

SUSPENSION - REAR

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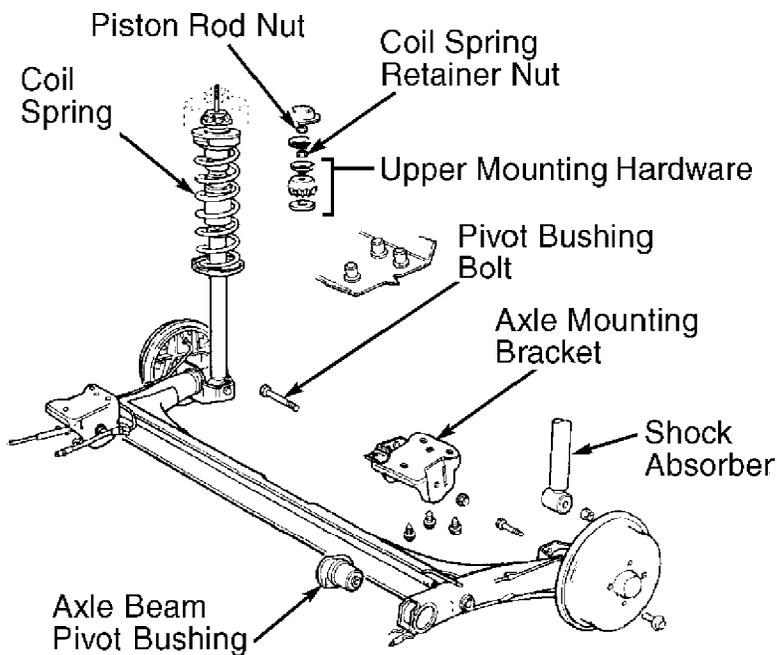
ARTICLE BEGINNING

1999-2000 SUSPENSION
Volkswagen Rear

Beetle, Cabrio, EuroVan, Golf, GTI, Jetta, Passat

DESCRIPTION

Suspension uses control arms and axle beam for stabilization. Control arms and axle beam are combined as one unit. Brake drums or discs rotate on stub axles bolted to control arms. See Fig. 1.



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Fig. 1: Rear Suspension Assembly (Typical)
Courtesy of Volkswagen United States, Inc.

ADJUSTMENTS & INSPECTION

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

NOTE: See SPECIFICATIONS & PROCEDURES article in WHEEL ALIGNMENT.

WHEEL BEARING

NOTE: Wheel bearing and wheel hub for Beetle are installed together in a housing. Wheel bearing/wheel hub assembly is maintenance and adjustment free.

While rotating brake disc or drum by hand, insert tip of screwdriver between thrust washer and hub. Adjustment is correct when light finger pressure against screwdriver moves thrust washer. Turn hub nut to adjust. Install castellated nut and NEW cotter pin.

REMOVAL & INSTALLATION

AXLE BEAM & SUSPENSION ASSEMBLY

CAUTION: When removing suspension assembly, add weight to rear of vehicle to prevent tipping due to change in center of gravity.

Removal

1) With vehicle on floor, remove plastic cap covering upper

strut nuts. Remove strut nuts. Raise and support vehicle. Disconnect parking brake at bracket near axle mount.

2) Disconnect and plug brakelines. Leave flex hose attached to suspension. Separate brake pressure regulator spring from axle beam. Remove axle beam-to-body nuts.

NOTE: DO NOT install bolts and nuts fouled with undercoating. With waxy coating on threads, true tightening torque cannot be measured. Clean or replace bolts and nuts.

Installation

1) If axle beam mounting has been removed, adjust mounting pad. See step 1) of INSTALLATION under AXLE BEAM BONDED RUBBER MOUNTING. If pad is not correctly aligned, torsional preload of mounting bushings will be incorrect.

2) Position rear suspension assembly on body. Install axle beam-to-body nuts. Raise wheel. Guide upper end of strut into body mount.

3) Connect parking brake cables. Connect brakelines. Lower vehicle. Tighten upper strut nuts. Tighten all bolts and nuts to specification. See TORQUE SPECIFICATIONS. Bleed brake system.

AXLE BEAM BONDED RUBBER MOUNTING OR BUSHING

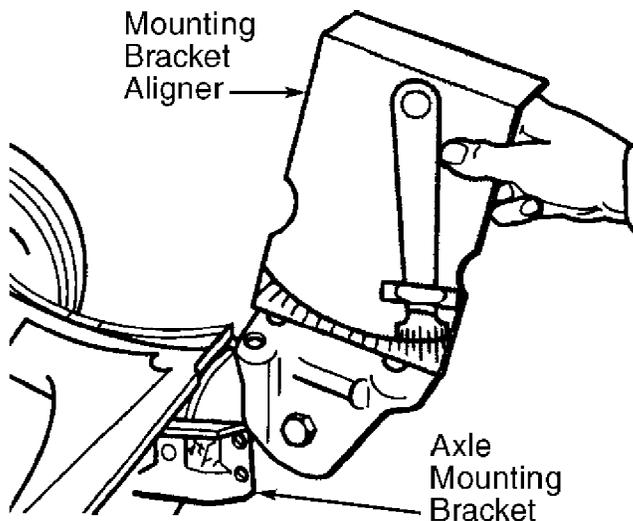
Removal (Except Beetle)

Raise and support vehicle. With no pressure on beam, remove axle beam-to-body nuts. Using Remover/Installer (VW 3111), press out rubber mounting. Press new rubber mounting into place.

