## FORD MOTOR CO. (Cont.)

### VERSAILLES, GRANADA, & MONARCH

#### CASTER

Caster is controlled by front suspension strut. To obtain positive caster, loosen strut rear nut and tighten front nut against bushing. To obtain negative caster, loosen strut front nut and tighten rear nut against bushing.

#### CAMBER

Camber is controlled by eccentric cam located at lower arm attachment to side rail. Loosen camber adjustment bolt nut at rear of body bracket. Spread body bracket at adjustment bolt area just enough to permit lateral travel of arm when adjustment bolt is turned. Rotate bolt and eccentric clockwise from high position to increase camber or counterclockwise to decrease camber. After adjustment, tighten lower arm eccentric bolt nut and strut front nut.

### ALL OTHER MODELS

#### CASTER

1) Install alignment tools (T69P-3000-A) into frame holes and tighten tools fingertight against upper arm inner shaft. Then, using a wrench, tighten an additional turn. Loosen bolts attaching upper arm inner shaft to frame. Firmly tap bolt heads to loosen lower assemblies. See *Fig. 12*.

2) To obtain positive caster, tighten tool front hook nut or loosen rear hook nut. To decrease caster, tighten rear hook nut or loosen front hook nut. Check camber to see that it did not change. Tighten upper arm inner shaft attaching bolts to 120-140 ft. lbs.

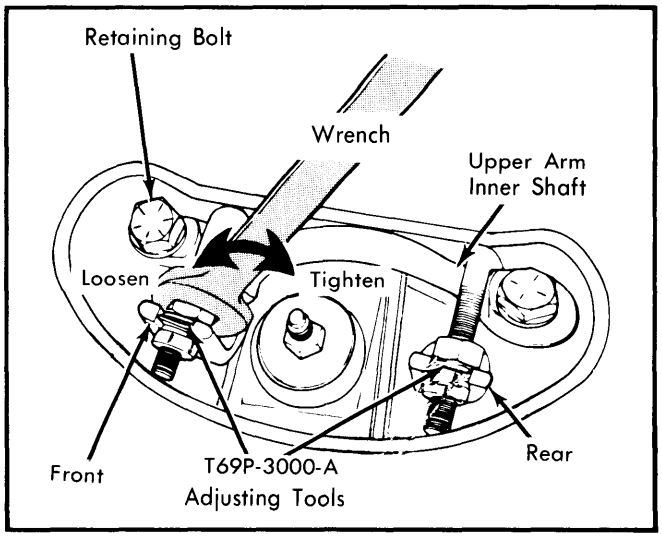


*Fig. 12 Caster & Camber Adjustment All Other Models*

#### CAMBER

1) To adjust camber angle, loosen inner shaft attaching bolts and tighten or loosen tool hook nuts to move inner shaft inboard or outboard as necessary. Using suitable tool (T69P-3000-A), camber can be checked without tightening inner shaft attaching bolts.

2) Move shaft inboard equally at both bolts to change camber in negative direction. Move shaft outboard equally at both bolts to change camber in positive direction.

## GENERAL MOTORS

### BUICK

#### TIRE INFLATION (COLD)

Before checking wheel alignment, ensure that tires are inflated to manufacturers specifications, found on tire placard on inside of glove box door or on drivers door jam.

#### RIDING HEIGHT

With car on smooth level floor, trunk empty and fuel tank full, bounce both front and rear of car several times and let car assume normal position. Measure the dimensions as shown in *Fig. 13*. If riding height is not within specified limits, install shims between upper end of spring and frame.

