

SUSPENSION - FRONT

Article Text

1991 Volkswagen Passat

For Volkswagen Technical Site

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Wednesday, August 25, 1999 09:04PM

ARTICLE BEGINNING

1990-92 SUSPENSION

Volkswagen Front

1990-92 Passat

1991-92 Cabriolet, Corrado, Golf, GTI, Jetta

DESCRIPTION

FWD suspension system has MacPherson struts. Wheel bearing housings are supported by lower control arms and vertically mounted strut assemblies. See Fig. 1 or 2.

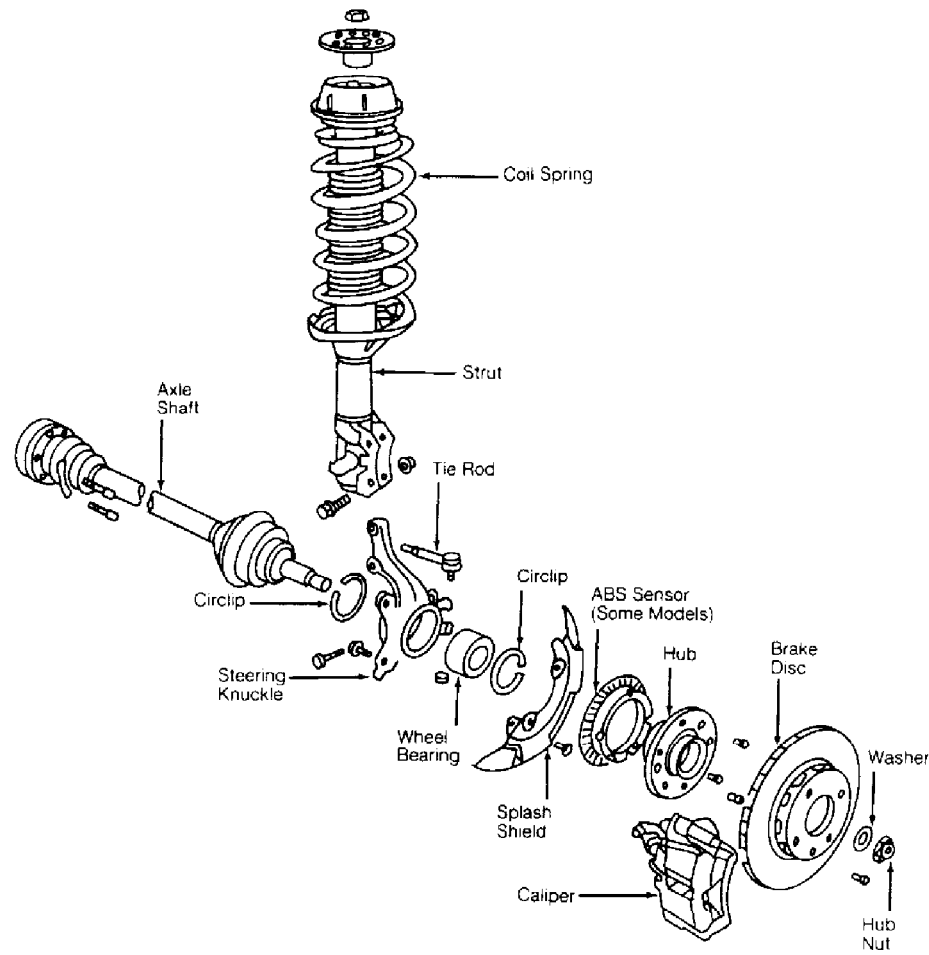


Fig. 1: Exploded View of Front Suspension (Typical)

