



Section J

Track and Running Gear

Service Manual - JS290 - Tier III Auto

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[Section 2 - Care and Safety](#)

[Section 3 - Routine Maintenance](#)

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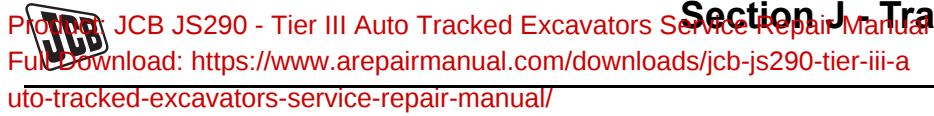
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Section J - Track and Running Gear


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Notes:

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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Section J - Track and Running Gear

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Idler Wheel and Recoil Unit

Removal

P11-J003

- 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

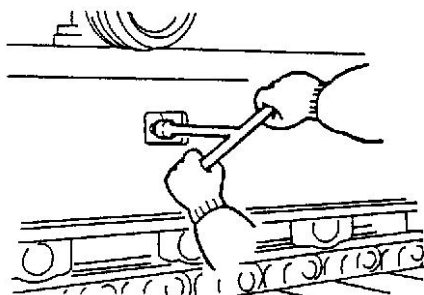


Fig 1.

C004260

- 2 Disconnect the track link, see **Section F, Track Motor/Reduction Gear**. 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

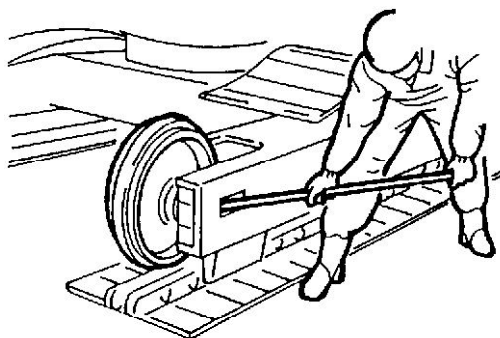


Fig 2.

C004520

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

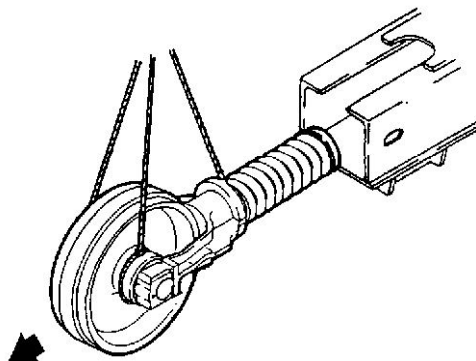


Fig 3.

C004530

- 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.*

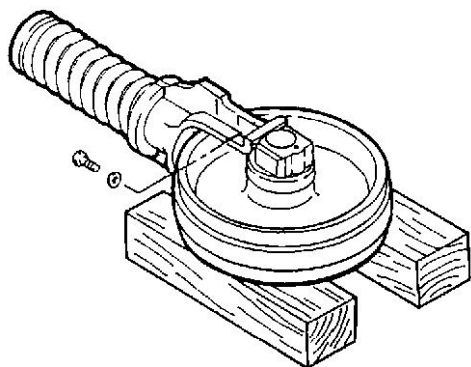


Fig 4.

C004540

Replacement

- 1 Before fitting the idler wheel, check the oil level at **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.

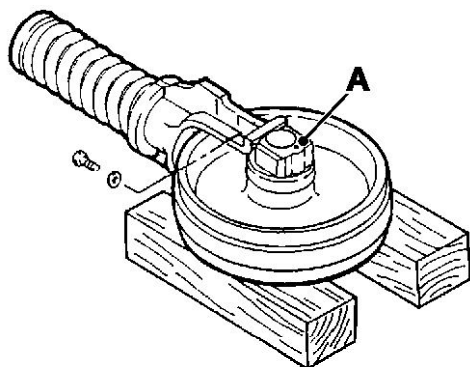


Fig 5.

C004560

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

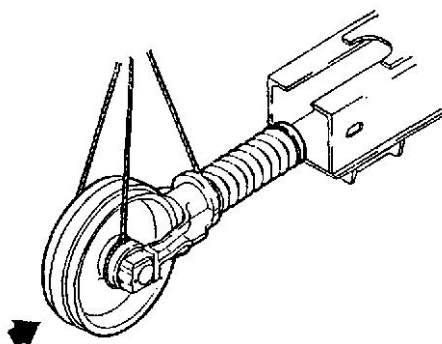


Fig 6.

C004570

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

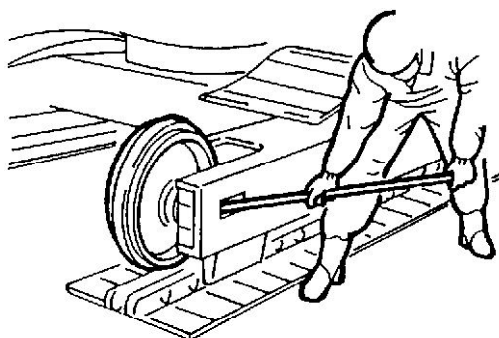


Fig 7.

C004520

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

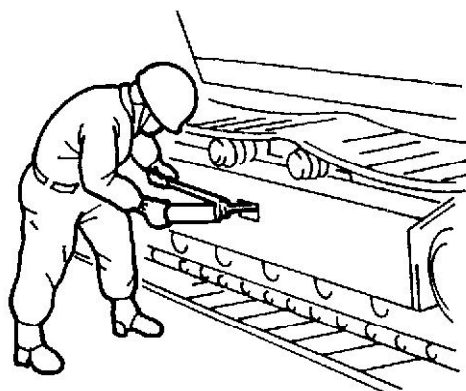


Fig 8.

C004330



Section J - Track and Running Gear Idler Wheel and Recoil Unit

Replacement

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Idler Wheel

Dismantling

TJ-001

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

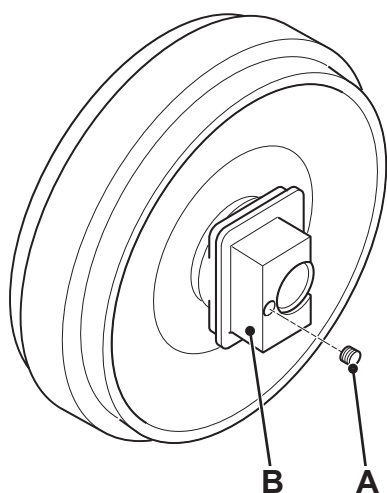


Fig 9.

T001050

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

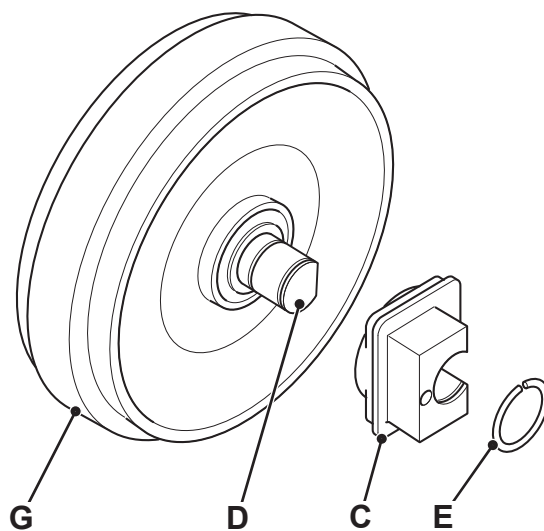


Fig 10.

T001060

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

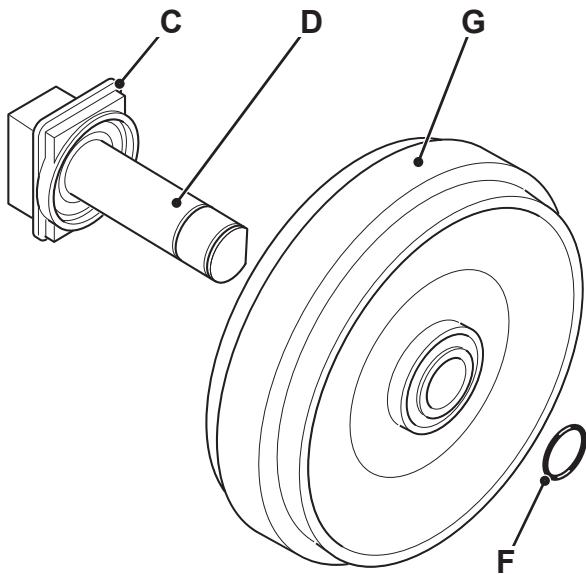


Fig 11.

T001070

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

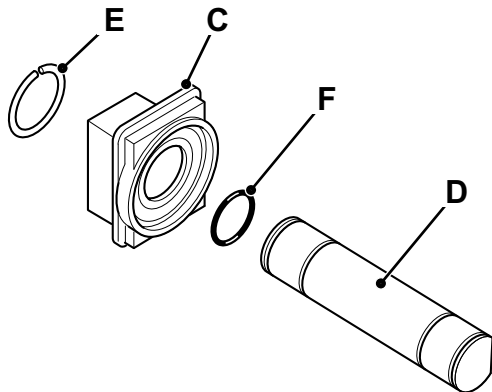


Fig 12.

