



Section J

Track and Running Gear

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Section J - Track and Running Gear

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Technical Data

Torque Specifications

Component	Nm	kgf m	lbf ft	Remarks
Drive sprocket fastening bolts	267-312	27.2-31.8	196.65-229.91	JCB Threadseal
Idler wheel installation bolts	267 - 312	27.2 - 31.8	196.65-229.91	JCB Threadseal
Top roller installation bolts	521-608	53.1-62	383.91-448.26	JCB Threadseal
Bottom roller installation bolts	371-432	37.8-44.1	273.29-318.84	JCB Threadseal
Recoil unit installation bolts	380-443	38.7-45.2	279.8-326.79	JCB Threadseal
Track Shoe Bolts	775.1-931.6	77-95	556.71-686.85	JCB Threadseal

Note: Install the drive sprocket with the chamfer to the body side.

Idler Wheel and Recoil Unit

Removal

- 1 Slacken the check valve to bleed out grease.

⚠ WARNING

When opening the check valve always stand to one side and loosen a little at a time until grease starts to come out. If you over-loosen too much grease could spurt out or the valve cover fly out and cause serious injury.

8-3-4-5

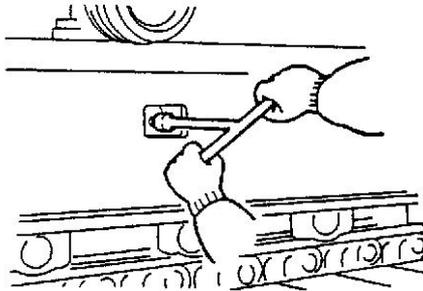


Fig 1.

- 2 Disconnect the track link, see *Track Motor/Reduction Gearbox, Removal and replacement, Section F*. Move the idler wheel and recoil assembly to the end of the undercarriage using a bar.

⚠ WARNING

Stand clear and to one side of the track while you remove the master pin. When the master pin is removed the track could fall forward and injure you.

TRACK-1-1

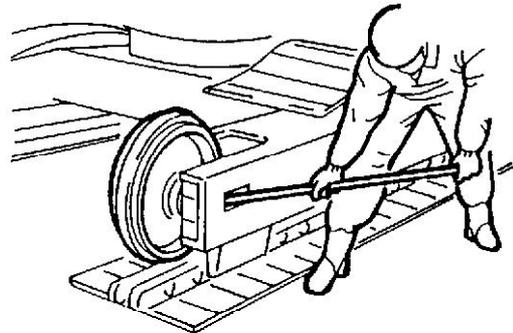


Fig 2.

- 3 Fasten a sling around the idler wheel and recoil assembly and remove it from the undercarriage.

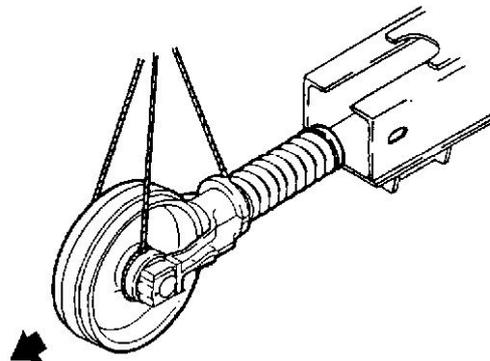


Fig 3.

- 4 Remove the bolts and remove the idler wheel from the recoil unit.

WARNING

RECOIL UNITS ARE DANGEROUS. They must not be dismantled without using suitable tools to compress the spring safely. The spring pressure can cause serious injury if suddenly released. Scrap units must be made harmless by compressing the spring in a hydraulic press and cutting through the end of the shaft before slowly releasing the pressure.

TRACK-1-10

Note: See *Grease Cylinder, Removal for Recoil Spring dismantling details.*

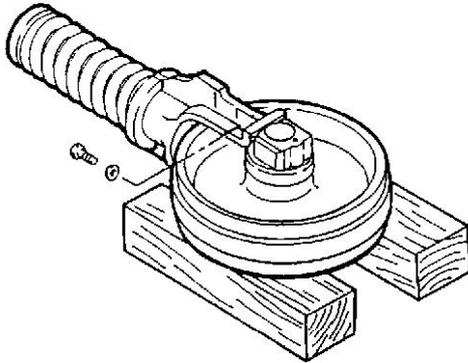


Fig 4.

Replacement

- 1 Before fitting the idler wheel, check the oil level at 5-A. If required, top up with the specified oil (see **Section 3**). Assemble the idler wheel to the recoil unit and fit the mounting bolts.

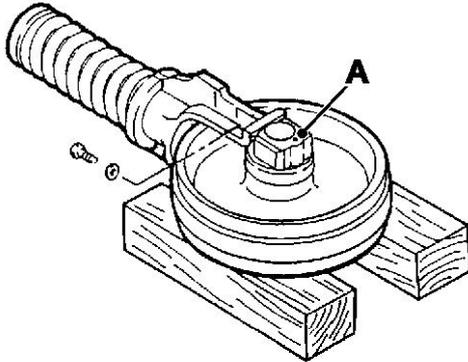


Fig 5.

- 2 Fasten a sling around the idler wheel and recoil assembly and enter it into the undercarriage.

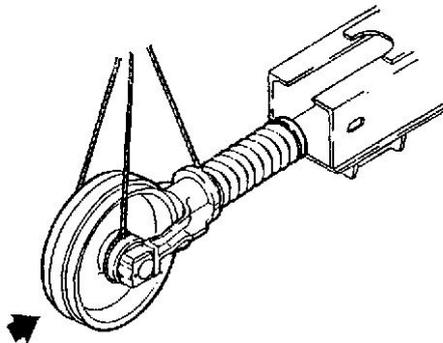


Fig 6.

- 3 Position the idler wheel in the undercarriage using a bar.

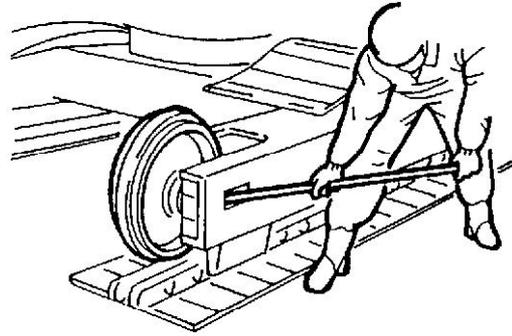


Fig 7.

- 4 Connect the track link, see **Track Motor/Reduction Gearbox, Removal and Replacement, Section F**. Apply grease through the check valve to adjust the track tension, see **Checking/Adjusting the Track Tension, Section 3**.

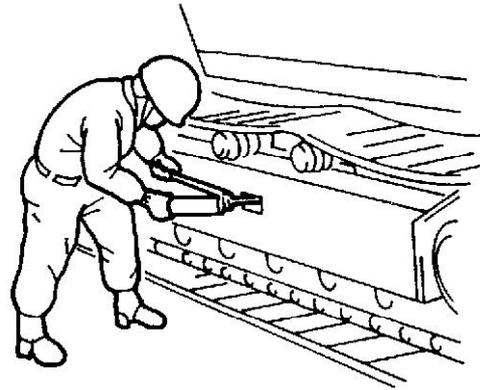


Fig 8.

Idler Wheel

Dismantling

- 1 Clean the idler wheel with a suitable solvent. Remove the plug **9-A** from hub **9-B** and drain the oil.

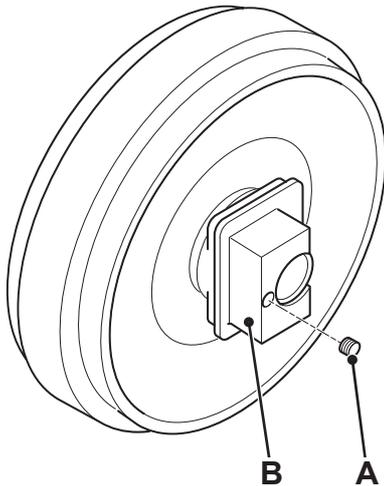


Fig 9.

- 2 On one side of the unit only, remove the wire clip **10-E** or roll pin (later machines) and separate the hub **10-C** from shaft **10-D**.

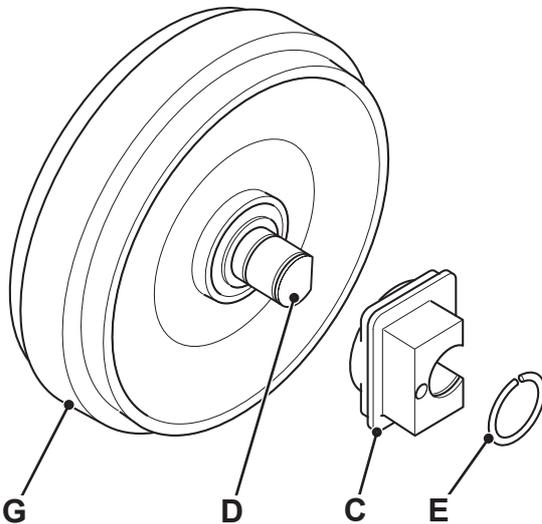


Fig 10.

- 3 Remove 'O'-ring **11-F** from shaft **11-D**. Pull out the shaft **11-D** from the idler wheel **11-G**.

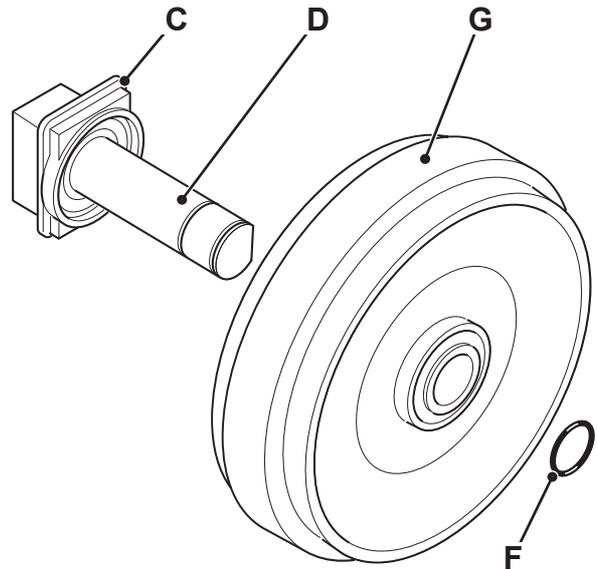


Fig 11.

- 4 Remove the wire clip **12-E** or roll pin (later machines) and separate hub **12-C** from shaft **12-D**. Remove 'O'-ring **12-F** from shaft **12-D**.

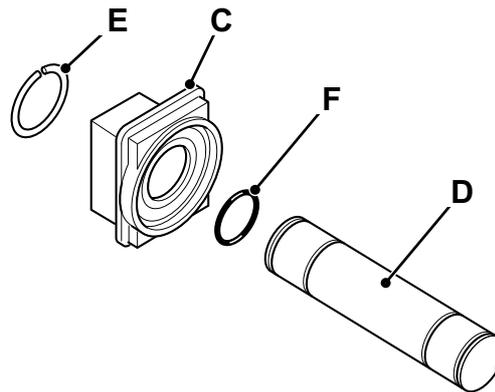


Fig 12.

