SUSPENSION - REAR
1998 Pontiac Bonneville

1998-99 SUSPENSION
Rear - "C" & "H" Bodies
GM
Bonneville, Eighty Eight, LeSabre, LSS, Park Avenue

DESCRIPTION

Vehicle uses an independent rear suspension. See Fig. 1. Coil springs bear vehicle weight. Struts absorb shock. Stabilizer bar minimizes body roll. Suspension adjustment link between strut and control arm allows rear toe to be adjusted. Rear camber is adjusted at bolts that secure strut to knuckle. Hub and bearing assembly on knuckle is a sealed unit. If faulty, entire assembly must be replaced.

NOTE: For information on Electronic Level Control (ELC), see appropriate ELECTRONIC article.

ADJUSTMENTS & INSPECTION

Fig. 1: Identifying Rear Suspension Components
Courtesy of General Motors Corp.
WHEEL ALIGNMENT

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

WHEEL BEARING

Inspection
Raise and support vehicle. Remove wheel. Remove brake drum, or caliper and rotor. Mount dial indicator with stem resting against hub. Push inward on hub. Adjust indicator to zero. Pull outward and note reading. Replace hub and bearing assembly if movement exceeds .005" (.13 mm).

RIDE HEIGHT

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

BALL JOINT CHECKING

Inspect for looseness where ball joint stud engages knuckle. If looseness exists, replace ball joint and steering knuckle. If stud is tight, position vehicle at normal riding height. With vehicle weight supported by wheels, ensure ball joint grease fitting shoulder extends past ball joint housing cover. See Fig. 2. Replace ball joint if grease fitting is even with or below cover. If ball joint is separated from knuckle inspect seal for damage, replace ball joint if seal is cut.

Fig. 2: Checking Ball Joint For Wear
Courtesy of General Motors Corp.

REMOVAL & INSTALLATION

COIL SPRING & INSULATORS
Removal

1) Raise and support vehicle. Allow suspension to hang free. Remove wheel. Disconnect ELC height sensor link from right control arm (if equipped). Remove parking brake cable retaining clip at left control arm. Disconnect stabilizer bar from knuckle bracket.

2) Place chain around spring and through control arm as a safety precaution. Secure Holding Fixture (J-23028-01) to transmission jack. Position holding fixture under control arm. See Fig. 3. Raise jack to remove tension from control arm pivot bolts.

3) Remove rear pivot bolt from control arm. Carefully move jack to remove tension from front of control arm. Remove front pivot bolt. Slowly lower jack to allow control arm to pivot downward.

4) After spring tension is relieved, remove safety chain, spring and insulators. DO NOT apply force to control arm or ball joint to remove spring.

Installation

1) Replace insulators if damaged or vehicle mileage exceeds 50,000 miles. Install upper and lower insulators onto spring. Install spring with upper spring end in proper position. See Fig. 4. On vehicles without ELC, ensure tightly wound coils are at top. On all vehicles, raise control arm into position using holding fixture secured to transmission jack.

CAUTION: Tighten stabilizer bar and control arm pivot nuts in proper sequence, with vehicle at normal riding height.

2) Install but DO NOT tighten front and then rear pivot bolts. Attach but DO NOT tighten stabilizer bar to knuckle bracket. To install remaining components, reverse removal procedure. Lower vehicle to normal riding height. Tighten pivot nuts (or bolts) to specification. See TORQUE SPECIFICATIONS table. Tighten stabilizer bar bolt to specification.

Fig. 3: Installing Control Arm Holding Fixture
Courtesy of General Motors Corp.
BALL JOINT

Removal & Installation
1) Raise and support vehicle. Remove wheel. For right ball joint replacement, disconnect ELC height sensor link (if equipped). For left ball joint replacement, remove parking brake cable retaining clip.

2) Remove cotter pin and nut securing suspension adjustment link to knuckle. See Fig. 1. Using Puller (J-24319-01) separate link from knuckle. Support control arm with a jack to prevent spring tension from forcing it downward.

3) Remove ball joint cotter pin and nut. Turn nut upside down and install onto ball joint stud (flat portion facing upward). DO NOT tighten nut. Using Puller (J-34505), separate ball joint stud from control arm by backing off inverted nut against puller.

4) Using Clamp (J-9519-23), Screw (J-9519-18) and Adapters (J-9519-7 and J-9519-17), press ball joint from control arm. See Fig. 5. To install, reverse removal procedure using clamp, screw and adapters. See Fig. 5. Attach ball joint to knuckle using NEW slotted hex nut.
Fig. 5: Removing & Installing Ball Joint
Courtesy of General Motors Corp.

CONTROL ARM
Removal
1) Raise and support vehicle. Remove wheel. Using Puller (J-24319-01), separate suspension adjustment link from control arm. Remove coil spring. See COIL SPRING & INSULATORS. Remove ball joint cotter pin and nut.
2) Turn nut upside down and install onto ball joint stud (flat portion facing upward). DO NOT tighten nut. Using Puller (J-34505), separate ball joint stud from control arm by backing off inverted nut against puller. Remove control arm pivot bolts and remove control arm.

Installation
To install, reverse removal procedure, install NEW ball joint nut. With vehicle at normal riding height, tighten control arm pivot nuts (or bolts) to specification. See TORQUE SPECIFICATIONS table. Tighten stabilizer bar bolts to specification.

