

02-13 FRONT SUSPENSION

FRONT SUSPENSION LOCATION

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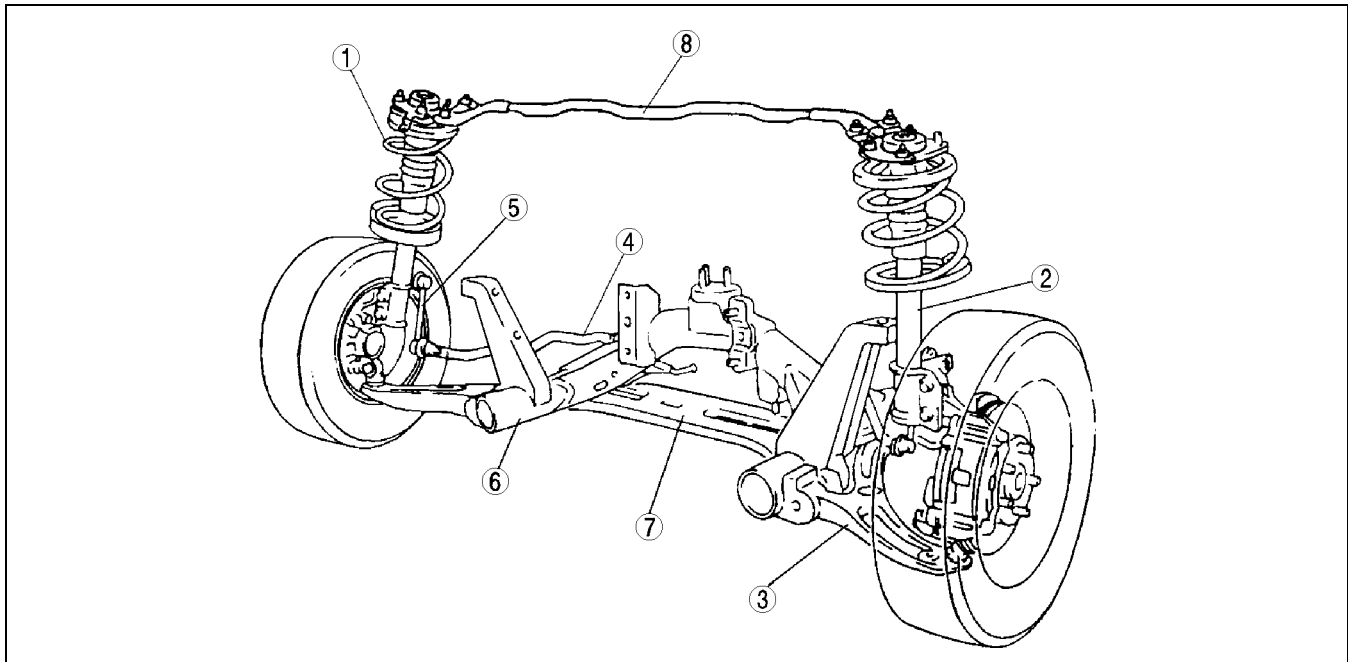
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A3U021301015W01



