

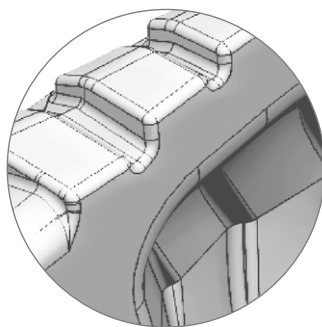
A background of technical drawings, including mechanical parts, gears, and structural components, rendered in a light gray, dashed-line style.

**RA  
RE  
FE  
FI  
LS**

**WEAR**

**TECH**

# Index



## TWISTER

Tooth	Dientes	9
HAMMERLESS Tooth	Dientes HAMMERLESS	17
Adapters	Portadientes	25
Pin	Pasadores	34

## T2

Tooth	Dientes	43
Adapters	Portadientes	50
Wear Cap	Protector Portadientes	53
Weld-On Nose	Nariz Reparación	54
Checking Templates	Plantillas para Reconstrucción	56
Pin	Pasadores	55

## X2

Tooth	Dientes	60
Adapters	Portadientes	64
Size 3900	Talla 3900	73

## MINER

### MINER 950

Tooth 950	Dientes 950	91
Adapters 950	Portadientes 950	94
Wear Caps 950	Protectores Portad.	95
Pin	Pasadores	97
Checking Templates	Plantillas para Reconstrucción	98

### MINER 1100-1300-1450

Solid Tooth	Dientes Sólidos	99
Tooth 920-1220	Dientes 920-1220	102
Pin 920-1220	Pasadores 920-1220	105
Intermediate Adapters	Adaptadores Intermedios	107
Wear Caps	Protector Port.	108
Mining Pins	Pasadores	110
Adapters	Portadientes	111
Adap. Wear Caps	Protectores interm.	112
Checking Templates	Plantillas para Reconstrucción	114
Weld-On Noses	Narices Soldables	115
Pin	Pasador	116
Excavator Lip Shrouds	Protectores Cuchilla Excavadora	117
Loader Lip Shrouds	Protectores Cuchilla Cargadora	123
Wing Shrouds	Protectores Laterales	124
Thrust Blocks	Bloques Apoyo	128
Lip Shroud Bases	Bases Protectores	131
Pin and Washers	Pasadores	131

CAST LIPS		133
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## LHD

### UNDERGROUND MINING

32mm		144
50mm		145
Lip Shrouds	Protectores Cuch.	146
Bucket Protection	Protectores Cazo	148
Pin	Pasadores	154

## DRP

### FUTURA DRP

ADCO		161
CASE		165
CATERPILLAR		169
Tooth	Dientes	171
Loader Adapters	Portadientes Cargadora	180
Excavator Adapters	Portadientes Excavadora	182
Wear Caps	Protectores Portad.	184
Weld-On Nose	Narices Soldables	
Hammerless Pin	Pasador Hammerless	189
Monoblock tooth	Dientes Monoblock	191
Vertical Pin	Pasador Vertical	193
Motorgrader	Motoniveladora	197
ESCO		199
Tooth	Dientes	200
Adapter	Portadientes	202
FIAT-HITACHI		205
H&L		209
HENSLEY		215
JOHN DEERE		221
KEECH		227
KOBELCO		231
KOMATSU		233
Compatible K	Compatible K	239
KVX		243
MINI EXCAVATOR		245
TATA HITACHI		247
VOLVO		253

## FC2

### FUTURA FC2

Tooth	Dientes	255
Excavator Adapters	Portadientes Excavadora	266
Loader Adapters	Portadientes Cargadora	268
Wear Caps	Protectores Portad.	269
HAMMERLESS Pin	Pasadores HAMMERLESS	271
FUTURA FC3	FUTURA FC3	275

## RIPPER

### FUTURA RIPPER

CATERPILLAR		281
Tooth	Dientes	282
Protector	Protectores	286
HAMMERLESS Pin	Pasadores HAMMERLESS	287
ESCO		289
KOMATSU		293

## DREDGE

### ESCO

SPHERILOK		297
QUADRILOK		307
SUPERCONICAL		311
IHC CB		315

## BP

### FUTURA BUCKET PROTECTION

Lip Shrouds	Protectores Cuchilla	322
Side Cutters	Protectores Laterales	324
Heel Shrouds	Protectores Esquineros	325
Wear Runners	Protectores Traseros	331
Chockys & Buttons	Barras y Botones	336

## blade

### FUTURA BLADE

FUTURA 550	FUTURA 550	340
FUTURA 600	FUTURA 600	342



### FUTURA TECHNICAL INFORMATION

Weld-on noses		349
Adapters		351
Twister		355
Twister Hammerless		359
T2		361
X2		365
Miner		367
Miner Bucket Protections		389
LHD		396
DRP+FC2		402
Dredge		410
Ripper		412
BP		416

Compatible with  
**Esco SuperV®**

**TWISTER**

Compatible with  
**Esco SV2®**

**T2**

Compatible with  
**Hensley XS® and TS®**

**X2**

Compatible with  
**Esco Posilok®**

**MINER**

Load Haul Dump  
**Underground Mining**

**LHD**

Futura  
**Direct Replacement Parts**

**DRP**

Futura  
**Proprietary System**

**FC2**

Futura  
**Ripper Parts and Components**

**RIPPER**

Futura  
**Dredging Range**

**DREDGE**

Futura  
**Bucket Protection Parts**

**BP**

Futura 550 and 600 HB  
**Premium Blades**

**BLADE**

Assembly  
**Instructions**



## Futura Wear Technology

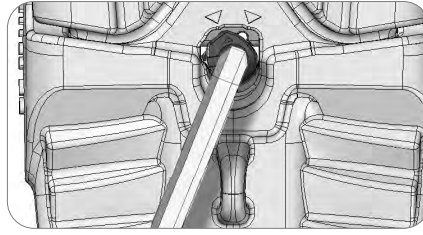
A complete engineered range of GET for perfect performance in all applications (light construction, heavy abrasion & mining) that **fulfils all your requirements and expectations.**



Economy Economía

## Hammerless System

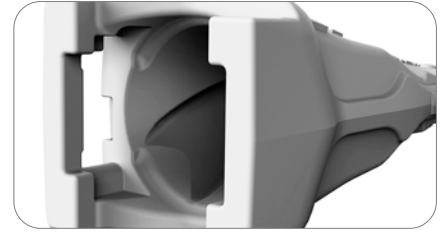
**FUTURA offers a range of universal hammerless locking solutions that improve safety** and make tooth/parts change-outs quick and easy.



Performance Rendimiento

## Innovative Solutions

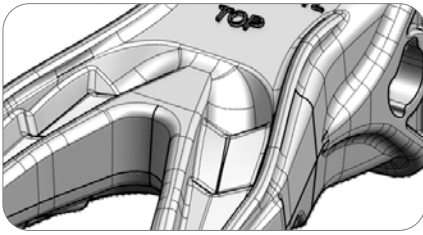
FUTURA teeth, adapters & bucket protection parts feature an innovative design that helps **increase the life of each part** and improves its efficiency for every application.



Productivity Productividad

## Beneficios FUTURA

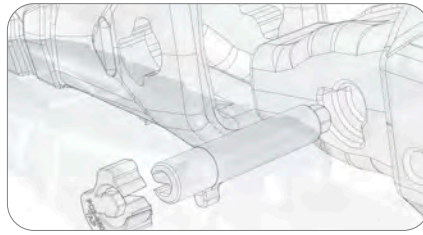
Una gama completa de sofisticada ingeniería para un rendimiento perfecto en todas las aplicaciones. **La gama FUTURA supera todos los requisitos y expectativas.**



Engineering Ingeniería

## Seguridad Hammerless

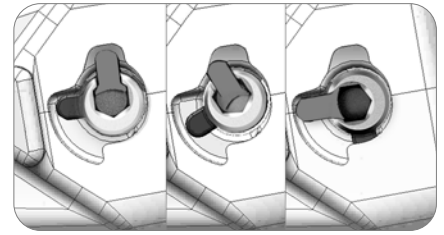
La gama FUTURA destaca por su oferta de **pasadores y sujeciones seguras.** La línea de pasadores **Hammerless elimina el riesgo del trabajo con martillos.**



Safety Seguridad

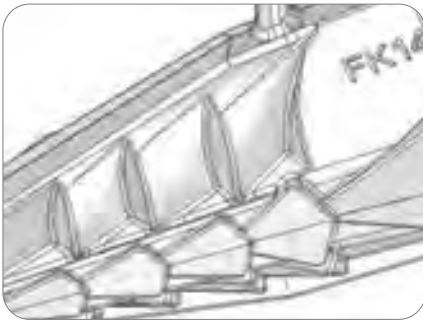
## Soluciones Innovadoras

Dientes, portadientes y adaptadores FUTURA presentan un **innovador diseño que alarga la vida útil de la pieza y mejora su eficacia en cada aplicación.**



Efficiency Eficacia

## Design Features Ventajas Técnicas del diseño FUTURA

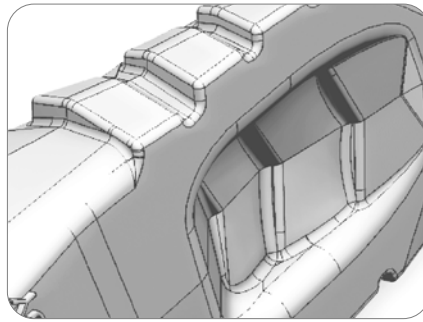


### Lateral Ribs

Lateral ribs reinforce the teeth box and protect pin. Minimize pocket breakage.

### Nervios Laterales

Los nervios laterales FUTURA refuerzan la caja del diente y protegen el bulón.

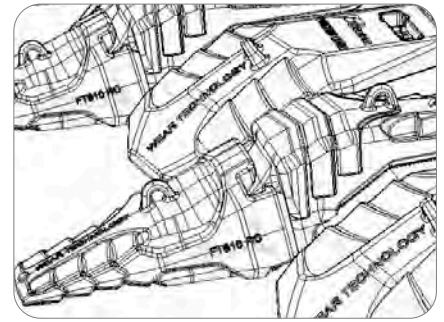


### Underside Pocket

Maintains tooth point sharpness without comprising point integrity.

### Rebaje Autoafilante

Mantiene el afilado **sin reducir la resistencia del diente.**



### Ribbed Sections

Optimized penetration and material flow. Ribbed sections improve self-sharpening effect & increase the tooth wear life. FUTURA uses an engineered wear pattern technology.

### Diseño en forma de Escamas

Mejora el rendimiento autoafilante. Optimiza la penetración y el flujo de material. Alargan la vida útil ya que protegen del desgaste la parte interna del diente.

## Proven Performance

Raised central ribs, lateral ribs and recessed pocket help material flow, **significantly extend tooth wear life** and increase sharpness properties providing better tooth penetration, **maintaining sharpness without reducing tooth resistance.**

More than 68% of wear steel is consumed on FUTURA worn teeth compared to new ones.

**Thanks to its optimal design more than 68% of steel has been used without losing teeth sharpness.**

FUTURA teeth are generally heavier than other competitor's teeth in the same category size and models. The **additional steel has been added in key areas where the tooth is subject to wear.**

**FUTURA RANGE has approximately 20% more usable wear material than other similar systems in the market.**

It is not just the length of the tooth or the percentage over the total weight. What really counts is the total wear material weight. You can find high ratios, but less weight means fewer cycles achieved. **FUTURA teeth last many more cycles.**

We have added more material on bottom lateral ribs and around the box section providing superior penetration shape and maintaining pocket integrity.

## Rendimiento Probado

El diseño con nervios laterales y centrales junto con el rebaje inferior contribuyen a facilitar el flujo de material, **alargando significativamente la vida útil de la pieza** y conservando sus propiedades autoafilantes.

**El diente mantiene la penetración sin reducir su resistencia.**

Comparando un diente FUTURA gastado con un diente FUTURA nuevo, comprobamos que **el 68% del acero ha sido aprovechado.**

Por su diseño optimizado el 68% del acero del diente se aprovecha, manteniendo la forma así como su rendimiento autoafilante.

Generalmente los dientes FUTURA son más pesados que los de la competencia. **Este peso extra se ha invertido en reforzar las áreas clave del diente** donde presenta más exposición al desgaste.

La línea de desgaste FUTURA emplea aproximadamente un 20% más de material de desgaste que las piezas de otros fabricantes.

**Este 20% más de material de desgaste "efectivo"** se incorpora a la parte inferior y a los laterales de la caja del diente donde proporcionan mejor penetración y resistencia para obtener el **máximo rendimiento de la pieza en cada aplicación.**

## Self-sharpening Design

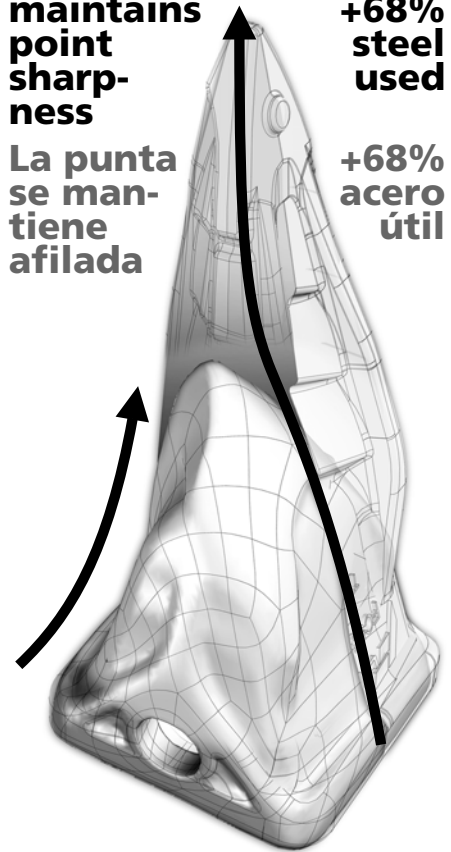
### Diseño Autoafilante

**maintains point sharpness**

**La punta se mantiene afilada**

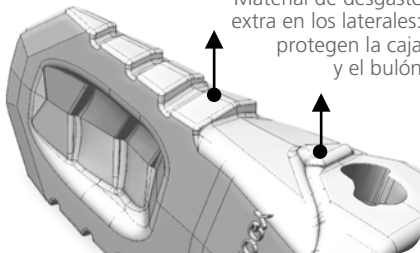
**+68% steel used**

**+68% acero útil**

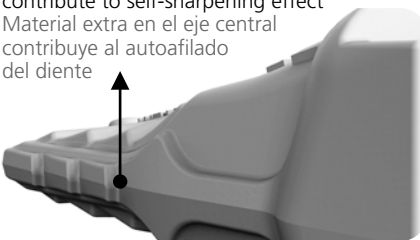


## FUTURA tooth vs. STANDARD tooth Diente FUTURA vs. Diente STANDARD

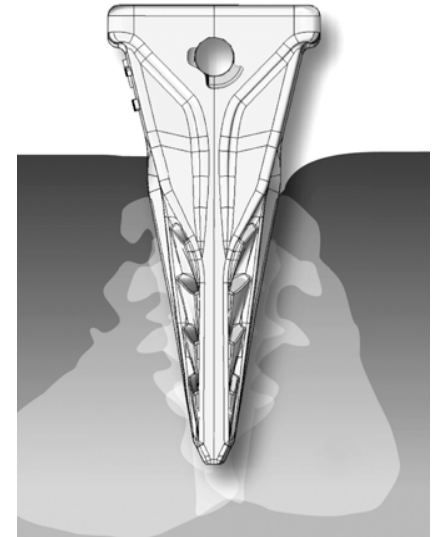
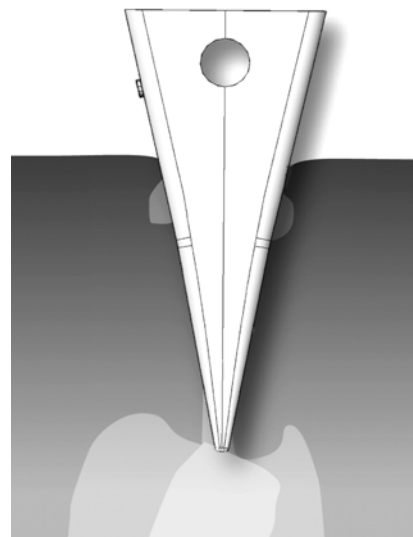
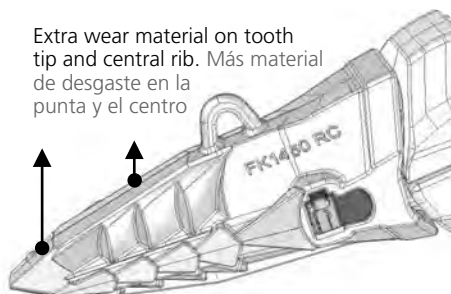
Extended lateral ribs maintain penetration shape, reinforce box strength & protect pin  
Material de desgaste extra en los laterales: protegen la caja y el bulón



Extra wear material on central & lateral ribs contribute to self-sharpening effect  
Material extra en el eje central contribuye al autoafilado del diente



Extra wear material on tooth tip and central rib. Más material de desgaste en la punta y el centro



STANDARD	
Wear factor Factor Desgaste	● ● ● ●
Penetration Penetración	● ● ● ● ●
Impact Impacto	● ● ● ● ●
Wear Weight Peso Desgaste	1,25 Kg. 2,75 Lbs
Wear Weight Peso Desgaste	<b>43%</b>
Penetration Penetración	115 mm. 4,53
Impact Impacto	200 mm. 7,87

FUTURA	
Wear factor Factor Desgaste	● ● ● ● ●
Penetration Penetración	● ● ● ● ● ● ●
Impact Impacto	● ● ● ● ● ● ● ● ●
Wear Weight Peso Desgaste	2,80 Kg. 6,16 Lbs
Wear Weight Peso Desgaste	<b>68%</b>
Penetration Penetración	127 mm. 5,00
Impact Impacto	210 mm. 8,27



# TWISTER

Futura TWISTER are compatible  
with Esco SuperV® teeth and adapters

FUTURA TWISTER, Dientes y Portadientes  
compatibles con Esco SuperV®



## Compatibility Compatibilidad



**Teeth compatibility**  
FUTURA TWISTER teeth fit on your current Super V® adapters

Los dientes FUTURA TWISTER pueden ir montados sobre sus portadientes actuales Esco Super V®



**Adapters and Weld on Noses:**  
FUTURA TWISTER adapters are suitable to be used with Esco Super V® teeth

Los dientes Esco Super V® pueden montarse sobre portadientes y narices soldables FUTURA TWISTER



Complete system featuring teeth, adapters, weld-on noses and pins. Sizes 13 to 810. TWISTER teeth, adapters and pins are suitable to be used with Esco Super V® parts.

Sistema compuesto de diente, portadiente y pasador. Variedad de diseños. Gama completa de tamaños: tallas de la 13 a la 810. Sistema compatible con Esco Super V®

	13	17	19	23	29	33	39	43	51	59	61	69	71	81
STANDARD	5,9	8,7	11,5	16,7	25,0	33,8	46,9	63,6	81,2	103,7	144,1	248,4	345,1	
HD	4,5	6,8	8,9	12,9	19,5	25,0	33,4	46,9	63,6	81,2	103,7	136,4	211,3	
ST/HD	4,4	7,1	10,0	15,7	21,7	29,4	39,9	53,3	67,4	88,8	119,9	188,0	270,5	402,2
EXTRA HD	3,4	5,4	7,6	12,0	16,3	22,1	30,2	39,9	53,3	67,4	88,8	129,9	188,0	275,2
ST/HD									62,2	82,9	110,0	161,1	218,5	334,5
EXTRA HD									48,6	62,2	82,9	120,4	161,1	231,9
	<b>LIGHT CONSTRUCTION</b> CONSTRUCCIÓN LIGERA			<b>CONSTRUCTION</b> CONSTRUCCIÓN				<b>HEAVY CONSTRUCTION</b> CONSTRUCCIÓN PESADA			<b>MINING</b> MINERÍA			

KEY TO PART NUMBERS  
CODIFICACIÓN REFERENCIAS

<b>F</b>	<b>T</b>	<b>33</b>	<b>0</b>	<b>R</b>	<b>P</b>	<b>L</b>
BRAND MARCA	TYPE TIPO	SIZE TAMAÑO	VERSION VERSION	ROCK ROCA		LIGHT LIGERO

# TWISTER

SYL	F	S	RPL	RP	RPHD	I	TL	VTL	WTL	RC		
FT130 SYL		FT130 S					FT130 TL		FT130 WTL		<b>13</b>	
FT170 SYL		FT170 S	FT170 RPL				FT170 TL		FT170 WTL		<b>17</b>	
FT190 SYL		FT190 S	FT190 RPL				FT190 TL		FT190 WTL		<b>19</b>	
FT230 SYL	FT230 F	FT230 S	FT230 RPL			FT230 I	FT230 TL		FT230 WTL		<b>23</b>	
FT290 SYL	FT290 F	FT290 S	FT290 RPL			FT290 I	FT290 TL		FT290 WTL		<b>29</b>	
FT330 SYL	FT330 F	FT330 S		FT330 RP		FT330 I	FT330 TL		FT330 WTL	FT330 RC	<b>33</b>	
	FT390 F	FT390 S		FT390 RP		FT390 I	FT390 TL		FT390 WTL	FT390 RC	<b>39</b>	
FT430 SYL	FT430 F	FT430 S		FT430 RP		FT430 I	FT430 TL		FT430 WTL	FT430 RC	<b>43</b>	
<b>TWISTER DUO</b>	FT510 F	FT510 S		FT510 RP		FT510 I		FT510 VTL	FT510 WTL	FT510 RC	<b>51</b>	
		FT590 S			FT590 RPHD	FT590 I		FT590 VTL	FT590 WTL	FT590 RC	<b>59</b>	
		FT610 S			FT610 RPHD	FT610 I		FT610 VTL	FT610 WTL	FT610 RC	<b>61</b>	
		FT690 S			FT690 RPHD	FT690 I		FT690 VTL	FT690 WTL	FT690 RC	<b>69</b>	
				FT710 RPHD	FT710 I		FT710 VTL	FT710 WTL	FT710 RC	<b>71</b>		
					FT810 I		FT810 VTL	FT810 WTL	FT810 RC	<b>81</b>		



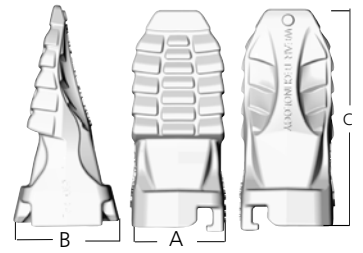
**RPL Rock Penetration Light** Penetración Roca Light



● ● ● □ □ □  
 WEAR FACTOR | DESGASTE

● ● ● ● ●  
 PENETRATION | PENETRACIÓN

● ● □ □ □ □  
 IMPACT | IMPACTO



mm.			REF	Cross Ref	Image	Image	Image	Image	Image	Image	Image	
A	B	C										
66 2,60"	70 2,76"	157 6,18"	<b>FT170 RPL</b>	V17TYL SD1CE	FT1317 PN	FT170 FL	FT170 BL	-	-	-	FT170 WN	<b>17</b>
80 3,15"	96 3,78"	191 7,52"	<b>FT190 RPL</b>	V19TY SD3CE	FT1923 PN	FT190 FL	FT190 BL	-	-	-	FT190 WN	<b>19</b>
90 3,54"	107 4,21"	213 8,39"	<b>FT230 RPL</b>	V23TY SD4CE	FT1923 PN	FT230 FL	FT230 BL	-	FT230-25 BO16 FT230-30 BO16	FT230-25 BOC23 FT230-30 BOC19	FT230 WN	<b>23</b>
102 4,02"	116 4,57"	241 9,49"	<b>FT290 RPL</b>	V29TYL SD5CE	FT290 PN	FT290 FL	-	FT290 LD	FT290-35 BO16 FT290-40 BO16	FT290-35 BOC23 FT290-40 BOC23	FT290 WN	<b>29</b>

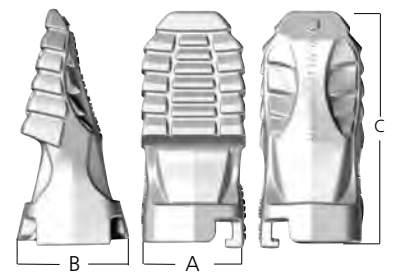
**RP Rock Penetration** Penetración Roca



● ● ● ● □ □ □  
 WEAR FACTOR | DESGASTE

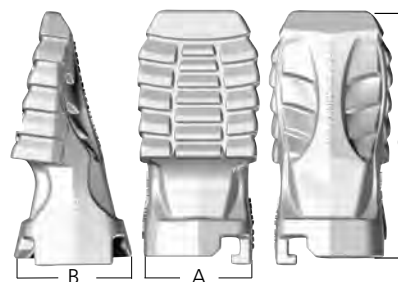
● ● ● ● ●  
 PENETRATION | PENETRACIÓN

● ● □ □ □ □  
 IMPACT | IMPACTO



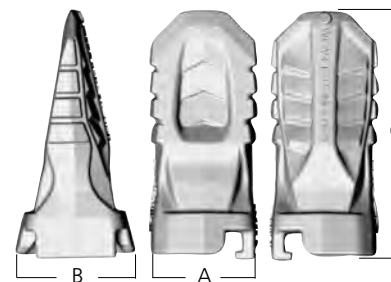
mm.			REF	Cross Ref	Image	Image	Image	Image	Image	Image
A	B	C								
114 4,49"	126 4,96"	276 10,87"	<b>FT330 RP</b>	V33AD SD7SA	FT330 PN	FT330 FL	FT330 LD	FT330-B22 LD/LH/RH	FT330 WN	<b>33</b>
128 5,04"	143 5,63"	312 12,28"	<b>FT390 RP</b>	V39AD SD8SA	FT390 PN	-	FT390 LD/LH/RH	FT390 WN	FT390 WN	<b>39</b>
144 5,67"	157 6,18"	336 13,23"	<b>FT430 RP</b>	V43AD SD9SA	FT430 PN	FT430 FL	FT430 LD/LH/RH	FT430-B22 LD/LH/RH FT430-60B22/LH/RH	FT430 WN	<b>43</b>
151 5,94"	165 6,50"	363 14,29"	<b>FT510 RP</b>	V39AD SD10SA	FT510 PN	-	FT510 LD/LH/RH	FT510-B22 LD/LH/RH	FT510 WN	<b>51</b>

## RPHD Rock Penetration HD Penetración Roca Trabajos Pesados



mm.				REF	Cross Ref	[Pin]	[Tip]	[Tip]	[Tip]	[Scale]
A	B	C								
170 6,69"	181 7,13"	412 16,22"	43,00 94,80	<b>FT590 RPHD</b>	V59AR	FT590 PN	FT590-B22 LD/LH/RH FT590-60B22 LD/LH/RH	FT590 WN	<b>59</b>	
207 8,15"	202 7,95"	425 16,73"	47,10 103,84	<b>FT610 RPHD</b>	V61ARL	FT610 PN	FT610 LD(LH/RH)	FT610 WN	<b>61</b>	
213 8,39"	219 8,62"	482 18,98"	64,00 141,09	<b>FT690 RPHD</b>	V69ARL	FT690 PN	FT690 LD(LH/RH)	FT690 WN	<b>69</b>	
261 10,28"	249 9,80"	513 20,20"	89,20 196,65	<b>FT710 RPHD</b>	V71ARL	FT710 PN	FT710 LD(LH/RH)	FT710 WN	<b>71</b>	

## S Standard Standard

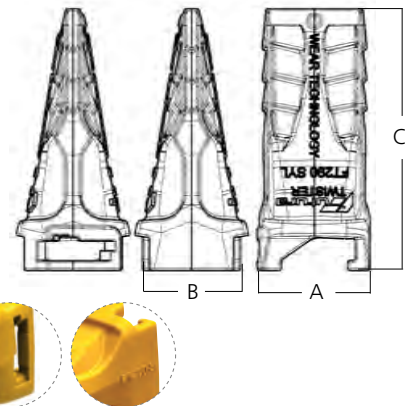
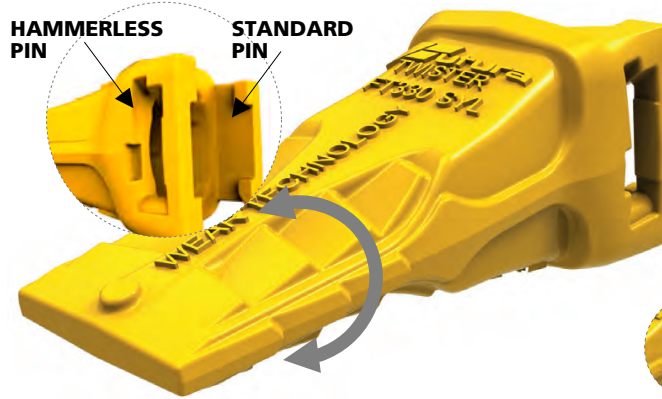
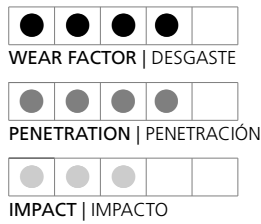


mm.				REF	Cross Ref	[Pin]	[Tip]	[Tip]	[Tip]	[Tip]	[Tip]	[Tip]	[Tip]	[Tip]	[Scale]
A	B	C													
55 2,17"	67 2,64"	120 4,72"	1,0 2,2	<b>FT130 S</b>	V13SYL SDM1TLR	FT1317 PN	FT130	FT130 FL	FT130 BL	-	-	-	-	<b>13</b>	
65 2,56"	69 2,72"	156 6,14"	1,5 3,31	<b>FT170 S</b>	V17SYL SD1TLR		FT170	FT170 FL	FT170 BL	-	-	-	-	<b>17</b>	
80 3,15"	96 3,78"	187 7,36"	3,3 7,3	<b>FT190 S</b>	V19SYL SD3TLR	FT1923 PN	FT190	FT190 FL	FT190 BL	-	-	-	-	<b>19</b>	
90 3,54"	107 4,21"	210 8,27"	4,3 9,5	<b>FT230 S</b>	V23SYL SD4TLR	FT1923 PN	FT230	FT230 FL	FT230 BL	-	FT230-25 BO16 FT230-30 BO16	FT230-25 BOC23 FT230-30 BOC19	-	<b>23</b>	
102 4,02"	116 4,57"	238 9,37"	6,2 13,7	<b>FT290 S</b>	V29SYL SD5TLR	FT290 PN	FT290	FT290 FL		FT290	FT290-35 BO16 FT290-40 BO16	FT290-35 BOC23 FT290-40 BOC23	-	<b>29</b>	
111 4,37"	126 4,96"	262 10,31"	8,0 17,6	<b>FT330 S</b>	V33SYL SD7TLR	FT330 PN	FT330	FT330 FL		FT330 FT330-B22	-	-	-	<b>33</b>	
128 5,04"	143 5,63"	294 11,57"	11,8 26,0	<b>FT390 S</b>	V39SYL SD8TLR	FT390 PN	FT390	-		FT390	-	-	-	<b>39</b>	
140 5,51"	157 6,18"	326 12,83"	15,9 35,1	<b>FT430 S</b>	V43SYL SD9TLR	FT430 PN	FT430	FT430 FL		FT430 FT430-B22 FT430-60B22	-	-	-	<b>43</b>	
152 5,98"	165 6,50"	374 14,72"	19,9 43,9	<b>FT510 S</b>	V51SYL SD10TLR	FT510 PN	FT510	-		FT510 FT510-B22	-	-	FT510 C	<b>51</b>	
165 6,50"	178 7,01"	402 15,83"	26,3 58,0	<b>FT590 S</b>	V59SYL SD11TLR	FT590 PN	FT590	-		FT590-B22 FT590-60B22	-	-	FT590 C	<b>59</b>	
172 6,77"	184 7,24"	360 14,17"	31,5 69,4	<b>FT610 S</b>	V61SYL	FT610 PN	FT610	-		FT610	-	-	FT610 C FT610 CST	<b>61</b>	
210 8,27"	219 8,62"	431 16,97"	40,7 89,73	<b>FT690 S</b>	V69SYL	FT690 PN	FT690	-		FT690 FT690-90	-	-	FT690 C FT690 CST	<b>69</b>	

Theoretical weights, subject to variations Pesos teóricos, sujetos a variaciones | Super V® is a registered trademark of Esco Corporation. Manufacturer's names, descriptions, pictures and part numbers are used for reference purposes only. Super V® marca registrada de Esco Corporation. Los nombres, descripciones, ilustraciones y referencias de otras marcas se utilizan a modo de referencia.



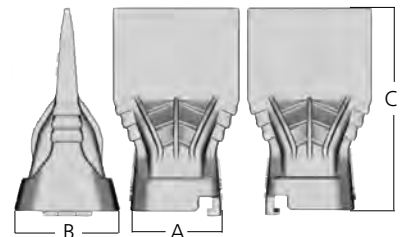
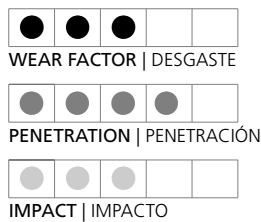
## SYL Symmetric Simétrico



# TWISTER DUO

mm.				REF	Cross R.								
A	B	C											
59 2,32"	54 2,13"	118 4,65"	0,80 1,76	<b>FT130 SYL</b> V13SYL	FT1317 PN-HL FT1317 PN	FT130							FT130 WN <b>13</b>
68 2,68"	62 2,44"	135 5,31"	1,40 3,1	<b>FT170 SYL</b> V17TYL	FT1317 PN-HL FT1317 PN	FT1317 PN-HL							FT170 WN <b>17</b>
80 3,15"	88 3,46"	183 7,20"	2,50 5,51	<b>FT190 SYL</b> V19SYL	FT1923 PN-HL FT1923 PN	FT190							FT190 WN <b>19</b>
91 3,58"	92 3,62"	209 8,23"	3,46 7,6	<b>FT230 SYL</b> V23SYL	FT1923 PN-HL FT1923 PN	FT230 FT230-30							FT230 WN <b>23</b>
104 4,09"	104 4,09"	240 9,45"	5,80 12,8	<b>FT290 SYL</b> V29SYL	FT2933 PN-HL FT290 PN	FT290 FT290-35							FT290 WN <b>29</b>
114 4,49"	113 4,45"	261 10,28"	6,90 15,2	<b>FT330 SYL</b> V33SYL	FT2933 PN-HL FT330 PN	FT330							FT330 WN <b>33</b>
128 5,04"	130 5,12"	288 11,34"	10,80 23,8	<b>FT390 SYL</b> V29SYL	FT390 PN-HL FT390 PN	FT390							FT390 WN <b>39</b>
144 5,67"	146 5,75"	325 12,80"	14,90 32,85	<b>FT430 SYL</b> V43SYL	FT430 PN-HL FT430 PN	FT430	FT430 LD FT430-B22 FT430-60B22						FT430 WN <b>43</b>
151 5,94"	152 5,98"	349 13,74"	18,30 40,34	<b>FT510 SYL</b> V43SYL	FT510 PN-HL FT510 PN	FT510	FT510 LD FT510-B22						FT510 WN <b>51</b>

## F Flare Ancho



mm.				REF	Cross R.								
A	B	C											
91 3,58"	106 4,17"	210 8,27"	4,6 10,14	<b>FT230 F</b> V23S5F	FT1923 PN	FT230	FT230 BL	FT230 FL					FT230 WN <b>23</b>
101 3,98"	116 4,57"	259 10,20"	7,0 15,4	<b>FT290 F</b> V29S6F	FT290 PN	FT290		FT290 FL	FT290				FT290 WN <b>29</b>
114 4,49"	126 4,96"	283 11,14"	10,4 22,9	<b>FT330 F</b> V33S7F	FT330 PN	FT330		FT330 FL	FT330 FT330-B22				FT330 WN <b>33</b>
128 5,04"	144 5,67"	310 12,20"	15,0 33,1	<b>FT390 F</b> V39S8F	FT390 PN	FT390		FT390 FL	FT390				FT390 WN <b>39</b>
144 5,67"	157 6,18"	348 13,70"	19,6 43,21	<b>FT430 F</b> V43S9F	FT430 PN	FT430		FT430 FL	FT430 FT430-B22 FT430-60B22				FT430 WN <b>43</b>
151 5,94"	165 6,50"	384 15,12"	27,5 60,6	<b>FT510 F</b> V51S10F	FT510 PN	FT510			FT510 FT510-B22	FT510 C			FT510 WN <b>51</b>

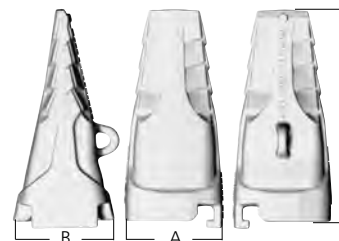
**RC Rock Chisel Cincel Roca**



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

IMPACT | IMPACTO



mm.				REF	Cross Ref	Image	Image	Image	Image	Image	Image
A	B	C	kg								
111 4,37"	126 4,96"	262 10,31"	8,00 330	<b>FT330 RC</b>	V33SD	FT330 PN	FT330	-	-	FT330 WN	<b>33</b>
128 5,04"	143 5,63"	294 11,57"	11,60 25,57	<b>FT390 RC</b>	V39SD SD8PR	FT390 PN	FT390	-	-	FT390 WN	<b>39</b>
140 5,51"	157 6,18"	326 12,83"	16,10 330	<b>FT430 RC</b>	V43SD SD9PR	FT430 PN	FT430	-	-	FT430 WN	<b>43</b>
152 5,98"	165 6,50"	374 14,72"	21,30 46,96	<b>FT510 RC</b>	V51SD V51SDX	FT510 PN	FT510	-	FT510 C	FT510 WN	<b>51</b>
165 6,50"	178 7,01"	402 15,83"	26,20 330	<b>FT590 RC</b>	V59SD V59SDX	FT590 PN	FT590	-	FT590 C	FT590 WN	<b>59</b>
170 6,69"	198 7,80"	429 16,89"	32,50 71,65	<b>FT610 RC</b>	V61SD V61SDX	FT610 PN	FT610	FT610 CST	FT610 C	FT610 WN	<b>61</b>
205 8,07"	219 8,62"	470 18,50"	46,50 102,51	<b>FT690 RC</b>	V69SD	FT690 PN	FT690	FT690 CST	FT690 C	FT690 WN	<b>69</b>
224 8,82"	237 9,33"	500 19,69"	57,90 127,65	<b>FT710 RC</b>	V71SD	FT710 PN	FT710	-	FT710 C	FT710 WN	<b>71</b>
267 10,51"	280 11,02"	576 22,68"	90,30 199,07	<b>FT810 RC</b>	V81SD	FT810 PN	FT810	FT810 CST	FT810 C	FT810 WN	<b>81</b>

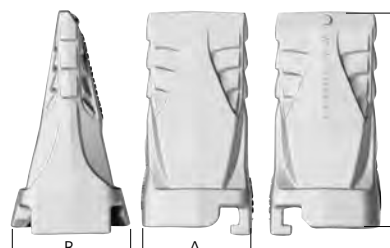
**I Impact Impacto**



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

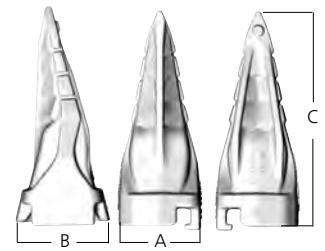
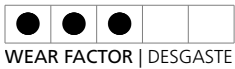
IMPACT | IMPACTO



mm.				REF	Cross Ref	Image	Image	Image	Image	Image	Image	
A	B	C	kg									
73 2,87"	108 4,25"	193 7,60"	4,00 8,82	<b>FT230 I</b>	V23RYL	FT1923 PN	FT230	FT230 BL	-	-	FT230 WN	<b>23</b>
92 3,62"	116 4,57"	222 8,74"	5,70 12,57	<b>FT290 I</b>	V29RYL	FT290 PN	FT290	-	-	-	FT290 WN	<b>29</b>
107 4,21"	126 4,96"	240 9,45"	7,60 16,75	<b>FT330 I</b>	V33RYL	FT330 PN	FT330	-	-	-	FT330 WN	<b>33</b>
127 5,00"	143 5,63"	267 10,51"	11,20 24,69	<b>FT390 I</b>	V39RYL	FT390 PN	FT390	-	-	-	FT390 WN	<b>39</b>
144 5,67"	157 6,18"	293 11,54"	14,60 32,19	<b>FT430 I</b>	V43RYL	FT430 PN	FT430	-	-	-	FT430 WN	<b>43</b>
151 5,94"	165 6,50"	324 12,76"	19,80 330	<b>FT510 I</b>	V51RYL	FT510 PN	FT510	-	-	FT510 C	FT510 WN	<b>51</b>
165 6,50"	178 7,01"	353 13,90"	25,70 56,66	<b>FT590 I</b>	V59RYL	FT590PN	FT590	-	-	FT590 C	FT590 WN	<b>59</b>
168 6,61"	196 7,72"	366 14,41"	28,10 61,95	<b>FT610 I</b>	V61RYL	FT610 PN	FT610	-	FT610 CST	FT610 C	FT610 WN	<b>61</b>
219 8,62"	210 8,27"	415 16,34"	44,10 97,22	<b>FT690 I</b>	V69RYL	FT690 PN	FT690	-	FT690 CST	FT690 C	FT690 WN	<b>69</b>
230 9,06"	237 9,33"	441 17,36"	54,20 119,49	<b>FT710 I</b>	V71RXL V71RYL	FT710 PN	FT710	-	-	FT710 C	FT710 WN	<b>71</b>
267 10,51"	280 11,02"	510 20,08"	87,00 191,80	<b>FT810 I</b>	V81RXL V81RYL	FT810 PN	FT810	-	FT810 CST	FT810 C	FT810 WN	<b>81</b>

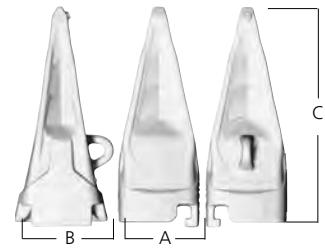
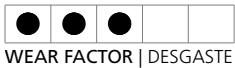
Theoretical weights, subject to variations Pesos teóricos, sujetos a variaciones | Super V® is a registered trademark of Esco Corporation. Manufacturer's names, descriptions, pictures and part numbers are used for reference purposes only. Super V® marca registrada de Esco Corporation. Los nombres, descripciones, ilustraciones y referencias de otras marcas se utilizan a modo de referencia.

## TL Tiger Long Tiger Largo



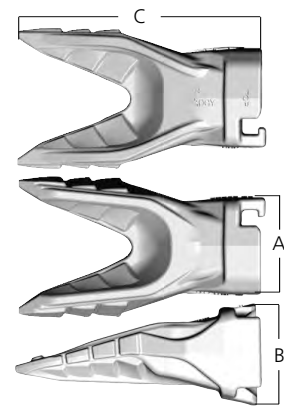
mm.			REF	Cross Ref	FT1317 PN	FT130	FT130 BL	FT130 WN	13
A	B	C							
55 2,17"	67 2,64"	136 5,35"	<b>FT130 TL</b>	V13VY	FT1317 PN	FT130	FT130 BL	FT130 WN	13
66 2,60"	69 2,72"	175 6,89"	<b>FT170 TL</b>	V17VY SD1 PE	FT1317 PN	FT170	FT170 BL	FT170 WN	17
77 3,03"	96 3,78"	200 7,87"	<b>FT190 TL</b>	V19VY SD3 PE	FT1923 PN	FT190	FT190 BL	FT190 WN	19
90 3,54"	107 4,21"	225 8,86"	<b>FT230 TL</b>	V23VY SD4 PE	FT1923 PN	FT230	FT230 BL	FT230 WN	23
102 4,02"	116 4,57"	270 10,63"	<b>FT290 TL</b>	V29VY SD5 PE	FT290 PN	FT290	-	FT290 WN	29
114 4,49"	126 4,96"	295 11,61"	<b>FT330 TL</b>	V33VY SD7 PE	FT330 PN	FT330	-	FT330 WN	33
128 5,04"	143 5,63"	326 12,83"	<b>FT390 TL</b>	V39VY SD8 PE	FT390 PN	FT390	-	FT390 WN	39
144 5,67"	157 6,18"	364 14,33"	<b>FT430 TL</b>	V43VY SD9 PE	FT430 PN	FT430	-	FT430 WN	43

## VTL Vector Tiger Long Vector Largo



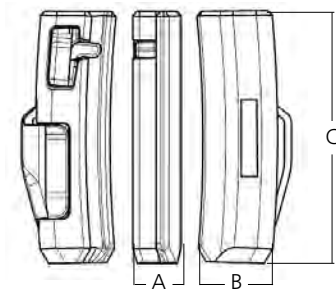
mm.			REF	Cross Ref	FT510 PN	FT510	FT510 CST	FT510 C	FT510 WN	51
A	B	C								
151 5,94"	165 6,50"	395 15,55"	<b>FT510 VTL</b>	V51VY V51VYH SD10PE	FT510 PN	FT510	-	FT510 C	FT510 WN	51
165 6,50"	178 7,01"	430 16,93"	<b>FT590 VTL</b>	V59VY V59VYH SD11PE	FT590 PN	FT590	-	FT590 C	FT590 WN	59
170 6,69"	198 7,80"	464 18,27"	<b>FT610 VTL</b>	V61VX SD12PE	FT610 PN	FT610	FT610 CST	FT610 C	FT610 WN	61
210 8,27"	219 8,62"	508 20,00"	<b>FT690 VTL</b>	V69VX	FT690 PN	FT690	FT690 CST	FT690 C	FT690 WN	69
230 9,06"	237 9,33"	550 21,65"	<b>FT710 VTL</b>	V71VX	FT710 PN	FT710	-	FT710 C	FT710 WN	71
265 10,43"	278 10,94"	642 25,28"	<b>FT810 VTL</b>	V81VX	FT810 PN	FT810	FT810 CST	FT810 C	FT810 WN	81

# WTL Twin Tiger Long Largo Doble Punta WTL



mm.			REF	Cross Ref	1	2	3	4	5	6	7	8	9	10
A	B	C												
56 2,20"	65 2,56"	138 5,43"	<b>FT130 WTL</b>	V17TVY	FT1317 PN	FT130	FT130 BL						FT130 WN	<b>13</b>
66 2,60"	69 2,72"	175 6,89"	<b>FT170 WTL</b>	V17TVY	FT1317 PN	FT170	FT170 BL						FT170 WN	<b>17</b>
77 3,03"	96 3,78"	200 7,87"	<b>FT190 WTL</b>	V19TVY	FT1923 PN	FT190	FT190 BL						FT190 WN	<b>19</b>
90 3,54"	107 4,21"	225 8,86"	<b>FT230 WTL</b>	V23TVY	FT1923 PN	FT230	FT230 BL						FT230 WN	<b>23</b>
102 4,02"	116 4,57"	270 10,63"	<b>FT290 WTL</b>	V29TVY	FT290 PN	FT290							FT290 WN	<b>29</b>
114 4,49"	126 4,96"	295 11,61"	<b>FT330 WTL</b>	V33TVY	FT330 PN	FT330							FT330 WN	<b>33</b>
128 5,04"	143 5,63"	326 12,83"	<b>FT390 WTL</b>	V39TVY	FT390 PN	FT390							FT390 WN	<b>39</b>
144 5,67"	157 6,18"	364 14,33"	<b>FT430 WTL</b>	V43TVY	FT430 PN	FT430							FT430 WN	<b>43</b>
151 5,94"	165 6,50"	326 12,83"	<b>FT510 WTL</b>	V51TVY	FT510 PN	FT510		FT510 C					FT510 WN	<b>51</b>
165 6,50"	178 7,01"	364 14,33"	<b>FT590 WTL</b>	V59TVY	FT590 PN	FT590		FT590 C					FT590 WN	<b>59</b>
170 6,69"	198 7,80"	326 12,83"	<b>FT610 WTL</b>	V61TVP	FT610 PN	FT610		FT610 C	FT610 CST				FT610 WN	<b>61</b>

## PN Twister Pin Pasador Twister



mm.				REF	Fig	Cross Ref	
A	B	C					
9,5 0,37"	17 14	47,5 1,87"	0,03 0,07	<b>FT1317 PN</b>	1	V13-17PN	<b>13-17</b>
11,3 0,44"	16,7 0,66"	53,1 2,09"	0,04 0,09	<b>FT1923 PN</b>	1	V23PN	<b>19-23</b>
13,8 0,54"	21,5 0,85"	74,9 2,95"	0,14 0,31	<b>FT290 PN</b>	1	V29PN	<b>29</b>
15,7 0,62"	23,5 0,93"	86,1 3,39"	0,16 0,35	<b>FT330 PN</b>	1	V33PN	<b>33</b>
17,8 0,70"	25,8 1,02"	95,1 3,74"	0,21 0,46	<b>FT390 PN</b>	1	V39PN	<b>39</b>
19,7 0,78"	33,1 1,30"	104,9 4,13"	0,29 0,64	<b>FT430 PN</b>	1	V43PN	<b>43</b>
21,3 0,84"	27 1,06"	112 4,41"	0,35 0,77	<b>FT510 PN</b>	2	V51PN	<b>51</b>
21,7 0,85"	28,9 1,14"	120 4,72"	0,40 0,88	<b>FT590 PN</b>	2	V59PN	<b>59</b>
21,6 0,85"	23 0,91"	131 5,16"	0,60 1,32	<b>FT610 PN</b>	2	V61PN	<b>61</b>
27 1,06"	33,7 1,33"	146 5,75"	0,73 1,61	<b>FT690 PN</b>	2	V69PN	<b>69</b>
29 1,14"	36,8 1,45"	160 6,30"	0,78 1,72	<b>FT710 PN</b>	2	V71PN	<b>71</b>
31,8 1,25"	39,6 1,56"	187 7,36"	1,10 2,43	<b>FT810 PN</b>	2	V81PN	<b>81</b>

Fig 1



Fig 2



FUTURA TWISTER PINS could be re-used several times and are designed to be used with other SuperV® products in the market

Gracias a la calidad de su acero, los pasadores TWISTER pueden ser re-utilizados varias veces. Están diseñados para poder ser utilizados con otros productos SuperV® y alternativos del mercado

## HPN Hot Slag Twister Pin Pasador Twister para Escoria Caliente



### Special HOT SLAG TWISTER PINS

Pasadores especiales para trabajo con escoria caliente.

mm.				REF	Fig	Cross Ref	
A	B	C					
17,6 0,69"	25,9 1,02"	95,9 3,78"	0,25 0,55	<b>FT390 HPN</b>	3	V39HPN	<b>39</b>
19,5 0,77"	29,8 1,17"	105,8 4,17"	0,34 0,75	<b>FT430 HPN</b>	3	V43HPN	<b>43</b>
21 0,83"	33,5 1,32"	112,6 4,43"	0,40 0,88	<b>FT510 HPN</b>	4	V51HPN	<b>51</b>
21,5 0,85"	34 1,34"	120,9 4,76"	0,45 0,99	<b>FT590 HPN</b>	4	V59HPN	<b>59</b>
21,7 0,85"	34,5 1,36"	130,3 5,13"	0,50 1,10	<b>FT610 HPN</b>	4	V61HPN	<b>61</b>
26,2 1,03"	40 1,57"	153,4 6,04"	0,85 1,87	<b>FT6971 HPN</b>	4	V69HPNA	<b>69-71</b>

Fig 3



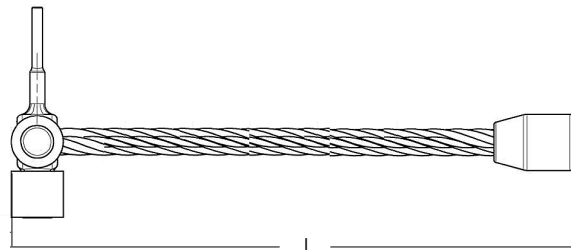
Fig 4



## Standard Pin Extraction Tools Herramientas Extractoras Pasadores Standard

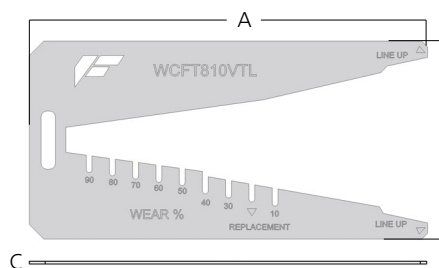
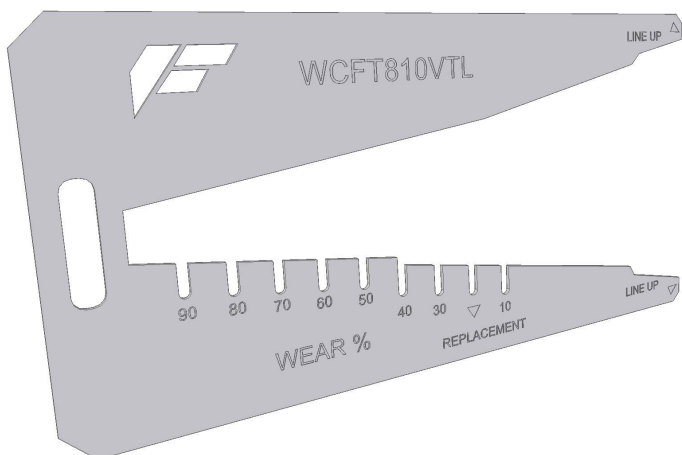


**EXTFT-1333    EXTFT-3961    EXTFT-6981**



mm.		REF	D
L	KG		
420 16,54"	1,80 3,97	<b>EXTFT-1333</b>	<b>13 to 33</b>
420 16,54"	2,40 5,29	<b>EXTFT-3961</b>	<b>39 to 61</b>
702 27,64"	4,30 9,48	<b>EXTFT-6981</b>	<b>69 to 81</b>

## Wear Checking Template Plantilla Comprobación Desgaste



mm.					Lb	REF	Tooth
A	in	B	in	C			
685	26,97"	340	13,39"	4	0,16"	<b>WCFT810VTL</b>	FT810 VTL
						<b>81</b>	

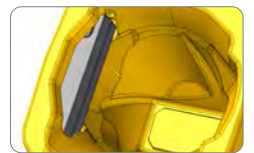
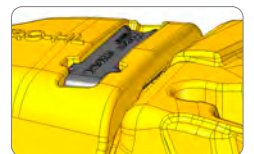
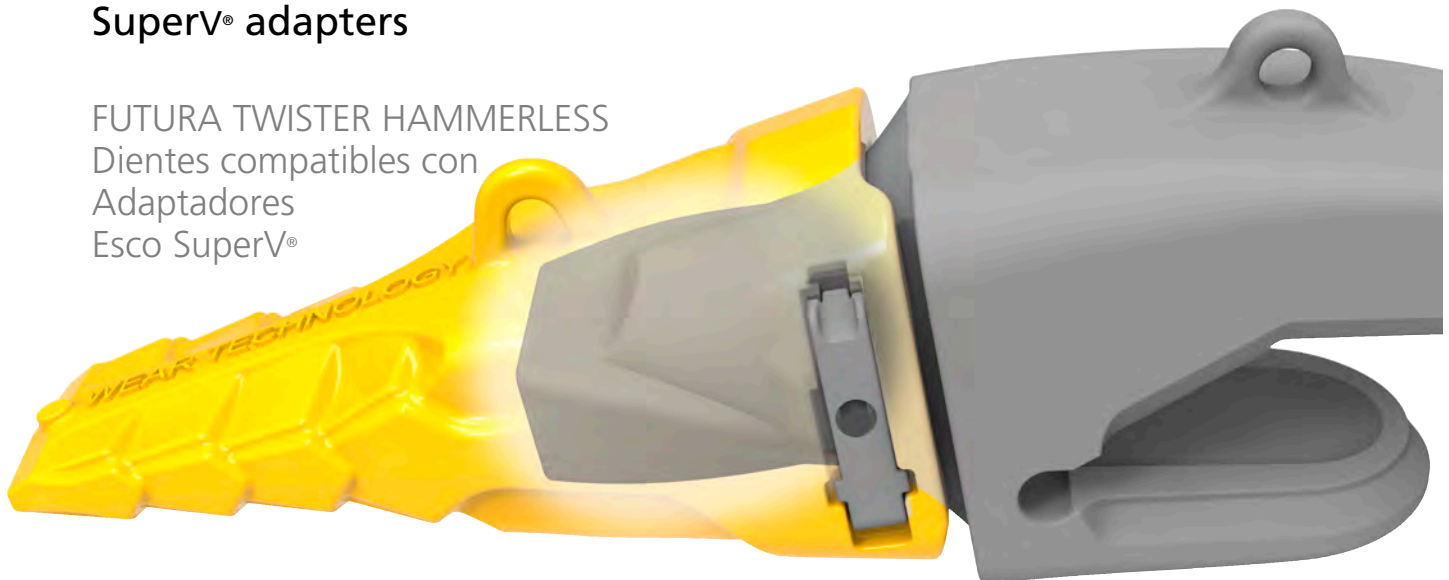


# TWISTER

## HAMMERLESS

Futura TWISTER HAMMERLESS  
 Teeth are compatible with Esco  
 SuperV® adapters

FUTURA TWISTER HAMMERLESS  
 Dientes compatibles con  
 Adaptadores  
 Esco SuperV®



### TWISTER DUO

SYL	RC-HL	RCP-HL	RCXL-HL	RX-HL	RPHD-HL	RPL-HL	I-HL
FT130 SYL <b>13</b>	FT590 RC-HL						FT590 I-HL <b>59</b>
FT170 SYL <b>17</b>	FT610 RC-HL						FT610 I-HL <b>61</b>
FT190 SYL <b>19</b>	FT690 RC-HL			FT690 RX-HL	FT690 RPHD-HL	FT690 RPL-HL	FT690 I-HL <b>69</b>
FT230 SYL <b>23</b>							
FT290 SYL <b>29</b>							
FT330 SYL <b>33</b>							
FT390 SYL <b>39</b>	FT710 RC-HL		FT710 RCXL-HL	FT710 RX-HL	FT710 RPHD-HL		FT710 I-HL <b>71</b>
FT430 SYL <b>43</b>							
FT510 SYL <b>51</b>	FT810 RC-HL	FT810 RCP-HL	FT810 RCXL-HL	FT810 RX-HL			FT810 I-HL <b>81</b>

## RC-HL Twister Hammerless Diente Twister Hammerless RC



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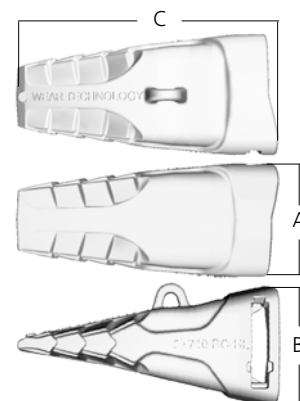
WEAR FACTOR | DESGASTE

● ● ● ● ●

PENETRATION | PENETRACIÓN

● ● ●

IMPACT | IMPACTO



mm.				REF	Cross R								59
A	B	C											
165	178	389	26,40	<b>FT590 RC-HL</b>	V59SD	FT590 PN-HL	FT590	FT590 LH	FT590 RH		FT590 C	FT590 WN	<b>59</b>
6,50"	7,01"	15,31"	58,20										
170	198	419	32,50	<b>FT610 RC-HL</b>	V61SD	FT6165 PN-HL	FT610	FT610 LH	FT610 RH	FT610 CST	FT610	FT610 WN	<b>61</b>
6,69"	7,80"	16,50"	71,65										
210	219	455	46,70	<b>FT690 RC-HL</b>	V69SD	FT690 PN-HL	FT690	FT690 LH	FT690 RH	FT690 CST	FT690 C	FT690 WN	<b>69</b>
8,27"	8,62"	17,91"	102,95				FT690-90	FT690 LH-90	FT690 RH-90				
224	237	501	58,00	<b>FT710 RC-HL</b>	V71SD	FT710 PN-HL	FT710	FT710 LH	FT710 RH	FT710-100 CST	FT710 C	FT710 WN	<b>71</b>
8,82"	9,33"	19,72"	127,87				FT710-100	FT710-100 LH	FT710-100 RH				
267	281	578	91,00	<b>FT810 RC-HL</b>	V81SD	FT810 PN-HL	FT810	FT810 LH	FT810 RH	FT810 CST	FT810 C	FT810 WN	<b>81</b>
10,51"	11,06"	22,76"	200,62				FT810-140	FT810-140 LH	FT810-140 RH	FT810-140 CST			

## RCP-HL Twister Hammerless Diente Twister Hammerless RCP



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WEAR FACTOR | DESGASTE

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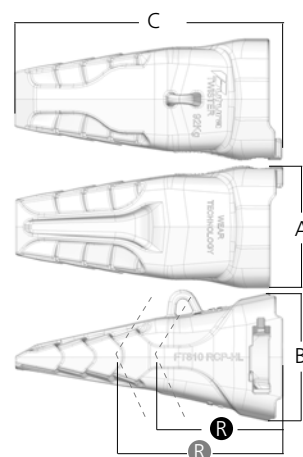
PENETRATION | PENETRACIÓN

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IMPACT | IMPACTO

**COMPATIBLE WITH BRADKEN ADAPTERS**

COMPATIBLE CON PORTADIENTES MARCA BRADKEN



**R** ROTATE ROTAR  
**R** REPLACE REEMPLAZAR

mm.					REF	Cross					81
A	B	C	<b>R</b>	<b>R</b>							
267	281	588	370	270	<b>FT810 RCP-HL</b>	V81CHD	FT810 PN-HLS*	FT810	FT810 CST	FT810 C	<b>81</b>
10,51"	11,06"	23,15"	14,57"	10,63"				FT810-140	FT810-140 CST		

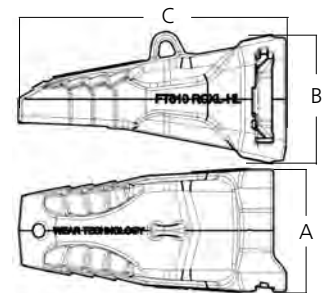


# RCXL-HL Twister Hammerless Diente Twister Hammerless RCXL

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 WEAR FACTOR | DESGASTE

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 PENETRATION | PENETRACIÓN

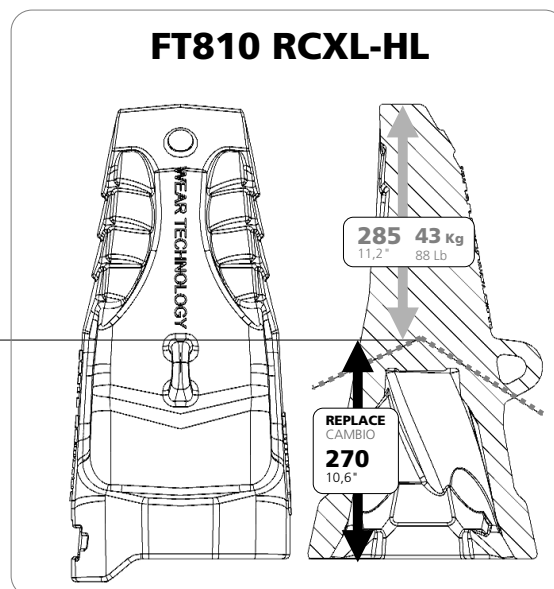
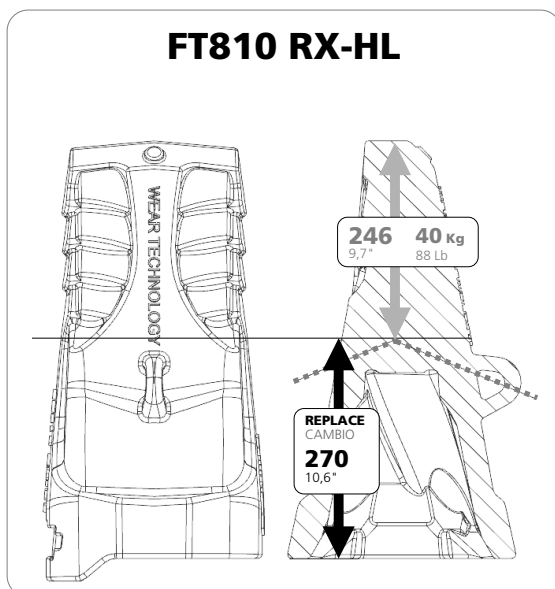
● ● ●  
 IMPACT | IMPACTO



mm.				REF	Cross R	FT710	FT710 LH	FT710 RH	FT710-100 CST	FT710 C	FT710 WN	71	
A	B	C	KG										
229	239	515	68,00	<b>FT710 RCXL-HL</b>	V71CHD	FT710 PN-HL	FT710	FT710 LH	FT710 RH	FT710-100 CST	FT710 C	FT710 WN	<b>71</b>
9,02"	9,41"	20,28"	149,91				FT710-100	FT710-100 LH	FT710-100 RH				
267	281	583	106,00	<b>FT810 RCXL-HL</b>	V81CHD	FT810 PN-HL	FT810	FT810 LH	FT810 RH	FT810 CST	FT810 C	FT810 WN	<b>81</b>
10,51"	11,06"	22,95"	233,69				FT810-140	FT810-140 LH	FT810-140 RH	FT810-140 CST			

## TWISTER HAMMERLESS TEETH Recommendations for use & replacement

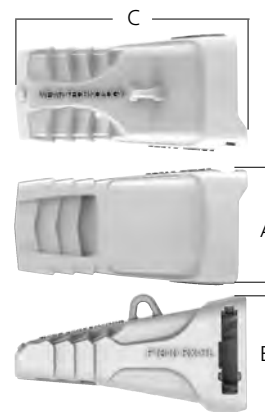
## DIENTES TWISTER HAMMERLESS Recomendaciones de uso y reemplazo



## RX-HL Twister Hammerless Diente Twister Hammerless RX



WEAR FACTOR | DESGASTE  
 PENETRATION | PENETRACIÓN  
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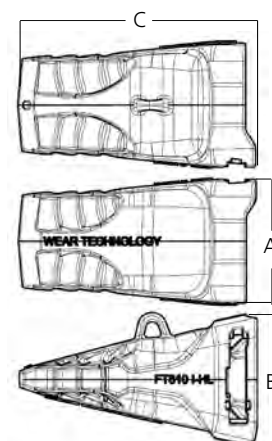


mm.				REF	Cross R								
A	B	C	KG										
210	219	456	54,00	<b>FT690 RX-HL</b>	V69SDX FT690 PN-HL	FT690	FT690 LH	FT690 RH	FT690 CST	FT690 C	FT690 WN	<b>69</b>	
8,27"	8,62"	17,95"	119,05			FT690-90	FT690LH-90	FT690RH-90					
229	238	506	70,00	<b>FT710 RX-HL</b>	V71SDX FT710 PN-HL	FT710	FT710 LH	FT710 RH	FT710-100 CST	FT710 C	FT710 WN	<b>71</b>	
9,02"	9,37"	19,92"	154,32			FT690-100	FT710-100 LH	FT710-100 RH					
267	281	537	102,00	<b>FT810 RX-HL</b>	V81SDX FT810 PN-HL	FT810	FT810 LH	FT810 RH	FT810 CST	FT810 C	FT810 WN	<b>81</b>	
10,51"	11,06"	21,14"	224,87			FT810-140	FT810-140 LH	FT810-140 RH	FT810-140 CST				

## I-HL Twister Hammerless Diente Twister Hammerless Impacto



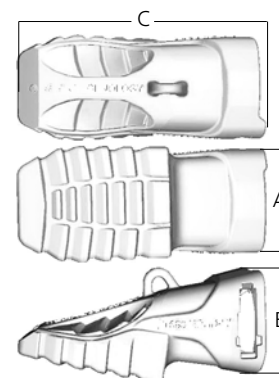
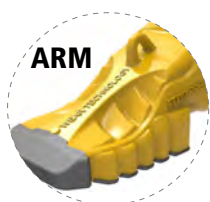
WEAR FACTOR | DESGASTE  
 PENETRATION | PENETRACIÓN  
 IMPACT | IMPACTO



mm.				REF	Cross R								
A	B	C	KG										
165	178	345	26,20	<b>FT590 I-HL</b>	U59RYL	FT590 PN-HL	FT590	FT590 LH	FT590 RH	FT590 CST	FT590 C	FT590 WN	<b>59</b>
6,50"	7,01"	13,58"	57,76										
166	196	364	28,26	<b>FT610 I-HL</b>	U61RYL	FT6165 PN-HL	FT610	FT610 LH	FT610 RH	FT610 CST	FT610C	FT610 WN	<b>61</b>
6,54"	7,72"	14,33"	62,30										
210	219	415	44,46	<b>FT690 I-HL</b>	U69RYL	FT690 PN-HL	FT690	FT690 LH	FT690 RH	FT690 CST	FT690 C	FT690 WN	<b>69</b>
8,27"	8,62"	16,34"	98,02				FT690-90	FT690LH-90	FT690RH-90				
229	237	442	55,50	<b>FT710 I-HL</b> <b>FT710 I-HL-ARM</b>	U71RYL	FT710 PN-HL	FT710	FT710 LH	FT710 RH	FT710-100 CST	FT710 C	FT710 WN	<b>71</b>
9,02"	9,33"	17,40"	122,35				FT710-100	FT710-100 LH	FT710-100 RH				
267	281	511	87,70	<b>FT810 I-HL</b>	U81RYL	FT810 PN-HL	FT810	FT810 LH	FT810 RH	FT810 CST	FT810 C	FT810 WN	<b>81</b>
10,51"	11,06"	20,12"	193,34				FT810-140	FT810-140 LH	FT810-140 RH	FT810-140 CST			

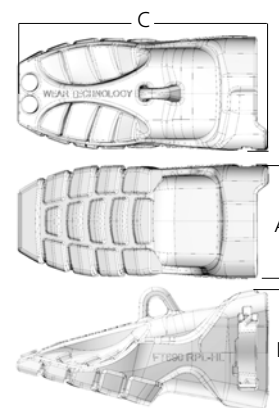
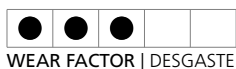


## RPHD-HL Twister Hammerless Diente Twister Hammerless RPHD



mm.				kg	REF	Cross R						69
A	B	C										
210 8,27"	219 8,62"	467 18,39"	64,11 141,34		<b>FT690 RPHD-HL</b>	VTH69	FT690 PN-HL	FT690 LD	FT690 LDLH	FT690 LDRH	FT690 WN	
261 10,28"	249 9,80"	498 19,61"	89,50 197,31		<b>FT710 RPHD-HL</b> <b>FT710 RPHD-HL-ARM</b>	VTH71	FT710 PN-HL	FT710 LD	FT710 LDLH	FT710 LDRH	FT710 WN	<b>71</b>

## RPL-HL Twister Hammerless Diente Twister Hammerless RPL

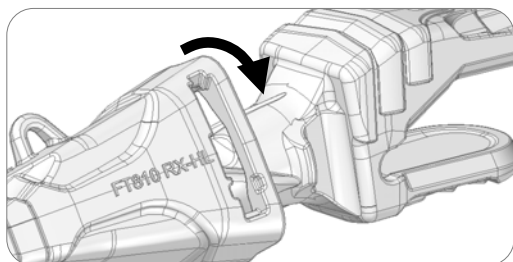


mm.				kg	REF	Cross R						69
A	B	C										
210 8,27"	226 8,90"	463 18,23"	53,00 116,84		<b>FT690 RPL-HL</b>	V69AG V69ARL	FT690 PN-HL	FT690 LD	FT690 LDLH	FT690 LDRH	FT690 WN	

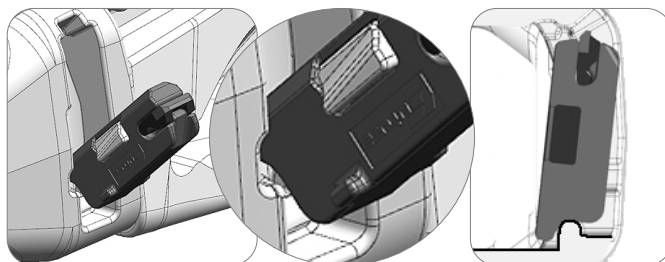
## Twister Hammerless Assembly Montaje Pasadores Twister Hammerless

**1**

Fit **TOOTH** on adapter finding the half spin. Insert **PIN** as shown in the picture



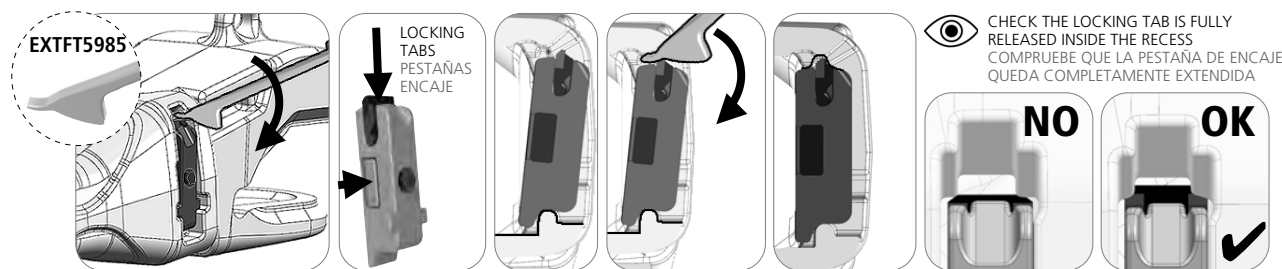
Encaje el **DIENTE** en el **PORTADIENTES** con un pequeño giro e inserte el **PASADOR** en la posición que se muestra en el dibujo



**2**

With extraction tool **EXTFT5985**, press until pin tab reaches its locking position and is fully released on the orifice

Utilice la herramienta **EXTFT5985** para hacer palanca sobre la pestaña móvil del pasador hasta que quede completamente extendida dentro del orificio

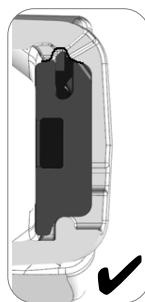


**3**

Use socket screw to expand lateral tab to the end

Use una herramienta hexagonal para expandir al máximo la pestaña lateral del pasador

SIDE TAB  
PESTAÑA  
LATERAL



<b>FT1317 PN-HL</b>	-	-	EXTFT-1317
<b>FT1923 PN-HL</b>	M5		
<b>FT2933 PN-HL</b>	M6		
<b>FT390 PN-HL</b>	M6		EXTFT5985
<b>FT430 PN-HL</b>	M6		
<b>FT510 PN-HL</b>	M6		
<b>FT590 PN-HL</b>	10 mm		
<b>FT6165 PN-HL</b>	10 mm		
<b>FT690 PN-HL</b>	13 mm		EXTFT-5985
<b>FT710 PN-HL</b>	13 mm		EXTFT-5985-280
<b>FT810 PN-HL</b>	17 mm		
<b>FT810 PN-HLS</b>	17 mm		

## PN-HL Hammerless Twister PIN PASADOR Twister Hammerless



FT810 PN-HLS  
 \*SHORT VERSION  
 \*VERSIÓN MÁS CORTA

mm.	in	Lb		REF			TOOL
L							
31,4	1,24"	0,03	0,06	<b>FT1317 PN-HL</b>	-	<b>13</b> <b>17</b>	<b>EXTFT1317</b>
51,8	2,04"	0,05	0,11	<b>FT1923 PN-HL</b>	M5	<b>19</b> <b>23</b>	
64,9	2,56"	0,16	0,35	<b>FT2933 PN-HL</b>	M6	<b>29</b> <b>33</b>	
76,9	3,03"	0,21	0,46	<b>FT390 PN-HL</b>	M6	<b>39</b>	<b>EXTFT1951</b>
85,0	3,35"	0,29	0,64	<b>FT430 PN-HL</b>	M6	<b>43</b>	
93,0	3,66"	0,34	0,75	<b>FT510 PN-HL</b>	M6	<b>51</b>	

mm.	in	Lb		REF			TOOL
L							
123,3	4,85"	0,60	1,32	<b>FT590 PN-HL</b>	10 mm	<b>59</b>	
132,0	5,20"	0,75	1,65	<b>FT6165 PN-HL</b>	10 mm	<b>61</b>	
136,0	5,35"	1,10	2,43	<b>FT690 PN-HL</b>	13 mm	<b>69</b>	<b>EXTFT5985</b>
156,0	6,14"	1,40	3,09	<b>FT710 PN-HL</b>	13 mm	<b>71</b>	<b>EXTFT5985-280</b>
186,0	7,32"	2,00	4,41	<b>FT810 PN-HL</b>	17 mm	<b>81</b>	
144,5	5,69"	1,27	2,80	<b>FT810 PN-HLS*</b>			

## EXTFT Hammerless Extraction Tool Herramienta Extractora



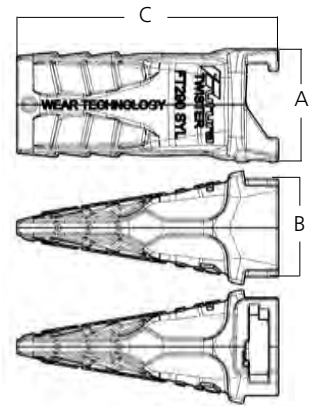
**EXTFT1317 EXTFT1951 EXTFT5985 EXTFT5985-280**

mm.	in	Lb		REF		
L						
388	15,28"	0,86	1,90	<b>EXTFT1317</b>	<b>13</b> <b>17</b>	
					<b>19</b> <b>23</b> <b>29</b> <b>33</b> <b>39</b> <b>43</b> <b>51</b>	
387	15,24"	0,86	1,90	<b>EXTFT1951</b>		
					<b>59</b> <b>61</b> <b>69</b> <b>71</b> <b>81</b>	
390	15,35"	1,00	2,20	<b>EXTFT5985</b>		
					<b>59</b> <b>61</b> <b>69</b> <b>71</b> <b>81</b>	
280	11,02"	0,80	1,76	<b>EXTFT5985-280</b>		

**SYL Symmetric Simétrico**



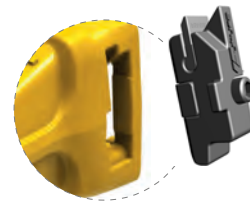
**STANDARD PIN**



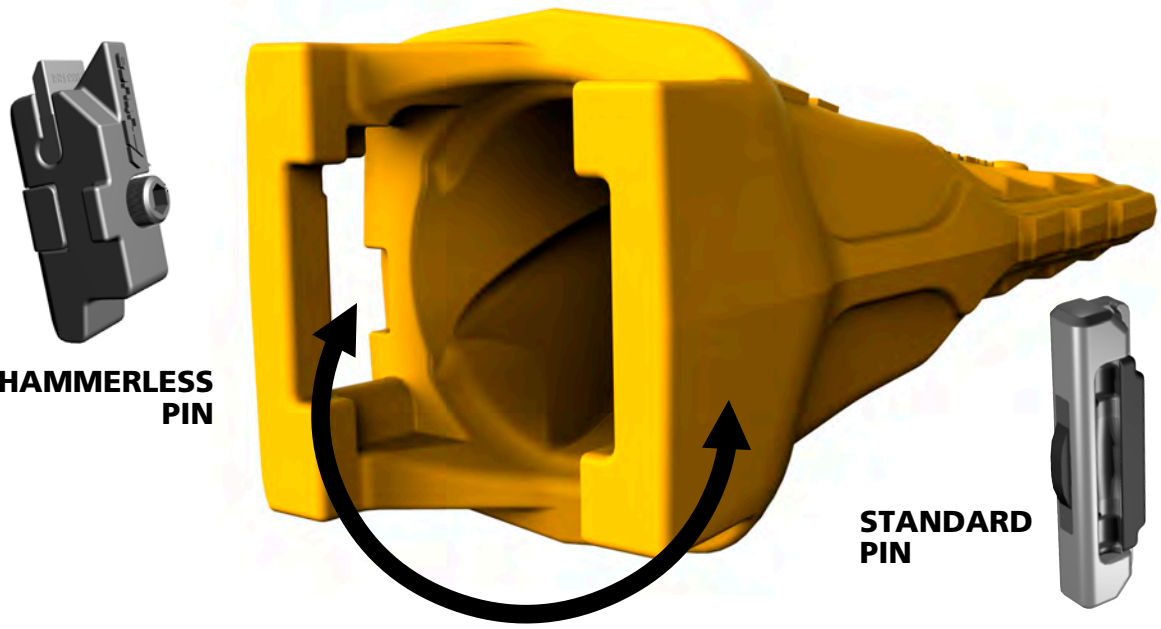
**TWISTER DUO**



**HAMMERLESS PIN**



mm.			REF	Cross R.	Pin Variants																																																												
A	B	C			FT130	FT130 BL	FT130 FL	-	-	FT130 WN	FT1317 PN-HL	FT1317 PN	FT1317 PN-HL	FT170 BL	FT170 FL	-	-	FT170 WN	FT1923 PN-HL	FT1923 PN	FT190	FT190 BL	FT190 FL	-	FT190 WN	FT2933 PN-HL	FT2933 PN	FT290	FT290 BL	FT290 FL	FT230-25 BOC23	FT230-25 BOC23	FT230-30 BOC19	FT230-30 BOC19	FT230 WN	FT2933 PN-HL	FT2933 PN	FT290	FT290 BL	FT290 FL	FT290-35 BOC23	FT290-35 BOC23	FT290-40 BOC23	FT290-40 BOC23	FT290 WN	FT330	FT330 FL	-	FT330 WN	FT390	FT390	FT390	FT390	FT390 WN	FT430	FT430 LD	FT430-B22	FT430-60B22	-	FT430 FL	-	FT430 WN	FT510	FT510 LD	FT510-B22
59	54	118	0,80	<b>FT130 SYL</b>	V13SYL	FT1317 PN-HL	FT1317 PN	FT130	FT130 BL	FT130 FL	-	-	FT130 WN	<b>13</b>																																																			
68	62	135	1,40	<b>FT170 SYL</b>	V17TYL	FT1317 PN-HL	FT1317 PN	FT1317 PN-HL	FT170 BL	FT170 FL	-	-	FT170 WN	<b>17</b>																																																			
80	88	183	2,50	<b>FT190 SYL</b>	V19SYL	FT1923 PN-HL	FT1923 PN	FT190	FT190 BL	FT190 FL	-	FT190 WN	<b>19</b>																																																				
91	92	209	3,46	<b>FT230 SYL</b>	V23SYL	FT1923 PN-HL	FT1923 PN	FT230	FT230 BL	FT230 FL	FT230-25 BOC23	FT230-25 BOC23	FT230-30 BOC19	FT230-30 BOC19	FT230 WN	<b>23</b>																																																	
104	104	240	5,80	<b>FT290 SYL</b>	V29SYL	FT2933 PN-HL	FT2933 PN	FT290	FT290 BL	FT290 FL	FT290-35 BOC23	FT290-35 BOC23	FT290-40 BOC23	FT290-40 BOC23	FT290 WN	<b>29</b>																																																	
114	113	261	6,90	<b>FT330 SYL</b>	V33SYL	FT2933 PN-HL	FT2933 PN	FT330	FT330 FL	-	FT330 WN	<b>33</b>																																																					
128	130	288	10,80	<b>FT390 SYL</b>	V29SYL	FT390 PN-HL	FT390 PN	FT390	FT390	FT390	FT390	FT390	FT390	FT390 WN	<b>39</b>																																																		
144	146	325	14,90	<b>FT430 SYL</b>	V43SYL	FT430 PN-HL	FT430 PN	FT430	FT430	FT430 LD	FT430-B22	FT430-60B22	-	FT430 FL	-	FT430 WN	<b>43</b>																																																
151	152	349	18,30	<b>FT510 SYL</b>	V43SYL	FT510 PN-HL	FT510 PN	FT510	FT510	FT510 LD	FT510-B22	-	FT510 WN	<b>51</b>																																																			





# TWISTER

**Futura TWISTER ADAPTERS  
are compatible with Esco SuperV® teeth**

Portadientes FUTURA TWISTER  
compatibles con Esco SuperV®



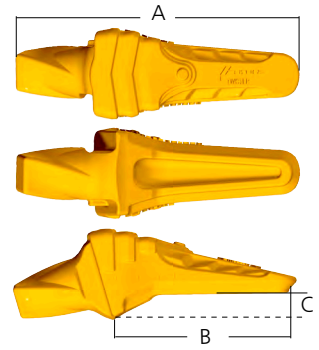
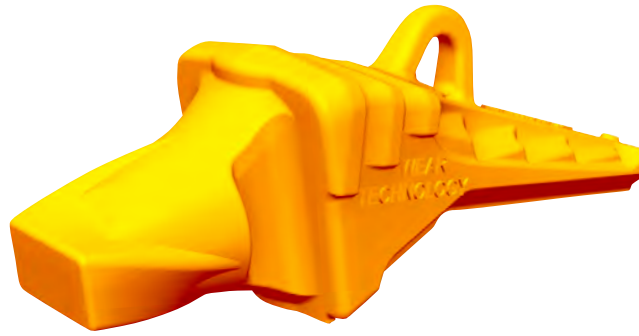
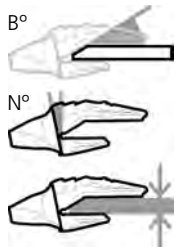
# Loader Adapters Portadientes Pala Cargadora



FL	BL	LDLH	LD	LDRH	BO	BOC	
<b>FT130 FL</b>	<b>FT130 BL</b>						<b>13</b>
<b>FT170 FL</b>	<b>FT170 BL</b>						<b>17</b>
<b>FT190 FL</b>	<b>FT190 BL</b>						<b>19</b>
<b>FT230 FL</b>	<b>FT230 BL</b>				<b>FT230-25 BO16</b> <b>FT230-30 BO16</b>	<b>FT230-25 BOC23</b> <b>FT230-30 BOC19</b>	<b>23</b>
<b>FT290 FL</b>			<b>FT290 LD</b>		<b>FT290-35 BO16</b> <b>FT290-40 BO16</b>	<b>FT290-35 BOC23</b> <b>FT290-40 BOC23</b>	<b>29</b>
<b>FT330 FL</b>		<b>FT330-B22 LDLH</b>	<b>FT330 LD</b> <b>FT330-B22 LD</b>	<b>FT330-B22 LDRH</b>			<b>33</b>
		<b>FT390 LDLH</b>	<b>FT390 LD</b>	<b>FT390 LDRH</b>			<b>39</b>
<b>FT430 FL</b>		<b>FT430 LDLH</b> <b>FT430-B22 LDLH</b> <b>FT430-60B22 LDLH</b>	<b>FT430 LD</b> <b>FT430-B22 LD</b> <b>FT430-60B22 LD</b>	<b>FT430 LDRH</b> <b>FT430-B22 LDRH</b> <b>FT430-60B22 LDRH</b>			<b>43</b>
		<b>FT510 LDLH</b> <b>FT510-B22 LDLH</b>	<b>FT510 LD</b> <b>FT510-B22 LD</b>	<b>FT510 LDRH</b> <b>FT510-B22 LDRH</b>			<b>51</b>
		<b>FT590-B22 LDLH</b> <b>FT590-60B22 LDLH</b>	<b>FT590-B22 LD</b> <b>FT590-60B22LD</b>	<b>FT590-B22 LDRH</b> <b>FT590-60B22 LDRH</b>			<b>59</b>
		<b>FT610 LDLH</b>	<b>FT610 LD</b>	<b>FT610 LDRH</b>			<b>61</b>
		<b>FT690 LDLH</b>	<b>FT690 LD</b>	<b>FT690 LDRH</b>			<b>69</b>
		<b>FT710 LDLH</b>	<b>FT710 LD</b>	<b>FT710 LDRH</b>			<b>71</b>
		<b>FT810 LDLH</b>	<b>FT810 LD</b>	<b>FT810 LDRH</b>			<b>81</b>

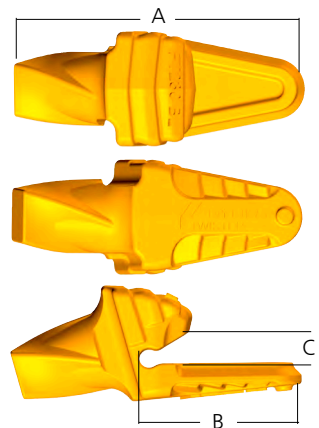
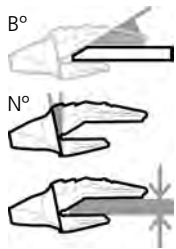


## FL Twister Flush Adapter Portadiente a Ras Twister



mm.			N°	B°		REF	Cross Ref		
A	B	C							
165 6,50"	101 3,98"	18 0,71"	15	22	<b>16</b> 0,63"	1,33 2,93	<b>FT130 FL</b>	8843-V13	<b>13</b>
209 8,23"	120 4,72"	19 0,75"	15	25	<b>20</b> 0,79"	2,40 5,29	<b>FT170 FL</b>	8806-V17	<b>17</b>
269 10,59"	150 5,91"	22,6 0,89"	15	25	<b>20 - 25</b> 0,79" - 0,98"	4,50 9,92	<b>FT190 FL</b>	8806-V19 8802-V19	<b>19</b>
307 12,09"	200 7,87"	29 1,14"	15	25	<b>30 - 35</b> 1,18" - 1,38"	7,00 15,43	<b>FT230 FL</b>	8803-V23 8830-V23	<b>23</b>
354 13,94"	240 9,45"	31 1,22"	17	25	<b>40</b> 1,57"	9,90 21,83	<b>FT290 FL</b>	8831-V29 3829A-V29	<b>29</b>
369 14,53"	250 9,84"	35 1,38"	17	22	<b>40 - 45</b> 1,57" - 1,77"	13,20 29,10	<b>FT330 FL</b>	8833-V33 8831-V33	<b>33</b>
481 18,94"	312 12,28"	64 2,52"	17	30	<b>63,5</b> 2,50"	26,10 57,54	<b>FT430 FL</b>	8837-V43	<b>43</b>

## Universal Bottom Leg Adapter Portadientes Universal



mm.			N°	B°		REF	Cross Ref		
A	B	C							
146 5,75"	82 3,23"	15 0,59"	17	30	<b>15</b> 0,59"	1,00 2,20	<b>FT130 BL</b>	833-V13	<b>13</b>
176 6,93"	98 3,86"	21 0,83"	17	30	<b>20</b> 0,79"	1,70 3,75	<b>FT170 BL</b>	833-V17	<b>17</b>
225 8,86"	131 5,16"	31 1,22"	17	30	<b>25-30</b> 1"-1,2"	3,51 7,74	<b>FT190 BL</b>	833-V19	<b>19</b>
234 9,21"	130 5,12"	26 1,02"	15	30	<b>30</b> 1,18"	4,78 10,54	<b>FT230 BL</b>	3870-V23	<b>23</b>

# Weld-On Loader Adapter Portadientes Cargadora



Fig 1

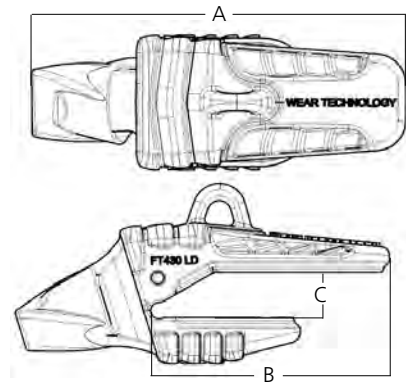
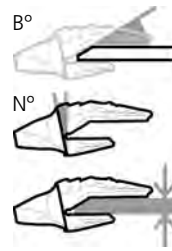
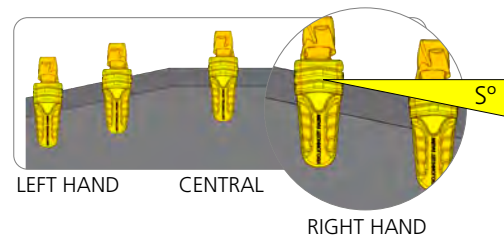
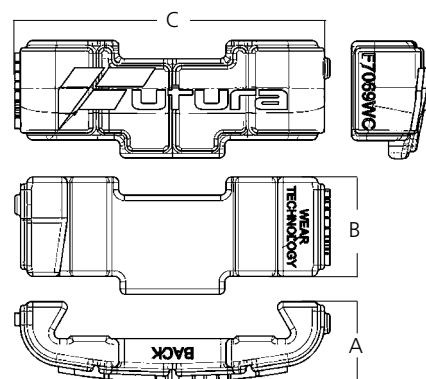


Fig 2  
Admits wear caps  
Puede montar protectores opcionales



mm.		CENTRAL		LEFT HAND		RIGHT HAND		OEM	S°	Fig					
A	B	C	B°	N°	Weight	Weight	Weight								
317	197	43	30	17	40	1,6"	9,68	<b>FT290 LD</b>	802A-V29	1	<b>29</b>				
12,5"	7,8"	1,7"					21,34								
345	215	43	30	17	40	1,6"	13,28	<b>FT330 LD</b>	802A-V33	1					
13,58"	8,46"	1,69"					29,28				<b>33</b>				
345	315	48	22	17	45	1,8"	12,22	<b>FT330-B22 LD</b>	4821-V33	15	12,49	<b>FT330-B22 LDLH</b>	<b>FT330-B22 LDRH</b>	1	
13,58"	12,40"	1,89"					26,94				27,54	4822L-V33	4822R-V33		
390	248	53	30	17	50	2"	19,90	<b>FT390 LD</b>	1837A-V39	10	20,18	<b>FT390 LDLH</b>	<b>FT390 LDRH</b>	1	<b>39</b>
15,35"	9,76"	2,09"					43,87				44,49	1812LA-V39	1812RA-V39		
437	279	53	30	17	50	2"	29,01	<b>FT430 LD</b>	1837A-V43	10	29,26	<b>FT430 LDLH</b>	<b>FT430 LDRH</b>	1	
17,20"	10,98"	2,09"					63,96				64,51	5840L-V43	5840R-V43		
437	279	53	22	17	50	2"	28,48	<b>FT430-B22 LD</b>	1810-V43	15	29,00	<b>FT430-B22 LDLH</b>	<b>FT430-B22 LDRH</b>	1	<b>43</b>
17,20"	10,98"	2,09"					62,79				63,93	1810L-V43	1810R-V43		
428	270	66	22	17	60	2,4"	27,30	<b>FT430-60B22 LD</b>	4888-V43	15	28,00	<b>FT430-60B22 LDLH</b>	<b>FT430-60B22 LDRH</b>	1	
16,85"	10,63"	2,60"			63,5	2,5"	60,19				61,73	4888L-V43	4888R-V43		
496	319	66	30	17	60	2,4"	36,34	<b>FT510 LD</b>	1829B-V51	10	36,78	<b>FT510 LDLH</b>	<b>FT510 LDRH</b>	1	
19,53"	12,56"	2,60"			63,5	2,5"	80,11				81,08	1828LB-V51	1828RB-V51		<b>51</b>
496	319	66	22	17	60	2,4"	36,38	<b>FT510-B22 LD</b>	8813A-V51	15	37,10	<b>FT510-B22 LDLH</b>	<b>FT510-B22 LDRH</b>	1	
19,53"	12,56"	2,60"			63,5	2,5"	80,20				81,79	8813LA-V51	1828RA-V51		
555	343	66	22	17	60	2,4"	48,40	<b>FT590-60B22 LD</b>	5869A-V59	15	49,10	<b>FT590-60B22 LDLH</b>	<b>FT590-60B22 LDRH</b>	2	
21,85"	13,50"	2,60"			63,5	2,5"	106,70				108,25	5869LA-V59	5869RA-V59		<b>59</b>
555	343	73	22	17	70	2,8"	47,00	<b>FT590-B22 LD</b>	4891-V59	15	47,80	<b>FT590-B22 LDLH</b>	<b>FT590-B22 LDRH</b>	2	
21,85"	13,50"	2,87"			75	3"	103,62				105,38	4888R-V43	5869A-V59		
646	406	73	30	17	70	2,8"	57,80	<b>FT610 LD</b>	6812-V61	10	58,70	<b>FT610 LDLH</b>	<b>FT610 LDRH</b>	2	<b>61</b>
25,43"	15,98"	2,87"			75	3"	127,43				129,41	6812LA-V61	6812RA-V61		
686	445	93	30	17	90	3,5"	89,00	<b>FT690 LD</b>	5839-V69	10	90,42	<b>FT690 LDLH</b>	<b>FT690 LDRH</b>	2	<b>69</b>
27,01"	17,52"	3,66"					196,21				199,34	5838L-V69	5838R-V69		
821	551	104	30	17	100	3,9"	120,10	<b>FT710 LD</b>	5896-V71	10	121,80	<b>FT710 LDLH</b>	<b>FT710 LDRH</b>	2	<b>71</b>
32,32"	21,69"	4,09"					264,77				268,52	5894L-V71	5894R-V71		

## OPTIONAL Wear Caps Protectores Portadiente OPCIONALES



### OPTIONAL PROTECTION

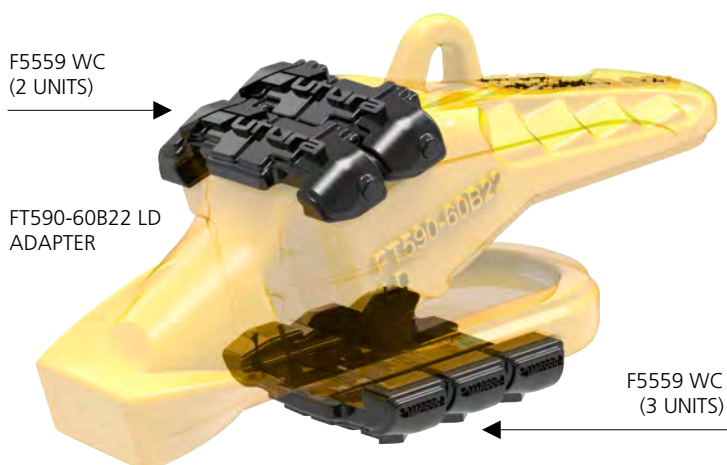
**WEAR CAPS FUTURA**  
Add extra wear resistance for FUTURA Adapters  
Quick and easy installation through the adapter's guides.  
Easy to install and remove  
Stock savings:  
One wear cap could be used for several FUTURA adapters.  
Versatile solution: stock savings

### PROTECCIÓN OPCIONAL

Los PROTECTORES UNIVERSALES FUTURA proporcionan resistencia adicional a sus portadientes marca FUTURA  
Instalación sencilla y rápida a través de las guías del portadientes. Fáciles de intalar y remover.  
Ahorro: Las mismas referencias pueden susarse para la protección de varios portadientes FUTURA. Solución versátil para el ahorro de stocks.



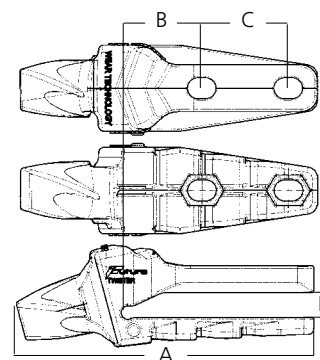
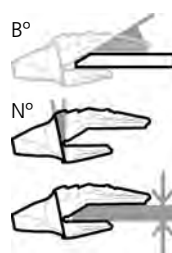
mm.				REF	UNITS	LOADER ADAPTERS			50 40 30 20 10 0
A	B	C							
42,7 1,68"	50,5 1,99"	178 7,01"	1,50 3,31	<b>F5559 WC</b> 	TOP 2 BOTTOM 3	<b>FT590-60B22 LDLH</b> <b>FT590-B22 LDLH</b>	<b>FT590-60B22 LD</b> <b>FT590-B22 LD</b>	<b>FT590-60B22 LDRH</b> <b>FT590-B22 LDRH</b>	<b>59</b>
45,2 1,78"	62,5 2,46"	207 8,15"	2,42 5,34	<b>F6061 WC</b> 	TOP 2 BOTTOM 2	<b>FT610 LDLH</b>	<b>FT610 LD</b>	<b>FT610 LDRH</b>	<b>61</b>
51,9 2,04"	71,5 2,81"	219 8,62"	3,23 7,12	<b>F7069WC</b> 	TOP 2 BOTTOM 2	<b>FT690 LDLH</b>	<b>FT690 LD</b>	<b>FT690 LDRH</b>	<b>69</b>
53,1 2,09"	93,5 3,68"	251 9,88"	4,50 9,92	<b>F8071 WC</b> 	TOP 2 BOTTOM 2	<b>FT710 LDLH</b>	<b>FT710 LDLH</b>	<b>FT710 LDRH</b>	<b>71</b>



Loader adapter mounted with FUTURA optional wear caps:  
2 on TOP STRAP and  
3 on BOTTOM STRAP  
FUTURA WEAR CAPS offer extra wear resistance to FUTURA ADAPTERS

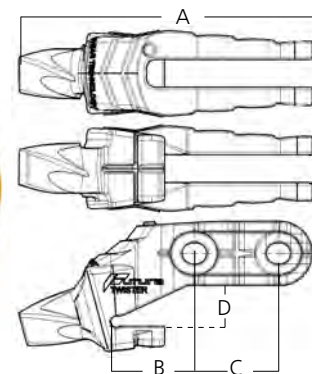
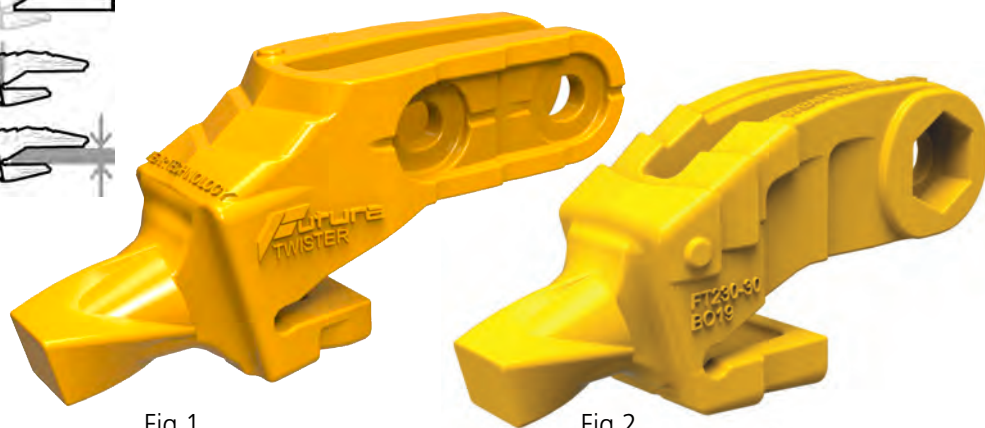
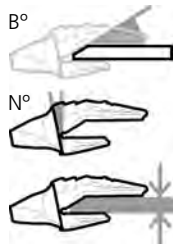
Portadientes de cargadora con protectores OPCIONALES montados:  
2 sobre la pala superior  
3 sobre la pala inferior del portadientes  
Estos protectores universales ofrecen resistencia adicional para alargar la vida de su portadientes FUTURA.

## Bolt-On Adapters Portadientes Atornillable



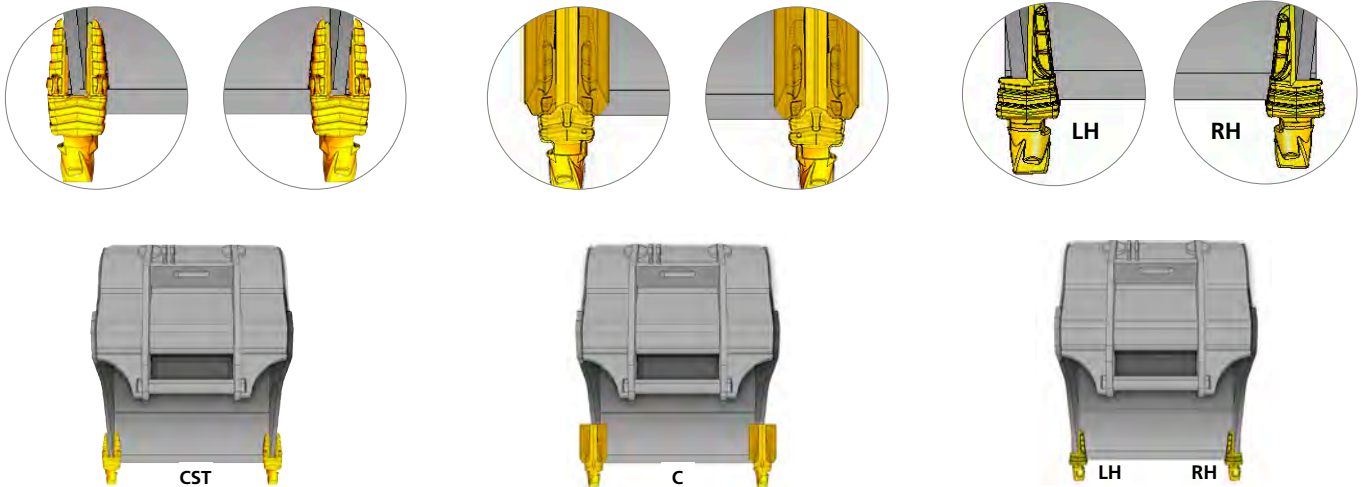
mm.				B°	N°			REF	Cross Ref			
A	B	C	D									
				20	15	0,8"	5,00 11,02	FT190-20 BO16	5775-V19	S-8537	NP-158	<b>19</b>
				25	15	1"	5,10 11,24	FT190-25 BO16	5776-V19	S-4367	NP-158	
310 12,20"	93 3,66"	90 3,54"	26 1,02"	25	15	<b>25</b> <b>1"</b>	7,60 16,75	<b>FT230-25 BO16</b>	3768A-V23	S-2968	NP-340	<b>23</b>
310 12,20"	84 3,31"	87 3,43"	34 1,34"	25	15	<b>30</b> <b>1,2"</b>	9,10 20,06	<b>FT230-30 BO16</b>	5733A-V23	S-2968	NP-340	
							8,20 18,08	FT230-35 BO16	5734A-V23	S-5227	NP-340	
356 14,02"	101 3,98"	120 4,72"	36 1,42"	25	17	<b>35</b> <b>1,4"</b>	9,40 20,72	<b>FT290-35 BO16</b>	3766A-V29	S-5227	NP-340	<b>29</b>
389 15,31"	116 4,57"	100 3,94"	43 1,69"	25	17	<b>40</b> <b>1,6"</b>	10,90 24,03	<b>FT290-40 BO16</b>	8719-V29	S-4639B	NP-100	
							12,00 26,46	FT330-40 BO16	8719-V33	S-4639B	NP-100	<b>33</b>

## Bolt-On Corner Adapters Portadientes Atornillable Esquinero



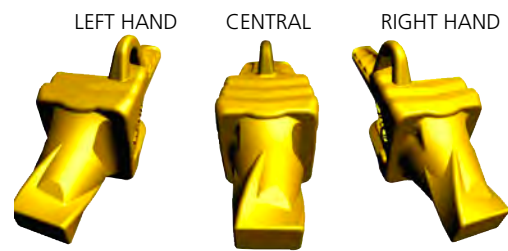
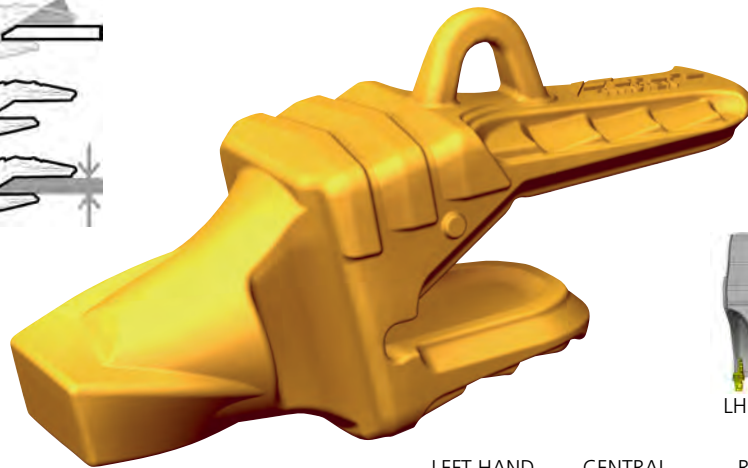
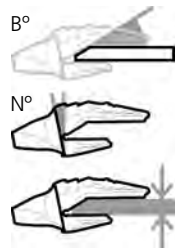
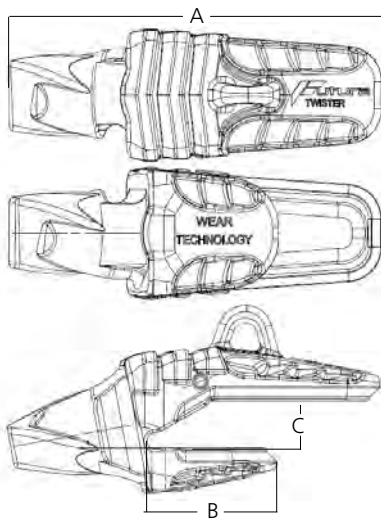
mm.					B°	N°				REF	Cross Ref	Fig.			
A	B	C	D	E											
348 13,70"	99 3,90"	99 3,90"	48 1,89"	33 1,30"	25	15	<b>25</b> <b>1"</b>	<b>30</b> <b>1,2"</b>	11,00 24,25	<b>FT230-25 BOC23</b>	5788L-V23 5788R-V23	1	S-4610	NP-222	<b>23</b>
335 13,19"	182 7,17"	-	42 1,65"	30 1,18"	25	15	<b>30</b> <b>1,2"</b> <b>35</b> <b>1,4"</b>	<b>30</b> <b>1,2"</b>	12,60 27,78	<b>FT230-30 BOC19</b>	5774A-V23	2	-	-	
370 14,57"	108 4,25"	100 3,94"	40 1,57"	26 1,02"	25	17	<b>35</b> <b>1,4"</b>	<b>25</b> <b>1"</b>	11,7 25,79	<b>FT290-35 BOC23</b>	3767-V29	1	S-4608	NP-340	<b>29</b>
419 16,50"	157 6,18"	81 3,19"	49 1,93"	38 1,50"	25	17	<b>40</b> <b>1,6"</b>	<b>35</b> <b>1,4"</b>	18,1 39,90	<b>FT290-40 BOC23</b>	5773-V29	1	-	-	
							17,00 37,48	40 25 40 25		FT330-40 BOC23	5773-V33	1	-	-	<b>33</b>

# Excavator Adapters Portadientes Excavadora



	CORNER	CORNER	CORNER LEFT	CENTRAL	CENTRAL	CORNER RIGHT	CORNER	CORNER	
16 0,6"									13
20 0,8"			<b>FT130 LH</b>	<b>FT130</b>	<b>FT130 BL</b>	<b>FT130 RH</b>			
25 1,0"			<b>FT170 LH</b>	<b>FT170</b>	<b>FT170 BL</b>	<b>FT170 RH</b>			17
25 1,0"			<b>FT170-25 LH</b>	<b>FT170-25</b>		<b>FT170-25 RH</b>			
25 1,0"			<b>FT190 LH</b>	<b>FT190</b>	<b>FT190 BL</b> 25-30 1"-1,2"	<b>FT190 RH</b>			19
25 1,0"			<b>FT230 LH</b>	<b>FT230</b>		<b>FT230 RH</b>			23
30 1,2"			<b>FT230-30 LH</b>	<b>FT230-30</b>	<b>FT230 BL</b>	<b>FT230-30 RH</b>			
30 1,2"			<b>FT290 LH</b>	<b>FT290</b>		<b>FT290 RH</b>			
35 1,4"			<b>FT290-35 LH</b>	<b>FT290-35</b>		<b>FT290-35 RH</b>			29
40 1,6"			<b>FT290-40 LH</b>	<b>FT290-40</b>		<b>FT290-40 RH</b>			
40 1,6"			<b>FT330 LH</b>	<b>FT330</b>		<b>FT330 RH</b>			33
45 1,8"			<b>FT390 LH</b>	<b>FT390</b>		<b>FT390 RH</b>			39
50 2,0"			<b>FT430 LH</b>	<b>FT430</b>		<b>FT430 RH</b>			43
60 2,4" 63,5 2,5"		<b>FT510 C</b> 70 2,8"	<b>FT510 LH</b>	<b>FT510</b>		<b>FT510 RH</b>	<b>FT510 C</b> 70 2,8"		51
70 2,8"		<b>FT590 C</b>	<b>FT590 LH</b>	<b>FT590</b>		<b>FT590 RH</b>	<b>FT590 C</b>		59
80 3,1"	<b>FT610 CST</b>	<b>FT610 C</b> 90 3,5"	<b>FT610 LH</b>	<b>FT610</b>		<b>FT610 RH</b>	<b>FT610 C</b> 90 3,5"	<b>FT610 CST</b>	61
80 3,1"			<b>FT690 LH</b>	<b>FT690</b>		<b>FT690 RH</b>			
90 3,5"	<b>FT690 CST</b>	<b>FT690 C</b>	<b>FT690-90 LH</b>	<b>FT690-90</b>		<b>FT690-90 RH</b>	<b>FT690 C</b>	<b>FT690 CST</b>	69
90 3,5"			<b>FT710 LH</b>	<b>FT710</b>		<b>FT710 RH</b>			
100 3,9"	<b>FT710-100 CST</b>	<b>FT710 C</b>	<b>FT710-100 LH</b>	<b>FT710-100</b>		<b>FT710-100 RH</b>	<b>FT710 C</b>	<b>FT710-100 CST</b>	71
120 4,7"	<b>FT810 CST</b>		<b>FT810 LH</b>	<b>FT810</b>		<b>FT810 RH</b>		<b>FT810 CST</b>	81
140 5,5"	<b>FT810-140 CST</b>	<b>FT810 C</b>	<b>FT810-140 LH</b>	<b>FT810-140</b>		<b>FT810-140 RH</b>	<b>FT810 C</b>	<b>FT810-140 CST</b>	

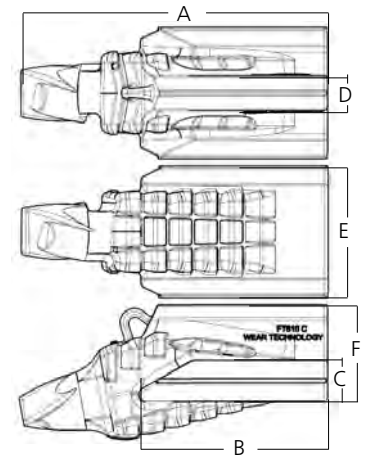
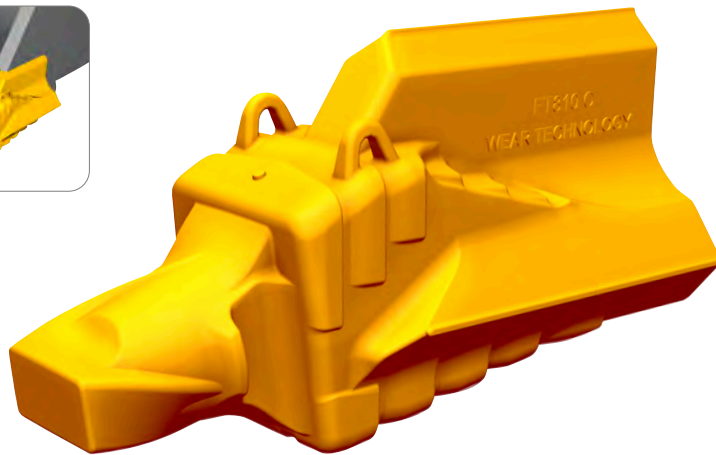
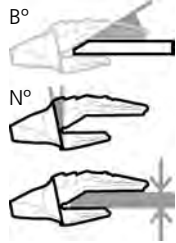
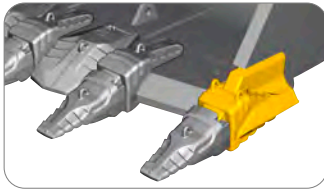
# Weld-On Excavator Adapter Portadientes Excavadora



mm.					CENTRAL		LEFT HAND		RIGHT HAND				
A	B	C	B°	N°				OEM					
153 6,0"	61 2,4"	17,5 0,7"	30	15	16	0,6"	1,20 2,65	<b>FT130</b>	1610T-V13	1,14 2,51	<b>FT130 LH</b>	<b>FT130 RH</b>	<b>13</b>
172,5 6,8"	59 2,3"	22 0,9"	30	15	20	0,8"	2,00 4,41	<b>FT170</b>	8841-V17	1,82 4,01	<b>FT170 LH</b>	<b>FT170 RH</b>	<b>17</b>
204 8,0"	67 2,6"	28 1,1"	23	17	25	1,0"	2,50 5,51	<b>FT170-25</b>	8842-V17	2,30 5,07	<b>FT170-25 LH</b>	<b>FT170-25 RH</b>	<b>17</b>
230 9,1"	76 3,0"	27 1,1"	30	15	25	1,0"	4,90 10,80	<b>FT190</b>	8822-V19 5854-V19	4,35 9,59	<b>FT190 LH</b>	<b>FT190 RH</b>	<b>19</b>
277 10,9"	87 3,4"	27 1,1"	30	15	25	1,0"	6,90 15,21	<b>FT230</b>	5854-V23	5,95 13,12	<b>FT230 LH</b>	<b>FT230 RH</b>	<b>23</b>
277 10,9"	87 3,4"	32 1,3"	30	15	30	1,2"	6,60 14,55	<b>FT230-30</b>	3880-V23 5849-V23	5,94 13,10	<b>FT230-30 LH</b>	<b>FT230-30 RH</b>	<b>23</b>
301 11,9"	100 3,9"	32 1,3"	30	10	30	1,2"	8,50 18,74	<b>FT290</b>	5849-V29	7,46 16,45	<b>FT290 LH</b>	<b>FT290 RH</b>	<b>29</b>
301 11,9"	100 3,9"	37 1,5"	30	10	35	1,4"	8,00 17,64	<b>FT290-35</b>	3881A-V29 3871A-V29	7,10 15,65	<b>FT290-35 LH</b>	<b>FT290-35 RH</b>	<b>29</b>
301 11,9"	100 3,9"	42 1,7"	30	10	40	1,6"	7,80 17,20	<b>FT290-40</b>	3882A-V29 5850-V29	7,18 15,83	<b>FT290-40 LH</b>	<b>FT290-40 RH</b>	<b>29</b>
340 13,39"	112 4,41"	42 1,65"	30	10	40	1,6"	11,70 25,79	<b>FT330</b>	5855-V33 3882A-V33	10,36 22,84	<b>FT330 LH</b>	<b>FT330 RH</b>	<b>33</b>
360 14,17"	134 5,28"	47 1,85"	30	10	45	1,8"	16,70 36,82	<b>FT390</b>	3810A-V39	15,00 33,07	<b>FT390 LH</b>	<b>FT390 RH</b>	<b>39</b>
421 16,57"	146 5,75"	53 2,09"	30	10	50	2,0"	24,30 53,57	<b>FT430</b>	8801-V43 5856-V43	20,90 46,08	<b>FT430 LH</b>	<b>FT430 RH</b>	<b>43</b>
448 17,64"	161 6,34"	66 2,60"	30	10	60 63,5	2,4" 2,5"	27,60 60,85	<b>FT510</b>	5857A-V51 3811-V51	27,60 60,85	<b>FT510 LH</b>	<b>FT510 RH</b>	<b>51</b>
490 19,29"	177 6,97"	73 2,87"	30	10	70	2,8"	37,90 83,55	<b>FT590</b>	3858-V59	36,00 79,37	<b>FT590 LH</b>	<b>FT590 RH</b>	<b>59</b>
634 24,96"	244 9,61"	82 3,23"	30	10	80	3,1"	59,80 131,83	<b>FT610</b>	5898-V61	56,00 123,46	<b>FT610 LH</b>	<b>FT610 RH</b>	<b>61</b>
648 25,51"	232 9,13"	83 3,27"	30	10	80	3,1"	75,00 165,34	<b>FT690</b>	5898-V69	67,32 148,41	<b>FT690 LH</b>	<b>FT690 RH</b>	<b>69</b>
648 25,51"	182 7,17"	93 3,66"	30	10	90	3,5"	74,20 163,58	<b>FT690-90</b>	6803-V69	68,40 150,79	<b>FT690-90 LH</b>	<b>FT690-90 RH</b>	<b>69</b>
801 31,54"	285 11,22"	93 3,66"	30	10	90	3,5"	120,00 264,55	<b>FT710</b>	2837-V71	104,70 230,82	<b>FT710 LH</b>	<b>FT710 RH</b>	<b>71</b>
801 31,54"	285 11,22"	104 4,09"	30	10	100	3,9"	119,00 262,35	<b>FT710-100</b>	5897-V71	105,28 232,10	<b>FT710-100 LH</b>	<b>FT710-100 RH</b>	<b>71</b>
881 34,69"	368 14,49"	123 4,84"	30	10	120	4,7"	176,00 388,01	<b>FT810</b>	3869B-V81 5892A-V81	161,05 355,05	<b>FT810 LH</b>	<b>FT810 RH</b>	<b>81</b>
896 35,28"	389 15,31"	142 5,59"	30	10	140	5,5"	200,00 440,92	<b>FT810-140</b>	6806-V81	178,21 392,88	<b>FT810-140 LH</b>	<b>FT810-140 RH</b>	<b>81</b>

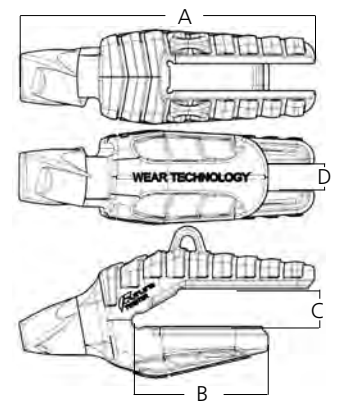
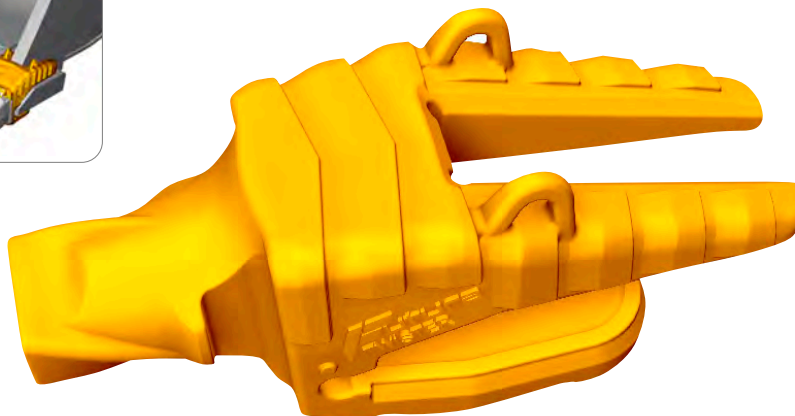
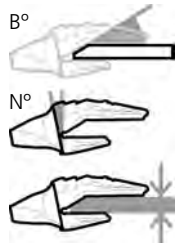


## Corner Adapters Cantoportadientes Excavadora



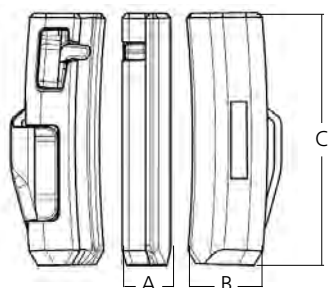
mm.						N°		B°		REF		Cross Ref					
A	B	C	D	E	F							CUP			CUP		
563 22,17"	367 14,45"	70 2,76"	50 1,97"	257 10,12"	190 7,48"	10	30	<b>70</b> 2,76"	<b>50</b> 1,97"	94,10 207,45	<b>FT510 C</b>	RS-V51	-	RC-V51L	RC-V51R	-	<b>51</b>
595 23,43"	376 14,80"	70 2,76"	50 1,97"	276 10,87"	190 7,48"	10	30	<b>70</b> 2,76"	<b>50</b> 1,97"	104,00 229,28	<b>FT590 C</b>	RS-V59		RC-V59L	RC-V59R		<b>59</b>
663 26,10"	401 15,79"	90 3,54"	75 2,95"	286 11,26"	210 8,27"	10	30	<b>90</b> 3,54"	<b>75</b> 2,95"	151,70 334,44	<b>FT610 C</b>	RS-V61	-	RC-V61L	RC-V61R	-	<b>61</b>
670 26,38"	407 16,02"	90 3,54"	75 2,95"	313 12,32"	225 8,86"	10	30	<b>90</b> 3,54"	<b>75</b> 2,95"	177,00 390,21	<b>FT690 C</b>	RS-V69	90	RC-V69L	RC-V69R	80	<b>69</b>
824 32,44"	527 20,75"	100 3,94"	75 2,95"	353 13,90"	250 9,84"	10	30	<b>100</b> 3,94"	<b>75</b> 2,95"	281,60 620,81	<b>FT710 C</b>	RS-V71	95	RC-V71L	RC-V71R	90	<b>71</b>
896 35,28"	558 21,97"	140 5,51"	90 3,54"	379 14,92"	370 14,57"	10	30	<b>140</b> 5,51"	<b>90</b> 3,54"	430,70 949,51	<b>FT810 C</b>	6807-V81	140	RC-V81L1	RC-V81R1	120	<b>81</b>

## Straddle Corner Adapters Cantoportadientes Tipo Horquilla



mm.				N°		B°		REF		Cross Ref		
A	B	C	D								CUP	
638 25,12"	295 11,61"	82 3,23"	58 2,28"	10	30	<b>80</b> 3,15"	<b>50</b> 1,97"	87,00 191,80	<b>FT610 CST</b>	6822-V61	76	<b>61</b>
668 26,30"	320 12,60"	93 3,66"	73 2,87"	10	30	<b>90</b> 3,54"	<b>70</b> 2,76"	99,00 218,25	<b>FT690 CST</b>	6824-V69	100	<b>69</b>
806 31,73"	532 20,94"	103 4,06"	83 3,27"	10	30	<b>100</b> 3,94"	<b>80</b> 3,15"	146,55 323,08	<b>FT710-100 CST</b>	5899-V71	100	<b>71</b>
823 32,40"	203 7,99"	123 4,84"	93 3,66"	10	30	<b>120</b> 4,72"	<b>90</b> 3,54"	209,00 460,76	<b>FT810 CST</b>	5895L-V81 5895R-V81	120	<b>81</b>
822 32,36"	279 10,98"	142 5,59"	93 3,66"	10	30	<b>140</b> 5,51"	<b>90</b> 3,54"	218,00 480,60	<b>FT810-140 CST</b>	6808L-V81 6808R-V81	140	

## Twister Pin Pasador Twister




mm.				REF	Fig	Cross Ref	
A	B	C	Weight				
9,5 0,37"	17 14	47,5 1,87"	0,03 0,07	<b>FT1317 PN</b>	1	V13-17PN	<b>13</b> <b>17</b>
11,3 0,44"	16,7 0,66"	53,1 2,09"	0,04 0,09	<b>FT1923 PN</b>	1	V23PN	<b>19</b> <b>23</b>
13,8 0,54"	21,5 0,85"	74,9 2,95"	0,14 0,31	<b>FT290 PN</b>	1	V29PN	<b>29</b>
15,7 0,62"	23,5 0,93"	86,1 3,39"	0,16 0,35	<b>FT330 PN</b>	1	V33PN	<b>33</b>
17,8 0,70"	25,8 1,02"	95,1 3,74"	0,21 0,46	<b>FT390 PN</b>	1	V39PN	<b>39</b>
19,7 0,78"	33,1 1,30"	104,9 4,13"	0,29 0,64	<b>FT430 PN</b>	1	V43PN	<b>43</b>
21,3 0,84"	27 1,06"	112 4,41"	0,35 0,77	<b>FT510 PN</b>	2	V51PN	<b>51</b>
21,7 0,85"	28,9 1,14"	120 4,72"	0,40 0,88	<b>FT590 PN</b>	2	V59PN	<b>59</b>
21,6 0,85"	23 0,91"	131 5,16"	0,60 1,32	<b>FT610 PN</b>	2	V61PN	<b>61</b>
27 1,06"	33,7 1,33"	146 5,75"	0,73 1,61	<b>FT690 PN</b>	2	V69PN	<b>69</b>
29 1,14"	36,8 1,45"	160 6,30"	0,78 1,72	<b>FT710 PN</b>	2	V71PN	<b>71</b>
31,8 1,25"	39,6 1,56"	187 7,36"	1,10 2,43	<b>FT810 PN</b>	2	V81PN	<b>81</b>

Fig 1



Fig 2



FUTURA TWISTER PINS could be re-used several times and are designed to be used with other SuperV® products in the market

Gracias a la calidad de su acero, los pasadores TWISTER pueden ser re-utilizados varias veces. Están diseñados para poder ser utilizados con otros productos SuperV® y alternativos del mercado

## Hot Slag Twister Pin Pasador Twister para Escoria Caliente



### Special HOT SLAG TWISTER PINS

Pasadores especiales para trabajo con escoria caliente.


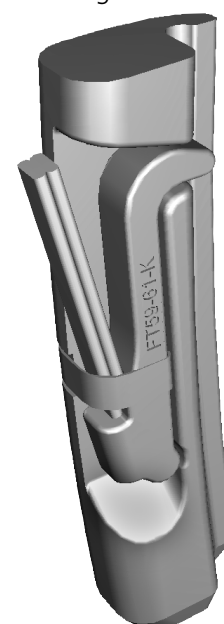
mm.				REF	Fig	Cross Ref	
A	B	C	Weight				
17,6 0,69"	25,9 1,02"	95,9 3,78"	0,25 0,55	<b>FT390 HPN</b>	3	V39HPN	<b>39</b>
19,5 0,77"	29,8 1,17"	105,8 4,17"	0,34 0,75	<b>FT430 HPN</b>	3	V43HPN	<b>43</b>
21 0,83"	33,5 1,32"	112,6 4,43"	0,40 0,88	<b>FT510 HPN</b>	4	V51HPN	<b>51</b>
21,5 0,85"	34 1,34"	120,9 4,76"	0,45 0,99	<b>FT590 HPN</b>	4	V59HPN	<b>59</b>
21,7 0,85"	34,5 1,36"	130,3 5,13"	0,50 1,10	<b>FT610 HPN</b>	4	V61HPN	<b>61</b>
26,2 1,03"	40 1,57"	153,4 6,04"	0,85 1,87	<b>FT6971 HPN</b>	4	V69HPNA	<b>69</b> <b>71</b>

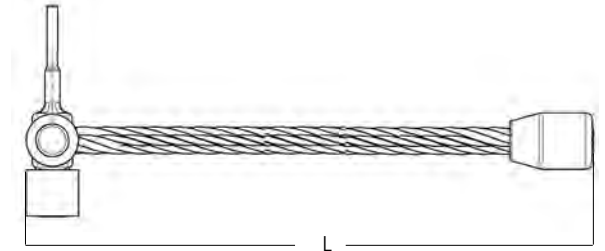
Fig 3



Fig 4



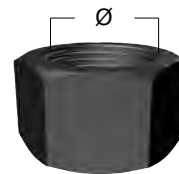
## Standard Pin Extraction Tools Herramientas Extractoras Pasadores Standard



mm.		REF	
L			
420 16,54"	1,80 3,97	<b>EXTFT-1333</b>	<b>13 to 33</b>
420 16,54"	2,40 5,29	<b>EXTFT-3961</b>	<b>39 to 61</b>
702 27,64"	4,30 9,48	<b>EXTFT-6981</b>	<b>69 to 81</b>

**EXTFT-1333    EXTFT-3961    EXTFT-6981**

## Hexagonal Bolts and Nuts for Bolt-On Adapters Sujeción Atornillable



BYG	OEM	Ø	L	BYG	OEM	Ø
<b>S-8537</b>	1A-8537	<b>5/8</b>	2-3/4" UNC	<b>NP-158</b>	4K-0367	<b>5/8" UNC</b>
<b>S-4367</b>	1B-4367		3" UNC			
<b>S-8537</b>	1A-8537		2-3/4" UNC			
<b>S-2968</b>	3B-2968	<b>3/4</b>	3 1/2" UNC	<b>NP-340</b>		<b>3/4" UNC</b>
<b>S-5227</b>	7F-5227		3 3/4" UNC			
<b>S-4610</b>	1D-4610	<b>7/8</b>	3 1/4" UNC	<b>NP-222</b>	2J-3505	<b>1" UNC</b>
<b>S-4639B</b>	1D-4639	<b>1"</b>	4" UNC	<b>NP-100</b>	2J-3507	<b>7/8" UNC</b>

## PN-HL Hammerless Twister PIN PASADOR Twister Hammerless



mm.	in	Lb		REF			TOOL
L							
31,4	1,24"	0,03	0,06	<b>FT1317 PN-HL</b>	-	<b>13</b> <b>17</b>	<b>EXTFT1317</b>
51,8	2,04"	0,05	0,11	<b>FT1923 PN-HL</b>	M5	<b>19</b> <b>23</b>	
64,9	2,56"	0,16	0,35	<b>FT2933 PN-HL</b>	M6	<b>29</b> <b>33</b>	
76,9	3,03"	0,21	0,46	<b>FT390 PN-HL</b>	M6	<b>39</b>	<b>EXTFT1951</b>
85,0	3,35"	0,29	0,64	<b>FT430 PN-HL</b>	M6	<b>43</b>	
93,0	3,66"	0,34	0,75	<b>FT510 PN-HL</b>	M6	<b>51</b>	



**FT810 PN-HLS**  
 \*SHORT VERSION  
 \*VERSIÓN MÁS CORTA

mm.	in	Lb		REF			TOOL
L							
123,3	4,85"	0,60	1,32	<b>FT590 PN-HL</b>	10 mm	<b>59</b>	
132,0	5,20"	0,75	1,65	<b>FT6165 PN-HL</b>	10 mm	<b>61</b>	
136,0	5,35"	1,10	2,43	<b>FT690 PN-HL</b>	13 mm	<b>69</b>	<b>EXTFT5985</b>
156,0	6,14"	1,40	3,09	<b>FT710 PN-HL</b>	13 mm	<b>71</b>	<b>EXTFT5985-280</b>
186,0	7,32"	2,00	4,41	<b>FT810 PN-HL</b>	17 mm	<b>81</b>	
144,5	5,69"	1,27	2,80	<b>FT810 PN-HLS*</b>			

## EXTFT Hammerless Extraction Tool Herramienta Extractora

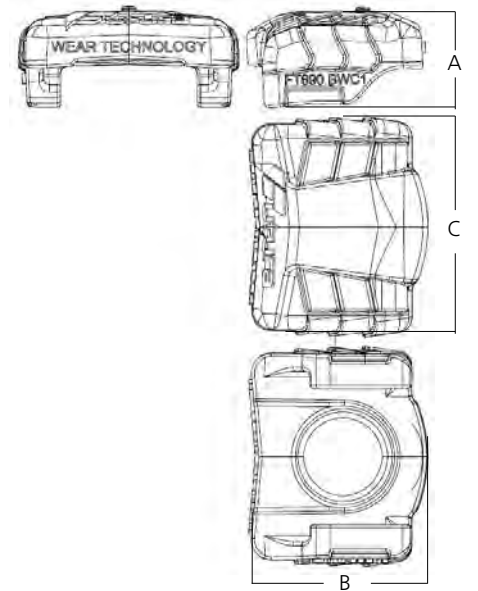


mm.	in	Lb		REF		
L						
388	15,28"	0,86	1,90	<b>EXTFT1317</b>	<b>13</b> <b>17</b>	
387	15,24"	0,86	1,90	<b>EXTFT1951</b>	<b>19</b> <b>23</b> <b>29</b> <b>33</b> <b>39</b> <b>43</b> <b>51</b>	
390	15,35"	1,00	2,20	<b>EXTFT5985</b>	<b>59</b> <b>61</b> <b>69</b> <b>71</b> <b>81</b>	
280	11,02"	0,80	1,76	<b>EXTFT5985-280</b>	<b>59</b> <b>61</b> <b>69</b> <b>71</b> <b>81</b>	

**EXTFT1317 EXTFT1951 EXTFT5985 EXTFT5985-280**



## Wear Cap for Bradken Twistlok Adapter Protector para Bradken

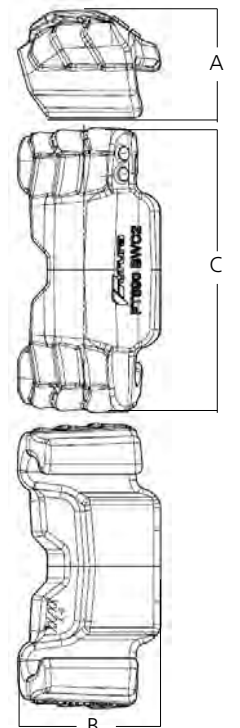


mm.		REF	Cross Ref	61 69 71 81
A	B			
92 3,62"	159 6,26"	192 7,56"	9,18 20,24	<b>FT610 BWC1</b> T610WC1
99 3,90"	179 7,05"	224 8,82"	13,13 28,95	<b>FT690 BWC1</b> T690WC1
103 4,06"	166 6,54"	244 9,61"	13,30 29,32	<b>FT710 BWC1</b> T710WC1
135 5,31"	177 6,97"	281 11,06"	19,28 42,50	<b>FT810 BWC2</b> 810BWC2



\* The Futura Wear Caps Work with **BRADKEN ADAPTERS AND FUTURA TWISTER TEETH ONLY**  
 \* Estos protectores solo deben utilizarse en portadientes Bradken con **DIENTES TWISTER**.

## Wear Cap for Bradken Twistlok Pro Adapter Protector para Bradken



mm.		REF	Cross Ref	69 71 81
A	B			
82 3,23"	107 4,21"	214 8,43"	5,40 11,90	<b>FT690 BWC2P</b> T690WC2
88 3,46"	117 4,61"	241 9,49"	6,50 14,33	<b>FT710 BWC2</b> T710WC2
103 4,06"	147 5,79"	284 11,18"	11,00 24,25	<b>FT810 BWC7</b> T810WC7



## Installation of FUTURA weld-on noses

Weld-on noses make it easy to convert your equipment to the FUTURA WEAR-TECHNOLOGY system.

FUTURA weld-on noses could also be used to repair adapters in an emergency or to upgrade nose sizes without replacing the entire adapter system.

### Weld rods

Please follow these procedures to avoid all risk of cracks. Use (AWS A5.1) E-7016, (DIN 8556) E 51 54 B 10 120, (ISO3581) E 515 B 120 29(H) weld rods or (AWS A5.18) ER 70 S-6, (DIN 8559) SG2, (NF 81.311) GS2 wire.

For repairs on the site or with difficult conditions (low temperature, manganese tooth base...) use (AWS A5.4) E307-15, (DIN 8556).

### 1 Preparing the parts

Shape tooth base to size and bevel opposite to bevel on weld-on nose (fig 1). Clean up the faces of the bevels carefully to remove scale, rust or dirt paint.

### 2 Installation: tack welding

2-1. Apply weld bead across the apex of both the nose & tooth base bevels.

2-2. Install point on weld-on nose and align the nose and point in the same plane as tooth being replaced.

### 3 Preheating

Preheat to 150-200°C. This temperature must be kept during all the welding sequence.

### 4 Welding on the nose

4-1. First passes: Allow 3mm. gap between weld-on nose and tooth base (fig 2). Starter plates are needed on each side of the weld.

Ensure 100% penetration on the first between the two parts. Turn the assembly over. Grind the back of the first pass. Make a second pass over the first one.

4-2. Building up the other pass Beads are alternatively built on the top and the bottom side to reduce stress concentrations. Remove slag after each pass. Stop the weld on the starter plate. Interpass temperatures must not exceed 200°C.

4-3. Finishing. Cooling down of the assembly must not exceed 50°C per hour. Remove the starter plates and grind smooth.

## Instalación de narices soldables FUTURA

Las narices soldables resultan la forma más rápida y fácil de convertir cualquier portadientes patentado al sistema FUTURA y poder disfrutar así de las altas prestaciones que ofrece. Las narices soldables pueden usarse también en caso de reparaciones de emergencia o para cambiar la talla de los dientes sin necesidad de reemplazar todos los portadientes del cazo.

### Varillas de soldadura

Siga estas recomendaciones para evitar la aparición de grietas. Use varillas de soldadura con estas especificaciones (AWS A5.1) E-7016, (DIN 8556) E 51 54 B 10 120, (ISO3581) E 515 B 120 29(H) o alambre de soldadura (AWS A5.18) ER 70 S-6, (DIN 8559) SG2, (NF 81.311) GS2.

En caso de reparaciones en el sitio o bajo condiciones especiales de baja temperatura pueden usarse las varillas (AWS A5.4) E307-15, (DIN 8556).

### 1 Preparación

Limpie la cuchilla a lo largo de las áreas de intervención. Cortar con una antorcha la pieza siguiendo un perfil biselado simétrico a la nariz de soldadura (fig 1). Limpie a fondo ambas superficies para eliminar restos de óxido, pintura o suciedad.

### 2 Instalación: cordón de soldadura

2-1. Aplique un cordón de soldadura en el vértice del bisel de la nariz y del bisel de los dientes

2-2. Marque un punto en la nariz de soldar y alinee la nariz y el punto en el mismo plano que el diente que ha de sustituir.

### 3 Pre-calentamiento

Pre-calentar a 150-200°C. Esta temperatura debe mantenerse durante la secuencia de soldadura.

### 4 Soldadura de la nariz

4-1. Primeros pases: Deje una brecha de unos 3mm entre la nariz soldar nariz y la base del diente (Fig 2). Se necesitan placas de apoyo en cada lado de la soldadura.

Asegúrese 100% de penetración en la primera pasada. Dele la vuelta al conjunto. Lime la parte posterior de la primera pasada. Haga un segundo pase sobre el primero.

4-2. Sigüientes pases: Vaya añadiendo pases alternativamente Comience a dar los pases de soldadura alternando la parte superior e inferior para reducir las concentraciones de esfuerzos. Quite la escoria después de cada pasada. Detenga la soldadura en la placa de arranque. Temperaturas entre pasada no debe superar los 200 °C.

### 4-3. Acabado

El enfriamiento del conjunto no debe superar los 50°C por hora. Quite las placas de apoyo y lije las superficies.

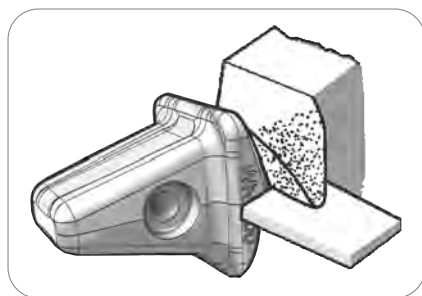
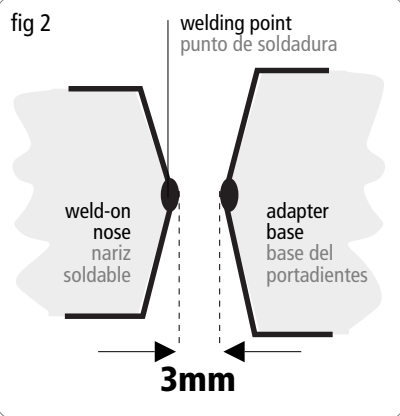
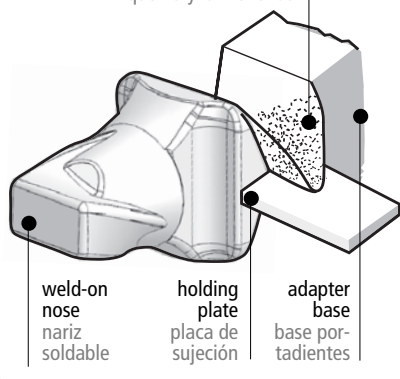
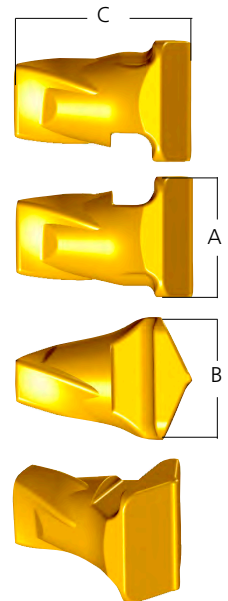


fig 1 eliminated by burning and grinding  
eliminado por la quema y la molienda



## Weld-On Nose Nariz Soldable



mm.		C	REF	Cross Ref	13 17 19 23 29 33 39 43 51 59 61 69 71 81
A	B				
46 1,81"	56 2,20"	72,5 2,85"	0,54 1,19	<b>FT130 WN</b>	-
55 2,17"	60 2,36"	86 3,39"	0,90 1,98	<b>FT170 WN</b>	-
76 190	76 230	109,5 230	1,80 3,97	<b>FT190 WN</b>	WN-V19
68 2,68"	68 2,68"	117 4,61"	2,80 6,17	<b>FT230 WN</b>	WN-V23
89 3,50"	91 3,58"	134 5,28"	3,70 8,16	<b>FT290 WN</b>	WN-V29
104 4,09"	103 4,06"	150 5,91"	5,30 11,68	<b>FT330 WN</b>	WN-V33
114 4,49"	118 4,65"	168 6,61"	7,50 16,53	<b>FT390 WN</b>	WN-V39
133 5,24"	129 5,08"	185 7,28"	10,30 22,71	<b>FT430 WN</b>	WN-V43
142 5,59"	168 6,61"	209 8,23"	14,95 32,96	<b>FT510 WN</b>	WN-V51
152 190	178 230	224 230	18,85 41,56	<b>FT590 WN</b>	WN-V59
152 5,98"	191 7,52"	244 9,61"	23,10 50,93	<b>FT610 WN</b>	WN-V61
178 7,01"	203 7,99"	268 10,55"	33,60 74,07	<b>FT690 WN</b>	WN-V69
203 7,99"	235 9,25"	299 11,77"	47,50 104,72	<b>FT710 WN</b>	WN-V71
229 9,02"	262 10,31"	319 12,56"	84,20 185,63	<b>FT810 WN</b>	WN-V81

### TWISTER Weld On Noses

Weld On Noses are the easiest and quickest way to convert any proprietary adapter into the High Performance FUTURA TWISTER System

### Nariz Soldable TWISTER

Las narices soldables resultan la forma más rápida y fácil de convertir cualquier portadientes patentado al sistema FUTURA TWISTER y poder disfrutar así de las altas prestaciones que ofrece el sistema FUTURA TWISTER

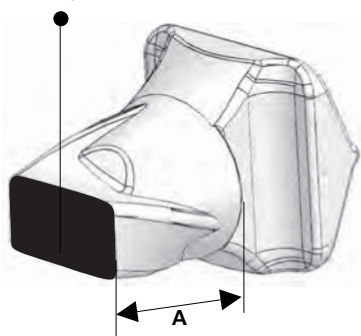


## Rebuilding of TWISTER noses

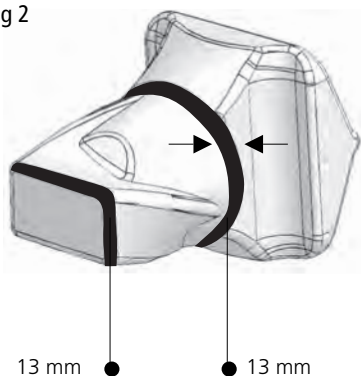
How do I know if a Twister nose needs rebuilding?

If the pin (OEM or TWISTER) does not stay in the proper assembly position on an adapter nose during use (even with a new tooth or new pin). In such cases you may choose to replace the adapter or to rebuild the adapter nose following the below procedures.

**fig 1** Build area with a butt fit, minimum 50% of the surface  
 la soldadura debe ser ajustada y cubrir un mínimo del 50% de la superficie



**fig 2**



## Reconstrucción de narices TWISTER

¿Cómo puedo saber si una nariz necesita reconstrucción?

Si el pasador (OEM o TWISTER) no permanece en la posición de ensamblaje correcta en la punta del portadientes durante el uso (incluso al usar un diente o un pasador nuevos). En tales casos, puede elegir reemplazar el portadientes o reconstruir la nariz del portadientes siguiendo estas instrucciones

### 1 Preparation

Clean all foreign material from the nose, then preheat to 150°C/300° F

### 1 Preparación

Limpie todo el material extra de la nariz, luego precaliente a 150°C / 300° F

### 2 Welding

Using an E9018 electrode, weld build the end of the nose as shown in fig. 1 to a length approximately 1<sup>1/2</sup> -1/8" (3mm) greater than dimension A (check table by size) Then carefully grind the weld to bring the nose length to dimension A.

### 2 Soldadura

Usando un electrodo E9018, suelde el extremo de la nariz como se muestra en la fig. 1 a una longitud aproximadamente de 3 mm (ver tabla según tallas) mayor que la dimensión A. A continuación, muela cuidadosamente la soldadura para alcanzar la longitud deseada.

Use a carpenter's square to ensure dimension A is measured accurately, make sure the nose end is flat and square. Make also sure the edges of the weld do not prevent full assembly of a point; the point must butt-fit against the nose end.

Use una escuadra de carpintero para asegurarse de que la dimensión A sea lo más precisa posible, asegúrese de que el extremo de la nariz sea plano y cuadrado. Asegúrese de que los bordes de la soldadura no impidan el ensamblaje.

### 3 Checking

Check the rebuild by attaching a new tooth/pin assembly on to the nose. There should be moderate resistance when driving the pin.

### 3 Comprobación

Verifique la reconstrucción al colocar un nuevo conjunto de diente / pasador en el portadientes. Debe haber una resistencia moderada al introducir el pasador.

If steps 1 to 3 do not prevent unseating of the pin, replacement of the adapter is recommended. If this is not possible, preheat and weld build single thin layers as shown of fig. 2.

Si los pasos 1 a 3 no impiden que el pasador se suelte, se recomienda reemplazar el portadientes. Si esto no es posible, precaliente y suelde capas individuales delgadas como se muestra en la fig. 2.

During the process stop welding and hit with a hammer frequently. Add more weld as necessary to minimize point looseness. Grind as required to achieve point butt-fit. Repeat step 3.

Durante el proceso, deje de soldar y golpee con un martillo con frecuencia. Agregue más soldadura según sea necesario para minimizar la pérdida de puntos. Moler según sea necesario para lograr el punto de ajuste. Repita el paso 3.

TWISTER SIZE	A	Weld
13	55	2
19	63	2,5
23	69	2,7
29	73	2,8
33	82	3,2
39	93	3,66
43	103	4
51	115	4,5
59	125	5
61	135	5,3
69	151	6
71	166	6,5
81	192	7,5





**Bold part number, available product**  
 Other part numbers please consult

**Referencia en negrita producto disponible**  
 Otras referencias consúltenos

**COMPATIBLE WITH ESCO SV2<sup>®</sup>**

**COMPATIBLE CON ESCO SV2<sup>®</sup>**



RC	RCXL	RCP	VX	TL	RX	RXL	RP	RPL	RPHD	WC	X	
FT265 RC	-	FT265 RCP	FT265 VX	-	FT265 RX	-	FT265 RP	FT265 RPL	FT265 RPHD	FT265 WC	FT265-7075 FT265-80 FT265	<b>265</b>
FT270 RC	-	FT270 RCP	FT270 VX	-	FT270 RX	-	-	-	FT270 RPHD	FT270 WC	FT270 FT270-100	<b>270</b>
FT275 RC	-	FT275 RCP	FT275 VX	-	FT275 RX	-	-	-	FT275 RPHD	FT275 WC	FT275 FT275-120	<b>275</b>
FT285 RC	FT285 RCXL	FT285 RCP	FT285 VX	FT285 TL	FT285 RX	FT285 RXL	-	-	-	FT285 WC	FT285 FT285-140	<b>285</b>
<b>EXCAVATOR</b>				<b>ROPE SHOVEL</b>				<b>LOADER</b>				

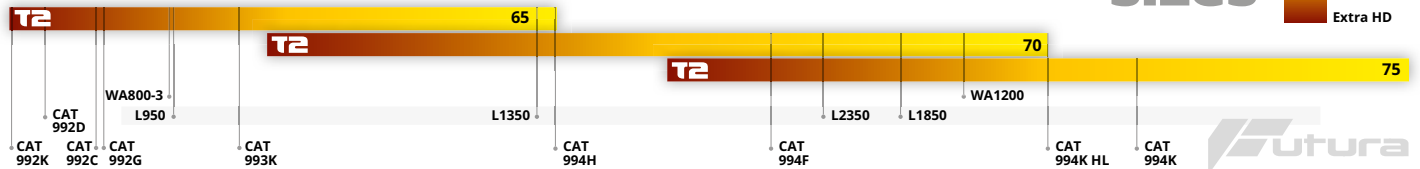
Guide to Nose Sizes Guía para la Selección de Tallas



wheel loader buckets  
up to 44m<sup>3</sup>

guide  
to nose  
sizes

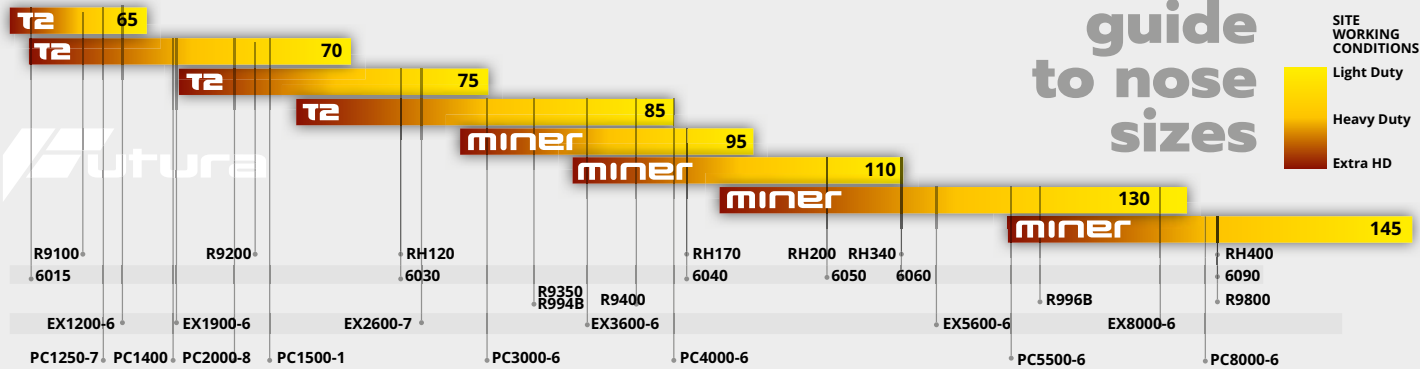
SITE WORKING CONDITIONS  
Light Duty  
Heavy Duty  
Extra HD



face shovel buckets  
up to 42m<sup>3</sup>

guide  
to nose  
sizes

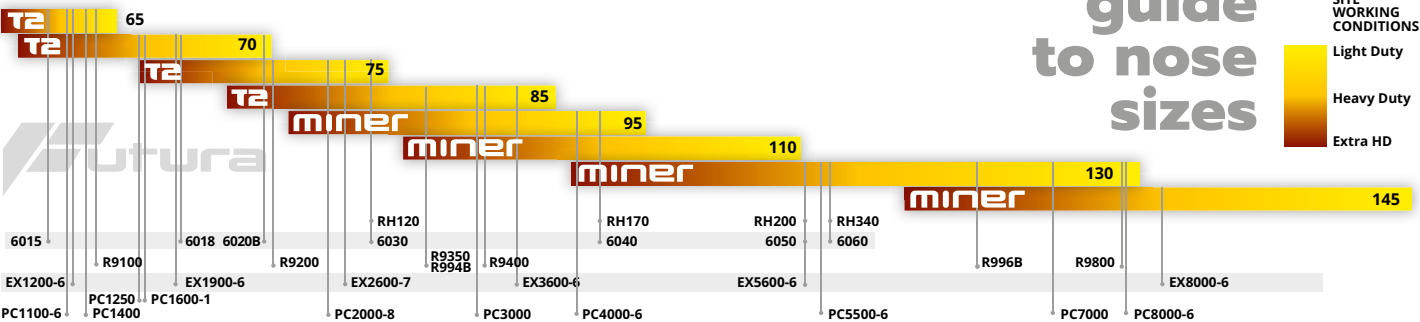
SITE WORKING CONDITIONS  
Light Duty  
Heavy Duty  
Extra HD



backhoe excavator buckets  
up to 42m<sup>3</sup>

guide  
to nose  
sizes

SITE WORKING CONDITIONS  
Light Duty  
Heavy Duty  
Extra HD



## RC Rock Chisel Tooth Diente Cincel Roca



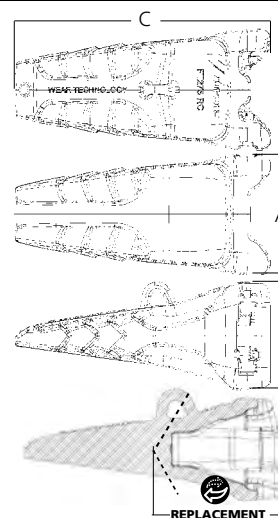
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.			REF	Cross Ref	WEAR TECHNOLOGY	REF	FT6165 PN-HL	FT265-7075, FT265-80, FT265	265
A	B	C							
206 8,11"	183 7,20"	453 17,83"	35,00 77,16	<b>FT265 RC</b>	65SV2SD	221 8,70"			
245 9,65"	199 7,83"	507 19,96"	51,00 112,43	<b>FT270 RC</b>	70SV2SD		FT270 PN-HL	FT270, FT270-100	<b>270</b>
259 10,20"	233 9,17"	549 21,61"	66,00 145,50	<b>FT275 RC</b>	75SV2SD		FT275 PN-HL	FT275, FT275-120	<b>275</b>
295 11,61"	257 10,12"	601 23,66"	90,00 198,41	<b>FT285 RC</b>	85SV2SD	292 11,50"	FT285 PN-HL	FT285	<b>285</b>

## RCXL Rock Chisel Heavy Diente Cincel Roca Extra



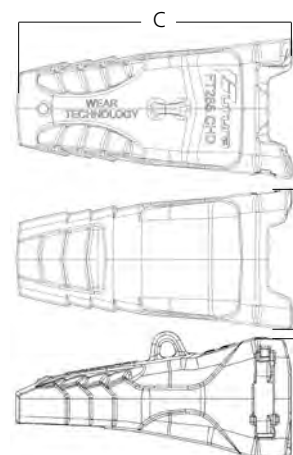
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.			REF	Cross Ref	REF	FT285 PN-HL	FT285	285
A	B	C						
284 8,11"	257 7,20"	576 17,83"	102,50 77,16	<b>FT285 RCXL</b>	85SV2CHD			

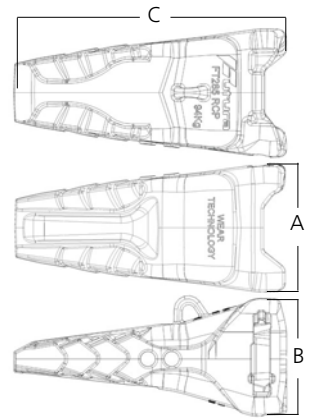
RCP Rock Chisel Penetration RCP Cincel Penetración



● ● ● ● ●  
 WEAR FACTOR | DESGASTE

● ● ● ● ●  
 PENETRATION | PENETRACIÓN

● ● ● ● ●  
 IMPACT | IMPACTO



mm.				REF	Cross Ref			
A	B	C						
284 11,61"	257 10,12"	601 23,66"	94,00 220,46	<b>FT285 RCP</b>	85SV2SD	FT285 PN-HL	FT285	<b>285</b>

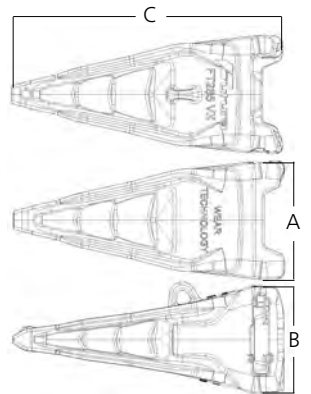
VX Vector Tooth VX Vector



● ● ● ● ●  
 WEAR FACTOR | DESGASTE

● ● ● ● ●  
 PENETRATION | PENETRACIÓN

● ● ● ● ●  
 IMPACT | IMPACTO



mm.				REF	Cross Ref			
A	B	C						
206 8,11"	183 7,20"	453 17,83"	31,00 68,34	<b>FT265 VX</b>	65SV2VX	FT6165 PN-HL	FT265-7075, FT265-80, FT265	<b>265</b>
245 9,65"	199 7,83"	507 19,96"	45,00 99,21	<b>FT270 VX</b>	70SV2VX	FT270 PN-HL	FT270, FT270-100	<b>270</b>
259 10,20"	233 9,17"	549 21,61"	60,00 132,28	<b>FT275 VX</b>	75SV2VX	FT275 PN-HL	FT275, FT275-120	<b>275</b>
295 11,61"	257 10,12"	601 23,66"	87,00 191,80	<b>FT285 VX</b>	85SV2VX	FT285 PN-HL	FT285	<b>285</b>

## RX Dipper X Dipper RX



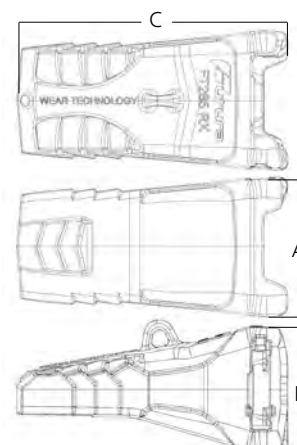
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.			kg	REF	Cross Ref	Image	Image	Part No.
A	B	C						
206 8,11"	183 7,20"	453 17,83"	33,50 73,85	<b>FT265 RX</b>	65SV2RXL 65SV2RX	FT6165 PN-HL	FT265-7075, FT265-80, FT265	<b>265</b>
245 9,65"	199 7,83"	507 19,96"	54,00 119,05	<b>FT270 RX</b>	70SV2RXL 70SV2RX	FT270 PN-HL	FT270, FT270-100	<b>270</b>
259 10,20"	233 9,17"	549 21,61"	80,00 176,37	<b>FT275 RX</b>	75SV2RXL 75SV2RX	FT275 PN-HL	FT275, FT275-120	<b>275</b>
295 11,61"	257 10,12"	601 23,66"	100,00 220,46	<b>FT285 RX</b>	85SV2RX	FT285 PN-HL	FT285	<b>285</b>

## VX Vector Tooth VX Vector



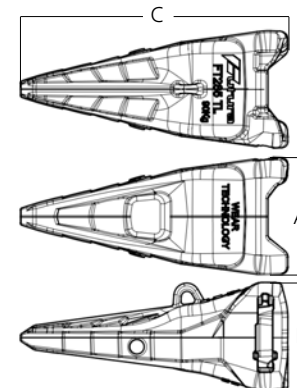
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.			kg	REF	Cross Ref	Image	Image	Part No.
A	B	C						
282 11,10"	259 10,20"	647 25,47"	90,00 198,41	<b>FT285 TL</b>		FT285 PN-HL	FT285	<b>285</b>

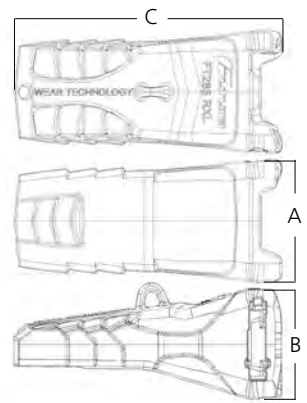
RXL Dipper Heavy X Dipper Heavy RXL



● ● ● ● ●  
 WEAR FACTOR | DESGASTE

● ● ● ● ●  
 PENETRATION | PENETRACIÓN

● ● ● ● ●  
 IMPACT | IMPACTO



mm.				REF	Cross Ref			
A	B	C						
295 11,61"	257 10,12"	601 23,66"	117,00 220,46	<b>FT285 RXL</b>	85SV2RXL	FT285 PN-HL	FT285	<b>285</b>

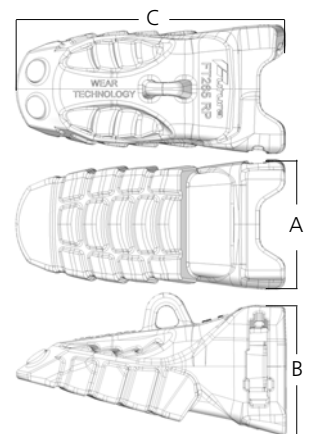
RP Rock Penetration RP Diente Cargadora



● ● ● ● ●  
 WEAR FACTOR | DESGASTE

● ● ● ● ●  
 PENETRATION | PENETRACIÓN

● ● ● ● ●  
 IMPACT | IMPACTO



mm.				REF	Cross Ref			
A	B	C						
201 7,91"	203 7,99"	380 14,96"	44,30 97,66	<b>FT265 RP</b>	FT6165 PN-HL	FT265 LD, FT265LDLH-LHS-RH-RHS	<b>265</b>	

## RPL Rock Penetration Light RPL Diente Cargadora



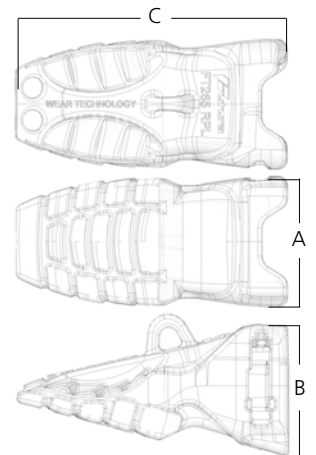
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.				REF	Cross Ref			
A	B	C						
201 7,91"	203 7,99"	419 16,50"	41,00 90,39	<b>FT265 RPL</b>	65SV2AG	FT6165 PN-HL	FT265 LD, FT265 LDLH-LHS-RH-RHS	<b>265</b>

## RPHD Rock Penetration Heavy Duty RPHD Diente Cargadora



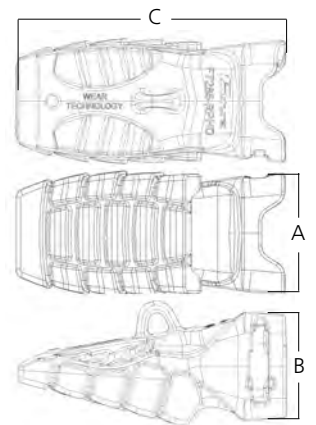
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



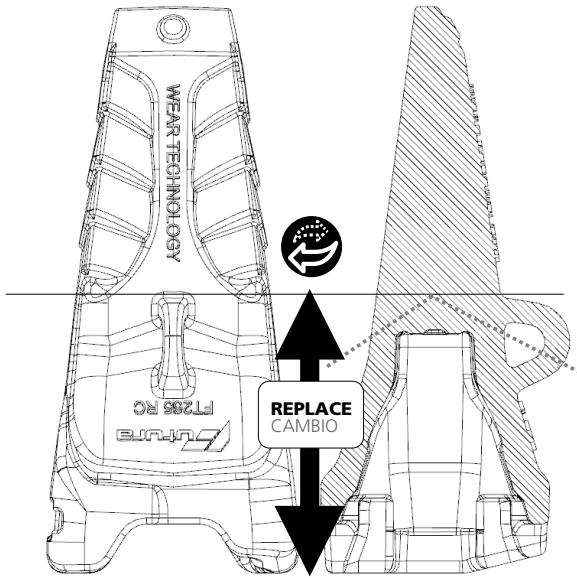
IMPACT | IMPACTO


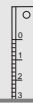


mm.				REF	Cross Ref			
A	B	C						
206 8,11"	183 7,20"	453 17,83"	55,00 121,25	<b>FT265 RPHD</b>	65SV2ADHL	FT6165 PN-HL	FT265 LD, FT265 LDLH-LHS-RH-RHS	<b>265</b>
245 9,65"	199 7,83"	507 19,96"	80,50 177,47	<b>FT270 RPHD</b>	70SV2ADHL	FT270 PN-HL	FT270 LD, FT270 LDLH-LHS-RH-RHS	<b>270</b>
206 8,11"	183 7,20"	453 17,83"	107,00 235,89	<b>FT275 RPHD</b>	75SV2ADB	FT275 PN-HL	FT275 LD, FT275 LDLH-LHS-RH-RHS	<b>275</b>

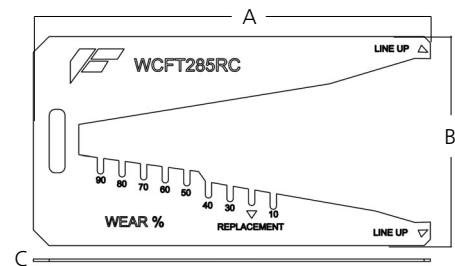
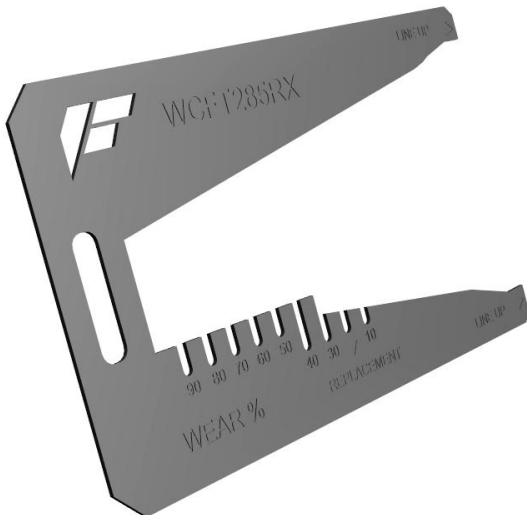
## T2 TEETH Recommendations for use and replacement


## DIENTES T2 Recomendaciones de uso y reemplazo



REF		
<b>FT265 RC</b>	<b>221</b> 8,70"	<b>265</b>
<b>FT270 RC</b>		<b>270</b>
<b>FT275 RC</b>		<b>275</b>
<b>FT285 RC</b>	<b>292</b> 11,50"	<b>285</b>

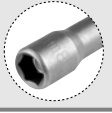

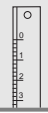

## Wear Checking Template Plantilla Comprobación Desgaste



mm.											
A	in	B	in	C	in		Lb	REF	Tooth		
575	22,64"	330	12,99"	4	0,16"	3,60	7,94	<b>WCFT275RC</b>	FT275 RC		
535	21,06"	330	12,99"	4	0,16"	3,00	6,61	<b>WCFT275RX</b>	FT275 RX		<b>275</b>
625	24,61"	330	12,99"	4	0,16"	3,50	7,72	<b>WCFT285RC</b>	FT285 RC		
575	22,64"	330	12,99"	4	0,16"	3,00	6,61	<b>WCFT285RX</b>	FT285 RX		<b>285</b>
665	26,18"	330	12,99"	4	0,16"	3,80	8,38	<b>WCFT285VX</b>	FT285 VX		



## Hammerless Pin Pasador Hammerless

mm		REF	 	
L				
117 4,61"	0,80 1,76	<b>FT6165 PN-HL</b>	10 mm	EXTFT5985 <b>265</b>
131 5,16"	1,15 2,54	<b>FT270 PN-HL</b>	13 mm	EXTFT5985 <b>270</b>
147 5,79"	1,20 2,65	<b>FT275 PN-HL</b>	13 mm	EXTFT5985 <b>275</b>
157 6,18"	1,80 3,97	<b>FT285 PN-HL</b>	17 mm	EXTFT5985 <b>285</b>

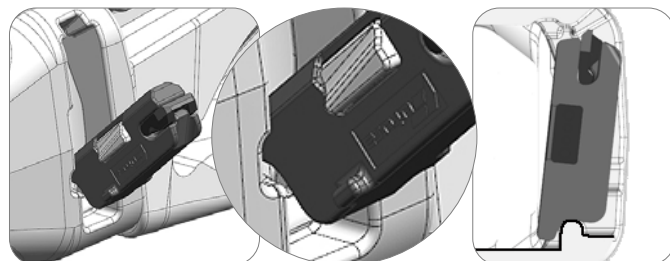
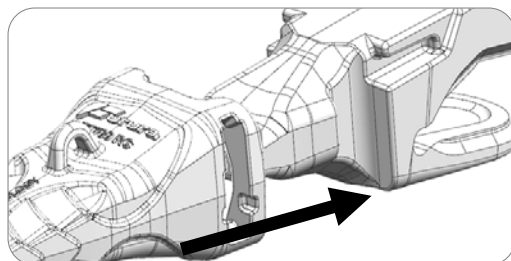


## T2 Assembly Montaje Pasadores T2

**1**

Fit TOOTH on adapter finding the half spin. Insert PIN as shown in the picture

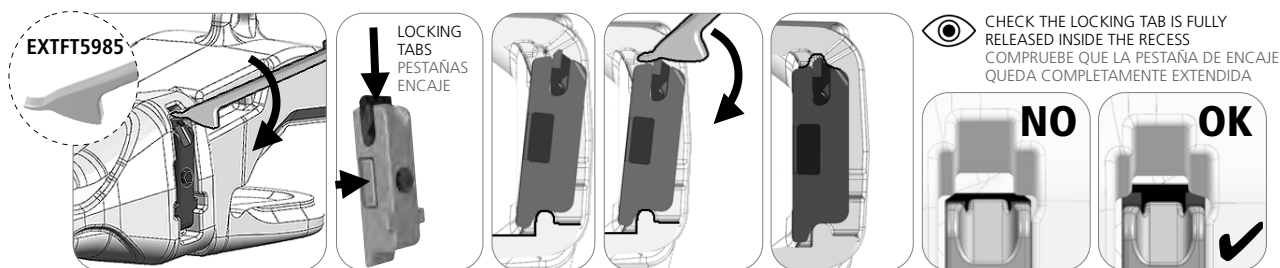
Encaje el DIENTE en el PORTADIENTES con un pequeño giro e inserte el PASADOR en la posición que se muestra en el dibujo



**2**

With extraction tool EXTFT5985, press until pin tab reaches its locking position and is fully released on the orifice

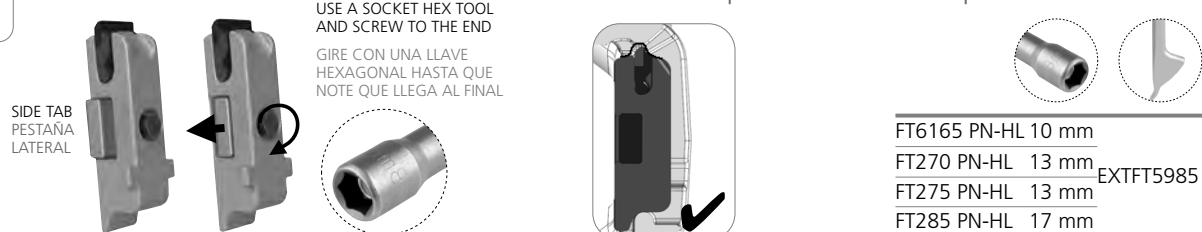
Utilice la herramienta EXTFT5985 para hacer palanca sobre la pestaña móvil del pasador hasta que quede completamente extendida dentro del orificio



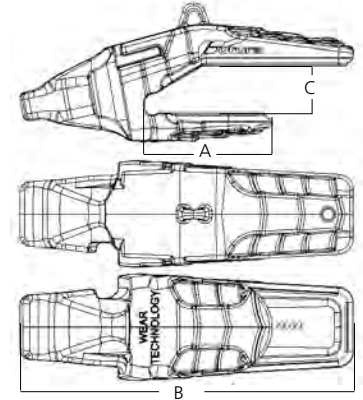
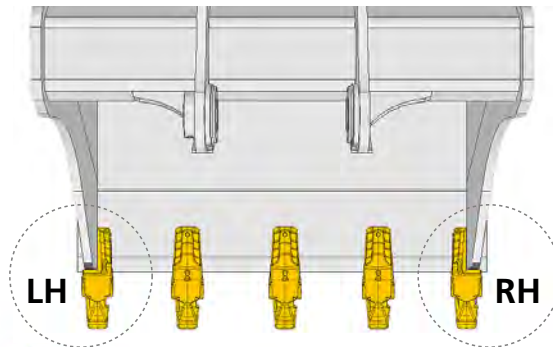
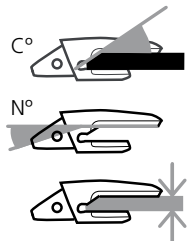
**3**

Use socket screw to expand lateral tab to the end

Use una herramienta hexagonal para expandir al máximo la pestaña lateral del pasador



Universal Adapter Portadientes Universal

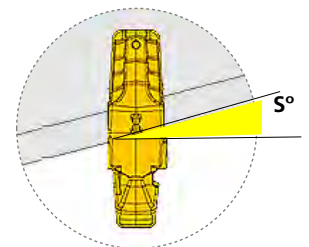


**LEFT HAND ADAPTER**  
PORTADIENTES IZQUIERDO



**CENTRAL ADAPTER**  
PORTADIENTES CENTRAL

**RIGHT HAND ADAPTER**  
PORTADIENTES DERECHO

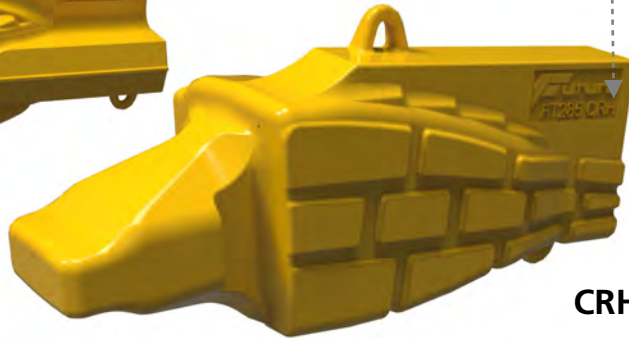
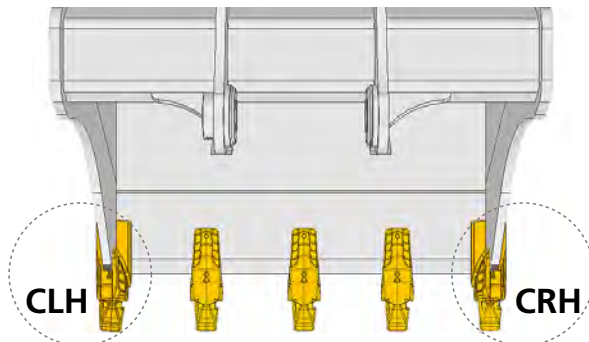
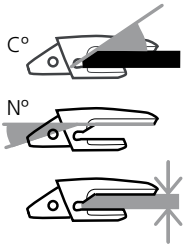


**RHS**

mm.																								
A	B	C	C°	N°	S°			REF	OEM	LH	LHS	RHS	RH											
218	8,6"	606	23,9"	76,5"	3,0"	30°	10°	70 75	2,8" 3"	64 140	FT265-7075	3858W-65SV2												
										56 123	FT265-7075 LH		●											
										56 123	FT265-7075 RH										●			
218	8,6"	606	23,9"	81,5"	3,2"	30°	10°	80	3,1"	64 141	FT265-80	5898W-65SV2												
										57 126	FT265-80 LH		●								FT265 WC	265		
										57 126	FT265-80 RH											●		
222	8,7"	606	23,9"	91,5"	3,6"	30°	10°	90	3,5"	64 141	FT265	6803W-65SV2												
										57 126	FT265 LH		●											
										57 126	FT265 RH											●		
294	11,6"	724	28,5"	91,5"	3,6"	30°	10°	90	3,5"	105 231	FT270	6803W-70SV2										270		
										85 187	FT270 LH		●											
										85 187	FT270 RH											●		
279	11,0"	724	28,5"	102,0"	4,0"	30°	10°	100	3,9"	105 230	FT270-100	5897W-70SV2												
										92 203	FT270-100 LH		●									FT270 WC		
										98	FT270-100 LHS			●										
										92 203	FT270-100 RH											●		
							15°			98 216	FT270-100 RHS				●									
330	13,0"	836	32,9"	102,0"	4,0"	30°	10°	100	3,9"	151 333	FT275	5897W-75SV2												
										130 287	FT275 LH		●											
										130 287	FT275 RH											●		
339	13,3"	836	32,9"	122,0"	4,8"	30°	10°	120	4,7"	151 333	FT275-120	6810W-75SV2										FT275 WC	275	
										130 287	FT275-120 LH		●											
										130 287	FT275-120 RH												●	
332	13,1"	868	34,2"	122,0"	4,8"	30°	10°	120	4,7"	189 417	FT285	6810W-85SV2												
										163 358	FT285 LH		●											
										163 358	FT285 RH												FT285 WC	285
335	13,2"	868	34,2"	142	5,6"	30°	10°	140	5,5"	184 405	FT285-140													



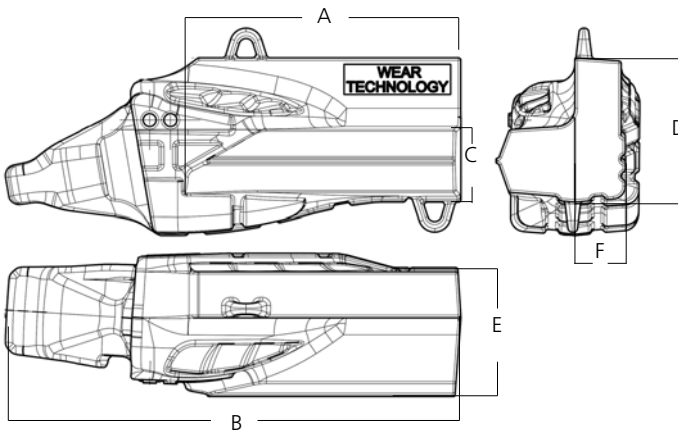
## Cast Corners Canto-Portadientes de Fundición



**CLH**  
**LEFT HAND**  
**CAST CORNER**  
 CANTO-  
 PORTADIENTES  
 IZQUIERDO

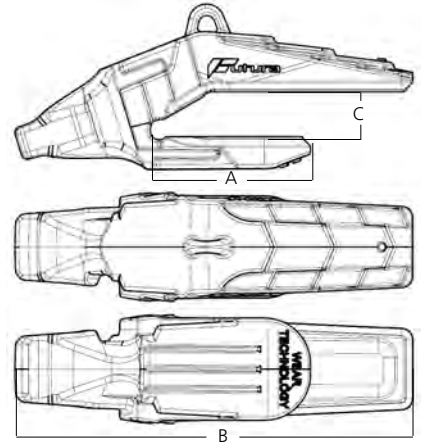
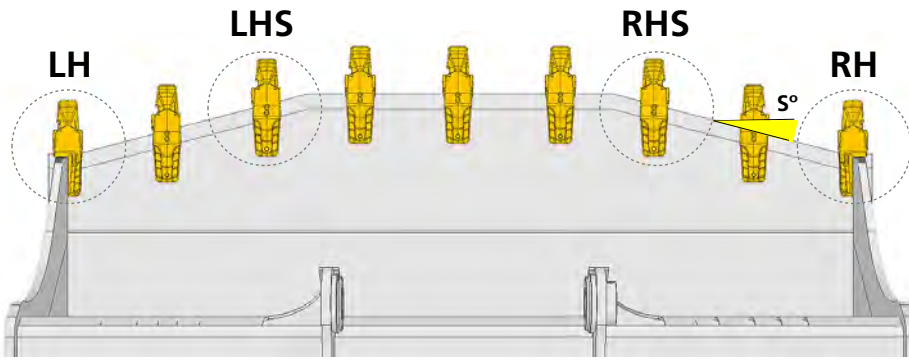
**CRH**  
**RIGHT HAND**  
**CAST CORNER**  
 CANTO-PORTADIENTES  
 DERECHO

**STLH**  
**LEFT HAND**  
**STRADDLE CORNER**  
 CANTO-PORTADIENTES  
 DE CABALLETE IZQUIERDO



mm.															REF	OEM						
A	B	C	D	E	F	C°	N°															
451	17,8"	767	30,2"	102	4,0"	225	8,9"	235	9,3"	70	2,8"	30°	10°	100	3,9"	70	2,8"	208	459	<b>FT275 CLH</b>	IN-75SV2L	<b>275</b>
451	17,8"	767	30,2"	102	4,0"	225	8,9"	235	9,3"	70	2,8"	30°	10°	100	3,9"	70	2,8"	208	459	<b>FT275 CRH</b>	IN-75SV2R	
506	19,9"	875	34,4"	122	4,8"	278	10,9"	248	9,8"	90	3,5"	30°	10°	120	4,7"	90	3,5"	317	699	<b>FT285 CLH</b>	IN-85SV2L1	<b>285</b>
506	19,9"	875	34,4"	122	4,8"	278	10,9"	248	9,8"	90	3,5"	30°	10°	120	4,7"	90	3,5"	317	699	<b>FT285 CRH</b>	IN-85SV2L1	
619	24,4"	988	38,9"	122	4,8"	303	11,9"	272	10,7"	90	3,5"	30°	10°	120	4,7"	90	3,5"	197	434	<b>FT285 STLH</b>	6838L-85SV2	
619	24,4"	988	38,9"	122	4,8"	303	11,9"	272	10,7"	90	3,5"	30°	10°	120	4,7"	90	3,5"	197	434	<b>FT285 STRH</b>	6838R-85SV2	

LOADER Adapter Portadientes CARGADORA



**LEFT HAND ADAPTER**  
PORTADIENTES IZQUIERDO

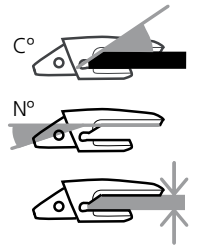
**CENTRAL ADAPTER**  
PORTADIENTES CENTRAL

**RIGHT HAND ADAPTER**  
PORTADIENTES DERECHO

**LOADER ADAPTER**  
PORTADIENTES CARGADORA

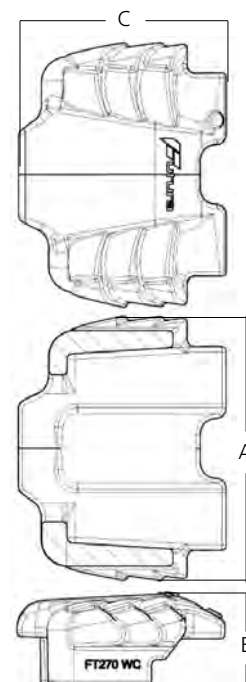


**LOADER ADAPTER WITH OPTIONAL WEAR CAPS**  
PORTADIENTES CARGADORA CON PROTECTORES OPCIONALES



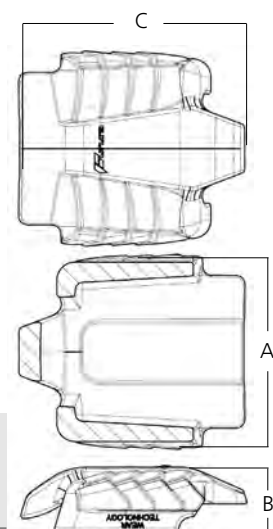
mm.																		
A	B	C	C°	N°	S°		REF	OEM	LH	LHS	RHS	RH						
							84 184	<b>FT265 LD</b>	6831W-65SV2									
279	692	77,5					72 158	<b>FT265 LDLH</b>		●								
11,0"	27,2"	3,1"	30°	17°	10°	<b>70</b>	85 187	<b>FT265 LDLHS</b>	6830LW-65SV2		●			FT265 WC	FT265 WCLD	<b>265</b>		
						<b>75</b>	72 159	<b>FT265 LDRH</b>				●						
					10°		85 187	<b>FT265 LDRHS</b>	6830RW-65SV2		●							
							97 214	<b>FT270 LD</b>	6854W-70SV2									
243	647	91,5					86 190	<b>FT270 LDLH</b>		●								
9,6"	25,5"	3,6"	30°	17°	10°	<b>90</b>	99 217	<b>FT270 LDLHS</b>	6861LW-70SV2		●			FT270 WC	FT270 WCLD	<b>270</b>		
							86 190	<b>FT270 LDRH</b>				●						
					10°		99 217	<b>FT270 LDRHS</b>	6861RW-70SV2		●							
							96 212	<b>FT270-100 LD</b>	6854W-70SV2									
243	647	101,5					86 190	<b>FT270-100 LDLH</b>		●								
9,6"	25,5"	4,0"	30°	17°	10°	<b>100</b>	99 217	<b>FT270-100 LDLHS</b>	6861LW-70SV2		●			FT270 WC	FT270 WCLD	<b>270</b>		
							86 190	<b>FT270-100 LDRH</b>				●						
					10°		99 217	<b>FT270-100 LDRHS</b>	6861RW-70SV2		●							
							155 341	<b>FT275 LD</b>	6847W-75SV2									
329	835	102					137 302	<b>FT275 LDLH</b>		●								
13,0"	32,9"	4,0"	30°	17°	10°	<b>100</b>	157 346	<b>FT275 LDLHS</b>	6848LW-75SV2		●			FT275 WC	FT275 WCLD	<b>275</b>		
							137 302	<b>FT275 LDRH</b>				●						
					10°		157 346	<b>FT275 LDRHS</b>	6848RW-75SV2		●							

## WC Adapter Wear Cap Protector Portadientes



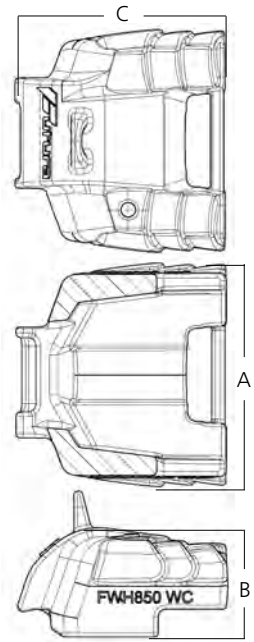
mm.				REF	Cross Ref	EXCAVATOR ADAPTER	LOADER ADAPTER	265
A	B	C						
211,9 8,34"	80 3,15"	183,5 7,22"	8,7 19,18	<b>FT265 WC</b>	WC265	FT265-7075, FT265-7075 LH, FT265-7075 RH, FT265-80, FT265-80 LH, FT265-80 RH, FT265, FT265 LH, FT265 RH	FT265 LD FT265 LDLH, FT265 LDRH FT265 LDLHS, FT265 LDRHS	<b>265</b>
256,1 10,08"	88,3 3,48"	200,1 7,88"	12,7 28,00	<b>FT270 WC</b>	WC270	FT270, FT270 LH, FT270 RH, FT270-100, FT270-100 LH, FT270-100 RH	FT270 LD FT270 LDLH, FT270 LDRH FT270 LDLHS, FT270 LDRHS	<b>270</b>
276,1 10,87"	98,9 3,89"	224,6 8,84"	17,0 37,48	<b>FT275 WC</b>	WC750	FT275, FT275 LH, FT275 RH, FT275-120, FT275-120 LH, FT275-120 RH	FT275 LD FT275 LDLH, FT275 LDRH FT275 LDLHS, FT275 LDRHS	<b>275</b>
301,4 11,87"	106 4,15"	235 9,25"	21,0 46,30	<b>FT285 WC</b>	WC285	FT285, FT285 LH, FT285 RH	-	<b>285</b>

## WCLD LOADER Adapter Wear Cap Protector Portadientes Cargadora



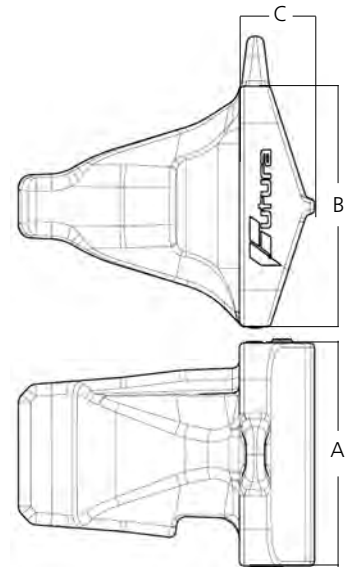
mm.				REF	LOADER ADAPTER	265
A	B	C				
217 8,34"	72 3,15"	250 7,22"	11,90 19,18	<b>FT265 WCLD</b>	FT265 LD FT265 LDLH, FT265 LDRH FT265 LDLHS, FT265 LDRHS	<b>265</b>
255 10,08"	76,2 3,48"	216 7,88"	13,13 28,00	<b>FT270 WCLD</b>	FT270 LD FT270 LDLH, FT270 LDRH FT270 LDLHS, FT270 LDRHS	<b>270</b>
277 10,87"	86,7 3,89"	241 8,84"	17,60 37,48	<b>FT275 WCLD</b>	FT275 LD FT275 LDLH, FT275 LDRH FT275 LDLHS, FT275 LDRHS	<b>275</b>

WC Wear Cap for WHISLER Adapters Protector Portadientes WHISLER



mm.			REF	Cross Ref	175
A	B	C			
273 10,87"	137 3,89"	272 8,84"	<b>FWH750 WC</b>	WC175	<b>175</b>
304 11,87"	149 4,15"	286 9,25"	<b>FWH850 WC</b>	WC185	<b>185</b>

Weld-On Noses Narices Soldables



mm.			REF	Cross Ref	265
A	B	C			
			FT265 WN	SV265WN	<b>265</b>
			FT270 WN	SV270WN	<b>270</b>
241 9,49"	260 10,24"	81 3,19"	<b>FT275 WN</b>	SV275WN	<b>275</b>
262 10,31"	274 10,79"	83 3,27"	<b>FT285 WN</b>	SV285WN	<b>285</b>

## Hammerless Pin Pasador Hammerless

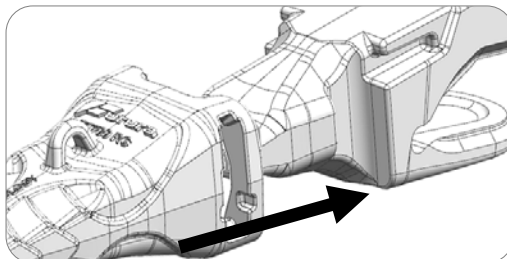
mm		REF			
L					
117 4,61"	0,80 1,76	<b>FT6165 PN-HL</b>	10 mm	EXTFT5985	<b>265</b>
131 5,16"	1,15 2,54	<b>FT270 PN-HL</b>	13 mm	EXTFT5985	<b>270</b>
147 5,79"	1,20 2,65	<b>FT275 PN-HL</b>	13 mm	EXTFT5985	<b>275</b>
157 6,18"	1,80 3,97	<b>FT285 PN-HL</b>	17 mm	EXTFT5985	<b>285</b>



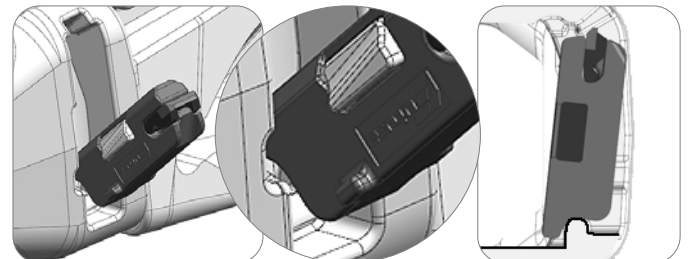
## T2 Assembly Montaje Pasadores T2

**1**

Fit TOOTH on adapter finding the half spin. Insert PIN as shown in the picture

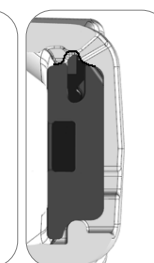
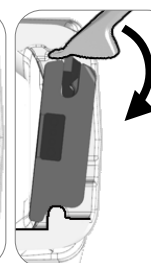
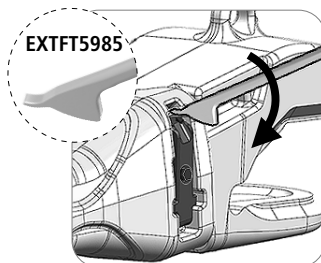


Encaje el DIENTE en el PORTADIENTES con un pequeño giro e inserte el PASADOR en la posición que se muestra en el dibujo



**2**

With extraction tool EXTFT5985, press until pin tab reaches its locking position and is fully released on the orifice

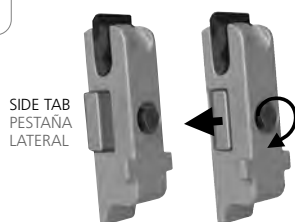


CHECK THE LOCKING TAB IS FULLY RELEASED INSIDE THE RECESS  
 COMPRUEBE QUE LA PESTAÑA DE ENCAJE QUEDA COMPLETAMENTE EXTENDIDA



**3**

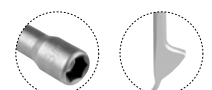
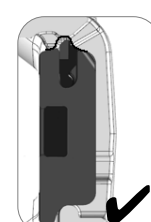
Use socket screw to expand lateral tab to the end



USE A SOCKET HEX TOOL AND SCREW TO THE END  
 GIRE CON UNA LLAVE HEXAGONAL HASTA QUE NOTE QUE LLEGA AL FINAL

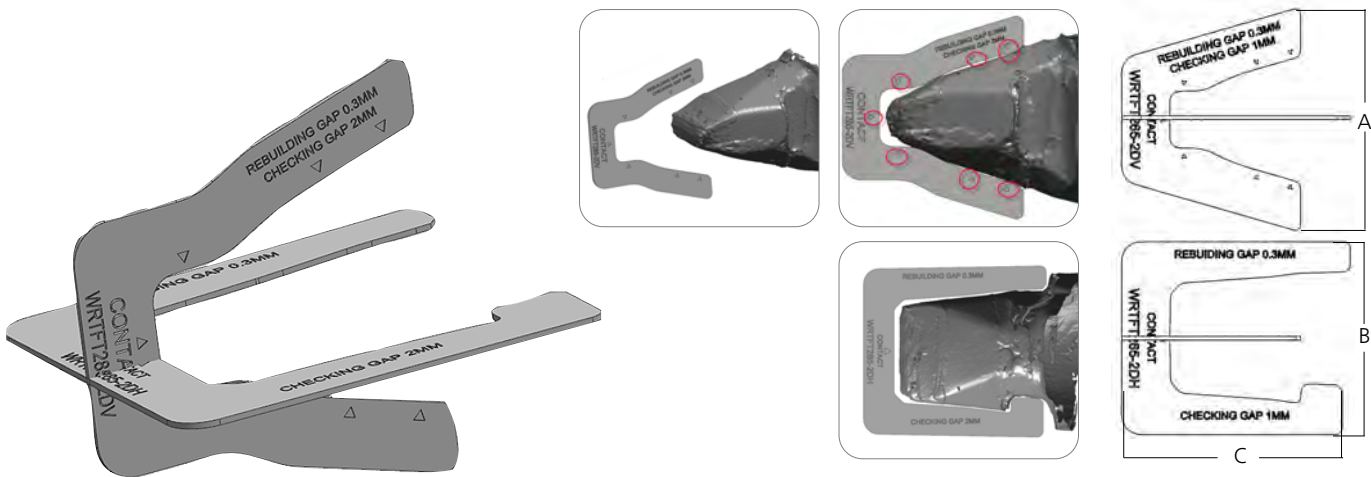



Use una herramienta hexagonal para expandir al máximo la pestaña lateral del pasador



FT6165 PN-HL	10 mm	EXTFT5985
FT270 PN-HL	13 mm	
FT275 PN-HL	13 mm	
FT285 PN-HL	17 mm	


## Nose Checking Templates 2D Plantilla para Comprobación de Narices



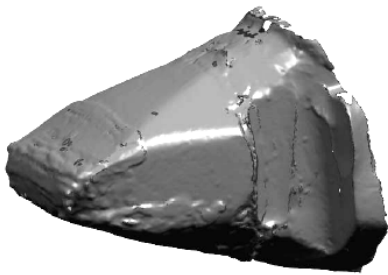
mm.		REF	Cross Ref	Adapters	Noses			
A	B						C	kg
232 9,13"	202 7,95"	237 9,33"	1,43 3,15	<b>WRTFT265-2D</b>	WRT-65SV2-CT WRT-65SV2-ST	65SV2	WN-65SV2	<b>265</b>
247 9,72"	230 9,06"	255 10,04"	1,60 3,53	<b>WRTFT270-2D</b>	WRT-70SV2-CT WRT-70SV2-ST	70SV2	WN-70SV2	<b>270</b>
268 10,55"	260 10,24"	275 10,83"	1,90 4,19	<b>WRTFT275-2D</b>	WRT-75SV2-CT WRT-75SV2-ST	75SV2	WN-75SV2	<b>275</b>
289 11,38"	280 11,02"	299 11,77"	2,10 4,63	<b>WRTFT285-2D</b>	WRT-85SV2-CT WRT-85SV2-ST	85SV2	WN-85SV2	<b>285</b>

## Nose Repair Templates 3D Plantilla Completa para Reparación de Narices



mm.		REF	Cross Ref	Adapters	Noses			
A	B						C	kg
221 8,70"	202 7,95"	241 9,49"	8,00 17,64	<b>WRTFT265-3D</b>	WRT-65SV2-3D	65SV2	WN-65SV2	<b>265</b>
244 9,61"	230 9,06"	259 10,20"	9,20 20,28	<b>WRTFT270-3D</b>	WRT-70SV2-3D	70SV2	WN-70SV2	<b>270</b>
260 10,24"	260 10,24"	285 11,22"	11,00 24,25	<b>WRTFT275-3D</b>	WRT-75SV2-3D	75SV2	WN-75SV2	<b>275</b>
276 10,87"	280 11,02"	312 12,28"	13,00 28,66	<b>WRTFT285-3D</b>	WRT-85SV2-3D	85SV2	WN-85SV2	<b>285</b>





## Using gauges to rebuild FUTURA T2 noses

There are two type of gauges available for the reconstruction of the FUTURA T2 noses.

