1968-71 AUSTIN AMERICA

Austin America (1968-71)

DESCRIPTION

Rack and pinion type steering mounted to engine bulkhead. Movement of steering wheel is transmitted through steering shaft to helical pinion. Rotation of pinion causes rack to move laterally where connecting rods, attached to rack, transmit this movement to steering arms on steering knuckles causing front wheels to change direction. Connecting rod inner ball joints are protected by convoluted rubber bellows.

ADJUSTMENT

STEERING GEAR

NOTE — Adjustments to steering can be done with steering gear installed in vehicle or during reassembly during a steering gear overhaul. Adjustment procedures are given in steering gear overhaul. See Steering Gear Reassembly in Overhaul procedures.

REMOVAL & INSTALLATION

STEERING GEAR

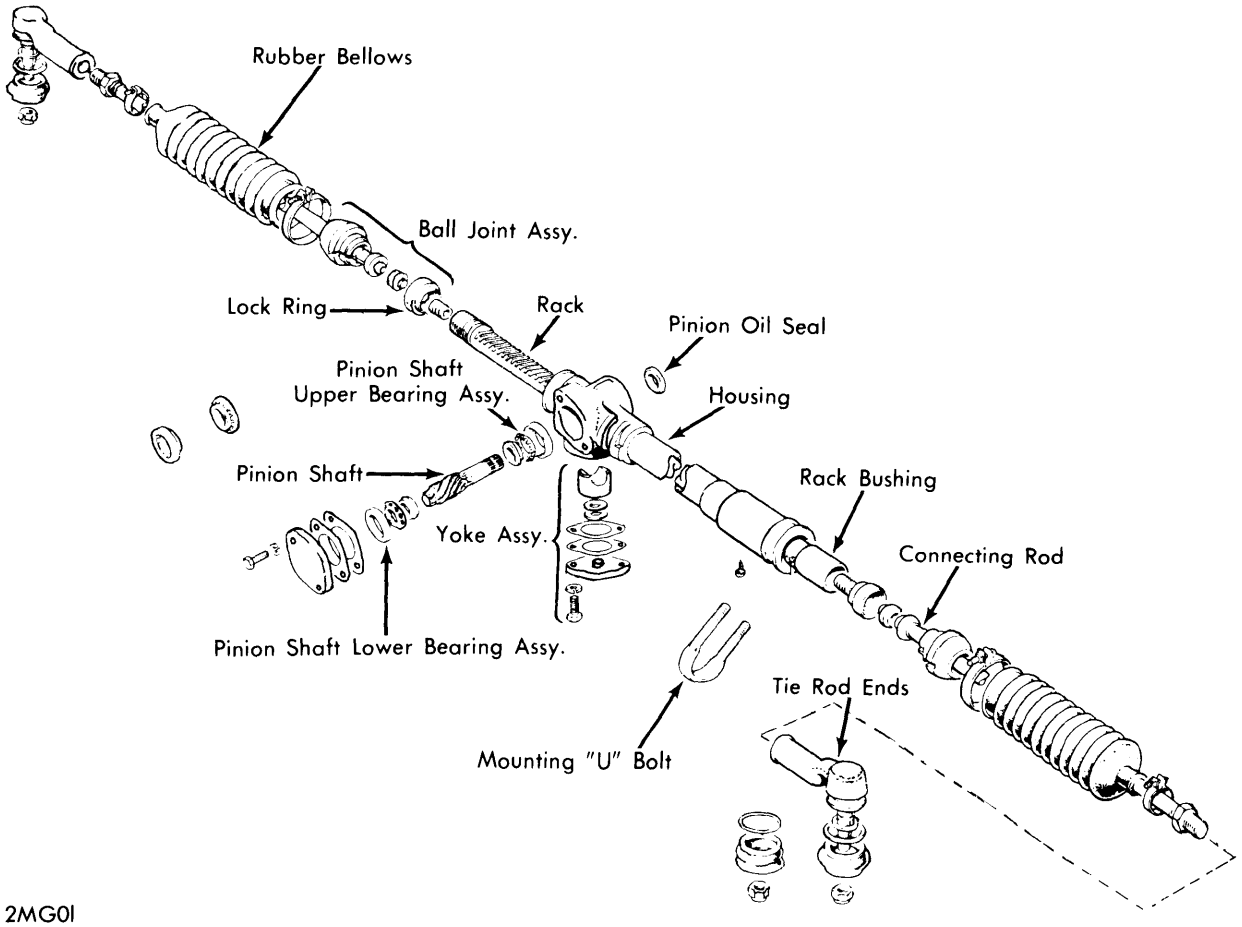
Removal – 1) Remove steering column. *See Steering Column Removal in this Section.* Place a jack under front portion of sub-frame, raise jack and position safety stands under side members.

2) Disconnect tie rod ends from steering arms, using a suitable tool (18G 1063). Remove bolts and set screws from each sub-frame tower. Remove bolts from toe board mountings and from gear shift lever extension.