T001080-C1

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

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

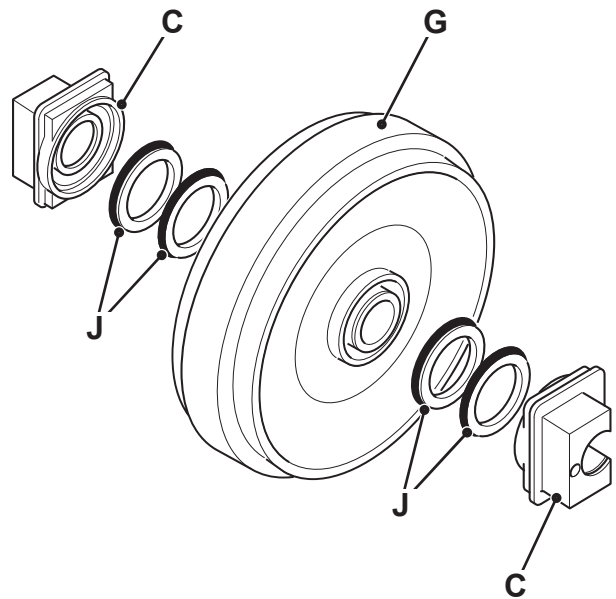


Fig 13.

T001090

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

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

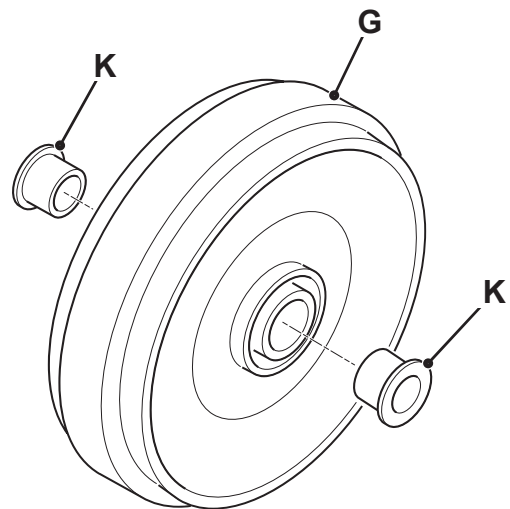


Fig 14.

T001100

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. Polish out scratches and roughness using an oil stone. Then apply a coat of engine oil to all parts.

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

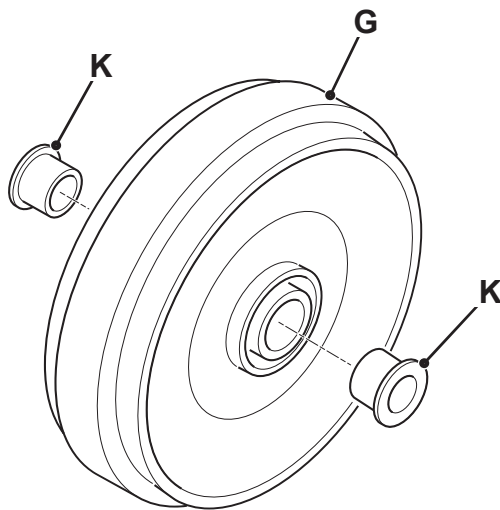


Fig 15.

T001100

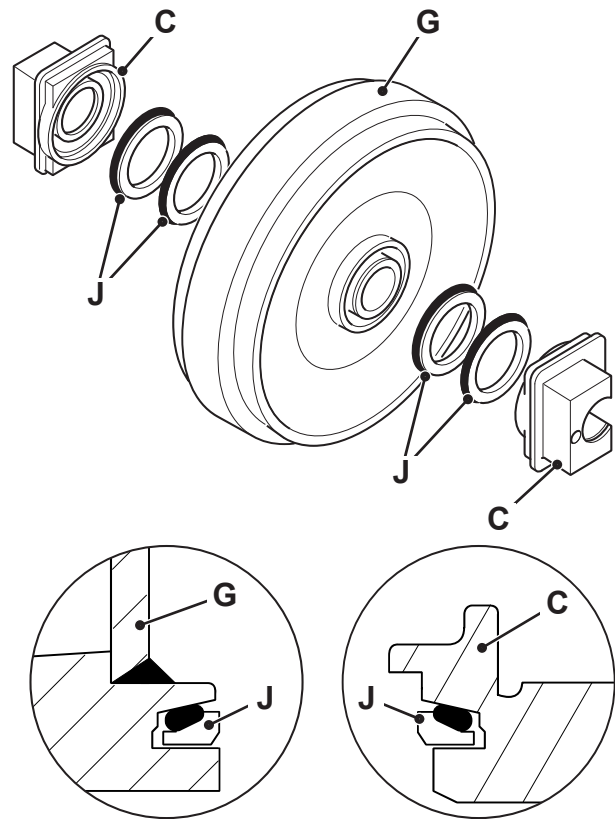


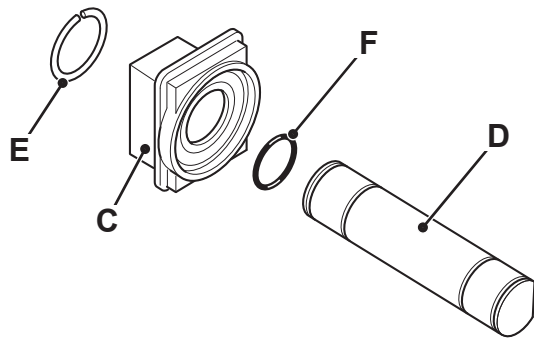
Fig 16.

T001091

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

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

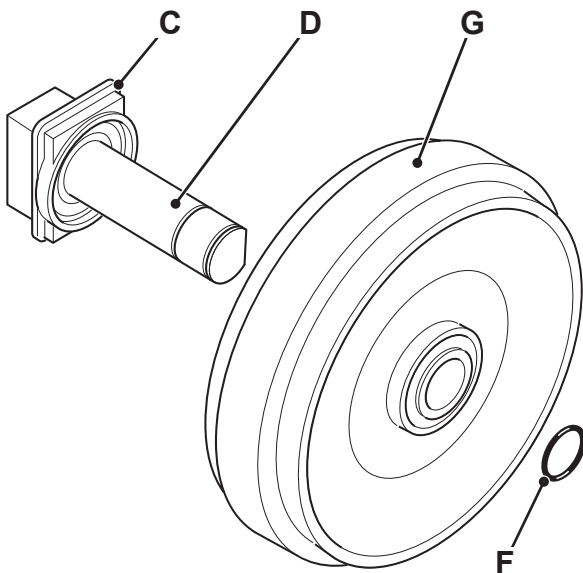
- 3 Grease a new 'O'-ring **F** and install on one end only of shaft **D**. Install shaft **D** into hub **C**. Fit new wire clip **E** or roll pin (later machines).



T001080

Fig 17.

- 4 Coat shaft **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 **G**.



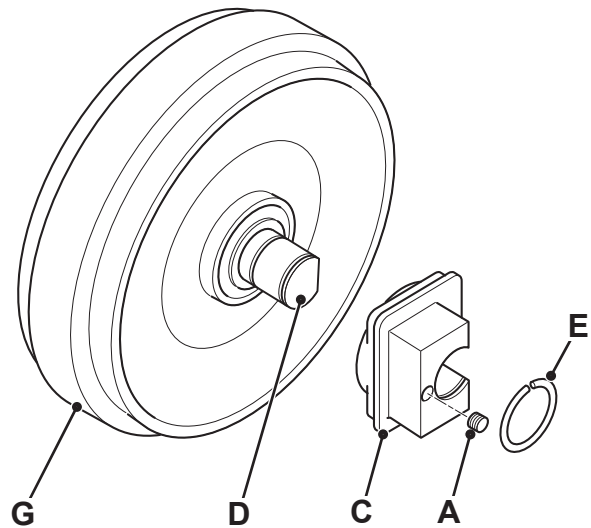
T001070

Fig 18.

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

Clean the metallic face of the seal, coat the metallic face with engine oil and install the hub **C** onto the shaft **D**. Fit new wire clip **E** or roll pin (later machines).

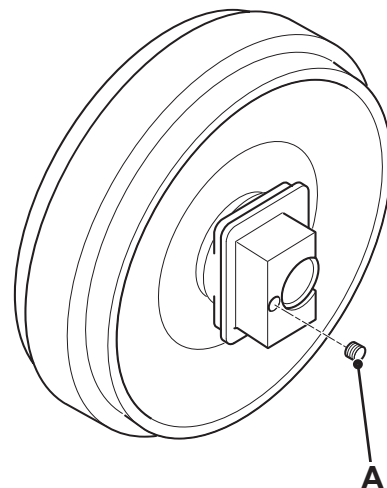
Wrap sealing tape around the plug **A** with one thread remaining uncovered. Insert this plug but leave the other one out until after testing.



