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This file was not scanned to deprive Mazda of any money – it was scanned due to the rareness of the original manuals and the overwhelming need of the RX-7 owner to have this information so that they can accurately troubleshoot problems. Perhaps if Mazda's dealerships could support the Rotary Engine it wouldn't be so necessary for the owners to do so.



Many thanks to Scott89t2 and www.1300cc.com for scanning this file.

1989 Mazda RX-7 Factory Service Manual

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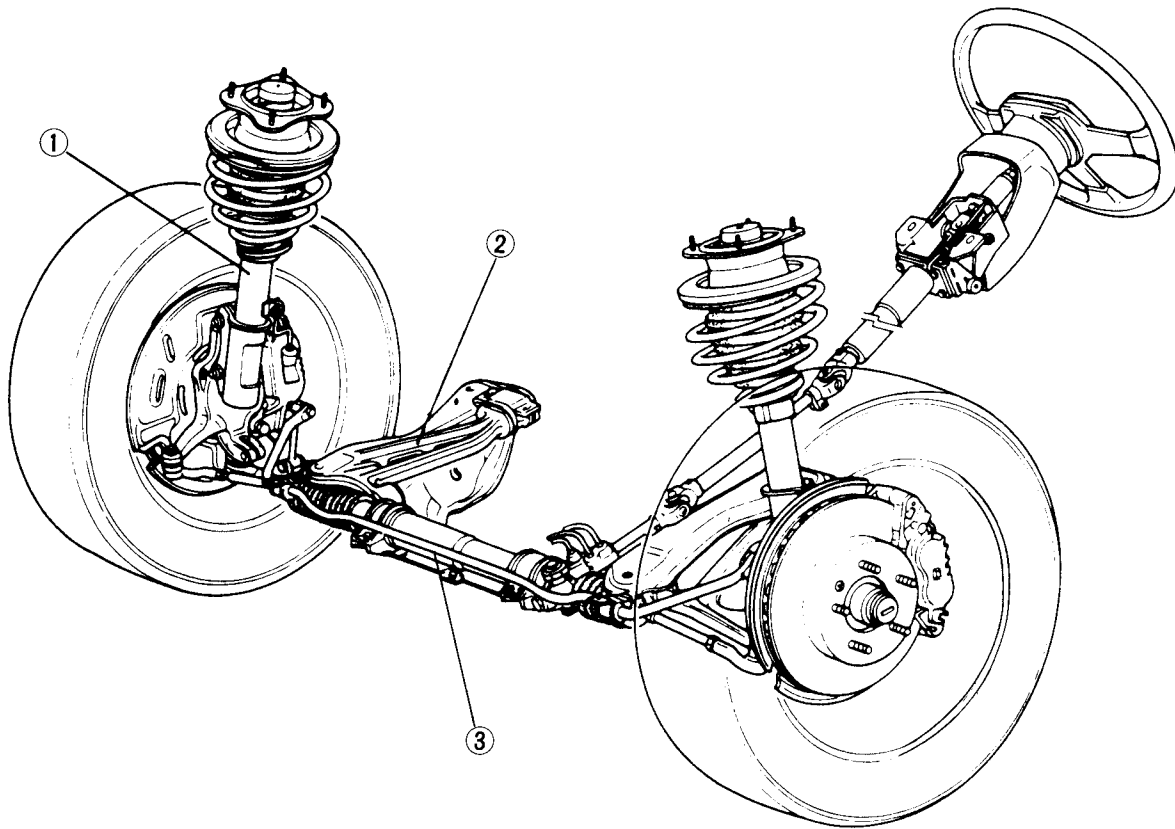
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SUSPENSION

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FRONT SUSPENSION

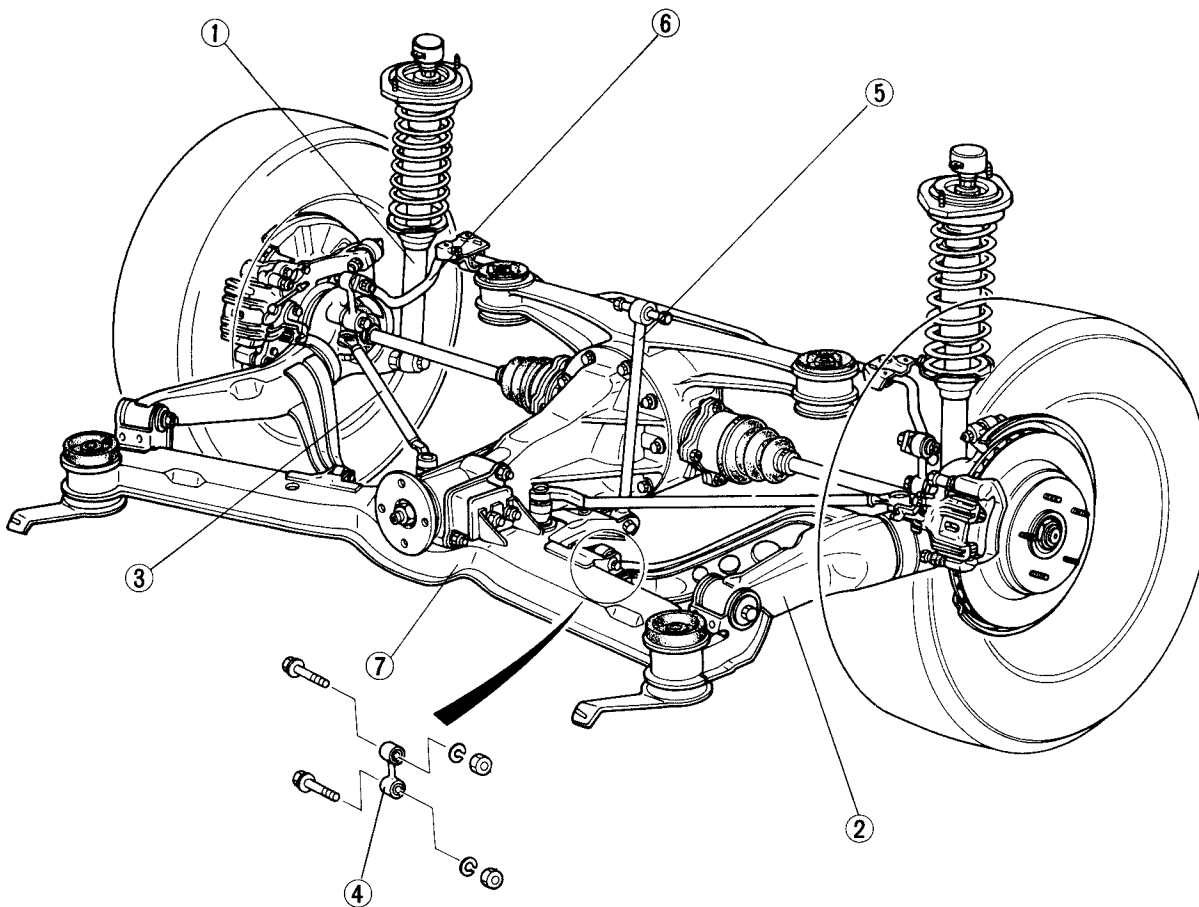


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REAR SUSPENSION



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- | | |
|--|--|
| <p>1. Rear shock absorber and spring
Removal and Installation page R-20
Disassembly, Inspection, and
Assembly page R-21</p> <p>2. Trailing arm
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Installation page R-23</p> <p>3. Lateral link
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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)
		Bottom	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

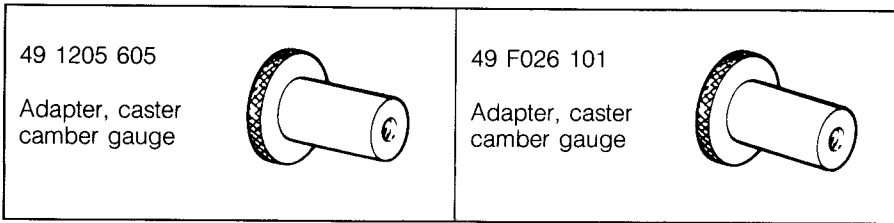
Problem	Possible cause	Action	Page
General instability	Weak coil springs Malfunction of shock absorber Worn or deteriorated lower arm or stabilizer bushing Worn or damaged lower arm ball joint Improperly adjusted wheel alignment Worn or deteriorated trailing arm bushing	Replace Replace Replace Replace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

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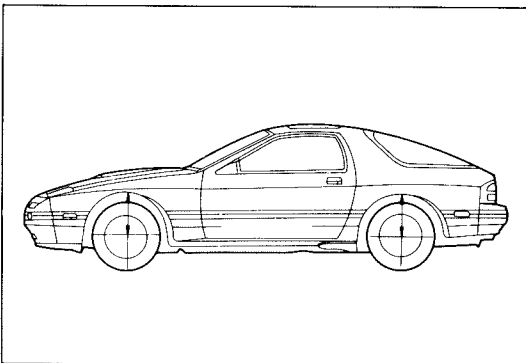
WHEEL ALIGNMENT

PREPARATION

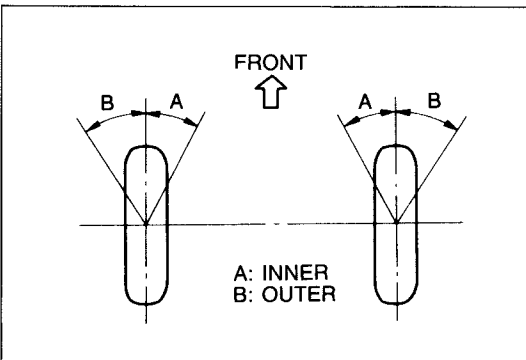
SST



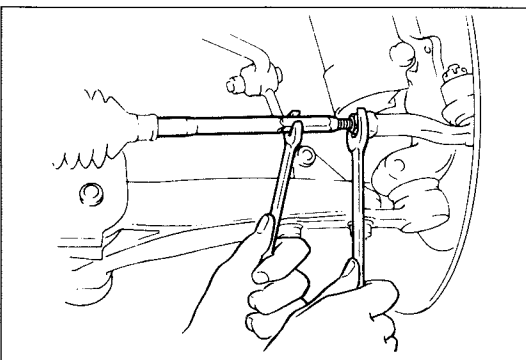
97U0RX-007



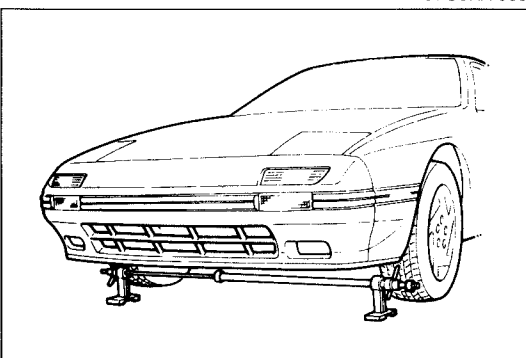
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97U0RX-009



97U0RX-010

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 $36^\circ \pm 2^\circ$
Outer $32^\circ \pm 2^\circ$**

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)

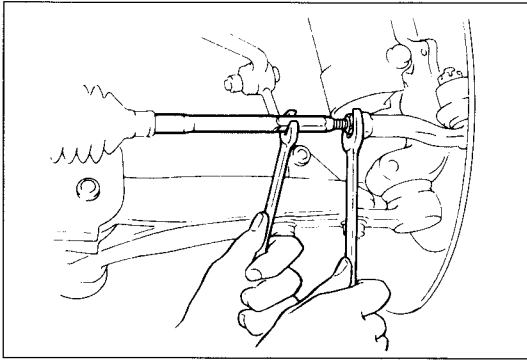
4. Adjust the toe-in.

Total Toe-in Inspection

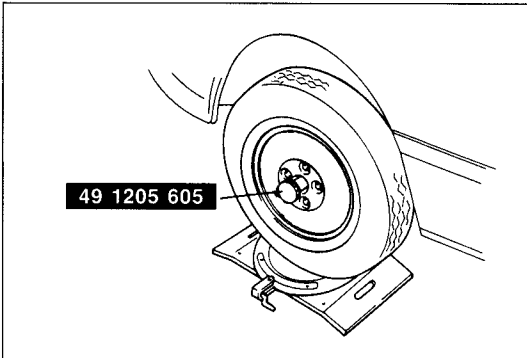
1. Raise the front of the vehicle until the tires clear the ground.
2. Turn the wheels by hand, mark a line in the center of each tire tread by using a scribing block.
3. Place the front wheels in the straight-ahead position and lower the vehicle.
4. Measure the distance between the lines at the front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

Both measurements must be taken at equal distances from the ground.

