

SUSPENSION - FRONT

Article Text

1989 Volkswagen Golf

For Volkswagen Technical Site

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Tuesday, August 24, 1999 12:05AM

ARTICLE BEGINNING

1989- 90 SUSPENSION

Front - Except Fox & Vanagon

Cabriolet, Golf, GTI, Jetta, Jetta GLI

DESCRIPTION

Vehicles are equipped with front wheel drive and MacPherson strut independent front suspension. Wheel bearing housings are supported by lower control arms and vertically mounted strut assemblies. Tie rods and stabilizer bar are connected to wheel bearing housing. See Fig. 1 or 2.

WHEEL BEARING ADJUSTMENT

Wheel bearings are pressed into wheel bearing housing and no adjustment is required.

BALL JOINT CHECKING

Raise vehicle and support with safety stands. Inspect ball joints for damaged rubber boots and play. Maximum tolerance for ball joint play not available from manufacturer.

WHEEL BEARING R & I

NOTE: The wheel bearing is destroyed when pressed out of the housing. Once either the wheel hub or bearing has been removed from housing, a new bearing must be installed.

REMOVAL

1) Remove axle shaft nut. Raise and support vehicle with safety stands. Allow suspension to hang free. Remove wheel assembly. Remove brake caliper attaching bolts. Remove caliper and hang out of way. Remove brake disc retaining screw and remove disc.

2) Remove tie rod ball joint from wheel bearing housing. Remove nut and clamp bolt from control arm ball joint. Remove control arm ball joint from wheel bearing housing and remove housing.

3) Remove 2 circlips retaining bearing in hub. Using Hub Remover (VW 295a), press wheel hub from bearing housing. Using a bearing puller, remove wheel bearing inner race from hub assembly. Using Bearing Remover (VW433), press wheel bearing out of outboard end of bearing housing.

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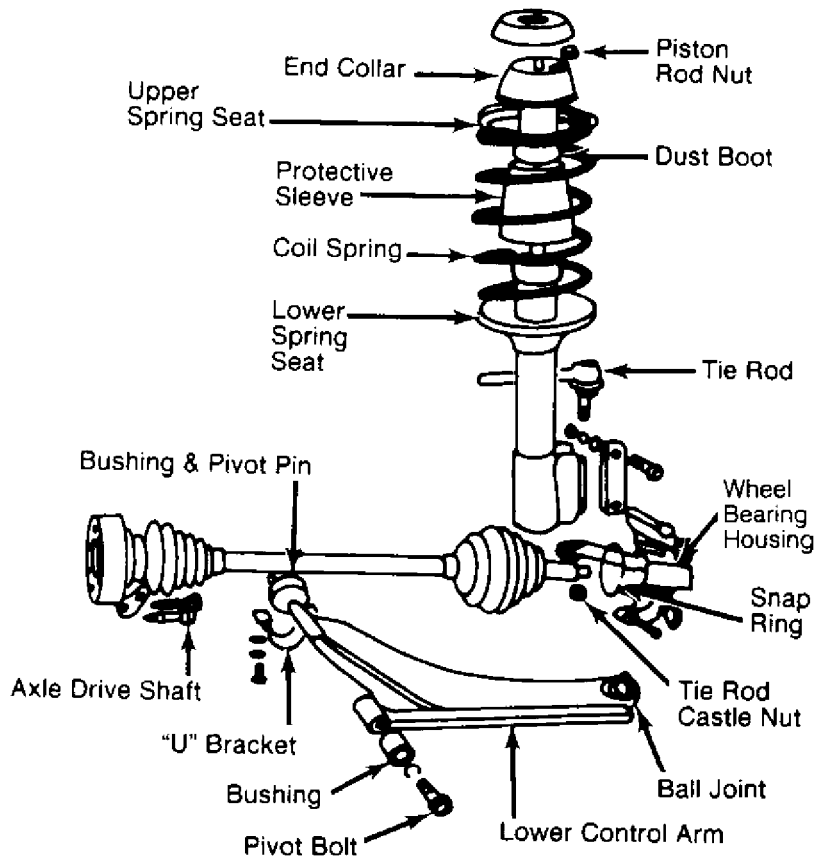


Fig. 1: Exploded View of Suspension (Exc. Jetta, Golf & GTI)
Courtesy of Volkswagen United States, Inc.

