

# DRP Caterpillar

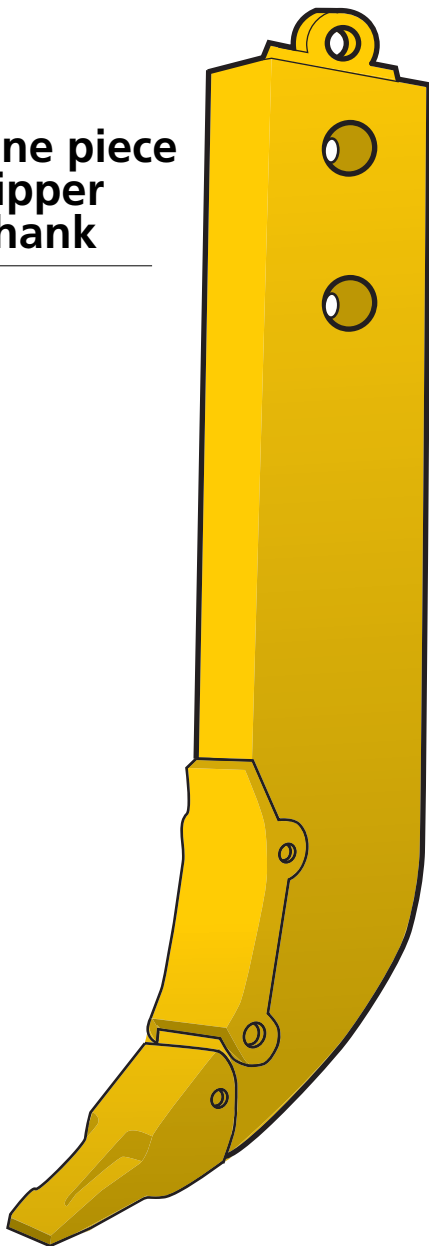
## Ripper Shanks

**Bold ref. number, product available**  
*Other ref. number please consult.*

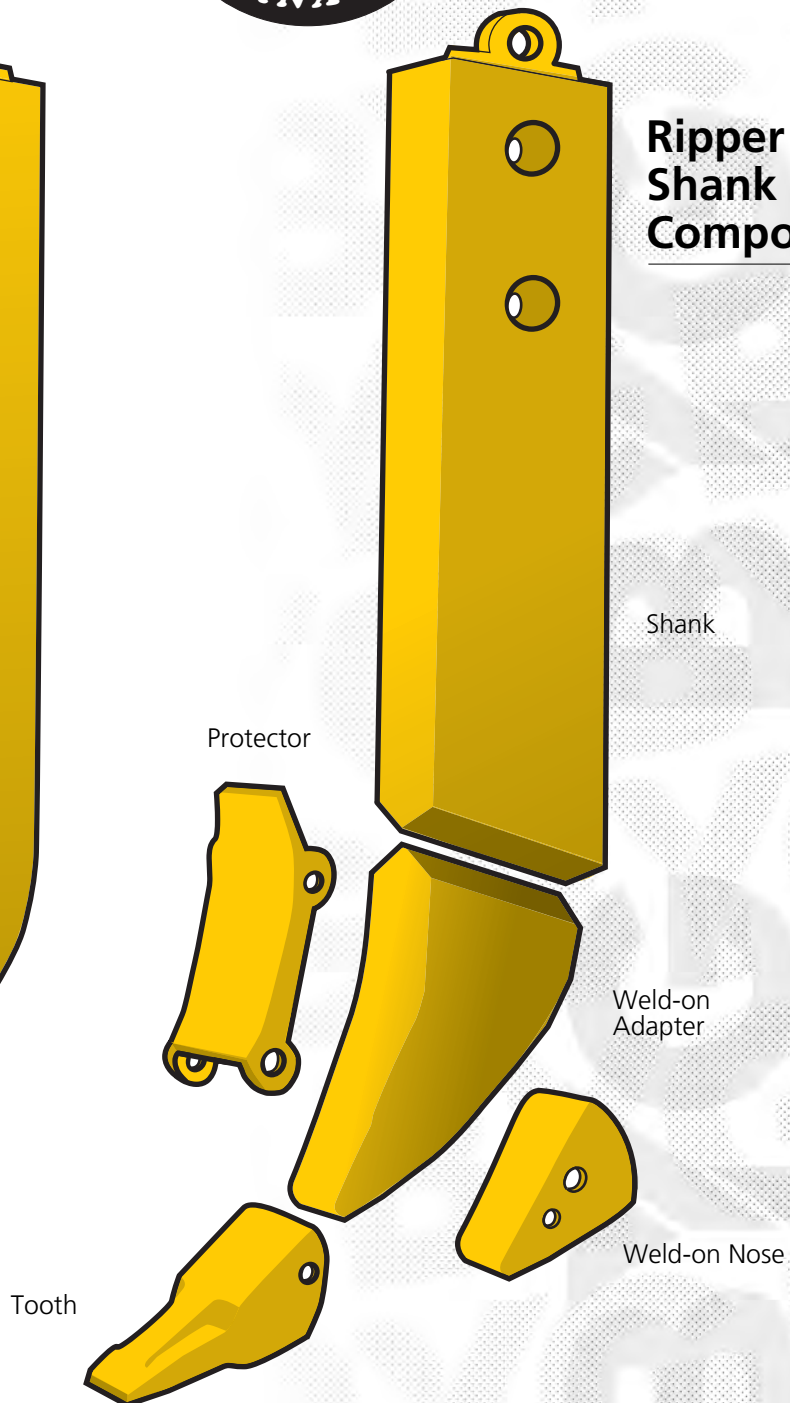
 **Futura Alternative**



One piece Ripper Shank



Ripper Shank Components





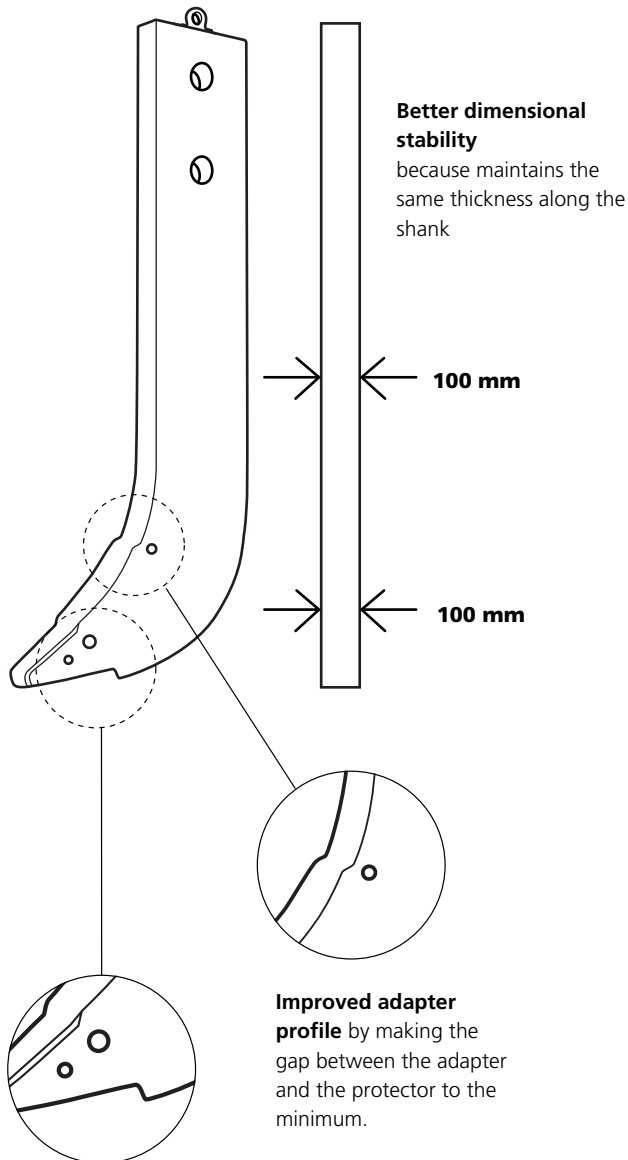
# Rippers

## Characteristics of BYG shanks

### Ripper Shanks

BYG one-piece ripper shanks are cut to length, formed and fully machined. Made of tough abrasion resistant alloy steel and thru-hardened for strength and maximum wear life.

BYG offers a complete range of shanks for main O.E.M. brands on the market, covering from the smallest ripper shank up to the largest 110 mm thick, for the biggest dozers on the market.



#### Improved design

Reinforced adapter box keeps ripper teeth movement to the minimum as well as protecting the rear area of the tip.

### One-piece machine finished Ripper Shanks, without any welding avoiding the risk of breakage on the welded areas

#### High toughness

Ripper toughness is very high even under difficult conditions, such as high rates of strain combined with low temperatures thanks to the most modern steel used in all our shanks.

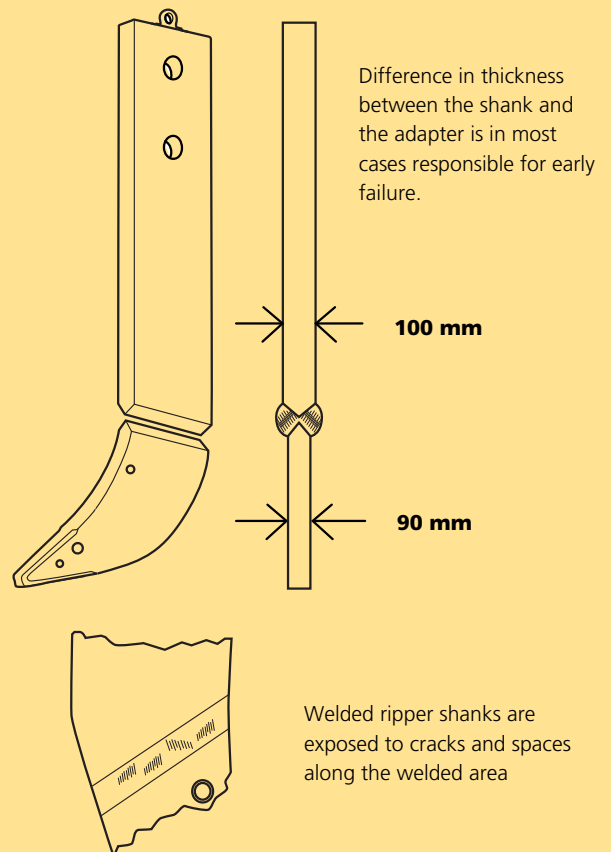
#### High strength

Due to its high strength, BYG shanks have better dimensional stability because they maintain the same thickness along the shank and thus sustain a smaller amount of permanent deformation.

### Competitors' Shanks

Fabricated Ripper Shanks made out of two pieces, shank and adapter, are welded together.

The shank is always thicker than the adapter making the bottom part of the shank (the most exposed section to impact), the weakest.





# Rippers

## Characteristics of BYG shanks

### Steel Technical Information

#### CHEMICAL COMPOSITION

(ladle analysis)

C	Si	Mn	P	S	B	Cr	Ni	Mo	CEV.
max	max	max	max	max	max	max	max	max	max
0,32	0,70	1,60	0,025	0,010	0,004	1,40	1,50	0,60	0,70

#### HARDNESS

HBW 370-430

#### MECHANICAL PROPERTIES

Typical values for 20 mm plate thickness

Yield Strength	Tensile Strength	Elongation	
R <sub>e</sub> N/mm	R <sub>m</sub> N/mm	A <sub>5</sub> %	A <sub>50</sub> %
1000	1250	10	16

#### IMPACT PROPERTIES

Testing Temperature °C	Impact energy
-40 (-40°F)	Charpy-V, longitudinal 45J

### Steelmaking and Casting

Ore-based metallurgy and modern continuous casting produce high-quality slabs with precise chemical composition and with very low levels of residual elements. This lays the foundation for a good end product.

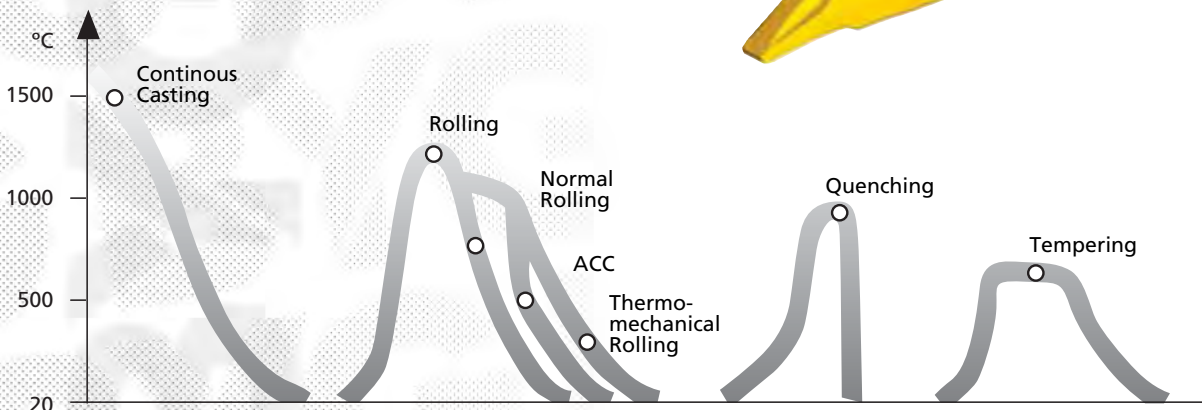
### Selected Rolling Sequence

The slabs are heated uniformly to 1200°C to enable them to be rolled in a four-high mill. They are rolled accurately to the specified thickness and to the microstructure which is best suited to the subsequent cooling process.

### Quenching and Tempering

Plates are quenched and tempered. This involves cooling the plate quickly from 900° to room temperature by intensive spraying with water in a roller quenching equipment.

After being tempered at 580°-650°C, plate acquires uniformly high strength, excellent toughness and good weldability, machinability and workability. Due to the effective water quenching by Accelerated Continuous Cooling in the roller quenching equipment, we can minimize the content of alloying elements.





# Codification of non OEM Ripper Shanks

The reference number of the shanks is composed of 5 blocks of characters. Each block indicates a characteristic of the shank.

**A BB CC DDD EEEE**  
(12 characters without blank spaces)

**A**

The first block (one character) indicates the type of part.

- R COMPLETE RIPPER SHANK
- Z SHANK

Example:

**R \*\* \*\* \*\* \***

**BB**

The second block (2 characters) indicates the quality of the part (Brinell scale), as shown.

- 40 400 Brinell
- 45 450 Brinell
- NX HIGH YIELD STRENGTH

Example:

**R 40 \*\* \*\* \*\* \***

**CC**

The third block (2 digits) indicates the shank thickness. The digits correspond exactly to the thickness (millimeters) with the exception of: 100mm, 110mm and 120mm thickness, as shown in the following list:

- 35 35mm. thickness (450 Brinell)
- 40 40mm. thickness (450 Brinell)
- 45 45mm. thickness (450 Brinell)
- 50 50mm. thickness (450 Brinell)
- 60 60mm. thickness (450 Brinell)
- 63 63mm. thickness (450 Brinell)
- 75 75mm. thickness (400 Brinell)
- 80 80mm. thickness (400 Brinell)
- 90 90mm. thickness (400 Brinell)
- 00 100mm. thickness (400 Brinell)
- 01 110mm. thickness (High Yield Strength)
- 02 120mm. thickness (High Yield Strength)

Example:

**R 40 75 \*\*\* \*\*\*\***

**DDD**

This block (3 digits) indicates the width of the shank, in millimeters.

Example:

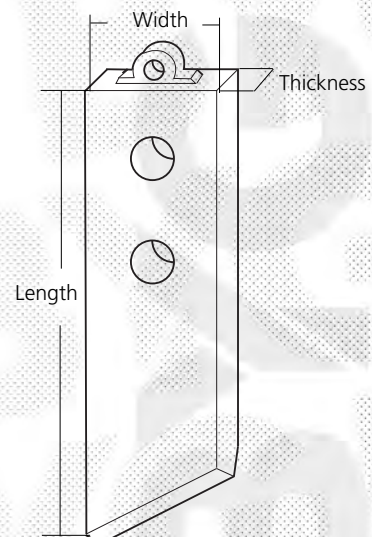
**R 40 75 305 \*\*\*\***

**EEEE**

The last block (4 digits) indicates the length (in millimeters) of the shank, always in multiples of 50mm.

Example:

**R 40 75 305 1650**



Reference example (12 characters without blank spaces)

**R40753051650**

R	40	75	305	1650
Type	Quality	Thickness	Width	Length

Customer should supply reference of teeth and protector to fit shank, number of holes and diameter of holes.



# Rippers

## What you need to know

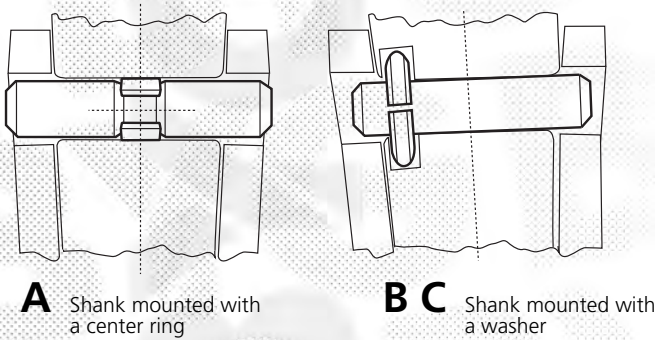
### Components

When a ripper breaks for the first time Caterpillar sells, depending on where the breakage has taken place, an adapter or a nose to repair it.

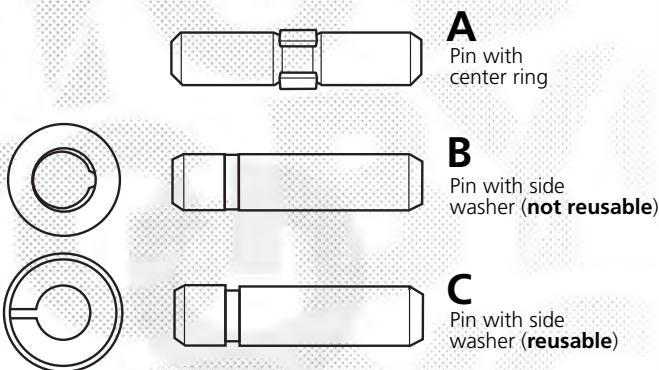


### Mounting systems

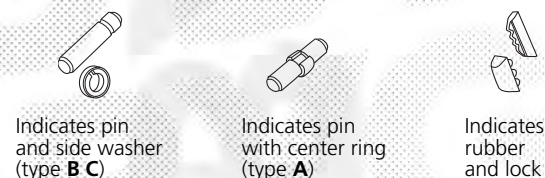
As you can see in our Ripper Catalogue in most cases the new pins of the shanks are different from the old ones. This is due to the fact that the old Caterpillar pins have a center ring and the modern ones are assembled with a washer.



In order to improve the assembly of the shanks Caterpillar changed from the A type pin (with a center ring) to the B type pin (not reusable with side washer) and the C type pin (reusable with side washer)



### Pin and washer reference numbers



### What a Caterpillar reference tells us

Behind each numeric reference Caterpillar uses different characters and numbers to indicate the type of shank, as follows:

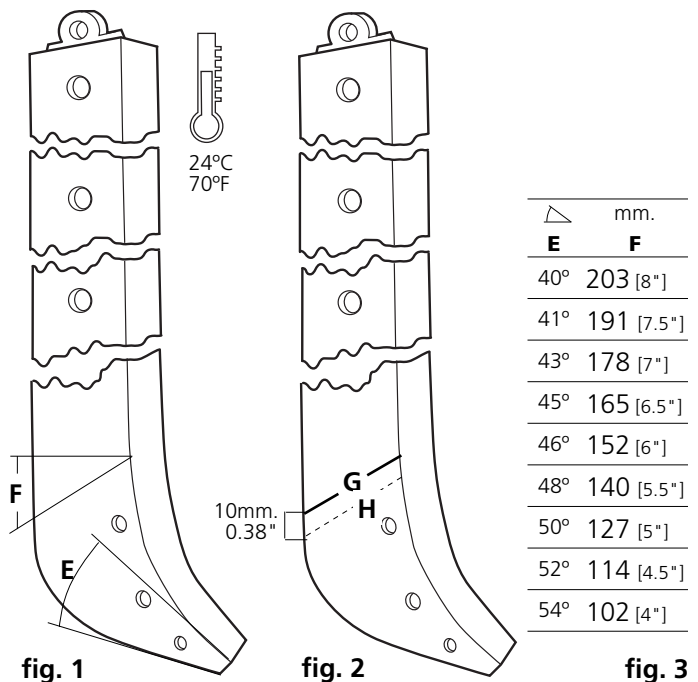
- S1** STRAIGHT shank with **one** hole
- S2** STRAIGHT shank with **two** holes
- C1** CURVED shank
- SS** SINGLE shank ripper
- MS** MULTIPLE shank ripper
- DR** DEEP RIPPING shank

### How to repair a ripper shank

**1** When a breakage takes place prior to the assembly keep the shank and the new adapter in a room where the temperature is at least 24°C (75° F). This way the center of the shank will reach a temperature of 21°C (70° F).

**2** If the shank is cut according to the proportions of the adapter indicated below (fig. 3), the angle of the shank (E, fig. 1) will be approximately the same as the original shank. The table below (fig. 3) shows the angles of the shank for different dimensions (F, fig. 1) which are the difference between the front and rear cuts of the shanks.

**EXAMPLE:** Make mark G (fig. 2) according to the dimensions indicated on the table below (fig. 3), make the desired changes for a different shank angle, make a parallel mark H 10 mm. (0.38") lower than G (fig.2).



# Rippers

## What you need to know

**3** Heat the area around marks **G** and **H** (fig. 4) until they have reached at least 149° C (300° F). Cut the shank across mark **H**, this way the shank will be heated evenly around the area of **G** preventing the formation of small cracks. Cut the shank across mark **G** (fig. 5) and eliminate the slag.

**4** With the help of a bracket or a metal strap fix the adapter to the ripper shank. Adjust the position of the adapter until the front border is in line with the rear border of the shank (fig. 6). Heat both pieces to 149° C (300° F) at least at 76 mm (3") at both sides of the junction of the two pieces.

**5** Make the first weldings with an AWS E-110-18,50 (.19" O) electrode. Start the first welding string and weld from the external border to the center of the shank. Make sure that all passes go around the external border of the shank. This will prevent from cracks in the welding near the border of the shank. Always eliminate the slag after each pass.

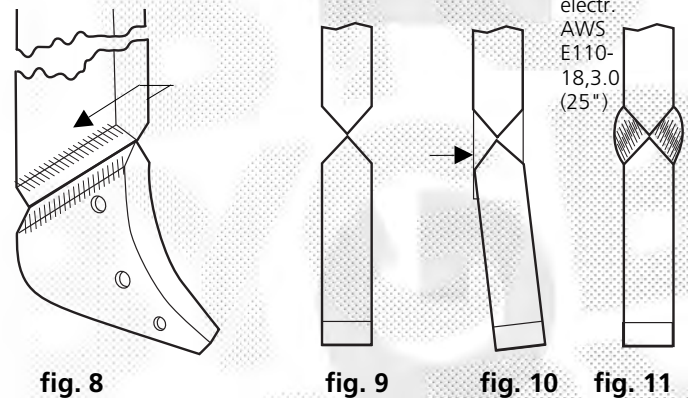
**6** Make a second pass on the first one (fig. 7). Turn the ripper around and grind the junction until you can see the base of the first pass.

**NOTE:** Make sure that the welding temperature is between 149°-232°C (300°- 450° F)

**7** Make two passes on this side, then a third pass on the first side.

**ATTENTION:** The temperature of the welded area must not exceed 232°C (450°F) at any moment. The temperature of the material around the junction will go up even after having made a pass.

**8** Make all other welding string with an AWS E-110-18,6.30 (.25") electrode. Make a string on one side and another one on the other side (fig. 8). Verify that the shank and the adapter are in line between each welding string (fig. 9). If the two pieces are not in line make one or two strings on the opposite side in the direction of the move of the adapter (fig. 10). Add weld until the welded area is higher than the surface of the shank and the adapter (fig. 11).

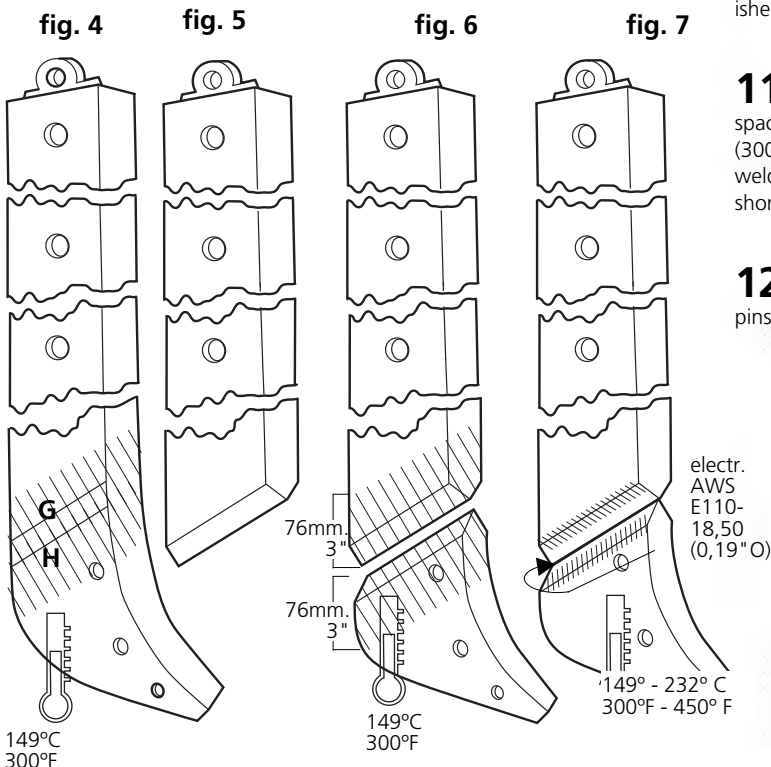
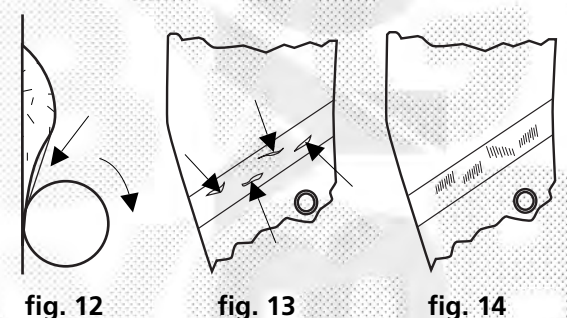


**9** If the border of the adapter is not in line with the shank, heat this area between 140°-232°C (300°-450° F). Fill in the space with more weld as indicated above. Make each welding string parallel lengthwise to the shank. Make sufficient welding strings to avoid any crack after grinding. Eliminate any slag after each string. Make the last string so that the surface is as smooth as possible.

