

## STEERING

### POWER STEERING PUMP 5.3

#### RENEW

57.20.14

Open the bonnet.  
Release the clips (1 Fig 1) and remove the LH air cleaner cover. Remove the element (2 Fig 1). Partially drain the coolant.  
Release the clips securing the top coolant hose, remove hose.  
Using a suitable syringe, remove all oil from the steering pump.  
Disconnect the return and feed hoses from the rear of the pump (1 Fig 2). Collect any oil spillage with waste rags.  
Slacken off the nut securing the adjuster rod to the timing cover.  
Remove the bolt securing the adjuster rod trunnion to the pump, swing the adjuster rod clear of the pump (2 Fig 2).  
Remove the nut securing the pump lower pivot bolt (3 Fig 2).  
Swing the pump to the engine and disengage the drive belt (4 Fig 2).  
Remove the lower pivot mounting bolt.  
Lift the pump from the car.  
Thoroughly clean all components and examine for wear and damage. Replace worn or damaged components as necessary.

Fit the new pump to position, and fit the lower pivot bolt. Engage the drive belt.  
Fit the adjuster rod trunnion bolt.  
Tighten the inner locknut to increase belt tension. The tension is correct when a load of 6.5lb (3kg) applied to the mid-point of the upper belt run, gives a total deflection of 0.16in (4mm). Tighten the locknuts.  
Reconnect the feed and return hoses to the pump.  
Refill the coolant system 26.10.01.  
Refit the top hose.  
Refit the air cleaner.  
Refill the system with recommended fluid and carry out the bleed procedure 57.15.02.  
Fit the reservoir cap (Fig 3).

#### DATA

#### TORQUE FIGURES

Hydraulic hose to outlet port 20–35Nm  
Outlet port to pump 50–70Nm

#### SPANNER SIZES

13mm  
16mm

#### OILS/GREASES/LUBRICANTS

Power Steering Reservoir **DEXRON 2D**

0016N

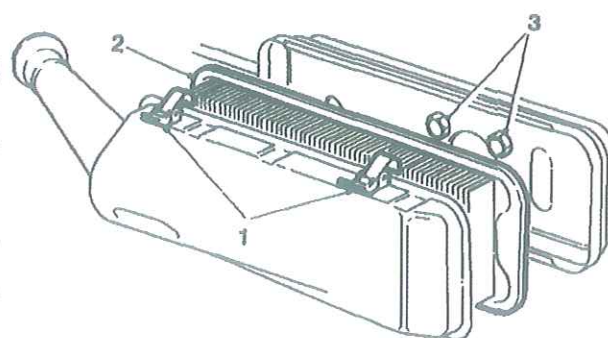


Fig 1

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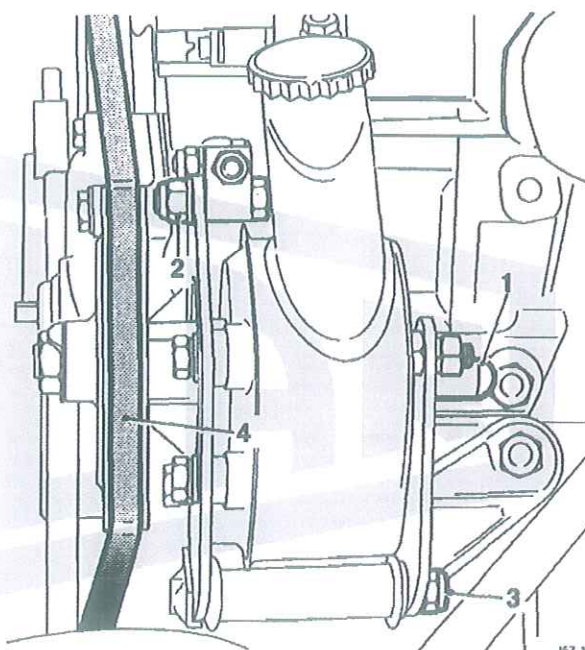


Fig 2

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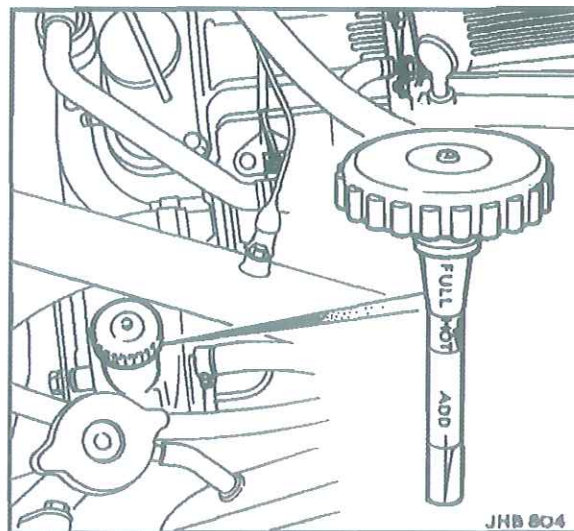