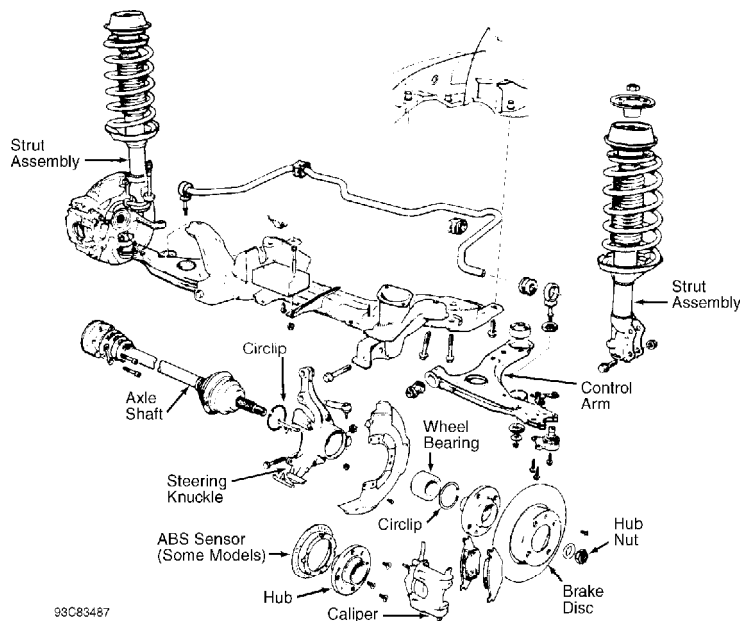


Fig. 2: Exploded View Of Front Suspension (Jetta, Golf & GTI)

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INSTALLATION

1) Press new bearing race onto hub. Using Bearing & Hub Installer (VW 472/1), press new bearing into bearing housing from outboard side. Using same adapter, press wheel hub into bearing housing. Apply a small bead approximately 1/4" of locking compound to the axle splines before installing in hub.

2) To complete installation, reverse removal procedure. Always replace self-locking axle shaft nut. Tighten all bolts and nuts to specification. See TORQUE SPECIFICATIONS table in this article. Check wheel alignment. See ALIGNMENT SPECS/PROCEDURES article in the WHEEL ALIGNMENT section.

NOTE: When installing hub, be sure that press adapter contacts ONLY the inner bearing race.

LOWER CONTROL ARM & BALL JOINT R & L

REMOVAL

1) Raise vehicle and support with safety stands. Remove clamp bolt retaining ball joint at wheel bearing housing. Force ball joint out of housing (ball joint can be replaced while control arm is in vehicle). Leave control arm hanging in mounts at subframe.

2) If control arm is not being removed and ball joint is riveted to control arm, drill out ball joint rivets with a 9/32" (7 mm) drill. After drilling rivets, it still may be necessary to chisel off rivet heads. Remove ball joint. See Fig. 3.

3) If control arm is being removed, remove stabilizer bar link rod nut, washers and bushings. Remove pivot bolt and "U" bracket housing inner pivot pin. Slide out control arm.

NOTE: On vehicles equipped with automatic transmissions, engine may have to be lifted slightly to gain access to pivot bolts.

INSPECTION

Check lower control arm bushings. Replace bushings if necessary. To replace bushings, press out worn bushing. Select new bushing and press into position. Make sure bushing does not twist when seating into place.

INSTALLATION

Slide new ball joint into slot in control arm. Install and tighten ball joint retaining bolts. Install lower control arm to subframe. Install ball joint into wheel bearing housing. To complete installation, reverse removal procedure. Tighten control arm bolts with vehicle on ground. Tighten all bolts and nuts to specification. See TORQUE SPECIFICATIONS table at the end of this article. Check the wheel alignment. See the ALIGNMENT SPECS/PROCEDURES article in the WHEEL ALIGNMENT section.