The 2D gauge is best used as a quick check to establish de level of wearing of the nose.

The 3D gauge (cage style) allows for a thorough check of the nose surface.

Both 2D and 3D gauges might help with two aspects:

### Gap checking

It is recommended to rebuild a nose when the observed gap between the template and the nose is greater than 2mm.

### Rebuilding gap

The rebuilding gap would show the maximum gap allowance while working on welding reconstruction. Achieving a 0,3mm of gap would mean a perfect rebuilding of a nose has been carried out.

WARNING: The closer the geometry of the rebuilt nose matches the geometry of the template the better the results.

### Vertical check

Place vertical template as shown in fig. 1, check the highlight surfaces (fig. 2) indicating the key fitting areas. The observed gaps will help to determine if any rebuilding of the nose is needed.

Warning: The vertical template can **only** be used for the **center** of the nose due to the T2 specific geometry.

### Horizontal check

Place horizontal template as shown in fig. 3. It will allow to check two important aspects: the lateral gap and the position of the hole. Warning: to check the position of the pin, make sure the top of the nose and the bottom of the template are in the right position.

### 2D vs 3D cage

Never attempt to rebuild a nose just using 2D templates since they are designed for minor weld-works and to value the wear status of the nose.

To rebuild noses use the 3D template (fig 4)

## Utilización de galgas de reconstrucción para narices T2

Hay dos tipos de plantillas disponibles para la comprobación de las narices FUTURA T2.

La galga 2D se utiliza para hacer comprobaciones rápidas al establecer el nivel de desgaste de la nariz.

El calibre 3D (estilo jaula) permite una verificación más minuciosa de la superficie completa de la nariz.

Las galgas 2D y 3D pueden ayudar con dos aspectos:

### Comprobación desgaste

Se recomienda reconstruir una nariz cuando el espacio observado entre la plantilla y la nariz sea mayor de 2 mm.

### Reconstrucción de la nariz

La galga mostraría la tolerancia máxima mientras se trabaja en la reconstrucción de la nariz. Lograr reducir el hueco a 0,3 mm significaría que se ha llevado a cabo una reconstrucción perfecta de la nariz.

ATENCIÓN: Cuanto más se aproxime la geometría de la nariz reconstruida a la geometría de la plantilla, mejores resultados se obtendrán en la reconstrucción de la nariz.

### Comprobación vertical

Coloque la plantilla vertical en el centro de la nariz tal como se muestra (fig. 1) y verifique las zonas resaltadas (fig. 2) que indican las áreas clave de ajuste de la nariz. Los huecos observados ayudarán a determinar la necesidad de reconstruir la nariz.

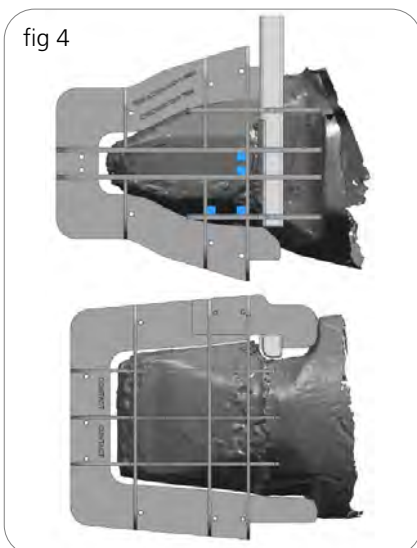
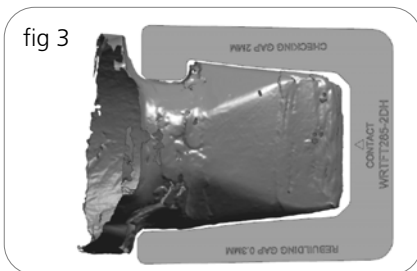
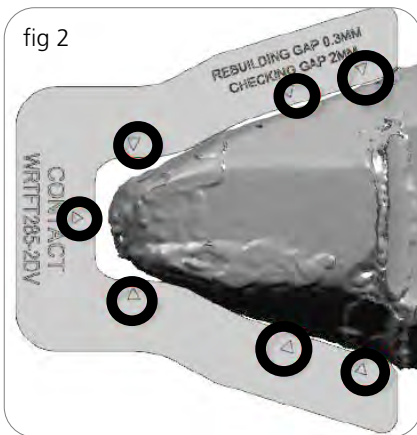
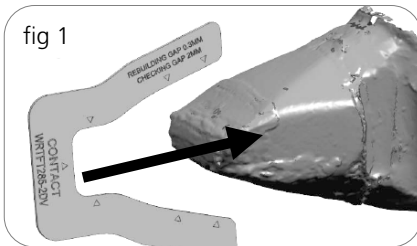
ATENCIÓN: La galga vertical sólo es válida en el centro de la nariz debido a la geometría característica de la gama T2. No utilice esta plantilla como referente si no está ubicada en el centro de la nariz.

### Comprobación horizontal

Coloque la plantilla horizontal como se muestra en la fig. 3. Permitirá verificar el desgaste lateral y la posición del rebaje del pasador. Para comprobar la posición de este rebaje asegúrese que la base de la plantilla esté bien colocada.

### Plantilla 2D o 3D

Nunca proceda a la reconstrucción de una nariz con plantillas 2D que están pensadas para soldaduras puntuales y para comprobar el estado del desgaste de la nariz. Para la reconstrucción de narices T2 utilice siempre plantillas 3D (fig. 4)







**Bold part number, available product**  
Other part numbers please consult

**Referencia en negrita producto disponible**  
Otras referencias consúltenos

# COMPATIBLE WITH HENSLEY XS<sup>®</sup>

# COMPATIBLE CON HENSLEY XS<sup>®</sup>



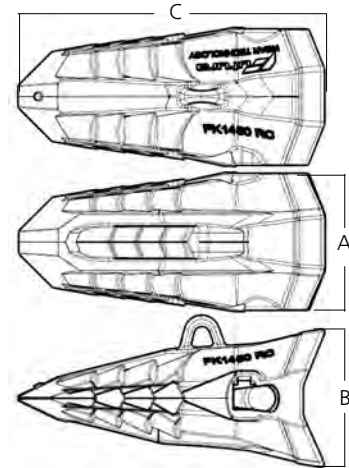
**FOR ROUND NOSE**  
PARA NARIZ REDONDA



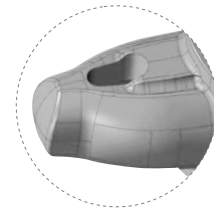
**FOR SQUARE NOSE**  
PARA NARIZ CUADRADA

RC	RPHD	TL	SYL	WC	X	LH-RH	CLH-CRH		PN	INT2
<b>FX850 RC</b> XS85RC	<b>FX850 RPHD</b> XS85RP2	<b>FX850 TL</b> XS85TV	<b>FX850 SYL</b> XS85SYL		<b>FX850-75</b> 1275XS85			85	<b>FX850 PN</b>	<b>FXK850 INT2</b>
<b>FX1150 RC</b> XS115RC	<b>FX1150 RPHD</b> XS115RP2	<b>FX1150 TL</b> XS115TV		<b>FX1150 WC</b> WC1150	<b>FX1150-75</b> 300XS115 <b>FX1150-90</b> 350XS115 <b>FX1150-90W</b> 1090MXS115 <b>FX1150 HD</b>	<b>FX1150-75 LHS</b> <b>FX1150-75 RHS</b> <b>FX1150-90W LHS</b> <b>FX1150-90W RHS</b>	<b>FX1150 C</b> 90XS115CC <b>FX1150 CST</b> <b>FX1150 HD</b>	115	<b>FX1150 PN</b>	
<b>FX1220 RC</b> XS122RC	<b>FX1220 RPHD</b> XS122RP3	<b>FX1220 TL</b> XS122TV		<b>FX1220 WC</b> WC122HX	<b>FX1220</b> 1090MXS122 <b>FX1220 HD</b>	<b>FX1220 LHS</b> <b>FX1220 RHS</b>	<b>FX1220 C</b> 90XS115CC <b>FX1220 CST</b> <b>FX1220 HD</b>	122		
<b>FX1450 RC</b> XS145RC	<b>FX1450 RPHD</b> XS145RP2	<b>FX1450 TL</b> XS145TV		<b>FX1450 WC</b> WC1450	<b>FX1450-100</b> 896XS145 <b>FX1450-120</b> 443XS145	<b>FX1450-100 LHS</b> <b>FX1450-100 RHS</b>	<b>FX1450 CLH</b> 120XS145CL <b>FX1450 CRH</b> 120XS145CR	145		
<b>FX1520 RC</b> XS152RC	<b>FX1520 RPHD</b> XS152RP2	<b>FX1520 TL</b> XS152TV		<b>FX1520 WC</b> WC152HX	<b>FX1520</b> 443XS152 <b>FX1520-100</b> 896XS152	<b>FX1520 LH</b> <b>FX1520 RH</b> <b>FX1520-100 LH</b> <b>FX1520-100 LHS</b> <b>FX1520-100 RH</b> <b>FX1520-100 RHS</b>	<b>FX1520 CLH</b> 475XS152CL <b>FX1520 CRH</b> 475XS152CR	152	<b>FX1450 PN2</b>	<b>FX1545 INT2</b>
<b>FX2500 RC</b> XS250RC		<b>FX2500 TL</b> XS250TV		<b>FX2500 WC</b> WC2500				250		
<b>FX2520 RC</b> XS252RC		<b>FX2520 TL</b> XS252TV		<b>FX2520 WC</b> WC252HX		<b>FX2520</b> <b>FX2520-120</b>	<b>FX2520 CLH</b> 550XS252CL <b>FX2520 CRH</b> 550XS252CR	252	<b>FX2500 PN</b>	
<b>FX3400 RC</b> XS340RC		<b>FX3400 TL</b> XS340TV		<b>FX3400 WC</b> WC3400				340	<b>FX3400 PN</b>	
<b>FX3420 RC</b> XS342RC		<b>FX3420 TL</b> XS342TV		<b>FX3420 WC</b> WC3420HX				342		

## RC Rock Chisel Diente Cincel Roca RC

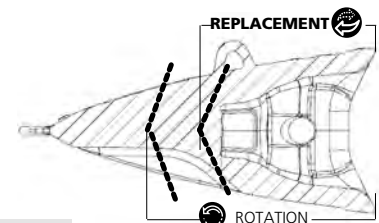
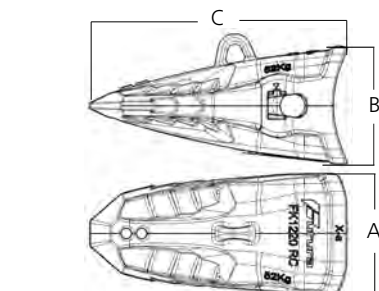


mm.			kg	REF	Cross Ref	OEM Pin	Weight		
A	B	C							
206 8,11"	183 7,20"	453 17,83"	28,60 63,05	<b>FX850 RC</b>	XS85 RC	FX850 PN	XS85PX XS85PC	FX850-75	<b>85</b>
245 9,65"	199 7,83"	507 19,96"	48,40 106,70	<b>FX1150 RC</b>	XS115 RC	FX1150 PN	XS115PX XS115PC	FX1150-90	<b>115</b>
259 10,20"	233 9,17"	549 21,61"	62,00 136,68	<b>FX1450 RC</b>	XS145 RC	FX1450 PN2	XS145PX XS145PC	FX1450-120	<b>145</b>
295 11,61"	257 10,12"	601 23,66"	90,00 198,41	<b>FX2500 RC</b>	XS250 RC	FX2500 PN	XS250PX XS250PC	FX2500-140	<b>250</b>
259 10,20"	233 9,17"	549 21,61"	117,90 259,92	<b>FX3400 RC</b>	XS340 RC	FX3400 PN	XS3400PX	FX3400	<b>340</b>

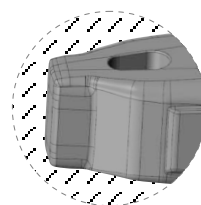


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PARA NARIZ REDONDA

## RC Rock Chisel Diente Cincel Roca RC



mm.			kg	REF	Cross Ref	Rotation	Rotation	OEM Pin	Weight	
A	B	C								
224 8,82"	219 8,62"	480 18,90"	52,00 114,64	<b>FX1220 RC</b>	XS122RC	0,00°	0,00°	FX1150 PN	XS115PX XS115PC	<b>122</b>
253 9,96"	240 9,45"	535 21,06"	72,00 158,73	<b>FX1520 RC</b>	XS152RC	0,00°	0,00°	FX1450 PN2	XS145PX XS145PC	<b>152</b>
285 11,22"	293 11,54"	597 23,50"	113,00 249,12	<b>FX2520 RC</b>	XS252RC	0,00°	0,00°	FX2500 PN	XS250PX XS250PC	<b>252</b>
285 11,22"	315 12,40"	621 24,45"	121,00 266,75	<b>FX3420 RC</b>	XS342RC	433 17,05°	333 13,11°	FX3400 PN	XS3400PX	<b>342</b>



**FOR SQUARE NOSE**  
PARA NARIZ CUADRADA



## TL Tiger Long Diente TL



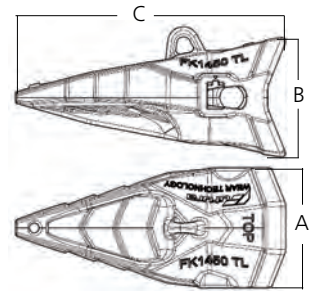
WEAR FACTOR | DESGASTE



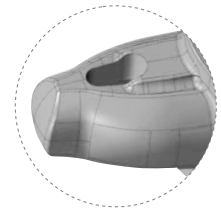
PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.				REF	Cross Ref		OEM Pin		
A	B	C							
192	192	440	26,00	<b>FX850 TL</b>	XS85TV	FX850 PN	XS85PX XS85PC	FX850-75	<b>85</b>
7,56"	7,56"	17,32"	57,32						
214	219	485	38,50	<b>FX1150 TL</b>	XS115 TL	FX1150 PN	XS115PX XS115PC	FX1150-90	<b>115</b>
8,43"	8,62"	19,09"	84,88						
240	239	540	51,50	<b>FX1450 TL</b>	XS145 TL	FX1450 PN2	XS145PX XS145PC	FX1450-120	<b>145</b>
9,45"	9,41"	21,26"	113,54						
280	275	612	84,00	<b>FX2500 TL</b>	XS250 TL	FX2500 PN	XS250PX XS250PC	FX2500-140	<b>250</b>
11,02"	10,83"	24,09"	185,19						
0,00"	0,00"	0,00"	0,00	FX3400 TL	XS340 TL	FX3400 PN	XS3400PX	FX3400	<b>340</b>



**FOR ROUND NOSE**  
PARA NARIZ REDONDA

## TL Tiger Long Diente TL



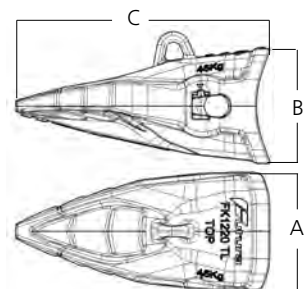
WEAR FACTOR | DESGASTE



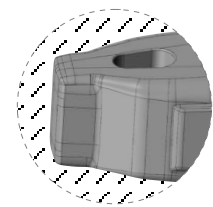
PENETRATION | PENETRACIÓN



IMPACT | IMPACTO

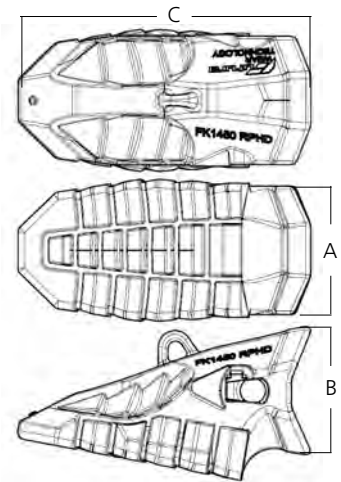
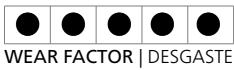


mm.				REF	Cross Ref		OEM Pin		
A	B	C							
224	219	482	45,00	<b>FX1220 TL</b>	XS122TL	FX1150 PN	XS115PX XS115PC	<b>122</b>	
8,82"	8,62"	18,98"	99,21						
253	240	540	62,00	<b>FX1520 TL</b>	XS152TL	FX1450 PN2	XS145PX XS145PC	<b>152</b>	
9,96"	9,45"	21,26"	136,68						
285	293	615	99,00	<b>FX2520 TL</b>	XS252TL	FX2500 PN	XS250PX XS250PC	<b>252</b>	
11,22"	11,54"	24,21"	218,25						
285	315	662	112,00	<b>FX3420 TL</b>	XS342TL	FX3400 PN	XS3400PX	<b>342</b>	
11,22"	12,40"	26,06"	246,91						

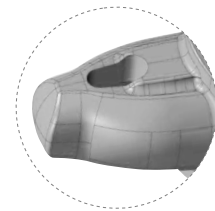


**FOR SQUARE NOSE**  
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## RPHD Rock Penetration HD Diente Penetración Roca HD

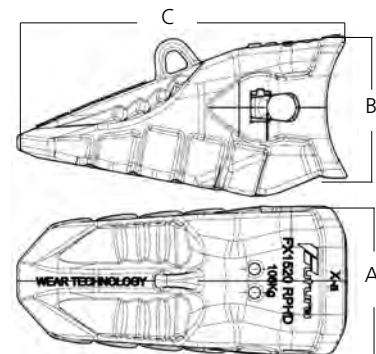


mm.				REF	Cross Ref	OEM PIN	FX	85
A	B	C	Weight					
192 7,56"	202 7,95"	439 17,28"	54,00 119,05	<b>FX850 RPHD</b>	XS85RP3	FX850 PN	XS85PX XS85PC	FX850-75
245 9,65"	199 7,83"	507 19,96"	71,20 156,97	<b>FX1150 RPHD</b>	XS115RP2	FX1150 PN	XS115PX XS115PC	FX1150-90
259 10,20"	233 9,17"	549 21,61"	107,60 237,21	<b>FX1450 RPHD</b>	XS145RP2	FX1450 PN2	XS145PX XS145PC	FX1450-120

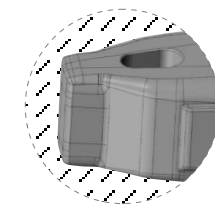


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## RPHD Rock Penetration HD Diente Penetración Roca HD

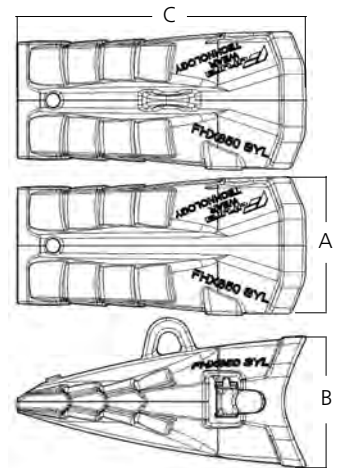


mm.				REF	Cross Ref	OEM Pin	FX	122
A	B	C	Weight					
223 8,78"	223 8,78"	491 19,33"	73,00 160,93	<b>FX1220 RPHD</b>	XS122RP3	FX1150 PN	XS115PX XS115PC	FX1220-90
253 9,96"	240 9,45"	555 21,85"	106,00 233,69	<b>FX1520 RPHD</b>	XS152RP2	FX1450 PN2	XS145PX XS145PC	FX1520-120

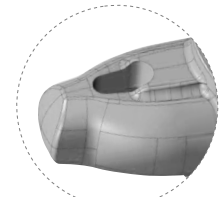


**FOR SQUARE NOSE**  
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## SYL SYMMETRIC Diente Simétrico SYL

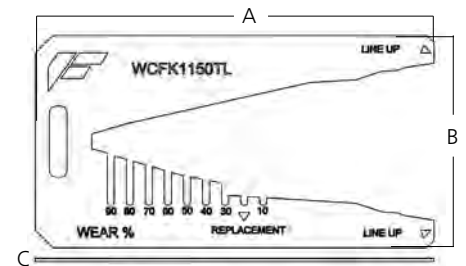
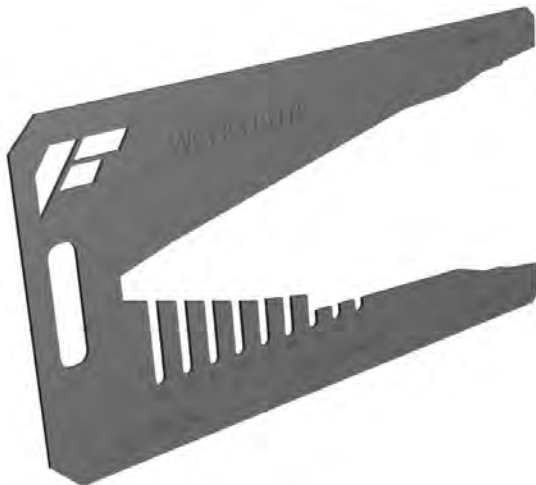


mm.			REF	Cross Ref	OEM Pin	FX850-75	85
A	B	C					
192	185	403	<b>FX850 SYL</b>	XS85SYL	FX850 PN	XS85PX XS85PC	
7,56"	7,28"	15,87"					

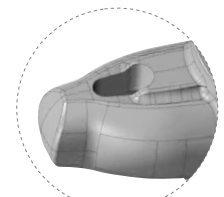


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## Wear Checking Template Plantilla Comprobación Desgaste



mm.			REF	Tooth	85
A	B	C			
520	260	4	<b>WCFX850TL</b>	FX850 TL	
20,47"	10,24"	0,16"			
565	300	4	<b>WCFK1150TL</b>	FX1150 TL	<b>115</b>
22,24"	11,81"	0,16"			
605	320	4	<b>WCFK1450TL</b>	FX1450 TL	<b>145</b>
23,82"	12,60"	0,16"			



**FOR ROUND NOSE**  
PARA NARIZ REDONDA

# Excavator Adapter Portadientes Soldable Excavadora



Fig. 1

Fig. 2

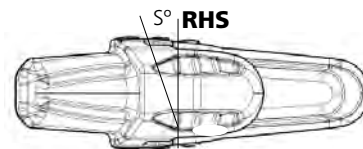
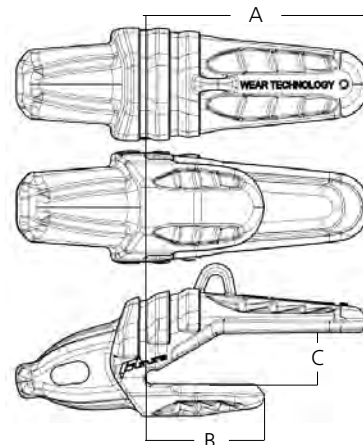
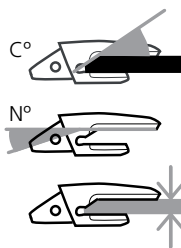
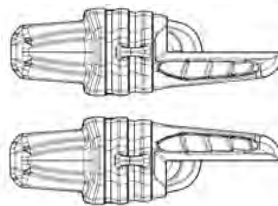
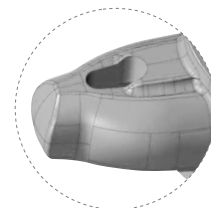


Fig. 3

**FX1150-90 LH**



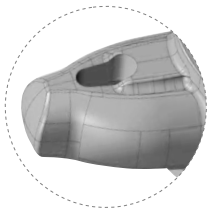
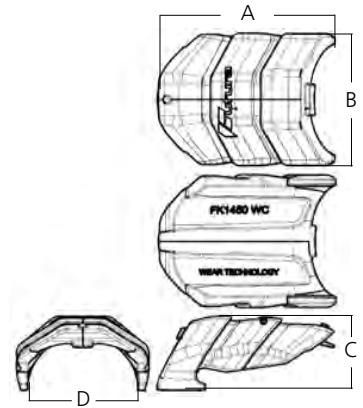
**FX1150-90 RH**



mm.		C	C°	N°	S°			REF	Cross Ref				
A	B												
366 14,41"	190 7,48"	76,5 3,01"	30	10	<b>75</b>	3"	48,70 107,36	<b>FX850-75</b>	1275XS85 1300XS85	Fig 1	FX850 PN	<b>85</b>	
412 16,22"	308 12,13"	78 3,07"	30	10	15	<b>75</b>	3"	<b>FX1150-75</b>	300XS115	FX1150WC	FX1150 PN	<b>115</b>	
412 16,22"	308 12,13"	78 3,07"						<b>FX1150-75 LHS</b>	302XS115	FX1150WC			
412 16,22"	308 12,13"	78 3,07"	30	10	15	<b>75</b>	3"	<b>FX1150-75 RHS</b>	302XS115	FX1150WC	FX1150 PN	<b>115</b>	
412 16,22"	308 12,13"	93 3,66"						<b>FX1150-90</b>	350XS115	Fig 1			
412 16,22"	308 12,13"	93 3,66"	30	10	<b>90</b>	3,5"	57,50 126,76	<b>FX1150-90 LH</b>	350XS115	Fig 3	FX1150 PN	<b>115</b>	
412 16,22"	308 12,13"	93 3,66"					57,50 126,76	<b>FX1150-90 RH</b>	350XS115	Fig 3			
412 16,22"	308 12,13"	93 3,66"	30	10	15	<b>90</b>	3,5"	64,30 141,75	<b>FX1150-90W</b>	1090MXS115	FX1150WC	FX1150 PN	<b>145</b>
412 16,22"	308 12,13"	93 3,66"						69,00 152,12	<b>FX1150-90W LHS</b>	1090MXS115L	FX1150WC		
412 16,22"	308 12,13"	93 3,66"	30	10	15	<b>90</b>	3,5"	69,00 152,12	<b>FX1150-90W RHS</b>	1090MXS115R	FX1150WC	FX1150 PN	<b>145</b>
412 16,22"	308 12,13"	93 3,66"						69,00 152,12	<b>FX1150 HD</b>	-	-		
460 18,11"	370 14,57"	104 4,09"	30	10	15	<b>100</b>	4"	105,00 231,48	<b>FX1450-100</b>	896XS145	FX1450WC	FX1450 PN2	<b>145</b>
460 18,11"	376 14,80"	104 4,09"	108,00 238,10	<b>FX1450-100 LHS</b>				894XS145	FX1450WC	FX1450 PN2			
460 18,11"	376 14,80"	104 4,09"	30	10	15	<b>100</b>	4"	108,00 238,10	<b>FX1450-100 RHS</b>	895XS145	FX1450WC	FX1450 PN2	<b>145</b>
512 20,16"	367 14,45"	125 4,92"	30	10	<b>120</b>	4,7"	105,00 231,48	<b>FX1450-120</b>	443XS145	FX1450WC	FX1450 PN2		



## Wear Cap Protector Portadientes

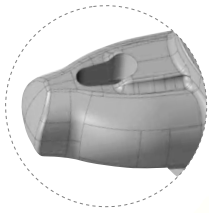


**FOR ROUND NOSE**  
**PARA NARIZ REDONDA**

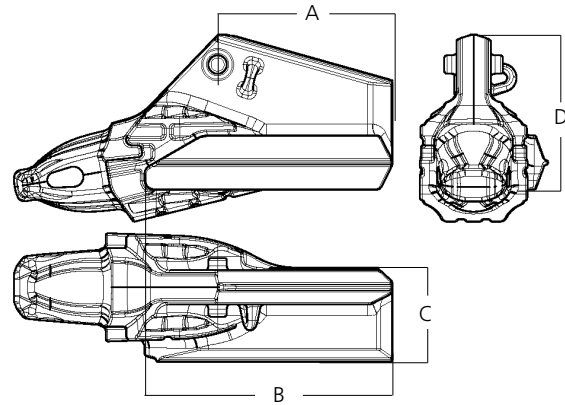
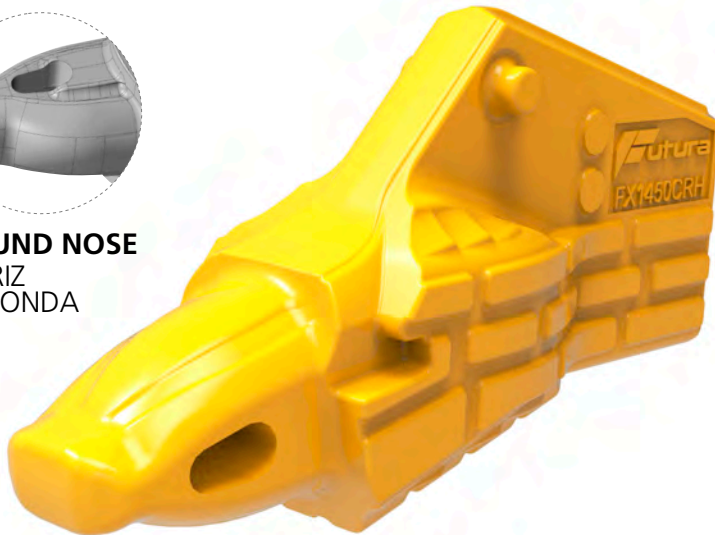


mm.		in.													
A	B	C	D							REF	Cross Ref				
188	7,40"	201	7,91"	116	4,57"	173,8	6,84"	6,38	14,07	<b>FX1150 WC</b>	WC1150	FX1150-75 FX1150-75 LHS FX1150-75 RHS FX1150-90W FX1150-90W LHS FX1150-90W RHS	<b>115</b>		
319	12,56"	233	9,17"	133	5,24"	196	7,72"	15,00	33,07	<b>FX1450 WC</b>	WC1450	FX1450-100 FX1450-100 LH FX1450-100 RH	<b>145</b>		
366	14,41"	263	10,35"	133	5,24"	213	8,39"	17,00	37,48	<b>FX2500 WC</b>	WC2500	FX2500-140	<b>250</b>		
391	15,39"	264	10,39"	152	5,98"	218	8,58"	23,00	50,71	<b>FX3400 WC</b>	WC3400	FX3400	<b>340</b>		
295	11,61"	325	12,80"	187	7,36"	254	10,00"	43,00	94,80	<b>FX3900 WC</b>	WC3900		<b>390</b>		

## Cast Corners Protectores Esquineros Fundidos



**ROUND NOSE**  
NARIZ  
REDONDA

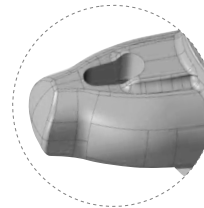


mm.											REF	Cross Ref		
A	B	C	D	C°	N°									
420	490	292	244	30	10	<b>70</b>	2,75"	<b>90</b>	3,5"	175 385,80	<b>FX1150 C</b>	90XS115CC	FX1150 PN	<b>145</b>
387	523	203	343	30	10	<b>76</b>	3"	<b>120</b>	4,7"	232 511,46	<b>FX1450 CLH</b>	120XS145CC	FX1450 PN2	<b>145</b>
											<b>FX1450 CRH</b>	120XS145CC		

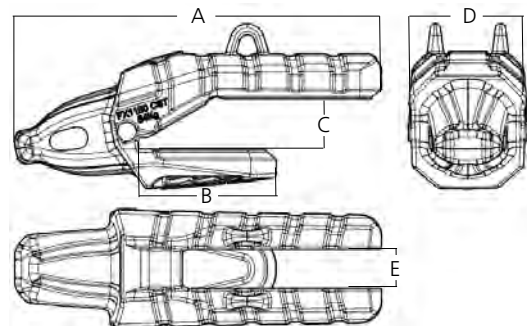
## Straddle & HD Cast Corners Protectores Esquineros Tipo Horquilla y HD



**FX1150 HD**

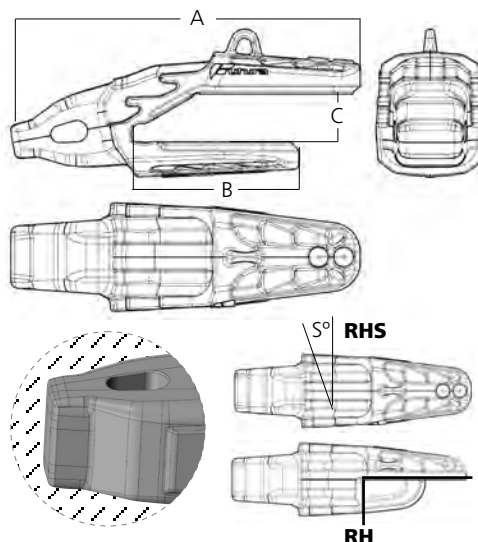
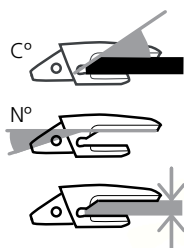


**ROUND NOSE**  
NARIZ  
REDONDA



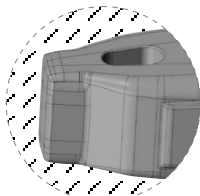
mm.											REF	Cross Ref			
A	B	C	D	E	C°	N°									
688	253	92	209	72	30	10	<b>70</b>	3"	<b>90</b>	3,5"	84 185,19	<b>FX1150 CST</b>	356XS115SL	FX1150 PN	<b>122</b>
688	253	92	209		30	10	<b>70</b>	3"	<b>90</b>	3,5"	97 213,84	<b>FX1150 HD</b>			

## Excavator Adapter Portadientes Soldable Excavadora

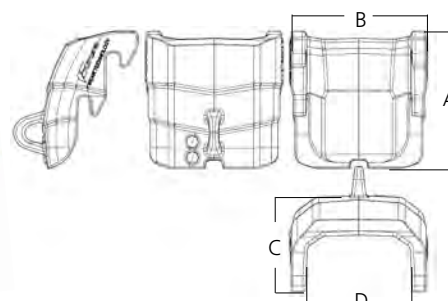


mm.		C	C°	N°	S°			Lbs	REF	Cross Ref				
A	B													
					-			74,00	163,14	<b>FX1220</b>	1090MXS122			
624	297	92	30	10	-	<b>90</b>	3,5"	103,00	227,07	<b>FX1220 HD</b>				
24,57"	11,69"	3,62"			15			76,00	167,55	<b>FX1220 LHS</b>	1090MXS122L	FX1150 PN	FX1220 WC	<b>122</b>
					15			76,00	167,55	<b>FX1220 RHS</b>	1090MXS122L			
					-			112,00	246,91	<b>FX1520-100</b>	896XS152		FX1520 WC	
754	366	104	30	10	-	<b>100</b>	4"	97,50	214,95	<b>FX1520-100 LH</b>	896XS152		FX1520 WCLH	
29,69"	14,41"	4,09"			-			97,50	214,95	<b>FX1520-100 RH</b>	896XS152	FX1450 PN2	FX1520 WCRH	
754	358	104			15			116,00	255,73	<b>FX1520-100 LHS</b>	896XS152		FX1520 WC	<b>152</b>
29,69"	14,09"	4,09"			15			116,00	255,73	<b>FX1520-100 RHS</b>	896XS152			
					-			112,00	246,91	<b>FX1520</b>	443XS152		FX1520 WC	
764	344	123	30	10	-	<b>120</b>	4,7"	99,00	218,25	<b>FX1520 LH</b>	443XS152	FX1450 PN2	FX1520 WCLH	
30,08"	13,54"	4,84"			-			99,00	218,25	<b>FX1520 RH</b>	443XS152		FX1520 WCRH	
883	366	122	30	10	-	<b>120</b>	4,7"	165,00	363,76	<b>FX2520-120</b>	257XS252	FX2500 PN	FX2520 WC	<b>252</b>
34,76"	14,41"	4,80"			-			165,00	363,76	<b>FX2520</b>	255XS252			
883	366	142	30	10	-	<b>140</b>	5,5"	165,00	363,76	<b>FX2520</b>	255XS252			
34,76"	14,41"	5,59"			-									

## Wear Cap Protector Portadientes

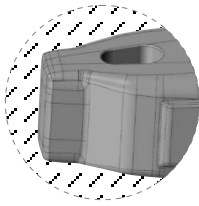


**FOR SQUARE NOSE**  
 PARA NARIZ CUADRADA

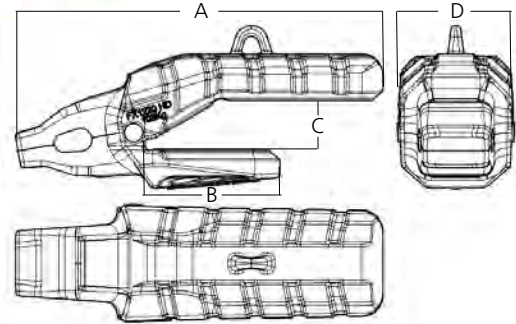
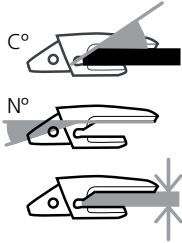


mm.		in			REF	Cross Ref							
A	B	C	D										
199	7,83"	210	8,27"	136	5,35"	166	6,55"	9,30	20,50	<b>FX1220 WC</b>	WC122HX	FX1220 FX120 LHS, FX1220 RHS	<b>122</b>
233	9,17"	230	9,06"	161	6,34"	181	7,13"	15,30	33,73	<b>FX1520 WC</b>	WC152HX	FX1520-100 FX1520-100 LHS, FX1220-100 RHS	
228	8,98"	230	9,06"	124	4,88"	181	7,13"	14,60	32,19	<b>FX1520 WCLH</b>		FX1520-100 LH F1520 LH	<b>152</b>
228	8,98"	230	9,06"	124	4,88"	181	7,13"	14,60	32,19	<b>FX1520 WCRH</b>		FX1520-100 RH F1520 RH	
258	10,16"	267	10,51"	185	7,28"	210	8,27"	22,00	48,50	<b>FX2520 WC</b>	WC252HX	FX2520 FX2520-120	<b>252</b>
304	11,97"	269	10,59"	202	7,95"	204	8,03"	27,20	59,96	<b>FX3420 WC</b>	WC342HX		<b>342</b>

Cast Corners Protectores Esquineros Fundidos

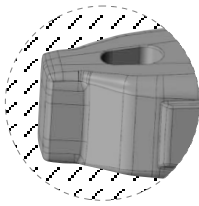


**SQUARE NOSE**  
NARIZ  
CUADRADA

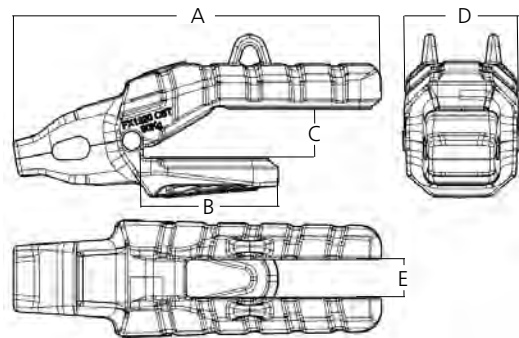
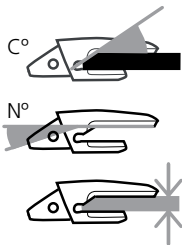


mm.											REF	Cross Ref	
A	B	C	D	C°	N°								
687	253	92	209	30	10	70	3"	90	3,5"	103	<b>FX1220 HD</b>	FX1150 PN	<b>122</b>
27,05"	9,96"	3,62"	8,23"							227,07			

Straddle Cast Corners Protectores Esquineros Tipo Horquilla

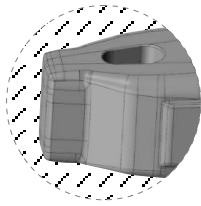


**SQUARE NOSE**  
NARIZ  
CUADRADA

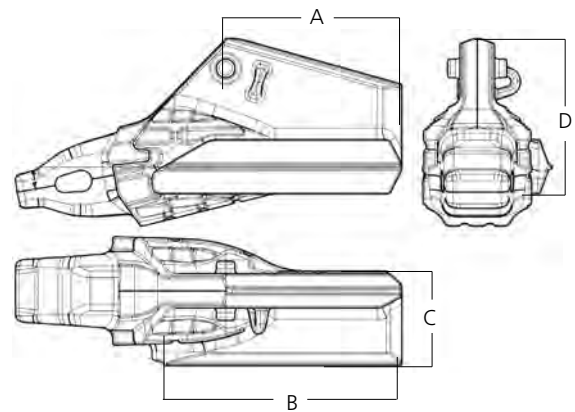
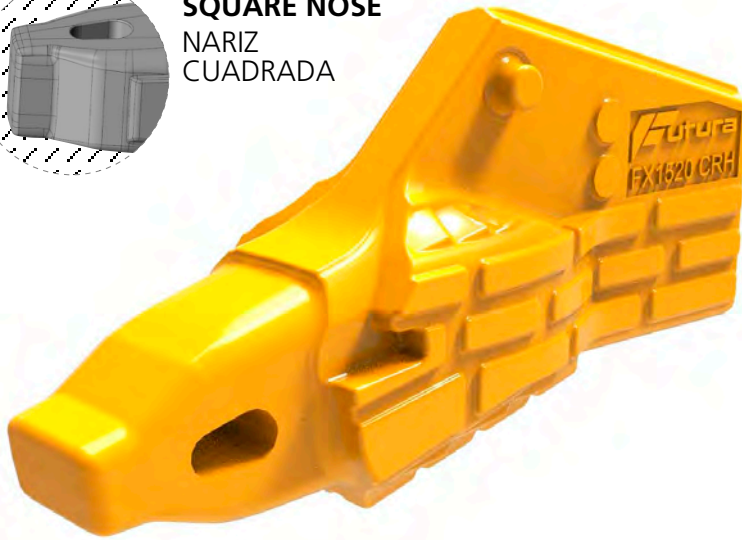


mm.											REF	Cross Ref			
A	B	C	D	E	C°	N°									
688	253	92	209	72	30	10	70	3"	90	3,5"	90	<b>FX1220 CST</b>	356XS122SL	FX1150 PN	<b>122</b>
27,09"	9,96"	3,62"	8,23"	2,83"							198,41				

## Cast Corners Protectores Esquineros Fundidos

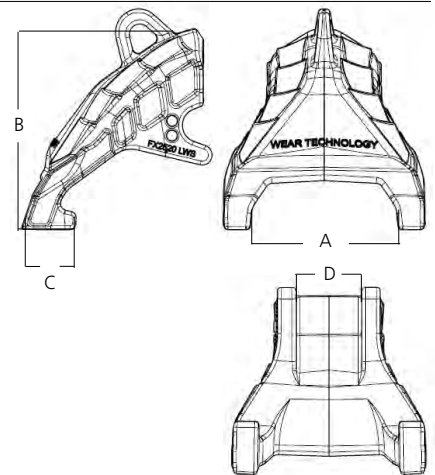


**SQUARE NOSE**  
 NARIZ CUADRADA



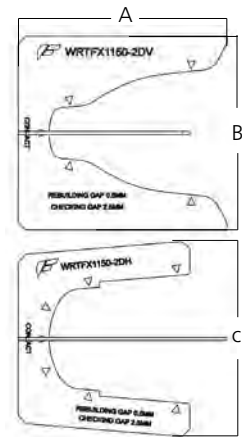
mm.											REF	Cross Ref		
A	B	C	D	C°	N°									
420 16,54"	490 19,29"	292 11,50"	244 9,61"	30	10	<b>70</b>	2,75"	<b>90</b>	3,5"	182 401,23	<b>FX1220 C</b>	90XS115CC	FX1150 PN	<b>122</b>
387 15,24"	523 20,59"	203 7,99"	343 13,50"	30	10	<b>76</b>	3"	<b>120</b>	4,7"	238 524,69	<b>FX1520 CLH</b> <b>FX1520 CRH</b>	475XS152CL 475XS152CR	FX1450 PN2	<b>152</b>
445 17,52"	534 21,02"	216 8,50"	327 12,87"	30	10	<b>90</b>	3,5"	<b>140</b>	5,5"	266 586,42	<b>FX2520 CLH</b> <b>FX2520 CRH</b>	550XS252CL 550XS252CR	FX2500 PN	<b>252</b>

## Lower Wing Shrouds Protectores Laterales

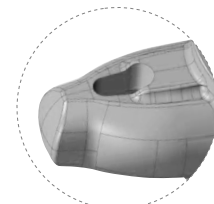


mm.								REF	Cross Ref	
A	B	C	D							
178 7,01"	235 9,25"	79 3,11"	80 3,15"	<b>80</b>	3,2"	20,00 44,09	<b>FX1520 LWS</b>	475WS152	<b>1520</b>	
199 7,83"	262 10,31"	73 2,87"	91,5 3,60"	<b>90</b>	4"	25,50 56,22	<b>FX2520 LWS</b>	550WS252	<b>2520</b>	
193 7,60"	307 12,09"	105 4,13"	91,5 3,60"	<b>90</b>	4"	32,75 72,20	<b>FX3420 LWS</b>	550WS342	<b>3420</b>	
278 10,94"	353 13,90"	108 4,25"	122 4,80"	<b>122</b>	4,8"	65,20 143,74	<b>FX3900 LWS</b>	625WS390	<b>3900</b>	

## Nose Checking Templates 2D Plantilla para Comprobación de Narices

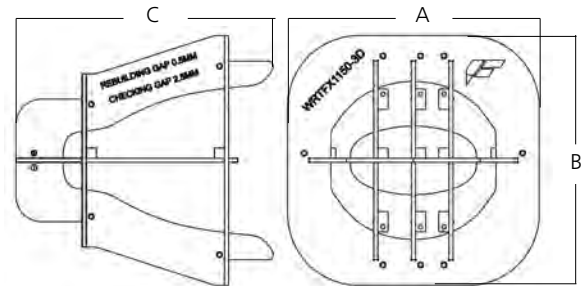


mm.				REF	ADAPTER NOSE SIZE	
A	B	C				
226 8,90"	254 10,00"	247 9,72"	1,90 4,19	<b>WRTFX1150-2D</b>	FX1150	<b>115</b>
283 11,14"	260 10,24"	290 11,42"	3,70 8,16	<b>WRTFX1450-2D</b>	FX1450	<b>145</b>

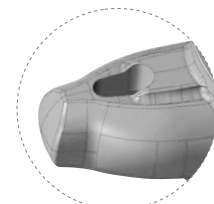


**FOR ROUND NOSE**  
PARA NARIZ REDONDA

## Nose Repair Templates 3D Plantilla Completa para Reparación de Narices



mm.				REF	ADAPTER NOSE SIZE	
A	B	C				
247 9,72"	245 9,65"	252 9,92"	4,80 10,58	<b>WRTFX1150-3D</b>	FX1150	<b>115</b>
281 11,06"	274 10,79"	292 11,50"	6,00 13,23	<b>WRTFX1450-3D</b>	FX1450	<b>145</b>



**FOR ROUND NOSE**  
PARA NARIZ REDONDA

## Hammerless Pin Pasador Hammerless

**EXTFDS**  
EXTRACTION  
TOOL

**OR**  
**STANDARD**  
**SCREWDRIVER**

mm.				REF	Cross Ref	Part Number	Weight
A	B	L	Weight				
32,7 1,29"	62 2,44"	186 7,32"	2,13 4,70	<b>FX850 PN</b>	XS85PX, XS85PC	<b>FXK850 INT2</b>	<b>85</b>
38,2 1,50"	69 2,72"	211 8,31"	2,50 5,51	<b>FX1150 PN</b>	XS115PX, XS115PC		<b>115</b> <b>122</b>
43,4 1,71"	74,5 2,93"	233 9,17"	3,80 8,38	<b>FX1450 PN2</b>	XS145PX, XS145PC		<b>145</b> <b>152</b>
47,8 1,88"	85 3,35"	260 10,24"	5,00 11,02	<b>FX2500 PN</b>	XS250PX, XS250PC	<b>FX1545 INT2</b>	<b>250</b> <b>252</b>
46,6 1,83"	88,2 3,47"	257,3 10,13"	5,50 12,13	<b>FX3400 PN</b>	XS3400PX		<b>340</b> <b>342</b>

**FX1545 INT2**  
LOCK  
REPLACEMENT

## Hammerless Assembly Montaje Hammerless

**EXTFDS**

**STANDARD**

**LOCKING  
TAB**  
PESTAÑA  
DE ENCAJE

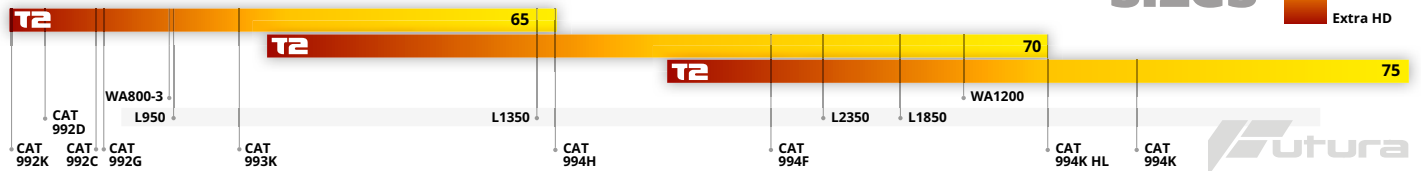
Guide to Nose Sizes Guía para la Selección de Tallas



wheel loader buckets  
 up to 44m<sup>3</sup>

guide  
 to nose  
 sizes

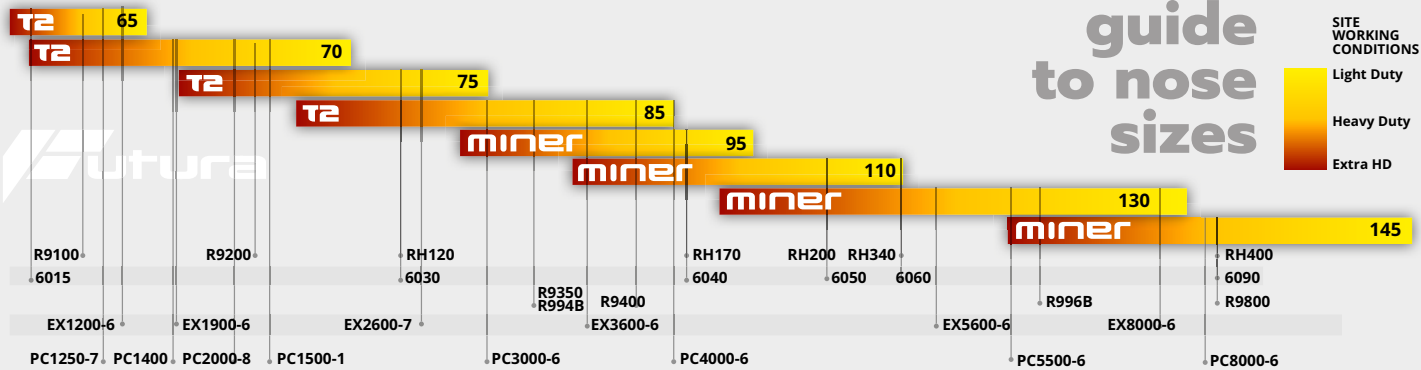
SITE WORKING CONDITIONS  
 Light Duty  
 Heavy Duty  
 Extra HD



face shovel buckets  
 up to 42m<sup>3</sup>

guide  
 to nose  
 sizes

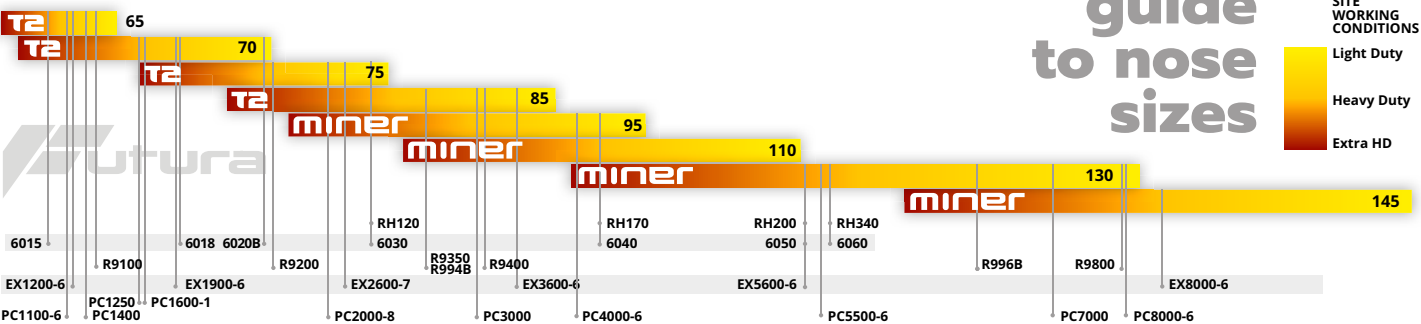
SITE WORKING CONDITIONS  
 Light Duty  
 Heavy Duty  
 Extra HD



backhoe excavator buckets  
 up to 42m<sup>3</sup>

guide  
 to nose  
 sizes

SITE WORKING CONDITIONS  
 Light Duty  
 Heavy Duty  
 Extra HD







# miner

## COMPATIBLE WITH HENSLEY TS® COMPATIBLE HENSLEY TS®

# RC Tooth Diente Cincel Roca

● ● ●

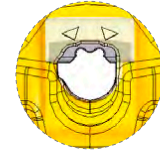
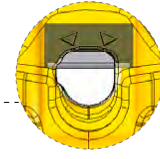
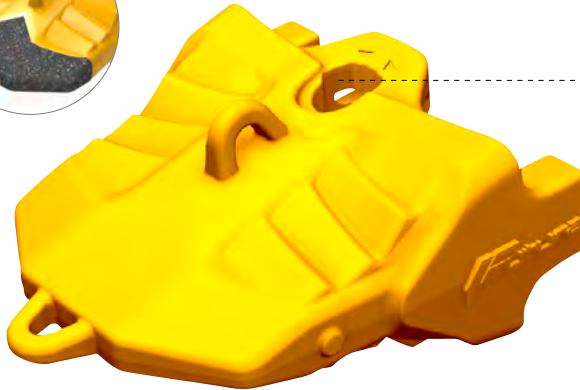
WEAR FACTOR | DESGASTE

● ● ● ● ●

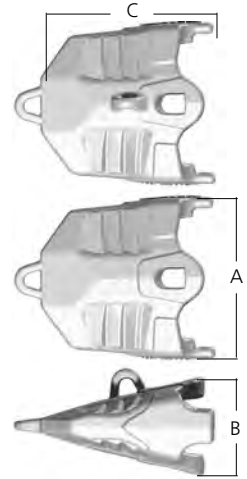
PENETRATION | PENETRACIÓN

● ● ●

IMPACT | IMPACTO

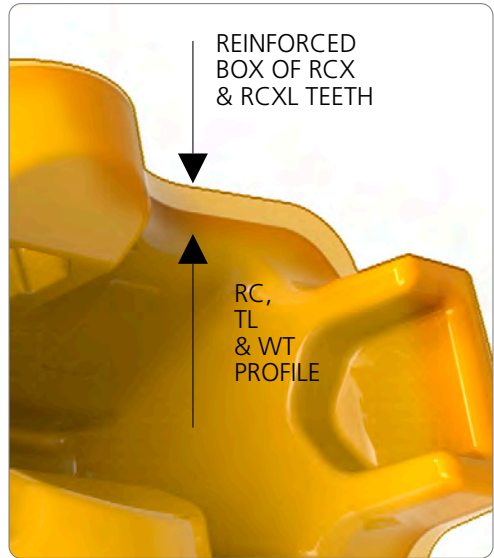
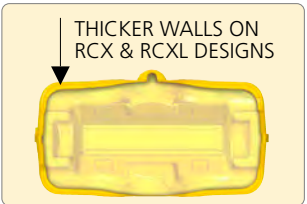


HL HAMMERLESS



# RC

mm.				REF	Cross Ref	Cross Ref	REF	REF	REF	SIZE
A	B	C	KG							
327 12,87"	185 7,28"	351 13,82"	58,16 128,22	<b>FM920 RC</b> <b>FM920 RC-ARM</b> <b>FM920 RCHL</b>	DRP 92KHA	DRP 92TKHA	FM920 PN	FM920 HLK	FX3900-920 IA	<b>390</b>
380 14,96"	199 7,83"	363 14,29"	74,00 163,14	<b>FM1120 RC</b> <b>FM1120 RC-ARM</b> <b>FM1120 RCHL</b>	DRP 112KH	DRP 112TKH	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>640</b>
441 17,36"	232 9,13"	400 15,75"	105,00 231,48	<b>FM1220 RC</b> <b>FM1220 RCHL</b>	DRP 122KH	DRP 122 TKH	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>800</b>



# RCX

# RCXL

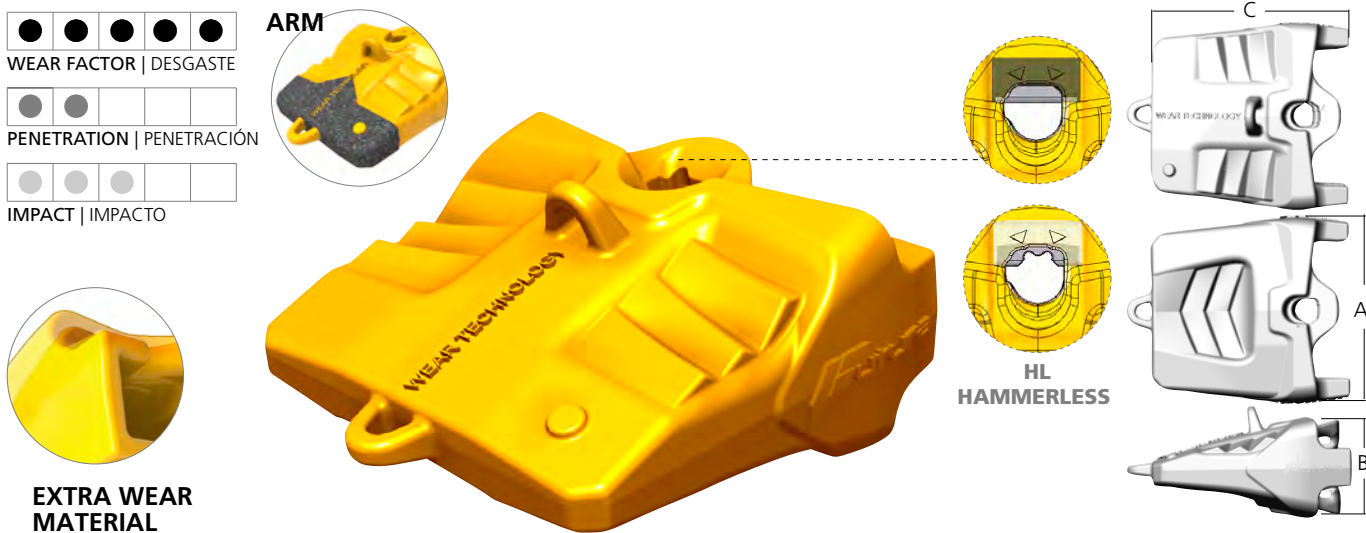


## RCX Rock Chisel Tooth Diente Cincel Roca RCX



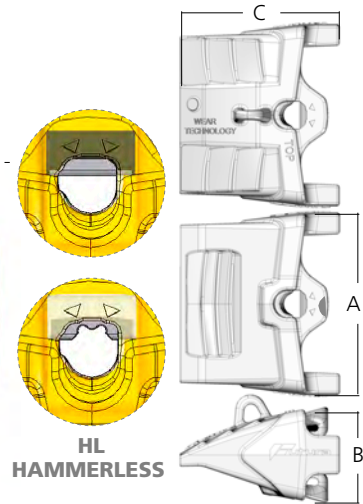
mm.				REF	Cross Ref	Cross Ref				SIZE
A	B	C								
344	185	349	64	<b>FM920 RCX</b> <b>FM920 RCX-ARM</b> <b>FM920 RCXHL</b>	DRP 92KHMA	DRP 92TKHMA	FM920 PN	FM920 HLK	FX3900-920 IA	<b>390</b>
13,54"	7,28"	13,74"	141,09							
401	200	363	82	<b>FM1120 RCX</b> <b>FM1120 RCXHL</b>	DRP 112KHMA	DRP 112TKHMA	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>640</b>
15,79"	7,87"	14,29"	180,78							
469	236	400	119	<b>FM1220 RCX</b> <b>FM1220 RCXHL</b>	DRP 122KHMA	DRP 122TKHMA	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>800</b>
18,46"	9,29"	15,75"	262,35							

## RCXL Rock Chisel Tooth Diente Cincel Roca RCXL



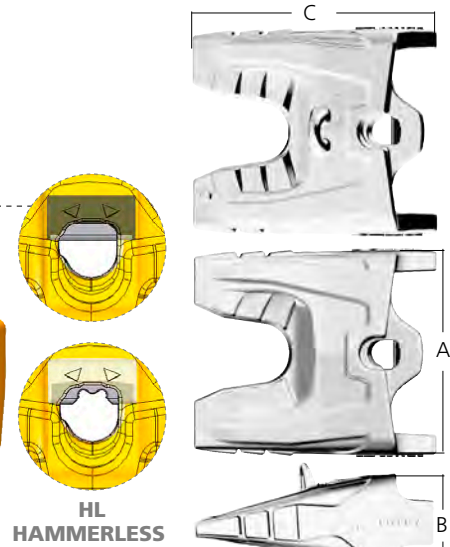
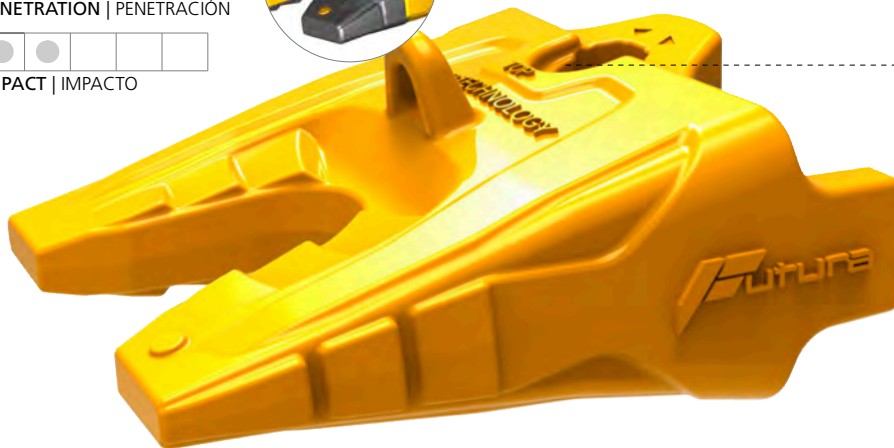
mm.				REF	Cross Ref	Cross Ref				SIZE
A	B	C								
344	185	396	77,00	<b>FM920 RCXL</b> <b>FM920 RCXLHL</b>	DRP 92KHRML	DRP 92TKHRML	FM920 PN	FM920 HLK	FX3900-920 IA	<b>390</b>
13,54"	7,28"	15,59"	169,75							
401	200	417	99,00	<b>FM1120 RCXL</b> <b>FM1120 RCXL-ARM</b> <b>FM1120 RCXLHL</b>	DRP 112KHRML	DRP 112TKHRML	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>640</b>
15,79"	7,87"	16,42"	218,25							
469	236	425	134,00	<b>FM1220 RCXL</b> <b>FM1220 RCXLHL</b>	DRP 122KRXL	DRP 122TKRXL	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>800</b>
18,46"	9,29"	16,73"	295,41							

## TL Tooth Diente Tiger Long



mm.				REF	Cross Ref				SIZE
A	B	C							
				FM920 TL	DRP 92TKAT	FM920 PN	FM920 HLK	FX3900-920 IA	<b>390</b>
380 14,96"	199 7,83"	332 13,07"	65,00 143,30	<b>FM1120 TL</b> <b>FM1120 TL-ARM</b> <b>FM1120 TLHL</b>	DRP 112TKAT	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>640</b>
441 17,36"	231 9,09"	393 15,47"	191,00 7,52"	<b>FM1220 TL</b> <b>FM1220 TLHL</b>	DRP 122KAT 122TKAT	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>800</b>

## WT Twin Tiger Tooth Diente Twin Tiger



mm.				REF	Cross Ref				SIZE
A	B	C							
315 12,40"	143 5,63"	342 13,46"	42,00 92,59	<b>FM920 WT</b> <b>FM920 WTHL</b>	DRP 92KTVL 92TKTVL	FM920 PN	FM920 HLK	FX3900-920 IA	<b>390</b>
359 14,13"	199 7,83"	332 13,07"	75,00 165,34	<b>FM1120 WT</b> <b>FM1120 WT-ARM</b> <b>FM1120 WTHL</b>	DRP 112KTVL 112TKVL	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>640</b>
441 17,36"	231 9,09"	400 15,75"	191,00 7,52"	<b>FM1220 WT</b> <b>FM1220 WTHL</b>	DRP 122KTV 122TKTV	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>800</b>

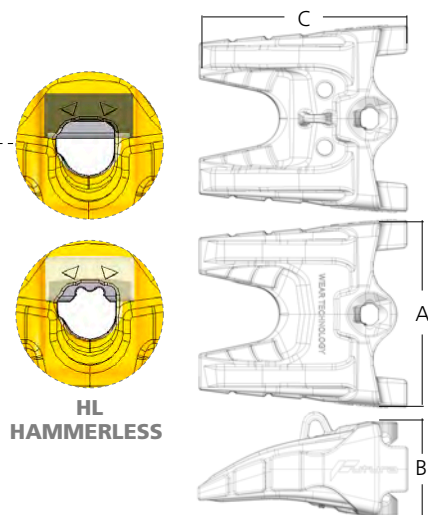
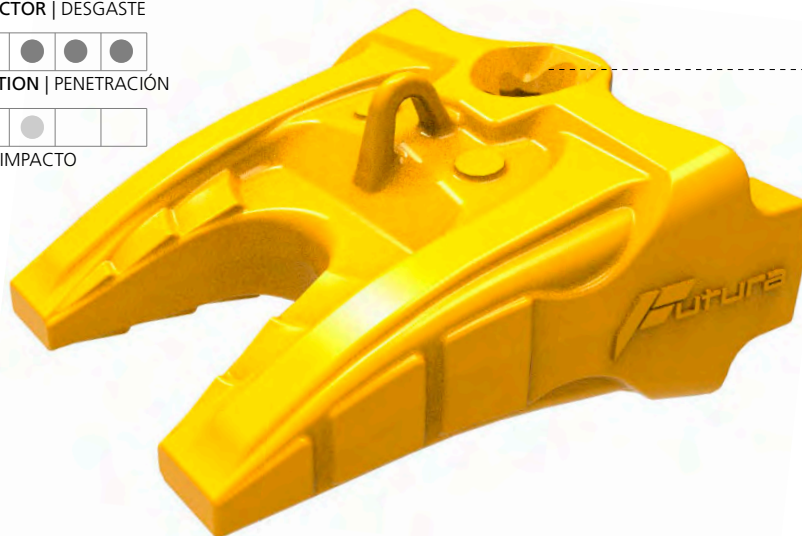
# WTL Twin Tiger Tooth Diente Twin Tiger Long



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

IMPACT | IMPACTO



mm.				REF	Cross Ref	FM1220 PN	FM1220 HLK	FM1450-1220 IA	SIZE
A	B	C							
469 18,46"	237 9,33"	520 20,47"	94,00 3,70"	<b>FM1220 WTL</b> <b>FM1220 WTLHL</b>	122KTV 112TKTV				<b>800</b>

# HAMMERLESS Pin Pasador Minería HAMMERLESS



Fig. 1

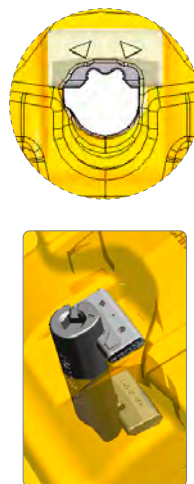
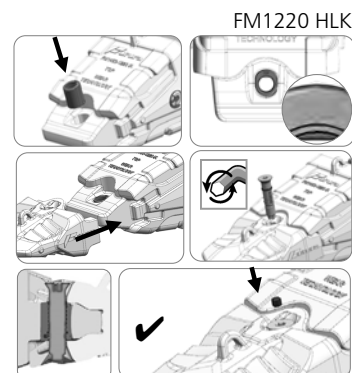
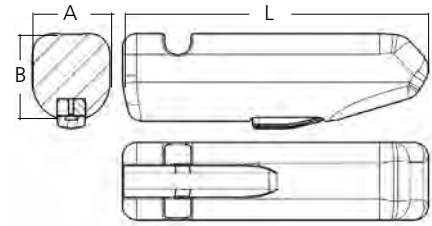
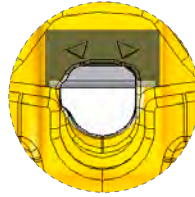


Fig. 2

mm.				REF	Cross Ref	Fig	SIZE	NOSE	
A	B	L							
36 1,42"	38 1,50"	147 5,79"	1,53 3,37	<b>FM920 HLK</b>	92TK PN	1	<b>92</b>	<b>390</b>	M19 3/4"
39 1,54"	44 1,73"	153 6,02"	1,8 3,97	<b>FM1120 HLK</b>	112TKPN-B	1	<b>112</b>	<b>640</b>	M19 3/4"
39 1,54"	50 1,97"	189 7,44"	3,79 8,36	<b>FM1220 HLK</b>	122TLPN	2	<b>122</b>	<b>800</b>	M19 3/4"



**STANDARD Mining Pin Pasador Minería STANDARD**

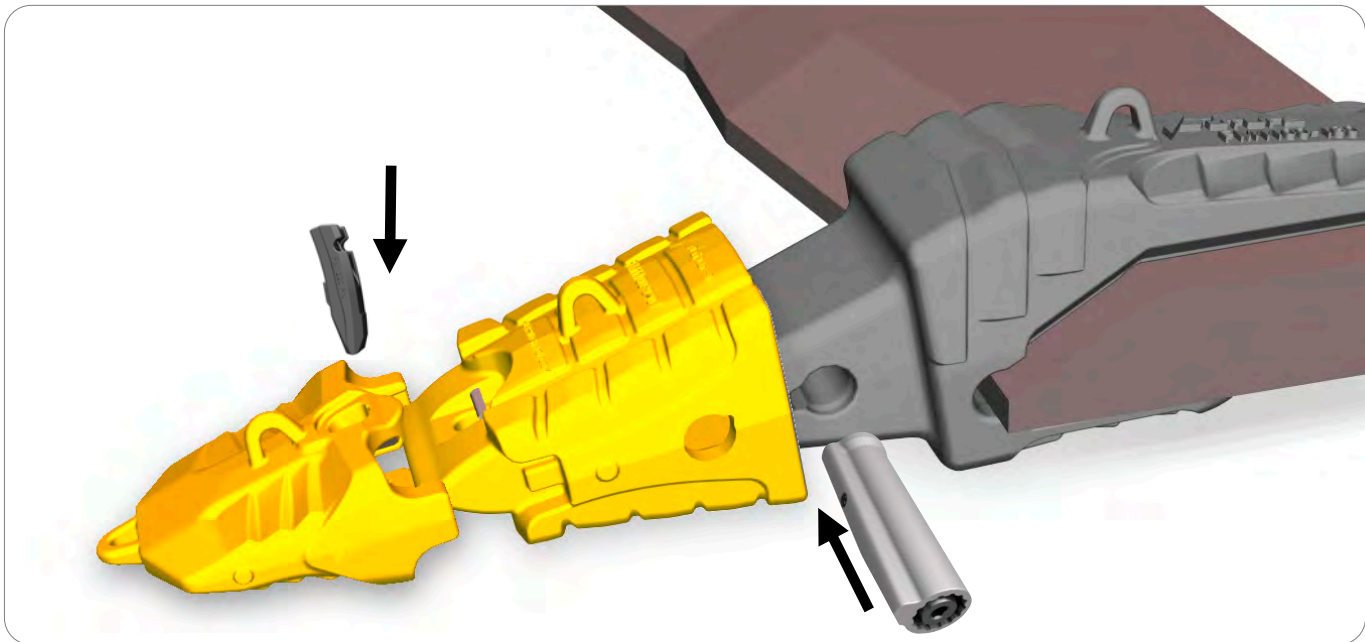


Weight  
4,40Kg  
10,36 Lbs

**EXTFM**  
EXTRACTION TOOL  
Herramienta para Extracción  
Pasadores de Minería

mm.				REF	Cross Ref	SIZE	NOSE	EXTFM
A	B	L	99					
36 1,42"	38 1,50"	147 5,79"	1,16 2,56	<b>FM920 PN</b>	PN92K	<b>92</b>	<b>390</b>	
39 1,54"	44 1,73"	153 6,02"	1,56 3,44	<b>FM1120 PN</b>	PN112KC	<b>112</b>	<b>640</b>	<b>EXTFM</b>
39 1,54"	50 1,97"	189 7,44"	2,29 5,05	<b>FM1220 PN</b>	PN122KC	<b>122</b>	<b>800</b>	

**Pin Assembly Montaje Pasador**

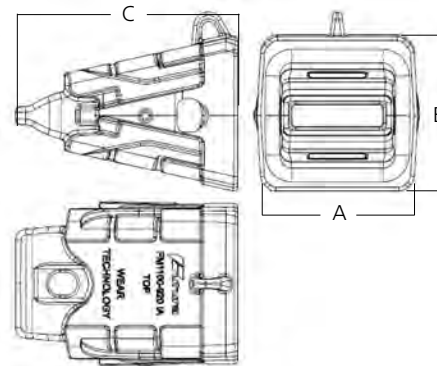


# INTERMEDIATE ADAPTERS COMPATIBLE WITH HENSLEY TS®

IA Intermediate Adapter Adaptador Intermedio



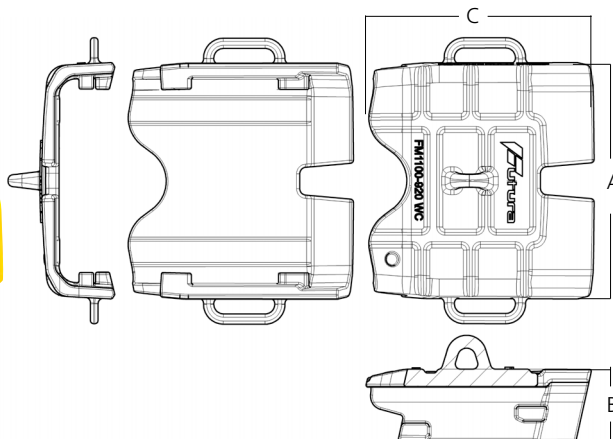
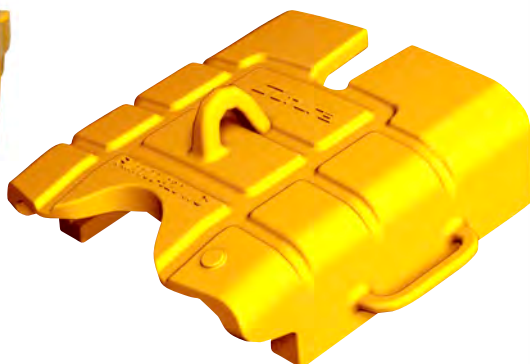
INTERMEDIATE  
 ADAPTER **4 FACE**  
 COMPATIBLE  
 WITH HENSLEY®  
 TS®



mm.				REF	CAPS	CROSS		SIZES TALLAS	
A	B	C							
336 13,23"	326 12,83"	465 18,31"	135,3 298,3	<b>FX3900-920 IA</b>	-	390TS922	<b>FX3900 DPNA</b> FX3900 PIAK, XS394P	92	<b>390</b>
388 15,28"	367 14,45"	504 19,84"	192,0 423,3	<b>FM1300-1120 IA</b>	FM1300-1120 WC	640TS1122	<b>FX6400 DPNA</b> FM1300 PIAK2, XS644P	112	<b>640</b>
453 17,83"	401 15,79"	564 22,20"	288,0 634,9	<b>FM1450-1220 IA</b>	FM1450-1220 WC	800TS1222	<b>FX8000 DPNA</b> FM1450PIAK, SX804P	122	<b>800</b>

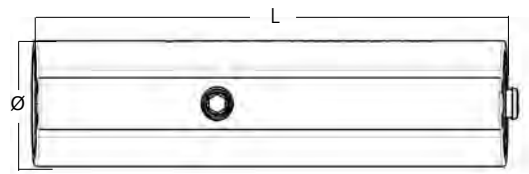
! The Intermediate Adapter Futura can be mounted on a Hensley® adapter with a Futura pin but NOT with the Hensley® pin. El Prediente Futura puede montar sobre portadientes Hensley® con pasador Futura pero NO con pasador Hensley®.

## OPTIONAL Caps for FUTURA Intermediate Adapters Protectores Opcionales



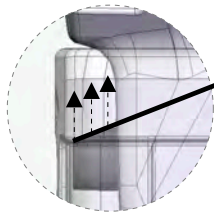
mm.				REF		TOP	BOTTOM	
A	B	C						
411 16,18"	133 5,24"	381 15,00"	40,00 88,18	<b>FM1300-1120 WC</b>	FM1300-1120 IA	1	1	<b>640</b>
486 19,13"	144 5,67"	474 18,66"	55,00 121,25	<b>FM1450-1220 WC</b>	FM1450-1220 IA	1	1	<b>800</b>

**HAMMERLESS Mining PIN** Pasador Minería



**DUAL EXPANSION DOBLE EXPANSIÓN**

mm					NOSE	
L	Ø		REF	Cross Ref		
235,7 9,28"	62 2,44"	5,80 12,79	<b>FX3900 DPNA</b>	XS394P	<b>3900</b>	<b>M14</b> 9/16"
267,6 10,54"	68 2,68"	8,00 17,64	<b>FX6400 DPNA</b>	XS644P	<b>6400</b>	<b>M14</b> 9/16"
300,2 11,82"	76,8 3,02"	11,70 25,79	<b>FX8000 DPNA</b>	XS804P	<b>8000</b>	<b>M14</b> 9/16"



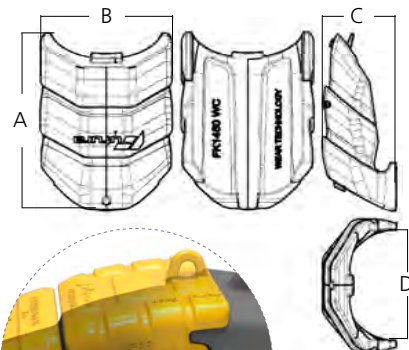
**DUAL TAKE UP**

Dual take up retention increases adapter nose life

**EXTRA TENSIÓN**

La retención de doble tirante aumenta la vida útil de la nariz del adaptador

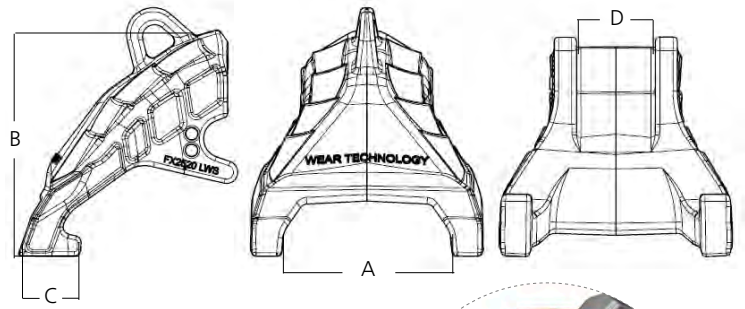
**Wear Cap** Protector Portadientes



mm. in													
A	B	C	D		REF	Cross Ref							
295 11,61"	325 12,80"	187 7,36"	254 10,00"	43,00 94,80	<b>FX3900 WC</b>	WC3900							<b>390</b>

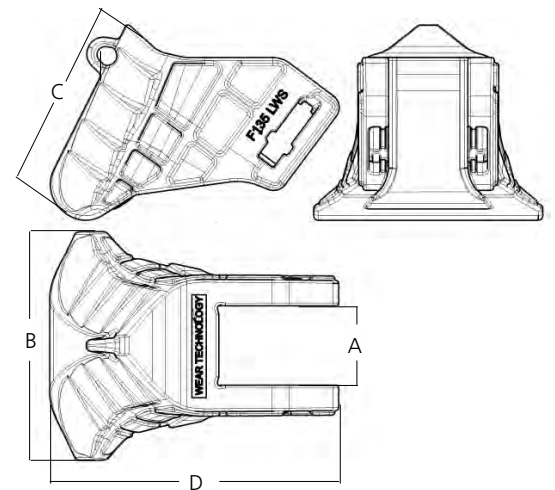


## Lower Wing Shrouds Protectores Laterales Inferiores



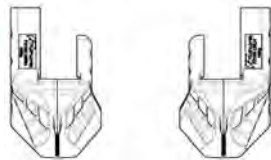
mm.						REF	Cross Ref		
A	B	C	D						
178 7,01"	235 9,25"	79 3,11"	80 3,15"	<b>80</b>	3,2"	20,00 44,09	<b>FX1520 LWS</b>	475WS152	<b>1520</b>
199 7,83"	262 10,31"	73 2,87"	91,5 3,60"	<b>90</b>	4"	25,50 56,22	<b>FX2520 LWS</b>	550WS252	<b>2520</b>
193 7,60"	307 12,09"	105 4,13"	91,5 3,60"	<b>90</b>	4"	32,75 72,20	<b>FX3420 LWS</b>	550WS342	<b>3420</b>
278 10,94"	353 13,90"	108 4,25"	122 4,80"	<b>122</b>	4,8"	65,20 143,74	<b>FX3900 LWS</b>	625WS390	<b>3900</b>

## Lower Wing Shrouds Protectores Laterales Inferiores

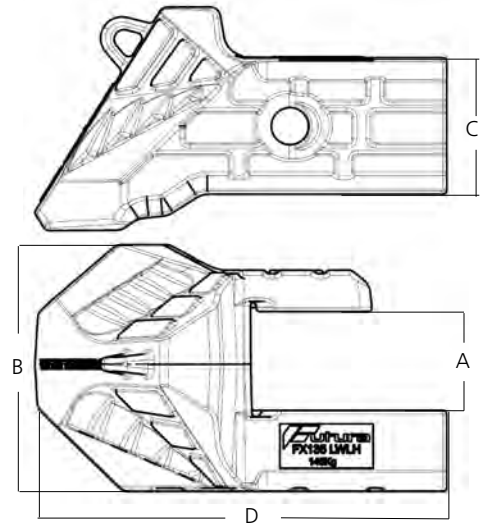


mm.						REF	Cross Ref	
A	B	C	D					
138 5,43"	399 15,71"	317 12,48"	497 19,57"	<b>135</b>	5,31"	113,00 249,12	<b>F135 LWS</b>	WS135

**BOLT-ON Lower Wing Shrouds** Protectores Laterales Inferiores



FX135 LWRH FX135 LWLH

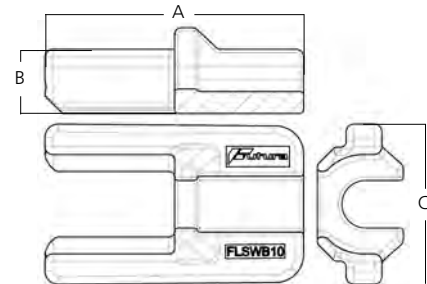


mm.						PART	Cross	RH	LH	BASE	PIN
A	B	C	D								
143 5,63"	322 12,68"	198 7,80"	597 23,50"	<b>135</b>	5,31"	113,00 249,12	<b>FX135 LWLH</b>	WS135L	●	<b>FLSWB10</b>	<b>FSA150J6</b>
143 5,63"	322 12,68"	198 7,80"	597 23,50"	<b>135</b>	5,31"	113,00 249,12	<b>FX135 LWRH</b>	WS135R	●		

**Lower Wing Shroud BASE** Base para Protectores Laterales Inferiores



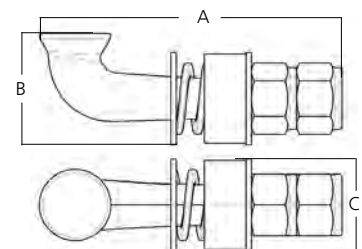
mm.					PART
A	B	C			
229 16,9"	57 9,2"	139 9,2"	6,60 14,55		<b>FLSWB10</b>



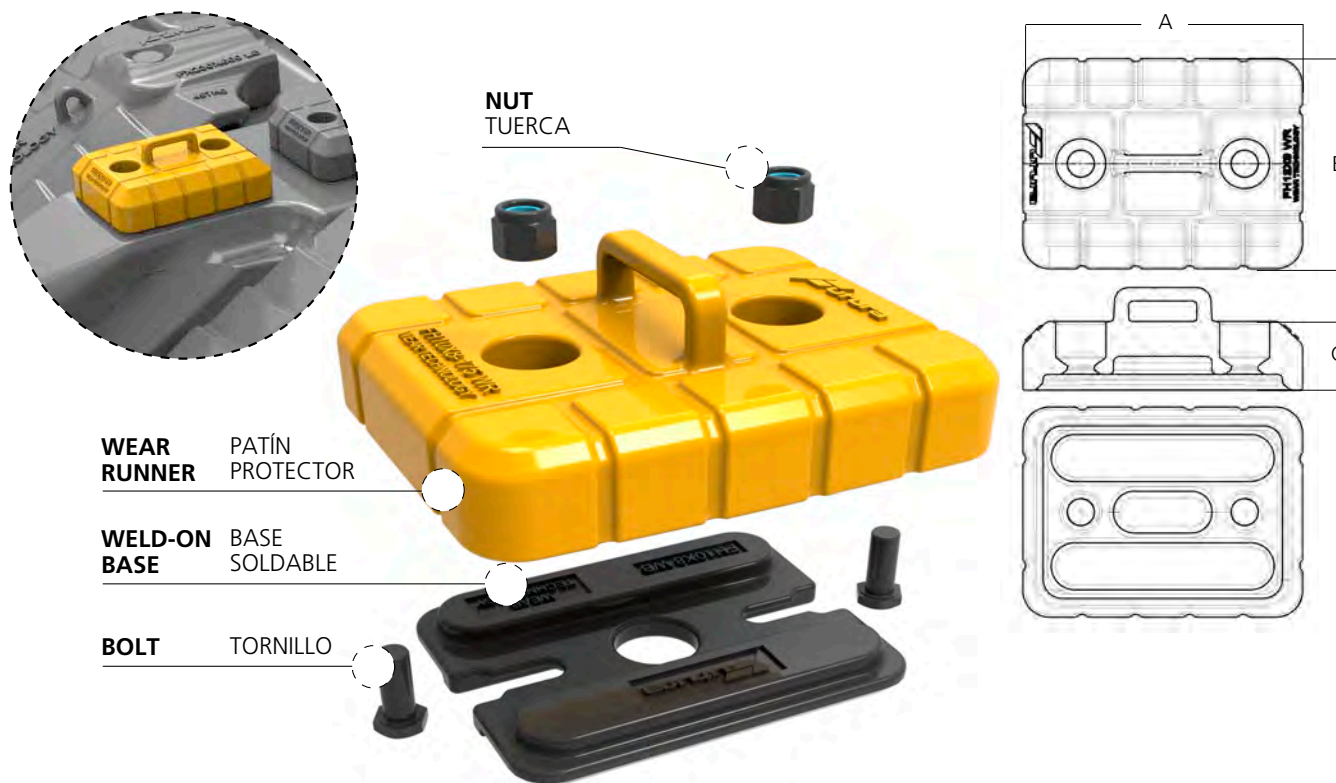
**Lower Wing Shroud J Bolt Assembly** Conjunto Tornillo J



mm.					PART
A	B	C			
279 16,9"	103 9,2"	86 9,2"	5,00 11,02		<b>FSA150J6</b>



## BOLT-ON Wear Runners Patines Protectoras Atornillables



A	in	B	in	C	in		SHROUD	Cross Ref	BASE	Kg.	lb	FASTENERS	Units	
203	8"	203	8"	50	1,97"	10,0	22	<b>FH8X8-175 WR</b>	B8X8-175WR	<b>FH8X8 WB</b>	3,1	7	<b>58125BCRNF</b>	2
254	10"	178	7"	79	3,11"	17,6	39	<b>FH10X7-S WR</b>	B10X7WRS	<b>FH10X7 WB</b>	4,8	11	<b>58125BCRNF</b>	2
254	10"	203	8"	44	1,73"	13,0	29	<b>FH10X8-175 WR</b>	B10X8WR175	<b>FH10X8 WB</b>	4,6	10		
254	10"	254	10"	72	2,83"	20,0	44	<b>FH10X10-275 WR</b>	B10X10WR275	<b>FH10X10 WB</b>	9,4	21	<b>115BLN</b>	
305	12"	229	9"	76	2,99"	25,4	56	<b>FH12X9 WR</b>	B12X9WR	<b>FH12X9 WB</b>	10,5	23	<b>115BLN</b>	2
305	12"	229	9"	102	4,02"	36,5	80	<b>FH12X9-4 WR</b>	B12X9WR4					
305	12"	305	12"	75	2,95"	35,1	77	<b>FH12X12 WR</b>	B12X12WR	<b>FH12X12 WB</b>	16,7	37		
356	14"	229	9"	70	2,76"	26,2	58	<b>FH14X9-275T WR</b>	B14X9WR275T	<b>FH12X9 WB</b>	10,5	23	<b>115BLN</b>	2
356	14"	229	9"	100	3,94"	47,1	104	<b>FH14X9-4T WR</b>	B14X9WR4T					
356	14"	254	10"	75	2,95"	29,1	64	<b>FH14X10-275T WR</b>	B14X10WR275T	<b>FH12X10 WB</b>	12,1	27		
356	14"	254	10"	108	4,25"	48,6	107	<b>FH14X10-4T WR</b>	B14X10WR4T					
406	16"	254	10"	81	3,19"	37,3	82	<b>FH16X10-3T WR</b>	B16X10WR3T	<b>FH12X10 WB</b>	12,1	27	<b>115BLN</b>	2

REF	BOLT	NUT	TORQUE VALUE (N.m)
<b>58125BCRNF</b>	58X114FB	TAC-580	258 ± 41
<b>115BLN</b>	1X112FB	1FN	922 ± 41

PAR DE APRIETE

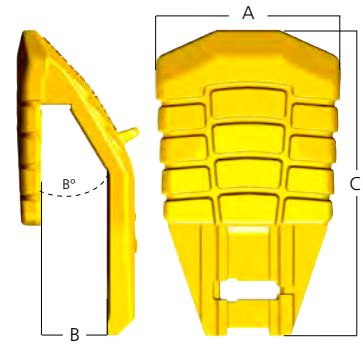


**58125BCRNF**



**115BLN**

## EXCAVATOR Lip Shrouds Protector de Cuchilla para EXCAVADORA



mm.		mm.	B°			Lb	PART	Cross	BASE	PIN	
A	B										
430 16,9"	234 9,2"	822 9,2"	30°	<b>230</b> 9"	387	853	<b>F230X430 LS</b>	LS130M435J, LS1301700J	FCB	FCP	TB230
600 23,6"	234 9,2"	868 9,2"	30°	<b>230</b> 9"	455	1.003	<b>F230X600 LS</b>	LS130M600JBH, LS1302350J	FCB	FCP	
410 16,1"	250 9,8"	879 9,8"	30°	<b>245</b> 9,6"	346	763	<b>F245X410 LS</b>	LS145S1600J, LS6401959J	FCB	FCP	
570 22,4"	250 9,8"	879 9,8"	30°	<b>245</b> 9,6"	472	1.041	<b>F245X570 LS</b>	LS145S2200J, LS8002200J	FCB	FCP	

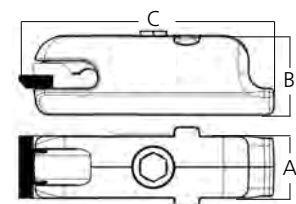
## Lip Shroud BASE BASE para Protector de Cuchilla

mm.				REF	Cross Ref
A	B	C			
160 6,30"	47,5 1,87"	166 6,55"	3,85 8,49	<b>FCB</b>	TCB

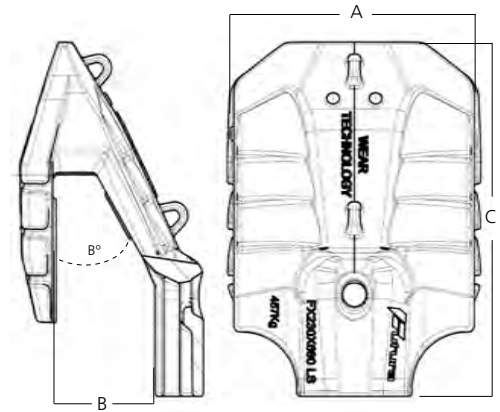


## Lip Shroud PIN PASADOR para Protector de Cuchilla

mm.				REF	Cross Ref
A	B	C			
50 1,97"	64 2,52"	216 8,50"	4,70 10,36	<b>FCP</b>	TCP



## BOLT-ON Lip Shrouds Protector de Cuchilla para EXCAVADORA

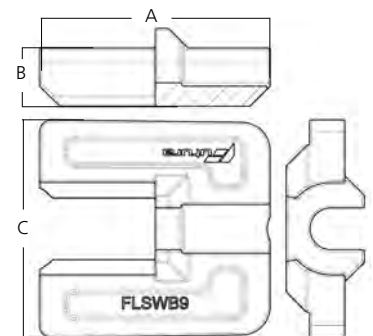


mm.		C	B°			Lb	PART	Cross	BASE	BOLT ASSEMBLY
A	B									
430 16,9"	236 9,2"	758 9,2"	30°			853	<b>FX230X430 LS</b>	LS1301700JSTD	<b>FLSWB9</b>	<b>FSA150J6</b>
600 23,6"	236 9,2"	803 9,2"	30°			1.003	<b>FX230X600 LS</b>	LS1302350JHD	<b>FLSWB9</b>	<b>FSA150J6</b>

## Lower Wing Shroud BASE Base para Protectores Laterales Inferiores



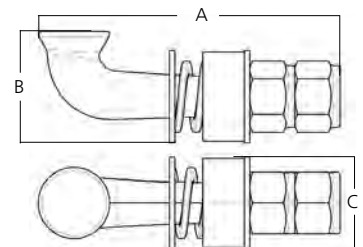
mm.				PART
A	B	C		
228 16,9"	58 9,2"	216 9,2"		<b>FLSWB9</b>



## Lip Shroud JBolt Assembly Conjunto Tornillo J



mm.				PART
A	B	C		
279 16,9"	103 9,2"	86 9,2"		<b>FSA150J6</b>



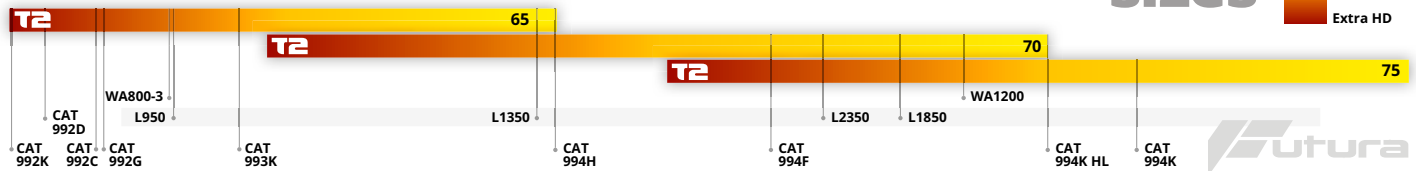
Guide to Nose Sizes Guía para la Selección de Tallas



wheel loader buckets  
 up to 44m<sup>3</sup>

guide  
 to nose  
 sizes

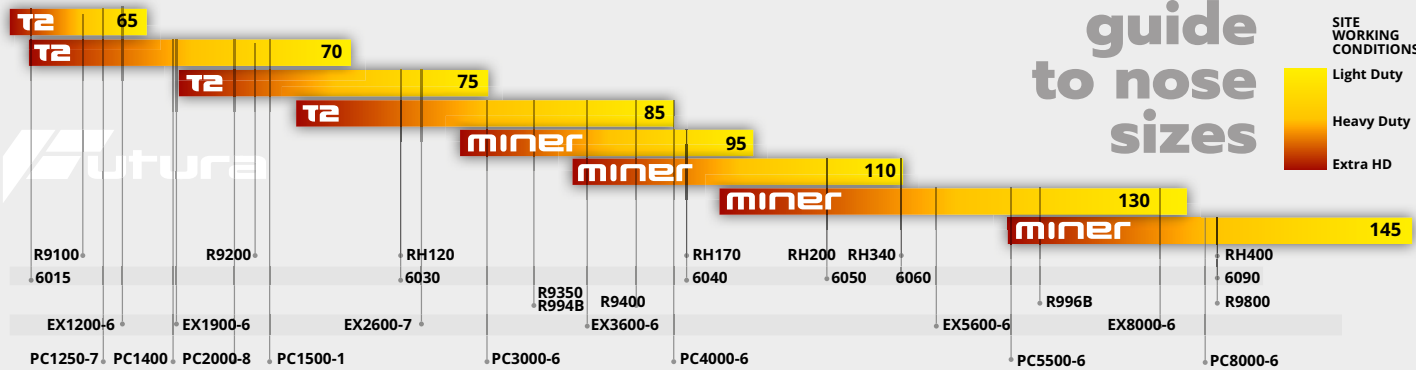
SITE WORKING CONDITIONS  
 Light Duty  
 Heavy Duty  
 Extra HD



face shovel buckets  
 up to 42m<sup>3</sup>

guide  
 to nose  
 sizes

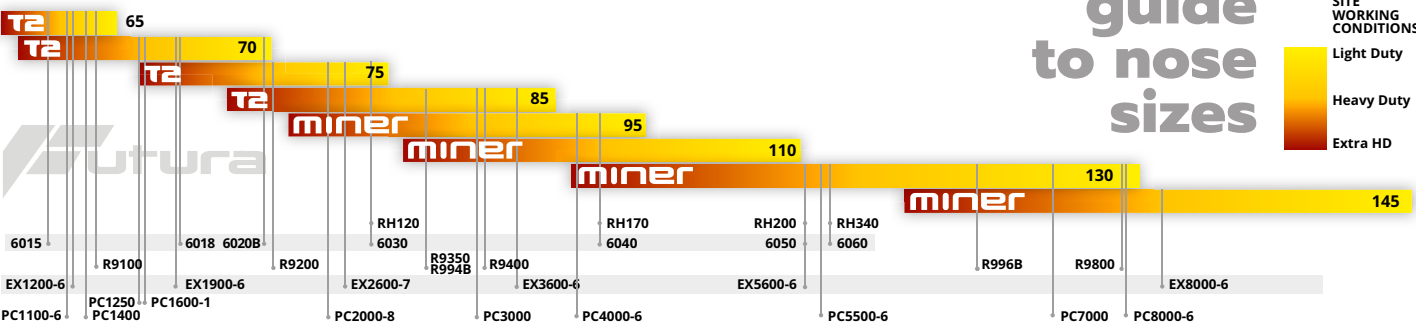
SITE WORKING CONDITIONS  
 Light Duty  
 Heavy Duty  
 Extra HD



backhoe excavator buckets  
 up to 42m<sup>3</sup>

guide  
 to nose  
 sizes

SITE WORKING CONDITIONS  
 Light Duty  
 Heavy Duty  
 Extra HD



# MINER

**UP TO 800 TN  
MACHINES**  
**PARA MÁQUINAS  
DE HASTA 800 TN**



<b>RC</b>	<b>RCX</b>	<b>VX</b>	<b>I</b>	
FM950 RC	FM950 RCX	FM950 VX	FM950 I	<b>95</b>
FM950 RC4	FM950 RCX4	FM950 VX4	FM950 I4	

**SOLID  
TOOTH  
DIENTES  
SÓLIDOS**

<b>RC</b>	
-	<b>95</b>
FM1100 RC	<b>110</b>
FM1300 RC2	<b>130</b>

<b>RC</b>	<b>RCX</b>	<b>RCXL</b>	<b>TL</b>	<b>WT</b>	<b>WTL</b>	<b>IA</b>	<b>IA</b>	
FM920 RC FM920 RC-ARM FM920 RCHL	FM920 RCX FM920 RCX-ARM FM920 RCXH	FM920 RCXL FM920 RCXLHL	FM920 TL FM920 TLHL	FM920 WT FM920 WTHL		FM1100-920 IA FM1100-920 IA-ARM FM1100-1120 IA	FM1100W920 IA	<b>110</b>
FM1120 RC FM1120 RC-ARM FM1120 RCHL	FM1120 RCX FM1120 RCXH	FM1120 RCXL FM1120 RCXL-ARM FM1120 RCXLHL	FM1120 TL FM1120 TL-ARM FM1120 TLHL	FM1120 WT FM1120 WT-ARM FM1120 WTHL	FM1120 WT FM1120 WTHL	FM1300-1120 IA FM1300-1120 IA-ARM	FM1300W1120 IA	<b>130</b>
FM1220 RC FM1220 RC-ARM FM1220 RCHL	FM1220 RCX FM1220 RCX-ARM FM1220 RCXH	FM1220 RCXL FM1220 RCXL-ARM FM1220 RCXLHL	FM1220 TL FM1220 TL-ARM FM1220 TLHL	FM1220 WT FM1220 WT-ARM FM1220 WTHL		FM1300-1220 IA FM1450-1220 IA FM1450-1220 IA-ARM	FM1300W1220 IA FM1450W1220 IA	<b>145</b>

# MINER

## Assembly and compatibility chart

SIZES 1100, 1300 and 1450			DRP KOMATSU® BRADKEN® CATERPILLAR®	DRP POSILOK®
FUTURA	POSILOK®	POSILOK® PLUS	4 FACE	8 FACE
 oem or Futura or Futura	 oem or Futura	 oem	 X	 FUTURA or OEM
 oem or Futura or Futura	 oem or Futura	 oem	 ✓	 FUTURA or OEM
 oem or Futura	 oem or Futura	 X	 X	 oem
 oem or Futura or Futura	 oem or Futura	 oem	 X	 oem
<h1>SIZE 1100-1300</h1>			 ✓	 FUTURA or OEM

SIZE 950			SIZE 950	
4 FACE	8 FACE	POSILOK®		
 FUTURA or OEM	 FUTURA or OEM	 FUTURA or OEM	 DRP POSILOK®	
 FUTURA or OEM	X	X	 DRP BRADKEN®	





**Bold part number, available product**  
Other part numbers please consult

**Referencia en negrita producto disponible**  
Otras referencias consúltenos

MINER

							<b>SIZES</b> <b>TALLAS</b>
<b>MACHINE WEIGHT</b>	up to 325 tn	<b>95</b>					
	BOF 139,1 tn						
<b>PESO MÁQUINA</b>	up to 400 tn		<b>110</b>	<b>92</b>			<b>110</b>
	BOF 171,1 tn						
	up to 500 tn		<b>130</b>		<b>112</b>		<b>130</b>
	BOF 252,6 tn						
	up to 800 tn			<b>122</b>			<b>145</b> <b>160</b>
	BOF 342,2 tn						

**GUIDE TO PART SIZES BY MAXIMUM MACHINE WEIGHT (TONS)**

**GUÍA PARA LA ELECCIÓN DE TALLAS SEGÚN PESO MÁXIMO DE LA MÁQUINA (TONS)**

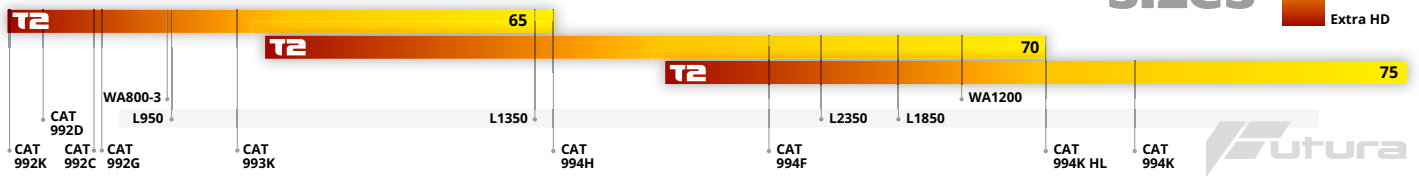
	<b>NOSE</b> <b>NARIZ</b>	<b>TOOTH</b> <b>DIENTE</b>	<b>HITACHI</b>	<b>TEREX</b>	<b>CATERPILLAR</b>	<b>KOMATSU</b>	<b>KOMATSU</b> <b>DEMAG</b>	<b>LIEBHERR</b>	<b>MCH.WEIGHT</b> <b>PESO MAQ.</b>
<b>T2</b>	275	<b>275</b>	EX2500 EX2500BE	RH120C RH120E	5230ME	PC3000 PC3000-6	H185S H241	R925 R994L	<300T
	285	<b>285</b>	EX3500 EX3500-3 EX3600 EX3600-BE EX3600-6	RH170	5230 5230B	PC4000 PC4000-6	H285 H385S	R935L R994BL	300-350T
<b>MINER</b>	95	<b>95</b>	EX3500 EX3500-3	RH120E	5230ME 3560B 6030	PC3000 PC3000-6	H285	R994 R9250	>350T
	110	<b>92</b>	EX3600	RH170	6040 6050B 5230B	PC4000	H285S	R9250 R9400 R9350 R994B	350-500T
	130	<b>112</b>	EX5500 EX5600	RH340 RH360	6060FS	PC4000 PC5500 PC5500-6	H485S	R995	500-750T
	145	<b>122</b>	EX8000	RH400	6090FS	PC8000	H48JS	R9800 R996	750-1000T



## wheel loader buckets up to 44m<sup>3</sup>

### guide to nose sizes

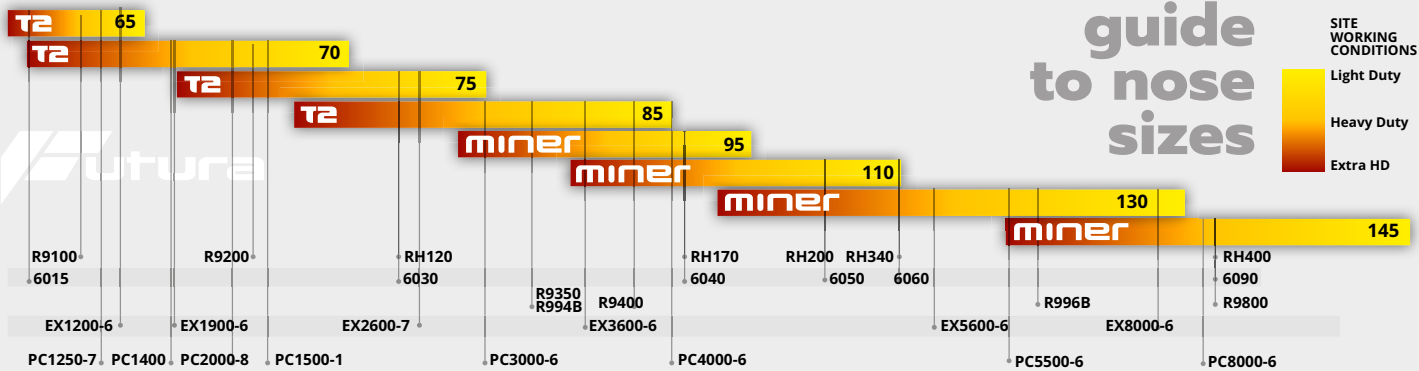
SITE WORKING CONDITIONS  
Light Duty  
Heavy Duty  
Extra HD



## face shovel buckets up to 42m<sup>3</sup>

### guide to nose sizes

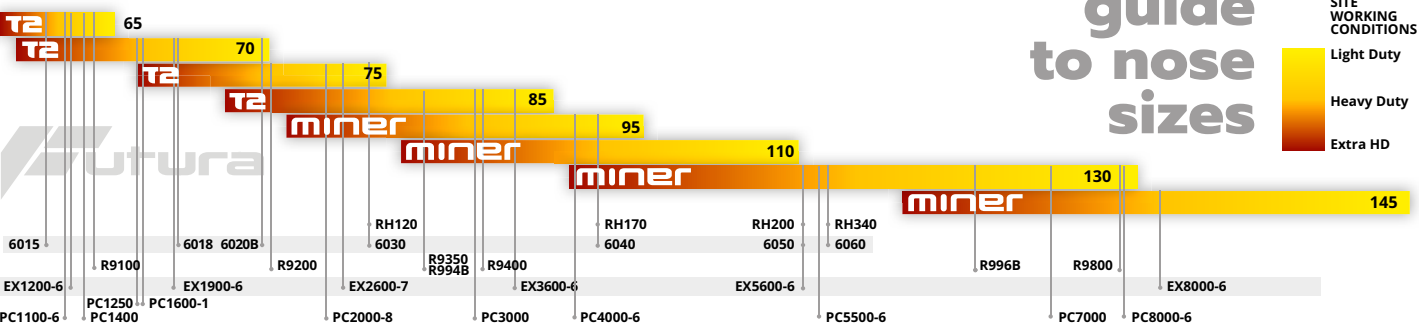
SITE WORKING CONDITIONS  
Light Duty  
Heavy Duty  
Extra HD



## backhoe excavator buckets up to 42m<sup>3</sup>

### guide to nose sizes

SITE WORKING CONDITIONS  
Light Duty  
Heavy Duty  
Extra HD



# MINER

## MINER 950: TEETH, ADAPTERS AND WEAR CAPS








## MINER 950: DIENTES, PORTADIENTES Y PROTECTORES

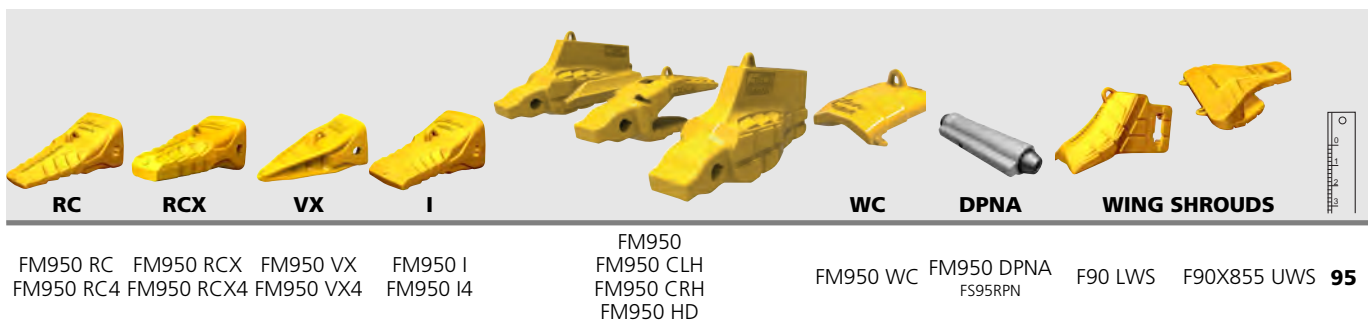
ASSEMBLY  
SIZE 950

MONTAJE  
TALLA 950



### tooth pocket shape compatibility chart

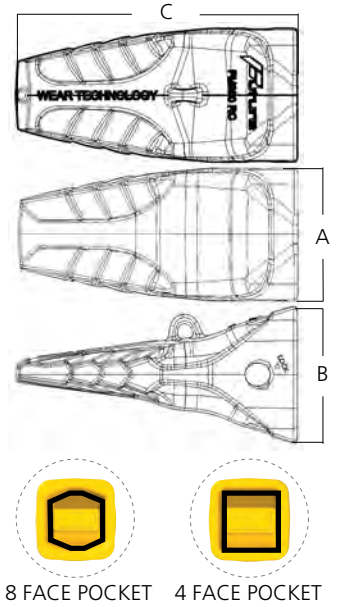
		
		
4 FACE	8 FACE	
✓	✗	 4 FACE ADAPTER DRP BRADKEN®
✓	✓	 8 FACE ADAPTER DRP POSILOK®







## RC Rock Chisel Tooth Diente Cincel Roca



WEAR FACTOR | DESGASTE  
PENETRATION | PENETRACIÓN  
IMPACT | IMPACTO

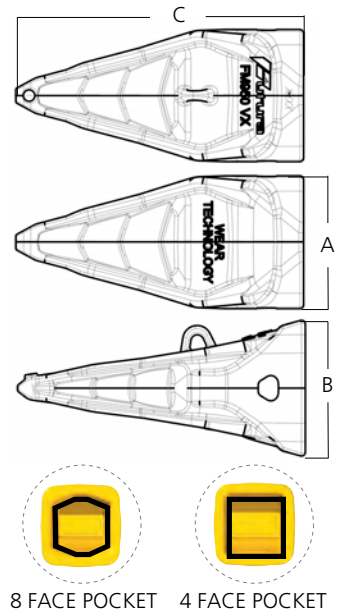
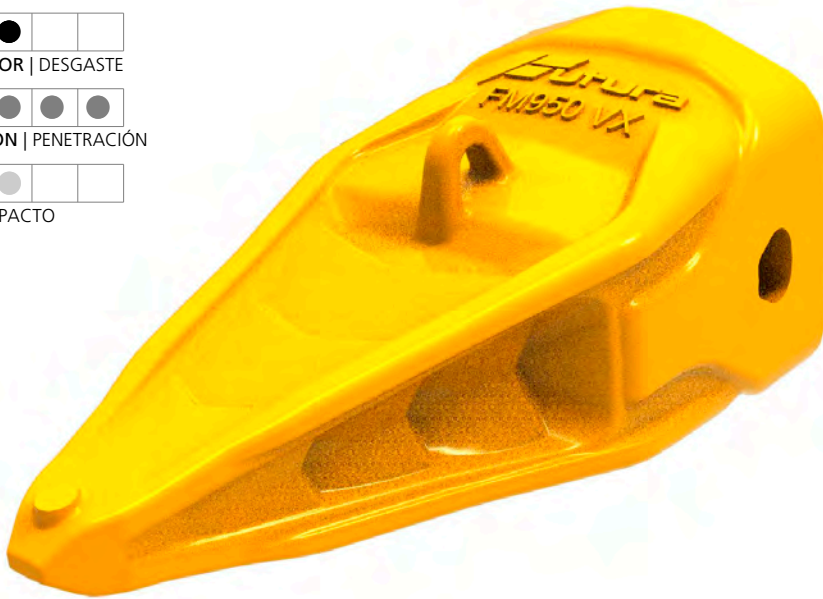






mm.				REF	Cross Ref	8 FACE POCKET	4 FACE POCKET	 	 	95
A	B	C	KG							
280 11,02"	293 11,54"	601 23,66"	98,00 216,05	<b>FM950 RC</b>	S95SD	●		FM950, FM950 CLH FM950 CRH	FM950 DPNA FS95RPN	
280 11,02"	293 11,54"	601 23,66"	107,00 235,89	<b>FM950 RC4</b>	PPS9BHP PPS9DHP		●			

## VX Tooth Diente VX



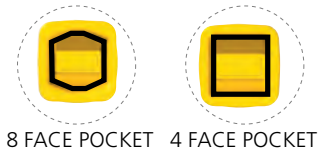
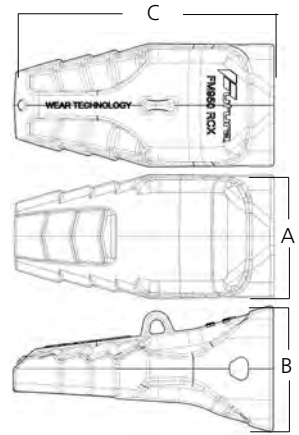
WEAR FACTOR | DESGASTE  
PENETRATION | PENETRACIÓN  
IMPACT | IMPACTO



mm.				REF	Cross Ref	8 FACE POCKET	4 FACE POCKET	 	 	95
A	B	C	KG							
286 11,26"	293 11,54"	621 24,45"	101,00 222,66	<b>FM950 VX</b>	S95VX	●		FM950 FM950 CLH FM950 CRH	FM950 DPNA FS95RPN	
286 11,26"	293 11,54"	621 24,45"	101,00 222,66	<b>FM950 VX4</b>	PPS9BHPL PPS9DHPL		●			

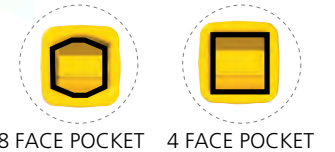
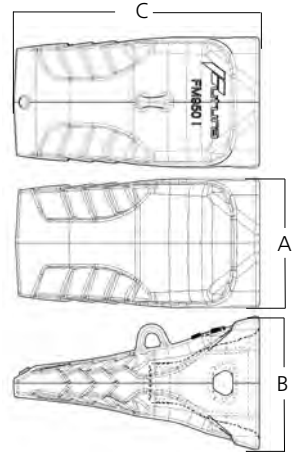
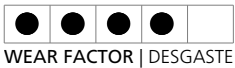


## RCX Tooth Diente Cincel Roca X



mm.				REF	Cross Ref				
A	B	C	KG						
286	293	604	129,00	<b>FM950 RCX</b>	fits S95RMX	●	FM950, FM950 CLH FM950 CRH	FM950 DPNA FS95RPN	<b>95</b>
286	293	604	129,00	<b>FM950 RCX4</b>	PPS9BHAXH PPS9DHAXH	●			

## IMPACT Tooth Diente IMPACTO



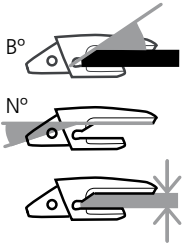
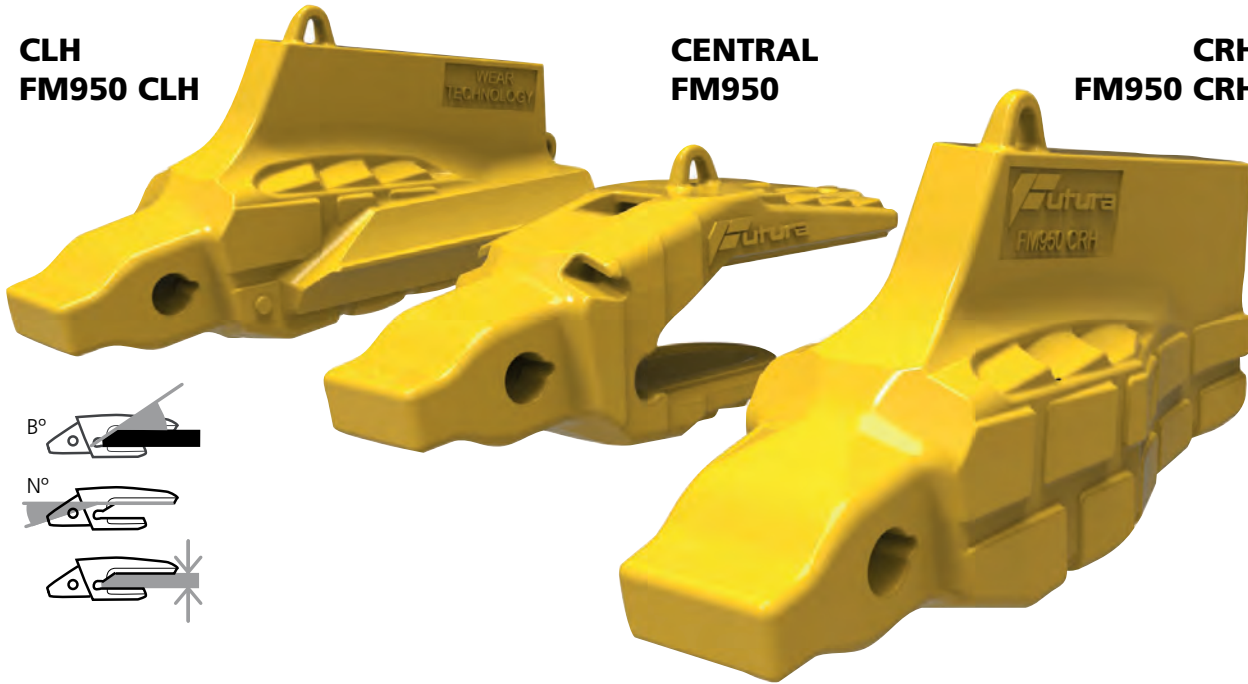
mm.				REF	Cross Ref				
A	B	C	KG						
286	294	539	104,00	<b>FM950 I</b>	S95RS	●	FM950, FM950 CLH FM950 CRH	FM950 DPNA FS95RPN	<b>95</b>
286	294	539	104,00	<b>FM950 I4</b>	PPS9BHPS	●			

# Adapter and Corner Adapters Portadientes y Cantoportadientes

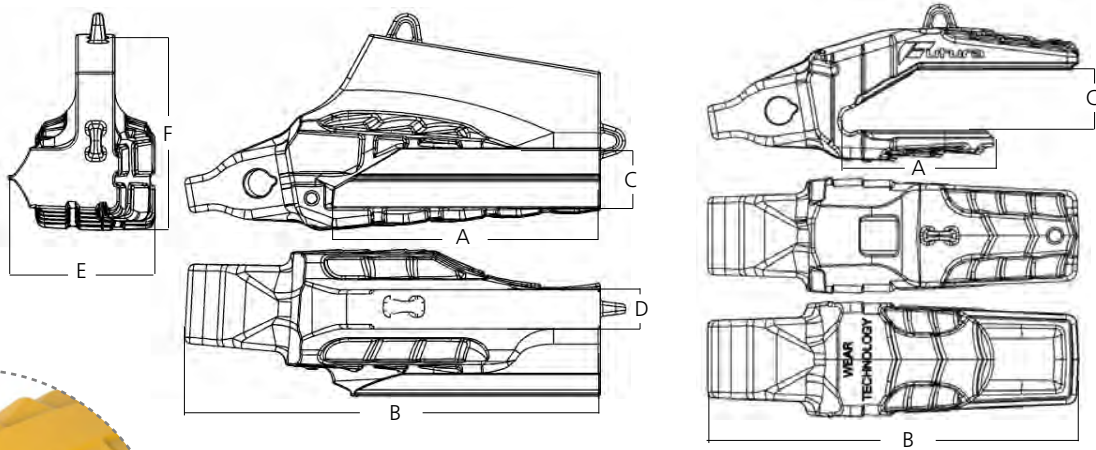
**CLH**  
**FM950 CLH**

**CENTRAL**  
**FM950**

**CRH**  
**FM950 CRH**



mm.										N°	B°	REF	Cross Ref	kg	REF	Cross Ref	95
A	B	C	D	E	F	Diagram 1	Diagram 2	Diagram 3									
359	876	142				10	30	<b>140</b>		197,00	<b>FM950</b>	6828-S95	FM950 WC				
14,13"	34,49"	5,59"						5,51"		434,30							
615	955	140	90	331	450	10	30	<b>140</b>	<b>90</b>	411,00	<b>FM950 CLH</b>	PWL-S95	NO	FM950 DPNA FS95RPN		F90 LWS	<b>95</b>
24,21"	37,60"	5,51"	3,54"	13,03"	17,72"			5,51"	3,54"	906,08						F90X855 UWS	
615	955	140	90	331	450	10	30	<b>140</b>	<b>90</b>	411,00	<b>FM950 CRH</b>	PWR-S95	NO				
24,21"	37,60"	5,51"	3,54"	13,03"	17,72"			5,51"	3,54"	906,08							
359	876	142				10	30	<b>140</b>		199,00	<b>FM950 HD</b>		NO	FM950 DPNA FS95RPN			<b>95</b>
14,13"	34,49"	5,59"						5,51"		438,71							

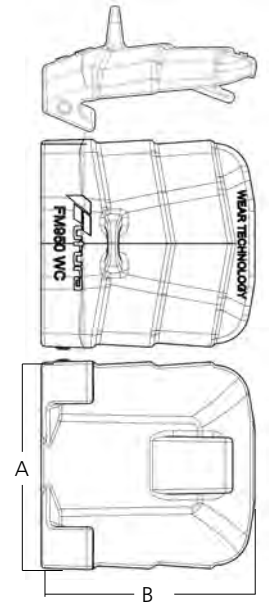


## FM950 HD

DOES NOT ADMIT ASSEMBLY WITH FM950 WC WEAR CAP. SUITABLE FOR CORNER POSITION.

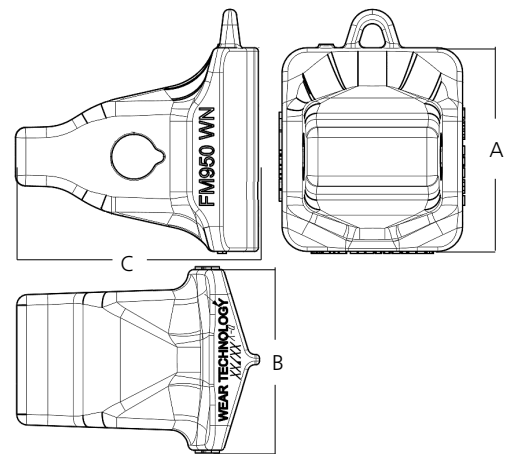
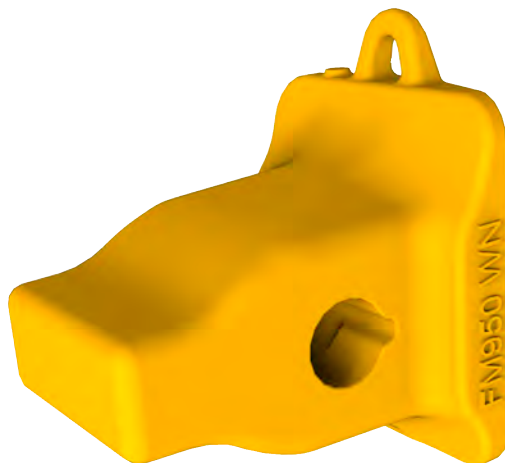
NO ADMITE EL MONTAJE DE PROTECTOR DE PORTADIENTES FM950 WC. PERFECTO PARA USO COMO PORTADIENTE ESQUINERO.

## Adapter Wear Caps Protectores Portadientes



mm			REF	Cross Ref		
A	B					
271 10,67"	281 11,06"	22,00 48,50	<b>FM950 WC</b>	WC95	<b>FM950</b>	<b>95</b>

## Weld-On Nose Nariz Soldable



mm.				REF			
A	B	C					
286 11,26"	254 10,00"	342 13,46"	79,00 174,16	<b>FM950 WN</b>	FM950 FM950 CLH FM950 CRH	FM950 DPNA FS95RPN	<b>95</b>

**Assembly instructions  
FM950 DPNA  
TOOTH + PIN**

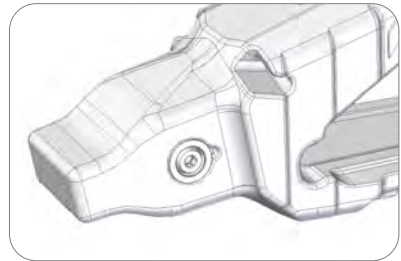
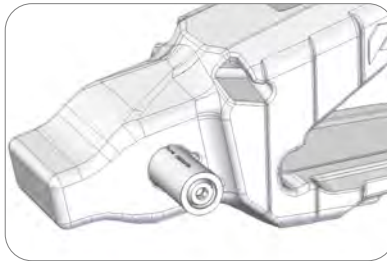
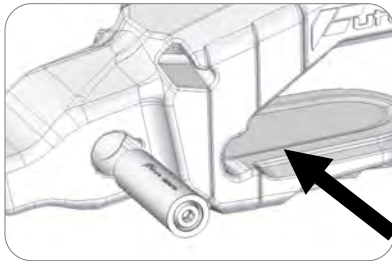
**Assembly instructions  
FM950 DPNA  
DIENTE + PASADOR**



**1**

**Place the PIN on the ADAPTER recess as shown below**

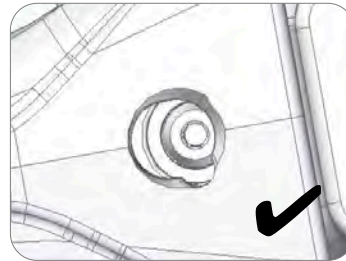
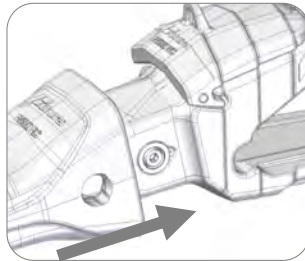
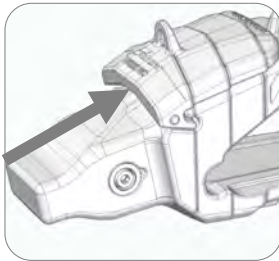
Coloque el pasador FUTURA MINER en el alojamiento del portadientes como se indica en la ilustración.



**2**

**Place the cap (if needed) and tooth on the adapter. The pin will look off centered. It is OK!**

Coloque el protector (si fuese necesario) y el diente sobre el portadientes. El encaje del pasador parece desplazado. Esto es CORRECTO



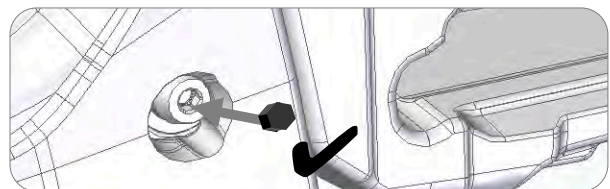
**3**

**Use an Allen M14 wrench to release the pin tabs until the assembly feels fully locked. The assembly is ready!**

Use una llave Allen M14 para expandir el pasador lo máximo que pueda. ¡El montaje ya está listo para trabajar!



ALLEN 14 mm.  
(9/16") wrench  
(hex tool)



**4**

**Disassembly:  
For tooth disassembly follow steps 1 to 3 in reverse order**

Desmontaje:  
Para desmontar los dientes siga los pasos 1 a 3 en orden inverso.





## MINER PIN (old model)\* Pasador Minería (Modelo anterior)\*

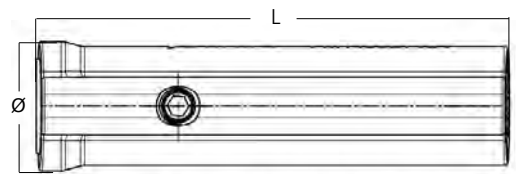
mm.			REF	Cross Ref	95
L	Ø	KG			
284 11,18"	61 2,40"	5,18 11,42	<b>FM950 PNK2*</b> FM950 PNK, FM950 DPNA, FS95RPN	S95RPN M19 3/4"	



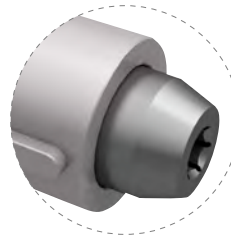
**\*Use with 4 face pocket teeth ONLY**



## RPN MINER PIN Pasador MINER EXPANSIÓN LATERAL



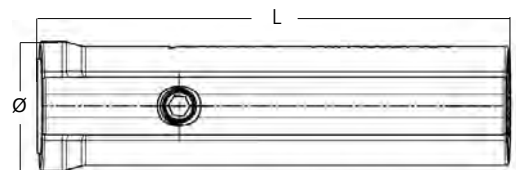
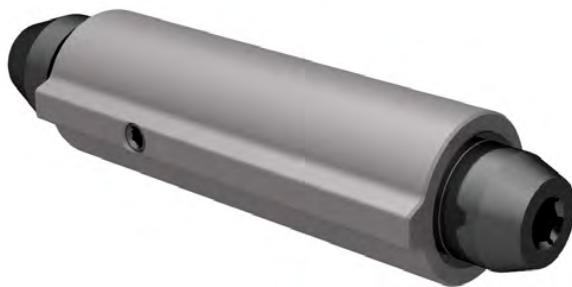
mm			REF	Cross Ref	95
L	Ø	KG			
195,7 7,70"	62 2,44"	4,20 9,26	<b>FS95RPN</b>	S95DPN M14 9/16"	



**DIRECT REPLACEMENT TO ESCO S95DPN PIN**  
**SINGLE EXPANSION**

**EXPANSIÓN POR UN LADO**

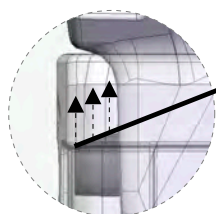
## DPNA DUAL EXPANSION MINER PIN Pasador MINER DUAL



mm			REF	Cross Ref	95
L	Ø	KG			
195,7 7,70"	62 2,44"	4,20 9,26	<b>FM950 DPNA</b> FM950 PIAK2, FS95RPN	S95DPN M14 9/16"	

**DUAL EXPANSION**

**DOBLE EXPANSIÓN**

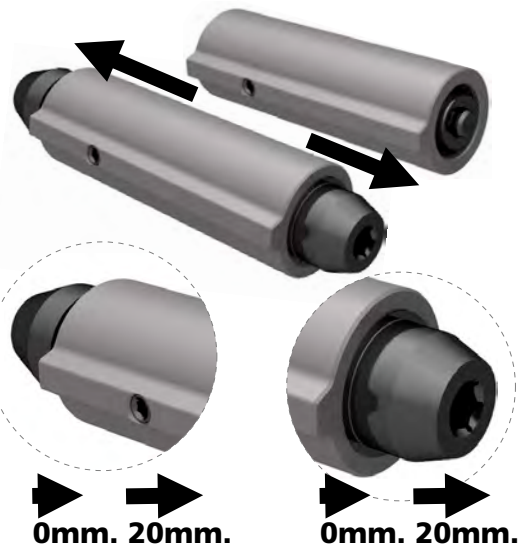


**DUAL TAKE UP**

**Dual take up retention increases adapter nose life**

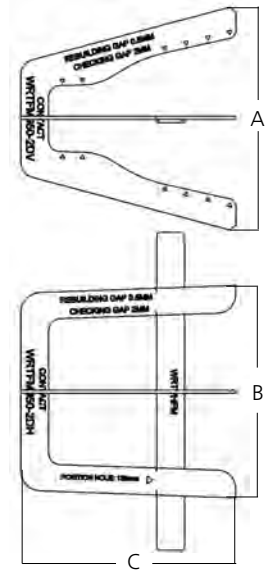
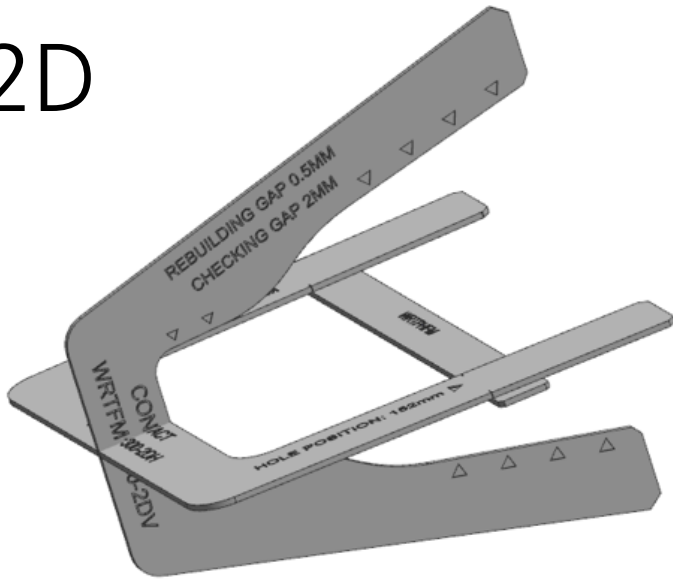
**EXTRA TENSION**

**La retención de doble tirante aumenta la vida útil de la nariz del adaptador**



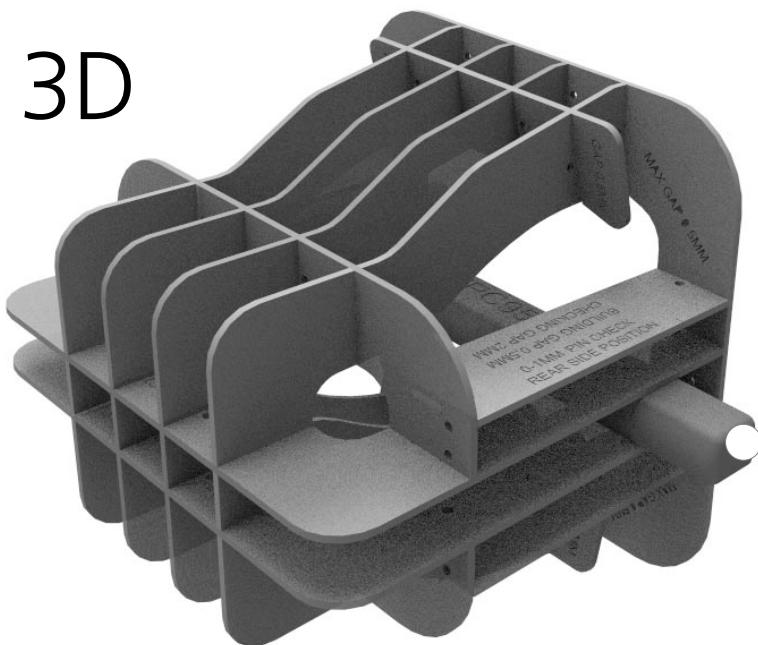
## Nose Checking Templates Plantillas para Comprobación de Narices

# 2D

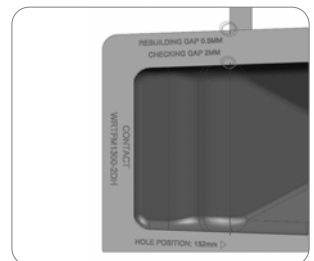
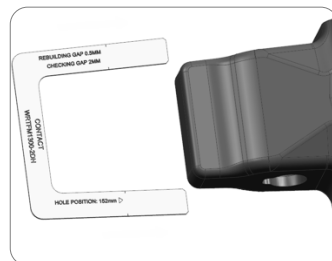


mm.		Kg	REF	Cross Ref	Adapters	Noses	95
A	B						
281 11,06"	267 10,51"	269 10,59"	<b>WRTFM950-2D</b>	<b>2D</b> WRTS95CT WRTS95ST	S95	WN-S95	<b>95</b>
290 11,42"	298 11,73"	287 11,30"	<b>WRTFM950-3D</b>	<b>3D</b>	S95	WN-S95	<b>95</b>
32 1,24"	29 1,14"	400 15,75"	<b>WRTPC950</b>	<b>PIN</b>	S95	WN-S95	<b>95</b>

# 3D



**WRTPC950**  
PIN CHECK TOOL



# MINER

## MINER 1100 & 1300 SOLID TEETH

## MINER 1100 Y 1300 DIENTES SÓLIDOS

### brand compatibility chart

FM1100 RC	FM1300 RC	
✓	✓	Caterpillar
	✓	Hensley

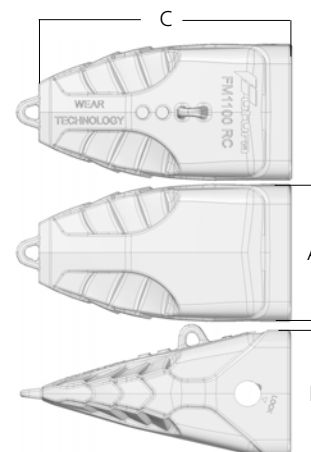
### RC Rock Chisel Tooth Diente Cincel Roca



● ● ● ● ●  
WEAR FACTOR | DESGASTE

● ● ● ● ●  
PENETRATION | PENETRACIÓN

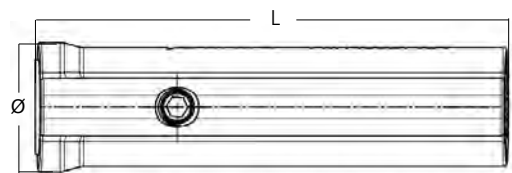
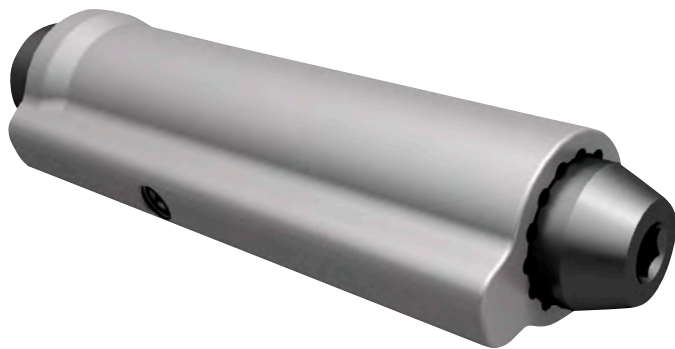
● ● ● ● ●  
IMPACT | IMPACTO



mm.				REF			
A	B	C					
336 13,23"	318 12,52"	620 24,41"	197,00 434,30	<b>FM1100 RC</b>	FM1100 DPNA FM1100 PIAK2 FM1100 PIAK	110	<b>110</b>
398 15,67"	340 13,39"	711 27,99"	284,00 626,10	<b>FM1300 RC2</b>	FM1300 DPNA FM1300 PIAK2 FM1300 PIAK	130	<b>130</b>

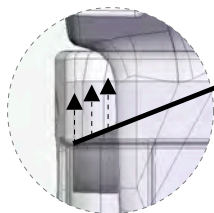
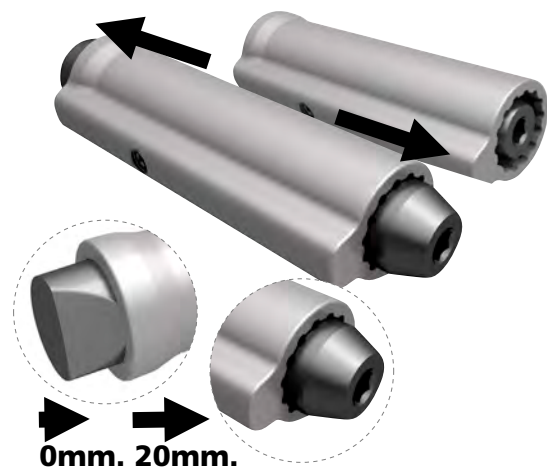


## HAMMERLESS Mining PIN Pasador Minería



mm			REF	Cross Ref	NOSE	M14
L	Ø	KG				
235,7 9,28"	68,2 2,69"	5,80 12,79	<b>FM1100 DPNA</b> FM1100 PIAK2, FM1100 PIAK	S110DPN	<b>110</b>	9/16"
267,6 10,54"	74 2,91"	8,00 17,64	<b>FM1300 DPNA</b> FM1300 PIAK2, FM1300 PIAK	S130DPN	<b>130</b>	9/16"
306,6 12,07"	83,9 3,30"	11,70 25,79	<b>FM1450 DPNA</b> FM11450 PIAK	S145DPN	<b>145</b>	9/16"

### DUAL EXPANSION DOBLE EXPANSIÓN



### DUAL TAKE UP

Dual take up retention increases adapter nose life

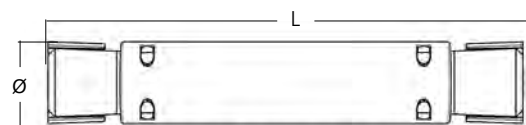
### EXTRA TENSION

La retención de doble tirante aumenta la vida útil de la nariz del adaptador

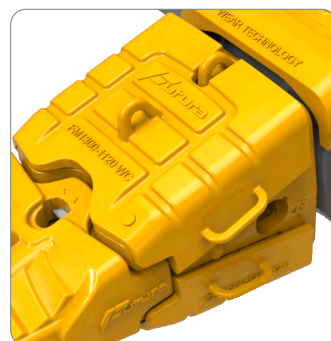
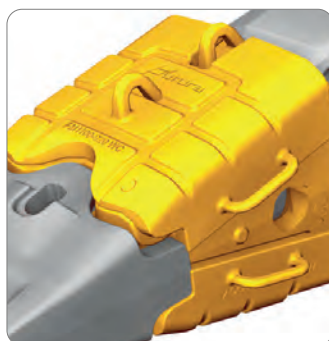
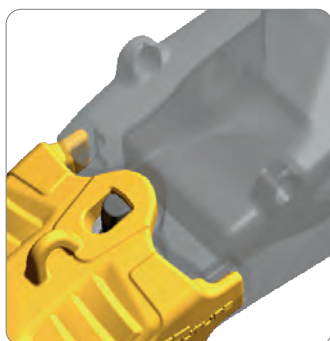
## HAMMERLESS PIN (Old Model) Pasador Minería (Modelo Antiguo)



mm			REF	Cross Ref	NOSE	M19
L	Ø	KG				
322 12,68"	62 2,44"	6,75 14,88	<b>FM1100 PIAK2</b> FM1100 PIAK, FM1100 DPNA	S110PN	<b>110</b>	3/4"
378 14,88"	84,7 3,33"	10 22,05	<b>FM1300 PIAK2</b> FM1300 PIAK, FM1300 DPNA	S130PNA	<b>130</b>	3/4"
443 17,44"	93 3,66"	14,50 31,97	<b>FM1450 PIAK</b> FM1450 DPNA	S145PNA	<b>145</b>	3/4"



# miner



Futura Miner teeth will fit onto an Esco® Standard Posilok® as well as a Posilok® Plus Intermediate adapter.

Futura Miner Intermediate adapters will fit onto an Esco® Posilok® adapter and are DRP for Hensley®, Esco® or Caterpillar® Intermediate adapters.

Esco® Posilok® and Posilok® Plus teeth will fit onto Futura Miner Intermediate adapters.

