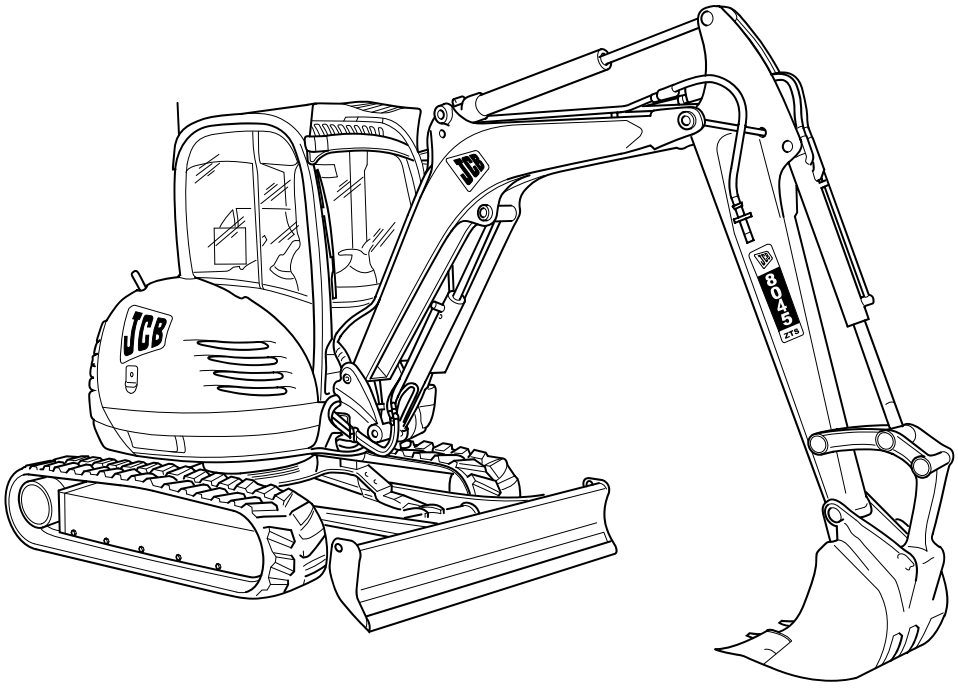
Track and Running Gear

Service Manual - 8040Z, 8045Z



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Notes:

Contents **Page No.**

Contents Page No.

Tracks and Running Gear

General Description

The Excavator track and running gear comprises the tracks, sprockets and rollers fitted to the machine. These may be of either steel or rubber construction depending on the option selected. Drive sprockets transmit drive from the track gearboxes to the tracks. Idler sprockets and top rollers maintain the track tension. The idler sprockets are set differently for rubber and steel tracks.

The track and running gear is located on and within the machine undercarriage side frames.

Technical Data

Track Weight -	
Rubber track (each)	240 kg (529 lb.)
Steel track (each)	280 kg (617 lb.)
Track Width	400 mm (15.75 in)
Top roller diameter	90 mm (3.5 in)

Major Component Torque Settings

Top roller to undercarriage	350 Nm, 35.7 kgf m, 258 lbf ft
Bottom roller to undercarriage	244 Nm, 24.9 kgf m, 180 lbf ft
Sprockets to tracks Motors	167 Nm, 17.0 kgf m, 123 lbf ft

Steel Track

Removal and Replacement

Note: *When converting a machine from steel tracks to rubber tracks, the track guides must be removed. When converting from rubber tracks to steel tracks the track guides must be fitted.* ⇨ ***Track Guides (J-7)***.

1 Position the machine so that the master pin **B** is at the front of the track, as shown.

2 Remove the fastener **A** and drive out the master pin **B**.

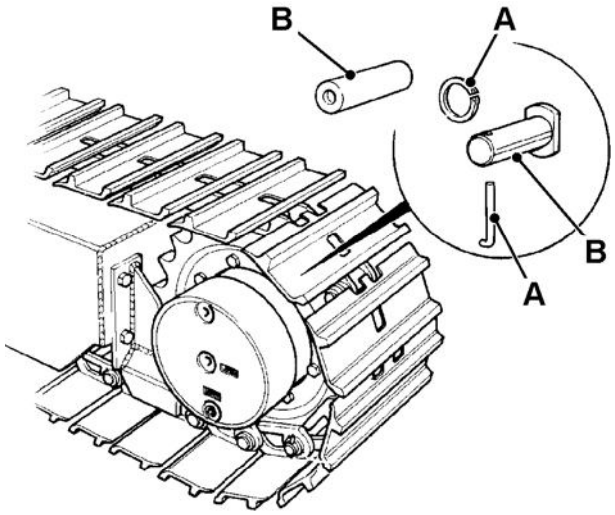

Fig 1.

⚠ WARNING

Ensure that all persons are clear of the track and especially of the driven sprocket during the following operations.

TRACK-1-6

3 Slowly reverse the machine until the track is laid on the ground.

⚠ WARNING

The following operations must only be undertaken by persons familiar with track changing operations and who are qualified to perform the operations. All persons must keep clear of the machine driven sprocket.

TRACK-1-7

4 Lay out the replacement track **C**, behind the machine. Drive the machine onto the new track, guiding the track over the idler wheel **D** and roller **E**, until the ends can be joined.