A3U0213W001

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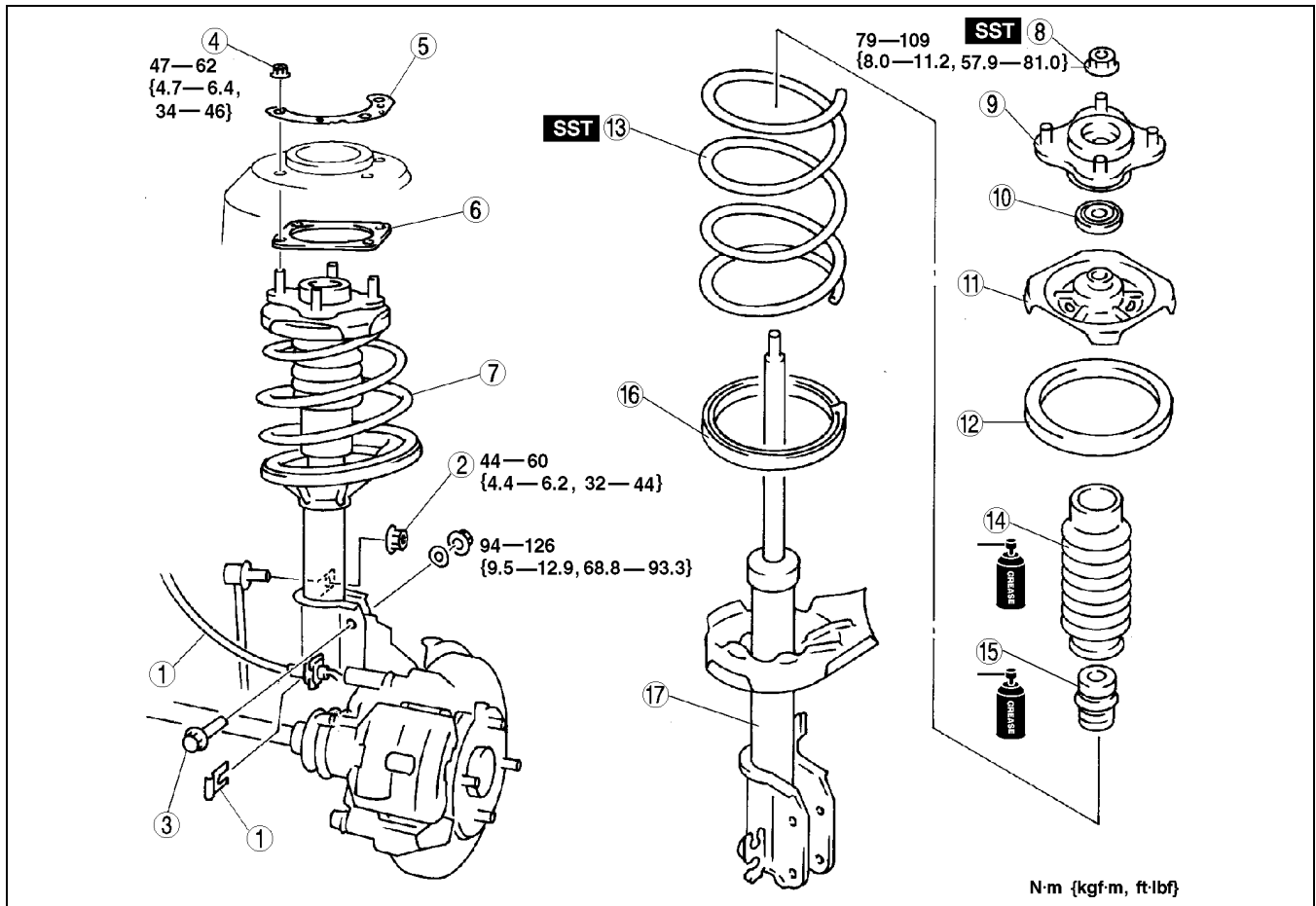
FRONT SHOCK ABSORBER AND COIL SPRING REMOVAL/INSTALLATION

A3U021304910W01

Caution

- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the harness if it is pulled by mistake. Before performing the following procedures, remove the ABS wheel-sensor (axle side) and set it to an appropriate place where the sensor will not be pulled by mistake while servicing the vehicle.

- Remove in the order indicated in the table.
- Install in the reverse order of removal.
- Inspect the front wheel alignment.
 - If not as specified, adjust the front wheel alignment. (See 02-11-1 FRONT WHEEL ALIGNMENT.)



Z3U0213W002

1	Clip and brake hose
2	Nut (Stabilizer control link)
3	Shock absorber bolt
4	Nut
5	Stiffener
6	Sheet
7	Front shock absorber and spring (See 02-13-4 Front Shock Absorber and Spring Installation Note)
8	Piston rod nut (See 02-13-3 Piston Rod Nut Removal Note)

9	Mounting rubber
10	Bearing
11	Upper spring seat
12	Upper spring seat rubber
13	Coil spring (See 02-13-3 Coil Spring Installation Note)
14	Dust Boot
15	Bound stopper
16	Lower spring seat rubber
17	Shock absorber

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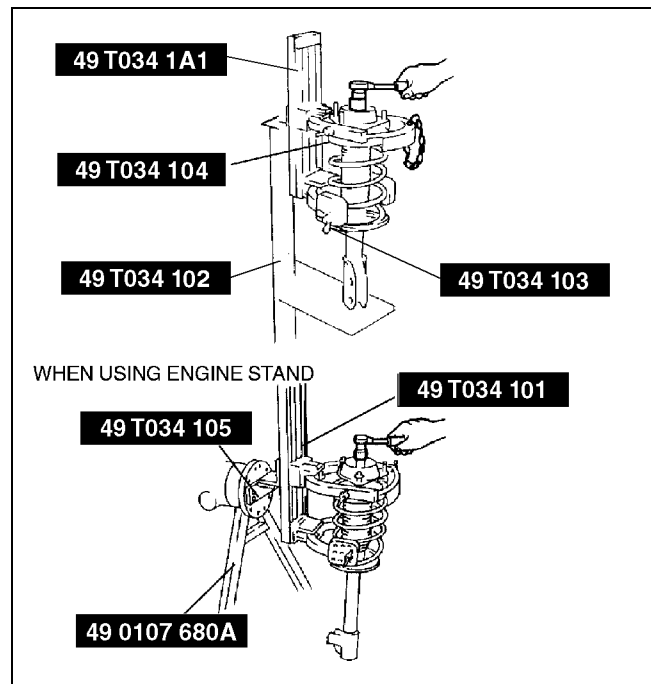
Piston Rod Nut Removal Note

1. Protect the coil spring using a piece of cloth, then set the **SSTs**.

Warning

- Removing the piston rod nut is dangerous. The shock absorber and spring could fly off under tremendous pressure and cause serious injury or death. Secure the shock absorber in the **SSTs** before removing the coil spring nut.