# miner

## MINER 1100 1300 & 1450 TEETH AND INTERMEDIATE ADAPTERS

DIENTES Y ADAPTADORES INTERMEDIOS COMPATIBLES  
CON ESCO POSILOK®. TALLAS 110 A 145

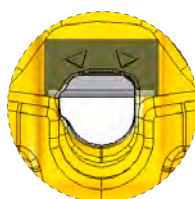
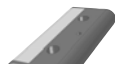
COMPATIBLE WITH  
ESCO POSILOK®  
SIZES 110 TO 145



### STANDARD PIN

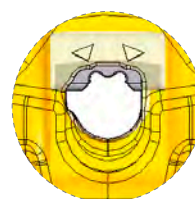


Locks teeth into Posilok® and Posilok® Plus intermediate adapters



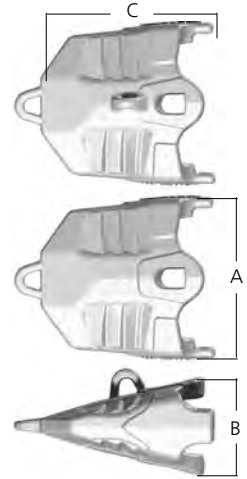
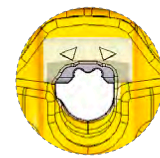
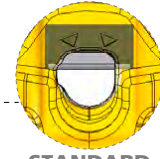
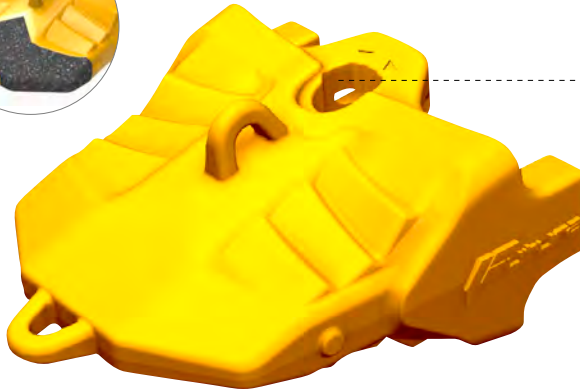
### HAMMERLESS PIN

Locks teeth into Posilok® Plus intermediate adapters



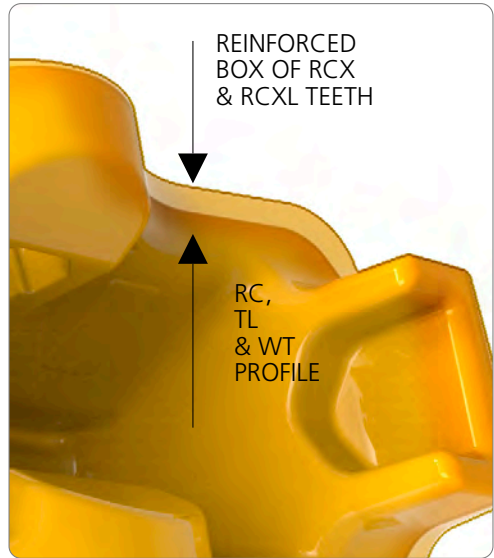
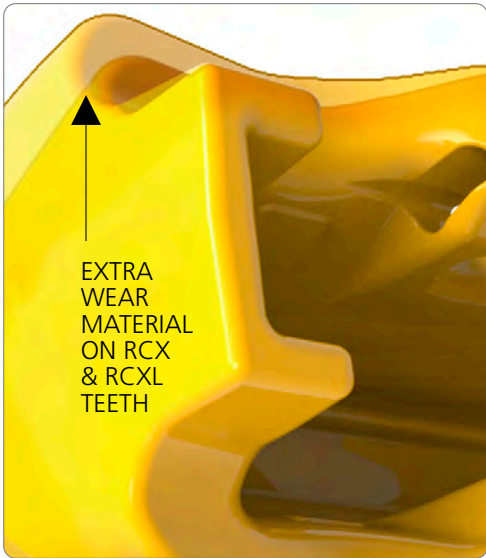
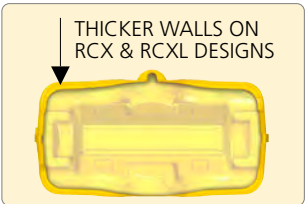
2 PIN OPTIONS:  
STANDARD OR HAMMERLESS

# RC Tooth Diente Cincel Roca



# RC

mm.				REF	Cross Ref	Cross Ref	[Image]	[Image]	[Image]	SIZES TALLAS	
A	B	C	[Image]							[Image]	
327 12,87"	185 7,28"	351 13,82"	58,16 128,22	<b>FM920 RC</b> <b>FM920 RC-ARM</b> <b>FM920 RCHL</b>	DRP 92KHA	DRP 92TKHA	FM920 PN	FM920 HLK	FM1100-920 IA	<b>92</b>	110
380 14,96"	199 7,83"	363 14,29"	74,00 163,14	<b>FM1120 RC</b> <b>FM1120 RC-ARM</b> <b>FM1120 RCHL</b>	DRP 112KH	DRP 112TKH	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>112</b>	130
441 17,36"	232 9,13"	400 15,75"	105,00 231,48	<b>FM1220 RC</b> <b>FM1220 RCHL</b>	DRP 122KH	DRP 122 TKH	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>122</b>	145








# RCX

# RCXL

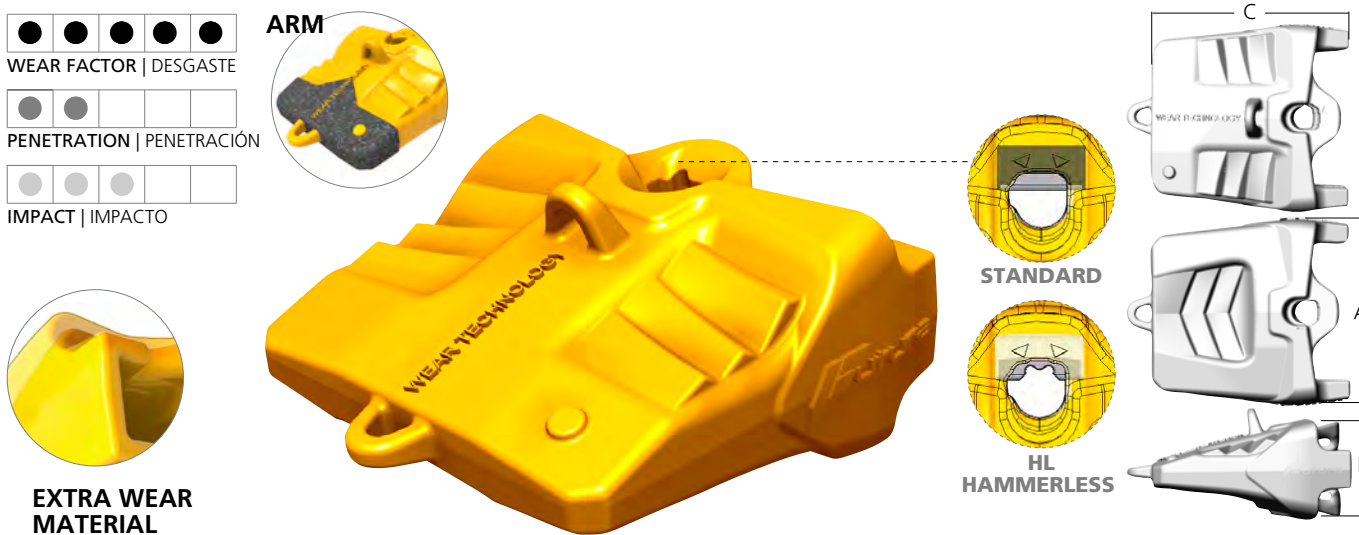







## RCX Rock Chisel Tooth Diente Cincel Roca RCX



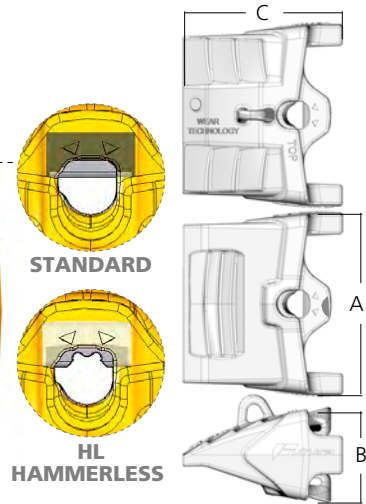
mm.				REF	Cross Ref	Cross Ref	 	  	SIZES TALLAS		
A	B	C	KG								
344 13,54"	185 7,28"	349 13,74"	64 141,09	<b>FM920 RCX</b> <b>FM920 RCX-ARM</b> <b>FM920 RCXHL</b>	DRP 92KHMA	DRP 92TKHMA	FM920 PN	FM920 HLK	FM1100-920 IA	<b>92</b>	110
401 15,79"	200 7,87"	363 14,29"	82 180,78	<b>FM1120 RCX</b> <b>FM1120 RCXHL</b>	DRP 112KHMA	DRP 112TKHMA	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>112</b>	130
469 18,46"	236 9,29"	400 15,75"	119 262,35	<b>FM1220 RCX</b> <b>FM1220 RCXHL</b>	DRP 122KHMA	DRP 122TKHMA	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>122</b>	145

## RCXL Rock Chisel Tooth Diente Cincel Roca RCXL



mm.				REF	Cross Ref	Cross Ref	 	  	SIZES TALLAS		
A	B	C	KG								
344 13,54"	185 7,28"	396 15,59"	77,00 169,75	<b>FM920 RCXL</b> <b>FM920 RCXLHL</b>	DRP 92KHRML	DRP 92TKHRML	FM920 PN	FM920 HLK	FM920-1100 IA	<b>92</b>	110
401 15,79"	200 7,87"	417 16,42"	99,00 218,25	<b>FM1120 RCXL</b> <b>FM1120 RCXL-ARM</b> <b>FM1120 RCXLHL</b>	DRP 112KHRML	DRP 112TKHRML	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>112</b>	130
469 18,46"	236 9,29"	425 16,73"	134,00 295,41	<b>FM1220 RCXL</b> <b>FM1220 RCXLHL</b>	DRP 122KRXL	DRP 122TKRXL	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>122</b>	145

## TL Tooth Diente Tiger Long



mm.			KG	REF	Cross Ref	[Pin Icon]	[Pin Icon]	[Tooth Icon]	SIZES TALLAS	
A	B	C								
339 13,35"	166 6,54"	432 17,01"	57,00 125,66	<b>FM920 TL</b> <b>FM920 TLHL</b>	DRP 92TKAT	FM920 PN	FM920 HLK	FM1100-920 IA	<b>92</b>	110
380 14,96"	199 7,83"	332 13,07"	65,00 143,30	<b>FM1120 TL</b> <b>FM1120 TL-ARM</b> <b>FM1120 TLHL</b>	DRP 112TKAT	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>112</b>	130
441 17,36"	231 9,09"	393 15,47"	191,00 421,08	<b>FM1220 TL</b> <b>FM1220 TLHL</b>	DRP 122TKAT 122TKAT	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>122</b>	145

## WT Twin Tiger Tooth Diente Twin Tiger



mm.			KG	REF	Cross Ref	[Pin Icon]	[Pin Icon]	[Tooth Icon]	SIZES TALLAS	
A	B	C								
315 12,40"	143 5,63"	342 13,46"	42,00 92,59	<b>FM920 WT</b> <b>FM920 WTHL</b>	DRP 92KTVL 92TKTVL	FM920 PN	FM920 HLK	FM1100-920 IA	<b>92</b>	110
359 14,13"	199 7,83"	332 13,07"	75,00 165,34	<b>FM1120 WT</b> <b>FM1120 WT-ARM</b> <b>FM1120 WTHL</b>	DRP 112KTVL 112TKVL	FM1120 PN	FM1120 HLK	FM1300-1120 IA	<b>112</b>	130
441 17,36"	231 9,09"	400 15,75"	191,00 421,08	<b>FM1220 WT</b> <b>FM1220 WTHL</b>	DRP 122KTV 122TKTV	FM1220 PN	FM1220 HLK	FM1450-1220 IA	<b>122</b>	145



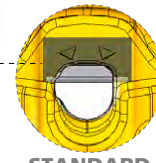
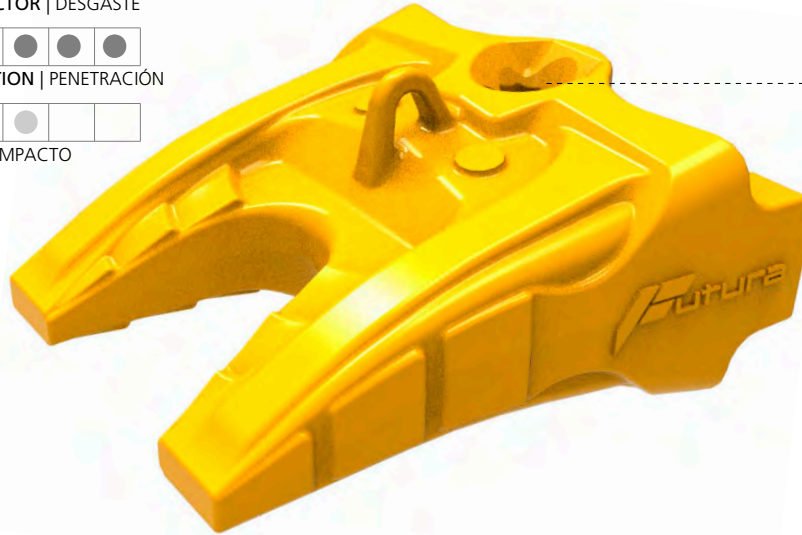
# WTL Twin Tiger Tooth Diente Twin Tiger Long



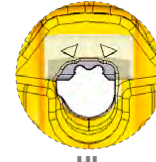
WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

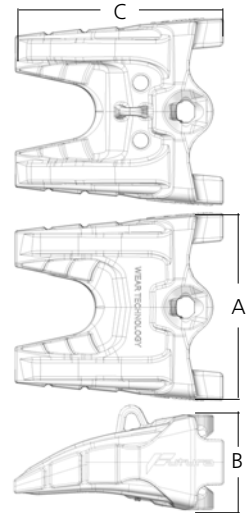
IMPACT | IMPACTO



STANDARD



HL HAMMERLESS



mm.			KG	REF	Cross Ref	FM1220 PN	FM1220 HLK	FM1450-1220 IA	SIZES TALLAS	
A	B	C							122	145
469 18,46"	237 9,33"	520 20,47"	94,00 207,23	<b>FM1220 WTL</b> <b>FM1220 WTLHL</b>	122KTV 112TKTV					

# HAMMERLESS Pin Pasador Minería HAMMERLESS



Fig. 1

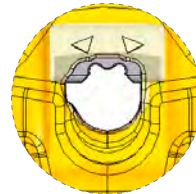
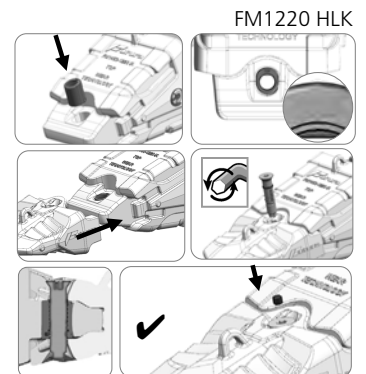
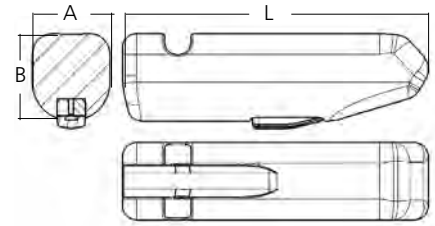
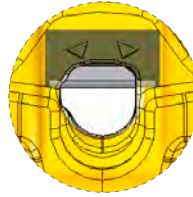


Fig. 2

mm.				REF	Cross Ref	Fig	SIZE	NOSE	M19 3/4"
A	B	L	KG						
36 1,42"	38 1,50"	147 5,79"	1,53 3,37	<b>FM920 HLK</b>	92TK PN	1	<b>92</b>	110	M19 3/4"
39 1,54"	44 1,73"	153 6,02"	1,8 3,97	<b>FM1120 HLK</b>	112TKPN-B	1	<b>112</b>	130	M19 3/4"
39 1,54"	50 1,97"	189 7,44"	3,79 8,36	<b>FM1220 HLK</b>	122TLPN	2	<b>122</b>	145	M19 3/4"



# STANDARD Mining Pin Pasador Minería STANDARD



Weight  
4,40Kg  
10,36 Lbs

**EXTFM**  
EXTRACTION TOOL  
Herramienta para Extracción  
Pasadores de Minería

mm.				REF	Cross Ref	SIZE		NOSE	EXTFM
A	B	L	KG			92	110		
36 1,42"	38 1,50"	147 5,79"	1,16 2,56	<b>FM920 PN</b>	PN92K	<b>92</b>	110		
39 1,54"	44 1,73"	153 6,02"	1,56 3,44	<b>FM1120 PN</b>	PN112KC	<b>112</b>	130		<b>EXTFM</b>
39 1,54"	50 1,97"	189 7,44"	2,29 5,05	<b>FM1220 PN</b>	PN122KC	<b>122</b>	145		

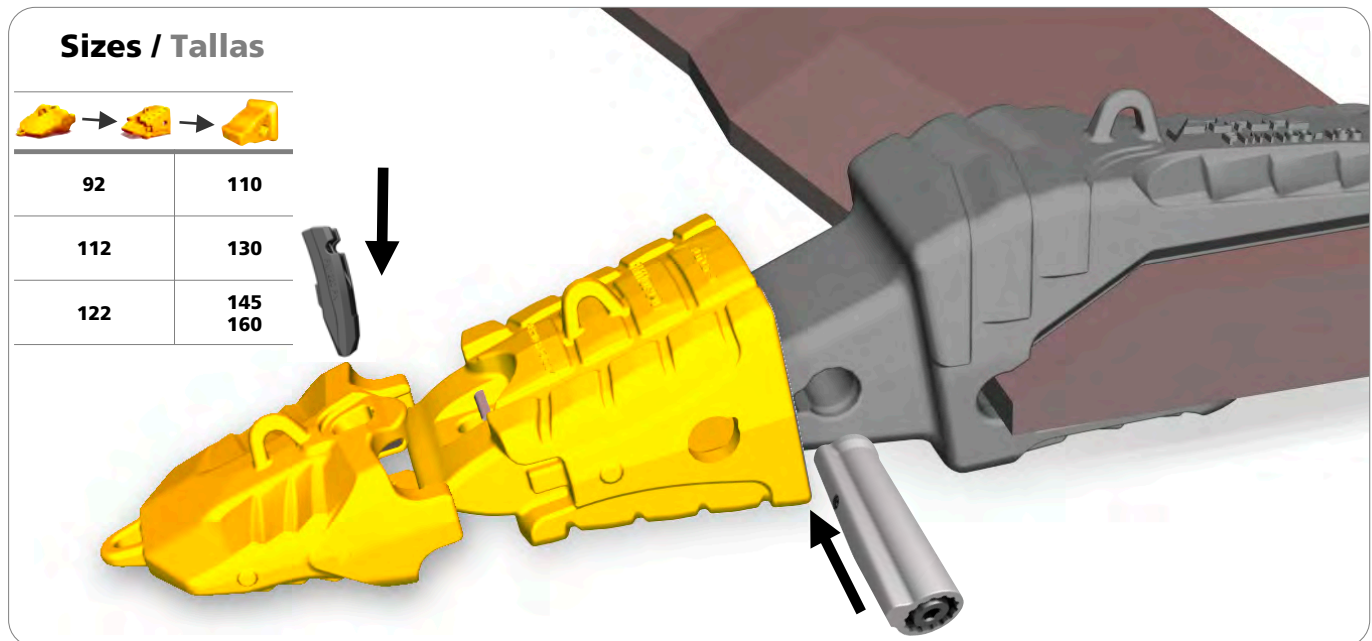
# Pin Assembly Montaje Pasador



## Sizes / Tallas



<b>92</b>	<b>110</b>
<b>112</b>	<b>130</b>
<b>122</b>	<b>145</b> <b>160</b>



# MINER

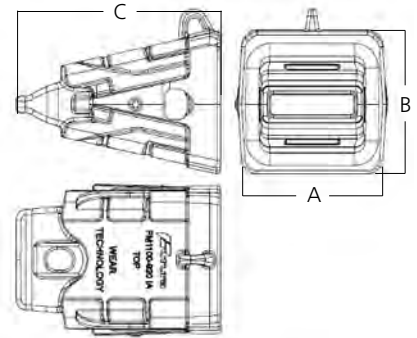
## MINER 1100 1300 & 1450 INTERMEDIATE ADAPTERS

## ADAPTADORES INTERMEDIOS

### IA Intermediate Adapter Adaptador Intermedio



4 FACE

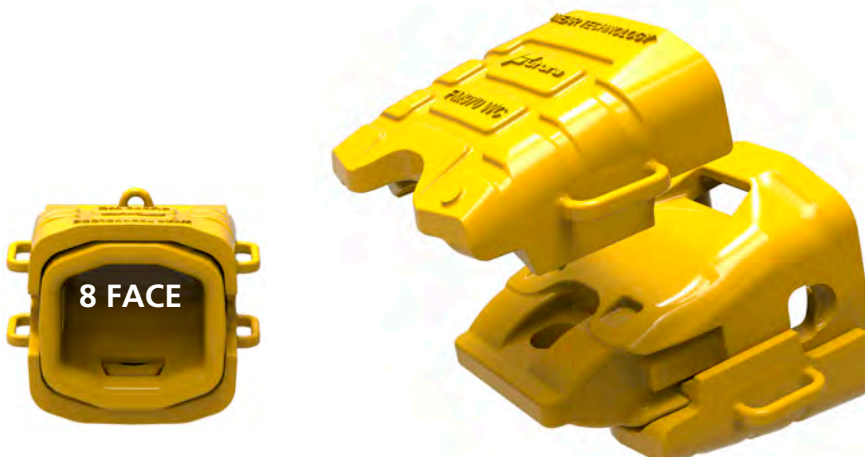


INTERMEDIATE ADAPTER **4 FACE**  
COMPATIBLE WITH: HENSLEY®, BRADKEN®,  
CATERPILLAR®, POSILOK® AND POSILOK®  
PLUS INTERMEDIATE ADAPTERS

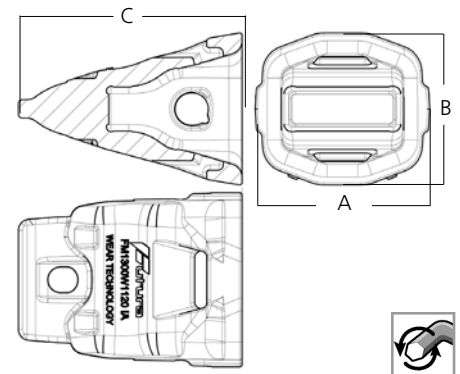
mm.			Compatible with							REF	CAPS	POSILOK®	POSILOK® PLUS	HENSLEY®	BRADKEN®	CATERPILLAR®	SIZES TALLAS
A	B	C	KG	POSILOK® PLUS	POSILOK® PLUS	POSILOK® PLUS	POSILOK® PLUS	POSILOK® PLUS									
336 13,23"	326 12,83"	465 18,31"	134,0 295,4	<b>FM1100-920 IA</b>	FM1100-920 WC	S110H92K	S110H92TK									FM1100 DPNA FM1100 PIAK2	92 <b>110</b>
355 13,98"	326 12,83"	487 19,17"	174,0 383,6	<b>FM1100-1120 IA</b>										PA10P12H		FM1100 DPNA FM1100 PIAK2	112 <b>110</b>
388 15,28"	367 14,45"	504 19,84"	192,0 423,3	<b>FM1300-1120 IA</b>	FM1300-1120 WC	S130H112K	S130H112TK	640TS1122						345-9667		FM1300 DPNA FM1300 PIAK2	112 <b>130</b>
402 15,83"	380 14,96"	536 21,10"	237,0 522,5	FM1300-1220 IA		S130H122K	S130H122TK										122 <b>130</b>
453 17,83"	401 15,79"	564 22,20"	288,0 634,9	<b>FM1450-1220 IA</b>	FM1450-1220 WC	S145H122K	S145H122TK	800TS1222								FM1450 DPNA FM1450 PIAK	122 <b>145</b>



The Intermediate Adapter Futura can be mounted on an Esco® adapter with Futura pin or Esco® Sidewinder® pin, it can be mounted on a Hensley® adapter with a Futura pin but NOT with the Hensley® pin. El Prediente Futura puede montar sobre portadientes Esco® con pasador Futura o con pasador Esco Sidewinder®. El montaje sobre portadientes Hensley® puede hacerse con pasador Futura pero NO con pasador Hensley®.

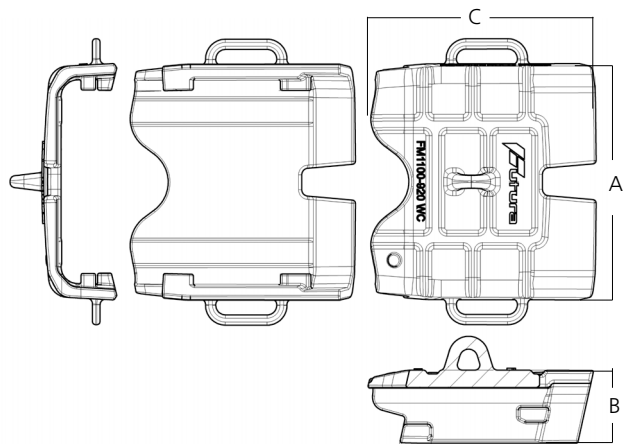
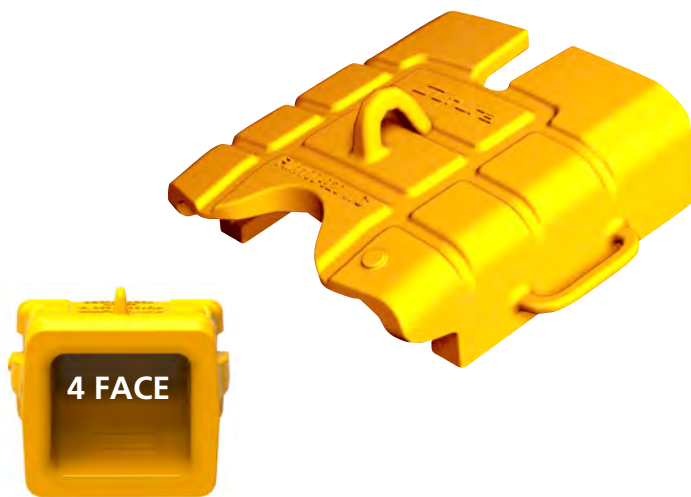


8 FACE

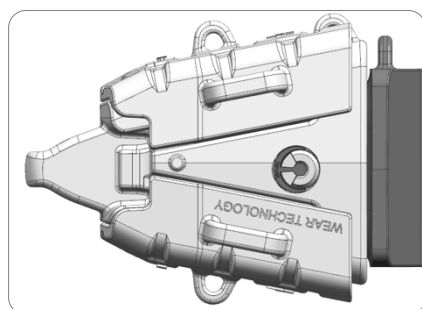
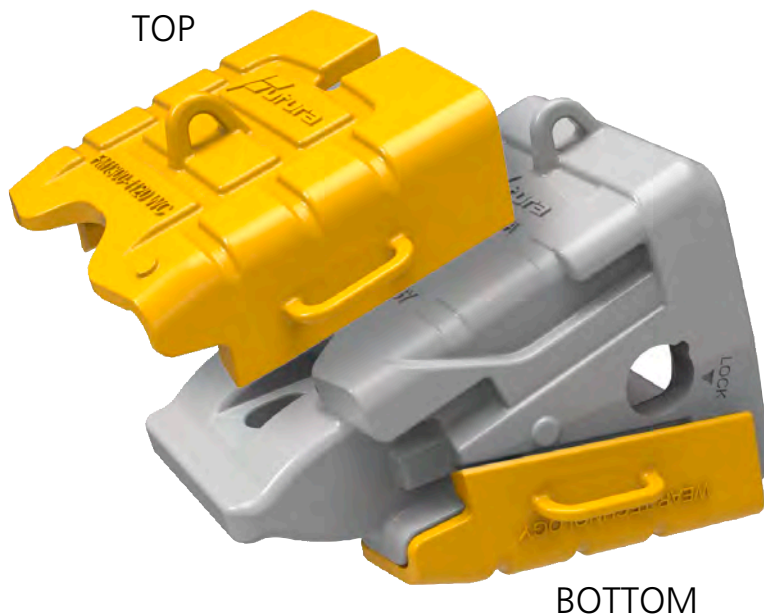
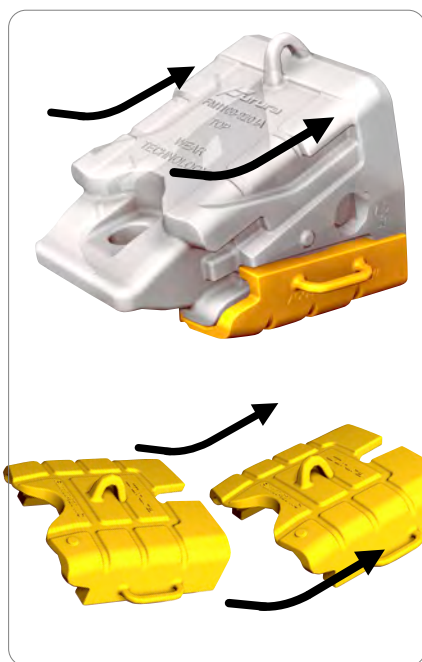


mm.			Cross Ref							REF	CAPS	POSILOK®	POSILOK® PLUS	SIZES TALLAS
A	B	C	KG	POSILOK® PLUS	POSILOK® PLUS	POSILOK® PLUS	POSILOK® PLUS							
334 13,15"	294 11,57"	469 18,46"	91,00 200,62	<b>FM1100W920 IA</b>	<b>FM940 WC</b>	S110WA92K	S110WA92TK						FM1100 DPNA	92 <b>110</b>
388 15,28"	338 13,31"	497 19,57"	133,00 293,21	<b>FM1300W1120 IA</b>	<b>FM970 WC</b>	S130W112K	S130W112TK						FM1300 DPNA	112 <b>130</b>
				FM1300W1220 IA		S130W122K	S130W122TK							122 <b>130</b>
449 17,68"	379 14,92"	564 22,20"	201,60 444,44	<b>FM1450W1220 IA</b>	<b>FM980 WC</b>	S145W122K	S145W122TK						FM1450 DPNA	122 <b>145</b>

## OPTIONAL Caps for FUTURA Intermediate Adapters Protectores Opcionales



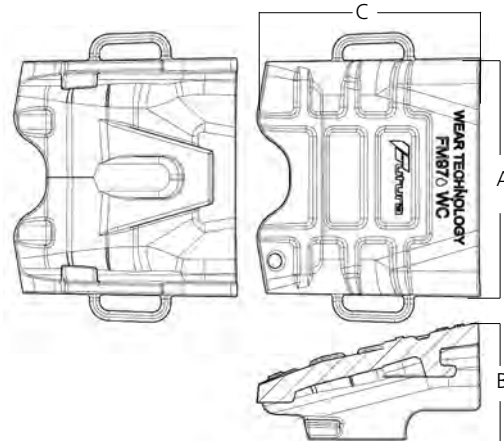
mm.				Kg	REF		TOP	BOTTOM	
A	B	C							
360 14,17"	113 4,45"	350 13,78"	28,00 61,73	<b>FM1100-920 WC</b>	FM1100-920 IA	1	1	<b>110</b>	
411 16,18"	133 5,24"	381 15,00"	40,00 88,18	<b>FM1300-1120 WC</b>	FM1300-1120 IA	1	1	<b>130</b>	
450 17,72"	140 5,51"	385 15,16"	38,70 85,32	FM1300-1220 WC	FM1300-1220 IA	1	1		
486 19,13"	144 5,67"	474 18,66"	55,00 121,25	<b>FM1450-1220 WC</b>	FM1450-1220 IA	1	1	<b>145</b>	



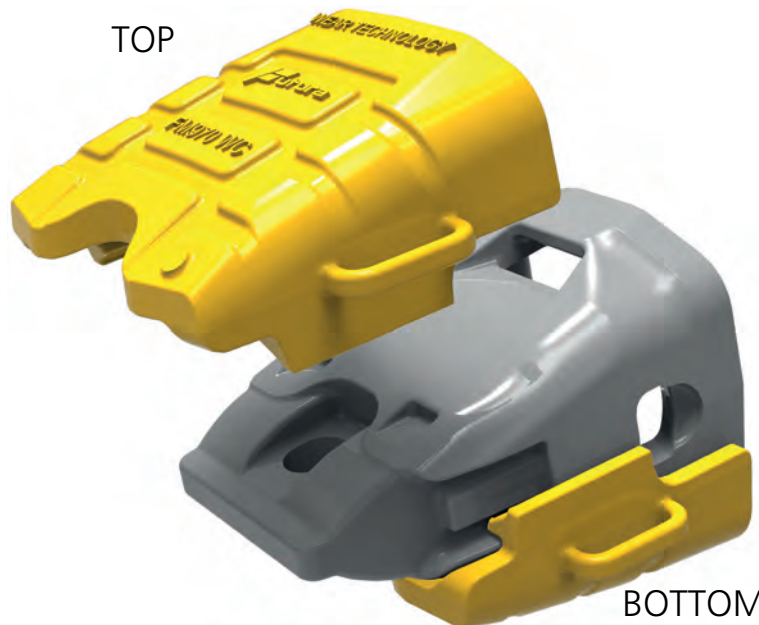
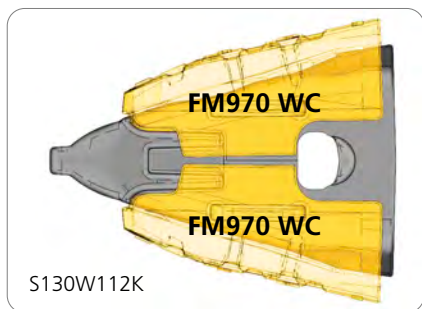
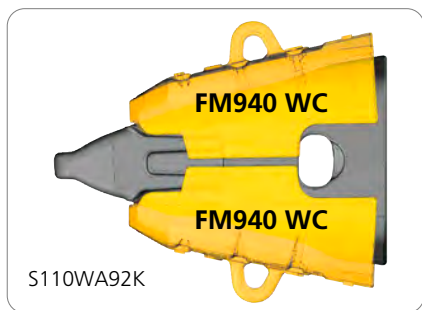
**Caution:**  
Intermediate Wear Caps must be installed prior to placing the teeth. Mining teeth contribute to the complete stability of the FUTURA Wear Caps.  
Never use FUTURA Wear Caps in intermediate adapters without tooth mounted.

**Atención:** Estos protectores deben montarse siempre antes que los dientes de minería. Los dientes de minería FUTURA contribuyen a la completa estabilidad de los PROTECTORES.  
Nunca utilice PROTECTORES en su adaptador intermedio si no llevan montados los dientes del conjunto.

# DIRECT REPLACEMENT Caps for ESCO Intermediate Adapters Protectores



mm.				REF	Cross Ref		TOP	BOTTOM	
A	B	C							
352 13,86"	175 6,87"	347 13,66"	38,50 84,88	<b>FM940 WC</b> <b>FM940 WC-ARM</b>	WC94A	S110WA92K, FM1100-920 IA	1	1	<b>110</b>
408 16,06"	201 7,91"	382 15,04"	56,00 123,46	<b>FM970 WC</b> <b>FM970 WC-ARM</b>	WC97	S130W112K, FM1300-1220 IA	1	1	<b>130</b>
467 18,39"	219 8,62"	417 16,42"	79,00 174,16	<b>FM980 WC</b>	WC98	S145W122K, FM1450-1220 IA	1	1	<b>145</b>



**Caution:**

Intermediate Wear Caps must be installed prior to placing the teeth. Mining teeth contribute to the complete stability of the FUTURA Wear Caps.

Never use FUTURA Wear Caps in intermediate adapters without tooth mounted.

**Atención:**

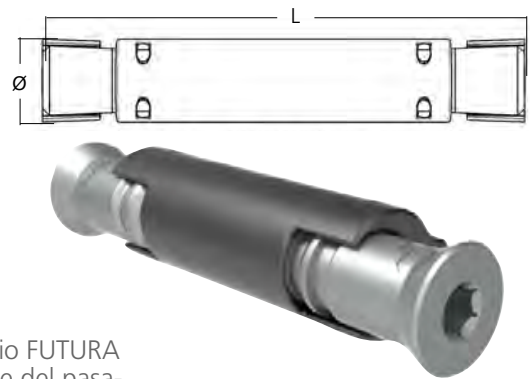
Estos protectores deben montarse siempre antes que los dientes de minería. Los dientes de minería FUTURA contribuyen a la completa estabilidad de los PROTECTORES.

Nunca utilice PROTECTORES en su adaptador intermedio si no llevan montados los dientes del conjunto.

# HAMMERLESS Mining PIN (Old Model) Pasador Minería (Modelo Antiguo)

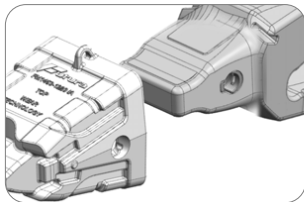


mm			NOSE			
L	Ø		REF	Cross Ref		
322 12,68"	62 2,44"	6,75 14,88	<b>FM1100 PIAK2</b> FM1100 PIAK, FM1100 DPNA	S110PN	<b>110</b>	M19 3/4"
378 14,88"	84,7 3,33"	10,00 22,05	<b>FM1300 PIAK2</b> FM1300 PIAK, FM1300 DPNA	S130PNA	<b>130</b>	M19 3/4"
443 17,44"	93 3,66"	14,50 31,97	<b>FM1450 PIAK</b> FM1450 DPNA	S145PNA	<b>145</b>	M19 3/4"

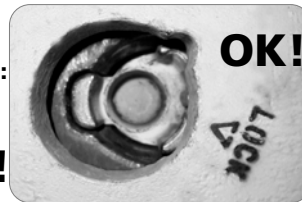


Place the FUTURA MINER intermediate adapter in position. The pin hole will look displaced. It is OK

Coloque el adaptador intermedio FUTURA en la posición indicada. El encaje del pasador parece desplazado. Esto es CORRECTO

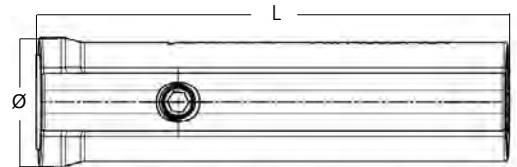


The pin hole LOOKS OFF CENTERED: IT IS OK



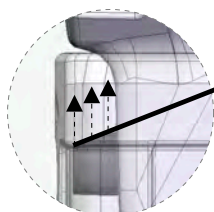
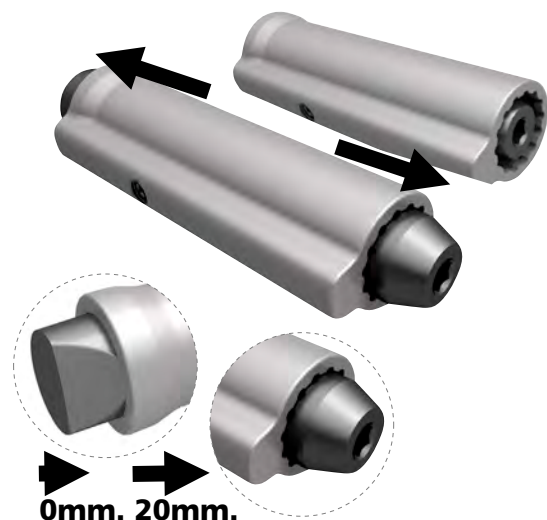
**Assembly Note**  
Notas para el montaje

# HAMMERLESS Mining PIN Pasador Minería



mm			NOSE			
L	Ø		REF	Cross Ref		
235,7 9,28"	68,2 2,69"	5,80 12,79	<b>FM1100 DPNA</b> FM1100 PIAK2, FM1100 PIAK	S110DPN	<b>110</b>	M14 9/16"
267,6 10,54"	74 2,91"	8,00 17,64	<b>FM1300 DPNA</b> FM1300 PIAK2, FM1300 PIAK	S130DPN	<b>130</b>	M14 9/16"
306,6 12,07"	83,9 3,30"	11,70 25,79	<b>FM1450 DPNA</b> FM11450 PIAK	S145DPN	<b>145</b>	M14 9/16"

**DUAL EXPANSION DOBLE EXPANSIÓN**



**DUAL TAKE UP**

Dual take up retention increases adapter nose life

**EXTRA TENSIÓN**

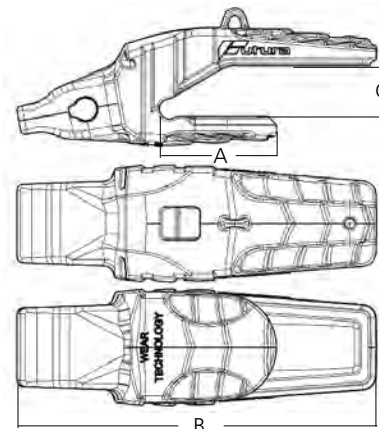
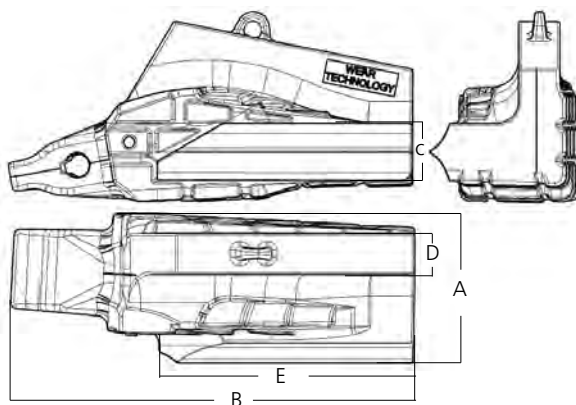
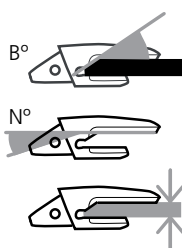
La retención de doble tirante aumenta la vida útil de la nariz del adaptador

# MINER

## MINER 1100 ADAPTERS

## PORTADIENTES MINER 1100

### Weld-On Adapters Portadientes Soldable Minería



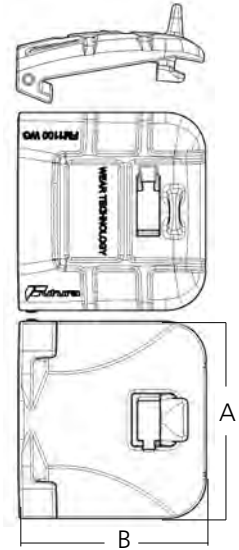
**CLH  
LEFT CORNER  
ADAPTER**

**CRH  
RIGHT CORNER  
ADAPTER**

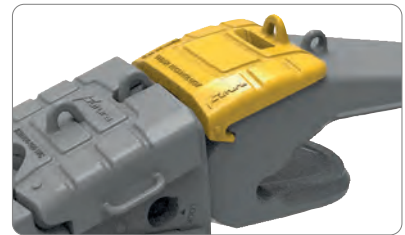
mm.											REF	Cross Ref	
A	B	C	D	E	N°	B°		KG					
329	1009	142	-	-	10	30		140	297,00	<b>FM1100-140</b>	5874-S110	FM1100 WC	FM1100 DPNA
12,95"	39,72"	5,59"	-	-	10	30	5,51"	654,76					
357	1027	163	-	-	10	30		160	297,50	<b>FM1100-160</b>	5875-S110		
14,06"	40,43"	6,42"	-	-	10	30	6,30"	655,86					
415	1123	160	115	710	10	30		160	725,00	<b>FM1100 CLH</b>	PWL3-S110	-	
16,34"	44,21"	6,30"	4,53"	27,95"	10	30	6,30"	1598,32					
415	1123	160	115	710	10	30		160	725,00	<b>FM1100 CRH</b>	PWR3-S110	-	F115 LWS F120X760 UWS
16,34"	44,21"	6,30"	4,53"	27,95"	10	30	6,30"	1598,32					

**110**

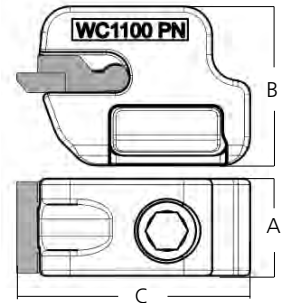
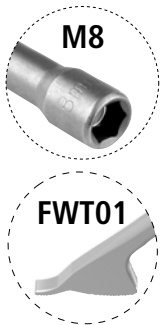
## Adapter Wear Caps Protectores Portadientes



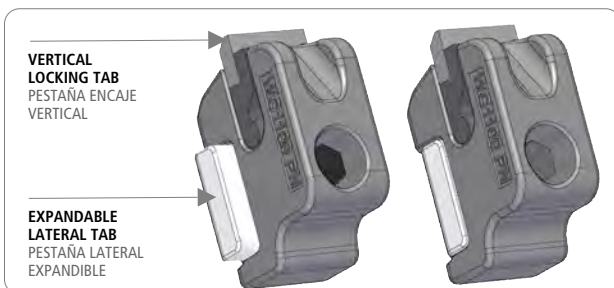
A	B		REF	Cross Ref		
304 11,97"	320 12,60"	26,4 58,20	<b>FM1100 WC</b>	WC95 WC1100 PN	FM1100-140 FM1100-160	5874-S110 5875-S110



## PIN for Wear Caps PASADOR para Protectores Portadientes



mm				ADAPTER	
A	B	C		REF	
34 1,34"	55 2,17"	82 3,23"	0,80 1,76	<b>WC1100 PN</b>	<b>110</b>



**EXTFLS**  
EXTRACTION TOOL





## Adapter Wear Caps Protectores Portadientes

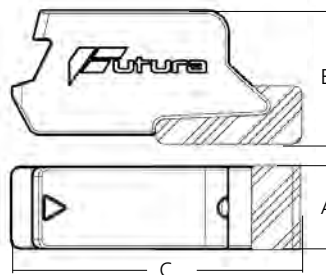


ASSEMBLY

mm				REF	Cross Ref			130
A	B	C						
438 17,24"	72 2,83"	400 15,75"	80,00 176,37	<b>FWR57B</b>	KLR57MB	FWB01B	FWL01B	<b>145</b>
472 18,58"	70 2,76"	402 15,83"	83,00 182,98	<b>FWR61B</b>	KLR61MB			

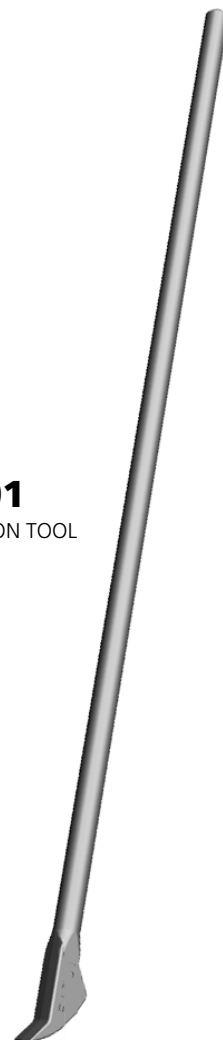


## PIN for Wear Caps PASADOR

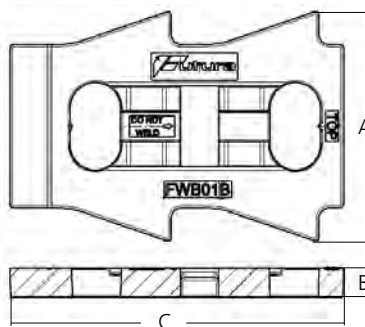


mm				REF	Cross Ref
A	B	C			
25,2 0,99"	40,9 1,61"	88,8 3,50"	6,30 13,89	<b>FWL01B</b>	KLL01MB

**FWT01**  
EXTRACTION TOOL

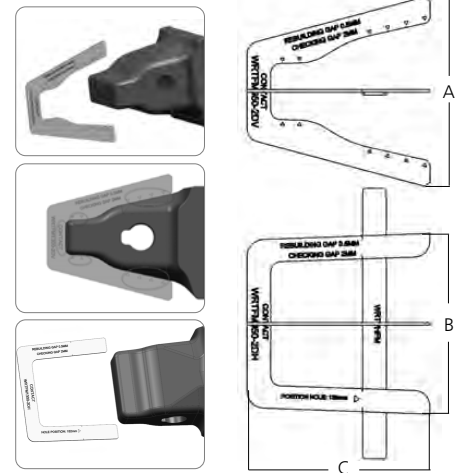
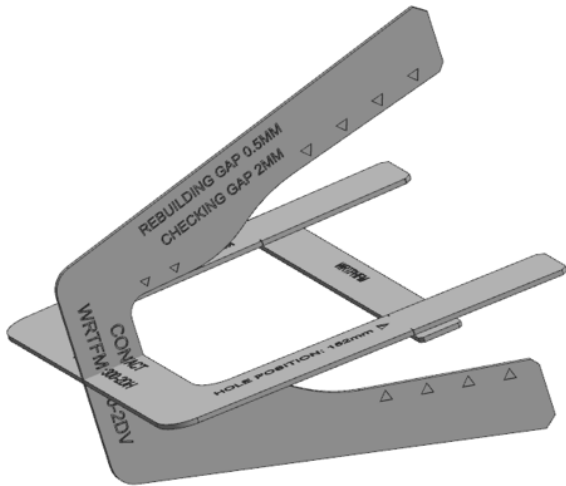


## Weld-on Base for Wear Caps BASE SOLDABLE

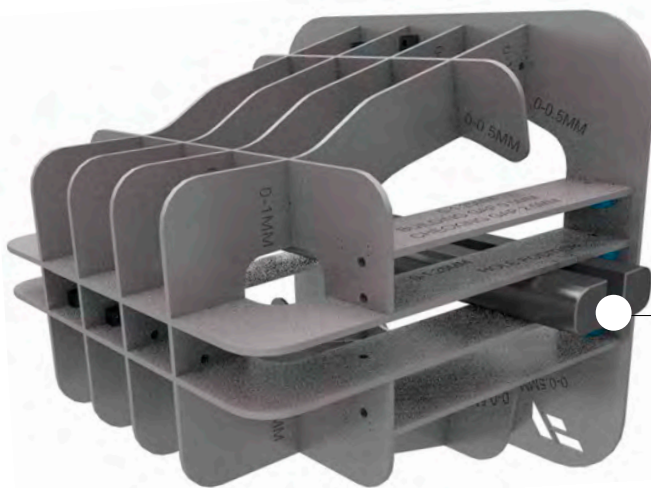


mm				REF	Cross Ref
A	B	C			
196 7,72"	25 0,98"	286 11,26"	30,00 66,14	<b>FWB01B</b>	KLB01MB

## Nose Checking Templates 2D Plantilla para Comprobación de Narices

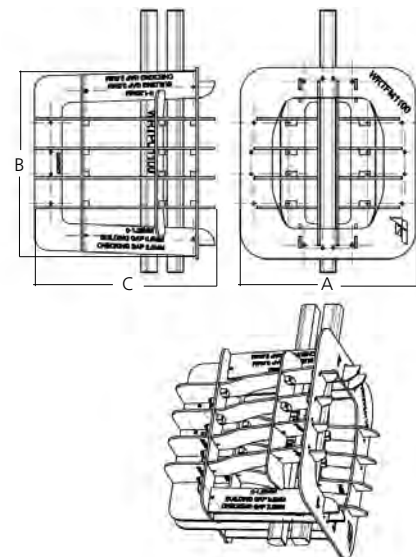


mm.			Kg	REF	Cross Ref	Adapters	Noses	
A	B	C						
281 11,06"	267 10,51"	269 10,59"	1,96 4,32	<b>WRTFM950-2D</b>	WRTS95CT WRTS95ST	S95	WN-S95	<b>95</b>
312 12,28"	330 12,99"	324 12,76"	2,70 5,95	<b>WRTFM1100-2D</b>	WRTS110CT WRTS110ST	S110	WN-S110	<b>110</b>
346 13,62"	383 15,08"	330 12,99"	3,27 7,21	<b>WRTFM1300-2D</b>	WRTS130CTA WRTS130STA	S130	WN-S130	<b>130</b>
369 14,53"	421 16,57"	365 14,37"	3,70 8,16	<b>WRTFM1450-2D</b>	WRTS145CT WRTS145ST	S145	WN-S145	<b>145</b>



### PIN CHECK TOOL

### COMPROBADOR DE PASADORES



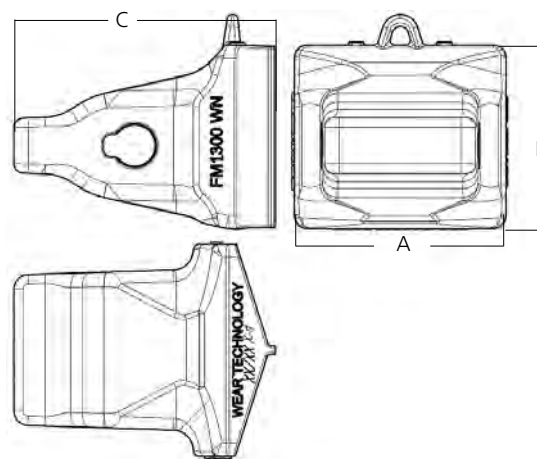
mm.			Kg	REF	PIN CHECK TOOL	Adapters	Noses	
A	B	C						
290 11,42"	298 11,73"	287 11,30"	13,00 28,66	<b>WRTFM950-3D</b>	<b>WRTPC950</b>	S95	WN-S95	<b>95</b>
320 12,60"	350 13,78"	327 12,87"	19,00 41,89	<b>WRTFM1100-3D</b>	<b>WRTPC1100</b>	S110	WN-S110	<b>110</b>
330 12,99"	373 14,69"	346 13,62"	19,20 42,33	<b>WRTFM1300-3D</b>	<b>WRTPC1300</b>	S130	WN-S130	<b>130</b>
380 14,96"	430 16,93"	385 15,16"	26,15 57,65	<b>WRTFM1450-3D</b>	<b>WRTPC1450</b>	S145	WN-S145	<b>145</b>




# MINER

## MINER 1100 1300 & 1450 WELD-ON NOSES

### MINER 1100 1300 Y 1450 NARICES SOLDABLES

#### WN Weld-On Nose Nariz Soldable

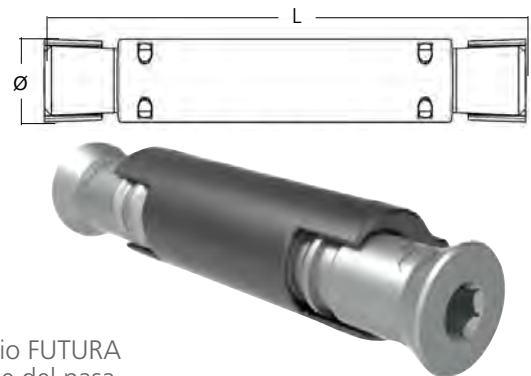


mm.			KG	REF	CROSS REF		SIZES TALLAS	
A	B	C						
305 12,01"	289 11,38"	400 15,75"	117,00 257,94	<b>FM1100 WN</b>	WN110	FM1100 DPNA	92	<b>110</b>
361 14,21"	311 12,24"	446 17,56"	174,00 383,60	<b>FM1300 WN</b>	WN130	FM1300 DPNA	112	<b>130</b>
392 15,43"	340 13,39"	474 18,66"	225,00 496,03	<b>FM1450 WN</b>	2N145	FM1450 DPNA	122	<b>145</b>

# HAMMERLESS Mining PIN (Old Model) Pasador Minería (Modelo Antiguo)

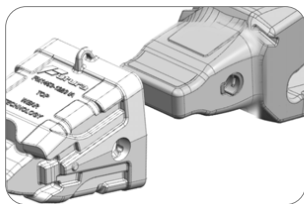


mm			NOSE			
L	Ø		REF	Cross Ref		
322 12,68"	62 2,44"	6,75 14,88	<b>FM1100 PIAK2</b> FM1100 PIAK, FM1100 DPNA	S110PN	<b>110</b>	M19 3/4"
378 14,88"	84,7 3,33"	10 22,05	<b>FM1300 PIAK2</b> FM1300 PIAK, FM1300 DPNA	S130PNA	<b>130</b>	M19 3/4"
443 17,44"	93 3,66"	14,50 31,97	<b>FM1450 PIAK</b> FM1450 DPNA	S145PNA	<b>145</b>	M19 3/4"

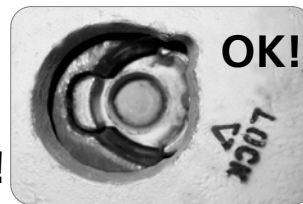


Place the FUTURA MINER intermediate adapter in position. The pin hole will look displaced. It is OK

Coloque el adaptador intermedio FUTURA en la posición indicada. El encaje del pasador parece desplazado. Esto es CORRECTO

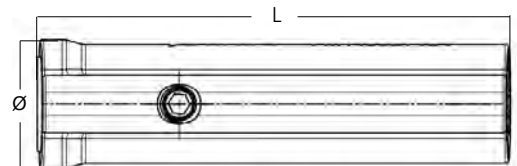


The pin hole LOOKS OFF CENTERED: IT IS OK



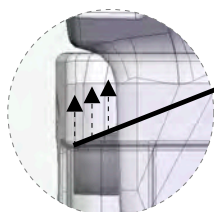
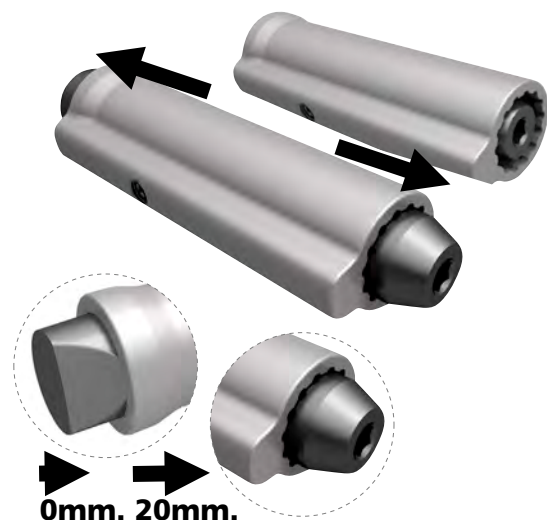
**Assembly Note**  
Notas para el montaje

# HAMMERLESS Mining PIN Pasador Minería



mm			NOSE			
L	Ø		REF	Cross Ref		
235,7 9,28"	68,2 2,69"	5,80 12,79	<b>FM1100 DPNA</b> FM1100 PIAK2, FM1100 PIAK	S110DPN	<b>110</b>	M14 9/16"
267,6 10,54"	74 2,91"	8,00 17,64	<b>FM1300 DPNA</b> FM1300 PIAK2, FM1300 PIAK	S130DPN	<b>130</b>	M14 9/16"
306,6 12,07"	83,9 3,30"	11,70 25,79	<b>FM1450 DPNA</b> FM11450 PIAK	S145DPN	<b>145</b>	M14 9/16"

**DUAL EXPANSION DOBLE EXPANSIÓN**



**DUAL TAKE UP**

Dual take up retention increases adapter nose life

**EXTRA TENSIÓN**

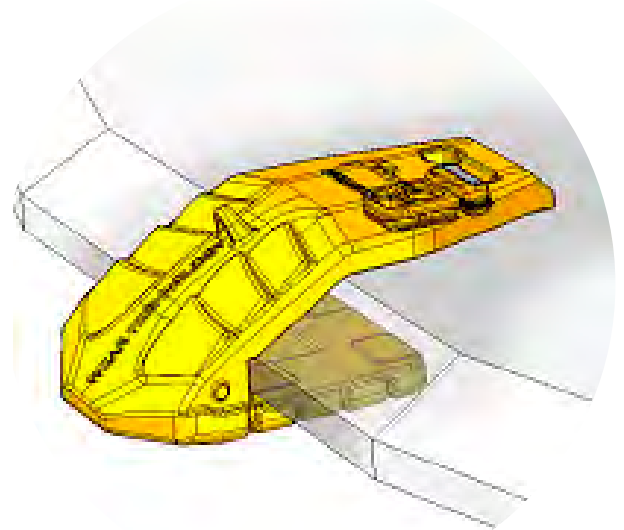
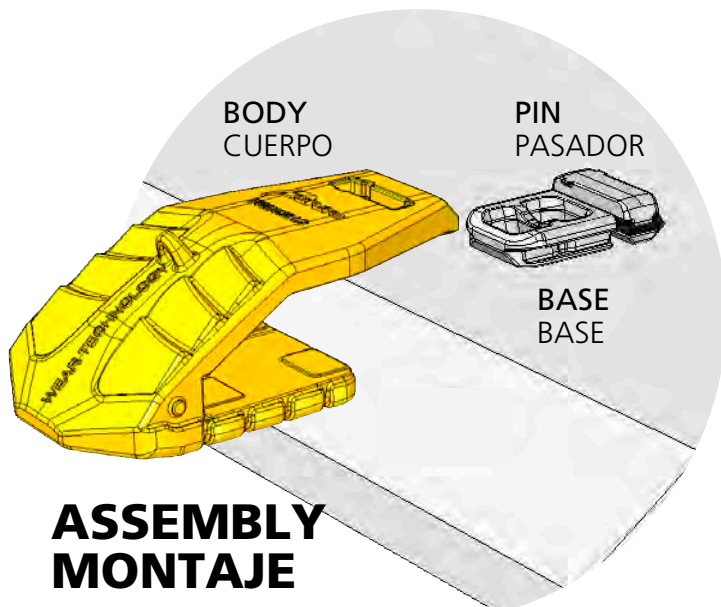
La retención de doble tirante aumenta la vida útil de la nariz del adaptador

# miner

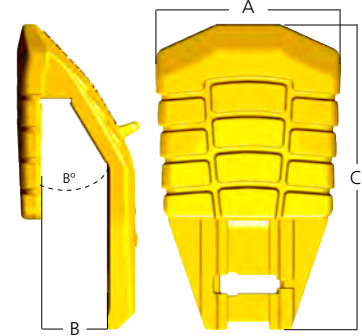
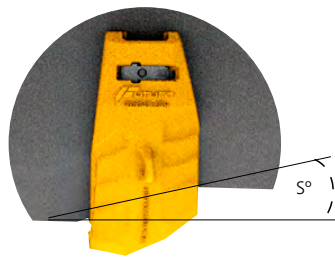


## EXCAVATOR LIP SHROUDS

### PROTECTORES DE CUCHILLA

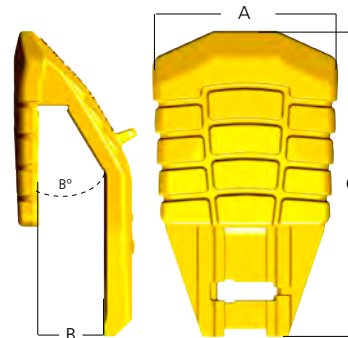
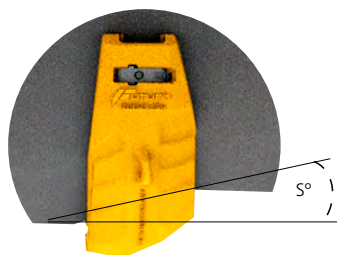


# EXCAVATOR Lip Shrouds Protector de Cuchilla para EXCAVADORA



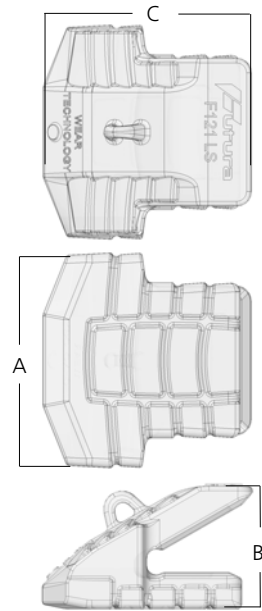
mm.		C	in	B°	S°	↑	Kg	Lb	LEFT	RIGHT	BASE PIN	THRUST BLOCK
A	B											
240	72	430	16,9"	-	-	70	39	85	<b>F70X240 LSLH</b> TAC70X240-2L	<b>F70X240 LS</b> TAC70X240-1B	<b>F70X240 LSRH</b> TAC70X240-2R	FAB FAP
9,4"	2,8"	429	16,9"	30°	14°	2,8"	42	91				
245	94	468	18,4"	-	-	90	45	99	<b>F90X245 LSLH</b> TAC 90X245-2LA	<b>F90X245 LS</b> TAC 90X245-1A	<b>F90X245 LSRH</b> TAC 90X245-2RA	FAB FAP
9,6"	3,7"	494	19,4"	30°	22°	3,9"	46	101				
320	94	505	19,9"	-	-	90	77	169	<b>F90X320 LSLH</b> TAC 90X320-6L	<b>F90X320 LS</b> TAC 90X320-5	<b>F90X320 LSRH</b> TAC 90X320-6R	FAB FAP
12,6"	3,7"	521	20,5"	30°	14°	3,9"	80	175				
360	94	527	20,7"	30°	14°	90	85	187	<b>F90X360 LSLH</b> TAC90X360-2L	<b>F90X360 LS</b> F90X360 LS	<b>F90X360 LSRH</b> TAC90X360-2R	FAB FAP
14,2"	3,7"					3,9"						
393	94	527	20,7"	30°	14°	90	88	195	<b>F90X390 LSLH</b> TAC90X390-1L	<b>F90X390 LS</b> F90X390 LS	<b>F90X390 LSRH</b> TAC90X390-1R	FAB FAP
15,5"	3,7"					3,9"						
290	103	601	23,7"	-	-	100	86	190	<b>F100X290 LSLH</b> TBC 100X290-4L	<b>F100X290 LS</b> TBC 100X290-3	<b>F100X290 LSRH</b> TBC 100X290-4R	FBB FBP
11,4"	4,1"	629	24,8"	30°	22°	3,9"	90	198				
320	103	595	23,4"	-	-	100	99	218	<b>F100X320 LSLH</b> TBC 100X320-2L	<b>F100X320 LS</b> TBC 100X320-1B	<b>F100X320 LSRH</b> TBC 100X320-2R	FBB FBP
12,6"	4,1"	607	23,9"	30°	10°	3,9"	100	219				
377	103	577	22,7"	-	-	100	110	242	<b>F100X375 LSLH</b> TBC100X375-1L	<b>F100X375 LS</b> TBC100X375-2	<b>F100X375 LSRH</b> TBC100X375-1R	FBB FBP
14,8"	4,1"	630	24,8"	30°	22°	3,9"	114	251	<b>F100X375D14 LSLH</b> TBC100X375-3L		<b>F100X375D14 LSRH</b> TBC100X375-3R	FBB FBP
		630	24,8"	14°		3,9"	112	247				
410	103	600	23,6"	-	-	100	123	271	<b>F100X410 LSLH</b> TBC 100X410-4L	<b>F100X410 LS</b> TBC 100X410-3	<b>F100X410 LSRH</b> TBC 100X410-4R	FBB FBP
16,1"	4,1"	618	24,3"	30°	10°	3,9"	126	278				
430	103	577	22,7"	-	-	100	130	287	<b>F100X430 LSLH</b> TBC 100X430-2L	<b>F100X430 LS</b> TBC 100X430-1	<b>F100X430 LSRH</b> TBC 100X430-2R	FBB FBP
16,9"	4,1"	629	24,8"	30°	22°	3,9"	133	293				
330	124	609	24,0"	-	-	120	118	260	<b>F120X330 LSLH</b> TBC 120X330-2LA	<b>F120X330 LS</b> TBC 120X330-1A	<b>F120X330 LSRH</b> TBC 120X330-2RA	FBB FBP
13,0"	4,9"	639	25,2"	30°	22°	4,72"	120	265				
350	124	595	23,4"	-	-	120	115	254	<b>F120X350 LSLH</b> TBC120X350-2LB	<b>F120X350 LS</b> TBC120X350-3A	<b>F120X350 LSRH</b> TBC120X350-2RB	FBB FBP
13,8"	4,9"	609	24,0"	30°	11,5°	4,72"	114	251				
375	124	623	24,5"	-	-	120	140	309	<b>F120X375 LSLH</b>	<b>F120X375 LS</b>	<b>F120X375 LSRH</b>	FBB FBP
14,8"	4,9"	641	25,2"	30°	14°	4,72"	140	309				
410	124	629	24,8"	-	-	120	150	331	<b>F120X410 LSLH</b> TBC 120X410-3L	<b>F120X410 LS</b>	<b>F120X410 LSRH</b> TBC120X410-3R	FBB FBP
16,1"	4,9"	640	25,2"	30°	14°	4,72"	154	338	<b>F120X410D22 LSLH</b> TBC 120X410-2L		<b>F120X410D22 LSRH</b> TBC120X410-2R	FBB FBP
		626	24,6"	22°	4,72"	123	271					

# EXCAVATOR Lip Shrouds Protector de Cuchilla para EXCAVADORA



mm.															
A	B	C	in	B°	S°		kg	Lb	LEFT	RIGHT	BASE PIN	THRUST BLOCK			
		623	24,5"	-		128	282		<b>F120X420 LS</b>						
420	124	608	23,9"	30°	11,5°	120	127	280	<b>F120X420 LSLH</b>	<b>F120X420 LSRH</b>	FBB	FBP			
						4,72"			TBC 120X420-2L	TBC 120X420-1	TBC 120X420-2R				
		623	24,5"	-		130	287		<b>F120X440 LS</b>						
440	124	608	23,9"	30°	11,5°	120	131	289	<b>F120X440 LSLH</b>	<b>F120X440 LSRH</b>	FBB	FBP			
						4,72"			TBC 120X440-2LB	TBC 120X440-1B	TBC 120X440-2RB				
		610	24,0"	-		163	358		<b>F120X535 LS</b>						
535	124	610	24,0"	30°	11,5°	120	167	367	<b>F120X535 LSLH</b>	<b>F120X535 LSRH</b>	FBB	FBP			
						4,72"			TBC 120X535-4L	TBC 120X535-3	TBC 120X535-4R				
		425	16,7"		25°	130-145	256	563	<b>F130145X425 LS</b>					F130145X425 B	
						5,1"-5,7"			ECC 130/145					FCP2	
		714	28,1"	-		182	401		<b>F140X420 LS</b>						
420	143	729	28,7"	30°	11,5°	140	180	397	<b>F140X420 LSLH</b>	<b>F140X420 LSRH</b>	FBB	FBP	TB160140		
						5,5"			TBC 140X420-2LA	TBC 140X420-1A	TBC 140X420-2RA				
		714	28,1"	-		227	500		<b>F140X465 LS</b>						
465	143	730	28,7"	30°	11,5°	140	221	487	<b>F140X465 LSLH</b>	<b>F140X465 LSRH</b>	FBB	FBP			
						5,5"			TBC 140X465-1RB	TBC 140X465-3A	TBC 140X465-1RB				
		715	28,1"	-		230	507		<b>F140X490 LS</b>						
490	143	730	28,7"	30°	11,5°	140	230	507	<b>F140X490 LSLH</b>	<b>F140X490 LSRH</b>	FBB	FBP			
						5,5"			TBC 140X490-2LB	TBC 140X490-1B	TBC 140X490-2RB				
		575	22,6"	30,2°	30°	140	231	509	<b>F140X575 LSLH</b>	<b>F140X575 LSRH</b>	FBB	FBP	TB140		
						5,5"			TBC 140X575-1LA	F140X575 LS	TBC 140X575-1RA				
						183	403		<b>F160X430 LS</b>						
430	166	727	28,6"	30°	14°	160	233	514	<b>F160X430 LSLH</b>	<b>F160X430 LSRH</b>	FBB	FBP			
						6,3"			TBC 160X430-2L	TBC 160X430-1	TBC 160X430-2R				
		820	32,3"	-		240	529		<b>F160X450 LS</b>						
450	166	800	31,5"	30°	14°	160	244	538	<b>F160X450 LSLH</b>	<b>F160X450 LSRH</b>	FBB	FBP	TB160140		
						6,3"			TBC 160X450-2L	TBC 160X450-1	TBC 160X450-2R				
		520	20,5"	32,4°	30°	14°	160	319	<b>F160X520 LSLH</b>	<b>F160X520 LSRH</b>	FBB	FBP			
						6,3"			TBC 160X520-1L	TBC 160X520-1R					
		570	22,4"	33,6°	30°	14°	160	354	<b>F160X570 LSLH</b>	<b>F160X570 LSRH</b>	FBB	FBP			
						6,3"			TBC 160X570-1L	TBC 160X570-1R					
		430	16,9"	32,4°	30°	230	387	853	<b>F230X430 LS</b>					FCB	TB230
						9"			TCCF130-28 TCCF130-21C TCCF130-21D					FCP	
		600	23,6"	34,2°	30°	230	455	1.003	<b>F230X600 LS</b>					FCB	FCP
						9"			TCCF130-16A TCC130-25C					FCP	
		410	16,1"	34,6°	30°	245	346	763	<b>F245X410 LS</b>					FCB	FCP
						9,6"			TCCF145-4 TCCF145-5 TCCF145-1B					FCP	
		570	22,4"	34,6°	30°	245	472	1.041	<b>F245X570 LS</b>					FCB	FCP
						9,6"			TCCF145-3 TCCF145-6 TCCF145-8 TCCF145-2B					FCP	

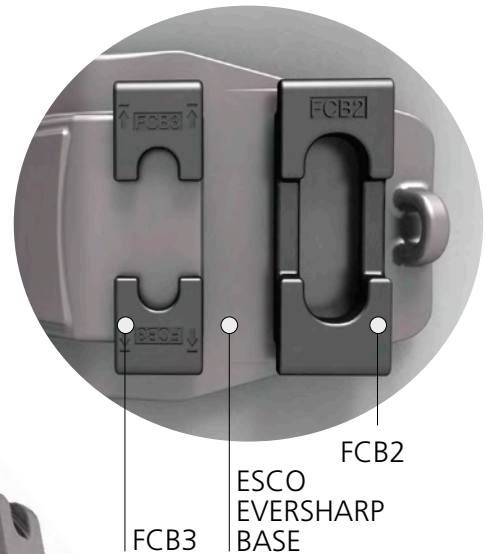
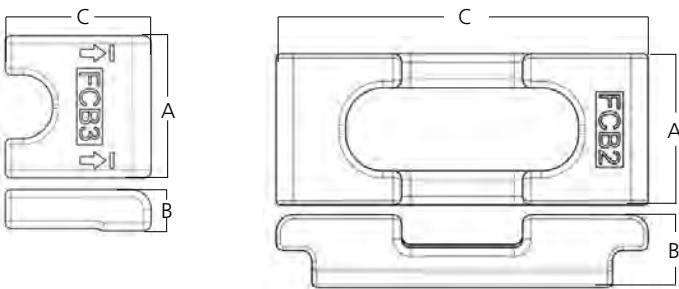
## EXCAVATOR Weld-On Lip Shrouds Protector Cuchilla SOLDABLE EXCAVADORA



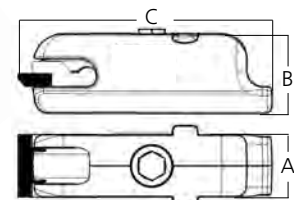
mm.					REF	OEM
A	B	C				
360 14,17"	209 8,23"	355 13,98"	87,00 191,80	120 4,72"	<b>F121 LS</b>	WS141LL

## Adapter and Pins for Eversharp Style Shroud Base y pasadores para Protector

mm.				REF	UNITS
A	B	C			
89 3,50"	42,7 1,68"	219 8,62"	3,00 6,61	<b>FCB2</b>	1
72 2,83"	21 0,83"	74 2,91"	0,70 1,54	<b>FCB3</b>	2

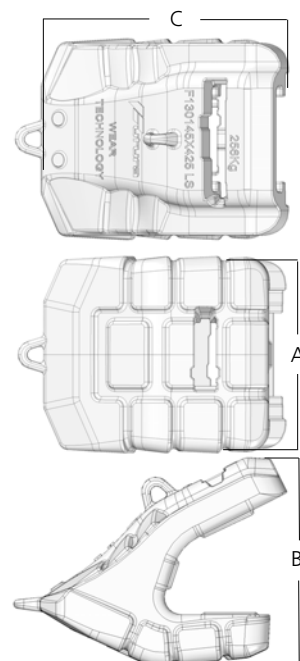
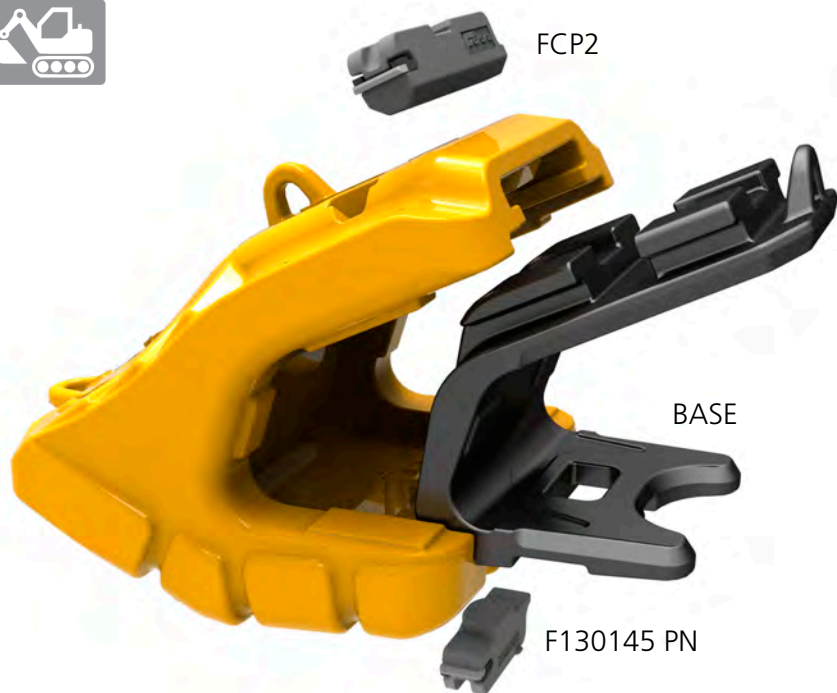


mm.				REF	POSITION
A	B	C			
51 2,01"	63,9 2,52"	258,2 10,17"	5,00 11,02	<b>FCP2</b>	TOP
44,5 1,75"	66,8 2,63"	161,6 6,36"	2,70 5,95	<b>F130145 PN</b>	BOTTOM





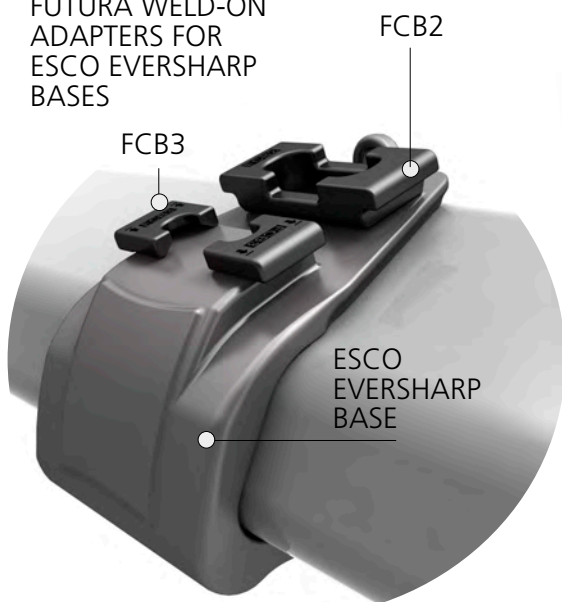
## Lip Shrouds for Eversharp Blades Protector Cuchilla para Eversharp



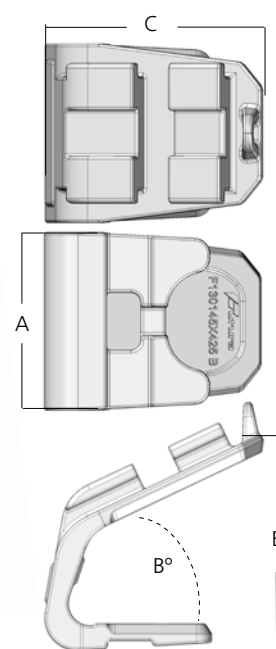
mm.						REF	OEM	BASE	PINS
A	B	C							
425 16,73"	457 17,99"	540 21,26"	256,00 564,37	<b>130</b> 5,12"	<b>154</b> 6,06"	<b>F130145X425 LS</b>	ECC130/145	<b>F130145X425 B</b>	<b>FCP2</b> <b>F130145 PN</b>

## Base and Adapters for Eversharp Style Shroud Base para Protector

FUTURA WELD-ON ADAPTERS FOR ESCO EVERSHARP BASES

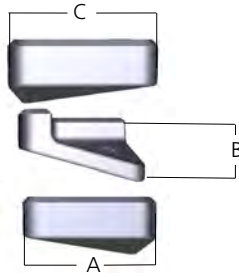


FUTURA F130145X450 B BASE

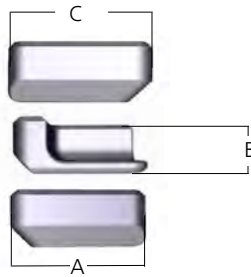


mm.						REF	SHROUD	ADAPTERS	PINS	
A	B	C	B°							
280 11,02"	336 13,23"	340 13,39"	25,4	55,00 121,25	<b>130</b> 5,12"	<b>154</b> 6,06"	<b>F130145X425 B</b>	F130145X425 LS	FCB2, FCB3	FCP2 F130145 PN

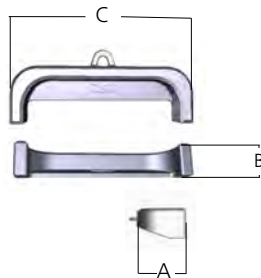
OPTIONAL Thrust Blocks Piezas de Apoyo OPCIONALES



mm.				REF	LIP SHROUD	UNITS
A	B	C				
190	106	190		<b>TB140</b>	F140X475 RH/LH	1
7,48"	4,17"	7,48"				



mm.				REF	LIP SHROUD	UNITS
A	B	C				
190	79	190		<b>TB160140</b>	F140X420 LS/RH/LH F160X450 LS/RH/LH	1
7,48"	3,11"	7,48"				



mm.				REF	LIP SHROUD	UNITS
A	B	C				
170	104	550		<b>TB230</b>	F230X430 LS	1
6,69"	4,09"	21,65"				



# MINER

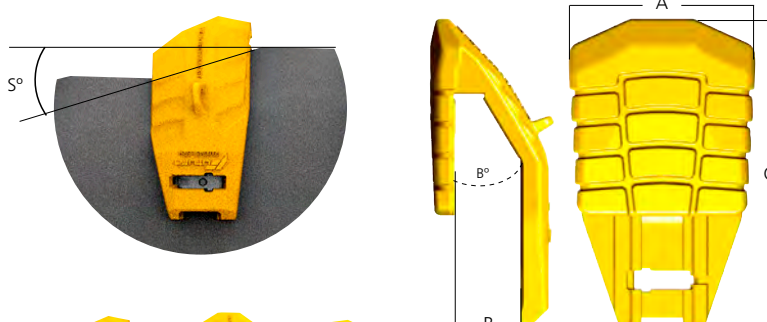


## LOADER LIP SHROUDS

### PROTECTORES DE CUCHILLA

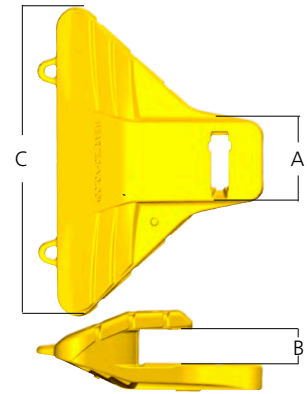


#### LOADER Lip Shrouds Protector de Cuchilla para CARGADORA



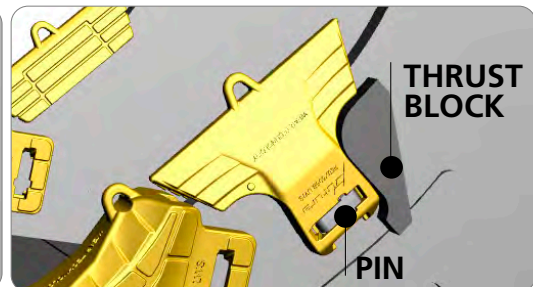
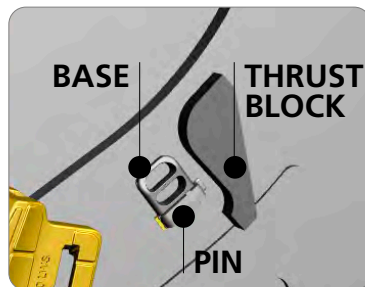
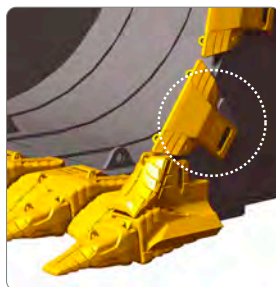
mm.															
A	B	C	in	B°	S°	KG	Lb	LEFT	CENTER	RIGHT	BASE	PIN			
345	52	445	16,9"	30°	13°	50	72	<b>F50X345 LDSLH</b> TAC50X345-4L	<b>F50X345 LDS</b> TAC50X345-3	<b>F50X345 LDSRH</b> TAC50X345-4R	FAB	FAP			
381	67	585	15,0"	30°	13°	65	101	<b>F65X380 LDSLH</b> LS2501500JL		<b>F65X380 LDSRH</b> LS2501500JR	FAB	FAP			
415	73	494	16,3"	30°	13°	70	105	<b>F70X415 LDSLH</b> TAC70X415-3L	<b>F70X415 LDS</b> TAC70X415-1	<b>F70X415 LDSRH</b> TAC70X415-3R	FAB	FAP			
450	73	572	17,7"	30°	10°	70	107	<b>F70X450 LDSLH</b> TAC70X450-2LA	<b>F70X450 LDS</b> TAC70X450-1A	<b>F70X450 LDSRH</b> TAC70X450-2RA	FAB	FAP			
430	77	600	16,9"	30°	13°	75	154	<b>F75X430 LDSLH</b> TAC75X430-2L	<b>F75X430 LDS</b> TAC75X430-1	<b>F75X430 LDSRH</b> TAC75X430-2R	FAB	FAP			
435	94	635	17,1"	30°	10°	90	163	<b>F90X435 LDSLH</b> TBC90X435-2LC	<b>F90X435 LDS</b> TBC90X435-1C	<b>F90X435 LDSRH</b> TBC90X435-2RC	FBB	FBP			
410	103	635	16,1"	30°	10°	100	138	<b>F100X410 LDSLH</b> TBC100X410-2LB	<b>F100X410 LDS</b> TBC100X410-1B	<b>F100X410 LDSRH</b> TBC100X410-2RB	FBB	FBP			
410	103	763	16,1"	30°	22°	100	208	<b>F100X410B22 LDSLH</b> TBC100X410-6LA	<b>F100X410B22 LDS</b> TBC100X410-5A	<b>F100X410B22 LDSRH</b> TBC100X410-6RA	FBB	FBP			

# TOP Wing Shrouds Protector Lateral Superior de Cazo



mm.				BASE	PIN	PIN&WAS	THRUST BLOCK				
A	B	C		REF	Cross Ref					Cross Ref	
175 6,89"	42 1,65"	440 17,32"	26,50 58,42	<b>F40X440 UWS</b>	TAW40X440-1A	FAB	FAP	-	<b>FDD33095 TB</b>	PDD33095#1	
175 6,89"	42 1,65"	560 22,05"	53,40 117,72	<b>F40X560 UWS</b>	TAW40X560-1	FAB	FAP	-	<b>FDD33096 TB</b>	PDD33096#1	<b>40</b> 1,57"
171 6,73"	42 1,65"	600 23,62"	33,50 73,85	<b>F40X600 UWS</b>	TAW40X600-1	FAB	FAP	BE7-5280 75KLSKR	<b>FDE51413 TB</b>	PDE51413#3	
175 6,89"	53 2,09"	505 19,88"	49,60 109,35	<b>F50X505 UWS</b>	TAW50X505-2	FAB	FAP	-	<b>FDD32816 TB</b>	PDD32816#1	
176 6,93"	53 2,09"	505 19,88"	31,50 69,44	<b>F50X505B UWS</b>	TAW50X505-1A	FAB	FAP	-	<b>FDD32816 TB</b>	PDD32816#1	
175 6,89"	53 2,09"	630 24,80"	49,40 108,91	<b>F50X630 UWS</b>	TAW50X630-1A	FAB	FAP	-	<b>FDE51413 TB</b>	PDE51413#3	<b>50</b> 1,97"
175 6,89"	53 2,09"	655 25,79"	86,50 190,70	<b>F50X655 UWS</b>	TBW50X655-1	FAB	FAP	-	<b>FDD33097 TB</b>	PDD33097#1	
228 8,98"	53 2,09"	800 31,50"	74,20 163,58	<b>F50X800 UWS</b>	TAW50X800-1A	FAB	FAP	?	<b>F3489 TB</b>	EP3489#1	
228 8,98"	67 2,64"	800 31,50"	83,00 182,98	<b>F65X800 UWS</b>	TAW65X800-1B	FAB	FAP	?	<b>F3489 TB</b>	EP3489#1	<b>65</b> 2,56"
217 8,54"	77 3,03"	545 21,46"	52,00 114,64	<b>F75X545 UWS</b>	TBW75X545-1A	FBB	FBP	-	<b>FDE1987 TBLH</b> <b>FDE1987 TBRH</b>	PDE51987#2L PDE51987#2R	<b>75</b> 2,95"
220 8,66"	78 3,07"	655 25,79"	99,00 218,25	<b>F75X655 UWS</b>	TBW75X655-1	FBB	FBP	-			
226 8,90"	82 3,23"	797 31,38"	111,00 244,71	<b>F80X800 UWS</b>	TBW80X800-1A	FBB	FBP	?	<b>F3492 TB</b>	EP3492#1	<b>80</b> 3,15"
226 8,90"	93 3,66"	495 19,49"	67,00 147,71	<b>F90X495 UWS</b>	TBW90X495-1	FBB	FBP	-			<b>90</b> 3,54"
226 8,90"	93 3,66"	855 33,66"	235,00 518,08	<b>F90X855 UWS</b>	TBW90X855-1A	FBB	FBP	-	<b>FDD32678 TB</b>	PDD32678#1	
220 8,66"	103 4,06"	965 37,99"	158,80 350,09	<b>F100X965 UWS</b>	TBW100X965-1	FBB	FBP	-	<b>FDD32680 TB</b>	PDD32680#1	<b>100</b> 3,94"
202 7,95"	123 4,84"	760 29,92"	165,00 363,76	<b>F120X760 UWS</b>	TAW120X760-1	FAB	FAP	-	<b>FDD33024 TB</b>	PDD33024#1	<b>120</b> 4,72"
250 9,84"	123 4,84"	760 29,92"	194,00 427,69	<b>F120X760A UWS</b>	TBW120X760-1A	FBB	FBP	-	<b>F3495 TB</b>	EP3495#1	
253 9,96"	142 5,59"	800 31,50"	238,00 524,69	<b>F140X800 UWS</b>	TBW140X800-1	FBB	FBP	-	<b>FDD33366 TB</b>	PDD33366#1	<b>140</b> 5,51"

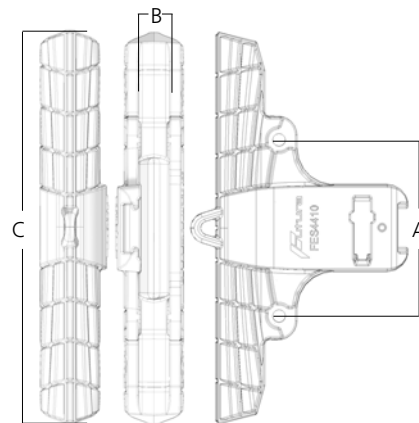
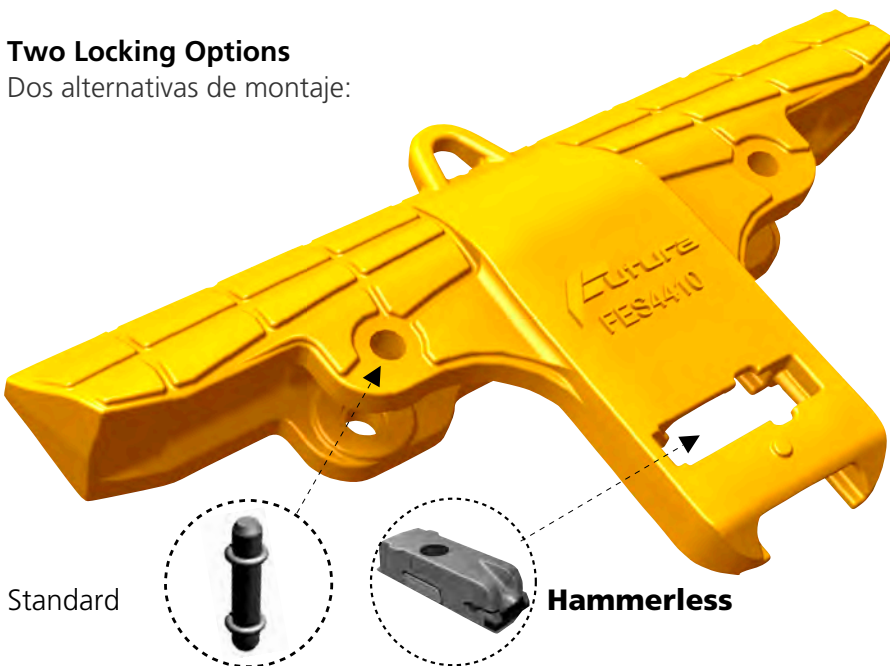
## ASSEMBLY MONTAJE



## Bolt-On Wing Shrouds Protector Lateral Atornillable

### Two Locking Options

Dos alternativas de montaje:



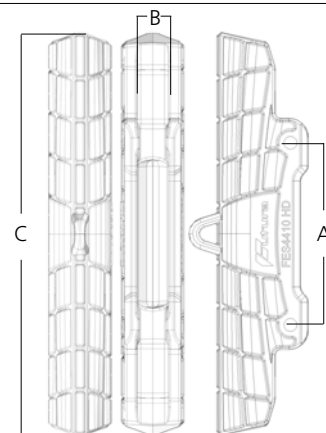
### Optional thrust blocks

Opción para el bloqueo:



mm.				REF	Cross Ref	BASE	PIN	PIN	WASHER	THRUST BLOCK	Weight		
A	B	C	KG										
268	42	600	33,50	<b>F40X600 UWS</b>	TAW40X600-1	FAB	FAP	BE7-5280	2 Un.	75KLKSR	4 Un.	FDE1413 TB PDE51413#3	<b>40</b> 1,57"
359	53	800	74,20	<b>F50X800 UWS</b>	TAW50X800-1A	FAB	FAP		2 Un.		4 Un.	F3489 TB EP3489#1	<b>50</b> 1,97"
358	53	800	59,90	<b>FES4410</b>	ES4410	FAB	FAP	E7-4411-4A	2 Un.	75KLKSR	4 Un.	FDD32816 TB PDD32816 TB#1	<b>50</b> 1,97"
360	67	800	83,00	<b>F65X800 UWS</b>	TAW65X800-1B	FAB	FAP		2 Un.		4 Un.	F3489 TB EP3489#1	<b>65</b> 2,56"
356	82	800	111,00	<b>F80X800 UWS</b>	TBW80X800-1A	FAB	FAP		2 Un.		4 Un.	F3492 TB EP3492#1	<b>80</b> 3,15"

## Bolt-On Wing Shrouds Protector Lateral Atornillable



mm.				REF	Cross Ref	PIN	WASHER	THRUST BLOCK	Weight		
A	B	C	KG								
358	53	800	51,80	<b>FES4410 HD</b>	ES4410	E7-4411-4A	2 Un.	75KLKSR	4 Un.	FDD32816 TB PDD32816 TB#1	<b>50</b> 1,97"

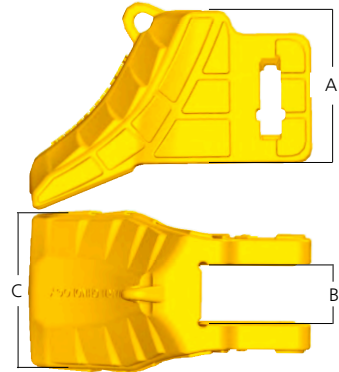
## LOWER Wing Shrouds Protector Lateral Inferior



**Pin Pasador**

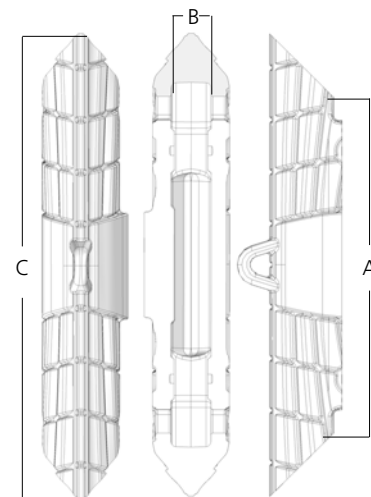


**Optional Thrust Blocks**



mm.			KG	REF	Cross Ref	BASE	PIN	THRUST BLOCK	Cross Ref	
A	B	C								
309 12,17"	53 2,09"	185 7,28"	69,00 152,12	<b>F50 LWS</b>	TAW50-1	FAB	FAP	-	-	<b>50</b> 1,97"
295 11,61"	66 2,60"	219 8,62"	75,70 166,89	<b>F65 LWS</b>	TAW65-1	FAB	FAP	<b>FDD33808 TB</b>	PDD33808	<b>65</b> 2,56"
301 11,85"	77 3,03"	261 10,28"	81,50 179,67	<b>F75 LWS</b>	TAW75-1	FAB	FAP	<b>FDD33808 TB</b>	PDD33808	<b>75</b> 2,95"
307 12,09"	93 3,66"	259 10,20"	85,00 187,39	<b>F90 LWS</b>	TAW90-1	FAB	FAP	<b>FDD33808 TB</b>	PDD33808	<b>90</b> 3,54"
291 11,46"	116 4,57"	286 11,26"	91,00 200,62	<b>F115 LWS</b>	TAW115-1	FAB	FAP	<b>FDD33312 TB</b>	PDD33312#1	<b>115</b> 4,53"
317 12,48"	138 5,43"	399 15,71"	113,00 249,12	<b>F135 LWS</b>	TAW135-1	FAB	FAP	<b>FDD33312 TB</b>	PDD33312#1	<b>135</b> 5,31"
315 12,40"	145 5,71"	395 15,55"	196,00 432,10	<b>F160 LWS</b>		FBB	FBB	<b>FDD33312 TB</b>	PDD33312#1	<b>145-160</b> 5,71"-6,30"
350 13,78"	165 6,50"	365 14,37"	194,00 427,69	<b>F165 LWS-RH</b>	TBW165-1R					
350 13,78"	165 6,50"	365 14,37"	194,00 427,69	<b>F165 LWS-LH</b>	TBW165-1L	FBB	FBB	<b>FDD33367 TB</b>	PDD33367#1	<b>165</b> 6,50"

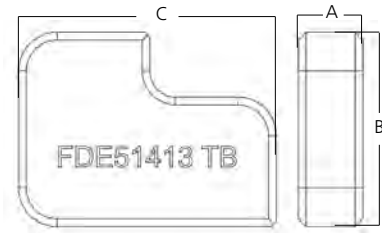
## Weld-On Wing Shroud Protector Lateral Soldable



mm.			KG	REF	Cross	
A	B	C				
529 20,83"	53 2,09"	728 28,66"	34,60 76,28	<b>FSH56-350</b>		<b>50</b> 1,97"



## Thrust Blocks for Top Wing Shrouds Bloques de Apoyo Opcionales



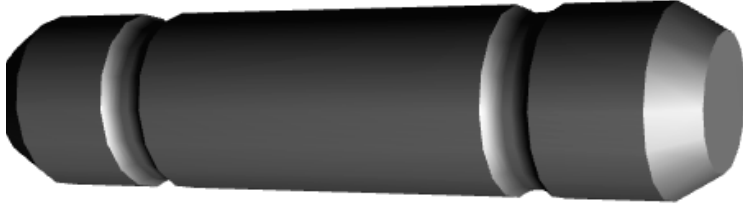
mm.			REF	Cross Ref	FOR SHROUD	REF		
A	B	C						
26 1,02"	92 3,61"	174 6,85"	1,90 4,19	<b>F3489 TB</b>	EP3489#1	F50X800 UWS F65X800 UWS	<b>50</b> 1,97" <b>65</b> 2,56"	
30 1,18"	125 4,92"	220 8,66"	3,40 7,50	<b>F3492 TB</b>	EP3492#1	F80X800 UWS	<b>80</b> 3,15"	
25 0,97"	153 6,01"	182 7,18"	3,10 6,83	<b>F3495 TB</b>	EP3495#1	F120X760A UWS	<b>120</b> 4,72"	
63 2,48"	121 4,76"	392 15,44"	19,00 41,89	<b>FDD32678 TB</b>	PDD32678#1	F90X855 UWS	<b>90</b> 3,54"	
40 1,57"	120 4,72"	217 8,52"	4,60 10,14	<b>FDD32680 TB</b>	PDD32680#1	F100X965 UWS	<b>100</b> 3,94"	
45 1,77"	121 4,76"	326 12,83"	8,20 18,08	<b>FDD32816 TB</b>	PDD32816#1	F50X505 UWS F50X505B UWS	<b>50</b> 1,97"	
40 1,57"	82 3,23"	252 9,92"	3,50 7,72	<b>FDD33024 TB</b>	PDD33024#1	F120X760 UWS	<b>120</b> 4,72"	
25 0,98"	48 1,89"	176 6,93"	1,60 3,53	<b>FDD33095 TB</b>	PDD33095#1	F40X440 UWS	<b>40</b> 1,57"	





## Thrust Blocks for Top Wing Shrouds Bloques de Apoyo Opcionales

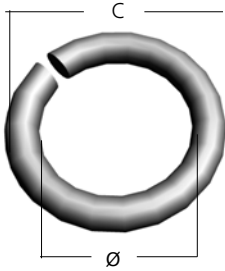
mm.				REF	Cross Ref	FOR SHROUD		REF
A	B	C						
26 1,02"	156 6,14"	194 7,64"	3,50 7,72	<b>FDD33096 TB</b>	PDD33096#1	F40X560 UWS	<b>40</b> 1,57"	
26 1,02"	20 0,79"	227 8,94"	2,70 5,95	<b>FDD33097 TB</b>	PDD33097#1	F50X655 UWS	<b>50</b> 1,97"	
45 1,77"	102 4,02"	178 7,00"	3,75 8,27	<b>FDD33312 TB</b>	PDD33312#1	F115 LWS	<b>115</b> 4,53" <b>135</b> 5,31"	
63 2,48"	190 7,48"	280 11,02"	11,60 25,57	<b>FDD33366 TB</b>	PDD33366#1	F140X800 UWS	<b>140</b> 5,51"	
63 2,48"	178 7,01"	255 10,03"	11,20 24,69	<b>FDD33367 TB</b>	PDD33367#1	F165 LWS-RH F165 LWS-LH	<b>165</b> 6,50"	
40 1,57"	137 5,39"	237 9,33"	5,12 11,29	<b>FDD33808 TB</b>	PDD33808	F65 LWS F75 LWS F90 LWS	<b>65</b> 2,56" <b>75</b> 2,95" <b>90</b> 3,54"	
25 0,98"	75 2,95"	100 3,94"	1,20 2,65	<b>FDE51413 TB</b>	PDE51413#3	F40X600 UWS F50X630 UWS	<b>40</b> 1,57" <b>50</b> 1,97"	
40 1,57"	102 4,02"	227 8,94"	4,24 9,35	<b>FDE51987 TBLH</b> <b>FDE51987 TBRH</b>	PDE51987#2L PDE51987#2R	F75X545 UWS	<b>75</b> 2,95"	
40 1,57"	69 2,72"	178 7,01"	3,58 7,89	<b>FDE52445 TB</b>	PDE52445 TB	FPDE52445	<b>80</b> 3,15"	


## Wing Shroud PIN Pasador Protector Lateral



mm.			REF	Cross Ref Cruce Ref		Unit
C	Ø					
112 4,41"	22 0,87"	0,31 0,68	<b>E7-4411-4A</b>	----	75KLKSR	2
80 3,15"	22 0,87"	0,22 0,49	<b>BE7-5280</b>	----	75KLKSR	2
164 6,45"	38 1,50"	1,38 3,04	<b>PDB31183-3</b>	----	120KLKSR	1

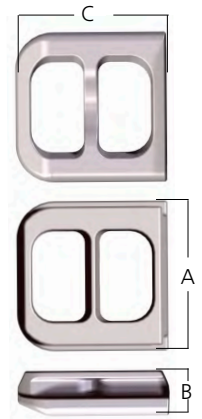
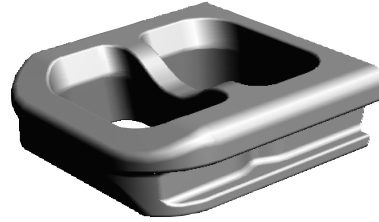
## Wing Shroud WASHER Arandela para Protector Lateral



mm.			REF	Unit
C	Ø			
32 1,26"	19,5 0,77"	0,02 0,04	<b>75KLKSR</b>	2
51 2,01"	35 1,38"	0,05 0,11	<b>120KLKSR</b>	1

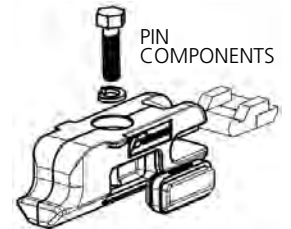
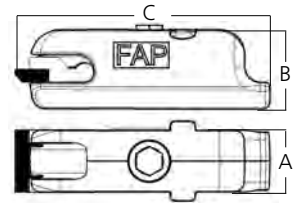
## Lip Shroud BASE BASE para Protector de Cuchilla

mm.				REF	Cross Ref
A	B	C			
86 3,39"	32 1,26"	90 3,54"	0,80 1,76	<b>FAB</b>	TAB
127 5,00"	38 1,49"	128 5,04"	1,85 4,08	<b>FBB</b>	TBB
160 6,30"	47,5 1,87"	166 6,55"	3,85 8,49	<b>FCB</b>	TCB



## Lip Shroud PIN PASADOR para Protector de Cuchilla

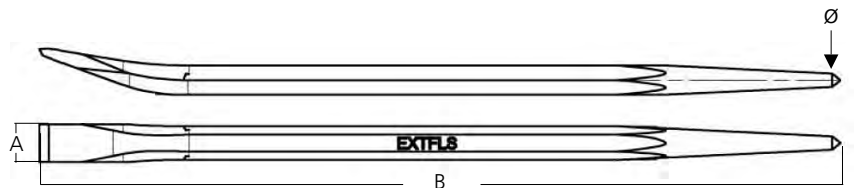
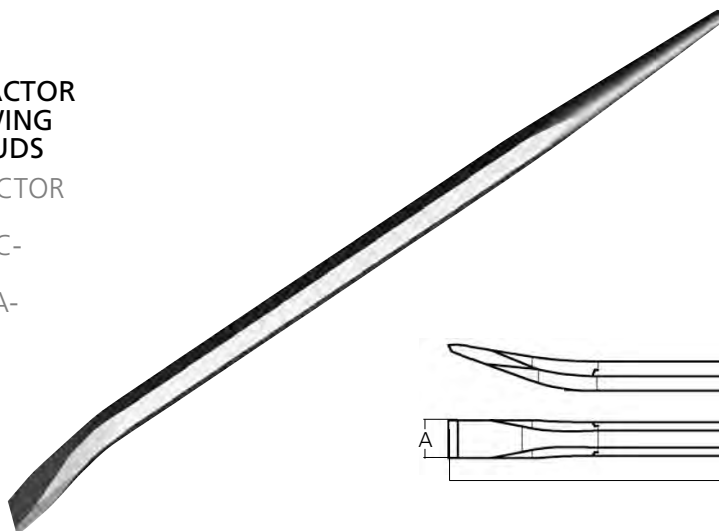
mm.				REF	Cross Ref
A	B	C			
31 1,22"	40 1,57"	127 5,00"	0,85 1,87	<b>FAP</b>	TAP
45 1,77"	52 2,05"	162 6,38"	2,20 4,85	<b>FBP</b>	TBP
50 1,97"	64 2,52"	216 8,50"	4,70 10,36	<b>FCP</b>	TCP



## EXTFLS Pin Extration TOOL HERRAMIENTA Extractora

**PIN EXTRACTOR FOR WING SHROUDS**

EXTRACTOR PARA PROTECTORES LATERALES



mm.				
A	B	Ø		REF
16,4 0,65"	350,0 13,78"	5,8 0,23"	0,3 0,66	<b>EXTFLS</b>



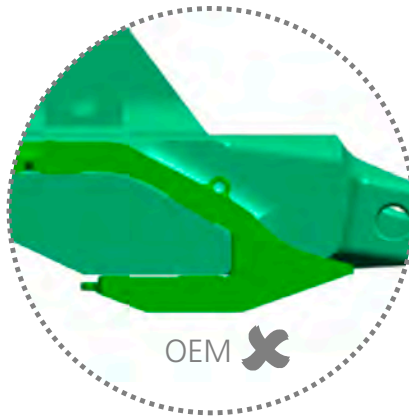
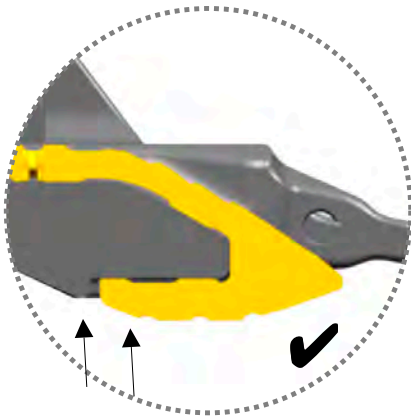
# miner

## CAST LIPS FOR 500 TON HYDRAULIC EXCAVATORS

### LABIOS FUNDIDOS PARA EXCAVADORAS HIDRÁULICAS DE MÁS DE 500 TONELADAS



## Cast Lips: Design Features Labios Fundidos: Características del diseño



### Extra protection for Lip Shrouds

Special recess in the FUTURA design fitted to completely cover and shield the lip protector, thus extending the service life of the assembly.

### Rebaje especial para los protectores de labio

Hueco especial en el diseño FUTURA ajustado para cubrir y proteger completamente el protector de labio alargando así la vida útil del conjunto.

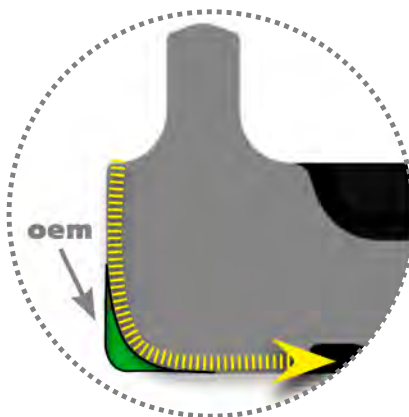
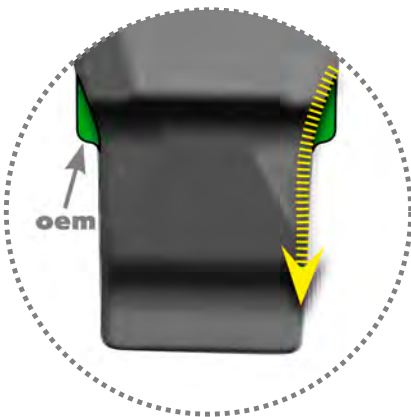


### Adjusted Sockets

Rounded and specially adjusted and designed sockets to increase the robustness of the assembly and extend its service life.

### Hendiduras refinadas

Rebajes redondeados y especialmente ajustados para el encaje con los protectores de labio que aumentan la robustez del conjunto y prolongan la vida útil de sus partes.



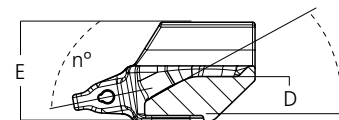
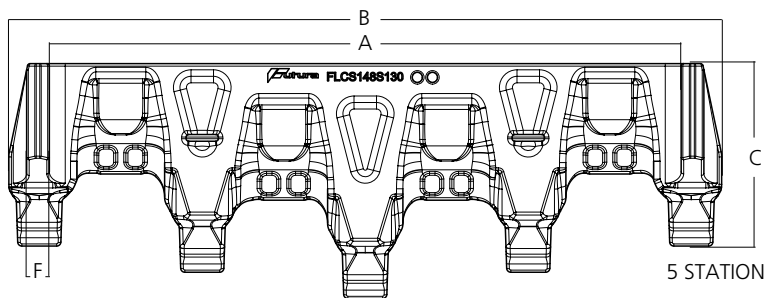
### Streamlined design

Streamlined design throughout the cast lip to prevent stresses and breakages. Designed to maximise performance even in the harshest digging conditions.

### Diseño racionalizado en cada ángulo

Diseño racionalizado en todo el labio de función para evitar tensiones y roturas. Diseñado para maximizar el rendimiento incluso en las condiciones de excavación más duras.

# Cast Lips Labios Fundidos

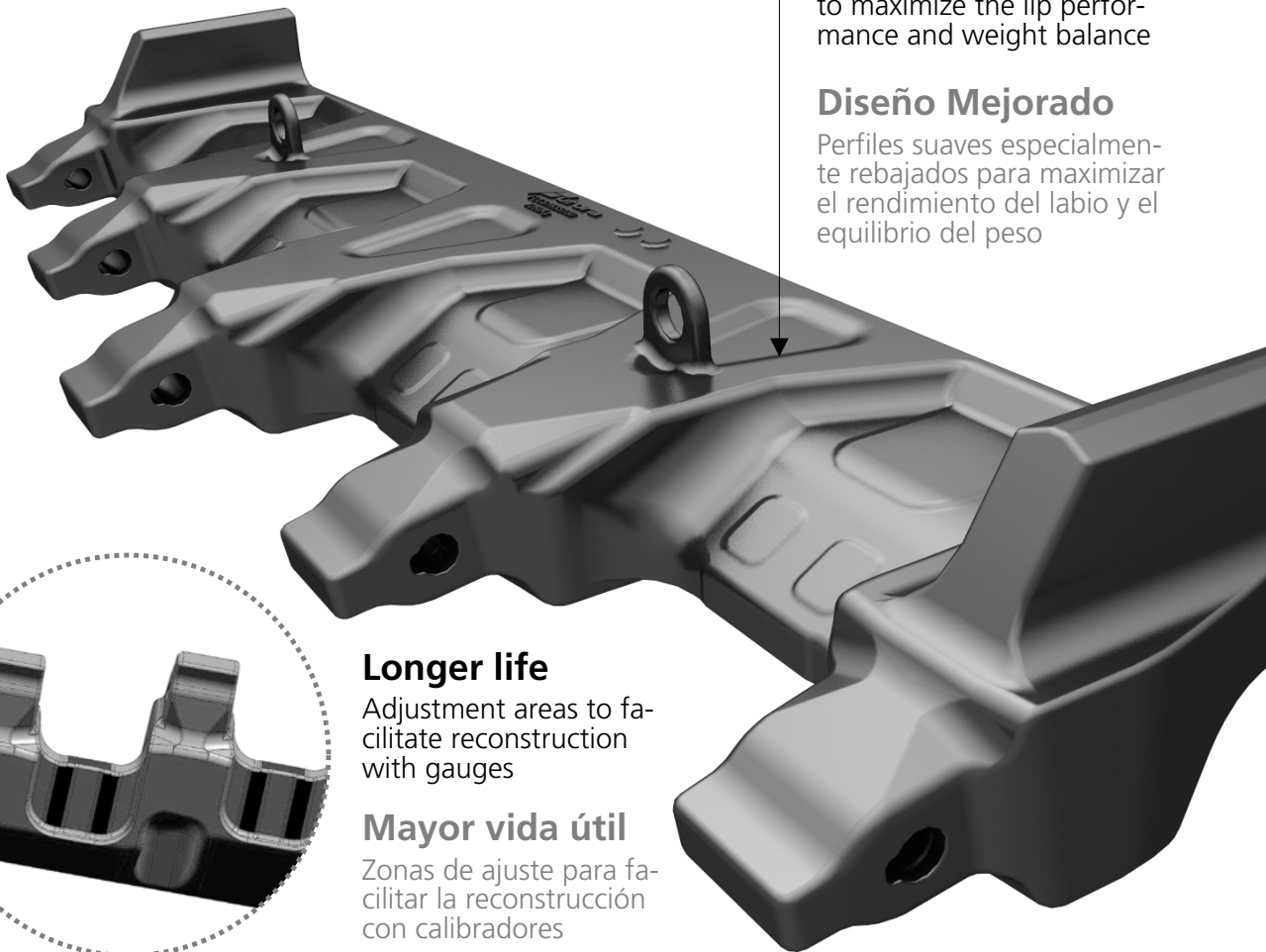


## Improved design

Specially carved soft profile to maximize the lip performance and weight balance

## Diseño Mejorado

Perfiles suaves especialmente rebajados para maximizar el rendimiento del labio y el equilibrio del peso

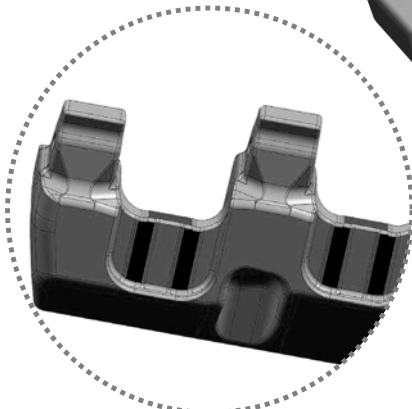


## Longer life

Adjustment areas to facilitate reconstruction with gauges

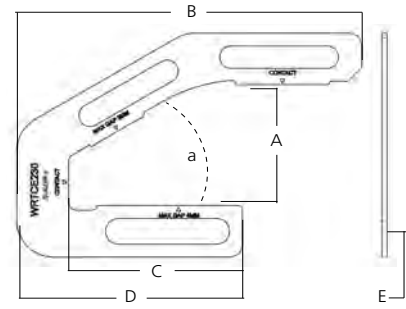
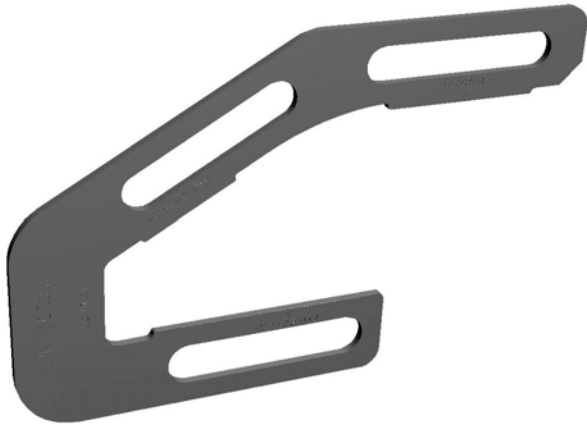
## Mayor vida útil

Zonas de ajuste para facilitar la reconstrucción con calibradores



mm.										REF	Cross Ref	Pos.	Hydraulic Face Shovels	Hydraulic Excavators	NOSE	
A	A in	B	C	D	E	F	b°	n°	KG							
3760	148"	4242	1086	232	591	135	30°	10°	6.876	<b>FLCS148S130</b>	LCS148S130	5			<b>130</b>	
148"		167,01"	42,76"	9,13"	23,27"	5,31"			15.159				RH200	RH340		
4145	163"	4627	1086	232	591	135	30°	10°	7.133	<b>FLCS163S130</b>	LCS163S130	5	RH340	CAT6060		
163"		182,17"	42,76"	9,13"	23,27"	5,31"			15.725				CAT6060	PC5500		
4300	169"	4782	1086	232	591	135	30°	10°	7.838	<b>FLCS169S130</b>	LCS169S130	6	EX5500	EX5500	<b>145</b>	
169"		188,27"	42,76"	9,13"	23,27"	5,31"			17.280					EX5600		
5105	201"	5587	1086	232	591	135	30°	10°	8.812	<b>FLCS201S130</b>	LCS201S130	6		R996		
201"		219,96"	42,76"	9,13"	23,27"	5,31"			19.427							
4300	169"	4829	1162	244	650	135	30°	10°	9.560	<b>FLCS169S145</b>	LCS169S145	6		R996	R996	<b>145</b>
169"		190,12"	45,75"	9,61"	25,59"	5,31"			21.076				R996	R996		
4300	169"	4829	1162	244	650	135	30°	10°	9.286	<b>FLCS169S145-5</b>	LCS169S145-5	5	EX8000	R9800		
169"		190,12"	45,75"	9,61"	25,59"	5,31"			20.472				CAT6090	EX800		
5105	201"	5634	1162	244	650	160	30°	10°	10.810	<b>FLCS201S145</b>	LCS201S145	6	PC7000	PC7000	<b>145</b>	
201"		221,81"	45,75"	9,61"	25,59"	6,30"			23.832				PC8000	PC8000		
5588	220"	6117	1162	244	650	160	30°	10°	11.125	<b>FLCS220S145</b>	LCS220S145	6				
220"		240,83"	45,75"	9,61"	25,59"	6,30"			24.526							

## Cast Lip Repair Template 2D Plantilla Reparación Labios Fundidos



mm.						KG	REF	Cross Ref	Cast lips	
A	B	C	D	E	a					
234 9,21"	667 26,28"	336 13,23"	436 17,17"	10 0,39"	30°	7,00 15,43	<b>WRTCE230</b>	CE230	FLCS148S130, FLCS163S130 FLCS169S130, FLCS201S130	<b>230</b>
244 9,61"	667 26,26"	336 13,23"	436 17,17"	10 0,39"	30°	7,00 15,43	<b>WRTCE245</b>	CE245	FLCS169S145, FLCS169S145-5, FLCS201S145, FLCS220S145	<b>245</b>



**FULL LIP PROTECTION AVAILABLE**

**ENHANCED DESIGN TO REDUCE WASHOUT AND WEAR**

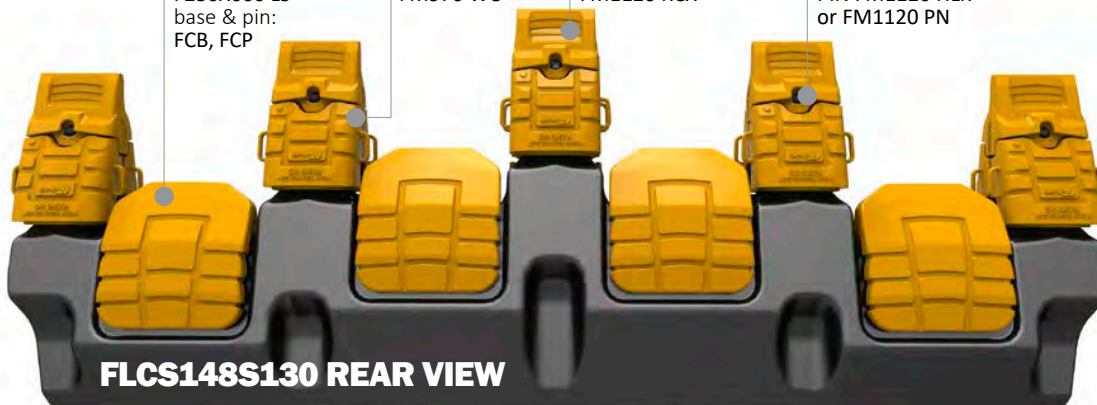


F230X600 LS  
base & pin:  
FCB, FCP

FM970 WC

FM1120 RCX

PIN FM1120 HLK  
or FM1120 PN



**FLCS148S130 REAR VIEW**

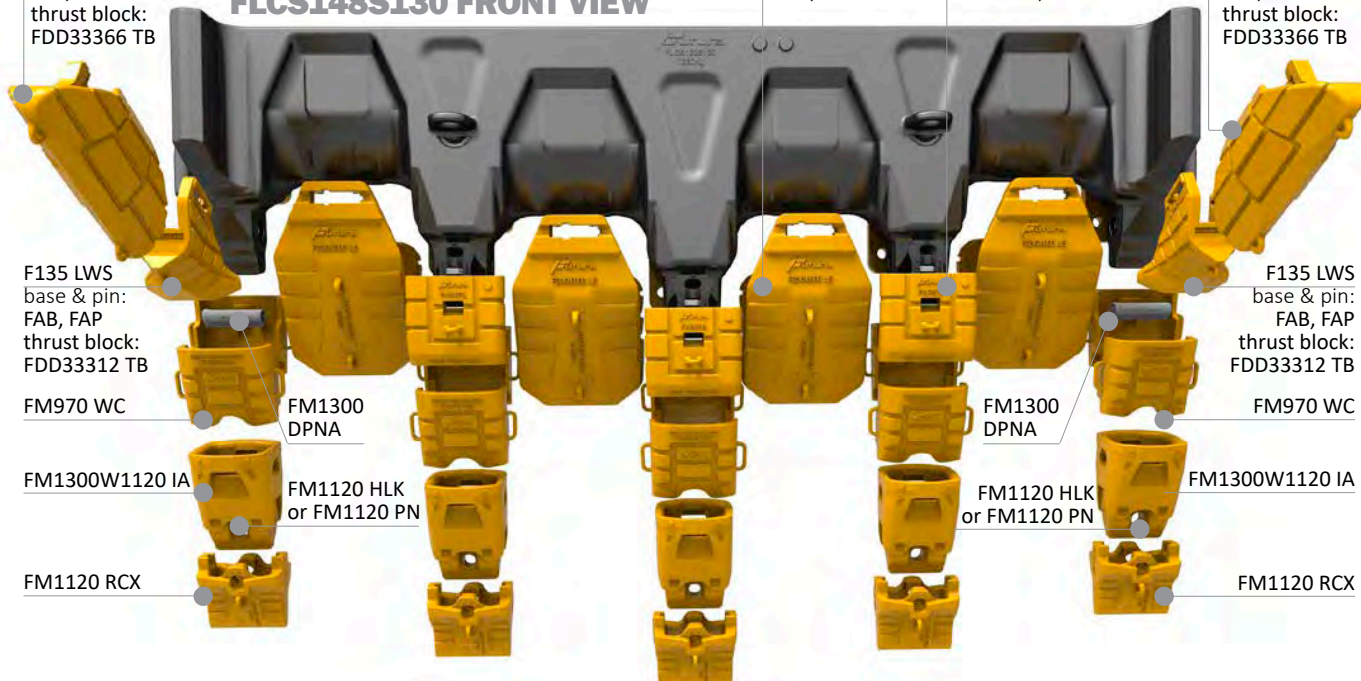
F140X800 UWS  
base & pin:  
FBB, FBP  
thrust block:  
FDD33366 TB

**FLCS148S130 FRONT VIEW**

F230X600 LS  
base & pin:  
FCB, FCP

FWR57B  
base & pin:  
FWB01B, FWL01B

F140X800 UWS  
base & pin:  
FBB, FBP  
thrust block:  
FDD33366 TB



F135 LWS  
base & pin:  
FAB, FAP  
thrust block:  
FDD33312 TB

F135 LWS  
base & pin:  
FAB, FAP  
thrust block:  
FDD33312 TB

FM970 WC

FM1300  
DPNA

FM1300  
DPNA

FM970 WC

FM1300W1120 IA

FM1120 HLK  
or FM1120 PN

FM1120 HLK  
or FM1120 PN

FM1300W1120 IA

FM1120 RCX

FM1120 RCX

CAST LIPS

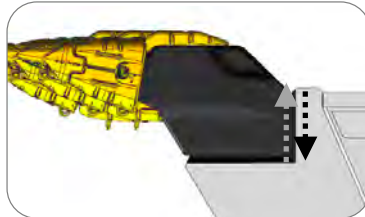
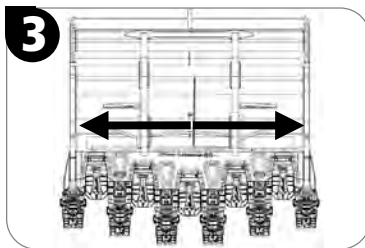
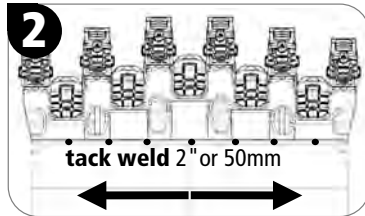
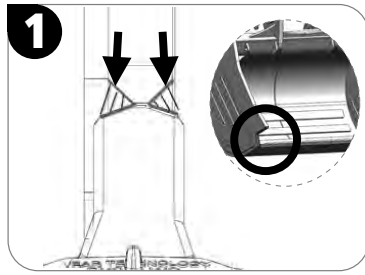
CAST LIP WELDING | MONTAJE Y SOLDADURA DE LABIOS FUNDIDOS



**Recommended filler materials:**

**Materiales de relleno recomendados:**

American Welding Society (AWS) specification **A5.18** class ER70S-6 wire for the Gas Metal Arc Welding process (GMAW) | **A5.2** class E71T-1 for the Flux Cored Arc Welding process (FCAW). Shielding gas should have a dew point of -40°F or lower | **A5.1** class E7018 stick electrode for the Shielded Metal Arc Welding process (SMAW), may also be used, although it is not the preferred process.



# Cast lips installation

## General Welding Instructions

### Before you start

Surfaces to be welded should be totally clean: remove rust, paint or any other impurity. Check area to be welded for any cracks with a non-destructive test method.

**Preheat:** It is recommended to preheat 300°F/150°C to 450°F/230°C the areas to weld & the adjoining zones. The correct preheating will reduce the danger of weld cracking. It is important not to exceed the recommended temperature. The most common method of preheating is by torches or burners using an open fuel gas flame. Preheating with burners or torches is much more effective when the heat is applied from the bottom side of the work piece with insulating blankets on the top side.

**Welding sequence** and directions:

- 1 **Bevels must be created in all joints** of the bucket plates to make easier the full penetration of weld. The recommended bevel check is **64mm (2,5") x 45°**. Clean bevels in all areas to be welded. Weld surfaces must be free from cutting slag, paint, and cracks. Well dry and ground.
- 2 The first tack weld should be placed in the center of the bucket on the bottom where the cutting edge joins to the bucket. Deposit a tack weld, every 24" or 600mm, alternating from each side of center, **working towards the sides of the bucket**. The minimum length of tack should be 2" or 50mm. After that begin the full welding.
- 3 Manipulate bucket to the digging position and repeat the procedure used in step 2. Alternating the process of weld on between the bottom and top side will help maintain the correct plane geometry and reduce residual stresses as well.
- 4 Lip corner area: Welding operation must be applied as shown in the picture: zones and directions, following the former mentioned steps: preheat, cleaning, etc.. Alternate the direction of travel, front to back-back to front of bucket for each weld pass depositing the weld on into the grooves.

### Cooling

Control cooling rate at the end of the welding process. Cooling rate should not exceed 35°C per hour.

### Visual Inspection

Magnetic Particle inspection or Dye Penetrant inspection should be done 48 hours after cooling to ambient temperature.

# Soldadura de labios fundidos

## Instrucciones generales de soldadura

### Antes de empezar

Las superficies a soldar deben estar totalmente limpias: elimine óxido, pintura u otras impurezas. Comprobar la zona a soldar para ver si hay grietas.

**Pre calentamiento:** Se recomienda precalentar de 150°C a 230°C las zonas a soldar y las zonas adyacentes. El precalentamiento correcto reducirá el peligro de agrietamiento de la soldadura. Es importante no superar la temperatura recomendada. El método más común de precalentamiento es mediante sopletes o quemadores utilizando una llama de gas combustible abierta. El precalentamiento con quemadores o sopletes es mucho más eficaz cuando el calor se aplica desde la parte inferior de la pieza con mantas aislantes en la parte superior

**Secuencia y direcciones de soldadura:**

- 1 **Deben crearse chaflanes en todas las juntas de las placas del cazo** para facilitar la penetración total de la soldadura. El chaflán recomendado es de **64mm (2,5") x 45°**. Limpiar los biselés en todas las zonas a soldar. Las superficies de soldadura deben estar libres de escoria de corte, pintura y grietas. Bien secas y rectificadas.
- 2 La primera soldadura por puntos debe colocarse en el centro del cazo, en la parte inferior, donde el borde de corte se une al cazo. Deposite una soldadura por puntos, cada 24" o 600mm, alternando desde cada lado del centro, **trabajando hacia los lados del cubo**. La longitud mínima de las soldadura por puntos debe ser de 2" o 50mm. A continuación, comience la soldadura completa.
- 3 Manipular el cazo hasta la posición de excavación y repetir el procedimiento utilizado en el paso 2. Alternar el proceso de soldadura entre el lado inferior y el superior ayudará a mantener la geometría plana correcta y a reducir también las tensiones residuales.
- 4 Zona de la esquina del labio: La operación de soldadura debe aplicarse como se muestra en la imagen: zonas y direcciones, siguiendo los pasos anteriormente mencionados: precalentamiento, limpieza, etc. Alternar el sentido (delante a atrás, de atrás a delante) del cazo para cada pasada de soldadura depositando la soldadura en las ranuras.

### Enfriamiento

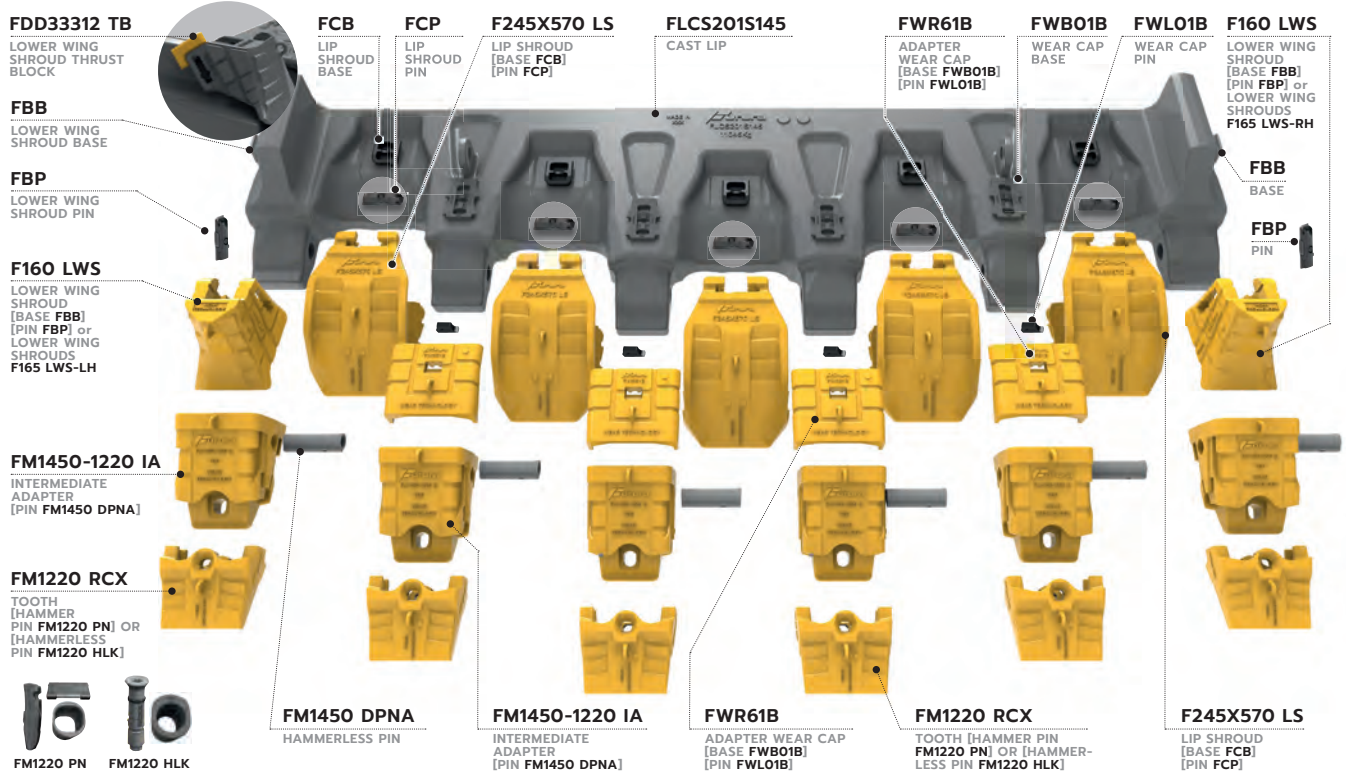
Controlar la velocidad de enfriamiento al final del proceso de soldadura. La tasa de enfriamiento no debe superar los 35°C por hora.

### Inspección visual

La inspección por partículas magnéticas o por líquidos penetrantes debe realizarse 48 horas después de enfriarse a temperatura ambiente.

# Lip Assembly Labios Fundidos Montados

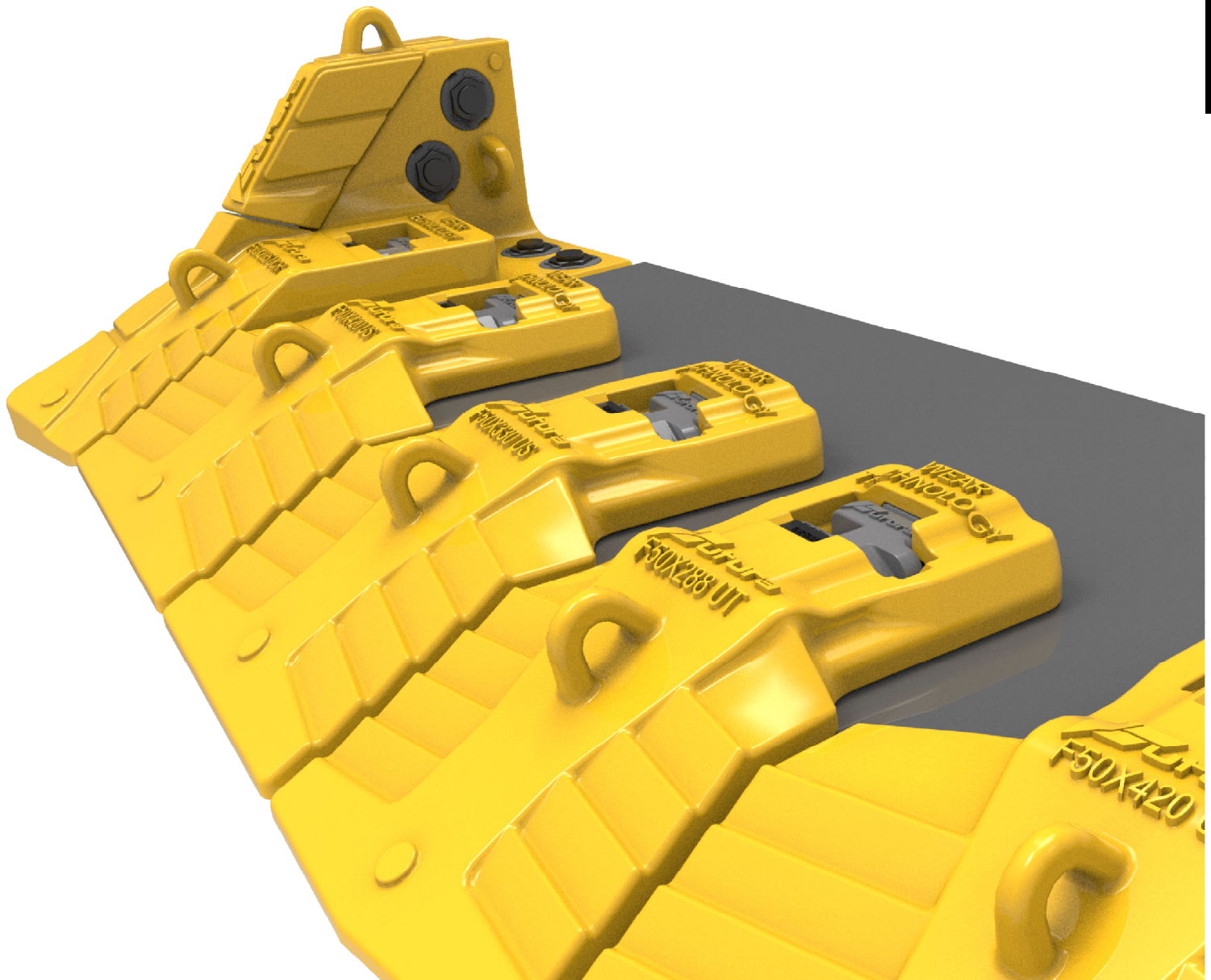
## FLCS201S145 ASSM





# LOAD HAUL DUMP

# LHD



**LHD MINER**

**LHD customized lips** Cuchillas LHD a medida



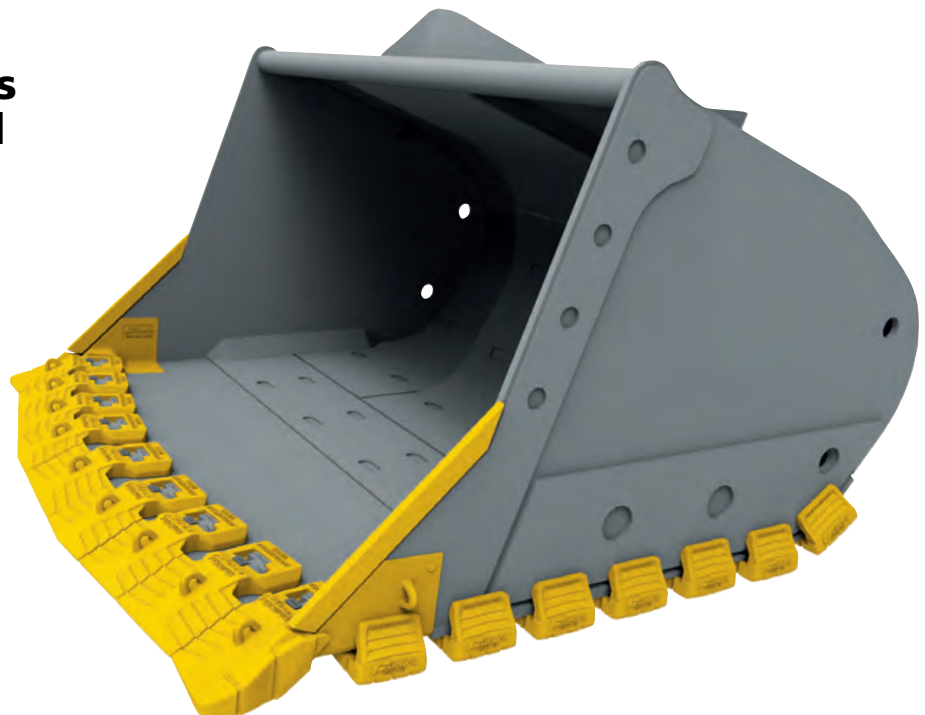
**Guide to part sizes  
by Maximum Machine  
Weight (tons)**

**Guía para la elección de tallas  
según peso máximo  
de la máquina (Toneladas)**

	FUTURA LHD	LIP THICKNESS GROSOR CUCH.	ATLAS COPCO	CATERPILLAR	SANDVIK	SANDVIK TORO	MCH.WEIGHT PESO MAQ.	BUCKET CAPACITY M <sup>3</sup>
<b>LHD</b>	<b>F32</b>	<b>32</b>	-	-	LH204	-	<b>3-4T</b>	<b>1,3-3,5</b>
			ST7	R1300G	LH307	T-6	<b>7T</b>	<b>2,4-3,7</b>
			ST1020	R1600	LH410	T-7	<b>10T</b>	<b>3,3-5,9</b>
	<b>F50</b>	<b>50</b>	ST1030, ST1520	R1700	LH512, LH514, LH517	T-9	<b>12-14T</b>	<b>4,6-7,5</b>
			ST1800	R2800, R2900	LH621	T-10	<b>17-18T</b>	<b>6,7-8,9</b>
			-	R3000	LH625E	T-11	<b>20-21T</b>	<b>8,3-12,8</b>

**Customized LHD lips  
for all underground  
mining machines**

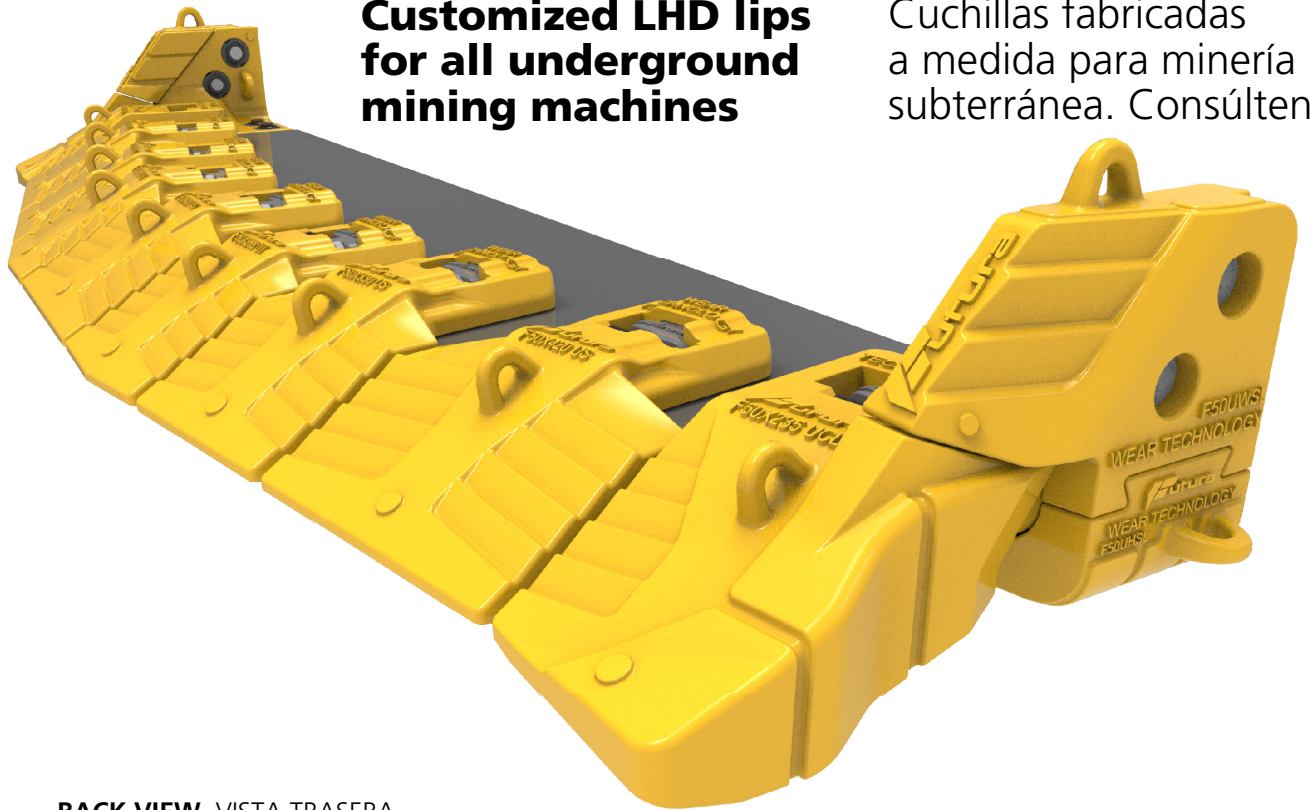
Cuchillas fabricadas a medida para minería subterránea.  
**Consútenos**



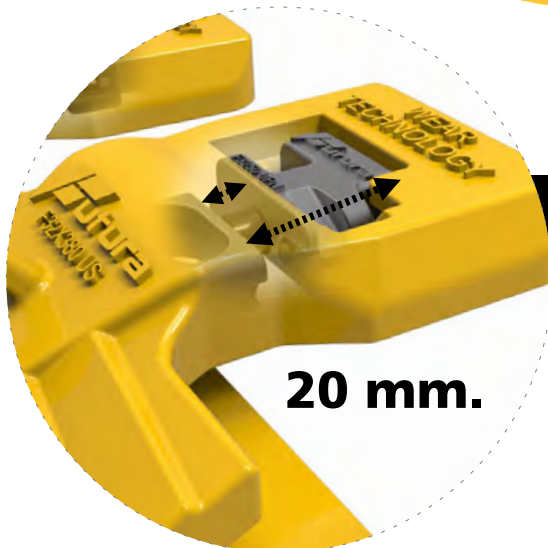
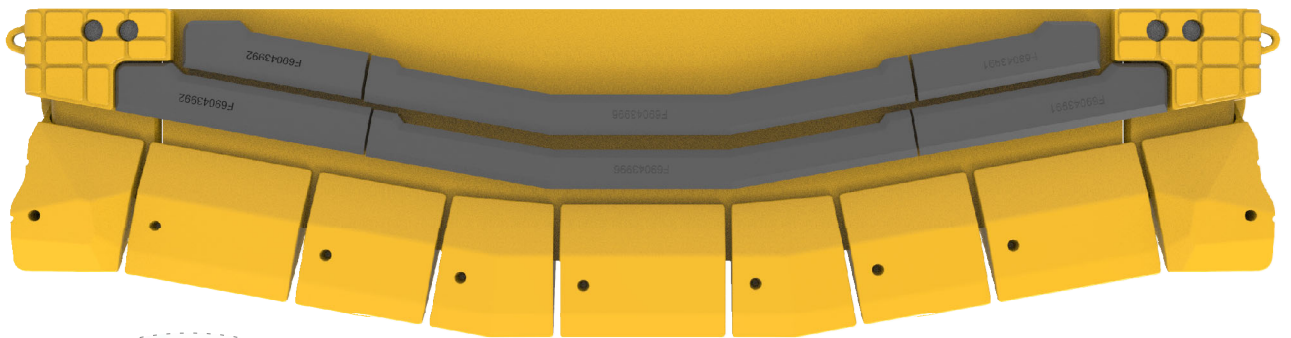
**LHD customized lips** Cuchillas LHD a medida

**Customized LHD lips for all underground mining machines**

Cuchillas fabricadas a medida para minería subterránea. Consúltenos



**BACK VIEW** VISTA TRASERA



**EXPANSION 20 mm.**

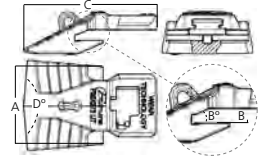
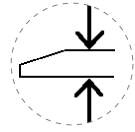


The **20 mm. piston expansion** allows to maintain tension of the shroud against the blade through out the shroud wear life

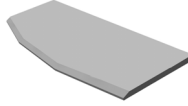
Los **20mm. de expansión del pistón** del pasador permiten mantener la tensión del pasador contra el protector durante toda su vida útil.

LHD MINER

32mm



**SPADE BLADE**  
CUCHILLA DELTA



**SPADE BLADE**  
CUCHILLA DELTA

**CAST CORNERS**  
CANTONERA SOLDABLE



**CAST CORNER RIGHT**  
CANTONERA SOLDABLE  
**F32X155 UCCR**  
ALTERNATIVE TO  
69039974, SCC32X155-RS

Kg.	36,3
lb	79,86
A	171 6,73"
B	32 1,26"
C	250 9,84"



**CAST CORNER LEFT**  
CANTONERA SOLDABLE  
**F32X155 UCCL**  
ALTERNATIVE TO  
69039973, SCC32X155-LS

Kg.	36,3
lb	79,86
A	171 6,73"
B	32 1,26"
C	250 9,84"

**CORNER SHROUD**  
PROTECTOR ESQUINA



**CORNER SHROUD RIGHT**  
PROTECTOR ESQUINA DERECHO  
**F32X210 UCR**  
ALTERNATIVE TO  
69039972, SBP32X210-CR2

Kg.	41,4	BASE	<b>FAB</b>
lb	91,08		<b>FUAB</b>
A	243 9,57"	PIN	<b>F3250 UPN</b>
B	18 0,71"	EXT.	<b>EXTFU</b>
C	475 18,70"		



**CORNER SHROUD LEFT**  
PROTECTOR ESQUINA IZQUIERDO  
**F32X210 UCL**  
ALTERNATIVE TO  
69039971, SBP32X210-CL2

Kg.	41,4	BASE	<b>FAB</b>
lb	91,08		<b>FUAB</b>
A	243 9,57"	PIN	<b>F3250 UPN</b>
B	18 0,71"	EXT.	<b>EXTFU</b>
C	472 18,58"		



**3/4 CORNER SHROUD RIGHT**  
PROTECTOR ESQUINA 3/4 DCHO.  
**F32X210 UCRH**  
ALTERNATIVE TO  
69042489, SBP32X210-CRH2

Kg.	32,9	BASE	<b>FAB</b>
lb	72,38		<b>FUAB</b>
A	243 9,57"	PIN	<b>F3250 UPN</b>
B	18 0,71"	EXT.	<b>EXTFU</b>
C	432 17,01"		



**3/4 CORNER SHROUD LEFT**  
PROTECTOR ESQUINA  
**F32X210 UCLH**  
ALTERNATIVE TO  
69042488, SBP32X210-CLH2

Kg.	32,9	BASE	<b>FAB</b>
lb	72,38		<b>FUAB</b>
A	243 9,57"	PIN	<b>F3250 UPN</b>
B	18 0,71"	EXT.	<b>EXTFU</b>
C	432 17,01"		

**TRANSITION SHROUD**  
PROTECTOR TRANSICIÓN



**TRANSITION SHROUD**  
PROTECTOR TRANSICIÓN  
**F32X275 UT**  
ALTERNATIVE TO  
69039970, SBP32X275-T2

Kg.	38,5	BASE	<b>FAB</b>
lb	84,7		<b>FUAB</b>
A	275 10,83"	PIN	<b>F3250 UPN</b>
B	33,5 1,32"	EXT.	<b>EXTFU</b>
C	444 17,48"		

**STRAIGHT SHROUD**  
PROTECTOR RECTO



**STRAIGHT SHROUD 250**  
PROTECTOR RECTO  
**F32X250 US**  
ALTERNATIVE TO  
69039967, SBP32X250-S2

Kg.	34,8	BASE	<b>FAB</b>
lb	76,56		<b>FUAB</b>
A	250 9,84"	PIN	<b>F3250 UPN</b>
B	33,5 1,32"	EXT.	<b>EXTFU</b>
C	434 17,09"		



**STRAIGHT SHROUD 310**  
PROTECTOR RECTO  
**F32X310 US**  
ALTERNATIVE TO  
69039968, SBP32X310-S2

Kg.	41,1	BASE	<b>FAB</b>
lb	90,42		<b>FUAB</b>
A	310 12,20"	PIN	<b>F3250 UPN</b>
B	33,5 1,32"	EXT.	<b>EXTFU</b>
C	434 17,09"		



**STRAIGHT SHROUD 380**  
PROTECTOR RECTO  
**F32X380 US**  
ALTERNATIVE TO  
69039969, SBP32X380-S2

Kg.	47,9	BASE	<b>FAB</b>
lb	105,38		<b>FUAB</b>
A	380 14,96"	PIN	<b>F3250 UPN</b>
B	33,5 1,32"	EXT.	<b>EXTFU</b>
C	434 17,09"		

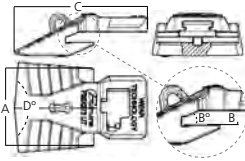
**HEEL SHROUDS**  
GUARDAESQUINAS



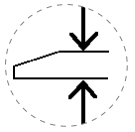
**WELD-ON HEEL SHROUD**  
GUARDAESQUINAS  
**FS307 HS**  
ALTERNATIVE TO  
69041891

Kg.	18,4
lb	40,48
A	198 7,80"
B	152 5,98"
C	219 8,62"

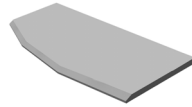




**50mm**



**SPADE BLADE**  
CUCHILLA DELTA



**SPADE BLADE**  
CUCHILLA DELTA

**CAST CORNERS**  
CANTONERA SOLDABLE



**CAST CORNER**  
CANTONERA SOLDABLE  
**F50X175 UCER**  
**F50X175 UCCL**  
ALTERNATIVE TO  
69037855, SCC50X175-RS

Kg.	57,5
lb	126,5
A	200 7,9
B	50 1,97"
C	295 11,61"

**EXTRA LONG**  
CANTONERA SOLDABLE  
**F50X175 UCER**  
**F50X175 UCCEL**  
ALTERNATIVE TO  
69037870, SCC50X175-RE



**CAST CORNER SPECIAL**  
CANTONERA ESPECIAL  
**F50X175 UCER2**  
**F50X175 UCCL2**  
SPECIAL DESIGN

Kg.	70,2
lb	154,44
A	290 11,4
B	50 1,97"
C	295 11,61"

**CORNER SHROUD**  
PROTECTOR ESQUINA



**CORNER SHROUD RIGHT**  
PROTECTOR ESQUINA DERECHO  
**F50X235 UCR**  
ALTERNATIVE TO  
69039952, SBP50X235-CR2  
69039966, SBP50X235-CRX2

Kg.	72,6
lb	159,72
A	281 11,06"
B	26,5 1,04"
C	534 21,02"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**



**CORNER SHROUD**  
PROTECTOR ESQUINA IZQUIERDO  
**F50X235 UCL**  
ALTERNATIVE TO  
69039951, SBP50X235-CL2  
69039965, SBP50X235-CLX2

Kg.	72,6
lb	159,72
A	281 11,06"
B	26,5 1,04"
C	534 21,02"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**



**3/4 CORNER SHROUD RIGHT**  
PROTECTOR ESQUINA 3/4 DCHO.  
**F50X235 UCRH**  
ALTERNATIVE TO  
69039954, SBP50X235-CRH2

Kg.	63,14
lb	138,91
A	281 11,06"
B	26,5 1,04"
C	480 18,90"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**



**3/4 CORNER SHROUD LEFT**  
PROTECTOR ESQUINA 3/4 IZQ.  
**F50X235 UCLH**  
ALTERNATIVE TO  
69039953, SBP50X235-CLH2

Kg.	63,14
lb	138,91
A	281 11,06"
B	26,5 1,04"
C	480 18,90"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**

**TRANSITION SHROUD**  
PROTECTOR TRANSICIÓN



**TRANSITION SHROUD**  
PROTECTOR TRANSICIÓN  
**F50X288 UT**  
ALTERNATIVE TO  
69039950, SBP50X288-T2,  
69039964, SBP50X288-TX2

Kg.	59,0
lb	129,8
A	288 11,34"
B	51,5 2,03"
C	497 19,57"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**

**STRAIGHT SHROUD**  
PROTECTOR RECTO



**STRAIGHT SHROUD**  
PROTECTOR RECTO  
**F50X290 US**  
ALTERNATIVE TO  
69039947, SBP50X290-S2,  
69039961, 69039961

Kg.	59,3
lb	130,46
A	290 11,42"
B	51,5 2,03"
C	497 19,57"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**



**STRAIGHT SHROUD**  
PROTECTOR RECTO  
**F50X330 US**  
ALTERNATIVE TO  
69039948, SBP50X330-S2,  
69039962, SBP50X330-SX2

Kg.	65,9
lb	144,98
A	330 12,99"
B	51,5 2,03"
C	497 19,57"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**



**STRAIGHT SHROUD**  
PROTECTOR RECTO  
**F50X420 US**  
ALTERNATIVE TO  
69039949, SBP50X420-S2,  
69039963, SBP50X420-SX2

Kg.	81
lb	178,2
A	420 16,54"
B	51,5 2,03"
C	497 19,57"

BASE **FAB**  
**FUAB**  
PIN **F3250 UPN**  
EXT. **EXTFU**

**HEEL SHROUDS**  
GUARDAESQUINAS



**WELD-ON HEEL SHROUD**  
GUARDAESQUINAS  
**FS517 HS**  
ALTERNATIVE TO  
69040888

Kg.	30,4
lb	66,88
A	202 7,95"
B	162 6,38"
C	297 11,69"

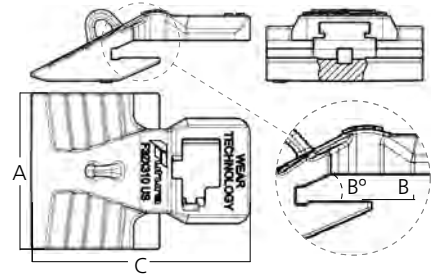
LHD MINER

Lip Shrouds STRAIGHT Protectores Cuchilla RECTOS

US



ARM AVAILABLE  
ARM DISPONIBLE



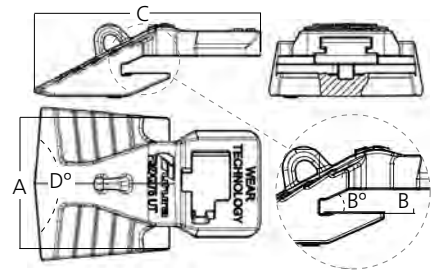
mm.			B°	↓ ↑	32	REF	ALTERNATIVE TO	BASE	PIN	TOOL	BLADE
A	B	C									
250 9,8"	33,50 1,3"	434 17,1"	25° 1,3"	32	34,80 76,72	<b>F32X250 US</b> <b>F32X250 US-ARM</b>	69039967, SBP32X250-S2	FAB, FUAB	F3250 UPN	EXTFU	
310 12,2"	33,50 1,3"	434 17,1"	25° 1,3"	32	41,10 90,61	<b>F32X310 US</b> <b>F32X310 US-ARM</b>	69039968, SBP32X310-S2	FAB, FUAB	F3250 UPN	EXTFU	<b>32</b>
380 15,0"	33,50 1,3"	434 17,1"	25° 1,3"	32	47,90 105,60	<b>F32X380 US</b> <b>F32X380 US-ARM</b>	69039969, SBP32X380-S2	FAB, FUAB	F3250 UPN	EXTFU	
290 11,4"	51,50 2,0"	497 19,6"	25° 2,0"	50	59,30 130,73	<b>F50X290 US</b> <b>F50X290 US-ARM</b>	69039947, 69039961, SBP50X290-S2, SBP50X290-SX2	FAB, FUAB	F3250 UPN	EXTFU	
330 13,0"	51,50 2,0"	497 19,6"	25° 2,0"	50	65,90 145,28	<b>F50X330 US</b> <b>F50X330 US-ARM</b>	69039948, 69039962, SBP50X330-S2, SBP50X330-SX2	FAB, FUAB	F3250 UPN	EXTFU	<b>50</b>
420 16,5"	51,50 2,0"	497 19,6"	25° 2,0"	50	81,00 178,57	<b>F50X420 US</b> <b>F50X330 US-ARM</b>	69039949, 69039963, SBP50X420-S2, SBP50X420-SX2	FAB, FUAB	F3250 UPN	EXTFU	

Lip Shrouds TRANSITION Protectores Cuchilla de TRANSICIÓN

UT



ARM AVAILABLE  
ARM DISPONIBLE

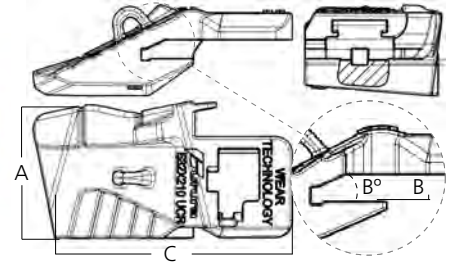


mm.					↓ ↑	32	REF	ALTERNATIVE TO	BASE	PIN	TOOL	BLADE
A	B	C	B°	D°								
275 10,8"	33,50 1,3"	445 17,5"	25° 1,3"	170°	32	38,50 84,88	<b>F32X275 UT</b> <b>F32X275 UT-ARM</b>	69039970, SBP32X275-T2	FAB, FUAB	F3250 UPN	EXTFU	<b>32</b>
288 11,3"	51,50 2,0"	497 19,6"	25° 2,0"	170°	50	59,00 130,07	<b>F50X288 UT</b> <b>F50X288 UT-ARM</b>	69039950, 69039964, SBP50X288-T2, SBP50X288-TX2	FAB, FUAB	F3250 UPN	EXTFU	<b>50</b>

Lip Shrouds CORNER Protectores Cuchilla ESQUINEROS



ARM AVAILABLE  
ARM DISPONIBLE



UCL | UCLH

UCR | UCRH

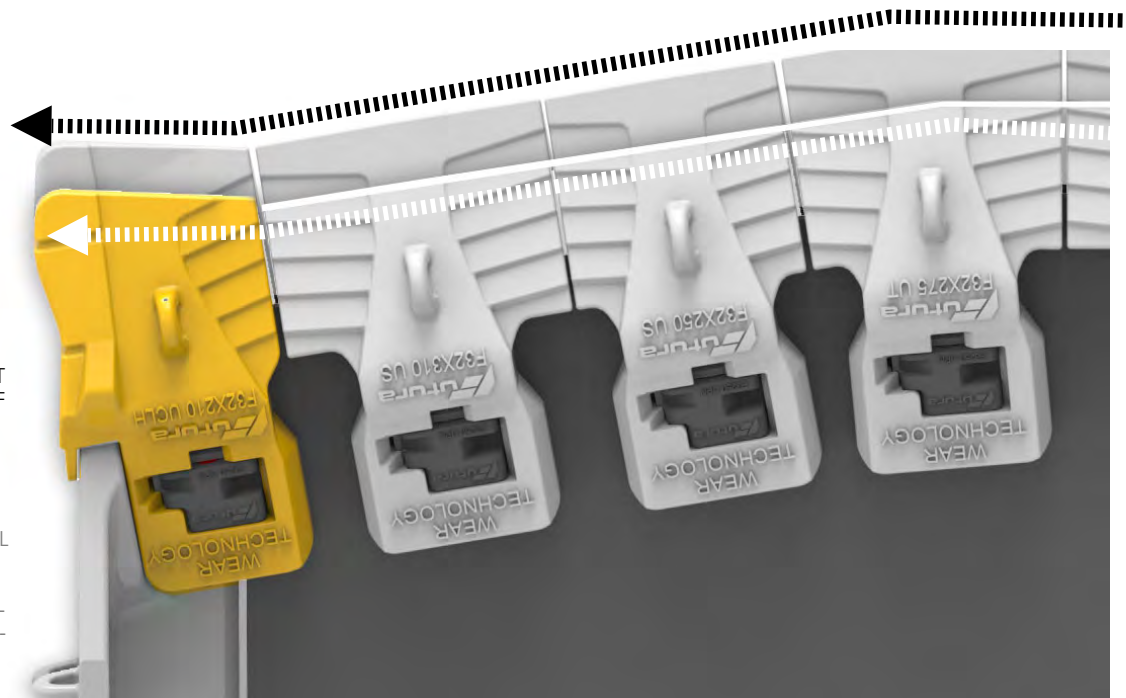
mm.		C	B°			REF	ALTERNATIVE TO			TOOL	BLADE
A	B										
243 9,6"	434 17,1"	472 18,6"	25° 1,3"	<b>32</b>	41,40 91,27	<b>F32X210 UCL</b> <b>F32X210 UCL-ARM</b>	69039971, SBP32X210-CL2	FAB, FUAB	F3250 UPN	EXTFU	<b>32</b>
243 9,6"	434 17,1"	472 18,6"	25° 1,3"	<b>32</b>	41,40 91,27	<b>F32X210 UCR</b> <b>F32X210 UCR-ARM</b>	69039972, SBP32X210-CR2	FAB, FUAB	F3250 UPN	EXTFU	
243 9,6"	434 17,1"	432 17,0"	25° 1,3"	<b>32</b>	32,90 72,53	<b>F32X210 UCLH</b> <b>F32X210 UCLH-ARM</b>	69042488, SBP32X210-CLH2	FAB, FUAB	F3250 UPN	EXTFU	
243 9,6"	434 17,1"	432 17,0"	25° 1,3"	<b>32</b>	32,90 72,53	<b>F32X210 UCRH</b> <b>F32X210 UCRH-ARM</b>	69042489, SBP32X210-CRH2	FAB, FUAB	F3250 UPN	EXTFU	
281 11,1"	497 19,6"	534 21,0"	25° 2,0"	<b>50</b>	72,60 160,05	<b>F50X235 UCL</b> <b>F50X235 UCL-ARM</b>	69039951, 69039965, SBP50X235-CL2, SBP50X235-CLX2	FAB, FUAB	F3250 UPN	EXTFU	<b>50</b>
281 11,1"	497 19,6"	534 21,0"	25° 2,0"	<b>50</b>	71,80 158,29	<b>F50X235 UCR</b> <b>F50X235 UCR-ARM</b>	69039952, 69039966, SBP50X235-CR2, SBP50X235-CRX2	FAB, FUAB	F3250 UPN	EXTFU	
281 11,1"	497 19,6"	480 18,9"	25° 2,0"	<b>50</b>	63,14 139,20	<b>F50X235 UCLH</b> <b>F50X235 UCR-ARM</b>	69039953, SBP50X235-CLH2	FAB, FUAB	F3250 UPN	EXTFU	
281 11,1"	497 19,6"	480 18,9"	25° 2,0"	<b>50</b>	63,14 139,20	<b>F50X235 UCRH</b> <b>F50X235 UCRH-ARM</b>	69039954, SBP50X235-CRH2	FAB, FUAB	F3250 UPN	EXTFU	

UCL UCR

3/4 SHROUD  
UCLH UCRH

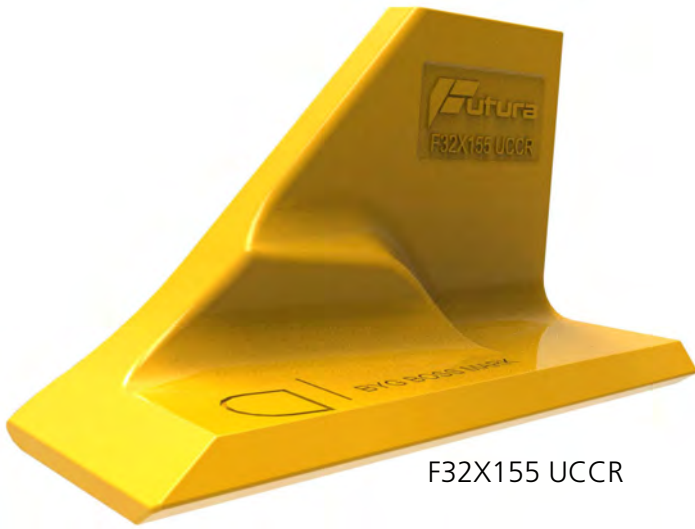
CORNERS ARE SHORTER TO HELP MAINTAIN BUCKET PROFILE WHEN THE REST OF SHROUDS ARE WORN

ESTOS PROTECTORES SON MÁS CORTOS Y AYUDAN A MANTENER EL PERFIL DEL CAZO Y PROLONGAR LA VIDA DEL MONTAJE A CUANDO EL RESTO DE PROTECTORES ESTÁ DESGASTADO

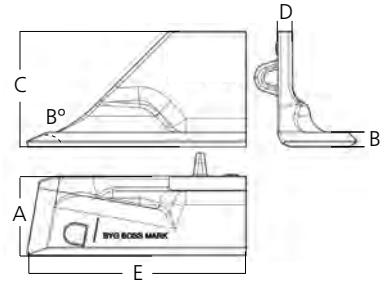


LHD MINER

Weld-on Cast CORNERS Cantonera Soldable

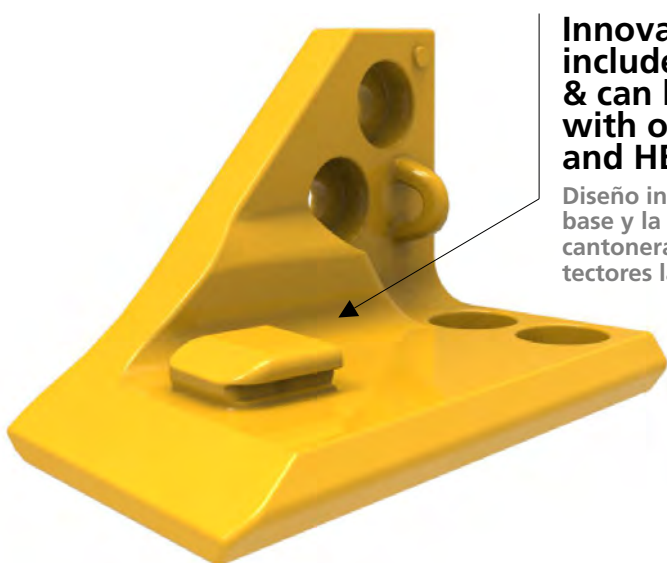


F32X155 UCCR



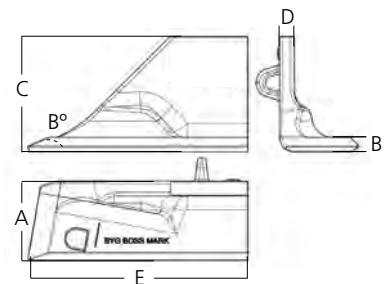
mm.														REF	ALTERNATIVE TO	BLADE	
A	B	C	D	E	B°	in	kg	Lbs									
171	6,7"	32	1,3"	250	9,8"	32	1,3"	476	18,7"	25°	32	1,3"	36,30	80,03	<b>F32X155 UCCL</b>	69039973, SCC32X155-LS	<b>32</b>
															<b>F32X155 UCCR</b>	69039974, SCC32X155-RS	
200	7,9"	50	2,0"	295	11,6"	50	2,0"	471	18,5"	25°	50	2,0"	57,50	126,76	<b>F50X175 UCCL</b>	69037854, SCC50X175-LS	<b>50</b>
															<b>F50X175 UCCR</b>	69037855, SCC50X175-RS	
200	7,9"	50	2,0"	295	11,6"	50	2,0"	539	21,2"	25°	50	2,0"	69,00	152,12	<b>F50X175 UCCEL</b>	69037869, SCC50X175-LE	<b>50</b>
															<b>F50X175 UCER</b>	69037870, SCC50X175-RE	

Special Weld-on Cast CORNERS Cantonera Soldable Especial



**Innovative design includes CAST BASE & can be REINFORCED with optional WING and HEEL SHROUDS**

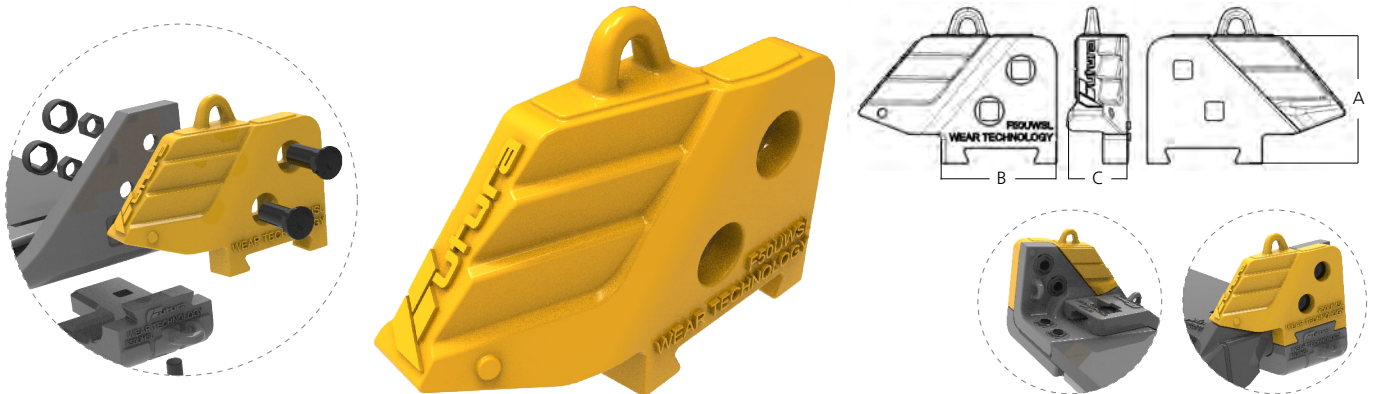
Diseño innovador que incluye la base y la posibilidad de reforzar la cantonera con el montaje de protectores laterales e inferiores



mm.														REF	ALTERNATIVE TO	BLADE	
A	B	C	D	E	B°	in	kg	Lbs									
290	11,4"	50	2,0"	295	11,6"	50	2,0"	486	19,1"	25°	50	2,0"	70,20	154,76	<b>F50X175 UCCL2</b>	SPECIAL DESIGN	<b>50</b>
															<b>F50X175 UCCR2</b>	SPECIAL DESIGN	

**Bolt-on WING SHROUD** Protector Lateral para Cantonera Soldable

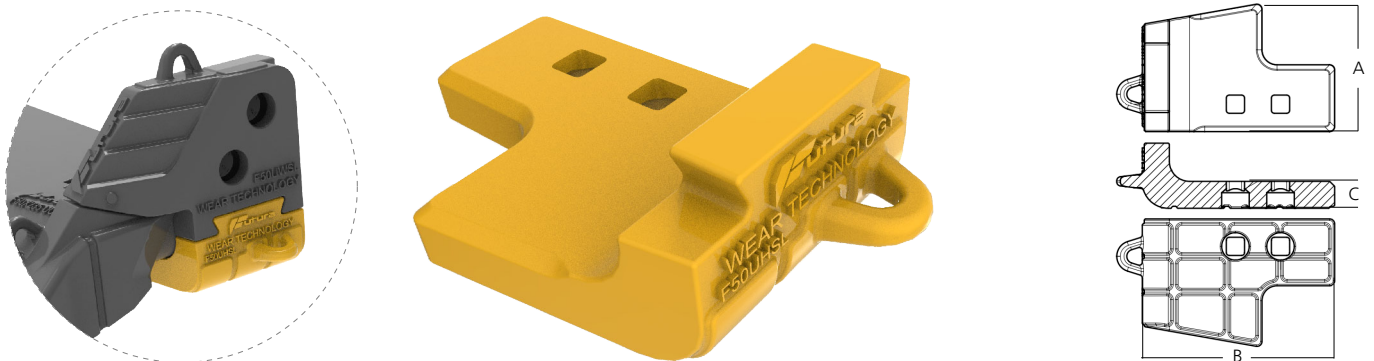
UWS



mm.			kg	Lbs	REF	F50X175 UCCL2	TPN11/4 (2 units)	NP-114 (2 units)	PB-799 (2 units)	BLADE
A	in	B								
246	9,7"	224	8,8"	29,80	65,70	<b>F50UWSL</b>				<b>50</b>
						<b>F50UWSR</b>	F50X175 UCCL2			
							F50X175 UCCR2			

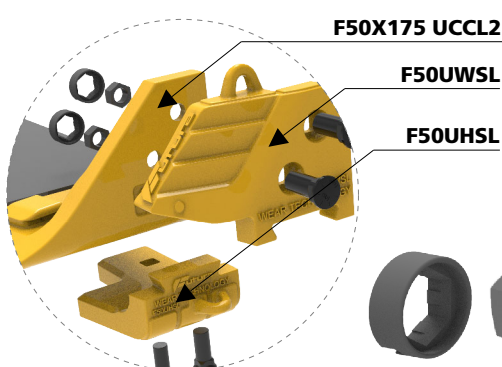
**Bolt-on WING SHROUD** Protector Lateral para Cantonera Soldable

UHS

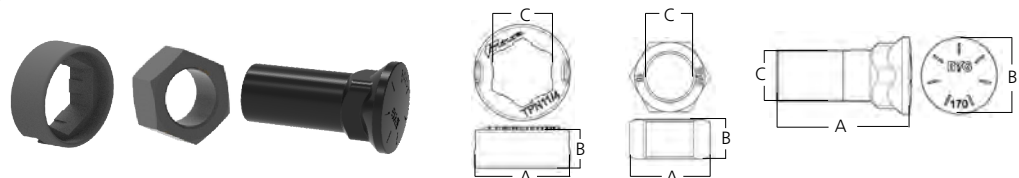


mm.			kg	Lbs	REF	F50X175 UCCL2	TPN11/4 (2 units)	NP-114 (2 units)	PB-799 (2 units)	BLADE
A	in	B								
255	10,0"	384	15,1"	35,10	77,38	<b>F50UHSL</b>				<b>50</b>
						<b>F50UHSR</b>	F50X175 UCCL2			
							F50X175 UCCR2			

**Bolts and Plugs for WING SHROUD** Anclaje para Cantonera Soldable

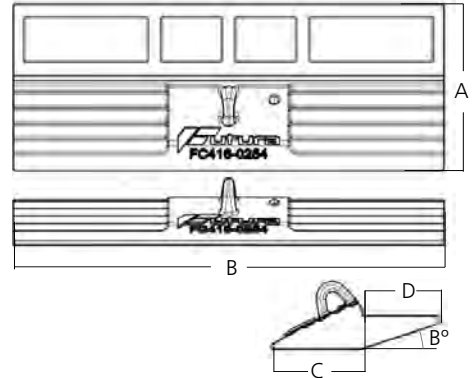
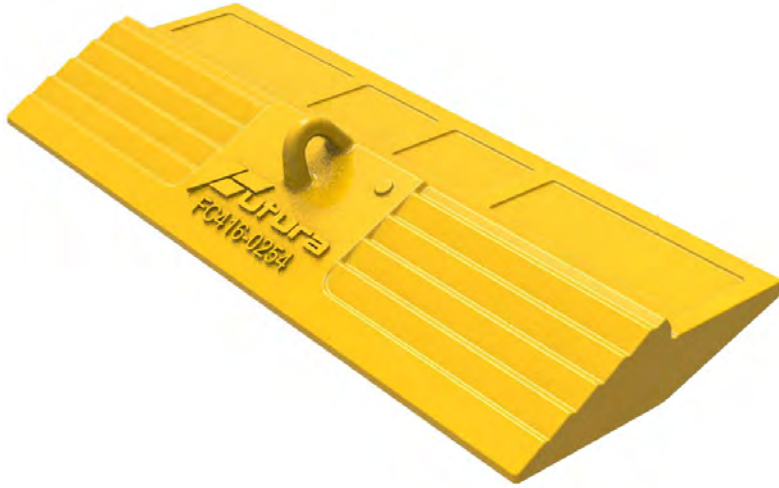


mm.			kg	Lbs	REF			
A	in	B				in	C	in
75	3,0"	30	1,2"	47	54,0"	0,07	0,15	<b>TPN11/4</b>
55	2,2"	27	1,1"		1-1/4"	0,23	0,51	<b>NP-114</b>
89	3,5"	384	15,1"		1-1/4"	0,70	1,54	<b>PB-799</b>



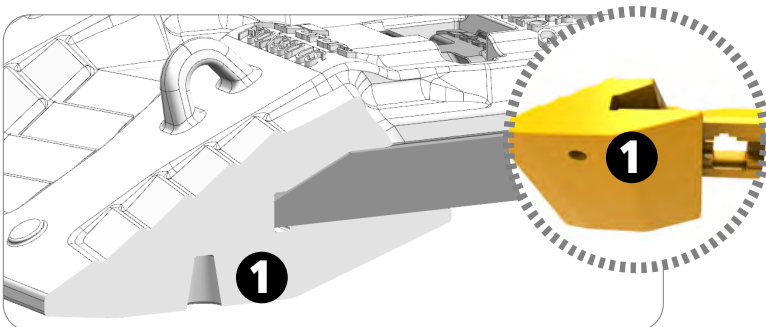
LHD MINER

Weld-On Lip Protector Protector de Labio Soldable



A	in	B	in	C	in	D	in		B°	Kg.	Lb	REF	Cross Ref	
329	12,95"	850	33,46"	177	6,97"	150	5,91"	<b>40</b>	1,57"	18°	105,0	231	<b>FC416-0254</b>	416-0254
329	12,95"	1150	45,28"	177	6,97"	150	5,91"	<b>40</b>	1,57"	18°	142,0	312	<b>FC416-0255</b>	416-0255

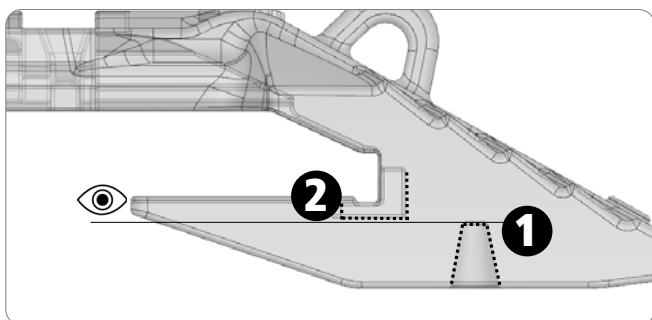
Shroud Replacement Recommendations Recomendaciones Uso y Reemplazo



Pay attention to the wear indicators ① and ② shown in the illustrations.

