ALL MODELS

GENERAL INFORMATION

All steering component fasteners are made of special quality materials. Replacement fasteners must be of same part number or equivalent. Do not weld, heat or bend steering linkage to repair or straighten. 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 lower specified torque; then tighten nut to next slot that lines up with stud hole. Do not hammer on ball studs or damage to threads may result. Threads should be clean and lightly lubricated with oil before being tightened.

REMOVAL & INSTALLATION

TIE RODS

Removal – Raise vehicle and remove cotter pins and nuts from ball studs. Use a suitable puller to separate ball studs from steering knuckle and center cross link. To remove tie rod ends from adjuster sleeve, remove clamp bolts and unscrew end assemblies. **NOTE** – *If sleeve adjuster clamp bolts are rusted, it is recommended that if torque required to remove nut from bolt after breakaway exceeds 7 ft. lbs., discard nuts and bolts.*

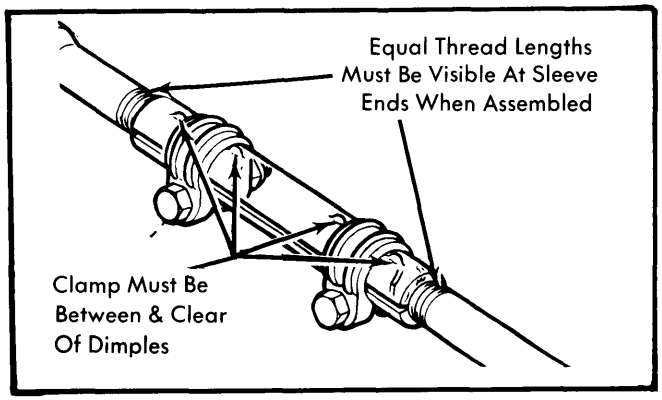

Fig. 1 Tie Rod Clamps Between Dimples (Typical) (General Motor's Shown)

Installation – If tie rod ends were removed, apply penetrating oil to clamps, tie rod threads and sleeve. Wipe threads clean and lubricate with EP chassis lube. Place sleeve clamps in position and thread tie rod ends an equal distance into sleeve. Install tie rod assembly, castellated nuts and new cotter pins. Rotate tie rod ends rearward to limit of ball stud travel, then position sleeve clamps and tighten bolts. Lower vehicle and adjust toe-in. *See Wheel Alignment Specifications & Procedures in WHEEL ALIGNMENT Section.*

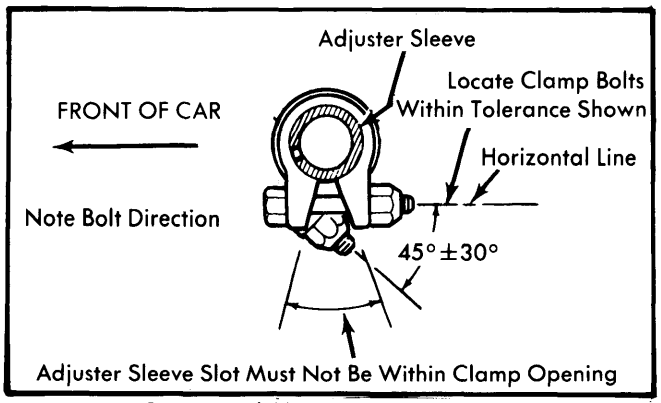

Fig. 2 Tie Rod Clamp Positioning ("H" Series) (Astre, Monza, Skyhawk, Starfire & Vega)

CENTER LINK

Removal – Raise vehicle and disconnect inner tie rod ends using a suitable puller. Disconnect center link ball studs from pitman arm and idler arm using suitable puller and remove center link.

