

Wheel Alignment

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.

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.

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 shims on upper control arm shaft. Raise vehicle and place jack stands under lower control arms. Remove wheel on side which requires caster adjustment.

2) Loosen hex. nut from upper control arm shaft and remove shaft. Adjust caster by replacing shims on inside legs of control arm shaft. Make sure smaller washer is installed on leg nearest front of vehicle.

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

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.

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 left tie rod. To adjust, rotate sleeve in either direction necessary to obtain specified toe-in. **NOTE** — One turn of adjustable sleeve equals .1755". Tighten clamping bolt and recheck toe-in.

PORSCHE

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.

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

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^①

Application	Front	Rear
911/S & 912E.....	3.9 ± .20" (99 ± 5 mm)	1.5 ± .20" (37 ± 5 mm)
Turbo Carrera	3.3 ± .20" (84.5 ± 5 mm)	1.5 ± .20" 37 ± 5 mm)
914.....	3.54 ± .20" (90 ± 5 mm)	

① - Measurement is expressed as difference between "a" and "b".

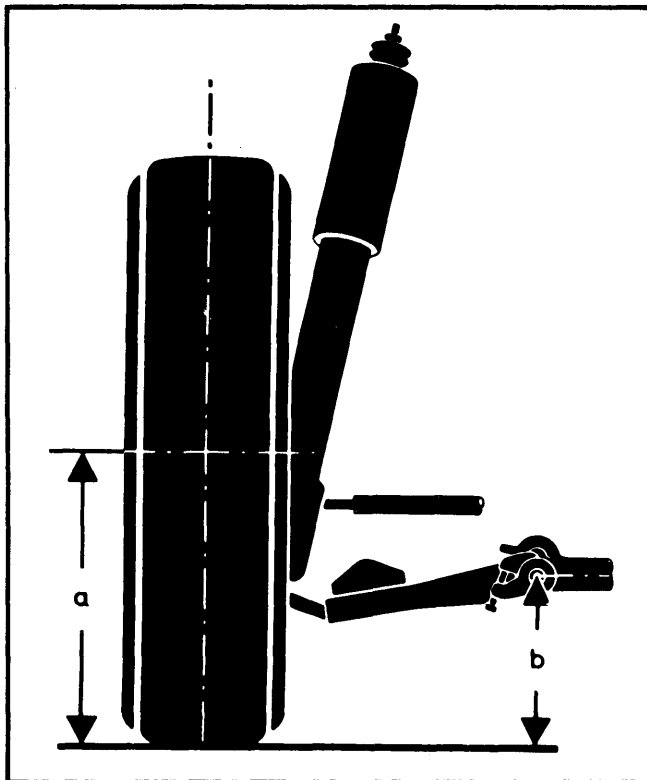


Fig. 1 Front Suspension Riding Height Measuring Points

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 1.46" (37.1 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 1.46 ± .20" (37.1 ± 5 mm). Difference in height from left to right should not exceed .197" (5 mm). If values are not within specifications, check front height and rear torsion bar adjustment. Correct as required.

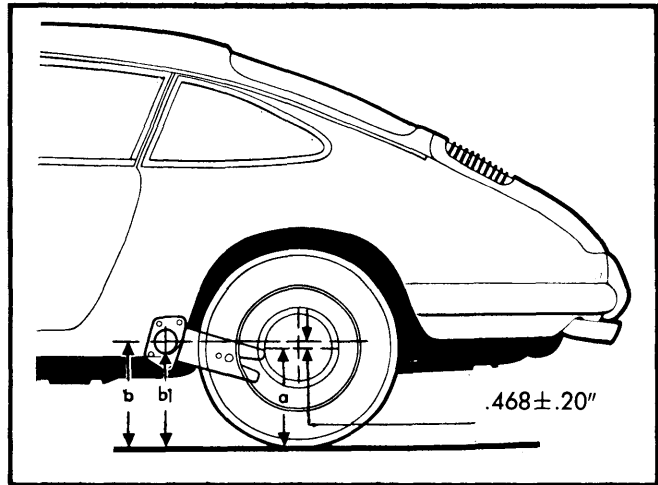


Fig. 2 Rear Suspension Riding Height Measuring Points & Dimensions

CASTER

All Models - If caster angle is not to specifications, it will be necessary to move 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.

CAMBER

All Models (Front) - If camber angle is not to specifications, it will be necessary to move 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 from side to side to obtain correct camber angle. Tighten all three screws and shock absorber nut. **NOTE** - Movement of adjuster plates in lengthwise direction will affect caster angle.

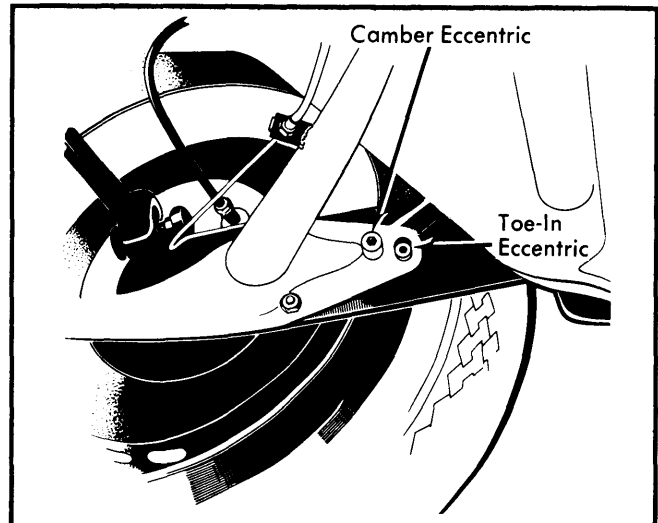


Fig. 3 911 Rear Suspension Adjustment Points

Wheel Alignment

PORSCHE (Cont.)

