GENERAL MOTORS (Cont.)

CASTER

NOTE – *Refer to Fig. 15 in CADILLAC section for caster and camber adjustment on all models except Skyhawk.*

All Models (Exc. Skyhawk) – 1) Loosen nuts and bolts attaching upper control arm to frame. To increase caster (positive), remove shims from front bolt and add them to rear bolt. To decrease caster (negative), add shims to front bolt and remove them from rear bolt.

2) Tighten control arm shaft nuts to 75 ft. lbs. on Skylark models. On all other models, tighten bolts to 125 ft. lbs. and nuts to 95 ft. lbs. Recheck caster adjustment.

Skyhawk – Loosen lower control arm rear pivot nut and rotate cam until specified caster setting is obtained. This moves the lower control arm forward or rearward. Hold cam bolt head while tightening pivot nut to 125 ft. lbs. Recheck camber setting and toe-in.

CAMBER

NOTE – *Refer to Fig. 15 in CADILLAC section for caster and camber adjustment on all models except Skyhawk.*

All Models (Exc. Skyhawk) – 1) Loosen nuts and bolts attaching upper control arm to frame. To increase camber (positive), remove equal amount of shims from front and rear bolts. To decrease camber (negative), add equal amount of shims to front and rear bolts.

2) Tighten upper control arm shaft nuts to 75 ft. lbs. on Skylark models. On all other models, tighten nuts to 95 ft. lbs.

Skyhawk – Set camber before setting caster or toe-in. Loosen lower control arm front pivot nut and rotate cam until specified camber setting is obtained. This moves control arm in and out. Hold cam bolt head and tighten nut to 125 ft. lbs.

REAR WHEEL ALIGNMENT (RIVIERA)

See CADILLAC, Rear Wheel Alignment (Eldorado & Seville)

CADILLAC

TIRE INFLATION (COLD)

Before checking wheel alignment, ensure that tires are inflated to manufacturer's 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 (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 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 (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 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 0°, 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*.

GENERAL MOTORS (Cont.)

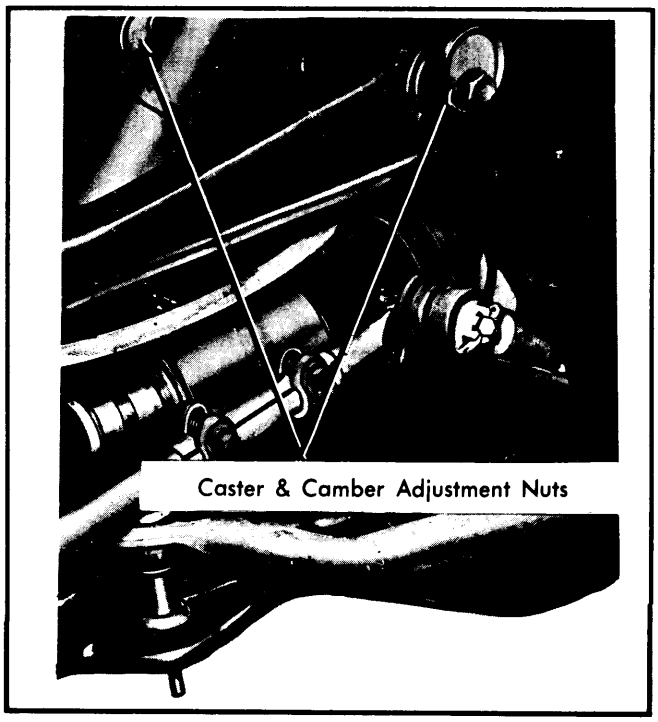

Fig. 14 Eldorado & Seville Caster & Camber Cam Locations

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".*

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 Riveria and Oldsmobile Toronado use the same rear 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.