**10** Grind all welding areas until they are even. When grinding always grind in a direction parallel with the length of the shank (fig. 12). Grinding across the shank will leave notches that could cause a failure of the welded area. Use a medium to a fine grinding tool for the finished surface.

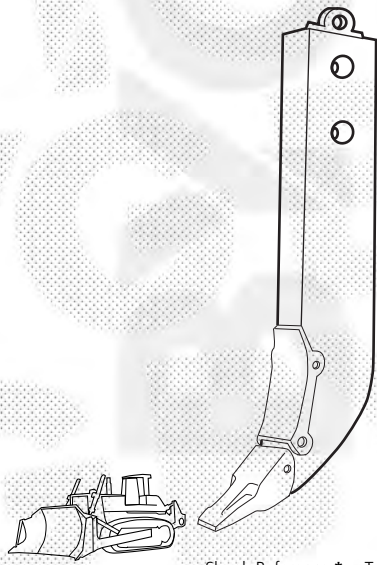
**11** Inspect the surface of the welded area. If there are any cracks or spaces (fig. 13), grind the area around the crack or space. Heat 149° C (300° F) and fill the area with more weld (fig. 14). Grind off the extra weld material. Uneven welded surfaces may cause a failure within short.

**12** Assemble the protector and the ripper point. The assembly of the pins should be done one by one.

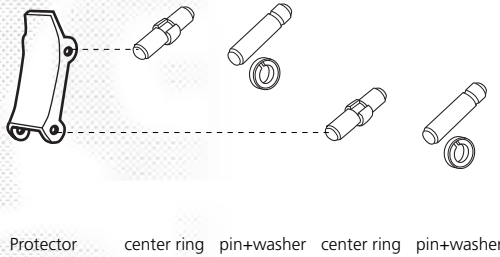




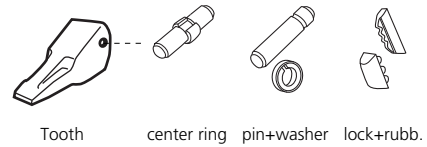
Complete Ripper Shank



Shank Reference \* Type



Protector center ring pin+washer center ring pin+washer



Tooth center ring pin+washer lock+rubb.

D3, 931, 933, 939, D4C, 135-H, 120-H	<b>8J-5299</b>	S1								1U-3209 1U-3201 9W-8209 1U-3202	8E-6208 8E-6209	⇒
943, 953	<b>1U-1257</b>	C1								9J-4259 1U-3251 1U-3252 TL	8E-6258 8E-6259	⇒
D4, 941, 951, 955, 963, 12, 14, 130, 140, 143H, 160H	<b>5K-1428</b> <b>6Y-0865</b> <b>9J-8913</b> <b>9J-6586</b>	S1 C1 C1 S1								7K-0037	4K-0043 5K-1426	⇒
16, 973, 977, D5, D6	<b>5K-0245</b> <b>9J-8923</b> <b>9J-3139</b> <b>8J-3215</b>	S1 C1 S1 S2								7K-0038	4K-0032 5K-1425	⇒
D7	<b>9W-7382</b>	S1								4T-4352 6Y-0359	8E-6358 1U-2405	⇒
983	<b>7J-6671</b>	S1								4T-4352 6Y-0359	8E-6358 1U-2405	⇒
D7, D8, D9	<b>7J-2514</b> <b>7J-2515</b> <b>7J-2459</b>	SS MS DR	7J-2352* 7J-2351*	7J-9600	6J-8811					7J-3309 7J-3310 7J-3312	7J-9600	⇒
D8K	<b>7J-1792</b> <b>7J-1793</b> <b>7J-1795</b> <b>107-3485</b> <b>107-3486</b> <b>8E-5346</b>	SS DR MS SS MS DR	6J-8814 / 132-4716	7J-9600	6J-8811					9W-2451 9W-2452 9W-2452 ST 8E-5570 114-0453	7J-9600	⇒
	<b>4T-0135</b> <b>4T-0134</b> <b>4T-0136</b>	SS DR MS	6J-8814 / 132-4716	7J-9600	6J-8811					9W-2451 9W-2452 9W-2452 ST 8E-5570 114-0453	7J-9600	⇒
D8L	<b>8E-5342</b> <b>8E-5340</b> <b>8E-5341</b>	SS DR MS	8E-1848	6Y-3394 8E-4743	6Y-3394 8E-4743					4T-5451 4T-5452 8E-5571	6Y-3394 8E-4743	⇒

7J-2352\* Piece belonging to one of the two pieces the ripper  
7J-2351\* protector of D7, D8, D9 is composed of

132-4716 This is the protector 6J-8814 with an extension of  
the arm for major protection to the Ripper Shank

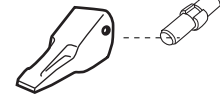
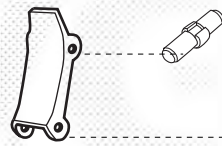
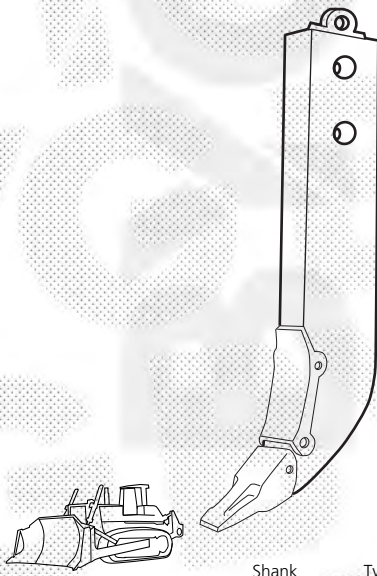


## Repair Components of the Shank



								D3, 931, 933, 939, D4C, 135-H, 120-H
								943, 953
					8E-7300		9J-6583 1U-2405	D4, 941, 951, 955, 963, 12, 14, 130, 140, 143H, 160H
					8E-7350		8E-6358 1U-2405	16, 973, 977, D5, D6
					8E-7350		8E-6358 1U-2405	D7
					8E-7350		8E-6358 1U-2405	983
<b>Z4075299****</b>	7J-2588	7J-9600	6J-8811	6J-8811	-			D7, D8, D9
<b>Z40903561550</b>								
<b>Z40903562100</b>	7J-1791	7J-9600	6J-8811	7J-9600	4T-9776	7J-9600		
<b>Z40753300900</b>	/				/			D8K
<b>Z40903561550</b>								
<b>Z40903562100</b>	8E-8418		6Y-3394 8E-4743	6Y-3394 8E-4743	6Y-3394 8E-4743	9U-9694	6Y-3394 8E-4743	
<b>Z40753301050</b>								
<b>Z40753301350</b>	7J-1791	7J-9600	6J-8811	7J-9600	4T-9776	7J-9600		
<b>Z40753301900</b>	/				/			
<b>Z40753300900</b>	8E-8418		6Y-3394 8E-4743	6Y-3394 8E-4743	6Y-3394 8E-4743	9U-9694	6Y-3394 8E-4743	D8L
<b>Z40753301350</b>	7J-1791	7J-9600	6J-8811	7J-9600	4T-9776	7J-9600		
<b>Z40753301900</b>	/				/			
<b>Z40753300900</b>	8E-8418		6Y-3394 8E-4743	6Y-3394 8E-4743	6Y-3394 8E-4743	9U-9694	6Y-3394 8E-4743	

Complete Ripper Shank



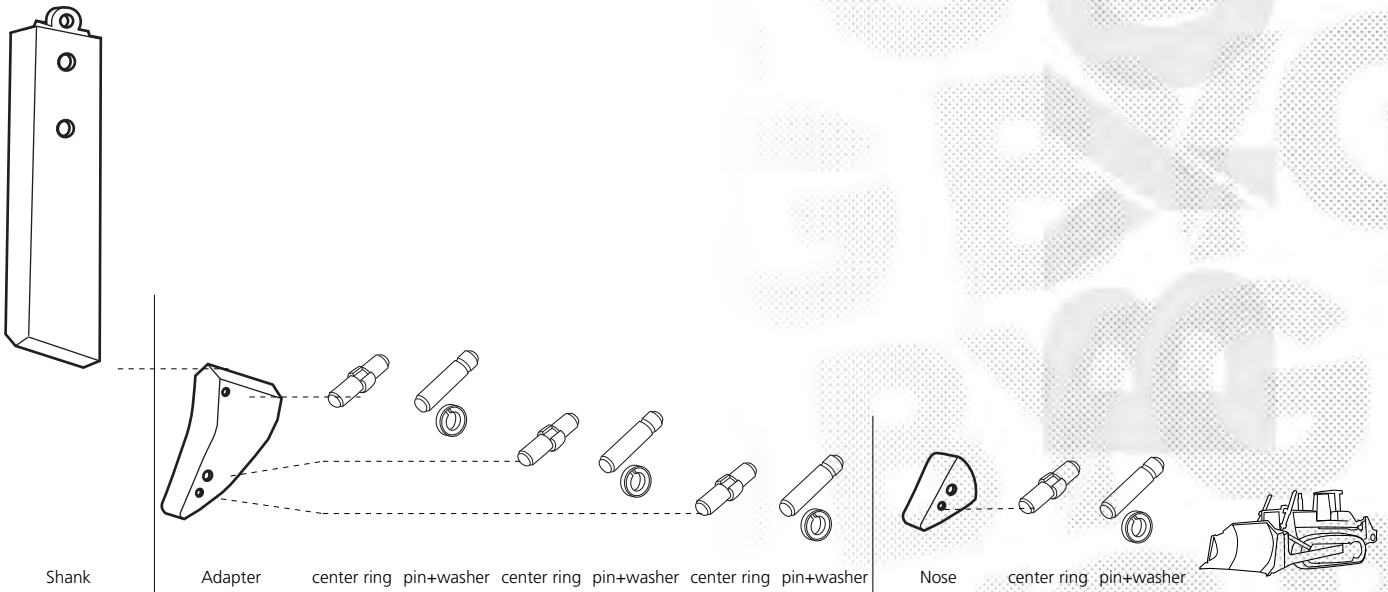
	Shank	Type	Protector	center ring	pin+washer	center ring	pin+washer	Tooth	center ring	pin+washer
D8N	<b>4T-8989</b>	SS	6J-8814					9W-2451		
	<b>4T-0134</b>	DR	/	7J-9600		6J-8811		9W-2452	7J-9600	
	<b>4T-8990</b>	MS	132-4716					9W-2452 ST		
	<b>8E-5347</b>	SS				6Y-3394	6Y-3394	8E-5570		6Y-3394
	<b>8E-5340</b>	DR	8E-1848			8E-4743	8E-4743	114-0453		8E-4743
	<b>8E-5346</b>	MS						4T-5451		
D9H	<b>7J-1792</b>	SS	6J-8814					9W-2451		
	<b>7J-1793</b>	DR	/	7J-9600		6J-8811		9W-2452	7J-9600	
	<b>7J-1794</b>	MS	132-4716					9W-2452 ST		
	<b>107-3485</b>	SS				6Y-3394	6Y-3394	8E-5570		6Y-3394
	<b>107-3486</b>	DR	8E-1848			8E-4743	8E-4743	114-0453		8E-4743
	<b>8E-5345</b>	MS						4T-5451		
D9L	<b>3G-2088</b>	SS	1U-3644**			3G-0500				3G-0500
	<b>9W-4427</b>	DR	/					4T-4501		
	<b>9J-5954</b>	MS	6Y-9704***	8J-4889		3G-0500		4T-4502	3G-0500	
	<b>6Y-6138</b>	SS						4T-4502 ST		
	<b>6Y-6144</b>	DR	9W-8365	3G-0500		3G-0500		4T-4503	3G-0500	
	<b>6Y-6141</b>	MS	/					4T-5501		
	<b>8E-8414</b>	SS				6Y-3909	6Y-3909	4T-5502		6Y-3909
	<b>8E-8416</b>	DR	9W-8365 EXT			4T-4707	4T-4707	8E-5572		4T-4707
D9N	<b>9W-6167</b>	SS	6J-8814					9W-2451		
	<b>4T-8988</b>	DR	/	7J-9600		6J-8811		9W-2452	7J-9600	
	<b>4T-8990</b>	MS	132-4716					9W-2452 ST		
	<b>8E-5339</b>	SS				6Y-3394	6Y-3394	8E-5570		6Y-3394
	<b>8E-5348</b>	DR	8E-1848			8E-4743	8E-4743	114-0453		8E-4743
	<b>8E-5346</b>	MS						4T-5451		
D10	<b>3G-5707</b>	SS	3G-9594**			3G-0500				3G-0500
	<b>3G-6507</b>	MS								
	<b>1V-4592</b>	SS	1U-3644**			3G-0500		4T-4501	3G-0500	
	<b>1U-4873</b>	MS	6Y-9704***	8J-4889		3G-0500		4T-4502	3G-0500	
	<b>6Y-4679</b>	MS	6Y-8960	3G-0500		3G-0500		4T-4502 ST		
	<b>6Y-5616</b>	MS	6Y-8960 EXT					4T-4503	3G-0500	
	<b>8E-8412</b>	SS	6Y-8960			6Y-3909	6Y-3909	4T-5501		6Y-3909
	<b>8E-8413</b>	MS	6Y-8960 EXT			4T-4707	4T-4707	4T-5502		4T-4707
								8E-5572		

132-4716  
 9W-8365 EXT Protector 6J-8814, 9W-8365 and 6Y-8960 with an extension of the arm for major protection of the Ripper shank  
 6Y-8960 EXT

1U-3644\*\*  
 3G-9594\*\*  
 Protectors with one hole

6Y-9704\*\*\*  
 Protectors with one hole and an insert

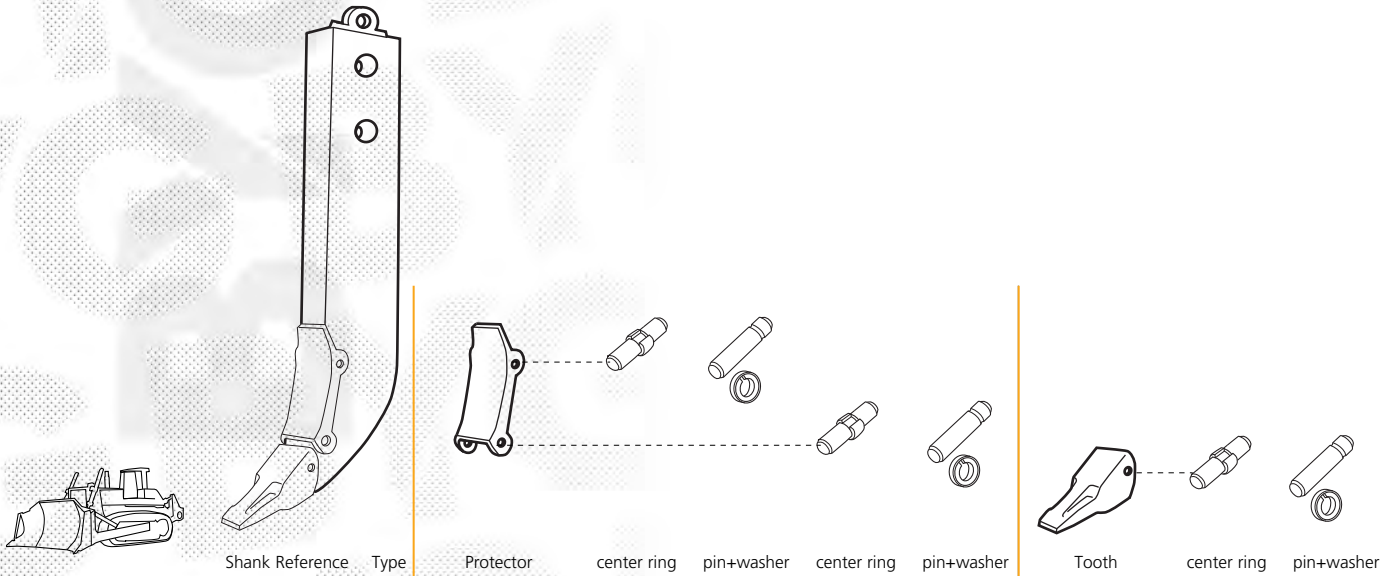
# Repair Components of the Shank



Shank	Adapter	center ring	pin+washer	center ring	pin+washer	center ring	pin+washer	Nose	center ring	pin+washer	
<b>Z40753301450</b>											
<b>Z40753301900</b>	7J-1791	7J-9600		6J-8811		7J-9600		4T-9776	7J-9600		
<b>Z40753301050</b>	/							/			D8N
<b>Z40753301450</b>											
<b>Z40753301900</b>	8E-8418		6Y-3394	8E-4743	6Y-3394	8E-4743	6Y-3394	8E-4743	9U-9694	6Y-3394	8E-4743
<b>Z40753301050</b>											
<b>Z40903561550</b>											
<b>Z40903562100</b>	7J-1791	7J-9600		6J-8811		7J-9600		4T-9776	7J-9600		
<b>Z40753301200</b>	/							/			D9H
<b>Z40753301550</b>											
<b>Z40753302100</b>	8E-8418		6Y-3394	8E-4743	6Y-3394	8E-4743	6Y-3394	8E-4743	9U-9694	6Y-3394	8E-4743
<b>Z40753301200</b>											
<b>Z40903561750</b>	1U-3630	8J-4889		3G-0500		3G-0500		4T-5819	3G-0500		
<b>Z40903562250</b>								/			
<b>Z40903561250</b>	1U-3630	8J-4889		3G-0500		3G-0500		103-8114		6Y-3909	4T-4707
<b>Z40903561600</b>	9W-9695										
<b>Z40903562100</b>	9W-9695 EXT	3G-0500		3G-0500		3G-0500		9W-9695P	3G-0500		D9L
<b>Z40903561100</b>	/							/			
<b>Z40903561100</b>	103-8115		6Y-3909		6Y-3909		6Y-3909			6Y-3909	
<b>Z40903562100</b>	103-8115 EXT		4T-4707		4T-4707		4T-4707	107-3361		4T-4707	
<b>Z40903561100</b>											
<b>Z40753301750</b>											
<b>Z40753302200</b>	7J-1791	7J-9600		6J-8811		7J-9600		4T-9776	7J-9600		
<b>Z40753301050</b>	/							/			D9N
<b>Z40753301750</b>											
<b>Z40753302200</b>	8E-8418		6Y-3394	8E-4743	6Y-3394	8E-4743	6Y-3394	8E-4743	9U-9694	6Y-3394	8E-4743
<b>Z40753301050</b>											
	3G-5707			3G-0500		3G-0500		4T-5819	3G-0500		
	3G-6507							/			
<b>Z40004002250</b>	1U-3630									6Y-3909	
<b>Z40004001400</b>		8J-4889		3G-0500		3G-0500		103-8114		4T-4707	
<b>Z40004002100</b>	9W-9695										D10
<b>Z40004001250</b>	9W-9695 EXT	3G-0500		3G-0500		3G-0500		9W-9695P	3G-0500		
	/							/			
<b>Z40004002050</b>	103-8115		6Y-3909		6Y-3909		6Y-3909			6Y-3909	
<b>Z40004001250</b>	103-8115 EXT		4T-4707		4T-4707		4T-4707	107-3361		4T-4707	



Complete Ripper Shank



	Shank Reference	Type	Protector	center ring	pin+washer	center ring	pin+washer	Tooth	center ring	pin+washer
D10N	<b>6Y-6138</b>	SS	1U-3644**			3G-0500		4T-4501	3G-0500	
	<b>9W-4427</b>	DR	/					4T-4502		
	<b>9J-5954</b>	MS	6Y-9704**	8J-4889		3G-0500		4T-4502 ST	3G-0500	
	<b>9W-8366</b>	SS						4T-4503		
	<b>6Y-6147</b>	DR	9W-8365	3G-0500		3G-0500		4T-5501	3G-0500	
	<b>6Y-6141</b>	MS	/					4T-5502		
	<b>8E-8411</b>	SS						8E-5572		
	<b>8E-8417</b>	DR	9W-8365 EXT		6Y-3909	6Y-3909	4T-5503		6Y-3909	
	<b>8E-8415</b>	MS			4T-4707	4T-4707			4T-4707	
D11, D11N	<b>3G-6507</b>	MS	3G-9594**			3G-0500		4T-4501	3G-0500	
								4T-4502		
	<b>1U-4873</b>	MS	6Y-9704***	8J-4889		3G-0500		4T-4502 ST	3G-0500	
								4T-4503		
	<b>6Y-5616</b>	MS	6Y-8960	3G-0500		3G-0500		4T-5501	3G-0500	
			/					4T-5502		
	<b>8E-8413</b>	MS	6Y-8960 EXT		6Y-3909	6Y-3909	8E-5572		6Y-3909	
					4T-4707	4T-4707	4T-5503		4T-4707	
	<b>7T-6020</b>	SS	9N-4621	9W-1821		9W-1821		9W-4551	9W-1821	
	<b>9W-0259</b>	DR						9W-4552		
	<b>8E-0467</b>	SS	9N-4621		8E-2229	8E-2229	6Y-3552		8E-2229	
	<b>8E-1466</b>	DR			8E-2230	8E-2230			8E-2230	

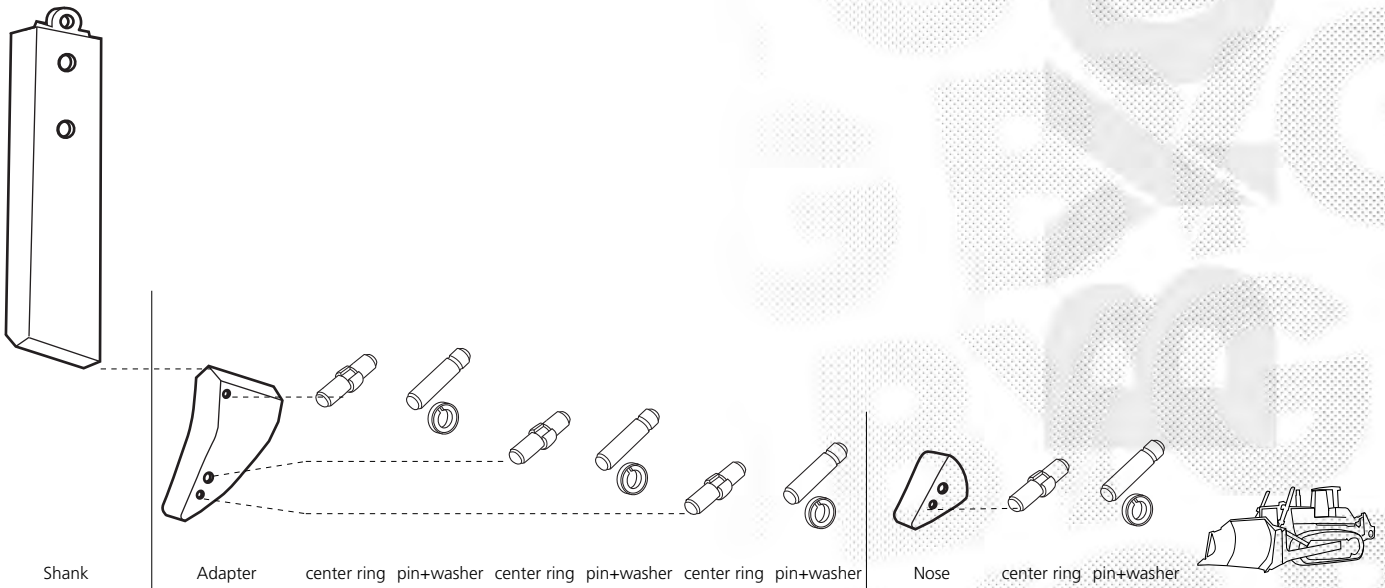
9W-8365 EXT  
6Y-8960 EXT

Protector 6J-8814, 9W-8365 and 6Y-8960 with an extension of the arm for major protection of the Ripper shank

1U-3644\*\*  
3G-9594\*\*  
Protectors with one hole

6Y-9704\*\*\*  
Protectors of a hole and an insert

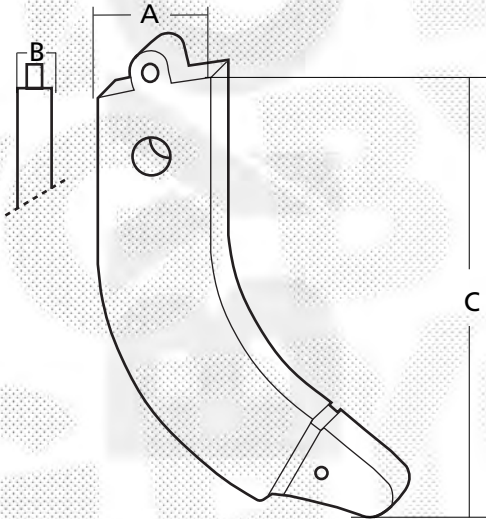
# Repair Components of the Shank



Part Number	Shank	Adapter	center ring	pin+washer	center ring	pin+washer	center ring	pin+washer	Nose	center ring	pin+washer	Model
<b>Z40903561600</b>									4T-5819	3G-500		
<b>Z40903562250</b>		1U-3630	8J-4889	3G-0500	3G-0500				/			
<b>Z40903561250</b>									103-8114			6Y-3909 4T-4707
<b>Z40903801750</b>		9W-9695	3G-0500	3G-0500	3G-0500				9W-9695P	3G-500		D10N
<b>Z40903802100</b>		9W-9695 EXT							/			
<b>Z40903561100</b>		/							/			
<b>Z40903801750</b>		103-8115		6Y-3909	6Y-3909	6Y-3909	6Y-3909		107-3361			6Y-3909
<b>Z40903802250</b>		103-8115 EXT		4T-4707	4T-4707	4T-4707	4T-4707					4T-4707
<b>Z40903561100</b>												
-		1U-3630		3G-0500	3G-0500				103-8114			6Y-3909 4T-4707
<b>Z40004001400</b>		1U-3630	8J-4889	3G-0500	3G-0500				103-8114			6Y-3909 4T-4707
<b>Z40004001250</b>		9W-9695 9W-9695 EXT	3G-0500	3G-0500	3G-0500				9W-9695P	3G-500		
<b>Z40004001250</b>		/							/			
<b>Z40004001250</b>		103-8115 103-8115 EXT		6Y-3909 4T-4707	6Y-3909 4T-4707	6Y-3909 4T-4707	6Y-3909 4T-4707		107-3361			6Y-3909 4T-4707
<b>Z40014501550</b>		6Y-9473	9W-1821	9W-1821	9W-1821							
<b>Z40014502100</b>		6Y-9473 EXT										
<b>Z40014501550</b>		/										
<b>Z40014501550</b>		104-9279		8E-2229	8E-2229	8E-2229	8E-2229					
<b>Z40014501650</b>		104-9279 EXT		8E-2230	8E-2230	8E-2230	8E-2230					