- 5 Remove floating seal **13-J** from each hub **13-C** using a pry bar.

Remove floating seal **13-J** from each side of idler wheel **13-G** using a pry bar.

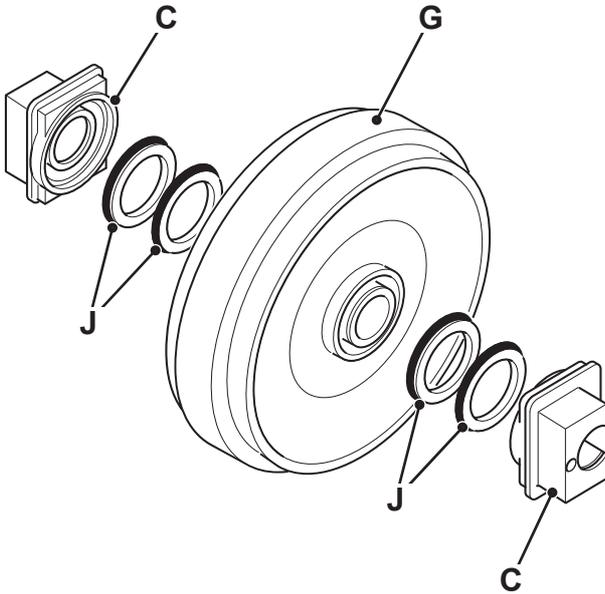


Fig 13.

- 6 If badly worn or damaged, remove the bushes **14-K** from idler wheel **14-G** using a press or puller.

Protect parts from moisture and dust if left dismantled for some time.

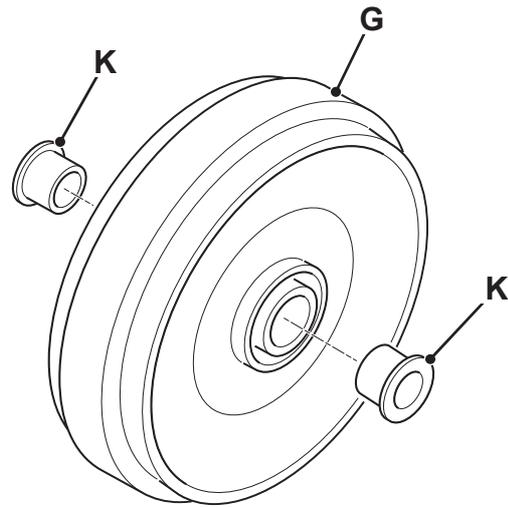


Fig 14.

Assembly

- 1 Clean all parts thoroughly in a suitable solvent. Dry shaft and bore of idler wheel using compressed air in a place free of dust and moisture.

Check components for wear as detailed, See [Wear Limits \(J-9\)](#). Polish out scratches and roughness using an oil stone. Then apply a coat of engine oil to all parts.

Carefully drive the new bushes **15-K** into the idler wheel **15-G**, using a suitable dolly.

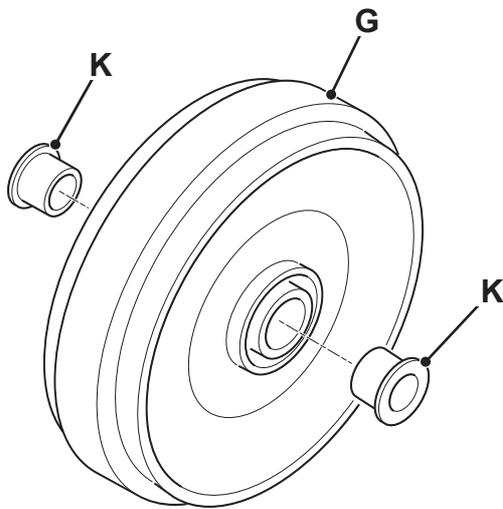


Fig 15.

- 2 Apply a coating of grease and install a new floating seal **16-J** into each side of the idler wheel **16-G** and hub.

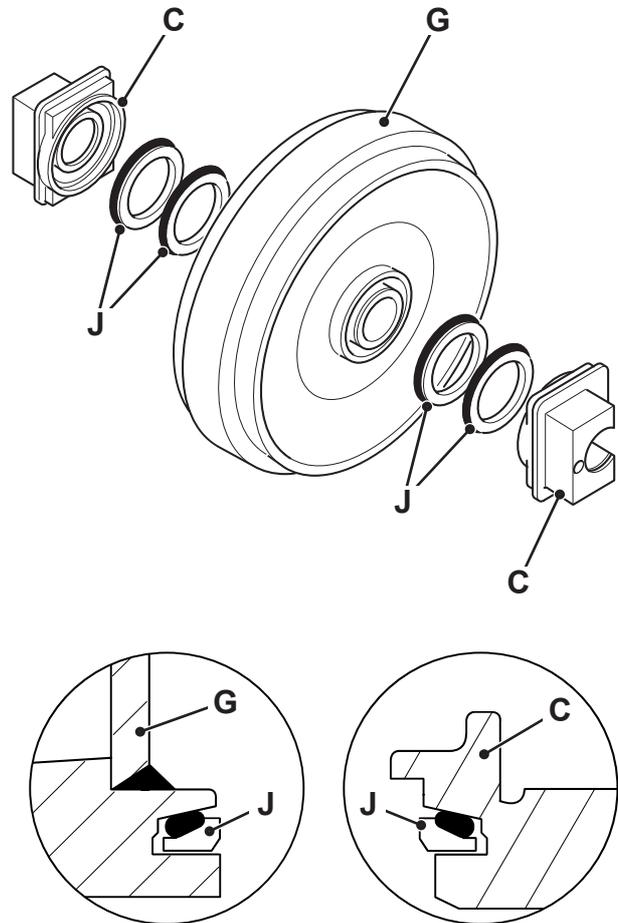


Fig 16.

Note: Ensure floating seals *J* are fitted correctly. ⇒ [Fig 16. \(J-7\)](#)

- 3 Grease a new 'O'-ring **17-F** and install on one end only of shaft **17-D**. Install shaft **17-D** into hub **17-C**. Fit new wire clip **17-E** or roll pin (later machines).

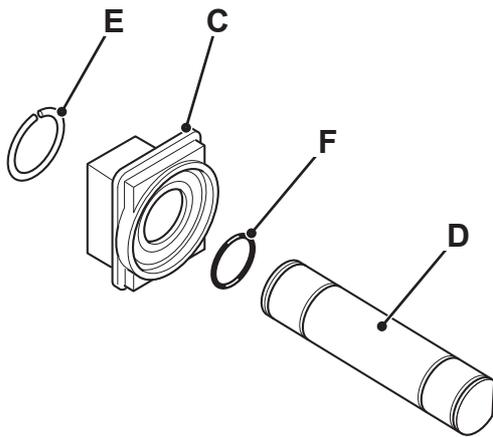


Fig 17.

- 4 Coat shaft **18-D** with grease. Clean the metallic face of the seal, coat the metallic face with engine oil and insert the shaft into the idler wheel **18-G**.

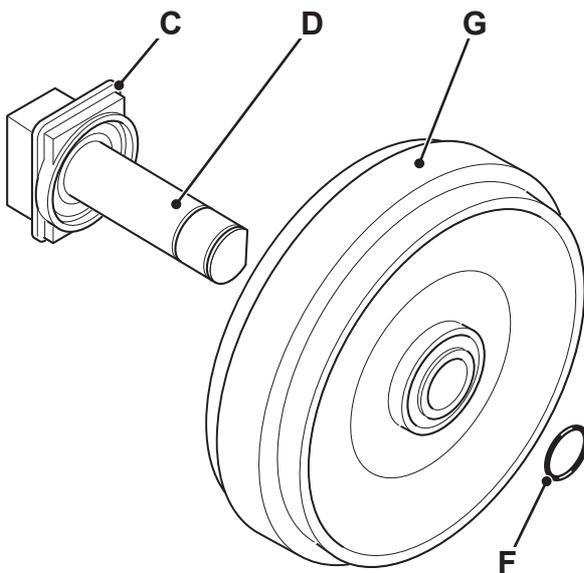


Fig 18.

- 5 Apply grease to a new 'O'-ring **18-F** and install it on the shaft **18-D**.

Clean the metallic face of the seal, coat the metallic face with engine oil and install the hub **19-C** onto the

shaft **19-D**. Fit new wire clip **19-E** or roll pin (later machines).

Wrap sealing tape around the plug **19-A** with one thread remaining uncovered. Insert this plug but leave the other one out until after testing.

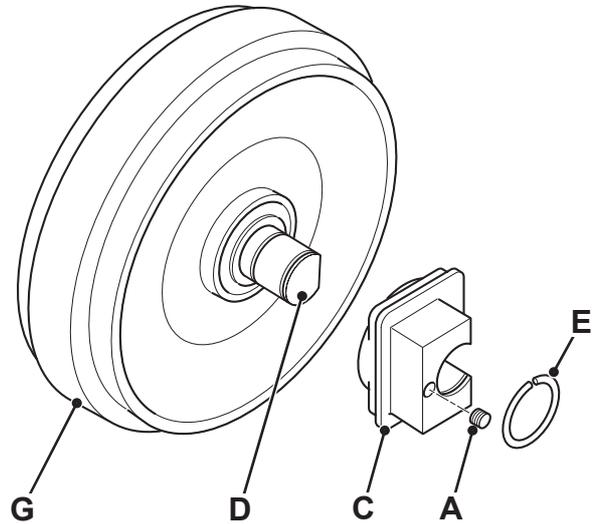


Fig 19.

- 6 Add the specified oil (see Section 3). Install plug using an appropriate pipe sealant.

