FIESTA RACK & PINION

Fiesta

DESCRIPTION

Rack and pinion steering gear is mounted to firewall by rubber-insulated clamps. Pinion shaft is supported by a bushing and a ball bearing, eliminating the need for preload adjustment. Excessive rack play is prevented by a spring loaded slipper that bears against rack. Rubber boots seal ends of gear, and tie rods transfer turning motion to front wheels.

ADJUSTMENT

RACK

1) Mount rack in vise with padded jaws, with rack slipper bearing cover up. Remove bolts and cover, shims and gasket. Using dial indicator, measure amount rack slipper protrudes from face of housing.

2) Assemble shim pack (including gasket) which is .002-.005" (.05-.125 mm) thicker than measurement obtained. Fit shims and gasket to housing and tighten cover bolts to 55-80 INCH lbs. (63.25-92.0 cmkg). Measure pinion turning torque to check adjustment. Torque should measure 5-18 INCH lbs. (5.8-20.8 cmkg).

REMOVAL & INSTALLATION

Removal – 1) Place front wheels in center position. Raise and support vehicle, then remove clamp bolt securing steering shaft to pinion shaft. Remove tie rod outer ball joints from steering arms.

2) Bend lock tabs and remove steering gear bolts and clamps. Remove steering gear from vehicle, then loosen lock nuts and detach tie rod ends from gear.