T001061

Fig 19.

- 6 Add the specified oil, refer to **Section 3, Lubricants and Capacities**. Install plug using an appropriate pipe sealant.



T001051

Fig 20.

Recoil Unit

Dismantling and Assembly

Dismantling

- 1 Carry out steps 1 to 4 of Idler Wheel and Recoil Unit, Removal.
- 2 Place the recoil unit in the spring compression jig, yoke **E** uppermost, see **Service Tools, Section 1**. Raise hydraulic jack **A** to compress recoil spring **B**.

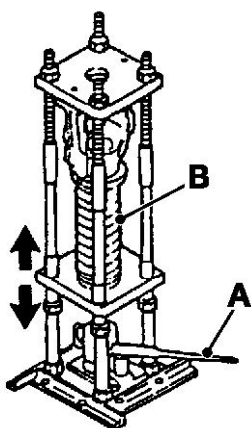


Fig 21.

- 3 Pull out roll pin **C** and remove castellated nut **D**. Lower jack **A** to release the pressure on recoil spring **B**.

Remove the recoil unit component parts from the jig: yoke **E** first, then spring **B** and, finally spring guide/retainer **F**.

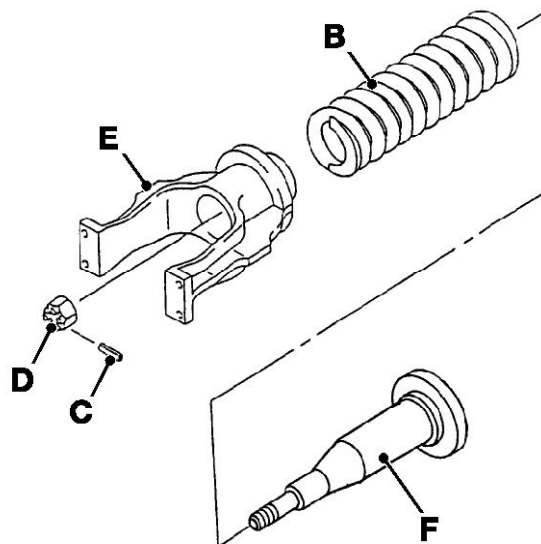


Fig 22.

Assembly

- 1 Position the recoil unit component parts in the spring compression jig, starting with spring guide/retainer **F**, see **Service Tools, Section 1**. Then spring **B** and yoke **E**. Raise hydraulic jack **A** to compress recoil spring **B**.

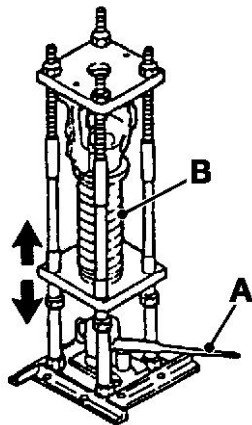


Fig 23.

- 2 Install castellated nut **D** on the threaded section of spring guide/retainer **F** which protrudes through yoke **E**, fully tighten and then install roll pin **C**.
- 3 Lower jack **A** to allow recoil spring **B** to expand and then remove the recoil unit from the jig.

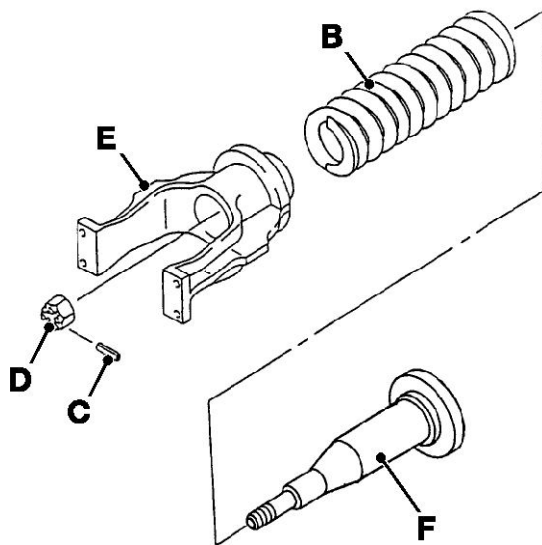


Fig 24.

- 4 Carry out steps 1 to 4 of Idler Wheel and Recoil Unit, Replacement.

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

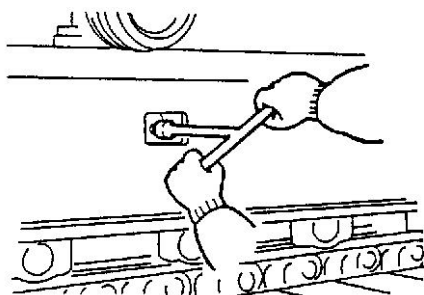


Fig 25.

- 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

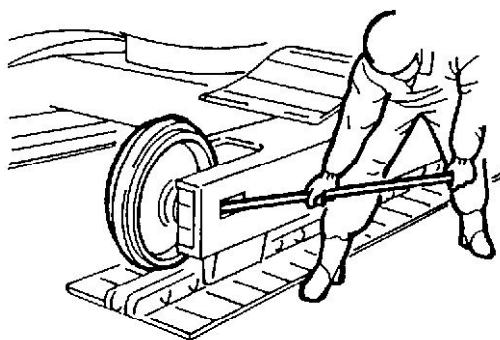


Fig 26.

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

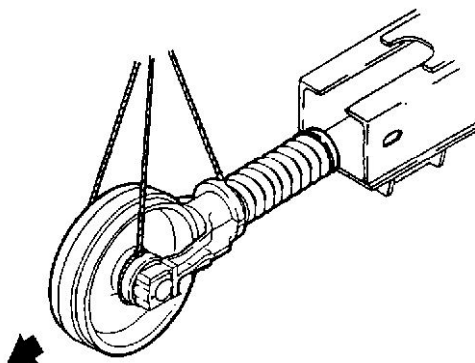


Fig 27.

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

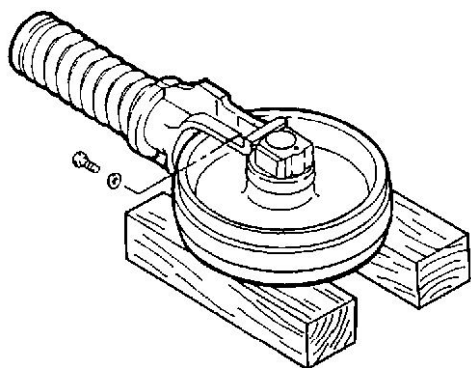


Fig 28.

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.

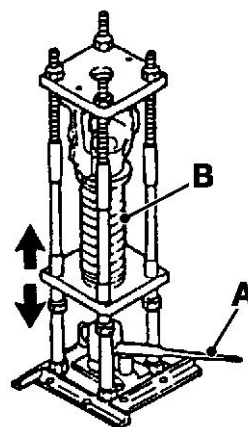


Fig 29.

Replacement

- 1 Re-assembly 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.

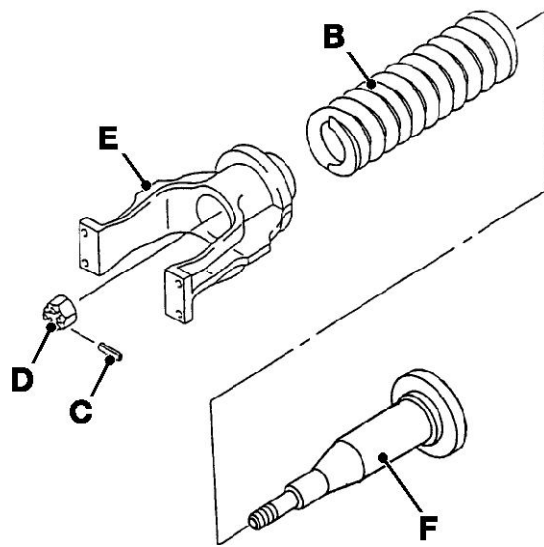


Fig 30.

Dismantling and Assembly

Dismantling

- 1 Carry out steps 1 to 3 of *Idler Wheel and Recoil Unit, Removal*.

Remove the lower roller immediately below the grease cylinder, **Bottom Roller, Removal**.

- 2 Remove bolts **A** and washers **B** and remove grease cylinder **C** through the bottom of side frame **D**.

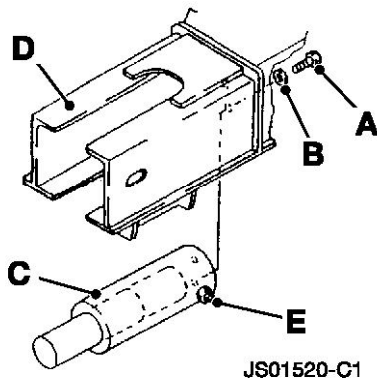


Fig 31.