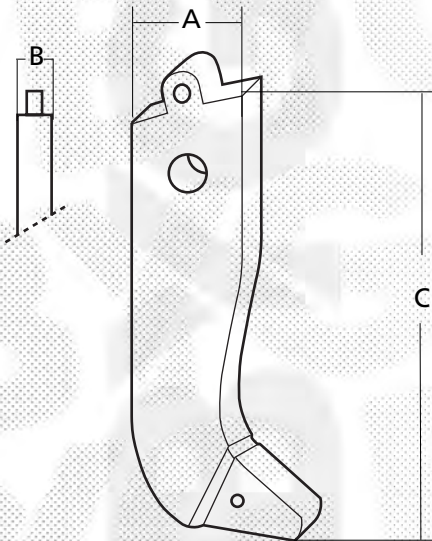
EXT - Extended adapter to support the two protector pins

## Small Ripper Shanks: Type C1



Machine Model	Part Number	mm		
		A	B	C
943, 953	<b>1U-1257</b>	112 4,41"	50 1,97"	500 19,69"
D4, 941, 951, 955, 963, 12, 14, 130, 140, 143H, 160H	<b>6Y-0865</b>	140 5,51"	60 2,36"	478 18,82"
	<b>9J-8913</b>	140 5,51"	60 2,36"	508 20,00"
12, 14, 130, 140,	<b>9J-8923</b>	178 7,01"	75 2,95"	673 26,50"

## Small Ripper Shanks: Type S1

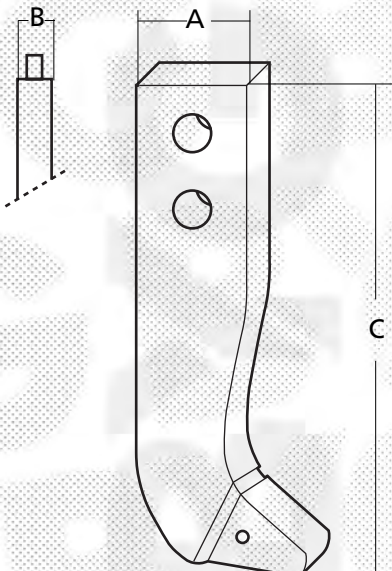


Machine Model	Part Number	mm		
		A	B	C
D3, 931, 933, 939, D4C, 135H, 120H	<b>8J-5299</b>	75 2,95"	35 1,38"	438 17,24"
D4, 941, 951, 955, 963, 12, 14, 130, 140, 143H, 160H	<b>9J-6586</b>	140 5,51"	60 2,36"	530 20,87"
	5K-1428*	-	-	-
16, 973, 977, D5, D6	<b>9J-3139</b>	176 6,93"	75 2,95"	711 27,99"
	5K-0245**	-	-	-
D7	<b>9W-7382</b>	229 9,02"	75 2,95"	1238 48,74"
983	<b>7J-6671</b>	178 7,01"	75 2,95"	672 26,46"

5K-1428\* Could be replaced by ref. 9J-6586 S1.

5K-0245\*\* Could be replaced by ref. 9J-3139 S1.

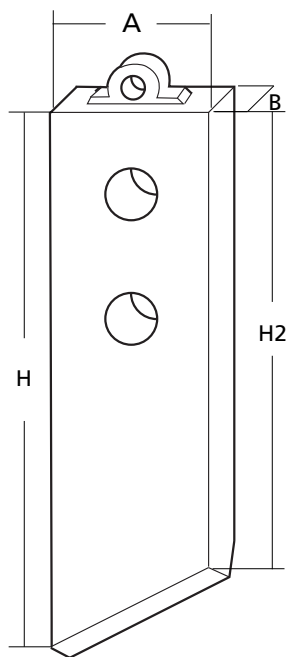
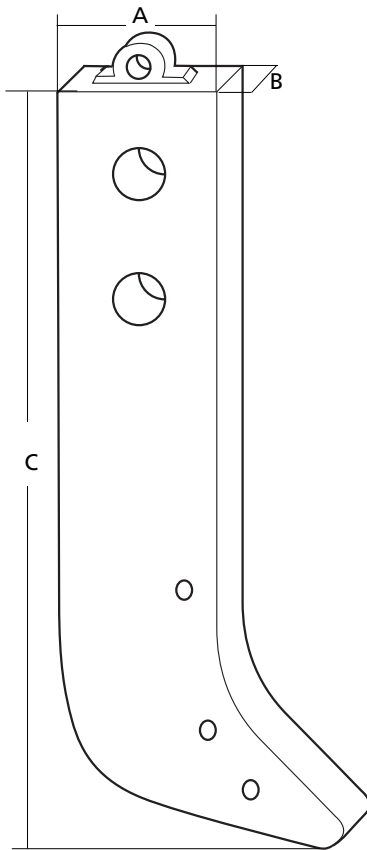
## Small Ripper Shanks: Type S2



Machine Model	Part Number	mm		
		A	B	C
16, 973, 977, D5, D6	<b>8J-3215</b>	176 6,93"	75 2,95"	850 33,46"



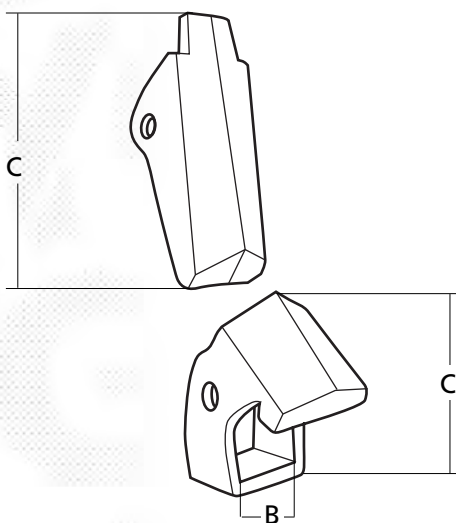
# Ripper Shanks & Shanks' Arms



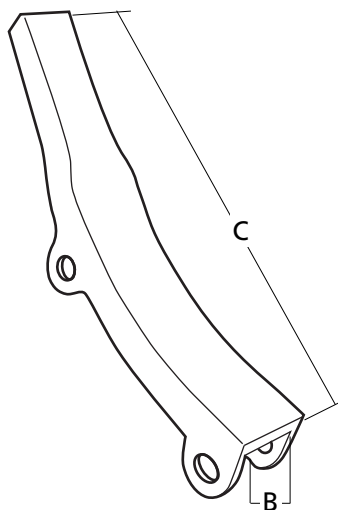
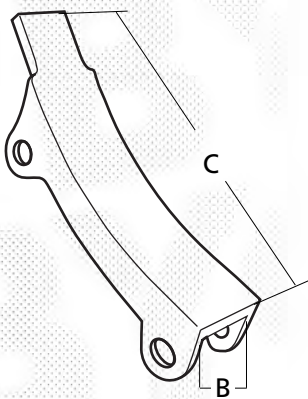
H2 - According to customer's specifications

			mm						Holes
			A	B	C	C"	H	H"	
D7, D8, D9	<b>7J-2514</b>	<b>Z4075229****</b>	279 11"		1479	58,23"	-	-	<b>4</b>
	<b>7J-2515</b>	<b>Z4075229****</b>	254 10"	75	1337	52,64"	-	-	<b>4</b>
	<b>7J-2459</b>	<b>Z4075229****</b>	279 9"	2,95"	1259	49,57"	-	-	<b>2</b>
D8K	<b>7J-1795</b>	<b>Z40753300900</b>			1579	62,17"	879	34,61"	<b>2</b>
D8K, D8N, D9N	<b>8E-5346</b>	<b>Z40753301050</b>			1610	63,39"	1010	39,76"	<b>2</b>
D8L	<b>4T-0135</b>	<b>Z40753301350</b>			1910	75,20"	1310	51,57"	<b>3</b>
D8L, D8N	<b>4T-0134</b>	<b>Z40753301900</b>			2454	96,61"	1854	72,99"	<b>3</b>
D8L	<b>4T-0136</b>	<b>Z40753300900</b>			1484	58,43"	884	34,80"	<b>2</b>
	<b>8E-5342</b>	<b>Z40753301350</b>			1910	75,20"	1310	51,57"	<b>3</b>
D8L, D8N	<b>8E-5340</b>	<b>Z40753301900</b>			2459	96,81"	1859	73,19"	<b>3</b>
D8L	<b>8E-5341</b>	<b>Z40753300900</b>			1499	59,02"	899	35,39"	<b>2</b>
D8N	<b>4T-8989</b>	<b>Z40753301450</b>	330,2	75	2016	79,37"	1416	55,75"	<b>3</b>
D8N, D9N	<b>4T-8990</b>	<b>Z40753301050</b>	13,00"	2,95"	1610	63,39"	1010	39,76"	<b>2</b>
D8N	<b>8E-5347</b>	<b>Z40753301450</b>			2019	79,49"	1419	55,87"	<b>3</b>
D9N	<b>4T-8988</b>	<b>Z40753302200</b>			2761	108,70"	2161	85,08"	<b>3</b>
D9H	<b>7J-1794</b>	<b>Z40753301200</b>			1758	69,21"	1158	45,59"	<b>2</b>
	<b>8E-5345</b>	<b>Z40753301200</b>			1763	69,41"	1163	45,79"	<b>2</b>
D9N	<b>9W-6167</b>	<b>Z40753301750</b>			2318	91,26"	1718	67,64"	<b>3</b>
	<b>8E-5339</b>	<b>Z40753301750</b>			2332	91,81"	1732	68,19"	<b>3</b>
	<b>8E-5348</b>	<b>Z40753302200</b>			2761	108,70"	2161	85,08"	<b>3</b>
D8K, D9H	<b>7J-1792</b>	<b>Z40903561550</b>			2142	84,33"	1542	60,71"	<b>4</b>
	<b>7J-1793</b>	<b>Z40903562100</b>	355,6	90	2700	106,30"	2100	82,68"	<b>6</b>
	<b>107-3485</b>	<b>Z40903561550</b>	14,00"	3,54"	2141	84,29"	1541	60,67"	<b>4</b>
	<b>107-3486</b>	<b>Z40903562100</b>			2700	106,30"	2100	82,68"	<b>6</b>
D9L	<b>3G-2088</b>	<b>Z40903561750</b>			2324	91,50"	1724	67,87"	<b>3</b>
D9L, D10N	<b>9W-4427</b>	<b>Z40903562250</b>			2825	111,22"	2225	87,60"	<b>3</b>
	<b>9J-5954</b>	<b>Z40903561250</b>			1809	71,22"	1209	47,60"	<b>2</b>
D9L	<b>6Y-6138</b>	<b>Z40903561600</b>	355,6	90	2324	91,50"	1564	61,57"	<b>3</b>
	<b>6Y-6144</b>	<b>Z40903562100</b>	14,00"	3,54"	2824	111,18"	2064	81,26"	<b>3</b>
D9L, D10N	<b>6Y-6141</b>	<b>Z40903561100</b>			1819	71,61"	1059	41,69"	<b>2</b>
	<b>8E-8415</b>	<b>Z40903561100</b>			1819	71,61"	1059	41,69"	<b>2</b>
D9L	<b>8E-8414</b>	<b>Z40903561100</b>			2324	91,50"	1564	61,57"	<b>3</b>
	<b>8E-8416</b>	<b>Z40903562100</b>			2824	111,18"	2064	81,26"	<b>3</b>
D10N	<b>9W-8366</b>	<b>Z40903801750</b>			2510	98,82"	1750	68,90"	<b>3</b>
	<b>6Y-6147</b>	<b>Z40903802100</b>	380	90	2825	111,22"	2065	81,30"	<b>3</b>
	<b>8E-8411</b>	<b>Z40903801750</b>	14,96"	3,54"	2510	98,82"	1750	68,90"	<b>3</b>
D10	<b>8E-8417</b>	<b>Z40903802250</b>			2997	117,99"	2237	88,07"	<b>3</b>
	<b>1V-4592</b>	<b>Z40004002250</b>			2802	110,31"	2202	86,69"	<b>4</b>
D10, D11N	<b>1U-4873</b>	<b>Z40004001400</b>			1968	77,48"	1368	53,86"	<b>2</b>
D10	<b>6Y-4679</b>	<b>Z40004002100</b>	400	100	2812	110,71"	2052	80,79"	<b>4</b>
D10, D11N	<b>6Y-5616</b>	<b>Z40004001250</b>	15,75"	3,94"	1977	77,83"	1217	47,91"	<b>2</b>
D10	<b>8E-8412</b>	<b>Z40004002050</b>			2812	110,71"	2042	80,39"	<b>4</b>
D10, D11N	<b>8E-8413</b>	<b>Z40004001250</b>			1977	77,83"	1217	47,91"	<b>2</b>
D11N	<b>7T-6020</b>	<b>Z40014501550</b>			2733	107,60"	1533	60,35"	<b>3</b>
	<b>9W-0259</b>	<b>Z40014502100</b>	450	110	3292	129,61"	2092	82,36"	<b>3</b>
	<b>8E-0467</b>	<b>Z40014501550</b>	17,72"	4,33"	2730	107,48"	1530	60,24"	<b>4</b>
D10	<b>8E-1466</b>	<b>Z40014501650</b>			2825	111,22"	1625	63,98"	<b>3</b>
	<b>3G-5707</b>	<b>3G-5707</b>			-	-	-	-	-
D10, D11N	<b>3G-6507</b>	<b>3G-6507</b>			-	-	-	-	-

Ripper Protectors

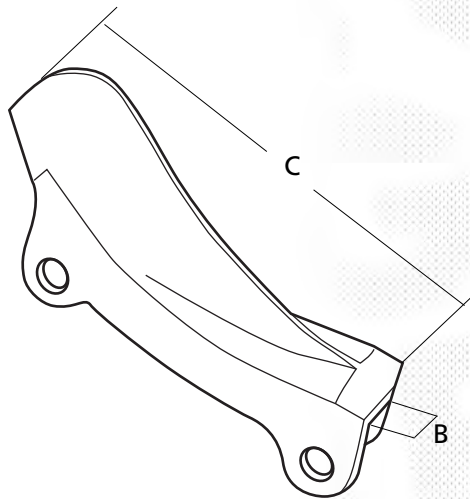


mm.	mm.		KG	kg	kg	kg	kg	kg	kg	kg	kg
	B	C									
75 2,95"	80 3,15"	320 12,60"	10,00 22,05	<b>7J-2352</b>	-	7J-9600	-	7J-2588	D7, D8, D9		
75 2,95"	80 3,15"	250 9,84"	8,40 18,52	-	<b>7J-2351</b>	-	6J-8811	7J-2588			

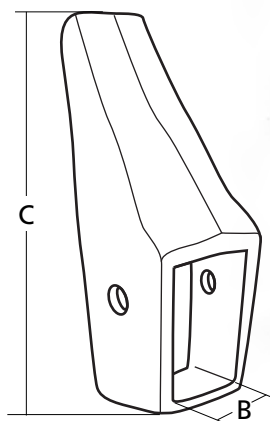


mm.	mm.		KG	kg	kg	kg	kg	kg	kg	kg	kg	kg
	B	C										
75 2,95"	80 3,15"	432 17,01"	14,10 31,08	<b>6J-8814</b>	-	7J-9600	-	-	6J-8811	-	-	7J-1791
												D8K, D8L, D8N, D9H, D9N
75 2,95"	80 3,15"	718 28,27"	24,50 54,01	-	<b>132-4716</b>	7J-9600	-	-	6J-8811	-	-	7J-1791
												8E-8418
												8E-8418

Ripper Protectors



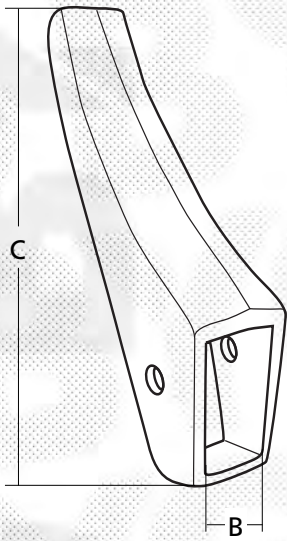
mm.												
	B	C										
75 2,95"	80 3,15"	486 19,13"	22,46 49,51	<b>8E-1848</b>	7J-9600	-	-	6J-8811	-	-	7J-1791	D8K, D8L, D9H, D9N
					-	6Y-3394	8E-4743	-	6Y-3394	8E-4743	8E-8418	



mm.								
	B	C						
90 3,54"	-	-	-	3G-9594	3G-0500	1U-3630	D10, D11, D11N	

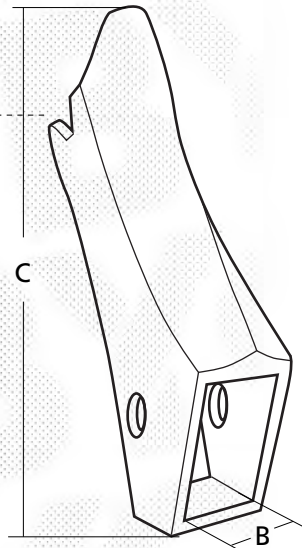


# Ripper Protectors



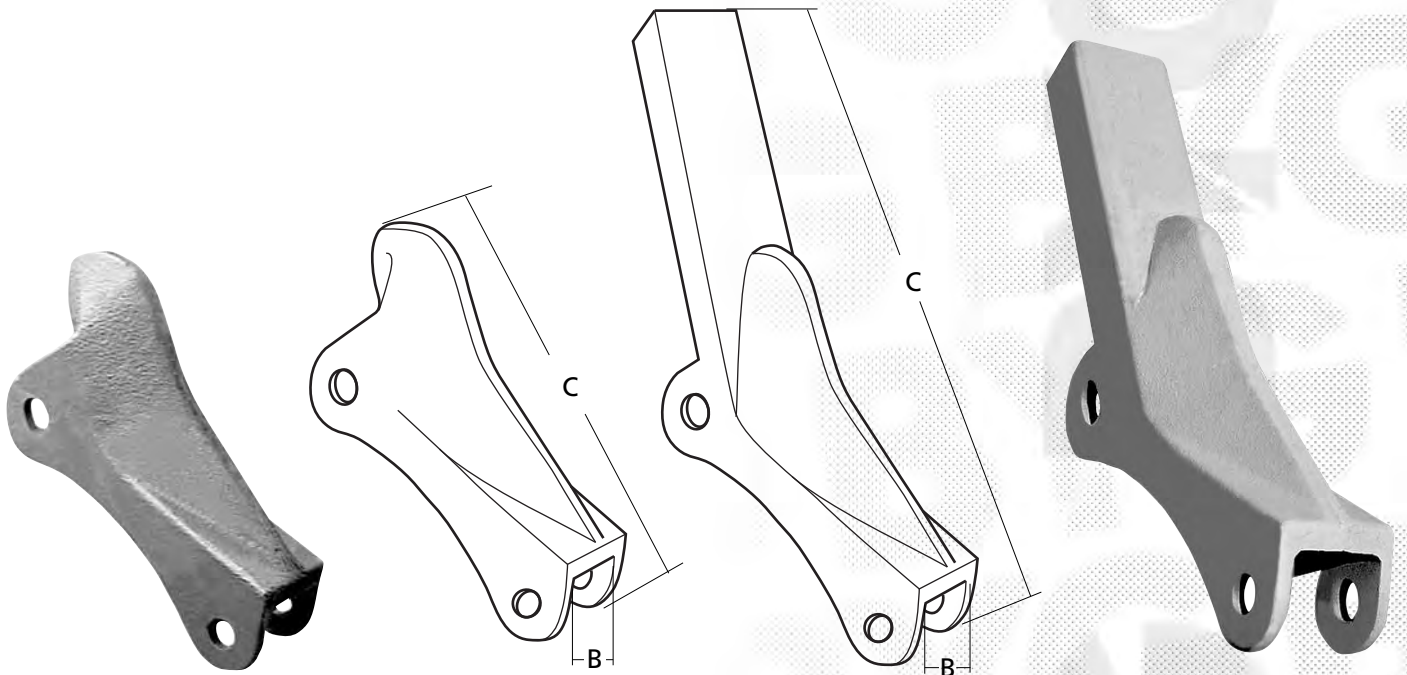
mm.							
	B	C					
90	96	737	42,21	<b>1U-3644</b>	3G-0500	1U-3630	D9L, D10, D10N, D11, D11N
3,54"	3,78"	29,02"	93,06				

Ref.  
8J-4889

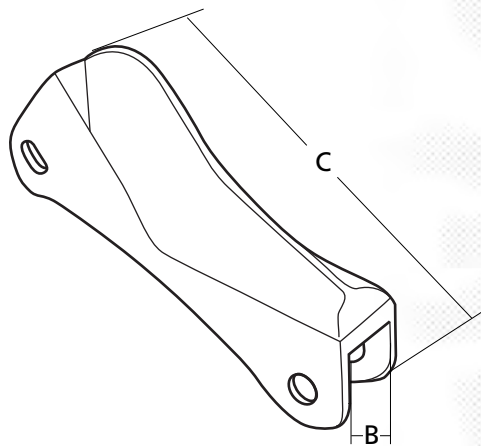


mm.							
	B	C					
90	96	740	55,00	<b>6Y-9704</b>	8J-4889	3G-0500	D9L, D10, D10N, D11, D11N
3,54"	3,78"	29,13"	121,25				

Ripper Protectors



mm.		B	C	KG	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9	Part 10	Part 11	
→	←															
90	96	600	39,40	<b>9W-8365</b>	-	3G-0500										
3,54"	3,78"	23,62"	86,86			6Y-3909	4T-4707	3G-0500	6Y-3909	4T-4707	9W-9695					
90	96	890	58,10	-	<b>9W-8365 EXT</b>	3G-0500										
3,54"	3,78"	35,04"	128,09			6Y-3909	4T-4707	3G-0500	6Y-3909	4T-4707	9W-9695					D9L, D10N
100	108	600	38,70	<b>6Y-8960</b>	-	3G-0500										
3,94"	4,25"	23,62"	85,32			6Y-3909	4T-4707	3G-0500	6Y-3909	4T-4707	9W-9695					D9L, D10, D10N, D11, D11N
100	108	890	56,80	-	<b>6Y-8960 EXT</b>	3G-0500										
3,94"	4,25"	35,04"	125,22			6Y-3909	4T-4707	3G-0500	6Y-3909	4T-4707	9W-9695					D9L, D10, D10N, D11, D11N



mm.		B	C	KG	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9	Part 10	Part 11	
→	←															
110	120	740	80,20	<b>9N-4621</b>	9W-1821											
4,33"	4,72"	29,13"	176,81			8E-2229	8E-2230	9W-1821	8E-2229	8E-2230	6Y-9473	6Y-9473 ETX	104-9279	104-9279 ETX		

Ripper Adapters

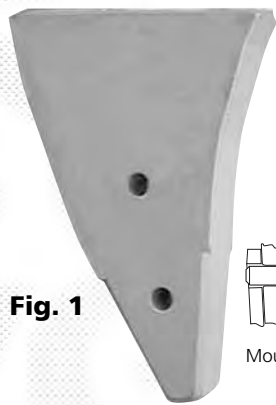
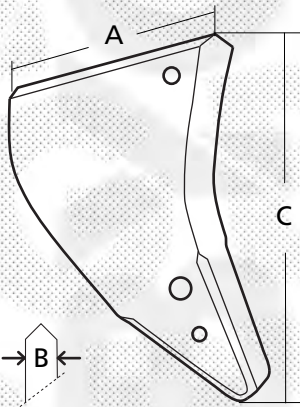


