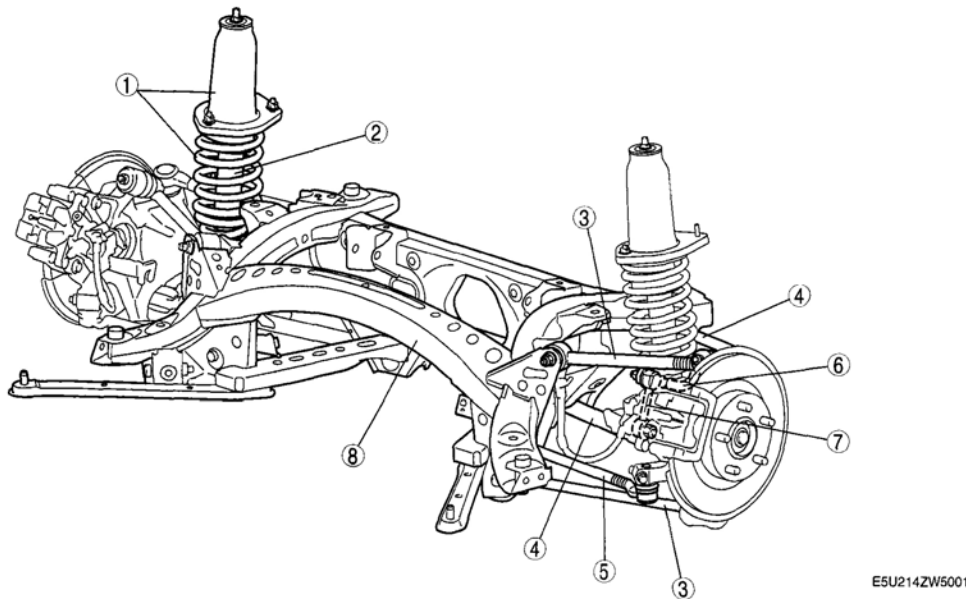


2007 SUSPENSION

Rear Suspension - MX-5 Miata

REAR SUSPENSION LOCATION INDEX



| | |
|---|-------------------------------------|
| 1 | Rear shock absorber and coil spring |
| 2 | Rear shock absorber |
| 3 | Rear trailing link |

| | |
|---|-------------------------|
| 4 | Rear lateral link |
| 5 | Toe control link |
| 6 | Rear stabilizer |
| 7 | Stabilizer control link |
| 8 | Rear crossmember |

G04318148

Fig. 1: Identifying Location Of Rear Suspension Components
 Courtesy of MAZDA MOTORS CORP.

REAR SHOCK ABSORBER AND COIL SPRING REMOVAL/INSTALLATION

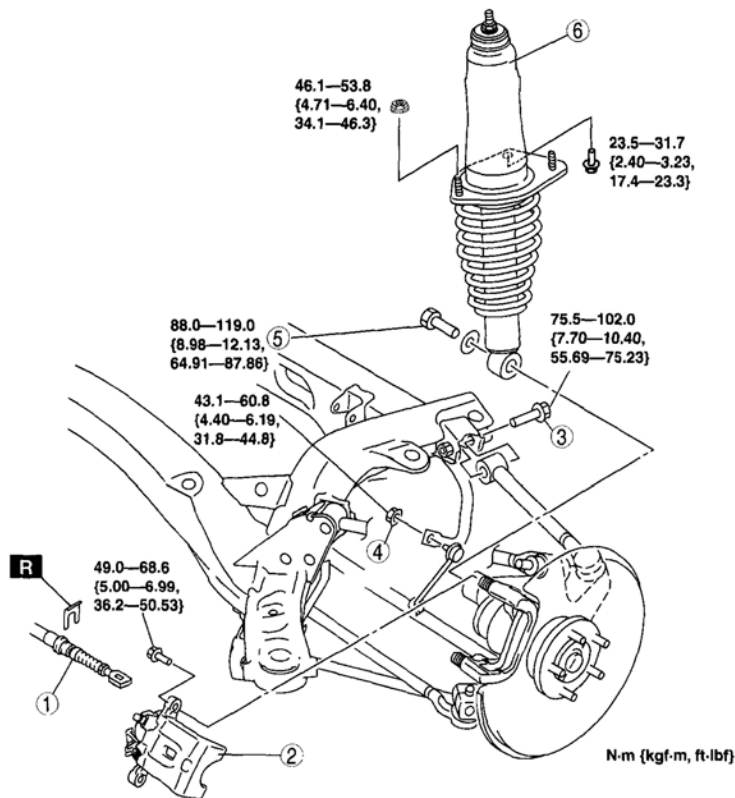
CAUTION:

- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the wiring harness if it is pulled by mistake. Before operations, remove the ABS wheel-speed sensor (axle side), and move the sensor away from the harnesses.

1. When working on the left side, remove the fuel tank protector. (See **FUEL TANK REMOVAL/INSTALLATION [LF]** .)
2. Remove in the order indicated in **Fig. 2** .
3. Install in the reverse order of removal.

2007 Mazda MX-5 Miata Sport

2007 SUSPENSION Rear Suspension - MX-5 Miata



ESU214ZW5002

| | | | |
|---|--------------------------------|---|-------------------------------------|
| 1 | Parking brake cable | 4 | Stabilizer control link upper nut |
| 2 | Caliper | 5 | Rear shock absorber lower bolt |
| 3 | Rear lateral link (upper) bolt | 6 | Rear shock absorber and coil spring |

G04318149

Fig. 2: Identifying Rear Shock Absorber & Coil Spring (With Torque Specifications)
Courtesy of MAZDA MOTORS CORP.

CALIPER REMOVAL NOTE

1. Remove the caliper, and hang the cable out of the way.

REAR SHOCK ABSORBER AND COIL SPRING DISASSEMBLY/ASSEMBLY

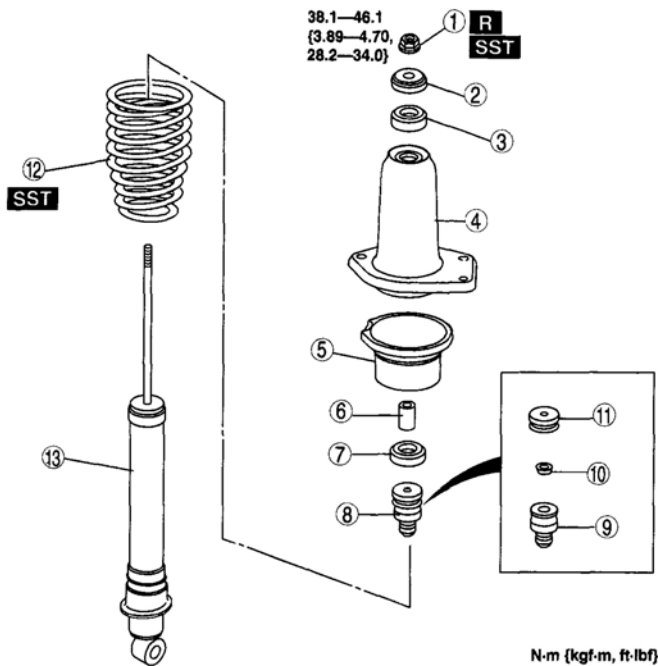
WARNING:

- Removing/installing the shock absorber and coil spring is dangerous. The shock absorber and coil spring could fly off and cause injury or death, and damage the vehicle.

1. Remove the rear shock absorber and coil spring. (See **REAR SHOCK ABSORBER AND COIL SPRING REMOVAL/INSTALLATION** .)
2. Remove in the order indicated in **Fig. 3** .
3. Install in the reverse order of removal.

2007 Mazda MX-5 Miata Sport

2007 SUSPENSION Rear Suspension - MX-5 Miata



ESU214ZW5013

| | |
|---|--------------------|
| 1 | Piston rod nut |
| 2 | Retainer |
| 3 | Bushing |
| 4 | Upper spring seat |
| 5 | Spring seat rubber |
| 6 | Spacer |

| | |
|----|----------------------------------|
| 7 | Bushing |
| 8 | Bound stopper and stopper casing |
| 9 | Bound stopper |
| 10 | Collar |
| 11 | Stopper casing |
| 12 | Coil spring |
| 13 | Rear shock absorber |

G04318150

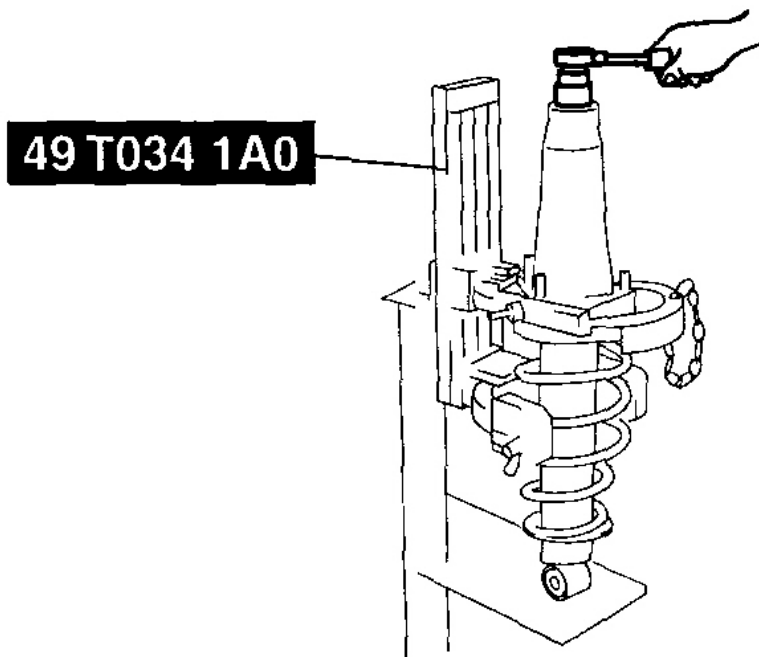
Fig. 3: Identifying Rear Shock Absorber & Coil Spring Components (With Torque Specifications)
 Courtesy of MAZDA MOTORS CORP.

PISTON ROD NUT REMOVAL NOTE

WARNING:

- Before removing the piston rod nut, secure the shock absorber and spring in the SSTs. Otherwise, the shock absorber and spring could fly off under tremendous pressure and cause serious injury or death, or damage to the vehicle.

1. Set the SSTs using cloth to prevent the spring from being damaged.
2. Using the SSTs, compress the coil spring and remove the piston rod nut.



E5U214ZW5003

Fig. 4: Removing Piston Rod Nut
Courtesy of MAZDA MOTORS CORP.

COIL SPRING INSTALLATION NOTE

1. Set the coil spring to the SSTs using cloth.
2. Using the SSTs, compress the coil spring.
3. Install the shock absorber so that the lower end of the coil spring is seated on the step of the lower spring seat.

