

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.

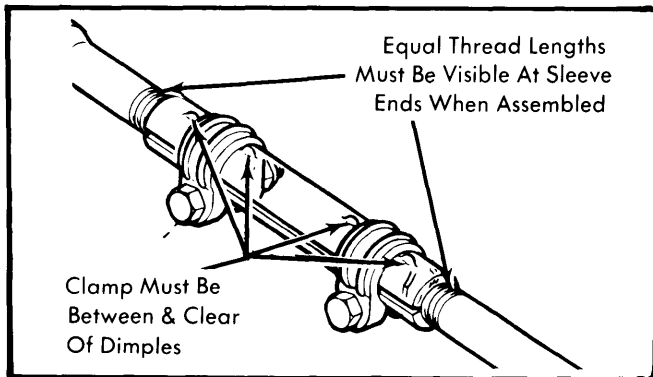


Fig. 1 Tie Rod Clamps Between Dimples (General Motors Shown).

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

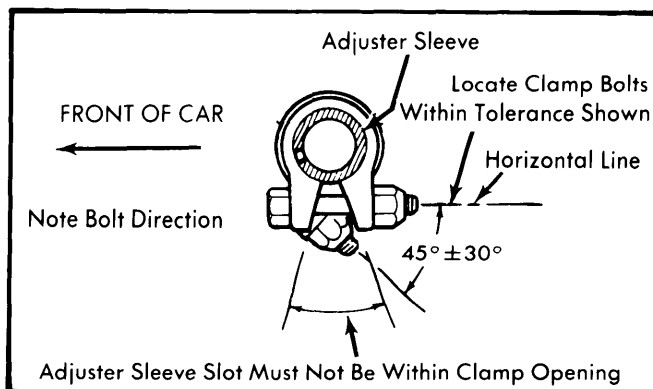


Fig. 2 Tie Rod Clamp Positioning (Monza, Skyhawk, Starfire)

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.

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.

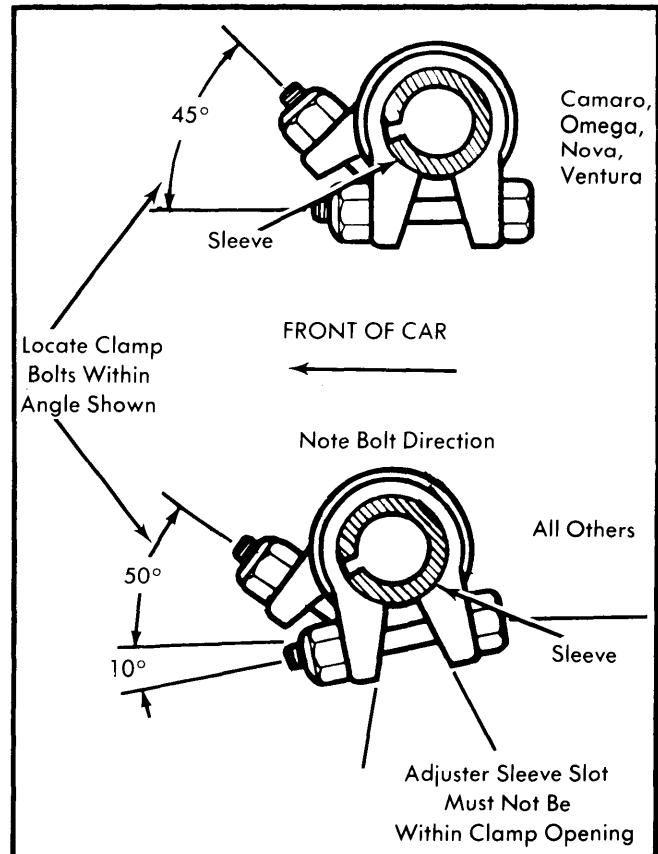


Fig. 3 Tie Rod Clamp Positioning (Buick, Pontiac, Chevrolet)

IDLER ARM

Removal — 1) 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).

2) Maximum allowable lash or vertical deflection of relay rod end of idler lever is $\frac{1}{8}$ " when a 25 lb. load is applied at that point. Replace assembly if deflection is more than $\frac{1}{8}$ ".

Steering Linkage

ALL MODELS (Cont.)