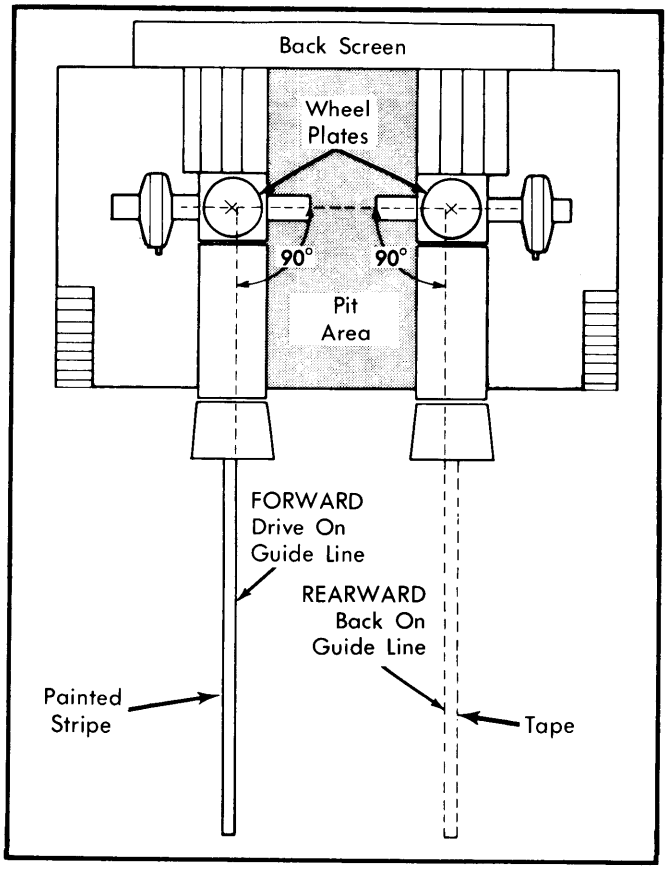

Fig. 16 Typical Alignment Machine Set Up For Eldorado & Seville Rear Wheel Alignment

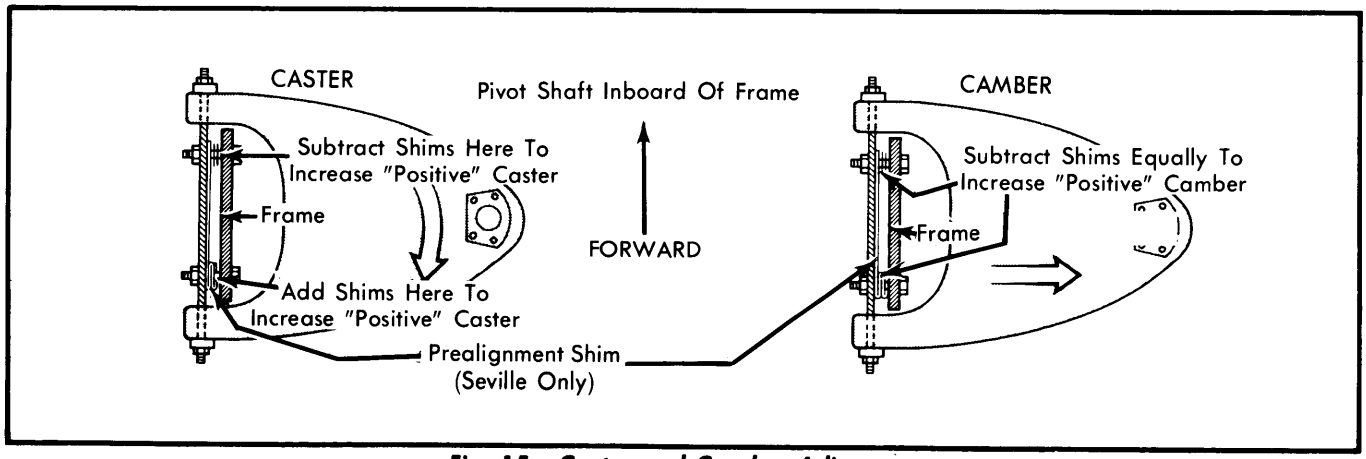

Fig. 15 Caster and Camber Adjustment (All Models Exc. Eldorado & Seville)

GENERAL MOTORS (Cont.)

