

## ISUZU RACK & PINION

I-Mark

### DESCRIPTION

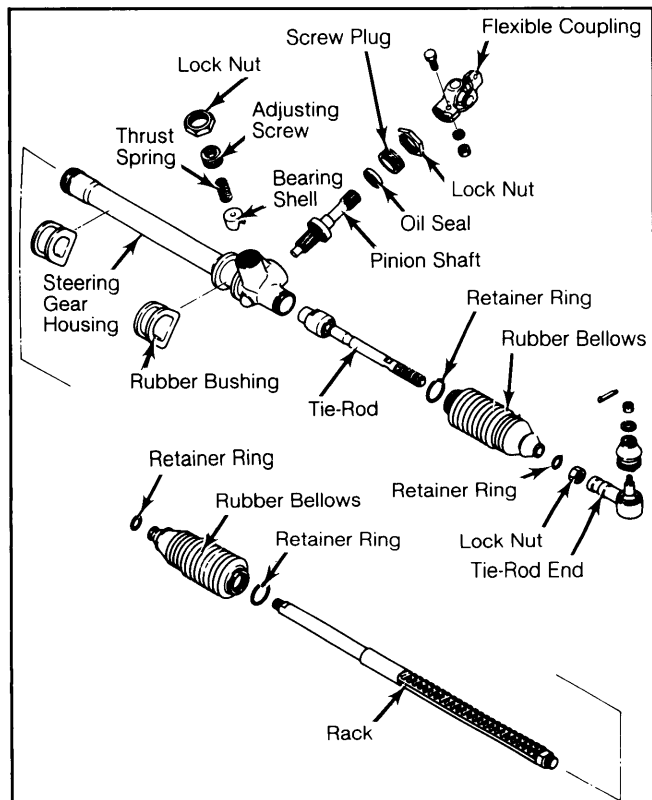
Steering gear assembly is a rack and pinion type. The steering gear pinion shaft, connected to lower end of steering column, moves the rack to the left or right, thereby transmitting any turning motion of the steering wheel to tie rods and steering knuckles.

### ADJUSTMENT

#### STEERING GEAR ADJUSTMENT

- 1) Position front wheels straight ahead with steering wheel centered. Turn adjusting screw into gear housing and tighten to 11 ft. lbs. (15 N.m).
- 2) Back off adjusting screw 1/12 of a turn. Tighten lock nut.

**Fig. 1: Exploded View Showing Various Components of Rack & Pinion Steering Gear Assembly**



### REMOVAL & INSTALLATION

#### STEERING GEAR

##### Removal

- 1) Raise and support front of vehicle. Remove engine under cover. Remove steering shaft coupling bolt. Remove both tie-rod end cotter keys and castle nuts. Using tie-rod puller, disconnect tie-rod end from steering knuckles.
- 2) Disconnect steering gear housing from crossmember. Remove steering coupling from steering shaft and remove steering gear assembly from car.

#### Installation

Position front wheels straight ahead with steering wheel centered. Reverse removal procedure to complete installation.

### OVERHAUL

#### STEERING GEAR

##### Disassembly

- 1) Clamp steering gear assembly in soft jaw vise. Disconnect tie-rod ends from tie-rods. Remove retainer rings from rubber bellows. Remove bellows from steering gear housing and ball joint.
- 2) Disconnect ball joint from rack. Loosen adjusting screw lock nut, remove adjusting screw, thrust spring and bearing shell from adjusting screw opening.
- 3) Remove lock nut and screw plug from steering gear housing. Do not turn pinion to end position. Pull pinion and rack out of steering gear housing.

##### Reassembly

- 1) Clamp steering gear assembly in a soft jaw vise. Coat all moving parts with gear lubricant. Insert long (toothless) end of rack into short end of housing until rack is centered in housing.

**NOTE:** Make sure that gear lubricant does not clog the 3 air channels in metal bushings. If air channels are blocked, a vacuum condition in bellows may result, drawing the bellows inward causing rack teeth to jam.

- 2) Center pinion on rack. Insert pinion shaft assembly into gear assembly, making sure pinion center tooth meshes with rack center tooth. Position screw plug and lock nut on gear assembly. Tighten screw plug and lock nut.
- 3) Place bearing shell into steering gear housing. Assemble thrust spring, adjusting screw and lock nut on gear assembly. Turn adjusting screw into gear housing and tighten to 11 ft. lbs. (15 N.m).
- 4) Back off adjusting screw 1/12 of a turn. Measure pinion shaft starting torque. If starting torque is incorrect, make an adjustment in the back-off limits of the adjusting screw. Tighten lock nut.
- 5) Screw ball joints onto both ends of the rack. Assemble tie rod ends to tie rods and tighten locknuts. Lubricate axial joint on rubber bellows with grease. Slide rubber bellows onto axial joint and steering gear housing. Attach retaining rings. Check that rubber bellows is not twisted.

#### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Adjusting Screw Lock Nut .....	58 (79)
Column-to-Instrument Panel Nut .....	11 (15)
Flexible Coupling Bolt .....	19 (26)
Tie Rod Ball Housing .....	65 (88)
Tie Rod End-to-Knuckle Nut .....	29 (39)
Tie Rod End Lock Nut .....	47 (64)
Screw Plug .....	58 (79)
Screw Plug Lock Nut .....	72 (98)
Steering Gear Housing Clamp Bolt .....	14 (19)

#### INCH Lbs. (N.m)

Pinion Shaft Starting Torque .....	3.4-12 (.38-1.35)
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