Fig. 1

Mounted with center ring pin

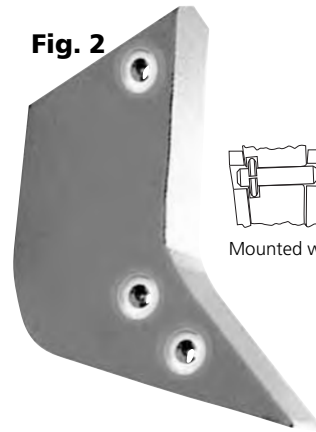


Fig. 2

Mounted with pin and washer



Fig. 3

Mounted with center ring pin



Fig. 4



Fig. 5

Mounted with pin and washer

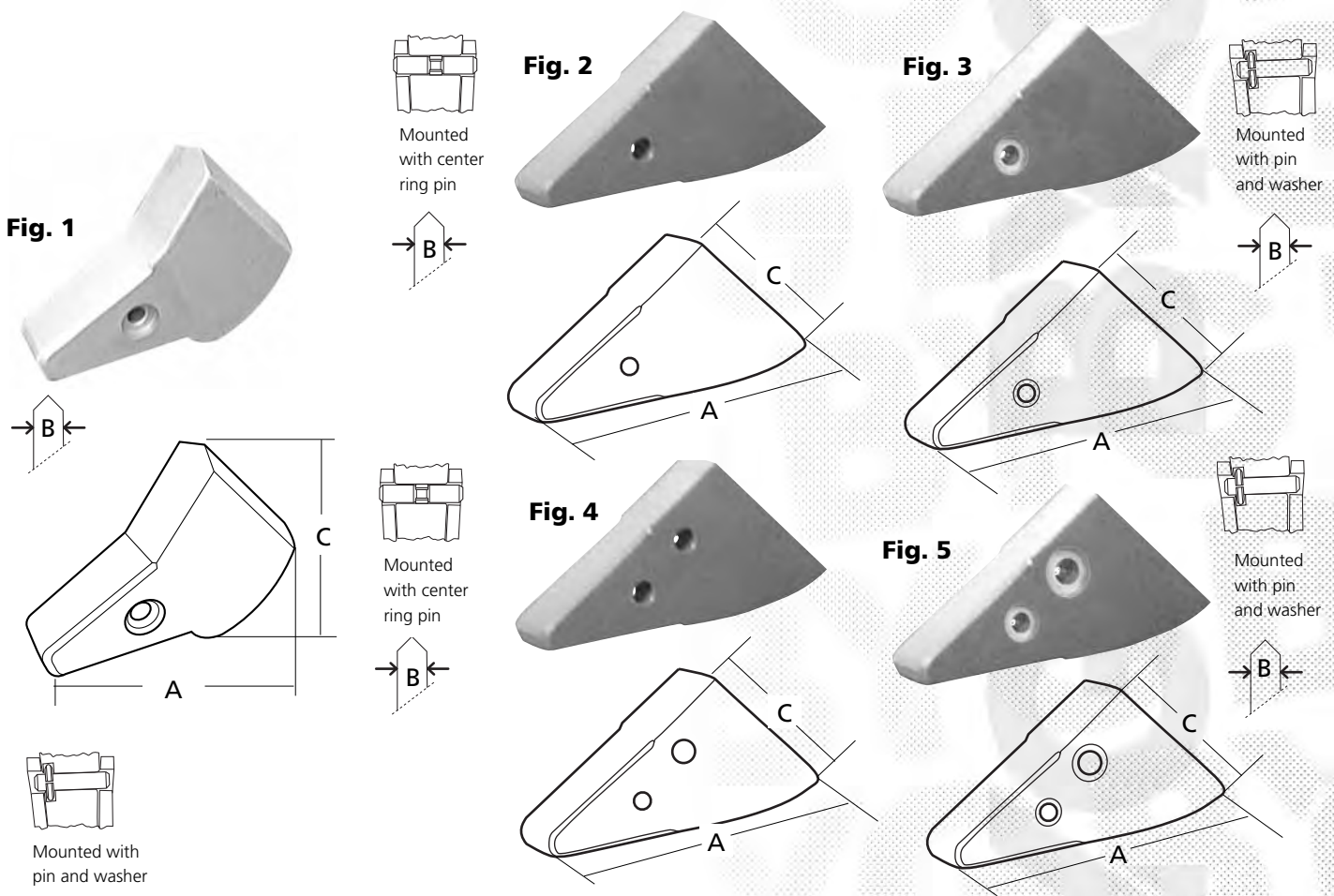


Fig. 6

Machine Model	mm.			Fig	Fig 1		Fig 2		Fig 3		Fig 4		Fig 5		Fig 6				
	A	B	C		Pin	Washer	Pin	Washer	Pin	Washer	Pin	Washer	Pin	Washer	Pin	Washer			
D4, 941, 951, 955, 963, 12, 14, 130, 140, 143H, 160H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4T-4302 9W-7309 6Y-0309		
16, 973, 977, D5, D6, D7, 983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4T-4352 6Y-0359		
D7, D8, D9	240 9,45"	75 2,95"	500 19,69"	7J-2587	2	7J-9600	-	6J-8811	-	7J-3309 7J-3310 7J-3312	6J-8811	-	7J-2514 7J-2515 7J-2459	-	-	-	-		
D8K, D8L, D8N, D9H, D9N	360 14,17"	75 2,95"	600 23,62"	7J-1791	3	7J-9600	-	6J-8811	-	9W-2451 9W-2452 9W-2452 ST 8E-5570 114-0453 4T-5451 4T-5452 8E-5571	7J-9600	-	7J-1792 8E-5341 7J-1793 4T-8989 7J-1795 4T-0134 107-3485 4T-8990 107-3486 8E-5347 8E-5346 8E-5340 4T-0135 7J-1794 4T-0134 8E-5345 4T-0136 9W-6167 8E-5342 4T-8988 8E-5340 4T-8990	-	-	6Y-3394 8E-4743	-	6Y-3394 8E-4743	
D9L, D10, D10N, D11, D11N	430 16,93"	90 3,54"	600 23,62"	1U-3630	1	-	-	3G-0500	-	4T-4501 4T-4502 4T-4502 ST 4T-4503 4T-5501 4T-5502 8E-5572 4T-5503	3G-0500	-	3G-2088 3G-6507 9W-4427 1V-4592 9J-5954 1U-4873	-	-	6Y-6138 6Y-5616 6Y-6144 8E-8412 6Y-6141 8E-8413 8E-8414 9W-8366 8E-8416 6Y-6147 8E-8415 8E-8411 6Y-4679 8E-8417	-	-	
D11, D11N	500 19,69"	110 4,33"	800 31,50"	6Y-9473	3	9W-1821	-	9W-1821	-	9W-4551 9W-4552 6Y-3552	9W-1821	-	7T-6020 9W-0259 8E-0467 8E-1466	-	-	8E-2229 8E-2230	-	8E-2229 8E-2230	
				6Y-9473 EXT	4														
				104-9279	5														
				104-9279 EXT	6														



# Ripper Noses



mm.	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	8E-7300		8E-7350		4T-9776		4T-5819		103-8114		9W-9695P		107-3361		9W-4551							
A B C																											
200 60 150 7,87" 2,36" 5,91"	<b>8E-7300</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
200 75 250 7,87" 2,95" 9,84"	<b>8E-7350</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
- - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
230 75 320 9,06" 2,95" 12,60"	-	-	-	<b>4T-9776</b>	-	6J-8811	-	9W-2451 9W-2452 9W-2452 ST	-	7J-9600	-	-	-	7J-1792 7J-1793 7J-1795	8E-5341 4T-8989 4T-0134	-	-	-	-	-	-	-	-				
230 75 320 9,06" 2,95" 12,60"	-	-	-	-	-	6Y-3394 8E-4743	-	8E-5570 114-0453 4T-5451 4T-5452 8E-5571	-	-	-	6Y-3394 8E-4743	-	107-3486 8E-5347 8E-5346 8E-5340 4T-0135 7J-1794 4T-0134 8E-5345 4T-0136 8E-5342 8E-5340	4T-8990 8E-5347 8E-5340 8E-5345 9W-6167 4T-8988 4T-8990	-	-	-	-	-	-	-	-	-	-	-	-
220 90 260 8,66" 3,54" 10,24"	-	<b>4T-5819</b>	-	-	-	-	-	-	-	-	-	-	-	3G-2088 9W-4427	3G-6507 1V-4592	-	-	-	-	-	-	-	-				
220 90 260 8,66" 3,54" 10,24"	-	-	<b>103-8114</b>	-	-	-	-	4T-4501 4T-4502 4T-4502 ST	-	6Y-3909 4T-4707	-	-	-	9J-5954 3G-5707	1U-4873 6Y-6138	-	-	-	-	-	-	-	-				
260 90 350 10,24" 3,54" 13,78"	-	-	-	<b>9W-9695P</b>	-	3G-0500	-	4T-4503 4T-5501 4T-5502 8E-5572 4T-5503	-	3G-0500	-	-	-	6Y-6138 6Y-6144 6Y-6141 8E-8413 8E-8414 8E-8416 8E-8415 6Y-4679	6Y-5616 8E-8412 8E-8413 9W-8366 6Y-6147 8E-8411 8E-8417	-	-	-	-	-	-	-	-	-	-	-	
260 90 350 10,24" 3,54" 13,78"	-	-	-	-	<b>107-3361</b>	-	6Y-3909 4T-4707	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
- - -	-	-	-	-	-	-	-	9W-4551 9W-4552 6Y-3552	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
- - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

Ripper Teeth



Fig. 1

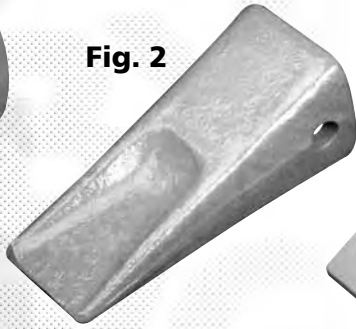


Fig. 2

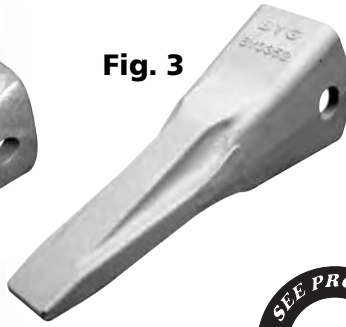


Fig. 3

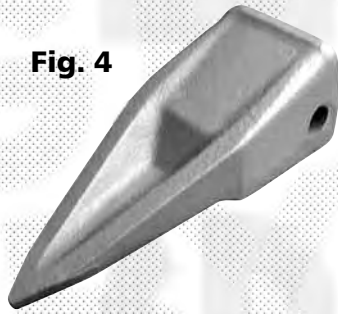
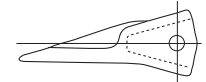


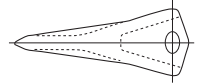
Fig. 4



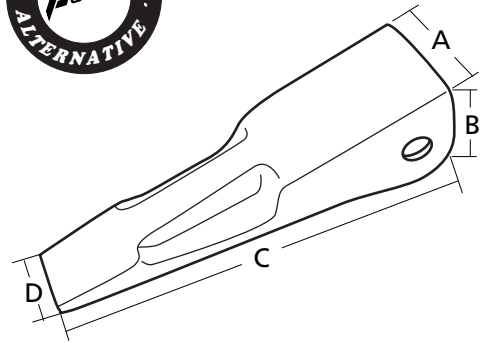
Fig. 5



Penetration teeth:  
good penetration



Symmetric teeth:  
more wear  
material



mm.							Fig	Shape					mm
A	B	C	D										
56	61	146	26	1,00	<b>1U-3209</b>	<b>1</b>	Long	•	-	8E-6208 8E-6209	-	D3	<b>R200</b>
2,20"	2,40"	5,75"	1,02"	2,20									
-	-	-	-	-	9W-8209	4	Sharp	•	-	8E-6208 8E-6209	-		
61	64	145	-	1,40	<b>1U-3202</b>	<b>2</b>	Long	•	-	8E-6208 8E-6209	-		
2,40"	2,52"	5,71"	-	3,09									
76	88	193	32	2,40	<b>9J-4259</b>	<b>1</b>	Long	•	-	8E-6208 8E-6209	-		
2,99"	3,46"	7,60"	1,26"	5,29									
65	73	164	65	2,29	<b>1U-3251</b>	<b>2</b>	Short	•	-	8E-6208 8E-6209	-	943, 953	<b>R250</b>
2,56"	2,87"	6,46"	2,56"	5,05									
76	89	215	-	2,60	<b>1U-3252 TL</b>	<b>4</b>	Sharp	•	-	8E-6208 8E-6209	-		
2,99"	3,50"	8,46"	-	5,73									
80	105	270	55	5,40	<b>4T-4302</b>	<b>3</b>	Long	•	8J-1433	9J-6583 1U-2405	-		
3,15"	4,13"	10,63"	2,17"	11,90									
73	107	270	72	5,50	<b>7K-0037</b>	<b>5</b>	Short	•	-	-	5K-1426 4K-0043	D4, 963, 14, 12	<b>R300</b>
2,87"	4,21"	10,63"	2,83"	12,13									
86	105	241	-	4,40	<b>1U-3302 TL</b>	<b>4</b>	Sharp	•	8J-1433	9J-6583 1U-2405	-		
3,39"	4,13"	9,49"	-	9,70									
-	-	-	-	-	168-1309	10	ARM	•	8J-1433	9J-6583 1U-2405	-		
82	101	287	48	5,40	<b>6Y-0309</b>	<b>6</b>	Long	•	8J-1433	9J-6583 1U-2405	-		
3,23"	3,98"	11,30"	1,89"	11,90									
90	130	364	50	11,12	<b>6Y-0352</b>	<b>3</b>	Long	•	7J-9600	8E-6358 1U-2405	-		
3,54"	5,12"	14,33"	1,97"	24,51									
108	138	385	-	11,12	<b>6Y-0352 TL</b>	<b>4</b>	Sharp	•	7J-9600	8E-6358 1U-2405	-	D5, D6, 973, 16, 977, D7	<b>R350</b>
4,25"	5,43"	15,16"	-	24,51									
105	133	360	50	11,50	<b>6Y-0359</b>	<b>6</b>	Long	•	7J-9600	8E-6358 1U-2405	-		
4,13"	5,24"	14,17"	1,97"	25,35									
81	132	340	80	8,00	<b>7K-0038</b>	<b>5</b>	ARM	•	-	-	5K-1425 4K-0032		
3,19"	5,20"	13,39"	3,15"	17,64									
-	-	-	-	-	159-0355	10	Abrasive	•	7J-9600	8E-6358 1U-2405	-		
115	137	302	110	11,60	<b>7J-3309</b>	<b>7</b>	Abrasive	•	7J-9600	6Y-3394 8E-4743	-		
4,53"	5,39"	11,89"	4,33"	25,57									
115	137	325	88	11,68	<b>7J-3310</b>	<b>7</b>	Intermed.	•	7J-9600	6Y-3394 8E-4743	-	D7, D8	<b>R400</b>
4,53"	5,39"	12,80"	3,46"	25,75									
106	127	360	68	14,50	<b>7J-3312</b>	<b>7</b>	Long	•	7J-9600	6Y-3394 8E-4743	-		
4,17"	5,00"	14,17"	2,68"	31,97									

Ripper Teeth

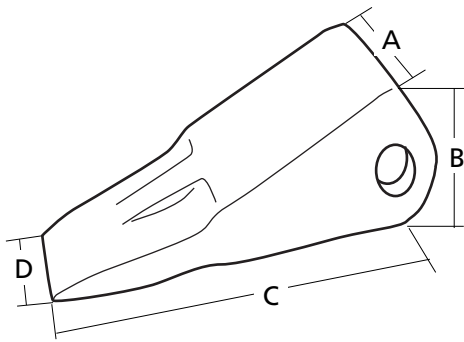


Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



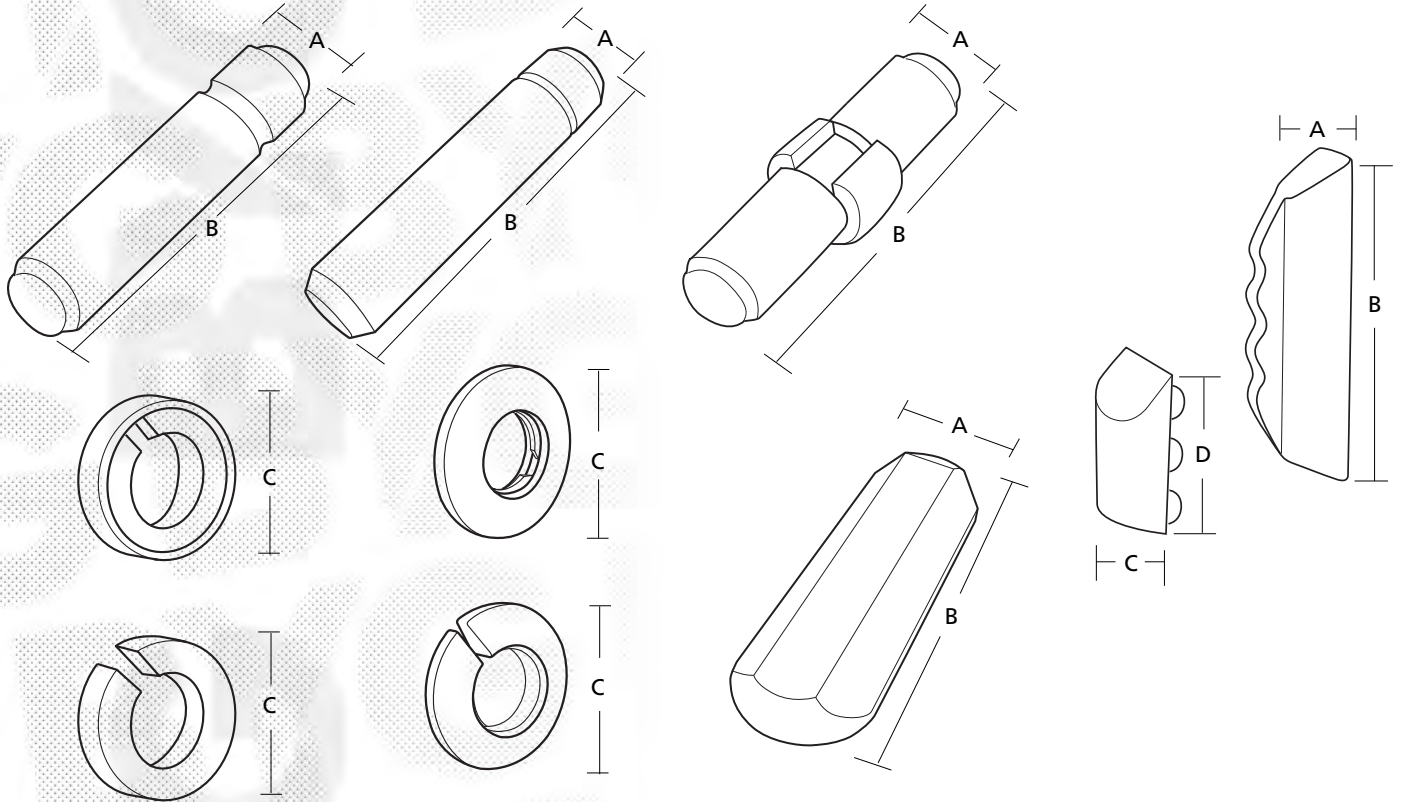
Fig. 11



mm.				KG	Image	Fig	Shape	Image	Image	Image	Image	Image
A	B	C	D									
122	163	341	78	15,00	9W-2451 FC450 R1	8	Short	•	7J-9600	6Y-3394 8E-4743	D8, D8L, D9, D8 K, D8 C, D8 N, D9 H, D9 N	R450
4,80"	6,42"	13,43"	3,07"	33,07								
127	167	379	90	21,00	9W-2452 FC450 R2	8	intermed.	•	7J-9600	6Y-3394 8E-4743		
5,00"	6,57"	14,92"	3,54"	46,30								
126	170	387	78	17,50	9W-2452 ST	11	Abrasive	•	7J-9600	6Y-3394 8E-4743		
4,96"	6,69"	15,24"	3,07"	38,58								
-	-	-	-	-	8E-5770	10	ARM	•	7J-9600	6Y-3394 8E-4743		
126	165	425	84	20,00	114-0453	3	Long	•	7J-9600	6Y-3394 8E-4743		
4,96"	6,50"	16,73"	3,31"	44,09								
125	168	340	50	14,60	4T-5451 FC450 R1	9	Short	•	7J-9600	6Y-3394 8E-4743		
4,92"	6,61"	13,39"	1,97"	32,19								
66,8	166	390	54	17,75	4T-5452 FC450 R2	9	Intermed.	•	7J-9600	6Y-3394 8E-4743		
2,63"	6,54"	15,35"	2,13"	39,13								
-	-	-	-	-	8E-5771	10	ARM	•	7J-9600	6Y-3394 8E-4743		
-	-	-	-	-	4T-4501 FC500 R1	8	Short	•	3G-0500	6Y-3909 4T-4707		
152	218	440	75	30,00	4T-4502 FC500 R2	8	Intermed.	•	3G-0500	6Y-3909 4T-4707		
5,98"	8,58"	17,32"	2,95"	66,14								
152	218	453	75	30,30	4T-4502 ST	11	Abrasive	•	3G-0500	6Y-3909 4T-4707		
5,98"	8,58"	17,83"	2,95"	66,80								
158	216	477	73	32,00	4T-4503	3	Long	•	3G-0500	6Y-3909 4T-4707		
6,22"	8,50"	18,78"	2,87"	70,55								
-	-	-	-	-	8E-5774	10	ARM	•	3G-0500	6Y-3909 4T-4707		
147	214	380	80	24,00	4T-5501 FC500 R1	9	Short	•	3G-0500	6Y-3909 4T-4707		
5,79"	8,43"	14,96"	3,15"	52,91								
152	218	440	75	27,30	4T-5502 FC500 R2	9	Intermed.	•	3G-0500	6Y-3909 4T-4707		
5,98"	8,58"	17,32"	2,95"	60,19								
-	-	-	-	-	8E-5772	10	ARM	•	3G-0500	6Y-3909 4T-4707		
153	223	480	76	29,20	4T-5503	6	Long	•	3G-0500	6Y-3909 4T-4707		
6,02"	8,78"	18,90"	2,99"	64,37								
180	273	456	78	40,80	9W-4551 FC550 R1	8	Short	•	9W-1821	8E-2229 8E-2230		
7,09"	10,75"	17,95"	3,07"	89,95								
-	-	-	-	-	9W-4552 FC550 R2	8	Intermed.	•	9W-1821	8E-2229 8E-2230		
-	-	-	-	-	6Y-3552 FC550 R2	9	Intermed.	•	9W-1821	8E-2229 8E-2230		



# Ripper Fasteners



mm.																
A	B	C	D													
11 0,43"	60 2,36"	19 0,75"	-	-	-	-	-	-	<b>8E-6208</b>	<b>8E-6209</b>	-	-	-	-	-	<b>R200</b>
14 0,55"	81 3,19"	29 1,14"	-	-	-	-	-	-	<b>8E-6258</b>	<b>8E-6259</b>	-	-	-	-	-	<b>R250</b>
19 0,75"	69 2,72"	23 0,91"	53 2,09"	<b>4K-0043</b>	<b>5K-1426</b>	-	-	-	-	-	-	-	-	-	-	-
19 0,75"	88 3,46"	-	-	-	-	-	-	<b>8J-1433</b>	-	-	-	-	-	-	-	<b>R300</b>
19 0,75"	88 3,46"	38 1,50"	-	-	-	-	-	-	<b>9J-6583</b>	-	<b>1U-2405</b>	-	-	-	-	-
19 0,75"	108 4,25"	38 1,50"	-	-	-	-	-	-	<b>8E-6358</b>	-	<b>1U-2405</b>	-	-	-	-	-
21 0,83"	80 3,15"	23 0,91"	54 2,13"	<b>4K-0032</b>	<b>5K-1425</b>	-	-	-	-	-	-	-	-	-	-	<b>R350</b>
25,4 1,00"	128 5,04"	-	-	-	-	-	-	<b>7J-9600</b>	-	-	-	-	-	-	-	<b>R400</b>
31,75 1,25"	115 4,53"	-	-	-	-	-	-	<b>6J-8811</b>	-	-	-	-	-	-	-	<b>R450</b>
25,4 1,00"	128 5,04"	48 1,89"	-	-	-	-	-	-	<b>6Y-3394</b>	<b>8E-4743</b>	-	-	-	-	-	<b>R500</b>
31,75 1,25"	153 6,02"	-	-	-	-	-	-	<b>3G-0500</b>	-	-	-	-	-	-	-	<b>R500</b>
31,75 1,25"	153 6,02"	64 2,52"	-	-	-	-	-	-	-	-	<b>6Y-1204</b>	<b>6Y-1202</b>	<b>6Y-3909</b>	<b>4T-4707</b>	-	<b>R500</b>
34,93 1,38"	155 6,10"	-	-	-	-	-	-	<b>9W-1821</b>	-	-	-	-	-	-	-	-
34,93 1,38"	170 6,69"	70 2,76"	-	-	-	-	-	-	-	-	<b>9N-4245</b>	<b>6Y-1205</b>	<b>8E-2229</b>	<b>8E-2230</b>	-	<b>R550</b>
35 1,38"	115 4,53"	-	-	-	-	-	-	<b>8J-4889</b>	-	-	-	-	-	-	-	-

Cross Ref.  
**Not reusable system > reusable system**

Not reusable	Reusable	Not reusable	Reusable	
6Y-1204 >	<b>6Y-3909</b>	6Y-1202 >	<b>4T-4707</b>	<b>R500</b>
9N-4245 >	<b>8E-2229</b>	6Y-1205 >	<b>8E-2230</b>	<b>R550</b>

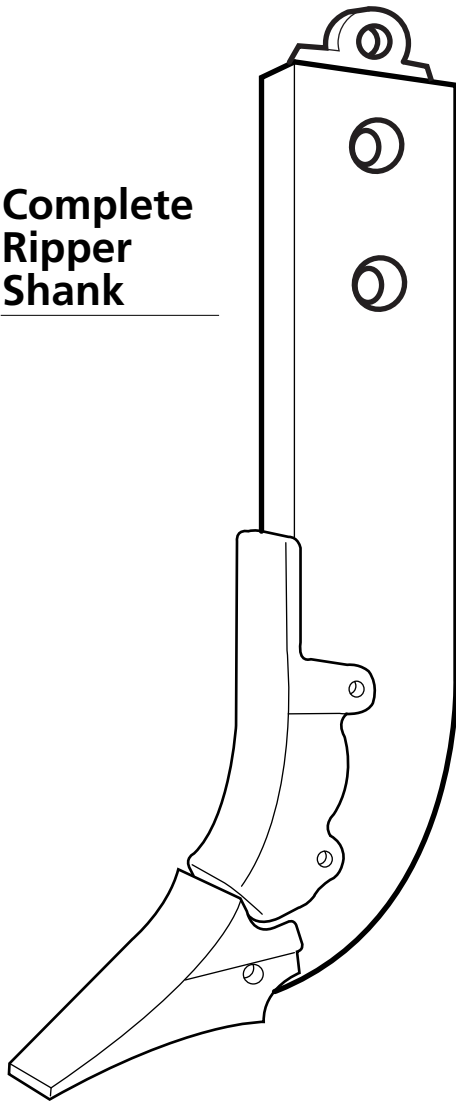
# DRP Esco

## Ripper Shanks

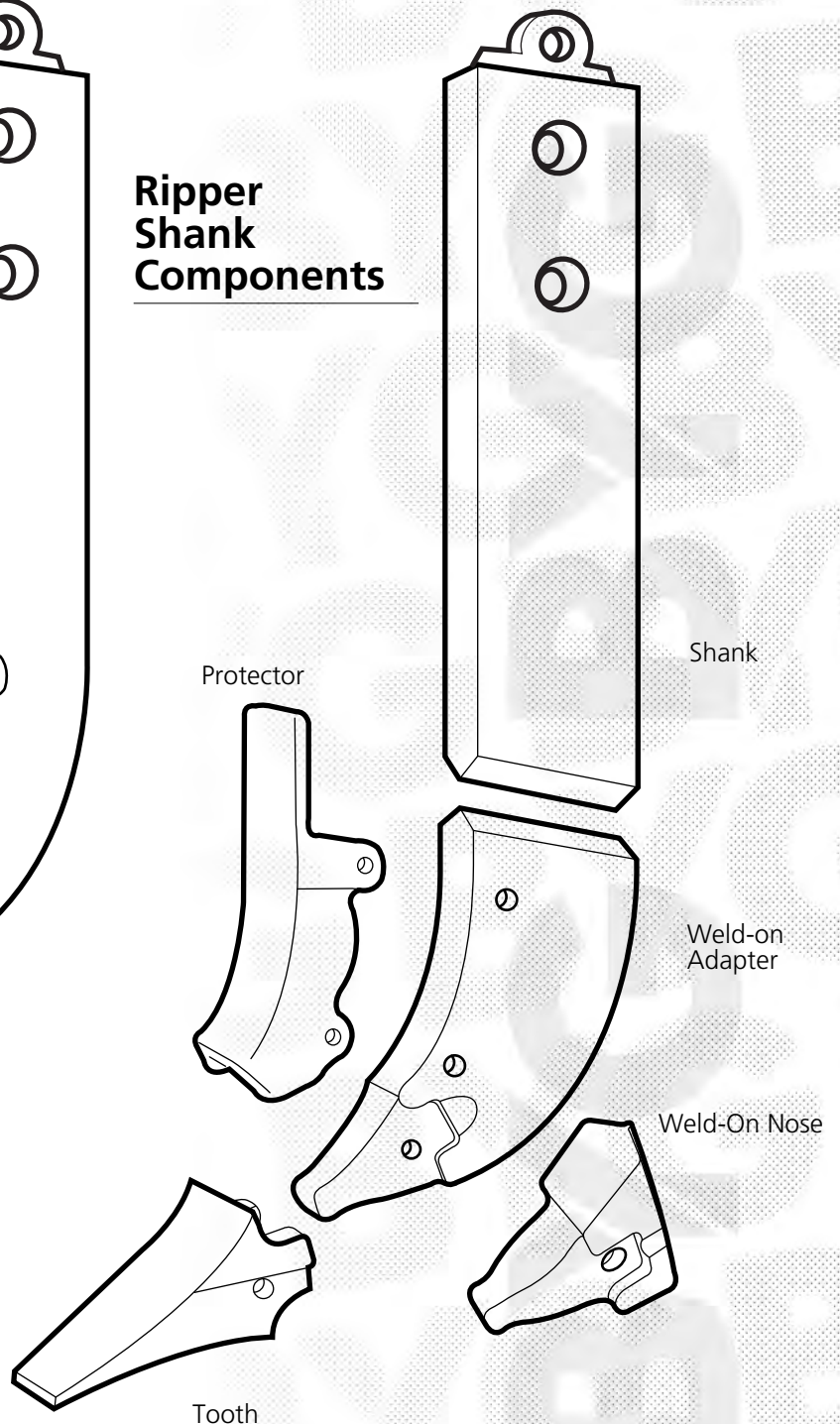
**Bold ref. number, product available**  
*Other ref. number please consult.*  
 **Futura Alternative**



Complete Ripper Shank



Ripper Shank Components



# Rippers

## What you need to know

### Instructions for repairing an Esco Type Ripper Shank

The welding of an adapter on a ripper shank is delicate and requires the application of correct welding techniques as well as the employment of adequate measures. The success and the advantages of the ESCO system greatly depend on it.