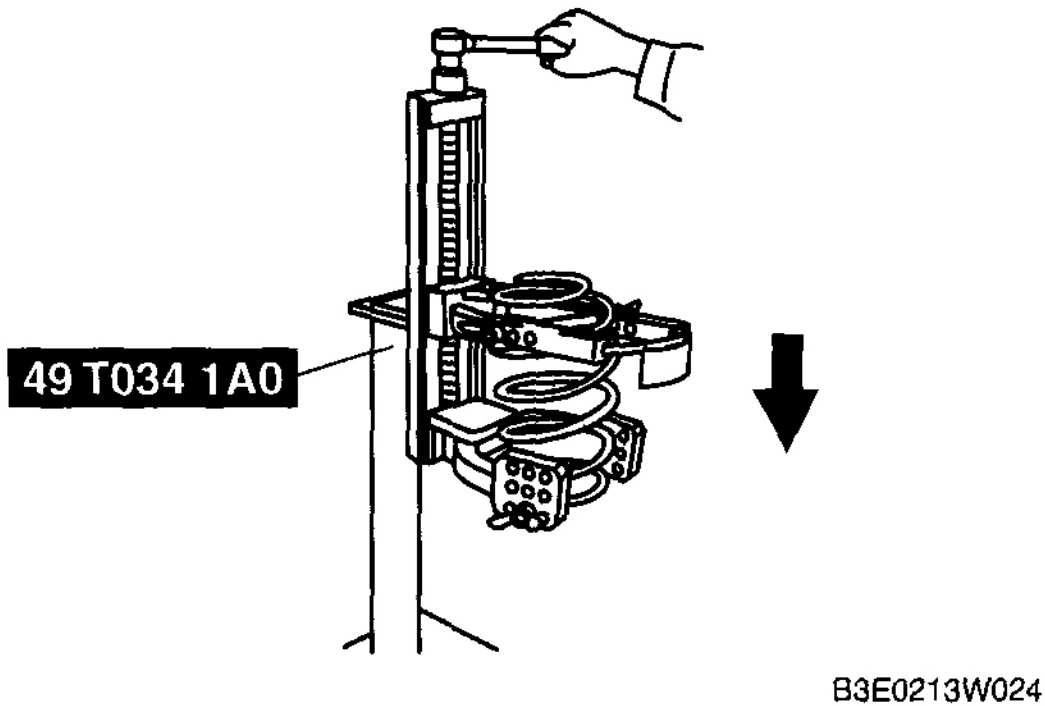
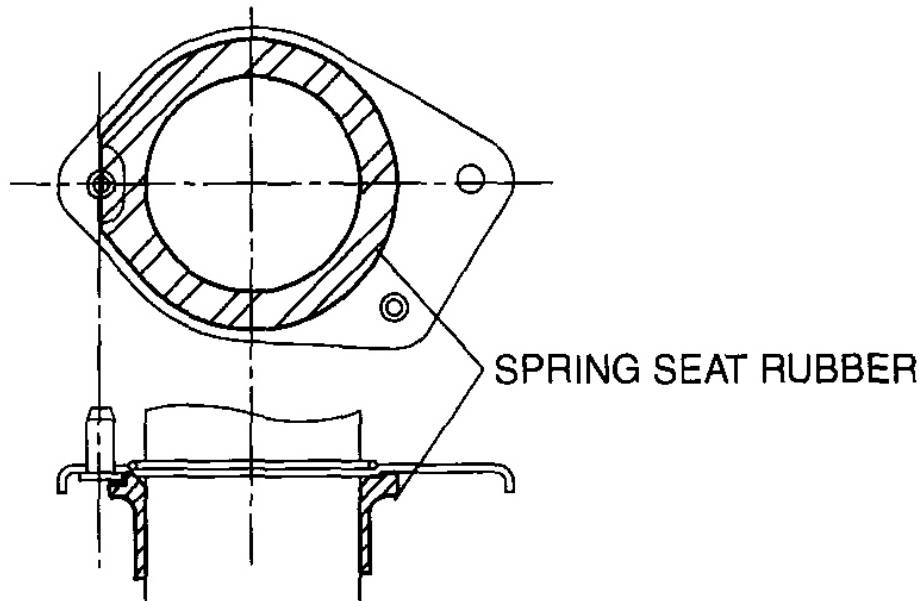


Fig. 5: Compressing Coil Spring Using SSTs
Courtesy of MAZDA MOTORS CORP.

COLLAR INSTALLATION NOTE

1. Install the collar so that the tapered side is facing downward as shown in **Fig. 6** .

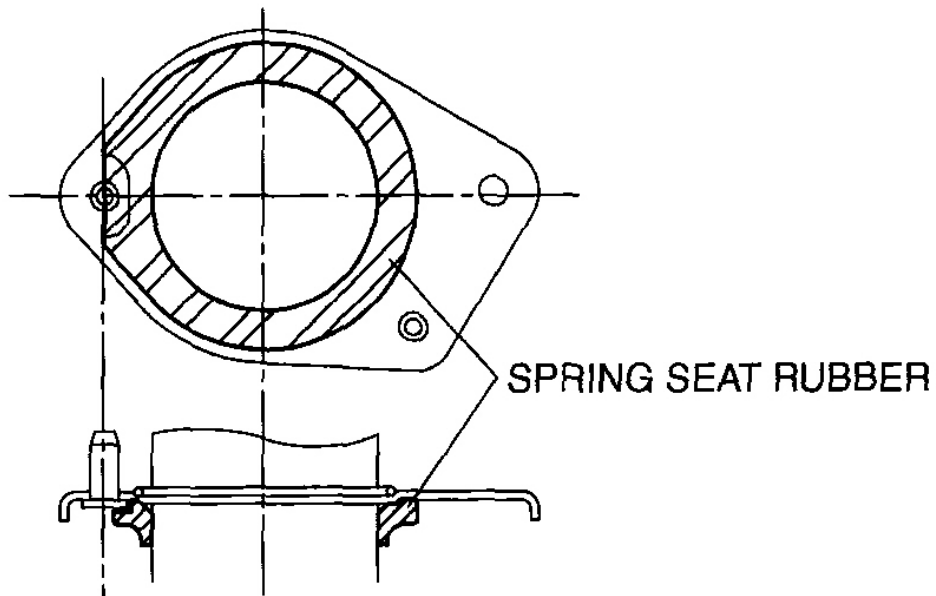


E5U214ZW5014

Fig. 6: Installing Collar Tapered Side Down
Courtesy of MAZDA MOTORS CORP.

SPRING SEAT RUBBER INSTALLATION NOTE

1. Install the spring seat rubber to the upper spring seat as shown in **Fig. 7** .

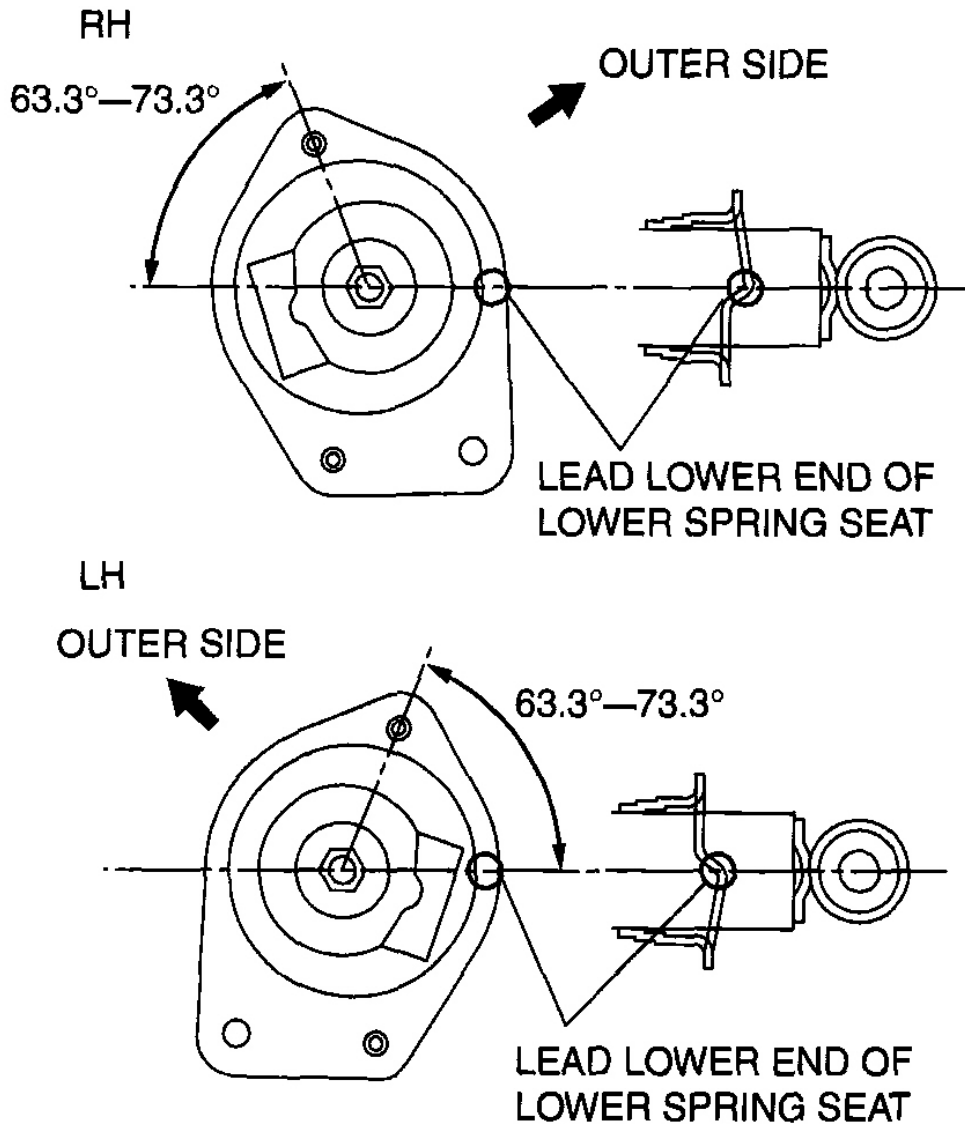


CHU0214W003

Fig. 7: Installing Spring Seat Rubber To Upper Spring Seat
Courtesy of MAZDA MOTORS CORP.

UPPER SPRING SEAT INSTALLATION NOTE

1. Install the coil spring with the lead lower end of the lower spring seat facing the direction shown in **Fig. 8**.



E5U214ZW5005

Fig. 8: Installing Coil Spring
Courtesy of MAZDA MOTORS CORP.

REAR SHOCK ABSORBER INSPECTION

1. Inspect the rear shock absorber in the same way as the front shock absorber. (See **FRONT SHOCK ABSORBER INSPECTION** .)