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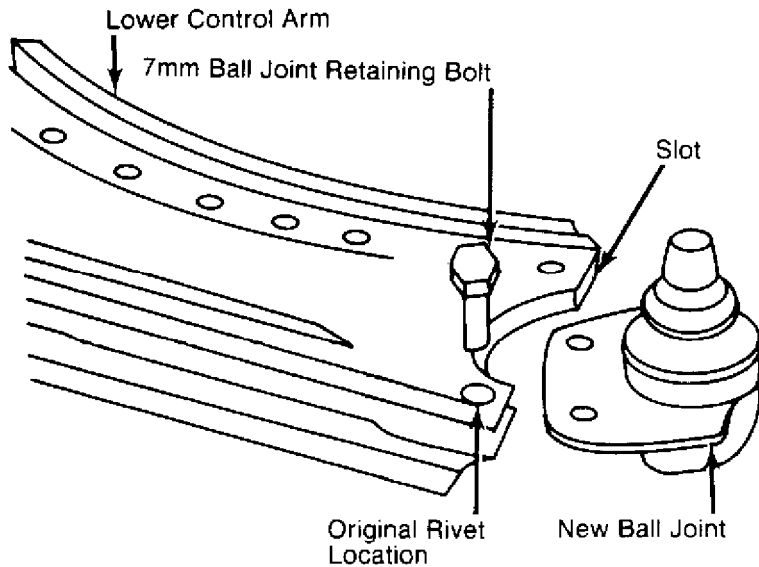


Fig. 3: New Ball Joint Installation on Lower Control Arm
Courtesy of Volkswagen United States, Inc.

STRUT ASSEMBLY R & I

REMOVAL

1) Raise vehicle and support with safety stands. Remove wheel assembly. Remove caliper assembly and support out of the way. Remove bolts retaining suspension strut to wheel bearing housing. Note that top bolt is used to adjust front wheel camber.

2) Support front suspension arm and related components. Pry or force suspension strut off wheel bearing housing. Working inside engine compartment, remove upper strut retaining nuts. Remove strut assembly.

DISASSEMBLY

Using spring compressor, slightly collapse coil spring. Remove shock absorber piston rod nut. Slowly release spring pressure. Remove upper retaining hardware and coil spring.

REASSEMBLY

1) Install protective sleeve and buffer over piston rod. Both coil springs must be of same class. If set cannot be matched, both springs will have to be replaced. Springs are color coded.

2) Position coil spring into lower spring seat. Install the upper spring retainer. Fit entire assembly into spring compressor and collapse coil spring until all the threaded portion of piston rod is exposed.

3) Install bearing, rubber bumper and remaining upper retaining components. Hold piston rod and tighten piston and lock nut.

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INSTALLATION

To install, reverse removal procedure. Tighten all bolts and nuts to specification. See **TORQUE SPECIFICATIONS** table in this article. Check wheel alignment. See **ALIGNMENT SPECS/PROCEDURES** article in the **WHEEL ALIGNMENT** section.

FRONT SUSPENSION ASSEMBLY R & I

REMOVAL

1) Raise vehicle and support at center with safety stands. Disconnect brake line and plug openings. Leave flex line in place. Remove stabilizer link rod nut, bushings and washers.

2) Remove tie rod nut. Separate tie rod from wheel bearing housing. Remove bolts retaining inner portion of constant velocity joint to transaxle drive flange.

3) Remove lower control arm front pivot bolt. Remove bolts retaining "U" shaped bracket holding control arm rear pivot.

NOTE: On vehicles equipped with automatic transmissions, engine may have to be lifted slightly to gain access to pivot bolts.

4) Support suspension assembly being removed. Remove upper strut retaining nuts (located in engine compartment). Remove suspension assembly from vehicle.

INSTALLATION

To install, reverse removal procedure. Make sure convex side of thrust washer faces pivot bolt head. Tighten all bolts and nuts to specification. See **TORQUE SPECIFICATIONS** table at the end of this paragraph. Check wheel alignment. See **ALIGNMENT SPECS/PROCEDURES** article in the **WHEEL ALIGNMENT** section.

TORQUE SPECIFICATIONS

TIGHTENING SPECIFICATIONS TABLE

AA

Application	Ft. Lbs. (N.m)
Axle Nut	170 (230)
Axle Shaft-to-Transaxle Bolt	32 (43)
Ball Joint Clamp Bolt	37 (50)
Ball Joint-to-Control Arm Bolt	18 (24)
Caliper Pin Bolts	18 (24)
Control Arm Pivot Bolt	
Cabriolet	50 (68)
Except Cabriolet	96 (130)
Control Arm-to-Subframe	

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Rear Bushing Bolt	96 (130)
Strut Piston Rod Nut	
Cabriolet	50 (68)
Except Cabriolet	44 (60)
Suspension Strut-to-Wheel	
Bearing Housing Bolt	59 (80)
Tie Rod Castle Nut	26 (35)
Wheel Lug Bolt	81 (110)
AA	

END OF ARTICLE