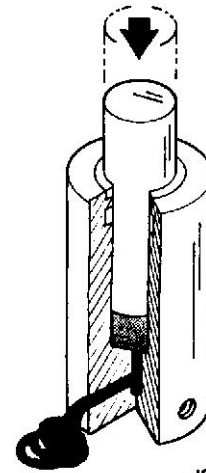


Fig 32.

- 2 Apply Threadseal to the threads of mounting bolts **A**.
- 3 When installing the grease cylinder, make sure it is orientated so that check valve **E** is facing outwards to the side of the machine.

Assembly

Assembly is the reverse of dismantling.

When Assembling

- 1 Before installing grease cylinder **C**, remove check valve **E** and use a press (as shown) to fully retract the cylinder and expel the grease. Refit the check valve.

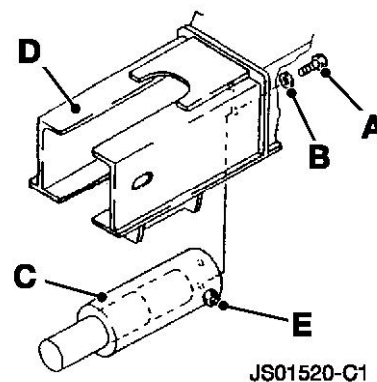


Fig 33.

- 4 Tighten bolts **A** to a torque of 267 - 312 Nm (197 - 230 lbf ft, 27 - 31 kgf m).

Drive Sprocket

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

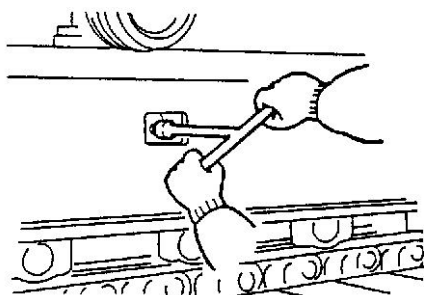


Fig 34.

- 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

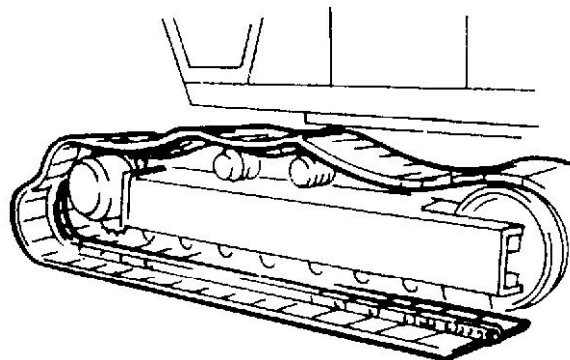


Fig 35.

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

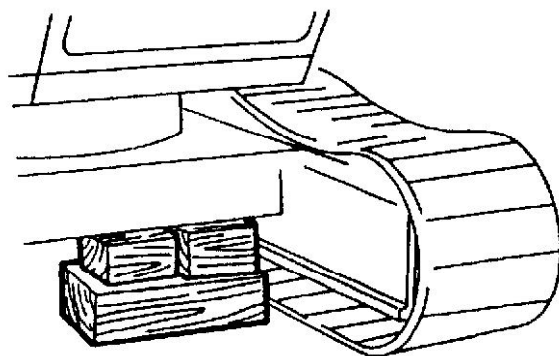


Fig 36.

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

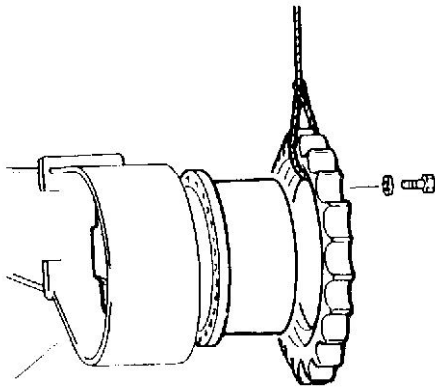


Fig 37.

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).

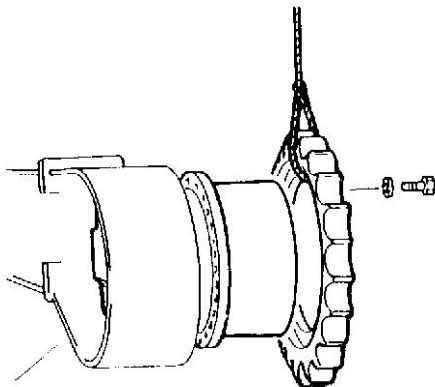


Fig 38.

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

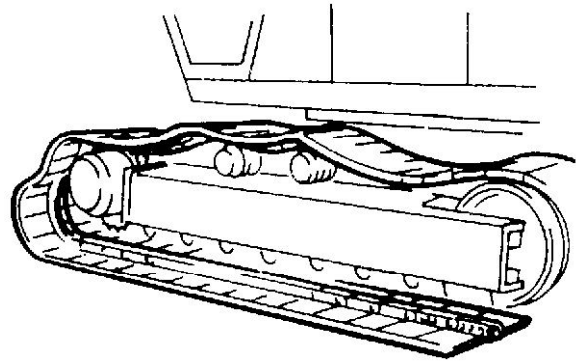


Fig 39.

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

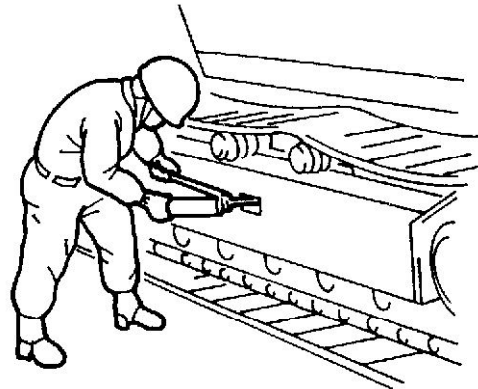


Fig 40.

Top Roller

Removal

P11-J004

- 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

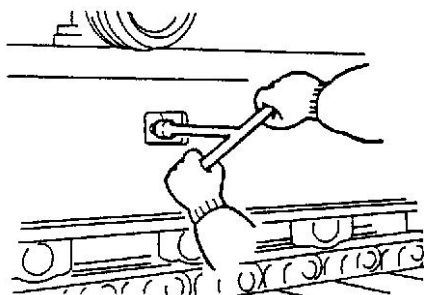


Fig 41.

C004260

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

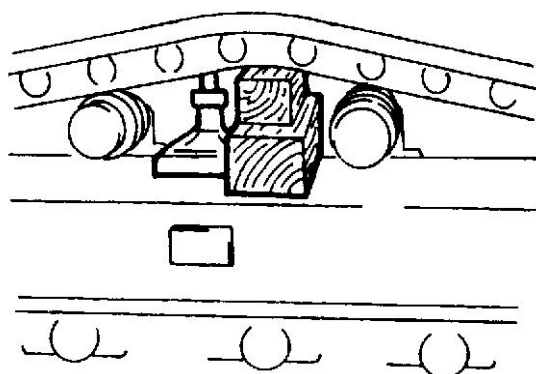


Fig 42.

C004750

- 3 Loosen but do not remove the mounting bolts. Tap the upper roller with a copper mallet to separate it from the side frame.

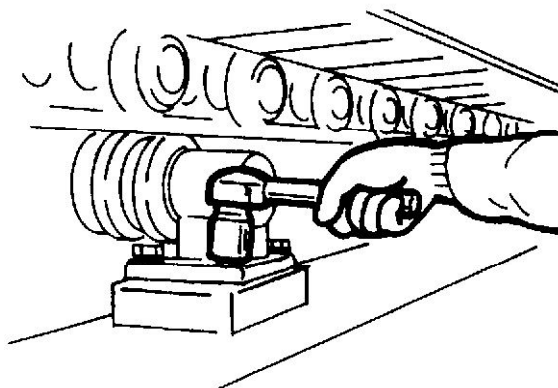


Fig 43.

C004760

- 4 Fasten a sling to the upper roller. Remove the mounting bolts and lift the upper roller clear.

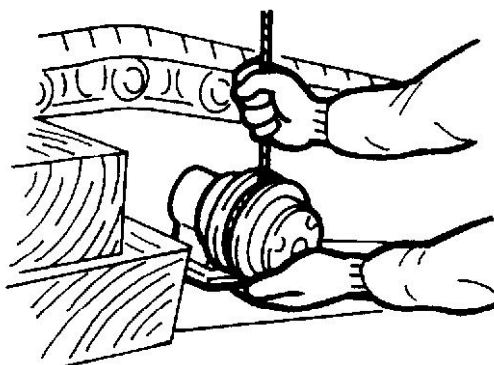


Fig 44.

C004770

Replacement

- 1 Before fitting the roller, check the oil level and, if necessary, top up, see Section 3, **Fluids and Lubricants**, . Install the plug **A** using an appropriate pipe thread sealant.

