GENERAL MOTORS (Cont.)

Riding Height Specifications

Application	Front (Inches)	Rear (Inches)
Century & Regal		
Sedan & Coupe	26.7	26.0
Wagon	26.9	16.5
LeSabre & Estate Wagon		
Sedan & Coupe	28.6	27.0
Wagon	28.7	27.3
Electra	28.6	23.6
Riviera	28.6	27.3
Skylark	26.4	25.8

CASTER

NOTE – *Caster is not adjustable on Skylark. Refer to Fig. 15 in CADILLAC section illustrating caster and camber adjustment on all models except Skylark and Riviera.*

All Models (Except Skylark and Riviera) – Loosen nuts attaching upper control arm pivot shaft to frame. To increase positive caster, remove shims from front bolt and add them to rear bolt. To decrease caster (negative), add shims to front and remove them from rear bolt. Tighten control arm shaft nuts and recheck caster.

Riviera – To adjust caster, note camber, then hold front cam bolt (inner end of upper control arm) and loosen nut. Turn bolt to obtain ¼ of the desired caster change. Hold bolt and tighten nut, then repeat on rear bolt, turning cam bolt so that original camber is restored. Tighten nuts to 80 ft. lbs. while holding bolt head.

NOTE – *At front cam bolt, positive camber change produces positive caster change and negative camber change results in negative caster change.*

CAMBER

NOTE – *Refer to Fig. 15 in CADILLAC section for illustration of camber adjustment on all models except Skylark and Riviera.*

All Models (Except Skylark and Riviera) – Loosen nuts attaching upper control arm pivot shaft to frame. To increase camber (positive), remove equal thickness of shims from front and rear bolts. To decrease camber (negative), add equal thickness of shims to front and rear bolts. Tighten control arm shaft nuts and recheck camber.

Skylark – To adjust camber, loosen nuts on cam and through bolts, then rotate cam bolt to move upper steering knuckle in or out. Cam must be seated between inner and outer guide surfaces. Check camber and tighten nuts to 140 ft. lbs. *See Fig. 13.*

NOTE – *Top bolt must be loose whenever camber is adjusted or damage to outer cam guide may occur.*

Riviera – Loosen nuts on one cam bolt (inner end of upper control arm) and turn bolt ½ of needed correction. Hold bolt and tighten nut in this position. Repeat operation on remaining bolt to obtain remaining correction. Setting camber in this manner will not affect caster.

NOTE – *Due to torsion bar suspension on Riviera models, it is possible to adjust front trim height.*

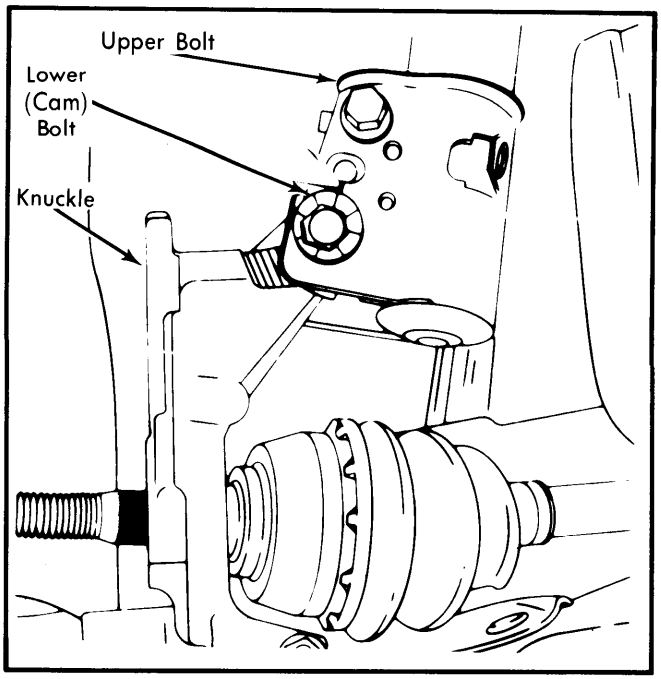

Fig. 13 Camber Adjustment (Skylark)

REAR WHEEL ALIGNMENT (RIVIERA)

See CADILLAC, Rear Wheel Alignment (Eldorado & Seville)

CADILLAC

TIRE INFLATION (COLD)

Before checking alignment, ensure that tires are inflated to manufacturer's specifications found on tire placard at rear of driver's door.