REAR SHOCK ABSORBER DISPOSAL

1. Dispose of the rear shock absorber in the same way as the front shock absorber. (See **FRONT SHOCK ABSORBER DISPOSAL**)

REAR LATERAL LINK (UPPER) REMOVAL/INSTALLATION

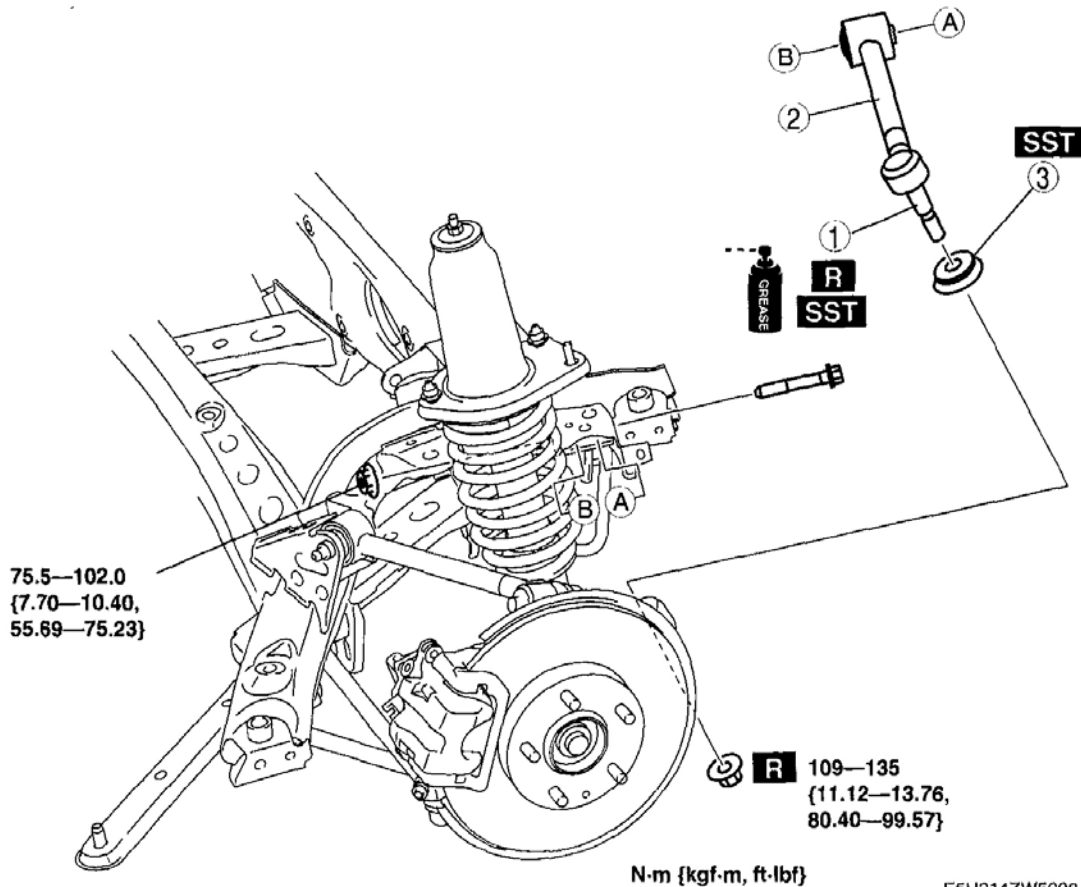
CAUTION:

- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the wiring harness if it is pulled by mistake. Before operations, remove the ABS wheel-speed sensor (axle side) and move the sensor away from the harnesses.

1. Remove in the order indicated in **Fig. 9** .
2. Install in the reverse order of removal.
3. Inspect the rear wheel alignment. (See **REAR WHEEL ALIGNMENT** .)

2007 Mazda MX-5 Miata Sport

2007 SUSPENSION Rear Suspension - MX-5 Miata



E5U214ZW5008

| | |
|---|--------------------------------------|
| 1 | Rear lateral link (upper) ball joint |
| 2 | Rear lateral link (upper) |
| 3 | Dust boot |

G04318161

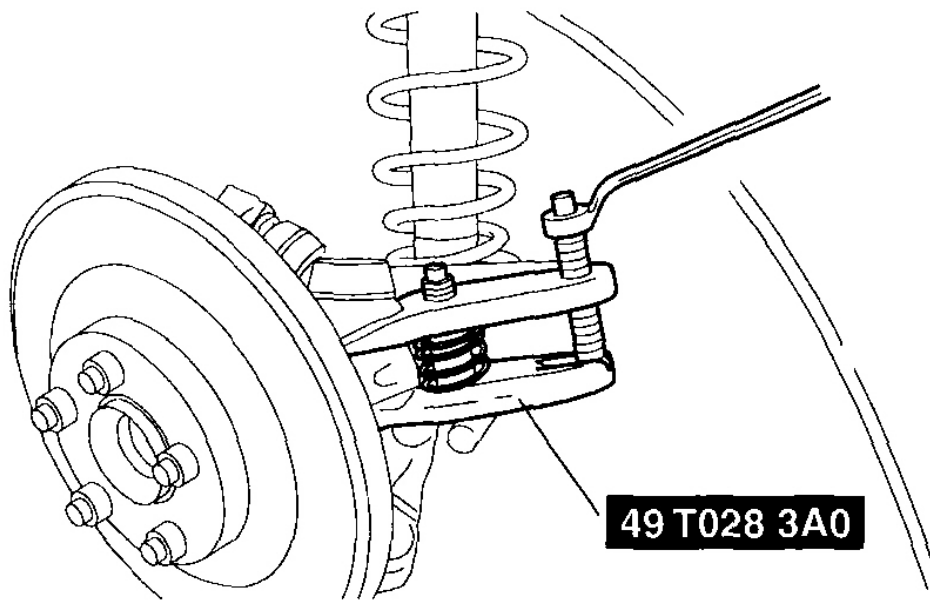
Fig. 9: Identifying Rear Lateral Link (Upper) Components (With Torque Specifications)
Courtesy of MAZDA MOTORS CORP.

REAR LATERAL LINK (UPPER) BALL JOINT REMOVAL NOTE

1. Using the SST , disconnect the rear lateral link (upper) ball joint.

NOTE:

- When removing the rear lateral link (upper) ball joint, the rear knuckle bushing may also come off. If it comes off, replace the rear knuckle.

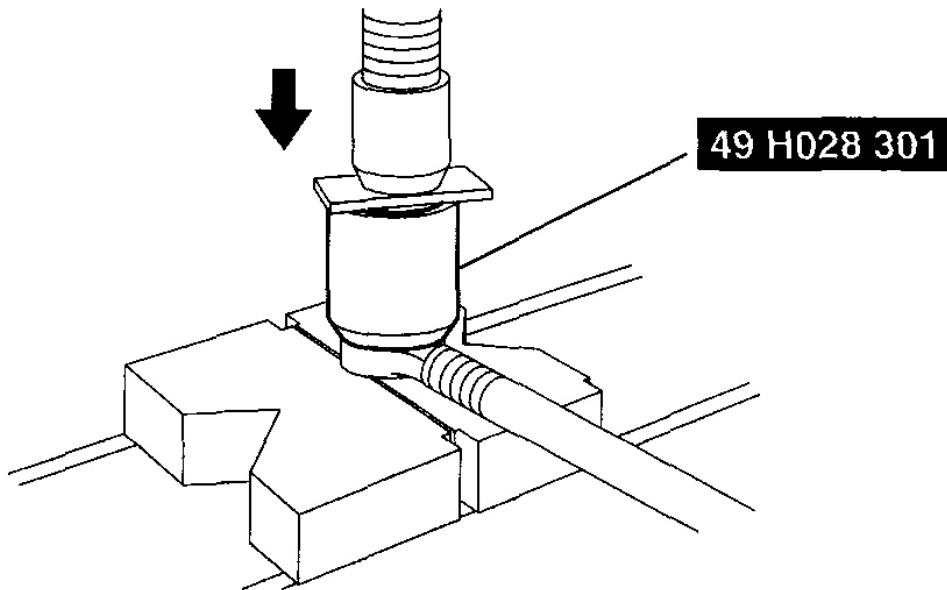


BHJ0214W013

Fig. 10: Disconnecting Rear Lateral Link (Upper) Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

DUST BOOT INSTALLATION NOTE

1. Wipe the grease off the ball joint stud.
2. Fill the inside of the new dust boot with grease.
3. Using the **SST** , install the dust boot to the ball joint.
4. Wipe off the excess grease.



BHJ0214W014

Fig. 11: Installing Dust Boot To Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

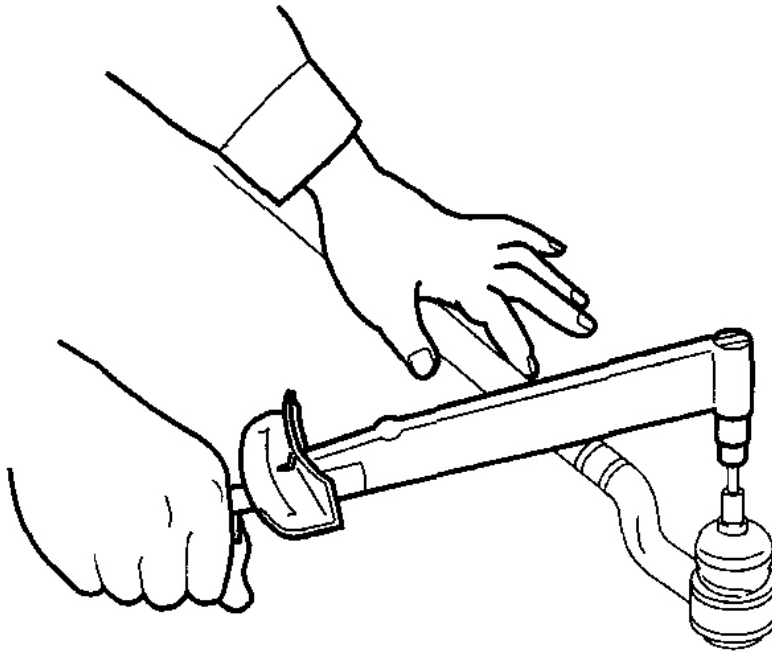
REAR LATERAL LINK (UPPER) INSPECTION

1. Remove the rear lateral link (upper) from the vehicle. (See **REAR LATERAL LINK (UPPER) REMOVAL/INSTALLATION** .)
2. Inspect the link for bending or damage. If there is any malfunction, replace the link.
3. Inspect the ball joint for looseness. If there is any malfunction, replace the ball joint.
4. Rotate the ball joint **5 times**.
5. Measure the ball-joint rotational torque using an Allen wrench and a torque wrench.

Rear lateral link (upper) ball joint rotational torque

0.4-2.8 N.m {5-28 kgf.cm, 4-24 in.lbf}

- If not within the specification, replace the rear lateral link (upper). (See **REAR LATERAL LINK (UPPER) REMOVAL/INSTALLATION** .)



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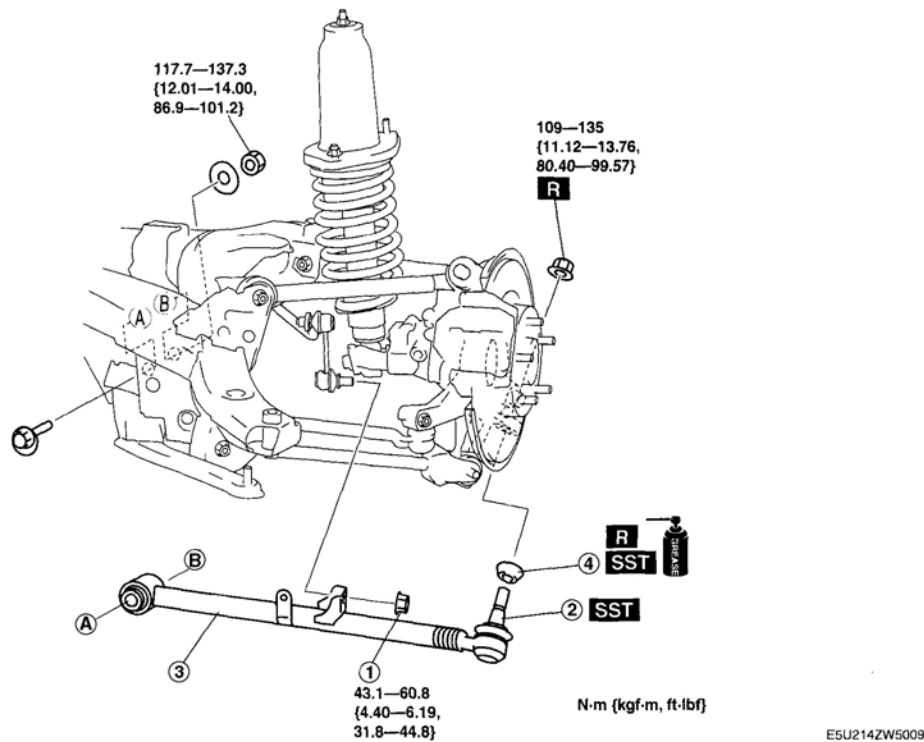
Fig. 12: Measuring Ball-Joint Rotational Torque Using Allen Wrench & Torque Wrench
Courtesy of MAZDA MOTORS CORP.

