1989 Mazda RX-7 Factory Service Manual

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SUSPENSION

97U0RX-001

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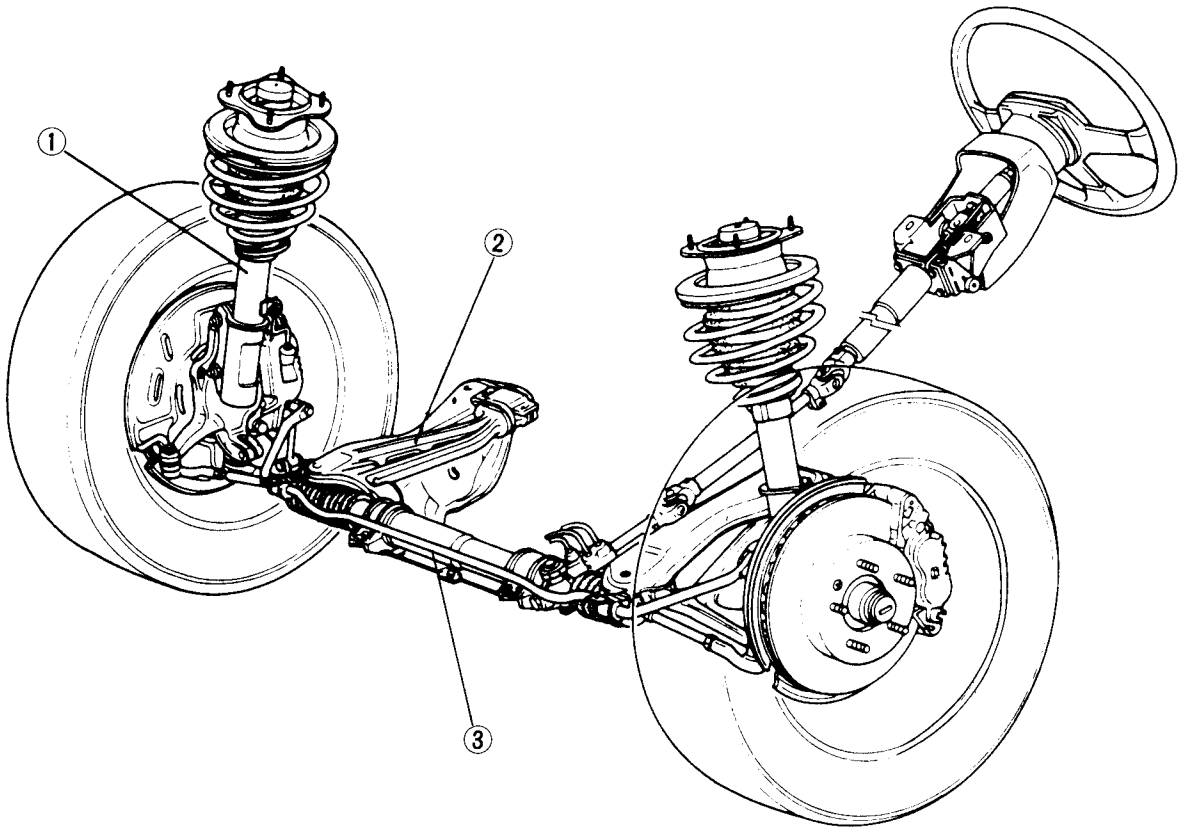
FRONT SUSPENSION



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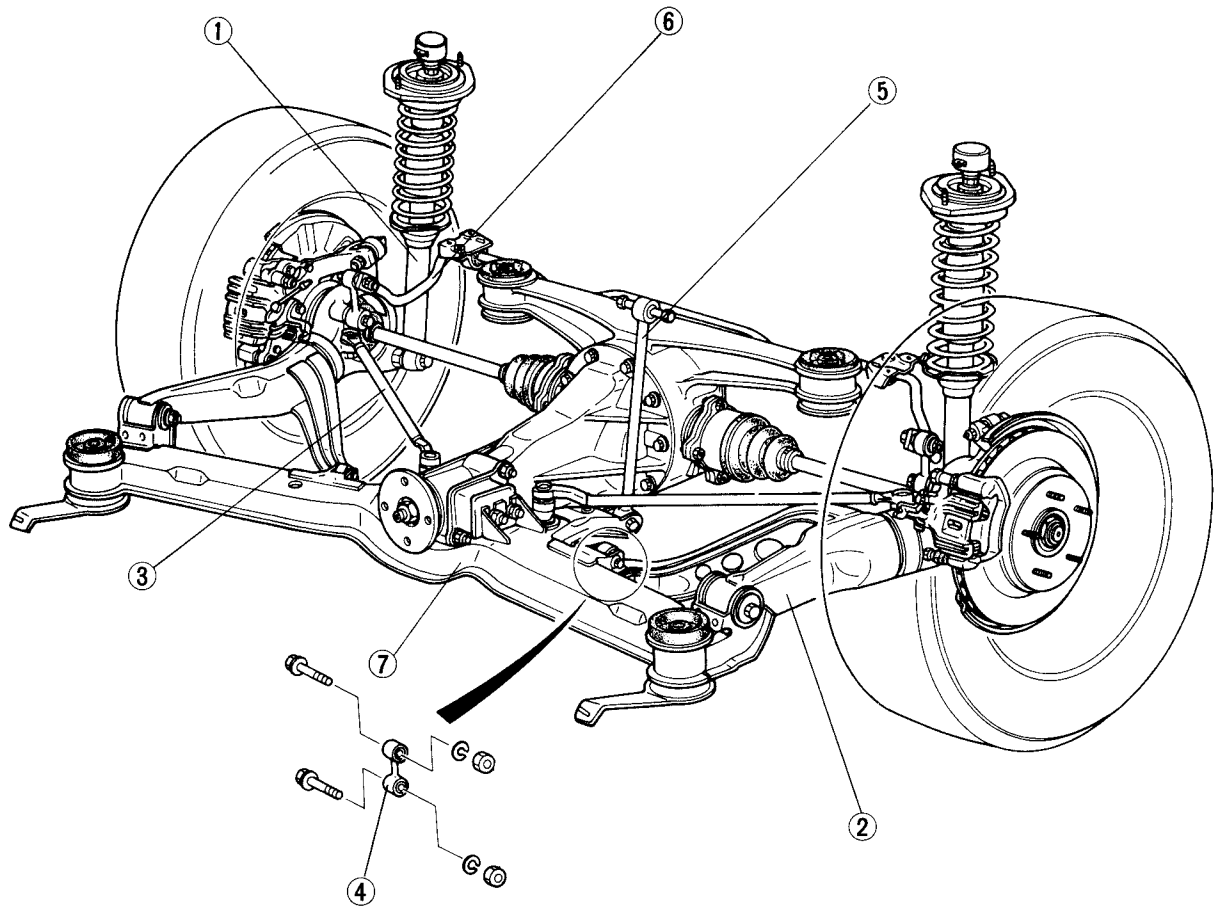
REAR SUSPENSION



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OUTLINE

SPECIFICATIONS
Front Suspension

Item \ Type				Sport suspension		Standard suspension	
				Left side	Right side	Left side	Right side
Suspension type				Strut			
Stabilizer	Type			Torsion bar			
	Diameter		mm (in)	24 (0.94)			
Shock absorbers				Cylindrical, double-acting			
Coil springs	Identification mark color			Green	Gray	Red	Light green
	Wire diameter		mm (in)	12.2 (0.48)	12.0 (0.47)	12.0 (0.47)	12.0 (0.47)
	Coil diameter	Top	mm (in)	147.2 (5.80)	147.0 (5.79)	147.0 (5.79)	147.0 (5.79)
		Bottum	mm (in)	69.8 (2.75)	70.0 (2.76)	70.0 (2.76)	70.0 (2.76)
	Free length		mm (in)	346.5 (13.64)	336.5 (13.23)	355.5 (14.00)	348.5 (13.72)
	Coil number		turns	4.29	4.08	4.41	4.41
Front wheel alignment (*Unladen)	Total toe-in		mm (in)	3 ± 3 (0.12 ± 0.12)			
			degree	0°18' ± 18'			
	Maximum steering angle	Inner		36° ± 2°			
		Outer		32° ± 2°			
	Camber angle			0°20' ± 30'			
	Caster angle			4°40' ± 45'			
	Kingpin angle			13°45'			

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Rear Suspension

Item \ Type			Sport suspension	Standard suspension	
			Normal body	Convertible top	
Suspension type			Multilink semi-trailing		
Stabilizer	Type		Torsion bar		
	Diameter	mm (in)	14 (0.55)	12 (0.47)	
Shock absorbers			Cylindrical, double-acting		
Coil springs	Identification mark color		Purple	Orange	
	Wire diameter	mm (in)	10.1 (0.40)	10.3 (0.41)	
	Coil diameter	mm (in)	84.4 (3.32)	84.2 (3.31)	
	Free length	mm (in)	385.0 (15.16)	372.5 (14.67)	
	Coil number	turns	9.62	9.43	
Rear wheel alignment (*Unladen)	Total toe-in	mm (in)	3 ± 3 (0.12 ± 0.12)		
		degree	0°18' ± 18'		
	Camber angle		−0°44' ± 30'		

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* Fuel tank full; radiator coolant and engine oil at specified level, and spare tire, jack, and tools in designated position

TROUBLESHOOTING GUIDE

Problem	Possible cause	Action	Page
General instability	Weak coil springs	Replace	R–12,22
	Malfunction of shock absorber	Replace	R–12,22
	Worn or deteriorated lower arm or stabilizer bushing	Replace	R–15,17,29
	Worn or damaged lower arm ball joint	Replace	R–16
	Improperly adjusted wheel alignment	Adjust	R– 6
	Worn or deteriorated trailing arm bushing	Replace	R–24
Body "rolls"	Weak stabilizer	Replace	R–17,29
	Worn or deteriorated stabilizer, lower arm, trailing arm bushing	Replace	R–15,17,24,29
"Heavy" steering wheel operation	Insufficiently lubricated or stuck lower arm ball joint	Replace	R–14
	Worn or damaged strut bearing	Replace	R–12
	Improperly adjusted wheel alignment	Adjust	R– 6
Steering wheel pulls to one side	Weak coil spring	Replace	R–12,22
	Worn or damaged lower arm or stabilizer bushing	Replace	R–15,17,29
	Deformed lower arm or knuckle	Replace	R–14
	Loosen lower arm bushing	Replace	R–15
Excessive steering wheel play	Worn or damaged lower arm bushing	Replace	R–15
	Worn or damaged lower arm ball joint	Replace	R–14
Body leans	Weak coil spring	Replace	R–12,22
	Weak stabilizer or lower arm bushing	Replace	R–15,17,29
Abnormal noise from suspension system	Loose mounting component	Tighten	
	Poorly lubricated or worn lower arm ball joint	Replace	R–14
	Malfunction of shock absorber	Replace	R–12,22
	Worn or deteriorated stabilizer or suspension arm bushing	Replace	R–15,17,24,29
	Worn or damaged front strut bearing	Replace	R–12
"Shake" occurs (Steering wheel vibrates up/down)	Excessive tire and wheel runout	Replace	—
	Loose lug nuts	Tighten	Section Q
	Unbalanced wheel(s)	Adjust or replace	Section Q
	Cracked or worn engine mount rubber	Replace	Section C
	Cracked or worn transmission mount rubber	Replace	Sections J1,J2,K
"Shimmy" occurs (Steering wheel vibrates left/right)	Cracked or worn steering gear mount rubber	Replace	Section N
	Loose steering gear mounting bolts	Tighten	Section N
	Stuck or damaged steering ball joint	Replace	Section N
	Excessive tire and wheel runout	Replace	—
	Loose lug nuts	Tighten	Section Q
	Unbalanced wheel(s)	Adjust or replace	Section Q
	Insufficient tire pressure	Adjust	Section Q
	Unevenly worn tires	Replace	Section Q
	Malfunction of shock absorber	Replace	R–12,22
	Loose shock absorber mounting bolts	Tighten	R–11,20
	Stuck or damaged lower arm ball joint	Replace	R–14
	Cracked or worn suspension bushings	Replace	R–15,24
	Damaged or worn front wheel bearing	Replace	Section M
	Improperly adjusted front wheel alignment	Adjust	R– 6

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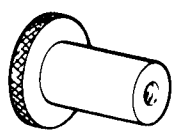
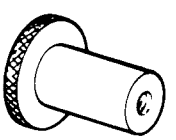
WHEEL ALIGNMENT

PREPARATION
SST

49 1205 605 Adapter, caster camber gauge	49 F026 101 Adapter, caster camber gauge

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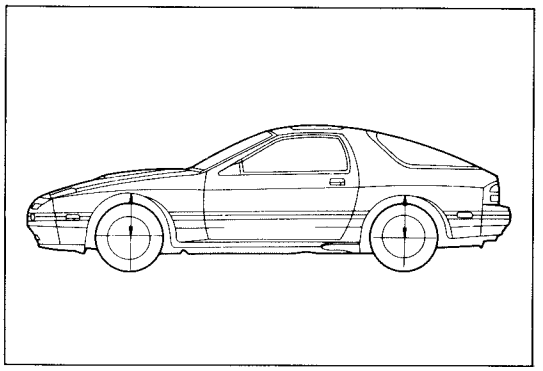

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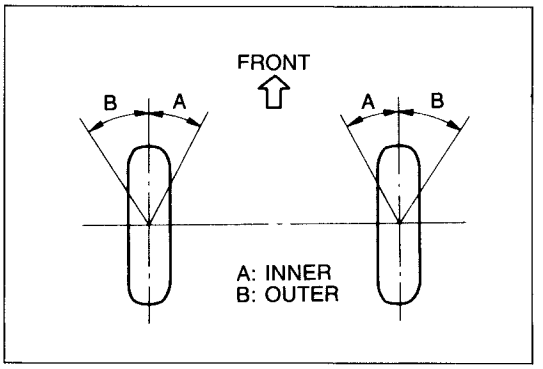

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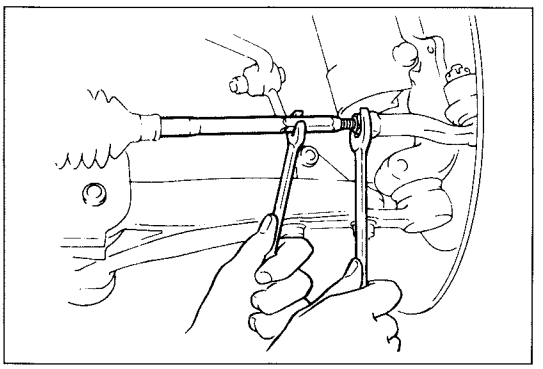

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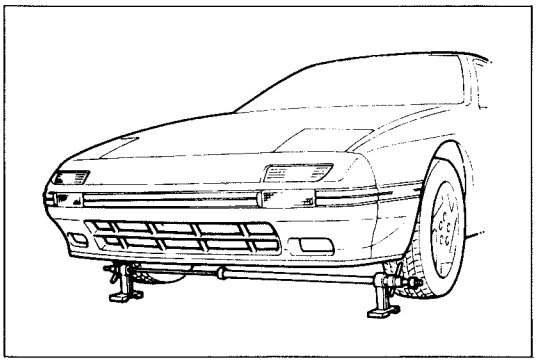

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PREINSPECTION

1. Check the tire inflations, and bring to the recommended pressure if necessary.
2. Inspect the front wheel bearing play, and correct it if necessary.
3. Inspect the wheel and tire runouts.
4. Inspect the ball joints and steering linkage for excessive looseness.
5. Position the vehicle on level ground, with no luggage or passenger load.
6. The difference in height between the left and right sides from the center of the wheel to the fender brim must not exceed **10mm (0.39 in)**.

FRONT WHEEL ALIGNMENT

Maximum Steering Angle

Inspection

The steering angle is measured by placing the front wheels on a turning-radius gauge.

Maximum steering angle: Inner 36° ± 2°
Outer 32° ± 2°

Adjustment

Adjust the turning angle as follows:

1. Loosen the adjusting bolt locknut.
2. Turn the tie-rod to provide the correct turning angle.
3. After adjustment, tighten the locknut to the specified torque.

