

04-11 CONVENTIONAL BRAKE SYSTEM

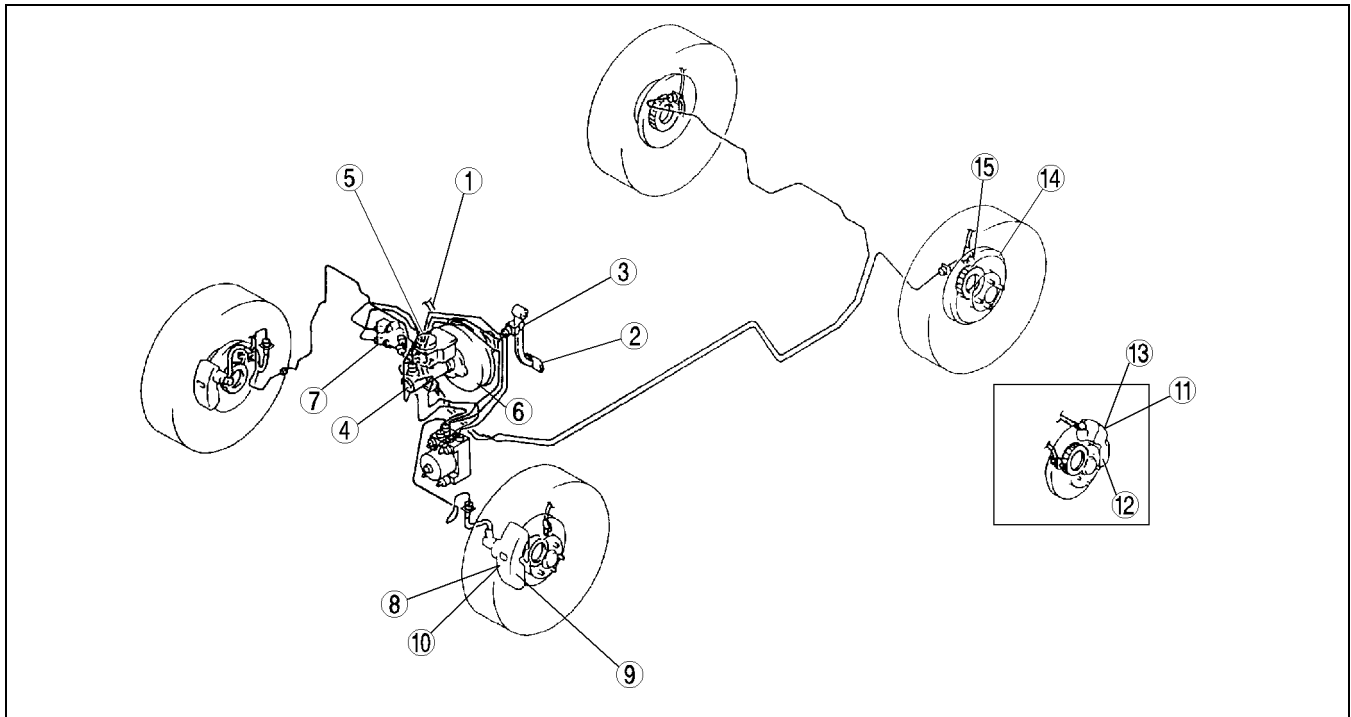
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CONVENTIONAL BRAKE SYSTEM LOCATION INDEX

A3U041101020W01



Z3U0411W101

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2	Brake pedal (See 04-11-3 BRAKE PEDAL INSPECTION) (See 04-11-5 BRAKE PEDAL REMOVAL/ INSTALLATION)
3	Brake switch (See 04-11-5 BRAKE SWITCH INSPECTION)
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15	Wheel cylinder (See 04-11-27 WHEEL CYLINDER DISASSEMBLY/ASSEMBLY)

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AIR BLEEDING

A3U041143001W01

Note

- The brakes should be bled whenever a brake line is disconnected. If a hydraulic line is disconnected at the master cylinder, start at the slave cylinder farthest from the brake master cylinder, and move to the next farthest slave cylinder until all 4 cylinders have been bled. If the disconnection point is anywhere except the master cylinder, start at the point closest to the disconnection, and move to the next closest slave cylinder until all 4 cylinders have been bled.

Specified fluid

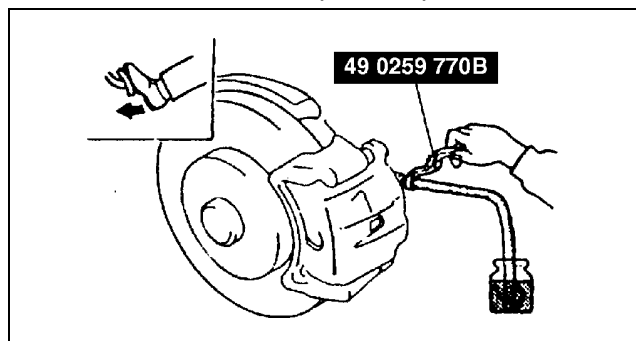
SAEJ1703 or FMVSS 116 DOT-3

1. On level ground, jack up the vehicle and support it evenly on safety stands.
2. Remove the bleeder cap and attach a vinyl tube to the bleeder screw.
3. Place the other end of the vinyl tube in a clear, fluid filled container.
4. The first person depresses the brake pedal a few times, and then holds it in the depressed position.
5. The second person loosens the bleeder screw, drains out the fluid and closes the screw using the **SST**.
6. Repeat Steps 4 and 5 until no air bubbles are seen. The reservoir should be kept **about 3/4** full during bleeding to prevent air from reentering the lines.