REAR LATERAL LINK (LOWER) REMOVAL/INSTALLATION

1. Remove in the order indicated in **Fig. 13** .
2. Install in the reverse order of removal.
3. Inspect the rear wheel alignment. (See **REAR WHEEL ALIGNMENT** .)

2007 Mazda MX-5 Miata Sport

2007 SUSPENSION Rear Suspension - MX-5 Miata



| | | | |
|---|--------------------------------------|---|---------------------------|
| 1 | Stabilizer control link lower nut | 3 | Rear lateral link (lower) |
| 2 | Rear lateral link (lower) ball joint | 4 | Dust boot |

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ESU214ZW5009

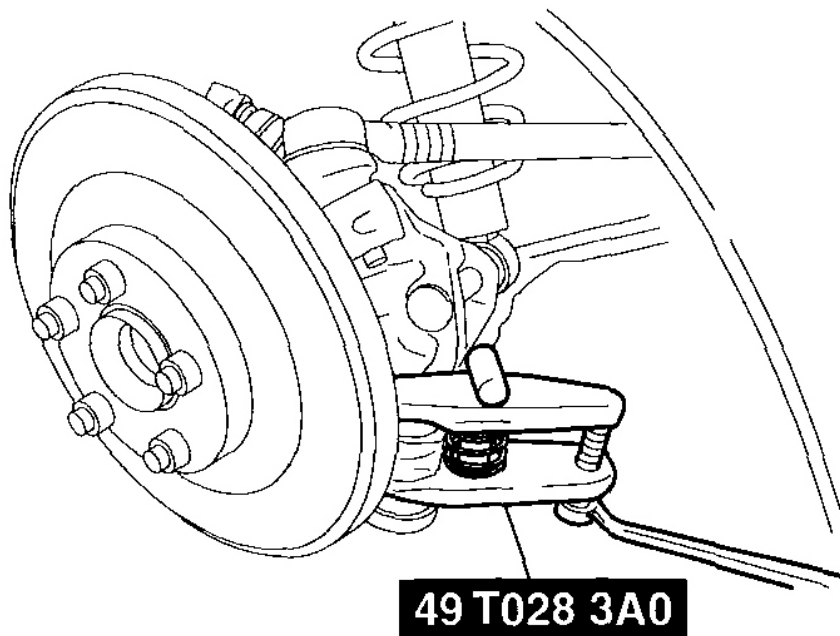
Fig. 13: Identifying Rear Lateral Link (Lower) Components (With Torque Specifications)
 Courtesy of MAZDA MOTORS CORP.

REAR LATERAL LINK (LOWER) BALL JOINT REMOVAL NOTE

1. Using the SST , disconnect the ball joint.

NOTE:

- When removing the rear lateral link (lower) ball joint, the rear knuckle bushing may also come off. If it comes off, replace the rear knuckle.

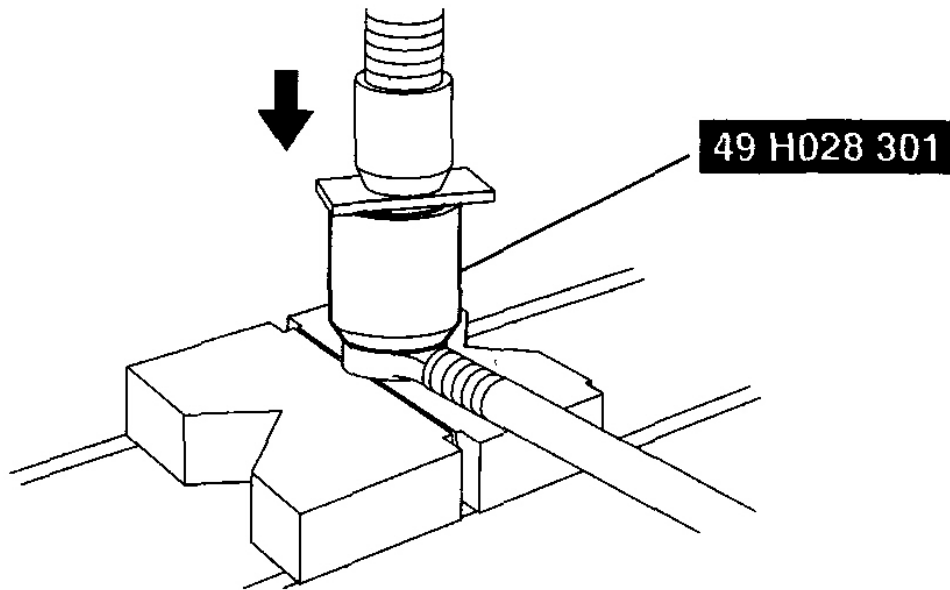


BHJ0214W017

Fig. 14: Disconnecting Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

DUST BOOT INSTALLATION NOTE

1. Wipe the grease off the ball joint stud.
2. Fill the inside of the new dust boot with grease.
3. Using the **SST** , install the dust boot to the ball joint.
4. Wipe off the excess grease.



BHJ0214W014

Fig. 15: Installing Dust Boot To Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

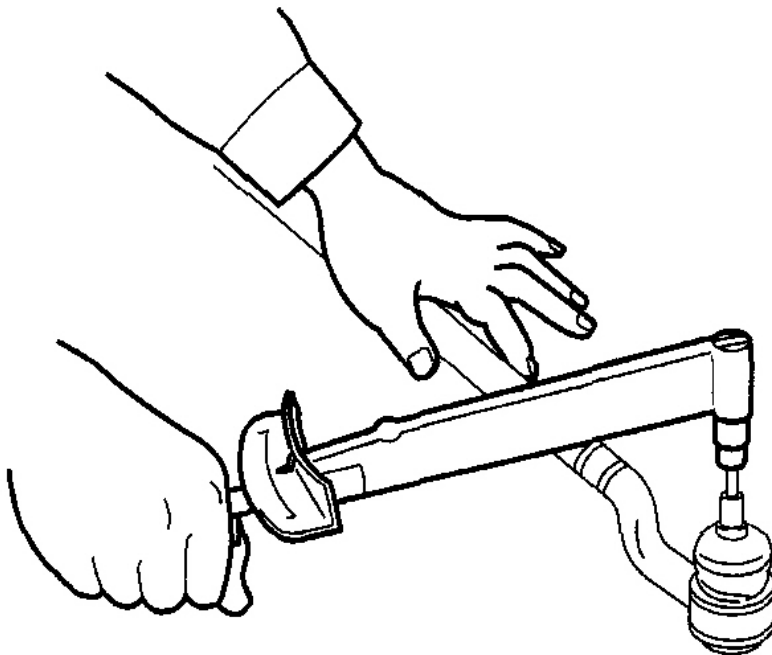
REAR LATERAL LINK (LOWER) INSPECTION

1. Remove the rear lateral link (lower) from the vehicle. (See **REAR LATERAL LINK (LOWER) REMOVAL/INSTALLATION** .)
2. Inspect the link for bending or damage. If there is any malfunction, replace the link.
3. Inspect the ball joint for looseness. If there is any malfunction, replace the ball joint.
4. Rotate the ball joint **5 times**.
5. Measure the ball-joint rotational torque using an Allen wrench and a torque wrench.

Rear lateral link (lower) ball joint rotational torque

0.4-2.8 N.m {5-28 kgf.cm, 4-24 in.lbf}

- If not within the specification, replace the rear lateral link (lower). (See **REAR LATERAL LINK (LOWER) REMOVAL/INSTALLATION** .)



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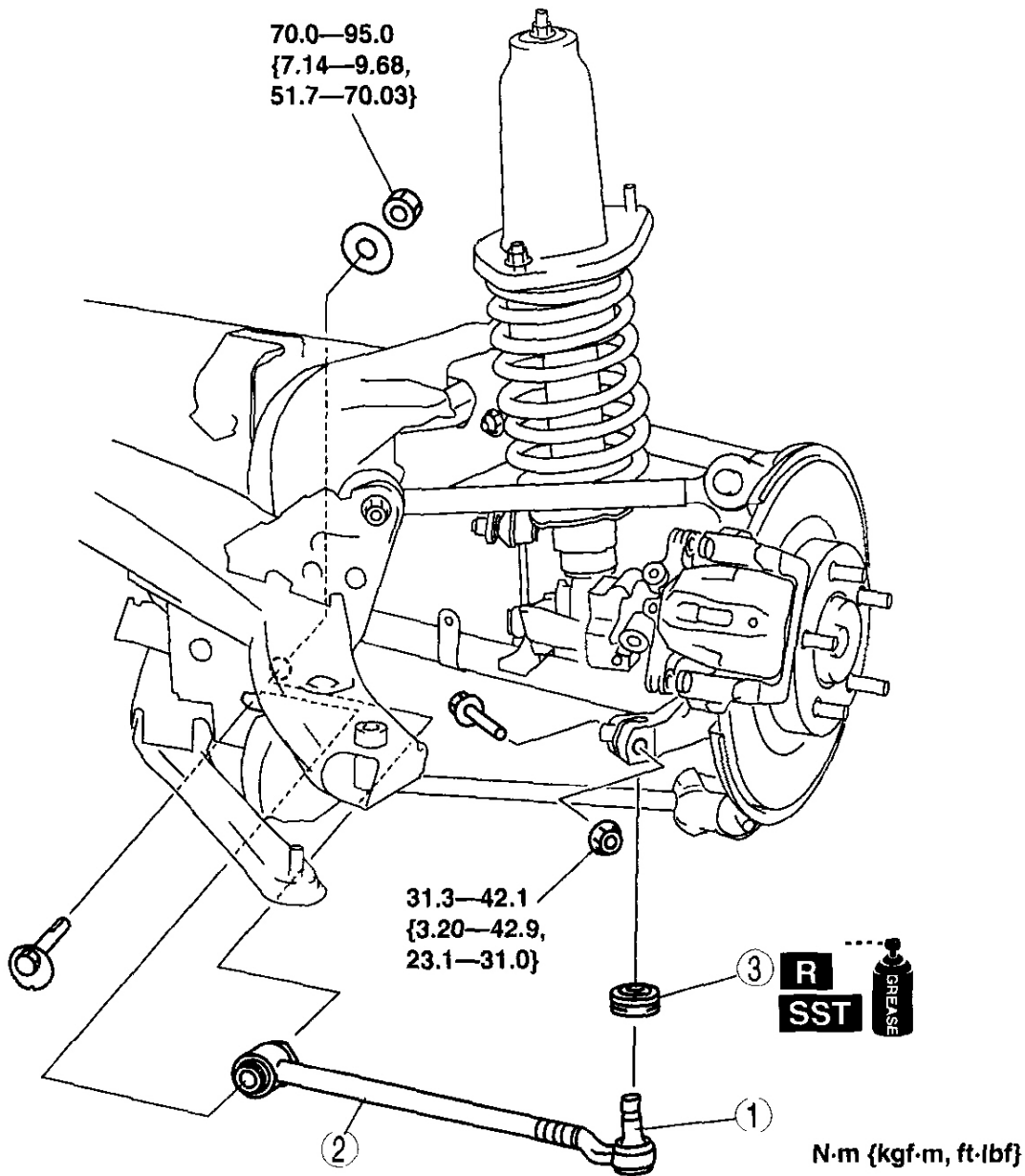
Fig. 16: Measuring Ball-Joint Rotational Torque Using Allen Wrench & Torque Wrench
Courtesy of MAZDA MOTORS CORP.

