1995-96 SUSPENSION

Front - EuroVan

DESCRIPTION

FWD independent suspension is a double-wishbone type with torsion bars mounted on upper control arm. Wheel is supported by a steering knuckle mounted between the upper and lower control arms. Torsion bars are mounted between the upper control arms and vehicle frame. Shock absorbers are mounted between the lower control arm and frame. See Fig. 1.
ADJUSTMENTS & INSPECTION

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

WHEEL BEARING

No adjustment is required.

RIDING HEIGHT

Measure the distance between bolt head of upper shock absorber mounting and center of bolt head of lower shock absorber mounting. If distance measured is not 10.3-10.4" (263-265 mm) turn torsion bar adjustment bolt until correct riding height is obtained.

BALL JOINT CHECKING

Raise and support vehicle. Inspect ball joints for excessive play and damaged rubber boots. There should be no vertical or horizontal ball joint play. Replace ball joint if any play is present.

REMOVAL & INSTALLATION

BALL JOINTS

Removal (Lower Ball Joint)

1. Install Control Arm Support (3250) between upper control arm and subframe. See Fig. 5. If control arm support is not available, release tension from torsion bar. Raise and support vehicle.
2. Remove steering knuckle. See WHEEL BEARING under REMOVAL & INSTALLATION. Using puller, remove lower ball joint from lower control arm. See Fig. 2.

Installation

To install, reverse removal procedure. Ensure all nuts and bolts are tightened to specification. See TORQUE SPECIFICATIONS.
Removal (Upper Ball Joint)

1. Install Control Arm Support (3250) between upper control arm and subframe. See Fig. 5. If control arm support is not available, release tension from torsion bar. Raise and support vehicle.

2. Remove steering knuckle. See WHEEL BEARING under REMOVAL & INSTALLATION. Remove eccentric bushing. See Fig. 7. Using ball joint puller, remove upper ball joint from upper control arm. See Fig. 3.

Installation

Using Press (3111), install upper ball joint into upper control arm. See Fig. 4. Reverse removal procedure to complete installation. Ensure all nuts and bolts are tightened to specification. See TORQUE SPECIFICATIONS.
HUB & KNUCKLE ASSEMBLY

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

LOWER CONTROL ARM

Removal
1. Install Control Arm Support (3250) between upper control arm and subframe. See Fig. 5. If control arm support is not available, release tension from torsion bar. Raise and support vehicle.

2. Remove bolt retaining ball joint at steering knuckle. Separate ball joint from housing. Leave control arm hanging in mounts at subframe. 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. If ball joint is bolted to control arm, remove bolts. Remove ball joint.

3. If control arm is to be removed from vehicle, remove stabilizer bar link rod nut, washers, and bushings. See Fig. 6. Remove pivot bolt and bracket housing inner pivot pin. Slide out control arm.

Inspection

Check lower control arm bushings for excessive wear, cracks or contamination. Replace bushings if necessary. To replace bushings, press out worn bushing. Select new bushing and press into position. Ensure bushing does not twist when seating into place.

Installation

1. 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 steering knuckle. To complete installation, reverse removal procedure.

2. Tighten control arm bolts with vehicle on ground. Tighten all bolts and nuts to specification. See TORQUE SPECIFICATIONS. Check wheel alignment. See WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES article in WHEEL ALIGNMENT section.

---

**Fig. 5: Supporting Upper Control Arm & Torsion Bar**

_Courtesy of VOLKSWAGEN UNITED STATES, INC._
Removal & Installation


2. Remove nuts and bolts securing shock absorber to lower control arm. Compress shock absorber and remove from vehicle. To install, reverse removal procedure.

TORSION BAR

Removal

Installation

To install, reverse removal procedure. Tighten adjusting nut so stud protrusion is equal to original measurement.

UPPER CONTROL ARM

Removal

1. Remove torsion bar. See TORSION BAR under REMOVAL & INSTALLATION. Remove cotter pin and nut. Disconnect upper ball joint from steering knuckle. See Fig. 7. Remove nut, cushion and retainer.
2. Disconnect shock absorber from frame. Do not disconnect shock absorber from lower control arm. Remove upper control arm shaft bolts and remove upper control arm from frame.

Bushing Replacement


Installation

To install, reverse removal procedure. Tighten shaft nuts to specification with vehicle on ground. Tighten all nuts and bolts to specification. See TORQUE SPECIFICATIONS.
1. Remove axle shaft nut with front wheels on ground. Install Control Arm Support (3250) between upper control arm and subframe. See Fig. 5. If control arm support is not available, release tension from torsion bar. Raise and support vehicle.

3. Remove wheel bearing circlip. Using Hub Remover (40-105), press wheel hub assembly out of steering knuckle. See Fig. 8. Using Bearing Remover (VW 442), press wheel bearing out of steering knuckle. See Fig. 9. Using a bearing puller, remove wheel bearing inner race from hub assembly. See Fig. 10.

---

**Fig. 8: Pressing Hub Assembly Out Of Steering Knuckle**
Courtesy of VOLKSWAGEN UNITED STATES, INC.

**Fig. 9: Pressing Wheel Bearing Out Of Steering Knuckle**
Courtesy of VOLKSWAGEN UNITED STATES, INC.

**Fig. 10: Wheel Bearing Inner Race**

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

Installation

1. Press new wheel bearing race onto hub. Using Bearing Installer (3253/7), press new bearing into steering knuckle from outboard side. Using Hub Installer (3074), press new bearing into steering knuckle. See Fig. 11.

2. To complete installation, reverse removal procedure. Always replace self-locking axle shaft bolt. Tighten bolts and nuts to specification. See TORQUE SPECIFICATIONS. Check wheel alignment. See WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES article in WHEEL ALIGNMENT section.

**Fig. 10: Removing Wheel Bearing Inner Race**
Courtesy of VOLKSWAGEN UNITED STATES, INC.

**Fig. 11: Pressing Wheel Hub Into Steering Knuckle**

**TORQUE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Application</th>
<th>Ft. Lbs. (N.m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axle Nut</td>
<td>148 (200)</td>
</tr>
<tr>
<td>Axle Shaft-To-Transaxle Bolt</td>
<td>41 (55)</td>
</tr>
<tr>
<td>Ball Joint Clamp Bolt</td>
<td>37 (50)</td>
</tr>
<tr>
<td>Ball Joint-To-Steering Knuckle Bolt</td>
<td>81 (110)</td>
</tr>
<tr>
<td>Brake Disc-To-Hub Bolt</td>
<td>118 (160)</td>
</tr>
<tr>
<td>Caliper Bolt</td>
<td>200 (265)</td>
</tr>
<tr>
<td>Caliper Pin Bolts</td>
<td>18 (24)</td>
</tr>
<tr>
<td>Control Arm Pivot Bolt</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>118 (160)</td>
</tr>
<tr>
<td>Upper</td>
<td>74 (116)</td>
</tr>
<tr>
<td>Tie Rod Castle Nut</td>
<td>26 (35)</td>
</tr>
<tr>
<td>Torsion Bar Bolts</td>
<td>118 (160)</td>
</tr>
<tr>
<td>Wheel Lug Bolt</td>
<td>81 (110)</td>
</tr>
</tbody>
</table>