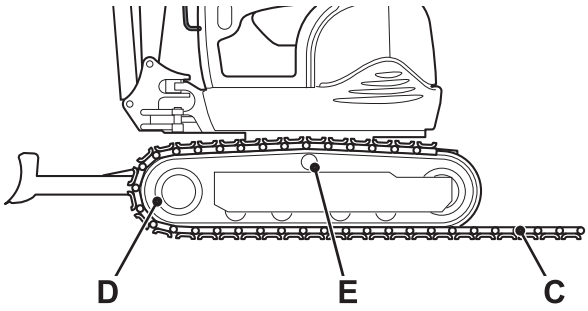

Fig 2.

5 Fit the master pin **B** and lock using a new fastener **A**. ⇨ ***Fig 1. (J-3)***

6 Tension the track. Refer to ***Track Tensioning, Section 3***.

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Rubber Track

Removal and Replacement

Note: *When converting a machine from steel tracks to rubber tracks, the track guides must be removed. When converting from rubber tracks to steel tracks the track guides must be fitted.* ⇨ ***Track Guides (J-7)***.

⚠ WARNING

A raised and badly supported machine can fall on you. Position the machine on a firm, level surface before raising one end. Ensure the other end is securely chocked. Do not rely solely on the machine hydraulics or jacks to support the machine when working under it.

Disconnect the battery, to prevent the engine being started while you are beneath the machine.

GEN-1-1

1 Position the machine in the posture shown. Fit suitable supports under the machine lower structure.

2 Using a 28 mm (1.1 in) socket, unscrew and remove the grease adaptor **B**.

3 Fully release the track tension by pushing the track idler inwards.

4 Pull the track clear of the machine.

5 Fit replacement track to the machine. Replace the grease adaptor **B**.

6 Check the tension clearance at **A**. Refer to ***Track Tensioning, Section 3***.

7 Remove the machine supports and lower the track to the ground.

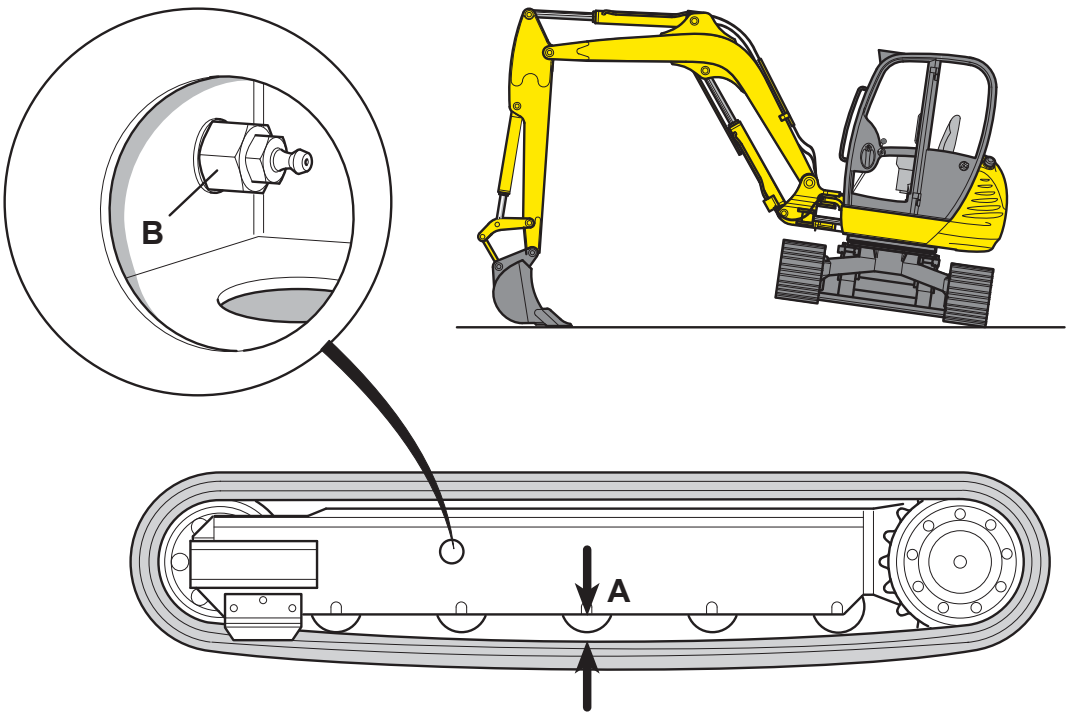

Fig 1.