TOE CONTROL LINK REMOVAL/INSTALLATION

1. Remove in the order indicated in **Fig. 17** .
2. Install in the reverse order of removal.
3. Inspect the rear wheel alignment. (See **REAR WHEEL ALIGNMENT** .)

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2007 SUSPENSION Rear Suspension - MX-5 Miata



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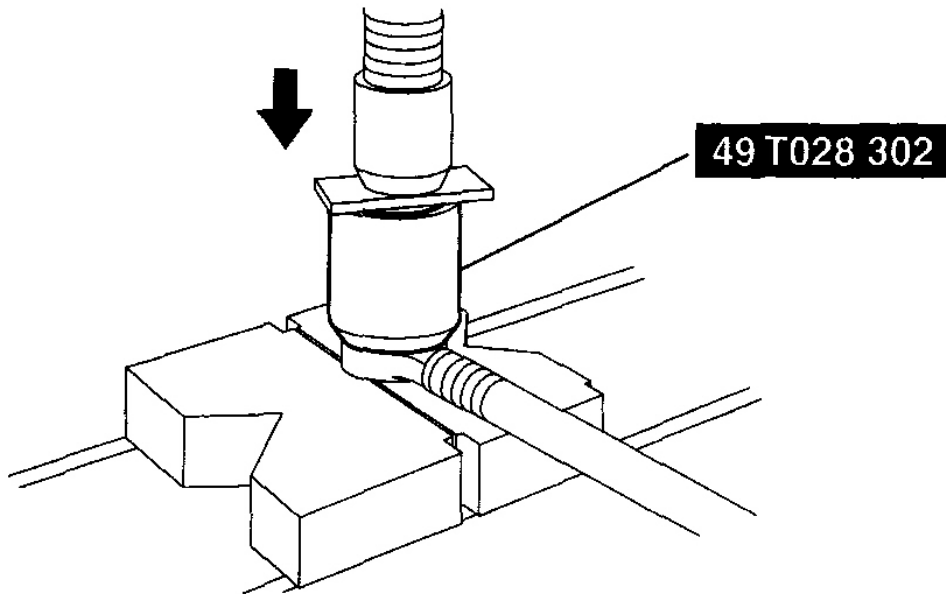
| | |
|---|-----------------------------|
| 1 | Toe control link ball joint |
| 2 | Toe control link |
| 3 | Dust boot |

G04318169

Fig. 17: Identifying Toe Control Link (With Torque Specifications)
 Courtesy of MAZDA MOTORS CORP.

DUST BOOT INSTALLATION NOTE

1. Wipe the grease off the ball joint stud.
2. Fill the inside of the new dust boot with grease.
3. Using the **SST** , install the dust boot to the ball joint.
4. Wipe off the excess grease.

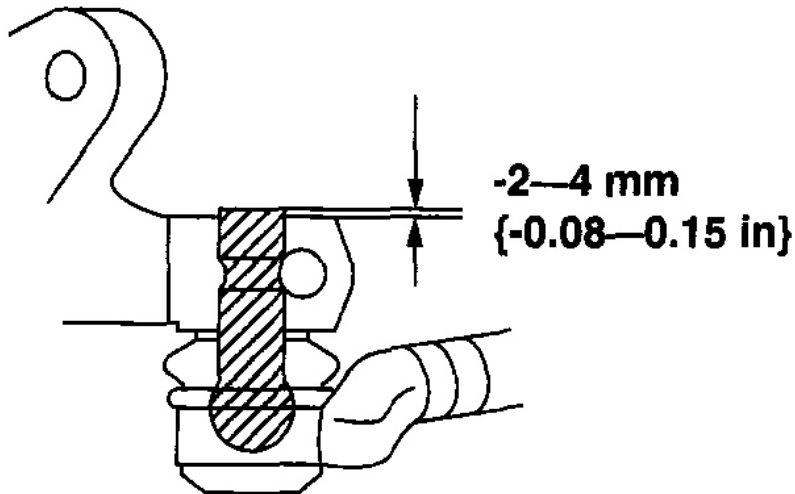


BHJ0214W016

Fig. 18: Installing Dust Boot To Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

TOE CONTROL LINK BALL JOINT INSTALLATION NOTE

1. Install the toe control link ball joint so that the ball joint stud projection is within **-2-4 mm {-0.08-0.15 in}**.



CHU0214W011

Fig. 19: Installing Toe Control Link Ball Joint
Courtesy of MAZDA MOTORS CORP.

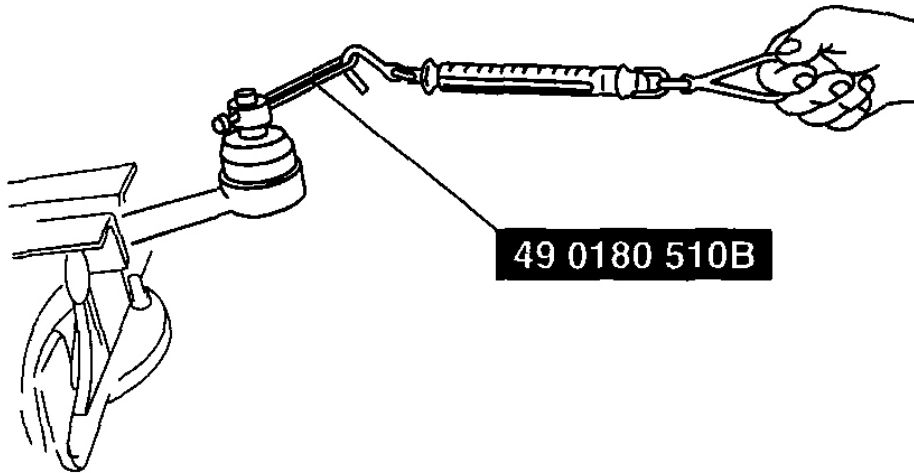
TOE CONTROL LINK INSPECTION

1. Remove the toe control link from the vehicle. (See **TOE CONTROL LINK REMOVAL/INSTALLATION** .)
2. Inspect the lateral link for bending or damage. If there is any malfunction, replace the lateral link.
3. Inspect the ball joint for looseness. If there is any malfunction, replace the ball joint.
4. Rotate the ball joint **5 times**.
5. Install the **SST** to the ball stud, and measure the ball joint rotational torque using a pull scale.

Toe control link ball joint rotational torque 0.3-2.2 N.m {4-22 kgf.cm, 3-19 in.lbf}

Pull scale reading: 3-22 N {0.3-2.2 kgf, 0.7-4.9 lbf}

- If not within the specification, replace the toe control link. (See **TOE CONTROL LINK REMOVAL/INSTALLATION** .)



BHJ0214W027

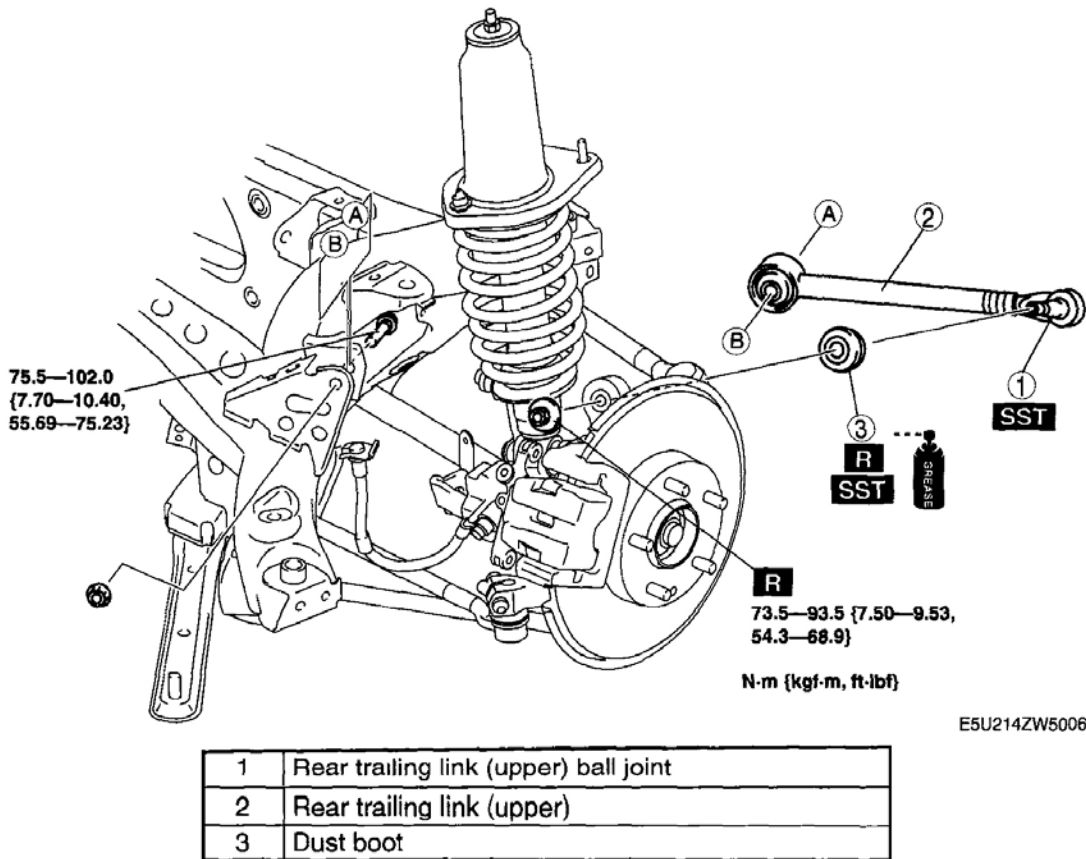
Fig. 20: Measuring Ball Joint Rotational Torque Using Pull Scale
Courtesy of MAZDA MOTORS CORP.

REAR TRAILING LINK (UPPER) REMOVAL/INSTALLATION

1. Remove in the order indicated in **Fig. 21** .
2. Install in the reverse order of removal.
3. Inspect the rear wheel alignment. (See **REAR WHEEL ALIGNMENT** .)

2007 Mazda MX-5 Miata Sport

2007 SUSPENSION Rear Suspension - MX-5 Miata



G04318156

Fig. 21: Identifying Rear Trailing Link (Upper) (With Torque Specifications)
Courtesy of MAZDA MOTORS CORP.

REAR TRAILING LINK (UPPER) BALL JOINT REMOVAL NOTE

1. Using the SST, disconnect the ball joint.

NOTE:

- When removing the rear trailing link (upper) ball joint, the rear knuckle bushing may also come off. If it comes off, replace the rear knuckle.