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 (Eldorado & Seville) – Measure distance from lower edge of front shock absorber dust tube to centerline of lower attachment. Distance should be within specifications, and equal within ⅜" 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.

NOTE – *Alternate dimension of 11.06-11.85" between centers of shock absorber mounting studs may be used.*

Front (All Others) – 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

GENERAL MOTORS (Cont.)

within specifications, and equal from side to side within 3/8". If heights are not equal, replace spring on low side.

Rear (Eldorado & Seville) – Place weight in trunk and turn on ignition, energizing electronic level control compressor. Turn ignition switch off and remove weight. Wait 30 seconds and measure between bottom of rear control arm flange and frame. Distance should be within specifications and equal within 3/8" from side to side.

Rear (All Others) – 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
All Models (Exc. Eldorado & Seville)		
Standard		
6.0L	1.79-2.57"	5.11-5.90"
Diesel	1.84-2.63"	5.12-5.91"
Electronic Level Control		
6.0L	1.71-2.49"	4.75-5.54"
Diesel	1.77-2.55"	4.76-5.55"
Eldorado		
6.0L	5.24-6.03"	4.99-5.78"
Diesel	5.24-6.03"	4.95-5.74"
Seville		
6.0L	5.24-6.03"	5.05-5.82"
Diesel	5.24-6.03"	5.00-5.79"

CASTER & CAMBER

Eldorado & Seville – **1)** 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 O°, then tighten front and rear cam bolts.

2) Check caster and if no adjustment is necessary, tighten cam nuts to 95 ft. lbs. If caster adjustment is necessary, loosen front and rear cam bolts and rotate front bolt so camber changes an amount equal to 1/4 of desired caster change.

3) 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.

4) Rotate rear cam bolt until camber setting returns to 0°. Tighten cam nuts to 95 ft. lbs. and recheck adjustments. See *Fig. 14*.

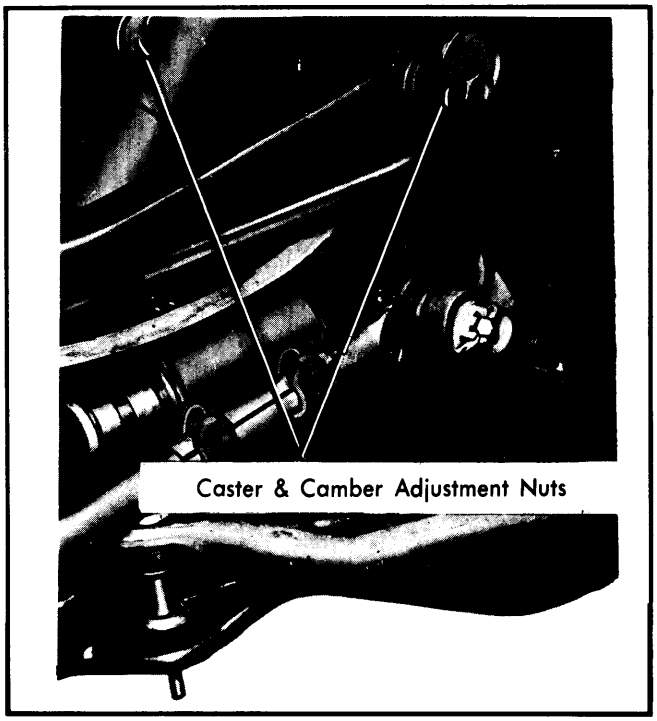

Fig. 14 Eldorado & Seville Caster & Camber Cam Locations

All Other Models – **1)** To adjust caster, loosen nuts and bolts attaching upper control arm to frame. To increase caster (positive), remove shims from the front bolt and add them to the rear bolt. To decrease caster (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".*

