

# Wheel Alignment

## MAZDA (Cont.)

remove four nuts attaching shock absorber support to fender apron. Raise front of vehicle and support with jack stands, then remove wheel on side to be adjusted.

2) Press shock absorber downward and change position of support according to table and Fig. 1. Tighten shock absorber support mounting nuts. Install wheel, lower vehicle and recheck caster and camber.

Caster and Camber Adjustment			
Adjustment		Variation	
	Shock Absorber Support	Caster	Camber
A	0	0	0
B	90°	½ °	0
C	180°	½ °	½ °
D	-90°	0	½ °

**Pickup** — To adjust, change shims between upper arm shaft and support bracket or turn upper arm shaft until specifications are obtained.

### CAMBER

**808, RX3SP & GLC** — Camber is not adjustable. If camber is not to specifications, inspect suspension for wear or damage and repair or replace components as necessary.

**RX4 and Cosmo** — See procedure given under Caster adjustment.

**Pickup** — To adjust, change shims between upper arm shaft and support bracket until specifications for camber are within limits.

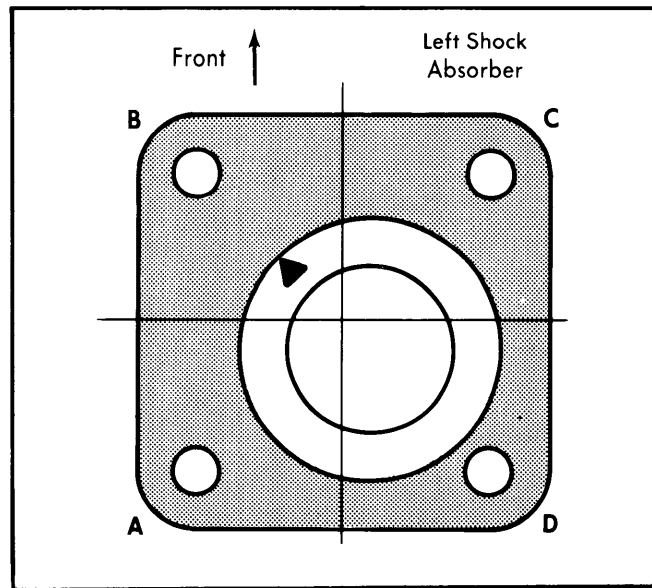


Fig. 1 RX4 & Cosmo Caster and Camber Adjusting Pad (Position "B" Shown)

### TOE-IN

**All Models** — 1) Raise front of vehicle. Turn wheels by hand and mark a line in center of each tire tread. Place vehicle in straight-ahead position and lower vehicle to ground.

2) Measure distance between marked lines at both front and rear of wheel. Make sure measurements are made equal distances from ground. Distance at rear of wheel should be .24" (6 mm) more than that at front wheels. Loosen lock nuts and turn tie rods until adjustment is correct.

## MERCEDES-BENZ

### ADJUSTMENT

#### TIRE INFLATION (COLD)

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

### CASTER

**All Models (Front)** — Test under loaded condition. Load vehicle with two 143 lb. weights on rear seat and full tank of gasoline. If caster is not to specifications, loosen lock nut on eccentric bolt on front side of lower control arm. To adjust, rotate eccentric bolt until caster angle is to specifications. Hold eccentric bolt in place and tighten lock nut.

### ADJUSTMENT

#### TIRE INFLATION (COLD)

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

### CAMBER

**All Models (Front)** — Test under loaded condition. Load vehicle with two 143 lb. weights on front seat, one 143 lb. weight on rear seat and full tank of gasoline. If camber is not to specifications, loosen lock nut of eccentric bolt on rear side of lower control arm. To adjust, rotate eccentric bolt until camber is within specifications. Hold eccentric bolt in place and tighten lock nut.

### TOE-IN

**All Models (Front)** — Place wheels in straight-ahead position. If toe-in is not within specifications, adjust by loosening lock nuts on outer steering links and rotating links to obtain specified toe-in. Make sure steering links are adjusted equally.

## MG

**NOTE** — All checks must be made with vehicle unloaded, tires properly inflated and steering wheel in straight-ahead position. Before making checks, ensure suspension components are in good condition. If necessary, repair damaged components before making wheel alignment checks.

## MG (Cont.)

### CASTER

**All Models** – Caster is nonadjustable. If alignment not within specifications, inspect for damaged suspension parts and repair or replace as necessary.

### CAMBER

**All Models** – Camber is not adjustable. If alignment is not within specifications, inspect suspension parts for wear or damage and repair or replace components as necessary.

