



Sedan Range

DATE 12/97

10-13

SERVICE

## TECHNICAL BULLETIN

Leaking Pinion Shaft Oil Seal –  
Seal Not Serviced Separately –  
Replace Pinion Valve Housing

MODEL 1995-97 MY  
Sedan Range  
VIN 720001-812255

### ISSUE:

The pinion valve housing and pinion shaft oil-seal are supplied in a repair kit as an integral component. As a result, the pinion valve housing must be replaced to repair a leaking pinion shaft oil seal. The oil seal can not be purchased or repaired as an individual component. This bulletin provides instructions on how to replace the pinion valve housing.

### ACTION:

**Note:** Before beginning work, ensure that the working area and steering rack exterior are thoroughly clean.  
Parts removed from the pinion valve housing that are to be used in the rebuild should be stored in clean plastic bags, and the bags sealed.  
Shop rags used for cleaning internal components must be clean and lint free.

### REMOVING PINION VALVE HOUSING:

1. Remove the steering rack from the vehicle, refer to section 10.15 in the XJ6-XJ12 Vehicle Service Manual.

**⚠ Caution:** To prevent damaging the steering rack housing, use minimal clamping force and soft vise jaws when supporting the steering rack in a vise.

2. Position the steering rack horizontally in a vise with the input shaft vertical.
3. Place a container under the steering rack, and remove the temporary sealing plugs from the steering rack feed and return ports.
4. Drain the remaining power steering oil from the steering rack by rotating the pinion shaft from lock-to-lock three times. Return the rack to its centered position.
5. Reinstall the plugs on the feed and return ports, and discard the power steering oil.

## STEERING RACK PINION HOUSING

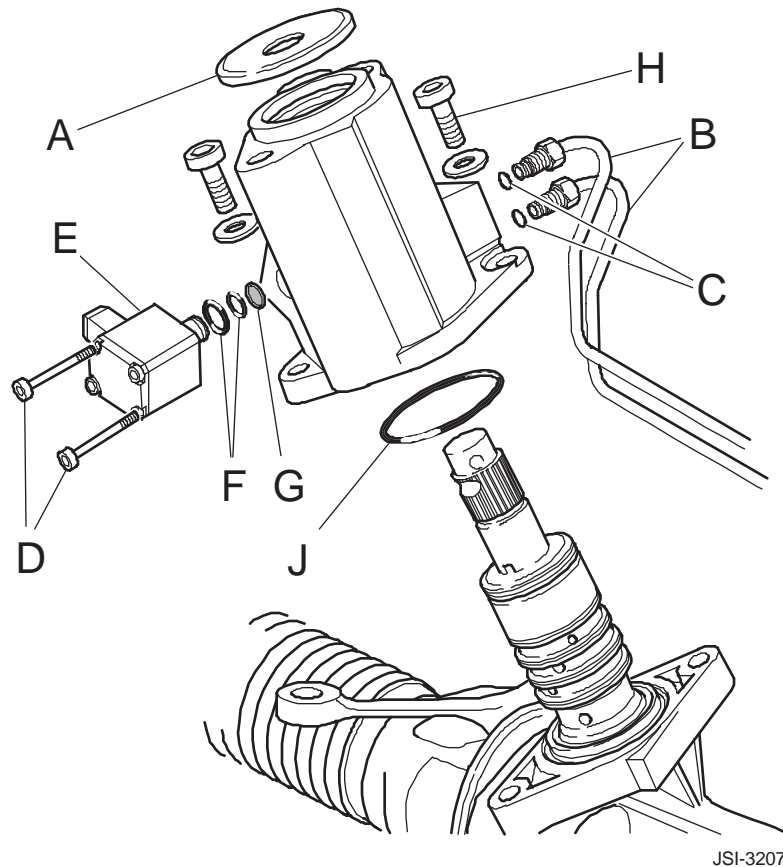


ILLUSTRATION 1

6. Remove and discard the dust cover (**A**, Illustration 1) from the pinion shaft splines.
7. Note the installed position of the oil transfer pipes (**B**), and disconnect the 4 pipe fittings. Use care not to distort the oil transfer pipes while removing them from the steering rack.
8. Remove and discard the 4 oil transfer pipe O-rings (**C**).