Tightening torque:
34—39 N·m (3.5—4.0 m-kg, 25—29 ft-lb)

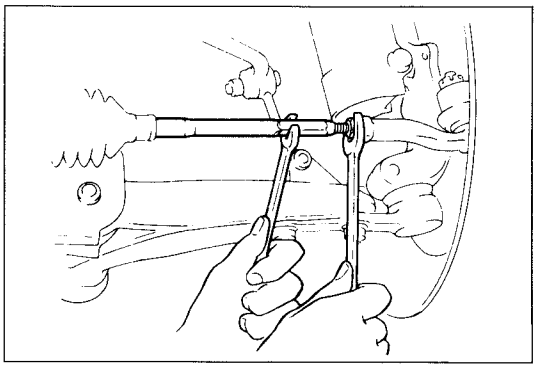
4. Adjust the toe-in.

Total Toe-in

Inspection

1. Raise the front of the vehicle until the tires clear the ground.
2. Turn the wheels by hand, mark a line in the center of each tire tread by using a scribing block.
3. Place the front wheels in the straight-ahead position and lower the vehicle.
4. Measure the distance between the lines at the front and rear of the wheels.
   Both measurements must be taken at equal distances from the ground.

Total toe-in (distance greater at rear than front):
3 ± 3mm (0.12 ± 0.12 in)



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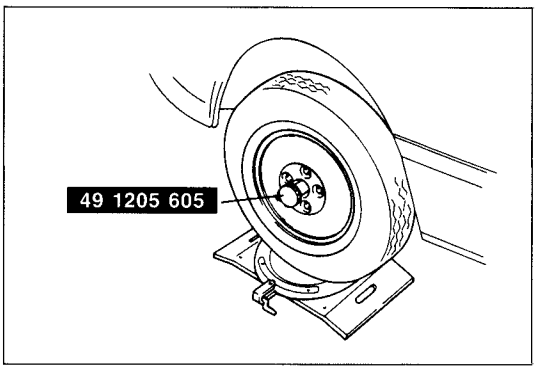

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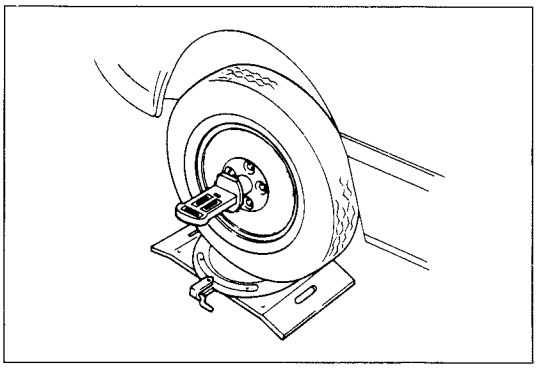

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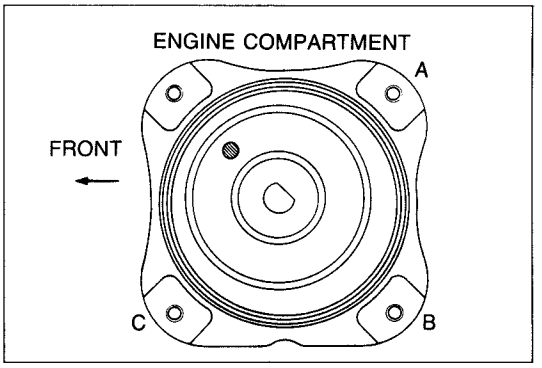

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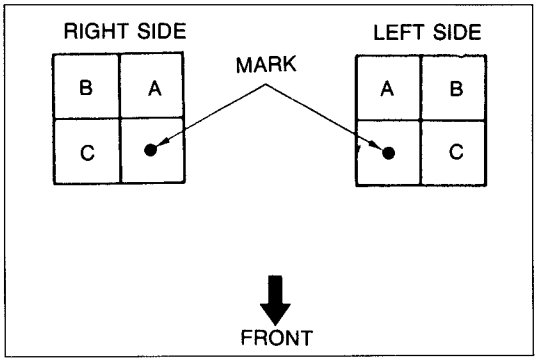

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Adjustment

To adjust the toe-in, loosen the left and right tie-rod locknuts, and turn the tie-rods by the same amount.

Caution

a) The left and right tie-rods are both right threaded, so, to increase the toe-in, turn the right tie-rod toward the front of the vehicle, and turn the left tie-rod by the same amount toward the rear.

b) One turn of the tie-rod (both sides) changes the toe-in by about 6mm (0.24 in).

c) Tighten the tie-rod locknuts to the specified torque.

Tightening torque:
34—40 N·m (3.5—4.0 m-kg, 25—29 ft-lb)

Camber and Caster

Inspection

The camber and caster are measured by placing the front wheels on a turning-radius gauge in accordance with the manufacturer's instructions.

Proceed in the following order:

1. Jack up the vehicle and attach the **SST** to the wheel hub as shown in the figure.

2. Attach the caster/camber gauge to the adaper and measure the camber and caster.

Camber angle: 0°20' ± 30'
Caster angle: 4°40' ± 45'

Left/right difference:
Camber: 30' or less
Caster : 45' or less

Adjustment

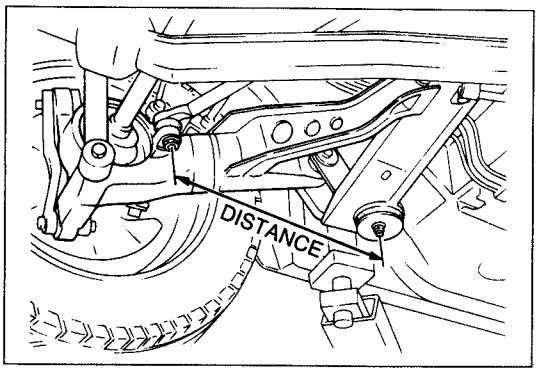
1. Jack up the front of the vehicle and support it with safety stands.
2. Remove the nuts holding the mounting block to the fender.
3. Push the mounting block downward, and turn it to the desired position.
4. Retighten the nuts to the specified torque.

Tightening torque:
29—36 N·m (3.0—3.7 m-kg, 22—27 ft-lb)

Note

The camber and caster are adjusted about 30' by changing the position of the mounting block.

Mark	Difference from standard position	
	Camber angle	Caster angle
A	0°	30'
B	30'	30'
C	30'	0°



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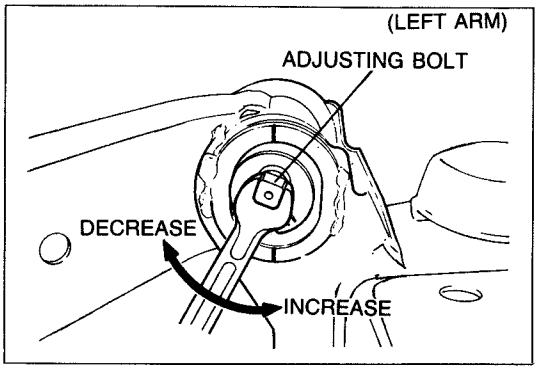

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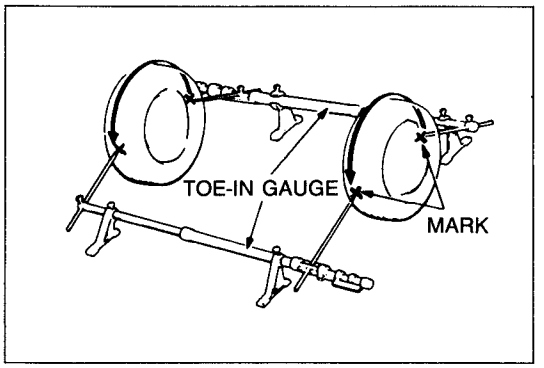

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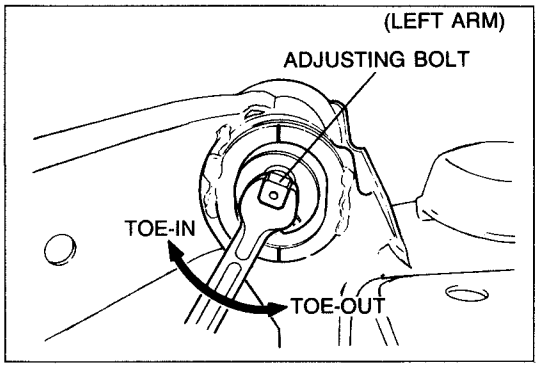

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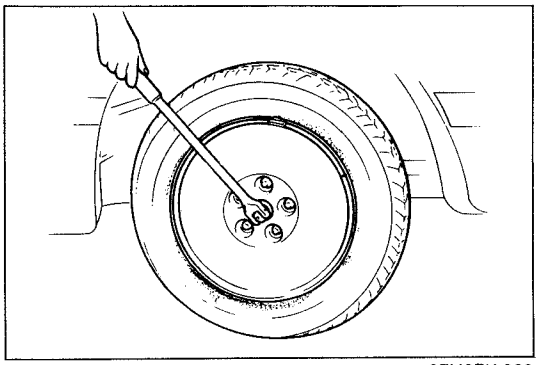

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REAR WHEEL ALIGNMENT

Distance from Subframe to Lateral Link Ball Joint

Inspection

Measure the distance between the center of the subframe rubber mount to the center of the lateral link ball joint for both left and right of the vehicle.
The left/right difference must be within **5mm (0.2 in)**.

Adjustment

To increase the distance, turn the cam plate as follows:
Right arm — Turn cam clockwise.
Left arm — Turn cam counterclockwise.

To decrease the distance, turn the adjusting cam as follows:
Right arm — Turn cam counterclockwise.
Left arm — Turn cam clockwise.

Amount of trailing arm movement:
1 mark = 1.8mm (0.07 in)

Total Toe-in

Inspection

1. Raise the rear of the vehicle until the tires clear the ground.
2. Turn the wheels by hand, and mark a line in the center of each tire tread using a scribing block.
3. Lower the vehicle.
4. Measure the distance between the marked lines at the front and rear or the wheels.

Total toe-in:
3 ± 3mm (0.12 ± 0.12 in)

Adjustment

Turn the left and right cam plates by the same amount, and adjust the toe-in to specification.

To decrease the toe-in, turn the cam plate as follows:
Right arm — Turn cam clockwise.
Left arm — Turn cam counterclockwise.

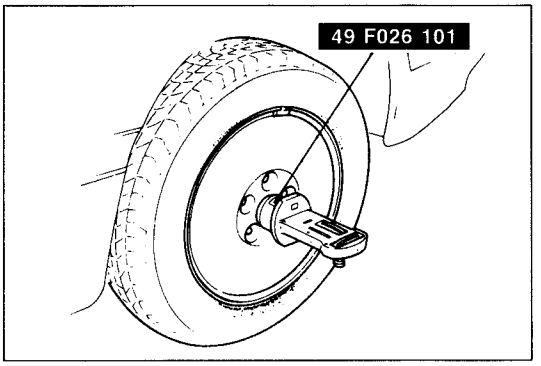
To increase the toe-in, turn the cam plate as follows:
Right arm — Turn cam counterclockwise.
Left arm — Turn cam clockwise.

Amount of toe-in change:
1 mark = 2.3mm (0.09 in) for one wheel

Camber

Preparation

1. Jack up the vehicle.
2. Remove the wheels and the hub caps.
3. Install the wheels.
4. Remove the driveshaft nut.
5. Lower the vehicle.



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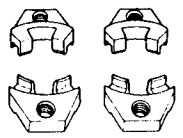
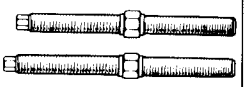
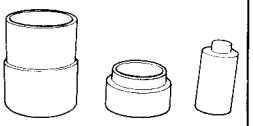
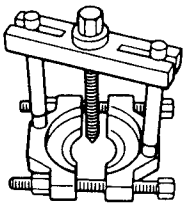
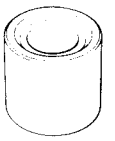
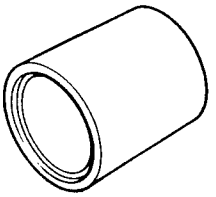
Inspection

1. Install the **SST** to the driveshaft.
2. Measure the camber angle with the caster, camber gauge.

Camber: -0°44' ± 30'

FRONT SUSPENSION (STRUT)

PREPARATION
SST

49 0223 640B Arm, coil spring compressor 	49 0370 641 Screw, coil spring compressor 	49 G030 625A Puller & Installer, lower arm bushing 
49 G030 627A Puller (Part of 49 G030 625A) 	49 0710 520 Puller, bearing 	49 0823 146 Support block 
49 0180 510B Attachment, preload measuring 	49 F034 201 Installer, boot 	

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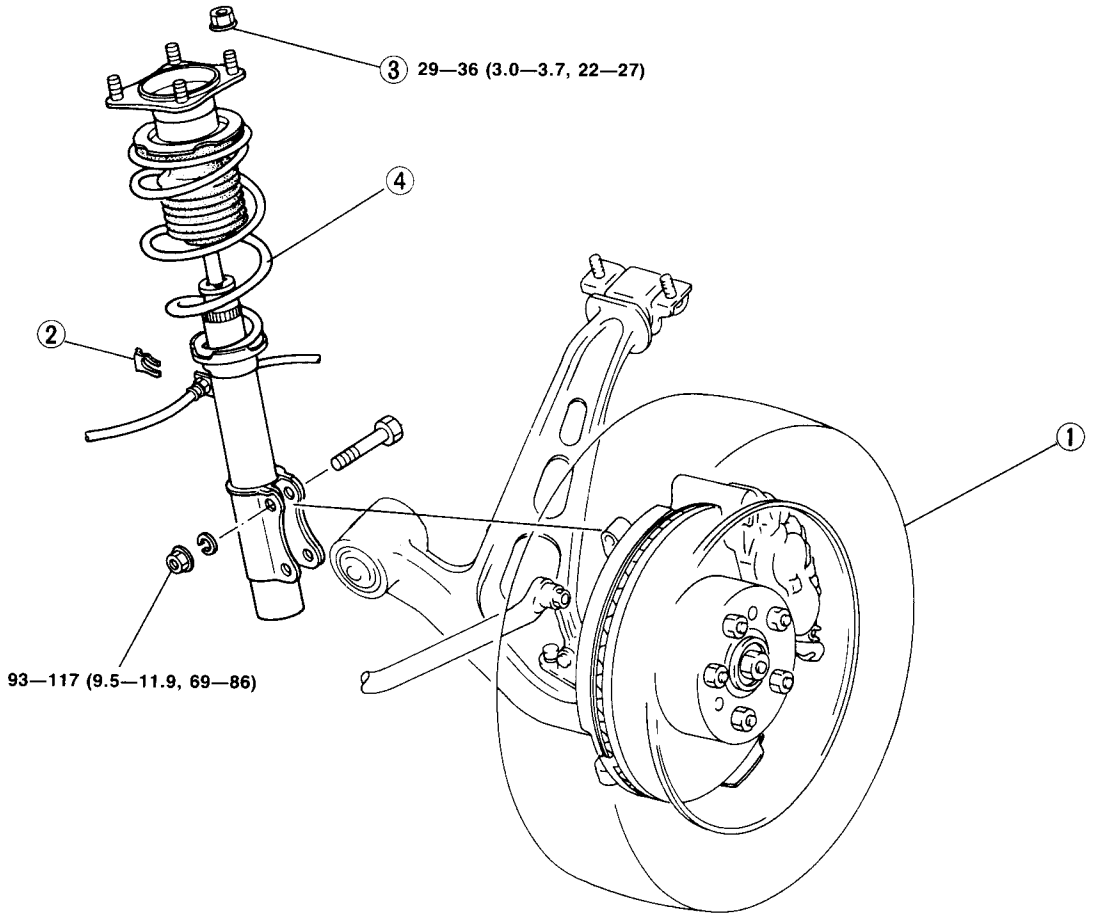
FRONT SHOCK ABSORBER AND SPRING

Removal and Installation

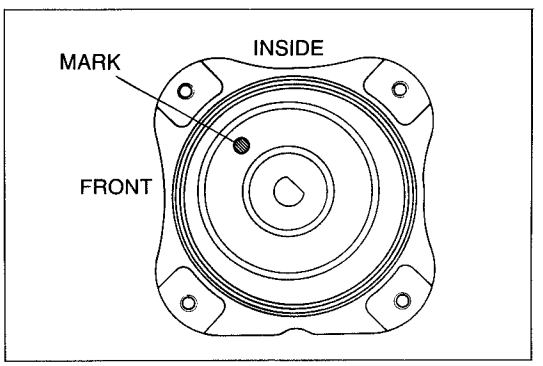
1. Jack up the front of the vehicle and support it with safety stands.
2. Remove in the order shown in the figure.
3. Install in the reverse order of removal, referring to **Installation Note**.
4. Tighten all nuts and bolts to the specified torque, referring to the figure.



