

## PORSCHE 911S, 924 & 930 TURBO CARRERA RACK & PINION

911S  
924  
930 Turbo Carrera

### DESCRIPTION

Rack and pinion gear is similar for all three models, however 911S tie rods attach to rack by yoke and eyebolt while 930 and 924 tie rods are attached by ball swivel joints. Pinion on 924 housing is offset to left while 911S and 930 pinion remains in center of housing. Ball bearing supported pinion engages bushing supported rack to provide play free steering action.

### ADJUSTMENT

#### STEERING GEAR

Steering gear adjusting methods vary according to type of steering rack pressure block: (1) Steel pressure block with plastic contact surface and external housing dust boot seat; (2) Plastic pressure block with no external housing dust boot seat. (3) Adjusting screw on 924 extends through cover to take play out of steering rack.

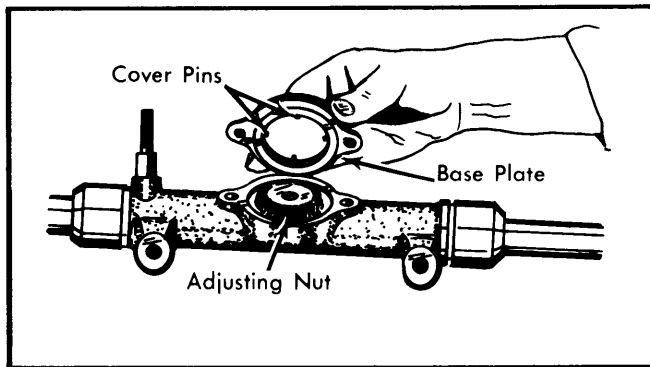


Fig. 1 Adjusting Nut with Cover

**Steel Pressure Block Type** – 1) With housing assembly in padded vise, detach base plate. Tighten adjusting nut seating contact. **NOTE** – Base plate has integral pins which may be used as a wrench for this adjustment. Back nut off contact by three teeth.

2) Check steering gear drag at pinion flange, using an INCH-lb. torque wrench. A measurement of 6.94 INCH lbs. (8 cmkg) should be obtained. If beyond this measurement, loosen adjusting nut; however, if this measurement is not less than 3.47 INCH lbs. (4 cmkg), do not retighten adjusting nut. Install base plate with gasket.

**NOTE** – When installing base plate, pin in plate must fit easily between teeth of adjusting nut. If necessary, move nut slightly.

**Plastic Pressure Block Type** – Remove base plate and tighten adjusting nut until 6.94 INCH lbs. (8 cmkg) torque is obtained, using method as described above. Install base plate with gasket.

**External Adjustment (924 Only)** – With rack centered, loosen lock nut and tighten adjusting screw until it just touches thrust washer. Hold screw and tighten lock nut.

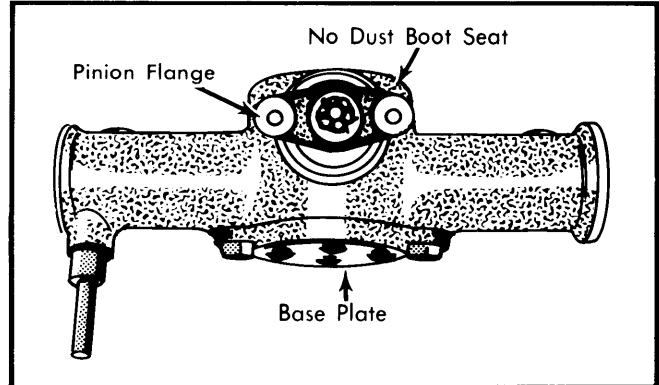


Fig. 2 Plastic Pressure Block Housing Assembly

### REMOVAL & INSTALLATION

#### STEERING GEAR

**Removal** – 1) Remove bottom bolt attaching universal joint to pinion shaft. Remove nuts and detach tie rod ball joints from steering knuckles.

2) Remove steering housing retaining bolts and extract entire steering housing from right side of vehicle. Detach track rods from rack.

**Installation** – To install, reverse removal procedures noting that indentation in pinion shaft must line up with bolt hole in lower universal joint. On 924 only, insert special centering bolt (9116) to center gear during installation.

### OVERHAUL

#### STEERING GEAR

**Disassembly** – 1) Mount steering housing in padded vise and remove base plate retaining bolts. Unscrew adjusting nut (base plate may be used as wrench). Remove pressure block and spring.

2) Move steering rack to either lock position and remove castellated nut. Using suitable puller (P 293), remove flange from pinion. Remove oil seal, lock ring and spacer. Using suitable puller (P 282), remove pinion from pinion carrier (ensure bearing does not bind against housing). Remove Woodruff key from pinion and press bearing off pinion.

3) Mark position of rack (for assembly), remove from housing, and withdraw pinion carrier. Press bearing out of pinion carrier. Remove rack bushing spring retainer from end of housing. Extract support ring and drive rack bushing out.

