



XK8

DATE 2/98  
Amended 11/99

211-02

SERVICE

## TECHNICAL BULLETIN

### Steering Rack – Oil Seal/Pinion Valve Housing – Replacement

MODEL 1997 MY only  
XK8 Range  
VIN 001001-018107

Remove and destroy Bulletin 211-02, dated 2/98.  
Replace with this Bulletin.  
Revisions are marked with a bar and in **bold text**.

#### 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 separately. This bulletin provides instructions on how to replace the pinion valve housing.

#### Action:

If the pinion valve housing or the oil seal needs to be replaced on an XK8 vehicle, refer to the following procedure:

**▲ Caution:** Before beginning work, ensure that the working area and exterior of the steering rack are thoroughly cleaned.  
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.

**▲ Caution:** To prevent damaging the steering rack housing, use a light clamping force and vise jaw protectors 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 supply 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 supply and return ports, and discard the power steering oil.

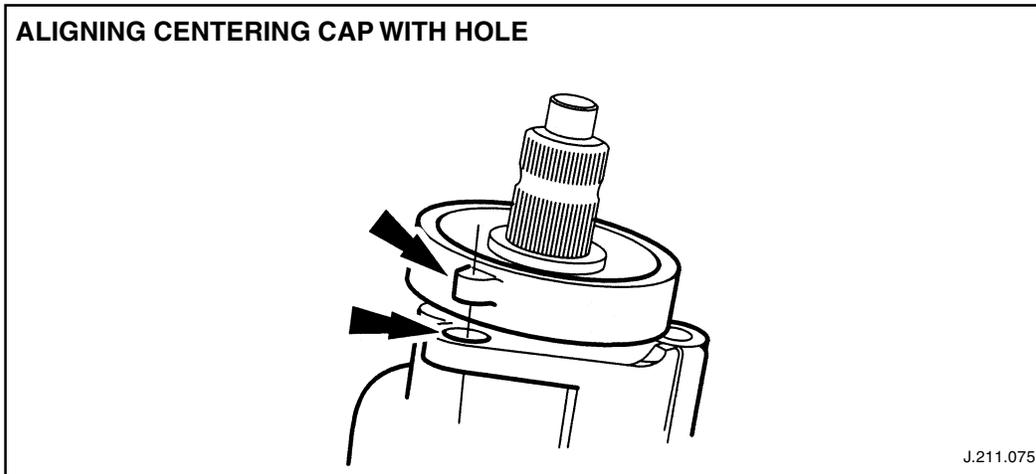


ILLUSTRATION 1

6. Center the travel of the rack inside the housing. Align the protrusion on the centering cap with the alignment hole in the pinion housing (Illustration 1).