N·m (m-kg, ft-lb)

97U0RX-023

1. Wheel and tire
2. Hose clip
3. Mounting block nut
   Installation note ..... page R–11
4. Shock absorber assembly
   Disassembly, Inspection, and Assembly ..... page R–12



97U0RX-024

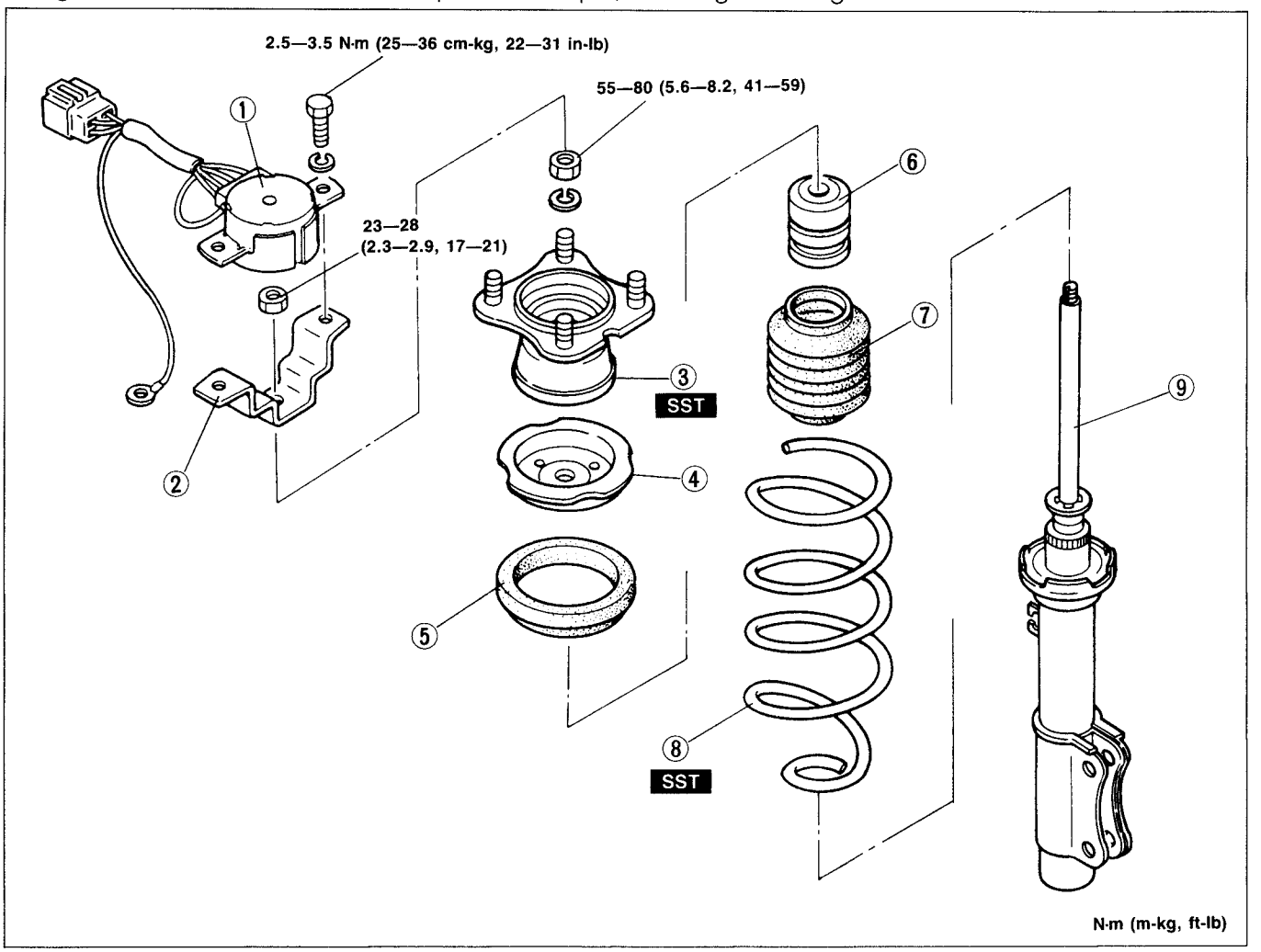
Installation note

Mounting block nut

Install the mounting block to the suspension tower with the white mark on the mounting block in the front-inside direction.

Disassembly, Inspection, and Assembly

1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all components and parts, Replace parts if necessary.
3. Assemble in the reverse order of disassembly, referring to **Assembly Note**.
4. Tighten all nuts and bolts to the specified torque, referring to the figure.



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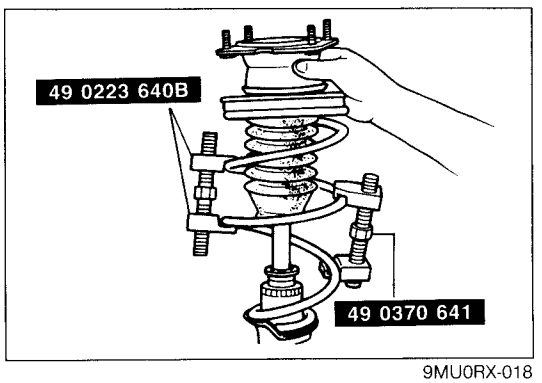
1. Actuator (AAS)
   Inspection ..... page R–34
2. Actuator brakcet (AAS)
3. Mounting block
   Disassembly note ..... page R–12
   Assembly note ..... page R–13
4. Spring upper seat
5. Spring seat
6. Bound stopper
7. Dust boot
8. Coil spring
   Disassembly note ..... page R–12
   Assembly note ..... page R–13
9. Shock abosrber
   Inspect for oil leakage or abnormal noise
   Inspection (AAS) ..... page R–13



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Disassembly note

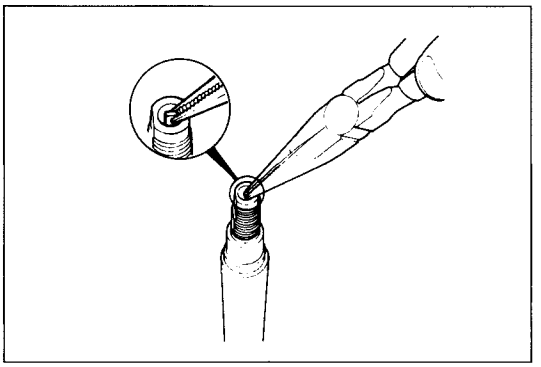
Coil spring and mounting block

Caution
Insert copper or aluminum plates between the part and the jaws of the vise.

1. Loosen the piston rod upper nut several turns, but do not remove it.

Caution
Do not remove the nut.

2. Compress the coil spring with the **SST**; then remove the nut.
3. Remove the coil spring.



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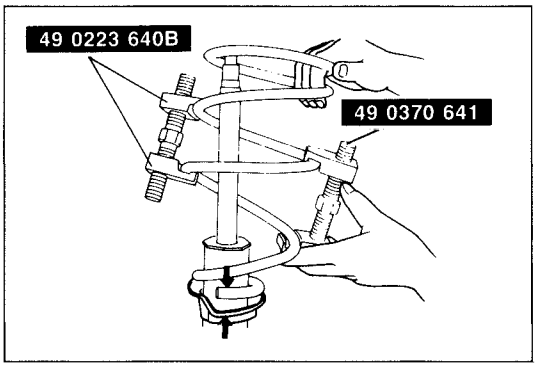


97U0RX-028

Inspection
Shock absorber (AAS)
Smooth rotation of control rod.

Assembly note
Coil spring and mounting block
1. Compress the coil spring with the **SST**.
2. Install the mounting block in the vise.
3. Tighten the piston and upper nut.

Tightening torque:
55—80 N·m (5.6—8.2 m-kg, 41—59 ft-lb)

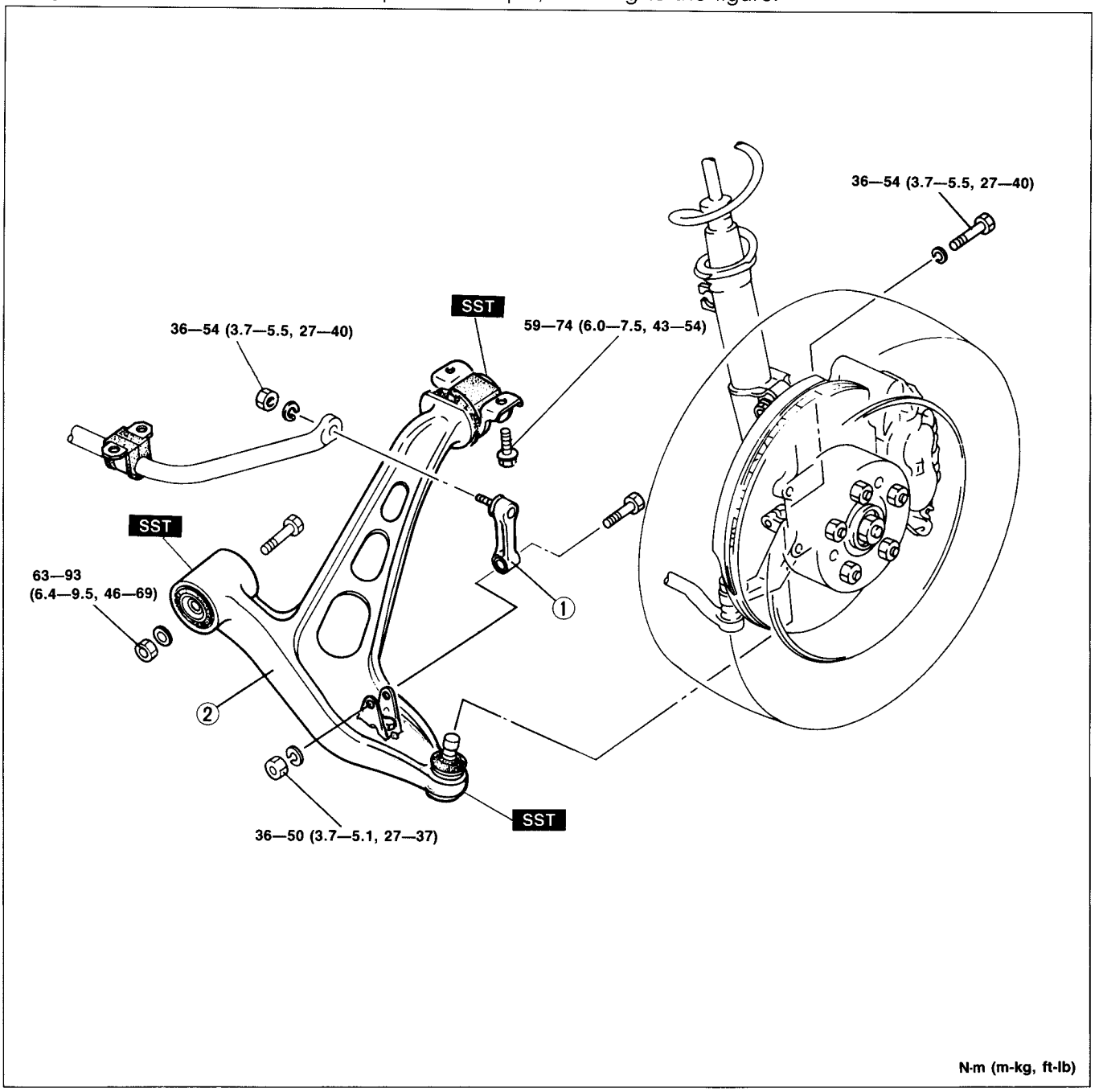
4. Remove the **SST**.

Caution
Check that the spring is well seated in the upper seat and lower seat.

FRONT LOWER ARM

Removal, Inspection, and Installation

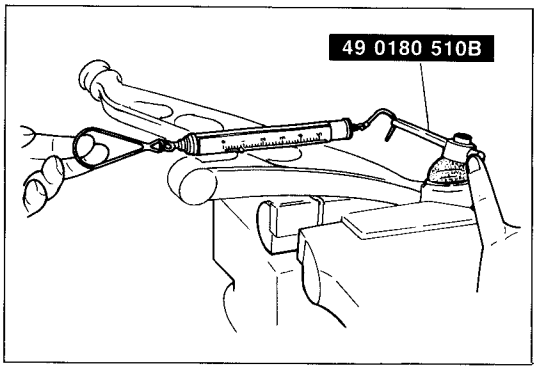
1. Jack up the front of the vehicle and support it with safety stands.
2. Remove in the order shown in the figure.
3. Inspect all components and parts.
4. Install in the reverse order of removal, referring to **Installation Note**.
5. Tighten all nuts and bolts to the specified torque, referring to the figure.



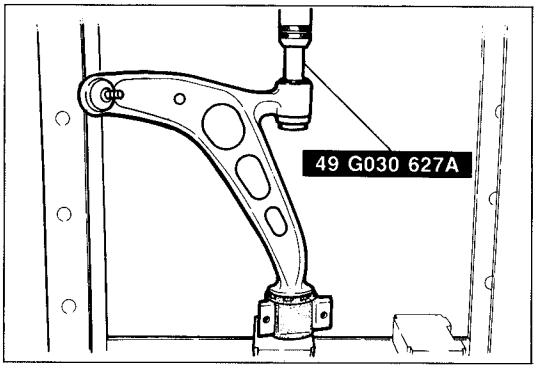
97U0RX-029

1. Control link
   Installation note ..... page R–16

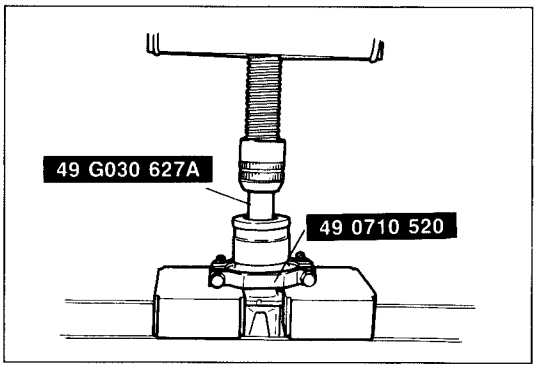
2. Lower arm
   Inspect for damage or cracks
   Inspect bushing for deterioration or damage
   Inspect dust boot for damage
   Inspection ..... page R–15
   Disassembly ..... page R–15
   Assembly ..... page R–15
   Installation note ..... page R–16



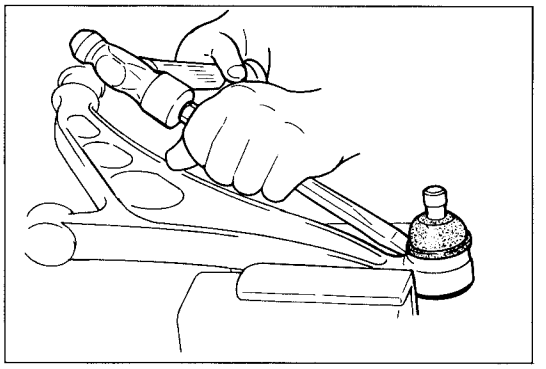
97U0RX-030

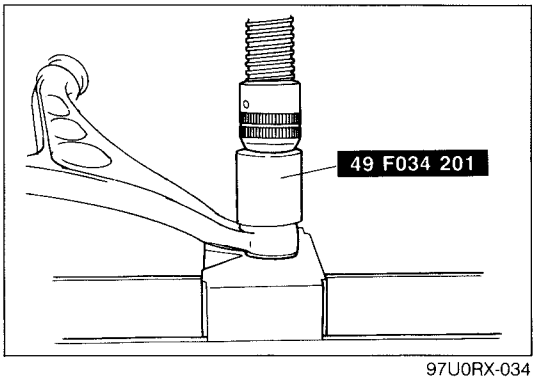


97U0RX-031



97U0RX-032


97U0RX-033



97U0RX-034

Inspection
Ball joint Preload

Note
Measure the preload after shaking the stud of the ball joint 3 or 4 times.