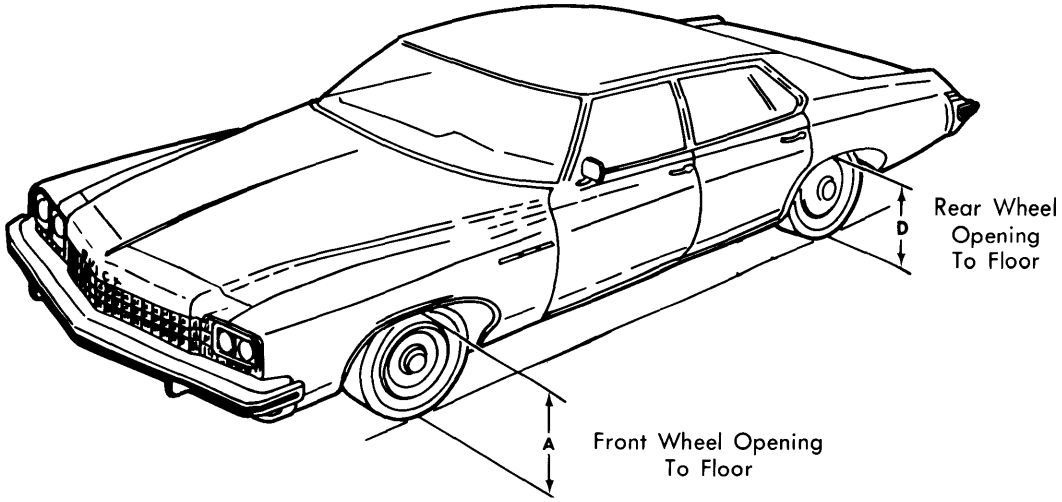


*Fig. 13 Riding Height Measuring Points*

## GENERAL MOTORS (Cont.)

### CASTER (EXC. SKYHAWK)

Loosen nuts and bolts attaching upper control arm to frame. To increase caster (more positive), remove shims from front bolt and add them to the rear bolt. To decrease caster (more negative), add shims to the front bolt and remove them from the rear bolt. Tighten control arm shaft nuts to 75 ft. lbs. on Skylarks. On all other models, tighten bolts to 125 ft. lbs. and nuts to 95 ft. lbs. Then check caster.

### CAMBER (EXC. SKYHAWK)

Loosen nuts and bolts attaching upper control arm to frame. To increase camber (more positive), remove equal amount of shims from front and rear bolts. To decrease camber (more negative), add equal amount of shims to front and rear bolts. Tighten upper control arm shaft nuts to 75 ft. lbs. on Skylark and 95 ft. lbs. on all other models. Check toe-in.

### CAMBER (SKYHAWK)

Set camber before setting caster or toe-in. Loosen lower control arm front pivot nut and rotate cam until specified camber setting is reached. Tighten pivot nut to 125 ft. lbs. and check caster. Hold cam bolt head while tightening nut.

### CASTER (SKYHAWK)

Loosen lower control arm rear pivot nut and rotate cam until specified caster setting is reached. This moves the lower control arm fore or aft. Hold cam bolt head while tightening pivot nut to 125 ft. lbs. and recheck camber setting and check toe-in.

**RIDING HEIGHT SPECIFICATIONS**

| Application | A | D |
|---|---|---|
| Century & Regal | | |
| Sedan | 26.7" | 26.0" |
| Coupe | 26.7" | 26.0" |
| Wagon | 26.8" | 26.4" |
| LeSabre, Riviera, & Estate Wagon | | |
| Sedan | 28.9" | 28.5" |
| Coupe | 28.9" | 28.5" |
| Wagon | 28.9" | 28.7" |
| Electra | 28.9" | 23.2" |
| Skyhawk | 25.7" | 26.0" |
| Skylark | 27.1" | 25.3" |

## CADILLAC

### TIRE INFLATION (COLD)

Before checking wheel alignment, ensure that tires are inflated to manufacturers specifications, found on tire placard in glove box.

### RIDING HEIGHT

Before checking riding height, trunk must be empty (except for spare tire and jack), front seat all way to rear, and fuel tank full. Normalize springs by working bumper up and down, then release bumper and let car assume normal position. If car is equipped with Automatic Level Control, deflate system using service valve and disconnect air line from superlift port on control valve. Check riding height as follows:

**Front (Exc. Eldorado & Seville)** – Measure distance from top of lower control arm in front of rubber bumper to flat surface on bottom of frame. Distance should be within specifications, and equal within 3/8" from side to side. If heights are unequal, replace spring on low side.