Installation – Connect center link to idler arm, making certain idler stud seal is in place, then tighten nut. Install end of rod in pitman arm, and tighten nut. Install tie rod ends, tighten nuts and install new cotter pins. Lower vehicle and adjust toe-in. *See Wheel Alignment Specifications & Procedures in WHEEL ALIGNMENT Section.*

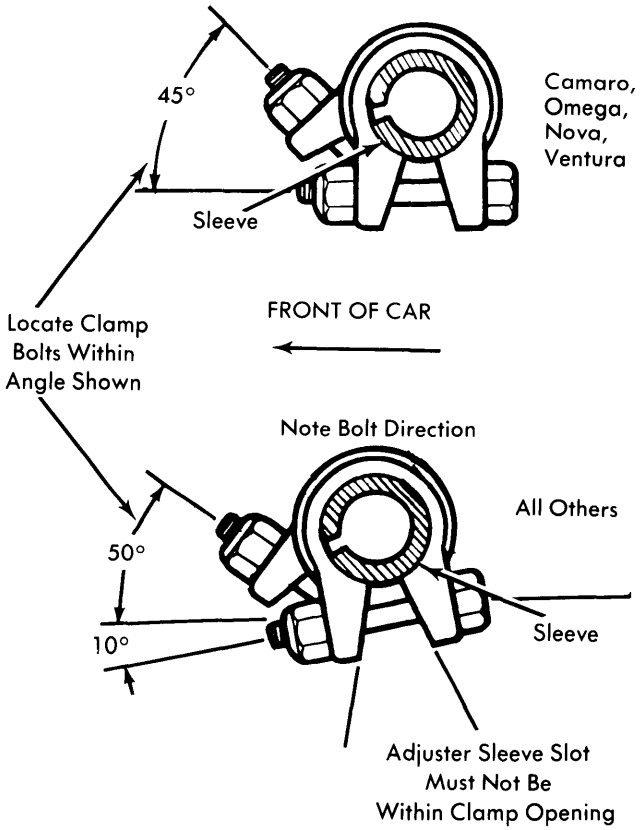

Fig. 3 Tie Rod Clamp Positioning (General Motors) (Exc. "H" Series, Eldorado & Toronado)

IDLER ARM

Removal – Raise vehicle and disconnect center link from idler arm. Remove two bolts attaching idler arm support to frame (note bolt direction). **NOTE** – *If idler arm support is disconnected from frame for other work, wire support to idler arm to prevent rotation if equipped with a threaded bushing (G.M. Saginaw linkage types).* Maximum allowable lash or vertical deflection of relay rod end of idler lever is ⅛" when a 25 lb. load is applied at that point. Replace assembly if deflection is more than ⅛".

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ALL MODELS (Cont.)

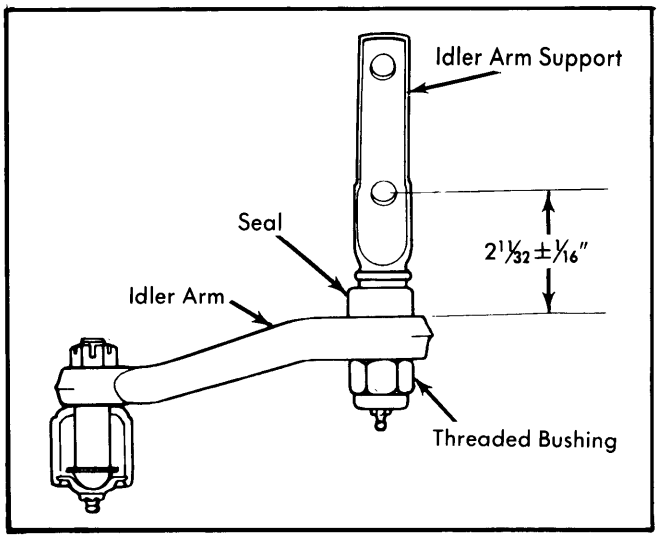

Fig. 4 Idler Arm Location (General Motors With Threaded Bushing)

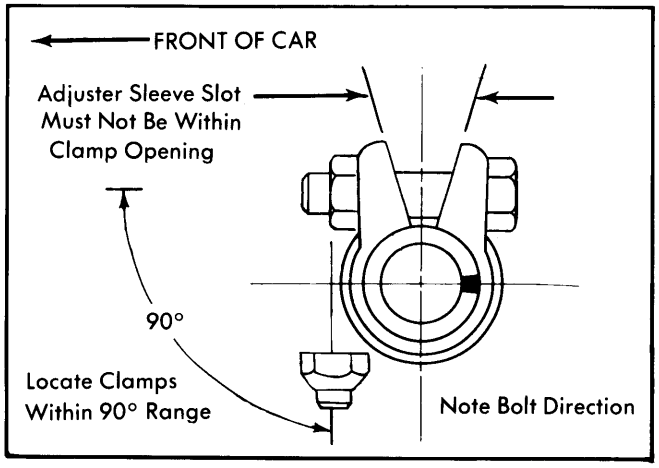

Fig. 5 Tie Rod Clamp Positioning (Toronado)