Attach the **SST** to the ball stud, and measure the preload using the pull scale.

Pull scale reading:
20—34 N (2.0—3.5 kg, 4.4—7.7 lb)
(While the ball stud is rotating)

Disassembly
Lower arm bushing (Front)
1. Set the **SST** against the bushing.
2. Push out the bushing.

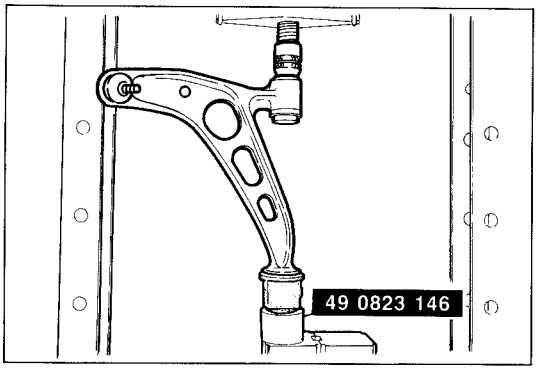
Lower arm bushing (Rear)

Caution
When using the SST, do not over tighten (hand tighten only) the clamping nuts, or the lower arm will be distorted damaged.

1. Set the **SST** against the lower arm.
2. Push out the bushing.

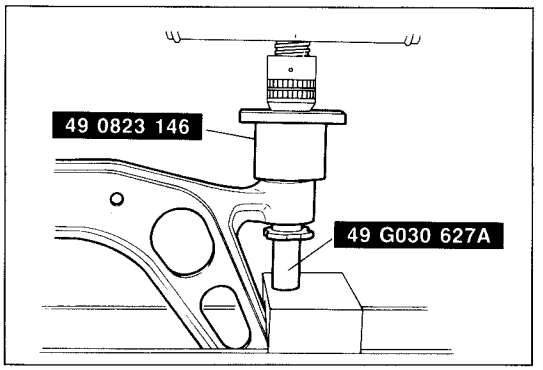
Dust boot
Remove the dust boot with a chisel.

Assembly
Dust boot
1. Liberally coat the inside of the new dust boot with grease.
2. Install the dust boot to the ball joint with the **SST**.



97U0RX-035

Lower arm bushing (rear)
1. Press the new bushing into the lower arm about half way.
2. Set the **SST** against the bushing.
3. Press the bushing into the lower arm.

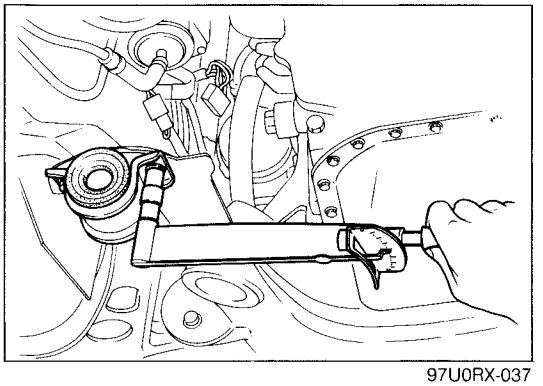


97U0RX-036

Lower arm bushing (front)

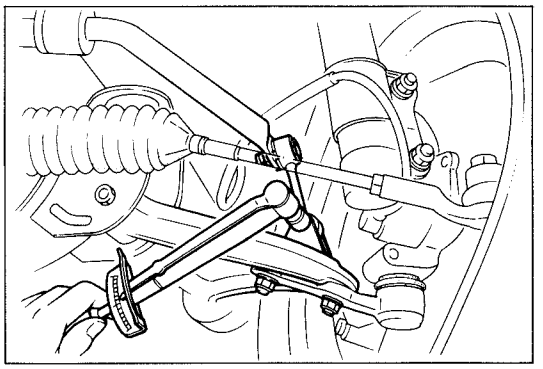
Caution
The following work should be performed by two persons.

1. Press the new bushing into the lower arm about half way.
2. Set the **SST** to the bushing.
3. Press the bushing into the lower arm.


97U0RX-037

Installation note
Lower arm
1. Install the lower arm and loosely tighten the bolts.
2. Lower the vehicle and tighten the bolts to the specified torque with the vehicle unloaded.

Tightening torque:
69—83 N·m (7.0—8.5 m-kg, 51—61 ft-lb)


97U0RX-038

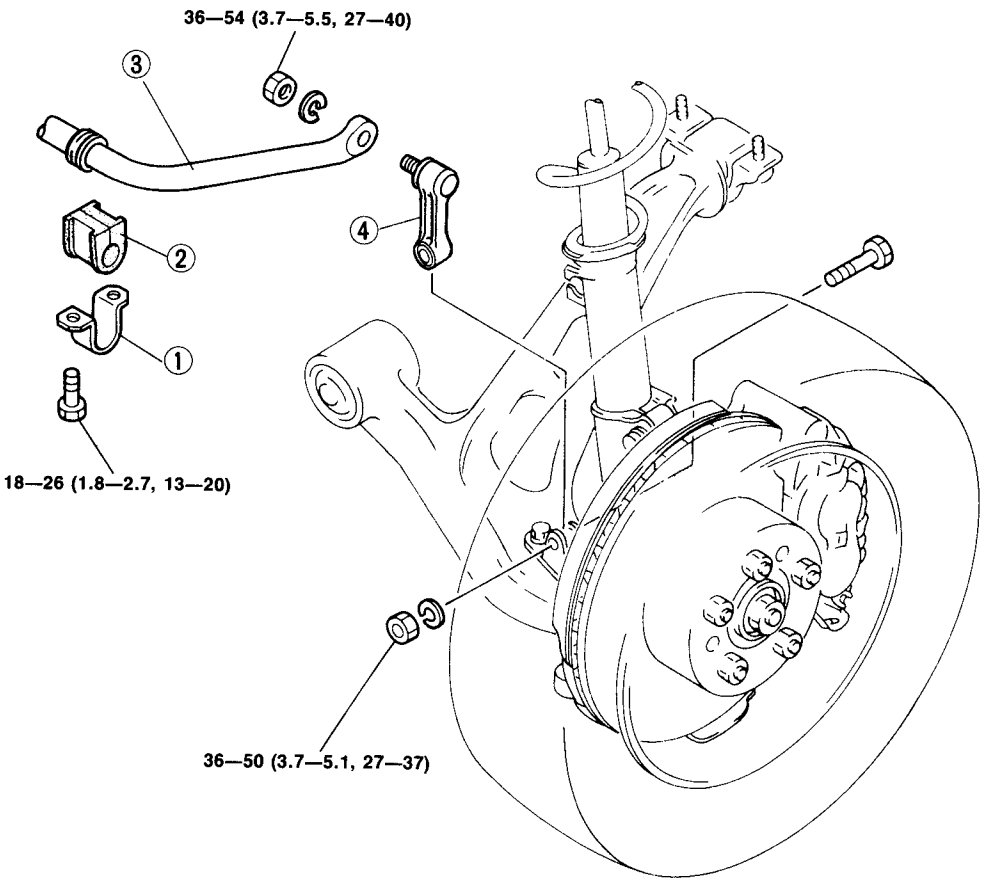
Stabilizer
1. Install the bushing and the stabilizer bracket to the body.
2. Loosely tighten the bolts.
3. Lower the vehicle and tighten the bolts to the specified torque with the vehicle unloaded.

Tightening torque:
36—50 N·m (3.7—5.1 m-kg, 27—37 ft-lb)

FRONT STABILIZER

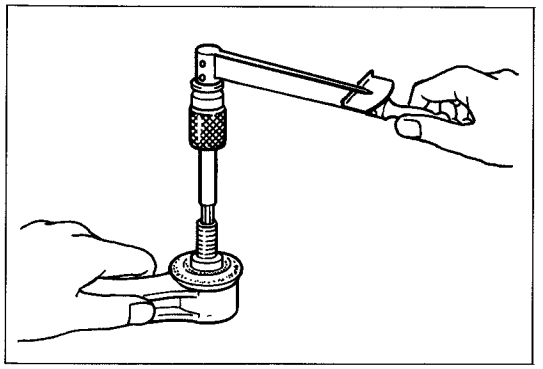
Removal, Inspection, and Installation

1. Jack up the front of the vehicle and support it with safety stands.
2. Remove in the order shown in the figure.
3. Inspect all components and parts, replace parts if necessary.
4. Install in the reverse order of removal, referring to **Installation Note**.
5. Tighten all nuts and bolts to the specified torque, referring to the figure.

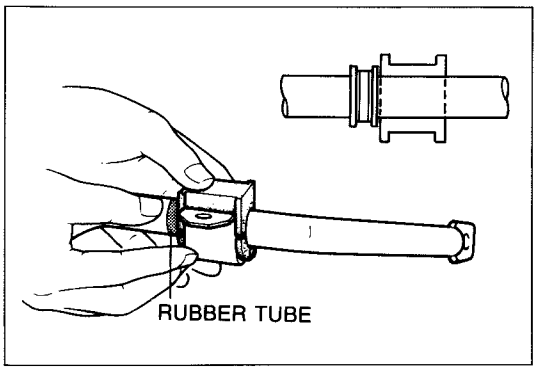


97U0RX-039

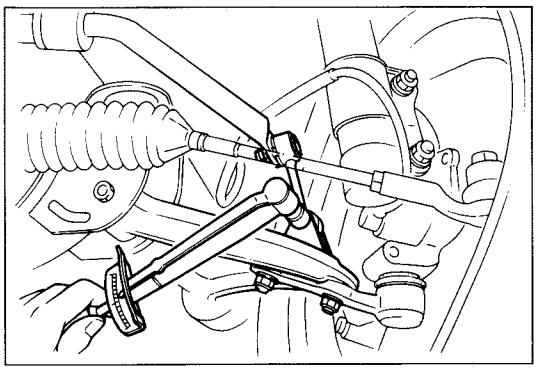
1. Stabilizer bracket
   Installation note ..... page R–18
2. Bushing
   Inspect for deterioration or wear
   Installation note ..... page R–18
3. Stabilizer
   Inspect for bending or damage
4. Control link
   Inspect for bending or damage
   Installation note ..... page R–18



97U0RX-083



97U0RX-040



97U0RX-041

Inspection note
Control link

Note
Measure the preload after rotating the stud of the ball joint 10 times.

Measure the preload with a suitable hexagon wrench and a torque wrench.

Preload:
0.2—1.5 N·m (2.0—15.0 cm-kg, 1.7—13 in-lb)

Installation note
Stabilizer bracket and bushing
1. Install so that the bushing seam faces toward the front.
2. Align the bushing with the rubber tube.
3. Install the stabilizer bracket and loosely tighten the bolt.
4. Lower the vehicle and tighten the bolts to the specified torque with the vehicle unloaded.

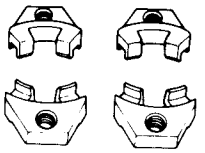
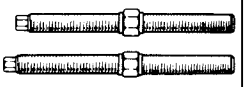
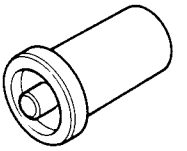
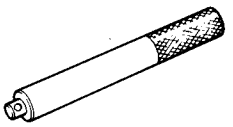
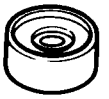
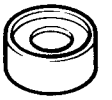
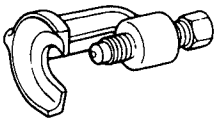
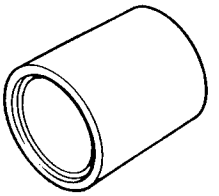
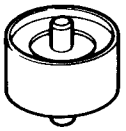
Tightening torque:
18—26 N·m (1.8—2.7 m-kg, 13—20 ft-lb)

Control link
1. Install the control link to the stabilizer and loosely tighten the bolts.
2. Lower the vehicle and tighten the bolts to the specified torque with the vehicle unloaded.

Tightening torque:
36—50 N·m (3.7—5.1 m-kg, 27—37 ft-lb)

REAR SUSPENSION (MALTILINK SEMI-TRAILING ARM)

PREPARATION
SST

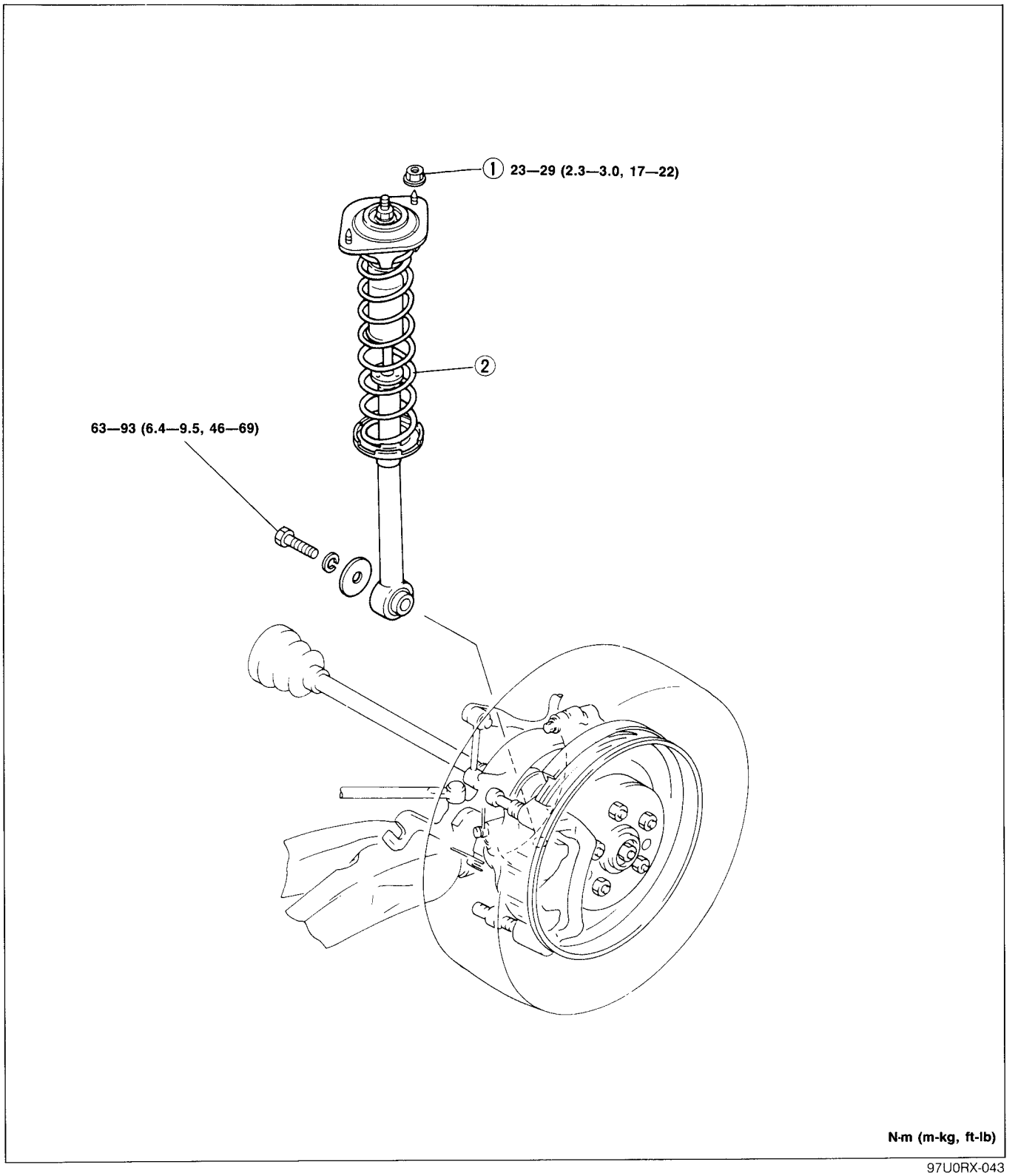
49 0223 640B Arm, coil spring compressor 	49 0370 641 Screw, coil spring compressor 	49 F028 2A0 Puller & installer set, rubber bush 
49 F027 003 Handle (Part of 49 F028 2A0) 	49 F028 204 Bush installer (Part of 49 F028 2A0) 	49 F028 205 Bush support (Part of 49 F028 2A0) 
49 F028 201 Bush puller (Part of 49 F028 2A0) 	49 F028 203 Spport block (Part of 49 F028 2A0) 	49 F028 202 Bush installer (Part of 49 F028 2A0) 
49 0118 850C Puller, ball joint 	49 0180 510B Attachment preload measuring 	49 F034 201 Instuller, boot 
49 F028 206 Mount rubber installer (Part of 49 F028 2A0) 		

97U0RX-042

REAR SHOCK ABSORBER AND SPRING

Removal and Installation

1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove in the order shown in the figure.
3. Install in the reverse order of removal.
4. Tighten all nuts and bolts to the specified torque, referring to the figure.