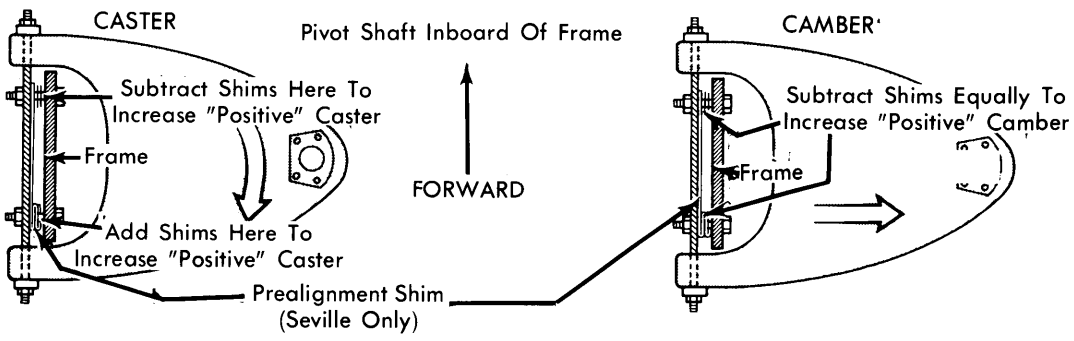

Fig. 15 Caster and Camber Adjustment (All Models Exc. Eldorado & Seville)

GENERAL MOTORS (Cont.)

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

REAR WHEEL ALIGNMENT (ELDORADO & SEVILLE)

NOTE – *Buick Riviera and Oldsmobile Toronado use the same wheel alignment procedure as Eldorado and Seville.*

1) Place tape on floor from alignment wheel plate rearward for 20 feet. See *Fig. 16*. Back vehicle onto alignment machine as straight as possible, with rear wheels on wheel plates.

2) Place straightedge against a rib of the front tire and record the distance from straightedge to tape guide line. Then, move straightedge to the same rib of the tire for the rear wheel and measure to guide line.

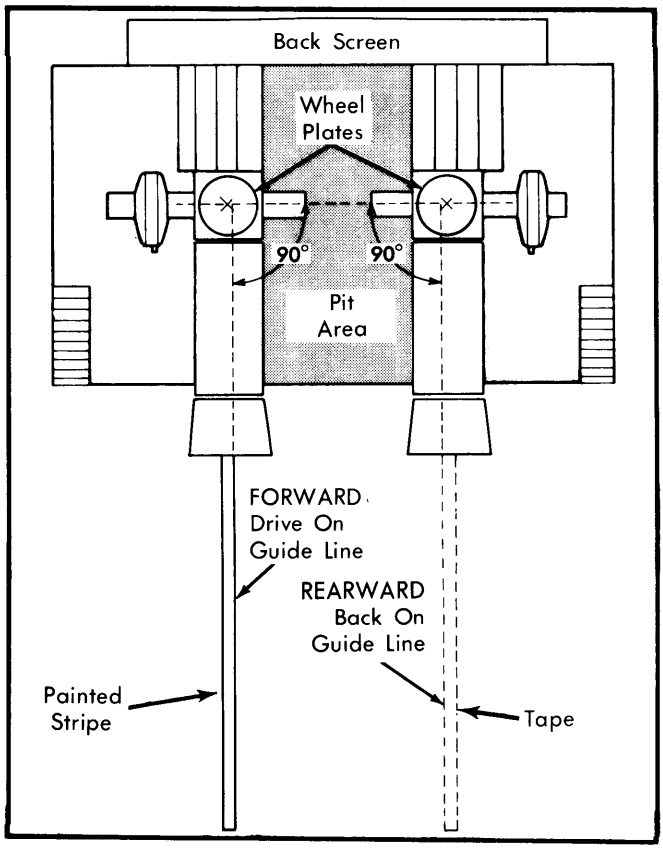

Fig. 16 Typical Alignment Machine Set Up For Eldorado & Seville Rear Wheel Alignment

3) The car will be square on the alignment machine if the rear dimension is the same as the front plus $\frac{5}{8}$" (suitable range of squareness $\frac{3}{8}$" to $\frac{7}{8}$" over front measurement).

NOTE – *With vehicle backed on alignment machine, toe-in will be read as toe-out.*

4) Toe adjustments are made at inner pivot bushings. Loosen nut and bolt at inner bushing. Use pry bar, if necessary. See *Fig. 17*. Move control arm rearward to increase toe-in and forward to increase toe-out. Tighten bushing nut to 75 ft. lbs. and recheck toe setting.