**Front (Eldorado)** – Measure distance from lower edge of front shock absorber dust tube to centerline of lower attachment. Distance should be within specifications, and equal within 3/8" on each side. If not within specifications adjust at torsion bar adjusting bolt. Clockwise rotation of bolt increases front height while counterclockwise rotation decreases height.

**Front (Seville)** – Measure distance from center of lower control arm bushing bolt head to horizontal line from lowest point on inboard corner of lower ball joint. Distance should be within specification and equal from side to side within 3/8". If heights are not equal, replace spring on low side.

**Rear (All Models)** – Measure distance from top of axle housing straight up to lower underside of frame. Distance should be within specifications, and equal within 1/2" on each side. If not within specifications, replace spring on low side.

**RIDING HEIGHT SPECIFICATIONS**

| Application | Front | Rear |
|---|---|---|
| Coupe DeVille | 2.12-2.87" | ①5.76-6.51" |
| Sedan DeVille | 2.12-2.87" | ①5.76-6.51" |
| Brougham | 1.86-2.61" | 5.38-6.13" |
| Fleetwood | 1.84-2.59" | 5.38-6.13" |
| Eldorado | 8.25-8.50" | 4.82-5.57" |
| Seville | 2.12-2.25" | ②3.50-4.12" |

① – With ALC 5.38-6.13"
② – With ALC Disconnected, 3.50"

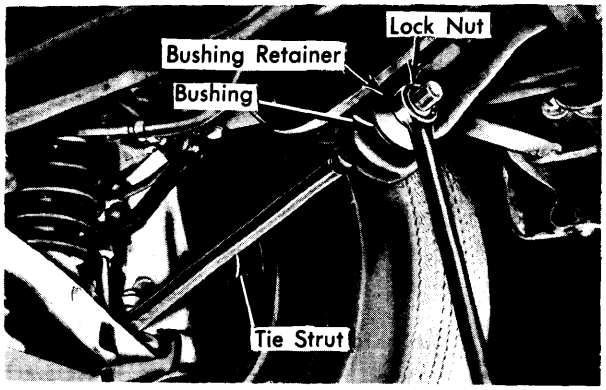


*Fig. 14 Caster Adjustment Except Eldorado & Seville*

### CASTER (EXC. ELDORADO & SEVILLE)

**NOTE** – *Before adjusting caster, loosen tie-struts at lower suspension arms to allow tie-strut to center and thus prevent damage to bushings and premature wear at frame front*

## GENERAL MOTORS (Cont.)

*crossmember.* To provide more negative caster, lengthen tie-struts by loosening front lock nuts and tightening rear lock nuts. To provide more positive caster, shorten tie-struts by loosening rear lock nuts and tightening front lock nuts. One turn of lock nuts results in approximately ½ ° change in caster. After adjustments are made, tighten tie-strut mounting bolt nuts at lower arms to 55 ft. lbs. and front lock nuts to 35 ft. lbs. NOTE – *When tightening front lock nut, hold rear nut securely to prevent changing caster setting.*

### CAMBER ADJUSTMENT (EXC. ELDORADO & SEVILLE)

Loosen lock nut on ball joint stud one turn and strike steering knuckle to free camber eccentric in steering knuckle. Using suitable tool (J-23415) turn camber eccentric until desired camber is obtained. Final position of ball joint should be in rear portion of camber eccentric in order to keep steering arm angle correct. After adjustments are completed, tighten ball joint stud nut.


*Fig. 15 Camber Adjustment Except Eldorado & Seville*

### CAMBER & CASTER (ELDORADO)

Loosen nuts on upper control arm front and rear cam bolts, note camber reading. Rotate front bolt to correct for half of incorrect reading. Rotate rear bolt to bring camber reading to 0°, then tighten front and rear cam bolts. Check caster and if no adjustment necessary, tighten cam nuts to 95 ft. lbs. If caster adjustment necessary, loosen front and rear cam bolts and rotate front bolt so camber changes an amount equal to ¼ of desired caster change. If adjusting for excessive negative caster, rotate front bolt to increase positive camber; if adjusting for excessive positive caster, rotate front bolt to increase negative camber. Rotate rear cam bolt until camber setting returns to 0°. Tighten cam nuts to 95 ft. lbs. and recheck adjustments.