**Indicator ①** When the recess of indicator ① is no longer visible, this means that it is time to think about **replacing** the protector.

**Indicator ②** If you see the shape of interior recess ② it is time to replace the protector. Do not delay: replace the protector as soon as possible.

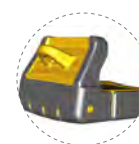
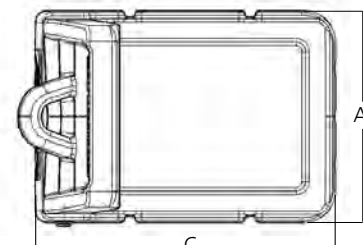
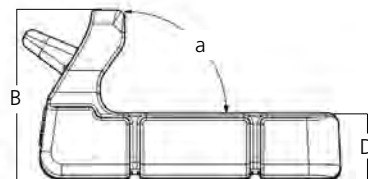
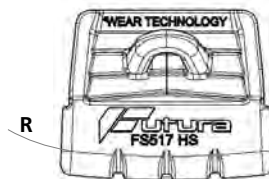
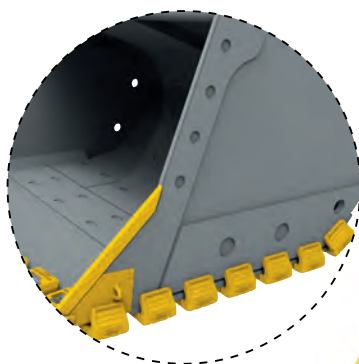


Preste atención a los dos **indicadores de desgaste** ① y ② que se muestran en las ilustraciones.

**Indicador ①** Cuando **desaparezca** de su vista el rebaje del indicador ① esto significa que es momento de pensar en reemplazar el protector.

**Indicador ②** Si ve que en el protector empieza a **mostrarse** la forma del rebaje ②, es momento de reemplazar el protector. No se demore: sustituya el protector.

**Weld-On Heel Shroud** Protector Esquinero Soldable

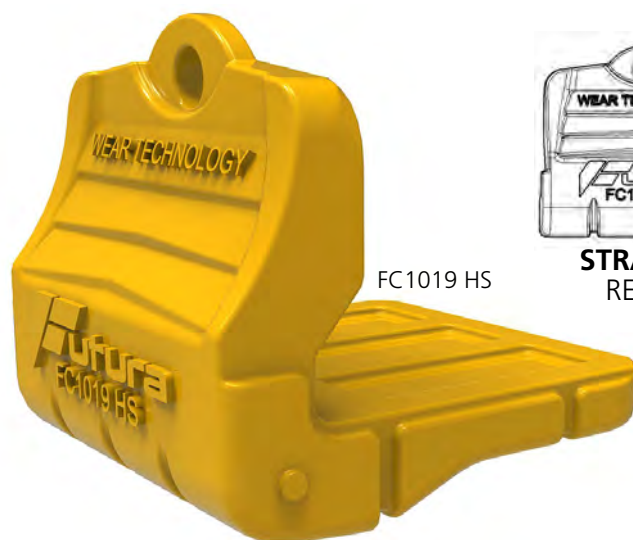


**ARM AVAILABLE**  
ARM DISPONIBLE

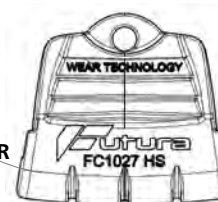
**Compatible SANDVIK®**

A	in	B	in	C	in	D	in	a°	R	in	Kg.	Lb	Type	SHROUD	Cross Ref
198	7,80"	152	5,98"	219	8,62"	50	1,97"	90°	860	33,86"	18,4	40	<b>CURVED</b> CURVO	<b>FS307 HS</b> <b>FS307 HS-ARM</b>	69041891
202	7,95"	162	6,38"	297	11,69"	64	2,52"	90°	770	30,31"	30,4	67	<b>CURVED</b> CURVO	<b>FS517 HS</b> <b>FS517 HS-ARM</b>	69040888

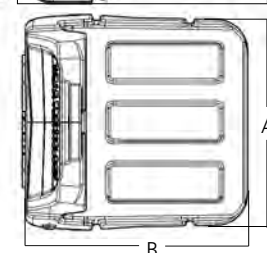
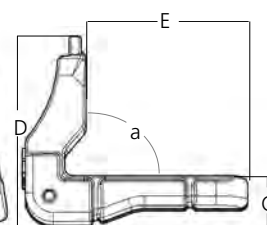
**Weld-On Heel Shrouds compatible CATERPILLAR** Protector Esquinero Soldable



**STRAIGHT**  
RECTO



**CURVED**  
CURVO

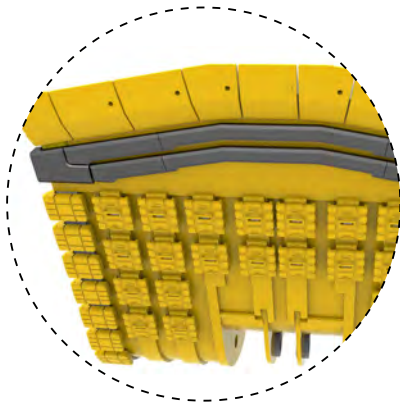


**Compatible CATERPILLAR®**

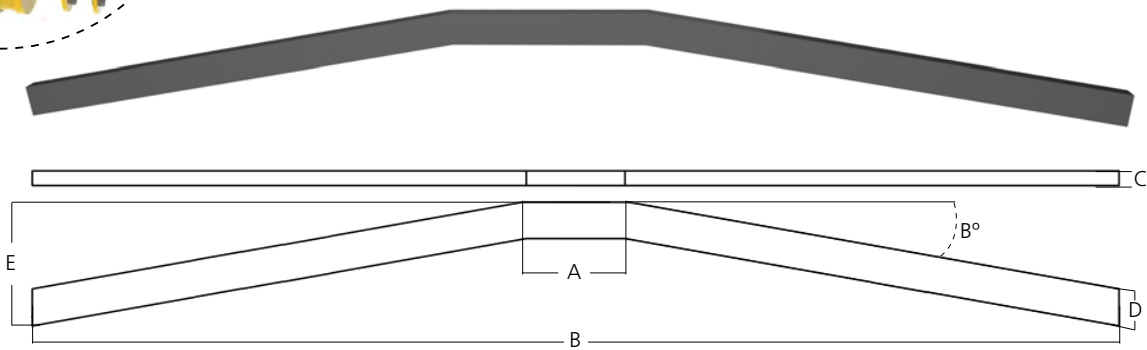
A	in	B	in	C	in	D	in	E	in	a°	R	in	Kg.	Lb	Type	SHROUD	Cross Ref
185	7,28"	210	8,27"	44	1,73"	155	6,10"	149	5,87"	90°	-	-	15,8	35	<b>STRAIGHT</b> RECTO	<b>FC6529 HS</b>	138-6529
185	7,28"	210	8,27"	49	1,93"	153	6,02"	150	5,91"	90°	900	35,43"	15,0	33	<b>CURVED</b> CURVO	<b>FC6551 HS</b>	138-6551
268	10,55"	272	10,71"	56	2,20"	241	9,49"	198	7,80"	90°	-	-	34,5	76	<b>STRAIGHT</b> RECTO	<b>FC1019 HS</b>	157-1019
268	10,55"	276	10,87"	65	2,56"	238	9,37"	201	7,91"	90°	780	30,71"	34,0	75	<b>CURVED</b> CURVO	<b>FC1027 HS</b>	157-1027

LHD MINER

Full Profile Bars Protectores de Cazo Completos

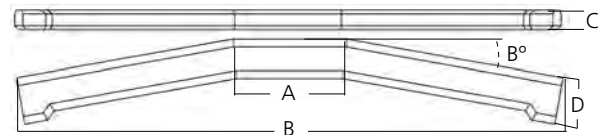
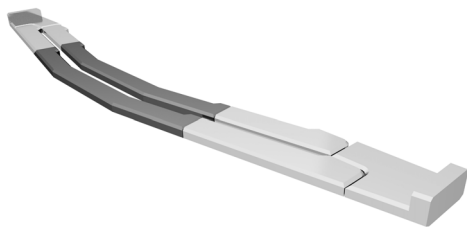


QUALITY  
HARDOX  
450 HB



	A	in	B	in	C	in	D	in	E	in	B°	Kg.	Lb	Ref	Cross Ref
<b>290</b>	11,42"		<b>3000</b>	118,11"	40	1,57"	100	3,94"	340	13,39"	10°	95,2	209	<b>F69037873</b>	69037873, SPB1X290
<b>460</b>	18,11"		<b>3240</b>	127,56"	40	1,57"	100	3,94"	347	13,66"	10°	102,8	226	<b>F69037874</b>	69037874, SPB1X420
<b>600</b>	23,62"		<b>3440</b>	135,43"	40	1,57"	100	3,94"	351	13,82"	10°	109,1	240	<b>F69037875</b>	69037875, SPB2X290
<b>680</b>	26,77"		<b>3520</b>	138,58"	40	1,57"	100	3,94"	352	13,86"	10°	111,6	246	<b>F69037876</b>	69037876, SPB2X330

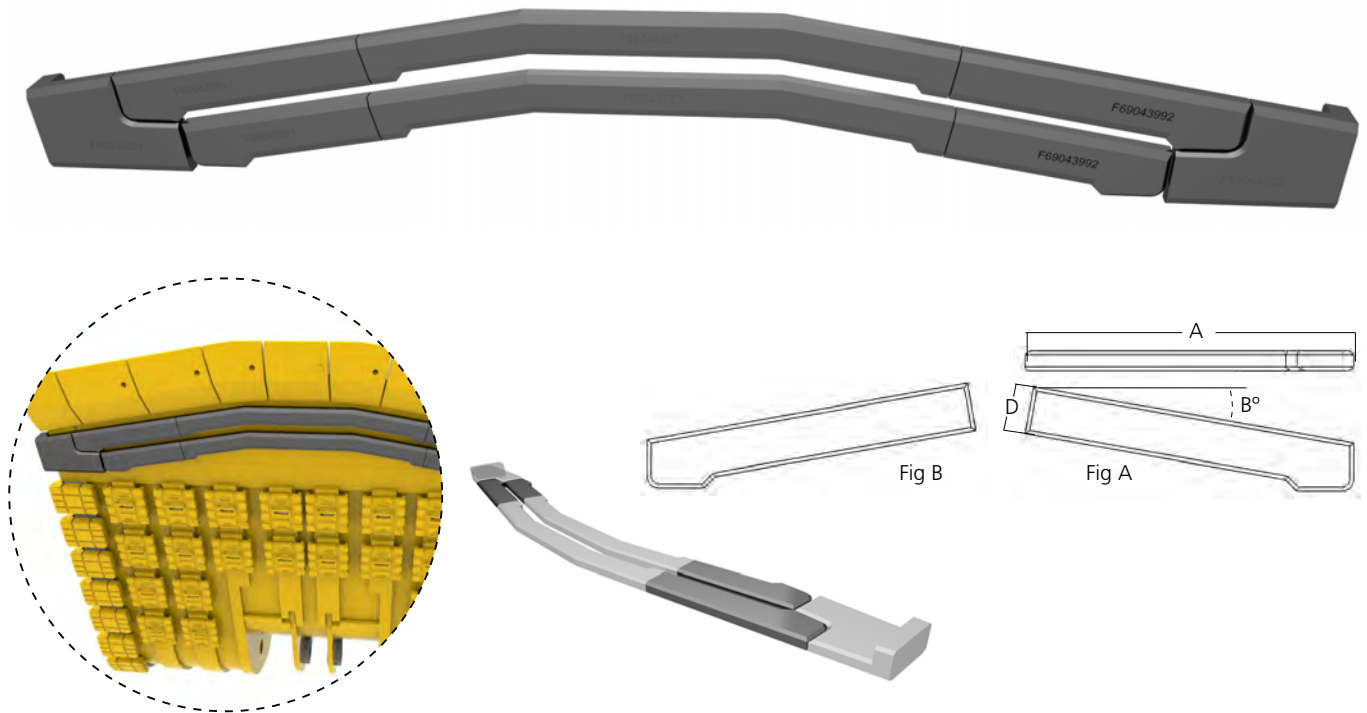
Central Profile Bars Protectores de Cazo de Centrales



	A	in	B	in	C	in	D	in	B°	Kg.	Lb	Ref	Cross Ref
<b>290</b>	11,42"		<b>1400</b>	55,12"	50	1,97"	120	4,72"	10°	52,5	116	<b>F69043995</b>	69043995, SCPB50X290
<b>460</b>	18,11"		<b>1400</b>	55,12"	50	1,97"	120	4,72"	10°	52,4	115	<b>F69043996</b>	69043996, SCPB50X460
<b>600</b>	23,62"		<b>1400</b>	55,12"	50	1,97"	120	4,72"	10°	52,3	115	<b>F69043997</b>	69043997, SCPB50X600
<b>680</b>	26,77"		<b>1400</b>	55,12"	50	1,97"	120	4,72"	10°	111,6	246	<b>F69043998</b>	69043998, SCPB50X680

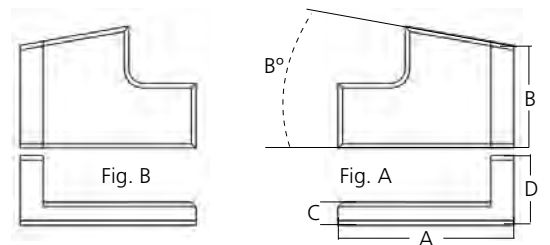


### Lateral Profile Bars Protectores de Cazo Laterales



A	in	C	in	D	in	B°	Kg.	Lb	Fig	Ref	Cross Ref
821	32,32"	50	1,97"	120	4,72"	10°	37,3	82	A	<b>F69043991</b>	69043991
821	32,32"	50	1,97"	120	4,72"	10°	37,3	82	B	<b>F69043992</b>	69043992
521	20,51"	50	1,97"	120	4,72"	10°	23,7	52	A	<b>F69043993</b>	69043993
521	20,51"	50	1,97"	120	4,72"	10°	23,7	52	B	<b>F69043994</b>	69043995

### Corner Protectors Protectores de Cazo Esquineros

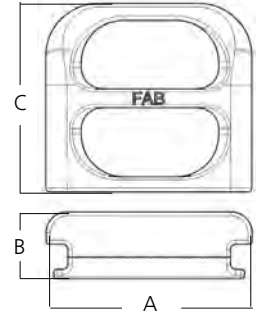
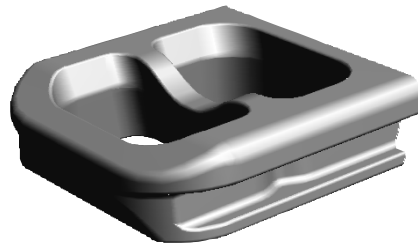


A	in	B	in	C	in	D	in	B°	Kg.	Lb	Fig	Ref	Cross Ref
380	14,96"	221	8,70"	50	1,97"	150	5,91"	10°	38,2	84	A	<b>F69043999</b>	69043999
380	14,96"	221	8,70"	50	1,97"	150	5,91"	10°	38,2	84	B	<b>F69044000</b>	69044000
380	14,96"	221	8,70"	50	1,97"	100	3,94"	10°	33,7	74	A	<b>F69044001</b>	69044001
380	14,96"	221	8,70"	50	1,97"	100	3,94"	10°	33,7	74	B	<b>F69044002</b>	69044002

**LHD MINER**

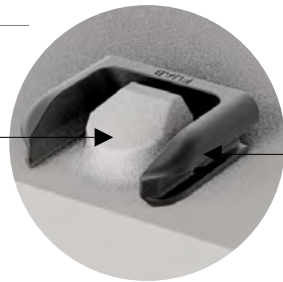
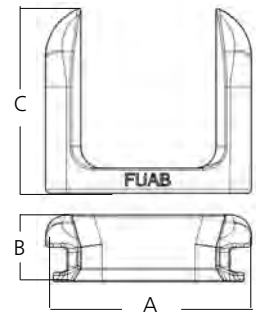
**Lip Shrouds BASE** BASE para Protector

mm.				
A	B	C		REF
86	32	90	0,80	<b>FAB</b>
3,39"	1,26"	3,54"	1,76	



**ADAPTER for Sandvik Base** Adaptador para bases Sandvik

mm.				
A	B	C		REF
86	32	90	0,60	<b>FUAB</b>
3,39"	1,26"	3,54"	1,32	

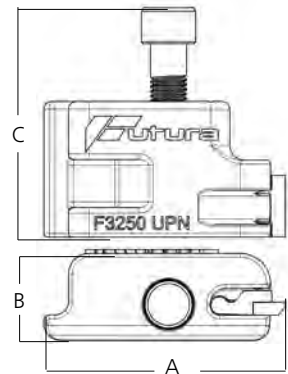


EXISTING SANDVIK BASE

FUTURA FUAB ADAPTER

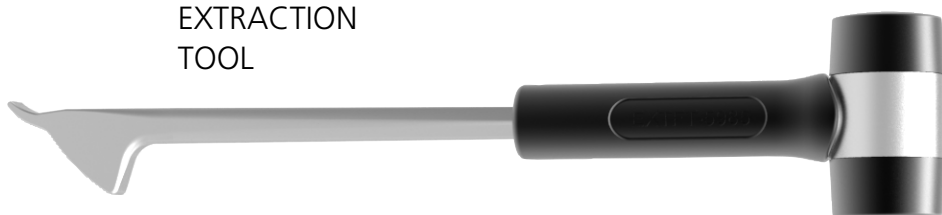
**Lip Shroud PIN** PASADOR para Protector de Cuchilla

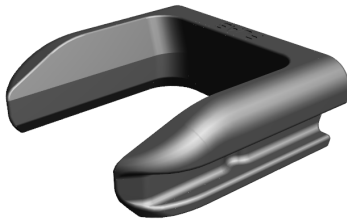
mm.					TORQUE VALUE PAR APRIETE
A	B	C		REF	
127	46	121	2,29	<b>F3250 UPN</b>	400Nm
5,00"	1,81"	4,76"	5,05		



**EXTFU Pin Extraction TOOL** HERRAMIENTA Extractora

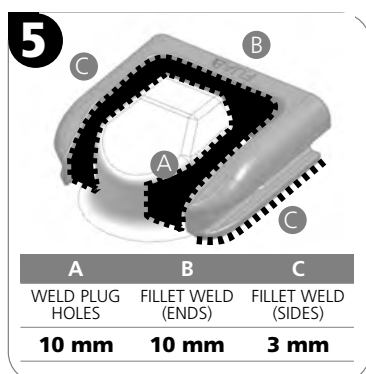
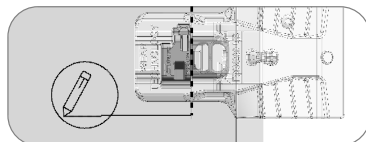
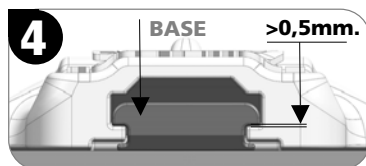
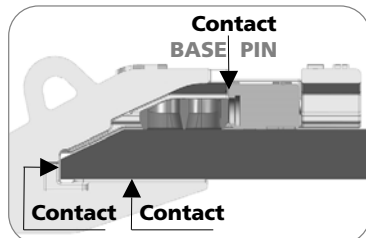
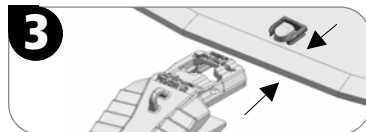
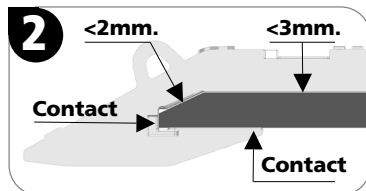
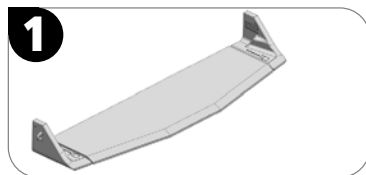
**EXTFU**  
EXTRACTION  
TOOL





# Welding FUAB adapter bases

# Soldadura de bases adaptables FUAB



**NOTE:** FUAB bases must be used exclusively for the assembly of the LHD system over existing OEM (Sandvik) bosses.

**1 Surface preparation** In order to provide sufficient support for the base as well as its pin the mounting surface must be relatively smooth and free of debris, weld spatter or other irregularities. Have a straight profile that produces a gap no greater than 3mm at the base weld (any gap greater than 3mm. must be shimmed). If removing existing worn bases, then preheat (100°C must be applied) Check lip is smooth after base removal.

**2 Shroud fitment** The shroud must be positioned at 90° to leading edge of lip. See graphic for allowed gaps. Shroud fit pad must make contact with 50% of the leading edge and bottom of the lip.

Base position is critical to the FUTURA LHD performance. If the location and installation of the base is correct, the shroud is quickly installed and securely held in place with the pin.

**3 Positioning the bases** Slide shroud assembly into place. Insert the base into the guide of the shroud. Locate the tapered end of the base up and forward. If the lip does not make 50% contact with the fit pads of the shroud, the lip must be rebuilt to provide a proper amount of bearing area.

**4** Insert pin and make sure the back of the base is in contact with the pin face is in contact with the shroud. Ensure clearance between base and shroud rail. If there is contact between the base rail and the shroud rail, then shim to achieve 0,5mm min. clearance. Remove the pin and mark the position of the back of the base with a pencil. Remove the shroud. Make sure the base is aligned to your pencil mark and tack weld it. Restore the shroud and check accuracy of fit on lip.

**5 Welding Recommendations**  
Consumables AS1553 Type E4816 & E4818 low hydrogen (keep dry) | Pre-heat: 175°C-200°C | Intertweld: Maintain an interpass temperature of 150°C | Postheat: 100°C (if air temperature is 10°C or lower). Remove slag after each pass and peen each bead

**Welding Areas**

See picture on the left. Do not exceed the welding wire dimensions.

**NOTA:** Las bases FUAB deben utilizarse exclusivamente para el montaje del sistema LHD sobre bases OEM (Sandvik) existentes.

**1 Preparación de la superficie** Para proporcionar un apoyo suficiente a la base y pasador, la superficie de montaje debe estar lisa y libre de residuos, salpicaduras u otras irregularidades. Tener un perfil recto que produzca una separación no mayor de 3mm en la soldadura de la base (cualquier separación mayor de 3mm. debe ser calzada). Si se eliminan las bases desgastadas existentes, se debe aplicar un precalentamiento (100°C). Comprobar que el labio está liso después de retirar la base.

**2 Conceptos generales montaje** Los protectores deben colocarse a 90° del borde delantero del labio. Véase el gráfico para las distancias máx. permitidas. Las almohadillas de ajuste de los protectores deben hacer contacto con el 50% del borde y de la parte inferior del labio.

La posición de las bases es fundamental. Si la ubicación e instalación de las bases es correcta, los protectores y pasadores se instalarán rápidamente y de forma segura.

**3 Posición de las bases** Deslice la base y el protector a su lugar en el labio, luego inserte la base en la guía del protector. Ajuste bien el protector a la base. Si el labio no hace un contacto del 50% con las almohadillas de ajuste del protector, el labio debe ser reconstruido para proporcionar un área suficiente de apoyo.

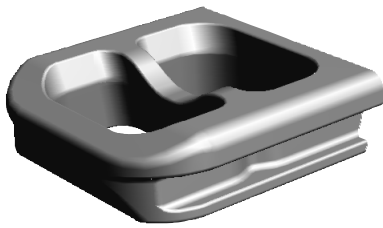
**4** Inserte el pasador y asegúrese de que la parte posterior de la base está en contacto con la cara del pasador y con el protector. Si hay contacto entre la guía de la base y la guía del protector, entonces calce para lograr una holgura mínima de 0,5 mm. Asegúrese de que la base está alineada con la marca del lápiz y haga el punteado para soldarla. Vuelva a colocar el protector y compruebe la exactitud del ajuste con el labio.

**5 Recomendaciones soldadura**  
Consumibles AS1553 tipo E4816 y E4818 bajo en hidrógeno (mantener seco) | Pre-calentamiento: 175°C-200°C | Mantener una temperatura entre pasadas de 150°C | Postcalentamiento: 100°C (si la temperatura ambiente es de 10°C o menos) | Retirar la escoria después de cada pasada y lijar cada cordón

**Áreas de Soldadura**

Siga las indicaciones de la imagen. No sobrepasar las dimensiones del hilo de soldar que se indica.

LHD MINER

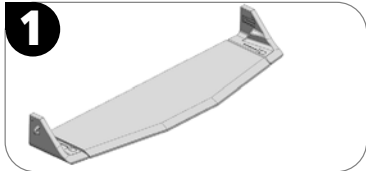


# Welding FAB bases

# Soldadura de bases FAB

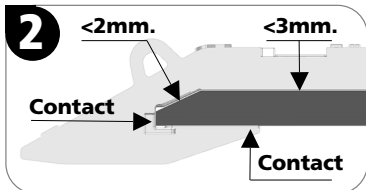
**NOTE:** For good operation of the system follow instructions below.

**NOTA:** Para el buen funcionamiento del sistema, siga estas instrucciones.



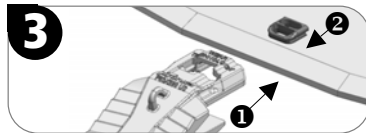
**1 Surface preparation**  
In order to provide sufficient support for the base as well as its pin the mounting surface must be relatively smooth and free of debris, weld spatter or other irregularities. Have a straight profile that produces a gap no greater than 3mm at the base weld (any gap greater than 3mm. must be shimmed). If removing existing worn bases, then preheat (100°C must be applied) Check lip is smooth after base removal.

**1 Preparación de la superficie**  
Para proporcionar un apoyo suficiente a la base y pasador, la superficie de montaje debe estar lisa y libre de residuos, salpicaduras u otras irregularidades. Tener un perfil recto que produzca una separación no mayor de 3mm en la soldadura de la base (cualquier separación mayor de 3mm. debe ser calzada). Si se eliminan las bases desgastadas existentes, se debe aplicar un precalentamiento (100°C). Comprobar que el labio está liso después de retirar la base.



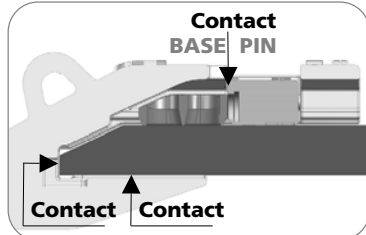
**2 Shroud fitment**  
The shroud must be positioned at 90° to leading edge of lip. See graphic for allowed gaps. Shroud fit pad must make contact with 50% of the leading edge and bottom of the lip.

**2 Conceptos gen. de montaje**  
Los protectores deben colocarse a 90° del borde delantero del labio. Véase el gráfico para las distancias máx. permitidas. Las almohadillas de ajuste de los protectores deben hacer contacto con el 50% del borde y de la parte inferior del labio.



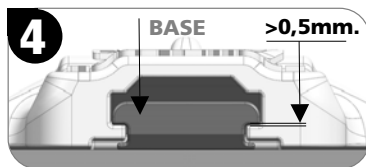
**3 Positioning the bases**  
Slide shroud assembly into place. Insert the base into the guide of the shroud. Locate the tapered end of the base up and forward. If the lip does not make 50% contact with the fit pads of the shroud, the lip must be rebuilt to provide a proper amount of bearing area.

La posición de las bases es fundamental. Si la ubicación e instalación de las bases es correcta, los protectores y pasadores se instalarán rápidamente y de forma segura.



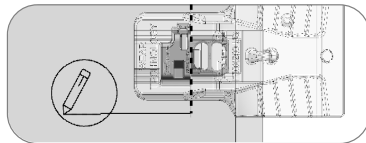
**4 Insert pin and make sure the back of the base is in contact with the pin face is in contact with the shroud.**  
Ensure clearance between base and shroud rail. If there is contact between the base rail and the shroud rail, then shim to achieve 0,5mm min. clearance. Remove the pin and mark the position of the back of the base with a pencil.

**3 Posición de las bases** Deslice la base y el protector a su lugar en el labio, luego inserte la base en la guía del protector. Ajuste bien el protector a la base. Si el labio no hace un contacto del 50% con las almohadillas de ajuste del protector, el labio debe ser reconstruido para proporcionar un área suficiente de apoyo.



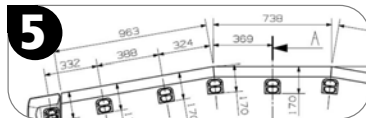
**4** Inserte el pasador y asegúrese de que la parte posterior de la base está en contacto con la cara del pasador y con el protector. Si hay contacto entre la guía de la base y la guía del protector, entonces calce para lograr una holgura mínima de 0,5 mm. Asegúrese de que la base está alineada con la marca del lápiz y haga el punteado para soldarla. Vuelva a colocar el protector y compruebe la exactitud del ajuste con el labio.

**4** Inserte el pasador y asegúrese de que la parte posterior de la base está en contacto con la cara del pasador y con el protector. Si hay contacto entre la guía de la base y la guía del protector, entonces calce para lograr una holgura mínima de 0,5 mm. Asegúrese de que la base está alineada con la marca del lápiz y haga el punteado para soldarla. Vuelva a colocar el protector y compruebe la exactitud del ajuste con el labio.



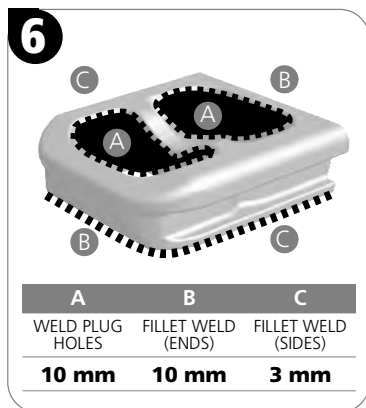
**5** For the correct position of the bases on the lip, please refer to the customized assembly drawings provided by BYG.

**5** Para la correcta posición de las bases en el labio, consulte los planos de montaje personalizados proporcionados por BYG.



**6 Welding Recommendations**  
**Consumables** AS1553 Type E4816 & E4818 low hydrogen (keep dry) | **Pre-heat:** 175°C-200°C | **Interterweld:** Maintain an interpass temperature of 150°C | **Postheat:** 100°C (if air temperature is 10°C or lower). Remove slag after each pass and peen each bead

**6 Recomendaciones soldadura**  
**Consumibles** AS1553 tipo E4816 y E4818 bajo en hidrógeno (mantener seco) | **Pre-calentamiento:** 175°C-200°C | **Mantener** una temperatura entre pasadas de 150°C | **Postcalentamiento:** 100°C (si la temperatura ambiente es de 10°C o menos) | **Retirar** la escoria después de cada pasada y lijar cada cordón



**Welding Areas**  
See picture on the left. Do not exceed the welding wire dimensions.

**Areas de Soldadura**  
Siga las indicaciones de la imagen. No sobrepasar las dimensiones del hilo de soldar que se indica.

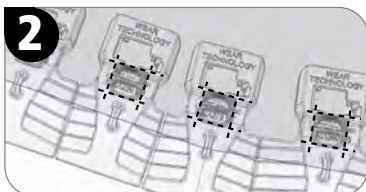
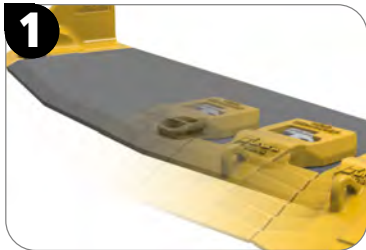


# Installation of FUTURA LHD lip shrouds

# Instalación de Protectores FUTURA LHD

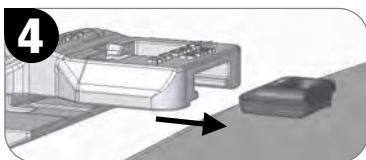
NOTE: For good operation of the system follow instructions below.

NOTA: Para el buen funcionamiento del sistema seguir estas instrucciones.



**3 Welding Soldadura**

	A	B	C
	WELD PLUG HOLES	FILLET WELD (ENDS)	FILLET WELD (SIDES)
<b>FAB</b>	<b>10 mm</b>	<b>10 mm</b>	<b>3 mm</b>
<b>FBB</b>	<b>13 mm</b>	<b>13 mm</b>	<b>6 mm</b>
<b>FCB</b>	<b>16 mm</b>	<b>13 mm</b>	<b>6 mm</b>



## Welding



1 Remove shrouds and pins from lip, ensuring the base area is free of any packed fines. If removing existing worn bases, then preheat (100°C) must be applied. Check lip area is smooth after base removal.

2 Align base and mark lip carefully with appropriate gauge or using respective shroud prior to tack welding into position, apply localized preheat (100°C) prior to tack welding.

Fit shroud to ensure correct boss position. Assemble the FUTURA hammerless pin to verify and then remove pin and shroud. Preheat base and adjacent lip area to 200°C and ensure preheat is maintained during welding.

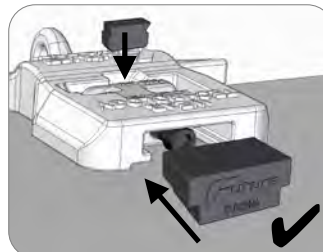
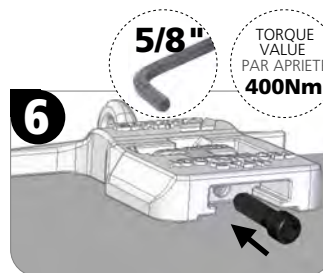
3 Please check the welding areas shown in the picture. Cover welded area with thermal blanket to allow slow cooling. Grind smooth all weld ends and any sharp edges.

## Assembly

- 4 Slide the shroud body through the base guides.
- 5 Lock the Hammerless pin in place with the help of the EXTUFU tool.
- 6 Place the bolt and screw with a 5/8" HEX KEY. Place the dirt plugs.

## Disassembly

Follow steps 4 to 6 in reverse order.



## Soldadura



1 Retire protectores y pasadores de la cuchilla si los hubiese, asegúrese que la base de la cuchilla está libre de partículas. Si ha de retirar bases anteriores, pre-caliente la zona a 100°C. Compruebe que la zona queda lisa después de retirar las bases.

2 Coloque la base y marque la cuchilla con un indicador adecuado antes de proceder a la soldadura de la misma. Pre-caliente a 100°C la zona a soldar. Coloque el cuerpo del protector para asegurar la posición correcta de la base. Monte el pasador sin martillo FUTURA para verificar posición y luego retire el pasador y el cuerpo del protector. Pre-caliente la base y la zona de la cuchilla a soldar a 200°C y mantenga esta temperatura durante todo el proceso de soldadura.

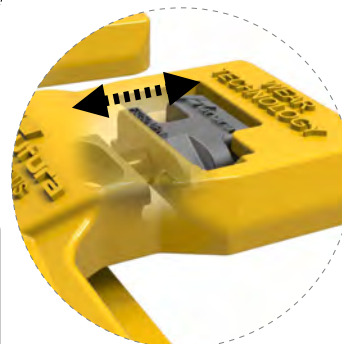
3 Compruebe las zonas de soldadura que se muestran en la imagen. Cubra el área soldada con una manta térmica para permitir un enfriamiento lento. Moler hasta que queden lisos todos los extremos de la soldadura y los bordes afilados.

## Montaje

- 4 Deslice el cuerpo del protector por las guías de la base.
- 5 Inserte el pasador hammerles con la ayuda de la herramienta EXTUFU.
- 6 Coloque el tornillo y use una llave HEXAGONAL de 5/8" para fijarlo. Coloque los tapones anti-suciedad.

## Desmontaje

Siga los pasos 4 a 6 en orden inverso.



**20 mm.**

The 20 mm. piston expansion allows to maintain tension of the shroud against the blade through out the shroud wear life

Los 20mm. de expansión del pistón del pasador permiten mantener la tensión del pasador contra el protector durante toda su vida útil.

**LHD MINER**

# FUTURA **WEAR** **TECH**



# DIRECT REPLACEMENT PARTS

## PIEZAS DE REEMPLAZO DIRECTO





DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
product available**  
*Other part numbers  
please consult*

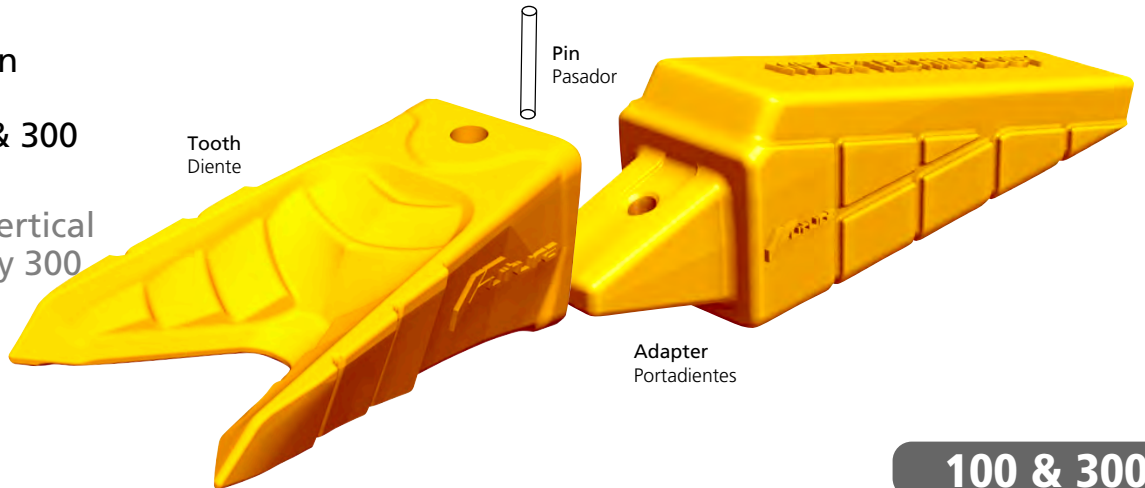
**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# Adco

## Teeth and Adapters Dientes y Portadientes

Vertical Pin  
Assembly  
sizes 100 & 300

Montaje  
Pasador Vertical  
tallas 100 y 300



**100 & 300**

Side Pin  
Assembly  
size 400

Montaje  
Pasador Lateral  
talla 400

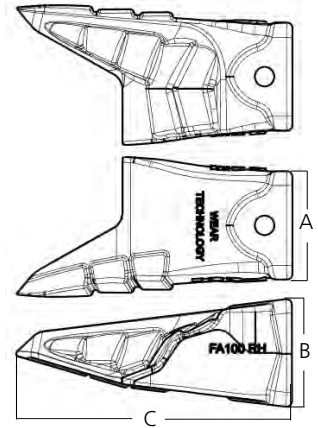
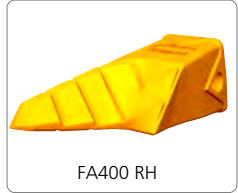


**400**

<b>FA100 RH</b> 100RH	<b>FA100 C</b> 100C	<b>FA100 LH</b> 100LH	<b>FA110 RH</b> 110RH	<b>FA110</b> 110	<b>FA110 LH</b> 110LH	<b>100</b>
<b>FA300 RH</b> 300RH	<b>FA300 C</b> 300C	<b>FA300 LH</b> 300LH	<b>FA310 RH</b> 310RH	<b>FA310</b> 310	<b>FA310 LH</b> 310LH	<b>300</b>
<b>FA400 RH</b> 400RH	<b>FA400 C</b> 400C	<b>FA400 LH</b> 400LH	<b>FA410 RH</b> 410RH	<b>FA410</b> 410	<b>FA410 LH</b> 410LH	<b>400</b>

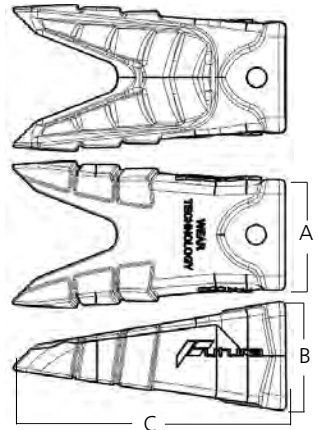
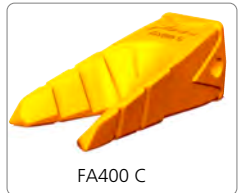
Adco

Right Hand Tooth Diente Derecho



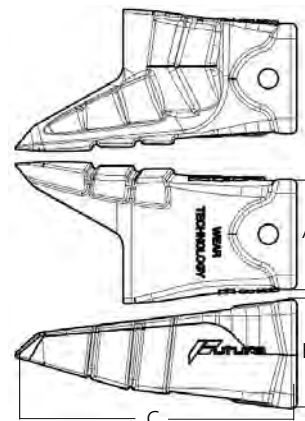
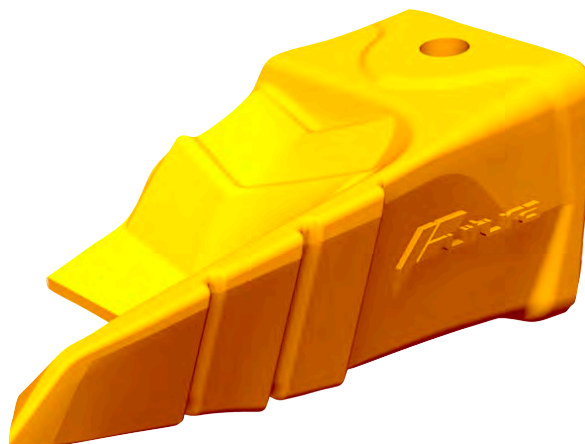
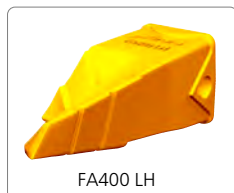
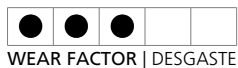
mm.				KG	REF	Cross Ref Cruce Ref				
A	B	C								
61 2,40"	60 2,36"	150 5,91"	1,54 3,40	<b>FA100 RH</b>	100RH	P156	-	FA110 RH	<b>100</b>	
92 3,62"	86 3,39"	216 8,50"	4,21 9,28	<b>FA300 RH</b>	300RH	P160	-	FA310 RH	<b>300</b>	
110 4,33"	115 4,53"	304 11,97"	10,40 22,93	<b>FA400 RH</b>	400RH	8E-6358 114-0358	8E-6359 114-0359	FA410 RH	<b>400</b>	

Central Tooth Diente Central



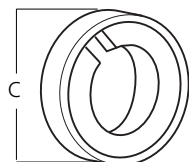
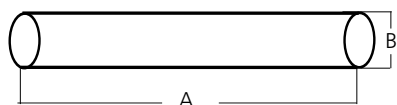
mm.				KG	REF	Cross Ref Cruce Ref				
A	B	C								
61 2,40"	60 2,36"	150 5,91"	1,50 3,31	<b>FA100 C</b>	100C	P156	-	FA110	<b>100</b>	
92 3,62"	86 3,39"	216 8,50"	4,95 10,91	<b>FA300 C</b>	300C	P160	-	FA310	<b>300</b>	
110 4,33"	115 4,53"	304 11,97"	9,50 20,94	<b>FA400 C</b>	400C	8E-6358 114-0358	8E-6359 114-0359	FA410	<b>400</b>	

## Left Hand Tooth Diente Izquierdo



mm.			KG	REF	Cross Ref Cruce Ref				
A	B	C							
61 2,40"	60 2,36"	150 5,91"	1,54 3,40	<b>FA100 LH</b>	100LH	P156	-	FA110 LH	<b>100</b>
92 3,62"	86 3,39"	216 8,50"	4,21 9,28	<b>FA300 LH</b>	300LH	P160	-	FA310 LH	<b>300</b>
110 4,33"	115 4,53"	304 11,97"	10,40 22,93	<b>FA400 LH</b>	400LH	8E-6358 114-0358	8E-6359 114-0359	FA410 LH	<b>400</b>

## Pin Pasador



mm.					
A	B	C			
57 2,24"	10 0,39"		<b>P156</b>		<b>100</b>
64 2,52"	13 0,51"		<b>P160</b>		<b>300</b>
108 4,25"	19 0,75"	40 1,57"	<b>8E-6358</b> <b>114-0358</b>	<b>8E-6359</b> <b>114-0359</b>	<b>400</b>



Adco

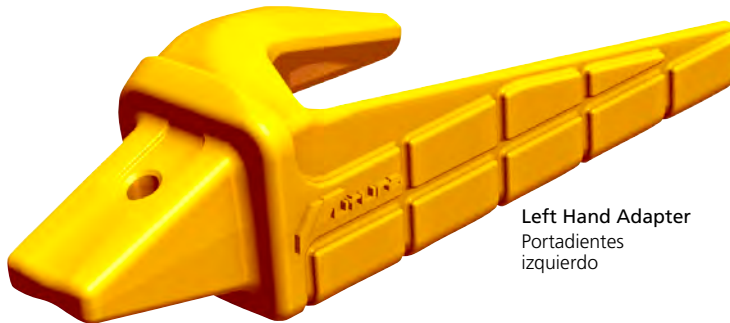
Adapters Portadientes



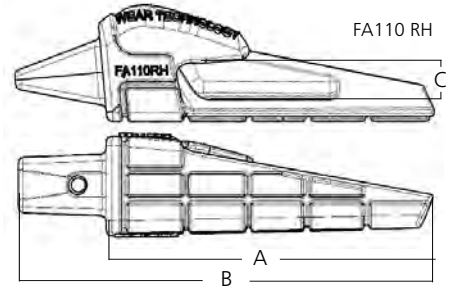
Right Hand Adapter  
Portadientes  
derecho



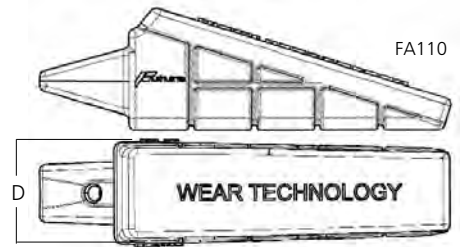
Central Adapter  
Portadientes  
central



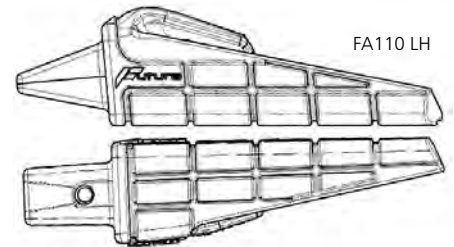
Left Hand Adapter  
Portadientes  
izquierdo



FA110 RH



FA110



FA110 LH



FA410 RH



FA410



FA410 LH

mm.					KG	Cross Ref Cruce Ref	P156	P160	FA100 RH	FA100 C	FA100 LH
A	B	C	D								
217 8,54"	275 10,83"	22 0,87"	-	3,18 7,01	<b>FA110 RH</b>	110RH	P156		FA100 RH		
214 8,43"	262 10,31"	-	81 3,19"	4,71 10,38	<b>FA110</b>	110	P156		FA100 C	<b>100</b>	
217 8,54"	275 10,83"	22 0,87"	-	3,20 7,05	<b>FA110 LH</b>	110LH	P156		FA100 LH		
228 8,98"	313 12,32"	38 1,50"	-	5,80 12,79	<b>FA310 RH</b>	310RH	P160		FA300 RH		
280 11,02"	349 13,74"	-	210 8,27"	19,50 42,99	<b>FA310</b>	310	P160		FA300 C	<b>300</b>	
228 8,98"	313 12,32"	38 1,50"	-	5,82 12,83	<b>FA310 LH</b>	310LH	P160		FA300 LH		
390 15,35"	283 11,14"	53 2,09"	-	12,78 28,17	<b>FA410 RH</b>	100RH	8E-6358 114-0358	8E-6359 114-0359	FA400 RH		
277 214	368 14,49"	-	197 7,76"	21,06 46,43	<b>FA410</b>	300RH	8E-6358 114-0358	8E-6359 114-0359	FA400 C	<b>400</b>	
283 11,14"	390 15,35"	53 2,09"	-	12,78 28,17	<b>FA410 LH</b>	400RH	8E-6358 114-0358	8E-6359 114-0359	FA400 LH		

Case 580 & 770

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

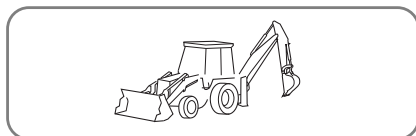
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product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
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consúltenos*

# Case

## Bolt On teeth for Case 580 & 770

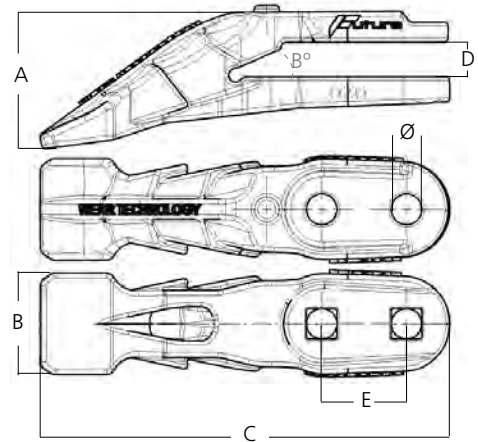
## Dientes Atornillables para Case 580 y 770



**FCS420052** **FCS420020** **FCS420053** 580-770

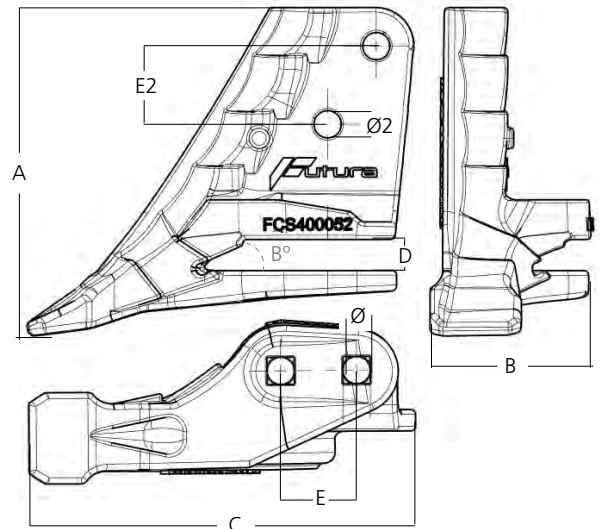
**Case 580 & 770**

**Bolt-On Tooth** Diente Atornillable



mm.													
A	B	C	D	E	Ø	B°							
80	60	241,5	20,5	50	18	23,5°	<b>20</b>	<b>2,8</b>	<b>FCS420020</b>	<b>PB-514</b>	<b>TAC-580</b>	<b>580-770</b>	
3,15"	2,36"	9,51"	0,81"	1,97"	0,71"		0,79"	6,17	BU0420002				

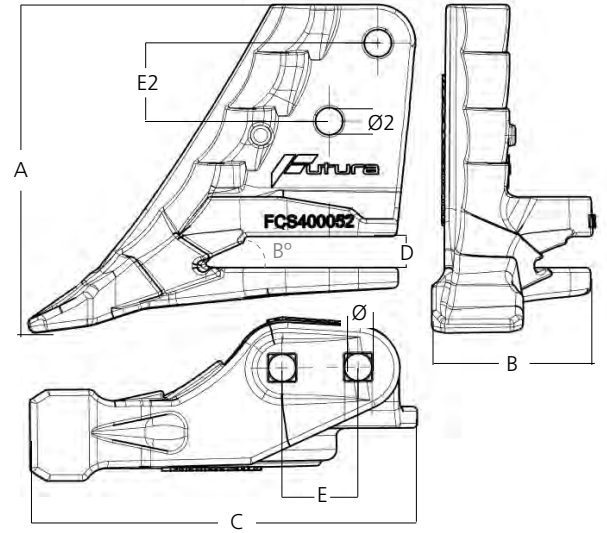
**Bolt-On Corner** Cantonera Atornillable



mm.																
A	B	C	D	E	E2	Ø	Ø2	B°								
216	104	255	20,5	50	51	18	18	23,5°	<b>20</b>	<b>5,9</b>	<b>FCS420052</b>	<b>S-9092</b>	<b>TAC-580</b>	<b>PB-514</b>	<b>TAC-580</b>	<b>580-770</b>
8,50"	4,09"	10,04"	0,81"	1,97"	2,01"	0,71"	0,71"		0,79"	13,01	BU0630302					

Case 580 & 770

**Bolt-On Corner** Cantonera Atornillable

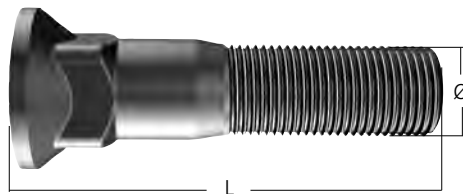


mm.																
A	B	C	D	E	E2	Ø	Ø2	B°								
216	104	255	20,5	50	51	18	18	23,5°	<b>20</b>	5,9	<b>FCS420053</b>	S-9092	TAC-580	PB-514	TAC-580	<b>580-770</b>
8,50"	4,09"	10,04"	0,81"	1,97"	2,01"	0,71"	0,71"		0,79"	13,01	BU0630303					

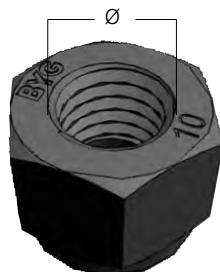
**Bolts & Nuts** Tornillos y Tuercas



mm.		OEM	BYG
L	Ø		
2-1/4"	5/8"	85-9092	<b>S-9092</b>



mm.		OEM	BYG
L	Ø		
2-3/4"	5/8"	4F-3657	<b>PB-514</b>



mm.		OEM	BYG
Ø			
5/8"		2H-3789	<b>TAC-580</b>

Case 580 & 770



Caterpillar

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
product available**

*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**

*Otras referencias  
consúltenos*

# Caterpillar

## Side Pin Teeth

## Sistema Pasador Lateral



# Caterpillar

## Key to part numbers

Codificación Referencias

<b>F</b>	<b>C</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>R</b>	<b>P</b>	<b>L</b>
BRAND MARCA	TYPE TIPO	SIZE TALLA	VERSION VERSION	ROCK ROCA	PENETRATION PENETRACION	LIGHT LIGERO	

**Limited sale to authorized Futura dealers**  
 Venta limitada a distribuidores autorizados FUTURA

## Guide to part sizes by Maximum Machine Weight (tons)

Guía para la elección de tallas según peso máximo de la máquina (en toneladas)

	200	225	250	300	350	400	460	550	600	700	800
<b>Standard</b>	8,7	11,5	16,7	25,0	33,8	46,9	63,6	81,2	103,7	144,1	248,4
<b>HD</b>	6,8	8,9	12,9	19,5	25,0	33,4	46,9	63,6	81,2	103,7	136,4
<b>ST/HD</b>	7,1	10,0	15,7	21,7	29,4	39,9	53,3	67,4	88,8	119,9	188,0
<b>Extra HD</b>	5,4	7,6	12,0	16,3	22,1	30,2	39,9	53,3	67,4	88,8	129,9
<b>ST/HD</b>								62,2	82,9	110,0	161,1
<b>Extra HD</b>								48,6	62,2	82,9	120,4

<b>Light Construction</b> Construcción Ligera	<b>Construction</b> Construcción	<b>Heavy Construction</b> Construcción Pesada	<b>Mining</b>
--	-------------------------------------	--	---------------

F	L	U	Weight
FC200 F	FC200 L		20
	FC220 L		22
FC250 F	FC250 L	FC250 U	25
FC300 F	FC300 L	FC300 U	30
FC350 F	FC350 L	FC350 U	35
FC400 F	FC400 L	FC400 U	40
FC450 F	FC450 L		46
FC550 F	FC550 L		55
	FC600 L		60

**Loader & Excavator**  
Cargadora y Excavadora

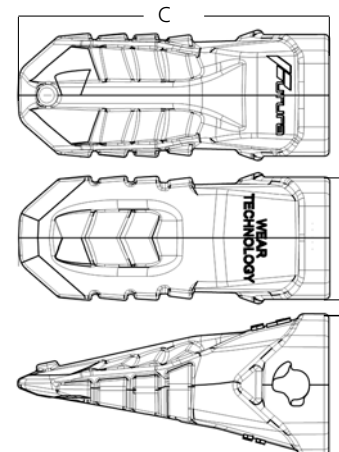
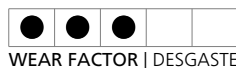
**Loader Cargadora**

**Excavator / Excavadora**

RPL	RP	RPHD	SYL	I	TL	VTL	WTL	WTS	WTP	P	RC	PHC	Weight
FC200 RPL			FC200 SYL		FC200 TL		FC200 WTL			FC200 P	FC200 RC		20
			FC220 SYL								FC220 RC		22
FC250 RPL	FC250 RP		FC250 SYL		FC250 TL		FC250 WTL			FC250 P	FC250 RC		25
FC300 RPL	FC300 RP		FC300 SYL		FC300 TL		FC300 WTL			FC300 P	FC300 RC		30
FC350 RPL	FC350 RP		FC350 SYL		FC350 TL		FC350 WTL	FC350 WTS		FC350 P	FC350 RC		35
FC400 RPL	FC400 RP	FC400 RPHD	FC400 SYL	FC350 I	FC400 TL		FC400 WTL			FC400 P	FC400 RC		40
FC450 RPL	FC450 RP	FC450 RPHD	FC450 SYL	FC450 I	FC450 TL	FC450 VTL	FC450 WTL	FC450 WTS		FC450 P	FC450 RC	FC450 PHC	46
FC550 RPL	FC550 RP	FC550 RPHD	FC550 SYL	FC550 I	FC550 TL	FC550 VTL	FC550 WTL		FC550 WTP	FC550 P	FC550 RC		55
FC600 RPL	FC600 RP	FC600 RPHD	FC600 SYL		FC600 TL	FC600 VTL	FC600 WTL		FC600 WTP	FC600 P	FC600 RC		60
	FC700 RP	FC700 RPHD			FC700 TL	FC700 VTL	FC700 WTL			FC700 P	FC700 RC		70
	FC800 RP	FC800 RPHD			FC800 TL					FC800 P	FC800 RC		80

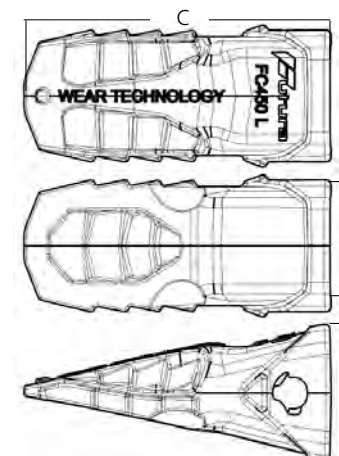


## UNIVERSAL Tooth Diente UNIVERSAL



mm.			KG	REF	OEM						mm.
A	B	C									
81 3,19"	89 3,50"	210 8,27"	3,10 6,83	<b>FC250 U</b>	1U-3252	FC250HL2	132-4763	8E-6259 149-5733	FC250	FC250 BL	<b>25</b>
93 3,66"	104 4,09"	213 8,39"	4,20 9,26	<b>FC300 U</b>	1U-3302	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	FC300 BL	<b>30</b>
107 4,21"	118 4,65"	242 9,53"	6,00 13,23	<b>FC350 U</b>	1U-3352	FC350HL2	114-0358	8E-6359 114-0359	FC350 FC350 B-35	FC350 BL	<b>35</b>
134 5,28"	140 5,51"	293 11,54"	10,90 24,03	<b>FC450 U</b>	9W-8452	FC450HL2	114-0468	8E-8469 107-3469	FC450 FC450-63	FC450 S	<b>46</b>

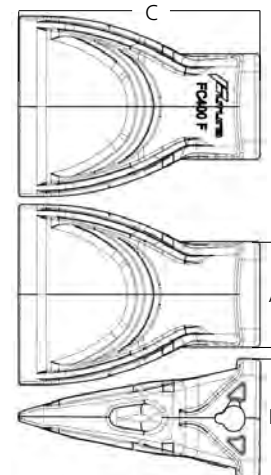
## LONG Teeth Diente LARGO



mm.			KG	REF	OEM						mm.
A	B	C									
62 2,44"	66 2,60"	159 6,26"	1,60 3,53	<b>FC200 L</b>	1U-3202	FC200HL2	8E-6208	8E-6209	FC200	FC200 BL	<b>20</b>
75 2,95"	81 3,19"	172 6,77"	2,10 4,63	<b>FC220 L</b>	6Y-3222	FC220HL2	132-4762	8E-6259 149-5733	FC220		<b>22</b>
81 3,19"	89 3,50"	210 8,27"	3,40 7,50	<b>FC250 L</b>	1U-3252	FC250HL2	132-4763	8E-6259 149-5733	FC250	FC250 BL	<b>25</b>
93 3,66"	104 4,09"	220 8,66"	4,70 10,36	<b>FC300 L</b>	1U-3302	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	FC300 BL	<b>30</b>
106 4,17"	116 4,57"	256 10,08"	6,90 15,21	<b>FC350 L</b>	1U-3352	FC350HL2	114-0358	8E-6359 114-0359	FC350 FC350 B-35	FC350 BL	<b>35</b>
119 4,69"	128 5,04"	274 10,79"	8,40 18,52	<b>FC400 L</b>	7T-3402	FC400HL2	116-7408	8E-8409 116-7409	FC400	FC400 S	<b>40</b>
134 5,28"	140 5,51"	312 12,28"	13,10 28,88	<b>FC450 L</b>	9W-8452	FC450HL2	114-0468	8E-8469 107-3469	FC450 FC450-63	FC450 S	<b>46</b>
162 6,38"	164 6,46"	361 14,21"	21,30 46,96	<b>FC550 L</b>	9W-8552	FC550HL2	107-3378	8E-5559 107-8559	FC550	FC550 S	<b>55</b>
181 7,13"	198 7,80"	412 16,22"	31,00 68,34	<b>FC600 L</b>	6I-6602	FC600HL2	113-9608	6I-6609 113-9609	FC600	FC600 S	<b>60</b>

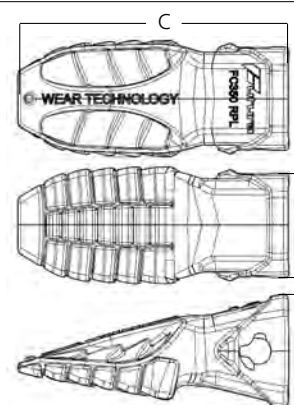
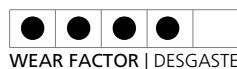
Caterpillar

FLARE Teeth Diente ANCHO



mm.			KG	REF	OEM						mm
A	B	C									
62 2,44"	67 2,64"	136 5,35"	1,60 3,53	<b>FC200 F</b>	109-9200	FC200HL2	8E-6208	8E-6209	FC200	FC200 BL	<b>20</b>
80 3,15"	94 3,70"	200 7,87"	4,00 8,82	<b>FC250 F</b>	3G-8250	FC250HL2	132-4763	8E-6259 149-5733	FC250	FC250 BL	<b>25</b>
93 3,66"	103 4,06"	241 9,49"	6,90 15,21	<b>FC300 F</b>	4T-1300 107-3300	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	FC300 BL	<b>30</b>
104 4,09"	121 4,76"	250 9,84"	9,40 20,72	<b>FC350 F</b>	8J-3350 107-3350	FC350HL2	114-0358	8E-6359 114-0359	FC350 FC350-B35	FC350 BL	<b>35</b>
120 4,72"	135 5,31"	273 10,75"	12,80 28,22	<b>FC400 F</b>	7T-3400 107-3400	FC400HL2	116-7408	8E-8409 116-7409	FC400	FC400 S	<b>40</b>
140 5,51"	146 5,75"	303 11,93"	18,70 41,23	<b>FC450 F</b>	8J-1450 107-3450	FC450HL2	114-0468	8E-8469 107-3469	FC450 FC450-63	FC450 S	<b>46</b>
164 6,46"	168 6,61"	343 13,50"	28,80 63,49	<b>FC550 F</b>	7J-9550 107-3550	FC550HL2	107-3378	8E-5559 107-8559	FC550	FC550 S	<b>55</b>

ROCK PENETRATION LIGHT Teeth Diente PENETRACIÓN LIGERO



mm.			KG	REF	OEM						mm
A	B	C									
61 2,40"	70 2,76"	167 6,57"	1,90 4,19	<b>FC200 RPL</b>		FC200HL2	8E-6208	8E-6209	FC200	FC200 BL	<b>20</b>
80 3,15"	92 3,62"	209 8,23"	3,80 8,38	<b>FC250 RPL</b>	9N-4252	FC250HL2	132-4763	8E-6259 149-5733	FC250	FC250 BL	<b>25</b>
93 3,66"	107 4,21"	244 9,61"	6,10 13,45	<b>FC300 RPL</b>	9N-4302	FC300HL2	132-4766	8E-6259 149-5733	FC300	FC300-35	<b>30</b>
110 4,33"	116 4,57"	275 10,83"	8,70 19,18	<b>FC350 RPL</b>	9N-4352	FC350HL2	114-0358	8E-6359 114-0359	FC350	FC350-B35	<b>35</b>
118 4,65"	131 5,16"	291 11,46"	11,53 25,42	<b>FC400 RPL</b>	8E-4402	FC400HL2	116-7408	8E-8409 116-7409	FC400	FC400 S	<b>40</b>
140 5,51"	150 5,91"	336 13,23"	17,60 38,80	<b>FC450 RPL</b>	9N-4452	FC450HL2	114-0468	8E-8469 107-3469	FC450	FC450-63	<b>46</b>
158 6,22"	162 6,38"	364 14,33"	21,20 46,74	<b>FC550 RPL</b>	9N-4552	FC550HL2	107-3378	8E-5559 107-8559	FC550	FC550 S	<b>55</b>
184 7,24"	198 7,80"	438 17,24"	38,60 85,10	<b>FC600 RPL</b>	7Y-0602	FC600HL2	113-9608	6I-6609 113-9609	FC600	FC600 S	<b>60</b>

Theoretical weights, subject to variations Pesos teóricos, sujetos a variaciones | Manufacturer's names, descriptions, pictures and part numbers are used for reference purposes only. Los nombres, descripciones, ilustraciones y referencias de otras marcas se utilizan a modo de referencia.

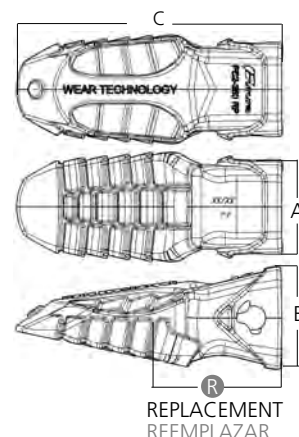
## ROCK PENETRATION Teeth Diente PENETRACIÓN ROCA



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

IMPACT | IMPACTO



mm.				KG	REF	OEM	[Pin]	[Pin]	[Washer]	[Tooth]	[Tooth]	mm.	
A	B	C	R										
81 3,2"	89 3,5"	243 9,6"	91 3,6"	6,2 14	<b>FC250 RP</b>	4T-2253 RP   9N-4253	FC250HL2	132-4763	8E-6259	149-5733	FC250 FC300 FC300-35	FC250 BL FC300 BL	<b>25</b> <b>30</b>
93 3,7"	105 4,1"	274 10,8"	107 4,2"	8,4 19	<b>FC300 RP</b>	4T-2303 RP   9N-4303	FC300HL2	132-4766	8E-6259	149-5733	FC350 FC350-B35	FC350 BL	<b>35</b>
111 4,4"	122 4,8"	297 11,7"	117 4,6"	11,7 26	<b>FC350 RP</b>	4T-2353 RP   9N-4353	FC350HL2	114-0358	8E-6359	114-0359	FC400 FC450-63	FC400 S FC450 S	<b>40</b> <b>46</b>
125 4,9"	132 5,2"	326 12,8"	130 5,1"	16,8 37	<b>FC400 RP</b>	7T-3403 RP	FC400HL2	116-7408	8E-8409	116-7409	FC550	FC400 S FC550 S	<b>40</b> <b>55</b>
134 5,3"	140 5,5"	375 14,8"	141 5,6"	23,8 52	<b>FC450 RP</b>	9W-1453 RP   9N-4453	FC450HL2	114-0468	8E-8469	107-3469	FC600 FC700	FC450 S FC600 S	<b>46</b> <b>60</b>
162 6,4"	164 6,5"	384 15,1"	165 6,5"	29,0 64	<b>FC550 RP</b>	9W-1553 RP   6Y-2553	FC550HL2	107-3378	8E-5559	107-8559	FC700 FC800	FC550 S FC700 S	<b>55</b> <b>70</b>
193 7,6"	190 7,5"	462 18,2"	196 7,7"	51,8 114	<b>FC600 RP</b>	6I-6603 RP   6I-6603	FC600HL2	113-9608	6I-6609	113-9609	FC800	FC600 S FC700 S	<b>60</b> <b>70</b>
210 8,3"	206 8,1"	500 19,7"	214 8,4"	65,1 144	<b>FC700 RP</b>	4T-4703 RP	FC700HL2	113-4708	4T-4707	113-4709		FC700 S FC800 S	<b>70</b> <b>80</b>
246 9,7"	241 9,5"	575 22,6"	238 9,4"	101,7 224	<b>FC800 RP</b>	6I-8803	FC800HL2	134-1808	134-1809			FC800 S	<b>80</b>

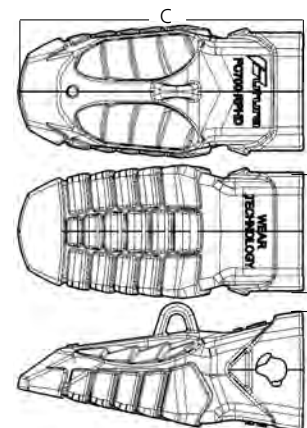
## ROCK PENETRATION HD Teeth Diente PENETRACIÓN ROCA HD



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

IMPACT | IMPACTO



mm.				KG	REF	OEM	[Pin]	[Pin]	[Washer]	[Tooth]	mm.
A	B	C	R								
124 4,88"	136 5,35"	327 12,87"	19,00 41,89	<b>FC400 RPHD</b>	135-9400	FC400HL2	116-7408	8E-8409	116-7409	FC400 S	<b>40</b>
140 5,51"	153 6,02"	368 14,49"	28,00 61,73	<b>FC450 RPHD</b>	138-6451	FC450HL2	114-0468	8E-8469	107-3469	FC450 S	<b>46</b>
160 6,30"	161 6,34"	386 15,20"	34,00 74,96	<b>FC550 RPHD</b>	138-6552	FC550HL2	107-3378	8E-5559	107-8559	FC550 S	<b>55</b>
200 7,87"	193 7,60"	456 17,95"	60,00 132,28	<b>FC600 RPHD</b>	135-9600	FC600HL2	113-9608	6I-6609	113-9609	FC600 S	<b>60</b>
209 8,23"	210 8,27"	502 19,76"	75,40 166,23	<b>FC700 RPHD</b>	135-9700	FC700HL2	113-4708	4T-4707	113-4709	FC700 S	<b>70</b>
240 9,45"	211 8,31"	579 22,80"	120,50 265,65	<b>FC800 RPHD</b>	135-9800	FC800HL2	134-1808	134-1809		FC800 S	<b>80</b>

Caterpillar

SYMMETRIC Teeth Diente SIMÉTRICO



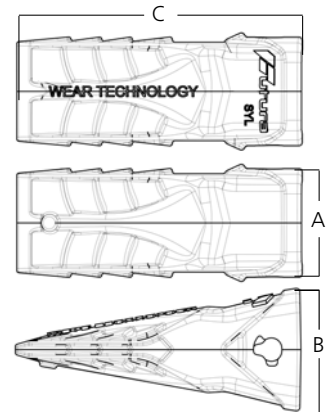
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.			KG	REF	OEM					mm
A	B	C								
67 2,64"	66 2,60"	155 6,10"	1,30 2,87	<b>FC200 SYL</b>	1U-3202 SYL	FC200HL2	8E-6208	8E-6209	FC200 FC200 BL	<b>20</b>
75 2,95"	81 3,19"	181 7,13"	2,40 5,29	<b>FC220 SYL</b>	6Y-3222 SYL	FC220HL2	132-4762	8E-6259 149-5733	FC220	<b>22</b>
81 3,19"	89 3,50"	210 8,27"	3,20 7,05	<b>FC250 SYL</b>	1U-3252 SYL	FC250HL2	132-4763	8E-6259 149-5733	FC250	<b>25</b>
93 3,66"	105 4,13"	224 8,82"	5,50 12,13	<b>FC300 SYL</b>	1U-3302 SYL	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	<b>30</b>
107 4,21"	118 4,65"	268 10,55"	7,00 15,43	<b>FC350 SYL</b>	1U-3352 SYL	FC350HL2	114-0358	8E-6359 114-0359	FC350	<b>35</b>
120 4,72"	132 5,20"	307 12,09"	11,90 26,23	<b>FC400 SYL</b>	8E-4402 SYL	FC400HL2	116-7408	8E-8409 116-7409	FC400	<b>40</b>
134 5,28"	140 5,51"	324 12,76"	13,70 30,20	<b>FC450 SYL</b>	9W-8452 SYL	FC450HL2	114-0468	8E-8469 107-3469	FC450	<b>46</b>
162 6,38"	164 6,46"	368 14,49"	20,40 44,97	<b>FC550 SYL</b>	9W-8552 SYL	FC550HL2	107-3378	8E-5559 107-8559	FC550	<b>55</b>
192 7,56"	195 7,68"	423 16,65"	40,00 88,18	<b>FC600 SYL</b>		FC600HL2	113-9608	6I-6609 113-9609	FC600	<b>60</b>



## IMPACT Teeth Diente IMPACTO



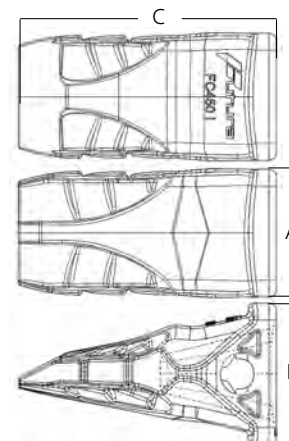
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.			KG	REF	OEM					O
A	B	C								
95 3,74"	110 4,33"	193 7,60"	5,20 11,46	<b>FC300 I</b>	9N-4302	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	<b>30</b>
104 4,09"	122 4,80"	213 8,39"	7,10 15,65	<b>FC350 I</b>	9N-4352	FC350HL2	114-0358	8E-6359 114-0359	FC350	<b>35</b>
135 5,31"	150 5,91"	273 10,75"	14,14 31,17	<b>FC450 I</b>	9N-4452	FC450HL2	114-0468	8E-8469 107-3469	FC450	<b>46</b>
158 6,22"	164 6,46"	296 11,65"	18,15 40,01	<b>FC550 I</b>	9N-4552	FC550HL2	107-3378	8E-5559 107-8559	FC550	<b>55</b>

## PENETRATION Teeth Diente PENETRACIÓN



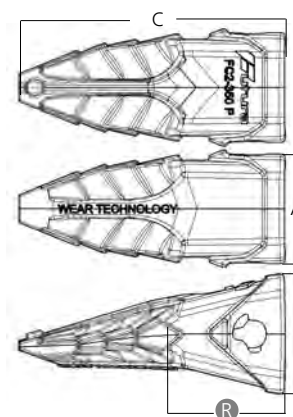
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



REPLACEMENT REEMPLAZAR

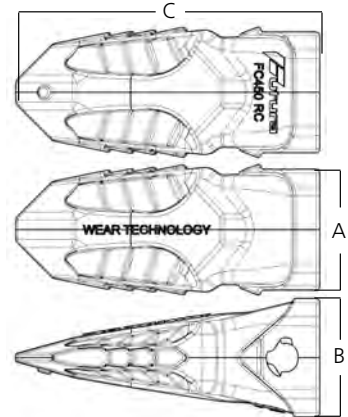
mm.				KG	REF	OEM					O
A	B	C	R								
62 2,4"	66 2,6"	157 6,2"	71 2,8"	1,3 3	<b>FC200 P</b>	1U-3209	FC200HL2	8E-6208	8E-6209	FC200 FC200 BL	<b>20</b>
81 3,2"	89 3,5"	202 8,0"	67 2,6"	2,7 6	<b>FC250 P</b>	9J-4259	FC250HL2	132-4763	8E-6259 149-5733	FC250	<b>25</b>
93 3,7"	105 4,1"	227 8,9"	107 4,2"	4,2 9	<b>FC300 P</b>	9J-4309	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	<b>30</b>
106 4,2"	116 4,6"	256 10,1"	116 4,6"	6,1 13	<b>FC350 P</b>	9J-4359	FC350HL2	114-0358	8E-6359 114-0359	FC350	<b>35</b>
125 4,9"	132 5,2"	288 11,3"	130 5,1"	9,4 21	<b>FC400 P</b>	6Y-7409	FC400HL2	116-7408	8E-8409 116-7409	FC400	<b>40</b>
134 5,3"	140 5,5"	313 12,3"	142 5,6"	11,8 26	<b>FC450 P</b>	9W-8459	FC450HL2	114-0468	8E-8469 107-3469	FC450	<b>46</b>
162 6,4"	163 6,4"	344 13,5"	165 6,5"	17,0 37	<b>FC550 P</b>	9W-8559	FC550HL2	107-3378	8E-5559 107-8559	FC550	<b>55</b>
193 7,6"	190 7,5"	404 15,9"	209 8,2"	28,3 62	<b>FC600 P</b>	7I-7609	FC600HL2	113-9608	6I-6609 113-9609	FC600	<b>60</b>
210 8,3"	206 8,1"	437 17,2"	214 8,4"	37,9 84	<b>FC700 P</b>	4T-4709	FC700HL2	113-4708	4T-4707 113-4709	FC700 S	<b>70</b>
242 9,5"	241 9,5"	478 18,8"	238 9,4"	54,8 121	<b>FC800 P</b>	117-6809	FC800HL2	134-1808	134-1809	FC800 S	<b>80</b>

Caterpillar

ROCK CHISEL Teeth Diente CINCEL ROCA



Wear factor | Factor desgaste  
 Penetration | Penetración  
 Impact | Impacto

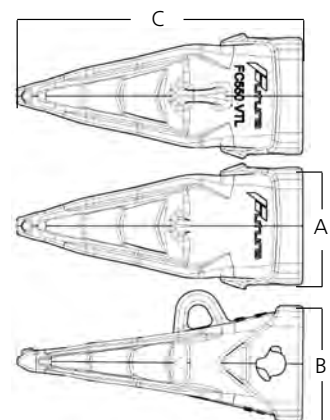


mm.			KG	REF	OEM	Pin	Pin	Washer	Tooth	Part No.
A	B	C								
62 2,44"	66 2,60"	159 6,26"	1,40 3,09	<b>FC200 RC</b>		FC200HL2	8E-6208	8E-6209	FC200 FC200 BL	<b>20</b>
75 2,95"	81 3,19"	191 7,52"	2,80 6,17	<b>FC220 RC</b>		FC220HL2	132-4762	8E-6259 149-5733	FC220	<b>22</b>
81 3,19"	94 3,70"	220 8,66"	4,00 8,82	<b>FC250 RC</b>	9J-4259	FC250HL2	132-4763	8E-6259 149-5733	FC250	<b>25</b>
93 3,66"	100 3,94"	245 9,65"	6,00 13,23	<b>FC300 RC</b>	1U-3302 RC   125-8309	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	<b>30</b>
106 4,17"	114 4,49"	285 11,22"	8,70 19,18	<b>FC350 RC</b>	1U-3352 RC   119-9359	FC350HL2	114-0358	8E-6359 114-0359	FC350	<b>35</b>
125 4,92"	130 5,12"	295 11,61"	11,30 24,91	<b>FC400 RC</b>	7T-3402 RC   124-7409	FC400HL2	116-7408	8E-8409 116-7409	FC400	<b>40</b>
134 5,28"	132 5,20"	338 13,31"	15,90 35,05	<b>FC450 RC</b>	1U-3452 RC   116-7459	FC450HL2	114-0468	8E-8469 107-3469	FC450	<b>46</b>
162 6,38"	161 6,34"	381 15,00"	26,00 57,32	<b>FC550 RC</b>	1U-3552 RC   113-0559	FC550HL2	107-3378	8E-5559 107-8559	FC550	<b>55</b>
192 7,56"	188 7,40"	440 17,32"	42,80 94,36	<b>FC600 RC</b>	6I-6602 RC   119-9609	FC600HL2	113-9608	6I-6609 113-9609	FC600	<b>60</b>
210 8,27"	209 8,23"	483 19,02"	53,00 116,84	<b>FC700 RC</b>	4T-4702 RC	FC700HL2	113-4708	4T-4707 113-4709	FC700 S	<b>70</b>
246 9,69"	244 9,61"	523 20,59"	82,50 181,88	<b>FC800 RC</b>		FC800HL2	134-1808	134-1809	FC800 S	<b>80</b>

VECTOR LONG Teeth Diente VECTOR LARGO



Wear factor | Factor desgaste  
 Penetration | Penetración  
 Impact | Impacto



mm.			KG	REF	OEM	Pin	Pin	Washer	Tooth	Part No.
A	B	C								
134 5,28"	132 5,20"	362 14,25"	13,25 29,21	<b>FC450 VTL</b>	1U-3452 WTL   7T-8459	FC450HL2	114-0468	8E-8469 107-3469	FC450	<b>46</b>
162 6,38"	161 6,34"	395 15,55"	20,50 45,19	<b>FC550 VTL</b>	1U-3552 WTL   9W-8259	FC550HL2	107-3378	8E-5559 107-8559	FC550	<b>55</b>
191 7,52"	188 7,40"	463 18,23"	34,00 74,96	<b>FC600 VTL</b>	107-8609	FC600HL2	113-9608	6I-6609 113-9609	FC600	<b>60</b>
210 8,27"	154 6,06"	508 20,00"	45,50 100,31	<b>FC700 VTL</b>	4T-4702	FC700HL2	113-4708	4T-4707 113-4709	FC700 S	<b>70</b>
246 9,69"	232 9,13"	609 23,98"	69,20 152,56	<b>FC800 VTL</b>	117-6809	FC800HL2	134-1808	134-1809	FC800 S	<b>80</b>





## TIGER LONG Teeth Diente TIGER LARGO



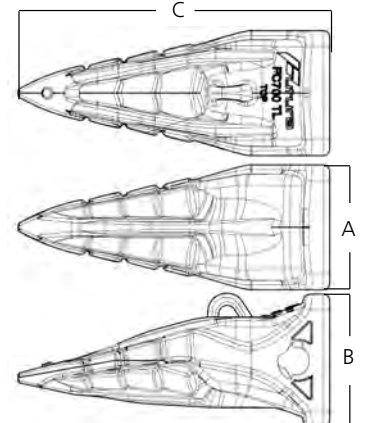
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF	OEM					
A	B	C								
61 2,40"	70 2,76"	165 6,50"	1,23 2,71	<b>FC200 TL</b>	1U-3202 TL	FC200HL2	8E-6208	8E-6209	FC200 FC200 BL	<b>20</b>
81 3,19"	93 3,66"	220 8,66"	2,63 5,80	<b>FC250 TL</b>	1U-3252 TL   9W-8259	FC250HL2	132-4763	8E-6259 149-5733	FC250	<b>25</b>
92 3,62"	105 4,13"	248 9,76"	3,70 8,16	<b>FC300 TL</b>	1U-3302 TL   9W-8309	FC300HL2	132-4766	8E-6259 149-5733	FC300 FC300-35	<b>30</b>
105 4,13"	121 4,76"	285 11,22"	6,30 13,89	<b>FC350 TL</b>	1U-3352 TL   9W-8359	FC350HL2	114-0358	8E-6359 114-0359	FC350	<b>35</b>
123 4,84"	141 5,55"	333 13,11"	11,00 24,25	<b>FC400 TL</b>	7T-3402 TL   6Y-5409	FC400HL2	116-7408	8E-8409 116-7409	FC400	<b>40</b>
132 5,20"	151 5,94"	356 14,02"	12,90 28,44	<b>FC450 TL</b>	1U-3452 TL   7T-8459	FC450HL2	114-0468	8E-8469 107-3469	FC450	<b>46</b>
156 6,14"	164 6,46"	390 15,35"	17,50 38,58	<b>FC550 TL</b>	1U-3552 TL   9W-6559	FC550HL2	107-3378	8E-5559 107-8559	FC550	<b>55</b>
186 7,32"	195 7,68"	463 18,23"	30,30 66,80	<b>FC600 TL</b>	6I-6602 TL   107-8609	FC600HL2	113-9608	6I-6609 113-9609	FC600	<b>60</b>
206 8,11"	216 8,50"	511 20,12"	41,70 91,93	<b>FC700 TL</b>	4T-4702 TL	FC700HL2	113-4708	4T-4707 113-4709	FC700 S	<b>70</b>
246 9,69"	234 9,21"	602 23,70"	68,50 151,01	<b>FC800 TL</b>	TSJ800V	FC800HL2	134-1808	134-1809	FC800 S	<b>80</b>

## PHC Teeth Diente PHC



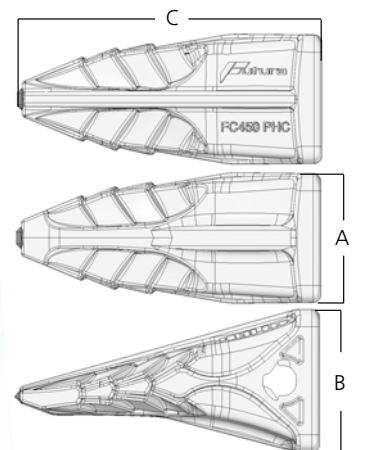
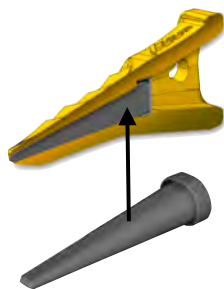
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



Tooth PHC  
Features a Chrome Core  
for extreme penetration

Diente PHC  
Interior y punta de cromo  
para penetración extrema

mm.				REF					
A	B	C							
135 5,31"	149 5,87"	318 12,52"	12,99 28,64	<b>FC450 PHC</b>	FC450HL2	114-0468	8E-8469 107-3469	FC450	<b>46</b>

Caterpillar

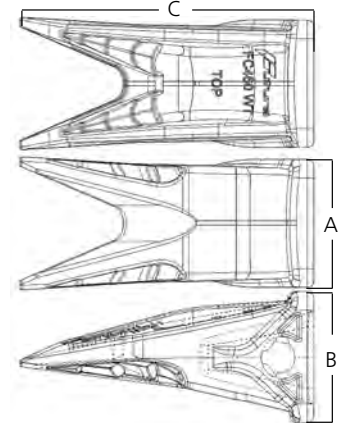
WT Teeth Diente WT



Wear factor | Factor desgaste

Penetration | Penetración

Impact | Impacto



mm.			KG	REF	OEM	Pin	Pin	Washer	Tooth	Part No.
A	B	C								
114 4,49"	121 4,76"	271 10,67"	8,40 18,52	<b>FC350 WT</b>	1U-3352 WTL   135-9337	FC350HL2	114-0358	8E-6359	114-0359	FC350 <b>35</b>
135 5,31"	139 5,47"	311 12,24"	16,10 35,49	<b>FC450 WT</b>	1U-3452 WTL   138-6458	FC450HL2	114-0468	8E-8469	107-3469	FC450 <b>46</b>

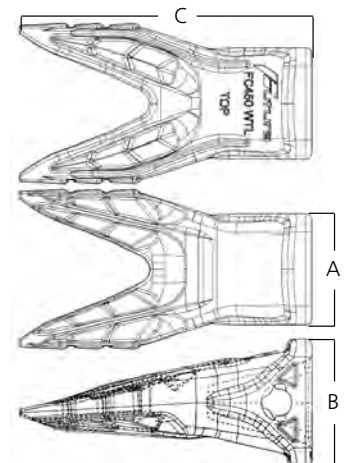
WTL Teeth Diente WTL



Wear factor | Factor desgaste

Penetration | Penetración

Impact | Impacto



mm.			KG	REF	OEM	Pin	Pin	Washer	Tooth	Part No.
A	B	C								
61 2,40"	70 2,76"	165 6,50"	1.9 VALUE!	<b>FC200 WTL</b>	1U-3202 WTL	FC200HL2	8E-6208	8E-6209	FC200 FC200 BL	<b>20</b>
82 3,23"	94 3,70"	220 8,66"	4,00 8,82	<b>FC250 WTL</b>	1U-3252 WTL   135-8252	FC250HL2	132-4763	8E-6259	149-5733	FC250 <b>25</b>
92 3,62"	106 4,17"	249 9,80"	5,40 11,90	<b>FC300 WTL</b>	1U-3302 WTL   135-9308	FC300HL2	132-4766	8E-6259	149-5733	FC300 FC300-35 <b>30</b>
105 4,13"	120 4,72"	284 11,18"	8,40 18,52	<b>FC350 WTL</b>	1U-3352 WTL   135-9357	FC350HL2	114-0358	8E-6359	114-0359	FC350 <b>35</b>
124 4,88"	142 5,59"	335 13,19"	13,95 30,75	<b>FC400 WTL</b>	7T-3402 WTL	FC400HL2	116-7408	8E-8409	116-7409	FC400 <b>40</b>
132 5,20"	151 5,94"	355 13,98"	16,33 36,00	<b>FC450 WTL</b>	1U-3452 WTL   138-6458	FC450HL2	114-0468	8E-8469	107-3469	FC450 <b>46</b>
155 6,10"	164 6,46"	388 15,28"	22,65 49,93	<b>FC550 WTL</b>	1U-3552 WTL   138-6558	FC550HL2	107-3378	8E-5559	107-8559	FC550 <b>55</b>
185 7,28"	195 7,68"	462 18,19"	38,40 84,66	<b>FC600 WTL</b>	6I-6602 WTL   107-8609	FC600HL2	113-9608	6I-6609	113-9609	FC600 <b>60</b>
204 8,03"	216 8,50"	510 20,08"	53,58 118,12	<b>FC700 WTL</b>	4T-4702 WTL	FC700HL2	113-4708	4T-4707	113-4709	FC700 S <b>70</b>

Theoretical weights, subject to variations Pesos teóricos, sujetos a variaciones | Manufacturer's names, descriptions, pictures and part numbers are used for reference purposes only. Los nombres, descripciones, ilustraciones y referencias de otras marcas se utilizan a modo de referencia.

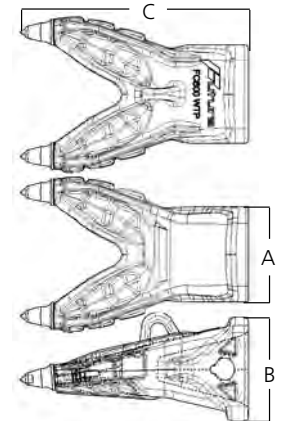


## VTP Teeth Diente WTP

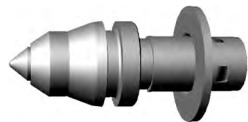
Wear factor | Factor desgaste  
 Penetration | Penetración  
 Impact | Impacto

Specially designed for extra abrasive materials

Especialmente diseñado para materiales altamente abrasivos



mm.			KG	REF	OEM	OEM	OEM	OEM	OEM	OEM		
A	B	C										
156 6,14"	164 6,46"	374 14,72"	24,32 53,62	<b>FC550 WTP</b>	BRP21	FC550HL2	107-3378	8E-5559	107-8559	FC550	<b>55</b>	
185 7,28"	195 7,68"	419 16,50"	36,11 79,61	<b>FC600 WTP</b>	BB40 HDS/50	EXT 600WTP	FC600HL2	113-9608	6I-6609	113-9609	FC600	<b>60</b>



BRP21



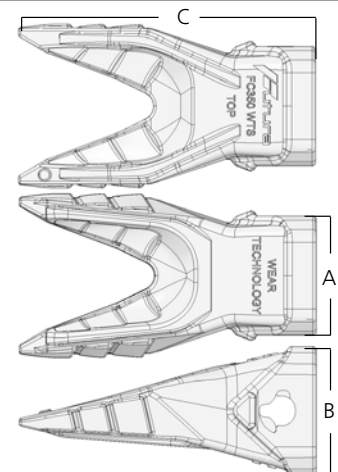
BB40 HDS/50



EXT 600WTP

## WTS Teeth Diente WTS

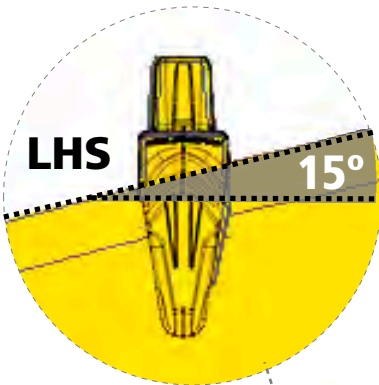
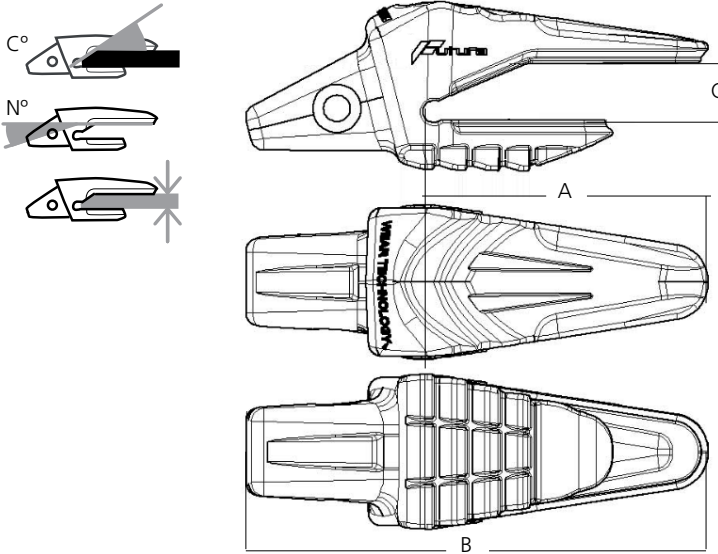
Wear factor | Factor desgaste  
 Penetration | Penetración  
 Impact | Impacto



mm.			KG	REF	OEM	OEM	OEM	OEM	OEM	OEM		
A	B	C										
57 2,24"	63 2,48"	170 6,69"	1,33 2,93	<b>FC200 WTS</b>	1U-3202 WTL   135-8208	FC200HL2	8E-6208	8E-6209	FC200	FC200 BL	<b>20</b>	
93 3,66"	100 3,94"	248 9,76"	5,30 11,68	<b>FC300 WTS</b>	1U-3302 WTL   135-9308	FC300HL2	132-4766	8E-6259	149-5733	FC300	FC300-35	<b>30</b>
106 4,17"	121 4,76"	279 10,98"	6,98 15,39	<b>FC350 WTS</b>	1U-3352 WTL   135-9337	FC350HL2	114-0358	8E-6359	114-0359	FC350	<b>35</b>	
131 5,16"	150 5,91"	343 13,50"	12,50 27,56	<b>FC450 WTS</b>	1U-3452 WTL   138-6458	FC450HL2	114-0468	8E-8469	107-3469	FC450	<b>46</b>	

Caterpillar

**LOADER Adapter** Portadientes CARGADORA



**LHS**

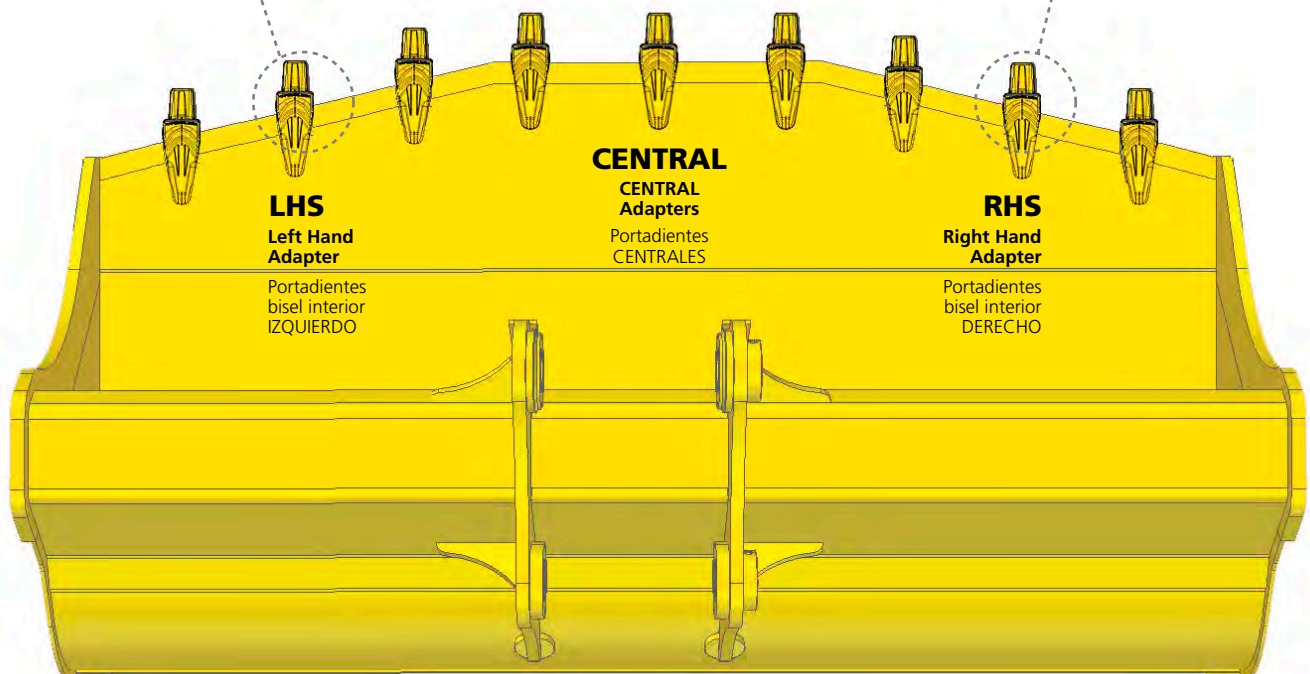
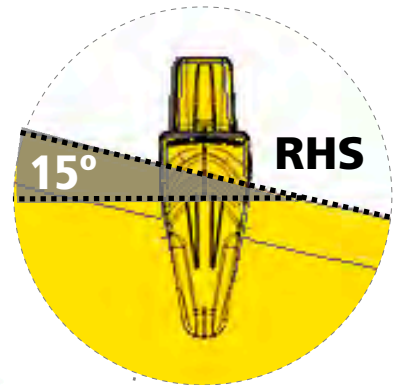
LHS FUTURA LOADER ADAPTERS FEATURE AN INTERNAL 15° BEVEL FOR SPADE BLADE PLACEMENT

LOS PORTADIENTES FUTURA LHS SE FABRICAN CON UN BISEL INTERIOR QUE PERMITE EL ENCAJE PERFECTO SOBRE CUCHILLAS DELTA

**RHS**

RHS FUTURA LOADER ADAPTERS FEATURE AN INTERNAL 15° BEVEL FOR SPADE BLADE PLACEMENT

LOS PORTADIENTES FUTURA RHS SE FABRICAN CON UN BISEL INTERIOR QUE PERMITE EL ENCAJE PERFECTO SOBRE CUCHILLAS DELTA



**LOADER BUCKET** CAZO/CUCCHARÓN CARGADORA



# LOADER Adapter Portadientes CARGADORA

Fig. 1



Fig. 1

FUTURA LOADER ADAPTERS SIZE 40 AND 45 DO NOT ADMIT OPTIONAL WEAR CAPS  
 LOS PORTADIENTES FUTURA DE LAS TALLAS 40 Y 45 NO ADMITEN EL MONTAJE DE PROTECTORES OPCIONALES

Fig. 2

FUTURA LOADER ADAPTERS (SIZE 55 AND ONWARDS) FEATURE TWO SLIDING GUIDES TO ALLOW FUTURA OPTIONAL WEAR CAPS ASSEMBLY  
 A PARTIR DE LA TALLA 55 EN ADELANTE LOS PORTADIENTES DE CARGADORA FUTURA PRESENTAN UNAS GUÍAS POR LAS QUE SE PUEDEN MONTAR PROTECTORES OPCIONALES FUTURA

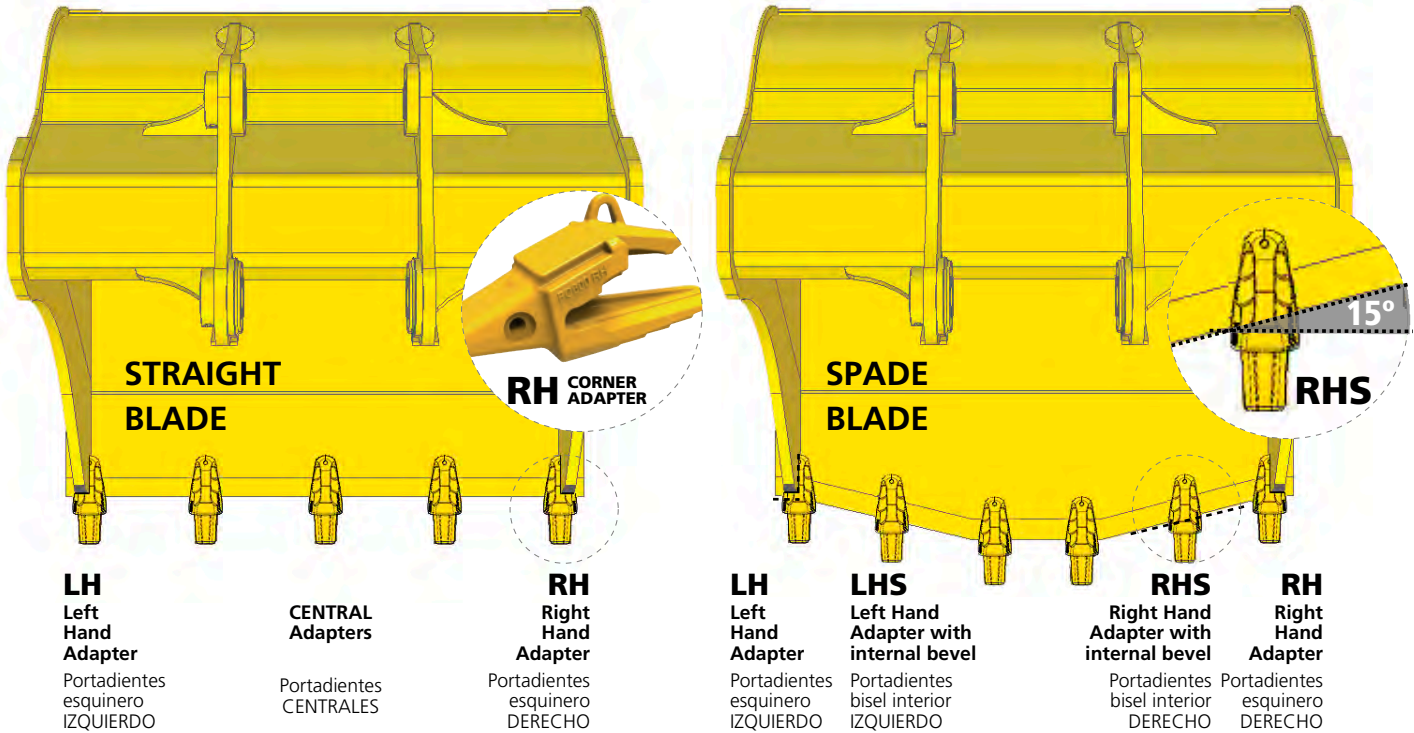
Fig. 2



mm.											REF	OEM		Fig		
A	B	C	C°	N°												
							19,19	42,3		<b>FC400 S</b>	125-8404	●				
260	10,2"	419	16,5"	46,5	1,8"	22°	15°	<b>45</b>	1,8"	19,90	43,9	<b>FC400 S LHS</b>	●	1	<b>40</b>	
										19,90	43,9	<b>FC400 S RHS</b>	●			
										23,80	52,5	<b>FC450 S</b>	●			
268	10,6"	435	17,1"	53	2,1"	22°	15°	<b>50</b>	2,0"	24,10	53,1	<b>FC450 S LHS</b>	●	1	<b>45</b>	
										24,10	53,1	<b>FC450 S RHS</b>	●			
										40,20	88,6	<b>FC550 S</b>	●			
373	14,7"	553	21,8"	66	2,6"	22°	15°	<b>60</b>	2,36"	44,30	97,7	<b>FC550 S LHS</b>	●	2	F559 WC	
								<b>63</b>	2,48"	44,30	97,7	<b>FC550 S RHS</b>	●			
										64,60	142,4	<b>FC600 S</b>	●			
371	14,6"	584	23,0"	73	2,9"	22°	15°	<b>70</b>	2,8"	66,10	145,7	<b>FC600 S LHS</b>	●	2	F6061 WC	
										66,10	145,7	<b>FC600 S RHS</b>	●			
										77,80	171,5	<b>FC700 S</b>	●			
365	14,4"	570	22,4"	78	3,1"	22°	17°	<b>70</b>	2,76"	80,40	177,2	<b>FC700 S LHS</b>	●	2	F7069 WC	
								<b>75</b>	2,95"	80,40	177,2	<b>FC700 S RHS</b>	●			
										80,20	176,8	<b>FC700-90 S</b>	●	2		
436	17,2"	689	27,1"	93,2	3,7"	22°	17°	<b>90</b>	3,5"	81,80	180,3	<b>FC700-90 S LHS</b>	●	2	F8071 WC	
										81,80	180,3	<b>FC700-90 S RHS</b>	●	2		
										81,70	180,1	<b>FC700-100 S</b>	●	2		
439	17,3"	693	27,3"	103	4,1"	22°	17°	<b>100</b>	3,9"	83,10	183,2	<b>FC700-100 S LHS</b>	●	2	F8071 WC	
										83,10	183,2	<b>FC700-100 S RHS</b>	●	2		
437	17,2"	698	27,5"	104	4,1"	22°	15°	<b>100</b>	3,9"	119,00	262,3	<b>FC800 S</b>	●	2	F8071 WC	

**Caterpillar**

**EXCAVATOR Adapter Portadientes EXCAVADORA**



mm.												Fig				
A	B	C	C°	N°	inch		Pds	REF	OEM							
116	4,6"	185	7,3"	23	0,9"	22	10	<b>20</b>	0,8"	1,8	4,0	<b>FC200</b>	119-3205	●	1	<b>20</b>
144	5,7"	226	8,9"	27	1,1"	22	10	<b>25</b>	1"	3,1	6,8	<b>FC220</b>	6Y-3224	●	1	<b>22</b>
										4,6	10,1	<b>FC250-25</b>	6Y-3254	●		
106	4,2"	252	9,9"	27	1,1"	22	10	<b>25</b>	1"	4,4	9,7	<b>FC250-25 RH</b>		●		
												<b>FC250-25 LH</b>		●		
										4,4	9,6	<b>FC250</b>	6Y-3254 113-3253	●	1	<b>25</b>
163	6,4"	257	10,1"	34	1,3"	22	10	<b>25</b> <b>32</b>	1" 1,3"	4,2	9,3	<b>FC250 RH</b>		●		
												<b>FC250 LH</b>		●		
218	8,6"	328	12,9"	34	1,3"	22	10	<b>30</b> <b>32</b>	1,2" 1,3"	7,8	17,2	<b>FC300</b>	3G-6304	●		
										7,2	15,9	<b>FC300 RH</b>		●		
												<b>FC300 LH</b>		●		
218	8,6"	328	12,9"	39	1,5"	22	10	<b>35</b>	1,4"	7,7	17,0	<b>FC300-35</b>	8E-9490	●	1	<b>30</b>
										7,6	16,6	<b>FC300-35 RH</b>	8E-9495	●		
												<b>FC300-35 LH</b>	8E-9496	●		
238	9,4"	357	14,1"	43	1,7"	22	10	<b>40</b>	1,6"	10,6	23,4	<b>FC350</b>	6I-6354	●		
										9,9	21,8	<b>FC350 RH</b>		●		
												<b>FC350 LH</b>		●	1	<b>35</b>
238	9,4"	357	14,1"	43	1,7"	<b>35</b>	10	<b>40</b>	1,6"	10,4	22,9	<b>FC350-B35</b>	3G-8354	●		
218	8,6"	328	12,9"	47	1,9"	22	10	<b>45</b>	7/8"	14,9	32,8	<b>FC400</b>	6I-6404	●		
										13,8	30,4	<b>FC400 RH</b>		●	1	<b>40</b>
												<b>FC400 LH</b>		●		
										20,6	45,4	<b>FC450</b>	6I-6464	●		
296	11,7"	439	17,3"	53	2,1"	22	10	<b>50</b>	2,0"	21,2	46,7	<b>FC450 RH</b>	6I-6465	●		
												<b>FC450 LH</b>	6I-6466	●		
										22,5	49,6	<b>FC450 RHS</b>		●	1	<b>46</b>
												<b>FC450 LHS</b>		●		
326	12,8"	466	18,3"	66	2,6"	22	10	<b>63</b>	2,5"	33,6	74,1	<b>FC450-63</b>		●		
										31,2	68,8	<b>FC450-63 RH</b>		●		
												<b>FC450-63 LH</b>		●		

Theoretical weights, subject to variations Pesos teóricos, sujetos a variaciones | Manufacturer's names, descriptions, pictures and part numbers are used for reference purposes only. Los nombres, descripciones, ilustraciones y referencias de otras marcas se utilizan a modo de referencia.



# EXCAVATOR Adapter Portadientes EXCAVADORA

Fig. 1

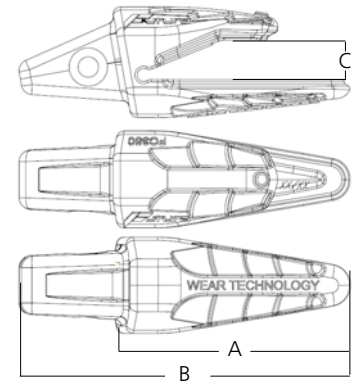
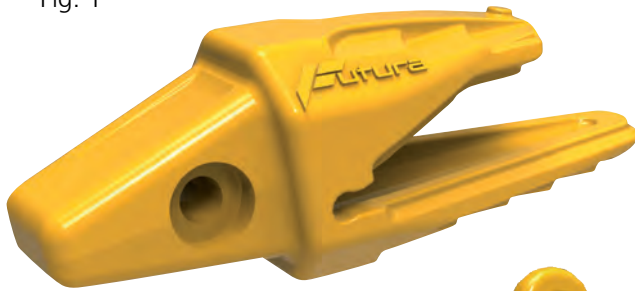
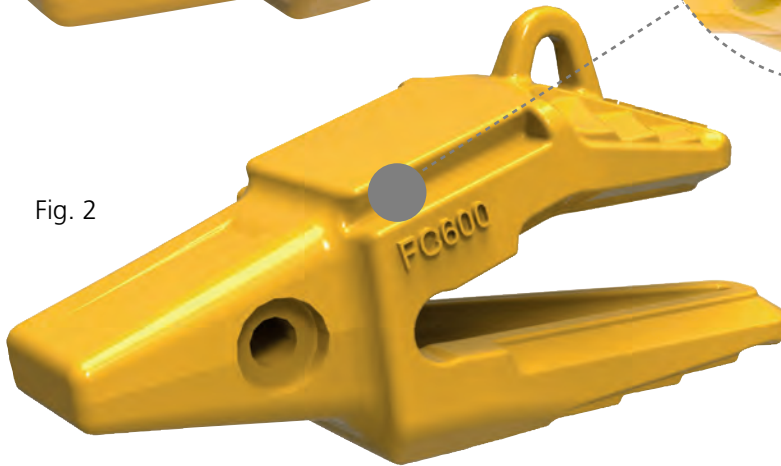
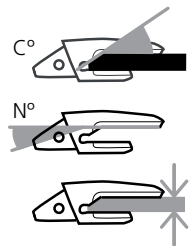


Fig. 2



FUTURA LOADER ADAPTERS (SIZE 55 AND ONWARDS) FEATURE A SLIDING GUIDE TO ALLOW FUTURA OPTIONAL WEAR CAPS ASSEMBLY

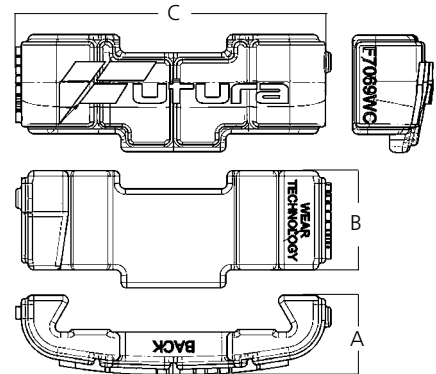
A PARTIR DE LA TALLA 55 EN ADELANTE LOS PORTADIENTES DE CARGADORA FUTURA PRESENTAN UNA GUÍA POR LA QUE SE PUEDEN MONTAR PROTECTORES OPCIONALES FUTURA



mm.										inch		Kg	Pds	REF	OEM	Fig					
A	B	C	C°	N°	inch	inch															
347	13,7"	512	20,2"	63	2,5"	22	10	60	2,4"	34,6	76,3	<b>FC550</b>	6I-6554	●							
												<b>FC550 RH</b>	6I-6555				●				
												<b>FC550 LH</b>	6I-6556	●					F5559 WC	<b>55</b>	
												<b>FC550 RHS</b>	105-6270					●			
												<b>FC550 LHS</b>	105-6269			●					
365	14,4"	568	22,4"	73	2,9"	22	10	70 75	2,8" 3"	60,9	134,3	<b>FC600</b>	6I-6604		●						
												<b>FC600 RH</b>	6I-6605				●				
												<b>FC600 LH</b>	6I-6606	●							
												<b>FC600 RHS</b>						●		F6061 WC	<b>60</b>
												<b>FC600 LHS</b>				●					
365	14,4"	568	22,4"	83	3,3"	22	10	80	3,1"	60,3	132,9	<b>FC600-80</b>	113-9604		●						
												<b>FC600-80 RH</b>	113-9605				●				
												<b>FC600-80 LH</b>	113-9606	●							
375	14,8"	628	24,7"	93	3,7"	35	10	90	3,5"	83,1	183,2	<b>FC700</b>	222-7700		●						
												<b>FC700 RH</b>					●				
												<b>FC700 LH</b>		●							
												<b>FC700 RHS</b>						●		F7069 WC	<b>70</b>
												<b>FC700 LHS</b>				●					
375	14,8"	628	24,7"	98	3,9"	35	10	95	3,7"	87,1	192,0	<b>FC700-95</b>			●						
												<b>FC700-95 RH</b>					●				
												<b>FC700-95 LH</b>		●							
462	18,2"	720	28,3"	104	4,1"	30	10	100	3,9"	122,0	269,0	<b>FC800</b>	6I-8804		●						
												<b>FC800 RH</b>					●		F8071 WC	<b>80</b>	
												<b>FC800 LH</b>		●							

Caterpillar

OPTIONAL Wear Cap Tapa Protectora OPCIONAL



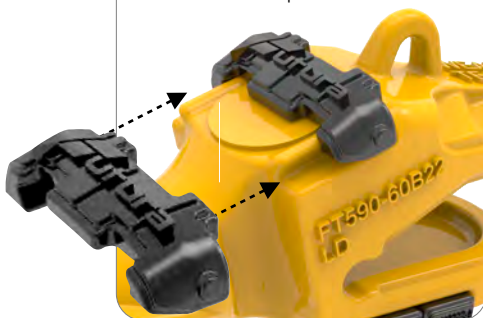
mm.		KG lb	Image	Part Number	Machine Type	Quantity	Image	Part Number
A	B							
42,7 1,68"	50,5 1,99"	178 7,01"	1,70 3,75	<b>F5559 WC</b>	2 UP 4 DOWN			<b>55</b>
45,2 1,78"	62,5 2,46"	207 8,15"	2,42 5,34	<b>F6061 WC</b>	2 UP 3 DOWN			<b>60</b>
51,9 2,04"	71,5 2,81"	219 8,62"	3,23 7,12	<b>F7069WC</b>	2 UP 3 DOWN			<b>70</b>
53,1 2,09"	93,5 3,68"	251 9,88"	4,50 9,92	<b>F8071 WC</b>	2 UP 3 DOWN			<b>80</b>

**QUICK, EASY INSTALLATION**

Just slide the wear caps through the adapter guides.

**STOCK SAVING**

Each wear cap could be mounted on various FUTURA adapters. Wear caps help prolong the wear life of each adapter.



**MONTAJE RÁPIDO Y FÁCIL**

Es suficiente con deslizar los protectores a lo largo de las guías del portadientes

**AHORRO EN STOCK**

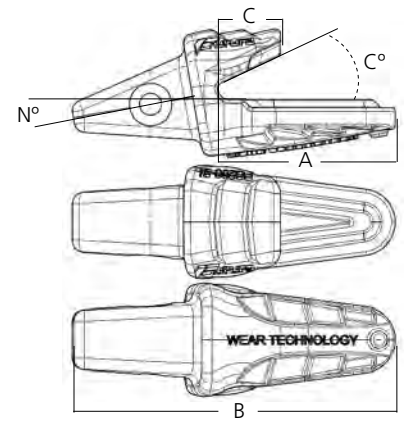
Estos protectores universales pueden utilizarse en varios adaptadores de la marca FUTURA.

Los protectores FUTURA alargan la vida útil de los portadientes.





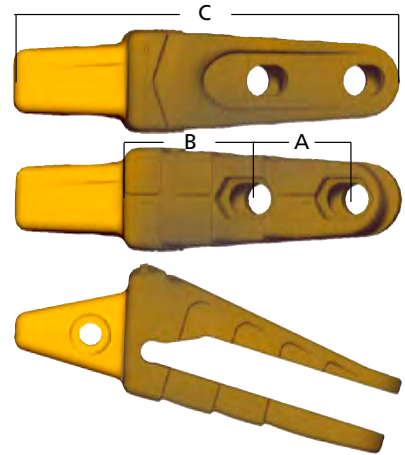
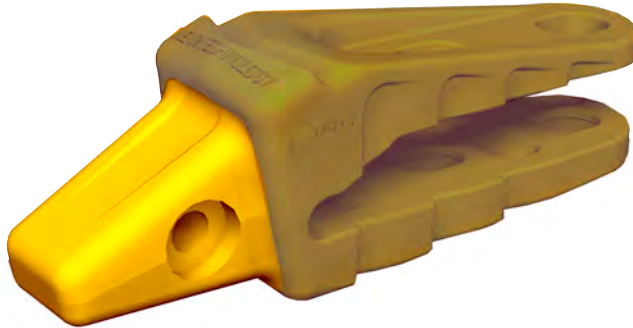
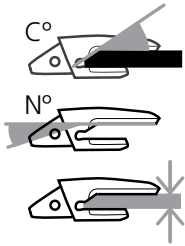
EXCAVATOR Adapter BL Type Portadientes EXCAVADORA



		mm.													
A	B	C	C°	N°			REF	OEM							
97	3,8"	175	6,9"	34	1,3"	25°	10°	<b>13</b> <b>25</b>	0,5" 1,0"	1,70	3,7	<b>FC200 BL</b>	8J-7525	<b>20</b>	
185	7,3"	297	11,7"	42	1,7"	22°	15°	<b>25</b>	1,0"	4,80	10,6	<b>FC250 BL</b>	3G-0169	<b>25</b>	
205	8,1"	321	12,6"	48	1,9"	22°	15°	<b>30</b>	1,2"	7,60	16,8	<b>FC300 BL</b>	9J-8929	<b>30</b>	
260	10,2"	388	15,3"	50	2,0"	22°	15°	<b>35</b>	1,4"	10,50	23,1	<b>FC350 BL</b>	1U-1350	<b>35</b>	

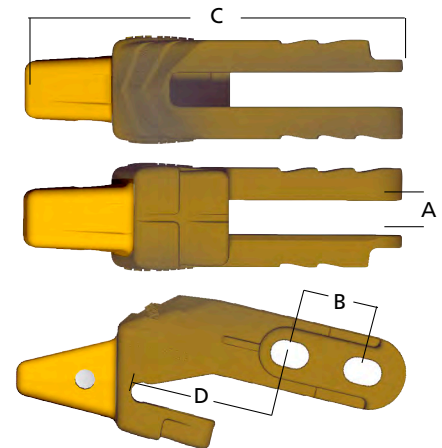
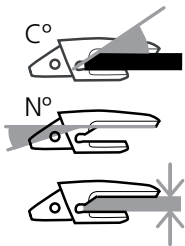
**Caterpillar**

**Special BOLT-ON Adapter** Portadientes ATORNILLABLE Especial



mm.			REF	OEM			MACHINE TONS	
A	B							
100 3,94"	142 5,59"	379 14,92"	<b>FC350 BO</b>	8719-V33	S-4639 B	NP.100	25-63 TN	<b>35</b>

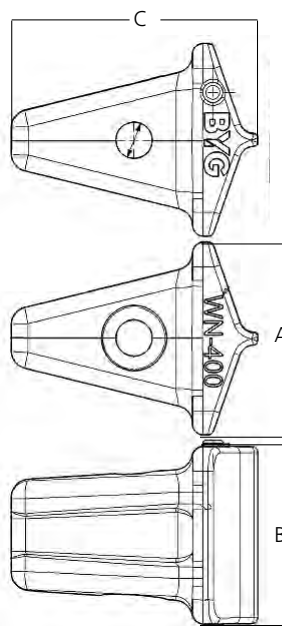
**Special BOLT-ON Corner Adapter** Cantoportadientes ATORNILLABLE



mm.			REF	OEM			MACHINE TONS				
A	B								C	D	C°
32 1,26"	80,5 3,17"	408 16,06"	154 6,06"	25	15	<b>FC350 BOC</b>	8719-V33	S-4639 B	NP.100	25-63 TN	<b>35</b>

## Weld-On Nose Nariz Soldable

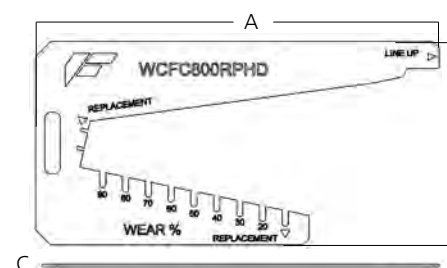
mm				ref	
A	B	C			
59 2,32"	57 2,24"	94,5 3,72"	1,00 2,20	<b>WN-200</b>	<b>20</b>
81 3,19"	65 2,56"	112 4,41"	1,80 3,97	<b>WN-220</b>	<b>22</b>
83 3,27"	70 2,76"	123,5 4,86"	2,40 5,29	<b>WN-250</b>	<b>25</b>
89 3,50"	89 3,50"	147,5 5,81"	4,30 9,48	<b>WN-300</b>	<b>30</b>
111 4,37"	102 4,02"	149 5,87"	5,00 11,02	<b>WN-350</b>	<b>35</b>
127 5,00"	117 4,61"	163 6,42"	7,00 15,43	<b>WN-400</b>	<b>40</b>
130 5,12"	127 5,00"	178 7,01"	9,20 20,28	<b>WN-450</b>	<b>45</b>
140 5,51"	146 5,75"	202 7,95"	13,50 29,76	<b>WN-550</b>	<b>55</b>
181 7,13"	194 7,64"	242 9,53"	26,00 57,32	<b>WN-600</b>	<b>60</b>
190 7,48"	207,5 8,17"	248 9,76"	31,20 68,78	<b>WN-700</b>	<b>70</b>
205 8,07"	235 9,25"	287 11,30"	44,30 97,66	<b>WN-800</b>	<b>80</b>



Weld On Noses are the easiest and quickest way to convert any proprietary adapter into the High Performance FUTURA Hammerless system.

Las Narices soldables resultan la forma más rápida y fácil de convertir cualquier portadientes patentado al sistema FUTURA Hammerless para disfrutar así de las altas prestaciones que ofrece.

## Wear Checking Template Plantilla Comprobación Desgaste



mm.				REF	Tooth	
A	B	C				
654,6 25,77"	330 12,99"	4 0,16"	3,17 6,99	<b>WCFC800RPHD</b>	FC800 RPHD	<b>80</b>

Caterpillar

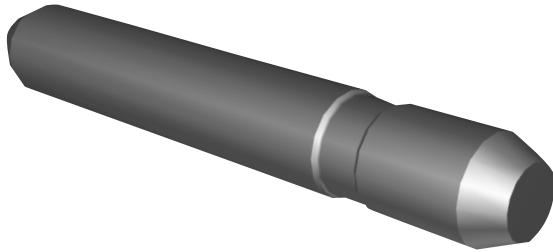
STANDARD Pin and Washer Pasadores y Arandelas STANDARD

Standard > re-usable

HD > non re-usable

Standard > re-utilizable

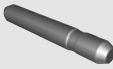



HD > no re-utilizable



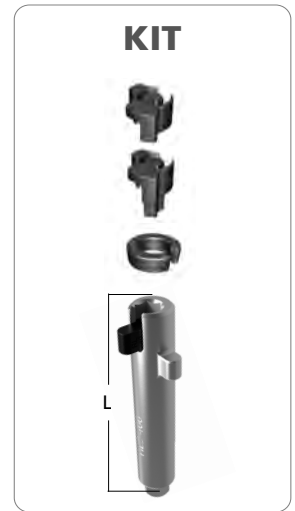
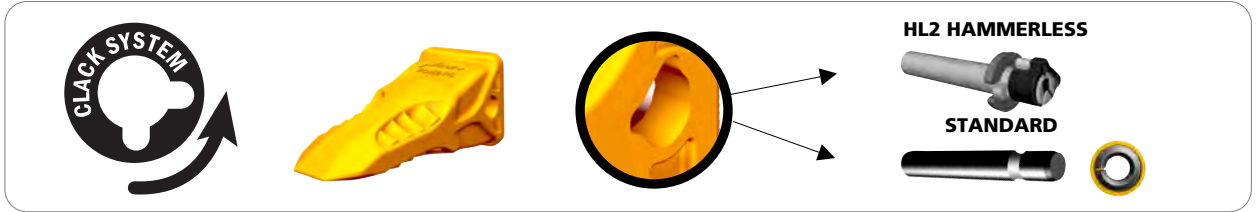
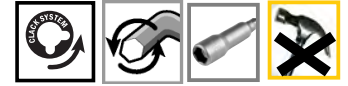
Standard



HD

mm.				Standard		HD		
L	Ø	C		OEM		OEM		
11 0,43"	61 2,40"	22 0,87"	<b>8E-6208</b>	1U-4208	<b>8E-6209</b>	4T-0001	<b>20</b> J200	
14 0,55"	69 2,72"	30 1,18"	<b>132-4762</b>	6Y-3228	<b>8E-6259</b>	3G-9609	<b>22</b> J225	
14 0,55"	78 3,07"	30 1,18"	<b>8E-6258</b> <b>132-4763</b>	9J-2258	<b>8E-6259</b>	3G-9609	<b>25</b> J250	
14 0,55"	92 3,62"	30 1,18"	<b>107-3308</b> <b>132-4766</b>	9J-2308	<b>8E-6259</b>	3G-9609	<b>30</b> J300	
19 0,75"	108 4,25"	40 1,57"	<b>8E-6358</b> <b>114-0358</b>	9J-2358	<b>8E-6359</b>	3G-9548	<b>35</b> J350	
22 0,87"	119 4,69"	42 1,65"	<b>7T-3408</b> <b>116-7408</b>		<b>8E-8409</b>		<b>40</b> J400	
19 0,75"	135 5,31"	40 1,57"	<b>9W-8296</b>	4T-1458 6Y-2527	<b>8E-6359</b>	3G-9549	<b>45</b> J450	
24 0,94"	141 5,55"	44 1,73"	<b>8E-0468</b> <b>114-0468</b>		<b>8E-8469</b>		<b>46</b> J460	
25 0,98"	162 6,38"	53 2,09"	<b>6Y-8558</b> <b>107-3378</b>	1U-1558	<b>8E-5559</b>	3G-9559	<b>55</b> J550	
30 1,18"	195 7,68"	59 2,32"	<b>6I-6608</b> <b>113-9608</b>		<b>6I-6609</b>		<b>60</b> J600	
32 1,26"	200 7,87"	70 2,76"	<b>4T-4708</b> <b>113-4708</b>		<b>4T-4707</b>		<b>70</b> J700	
35 1,38"	240 9,45"	70 2,76"	<b>134-1808</b>	102-0101		101-2874	<b>80</b> J800	

# HAMMERLESS PIN HL2 Pasador HAMMERLESS



mm.		REF	OEM												
L	Ø														
61 2,40"	11 0,43"	<b>FC200HL2</b>	8E-6208 1U-4208	8E-6209 4T-001	●	●	●	●	●	●	●	M8 9/32"	-	-	<b>20</b>
69 2,72"	14 0,55"	<b>FC220HL2</b>	132-4762 6Y-3228	8E-6259 3G-9609 149-5733	●	●	●	●	●	●	●	M10 3/8"	M8 5/16"		<b>22</b>
78 3,07"	14 0,55"	<b>FC250HL2</b>	8E-6258 132-4763 9J-2258	8E-6259 3G-9609 149-5733	●	●	●	●	●	●	●	M10 3/8"	M8 5/16"		<b>25</b>
94 3,70"	15 0,59"	<b>FC300HL2</b>	107-3308 132-4766 9J-2308	8E-6259 3G-9609 149-5733	●	●	●	●	●	●	●	M10 3/8"	M8 5/16"		<b>30</b>
104 4,09"	20 0,79"	<b>FC350HL2</b>	8E-6358 114-0358 9J-2358	8E-6359 3G-9548 114-0359	●	●	●	●	●	●	●	M13 1/2"	M10 3/8"		<b>35</b>
118 4,65"	22 0,87"	<b>FC400HL2</b>	7T-3408 116-7408	8E-8409 116-7409	●	●	●	●	●	●	●	M14 9/16"	M12 1/2"		<b>40</b>
136 5,35"	24 0,94"	<b>FC450HL2</b>	8E-0468 114-0468	8E-8469 107-3469	●	●	●	●	●	●	●	M15 5/8"	M12 1/2"		<b>45</b>
159 6,26"	25 0,98"	<b>FC550HL2</b>	6Y-8558 107-3378 1U-1558	8E-5559 3G-9559 107-8559	●	●	●	●	●	●	●	M15 5/8"	M12 1/2"		<b>55</b>
195 7,68"	30 1,18"	<b>FC600HL2</b>	6I-6608 113-9608	6I-6609 113-9609	●	●	●	●	●	●	●	M20 13/16"	M17 11/16"		<b>60</b>
204 8,03"	32 1,26"	<b>FC700HL2</b>	4T-4708 113-4708	4T-4707 113-4709	●	●	●	●	●	●	●	M22 7/8"	M17 11/16"		<b>70</b>
238 9,37"	35 1,38"	<b>FC800HL2</b>	134-1808 102-0101	101-2874 134-1809	●	●	●	●	●	●	●	M24 15/16"	M19 3/4"		<b>80</b>

# Caterpillar

## ASSEMBLY INSTRUCTIONS

ENGLISH

► The FUTURA hammerless system HL2 works **only with FUTURA teeth** ► For **Adapters FC2** omit step 1

1 Insert the washer into the adapter washer hole as shown in the picture 2 Mount the tooth on the adapter 3 Insert the pin into the hole 4 Use a SOCKET HEX or a HEX KEY (check the HEX TABLE below for recommended keys for each pin) to rotate the pin from any of its ends. A rubber insert under locking tab allows the locking tab (fig 5) to compress, rotate and lock. 6 Each pin comes with a heavy duty dirt plug to keep fines out of the pin's socket. Choose the right plug according to the tooth recess and place. Discard the other plug.

**Disassembly** Repeat steps in reverse order.

## INSTRUCCIONES DE MONTAJE

ESPAÑOL

► El sistema FUTURA Hammerless HL2 FUNCIONA SOLO CON DIENTES MARCA FUTURA ► Para el montaje con **portadientes FC2** omite el paso 1

1 Inserte la arandela en el hueco del portadientes en la posición que se indica 2 Encaje el diente en el portadientes 3 Coloque el pasador en el orificio del diente como se indica 4 Utilice una llave ALLEN o un VASO HEXAGONAL para girar el pasador (compruebe el tamaño de la llave en la tabla más abajo) 5 El mecanismo de fijación del pasador permite que la pestaña de cierre se comprima, rote y bloquee el diente 6 Los pasadores HL2 van acompañados de un tapón de goma anti-suciedad para sus extremos. Elija el que mejor se ajuste y colóquelo en posición. Los tapones de goma ayudan a prevenir la entrada de suciedad. Deseche el tapón sobrante.

**Desmontaje** Repetir los pasos en orden inverso.

## INSTRUCTIONS DE MONTAGE

FRANÇAIS

► Le système de montage sans marteau FUTURA HL2 fonctionne **uniquement avec FUTURA dents** ► Pour **Adaptateurs FC2** passer l'étape 1

1 Insérer la rondelle dans le trou de l'adaptateur comme montré dans l'image 2 Montez la dent sur l'adaptateur 3 Insérez la goupille dans le trou 4 Aussi facile à installer qu'à retirer avec une clé Allen standard ou une socket HEX (vérifier la taille de la clé dans le tableau). Les goupilles sont retenues en place en toute sécurité par le mécanisme de loquet muni de l'insertion de caoutchouc sous la barrure qui permet de compresser, tourner et barrer en place (fig 5) 6 Chaque goupille vient avec un bouchon pour empêcher la saleté de pénétrer dans les extrémités.

**Démontage** Répétez les étapes dans l'ordre inverse.

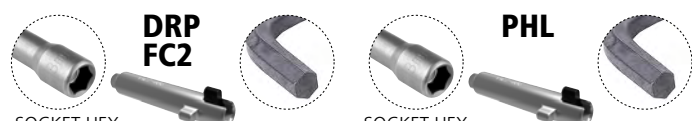
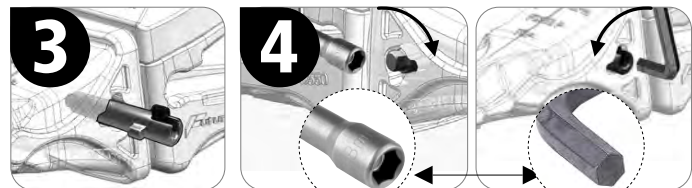
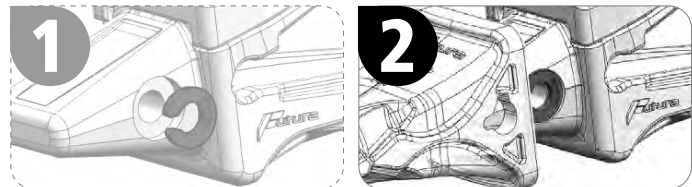
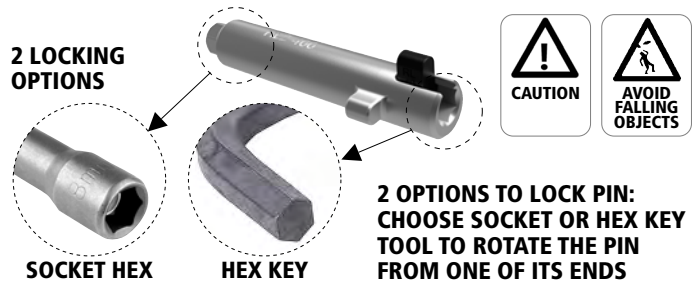
## INSTRUÇÕES DE MONTAGEM

PORTUGUÊS

► El sistema HL2 funciona **exclusivamente com pontas FUTURA** ► Para **Adaptadores FC2** omitir o passo 1

1 Inserir na anilha no orifício na posição indicada 2 Montar a ponta no adaptador 3 Colocar a cavilha no orifício da ponta 4 Use uma chave Allen (hex) ou um soquete HEX para ligar a cavilha (verificar o tamanho da chave no quadro) 5 O mecanismo de fixação permite que o encaixe da borracha se comprima, rode e bloqueie a peça com uma simples rotação de 90° 6 Cada trava vêm acompanhado de um tampão para evitar a entrada de sujidade nas extremidades

**Desmontagem** repita os passos na ordem inversa.



DRP FC2				PHL			
SOCKET HEX				SOCKET HEX			
M7	9/32"	HL2-200	M8	5/16"	M10	3/8"	FD33 PHL
M10	3/8"	HL2-220	M8	5/16"			
M10	3/8"	HL2-250	M8	5/16"			
M10	3/8"	HL2-300	M8	5/16"			
M13	1/2"	HL2-350	M10	3/8"			
M14	9/16"	HL2-400	M12	1/2"			
M15	5/8"	HL2-450	M12	1/2"			
M15	5/8"	HL2-550	M12	1/2"			
M20	13/16"	HL2-600	M17	11/16"			
M22	7/8"	HL2-700	M17	11/16"			
M24	15/16"	HL2-800	M19	3/4"			

### OEM Cross Refs (WHEN USING FUTURA TOOTH)

L	L	Ø	Ø				SIZE
mm	in	mm	in				
61	2,40"	11	0,43"	FC200HL2	8E-6208, 1U-4208	8E-6209, 4T-0001	20
69	2,72"	14	0,55"	FC220HL2	132-4762, 6Y-3228	8E-6259, 3G-9609, 149-5733	22
79	3,11"	14	0,55"	FC250HL2	8E-6258, 132-4763, 9J-2258	8E-6259, 3G-9609, 149-5733	25
94	3,70"	15	0,59"	FC300HL2	107-3308, 132-4766, 9J-2308	8E-6259, 3G-9609, 149-5733	30
104	4,09"	20	0,79"	FC350HL2	8E-6358, 114-0358, 9J-2358	8E-6359, 3G-9548, 114-0359	35
118	4,65"	22	0,87"	FC400HL2	7T-3408, 116-7408	8E-8409, 116-7409	40
136	5,35"	24	0,94"	FC450HL2	8E-0468, 114-0468	8E-8469, 107-3469	45
159	6,26"	25	0,98"	FC550HL2	6Y-8558, 107-3378, 1U-1558	8E-5559, 3G-9559, 107-8559	55
195	7,68"	30	1,18"	FC600HL2	6I-6608, 113-9608	6I-6609, 113-9609	60
204	8,03"	32	1,26"	FC700HL2	4T-4708, 113-4708	4T-4707, 113-4709	70
238	9,37"	35	1,38"	FC800HL2	134-1808, 102-0101	101-2874, 134-1809	80
105	4,13"	15	0,59"	FD33 PHL	132-4766	8E-6259, 149-5733	33

Caterpillar

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# Caterpillar

## Bolt-On Monoblock Teeth

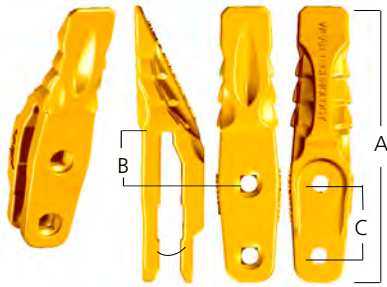
## Dientes Monoblock Atornillables



mm.						<b>Part#</b>							
A	B	C	B										
287 11,30"	54 2,13"	75 2,95"	25°	19 0,75"	3,60 7,94	<b>FC6Y-6335</b> 6Y-6335   9W-1879	4F-3656	4K-0367	-	-	-	416, 426, 428	<b>20</b>

**Caterpillar**

**MONOBLOCK Tooth** Diente MONOBLOCK



mm.												
A	B	C	B			<b>Part#</b>						
287 11,30"	54 2,13"	75 2,95"	25°	19 0,75"	3,60 7,94	<b>FC6Y-6335</b> 6Y-6335   9W-1879	4F-3656	4K-0367	-	-	-	416, 426, 428
												<b>20</b>



DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

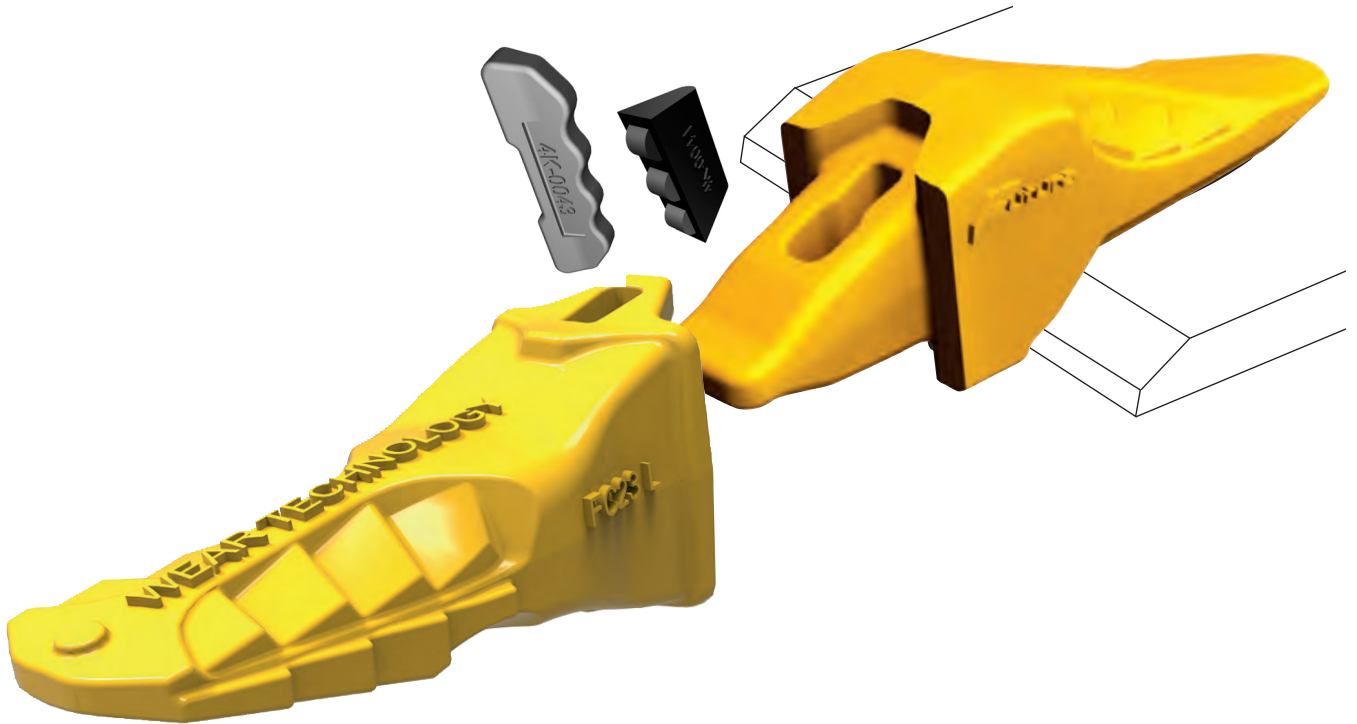
# Caterpillar

## Vertical Pin System

## Sistema Pasador Vertical

**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*



<b>FC23 L</b> 4K-6936	<b>FC23 P</b>	<b>FC23 F</b>
		<b>FC23 R</b> P-23
		910, 920, 922, 931, 933, 941
<b>FC34 L</b> 4K-0034	-	-
		930, 944, 950, 951, 955, 966,

**Caterpillar**

**Vertical Pin Teeth LONG Diente Pasador Vertical LARGO**



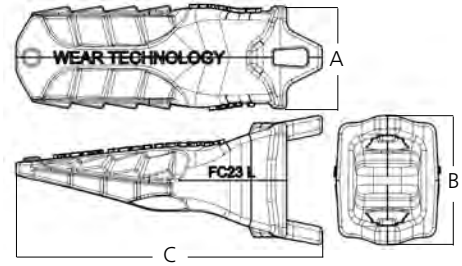
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF	4K-0043	4K-0041	FC23	FC23 F	FC23 R	910, 920, 922, 931, 933, 941
A	B	C	KG							
60 2,36"	75 2,95"	180 7,09"	1,50 3,31	<b>FC23 L</b> 4K-6936						
72 2,83"	77 3,03"	189 7,44"	2,10 6,50	<b>FC34 L</b> 4K-0034			-	-	-	930, 944, 950, 951, 955, 966

**Vertical Pin Teeth PENETRATION Diente Pasador Vertical PENETRACIÓN**



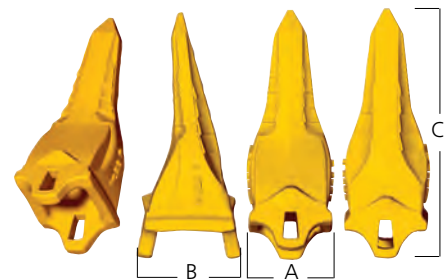
Wear factor | Factor desgaste



Penetration | Penetración

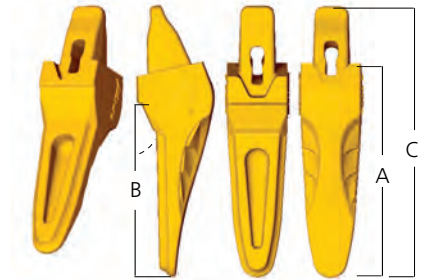


Impact | Impacto



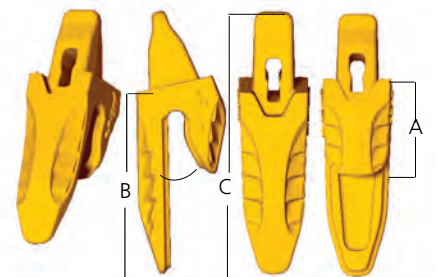
mm.				REF	4K-0043	4K-0041	FC23	FC23 F	FC23 R	910, 920, 922, 931, 933, 941
A	B	C	KG							
60 2,36"	78 3,07"	180 7,09"	1,20 2,65	<b>FC23 P</b>						

### Weld-on Flush Mount Adapter Portadientes a Ras



mm.								REF	4K-0043	4K-0041	FC23 L	FC23 P	910, 920, 922, 931, 933, 941
A	B	C	B	25°	13	20	3,55						
202	174	273	25°	13	20	3,55	<b>FC23 F</b>						
7,95"	6,85"	10,75"		0,51"	0,79"	7,83							

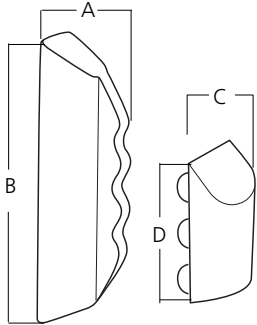
### Weld-on Adapter Portadientes Soldable





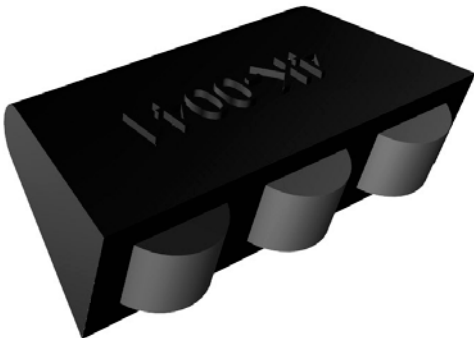
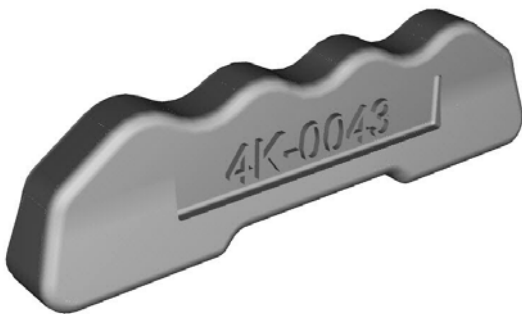
mm.								REF	4K-0043	4K-0041	FC23 L	FC23 P	910, 920, 922, 931, 933, 941
A	B	C	B	25°	13	20	2,85						
125	158	232	25°	13	20	2,85	<b>FC23 R</b>						
4,92"	6,22"	9,13"		0,51"	0,79"	6,28							

Caterpillar

**Lock and Rubber** Chaveta y Goma



mm.					
A	B	C	D		
18	68	20,5	44	<b>4K-0043</b>	<b>4K-0041</b>



DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
product available**

*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**

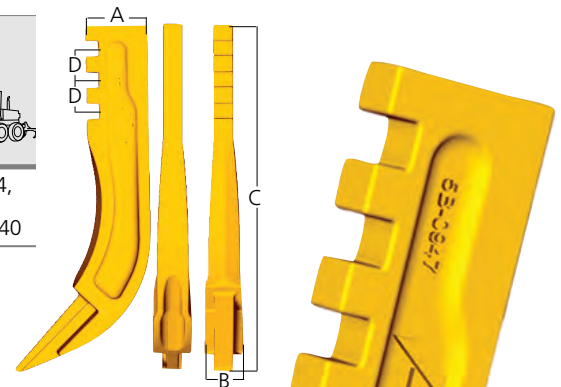
*Otras referencias  
consúltenos*

# Caterpillar

## Motorgrader Components Componentes Niveladora

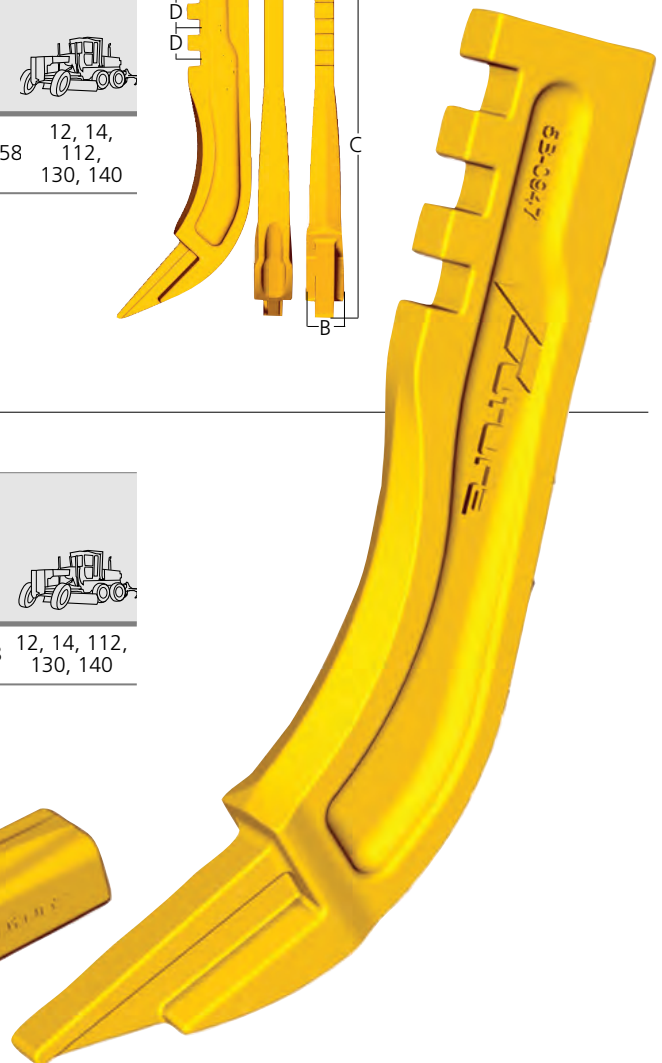
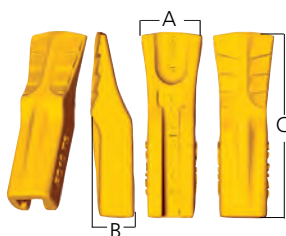
### SCARIFIER Shank Brazo ESCARIFICADOR

mm.											
A	B	C	D			OEM					
76	47	419	38	5,20	<b>FC10 SS</b>	9F-5124	FC10 TS	5K-1459	5K-1458	12, 14, 112, 130, 140	
2,99"	1,85"	16,50"	1,50"	11,46							





### SCARIFIER Tip Diente ESCARIFICADOR

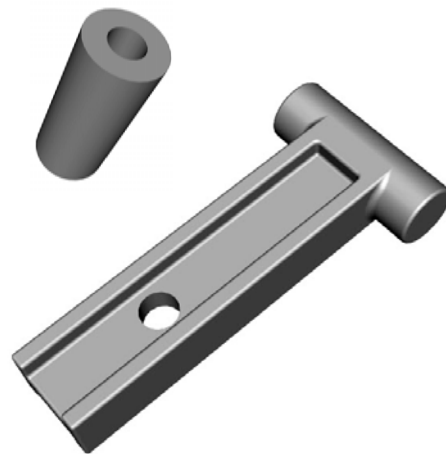
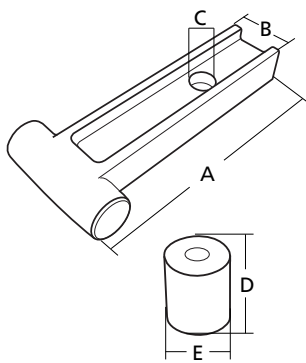
mm.									
A	B	C			OEM				
60	41	194	1,50	<b>FC10 TS</b>	6Y-5230 2D-5572	FC10 SS	5K-1459	5K-1458	12, 14, 112, 130, 140
2,36"	1,61"	7,64"	3,31						



**Caterpillar**

**Fasteners Sujeción**

mm.						
A	B	C	D	E		
116	25	10	15	10,5	<b>5K-1459</b>	<b>5K-1458</b>
4,57"	0,98"	0,39"	0,59"	0,41"		



Esco

DIRECT  
REPLACEMENT  
PARTS FOR

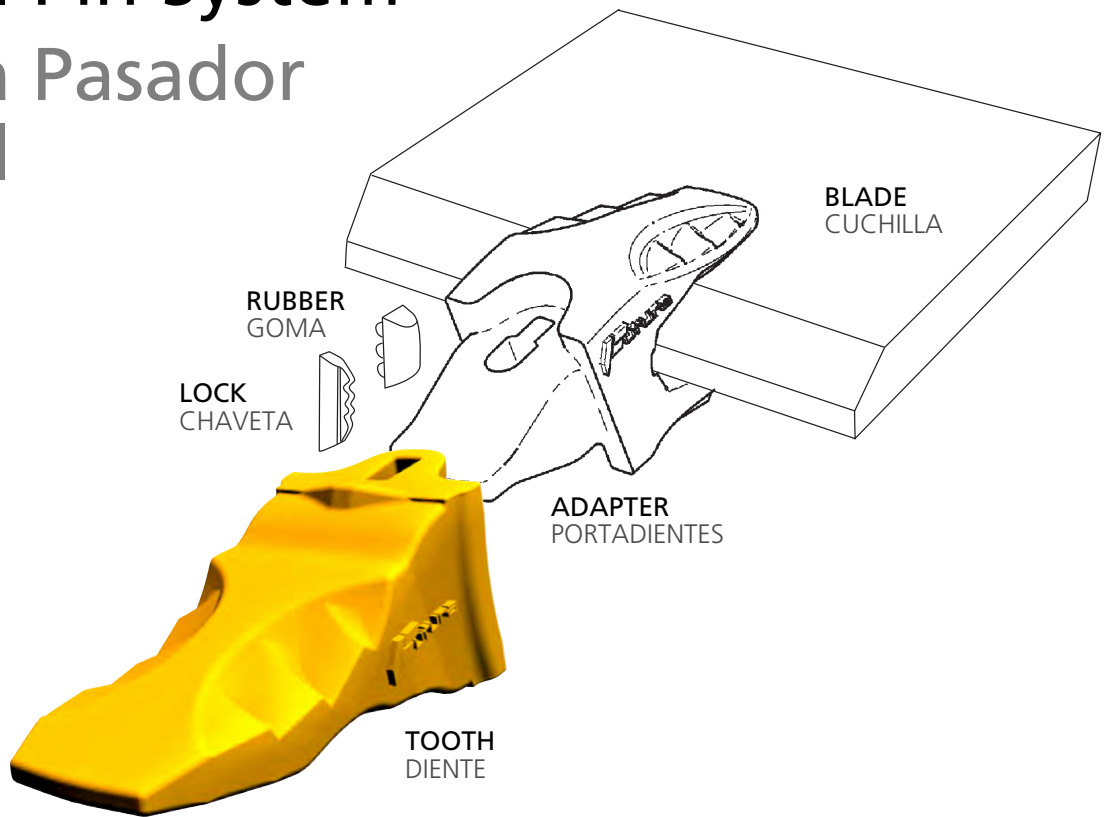
PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# Esco

## Vertical Pin System Sistema Pasador Vertical



LONG	VIP	SYMMETRIC	VECTOR	TWO STRAP LOADER	SUPERCONICAL R	SUPERCONICAL S	
<b>FE15 L</b>	-	-	-	<b>FE15 R</b>	-	-	<b>15</b>
<b>FE18 L</b> 18-TL	<b>FE18 P</b> 18-VIP	-	<b>FE18 TVC</b> 18WTL	<b>FE18 R</b> 833-18	-	-	<b>18</b>
-	-	<b>FE25 S</b> 25-S	-	<b>FE25 R</b> 855-25	-	-	<b>25</b>
-	-	<b>FE30 S</b> 30-S	-	-	-	-	<b>30</b>
-	-	<b>FE35 S</b> 35-S	-	-	-	-	<b>35</b>
-	-	<b>FE40 S</b> 40-S	-	-	-	-	<b>40</b>
-	-	-	-	-	-	<b>FE66 S</b> 66-S	<b>66</b>
-	-	-	-	-	-	<b>FE76 S</b> 76-S	<b>76</b>
-	-	-	-	-	<b>FE86 R</b> 86-R	-	<b>86</b>

Esco

### Vertical Pin Teeth LONG Diente Pasador Vertical LARGO



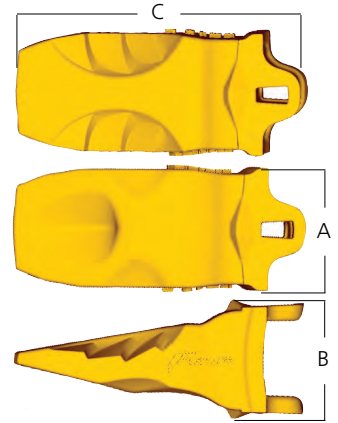
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.			KG	REF				O
A	B	C						
52 2,05"	51 2,01"	122 4,80"	0,70 1,54	<b>FE15 L</b>	18-PN	15-LK	-	<b>15</b>
61 2,40"	54 2,13"	127 5,00"	1,12 2,47	<b>FE18 L</b> 18-TL	18-PN 18-PNR	18-LK 18-LKR	FE18 R	<b>18</b>

### Vertical Pin Tooth VIP Diente Pasador Vertical VIP



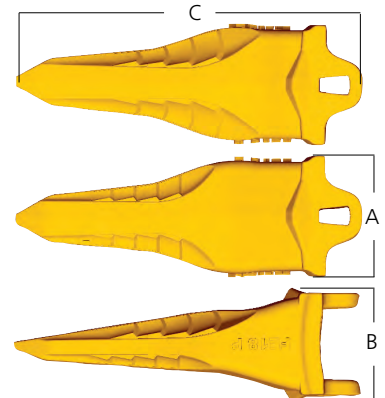
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.			KG	REF				O
A	B	C						
62 2,44"	53 2,09"	160 6,30"	1,15 2,54	<b>FE18 P</b> 18-VIP	18-PN 18-PNR	18-LK 18-LKR	FE18 R	<b>18</b>



## Vertical Pin Tooth VECTOR Diente Pasador Vertical VECTOR



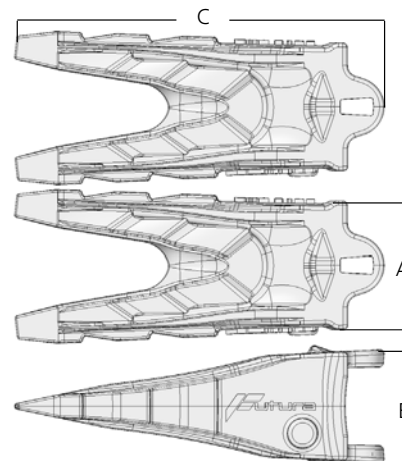
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.			KG	REF				
A	B	C						
61 2,40"	54 2,13"	175 6,89"	1,40 3,09	<b>FE18 TVC</b> 18WTL	18-PN 18-PNR	18-LK 18-LKR	FE18 R	<b>18</b>

## Vertical Pin Teeth SIMMETRIC Diente Pasador Vertical SIMÉTRICO



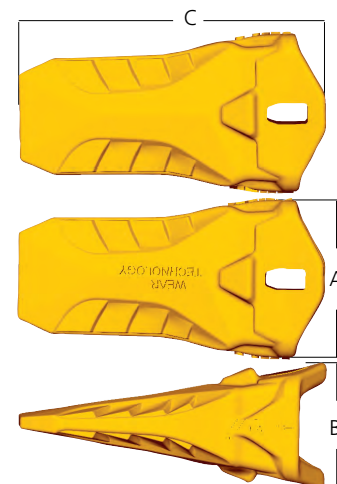
Wear factor | Factor desgaste



Penetration | Penetración



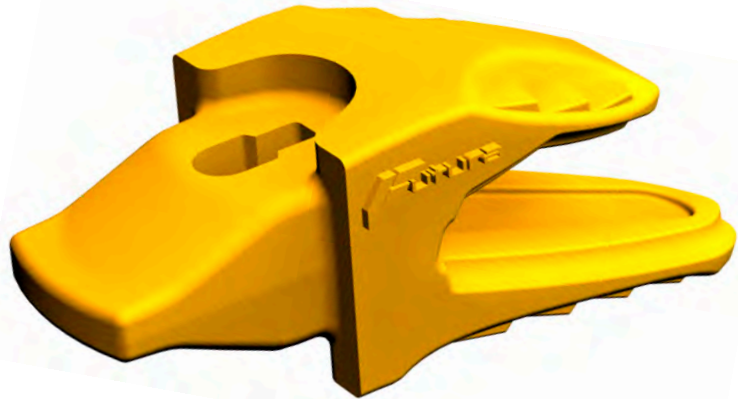
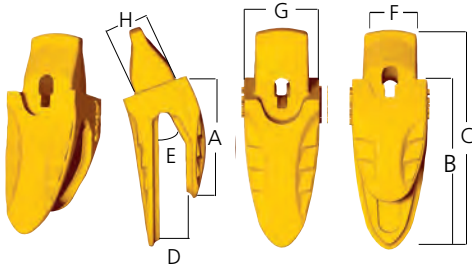
Impact | Impacto



mm.			KG	REF				
A	B	C						
87 3,43"	79 3,11"	190 7,48"	2,33 5,14	<b>FE25 S</b> 25-S	25-30-PN 25-30-PNR	25-30-LK 25-30-LKR	FE25 R	<b>25</b>
96 3,78"	80 3,15"	188 7,40"	2,88 6,35	<b>FE30 S</b> 30-S	25-30-PN 25-30-PNR	25-30-LK 25-30-LKR	-	<b>30</b>
111 4,37"	90 3,54"	217 8,54"	4,14 9,13	<b>FE35 S</b> 35-S	35-PN 35-PNR	35-40-LK 35-40-LKR	-	<b>35</b>
128 5,04"	104 4,09"	249 9,80"	6,84 15,08	<b>FE40 S</b> 40-S	40-PN 40-PNR	35-40-LK 35-40-LKR	-	<b>40</b>

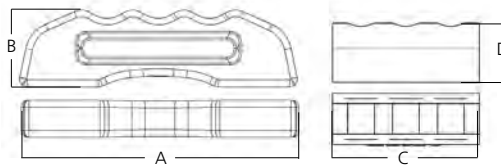
Esco

Weld-On ADAPTER Portadientes Soldable



mm.										REF	18-PN	15-LK	FE15 L	-	-	15
A	B	C	D	E	F	G	H									
83	101	150	18	24°	36	51	58	16	1,03	<b>FE15 R</b>	18-PN	15-LK	FE15 L	-	-	<b>15</b>
3,27"	3,98"	5,91"	0,71"		1,42"	2,01"	2,28"	0,63"	2,27	-						
98	119	176	22	28°	42	61	99	20	1,62	<b>FE18 R</b>	18-PN	18-LK	FE18 L	FE18 P	-	<b>18</b>
3,86"	4,69"	6,93"	0,87"		1,65"	2,40"	3,90"	0,79"	3,57	833-18	18-PNR	18-LKR				
119	147	226	27	23°	51	85	84	25	3,72	<b>FE25 R</b>	25-30-PN	25-30-LK	-	-	FE25 S	<b>25</b>
4,69"	5,79"	8,90"	1,06"		2,01"	3,35"	3,31"	0,98"	8,20	855-25	25-30-PNR	25-30-LKR				

Lock & Rubber Chaveta y Goma



Standard

mm.						15
A	B	C	D			
52	13	30	14,3	<b>18-PN</b>	<b>15-LK</b>	<b>15</b>
2,05"	0,51"	1,18"	0,56"			
52	13	35	14,3	<b>18-PN</b>	<b>18-LK</b>	<b>18</b>
2,05"	0,51"	1,38"	0,56"			
73	20	38	20,5	<b>25-30-PN</b>	<b>25-30-LK</b>	<b>25-30</b>
2,87"	0,79"	1,50"	0,81"			
83	22,5	48	22,2	<b>35-PN</b>	<b>35-40-LK</b>	<b>35</b>
3,27"	0,89"	1,89"	0,87"			
92	30	48	22,2	<b>40-PN</b>	<b>35-40-LK</b>	<b>40</b>
3,62"	1,18"	1,89"	0,87"			

Reinforced Reforzada

mm.						18	25-30	35	40
A	B	C	D						
52	13	35	14,3	<b>18-PNR</b>	<b>18-LKR</b>	<b>18</b>			
2,05"	0,51"	1,38"	0,56"						
73	20	38	20,5	<b>25-30-PNR</b>	<b>25-30-LKR</b>	<b>25-30</b>			
2,87"	0,79"	1,50"	0,81"						
83	22,5	48	22,2	<b>35-PNR</b>	<b>35-40-LKR</b>	<b>35</b>			
3,27"	0,89"	1,89"	0,87"						
92	30	48	22,2	<b>40-PNR</b>	<b>35-40-LKR</b>	<b>40</b>			
3,62"	1,18"	1,89"	0,87"						

## Superconical Tooth R Diente Supercónico Tipo R



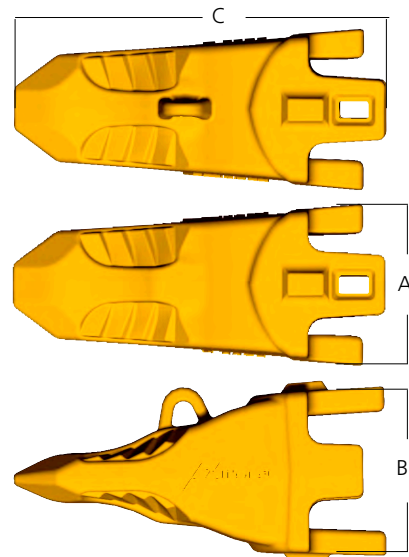
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF				
A	B	C						
233	242	534	60,40	<b>FE86 R</b>				
9,17"	9,53"	21,02"	133,16	86-R 86-FP 86-LP	86-LK	86-PN	3863-86	<b>86</b>

## Superconical Tooth S Diente Supercónico Tipo S



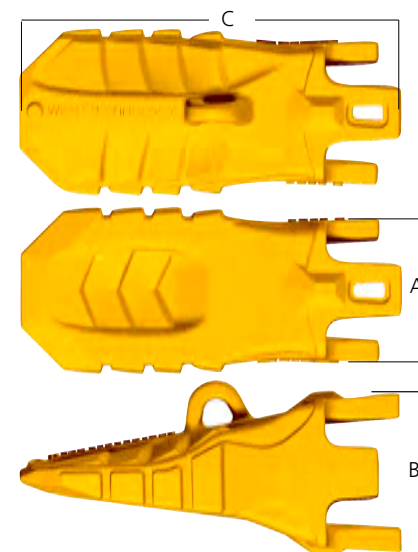
Wear factor | Factor desgaste



Penetration | Penetración



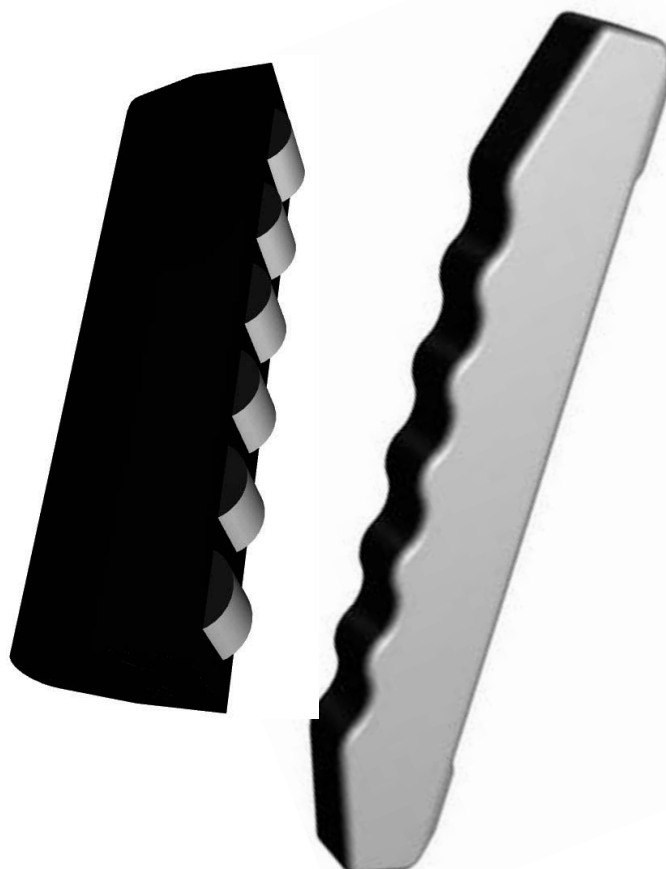
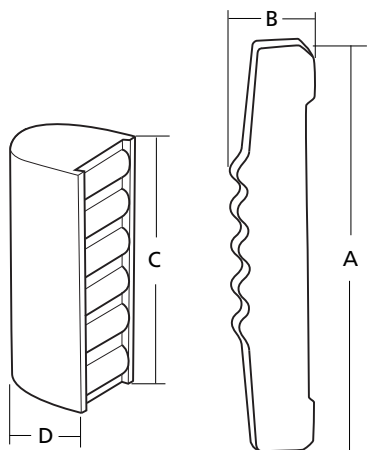
Impact | Impacto






mm.				REF				
A	B	C						
158	175	420	28,15	<b>FE66 S</b>				
6,22"	6,89"	16,54"	62,06	66-R 66-FP 66-LP	66-LK	66-PN	3858-66	<b>66</b>
205	188	451	35,80	<b>FE76 S</b>				
8,07"	7,40"	17,76"	78,92	76-R 76-FP 76-LP			2878-76	<b>76</b>

Esco

**Superconical Lock & Rubber** Chaveta y Goma Supercónica



**Superconical**

mm.						
A	B	C	D			
90	20	54	16	36-LK	36-PN	<b>36</b>
3,54"	0,79"	2,13"	0,63"			
117	23	76	24	46-LK	46-PN	<b>46</b>
4,61"	0,91"	2,99"	0,94"			
152	30	95	30	<b>56-LK</b>	<b>56-PN</b>	<b>56</b>
5,98"	1,18"	3,74"	1,18"			
165	30	112,5	30	<b>66-LK</b>	<b>66-PN</b>	<b>66</b>
6,50"	1,18"	4,43"	1,18"			
182	32	124	23	<b>76-LK</b>	<b>76-PN</b>	<b>76</b>
7,17"	1,26"	4,88"	0,91"			
234	40,6	161	31,5	<b>86-LK</b>	<b>86-PN</b>	<b>86</b>
9,21"	1,60"	6,34"	1,24"			

Fiat-Hitachi

DIRECT  
REPLACEMENT  
PARTS FOR

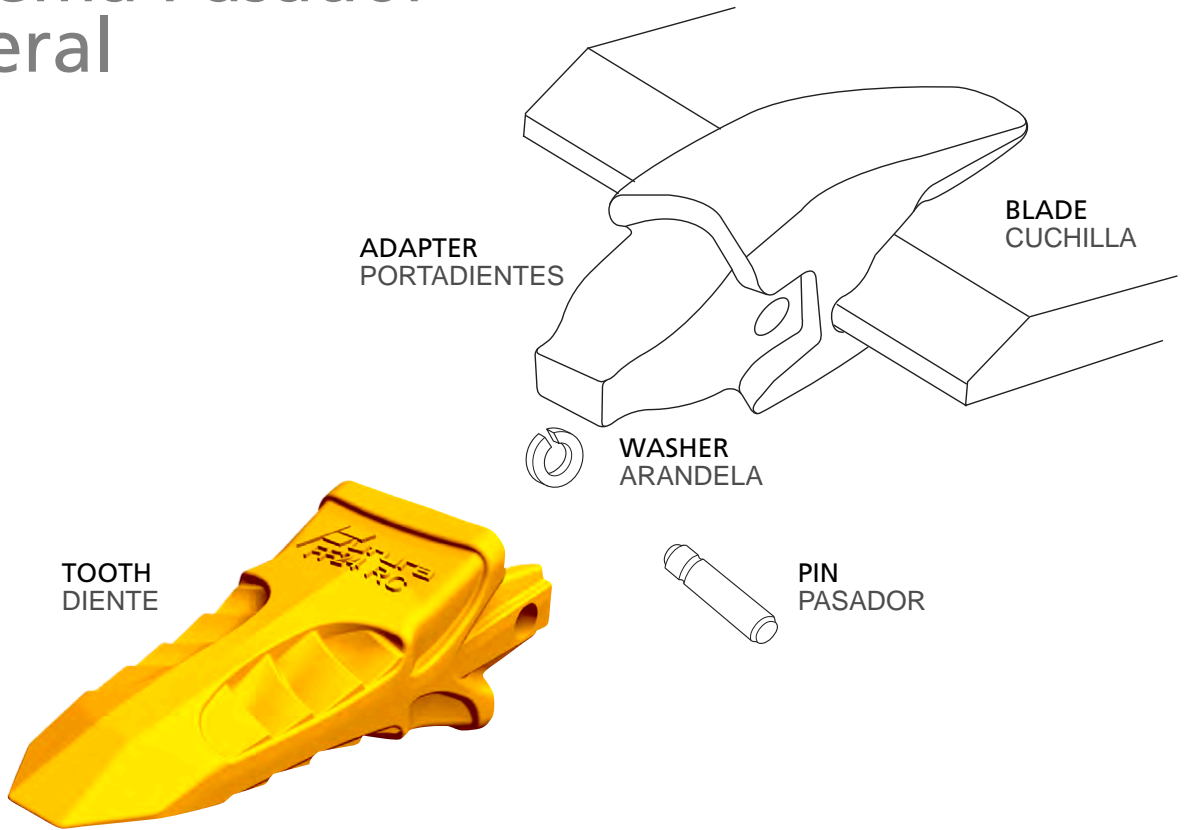
PIEZAS DE  
REEMPLAZO  
DIRECTO PARA




**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# Fiat Hitachi

## Side Pin System Sistema Pasador Lateral



STANDARD	ROCK CHISEL	
		
<b>FF22 S</b> 71407828	<b>FF22 RC</b> 71407828 RE	<b>22</b>
<b>FF24 S</b> 71417992	<b>FF24 RC</b> 71407992 RE	<b>24</b>
<b>FF26 S</b> 71421565	<b>FF26 RC</b> 71421565 RE	<b>26</b>
<b>FF28 S</b> 71432195	<b>FF28 RC</b> 71432195 RE	<b>28</b>
<b>FF32 S</b>	-	<b>32</b>

## Fiat-Hitachi

## CROSS References between Brands EQUIVALENCIAS entre marcas

## Teeth Dientes

FUTURA®	BYG®	FIAT®	FIXMET®	FEURST®	ESCO®	
<b>FF22 S</b>	71407828	71467241 / 71407828	MF22 S	222LTR	022SL	<b>22</b>
<b>FF24 S</b>	71417992	71465120 / 71419992	MF24 S	24LTR	024SL	<b>24</b>
<b>FF26 S</b>	<b>71421565</b>	71464186 / 71421565	MF26 S	26LTR	026SL	<b>26</b>
<b>FF28 S</b>	71432195	71468101 / 17432195	MF28 S	28LTR	028SL	<b>28</b>
<b>FF32 S</b>	-	-	MF32 S	32LTR	-	<b>32</b>

FUTURA®	BYG®	FIAT®	FIXMET®	FEURST®	ESCO®	
<b>FF22 RC</b>	<b>71407828 RE</b>	71467241 / 71407828	MF22 E	222 PR	22	<b>22</b>
<b>FF24 RC</b>	<b>71417992 RE</b>	71465120 / 71419992	MF24 E	24 PR	24	<b>24</b>
<b>FF26 RC</b>	<b>71421565 RE</b>	71464186 / 71421565	MF26 E	26 PR	26	<b>26</b>
<b>FF28 RC</b>	71432195 RE	71468101 / 17432195	MF28 E	28 PR	28	<b>28</b>
<b>FF32 RC</b>	-	-	MF32 E	32 PR	-	<b>32</b>

