

## VOLKSWAGEN TYPE 1 SUPER BEETLE

### Type 1 Super Beetle

#### DESCRIPTION

Independent strut type suspension consisting of vertically mounted strut assemblies, lower control arms and a stabilizer bar. Strut assembly mounts at top to fender panel by means of a thrust bearing and at bottom to steering knuckle. Steering knuckle mounts to a ball joint which is connected to lower control arm. Control arm pivots in mount connected to chassis member. Strut assembly consists of a shock absorber integral with strut tube, a coil spring is mounted over strut tube, and a thrust bearing is mounted on top of assembly. A stabilizer bar mounts to chassis member and is connected at ends to lower control arms.

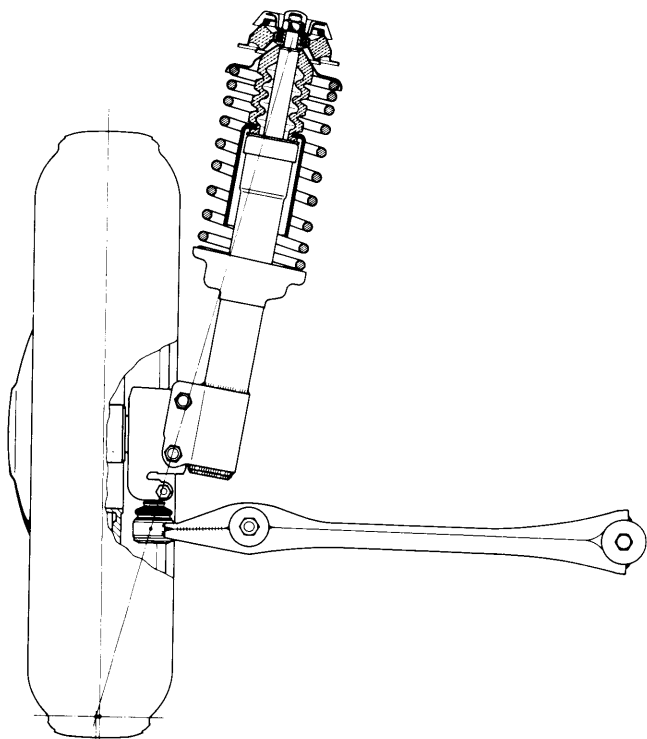


Fig. 1 Sectional View of Front Suspension Assembly

#### 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. Compress coil spring using a suitable compressor (VW 340). Remove nut from shock absorber piston rod and remove thrust bearing mount. Release spring compressor and remove coil spring.

**Installation** — Inspect strut assembly components for wear or distortion. There should be no variation of pressure when pushing in or pulling out on shock absorber piston rod. Inspect for leaks. If shock absorber in strut assembly is found defective, strut assembly must be replaced. Install coil spring on strut assembly and compress until unthreaded portion of piston rod protrudes .3-.4" from top of upper spring seat. Install thrust bearing, use new self-locking nut and tighten to specification. Reverse removal procedure to install in vehicle. Tighten all nuts and bolts. Replace all self-locking nuts with new ones.

##### CONTROL ARM

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

**Removal** — Loosen ball joint clamp bolt. Pull control arm down and free from steering knuckle. From stabilizer bar remove cotter pin and castellated nut on right end, and on left end of bar remove self-locking nut. Force control arm down and off 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.

##### STEERING KNUCKLE

**Removal** — Raise vehicle and place safety stands under body. Remove tire and wheel. Remove brake system components from steering knuckle. **NOTE** — See appropriate story in *BRAKE SYSTEMS* Section for removal. If left side steering knuckle is being removed, pull out speedometer cable. Remove nut from tie rod end stud and using suitable tool press out of steering arm. Loosen suspension ball joint clamp bolt and pull control arm with ball joint down free of steering knuckle. Extract bolts mounting steering knuckle to strut and lift assembly from vehicle.

**Installation** — To install, reverse removal procedure.

##### 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.

# Front Suspension

## VOLKSWAGEN TYPE 1 SUPER BEETLE (Cont.)

**Installation** — To install, reverse removal procedure.

### 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 Stud Nut .....	25 (3.5)
Stabilizer Bar Mounting Bracket Bolts .....	29 (4.0)
Stabilizer Bar-to-Control Arm .....	①22 (3.0)
Strut Mounting-to-Shock Absorber .....	43 (6.0)
Strut Assembly-to-Body .....	14 (2.0)
Steering Knuckle-to-Strut .....	61 (8.5)
Control Arm-to-Frame .....	29 (4.0)
Control Arm-to-Ball Joint .....	29 (4.0)

① — Turn until cotter pin hole is accessible.