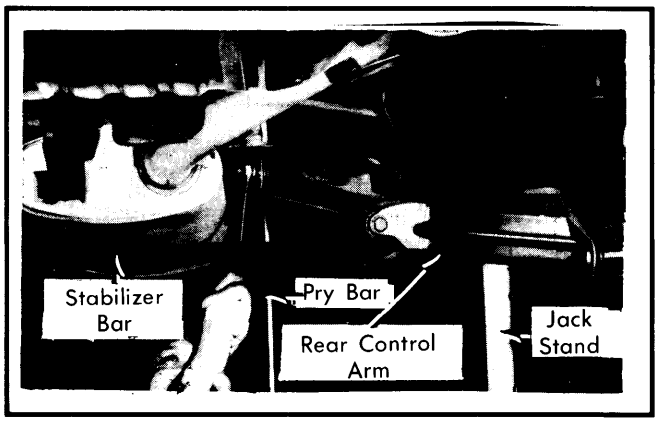

Fig. 17 Adjusting Rear Wheel Alignment (Eldorado & Seville)

5) Check camber. As camber cannot be adjusted, check for bent or damaged parts if outside of specifications.

CHEVROLET

TIRE INFLATION (COLD)

Inflate tires to manufacturer's specifications, found on tire inflation placard attached to left front door.

RIDING HEIGHT

With car on smooth level floor, lift car about 1½" at front bumper and allow vehicle to settle on its own. Repeat twice more, then measure the "Z" and "J" height in the settled position after third lift. Repeat procedure and average the readings for true measurement. When measuring "D" and "K" height, follow same procedure except lift and push on rear bumper. Measurements must be within specifications. See *RIDING HEIGHT SPECIFICATIONS and Figs. 18 through 24.*

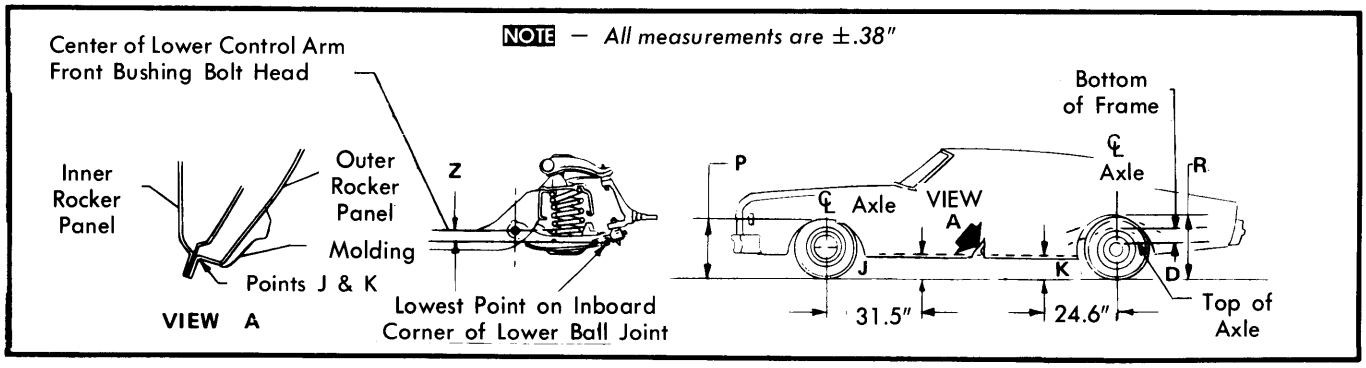

Fig. 18 Riding Height Measuring Points (Caprice & Impala)

GENERAL MOTORS (Cont.)

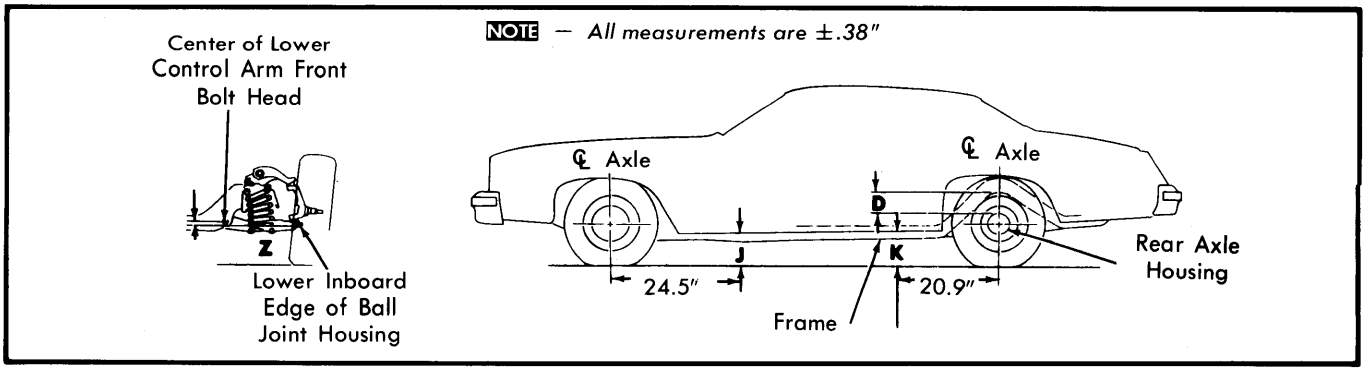

Fig. 19 Riding Height Measuring Points (Monte Carlo, Malibu, El Camino & Caballero)