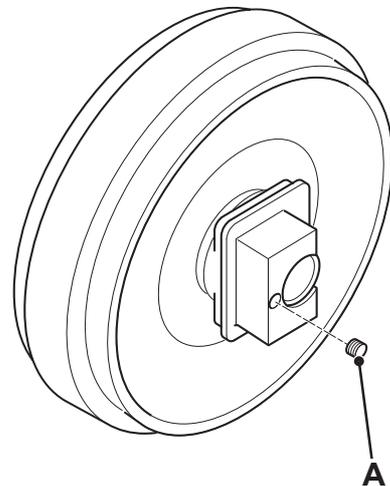
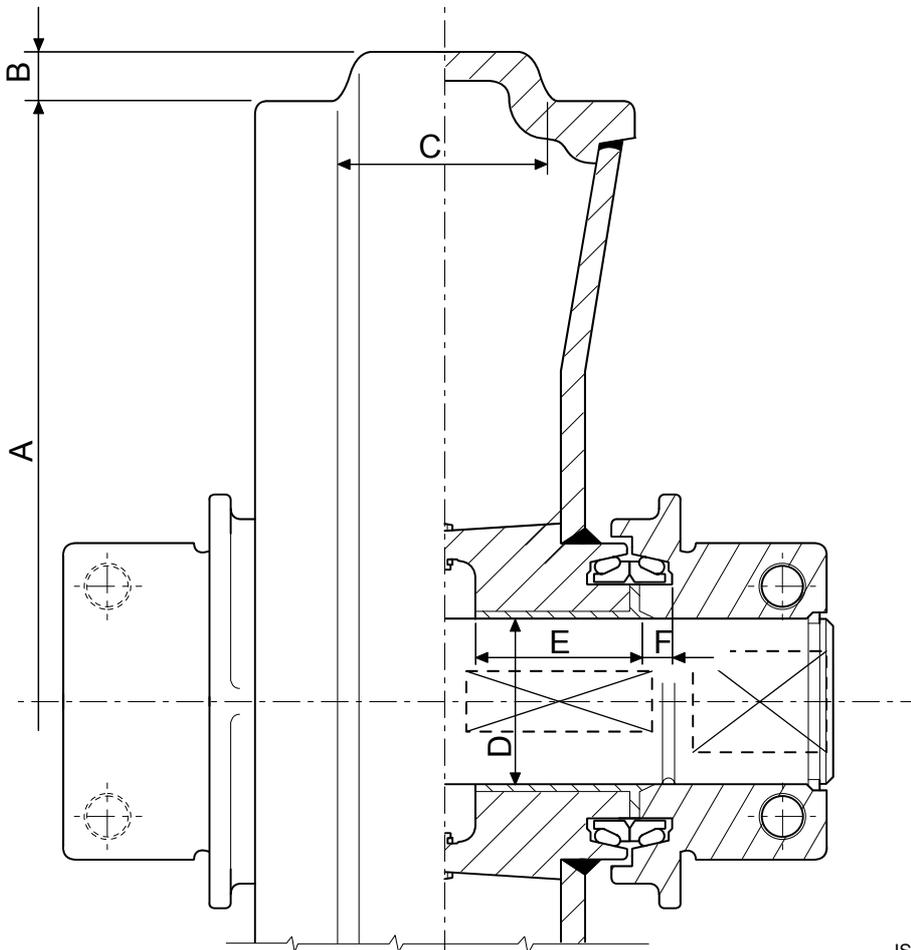


Fig 20.

Wear Limits

Item	Dimension	Standard Size		Service Limit		Action
		mm	in	mm	in	
Wheel Diameter	A	494	19.4	490	19.29	Build up or renew
	B	21	0.8	-	-	
Wheel Width	C	84	3.3	80	3.14	Build up or renew
Shaft Diameter	D	65	2.55	64.5	2.53	
Bush Bore	D	65	2.55	65.0	2.59	Renew
Length over Bush/Seal	E	69	2.71	68.6	2.7	Renew
Hub	F	12.4	0.48	11.9	0.46	Renew



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Fig 21.

Grease Cylinder

Removal and Replacement

Removal

- 1 Slacken the check valve to bleed out grease.

⚠ WARNING

When opening the check valve always stand to one side and loosen a little at a time until grease starts to come out. If you over-loosen too much grease could spurt out or the valve cover fly out and cause serious injury.

8-3-4-5

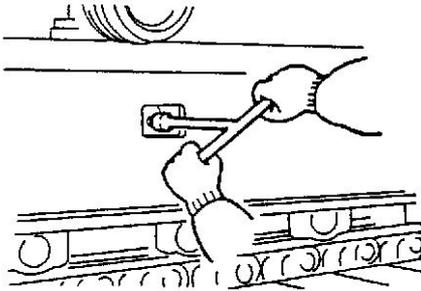


Fig 22.

- 2 Disconnect the track link, see *Track Motor/Reduction Gearbox, Removal and replacement, Section F*. Move the idler wheel and recoil assembly to the end of the undercarriage using a bar.

⚠ WARNING

Stand clear and to one side of the track while you remove the master pin. When the master pin is removed the track could fall forward and injure you.

TRACK-1-1

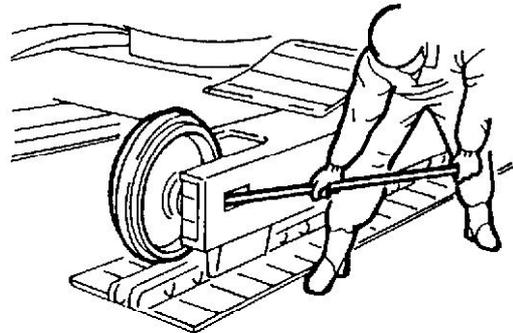


Fig 23.

- 3 Fasten a sling around the idler wheel and recoil assembly and remove it from the undercarriage.

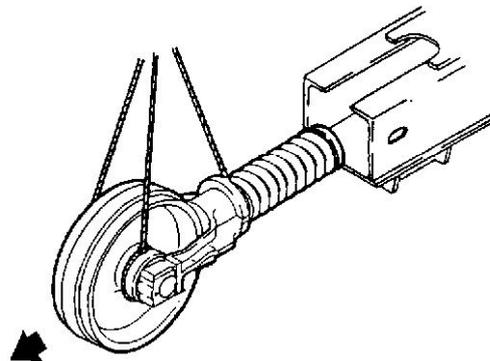


Fig 24.

- 4 Remove the bolts and remove the idler wheel from the recoil unit.

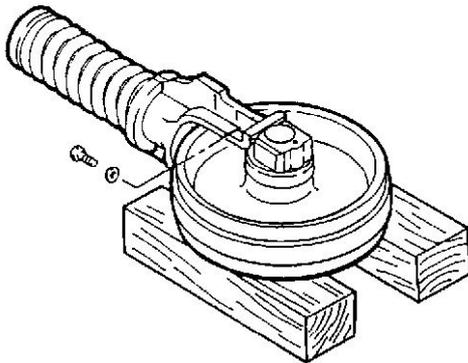


Fig 25.

WARNING

RECOIL UNITS ARE DANGEROUS. They must not be dismantled without using suitable tools to compress the spring safely. The spring pressure can cause serious injury if suddenly released. Scrap units must be made harmless by compressing the spring in a hydraulic press and cutting through the end of the shaft before slowly releasing the pressure.

TRACK-1-10

Note: If it becomes necessary to dismantle the recoil spring assembly, the following procedure should be used.

- 5 Prepare the jig for Recoil Spring Disassembly. Place the re-coil spring unit as shown.

Jack up the hydraulic jack A and compress the Recoil Spring B.

- 6 Remove the Recoil Spring. Pull out the Spring Pin C and remove the castellated nut D. Let the jack A down to relieve the pressure on the recoil spring B.

Remove the components from the jig, firstly the yoke E, spring B and finally, the grease cylinder F.

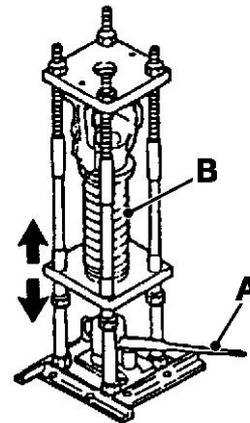


Fig 26.

Replacement

- 1 Reassembly of Components.
 - a Set the components in the jig, firstly the grease cylinder **F**, then place the spring **B** on top, and finally, the yoke **E**.
 - b Extend jack **A** and compress recoil spring **B**.
 - c Install the castellated nut **D** on the threaded section of the grease cylinder **F** which protrudes through the yoke **E**. Tighten nut **D**, aligning the castellations with the pin hole.
 - d Remove the recoil spring assembly from the jig. See "*Recoil Spring Installation*".
 - e Renew and install spring pin **C**.
 - f Release jack **A** carefully and allow recoil spring **B** to expand. Remove assembly from the jig.

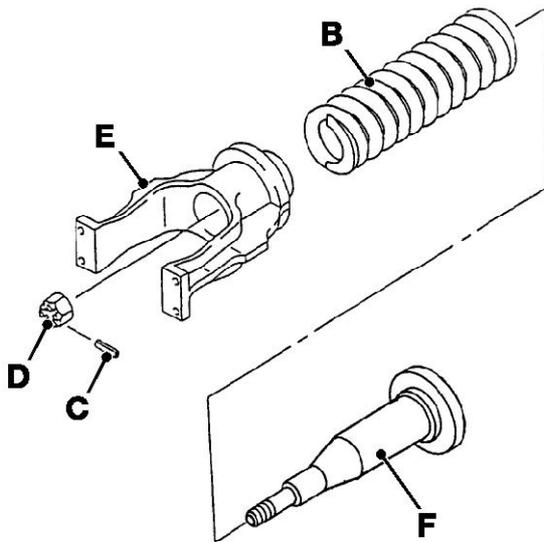


Fig 27.

Dismantling

- 1 Clean the grease cylinder **A** with an appropriate detergent. Remove bolt **B** and washer **C**, remove the bracket **D**. Remove the check valve **E**, together with the grease nipple **F** from the cylinder **A**.

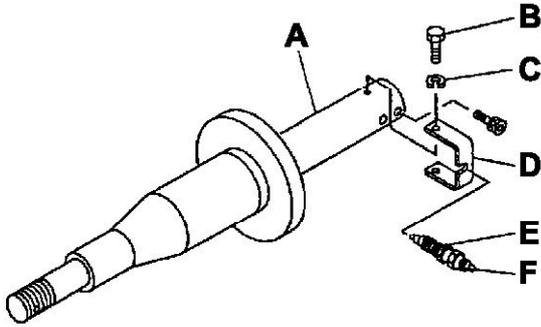


Fig 28.

- 2 Pull out the Piston Rod **G** from the grease cylinder **A**.

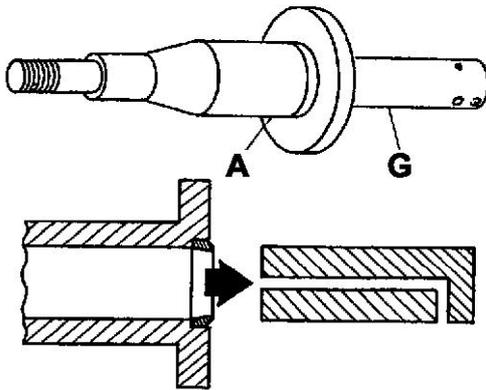


Fig 29.

- 3 Remove the Dust Seal **H** from the grease cylinder **A**.

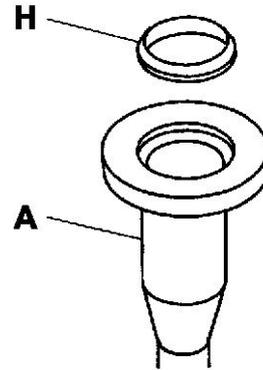


Fig 30.

- 4 Remove the Back-up ring **J** and 'O'-ring **K** from the grease cylinder.

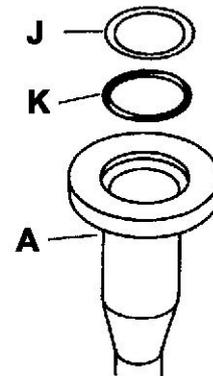


Fig 31.

Assembly

- 1 Install a new greased 'O'-ring **K**, to the grease cylinder **A**. Install a new back-up ring **J**.