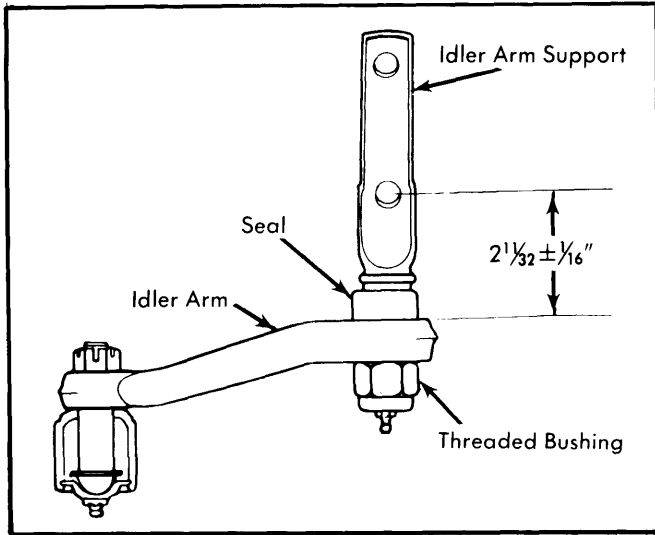


Fig. 4 Idler Arm Location
(General Motors with Threaded Bushing)

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.

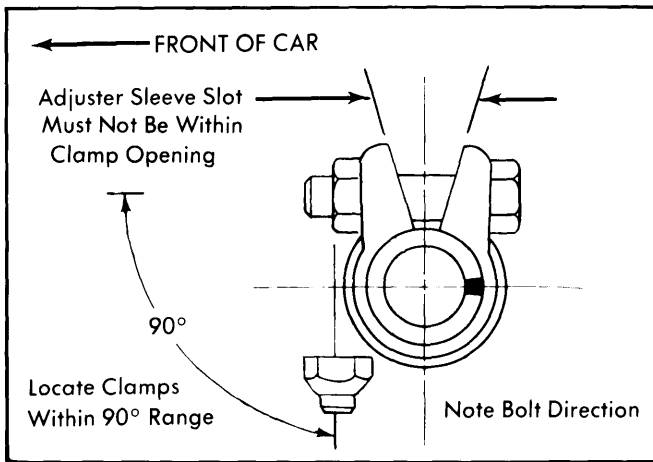


Fig. 5 Tie Rod Clamp Positioning
(Toronado)

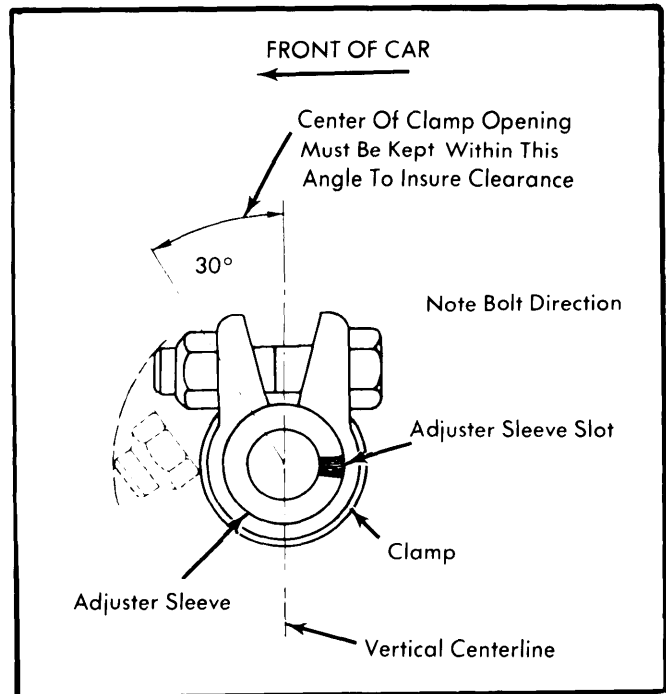


Fig. 7 Tie Rod Clamp Positioning
(Eldorado)