## Adapters Portadientes

FUTURA®	BYG®	FIAT®	FIXMET®	FEURST®	ESCO®	
-	-	71407829	1MF22FC / 1MF22OA 1MF22UC / 1MF22WC 1MF22WL / 1MF22WR	1530-222 1530-2220° 1230-222 1030-222	-	<b>22</b>
-	-	71417993	1MF24FC / 1MF24OA 1MF24UC / 1MF24WC 1MF24WL / 1MF24WR	1535-24 1535-240° 1035-24	-	<b>24</b>
-	-	71421566	1MF26FC / 1MF26OA 1MF26UC / 1MF26WC 1MF26WL / 1MF26WR	1540-26 1540-260° 1040-26	-	<b>26</b>
-	-	71432196	1MF28FC / 1MF28OA 1MF28WC / 1MF28WL 1MF28WR	1545-28 1550-28 1045-28	-	<b>28</b>
-	-	-	1MF32WC / 1MF32WL 1MF32WR	1560-32	-	<b>32</b>

## Pins Pasadores

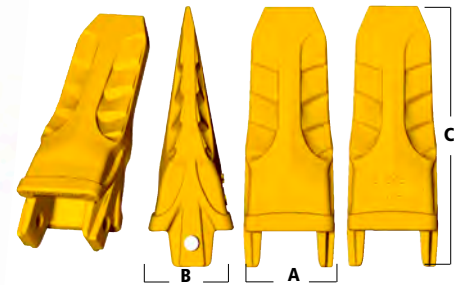
BYG®	FIAT®	FIXMET®	FEURST®	ESCO®	
<b>2MF-22P</b>	71467242 / 71407832	2MF22P	22CL	022PN	<b>22</b>
<b>2MF-24P</b>	71465124 / 71417996	2MF24P	24CL	024PN	<b>24</b>
<b>2MF-26P</b>	71464190 / 71421569	2MF26P	26CL	026PN	<b>26</b>
<b>2MF-28P</b>	71468105 / 71432199	2MF28P	28CL	028PN	<b>28</b>
<b>2MF-32P</b>	- / -	2MF32P	32CL	032PN	<b>32</b>

## Washers Arandelas

BYG®	FIAT®	FIXMET®	FEURST®	ESCO®	
<b>2MF-21 / 22R</b>	71467243 / 71407833	2MF21 / 22R	22RD	022LK	<b>22</b>
<b>2MF-24R</b>	71465125 / 71417997	2MF24R	24RD	024LK	<b>24</b>
<b>2MF-26 / 28R</b>	71464191 / 71421570	2MF26 / 28R	26RD	026-28LK	<b>26</b>
<b>2MF-26 / 28R</b>	71464191 / 71432200	2MF26 / 28R	28RD	026-28LK	<b>28</b>
<b>2MF-32R</b>	- / -	2MF32R	32RD	032LK	<b>32</b>

### STANDARD Teeth Diente STANDARD

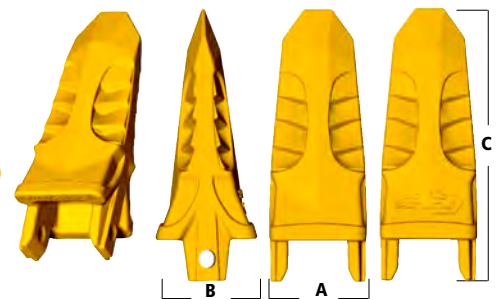
Wear factor | Factor desgaste  
 Penetration | Penetración  
 Impact | Impacto



mm.				REF	Cylinder	Ring	Tooth	Break Out Force Kn	Break Out Force Kn	Break Out Force Kn	Break Out Force Kn	Scale
A	B	C	KG									
80 3,15"	90 3,54"	218 8,58"	3,50 7,72	<b>FF22 S</b> 71407828	2MF-22P	2MF-21/22R	*	113 - 225	9 - 23	70 - 140	8 - 15	<b>22</b>
102 4,02"	106 4,17"	282 11,10"	6,86 15,12	<b>FF24 S</b> 71417992	2MF-24P	2MF-24R	*	225 - 314	23 - 32	140 - 245	15 - 25	<b>24</b>
120 4,72"	117 4,61"	330 12,99"	10,65 23,48	<b>FF26 S</b> 71421565	2MF-26P	2MF-26/28R	*	314 - 490	32 - 50	245 - 340	25 - 35	<b>26</b>
138 5,43"	130 5,12"	401 15,79"	16,00 35,27	<b>FF28 S</b> 71432195	2MF-28P	2MF-26/28R	*	490 - 735	50 - 75	340 - 490	35 - 50	<b>28</b>
163 6,42"	155 6,10"	422 16,61"	24,19 53,33	<b>FF32 S</b>	2MF-32P	2MF-32R	*	735 - 930	75 - 95	490 - 635	50 - 65	<b>32</b>

### ROCK CHISEL Teeth Diente Cincel Roca

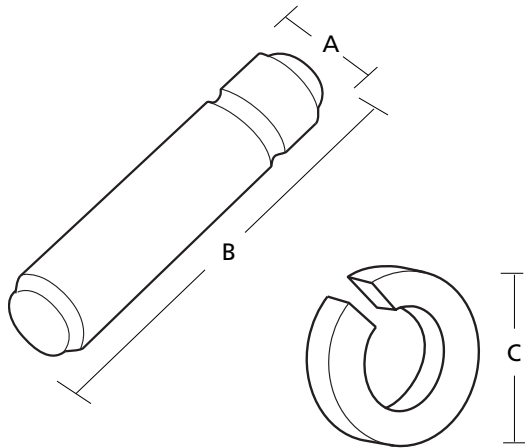
Wear factor | Factor desgaste  
 Penetration | Penetración  
 Impact | Impacto






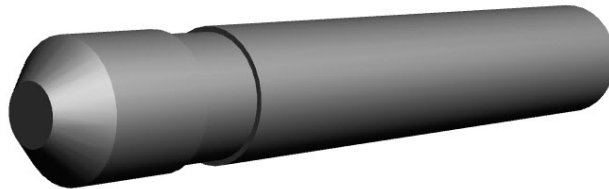
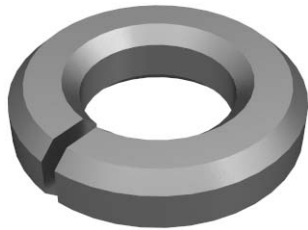
mm.				REF	Cylinder	Ring	Tooth	BREAK OUT FORCE KN	BREAK OUT FORCE KN	BREAK OUT FORCE KN	BREAK OUT FORCE KN	Scale
A	B	C	KG									
80 3,15"	90 3,54"	244 9,61"	3,80 8,38	<b>FF22 RC</b> 71407828 RE	2MF-22P	2MF-21/22R	*	113 - 225	9 - 23	70 - 140	8 - 15	<b>22</b>
102 4,02"	106 4,17"	286 11,26"	6,58 14,51	<b>FF24 RC</b> 71407992 RE	2MF-24P	2MF-24R	*	225 - 314	23 - 32	140 - 245	15 - 25	<b>24</b>
120 4,72"	117 4,61"	334 13,15"	10,17 22,42	<b>FF26 RC</b> 71421565 RE	2MF-26P	2MF-26/28R	*	314 - 490	32 - 50	245 - 340	25 - 35	<b>26</b>
138 5,43"	127 5,00"	407 16,02"	15,07 33,22	<b>FF28 RC</b> 71432195 RE	2MF-28P	2MF-26/28R	*	490 - 735	50 - 75	340 - 490	35 - 50	<b>28</b>

**Fiat-Hitachi**

**PIN and WASHER Pasador y Arandela**



mm.					
A	B	C			
10 0,39"	85 3,35"	18 0,71"	<b>2MF-22P</b>	<b>2MF-21/22R</b>	<b>22</b>
14 0,55"	102 4,02"	27 1,06"	<b>2MF-24P</b>	<b>2MF-24R</b>	<b>24</b>
19 0,75"	122 4,80"	32 1,26"	<b>2MF-26P</b>	<b>2MF-26/28R</b>	<b>26</b>
19 0,75"	135 5,31"	32 1,26"	<b>2MF-28P</b>	<b>2MF-26/28R</b>	<b>28</b>
25 0,98"	155 6,10"	45 1,77"	<b>2MF-32P</b>	<b>2MF-32R</b>	<b>32</b>







DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# H&L

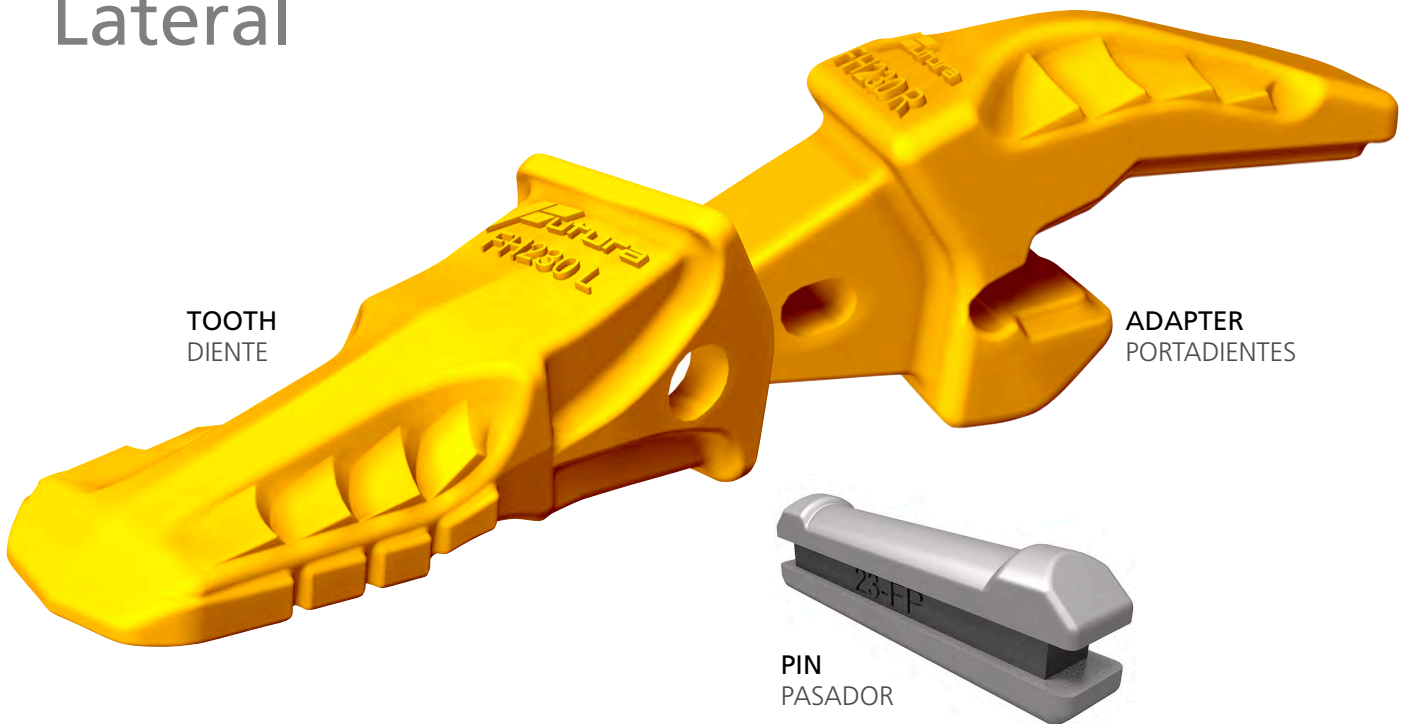
## Side Pin System Sistema Pasador Lateral

**Bold part number,  
available product**

*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**

*Otras referencias  
consúltenos*



L	SYL	TL	WTL	WTS	Adapter	Adapter	
<b>FH230 L</b> 23HXL 230-S	<b>FH230 SYL</b>	<b>FH230 TL</b> 23-TL	<b>FH230 WTL</b> 23-WTL	<b>FH230 WTS</b>	<b>FH230</b> 834-23	<b>FH230 R</b> 2740-23	<b>23</b>

**H&L**

**Side Pin Teeth L** Diente Pasador Lateral L



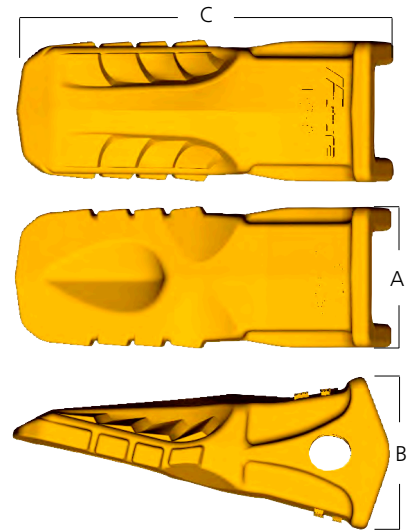
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				KG lb	REF				
A	B	C							
59	62	152	1,10	<b>FH230 L</b> 23-HXL	23-FP	FH230 834-23	FH230 R 2740-23	<b>23</b>	
2,32"	2,44"	5,98"	2,43						

**Side Pin Teeth SYL** Diente Pasador Lateral Simétrico



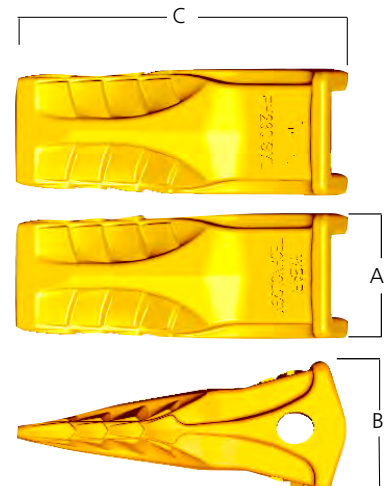
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



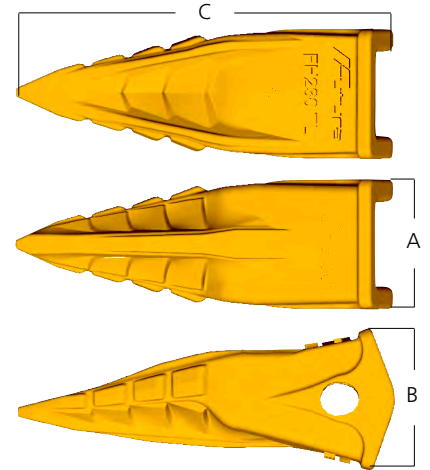
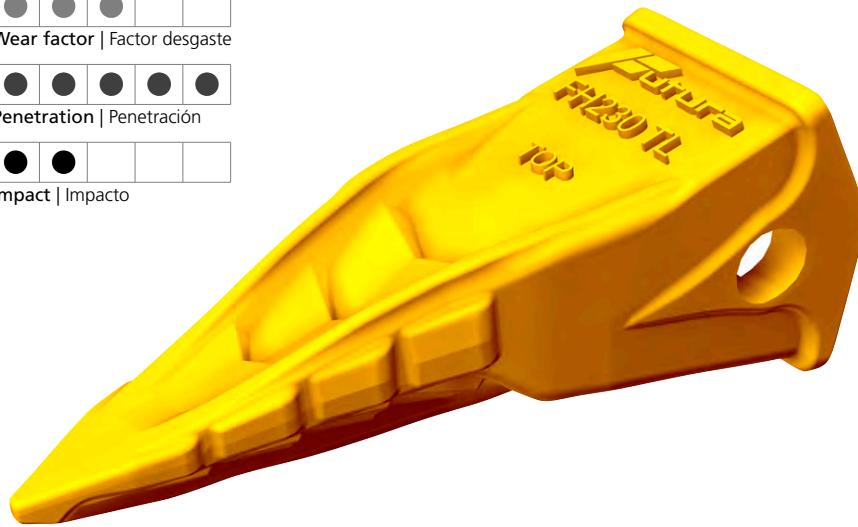
mm.				KG lb	REF				
A	B	C							
59	63	156	1,20	<b>FH230 SYL</b>	23-FP	-	2740-23	834-23	<b>23</b>
2,32"	2,48"	6,14"	2,65						

### Side Pin Teeth TL Diente Pasador Lateral TL

Wear factor | Factor desgaste

Penetration | Penetración

Impact | Impacto



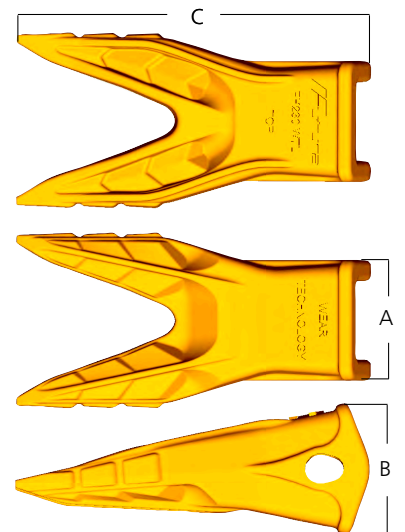
mm.			KG	REF	23-FP	FH230 834-23	FH230 R 2740-23	23
A	B	C						
60 2,36"	65 2,56"	162 6,38"	1,25 2,76	<b>FH230 TL</b> 23-TL				

### Side Pin Teeth WTL Diente Pasador Lateral WTL

Wear factor | Factor desgaste

Penetration | Penetración

Impact | Impacto



mm.			KG	REF	23-FP	FH230 834-23	FH230 R 2740-23	23
A	B	C						
59 2,32"	64 2,52"	174 6,85"	1,66 3,66	<b>FH230 WTL</b> 23-WTL				

**H&L**

**Side Pin Teeth WTS** Diente Pasador Lateral WTS



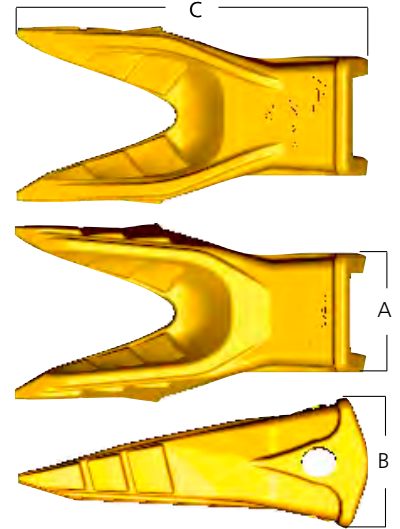
Wear factor | Factor desgaste



Penetration | Penetración

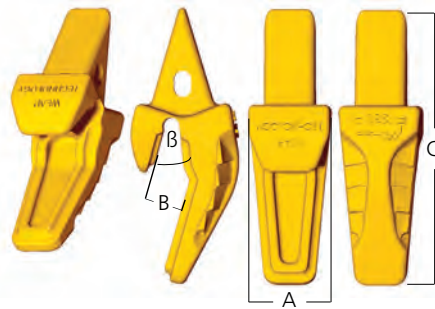


Impact | Impacto



mm.			KG	REF	23-FP	2740-23	834-23	23
A	B	C						
59	64	174	1,5	<b>FH230 WTS</b>	-	-	-	
2,32"	2,52"	6,85"	3,31	-				

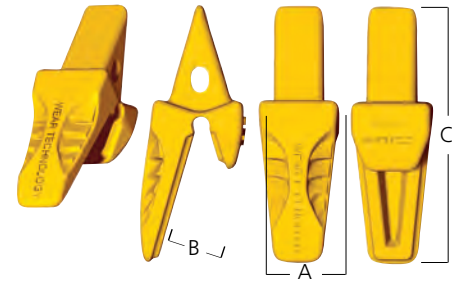
**Adapter R** Portadientes R



mm.				KG	REF	23-FP	FH230 L 23-HXL	FH230 TL 23-TL	FH230 WTL 23-WTL	23
A	B	C	B							
59	27	193	21°	2,17	<b>FH230 R</b>	-	-	-	-	
2,32"	1,06"	7,60"		4,78	-					

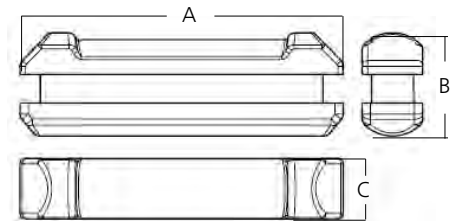
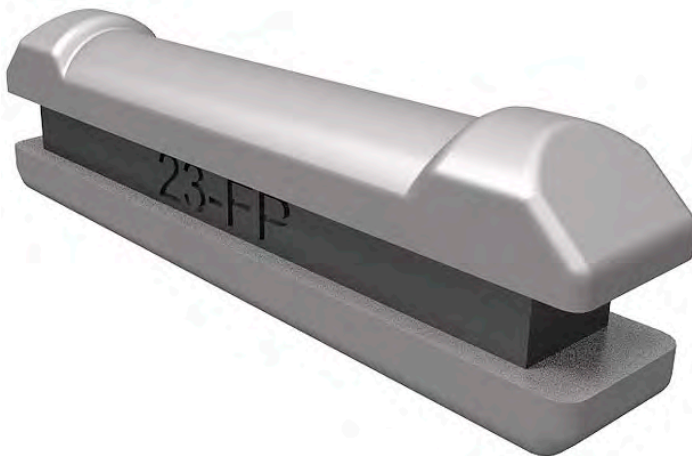


## Adapter Portadientes



mm.										
A	B	C	B		REF					
59 2,32"	71 2,80"	194 7,64"	33°	1,95 4,30	<b>FH230</b> 2740-23	23-FP	<b>FH230 L</b> 23-HXL	<b>FH230 TL</b>	<b>FH230 WTL</b>	<b>23</b>

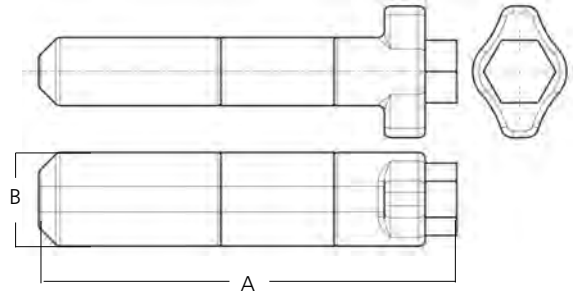
## Pin Pasador



mm.				
A	B	C		
58,8 2,31"	18,7 0,74"	11 0,43"	<b>23-FP</b>	<b>23</b>

H&L

**Pasador Hammerless Pasador Hammerless**



mm.		REF	
A	B		
66,5 2,62"	15 0,59"	<b>FH230 PN</b>	<b>23</b>

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

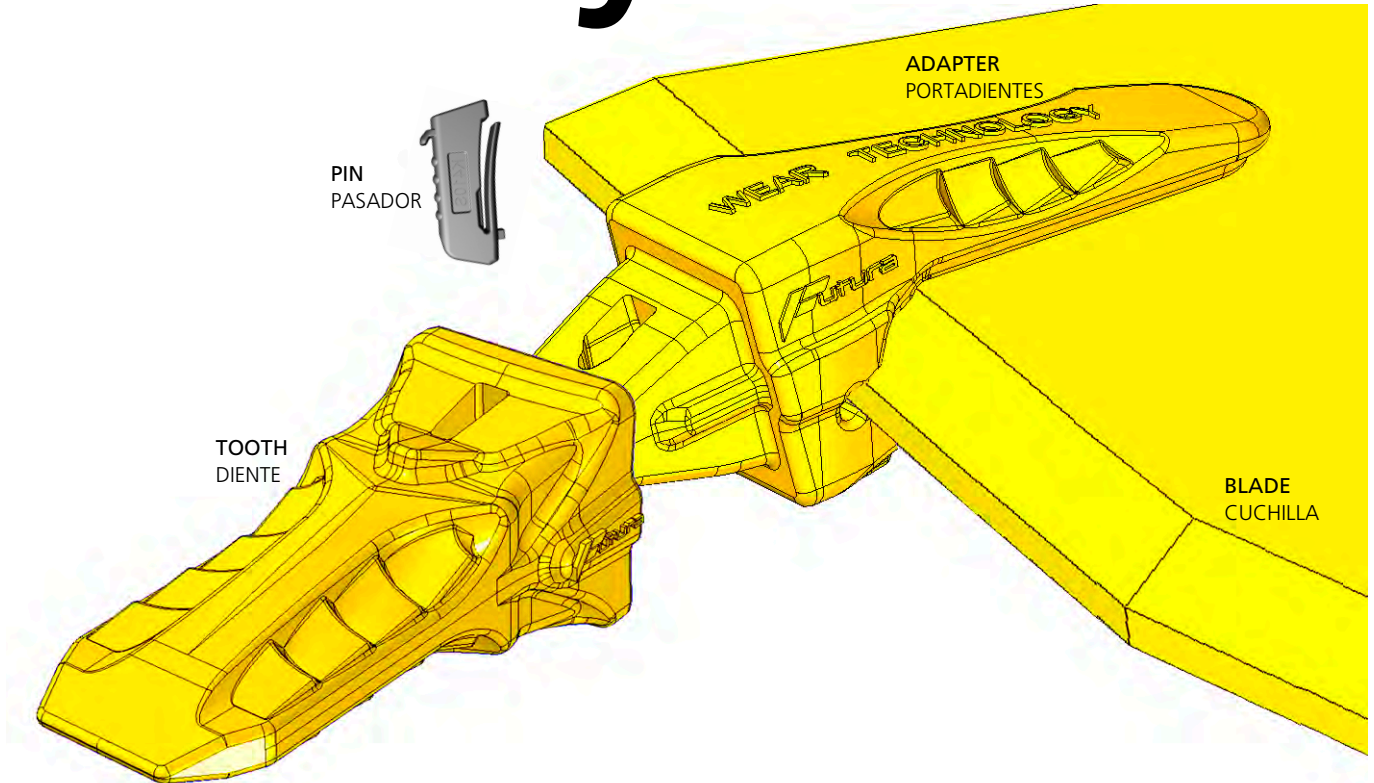
# Hensley

**Bold part number,  
available product**

*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**

*Otras referencias  
consúltenos*

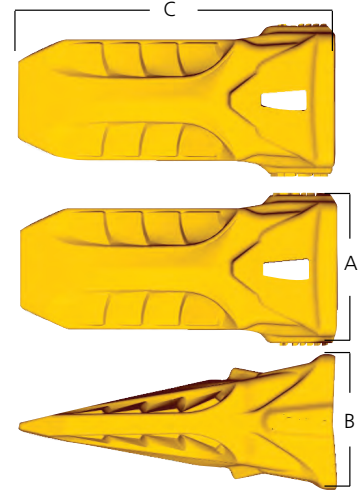


STANDARD	SYL	RP2	TIGER	TWIN TIGER	FLARE	ADAPTER	
<b>FP156 X</b> X156			<b>FP156 T</b> T156	<b>FP156 WT</b> X156WT	<b>FP156 F</b> X156F	<b>FP230X156 R</b> <b>FP550X156 R</b> <b>FP552X156 R</b>	<b>156</b>
<b>FP290 X</b> X290	<b>FP290 SYL</b> X290SYL	-	<b>FP290 T</b> T290	<b>FP290 WT</b> X290WT		<b>FP109X220 R</b>	<b>220</b>
<b>FP310 X</b> X310	-	-	-	<b>FP310 WT</b> X310WT		<b>FP127X290 R</b> <b>FP158X290 R</b>	<b>290</b>
<b>FP330 X</b> X330	<b>FP330 SYL</b> -	-	<b>FP330 T</b> T330	<b>FP330 WT</b> X330WT		<b>FP158X330 R</b>	<b>330</b>
<b>FP370 X</b> X370	-	-	<b>FP370 T</b> T370	<b>FP370 WT</b> X370WT		<i>FP158X370 R</i> <b>FP937X370 R</b> <i>FP940X370 R</i>	<b>370</b>
<b>FP400 X</b> X400	-	-	<b>FP400 T</b> T450	<b>FP400 WT</b> X450WT		<i>FP802X400 R</i>	<b>400</b>
<b>FP410 X</b> X410	-	-	<b>FP410 T</b> T410	<b>FP410 WT</b> X410WT		<i>FP937X410 R</i> <b>FP940X410 R</b>	<b>410</b>
<b>FP450 X</b> X450	-	<b>FP450 RP2</b> X450RP2	<b>FP450 T</b> T450	<b>FP450 WT</b> X450WT		<i>FP303X450 R</i>	<b>450</b>
<b>FP475 X</b> X475	-	-	-	<b>FP475 WT</b> X475WT	-	-	<b>475</b>
<b>FP500 X</b> X500	-	<b>FP500 RP2</b> X500RP2	<b>FP500 T</b> T500	<b>FP500 WT</b> X500WT	-	-	<b>500</b>

Hensley

Parabolic STANDARD Teeth Diente Parabólico STANDARD

Wear factor | Factor desgaste  
Penetration | Penetración  
Impact | Impacto

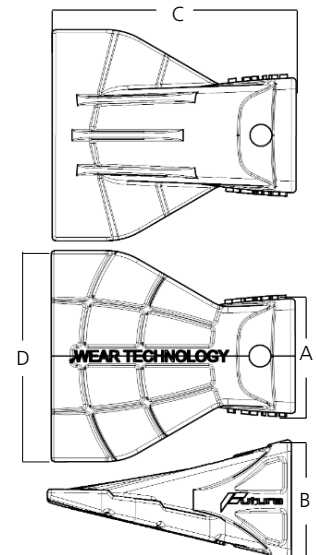


mm.				KG	REF	pin pasador	Image	Weight
A	B	C						
57	55	130	0,85	<b>FP156 X</b> X156	P156	FP158X370 R FP937X370 R	<b>156</b>	
2,24"	2,17"	5,12"	1,87					
110	100	236	5,67	<b>FP290 X</b> X290	K290S	FP127X290 R FP158X290 R	<b>290</b>	
4,33"	3,94"	9,29"	12,50					
105	83	225	4,04	<b>FP310 X</b> X310	P160	-	<b>310</b>	
4,13"	3,27"	8,86"	8,91					
129	114	270	8,46	<b>FP330 X</b> X330	K330S	FP158X330 R	<b>330</b>	
5,08"	4,49"	10,63"	18,65					
141	128	302	11,8	<b>FP370 X</b> X370	K370S	FP158X370 R FP937X370 R	<b>370</b>	
5,55"	5,04"	11,89"	26,01					
146	121	295	10,92	<b>FP400 X</b> X400	P400HD	FP802X400 R	<b>400</b>	
5,75"	4,76"	11,61"	24,07					
158	140	335	16,15	<b>FP410 X</b> X410	K410S	FP937X410R FP940X410R	<b>410</b>	
6,22"	5,51"	13,19"	35,60					
172	165	366	22,42	<b>FP450 X</b> X450	K450S	FP303X450 R	<b>450</b>	
6,77"	6,50"	14,41"	49,43					
176	155	359	21,86	<b>FP475 X</b> X475	P475P		<b>475</b>	
6,93"	6,10"	14,13"	48,19					
192	175	413	29,5	<b>FP500 X</b> X500	K500R		<b>500</b>	
7,56"	6,89"	16,26"	65,04					



Parabolic FLARE Teeth Diente Parabólico ANCHO

Wear factor | Factor desgaste  
Penetration | Penetración  
Impact | Impacto



mm.					KG	REF	pin pasador	Image	Weight
A	B	C	D						
60	63	128	111	1,48	<b>FP156 F</b> X156	K156S	FP127X156 R FP158X156 R	<b>156</b>	
2,36"	2,48"	5,04"	4,37"	3,26					

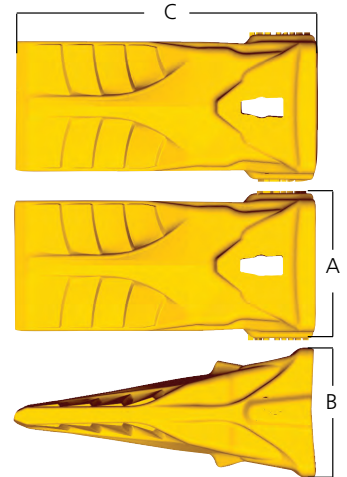



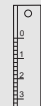
## Parabolic SYL Teeth Diente Parabólico SIMÉTRICO

Wear factor | Factor desgaste

Penetration | Penetración

Impact | Impacto



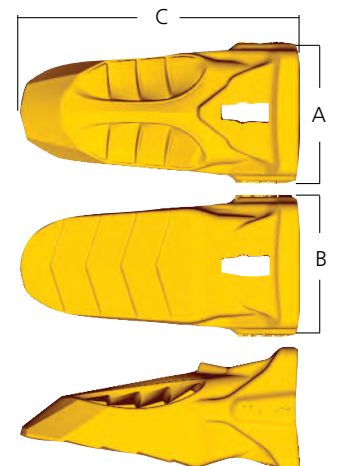
mm.		C	KG	REF	pin pasador		
A	B						
108 4,25"	94 3,70"	222 8,74"	4,8 10,58	<b>FP290 SYL</b> X290SYL	K290S	FP127X290 R FP158X290 R	<b>290</b>
124 4,88"	110 4,33"	257 10,12"	7,4 16,31	<b>FP330 SYL</b> -	K330S	FP158X290 R	<b>330</b>


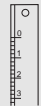
## Parabolic RP2 Teeth Diente Parabólico RP2

Wear factor | Factor desgaste

Penetration | Penetración

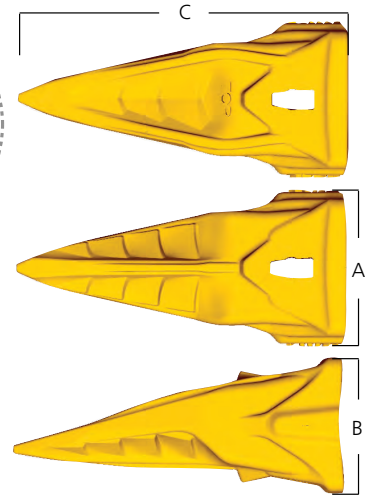
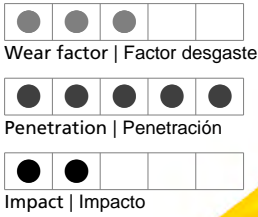
Impact | Impacto



mm.		C	KG	REF	pin pasador		
A	B						
172 6,77"	155 6,10"	346 13,62"	23,06 50,84	<b>FP450 RP2</b> X450RP2	K450S	FP303X450 R	<b>450</b>
186 7,32"	172 6,77"	396 15,59"	33,62 74,12	<b>FP500 RP2</b> X500RP2	K500R		<b>500</b>

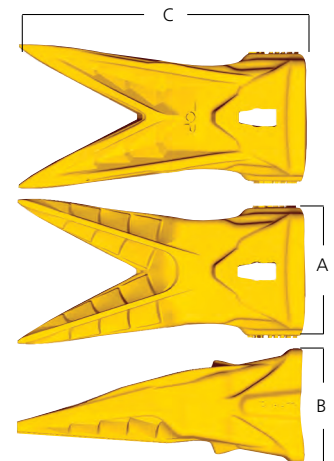
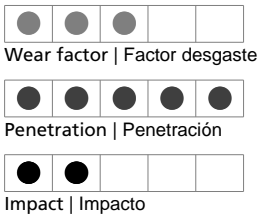
Hensley

Parabolic TIGER Teeth Diente Parabólico TIGER



mm.			KG	REF	pin pasador	REF	Weight
A	B	C					
60	55	149	0,84	<b>FP156 T</b>		FP127X156 R FP158X156 R	<b>156 *</b>
2,36"	2,17"	5,87"	1,85	T156			
107	97	240	5,67	<b>FP290 T</b>	K290S	FP127X290 R FP158X290 R	<b>290</b>
4,21"	3,82"	9,45"	12,50	T290			
124	110	278	6,08	<b>FP330 T</b>	K330S	FP158X290 R	<b>330</b>
4,88"	4,33"	10,94"	13,40	T330			
137	125	303	8,68	<b>FP370 T</b>	K370S	FP158X370 R FP937X370 R FP940X370 R	<b>370</b>
5,39"	4,92"	11,93"	19,14	T370			
141	116	306	8,14	<b>FP400 T</b>	P400HD	FP802X400 R	<b>400</b>
5,55"	4,57"	12,05"	17,95	T400			
153	134	345	11,77	<b>FP410 T</b>	K410S	FP937X410R FP940X410R	<b>410</b>
6,02"	5,28"	13,58"	25,95	T410			
166	156	380	16,50	<b>FP450 T</b>	K450S	FP303X450 R	<b>450</b>
6,54"	6,14"	14,96"	36,38	T450			
186	169	417	20,92	<b>FP500 T</b>	K500R		<b>500</b>
7,32"	6,65"	16,42"	46,12	T500			

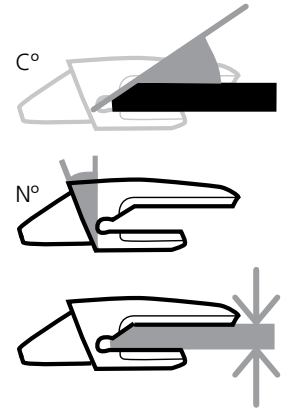
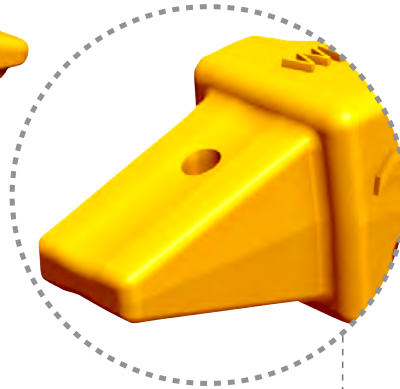
Parabolic TWIN TIGER Teeth Diente Parabólico TWIN TIGER



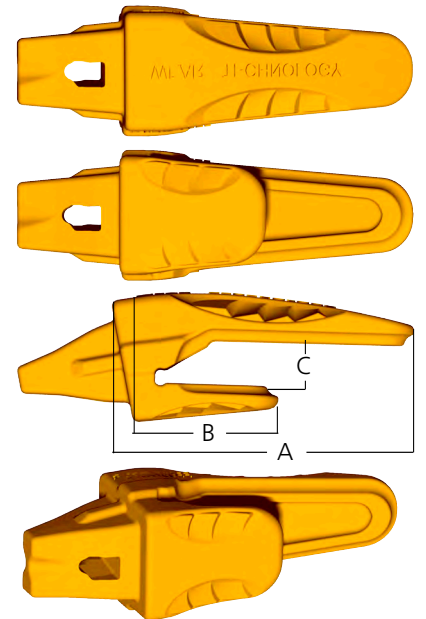
mm.			KG	REF	pin pasador	REF	Weight
A	B	C					
60	55	159	1,17	<b>FP156 WT</b>	K290S	FP127X156 R FP158X156 R	<b>156 *</b>
2,36"	2,17"	6,26"	2,58	X156WT			
108	98	240	5,67	<b>FP290 WT</b>	K290S	FP127X290 R FP158X290 R	<b>290</b>
4,25"	3,86"	9,45"	12,50	X290WT			
108	96	243	5,54	<b>FP310 WT</b>	P160	-	<b>310</b>
4,25"	3,78"	9,57"	12,21	X310WT			
124	110	277	7,60	<b>FP330 WT</b>	K330S	FP158X290 R	<b>330</b>
4,88"	4,33"	10,91"	16,75	X330WT			
137	125	302	10,60	<b>FP370 WT</b>	K370S	FP158X370 R FP937X370 R FP940X370 R	<b>370</b>
5,39"	4,92"	11,89"	23,37	X370WT			
141	116	304	10,00	<b>FP400 WT</b>	P400HD	FP802X400 R	<b>400</b>
5,55"	4,57"	11,97"	22,05	X400WT			
153	134	344	14,69	<b>FP410 WT</b>	K410S	FP937X410R FP940X410R	<b>410</b>
6,02"	5,28"	13,54"	32,39	X410WT			
165	155	378	20,18	<b>FP450 WT</b>	K450S	FP303X450 R	<b>450</b>
6,50"	6,10"	14,88"	44,49	X450WT			
173	143	372	19,26	<b>FP475 WT</b>	P475P	-	<b>475</b>
6,81"	5,63"	14,65"	42,46	X475WT			
183	164	414	24,59	<b>FP500 WT</b>	K500R	-	<b>500</b>
7,20"	6,46"	16,30"	54,21	X500WT			



## Parabolic Adapter Portadientes Parabólico



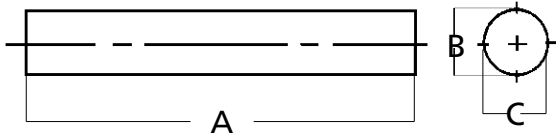
mm.		C	C°	N°	KG	REF	OEM
A	B						
139 5,47"	54 2,13"	17 0,67"	<b>15</b> 0,59"	30°	15°	1,90 4,19	<b>FP230X156 R</b> 230X156
173 6,81"	80,5 3,17"	27 1,06"	<b>25</b> 0,98"	26°	13°	2,40 5,29	<b>FP550X156 R</b> 550X156
167 6,57"	92 3,62"	21,5 0,85"	<b>20</b> 0,79"	30°	15°	2,40 5,29	<b>FP552X156 R</b> 552X156
229 9,02"	143 5,63"	33 1,30"	<b>30</b> 1,18"	30°	15°	6,50 14,33	<b>FP109X220 R</b> 109X220
274 10,79"	121 4,76"	33 1,30"	<b>30</b> 1,18"	30°	12°	10,80 23,81	<b>FP127X290 R</b> 127X290
261,5 10,30"	167 6,57"	41 1,61"	<b>38</b> 1,50"	30°	12°	11,20 24,69	<b>FP158X290 R</b> 158X290
292 11,50"	195 7,68"	40 1,57"	<b>38</b> 1,50"	30°	15°	17,00 37,48	<b>FP158X330 R</b> 158X330
323 12,72"	156 6,14"	40 1,57"	<b>38</b> 1,50"	30°	12°	19,00 41,89	<i>FP158X370 R</i> 158X370
323 12,72"	156 6,14"	47 1,85"	<b>45</b> 1,77"	30°	12°	18,20 40,12	<b>FP937X370 R</b> 937X370
323 12,72"	156 6,14"	52 2,05"	<b>50</b> 1,97"	30°	12°	17,60 38,80	<i>FP940X370 R</i> 940X370
337 13,27"	167 6,57"	52 2,05"	<b>50</b> 1,97"	30°	15°	21,20 46,74	<i>FP802X400 R</i> 802X400
331 13,03"	156 6,14"	47 1,85"	<b>45</b> 1,77"	30°	12°	22,50 49,60	<i>FP937X410 R</i> 937X410
332 13,07"	154 6,06"	52 2,05"	<b>50</b> 1,97"	30°	12°	21,50 47,40	<b>FP940X410 R</b> 940X410
363 14,29"	237 9,33"	65 2,56"	<b>63,5</b> 2,50"	30°	12°	33,20 73,19	<i>FP303X450 R</i> 303X450



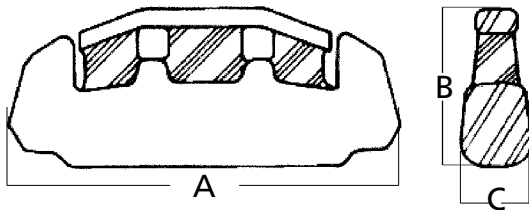
**Hensley**

**Parabolic Pin Pasador Parabólico**

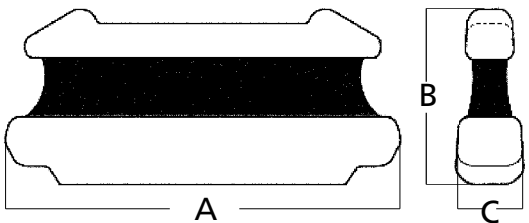
**1. Roll Pins / Pasador Cilindrico**



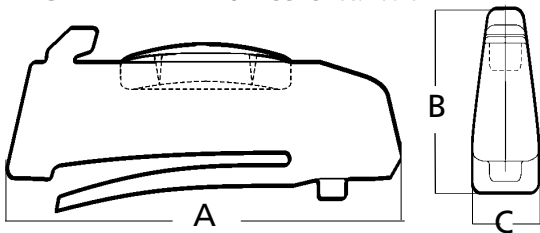
**2. Flex Pin / Pasador Flexible (Optional)**



**3. STP Solid Rubber (Optional) / Goma Solida**



**4. STEEL KEEPER / Acero Standard**



		mm.			Pin / Pasador	Type	
A	B	C					
51 2,01"	10 0,39"	10 0,39"	0,05 0,11	<b>P156</b>	Roll Pin	<b>156</b>	
76 2,99"	13 0,51"	13 0,51"	0,05 0,11	<b>P160</b>	Roll Pin	<b>160</b>	
76 2,99"	13 0,51"	13 0,51"	0,05 0,11	<b>X220</b>	Roll Pin	<b>220</b>	
78 3,07"	32 1,26"	14 0,55"	0,12 0,25	<b>P290</b>	Flex Pin		
79 3,11"	32 1,26"	13 0,51"	0,13 0,30	<b>P290STP</b>	STP	<b>290</b>	
78 3,07"	32 1,26"	14 0,55"	0,19 0,42	<b>K290S</b>	Standard		
76 2,99"	13 0,51"	13 0,51"	0,05 0,11	<b>P160</b>	Roll Pin	<b>310</b>	
89 3,50"	41 1,61"	14 0,55"	0,19 0,42	<b>P330</b>	Standard		
89 3,50"	41 1,61"	14 0,55"	0,20 0,44	<b>P330STP</b>	STP	<b>330</b>	
89 3,50"	41 1,61"	14 0,55"	0,22 0,49	<b>K330S</b>	Standard Steel Key		
110 4,33"	48 1,89"	21 0,83"	0,39 0,86	<b>P370</b>	Flex Pin		
110 4,33"	48 1,89"	21 0,83"	0,43 0,95	<b>P370STP</b>	STP	<b>370</b>	
110 4,33"	48 1,89"	21 0,83"	0,48 1,06	<b>K370S</b>	Standard Steel Key		
90 3,54"	40 1,57"	13 0,51"	0,20 0,44	<b>P400HD</b>	Flex Pin HD	<b>400</b>	
117 4,61"	53 2,09"	21 0,83"	0,43 0,95	<b>P410</b>	Flex Pin		
117 4,61"	53 2,09"	21 0,83"	0,51 1,12	<b>P410STP</b>	STP	<b>410</b>	
117 4,61"	53 2,09"	21 0,83"	0,56 1,23	<b>K410S</b>	Standard Steel Key		
132 5,20"	54 2,13"	22 0,87"	0,54 1,19	<b>P450</b>	Flex Pin		
132 5,20"	54 2,13"	22 0,87"	0,65 1,43	<b>K450S</b>	Standard Steel Key	<b>450</b>	
116 4,57"	43 1,69"	17 0,67"	0,39 0,86	<b>P475P</b>	Flex Pin	<b>475</b>	
151 5,94"	54 2,13"	29 1,14"	1,13 2,49	<b>K500R</b>	Standard Steel Key	<b>500</b>	

**Size / Talla**  
**156, 220**

**Size / Talla**  
**290, 330, 370, 400, 410 4520**



DIRECT  
REPLACEMENT  
PARTS FOR

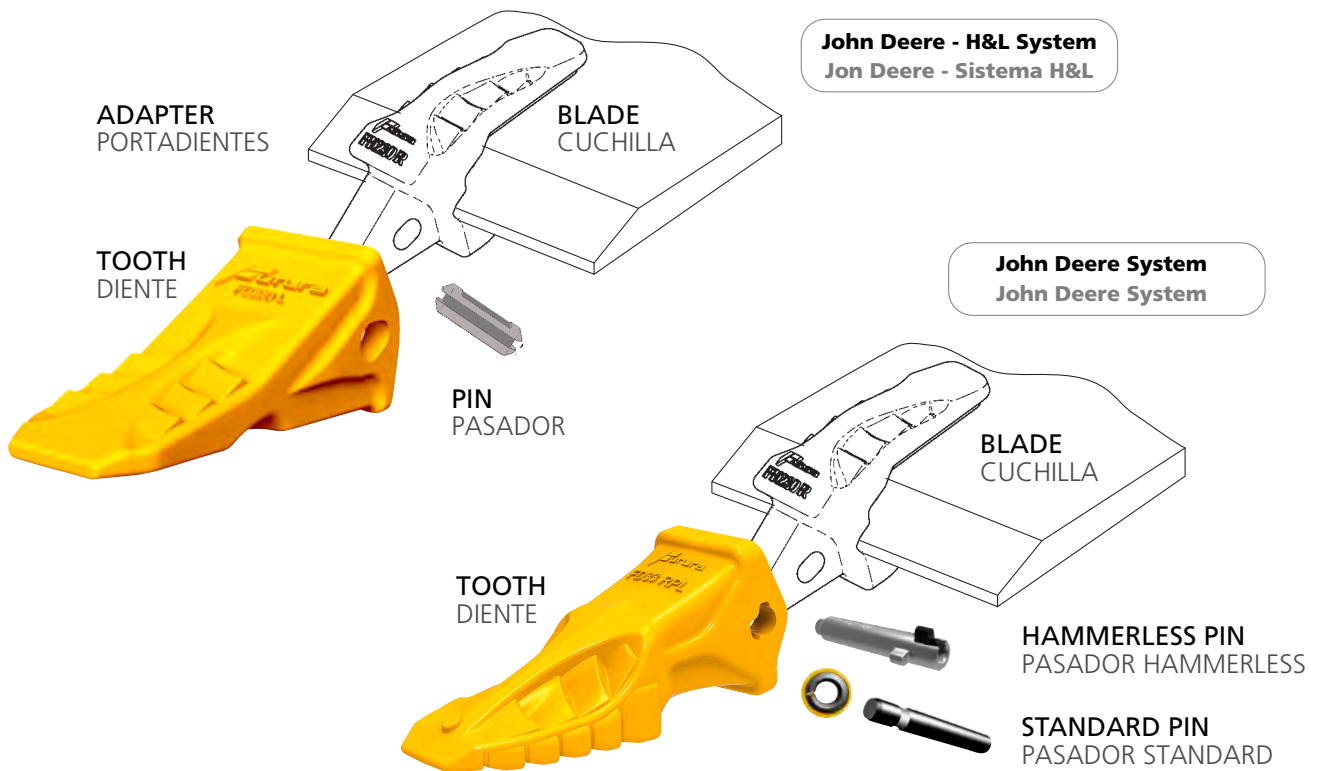
PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
available product**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# John Deere

## Side Pin Tooth Dientes Pasador Lateral



L	TL	WTL	RP	RPL	
<b>FD230 L</b>	<b>FD230 TL</b>	<b>FD230 WTL</b>	-	-	<b>23</b>
			<b>FD33 RP</b>	<b>FD33 RPL</b>	<b>33</b>
<b>John Deere - H&amp;L System</b> Jon Deere - Sistema H&L			<b>John Deere System</b> Sistema John Deere		

**John Deere**

**John Deere - H&L System**  
Jon Deere - Sistema H&L

**Side Pin Teeth L** Diente Pasador Lateral L



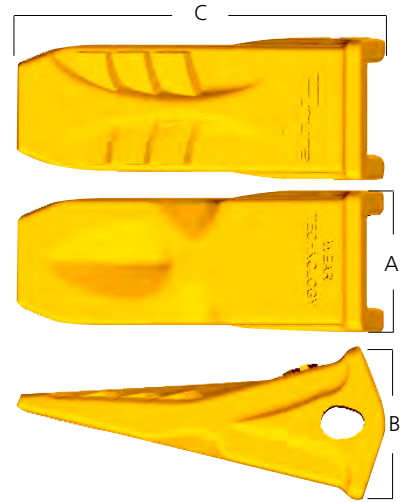
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF	OEM		
A	B	C	KG lb				
59	62	154	1,16	<b>FD230 L</b>	23-PN	23	
2,32"	2,44"	6,06"	2,56				

**Side Pin Teeth TL** Diente Pasador Lateral TL



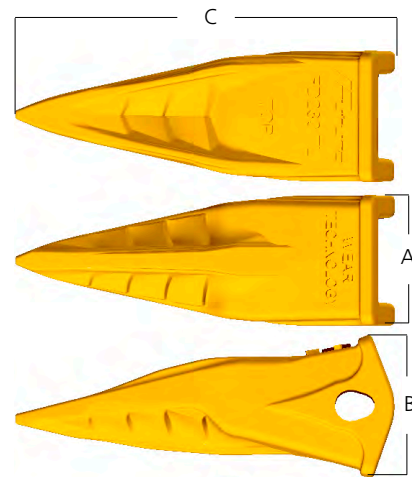
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



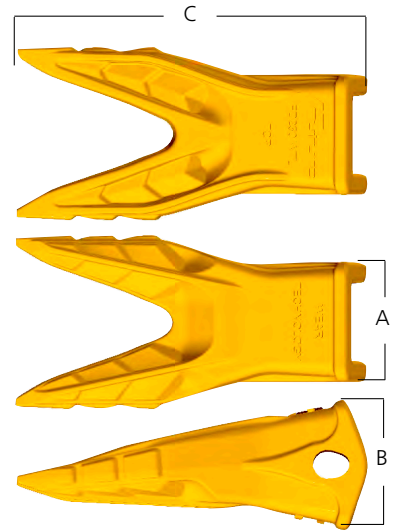
mm.				REF	OEM		
A	B	C	KG lb				
59	64	172	1,30	<b>FD230 TL</b>	23-PN	23	
2,32"	2,52"	6,77"	2,87				

**John Deere - H&L System**  
Jon Deere - Sistema H&L

**John Deere**

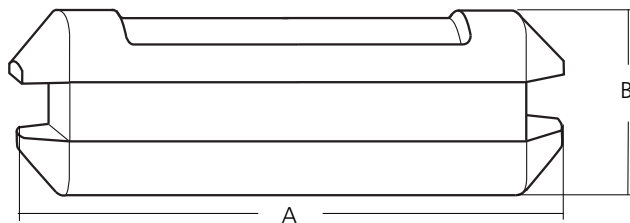
## Side Pin Teeth WTL Diente Pasador Lateral WTL

Wear factor | Factor desgaste  
Penetration | Penetración  
Impact | Impacto



mm.			KG	REF	OEM	23-PN	23
A	B	C					
59 2,32"	64 2,52"	173 6,81"	1,63 3,59	<b>FD230 WTL</b>			

## PIN Pasador



mm.		23-PN	23
A	B		
54 2,13"	19 0,75"		

John Deere

John Deere System  
Sistema John Deere

Side Pin Teeth RP Diente Pasador Lateral RP



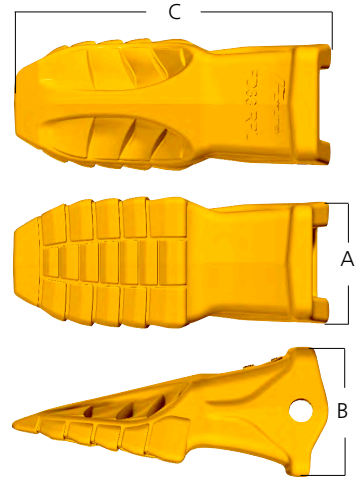
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF	OEM				
A	B	C							
119	116	287	9,55	<b>FD33 RP</b>	TF33 L	132-4766	8E-6259 149-5733	FD33 PHL	<b>33</b>
4,69"	4,57"	11,30"	21,05						

Side Pin Teeth RPL Diente Pasador Lateral RPL



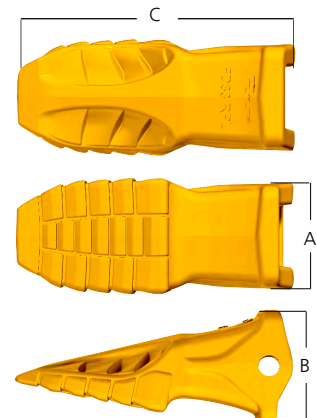
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF	OEM				
A	B	C							
119	116	287	9,55	<b>FE33 RPL</b>	TF33 L	132-4766	8E-6259 149-5733	FD33 PHL	<b>33</b>
4,69"	4,57"	11,30"	21,05						

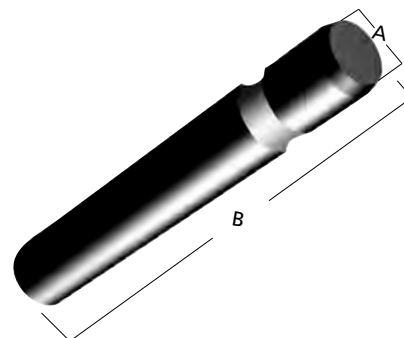


**John Deere System**  
Sistema John Deere

**John Deere**

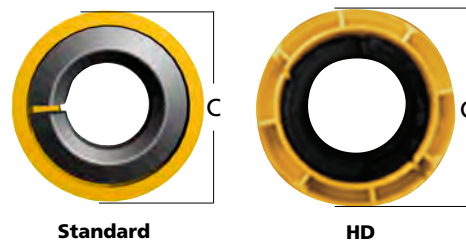
### Pin STANDARD Pasador STANDARD

mm.			Standard		HD		
A	B			OEM		OEM	
14	92	107-3308	<b>8E-6259</b>	9J-2308	<b>149-5733</b>	3G-9609	<b>33</b>
0,55"	3,62"	<b>132-4766</b>					



### Washer STANDARD Arandela STANDARD

	Standard		HD		
C		OEM		OEM	
30	<b>8E-6259</b>	9J-2308	<b>149-5733</b>	3G-9609	<b>33</b>
1,18"					

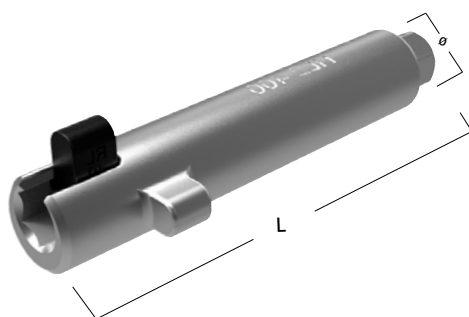


Standard

HD

Standard > **re-usable**  
HD > **non re-usable**

### PHL HAMMERLESS Pin Pasador HAMMERLESS

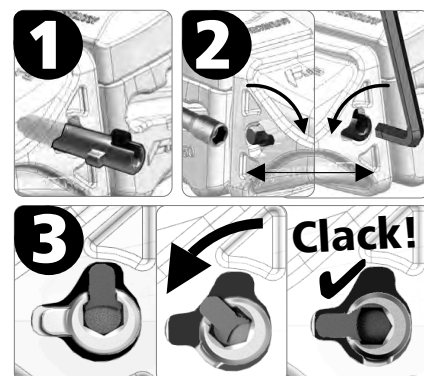


SOCKET HEX

HEX KEY

**M10 3/8" FD33 PHL M8 5/16"**

L	ø		REF	
105	14,2	0,10	<b>FD33 PHL</b>	<b>33</b>
4,13"	0,56"	0,22		



John Deere

**Edge Protectors** Protectores de Cuchilla

**T55**

**T26**



Kg	Lb		Part#	OEM	Machine
39	87	20	<b>T196455</b>	T196455	844 J

Kg	Lb		Part#	OEM	Machine
130	286	20	<b>T198126</b>	T198126	844 J

Keech

DIRECT  
REPLACEMENT  
PARTS FOR

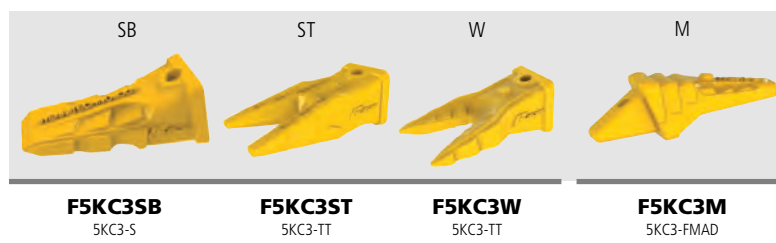
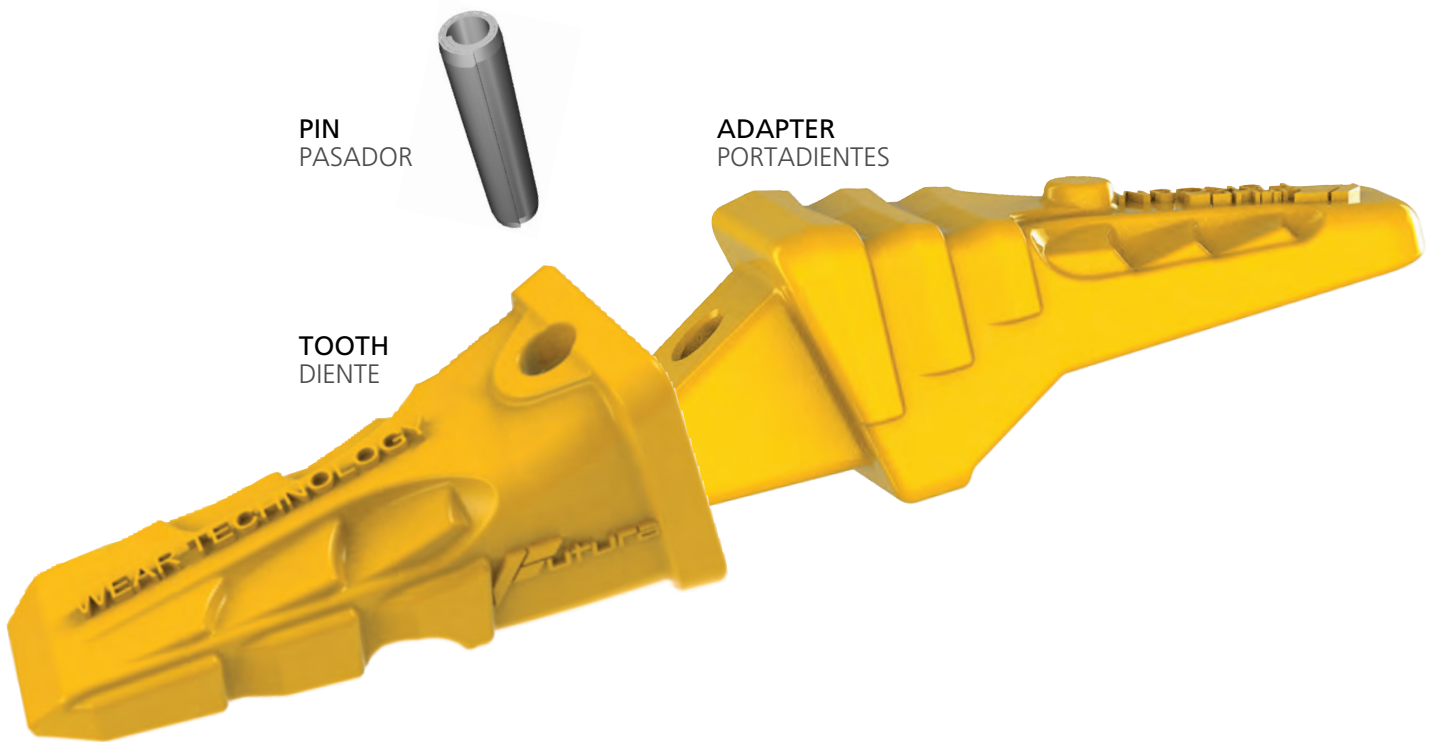
PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
available product**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# Keech

## Vertical Pin System Sistema Pasador Vertical



Keech

Vertical Pin Tooth SB Diente Pasador Vertical SB



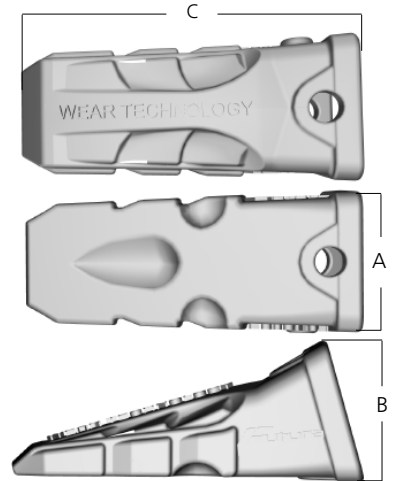
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF	PIN-10050 ES	F5KC3M 5KC3-FMAD
A	B	C	KG lb			
54 2,13"	53 2,09"	124,5 4,90"	0,89 1,96	<b>F5KC3SB</b> 5KC3-S		

Vertical Pin Tooth ST Diente Pasador Vertical ST



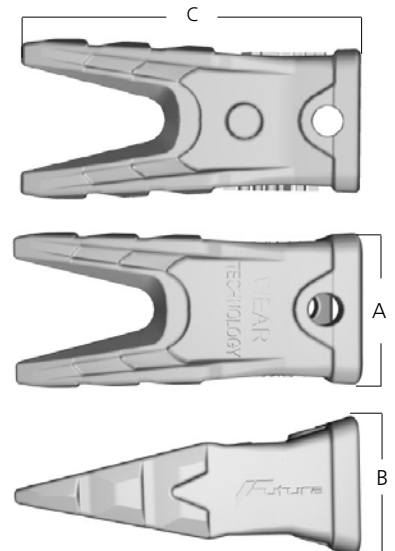
Wear factor | Factor desgaste



Penetration | Penetración



Impact | Impacto



mm.				REF	PIN-10050 ES	F5KC3M 5KC3-FMAD
A	B	C	KG lb			
54 2,13"	52,5 2,07"	129 5,08"	0,95 2,09	<b>F5KC3ST</b> 5KC3-TT		

## Vertical Pin Tooth W Diente Pasador Vertical W



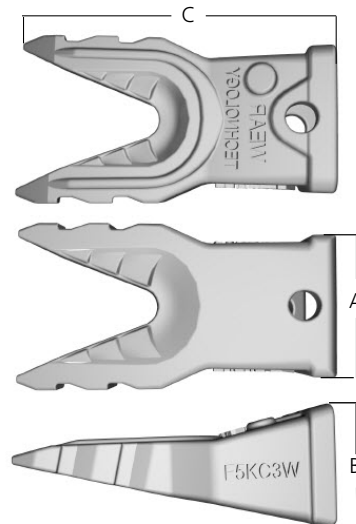
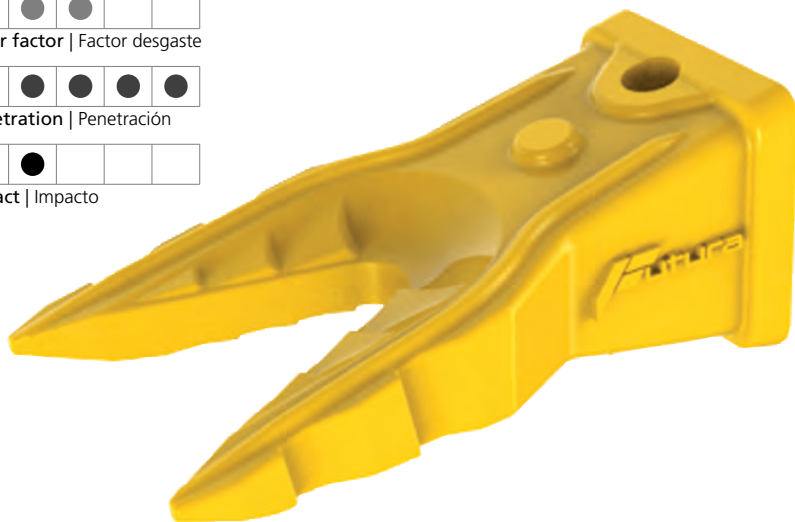
Wear factor | Factor desgaste



Penetration | Penetración

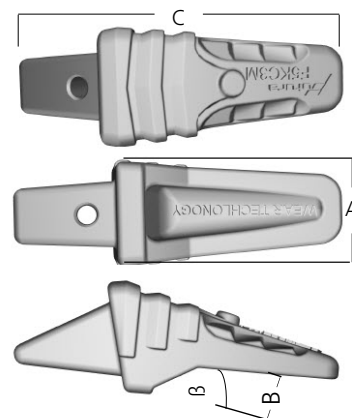


Impact | Impacto



mm.				REF		
A	B	C				
69 2,72"	50 1,97"	126 4,96"	0,86 1,90	<b>F5KC3W</b> 5KC3-TT	PIN-10050 ES	F5KC3M 5KC3-FMAD

## Vertical Pin Adapter M Portadientes Pasador Vertical ST




mm.						REF
A	B	B'	B°	C		
53,5 2,11"	52 2,05"	14,5 0,57"	30	159 6,26"	1,66 3,66	<b>F5KC3M</b> 5KC3-FMAD

Keech

**Spring Pin** Pasador



mm.			REF
L	Ø		
45 1,77"	10 0,39"	0,10 0,22	<b>PIN-10050 ES</b>

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# Kobelco

**Bold part number,  
available product**  
Other part numbers  
please consult

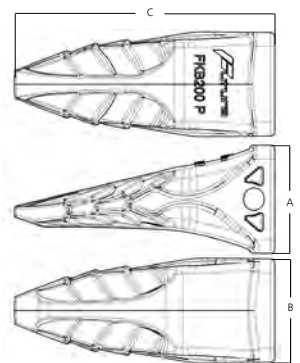
**Referencia en negrita  
producto disponible**  
Otras referencias  
consúltenos

## Side PIN tooth P Diente Pasador Lateral Penetración

Wear factor | Factor desgaste

Penetration | Penetración

Impact | Impacto



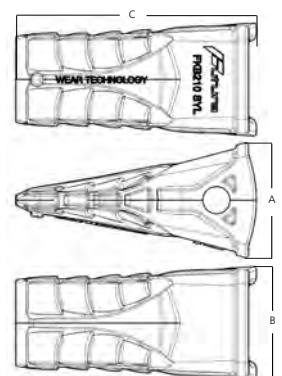
mm.			KG lb	REF				
A	B	C						
115 4,53"	110 4,33"	276 10,87"	8,10 17,86	<b>FKB200 P</b> YN61B010065001	YN61B010065002	YN61B010065003	-	<b>SK100</b>

## Side PIN tooth SYL Diente Pasador Lateral Simétrico

Wear factor | Factor desgaste

Penetration | Penetración

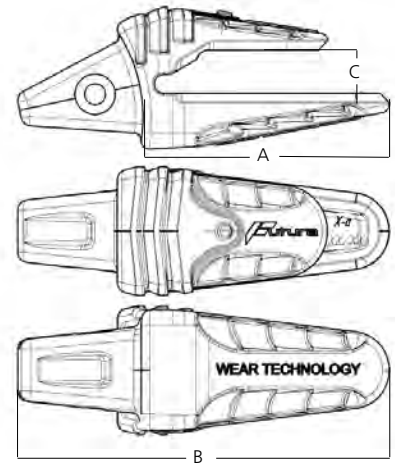
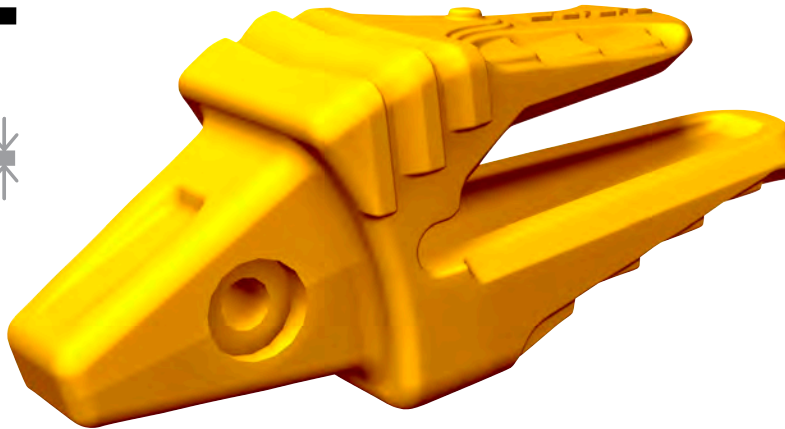
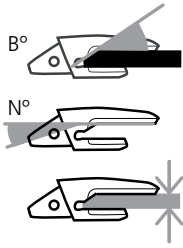
Impact | Impacto



mm.			KG lb	REF				
A	B	C						
124 4,88"	122 4,80"	260 10,24"	8,10 17,86	<b>FKB210 SYL</b> YN69B000085001-L	YN69B000085002-L	YN69B000085003-L	FKB210 YN61B01020P1-L	<b>SK210</b>
147 5,79"	137 5,39"	273 10,75"	13,30 29,32	<b>FKB350 SYL</b> LC69B00001S1-L	LC69B00001S2-L	LC69B00001S3-L	FKB350 LV61B01001P1-L	<b>SK350</b>

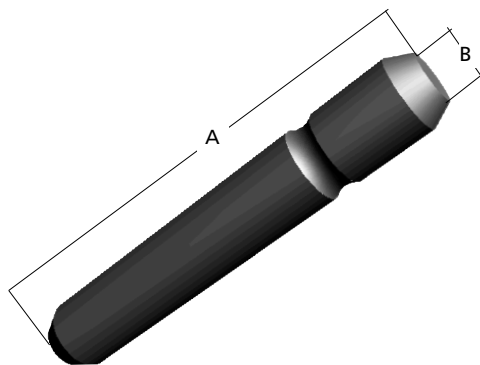
**Kobelco**

**Adapter Portadientes**



mm.											
A	B	C	B°	N°			REF	OEM			
243	364	42	30°	12°	<b>40</b>	1,6"	14,70 32	<b>FKB210</b> YN61B01020P1-L	YN69B00008S002-L	YN69B00008S003-L	<b>SK210</b>
9,6"	14,3"	1,7"									
244	370	52	30°	12°	<b>50</b>	2,0"	18,70 41	<b>FKB350</b> LV61B01001P1-L	LC69B00001S2-L	LC69B00001S3-L	<b>SK350</b>
9,6"	14,6"	2,0"									

**Pin and Washer Pasador y Arandela**



mm.		REF		
A	B			
118	20	<b>YN69B00008S002-L</b>	<b>YN69B00008S003-L</b>	<b>210</b>
4,65"	0,79"			
132	20	<b>LC69B00001S2-L</b>	<b>LC69B00001S3-L</b>	<b>350</b>
5,20"	0,79"			



DIRECT  
REPLACEMENT  
PARTS FOR

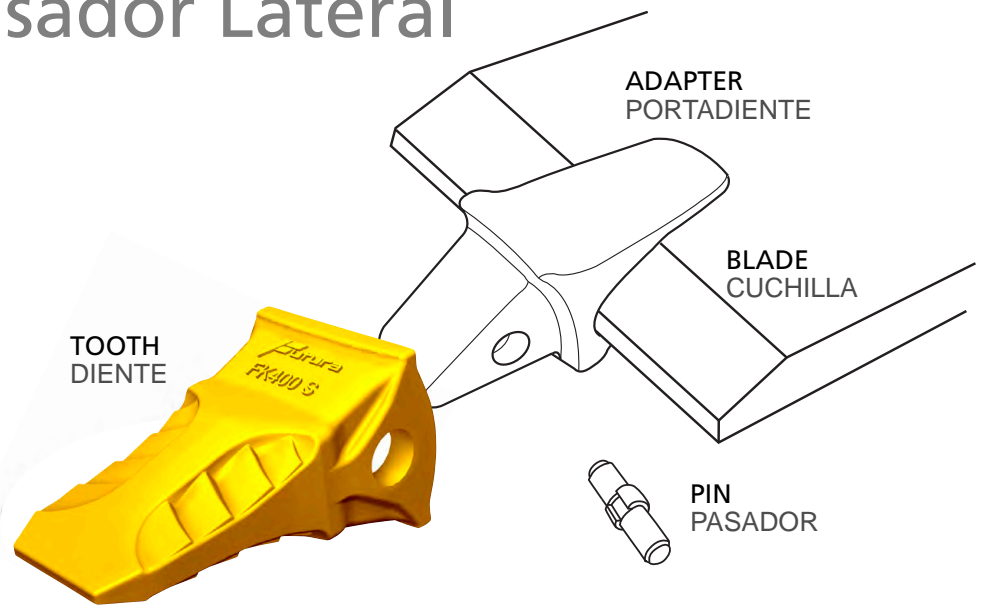
PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# Komatsu

## Side Pin Teeth Sistema Pasador Lateral

**Bold part number, available product**  
*Other part numbers please consult*






**Referencia en negrita producto disponible**  
*Otras referencias consúltenos*



EXCAVATOR TEETH  
EXCAVADORA

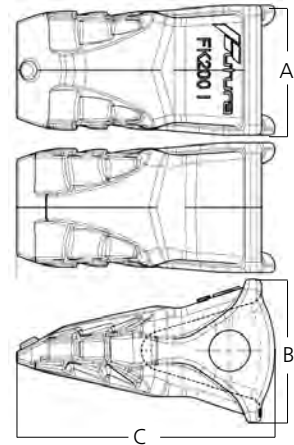


LOADER TEETH  
CARGADORA

IMPACT	STANDARD	ROCK CHISEL	TIGER LONG	ROCK PENETRATION LIGHT
				
<b>REF</b> Cross R.	<b>REF</b> Cross R.	<b>REF</b> Cross R.	<b>REF</b> Cross R.	<b>REF</b> Cross R.
<b>FK200 I</b>	<b>FK200 S</b> 205-70-19570	<b>FK200 RC</b> 205-70-19570	<b>FK200 TL</b> 205-70-19570	<b>200</b>
<b>FK300 I</b> 205-70-19570	<b>FK300 S</b> 207-70-14151	<b>FK300 RC</b> 207-70-14151	<b>FK300 TL</b> 207-70-14151	<b>300</b>
	<b>FK400 S</b> 208-70-14152	<b>FK400 RC</b> 208-70-14152	<b>FK400 TL</b> 208-70-14152	<b>400</b>
		<b>FK750 RC</b> 208-70-14152 209-70-54720		<b>650</b> <b>750</b>
		<b>FK1100 RC</b> 209-70-54720 21N-72-14290		<b>1000</b> <b>1100</b>
				<b>FK420 RPL</b> 423-847-1140 <b>420</b>
				<b>FK600 RPL</b> 426-847-1110 <b>600</b>

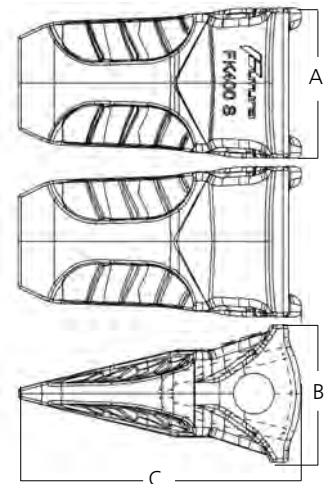
Komatsu

IMPACT Teeth Diente IMPACTO



A		B		C		kg	Lb	REF	OEM			
mm.	in	mm.	in	mm.	in							
102	4,02"	112	4,41"	203	7,99"	5,60	12,35	<b>FK200 I</b>		09244-02496	205-70-68141 205-939-7120	<b>200</b>
124	4,88"	121	4,76"	234	9,21"	8,60	18,96	<b>FK300 I</b>	205-70-19570	09244-02516	207-70-14142 207-939-3120	<b>300</b>

STANDARD Teeth Diente STANDARD



A		B		C		kg	Lb	REF	OEM			
mm.	in	mm.	in	mm.	in							
102	4,02"	112	4,41"	225	8,86"	5,10	11,24	<b>FK200 S</b>	205-70-19570	09244-02496	205-70-68141 205-939-7120	<b>200</b>
124	4,88"	121	4,76"	248	9,76"	7,93	17,48	<b>FK300 S</b>	207-70-14151	09244-02516	207-70-14142 207-939-3120	<b>300</b>
146	5,75"	135	5,31"	276	10,87"	11,60	25,57	<b>FK400 S</b>	208-70-14152	09244-03036	208-70-14143	<b>400</b>

## ROCK CHISEL Teeth Diente CINCEL ROCA



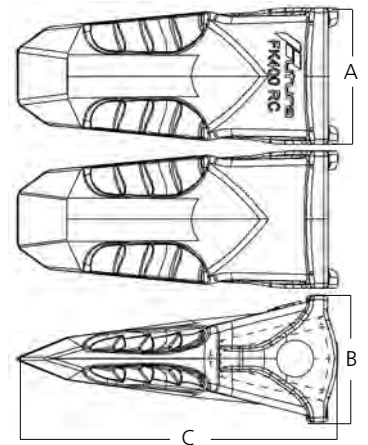
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



		mm.				Kg	Lb	REF	OEM			
A	in	B	in	C	in							
102	4,02"	112	4,41"	267	10,51"	7,00	15,43	<b>FK200 RC</b>	205-70-19570	09244-02496	205-70-68141 205-939-7120	<b>200</b>
124	4,88"	124	4,88"	295	11,61"	10,50	23,15	<b>FK300 RC</b>	207-70-14151	09244-02516	207-70-14142 207-939-3120	<b>300</b>
146	5,75"	136	5,35"	345	13,58"	15,50	34,17	<b>FK400 RC</b>	208-70-14152 RE	09244-03036	208-70-14143	<b>400</b>
185	7,28"	191	7,52"	438	17,24"	35,10	77,38	<b>FK750 RC</b>	208-70-14152 209-70-54720	209-70-54240	209-70-74140	<b>650 750</b>
188	7,40"	255	10,04"	518	20,39"	54,80	120,81	<b>FK1100 RC</b>	209-70-54720 21N-72-14290	21N-72-14330	21N-70-14140	<b>1000 1100</b>

## TIGER LONG Teeth Diente TIGER LONG



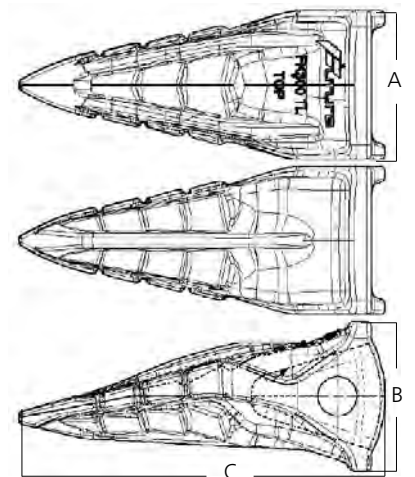
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



		mm.				Kg	Lb	REF	OEM			
A	in	B	in	C	in							
102	4,02"	112	4,41"	270	10,63"	5,40	11,90	<b>FK200 TL</b>	205-70-19570	09244-02496	205-70-68141 205-939-7120	<b>200</b>
122	4,80"	122	4,80"	299	11,77"	7,90	17,42	<b>FK300 TL</b>	207-70-14151	09244-02516	207-70-14142 207-939-3120	<b>300</b>
146	5,75"	137	5,39"	340	13,39"	11,40	25,13	<b>FK400 TL</b>	208-70-14152 RE	09244-03036	208-70-14143	<b>400</b>

Komatsu

ROCK PENETRATION LIGHT Teeth Diente Penetración Roca Ligero



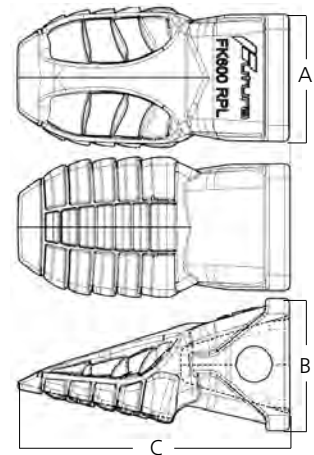
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN

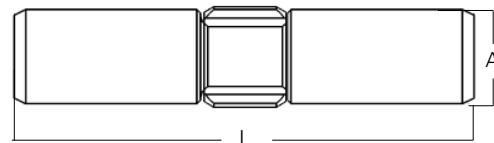


IMPACT | IMPACTO



mm.			Lb	REF	OEM	420	600	
A	B	C						
140	146	300	36,38	<b>FK420 RPL</b>	423-847-1140	09244-02516	423-847-1111	419-847-1210 423-847-1210
5,51"	5,75"	11,81"	16,50	<b>FK600 RPL</b>	426-847-1110	09244-03036	426-847-1111	425-847-1191 426-847-1120 426-847-1141
								426-847-1121 A

Pin Pasador



mm.			Lb	REF	OEM	420	600
A	L						
25	97	3,82"	0,34	0,75	<b>09244-02496</b>	205-70-19610 205-70-69130	PC100, PC100L-5, PC120-5, PC130, PC200LC-5, PW210-1
25	119	4,69"	0,42	0,93	<b>09244-02516</b>	175-78-21810	PC220, PC220LC-5, PC240LC-NLC, PC280LC-3, PC290 LC/NLC, PC300, PC300LC-5, PC340 LC/NLC PC360LC-3, PC-380 LC
30	145	5,71"	0,70	1,54	<b>09244-03036</b>	198-79-11320, A09-78-11730 426-847-1130	198-79-11320, A09-78-11730 426-847-1130
36	165	6,50"	1,30	2,87	<b>209-70-54240</b>	209-70-54240	PC650, PC650LC-3, PC650SE, PC750, PC750SE
40	165	6,50"	1,53	3,37	<b>21N-72-14330</b>	21N-70-00060	PC-1000LC-1 PC1000SE-1, PC-1100SP, PC-1200
50	183	7,20"	2,60	5,73	<b>21T-72-74320</b>	-	PC-1600, PC-1600-1

FUTURA FKM

**FKM**

DIRECT  
REPLACEMENT  
PARTS FOR

**Komatsu**

Compatible with K System

**Bold part number, available product**  
Other part numbers please consult

**Referencia en negrita producto disponible**  
Otras referencias consúltenos

TOOTH  
DIENTE

PIN  
PASADOR

ADAPTER  
PORTADIENTE

70 85

Hammerless  
SIZES



EXCAVATOR TEETH  
EXCAVADORA



LOADER TEETH  
CARGADORA

T	WT	RC	SYL	F	RPHD	PIN	
<b>FKM150 T</b> K15T		<b>FKM150 RC</b> K15RC	<b>FKM150 SYL</b> K15SYL	<b>FKM150 F</b> K15F		<b>FKM150 PN</b> KP15C	<b>15</b>
<b>FKM200 T</b> K20T	<b>FKM200 WT</b> K20WT	<b>FKM200 RC</b> K20RC	<b>FKM200 SYL</b> K20SYL	<b>FKM200 F</b> K20F	<b>FKM200 RPHD</b> K20RP2	<b>FKM200 PN</b> KP20C	<b>20</b>
<b>FKM250 T</b> K25T	<b>FKM250 WT</b> K25WT	<b>FKM250 RC</b> K25RC	<b>FKM250 SYL</b> K25SYL	<b>FKM250 F</b> K25F	<b>FKM250 RPHD</b> K25RP2	<b>FKM250 PN</b> KP25C	<b>25</b>
<b>FKM300 T</b> K30T	<b>FKM300 WT</b> K30WT	<b>FKM300 RC</b> K30RC	<b>FKM300 SYL</b> K30SYL	<b>FKM300 F</b> K30F	<b>FKM300 RPHD</b> K30RP2	<b>FKM300 PN</b> KP30C	<b>30</b>
<b>FKM400 T</b> K40T	<b>FKM400 WT</b> K40WT	<b>FKM400 RC</b> K40RC	<b>FKM400 SYL</b> K40SYL	<b>FKM400 F</b> K40F		<b>FKM400 PN</b> KP40C	<b>40</b>
<b>FKM500 T</b> K50T	<b>FKM500 WT</b> K50WT	<b>FKM500 RC</b> K50RC	<b>FKM500 SYL</b> K50SYL	<b>FKM500 F</b> K50F	<b>FKM500 RPHD</b> K50RP2	<b>FKM500 PN</b> KP50C	<b>50</b>
<b>HAMMERLESS SIZES</b>							
		<b>FKM700 RC</b> K70RC	<b>FKM700 SYL</b> K70SYL		<b>FKM700 RPHD</b> K70RP2	<b>FKM700 PN</b> KP70C	<b>70</b>
<b>FKM850 TL</b> K85T		<b>FKM850 RC</b> K85RC	<b>FKM850 SYL</b> K85SYL		<b>FKM850 RPHD</b> K85RP2	<b>FKM850 PN</b> KP85C, KP85X	<b>85</b>

**FUTURA FKM**

**SYMMETRICAL Teeth Diente SIMÉTRICO SYL**



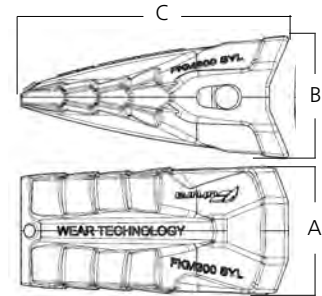
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



HAMMERLESS RECESS T70 T85

		mm.													
A	in	B	in	C	in		Lb	REF	OEM			OEM			
97	3,82"	95	3,74"	205	8,07"	3,85	8,49	<b>FKM150 SYL</b>	K15SYL	FKM150 PN		KP15C	K112515		<b>15</b>
112	4,41"	109	4,29"	234	9,21"	5,90	13,01	<b>FKM200 SYL</b>	K20SYL	FKM200 PN		KP20C	K115020		<b>20</b>
126	4,96"	124	4,88"	265	10,43"	8,40	18,52	<b>FKM250 SYL</b>	K25SYL	FKM250 PN		KP25C	K117525		<b>25</b>
140	5,51"	135	5,31"	296	11,65"	11,70	25,79	<b>FKM300 SYL</b>	K30SYL	FKM300 PN		KP30C	K120030		<b>30</b>
149	5,87"	141	5,55"	315	12,40"	13,75	30,31	<b>FKM400 SYL</b>	K40SYL	FKM400 PN		KP40C	K125040		<b>40</b>
170	6,69"	163	6,42"	350	13,78"	19,40	42,77	<b>FKM500 SYL</b>	K50SYL	FKM500 PN		KP50C	K120050		<b>50</b>
182	7,17"	184	7,24"	379	14,92"	24,60	54,23	<b>FKM700 SYL</b>	K70TSYL	FKM700 PN		KP70C	K1070M70		<b>70</b>
192	7,56"	185	7,28"	403	15,87"	29,00	63,93	<b>FKM850 SYL</b>	K85SYL	FKM850 PN	KP85C, KP85X	FKM850-75		<b>85</b>	

**FLARE Teeth Diente ANCHO**



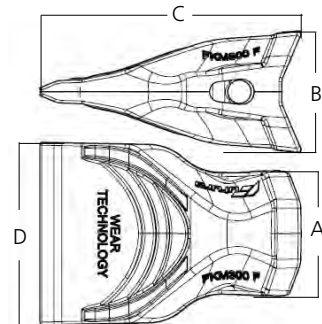
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



		mm.													
A	in	B	in	C	in	D	in		Lb	REF	OEM		OEM		
97	3,82"	95	3,74"	203	7,99"	142	5,59"	4,70	10,36	<b>FKM150 F</b>	K15F	FKM150 PN	KP15C	K112515	
112	4,41"	109	4,29"	233	9,17"	163	6,42"	7,00	15,43	<b>FKM200 F</b>	K20F	FKM200 PN	KP20C	K115020	
126	4,96"	124	4,88"	264	10,39"	184	7,24"	10,30	22,71	<b>FKM250 F</b>	K25F	FKM250 PN	KP25C	K117525	
140	5,51"	131	5,16"	291	11,46"	203	7,99"	16,20	35,71	<b>FKM300 F</b>	K30F	FKM300 PN	KP30C	K120030	
149	5,87"	141	5,55"	316	12,44"	217	8,54"	17,50	38,58	<b>FKM400 F</b>	K40F	FKM400 PN	KP40C	K125040	
170	6,69"	163	6,42"	346	13,62"	239	9,41"	25,90	57,10	<b>FKM500 F</b>	K50F	FKM500 PN	KP50C	K120050	

FUTURA FKM

ROCK CHISEL Teeth Diente CINCEL ROCA



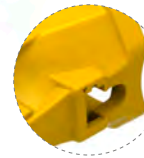
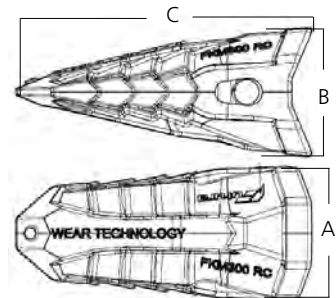
WEAR FACTOR | DESGASTE



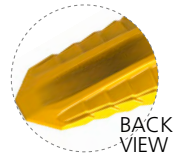
PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



HAMMERLESS RECESS T70 T85



BACK VIEW

mm.		in		in		in		Lb	REF	OEM	OEM	OEM	OEM	mm.
A	B	C	Weight	Weight	Weight	Weight								
97	3,82"	95	3,74"	217	8,54"	3,85	8,49	<b>FKM150 RC</b>	K15RC	FKM150 PN	KP15C	K112515	<b>15</b>	
112	4,41"	109	4,29"	247	9,72"	5,60	12,35	<b>FKM200 RC</b>	K20RC	FKM200 PN	KP20C	K115020	<b>20</b>	
124	4,88"	124	4,88"	279	10,98"	8,20	18,08	<b>FKM250 RC</b>	K25RC	FKM250 PN	KP25C	K117525	<b>25</b>	
140	5,51"	135	5,31"	310	12,20"	11,40	25,13	<b>FKM300 RC</b>	K30RC	FKM300 PN	KP30C	K120030	<b>30</b>	
149	5,87"	141	5,55"	333	13,11"	14,00	30,86	<b>FKM400 RC</b>	K40RC	FKM400 PN	KP40C	K125040	<b>40</b>	
165	6,50"	163	6,42"	366	14,41"	19,20	42,33	<b>FKM500 RC</b>	K50RC	FKM500 PN	KP50C	K120050	<b>50</b>	
182	7,17"	184	7,24"	398	15,67"	24,00	52,91	<b>FKM700 RC</b>	K70RC	FKM700 PN	KP70C	K1070M70	<b>70</b>	
192	7,56"	185	7,28"	424	16,69"	28,00	61,73	<b>FKM850 RC</b>	K85RC	FKM850 PN	KP85C, KP85X	FKM850-75	<b>85</b>	

TWIN TIGER Teeth Diente TIGER DOBLE



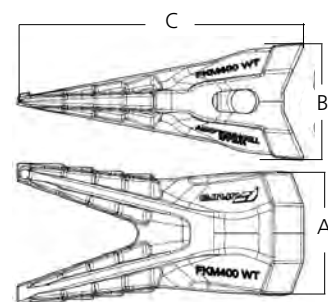
WEAR FACTOR | DESGASTE



PENETRATION | PENETRACIÓN



IMPACT | IMPACTO



mm.		in		in		in		Lb	REF	OEM	OEM	OEM	OEM	mm.
A	B	C	Weight	Weight	Weight	Weight								
112	4,41"	109	4,29"	257	10,12"	5,60	12,35	<b>FKM200 WT</b>	K20WT	FKM200 PN	KP20C	K115020	<b>20</b>	
126	4,96"	124	4,88"	291	11,46"	7,80	17,20	<b>FKM250 WT</b>	K25WT	FKM250 PN	KP25C	K117525	<b>25</b>	
141	5,55"	136	5,35"	321	12,64"	9,70	21,38	<b>FKM300 WT</b>	K30WT	FKM300 PN	KP30C	K120030	<b>30</b>	
149	5,87"	141	5,55"	344	13,54"	12,10	26,68	<b>FKM400 WT</b>	K40WT	FKM400 PN	KP40C	K125040	<b>40</b>	
170	6,69"	163	6,42"	384	15,12"	17,90	39,46	<b>FKM500 WT</b>	K50WT	FKM500 PN	KP50C	K120050	<b>50</b>	

**FUTURA FKM**

**TIGER Teeth Diente TIGER**



WEAR FACTOR | DESGASTE

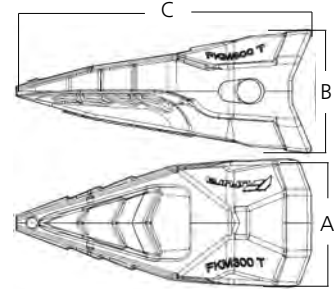
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PENETRATION | PENETRACIÓN

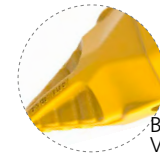
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IMPACT | IMPACTO

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HAMMERLESS RECESS T85



BACK VIEW

mm.		in		in		in		Lb	REF	OEM	OEM	OEM	OEM	15
A	B	C	A	B	C	kg								
97	3,82"	95	3,74"	227	8,94"	3,50	7,72	<b>FKM150 T</b>	K15T	FKM150 PN	KP15C	K112515	<b>15</b>	
112	4,41"	109	4,29"	257	10,12"	5,15	11,35	<b>FKM200 T</b>	K20T	FKM200 PN	KP20C	K115020	<b>20</b>	
126	4,96"	124	4,88"	292	11,50"	7,40	16,31	<b>FKM250 T</b>	K25T	FKM250 PN	KP25C	K117525	<b>25</b>	
140	5,51"	135	5,31"	323	12,72"	10,30	22,71	<b>FKM300 T</b>	K30T	FKM300 PN	KP30C	K120030	<b>30</b>	
149	5,87"	141	5,55"	344	13,54"	12,20	26,90	<b>FKM400 T</b>	K40T	FKM400 PN	KP40C	K125040	<b>40</b>	
170	6,69"	163	6,42"	381	15,00"	16,70	36,82	<b>FKM500 T</b>	K50T	FKM500 PN	KP50C	K120050	<b>50</b>	
192	7,56"	185	7,28"	440	17,32"	26,00	57,32	<b>FKM850 TL</b>	K85T	FKM850 PN	KP85C, KP85X	FKM850-75	<b>85</b>	

**ROCK PENETRATION HD Teeth Diente CARGADORA RPHD**



WEAR FACTOR | DESGASTE

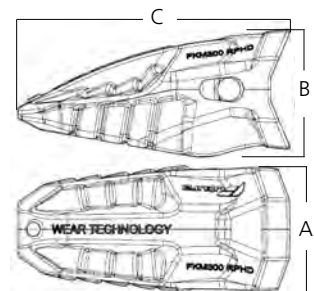
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PENETRATION | PENETRACIÓN

● ● ● □ □

IMPACT | IMPACTO

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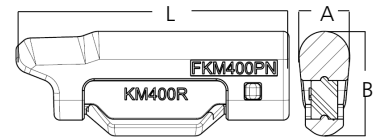
HAMMERLESS RECESS T70-85

mm.		in		in		in		Lb	REF	OEM	OEM	OEM	OEM	20
A	B	C	A	B	C	kg								
112	4,41"	110	4,33"	245	9,65"	8,90	19,62	<b>FKM200 RPHD</b>	K20RP2	FKM200 PN	KP20C	K115020	<b>20</b>	
126	4,96"	124	4,88"	279	10,98"	13,00	28,66	<b>FKM250 RPHD</b>	K25RP2	FKM250 PN	KP25C	K117525	<b>25</b>	
140	5,51"	135	5,31"	308	12,13"	16,80	37,04	<b>FKM300 RPHD</b>	K30RP2	FKM300 PN	KP30C	K120030	<b>30</b>	
170	6,69"	163	6,42"	364	14,33"	28,50	62,83	<b>FKM500 RPHD</b>	K50RP2	FKM500 PN	KP50C	K120050	<b>50</b>	
184	7,24"	198	7,80"	393	15,47"	36,00	79,37	<b>FKM700 RPHD</b>	K70RP2	FKM700 PN	KP70C	K1070M70	<b>70</b>	
192	7,56"	202	7,95"	440	17,32"	54,00	119,05	<b>FKM850 RPHD</b>	K85RP3	FKM850 PN	KP85C, KP85X	FKM850-75	<b>85</b>	



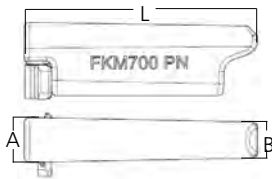
FUTURA FKM

FUTURA HAMMER PIN Pasador de Martillo

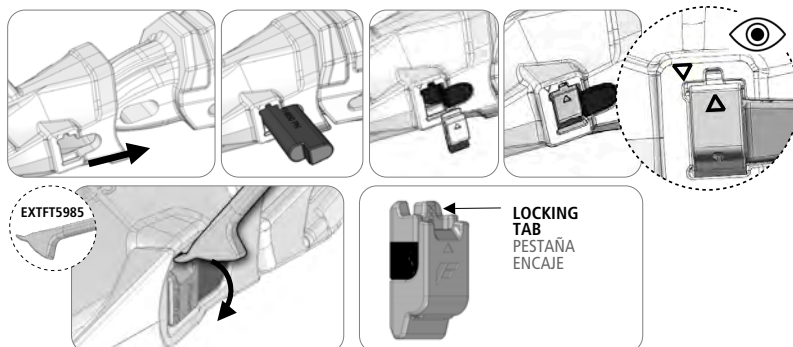


mm.										REF	OEM	
A	in	B	in	C	in		Lb					
18	0,71"	36,3	1,43"	92,5	3,64"	0,23	0,51	<b>FKM150 PN</b>	KP15C	K112515	<b>15</b>	
19	0,75"	40,2	1,58"	103,2	4,06"	0,29	0,64	<b>FKM200 PN</b>	KP20C	K115020	<b>20</b>	
22	0,87"	43,4	1,71"	117,9	4,64"	0,46	1,01	<b>FKM250 PN</b>	KP25C	K117525	<b>25</b>	
24	0,94"	49,4	1,94"	130,5	5,14"	0,69	1,52	<b>FKM300 PN</b>	KP30C	K120030	<b>30</b>	
26	1,02"	52,8	2,08"	138,7	5,46"	0,75	1,65	<b>FKM400 PN</b>	KP40C	K125040	<b>40</b>	
31	1,22"	57,9	2,28"	156,5	6,16"	1,05	2,31	<b>FKM500 PN</b>	KP50C	K120050	<b>50</b>	

FUTURA HAMMERLESS PIN Pasador Sin Martillo Hammerless



mm.										REPLACEMENT		
A	in	B	in	L	in		Lb	REF	OEM			
34,2	1,35"	27,8	1,09"	179,7	7,07"	1,7	3,75	<b>FKM700 PN</b>	KP70C	<b>FXK700 INT2</b>	K1070M70	<b>70</b>
56,6	2,23"	53,1	2,09"	186,2	7,33"	1,85	4,08	<b>FKM850 PN</b>	KP85C KP85X	<b>FXK850 INT2</b>	K1070M70	<b>85</b>



**EXTFT5985**  
EXTRACTION  
TOOL



**KVX**

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# KVX

## Bolt-On Teeth

### Dientes Atornillables

**Bold part number, available product**  
Other part numbers please consult

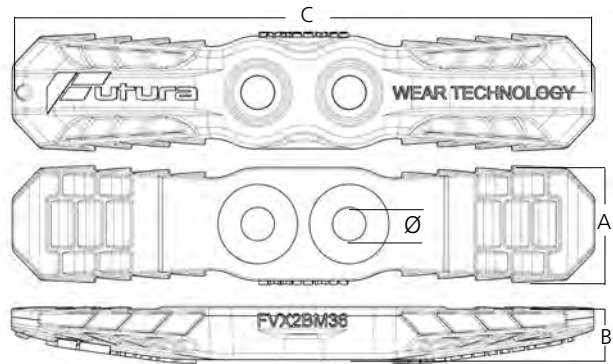
**Referencia en negrita producto disponible**  
Otras referencias consúltenos



SIZE		SIZE		OEM			Ø	in	SIZE
M27	6-9 TON	M27	<b>FVX2BM27</b>	131202	<b>BK-27060</b>	BOLT M27X60	27,8	1,09"	<b>M27</b>
M36	10-17 TON	M36	<b>FVX2BM36</b>	131203	<b>BK-36077</b>	BOLT M36X77	36,6	1,44"	<b>M36</b>
M48	18-24 TON	M48	<b>FVX2BM48</b>	131206	<b>BK-48100</b>	BOLT M48X100	48,9	1,93"	<b>M48</b>

KVX

Bolt-On Tooth Diente Atornillable



A	in	B	mm	in	C	in	Ø	in		Lb	Part#	OEM		SIZE
90	3,54"	44	1,73"	522	20,55"	<b>27,8</b>	1,09"	9,3	20	<b>FVX2BM27</b>	131202		6-11 TON	<b>M27</b>
123	4,84"	58	2,28"	637	25,08"	<b>36,6</b>	1,44"	22,5	50	<b>FVX2BM36</b>	131203		11-23 TON	<b>M36</b>
154	6,06"	77	3,03"	796	31,34"	<b>48,9</b>	1,93"	38,0	84	<b>FVX2BM48</b>	131206		23-35 TON	<b>M48</b>

Bolts for KVX Tooth Tornillos para dientes KVX



Ø	in	L	mm	in		Lb	Part#	OEM		SIZE
<b>20</b>	0,79"	50	1,97"	0,14	0,31	<b>BK-20050</b>				<b>M20</b>
<b>27,8</b>	1,09"	60	2,36"	0,37	0,81	<b>BK-27060</b>	35068		6-11 TON	<b>M27</b>
<b>36,6</b>	1,44"	77	3,03"	0,66	1,45	<b>BK-36077</b>	035073H		11-23 TON	<b>M36</b>
<b>48,9</b>	1,93"	100	3,94"	1,65	3,63	<b>BK-48100</b>	138829H		23-35 TON	<b>M48</b>
<b>60</b>	2,36"	101	3,98"	2,50	5,50	<b>BK-60101</b>				<b>M60</b>
<b>60</b>	2,36"	130	5,12"	3,12	6,86	<b>BK-60130</b>				<b>M60</b>

Mini Excavator

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# Mini Excavators

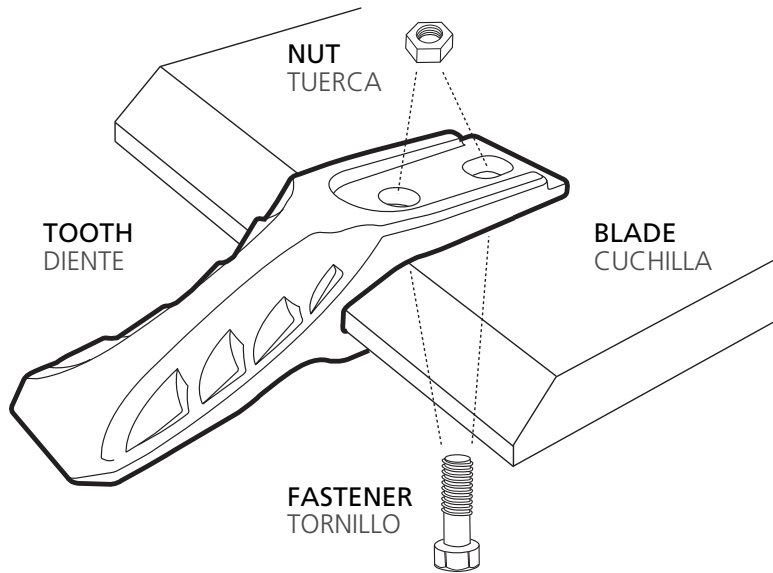
**Bold part number,  
available product**

*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**

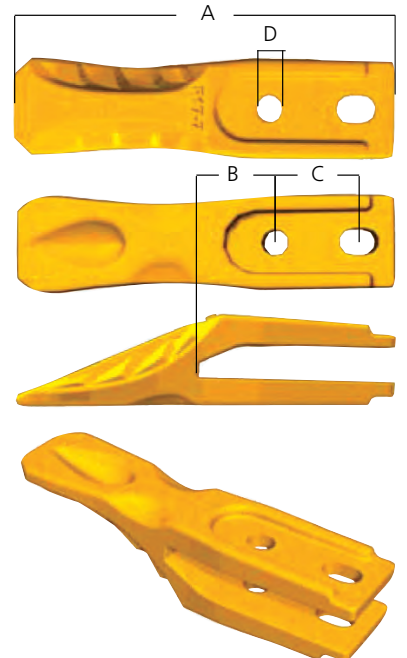
*Otras referencias  
consúltenos*

## Teeth Dientes



### Bolt-On Mini Excavator Tooth Diente Atornillable para Miniexcavadora

●	●	●	□	□
Wear factor   Factor desgaste				
●	●	●	□	□
Penetration   Penetración				
●	●	●	□	□
Impact   Impacto				



mm.									
A	B	C	D						
193	40	40	45	14	16	1,28	<b>F17-7</b>	M-12040	TM-012
7,60"	1,57"	1,57"	1,77"	0,55"	0,63"	2,82	17-7		

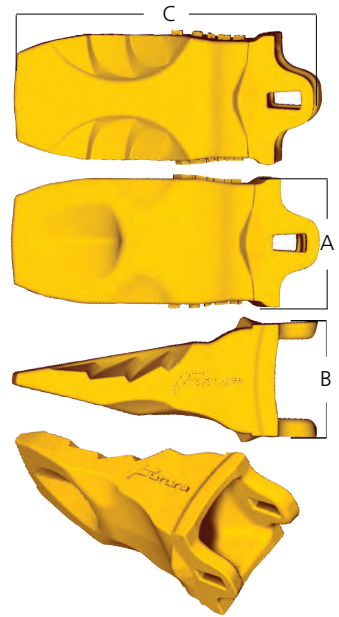
**Mini Excavator**

**Vertical Pin Tooth** Diente Pasador Vertical Largo

Wear factor | Factor desgaste

Penetration | Penetración

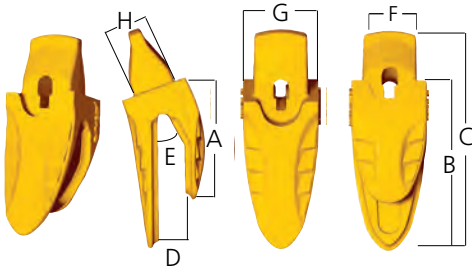
Impact | Impacto



mm.							
A	B	C					
52	51	122	0,70	<i>FE15 L</i>	18-PN	15-LK	FE15 R
2,05"	2,01"	4,80"	1,54	*			<b>15</b>

\* Replaceable FT130 S

**Vertical Pin Weld-On Adapter** Portadientes Pasador Vertical Soldable

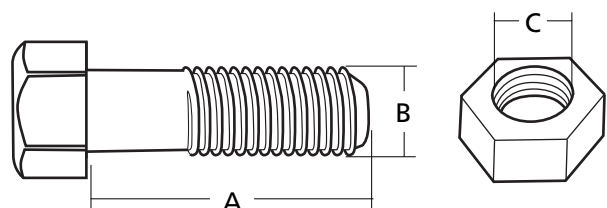


mm.										
A	B	C	D	E	F	G	H			
83	111	130	11	24°	36	51	58	15	1,03	<i>FE15 R</i>
3,27"	3,98"	5,91"	0,71"		1,42"	2,01"	2,28"	0,63"	2,27	*
										18-PN
										15-LK
										FE15 L
										<b>15</b>

\* Replaceable FT130

**Bolts & Nuts** Tornillos y Tuercas

mm.			OEM	BYG ref.	OEM	BYG ref.
A	B	Thread		C		
40	12	1,75	<b>6V-8197</b>	<b>M-12040</b>	M-12	<b>6V-8149</b>
1,57"	0,47"	0,07"				<b>TM-012</b>



Tata-Hitachi

DIRECT REPLACEMENT PARTS FOR

PIEZAS DE REEMPLAZO DIRECTO PARA

# Tata-Hitachi

## Side Pin Teeth Dientes Pasador Lateral

**Bold part number, available product**  
Other part numbers please consult

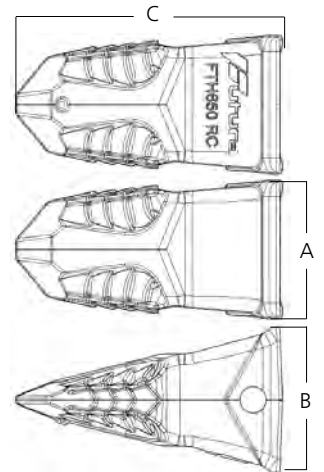
**Referencia en negrita producto disponible**  
Otras referencias consúltenos

### ROCK CHISEL Teeth Diente Pasador Lateral CINCEL ROCA

● ● ● | WEAR FACTOR | DESGASTE

● ● ● ● ● | PENETRATION | PENETRACION

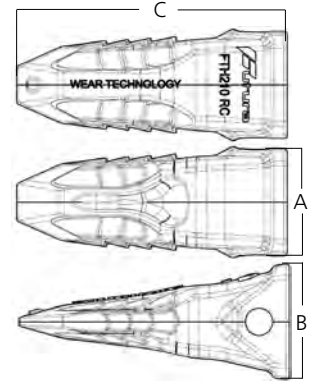
● ● ● | IMPACT | IMPACTO





mm.			KG	REF				
A	B	C						
171 6,73"	181 7,13"	330 12,99"	21,20 46,74	<b>FTH650 RC</b> TD08460	- TE09010	- TE09011	-	<b>65</b>
192,9 7,59"	202 7,95"	446 17,56"	40,80 89,95	<b>FTH1200 RC</b> TD08413	- TE08790	- TE08791	<b>FTH1200 PNHL</b>	<b>120</b>

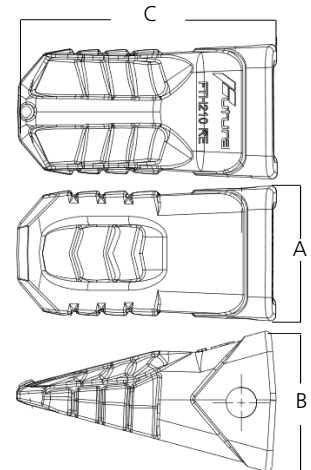
Tata-Hitachi




ROCK CHISEL Teeth Diente CINCEL ROCA



mm.			KG	REF	CROSS		
A	B	C					
110 4,33"	119 4,69"	277 10,91"	7,30 16,09	<b>FTH210 RC</b>	TB00705RC	FTH210-B90	<b>21</b>

ROCK EXPLODER Teeth Diente Pasador Lateral ROCK EXPLODER

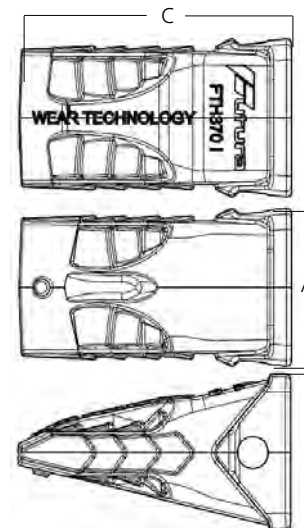


mm.			KG	REF	CROSS			
A	B	C						
128 5,04"	133 5,24"	236 9,29"	9,40 20,72	<b>FTH210 RE</b>	TB00705	TE21526	TE21627	<b>21</b>
159 6,26"	143 5,63"	248 9,76"	12,30 27,12	<b>FTH350 RE</b>	TB00822	TB00822 LP TE04412	TB00822 R -	<b>35</b>



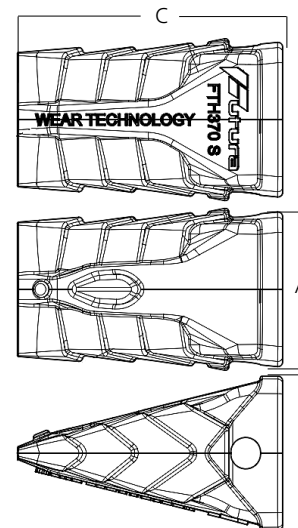
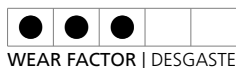
Tata-Hitachi

### IMPACT Teeth Diente IMPACTO



mm.			KG	REF	CROSS	FTH370	37
A	B	C					
136 5,35"	135 5,31"	233 9,17"	10,20 22,49	<b>FTH370 I</b>	TE06423	FTH370	37

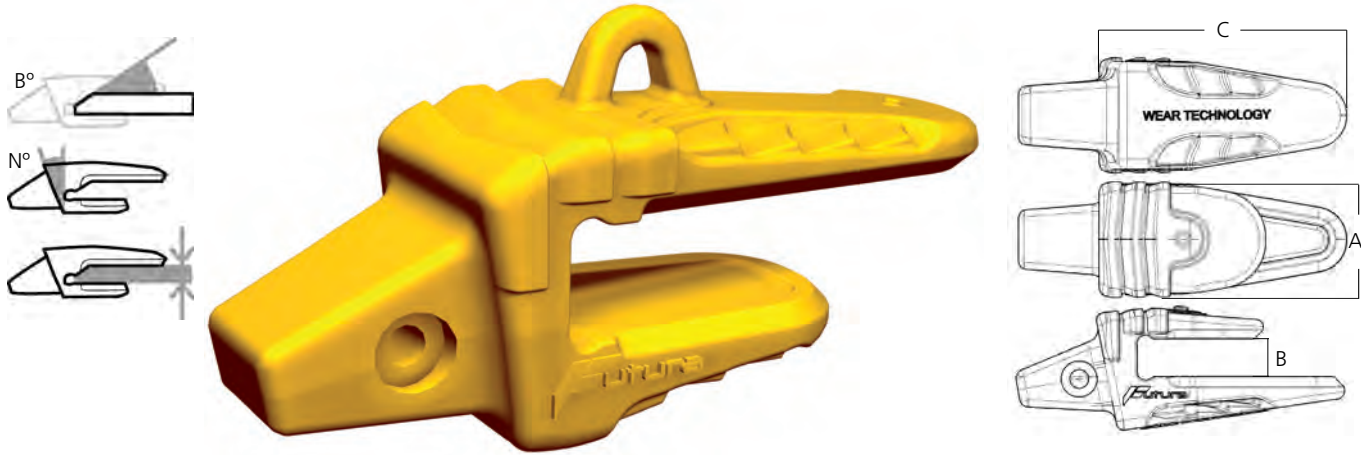
### SYMMETRICAL Teeth Diente SIMÈTRICO



mm.			KG	REF	CROSS	FTH370	37
A	B	C					
136 5,35"	135 5,31"	233 9,17"	10,50 23,15	<b>FTH370 S</b>	TE06423	FTH370	37

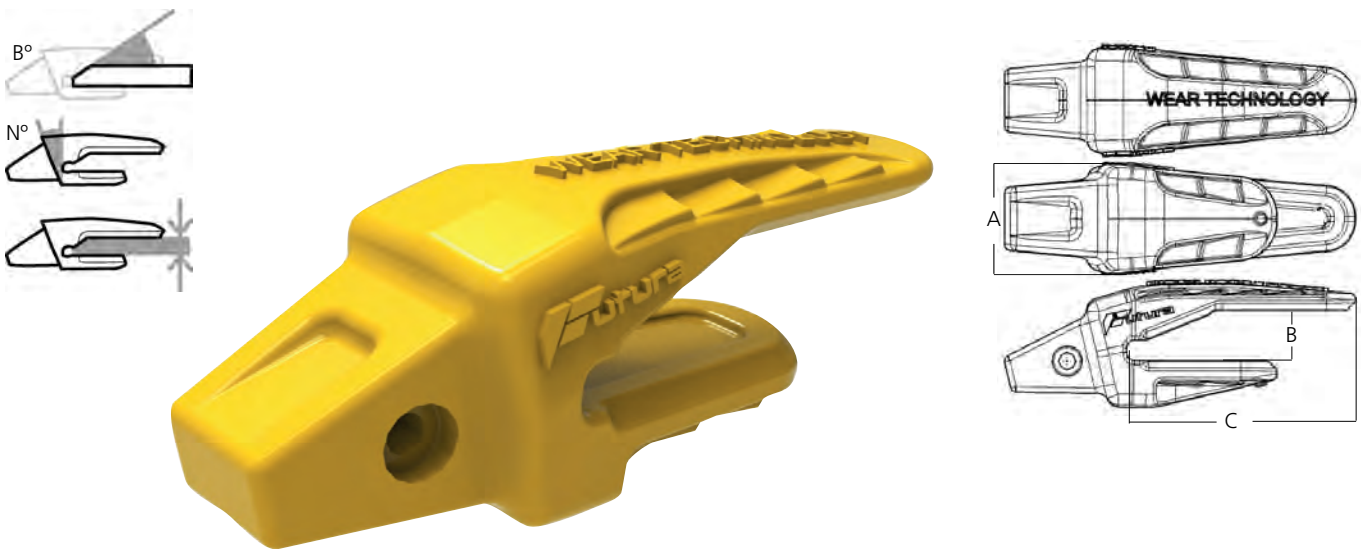
**Tata-Hitachi**

**Adapter Portadientes**



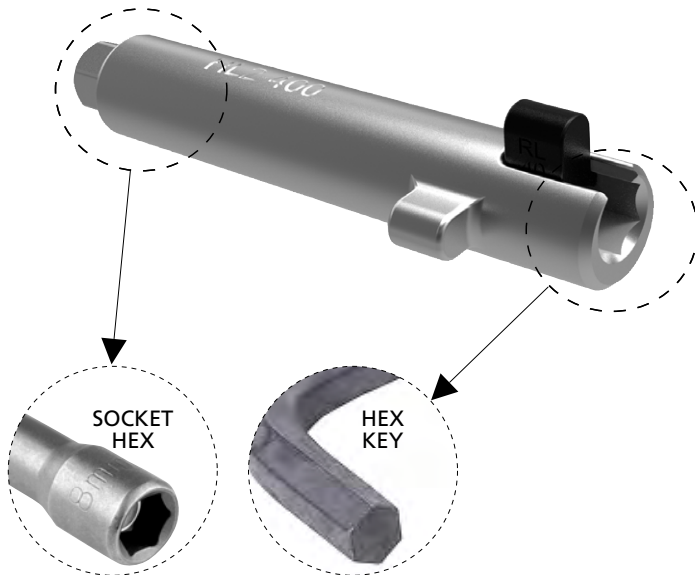
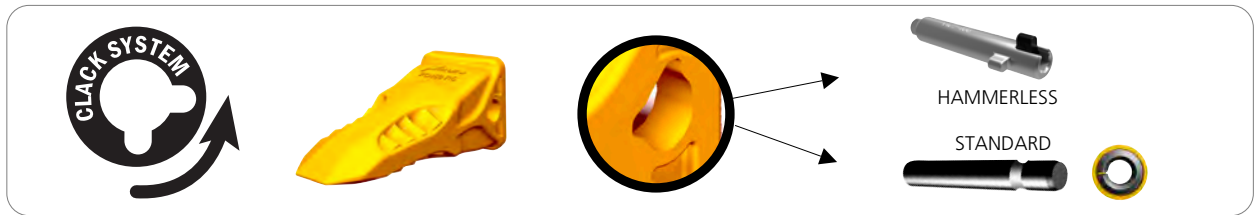
mm.		C		B°	N°		REF	
A	B							
129 5,08"	42 1,65"	254 10,00"	40 1,57"	90	10	14,60 32,19	<b>FTH210-B90</b>	<b>21</b>
152 5,98"	62 2,44"	340 13,39"	60 2,36"	90	13,2	26,20 57,76	<b>FTH350-B90</b>	<b>35</b>

**Adapter Portadientes**



mm.		C		B°	N°		REF	CROSS	
A	B								
138 5,43"	63 2,48"	290 11,42"	60 2,36"	22°	13°	23,60 52,03	<b>FTH370</b>	TE06422	<b>37</b>

## Hammerless Pin Pasador Hammerless

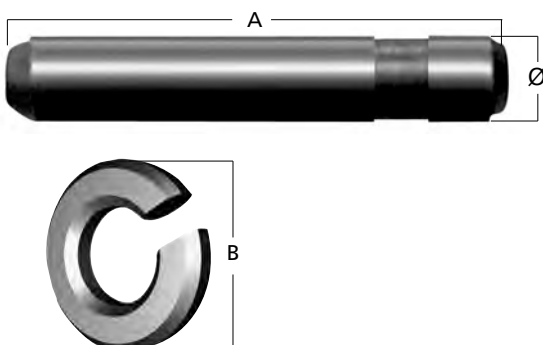


**2 LOCKING OPTION**  
**2 OPCIONES DE MONTAJE**  
**2 OPTIONS DE MONTAGE**  
**2 OPÇÕES DE MONTAGEM**

mm.		OEM								
L	Ø									

180	36,8	1,5	<b>FTH1200 PNHL</b>	TEO8790	TEO8791	•	•	•	M24 15/16" M21 13/16"	<b>120</b>
7,09"	1,45"	3,31								

## STANDARD Pin and Washer Pasador y Arandela STANDARD



mm.								
A	Ø			B				
146	20	0,17	<b>TE21526</b>	36,2	0,04	<b>TE21627</b>		<b>21</b>
5,75"	0,79"	0,37	TE21526	1,43"	0,09			
146	20	0,35	<b>FB00822 LP</b>	38	0,05	<b>TB00822 RT</b>		<b>35</b>
5,75"	0,79"	0,77	TEO4412	1,50"	0,11			
122	18,5	0,25	-					<b>65</b>
4,80"	0,73"	0,55	TEO9010					
146	20	1,42						<b>120</b>
5,75"	0,79"	3,13	TEO8790					

**Tata-Hitachi**

**ENGLISH**

**ASSEMBLY INSTRUCTIONS**

► The FUTURA systems HL2, RHP and PHL work with FUTURA teeth ONLY ► For Adapters FC2 omit step 1

1 Insert the washer into the adapter washer hole as shown in the picture  
 2 Mount the tooth on the adapter/ripper 3 Insert the pin into the hole  
 4 Use a SOCKET HEX or a HEX KEY (check the HEX TABLE below for recommended keys for each pin) to rotate the pin from any of its ends. A rubber insert under locking tab allows the locking tab (fig 5) to compress, rotate and lock. 6 Each pin comes with a heavy duty dirt plug to keep fines out of the pin's socket. Choose the right plug according to the tooth recess and place. Discard the other plug.

**DISASSEMBLY**

Repeat steps in reverse order.

**ESPAÑOL**

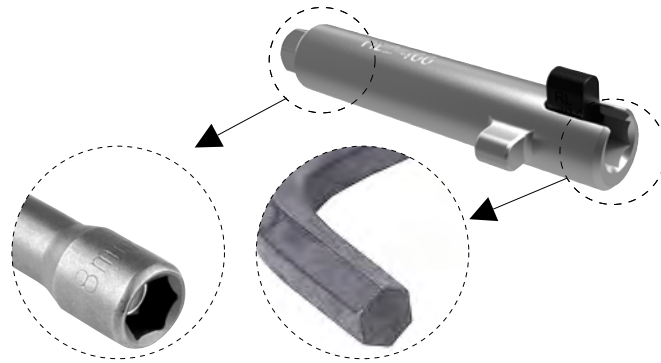
**INSTRUCCIONES DE MONTAJE**

► El sistema FUTURA HL2, RHP y PHL FUNCIONA SOLO CON DIENTES MARCA FUTURA ► Para el montaje con portadientes FC2 omite el paso 1

1 Inserte la arandela en el hueco del portadientes/ripper en la posición que se indica 2 Encaje el diente en el portadientes 3 Coloque el pasador en el orificio del diente como se indica 4 Utilice una llave ALLEN o un VASO HEXAGONAL para girar el pasador (compruebe el tamaño de la llave en la tabla más abajo) 5 El mecanismo de fijación del pasador permite que la pestaña de cierre se comprima, rote y bloquee el diente 6 Los pasadores HL2 van acompañados de un tapón de goma anti-suciedad para sus extremos. Elija el que mejor se ajuste y colóquelo en posición. Los tapones de goma ayudan a prevenir la entrada de suciedad. Deseche el tapón sobrante.

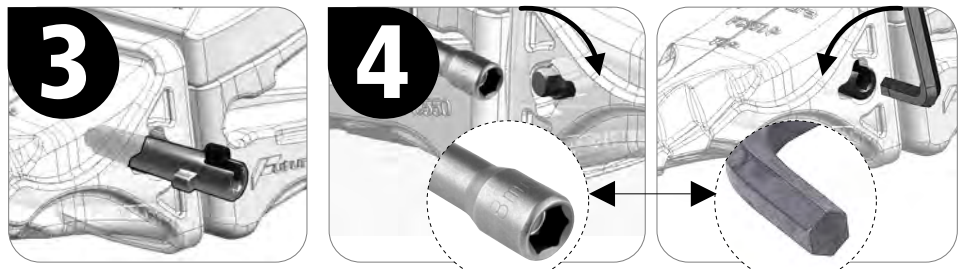
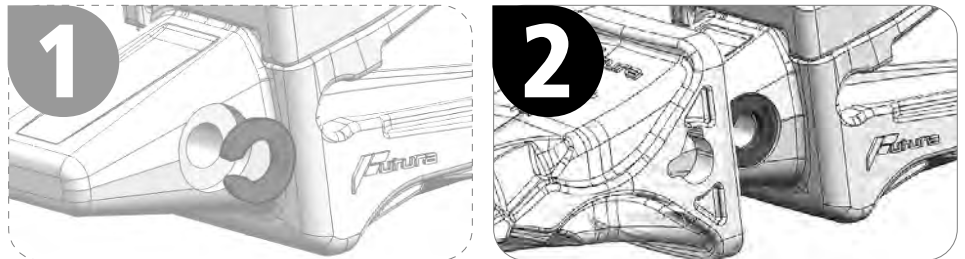
**DESMONTAJE**

Repetir los pasos en orden inverso.

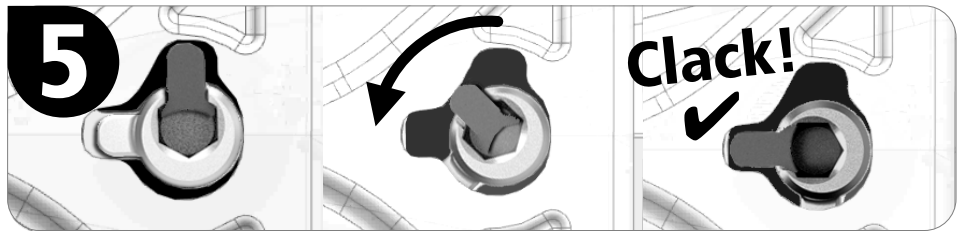


SOCKET HEX **PNHL** HEX KEY  
**M21 13/16"** FTH1200 PNHL **M24 15/16"**

**2 LOCKING OPTION**  
**2 OPCIONES DE MONTAJE**  
**2 OPTIONS DE MONTAGE**  
**2 OPÇÕES DE MONTAGEM**



**SOCKET HEX** **HEX KEY**





DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# Volvo

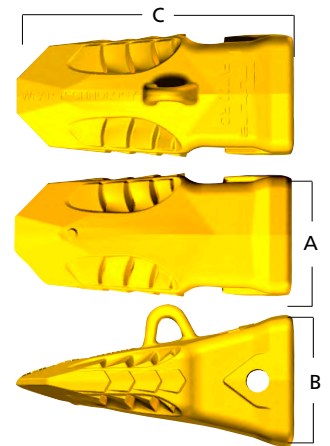
**Bold part number,  
available product**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

## Side Pin Teeth Dientes Pasador Lateral

### ROCK CHISEL Teeth Diente Pasador Lateral CINCEL ROCA

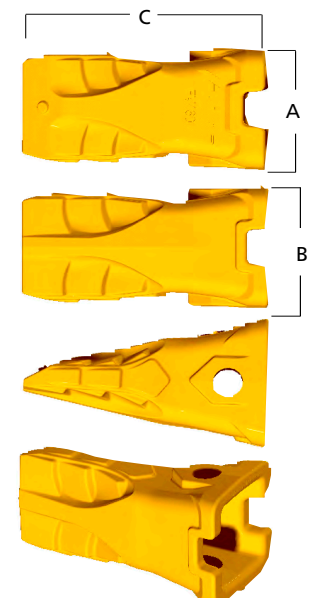
Wear factor | Factor desgaste  
Penetration | Penetración  
Impact | Impacto



mm.			KG	REF	IE 10001 L	IE 10002 L	FV700	700
A	B	C						
180	194	403,5	35,90	<b>FV700 RC</b>				
7,09"	7,64"	15,89"	79,14	14526511L				

### IMPACT Teeth Diente Pasador Lateral IMPACTO

Wear factor | Factor desgaste  
Penetration | Penetración  
Impact | Impacto



mm.			KG	REF	360	460
A	B	C				
151	141	265	13,50	<b>FV360 I</b>		
5,94"	5,55"	10,43"	29,76	1171-01910		
152	156	287	15,50	<b>FV460 I</b>		
5,98"	6,14"	11,30"	34,17	14553243		

Volvo

**SYMMETRIC Tooth** Diente SIMÉTRICO



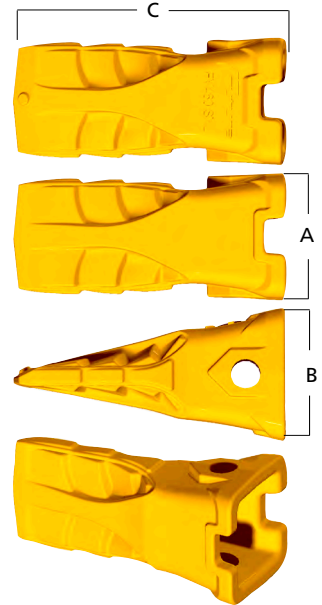
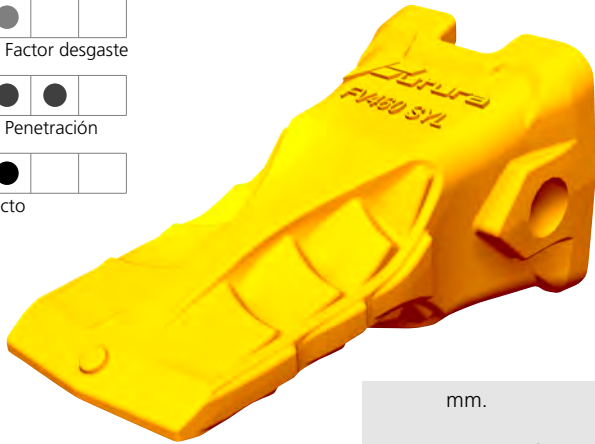
Wear factor | Factor desgaste



Penetration | Penetración

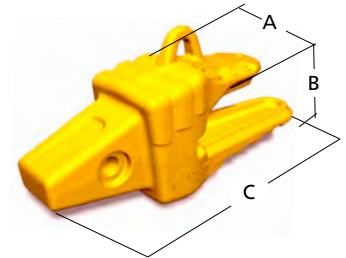
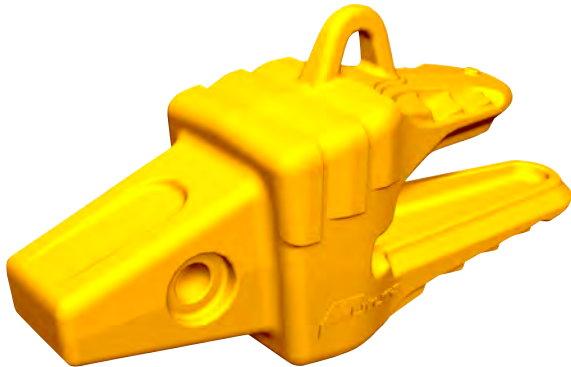


Impact | Impacto



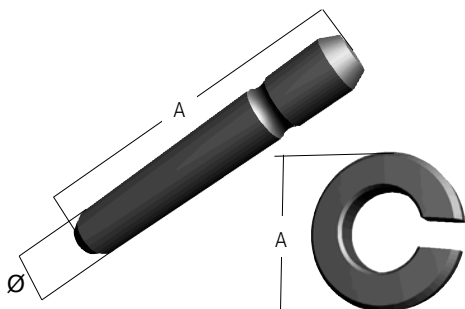
mm.				REF	
A	B	C			
152	156	323	16,10	<b>FV460 SYL</b>	<b>460</b>
5,98"	6,14"	12,72"	35,49	KT55 G 14553243	

**Weld-On Adapter** Portadientes Soldable



mm.				REF			
A	B	C					
171	209	539	43,60	<b>FV700</b>	IE 10001 L	IE 10002 L	<b>700</b>
6,73"	8,23"	21,22"	96,12	14326509L			

**Pin & Washer** Pasador y Arandela



mm.			
A	Ø		
160	27,5	<b>IE 10001 L</b>	<b>700</b>
6,30"	1,08"		

mm.		
A		
50,4	<b>IE 10002 L</b>	<b>700</b>
1,98"		

# FC2

## PROPRIETARY SYSTEM

### SISTEMA EXCLUSIVO

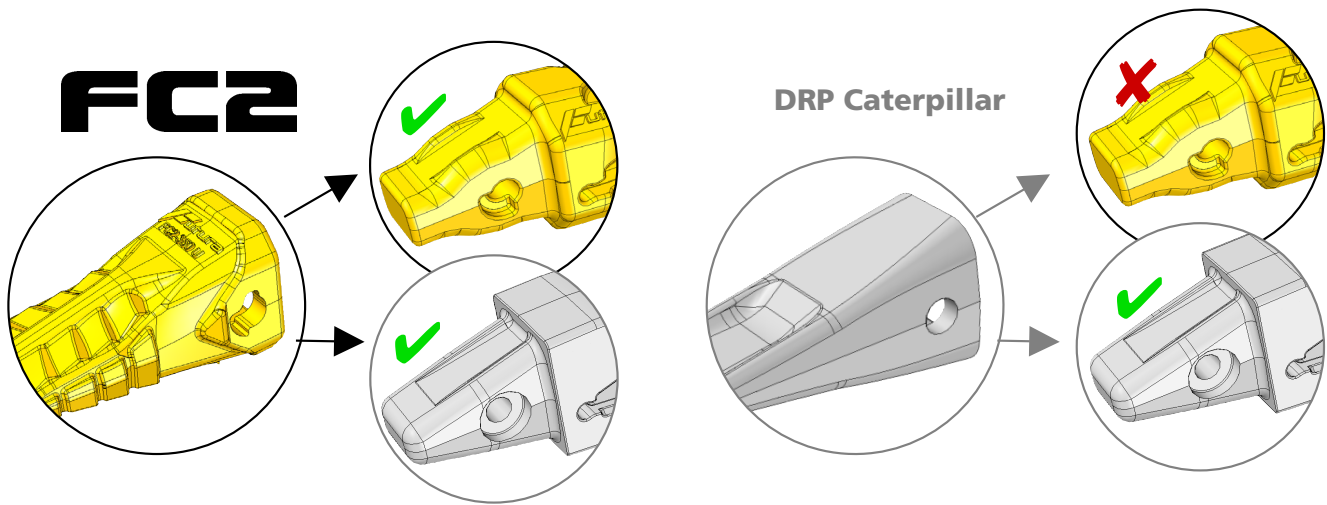


**Bold part number, product available**  
 Other part numbers please consult

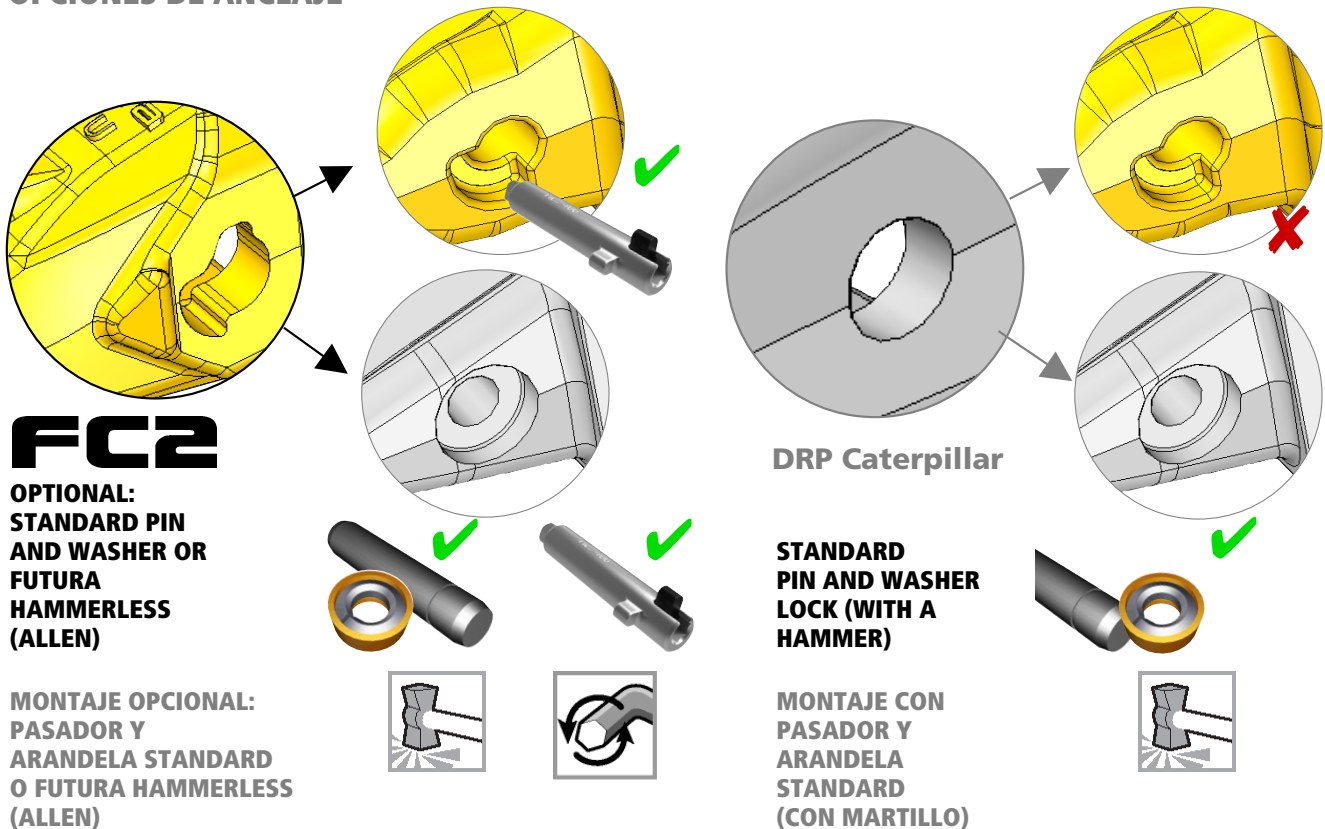
**Referencia en negrita producto disponible**  
 Otras referencias consúltenos

L	RC	SYL	U	VTL	WTS	TL	P	RP	RPHD	RPL	HL2	SIZE
<b>FC2-200 L</b>	<b>FC2-200 RC</b>	<b>FC2-200 SYL</b>			<b>FC2-200 WTS</b>		<b>FC2-200 P</b>			<b>FC2-200 RPL</b>	<b>FC200HL2</b>	<b>20</b>
<b>FC2-220 L</b>	<b>FC2-220-RC</b>	<b>FC2-220-SYL</b>									<b>FC220HL2</b>	<b>22</b>
<b>FC2-250 L</b>	<b>FC2-250 RC</b>	<b>FC2-250-SYL</b>	<b>FC2-250 U</b>				<b>FC2-250 P</b>	<b>FC2-250 RP</b>		<b>FC2-250 RPL</b>	<b>FC250HL2</b>	<b>25</b>
<b>FC2-300 L</b>	<b>FC2-300 RC</b>	<b>FC2-300 SYL</b>	<b>FC2-300 U</b>		<b>FC2-300 WTS</b>		<b>FC2-300 P</b>	<b>FC2-300 RP</b>		<b>FC2-300 RPL</b>	<b>FC300HL2</b>	<b>30</b>
<b>FC2-350 L</b>	<b>FC2-350 RC</b>	<b>FC2-350 SYL</b>	<b>FC2-350 U</b>		<b>FC2-350 WTS</b>		<b>FC2-350 P</b>	<b>FC2-350 RP</b>		<b>FC2-350 RPL</b>	<b>FC350HL2</b>	<b>35</b>
<b>FC2-400 L</b>	<b>FC2-400 RC</b>	<b>FC2-400 SYL</b>					<b>FC2-400 P</b>	<b>FC2-400 RP</b>		<b>FC2-400 RPL</b>	<b>FC400HL2</b>	<b>40</b>
<b>FC2-450 L</b>	<b>FC2-450 RC</b>	<b>FC2-450 SYL</b>	<b>FC2-450 U</b>	<b>FC2-450 VTL</b>	<b>FC2-450 WTS</b>		<b>FC2-450 P</b>	<b>FC2-450 RP</b>		<b>FC2-450 RPL</b>	<b>FC450HL2</b>	<b>45</b>
<b>FC2-550 L</b>	<b>FC2-550 RC</b>	<b>FC2-550 SYL</b>	<b>FC2-550 U</b>	<b>FC2-550 VTL</b>			<b>FC2-550 P</b>	<b>FC2-550 RP</b>		<b>FC2-550 RPL</b>	<b>FC550HL2</b>	<b>55</b>
<b>FC2-600 L</b>	<b>FC2-600 RC</b>	<b>FC2-600 SYL</b>	<b>FC2-600 U</b>	<b>FC2-600 VTL</b>			<b>FC2-600 P</b>	<b>FC2-600 RP</b>		<b>FC2-600 RPL</b>	<b>FC600HL2</b>	<b>60</b>
	<b>FC2-700 RC</b>			<b>FC2-700 VTL</b>			<b>FC2-700 P</b>	<b>FC2-700 RP</b>	<b>FC2-700 RPHD</b>		<b>FC700HL2</b>	<b>70</b>
	<b>FC2-800 RC</b>			<b>FC2-800 VTL</b>		<b>FC2-800 TL</b>		<b>FC2-800 RP</b>			<b>FC800HL2</b>	<b>80</b>

## NOSE COMPATIBILITY COMPATIBILIDAD DE LA NARIZ



## LOCKING OPTIONS OPCIONES DE ANCLAJE

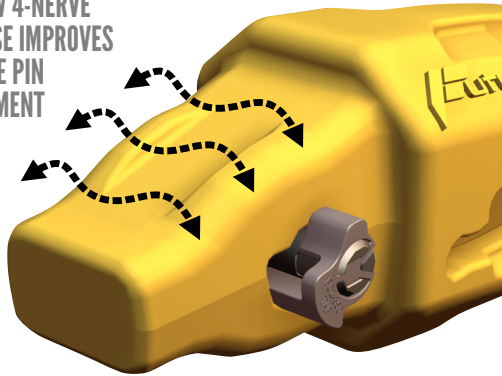




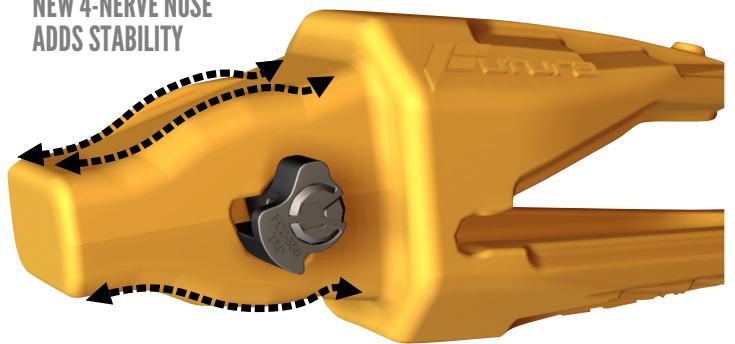
# PROPRIETARY SYSTEM SISTEMA EXCLUSIVO

# FC2

NEW 4-NERVE  
NOSE IMPROVES  
SIDE PIN  
FITMENT



NEW 4-NERVE NOSE  
ADDS STABILITY



**1**  
BENEFIT

**ONE TOOTH  
FITS TWO  
SYSTEMS**

**1x2**  
COMPATIBILITY

FC2 teeth are fully compatible with standard J Series Adapters

**2**  
BENEFIT

**HAMMERLESS  
AND SAFE  
SYSTEM**

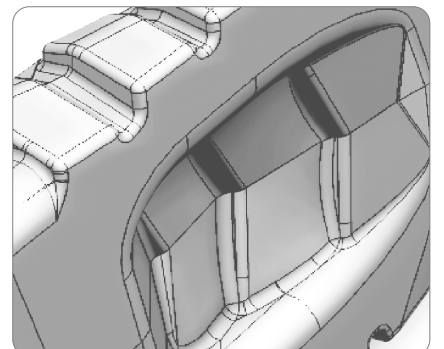
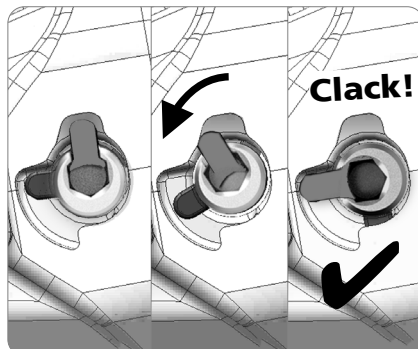


FC2 teeth are easily assembled and disassembled with a standard Allen or hex key.

**3**  
BENEFIT

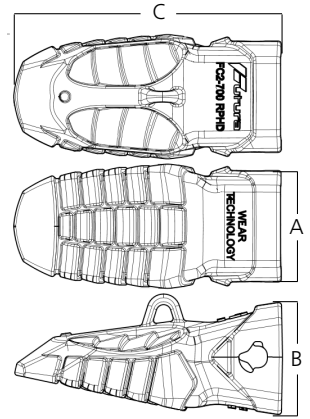
**OUTSTANDING  
QUALITY &  
UNBEATABLE PRICE**

FC2 parts are sold at Futura Wear Technology prices. Stock savings: ONE tooth would fit onto TWO systems





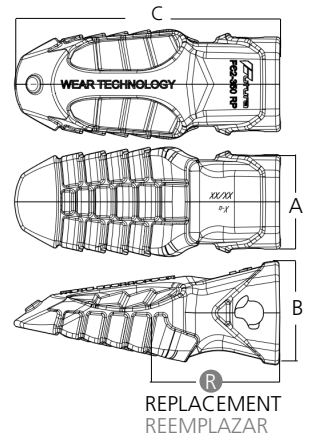
## Teeth ROCK PENETRATION HD Diente PENETRACIÓN HD



A	in	B	mm	in	C	in		Lb	Part#	OEM		SIZE
210	8,27"	212	8,35"	504	19,84"	75,4	166	<b>FC2-700 RPHD</b>	135-9700	FC700HL2		<b>70</b>



## Teeth ROCK PENETRATION Diente PENETRACIÓN ROCA



A	in	B	mm	in	C	in	R	in		Lb	Part#	OEM		SIZE
81	3,19"	89	3,50"	243	9,57"	91	3,58"	6,1	13	<b>FC2-250 RP</b>	4T-2253 RP, 9N-4253	FC250HL2		<b>25</b>
93	3,66"	105	4,13"	274	10,79"	107	4,21"	8,4	18	<b>FC2-300 RP</b>	4T-2303 RP, 9N-4303	FC300HL2		<b>30</b>
106	4,17"	116	4,57"	297	11,69"	117	4,61"	11,6	26	<b>FC2-350 RP</b>	4T-2353 RP, 9N-4353	FC350HL2		<b>35</b>
125	4,92"	132	5,20"	326	12,83"	130	5,12"	16,7	37	<b>FC2-400 RP</b>	7T-3403 RP	FC400HL2		<b>40</b>
134	5,28"	140	5,51"	375	14,76"	141	5,55"	23,6	52	<b>FC2-450 RP</b>	9W-1453 RP, 9N-4453	FC450HL2		<b>45</b>
162	6,38"	164	6,46"	384	15,12"	165	6,50"	28,3	62	<b>FC2-550 RP</b>	9W-1553 RP, 6Y-2553	FC550HL2		<b>55</b>
193	7,60"	190	7,48"	462	18,19"	196	7,72"	50,9	112	<b>FC2-600 RP</b>	6I-6603 RP, 6I-6603	FC600HL2		<b>60</b>
210	8,27"	206	8,11"	502	19,76"	214	8,43"	64,1	141	<b>FC2-700 RP</b>	4T-4703 RP	FC700HL2		<b>70</b>
246	9,69"	241	9,49"	575	22,64"	238	9,37"	100,2	220	<b>FC2-800 RP</b>	6I-8803	FC800HL2		<b>80</b>



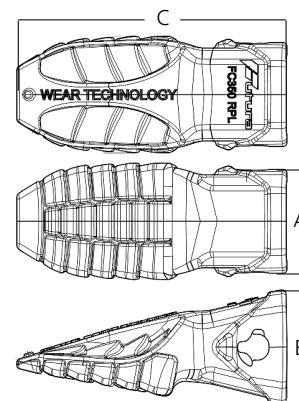
## Teeth ROCK PENETRATION LIGHT Diente PENETRACIÓN LIGERO



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

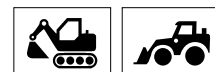
IMPACT | IMPACTO



A	in	B	mm	in	C	in	kg	Lb	Part#	OEM	FC	SIZE
61	2,40"	70	2,76"	167	6,57"	1,9	4		<b>FC2-200 RPL</b>		FC200HL2	<b>20</b>
81	3,19"	89	3,50"	211	8,31"	3,9	9		<b>FC2-250 RPL</b>	9N-4252	FC250HL2	<b>25</b>
93	3,66"	105	4,13"	241	9,49"	6,3	14		<b>FC2-300 RPL</b>	9N-4302	FC300HL2	<b>30</b>
106	4,17"	116	4,57"	275	10,83"	8,6	19		<b>FC2-350 RPL</b>	9N-4352	FC350HL2	<b>35</b>
125	4,92"	132	5,20"	291	11,46"	12,1	27		<b>FC2-400 RPL</b>	8E-4402	FC400HL2	<b>40</b>
134	5,28"	140	5,51"	335	13,19"	17,5	39		<b>FC2-450 RPL</b>	9N-4452	FC450HL2	<b>45</b>
162	6,38"	163	6,42"	362	14,25"	23,0	51		<b>FC2-550 RPL</b>	9N-4552	FC550HL2	<b>55</b>
192	7,56"	190	7,48"	439	17,28"	40,1	88		<b>FC2-600 RPL</b>	7Y-0602	FC600HL2	<b>60</b>



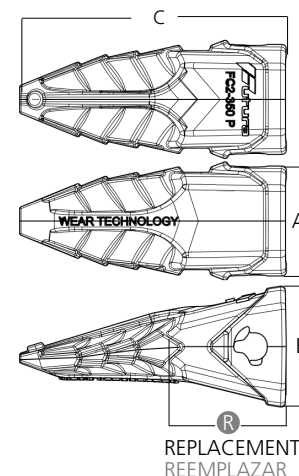
## Teeth PENETRATION Diente PENETRACIÓN



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

IMPACT | IMPACTO

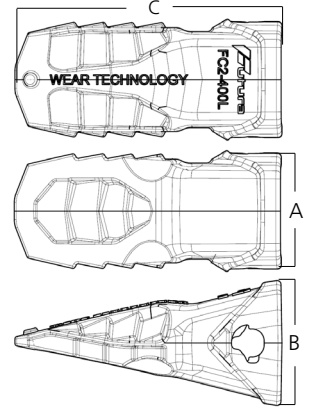
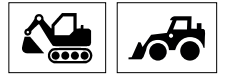


A	in	B	mm	in	C	in	R	in	kg	Lb	Part#	OEM	FC	SIZE
62	2,44"	66	2,60"	157	6,18"	71	2,80"	1,2	3		<b>FC2-200 P</b>	1U-3209	FC200HL2	<b>20</b>
81	3,19"	89	3,50"	202	7,95"	67	2,64"	2,7	6		<b>FC2-250 P</b>	9J-4259	FC250HL2	<b>25</b>
93	3,66"	105	4,13"	227	8,94"	107	4,21"	4,2	9		<b>FC2-300 P</b>	9J-4309	FC300HL2	<b>30</b>
106	4,17"	116	4,57"	256	10,08"	116	4,57"	6,0	13		<b>FC2-350 P</b>	9J-4359	FC350HL2	<b>35</b>
125	4,92"	132	5,20"	288	11,34"	130	5,12"	9,3	20		<b>FC2-400 P</b>	6Y-7409	FC400HL2	<b>40</b>
134	5,28"	140	5,51"	313	12,32"	142	5,59"	11,2	25		<b>FC2-450 P</b>	9W-8459	FC450HL2	<b>45</b>
162	6,38"	163	6,42"	344	13,54"	165	6,50"	16,4	36		<b>FC2-550 P</b>	9W-8559	FC550HL2	<b>55</b>
193	7,60"	190	7,48"	404	15,91"	209	8,23"	27,4	60		<b>FC2-600 P</b>	7I-7609	FC600HL2	<b>60</b>
210	8,27"	206	8,11"	437	17,20"	214	8,43"	36,9	81		<b>FC2-700 P</b>	4T-4709	FC700HL2	<b>70</b>



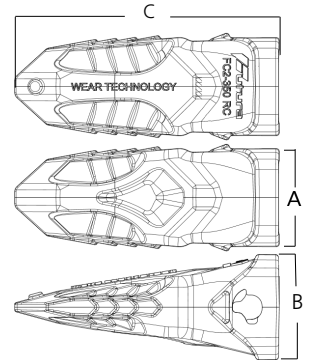
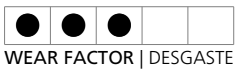
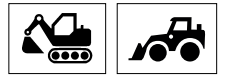
REPLACEMENT  
REEMPLAZAR

## Teeth LONG Diente LARGO



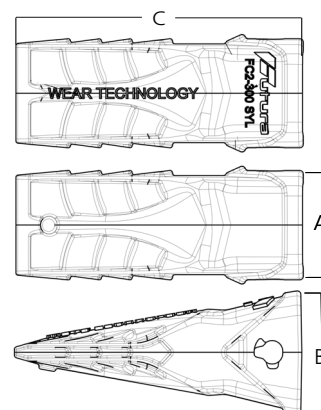
A	in	B	mm	in	C	in		Lb	Part#	OEM		SIZE
62	2,44"	66	2,60"	159	6,26"	1,6	4	<b>FC2-200 L</b>	1U-3202	FC200HL2		<b>20</b>
75	2,95"	81	3,19"	172	6,77"	2,1	5	<b>FC2-220 L</b>	6Y-3222	FC220HL2		<b>22</b>
81	3,19"	89	3,50"	210	8,27"	3,4	7	<b>FC2-250 L</b>	1U-3252	FC250HL2		<b>25</b>
93	3,66"	104	4,09"	220	8,66"	4,7	10	<b>FC2-300 L</b>	1U-3302	FC300HL2		<b>30</b>
106	4,17"	116	4,57"	256	10,08"	6,9	15	<b>FC2-350 L</b>	1U-3352	FC350HL2		<b>35</b>
119	4,69"	128	5,04"	274	10,79"	8,4	18	<b>FC2-400 L</b>	7T-3402	FC400HL2		<b>40</b>
134	5,28"	140	5,51"	312	12,28"	13,1	29	<b>FC2-450 L</b>	9W-8452	FC450HL2		<b>45</b>
162	6,38"	164	6,46"	361	14,21"	20,1	44	<b>FC2-550 L</b>	9W-8552	FC550HL2		<b>55</b>
187	7,36"	190	7,48"	422	16,61"	29,9	66	<b>FC2-600 L</b>	6I-6602	FC600HL2		<b>60</b>

## Teeth ROCK CHISEL Diente CINCEL ROCA



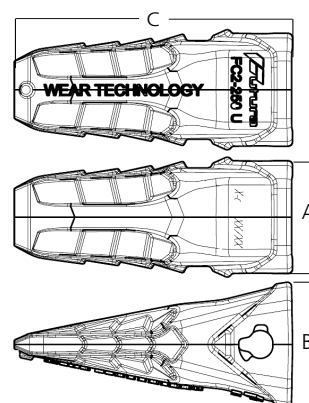
A	in	B	mm	in	C	in		Lb	Part#	OEM		SIZE
62	2,44"	66	2,60"	159	6,26"	1,4	3	<b>FC2-200 RC</b>	1U-3202 RC	FC200HL2		<b>20</b>
75	2,95"	81	3,19"	191	7,52"	2,5	6	<b>FC2-220 RC</b>	6Y-3222 RC	FC220HL2		<b>22</b>
81	3,19"	94	3,70"	220	8,66"	4,0	9	<b>FC2-250 RC</b>	1U-3252 RC	FC250HL2		<b>25</b>
93	3,66"	100	3,94"	247	9,72"	5,8	13	<b>FC2-300 RC</b>	1U-3302 RC	FC300HL2		<b>30</b>
106	4,17"	114	4,49"	285	11,22"	8,6	19	<b>FC2-350 RC</b>	1U-3352 RC	FC350HL2		<b>35</b>
125	4,92"	130	5,12"	295	11,61"	11,2	25	<b>FC2-400 RC</b>	7T-3402 RC	FC400HL2		<b>40</b>
134	5,28"	132	5,20"	338	13,31"	15,6	34	<b>FC2-450 RC</b>	9W-8452 RC	FC450HL2		<b>45</b>
162	6,38"	161	6,34"	381	15,00"	25,4	56	<b>FC2-550 RC</b>	9W-8552 RC	FC550HL2		<b>55</b>
193	7,60"	188	7,40"	440	17,32"	41,9	92	<b>FC2-600 RC</b>	6I-6602 RC	FC600HL2		<b>60</b>
210	8,27"	207	8,15"	483	19,02"	52,1	115	<b>FC2-700 RC</b>	4T-4702 RC	FC700HL2		<b>70</b>
244	9,61"	244	9,61"	523	20,59"	81,0	178	<b>FC2-800 RC</b>		FC800HL2		<b>80</b>

## Teeth SYMMETRIC Diente SIMÉTRICO



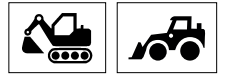
A	in	B	mm	in	C	in		Lb	Part#	OEM		SIZE
62	2,44"	66	2,60"	155	6,10"	1,3	3	<b>FC2-200 SYL</b>	1U-3202 SYL	FC200HL2		<b>20</b>
75	2,95"	81	3,19"	181	7,13"	2,4	5	<b>FC2-220 SYL</b>	6Y-3222 SYL	FC220HL2		<b>22</b>
81	3,19"	89	3,50"	210	8,27"	3,2	7	<b>FC2-250 SYL</b>	1U-3252 SYL	FC250HL2		<b>25</b>
93	3,66"	105	4,13"	244	9,61"	5,5	12	<b>FC2-300 SYL</b>	1U-3302 SYL	FC300HL2		<b>30</b>
107	4,21"	118	4,65"	268	10,55"	7,0	15	<b>FC2-350 SYL</b>	1U-3352 SYL	FC350HL2		<b>35</b>
125	4,92"	132	5,20"	315	12,40"	11,9	26	<b>FC2-400 SYL</b>	8E-4402 SYL	FC400HL2		<b>40</b>
134	5,28"	140	5,51"	324	12,76"	13,7	30	<b>FC2-450 SYL</b>	9W-8452 SYL	FC450HL2		<b>45</b>
160	6,30"	164	6,46"	368	14,49"	20,4	45	<b>FC2-550 SYL</b>	9W-8552 SYL	FC550HL2		<b>55</b>
192	7,56"	190	7,48"	422	16,61"	33,5	74	<b>FC2-600 SYL</b>	6I-6602 SYL	FC600HL2		<b>60</b>

## Teeth UNIVERSAL Diente UNIVERSAL



A	in	B	mm	in	C	in		Lb	Part#	OEM		SIZE
81	3,19"	89	3,50"	198	7,80"	3,1	7	<b>FC2-250 U</b>	1U-3252	FC250HL2		<b>25</b>
94	3,70"	105	4,13"	213	8,39"	4,2	9	<b>FC2-300 U</b>	1U-3302	FC300HL2		<b>30</b>
106	4,17"	117	4,61"	242	9,53"	6,0	13	<b>FC2-350 U</b>	1U-3352	FC350HL2		<b>35</b>
134	5,28"	140	5,51"	293	11,54"	10,9	24	<b>FC2-450 U</b>	9W-8452	FC450HL2		<b>45</b>
162	6,38"	161	6,34"	351	13,82"	21,6	48	<b>FC2-550 U</b>	9W-8552	FC550HL2		<b>55</b>
192	7,56"	188	7,40"	411	16,18"	35,6	78	<b>FC2-600 U</b>	6I-6602	FC600HL2		<b>60</b>

**Teeth TWIN TIGER SHARP** Diente DOBLE PUNTA AFILADO



● ● ●

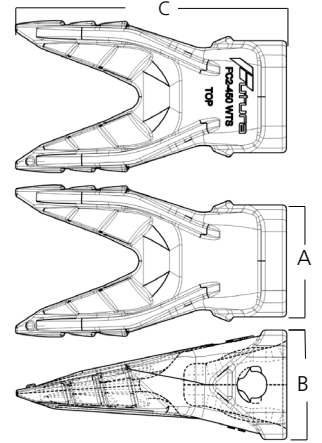
WEAR FACTOR | DESGASTE

● ● ● ● ●

PENETRATION | PENETRACIÓN

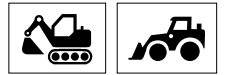
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IMPACT | IMPACTO



A	in	B	mm in	C	in		Lb	Part#	OEM		SIZE
62	2,44"	66	2,60"	170	6,69"	1,4	3	<b>FC2-200 WTS</b>	135-8208	FC200HL2	<b>20</b>
93	3,66"	100	3,94"	248	9,76"	5,3	12	<b>FC2-300 WTS</b>	135-9308	FC300HL2	<b>30</b>
106	4,17"	114	4,49"	262	10,31"	6,8	15	<b>FC2-350 WTS</b>	135-9337	FC350HL2	<b>35</b>
134	5,28"	132	5,20"	324	12,76"	12,4	27	<b>FC2-450 WTS</b>	135-9408	FC450HL2	<b>45</b>

**Teeth VECTOR TIGER LONG** Diente LARGO VECTOR



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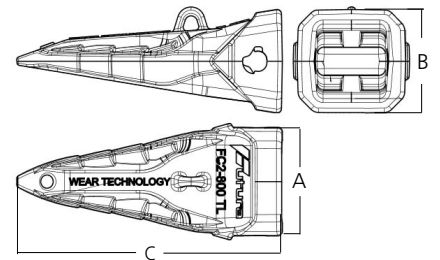
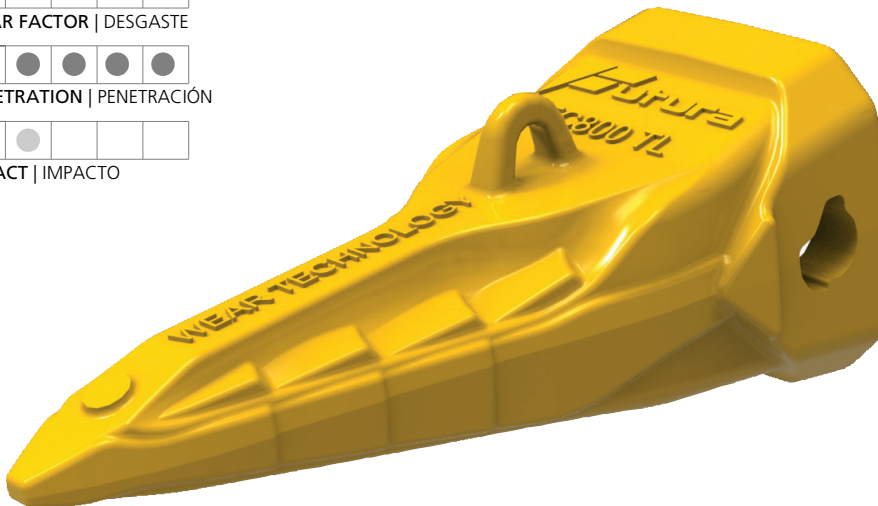
WEAR FACTOR | DESGASTE

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PENETRATION | PENETRACIÓN

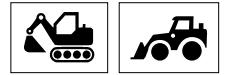
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IMPACT | IMPACTO



A	in	B	mm in	C	in		Lb	Part#	OEM		SIZE
250	9,84"	235	9,25"	602	23,70"	67,0	147	<b>FC2-800 TL</b>	-	FC800HL2	<b>80</b>

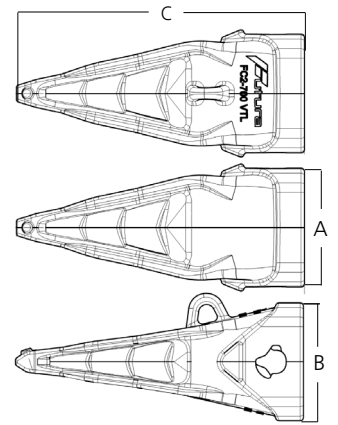
# Teeth VECTOR TIGER LONG Diente LARGO VECTOR



WEAR FACTOR | DESGASTE

PENETRATION | PENETRACIÓN

IMPACT | IMPACTO



A	in	B	mm in	C	in		Lb	Part#	OEM		SIZE
98	3,86"	103	4,06"	362	14,25"	13,0	29	<b>FC2-450 VTL</b>	7T-8459	FC450HL2	<b>45</b>
162	6,38"	161	6,34"	395	15,55"	19,2	42	<b>FC2-550 VTL</b>	9W-6559	FC550HL2	<b>55</b>
192	7,56"	188	7,40"	463	18,23"	33,6	74	<b>FC2-600 VTL</b>	107-8609	FC600HL2	<b>60</b>
210	8,27"	209	8,23"	507	19,96"	45,0	99	<b>FC2-700 VTL</b>	4T-4702	FC700HL2	<b>70</b>
246	9,69"	232	9,13"	609	23,98"	68,5	151	<b>FC2-800 VTL</b>	-	FC800HL2	<b>80</b>





# FC2

## PROPRIETARY SYSTEM



# ADAPTERS




## PORTADIENTES

**Bold part number, product available**  
Other part numbers please consult

**Referencia en negrita producto disponible**  
Otras referencias consúltenos



**EXCAVADORA**  
**EXCAVATOR**

			
		LH / RH	LHS / RHS
FC2-200			
FC2-220			
FC2-250			
<b>FC2-250-25</b>	<b>FC2-250-25</b>	LH / RH	
FC2-300			
FC2-300-35			
FC2-350			
<b>FC2-350-B35</b>			
FC2-400		FC2-400 LH / RH	
FC2-450			FC2-450 LHS / RHS
FC2-450-63			
FC2-550	FC2-550 LH / RH		FC2-550 LHS / RHS
FC2-600	FC2-600 LH / RH		FC2-600 LHS / RHS
FC2-600-80			
FC2-700	FC2-700 LH / RH		FC2-700 LHS / RHS
FC2-700-95	FC2-700-95 LH / RH		
FC2-800	FC2-800 LH / RH		





**UNIVERSAL**



FC2-200 BL
FC2-250 BL
FC2-300 BL
FC2-350 BL



**LOADER**  
**CARGADORA**

					SIZE
		S LHS	RHS	HL2	
				FC200HL2	<b>20</b>
				FC220HL2	<b>22</b>
				FC250HL2	<b>25</b>
				FC300HL2	<b>30</b>
				FC350HL2	<b>35</b>
FC2-400 S	FC2-400S	LHS / RHS		FC400HL2	<b>40</b>
FC2-450 S	FC2-450 S	LHS / RHS		FC450HL2	<b>45</b>
FC2-550 S	FC2-550 S	LHS / RHS		FC550HL2	<b>55</b>
FC2-600 S	FC2-600 S	LHS / RHS		FC600HL2	<b>60</b>
FC2-700 S	FC2-700	LHS / RHS		FC700HL2	<b>70</b>
FC2-800 S				FC800HL2	<b>80</b>

## Guide to part sizes by Maximum Machine Weight (tons)

Guía para la elección de tallas según peso máximo de la máquina (en toneladas)

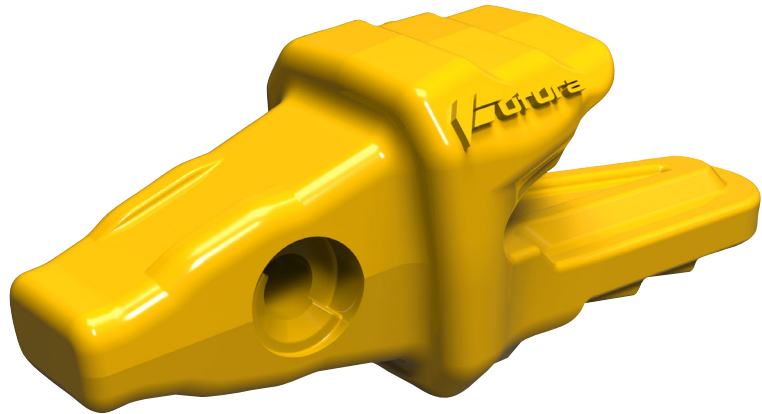
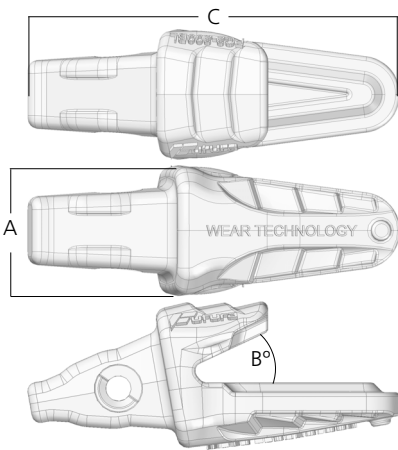
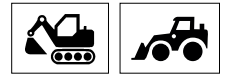
	SIZE	200	225	250	300	350	400	460	550	600	700	800
	Standard	8,7	11,5	16,7	25,0	33,8	46,9	63,6	81,2	103,7	144,1	248,4
	HD	6,8	8,9	12,9	19,5	25,0	33,4	46,9	63,6	81,2	103,7	136,4
	ST/HD	7,1	10,0	15,7	21,7	29,4	39,9	53,3	67,4	88,8	119,9	188,0
	Extra HD	5,4	7,6	12,0	16,3	22,1	30,2	39,9	53,3	67,4	88,8	129,9
	ST/HD							62,2	82,9	110,0	161,1	
	Extra HD							48,6	62,2	82,9	120,4	




Light Construction Construcción Ligera	Construction Construcción	Heavy Construction Construcción Pesada	Mining Mining
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# FC2 PROPRIETARY SYSTEM

# ADAPTERS PORTADIENTES

## BOTTOM LEG Adapter Portadiente UNIVERSAL

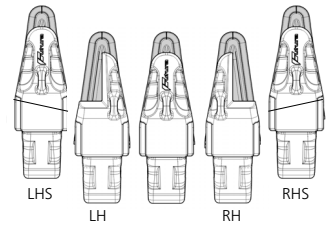
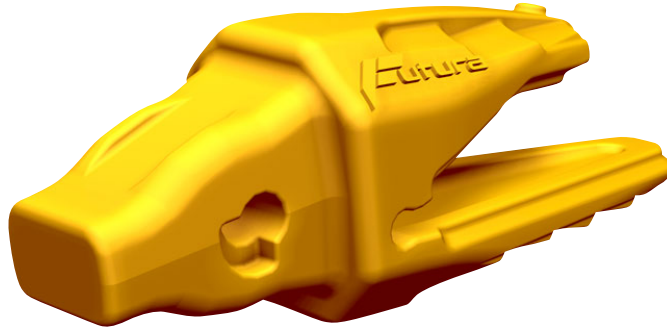
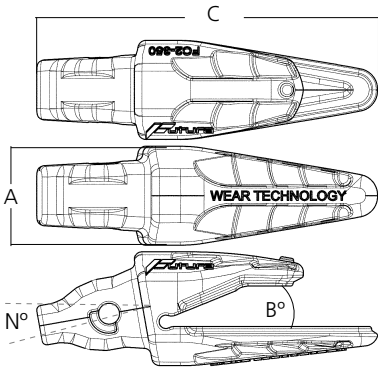


mm		in		B°		in		Lb	Part#	OEM		SIZE
A	in	C	in									
61	2,40"	175	6,89"	25	<b>13-25</b>	0,51"-0,98"	1,7	4	<b>FC2-200 BL</b>	8J-7525	FC200HL2	<b>20</b>
81	3,19"	298	11,73"	22	<b>25</b>	1,00"	4,9	11	<b>FC2-250 BL</b>	3G-0169	FC250HL2	<b>25</b>
93	3,66"	321	12,64"	22	<b>30</b>	1,20"	7,6	17	<b>FC2-300 BL</b>	9J-8929	FC300HL2	<b>30</b>
106	4,17"	390	15,35"	22	<b>35</b>	1,40"	10,8	24	<b>FC2-350 BL</b>	1U-1350	FC350HL2	<b>35</b>

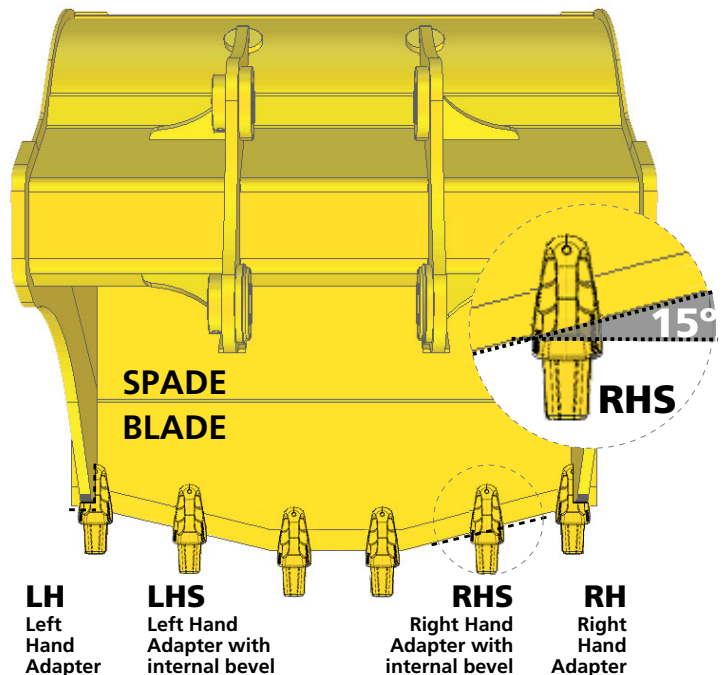
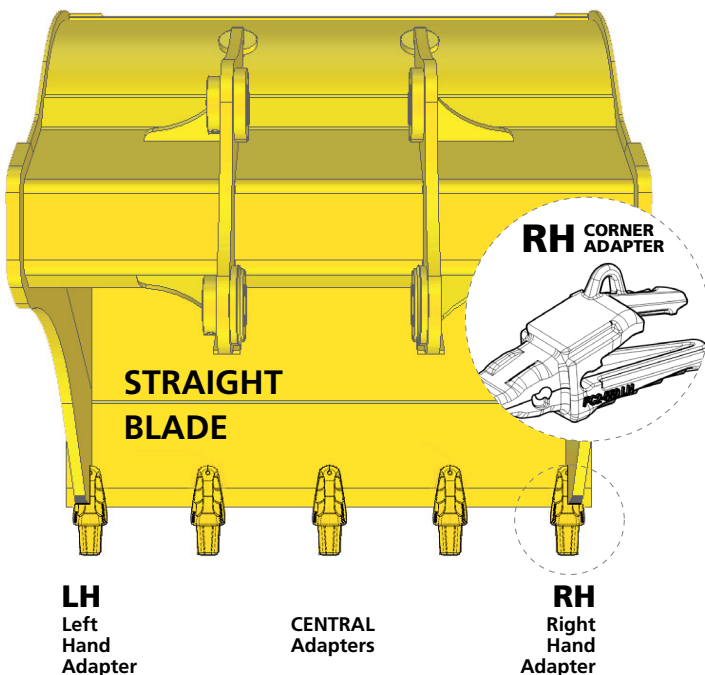




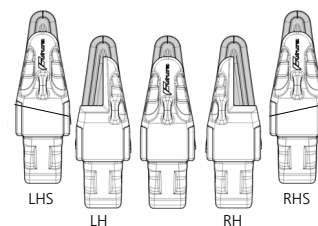
**EXCAVATOR Adapter** Portadientes EXCAVADORA



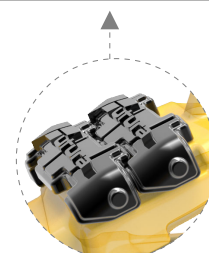
mm		in		N°	B°	in	Lb	Part#	OEM	SIZE
75	2,95"	225	8,86"	10	22	25	0,98"	FC2-220	6Y-3224	22
								FC2-250-25	6Y-3254	
79	3,11"	253	9,96"	10	22	25	0,98"	FC2-250-25 LH		25
								FC2-250-25 RH		
75	2,95"	258	10,16"	10	22	30	1,18"	FC2-250	119-3253	
96	3,78"	328	12,91"	10	22	30	1,2"	FC2-300	3G-6304	30
90	3,54"	330	12,99"	10	22	35	1,38"	FC2-300-35	8E-9490	
104	4,09"	358	14,09"	10	22	40	1,57"	FC2-350	6I-6354	35
104	4,09"	359	14,13"	10	35	40	1,57"	FC2-350-B35	3G-8354	
								FC2-400	6I-6404	
125	4,92"	402	15,83"	10	22	45	1,77"	FC2-400 LH		40
								FC2-400 RH		
								FC2-450	6I-6464	
135	5,31"	438	17,24"	10	22	50	1,97"	FC2-450 LHS		45
								FC2-450 RHS		
140	5,51"	466	18,35"	10	22	63	2,48"	FC2-450-63		



# EXCAVATOR Adapter Portadientes EXCAVADORA



mm																					
A	in	C	in	N°	B°		in		Lb	Part#	OEM										SIZE
								35,3	78	<b>FC2-550</b>	6I-6554										
								33,2	73	<b>FC2-550 LH</b>	6I-6556										
160	6,30"	514	20,24"	10	22	60	2,36"	33,2	73	<b>FC2-550 RH</b>	6I-6555							F5559 WC	FC550HL2	<b>55</b>	
								35,4	78	<b>FC2-550 LHS</b>	105-6269	●	15°								
								35,4	78	<b>FC2-550 RHS</b>	105-6270		15°	●							
								62,1	137	<b>FC2-600</b>	6I-6604										
								56,8	125	<b>FC2-600 LH</b>	6I-6606										
190	7,48"	569	22,40"	10	22	70 75	2,80" 3"	56,8	125	<b>FC2-600 RH</b>	6I-6605							F6061 WC	FC600HL2	<b>60</b>	
								62,4	137	<b>FC2-600 LHS</b>		●	15°								
								62,4	137	<b>FC2-600 RHS</b>			15°	●							
190	7,48"	569	22,40"	10	22	80	3,15"	61,5	135	<b>FC2-600-80</b>	119-8604										
								83,1	183	<b>FC2-700</b>	222-7700										
								81,8	180	<b>FC2-700 LH</b>											
375	14,76"	628	24,72"	10	35	90	3,50"	81,8	180	<b>FC2-700 RH</b>											
								89,5	197	<b>FC2-700 LHS</b>		●	15°					F7069 WC	FC700HL2	<b>70</b>	
								89,5	197	<b>FC2-700 RHS</b>			15°	●							
								87,1	192	<b>FC2-700-95</b>											
375	14,76"	628	24,72"	10	35	95	3,74"	82,4	181	<b>FC2-700-95 LH</b>											
								82,4	181	<b>FC2-700-95 RH</b>											
								122,0	268	<b>FC2-800</b>	6I-8804										
462	18,19"	720	28,35"	10	30	100	3,94"	117,9	259	<b>FC2-800 LH</b>								F8071 WC	FC800HL2	<b>80</b>	
								117,9	259	<b>FC2-800 RH</b>											

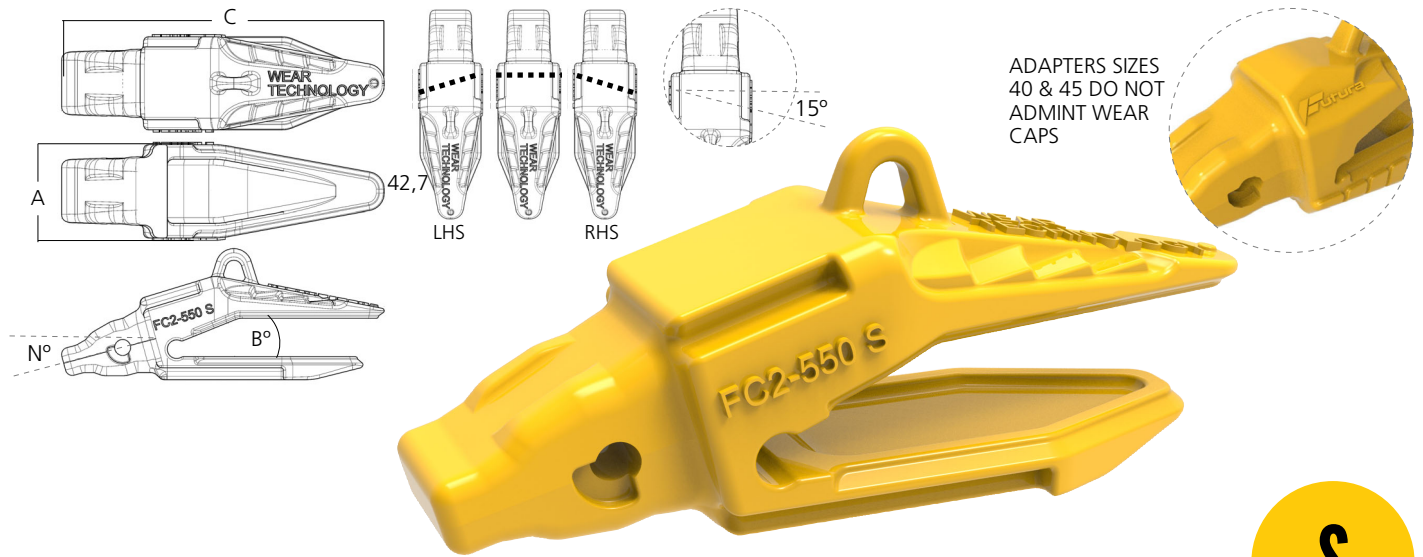


Optional Wear Cap

Protector de Portadientes opcional



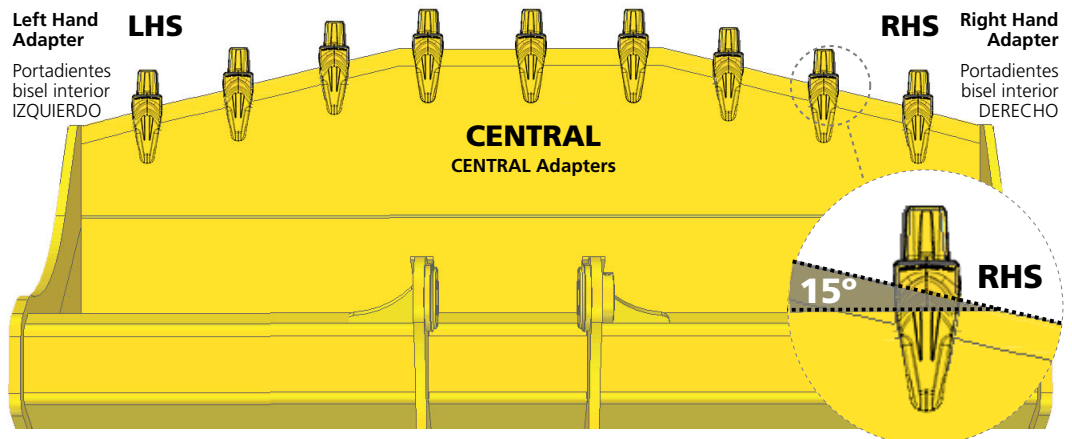
## LOADER Adapter Portadientes CARGADORA



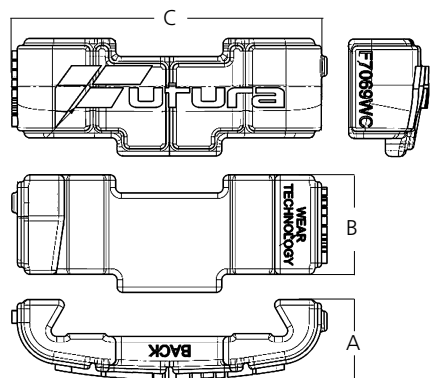
ADAPTERS SIZES  
40 & 45 DO NOT  
ADMINT WEAR  
CAPS

mm		in		N°	B°	↕	in	Lb	Part#	OEM	●	●	●	SIZE
A	C	in	in											
130	5,12"	420	16,54"	15	22	45	1,8"	20 44	<b>FC2-400 S</b>	125-8404	●	●	●	FC400HL2 <b>40</b>
								21 45	<b>FC2-400 S LHS</b>		●	●	●	
								21 46	<b>FC2-400 S RHS</b>		●	●	●	
141	5,55"	435	17,13"	15	22	50	2,0"	24 53	<b>FC2-450 S</b>	114-0464	●	●	●	
								24 54	<b>FC2-450 S LHS</b>	114-0466	●	●	●	FC450HL2 <b>45</b>
								24 53	<b>FC2-450 S RHS</b>	114-0465	●	●	●	
160	6,30"	554	21,81"	15	22	60	2,36"	41 90	<b>FC2-550 S</b>	107-3554	●	●	●	
						63	2,48"	42 92	<b>FC2-550 S LHS</b>	107-3556	●	●	●	F5559 WC FC550HL2 <b>55</b>
								42 92	<b>FC2-550 S RHS</b>	107-3555	●	●	●	
199	7,83"	586	23,07"	15	22	75	2,95"	66 145	<b>FC2-600 S</b>	119-8604	●	●	●	
								68 149	<b>FC2-600 S LHS</b>	119-8606	●	●	●	F6061 WC FC600HL2 <b>60</b>
								68 149	<b>FC2-600 S RHS</b>	119-8605	●	●	●	
210	8,27"	572	22,52"	17	22	70	2,76"	76 167	<b>FC2-700 S</b>	133-0704	●	●	●	
								78 171	<b>FC2-700 S LHS</b>	133-0706	●	●	●	F7069 WC FC700HL2 <b>70</b>
								78 171	<b>FC2-700 S RHS</b>	133-0705	●	●	●	
230	9,06"	701	27,60"	15	22	100	3,94"	121 266	<b>FC2-800 S</b>	61-8804	●	●	●	F8071 WC FC800HL2 <b>80</b>

## LOADER BUCKET CAZO / CUCHARÓN CARGADORA



# OPTIONAL Wear Caps Protectores Portadiente OPCIONALES



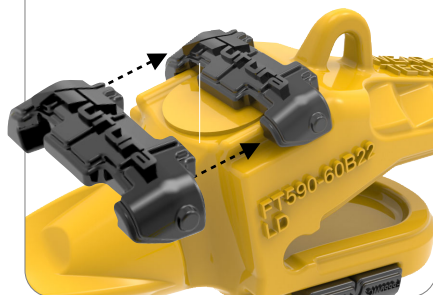
mm.						SIZE
A	B	C				
42,7 1,68"	50,5 1,99"	178 7,01"	1,70 3,75			55
45,2 1,78"	62,5 2,46"	207 8,15"	2,42 5,34			60
51,9 2,04"	71,5 2,81"	219 8,62"	3,23 7,12			70
53,1 2,09"	93,5 3,68"	251 9,88"	4,50 9,92			80

### QUICK, EASY INSTALLATION

Just slide the wear caps through the adapter guides.