Fig 3

## STEERING

### POWER STEERING PUMP 3.6

#### OVERHAUL

57.20.20

Remove the power steering pump 57.20.14.  
Thoroughly clean the exterior of the pump.  
Remove the plugs, drain and discard the fluid.  
Using Service Tool 18G 1445 remove the drive dog from the pump shaft (Fig 1).

Insert a suitable punch (1 Fig 2) in the hole in the rear of the pump body and dislodge the spring ring.

Extract the ring with a screwdriver (2 Fig 2).

If the endplate is not ejected by spring pressure, a light tap on the casing will free it.

Extract the endplate 'O' ring seal (13 Fig 3) from the pump body and discard.

NOTE: Examine the exposed portion of the driveshaft. If it is corroded, thoroughly clean it with crocus cloth. This will prevent damage being caused to the shaft bushing when tapping the shaft through. If the shaft bushing is damaged, then replace the entire pump housing.

Lightly tap the shaft (1 Fig 3) through the pump body, carrying the pump rotor assembly with it.

Extract the other 'O' ring seal (12 Fig 3) from the pump body and discard.

Carefully separate the pump rotor components.

Remove the circlip (8 Fig 3), withdraw the rotor (6 Fig 3)/thrust plate (5 Fig 3) from the shaft.

Extract the drive shaft oil seal (2 Fig 3) using a suitable drift.

Key to Fig 3:

- 1 Drive shaft
- 2 Drive shaft seal
- 3 Pump body
- 4 Dowel pins
- 5 Thrust plate
- 6 Pump rotor
- 7 Pump rotor vanes
- 8 Circlip
- 9 Pump ring
- 10 Pressure plate
- 11 Pressure plate spring
- 12 Pump ring 'O' ring seal
- 13 End plate 'O' ring seal
- 14 End plate
- 15 End plate spring ring
- 16 Outlet connector
- 17 'O' ring seal
- 18 Control valve
- 19 Control valve spring



Fig 1

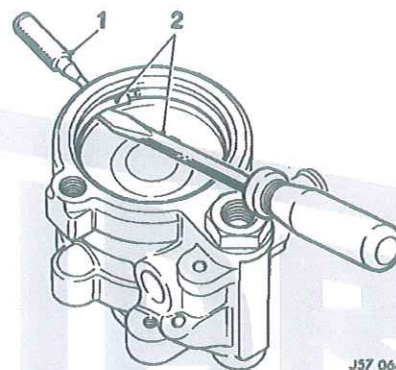


Fig 2

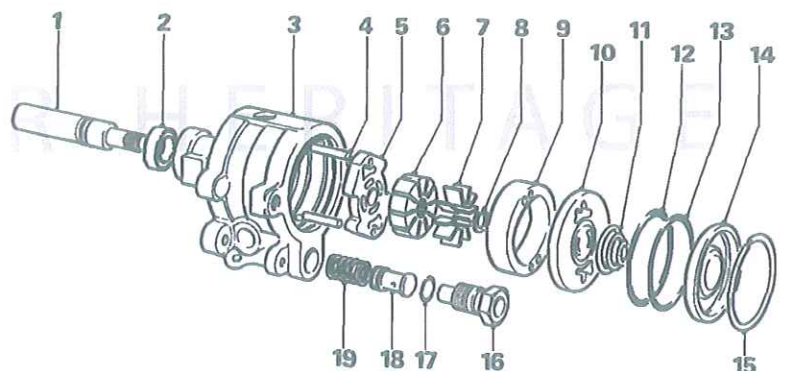


Fig 3



## STEERING

### Inspection:

Clean all the components, carefully inspect for any signs of wear and damage.

Light scoring of the thrust and pressure plates can be removed by lapping.

If the pump ring or vanes show signs of chattering or grooving, then they must be renewed.

Scuff marks and light universal wear are acceptable. Check the control valve for free movement; remove any burrs and renew the valve if it is at all faulty. Check the shaft in the bush; it should run freely and no excessive sideways movement should be evident.