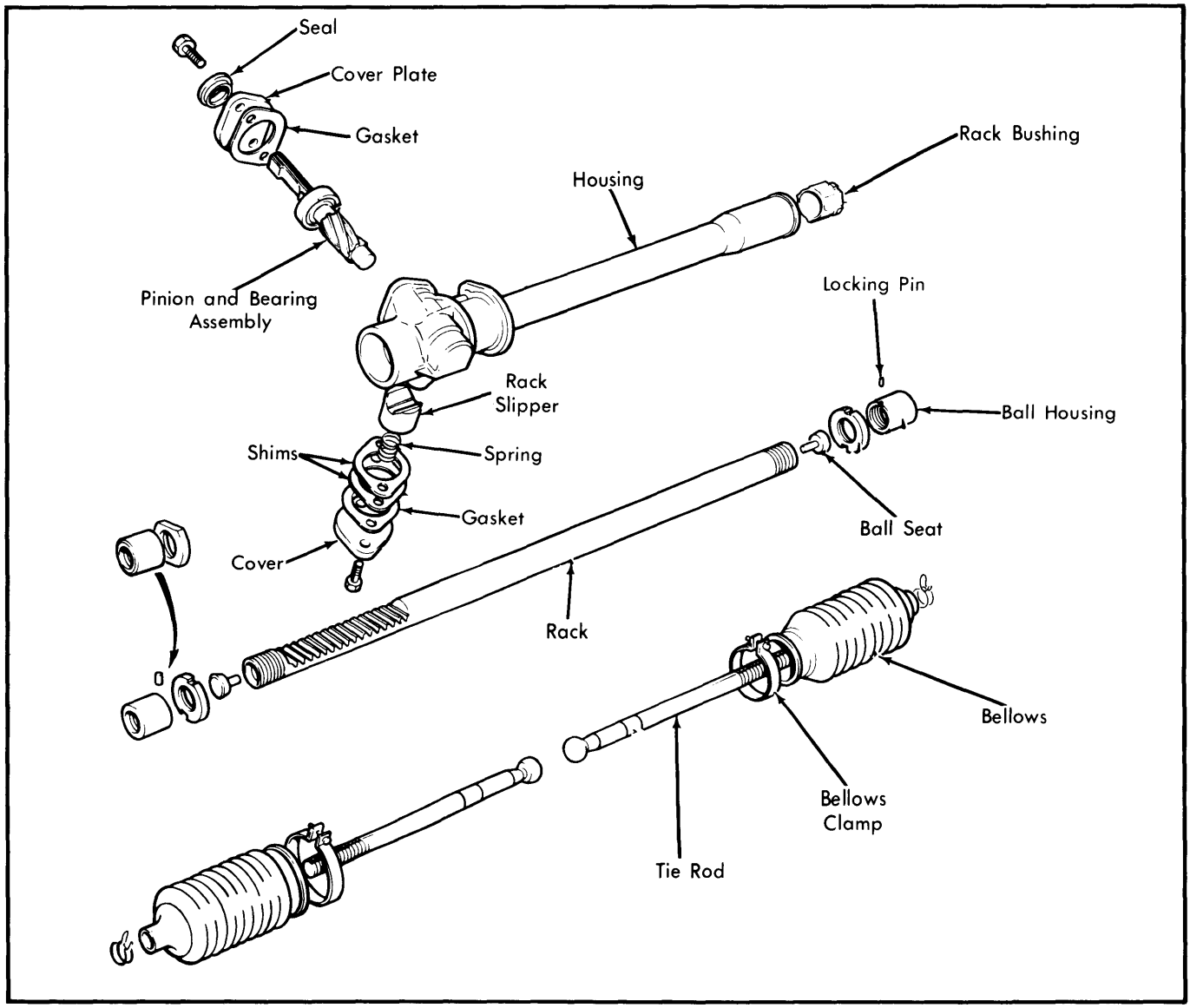

Fig. 1 Exploded View of Fiesta Steering Gear

FIESTA RACK & PINION (Cont.)

Installation – To install, reverse removal procedure and install new lock plates and cotter pins. Check wheel alignment and steering wheel position.

OVERHAUL

Disassembly – **1)** Remove bellows and drain fluid lubricant from steering gear, then mount in padded vise. Drill out pins securing tie rod ball joint housings to rack, using 5/32" drill bit.

CAUTION – *Do not drill deeper than .4" (9.5 mm).*

2) Separate ball joint housing and lock ring, then remove housings, tie rods and ball seats. Remove rack slipper cover plate, shims, gasket, spring and slipper.

3) Remove pinion bearing cover plate, gasket, and seal. Remove pinion and bearing assembly. If necessary, use suitable tool (T77F-3504-F) and slide hammer to remove pinion bushing. Remove rack from housing.

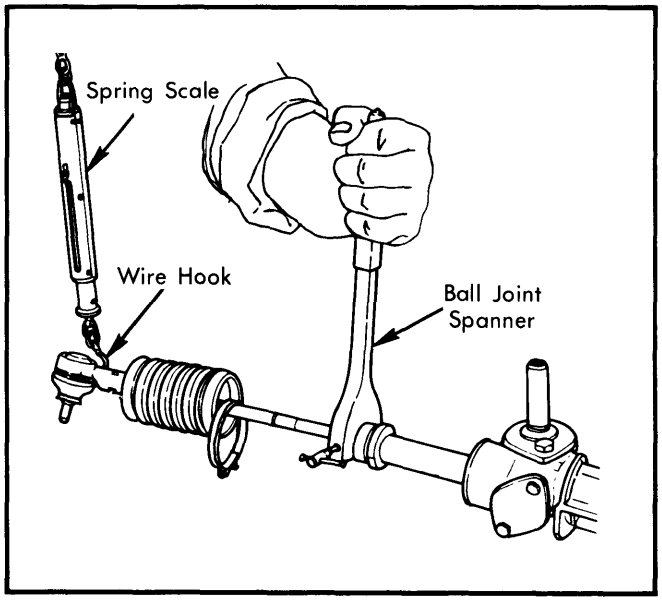

Fig. 2 Checking Tie Rod Effort

Inspection – Clean all parts and inspect for wear. Pinion shaft and bearing are serviced as an assembly and must be replaced if damaged. Rack support bushing at end of housing can be replaced separately if necessary.

Reassembly – **1)** Position rack in housing. With rack centered, insert pinion and bearing assembly. Flat on pinion must face right hand side of vehicle and be at 90° to centerline of rack. Install pinion shaft gasket, cover and seal, applying sealer to bolts. Tighten to specification.

2) Install rack slipper, spring, shims, gasket and cover plate. Select shims as described in *Adjustment* in this article.

3) Grease tie rod ball and seat and assemble on end of rack. Tighten ball seat until effort required to move tie rod is 5.1 lbs. (2.3 kg) when measured 1/4" from end of rod. *See Fig. 2.*

4) Centerpunch and drill 5/32" hole .4" (9.5 mm) deep at housing and lock nut joint. Install retaining pins and peen metal to lock in place. Grease bellows inner ends and install. Use screw clamps in place of some production wire clamps. Add .2 pt. of fluid grease and tighten clamps.

5) Turn pinion to move rack side to side 5 times. Using torque gauge, measure rotating torque. Effort should be between 5-18 INCH lbs. (5.8-20.8 cmkg). Check adjustment and correct if necessary.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Steering Gear-to-Firewall	33-37 (4.6-5.1)
Tie Rod End-to-Steering Arm	18-22 (2.5-3.0)
Coupling-to-Pinion Clamp	33-41 (4.6-5.7)
Tie Rod End Lock Nut	42-50 (5.8-6.9)
Pinion Bearing Cover Bolts	13-18 (1.7-2.4)
Rack Slipper Cover Bolts	4.5-6.7 (0.6-0.9)
Ball Joint Housing Lock Nut	33-38 (4.6-5.1)