### General Rules

- 1 Weld with a rube thread according to norm aws A5 20: E71 T-5. This guarantees a very low contents of hydrogen.
- 2 Employ a gas with a composition of Ar + 25 % CO<sub>2</sub>. Specify that it must not contain any humidity. The recommended minimum Flow is 16,52 l/m.
- 3 During the whole welding process you have to work with absolute cleanliness. Do not rub the welding with gloves , rags, greasy bushes or other contaminating material.
- 4 It is very important to hammer the welding strings after each pass.
- 5 Preheat the area between 120° C and 200° C before welding has been carried out let cool off slowly. If needed, wrap an asbestos blanket around the ripper.
- 6 During the whole process make sure that the interpass temperature does not reach 250° C at a distance of 2 inches from the welding.

### Welding Process

- 1 Place the ripper flat on the floor and draw a parallel line along its axis. (Fig. 1)
- 2 Determine the cutting angle degree. It is important to respect this angle to achieve a good penetration and sharpness of the tooth. Draw a line AB on the shank according to the angle .
- 3 Place the adapter on the shank so that its welding bevel is kept parallel to the AB line. Move the adapter upwards and downwards considering carefully the adequate total length so that possible repairs, weldings or wear of the shank remain in the area that is going to be eliminated. Once the idea situation has been determined mark the cutting line that has to be parallel to AB. Withdraw the adapter.

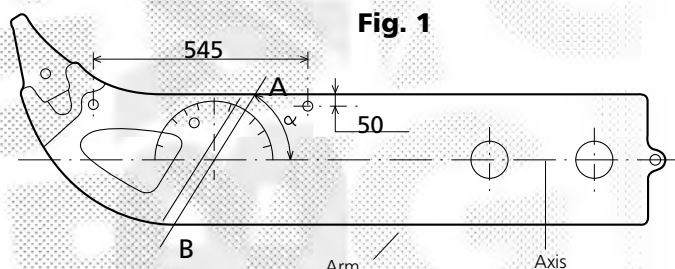
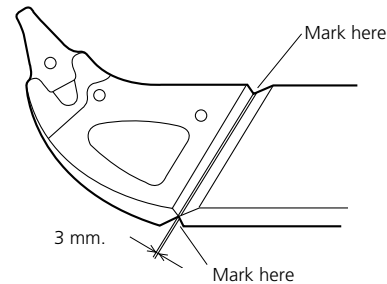


Fig. 1

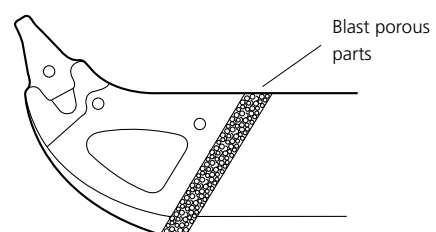
- 4 Preheat the area to be cut at 200°C and carry out a first cut across the marked line (Fig. 2). Maintaining the temperature at 200°C. Cut bevels similar to the adapter. Clean off the rest of slag, oxyde etc. in case of using a grindstone with compressed air, avoid pointing the jet on the hot metal.

Fig. 2



- 5 Prepare the adapter in the same way eliminating any paint and dirt in the area that is to be welded.
- 6 Place the adapter in position so that the front border is in line with the front border of the shank. Preheat the assembly and weld. Follow the general welding instructions.
- 7 Make the first passes lengthwise the bevel making sure that the penetration is 100%. Hammer after each welding string. Turn the assembly around and grind the first strings until you reach clean material. Continue welding alternatively on each side to correct deformations. Deformations are corrected by welding on the convex side. Make some more passes to ensure a thickness that can be ground remaining totally smooth without any cavity.
- 8 Once the welding has been finished blast the porous parts which have been accumulating at the end of each welding (Fig. 3), with air until you reach clean material. Fill the space by welding in the same way.
- 9 Grind the welding carefully leaving the surface of the junctons smooth without roughness. Use a fine grindstone for the last passes and grind always parallel with the length of the shank. In case of using a grindstone of compressed air, avoid the jet on the hot material.
- 10 Only once the welding process has been concluded verify if there are any cracks by using penetrating liquids. Any crack must be repaired.
- 11 During the whole operation maintain the temperature under 260°C.

Fig. 3







# Codification of non OEM Ripper Shanks

The reference number of the shanks is composed of 5 blocks of characters. Each block indicates a characteristic of the shank.

**A BB CC DDD EEEE**  
(12 characters without blank spaces)

**A**

The first block (one character) indicates the type of part.

- R COMPLETE RIPPER SHANK
- Z SHANK

Example:

**R \* \* \* \* \* \* \* \***

**BB**

The second block (2 characters) indicates the quality of the part (Brinell scale), as shown.

- 40 400 Brinell
- 45 450 Brinell
- NX HIGH YIELD STRENGTH

Example:

**R 40 \* \* \* \* \* \* \* \***

**CC**

The third block (2 digits) indicates the shank thickness. The digits correspond exactly to the thickness (millimeters) with the exception of: 100mm, 110mm and 120mm thickness, as shown in the following list:

- 35 35mm. thickness (450 Brinell)
- 40 40mm. thickness (450 Brinell)
- 45 45mm. thickness (450 Brinell)
- 50 50mm. thickness (450 Brinell)
- 60 60mm. thickness (450 Brinell)
- 63 63mm. thickness (450 Brinell)
- 75 75mm. thickness (400 Brinell)
- 80 80mm. thickness (400 Brinell)
- 90 90mm. thickness (400 Brinell)
- 00 100mm. thickness (400 Brinell)
- 01 110mm. thickness (High Yield Strength)
- 02 120mm. thickness (High Yield Strength)

Example:

**R 40 75 \* \* \* \* \* \* \* \***

**DDD**

This block (3 digits) indicates the width of the shank, in millimeters.

Example:

**R 40 75 305 \* \* \* \* \* \* \* \***

**EEEE**

The last block (4 digits) indicates the length (in millimeters) of the shank, always in multiples of 50mm.

Example:

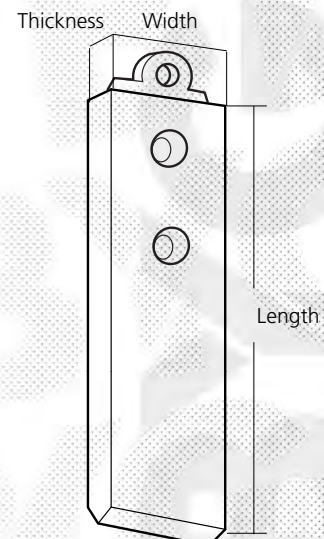
**R 40 75 305 1650**

Reference example (12 characters without blank spaces)

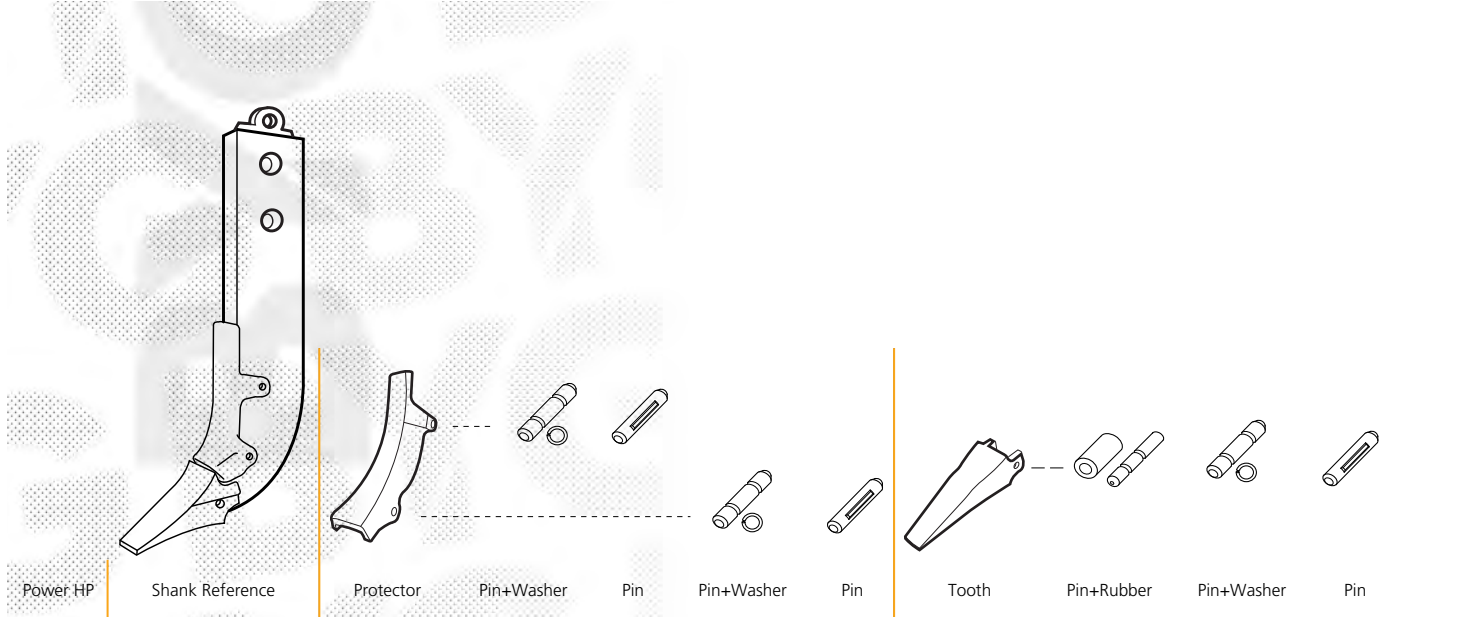
**R40753051650**

Type    Quality    Thickness    Width    Length

Customer should supply reference of teeth and protector to fit shank, number of holes and diameter of holes.



# Complete Ripper Shank

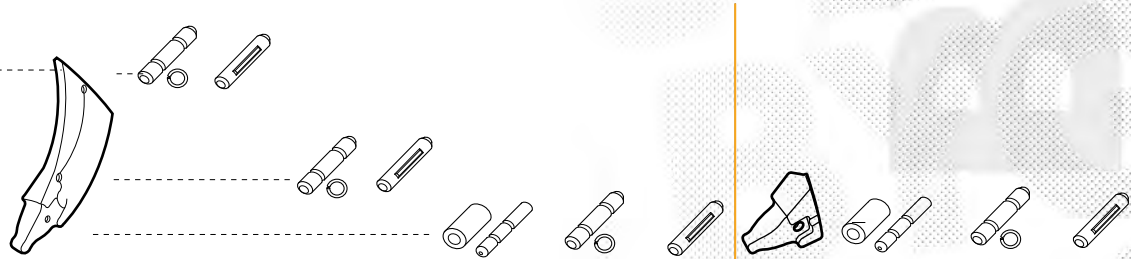
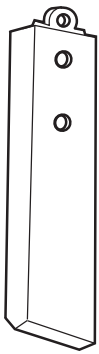


Power HP	Shank Reference	Protector	Pin+Washer	Pin	Pin+Washer	Pin	Tooth	Pin+Rubber	Pin+Washer	Pin
60-100	<b>22-RC4</b>						22-R10	22-RPG 22-RBG		
100-160	<b>25-RC6</b>						25-R12 G25R 25-R12VIP	25-RPG 25-RBG		⇒
160-300	<b>35-RC9P4</b>						35-R14A G35R	35-RPG 35-RBG		
	<b>35-RK155</b>	35-RSLH	35-RPH 49-SR	35-RPH 49-SR			35-RH14A 35-RH15A 35-RH16-1A		35-RPH 49-SR	⇒
	<b>35-RK9 C176</b> <i>35-5RK155-76*</i> <i>35-5RC9P4*</i>	35-5RSL		35-RSP	35-RSP	35-5R14 35-5R15			35-RSP	
300-500	<b>39-RFA31-SHD</b>						39-R16A	39-RPG 39-RBG		
	<b>39-RK41-11</b>						39-R17E			
	<b>39-RK9 C176</b>									
	<b>39-RK9 C1104</b>									
	<b>39-RK9 DO76</b>	39-RHSL	39-SPH 39-SRH	39-SPH 39-SRH			39-RH16A			
	<b>39-RC89</b>						39-RH17E		49RP-39RPH 49-SR	
	<b>39-RC8L</b>						39-RH18A			
	<b>39-RC9L</b>									
	<b>39-RK355</b>									
	<i>39-5RC8L100*</i> <i>39-5RC9L97*</i> <i>39-5RK375-84*</i> <i>39-5RC89PS4*</i> <i>39-5RC10-76*</i> <i>39-5RC9L70*</i> <i>39-5RC9L70-1*</i>	39-5RSLA		39-RSP	39-RSP	39-5R17A 39-5R18A				39-RSP
<b>39-5RC8-132</b>										
<b>39-5RK375-130</b>										
<b>39-5R375A-130</b>										
<b>39-5RC9LPS-102</b>										
<b>39-5R09L-101</b>										

\* Cast Shank

Esco Ripper shanks can be replaced by CAT. shanks for example:  
 49-5RC9L Esco by 6Y-6138 CAT  
 49-5RC10 Esco by 6Y-4679 CAT  
 49-5RC11 Esco by 8E-0467 CAT  
 39-RC Esco by 7J-1792 CAT  
 39-RC8L Esco by 4T-0135 CAT

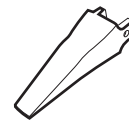
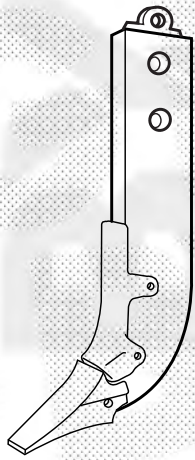
# Repair Components of the Shanks



Arm of Shank	Adapter	Pin+Washer	Pin	Pin+Washer	Pin	Pin+Rubber	Pin+Washer	Pin	Nose	Pin+Rubber	Pin+Washer	Pin	Power HP
<b>Z4560140</b>	22-RNSEF (a) 22-RNSLF (b)					22-RPG 22-RBG			22-RN	22-RPG 22-RBG			60-100
<b>Z4075178</b>	25-RNSPF (c) 25-RNSEF (b)					25-RPG 25-RBG			25-RN	25-RPG 25-RBG			100-160
<b>Z40753301150</b>	35-RNSEF					35-RPG 35-RBG							
<b>Z40753181150</b>	35-RNSPF Short						35-RPH 49-SR		35-RN	35-RPG 35-RBG			
<b>Z40753561450</b>	35-RWNSA Long	35-RPH 49-SR		35-RPH 49-SR									160-300
<b>Z40753561350</b>													
<b>Z40753301300</b>	35-5RWNS		35-RSP		35-RSP			35-RSP	35-5RN			35-RSP	
<b>Z40014151450</b>													
<b>Z40014002700</b>													
<b>Z40903561350</b>													
<b>Z40903562050</b>													
<b>Z40903561650</b>	39-RWNS1A	39-SPH 39-SRH		39-SPH 39-SRH		49RP-39RPH 49-SR			39-RWN			49RP-39RPH 49-SR	
<b>Z40903561400</b>													
<b>Z40753301200</b>													
<b>Z40903561550</b>													
<b>Z40903951500</b>													
<b>Z40753302050</b>													300-500
<b>Z40903561900</b>													
<b>Z40903561550</b>													
<b>Z40753561550</b>													
<b>Z40903561350</b>													
<b>Z40903561200</b>													
<b>Z40903561200</b>	39-5RWNS		39-RSP		39-RSP			39-RSP	39-5RWN			39-RSP	
<b>Z40903562750</b>													
<b>Z40903562700</b>													
<b>Z40903562700</b>													
<b>Z40903562000</b>													
<b>Z40903562000</b>													



Complete Ripper Shank



Power HP

Shank Reference

Protector

Pin+Washer

Pin

Pin+Washer

Pin

Tooth

Pin+Washer

Pin

- 39-5RC9H-84**
- 39-5RC9-84**
- 39-5RC8L-80**
- 39-5RK375A-71**
- 39-RC9H-70**
- 39-5RC9L-70**
- 39-5RC9-65**
- 39-5RCD10\**
- 39-5RC10N-111**
- 39-5RD10-102**
- 39-59C9LPS-92**
- 39-59C9H-88A**
- 39-5RC9H-88**
- 39-5RK355P-72**
- 39-5RK375-72**

300-500

39-5RSLA

39-RSP

39-RSP

39-5R17A  
39-5R18A

39-RSP



- 49-RC10**
- 49-RC11**
- 49-RK375**
- 49-RK475**
- 49-5RC9L**
- 49-5RK455**
- 49-5RC10**
- 49-5RK375**
- 49-5RC11**
- 49-5RC10107\**
- 49-5RC109-113**
- 49-5RC11N-107**
- 49-5RD11-107**
- 49-5RK475-102**
- 49-5RD11-102**
- 49-5RD11-101**
- 49-5RK475-87**
- 49-5RK475-84**
- 49-5RC9LPS-85**

500-900

49-RSL

49RP-39RPH  
49-SR

49RP-39RPH  
49-SR

49-R18A  
49-R20E  
49-R21V

49RP-39RPH  
49-SR



49-5RSL

49-RSP

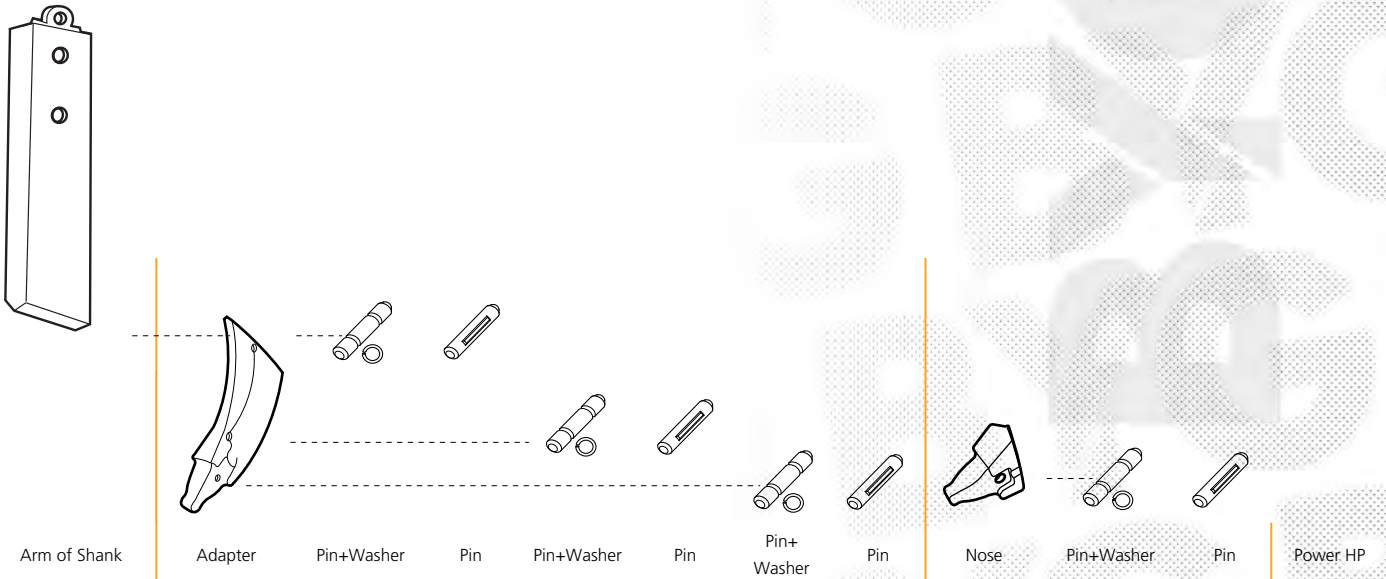
49-RSP

49-5R18  
49-5R19V  
49-5R21V

49-RSP

\* Cast Shank

# Repair Components of the Shanks

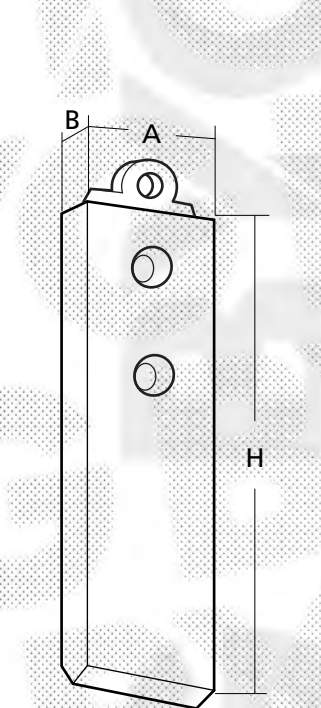




Part Number	Adapter	Pin+Washer	Pin	Pin+Washer	Pin	Pin+Washer	Pin	Nose	Pin+Washer	Pin	Power HP
Z40753301650											
Z40753301650											
Z40753301450											
Z40903601200	39-5RWNS										
Z40753301200											
Z40903561200											
Z40753301050											
Z40014001650			39-RSP		39-RSP		39-RSP	39-5RWN		39-RSP	300-500
Z40013802150											
Z40903802000											
Z40903562000	39-5RWNS2										
Z40903561650											
Z40903561650											
Z40904001100											
Z40903561250											
Z40004001850											
Z40014501800	49-RWNS1A	49RP-39-RPH 49-SR	49RP-39-RPH 49-SR	49RP-39-RPH 49-SR	49RP-39-RPH 49-SR		49-RWN	49RP-39-RPH 49-SR			
Z40004001100											
Z40014601900											
Z40903561500											
Z40014601900											
Z40004001850											
Z40004001100											
Z40014501800											
Z40004001900											500-900
Z40004002050											
Z40014501900	49-5RWNS		49-RSP		49-RSP		49-RSP	□			
Z40014501900											
Z40014601800											
Z40004001850											
Z40014501750											
Z40014601400											
Z40014601350											
Z40903561200											