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Track Guides

Introduction

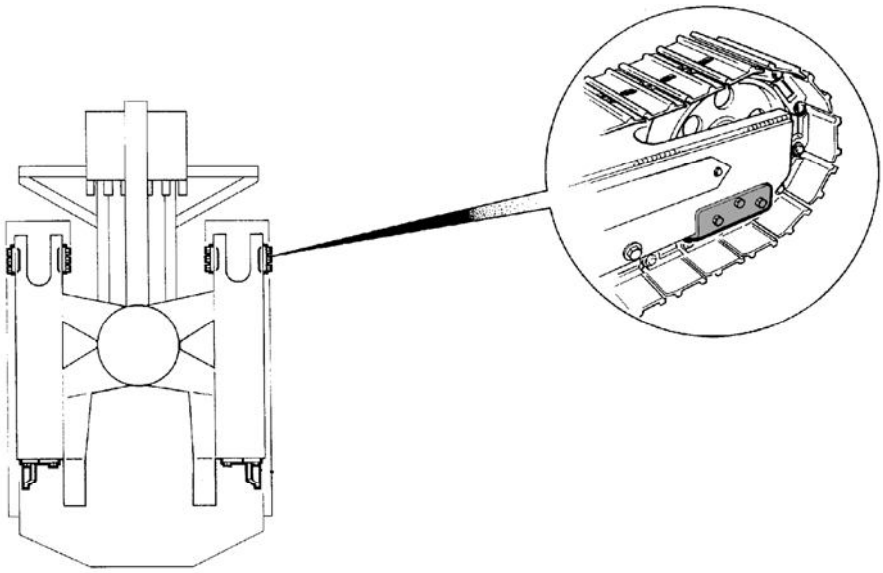

Fig 1.

Track guides are fitted to both sides of each track at the idler wheel position.

Table 1.

Track Change	Guides
Steel to Rubber	OFF
Rubber to Steel	ON

⚠ CAUTION

When converting a machine from steel tracks to rubber tracks, the track guides must be removed. When converting from rubber tracks to steel tracks the track guides must be fitted.

Damage to the tracks may result if this is not carried out.

TRACK-1-8

Removal and Replacement

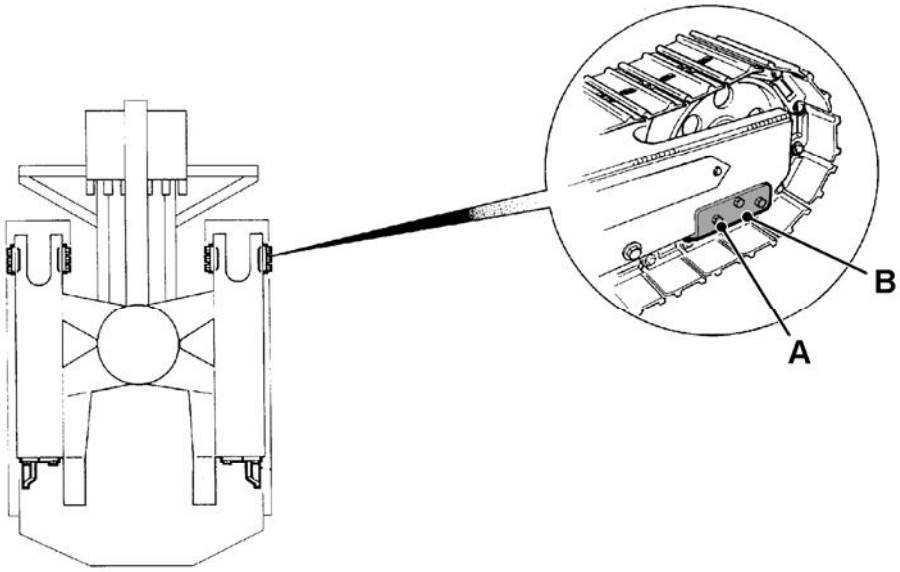

Fig 2.

Removal

Remove the bolts **A** securing the guide brackets **B** to the subframe, remove the bracket from the subframe.

Replacement

Replace in the reverse order of removal.

Track Rollers

Removal and Replacement

Removal

⚠ WARNING

A raised and badly supported machine can fall on you. Position the machine on a firm, level surface before raising one end. Ensure the other end is securely chocked. Do not rely solely on the machine hydraulics or jacks to support the machine when working under it.

Disconnect the battery, to prevent the engine being started while you are beneath the machine.

GEN-1-1

1 Set the machine in the posture shown. Fit suitable supports under the machine lower structure. If necessary adjust the track tension to allow the track to become clear of the rollers.

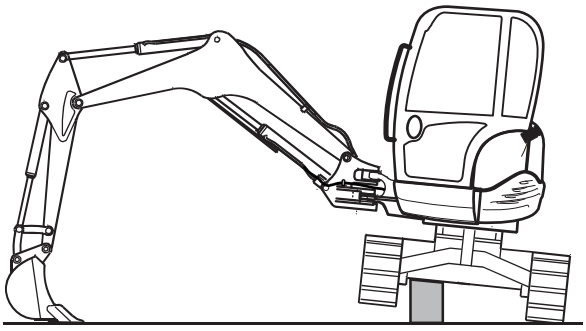

Fig 1.

Upper Roller

2 Gain access to the roller by removing or splitting the track.

3 Access to nut **A** is through the idler wheel greasing point **G**. Undo the nut **A** securing the roller **B** to its mounting bracket.