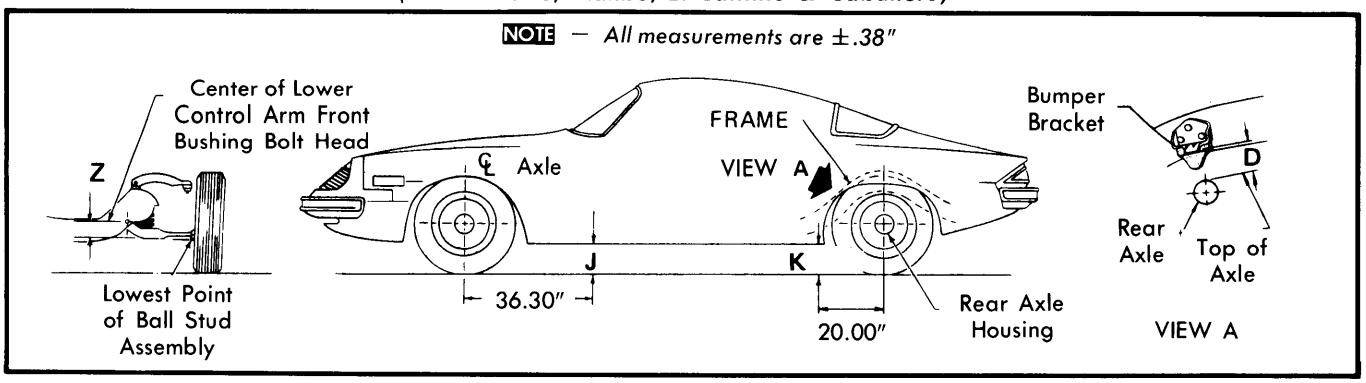

Fig. 20 Riding Height Measuring Points (Camaro)

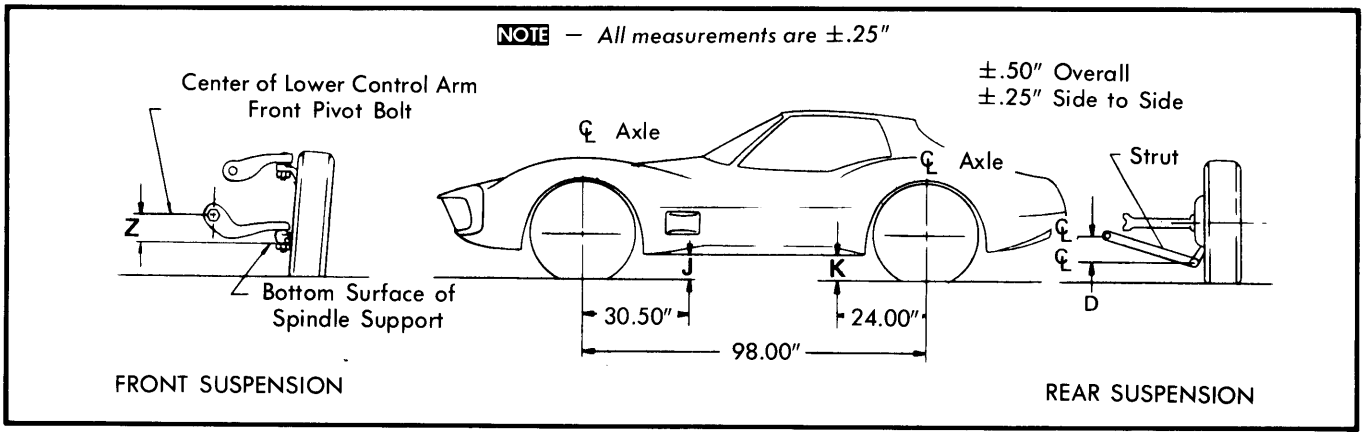

Fig. 21 Riding Height Measuring Points (Corvette)