4

□ Is not manufactured

# Ripper Shanks & Shanks' Arms

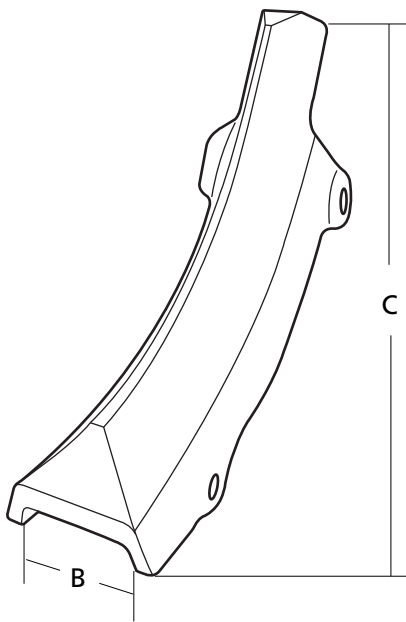
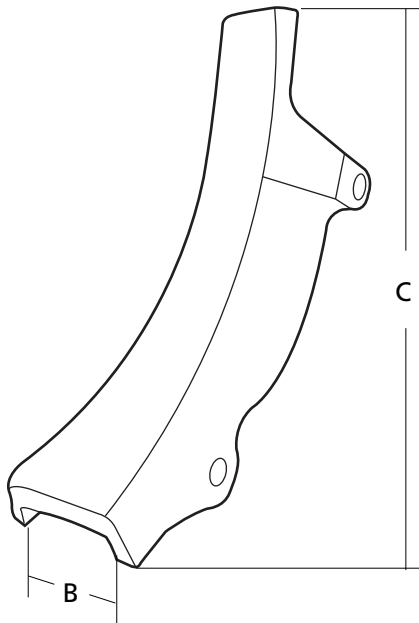


Power HP			mm.								Holes
			A	"	B	"	C	"	H	"	
60-100	<b>22-RC4</b>	<b>Z4560140</b>	140	5,51"	60	2,36"	500	19,69"	-	-	<b>1</b>
100-160	<b>25-RC6</b>	<b>Z4075178</b>	178	7,01"	75	2,95"	600	23,62"	-	-	<b>1</b>
160-300	<b>35-RK155</b>	<b>Z40753181150</b>	318	12,52"	75	2,95"	1622	63,86"	1120	44,09"	<b>2</b>
	<b>35-RC9P4</b>	<b>Z40753301150</b>	330,2	13,00"	75	2,95"	1650	64,96"	1150	45,28"	<b>2</b>
	<i>35-5RC9P4*</i>	<b>Z40753301300</b>					1772	69,76"	1265	49,80"	<b>2</b>
	<b>35-RK9 C176</b>	<b>Z40903561450</b>	355,6	14,00"	90	3,54"	1930	75,98"	1430	56,30"	<b>3</b>
	<i>35-5RK155-76*</i>	<b>Z40903561350</b>			94	3,70"	1930	75,98"	1320	51,97"	<b>3</b>
300-500	<b>39-RC8L</b>	<b>Z40753301200</b>	330,2	13,00"	75	2,95"	1805	71,06"	1200	47,24"	<b>3</b>
	<i>39-5RC8L100*</i>	<b>Z40753302050</b>					2540	100,00"	2032	80,00"	<b>4</b>
	<b>39-5RC9H-84</b>	<b>Z40753301650</b>					2134	84,02"	1626	64,02"	<b>4</b>
	<b>39-5RC9-84</b>	<b>Z40753301650</b>	2134	84,02"	1626	64,02"	<b>3</b>				
	<b>39-5RC8L-80</b>	<b>Z40753301450</b>	2032	80,00"	1424	56,06"	<b>2</b>				
	<b>39-RC9H-70</b>	<b>Z40753301200</b>	1778	70,00"	1168	45,98"	<b>4</b>				
	<b>39-5RC9-65</b>	<b>Z40753301050</b>	1651	65,00"	1041	40,98"	<b>2</b>				
	<i>39-5RC89PS4*</i>	<b>Z40753561550</b>	355,6	14,00"	75	2,95"	2121	83,50"	1511	59,49"	<b>3</b>
	<b>39-RC9L</b>	<b>Z40903561550</b>	2125	83,66"	1525	60,04"	<b>4</b>				
	<b>39-RC89</b>	<b>Z40903561400</b>	2035	80,12"	1400	55,12"	<b>3</b>				
	<b>39-RK9 C176</b>	<b>Z40903561350</b>	1930	75,98"	1320	51,97"	<b>3</b>				
	<b>39-RK9 C1104</b>	<b>Z40903562050</b>	2641	103,98"	2030	79,92"	<b>5</b>				
	<b>39-RK9 DO76</b>	<b>Z40903561650</b>	1930	75,98"	1620	63,78"	<b>3</b>				
	<i>39-5RC9L97*</i>	<b>Z40903561900</b>	2464	97,01"	1854	72,99"	<b>4</b>				
	<i>39-5RK375-84*</i>	<b>Z40903561550</b>	2134	84,02"	1524	60,00"	<b>3</b>				
	<i>39-5RC10-76*</i>	<b>Z40903561350</b>	1930	75,98"	1320	51,97"	<b>2</b>				
	<i>39-5RC9L70*</i>	<b>Z40903561200</b>	1765	69,49"	1155	45,47"	<b>2</b>				
	<i>39-5RC9L70-1*</i>	<b>Z40903561200</b>	1765	69,49"	1155	45,47"	<b>2</b>				
	<b>39-5RC8-132</b>	<b>Z40903562750</b>	355,6	14,00"	90	3,54"	3353	132,01"	2743	107,99"	<b>7</b>
	<b>39-5RK375-130</b>	<b>Z40903562700</b>	3302	130,00"	2692	105,98"	<b>7</b>				
	<b>39-5R375A-130</b>	<b>Z40903562700</b>	3302	130,00"	2692	105,98"	<b>5</b>				
	<b>39-5RC9LPS-102</b>	<b>Z40903562000</b>	2591	102,01"	1981	77,99"	<b>4</b>				
	<b>39-5R09L-101</b>	<b>Z40903562000</b>	2565	100,98"	1955	76,97"	<b>4</b>				
	<b>39-59C9LPS-92</b>	<b>Z40903562000</b>	2337	92,01"	1955	76,97"	<b>4</b>				
	<b>39-59C9H-88A</b>	<b>Z40903561650</b>	2235	87,99"	1625	63,98"	<b>4</b>				
	<b>39-5RC9H-88</b>	<b>Z40903561650</b>	2235	87,99"	1625	63,98"	<b>2</b>				
	<b>39-5RK375-72</b>	<b>Z40903561250</b>	1829	72,01"	1219	47,99"	<b>2</b>				
	<b>39-5RC9L-70</b>	<b>Z40903561200</b>	1765	69,49"	1155	45,47"	<b>2</b>				
	<b>39-5RK375A-71</b>	<b>Z40903601200</b>	360	14,17"	90	3,54"	1797	70,75"	1187	46,73"	<b>2</b>
	<b>39-5RD10-102</b>	<b>Z40903802000</b>	380	14,96"	90	3,54"	2591	102,01"	1981	77,99"	<b>4</b>
<b>39-RK355</b>	<b>Z40903951500</b>	395	15,55"	90	3,54"	2100	82,68"	1500	59,06"	<b>3</b>	
<b>39-5RK355P-72</b>	<b>Z40904001100</b>	400	15,75"	90	3,54"	1829	72,01"	1067	42,01"	<b>2</b>	
<b>39-RFA31-SHD</b>	<b>Z40014151450</b>	415	16,34"	100	3,94"	2050	80,71"	1450	57,09"	<b>3</b>	
<b>39-5RC10N-111</b>	<b>Z40013802150</b>	380	14,96"	100	3,94"	2870	112,99"	2108	82,99"	<b>3</b>	
<i>39-5RCD10*</i>	<b>Z40014001650</b>	400	15,75"	100	3,94"	2405	94,69"	1643	64,69"	<b>2</b>	
<b>39-RK41-11</b>	<b>Z40014002700</b>	400	15,75"	114	4,49"	3300	129,92"	2690	105,91"	<b>6</b>	
500-900	<b>49-5RC9LPS-85</b>	<b>Z40903561200</b>	355,6	14,00"	89	3,50"	2007	79,02"	1181	46,50"	<b>2</b>
	<b>49-5RC9L</b>	<b>Z40903561500</b>			90	3,54"	2355	92,72"	1500	59,06"	<b>4</b>
	<b>49-RC10</b>	<b>Z40004001850</b>	400	15,75"	100	3,94"	2695	106,10"	1845	72,64"	<b>4</b>
	<b>49-RK375</b>	<b>Z40004001100</b>					1451	57,13"	1056	41,57"	<b>4</b>
	<b>49-5RC10</b>	<b>Z40004001850</b>					2695	106,10"	1845	72,64"	<b>4</b>
	<b>49-5RK375</b>	<b>Z40004001100</b>	1451	57,13"	1056	41,57"	<b>4</b>				
	<i>49-5RC10107*</i>	<b>Z40004001900</b>	2718	107,01"	1892	74,49"	<b>3</b>				
	<b>49-5RC109-113</b>	<b>Z40004002050</b>	2870	112,99"	2044	80,47"	<b>3</b>				
	<b>49-5RD11-102</b>	<b>Z40004001800</b>	2591	102,01"	1765	69,49"	<b>4</b>				
	<b>49-RC11</b>	<b>Z40014501800</b>	450	17,72"	110	4,33"	2651	104,37"	1800	70,87"	<b>4</b>
	<b>49-5RC11</b>	<b>Z40014501800</b>					2651	104,37"	1800	70,87"	<b>4</b>
	<b>49-5RC11N-107</b>	<b>Z40014501900</b>					2718	107,01"	1892	74,49"	<b>4</b>
	<b>49-5RD11-107</b>	<b>Z40014501900</b>					2718	107,01"	1892	74,49"	<b>3</b>
	<b>49-RK475</b>	<b>Z40014601900</b>	460	18,11"	110	4,33"	2730	107,48"	1880	74,02"	<b>5</b>
	<b>49-5RK455</b>	<b>Z40014601900</b>					2730	107,48"	1880	74,02"	<b>5</b>
<b>49-5RD11-101</b>	<b>Z40014501750</b>	450	17,72"			2565	100,98"	1739	68,46"	<b>4</b>	
<b>49-5RK475-102</b>	<b>Z40014601800</b>	460	18,11"	114	4,49"	2591	102,01"	1765	69,49"	<b>3</b>	
<b>49-5RK475-87</b>	<b>Z40014601400</b>					2210	87,01"	1384	54,49"	<b>4</b>	
<b>49-5RK475-84</b>	<b>Z40014601350</b>					2134	84,02"	1304	51,34"	<b>4</b>	

\* Cast Shank

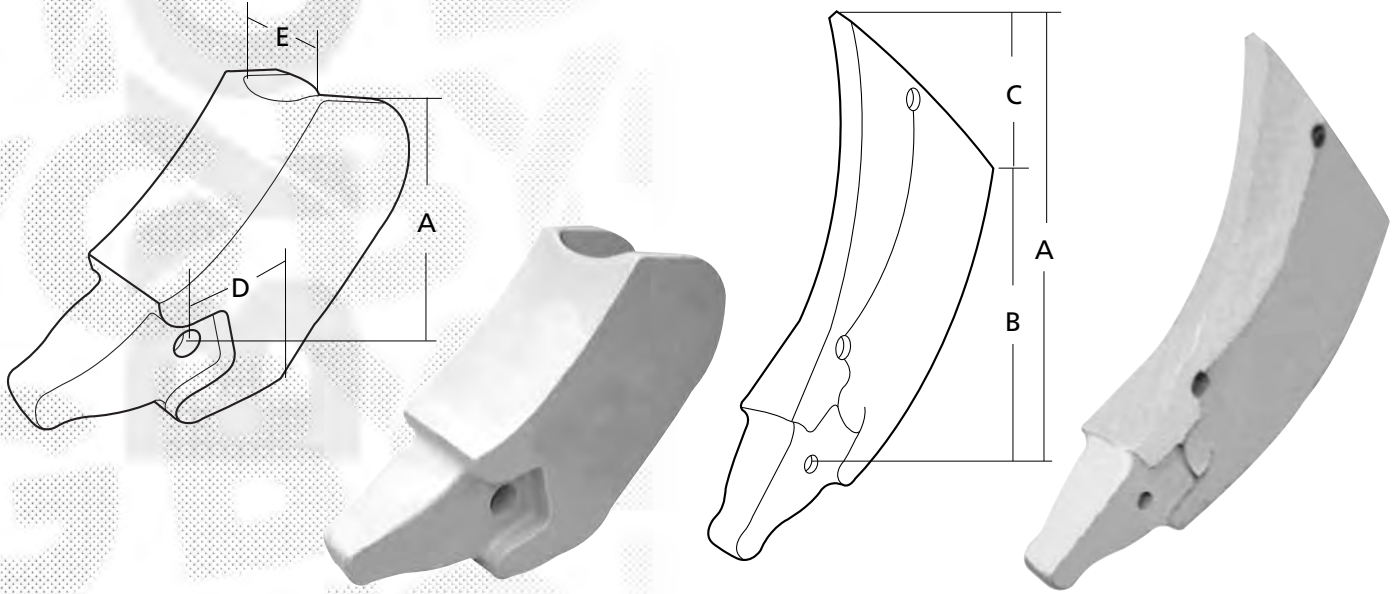


Ripper Protectors



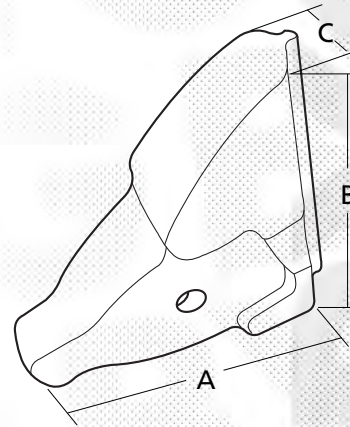
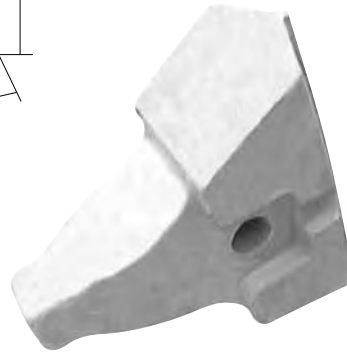
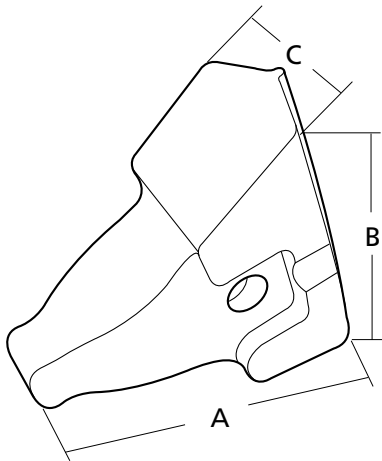
mm.					kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	
mm.																kg
mm.					B	C										Power HP
60	75	90	70	537	-	-	35-RSLH	35-RPH	35-RPH	35-RPH	35-RWNSA				160-300	
2,36"	2,95"	3,54"	2,76"	21,14"	-	-		49-SR	49-SR	49-SR						
60	75	90	70	537	24,00	35-5RSL	-		35-RSP	35-RSP	35-5RWNS					
2,36"	2,95"	3,54"	2,76"	21,14"	52,91											
75	90	100	85	580	30,70	-	<b>39-RHSL</b>	39-SPH	39-SPH	39-SPH	39-RWNS1A				300-500	
2,95"	3,54"	3,94"	3,35"	22,83"	67,68		FE39 RPT	39-SRH	39-SRH	39-SRH						
75	90	100	85	591	41,30	39-5RSLA	-		39-RSP	39-RSP	39-5RWNS					
2,95"	3,54"	3,94"	3,35"	23,27"	91,05						39-5RWNS2					
-	-	-	-	-	-	-	49-RSL	49RP-39RPH	49RP-39RPH	49RP-39RPH	49-RWNS1A				500-900	
-	-	-	-	-	-	-		49-SR	49-SR	49-SR						
100	110	115	100	664	42,20	49-5RSL	-		49-RSP	49-RSP	49-5RWNS					
3,94"	4,33"	4,53"	3,94"	26,14"	93,03											

Ripper Adapters



Power HP	mm.					mm.										a	b	c	
	A	B	C	D	E	1	2	3	4	5	6	7	8	9	10				11
60	138	-	-	75	51	<b>22-RNSEF</b>					-	-	-	-	22-R10	22-RPG	a	22-RC4	⇒
100	5,43"	-	-	2,95"	61	<b>22-RNSLF</b>					-	-	-	-	-	22-RBG	-	-	-
100	173	-	-	71	61	<b>25-RNSEF</b>					-	-	-	-	25-R12	25-RPG	a	25-RC6	⇒
160	6,81"	-	-	2,80"	71	<b>25-RNSPF</b>					-	-	-	-	25-R12VIP	25-RBG	-	-	-
160	173	-	-	78	71	<b>35-RNSEF</b>					-	-	-	-	35-R14A	35-RPG	a	35-RC9P4	-
	6,81"	-	-	3,07"	2,80"	<b>35-RNSPF</b>					-	-	-	-	G35R	35-RBG	-	-	-
300	166	-	-	86	83	<b>35-RNSPF</b>					-	-	-	-	35-RH14A	35-RPH	b	35-RK155	⇒
	6,54"	-	-	3,39"	3,27"	<b>35-RWNSA</b>					35-RPH	-	35-RPH	-	35-RH15A	49-SR	-	35-RK9 C176	-
	508	305	203	-	70	<b>35-RWNSA</b>					49-SR	-	49-SR	-	35-RH16-1A	-	-	-	-
	20,00"	12,01"	7,99"	-	2,76"	<b>35-5RWNS</b>					35-RSP	-	35-RSP	-	35-5R14	35-RSP	c	35-5RK155-76	-
	508	305	203	-	70	<b>35-5RWNS</b>					35-RSP	-	35-RSP	-	35-5R15	-	-	35-5RC9P4	-
	20,00"	12,01"	7,99"	-	2,76"	<b>35-5RWNS</b>					35-RSP	-	35-RSP	-	-	-	-	-	-
300	610	356	254	-	85	<b>39-RWNS1A</b>					39-SPH	-	39-SPH	-	39-R16A	39-RPG	a	39-RFA31-SHD	39-RC89
	24,02"	14,02"	10,00"	-	3,35"	<b>39-RWNS1A</b>					39-SRH	-	39-SRH	-	39-R17E	39-RBG	-	39-RK41-11	39-RC8L
	610	356	254	-	103	<b>39-RWNS1A</b>					39-SRH	-	39-SRH	-	39-RH16A	49RPH-39RPH	b	39-RK9 C176	39-RC9L
	24,02"	14,02"	10,00"	-	4,06"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	39-RH17E	49-SR	-	39-RK9 C1104	39-RC9L
	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	39-RH18A	-	-	39-RK9 D076	39-RK355
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	-	-
300	610	356	254	-	103	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RCD10	39-5RC9H-88A
500	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC10N-111	39-5RC9H-88
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5R10-102	39-5RK355-72
	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC9LPS-92	39-5RK375-72
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	-	-
300	610	356	254	-	103	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	39-5R17A	39-RSP	c	39-5RC8L100	39-5RC9LPS-102
500	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	39-5R18E	39-RSP	-	39-5RC9L97	39-5R09L-101
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RK375-84	39-5RC9H-84
	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC89PS4	39-5RC9-84
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC10-76	39-5RC8L-80
	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC9L70	39-5RC8L-80
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC9L70-1	39-5RC8L-80
	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC9L70-1	39-5RK375A-71
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RC8-132	39-RC9H-70
	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5RK375-130	39-5RC9L-70
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	39-5R375A-130	39-5RC9-65
	610	356	254	-	85	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	-	-
	24,02"	14,02"	10,00"	-	3,35"	<b>39-5RWNS2</b>					39-SRH	-	39-SRH	-	-	-	-	-	-
500	-	-	-	-	-	<b>49-RWNS1A</b>					49RPH-39RPH	-	49RPH-39RPH	-	49-R18A	49RPH-39RPH	b	49-RC10	49-RK375
900	-	-	-	-	-	<b>49-RWNS1A</b>					49-SR	-	49-SR	-	49-R20EA	49-SR	-	49-RC11	49-RK475
	-	-	-	-	-	<b>49-RWNS1A</b>					49-SR	-	49-SR	-	49-R21V	-	-	49-5RK455	49-5RK375
	-	-	-	-	-	<b>49-RWNS1A</b>					49-SR	-	49-SR	-	-	-	-	49-5RC9L	49-5RC11
	-	-	-	-	-	<b>49-RWNS1A</b>					49-SR	-	49-SR	-	-	-	-	49-5RC10	49-5RC11
500	-	-	-	-	-	<b>49-RWNS1A</b>					49-SR	-	49-SR	-	-	-	-	-	-
900	815	524	456	-	103	<b>49-5RWNS</b>					49-RSP	-	49-RSP	-	49-5R18	49-RSP	c	49-5RC10107	49-5RD11-102
	32,09"	20,63"	17,95"	-	4,06"	<b>49-5RWNS</b>					49-RSP	-	49-RSP	-	49-5R19V	49-RSP	-	49-5RC109-113	49-5RD11-101
	815	524	456	-	103	<b>49-5RWNS</b>					49-RSP	-	49-RSP	-	49-5R21V	-	-	49-5RC11N-107	49-5RK475-87
	32,09"	20,63"	17,95"	-	4,06"	<b>49-5RWNS</b>					49-RSP	-	49-RSP	-	-	-	-	49-5RD1-107	49-5RK475-84
	815	524	456	-	103	<b>49-5RWNS</b>					49-RSP	-	49-RSP	-	-	-	-	49-5RK475-102	49-5RC9LPS-85
	32,09"	20,63"	17,95"	-	4,06"	<b>49-5RWNS</b>					49-RSP	-	49-RSP	-	-	-	-	-	-

Ripper Noses



mm.										Power HP		
A	B	C										
171 6,73"	145 5,71"	78 3,07"	22-RN		22-R10	22-RPG 22-RBG				22-RC4	60-100	
190 7,48"	168 6,61"	90 3,54"	<b>25-RN</b>		25-R12 G25R 25-R12VIP	25-RPG 25-RBG				25-RC6	100-160	
253 9,96"	225 8,86"	113 4,45"	<b>35-RN</b>		35-R14A G35R	35-RPG 35-RBG		35-RPH 49-SR		35-RC9P4 35-RK155 35-RK9 C176	160-300	
236 9,29"	216 8,50"	113 4,45"	35-5RN		35-5R14 35-5R15			35-RSP		35-5RK155-76 35-5RC9P4		
330 12,99"	243 9,57"	128 5,04"		<b>39-RWN</b>	39-R16 39-R17E	39-RPG 39-RBG		49RP-39RPH 49-SR		39-RFA31-SHD 39-RK41-11 39-RK9 C176 39-RK9 C1104 39-RK9 DO76	39-RC89 39-RC8L 39-RC9L 39-RK355	
330 12,99"	243 9,57"	128 5,04"		39-5RWN	39-5R17A 39-5R18A			39-RSP		39-5RC8L100 39-5RC9L97 39-5RC10 39-5RK375-84 39-5RC89PS4 39-5RC10-76 39-5RC9L70 39-5RC9L70-1 39-5RC8-132 39-5RK375-130 39-5R375A-130 39-5RC10N-111 39-5RC9LPS-10 39-5RD10-102	39-5R09L-101 39-59C9LPS-92 39-59C9H-88A 39-5RC9H-88 39-5RC9H-84 39-5RC9-84 39-5RC8L-80 39-5RC8L-80 39-5RK355P-72 39-5RK375-72 39-5RK375A-71 39-RC9H-70 39-5RC9L-70 39-5RC9-65	300-500
395 15,55"	292 11,50"	114 4,49"		49-RWN	49-R18A 49-R20EA 49-R21V			49RP-39RPH 49-SR		49-RC10 49-RC11	49-RK375 49-RK475	
				□	49-5R18 49-5R19V 49-5R21V			49-RSP		49-5RK455 49-5RC96 49-5RC10 49-5RC10107 49-5RC109-113 49-5RC11N-107 49-5RD11-107 49-5RK475-102	49-5RK375 49-5RC11 49-5RD11-102 49-5RD11-101 49-5RK475-87 49-5RK475-84 49-5RCLPS-85	500-900

□ Is not manufactured



Ripper Teeth

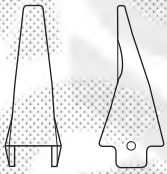


Fig. 1

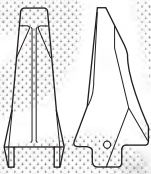
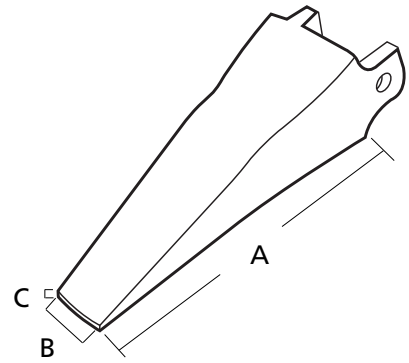
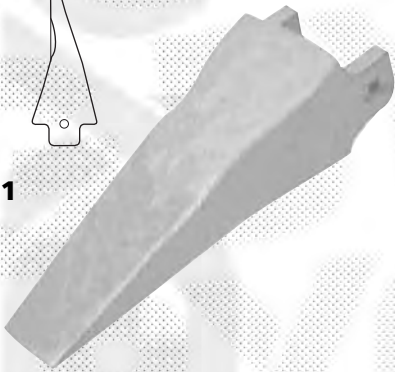


Fig. 2

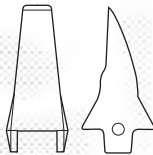
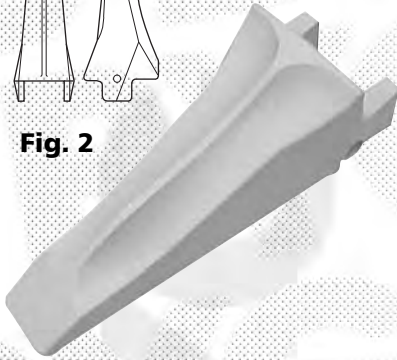


Fig. 3

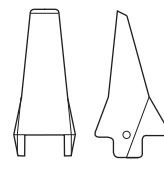
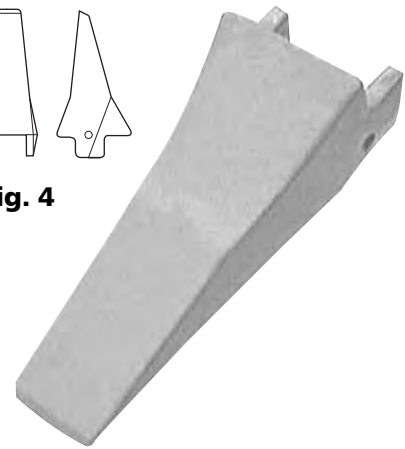