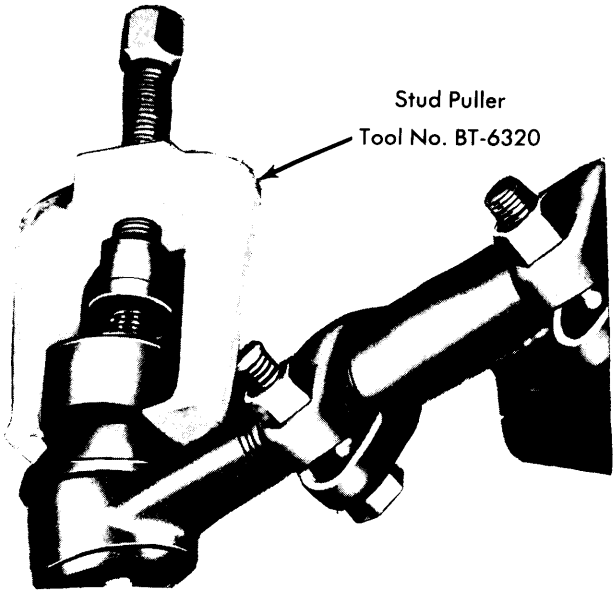

Fig. 6 Steering Linkage Ball Stud Removal

Installation – To install idler arm, reverse removal procedure and note the following: With General Motors Saginaw Linkage with threaded bushing idler arm, an adjustment is required for proper location of idler arm on its support. Idler arm ball socket will be level with pitman arm ball socket. The support must be threaded into idler arm bushing until distance from center of bolt hole to top of idler arm boss is as shown in *Fig. 4*. When idler arm is installed on support, it must be free to rotate a minimum of 90° in both directions from straight ahead. On Matador model, the idler arm has a replaceable bushing.

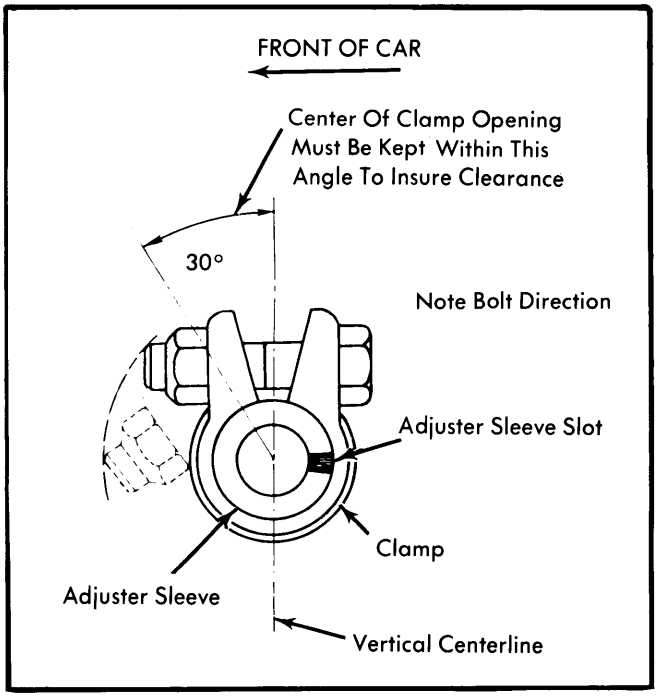

Fig. 7 Tie Rod Clamp Positioning (Eldorado)