Tightening torque

5.9—8.8 N·m {60—90 kgf·cm, 53—78 in·lbf}

7. Inspect for correct brake operation.
8. Verify that there is no fluid leakage. Wipe off any spilled fluid immediately.
9. After bleeding the brakes, add brake fluid to the maximum level.



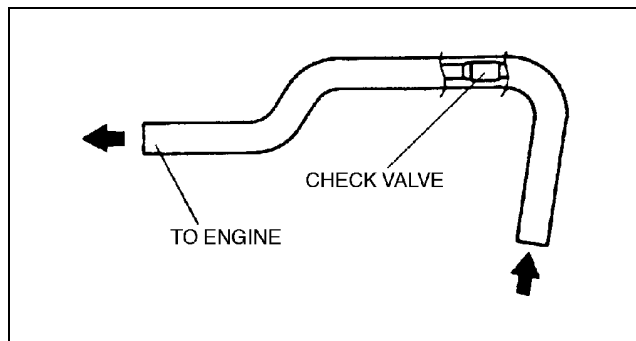
X3U411WA0

04-11

VACUUM HOSE CHECK VALVE INSPECTION (POWER BRAKE UNIT)

A3U041143980W01

1. Remove the clamps and vacuum hose.
2. Apply both suction and pressure to the engine-side hose, and verify that air blows only toward that side.
 - If air flows in both directions or not at all, replace the vacuum hose.



X3U411WA1

BRAKE PEDAL INSPECTION

A3U041143300W01

Brake Pedal Height Inspection

1. Verify that the distance from the carpet to the center of the upper surface of the pedal pad is as specified.

Pedal height (reference value)

185 mm {7.28 in}

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Brake Pedal Height Adjustment

1. Disconnect the brake switch connector.
2. Loosen locknut B and turn switch A until it does not contact the pedal.
3. Loosen locknut D and turn rod C to adjust the height.
4. Tighten the bolt with locknut B so that clearance between the bolt for brake light switch A and pedal stopper is within the specification.

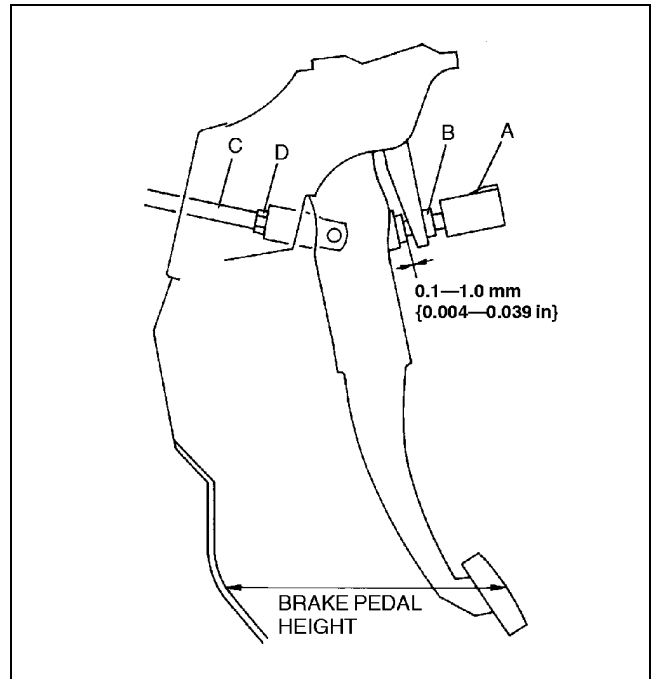
Specification

0.1—1.0 mm {0.004—0.039 in}

Tightening torque

13.8—17.6 N·m {140—180 kgf·cm, 122—156 in·lbf}

5. Connect the brake switch connector.
6. After adjustment, inspect the pedal play and the brake light operation.



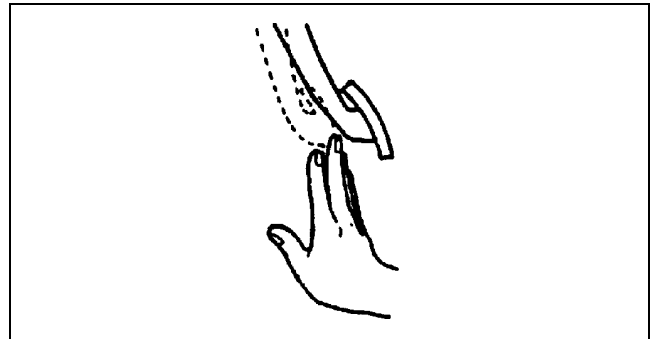
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Brake Pedal Play Inspection

1. Depress the pedal a few times to eliminate the vacuum in the system.
2. Remove the spring pin, verify that the holes in the fork and in the pedal are aligned, and reinstall the pin. (See 04-11-5 BRAKE PEDAL REMOVAL/INSTALLATION.)
3. Gently depress the pedal by hand until resistance is felt, and check the pedal play.

Pedal play

4—12 mm {0.16—0.47 in}



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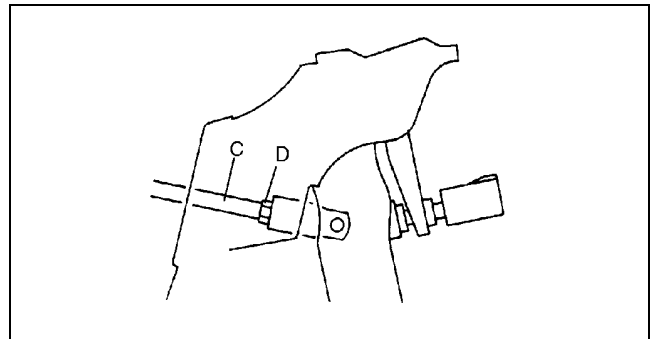
Brake Pedal Play Adjustment

1. Remove the spring pin and clevis pin. (See 04-11-5 BRAKE PEDAL REMOVAL/INSTALLATION.)
2. Loosen locknut D and turn rod C to align the holes in the fork and in the pedal.
3. Install the clevis pin and the spring pin.
4. Tighten locknut D.

