

## 1997 Mazda MX-5 Miata

1997, 1999-2000 SUSPENSION Rear - Miata

### 1997, 1999-2000 SUSPENSION

#### Rear - Miata

## DESCRIPTION

Rear suspension consists of spring over shock, crossmember, upper and lower arms, and stabilizer bar with control link. Upper and lower arms attach to crossmember and knuckle. A stabilizer bar with control link is mounted to lower arm and crossmember. Rear wheel alignment is adjusted by turning adjusting cams on lower arm. Upper coil over shock mount plate has been redesigned for 1999-2000. New design incorporates a urethane bumper and improves ride and cornering.

## ADJUSTMENTS & INSPECTION

### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

### WHEEL BEARING ADJUSTMENT

Raise and support vehicle. Remove rear wheel assembly. Remove caliper assembly and ABS wheel speed sensor. Remove brake rotor. Attach dial indicator to axle hub and measure bearing play. Check bearing axial play by rocking hub assembly by hand. Maximum bearing play is .002" (.05 mm). If play exceeds specification, check drive axle lock nut torque or replace wheel bearing. See **TORQUE SPECIFICATIONS**.

## REMOVAL & INSTALLATION

### WHEEL BEARING

#### Removal

1. Raise and support vehicle. Remove rear wheel assembly. Remove drive axle lock nut. Remove brake caliper assembly and ABS wheel speed sensor, and wire aside. Remove screws and rotor. Remove ABS speed sensor bracket. Remove knuckle assembly from upper and lower arms.
2. Using Handle (49-G030-102), Installer (49-G030-727) and Puller (49-F026-103), remove hub from knuckle. Remove snap ring from knuckle. Using handle, installer and Puller (49-0636-145), remove wheel bearing inner race from hub. Remove wheel bearing outer race from knuckle using Handle (49-G030-797), Puller (49-F026-103) and Adapter (49-F027-005).

#### Inspection

Check wheel hub and knuckle for cracks and damage. Check dust cover for deformation. Check bearing for excessive wear or seizure. Replace components as necessary.

#### Installation

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Press new wheel bearing into knuckle using Handle (49-G030-797), Installer (49-F027-007) and Adapter (49-F027-009). Press hub into knuckle using adapter. To install, reverse removal procedure. Tighten drive axle lock nut to specification. See **TORQUE SPECIFICATIONS** . Stake drive axle lock nut. Check axial play. See **WHEEL BEARING ADJUSTMENT** .

### SHOCK ASSEMBLY

#### Removal & Disassembly

1. Raise vehicle and remove fuel tank filler pipe protector (1997). Remove rear wheel assembly. Remove stabilizer bar nut and bolt from lower control arm. Remove 2 upper shock mount-to-body nuts. Remove lower shock bolt. Lower arms, and remove shock assembly.