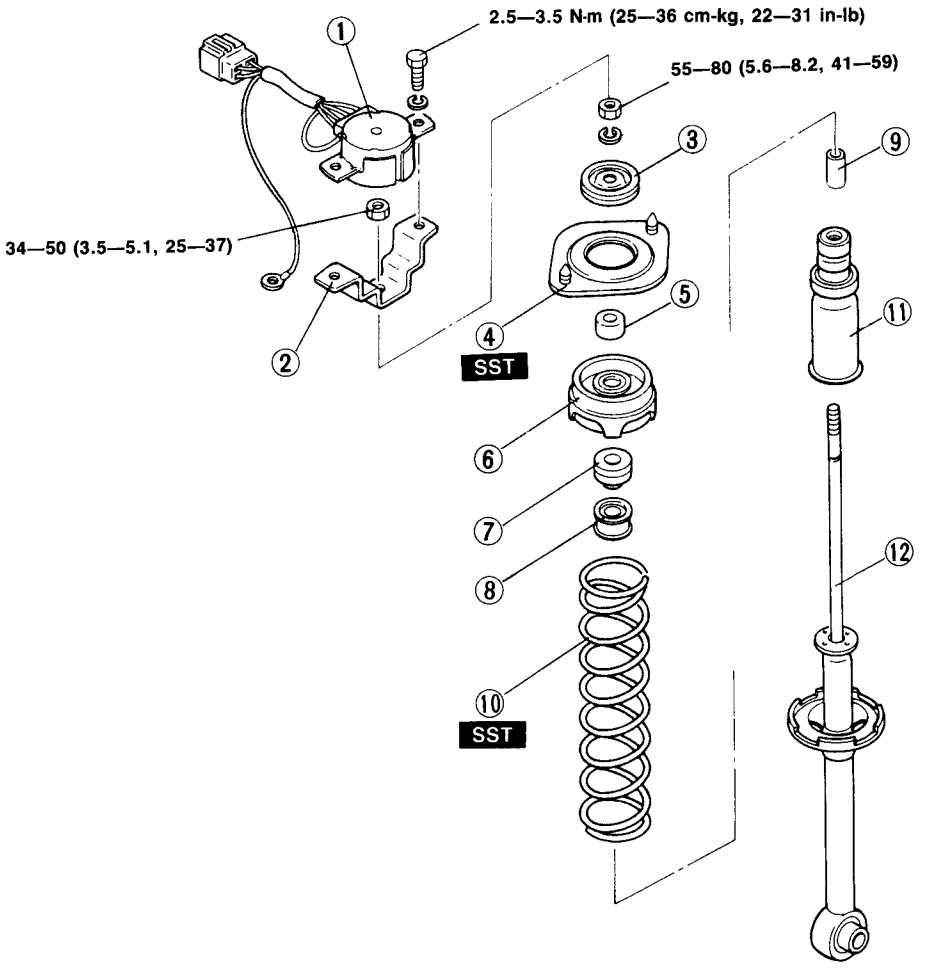


97U0RX-043

1. Mounting plate nut
2. Shock absorber assembly
   Disassembly, Inspection, and Assembly ..... page R–21

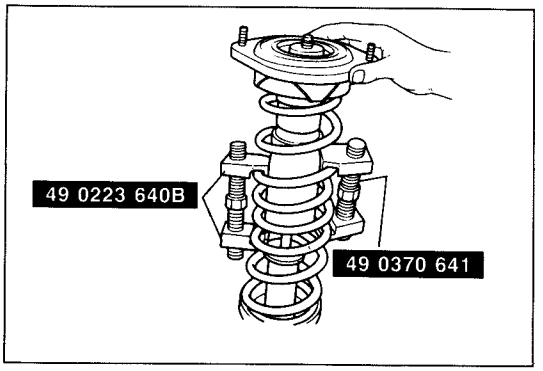
Disassembly, Inspection, and Assembly

1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all components and parts, Replace parts if necessary.
3. Assemble in the reverse order of disassembly, referring to **Assembly Note**.
4. Tighten all nuts and bolts to the specified torque, referring to the figure.

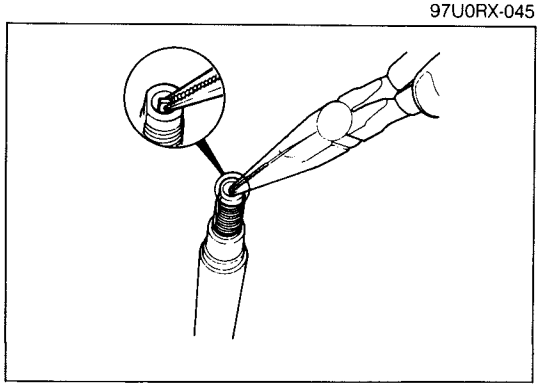


97U0RX-044

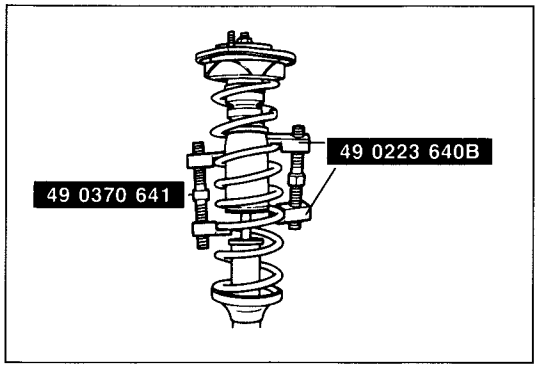
1. Actuator (AAS)
2. Bracket (AAS)
3. Stopper
4. Mounting plate
   Disassembly note ..... page R–22
   Assembly note ..... page R–22
5. Rubber bushing
6. Spring seat
7. Rubber bushing
8. Set plate
9. Spacer
10. Coil spring
    Disassembly note ..... page R–22
    Assembly note ..... page R–22
11. Bound stopper rubber
12. Shock absorber
    Inspect for oil leakage or abnormal noise
    Inspection (AAS) ..... page R–22



97U0RX-045



97U0RX-046



97U0RX-047

Disassembly note
Coil spring and mounting plate

Caution
Insert copper or aluminum plates between the part and the jaws of the vise.

1. Position the shock absorber mount in a vice.

Caution
Do not remove the nut.

2. Loosen the piston rod upper nut several turns, but do not remove.
3. Compress the coil spring with the **SST** and then remove the nut.
4. Remove the coil spring.

Inspection
Shock absorber (AAS)
Smooth rotation of the control rod.

Assembly note
Coil spring and mounting plate
1. Compress the coil spring with the **SST**.
2. Install the mounting block in the vise.
3. Tighten the piston rod upper nut.

Tightening torque:
55—80 N·m (5.6—8.2 m-kg, 41—59 ft-lb)

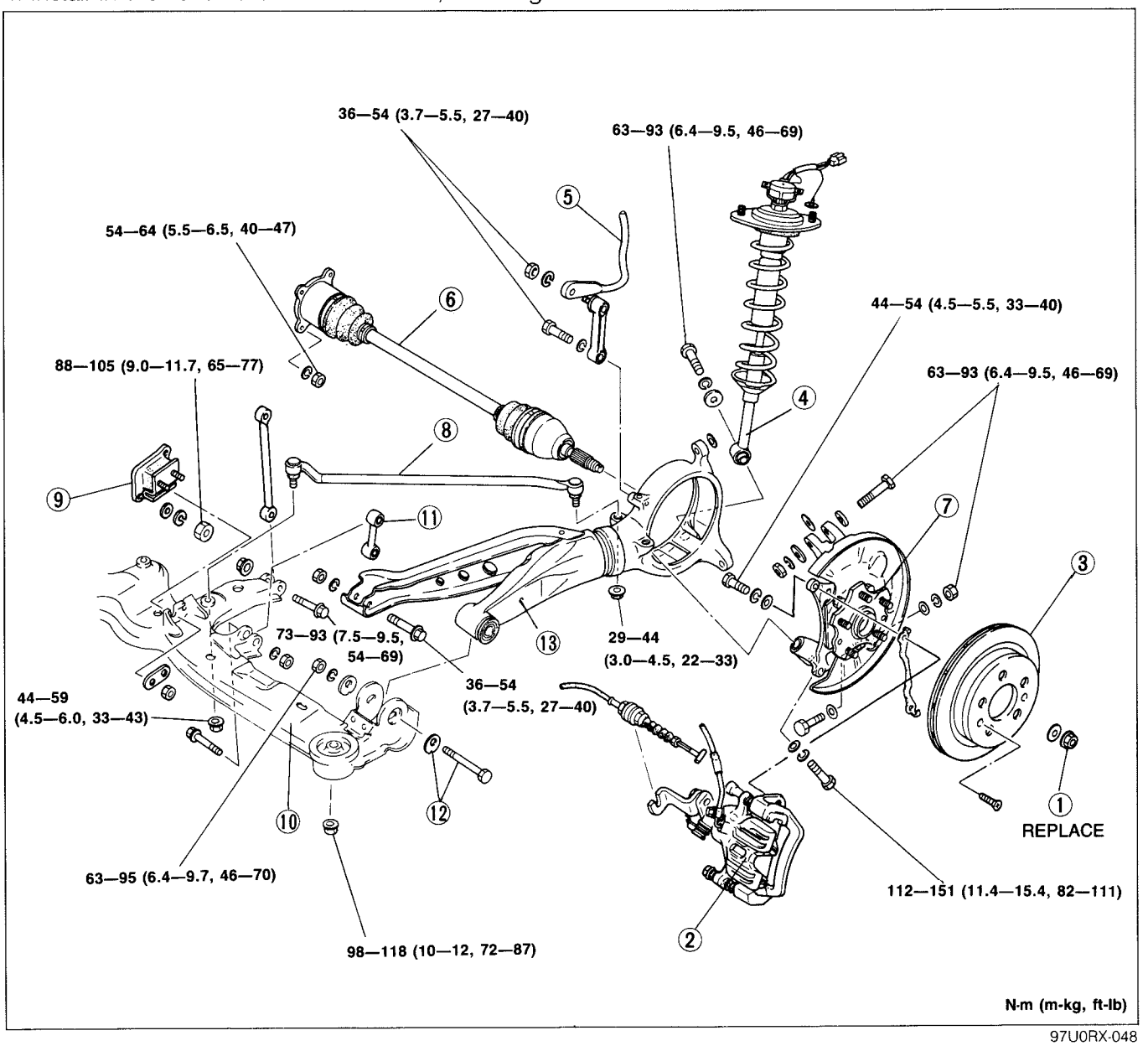
4. Remove the **SST**.

Caution
Check that the spring is well seated in the upper seat and lower seat.

TRAILING ARM

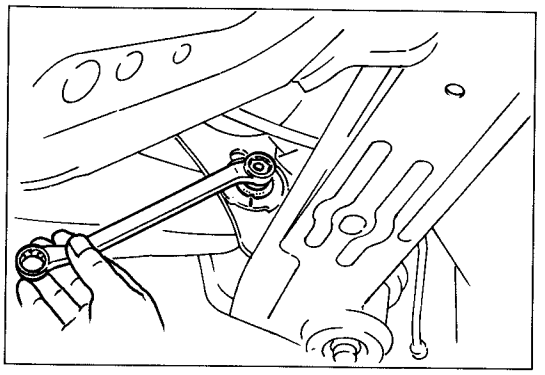
Removal, Inspection, and Installation

1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove in the sequence shown in the figure, referring to **Removal Note**.
3. Inspect all components and parts.
4. Install in the reverse order of removal, referring to **Installation Note**.



97U0RX-048

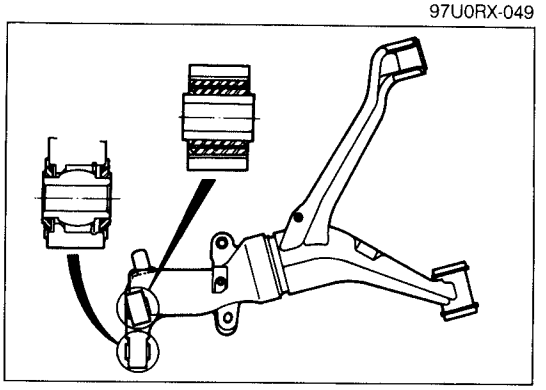
1. Driveshaft locknut
   Installation note ..... page R–25
2. Brake caliper assembly
3. Disc plate
4. Shock absorber
   Removal and Installation ..... page R–20
5. Stabilizer
   Removal and Installation ..... page R–29
6. Driveshaft
   Removal and Installation ..... Section M
7. Triaxial floating hub outer assembly
   Removal and Installation ..... Section M
8. Lateral link
   Removal and Installation ..... page R–26
9. Differential mount
10. Subframe
    Removal and Installation ..... page R–31
11. Control link
    Removal and Installation ..... page R–28
12. Adjusting bolt and cam plate
    Removal note ..... page R–24
    Installation note ..... page R–25
13. Trailing arm
    Inspection ..... page R–24
    Disassembly ..... page R–24
    Assembly ..... page R–25


97U0RX-049

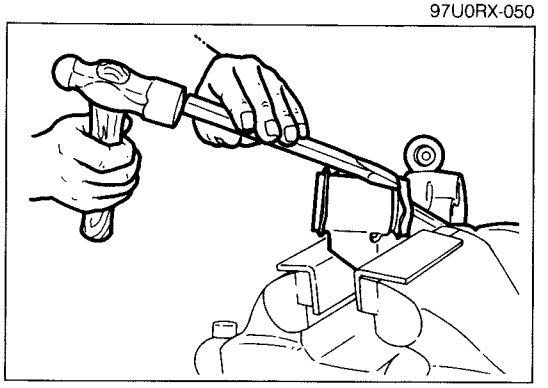
Removal note
Adjusting bolt and cam plate

Note
Before removing the adjusting bolt, mark the cam plate setting position.

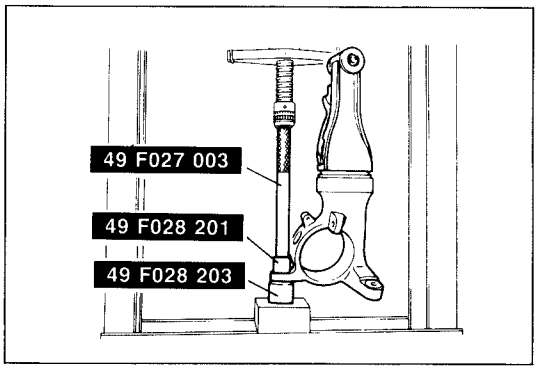
1. Remove the nut from the adjusting bolt.
2. Remove the adjusting bolt.


97U0RX-050

Inspection
Check the following points. Replace the parts if necessary.
1. Trailing arm for damge or cracks.
2. Bushings for deterioration or wear.
3. Pillow ball for looseness or damage.

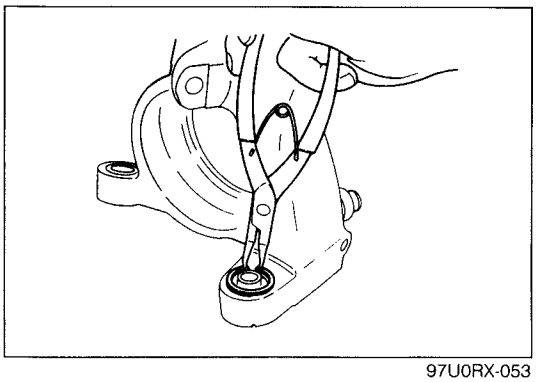

97U0RX-051

Disassembly
Trailing arm bushing (subframe side)
1. Secure the trailing arm in a vise.
2. Remove the bushings by tapping with a chisel and a hammer.