### STOCK SAVING

Each wear cap could be mounted on various FUTURA adapters. Wear caps help prolong the wear life of each adapter.

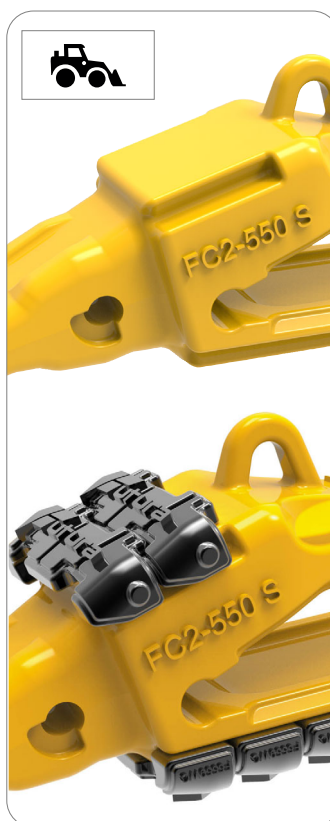


### MONTAJE RÁPIDO Y FÁCIL

Es suficiente con deslizar los protectores a lo largo de las guías del portadientes

### AHORRO EN STOCK

Estos protectores universales pueden utilizarse en varios adaptadores de la marca FUTURA. Los protectores FUTURA alargan la vida útil de los portadientes.



## ASSEMBLY INSTRUCTIONS

ENGLISH

⦿ The FUTURA hammerless system HL2 works **only with FUTURA teeth** ⦿ For **Adapters FC2** omit step ①

① Insert the washer into the adapter washer hole as shown in the picture ② Mount the tooth on the adapter ③ Insert the pin into the hole ④ Use a SOCKET HEX or a HEX KEY (check the HEX TABLE below for recommended keys for each pin) to rotate the pin from any of its ends. A rubber insert under locking tab allows the locking tab (fig ⑤) to compress, rotate and lock. ⑥ Each pin comes with a heavy duty dirt plug to keep fines out of the pin's socket. Choose the right plug according to the tooth recess and place. Discard the other plug.

**Disassembly** Repeat steps in reverse order.

## INSTRUCCIONES DE MONTAJE

ESPAÑOL

⦿ El sistema FUTURA Hammerless HL2 FUNCIONA SOLO CON DIENTES MARCA FUTURA ⦿ Para el montaje con portadientes FC2 omite el paso ①

① Inserte la arandela en el hueco del portadientes en la posición que se indica ② Encaje el diente en el portadientes ③ Coloque el pasador en el orificio del diente como se indica ④ Utilice una llave ALLEN o un VASO HEXAGONAL para girar el pasador (compruebe el tamaño de la llave en la tabla más abajo) ⑤ El mecanismo de fijación del pasador permite que la pestaña de cierre se comprima, rote y bloquee el diente ⑥ Los pasadores HL2 van acompañados de un tapón de goma anti-suciedad para sus extremos. Elija el que mejor se ajuste y colóquelo en posición. Los tapones de goma ayudan a prevenir la entrada de suciedad. Deseche el tapón sobrante.

**Desmontaje** Repetir los pasos en orden inverso.

## INSTRUCTIONS DE MONTAGE

FRANÇAIS

⦿ Le système de montage sans marteau FUTURA HL2 fonctionne **uniquement avec FUTURA dents** ⦿ Pour **Adaptateurs FC2** passer l'étape ①

① Insérer la rondelle dans le trou de l'adaptateur comme montré dans l'image ② Montez la dent sur l'adaptateur ③ Insérez la goupille dans le trou ④ Aussi facile à installer qu'à retirer avec une clé Allen standard ou une socket HEX (vérifier la taille de la clé dans le tableau). Les goupilles sont retenues en place en toute sécurité par le mécanisme de loquet muni de l'insertion de caoutchouc sous la barrure qui permet de compresser, tourner et barrer en place (fig ⑤) ⑥ Chaque goupille vient avec un bouchon pour empêcher la saleté de pénétrer dans les extrémités.

**Démontage** Répétez les étapes dans l'ordre inverse.

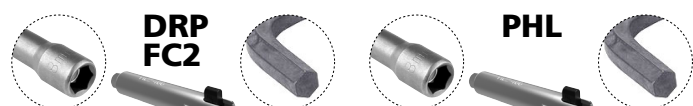
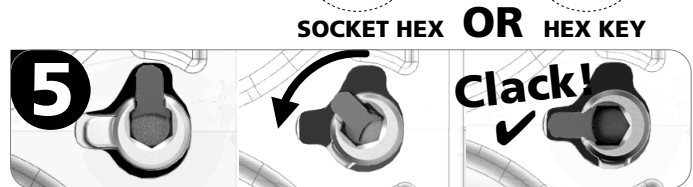
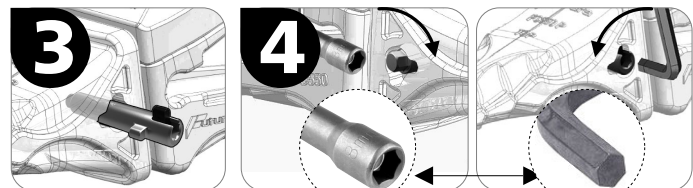
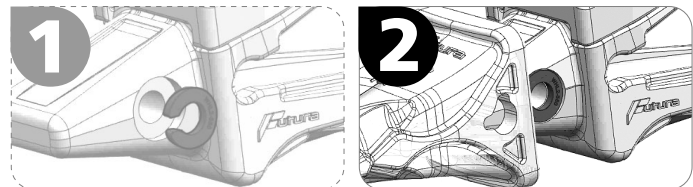
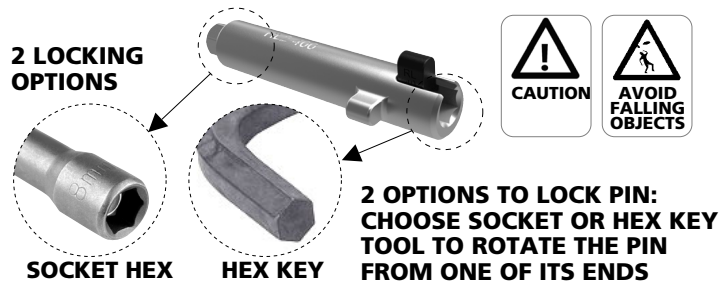
## INSTRUÇÕES DE MONTAGEM

PORTUGUÊS

⦿ El sistema HL2 funciona **exclusivamente com pontas FUTURA** ⦿ Para **Adaptadores FC2** omitir o passo ①

① Inserir na anilha no orifício na posição indicada ② Montar a ponta no adaptador ③ Colocar a cavilha no orifício da ponta ④ Use uma chave Allen (hex) ou um soquete HEX para ligar a cavilha (verificar o tamanho da chave no quadro) ⑤ O mecanismo de fixação permite que o encaixe da borracha se comprima, rode e bloqueie a peça com uma simples rotação de 90° ⑥ Cada trava vêm acompanhado de um tampão para evitar a entrada de sujidade nas extremidades

**Desmontagem** repita os passos na ordem inversa.



**SOCKET HEX**    **SOCKET HEX**

M7	9/32"	HL2-200	M10	3/8"	FD33 PHL	M8	5/16"
M10	3/8"	HL2-220	M8	5/16"			
M10	3/8"	HL2-250	M8	5/16"			
M10	3/8"	HL2-300	M8	5/16"			
M13	1/2"	HL2-350	M10	3/8"			
M14	9/16"	HL2-400	M12	1/2"			
M15	5/8"	HL2-450	M12	1/2"			
M15	5/8"	HL2-550	M12	1/2"			
M20	13/16"	HL2-600	M17	11/16"			
M22	7/8"	HL2-700	M17	11/16"			
M24	15/16"	HL2-800	M19	3/4"			

### OEM Cross Refs (WHEN USING FUTURA TOOTH)

L	L	Ø	Ø				SIZE
mm	in	mm	in				
61	2,40"	11	0,43"	<b>FC200HL2</b>	8E-6208, 1U-4208	8E-6209, 4T-0001	<b>20</b>
69	2,72"	14	0,55"	<b>FC220HL2</b>	132-4762, 6Y-3228	8E-6259, 3G-9609, 149-5733	<b>22</b>
79	3,11"	14	0,55"	<b>FC250HL2</b>	8E-6258, 132-4763, 9J-2258	8E-6259, 3G-9609, 149-5733	<b>25</b>
94	3,70"	15	0,59"	<b>FC300HL2</b>	107-3308, 132-4766, 9J-2308	8E-6259, 3G-9609, 149-5733	<b>30</b>
104	4,09"	20	0,79"	<b>FC350HL2</b>	8E-6358, 114-0358, 9J-2358	8E-6359, 3G-9548, 114-0359	<b>35</b>
118	4,65"	22	0,87"	<b>FC400HL2</b>	7T-3408, 116-7408	8E-8409, 116-7409	<b>40</b>
136	5,35"	24	0,94"	<b>FC450HL2</b>	8E-0468, 114-0468	8E-8469, 107-3469	<b>45</b>
159	6,26"	25	0,98"	<b>FC500HL2</b>	6Y-8558, 107-3378, 1U-1558	8E-5559, 3G-9559, 107-8559	<b>55</b>
195	7,68"	30	1,18"	<b>FC600HL2</b>	6I-6608, 113-9608	6I-6609, 113-9609	<b>60</b>
204	8,03"	32	1,26"	<b>FC700HL2</b>	4T-4708, 113-4708	4T-4707, 113-4709	<b>70</b>
238	9,37"	35	1,38"	<b>FC800HL2</b>	134-1808, 102-0101	101-2874, 134-1809	<b>80</b>
105	4,13"	15	0,59"	<b>FD33 PHL</b>	132-4766	8E-6259, 149-5733	<b>33</b>

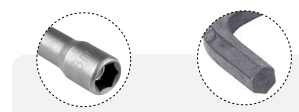
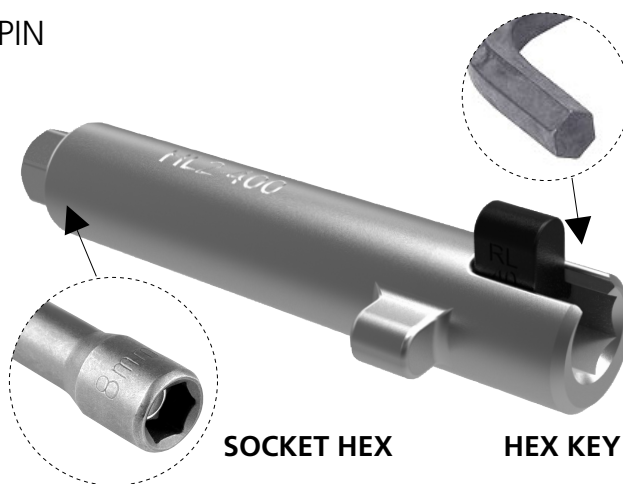




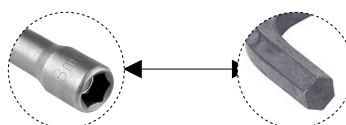
# HAMMERLESS PIN Pasador HL2

FAST THE HAMMERLESS PIN FROM ANY OF ITS HEXAGONAL ENDS

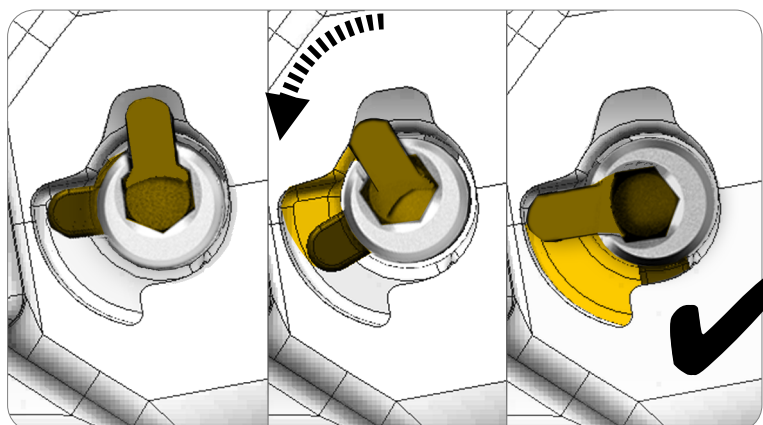
EL PASADOR SE PUEDE MONTAR POR CUALQUIERA DE SUS DOS EXTREMOS CON HERRAMIENTAS ESTÁNDAR

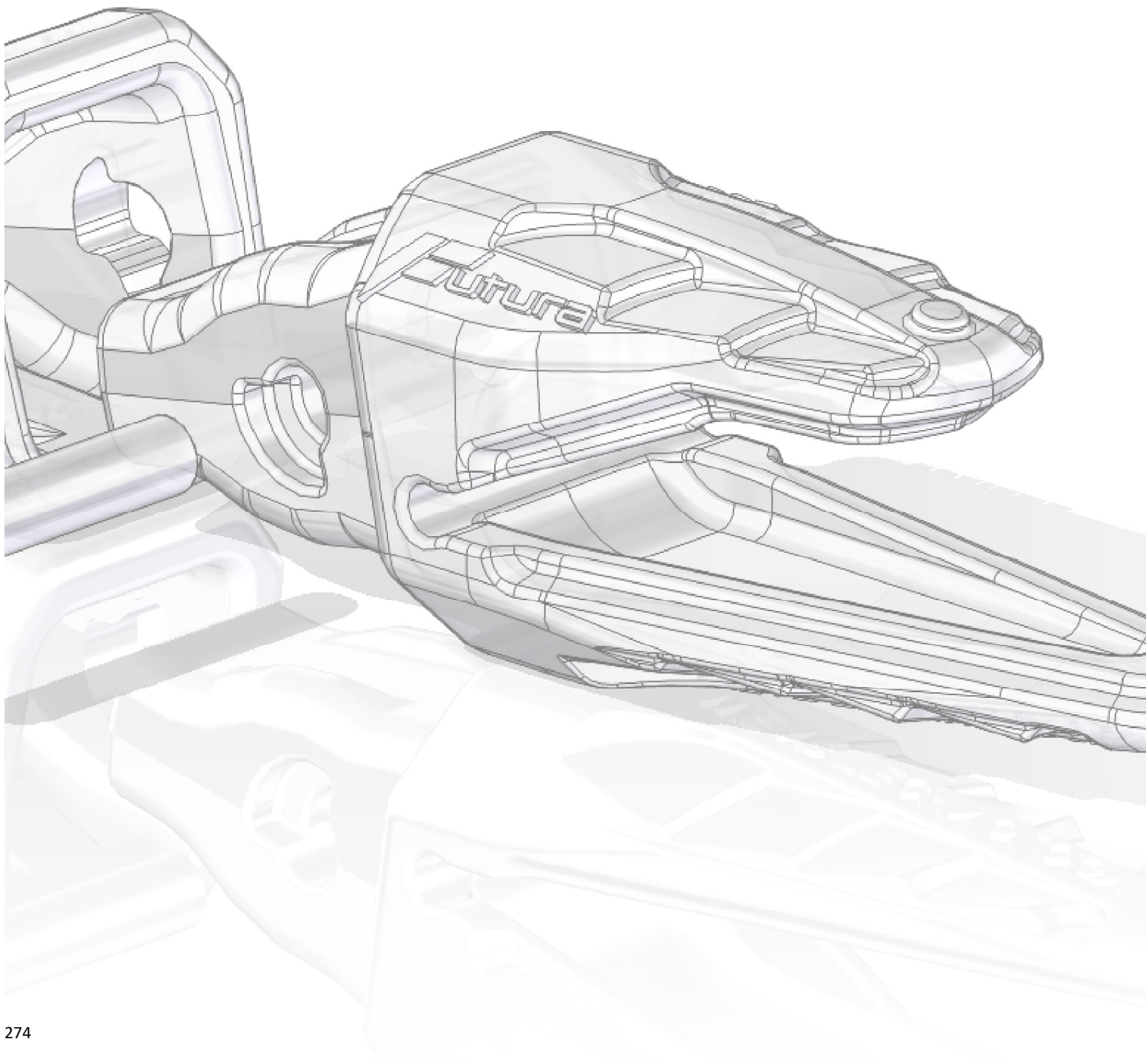


L	mm		in	Ø	in	kg	Lb	Pin	OEM PIN	OEM WASHER	SIZE	
	in	Ø										
61	2,40"	11	0,43"	0,04	0,1			<b>FC200HL2</b>	8E-6208, 1U-4208	8E-6209, 4T-0001	<b>20</b>	M7 9/32"
69	2,72"	14	0,55"	0,10	0,2			<b>FC220HL2</b>	132-4762, 6Y-3228	8E-6259, 3G-9609	<b>22</b>	M10 3/8" M8 5/16"
79	3,11"	14	0,55"	0,12	0,3			<b>FC250HL2</b>	8E-6258, 132-4763	8E-6259, 3G-9609	<b>25</b>	M10 3/8" M8 5/16"
94	3,70"	15	0,59"	0,15	0,3			<b>FC300HL2</b>	107-3308, 132-4766	8E-6259, 3G-9609	<b>30</b>	M10 3/8" M8 5/16"
104	4,09"	20	0,79"	0,29	0,6			<b>FC350HL2</b>	8E-6358, 114-0358	8E-6359, 3G-9548	<b>35</b>	M13 1/2" M10 3/8"
118	4,65"	22	0,87"	0,38	0,8			<b>FC400HL2</b>	7T-3408, 116-7408	8E-8409, 116-7409	<b>40</b>	M14 9/16" M12 1/2"
136	5,35"	24	0,94"	0,48	1,1			<b>FC450HL2</b>	8E-0468, 114-0468	8E-8469, 107-3469	<b>45</b>	M15 5/8" M12 1/2"
159	6,26"	25	0,98"	0,65	1,4			<b>FC550HL2</b>	6Y-8558, 107-3378	8E-5559, 3G-9559	<b>55</b>	M15 5/8" M12 1/2"
195	7,68"	30	1,18"	1,14	2,5			<b>FC600HL2</b>	6I-6608, 113-9608	6I-6609, 113-9609	<b>60</b>	M20 13/16" M17 11/16"
204	8,03"	32	1,26"	1,47	3,2			<b>FC700HL2</b>	4T-4708, 113-4708	4T-4707, 113-4709	<b>70</b>	M22 7/8" M17 11/16"
238	9,37"	35	1,38"	2,00	4,4			<b>FC800HL2</b>	134-1808, 102-0101	101-2874, 134-1809	<b>80</b>	M24 15/16" M19 3/4"



SOCKET HEX OR HEX KEY







# FC3

NEW HAMMERLESS SOLUTION

NUEVA SOLUCIÓN HAMMERLESS



**new  
hammerless**

COMPLETE SYSTEM: ADAPTERS,  
PINS AND TEETH  
SIZES 800, 900 & 1000

SISTEMA COMPLETO: PORTADIENTES,  
PASADORES Y DIENTES.  
TALLAS 800, 900 Y 1000

**FUTURA FC3 SYSTEM****NEW HAMMERLESS VERTICAL PIN****QUALITY****QUICK****SAFE****INNOVATIVE****FUTURA WEAR  
TECH**

# FUTURA FC3 SYSTEM

# FC3



**HL**

## HAMMERLESS PIN

FC3-891 PN-HL



**L**



kg	Lb	Part#	Alternativo	Pasador	Talla
5,6	12	<b>FC3-800 L</b>	220-9089		<b>800</b>
7,1	16	<b>FC3-900 L</b>	220-9099	FC3-891 PN-HL	<b>900</b>
9,5	21	<b>FC3-1000 L</b>	220-9109		<b>1000</b>



**RC**



kg	Lb	Part#	Alternativo	Pasador	Size
6,3	14	<b>FC3-800 RC</b>	220-9081		<b>800</b>
8,4	18	<b>FC3-900 RC</b>	220-9091	FC3-891 PN-HL	<b>900</b>
11,1	24	<b>FC3-1000 RC</b>	220-9101		<b>1000</b>



**RPL**

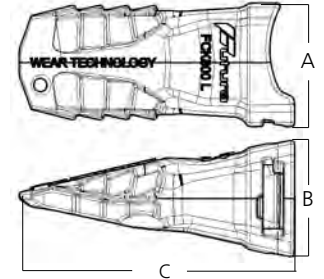


kg	Lb	Part#	Alternativo	Pasador	Size
6,6	15	<b>FC3-800 RPL</b>	220-9081		<b>800</b>
8,6	19	<b>FC3-900 RPL</b>	220-9091	FC3-891 PN-HL	<b>900</b>
11,6	26	<b>FC3-1000 RPL</b>	220-9101		<b>1000</b>

added benefit:  
teeth and pin would  
also fit on **Caterpillar  
K adapters**

**FUTURA FC3 SYSTEM**

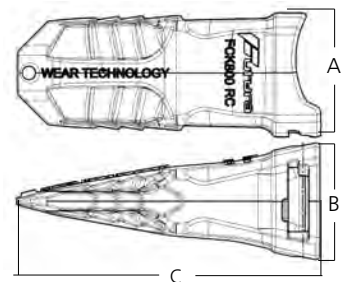
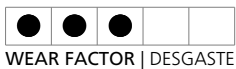
**Teeth LONG Diente LARGO**



A	in	B	mm	in	C	in	kg	Lb	Part#	OEM	Image	SIZE
109	4,29"	98	3,86"	246	9,69"	5,6	12		<b>FC3-800 L</b>	220-9089 315-1098 421-8939 421-8940		<b>800</b>
119	4,69"	107	4,21"	267	10,51"	7,1	16		<b>FC3-900 L</b>	220-9099 421-8949 421-8950		<b>900</b>
131	5,16"	116	4,57"	297	11,69"	9,5	21		<b>FC3-1000 L</b>	220-9109 417-8650 417-8651		<b>1000</b>



**Teeth ROCK CHISEL Diente CINCEL ROCA**

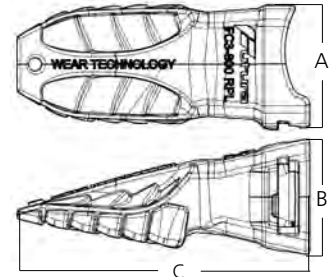
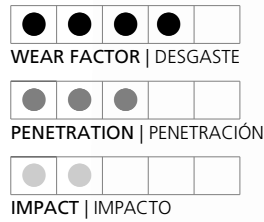


A	in	B	mm	in	C	in	kg	Lb	Part#	OEM	Image	SIZE
109	4,29"	98	3,86"	268	10,55"	6,3	14		<b>FC3-800 RC</b>	220-9081 421-7135 421-7136		<b>800</b>
119	4,69"	107	4,21"	297	11,69"	8,4	18		<b>FC3-900 RC</b>	220-9091 390-0097 390-0099		<b>900</b>
131	5,16"	116	4,57"	311	12,24"	11,1	24		<b>FC3-1000 RC</b>	220-9101 417-8648 417-8649		<b>1000</b>



# FUTURA FC3 SYSTEM

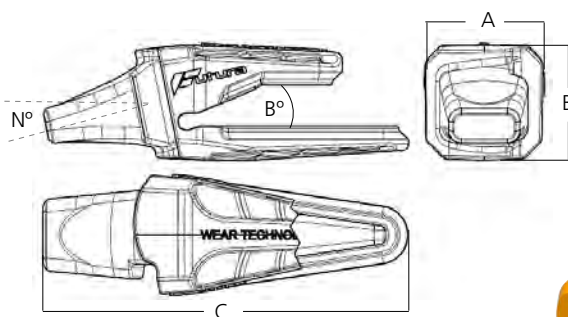
## Teeth ROCK PENETRATION LIGHT Diente Cargadora RPL



A	in	B	mm	in	C	in	kg	Lb	Part#	OEM	FC3-891 PN-HL	SIZE
109	4,29"	98	3,86"	261	10,28"	6,6	15		<b>FC3-800 RPL</b>	220-9089 315-1098 421-8939 421-8940	FC3-891 PN-HL	<b>800</b>
119	4,69"	107	4,21"	279	10,98"	8,6	19		<b>FC3-900 RPL</b>	220-9099 421-8949 421-8950	FC3-891 PN-HL	<b>900</b>
131	5,16"	116	4,57"	308	12,13"	11,6	26		<b>FC3-1000 RPL</b>	220-9109 417-8650 417-8651	FC3-891 PN-HL	<b>1000</b>



## EXCAVATOR Adapter Portadientes EXCAVADORA

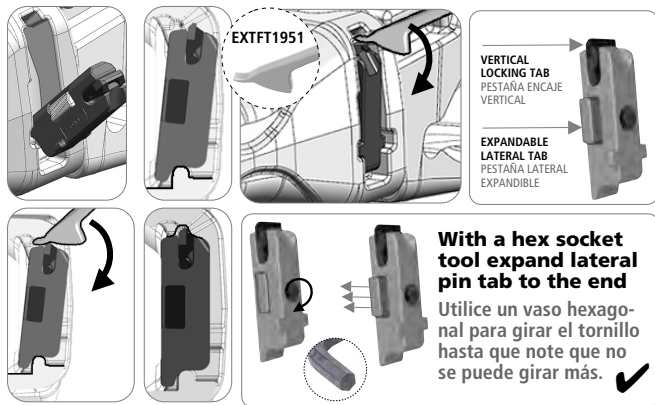


A	in	B	mm	in	C	in	N°	B°	in	kg	Lb	Part#	OEM	FC3-891 PN-HL	SIZE
106	4,17"	105	4,13"	334	13,15"	10	22	<b>35</b>	1,38"	9,0	20	<b>FC3-800</b>	220-9084	FC3-891 PN-HL	<b>800</b>
114	4,49"	116	4,57"	364	14,33"	10	22	<b>40</b>	1,57"	11,8	26	<b>FC3-900</b>	220-9094	FC3-891 PN-HL	<b>900</b>
125	4,92"	126	4,96"	392	15,43"	10	22	<b>45</b>	1,77"	14,8	33	<b>FC3-1000</b>	220-9104	FC3-891 PN-HL	<b>1000</b>



**FUTURA FC3 SYSTEM**

**Pin HAMMERLESS Pasador FUTURA HAMMERLESS**



mm L	mm	Part#	FC3-800 L FC3-800 RC	FC3-800	SIZE
64,8	0,2	<b>FC3-891 PN-HL</b>	FC3-900 L FC3-900 RC	FC3-900	<b>800</b>
2,55"	0		FC3-1000 L FC3-1000 RC	FC3-1000	<b>900</b>
					<b>1000</b>





Caterpillar

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# Caterpillar

**Bold part number,  
available product**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

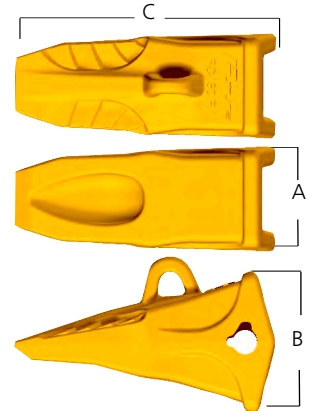
## Ripper Components Componentes Ripper



R1	R2	R2S	R2ST	R3	R3ST	R2P		
-	FC300 R2	-	-	-	-	-	D4 963, 14, 12	<b>R300</b>
-	FC350 R2	-	FC350 R2ST	-	-	-	D5, D6, 973, 16, 977, D7	<b>R350</b>
FC450 R1	FC450 R2	-	FC450 R2ST	FC450 R3	-	-	D8, D8 L, D9, D8 K, D8C, D8 N, D9 H, D9 N	<b>R450</b>
FC500 R1	FC500 R2	FC500 R2S	FC500 R2ST	FC500 R3	FC500 R3ST	FC500 R2P	D10 N	<b>R500</b>
FC550 R1	FC550 R2	FC550 R2S	-	-	-	-	D10 N, D11SS	<b>R550</b>
•	•	•	•	•	•	•		
•	•	•	•	•	•	•		

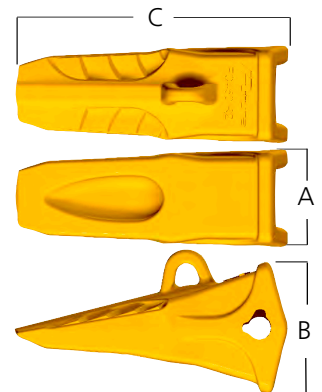
Caterpillar

**R1 Short Ripper Teeth** Diente Ripper Corto



mm.				REF	OEM		REUSABLE		NO REUSABLE		STANDARD	HAMMERLESS	R
A	B	C	KG										
139 5,47"	186 7,32"	344 13,54"	19,30 330	<b>FC450 R1</b>	9W-2451	4T-5451	6Y-3394	-	-	-	8E-4743	FCR450HP	<b>R450</b>
156 6,14"	219 8,62"	414 16,30"	32,50 71,65	<b>FC500 R1</b>	4T-4501	4T-5501	6Y-3909	4T-4707	6Y-1204	6Y-1202	-	FCR500HP	<b>R500</b>
176 6,93"	254 10,00"	480 18,90"	51,90 114,42	<b>FC550 R1</b>	9W-4551	-	8E-2229	8E-2230	9N-4245	6Y-1205	-	FCR550HP	<b>R550</b>

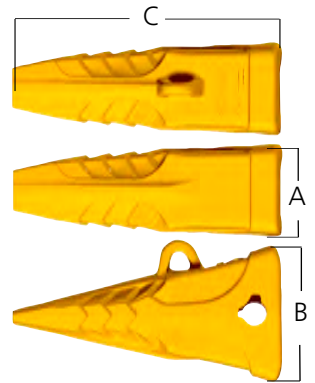
**R2 Medium Ripper Teeth** Diente Ripper Intermedio



mm.				REF	OEM		REUSABLE		NO REUSABLE		STANDARD	HAMMERLESS	R
A	B	C	KG										
94 3,70"	114 4,49"	295 11,61"	6,30 330	<b>FC300 R2</b>	4T-4302	6Y-0309	9J-6583	-	-	-	1U-2405	FCR300HP	<b>R300</b>
123 4,84"	164 6,46"	342 13,46"	14,50 31,97	<b>FC350 R2</b>	6Y-0352	6Y-0359	8E-6358	-	-	-	1U-2405	FCR350HP	<b>R350</b>
139 5,47"	186 7,32"	388 15,28"	25,00 55,11	<b>FC450 R2</b>	9W-2452	4T-5452	6Y-3394	-	-	-	8E-4743	FCR450HP	<b>R450</b>
157 6,18"	219 8,62"	454 17,87"	33,50 73,85	<b>FC500 R2</b>	4T-4502	4T-5502	6Y-3909	4T-4707	6Y-1204	6Y-1202	-	FCR500HP	<b>R500</b>
182 7,17"	250 9,84"	535 21,06"	55,40 122,13	<b>FC550 R2</b>	9W-4552	6Y-3552	8E-2229	8E-2230	9N-4245	6Y-1205	-	FCR550HP	<b>R550</b>

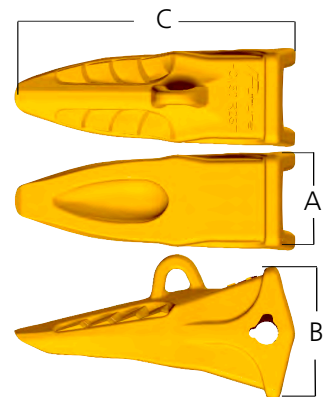
Caterpillar

**R2S Medium Symmetric Ripper Teeth** Diente Intermedio Simétrico



mm.			REF	OEM		REUSABLE		NO REUSABLE		HAMMERLESS		R
A	B	C										
228 8,98"	454 17,87"	36,30 80,03	<b>FC500 R2S</b>	4T-4502	-	6Y-3909	4T-4707	6Y-1204	6Y-1202	FCR500HP	<b>R500</b>	
181 7,13"	277 10,91"	544 21,42"	57,00 125,66	<b>FC550 R2S</b>	9W-4552	6Y-3552	8E-2229	8E-2230	9N-4245	6Y-1205	FCR550HP	<b>R550</b>

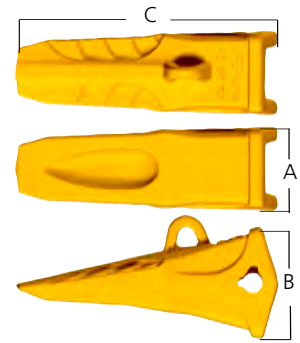
**R2ST Medium Star Ripper Teeth** Diente Ripper Intermedio Estrella



mm.			REF	OEM		REUSABLE		NO REUSABLE		STANDARD	HAMMERLESS	R	
A	B	C											
122 4,80"	184 7,24"	345 13,58"	13,40 29,54	<b>FC350 R2ST</b>	6Y-0352 Star	-	8E-6358	-	-	-	1U-2405	FCR350HP	<b>R350</b>
139 5,47"	186 7,32"	392 15,43"	19,80 43,65	<b>FC450 R2ST</b>	9W-2452 Star	-	6Y-3394	-	-	-	8E-4743	FCR450HP	<b>R450</b>
157 6,18"	228 8,98"	454 17,87"	32,70 72,09	<b>FC500 R2ST</b>	4T-4502 Star	-	6Y-3909	4T-4707	6Y-1204	6Y-1202	-	FCR500HP	<b>R500</b>
				<b>FC550 R2ST</b>	9W-4552 Star	-	8E-2229	8E-2230	9N-4245	6Y-1205	-	FCR550HP	<b>R550</b>

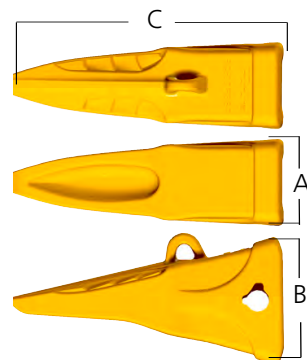
Caterpillar

**R3 Long Ripper Teeth** Diente Ripper Largo



mm.				REF	OEM	REUSABLE		NO REUSABLE		STANDARD	HAMMERLESS	R	
A	B	C	KG										
139 5,47"	182 7,17"	430 16,93"	22,90 330	<b>FC450 R3</b>	114-0453	-	6Y-3394	-	-	8E-4743	FCR450HP	<b>R450</b>	
157 6,18"	219 8,62"	502 19,76"	37,40 82,45	<b>FC500 R3</b>	4T-5503 4T-4503	4T-5503	6Y-3909	4T-4707	6Y-1204	6Y-1202	-	FCR500HP	<b>R500</b>

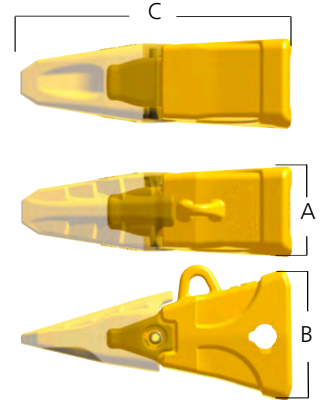
**R3ST Long Star Ripper Tooth** Diente Ripper Largo Estrella Intermedio



mm.				REF	OEM	REUSABLE		NO REUSABLE		HAMMERLESS		R
A	B	C	KG									
157 6,18"	228 8,98"	498 19,61"	36,60 330	<b>FC500 R3ST</b>	4T-5503 4T-4503	-	6Y-3909	4T-4707	6Y-1204	6Y-1202	FCR500HP	<b>R500</b>



**R2P Replaceable Tip Tooth** Diente Punta Reemplazable

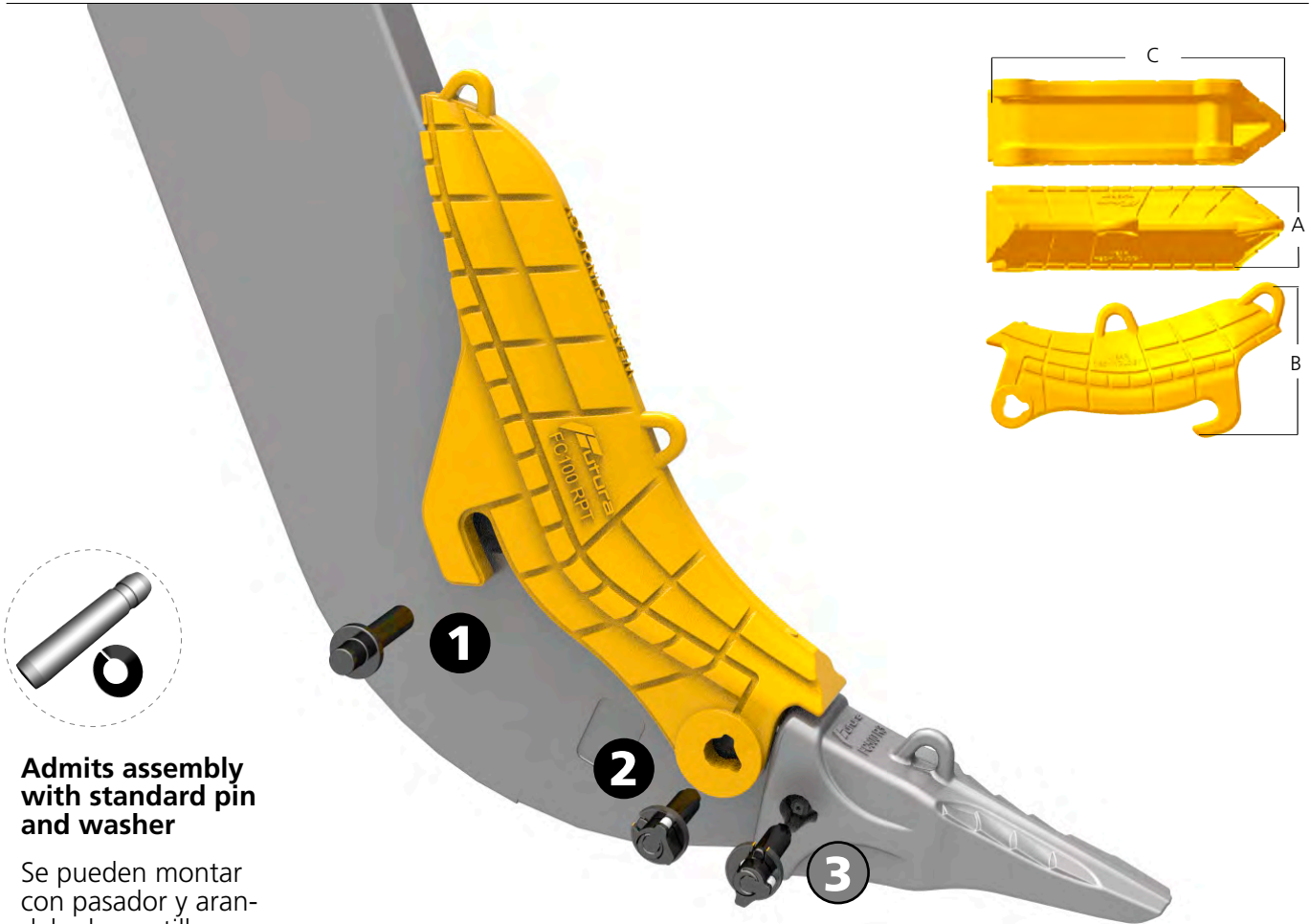


mm.						REPLACEABLE TIP PUNTA REEMPLAZABLE						
A	B	C	KG	OEM	FCR500HP	A	B	C	KG	FC500 TR2	FC400HL2	R500
157	228	469	36,8	4T-4501		132	108	240	9,4			
6,18"	8,98"	18,46"	81,13	4T-5501		5,20"	4,25"	9,45"	20,72			

\*FULL ASSEMBLY MONTAJE COMPLETO

Caterpillar

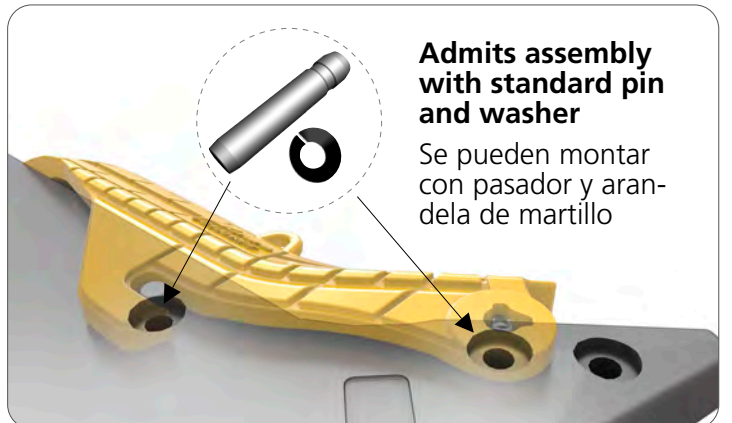
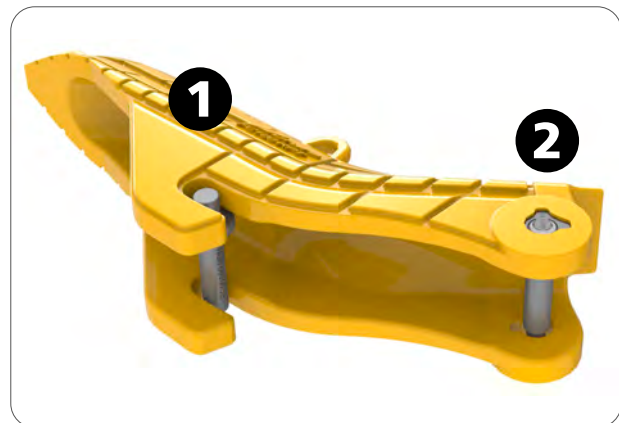
Hammerless Ripper Protector Protector Ripper Hammerless



Admits assembly with standard pin and washer

Se pueden montar con pasador y arandela de martillo

mm.		kg	↔	REF	OEM	1	2	3	R
A	B								
141 5,55"	368 14,49"	50,48 330	<b>75</b> 2,95"	<b>FC75 RPT</b>	STD 6J8814 EXT 132-4716	FC75 RPN	FCR450HP	FCR450HP	<b>R450</b>
182 7,17"	500 19,69"	105,46 232,50	<b>90</b> 3,54"	<b>FC90 RPT</b>	STD 9W8365 EXT 132-1014	FC90100 RPN	FCR90100HP	FCR500HP	<b>R500</b>
182 7,17"	525 20,67"	108,60 330	<b>100</b> 3,94"	<b>FC100 RPT</b>	STD 6Y8960 EXT 132-1015	FC90100 RPN	FCR90100HP	FCR500HP	<b>R500</b>
203 7,99"	449 17,68"	146,47 322,91	<b>110</b> 4,33"	<b>FC110 RPT</b>	STD 9W4621 EXT 132-1016	FC110 RPN	FCR550HP	FCR550HP	<b>R550</b>

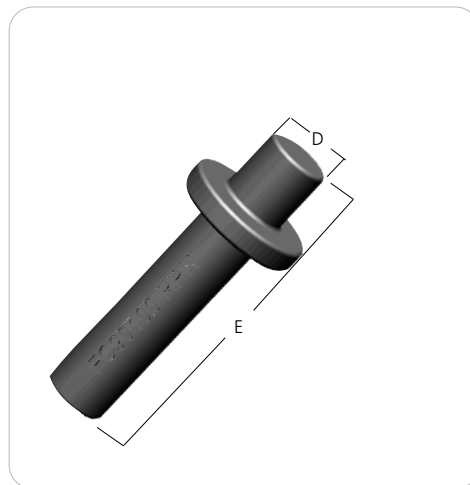
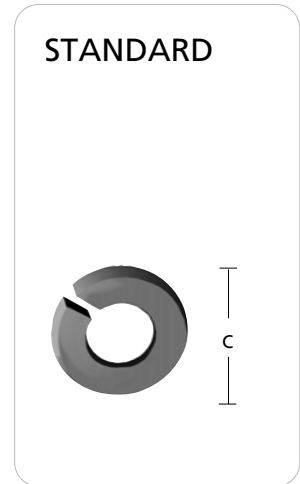
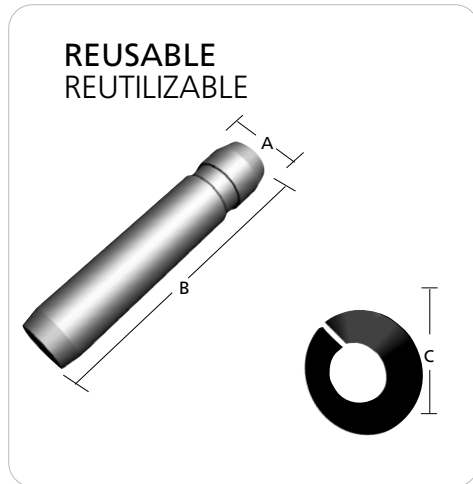


Admits assembly with standard pin and washer

Se pueden montar con pasador y arandela de martillo



**Ripper Fasteners** Sujeción Ripper



mm						REUSABLE	NO REUSABLE	STANDARD	HAMMERLESS				
A	B	C	D	E	KG								
19 0,75"	88 3,46"	38 1,50"	20,50 0,81"	92 3,62"	0,19 0,01"	<b>9J-6583</b>	-	-	<b>1U-2405</b>	<b>FCR300HP</b>	-	<b>R300</b>	
19 0,75"	108 4,25"	38 1,50"	20,50 0,81"	120 4,72"	0,20 0,01"	<b>8E-6358</b>	-	-	<b>1U-2405</b>	<b>FCR350HP</b>	-	<b>R350</b>	
25,4 1,00"	128 5,04"	48 1,89"	26 1,02"	135 5,31"	0,47 0,02"	<b>6Y-3394</b>	-	-	<b>8E-4743</b>	<b>FCR450HP</b>	<b>FC75 RPN</b>	<b>R450</b>	
31,75 1,25"	153 6,02"	64 2,52"	33 1,30"	153 6,02"	0,93 0,04"	<b>6Y-3909</b>	<b>4T-4707</b>	<b>6Y-1204</b>	<b>6Y-1202</b>	-	<b>FCR500HP</b>	<b>R500</b>	
			33 1,30"	167 6,57"	1,10 0,04"					-	<b>FCR90100HP</b>	<b>FC90100 RPN</b>	<b>R500</b>
			37,5 1,48"	170 6,69"	1,15 0,05"	<b>8E-2229</b>	<b>8E-2230</b>	<b>9N-4245</b>	<b>6Y-1205</b>	-	<b>FCR550HP</b>	<b>FC110 RPN</b>	<b>R550</b>

# Caterpillar

## ASSEMBLY INSTRUCTIONS

ENGLISH

► The FUTURA hammerless system RHP works **only with FUTURA RIPPER teeth**

1 Insert the washer into the ripper washer hole as shown in the picture 2 Mount the tooth on the ripper 3 Insert the pin into the hole. Use a SOCKET HEX or a HEX KEY (check the HEX TABLE below for recommended keys for each pin) to rotate the pin from any of its ends. A rubber insert under locking tab allows the locking tab (fig 5) to compress, rotate and lock. 6 Each pin comes with a heavy duty "dirt" plug to keep fines out of the pin's socket. Place plug.

**Disassembly** Repeat steps in reverse order.

## INSTRUCCIONES DE MONTAJE

ESPAÑOL

► El sistema FUTURA Hammerless RHP FUNCIONA SOLO CON DIENTES DE RIPPER MARCA FUTURA

1 Inserte la arandela en el hueco del ripper en la posición que se indica 2 Encaje el diente en el brazo de ripper 3 Coloque el pasador en el orificio del diente como se indica 4 Utilice una llave ALLEN (hexagonal) o un VASO HEXAGONAL para girar el pasador (compruebe el tamaño de la llave en la tabla de la derecha) 5 El mecanismo de fijación del pasador permite que la pestaña de cierre se comprima, rote y bloquee el diente 6 Los pasadores RHP van acompañados de un tapón de goma anti-suciedad. Coloque el tapón. El diente está listo para trabajar.

**Desmontaje** Repetir los pasos en orden inverso.

## INSTRUCTIONS DE MONTAGE

FRANÇAIS

► Le système de montage sans marteau FUTURA RHP fonctionne **uniquement avec FUTURA RIPPER dents**

1 Insérer la rondelle dans le trou del ripper comme montré dans l'image 2 Montez la dent sur el ripper 3 Insérez la goupille dans le trou 4 Aussi facile à installer qu'à retirer avec une clé Allen standard ou une socket HEX (vérifier la taille de la clé dans le tableau à droite). Les goupilles sont retenues en place en toute sécurité par le mécanisme de loquet muni del'insertion de caoutchouc sous la barrure qui permet de compresser, tourner et barrer en place (fig. 5) 6 Chaque goupille vient avec un bouchon pour empêcher la saleté de pénétrer dans les extrémités. Insérer le bouchon.

**Démontage** Répétez les étapes dans l'ordre inverse.

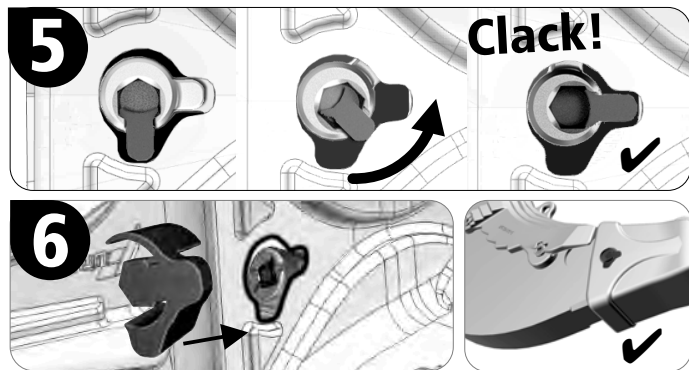
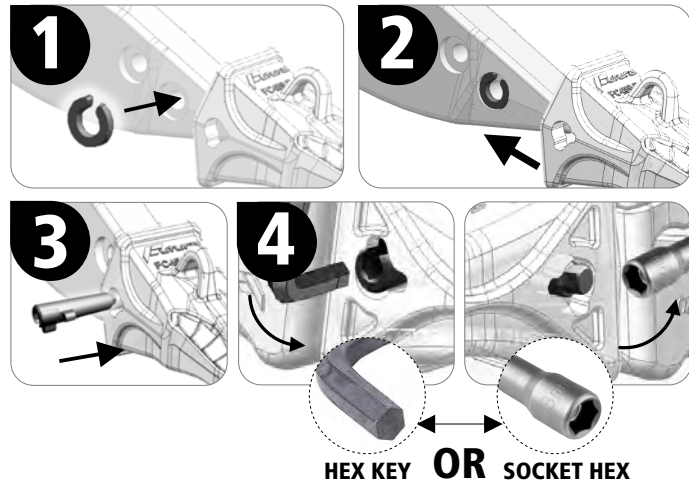
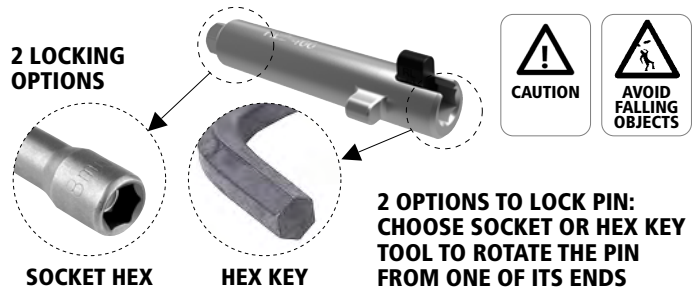
## INSTRUÇÕES DE MONTAGEM

PORTUGUÊS

► The sistema RHP funciona **exclusivamente com pontas FUTURA RIPPER**

1 Inserir na anilha no orifício na posição indicada 2 Montar a ponta no ripper 3 Colocar a cavilha no orifício da ponta 4 Use uma chave Allen (hex) ou un soquete HEX para ligar a cavilha (verificar o tamanho da chave no quadro à direita) 5 O mecanismo de fixação permite que o encaixe da borracha se comprima, rode e bloqueie a peça com uma simples rotação de 90° 6 Cada trava vêm acompanhado de um tampão para evitar a entrada de sujidade nas extremidades. Inserir tampão.

**Desmontagem** repita os passos na ordem inversa.



SOCKET HEX		PART NUMBER			
<b>M13</b>	1/2"	HL2-R300	<b>M10</b>	3/8"	
<b>M13</b>	1/2"	HL2-R350	<b>M10</b>	3/8"	
<b>M17</b>	11/16"	HL2-R450	<b>M14</b>	9/16"	
<b>M22</b>	7/8"	HL2-R500	<b>M18</b>	11/16"	
<b>M24</b>	15/16"	HL2-R550	<b>M21</b>	13/16"	

### OEM Cross Refs (WHEN USING FUTURA TOOTH)

L	L	Ø	Ø				SIZE
mm	in	mm	in				
92	3,62"	20,5	0,81"	<b>FCR300HP</b>	9J-6583	1U-2405	<b>R300</b>
120	4,72"	20,5	0,81"	<b>FCR350HP</b>	8E-6358	1U-2405	<b>R350</b>
135	5,31"	26,0	1,02"	<b>FCR450HP</b>	6Y-3394	8E-4743	<b>R450</b>
153	6,02"	33,0	1,30"	<b>FCR500HP</b>	6Y-3909, 6Y-1204	4T-4707, 6Y-1202	<b>R500</b>
170	6,69"	37,5	1,48"	<b>FCR550HP</b>	8E-2229, 9N-4245	8E-2230, 6Y-1205	<b>R550</b>





DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# Esco

## Ripper Components Componentes Ripper

		Power HP Potencia CV	
-	<b>FE22 R2</b> 22-R10	30-100	<b>22</b>
-	<b>FE25 R2</b> 25-R12	100-160	<b>25</b>
-	<b>FE35 R2</b> 35-RH1A4	160-300	<b>35</b>
<b>FE39 RPT</b> 39-RHSL	<b>FE39 R2</b> 39-R17E 39-RH17E 39-RH18A	300-500	<b>39</b>



PROTECTOR  
PROTECTOR

TOOTH  
DIENTE

Esco

**Ripper Protector** Protector de Ripper



mm.		mm.		mm.		mm.		mm.	
B	C	KG	Part	Part	Part	Part	Part	Part	Part
90	88	392	43,83	<b>FE39 RPT</b>	39-SPH	39-SPH	39-SPH	39-RWNS1A	<b>300-500</b>
3,54"	3,46"	15,43"	96,63	39-RHSL	39-SRH	39-SRH	39-SRH		

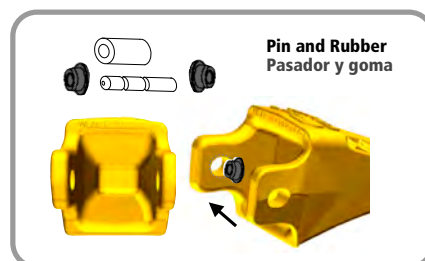
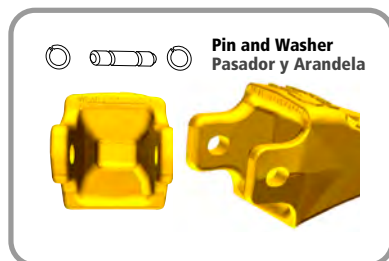
**R2 Ripper Teeth** Diente de Ripper



**\*Includes Adaptation Kit**  
**\*Incluye Kit Adaptación**

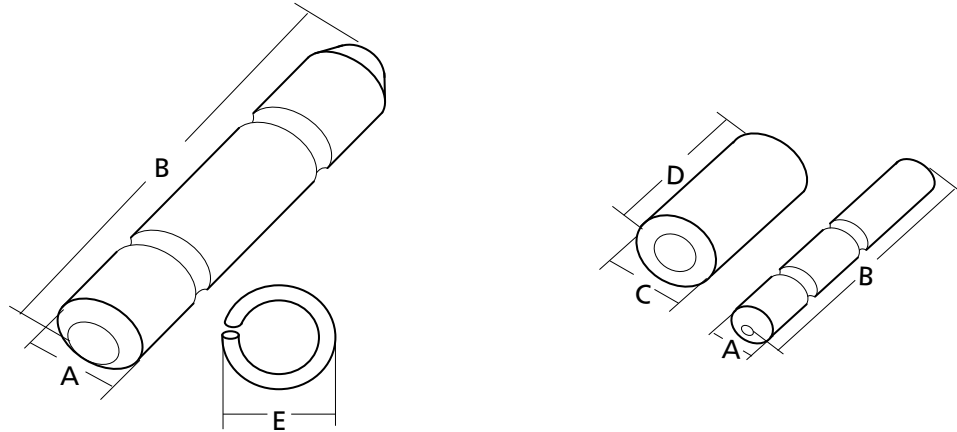
mm.				Current System / Sistema Actual			Old System / Sistema Antiguo			mm.
A	B	C	KG	Part	Part	Part	Part	Part	Part	
86	98	273	4,00	<b>FE22 R2</b>	22-RPG	22-RBG	-	-	-	<b>22</b>
3,39"	3,86"	10,75"	8,82	22-R10						
101	106	307	6,00	<b>FE25 R2</b>	25-RPG	25-RBG	-	-	-	<b>25</b>
3,98"	4,17"	12,09"	13,23	25-R12						
129	146	407	14,30	<b>FE35 R2*</b>	35-RPG	49-SR	●	35-RPG	35-RBG	<b>35</b>
5,08"	5,75"	16,02"	31,53	35-RH14A						
154	214	458	24,90	<b>FE39 R2*</b>	49RP-39RPH	49-SR	●	39-RPG	39-RBG	<b>39</b>
6,06"	8,43"	18,03"	54,89	39-R17E 39-RH17E 39-RH18A						






**\*Mounts the two systems**  
**\*Permite montar los dos sistemas:**

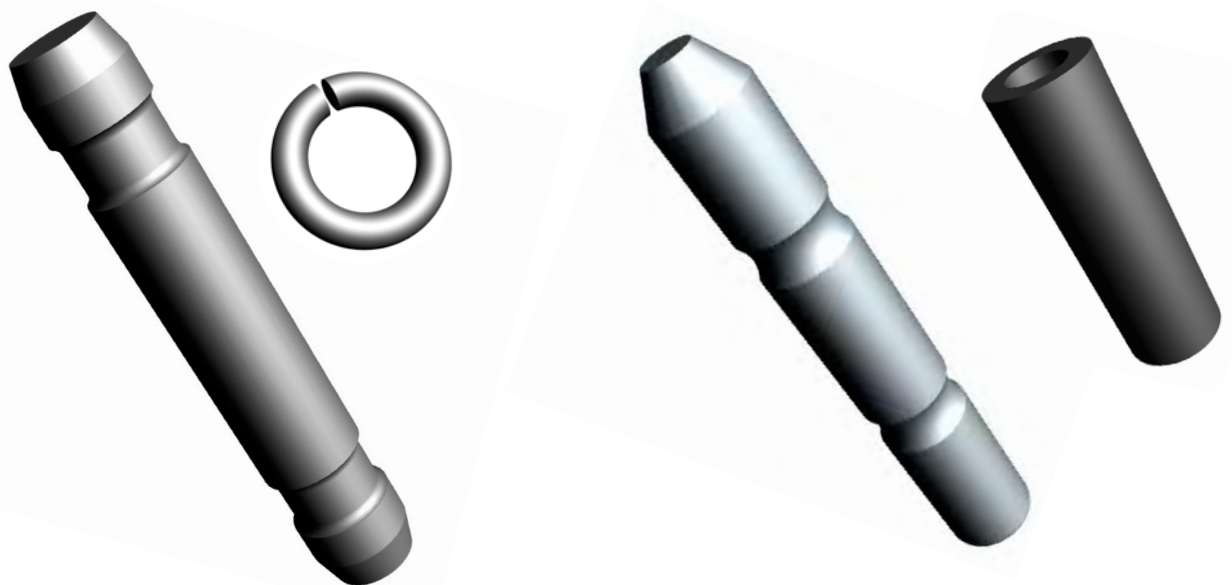




**Pin & Washer** Pasador y Arandela



mm.									
A	B	C	D	E					
12,7 0,50"	82 3,23"	20,6 0,81"	56 2,20"	-	-	-	<b>22-RPG</b>	<b>22-RBG</b>	<b>22</b>
12,7 0,50"	92 3,62"	20,6 0,81"	64 2,52"	-	-	-	<b>25-RPG</b>	<b>25-RBG</b>	<b>25</b>
12,7 0,50"	130 5,12"	20,6 0,81"	84 3,31"	-	-	-	<b>35-RPG</b>	<b>35-RBG</b>	<b>35</b>
22,2 0,87"	127 5,00"	-	-	32,6 1,28"	<b>35-RPH</b>	<b>49-SR</b>	-	-	<b>35</b>
12,7 0,50"	140 5,51"	20,6 0,81"	84 3,31"	-	-	-	<b>39-RPG</b>	<b>39-RBG</b>	<b>39</b>
22,2 0,87"	151 5,94"	-	-	32,6 1,28"	<b>49RP-39RPH</b>	<b>49-SR</b>	-	-	<b>39</b>
30 1,18"	133 5,24"	-	-	40,5 1,59"	<b>39-SPH</b>	<b>39-SRH</b>	-	-	<b>39</b>



Esco

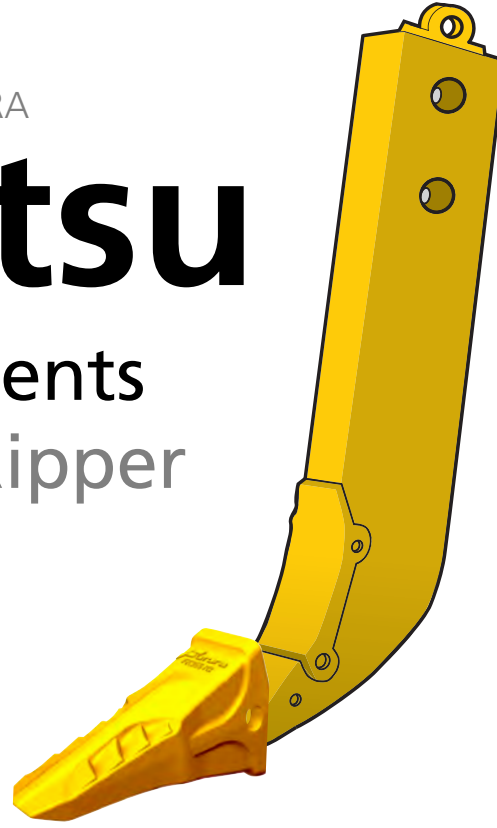
Komatsu

DIRECT REPLACEMENT PARTS FOR

PIEZAS DE REEMPLAZO DIRECTO PARA

# Komatsu

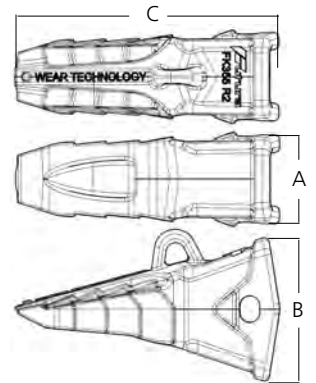
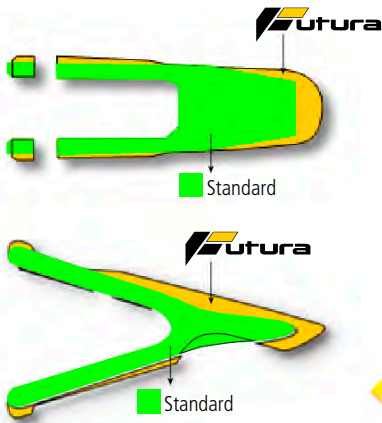
## Ripper Components Componentes Ripper



**Bold part number, available product**  
Other part numbers please consult

**Referencia en negrita producto disponible**  
Otras referencias consúltenos

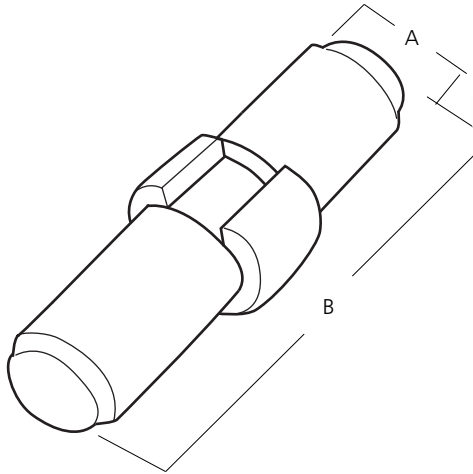
### Ripper Teeth Diente Ripper




mm.				OEM					
A	B	C	KG						
129 5,08"	185 7,28"	356 14,02"	16,80 37,04	<b>FK155 R2</b>	<b>175-78-31230</b> <b>175-78-31232</b>	175-78-34131 175-78-34141	09244-02508	D85-18, D85-21, D135A-1 D135A-2, D150A-1, D155A-1, D155A-2, D155AX-3	<b>R155</b>
133 5,24"	215 8,46"	394 15,51"	21,50 47,40	<b>FK355 R2</b>	<b>195-78-21331</b> <b>195-78-21333</b>	195-78-29130 195-78-29140	09244-02508	D275A-2 D355A-3 D455A-1	<b>R355</b>
144 5,67"	230 9,06"	463 18,23"	30,70 67,68	<b>FK375 R2</b>	<b>195-78-71320</b> <b>195-78-71330</b> 195-78-71340 195-78-71350		195-78-71360	D375A-1 D375A-2	<b>R375</b>
163 6,42"	266 10,47"	476 18,74"	39,30 86,64	<b>FK475 R2</b>	198-78-21420 198-78-21380	<b>198-78-21350</b> <b>198-78-21340</b>	198-78-21410	D475A-1 D475A-2	<b>R475</b>

**Komatsu**

**Ripper Fasteners Pasadores Ripper**



mm.		Ref. BYG	OEM	
A	B			
25 0,98"	97 3,82"	<b>09244-02496</b>	205-70-19610 205-70-69130	D40/D45, D40/D41, D50/D53-16 D50/D53-17, D66S
				D60/D65-7 D60/D65-8, D65-12, D75A-1 D75S-3, D75S-5, D85E-SS-2A
25 0,98"	109 4,29"	<b>175-78-21740</b>	09244-02508	D85-18, D85-21, D135A-1, D135A-2 D150A-1, D155A-1, D155A-2, D155AX-3
				D275A-2, D355A-3 D455A-1 D375A-1
30 1,18"	145 5,71"	<b>09244-03036</b>	198-79-11320 A03-78-11730 426-847-1130	D455A-1, D475A-1, D375A-1, D375A-2
30 1,18"	113 4,45"	<b>195-78-71360</b>	-	D375A-1 D375A-2
-	-	198-78-21410	-	D475A-2
-	-	-	-	D475A-1, D475A-2
35 1,38"	185 7,28"	<b>19M-78-11370</b>	19M-78-11371	D575 A-2



**Dredge**

## Spherilok

DIRECT  
REPLACEMENT  
PARTS FORPIEZAS DE  
REEMPLAZO  
DIRECTO PARA

## Spherilok

HORSE POWER		BREAK OUT FORCE		SIZE
STANDARD	HEAVY DUTY	STANDARD	HEAVY DUTY	
300 - 1000		225 - 750 KW		<b>28</b>
1000 - 2000	<b>800 - 1800</b>	750 - 1500 KW	<b>600 - 1350 KW</b>	<b>38</b>
2000 - 3500	<b>1800 - 2800</b>	1500 - 2625 KW	<b>1350 - 2100 KW</b>	<b>48</b>
3500 - 5000	<b>2800 - 3500</b>	2625 - 3750 KW	<b>2100 - 2600 KW</b>	<b>52</b>
5000 - 7000	<b>3500 - 5000</b>	3750 - 5250 KW	<b>2600 - 3730 KW</b>	<b>58</b>
	<b>5000 - 6500</b>		<b>3730 - 4850 KW</b>	<b>62</b>
	<b>6500 - 8000</b>		<b>6500 - 8000 KW</b>	<b>68</b>

## QUICK SELECTION GUIDE

GUIA DE SELECCIÓN DE TALLAS



Spherilok

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

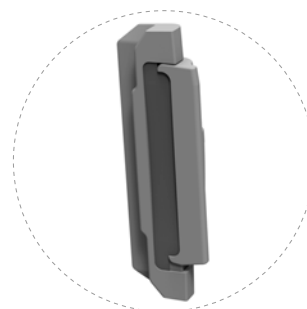
**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

# Spherilok



2 Tooth options  
with your  
current adapter



**DREDGE**



**HAMMERLESS  
SOLUTION**

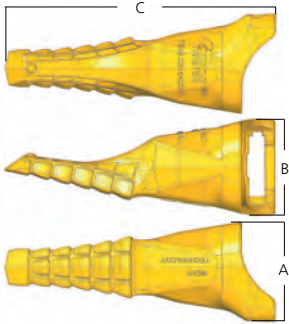
**DRP**

**STANDARD OEM  
ASSEMBLY**



**Spherilok**

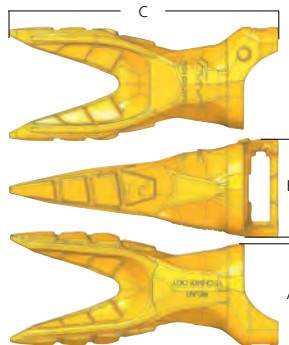
**Hammerless Chisel Tooth** Diente Cincel Hammerless



**C HL**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref				SIZE		
118	4,65"	112	4,41"	344	13,54"	5,9 13,01	<b>FE28 DS13ACHL</b> <b>FE28 DS13ACHL-ARM</b>	28DS13AC	FE28 DSPNHL	FE28 DS380D	FE28 DS8862	FE28 DSWN	<b>28</b>	
146	5,75"	137	5,39"	380	14,96"	10,30 22,71	<b>FE38 DS15ACHL</b> <b>FE38 DS15ACHL-ARM</b>	38DS15AC	FE38 DSPNHL	FE38 DS490D	FE38 DS3816A	FE38 DSWN	<b>38</b>	
159	6,26"	154	6,06"	433	17,05"	13,80 30,42	<b>FE48 DS16AC2HL</b> <b>FE48 DS16AC2HL-ARM</b>	48DS16AC2	FE48 DSPNHL	FE48 DS580D	-	FE48 DSWN	<b>48</b>	EXTFI EXTFI 90
169	6,65"	169	6,65"	439	17,28"	18,40 40,56	<b>FE52 D18AC2HL</b>		FE5268 DSPNHL	FE52 D642D	FE52 DS8868D		<b>52</b>	
223	8,78"	203	7,99"	503	19,80"	29,00 63,93	<b>FE62 D19CHL</b>		FE5268 DSPNHL	FE62 D709D			<b>62</b>	
238	9,37"	222	8,74"	628	24,72"	44,00 97,00	<b>FE68 D24CHL</b>	68DS16AC2	FE5268 DSPNHL	FE68 D789D			<b>68</b>	

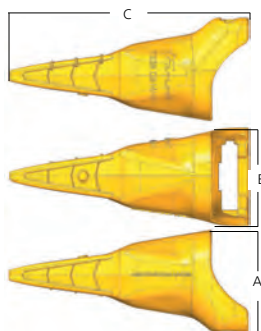
**Hammerless WT Tooth** Diente Doble Punta Hammerless



**WT HL**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref				SIZE		
112	4,41"	117	4,61"	305	12,01"	6,30 13,89	<b>FE28 DS12WTHL</b> <b>FE28 DS12WTHL-ARM</b>	-	FE28 DSPNHL	FE28 DS380D	FE28 DS8862	FE28 DSWN	<b>28</b>	EXTFI EXTFI 90

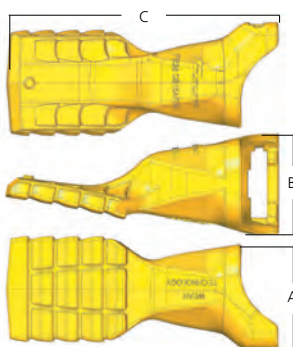
## Hammerless Pick Point Tooth Diente VTL Hammerless



**P** **HL**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE	
120	4,72"	117	4,61"	310	12,20"	6,00	13,23	<b>FE28 DS12HL</b> <b>FE28 DS12HL-ARM</b>	28DS12	FE28 DSPNHL	FE28 DS380D	FE28 DS8862	FE28 DSWN	<b>28</b>	
140	5,51"	122	4,80"	332	13,07"	8,50	18,74	<b>FE38 DS14HL</b> <b>FE38 DS14HL-ARM</b>	38DS14	FE38 DSPNHL	FE38 DS490D	FE38 DS3816A	FE38 DSWN	<b>38</b>	
159	6,26"	154	6,06"	350	13,78"	10,90	24,03	<b>FE48 DS14HL</b> <b>FE48 DS14HL-ARM</b>	48DS14	FE48 DSPNHL	FE48 DS580D		FE48 DSWN	<b>48</b>	EXTFI EXTFI 90
169	6,65"	169	6,65"	391	15,39"	15,90	35,05	<b>FE52 D1610HL</b>	52D16-10	FE5268 DSPNHL	FE52 D642D	FE52 DS8868D		<b>52</b>	
220	8,66"	199	7,83"	480	18,90"	25,60	56,44	<b>FE62 D1910AHL</b> <b>FE62 D1910AHL-ARM</b>	62D19-10A	FE5268 DSPNHL	FE62 D709D			<b>62</b>	
230	9,06"	220	8,66"	503	19,80"	30,30	66,80	<b>FE68 D1910AHL</b>	68D19-10A	FE5268 DSPNHL	FE68 D789D			<b>68</b>	

## Hammerless Flare Tooth Diente Ancho Hammerless

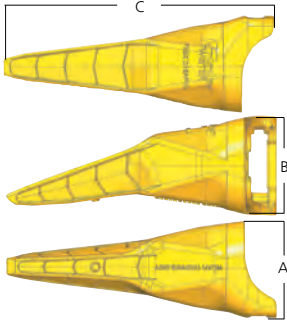


**F** **HL**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE	
112	4,41"	117	4,61"	334	13,15"	5,80	12,79	<b>FE28 DS13AFHL</b> <b>FE28 DS13AFHL-ARM</b>	28DS13AF	FE28 DSPNHL	FE28 DS380D	FE28 DS8862	FE28 DSWN	<b>28</b>	
145	5,71"	137	5,39"	374	14,72"	12,50	27,56	<b>FE38 DS15AFHL</b> <b>FE38 DS15AFHL-ARM</b>	38DS15AF	FE38 DSPNHL	FE38 DS490D	FE38 DS3816A	FE38 DSWN	<b>38</b>	EXTFI EXTFI 90
159	6,26"	154	6,06"	428	16,85"	16,80	37,04	<b>FE48 DS16AFHL</b> <b>FE48 DS16AFHL-ARM</b>	48DS16AF	FE48 DSPNHL	FE48 DS580D		FE48 DSWN	<b>48</b>	
172	6,77"	169	6,65"	440	17,32"	20,70	45,63	<b>FE52 D18AF2HL</b>		FE5268 DSPNHL	FE52 D642D	FE52 DS8868D		<b>52</b>	

**Spherilok**

**Hammerless AP Tooth Diente Cincel Hammerless**



**AP HL**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref			SIZE			
169	6,65"	169	6,65"	456	17,95"	17,30	38,14	<b>FE52 D18APHL</b> <b>FE52 D18APHL-ARM</b>	52D18AP	FE28 DSPNHL	FE52 D642D	FE52 DS8868D	<b>52</b>	EXTFI EXTFTI90

**Hammerless Pin Pasador Hammerless Exclusivo**

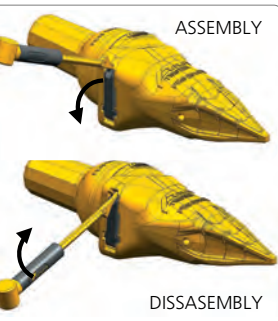
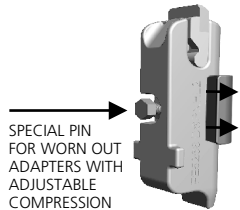
**EXTFI & EXTFI 90  
EXTRACTION TOOLS**

HERRAMIENTAS  
EXTRACCIÓN

SPECIAL TOOL  
FOR EASY  
INSTALLATION  
AND  
REMOVAL

EXTFI 90      EXTFI

**FE5268 DSPNHL2**



**ENGINEERED PINS**

FUTURA HAMMERLESS pins have more compression on each side than their OEM equivalents. More compression on the walls of the assembly means more stability and extended wear life of all the parts in contact.

**EXTENDED  
WEAR LIFE**

**SAFETY**

**SHORTEST  
DOWNTIME**

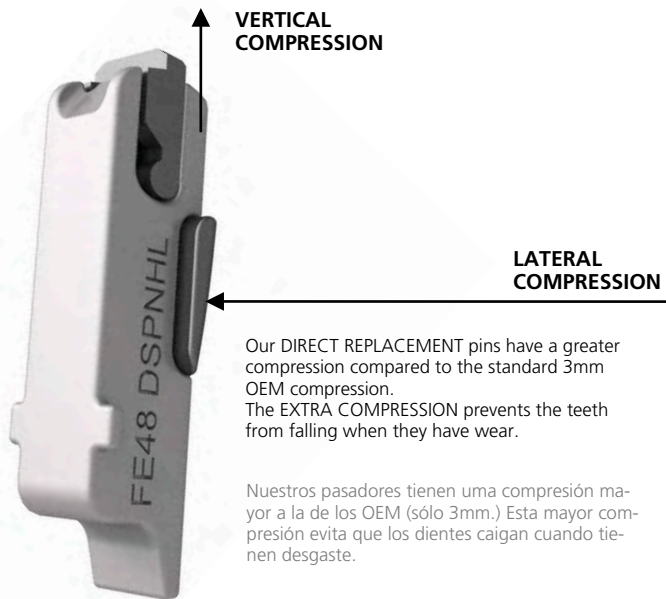
**DISEÑO MEJORADO**

Los pasadores FUTURA HAMMERLESS presentan más compresión en cada lado que sus equivalentes OEM. Una mayor compresión en las paredes internas del conjunto se traduce en un mayor estabilidad y una mayor vida

**MAYOR VIDA ÚTIL DE  
LOS COMPONENTES**

**MÁS SEGURIDAD**

**MÁS RAPIDEZ  
EN LOS CAMBIOS**



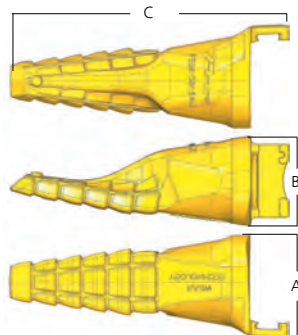
Our DIRECT REPLACEMENT pins have a greater compression compared to the standard 3mm OEM compression. The EXTRA COMPRESSION prevents the teeth from falling when they have wear.

Nuestros pasadores tienen una compresión mayor a la de los OEM (sólo 3mm.) Esta mayor compresión evita que los dientes caigan cuando tienen desgaste.



L	L in	Lbs	Part#	SIZE
74	2,91"	0,21 0,46	<b>FE28 DSPNHL</b>	<b>28</b>
106	4,17"	0,42 0,93	<b>FE38 DSPNHL</b>	<b>38</b>
116	4,57"	0,50 1,10	<b>FE48 DSPNHL</b>	<b>48</b>
115	4,53"	0,63 1,39	<b>FE5268 DSPNHL</b>	<b>52</b>
115	4,53"	0,63 1,39	<b>FE5268 DSPNHL2</b>	<b>68</b>

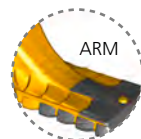
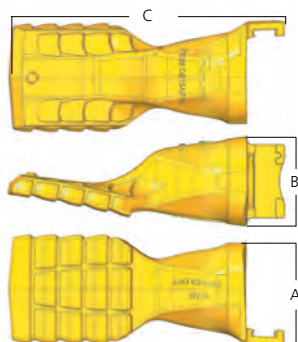
## DRP Chisel Tooth Diente Cincel Reemplazo Directo



**C**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE	
119	4,69"	107	4,21"	345	13,58"	5,63	12,41	<b>FE28 DS13AC</b> <b>FE28 DS13AC-ARM</b>	28DS13AC	FE28 DSPN	FE28 DS380D	FE28 DS8862	FE28 DSWN	<b>28</b>	EXTFT-1333
140	5,51"	122	4,80"	332	13,07"	9,30	20,50	<b>FE38 DS15AC</b> <b>FE38 DS15AC-ARM</b>	38DS15AC	FE38 DSPN	FE38 DS490D	FE38 DS3816A	FE38 DSWN	<b>38</b>	EXTFT-3961
168	6,61"	162	6,38"	438	17,24"	17,84	39,33	<b>FE52 D18AC2</b>	FE5268 DSPN		FE52 D642D	FE52 D8868D		<b>52</b>	
226	8,90"	198	7,80"	500	19,69"	27,70	61,07	<b>FE62 D19C</b>	62D19C	FE5268 DSPN				<b>62</b>	
227	8,94"	199	7,83"	576	22,68"	31,00	68,34	<b>FE62 D23C</b>	62D23C	52D-58 DSPN2		FE62 D709D		<b>62</b>	EXTFT-6981
243	9,57"	222	8,74"	624	24,57"	43,00	94,80	<b>FE68 D24C</b>	68DS16AC2			FE68 D789D		<b>68</b>	

## DRP Flare Tooth Diente Ancho Reemplazo Directo

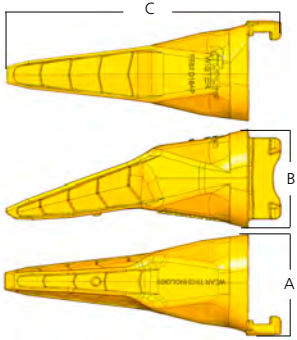


**F**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE	
117	4,61"	107	4,21"	334	13,15"	7,60	16,75	<b>FE28 DS13AF</b> <b>FE28 DS13AF-ARM</b>	28DS13AF	FE28 DSPN	FE28 DS380D	FE28 DS8862	FE28 DSWN	<b>28</b>	EXTFT-1333
140	5,51"	128	5,04"	373	14,69"	12,11	26,70	<b>FE38 DS15AF</b>	38DS15AF	FE38 DSPN	FE38 DS490D	FE38 DS3816A	FE38 DSWN	<b>38</b>	EXTFT-3961
170	6,69"	163	6,42"	441	17,36"	21,40	47,18	<b>FE52 D18AF2</b>	52D18AF2	FE5268 DSPN	FE52 D642D	FE52 DS8868D		<b>52</b>	EXTFT-3961

**Spherilok**

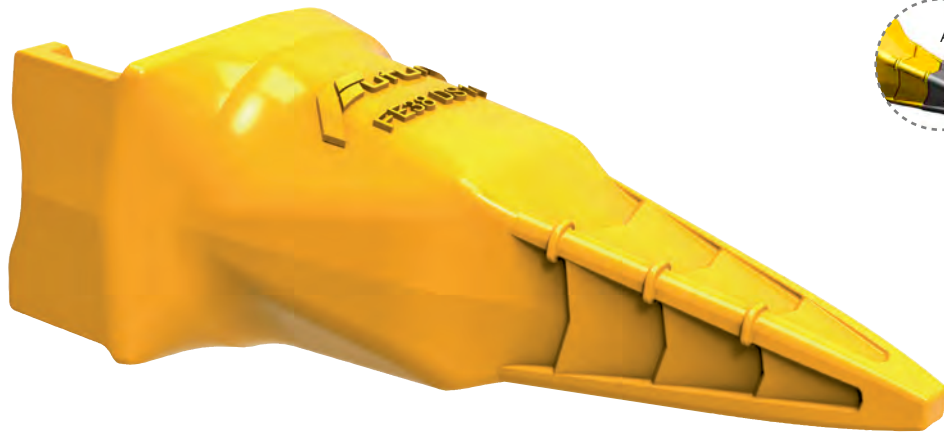
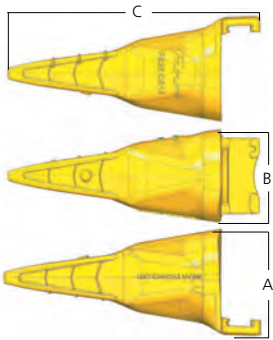
**DRP AP Tooth** Diente Cincel Reemplazo Directo



**AP**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref				SIZE	
168	6,61"	162	6,38"	456	17,95"		16,80 37,04	<b>FE52 D18AP</b>	52D18AP	FE5268 DSPN 52D-58 DSPN2 52D-58 DSPN2X	FE52 D642D	FE52 D8868D	<b>52</b>	EXTFT-3961

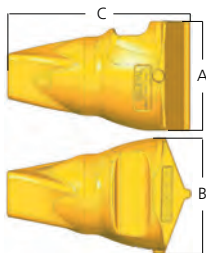
**DRP Pick Point Tooth** Diente VTL Reemplazo Directo



**P**

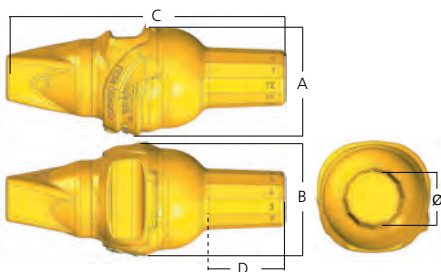
A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE	
120	4,72"	117	4,61"	310	12,20"		5,31 11,71	<b>FE28 DS12</b> <b>FE28 DS12 -ARM</b>	28DS12	FE28 DSPN	FE28 DS380D	FE28 DS8862	FE28 DSWN	<b>28</b>	EXTFT-1333
140	5,51"	122	4,80"	332	13,07"		7,70 16,98	<b>FE38 DS14</b> <b>FE38 DS14 -ARM</b>	38DS14	FE38 DSPN	FE38 DS490D	FE38 DS3816A	FE38 DSWN	<b>38</b>	
156	6,14"	146	5,75"	348	13,70"		10,20 22,49	<b>FE48 DS14</b> <b>FE48 DS14 -ARM</b>	48DS14	FE48 DSPN	FE48 DS580D		FE48 DSWN	<b>48</b>	EXTFT-3961
169	6,65"	161	6,34"	391	15,39"		15,48 34,13	<b>FE52 D1610</b> <b>FE52 D1610 -ARM</b>	52D16-10		FE52 D642D	FE52 D8868D		<b>52</b>	
228	8,98"	202	7,95"	477	18,78"		26,00 57,32	<b>FE62 D1910A</b> <b>FE62 D1910A -ARM</b>	62D19-10A	FE5268 DSPN 52D-58 DSPN2 52D-58 DSPN2X	FE62 D709D		FE62 D709D	<b>62</b>	EXTFT-6981
243	9,57"	223	8,78"	497	19,57"		29,3 64,59	<b>FE68 D1910A</b> <b>FE68 D1910A -ARM</b>	68D19-10A		FE68 D789D			<b>68</b>	

## Weld-on Nose Nariz Soldable



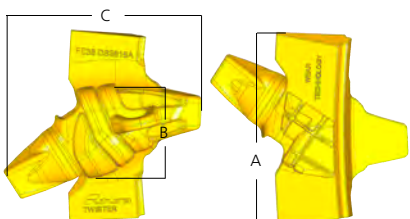
A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref	SIZE
98	3,86"	100	3,94"	178	7,01"	6,82	15,04	<b>FE28 DSWN</b>	WN28DS	<b>28</b>
131	5,16"	133	5,24"	217	8,54"	13,00	28,66	<b>FE38 DSWN</b>	WN38DS	<b>38</b>
156	6,14"	157	6,18"	241	9,49"	19,30	42,55	<b>FE48 DSWN</b>	WN48DS	<b>48</b>

## Adapter Portadientes



A	A in	B	B in	C	C in	D	D in	ø	ø in		Pounds	Part#	Cross Ref	SIZE
101	3,98"	101	3,98"	264	10,39"	82	3,23"	53	2,09"	8,80	19,40	<b>FE28 DS380D</b>	-	<b>28</b>
137	5,39"	135	5,31"	339	13,35"	97	3,82"	66	2,60"	18,80	41,45	<b>FE38 DS490D</b>	490D38DS	<b>38</b>
158	6,22"	162	6,38"	428	16,85"	139	5,47"	78	3,07"	30,00	66,14	<b>FE48 DS580D</b>	580D48DS	<b>48</b>
176	6,93"	181	7,13"	460	18,11"	152	5,98"	84	3,31"	40,00	88,18	<b>FE52 D642D</b>	642D52D	<b>52</b>
206	8,11"	208	8,19"	490	19,29"	160	6,30"	92	3,62"	58,60	129,19	<b>FE62 D709D</b>	709D62D	<b>62</b>
254	10,00"	243	9,57"	515	20,28"	160	6,30"	96	3,78"	68,7	151,46	<b>FE68 D709D</b>	709D68D	<b>68</b>
232	9,13"	232	9,13"	512	20,16"	142	5,59"	89	3,50"	72,90	160,71	<b>FE68 D789D</b>	789D68D	

## Adapter Portadientes



A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref	SIZE
233	9,17"	104	4,09"	302	11,89"	13,00	28,66	<b>FE28 DS8862</b>	3816A30DS	<b>28</b>
326	12,83"	144	5,67"	344	13,54"	28,00	61,73	<b>FE38 DS3816A</b>	3816A30DS	<b>38</b>
413	16,26"	198	7,80"	373	14,69"	39,70	87,52	<b>FE52 D8868D</b>	8868D52DS	<b>52</b>

**Spherilok**

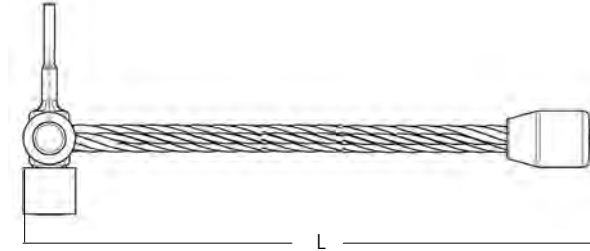
**Standard Pin Extraction Tools** Herramientas Extractoras Pasadores Standard



**EXTFT-1333**

**EXTFT-3961**

**EXTFT-6981**



mm.		REF	
L			
420 16,54"	1,80 3,97	<b>EXTFT-1333</b>	<b>13 to 33</b>
420 16,54"	2,40 5,29	<b>EXTFT-3961</b>	<b>39 to 61</b>
702 27,64"	4,30 9,48	<b>EXTFT-6981</b>	<b>69 to 81</b>



## DRP Standard Pin Pasador Reemplazo Directo Standard



L	L in	Pounds	Part#	Cross Ref	Type	SIZE
140	5,51"	0,36 0,79	<b>52D-58DSPN2</b>	52DSPN3	<b>STANDARD</b>	<b>52</b>
140	5,51"	0,36 0,79	<b>52D-58DSPN2X</b>	52DSPN3	<b>HD</b>	<b>62</b>

## DRP Engineered Pin Pasador Reemplazo Directo Mejorado



**4MM+4MM  
COMPRESSION**

**4MM+4MM  
COMPRESIÓN**

### EXTENDED WEAR LIFE

The FUTURA DRP pins present 8mm. of compression compared to the standard 3mm. OEM compression. The EXTRA COMPRESSION prevents the teeth from falling when they have wear.

### ENGINEERED PINS

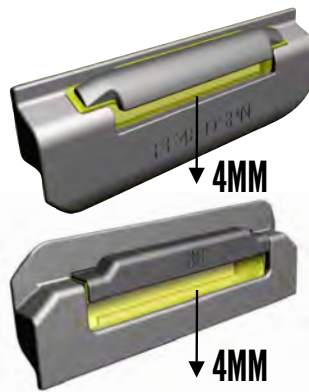
FUTURA DRP pins have more compression on each side than their OEM equivalents. More compression on the walls of the assembly means more stability and extended wear life of all the parts in contact.

### MAYOR VIDA ÚTIL

Nuestros pasadores tienen 8mm. de compresión y los OEM sólo 3mm. Una mayor compresión evita que los dientes caigan cuando tienen desgaste.

### DISEÑO MEJORADO

Los pasadores FUTURA DRP presentan más compresión en cada lado que sus equivalentes OEM. Una mayor compresión en las paredes internas del conjunto se traduce en un mayor estabilidad y una mayor vida



L	L in	Pounds	Part#	Cross Ref	SIZE
74	2,91"	0,13 0,29	<b>FE28 DSPN</b>	28DSPN3	<b>28</b>
100,5	3,96"	0,25 0,55	<b>FE38 DSPN</b>	38DSPN3	<b>38</b>
120,5	4,74"	0,30 0,66	<b>FE48 DSPN</b>	48DSPN3	<b>48</b>
140	5,51"	0,41 0,90	<b>FE5268 DSPN</b>	52DSPN3	<b>52</b> <b>62</b> <b>68</b>

FUTURA vs STANDARD OEM

FUTURA vs HD OEM

	<p>FUTURA PIN </p> <p>OEM PIN </p> <p>OEM HD PIN </p>	<p>PIN COMPRESSION <b>FUTURA = OEM</b></p>	<p>PIN COMPRESSION <b>FUTURA &lt; 4MM OEM</b></p>
		<p><b>FUTURA 4MM &gt; OEM</b></p>	<p><b>FUTURA 4MM &gt; OEM</b></p>

Spherilok

Quadrilok

DIRECT  
REPLACEMENT  
PARTS FOR

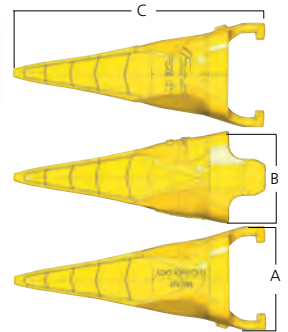
PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# Quadrilok

**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

## Pick Point Tooth Diente VTL

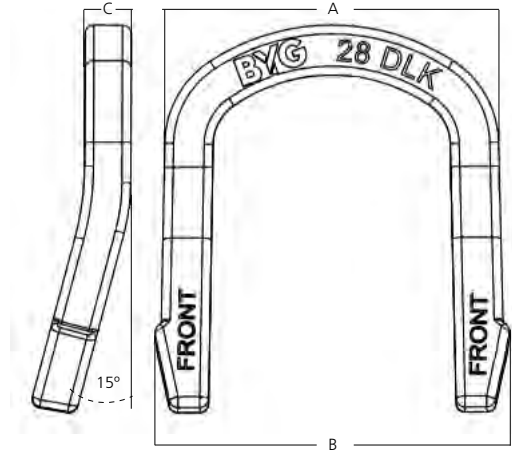



**P**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref		SIZE
118	4,65"	105	4,13"	285	11,22"	4,50 9,92	<b>FE28 D11</b>	28D11	28DLK	<b>28</b>

**Quadrilok**

**Quadrilok Pin** Pasador herradura Quadrilok



A	A in	B	B in	C	C in	 Pounds	Part#	SIZE
94	3,70"	99,7	3,93"	13,6	0,54"	0,34 0,75	<b>28 DLK</b>	<b>28</b>

SuperV

DIRECT  
REPLACEMENT  
PARTS FOR

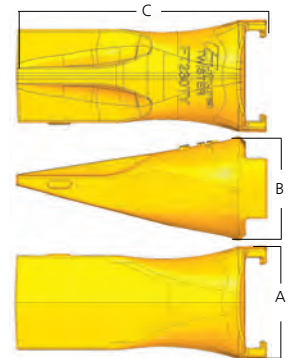
PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# SuperV

**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*

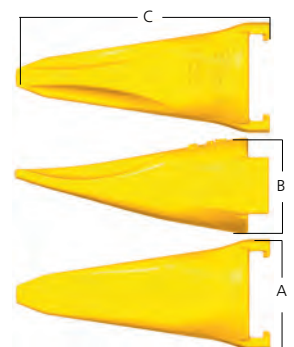
## Standard TY Tooth Diente TY



**TY**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref		SIZE	
90	3,54"	82	3,23"	209	8,23"	3,40 7,50	<b>FT230 TY</b>	V23 TY	FT1923 PN	<b>23</b>	EXTFT-1333

## Chisel VY Tooth Diente VY



**VY**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref		SIZE	
91	3,58"	79	3,11"	220	8,66"	2,80 6,17	<b>FT230 VY</b>	V23 VY	FT1923 PN	<b>23</b>	EXTFT-1333

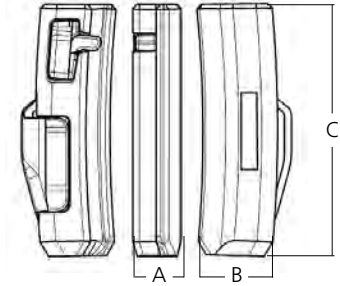
SuperV

DRP Pin Pasador



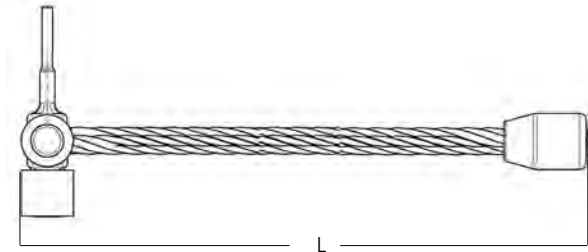
FUTURA PINS could be re-used several times and are designed to be used with other SuperV® products in the market

Gracias a la calidad de su acero, los pasadores TWISTER pueden ser re-utilizados varias veces. Están diseñados para poder ser utilizados con otros productos SuperV® y alternativos del mercado



A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref	SIZE
11,3	0,44"	16,7	0,66"	53,1	2,09"	0,04	0,09	<b>FT1923 PN</b>	V23PN	<b>23</b>

Standard Pin Extraction Tools Herramientas Extractoras Pasadores Standard



L	L in		Pounds	Part#	SIZE
420	16,54"	1,80	3,97	<b>EXTFT-1333</b>	<b>23</b>

Superconical

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

# Superconical

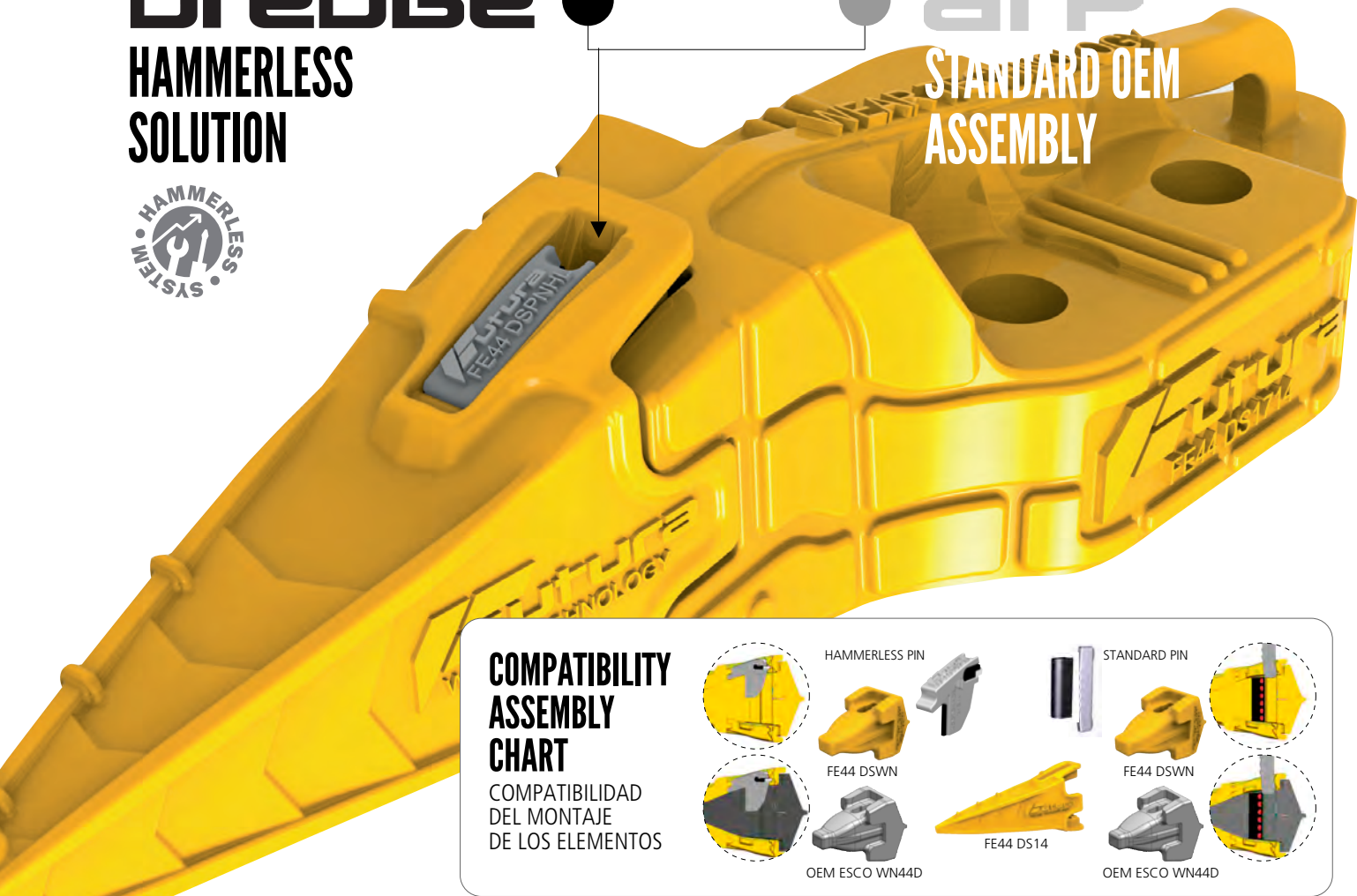


2 Assembly  
options  
with your  
current adapter



**DREDGE** ●  
**HAMMERLESS  
SOLUTION**

● **DRP**  
**STANDARD OEM  
ASSEMBLY**

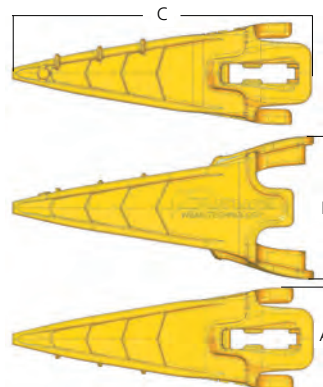


**COMPATIBILITY ASSEMBLY CHART**  
COMPATIBILIDAD DEL MONTAJE DE LOS ELEMENTOS

Adapter	Hammerless Pin	Standard Pin
FE44 DSWN	Compatible	Compatible
OEM ESCO WN44D	Compatible	Compatible
FE44 DS14	Compatible	Compatible
OEM ESCO WN44D	Compatible	Compatible

**Superconical**

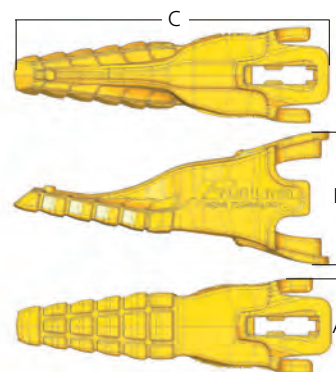
**DRP Standard Tooth** Diente Standard



**P**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref							SIZE	
124	4,88"	173	6,81"	362	14,25"	10,31	22,73	<b>FE44 DS14</b> <b>FE44 DS14-ARM</b>	44D-14	44-DLK	44-DPN	FE44 DSPNHL	FE44 DS1714 FE44 DS1806	FE44 DSWN	EXTF EXTFI 90	<b>44</b>

**DRP Chisel Tooth** Diente Cincel



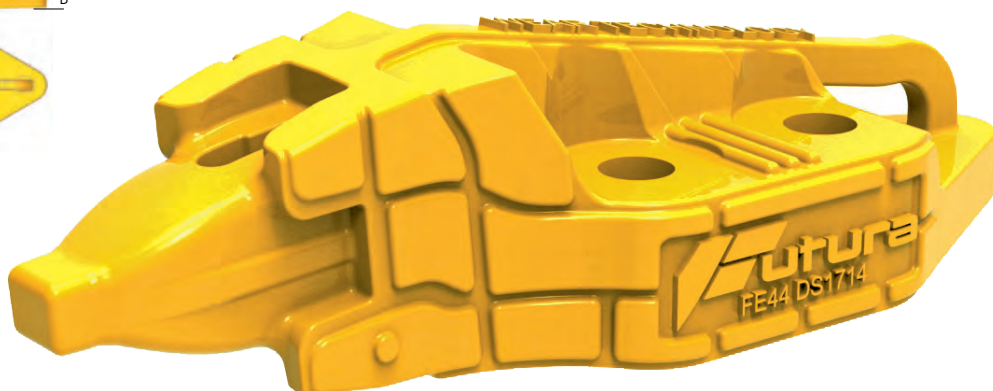
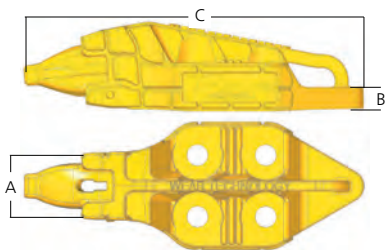
**C**

A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref							SIZE	
124	4,88"	173	6,81"	408	16,06"	11,95	26,34	<b>FE44 DS15AC</b> <b>FE44 DS15AC-ARM</b>	-	44-DLK	44-DPN	FE44 DSPNHL	FE44 DS1714 FE44 DS1806	FE44 DSWN	EXTF EXTFI 90	<b>44</b>



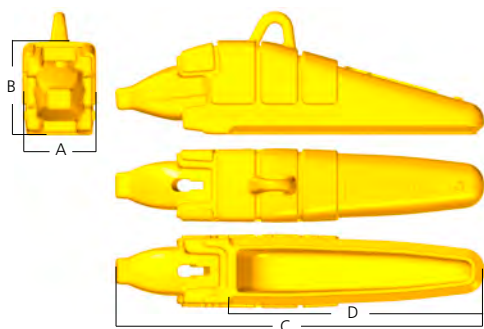
Superconical

### Bolt-on Adapter Portadientes Atornillable



A	A in	B	B in	C	C in	Ø	Ø in		Pounds	Part#	Cross Ref	SIZE
114	4,49"	44	1,73"	630	24,80"	40	1,57"	63,80	140,65	<b>FE44 DS1714</b>	1714-44D	<b>44</b>

### Weld-on Adapter Portadientes Soldable



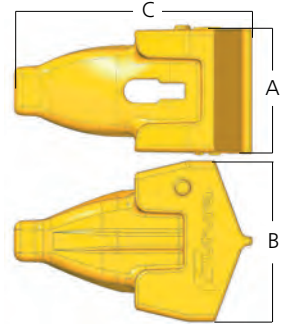
A	A in	B	B in	C	C in	D	D in		Pounds	Part#	Cross Ref	SIZE
126	4,96"	162	6,38"	635	25,00"	442	17,40"	41,40	91,27	<b>FE44 DS1806</b>	1086-44D	<b>44</b>

**Superconical**

**Weld-on Nose** Nariz Soldable

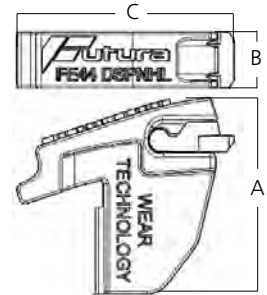
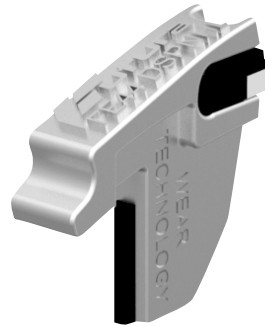


FE44 DSWN90



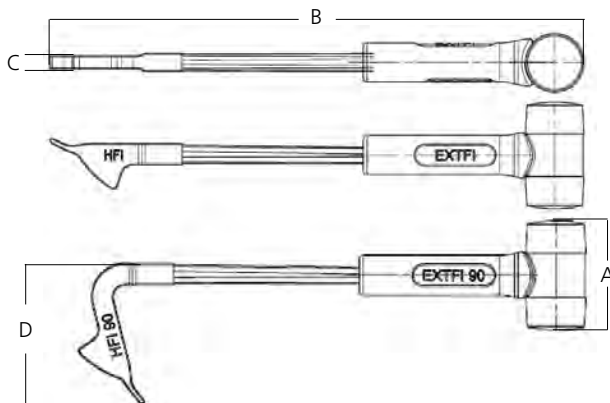
A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref	SIZE
115	4,53"	148	5,83"	218	8,58"	12,00	26,46	<b>FE44 DSWN</b>	WN44D	<b>44</b>
148	5,83"	115	4,53"	218	8,58"	12,50	27,56	<b>FE44 DSWN90</b>	WN44D90	

**Hammerless Pin** Pasador Hammerless



A	A in	B	B in	C	C in		Pounds	Part#	SIZE
77	3,03"	22	0,87"	85	3,35"	0,50	1,10	<b>FE44 DSPNHL</b>	<b>44</b>

**Extraction Tools** Herramientas Extractoras



EXTFI



EXTFI 90

A	A in	B	B in	C	C in	D	C in		Pounds	Part#
82	3,23"	381	15,00"	10	0,39"			1,00	2,20	<b>EXTFI</b>
82	3,23"	412	16,22"	10	0,39"	85	3,35"	1,00	2,20	<b>EXTFI 90</b>

DRP IHC CB

DIRECT  
REPLACEMENT  
PARTS FOR

PIEZAS DE  
REEMPLAZO  
DIRECTO PARA

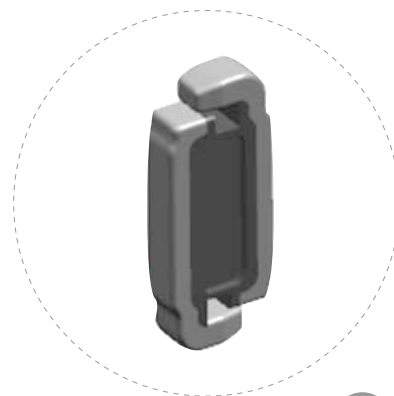
# IHC CB

**Bold part number,  
product available**  
*Other part numbers  
please consult*

**Referencia en negrita  
producto disponible**  
*Otras referencias  
consúltenos*



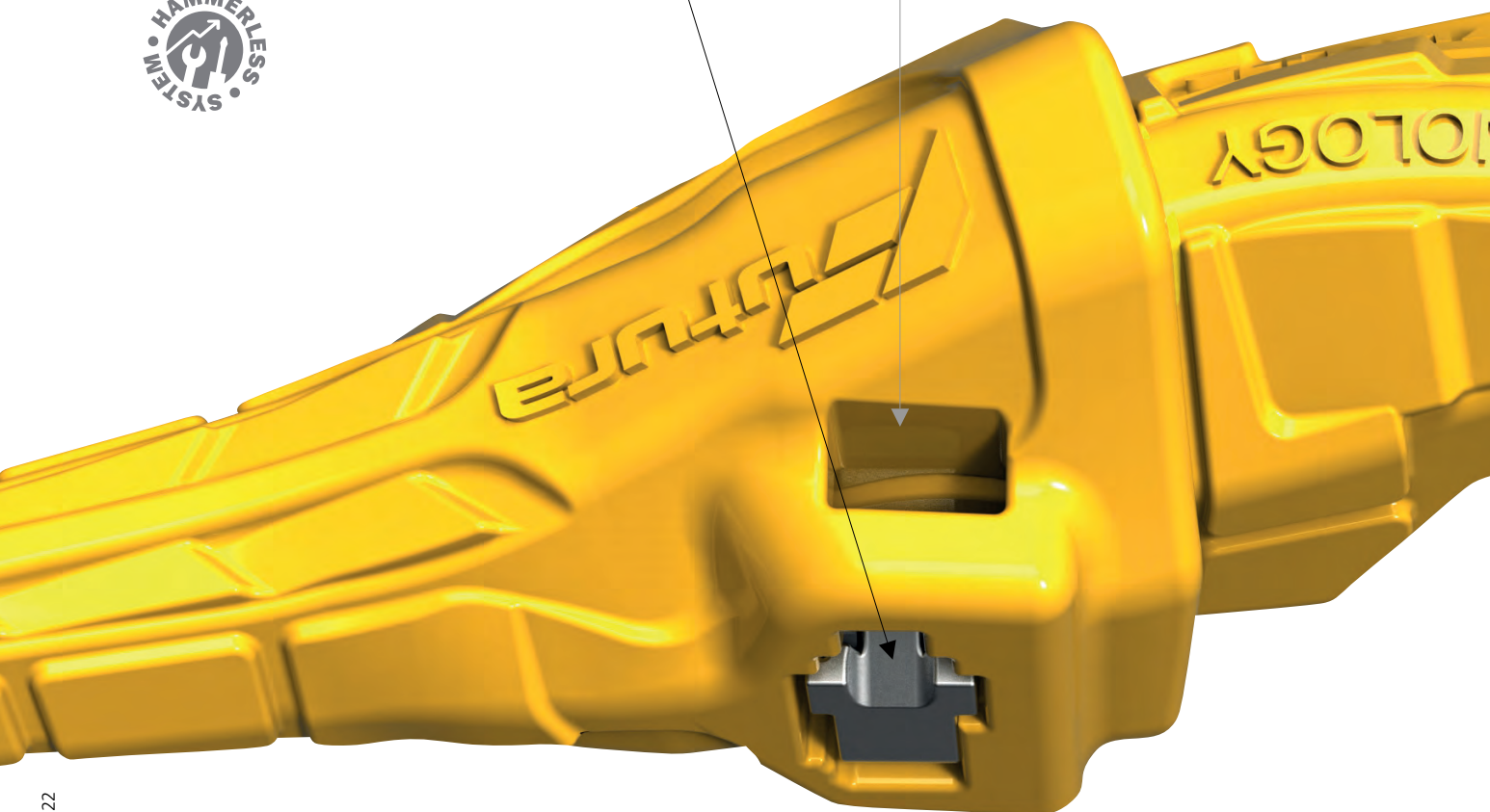
2 Assembly  
options  
with your  
current adapter



**DREDGE**  
**HAMMERLESS SOLUTION**

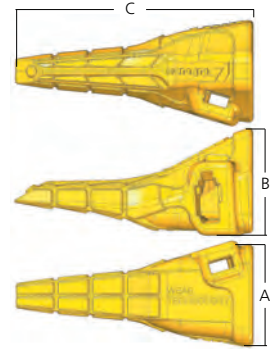


**DRP**  
**STANDARD OEM ASSEMBLY**



**DRP IHC CB**

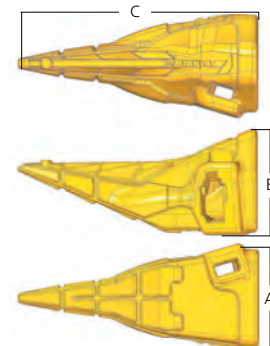
**DRP Chisel Tooth** Diente Cincel



**N**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE
127	5,00"	133	5,24"	295	11,61"	7,30	16,09	<b>FI200 N</b>	20-CB-N	FI200 HL	FI200 PN	FI200 ACR	EXTFI, EXTFI90	<b>200</b>

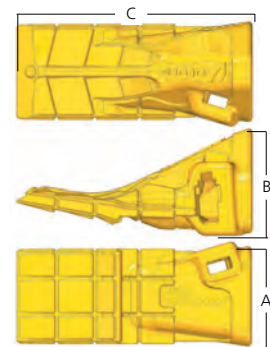
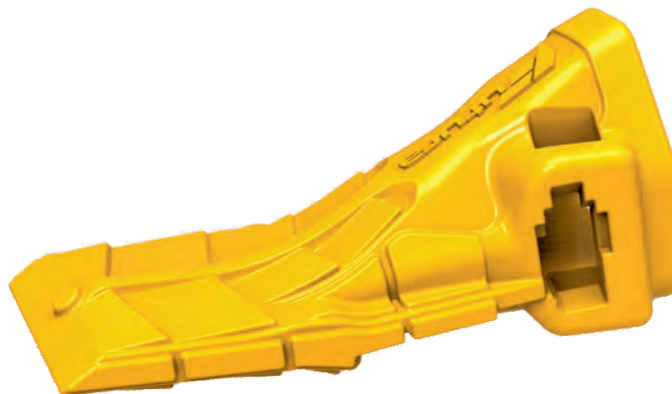
**DRP Pick Tooth** Diente Punta



**P**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE
122	4,80"	133	5,24"	301	11,85"	8,40	18,52	<b>FI200 P</b>	20-CB-P	FI200 HL	FI200 PN	FI200 ACR	EXTFI, EXTFI90	<b>200</b>

**DRP Flare Tooth** Diente Ancho

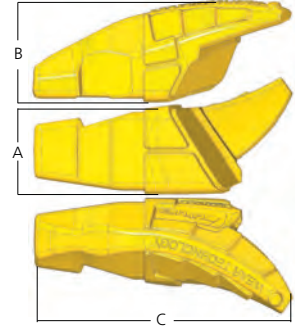


**F**

A	A in	B	B in	C	C in		Pounds	Part#	Cross Ref					SIZE
125	4,92"	133	5,24"	293	11,54"	9,30	20,50	<b>FI200 F</b>	20-CB-F	FI200 HL	FI200 PN	FI200 ACR	EXTFI, EXTFI90	<b>200</b>

**DRP IHC CB**

**Weld-on Adapter** Portadientes Soldable



A	A in	B	B in	C	C in	Pounds	Part#	Cross Ref	SIZE
83	3,27"	108	4,25"	268	10,55"	8,10 17,86	<b>FI200 ACR</b>	20-CB AD	<b>200</b>

**Hammerless Pin** Pasador



A	A in	L	L in	Pounds	Part#	SIZE
22	60,8	108	4,25"	0,20 0,44	<b>FI200 HL</b>	<b>200</b>

**Extraction Tools** Herr. Extractoras



**COMPATIBILITY ASSEMBLY CHART**  
COMPATIBILIDAD DEL MONTAJE DE LOS ELEMENTOS

 FI200 N	 FI200 HL	 FI200 ACR	 OEM ADAPTER
 OEM TOOTH	 FI200 HL	 FI200 ACR	 OEM ADAPTER

 FI200 N	 OEM PIN	 FI200 ACR	 OEM ADAPTER
 OEM TOOTH	 OEM PIN	 FI200 ACR	 OEM ADAPTER

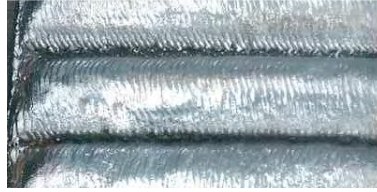
# Overlay Options

## 3 OVERLAY OPTIONS AVAILABLE FOR ALL FUTURA PARTS



### PTAW CHROMIUM CARBIDE OVERLAY

TYPE	CHROMIUM CARBIDE OVERLAY
PROCESS	PLASMA TRANSFER ARC WELDING
APPLICATION	<b>IMPACT - WEAR - ABRASION</b>
ALLOYS	Fe C Cr B Si Mo W Nb
THICKNESS	4-5 mm
HARDNESS	60-67HRC
FINISH	Uniform and dense microstructure.



### PTAW TUNGSTEN

TYPE	TUNGSTEN CARBIDE OVERLAY
PROCESS	PLASMA TRANSFER ARC WELDING
APPLICATION	<b>IMPACT- WEAR - ABRASION</b>
ALLOYS	TUNGSTEN
THICKNESS	4-5 mm
HARDNESS	90-95HRC
FINISH	Tungsten carbide overlay sits on a middle layer to release stress and improve impact toughness. Uniform carbide particles.



### ARM HARDFACING

TYPE	TUNGSTEN COATING
PROCESS	ARC WELDING   FILTER ROD
APPLICATION	<b>WEAR - ABRASION - LOW IMPACT</b>
ALLOYS	TUNGSTEN
THICKNESS	6-7 mm
HARDNESS	60-67HRC
FINISH	Coated layer of tungsten. Dense structure of tungsten particles with a rough finish.



### WHAT IS HARDFACING?

Hardfacing is a metal working process where harder/tougher material is applied to a base metal. It is welded to the base material with specialized electrodes for **arc welding** or filler rod for oxyacetylene and TIG welding.

### WHAT IS PTWA?

Powder metal alloys are used in the PTAW (Plasma Transfer Arc Welding) process

### WHAT IS A TUNGSTEN COATING?

A tungsten coating is made of **extremely hard Tungsten particles** (Tungsten is harder than Quartz and Topaz). This coating forms a **protective shield** over key wearing surfaces. The Tungsten coating is bondable to practically any tip, blade or wear part manufactured by BYG.

### ARM APPLICATIONS

Tungsten coating is recommended for applications where **sand, gravel and other abrasive materials** severely diminish wear parts life.

### WHERE CAN BE USED?

Hardfacing may be applied to a new part during production to increase its **wear resistance**, or it may be used to restore a worn-down surface.

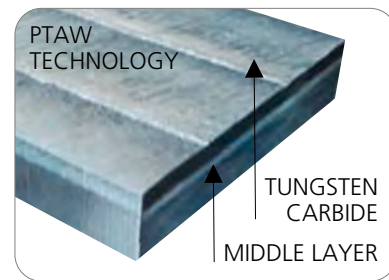
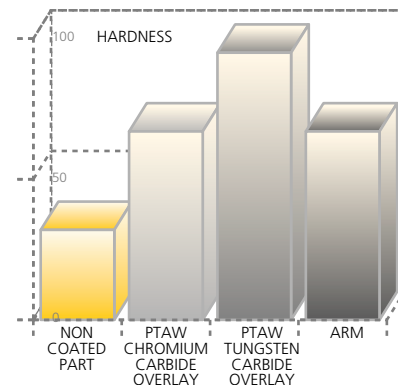
### BENEFITS?

The result of significant savings in machine downtime and production costs has meant that this process has been adopted across many industries.

### ECONOMY

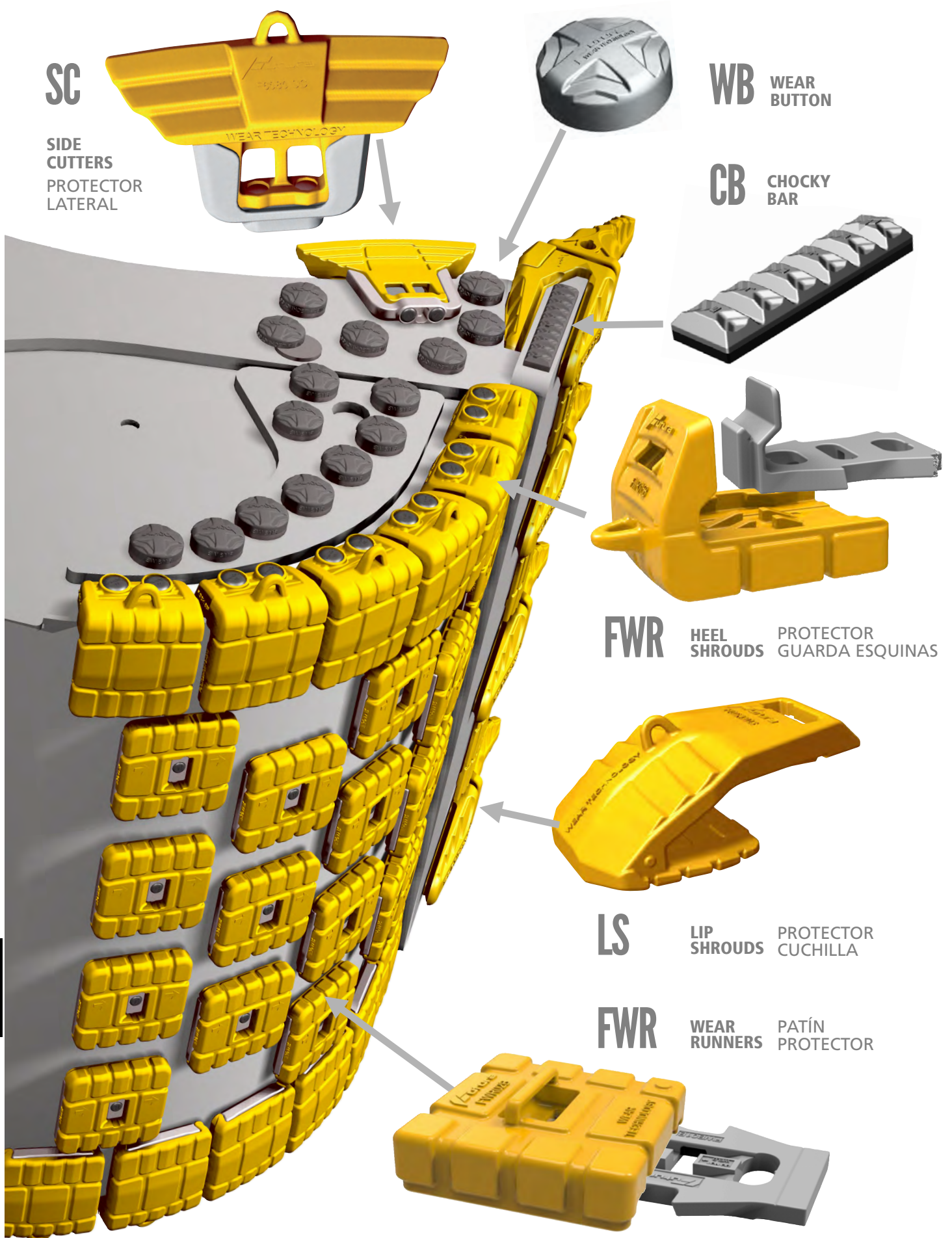
BYG tungsten coating protects components from wear in critical areas. Compared with non-coated components, protected parts can last up to 3-5 times longer in high abrasion/low to moderate impact conditions. This represents a substantial saving on total operating costs. The tungsten coating delivers dramatically lower costs per hour in appropriate applications.

Tungsten coating enhanced wear patterns improve penetration and help your machines do more work each hour, which increases productivity and therefore profitability. Long wear life means you'll spend less time replacing wear parts, which help reduce total operating costs.



# BP





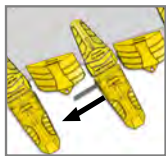
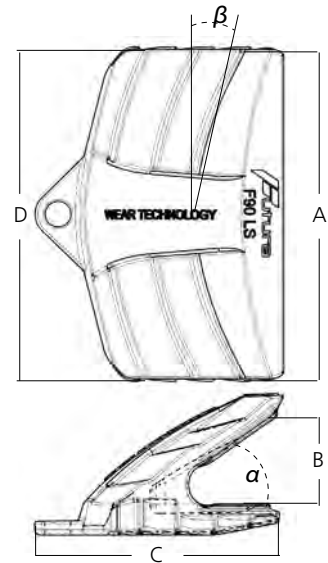


# QUICK GUIDE

## GUÍA RÁPIDA

		DRP SIDE PIN 22°			TWISTER / MINER 30°			WEAR BUTTON	CHOCKY BAR	ROLL BAR	WEAR PADS	WEAR RUNNERS	HEEL SHROUDS	SIDE CUTTERS
TONS	mm	in												
15	30	1,2"	FC300			FT290								
22	35	1,4"	FC300-35			FT290-35								
20 25	40	2"	FC350	F50 LS		FT290-40 FT330								
	45	2"	FC400			FT390								
24 40	50	2"	FC450	F50 LS	F50 LSQR	FT430		F50X345 LDS						
	53	60	2"	FC550	F60 LS	F60 LSQR	FT510							
53 68	70	2,8"	FC600	F70 LS	F70 LSQR	FT590		F70X240 LS F70X415 LDS F75X430 LDS						
	75	3"												
70 119	80	3,1"			FT610 FT690		F90X245 LS F90X320 LS F90X360 LS F90X390 LS F90X435 LDS							
	90	3,5"	FC700	F90LS	F90 LSQR	FT690-90 FT710	FEB90							
	95	3,7"												
150	100	3,9"	FC800	F90 LS	F100X290 LS F100X320 LS F100X410 LS F100X430 LS	FT710-100 FEB90		F100X290 LS F100X320 LS F100X375 LS F100X410 LS F100X430 LS						
					F120X330 LS F120X375 LS F120X410 LS F120X440 LS	FT810	F120 LS	F120X330 LS F120X375 LS F120X410 LS F120X440 LS F120X535 LS						
250	140	5,5"			F140X420 LS F140X465 LS F140X490 LS F140X575 LS	FT810-140 FM950	F140X420 LS F140X465 LS F140X490 LS F140X575 LS							
					F160X450 LS F160X570 LS	FM950 FM1100	F160X450 LS F160X570 LS							
500	230	9"			F230X430 LS F230X600 LS	FM1300	F230X430 LS F230X600 LS							
700	245	9,6"			F245X410 LS F260X570 LS	FM1450	F245X410 LS F260X570 LS							

## Weld-On Lip Shroud 450HB Protector Cuchilla Soldable 450HB



Specially designed to ease pin insertion and removal!  
Diseñados para facilitar la colocación y retirada de pasadores

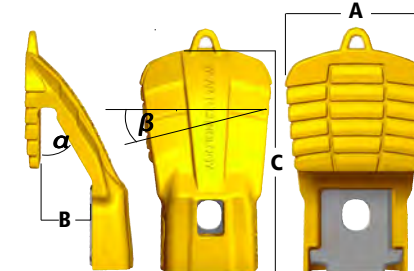


mm.															
A	B	C	D	$\alpha$	$\beta$	KG				OEM					
		180	7,09"			-	7,00	15,43	<b>F50 LS</b>						
150	5,91"	45	1,77"	188	7,40"	150	5,91"	23°	15°	7,10	15,65	<b>F50 LSLH</b>	<b>40-50</b>	<b>460</b>	
				188	7,40"				15°	7,10	15,65	<b>F50 LSRH</b>	1,57"-1,97"		
				152	5,98"				-	7,00	15,43	<b>F50X150 WLS</b>			
150	5,91"	45	1,77"	163	6,42"	158	6,22"	30°	15°	7,00	15,43	<b>F50X150 WLS LH</b>	<b>40-50</b>	<b>460</b>	
				163	6,42"				15°	7,00	15,43	<b>F50X150 WLS RH</b>	1,57"-1,97"		
358	14,09"	45	1,77"	155	6,10"	350	13,78"	30°	-	16,40	36,16	<b>F50X350 WLS</b>	<b>40-50</b>	<b>460</b>	
													1,57"-1,97"		
1200	47,24"	45	1,77"	198	7,80"	1200	47,24"	30°	-	62,00	136,68	<b>F50X1200 WLS</b>	<b>40-50</b>	<b>460</b>	
													1,57"-1,97"		
				236	9,29"				-	19,80	43,65	<b>F60 LS</b>			
250	9,84"	56	2,20"	231	9,09"	250	9,84"	23°	15°	20,40	44,97	<b>F60 LSLH</b>	<b>60</b>	<b>550</b>	
				231	9,09"				15°	20,40	44,97	<b>F60 LSRH</b>	2,36"		
				236	9,29"				-	20,70	45,63	<b>F70 LS</b>			
250	9,84"	65	2,56"	231	9,09"	250	9,84"	23°	15°	21,90	48,28	<b>F70 LSLH</b>	<b>70-75</b>	<b>600</b>	
				231	9,09"				15°	21,90	48,28	<b>F70 LSRH</b>	2,76"-2,95"		
				232	9,13"				-	21,20	46,74	<b>F70X250 WLS</b>			
258	10,16"	56	2,20"	119	4,69"	250	9,84"	30°	15°	21,20	46,74	<b>F70X250 WLS LH</b>	<b>60-75</b>	<b>600</b>	
				119	4,69"				15°	21,20	46,74	<b>F70X250 WLS RH</b>	2,36"-2,95"		
358	14,09"	56	2,20"	234	9,21"	350	13,78"	30°	-	35,20	77,60	<b>F70X350 WLS</b>			
788	31,02"	56	2,20"	234	9,21"	780	30,71"	30°	-	80,30	177,03	<b>F70X780 WLS</b>	<b>60-75</b>	<b>600</b>	
													2,36"-2,95"		
1200	47,24"	56	2,20"	222	8,74"	1200	47,24"	30°	-	96,70	213,18	<b>F70X1200 WLS</b>			
				268	10,55"				-	34,30	75,62	<b>F90 LS</b>			
362	14,25"	95	3,74"	266	10,47"	362	14,25"	35°	15°	36,20	79,81	<b>F90 LSLH</b>	<b>80-100</b>	<b>700</b>	
				266	10,47"				15°	36,20	79,81	<b>F90 LSRH</b>	3,15"-3,94"		
				276	10,87"				-	34,60	76,28	<b>FEB90</b>			
356	14,02"	95	3,74"	277	10,91"	356	14,02"	30°	15°	36,40	80,25	<b>FEB90 L</b>	<b>80-100</b>	<b>700</b>	
				277	10,91"				15°	36,40	80,25	<b>FEB90 R</b>	3,15"-3,94"	B90 B90L B90R	
566	22,28"	80	3,15"	234	9,21"	558	21,97"	30°	-	55,40	122,13	<b>F90X558 WLS</b>	<b>80-100</b>		
													3,15"-3,94"		
128	5,04"	92	3,62"	229	9,02"	193	7,60"	30°	-	15,20	33,51	<b>FSH9130</b>	<b>90</b>	SH9130	
													3,54"		
				322	12,68"				-	41,90	92,37	<b>F120 LS</b>			
280	11,02"	99	3,90"	322	12,68"	321	12,64"	30°	15°	42,20	93,03	<b>F120 LSLH</b>	<b>120</b>	<b>800</b>	
				322	12,68"				15°	42,20	93,03	<b>F120 LSRH</b>	4,72"		
254	10,00"	125	4,92"	355	13,98"	360	14,17"	30°	-	87,00	191,80	<b>F121 LS</b>	<b>120</b>	WS141LL	
													4,72"		

## Mechanically Attached Lip Shrouds 500HB Protector Cuchilla Mecánico


		mm.															
A	B	C	$\alpha$	$\beta$													
152 5,98"	55 1,77"	345 13,58"	22°	15°				<b>F50 LSQR</b>									
		347 13,66"						<b>F50 LSQR LH</b>	<b>40-50</b>	<b>460</b>	F50 LSP1K						
		347 13,66"						<b>F50 LSQR RH</b>			F50 LSP3K						
247 9,72"	62 2,20"	403 15,87"	22°	15°				<b>F60 LSQR</b>									
		405 15,94"						<b>F60 LSQR LH</b>	<b>60</b>	<b>550</b>	F60 LSP1K						
		405 15,94"						<b>F60 LSQR RH</b>			F60 LSP3K						
251 9,88"	77 2,56"	424 16,69"	22°	15°				<b>F70 LSQR</b>									
		426 16,77"						<b>F70 LSQR LH</b>	<b>70-75</b>	<b>600</b>	F70 LSP1K						
		426 16,77"						<b>F70 LSQR RH</b>			F70 LSP3K						
366 14,41"	92 3,74"	471 18,54"	35°	15°				<b>F90 LSQR</b>									
		475 18,70"						<b>F90 LSQR LH</b>	<b>80-100</b>	<b>700</b>	F90 LSP1K						
		475 18,70"						<b>F90 LSQR RH</b>			F90 LSP3K						
440 17,32"	103 4,06"	533 20,98"	30°	15°				<b>F100 LSQR</b>									
		555 21,85"						<b>F100 LSQR LH</b>	<b>100</b>	<b>800</b>	F100 LSP1K						
		555 21,85"						<b>F100 LSQR RH</b>			F100 LSP3K						
440 17,32"	123 4,84"	533 20,98"	30°	15°				<b>F120 LSQR</b>									
		555 21,85"						<b>F120 LSQR LH</b>	<b>120</b>	<b>800</b>	F120 LSP1K						
		555 21,85"						<b>F120 LSQR RH</b>			F120 LSP3K						

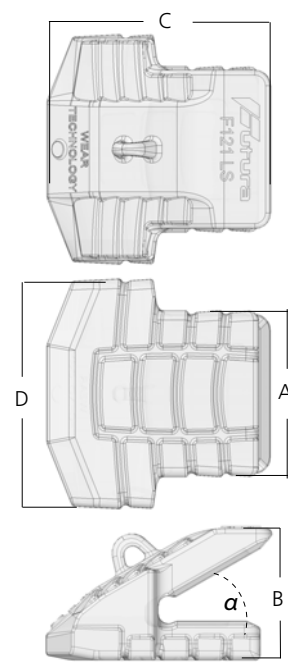
**Replacement Kits**

- F50 LSP1K
- F50 LSP3K
- F50 LSP2K
- F60 LSP1K
- F60 LSP3K
- F60 LSP2K
- F70 LSP1K
- F70 LSP3K
- F70 LSP2K
- F90 LSP1K
- F90 LSP3K
- F90 LSP2K
- F100 LSP1K
- F100 LSP3K
- F100 LSP2K
- F120 LSP1K
- F120 LSP3K
- F120 LSP2K

## Weld-On Lip Shrouds Protector Cuchilla Soldable





		mm.								
A	B	C	D	$\alpha$						OEM
254 10,00"	209 8,23"	355 13,98"	360 14,17"	30°	87,00 191,80	<b>120</b> 4,72"	<b>F121 LS</b>			WS141LL

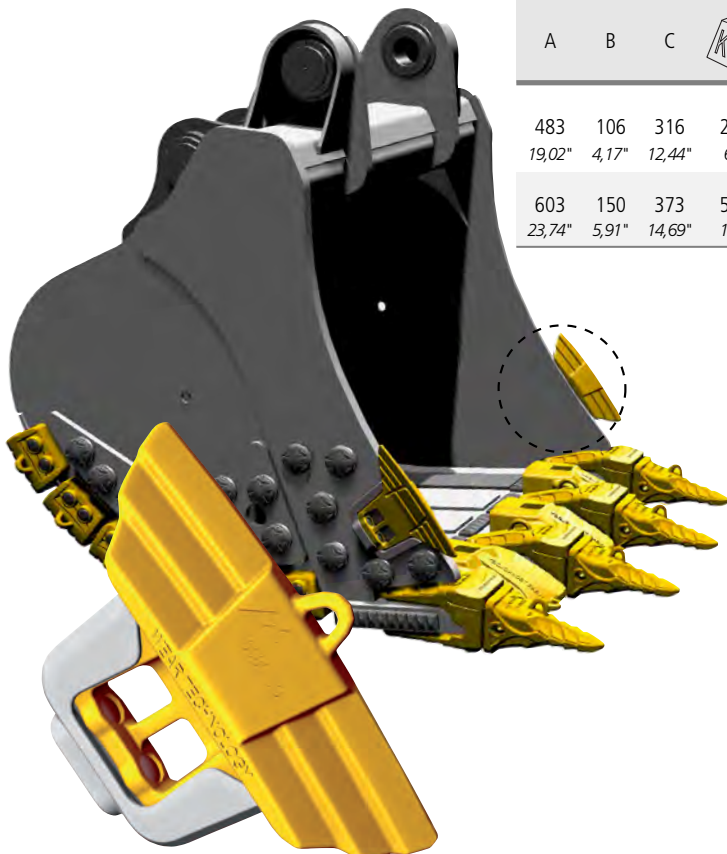
## Weld-On Side Cutter 450HB Protector Lateral Soldable 450HB



mm.		C	KG		OEM	
A	B					
150 5,91"	89 3,50"	32 1,26"	1,57 3,46	<b>F150 WS</b>		<b>14,5-16</b> 0,57-0,63"
200 7,87"	123 4,84"	40 1,57"	3,45 7,61	<b>F200 WS</b>		<b>25</b> 0,98"
280 11,02"	123 4,84"	40 1,57"	4,83 10,65	<b>F280 WS</b>	WP72S	<b>25</b> 0,98"



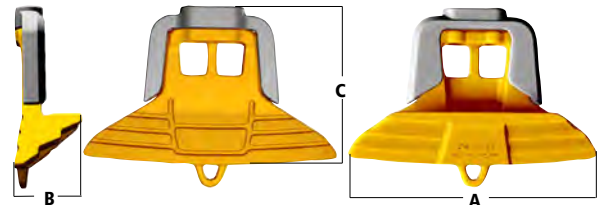
## Mechanically Attached Side Cutter 500HB Protector Lateral Mecánico 500HB



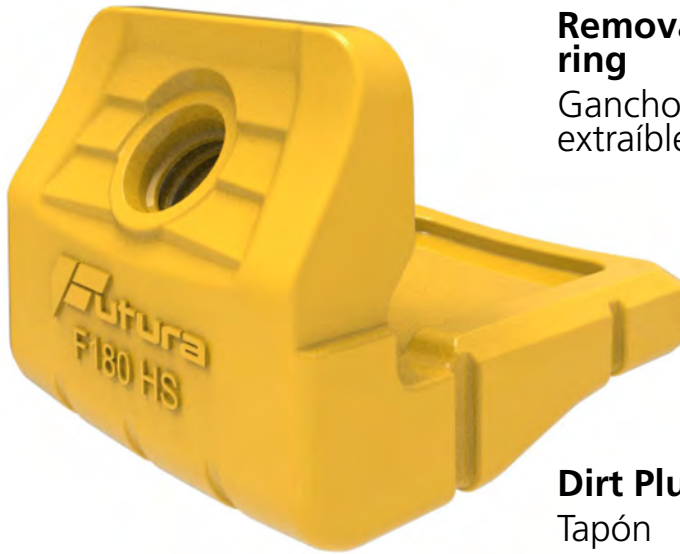
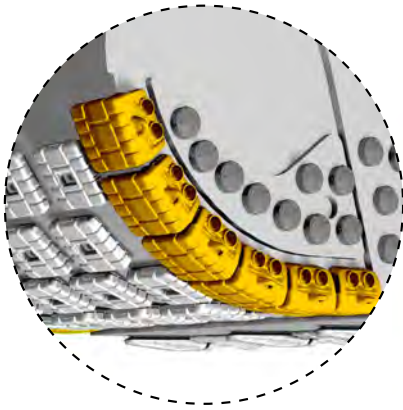
mm.		C	KG		OEM	
A	B					
483 19,02"	106 4,17"	316 12,44"	27,80 61,29	<b>F3050 SC</b>	TAW38X440 TAW40X440 TAW50X505	<b>30-50</b> 1,2"-2,0"
603 23,74"	150 5,91"	373 14,69"	55,70 122,80	<b>F6080 SC</b>	TBW75X545 TBW75X655	<b>60-80</b> 2,4"-3,1"

**Kits Recambio**

	F3050 SCW
	F6080 SCW



## Weld-On Heel Shrouds Protector Esquinero Soldable



**Removable ring**

Gancho extraíble

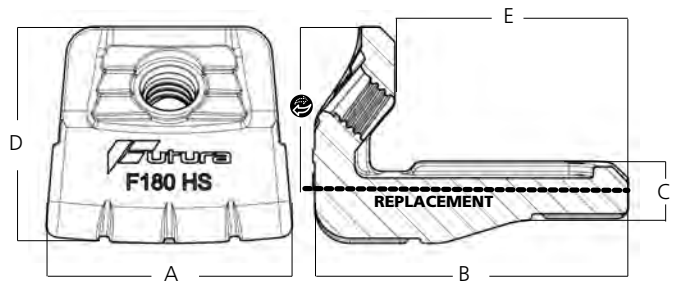


**Dirt Plug**

Tapón



A	B	C	D	E		Kg.	SHROUD	Cross Ref			MACHINE TONS
190 7,48"	183 7,20"	38 1,50"	100 3,94"	137 5,39"	71 2,80"	10,0 22	<b>F20 HS</b>	ES6697-4, ES6697-4HX, F10 HS	--	--	<b>20 Tn</b>
190 7,48"	202 7,95"	42 1,65"	102 4,02"	150 5,91"	71 2,80"	12,0 26	<b>F30 HS</b>	ES6697-3, ES6697-3HX, F12 HS	--	--	<b>30 Tn</b>
190 7,48"	270 10,63"	65 2,56"	169 6,65"	193 7,60"	126 4,96"	23,9 53	<b>F60 HS</b>	ES6697-2, ES6697-2HX, CWS50X190-1, F24 HS	<b>FEB-35</b>	<b>FEB-35 TAP</b>	<b>60 Tn</b>
252 9,92"	320 12,60"	64 2,52"	221 8,70"	238 9,37"	164 6,46"	45,4 100	<b>F180 HS</b>	ES6697-5, ES6697-5HX CWS60X250-1, F40 HS	<b>FEB-53</b>	<b>FEB-53 TAP</b>	<b>180 Tn</b>
252 9,92"	337 13,27"	88 3,46"	267 10,51"	238 9,37"	0,00"	67,8 149	<b>F300 HS</b>	ES6697-7 CWS100X250-1	<b>FEB-53</b>	<b>FEB-53 TAP</b>	<b>300 Tn</b>
252 9,92"	362 14,25"	115 4,53"	274 10,79"	238 9,37"	172 6,77"	87,8 193	<b>F500 HS</b>	ES6697-7 CWS100X250-1, F90 HS	<b>FEB-53</b>	<b>FEB-53 TAP</b>	<b>500 Tn</b>
252 9,92"	409 16,10"	115 4,53"	427 16,81"	305 12,01"	332 13,07"	117,0 257	<b>F800 HS</b>	PDE56250	<b>FEB-53</b> (2 UNITS)	<b>FEB-53 TAP</b> (2 UNITS)	<b>800 Tn</b>

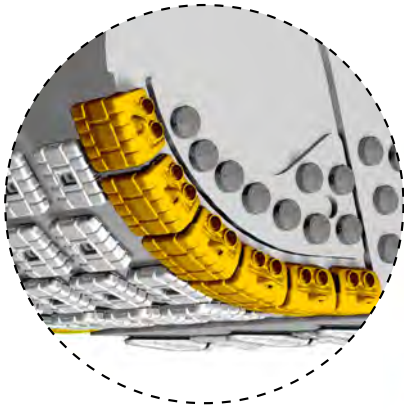


### REFERENCE GUIDE



Machine	20 Tn	30 Tn	60 Tn	180 Tn	300 Tn	500 Tn	800 Tn
	F20 HS	F30 HS	F60 HS	F180 HS	F300 HS	F500 HS	F800 HS

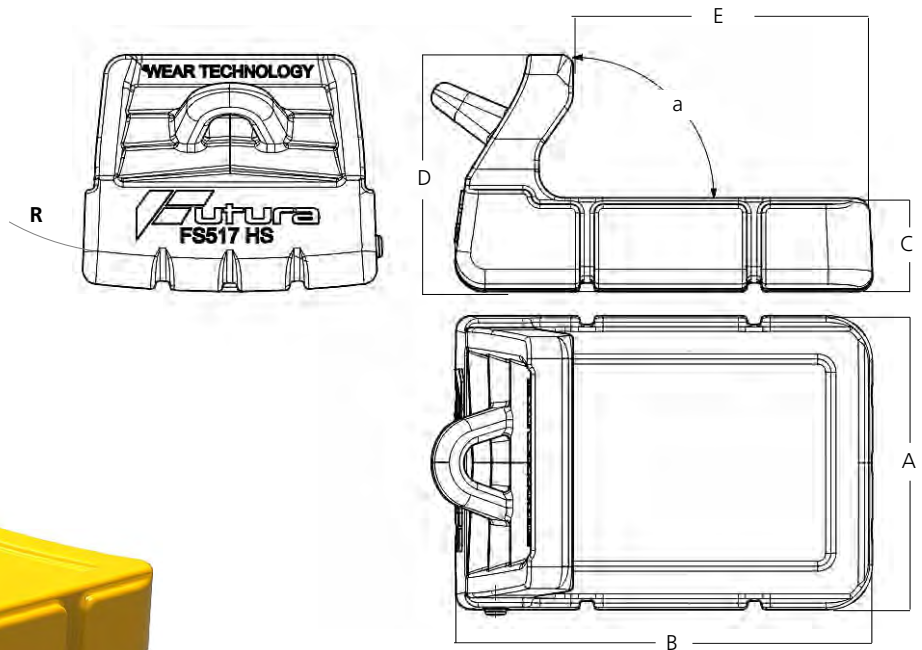
**Weld-On Heel Shrouds compatible SANDVIK Protector Esquinero Soldable**



FS517 HS

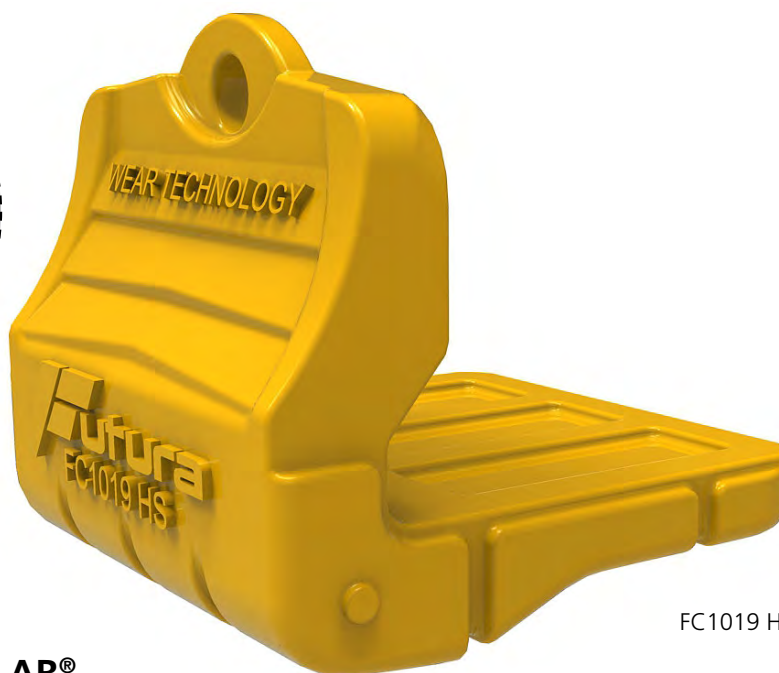
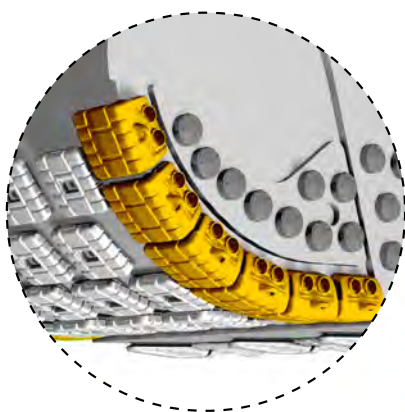
**Compatible SANDVIK®**

A	in	B	in	C	in	D	in	a°	R	in	Kg.	Lb	Type	SHROUD	Cross Ref
198	7,80"	152	5,98"	219	8,62"	50	1,97"	90°	860	33,86"	18,4	40	<b>CURVED</b> CURVO	<b>FS307 HS</b> <b>FS307 HS-ARM</b>	69041891
202	7,95"	162	6,38"	297	11,69"	64	2,52"	90°	770	30,31"	30,4	67	<b>CURVED</b> CURVO	<b>FS517 HS</b> <b>FS517 HS-ARM</b>	69040888



FS307 HS

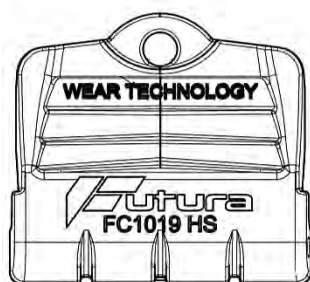
## Weld-On Heel Shrouds compatible CATERPILLAR Protector Esquinero Soldable



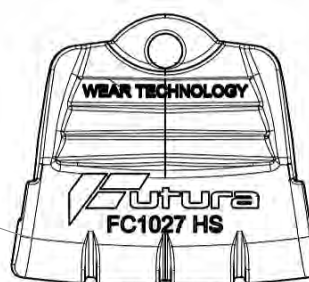
FC1019 HS

### Compatible CATERPILLAR®

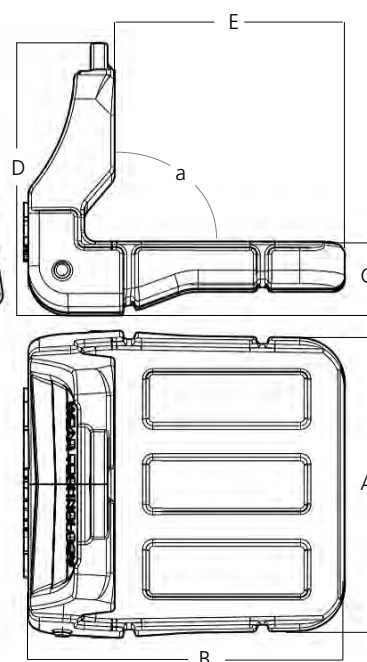
A	in	B	in	C	in	D	in	E	in	a°	R	in	Kg.	Lb	Type	SHROUD	Cross Ref	
185	7,28"	210	8,27"	44	1,73"	155	6,10"	149	5,87"	90°	-	15,8	35		<b>STRAIGHT RECTO</b>	<b>FC6529 HS</b>	138-6529	
185	7,28"	210	8,27"	49	1,93"	153	6,02"	150	5,91"	90°	900	35,43"	15,0	33		<b>CURVED CURVO</b>	<b>FC6551 HS</b>	138-6551
268	10,55"	272	10,71"	56	2,20"	241	9,49"	198	7,80"	90°	-	34,5	76		<b>STRAIGHT RECTO</b>	<b>FC1019 HS</b>	157-1019	
268	10,55"	276	10,87"	65	2,56"	238	9,37"	201	7,91"	90°	780	30,71"	34,0	75		<b>CURVED CURVO</b>	<b>FC1027 HS</b>	157-1027



**STRAIGHT RECTO**

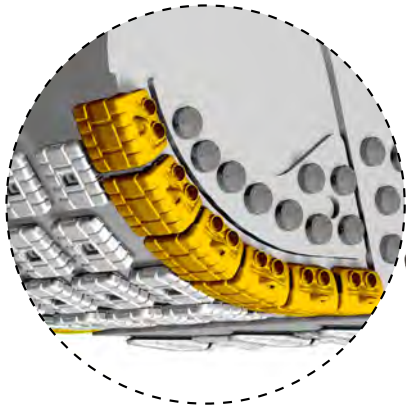


**CURVED CURVO**



FC1027 HS

**Bolt-On Heel Shrouds** Protector Esquinero Atornillable



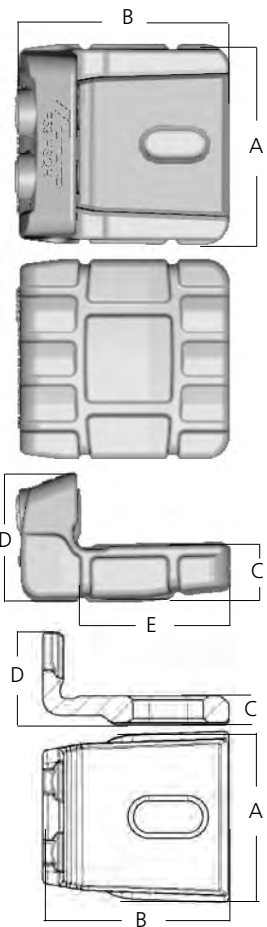
**BOLT**  
TORNILLO

**BASE**  
BASE

**SHROUD**  
PATIN

**SHROUD PATIN**

A	in	B	in	C	in	D	in	E	in	Kg.	Lb	SHROUD	SHROUD	Cross Ref
206	8,11"	217	8,54"	49	1,93"	123	4,84"			19	42	F49 HSC	<b>F49 HSQR</b>	ES6697-4 ES6697-4HX
206	8,11"	217	8,54"	59	2,32"	133	5,24"			22	48	F59 HSC	<b>F59 HSQR</b>	ES6697-3, ES6697-3HX CWS50X190-1
255	10,04"	269	10,59"	69	2,72"	183	7,20"			43	95	F69 HSC	<b>F69 HSQR</b>	ES6697-2, ES6697-2HX CWS50X190-1
255	10,04"	328	12,91"	89	3,50"	233	9,17"			66	145	F89 HSC	<b>F89 HSQR</b>	ES6697-5, ES6697-5HX CWS60X250-1



**BASE BASE**

A	in	B	in	C	in	D	in	D	in	Kg.	Lb	BASE	BOLT	SHROUD
128	5,04"	173	6,79"	27	1,06"	86	3,39"			4,8	10,45	<b>F4959 HSB</b>	PB-322	F49 HSQR F59 HSQR
162	6,38"	219	8,60"	35	1,38"	124	4,90"			9,5	20,90	<b>F69 HSB</b>	PB-940	F69 HSQR
169	6,65"	264	10,37"	45	1,77"	154	6,06"			16,2	35,64	<b>F89 HSB</b>	PB-800	F89 HSQR

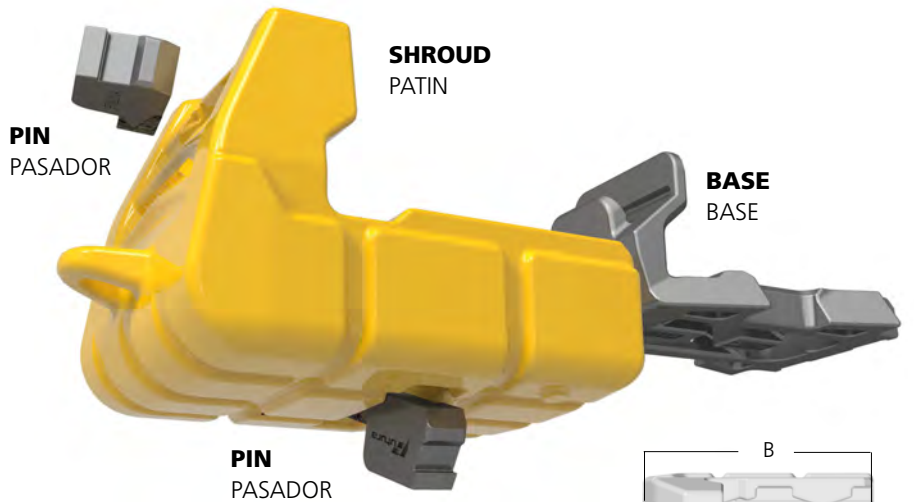
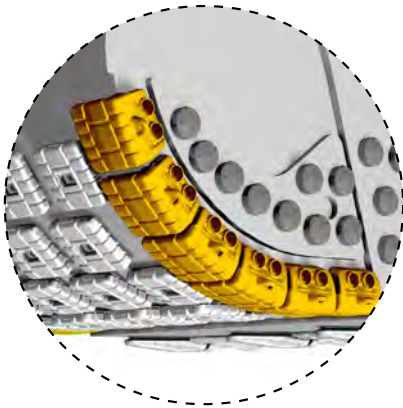
**BOLT TORNILLO**

SHROUD	BOLT	TORQUE VALUE (d.a.N.m)	REPLACE-MENT KITS
F49 HSQR	<b>PB-322</b>	40,40	<b>F49 HSCK</b>
F59 HSQR	<b>PB-322</b>	40,40	<b>F59 HSCK</b>
F69 HSQR	<b>PB-940</b>	96,30	<b>F69 HSCK</b>
F89 HSQR	<b>PB-800</b>	191,00	<b>F89 HSCK</b>
			KITS RECAMBIO



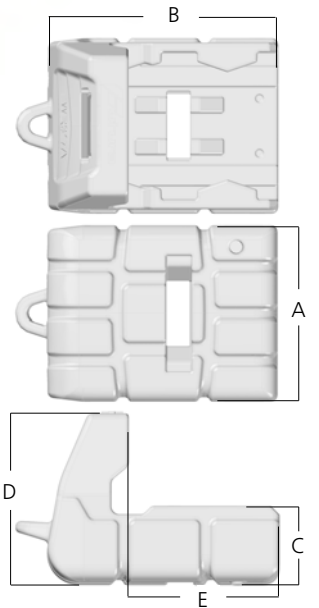


# Hammerless 2 Pin Heel Shrouds Protector Esquinero de 2 Pasadores



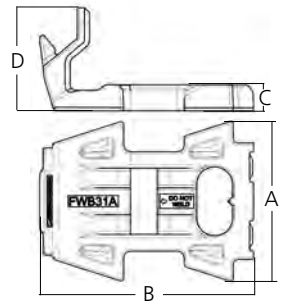
## SHROUD PATIN

A	in	B	in	C	in	D	in	E	in	Kg.	Lb	SHROUD	Cross Ref	BASE
206	8,11"	206	8,11"	42	1,65"	124	4,88"	136	5,35"	12,5	28	<b>FWR314C</b>	ES6697-4, ES6697-4HX	
206	8,11"	218	8,58"	48	1,89"	130	5,12"	148	5,83"	15,1	33	<b>FWR313C</b>	ES6697-3, ES6697-3HX CWS50X190-1	FWB31C
206	8,11"	264	10,39"	66	2,60"	164	6,46"	192	7,56"	26,0	57	<b>FWR312C</b>	ES6697-2, ES6697-2HX CWS50X190-1	
256	10,08"	307	12,09"	74	2,91"	214	8,43"	234	9,21"	40,5	89	<b>FWR315B</b>	ES6697-5, ES6697-5HX	FWB31B
278	10,94"	363	14,29"	125	4,92"	270	10,63"	236	9,29"	85,0	187	<b>FWR317A</b>	ES6697-7, CWS100X250-1	FWB31A
278	10,94"	413	16,26"	131	5,16"	436	17,17"	306	12,05"	113,5	250	<b>FWR318A</b>	PDE56250	FWB318A



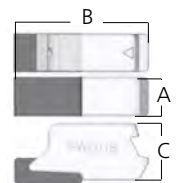
## BASE BASE

A	in	B	in	C	in	D	in	Kg.	Lb	BASE	PIN	SHROUD	TOOL
161	6,34"	197	7,76"	15	0,57"	80	3,13"	2,9	6,27	<b>FWB31C</b>	FWL01C	FWR314C FWR313C FWR312C	
194	7,64"	267	10,51"	25	0,98"	133	5,24"	7,5	16,50	<b>FWB31B</b>	FWL01B	FWR315B	FWT01
227	8,94"	296	11,65"	38	1,50"	148	5,83"	14,5	31,90	<b>FWB31A</b>	FWL01A	FWR317A	
227	8,94"	370	14,57"	38	1,50"	273	10,75"	22,0	48,40	<b>FWB318A</b>		FWR318A	

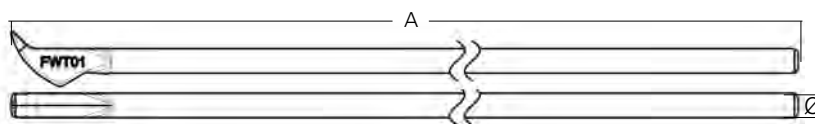


## PIN PASADOR

A	in	B	in	C	in	Kg.	Lb	PIN	Cross	TOOL
20	0,79"	72	2,83"	25	0,99"	0,2	0,35	<b>FWL01C</b>	KLL01MC	
26	1,01"	88	3,46"	38	1,50"	0,6	1,32	<b>FWL01B</b>	KLL01MB	FWT01
32	1,26"	118	4,65"	57	2,24"	1,8	3,96	<b>FWL01A</b>	KLL01MA	

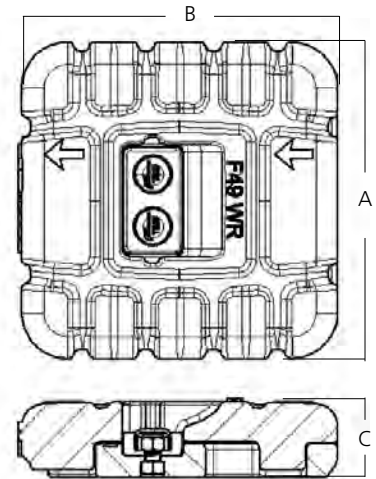
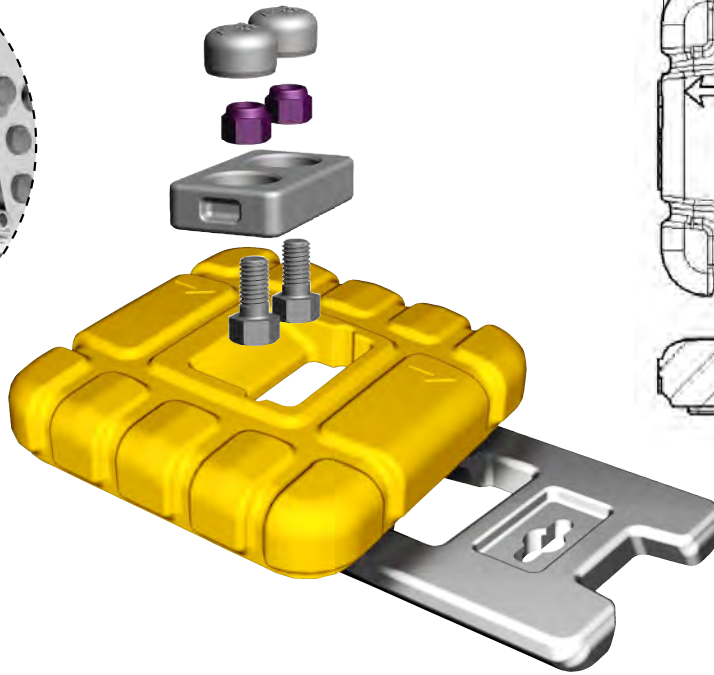
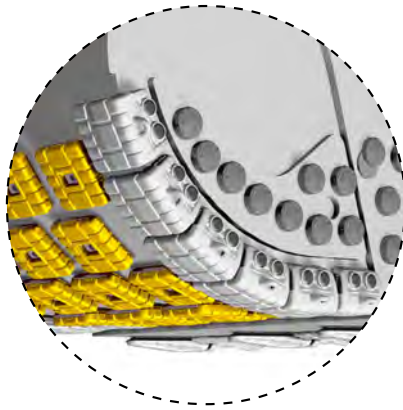


## TOOL HERRAMIENTA MONTAJE



A	in	Ø	in	Kg.	Lb	TOOL
832	32,76"	19	0,76"	2,0	4,40	<b>FWT01</b>

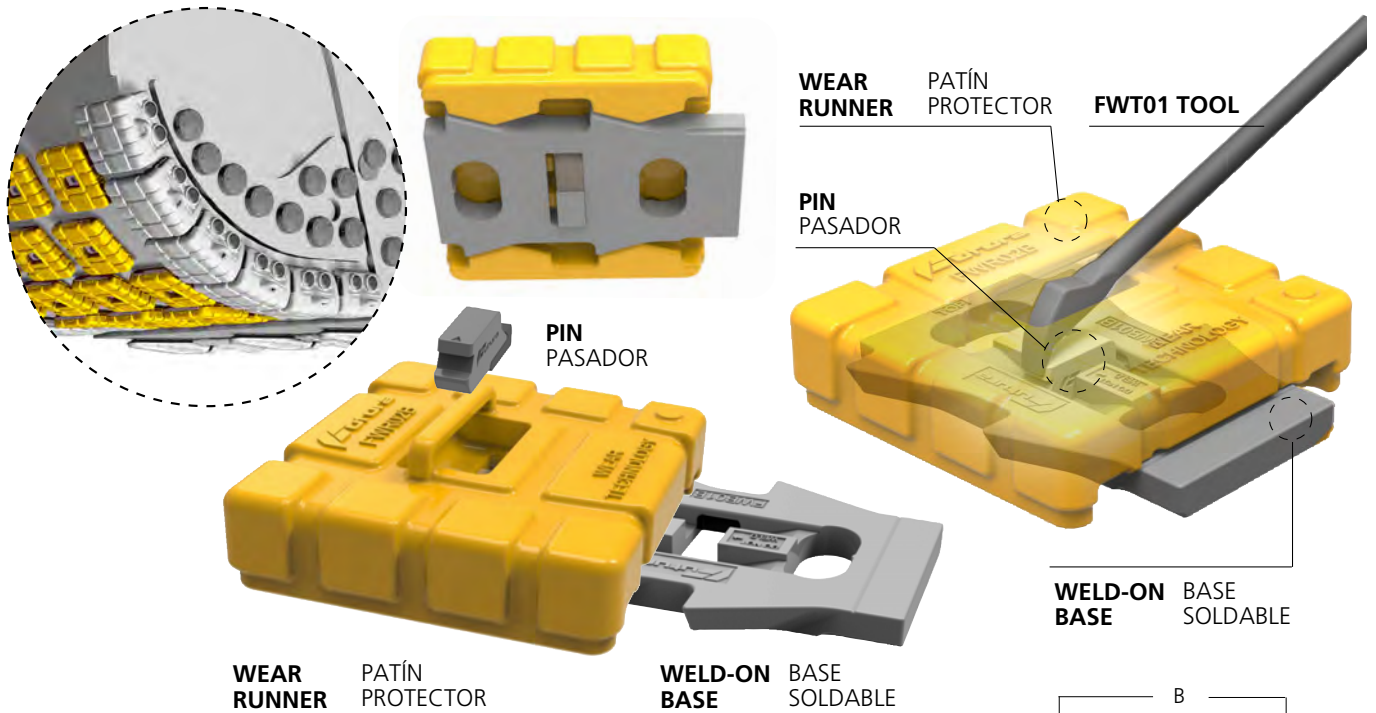
**Bolt-On Wear Runners** Patines Protectores Atornillables



mm.				KG	OEM	units	units	units	units	units	units				
A	B	C													
206 8,11"	206 8,11"	<b>39</b> 1,54"	9,75 21,49	<b>F39 WR</b>	KLR01MC	1 unit	1 unit	S-0509	2	TAC-380	2	LK-3949	1	T 3/8	2
206 8,11"	206 8,11"	<b>49</b> 1,93"	12,12 26,72	<b>F49 WR</b>	KLR02MC B8X8WR175	1 unit	1 unit	S-0509	2	TAC-380	2	LK-3949	1	T 3/8	2
206 8,11"	206 8,11"	<b>59</b> 2,32"	23,80 52,47	<b>F59 WR</b>	KLR01MB	1 unit	1 unit	S-1621	1	TAC-120	1	LK-5979	1	T1/2	1
206 8,11"	206 8,11"	<b>79</b> 3,11"	40,10 88,40	<b>F79 WR</b>	KLR02MB B10X10WR275	1 unit	1 unit	S-1595 B	1	TAC-120	1	LK-5979	1	T1/2	1

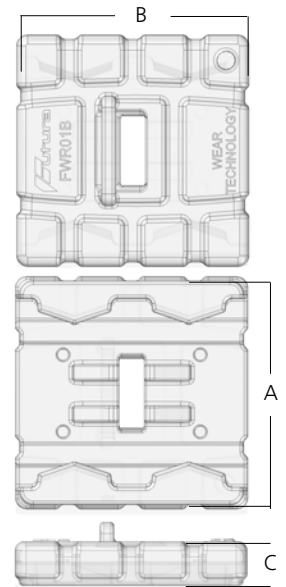
REF	BOLT	TORQUE VALUE (N.m)
<b>F39 WR</b>	S-0509	5,58
<b>F49 WR</b>	S-0509	5,58
<b>F59 WR</b>	S-1621	13,10
<b>F79 WR</b>	S-1595 B	13,10
PAR DE APRIETE		

# Hammerless Wear Runners 500HB Patín Protector de Fondo Hammerless



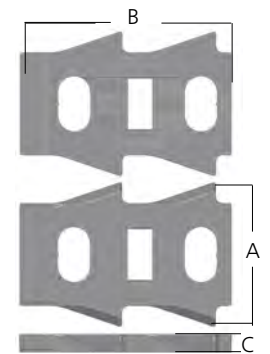
## SHROUD PATIN

A	in	B	in	C	in	Kg.	Lb	SHROUD	Cross Ref	BASE	PIN	TOOL
206	8,11"	206	8,11"	32	1,26"	6,4	14	<b>FWR01C</b>	KLR01MC			
206	8,11"	206	8,11"	40	1,57"	8,0	18	<b>FWR02C</b>	KLR02MC	FWB01C	FWL01C	
218	8,58"	358	14,09"	40	1,57"	19,0	42	<b>FWR19C</b>	KLR19MC			
256	10,08"	256	10,08"	49	1,93"	14,5	32	<b>FWR01B</b>	KLR01MB	FWB01B	FWL01B	FWT01
256	10,08"	256	10,08"	69	2,72"	23,5	52	<b>FWR02B</b>	KLR02MB			
307	12,09"	307	12,09"	82	3,23"	37,0	81	<b>FWR01A</b>	KLR01MA	FWB01A	FWL01A	
307	12,09"	307	12,09"	108	4,25"	55,0	121	<b>FWR02A</b>	KLR02MA			



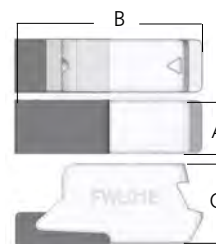
## BASE BASE

A	in	B	in	C	in	Kg.	Lb	BASE	Cross	PIN	SHROUD	TOOL
162	6,38"	221	8,70"	15	0,57"	2,9	6	<b>FWB01C</b>	KLB01MC	FWL01C	FWR01C FWR02C FWR19C	
196	7,72"	286	11,26"	25	0,98"	6,3	14	<b>FWB01B</b>	KLB01MB	FWL01B	FWR01B FWR02B	FWT01
229	9,02"	363	14,29"	38	1,50"	12,5	28	<b>FWB01A</b>	KLB01MA	FWL01A	FWR01A FWR02A	

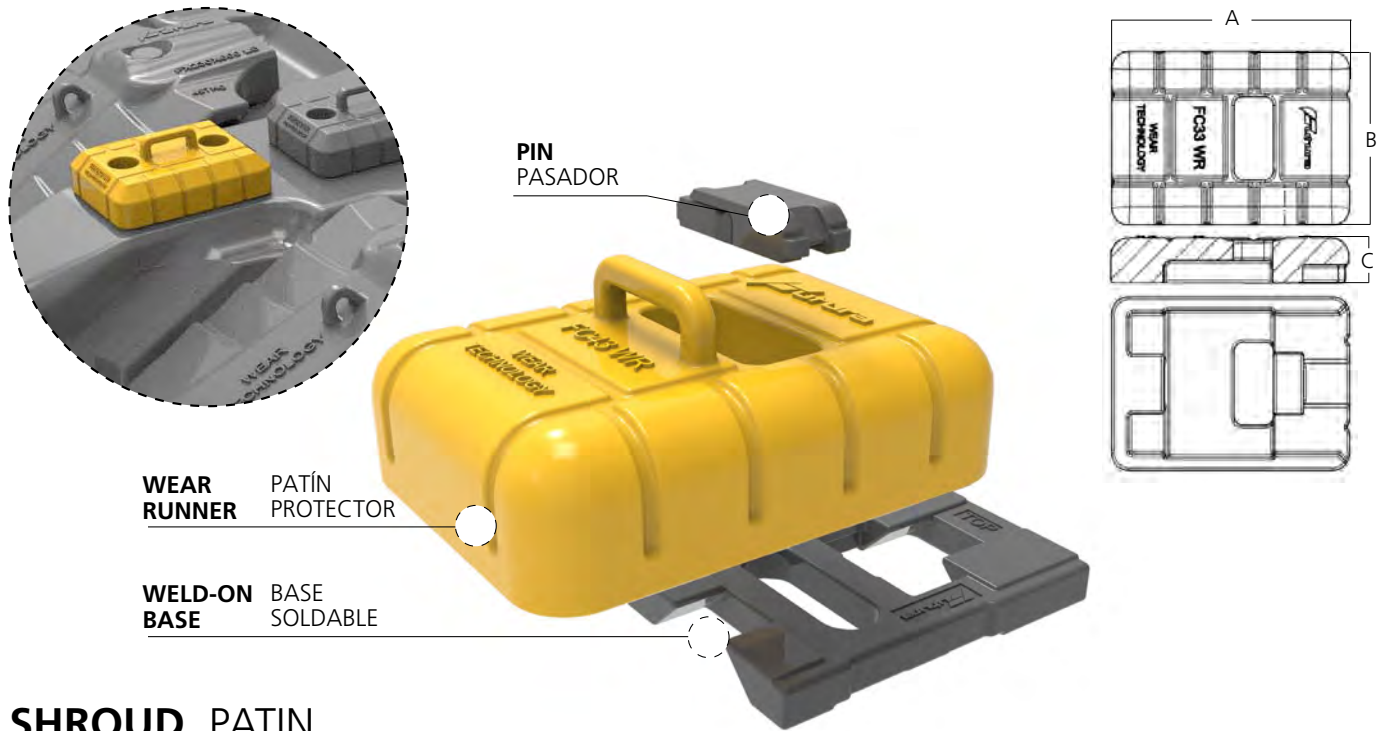


## PIN PASADOR

A	in	B	in	C	in	Kg.	Lb	PIN	Cross	TOOL
20	0,77"	72	2,82"	25	0,99"	0,2	0	<b>FWL01C</b>	KLL01MC	
26	1,01"	88	3,46"	38	1,50"	0,6	1	<b>FWL01B</b>	KLL01MB	FWT01
32	1,26"	118	4,64"	57	2,24"	1,8	4	<b>FWL01A</b>	KLL01MA	



## Clip-On DRP Caterpillar Wear Runners Patines Protectores para Caterpillar



**WEAR RUNNER** PATÍN PROTECTOR

**WELD-ON BASE** BASE SOLDABLE

**PIN PASADOR**

### SHROUD PATIN

A	in	B	in	C	in	Kg.	Lb	SHROUD	Cross Ref	BASE	Kg.	Lb	PIN	Units	TOOL
225	9"	200	8"	44	7,87"	9,8	22	<b>FC23 WR</b>	138-0022 138-0023	<b>FC20 WB</b>	17,0	37	<b>FC2030 WRPN</b>	2	<b>EXTFT1951</b>
275	11"	200	8"	52	2,05"	13,3	29	<b>FC33 WR</b>	138-0032 138-0033	<b>FC30 WB</b>	23,0	51			
275	11"	200	8"	67	2,64"	16,9	37	<b>FC43 WR</b>	138-0042 138-0043	<b>FC40 WB</b>	29,0	64			
300	12"	250	10"	91	3,58"	34,1	75	<b>FC53 WR</b>	138-0052 138-0053	<b>FC50 WB</b>	30,0	66			

### BASE BASE SOLDABLE

A	in	B	in	C	in	Kg.	Lb	BASE	SHROUD
200	7,87"	159	6,26"	17	0,68"	2,4	5	<b>FC20 WB</b>	FC23 WR
225	8,86"	160	6,30"	23	0,91"	3,7	8	<b>FC30 WB</b>	FC33 WR
235	9,25"	160	6,30"	29	1,14"	4,6	10	<b>FC40 WB</b>	FC43 WR
235	9,25"	199	7,83"	30	1,16"	6,4	14	<b>FC50 WB</b>	FC53 WR



### PIN PASADOR

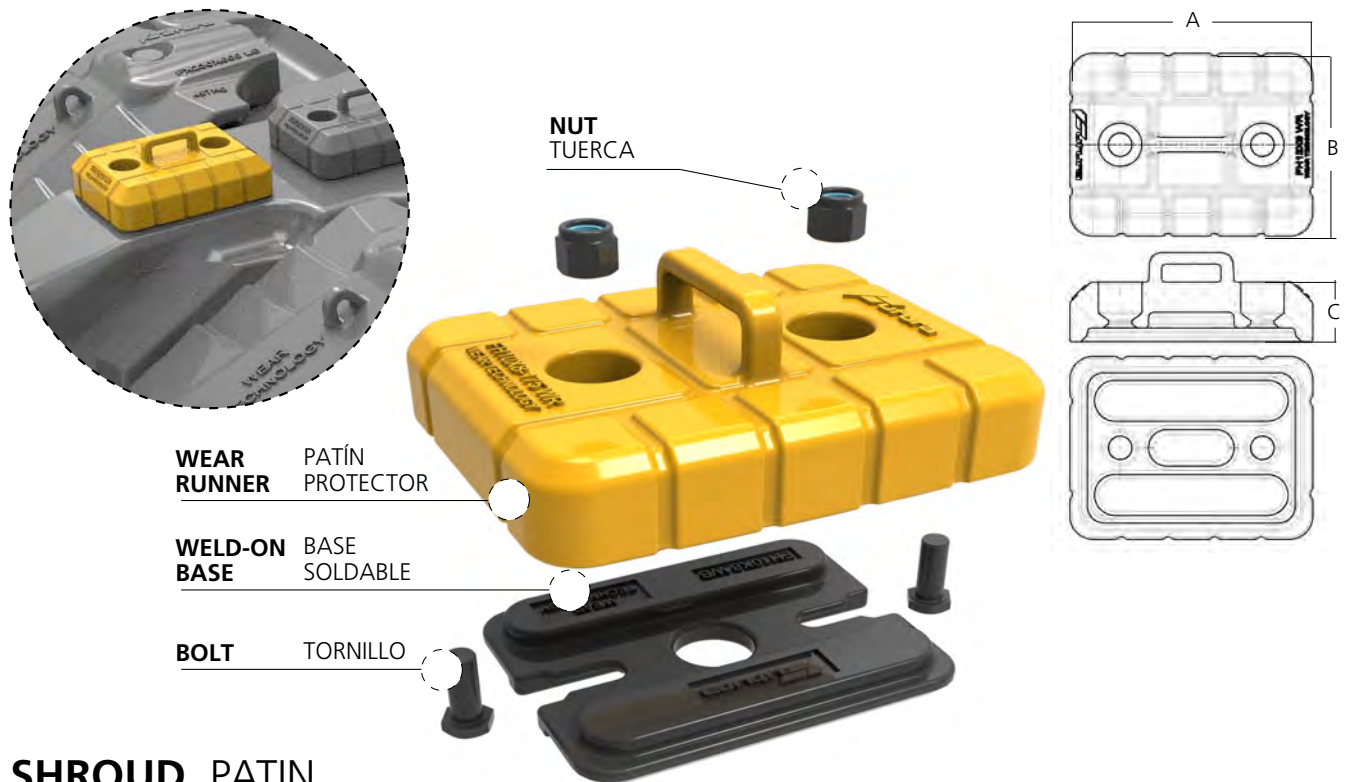
REF	SHROUD
<b>FC2030 WRPN</b>	FC23 WR FC33 WR
<b>FC4050 WRPN</b>	FC43 WR FC53 WR



### TOOL HERRAMIENTA

REF	L	in	Kg.	Lb
<b>EXTFT1951</b>	200	7,87"	0,9	2

## Bolt-On Wear Runners Patines Protectores Atornillables



### SHROUD PATIN

A	in	B	in	C	in	Kg.	Lb	SHROUD	Cross Ref	BASE	Kg.	Lb	FASTENERS	Units
203	8"	203	8"	50	1,97"	10,0	22	<b>FH8X8-175 WR</b>	B8X8-175WR	<b>FH8X8 WB</b>	3,1	7	<b>58125BCRNF</b>	2
254	10"	178	7"	79	3,11"	17,6	39	<b>FH10X7-S WR</b>	B10X7WRS	<b>FH10X7 WB</b>	4,8	11	<b>58125BCRNF</b>	2
254	10"	203	8"	44	1,73"	13,0	29	<b>FH10X8-175 WR</b>	B10X8WR175	<b>FH10X8 WB</b>	4,6	10		
254	10"	254	10"	72	2,83"	20,0	44	<b>FH10X10-275 WR</b>	B10X10WR275	<b>FH10X10 WB</b>	9,4	21	<b>115BLN</b>	
305	12"	229	9"	76	2,99"	25,4	56	<b>FH12X9 WR</b>	B12X9WR	<b>FH12X9 WB</b>	10,5	23	<b>115BLN</b>	2
305	12"	229	9"	102	4,02"	36,5	80	<b>FH12X9-4 WR</b>	B12X9WR4					
305	12"	305	12"	75	2,95"	35,1	77	<b>FH12X12 WR</b>	B12X12WR	<b>FH12X12 WB</b>	16,7	37		
356	14"	229	9"	70	2,76"	26,2	58	<b>FH14X9-275T WR</b>	B14X9WR275T	<b>FH12X9 WB</b>	10,5	23	<b>115BLN</b>	2
356	14"	229	9"	100	3,94"	47,1	104	<b>FH14X9-4T WR</b>	B14X9WR4T					
356	14"	254	10"	75	2,95"	29,1	64	<b>FH14X10-275T WR</b>	B14X10WR275T	<b>FH12X10 WB</b>	12,1	27		
356	14"	254	10"	108	4,25"	48,6	107	<b>FH14X10-4T WR</b>	B14X10WR4T					
406	16"	254	10"	81	3,19"	37,3	82	<b>FH16X10-3T WR</b>	B16X10WR3T	<b>FH12X10 WB</b>	12,1	27	<b>115BLN</b>	2

REF	BOLT	NUT	TORQUE VALUE (N.m)
<b>58125BCRNF</b>	58X114FB	TAC-580	258 ± 41
<b>115BLN</b>	1X112FB	1FN	922 ± 41

PAR DE APRIETE

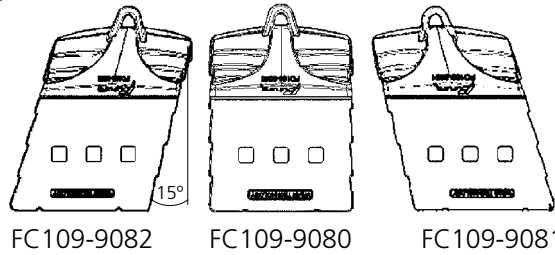
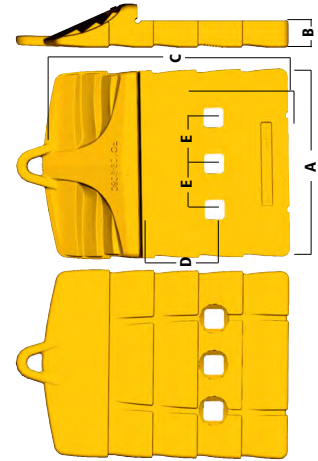


**58125BCRNF**



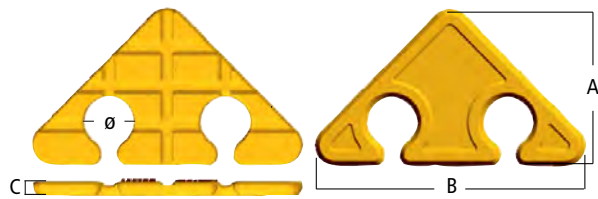
**115BLN**

## Bolt-On Edge Protector for Loader Protector Cargadora 994 y 998



mm.							REF	Cross	Holes			
A	B	C	D	E								
						52,2 115,1	<b>FC109-9080</b>	109-9080				<b>988</b>
348 13,70"	39 1,54"	456 17,95"	85 3,35"	85 3,35"	<b>45</b> 1,77"	54,0 119,0	<b>FC109-9081</b>	109-9081	3	PB-807	NP-114	<b>988F</b>
						54,0 119,0	<b>FC109-9082</b>	109-9082				<b>988G</b>
						152,0 335,1	<b>FC109-9030</b>	109-9030				
440 17,32"	82 3,23"	593 23,35"	270 10,63"	85 3,35"	<b>100</b> 3,94"	158,0 348,3	<b>FC109-9031</b>	109-9031	5	PB-801	NP-114	<b>994</b>
						158,0 348,3	<b>FC109-9032</b>	109-9032				

## Universal Wear Pad Protector Soldable Universal



**Benefits**  
 Extended wear life of the truck hopper ✓  
 Savings on Maintenance cost: only worn parts need replacement ✓  
 Quick and easy installation: Weld on protectors ✓  
 Effective design ✓

**Ventajas:**  
 Duplican la vida útil del fondo del camión ✓  
 Ahorro en costes de mantenimiento ya que sólo es preciso cambiar las piezas gastadas ✓  
 Instalación rápida y fácil mediante soldadura ✓  
 Más económicos que otros sistemas, mayor protección a menor coste ✓

A	in	B	in	C	in	Ø	in	Kg.	Lb	REF
158	6,22"	275	10,83"	16	0,63"	<b>150</b>	5,91"	2,0	4	<b>PTV-01</b>



# CHROME WHITE IRON

## DESIGNED FOR SEVERE APPLICATIONS AND ABRASIVE CONDITIONS

## DISEÑADOS PARA APLICACIONES SEVERAS Y CONDICIONES ABRASIVAS

### EXTREMELY HARD

Available in different sizes and shapes, the FUTURA Chrome white iron part is extremely hard, laminated bi-metallic, wear resistant composite with chrome-molly white iron being bonded onto a mild steel backing plate. The bonding shear strength is over 210 Mpa and will not separate.