Tightening torque

24—34 N·m {2.4—3.5 kgf·m, 18—25 ft·lbf}

5. Check the pedal height and the brake light operation.



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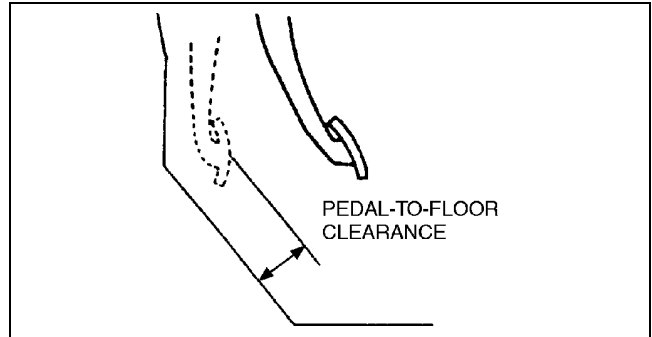
Pedal-to-floor Clearance Inspection

1. Start the engine and depress the brake pedal with a force of **588 N {60 kgf, 132 lbf}**
2. Verify that the distance from the floor panel to the pedal pad center is as specified when the pedal is depressed.
 - If the distance is less than specified, check for the air in brake system.

Specification

ZM : 88 mm {3.5 in} min.

FS : 84 mm {3.3 in} min.



X3U411WA5

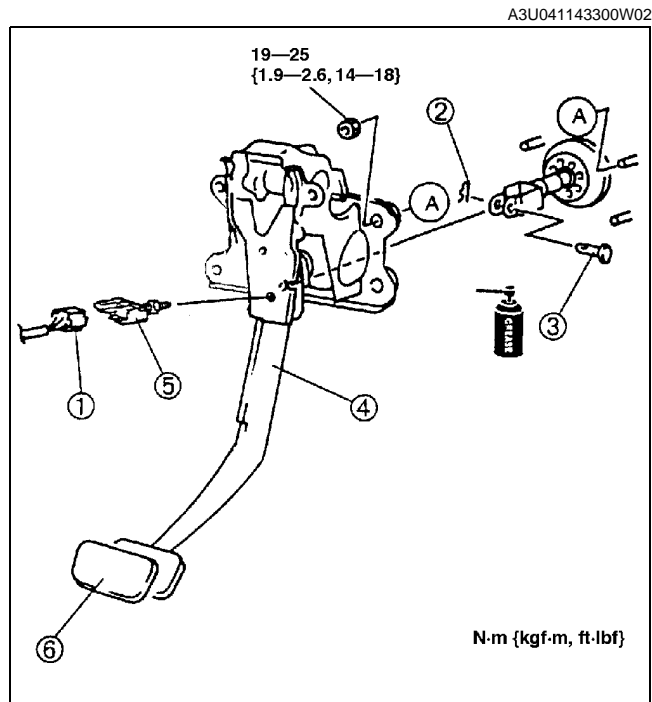
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BRAKE PEDAL REMOVAL/INSTALLATION

1. Remove in the order indicated in the table.

1	Brake switch connector
2	Spring pin
3	Clevis pin
4	Brake pedal
5	Brake switch
6	Pedal pad

2. Install in the reverse order of removal.



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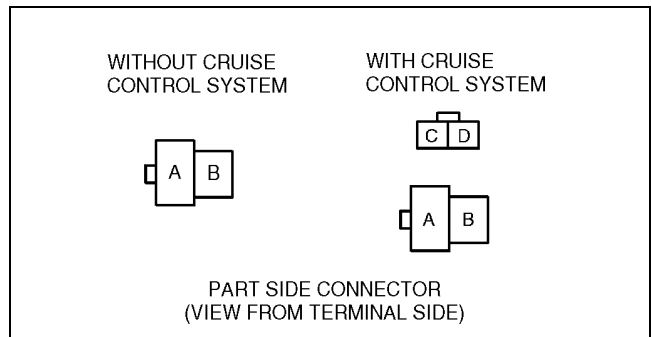
BRAKE SWITCH INSPECTION

1. Disconnect the brake switch connector.
2. Inspect for continuity between the terminals of the brake switch connector using the ohmmeter.
 - If not as specified, replace the brake switch.

○—○ : Continuity

Condition	Terminal			
	A	B	C	D
Brake pedal is depressed	○—○			
Brake pedal is not depressed			○—○	

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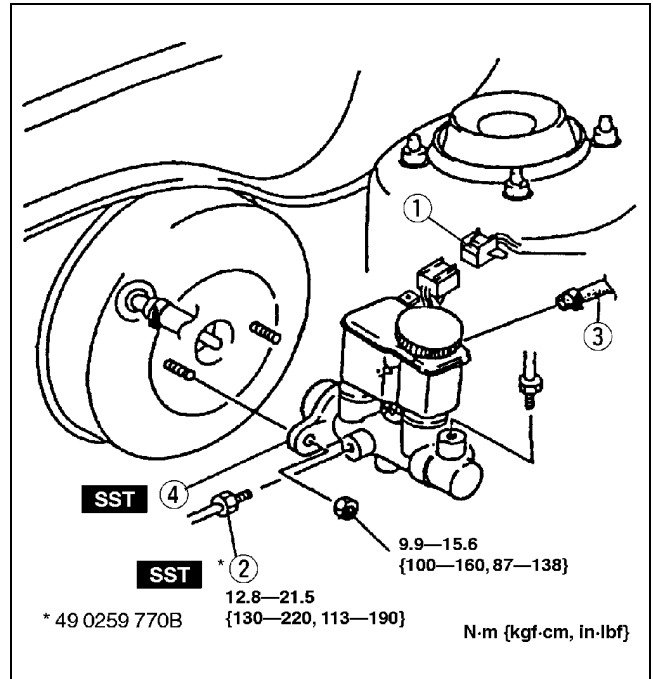
MASTER CYLINDER REMOVAL/INSTALLATION

