GENERAL MOTORS

All Models

Steering System Service Precautions – All steering component fasteners are made of special quality materials. Replacement fasteners must be of same part number or equivalent. Torque all fasteners to specification and install new cotter pins. When installing cotter pins, do not back off castellated nuts to align cotter pin hole, tighten nut to next slot that lines up with hole. Do not hammer on ball studs or damage to threads may result. If threads are not clean and smooth, ball studs may turn in joint when nuts are tightened. Sleeve clamps must always be positioned as specified before tightening bolts.

Tie Rod Replacement – 1) Raise vehicle and remove tie rod fasteners. Remove outer ball stud by tapping on steering arm at tie rod end with a light hammer using a heavy hammer as a backing. Remove inner ball stud from relay rod using same procedure.

2) To remove tie rod ends from tie rod, loosen clamp bolts and unscrew end assemblies. Tie rod adjuster clamp bolts often become rusted in service. It is recommended that if torque required to remove the nut from a bolt after breakaway exceeds 7 ft. lbs., discard the nuts and bolts. Apply penetrating oil between clamps and tube, and rotate clamps until they move freely. Use new fasteners of same part number during reassembly to assure proper clamping at specified nut torque.

3) To install tie rods, use following procedure: Lubricate tie rod threads with EP chassis lube and install tie rod ends making sure both are threaded an equal distance from tie rod. Check that threads on ball studs and nuts are clean and smooth. Check condition of ball stud seals and replace if necessary using suitable tool (J-24434). Install ball studs in steering arms and relay rod. Install ball stud nuts and torque to specifications, and install new cotter pins. Adjust toe-in. See *Wheel Alignment Specifications & Procedures in WHEEL ALIGNMENT Section.*

4) Before tightening tie rod adjusting sleeve clamp bolt, note the following: Clamps must be between locating dimples at either end of sleeve. Adjuster sleeve slot must not be within open area of clamp jaw opening. See *Fig. 6 and 7.*

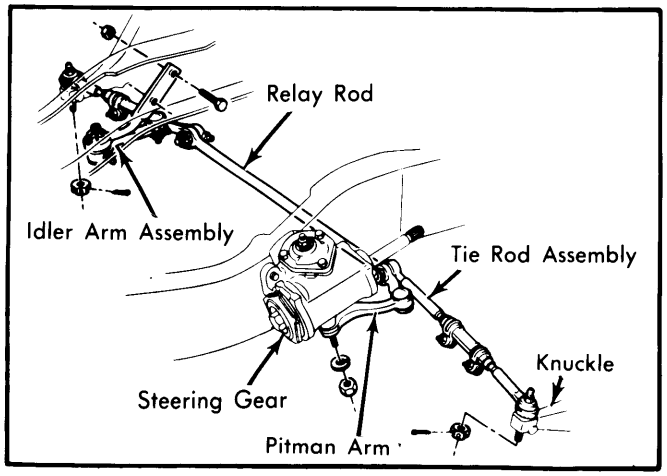

Fig. 1 "C" Model Steering Linkage

5) Rotate both inner and outer tie rod housing rearward to limit of ball joint travel before tightening clamps. After tightening clamps, return tie rod assembly to center of travel. Check each tie rod for a rotation of at least 35° using a bubble protractor and a pair of vise grips. Lubricate inner and outer tie rod ends.