2. Compress the coil spring using the **SSTs**, and remove the piston rod nut.

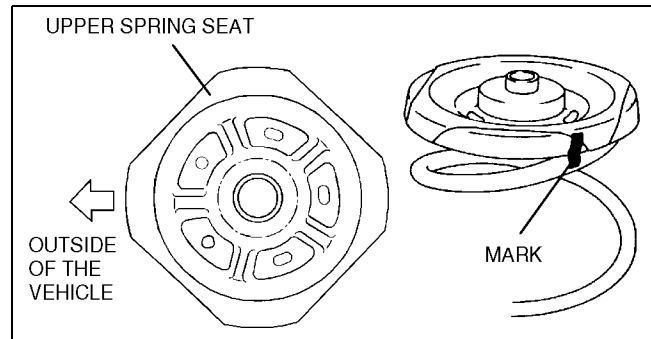


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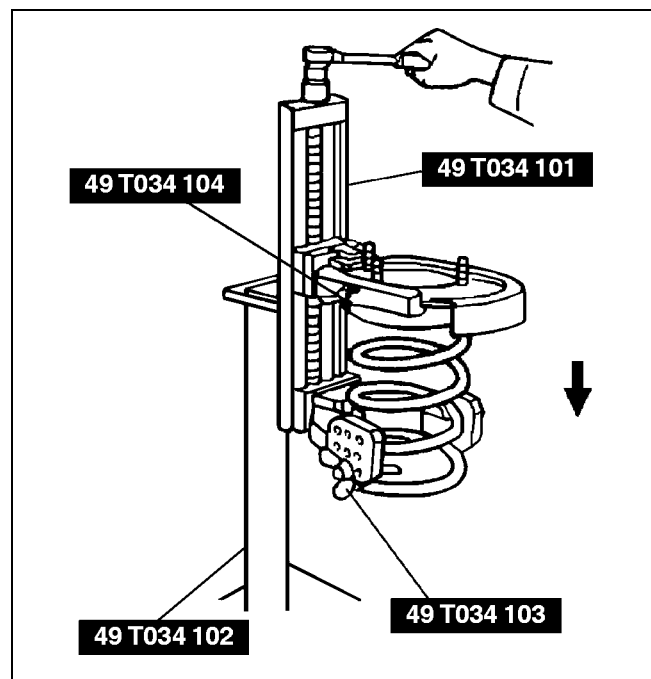
Coil Spring Installation Note

1. Temporarily install the coil spring, upper spring seat rubber and upper spring seat on the shock absorber so that the lower end of the coil spring is seated on the step of the lower spring seat.
2. Mark the coil spring, upper spring seat rubber and upper spring seat for proper installation as shown in the figure.
3. Align the marks of the coil spring, upper spring seat rubber and upper spring seat. Protect the coil spring and upper seat spring using a piece of cloth, then set the **SSTs**.



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4. Compress the coil spring using the **SSTs**.
5. Install the lower spring seat rubber on the lower spring seat.
6. Install the shock absorber so that the lower end of the coil spring is seated on the step of the lower spring seat.
7. Make sure that the marks on the shock absorber and upper spring seat are aligned.
8. Install the bearing, mounting rubber, and piston rod nut as shown in the figure, then remove the **SSTs**.

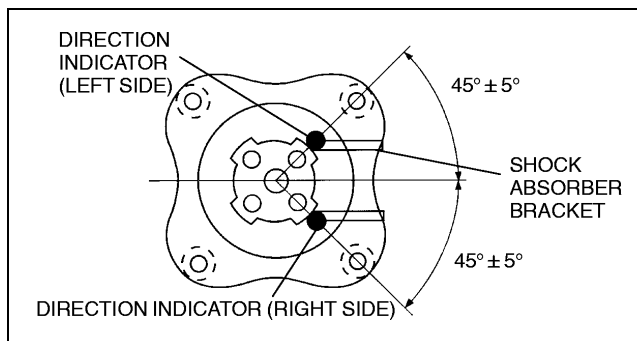


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Piston rod nut tightening torque

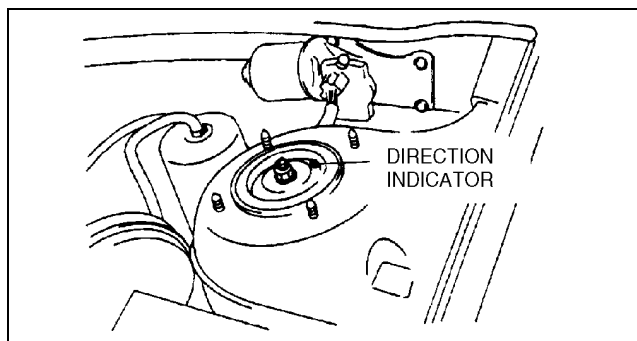
79—109 N·m {8.0—11.2 kgf·m, 57.9—81.0 ft·lbf}



X3U213WA4

Front Shock Absorber and Spring Installation Note

1. Face the mounting block direction indicator toward the rear outboard position, and install the shock absorber.



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FRONT SHOCK ABSORBER INSPECTION

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1. Remove the front shock absorber from the vehicle.
2. Inspect for damage and oil leakage.
3. Inspect the rubber bushing for deterioration and wear.
4. Compress and extend the shock piston at least **3 times**. Verify that the operational force does not change and that there is no unusual noise.
 - (1) Compress the shock absorber piston and release it.
 - (2) Verify that the piston extends fully at a normal speed.
 - If not as specified, replace the shock absorber.