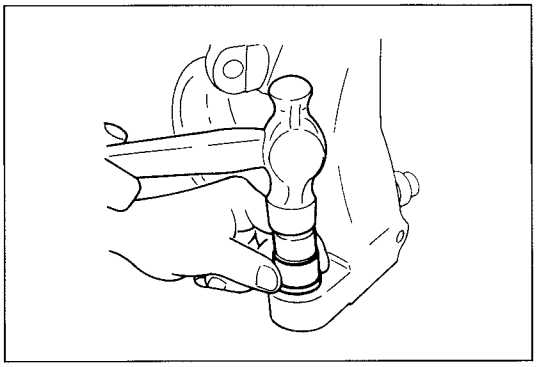


97U0RX-052

Trailing arm bushing (triaxial floating hub inner side)
1. Set the **SST** to the bushing.
2. Push out the bushing.

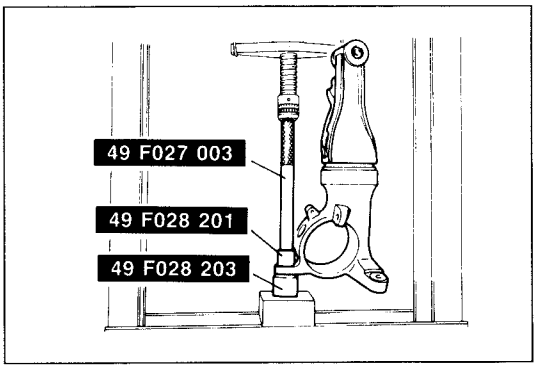

97U0RX-053

Pillow ball
1. Remove the rubber seals with a screwdriver.
2. Remove the snap rings with snap-ring pliers.
3. Remove the pillow ball by carefully tapping with a piece of pipe (outer diameter 20mm, 0.79 in).



97U0RX-054

Assembly
Pillow ball
1. Coat the pillow ball with grease.
2. Install the pillow ball into the trailing arm by carefully tapping with a piece of pipe (outer diameter 30mm, 1.18 in).
3. Install the snap ring.
4. Coat the rubber seals with grease and install them into the trailing arm.

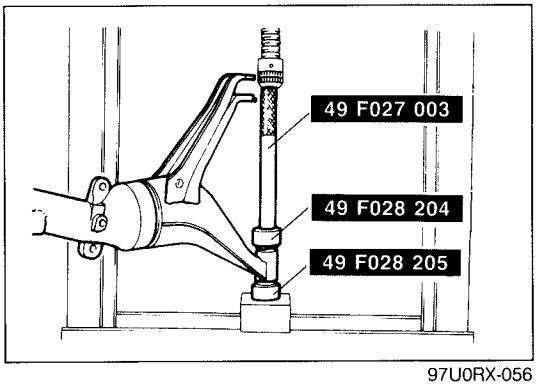


97U0RX-055

Trailing arm bushing (triaxial floating hub inner side)

Caution
a) The following work should be performed by two persons.
b) Position the yellow mark on the bushing downward.

1. Set the new bushing and the **SST** to the trailing arm.
2. Press the bushing into the trailing arm.

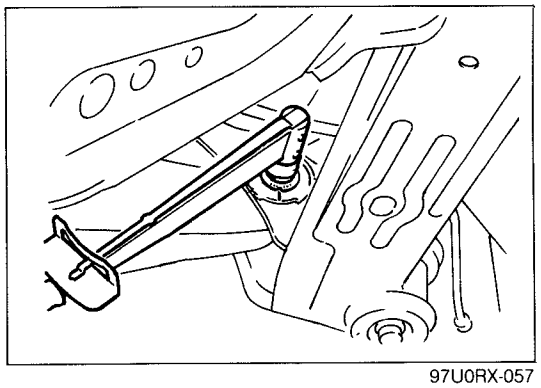


97U0RX-056

Trailing arm bushing (subframe side)

Caution
The following work should be performed by two persons.

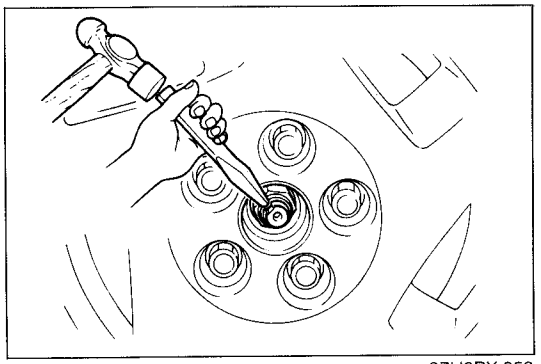
1. Set the new bushing and the **SST** to the trailing arm.
2. Press the bushing into the trailing arm.



97U0RX-057

Installation note
Adjusting bolt and cam plate
1. Install the adjusting bolt.
2. Place the cam plate so that the cam position is the same as when the cam was removed.
3. Install the nut and loosely tighten it.
4. Lower the vehicle and adjust the toe-in. (Refer to page R–8.)
5. Tighten the nut to the specified torque with the vehicle unloaded.

Tightening torque:
63—95 N·m (6.4—9.7 m-kg, 46—70 ft-lb)



97U0RX-058

Driveshaft locknut
1. Install the new locknut and tighten it to the specified torque.

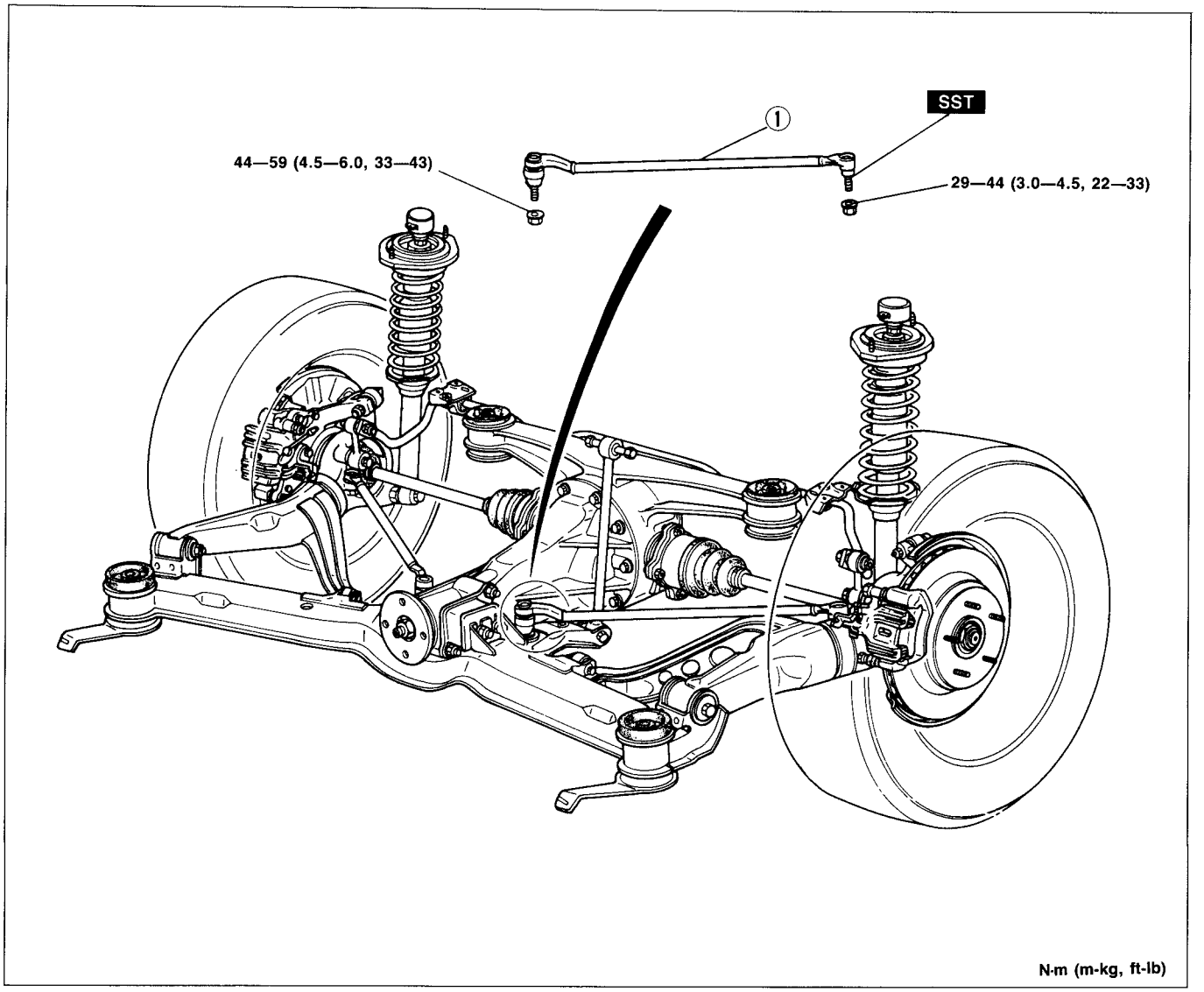
Tightening torque:
235—314 N·m (24—32 m-kg, 174—231 ft-lb)

2. Stake the locknut to the groove in the driveshaft.

LATERAL LINK

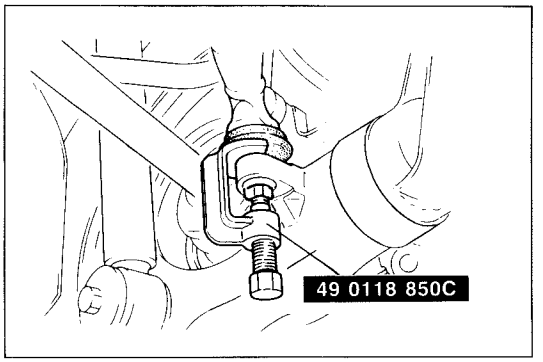
Removal, Inspection, and Installation

1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove in the sequence shown in the figure, referring to **Removal Note**.
3. Inspect all components and parts.
4. Install in the reverse order of removal.



97U0RX-059

1. Lateral link
   - Removal note ..... page R–26
   - Inspection ..... page R–27
   - Disassembly ..... page R–27
   - Assembly ..... page R–27

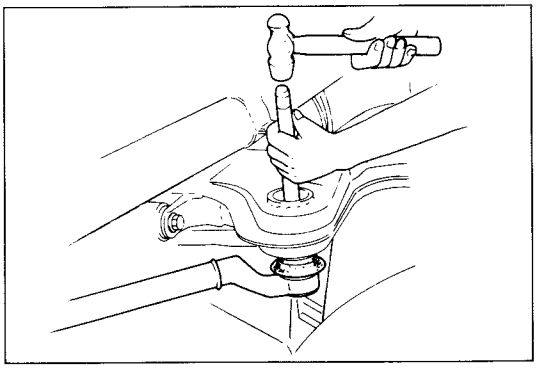


97U0RX-060

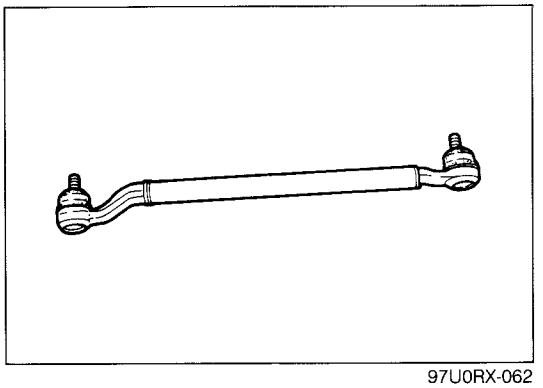
Removal note

Ball joint (trailing arm side)

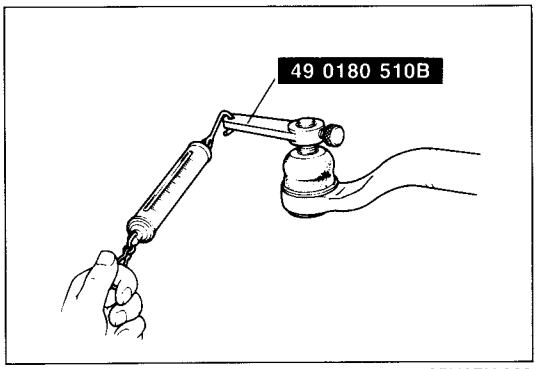
1. Remove the nut.
2. Separate the ball joint from the trailing arm with the **SST**.


97U0RX-061

Ball joint (subframe side)
1. Remove the nut.
2. Separate the ball joint from the subframe by tapping the stud with a brass bar.


97U0RX-062

Inspection
Check the following points. Replace the parts if necessary.
1. Lateral link for bending or damage.
2. Dust boot for damage.
3. Preload of ball joint.



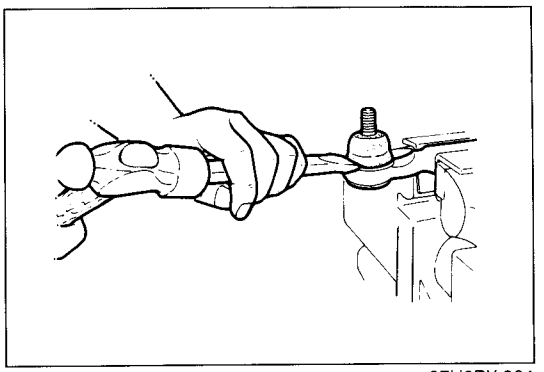
97U0RX-063

Ball joint Preload

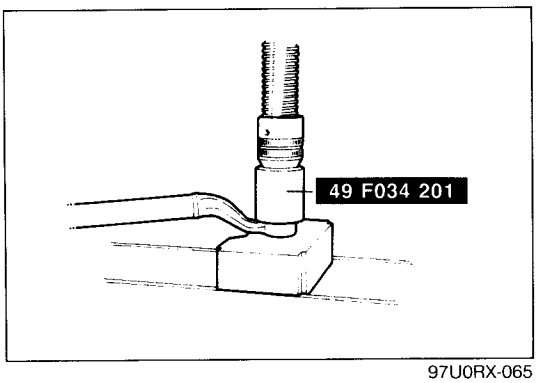
Note
Merasure the preload after shaking the stud of the ball joint 3 or 4 times.

Attach the **SST** to the ball stud, and measure the preload using the pull scale.

Pull scale reading: 5—12 N (0.5—1.2 kg, 1.1—2.6 lb)
(While the ball stud is rotating)


97U0RX-064

Disassembly
Dust boot
Remove the dust boot using a chisel.



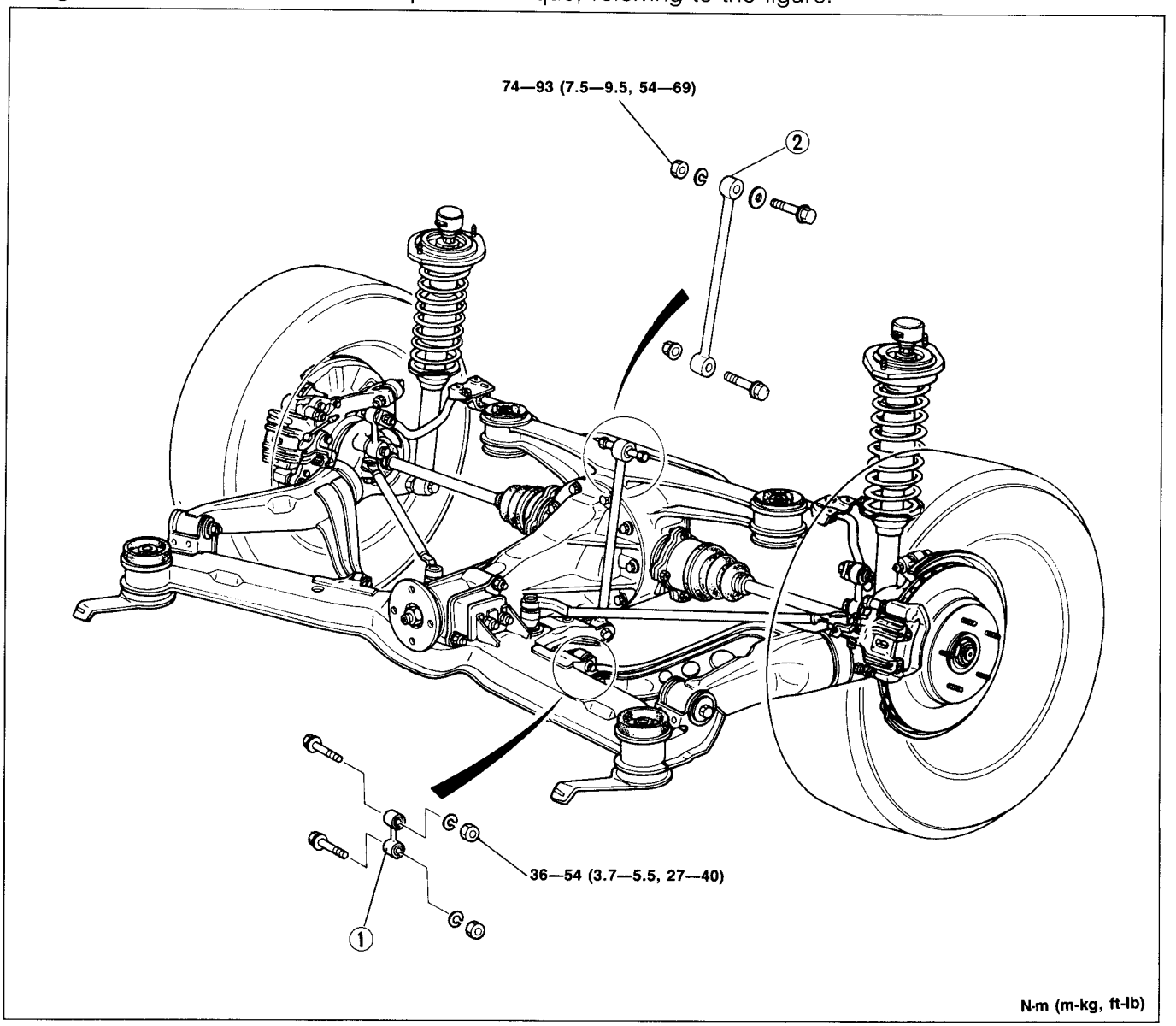
97U0RX-065

Assembly
Dust boot
1. Liberally coat the inside of the new dust boot with grease.
2. Install the dust boot to the ball joint with the **SST**.