Lower Roller

4 Remove the bolts **C**, **D** and washers **E**. Lower the roller assembly **F** from the machine.

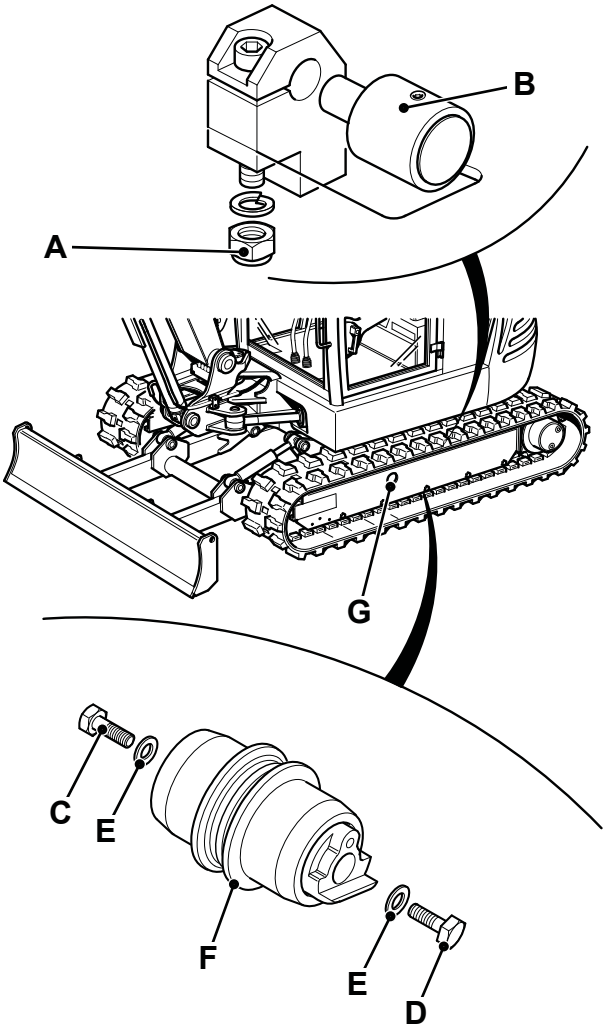

Fig 2.

Replacement

1 Fit the rollers in the reverse sequence to removal. Torque tighten the fittings.

2 Refit and tension the track.

3 Remove the supports and lower the tracks to the ground.

Table 1. Torque Settings

Item	Nm	lbf ft	kgf m
A	184	136	19
C	244	180	25
D	244	180	25

Dismantling and Assembly

Lower Rollers

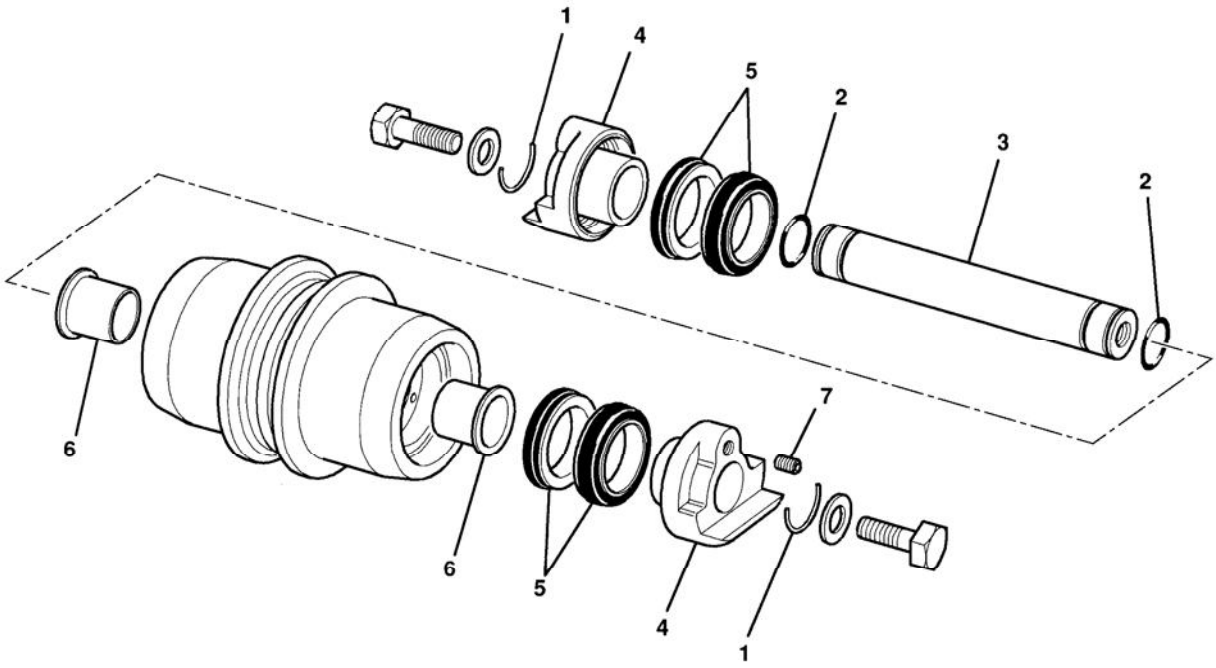

Fig 3.

Dismantling

1 Remove semi circular clips **1** from grooves in end of shaft.

2 Remove 'O rings **2** from roller shaft **3** and remove shaft.

3 Pry off end caps **4** and drain roller of oil.

4 Maintain metallic face seals **5** in original pairs.

5 If necessary remove bearing bushes **6**.

Inspection

1 Check that the roller diameter at the outer edge are within permitted limits. ⇨ *Track Roller Metallic Face Seals (J-19)*. Re-new as necessary.

