

LUBRICATION

This first part of the maintenance section covers renewal of lubricating oils for the major units of the vehicle and other components that require lubrication, as detailed in the 'Maintenance Schedules'. Refer to Section 09 for Capacities and Recommended Lubricants.

Vehicles operating under severe conditions of dust, sand, mud and water should have the oils changed and lubrication carried out at more frequent intervals than that recommended in the maintenance schedules.

Draining of used oil should take place after a run when the oil is warm. Always clean the drain and filler-level plugs before removing. In the interests of safety disconnect the vehicle battery to prevent the engine being started and the vehicle moved inadvertently, while oil changing is taking place.

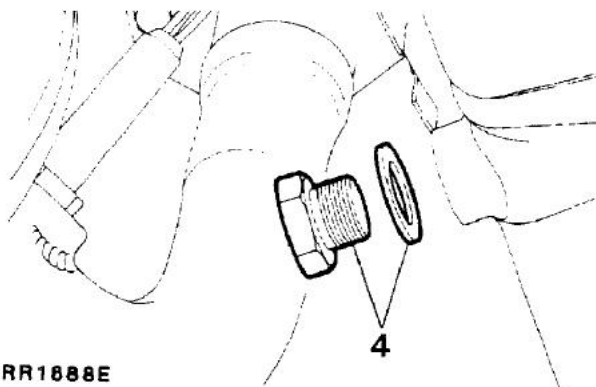
Allow as much time as possible for the oil to drain completely except where blown sand or dirt can enter the drain holes. In these conditions clean and refit the drain plugs immediately the main bulk of oil has drained.

Where possible, always refill with oil of the make and specification recommended in the lubrication charts and from sealed containers.

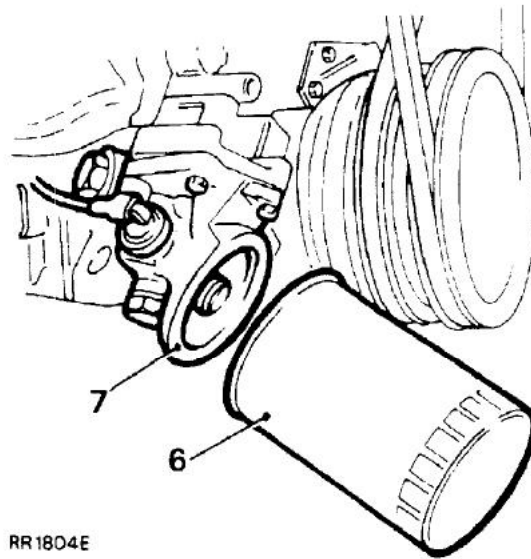
RENEW ENGINE OIL AND FILTER

DRAIN THE OIL

1. Before changing the oil ensure that the vehicle is level on either hoist or ground.
2. Run the engine to warm the oil; switch off the ignition and disconnect the battery for safety.
3. Place an oil tray under the drain plug.
4. Remove the drain plug in the bottom of the sump at the left-hand side. Allow oil to drain away completely. Fit new copper washer and replace the plug, tighten to the correct torque value.



RR1688E



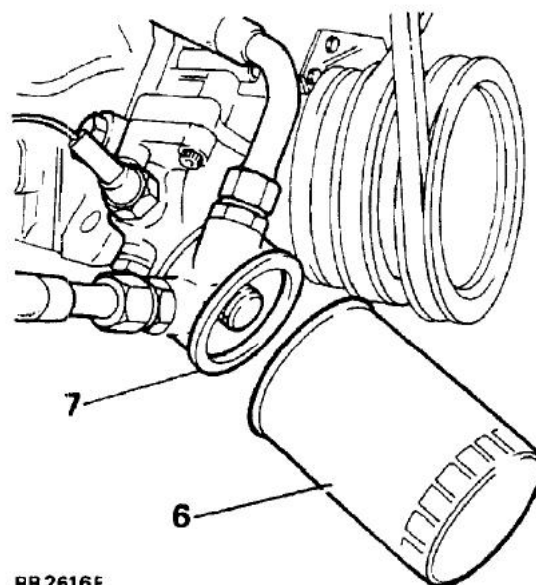
RR1804E

Fit new oil filter

5. Remove the engine undertray if the vehicle is a 1989 model year (See Section 76, page 60). Place an oil tray under the engine.

NOTE: 1989 model year vehicles have an engine oil cooler. The oil cooler adaptor is secured to the oil pump cover, see RR2616E.