CONTROL LINK AND SUBLINK

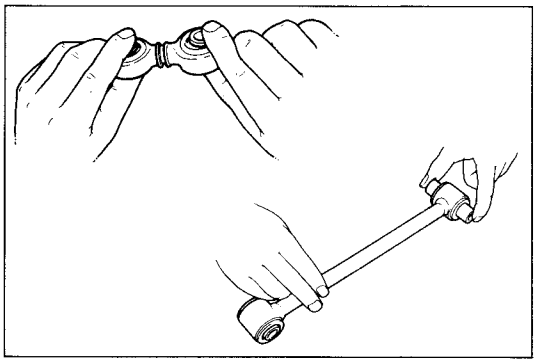
Removal, Inspection, and Installation

1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove in the order shown in the figure.
3. Inspect all components and parts.
4. Install in the reverse order of removal.
5. Tighten all nuts and bolts to the specified torque, referring to the figure.



97U0RX-066

1. Control link
   Inspection ..... page R–28
2. Sublink
   Inspection ..... page R–28



97U0RX-067

Inspection

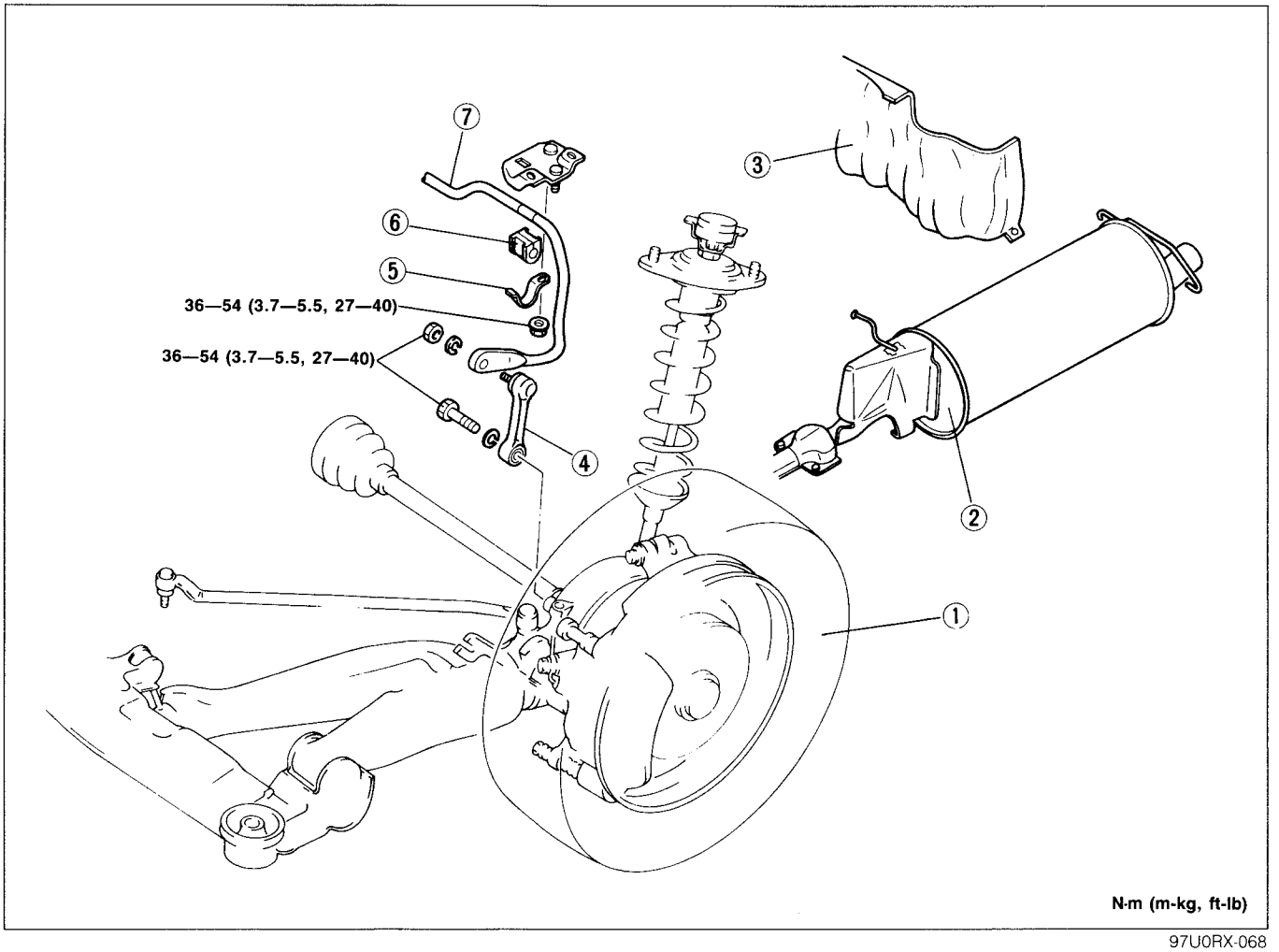
Check the following points. Replace the parts if necessary.

1. Control link for bending or damage.
2. Pillow ball for looseness or damage.
3. Dust boot for damage.
4. Sublink for bending or damage.
5. Bushing for deterioration or wear.

REAR STABILIZER

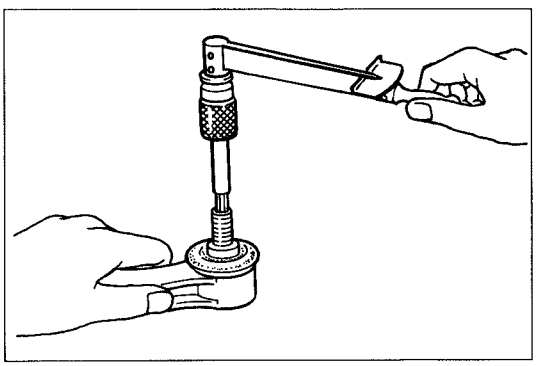
Removal, Inspection, and Installation

1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove in the sequence shown in the figure.
3. Inspect all components and parts.
4. Install in the reverse order of removal, referring to **Installation Note**.



97U0RX-068

1. Wheel
2. Silencer
   Removal and Installation..... Section F1, F2
3. Fuel tank protector
   Removal and Installation..... Section F1, F2
4. Control link
   Inspect for bending or damage
   Inspection note..... page R–29
   Installation note ..... page R–30
5. Stabilizer bracket
6. Bushing
   Inspect for deterioration or wear
7. Stabilizer
   Inspect for bending or damage
   Installation note ..... page R–30



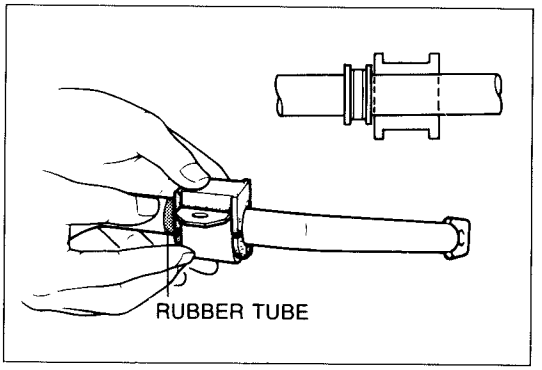
97U0RX-083

Inspection note
Control link

Note
Measure the preload after rotating the stud of the ball joint 10 times.

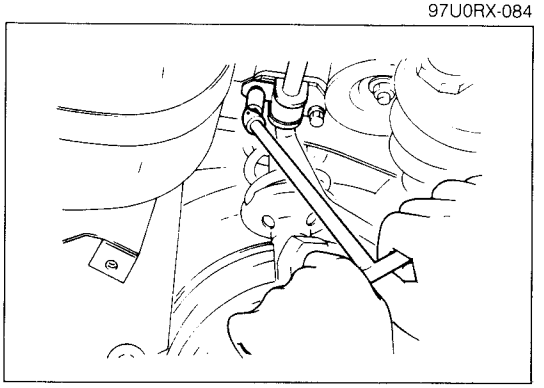
Measure the preload with a suitable hexagon wrench and a torque wrench.

Preload:
0.2—1.5 N·m (2.0—15.0 cm-kg, 1.7—13 in-lb)



97U0RX-084

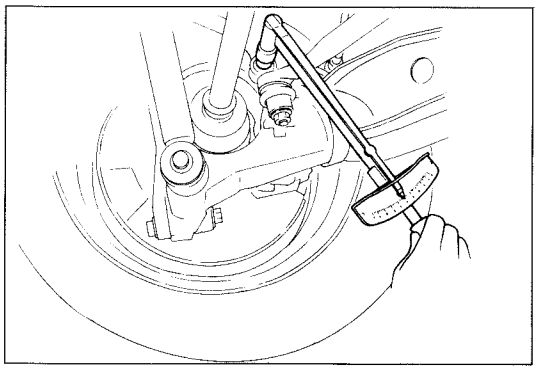
Installation note
Stabilizer
1. Align the bushing with the rubber tube.
2. Install the bushing and the stabilizer bracket to the body.



97U0RX-070

3. Loosely tighten the bolts.
4. Lower the vehicle and tighten the bolts to the specified torque with the vehicle unloaded.

Tightening torque:
36—54 N·m (3.7—5.5 m-kg, 27—40 ft-lb)



97U0RX-071

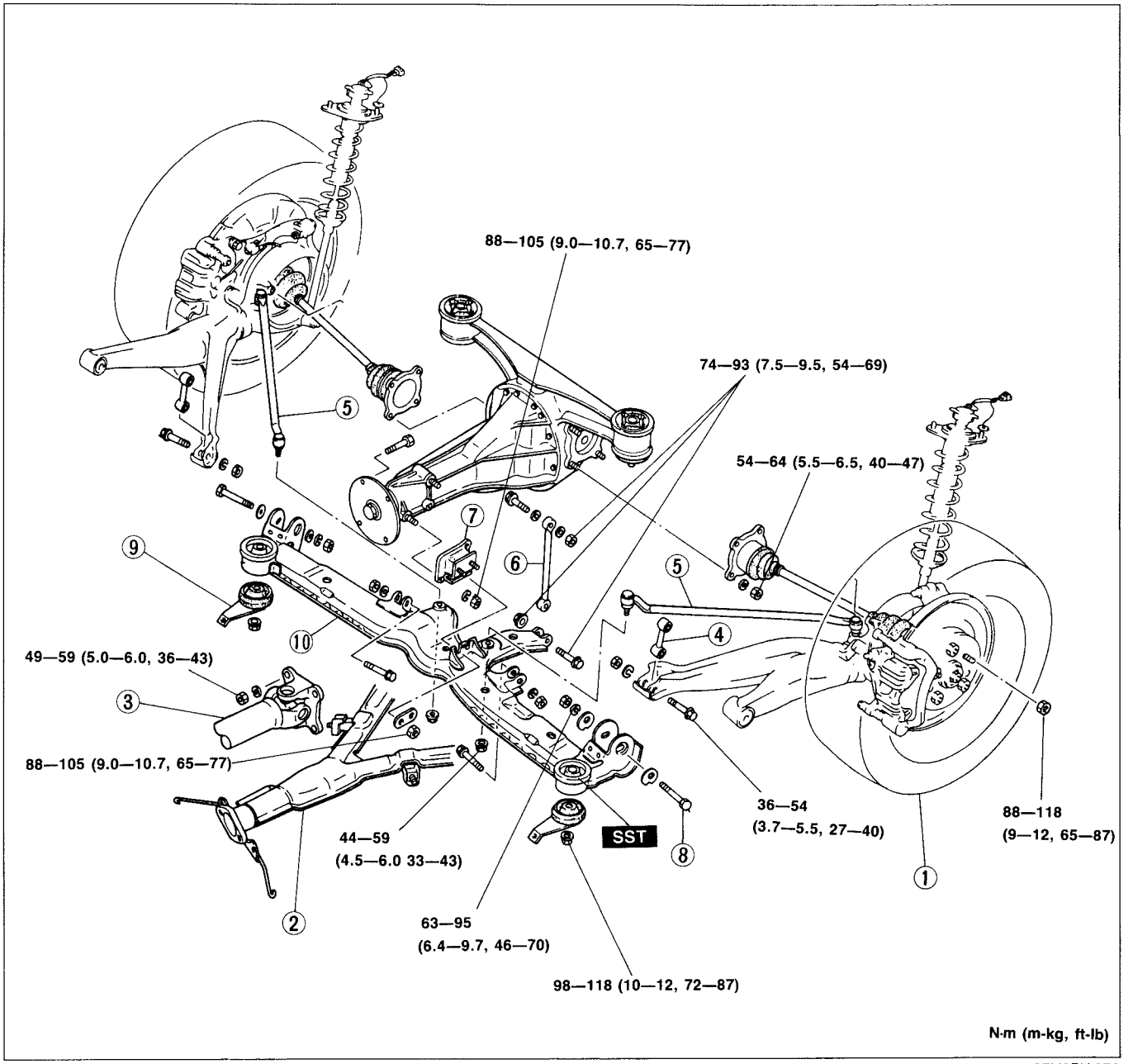
Control link
1. Install the control link and loosely tighten the bolts.
2. Lower the vehicle and tighten the bolts to the specified torque with the vehicle unloaded.

Tightening torque:
36—54 N·m (3.7—5.5 m-kg, 27—40 ft-lb)

SUBFRAME

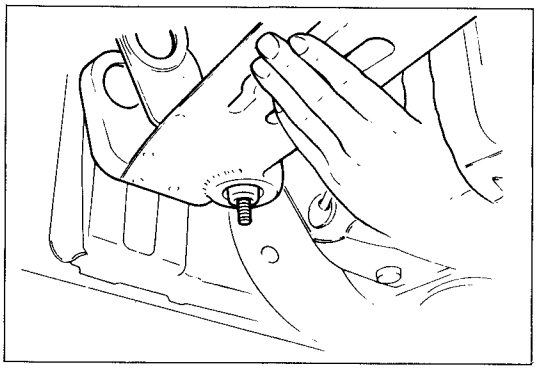
Removal, Inspection, and Installation

1. Jack up the rear of the vehicle and support with safety stands.
2. Remove in the sequence shown in the figure, referring to **Removal Note**.
3. Inspect all components and parts.
4. Install in the reverse order of removal referring to **Installation Note**.
5. Tighten all nuts and bolts to the specified torque, referring to the figure.