FRONT SHOCK ABSORBER DISPOSAL

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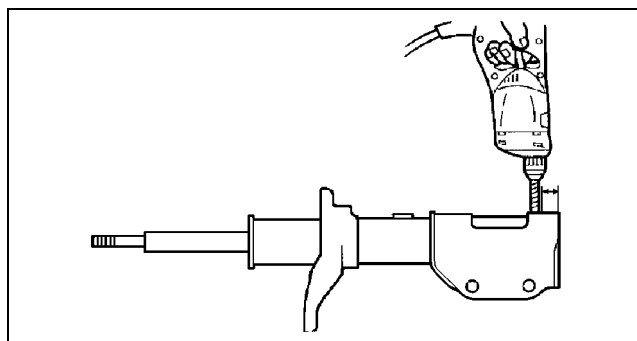
Warning

- Whenever drilling into a shock absorber, wear protective eye wear. The gas in the shock absorber is pressurized, and could spray metal chips into the eyes and face when drilling.

1. Clamp a shock absorber flat or with the piston downwards.
2. Drill a **2—3 mm {0.08—0.11 in}** hole at a point **20—30 mm {0.8—1.1 in}** from the bottom of the tube, so that the gas can escape.
3. Turn the hole downwards.
4. The oil can be collected by moving the piston rod several times up and down and cutting the tube at the end.
5. Dispose of waste oil according to the waste disposal law.

Note

- Shock absorber gas is nitrogen gas.
- Shock absorber oil is mineral oil.



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FRONT SUSPENSION

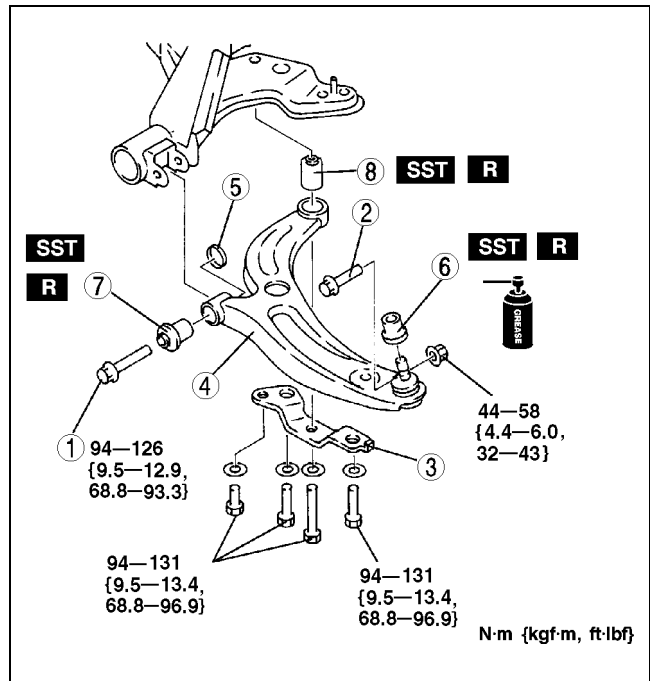
FRONT LOWER ARM REMOVAL/INSTALLATION

A3U021334300W01

1. Remove in the order indicated in the table.

1	Bolt
2	Bolt (Lower arm ball joint)
3	Bracket
4	Lower arm component
5	Stopper
6	Dust boot (See 02-13-5 Dust Boot Removal Note) (See 02-13-7 Dust Boot Installation Note)
7	Lower arm bushing (front) (See 02-13-5 Lower Arm Bushing (Front) Removal Note) (See 02-13-6 Lower Arm Bushing (Front) Installation Note)
8	Lower arm bushing (rear) (See 02-13-6 Lower Arm Bushing (Rear) Removal Note) (See 02-13-6 Lower Arm Bushing (Rear) Installation Note)

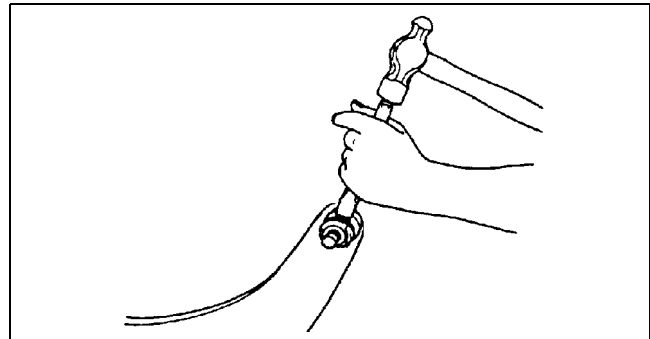
2. Install in the reverse order of removal.