Measure the external diameter of the shaft and the internal diameter of drive dog. There **MUST** be an interference fit of 0,025mm–0,066mm (0.001–0.0026in) between the drive dog and the shaft.

### Assembly:

Fit a new shaft seal to the pump housing, lightly smear with petroleum jelly and insert the shaft, splined end first.

Fit the dowel pins (1 Fig 1). Fit the thrust plate, ensure that the port face is facing outwards (2 Fig 1) over the dowel pins.

Fit the rotor (Fig 2) counterboard face first, to the shaft splines and secure with a new circlip. Do not overstretch the circlip.

Slide the pump ring (1 Fig 3) over the dowel pins; ensure that the rotation arrow is visible (arrowed Fig 3).

Fit the vanes into the slots in the rotor with their radial edges outermost (Fig 4).

Lightly smear the new pressure plate 'O' ring seal with petroleum jelly and insert in the groove of the pump housing. Fit the pressure plate (1 Fig 1 page 32) with the spring recessed face outermost and press firmly into the 'O' ring seal.

Lightly smear the other new 'O' ring seal with petroleum jelly and insert into the outer groove of the pump housing.

Refit the spring and place the end plate in position.

Place the spring ring with the gap away from the extractor hole in the pump body.

Place the assembly under a press and carefully depress the end plate until the spring ring can be sprung into the groove.

Reassemble the control valve, and refit the valve to the outlet port.

Using Service Tool 18G 1445 refit the drive dog to the shaft (Fig 2 page 33).

Refit the steering pump 57.20.14.

Refill the system with recommended fluid and carry out the bleed procedure 57.15.02.

## DATA

### SPECIAL TOOLS

**18G 1445** Drive coupling remover/replacer

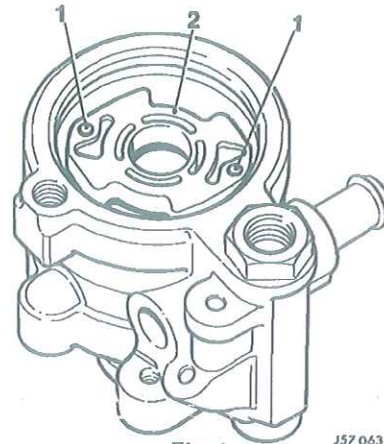


Fig 1

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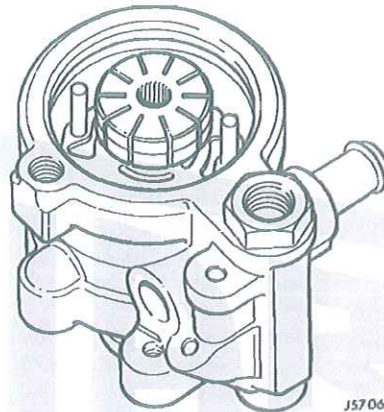


Fig 2

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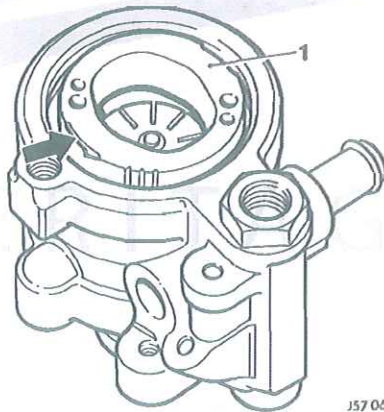


Fig 3

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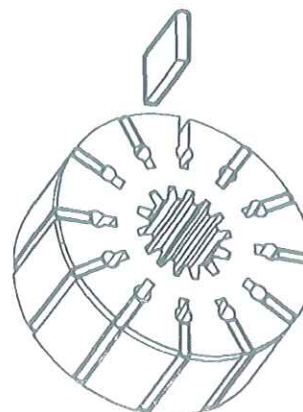


Fig 4

57 003



# STEERING

## DATA

### TORQUE FIGURES

Hydraulic hose to outlet port 20–35Nm

Outlet port to pump 50–70Nm

Pump adaptor to engine 23–27Nm

Pump to adaptor 49–54Nm

### SPANNER SIZES

13mm

16mm

26mm

### OILS/GREASES/LUBRICANTS

Power Steering Reservoir DEXRON 2D

0016N

## POWER STEERING PUMP 5.3

### OVERHAUL

57.20.20

Remove the power steering pump 57.20.14

Remove the rear mounting plate (1 Fig 3).

Remove the pump pulley (2 Fig 3).

Noting position and relative size of spacers, remove the front mounting plate (3 Fig 3).

Thoroughly clean the pump exterior (4 Fig 3).