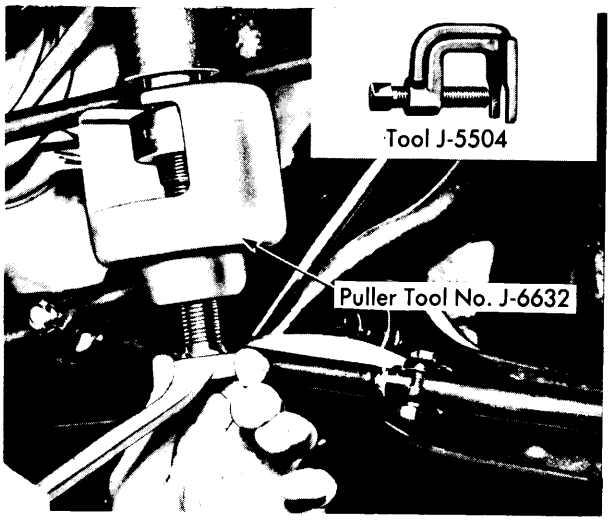

Fig. 8 Steering Gear Pitman Arm Removal

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ALL MODELS (Cont.)

PITMAN ARM

Removal – Raise vehicle and mark position of pitman arm to steering shaft relationship. Remove cross link ball stud cotter pin and nut. Using suitable puller, disconnect cross link from pitman arm. With Eldorado and Toronado front wheel drive models, it is necessary to disconnect and/or remove steering gear from its mounting before removing pitman arm. Remove pitman arm retaining nut and lock washer. Install suitable puller and remove pitman arm. NOTE – *DO NOT hammer on end of puller or damage to steering gear components may result.*

Installation – To install pitman arm, reverse removal procedure and tighten nuts as required.

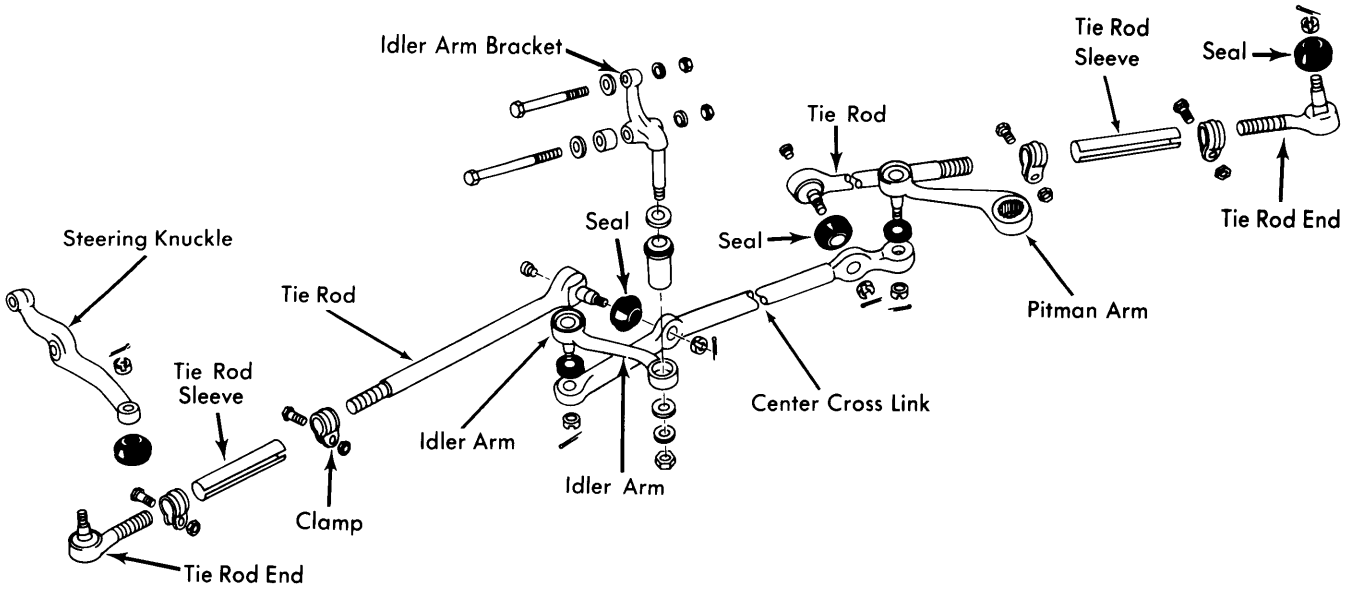

Fig. 9 Exploded View of Steering Linkage (Typical)

TIGHTENING SPECIFICATIONS

AMERICAN MOTORS

Application	Ft. Lbs.
Pitman Arm-to-Steering Gear	115
Idler Arm-to-Support	50
Pitman Arm-to-Cross Link	40
Idler Arm-to-Cross Link	40
Tie Rod-to-Steering Knuckle	
Pacer	50
All Others	35
Tie Rod-to-Cross Link	40
Tie Rod Clamps	
Pacer	20
All Others	14

CHRYSLER CORP.