2 Check that the roller bearing bushes **6** are not marked or worn oval. Renew as necessary.

3 Check contact area of metallic face seals **5**. ⇨ *Track Roller Metallic Face Seals (J-19)*.

Assembly

1 Install bearing bushes **6** into roller shell.

2 Fit one pair of metallic face seals **5** to end cap and roller shell.

3 Replace roller shaft **3** through roller end cap. Renew 'O' rings **2** on roller shaft.

4 Replace semi circular clip **1** in roller shaft groove.

5 Remove filler plug **7** in end cap, fill roller casing with 75cc of JCB Special Gear Oil.

Upper Rollers

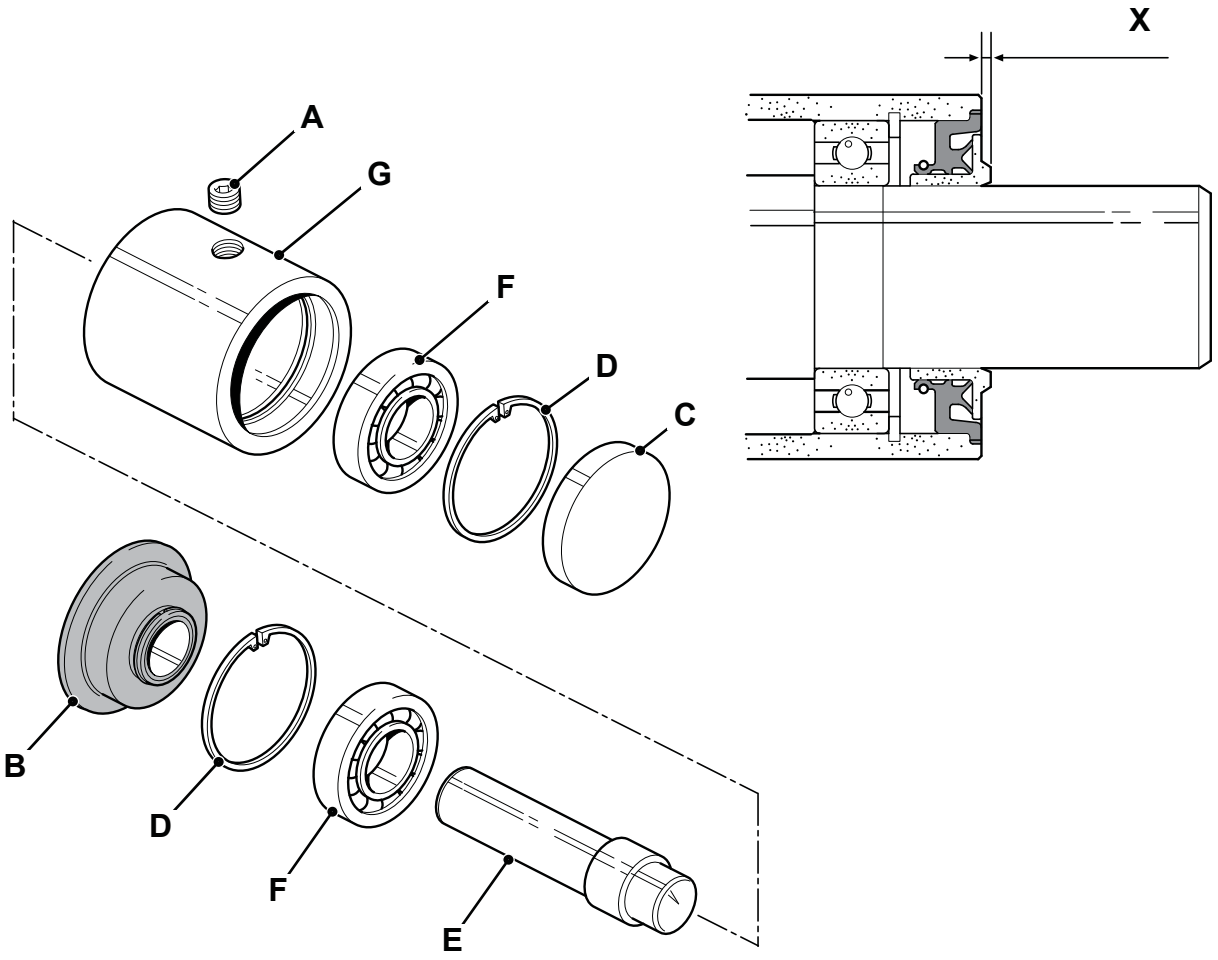

Fig 4.

Dismantling

1 Remove the plug **A** and drain the oil from the roller.

2 Remove the seal **B**.

3 Extract the cover **C**. (The cover will be need to be replaced with a new item for assembly).

4 Remove the circlips **D**.

5 Using a hide mallet, hit the end of the shaft **E** to drive out one of the bearings **F**.

6 Press out the remaining bearing **F** from roller **G**.

Inspection

1 Check that the roller diameter at the outer edge is within permitted limits, Renew as necessary.

2 Check that the roller bearings run freely and smoothly and there is no discoloration, scratching, pitting or corrosion. Renew as necessary.

Assembly

1 Fit one circlip **D** and press one bearing **F** into the roller **G**.

2 Install the shaft **E**.

3 Press the second bearing **F** into the roller **G** over the shaft **E**.

4 Fit the second circlip **D**.

5 Fit a new cover **C**.

6 Fit the seal B so that the outer face is 1.7mm (0.067in) above end face of the roller as shown at **X**.

7 With the filler plug hole uppermost, fill the assembly with 53cc of JCB Gear Oil HD90.

8 Install plug **A**.

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Idler and Recoil Unit

Removal and Replacement

Removal

1 Set the machine to remove the track.

2 Undo the recoil adjusting valve nut **B** to relieve the grease pressure.

3 Carefully raise and support the dozer clear of the track to give sufficient clearance for the removal of the idler wheel.