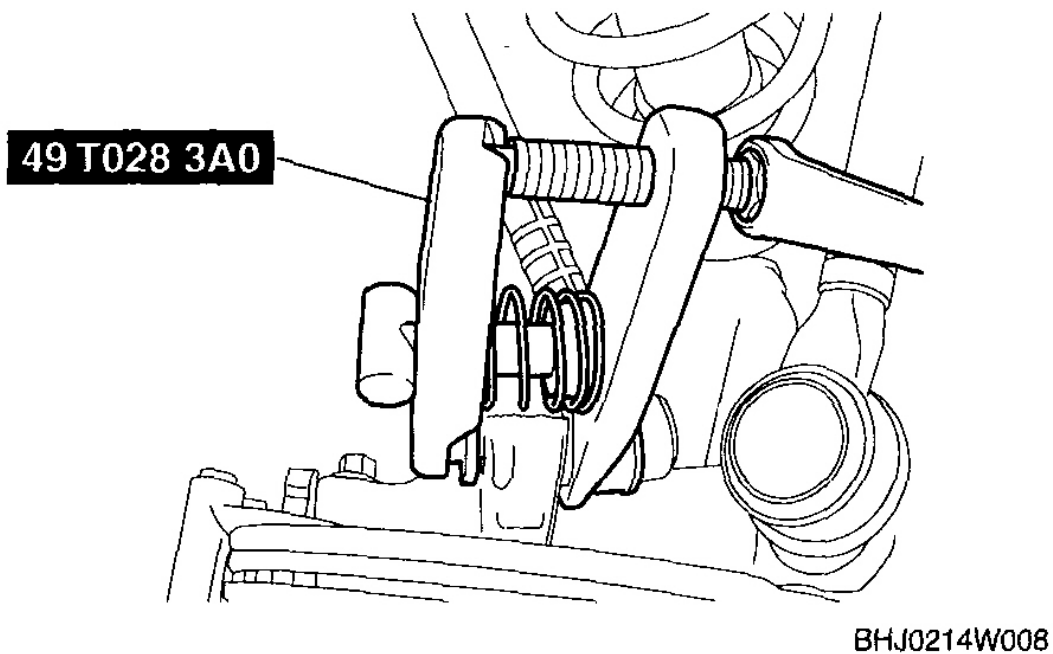
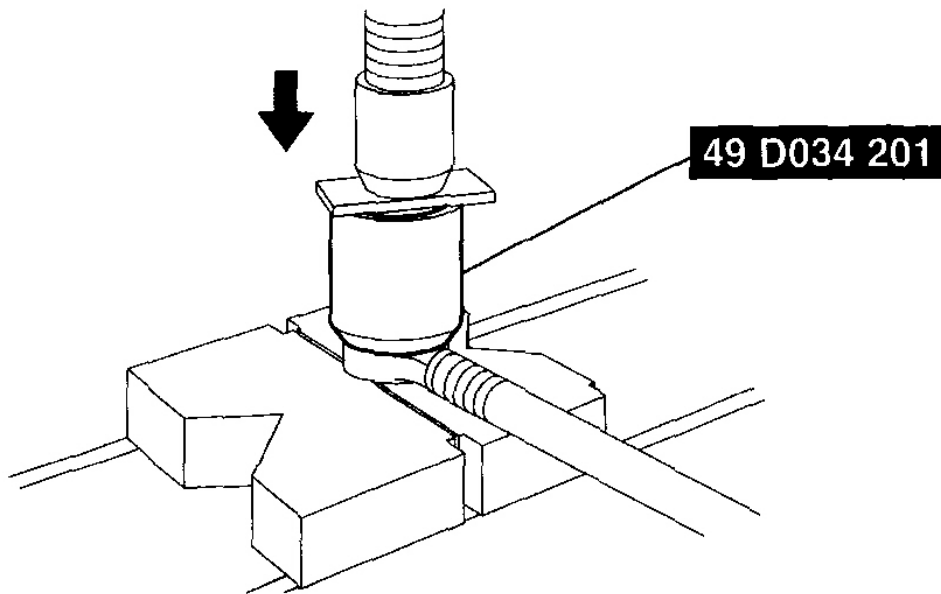


Fig. 22: Disconnecting Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

DUST BOOT INSTALLATION NOTE

1. Wipe the grease off the ball joint stud.
2. Fill the inside of the new dust boot with grease.
3. Using the **SST**, install the dust boot to the ball joint.
4. Wipe off the excess grease.



BHJ0214W015

Fig. 23: Installing Dust Boot To Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

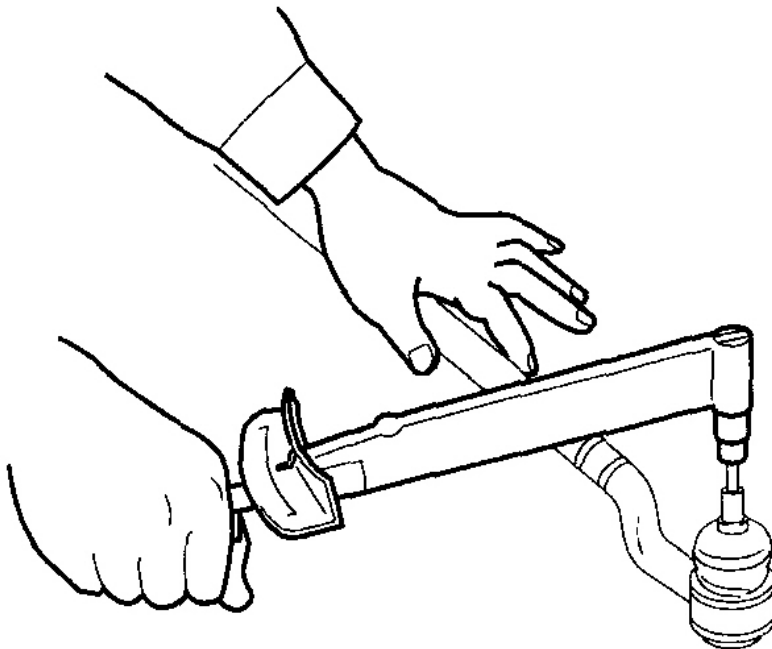
REAR TRAILING LINK (UPPER) INSPECTION

1. Remove the rear trailing link (upper) from the vehicle. (See **REAR TRAILING LINK (UPPER) REMOVAL/INSTALLATION** .)
2. Inspect the link for bending or damage. If there is any malfunction, replace the rear trailing link (upper).
3. Inspect the ball joint for looseness. If there is any malfunction, replace the ball joint.
4. Rotate the ball joint **5 times**.
5. Measure the ball-joint rotational torque using an Allen wrench and a torque wrench.

Rear trailing link (upper) ball joint rotational torque

0.4-3.3 N.m {5-33 kgf.cm, 4-29 in.lbf}

- If not within the specification, replace the rear trailing link (upper). (See **REAR TRAILING LINK (UPPER) REMOVAL/INSTALLATION** .)



BHJ0214W010

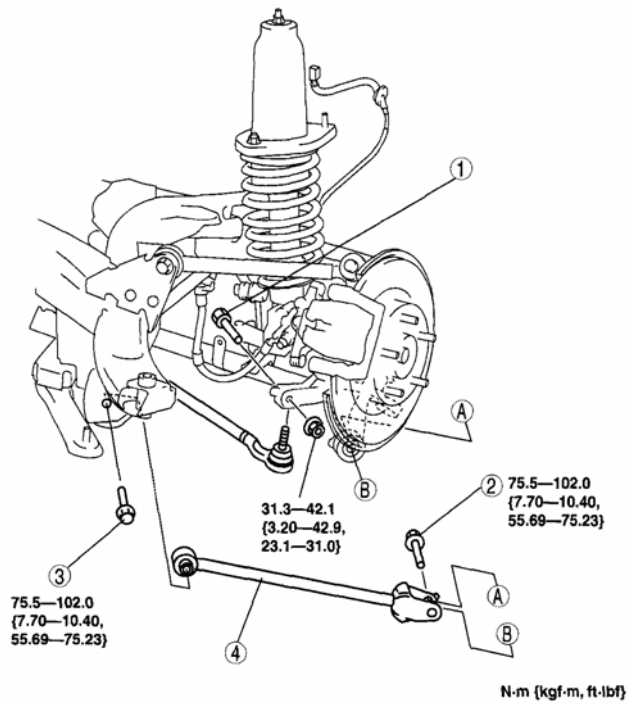
Fig. 24: Measuring Ball-Joint Rotational Torque Using Allen Wrench & Torque Wrench
Courtesy of MAZDA MOTORS CORP.

REAR TRAILING LINK (LOWER) REMOVAL/INSTALLATION

1. Remove in the order indicated in **Fig. 25** .
2. Install in the reverse order of removal.
3. Inspect the rear wheel alignment. (See **REAR WHEEL ALIGNMENT** .)

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2007 SUSPENSION Rear Suspension - MX-5 Miata



E5U214SI9001

| | |
|---|---------------------------------------|
| 1 | Toe control link outer bolt |
| 2 | Rear trailing link (lower) outer bolt |

| | |
|---|---------------------------------------|
| 3 | Rear trailing link (lower) inner bolt |
| 4 | Rear trailing link (lower) |

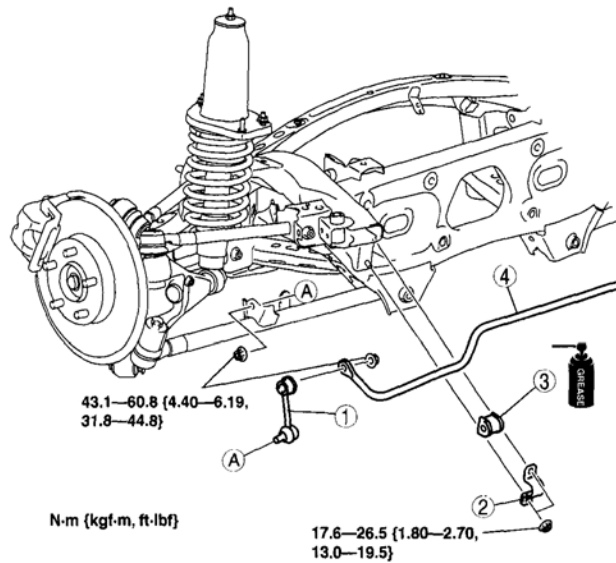
Fig. 25: Identifying Rear Trailing Link (Lower) (With Torque Specifications)
Courtesy of MAZDA MOTORS CORP.

REAR STABILIZER REMOVAL/INSTALLATION

1. Remove in the order indicated in **Fig. 26**.
2. Install in the reverse order of removal.

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ESU214ZW5011

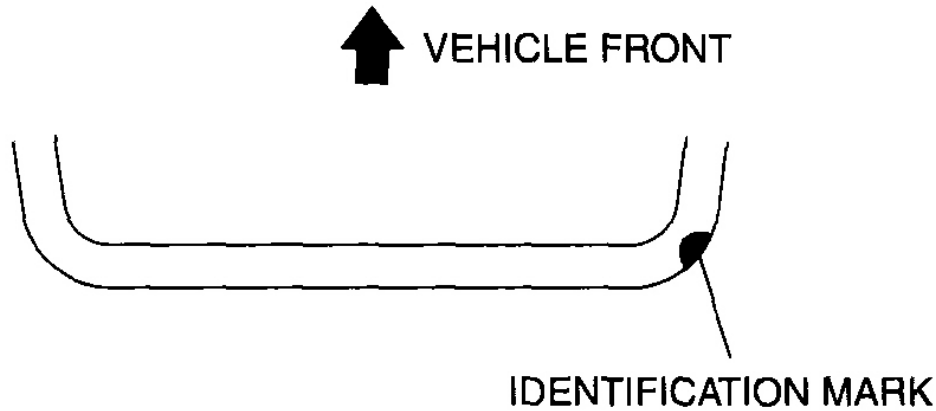
| | | | |
|---|-------------------------|---|-----------------|
| 1 | Stabilizer control link | 3 | Bushing |
| 2 | Stabilizer bracket | 4 | Rear stabilizer |

G04318173

Fig. 26: Identifying Rear Stabilizer (With Torque Specifications)
Courtesy of MAZDA MOTORS CORP.