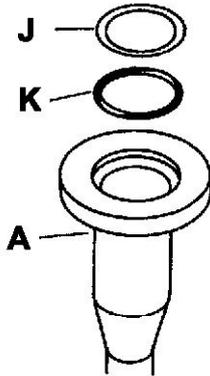


Fig 32.

- 2 Install the dust seal **H** using a suitable jig and hammer to the grease cylinder **A**.

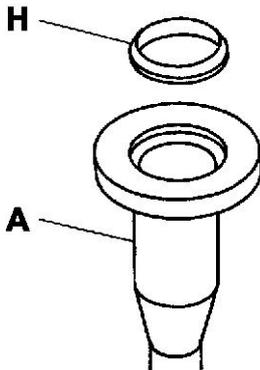


Fig 33.

- 3 Coat the piston rod **G** with grease.
Insert the piston rod **G** into the grease cylinder **A**.

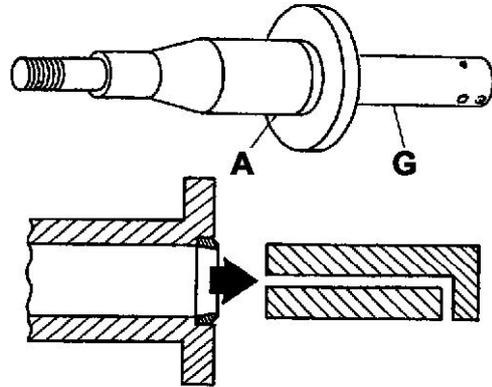


Fig 34.

- 4 Install the check valve **E**, with the grease nipple **F**, to the grease cylinder **A** torque to 58.84 Nm (43.4 lb/ft).

Fasten the bracket **D** to the grease cylinder **A** using the bolt **B** and washer **C**.

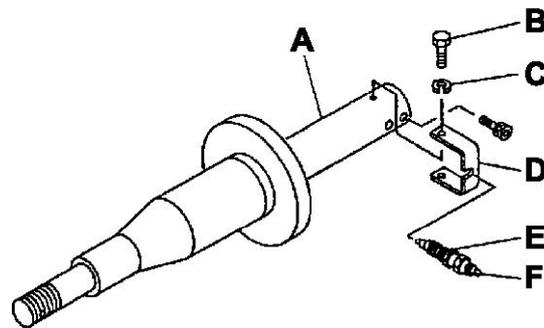


Fig 35.

Drive Sprocket

Removal

- 1 Slacken the check valve to bleed out grease.

⚠ WARNING

When opening the check valve always stand to one side and loosen a little at a time until grease starts to come out. If you over-loosen too much grease could spurt out or the valve cover fly out and cause serious injury.

8-3-4-5

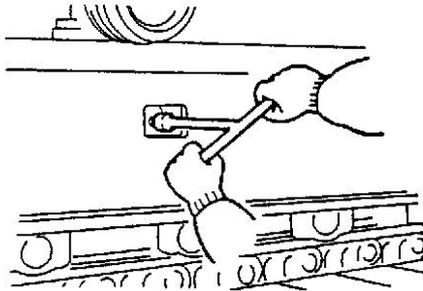


Fig 36.

- 2 Disconnect the track link, see *Track Motor/Reduction Gearbox, Removal and Replacement*.

⚠ WARNING

Stand clear and to one side of the track while you remove the master pin. When the master pin is removed the track could fall forward and injure you.

TRACK-1-1

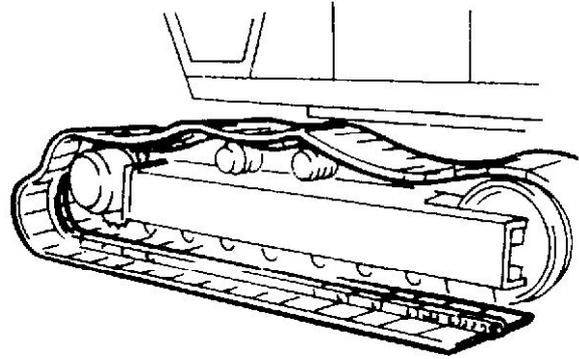


Fig 37.

- 3 Lift the side of the undercarriage high enough to permit drive sprocket removal. Support with wooden blocks.

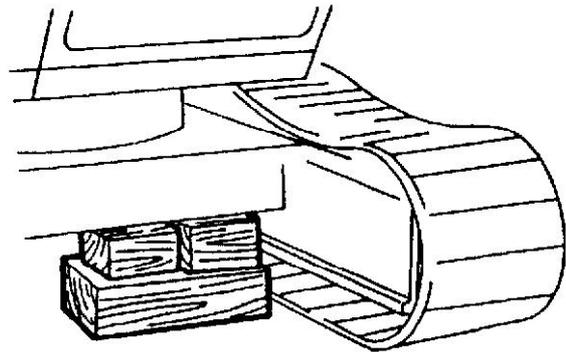


Fig 38.

- 4 Support the drive sprocket, remove the bolts and lever it away from the gearbox unit.

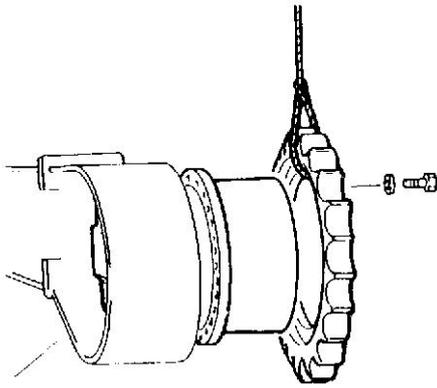


Fig 39.

Replacement

- 1 Support the sprocket and position it on the gearbox.

Install the bolts and washers, using Threadseal on the bolt threads. Tighten the bolts in a diagonal sequence to a torque of 267 - 312 Nm (197 - 230 lbf ft, 27 - 31 kgf m).

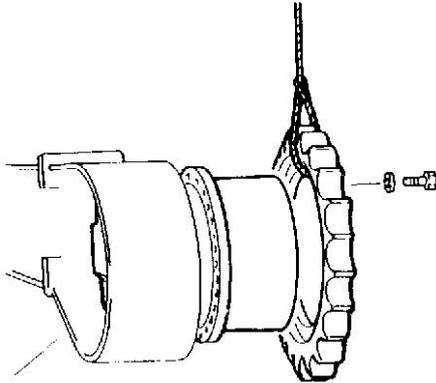


Fig 40.

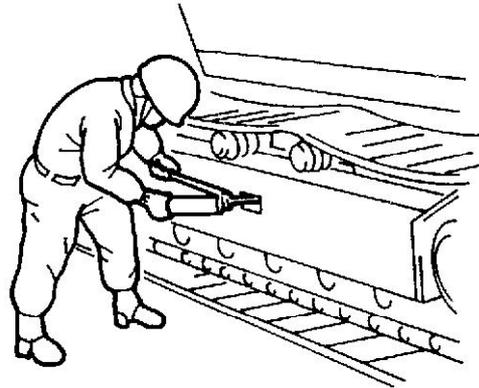


Fig 42.

- 2 Remove the wooden blocks. Connect the track link.

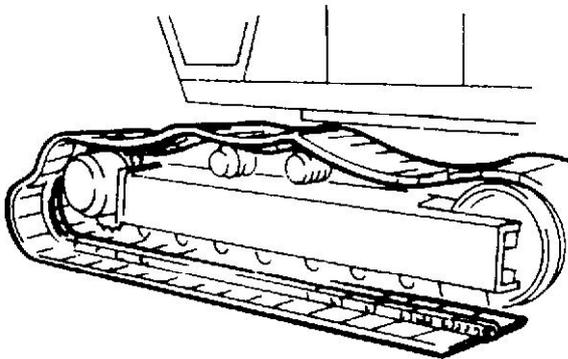


Fig 41.

- 3 Apply grease through the check valve to adjust the track tension (see **Checking/Adjusting the Track Tension, Section 3**).

Wear Limits

Item	Dimension	Standard Size		Service Limit		Action
		mm	in	mm	in	
Width	A	66	2.59	60	2.59	Renew
Diameter	B	582.5	22.93	576.5	22.69	Renew
Diameter	C	656	25.9	65.3	25.7	Renew
Diameter	D	644.6	25.37	-	-	Renew
Centres	E	190	7.4	-	-	Renew

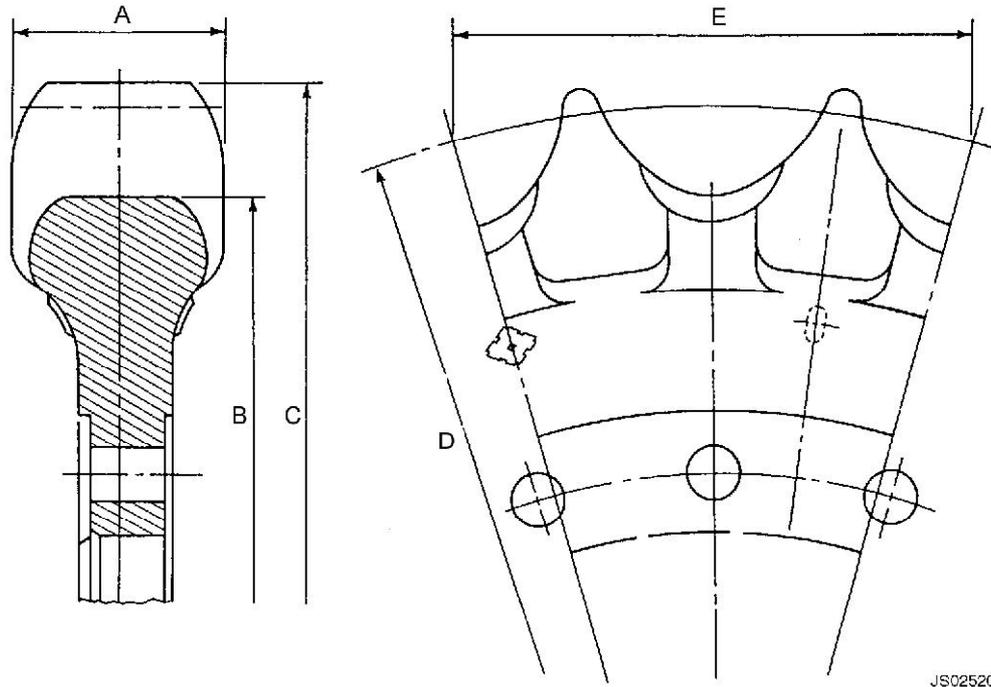


Fig 43.

Top Roller

Removal

Note: Note: The following procedure is applicable to all top rollers but as there are visual differences, the illustrations show only a typical unit.

- 1 Slacken the check valve to bleed out grease.

WARNING

When opening the check valve always stand to one side and loosen a little at a time until grease starts to come out. If you over-loosen too much grease could spurt out or the valve cover fly out and cause serious injury.

8-3-4-5

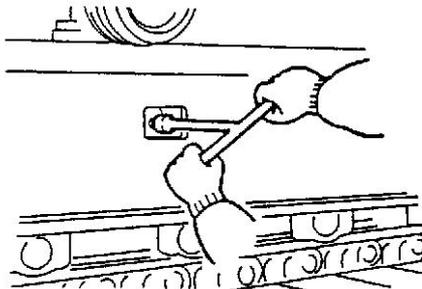


Fig 44.