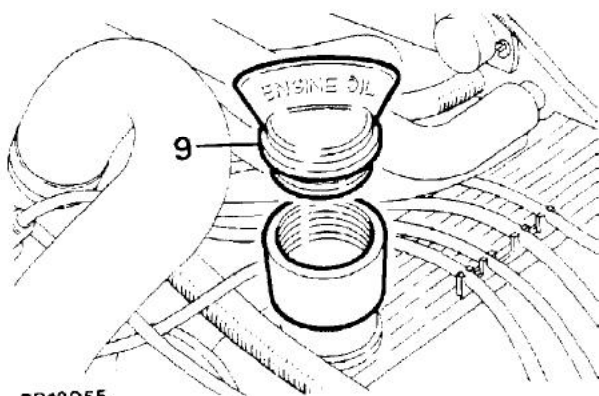
6. Unscrew the filter counter-clockwise, using a strap wrench as necessary.
7. Clean the oil pump mating face (1989 Models: oil cooler adaptor mating face) and coat the rubber washer of the new filter with clean engine oil, screw the filter on clockwise until the rubber sealing ring touches the machined face, tighten a further half turn by hand only. **DO NOT** overtighten.



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Refill sump with oil

8. Check that the drain plug is tight.
9. Clean the outside of the oil filler cap, remove it from the extension filler neck and clean the inside.



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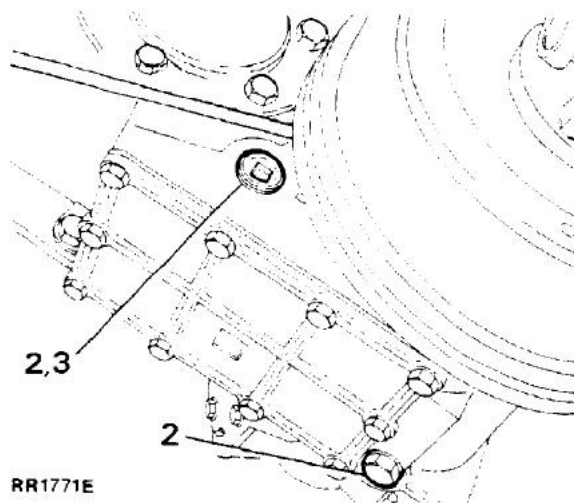
10. Pour in the correct quantity of new oil of the correct grade from a sealed container to the high mark on the dipstick and firmly replace the filler cap. **DO NOT FILL ABOVE 'HIGH' MARK.** Reconnect the battery.
11. Run the engine and check for leaks from the filter. Stop the engine, allow the oil to run back into the sump for a few minutes, then check the oil level again and top up if necessary.

RENEW MAIN AND TRANSFER GEARBOX OILS

DRAIN AND RENEW LT230 TRANSFER GEARBOX OIL

1. Before changing the oil ensure that the vehicle is level on either hoist or ground. Place a container under the gearbox to catch the old oil. Disconnect the battery.
2. Remove the drain and level/filler plugs and allow the oil to drain. Fit the drain plug using a new washer, if necessary, and tighten to the correct torque value. Do not overtighten.

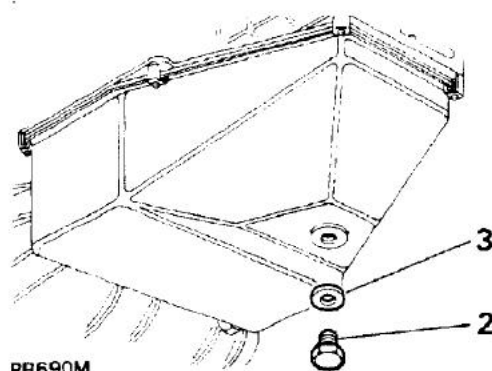
3. Inject the approximate quantity of the recommended oil until it reaches the level/filler plug hole. Fit the level/filler plug and tighten to the correct torque value, do not overtighten, wipe away any surplus oil.



RR1771E

RENEW ZF AUTOMATIC GEARBOX FLUID

1. Before changing the oil ensure that the vehicle is level on either hoist or ground. Obtain a suitable container to drain the gearbox fluid into. Disconnect the battery.
2. Remove the gearbox dipstick located at the rear of the right hand rocker cover, to aid oil drainage. Release the plug from the bottom of the sump and allow time for the fluid to drain.
3. Refit the plug using a new sealing washer and tighten to the correct torque value. Do not overtighten.