4 Support the dozer ram and disconnect the dozer from the ram.

5 Lift the idler and recoil assembly clear of the machine undercarriage.

Replacement

1 Install the idler and recoil assembly into the machine undercarriage.

2 Reconnect the dozer to the dozer ram.

3 Fit the track to the machine.

4 Set the track tension **A**. Refer to ***Track Tensioning, Section 3***.

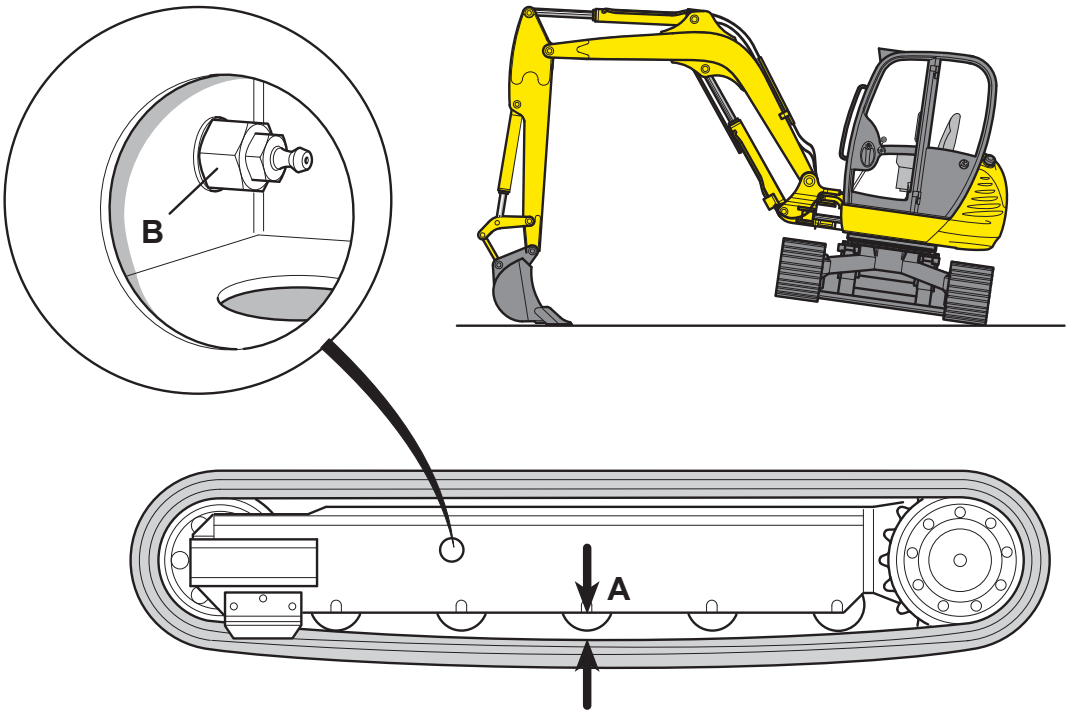

Fig 1.