- 2 Jack up the track high enough to permit roller removal. Put wooden blocks between track link and side frame.

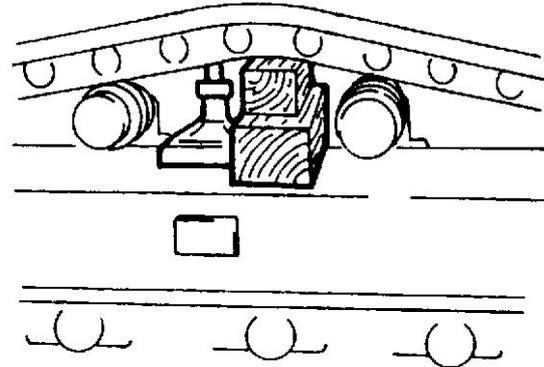


Fig 45.

- 3 Remove the mounting bolts, and tap the upper roller with a copper mallet to separate it from the side frame.

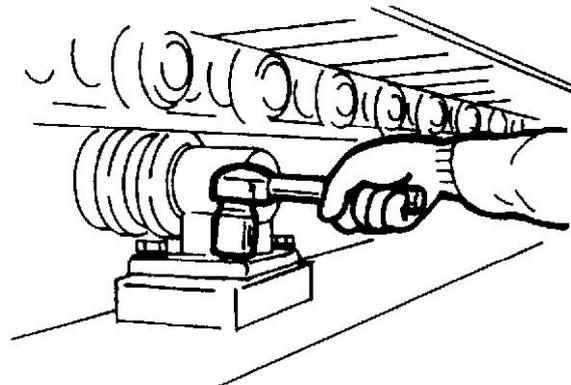


Fig 46.

- 4 Fasten a sling to the upper roller, and completely remove the upper roller bolt and remove the upper roller.

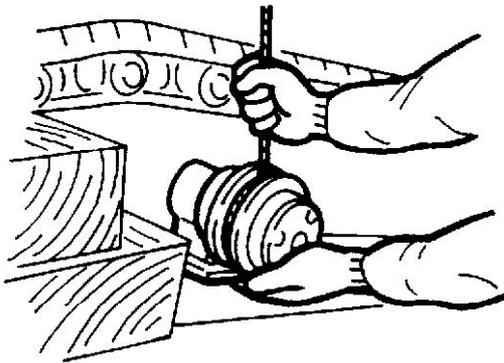


Fig 47.

Replacement

- 1 Before fitting the roller, add the specified oil (see **Section 3**). Install plug using an appropriate pipe thread sealant.

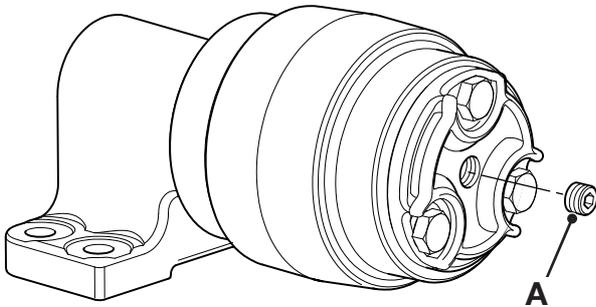


Fig 48.

- 2 With the track supported as shown under Removal, install the roller. Apply JCB Threadlocker and Sealer to the threads and fit the mounting bolts.

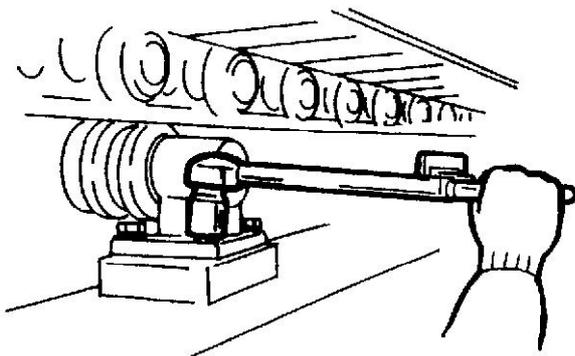


Fig 49.

- 3 Remove the wooden blocks and jack.

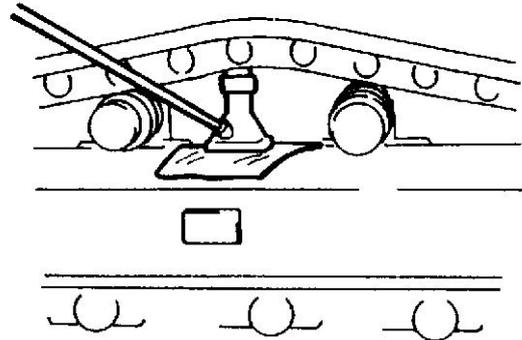


Fig 50.

- 4 Apply grease through the check valve to adjust the track tension, see **Checking/Adjusting the Track Tension**.

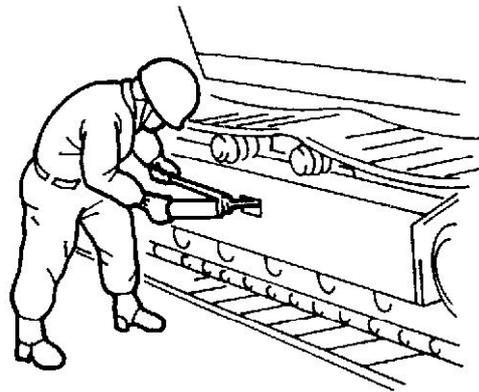


Fig 51.

Dismantling

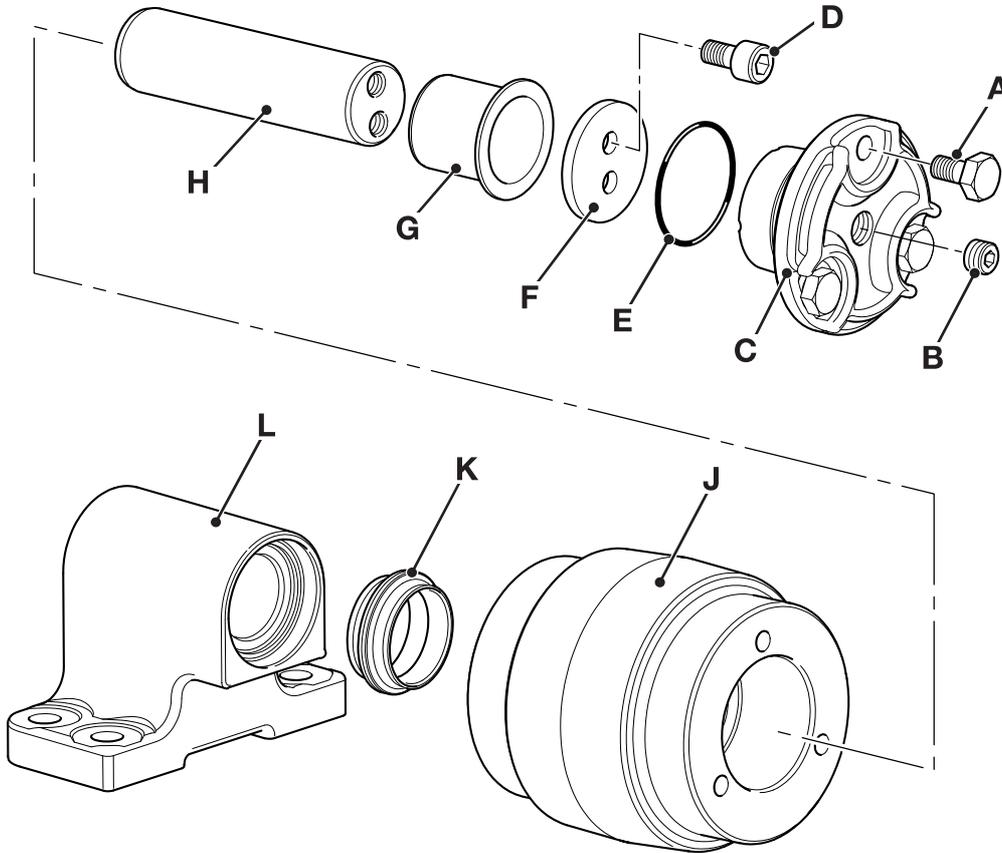


Fig 52.

Item	Part Name
A	Bolt
B	Plug
C	Cover
D	Screw
E	`O'-ring
F	Thrust plate
G	Bush
H	Shaft
J	Roller
K	Floating seal assembly
L	Mounting bracket

- 1 Clean the upper roller **L** with an appropriate detergent. Remove the plug **B** from the cover and drain the oil.

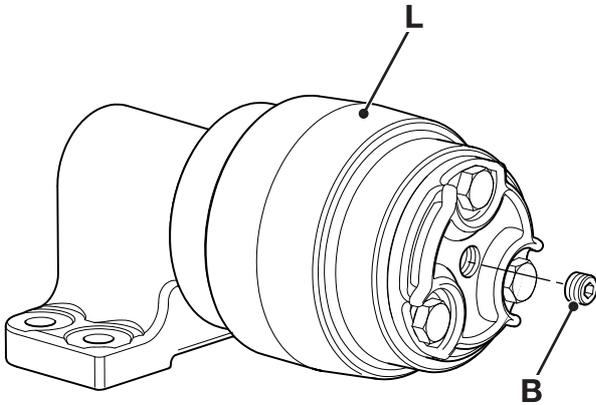


Fig 53.

- 2 Remove the bolts **A**, and remove cover **C**. From cover **C**, remove 'O'-ring **E** and discard.

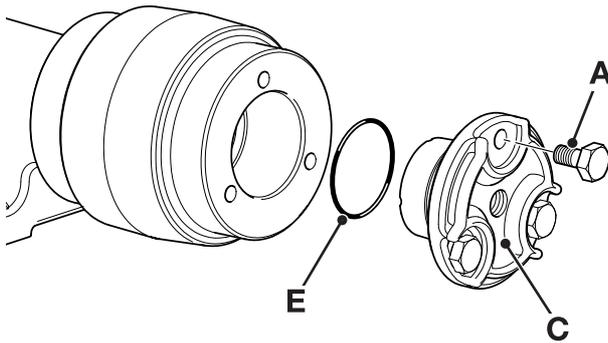


Fig 54.

- 3 Remove bolt **D**, and the thrust plate **F** from the end of the shaft.

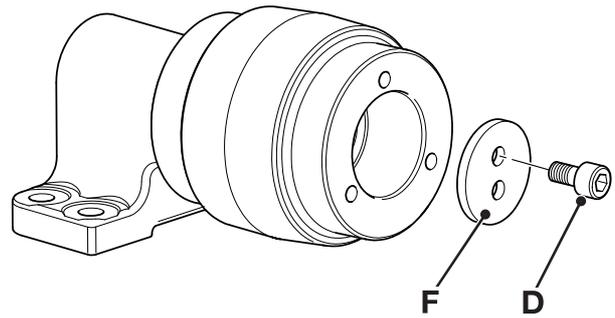


Fig 55.