Remove the high pressure outlet union and mounting plate studs (1 Fig 4).

Tilt the pump to one side to remove the flow control valve and spring (2 Fig 4).

Fit the spindle body to a vice and carefully tap the pump casing from the body (3 Fig 4).

Remove the three 'O' rings from the ports in pump body (1 Fig 1 page 34), remove the magnet on the pump body flange.

NOTE: If large amounts of fibrous metal material are deposited on the magnet, damage or considerable wear within the pump is indicated.

Insert a suitable pin punch into the pump body, and push the retaining ring free from its groove and lever out of the body (2 Fig 1 page 34).

Remove the retaining plate (3 Fig 1 page 34); if the plate sticks, lightly tap with a mallet.

Remove the spring (4 Fig 1 page 34).

Remove the top 'O' ring (5 Fig 1 page 34) from the recess in the pump body. Remove the key from the rotor shaft (1 Fig 2 page 34).

Gently tap the roller spindle (2 Fig 2 page 34) towards the pump body and carefully remove the pump assembly from the body, lay the assembly to one side.

Remove the lower 'O' ring from the recess in the pump body (3 Fig 2 page 34).

If during the above operation, the pump dowel pins remain in the body, remove the pins (4 Fig 2 page 34).

Remove the rotor housing top plate from the pump assembly (5 Fig 2 page 34). Remove the rotor housing (6 Fig 2 page 34).

Remove the rotor vanes (7 Fig 2 page 34).

Remove circlip securing rotor to drive shaft (8 Fig 2 page 34).

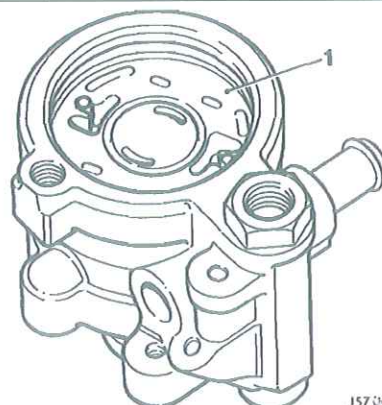


Fig 1

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Fig 2

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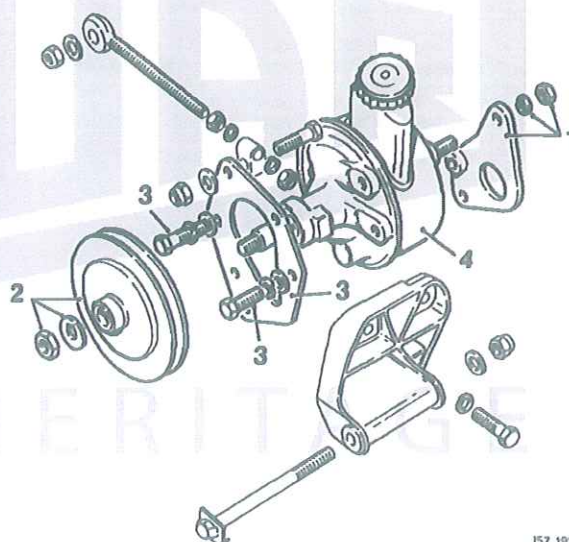


Fig 3

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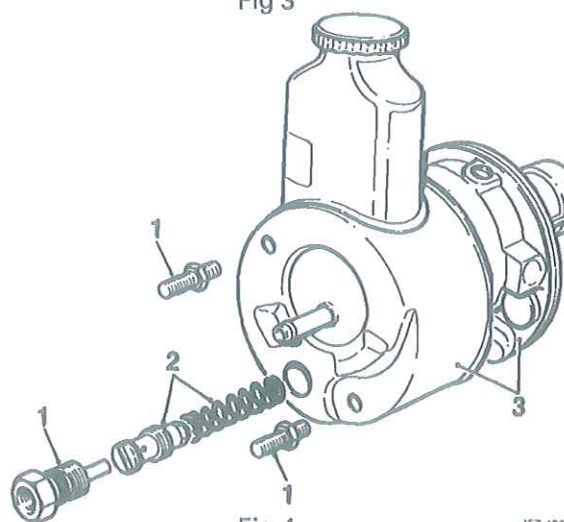


Fig 4

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## STEERING

Remove the drive shaft oil seal from the pump body (9 Fig 2).

### Inspection:

Clean all parts with lint free cloth.

Discard old seals, 'O' rings, rotor housing and rotor vanes. All these items are contained within the repair kits.

Should any item other than those contained within the repair kit be defective or doubt as to their condition exist, a new pump must be fitted.