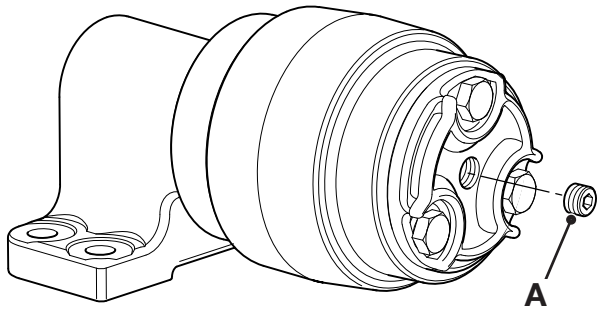


Fig 45.

802958

- 2 With the track supported as shown under Removal, step 2, install the roller.
- 3 Apply JCB Threadseal to the threads and install the mounting bolts. Tighten to a torque of 259 Nm (191 lbf ft).

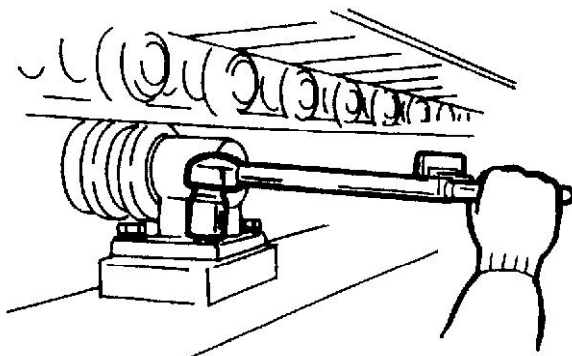


Fig 46.

C004790

- 4 Remove the wooden blocks and jack.

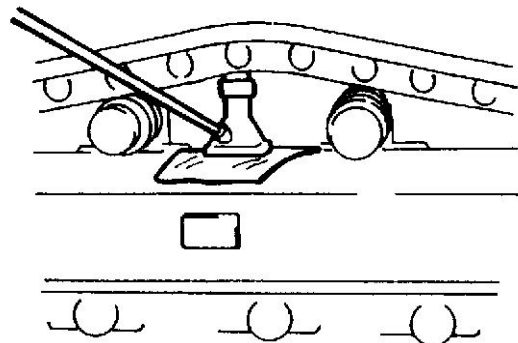


Fig 47.

C004800

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

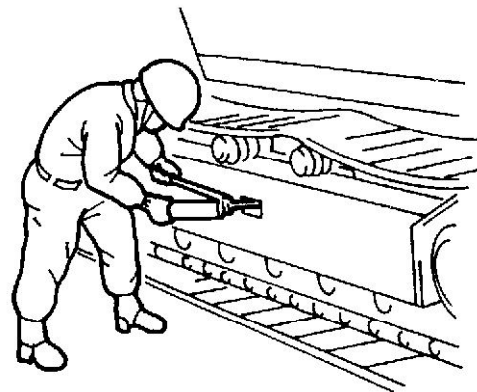


Fig 48.

C004330

Dismantling

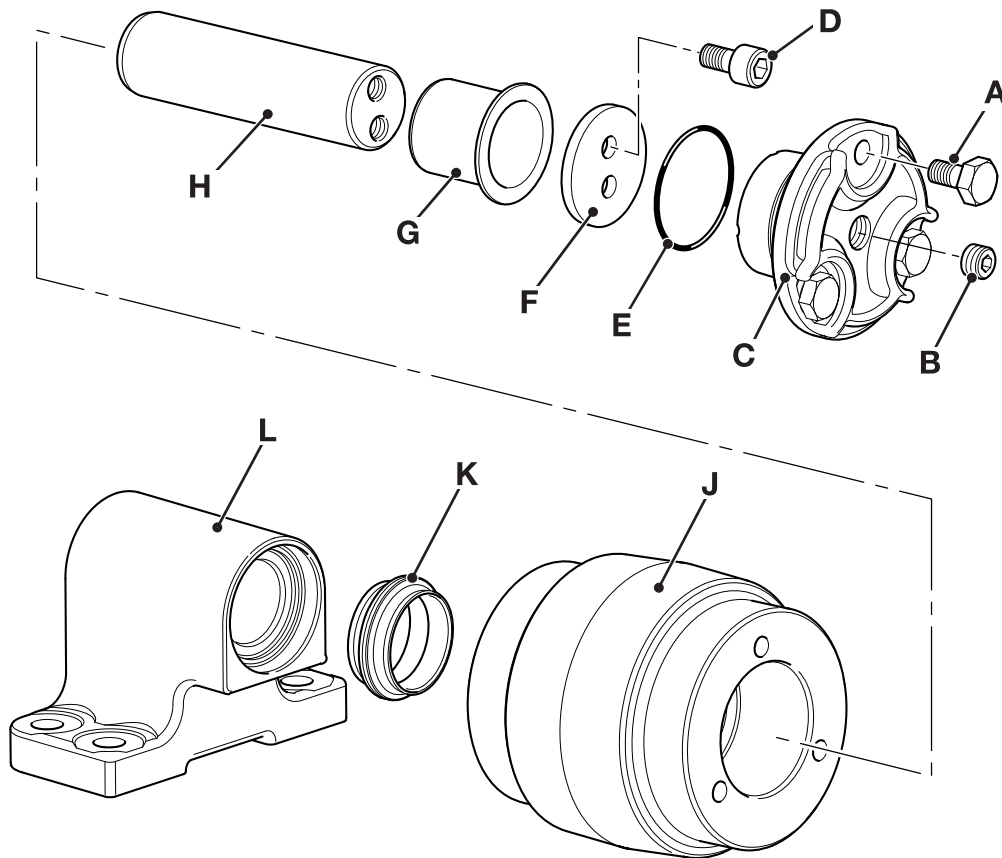


Fig 49.

802950

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.

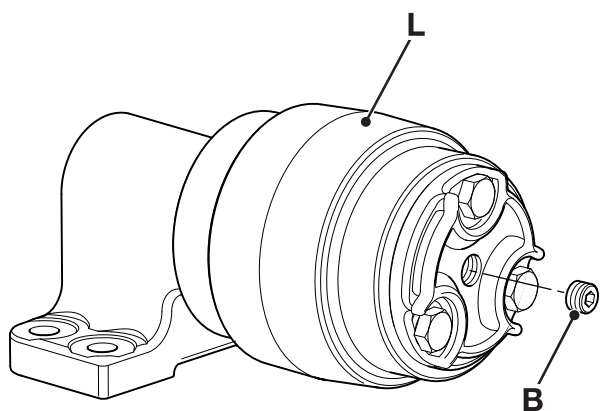


Fig 50.

802951

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

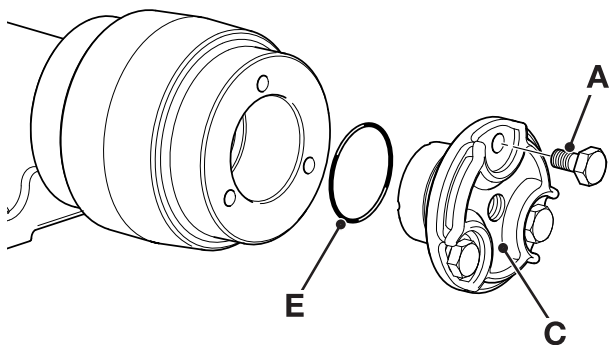


Fig 51.

802952

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

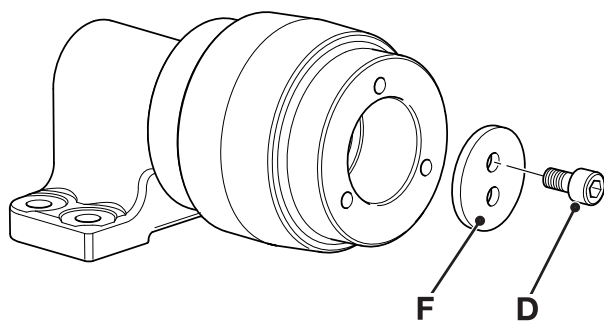


Fig 52.

802953

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

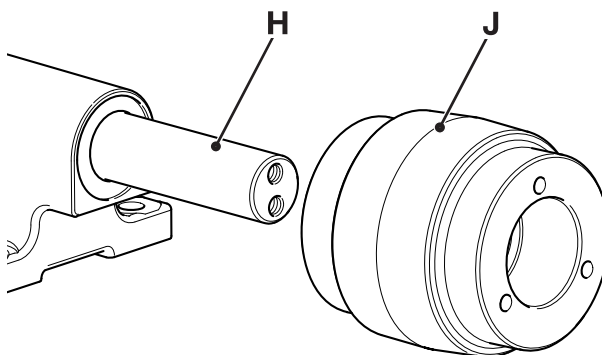
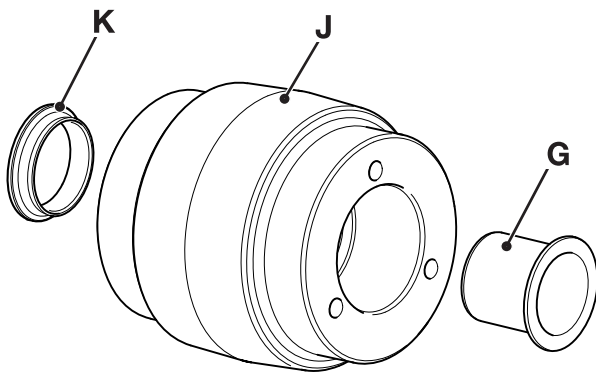


Fig 53.