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

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

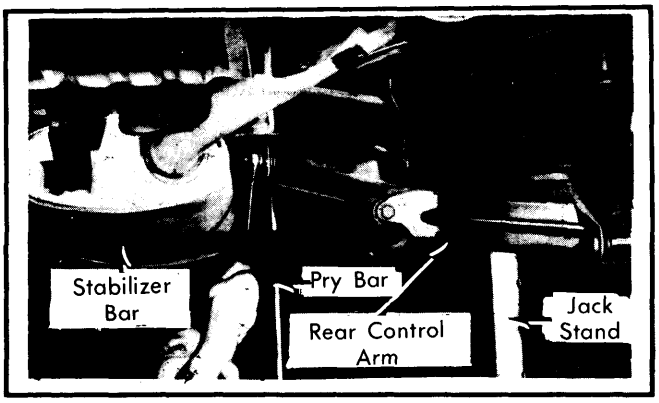

Fig. 17 Adjusting Rear Wheel Alignment (Eldorado & Seville)

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.

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.*

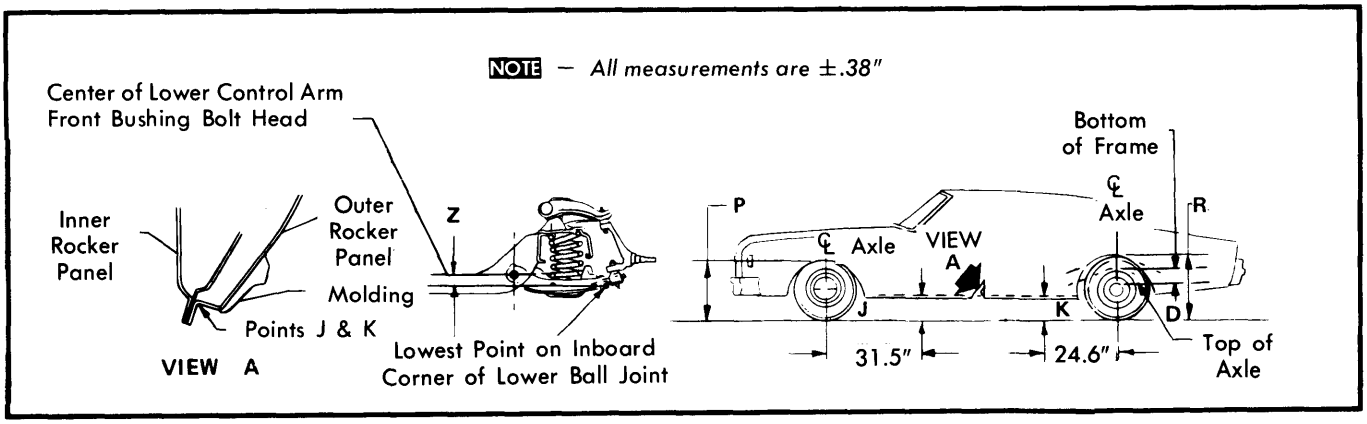

Fig. 18 Riding Height Measuring Points (Caprice & Impala)