A3U041143400W01

1. Remove in the order indicated in the table.

1	Brake fluid level sensor connector
2	Brake pipe
3	Hose (MTX)
4	Master cylinder (See 04-11-6 Master Cylinder Installation Note)

2. Install in the reverse order of removal.



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Master Cylinder Installation Note

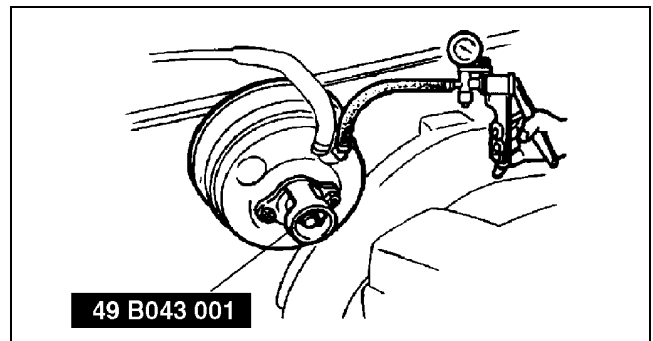
FS

1. Turn the nut of the **SST** clockwise to fully retract the **SST** gauge rod. Attach the **SST** to the power brake unit.

Tightening torque

9.9—15 N·m {1.0—1.6 kgf·m, 7.3—11 ft·lbf}

2. Apply a **66.7 kPa {500 mmHg, 19.7 inHg}** vacuum by using a vacuum pump.

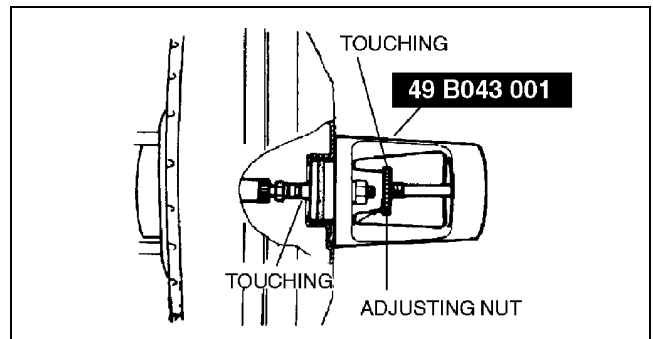


Z5U0411W130

- Turn the adjusting nut of the **SST** counterclockwise until the gauge rod just contacts the push rod end of the power brake unit. Push lightly on the end of the gauge rod to be sure it is seated. Verify that there is no gap between the adjusting nut and **SST** body.
- Remove the **SST** from the power brake unit without disturbing the adjusting nut. Set the **SST** onto the master cylinder as shown in the figure.

Caution

- When pushing the **SST** gauge rod into the master cylinder piston, only use enough pressure to push the rod to the bottom of the piston. If too much pressure is applied, a false reading will occur.

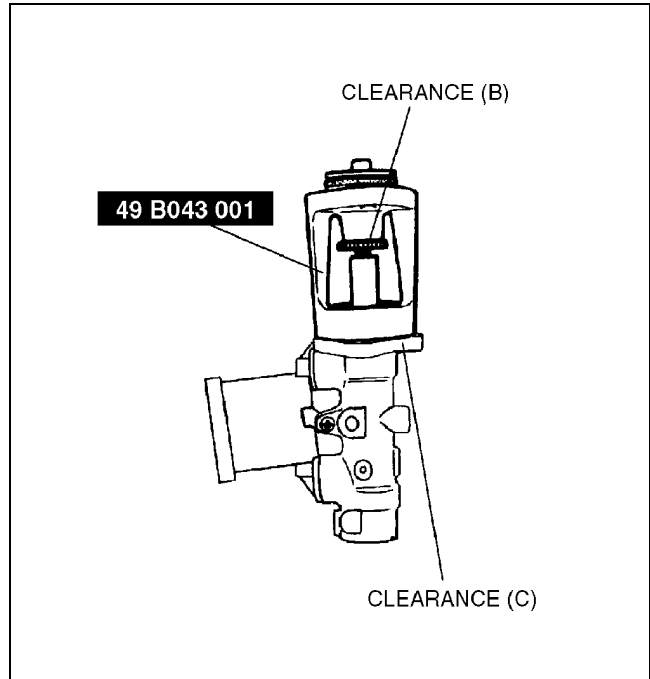


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5. Push lightly on the end of the **SST** gauge rod to be sure it has contacted the bottom of the master cylinder piston, but do not push so hard that the piston moves. Note any clearance between the **SST** body and the adjusting nut (clearance B) or between the body and the master cylinder (clearance C).