REAR STABILIZER INSTALLATION NOTE

1. Install the rear stabilizer so that the identification mark is on the right side of the vehicle.



E5U214ZW5015

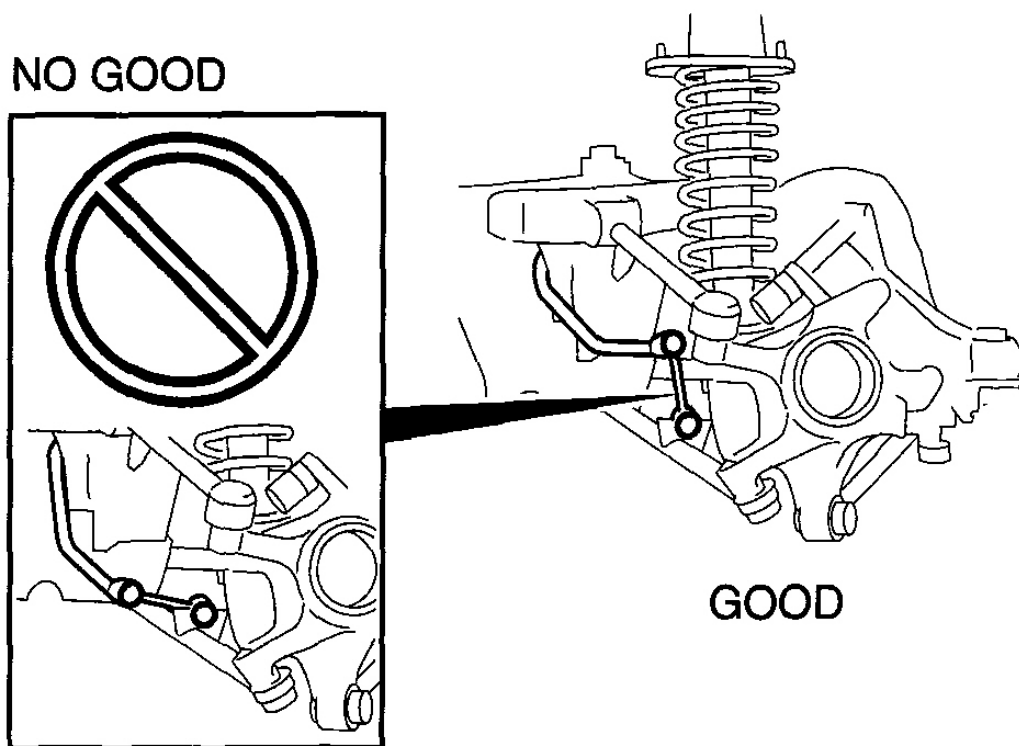
Fig. 27: Identifying Identification Mark
Courtesy of MAZDA MOTORS CORP.

STABILIZER CONTROL LINK INSTALLATION NOTE

1. Install the stabilizer control link in the proper angle as shown in Fig. 28 .

CAUTION:

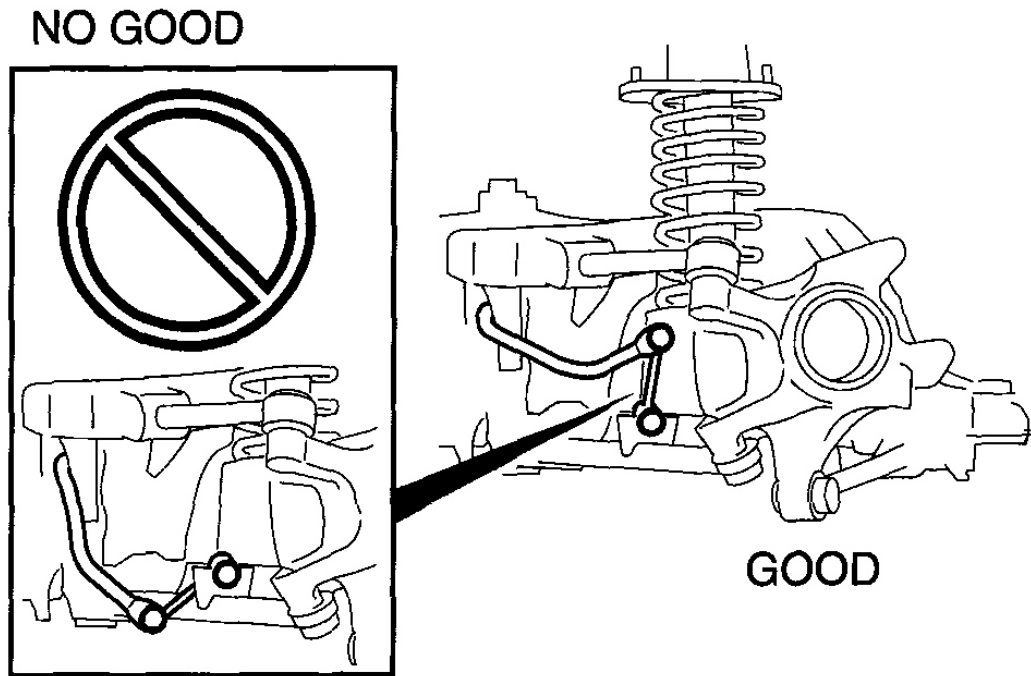
- Be sure to install the stabilizer control link in the proper position. If it is not installed properly, the stabilizer control link may interfere with peripheral components when driving, causing damage to each other.



CHU0214W033

Fig. 28: Precaution For Stabilizer Control Link (1 Of 2)
Courtesy of MAZDA MOTORS CORP.

2. Place the vehicle on, the ground and verify that the stabilizer control link is installed in the angle shown in **Fig. 29** .



CHU0214W034

Fig. 29: Precaution For Stabilizer Control Link (2 Of 2)
Courtesy of MAZDA MOTORS CORP.

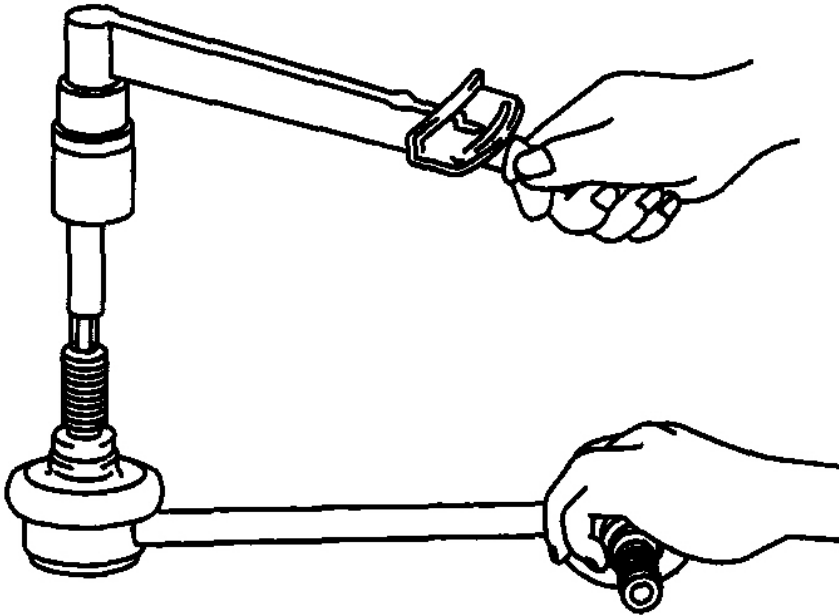
REAR STABILIZER CONTROL LINK INSPECTION

1. Remove the stabilizer control link from the vehicle. (See **REAR STABILIZER REMOVAL/INSTALLATION** .)
2. Inspect the link for bending or damage. If there is any malfunction, replace the link.
3. Rotate the ball joint **10 times**, and rock the ball joint **10 times**.
4. Measure the ball-joint rotational torque using an Allen wrench and a torque wrench.

Stabilizer control link ball joint rotational torque

0.23-0.47 N.m {2.35-4.79 kgf.cm, 2.04-4.15 in.lbf}

- If not within the specification, replace the stabilizer control link ball joint. (See **REAR STABILIZER REMOVAL/INSTALLATION** .)



BHJ0214W028

Fig. 30: Measuring Ball-Joint Rotational Torque Using Allen Wrench & Torque Wrench
Courtesy of MAZDA MOTORS CORP.

REAR CROSSMEMBER REMOVAL/INSTALLATION

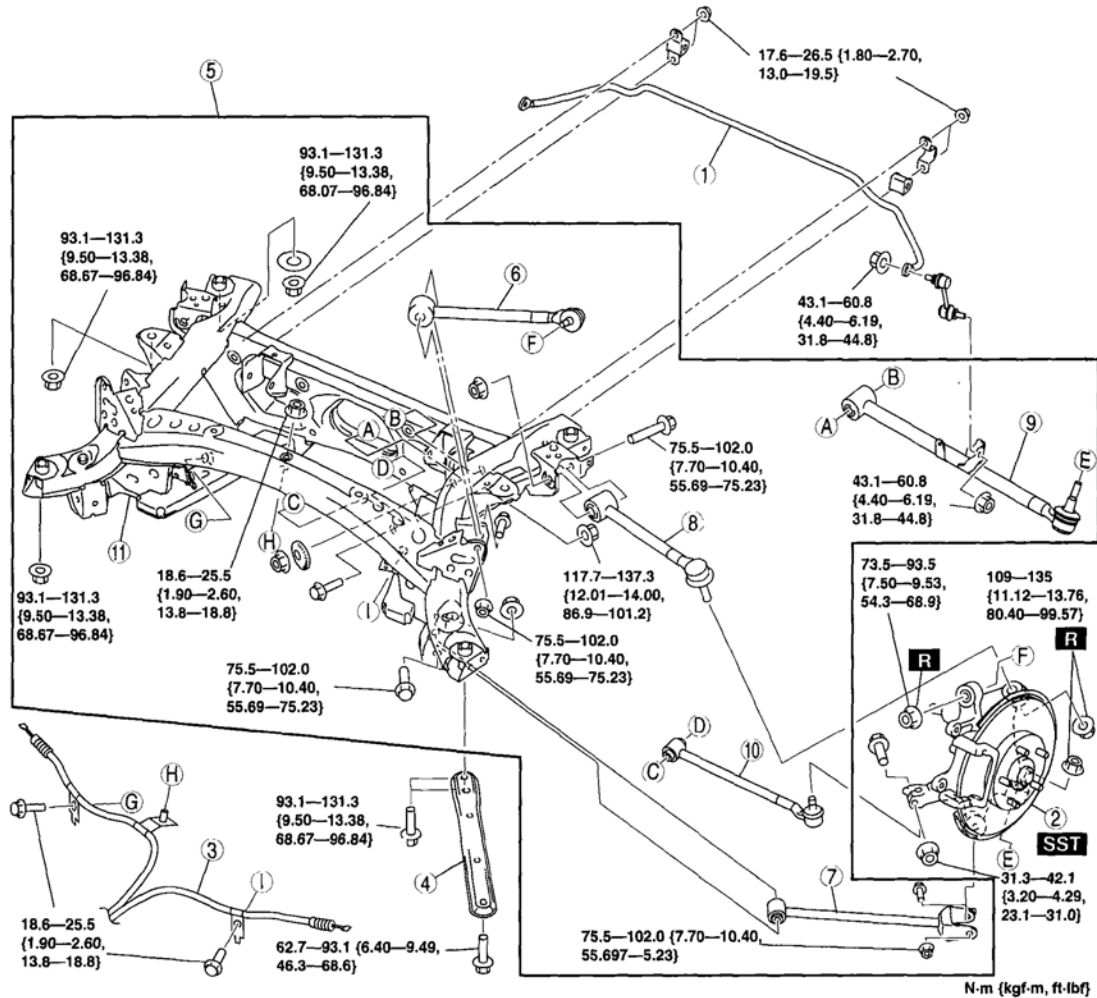
- CAUTION:**
- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the wiring harness if it is pulled by mistake. Before operations, remove the ABS wheel-speed sensor (axle side) and move the sensor away from the harnesses.