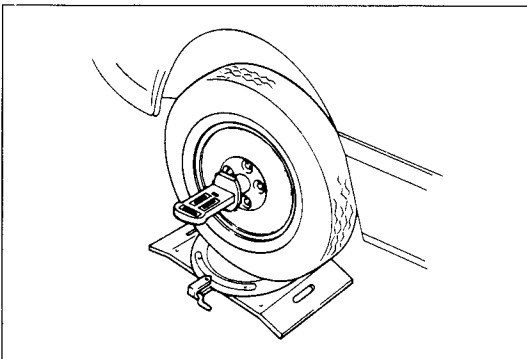
**Total toe-in (distance greater at rear than front):
 $3 \pm 3\text{mm}$ ($0.12 \pm 0.12\text{ in}$)**



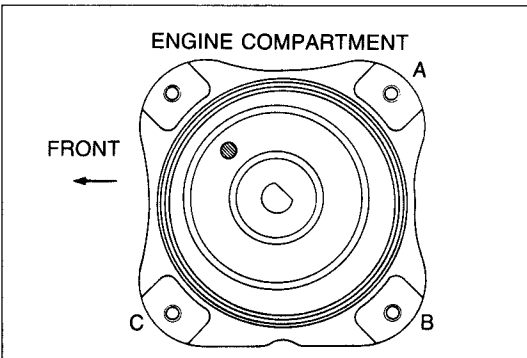
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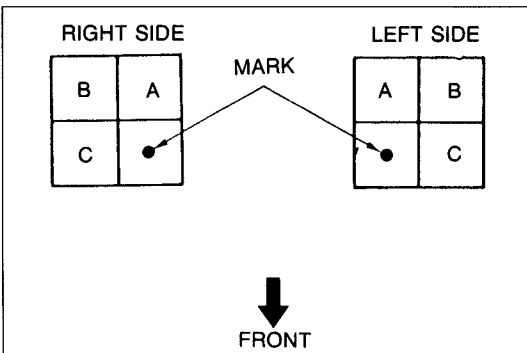
97U0RX-012



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97U0RX-014



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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

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

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

- Attach the caster/camber gauge to the adapter 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

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

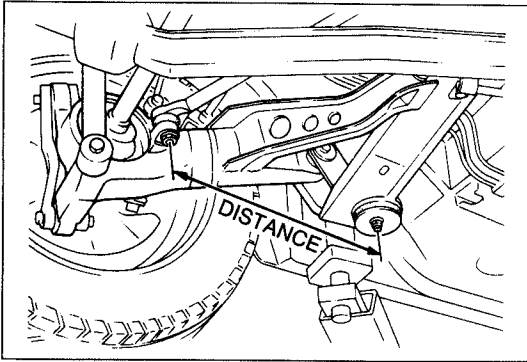
Tightening torque:

29—36 N·m (3.0—3.7 m·kg, 22—27 ft·lb)

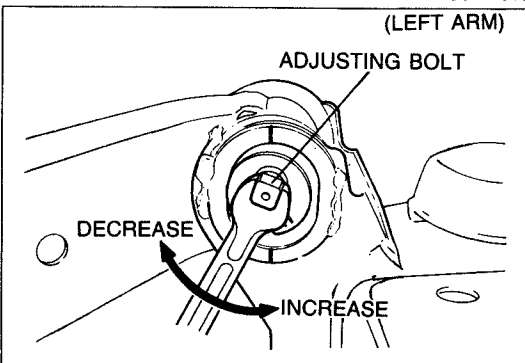
Note

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

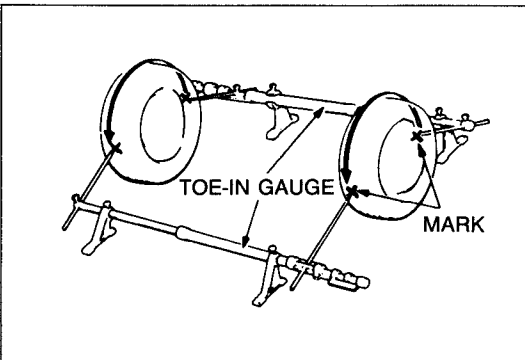
Mark	Difference from standard position	
	Camber angle	Caster angle
A	0°	30'
B	30'	30'
C	30'	0°



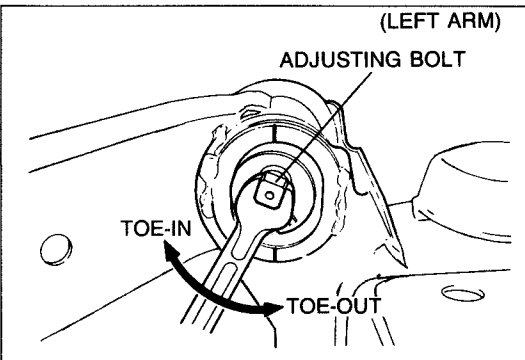
97U0RX-016



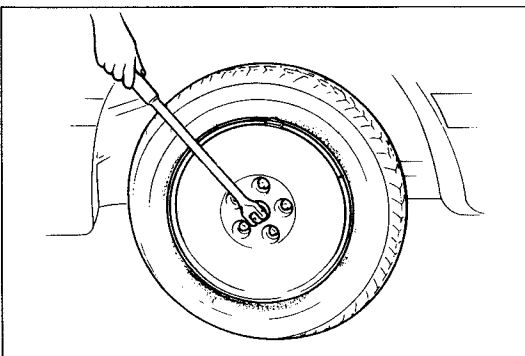
97U0RX-017



97U0RX-018



97U0RX-019



97U0RX-020

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 of 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.

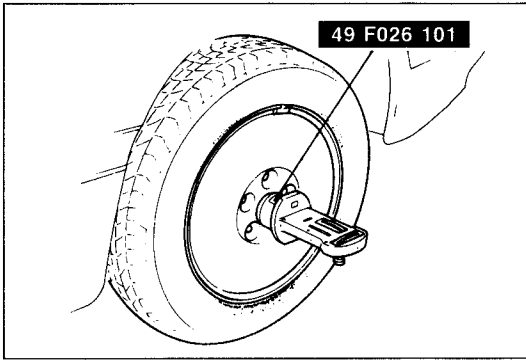
Left arm — Turn cam clockwise.

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.



97U0RX-021

Inspection

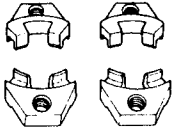
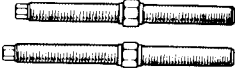
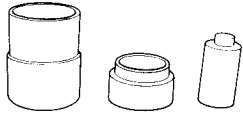

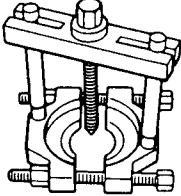
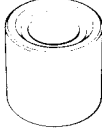

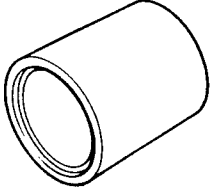
1. Install the **SST** to the driveshaft.
2. Measure the camber angle with the caster, camber gauge.

Camber: $-0^{\circ}44' \pm 30'$

R FRONT SUSPENSION (STRUT)

FRONT SUSPENSION (STRUT)

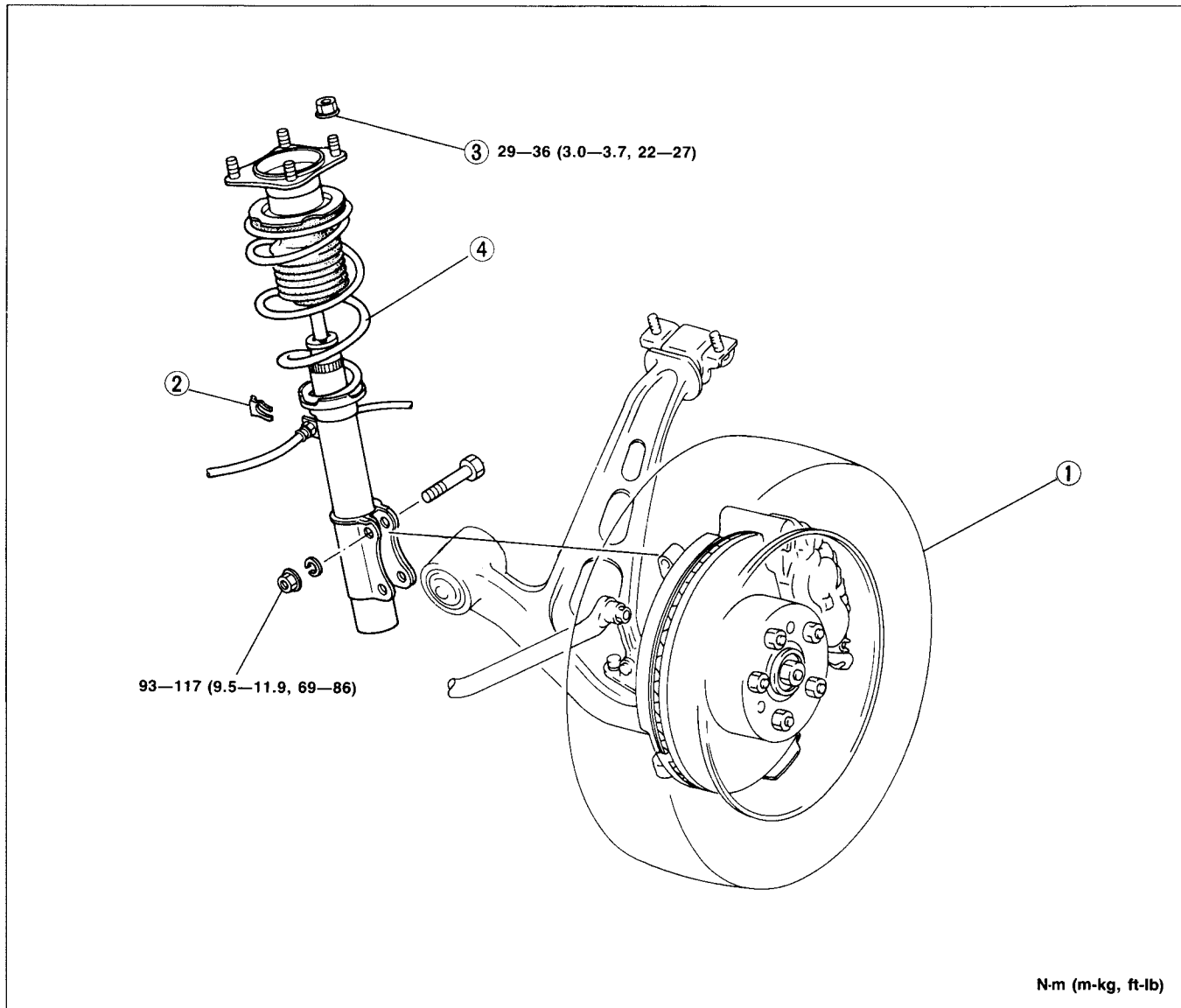
PREPARATION SST

<p>49 0223 640B Arm, coil spring compressor</p> 	<p>49 0370 641 Screw, coil spring compressor</p> 	<p>49 G030 625A Puller & Installer, lower arm bushing</p> 
<p>49 G030 627A Puller (Part of 49 G030 625A)</p> 	<p>49 0710 520 Puller, bearing</p> 	<p>49 0823 146 Support block</p> 
<p>49 0180 510B Attachment, preload measuring</p> 	<p>49 F034 201 Installer, boot</p> 	<p>97U0RX-022</p>

FRONT SHOCK ABSORBER AND SPRING

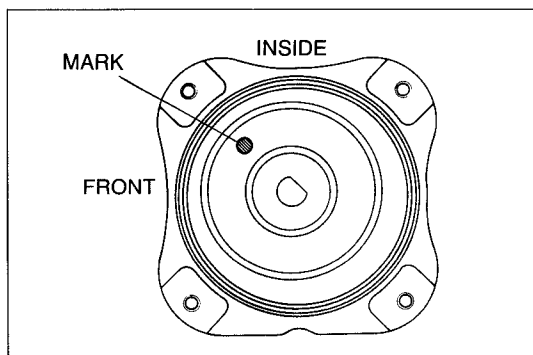
Removal and Installation

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.



97UORX-023

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Wheel and tire 2. Hose clip 3. Mounting block nut
Installation note page R-11 | <ol style="list-style-type: none"> 4. Shock absorber assembly
Disassembly, Inspection, and
Assembly page R-12 |
|--|--|



97UORX-024

Installation note

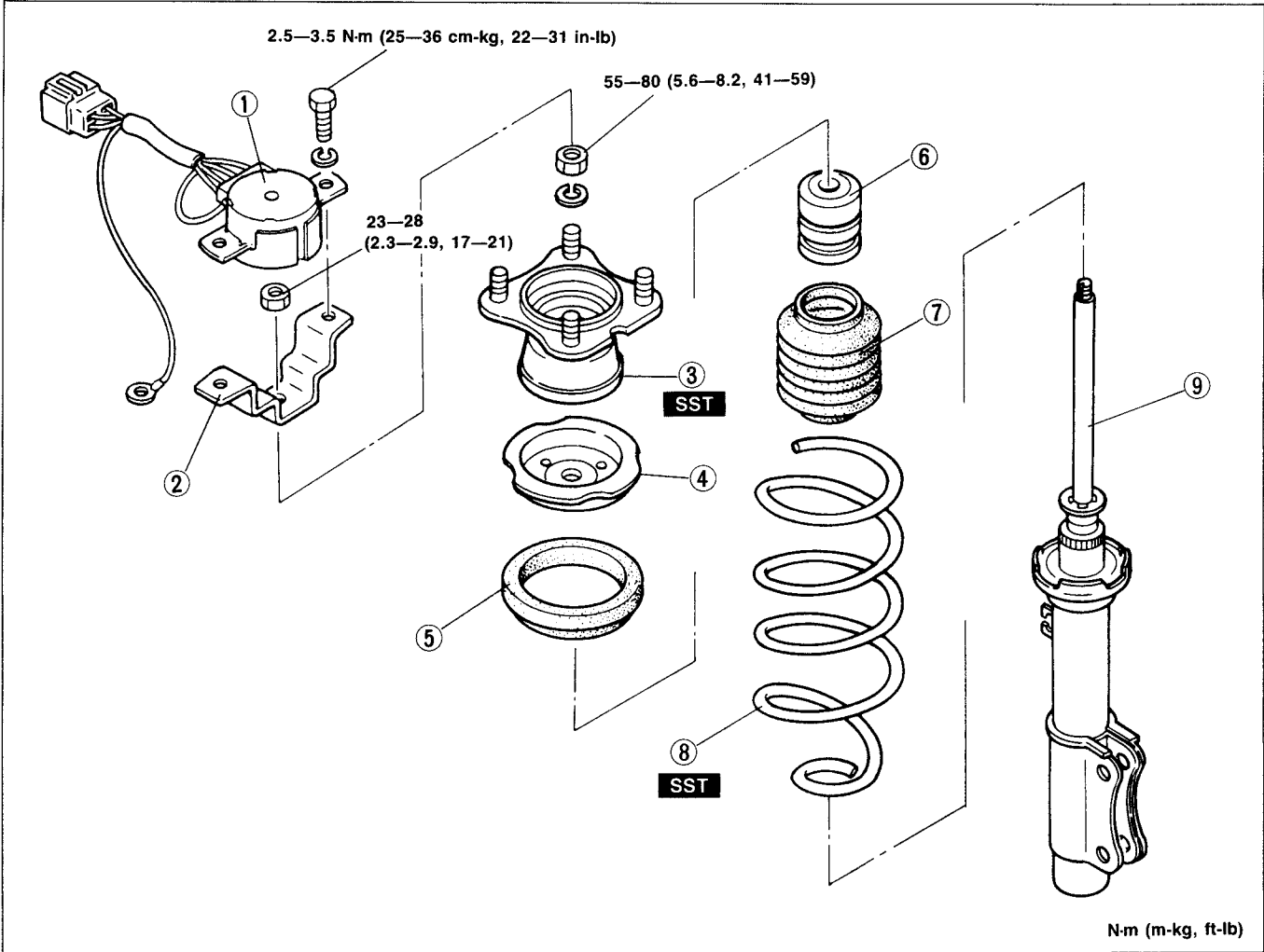
Mounting block nut

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

R FRONT SUSPENSION (STRUT)