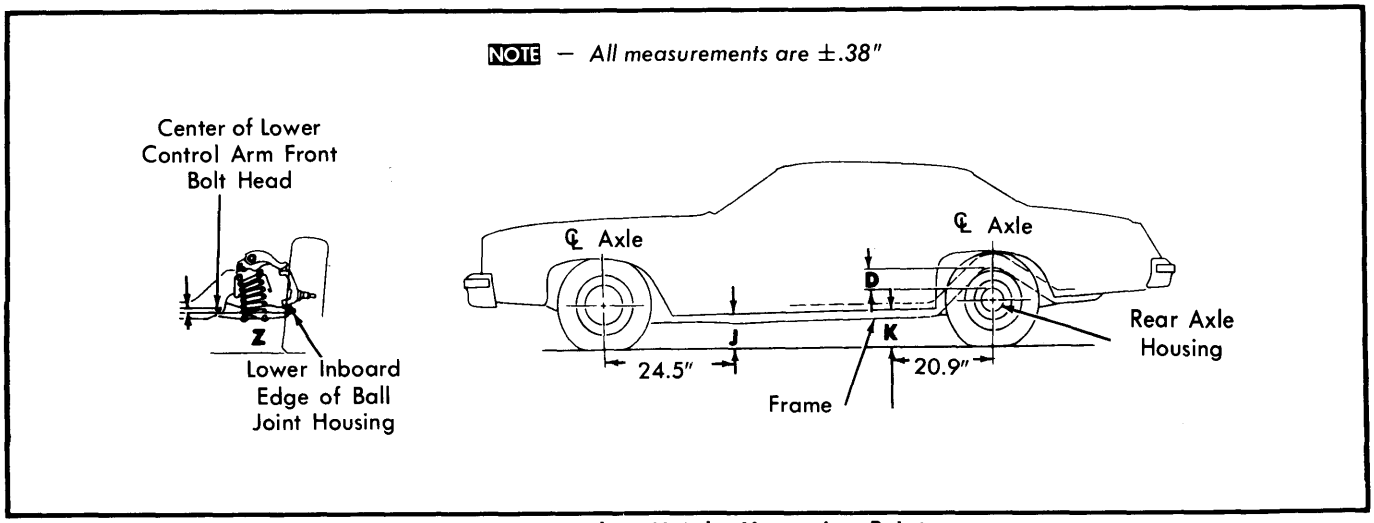

Fig. 19 Riding Height Measuring Points (Monte Carlo, Malibu, El Camino & Caballero)

GENERAL MOTORS (Cont.)

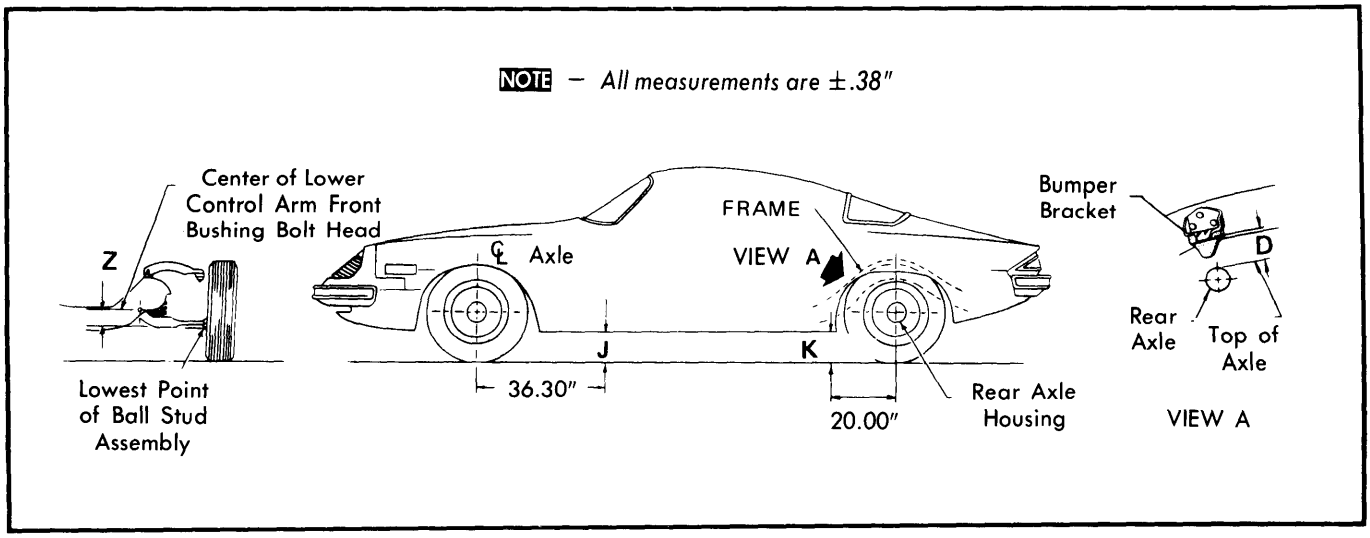

Fig. 20 Riding Height Measuring Points (Camaro & Berlinetta)