## 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

1) If caster is not within specifications, adjust by changing washers on upper control arm shaft. Raise vehicle and place jack stands under lower control arms. Remove wheel on side which requires caster adjustment.

**NOTE** – The replacement of washers requires the same diameter as those being changed and a combination such that the total thickness of front and rear equals 12 mm. If specifications are not achieved, frame alignment is required.

2) Loosen hex. nut from upper control arm shaft and remove shaft. Adjust caster by replacing washers on control arm shaft. Put smaller washer on leg nearest front of vehicle.

## 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

Caster angle is not adjustable. If not to specifications, check suspension system for wear or damage and repair or replace components as necessary.

## 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.

### TOE-IN

**All Models** – Turn front wheels to straight-ahead position and check toe-in measurement. Move vehicle ahead so front wheels rotate 180° and take second reading. Take average of two readings to check toe-in. If not within specifications, loosen lock nut for each tie rod and loosen clips securing rubber gaiters to tie rods. To adjust, rotate both tie rods equally to set toe-in to specifications. **NOTE** – Tie rods must be equal lengths. Tighten lock nuts and clips on tie rods.

## OPEL

### CAMBER

Raise front of vehicle and place jack stands below lower control arms. Remove wheel on side to be adjusted. Remove ball joint from upper control arm and front steering knuckle. To adjust camber, lift upper control arm and rotate ball joint flange 180°. **NOTE** – Only two adjustments are possible. Rotating ball joint flange will make camber more negative.

### TOE-IN

1) Position front wheel in straight-ahead position. Remove clamp on tie rod bellows and push bellows back. Loosen tie rod clamping bolts. To adjust, rotate tie rod sleeves equally to obtain specified toe-in. **NOTE** – Never grip tie rod on inner ball joint stud.

2) Pull bellows over tie rods and secure wire clamps. Bellows must not be twisted and wire ends showing towards steering gear adjusting screw opening. Tighten clamp bolts. Rotate wheel back and forth several times to check bellows for correct attachment to tie rods.

## PEUGEOT

### CAMBER

Camber angle is not adjustable. If not to specifications, check suspension system for wear or damage and repair or replace components as necessary.

### TOE-IN

Position wheels in straight-ahead position. If toe-in is not to specifications, loosen clamping bolts on the two steering links. To adjust, rotate two steering links simultaneously in either direction necessary to obtain specified toe-in. Tighten clamping bolt and recheck toe-in.

## PORSCHE

### RIDING HEIGHT

**NOTE** – Riding height should be set with full tank of gasoline and spare tire included.

**All Models (Front)** – Checking or adjusting riding height can only be performed with vehicle on level surface. Mark center of front wheel hub cap (grease retainer cup). Bounce vehicle several times to settle suspension. Measure distance "a" as shown in illustration, then measure distance "b". Difference

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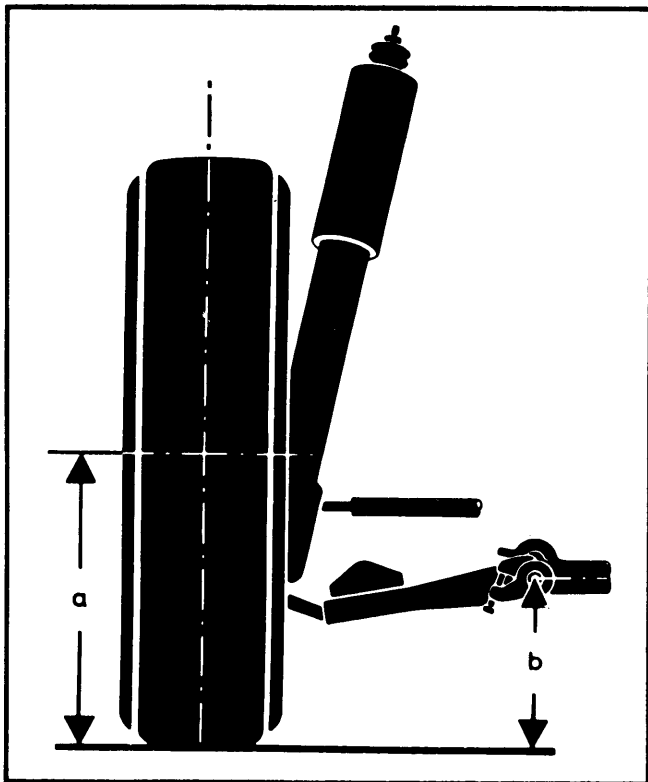
## PORSCHE (Cont.)

between "a" and "b" should be to specifications. If necessary to adjust, loosen or tighten torsion bar adjusting bolt until correct height is obtained. Bounce vehicle several times and recheck height. **NOTE** — Difference between right and left measurement must not exceed .20".