**CAUTION: DO NOT lower arms excessively. This may damage brake hose.**

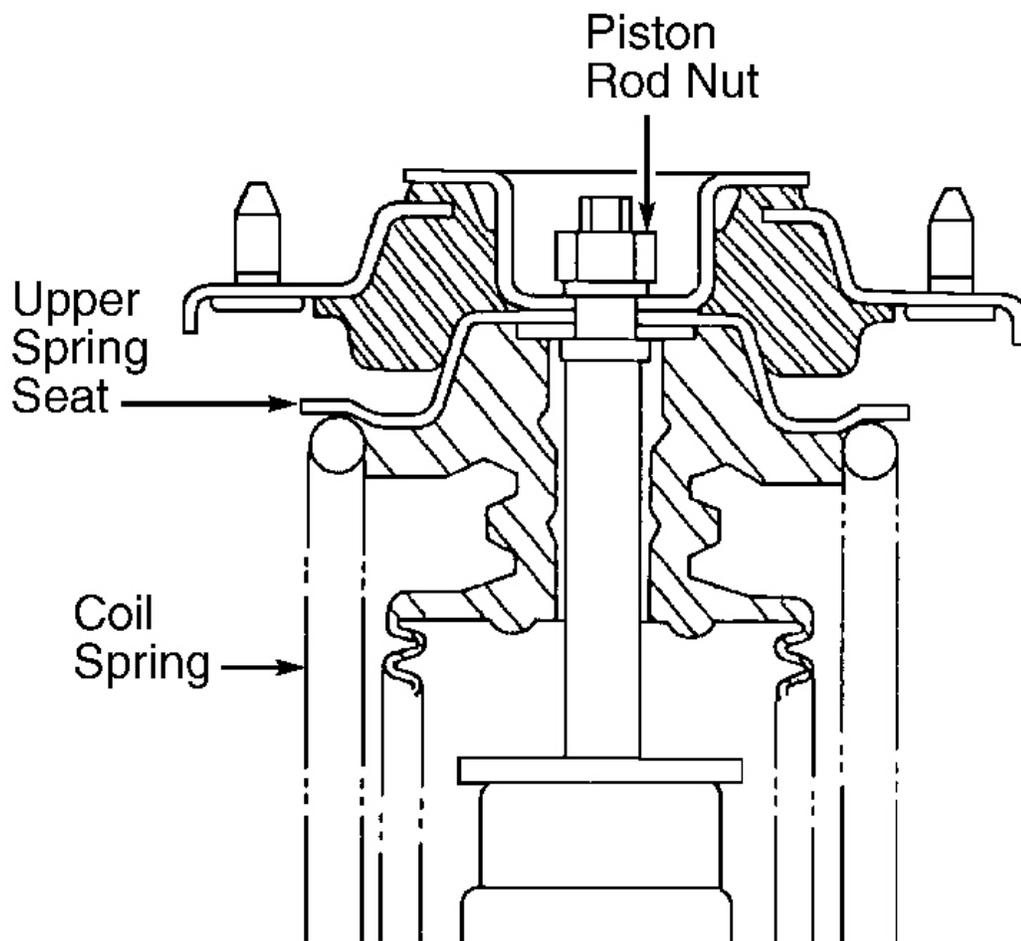
2. Clamp shock securely in soft-jaw vise. Compress coil spring. Remove lock nut and washer. Remove remaining components and note order for reassembly.

#### Inspection

Check shock for leaks or abnormal noise. Inspect components for wear or damage. Check for loose installation of bolts and nuts. Replace components as necessary.

#### Reassembly (1997)

To reassemble, reverse disassembly procedure. To install, reverse removal procedure. Ensure coil spring is seated in upper and lower seats. See **Fig. 1** . Tighten piston rod nut. See **TORQUE SPECIFICATIONS** .



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**Fig. 1: Cross-Sectional View Of Upper Coil Over Shock Assembly (1997)**  
Courtesy of MAZDA MOTORS CORP.