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Dust Boot Removal Note

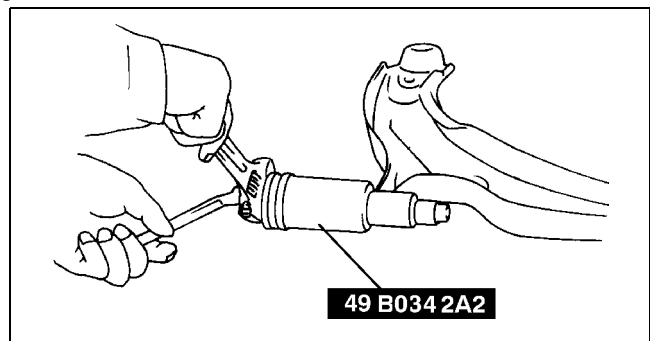
1. Remove the dust boot using a chisel, being careful not to damage the ball joint and the arm.



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Lower Arm Bushing (Front) Removal Note

1. Cut away the projecting rubber of the lower arm bushing.
2. Set the **SST** onto the lower arm, and remove the bushing.



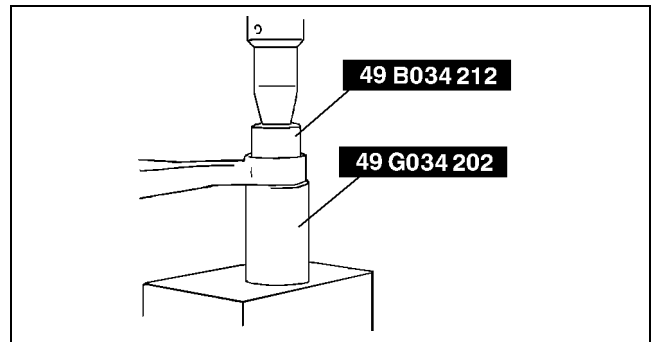
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Lower Arm Bushing (Rear) Removal Note

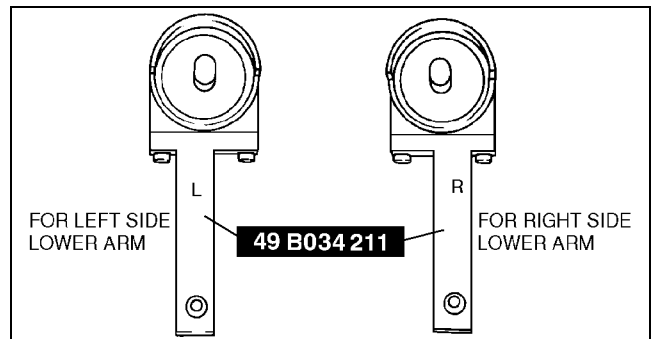
1. Remove the lower arm bushing using the **SSTs** and a press.



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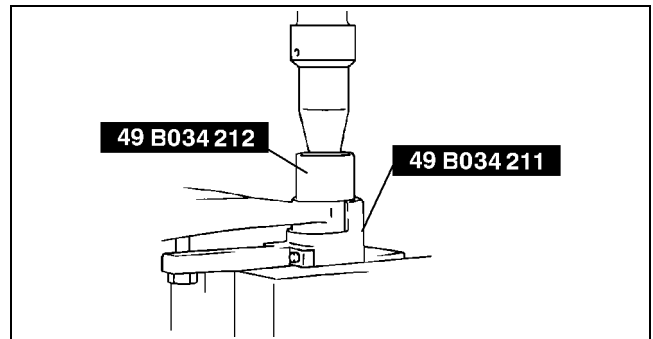
Lower Arm Bushing (Rear) Installation Note

1. Align the mark of the lower arm and the small projection of the lower arm bushing (rear) as shown in the figure.
2. Set the lower arm onto the **SST** (49 B034 211).



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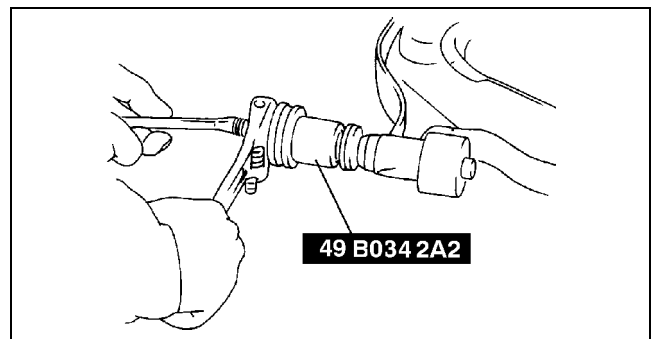
3. Press the new lower arm bushing using the **SST** (49 B034 212).