Measurement	Push rod
Clearance at (B)	Too short
Clearance at (C)	Too long
No clearance at (B) or (C)	



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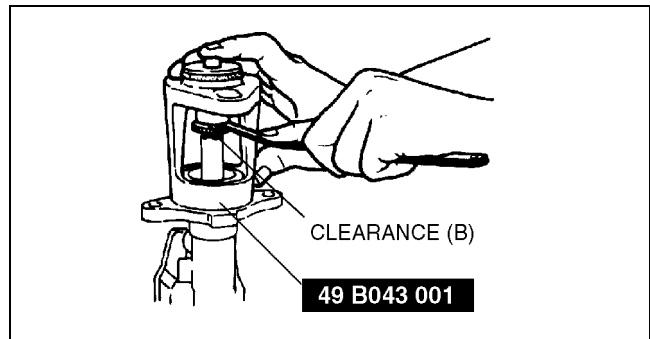
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Adjusting the push rod clearance at B

Note

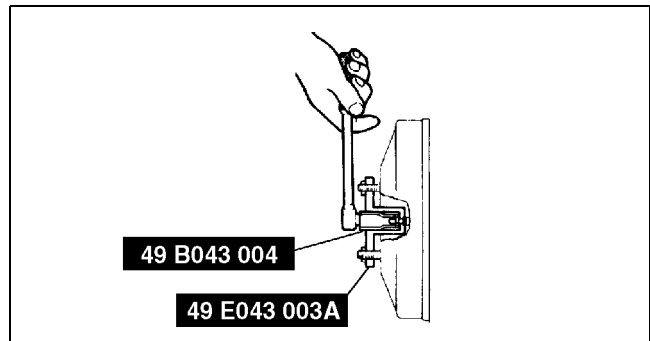
- The threads of the push rod are specially designed so that the bolt becomes harder to turn past a certain point. This is to prevent the bolt from coming loose. Turn the bolt only within this range when adjusting.

- Push lightly on the end of the **SST** gauge rod, and measure the clearance between the adjusting nut and the **SST** body.



Z5U0411W133

- Using the **SST**, turn the nut to lengthen the power brake unit push rod an amount equal to the sum subtracting **0.1—0.4 mm {0.004—0.016 in}** from the clearance measured at B.



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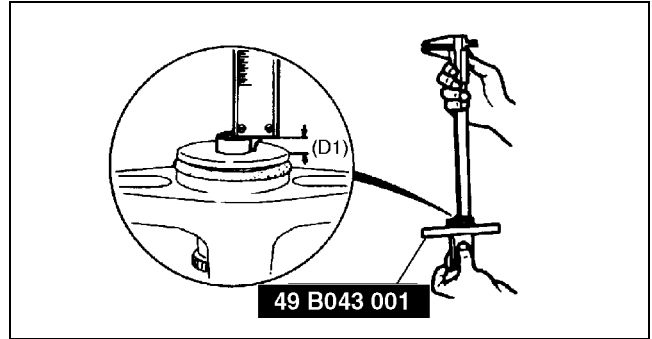
CONVENTIONAL BRAKE SYSTEM

Adjusting the push rod clearance at C or no clearance at B or C

Note

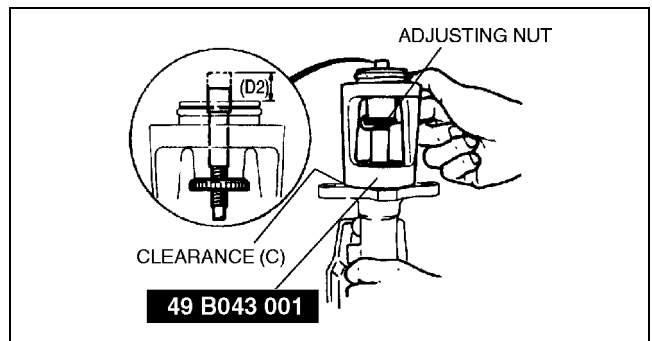
- The threads of the push rod are specially designed so that the bolt becomes harder to turn past a certain point. This is to prevent the bolt from coming loose. Turn the bolt only within this range when adjusting.

1. Measure and record height D1 of the gauge rod.
2. Turn the adjusting nut until the **SST** body sets evenly on the master cylinder. (Turn only enough for the body to touch.)



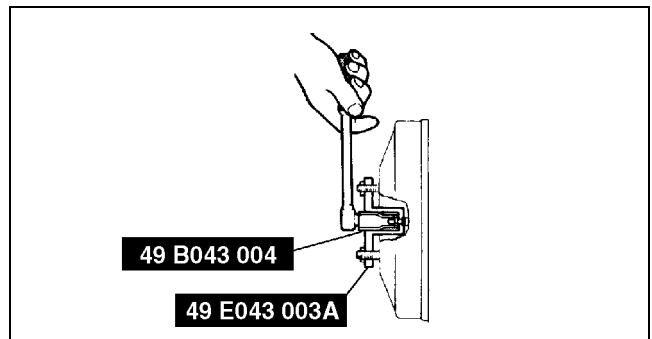
Z5U0411W135

3. Measure and record height D2 of the gauge rod.



Z5U0411W136

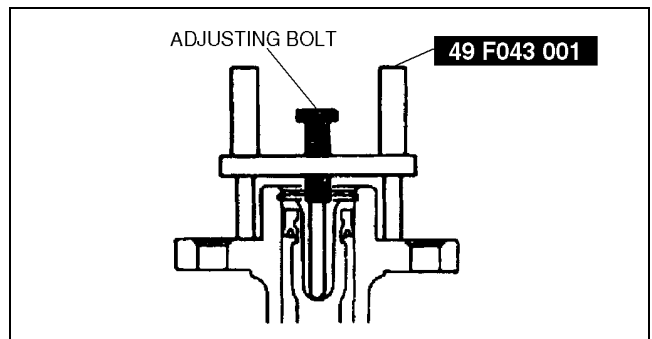
4. Subtract D1 from D2 and add **0.1—0.4 mm {0.004—0.016 in}**. Using the **SST**, turn the nut to shorten the power booster push rod an amount equal to the sum.