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-025

- | | |
|--|---|
| <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 6. Bound stopper 7. Dust boot 8. Coil spring
Disassembly note page R-12
Assembly note..... page R-13 9. Shock absorber
Inspect for oil leakage or abnormal noise
Inspection (AAS)..... page R-13 |
|--|---|

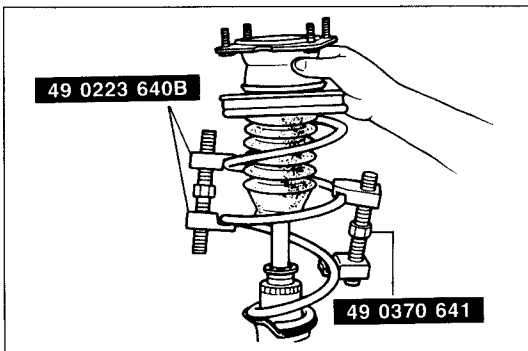
Disassembly note Coil spring and mounting block

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

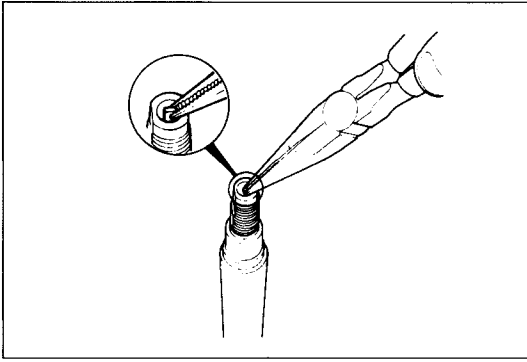
1. Loosen the piston rod upper nut several turns, but do not remove it.

Caution
Do not remove the nut.

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



9MU0RX-018

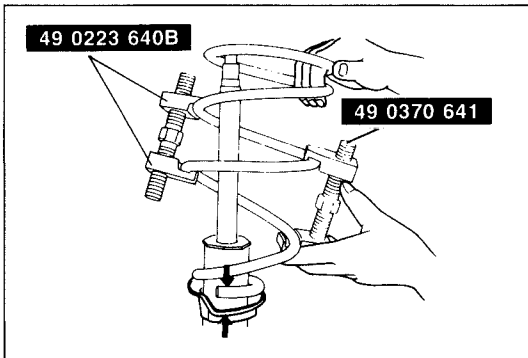


97U0RX-027

Inspection

Shock absorber (AAS)

Smooth rotation of control rod.



97U0RX-028

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

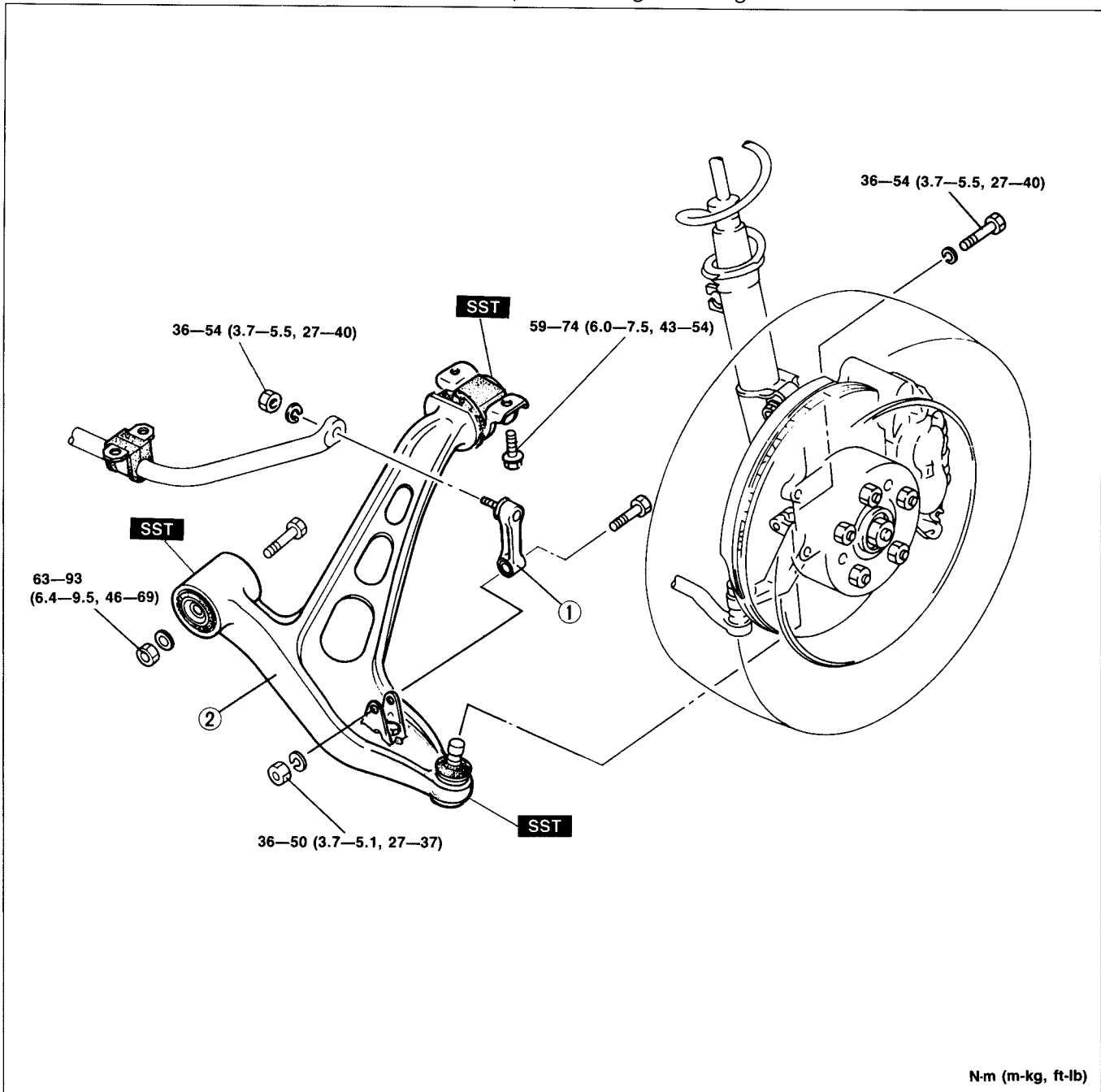
Check that the spring is well seated in the upper seat and lower seat.

R FRONT SUSPENSION (STRUT)

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.

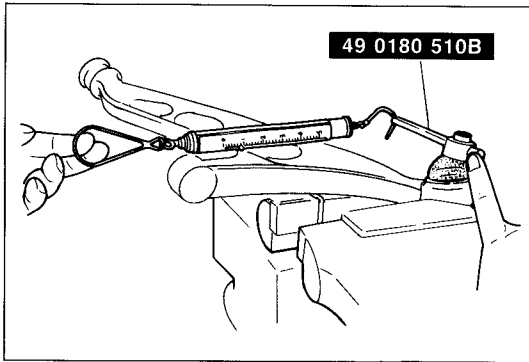


N-m (m-kg, ft-lb)

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

Inspection Ball joint Preload

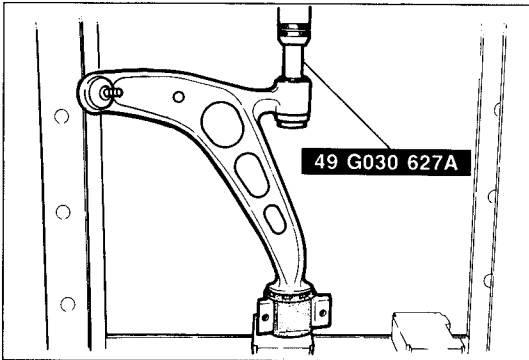
Note

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:

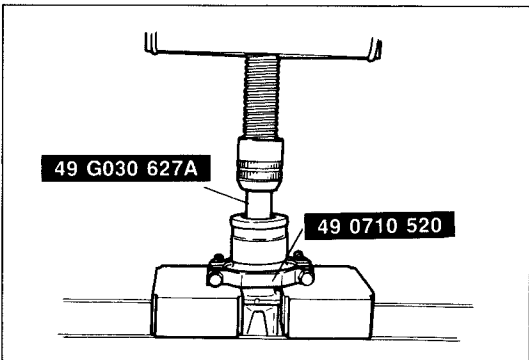
20—34 N (2.0—3.5 kg, 4.4—7.7 lb)
(While the ball stud is rotating)



97U0RX-031

Disassembly Lower arm bushing (Front)

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



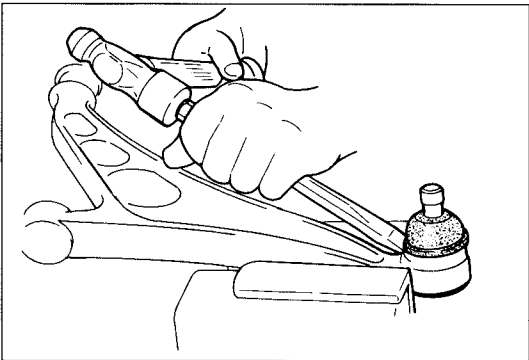
97U0RX-032

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.

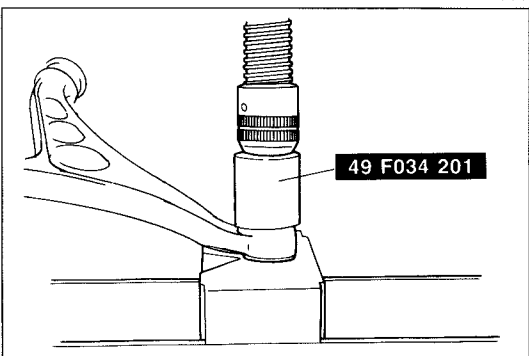
1. Set the **SST** against the lower arm.
2. Push out the bushing.



97U0RX-033

Dust boot

Remove the dust boot with a chisel.

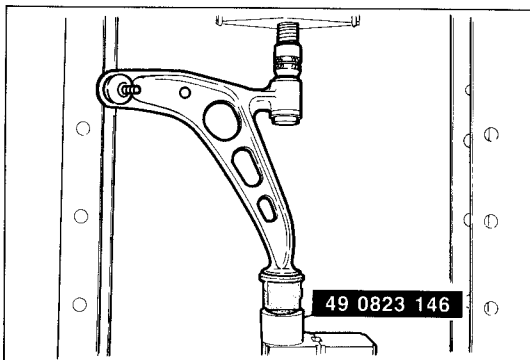


97U0RX-034

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**.

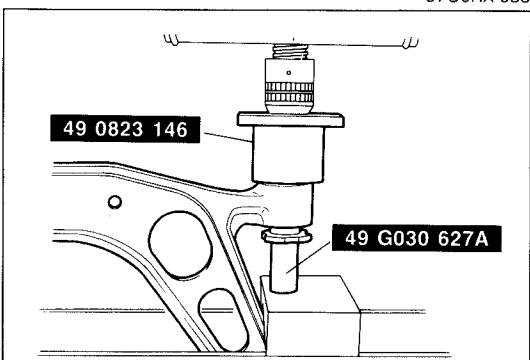
R FRONT SUSPENSION (STRUT)



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.



