

# Wheel Alignment

## FIAT (Cont.)

**Model X1/9 Front & Rear** – Camber is nonadjustable. If not within specifications, inspect suspension for damage and repair or replace parts as necessary.

shims. To increase toe-in, add shims to rear screw or remove shims from front screw. To decrease, add shims to front screw or remove shims from rear screw.

### TOE-IN

**Model 128, 131 & X1/9 Front** – Place front wheels in straight-ahead position. If toe-in is not within specifications, loosen sleeve locking nut on tie rods. To adjust, rotate hexagon on ball pin to set toe-in to specifications. Hold hexagon in position and lock nut against tie rod sleeve.

**Model 124 Front** – Place front wheels in straight-ahead position. If toe-in is not within specifications, loosen four clamps securing sleeves on tie rods. Rotate tie rods in opposite direction (by equal amounts) to set toe-in to specifications. Tighten clamp nuts. **NOTE** – Expansion slot in sleeve must coincide with clamp joint when clamp is fully tightened.

**Model 128 Rear** – If rear toe-in is not within specifications raise rear of vehicle and compress one end of leaf spring, shifting it from flexible guide anchoring spring to control arm. Remove guide and slowly release spring. Remove nuts attaching pivot to body and loosen screws to free adjustment

**Model X1/9 Rear** – If rear wheel toe-in is not within specifications, loosen clamps securing sleeves to reaction rods. Adjust toe-in by lengthening or shortening reaction rods. Tighten clamps and recheck toe-in.

## HONDA

### ADJUSTMENT

#### TIRE INFLATION (COLD)

Before checking or adjusting wheel alignment, make sure tires are correctly inflated. Refer to manufacturers specifications located in glove box.

#### CASTER

Caster is nonadjustable. If alignment is not within specifications, inspect for damaged parts and replace as necessary.

#### RIDING HEIGHT

Make sure tires are properly inflated. Measure from bottom of side marker lamps to ground. If height measurement is not within specifications, check rear height before attempting to repair front suspension.

#### CAMBER

Camber is nonadjustable. If alignment is not within specifications, inspect for damaged parts and replace as necessary.

#### Riding Height Specifications

Application	Front	Rear
Civic.....	25.78"..... (655 mm).....	24.01"..... (610 mm)
CVCC		
Sedan.....	24.2"..... (615 mm).....	20.7"..... (525 mm)
Station Wgn.....	24.2"..... (615 mm).....	23.5"..... (598 mm)
Accord.....	24.0"..... (610 mm).....	25.4"..... (645 mm)

#### TOE-OUT

**Front, CVCC and Accord** – Loosen lock nuts at each end of tie rods. Turn tie rod until toe-out is within specifications. Use same procedure for both sides. To center steering wheel after toe has been adjusted, turn both tie rods in same direction until steering wheel (spokes) are centered. Tighten lock nuts.

#### TOE-IN

**Rear, CVCC and Accord** – To adjust toe-in, loosen nuts on radius rods. Rotate radius rods until toe-in is within specifications, then tighten lock nuts. **NOTE** – Each notch on cam plate is equal to  $\frac{5}{64}$ " movement.

## JAGUAR

### ADJUSTMENT

#### TIRE INFLATION (COLD)

Before attempting to check or adjust wheel alignment, make sure tires are properly inflated. Refer to owner's manual for manufacturer's specifications.

#### RIDING HEIGHT

**All Models (Front)** – 1) Check that vehicle is full of fuel, oil, and water, and that tires are properly inflated. Press down on front bumper and slowly release, then lift up on bumper and slowly release, this will settle front suspension.

## JAGUAR (Cont.)

- 2) On XJ6 and XJ12 models, measure distance between center of outer headlight and ground on both sides of vehicle. Height should be 24.6" (611 mm) minimum.
- 3) On XJS models, measure distance between lower face of crossmember and ground on both sides. Height should be 6.0" (152 mm) minimum, plus thickness of slip plates.
- 4) On all models, adjust by installing or removing spring spacers from front coil springs. **NOTE** — Spring spacers are  $\frac{1}{8}$ " (3.2 mm) thick and will change riding height approximately  $\frac{7}{16}$ " (7.9 mm).

**All Models (Rear)** — Check that vehicle is full of gasoline, water and oil, and that tires are properly inflated. Roll vehicle forward three car lengths to settle suspension system. Measure distance between lower surface of rear crossmember and ground on both sides of vehicle. Correct height should be  $7.45 \pm .25$  (189  $\pm$  6 mm). If height is correct, it will be unnecessary to proceed further, however if height is incorrect, all four rear springs will need to be replaced.