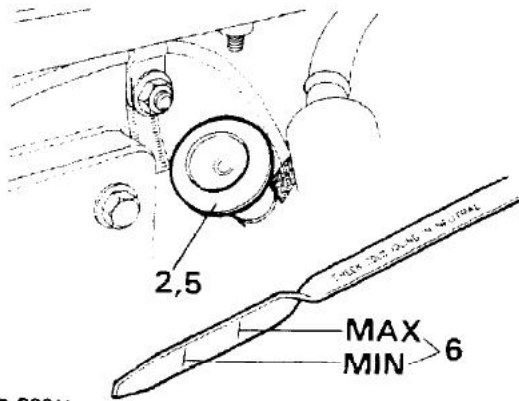
RR690M

Continued

Refill ZF Automatic Gearbox and Check Fluid Level.

NOTE: The fluid level in the ZF automatic gearbox is checked when the fluid is cold and the engine idling in neutral gear.

4. Ensure the vehicle is on level ground.
5. Refill or top-up with the correct quantity and grade of fluid (see Lubricants and Fluids Section 09) at the combined filler/dipstick tube.
6. Reconnect the battery, start and run the engine, ensure that the fluid level registers between the minimum and maximum level markings on the dipstick.



RR 692M

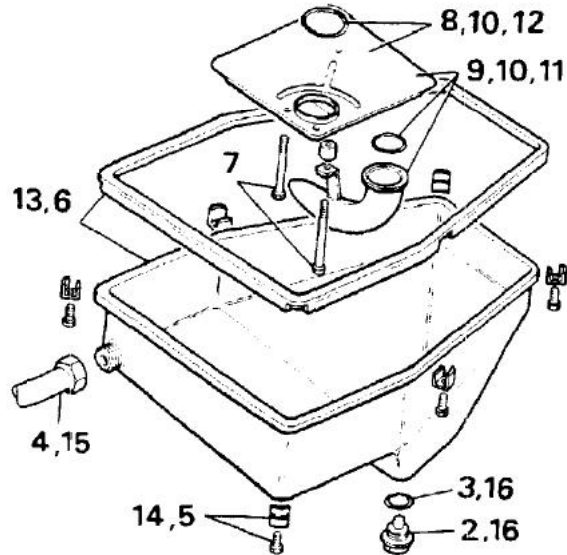
OIL SCREEN REPLACEMENT ZF AUTOMATIC GEARBOX

Removing

1. Place the vehicle on a hoist or over a pit, open the hood and disconnect the battery leads.
2. From underneath the vehicle drain the gearbox using a suitable container.
3. Discard the oil pan plug seal ring.
4. Remove the filler/level tube from the oil pan.
5. Remove the six retaining plates and bolts.
6. Remove the oil pan and discard the gasket.
7. Using TX27 Torx bit remove the three screws which hold the oil screen.
8. Remove the oil screen and discard the 'O' rings.
9. Separate the oil screen from the suction tube and discard the 'O' ring and oil screen.

Refitting

10. Fit two new 'O' rings to the oil screen using a light grease for ease of assembly.
11. Fit the suction tube to the oil screen.

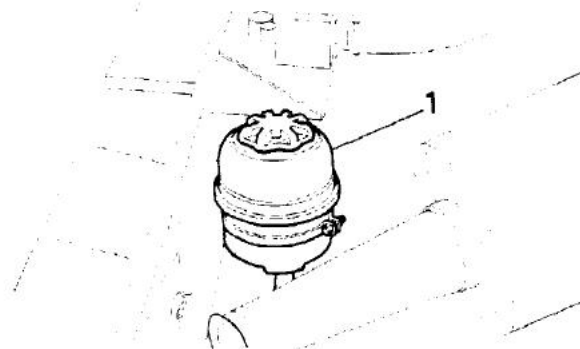


RR691M

12. Fit the oil screen to the control unit and secure with three bolts using TX27 Torx bit tighten to the specified torque value.
13. Refit the oil pan using a new gasket.
14. Secure using the six retaining plates and bolts (two straight and four corner plates), tighten to the specified torque value.
15. Reconnect the oil level/filler tube.
16. Fit oil pan plug using a new seal.
17. Connect the battery leads.
18. Fill the gearbox with the correct oil through the filler/level tube located within the engine bay (see Lubricants and Fluids Section 09).
19. Ensuring the vehicle is on level ground with the park-brake applied, check oil level while engine is running at idle with neutral selected.