802954

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



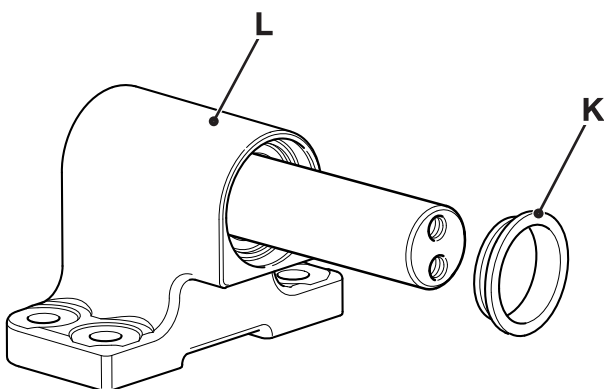
802955

Fig 54.

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.



802956

Fig 55.

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.

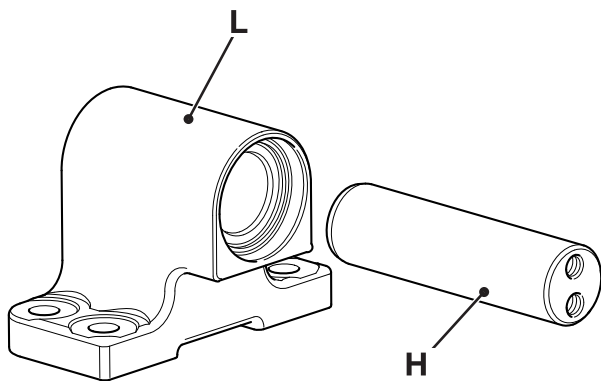


Fig 56.

802957

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

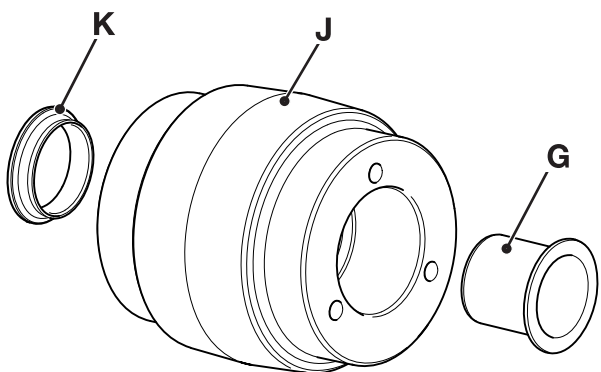


Fig 57.

802955

- 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.

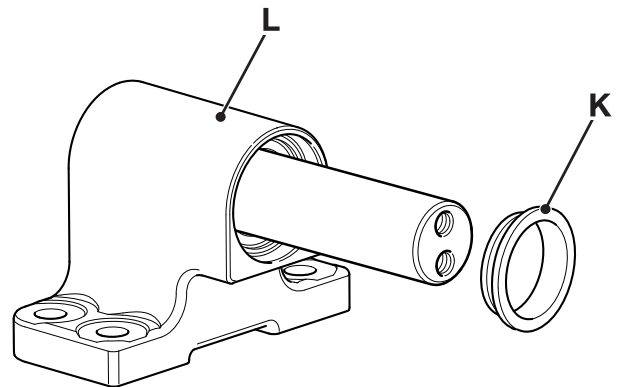


Fig 58.

802956

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

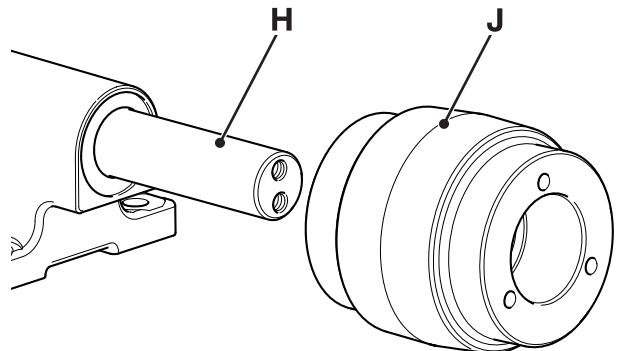


Fig 59.

802954

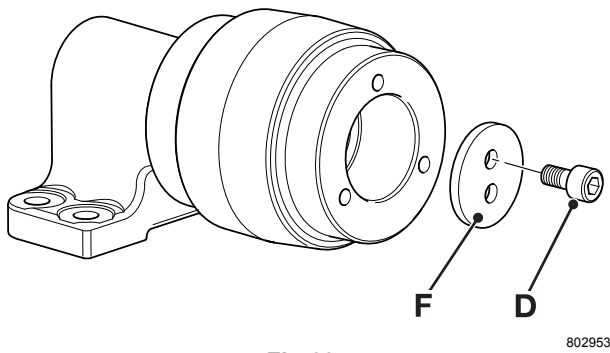


Fig 60.

- 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.

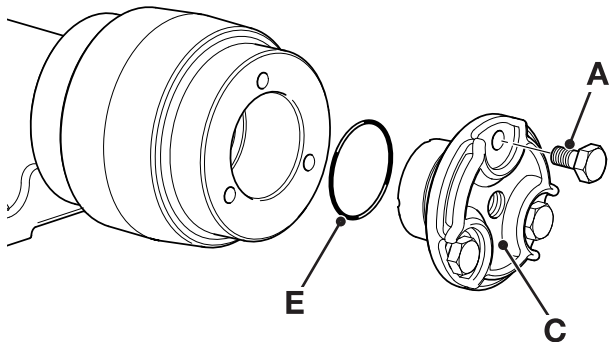


Fig 61.

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

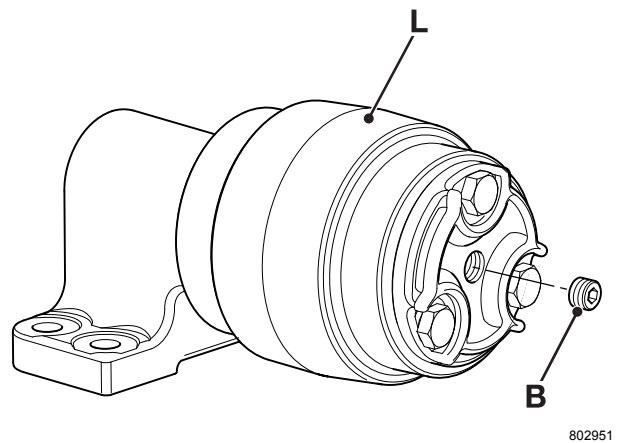


Fig 62.



Section J - Track and Running Gear

Top Roller

Assembly

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Bottom Roller

Removal

P11-J005

- 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

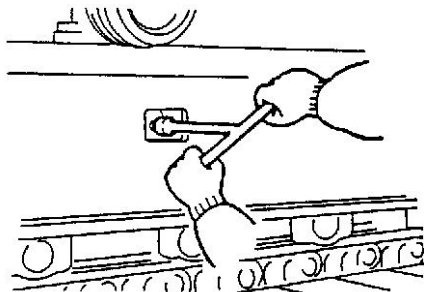


Fig 63.

C004260

- 2 Remove the bolts securing the mounting brackets to the side frame.

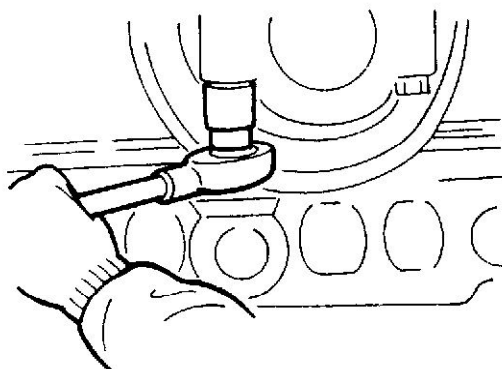


Fig 64.

C005110

- 3 Lift the side of the undercarriage high enough to permit bottom roller removal. Support with wooden blocks. Tap the bottom roller with a copper mallet to separate it from the side frame.

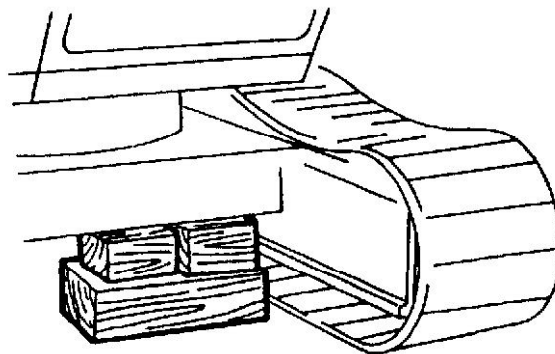


Fig 65.