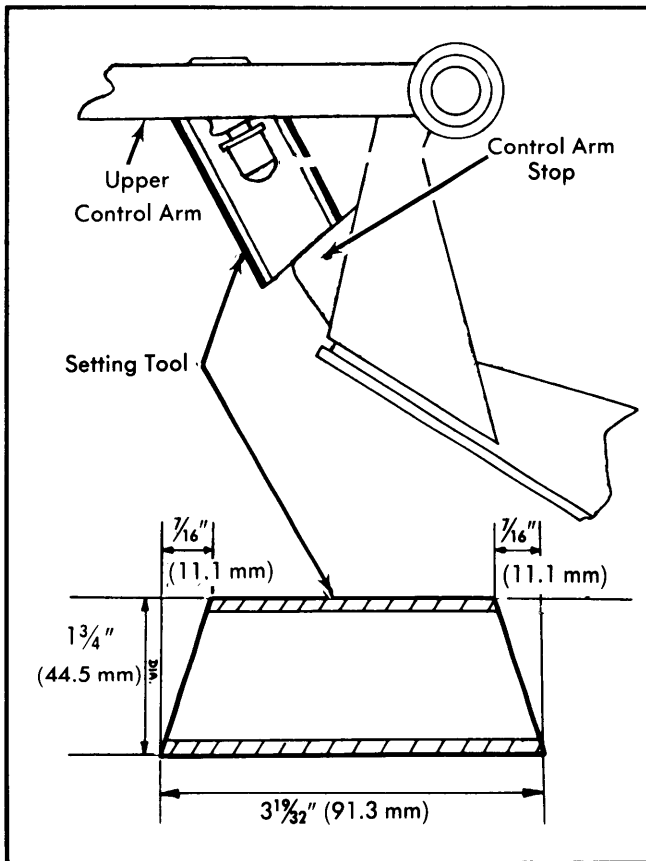


Fig. 1 Dimensions for Fabricating the Two Necessary Setting Tools

### PREPARATION FOR CASTER & CAMBER ADJUSTMENT

- 1) Ensure vehicle is on level ground and that tires are properly inflated. Before checking or adjusting caster or camber it will be necessary to fabricate two setting tools (See Fig. 1).

- 2) Compress front suspension and insert tools under upper control arms, adjacent to control arm rubber stops and over brackets welded to bottom of control arms.
- 3) Compress rear suspension and install suitable suspension setting links (J. 25), to lock rear suspension in place (See Fig. 2). Vehicle is now locked in half-loaded condition and caster and camber can be checked and adjusted.

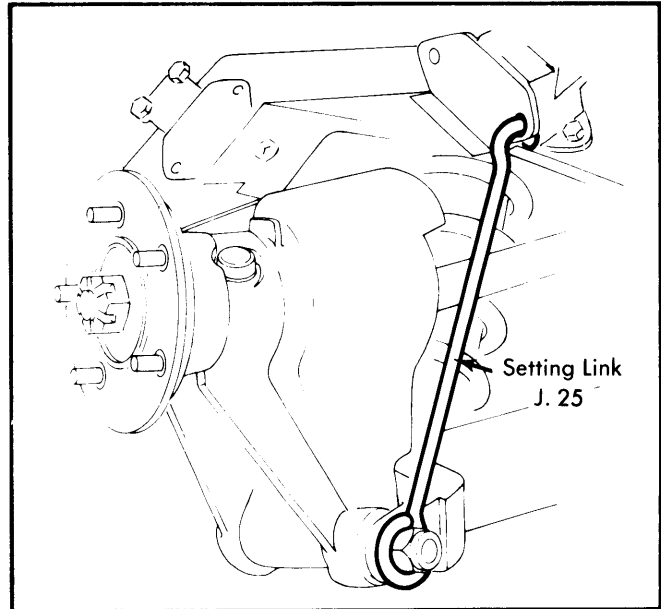


Fig. 2 Rear Suspension in Locked Position with Special Tool

### CASTER

**NOTE** — Before adjusting caster angle, make sure car is standing at normal riding height.

**All Models** — If caster angle is not within specifications, adjust by moving shims on front and rear of upper control arm ball joint. To increase caster, loosen bolts securing upper ball joint and move shims from rear of ball joint to front of ball joint. To decrease caster, reverse procedure. Tighten ball joint attaching bolts and recheck caster angle.

### CAMBER

**NOTE** — Before attempting to check or adjust camber angle it will be necessary to make sure that vehicle is in half-loaded condition.

**All Models (Front)** — With wheels in straight-ahead position, measure camber angle. **NOTE** — Two front wheels must be within  $\frac{1}{4}$ ° of each other. Adjustment is accomplished by means of shims placed between control arm mounting bracket and the frame. Adding shims increases camber angle. **NOTE** — Be sure to use the same number of shims on each bolt, otherwise caster angle will be affected.