Z5U0411W134

ZM

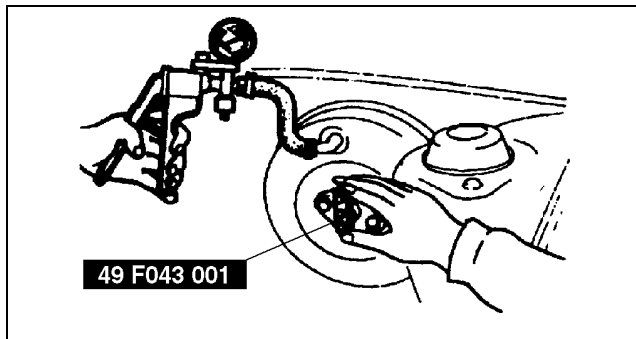
1. Place the **SST** atop the master cylinder. Turn the adjusting bolt until it touches the bottom of the push rod hole in the piston.
2. Apply **66.7 kPa {500 mmHg, 19.7 inHg}** vacuum to the power brake unit using a vacuum pump.



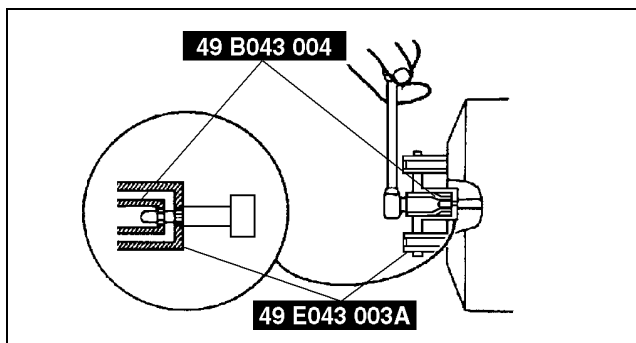
X3U411WAA

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3. Invert the **SST** used in Step 1 and place it on the power brake unit.
4. Measure the clearance between the end of the **SST** and the push rod of the power brake unit.
 - If it is not **0.1—0.4 mm {0.004—0.016 in}**, loosen the push rod locknut and turn the push rod to adjust it using the **SSTs**.



X3U411WAB



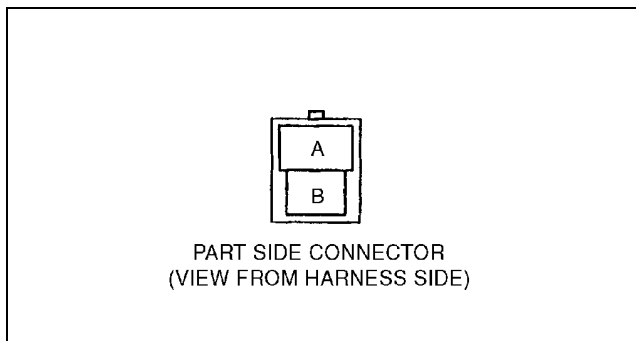
X3U411WAC

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FLUID LEVEL SENSOR INSPECTION

1. Disconnect the sensor connector.
2. Connect an ohmmeter to the connector.
3. Starting with the fluid level above MIN, verify that there is no continuity.
4. Remove the brake fluid and verify that there is continuity when the level is below MIN.
 - If not as specified, replace the sensor.

A3U041143540W01



Y3U411WA1

○—○ : Continuity

Fluid level	Terminal	
	A	B
Below MIN	○—○	○—○
Above MIN		

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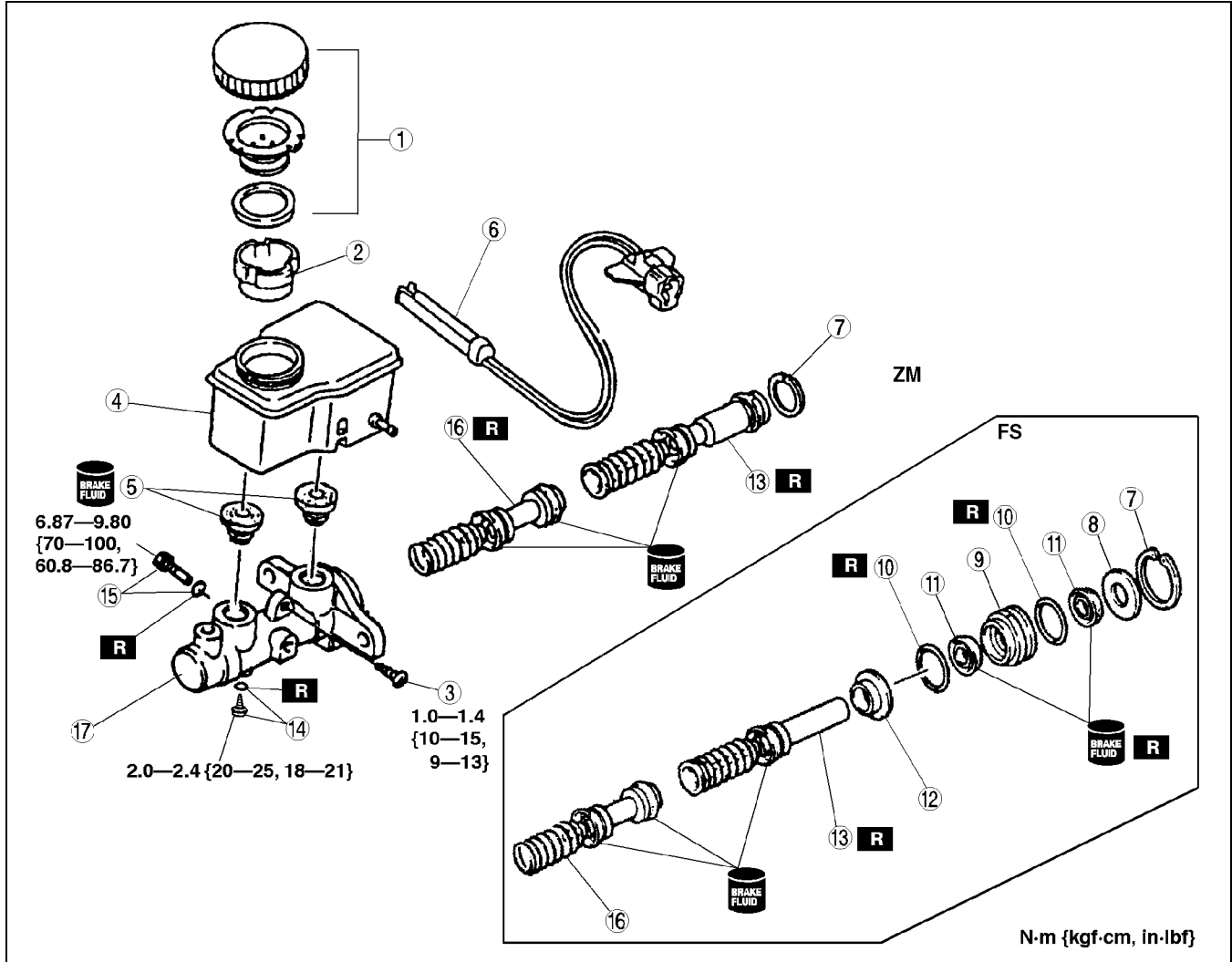
MASTER CYLINDER DISASSEMBLY/ASSEMBLY