### CASTER (SEVILLE)

Loosen nuts and bolts attaching upper control arm to frame. To increase caster (more positive), remove shims from the front bolt and add them to the rear bolt. To decrease caster (more negative), add shims to the front bolt and remove shims from the rear bolt. Tighten control arm shaft nuts to 75 ft. lbs. NOTE – *Difference between front and rear shim packs must not exceed .40 inches.*

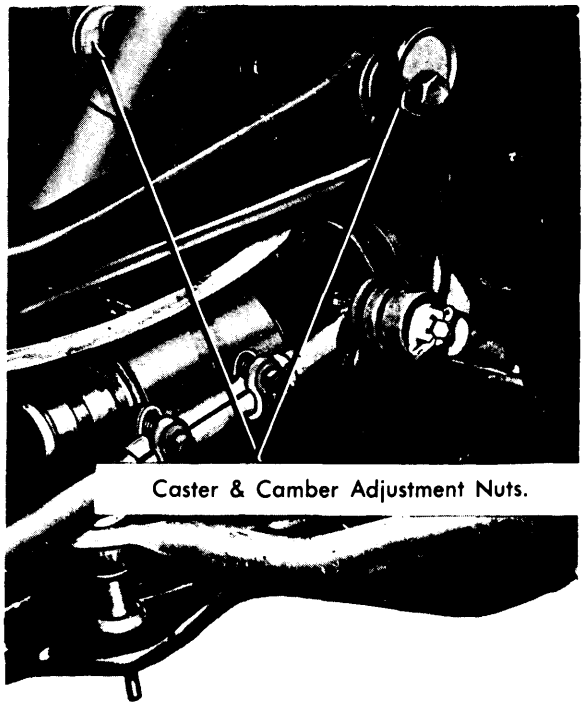


*Fig. 16 Eldorado Caster & Camber Cam Locations*

### CAMBER (SEVILLE)

Loosen nuts and bolts attaching upper control arm to frame. To increase camber (more positive), remove shims from both front and rear bolts. To decrease camber (more negative), add equal amount of shims to both front and rear bolts. Tighten control arm shaft nuts to 75 ft. lbs.

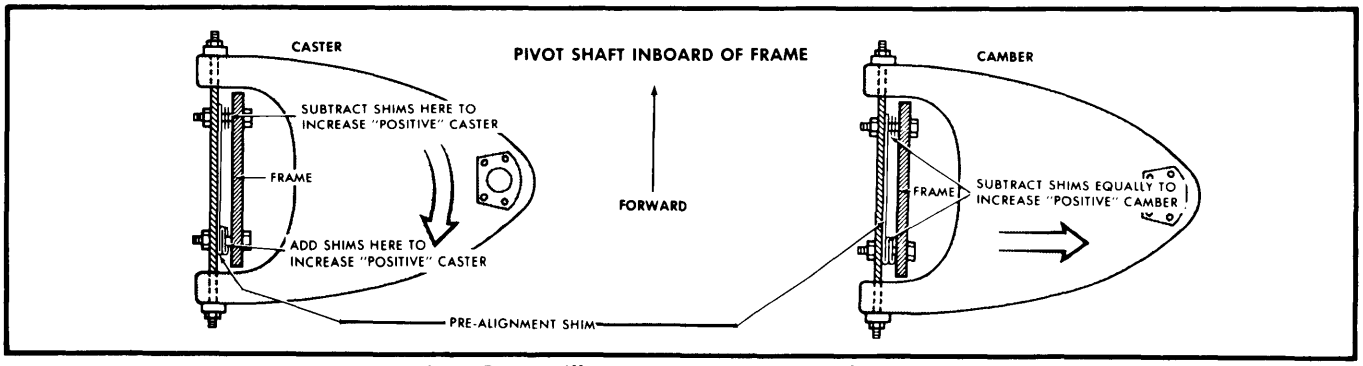


*Fig. 17 Seville Caster & Camber Adjustment*