1. Remove the exhaust pipe. (See **EXHAUST SYSTEM REMOVAL/INSTALLATION [LF]** .)
2. Remove the propeller shaft. (See **PROPELLER SHAFT REMOVAL/INSTALLATION** .)
3. Remove the power plant frame. (See **TRANSMISSION REMOVAL/INSTALLATION [M15M-D]** .)
(See **TRANSMISSION REMOVAL/INSTALLATION [P66M-D]** .) (See **AUTOMATIC TRANSMISSION REMOVAL/INSTALLATION [SJ6A-EL]** .)
4. Remove the rear drive shaft. (See **REAR DRIVE SHAFT REMOVAL/INSTALLATION** .)
5. Remove the rear differential. (See **REAR DIFFERENTIAL REMOVAL/INSTALLATION** .)
6. Remove in the order indicated in the table.
7. Install in the reverse order of removal.

2007 Mazda MX-5 Miata Sport

2007 SUSPENSION Rear Suspension - MX-5 Miata

8. Inspect the rear wheel alignment. (See **REAR WHEEL ALIGNMENT** .)



N-m (kgf-m, ft-lbf)

E5U214ZW5012

| | |
|---|----------------------------|
| 1 | Rear stabilizer |
| 2 | Rear axle component |
| 3 | Parking brake cable |
| 4 | Stopper plate |
| 5 | Rear crossmember component |
| 6 | Rear trailing link (upper) |

| | |
|----|----------------------------|
| 7 | Rear trailing link (lower) |
| 8 | Rear lateral link (upper) |
| 9 | Rear lateral link (lower) |
| 10 | Toe control link |
| 11 | Rear crossmember |

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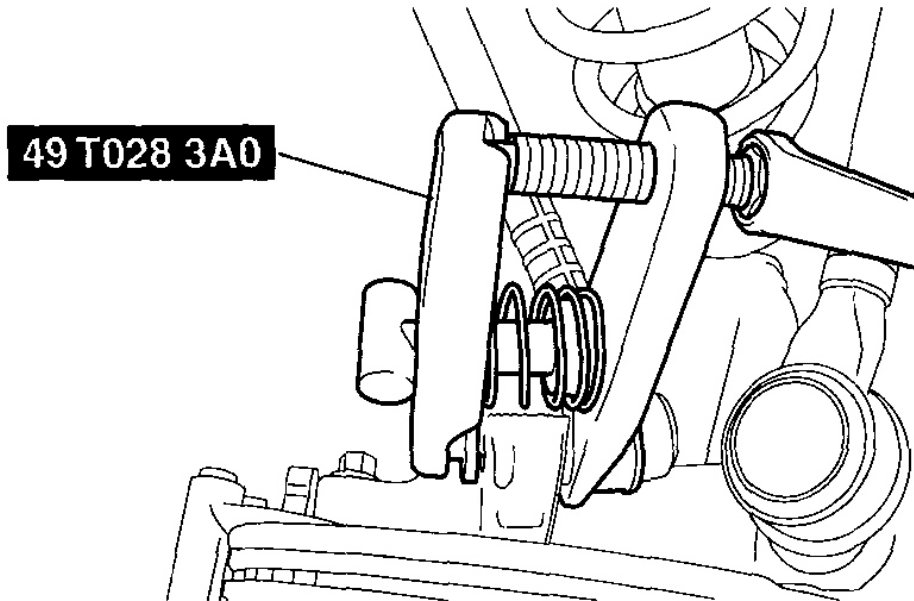
Fig. 31: Identifying Rear Crossmember Components (With Torque Specifications)
Courtesy of MAZDA MOTORS CORP.

REAR AXLE COMPONENT REMOVAL NOTE

NOTE:

- When removing the ball joints, the rear knuckle bushings may also come off. If they come off, replace the rear knuckle.

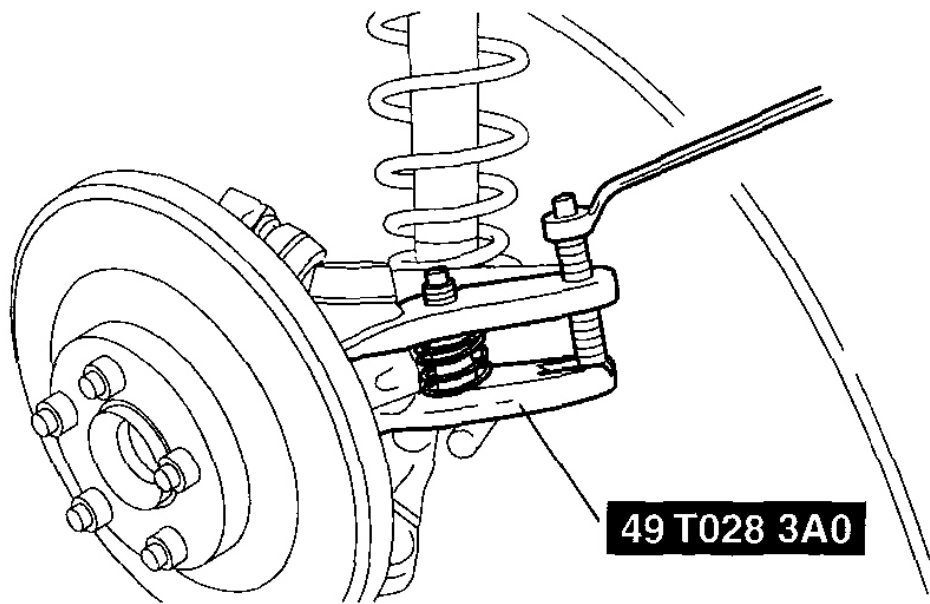
1. Support the knuckle using a jack.
2. Using the **SST** , disconnect the rear trailing link (upper) ball joint.
3. Remove the rear trailing link (lower) outer bolt.



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Fig. 32: Disconnecting Rear Trailing Link (Upper) Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

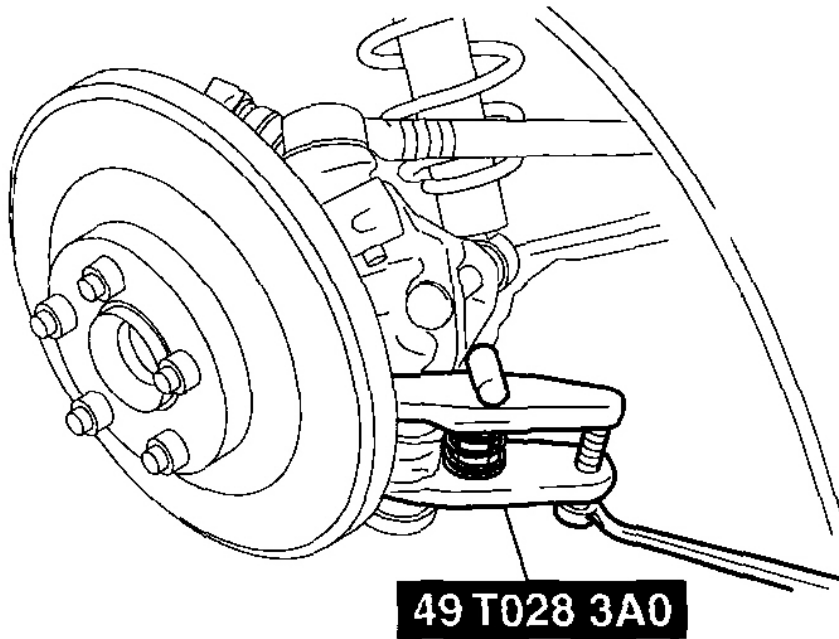
4. Using the **SST** , disconnect the rear lateral link (upper) ball joint.



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Fig. 33: Disconnecting Rear Lateral Link (Upper) Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

5. Using the **SST** , disconnect the rear lateral link (lower) ball joint.
6. Remove the toe control link outer bolt.
7. Remove the shock absorber lower bolt.
8. Remove the rear axle component.



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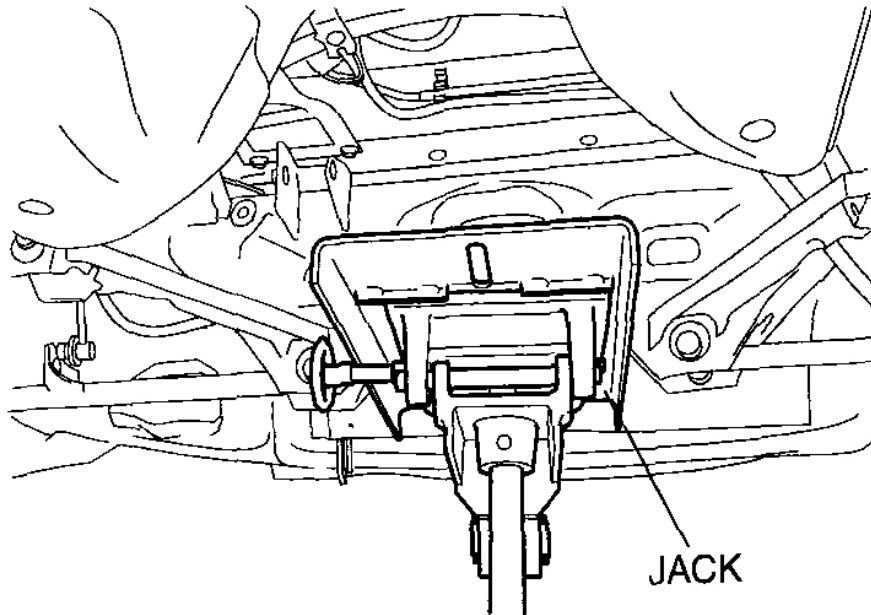
Fig. 34: Disconnecting Rear Lateral Link (Lower) Ball Joint Using SST
Courtesy of MAZDA MOTORS CORP.

REAR CROSSMEMBER COMPONENT REMOVAL NOTE

WARNING:

- Be sure that the crossmember component is securely supported by the jack. If not securely supported, the crossmember component could fall, resulting in serious injury or death, and damage to the vehicle.

1. Support the rear crossmember with the jack, and remove the bolt.



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Fig. 35: Supporting Rear Crossmember With Jack
Courtesy of MAZDA MOTORS CORP.

2. Remove the rear crossmember component.