- 4 Pull the upper roller **J** from the shaft **H**.

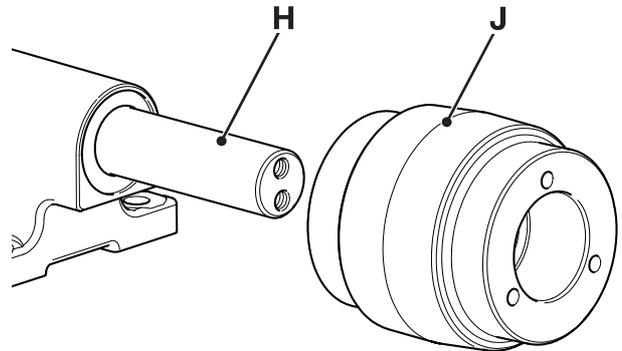


Fig 56.

- 5 Remove the floating seal **K** from the upper roller **J**.

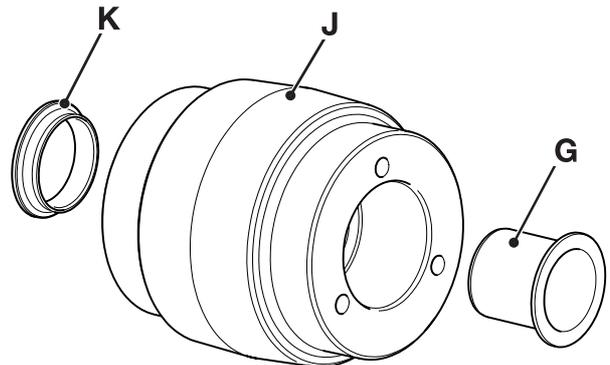


Fig 57.

If badly worn or damaged, remove the bushes **G**, from the roller **J**.

- 6 Remove floating seal **K** from bracket **L** using a pry bar.

Protect parts from moisture and dust if left dismantled for some time.

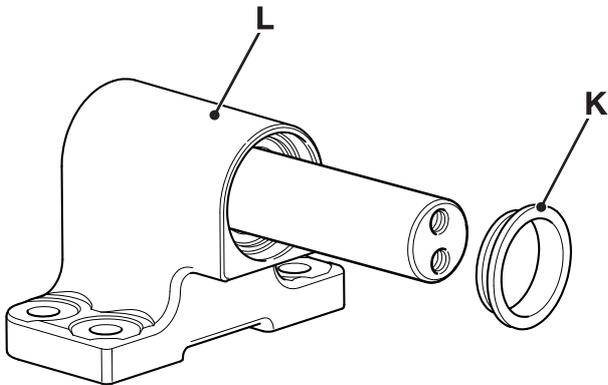


Fig 58.

Assembly

- 1 Clean all parts thoroughly in a suitable solvent. Dry shaft and bore of roller using compressed air in a place free of dust and moisture.

Check components for wear as detailed under (Wear Limits). Polish out scratches and roughness using an oil stone. Then apply a coat of engine oil to all parts.

If a new shaft or bracket are required, press-fit shaft **H** into bracket **L**, taking care to protect the threads of the tapped holes in the end of the shaft.

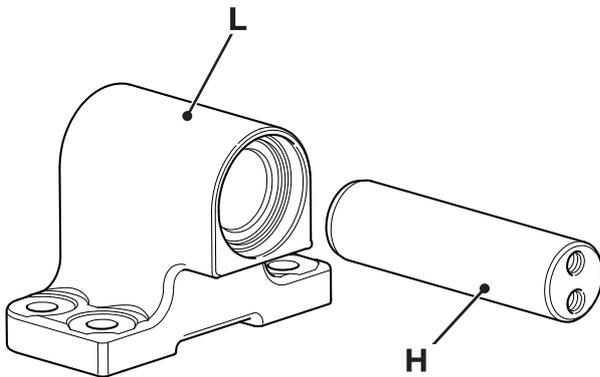


Fig 59.

- 2 Using a jig and hammer, insert the bush G into the roller J.

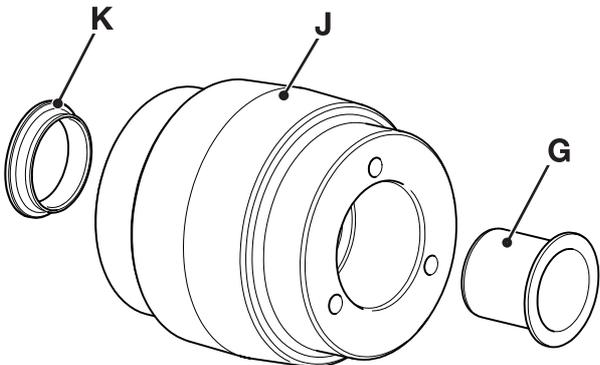


Fig 60.

- 3 Install a new floating seal K into the roller J.

Coat the metallic face of the seal with engine oil.

- 4 Install a new seal K into the bracket L.

Coat the metallic face of the seal with engine oil.

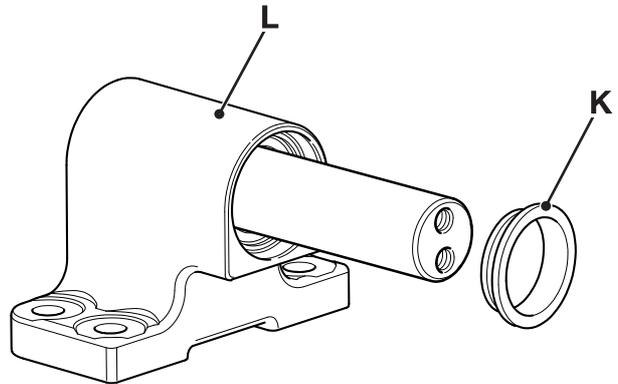


Fig 61.

- 5 Coat the shaft H with grease. Install the roller J onto the shaft H.

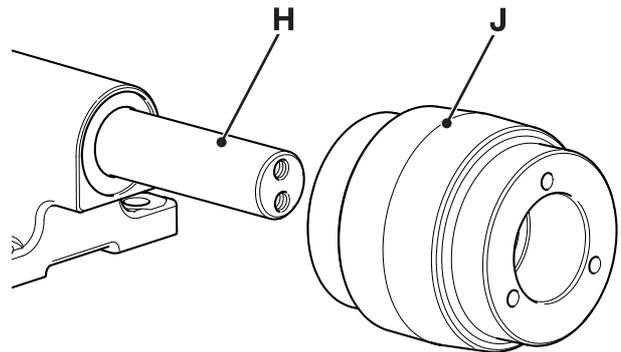


Fig 62.

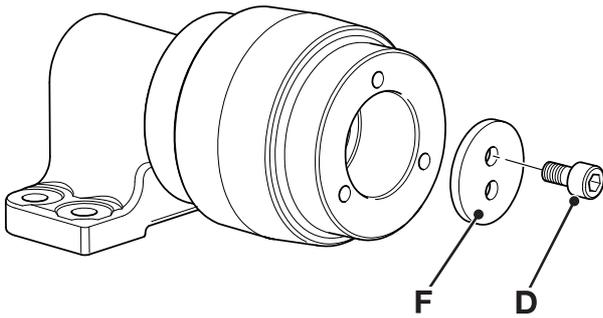


Fig 63.

- 6 Apply grease to the inside face of thrust plate **F** and install it on the shaft using bolts **D**.

Note: Apply JCB Threadlocker and Sealant to threads and fit the bolts. Torque tighten to 34Nm, 25lbf ft.

- 7 Apply grease to a new 'O'-ring **E** and install it onto cover **C**. Install the cover **C** to the roller. Retain with bolts **A**.

Note: Apply JCB Threadlocker and Sealant to threads and fit the bolts. Torque tighten to 50Nm, 37lbf ft.

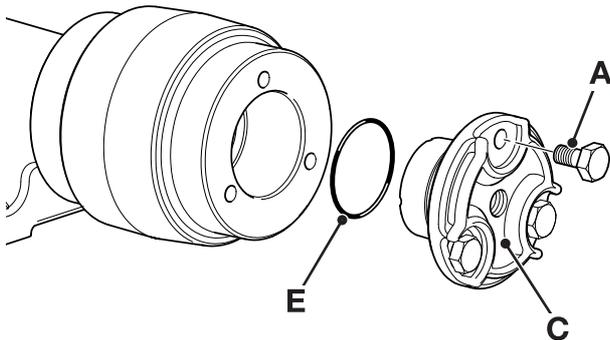


Fig 64.

- 8 Fill with oil, see **Fluids and Lubricants, Section 3**. Install plug **B** using JCB Threadlocker and Sealant to threads.

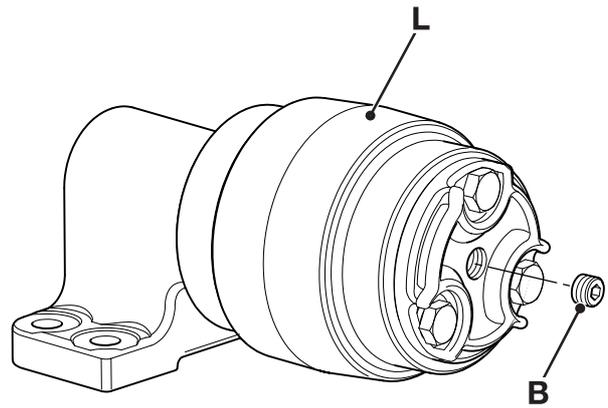


Fig 65.

Wear Limits

JS200 - 260	
Nominal Pitch	190.00mm
	Dimension A (mm)
Wear	Normal Impact
0%	120.00
10%	118.90
20%	117.70
30%	116.60
40%	115.40
50%	114.20
60%	113.10
70%	111.90
80%	110.90
90%	109.00
100%	107.20
110%	105.40
120%	103.50

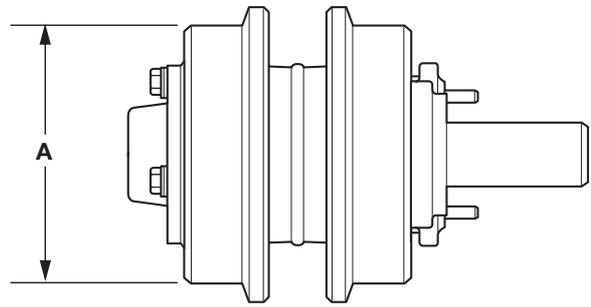


Fig 66.

Bottom Roller

Removal

Note: The following procedure is applicable to all bottom rollers, but as there are visual differences, the illustrations show only a typical unit.

- 1 Slacken the check valve to bleed out grease.

⚠ WARNING

When opening the check valve always stand to one side and loosen a little at a time until grease starts to come out. If you over-loosen too much grease could spurt out or the valve cover fly out and cause serious injury.

8-3-4-5

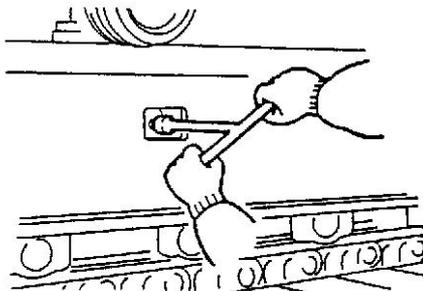


Fig 67.