Dismantling, Inspection and Assembly

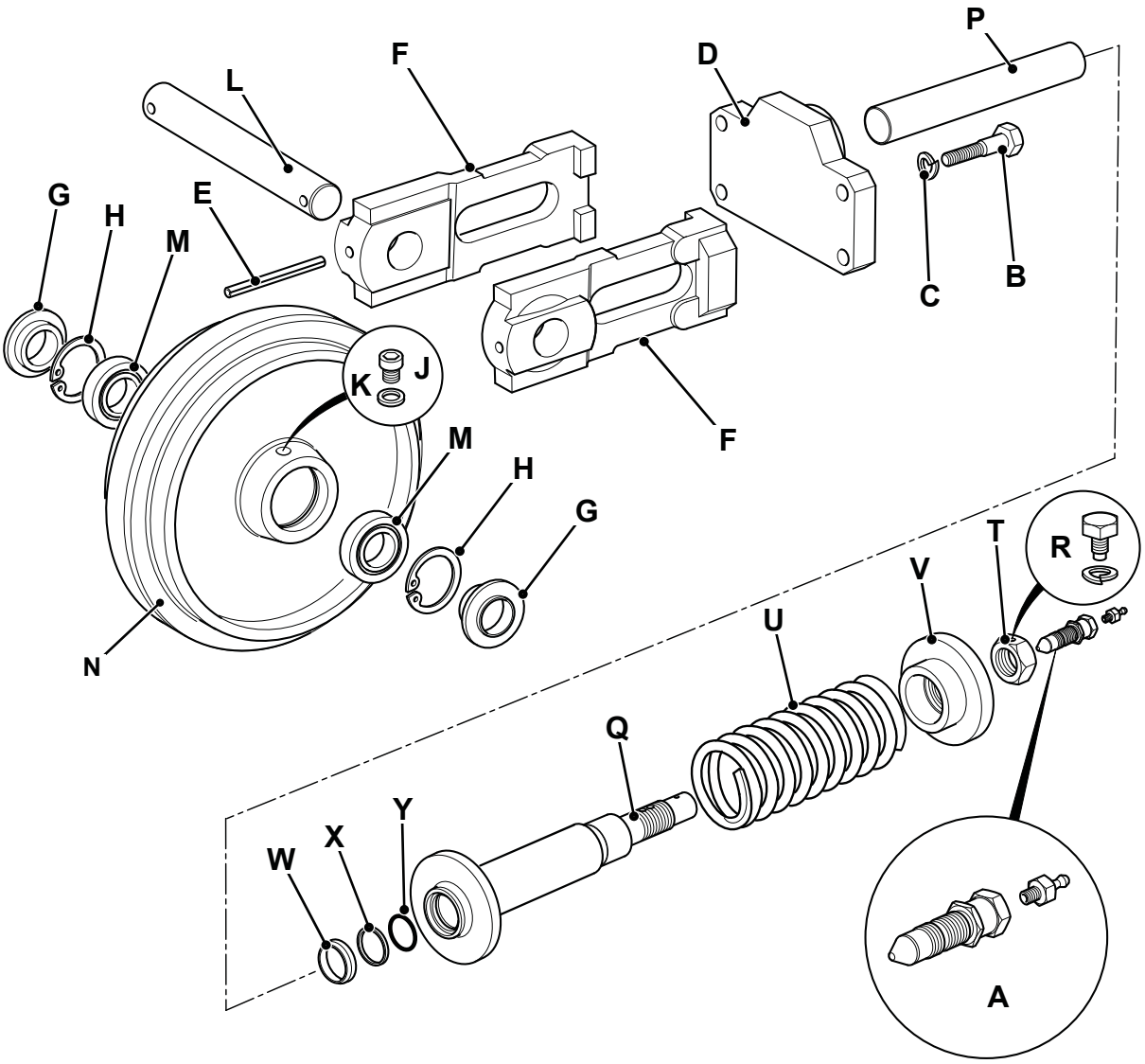

Fig 2.

Dismantling

⚠ WARNING

The recoil unit spring can cause serious injury if suddenly released. Take great care when removing and replacing the spring retaining nut.

Scrap recoil units must be dismantled before transfer from the workshop

Do not use flame cutting equipment unless precautions are taken to release the spring pressure slowly.

TRACK-1-9

1 Remove the recoil valve **A** to relieve the grease pressure.

2 Remove bolts **B** and spring washers **C**, separate the idler sprocket from yoke **D**.

3 Drive out the pins **E**.

4 Remove the idler brackets **F**.

5 Remove the lip seals **G** and circlips **H**.

6 Remove the screw **J** with washer **K**.

7 Using a hide faced mallet, drive out the shaft **L** and one of the bearings **M**. Press the remaining bearing **M** from the idler sprocket **N**.

8 Withdraw the piston rod **P** from the cylinder **Q**.

9 Ensure all old grease is removed from the cylinder **Q**. Slacken the locking bolt **R** from the nut **T**.

10 Using a 2.5 to 3.0 tonne press, compress the spring **U** and remove the nut **T**.

11 Carefully release the pressure on the unit. Remove the cap **V** and the spring **U** from the cylinder

12 Remove and discard the wiper seal **W**, spacer **X** and `O' ring **Y**.

Inspection

1 Examine the spring **U** for cracks and distortion. Renew if necessary.

2 Examine the cylinder **Q** for wear or damage. Renew if necessary.

3 Examine the cap **V** for wear or damage. Renew if necessary.

Assembly

1 Install the idler shaft **L** into the idler sprocket **N**.

2 Fit new bearings **M** in the idler sprocket **N** over the idler shaft **L**.

3 Secure the bearings M with the circlips **H**.

4 Fit new lip seals **G** to the idler sprocket **N** over the idler shaft **L**.

5 Fill the idler assembly with JCB gear oil HD90 through the capscrew **J** hole.

6 Fit a new bonded washer **K** and the capscrew **J** into the idler sprocket **N**.

7 Position the idler brackets **F** over the idler shaft **L** with the holes for tension pin **E** aligned.

8 Drive in the tension pins **E** to secure the idler brackets to the idler shaft **L**.

9 Fit the yoke **D** to the idler brackets **F** with the bolts **B** and spring washers **C**.

10 Lubricate the new seal **X**, `O'-ring **Y** and new wiper seal **W** with MPL grease and install them in the cylinder **Q**.

11 Fully pack the cylinder **Q** with JCB MPL grease.

12 Slide the piston rod **P** in to the cylinder **Q**.

13 Prime the piston rod **P** with JCB MPL grease to ensure that there are no trapped air pockets. Carefully push in the piston rod **P** until grease is emitted continuously from the valve orifice.

14 Remove the grease nipple from the valve **A** and fit valve A into cylinder **Q**. Ensure that grease flows from valve **A** then fit the grease nipple to valve **A**.