C004280

- 4 Remove the roller.

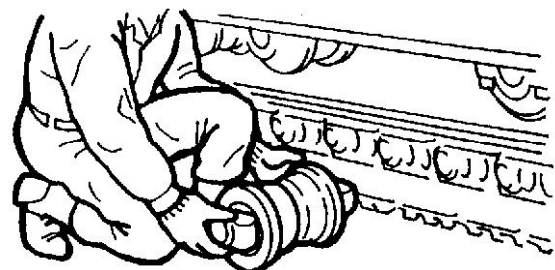


Fig 66.

C005120

Replacement

- 1 Before fitting the roller, fill with oil, see Section 3, **Fluids and Lubricants**. Install the plug using an appropriate pipe thread sealant.

With the undercarriage lifted and supported with wooden blocks, position the roller on the track link as shown.

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

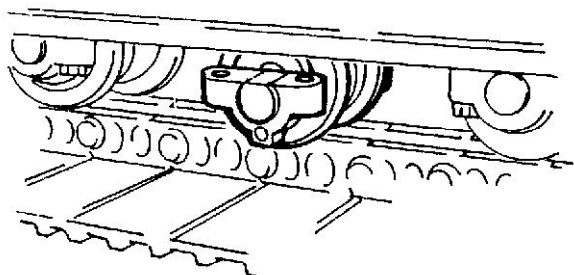


Fig 67.

C005130

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

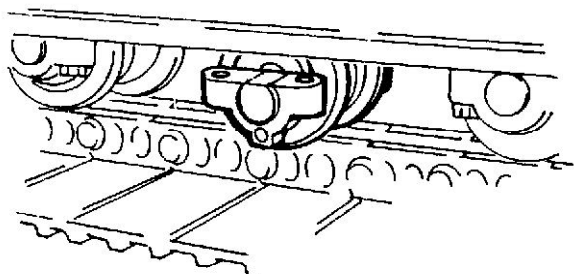


Fig 68.

C005130

- 3 Apply JCB Threadseal to the threads and install the mounting bolts. Tighten to a torque of 506 Nm (373 lbf ft).

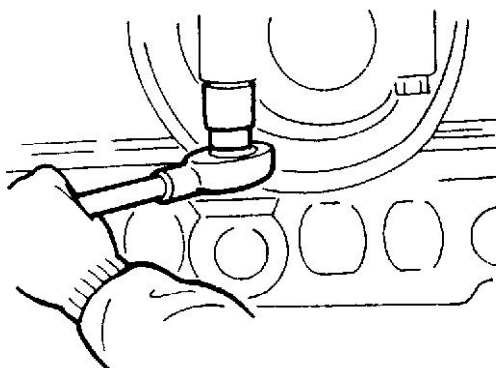


Fig 69.

C005110

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

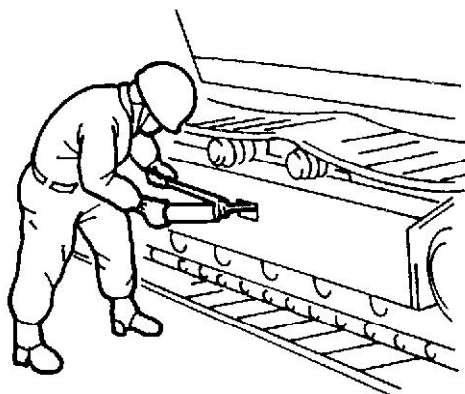


Fig 70.

C004330

Dismantling

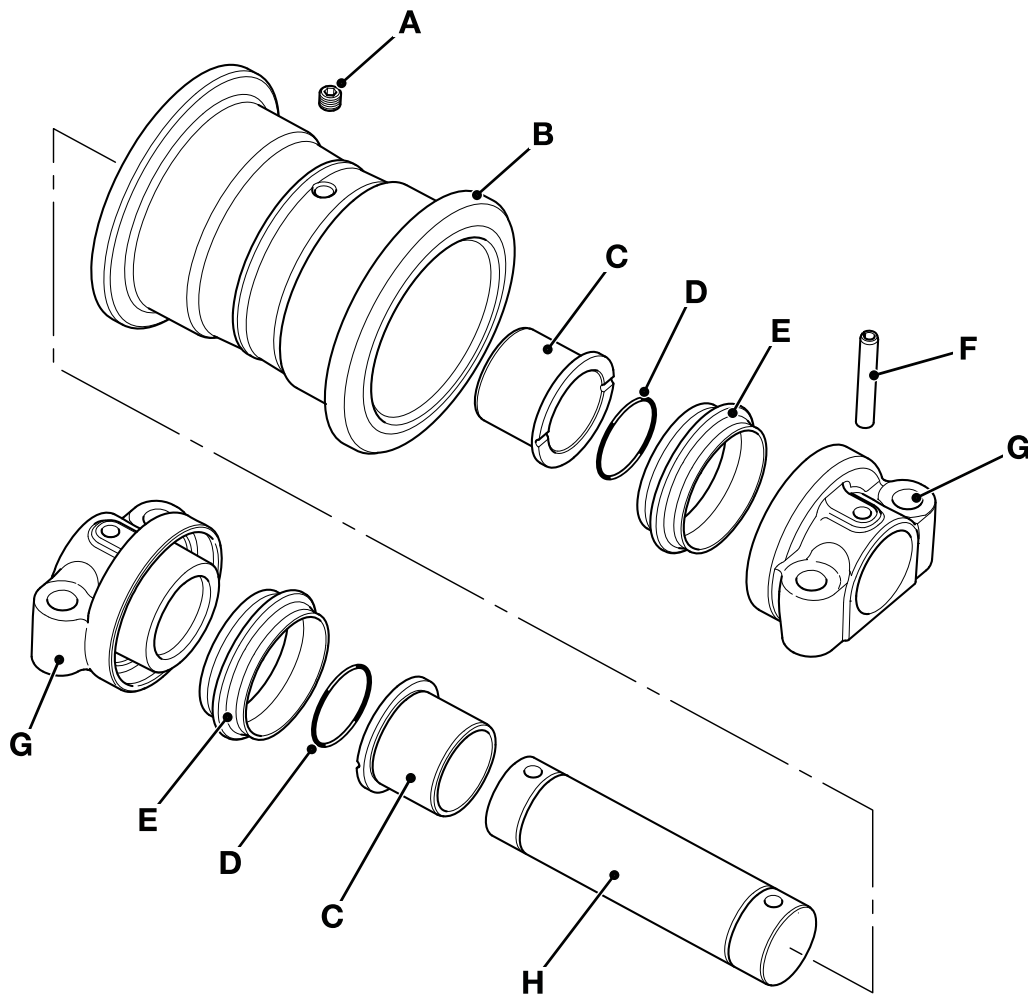


Fig 71.

802960-1

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.

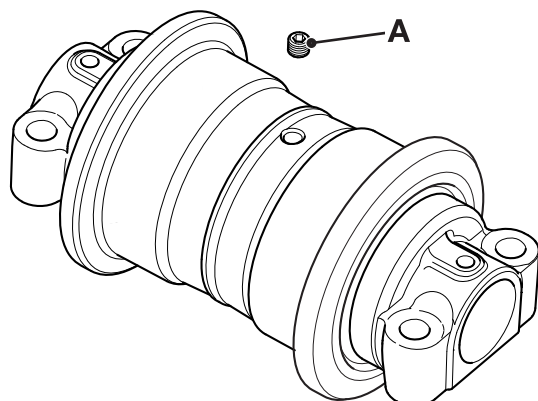


Fig 72.

802961

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

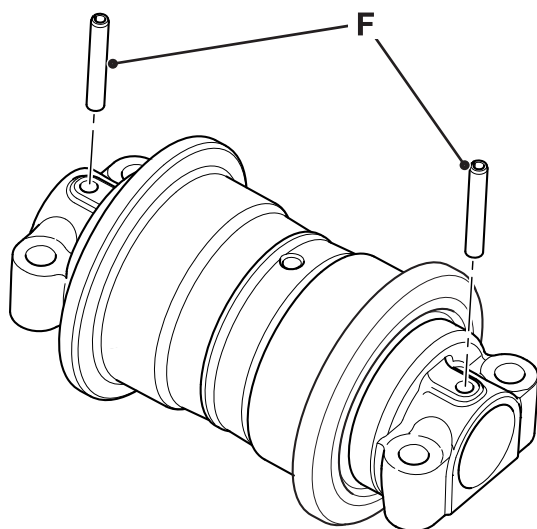


Fig 73.