- 2 Lift the side of the undercarriage high enough to permit bottom roller removal. Support with wooden blocks.

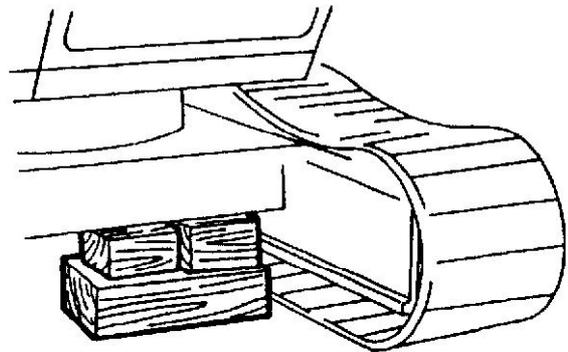


Fig 68.

- 3 Remove the mounting bolts, and tap the bottom roller with a copper mallet to separate it from the side frame.

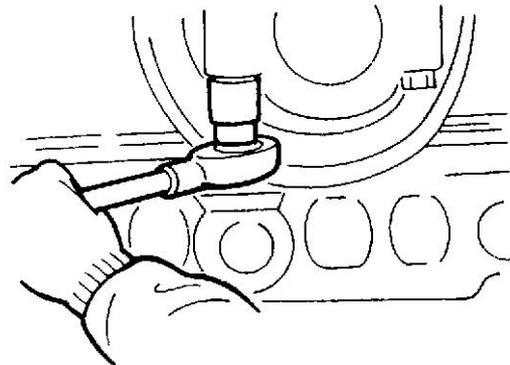


Fig 69.

- 4 Remove the roller.

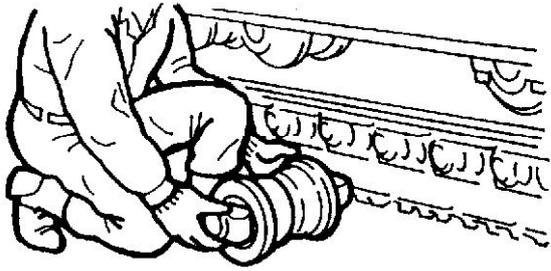


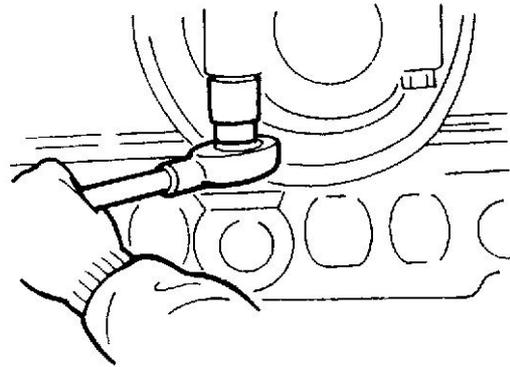
Fig 70.

Replacement

- 1 Before fitting the roller, add the specified oil (see Section 3) and install plug using an appropriate pipe thread sealant.

With the undercarriage lifted and supported as shown under Removal, position the roller on the track link as shown.

Align the holes in the brackets with the tapped holes in the undercarriage.



- 4 Apply grease through the check valve to adjust the track tension (see Section 3).

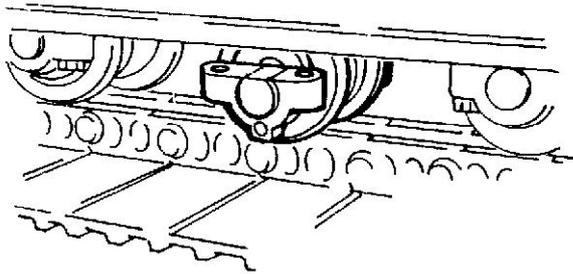


Fig 71.

- 2 Lower the undercarriage sufficient to allow the mounting bolts to be installed.

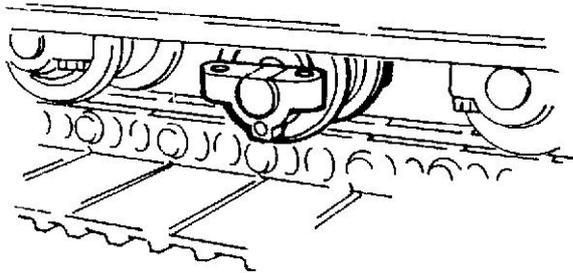


Fig 72.

- 3 Apply JCB Threadlocker & Sealer to the threads and install the mounting bolts. Tighten to a torque of 267 - 312 Nm (197 - 230 lbf ft, 27 - 31 kgf m).

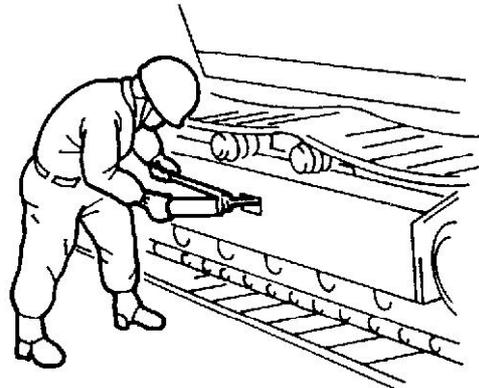


Fig 73.

Dismantling

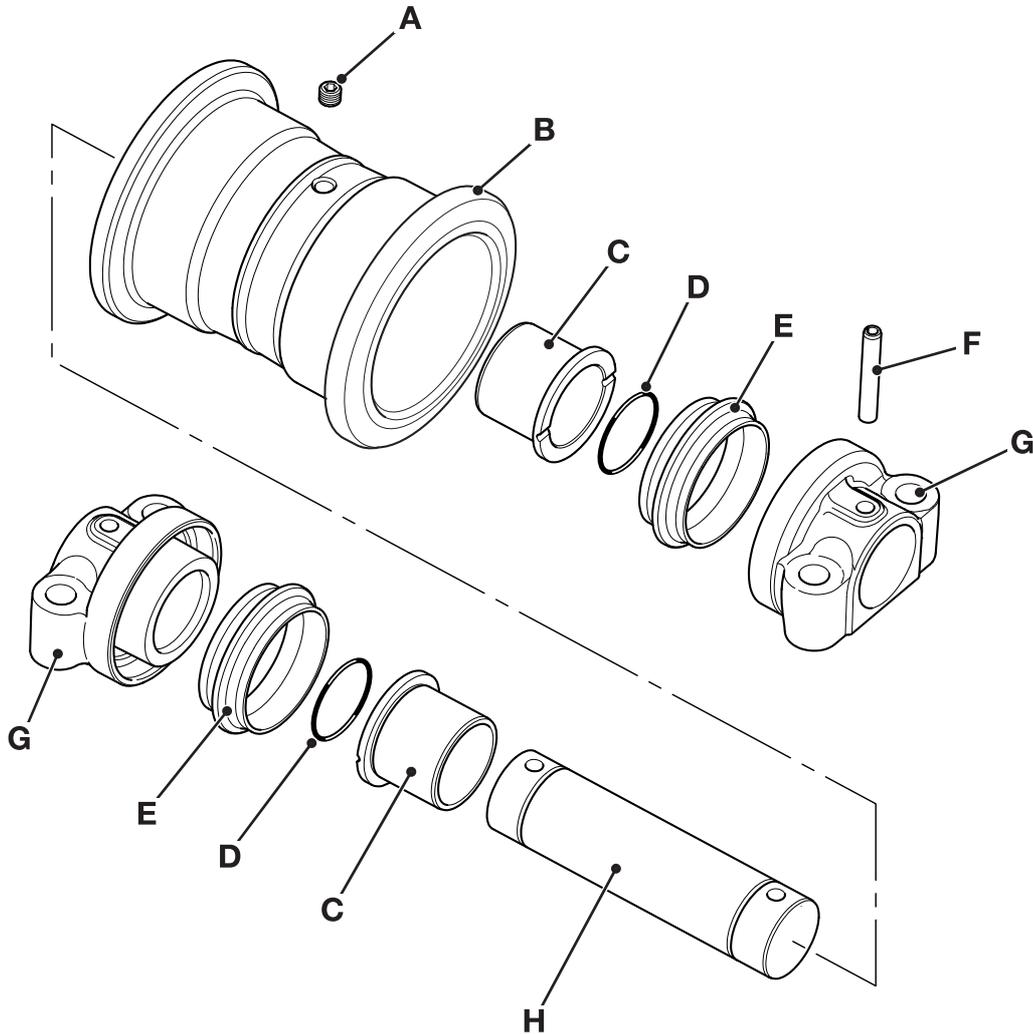


Fig 74.

Item	Part Name
A	Plug
B	Roller
C	Bush
D	'O'-ring
E	Floating seal assembly
F	Locking pin
G	Mounting bracket
H	Shaft

- 1 Clean the roller with a suitable solvent. Remove the plug **A** and drain the oil.

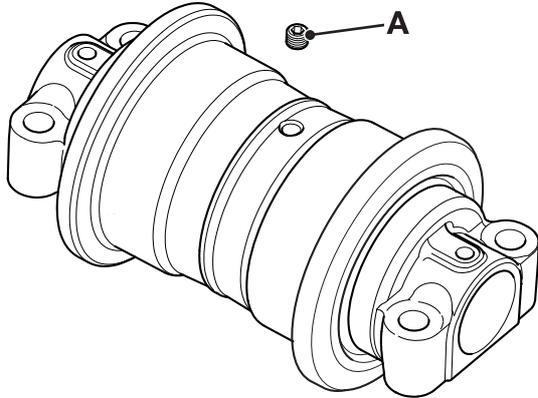


Fig 75.

- 2 Remove locking pins **F** from each end of assembly.

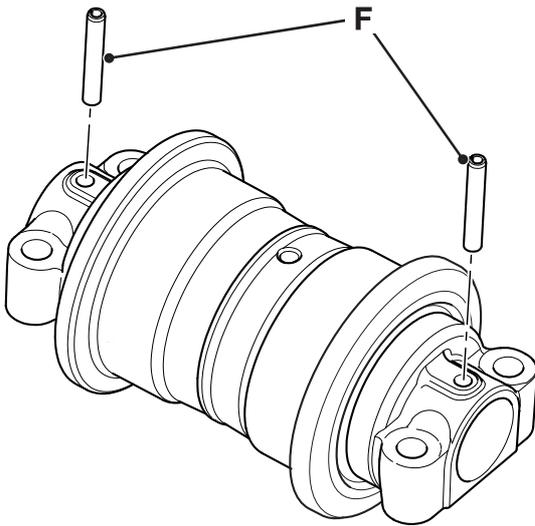


Fig 76.

- 3 Remove mounting brackets **G** from shaft **H**.

