

Front Suspension

PORSCHE 911SC

DESCRIPTION

Independent MacPherson strut type suspension with torsion bars is used. Strut assemblies are mounted to inner fender panels at top by thrust bearings. Bottom of strut assemblies are mounted to control arms by ball joints.

Steering knuckle and shock absorbers are integral with individual strut assembly. Control arms pivot in mounts connected to body at front and in mounts integral with suspension crossmember at rear.

Torsion bars anchor to control arm at front and to suspension crossmember at rear. Suspension crossmember also serves as mount for steering gear and is removable.

ADJUSTMENT

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See *Wheel Alignment Specifications & Procedures* in *WHEEL ALIGNMENT* section.

WHEEL BEARING

1) Tighten hub nut while rotating wheel to seat bearings. Back off nut until thrust washer can be moved sideways with light pressure from a screwdriver.

2) Spindle nut should be tight enough to prevent any wheel hub axial play. Tighten pinch bolt, making sure that hub nut does not change position.

BALL JOINT CHECKING

Check lower ball joints for any signs of unusual wear, damage or excessive play. If any is found, ball joint must be replaced.

REMOVAL & INSTALLATION

WHEEL BEARING

Removal

1) Raise vehicle and support with safety stands. Remove wheel assembly. Disconnect brake line

from caliper. Remove caliper. Remove grease cap, loosen hub nut pinch bolt.

2) Remove hub nut and remove wheel bearing thrust washer. Remove hub and rotor assembly from vehicle.

3) Press out outer wheel bearing (depending on equipment used, it may be necessary to separate rotor from hub), heat wheel hub to 250-300° F (120-150° C) and press out inner bearing and grease seal. Press out bearing races.

NOTE: Always replace bearings and races as matched sets.

Installation

To install, reverse removal procedures.

CONTROL ARM & BALL JOINT

Removal

1) Raise vehicle and support with safety stands, under body. Remove wheel assembly. Remove adjusting screw from torsion bar lever and remove lever.

2) Disconnect strut assembly from control arm. Remove rear control arm retaining bolt at suspension crossmember.

3) Remove bolts securing front control arm mount to body. Slide control arm with torsion bar out of suspension crossmember.

NOTE: If both control arms are being removed, reinstall rear control arm mounting bolt in suspension crossmember before removing opposite side.

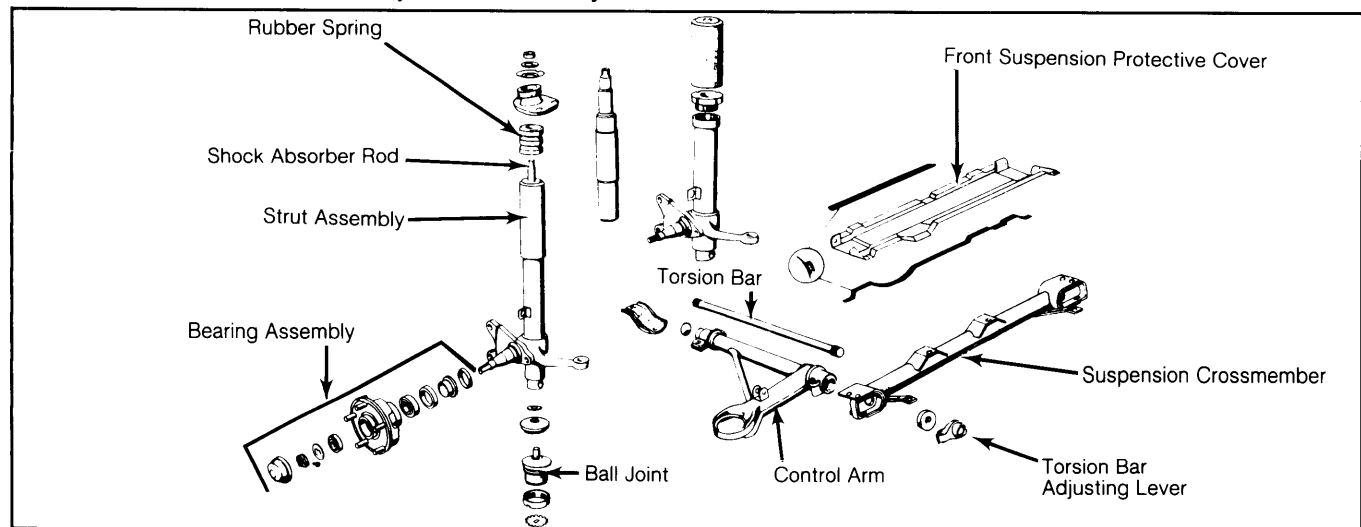
4) Secure control arm in a vise and remove ball joint retaining nut. Remove ball joint from control arm. Control arm should pivot smoothly in mounts. If control arm binds or is distorted, it must be replaced.