Pitman Arm-to-Steering Gear	175
Idler Arm-to-Support	65-70
Pitman Arm-to-Cross Link	40
Idler Arm-to-Cross Link	40
Tie Rod-to-Steering Knuckle	40

CHRYSLER CORP.

Application	Ft. Lbs.
Tie Rod-to-Cross Link	40
Tie Rod Clamps	200 INCH Lbs.

FORD MOTOR CO.

Pitman Arm-to-Steering Gear	200-225
Idler Arm-to-Support	
Comet, Granada, Maverick, Monarch	60-65
All Others	45-50
Pitman Arm-to-Cross Link	①43-47
Idler Arm-to-Cross Link	
Comet, Granada, Maverick, Monarch	①77-85
All Others	①53-70
Tie Rod-to-Steering Knuckle	①43-47
Tie Rod-to-Cross Link	①43-47
Tie Rod Clamps	20-22

① – Torque to low Limit, then tighten nut to nearest cotter pin hole.

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Steering Linkage

ALL MODELS (Cont.)

TIGHTENING SPECIFICATIONS

GENERAL MOTORS

Application	Ft. Lbs.
Pitman Arm-to-Steering Gear	
Buick	
Skyhawk With Manual Steering	140
All Others	185
Cadillac	185
Chevrolet	
Monza & Vega 4 Cyl.	140
All Others	185
Starfire, Omega With Man. Steering	160
All Others	210
Pontiac	
Astre, Sunbird With Man. Steering	140
Astre, Sunbird With Pwr. Steering	185
All Others	185
Idler Arm-to-Support	
Buick	
Skyhawk	25-35
All Others	45-55
Cadillac	
Eldorado	95
Seville	50
All Others	50
Chevrolet	
Corvette, Monza & Vega	30
All Others	50
Oldsmobile	
Toronado	110
Starfire	35
All Others	45-55
Pontiac	
Astre & Sunbird	30
All Others	50
Pitman Arm-to-Cross Link	
Buick	②40-50
Cadillac	
Eldorado	③60
Seville	①35
All Others	②45
Chevrolet	
Monza & Vega	①35
All Others	②45
Oldsmobile	
Toronado	60
Starfire	50
All Others	55
Pontiac	②45

Application	Ft. Lbs.
Idler Arm-to-Cross Link	
Buick	④30-40
Cadillac	
Eldorado	③60
Seville	①35
All Others	①35
Chevrolet	①35
Oldsmobile	
88, 98 & Toronado	55-65
All Others	50
Pontiac	②35-40
Tie Rod-to-Steering Knuckle	
Buick	④30-40
Cadillac	
Seville	35
All Others	37
Chevrolet	①35
Oldsmobile	②40
Pontiac	①35
Tie Rod-to-Cross Link	
Buick	①40
Cadillac	
Seville	①35
All Others	①35
Chevrolet	①35
Oldsmobile	
Toronado	70
All Others	50
Pontiac	
Astre, Sunbird, LeMans, Grand LeMans & Grand Prix	②40
All Others	③60
Tie Rod Clamps	
Buick	
Skyhawk	9-14
All Others	19-24
Cadillac	22
Chevrolet	
Corvette, Monza & Vega	11
All Others	22
Oldsmobile	16
Pontiac	
Astre & Sunbird	11
All Others	14

① — Plus additional torque required to align nut slot with cotter pin hole (not to exceed 50 ft. lbs.).

② — Plus additional torque required to align nut slot with cotter pin hole (not to exceed 55 ft. lbs.).

③ — Plus additional torque required to align nut slot with cotter pin hole (not to exceed 85 ft. lbs.).

④ — Plus additional torque required to align nut slot with cotter pin hole (not to exceed 45 ft. lbs.)

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