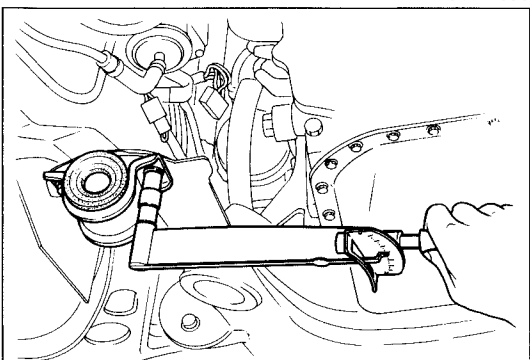
97U0RX-036

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

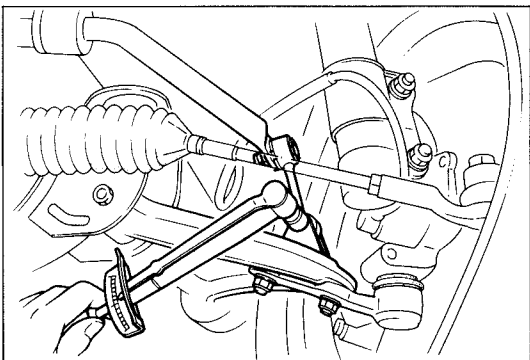
Installation note

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.

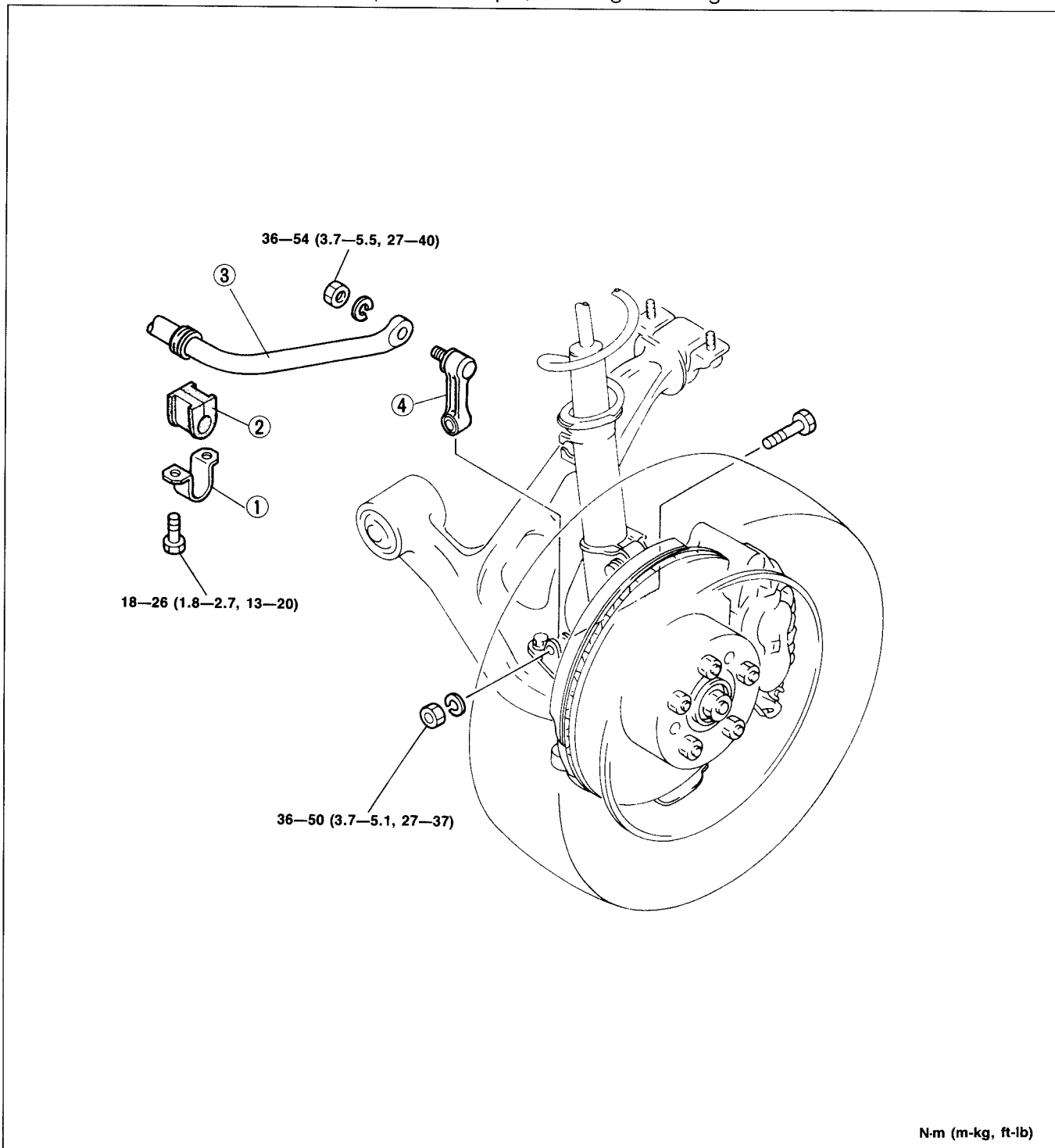
Tightening torque:

36—50 N·m (3.7—5.1 m·kg, 27—37 ft·lb)

FRONT STABILIZER

Removal, Inspection, and Installation

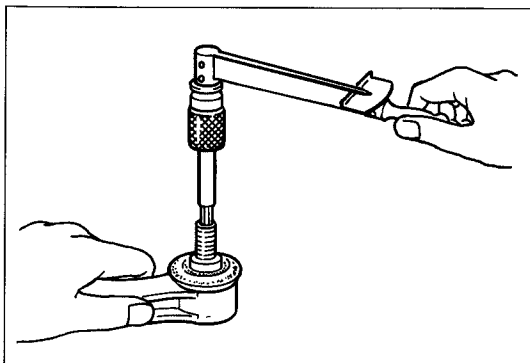
1. Jack up the front of the vehicle and support it with safety stands.
2. Remove in the order shown in the figure.
3. Inspect all components and parts, replace parts if necessary.
4. Install in the reverse order of removal, referring to **Installation Note**.
5. Tighten all nuts and bolts to the specified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



97U0RX-039

- | | |
|--|---|
| <p>1. Stabilizer bracket
Installation note page R-18</p> <p>2. Bushing
Inspect for deterioration or wear
Installation note page R-18</p> | <p>3. Stabilizer
Inspect for bending or damage</p> <p>4. Control link
Inspect for bending or damage
Installation note page R-18</p> |
|--|---|

R FRONT SUSPENSION (STRUT)



97U0RX-083

Inspection note Control link

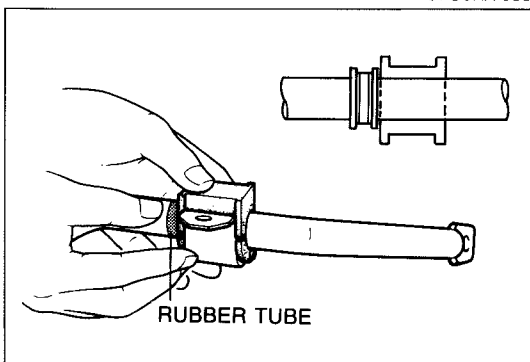
Note

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-040

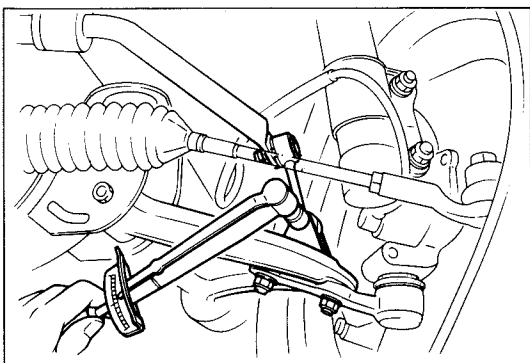
Installation note

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)



97U0RX-041

Control link

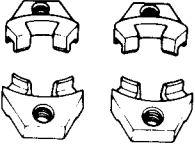
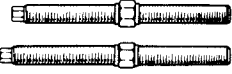
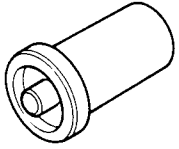
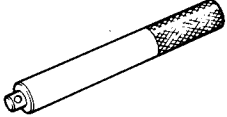





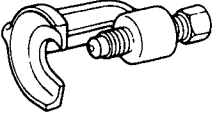

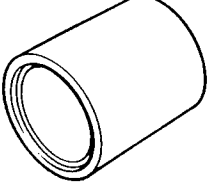
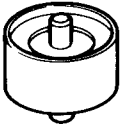
1. Install the control link to the stabilizer and loosely tighten the bolts.
2. Lower the vehicle and tighten the bolts to the specified torque with the vehicle unloaded.

Tightening torque:

36—50 N·m (3.7—5.1 m·kg, 27—37 ft·lb)

REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)

PREPARATION SST

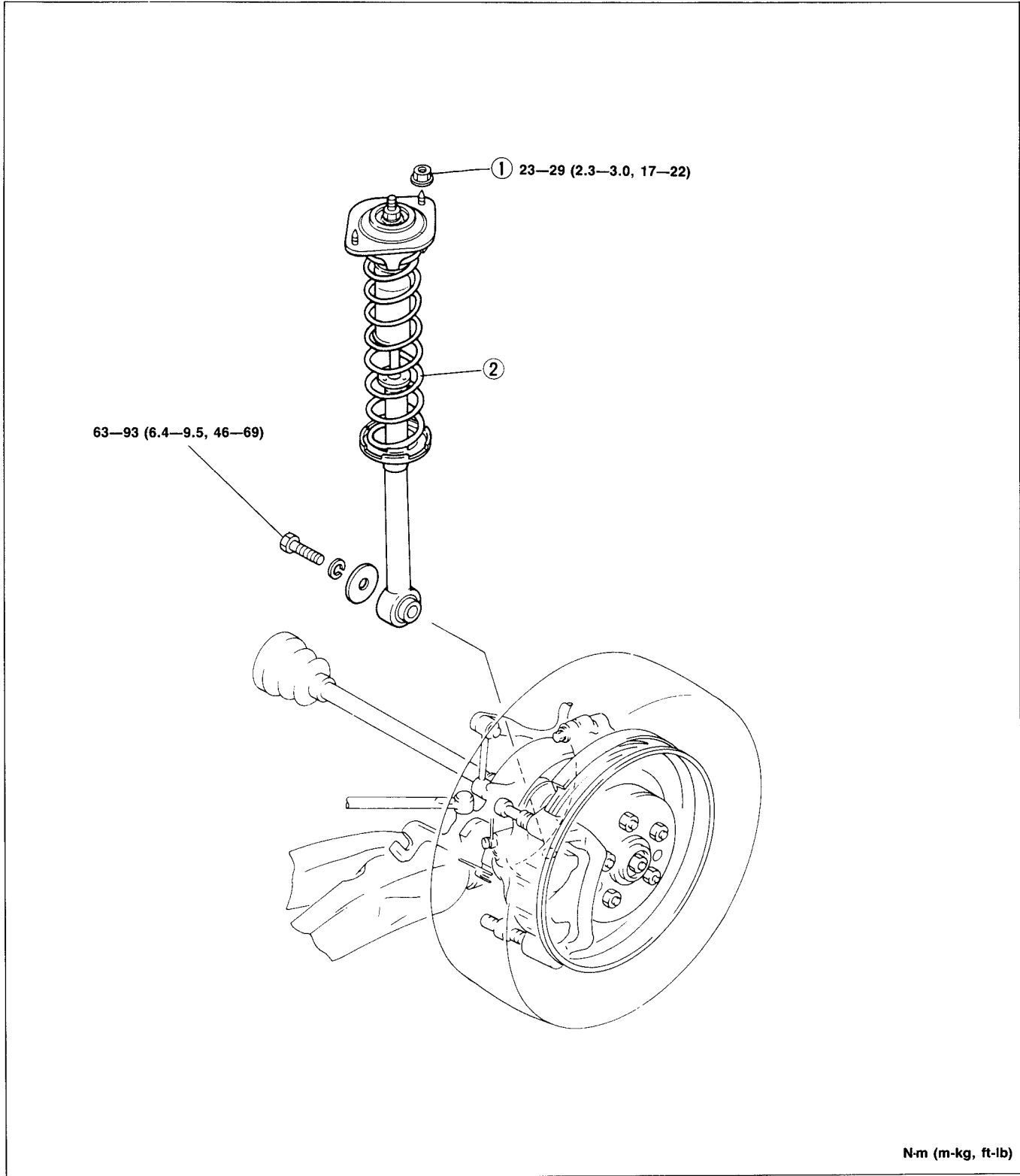
<p>49 0223 640B</p> <p>Arm, coil spring compressor</p> 	<p>49 0370 641</p> <p>Screw, coil spring compressor</p> 	<p>49 F028 2A0</p> <p>Puller & installer set, rubber bush</p> 
<p>49 F027 003</p> <p>Handle (Part of 49 F028 2A0)</p> 	<p>49 F028 204</p> <p>Bush installer (Part of 49 F028 2A0)</p> 	<p>49 F028 205</p> <p>Bush support (Part of 49 F028 2A0)</p> 
<p>49 F028 201</p> <p>Bush puller (Part of 49 F028 2A0)</p> 	<p>49 F028 203</p> <p>Support block (Part of 49 F028 2A0)</p> 	<p>49 F028 202</p> <p>Bush installer (Part of 49 F028 2A0)</p> 
<p>49 0118 850C</p> <p>Puller, ball joint</p> 	<p>49 0180 510B</p> <p>Attachment preload measuring</p> 	<p>49 F034 201</p> <p>Instuller, boot</p> 
<p>49 F028 206</p> <p>Mount rubber installer (Part of 49 F028 2A0)</p> 	<p>97U0RX-042</p>	

R REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)

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.