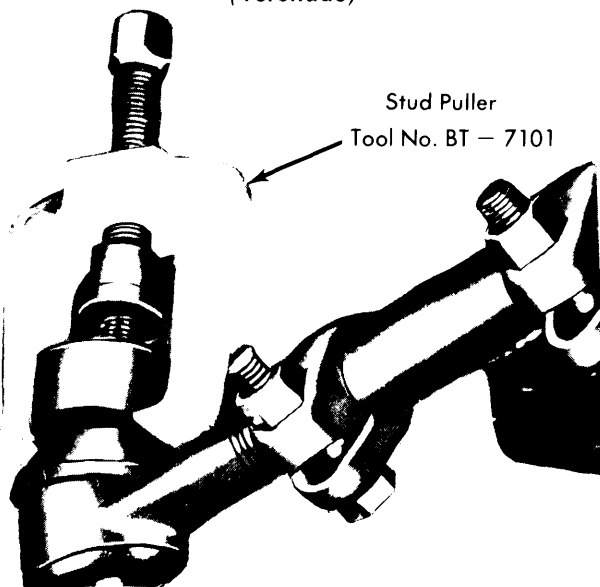


Fig. 6 Steering Linkage Ball Stud Removal

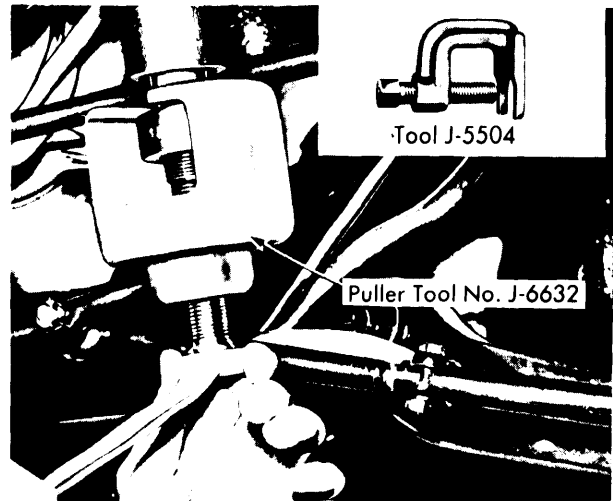


Fig. 8 Steering Gear Pitman Arm Removal

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.