### Reassembly:

Lubricate a new drive shaft seal and fit to the pump shaft housing.

Fit a new 'O' ring to the lower recess in the pump body.

Fit the dowel pins into locating holes in the pump body.

With the cutaway face uppermost, fit the bottom plate to the drive shaft.

With the counterbored face of rotor facing the bottom plate, fit the rotor over the splines of the drive shaft. Secure the rotor and bottom plate with a circlip.

Insert the vanes in rotor slots, ensuring that the radial edges face outwards.

Carefully fit the drive shaft and rotor assembly to the pump body, ensure that the dowel pins locate through the smallest holes of the bottom plate.

With the arrowed section uppermost, fit the pump ring chamber over the rotor assembly and dowel pins.

Push the complete pump assembly home.

Lubricate a new 'O' ring and fit to the upper recess in the pump body.

Fit the spring to the recess in the top plate.

Position the retaining plate over the spring in the pump body.

Push the plate into the pump body and fit the retaining ring, ensure that the ring is fully home in the locating recess.

Fit new 'O' rings to the port recesses in the pump body.

Fit the large 'O' ring to the periphery of the pump body, and the magnet to the pump body flange.

Position the pump outer casing over the body.

Locate the bracket mounting studs through the outer casing and into the pump body. Carefully drive the outer casing fully home over the pump body.

Fully tighten the bracket mounting studs.

Fit the spring and flow control valve to the pump.

Fit the high pressure outlet union to the pump.

Fit a NEW Woodruff key to the drive shaft spindle.

Fit the front mounting plate to the pump, ensuring the correct location of the spacers.

Refit the pump pulley.

Refit the rear mounting plate.

Refit the steering pump 57.20.14.

Refill the system with recommended fluid and carry out the bleed procedure 57.15.02.

Fit the reservoir cap (Fig 3).

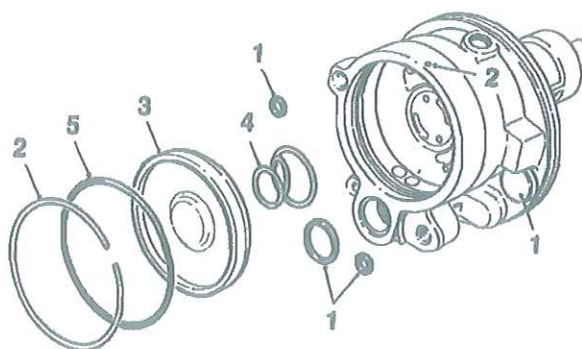


Fig 1

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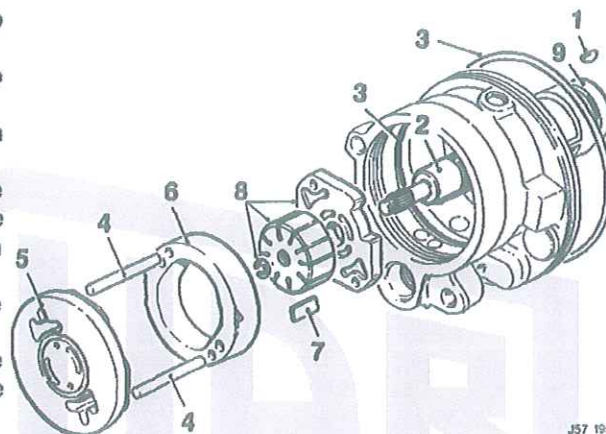


Fig 2

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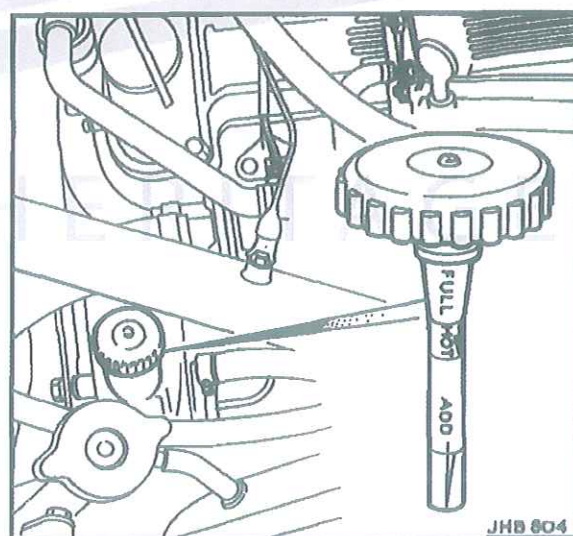


Fig 3

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