911 Series (Rear) — In order to obtain correct camber value at rear wheels, it is necessary that rear torsion bars be adjusted first. See *Torsion Bar Adjustment*. Now, loosen nuts on retaining bolts and on eccentric bolt at rear axle flange. Turn camber eccentric until camber angle is within specifications. Tighten retaining nuts and eccentric bolt nuts.

914 Series (Rear) — Mark position of rear axle control arm on base plate, then remove center bolt attaching base plate to body and loosen remaining base plate attaching bolts. To adjust camber, add or remove shims between base plate and body. Shims are available in the following thicknesses: .079" (2 mm), .118" (3 mm) and .157" (4 mm). With camber set to specifications, install center mounting bolt and tighten all remaining bolts.

TOE-IN

NOTE — All toe-in specifications are given in degrees.

All Models (Front) — Place front wheels in straight-ahead position. Adjust left and right steering links (tie rods) equally to obtain specified setting. Coat each steering link with anti-corrosive compound after adjustment.

911 Series (Rear) — To adjust rear wheel toe-in, loosen nuts on retaining bolts and adjusting eccentrics at rear axle flange. Turn toe-in eccentric until toe-in is set to specifications. Hold eccentric stationary and tighten all lock nuts.

914 Series (Rear) — To adjust rear wheel toe-in, loosen retaining bolts of rear axle control arm base plate. Move control arm pivot bracket backward or forward until toe-in is within specifications. Tighten retaining bolts and recheck toe-in setting.

TORSION BAR ADJUSTMENT

911 Series (Rear) — Place torsion bar into transverse tube with inner end splines first. Slip radius arm onto outer end splines of torsion bar. Place suitable leveling tool (VW 261) on lower edge of door opening and adjust level so bubble is in center of glass. Check adjustment (degrees) of free hanging radius arm with same leveling tool. If not to specifications, adjust by turning torsion bar and radius arm in opposite directions. Adjustment of both radius arms must each equal $36^{\circ}45' \pm 15'$.

RENAULT

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.

RIDING HEIGHT

NOTE — Front cam procedure applies to models built before 9/75.

R-5, Cam Method — 1) Calculate difference between H1 and H2 (Fig. 1). Value obtained must not exceed $2\frac{1}{4} \pm \frac{3}{8}$ " (58 ± 10 mm).

2) Calculate difference between H4 and H5 (Fig. 1). Value obtained must not exceed $-\frac{7}{16}$ to $+\frac{3}{8}$ " (-11 to $+10$ mm).

3) After making adjustments at cam located under seat, make sure difference between left and right sides does not exceed $\frac{3}{8}$ " (10 mm).

R-5 Torsion Bar Rotation Method — Remove torsion bar arms from mounting position in sleeves. Rotate arm clockwise to increase height as necessary.

CASTER

R-12, 15 & 17 — If caster angle is not within specifications, loosen lock nuts "C" and "D" on strut rod. To reduce caster angle, unscrew nut "B" and tighten nut "A". To increase caster angle, unscrew nut "A" and tighten nut "B". When caster angle is within specifications, tighten all nuts.

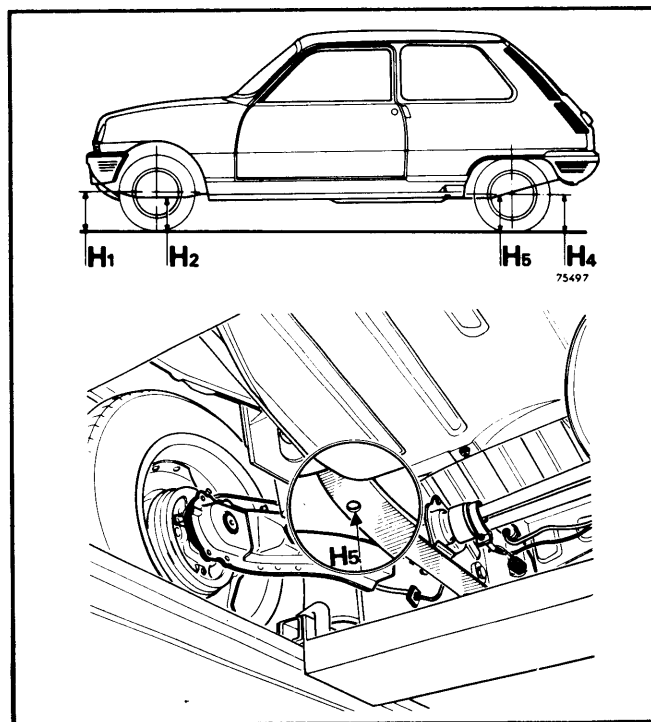


Fig. 1 Riding Height Adjustment Points

R-5, — 1) Vehicle riding height must be calculated before adjusting caster. Measure distance between ground and rear side member (H5, Fig. 1). Measure distance between ground and front side member in line with wheel centers (H2, Fig. 1). Subtract measurements and refer to table for correct caster angle.