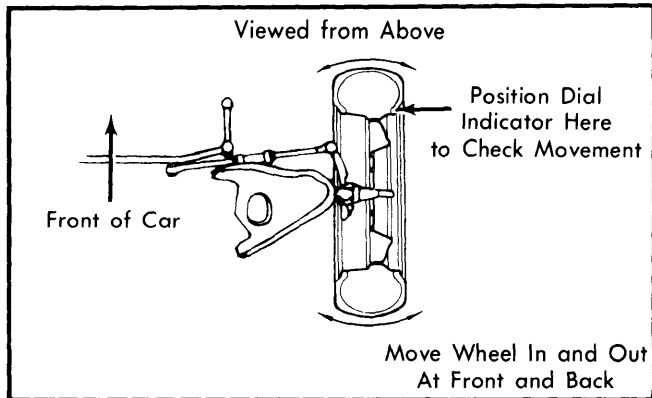


## WHEEL ALIGNMENT PROCEDURES

### PRE-ALIGNMENT INSTRUCTIONS

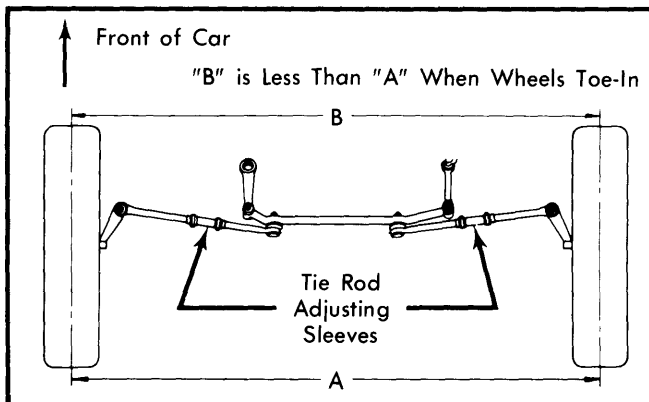
Before making wheel alignment adjustments, check the following:

- 1) Wheel bearings must be properly adjusted.
- 2) Steering linkage and suspension must not have excessive looseness. Check for wear in tie rod ends and ball joints. See Fig. 1.



**Fig. 1 Checking Steering Linkage**

- 3) Tires should be approximately equal in tread wear and runout must not be excessive. Tires and wheels should be in balance, and inflated to manufacturer's specifications.
- 4) Car must be at curb height with full fuel tank, no passenger load, spare in place, and no load in trunk.
- 5) Car must be on level floor and at normal running height. Bounce front and rear end of car an equal number of times, always releasing bumper at bottom of down stroke. Allow it to settle to normal running height.
- 6) If steering wheel is not centered with front wheels in straight ahead position, correct by shortening one tie rod adjusting sleeve and lengthening opposite sleeve. See Fig. 2.



**Fig. 2 Adjusting Tie Rod Sleeves (Top View)**

- 7) Ensure wheel lug nuts are tightened to manufacturers' specifications. See Chart.

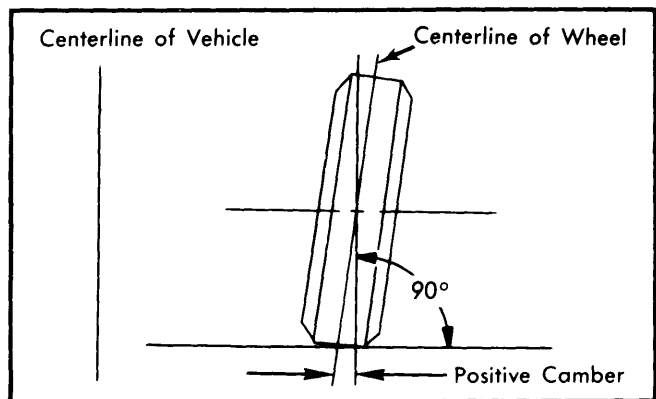
### CAMBER

- 1) Camber is the tilting of the wheel, outward at either top or bottom, as viewed from the front of vehicle. See Fig. 3.

### WHEEL LUG NUTS TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
American Motors .....	75
Buick	
Riviera .....	100
1/2" Studs .....	100
7/16" Studs .....	80
All Others .....	80
Cadillac .....	100
Chevrolet	
Monza Aluminum .....	90
Camaro Aluminum .....	120
Impala and Caprice Wagon .....	100
All Others .....	80
Chrysler Corp.	
Omni, Horizon .....	80
All Others .....	85
Ford Motor Co. ....	80-105
Oldsmobile	
88 Wagon, 98, Toronado .....	100
Cutlass Aluminum .....	90
All Others .....	80
Pontiac	
Aluminum .....	90
All Others .....	80

- 2) When wheels tilt outward at the top (from centerline of vehicle), camber is said to be positive. When wheels tilt inward at the top, camber is said to be negative. Amount of tilt is measured in degrees from vertical.



**Fig. 3 Determining Camber Angle**

### CASTER

- 1) Caster is the tilting of the front steering axis either forward or backward from vertical, as viewed from the side of the car. See Fig. 4.
- 2) When axis is tilted backward from vertical, caster is said to be positive. This creates a trailing action on front wheels. When axis is tilted forward, caster is negative, causing a leading action on front wheels.