802962

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

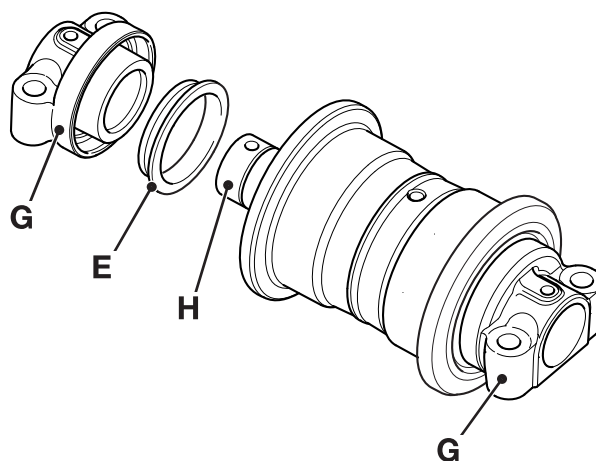


Fig 74.

802963

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**.

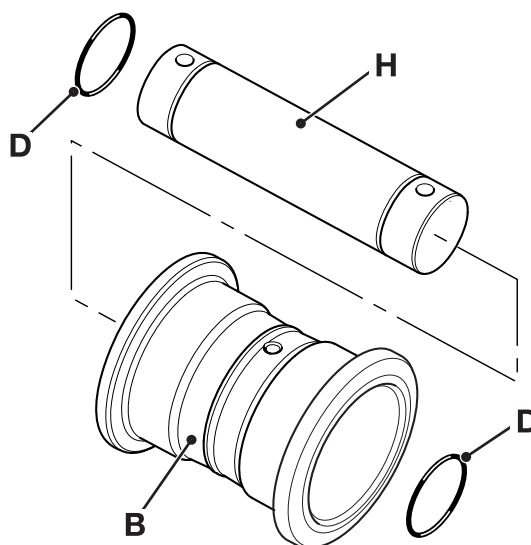


Fig 75.

802964

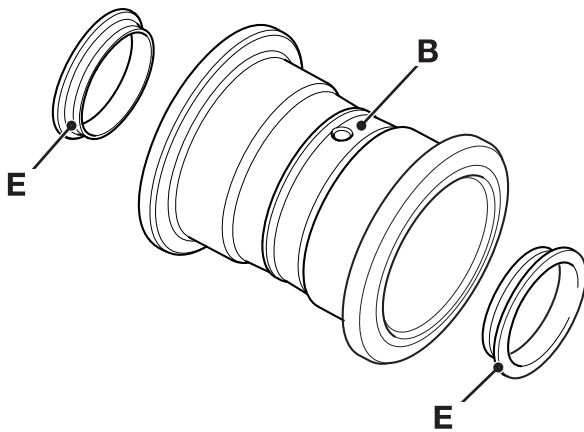


Fig 76.

802965

- 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.

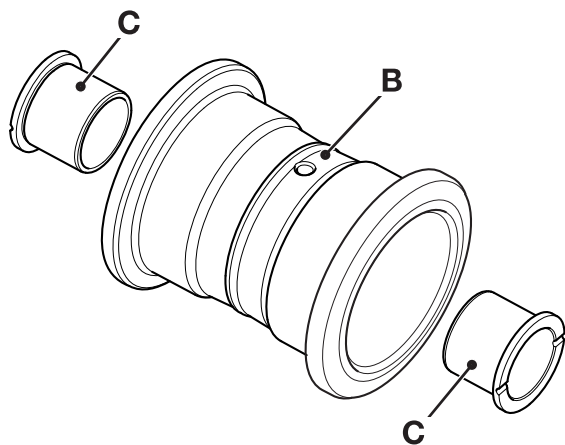


Fig 77.

802966

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. 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.

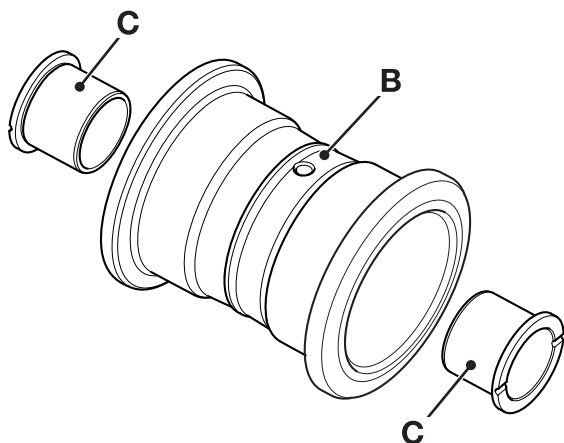


Fig 78.

802966

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

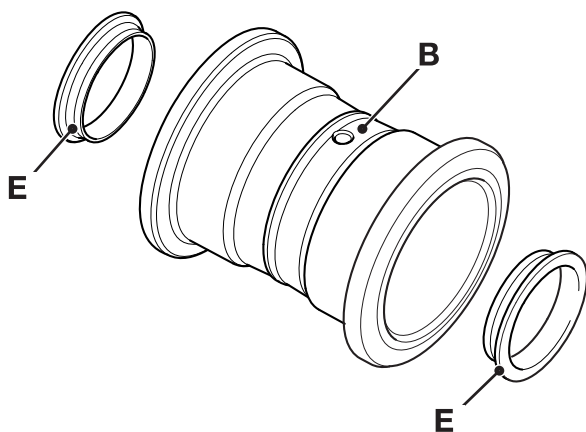


Fig 79.

802965

- 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**.

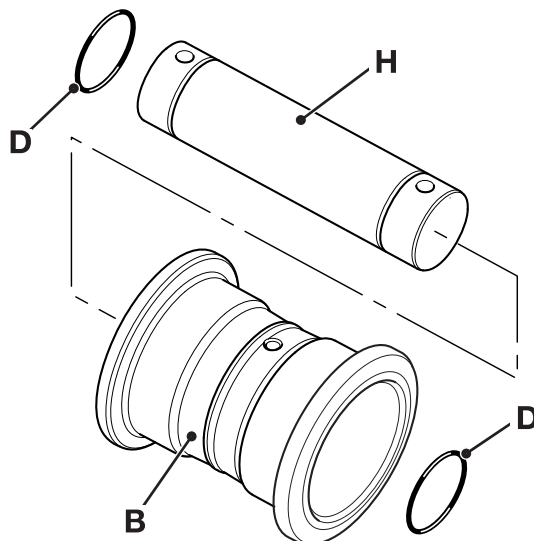


Fig 80.

802964

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

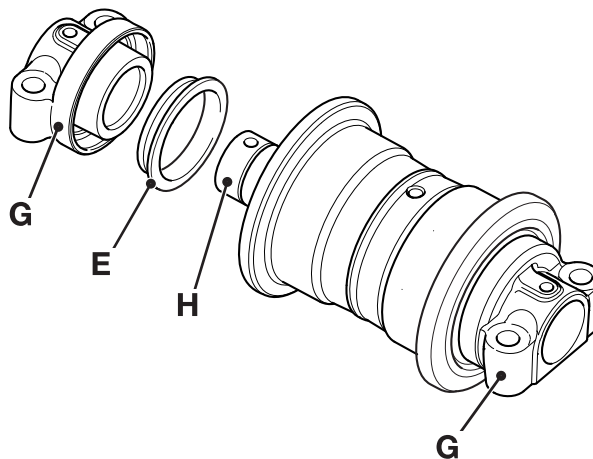


Fig 81.

802963

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

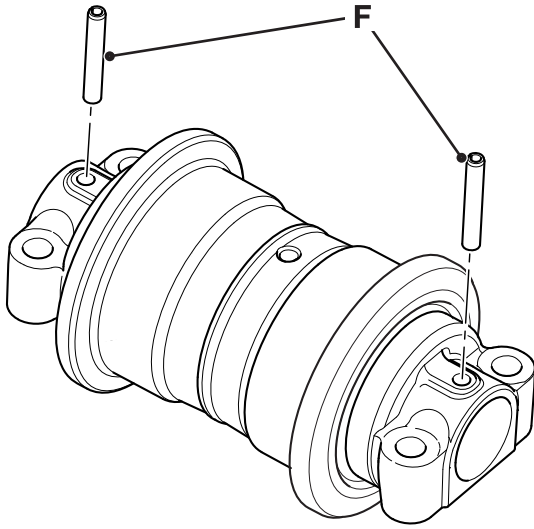


Fig 82.

802962

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

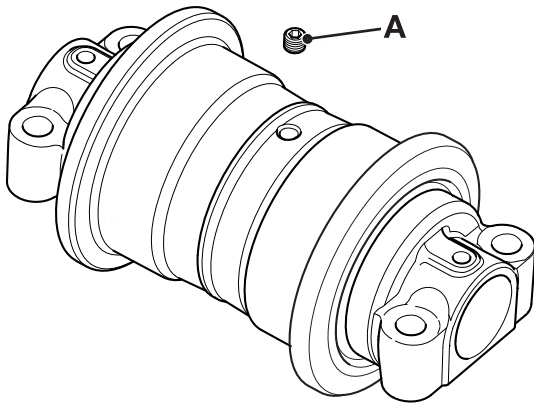


Fig 83.

802961

Fig 84.