Fig. 4



mm.			KG	Image	Fig.	Image	Image	Image	Image	Image	Power HP	Image
A	B	C										
268 10,55"	45 1,77"	9 0,35"	4,30 9,48	<b>22-R10</b> FE22 R2	<b>1</b>	22-RPG	22-RBG	-	-	-	60-100	<b>22</b>
305 12,01"	51 2,01"	10 0,39"	5,18 11,42	<b>25-R12</b> FE25 R2	<b>1</b>	25-RPG	25-RBG	-	-	-	100-160	<b>25</b>
315 12,40"	10 0,39"	-	5,40 11,90	25-R12VIP	<b>1</b>	-	-	-	-	-	-	-
355 13,98"	76 2,99"	10 0,39"	12,00 26,46	<b>35-R14A</b>	<b>4</b>	35-RPG	35-RBG	-	-	-	-	-
355 13,98"	76 2,99"	10 0,39"	12,00 26,46	<b>35-RH14A</b> FE35 R2	<b>4</b>	-	-	-	-	-	-	-
381 15,00"	76 2,99"	10 0,39"	12,80 28,22	35-RH15A	<b>4</b>	-	-	35-RPH	49-SR	-	160-300	<b>35</b>
407 16,02"	76 2,99"	12 0,47"	13,56 29,89	35-RH16-1A	<b>4</b>	-	-	-	-	-	-	-
360 14,17"	76	-	13,60 29,98	35-5R14	<b>6</b>	-	-	-	-	-	-	-
387 15,24"	2,99"	-	14,50 31,97	35-5R15	<b>6</b>	-	-	-	-	35-RSP	-	-

Ripper Teeth

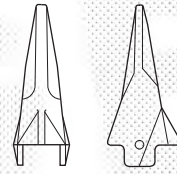
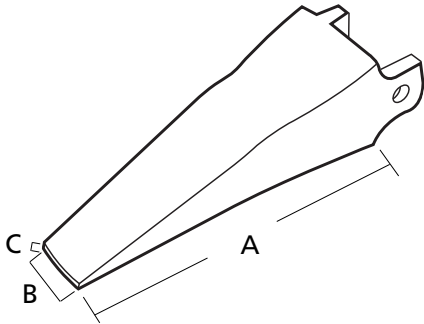


Fig. 5

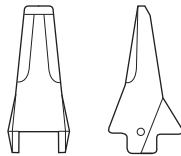
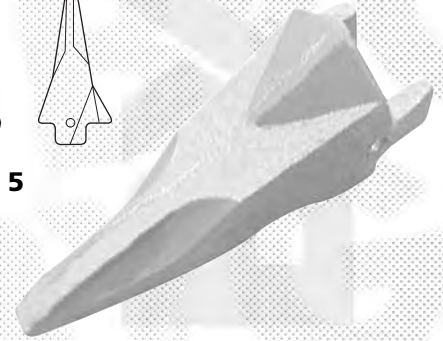


Fig. 6

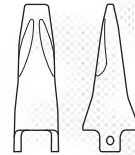


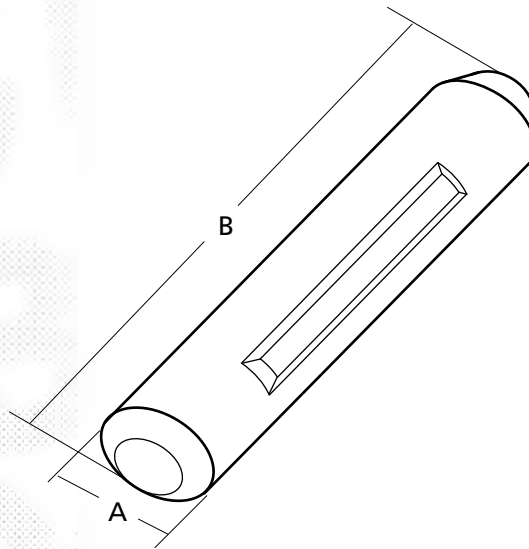
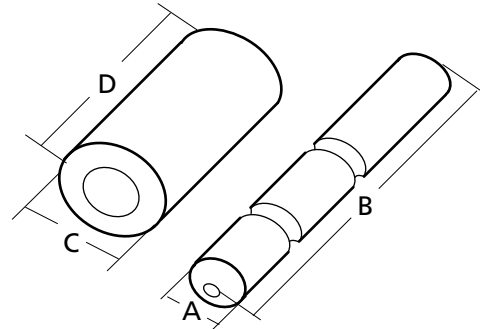
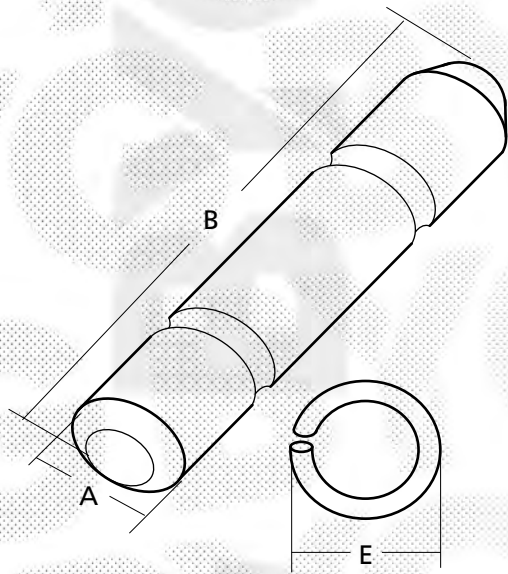
Fig. 7









mm.			KG	mm	Fig.	mm	mm	mm	mm	mm	Power HP	mm
A	B	C										
406 15,98"	76 2,99"	19 0,75"	20,00 44,09	39-R16A *	<b>4</b>	39-RPG	39-RBG	-	-	-		
406 15,98"	76 2,99"	19 0,75"	20,00 44,09	39-RH16A *	<b>4</b>	-	-	49RP-39RPH	49-SR	-		
432 17,01"	76 2,99"	22 0,87"	19,50 42,99	<b>39-R17E</b> FE39 R2	<b>3</b>	39-RPG	39-RBG	-	-	-		
432 17,01"	76 2,99"	22 0,87"	19,50 42,99	<b>39-RH17E</b> FE39 R2	<b>3</b>	-	-	49RP-39RPH	49-SR	-	300-500	<b>39</b>
457 17,99"	80 3,15"	40 1,57"	24,30 53,57	<b>39-RH18A</b> FE39 R2	<b>2</b>	-	-	-	-	-		
432 17,01"	76 2,99"	-	20,4 44,97	39-5R17A	<b>2</b>	-	-	-	-	39-RSP		
457 17,99"	83 3,27"	-	25,8 56,88	39-5R18A	<b>2</b>	-	-	-	-	-		
457 17,99"	89 3,50"	31 1,22"	29 64,15	49-R18A	<b>2</b>	-	-	49RP-39RPH	49-SR	-		
457 17,99"	89 3,50"	31 1,22"	31 69,00	49-5R18	<b>6</b>	-	-	-	-	49-RSP		
483 19,02"	38 1,50"	31 1,22"	33 72,09	49-5R19V	<b>5</b>	-	-	-	-	-		
508 20,00"	80 3,15"	31 1,22"	33 72,31	49-R20E	<b>6</b>	-	-	49RP-39RPH	49-SR	-	500-900	<b>49</b>
533 20,98"	38 1,50"	31 1,22"	35 76,06	49-R21V	<b>5</b>	-	-	-	-	-		
533 20,98"	38 1,50"	31 1,22"	35 76,94	49-5R21V	<b>5</b>	-	-	-	-	49-RSP		

\* These teeth have been replaced by **39-RH17E**

Pins & Washers



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>	-	-	-	
22,2 0,87"	127 5,00"	-	-	32,6 1,28"	-	-	<b>35-RPH</b>	<b>49-SR</b>	-	<b>35</b>
19 0,75"	121 4,76"	-	-	-	-	-	-	-	35-RSP	
12,7 0,50"	140 5,51"	20,6 0,81"	84 3,31"	-	<b>39-RPG</b>	<b>39-RBG</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>	-	
25 0,98"	127 5,00"	-	-	-	-	-	-	-	39-RSP	
29 1,14"	149 5,87"	-	-	-	-	-	-	-	49-RSP	<b>49</b>



DRP

# Komatsu

## Ripper Shanks

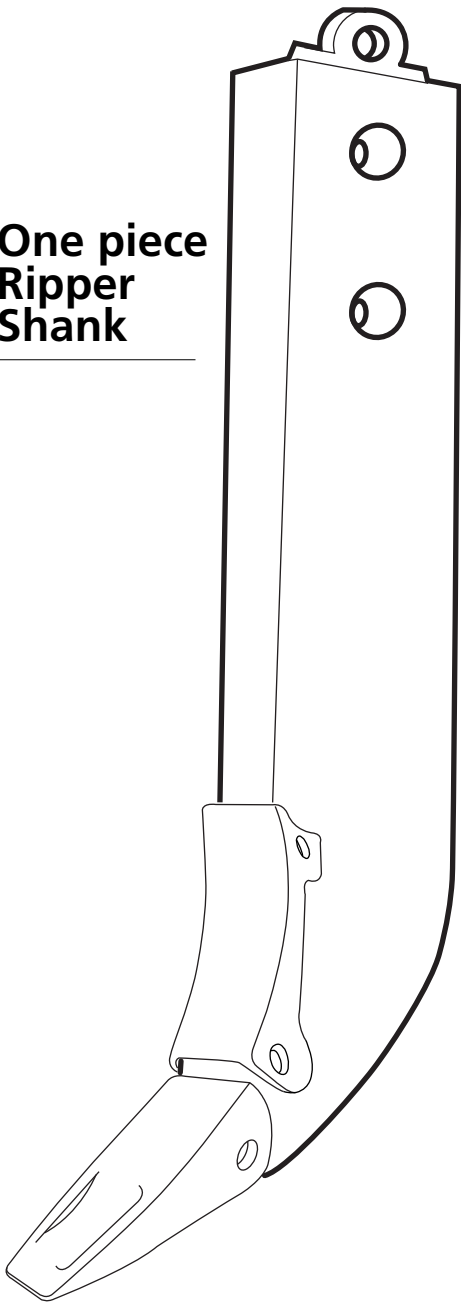
**Bold ref. number, product available**

*Other ref. number please consult*

 **Futura Alternative**

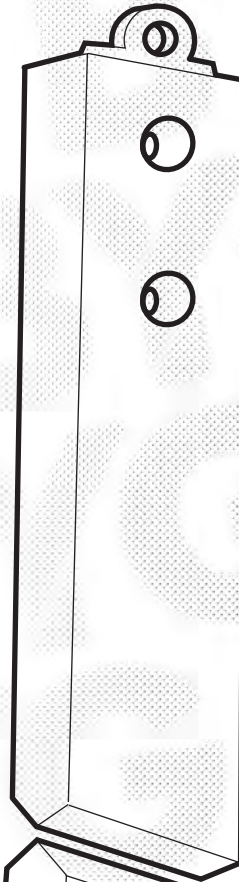


**One piece Ripper Shank**



**Ripper Shank Components**

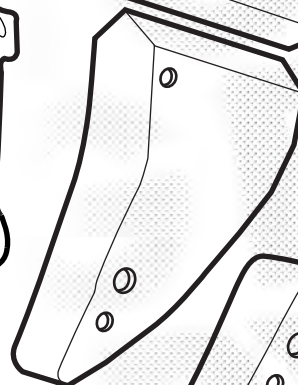
Shank



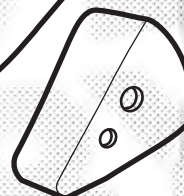
Protector



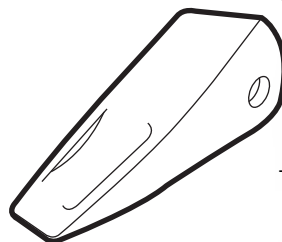
Weld-On Adapter

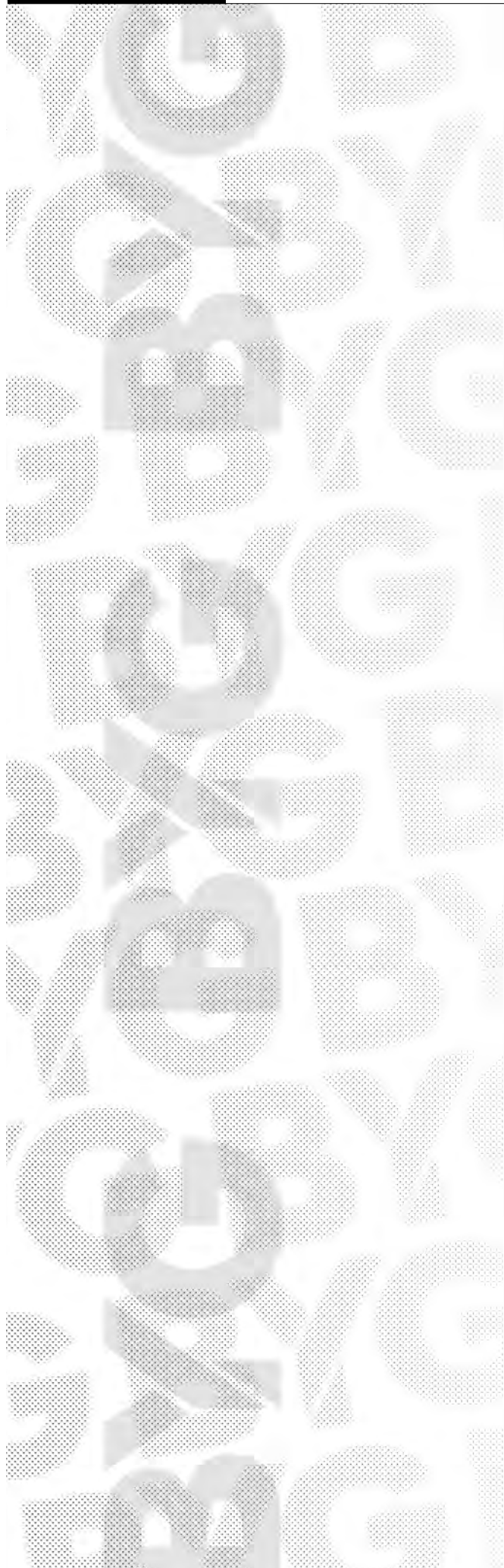


Weld-On Nose



Tooth





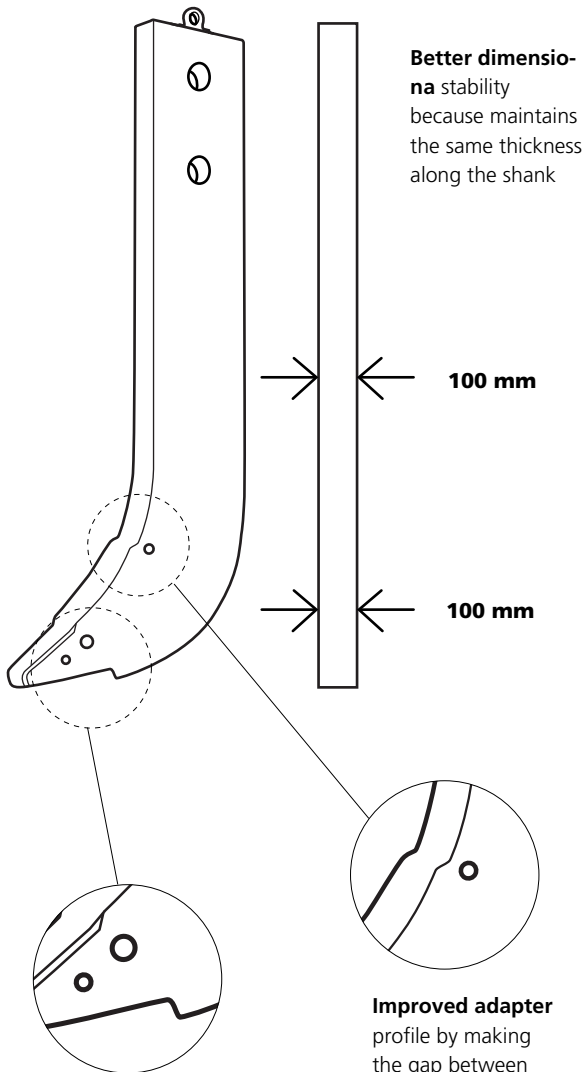
# Rippers

## Characteristics of BYG shanks

### Ripper Shanks

BYG one-piece ripper shanks are cut to length, formed and fully machined. Made of tough abrasion resistant alloy steel and thru-hardened for strength and maximum wear life.

BYG offers a complete range of shanks for main O.E.M. brands on the market, covering from the smallest ripper shank up to the largest 110 mm thick, for the biggest dozers on the market.



**Improved design**  
Reinforced adapter box keeps ripper teeth movement to the minimum as well as protecting the rear area of the tip.

**One-piece machine finished Ripper Shanks**, without any welding avoiding the risk of breakage on the welded areas

### High toughness

Ripper toughness is very high even under difficult conditions, such as high rates of strain combined with low temperatures thanks to the most modern steel used in all our shanks.

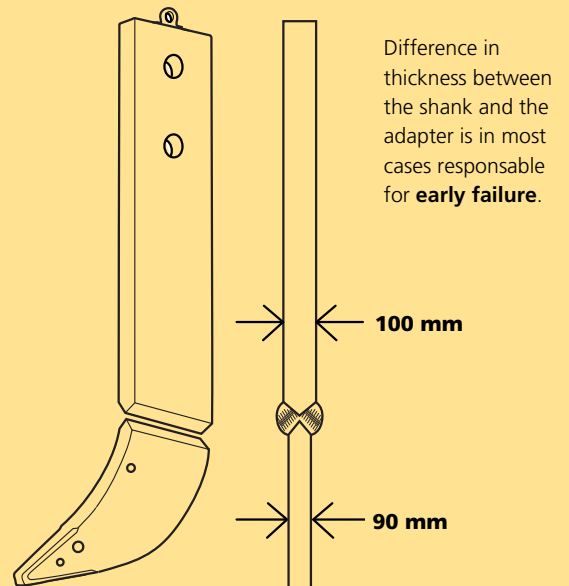
### High strength

Due to its high strength, BYG shanks have better dimensional stability because they maintain the same thickness along the shank and thus sustain a smaller amount of permanent deformation.

### Competitors' Shanks

Fabricated Ripper Shanks made out of **two pieces**, shank and adapter, are **welded** together.

The shank is always thicker than the adapter making the bottom part of the shank the most exposed section to impact, the weakest.



Welded ripper shanks are exposed to **cracks and spaces** along the welded area.



# Rippers

## Characteristics of BYG shanks

### Steel Technical Information

**CHEMICAL COMPOSITION**

(ladle analysis)

C	Si	Mn	P	S	B	Cr	Ni	Mo	CEV.
max	max	max	max	max	max	max	max	max	max
%	%	%	%	%	%	%	%	%	%
0,32	0,70	1,60	0,025	0,010	0,004	1,40	1,50	0,60	0,70

**HARDNESS**

HBW 370-430

**MECHANICAL PROPERTIES**

Typical values for 20 mm plate thickness

Yield Strength		Tensile Strength		Elongation	
R <sub>e</sub> N/mm		R <sub>m</sub> N/mm		A <sub>5</sub> %	A <sub>50</sub> %
1000		1250		10	16

**IMPACT PROPERTIES**

Testing Temperature °C	Impact energy
-40 (-40°F)	Charpy-V, longitudinal 45J

### Steelmaking and casting

Ore-based metallurgy and modern continuous casting produce high-quality slabs with precise chemical composition and with very low levels of residual elements. This lays the foundation for a good end product.

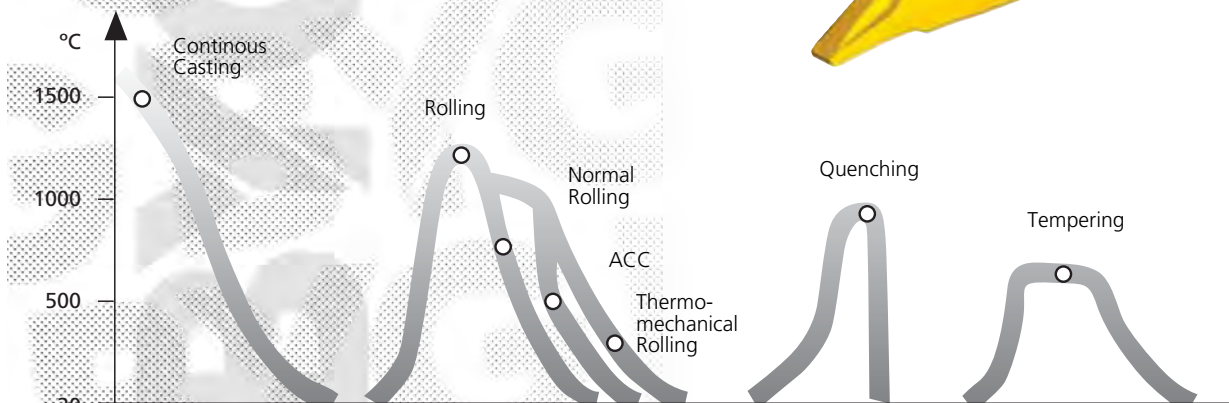
### Selected rolling sequence

The slabs are heated uniformly to 1200°C to enable them to be rolled in a four-high mill. They are rolled accurately to the specified thickness and to the microstructure which is best suited to the subsequent cooling process.

### Quenching and tempering

Plates are quenched and tempered. This involves cooling the plate quickly from 900° to room temperature by intensive spraying with water in a roller quenching equipment.

After being tempered at 580°-650°C, plate acquires uniformly high strength, excellent toughness and good weldability, machinability and workability. Due to the effective water quenching by Accelerated Continuous Cooling in the roller quenching equipment, we can minimize the content of alloying elements.





# Codification of non OEM Ripper Shanks

The reference number of the shanks is composed of 5 blocks of characters. Each block indicates a characteristic of the shank.

**A BB CC DDD EEEE**  
(12 characters without blank spaces)

**A**

The first block (one character) indicates the type of part.

- R COMPLETE RIPPER SHANK
- Z SHANK

Example:

**R \*\* \*\* \*\* \***

**BB**

The second block (2 characters) indicates the quality of the part (Brinell scale), as shown.

- 40 400 Brinell
- 45 450 Brinell
- NX HIGH YIELD STRENGTH

Example:

**R 40 \*\* \*\* \***

**CC**

The third block (2 digits) indicates the shank thickness. The digits correspond exactly to the thickness (millimeters) with the exception of: 100mm, 110mm and 120mm thickness, as shown in the following list:

- 35 35mm. thickness (450 Brinell)
- 40 40mm. thickness (450 Brinell)
- 45 45mm. thickness (450 Brinell)
- 50 50mm. thickness (450 Brinell)
- 60 60mm. thickness (450 Brinell)
- 63 63mm. thickness (450 Brinell)
- 75 75mm. thickness (400 Brinell)
- 80 80mm. thickness (400 Brinell)
- 90 90mm. thickness (400 Brinell)
- 00 100mm. thickness (400 Brinell)
- 01 110mm. thickness (High Yield Strength)
- 02 120mm. thickness (High Yield Strength)

Example:

**R 40 75 \*\*\* \*\*\*\***

**DDD**

This block (3 digits) indicates the width of the shank, in millimeters.

Example:

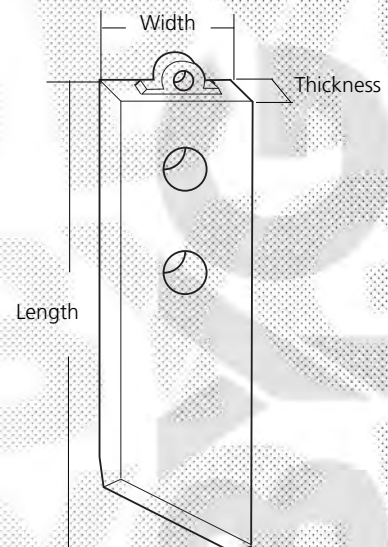
**R 40 75 305 \*\*\*\***

**EEEE**

The last block (4 digits) indicates the length (in millimeters) of the shank, always in multiples of 50mm.

Example:

**R 40 75 305 1650**



Reference example (12 characters without blank spaces)

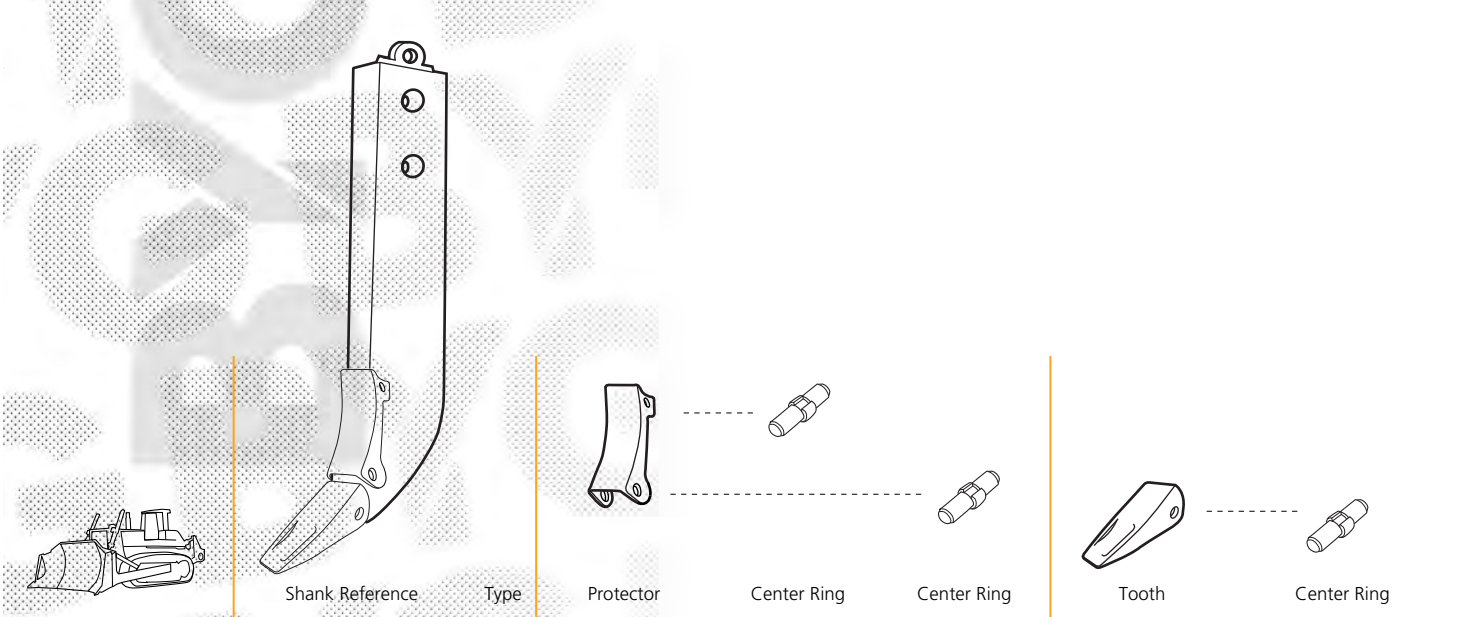
**R40753051650**

Type    Quality    Thickness    Width    Length

Customer should supply reference of teeth and protector to fit shank, number of holes and diameter of holes.