**Note:** Do not rotate the pinion from this setting during subsequent steps until the new centering cap is installed.

## STEERING RACK PINION HOUSING

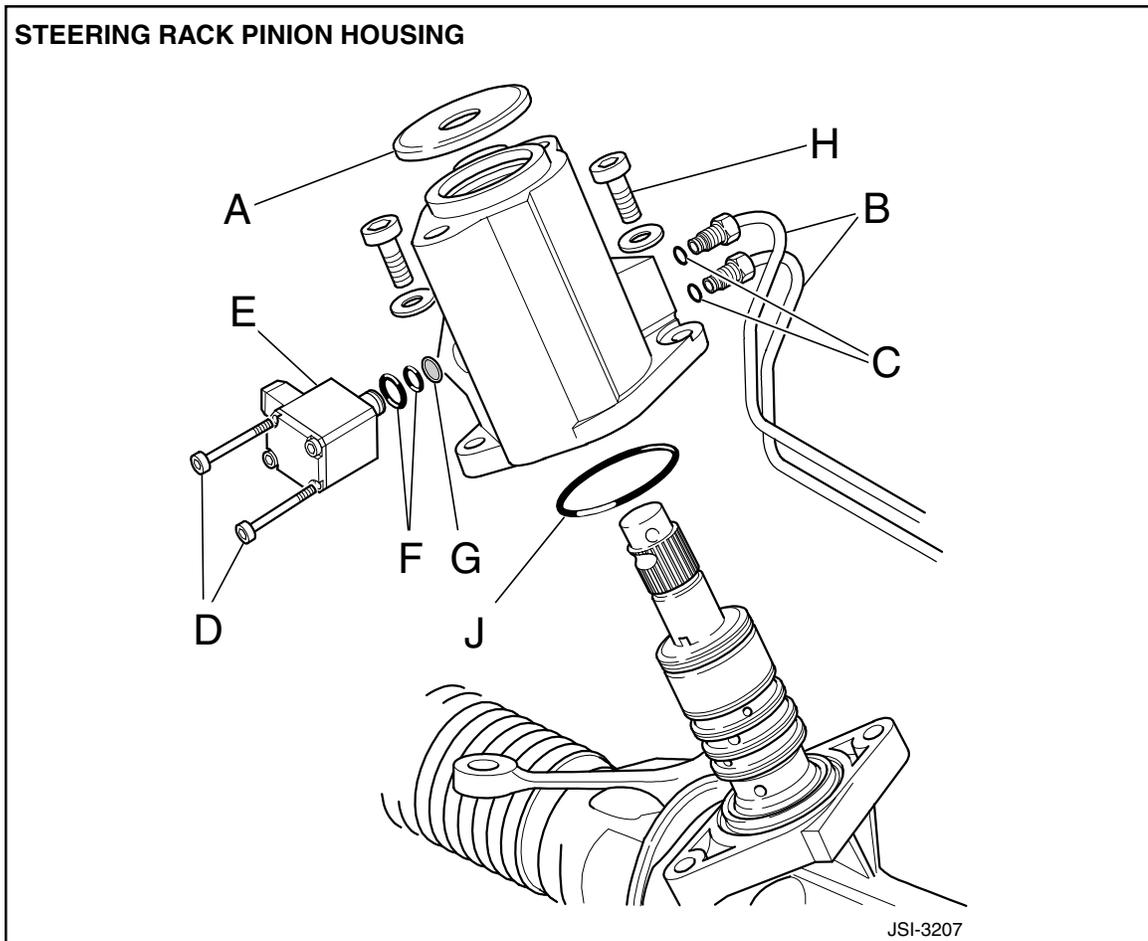


ILLUSTRATION 2

7. Remove and discard the centering cap (A, Illustration 2) from the pinion shaft splines.
8. 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.
9. Remove and discard the 4 oil transfer pipe O-rings (C).

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

10. Remove the upper and lower securing screws (D) from the transducer.
11. Note its installed position, and remove the transducer (E) from the valve housing.
12. Note the installed positions, and remove and discard the 2 O-rings (F) from the transducer.
13. Remove and discard the strainer (G) from the transducer port in the valve housing.
14. Remove and discard the 2 screws and the 2 washers (H, Illustration 1), securing the pinion valve housing to the steering rack housing.
15. Note the installed position of the pinion valve housing, and lift the housing from the steering rack using a steady upward twisting motion. Avoid excessive force and rocking of the housing to prevent damaging or disturbing the rotary-valve assembly O-rings.

16. Remove and discard the O-ring (**J**) from the recess in the steering rack housing.

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

#### INSTALLATION:

**⚠ Caution:** 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. Smear a small amount of grease into the cavity at the top of the pinion valve housing.
9. Install the new centering cap (**A**) on the pinion shaft splines.
10. Thoroughly clean the oil transfer pipes (**B**) and the area around the pipes ports.
11. Lubricate the new pipe union O-rings (**C**) with clean power steering oil, and install the O-rings on the oil transfer pipes.
12. 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.
13. 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.
14. Tighten the oil transfer pipe unions to 7 Nm.
15. Install the new O-rings (**F**) on the transducer and apply a light coating of grease.
16. Install the new strainer (**G**) on the transducer port in the pinion valve housing making sure the strainer is seated correctly.
17. 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.
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. The centering pin will shear off - this is intentional.
19. Center the steering rack. Center the steering rack as described in step 6 of the removal instructions.

20. Install the steering rack in the vehicle making sure that the rack remains centered.
21. Check the front wheel alignment and adjust if necessary.

**Parts Information:**

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Pinion valve housing - <b>1997 MY only</b>	JLM 20656

**Note:** This valve housing is not compatible with the transducer used on 1998 MY-ON vehicles.

**Warranty Information:**

<u>FAULT CODE</u>	<u>R.O. NUMBER</u>	<u>DESCRIPTION</u>	<u>TIME ALLOWANCE</u>
GB BD	57.10.10	Steering pinion valve housing - replace	2.30 hrs.