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Lower Arm Bushing (Front) Installation Note

1. Install the new bushing, and pull it into the lower arm using the **SST**.

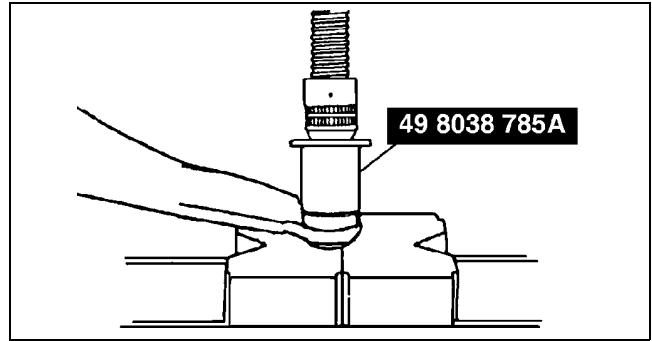


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Dust Boot Installation Note

1. Wipe the grease off the ball stud.
2. Fill the inside of the new dust boot with grease.
3. Press the boot onto the ball joint using the **SST**.
4. Wipe away the excess grease.



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FRONT LOWER ARM INSPECTION

1. Remove the lower arm from the vehicle.
2. Inspect for damage, cracks, and bending.
3. Inspect the ball joint rotation torque.
 - (1) Rotate the ball joint **5 times**.
 - (2) Connect the **SST** to the ball stud, and measure the rotation torque using a pull scale.
 - Replace it if not within the specification.

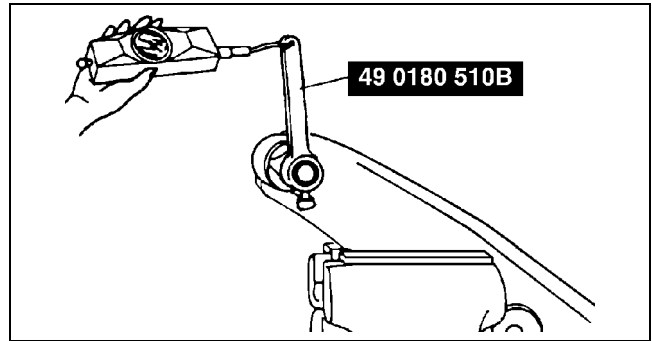
Ball joint preload

1.0—4.9 N·m {10—50 kgf·cm, 9—43 in·lbf}

Pull scale reading

14—44 N {1.4—4.5 kgf, 3—10 lbf}

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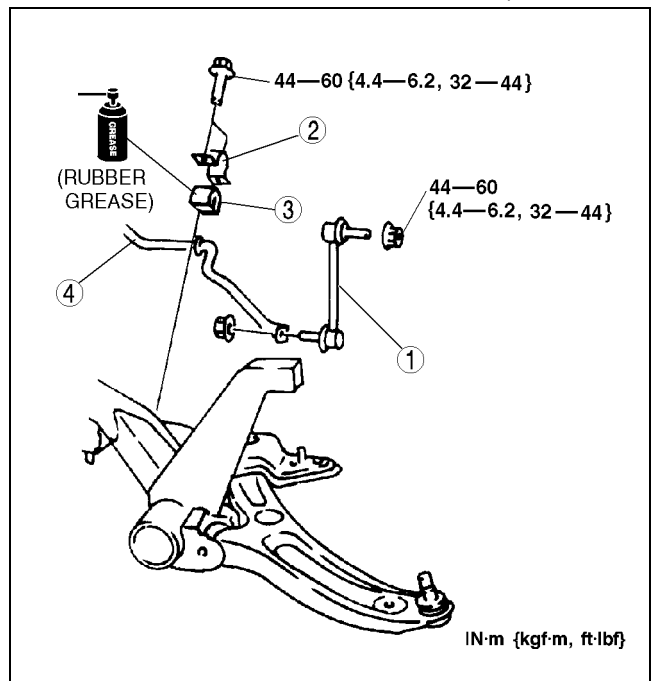
FRONT STABILIZER REMOVAL/INSTALLATION

1. Remove the crossmember. (See 02-13-8 FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
2. Remove in the order indicated in the table.