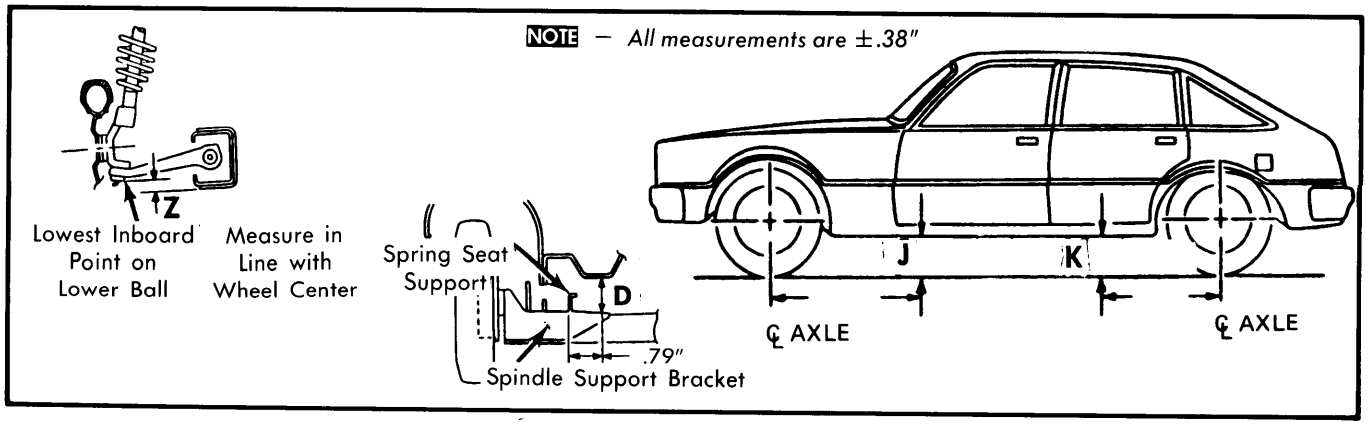

Fig. 22 Riding Height Measuring Points (Citation)

GENERAL MOTORS (Cont.)

NOTE – *All measurements are ±.38"*

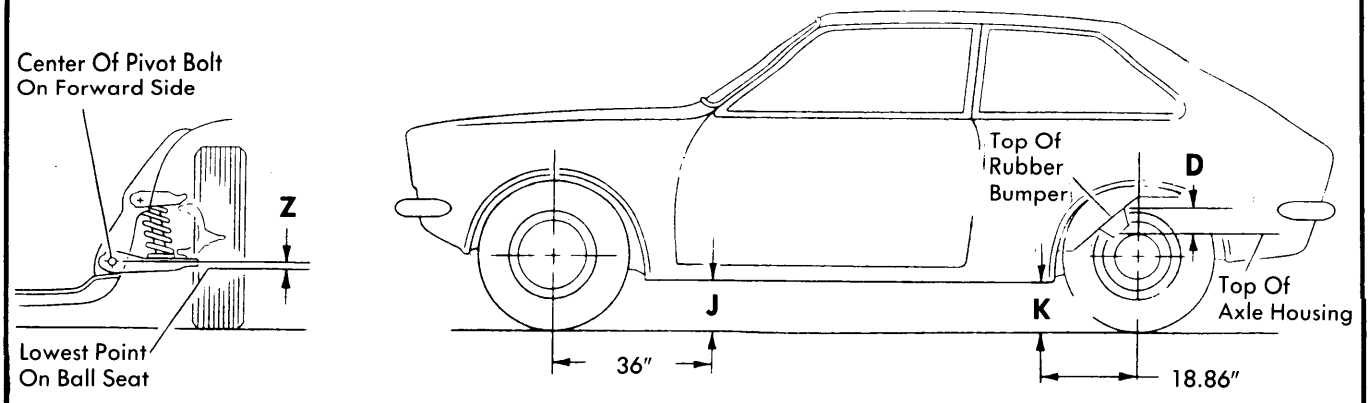

Fig. 23 Riding Height Measuring Points (Chevette)

RIDING HEIGHT SPECIFICATIONS

NOTE – *To obtain readings "Z" and "J", raise front bumper about 1 ½" and let loose. Repeat three times. Take measurements. Repeat procedure pushing bumper down 1 ½" three times and releasing. Take measurements. Average the two measurements. Follow a similar procedure to obtain measurements "D" and "K" only lift and lower rear bumper.*