5) Inspect torsion bars for damaged serrations. Check sealing bellows on ball joint for damaged or cracks, (replace if necessary). Remove sealing bellows with a flat chisel and install using mandrel to press bellows on.

Installation

1) Install ball joint in control arm and tighten grooved nut. Secure nut by bending over tab on lock

Fig. 1: Exploded View of Front Suspension Assembly



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washer. Grease entire torsion bar and install in control arm.

2) Place control arm in proper position in vehicle and tighten retaining bolts (front to rear). Install strut assembly on ball joint and tighten retaining bolt. Push down on control arm until it contacts stops. Install torsion bar seal and adjusting lever.

3) Slide adjusting lever against torsion bar until it reaches stop. Grease adjusting bolt threads and install in lever. Make sure closing cover is correctly seated against adjusting lever.

4) Install control arm protective cover. Install wheel assembly. Lower vehicle and check riding height and wheel alignment.

STRUT ASSEMBLY

Removal

1) Raise vehicle and support with safety stands, under body. Remove wheel assembly. Remove brake rotor and brake caliper.

NOTE: If necessary, refer to appropriate article in BRAKE SYSTEM section.

2) Remove tie rod end strut nut and separate tie rod end from steering arm. Unscrew adjusting screw from torsion bar adjusting lever and remove lever.

3) Remove ball joint retaining bolt at bottom of strut assembly and push control arm down to separate strut assembly from ball joint.

4) From inside luggage compartment, remove center nut from upper strut assembly mount. Remove lock washer, tab washer and strut assembly.

5) Mark position of pressure plates on fender panel and remove Allen head bolts and pressure plates. Remove thrust bearing and support.

NOTE: Thrust bearing can be removed without completely removing strut assembly by disconnecting upper mount and pulling down on control arm to separate from thrust bearing.

Installation

1) Install thrust bearing and support. Place pressure plates in proper position and tighten Allen head bolts. Inspect strut assembly for leaks, if leak is discovered, strut assembly must be replaced.

2) Push rod to bottom of stroke, if flange does not bottom out against strut tube, replace strut assembly. There should be no variation of pressure when pushing in or pulling out on rod.

3) Install strut assembly in proper position in vehicle. Install hollow rubber spring, new lock washer, and tighten nut. Fit strut assembly to ball joint and tighten nut.

NOTE: Make sure steel washer is between ball joint and stud.

4) Push control arm lever down to stop and install adjusting lever on torsion bar. Grease threads of adjusting screw with grease and install screw. Make sure closing cover is correctly seated against adjusting lever.

5) Install tie rod and retighten nut. Install remaining components. See appropriate article in BRAKE SYSTEM section. Tighten all nuts and bolts, bleed brake system, check riding height, and wheel alignment.

SUSPENSION CROSSMEMBER

Removal

1) Raise vehicle and support with safety stands, under vehicle body. Remove front axle protective cover. Remove steering gear bolts from crossmember.

2) Remove rear control arm retaining bolts. Remove suspension crossmember. Place crossmember on level surface and check for distortion. Inspect for cracks or damage, (replace if necessary).

Installation

1) Place crossmember in proper position in vehicle and install control arm retaining bolts. Install steering gear bolts and tighten.

2) Install front suspension protective cover. Lower vehicle. Check riding height and wheel alignment.

STABILIZER BAR

Removal

Remove stabilizer shackles. Unbolt stabilizer lever retaining nuts and extract lever. Remove stabilizer mounting cover hardware and gently pry cover from vehicle.

Installation

1) Check all rubber grommets for signs of wear, (replace if necessary). Coat rubber parts with lubricant. Reinstall stabilizer mounting cover, center stabilizer, and tighten attaching bolts.

2) Seat stabilizer lever in position so stabilizer protrudes approximately .118" (3 mm) beyond lever. Tighten retaining nuts and install shackles.

AXLE ASSEMBLY

Removal

1) Disconnect brake hose and plug openings. Disconnect stabilizer bar at crossmember. Remove tie rod shield. Remove bolts at carrier and control arm brackets.

2) Place floor jack under crossmember. Disconnect steering shaft. Remove upper strut mounting hardware. Carefully pull front axle assembly from vehicle.

Installation

To install, reverse removal procedure.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Strut Assembly-to-Ball Joint Securing Bolt	47 (64)
Strut Assembly Thrust Bearing	58 (79)
Pressure Plate Allen Head Bolts	34 (46)
Front Control Arm Mount	34 (46)
Control Arm & Suspension Crossmember Retaining Bolt	65 (88)
Steering Gear Bolts	34 (46)
Ball Joint-to-Control Arm Grooved Nut	108 (147)
Front Protective Clamp Allen Head Bolt	32 (44)
Suspension Protective Cover-to-Body Bolts	34 (46)
Suspension Protective Cover-to-Crossmember Bolts	11 (15)
Tie Rod End Strut Nuts	32 (44)