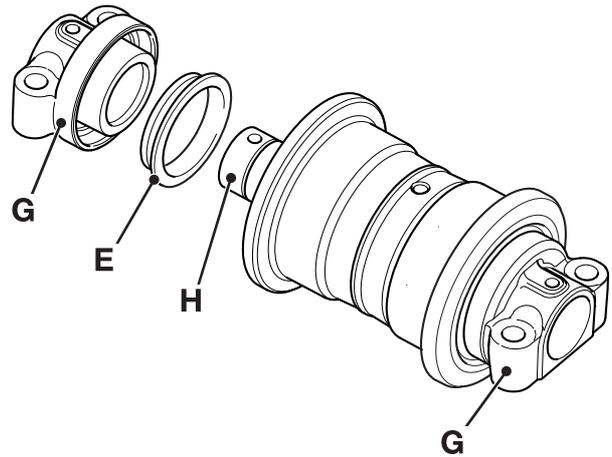


Fig 77.

Using a pry bar, remove floating seals **E** from brackets **G** and discard.

- 4 Remove and discard 'O'-rings **D** from shaft **H**. Pull out shaft **H** from roller **B**.

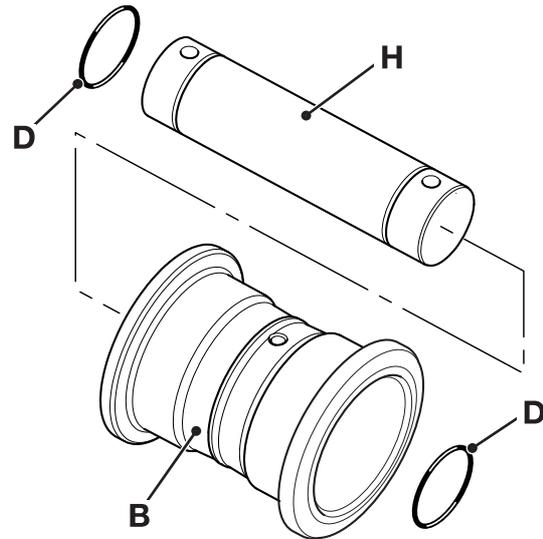


Fig 78.

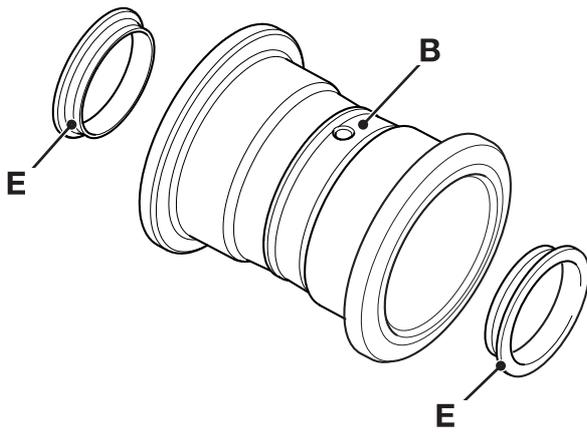


Fig 79.

- 5 Remove floating seals **E** from roller **B** using a pry bar.
- 6 If badly worn or damaged, remove and discard bushes **C** from roller **B**, using a press or puller. Otherwise do not disturb.

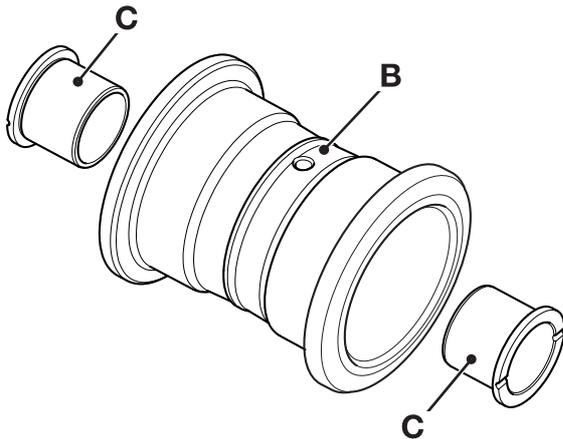


Fig 80.

Protect parts from moisture and dust if left dismantled for some time.

Assembly

- 1 Clean all parts thoroughly in a suitable solvent. Dry shaft and bore of roller using compressed air in a place free of dust and moisture.

Check components for wear as detailed, [⇒ Wear Limits \(J-36\)](#). Polish out scratches and roughness using an oil stone. Then apply a coat of engine oil to all parts.

If being replaced, install bushes **C** into roller **B**, using a dolly and hammer.

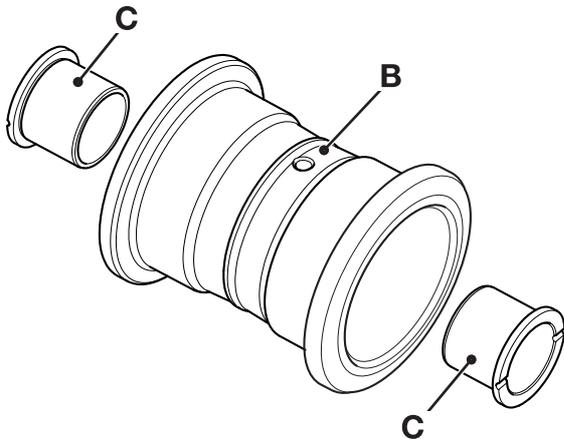


Fig 81.

- 2 Install new floating seals **E** into roller **B**.

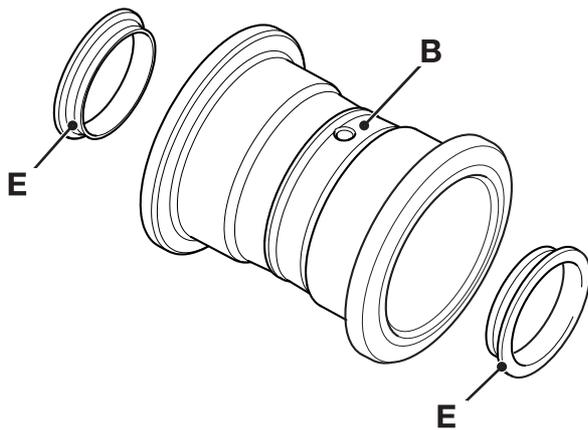


Fig 82.

- 3 Coat shaft **H** with grease. Insert the shaft into roller **B**. Apply grease to new 'O'-rings **D** and install them on shaft **H**.

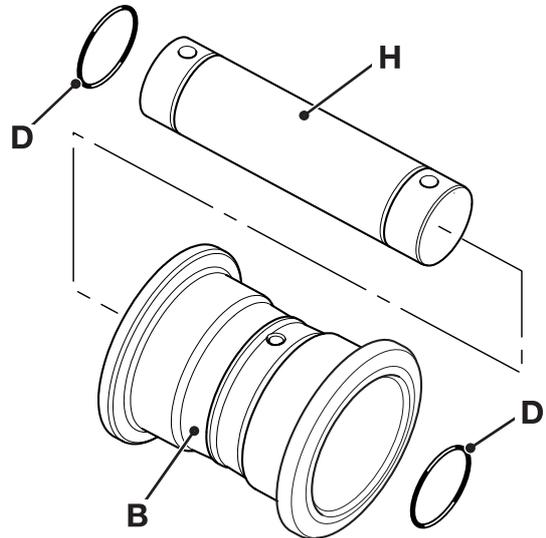


Fig 83.

- 4 Install new floating seals **E** into brackets **G**. Coat the metallic face of each seal with engine oil.

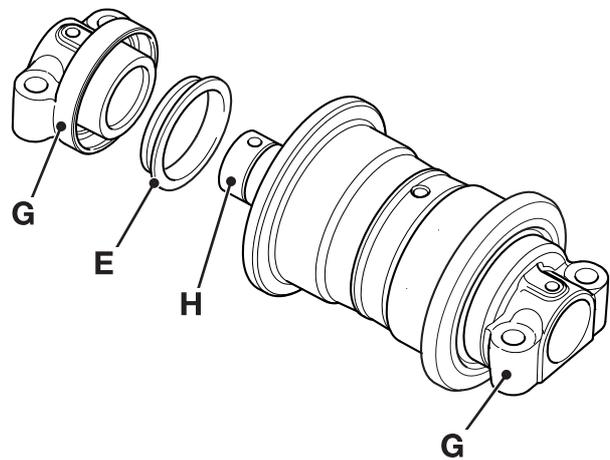


Fig 84.

- 5 Press mounting brackets **G** onto shaft **H** and insert new locking pins **F**.

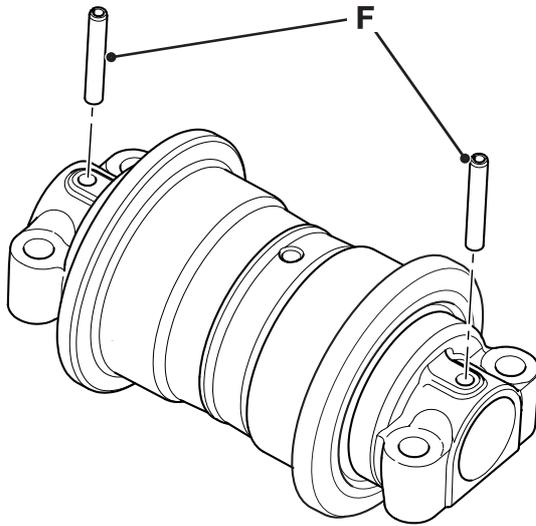


Fig 85.

- 6 Fill the unit with oil, **see *Fluid and Lubricants, Section 3***. Install plug **A** using an appropriate pipe thread sealant.

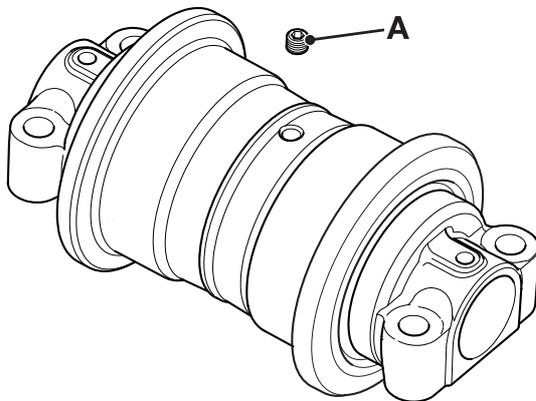


Fig 86.



Wear Limits

JS200 - 260	
Nominal Pitch	190.00mm
Dimension A (mm)	
Wear	Normal Impact
0%	150.00
10%	148.80
20%	147.50
30%	146.30
40%	145.00
50%	143.80
60%	142.20
70%	140.60
80%	139.20
90%	137.60
100%	135.20
110%	133.00
120%	131.00

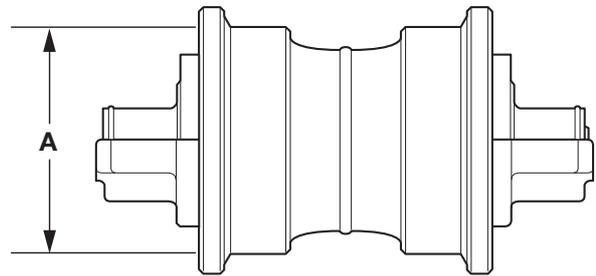


Fig 87.