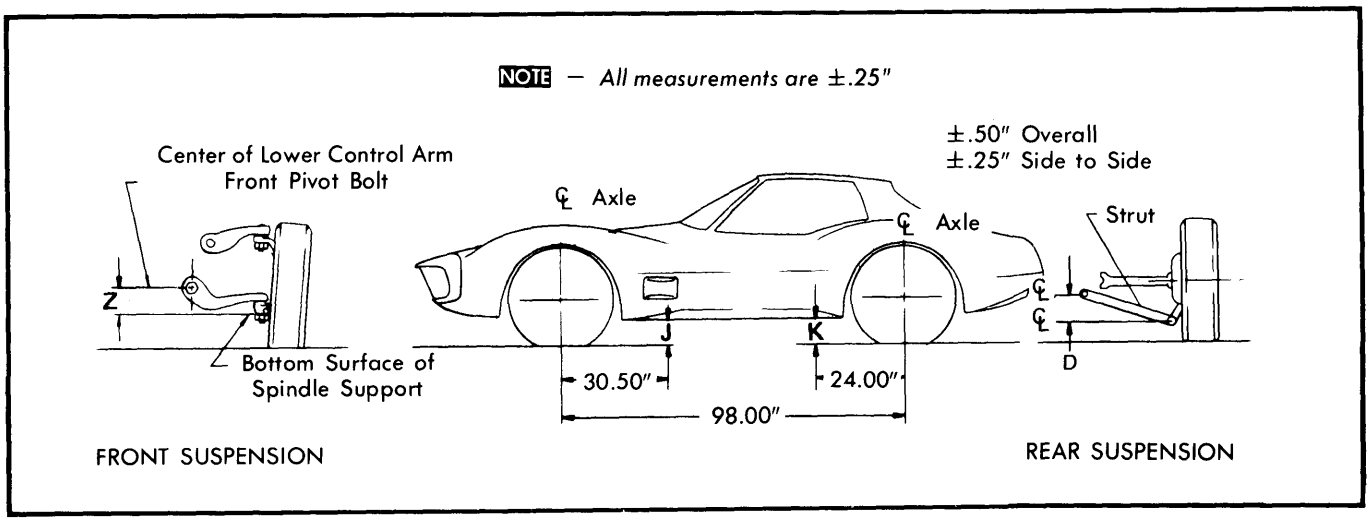

Fig. 21 Riding Height Measuring Points (Corvette)

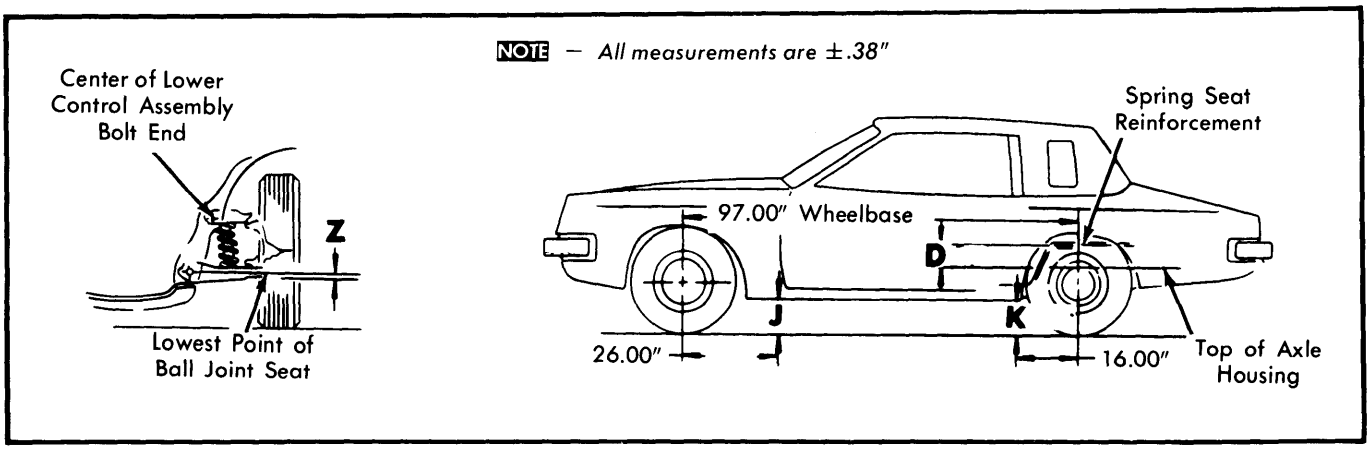

Fig. 22 Riding Height Measuring Points (Monza)

GENERAL MOTORS (Cont.)