Complete Ripper Shank

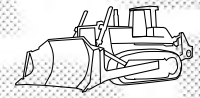
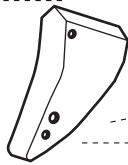
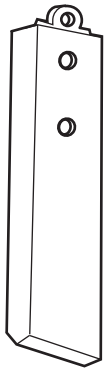


Shank Reference	Type	Protector	Center Ring	Center Ring	Tooth	Center Ring
D40/D45, D40/D41 D50/D53-16 D50/D53-17 D66S	<b>131-78-31180</b> 131-78-00141	-	-	-	131-78-31190	09244-02496 ⇨
D60/D65-7 D60/D65-8 D65-12, D75A-1 D75S-3, D75S-5 D85E-SS-2A	<b>141-78-11241</b> 141-78-00081	-	-	-	141-78-11253 141-78-11330 141-78-11254	09244-02508 ⇨
D85-18, D85-21 D135A-1, D135A-2 D150A-1, D155A-1 D155A-2, D155AX-3	<b>154-78-14344</b> <b>175-78-21613</b> <b>175-78-21614</b>	195-78-21320 195-78-21580*	09244-02508	09244-02508	175-78-31230 175-78-34131 175-78-61660 175-78-31293 175-78-34141 175-78-61670 175-78-31232	09244-02508 ⇨
D275A-2 D355A-3 D455A-1	<b>195-79-31140</b> <b>195-78-41190</b>	SS 195-78-21320 MS 195-78-21580*	09244-02508	09244-02508	17M-78-21350 195-78-21331 195-78-29130 195-78-71440 195-78-29140 195-78-71450 195-78-21333	09244-02508 ⇨
D375A-1	<b>195-78-71120</b>	195-78-71110	09244-02508	09244-02508	195-78-71140 195-78-71250 195-78-71260 195-78-71240	09244-02508 ⇨
D375A-1 D375A-2	<b>195-79-51110</b>	195-78-72410*	09244-03036	09244-03036	195-78-71420 195-78-71320 195-78-71370 195-78-71340 195-78-71350 195-78-71330 195-78-71390	195-78-71360 ⇨
D455A-1	<b>198-79-11630</b> <b>198-78-11240</b>	SS 198-79-11220 MS 198-79-11640*	09244-03036	09244-03036	198-79-11560 198-79-11551	09244-03036 ⇨
D475A-1 D475A-2	-	198-78-21330	09244-03036	09244-03036	198-78-21420 198-78-21340 198-78-21350 198-78-21380	09244-03036 (A1) 198-78-21410 (A2) ⇨
D575A-2	-	-	-	-	19M-78-11520 19M-78-11450 19M-78-11510 19M-78-11450 19M-78-11341	19M-78-11370 ⇨

\* Extended  
MS - Multiple shank Ripper  
SS - Single shank Ripper



# Repair Components of the Shank



Arm of Shank

Adapter

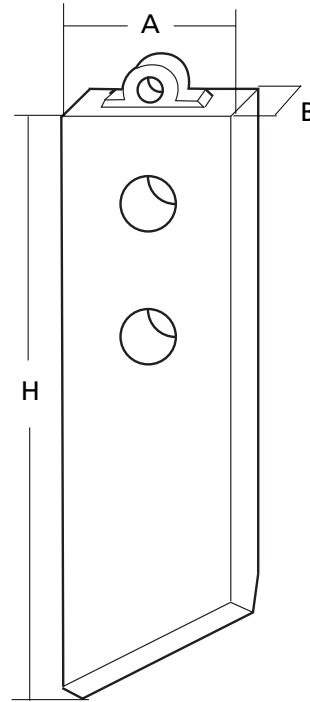
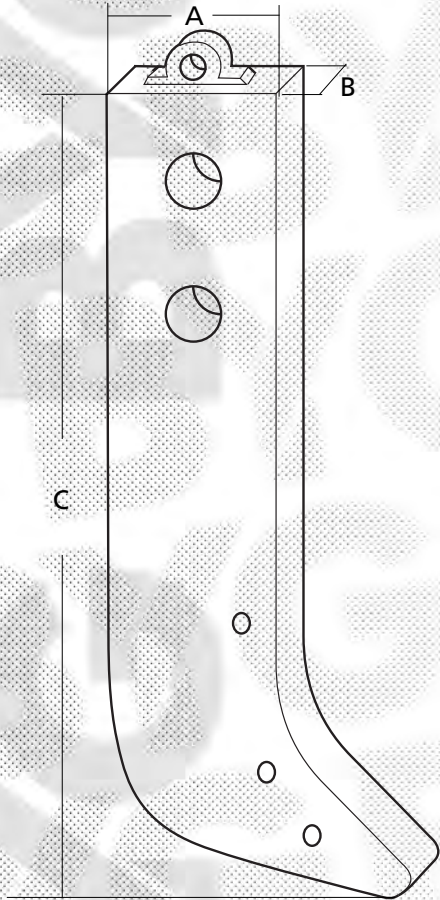
Center Ring

Center Ring

Center Ring

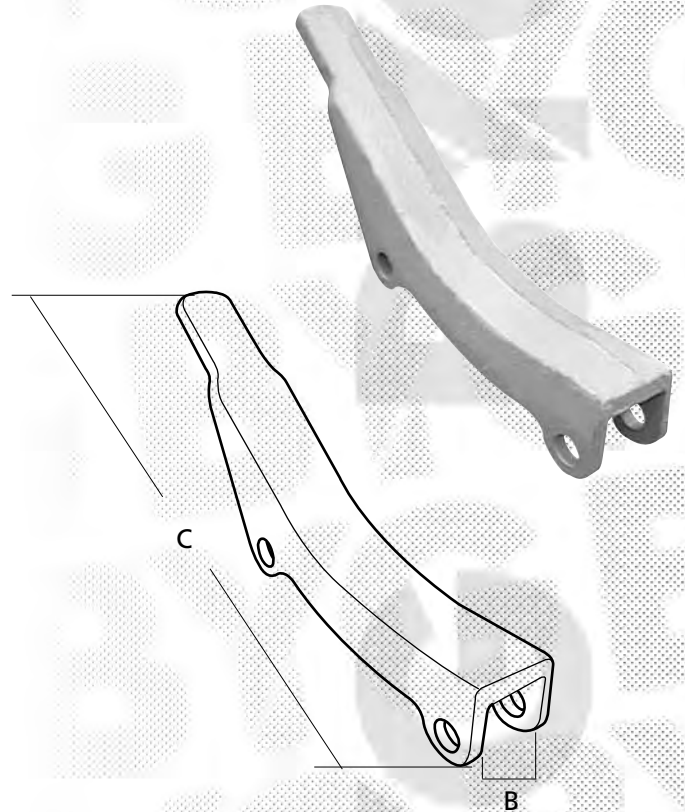
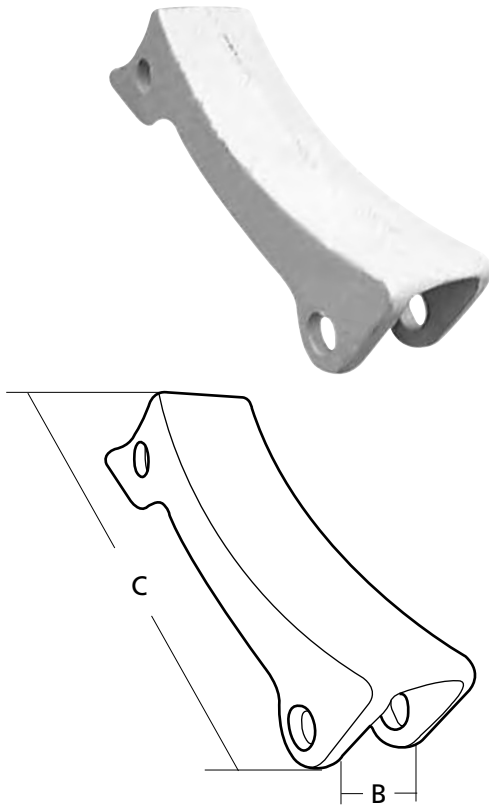
<b>Z4550184-</b>	-	-	-	-	D40/D45, D40/D41 D50/D53-16 D50/D53-17 D66S
<b>Z4075178-</b>	154-78-14340 175-78-21610	09244-02508	09244-02508	09244-02508	D60/D65-7 D60/D65-8 D65-12, D75A-1 D75S-3, D75S-5 D85E-SS-2A
<b>Z4075235-</b>					D85-18, D85-21
<b>Z4075317-</b>	195-78-14350	09244-02508	09244-02508	09244-02508	D135A-1, D135A-2
<b>Z4075330-</b>					D150A-1, D155A-1 D155A-2, D155AX-3
<b>Z4090400-</b>					D275A-2
<b>Z4090360-</b>	198-79-11620	09244-02508	09244-02508	09244-02508	D355A-3 D455A-1
<b>Z4090360-</b>	195-78-71380	09244-02508	09244-02508	09244-02508	D375A-1
<b>Z4095400-</b>	195-78-71380	09244-03036	09244-03036	09244-03036	D375A-1 D375A-2
<b>Z4001464-</b>					D455A-1
<b>Z4095400-</b>					
-	198-78-21430	09244-03036	09244-03036	09244-03036	D475A-1 D475A-2
-	-	-	-	-	D575A-2

# Ripper Shanks & Shanks' Arms



			mm.				Holes
			A	B	C	H	
D40/D45, D40/D41 D50/D53-16 D50/D53-17 D66S	<b>131-78-31180</b> 131-78-00141	<b>Z4550184-</b>	184 7,24"	50 1,97"	864 34,02"	- -	<b>3</b>
D60/D65-7 D60/D65-8 D65-12, D75A-1 D75S-3, D75S-5 D85E-SS-2A	<b>141-78-11241</b> 141-78-00081	<b>Z4075178-</b>	178 7,01"	75 2,95"	686 27,01"	- -	<b>2</b>
D85-18, D85-21 D135A-1, D135A-2 D150A-1, D155A-1 D155A-2, D155AX-3	<b>154-78-14344</b>	<b>Z4075235-</b>	235 9,25"		1320 51,97"	- -	<b>2</b>
	<b>175-78-21613</b>	<b>Z4075317-</b>	317 12,48"	75 2,95"	1600 62,99"	- -	<b>2</b>
	<b>175-78-21614</b>	<b>Z4075330-</b>	330 12,99"		1640 64,57"	- -	<b>2</b>
D275A-2 D355A-3 D455A-1	<b>195-79-31140</b>	<b>Z4090400-</b>	400 15,75"	90	2350 92,52"	- -	<b>4</b>
	<b>195-78-41190</b>	<b>Z4090360-</b>	360 14,17"	3,54"	1800 70,87"	- -	<b>2</b>
D375A-1	<b>195-78-71120</b>	<b>Z4090360-</b>	360 14,17"	90 3,54"	1840 72,44"	- -	-
D375A-1 D375A-2	<b>195-79-51110</b>	<b>Z4095400-</b>	400 15,75"	95 3,74"	2350 92,52"	- -	-
D455A-1	<b>198-79-11630</b>	<b>Z4001464-</b>	464 18,27"	110 4,33"	2845 112,01"	- -	<b>5</b>
	<b>198-78-11240</b>	<b>Z4095400-</b>	400 15,75"	95 3,74"	2159 85,00"	- -	<b>2</b>
D475A-1 D475A-2	-	-	-	-	-	-	-
D575A-2	-	-	-	-	-	-	-

Ripper Protectors



mm.											
↔		B	C	KG							
-	-	-	-	-	-	-	-	-	-	-	D40/D45, D40/D41 D50/D53-16 D50/D53-17 D66S
-	-	-	-	-	-	-	-	-	154-78-14340 175-78-21610	-	D60/D65-7 D60/D65-8 D65-12, D75A-1 D75S-3, D75S-5 D85E-SS-2A
75 2,95"	79 3,11"	467 18,39"	6,80 14,99	<b>195-78-21320</b>	-	09244-02508	09244-02508	195-78-14350	-	-	D85-18, D85-21 D135A-1, D135A-2 D150A-1, D155A-1 D155A-2, D155AX-3
-	-	703 27,68"	12,24 26,98	-	<b>195-78-21580</b>	-	-	198-79-11620	-	-	D275A-2 D355A-3 D455A-1
75 2,95"	78 3,07"	513 20,20"	3,20 7,05	<b>195-78-71111</b>	-	09244-02508	09244-02508	195-78-71380	-	-	D375A-1
80 3,15"	82 3,23"	862 33,94"	49,90 110,01	-	195-78-72410	09244-03036	09244-03036	198-78-71380	-	-	D375A-1 D375A-2
-	-	-	-	198-79-11220	-	09244-03036	09244-03036	-	-	-	D455A-1
-	-	-	-	-	198-79-11640	-	-	-	-	-	-
95 3,74"	98 3,86"	683 26,89"	39 85,98	198-78-21330	-	09244-03036	09244-03036	198-78-21430	-	-	D475A-1 D475A-2
-	-	-	-	-	-	-	-	-	-	-	D575A-2



Ripper Adapters

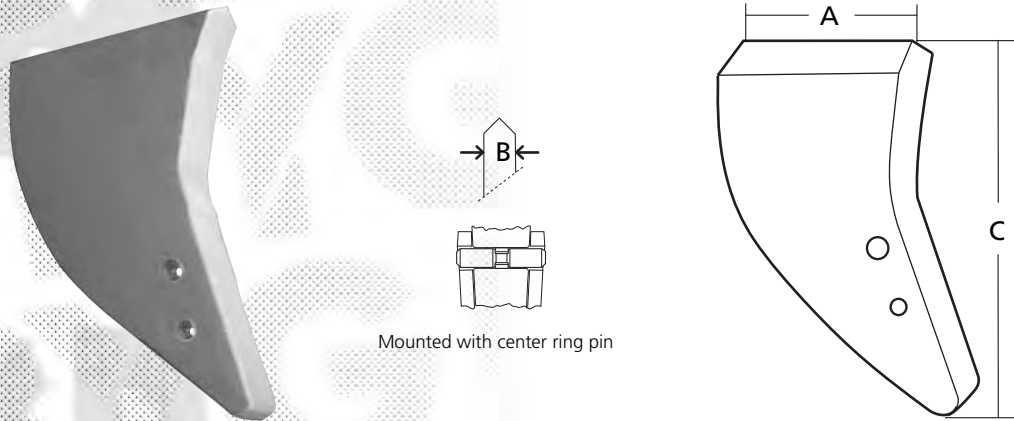








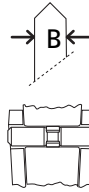
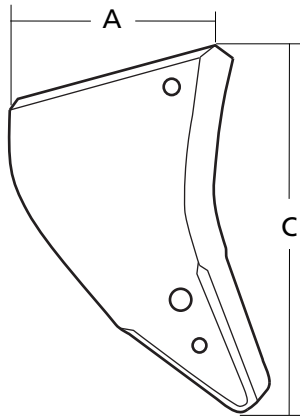


Fig. 1

	mm.			Fig. 1	Fig. 2					
	A	B	C							
D40/D45, D40/D41 D50/D53-16 D50/D53-17, D66S	-	-	-	-	-	-	-	131-78-31190	09244-02496	131-78-31180 131-78-00141
D60/D65-7 D60/D65-8 D65-12 D75A-1 D75S-3 D75S-5 D85E-SS-2A	178 7,01"	76 2,99"	-			-	09244-02508	09244-02508	141-78-11253 141-78-11330 141-78-11254	09244-02508 141-78-00081
D85-18, D85-21 D135A-1 D135A-2 D150A-1 D155A-1 D155A-2 D155AX-3	300 11,81"	76 2,99"	-	-	-	195-78-14350	09244-02508	09244-02508	175-78-32230 175-78-34131 175-78-61660 175-78-31293 175-78-34141 175-78-61670 175-78-31232	154-78-14344 175-78-21613 195-79-21614
D275A-2 D355A-3 D455A-1	-	-	-	-	198-79-11620	09244-02508	09244-02508	17M-78-21350 195-78-21331 195-78-29130 195-78-71440 195-78-29140 195-78-71450 195-78-21333	09244-02508	195-79-31140 195-78-41190













Ripper Adapters



Mounted with center ring pin



Fig. 2

	mm.			Fig. 1	Fig. 2					
	A	B	C							
D375A-1	351	76	484			09244-02508	09244-02508	195-78-71140	09244-02508	195-78-71120
								195-78-71250		
D375A-1 D375A-2	13,82"	2,99"	19,06"			09244-03036	09244-03036	195--78-71420	195-78-71360	195-79-51110
								195-78-71320		
D455A-1	-	-	-	-	-	-	-	198-79-11560	09244-03036	198-79-11630
								198-79-11551		198-78-11240
D475A-1 D475A-2	359	95	567			09244-03036	09244-03036	198-78-21420	09244-03036(A-1)	-
	14,13"	3,74"	22,32"					198-78-21340		
D575A-2	-	-	-	-	-	-	-	19M-78-11520	19M-78-11370	-
								19M-78-11450		

Ripper Teeth



Fig. 1

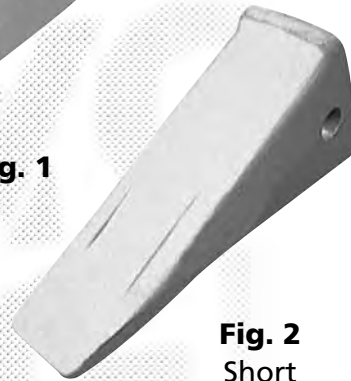
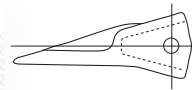
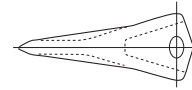


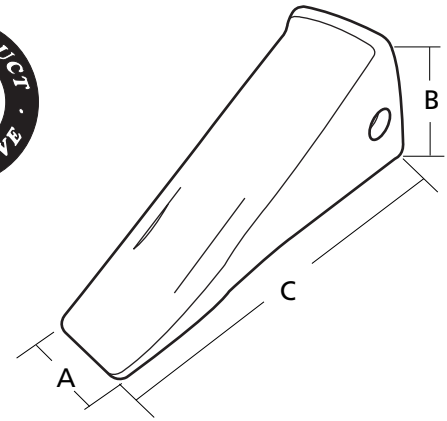
Fig. 2 Short



Penetration teeth:  
good penetration



Simmetric teeth:  
more wear  
material



mm.			KG	Shape	Fig	Quality	Quality	Quality	Quality	
A	B	C								
90 3,54"	115 4,53"	260 10,24"	17,56 38,71	-	<b>1</b>	<b>131-78-31190</b>	STD	•	09244-02496	D40/D45, D40/D41 D50/D53-16 D50/D53-17 D66S
		219 8,62"	-	Corto	<b>2</b>	141-78-11330	STD	•		D60/D65-7 D60/D65-8
116 4,57"	125 4,92"	277 10,91"	17,56 38,71	Standard	<b>3</b>	<b>141-78-11253</b>		•	09244-02508	D65-12, D75A-1 D75S-3, D75S-5 D85E-SS-2A
		342 13,46"	-	L	<b>4</b>	141-78-11254		•		
		335 13,19"	24,50 54,01	Standard	<b>3</b>	<b>175-78-31230</b> FK155R2	STD	•		
		-	7,10 15,65	Standard	<b>3</b>	<b>175-78-31232</b> FK155R2	HD	•		D85-18, D85-21
118 4,65"	129,3 5,09"	385 15,16"	-	L	<b>4</b>	175-78-31293 FK155R2	STD	•		D135A-1, D135A-2
		-	-	L	<b>4</b>	175-78-61660	HD	•	09244-02508	D150A-1, D155A-1
		-	-	L	<b>4</b>	175-78-61670	HD	•		D155A-2, D155AX-3
		379 14,92"	-	L	<b>4</b>	<b>175-78-34131</b> FK155R2		•		
		-	-	L	<b>4</b>	<b>175-78-34141</b> FK155R2		•		
		-	-	C	<b>2</b>	17M-78-21350	STD	•		
118 4,65"	155 6,10"	365 14,37"	6,80 14,99	Standard	<b>3</b>	<b>195-78-21331</b> FK355R2	HD	•		
		-	1,75 3,86	Standard	<b>3</b>	<b>195-78-21333</b> FK355R2	STD	•		D275A-2 D355A-3
		-	-	L	<b>4</b>	195-78-71440	HD	•	09244-02508	
		-	-	L	<b>4</b>	195-78-71450		•		
		418 16,46"	-	L	<b>4</b>	<b>195-78-29130</b> FK355R2		•		
		-	-	L	<b>4</b>	<b>195-78-29140</b> FK355R2		•		



Ripper Teeth

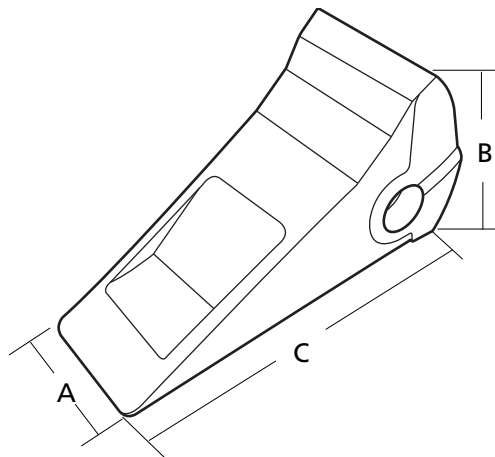


Fig. 3  
STD

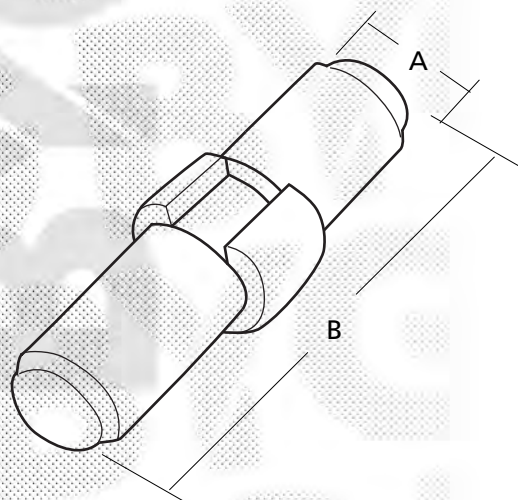



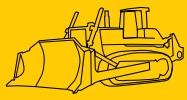
Fig. 4

mm.			KG	Shape	Fig	Quality	Quality	Quality	Quality
A	B	C							
VALUE!	VALUE!	383	4,50	Standard	3	195-78-71140	STD	•	
124	173	435	9,92	Standard	3	195-78-71240	HD	•	
273,37	381,39	958,99	-	L	4	195-78-71250	STD	•	09244-02508
		487	-	L	4	195-78-71260	HD	•	
		1073,63	-	L	4	195-78-71420	STD	•	
			-	C	2	195-78-71420	STD	•	
		435	6,35	Standard	3	195-78-71320	STD	•	
		958,99	14,00	Standard	3	FK375R2	HD	•	
			3,10	Standard	3	195-78-71330	HD	•	
			6,83	Standard	3	FK375R2	STD	•	195-78-71360
			-	Standard	3	195-78-71370	STD	•	
			-	Standard	3	195-78-71390	HD	•	
124	173	487	-	L	4	195-78-71340	STD	•	
273,37	381,39	1073,63	-	L	4	FK375R2	HD	•	
			-	L	4	195-78-71350	HD	•	
			-	L	4	FK375R2	HD	•	
137	183	430	-	Standard	3	198-79-11560	STD	•	
302,03	403,44	947,97	-	Standard	3	198-79-11551	HD	•	09244-03036
			6,15	L	3	198-78-21340	STD	•	09244-03036 (A-1)
			13,56	L	3	198-78-21340	STD	•	
150	201	465	19,40	Standard	3	198-78-21350	HD	•	198-78-21410 (A-2)
330,69	443,12	1025,13	42,77	Standard	3	198-78-21350	HD	•	
			-	Standard	2	198-78-21420	STD	•	-
			-	L	4	198-78-21380	HD	•	-
			-	-	-	19M-78-11341	HD	•	
			-	-	-	19M-78-11450	STD	•	
			-	-	-	19M-78-11510	HD	•	19M-78-11370
			-	-	-	19M-78-11450	HD	•	19M-78-11370
			-	-	-	19M-78-11520	STD	•	19M-78-11370

L=Long C=Short

## Sujección Ripper



mm.		Ref. BYG 	Ref. Alternativa	
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
25 0,98"	109 4,29"	<b>09244-02508</b>	175-78-21740	D60/D65-7 D60/D65-8, D65-12, D75A-1 D75S-3, D75S-5, D85E-SS-2A
				D85-18, D85-21, D135A-1, D135A-2 D150A-1, D155A-1, D155A-2, D155AX-3
				D275A-2, D355A-3 D455A-1
				D375A-1
25 0,98"	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
-	-	198-78-21340	-	D475A-1, D475A-2
35 1,38"	185 7,28"	<b>19M-78-11370</b>	19M-78-11371	D575 A-2