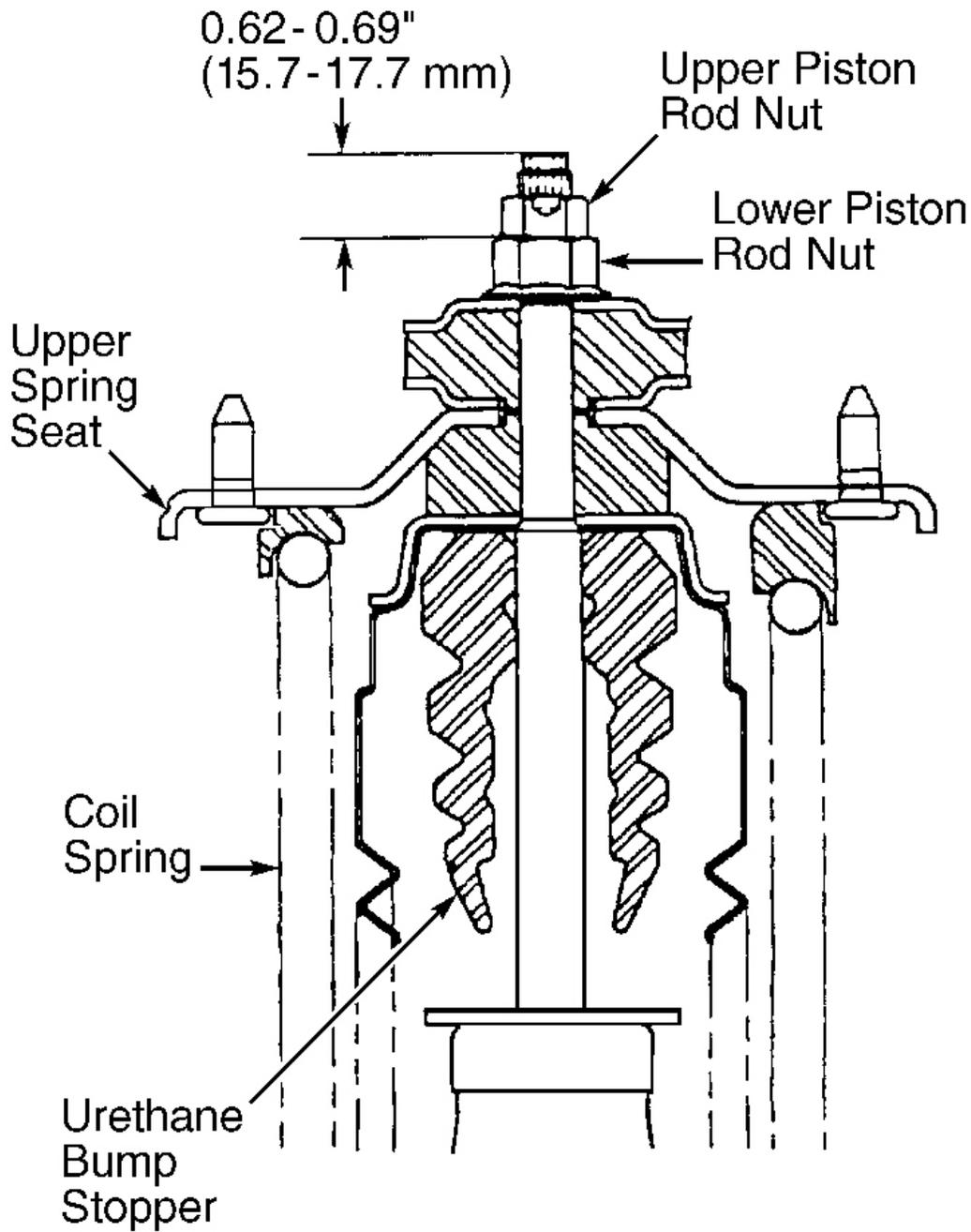
**Reassembly (1999 & 2000)**

Clamp shock in vise. Install spring and upper spring retainer in original orientation to shock. Tighten lower piston rod nut so that exposed thread of piston rod is 0.62-0.69" (15.7-17.7mm). See **Fig. 2** . Tighten upper nut to 12-17 ft. lbs. (16-23 N.m).

**CAUTION: Using air tool will damage piston rod thread. DO NOT use air tool.**

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**Fig. 2: Cross-Sectional View Of Upper Coil Over Shock Assembly (1999-2000)**  
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### Installation

Reinstall shock in reverse order. Tighten nuts and bolts to specification with vehicle resting on ground and suspension unloaded. See **TORQUE SPECIFICATIONS** . Check rear wheel alignment. See **SPECIFICATIONS & PROCEDURES** article in **WHEEL ALIGNMENT**.

