

# Front Suspension

## VOLKSWAGEN TYPE 1

### Type 1

#### DESCRIPTION

Independent strut type suspension consisting of vertically mounted strut assemblies, lower control arms and a stabilizer bar is used on Type 1 vehicles. Struts mount at top to fender panel and at bottom to side of steering knuckle. Steering knuckle mounts to a ball joint that is pressed into lower control arm. Control arm pivots in bushing mounted at chassis tube. Strut assembly consists of a shock absorber inside strut housing, coil spring mounted over strut housing, and a thrust bearing mounted on top attaching assembly. A stabilizer bar mounts to chassis and through lower control arms.

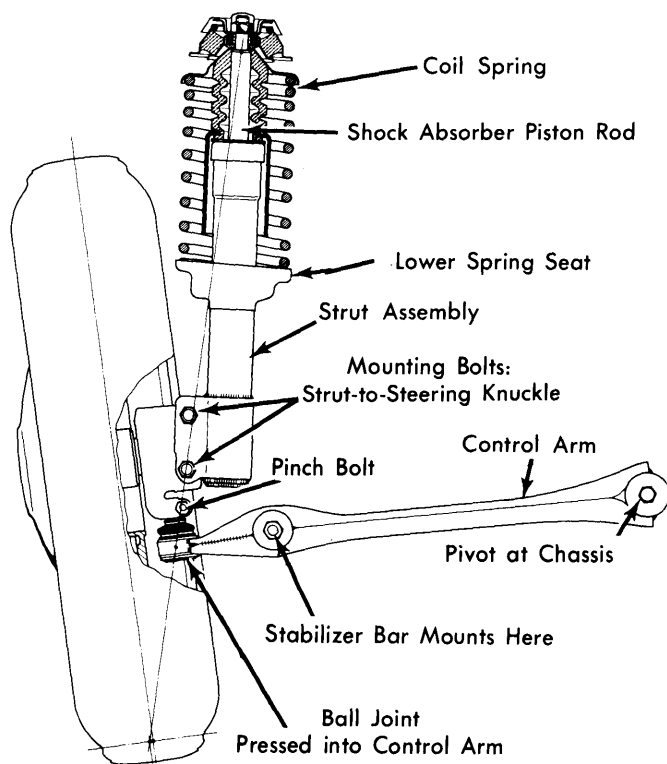


Fig. 1 Sectional View of Front Suspension

#### ADJUSTMENT

##### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

##### BALL JOINT CHECKING

See *Ball Joint Checking* in *WHEEL ALIGNMENT* Section.

##### WHEEL BEARING ADJUSTMENT

See *Wheel Bearing Adjustment* in *WHEEL ALIGNMENT* Section.

#### REMOVAL & INSTALLATION

##### STRUT ASSEMBLY

**Removal** — Raise vehicle and place safety stands under body. Remove wheel and tire. If left side strut assembly is to be removed pull speedometer cable out of steering knuckle. Pry loose brake hose retaining clip from strut. Remove two nuts and bolts that mount steering knuckle to strut and separate knuckle from strut. From inside luggage compartment, remove nuts securing assembly to fender panel and guide strut assembly from vehicle.

**Disassembly** — 1) Fit strut to suitable spring compressor. Pry off thrust bearing dust cap. Slightly compress coil.

2) Remove piston rod lock nut. Relieve spring pressure. Remove thrust bearing assembly. Separate coil spring from strut. Remove thrust bearing assembly. Take out rubber bumper and protective sleeve.

**Inspection** — 1) Hold shock absorber in assembled position. Work shock absorber back and forth; resistance must be uniform. Replace as necessary.

2) If new coil spring must be used make sure that both springs have the same identification markings.

##### Coil Spring Chart

Application	Spring Pressure Lbs. (kg)
1 Red Mark.....	500-514 (227-233)
2 Red Marks.....	516-529 (234-240)
3 Red Marks.....	531-545 (241-247)

**Reassembly** — Fit buffer and protective sleeve. Fit shock absorber and coil spring to compressor. Tighten compressor until piston rod threads project about  $\frac{5}{16}$ - $\frac{3}{8}$  (8-10 mm) over spring seat. Install thrust bearing assembly. Fit new piston rod lock nut.

**Installation** — Reverse removal procedure to refit strut assembly to vehicle.

##### CONTROL ARM

**NOTE** — It is not necessary to remove suspension strut assembly or stabilizer bar when replacing control arm.

**Removal** — 1) Loosen ball joint pinch bolt. Pull control arm down and free from steering knuckle. Remove cotter pin and castle nut from stabilizer bar. Remove nut from control arm pivot bolt.

2) Force stabilizer bar off mounting at control arm. Tap out control arm pivot bolt. Remove control arm from vehicle.

**Installation** — Check control arm for obvious cracks or distortion. Inspect rubber bushings and replace as necessary using suitable press. To install, reverse removal procedure and tighten all nuts and bolts. Check wheel alignment.

## VOLKSWAGEN TYPE 1 (Cont.)

### STEERING KNUCKLE

**Removal** — 1) Raise and support vehicle. Remove wheel and tire. Remove speedometer through back of steering knuckle.

2) Remove wheel bearing pinch bolt nut. Remove brake caliper and hang with wire hook out of way. Remove hub and rotor assembly. See *Volkswagen in BRAKE Section*.

3) Remove tie rod nut from end stud. Press tie rod out of steering arm.

4) Loosen pinch bolt on suspension ball joint stud. Pull lower control arm complete with ball joint down from steering knuckle.

5) Take out both bolts securing steering knuckle to strut assembly. Remove knuckle from vehicle.

**Installation** — Reverse removal procedure and note: Adjust wheel bearings and check front wheel alignment.

### BALL JOINT

**Removal** — Raise vehicle and place safety stands under body. Remove control arm as previously described. Using a suitable press type tool, press ball joint downward and free from control arm.

**Installation** — Select new ball joint and press into control arm from deep side of arm. Reverse removal procedure for remaining components.

### STABILIZER BAR

**Removal** — Remove cotter pin and nut from stabilizer bar end at control arm. Remove bolts from brackets securing stabilizer bar to chassis member. Pull stabilizer bar out of control arm and remove from vehicle.

**Installation** — Inspect rubber mounting components for wear or cracking. Reverse removal procedure for installation. Tighten all bolts and nuts to specifications.

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Ball Joint Pinch Bolt.....	25 (3.5)
Stabilizer Bar Mounting Bracket Bolts .....	29 (4.)
Stabilizer Bar-to-Control Arm .....	①22 (3.0)
Strut Assembly-to-Body.....	14 (2.0)
Steering Knuckle-to-Strut .....	61 (8.5)
Control Arm-to-Chassis .....	29 (4.0)
Piston Rod Lock Nut .....	43 (6.0)

① — Turn until cotter pin hole is accessible.