15 Slide the spring **U** with plate **V** over the cylinder **Q**.

⚠ 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

16 Use the 2.5 to 3.0 tonne press to compress the spring to a length as below at **X**. Check compression load for each track type:

Steel tracks:	263mm (10.5in)
Rubber tracks:	248mm (9.9in)

17 Install the nut **T** and secure with the locking bolt **R** at the correct hole position in the cylinder.

Note: *There are two set positions for the locking bolt and nut. These are different for steel or rubber tracks. The nuts are marked **R** and **S**.*

18 Release the spring assembly from the press.

19 Install the idler and recoil assembly into the machine undercarriage.

20 Reconnect the dozer to the dozer ram.

21 Fit the track to the machine.

22 Set the track tension.

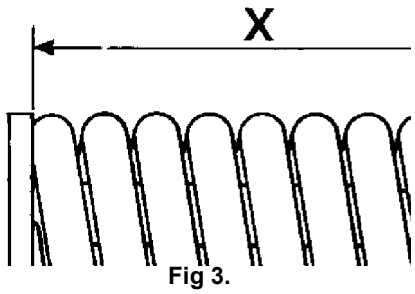

Fig 3.

Track Rollers

Track Roller Metallic Face Seals

P11-J002

When Removing

⚠ CAUTION

Avoid skin contact with surface 'A' as corrosion may be caused.

GEN-3-10

Retain face seals in pairs when they are removed. Fit as matched pairs if suitable for further use.

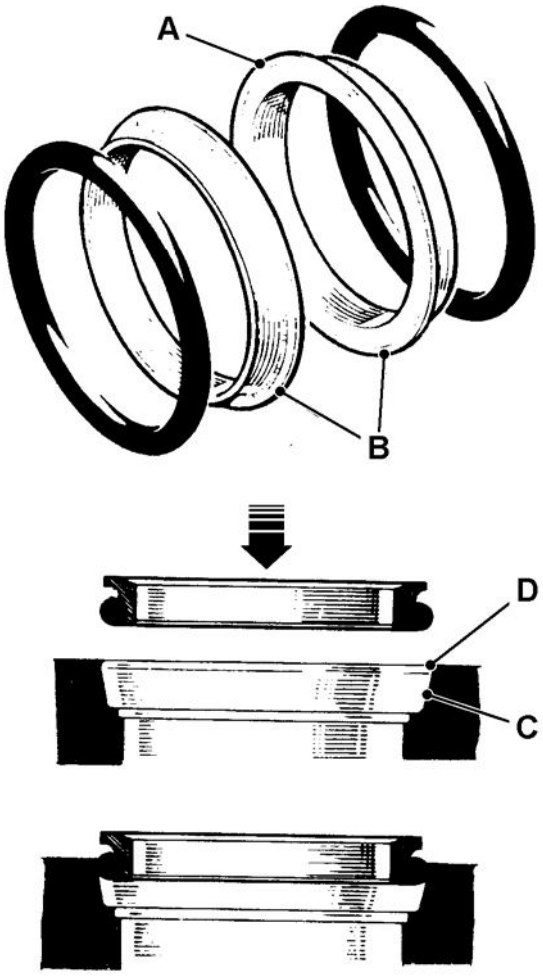

Fig 1.

Inspection

1 If contact area **A** is undamaged, estimate remaining life wear as follows:

New seals- Contact area is a narrow band at outer edge.

Partly worn seals - Contact area is wider but does not extend full width.

Scrap seals - Contact area is worn to full width.

2 Renew pair of seals if contact surface is scratched, pitted or corroded.

3 Examine outer edges **B**, housing ramp **C** and lip **D**. Carefully polish away light damage or corrosion.

When Replacing

Note: *Do not allow oil to come into contact with the 'O' rings or housings until the assembly is complete.*

Thoroughly clean and dry seals, 'O' rings and housings before fitting seals as follows:

1 Fit 'O' rings onto the seals, check that they seat evenly and are not twisted.

2 Press 'O' ring past lip **D**. Check that dimension is constant around the circumference of seal.

3 Immediately before final assembly, clean dust etc. from surface **A** and lightly coat with clean oil of the appropriate grade.

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Driven Sprocket

Removal and Replacement

Removal

1 Set up the machine and remove the track. Clean off all dirt and accumulated debris.

2 Remove the bolts **A**.

3 Remove driven sprocket **C** from the track gearbox **D**.

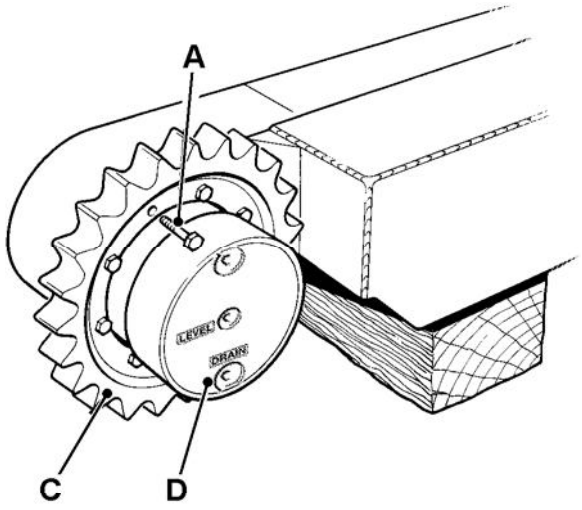

Fig 1.

Inspection

1 Check that the driven sprocket conforms to permitted tolerances.

Replacement

1 Install the driven sprocket **C** onto the track gearbox **D**.

2 Using locking fluid on the bolt threads, torque tighten the bolts **A** in a diagonal sequence ⇨ *Table 1. Torque Settings (J-21)*.

3 Fit the track.

Table 1. Torque Settings

Item	Nm	lbf ft	kgf m
A	167	123	17

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