### Riding Height Specifications<sup>①</sup>

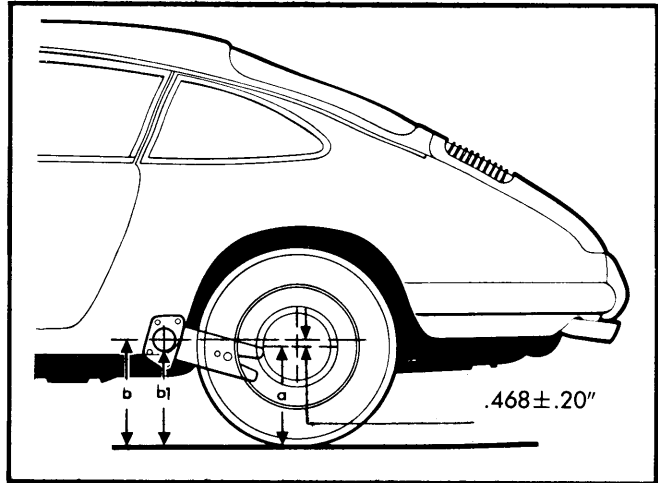
Application	Front	Rear
911/S .....	4.25±.20" (108±5 mm)	.468±.20" (12±5 mm)
Turbo Carrera .....	3.3±.20" (84.5±5 mm)	1.5±.20" (37±5 mm)
924 .....	②	②

- ① — Measurement is expressed as difference between "a" and "b".
- ② — No specifications are available for Model 924.



**Fig. 1 Front Suspension Riding Height Measuring Points**

**911 Series (Rear)** — Checking or adjusting riding height can only be performed with vehicle on level surface. Mark center of rear wheel. Bounce vehicle several times to settle suspension. Measure distance "a" as shown in illustration. Distance "a" plus .468" (12 mm) equals "b"; however, distance "b" is difficult to measure because the torsion bar is mounted off center in its rubber bushing. Therefore it is necessary to measure distance "b1" and add .585" (14.8 mm), radius of bushing. This total should be equal to "b". After calculating "b", difference between "a" and "b" should be .468±.20" (12±5mm). Difference in height from left to right should not exceed .197" (8 mm). If values are not within specifications, check front and rear torsion bar adjustment. Correct as required.



**Fig. 2 Porsche 911/S Rear Suspension Riding Height Measuring Points and Dimensions**

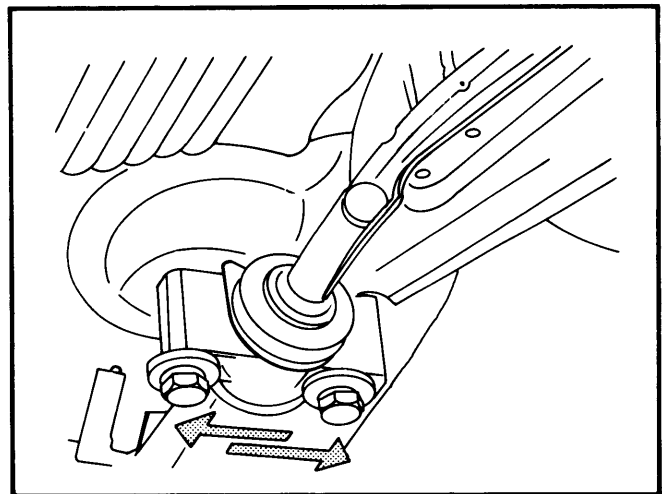
**NOTE** — Caster and Camber cannot be adjusted on vehicles up to chassis serial number 302.694, also on chassis number 302.736 and 302.805. If vehicles are not within specifications, check for damage or worn suspension parts.

### CASTER

**911 Series & Turbo Carrera** — If caster angle is not to specifications, it will be necessary to remove adjuster plate which attaches to front shock absorber. Remove enough front compartment carpet to allow access to top of each shock absorber. Mark position of each movable plate, located below each Allen screw. Loosen each screw and upper shock absorber nut. Move assembly lengthwise to obtain correct caster angle. Tighten all three screws and shock absorber nut.

**NOTE** — Movement of adjuster plate from side to side will affect camber angle.

**924** — Adjust caster by moving the rear of suspension control arm from side-to-side. See Fig. 3.



**Fig. 3 View Showing 924 Caster Adjustment**