CONTROL ARM BUSHING

Removal
1) Remove control arm. See CONTROL ARM. Install Spacer (J-22222-5 or J-33793-5) according to bushing size in control arm. Position Receiver Tube (J-25317-2) and Cap (J-29376-7) on outside of control arm. See Fig. 6. Ensure receiver tube does not contact bushing flange.
2) Coat threaded portion of Bolt and Bearing (J-21474-19) with grease. Install bolt through receiver, cap and bushing. Install Remover (J-22222-2 or J-28685-2) onto bolt at inner side of control arm with small end contacting bushing.
3) Place bearing on bolt, and install Nut (J-21474-18). Tighten nut to remove bushing from control arm.

NOTE: Control arm bushings are different sizes, requiring different combinations of removers/installers for replacement.

Installation
1) Install NEW bushing in control arm with flanged end facing outward. Install proper sized spacer on bushing. Position receiver tube and cap on inside of control arm.
2) Center receiver tube over hole. Coat threaded portion of bolt and bearing with grease. Install bolt through receiver, cap and bushing. Place installer on bolt at outer side of control arm with large end contacting bushing flange.
3) Place bearing on bolt and install nut. Bearing must be positioned between nut and installer. Tighten nut and draw bushing into control arm until bushing flange seats firmly against control arm. Reinstall control arm. See CONTROL ARM.

Fig. 6: Removing & Installing Control Arm Bushings
Courtesy of General Motors Corp.

STABILIZER BAR
Removal
Raise and support vehicle. Remove wheels. Remove nut, support bolt, retainer, and insulators retaining stabilizer bar to knuckle. Remove bushing clip bolt. Bend open end of bushing clip downward. Remove stabilizer bar and bushings. See Fig. 7.

Installation
To install, reverse removal procedure, install insulator into link with slit toward rear. Tighten bushing clip bolt to specification with vehicle at normal riding height. See TORQUE SPECIFICATIONS table.

CAUTION: Knuckle must be supported when strut is removed to prevent possible ball joint damage.
Removal

Remove trim covers from trunk (or rear seat and seat back) as necessary for access to upper strut mount. Raise and support vehicle. Remove wheel. Disconnect ELC air tube (if equipped) from strut. Support control arm from below. Remove bolts securing strut to knuckle. See Fig. 8. Remove strut upper mounting nuts. Remove lower strut from vehicle, and disconnect CCR electrical connector at top of strut (if equipped).

Installation

To install, reverse removal procedure, strut-to-knuckle bolts must face toward front of vehicle. Tighten bolts to specification. See TORQUE SPECIFICATIONS table. Before lowering vehicle, lightly pressurize ELC system (if equipped) by grounding Yellow wire of compressor test lead located near ELC compressor in engine compartment. Check and adjust rear wheel alignment. See WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES article in WHEEL ALIGNMENT section.

Fig. 8: Exploded View Of Strut
Courtesy of General Motors Corp.

SUSPENSION ADJUSTMENT LINK
Removal
Raise and support vehicle. Remove wheel. Remove cotter pin and nut from suspension adjustment link. See Fig. 1. Using Puller (J-24319-01), separate suspension adjustment link from knuckle. Remove nut and washer from control arm. Remove suspension adjustment link.

Installation
To install, reverse removal procedures. Lubricate adjustment link joints. Check and adjust rear alignment. See WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES article in WHEEL ALIGNMENT section.

WHEEL BEARING

Removal & Installation

TORQUE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Application</th>
<th>Ft. Lbs. (N.m)</th>
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<tbody>
<tr>
<td>Ball Joint Stud Nut</td>
<td>(1) 40 (54)</td>
</tr>
<tr>
<td>Control Arm Pivot</td>
<td></td>
</tr>
<tr>
<td>Bolt (if torquing from bolt side)</td>
<td>134 (182)</td>
</tr>
<tr>
<td>Nut (if torquing from nut side)</td>
<td>85 (115)</td>
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<tr>
<td>Hub &amp; Bearing Assembly-To-Knuckle Bolt</td>
<td>52 (71)</td>
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<tr>
<td>Stabilizer Bar</td>
<td></td>
</tr>
<tr>
<td>Bar-To-Knuckle Bracket Bolt/Nut</td>
<td>13 (18)</td>
</tr>
<tr>
<td>Bar Link-To-Bracket Bolt</td>
<td>35 (47)</td>
</tr>
<tr>
<td>Bar Link Bracket-To-Frame Bolt</td>
<td>14 (19)</td>
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<tr>
<td>Bar-To-Link Bolt</td>
<td>17 (23)</td>
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<tr>
<td>Strut-To-Knuckle Nut</td>
<td>140 (190)</td>
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<tr>
<td>Strut-To-Upper Mount Nut</td>
<td>35 (47)</td>
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<tr>
<td>Suspension Adjusting Link Nut</td>
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</tr>
<tr>
<td>Adjusting Lock Nut</td>
<td>48 (65)</td>
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<tr>
<td>At Control Arm</td>
<td>63 (85)</td>
</tr>
<tr>
<td>At Knuckle</td>
<td>33 (45)</td>
</tr>
<tr>
<td>Wheel Lug Nut</td>
<td>100 (136)</td>
</tr>
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</table>

(1) - Tighten to specification (minimum). Tighten further, but only as far as necessary to align cotter pin holes. DO NOT loosen nut to align holes.