A3U021334100W01

1	Stabilizer control link
2	Stabilizer bracket (See 02-13-8 Stabilizer Bracket Installation Note)
3	Stabilizer bushing
4	Front stabilizer

3. Install in the reverse order of removal.
4. Inspect the front wheel alignment and adjust it if necessary.

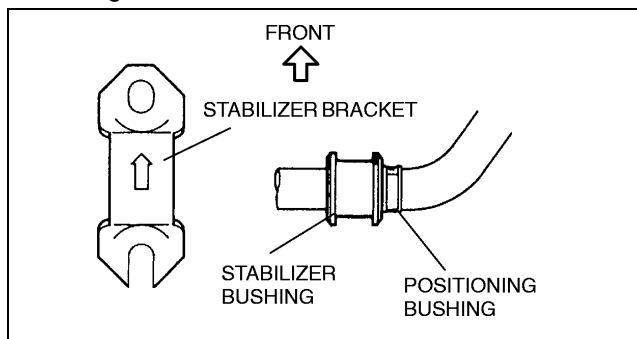


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FRONT SUSPENSION

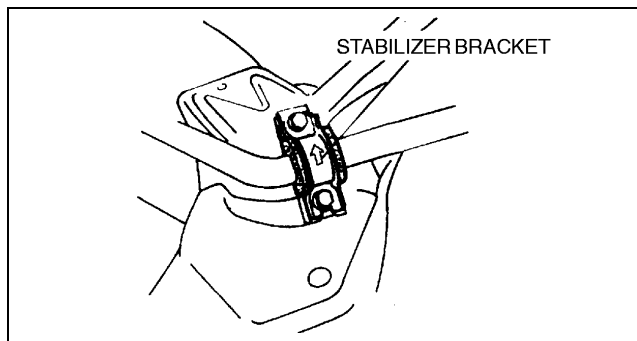
Stabilizer Bracket Installation Note

1. Apply rubber grease to the inside surface of the stabilizer bushing.
2. Align the bushing with the inside of positioning plate on the stabilizer bar.



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3. Install the stabilizer bracket.



X3U213WAJ

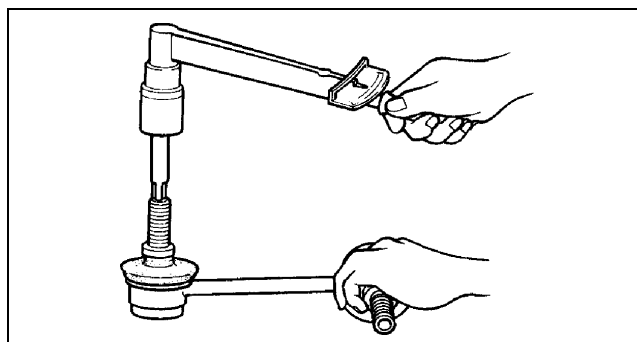
STABILIZER CONTROL LINK (FRONT) INSPECTION

A3U021334150W01

1. Remove the stabilizer control link from the vehicle.
2. Inspect for bending and damage.
3. Measure the ball joint starting torque.
 - (1) Rock the ball joint stud side to side **10 times**.
 - (2) Rotate the ball joint stud **10 times**.
 - (3) Measure the starting torque using a suitable Allen socket and a torque wrench.

Starting torque

0.2—2.5 N·m {1.4—26.0 kgf·cm, 1.3—22.0 in·lbf}



X3U213WAK

FRONT CROSSMEMBER REMOVAL/INSTALLATION

A3U021334800W01

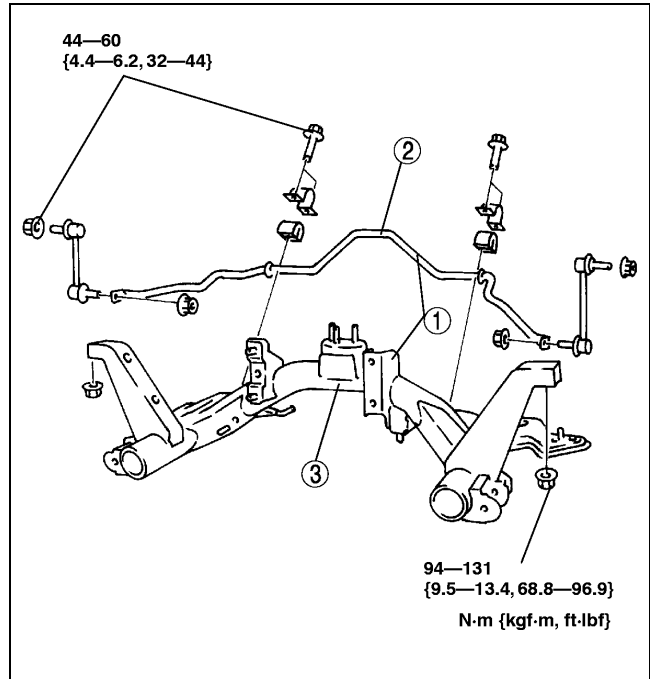
1. For the MTX models, remove the change control rod and extension bar. (See 05-15A-4 MANUAL TRANSAXLE (MTX) REMOVAL/INSTALLATION [F25M-R].)
2. Remove the front exhaust pipe. (See 01-15-1 EXHAUST SYSTEM REMOVAL/INSTALLATION.) (See 01-15-1 EXHAUST SYSTEM REMOVAL/INSTALLATION.)
3. Remove the transverse member. (See 02-13-9 TRANSVERSE MEMBER (ZM (ATX), FS) REMOVAL/INSTALLATION)
4. Remove the steering gear and linkage. (See 06-12-9 STEERING GEAR AND LINKAGE REMOVAL/INSTALLATION.)
5. Remove the front lower arm. (See 02-13-5 FRONT LOWER ARM REMOVAL/INSTALLATION.)