Installation

1) Loosely install mounting pad onto axle beam. Using remover/installer, install bushing. Using Mounting Bracket Aligner (3021), align mount until aligner reads 12.5-14.5 on Passat, and 10-14 degrees for all others. See Fig. 2.

2) Install all mounting bolts but do not tighten. Align right-hand mounting bracket so that bolts are in center of elongated holes. On left-hand side press mounting bracket against axle beam pushing with a lever until gap on inside is minimal. Tighten bolts to specification.



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Fig. 2: Aligning Axle Beam Mounting Pad (Except Beetle)
Courtesy of Volkswagen United States, Inc.

Removal (Beetle)

1) On vehicles without ABS remove bolts fastening brake pressure regulator. Unclip parking brake cable from retainer on rear axle beam and unhook from retainers.

2) Position Engine/Transmission Jack (VGA1383A) with rag

under brake line. Disconnect brake line from rear axle. Remove rear axle mounting bracket bolts on both sides.

3) Position a wooden block between rear axle beam and body. Install Slide Hammer (VW771) and pull out bonded rubber bushing.

Installation

Markings on face of bonded rubber bushing must align with edge of trailing arm. Mark position of marks on bonded rubber bushing. Assemble Installer Set (3416/2, 3346 & 3416/1) and bonded rubber bushing onto rear axle. Ensure mark aligns with edge of turning spindle. Check position of bonded rubber bushing after installing. Complete installation by reversing removal procedures.

STRUT ASSEMBLY

Removal

1) With vehicle on floor, remove plastic cap covering upper strut nuts. Remove strut upper nuts. Slowly raise vehicle until weight is off spring. Remove strut-to-axle beam bolt. Raise vehicle until strut can be removed. It may be necessary to turn top of strut until lugs are over cutouts in body. Place strut assembly in vise.

2) Hold piston rod. Remove piston rod nut and related components. See Fig. 1. Remove slotted nut (some models). Remove spacer and coil spring. If coil spring is to be replaced, ensure paint stripe color on replacement spring matches original spring color stripe.

Installation

1) Install protective cap and tube onto shock absorber. Install rubber bumper with small end downward. Install snap ring and washer. Place spring into lower seat. Install upper retainer with spacer sleeve.

2) Tighten piston rod nut. Install upper mounting hardware. Tighten piston rod. To complete installation, reverse removal procedure. Tighten bolts and nuts to specification. See TORQUE SPECIFICATIONS.

WHEEL BEARING

Removal - Disc Brakes (Except Beetle)

Raise and support vehicle. Remove wheel. Remove caliper assembly and support it aside. Remove dust cap, cotter pin, hub nut, and thrust washer. Remove brake disc. Using a long drift, tap bearings, races, and grease seal from disc hub.

Installation

1) Clean hub cavity thoroughly. Using Bearing Race Installer (VW 411 and VW 432), press inner and outer bearing races into bore. Lubricate and install inner bearing. Using Seal Installer (VW 295 and 3074), tap grease seal into bore.

2) Install brake disc, outer bearing, thrust washer, and hub nut. Reverse removal procedure to complete installation. Adjust wheel bearing. See WHEEL BEARING under ADJUSTMENTS & INSPECTION. Install NEW cotter pin.

Removal - Drum Brakes (Except Beetle)

Raise and support vehicle. Remove wheel. Remove dust cap, cotter pin, hub nut, and thrust washer. Remove brake drum. Using a long drift, tap bearings, races, and grease seal from hub.

Installation

1) Clean hub cavity thoroughly. Using Bearing Race Installer (VW 411 and VW 432), press outer bearing race into bore. Using same bearing race installer, press inner bearing race into bore. Lubricate

and install inner bearing. Using Seal Installer (VW 295 and 3074), tap grease seal into bore.

2) Install brake drum, outer bearing, thrust washer, and hub nut. Reverse removal procedure to complete installation. Adjust wheel bearing. See WHEEL BEARING under ADJUSTMENTS & INSPECTION. Install NEW cotter pin.

Removal (Beetle)

1) Raise and support vehicle. Remove wheel. Remove dust cap. On models with rear disc brakes, remove brake caliper, and support aside. Remove brake disc.

2) On models with rear drum brakes, remove brake drum. On all models, remove wheel bearing/hub unit using Kukko Puller (20/2). Pull bearing inner race off stub axle using Leg Clamp Puller Kukko (204-2).

Installation

1) Install wheel bearing/hub unit as far as possible onto stub axle. Attach Assembler (3420) and pull wheel bearing/hub unit fully on up to stop. Remove installer.

2) Install NEW 12-point nut and tighten to specification. See TORQUE SPECIFICATIONS. To complete installation, reverse removal procedure.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

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Application	Ft. Lbs. (N.m)
Brake Backing Plate Bolt	44 (60)
Brake Caliper Bracket Bolt	
Except Beetle	41 (56)
Beetle	48 (65)
Brake Pressure Regulator Mounting Bracket Bolt	
Except Beetle	52 (70)
Beetle	55 (75)
Brake Splash Shield	44 (60)
Coil Spring Retainer-To-Piston Rod Nut	11 (15)
Rear Axle Beam Pivot Bushing Bolt	60 (80)
Rear Axle Mounting Pad-To-Body Bolt	52 (70)
Strut-To-Axle Beam Nut	
Except Beetle	52 (70)
Beetle	44 (60)
Strut-To-Body Bolt	
Except Beetle	18 (25)
Beetle	55 (75)
Stub Axle-To-Control Arm Bolt	44 (60)
Wheel Lug Bolt	
Except Beetle	81 (110)
Beetle	89 (120)

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END OF ARTICLE