MAZDA RACK & PINION

GLC (Exc. Wagon)

DESCRIPTION

Rack and pinion type steering is mounted by rubber insulators to crossmember. Adjustment is provided for pinion gear preload. Pinion shaft is coupled to steering shaft and tie rods connect end of rack to steering arms of front wheels.

ADJUSTMENT

NOTE – *Adjustments are performed during reassembly portion of overhaul procedure.*

REMOVAL & INSTALLATION

STEERING GEAR

Removal – 1) Raise front of vehicle and support with stands. Remove front wheels. Disconnect tie rod ends from steering knuckles.

2) Remove band securing rubber boot to steering gear. Pull boot upward and remove bolt and washer securing steering shaft-to-pinion coupler.

3) Remove steering gear bracket bolts. Remove steering gear and linkage through tie rod hole.

Installation – To install, reverse removal procedure.

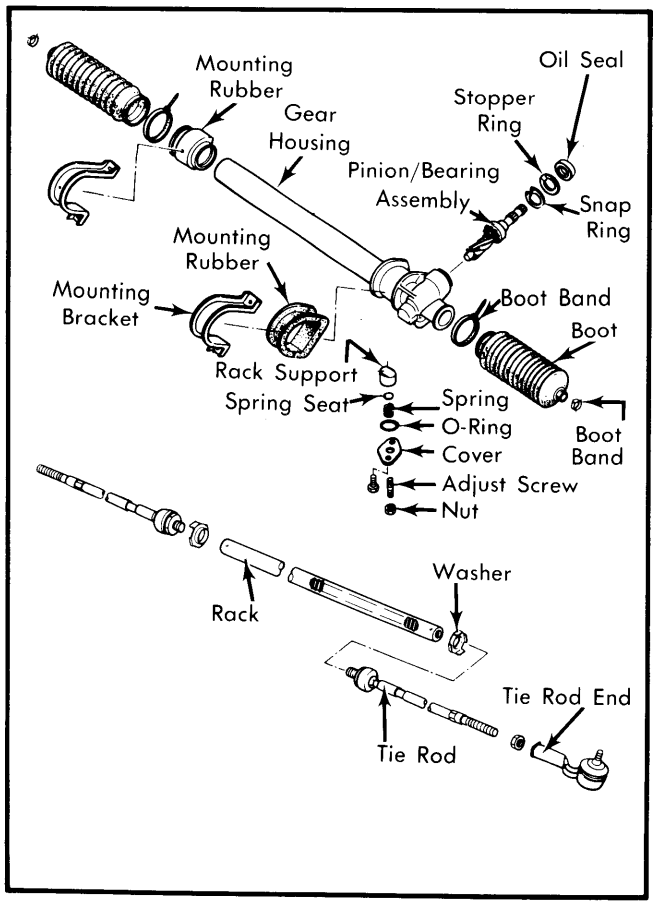

Fig. 1 Exploded View of Steering Gear Assembly

OVERHAUL

STEERING GEAR

Disassembly – 1) Place steering gear in a vise. Mark threaded portion of tie rod to aid in setting alignment after reassembly. Remove tie rod ends.

2) Remove boot band on large diameter side of gear housing. Using a screwdriver, remove staking from washer. Using 2 wrenches, hold geared portion of rack while turning tie rod side, separating rack from tie rod.

3) Remove oil seal using a small screwdriver. Using snap ring pliers, remove snap ring. Grasp pinion shaft with pliers. Pull on pinion shaft, while lightly tapping on gear housing with a hammer to remove gear assembly. Remove rack from housing.

Inspection – Check rubber boots, ball bearings and tooth surface of rack for wear or damage. Check sliding surface of rack support and gear housing for cracks or damage. Check tie rod ball joints for smooth operation.

NOTE – *If part(s) of rack and gear assembly are found to be defective, entire unit must be replaced.*

Reassembly – 1) Apply lithium grease to the following parts: ball bearing, roller bearing on pinion, inside of gear housing, lip of oil seal, sliding and backing surface of rack support, sliding surface of rack bushings, rack pinion teeth and ball joint of tie rods.

2) Insert rack with non-tooth side into pinion side of housing. Install pinion and bearing assembly making sure rack teeth and pinion are meshed properly.

NOTE – *If fit between housing and bearing is too tight, strike outer ring of bearing lightly while carefully checking the meshing of rack and pinion.*

3) Install snap ring in housing groove. Install stopper with protruded portion being placed in gap of snap ring. Position seal in housing. Using a hammer, tap lightly on seal until seal is flush with end surface of housing.

4) Turn adjusting srew until tightening torque increases suddenly. Unscrew adjusting screw 0-15° and tighten screw with locknut. To complete reassembly, reverse disassembly procedure.

5) Measure pinion gear preload using a spring scale and attachment (49 0180 510A). Install attachment to gear shaft.

6) Hook spring scale to attachment and turn it at a speed of 1 revolution per 1 to 2 seconds. Scale should read 1.3-2.6 lbs. (.6-1.2 kg).

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
Shaft-to-Pinion Bolt	13-20 (18-27)
Mounting Bracket Bolt	23-34 (31-46)
Tie Rod End & Knuckle	22-33 (30-45)