### CONSISTENT PROPERTIES

Post bonding heat treatment is conducted to ensure the FUTURA parts have finely dispersed microstructure and more consistent properties compared to most brands in the market.

### HARDNESS 700HB

The hardness of alloy, 700 brinell or HRC 63 minimum, provides maximum abrasion resistance, while the steel backing plate acts as a means of absorbing high impacts and allows easy fitting and use. The ideal working temperature for FUTURA Bucket parts is no higher than 300°C.

### APPLICATIONS

Typical applications include buckets (excavator, loader, dragline, face shovel), crusher spider arm guards, discharge chutes, rock boxes, grizzly bars or feeders, shredder and grinding mills, sugar cane knife edges, adaptor / attachment protection, dredging equipment, screen feed distribution and feed hopper wear areas.

### DUREZA EXTREMA

Disponibile en diferentes tamaños y formas, la parte de acero blanco de cromo FUTURA es extremadamente dura, de laminado bi-metálico, un compuesto resistente al desgaste que une el acero blanco de cromo a una placa de apoyo de acero soldable. La resistencia al cizallamiento de unión es más de 210 Mpa y no se separará.

### CONSISTENCIA

Se lleva a cabo un tratamiento térmico posterior a la unión para asegurar que las piezas FUTURA tienen una microestructura finamente dispersa y propiedades más uniformes en comparación con la mayoría de las marcas en el mercado.

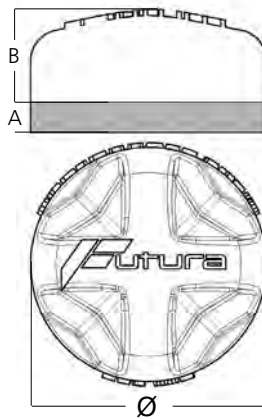
### DUREZA DE 700HB

La dureza de la aleación, 700 Brinell o 63 HRC mínimo, proporciona la máxima resistencia a la abrasión, mientras que la placa de apoyo de acero actúa como un medio de absorción de alto impacto y permite una fácil instalación y uso. La temperatura de trabajo ideal para piezas FUTURA no debe superar los 300° C.

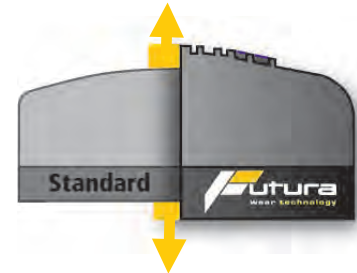
### APLICACIONES

Las aplicaciones típicas incluyen cazos, cucharones (excavadora, cargadora, arrastre, pala), arañas trituradoras, tolvas de descarga, cajas de roca, barras grizzly, trituradoras y molinos, cuchillas de caña de azúcar, material de dragado y las zonas de desgaste de tolvas de alimentación.

## Wear Button 700HB Botones Antidesgaste 700HB



20% more wear material in the wear zone and in the welding plate than standard buttons and bars ✓

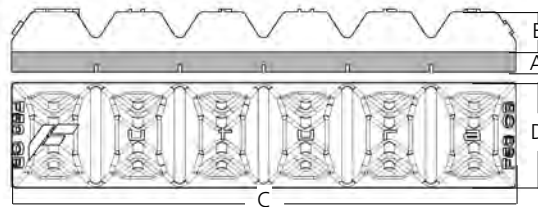
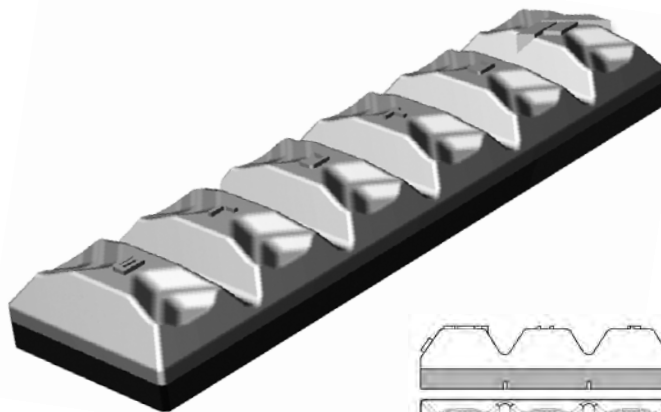


20% más de material en la zona de desgaste y en la chapa de soldadura que los productos standard

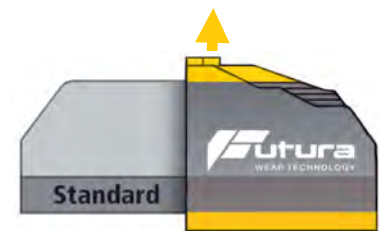


A	in	B	in	Ø	in	Kg.	Lb	REF	Cross
9,5	0,37"	21	0,83"	<b>60</b>	2,36"	0,57	1	<b>F60 WB</b>	IB50, D50BN, WB60
9,5	0,37"	28	1,10"	<b>75</b>	2,95"	1,10	2	<b>F75 WB</b>	IB75, D75BN, WB75
9,5	0,37"	34	1,34"	<b>90</b>	3,54"	1,40	3	<b>F90 WB</b>	IB90, D90BN, WB90
13	0,51"	35	1,38"	<b>115</b>	4,53"	3,34	7	<b>F115 WB</b>	IB115, D114BN
16	0,63"	45	1,77"	<b>150</b>	5,91"	7,20	16	<b>F150 WB</b>	IB150, D150BN, WB150

## Chocky Bar 700HB Barras Antidesgaste 700HB



20% more wear material in the wear zone and in the welding plate than standard buttons and bars ✓

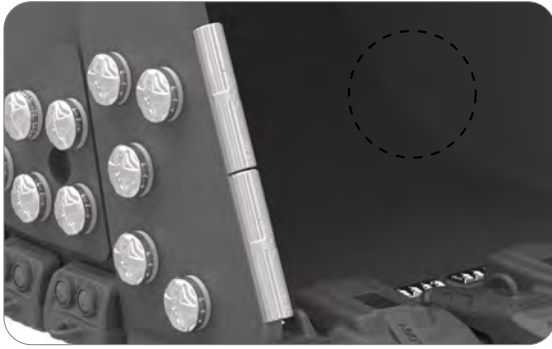


20% más de material en la zona de desgaste y en la chapa de soldadura que los productos standard

A	in	B	in	c	in	D	in	Kg.	Lb	REF	Cross
9,5	0,37"	19	0,75"	240	9,45"	<b>25</b>	0,98"	1,04	2	<b>F25 CB</b>	IBR25, D25CB
9,5	0,37"	19	0,75"	240	9,45"	<b>40</b>	1,57"	1,66	4	<b>F40 CB</b>	IBR38, D38CB, CB40N, 1086NA
9,5	0,37"	19	0,75"	240	9,45"	<b>50</b>	1,97"	2,10	5	<b>F50 CB</b>	IBR50, D51CB, CB50N
9,5	0,37"	19	0,75"	240	9,45"	<b>65</b>	2,56"	2,77	6	<b>F65 CB</b>	IBR65, D64CB, CB65N, 1088NA
9,5	0,37"	19	0,75"	240	9,45"	<b>100</b>	3,94"	4,30	9	<b>F100 CB</b>	IBR100, D100CB, CB100N
9,5	0,37"	19	0,75"	240	9,45"	<b>130</b>	5,12"	5,60	12	<b>F130 CB</b>	IBR130, D130CB, CB130N, 090NA



## Roll Bars 700HB Barra Antidegaste 700HB

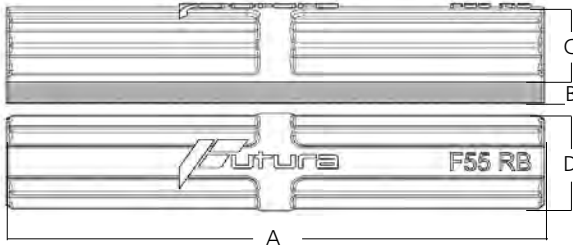
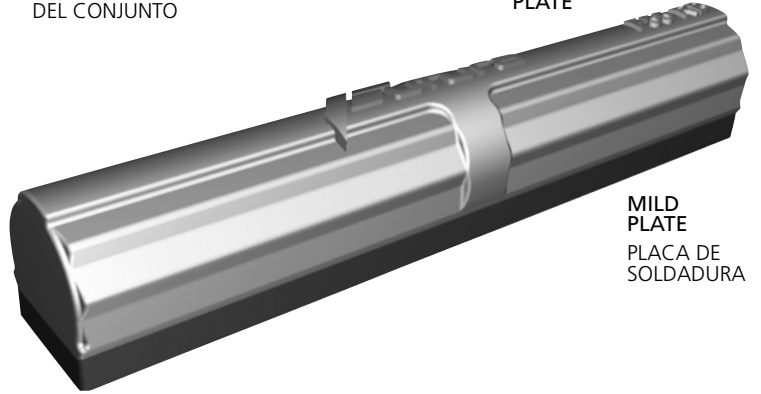


CHROME AND MILD PLATES ARE JOINED BY A SPECIAL WELDING PROCESS THAT GUARANTEES THE STABILITY OF THE ASSEMBLY

LAS DOS PLACAS ESTÁN UNIDAS MEDIANTE UN PROCESO ESPECIAL DE SOLDADURA QUE GARANTIZA LA ESTABILIDAD DEL CONJUNTO

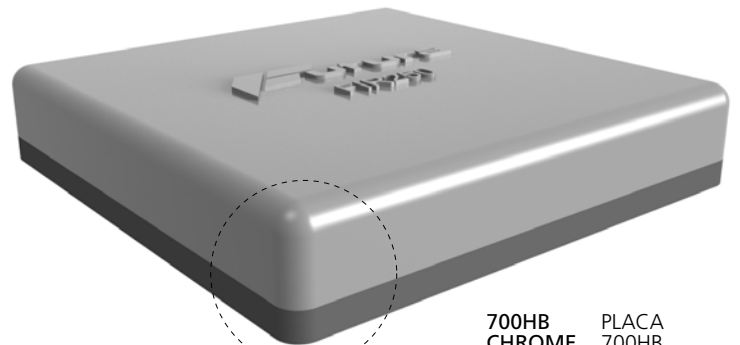
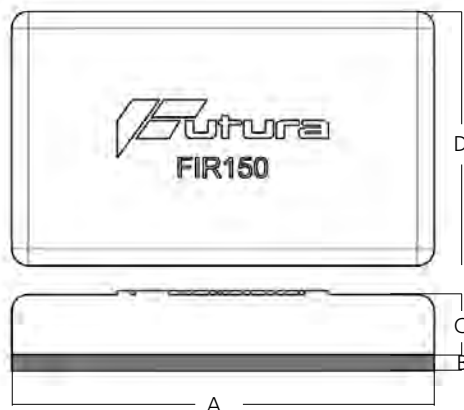
700HB CHROME PLATE PLACA 700HB CROMO

MILD PLATE PLACA DE SOLDADURA



A	in	B	in	C	in	D	in	Ø	in	Kg.	Lb	REF	Cross
229	9,02"	12	0,47"	28	1,08"	27	1,06"	35	1,38"	1,9	4	<b>F35 RB</b>	280-4096
305	12,01"	12	0,47"	42	1,65"	44	1,73"	55	2,17"	5,7	12	<b>F55 RB</b>	280-4097
305	12,01"	12	0,47"	59	2,34"	66	2,60"	80	3,15"	10,8	24	<b>F80 RB</b>	280-4098

## Skid Blocks 700HB Bloques de Protección Soldables 700HB

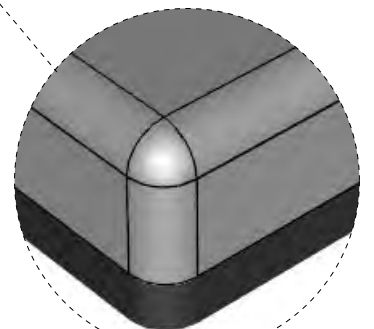


CHROME AND MILD PLATES ARE JOINED BY A SPECIAL WELDING PROCESS THAT GUARANTEES THE STABILITY OF THE ASSEMBLY

LAS DOS PLACAS ESTÁN UNIDAS MEDIANTE UN PROCESO ESPECIAL DE SOLDADURA QUE GARANTIZA LA ESTABILIDAD DEL CONJUNTO

700HB CHROME PLATE PLACA 700HB CROMO

MILD PLATE PLACA DE SOLDADURA



A	in	B	in	C	in	D	in	Kg.	Lb	REF	Cross
250	9,84"	9,5	0,37"	27,5	1,08"	150	5,91"	13,0	29	<b>FIR150</b>	IR150
250	9,84"	12,5	0,49"	35,5	1,40"	250	9,84"	23,3	51	<b>FIR250</b>	IR250



# blade



# FUTURA 550 +70% DE VIDA ÚTIL COMPARADO CON CUCHILLAS AL BORO DE 500 BRINELL



## PROPIEDADES MECÁNICAS

GROSOR mm	DUREZA HBW	RESILIENCIA CVL
8,0 - 65,0	540 - 575	30J / -40°

El acero FUTURA 550 es resistente a la abrasión con una dureza nominal de 550 HBW. Las aplicaciones típicas son componentes con resistencia a la abrasión.



**BULLDOZER**



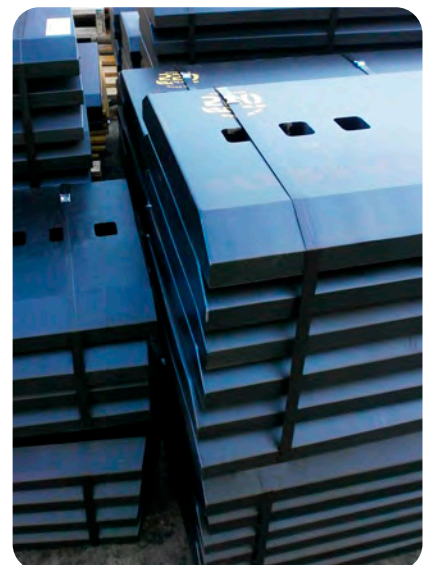
**TRÁILLA**



**NIVELADORA**



**CARGADORA**



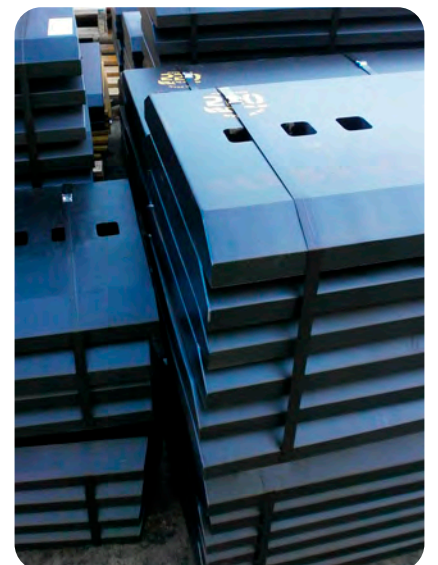
# FUTURA 550: +70% WEAR LIFE COMPARED TO OTHER 500 BRINELL BORON STEEL



## MECHANICAL PROPERTIES

THICKNESS mm	HARDNESS HBW	RESILIENCE CVL
8,0 - 65,0	540 - 575	30J / -40°

FUTURA 550 is an abrasion resistant steel with a nominal hardness of 550 HBW. Typical applications are components with abrasion resistance.





# FUTURA 600 EL PRODUCTO ALTERNATIVO A LAS CUCHILLAS CON RECUBRIMIENTO DE TUNGSTENO O CROMO A UN PRECIO COMPETITIVO

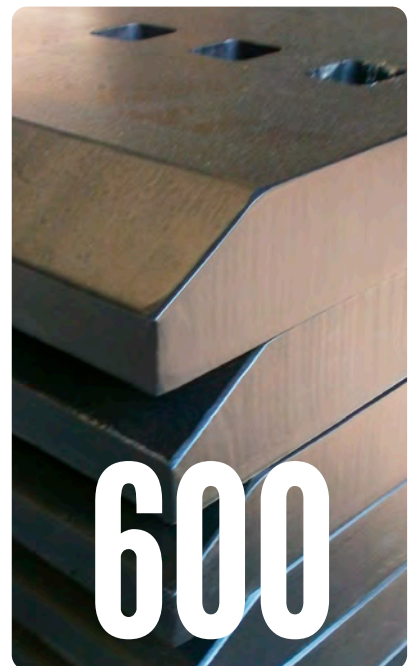
## PROPIEDADES MECÂNICAS

GROSOR mm	DUREZA HBW	RESILIENCIA CVL
6,0 - 51,0	570 - 640	20J / -40°
51,1 - 65,0	550 - 640	20J / -40°

El acero FUTURA 600 es resistente a la abrasión con una dureza nominal de 600 HBW. Las aplicaciones típicas son componentes con resistencia a la abrasión.

## COMPOSICIÓN QUÍMICA

C Max%	Si Max%	Mn Max%	P Max%	S Max%	Cr Max%	Ni Max%	Mo Max%	B Max%
0,47	0,70	1,00	0,015	0,010	1,20	2,50	0,70	0,005





# FUTURA 600 BRINELL PRODUCTS CAN BE A SUBSTITUTE FOR CARBIDE OVERLAY CUTTING EDGES AT A VERY AFFORDABLE COST

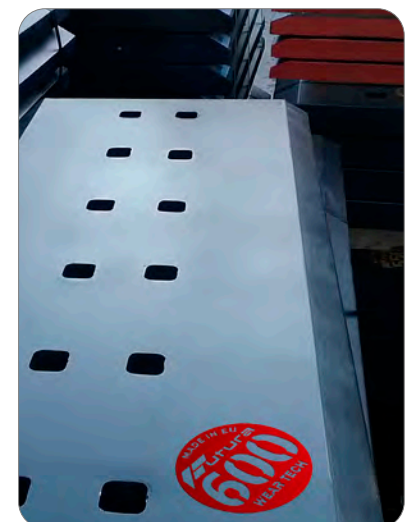
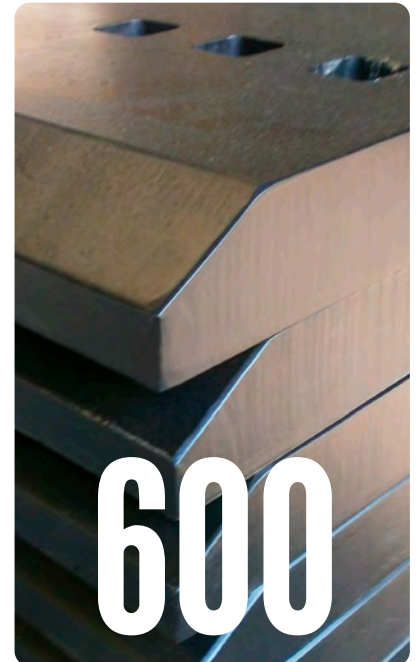
## MECHANICAL PROPERTIES

THICKNESS mm	HARDNESS HBW	RESILIENCE CVL
6,0 - 51,0	570 - 640	20J / -40°
51,1 - 65,0	550 - 640	20J / -40°

FUTURA 600 is an abrasion resistant steel with a nominal hardness of 600 HBW. Typical applications are components with abrasion resistance.

## CHEMICAL COMPOSITION (HEAT ANALYSIS)

C Max%	Si Max%	Mn Max%	P Max%	S Max%	Cr Max%	Ni Max%	Mo Max%	B Max%
0,47	0,70	1,00	0,015	0,010	1,20	2,50	0,70	0,005



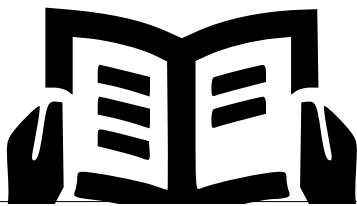






**TECHNICAL  
INFORMATION**

INFORMACIÓN  
TÉCNICA



# GENERAL



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

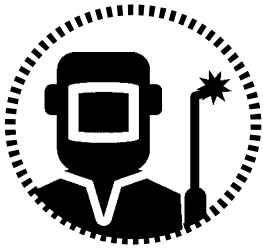
### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



**GENERAL**

GENERAL WELDING PROCEDURES | SOLDADURA: PROCEDIMIENTO GENERAL



## General Welding Procedure

### Weld preparation

Use basic electrodes with a low contents of hydrogen E7018 weld rod or E70T-5 (do not use E70T-1) cored wire with CO<sub>2</sub> gas shielding. Store weld rod in 120°C (250°F) oven. Recondition exposed supply of weld rod by reheating for two hours at 260°C (500°F). Remove only enough weld rod for one hour of use. The moisture (water content in the air) level of exposed low hydrogen electrodes can be too high and can cause weld cracking.

### Warning

Do not weld on painted areas. The effect of gases from burned paint is a danger to the person doing the welding. Do not perform any procedure, outlined in this publication, or order any parts until you read and understand the information contained within.

### Before you start welding

- 1 Grind all weld points smooth on the areas to be welded.
- 2 Remove all paint, rust, grease and dirt from the surfaces to be welded using a wire brush. NOTE: Weld on painted or dirty areas can cause welds of poor quality. The result is weld embrittlement from hydrogen, porosity or lack of fusion. High speed disc sanders are preferred over grinders as grinding on a cold, heat treated steel with a grinding wheel can generate hot spots, as indicated by a blue/black or brown color. Rapid cooling after grinding creates small surface cracks.
- 3 Do not weld, flame cut, gouge, or do any heavy grinding on the base edge, adapters or welds until the area to be worked on is preheated to 204°C to 260°C (400°F to 500°F).
- 4 Do not use gas shielded welding in windy areas or where fans are present. Poor welds can occur due to excessive cooling.

### Preheating process

It is not necessary to preheat the adapters or the base edge when the base cutting edge is 25mm. (1in) thick or less. Do not preheat the entire length of the blade edge already welded to a bucket. Expansion of the base edge can cause cracks in the rear edge weld. Do not preheat any portion of the base edge or adapters until all components are at room temperature. Verify position of corner adapters to the bucket and then equally space the adapters across the base edge. Preheat the entire adapter and an area of the base edge extending 100mm (4in) beyond the weld area from the side opposite to be welded. Heat to 260°C (500°F) and check the temperatures of both pieces on the side to be welded. NOTE: To prevent losing hardness, do not exceed temperatures 315°C (600°F). Reheat if temperatures drop below 175°C (350°F)

### Procedure

- 1 The ground cable should be firmly attached to the base edge, not the adapters.
- 2 Position the work so that the weld can be applied horizontally, allowing for higher amperage and deposition rates along with a puddle of molten metal that is easier to control.
- 3 Good weld fusion with the adapters and base edge is extremely critical. Incomplete fusion with the adapter or base edge surfaces will result in an under bead crack. This unseen crack, with time, will propagate to the surface at the edge of the weld, leading to strap or base edge cracking and finally to breakage.
- 4 Adapters have either a 30° or 45° bevel along the sides of the straps which makes it difficult to obtain the proper electrode angle and to maintain puddle control unless the base edge is positioned on end. Ideally, the bevel welds are best controlled with the base edge vertical and the adapter sides horizontal, and the fillet welds with the edge moved off from vertical as shown.
- 5 In most cases, it will be impossible to adjust the weld area into this position, but whatever angle the edge or bucket can be placed, it will be helpful in preventing the molten puddle from pulling away from the beveled surface. More numerous, but smaller, weld passes will help to compensate for lack of proper position.



## Procedimiento General de Soldadura

### Preparación de la soldadura

Usar electrodos básicos de bajo contenido en hidrógeno E7018 o E70T-5 (no usar E70T-1 con protector de gas CO<sub>2</sub>). Una vez abierto el paquete de electrodos, mantenerlos en un horno ventilados a 120°C, extraer únicamente los electrodos que se vayan a consumir en una hora. Los electrodos que sobren deberán ser precalentados a 260°C antes de ser utilizados en soldaduras posteriores. Los electrodos absorben humedad cuando son expuestos al aire lo cual facilita la formación de grietas en el metal base por debajo de la soldadura.

### Precaución

No soldar en áreas pintadas. El efecto del gas sobre la pintura quemada es perjudicial para el soldador. No proceda a la soldadura de portadientes hasta que no haya leído y comprendido la información contenida en estas instrucciones antes de empezar a soldar.

### Antes de empezar a soldar

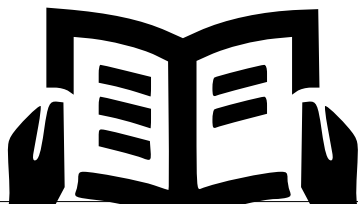
- 1 Pulir cualquier irregularidad de las zonas a soldar.
- 2 Quitar toda la pintura, polvo, grasa y suciedad de la superficie a soldar usando un cepillo de alambre. NOTA: Soldar sobre superficies pintadas o sucias puede producir soldaduras de baja calidad. Los discos arenosos de alta velocidad son preferibles a las muelas ya que al actuar sobre un acero tratado frío, puede generar puntos calientes que se caracterizan por manchas azules o amarronadas. Un proceso de enfriamiento rápido después de amolar puede crear pequeñas grietas
- 3 No soldar, cortar o realizar ningún trabajo sobre la cuchilla o lateral de cazo hasta que el área a trabajar haya sido precalentada entre 204°C y 260°C.
- 4 No suelde en áreas con corrientes de aire o ventiladores. Un exceso de ventilación puede producir soldaduras de baja calidad.

### Proceso de precalentamiento

No es necesario precalentar la cuchilla o el portadientes cuando la cuchilla tenga un espesor inferior a 25 mm. No precalentar la cuchilla en todo su largo, la expansión de ésta puede causar grietas en la parte posterior. No precalentar ninguna parte de la cuchilla o del cucharón hasta que todos los componentes a soldar estén a temperatura ambiente. Presentar los portadientes sobre el bisel de la cuchilla, procurando que los de los extremos queden lo más hacia la esquina posible. Precalentar todo el adaptador y el área de la cuchilla base hasta 100 mm. hacia el interior del área de soldadura por el lado opuesto al de soldadura. Calentar hasta 260°C y comprobar la temperatura de ambas piezas en el lado a soldar. NOTA: Para prevenir la pérdida de dureza no exceder la temperatura de 315°C. Recalentar si la temperatura baja de los 175°C.

### Procedimientos generales de soldadura

- 1 La toma de tierra debe estar firmemente sujeta a la cuchilla, no al portadientes.
- 2 Colocar el trabajo de forma que la soldadura pueda aplicarse horizontalmente, permitiendo un alto voltaje sobre la cantidad de metal fundido haciendo más fácil su manejo.
- 3 Completar bien la fusión entre los dos elementos es extremadamente crítico ya que de resultar incompleta formaría gran cantidad de grietas.
- 4 Las cuchillas tienen un bisel lateral de unos 30° ó 45° lo que dificulta obtener el ángulo necesario para mantener el material fundido en la posición adecuada. Idealmente la soldadura se controla mejor con el cucharón en posición vertical y el adaptador horizontal.
- 5 En muchos casos será imposible ajustar el área a soldar en esta posición, aunque cualquier otro ángulo de colocación del cucharón o el cazo será bueno para evitar que el material fundido se mueva del área biselada. Dar unas cuantas pasadas ayudará a compensar la posición correcta.



# GENERAL



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

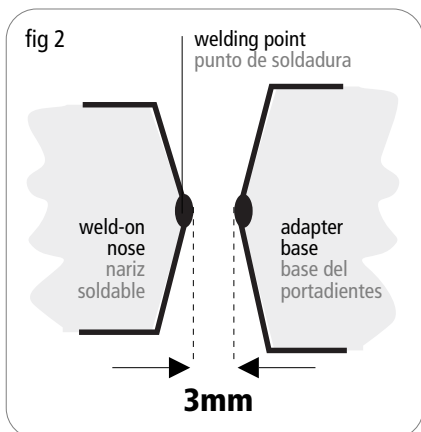
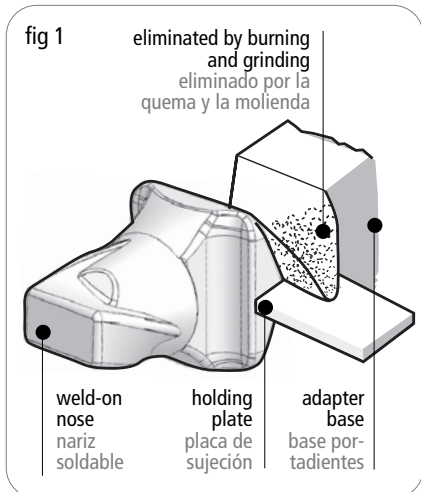
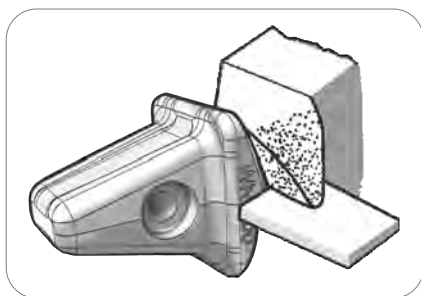
al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



## Installation of FUTURA weld-on noses

Weld-on noses make it easy to convert your equipment to the FUTURA WEAR-TECHNOLOGY system.

FUTURA weld-on noses could also be used to repair adapters in an emergency or to upgrade nose sizes without replacing the entire adapter system.

### Weld rods

Please follow these procedures to avoid all risk of cracks. Use (AWS A5.1) E-7016, (DIN 8556) E 51 54 B 10 120, (ISO3581) E 515 B 120 29(H) weld rods or (AWS A5.18) ER 70 S-6, (DIN 8559) SG2, (NF 81.311) GS2 wire.

For repairs on the site or with difficult conditions (low temperature, manganese tooth base...) use (AWS A5.4) E307-15, (DIN 8556).

### 1 Preparing the parts

Shape tooth base to size and bevel opposite to bevel on weld-on nose (fig 1). Clean up the faces of the bevels carefully to remove scale, rust or dirt paint.

### 2 Installation: tack welding

2-1. Apply weld bead across the apex of both the nose & tooth base bevels.

2-2. Install point on weld-on nose and align the nose and point in the same plane as tooth being replaced.

### 3 Preheating

Preheat to 150-200°C. This temperature must be kept during all the welding sequence.

### 4 Welding on the nose

4-1. **First passes:** Allow 3mm. gap between weld-on nose and tooth base (fig 2). Starter plates are needed on each side of the weld.

Ensure 100% penetration on the first between the two parts. Turn the assembly over. Grind the back of the first pass. Make a second pass over the first one.

4-2. **Building up the other pass** Beads are alternatively built on the top and the bottom side to reduce stress concentrations. Remove slag after each pass. Stop the weld on the starter plate. Interpass temperatures must not exceed 200°C.

#### 4-3. Finishing

Cooling down of the assembly must not exceed 50°C per hour. Remove the starter plates and grind smooth.

## Instalación de narices soldables FUTURA

Las narices soldables resultan la forma más rápida y fácil de convertir cualquier portadientes patentado al sistema FUTURA y poder disfrutar así de las altas prestaciones que ofrece. Las narices soldables pueden usarse también en caso de reparaciones de emergencia o para cambiar la talla de los dientes sin necesidad de reemplazar todos los portadientes del cazo.

### Varillas de soldadura

Siga estas recomendaciones para evitar la aparición de grietas. Use varillas de soldadura con estas especificaciones (AWS A5.1) E-7016, (DIN 8556) E 51 54 B 10 120, (ISO3581) E 515 B 120 29(H) o alambre de soldadura (AWS A5.18) ER 70 S-6, (DIN 8559) SG2, (NF 81.311) GS2.

En caso de reparaciones en el sitio o bajo condiciones especiales de baja temperatura pueden usarse las varillas (AWS A5.4) E307-15, (DIN 8556).

### 1 Preparación

Limpie la cuchilla a lo largo de las áreas de intervención. Cortar con una antorcha la pieza siguiendo un perfil biselado simétrico a la nariz de soldadura (fig 1). Limpie a fondo ambas superficies para eliminar restos de óxido, pintura o suciedad.

### 2 Instalación: cordón de soldadura

2-1. Aplique un cordón de soldadura en el vértice del bisel de la nariz y del bisel de los dientes

2-2. Marque un punto en la nariz de soldar y alinee nariz y el punto en el mismo plano que el diente que ha de sustituir.

### 3 Pre-calentamiento

Pre-calentar a 150-200°C. Esta temperatura debe mantenerse durante la secuencia de soldadura.

### 4 Soldadura de la nariz

4-1. **Primeros pasos:** Deje una brecha de unos 3mm entre la nariz soldar nariz y la base del diente (Fig 2). Se necesitan placas de apoyo en cada lado de la soldadura.

Asegúrese 100% de penetración en la primera pasada. Dele la vuelta al conjunto. Lime la parte posterior de la primera pasada. Haga un segundo pase sobre el primero.

4-2. **Siguientes pasos:** Vaya añadiendo pases alternativamente Comience a dar los pases de soldadura alternando la parte superior e inferior para reducir las concentraciones de esfuerzos. Quite la escoria después de cada pasada. Detenga la soldadura en la placa de arranque. Temperaturas entre pasada no debe superar los 200 ° C.

#### 4-3. Acabado

El enfriamiento del conjunto no debe superar los 50°C por hora. Quite las placas de apoyo y lije las superficies.



## GENERAL

GENERAL WELDING PROCEDURES | INSTRUCCIONES SOLDADURA

# Adapter to base cutting edge welding procedure

This instruction gives the procedure for welding bucket tip adapters to the base cutting edge used on Loader or Excavator Buckets.

## Weld preparation

Use basic electrodes with a low contents of hydrogen E7018 weld rod or E70T-5 (do not use E70T-1) cored wire with CO<sub>2</sub> gas shielding. Store weld rod in 120°C (250°F) oven. Recondition exposed supply of weld rod by reheating for two hours at 260°C (500°F). Remove only enough weld rod for one hour of use. The moisture (water content in the air) level of exposed low hydrogen electrodes can be too high and can cause weld cracking.

## Warning

Do not weld on painted areas. The effect of gases from burned paint is a danger to the person doing the welding. Do not perform any procedure, outlined in this publication, or order any parts until you read and understand the information contained within.

## Before you start welding

- 1 Grind all weld points smooth on the base edge and on the adapter.
- 2 Remove all paint, rust, grease and dirt from the surfaces to be welded using a wire brush. NOTE: Weld on painted or dirty areas can cause welds of poor quality. The result is weld embrittlement from hydrogen, porosity or lack of fusion. High speed disc sanders are preferred over grinders as grinding on a cold, heat treated steel with a grinding wheel can generate hot spots, as indicated by a blue/black or brown color. Rapid cooling after grinding creates small surface cracks.
- 3 Do not weld, flame cut, gouge, or do any heavy grinding on the base edge, adapters or welds until the area to be worked on is preheated to 204°C to 260°C (400°F to 500°F).
- 4 Do not use gas shielded welding in windy areas or where fans are present. Poor welds can occur due to excessive cooling.

## Preheating process

It is not necessary to preheat the adapters or the base edge when the base cutting edge is 25mm. (1in) thick or less. Do not preheat the entire length of the blade edge already welded to a bucket. Expansion of the base edge can cause cracks in the rear edge weld. Do not preheat any portion of the base edge or adapters until all components are at room temperature. Verify position of corner adapters to the bucket and then equally space the adapters across the base edge. Preheat the entire adapter and an area of the base edge extending 100mm (4in) beyond the weld area from the side opposite to be welded. Heat to 260°C (500°F) and check the temperatures of both pieces on the side to be welded. NOTE: To prevent losing hardness, do not exceed temperatures 315°C (600°F). Reheat if temperatures drop below 175°C (350°F)

## Procedure

- 1 The ground cable should be firmly attached to the base edge, not the adapters.
- 2 Position the work so that the weld can be applied horizontally, allowing for higher amperage and deposition rates along with a puddle of molten metal that is easier to control.
- 3 Good weld fusion with the adapters and base edge is extremely critical. Incomplete fusion with the adapter or base edge surfaces will result in an under bead crack. This unseen crack, with time, will propagate to the surface at the edge of the weld, leading to strap or base edge cracking and finally to breakage.
- 4 Adapters have either a 30° or 45° bevel along the sides of the straps which makes it difficult to obtain the proper electrode angle and to maintain puddle control unless the base edge is positioned on end. Ideally, the bevel welds are best controlled with the base edge vertical and the adapter sides horizontal, and the fillet welds with the edge moved off from vertical as shown.
- 5 In most cases, it will be impossible to adjust the weld area into this position, but whatever angle the edge or bucket can be placed, it will be helpful in preventing the molten puddle from pulling away from the beveled surface. More numerous, but smaller, weld passes will help to compensate for lack of proper position.

# Soldadura de portadientes a la cuchilla base

Estas explicaciones muestran el procedimiento para soldar portadientes a la cuchilla base del cazo de una cargadora o excavadora.

## Preparación de la soldadura

Usar electrodos básicos de bajo contenido en hidrógeno E7018 o E70T-5 (no usar E70T-1 con protector de gas CO<sub>2</sub>). Una vez abierto el paquete de electrodos, mantenerlos en un horno ventilados a 120°C, extraer únicamente los electrodos que se vayan a consumir en una hora. Los electrodos que sobren deberán ser precalentados a 260°C antes de ser utilizados en soldaduras posteriores. Los electrodos absorben humedad cuando son expuestos al aire lo cual facilita la formación de grietas en el metal base por debajo de la soldadura.

## Precaución

No soldar en áreas pintadas. El efecto del gas sobre la pintura quemada es perjudicial para el soldador. No proceda a la soldadura de portadientes hasta que no haya leído y comprendido la información contenida en estas instrucciones antes de empezar a soldar.

## Antes de empezar a soldar

- 1 Pulir cualquier irregularidad de la cuchilla y portadientes.
- 2 Quitar toda la pintura, polvo, grasa y suciedad de la superficie a soldar usando un cepillo de alambre. NOTA: Soldar sobre superficies pintadas o sucias puede producir soldaduras de baja calidad. Los discos arenosos de alta velocidad son preferibles a las muelas ya que al actuar sobre un acero tratado frío, puede generar puntos calientes que se caracterizan por manchas azules o amarilladas. Un proceso de enfriamiento rápido después de amolar puede crear pequeñas grietas.
- 3 No soldar, cortar o realizar ningún trabajo sobre la cuchilla hasta que el área a trabajar haya sido precalentada entre 204°C y 260°C.
- 4 No suelde en áreas con corrientes de aire o ventiladores. Soldaduras de baja calidad son debido al exceso de ventilación.

## Proceso de precalentamiento

No es necesario precalentar la cuchilla o el portadientes cuando la cuchilla tenga un espesor inferior a 25 mm. No precalentar la cuchilla en todo su largo, la expansión de ésta puede causar grietas en la parte posterior. No precalentar ninguna parte de la cuchilla o del cucharón hasta que todos los componentes a soldar estén a temperatura ambiente. Presentar los portadientes sobre el bisel de la cuchilla, procurando que los de los extremos queden lo más hacia la esquina posible. Precalentar todo el adaptador y el área de la cuchilla base hasta 100 mm. hacia el interior del área de soldadura por el lado opuesto al de soldadura. Calentar hasta 260°C y comprobar la temperatura de ambas piezas en el lado a soldar. NOTA: Para prevenir la pérdida de dureza no exceder la temperatura de 315°C. Recalentar si la temperatura baja de los 175°C.

## Procedimientos generales de soldadura

- 1 La toma de tierra debe estar firmemente sujeta a la cuchilla, no al portadientes.
- 2 Colocar el trabajo de forma que la soldadura pueda aplicarse horizontalmente, permitiendo un alto voltage sobre la cantidad de metal fundido haciendo más fácil su manejo.
- 3 Completar bien la fusión entre los dos elementos es extremadamente crítico ya que de resultar incompleta formaría gran cantidad de grietas.
- 4 Las cuchillas tienen un bisel lateral de unos 30° ó 45° lo que dificulta obtener el ángulo necesario para mantener el material fundido en la posición adecuada. Idealmente la soldadura se controla mejor con el cucharón en posición vertical y el adaptador horizontal.
- 5 En muchos casos será imposible ajustar el área a soldar en esta posición, aunque cualquier otro ángulo de colocación del cucharón o el cazo será bueno para evitar que el material fundido se mueva del área biselada. Dar unas cuantas pasadas ayudará a compensar la posición correcta.



**GENERAL**

FLUSH ADAPTER | PORTADIENTES TIPO A RAS

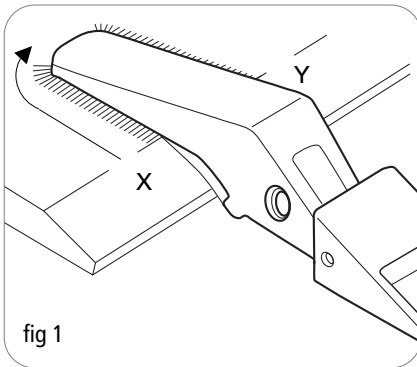
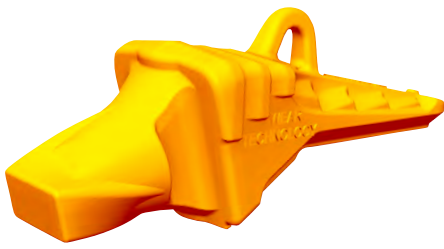


fig 1

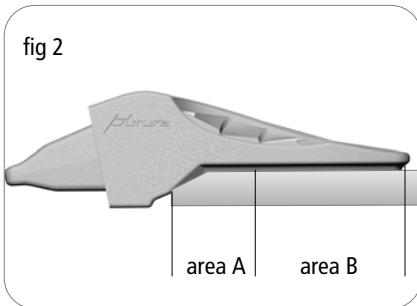


fig 2



# Installation of FUTURA flush Adapters

- 1 Place the adapter on the lip so that the corner adapters are well placed on the corners. Make sure that they sit well on the bevel of the blade.
- 2 Preheat and start welding a few points to maintain the adapters in place. See general welding instructions.
- 3 It is convenient to start welding at points X and Y as indicated in fig. 1 in order to make sure that the defects of the welding that is produced at the beginning of the strings can be eliminated.
- 4 Start welding in at the center of the strap of the adapter welding around it until reaching the same point on the opposite side (area B fig 2). Continue welding strings on each side from the initial points at 25mm from the border of the lip until meeting the first string again (area A fig. 2). Repeat the indicated operations until completing the welding with the required thickness.
- 5 Weld the remaining part between the adapter and the border of the lip. Maintain the same thickness of the string than for the rest of the weldings.
- 6 Use a grindstone to eliminate the irregularities to obtain a smooth finish, especially in the lower front part.

# Instalación de portadientes tipo a ras FUTURA

- 1 Colocar los portadientes sobre el labio, procurando que los extremos queden situados bien a la esquina. Asegúrese de que se asienten bien sobre el chafán de la cuchilla.
- 2 Precalear y apuntar los portadientes. Seguir las normas generales de soldadura.
- 3 Es conveniente empezar la soldadura en los puntos X e Y (indicados en la fig.1) para asegurar que los defectos de la soldadura que se producen al inicio de los cordones puedan ser eliminados.
- 4 Empezar la soldadura a mitad de la longitud de la pala del portadientes e ir soldando dando la vuelta por detrás de la pala hasta la misma altura que el punto de partida (area B fig.2). Continuar sendos cordones desde el borde del labio hasta empalmar con la soldadura anterior (area A fig.2). Repetir el proceso hasta alcanzar la dimensión adecuada.
- 5 Soldar el trozo que queda entre portadientes y el borde del labio. Mantener el mismo dimensionado que para el resto de la soldadura.
- 6 Utilizando una muela eliminar las asperezas e irregularidades dejando un acabado liso, especialmente en la parte frontal inferior.





**GENERAL**

BOTTOM STRAP ADAPTERS | PORTADIENTES TIPO UNIVERSAL



# Installation of FUTURA bottom strap adapters

# Instalación de portadientes tipo universal FUTURA

- 1 Place the adapters on the blade and make sure they settle well on the bevel.
- 2 Preheat and weld the adapters in place with a few welding points. See general welding instructions.
- 3 Start with initial welding points as shown on **fig.1** taking into account that 25 mm of the frontal part will have to remain without welding.
- 4 Weld the lower part of the strap starting with a string of 100 mm from the border of the lip (area B, **fig. 3**), welding around it until reaching the same point on the opposite side. Continue welding from X to Y until joining the ends of the first string (**fig. 1**). Repeat the process various times until the welding has reached the dimension specified in the table below (**fig. 5**) for area B. Continue welding in area A gradually extending to area B to reach a gradual transition until area A has reached the sized specified in the table (**fig. 5**).
- 5 Polish the welding surface with a grindstone trying to maintain the grooves caused by the grindstone parallel to the border of the lip (**fig. 4**).
- 6 Now start welding the short (upper) strap beginning the welding string at an initial point of approx. 25 mm from the border of the lip continuing the border of the loader blade until finishing at 25 mm from the border of the other side (**fig. 2**). Repeat the passes until reaching the welding thickness indicated in the table (**fig.5**) for area A (**fig.3**).
- 7 Use a grindstone to eliminate the irregularities to obtain a smooth finish.

- 1 Coloque los portadientes sobre la cuchilla. Asegúrese de que asientan bien sobre el bisel de la cuchilla.
- 2 Precalentar y apuntar los portadientes en su sitio. (Ver las instrucciones generales de soldadura).
- 3 Colocar puntos de iniciación tal como se muestra en la figura, teniendo en cuenta que deberán quedar unos 25 mm. por la parte frontal sin soldar (**fig 1**).
- 4 Soldar la pala larga inferior empezando con cordón a unos 100 mm. del borde del labio (area B **fig. 3**), y dando la vuelta por detrás hasta llegar a la misma altura de donde empezamos. Dar a continuación sendos cordones, uno por cada lado desde X e Y hasta empalmar con los extremos del primer cordón (**fig.1**). Repetir el proceso sucesivamente hasta que la soldadura haya alcanzado la dimensión que se especifica en la tabla de la **fig.5** para la zona B. Continuar dando pasadas en la zona A, extendiéndose gradualmente sobre la zona B para lograr una transición gradual hasta alcanzar en la zona A el tamaño que se especifica en la tabla de la **fig. 5**.
- 5 Alisar con una desbarbadora, procurando que las estrías que deja la piedra sean paralelas al borde del labio (**fig.4**)
- 6 Soldar ahora la pala corta (superior) empezando los cordones en un punto de iniciación a 25mm. aproximadamente del borde del labio y siguiendo el entorno de la pala hasta acabar en la otra placa a 25 mm. de borde del labio (**fig.2**). Repetir las pasadas hasta alcanzar el espesor de soldadura indicado en la tabla de la **fig.5** para la zona A (**fig. 3**).
- 7 Utilizando una muela eliminar las asperezas e irregularidades dejando un acabado liso.

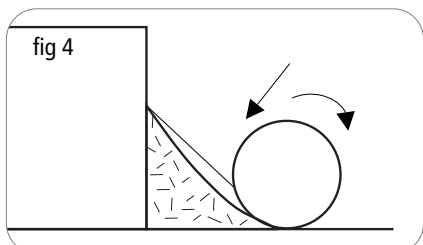
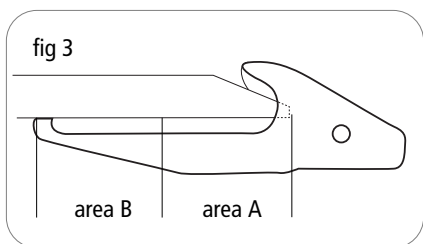
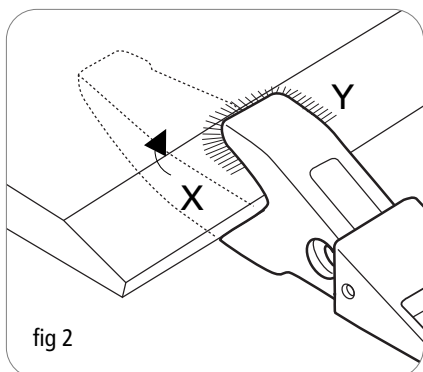
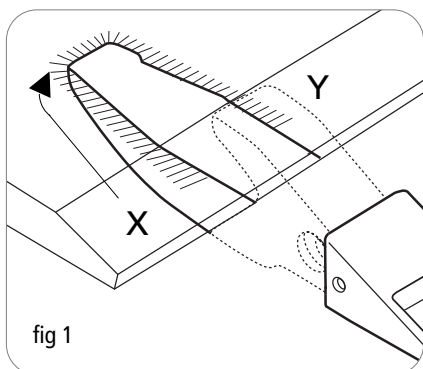


fig 5

**DIRECT REPLACEMENT FOR CATERPILLAR SIZES**

Area A	Area B	
12mm.	6mm.	25
15mm.	7mm.	30
18mm.	9mm.	35-40
25mm.	12mm.	45-50
30mm.	17mm.	55-60

**TWISTER SIZES**

Area A	Area B	
12mm.	6mm.	190-230
15mm.	7mm.	290
18mm.	9mm.	330-390
25mm.	12mm.	410-450
30mm.	17mm.	510-590-610





**GENERAL**

TWO STRAP ADAPTERS | PORTADIENTES DOBLE PALA

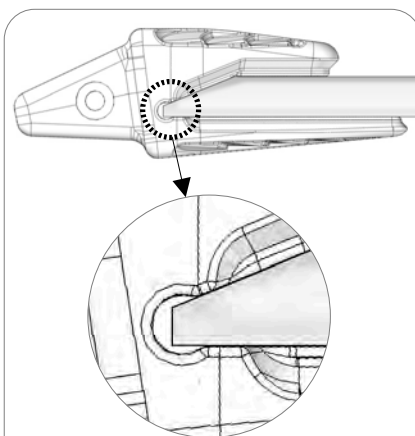


## Installation of FUTURA two strap adapters

- 1 Place the adapters on the blade and be sure that they settle well on the bevel.
- 2 Preheat and weld the adapters in place. Follow the general welding instructions.
- 3 Start welding in the center of the above strap of the adapter welding around it until reaching the same point on the opposite side. Follow welding sequences as shown (1-2-3)
- 4 Polish the welding surface with a grindstone.
- 5 Turn the bucket upside down.
- 6 Weld the lower part of the adapter (short strap) starting at 15-25 mm from the border of the lip until the center of the backside, welding alternative strings on each side which will meet on the backside until they reach the specified welding thickness.
- 7 Use a grindstone to eliminate the irregularities to obtain a smooth finish.

## Instalación de portadientes pala y media y doble pala FUTURA

- 1 Presentar los portadientes sobre el labio y asegurarse que asientan bien sobre el chafán de la cuchilla.
- 2 Precalentar y apuntar los portadientes en su sitio. Seguir las instrucciones generales de soldadura.
- 3 Empezar soldando aproximadamente por el centro de la longitud de la pala superior, dando un cordón todo alrededor de la misma hasta la misma altura del lado opuesto. Siga la secuencia de soldado (1-2-3) que se muestra en la imagen.
- 4 Alisar con una desbarbadora la superficie de soldadura.
- 5 Dar la vuelta al cazo.
- 6 Soldar ahora la parte inferior (corta), empezando la iniciación a 15-25 mm. del borde del labio hasta el centro de la parte posterior, e ir dando cordones alternativos a cada lado, que se juntarán en la parte posterior, hasta alcanzar el tamaño de soldadura especificado.
- 7 Utilizando una muela, eliminar las asperezas e irregularidades dejando un acabado liso.

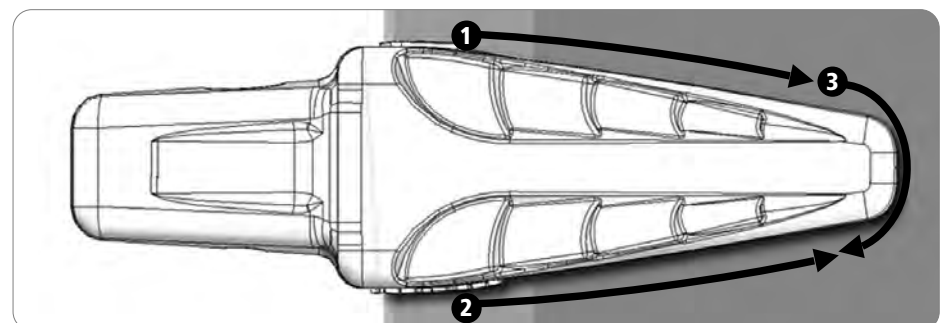
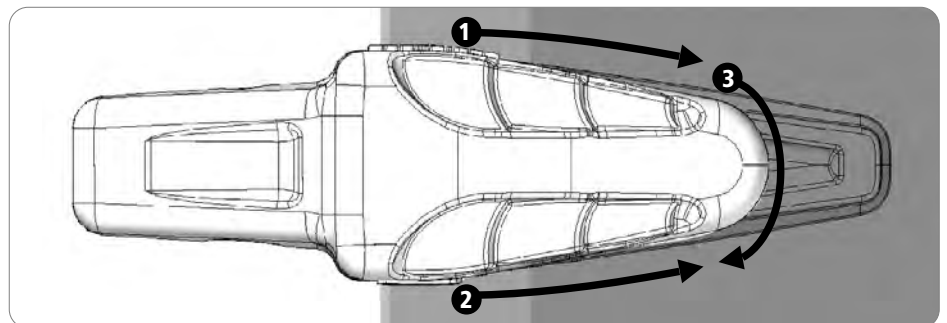


Avoid to weld in the critical zones.

Start/finish the welds 15 to 25 mm. off the critical zones.

Evite la soldadura en zonas críticas.

Comience y termine las pasadas a 15-25 mm de distancia de estas zonas





# TWISTER



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



**FUTURA TWISTER**

WELD-ON NOSES | NARICES SOLDABLES



# Rebuilding of TWISTER noses

How do I know if a Twister nose needs rebuilding?

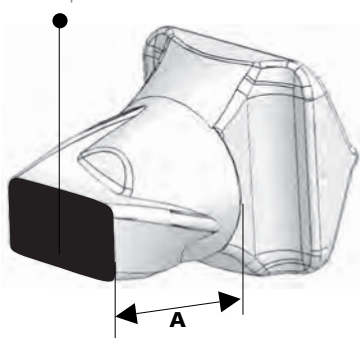
If the pin (OEM or TWISTER) does not stay in the proper assembly position on an adapter nose during use (even with a new tooth or new pin). In such cases you may choose to replace the adapter or to rebuild the adapter nose following the below procedures.

# Reconstrucción de narices TWISTER

¿Cómo puedo saber si una nariz necesita reconstrucción?

Si el pasador (OEM o TWISTER) no permanece en la posición de ensamblaje correcta en la punta del portadientes durante el uso (incluso al usar un diente o un pasador nuevos). En tales casos, puede elegir reemplazar el portadientes o reconstruir la nariz del portadientes siguiendo estas instrucciones

**fig 1** Build area with a butt fit, minimum 50% of the surface  
la soldadura debe ser ajustada y cubrir un mínimo del 50% de la superficie



## 1 Preparation

Clean all foreign material from the nose, then preheat to 150°C/300° F

## 1 Preparación

Limpie todo el material extra de la nariz, luego precaliente a 150°C / 300° F

## 2 Welding

Using an E9018 electrode, weld build the end of the nose as shown in fig. 1 to a length approximately 1<sup>1</sup>/<sub>2</sub> -1/8" (3mm) greater than dimension A (check table by size) Then carefully grind the weld to bring the nose length to dimension A.

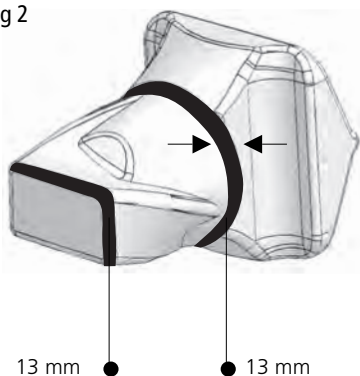
## 2 Soldadura

Usando un electrodo E9018, suelde el extremo de la nariz como se muestra en la fig. 1 a una longitud aproximadamente de 3 mm (ver tabla según tallas) mayor que la dimensión A. A continuación, muela cuidadosamente la soldadura para alcanzar la longitud deseada.

Use a carpenter's square to ensure dimension A is measured accurately, make sure the nose end is flat and square. Make also sure the edges of the weld do not prevent full assembly of a point; the point must butt-fit against the nose end.

Use una escuadra de carpintero para asegurarse de que la dimensión A sea lo más precisa posible, asegúrese de que el extremo de la nariz sea plano y cuadrado. Asegúrese de que los bordes de la soldadura no impidan el ensamblaje.

**fig 2**



## 3 Checking

Check the rebuild by attaching a new tooth/pin assembly on to the nose. There should be moderate resistance when driving the pin.

## 3 Comprobación

Verifique la reconstrucción al colocar un nuevo conjunto de diente / pasador en el portadientes. Debe haber una resistencia moderada al introducir el pasador.

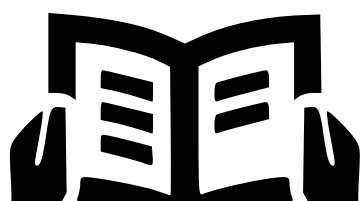
If steps 1 to 3 do not prevent unseating of the pin, replacement of the adapter is recommended. If this is not possible, preheat and weld build single thin layers as shown of fig. 2.

Si los pasos 1 a 3 no impiden que el pasador se suelte, se recomienda reemplazar el portadientes. Si esto no es posible, precaliente y suelde capas individuales delgadas como se muestra en la fig. 2.

During the process stop welding and hit with a hammer frequently. Add more weld as necessary to minimize point looseness. Grind as required to achieve point butt-fit. Repeat step 3.

Durante el proceso, deje de soldar y golpee con un martillo con frecuencia. Agregue más soldadura según sea necesario para minimizar la pérdida de puntos. Moler según sea necesario para lograr el punto de ajuste. Repita el paso 3.

TWISTER SIZE	A	Weld
180	55	2
190	63	2,5
230	69	2,7
290	73	2,8
330	82	3,2
390	93	3,66
430	103	4
510	115	4,5
590	125	5
610	135	5,3
690	151	6
710	166	6,5
810	192	7,5



# TWISTER



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**FUTURA TWISTER**

TOOTH + PIN | DIENTE + PASADOR

**Assembly instructions  
FUTURA TWISTER  
TOOTH**

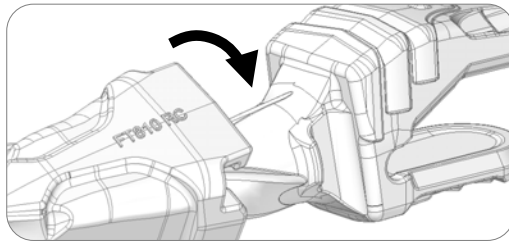
TOOTH + ADAPTER + PIN

**Instrucciones de montaje  
DIENTES  
FUTURA TWISTER**

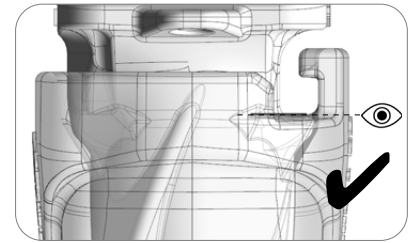
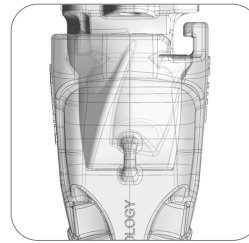
DIENTE + PORTADIENTE + PASADOR

**1**

**Fit TOOTH on adapter finding the half spin. Check TOOTH position is aligned**



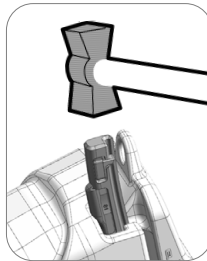
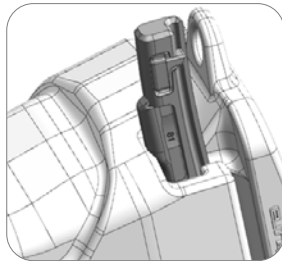
**Encaje el DIENTE en el PORTADIENTES con un pequeño giro del diente. Verifique que el diente quede bien colocado**



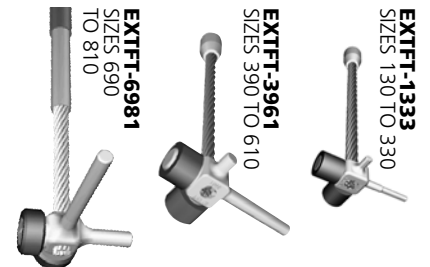
**2**

**Place PIN as shown and hit with a HAMMER**

**Coloque el PASADOR tal como se indica y golpéelo con un martillo**



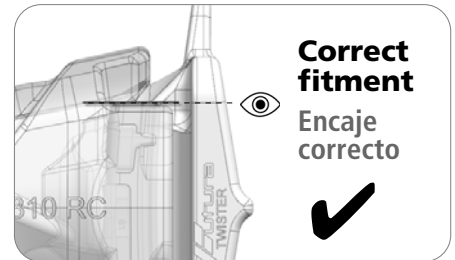
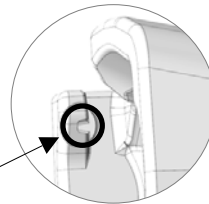
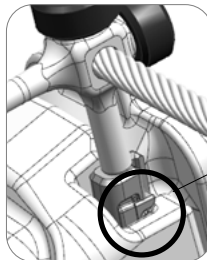
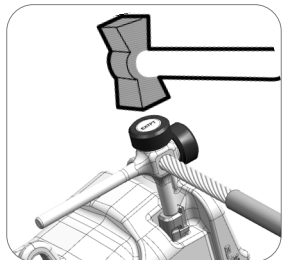
**EXTRACTION TOOLS  
HERRAMIENTAS EXTRACCIÓN**



**3**

**Use the EXTFT tool to hammer PIN until the rubber tab gets into its locking position. Perform visual check**

**Utilice la herramienta EXTFT para acabar de encajar el PASADOR hasta que la pestaña de goma quede anclada. Inspeccione visualmente**



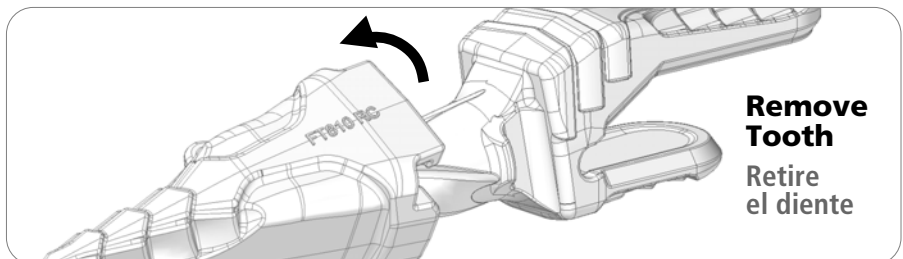
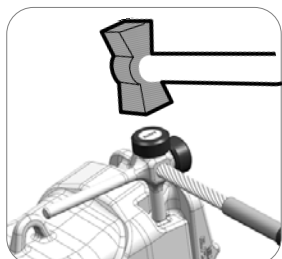
**Disassembly instructions:**

**Instrucciones para el desmontaje**

**4**

**Hammer the PIN out with the help of the extraction tool until it falls**

**Con la ayuda de la herramienta extractora golpee el PASADOR con un martillo hasta que caiga**

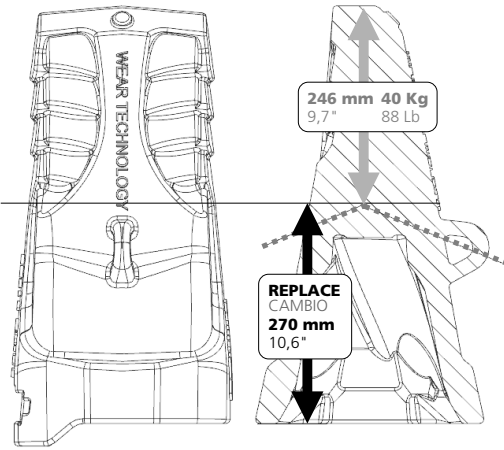




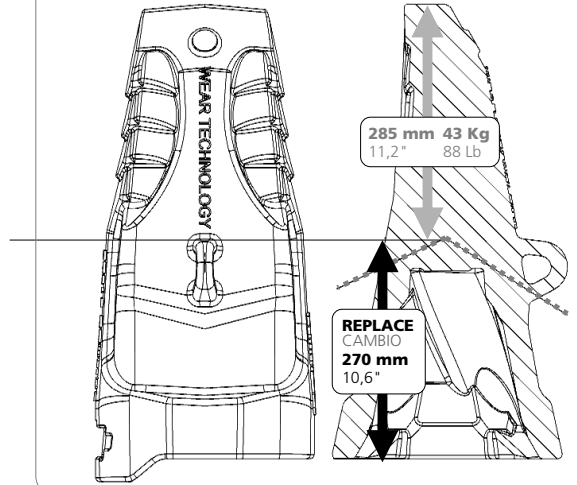
## TWISTER HAMMERLESS TEETH Recommendations for use & replacement

## DIENTES TWISTER HAMMERLESS Recomendaciones de uso y reemplazo

**FT810 RX-HL**



**FT810 RCXL-HL**





**TWISTER HAMMERLESS**

TOOTH + PIN | DIENTE + PASADOR

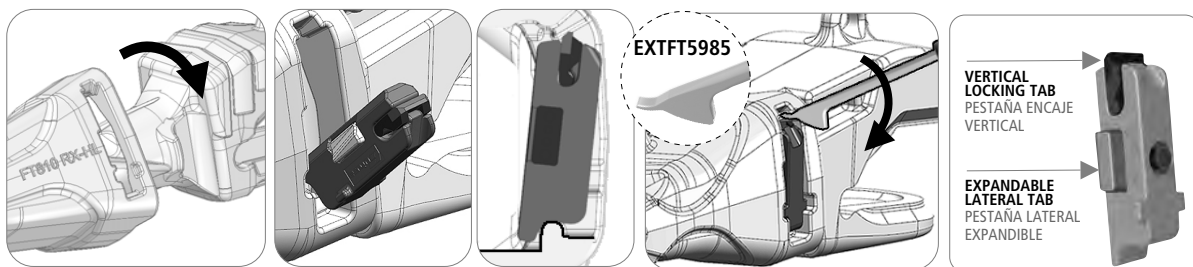
**Assembly instructions**  
**FUTURA TWISTER HAMMERLESS**  
**SIZES 590, 610, 690, 710 & 810**  
**TOOTH + ADAPTER + PIN**

**Instrucciones de montaje**  
**FUTURA TWISTER HAMMERLESS**  
**TALLAS 590, 610, 690, 710 Y 810**  
**DIENTE + PORTADIENTE + PASADOR**

**1**

**Fit TOOTH on adapter finding the half spin. Insert PIN as shown in the picture**

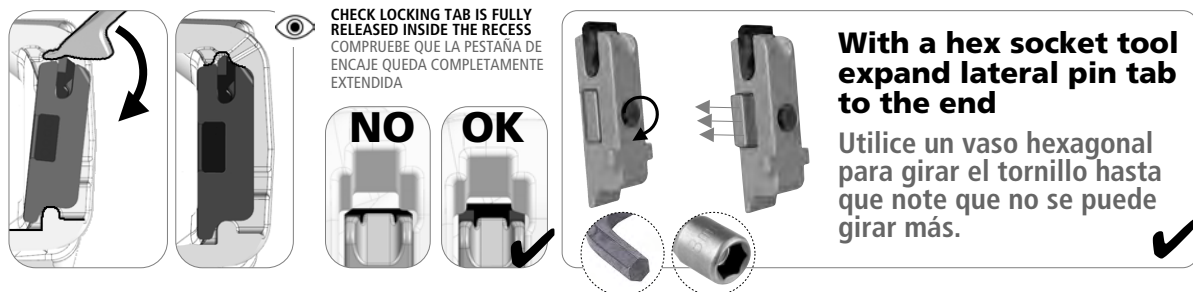
**Encaje el DIENTE en el PORTADIENTES con un pequeño giro e inserte el PASADOR en la posición que se muestra en el dibujo**



**2**

**With extraction tool EXTFT5985, press until pin tab reaches its locking position and is fully released on the orifice**

**Utilice la herramienta EXTFT5985 para hacer palanca sobre la pestaña móvil del pasador hasta que quede completamente extendida dentro del orificio**



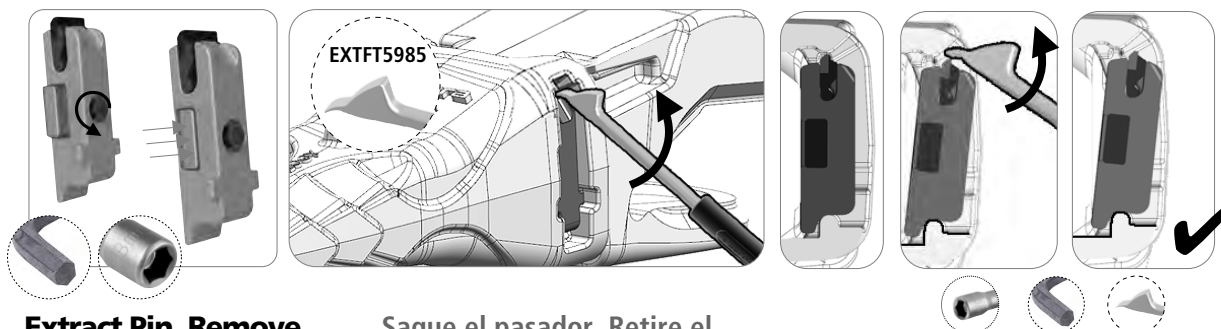
**Disassembly instructions:**

**Instrucciones para el desmontaje**

**3**

**Compress lateral tab with socket hex tool. Unlock vertical tab with EXTFT5985 tool.**

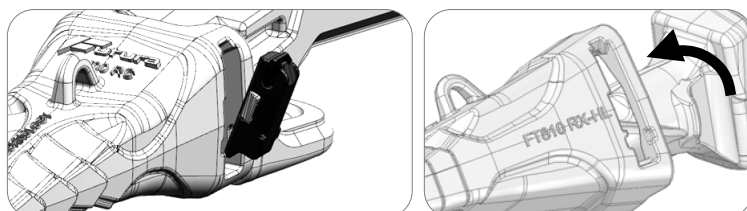
**Utilice un vaso hexagonal para comprimir la pestaña lateral. Use herramienta extractora y haga palanca sobre la pestaña hasta que quede fuera del orificio**



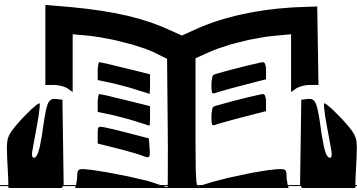
**4**

**Extract Pin. Remove TOOTH with a short spin**

**Saque el pasador. Retire el diente con un pequeño giro**



FT1317 PN-HL	-	-	EXTFT-1317
FT1923 PN-HL		M5	
FT2933 PN-HL		M6	
FT390 PN-HL		M6	EXTFT5985
FT430 PN-HL		M6	
FT510 PN-HL		M6	
FT590 PN-HL	10 mm		
FT6165 PN-HL	10 mm		
FT690 PN-HL	13 mm		EXTFT5985
FT710 PN-HL	13 mm		
FT810 PN-HL	17 mm		



## **WARNING**

### **ALWAYS WORK SAFELY**

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### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## **CUIDADO**

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.





**FUTURA T2**

TOOTH + PIN | DIENTE + PASADOR

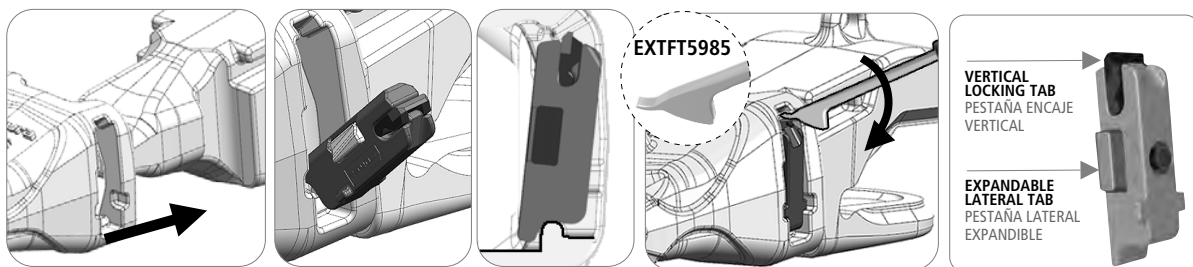
**Assembly instructions**  
**FUTURA T2 TOOTH**  
**SIZES 265, 270, 275 & 285**  
**TOOTH + ADAPTER + PIN**

**Instrucciones de montaje**  
**DIENTES T2**  
**TALLAS 265, 270, 275 Y 285**  
**DIENTE + PORTADIENTE + PASADOR**

**1**

**Fit TOOTH on adapter. Insert PIN as shown in the picture**

**Encaje el DIENTE en el PORTADIENTES e insterte el PASADOR en la posición que se muestra en el dibujo**



**2**

**With extraction tool EXTFT5985, press until pin tab reaches its locking position and is fully released on the orifice**

**Utilice la herramienta EXTFT5985 para hacer palanca sobre la pestaña móvil del pasador hasta que quede completamente extendida dentro del orificio**



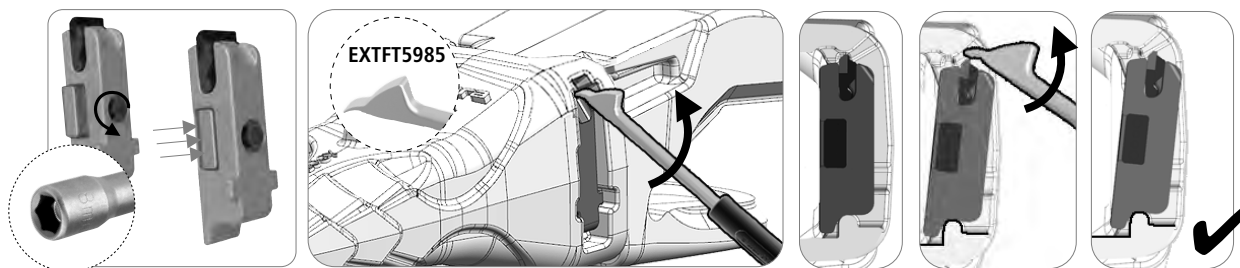
**Disassembly instructions:**

**Instrucciones para el desmontaje**

**3**

**Compress lateral tab with socket hex tool. Unlock vertical tab with EXTFT5985 tool.**

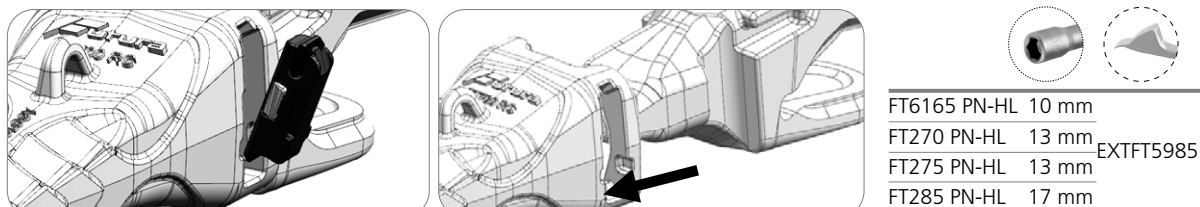
**Utilice un vaso hexagonal para comprimir la pestaña lateral. Use herramienta extractora y haga palanca sobre la pestaña hasta que quede fuera del orificio**



**4**

**Extract Pin. Remove TOOTH.**

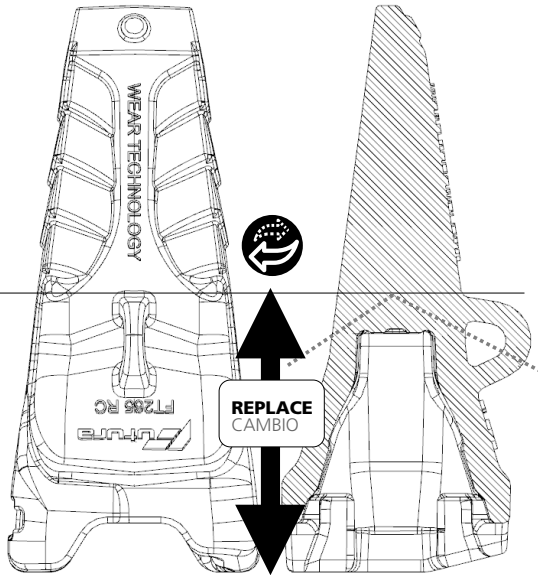
**Saque el pasador. Ya puede retirar el diente del portadientes.**







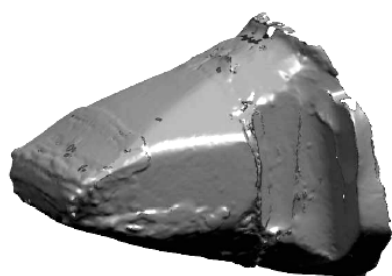
## T2 TOOTH Recommendations for use and replacement

## DIENTES T2 Recomendaciones de uso y reemplazo



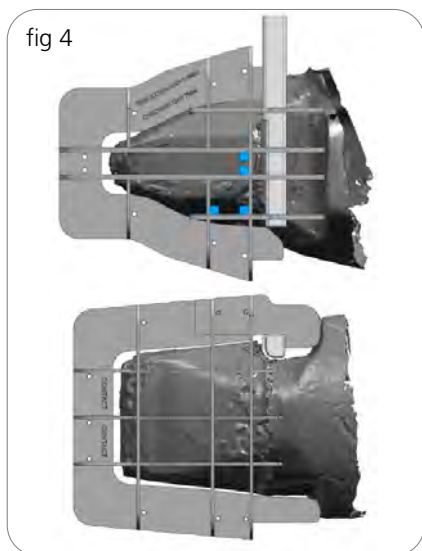
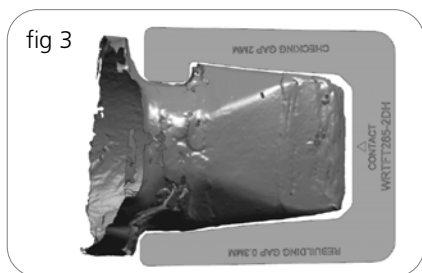
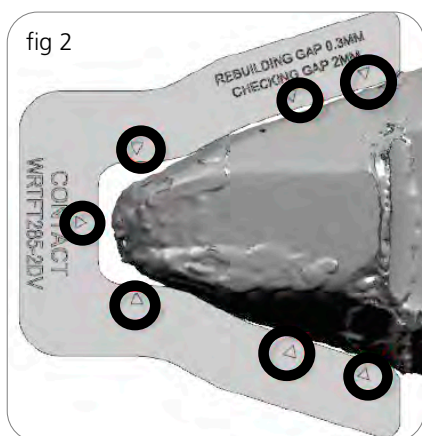
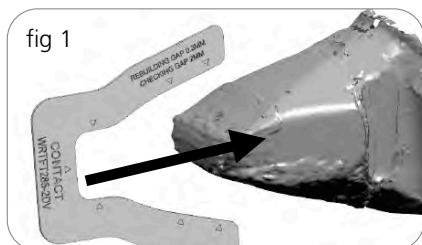
### RC

REF		
FT265 RC	221 8,70"	265
FT270 RC		270
FT275 RC		275
FT285 RC	292 11,50"	285



## Using gauges to rebuild FUTURA T2 noses

## Utilización de galgas de reconstrucción para narices T2



There are two type of gauges available for the reconstruction of the FUTURA T2 noses.

The 2D gauge is best used as a quick check to establish de level of wearing of the nose.

The 3D gauge (cage style) allows for a thorough check of the nose surface.

Both 2D and 3D gauges might help with two aspects:

### Gap checking

It is recommended to rebuild a nose when the observed gap between the template and the nose is greater than 2mm.

### Rebuilding gap

The rebuilding gap would show the maximum gap allowance while working on welding reconstruction. Achieving a 0,3mm of gap would mean a perfect rebuilding of a nose has been carried out.

WARNING: The closer the geometry of the rebuilt nose matches the geometry of the template the better the results.

### Vertical check

Place vertical template as shown of fig. 1, check the highlight surfaces (fig. 2) indicating the key fitting areas. The observed gaps will help to determine if any rebuilding of the nose is needed.

Warning: The vertical template can **only** be used for the **center** of the nose due to the T2 specific geometry.

### Horizontal check

Place horizontal template as shown in fig. 3. It will allow to check two important aspects: the lateral gap and the position of the hole.

Warning: to check the position of the pin, make sure the top of the nose and the bottom of the template are in the right position.

### 2D vs 3D cage

Never attempt to rebuild a nose just using 2D templates since they are designed for minor weld-works and to value the wear status of the nose.

To rebuild noses use the 3D template (fig 4)

Hay dos tipos de plantillas disponibles para la comprobación de las narices FUTURA T2.

La galga 2D se utiliza para hacer comprobaciones rápidas al establecer el nivel de desgaste de la nariz.

El calibre 3D (estilo jaula) permite una verificación más minuciosa de la superficie completa de la nariz.

Las galgas 2D y 3D pueden ayudar con dos aspectos:

### Comprobación desgaste

Se recomienda reconstruir una nariz cuando el espacio observado entre la plantilla y la nariz sea mayor de 2 mm.

### Reconstrucción de la nariz

La galga mostraría la tolerancia máxima mientras se trabaja en la reconstrucción de la nariz. Lograr reducir el hueco a 0,3 mm significaría que se ha llevado a cabo una reconstrucción perfecta de la nariz.

ATENCIÓN: Cuanto más se aproxime la geometría de la nariz reconstruida a la geometría de la plantilla, mejores resultados se obtendrán en la reconstrucción de la nariz.

### Comprobación vertical

Coloque la plantilla vertical en el centro de la nariz tal como se muestra (fig. 1) y verifique las zonas resaltadas (fig. 2) que indican las áreas clave de ajuste de la nariz. Los huecos observados ayudarán a determinar la necesidad de reconstruir la nariz.

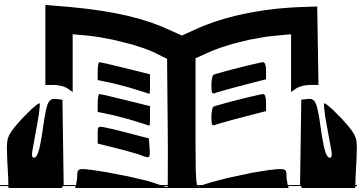
ATENCIÓN: La galga vertical sólo es válida en el centro de la nariz debido a la geometría característica de la gama T2. No utilice esta plantilla como referente si no está ubicada en el centro de la nariz.

### Comprobación horizontal

Coloque la plantilla horizontal como se muestra en la fig. 3. Permitirá verificar el desgaste lateral y la posición del rebaje del pasador. Para comprobar la posición de este rebaje asegúrese que la base de la plantilla esté bien colocada.

### Plantilla 2D o 3D

Nunca proceda a la reconstrucción de una nariz con plantillas 2D que están pensadas para soldaduras puntuales y para comprobar el estado del desgaste de la nariz. Para la reconstrucción de narices T2 utilice siempre plantillas 3D (fig. 4)



## **WARNING**

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### **KEEP BYSTANDERS OUT OF THE WAY**

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## **CUIDADO**

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

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### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

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**FUTURA X2**

TOOTH + PIN | DIENTE + PASADOR

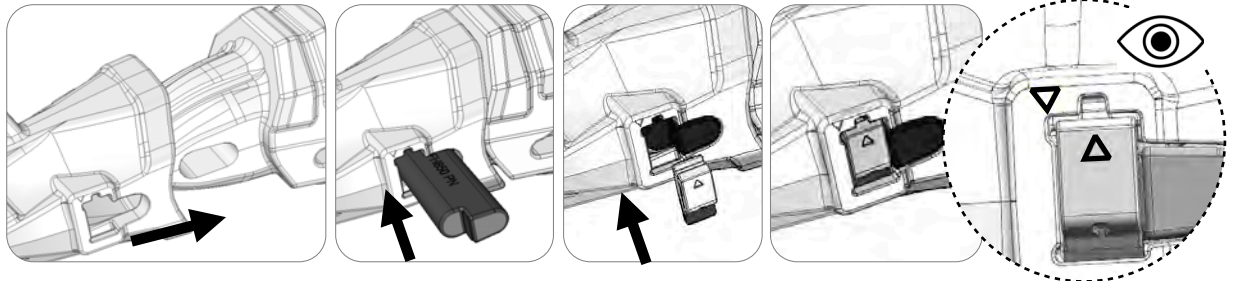
**Assembly instructions**  
**FUTURA X2 TOOTH**  
**SIZES 850 1150 1450 2500 3400**  
**TOOTH + ADAPTER + PIN**

**Instrucciones de montaje**  
**DIENTES X2**  
**TALLAS 850 1150 1450 2500 3400**  
**DIENTE + PORTADIENTE + PASADOR**

**1**

**Place TOOTH on the ADAPTER.**  
**Insert PIN as shown in the picture**

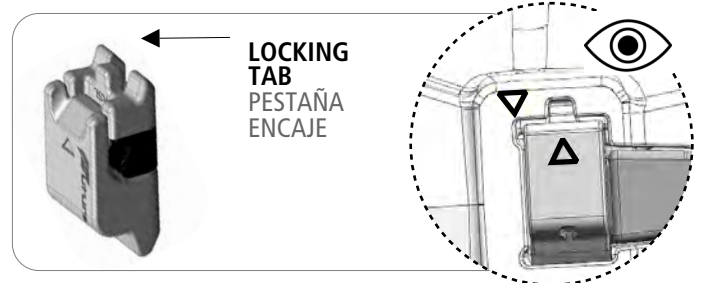
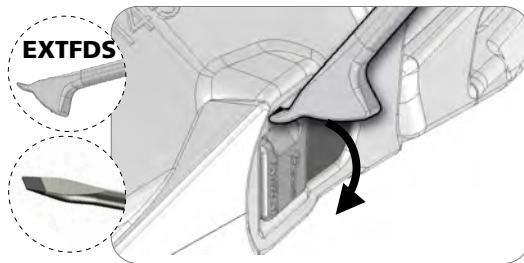
**Encaje el DIENTE en el PORTADIENTES e insterte el PASADOR en la posición que se muestra en el dibujo**



**2**

**With extraction tool EXTFDS or STANDARD SCREWDRIVER, press until pin tab reaches its locking position and is fully released on the orifice**

**Utilice la herramienta EXTFDS o un DESTORNILLADOR STANDARD para hacer palanca sobre la pestaña móvil del pasador hasta que quede completamente extendida dentro del orificio**



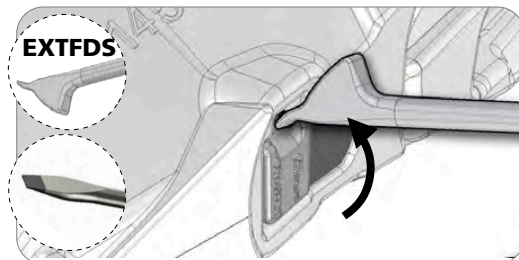
**Dissassembly instructions**

**Instrucciones para el desmontaje**

**3**

**Using the extraction tool EXTF5985, press until pin tab is released from its locking position**

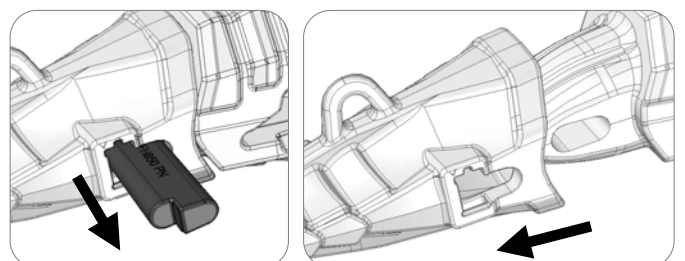
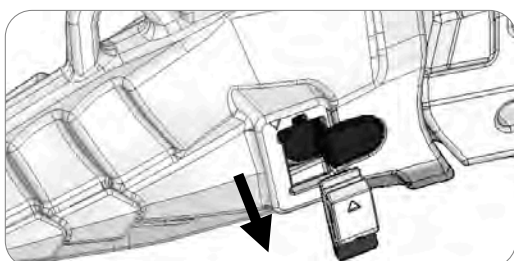
**Utilice una herramienta y haga palanca sobre la pestaña móvil del pasador hasta que quede fuera del orificio**

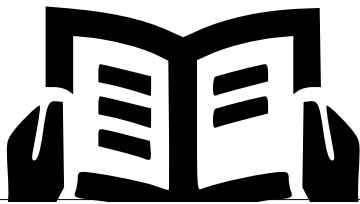


**4**

**Extract Pin.**  
**Remove TOOTH.**

**Saque el pasador.**  
**Retire el diente de portadientes**





# MINER

## COMPATIBLE WITH HENSLEY® TS®



### WARNING

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### CUIDADO

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al realizar los trabajos descritos en estas instrucciones de montaje

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#### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



**FX3900 DPNA - FX8000 DPNA**

TOOTH + PIN | DIENTE + PASADOR

**Assembly instructions**

**FX3900 DPNA  
FX6400 DPNA  
FX8000 DPNA**

**INTERMEDIATE ADAPTER + PIN**

**Instrucciones montaje**

**FX3900 DPNA  
FX6400 DPNA  
FX8000 DPNA**

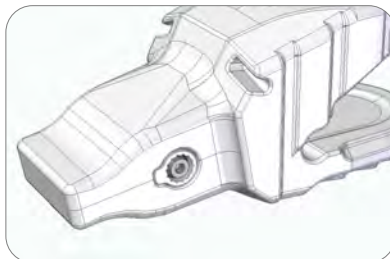
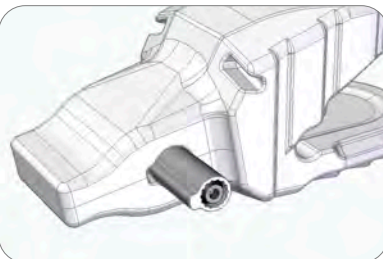
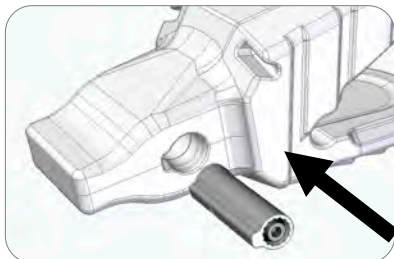
**ADAPTADOR INTERMEDIO + PASADOR**



**1**

**Place the PIN on the ADAPTER recess as shown below**

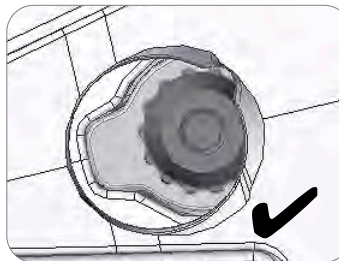
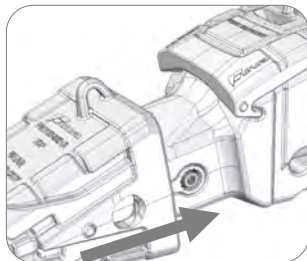
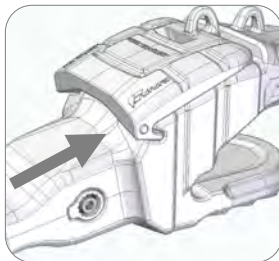
**Coloque el pasador FUTURA MINER en el alojamiento del portadientes como se indica en la ilustración.**



**2**

**Place the cap (if needed) and tooth on the adapter. The pin will look off centered. It is OK!**

**Coloque el protector (si fuese necesario) y el diente sobre el portadientes. El encaje del pasador parece desplazado. Esto es CORRECTO**



**The pin hole LOOKS OFF CENTERED: IT IS OK**



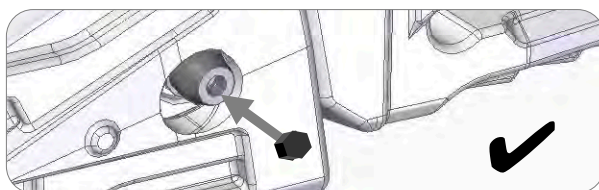
**3**

**Use an Allen M14 wrench to release the pin tabs until the assembly feels fully locked. The assembly is ready!**

**Use una llave Allen M14 para expandir el pasador lo máximo que pueda. ¡El montaje ya está listo para trabajar!**



**ALLEN 14 mm. (9/16") wrench (hex tool)**



**4**

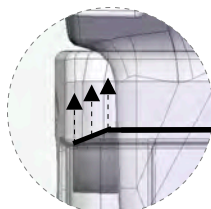
**Disassembly:  
For tooth disassembly follow steps 1 to 3 in reverse order**

**Desmontaje:  
Para desmontar los dientes siga los pasos 1 a 3 en orden inverso.**

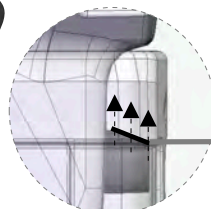
**DUAL EXPANSION**

**DOBLE EXPANSIÓN**

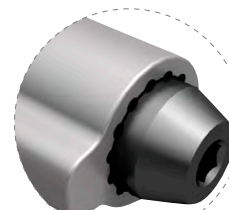
**0mm.  
20mm.  
MAX.**



**DUAL TAKE UP**



**EXTRA TENSION**



**0mm. 20mm.**



# MINER



## WARNING

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## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.





# Assembly and compatibility chart









## SIZES 1100, 1300 and 1450

DRP KOMATSU®  
BRADKEN®  
CATERPILLAR®

DRP  
POSILOK®

			
FUTURA	POSILOK®	POSILOK® PLUS	4 FACE 8 FACE
oem  or  or 	oem  or 	oem 	  X  FUTURA or OEM
oem  or  or 	oem  or 	oem 	  ✓  FUTURA or OEM
oem  or 	oem  or 	X	POSILOK®   X  oem
oem  or  or 	oem  or 	oem 	POSILOK® PLUS   X  oem
<b>SIZE 1100-1300</b>			 ✓  FUTURA or OEM

## SIZE 950

			<b>SIZE 950</b>
4 FACE	8 FACE	POSILOK®	
✓  FUTURA or OEM	✓  FUTURA or OEM	✓  FUTURA or OEM	DRP POSILOK®
✓  FUTURA or OEM	X	X	DRP BRADKEN® 



### FM950 PNK2

TOOTH + PIN | DIENTE + PASADOR

## Assembly instructions FM950 PNK2 OLD MODEL

TOOTH + PIN

## Assembly instructions FM950 PNK2 OLD MODEL

DIENTE + PASADOR



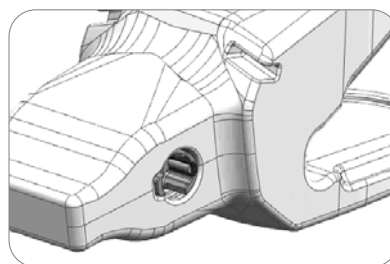
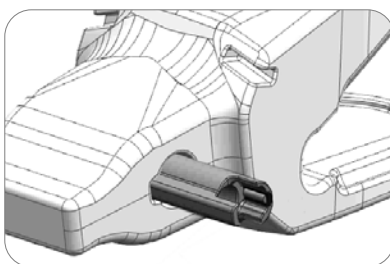
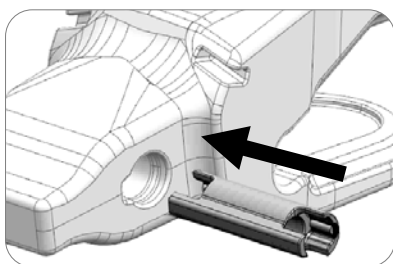
Use with 4 face  
pocket teeth ONLY



# 1

Place the central piece of the FUTURA MINER PIN on the ADAPTER

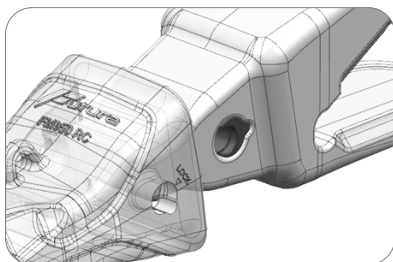
Coloque la parte central del pasador FUTURA MINER en el alojamiento del portadientes como se indica en la ilustración



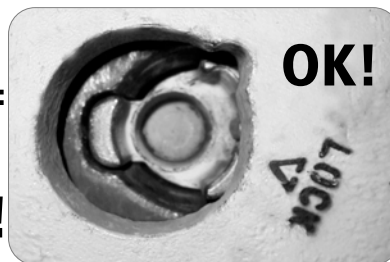
# 2

Place the FUTURA MINER FM950 tooth in position. The pin hole will look displaced. It is OK

Coloque el diente FUTURA FM950 en la posición indicada. El encaje del pasador parece desplazado. Esto es CORRECTO



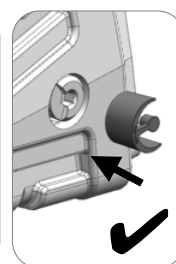
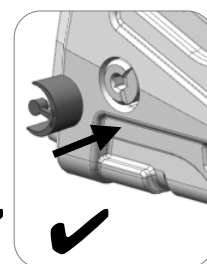
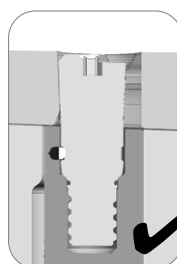
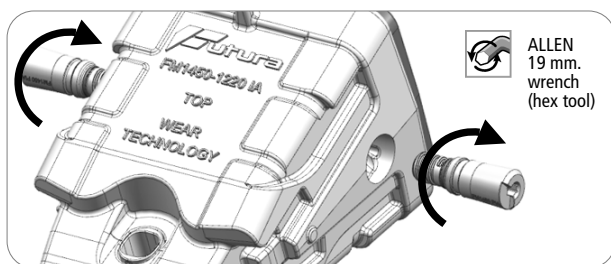
The pin hole LOOKS OFF CENTERED: IT IS OK



# 3

Insert pin on each side and screw both pins alternatively to achieve a balanced adjustment until reaching locking position. Insert dirt plugs.

Coloque el pasador en cada lado y gírelos poco a poco y alternativamente con una llave ALLEN hasta alcanzar la posición de bloqueo. Coloque los tapones anti-suciedad en cada extremo.



The assembly is ready!

El montaje ya está listo para trabajar!

# 4

Disassembly: For tooth disassembly follow steps 1 to 3 in reverse order

Desmontaje: Para desmontar los dientes siga los pasos 1 a 3 en orden inverso.



**FM950 PNK**

TOOTH + PIN | DIENTE + PASADOR

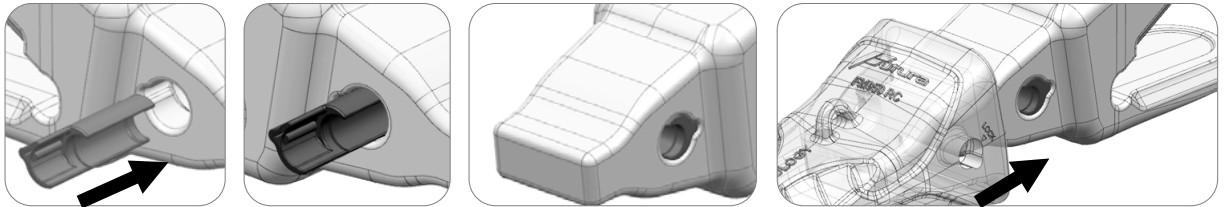
**Assembly instructions  
FM950 PNK  
OLD MODEL  
TOOTH + PIN**

**Instrucciones  
de montaje PNK  
MODELO ANTIGUO  
DIENTE + PASADOR**



**1** Place the central piece of the PIN FM950 PNK on the ADAPTER. Place tooth in position.

Coloque la parte central del pasador FUTURA MINER FM950 PNK en el alojamiento del portadientes como se indica en la imagen. Coloque el diente.



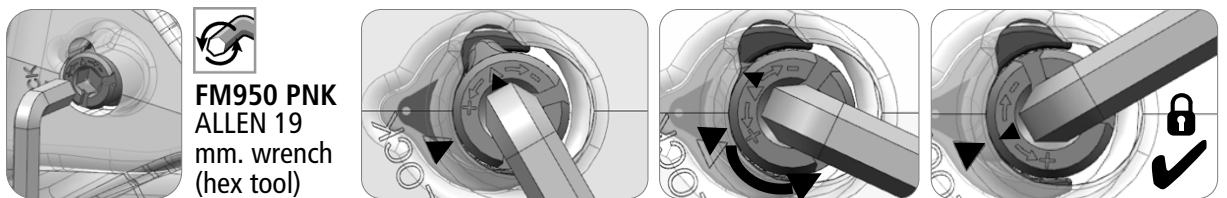
**2** Place the MINER PIN FM950 PNK as shown below. The pin hole will look displaced. It is OK

Coloque el pasador FUTURA MINER FM950 PNK como se indica. El encaje del pasador parece desplazado. Esto es CORRECTO



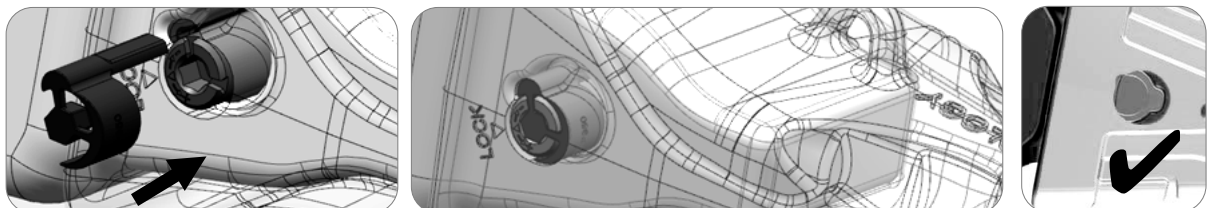
**3** Use a standard 19mm. ALLEN wrench to rotate and lock the pin. Follow the arrow marks displayed on tooth and pin to lock/unlock pin

Con la ayuda de una llave standard tipo ALLEN de 19mm. rote y bloquee el pasador. Utilice las marcas que aparecen como guía en el diente y el pasador para bloquear o desbloquear el pasador



**4** Place the pin dirt plug to complete the assembly

Coloque el tapón embellecedor anti-suciedad en el extremo del pasador para completar el montaje



**5** Disassembly instructions: Follow steps 1 to 4 in reverse order

Instrucciones para el desmontaje: Siga los pasos 1 a 4 en orden inverso.



# FS95RPN

TOOTH + PIN | DIENTE + PASADOR

## Assembly instructions FS95RPN TOOTH + PIN

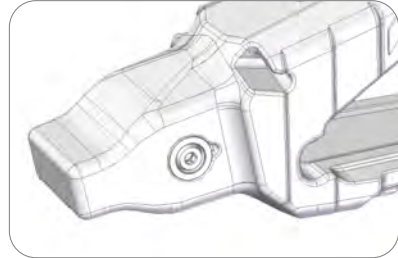
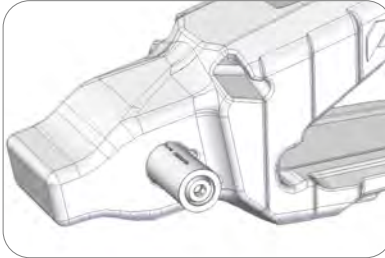
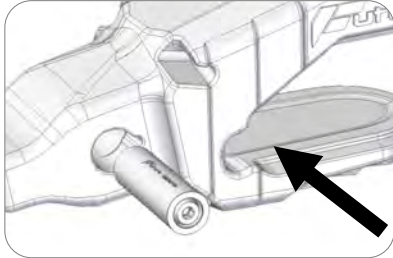
## Assembly instructions FS95RPN DIENTE + PASADOR



# 1

Place the PIN on the ADAPTER recess as shown below

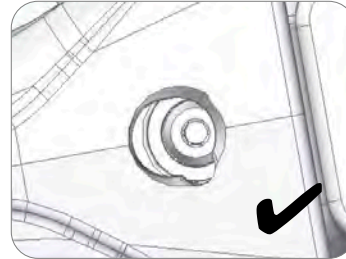
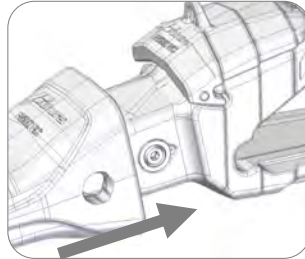
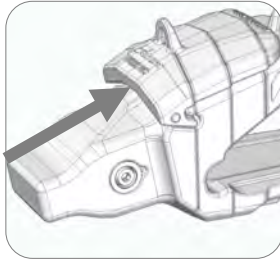
Coloque el pasador FUTURA MINER en el alojamiento del portadientes como se indica en la ilustración.



# 2

Place the cap (if needed) and tooth on the adapter. The pin will look off centered. It is OK!

Coloque el protector (si fuese necesario) y el diente sobre el portadientes. El encaje del pasador parece desplazado. Esto es CORRECTO



The pin hole LOOKS OFF CENTERED: IT IS OK



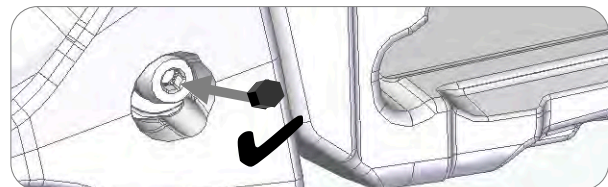
# 3

Use an Allen M14 wrench to release the pin tabs until the assembly feels fully locked. The assembly is ready!

Use una llave Allen M14 para expandir el pasador lo máximo que pueda. ¡El montaje ya está listo para trabajar!



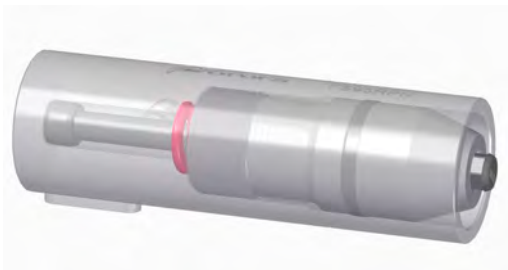
ALLEN 14 mm. (9/16") wrench (hex tool)



# 4

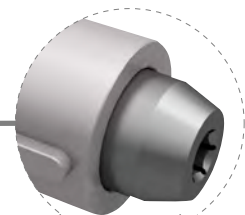
Disassembly:  
For tooth disassembly follow steps 1 to 3 in reverse order

Desmontaje:  
Para desmontar los dientes siga los pasos 1 a 3 en orden inverso.

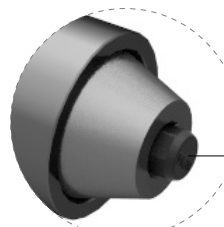


SINGLE EXPANSION

EXPANSIÓN POR UN LADO



0mm. 20mm.



DIRT PLUG  
TAPÓN ANTI-SUCIEDAD



**FM950 DPNA**

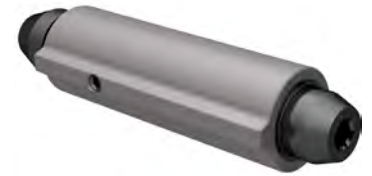
TOOTH + PIN | DIENTE + PASADOR

**Assembly instructions  
FM950 DPNA**

**TOOTH + PIN**

**Assembly instructions  
FM950 DPNA**

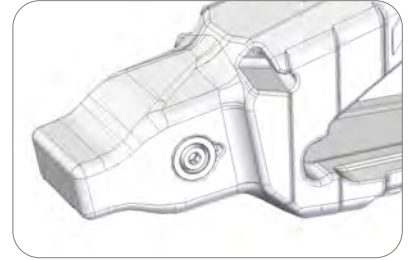
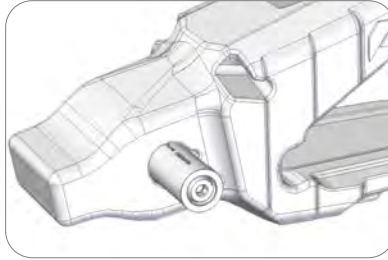
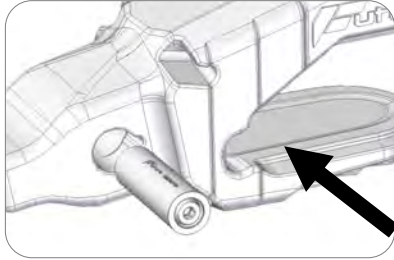
**DIENTE + PASADOR**



**1**

**Place the PIN on the ADAPTER recess as shown below**

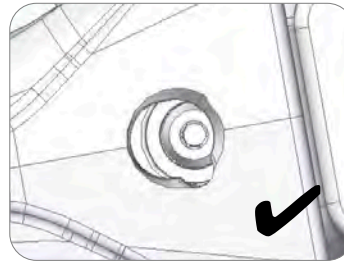
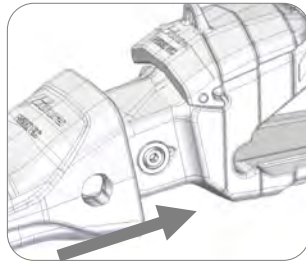
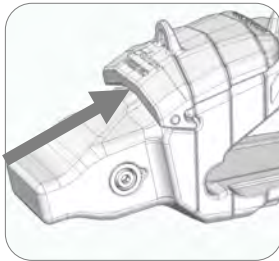
Coloque el pasador FUTURA MINER en el alojamiento de portadientes como se indica en la ilustración.



**2**

**Place the cap (if needed) and tooth on the adapter. The pin will look off centered. It is OK!**

Coloque el protector (si fuese necesario) y el diente sobre el portadientes. El encaje del pasador parece desplazado. Esto es CORRECTO



**The pin hole LOOKS OFF CENTERED: IT IS OK**



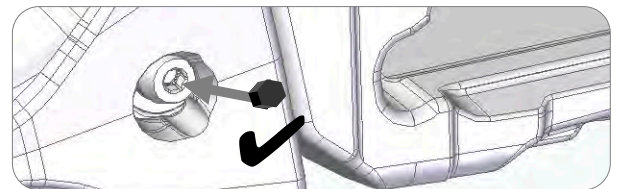
**3**

**Use an Allen M14 wrench to release the pin tabs until the assembly feels fully locked. The assembly is ready!**

Use una llave Allen M14 para expandir el pasador lo máximo que pueda. ¡El montaje ya está listo para trabajar!



**ALLEN 14 mm. (9/16") wrench (hex tool)**



**4**

**Disassembly:  
For tooth disassembly follow steps 1 to 3 in reverse order**

Desmontaje:  
Para desmontar los dientes siga los pasos 1 a 3 en orden inverso.





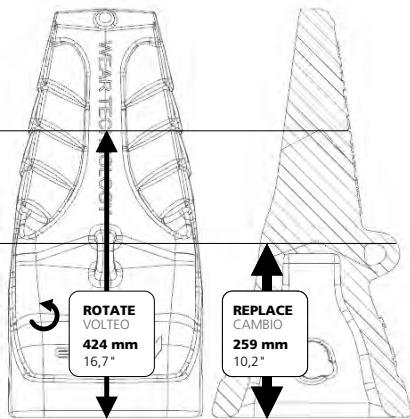
## FM950 TOOTH

USE AND REPLACEMENT | RECOMENDACIONES DE USO

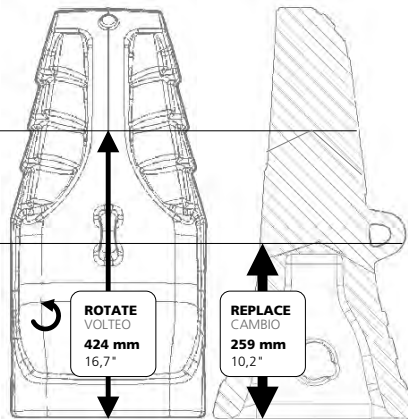
### MINER TOOTH Recommendations for use and replacement

### DIENTES FUTURA MINER Recomendaciones de uso y reemplazo

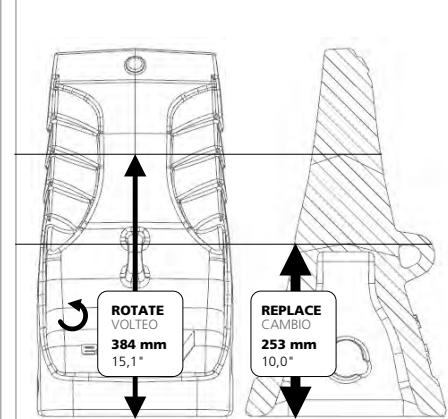
#### FM950 RC, FM950 RC4 ROCK CHISEL



#### FM950 RCX, FM950 RCX4 ROCK CHISEL XL

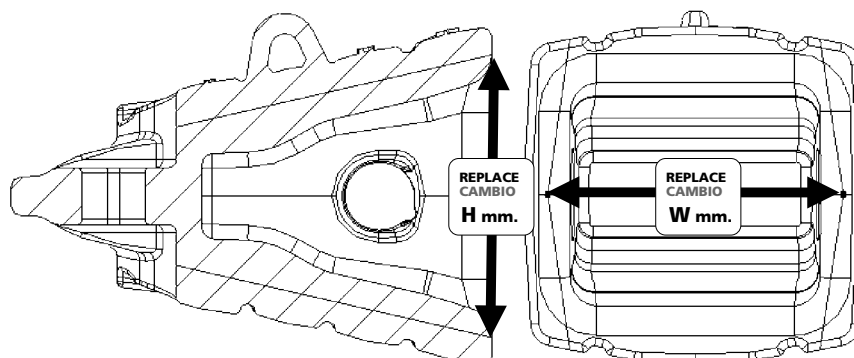


#### FM950 I, FM950 I4 IMPACT



## FM1100-1450 TOOTH

USE AND REPLACEMENT | RECOMENDACIONES DE USO



#### FM1100-920 IA

H 273 mm 10.7" W 285 mm 11.2"

#### FM1300-1120 IA

H 0.0" W 0.0"

#### FM1450-1220 IA

H 0.0" W 0.0"



**FM1100 DPNA - FM1450 DPNA**

TOOTH + PIN | DIENTE + PASADOR

**Assembly instructions**

**FM1100 DPNA  
FM1300 DPNA  
FM1450 DPNA**

**INTERMEDIATE ADAPTER + PIN**

**Instrucciones montaje**

**FM1100 DPNA  
FM1300 DPNA  
FM1450 DPNA**

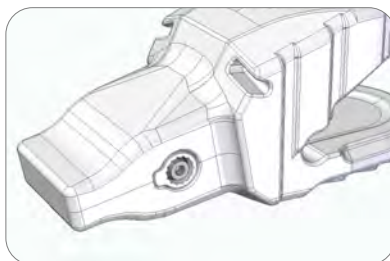
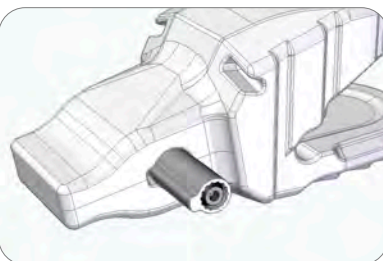
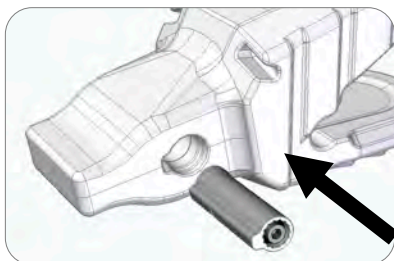
**ADAPTADOR INTERMEDIO + PASADOR**



**1**

**Place the PIN on the ADAPTER recess as shown below**

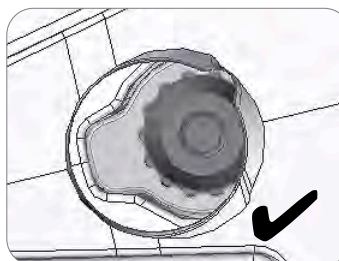
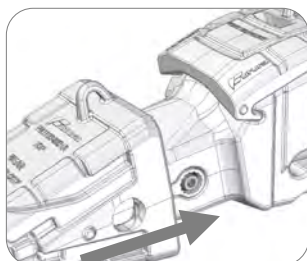
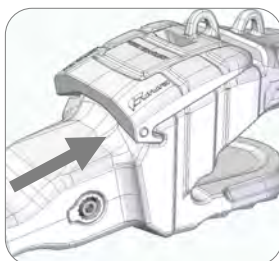
**Coloque el pasador FUTURA MINER en el alojamiento del portadientes como se indica en la ilustración.**



**2**

**Place the cap (if needed) and tooth on the adapter. The pin will look off centered. It is OK!**

**Coloque el protector (si fuese necesario) y el diente sobre el portadientes. El encaje del pasador parece desplazado. Esto es CORRECTO**



**The pin hole LOOKS OFF CENTERED: IT IS OK**



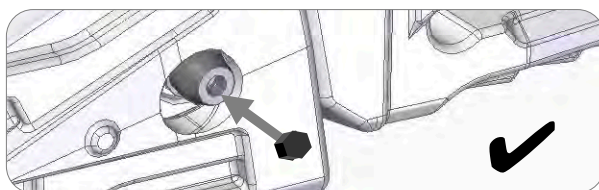
**3**

**Use an Allen M14 wrench to release the pin tabs until the assembly feels fully locked. The assembly is ready!**

**Use una llave Allen M14 para expandir el pasador lo máximo que pueda. ¡El montaje ya está listo para trabajar!**



**ALLEN 14 mm. (9/16") wrench (hex tool)**



**4**

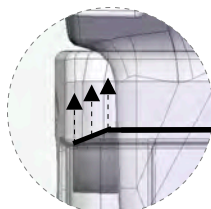
**Disassembly:  
For tooth disassembly follow steps 1 to 3 in reverse order**

**Desmontaje:  
Para desmontar los dientes siga los pasos 1 a 3 en orden inverso.**

**DUAL EXPANSION**

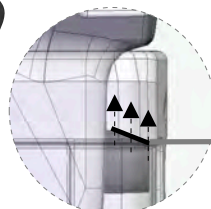
**DOBLE EXPANSIÓN**

**0mm.  
20mm.  
MAX.**



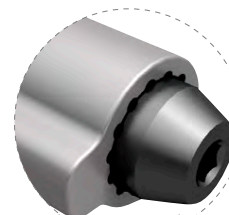
**DUAL TAKE UP**

**Dual take up retention increases adapter nose life**



**EXTRA TENSION**

**La retención de doble tirante aumenta la vida útil de la nariz del adaptador**



**0mm. 20mm.**



## MINER PNK2 PIN SIZES 1100 TO 1450

INTERMEDIATE ADAPTER+PIN | ADAPTADOR INTERMEDIO+PASADOR

### Assembly instructions

FM1100 PIAK2  
FM1300 PIAK2  
FM1450 PIAK

INTERMEDIATE ADAPTER + PIN

### Instrucciones montaje

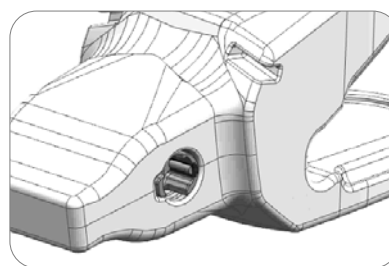
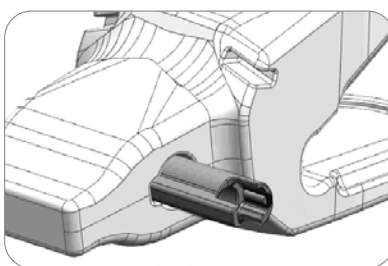
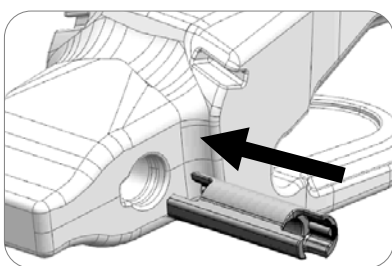
FM1100 PIAK2  
FM1300 PIAK2  
FM1450 PIAK

ADAPTADOR INTERMEDIO + PASADOR



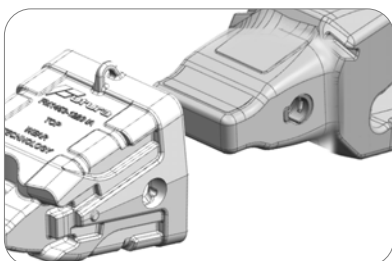
**1** Place the central piece of the **FUTURA MINER PIN** on the **ADAPTER**

Coloque la parte central del pasador **FUTURA MINER** en el alojamiento del portadientes como se indica en la ilustración



**2** Place the **FUTURA MINER** intermediate adapter in position. The pin hole will look displaced. It is **OK**

Coloque el adaptador intermedio **FUTURA** en la posición indicada. El encaje del pasador parece desplazado. Esto es **CORRECTO**

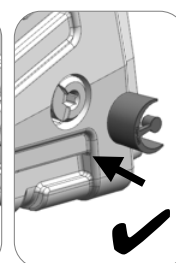
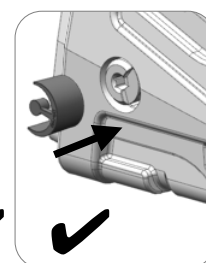
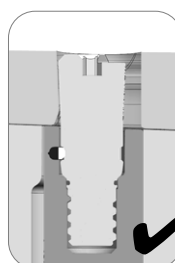
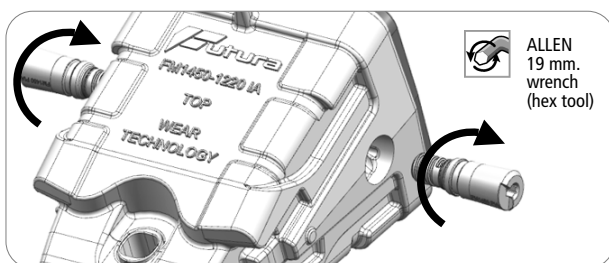


The pin hole **LOOKS OFF CENTERED: IT IS OK**



**3** Insert pin on each side and screw both pins alternatively to achieve a balanced adjustment until reaching locking position. Insert dirt plugs.

Coloque el pasador en cada lado y gírelos poco a poco y alternativamente con una llave **ALLEN** hasta alcanzar la posición de bloqueo. Coloque los tapones anti-suciedad en cada extremo.



The Intermediate Adapter is ready for tooth assembly now!

Su Adaptador intermedio ya está preparado para el montaje del diente.

**4** Disassembly: For Intermediate adapter disassembly follow steps 1 to 3 in reverse order

Instrucciones para el desmontaje: Para desmontar los Adaptadores Intermedios siga los pasos 1 a 3 en orden inverso.





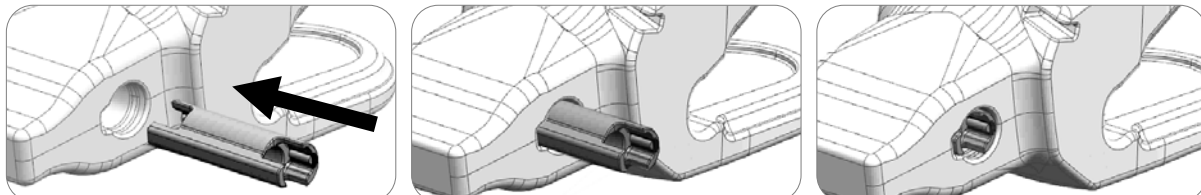
**FM1100 PIAK - FM1300 PIAK**  
INTERMEDIATE ADAPTER+PIN | ADAPTADOR INTERMEDIO+PASADOR

**Assembly instructions**  
**FM1100-920 IA + FM1100 PIAK**  
**FM1300-1120 IA + FM1300 PIAK**

**Instrucciones de montaje**  
**FM1100-920 IA + FM1100 PIAK**  
**FM1300-1120 IA + FM1300 PIAK**

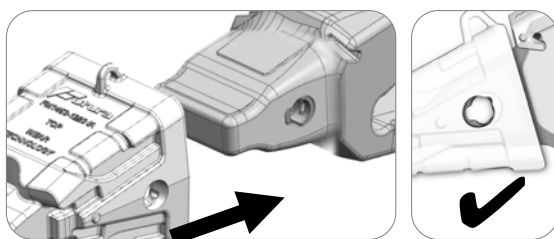
**1** Place the central piece of the **FUTURA MINER PIN** on the **ADAPTER**

Coloque la parte central del pasador **FUTURA MINER** en el alojamiento del portadientes tal como se indica



**2** Place the **FUTURA MINER** intermediate adapter in position. The pin hole will look displaced. It is **OK**

Coloque el adaptador intermedio **FUTURA** en la posición indicada. El encaje del pasador parece desplazado. Esto es **CORRECTO**

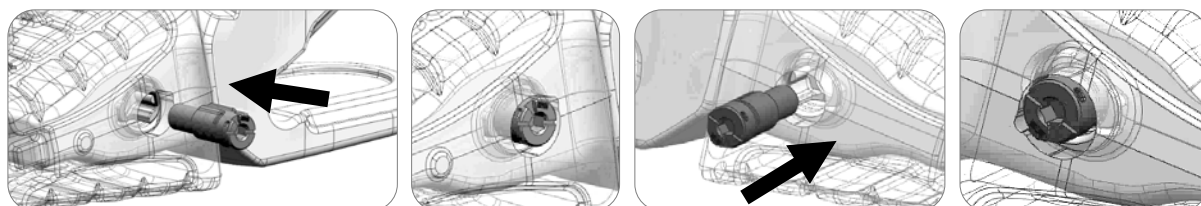


The pin **LOOKS OFF CENTERED: IT IS OK**



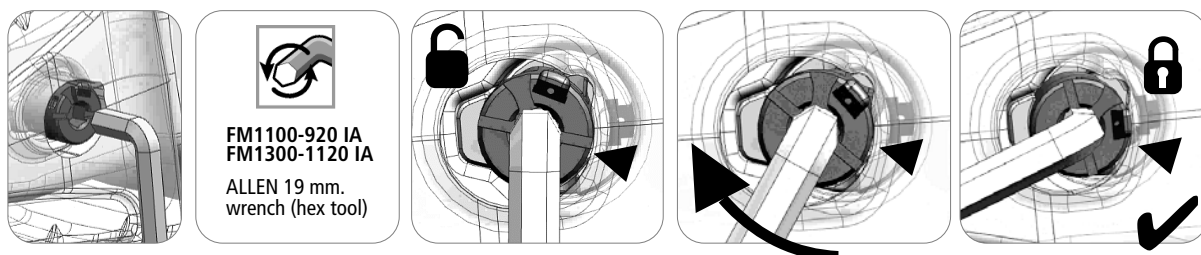
**3** Place **PIN** on each side of the intermediate adapter as shown below.

Coloque los pasadores en cada uno de los extremos del adaptador intermedio.



**4** Use a standard **ALLEN** wrench to rotate and lock the **PINS** on each side of the Intermediate Adapter.

Con la ayuda de una llave hexagonal **ALLEN** rote y bloquee los pasadores de cada uno de los lados.



**5** Place pin dirt plugs on each end. The Intermediate Adapter is ready for tooth assembly now!

Coloque el tapón anti-suciedad en cada extremo. Su Adaptador intermedio ya está preparado para el montaje del diente.

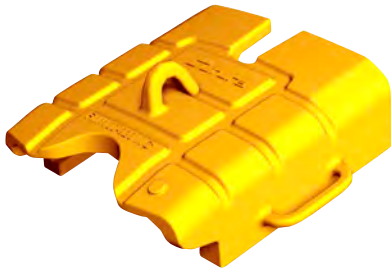
**6** Disassembly instructions: For Intermediate Adapter disassembly follow steps 1 to 5 in reverse order

Instrucciones para el desmontaje: Para desmontar los Adaptadores Intermedios siga los pasos 1 a 5 en orden inverso.



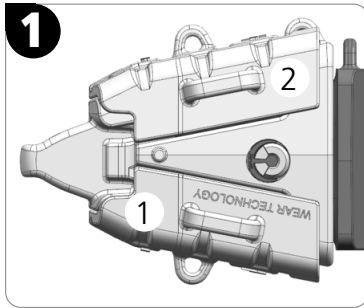
## FM1100-1300-1450 WEAR CAPS

OPTIONAL WEAR CAPS FOR FUTURA INTERMEDIATE ADAPTERS



## Installation of optional Wear Caps for Futura Intermediate Adapters

## Montaje de protectores para adaptadores intermedios FUTURA



### Caution:

Intermediate Wear Caps must be installed prior to placing the teeth. Mining teeth contribute to the complete stability of the FUTURA Wear Caps.

Never use FUTURA Wear Caps in intermediate adapters without tooth mounted.

### Atención:

Estos protectores deben montarse siempre antes que los dientes de minería. Los dientes de minería FUTURA contribuyen a la completa estabilidad de los PROTECTORES.

Nunca utilice PROTECTORES en su adaptador intermedio si no llevan montados los dientes del conjunto.



### Assembly

- 1 Place the Bottom Wear Cap first. If possible, try to place the Wear Caps with the intermediate adapter in horizontal position.
- 2 Try to follow the movement of the Intermediate Adapter installation guides with the Wear Cap. The Wear Caps will slide through the installation guides. Make sure the Wear Caps completely covers the intermediate adapter.
- 3 Place mining teeth before using the Wear Caps. **NEVER** use Wear Caps on Intermediate Adapters where the teeth are not present.

### Montaje

- 1 Coloque primero el Protector inferior. Probablemente le resulte más cómodo trabajar con el adaptador intermedio en posición completamente horizontal.
- 2 Fíjese en las guías del Adaptador Intermedio e intente seguirlas con el portector para encajar la pieza. Los protectores encajan una vez deslizados por estas guías. Asegúrese que el protector cubra totalmente el Adaptador Intermedio.
- 3 Coloque los dientes de minería antes de utilizar los protectores para Adaptadores intermedios. **NO** utilice **NUNCA** los Protectores de Adaptadores Intermedios sin haber montado antes los dientes del conjunto.

### Disassembly

- 4 Follow steps 3 to 1 in reverse order.

### Desmontaje

- 4 Siga los pasos 3 a 1 en orden inverso.





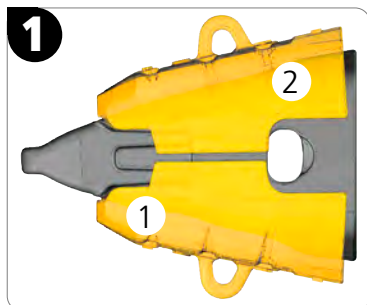
## FM940 WC | FM970 WC DRP WEAR

DIRECT REPLACEMENT WEAR CAPS FOR POSILOK INTERMEDIATE ADAPTERS



### Installation of Direct Replacement Wear Caps for Posilok Intermediate Adapters

### Montaje de protectores de Reemplazo Directo para Adaptadores Intermedios Posilok



#### Caution:

Intermediate Wear Caps must be installed prior to placing the teeth. Mining teeth contribute to the complete stability of the FUTURA Wear Caps.

Never use FUTURA Wear Caps in intermediate adapters without tooth mounted.

#### Atención:

Estos protectores deben montarse siempre antes que los dientes de minería. Los dientes de minería FUTURA contribuyen a la completa estabilidad de los PROTECTORES.

Nunca utilice PROTECTORES en su adaptador intermedio si no llevan montados los dientes del conjunto.



#### Assembly

- 1 Place the Bottom Wear Cap first. If possible, try to place the Wear Caps with the intermediate adapter in horizontal position.
- 2 Place the Wear Cap on the Intermediate Adapter making sure the central tab matches the central recess. Use the Wear Cap side tabs to slide and push the Wear Cap to its final locking position making sure it remains firmly locked.
- 3 Place and lock mining teeth (OEM or FUTURA) before using the Wear Caps. NEVER use Wear Caps on Intermediate Adapters where the teeth are not present.

#### Disassembly

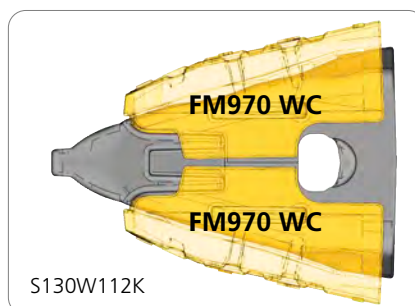
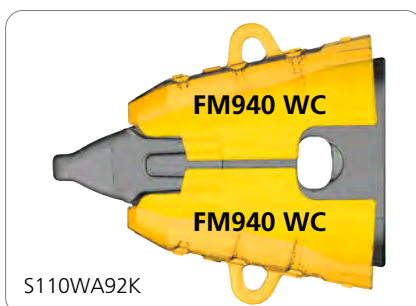
- 4 Follow steps 3 to 1 in reverse order.

#### Montaje

- 1 Coloque primero el Protector inferior. Probablemente le resulte más cómodo trabajar con el adaptador intermedio en posición completamente horizontal.
- 2 Fijese en las pestañas de fijación del protector. Coloque el protector de manera que la pestaña central encaje en los rebajes del Adaptador Intermedio. Deslice el Protector por las guías laterales hasta que note que el protector queda firmemente sujeto y cubra totalmente al Adaptador Intermedio.
- 3 Coloque los dientes de minería (OEM o FUTURA) antes de utilizar los protectores para Adaptadores intermedios. NO utilice NUNCA los Protectores de Adaptadores Intermedios sin haber montado antes los dientes del conjunto.

#### Desmontaje

- 4 Siga los pasos 3 a 1 en orden inverso.





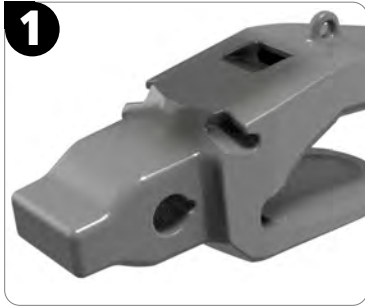
## FM950 WC

DIRECT REPLACEMENT WEAR CAPS FOR FUTURA/POSILOK® SIZE 95 ADAPTERS



## Installation of Direct Replacement Wear Caps for Posilok® or FUTURA Adapters size 95

## Montaje de protectores para portadientes marca Posilok® o FUTURA MINER talla 95



### Caution:

Adapter Wear Caps must be installed prior to placing the teeth. Mining teeth contribute to the complete stability of the FUTURA/Posilok Wear Caps.

Never use FUTURA Wear Caps in adapters without tooth mounted.

### Atención:

Estos protectores deben montarse siempre antes que los dientes de minería. Los dientes de minería FUTURA contribuyen a la completa estabilidad de los PROTECTORES.

Nunca utilice PROTECTORES en su portadientes si no llevan montados los dientes del conjunto.



### Assembly

- 1** If possible, try to place the Wear Caps with the mining adapter in horizontal position.
- 2** Place the Wear Cap on the Adapter making sure the central tab of the cap matches the central recess of the Adapter. Use the Wear Cap side tabs to slide and push the Wear Cap to its final locking position making sure it remains firmly locked.
- 3** Place and lock mining teeth (OEM or FUTURA) before using the Wear Caps. NEVER use Wear Caps on Adapters where the teeth are not present.

### Montaje

- 1** Probablemente le resulte más cómodo trabajar con el portadientes en posición horizontal.
- 2** Fijese en las pestañas de fijación del protector. Coloque el protector de manera que la pestaña central encaje en el rebaje central del Portadientes. Deslice el Protector por las guías laterales hasta que note que el protector queda firmemente sujeto al Portadientes.
- 3** Coloque los dientes de minería (OEM o FUTURA) antes de utilizar los protectores para Portadientes. NO utilice NUNCA los Protectores de Portadientes sin haber montado antes los dientes del conjunto.



### Disassembly

- 4** Follow steps 3 to 1 in reverse order.

### Desmontaje

- 4** Siga los pasos 3 a 1 en orden inverso.





**FM1100 WC**

DIRECT REPLACEMENT WEAR CAPS FOR FUTURA/POSILOK® SIZE 110 ADAPTERS

**Assembly instructions  
FM1100 WC + WC1100 PN  
TOOTH + ADAPTER + PIN**

**Instrucciones de montaje  
FM1100 WC + WC1100 PN  
DIENTE + PORTADIENTE + PASADOR**

**Caution:** Adapter Wear Caps must be installed prior to placing the teeth. Mining teeth contribute to the complete stability of the FUTURA/Posilok Wear Caps.

Never use FUTURA Wear Caps in adapters without tooth mounted.

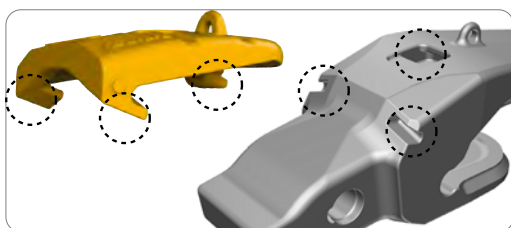
**Atención:** Estos protectores deben montarse siempre antes que los dientes de minería. Los dientes de minería FUTURA contribuyen a la completa estabilidad de los PROTECTORES.

Nunca utilice PROTECTORES en su portadientes si no llevan montados los dientes del conjunto.

**1**

**Place the Wear Cap on the Adapter sliding the 3 tabs on the Adapter recesses**

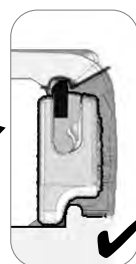
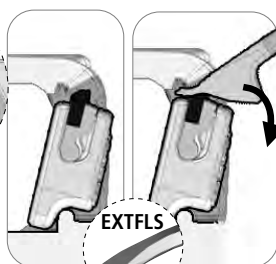
Coloque el protector de manera que las tres pestañas encajen en los orificios del Portadientes. Deslice el protector hasta que note que queda firmemente sujeto.



**2**

**Place pin WC1100 PN as shown in the picture and use tool until the pin tab reaches locking position**

Coloque el pasador WC1100 PN tal como se ve en la imagen y use la herramienta FWT01 para soltar la pestaña del pasador dentro del portadientes



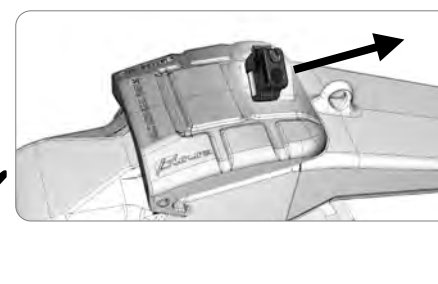
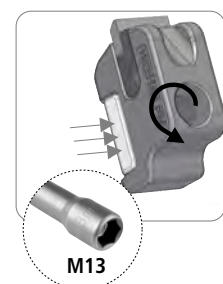
**Disassembly instructions:**

**Instrucciones para el desmontaje**

**3**

**Compress lateral tab with M8 socket hex tool. Unlock vertical tab with FWT01 tool. Remove pin**

Utilice un vaso hexagonal para comprimir la pestaña lateral. Use herramienta extractora y haga palanca sobre la pestaña hasta que quede fuera del orificio





**FM920 PN - FM1120 PN - FM1220 PN**

TOOTH + STANDARD PIN | DIENTE + PASADOR STANDARD

**Assembly instructions**

**FM920 ... + FM920 PN**  
**FM1120 ... + FM1120 PN**  
**FM1220 ... + FM1220 PN**

**TOOTH + STANDARD PIN**

**Instrucciones de montaje**

**FM920 ... + FM920 PN**  
**FM1120 ... + FM1120 PN**  
**FM1220 ... + FM1220 PN**

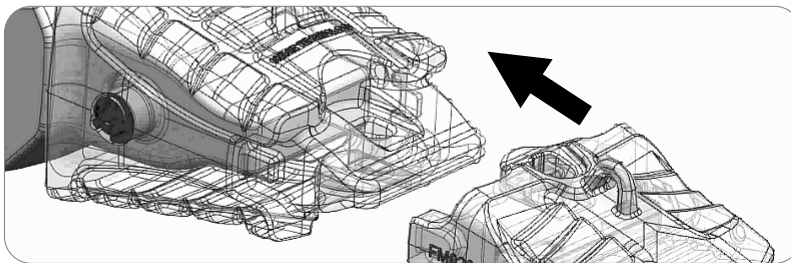
**DIENTE + PASADOR STANDARD**



**1**

**Place the MINER TOOTH on the INTERMEDIATE A ADAPTER**

**Encaje el DIENTE en posición sobre el ADAPTADOR INTERMEDIO**

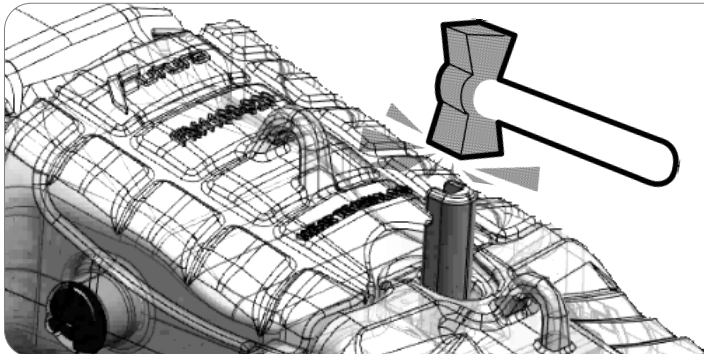


**FM920 (MODEL) >**  
Intermediate Adapter  
**FM110-920 IA**  
**FM1120 (MODEL) >**  
Intermediate Adapter  
**FM1300-1120 IA**

**2**

**Use a standard hammer to lock the vertical FUTURA MINER PIN**

**Utilice un martillo standard para golpear el pasador hasta que entre en su alojamiento**



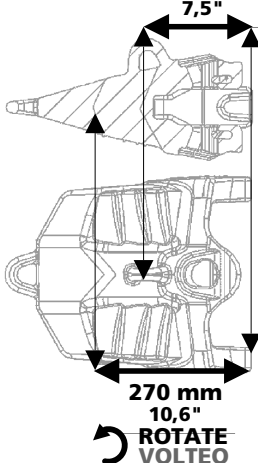
**3**

**Recommendations for use and replacement**

**Recomendaciones de uso y reemplazo**

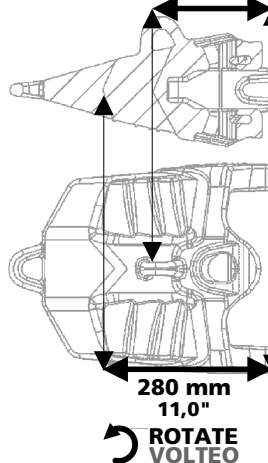
**FM920 RC**

**REPLACE  
CAMBIO  
190 mm  
7,5"**



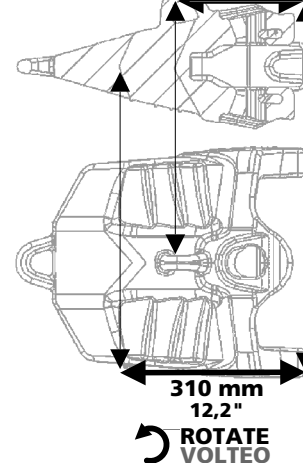
**FM1120 RC**

**REPLACE  
CAMBIO  
200 mm  
7,9"**



**FM1220 RC**

**REPLACE  
CAMBIO  
225 mm  
8,9"**





**FM920 PN - FM1120 PN - FM1220 PN**

TOOTH + STANDARD PIN | DIENTE + PASADOR STANDARD

**Disassembly instructions**

**FM920 ... + FM920 PN**  
**FM1120 ... + FM1120 PN**  
**FM1220 ... + FM1220 PN**

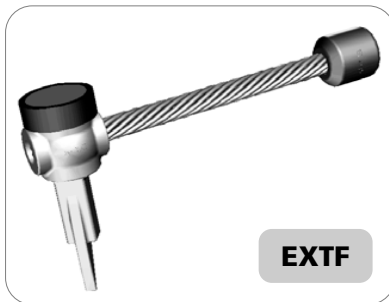
**TOOTH + STANDARD PIN**

**Instrucciones de desmontaje**

**FM920 ... + FM920 PN**  
**FM1120 ... + FM1120 PN**  
**FM1220 ... + FM1220 PN**

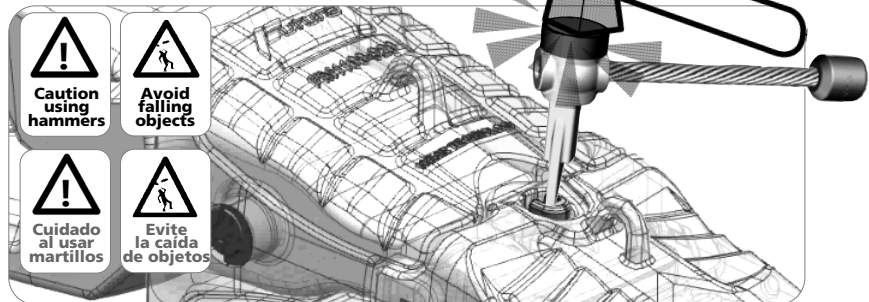
**DIENTE + PASADOR STANDARD**

**4** Use the EXTFM pin extractor to remove the pin

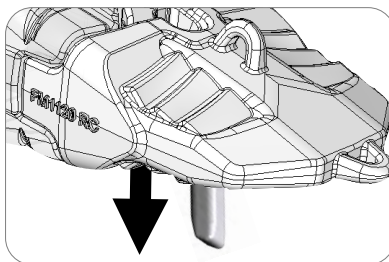


**EXTFM**

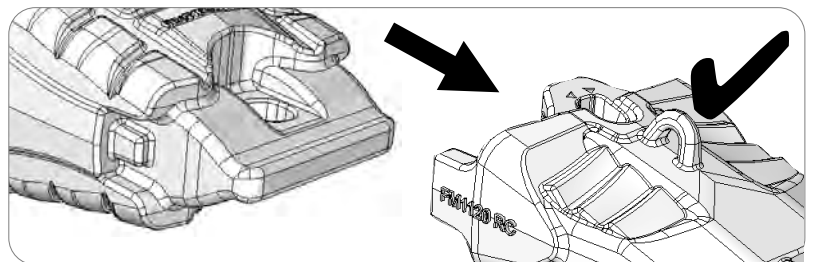
Utilice la herramienta de extracción EXTFM como se indica



**5** Remove the pin first and then, the tooth



Saque primero el pasador y luego el diente como se indica en la ilustración



**Recommendations for use and replacement**

**Recomendaciones de uso y reemplazo**

**FM920 RC**

REPLACE CAMBIO  
190 mm  
7,5"

270 mm  
10.6"

ROTATE VOLTEO

**FM1120 RC**

REPLACE CAMBIO  
200 mm  
7,9"

280 mm  
11,0"

ROTATE VOLTEO

**FM1220 RC**

REPLACE CAMBIO  
225 mm  
8,9"

310 mm  
12,2"

ROTATE VOLTEO



**FM920 HLK - FM1120 HLK**

TOOTH + HAMMERLESS PIN | DIENTE + PASADOR HAMMERLESS

**Assembly instructions**  
TOOTH + HAMMERLESS HLK PIN

**FM920 ... + FM920 HLK**  
**FM1120 ... + FM1120 HLK**

**Instrucciones de montaje**  
DIENTE + PASADOR HLK (HAMMERLESS)

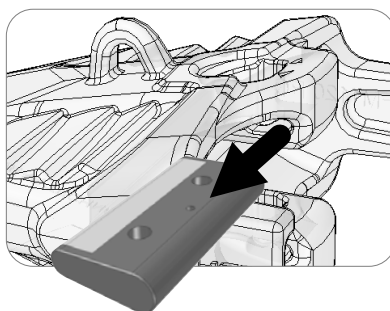
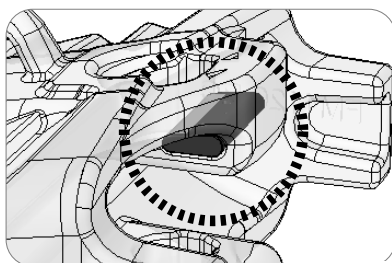
**FM920 ... + FM920 HLK**  
**FM1120 ... + FM1120 HLK**



**1**

Remove the internal lock that comes as a standard on the FUTURA MINER tooth

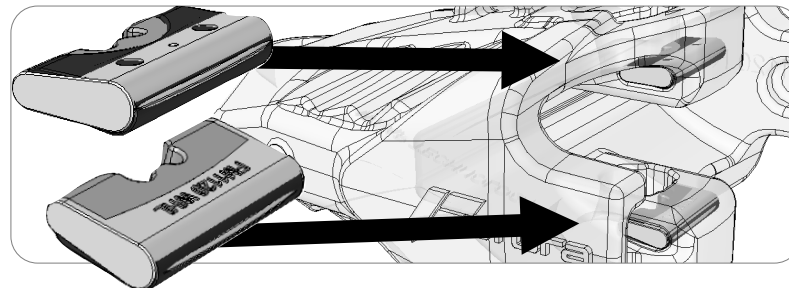
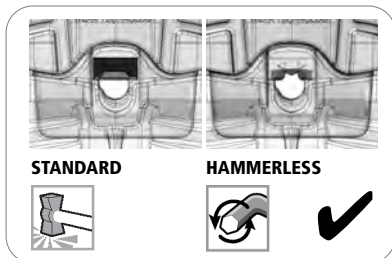
Saque la chaveta de goma que viene como standard en los dientes FUTURA MINER



**2**

Place supplied locks on tooth as shown below, be careful with up/down positions

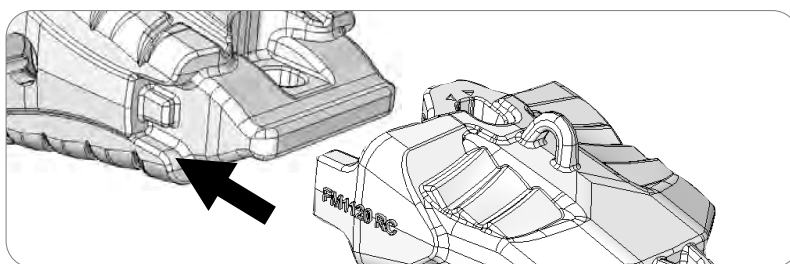
Coloque las chavetas que vienen en el envase de los pasadores HLK. Vigile que la posición de las chavetas sea la correcta (arriba/abajo)



**3**

Place the FUTURA MINER TOOTH on the INTERMEDIATE ADAPTER

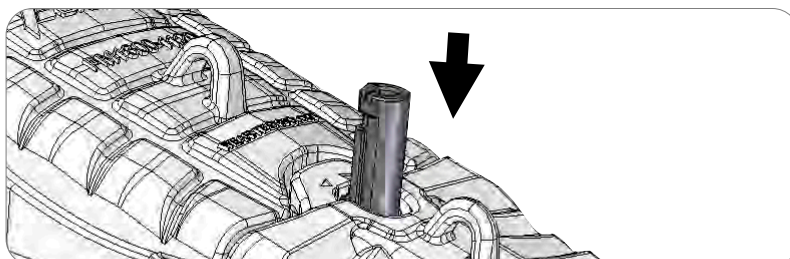
Coloque el diente de minería FUTURA en posición (ver ilustración)



**4**

Insert the HAMMERLESS MINER Pin as follows

Inserte el PASADOR HAMMERLESS de minería como se indica en el dibujo



**FM920 RC**  
standard ALLEN  
**17 mm.** wrench



**FM1120 RC**  
standard ALLEN  
**19 mm.** wrench





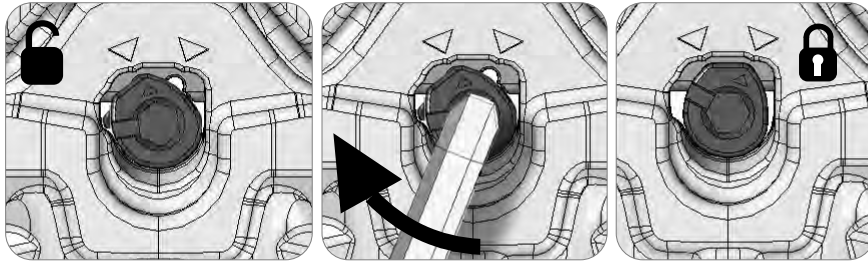
FM920 HLK - FM1120 HLK

TOOTH + HAMMERLESS PIN | DIENTE + PASADOR HAMMERLESS

5

Use a standard ALLEN wrench to lock the HAMMERLESS Pin. Follow the arrow marks displayed on the Intermediate adapter to lock/unlock the pin. Insert security plug.