POWER STEERING-FLUID RESERVOIR

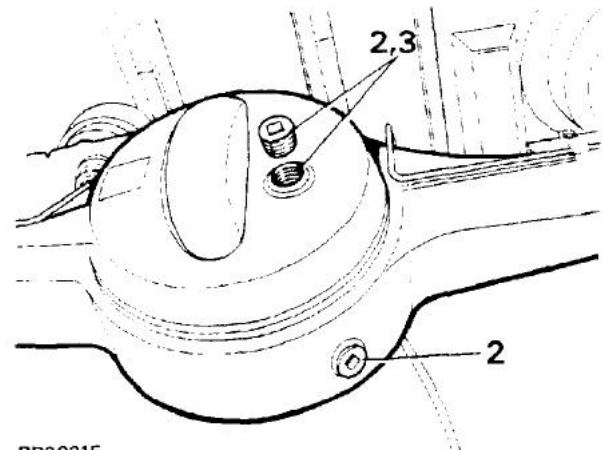
1. Clean and remove the reservoir cap, wipe the dipstick which is incorporated into the cap and refit the cap. Remove the cap again and check the fluid level is up to the high mark on the dipstick.
2. If necessary top-up with a recommended fluid (see Lubricants and Fluids Section 09).
3. Refit the cap.



RR1850E

RENEW FRONT AND REAR AXLE OIL

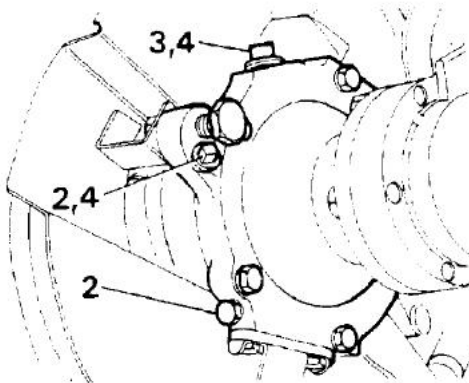
1. The vehicle must be level. Place a container under the axle to be drained.
2. Using a wrench with a 13mm (0.5 in) square drive remove the drain and filler/level plugs from the axle and allow the oil to drain completely. Clean and refit the drain plug.
3. Inject new oil of a recommended make and grade until it reaches the level hole. Clean and refit the filler/level plug and wipe away any surplus oil.



RR2031E

RENEW SWIVEL PIN HOUSING OIL

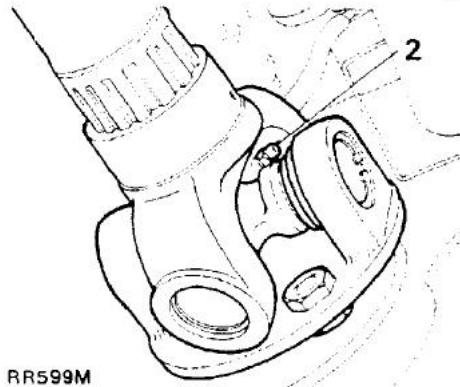
1. The vehicle must be level. Place a container under each swivel housing to catch the old oil.
2. Remove the drain and level plugs and allow the oil to drain completely, clean and refit the drain plug.
3. Remove the filler plug and inject the recommended make and grade of oil until oil reaches the level hole.
4. Clean and refit the level and filler plugs, wipe away any surplus oil.



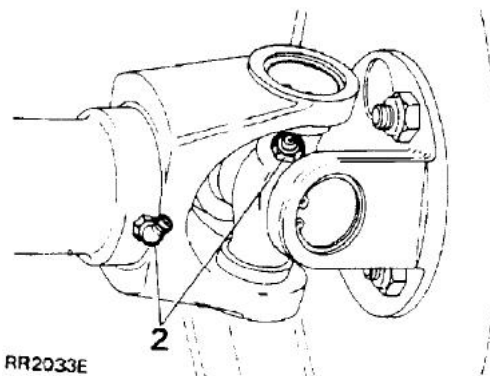
RR2032E

LUBRICATE FRONT AND REAR DRIVE SHAFT UNIVERSAL AND SLIDING JOINTS

1. Clean all the grease nipples on the front and rear drive shafts.
2. Charge a low pressure hand-grease gun with grease of a recommended make and grade and apply to the grease nipples at the front and rear drive shaft universal and sliding joints.



RR599M



RR2033E