

SUSPENSION - FRONT

Article Text

1987 Volkswagen Quantum/Quantum Syncro

For Volkswagen Technical Site

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Sunday, March 19, 2000 01:53AM

ARTICLE BEGINNING

1987 SUSPENSION

Volkswagen Front Suspension

Fox, Quantum & Scirocco

DESCRIPTION

Vehicles are equipped with front wheel drive and MacPherson strut independent front suspension. Wheel bearing housings and lower strut tubes are a one piece unit, and are supported by lower control arms. Tie rods are connected to lower strut tube, and stabilizer bar are connected to lower control arm. See Fig. 1.

ADJUSTMENTS & INSPECTION

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES in WHEEL ALIGNMENT section.

WHEEL BEARING

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.

SUSPENSION - FRONT

Article Text (p. 2)

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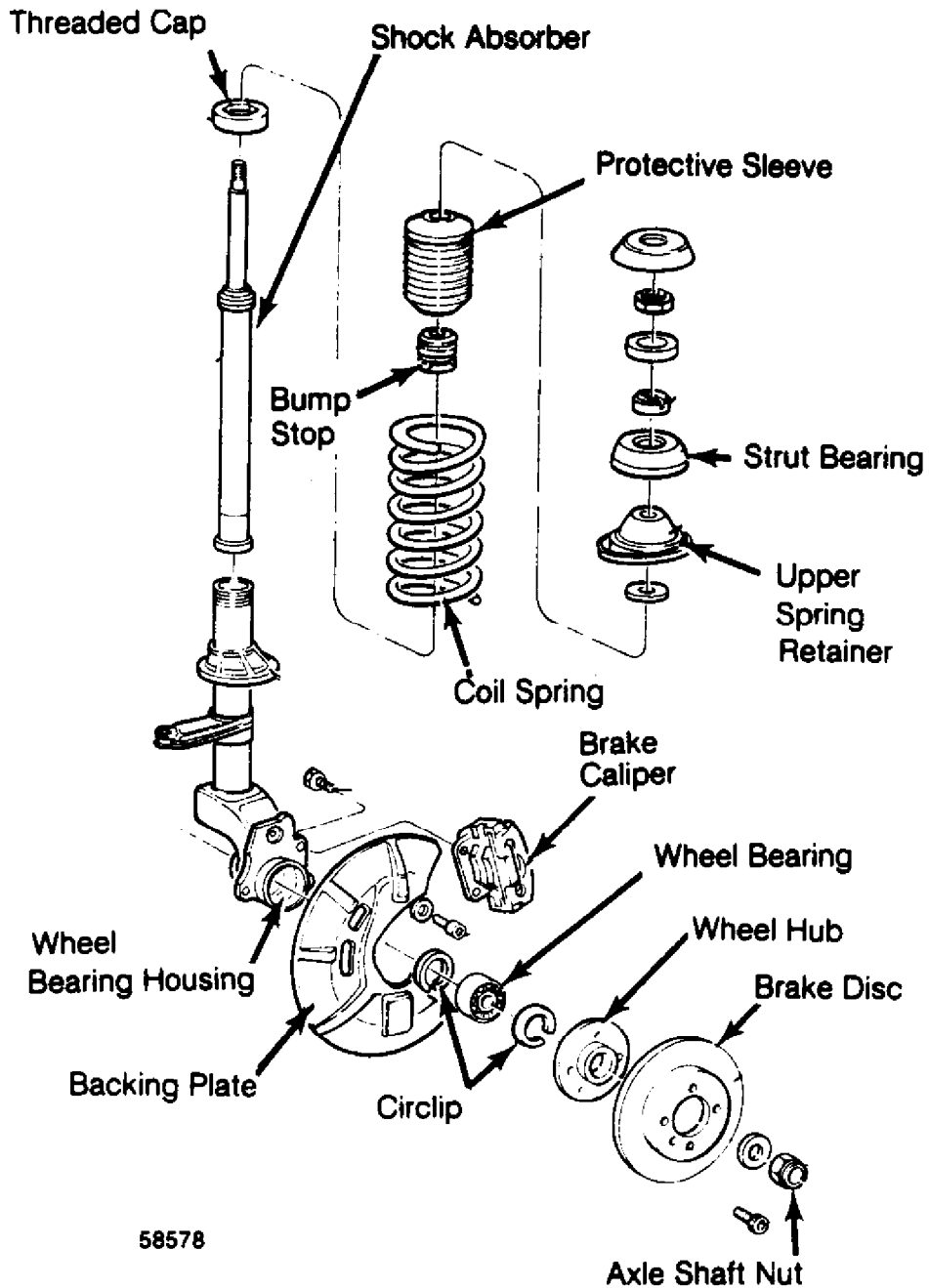


Fig. 1: Exploded View of Front Suspension
Courtesy of Volkswagen United States, Inc.