3) From inside vehicle, remove nuts from "U" bolts clamping steering gear housing to toe board. Lower sub-frame with jack just enough to allow steering gear to be removed on driver's side of vehicle.

NOTE – Do not lower sub-frame any more than necessary to prevent damaging suspension displacer hoses, hydraulic hoses, controls, etc.

Installation – To install steering gear, reverse removal procedure. Do not tighten "U" bolt nuts until steering column pinch bolt and steering column clamp bolts are tightened. Tighten "U" bolt nuts evenly one-half turn at a time.



RACK & PINION STEERING GEAR COMPONENTS

1968-71 AUSTIN AMERICA (Cont.)

OVERHAUL

STEERING GEAR

Disassembly – 1) Loosen lock nuts on tie rod ends and remove tie rod ends from connecting rods. Loosen retainers and remove both rubber bellows and drain oil.

2) Pry up indentations of lock ring out of slots in the rack and ball joint housing. *NOTE – On some early models, a lock washer is installed, pry indentations of lock washer clear of slots in lock ring and ball joint housing.*

3) Loosen lock ring and, using suitable wrenches (18G 706 and 18G 707), remove outer ball joint housing from lock ring. Remove yoke cover plate and shims. Withdraw yoke and spring.

4) Remove pinion shaft bearing housing and shims. Remove thrust washer and bearing and bearing race (early models) or bearing assembly (later models). Withdraw pinion shaft.

5) Upper bearing race, bearing and thrust washer or bearing assembly cannot be removed until rack is removed from housing. Remove pinion shaft oil seal. Withdraw rack from pinion end of housing.

NOTE – Carefully extract rack from housing to avoid damaging bushing in opposite end of housing.

6) Check bushing in ends of housing. If bushing is defective, remove retaining screw and extract bushing. On early units using felt bushing, extract metal sleeve also.

7) Thoroughly clean and inspect all components. Inspect teeth on rack and pinion for damage. Inspect rubber bellows for wear or cracking.

Reassembly – 1) Coat all components with oil before assembling. Install a new bushing in end of housing. If steering gear is early type using felt bushing, replace felt bushing with later plastic type.

2) Position bushing in housing so that screw hole in housing is centered between flats on bushing. Using a 7/64" drill, drill through screw hole into bushing. Coat retaining screw with sealing compound and install screw.

3) Install upper pinion bearing in housing. Install rack and centralize rack in housing. Install pinion shaft and lower pinion bearing.

4) Install pinion bearing housing, without shims or gasket and lightly tighten screws. Measure clearance between cover and housing with a feeler gauge.

5) Remove cover and reinstall with gasket plus shims to make a combined thickness of .001-.003" **less** than measurement taken with feeler gauge. Apply sealer to gasket and tighten cover bolts.

6) Two types of damper adjustments are required, depending on whether steering gear is equipped with early or late yoke assembly.

7) If equipped with early type, install yoke, spring halves and cover plate without shims. On later types, install yoke and cover plate without spring or shims.

8) On both types, position rack in straight ahead position. Tighten cover bolts gradually and evenly while turning pinion 180° clockwise then 180° counterclockwise. Continue tightening bolts until it requires 15 INCH lbs. to rotate pinion.

9) Measure gap between cover and housing with a feeler gauge and remove cover. On early models, install cover, new gasket coated with sealer, spring halves and shims. Shim thickness and gasket thickness should have a combined total of .001-.003" **greater** than feeler gauge measurement. Torque to rotate pinion should not exceed 25 INCH lbs.

10) On later models, install cover, new gasket coated with sealer, spring and shims. Shim thickness and gasket thickness should have a combined total of .003-.005" **greater** than feeler gauge measurement. Torque to rotate pinion should not exceed 35 INCH lbs.

11) Install a new pinion shaft oil seal. Install a new ball joint lock ring onto each end of rack to end of threads. Install each spring, seat, connecting rod and ball housings to each end of rack.

12) Tighten ball housing until connecting rod moves firmly. Turn lock ring until it meets housing and check that connecting rod still moves firmly. Loosen ball housing 1/8 turn and, using suitable wrenches (18G 706 and 18G 707), tighten lock ring to housing to specifications.

13) If ball joint is correctly assembled, 32-52 INCH lbs. should be required to move connecting rod in ball joint housing. Stake lips of lock ring to slots in ball housing. Install rubber bellows on end of housing opposite pinion end and tighten retainers.

14) Stand steering gear up on end with pinion end up. Pour .4 pt. of S.A.E. 90 Hypoid gear oil into housing and install remaining bellows. Centralize rack and mark pinion so that rack can be checked after steering gear is installed in vehicle.

15) Install both tie rod ends and lock nuts on connecting rods. Position tie rod ends an equal distance in on both connecting rods. Distance between tie rod end studs when correctly positioned is 45.34". Tighten lock nuts.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Yoke Cover Bolts	12-18
Tie Rod End Lock Nuts	
Welded Disc Type	35-40
Shouldered End Type	30-35