**Note:** Cap the ends of the oil transfer pipes and plug the ports on the steering rack housing to prevent the ingress of foreign particles.

9. Remove the upper and lower securing screws (**D**) from the transducer.
10. Note its installed position, and remove the transducer (**E**) from the valve housing.
11. Note the installed positions, and remove and discard the 2 O-rings (**F**) from the transducer.
12. Remove and discard the strainer (**G**) from the transducer port in the valve housing.

13. Remove and discard the 2 screws and the 2 washers (**H**, Illustration 1), securing the pinion valve housing to the steering rack housing.
14. Note the installed position of the pinion valve housing, and lift the housing from the steering rack using a steady upward twisting motion. Excessive force and rocking of the housing should be avoided to prevent damaging or disturbing the rotary-valve assembly O-rings.
15. Remove and discard the O-ring (**J**) from the recess in the steering rack housing.

**Note:** To prevent contamination, cover the rotary-valve assembly with a plastic bag.

#### INSTALLATION:

**Note:** Ensure all mating surfaces and O-ring recesses are thoroughly clean before beginning installation work.

1. Install a new O-ring (**J**) into the recess of the steering rack housing.
2. Install the pinion seal protector, which is supplied with the repair kit, on the splines on the pinion shaft.
3. Apply grease to the lip of the pinion shaft seal. The seal is located in the top orifice of the pinion valve housing.
4. Ensure fingers are clean, and lubricate the rotary-valve assembly O-rings with clean power steering oil.
5. Ensure the correct orientation of the pinion valve housings, and install the housing on the steering rack using a steady downward twisting motion. Avoid excessive force and rocking of the housing to prevent damaging or disturbing the rotary-valve assembly O-rings.
6. Remove the pinion seal protector.
7. Install new bolts and washers (**H**) on the pinion valve housing, and tighten to 17 Nm.
8. Thoroughly clean the oil transfer pipes (**B**) and the area around the pipes ports.
9. Lubricate the new pipe union O-rings (**C**) with clean power steering oil, and install the O-rings on the oil transfer pipes.
10. Install the oil transfer pipes to the steering rack taking care not to damage the pipe installing O-rings against the threads of the port.
11. Enter the pipe unions into the port threads and lightly tighten them while checking that the pipes and O-rings are properly seated in the bores.
12. Tighten the oil transfer pipe unions to 7 Nm.
13. Install the new O-rings (**F**) on the transducer and apply a light coating of grease.
14. Install the new strainer (**G**) on the transducer port in the pinion valve housing making sure the strainer is seated correctly.

15. Ensure the correct orientation of the transducer (**E**, Illustration 1), and install the transducer on the pinion valve housing and secure with the retaining screws (**D**), tighten screws to 3 Nm.
16. Smear a small amount of grease into the cavity at the top of the pinion valve housing.
17. Install the new dust cover (**A**) on the pinion shaft splines.
18. Rotate the pinion shaft from lock-to-lock to verify that the steering rack operates freely, and that no tight spots can be felt.
19. Remove the access plug from the steering rack centering opening, and discard the sealing washer.
20. Install the centering pin, Service Tool Number JD 120, into the opening and center the steering rack.
21. Remove the centering pin and reinstall the access plug and new sealing washer.
22. Install the steering rack on the vehicle, refer to section 10.15 in the XJ6-XJ12 Vehicle Service Manual.
23. Check the front wheel alignment and adjust if necessary.

#### **PARTS INFORMATION:**

<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QTY</u>
Sedan (4.0L) Range	JLM 20632	1
XJ 12 Sedan	JLM 20634	1

#### **WARRANTY INFORMATION:**

<u>FAULT CODE</u>	<u>R.O. NUMBER</u>	<u>DESCRIPTION</u>	<u>TIME ALLOWANCE</u>
GB BD HJ	57.10.10	Sedan 4.0L steering pinion valve housing - replace	2.50 hrs.
		Sedan 6.0L steering pinion valve housing - replace	2.65 hrs.