REMOVAL & INSTALLATION

WHEEL BEARING

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.

SUSPENSION - FRONT

Article Text (p. 3)

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Removal

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

2) Remove tie rod ball joint from strut tube. Remove nut and clamp bolt from control arm ball joint. Remove stabilizer bracket nut from lower control arm. Remove control arm ball joint from wheel bearing housing and press out axle shaft from hub.

3) Support strut assembly to prevent it from falling. Remove upper strut mounting nut and remove wheel bearing housing and strut assembly.

4) Using Hub Remover (VW 295a), press wheel hub from bearing housing. Using a bearing puller, remove wheel bearing inner race from hub assembly. Remove circlips retaining bearing in hub. Using Bearing Remover (VW519), press wheel bearing out of outboard end of bearing housing.

Installation

1) Using Bearing Installer (40-20) and Housing Support (VW402), press new bearing into bearing housing from outboard side. Using same Housing Support and Hub Installer (VW519), press wheel hub into bearing housing. Apply a small bead approximately 1/4" of D6 locking compound to the axle splines before installing in hub. See Fig. 2.

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

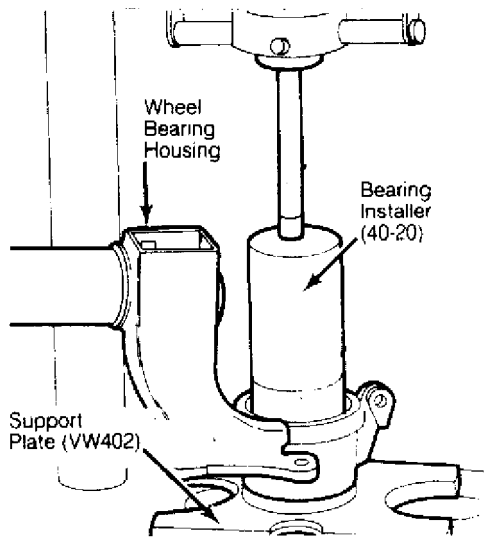


Fig. 2: Pressing Wheel Bearing
Courtesy of Volkswagen United States, Inc.

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

SUSPENSION - FRONT

Article Text (p. 4)

1987 Volkswagen Quantum/Quantum Syncro

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Sunday, March 19, 2000 01:53AM

article. Check wheel alignment.

LOWER CONTROL ARM & BALL JOINT

Removal

1) Raise vehicle and support with safety stands. Remove clamp bolt retaining ball joint to 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, remove ball joint clamp bolt and nut and remove ball joint from wheel bearing housing by pressing down on lower control arm. Remove ball joint-to-control arm nuts and remove ball joint.

3) If control arm is being removed, remove stabilizer bar link rod nut, washers and bushings. Remove control arm pivot bolts and nuts and remove lower control arm

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 pivot bolts with vehicle resting on ground. Tighten all bolts and nuts to specification. See TORQUE SPECIFICATIONS table in this article. Check wheel alignment.

STRUT ASSEMBLY & SHOCK ABSORBER

Removal

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

2) Remove ball joint clamp bolt and nut from wheel bearing housing and press down on control arm to separate ball joint from housing. Press out axle shaft from hub. Support strut assembly to prevent from falling. Remove strut upper mount nut and remove strut.

Disassembly

1) Install strut to spring compressor. Slightly collapse coil spring. Remove shock absorber piston rod nut. Slowly release spring pressure. Remove upper retaining hardware and coil spring.

2) Place strut assembly in a holding fixture. Remove shock absorber threaded cap and remove shock absorber from strut tube. Drain any oil that may be in strut tube.

Reassembly

1) Install shock absorber in strut tube and install and tighten threaded cap. Install protective sleeve and bump stop 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

SUSPENSION - FRONT

Article Text (p. 5)

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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.

Installation

To install, reverse removal procedure. Tighten all bolts and nuts to specification. Check wheel alignment.

FRONT SUSPENSION ASSEMBLY

Removal

1) Raise vehicle and support at center with safety stands. Disconnect brake line, leave flex line in place, and plug openings. 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 bolts. 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. Tighten control arm pivot bolts with vehicle resting on ground. Tighten all bolts and nuts to specification.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS TABLE

Application		Ft. Lbs. (N.m)	
Axle Nut	.....	170	(230)
Axle Shaft-to-Transaxle Bolt	.....	32	(44)
Ball Joint Clamp Bolt	.....	48	(65)
Ball Joint-to-Control Arm Bolt	.....	48	(65)
Caliper Pin Bolts	.....	18	(24)
Control Arm Pivot Bolts	.....	44	(60)
Strut Upper Mount Nut	.....	44	(60)
Tie Rod Castle Nut	.....	22	(30)
Wheel Lug Bolt	.....	81	(110)

END OF ARTICLE