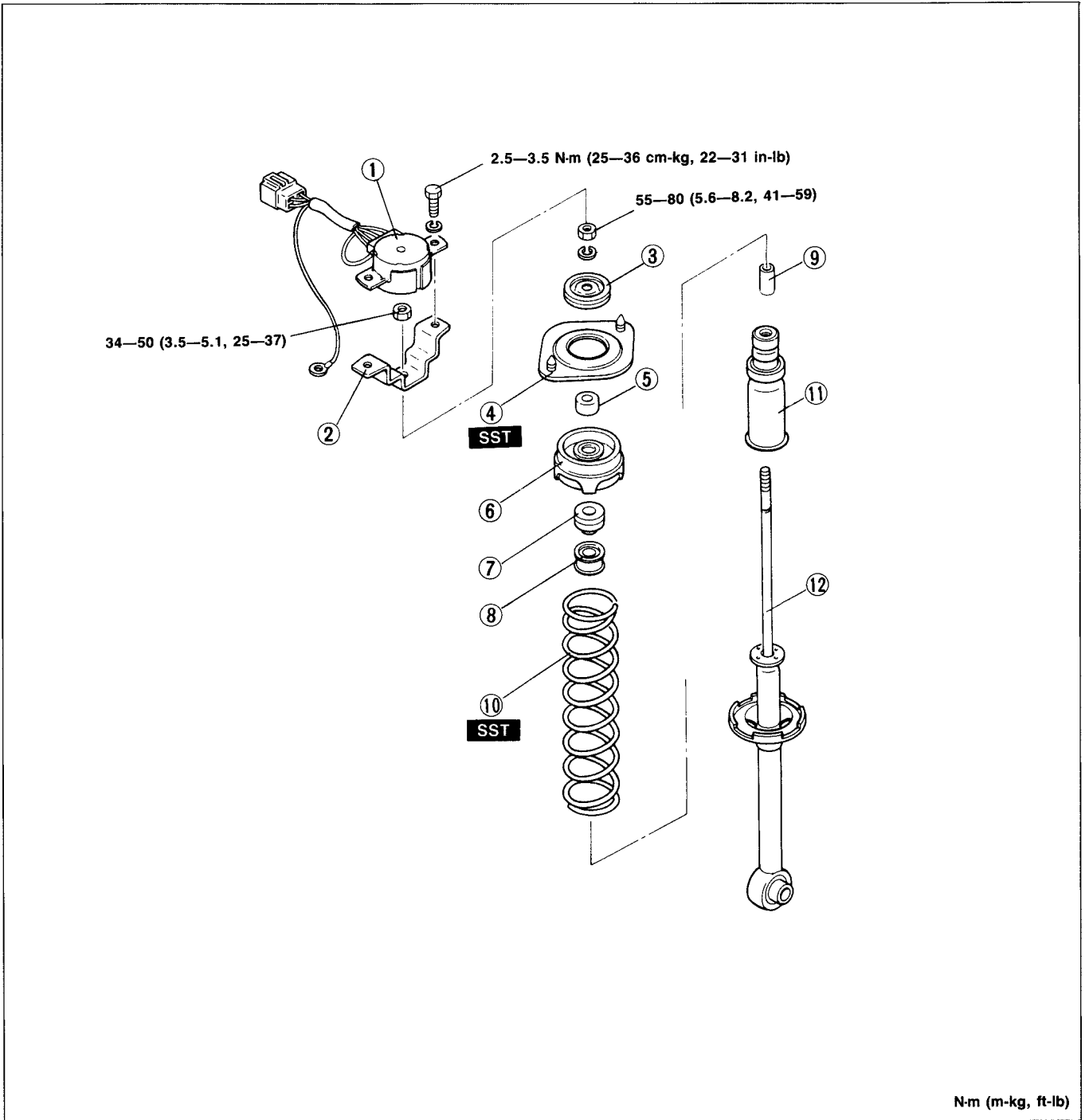
97U0RX-043

1. Mounting plate nut

2. Shock absorber assembly
Disassembly, Inspection, and
Assembly..... page R-21

Disassembly, Inspection, and Assembly

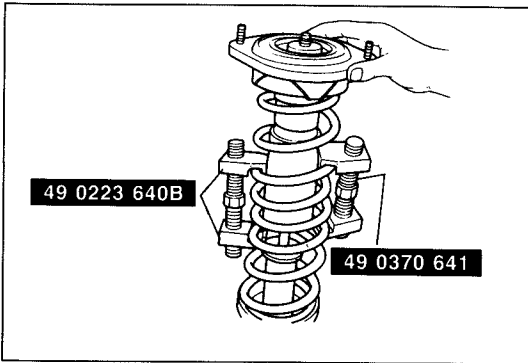
1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all components and parts, Replace parts if necessary.
3. Assemble in the reverse order of disassembly, referring to **Assembly Note**.
4. Tighten all nuts and bolts to the specified torque, referring to the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



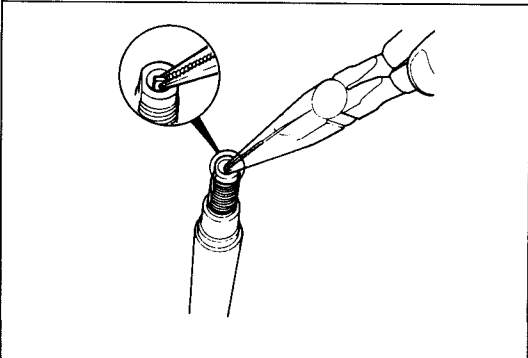
97U0RX-044

- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Actuator (AAS) 2. Bracket (AAS) 3. Stopper 4. Mounting plate <ul style="list-style-type: none"> Disassembly note page R-22 Assembly note..... page R-22 5. Rubber bushing 6. Spring seat 7. Rubber bushing | <ul style="list-style-type: none"> 8. Set plate 9. Spacer 10. Coil spring <ul style="list-style-type: none"> Disassembly note page R-22 Assembly note..... page R-22 11. Bound stopper rubber 12. Shock absorber <ul style="list-style-type: none"> Inspect for oil leakage or abnormal noise Inspection (AAS)..... page R-22 |
|--|--|

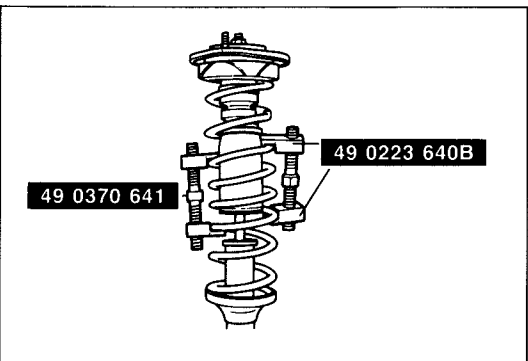
R REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)



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 vise.

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)

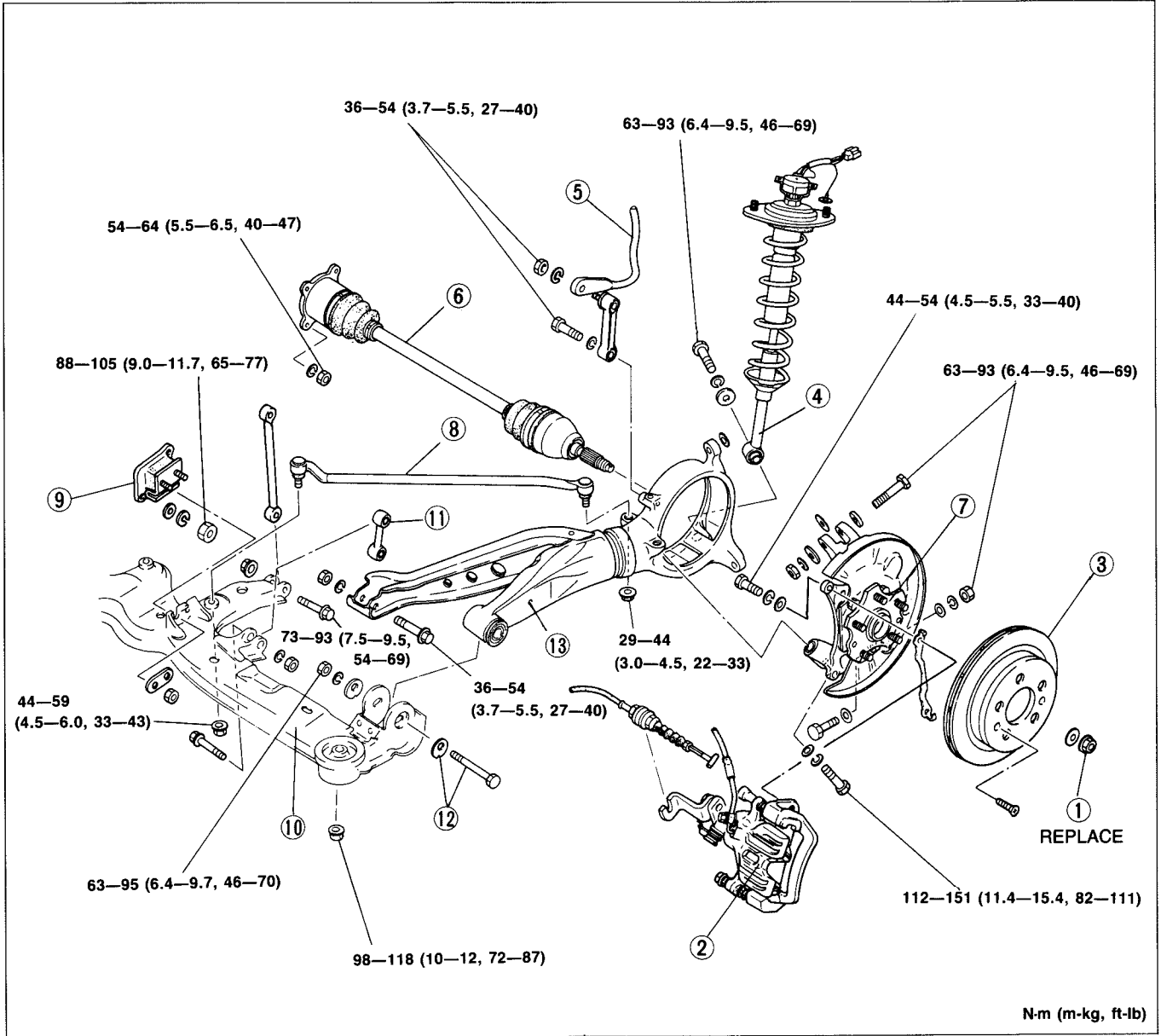
4. Remove the **SST**.

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

TRAILING ARM

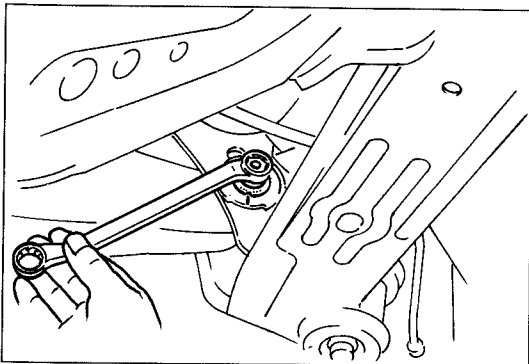
Removal, Inspection, and Installation

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**.



- | | |
|---|--|
| <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 |
|---|--|

R REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)



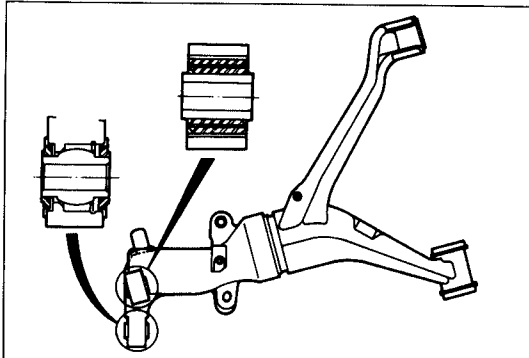
97U0RX-049

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.

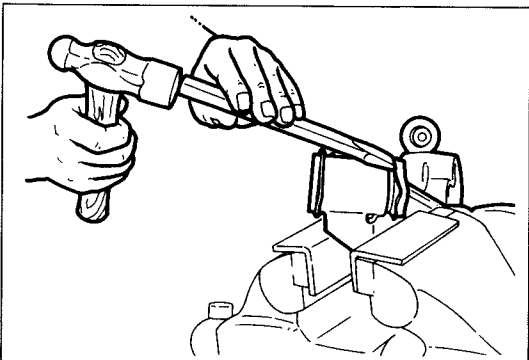


97U0RX-050

Inspection

Check the following points. Replace the parts if necessary.

1. Trailing arm for damage or cracks.
2. Bushings for deterioration or wear.
3. Pillow ball for looseness or damage.

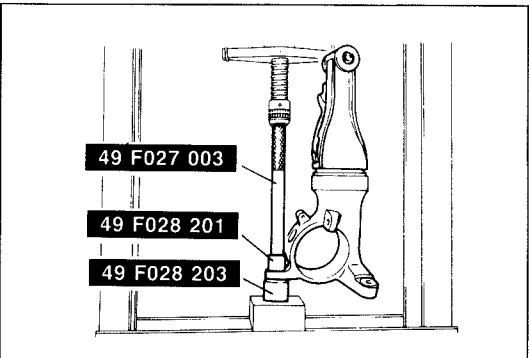


97U0RX-051

Disassembly

Trailing arm bushing (subframe side)

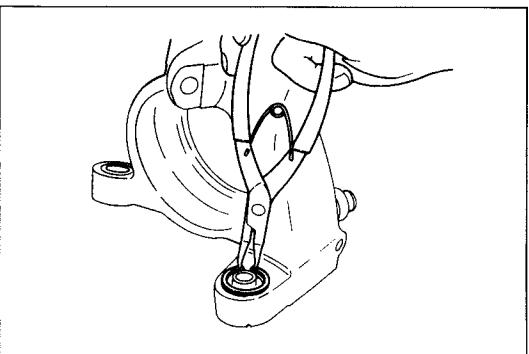
1. Secure the trailing arm in a vise.
2. Remove the bushings by tapping with a chisel and a hammer.