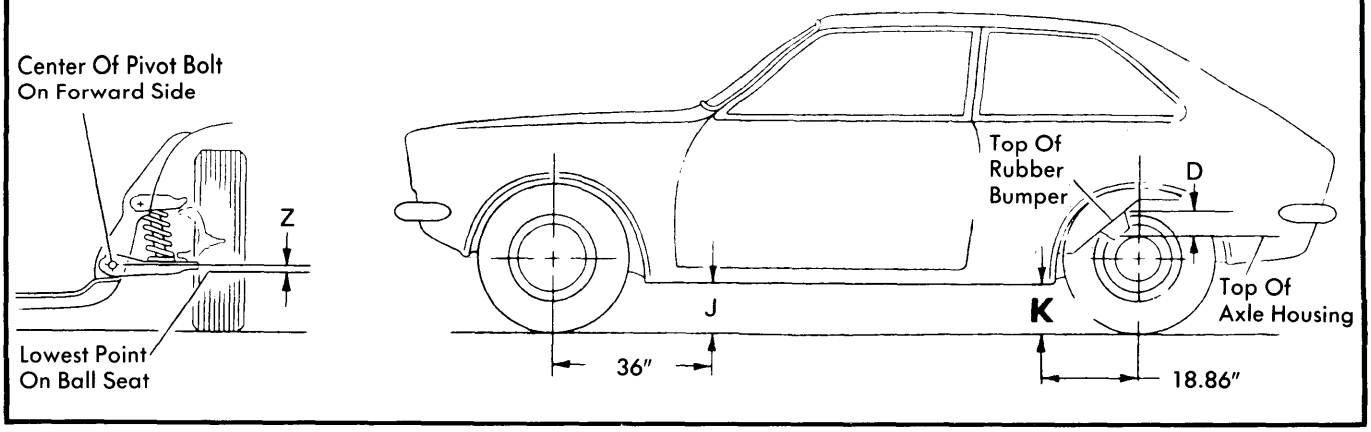

Fig. 23 Riding Height Measuring Points (Chevette)

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	P205-70R14	2.36"	4.76"	9.72"	9.68"
El Camino & Caballero	P205-75R14	2.04"	4.99"	9.92"	10.31"
Camaro & Berlinetta	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"
Monza					
Coupe & Hatchback					
4 Cyl.	A78-13	2.28"	10.16"	7.75"	7.75"
	B78-13	2.13"	10.03"	7.75"	7.75"
	BR70-13	2.24"	10.12"	7.75"	7.75"
V6	B78-13	2.18"	10.03"	7.75"	7.75"
	BR70-13	2.32"	10.09"	7.75"	7.75"
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"
	P155-80R13	2.40"	5.47"	9.01"	8.85"
Sedan	P175-70R13	2.36"	5.47"	9.01"	8.85"

GENERAL MOTORS (Cont.)

CAMBER

All Models (Exc. Monza, Chevette and Citation) – Loosen bolts and nuts attaching upper control arm shaft to frame. Adding an equal number of shims at both front and rear bolts will decrease positive camber, while subtracting an equal number of shims will increase camber. Tighten bolts when adjustment is completed. *See Figs. 24 and 25.*

NOTE – *Normal shim pack will leave at least 2 threads of bolt exposed beyond nut. Also, difference between front and rear shim packs must not exceed .40".*

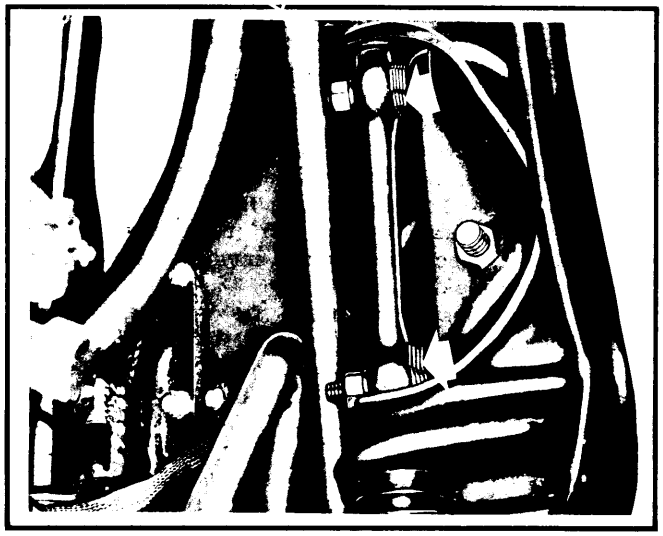

Fig. 24 Caster and Camber Adjusting Shims (Exc. Corvette, Monza and Chevette)