A3U041143400W02

Caution

- If the master cylinder body is damaged, replace the unit as an assembly. When securing the master cylinder in a vise, tighten only the flange of the master cylinder.

1. Disassemble in the order indicated in the table.
2. Assemble in the reverse order of disassembly.



Z3U0411W011

1	Cap set
2	Float
3	Screw
4	Reservoir
5	Joint bushing
6	Fluid level sensor
7	Snap ring
8	Spacer
9	Piston guide
10	O-ring

11	Cup
12	Primary piston stopper
13	Primary piston
14	Stop screw and O-ring (without ABS) (See 04-11-11 Stop Screw and O-ring (without ABS) Assembly Note)
15	Stop pin and O-ring (with ABS) (See 04-11-11 Stop Pin and O-ring (with ABS) Assembly Note)
16	Secondary piston
17	Master cylinder body

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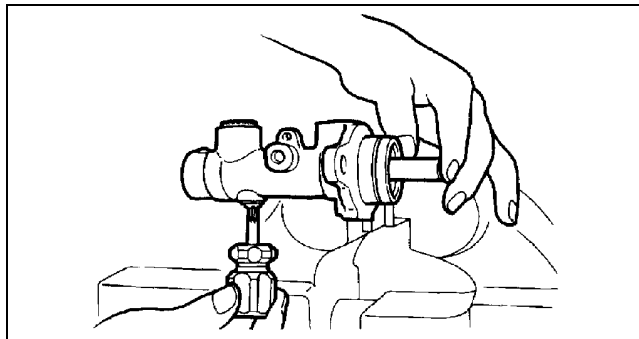
Stop Screw and O-ring (without ABS) Assembly Note

1. Install the secondary piston and primary piston.
2. Install the new O-ring onto the stop screw.
3. Push the primary piston assembly in full.
4. Install and tighten the stop screw.

Tightening torque

2.0—2.4 N·m {20—25 kgf·cm, 18—21 in·lbf}

5. Push and release the secondary piston component to verify that it is held properly by the stop screw.



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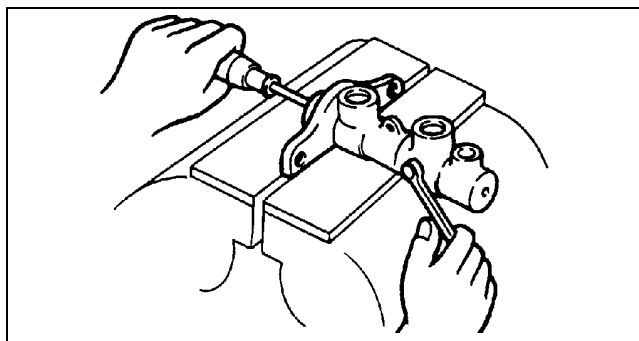
Stop Pin and O-ring (with ABS) Assembly Note

1. Install the secondary piston with the piston hole facing the stop pin and primary piston.
2. Install the new O-ring onto the stop pin.
3. Push the primary piston assembly in full.
4. Install and tighten the stop pin.

Tightening torque

6.87—9.80 N·m {70—100 kgf·cm, 60.8—86.7 in·lbf}

5. Push and release the secondary piston component to verify that it is held properly by the stop pin.



X3U411WAH

POWER BRAKE UNIT INSPECTION

Power Brake Unit Function Check

Simple method

Note

- Replace power brake unit component if necessary.

Step 1

1. With engine stopped, depress the pedal a few times.
2. With pedal depressed, start the engine.
 - If the pedal moves down slightly, immediately after engine starts, the unit is operating.
 - If not as specified, inspect for damage on the check valve or vacuum hose, and examine the installation. Repair if necessary, and inspect it again.