### LOWER ARM

#### Removal

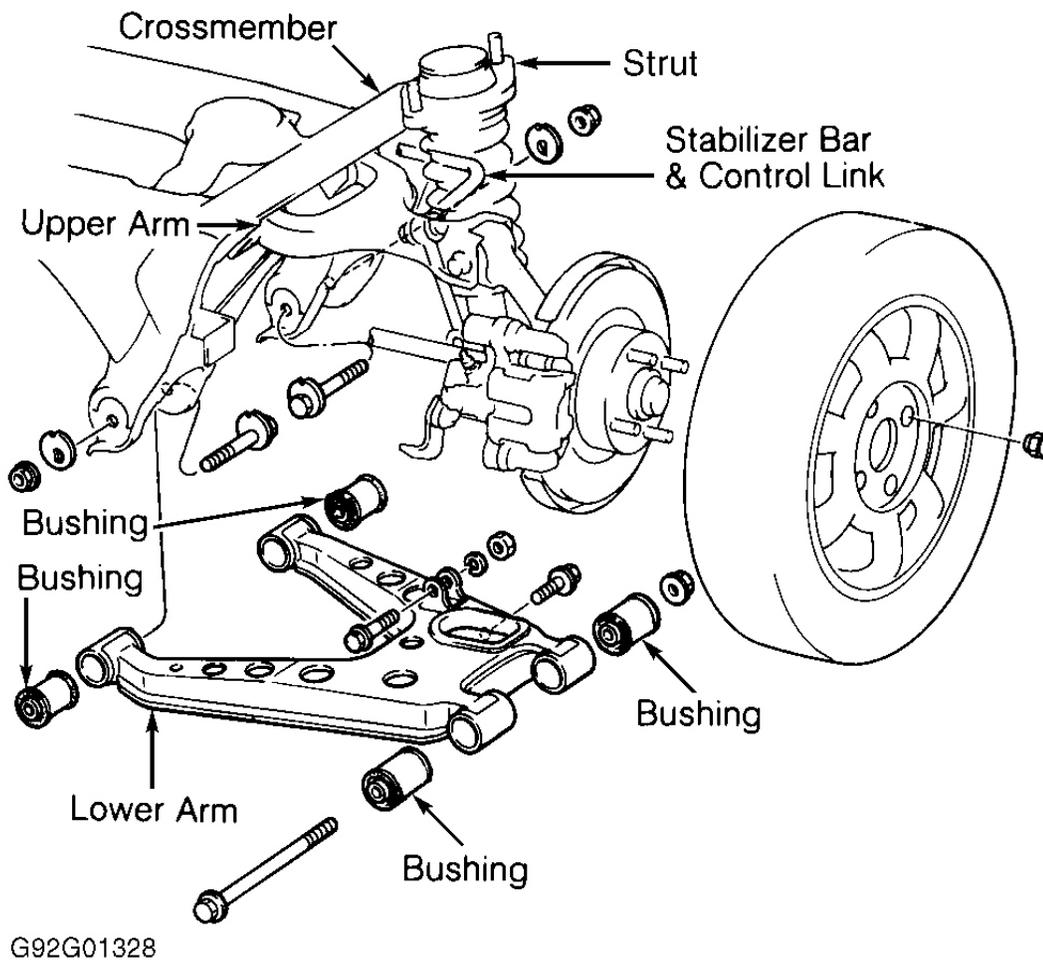
Raise and support vehicle. Remove rear wheel assembly. Remove stabilizer bar control link nut and bolt. See **Fig. 3** . Remove lower shock bolt. Remove lower arm-to-crossmember bolts. Remove lower arm-to-knuckle bolts. Remove lower arm. Inspect arm for damage, cracks and deformation. Check for damaged or worn bushings.

#### Installation

To install, reverse removal procedure. Tighten all nuts/bolts to specification with vehicle resting on ground and suspension unloaded. See **TORQUE SPECIFICATIONS** . Adjust rear wheel alignment. See **SPECIFICATIONS & PROCEDURES** article in **WHEEL ALIGNMENT**.

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**Fig. 3: Exploded View Of Rear Lower Arm Assembly**  
Courtesy of MAZDA MOTORS CORP.

### UPPER ARM

#### Removal

Raise and support vehicle. Remove rear wheel assembly. Remove upper arm-to-crossmember bolts. Remove upper arm-to-knuckle bolts. Remove upper arm. Inspect arm for damage, cracks and deformation. Check for damaged or worn bushings.

#### Installation

To install, reverse removal procedure. Tighten all nuts/bolts to specification with vehicle resting on ground and suspension unloaded. See **TORQUE SPECIFICATIONS** . Adjust rear wheel alignment. See **SPECIFICATIONS & PROCEDURES** article in **WHEEL ALIGNMENT**.