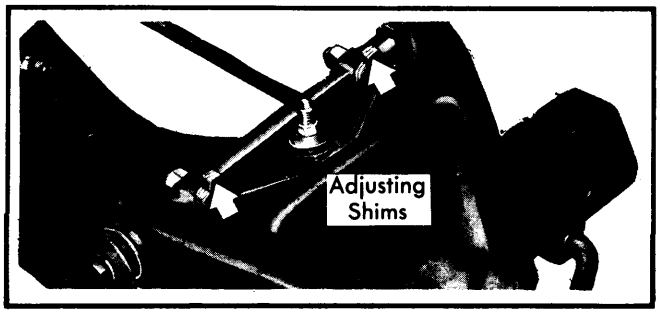

Fig. 25 Caster and Camber Adjusting Shims (Corvette)

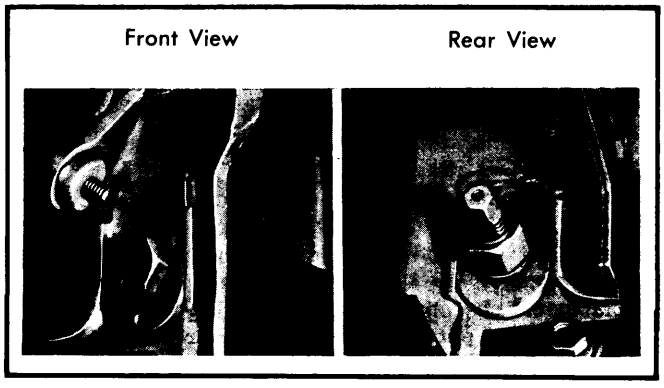

Fig. 26 Caster and Camber Adjustment (Monza)

Monza – To adjust camber, loosen front lower control arm pivot nut and rotate cam until proper setting is obtained. Eccentric cam action will move lower arm in or out. Hold cam bolt head stationary and tighten nut. *See Fig. 26.*

Citation – To adjust camber, loosen the cam and through bolts, then rotate cam until proper setting is obtained.

NOTE – *Top bolt must be loose whenever a camber adjustment is attempted or damage of the outer cam guide may result.*

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. 27.*

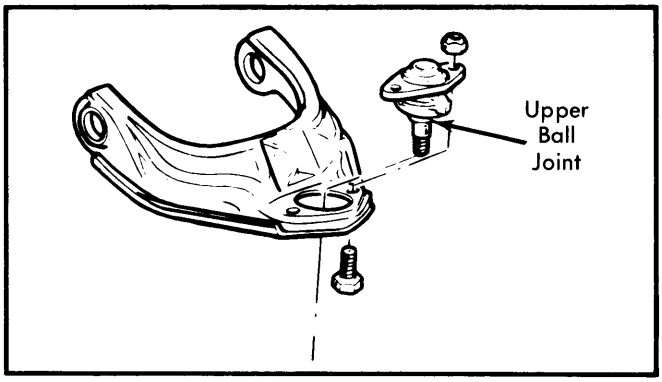

Fig. 27 Chevette Camber Adjustment

CASTER

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

All Models (Exc. Monza and Chevette) – Loosen bolts and nuts attaching upper control arm shaft to frame. To decrease caster, add shims to front bolts and remove shims from rear bolt. To increase caster, remove shims from front bolt and add shims to rear bolt. Tighten attaching bolts when adjustment is complete. *See Figs. 24 and 25.*

NOTE – *Normal shim pack will leave at least two threads of bolt exposed beyond nut. Difference between front and rear shim packs must not exceed .40".*

Monza – To adjust, loosen rear lower control arm pivot nut and rotate cam until proper setting is obtained. Cam will move lower control arm forward or rearward. Hold cam bolt stationary and tighten nut. Recheck camber after setting caster. *See Fig. 26.*

Chevette – Adjust caster by realigning washers located between legs of upper control arm. *See Fig. 28.*

NOTE – *Always use 2 washers with a combined thickness of .472". If a .12" washer is installed at front and .35" washer at rear it will change caster +1°. If reversed with .35" washer at front and .12" washer at rear it will change caster by −1°.*