Application	Tires	Z	J	K	D
Caprice & Impala	P205-75	2.55"	6.18"	10.51"	10.63"
	P225-70	2.44"	6.06"	10.51"	10.63"
	P215-75	2.36"	5.98"	10.51"	10.63"
	P225-75	2.00"	5.03"	10.55"	10.66"
Malibu					
Sedan & Coupe	P185-75R14	2.48"	5.63"	9.96"	10.28"
	P195-75R14	2.23"	5.40"	9.96"	10.28"
Wagon	P195-75R14	2.28"	5.40"	9.96"	10.28"
Monte Carlo	P185-75R14	2.08"	4.56"	9.72"	9.68"
	P195-75R14	2.08"	4.56"	9.72"	9.68"
	P205-70R14	2.36"	4.76"	9.72"	9.68"
El Camino & Caballero	P205-75R14	2.04"	4.99"	9.92"	10.31"
Camaro	P205-75R14	2.10"	4.77"	8.20"	7.85"
	P255-70R15	1.43"	4.08"	8.20"	7.85"
	P205-75R14	2.10"	4.77"	8.20"	7.85"
Corvette	P225-70R15	2.67"	2.91"	8.68"	8.57"
	P225-60R15	2.85"	3.08"	8.68"	8.57"
Chevette					
Coupe	P155-80R13	2.36"	5.43"	9.01"	8.85"
	P175-70R13	2.32"	5.74"	9.01"	8.85"
Sedan	P155-80R13	2.40"	5.47"	9.01"	8.85"
	P175-70R13	2.36"	5.47"	9.01"	8.85"
Citation	P185-80R13	.31"	9.17"	9.25"	7.40"
	P205-70R13	.51"	9.17"	9.25"	7.56"
	P215-60R13	.51"	9.17"	9.25"	7.59"

GENERAL MOTORS (Cont.)

CAMBER

All Models (Except Chevette and Citation) – Loosen nuts holding upper control arm pivot shaft to frame. Add equal number of shims at both front and rear bolts to decrease positive camber, or subtract shims to increase camber. Tighten nut on thinner shim pack first, then tighten remaining nut and recheck camber. Normal shim pack will leave at least 2 threads of bolt exposed beyond nut. If difference in thickness between front and rear shim packs exceeds .40", check for damaged control arms and related parts.

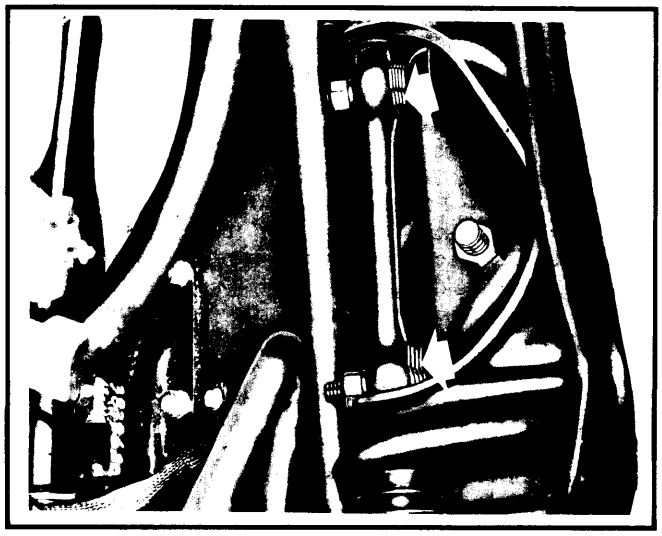

Fig. 24 Caster and Camber Adjusting Shims (Except Chevette and Citation)

Citation – To adjust camber, loosen nuts on cam and through bolts, then rotate cam bolt to move upper knuckle in or out. Cam must be seated between inner and outer guide surfaces. Check camber and tighten nuts to 140 ft. lbs.