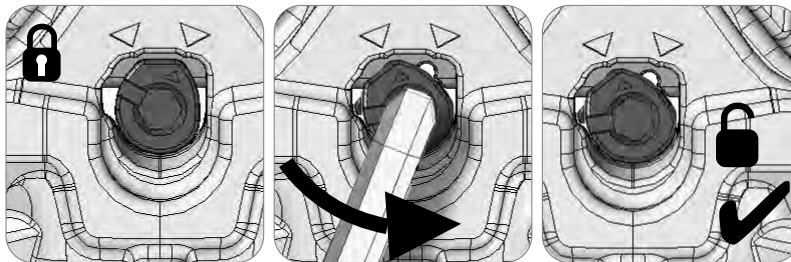
Detalle del movimiento de rotación y bloqueo del pasador con una llave tipo ALLEN. Utilice las marcas de referencia en el adaptador intermedio para bloquear o desbloquear el pasador. Inserte pieza de seguridad.



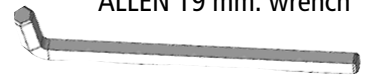
6

Disassembly instructions: Use a standard ALLEN wrench to unlock the HAMMERLESS Pin

Instrucciones para el desmontaje: Utilice una llave ALLEN del tamaño adecuado para desmontar el pasador de minería HAMMERLESS



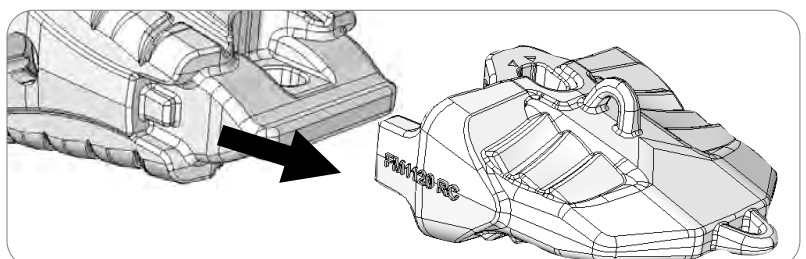
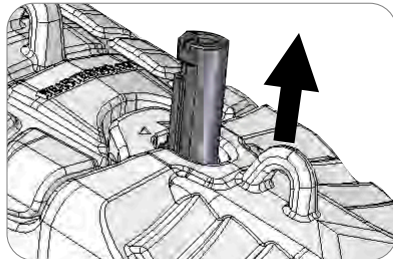
FM920 RC  
ALLEN 17 mm. wrench  
FM1120 RC  
ALLEN 19 mm. wrench



7

Remove the pin first and then, the tooth

Retire el pasador y luego el diente



Recommendations for use and replacement

Recomendaciones de uso y reemplazo

**FM920 RC**

REPLACE  
CAMBIO  
**190 mm**  
7,5"

**270 mm**  
10,6"

ROTATE  
VOLTEO

**FM1120 RC**

REPLACE  
CAMBIO  
**200 mm**  
7,9"

**280 mm**  
11,0"

ROTATE  
VOLTEO

**FM1220 RC**

REPLACE  
CAMBIO  
**225 mm**  
8,9"

**310 mm**  
12,2"

ROTATE  
VOLTEO



### FM1220 HLK

TOOTH + HAMMERLESS PIN | DIENTE + PASADOR HAMMERLESS

## Assembly instructions

TOOTH + HAMMERLESS HLK PIN

### FM1220 ... + FM1220 HLK



## Instrucciones de montaje

DIENTE + PASADOR HLK

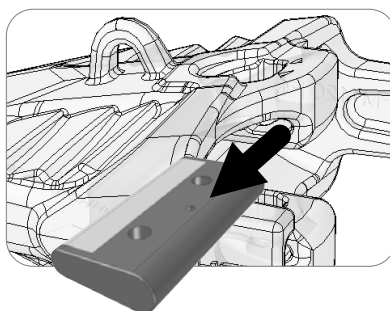
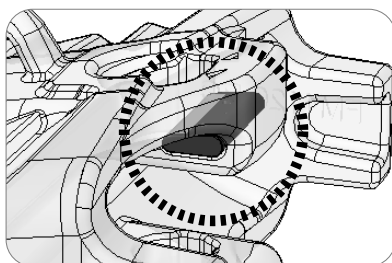
### FM1220 ... + FM1220 HLK



# 1

Remove the internal lock that comes as a standard on the FUTURA MINER tooth

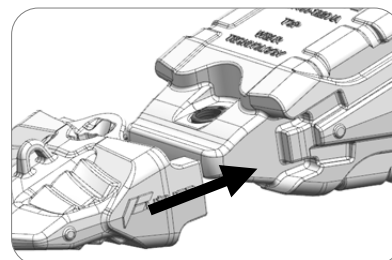
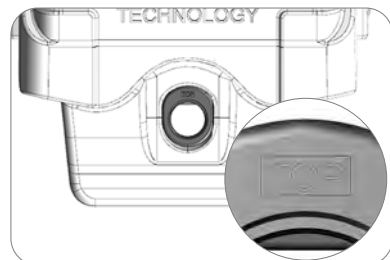
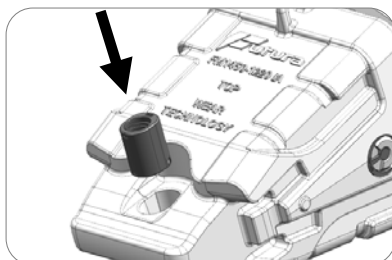
Saque la chaveta de goma que viene como standard en los dientes FUTURA MINER



# 2

Insert part FM1220 WHL on the adapter hole. Make sure it is placed as shown. Place tooth.

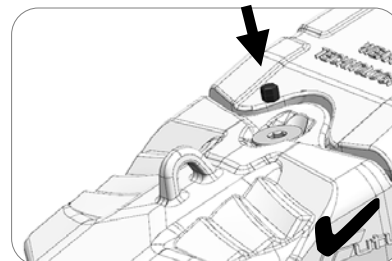
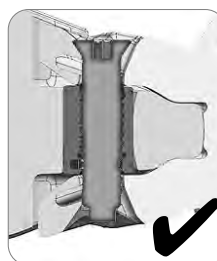
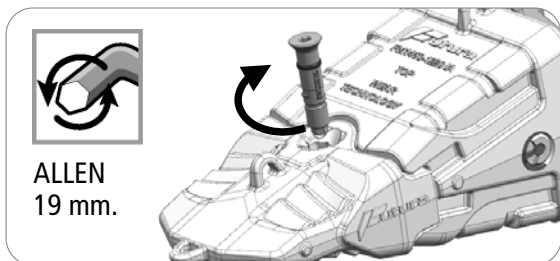
Coloque la pieza FM1220 WHL en el orificio del adaptador. Asegúrese que la colocación es la que se indica. Coloque el diente de minería.



# 3

Insert pin and screw until reaching locking position. Insert dirt plug on top.

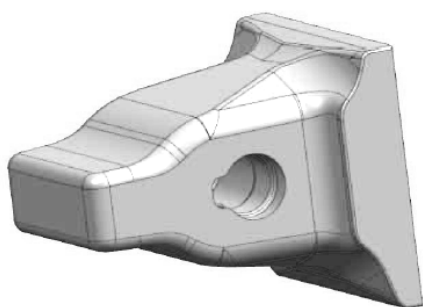
Coloque el diente de minería y enrosque hasta alcanzar la posición de bloqueo. Coloque el tapón anti-suciedad.



# 4

Disassembly  
For tooth disassembly follow steps 1 to 3 in reverse order

Instrucciones para el desmontaje:  
Para desmontar los dientes siga los pasos 1 a 3 en orden inverso.



## Using 2D & 3D gauges to rebuild MINER noses

## Utilización de galgas 2D y 3D para la reconstrucción de narices MINER

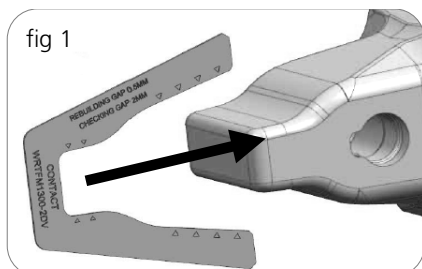


fig 1

There are two type of gauges available for the reconstruction of the FUTURA MINER noses.

Hay dos tipos de plantillas disponibles para la comprobación de las narices FUTURA MINER.

The 2D gauge is best used as a quick check to establish the level of wearing of the nose.

La galga 2D se utiliza para hacer comprobaciones rápidas al establecer el nivel de desgaste de la nariz.

The 3D gauge (cage style) allows for a thorough check of the nose surface.

El calibre 3D (estilo jaula) permite una verificación más minuciosa de la superficie completa de la nariz.

Both 2D and 3D gauges might help with two aspects:

Las galgas 2D y 3D pueden ayudar con dos aspectos:

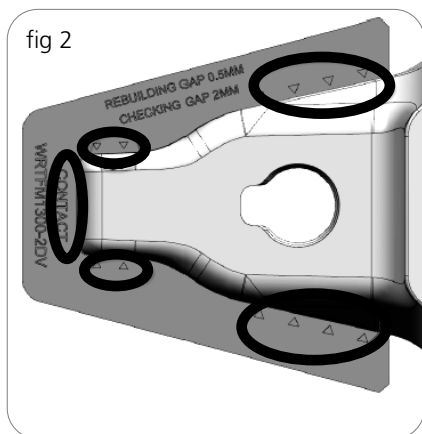


fig 2

### Gap checking

It is recommended to rebuild a nose when the observed gap between the template and the nose is greater than 2mm.

### Comprobación desgaste

Se recomienda reconstruir una nariz cuando el espacio observado entre la plantilla y la nariz sea mayor de 2 mm.

### Rebuilding gap

The rebuilding gap would show the maximum gap allowance while working on welding reconstruction. Achieving a 0,3mm of gap would mean a perfect rebuilding of a nose has been carried out.

### Reconstrucción de la nariz

La galga mostraría la tolerancia máxima mientras se trabaja en la reconstrucción de la nariz. Lograr reducir el hueco a 0,3 mm significaría que se ha llevado a cabo una reconstrucción perfecta de la nariz.

**WARNING** The closer the geometry of the rebuilt nose matches the geometry of the template the better the results.

**ATENCIÓN** Cuanto más se aproxime la geometría de la nariz reconstruida a la geometría de la plantilla, mejores resultados se obtendrán en la reconstrucción de la nariz.

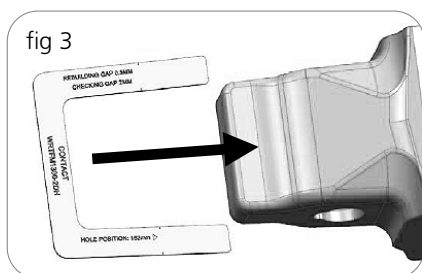


fig 3

### Vertical check

Place vertical template as shown of fig. 1, check the highlighted surfaces (fig. 2) indicating the key fitting areas. The observed gaps will help to determine if a rebuilding of the nose is needed.

### Comprobación vertical

Coloque la plantilla vertical tal como se muestra en la fig. 1, verifique las superficies resaltadas en la figura 2 que indican las áreas de ajuste claves de la nariz. Los huecos observados ayudarán a determinar si es necesaria la reconstrucción de la nariz.

### Horizontal check

Place horizontal template as shown in fig. 3. It will allow to check two important aspects: the lateral gap and the position of the hole. The position of the pin hole will be checked with the aide of the template marks labeled WRTPHFM (fig. 4) The template also displays the optimal distance between the top of the nose and the side hole.

### Comprobación horizontal

Coloque la plantilla horizontal como se muestra en la fig. 3. Permitirá verificar dos aspectos importantes: el espacio lateral y la posición del agujero. La posición del orificio del pasador se comprobará con la ayuda de las marcas de la plantilla etiquetada WRTPHFM (figura 4). La plantilla también muestra la distancia idónea entre la parte superior de la nariz y el orificio lateral.

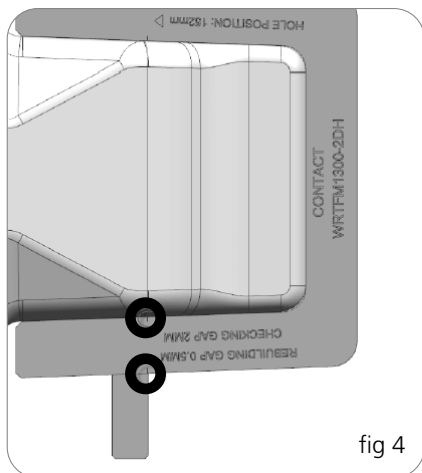


fig 4

### 2D vs 3D cage

Never attempt to rebuild a nose just using 2D templates since they are designed for minor weld-works and to value the wear status of the nose.

### Plantilla 2D o 3D

Nunca proceda a la reconstrucción de una nariz con plantillas 2D que están pensadas para soldaduras puntuales y para comprobar el estado del desgaste de la nariz.

To rebuild noses use the 3D template

Para la reconstrucción de narices utilice siempre plantillas 3D



# MINER BUCKETS



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

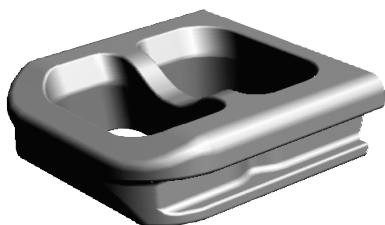
al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

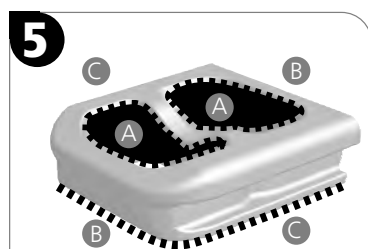
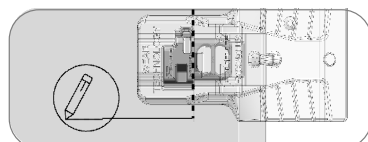
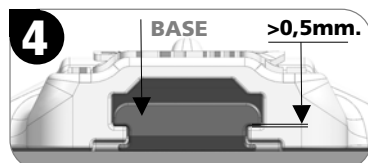
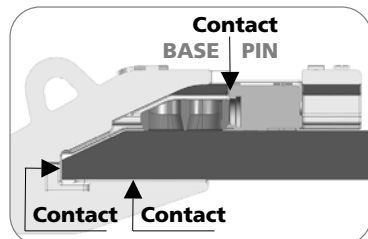
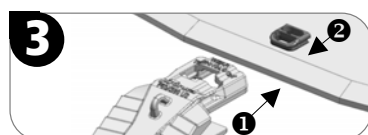
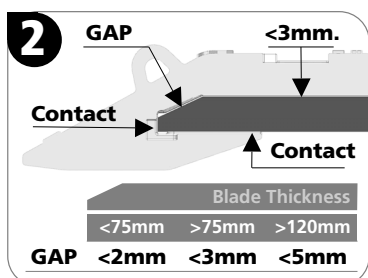
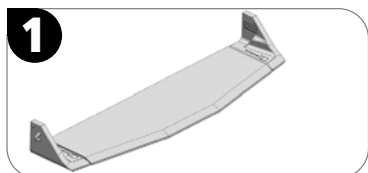
### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



# Welding FAB FBB FCB bases

# Soldadura de bases FAB FBB FCB



	A	B	C
	WELD PLUG HOLES	FILLET WELD (ENDS)	FILLET WELD (SIDES)
<b>FAB</b>	<b>10 mm</b>	<b>10 mm</b>	<b>3 mm</b>
<b>FBB</b>	<b>13 mm</b>	<b>13 mm</b>	<b>6 mm</b>
<b>FCB</b>	<b>16 mm</b>	<b>13 mm</b>	<b>6 mm</b>

**NOTE:** For good operation of the system follow instructions below.

- Surface preparation** In order to provide sufficient support for the base as well as its pin the mounting surface must be relatively smooth and free of debris, weld spatter or other irregularities. Have a straight profile that produces a gap no greater than 3mm at the base weld (any gap greater than 3mm. must be shimmed). If removing existing worn bases, then preheat (100°C must be applied) Check lip is smooth after base removal.
- Shroud fitment** The shroud must be positioned at 90° to leading edge of lip. See graphic for allowed gaps. Shroud fit pad must make contact with 50% of the leading edge and bottom of the lip. Base position is critical. If the location and installation of the base is correct, the shroud is quickly installed and securely held in place with the pin.
- Positioning the bases** Slide shroud assembly into place. Insert the base into the guide of the shroud. Locate the tapered end of the base up and forward. If the lip does not make 50% contact with the fit pads of the shroud, the lip must be rebuilt to provide a proper amount of bearing area.
- Insert pin and make sure the back of the base is in contact with the pin face. Ensure clearance between base and shroud rail. If there is contact between the base rail and the shroud rail, then shim to achieve 0,5mm min. clearance. Remove the pin and mark the position of the back of the base with a pencil. Remove the shroud. Make sure the base is aligned to your pencil mark and tack weld it. Restore the shroud and check accuracy of fit on lip.

- Welding Recommendations**  
Consumables AS1553 Type E4816 & E4818 low hydrogen (keep dry) | Pre-heat: 175°C-200°C | Interterweld: Maintain an interpass temperature of 150°C | Postheat: 100°C (if air temperature is 10°C or lower). Remove slag after each pass and peen each bead

### Welding Areas

See picture on the left. Do not exceed the welding wire dimentions.

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.

- Preparación de la superficie** Para proporcionar un apoyo suficiente a la base y pasador, la superficie de montaje debe estar lisa y libre de residuos, salpicaduras u otras irregularidades. Tener un perfil recto que produzca una separación no mayor de 3mm en la soldadura de la base (cualquier separación mayor de 3mm. debe ser calzada). Si se eliminan las bases desgastadas existentes, se debe aplicar un precalentamiento (100°C). Comprobar que el labio está liso después de retirar la base.
- Conceptos generales de montaje** Los protectores deben colocarse a 90° del borde delantero del labio. Véase el gráfico para las distancias máx. permitidas. Las almohadillas de ajuste de los protectores deben hacer contacto con el 50% del borde y de la parte inferior del labio. La posición de las bases es fundamental. Si la ubicación e instalación de las bases es correcta, los protectores y pasadores se instalarán rápidamente y de forma segura.
- Posición de las bases** Deslice la base y el protector a su lugar en el labio, luego inserte la base en la guía del protector. Ajuste bien el protector a la base. Si el labio no hace un contacto del 50% con las almohadillas de ajuste del protector, el labio debe ser reconstruido para proporcionar un área suficiente de apoyo.
- Inserte el pasador y asegúrese de que la parte posterior de la base está en contacto con la cara del pasador y con el protector. Si hay contacto entre la guía de la base y la guía del protector, entonces calce para lograr una holgura mínima de 0,5 mm. Asegúrese de que la base está alineada con la marca del lápiz y haga el punteado para soldarla. Vuelva a colocar el protector y compruebe la exactitud del ajuste con el labio.

- Recomendaciones de soldadura**  
Consumibles AS1553 tipo E4816 y E4818 bajo en hidrógeno (mantener seco) | Pre-calentamiento: 175°C-200°C | Mantener una temperatura entre pasadas de 150°C | Postcalentamiento: 100°C (si la temperatura ambiente es de 10°C o menos) | Retirar la escoria después de cada pasada y lijar cada cordón

### Áreas de Soldadura

Siga las indicaciones de la imagen. No sobrepasar las dimensiones del hilo de soldar que se indica.

## CAST LIPS

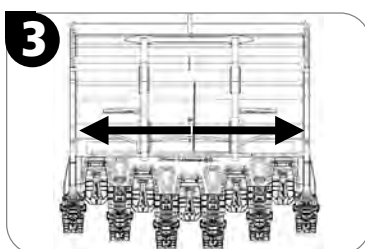
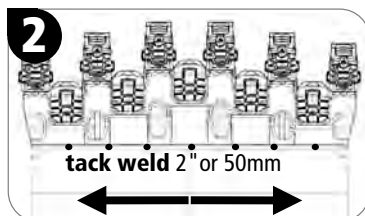
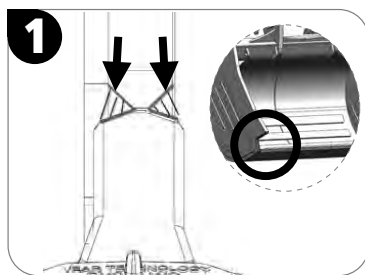
CAST LIP WELDING | MONTAJE Y SOLDADURA DE LABIOS FUNDIDOS



### Recommended filler materials:

Materiales de relleno recomendados:

American Welding Society (AWS) specification **A5.18** class ER70S-6 wire for the Gas Metal Arc Welding process (GMAW) | **A5.2** class E71T-1 for the Flux Cored Arc Welding process (FCAW). Shielding gas should have a dew point of -40°F or lower | **A5.1** class E7018 stick electrode for the Shielded Metal Arc Welding process (SMAW), may also be used, although it is not the preferred process.



## Cast lips installation

### General Welding Instructions

#### Before you start

Surfaces to be welded should be totally clean: remove rust, paint or any other impurity. Check area to be welded for any cracks with a non-destructive test method.

**Preheat:** It is recommended to preheat 300°F/150°C to 450°F/230°C the areas to weld & the adjoining zones. The correct preheating will reduce the danger of weld cracking. It is important not to exceed the recommended temperature. The most common method of preheating is by torches or burners using an open fuel gas flame. Preheating with burners or torches is much more effective when the heat is applied from the bottom side of the work piece with insulating blankets on the top side.

**Welding sequence** and directions:

- 1 Bevels must be created in all joints** of the bucket plates to make easier the full penetration of weld. The recommended bevel check is **64mm (2,5") x 45°**. Clean bevels in all areas to be welded. Weld surfaces must be free from cutting slag, paint, and cracks. Well dry and ground.
- 2** The first tack weld should be placed in the center of the bucket on the bottom where the cutting edge joins to the bucket. Deposit a tack weld, every 24" or 600mm, alternating from each side of center, **working towards the sides of the bucket**. The minimum length of tack should be 2" or 50mm. After that begin the full welding.
- 3** Manipulate bucket to the digging position and repeat the procedure used in step 2. Alternating the process of weld on between the bottom and top side will help maintain the correct plane geometry and reduce residual stresses as well.
- 4** Lip corner area: Welding operation must be applied as shown in the picture: zones and directions, following the former mentioned steps: preheat, cleaning, etc.. Alternate the direction of travel, front to back-back to front of bucket for each weld pass depositing the weld on into the grooves.

#### Cooling

Control cooling rate at the end of the welding process. Cooling rate should not exceed 35°C per hour.

#### Visual Inspection

Magnetic Particle inspection or Dye Penetrant inspection should be done 48 hours after cooling to ambient temperature.

## Soldadura de labios fundidos

### Instrucciones generales de soldadura

#### Antes de empezar

Las superficies a soldar deben estar totalmente limpias: elimine óxido, pintura u otras impurezas. Comprobar la zona a soldar para ver si hay grietas.

**Pre calentamiento:** Se recomienda precalentar de 150°C a 230°C las zonas a soldar y las zonas adyacentes. El pre calentamiento correcto reducirá el peligro de agrietamiento de la soldadura. Es importante no superar la temperatura recomendada. El método más común de pre calentamiento es mediante sopletes o quemadores utilizando una llama de gas combustible abierta. El pre calentamiento con quemadores o sopletes es mucho más eficaz cuando el calor se aplica desde la parte inferior de la pieza con mantas aislantes en la parte superior

**Secuencia y direcciones de soldadura:**

- 1 Deben crearse chaflanes en todas las juntas de las placas del cazo** para facilitar la penetración total de la soldadura. El chaflán recomendado es de **64mm (2,5") x 45°**. Limpiar los biselés en todas las zonas a soldar. Las superficies de soldadura deben estar libres de escoria de corte, pintura y grietas. Bien secas y rectificadas.
- 2** La primera soldadura por puntos debe colocarse en el centro del cazo, en la parte inferior, donde el borde de corte se une al cazo. Deposite una soldadura por puntos, cada 24" o 600mm, alternando desde cada lado del centro, **trabajando hacia los lados del cubo**. La longitud mínima de las soldadura por puntos debe ser de 2" o 50mm. A continuación, comience la soldadura completa.
- 3** Manipular el cazo hasta la posición de excavación y repetir el procedimiento utilizado en el paso 2. Alternar el proceso de soldadura entre el lado inferior y el superior ayudará a mantener la geometría plana correcta y a reducir también las tensiones residuales.
- 4** Zona de la esquina del labio: La operación de soldadura debe aplicarse como se muestra en la imagen: zonas y direcciones, siguiendo los pasos anteriormente mencionados: pre calentamiento, limpieza, etc. Alternar el sentido (delante a atrás, de atrás a delante) del cazo para cada pasada de soldadura depositando la soldadura en las ranuras.

#### Enfriamiento

Controlar la velocidad de enfriamiento al final del proceso de soldadura. La tasa de enfriamiento no debe superar los 35°C por hora.

#### Inspección visual

La inspección por partículas magnéticas o por líquidos penetrantes debe realizarse 48 horas después de enfriarse a temperatura ambiente.



CAST LIPS

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## FUTURA MINER

LIP SHROUDS | PROTECTORES DE CUCHILLA



# Installation of FUTURA MINER lip shrouds

# Instalación de Protectores de Cuchilla FUTURA MINER

**NOTE:** For good operation of the system follow instructions below.

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.

### Welding



### Soldadura



- 1 Remove shrouds and pins from lip, ensuring the base area is free of any packed fines. If removing existing worn bases, then preheat (100°C) must be applied. Check lip area is smooth after base removal.
- 2 Align base and mark lip carefully with appropriate gauge or using respective shroud prior to tack welding into position, apply localized preheat (100°C) prior to tack welding. Fit shroud to ensure correct boss position. Assemble the FUTURA hammerless pin to verify and then remove pin and shroud. Preheat base and adjacent lip area to 200°C and ensure preheat is maintained during welding.
- 3 Please check the gap allowance and welding areas shown in the picture. Cover welded area with thermal blanket to allow slow cooling. Grind smooth all weld ends and any sharp edges.

- 1 Retire protectores y pasadores de la cuchilla si los hubiese, asegúrese que la base de la cuchilla está libre de partículas. Si ha de retirar bases anteriores, pre-caliente la zona a 100°C. Compruebe que la zona queda lisa después de retirar las bases.
- 2 Coloque la base y marque la cuchilla con un indicador adecuado antes de proceder a la soldadura de la misma. Pre-caliente a 100°C la zona a soldar. Coloque el cuerpo del protector para asegurar la posición correcta de la base. Monte el pasador sin martillo FUTURA para verificar posición y luego retire el pasador y el cuerpo del protector. Pre-caliente la base y la zona de la cuchilla a soldar a 200°C y mantenga esta temperatura durante todo el proceso de soldadura.
- 3 Compruebe que las separaciones y las zonas de soldadura que se muestran en la imagen sean correctas. Cubra el área soldada con una manta térmica para permitir un enfriamiento lento. Moler hasta que queden lisos todos los extremos de la soldadura y los bordes afilados.

### Assembly

### Montaje

- 4 Slide the shroud body through the base guides.
- 5 Lock the Hammerless pin in place with the help of the EXTFLS tool.
- 6 For extra reinforcement weld optional thrust blocks if required.

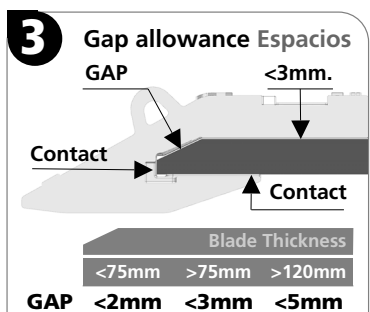
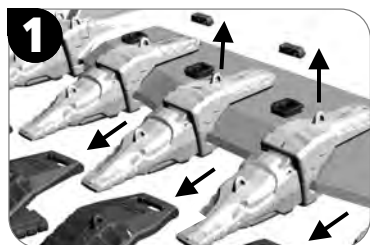
- 4 Deslice el cuerpo del protector por las guías de la base.
- 5 Inserte el pasador hammerless con la ayuda de la herramienta EXTFLS.
- 6 Si los protectores van a sufrir mucho esfuerzo es recomendable soldar bases de apoyo opcionales.

### Disassembly

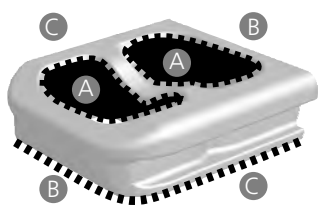
Follow steps 4 to 5 in reverse order.

### Desmontaje

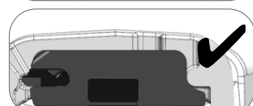
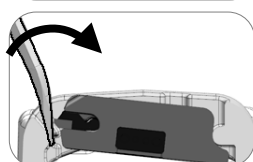
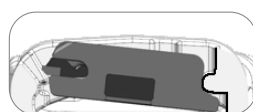
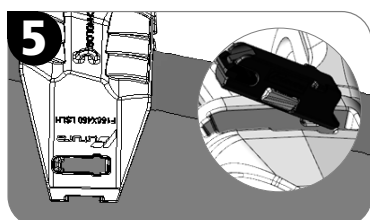
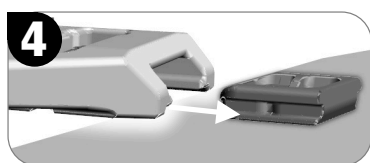
Siga los pasos 4 a 5 en orden inverso.



### Welding Soldadura



	A	B	C
	WELD PLUG HOLES	FILLET WELD (ENDS)	FILLET WELD (SIDES)
FAB	10 mm	10 mm	3 mm
FBB	13 mm	13 mm	6 mm
FCB	16 mm	13 mm	6 mm







FUTURA MINER

WING SHROUDS HAMMERLESS | PROTECTORES LATERALES HAMMERLESS

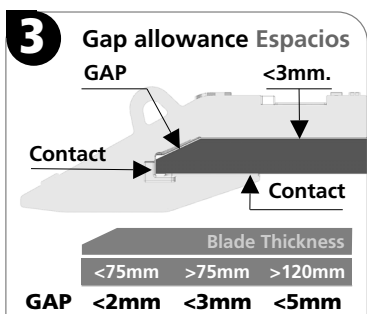


# Installation of FUTURA MINER wing shrouds

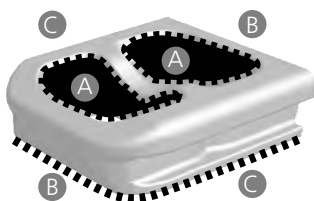
# Instalación de protectores laterales de cazo FUTURA MINER

**NOTE:** For good operation of the system follow instructions below.

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.



**Welding Soldadura**



	A	B	C
	WELD PLUG HOLES	FILLET WELD (ENDS)	FILLET WELD (SIDES)
<b>FAB</b>	10 mm	10 mm	3 mm
<b>FBB</b>	13 mm	13 mm	6 mm
<b>FCB</b>	16 mm	13 mm	6 mm

**Welding**



- Remove old wing shrouds and pins from bucket side, ensuring the area is free of any packed fines. If removing existing worn bases, then preheat (100°C) must be applied. Check side area is smooth after base removal.
- Align base and mark bucket side carefully with appropriate gauge or using respective shroud prior to tack welding into position, apply localized preheat (100°C) prior to tack welding. Fit wing shroud to ensure correct boss position. Assemble the FUTURA hammerless pin to verify and then remove pin and shroud. Preheat base and adjacent bucket area to 200°C and ensure preheat is maintained during welding.
- Please check the gap allowance and welding areas shown in the picture. Cover welded area with thermal blanket to allow slow cooling. Grind smooth all weld ends and any sharp edges.

**Soldadura**



- Retire protectores y pasadores de la cuchilla si los hubiese, asegúrese que la base de la cuchilla está libre de partículas. Si ha de retirar bases anteriores, pre-caliente la zona a 100°C. Compruebe que la zona queda lisa después de retirar las bases.
- Coloque la base y marque la cuchilla con un indicador adecuado antes de proceder a la soldadura de la misma. Pre-caliente a 100°C la zona a soldar. Coloque el cuerpo del protector para asegurar la posición correcta de la base. Monte el pasador sin martillo FUTURA para verificar posición y luego retire el pasador y el cuerpo del protector. Pre-caliente la base y la zona de la cuchilla a soldar a 200°C y mantenga esta temperatura durante todo el proceso de soldadura.
- Compruebe que las zonas de soldadura y la separación entre el protector y el lateral del cazo son correctas. Cubra el área soldada con una manta térmica para permitir un enfriamiento lento. Moler hasta que queden lisos todos los extremos de la soldadura y los bordes afilados.

**Assembly**

- Slide the wing shroud body through the base guides.
- Lock the Hammerless pin in place with the help of the EXTFLS tool.
- For extra reinforcement weld optional thrust blocks if required.

**Montaje**

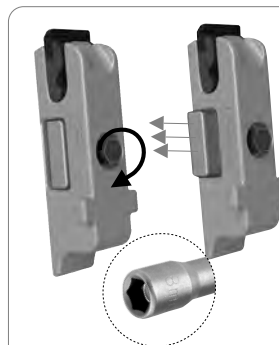
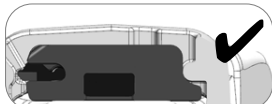
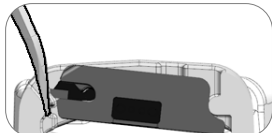
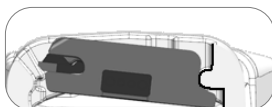
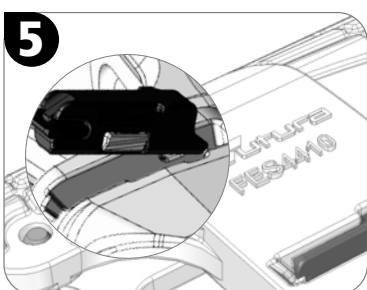
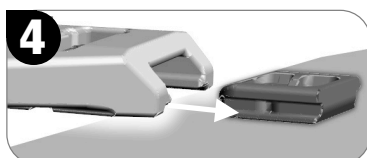
- Deslice el cuerpo del protector por las guías de la base.
- Inserte el pasador hammerless con la ayuda de la herramienta EXTFLS.
- Si los protectores van a sufrir mucho esfuerzo es recomendable soldar bases de apoyo opcionales.

**Disassembly**

Follow steps 4 to 5 in reverse order.

**Desmontaje**

Siga los pasos 4 a 5 en orden inverso.



**With a hex socket tool expand lateral pin tab to the end**

Utilice un vaso hexagonal para girar el tornillo hasta que note que no se puede girar más. ✓



# FUTURA MINER

WING SHROUDS HAMMERLESS | PROTECTORES LATERALES HAMMERLESS

## Wing shrouds replacement recommendations

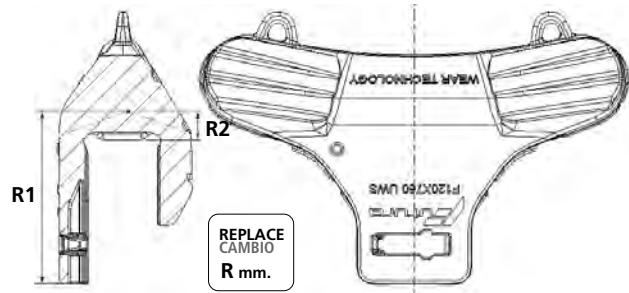
## Protectores laterales cazo: reemplazo

### TOP WING SHROUD



**R1** mm. **R2** mm.  
inch inch

<b>F40X440 UWS</b>		
<b>F40X600 UWS</b>		
<b>F50X505 UWS</b>		
<b>F50X505B UWS</b>		
<b>F75X545 UWS</b>		
<b>F75X655 UWS</b>		
<b>F90X855 UWS</b>		
<b>F120X760 UWS</b>	306	12,0" 50 2,0"
<b>F140X800 UWS</b>		

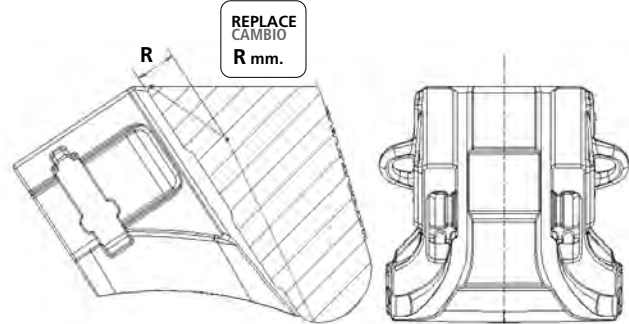


### LOWER WING SHROUD

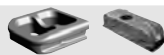


**R** mm.  
inch

<b>F50 LWS</b>		
<b>F65 LWS</b>		
<b>F75 LWS</b>		
<b>F90 LWS</b>		
<b>F115 LWS</b>	50	2,0"
<b>F135 LWS</b>		
<b>F165 LWS-RH</b>		
<b>F165 LWS-LH</b>		

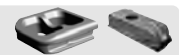


### UWS



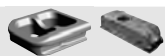
<b>F40X440 UWS</b>	FAB	FAP
<b>F40X600 UWS</b>	FAB	FAP
<b>F50X505 UWS</b>	FAB	FAP
<b>F50X505B UWS</b>	FAB	FAP
<b>F75X545 UWS</b>	FBB	FBP
<b>F75X655 UWS</b>	FBB	FBP
<b>F90X855 UWS</b>	FBB	FBP
<b>F120X760 UWS</b>	FAB	FAP
<b>F140X800 UWS</b>	FBB	FBP

### LWS



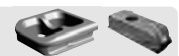
<b>F50 LWS</b>	FAB	FAP
<b>F65 LWS</b>	FAB	FAP
<b>F75 LWS</b>	FAB	FAP
<b>F90 LWS</b>	FAB	FAP
<b>F115 LWS</b>	FAB	FAP
<b>F135 LWS</b>	FAB	FAP
<b>F165 LWS-RH</b>	FBB	FBP
<b>F165 LWS-LH</b>	FBB	FBP

### FPDE



<b>FPDE52445</b>	FBB	FBP
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### FES



<b>FES4410</b>	FAB	FAP
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FUTURA MINER

WING SHROUDS STANDARD ASSEMBLY | PROTECTORES LATERALES



# Wing Shrouds Standard Side Pin Assembly

# Montaje Standard con pasador de protectores Laterales de Cazo

**NOTE:** For good operation of the assembly follow the instructions below.

**NOTA:** Para el buen funcionamiento del sistema siga estas instrucciones.

## Assembly

## Montaje

- 1 Place each of the four washers in the housing of the shroud as shown in the picture
- 2 Ensure that the washers do not move while placing the shroud on the side of the bucket
- 3 Hammer each of the two pins on the sides of the shroud with the help of a hammer.
- 4 Check pins are perfectly locked in place
- 5 For extra reinforcement weld optional thrust blocks if required.

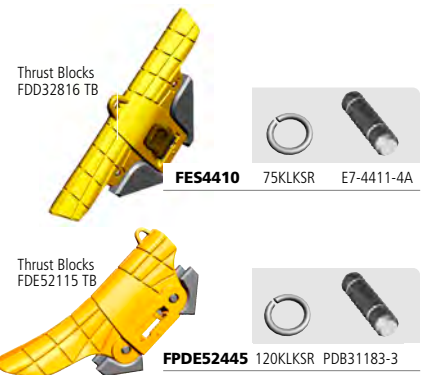
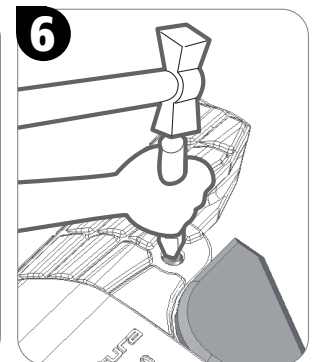
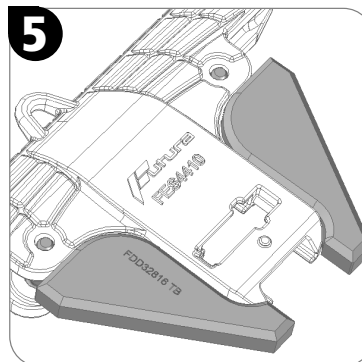
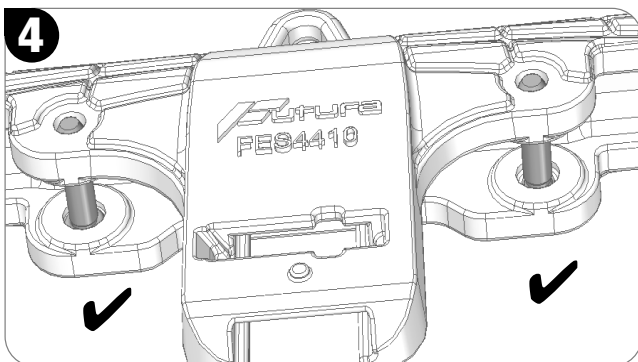
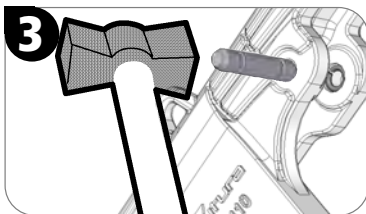
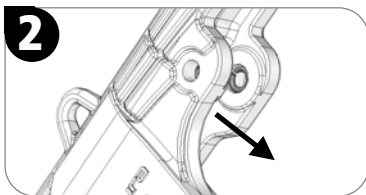
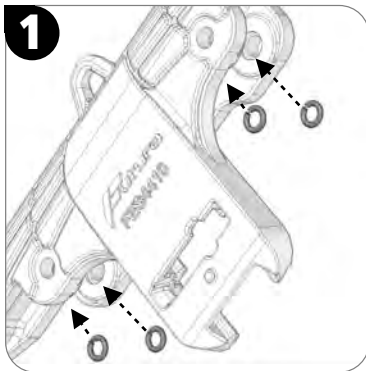
- 1 Coloque cada una de las cuatro arandelas en su alojamiento correspondiente del protector lateral tal como se muestra en la imagen
- 2 Procure que no se muevan mientras coloca el protector en el lateral del cazo
- 3 Inserte el pasador en cada uno de los lados con la ayuda de un martillo
- 4 Compruebe que los pasadores quedan perfectamente bloqueados
- 4 Si los protectores van a sufrir mucho esfuerzo es recomendable soldar bases de apoyo opcionales.

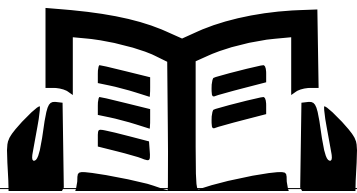
## Disassembly

## Desmontaje

- 6 Hammer each PIN out with the help of a chisel until it falls

- 6 Con la ayuda de un cincel golpee el PASADOR con un martillo hasta que caiga.





# LHD



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



# LHD

## Guide to part sizes by Maximum Machine Weight (tons)

	FUTURA LHD	LIP THICKNESS GROSOR CUCH.	ATLAS COPCO	CATERPILLAR	SANDVIK	SANDVIK TORO	MCH.WEIGHT PESO MAQ.	BUCKET CAPACITY M <sup>3</sup>
<b>LHD</b>	<b>F32</b>	<b>32</b>	-	-	LH204	-	<b>3-4T</b>	<b>1,3-3,5</b>
			ST7	R1300G	LH307	T-6	<b>7T</b>	<b>2,4-3,7</b>
			ST1020	R1600	LH410	T-7	<b>10T</b>	<b>3,3-5,9</b>
	<b>F50</b>	<b>50</b>	ST1030, ST1520	R1700	LH512, LH514, LH517	T-9	<b>12-14T</b>	<b>4,6-7,5</b>
			ST1800	R2800, R2900	LH621	T-10	<b>17-18T</b>	<b>6,7-8,9</b>
			-	R3000	LH625E	T-11	<b>20-21T</b>	<b>8,3-12,8</b>



## FUTURA LHD

FUAB ADAPTER BASES | BASES ADAPTABLES FUAB



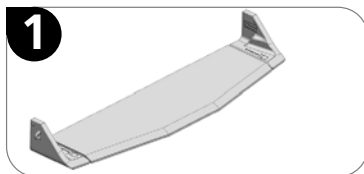
## Welding FUAB bases

## Soldadura de bases FUAB



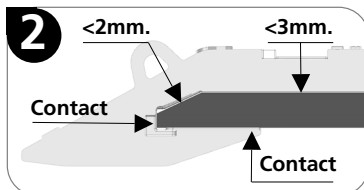
**NOTE:** FUAB bases must be used exclusively for the assembly of the LHD system over existing OEM (Sandvik) bosses.

**NOTA:** Las bases FUAB deben utilizarse exclusivamente para el montaje del sistema LHD sobre bases OEM (Sandvik) existentes.



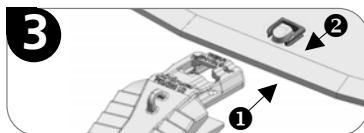
**1 Surface preparation** In order to provide sufficient support for the base as well as its pin the mounting surface must be relatively smooth and free of debris, weld spatter or other irregularities. Have a straight profile that produces a gap no greater than 3mm at the base weld (any gap greater than 3mm. must be shimmed). If removing existing worn bases, then preheat (100°C must be applied) Check lip is smooth after base removal.

**1 Preparación de la superficie** Para proporcionar un apoyo suficiente a la base y pasador, la superficie de montaje debe estar lisa y libre de residuos, salpicaduras u otras irregularidades. Tener un perfil recto que produzca una separación no mayor de 3mm en la soldadura de la base (cualquier separación mayor de 3mm. debe ser calzada). Si se eliminan las bases desgastadas existentes, se debe aplicar un precalentamiento (100°C). Comprobar que el labio está liso después de retirar la base.



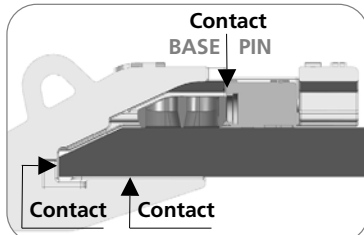
**2 Shroud fitment** The shroud must be positioned at 90° to leading edge of lip. See graphic for allowed gaps. Shroud fit pad must make contact with 50% of the leading edge and bottom of the lip.

**2 Conceptos generales de montaje** Los protectores deben colocarse a 90° del borde delantero del labio. Véase el gráfico para las distancias máx. permitidas. Las almohadillas de ajuste de los protectores deben hacer contacto con el 50% del borde y de la parte inferior del labio.



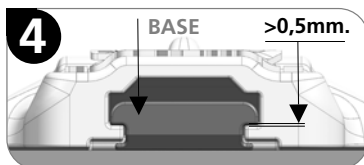
Base position is critical to the FUTURA LHD performance. If the location and installation of the base is correct, the shroud is quickly installed and securely held in place with the pin.

La posición de las bases es fundamental. Si la ubicación e instalación de las bases es correcta, los protectores y pasadores se instalarán rápidamente y de forma segura.



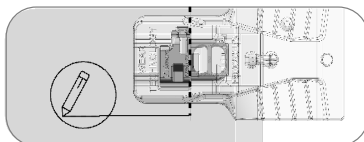
**3 Positioning the bases** Slide shroud assembly into place. Insert the base into the guide of the shroud. Locate the tapered end of the base up and forward. If the lip does not make 50% contact with the fit pads of the shroud, the lip must be rebuilt to provide a proper amount of bearing area.

**3 Posición de las bases** Deslice la base y el protector a su lugar en el labio, luego inserte la base en la guía del protector. Ajuste bien el protector a la base. Si el labio no hace un contacto del 50% con las almohadillas de ajuste del protector, el labio debe ser reconstruido para proporcionar un área suficiente de apoyo.



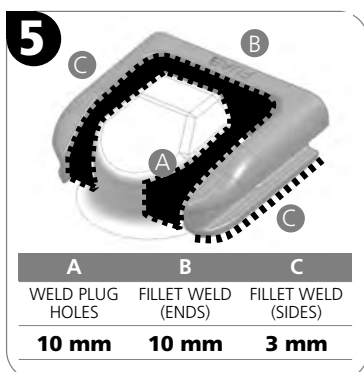
**4** Insert pin and make sure the back of the base is in contact with the pin face.

**4** Inserte el pasador y asegúrese de que la parte posterior de la base está en contacto con la cara del pasador y con el protector. Si hay contacto entre la guía de la base y la guía del protector, entonces calce para lograr una holgura mínima de 0,5 mm. Asegúrese de que la base está alineada con la marca del lápiz y haga el punteado para soldarla. Vuelva a colocar el protector y compruebe la exactitud del ajuste con el labio.



Ensure clearance between base and shroud rail. If there is contact between the base rail and the shroud rail, then shim to achieve 0,5mm min. clearance. Remove the pin and mark the position of the back of the base with a pencil. Remove the shroud. Make sure the base is aligned to your pencil mark and tack weld it. Restore the shroud and check accuracy of fit on lip.

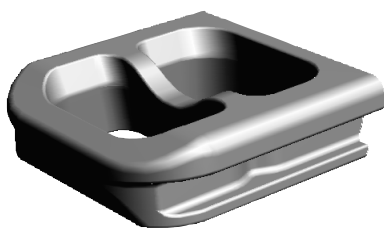
**5 Recomendaciones de soldadura Consumibles** AS1553 tipo E4816 y E4818 bajo en hidrógeno (mantener seco) | Pre-calentamiento: 175°C-200°C | Mantener una temperatura entre pasadas de 150°C | Postcalentamiento: 100°C (si la temperatura ambiente es de 10°C o menos) | Retirar la escoria después de cada pasada y lijar cada cordón



**5 Welding Recommendations Consumibles** AS1553 Type E4816 & E4818 low hydrogen (keep dry) | **Pre-heat:** 175°C-200°C | **Interweld:** Maintain an interpass temperature of 150°C | **Postheat:** 100°C (if air temperature is 10°C or lower). Remove slag after each pass and peen each bead

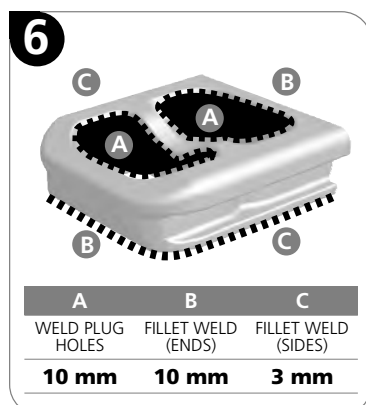
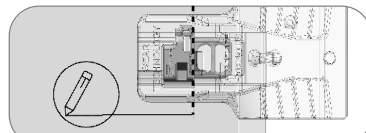
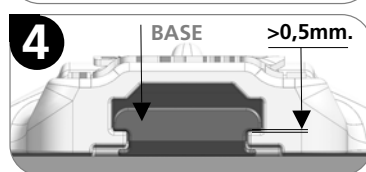
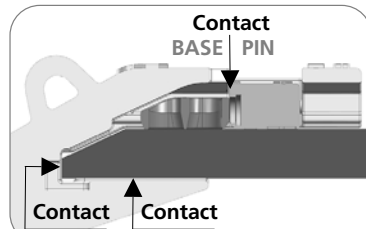
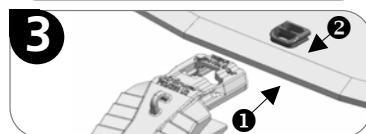
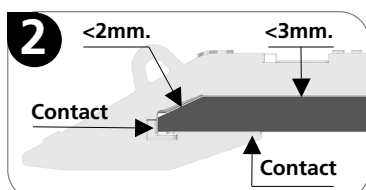
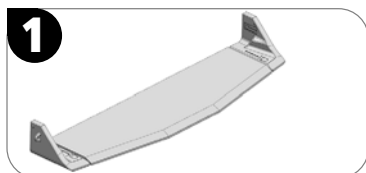
**Areas de Soldadura** Siga las indicaciones de la imagen. No sobrepasar las dimensiones del hilo de soldar que se indica.

**Welding Areas** See picture on the left. Do not exceed the welding wire dimensions.



## Welding FAB bases

## Soldadura de bases FAB



**NOTE:** For good operation of the system follow instructions below.

- Surface preparation** In order to provide sufficient support for the base as well as its pin the mounting surface must be relatively smooth and free of debris, weld spatter or other irregularities. Have a straight profile that produces a gap no greater than 3mm at the base weld (any gap greater than 3mm. must be shimmed). If removing existing worn bases, then preheat (100°C must be applied) Check lip is smooth after base removal.
  - Shroud fitment** The shroud must be positioned at 90° to leading edge of lip. See graphic for allowed gaps. Shroud fit pad must make contact with 50% of the leading edge and bottom of the lip. Base position is critical to the FUTURA LHD performance. If the location and installation of the base is correct, the shroud is quickly installed and securely held in place with the pin.
  - Positioning the bases** Slide shroud assembly into place. Insert the base into the guide of the shroud. Locate the tapered end of the base up and forward. If the lip does not make 50% contact with the fit pads of the shroud, the lip must be rebuilt to provide a proper amount of bearing area.
  - Insert pin and make sure the back of the base is in contact with the pin face is in contact with the shroud. Ensure clearance between base and shroud rail. If there is contact between the base rail and the shroud rail, then shim to achieve 0,5mm min. clearance. Remove the pin and mark the position of the back of the base with a pencil. Remove the shroud. Make sure the base is aligned to your pencil mark and tack weld it. Restore the shroud and check accuracy of fit on lip.
  - For the correct position of the bases on the lip, please refer to the customized assembly drawings provided by BYG.
  - Welding Recommendations**  
Consumables AS1553 Type E4816 & E4818 low hydrogen (keep dry) | Pre-heat: 175°C-200°C | Interterweld: Maintain an interpass temperature of 150°C | Postheat: 100°C (if air temperature is 10°C or lower). Remove slag after each pass and peen each bead
- Welding Areas**  
See picture on the left. Do not exceed the welding wire dimensions.

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.

- Preparación de la superficie** Para proporcionar un apoyo suficiente a la base y pasador, la superficie de montaje debe estar lisa y libre de residuos, salpicaduras u otras irregularidades. Tener un perfil recto que produzca una separación no mayor de 3mm en la soldadura de la base (cualquier separación mayor de 3mm. debe ser calzada). Si se eliminan las bases desgastadas existentes, se debe aplicar un precalentamiento (100°C). Comprobar que el labio está liso después de retirar la base.
  - Conceptos generales de montaje**  
Los protectores deben colocarse a 90° del borde delantero del labio. Véase el gráfico para las distancias máx. permitidas. Las almohadillas de ajuste de los protectores deben hacer contacto con el 50% del borde de la parte inferior del labio. La posición de las bases es fundamental. Si la ubicación e instalación de las bases es correcta, los protectores y pasadores se instalarán rápidamente y de forma segura.
  - Posición de las bases** Deslice la base y el protector a su lugar en el labio, luego inserte la base en la guía del protector. Ajuste bien el protector a la base. Si el labio no hace un contacto del 50% con las almohadillas de ajuste del protector, el labio debe ser reconstruido para proporcionar un área suficiente de apoyo.
  - Inserte el pasador y asegúrese de que la parte posterior de la base está en contacto con la cara del pasador y con el protector. Si hay contacto entre la guía de la base y la guía del protector, entonces calce para lograr una holgura mínima de 0,5 mm. Asegúrese de que la base está alineada con la marca del lápiz y haga el punteado para soldarla. Vuelva a colocar el protector y compruebe la exactitud del ajuste con el labio.
  - Para la correcta posición de las bases en el labio, consulte los planos de montaje personalizados proporcionados por BYG.
  - Recomendaciones de soldadura**  
Consumibles AS1553 tipo E4816 y E4818 bajo en hidrógeno (mantener seco) | Pre-calentamiento: 175°C-200°C | Mantener una temperatura entre pasadas de 150°C | Postcalentamiento: 100°C (si la temperatura ambiente es de 10°C o menos) | Retirar la escoria después de cada pasada y lijar cada cordón
- Áreas de Soldadura**  
Siga las indicaciones de la imagen. No sobrepasar las dimensiones del hilo de soldar que se indica.

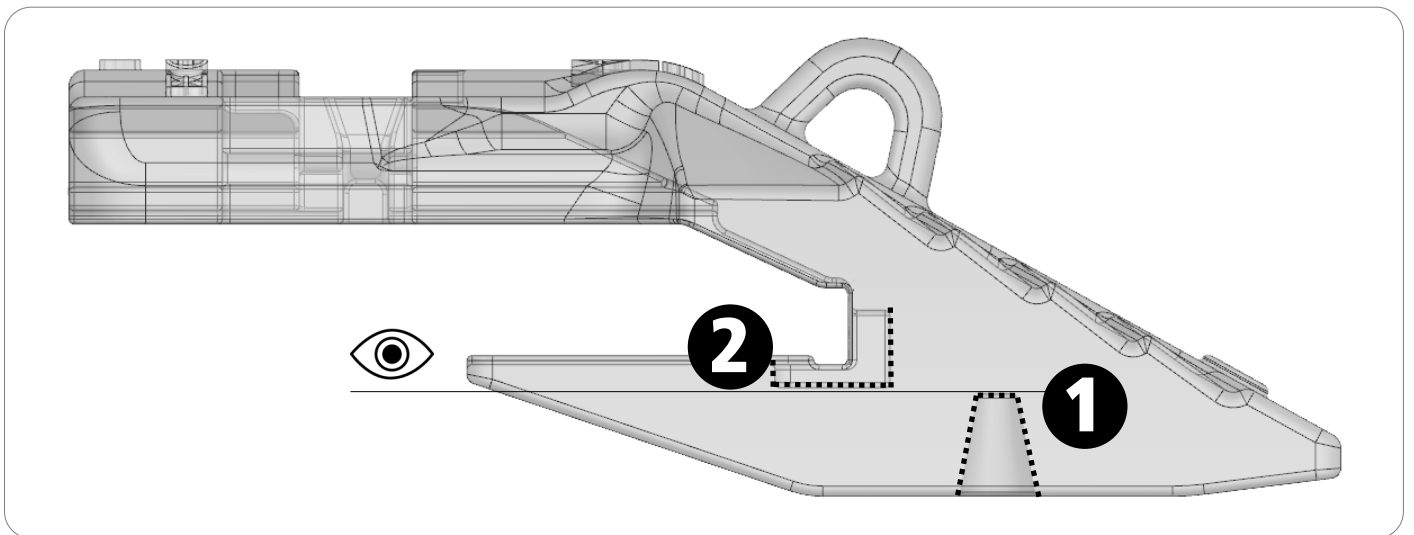
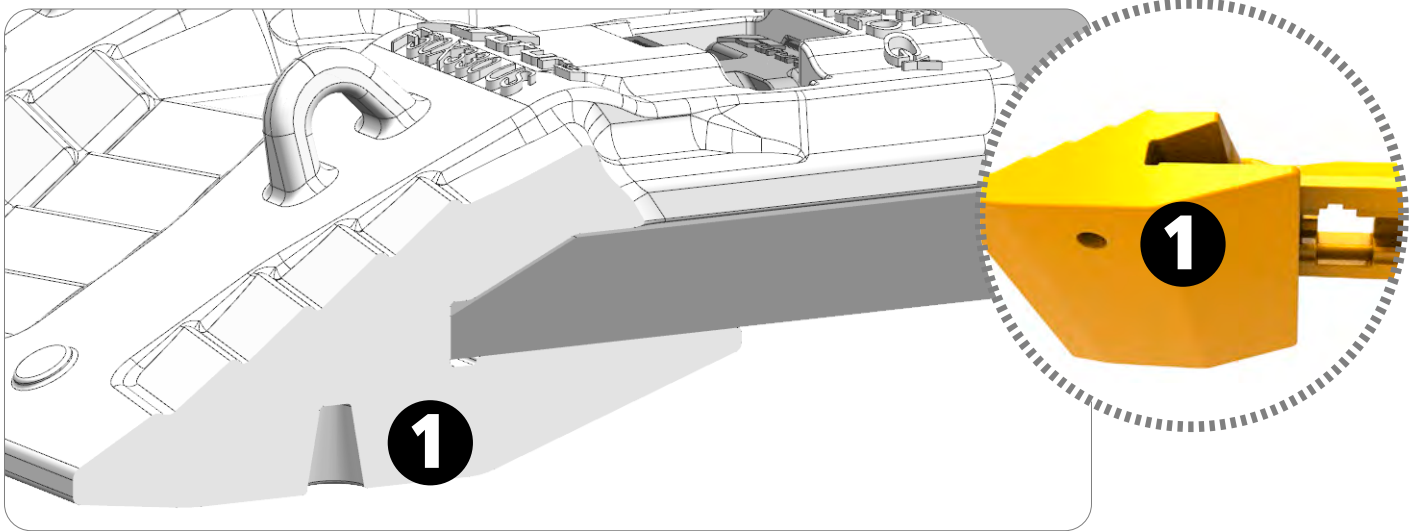


LHD

WEAR INDICATORS | INDICADORES DE DESGASTE

## LHD shrouds replacement recommendations

## Protectores LHD recomendaciones uso y reemplazo



Pay attention to the wear indicators ① and ② shown in the illustrations above.

### Indicator ①

When the recess of indicator ① is no longer visible, this means that it is time to think about **replacing** the protector.

### Indicator ②

If you see the shape of interior recess ② it is time to replace the protector.

Do not delay: replace the protector as soon as possible.

Preste atención a los dos **indicadores de desgaste** ① y ② que se muestran en las ilustraciones superiores.

### Indicador ①

Cuando **desaparezca** de su vista el rebaje del indicador ① esto significa que es momento de pensar en reemplazar el protector.

### Indicador ②

Si ve que en el protector empieza a **mostrarse** la forma del rebaje ②, es momento de reemplazar el protector.

No se demore: sustituya el protector.



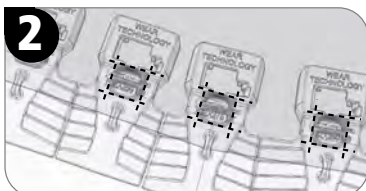
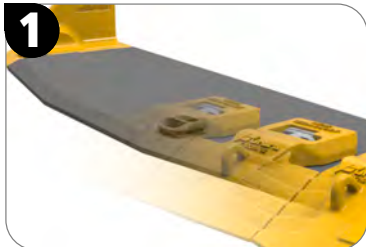


# Installation of FUTURA LHD lip shrouds

# Instalación de Protectores FUTURA LHD

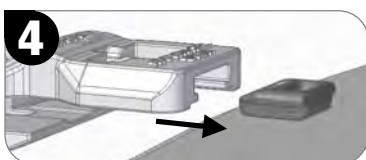
NOTE: For good operation of the system follow instructions below.

NOTA: Para el buen funcionamiento del sistema seguir estas instrucciones.



**3 Welding Soldadura**

	A	B	C
	WELD PLUG HOLES	FILLET WELD (ENDS)	FILLET WELD (SIDES)
<b>FAB</b>	<b>10 mm</b>	<b>10 mm</b>	<b>3 mm</b>
<b>FBB</b>	<b>13 mm</b>	<b>13 mm</b>	<b>6 mm</b>
<b>FCB</b>	<b>16 mm</b>	<b>13 mm</b>	<b>6 mm</b>



## Welding



- Remove shrouds and pins from lip, ensuring the base area is free of any packed fines. If removing existing worn bases, then preheat (100°C) must be applied. Check lip area is smooth after base removal.
- Align base and mark lip carefully with appropriate gauge or using respective shroud prior to tack welding into position, apply **localized preheat (100°C) prior to tack welding.** Fit shroud to ensure correct boss position. Assemble the FUTURA hammerless pin to verify and then remove pin and shroud. Preheat base and adjacent lip area to 200°C and ensure preheat is maintained during welding.
- Please check the welding areas shown in the picture. Cover welded area with thermal blanket to allow slow cooling. Grind smooth all weld ends and any sharp edges.

## Soldadura



- Retire protectores y pasadores de la cuchilla si los hubiese, asegúrese que la base de la cuchilla está libre de partículas. Si ha de retirar bases anteriores, pre-caliente la zona a 100°C. Compruebe que la zona queda lisa después de retirar las bases.
- Coloque la base y marque la cuchilla con un indicador adecuado antes de proceder a la soldadura de la misma. **Pre-caliente a 100°C la zona a soldar.** Coloque el cuerpo del protector para asegurar la posición correcta de la base. Monte el pasador sin martillo FUTURA para verificar posición y luego retire el pasador y el cuerpo del protector. Pre-caliente la base y la zona de la cuchilla a soldar a 200°C y mantenga esta temperatura durante todo el proceso de soldadura.
- Compruebe las zonas de soldadura que se muestran en la imagen. Cubra el área soldada con una manta térmica para permitir un enfriamiento lento. Moler hasta que queden lisos todos los extremos de la soldadura y los bordes afilados.

## Assembly

- Slide the shroud body through the base guides.
- Lock the Hammerless pin in place with the help of the EXTFU tool.
- Place the bolt and screw with a 5/8" HEX KEY. Place the dirt plugs.

## Montaje

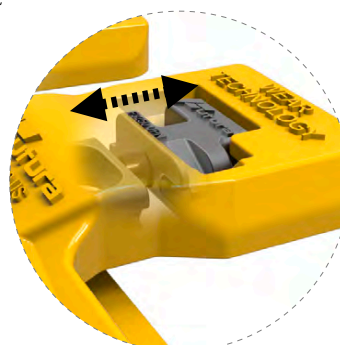
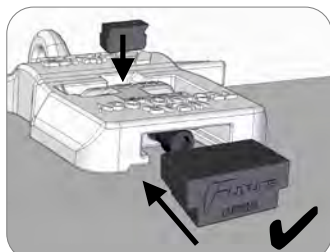
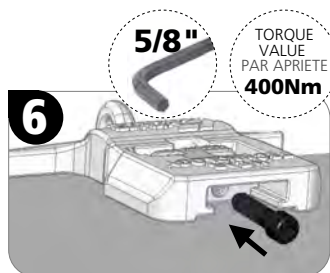
- Deslice el cuerpo del protector por las guías de la base.
- Inserte el pasador hammerles con la ayuda de la herramienta EXTFU.
- Coloque el tornillo y use una llave HEXAGONAL de 5/8" para fijarlo. Coloque los tapones anti-suciedad.

## Disassembly

Follow steps 4 to 6 in reverse order.

## Desmontaje

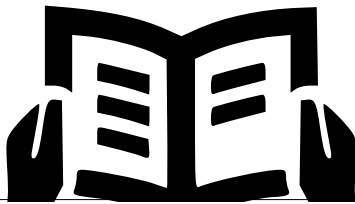
Siga los pasos 4 a 6 en orden inverso.



## 20 mm.

The 20 mm. piston expansion allows to maintain tension of the shroud against the blade throughout the shroud wear life

Los 20mm. de expansión del pistón del pasador permiten mantener la tensión del pasador contra el protector durante toda su vida útil.



# DRP



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

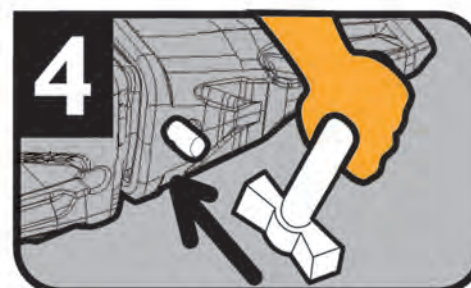
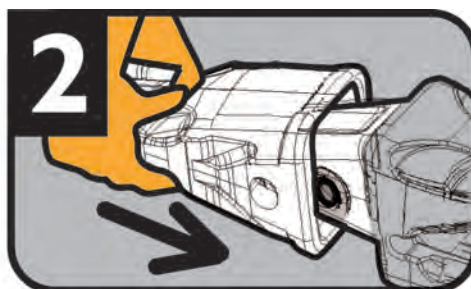
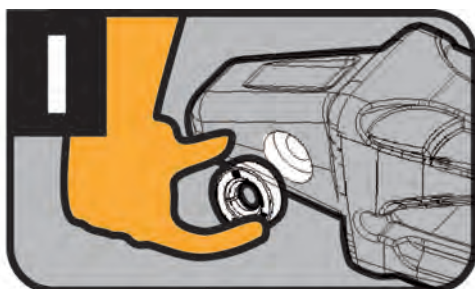
### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.

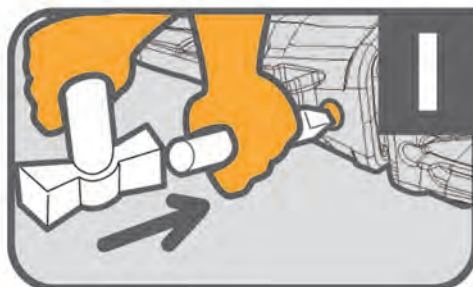


# HAMMER ASSEMBLY

## Assembly



## Disassembly





## FUTURA DRP PARTS

HALF ARROW SEGMENTS | SEGMENTOS ATORNILLABLES

# HALF-ARROW SEGMENTS ASSEMBLY

# MONTAJE DE SEGMENTOS ATORNILLABLES

NOTE: For good operation of the assembly follow the instructions below.

NOTA: Para el buen funcionamiento del sistema siga estas instrucciones.

### Assembly

### Montaje

- 1 Place segment on the base blade as shown in the picture. Make sure the arrow segment is firmly placed against the base blade and the holes are perfectly aligned.
- 2 Fit plow bolts on the holes and screw the washer and nuts.

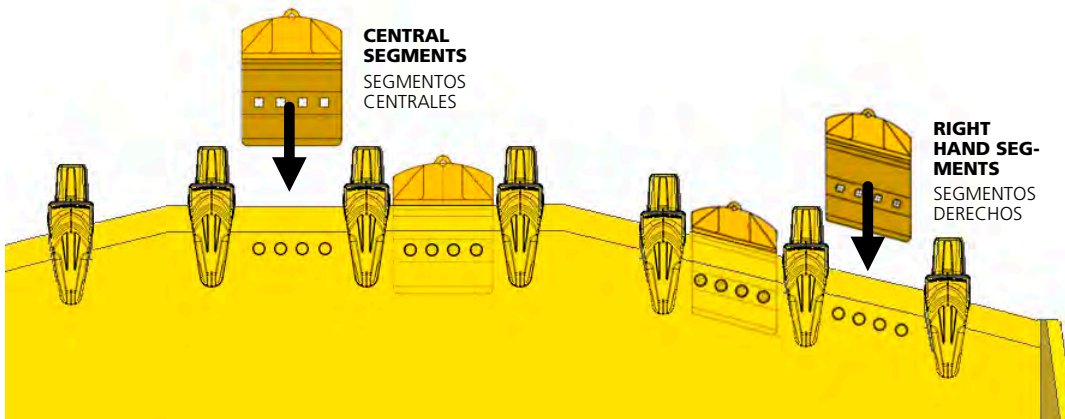
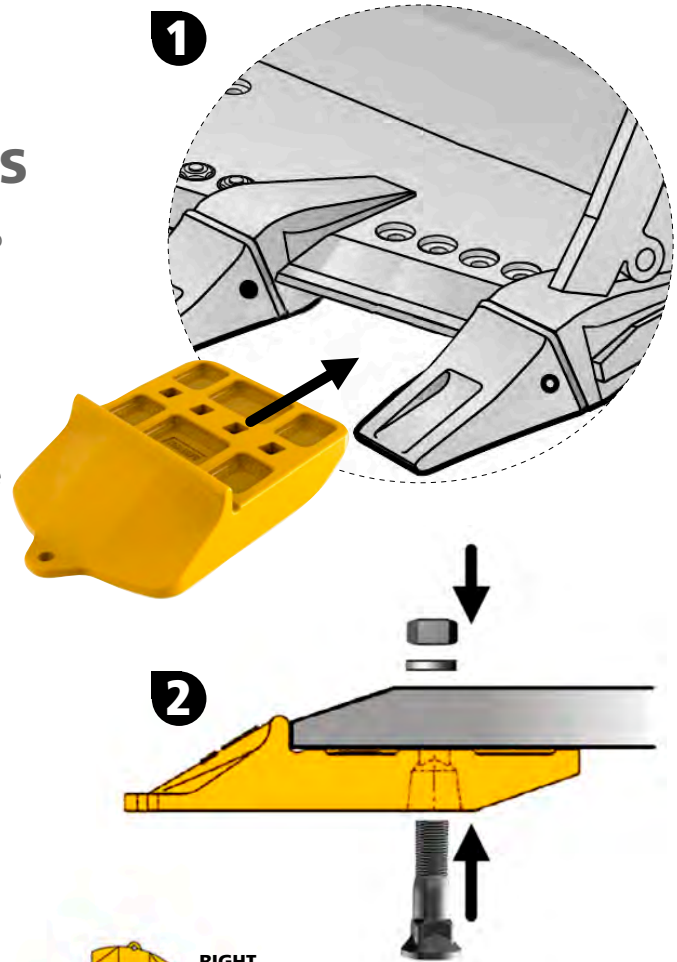
- 1 Coloque el segmento sobre la cuchilla base como se muestra en la imagen. Asegúrese de que el segmento esté firmemente colocado sobre la cuchilla y que los orificios estén perfectamente alineados.
- 2 Coloque los tornillos de cuchilla en los orificios y apriete las tuercas y arandelas.

### Disassembly

### Desmontaje

- 3 Unscrew the nuts and re-release plow bolts. Remove the arrow segment.

- 3 Desenrosque las tuercas y suelte los tornillos. Ya puede retirar el segmento.



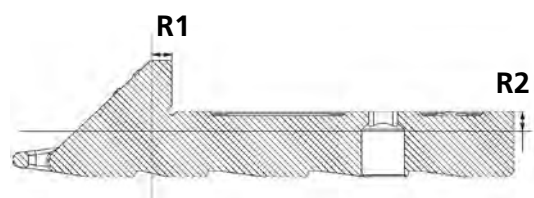
## DRP replacement recommendations

## Recomendaciones para reemplazo

FC109-9030 | FC109-9031 | FC109-9032



	R1	mm.	inch	R2	mm.	inch
FC109-9030	25	1,0"	25	1,0"	25	1,0"
FC109-9031	25	1,0"	25	1,0"	25	1,0"
FC109-9032	25	1,0"	25	1,0"	25	1,0"



REPLACE  
CAMBIO



FUTURA DRP PARTS

USE RECOMMENDATIONS | RECOMENDACIONES DE USO

# DRP replacement recommendations

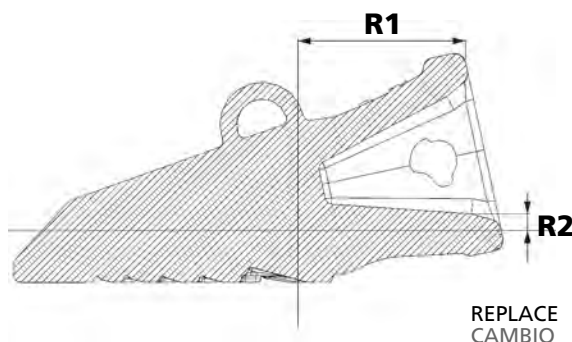
# Recomendaciones para reemplazo

## FC800 RPHD



R1 mm. inch R2 mm. inch

FC400 RPHD			
FC450 RPHD			
FC550 RPHD			
FC600 RPHD			
FC700 RPHD			
FC800 RPHD	200	7,9"	20 0,8"



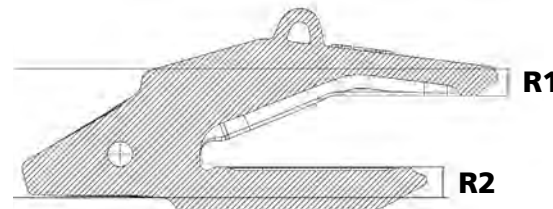
REPLACE  
CAMBIO

## FC800 S



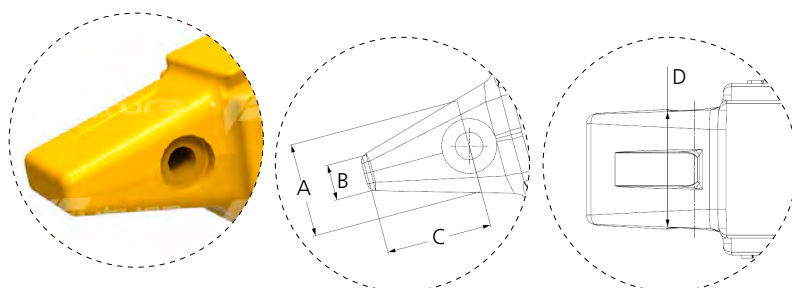
R1 mm. inch R2 mm. inch

FC400 S			
FC450 S			
FC550 S			
FC600 S			
FC700 S			
FC800 S	40	1,6"	45 1,8"



REPLACE  
CAMBIO

NOMINAL AND MINIMUM MESURES FOR NOSE REPLACEMENT  
MEDIDAS NOMINALES Y MÍNIMAS PARA CAMBIO DE NARICES



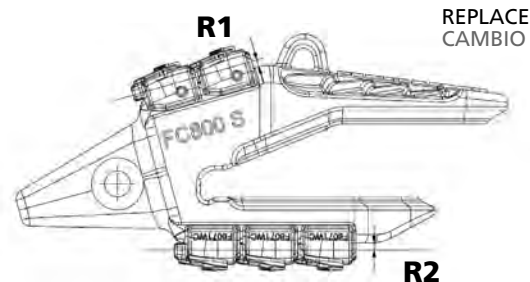
	A	B	C	D
FC400 S				
FC450 S				
FC550 S				
FC600 S				
FC700 S				
FC800 S	130 5,1"	52 2,0"	145 5,7"	161 6,3"
min.	126 5,0"	48 1,9"	142 5,6"	155 6,1"

## F8071 WC

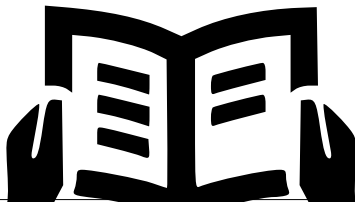


R1 mm. inch R2 mm. inch

F5559 WC			
F6061 WC			
F7069 WC			
F8071 WC	10	0,4"	10 0,4"



REPLACE  
CAMBIO



# DRP



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

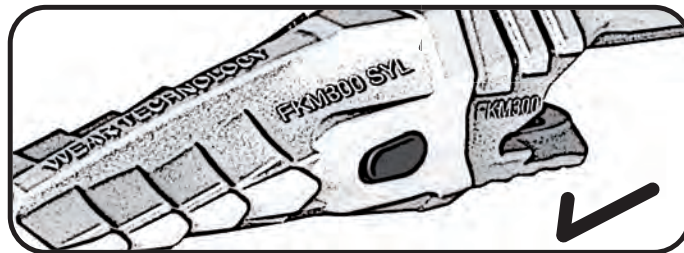
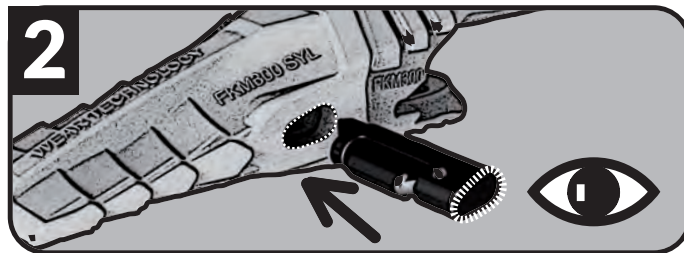
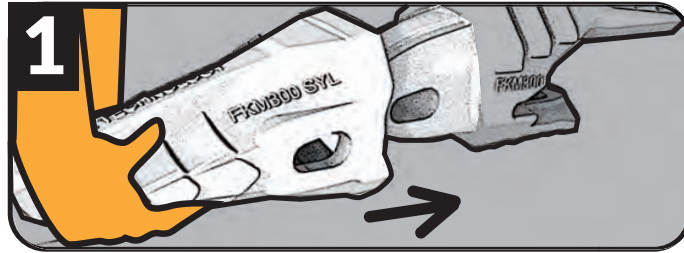
Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



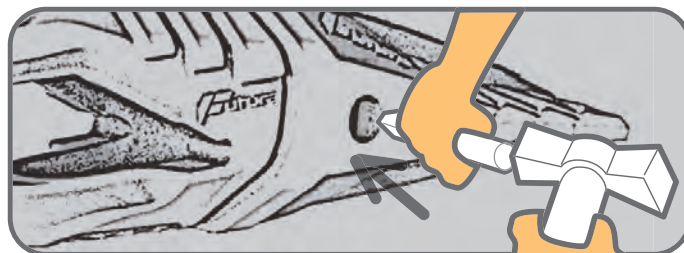
# FUTURA FKM HAMMER PIN

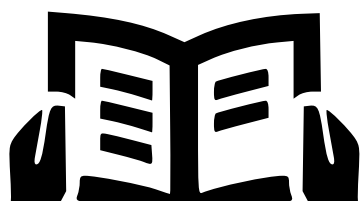
FKM150-200-250-300-400-500 PN

## ASSEMBLY



## DISASSEMBLY





# DRP

# FCC2

## DRP replacement recommendations



Repeated use of pins or plugs may reduce their effectiveness due to distortion or wear. Look for bumps or scratches on steel components or cuts or tears in rubber components. The best way to check this is to compare with new parts. Replace if in doubt. The cost of a lost tooth is greater than the cost of a new pin.

The number of uses depends on the application. Applications with moderate to light impact terrains (e.g. caliche), allow for greater reuse. Applications in low abrasion and high impact terrains (e.g. quarry stone) allow for less reuse.

## Recomendaciones de uso y reemplazo

El uso repetido de pasadores o tapones puede reducir su efectividad debido a distorsión o desgaste. Mire en busca de golpes o arañazos sobre los componentes de acero o cortes o desgarraduras en los componentes de caucho. La mejor forma de verificar esto es comparar con piezas nuevas. Reemplace si tiene alguna duda. El coste de un diente perdido es mayor que el coste de un pasador nuevo.

El número de usos depende de la aplicación. Las aplicaciones con terrenos de impacto moderado a ligero (p.e. caliche), permite mayor reutilización. Aplicaciones en terrenos de baja abrasión y alto impacto (p.e. piedra de cantera) permite menos reutilización.





FUTURA HL2

TOOTH + PIN ASSEMBLY | MONTAJE DIENTE + PASADOR

ASSEMBLY INSTRUCTIONS

ENGLISH

The FUTURA hammerless system HL2 works **only** with FUTURA teeth For Adapters FC2 omit step 1

1 Insert the washer into the adapter washer hole as shown in the picture 2 Mount the tooth on the adapter 3 Insert the pin into the hole 4 Use a SOCKET HEX or a HEX KEY (check the HEX TABLE below for recommended keys for each pin) to rotate the pin from any of its ends. A rubber insert under locking tab allows the locking tab (fig 5) to compress, rotate and lock. 6 Each pin comes with a heavy duty dirt plug to keep fines out of the pin's socket. Choose the right plug according to the tooth recess and place. Discard the other plug.

Disassembly Repeat steps in reverse order.

INSTRUCCIONES DE MONTAJE

ESPAÑOL

El sistema FUTURA Hammerless HL2 FUNCIONA SOLO CON DIENTES MARCA FUTURA Para el montaje con portadientes FC2 omite el paso 1

1 Inserte la arandela en el hueco del portadientes en la posición que se indica 2 Encaje el diente en el portadientes 3 Coloque el pasador en el orificio del diente como se indica 4 Utilice una llave ALLEN o un VASO HEXAGONAL para girar el pasador (compruebe el tamaño de la llave en la tabla más abajo) 5 El mecanismo de fijación del pasador permite que la pestaña de cierre se comprima, rote y bloquee el diente 6 Los pasadores HL2 van acompañados de un tapón de goma anti-suciedad para sus extremos. Elija el que mejor se ajuste y colóquelo en posición. Los tapones de goma ayudan a prevenir la entrada de suciedad. Deseche el tapón sobrante.

Desmontaje Repetir los pasos en orden inverso.

INSTRUCTIONS DE MONTAGE

FRANÇAIS

Le système de montage sans marteau FUTURA HL2 fonctionne **uniquement** avec FUTURA dents Pour Adaptateurs FC2 passer l'étape 1

1 Insérer la rondelle dans le trou de l'adaptateur comme montré dans l'image 2 Montez la dent sur l'adaptateur 3 Insérez la goupille dans le trou 4 Aussi facile à installer qu'à retirer avec une clé Allen standard ou une socket HEX (vérifier la taille de la clé dans le tableau). Les goupilles sont retenues en place en toute sécurité par le mécanisme de loquet muni de l'insertion de caoutchouc sous la barrure qui permet de compresser, tourner et barrer en place (fig 5) 6 Chaque goupille vient avec un bouchon pour empêcher la saleté de pénétrer dans les extrémités.

Démontage Répétez les étapes dans l'ordre inverse.

INSTRUÇÕES DE MONTAGEM

PORTUGUÊS

El sistema HL2 funciona **exclusivamente** com pontas FUTURA Para Adaptadores FC2 omitir o passo 1

1 Inserir na anilha no orifício na posição indicada 2 Montar a ponta no adaptador 3 Colocar a cavilha no orifício da ponta 4 Use uma chave Allen (hex) ou um soquete HEX para ligar a cavilha (verificar o tamanho da chave no quadro) 5 O mecanismo de fixação permite que o encaixe da borracha se comprima, rode e bloqueie a peça com uma simples rotação de 90° 6 Cada trava vêm acompanhado de um tampão para evitar a entrada de sujidade nas extremidades

Desmontagem repita os passos na ordem inversa.



DRP FC2		PHL	
SOCKET HEX	HEX KEY	SOCKET HEX	HEX KEY
M7 9/32"	HL2-200	M10 3/8"	FD33 PHL M8 5/16"
M10 3/8"	HL2-220	M10 3/8"	HL2-250 M8 5/16"
M10 3/8"	HL2-300	M10 3/8"	HL2-350 M8 5/16"
M13 1/2"	HL2-350	M10 3/8"	HL2-400 M12 1/2"
M14 9/16"	HL2-400	M12 1/2"	HL2-450 M12 1/2"
M15 5/8"	HL2-450	M12 1/2"	HL2-550 M12 1/2"
M15 5/8"	HL2-550	M12 1/2"	HL2-600 M17 11/16"
M20 13/16"	HL2-600	M17 11/16"	HL2-700 M17 11/16"
M22 7/8"	HL2-700	M17 11/16"	HL2-800 M19 3/4"
M24 15/16"	HL2-800	M19 3/4"	

OEM Cross Refs (WHEN USING FUTURA TOOTH)

L mm	L in	Ø mm	Ø in				SIZE
61	2,40"	11	0,43"	FC200HL2	8E-6208, 1U-4208	8E-6209, 4T-0001	20
69	2,72"	14	0,55"	FC220HL2	132-4762, 6Y-3228	8E-6259, 3G-9609, 149-5733	22
79	3,11"	14	0,55"	FC250HL2	8E-6258, 132-4763, 9J-2258	8E-6259, 3G-9609, 149-5733	25
94	3,70"	15	0,59"	FC300HL2	107-3308, 132-4766, 9J-2308	8E-6259, 3G-9609, 149-5733	30
104	4,09"	20	0,79"	FC350HL2	8E-6358, 114-0358, 9J-2358	8E-6359, 3G-9548, 114-0359	35
118	4,65"	22	0,87"	FC400HL2	7T-3408, 116-7408	8E-8409, 116-7409	40
136	5,35"	24	0,94"	FC450HL2	8E-0468, 114-0468	8E-8469, 107-3469	45
159	6,26"	25	0,98"	FC550HL2	6Y-8558, 107-3378, 1U-1558	8E-5559, 3G-9559, 107-8559	55
195	7,68"	30	1,18"	FC600HL2	6I-6608, 113-9608	6I-6609, 113-9609	60
204	8,03"	32	1,26"	FC700HL2	4T-4708, 113-4708	4T-4707, 113-4709	70
238	9,37"	35	1,38"	FC800HL2	134-1808, 102-0101	101-2874, 134-1809	80
105	4,13"	15	0,59"	FD33 PHL	132-4766	8E-6259, 149-5733	33
192	7,56"	38	1,50"	FK900 PNHL	427-70-13891		900



## FUTURA DREDGE

TOOTH + STANDARD PIN ASSEMBLY | DIENTE + PASADOR STANDARD

### Assembly instructions FUTURA DREDGE DRP IHC SIZE 200

TOOTH + STANDARD PIN

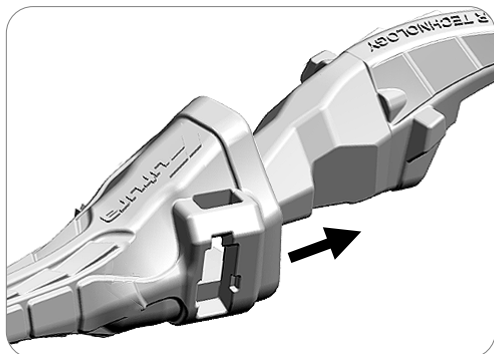
### Instrucciones de montaje FUTURA DREDGE DRP IHC TALLA 200

DIENTE + PASADOR STANDARD

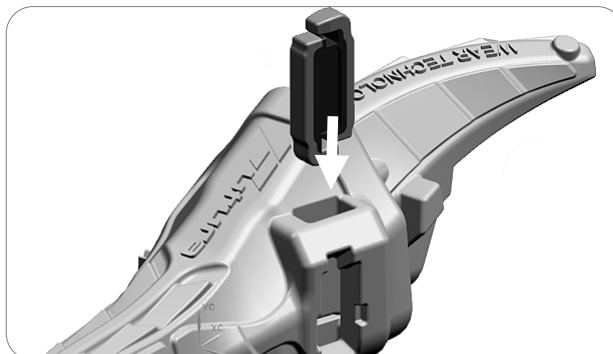


1

Place TOOTH on the ADAPTER.  
Insert PIN as shown in the picture.

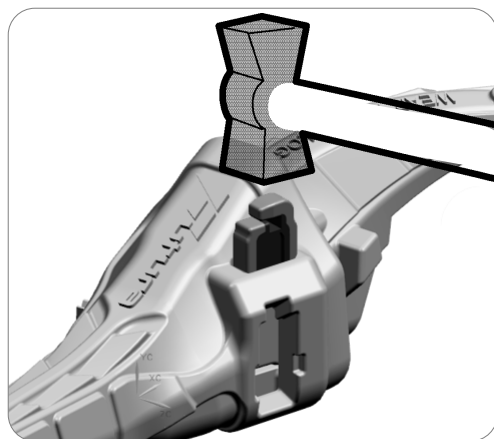


Encaje el DIENTE en el PORTA-DIENTES e inserte el PASADOR en la posición que se muestra en el dibujo.



2

Use hammer to lock pin.  
Check stability of the assembly.



Utilice un martillo y golpee para insertar el pasador hasta que el diente quede fijado.

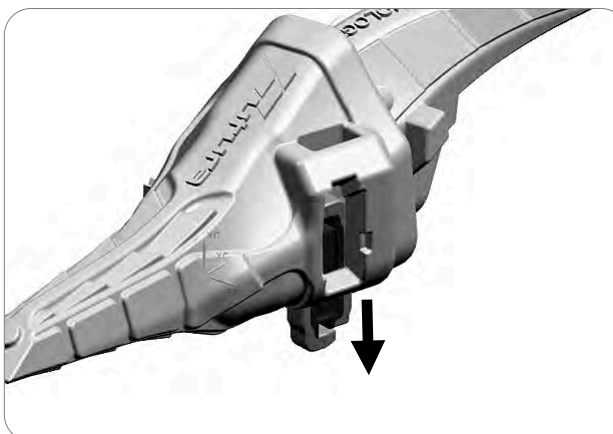


3

Tooth removal:  
Use hammer and chisel to unlock pin.  
Remove pin. Remove tooth.



Utilice un cincel y un martillo y golpee el pasador como se indica. Retire el pasador.  
Retire el diente.





## FUTURA DREDGE

TOOTH + HAMMERLESS PIN ASSEMBLY | DIENTE + PASADOR HAMMERLESS

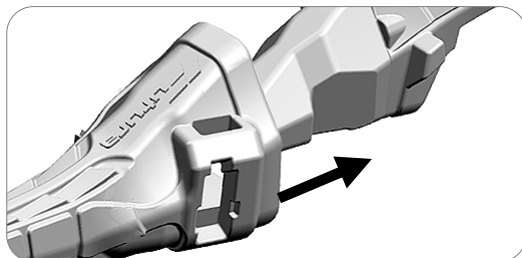
### Assembly instructions FUTURA DREDGE DRP IHC SIZE 200 TOOTH + HAMMERLESS PIN

### Instrucciones de montaje FUTURA DREDGE DRP IHC TALLA 200 DIENTE + PASADOR HAMMERLESS

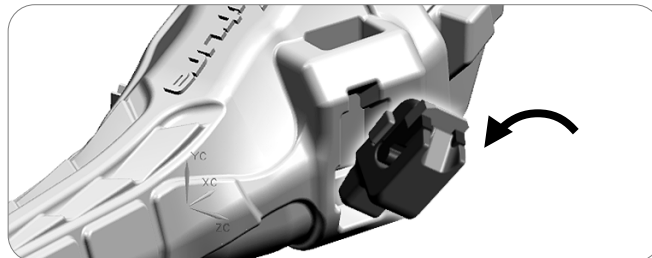


1

Place TOOTH on the ADAPTER.  
Insert PIN as shown in the picture



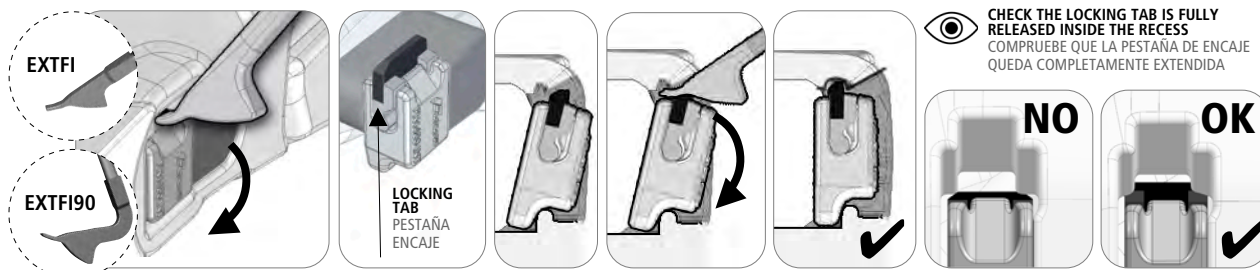
Encaje el DIENTE en el PORTADIENTES e insterte el PASADOR en la posición que se muestra en el dibujo



2

With extraction tool, press until pin tab reaches its locking position and is fully released in the orifice

Utilice la herramienta EXTFI o EXTFI90 para hacer palanca sobre la pestaña móvil del pasador hasta que quede completamente extendida dentro del orificio



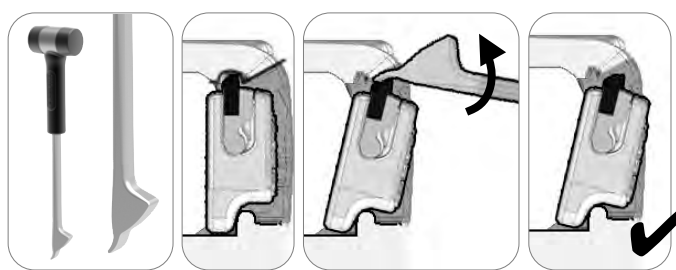
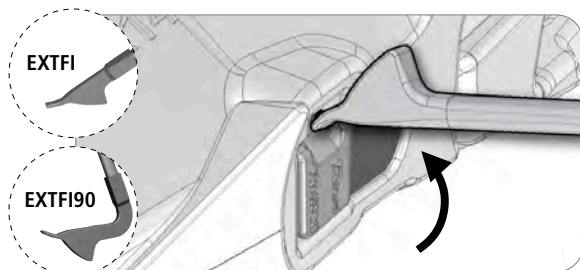
Disassembly instructions:

Instrucciones para el desmontaje

3

Using the extraction tool press until pin tab is released from its locking position

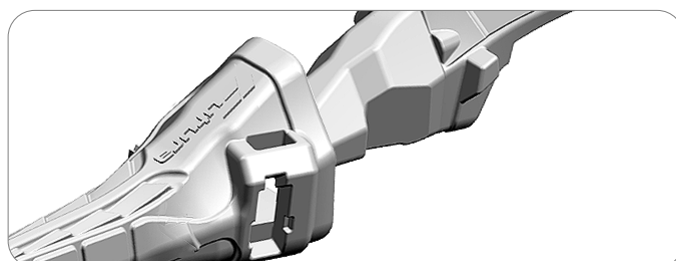
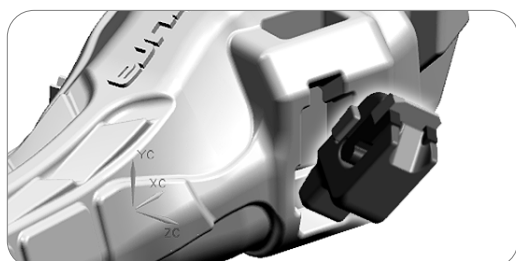
Utilice una herramienta y haga palanca sobre la pestaña móvil del pasador hasta que quede fuera del orificio

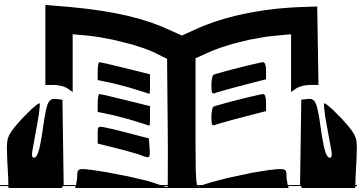


4

Extract Pin.  
Remove TOOTH.

Saque el pasador.  
Retire el diente de portadientes





# RIPPER



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



## HAMMERLESS RIPPER TOOTH ASSEMBLY

HAMMERLESS PIN | PASADORES HAMMERLESS

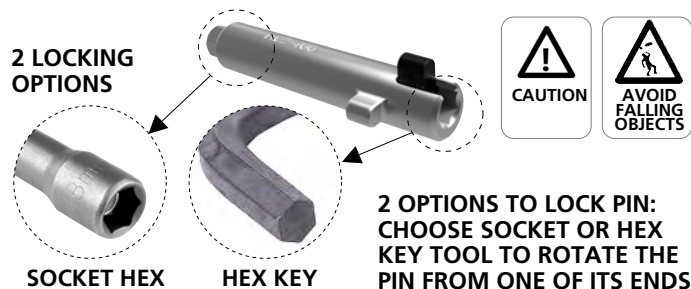
### ASSEMBLY INSTRUCTIONS

ENGLISH

The FUTURA hammerless system RHP works **only with FUTURA RIPPER teeth**

1 Insert the washer into the ripper washer hole as shown in the picture 2 Mount the tooth on the ripper 3 Insert the pin into the hole. Use a SOCKET HEX or a HEX KEY (check the HEX TABLE below for recommended keys for each pin) to rotate the pin from any of its ends. A rubber insert under locking tab allows the locking tab (fig 5) to compress, rotate and lock. 6 Each pin comes with a heavy duty "dirt" plug to keep fines out of the pin's socket. Place plug.

**Disassembly** Repeat steps in reverse order.



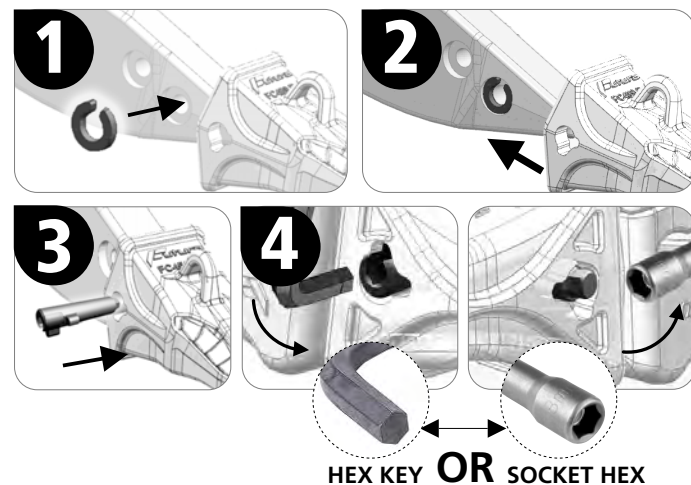
### INSTRUCCIONES DE MONTAJE

ESPAÑOL

El sistema FUTURA Hammerless RHP **FUNCIONA SOLO CON DIENTES DE RIPPER MARCA FUTURA**

1 Inserte la arandela en el hueco del ripper en la posición que se indica 2 Encaje el diente en el brazo de ripper 3 Coloque el pasador en el orificio del diente como se indica 4 Utilice una llave ALLEN (hexagonal) o un VASO HEXAGONAL para girar el pasador (compruebe el tamaño de la llave en la tabla de la derecha) 5 El mecanismo de fijación del pasador permite que la pestaña de cierre se comprima, rote y bloquee el diente 6 Los pasadores RHP van acompañados de un tapón de goma anti-suciedad. Coloque el tapón. El diente está listo para trabajar.

**Desmontaje** Repetir los pasos en orden inverso.



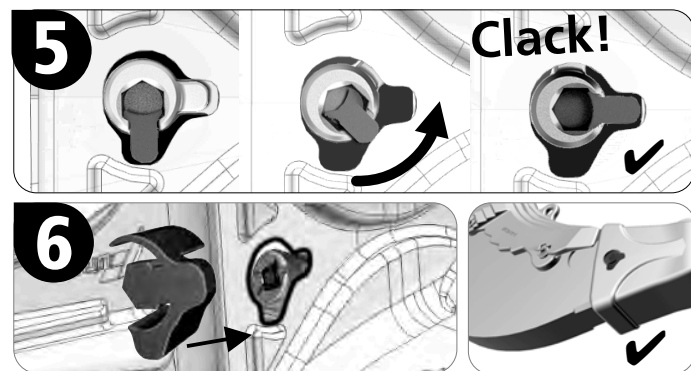
### INSTRUCTIONS DE MONTAGE

FRANÇAIS

Le système de montage sans marteau FUTURA RHP fonctionne **uniquement avec FUTURA RIPPER dents**

1 Insérer la rondelle dans le trou del ripper comme montré dans l'image 2 Montez la dent sur el ripper 3 Insérez la goupille dans le trou 4 Aussi facile à installer qu'à retirer avec une clé Allen standard ou une socket HEX (vérifier la taille de la clé dans le tableau à droite). Les goupilles sont retenues en place en toute sécurité par le mécanisme de loquet muni del'insertion de caoutchouc sous la barrure qui permet de compresser, tourner et barrer en place (fig. 5) 6 Chaque goupille vient avec un bouchon pour empêcher la saleté de pénétrer dans les extrémités. Insérer le bouchon.

**Démontage** Répétez les étapes dans l'ordre inverse.



### INSTRUÇÕES DE MONTAGEM

PORTUGUÊS

The sistema RHP funciona **exclusivamente com pontas FUTURA RIPPER**

1 Inserir na anilha no orifício na posição indicada 2 Montar la ponta no ripper 3 Colocar a cavilha no orifício da ponta 4 Use uma chave Allen (hex) ou un soquete HEX para ligar a cavilha (verificar o tamanho da chave no quadro à direita) 5 O mecanismo de fixação permite que o encaixe da borracha se comprima, rode e bloqueie a peça com uma simples rotação de 90° 6 Cada trava vêm acompanhado de um tampão para evitar a entrada de sujidade nas extremidades. Inserir tampão.

**Desmontagem** repita os passos na ordem inversa.

SOCKET HEX	PART NUMBER	ALLEN HEX KEY
<b>M13</b> 1/2"	HL2-R300	<b>M10</b> 3/8"
<b>M13</b> 1/2"	HL2-R350	<b>M10</b> 3/8"
<b>M17</b> 11/16"	HL2-R450	<b>M14</b> 9/16"
<b>M22</b> 7/8"	HL2-R500	<b>M18</b> 11/16"
<b>M24</b> 15/16"	HL2-R550	<b>M21</b> 13/16"

#### OEM Cross Refs (WHEN USING FUTURA TOOTH)

L mm	L in	Ø mm	Ø in				SIZE
92	3,62"	20,5	0,81"	<b>FCR300HP</b>	9J-6583	1U-2405	<b>R300</b>
120	4,72"	20,5	0,81"	<b>FCR350HP</b>	8E-6358	1U-2405	<b>R350</b>
135	5,31"	26,0	1,02"	<b>FCR450HP</b>	6Y-3394	8E-4743	<b>R450</b>
153	6,02"	33,0	1,30"	<b>FCR500HP</b>	6Y-3909, 6Y-1204	4T-4707, 6Y-1202	<b>R500</b>
170	6,69"	37,5	1,48"	<b>FCR550HP</b>	8E-2229, 9N-4245	8E-2230, 6Y-1205	<b>R550</b>



# RIPPER



## WARNING

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## CUIDADO

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



FUTURA RPT RIPPER PROTECTORS

HAMMERLESS PIN | PASADORES HAMMERLESS

ASSEMBLY INSTRUCTIONS

ENGLISH

1 Insert the pin and the washer into the ripper pin and washer hole as shown in the picture 2 Place the protector hook on the protruding part of the pin and move it until it fits on the ripper shank 3 Insert the pin into the hole. Use a SOCKET HEX or a HEX KEY (check the HEX TABLE below for recommended keys for each pin) to rotate the pin from any of its ends. A rubber insert under locking tab allows the locking tab (fig 5) to compress, rotate and lock. 6 Each pin comes with a heavy duty "dirt" plug to keep fines out of the pin's socket. Place plug.

Disassembly Repeat steps in reverse order.

INSTRUCCIONES DE MONTAJE

ESPAÑOL

1 Inserte el pasador y la arandela en los huecos en la posición que se indica. 2 Apoye el gancho del protector sobre la parte que sobresale del pasador y muévelo hasta que quede bien encajado sobre el brazo de ripper 3 Coloque el pasador en el orificio del diente como se indica 4 Utilice una llave ALLEN (hexagonal) o un VASO HEXAGONAL para girar el pasador (compruebe el tamaño de la llave en la tabla de la derecha) 5 El mecanismo de fijación del pasador permite que la pestaña de cierre se comprima, rote y bloquee el diente 6 Los pasadores RHP van acompañados de un tapón de goma anti-suciedad. Coloque el tapón. El protector está listo para trabajar.

Desmontaje Repetir los pasos en orden inverso.

INSTRUCTIONS DE MONTAGE

FRANÇAIS

1 Insérez la goupille et la rondelle dans les trous à la position indiquée 2 Reposez le crochet du protecteur sur la partie saillante de la goupille et déplacez-le jusqu'à ce qu'il s'enclenche sur le bras du ripper 3 Insérez la goupille dans le trou 4 Aussi facile à installer qu'à retirer avec une clé Allen standard ou une socket HEX (vérifier la taille de la clé dans le tableau à droite). Les goupilles sont retenues en place en toute sécurité par le mécanisme de loquet muni de l'insertion de caoutchouc sous la barrure qui permet de compresser, tourner et barrer en place (fig. 5) 6 Chaque goupille vient avec un bouchon pour empêcher la saleté de pénétrer dans les extrémités. Insérer le bouchon.

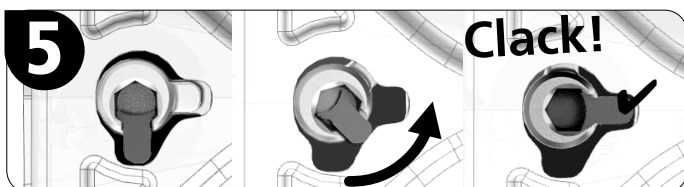
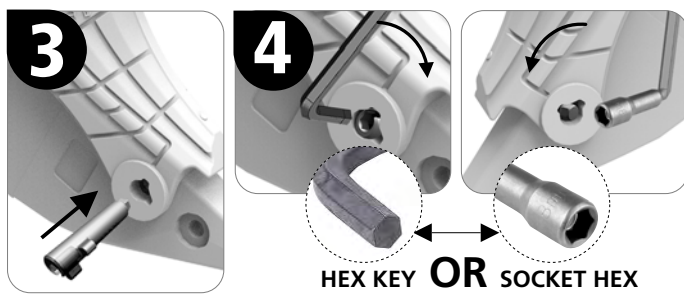
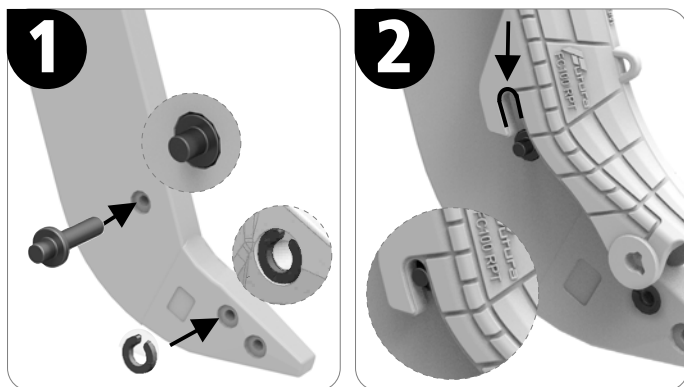
Démontage Répétez les étapes dans l'ordre inverse.

INSTRUÇÕES DE MONTAGEM

PORTUGUÊS

1 Insira o pino e a arruela nos orifícios na posição indicada 2 Insira o pino e a arruela nos orifícios na posição indicada 3 Colocar a cavilha no orifício da ponta 4 Use uma chave Allen (hex) ou um soquete HEX para ligar a cavilha (verificar o tamanho da chave no quadro à direita) 5 O mecanismo de fixação permite que o encaixe da borracha se comprima, rode e bloqueie a peça com uma simples rotação de 90° 6 Cada trava vêm acompanhado de um tampão para evitar a entrada de sujeira nas extremidades. Inserir tampão.

Desmontagem repita os passos na ordem inversa.

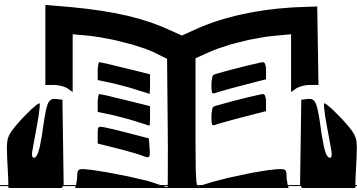


	Inch	REF			
75	2,95"	<b>FC75 RPT</b>	FC75 RPN	FCR450HP	<b>R450</b>
90	3,54"	<b>FC90 RPT</b>	FC90100 RPN	FCR90100HP	<b>R500</b>
100	3,94"	<b>FC100 RPT</b>	FC90100 RPN	FCR90100HP	<b>R500</b>
110	4,33"	<b>FC110 RPT</b>	FC110 RPN	FCR550HP	<b>R550</b>

SOCKET HEX	PART NUMBER	ALLEN HEX KEY
<b>M17</b>	11/16"	<b>M14</b> 9/16"
<b>M22</b>	7/8"	<b>M18</b> 11/16"
<b>M24</b>	15/16"	<b>M21</b> 13/16"

OEM Cross Refs (WHEN USING FUTURA TOOTH)

L mm	L in	Ø mm	Ø in				SIZE
135	5,31"	26,0	1,02"	<b>FCR450HP</b>	6Y-3394	8E-4743	<b>R450</b>
167	6,57"	32,0	1,26"	<b>FCR90100HP</b>			
170	6,69"	37,5	1,48"	<b>FCR550HP</b>	8E-2229, 9N-4245	8E-2230, 6Y-1205	<b>R550</b>



**BP**



## **WARNING**

### **ALWAYS WORK SAFELY**

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## **CUIDADO**

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

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FUTURA BUCKET

WELD-ON HEEL SHROUDS | PROTECTORES GUARDAESQUINA SOLDABLES



# Weld-on heel shrouds welding instructions

# Instrucciones soldadura esquineros soldables

## Before Welding

Use basic electrodes with a low contents of hydrogen E7018 weld rod or E70T-5 (do not use E70T-1) cored wire with CO<sub>2</sub> gas shielding. Store weld rod in 120°C (250°F) oven. Recondition exposed supply of weld rod by reheating for two hours at 260°C (500°F). Remove only enough weld rod for one hour of use. The moisture (water content in the air) level of exposed low hydrogen electrodes can be too high and can cause weld cracking.

**NOTE:** Remove all paint, rust, grease and dirt from the surfaces to be welded using a wire brush. **NOTE:** Weld on painted or dirty areas can cause welds of poor quality. The result is weld embrittlement from hydrogen, porosity or lack of fusion.

**NOTE:** Do not use gas shielded welding in windy areas or where fans are present. Poor welds can occur due to excessive cooling.

**NOTE:** To prevent losing hardness, do not exceed temperatures 315°C (600°F). Reheat if temperatures drop below 175°C (350°F)

Verify position of the heel shrouds to the bucket and then equally space the shrouds across the bucket edge.

## Preparación de la Soldadura

Usar electrodos básicos de bajo contenido en hidrógeno E7018 o E70T-5 (no usar E70T-1 con protector de gas CO<sub>2</sub>). Los electrodos absorben humedad cuando son expuestos al aire y esto facilita la formación de grietas en el metal base por debajo de la soldadura. Extraer únicamente los electrodos que se vayan a consumir en una hora. Los electrodos que sobren deberán ser precalentados a 260°C antes de ser utilizados en otra soldadura posterior.

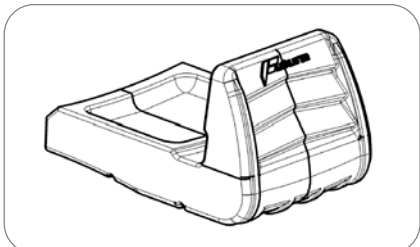
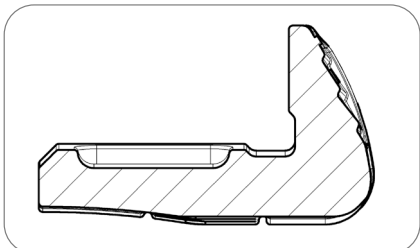
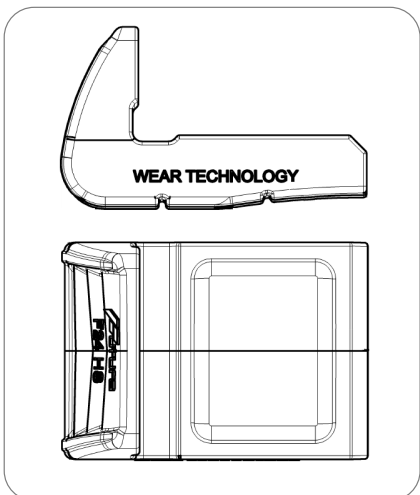
**ATENCIÓN:** Pulir cualquier irregularidad y quitar toda la pintura, polvo, grasa y suciedad de la superficie a soldar usando un cepillo de alambre.

**ATENCIÓN:** Soldar sobre superficies pintadas o sucias puede producir soldaduras de baja calidad.

**ATENCIÓN:** No suelde en áreas con corrientes de aire o ventiladores. Soldaduras de baja calidad son debido al exceso de ventilación.

**ATENCIÓN:** Para prevenir la pérdida de dureza no exceder la temperatura de 315°C. Recalentar si la temperatura baja de los 175°C.

Verifique la posición de los protectores esquineros de ambos lados del cazo y compruebe que guardan la misma distancia de separación entre ellos.



## Welding



**NOTE:** It is very likely that a gap condition will exist between the sides of the Heel shroud and the bucket due to the placement on the bucket and different raddi.

In most cases, it will be impossible to adjust the weld area into this position, but whatever angle bucket can be placed, it will be helpful in preventing the molten puddle from pulling away from the beveled surface.

The sides may be welded, but is treated more as a "close out" weld. The objective is to stop material from packing in under the shroud. If a gap condition exists, more numerous, but smaller, weld passes will help to compensate for lack of proper position.

Shrouds need not be placed tightly together. They can be spaced apart and still provide full protection due to "shadowing" effect.

Always leave a minimum of 20mm (3/4") between each mounted heel shroud.

## Soldadura



**ATENCIÓN:** Es probable que queden espacios entre los lados del protector esquinero al colocarlo sobre la esquina del cazo debido a que sus radios no coincidan exactamente.

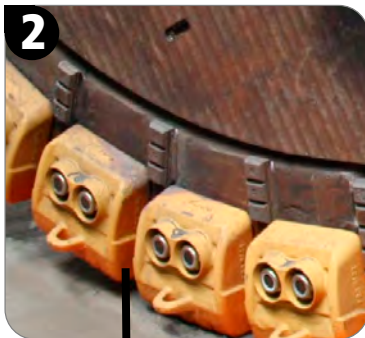
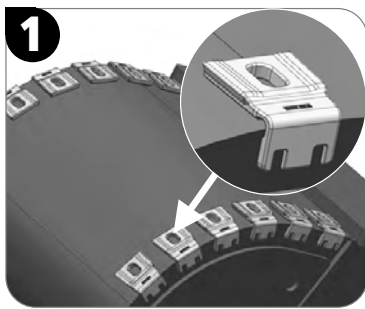
En estos casos no será posible ajustar el área de la soldadura en esta posición, pero cualquiera que sea el ángulo del cazo, los protectores esquineros pueden ser soldados. Esta soldadura será útil para que el charco producido en la soldadura no se separe de la superficie biselada.

Los lados se pueden soldar, pero se trata más de "cerrar" con la soldadura. El objetivo es impedir que el material se incruste debajo del protector. Si existe una condición de vacío, dar pases de soldadura más pequeños pero más numerosos ayudará a compensar la falta de posición adecuada.

No es necesario colocar los protectores muy juntos entre sí. Los protectores pueden colocarse a cierta distancia y aun así proporcionarán una protección completa debido al efecto "shadowing". La distancia mínima recomendada entre cada protector no debe ser nunca inferior a 20mm (3/4")

## FUTURA BUCKET

MECHANICAL HEEL SHROUDS | GUARDAESQUINAS MECÁNICOS



**Minimum gap between each mounted shroud:**  
Espacio mínimo entre protectores montados:  
**20mm (3/4")**



The concept is to deposit as much weld as possible to the base without causing interference with the seating of the heel shroud.

El objetivo es depositar la mayor cantidad de soldadura posible en la base sin causar interferencia con el asentamiento de la cubierta del talón.

## Bolt-On heel shrouds welding instructions

**NOTE:** For good operation of the system follow instructions below.



### Surface Preparation

- 1 Position wear runner base in desired location (as shown in the picture) making sure that there is clearance around the perimeter of the base for the heel shroud. Shrouds need not be placed tightly together. They can be spaced apart and still provide full protection due to "shadowing" effect.
- 2 Always leave a minimum of 20mm (3/4") between each mounted heel shroud.

The surface that the heel shroud based will be welded to should be clean and free from any impurities that will affect the strength of the weld.

After placement has been confirmed, pre-heat the base material to recommended temperatures.

### Welding

Welding Recommendations:  
**Consumables** AS1553 Type E4816 & E4818 low hydrogen (keep dry)  
**Pre-heat:** 175°C-200°C

**Interweld:** Maintain an interpass temperature of 150°C

**Postheat:** 100°C (if air temperature is 10°C or lower). Remove slag after each pass and peen each bead.

Stringer beads are recommended for higher strength and less distortion. The use of weave or wash beads is NOT recommended and should not be used. Arc strikes should be avoided or ground down.

Weld-out for the base should begin with the slot area of the base. Deposit a 1/2" (13mm) fillet weld, all the way around.

Apply weld to the base perimeter next. Deposit stringer beads to fill the groove on the base completely.

Care must be taken at this point not to add too much weld. If the joint is over welded, the weld material can interfere with the installation of the Heel shroud. The concept is to deposit as much weld as possible to the base without causing interference with the seating of the heel shroud.

- 3 Weld on the recommended areas (A) and avoid welding on the (B) areas

## Instrucciones de soldadura esquineros atornillables

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.



### Preparación de la superficie

- 1 Coloque las bases soldables en posición (como se muestra en la imagen) asegurándose de que haya espacio libre alrededor del perímetro de cada una de ellas. No es necesario que los protectores se coloquen muy juntos. Pueden estar separados y seguir proporcionando una protección completa debido al efecto de "sombra".
- 2 Es aconsejable dejar siempre un mínimo de 20 mm (3/4") entre cada protector esquinero montado.

La superficie a la que se soldará la base de la cubierta del talón debe estar limpia y libre de cualquier impureza que pueda afectar a la resistencia de la soldadura.

Una vez confirmada la colocación, precaliente el material base a las temperaturas recomendadas.

### Soldadura

Recomendaciones de soldadura:  
**Consumibles** AS1553 Tipo E4816 y E4818 de bajo hidrógeno (mantener seco)

**Pre calentamiento:** 175°C-200°C

**Intersoldadura:** Mantener una temperatura entre pasadas de 150°C

**Poscalentamiento:** 100°C (si la temperatura del aire es de 10°C o inferior). Retirar la escoria después de cada pasada y pulir cada cordón.

Se recomienda el uso de cordones para una mayor resistencia y menor distorsión. NO se recomienda el uso de cordones de onda o punteado. La soldadura de la base debe comenzar con el área de la ranura de la base. Depositar una soldadura de filete de 1/2" (13mm), en todo el perímetro de la base.

Aplique la soldadura en el perímetro de la base. Depositar cordones de soldadura para llenar completamente la ranura de la base.

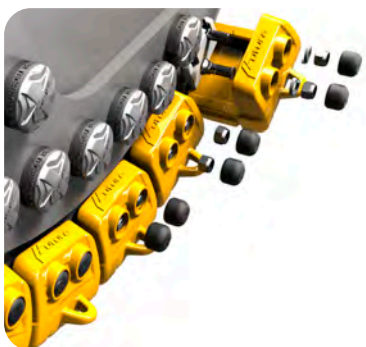
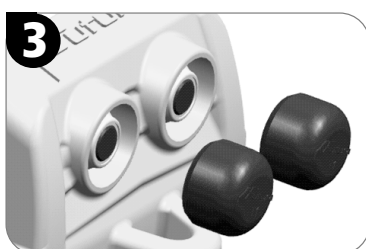
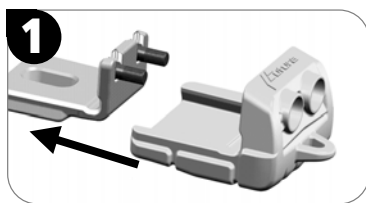
En este punto se debe tener cuidado de no añadir demasiada soldadura. Si la junta se suelda en exceso, el material de soldadura puede interferir con la instalación de la cubierta del talón. El objetivo es depositar la mayor cantidad de soldadura posible en la base sin causar interferencia con el asentamiento de la cubierta del talón.

- 3 Use las zonas de soldadura recomendadas (A) y evite soldar en las zonas marcadas como (B).



FUTURA BUCKET

BOLT-ON HEEL SHROUDS | GUARDAESQUINAS ATORNILLABLES



# Bolt-On heel shrouds assembly instructions

**NOTE:** For good operation of the system follow instructions below.

## Assembly

- 1 Once the base is welded in to the bucket, insert the bolt an then the heel shroud body sliding it through the guides
- 2 Insert and mount bolts, elastic washers and nuts. See table below for required tooling and torque values
- 3 Finally, fit the rubber stoppers.
- 4 Repeat steps 1 to 3 for each Mechanical Heel Shroud to be installed.

## Disassembly

Follow steps 1 to 4 in reverse order.

## Use and Maintenance

For best results, it may be necessary to re-torque all fastener components periodically depending on the application.

Usually, re-torquing components after a few hours of machine operation will ensure component security.

### Wear indicators:

The shrouds have no wear indicators. You have to be careful with wear because the limit is the base of the shroud. If you wear the base then you'll have to change the complete set. Check table below for recommended wear limits.

### Rotation of bolt-on heel shrouds:

We recommend to **change all hardware in every rotation**. Nuts have a nylon lock and they can't be re-used

# Instrucciones de montaje esquineros atornillables

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.

## Montaje

- 1 Una vez que la base está soldada en el cazo, inserte los tornillos y luego el cuerpo del protector por las guías dispuestas en la base.
- 2 Insertar y fijar los tornillos, las arandelas elásticas y las tuercas.
- 3 Finalmente se encajan los tapones de goma.
- 4 Repetir los pasos 1 a 3 de estas las instrucciones de montaje para cada uno de los protectores a instalar.

## Desmontaje

Siga los pasos 1 a 4 en orden inverso.

## Uso y Mantenimiento

Para obtener los mejores resultados, se recomienda revisar periódicamente el apriete de los tornillos. Puede ser necesario re-apretar todos los componentes de fijación, dependiendo de la aplicación.


El reapriete de los componentes después de unas horas de funcionamiento de la máquina garantizará la seguridad de los componentes.

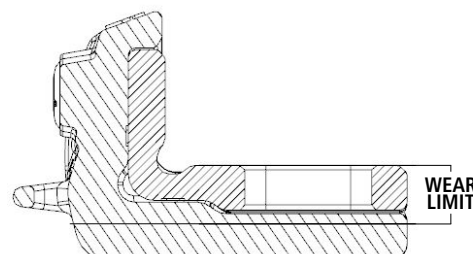
### Indicadores de desgaste:

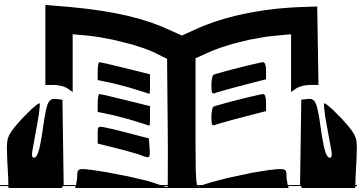
Estos protectores no tienen indicadores de desgaste. Hay que tener cuidado con el desgaste para no llegar a desgastar la base. Si el desgaste del protector atornillable llega a la base soldable, habrá que cambiar el conjunto completo. Consulte la tabla más abajo para conocer los límites de desgaste recomendados.

### Rotación de los protectores:

Se recomienda cambiar toda la tornillería en cada rotación. Las tuercas tienen un cierre de nylon y no se pueden reutilizar.

REF	BOLT	NUT	WASHER		TORQUE VALUE (d.a.N.m)	WEAR LIMIT (mm.)
F49 HSQR	PB-322	NP-190	O-219	1-1/8"	<b>40,40</b>	<b>32</b>
F59 HSQR	PB-322	NP-190	O-219	1-1/8"	<b>40,40</b>	<b>32</b>
F69 HSQR	PB-940	TAC-100	O-254	1-1/2"	<b>96,30</b>	<b>40,5</b>
F89 HSQR	PB-800	TAC-114	O-320	1-7/8"	<b>191,00</b>	<b>55</b>
				PAR DE APRIETE		LIMITE DESGASTE





## **WARNING**

### **ALWAYS WORK SAFELY**

When performing the work described on these assembly instructions

### **ALWAYS USE SAFETY EQUIPMENT TO HELP AVOID INJURY**

Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection on site requirements when performing maintenance work.

### **KEEP BYSTANDERS OUT OF THE WAY**

To avoid injury to others, keep bystanders well out of the way.



## **CUIDADO**

### **TRABAJE CON SEGURIDAD**

al realizar los trabajos descritos en estas instrucciones de montaje

### **UTILICE EL EQUIPO DE SEGURIDAD ADECUADO**

Lleve siempre casco, guantes, zapatos de seguridad, protección ocular, protección auditiva según los requisitos del sitio al realizar trabajos de mantenimiento.

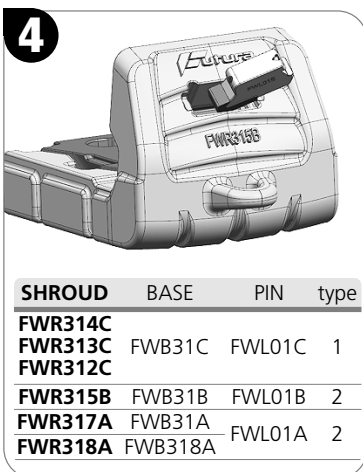
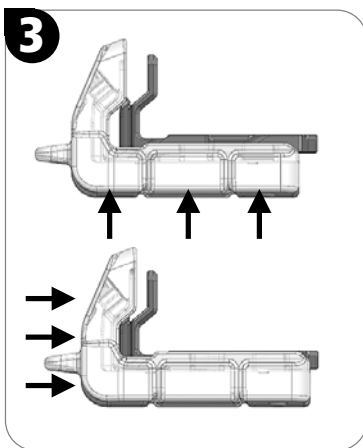
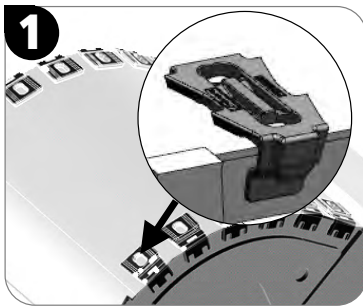
### **MANTENGA AL PERSONAL AJENO ALEJADO DE LA ZONA**

Para evitar lesiones a los demás, mantener a los curiosos y fuera del camino.



FUTURA BUCKET

MECHANICAL HEEL SHROUDS | GUARDAESQUINAS MECÁNICOS



# Hammerless heel shrouds assembly instructions

**NOTE:** For good operation of the system follow instructions below.



## Base Welding

- 1 To weld the Heel Shroud Base on the Bucket, place the base in the position shown in the picture.
- 2 Weld on the recommended areas (A) and avoid welding on the (B) areas

## Shroud Assembly

- 3 Once the base is welded insert the shroud sliding it over the base in two movements as shown in the picture

## Pin Assembly

- 4 Insert pin as shown in the picture.
- 5 Lock pin with special tool FWT01

## Disassembly

Follow steps 3 to 5 in reverse order.

# Instrucciones de montaje esquineros hammerless

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.



## Soldadura de la Base

- 1 Soldar la base del protector en el cazo posicionándolo como se muestra en la imagen.
- 2 Use las zonas de soldadura recomendadas (A) y evite soldar en las zonas marcadas como (B).

## Montaje del Protector

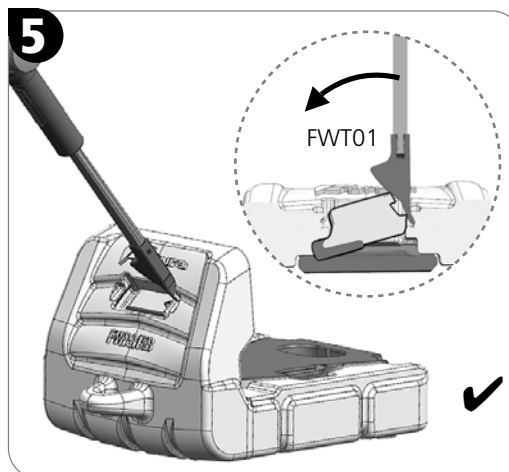
- 3 Una vez que la base está soldada en el cazo, deslice el protector y colóquelo sobre la base tal como se indica en la fig. 3

## Montaje del Pasador

- 4 Inserte el pasador en el orificio
- 5 Ayúdese de la herramienta FWT01 o similar para encajar el pasador.

## Desmontaje

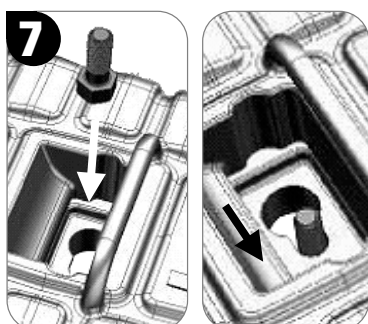
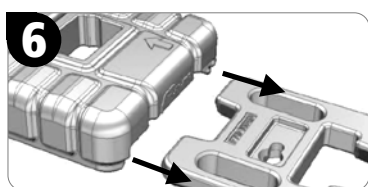
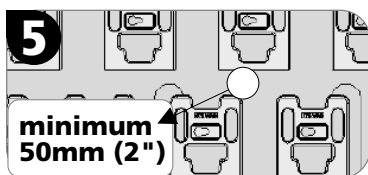
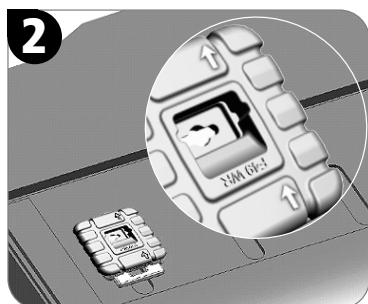
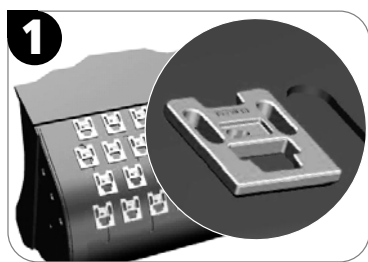
Siga los pasos 3 a 5 en orden inverso.





## FUTURA BUCKET

WEAR RUNNERS | PROTECTORES DE FONDO

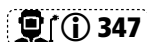


## Bolt-On Wear runners assembly instructions

**NOTE:** For the good operation of the system follow the instructions.

### Assembly

- To weld the Wear Runner base on the bucket, place it in the position shown in the picture.
- It is important to position the Wear Runner with the arrows facing the direction of the teeth / blade. The disassembly direction will then be opposite to the bucket working direction.



### Welding Instructions

- Weld the Runner base to the bucket plate as shown in the picture.
- Pay attention to the recommended welding areas (A) and avoid to weld on (B) areas.

### Distribution of the bases

- Leave a gap of minimum 50 mm. (2 inches) between bases to allow enough room for the assembly and disassembly of the runners.
- Once bases are welded, place each wear runner body sliding it through the guides
- Insert the bolt as shown in the picture. Insert the pin, screw the nut and insert the dirt plugs.

Repeat the installation instructions for each of the welded bases.

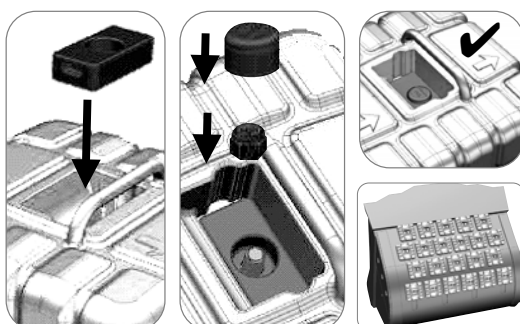
### Disassembly

Repeat the same steps but in reverse order

### Attention

It is very important to respect the safety distance between parts in order to facilitate the removal of the removable parts.

Tighten and check all the bolts periodically (depending on the application). This operation will ensure the safety of the components.



## Instrucciones montaje protectores de fondo atornillables

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.

### Montaje

- Seleccione la zona del cazo donde desee colocar los Wear Runners y suelde las bases al mismo.
- Es muy importante posicionar el Wear Runner con las flechas apuntando hacia los dientes. De esta manera, la dirección de desmontaje del Wear Runner irá en dirección opuesta a la de trabajo del cazo.



### Instrucciones Soldadura

- Suelde la base del Wear Runner a la base del cazo como se muestra en la figura, soldando por las zonas indicadas.
- Evite las zonas (B) y proceda con la soldadura en las zonas recomendadas (A).

### Distribución de las bases

- Deje una distancia mínima de 50mm. entre bases para facilitar la posterior salida de la pieza desmontable.
- Una vez soldada la base, monte el cuerpo del wear runner deslizándolo sobre la guía de la base.
- Insertar tornillo hexagonal como se indica. Insertar la chaveta en su ranura, apretar la tuerca y colocar el tapón anti-suciedad.

Repita las instrucciones de montaje para cada una de las bases a instalar.

### Desmontaje

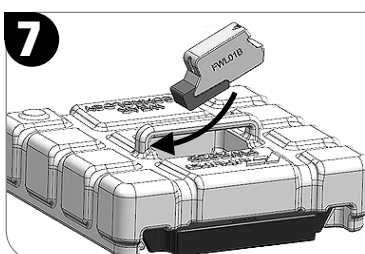
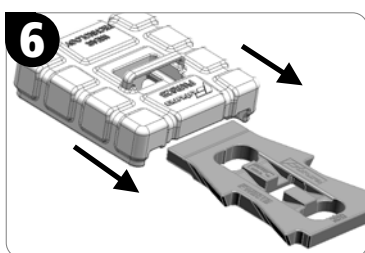
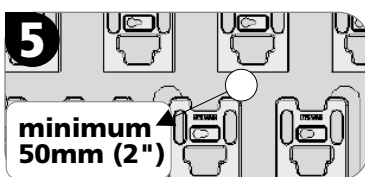
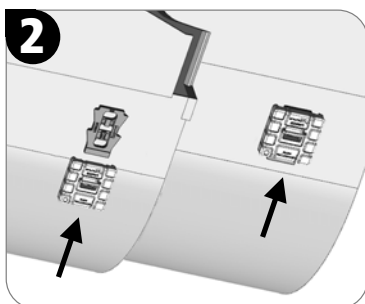
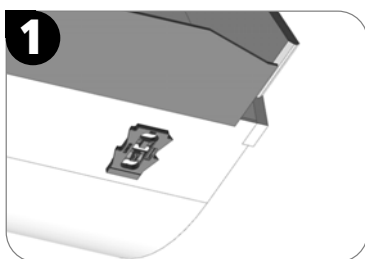
Repetir los mismos pasos pero a la inversa.

### Atención

Es muy importante respetar la distancia de seguridad marcada entre pieza y pieza para facilitar la salida de la pieza desmontable superior.

Re-apretar todos los tornillos periódicamente dependiendo de la aplicación. Esta operación asegurará la seguridad de los componentes.

REF	BOLT	TORQUE VALUE (N.m)
F39 WR	S-0509	5,58
F49 WR	S-0509	5,58
F59 WR	S-1621	13,10
F79 WR	S-1595 B	13,10
PAR DE APRIETE		



# Wear runners assembly instructions

**NOTE:** For the good operation of the system follow the instructions.

## Assembly

- ❶ To weld the Wear Runner base on the bucket, place it in the position shown in the picture.
- ❷ It is important to position the Wear Runner with the arrows facing the direction of the teeth / blade. The disassembly direction will then be opposite to the bucket working direction.

## Welding Instructions



- ❸ Weld the Runner base to the bucket plate as shown in the picture.
- ❹ Pay attention to the recommended welding areas (A) and avoid to weld on (B) areas.

## Distribution of the bases

- ❺ Leave a gap of minimum 50 mm. (2 inches) between bases to allow enough room for the assembly and disassembly of the runners.
- ❻ Once bases are welded, place each wear runner body sliding it through the guides
- ❼ Insert the pin as shown in the picture with the help of the FWT01 tool or similar

## Disassembly

Repeat the same steps but in reverse order

## Attention

It is very important to respect the safety distance between parts in order to facilitate the removal of the removable parts.

Check pins periodically (depending on the application). This operation will ensure the safety of the components.

# Instrucciones de montaje protectores de fondo

**NOTA:** Para el buen funcionamiento del sistema seguir estas instrucciones.

## Montaje

- ❶ Seleccione la zona del cazo donde desee colocar los Wear Runners y suelde las bases al mismo.
- ❷ Es muy importante posicionar el Wear Runner con las flechas apuntando hacia los dientes. De esta manera, la dirección de desmontaje del Wear Runner irá en dirección opuesta a la de trabajo del cazo.

## Instrucciones de Soldadura



- ❸ Suelde la base del Wear Runner a la base del cazo como se muestra en la figura, soldando por las zonas indicadas.
- ❹ Evite las zonas (B) y proceda con la soldadura en las zonas recomendadas (A).

## Distribución de las bases

- ❺ Deje una distancia mínima de 50mm. entre bases para facilitar la posterior salida de la pieza desmontable.
- ❻ Una vez soldada la base, monte el cuerpo del wear runner deslizando sobre la guía de la base.
- ❼ Inserte el pasador en el orificio. Ayúdese de la herramienta FWT01 o similar para encajar el pasador.

## Desmontaje

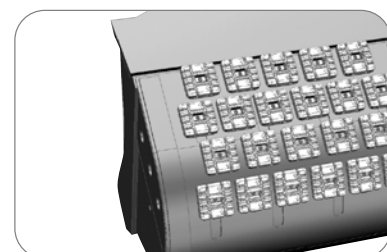
Repetir los mismos pasos pero a la inversa.

## Atención

Es muy importante respetar la distancia de seguridad marcada entre pieza y pieza para facilitar la salida de la pieza desmontable superior.

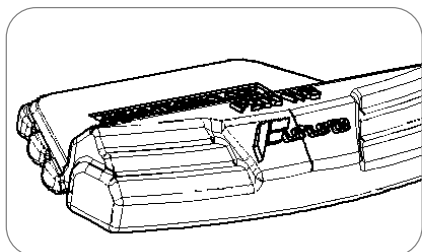
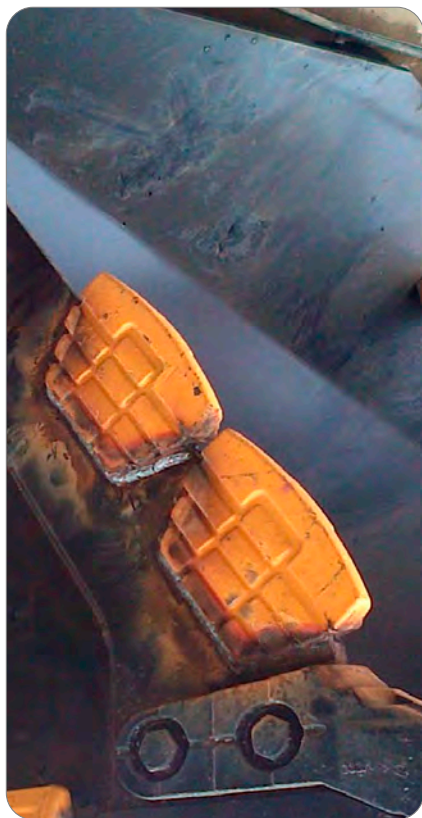
Revise periódicamente la fijación de los pasadores dependiendo de la aplicación. Esta operación asegurará la seguridad de los componentes.

SHROUD	BASE	PIN
FWR01C		
FWR02C	FWB01C	FWL01C
FWR19C		
FWR01B		
FWR02B	FWB01B	FWL01B
FWR01A		
FWR02A	FWB01A	FWL01A



## FUTURA BUCKET

WELD-ON SIDE CUTTERS | PROTECTORES LATERALES SOLDABLES



## Weld-on side cutters welding instructions

### Before Welding

Use basic electrodes with a low contents of hydrogen E7018 weld rod or E70T-5 (do not use E70T-1) cored wire with CO<sub>2</sub> gas shielding. Store weld rod in 120°C (250°F) oven. Recondition exposed supply of weld rod by reheating for two hours at 260°C (500°F). Remove only enough weld rod for one hour of use. The moisture (water content in the air) level of exposed low hydrogen electrodes can be too high and can cause weld cracking.

**NOTE:** Remove all paint, rust, grease and dirt from the surfaces to be welded using a wire brush. **NOTE:** Weld on painted or dirty areas can cause welds of poor quality. The result is weld embrittlement from hydrogen, porosity or lack of fusion.

**NOTE:** Do not use gas shielded welding in windy areas or where fans are present. Poor welds can occur due to excessive cooling.

**NOTE:** To prevent losing hardness, do not exceed temperatures 315°C (600°F). Reheat if temperatures drop below 175°C (350°F)

Verify position of the heel shrouds to the bucket and then equally space the shrouds across the bucket edge.

### Welding



**NOTE:** It is very likely that a gap condition will exist between the sides of the side cutters and the bucket side due to the placement on the bucket and different radii.

In most cases, it will be impossible to adjust the weld area into this position, but whatever angle bucket can be placed, it will be helpful in preventing the molten puddle from pulling away from the beveled surface.

The sides may be welded, but is treated more as a "close out" weld. The objective is to stop material from packing in under the side cutter. If a gap condition exists, more numerous, but smaller, weld passes will help to compensate for lack of proper position.

Side cutters need not be placed tightly together. They can be spaced apart and still provide full protection due to "shadowing" effect.

Always leave a minimum of 20mm (3/4") between each mounted heel shroud.

## Instrucciones soldadura laterales soldables

### Preparación de la Soldadura

Usar electrodos básicos de bajo contenido en hidrógeno E7018 o E70T-5 (no usar E70T-1 con protector de gas CO<sub>2</sub>). Los electrodos absorben humedad cuando son expuestos al aire y esto facilita la formación de grietas en el metal base por debajo de la soldadura. Extraer únicamente los electrodos que se vayan a consumir en una hora. Los electrodos que sobren deberán ser precalentados a 260°C antes de ser utilizados en otra soldadura posterior.

**ATENCIÓN:** Pulir cualquier irregularidad y quitar toda la pintura, polvo, grasa y suciedad de la superficie a soldar usando un cepillo de alambre.

**ATENCIÓN:** Soldar sobre superficies pintadas o sucias puede producir soldaduras de baja calidad.

**ATENCIÓN:** No suelde en áreas con corrientes de aire o ventiladores. Soldaduras de baja calidad son debido al exceso de ventilación.

**ATENCIÓN:** Para prevenir la pérdida de dureza no exceder la temperatura de 315°C. Recalentar si la temperatura baja de los 175°C.

Verifique la posición de los protectores esquineros de ambos lados del cazo y compruebe que guardan la misma distancia de separación entre ellos.

### Soldadura



**ATENCIÓN:** Es probable que queden espacios entre los lados del protector lateral al colocarlo sobre el borde del cazo debido a que sus radios no coincidan exactamente.

En estos casos no será posible ajustar el área de la soldadura en esta posición, pero cualquiera que sea el ángulo del cazo, los protectores laterales pueden ser soldados. Esta soldadura será útil para que el charco producido en la soldadura no se separe de la superficie biselada.

Los lados se pueden soldar, pero se trata más de "cerrar" con la soldadura. El objetivo es impedir que el material se incruste debajo del protector. Si existe una condición de vacío, dar pases de soldadura más pequeños pero más numerosos ayudará a compensar la falta de posición adecuada.

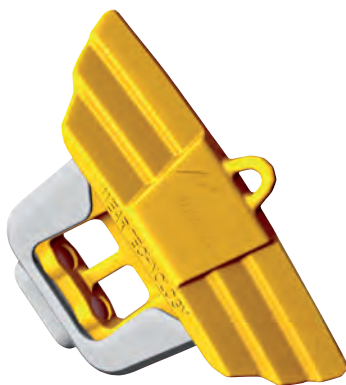
No es necesario colocar los protectores muy juntos entre sí. Los protectores pueden colocarse a cierta distancia y aun así proporcionarán una protección completa debido al efecto "shadowing". La distancia mínima recomendada entre cada protector no debe ser nunca inferior a 20mm (3/4")





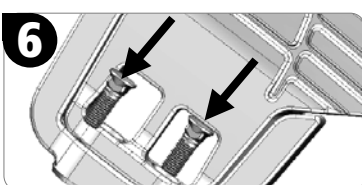
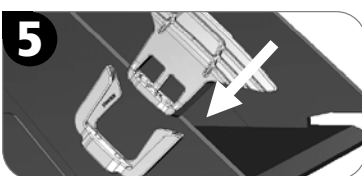
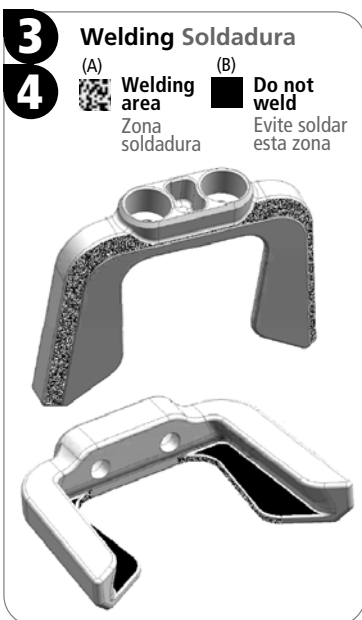
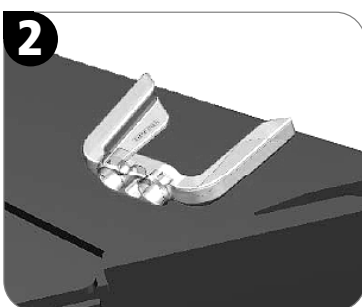
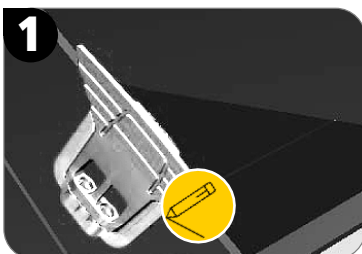
FUTURA BUCKET

MECHANICAL SIDE CUTTERS | PROTECTORES LATERALES MECÁNICOS



# Bolt-On side cutter assembly

# Montaje protector lateral atornillable



**NOTE:** For the good operation of the system follow the instructions.

## Welding

1 Remove any dirt ensuring the base area is free of any packed fines. If removing existing worn bases, then preheat (100°C) must be applied. Check area is smooth after base removal.

Place the side cutter and mark position prior to tack welding, apply **localized preheat (100°C) prior to tack welding.**

2 Preheat base and adjacent lip area to 200°C and ensure preheat is maintained during welding.

## Welding Instructions



3 Weld the cutter base to the bucket side as shown in the picture.

4 Pay attention to the recommended welding areas (A) and avoid to weld on (B) areas.

## Assembly

5 Once the base is welded, slide the protector along the base guides.

6 Insert the bolt as shown in the picture.

7 Insert the pin, screw the nut and insert the dirt plugs.

Repeat the installation instructions for each of the side cutters

## Disassembly

Repeat the same steps but in reverse order

## Attention

Tighten and check all the bolts periodically (depending on the application). This operation will ensure the safety of the components.

**NOTA:** Para el buen funcionamiento del sistema siga estas instrucciones.

## Soldadura

1 Asegúrese que la zona donde va colocado el protector de la cuchilla está libre de partículas. Si ha de retirar bases anteriores, pre-caliente la zona a 100°C. Compruebe que la zona queda lisa después de retirar las bases.

Coloque el conjunto y marque el lateral del cazo con un indicador adecuado antes de proceder a la soldadura.

2 Pre-caliente la base y la zona del lateral del cazo a soldar a 200°C y mantenga esta temperatura durante todo el proceso de soldadura.

## Instrucciones de Soldadura



3 Suelde la base del protector al lateral del cazo como se muestra en la figura, soldando por las zonas indicadas.

4 Evite las zonas (B) y proceda con la soldadura en las zonas recomendadas (A).

## Montaje

5 Una vez soldada la base, deslice el protector a lo largo de las guías de la base.

6 Insertar el tornillo como se indica.

7 Insertar la chaveta en su ranura, apretar la tuerca y colocar el tapón anti-suciedad.

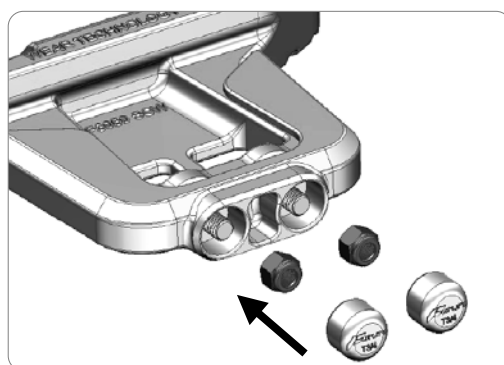
Repita las instrucciones de montaje para cada uno de los protectores a instalar.

## Desmontaje

Repetir los mismos pasos pero a la inversa.

## Atención

Re-apretar todos los tornillos periódicamente dependiendo de la aplicación. Esta operación asegurará la seguridad de los componentes.



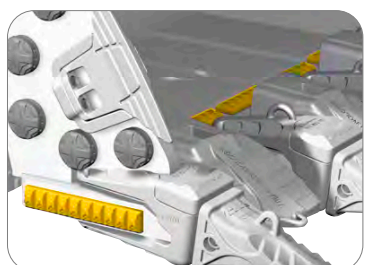
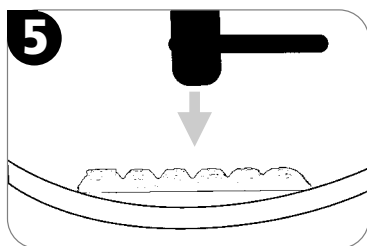
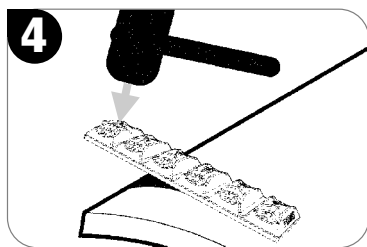
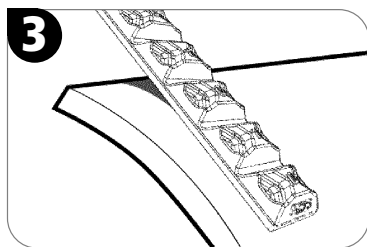
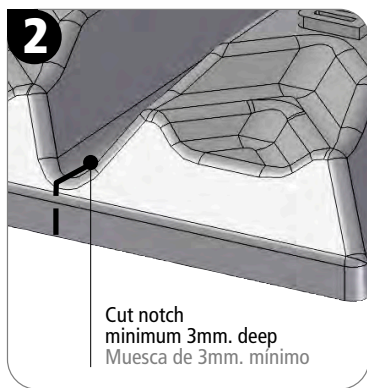
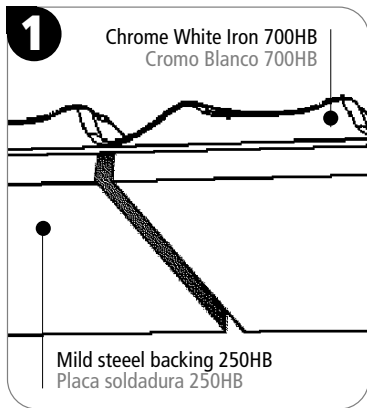
REF	BOLT	TORQUE VALUE (N.m)
F3050 SC	PB-322	28,40
F6080 SC	PB-940	67,60

PAR DE APRIETE



## FUTURA BUCKET

CHOCKY BARS | CHOCKY BARS



## Chocky bars: installation

### Cutting details

The preferred cutting method is high pressure abrasive water jet cutting. Thermal cutting using an oxyacetylene torch, arc-air or plasma is NOT recommended due to high localized heat input and high risk of cracking and delamination.

**Cutting Futura F25 CB chocky bar**  
For chocky bars Futura F25 CB cutting by abrasive discs is an accepted practice.

**Cutting Futura F40 CB to F130 CB chocky bars**  
Cutting procedure for Futura F40 CB, F50 CB, F65 CB, F100 CB and F130 CB.

- 1 Secure the piece to be cut in a vice or clamp
- 2 Notch the backing plate as shown in fig. 1
- 3 Notch the white iron a minimum of 3mm deep opposite the notch in the backing plate, as per fig. 2

**Note:** The deeper the notch in the white iron, the cleaner the break.

**Caution:** Extreme care must be taken when cutting to minimize local pre-heating or cracks and delamination may occur.

### Forming procedure

**Note:** for severe curves with a radius of less than 305mm. or inside curves, it is advisable to notch the mild steel backing plate opposite the V to assist forming fig.1

- 1 Clean the surface to which chocky bar will be welded.
- 2 Tack weld one end of the chocky bar (as per the welding procedure) in at least 3 places by 15mm. minimum length per weld fig. 3

Outside curves: Hammer down unwedged end of bar with a soft face hammer, to bend bar to match mating radius. fig. 4

Inside curves starting in the center strike bar with a soft face hammer to bend bar to match mating radius. fig. 5

- 3 Stitch weld as per the weld procedure. The chocky bar may crack during bending. This is normal.

## Chocky bars: instalación

### Corte

El método recomendado de corte es el corte abrasivo de alta presión por chorro de agua. El Corte térmico mediante antorcha de oxiacetileno o de plasma no es recomendable debido que la gran aportación de calor se hace de forma local con el consiguiente riesgo de agrietamiento y fisuras en las barras FUTURA.

**Corte de barras Futura F25 CB**  
No obstante, para las barras Futura F25 CB el corte mediante discos abrasivos es una práctica aceptada.

**Corte de barras F40 CB a F130 CB**  
Procedimiento de corte para las barras Futura F40 CB, F50 CB, F65 CB, F100 CB y F130 CB.

- 1 Asegure la pieza a cortar sobre un banco o abrazadera
- 2 Haga una muesca en la placa de soldadura como se muestra en la fig. 1
- 3 Haga otra muesca de (mínimo) 3mm. de profundidad en la parte superior (cromo blanco) de la barra, tal como se muestra en la fig. 2

**Nota:** Cuanto más profunda sea la muesca, más limpio será el corte resultante.

**Precaución:** Debe extremarse el cuidado al cortar para reducir al mínimo la concentración de calor localizado y evitar así la aparición de grietas y fisuras en la pieza.

### Moldeo

**Nota:** para las curvas exageradas, curvas con un radio de menos de 305 mm. o curvas cóncavas, es aconsejable hacer muescas en la placa de soldadura para ayudar a la formación de la curva (ver fig. 1)

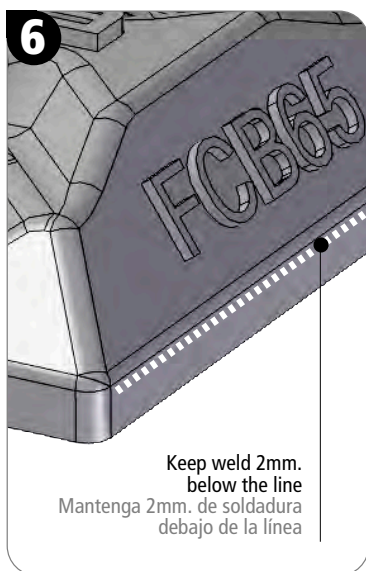
- 1 Limpie la superficie en la que vaya a soldar la barra Chocky.
- 2 Ponga 3 puntos de soldadura de al menos 15mm. de longitud cada uno en un extremo de la barra Chocky (fig. 3)

Curvas convexas: golpee con un martillo blando la parte de la barra que no está soldada para darle la forma del radio de la curva. fig. 4

Curvas cóncavas: golpee la barra desde el centro para ir doblando la barra hasta que coincida con el radio de la curva. fig. 5

- 3 Haga puntadas de soldadura según el procedimiento de soldadura.

**Nota:** Las barras Chocky pueden agrietarse durante el doblado, es normal.



## Chocky bars: welding procedure

### Welding

- 1 Ensure the Futura chocky bar backing plate and matting metal surface is clean and flat.
- 2 Welding rod selection:  
Low hydrogen weld rods or gas covered cored wire is recommended.  
  
Gas shielded solid MIG wire Ø1,2mm. max  
Flux cored wire Ø1,6mm. max to ASTM/AWS A5.18 classification ER705-6  
Low hydrogen electrode Ø3,25 mm. max t ASTM/AWS A5.1 classification. E7016-1H8 or E7018-1H4.
- 3 Do not preheat the Futura chocky bars.
- 4 Clamp and tack weld the Futura chocky bar into position
- 5 Stitch weld, laying 50mm. maximum length on each run, alternating ends or sides to minimize heat input.
- 6 Do not deposit weld within 2mm. from the joint line between Futura chocky bar and the steel backing plate, as shown in fig. 6



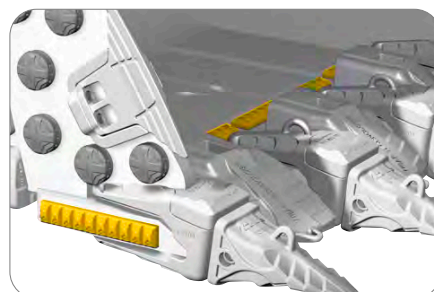
### Caution

Temperature must not exceed 200°C. Excessive heat input may cause cracking and delamination. Use thermal crayons to monitor temperature. Do not weld continuously, continuous weld may cause warping, delamination, and cracking. If a complete peripheral weld is required, use stitch weld procedure.

### Product Safety

Any fitting or fabrication work should be carried out in accordance with applicable site safety standards, ensuring use of approved hard hats, eye protection, steel-toed shoes and protective gloves.

Always use a soft faced hammer when performing the work as described in these instructions.



## Chocky bars: instrucciones soldadura

### Soldadura

- 1 Asegúrese de que las placas traseras (placas de soldadura) de las barras Chocky están limpias y planas.
- 2 Elección de las varillas de soldadura:  
Las varillas de bajo hidrógeno o "gas covered cored wire" son las más recomendables  
Gas shielded solid MIG wire Ø1,2mm. max  
Flux cored wire Ø1,6mm. max a ASTM/AWS A5.18 classification ER705-6  
Low hydrogen electrode Ø3,25 mm. max t ASTM/AWS A5.1 classification. E7016-1H8 ó E7018-1H4
- 3 No pre-calentar las barras Chocky marca FUTURA
- 4 Coloque puntos de soldadura para asegurar la barra Chocky FUTURA en la posición deseada
- 5 Haga las puntadas de soldadura, no exceda de los 50mm. de longitud en cada pasada, vaya alternando los extremos y cambiando los lados para reducir al mínimo la entrada de calor.
- 6 Mantenga libre de soldadura (unos 2mm. por debajo) la línea de unión entre la placa de soldadura y la placa de cromo de la barra Futura, como se muestra en la fig. 6

### Precaución

La temperatura no debe exceder los 200°C. Una entrada excesiva de calor puede producir agrietamiento y delaminación de las piezas.

Use instrumentos adecuados para controlar la temperatura.

No suelde continuamente, la soldadura continua puede causar deformaciones y exfoliación. Si es necesaria una soldadura periférica completa, vaya soldando en pasadas sucesivas

### Seguridad

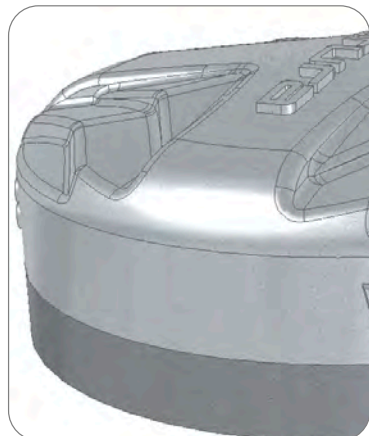
La seguridad de cualquier producto de montaje o herramienta de trabajo debe llevarse a cabo de conformidad con las normas de seguridad aplicables in situ, garantizar el uso de cascos aprobados, protección ocular, zapatos con punta de acero y guantes de protección.

Use siempre martillos blandos al realizar el trabajo como se describe en estas instrucciones



## FUTURA BUCKET

WEAR BUTTONS | WEAR BUTTONS



## Wear buttons: welding procedure

### Welding

- 1 Ensure the Futura wear button backing plate and matting metal surface is clean and flat.
- 2 Welding rod selection:  
Low hydrogen weld rods or gas covered cored wire is recommended.  
  
Gas shielded solid MIG wire Ø1,2mm. max Flux cored wire Ø1,6mm. max to ASTM/AWS A5.18 classification ER705-6  
Low hydrogen electrode Ø3,25 mm. max t ASTM/AWS A5.1 classification. E7016-1H8 or E7018-1H4.
- 3 Do not preheat the Futura wear buttons
- 4 Clamp and tack weld the Futura wear button into position
- 5 Stitch weld, laying 50mm. maximum length on each run, alternating ends or sides to minimize heat input.
- 6 Do not deposit weld within 2mm. from the joint line between Futura wear button and the steel backing plate, as shown in picture

### Caution

Temperature must not exceed 200°C. Excessive heat input may cause cracking and delamination. Use thermal crayons to monitor temperature. Do not weld continuously, continuous weld may cause warping, delamination, and cracking. If a complete peripheral weld is required, use stitch weld procedure.

### Product Safety

Any fitting or fabrication work should be carried out in accordance with applicable site safety standards, ensuring use of approved hard hats, eye protection, steel-toed shoes and protective gloves.

## Wear buttons: instrucciones soldadura

### Soldadura

- 1 Asegúrese de que la placas traseras (placas de soldadura) de los wear buttons están limpias.
- 2 Elección de las varillas de soldadura:  
Las varillas de bajo hidrógeno o "gas covered cored wire" son las más recomendables  
Gas shielded solid MIG wire Ø1,2mm. max Flux cored wire Ø1,6mm. max a ASTM/AWS A5.18 classification ER705-6  
Low hydrogen electrode Ø3,25 mm. max t ASTM/AWS A5.1 classification. E7016-1H8 ó E7018-1H4
- 3 No pre-calentar los wear buttons marca FUTURA
- 4 Coloque puntos de soldadura para asegurar que los wear buttons están en la posición deseada
- 5 Haga las puntadas de soldadura, no exceda de los 50mm. de longitud en cada pasada, vaya alternando los extremos y cambiando los lados para reducir al mínimo la entrada de calor.
- 6 Mantenga libre de soldadura (unos 2mm. por debajo) la línea de unión entre la placa de soldadura y la placa de cromo del wear button Futura, como se muestra en la imagen.

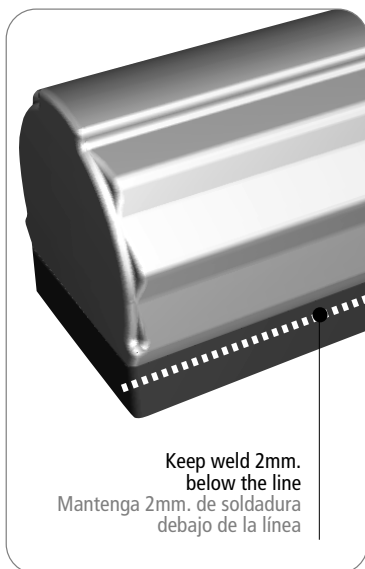
### Precaución

La temperatura no debe exceder los 200°C. Una entrada excesiva de calor puede producir agrietamiento y delaminación de las piezas. Use instrumentos adecuados para controlar la temperatura. No suelde continuamente, la soldadura continua puede causar deformaciones y exfoliación. Si es necesaria una soldadura periférica completa, vaya soldando en pasadas sucesivas

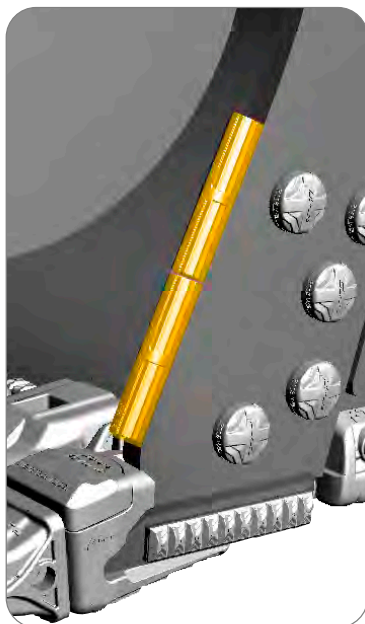
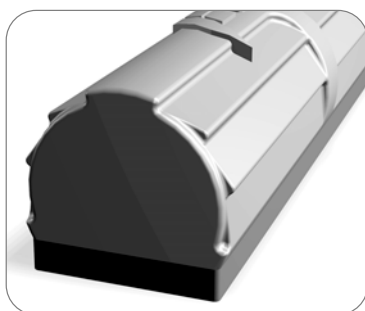
### Seguridad

La seguridad de cualquier producto de montaje o herramienta de trabajo debe llevarse a cabo de conformidad con las normas de seguridad aplicables in situ, garantizar el uso de cascos aprobados, protección ocular, zapatos con punta de acero y guantes de protección.





Keep weld 2mm. below the line  
Mantenga 2mm. de soldadura debajo de la línea



## Roll bars: welding procedure

### Welding

- 1 Ensure the Futura roll bar backing plate and matting metal surface is clean and flat.
- 2 Welding rod selection:  
Low hydrogen weld rods or gas covered cored wire is recommended.  
  
Gas shielded solid MIG wire Ø1,2mm. max Flux cored wire Ø1,6mm. max to ASTM/AWS A5.18 classification ER705-6  
Low hydrogen electrode Ø3,25 mm. max t ASTM/AWS A5.1 classification. E7016-1H8 or E7018-1H4.
- 3 Do not preheat the Futura roll bars.
- 4 Clamp and tack weld the Futura roll bar into position
- 5 Stitch weld, laying 50mm. maximum length on each run, alternating ends or sides to minimize heat input.
- 6 Do not deposit weld within 2mm. from the joint line between Futura roll bar and the steel backing plate, as shown in picture.

### Caution

Temperature must not exceed 200°C. Excessive heat input may cause cracking and delamination. Use thermal crayons to monitor temperature. Do not weld continuously, continuous weld may cause warping, delamination, and cracking. If a complete peripheral weld is required, use stitch weld procedure.

### Product Safety

Any fitting or fabrication work should be carried out in accordance with applicable site safety standards, ensuring use of approved hard hats, eye protection, steel-toed shoes and protective gloves.

## Roll bars: instrucciones soldadura

### Soldadura

- 1 Asegúrese de que las placas traseras (placas de soldadura) de las roll bar están limpias y planas.
- 2 Elección de las varillas de soldadura:  
Las varillas de bajo hidrógeno o "gas covered cored wire" son las más recomendables  
Gas shielded solid MIG wire Ø1,2mm. max Flux cored wire Ø1,6mm. max a ASTM/AWS A5.18 classification ER705-6  
Low hydrogen electrode Ø3,25 mm. max t ASTM/AWS A5.1 classification. E7016-1H8 ó E7018-1H4
- 3 No pre-calentar las roll bar marca FUTURA
- 4 Coloque puntos de soldadura para asegurar la roll bar FUTURA en la posición deseada
- 5 Haga las puntadas de soldadura, no exceda de los 50mm. de longitud en cada pasada, vaya alternando los extremos y cambiando los lados para reducir al mínimo la entrada de calor.
- 6 Mantenga libre de soldadura (unos 2mm. por debajo) la línea de unión entre la placa de soldadura y la placa de cromo de las roll bar Futura, como se muestra en la imagen.

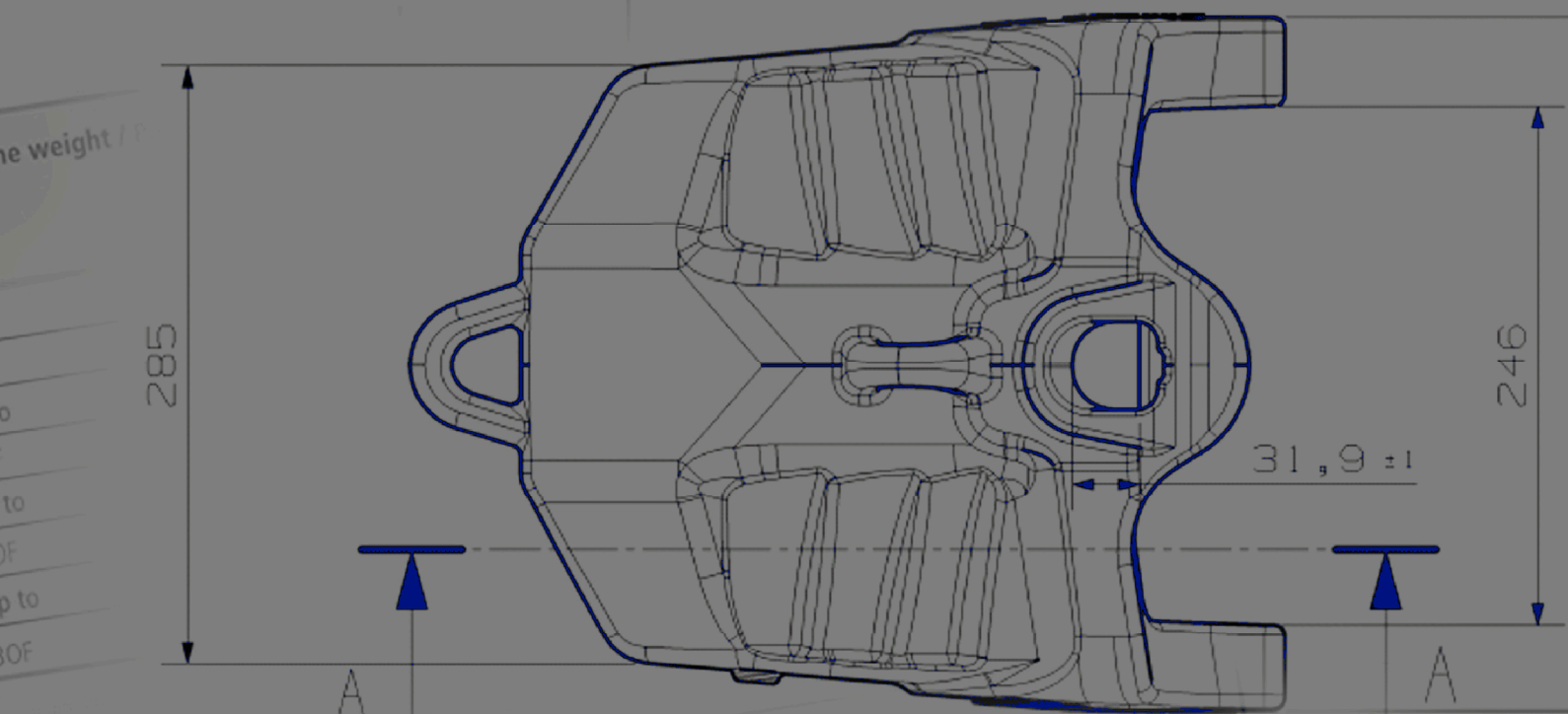
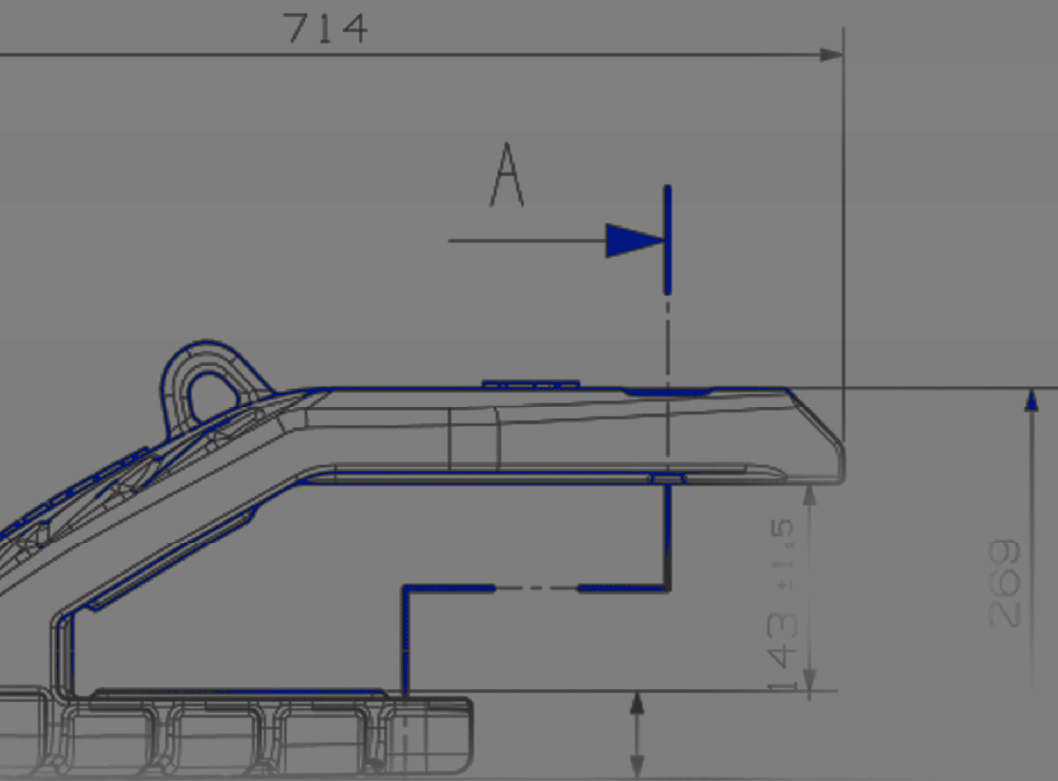
### Precaución

La temperatura no debe exceder los 200°C. Una entrada excesiva de calor puede producir agrietamiento y delaminación de las piezas.

Use instrumentos adecuados para controlar la temperatura. No suelde continuamente, la soldadura continua puede causar deformaciones y exfoliación. Si es necesaria una soldadura periférica completa, vaya soldando en pasadas sucesivas.

### Seguridad

La seguridad de cualquier producto de montaje o herramienta de trabajo debe llevarse a cabo de conformidad con las normas de seguridad aplicables in situ, garantizar el uso de cascos aprobados, protección ocular, zapatos con punta de acero y guantes de protección.

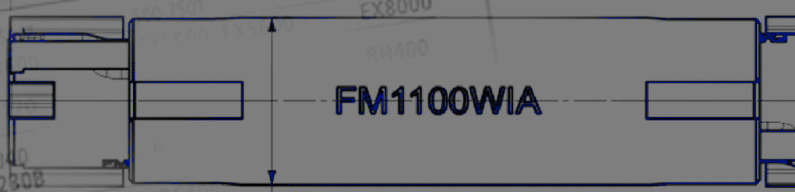


GUIDE / GUÍA PARA LA SELECCIÓN

Adapter / Adaptador Intermedio

Weight / Peso Maquina

950	1100	1300	1450
950	920	1120	1220
< 350T	350-450	450-750T	750-1000
EX3500, EX3500-3	EX3500-3	EX3500-3	EX8000
RH120E	RH120E	RH400	RH400
1020, 5230ME,	6040		
	5280B		



NOTE: On l