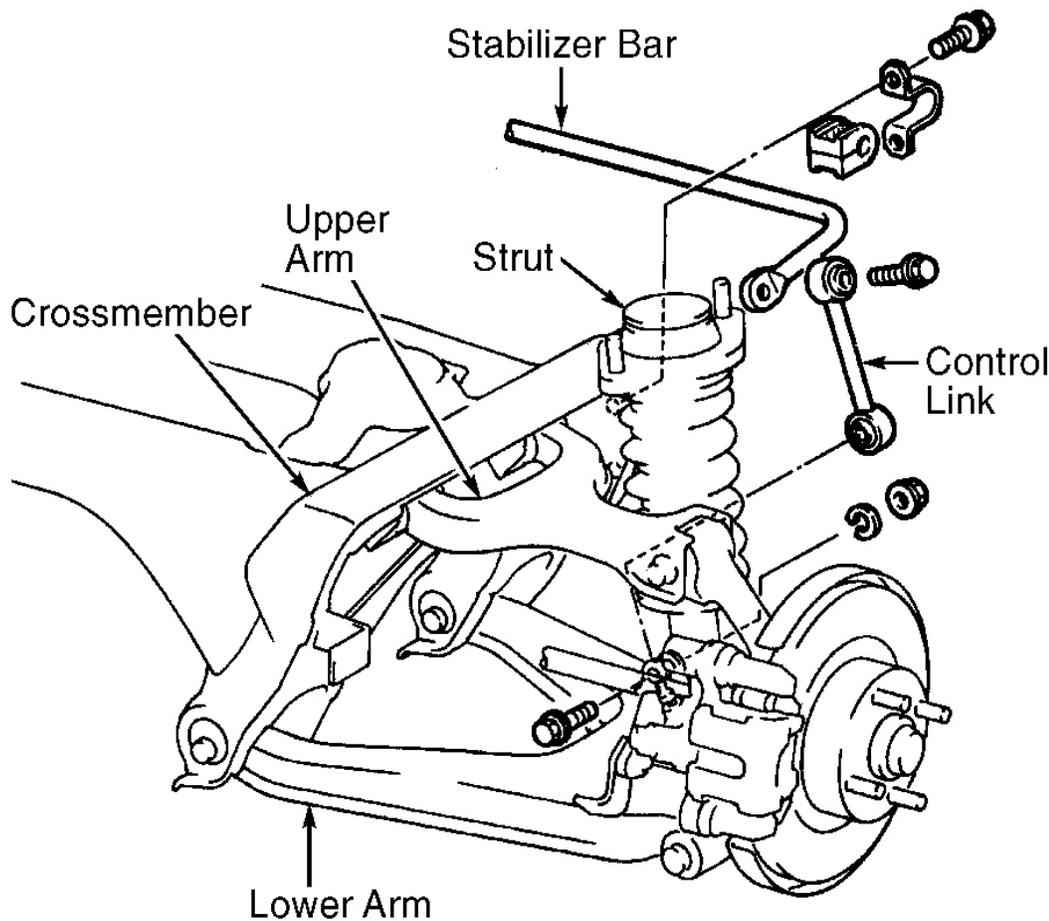
## STABILIZER BAR

### Removal

Raise and support vehicle. Remove rear wheel assembly. Remove stabilizer bar-to-crossmember bolts, brackets and bushings. See **Fig. 4** . Remove stabilizer bar control link-to-lower arm nut and bolt. Remove stabilizer bar and control link from vehicle. Separate stabilizer bar from control link. Inspect stabilizer bar and components for damage, cracks and deterioration.

### Installation

To install, reverse removal procedure. Ensure bushing is aligned with White line on stabilizer. Tighten nuts and bolts to specification with vehicle resting on ground and suspension unloaded. See **TORQUE SPECIFICATIONS** .



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**Fig. 4: Exploded View Of Rear Stabilizer Bar & Control Link**

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**TORQUE SPECIFICATIONS****TORQUE SPECIFICATIONS**

<b>Application</b>	<b>Ft. Lbs. (N.m)</b>
ABS Speed Sensor Harness & Bracket Bolts	12-16 (16-22)
Caliper Assembly-To-Knuckle Bolt	37-50 (50-68)
Drive Axle Lock Nut	
1997	160-216 (216-294)
1999 & 2000	174-235 (236-318)
Lower Arm-To-Crossmember Nuts	54-70 (73-95)
Lower Arm-To-Knuckle Nut	46-55 (63-75)
Shock Piston Rod Nut	
1997	22-27 (30-37)
Shock-To-Body Nuts	22-26 (30-35)
Stabilizer Bar Bracket Bolts	15-20 (20-28)
Stabilizer Link Bolts	
1997	27-39 (37-53)
1999 & 2000	32-44 (44-60)
Strut-To-Lower Arm Bolt	54-68 (73-93)
Upper Arm-To-Crossmember Nuts	
1997	34-49 (47-66)
1999 & 2000	40-56 (54-76)
Upper Arm-To-Knuckle Bolt	
1997	34-49 (47-66)
1999 & 2000	40-56 (54-76)
Wheel Lug Nuts	66-86 (89-117)