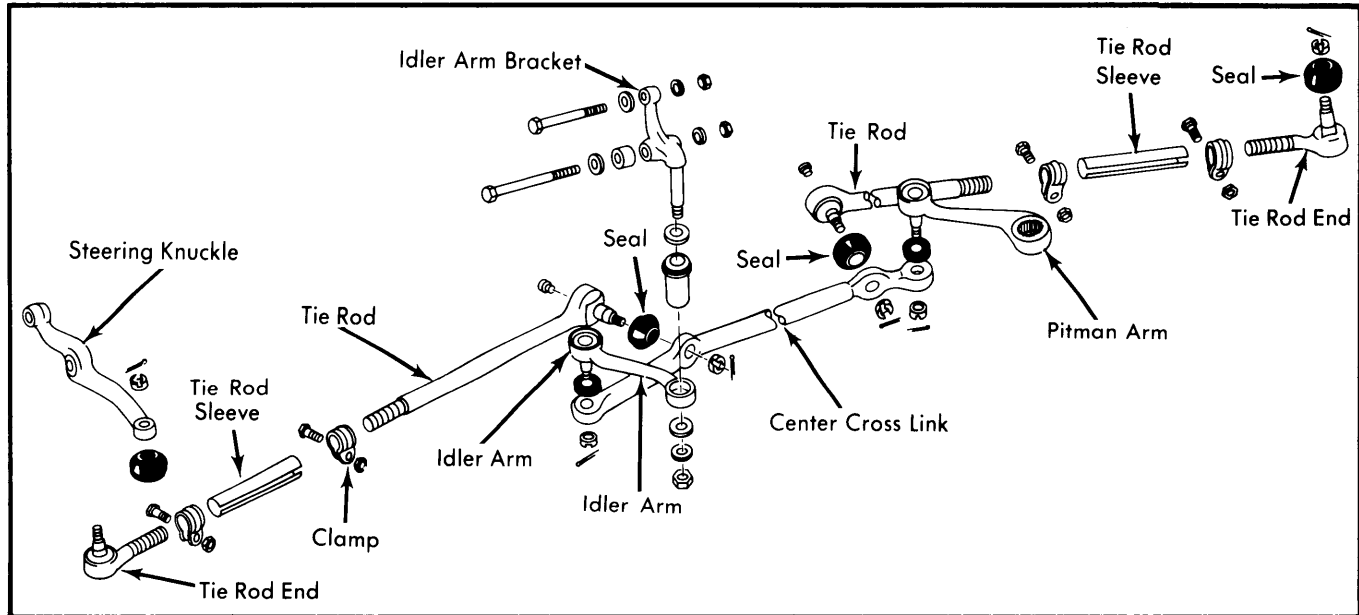


Fig. 9 Exploded View of Steering Linkage

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.	Application	Ft. Lbs.
AMERICAN MOTORS		CHRYSLER CORP.	
Pitman Arm-to-Steering Gear	115	Tie Rod-to-Cross Link.....	40
Idler Arm-to-Support	50	Tie Rod Clamps	17
Pitman Arm-to-Cross Link	40		
Idler Arm-to-Cross Link	40	FORD MOTOR CO.	
Tie Rod-to-Steering Knuckle		Pitman Arm-to-Steering Gear	
Pacer	50	Granada, Monarch, Versailles	Ⓞ200-225
All Others	35	Others	236-250
Tie Rod-to-Cross Link	40	Idler Arm-to-Support	
Tie Rod Clamps		Granada, Monarch, Versailles	60-65
Pacer	20	Others	45-50
All Others	14	Pitman Arm-to-Cross Link	Ⓞ43-47
		Idler Arm-to-Cross Link	
CHRYSLER CORP.		Granada, Monarch, Versailles	Ⓞ77-85
Pitman Arm-to-Steering Gear	175	Others	Ⓞ53-70
Idler Arm-to-Support	65-70	Tie Rod-to-Steering Knuckle	Ⓞ43-47
Pitman Arm-to-Cross Link	40	Tie Rod-to-Cross Link	Ⓞ43-47
Idler Arm-to-Cross Link	40	Tie Rod Clamps	20-22
Tie Rod-to-Steering Knuckle	40		

Ⓞ — Torque to low limit, then tighten nut to nearest cotter pin hole.

Steering Linkage

ALL MODELS (Cont.)

TIGHTENING SPECIFICATIONS

GENERAL MOTORS

Application	Ft. Lbs.	Application	Ft. Lbs.
Pitman Arm-to-Steering Gear			
Buick			
Skyhawk (Manual)	① 140	Oldsmobile	
All Others	① 185	All (Exc. Toronado)	45
Cadillac		Toronado	60
All	② 180	Pontiac	
Chevrolet		All	③ 45
Monza	① 168	Idler Arm-to-Cross Link	
All Others	① 185	Buick	
Oldsmobile		All	② 35
Omega, Starfire (Manual)	② 140	Cadillac	
All Others	② 180	Eldorado	② 60
Pontiac		Seville	② 40
Sunbird	184	All Others	② 35
All Others	140	Chevrolet	
Idler Arm-to-Support			
Buick			
Electra, LeSabre, Century	② 61	All	① 35
Skylark	② 50	Oldsmobile	
Skyhawk	② 30	Toronado	② 60
Cadillac		All Others	② 45
Eldorado	② 90	Pontiac	
Seville	② 40	All	③ 35
All Others	② 50	Tie Rod-to-Cross Link	
Chevrolet		Buick	
Corvette, Monza	30	All	② 40
All Others	50	Cadillac	
Oldsmobile		All	② 35
Starfire	② 30	Chevrolet	
Cutlass, Omega, Delta 88		All	① 35
Ninety-eight	② 50	Oldsmobile	
Toronado	② 95	Toronado	② 60
Pontiac		All Others	② 40
LeMans, Firebird, Phoenix	50	Pontiac	
Sunbird	30	Sunbird, LeMans, Grand Prix	③ 40
Bonneville	61	All Others	③ 60
Pitman Arm-to-Cross Link			
Buick			
All	45	Tie Rod Clamps	
Cadillac		Buick	
Eldorado	② 60	Skyhawk	11
All Others	② 45	All Others	14
Chevrolet		Cadillac	
Monza	① 35	Eldorado	60
All Others	① 45	All Others	22
Chevrolet			
Monza	① 35	Monza	14
All Others	① 45	Corvette	11
Pontiac			
Sunbird	11	All Others	22
All Others	14	Pontiac	
		Sunbird	11
		All Others	14

① — Align castellated nut with hole without loosening nut. Do not exceed 50 ft. lbs.
 ② — Do not loosen nut to install cotter pin, turn to next hole.

③ — Maximum of 1/16" turn to align cotter pin hole. Do not back off nut to insert cotter pin.