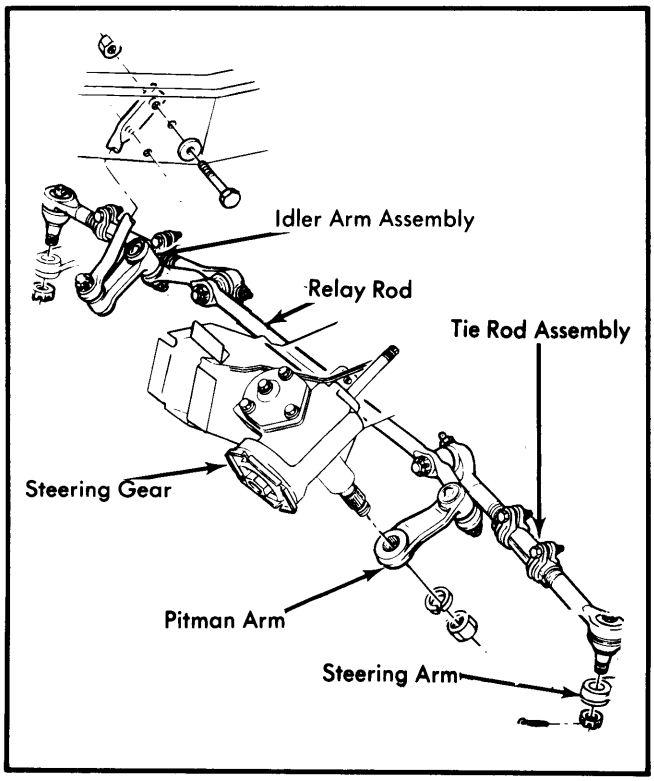

Fig. 2 "G" Model Steering Linkage

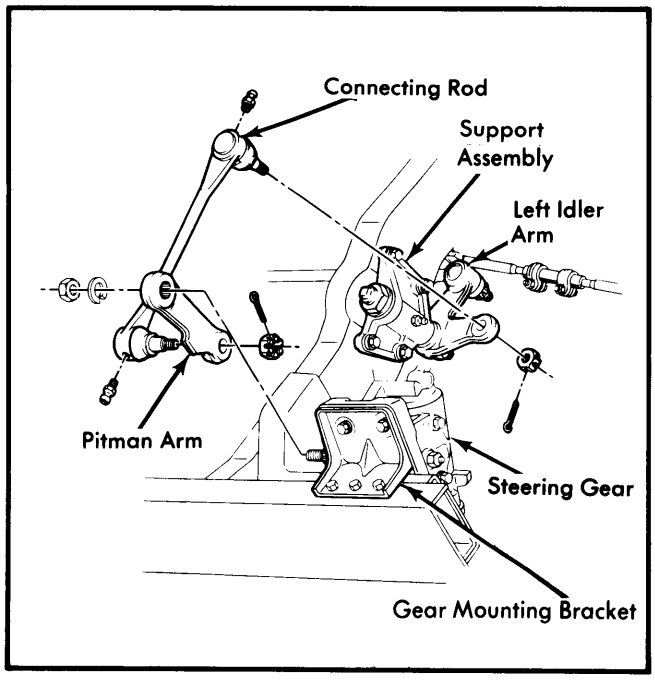

Fig. 3 "P" Model Steering Linkage

GENERAL MOTORS (Cont.)

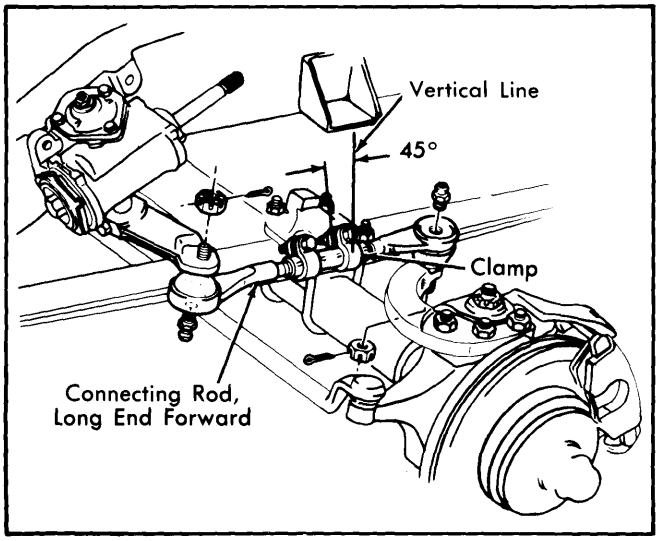

Fig. 4 "K" Model Steering Linkage

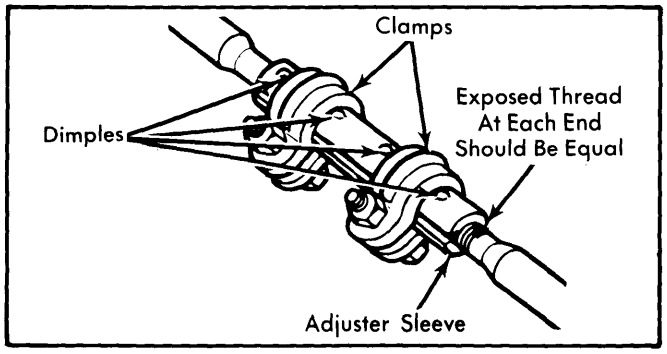

Fig. 5 Position of Tie Rod Clamps

Relay Rod Replacement – 1) Raise vehicle on hoist. Remove inner ends of tie rods from relay rod. Remove nuts from pitman arm and idler arm ball studs at relay rod. Remove relay rod from pitman and idler arms by tapping on relay rod ball studs bosses with a light hammer while using a heavy hammer as a backing. Remove relay rod.