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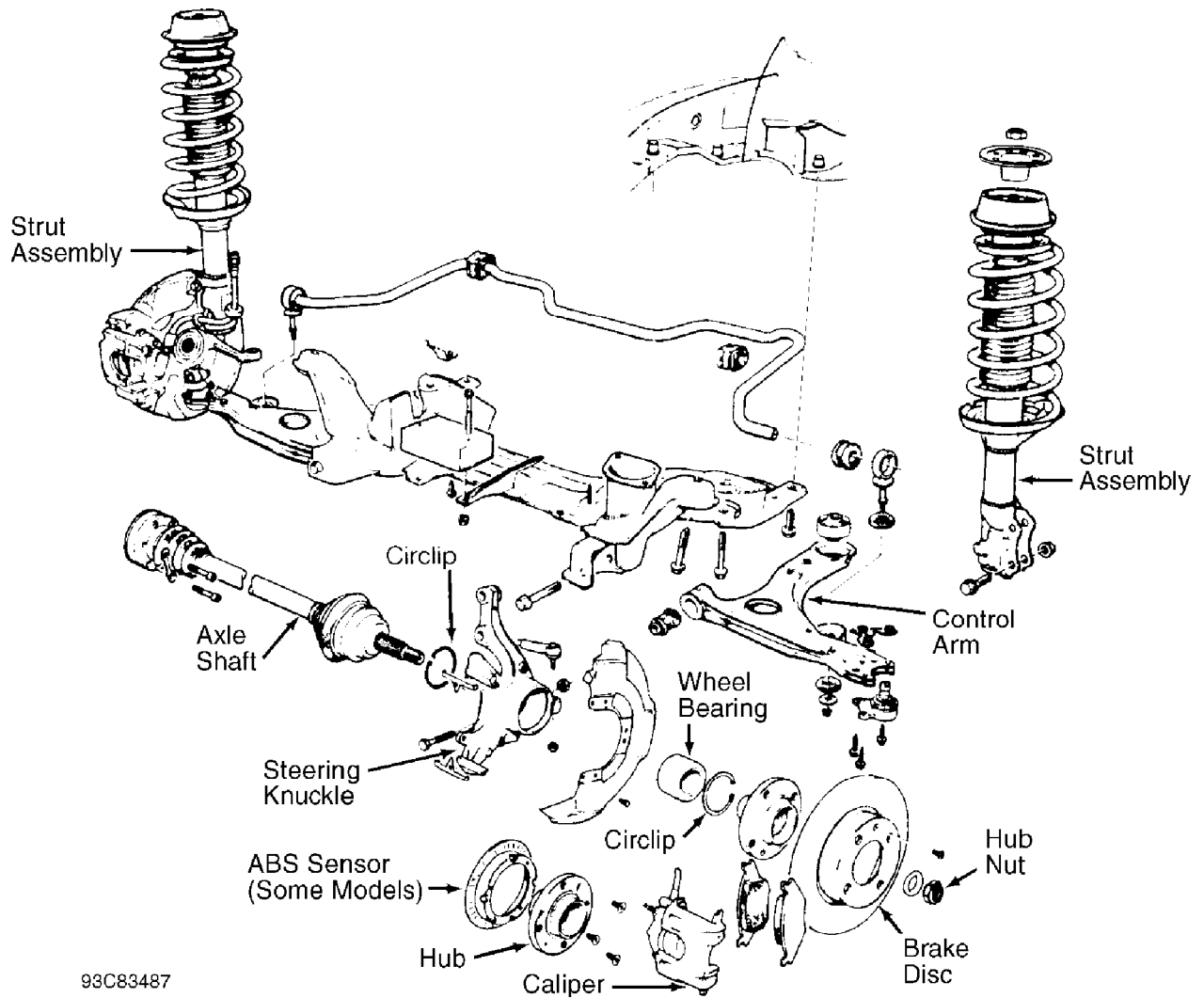


Fig. 2: Exploded View Of Front Suspension

ADJUSTMENTS & INSPECTION

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

NOTE: See SPECIFICATIONS & PROCEDURES article in the WHEEL ALIGNMENT Section.

WHEEL BEARING

No adjustment is required.

BALL JOINT CHECKING

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

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REMOVAL & INSTALLATION

HUB & KNUCKLE ASSEMBLY

Use exploded view illustration when removing or installing hub and knuckle assembly. See Fig. 1 or 2.