## PORSCHE 911S, 924 & 930 TURBO CARRERA RACK & PINION (Cont.)

**Reassembly** — Reverse disassembly procedure, noting the following: During assembly, coat all components with suitable gear lubricant. Use shims, if necessary, to adjust axial play of pinion to zero. Fill housing with suitable gear lubricant, either before installing pinion or after, by means of bolt hole opposite base plate.

### EYEBOLT (911S ONLY)

**CAUTION** — Eyebolt must be installed in precise position to ensure free movement of steering components and exact guiding of track rod.

**Disassembly** — Clamp gear into special tool (P 285b) without washers. Remove clamps on outer end of bellows and pull bellows off holder. Loosen bellows holder with hook spanner and unscrew eyebolt and bellows holder.

**Inspection** — Check eyebolt, bellows and clamps for visible wear. Replace as required.

**Assembly** — Mount bellows on housing. Screw bellows holder on eyebolt. Coat eyebolt threads and rack face end with sealer. Install eyebolts. Attach steering gear, without washers, to original holding tool (P 285b). Locating pins should slide easily into eyebolts, with flattened end resting against outer pin. Tighten bellows holder. Clamp bellows to gear assembly.

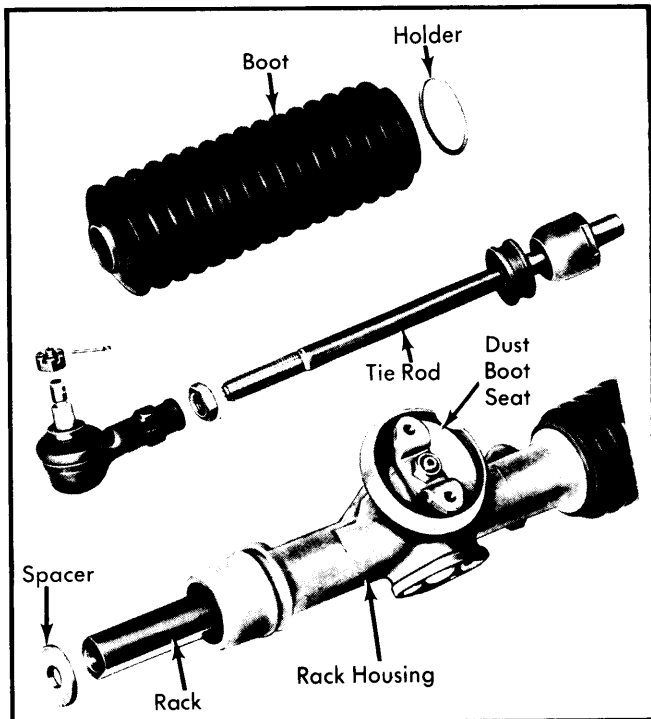


Fig. 3 Exploded View of 911S and 930 Turbo Carrera Steering Gear Assembly

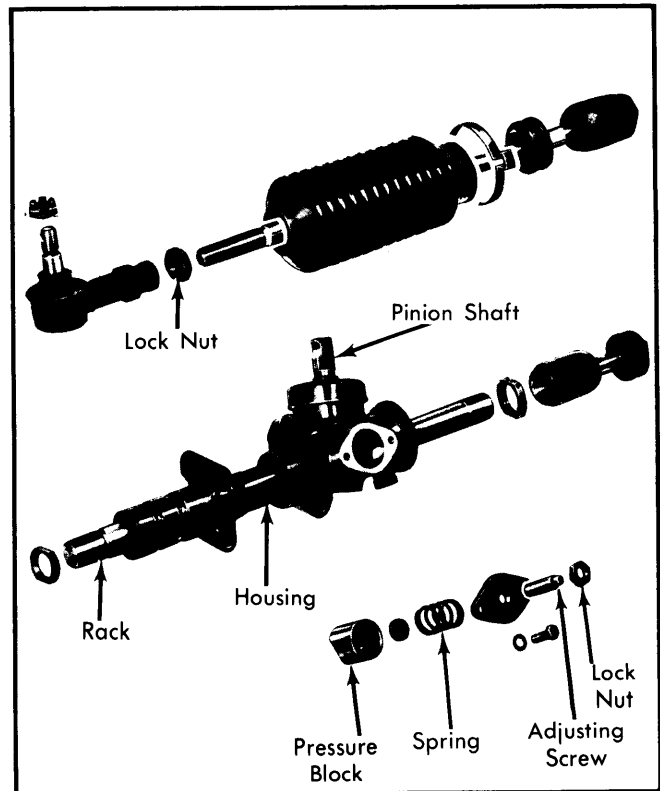


Fig. 4 Exploded View of Porsche 924 Steering Gear Assembly

### TIGHTENING SPECIFICATIONS

Application	Fr.Lbs. (mkg)
Housing to Crossmember	
911S & 930 .....	34 (4.7)
924 .....	14-17 (2-2.4)
Tie Rod to Steering Knuckle	
911S & 930 .....	32.5 (4.5)
924 21 (2.9) Tie Rod to Rack (Counternut)	
911S & 930 .....	34 (4.7)
924 .....	29 (4)
"U" Joint Coupling Bolt (All) .....	25 (3.5)
Bearing Cover	
911S & 930 .....	10.8 (1.5)
924 .....	4-6 (.6-.8)