97U0RX-072

1. Wheel
2. Exhaust pipe
   Removal and Installation ..... Sections F1, F2
3. Propeller shaft
   Removal and Installation ..... Section L
4. Control link
5. Lateral link
   Removal and Installation ..... page R–26
6. Sublink
   Removal and Installation ..... page R–28
7. Differential mount
8. Adjusting bolt
9. Differential mount
   Removal note ..... page R–32
   Installation note ..... page R–32
10. Subframe
    Inspect for deformation, cracks, or damage
    Inspect the rubber mount for deterioration or wear
    Disassembly ..... page R–32
    Assembly ..... page R–32



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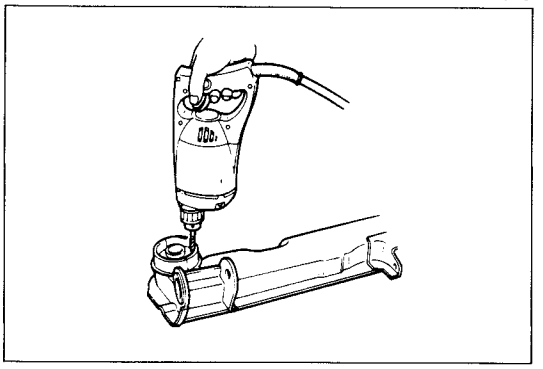

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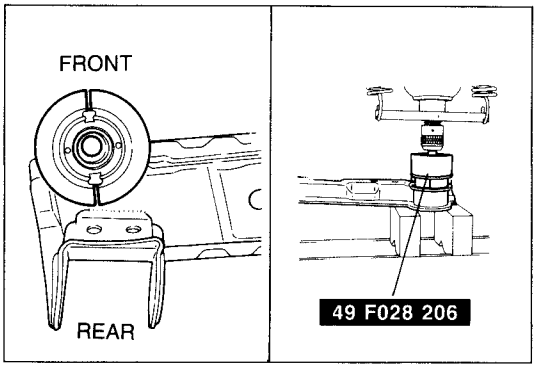
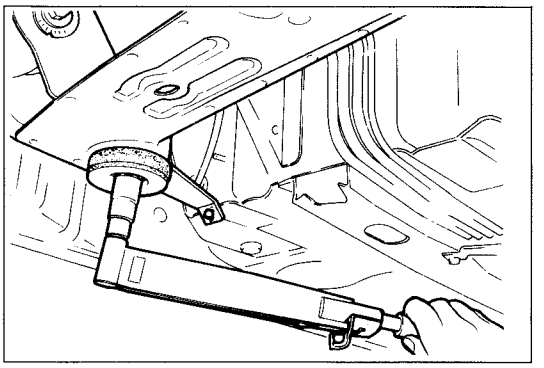
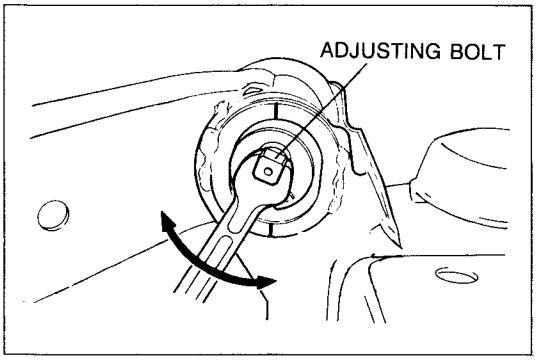


97U0RX-075



97U0RX-076



97U0RX-077

Removal note
Differential mount

1. Loosen the left subframe mounting nut and lower the left side of the subframe.
2. Separate the differential from the subframe by removing the differential mounting bolts.
3. Remove the subframe from the body by removing the subframe mounting nuts.

Disassembly
Subframe rubber mount

1. Drill holes in the rubber part of the rubber mount.
2. Remove the rubber mount by tapping with the chisel and hammer.

Assembly
Subframe rubber mount

Caution
The following work should be performed by two persons.

1. Install the rubber mount into the subframe as shown in the figure.
2. Set the **SST** against the rubber mount.
3. Press the rubber mount into the subframe.

Installation note
Differential mount

1. Install the subframe to the body and tighten the subframe mounting nuts loosely.
2. Install the differential to the subframe and tighten the differential mounting bolts.

Tightening torque:
74—93 N·m (7.5—9.5 m-kg, 54—69 ft-lb)

3. Tighten the subframe mounting nuts to the specified torque.

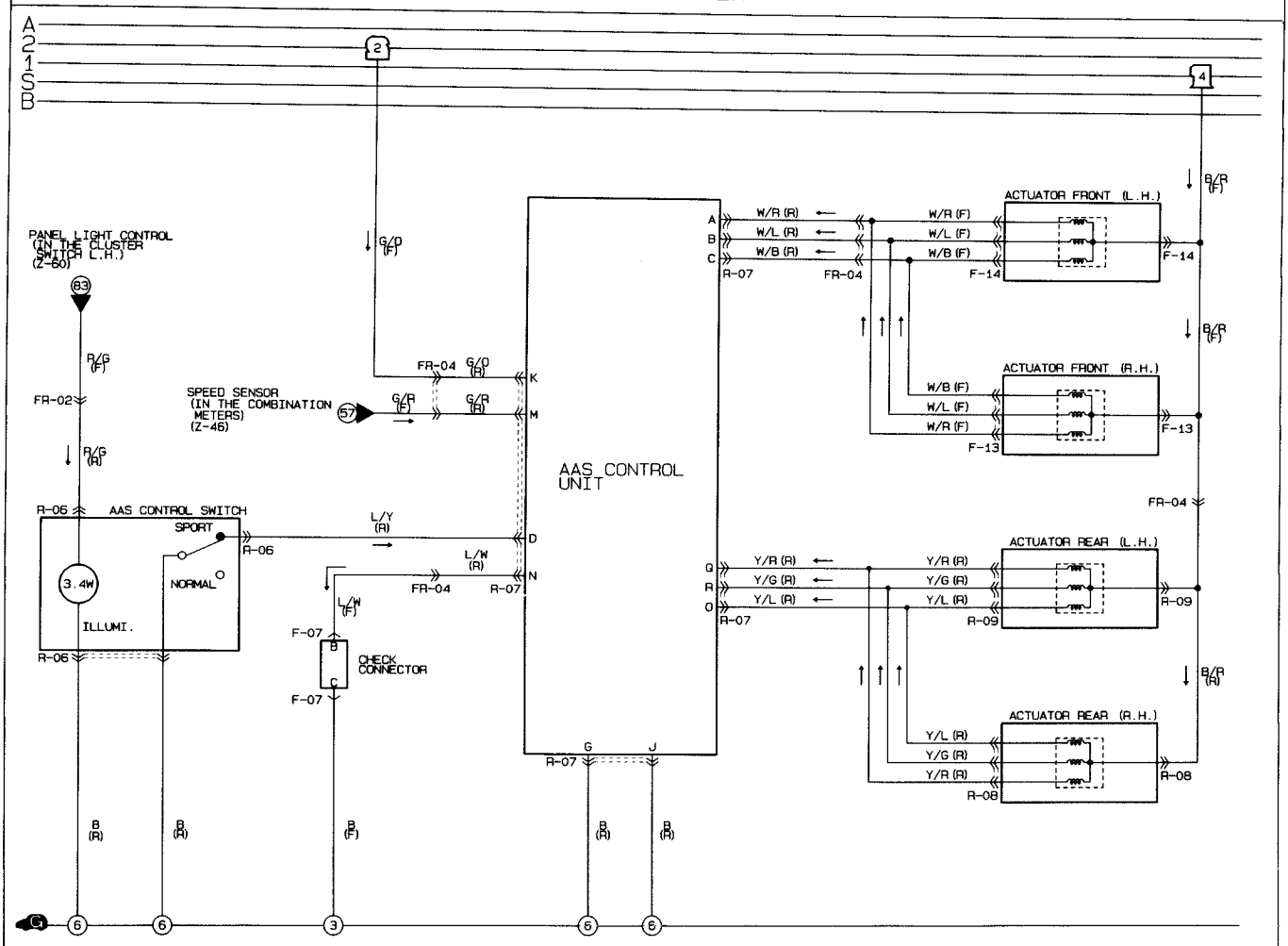
Tightening torque:
98—118 N·m (10—12 m-kg, 72—87 ft-lb)

Note
Check and adjust the toe-in after installation of the subframe. (See page R–8.)

AUTO ADJUSTING SUSPENSION (AAS)

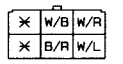
CIRCUIT DIAGRAM

■ AAS (AUTO ADJUSTING SUSPENSION) CONTROL SYSTEM

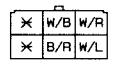


F-07 CHECK CONNECTOR (F)

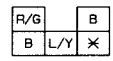
F-13 ACTUATOR FRONT (R.H.) (F)



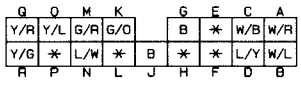
F-14 ACTUATOR FRONT (L.H.) (F)



R-06 AAS CONTROL SWITCH (R)



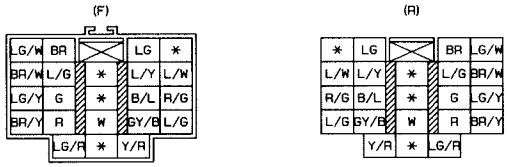
R-07 AAS CONTROL UNIT (R)



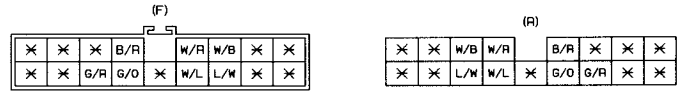
R-08 ACTUATOR REAR (R.H.) (R)

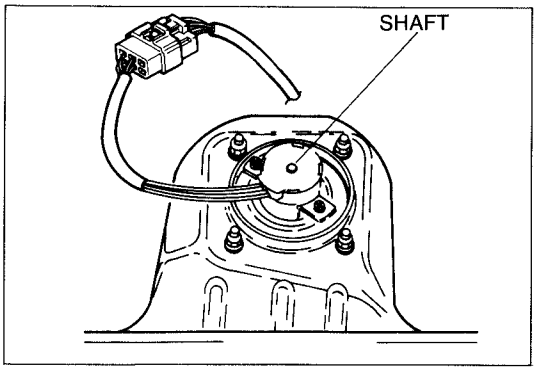
R-09 ACTUATOR REAR (L.H.) (R)

FR-02 FRONT (F) -REAR (R)

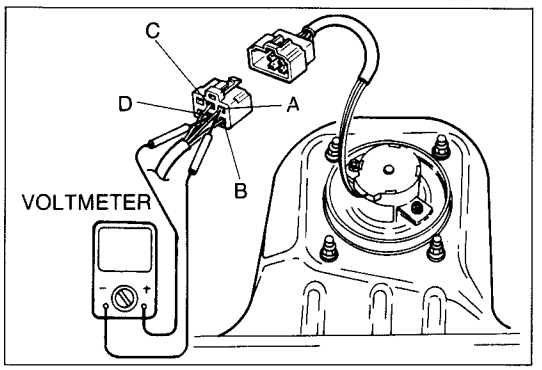


FR-04 FRONT (F) -REAR (R)





97U0RX-079



97U0RX-241

INSPECTION OF CIRCUIT AND PARTS

Actuator

1. Turn the ignition switch to ON and start the engine.
2. Alternately switch ON the "NORMAL" and "SPORT" switches. Check that the shaft of the actuator installed on the front and rear damper operates.

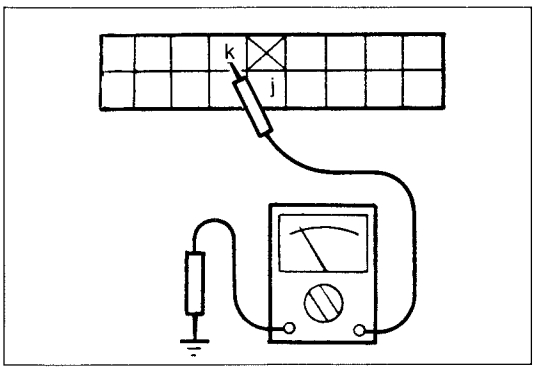
Note
The actuator must not be disassembled.

3. Check as follows if the motor is not operating:
   (1) Turn the ignition switch to ON.
   (2) Disconnect the connector of the actuator which is not operating and connect a voltmeter to the connector (4-pin) at the chassis side (harness side).
   (3) Measure the voltage of the terminals.

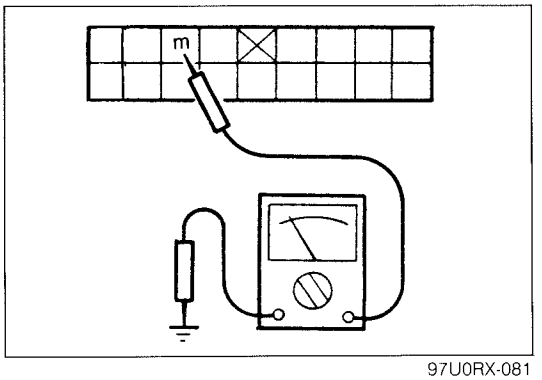
		Terminal	SPORT/NORMAL setting	Voltage
	+	D	When sport is pressed	Approx. 0.3 sec., 12V *1
	−	A		
	+	D	When NORMAL is pressed	Approx. 0.3 sec., 12V *1
	−	C		

*1 The voltmeter will indicate approx. 12V for only approx. 0.3 sec. after the "Sport" or "Normal" switch is pushed.

If voltage is normal, there may be a malfunction in the actuator.



97U0RX-080



97U0RX-081

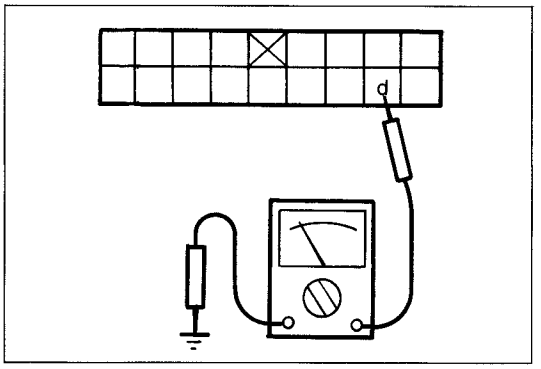
(4) If the results of the check in (3) indicate a problem, disconnect the connector of the AAS control unit, and check the voltage or continuity of the terminals.

Terminal (j) ↔ Body ground continuity
Terminal (k) ↔ Body ground 12V
(Turn the ignition sw to ON)

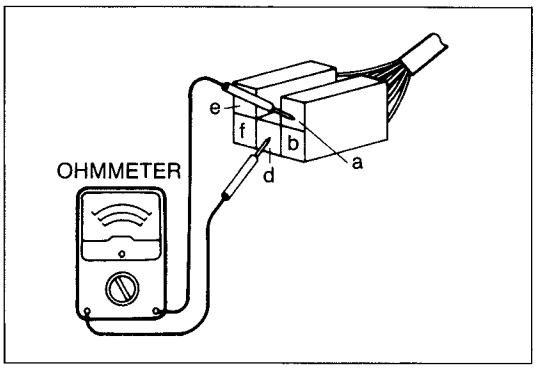
If the results are not correct, check or repair the power supply or the ground circuit.
If they are normal, there may be a malfunction in the control switch or the control unit.

System check of vehicle speed sensor

1. Disconnect the connector of the AAS control unit, and connect a tester to the (m) terminal of the connector (17-pin) at the harness side.
2. Jack up the rear of the vehicle, and check to be sure that there is alternately continuity and no continuity when a rear tire is turned manually.
3. If there is no continuity, there may be a malfunction of the vehicle speed sensor or damage to or disconnection of the harness.



97U0RX-082



67U15X-147

System check of AAS switch

1. Turn the ignition switch to ON.
2. Disconnect the connector of the AAS control unit and connect a voltmeter to the (d) terminal of the connector (17-pin) at the chassis side (harness side).
3. Check that there is voltage when SPORT is pressed ON.

Terminal	Wiring color	Voltage
d	LY	12V

If not correct, there may be a malfunction in the AAS switch or damage to or disconnection of the wiring harness.

Checking AAS switch

1. Disconnect the connector of the AAS switch and connect an ohmmeter to the connector (5-pin) at the switch side.
2. Check for continuity of the terminals.

Terminal	Switch position	Continuity
a to d	When SPORT is pressed ON	Yes