97U0RX-052

Trailing arm bushing (triaxial floating hub inner side)

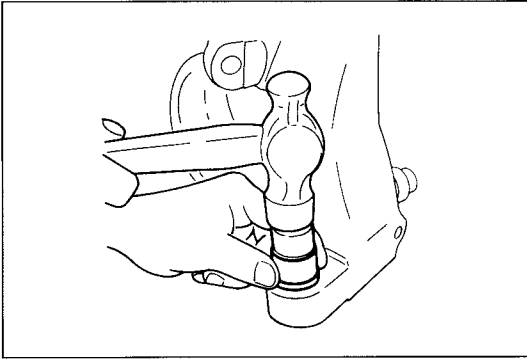
1. Set the **SST** to the bushing.
2. Push out the bushing.



97U0RX-053

Pillow ball

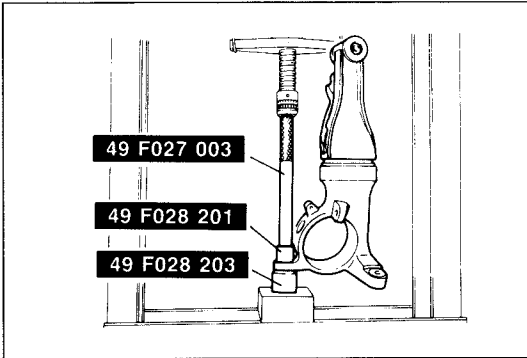
1. Remove the rubber seals with a screwdriver.
2. Remove the snap rings with snap-ring pliers.
3. Remove the pillow ball by carefully tapping with a piece of pipe (outer diameter 20mm, 0.79 in).



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.



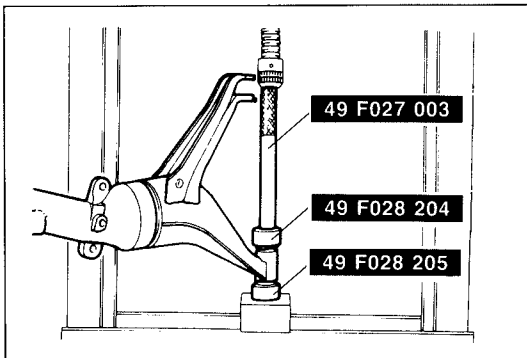
97U0RX-055

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.



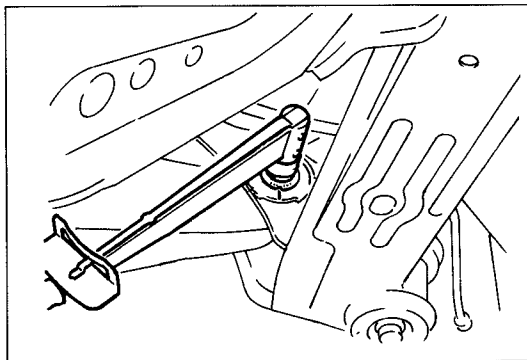
97U0RX-056

Trailing arm bushing (subframe side)

Caution

- a) 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)

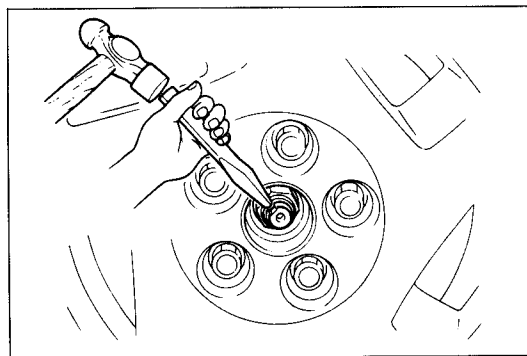
Driveshaft locknut

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.



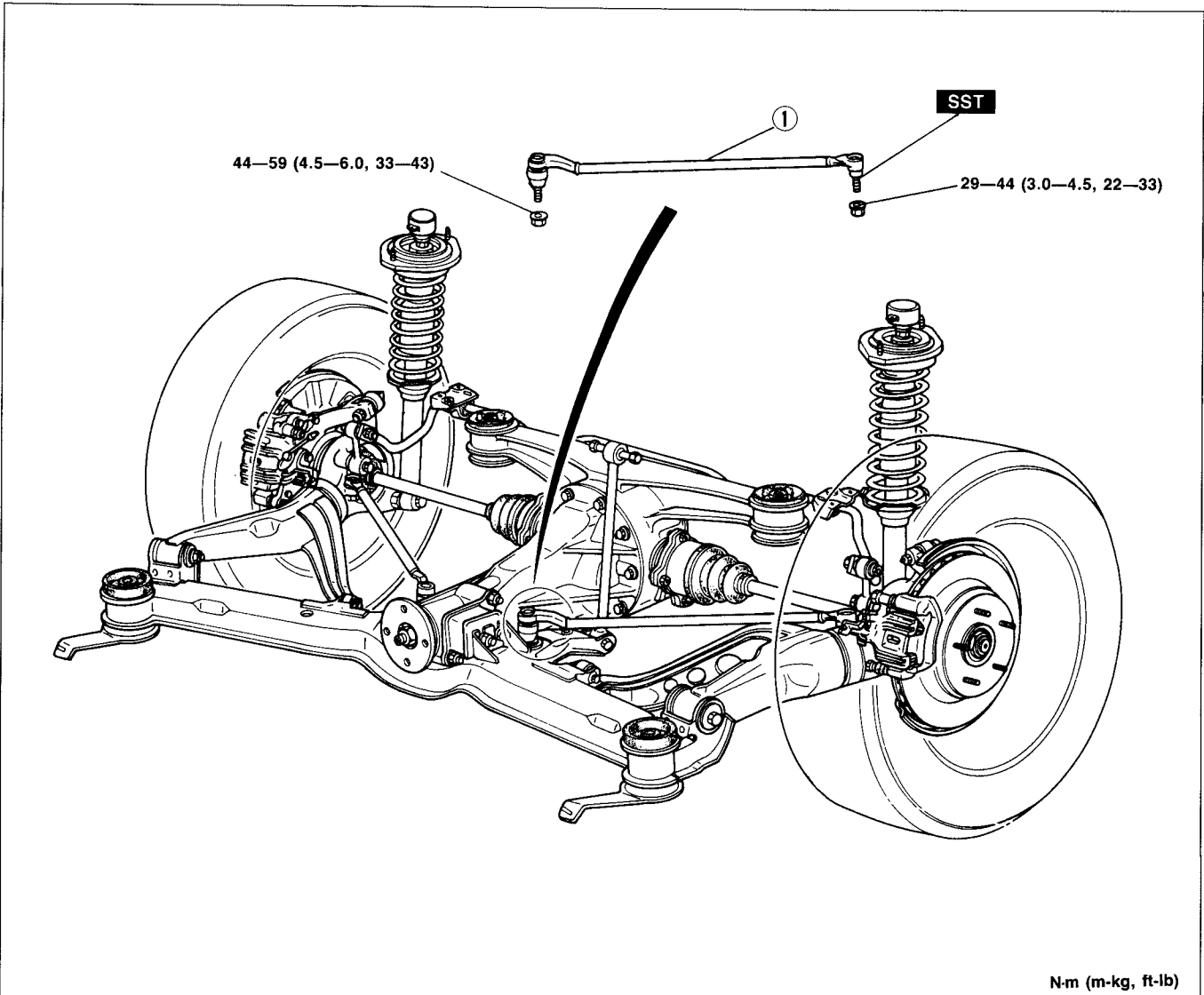
97U0RX-058

R REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)

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.

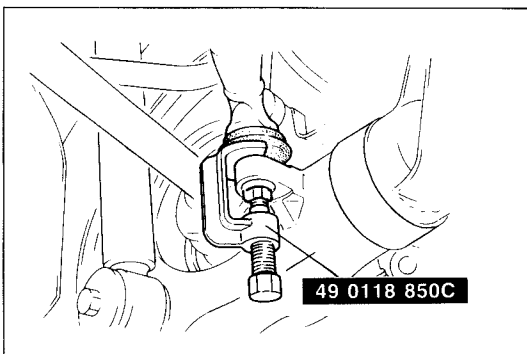


N-m (m-kg, ft-lb)

97U0RX-059

1. Lateral link

- Removal note page R-26
- Inspection page R-27
- Disassembly page R-27
- Assembly page R-27

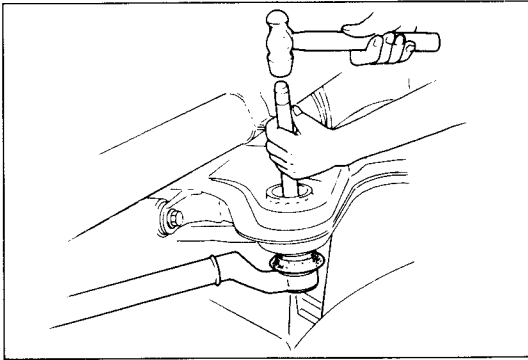


Removal note

Ball joint (trailing arm side)

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

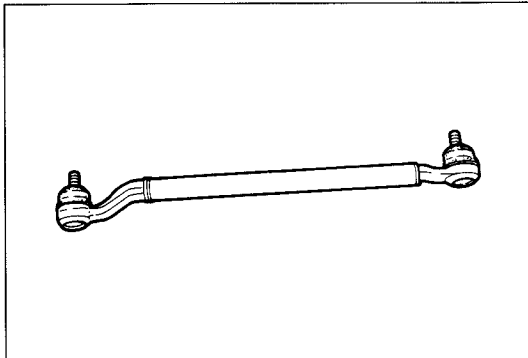
97U0RX-060



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.

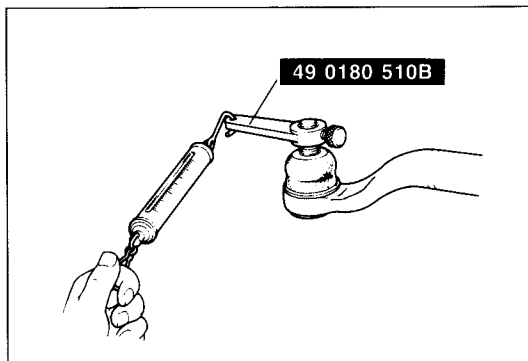


97U0RX-062

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

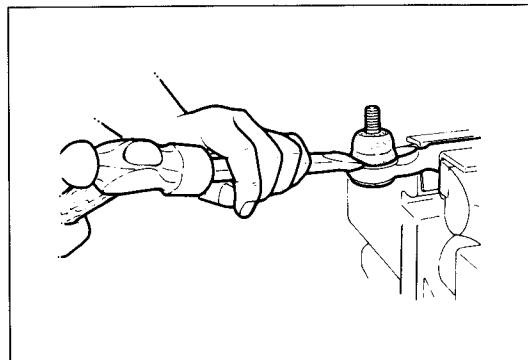
Ball joint Preload

Note

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.

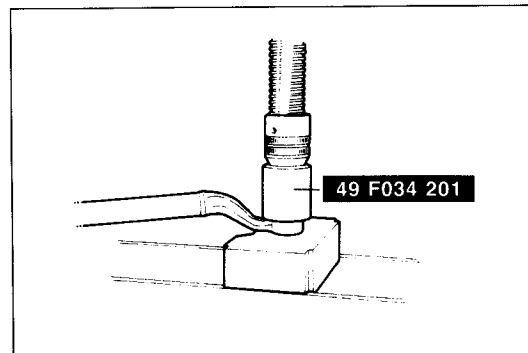
Pull scale reading: 5—12 N (0.5—1.2 kg, 1.1—2.6 lb)
(While the ball stud is rotating)



97U0RX-064

Disassembly Dust boot

Remove the dust boot using a chisel.