2) To install, reverse removal procedure and note following: Check ball studs and nuts for clean and smooth threads. Check stud seals and replace if necessary. Torque nuts and install new cotter pins.

Idler Arm Replacement – 1) Place vehicle on hoist. Remove fasteners from ball stud and relay rod. Remove ball stud from relay rod by tapping on relay rod boss with a light hammer, while using a heavy hammer as a backing. Remove idler arm-to-frame bolts and remove idler arm assembly.

NOTE – *Idler arm assembly should always be replaced if it is found that an up and down force of 25 lbs., applied at relay rod end of idler arm, produces a lash of more than 1/8" in straight ahead position.*

2) To install, reverse removal procedure while noting the following: Ensure that threads on studs and nuts are clean and smooth. Check ball stud seals and replace if necessary. Install connecting rod while making sure long end of rod is toward

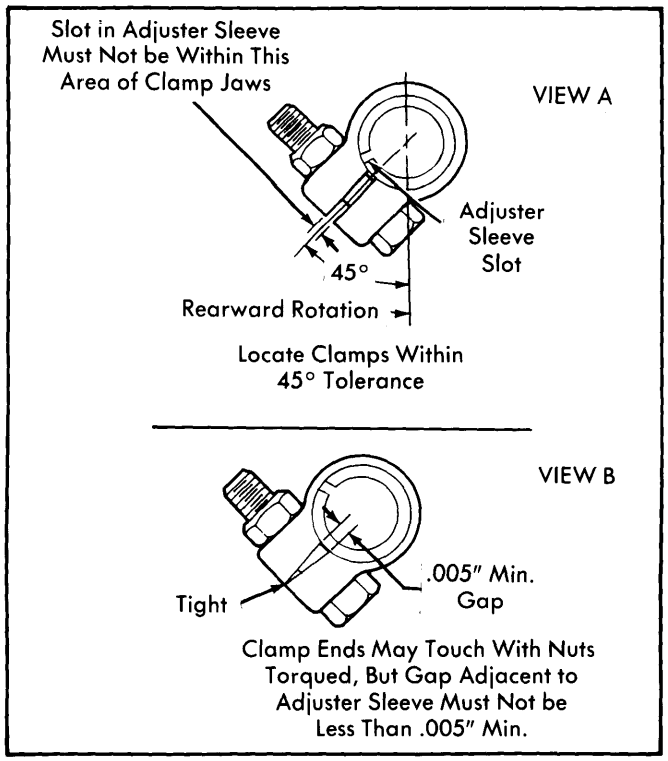

Fig. 6 Tie Rod Clamp Position "C", "K" and "P" Models

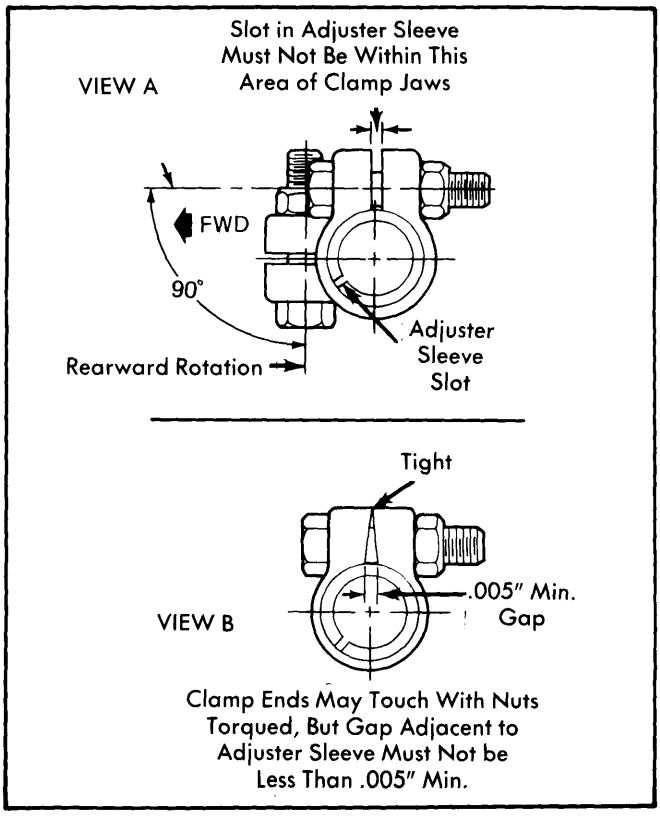

Fig. 7 Tie Rod Clamp Position "G" Model