**All Models (Rear)** — Before checking rear wheel camber, rear suspension must be in the half-loaded position. See Preparation for Caster & Camber Adjustment. To adjust, remove suspension setting links (JD.25), raise and support rear of vehicle and remove wheels. Loosen nuts securing half-shaft to brake disc, then add or remove shims as required to bring camber angle within specifications. **NOTE** — Addition of one

# Wheel Alignment

## JAGUAR (Cont.)

.020" (.5 mm) shim will alter camber 1/4°. Retighten nuts and bolts and check camber angle.

### TOE-IN

**All Models** – Place vehicle in straight-ahead position. Remove grease nipple from rack adjuster nut. Put centralizing

tool 12279 (or equivalent) into locating hole. Push tool on to back of rack bar. Slowly turn steering wheel until tool drops into back of rack bar. Measure toe-in. If toe-in is not within specifications, adjust by loosening steering link lock nuts and rotating adjuster sleeves equal amounts, as necessary. Tighten lock nuts and recheck toe-in.

### ADJUSTMENT

#### TIRE INFLATION

Before checking or adjusting wheel alignment, ensure tires are correctly inflated. Refer to manufacturers specifications located in glove box or on right hand door jam.

#### RIDING HEIGHT

1) Place vehicle on smooth level surface. Bounce vehicle several times. Raise vehicle and allow to settle at normal height. Measure distance as shown in Fig. 1 and 2.

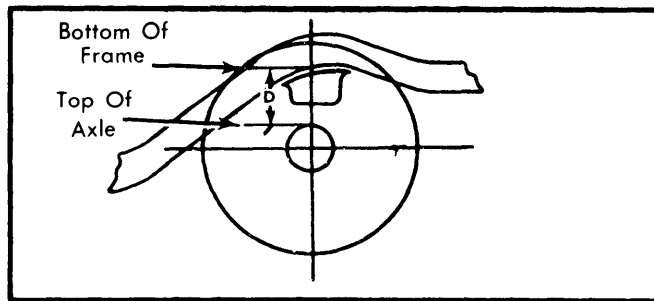


Fig. 1 Rear Suspension Riding Height Measuring Point

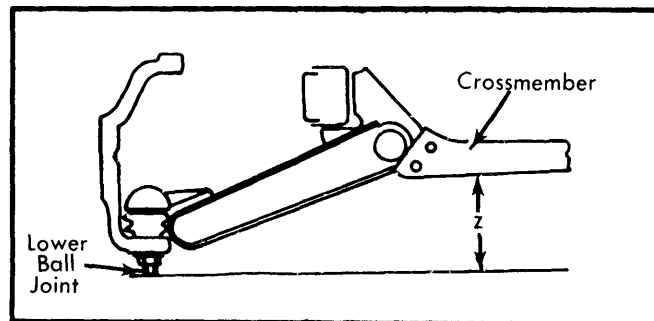


Fig. 2 Front Suspension Riding Height Measuring Point

### LUV

**NOTE** – Height check should be made with a full tank of gas, spare tire installed, and jack included. No passengers should be in vehicle.

2) Difference between measurements of each side must not be more than 1/2". If an adjustment is necessary, it can be made at bolt on height control arm.

#### Riding Height Specifications

Application	Front	Rear
LUV	4.6"	6.0"

### CASTER

Adjustment is made with shims inserted between upper control arm pivot shaft and frame. Adding or subtracting shims from either front or rear bolts will effect a change in caster. Shims may be transferred from front to rear or from rear to front. Transfer of one shim from front bolt to rear bolt will decrease positive caster. For correct specifications, refer to table.

### CAMBER

Camber is adjusted by adding or subtracting shims. Adding an equal number of shims at both front and rear of pivot shaft will decrease positive camber. For correct specifications, refer to table.

### TOE-IN

**NOTE** – Toe-in must be adjusted after caster and camber adjustment.

Toe-in can be adjusted by rotating the intermediate rod after loosening lock nuts. Rotating intermediate rod towards front of vehicle reduces toe-in and towards rear of vehicle increases toe-in. For correct specifications, refer to specifications table.

## MAZDA

### ADJUSTMENT

#### TIRE INFLATION (COLD)

Before attempting to check or adjust wheel alignment, make sure tires are properly inflated. Refer to manufacturer's specifications given in owner's manual.

### CASTER

**808 & RX3** – Caster is not adjustable. If caster angle is not to specifications, inspect suspension for wear or damage and repair or replace components as necessary.

**RX4 and Cosmo** – Caster and camber angles are adjusted by changing position of shock absorber support. To adjust,