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6. Remove in the order indicated in the table.

1	Crossmember component (See 02-13-9 Crossmember Component Removal Note)
2	Front stabilizer (See 02-13-7 FRONT STABILIZER REMOVAL/INSTALLATION)
3	Front crossmember

7. Install in the reverse order of removal.
8. Inspect the front wheel alignment as necessary.

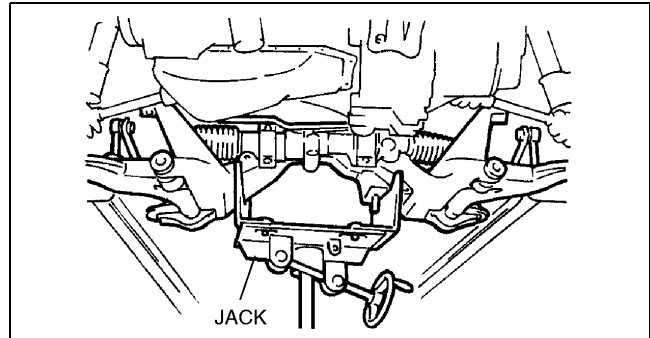


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Crossmember Component Removal Note

1. Support the crossmember using a jack and remove the bolts and nuts.
2. Remove the crossmember component.

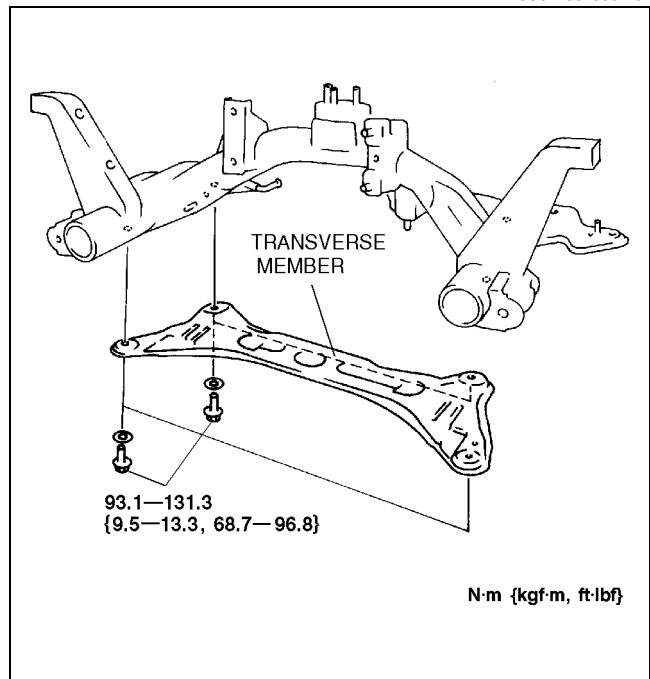


X3U213WAM

TRANSVERSE MEMBER (ZM (ATX), FS) REMOVAL/INSTALLATION

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1. Remove the transverse member.
2. Install the transverse member.



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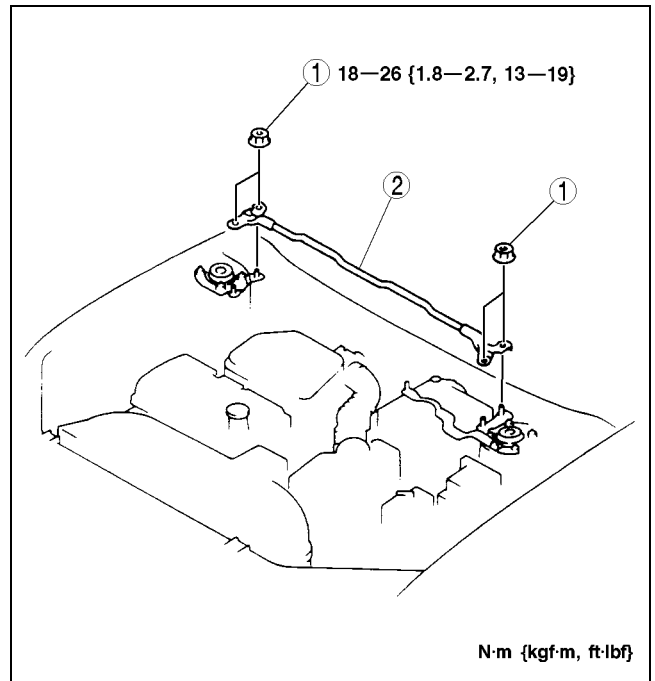
FRONT STRUT BAR REMOVAL/INSTALLATION

A3U021301015W02

1. Remove in the order indicated in the table.

1	Nut
2	Front strut bar

2. Install in the reverse order of removal.



Y3A7414W002