97U0RX-065

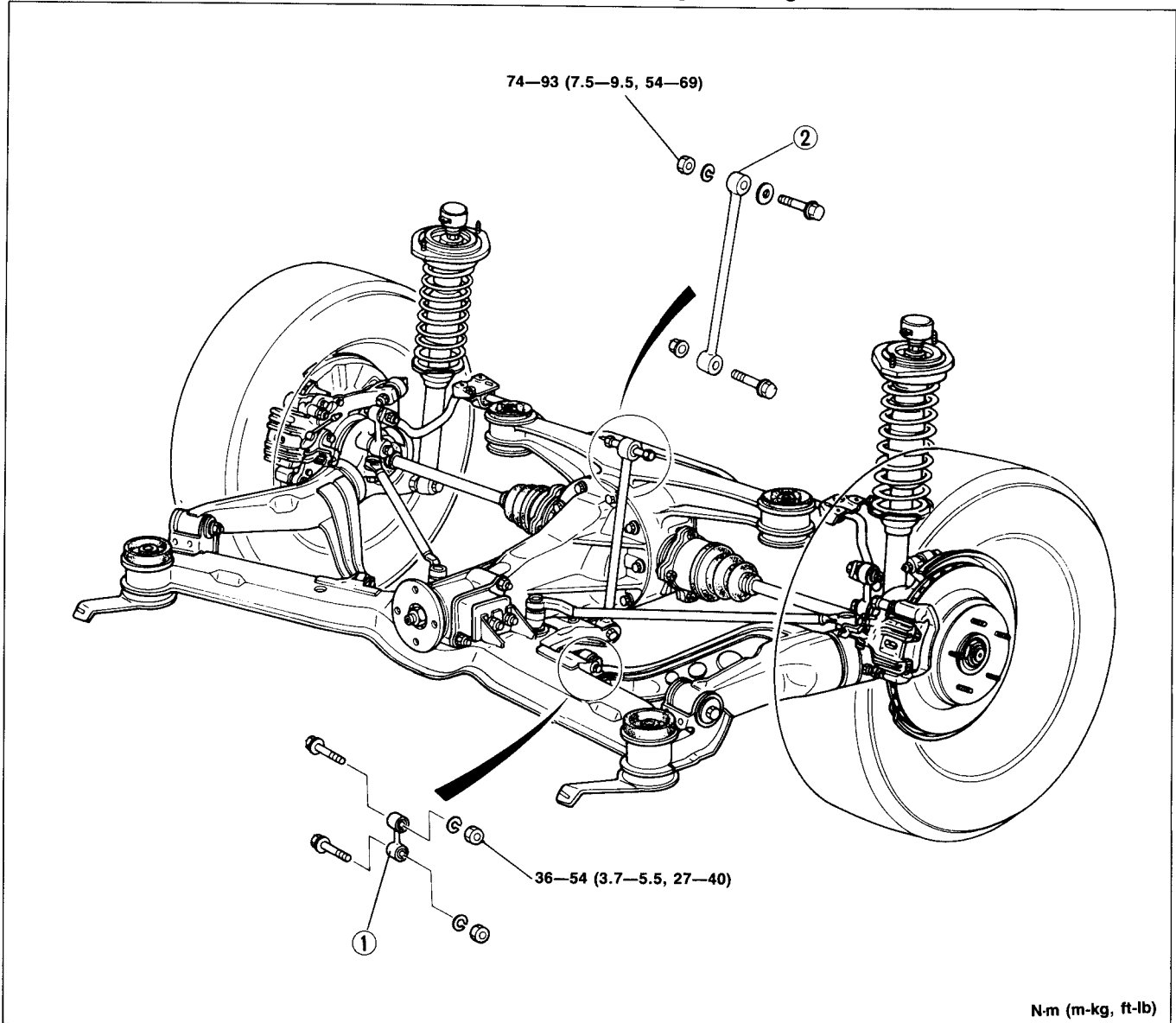
Assembly Dust boot

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

R REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)

CONTROL LINK AND SUBLINK Removal, Inspection, and Installation

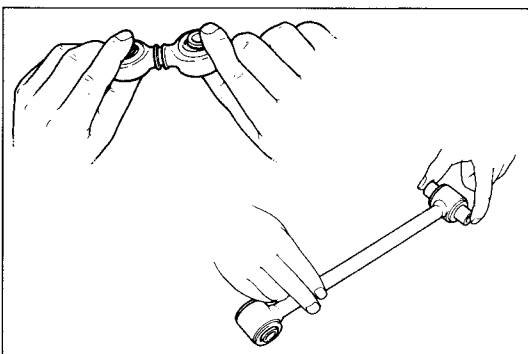
1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove in the order shown in the figure.
3. Inspect all components and parts.
4. Install in the reverse order of removal.
5. Tighten all nuts and bolts to the specified torque, referring to the figure.



97U0RX-066

1. Control link
Inspection page R-28

2. Sublink
Inspection page R-28



97U0RX-067

Inspection

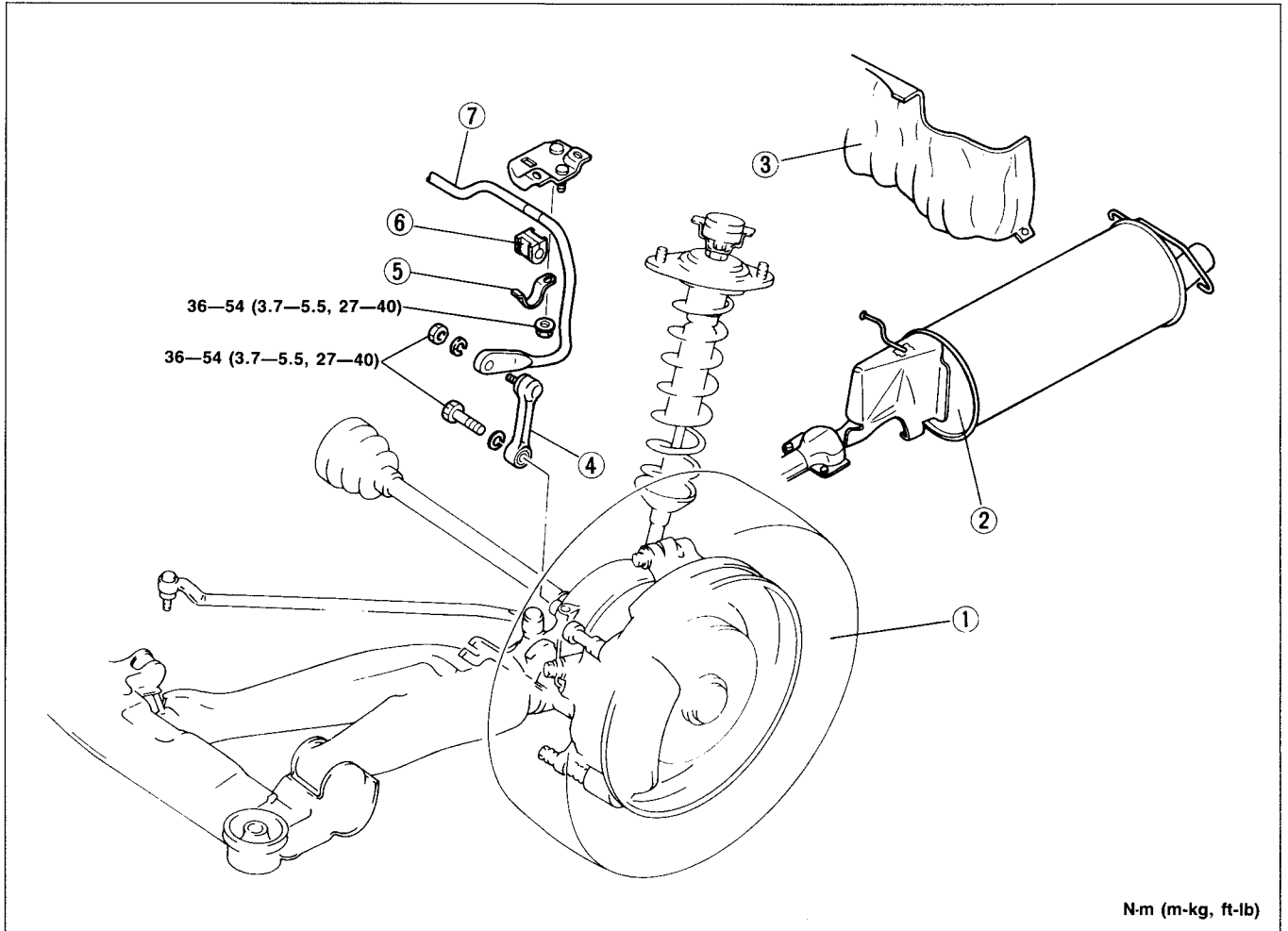
Check the following points. Replace the parts if necessary.

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

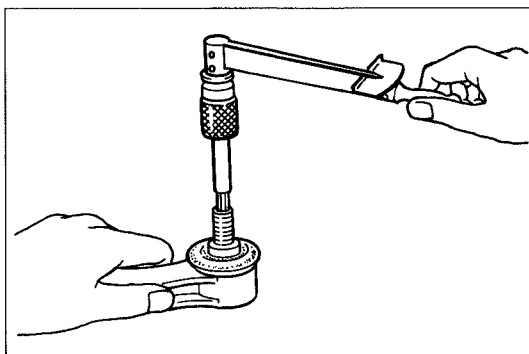
1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove in the sequence shown in the figure.
3. Inspect all components and parts.
4. Install in the reverse order of removal, referring to **Installation Note**.



N-m (m-kg, ft-lb)

97U0RX-068

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



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Inspection note Control link

Note

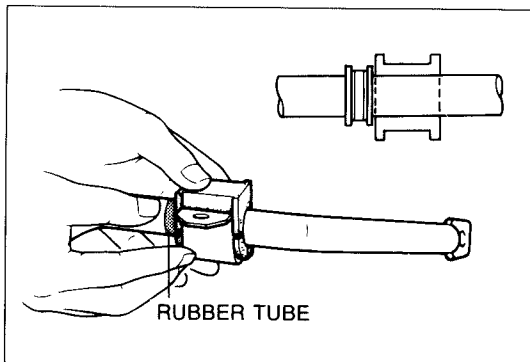
Measure the preload after rotating the stud of the ball joint 10 times.

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

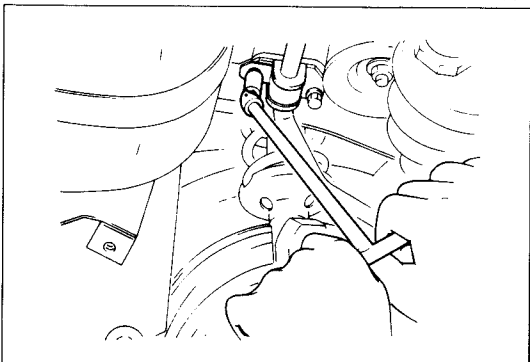
Preload:

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

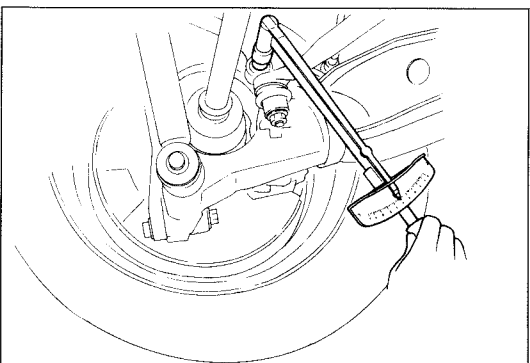
R REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)



97U0RX-084



97U0RX-070



97U0RX-071

Installation note

Stabilizer

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

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)

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.

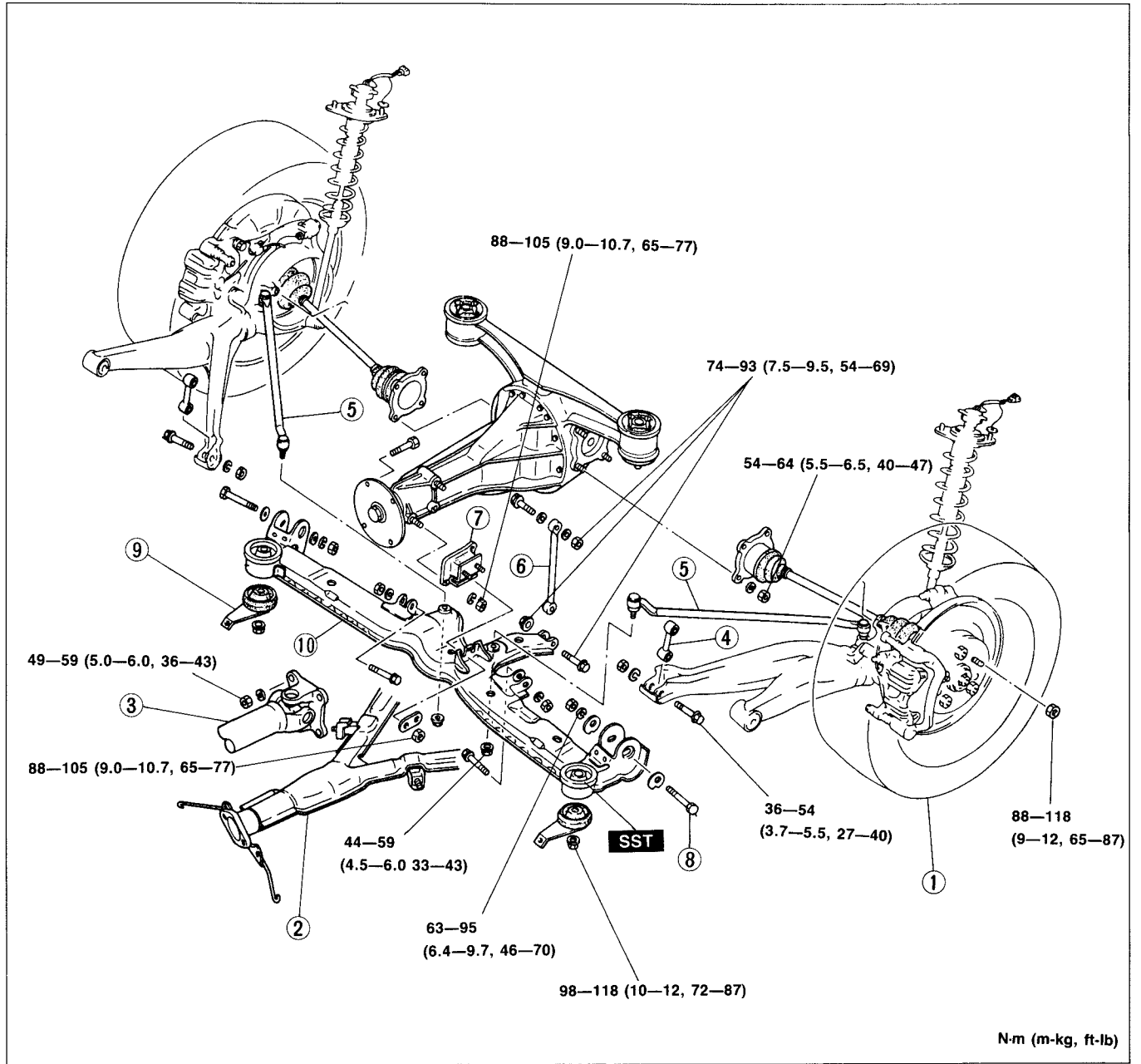
Tightening torque:

36—54 N·m (3.7—5.5 m·kg, 27—40 ft·lb)

SUBFRAME

Removal, Inspection, and Installation

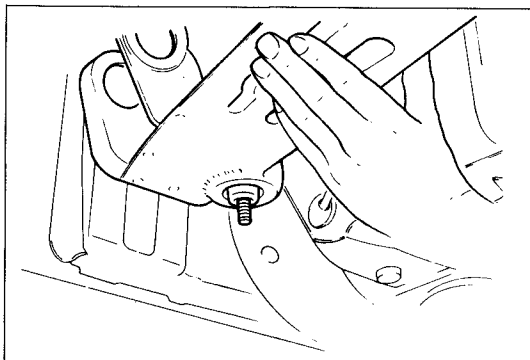
1. Jack up the rear of the vehicle and support with safety stands.
2. Remove in the sequence shown in the figure, referring to **Removal Note**.
3. Inspect all components and parts.
4. Install in the reverse order of removal referring to **Installation Note**.
5. Tighten all nuts and bolts to the specified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



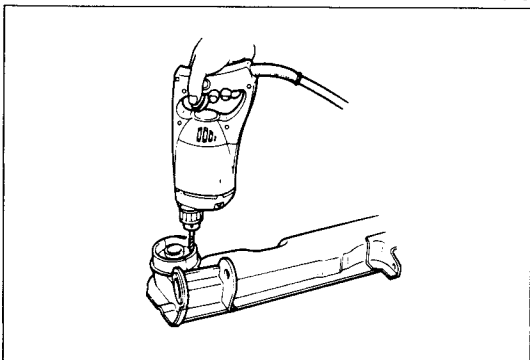
97U0RX-072

- | | |
|--|--|
| <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 |
|--|--|

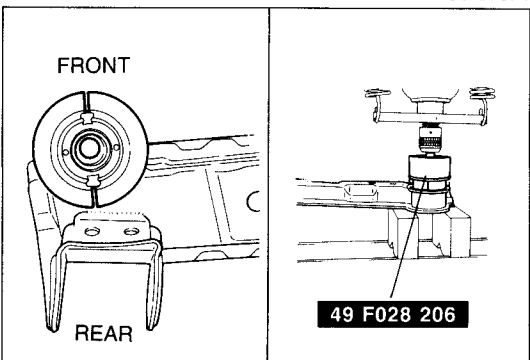
R REAR SUSPENSION (MULTILINK SEMI-TRAILING ARM)



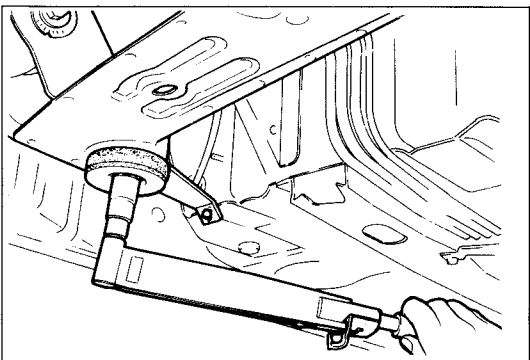
97U0RX-073



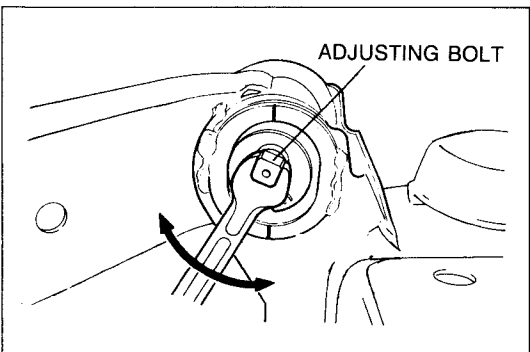
97U0RX-074



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)

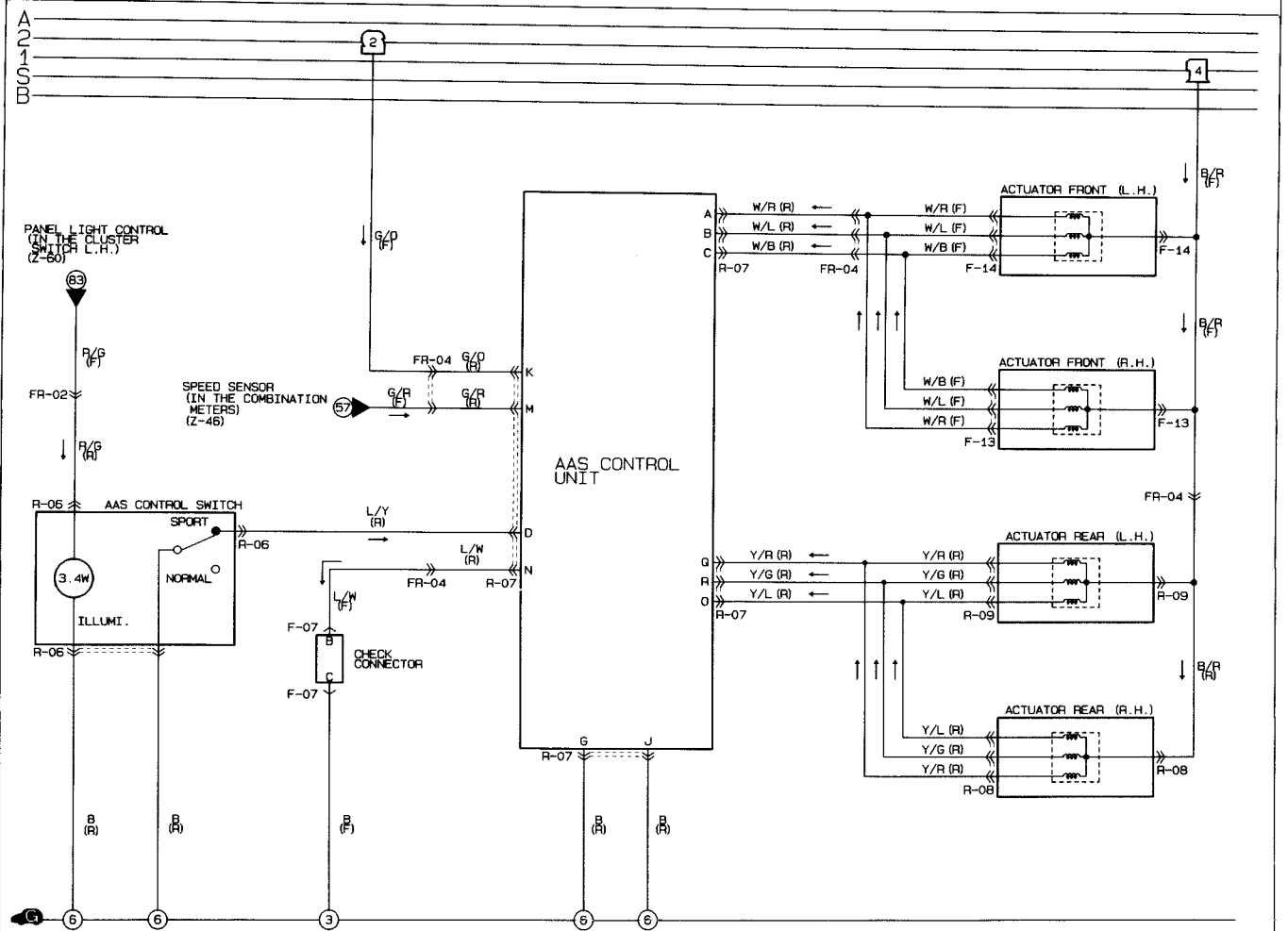
Note

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



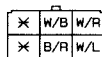
F-07 CHECK CONNECTOR (F)



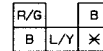
F-13 ACTUATOR FRONT (R.H.) (F)



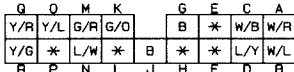
F-14 ACTUATOR FRONT (L.H.) (F)



R-06 AAS CONTROL SWITCH (R)



R-07 AAS CONTROL UNIT (R)



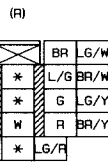
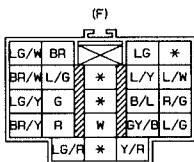
R-08 ACTUATOR REAR (R.H.) (R)



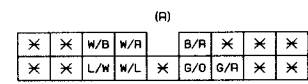
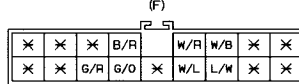
R-09 ACTUATOR REAR (L.H.) (R)



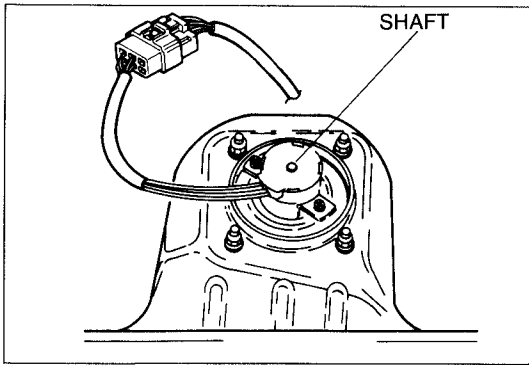
FR-02 FRONT (F) - REAR (R)



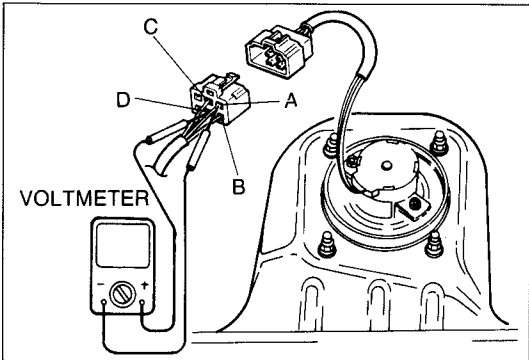
FR-04 FRONT (F) - REAR (R)



R AUTO ADJUSTING SUSPENSION (AAS)



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

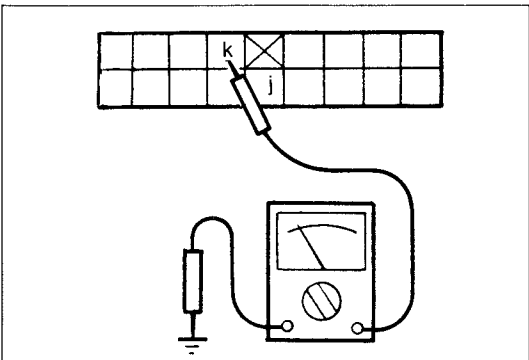
The actuator must not be disassembled.

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.

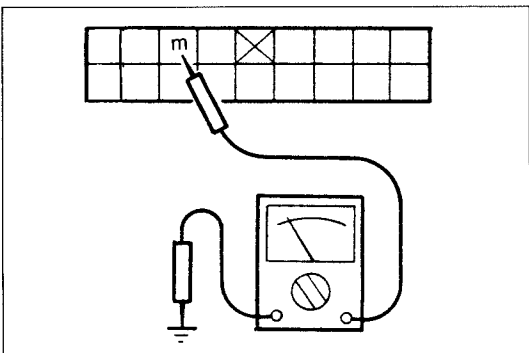
	Terminal	SPORT/NORMAL setting	Voltage
	+	When sport is pressed	Approx. 0.3 sec., 12V *1
	-		
	+	When NORMAL is pressed	Approx. 0.3 sec., 12V *1
	-		

*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

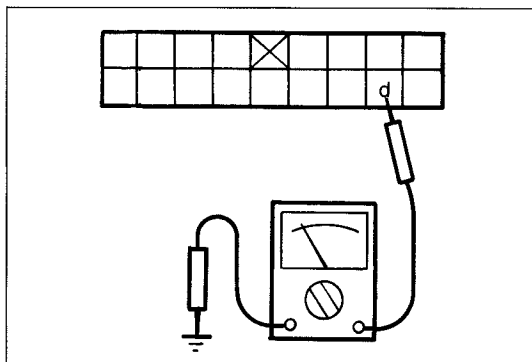
(Turn the ignition sw to ON)

If the results are not correct, check or repair the power supply or the ground circuit.

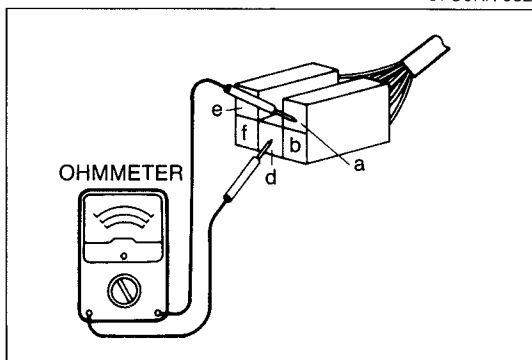
If they are normal, there may be a malfunction in the control switch or the control unit.

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.



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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