NOTE – *Top bolt must be loose whenever camber is adjusted or damage to outer cam guide may occur.*

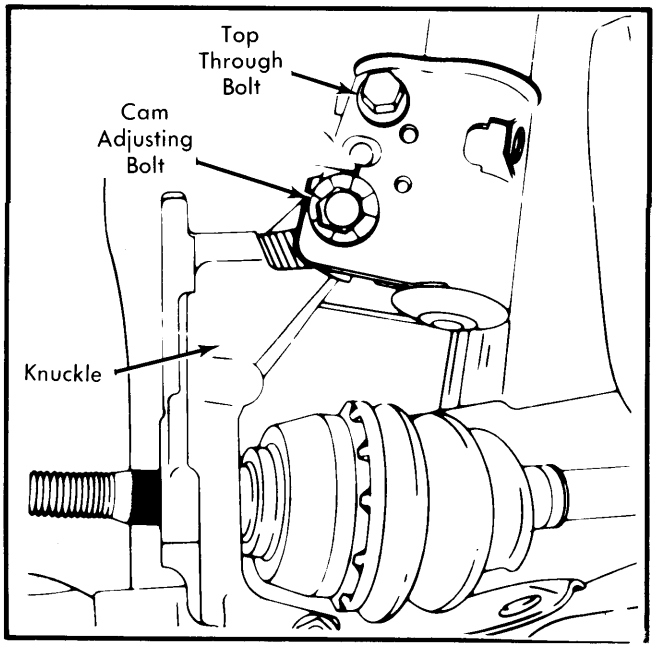

Fig. 25 Camber Adjustment (Citation)

Chevette – Remove upper ball joint, rotate one half turn and reinstall with flat surface of upper flange facing inboard side of the control arm. This will increase camber angle approximately 1°. See *Fig. 26*.

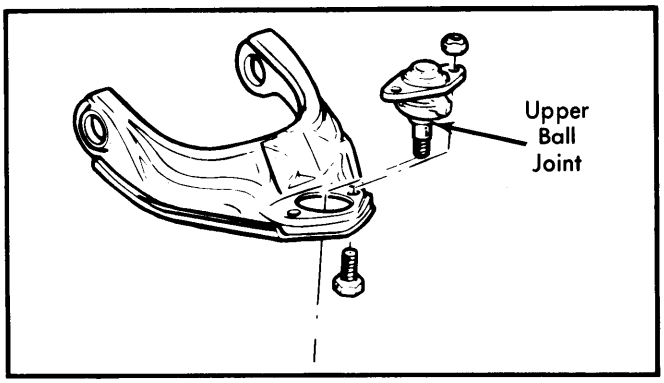

Fig. 26 Chevette Camber Adjustment

CASTER

NOTE – *Citation – Caster is set at the factory and cannot be adjusted.*

All Models (Except Chevette and Citation) – Loosen nuts holding upper control arm pivot shaft to frame. To decrease caster, add shims to front bolt and remove from rear bolt. To increase positive caster, remove shims from front bolt and add to rear. Difference between front and rear shim pack thickness must not exceed .40".

Chevette – Adjust caster by realigning washers located between legs of upper control arm and locating tube. Always use 2 washers with a combined thickness of .472". If a .12" washer is installed at front and a .35" washer at rear, it will change caster +1°. If reversed with a .35" washer at front and a .12" washer at rear, caster will change −1°. See *Fig. 27*.

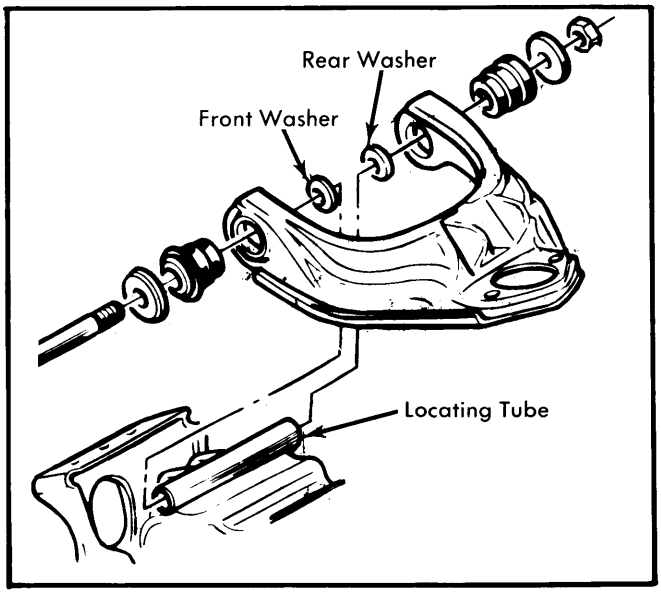

Fig. 27 Chevette Caster Adjustment