LOWER CONTROL ARM & BALL JOINT

Removal

1) Raise and support vehicle. Remove bolt retaining ball joint at wheel bearing housing. Force ball joint from of housing. Leave control arm hanging in mounts at subframe.

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

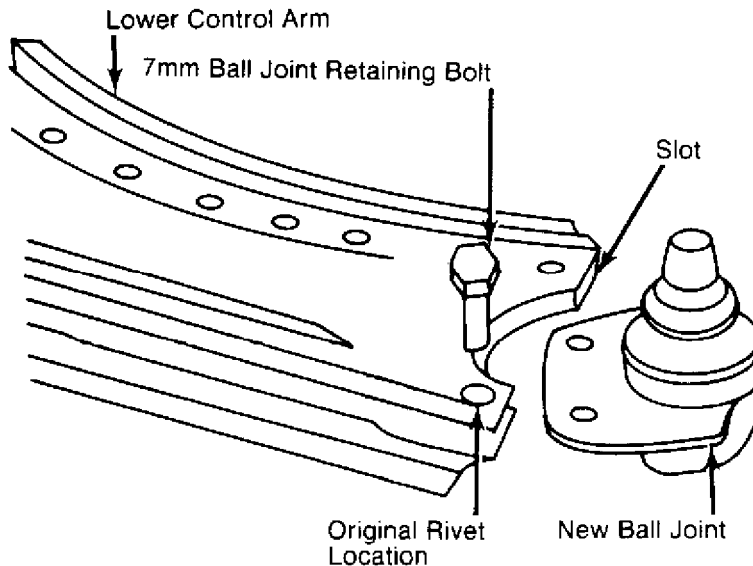


Fig. 3: Installing Lower Ball Joint
Courtesy of Volkswagen United States, Inc.

3) If control arm is to be 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 with automatic transmission, 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.

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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 end of article. Check wheel alignment. See SPECIFICATIONS & PROCEDURES article in the WHEEL ALIGNMENT Section.

STRUT ASSEMBLY

Removal

1) Raise and support vehicle. Remove wheel assembly. Remove and support caliper assembly out of work area. Remove bolts which retain strut to wheel bearing housing. Note top bolt is used to adjust front wheel camber.

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

Installation

To install, reverse removal procedure. Tighten bolts and nuts to specification. See TORQUE SPECIFICATIONS TABLE at end of article. Check wheel alignment. See SPECIFICATIONS & PROCEDURES article in the WHEEL ALIGNMENT Section.

FRONT SUSPENSION ASSEMBLY

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 with automatic transmission, engine may have to be lifted slightly to gain access to pivot bolts.

4) Support suspension assembly being removed. Remove upper strut retaining nuts. Remove suspension assembly from vehicle.

Installation

To install, reverse removal procedure. Make sure convex side of thrust washer faces pivot bolt head. Tighten bolts and nuts to specification. Check wheel alignment. See SPECIFICATIONS & PROCEDURES article in the WHEEL ALIGNMENT Section.

WHEEL BEARING

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NOTE: Wheel bearing is destroyed when pressed out of housing. When either 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 work area. 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 (VW 433), press wheel bearing from outboard end of bearing housing.

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 of locking compound to axle splines before installing into hub.

2) To complete installation, reverse removal procedure. Always replace self-locking axle shaft nut. Tighten bolts and nuts to specification. See TORQUE SPECIFICATIONS TABLE at end of article. Check wheel alignment. See SPECIFICATIONS & PROCEDURES article in the WHEEL ALIGNMENT Section.

NOTE: When installing hub, ensure press adapter contacts inner bearing race only.

TORQUE SPECIFICATIONS

TORQUE 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 Bolt	18 (24)
Control Arm Pivot Bolt	
Cabriolet	50 (68)
All Others	96 (130)
Control Arm-To-Subframe Rear Bushing Bolt	96 (130)
Strut Piston Rod Nut	
Cabriolet	50 (68)
All Others	44 (60)

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Suspension Strut-To-Wheel Bearing Housing Bolt 59 (80)
Tie Rod Castle Nut 26 (35)
Wheel Lug Bolt 81 (110)
AA

END OF ARTICLE