Step 2

1. Start the engine.
2. Stop the engine after it has run for **1 or 2 minutes**.
3. Depress the pedal with usual force.
 - If the first pedal stroke is long and becomes shorter with subsequent strokes, the unit is operating.
 - If not as specified, inspect for damage on the check valve or vacuum hose, and examine the installation. Repair if necessary, and inspect it again.

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CONVENTIONAL BRAKE SYSTEM

Step 3

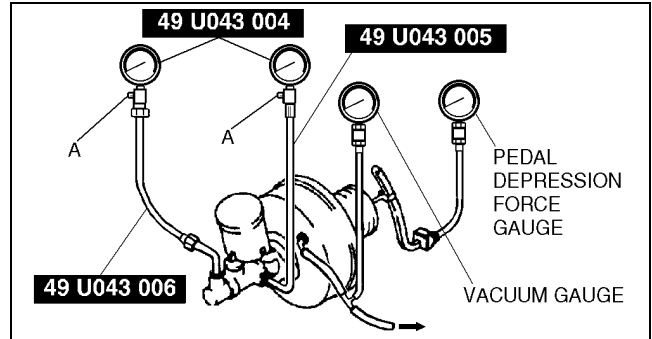
1. Start the engine.
2. Depress the pedal with usual force.
3. Stop the engine with the pedal held depressed.
4. Hold the pedal down for **about 30 seconds**.
 - If the pedal height does not change, the unit is operating.
 - If not as specified, inspect for damage on the check valve or vacuum hose, and examine the installation. Repair if necessary, and inspect it again.

Inspection using the testers

1. Connect the **SSTs**, vacuum gauge, and pedal depression force gauge as shown in the figure.

Note

- Use commercially available gauges and pedal depression force gauge.
 - Bleed the air from the **SST** at gauge A.
2. After bleeding the air from the **SST**, conduct the test as described in the following steps.



A3U0411W002

Checking for vacuum loss (unloaded condition)

1. Start the engine.
2. Stop the engine when the vacuum gauge reading reaches **66.7 kPa {500 mmHg, 19.7 inHg}**.
3. Observe the vacuum gauge for **15 seconds**.
 - If the gauge shows **63.4—66.6 kPa {475—500 mmHg, 18.8—19.6 inHg}**, the unit is operating.
 - If a problem is found, inspect for damage on the check valve or vacuum hose, and examine the installation. Repair if necessary, and inspect it again.

(loaded condition)

1. Start the engine.
2. Depress the brake pedal with a force of **200 N {20 kgf, 44 lbf}**.
3. With the brake pedal depressed, stop the engine when the vacuum gauge reading reaches **66.7 kPa {500 mmHg, 19.7 inHg}**.
4. Observe the vacuum gauge for **15 seconds**.
 - If the gauge shows **63.4—66.6 kPa {475—500 mmHg, 18.8—19.6 inHg}**, the unit is operating.
 - If a problem is found, inspect for damage on the check valve or vacuum hose, and examine the installation. Repair if necessary, and inspect it again.

Checking for hydraulic pressure

1. When the engine is stopped (vacuum **0 kPa {0 mmHg, 0 inHg}**) and the fluid pressure is within the specification, the unit is operating.

Engine type	Pedal force	Fluid pressure
ZM	200 N {20 kgf, 44 lbf}	650 kPa {7 kgf/cm ² , 94 psi} min.
FS		600 kPa {6 kgf/cm ² , 87 psi} min.

2. Start the engine. Depress the brake pedal when the vacuum reaches **66.7 kPa {500 mmHg, 19.7 inHg}**.
 - If the fluid pressure is within the specification, the unit is operating.
 - If the fluid pressure is not as specified, inspect for damage on the check valve or vacuum hose, and fluid leakage of the hydraulic line. Repair as necessary, and inspect again.

Engine type	Pedal force	Fluid pressure
ZM	200 N {20 kgf, 44 lbf}	6,500 kPa {66 kgf/cm ² , 943 psi} min.
FS		7,200 kPa {73 kgf/cm ² , 1,044 psi} min.

CONVENTIONAL BRAKE SYSTEM

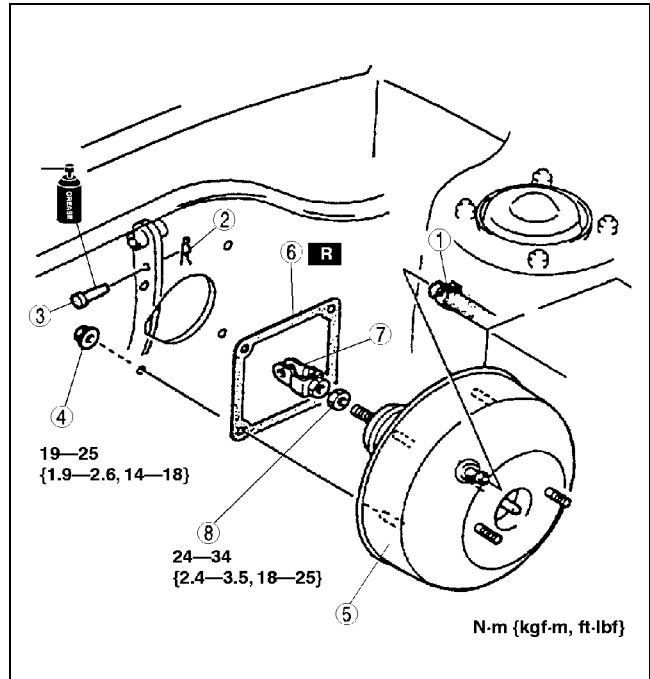
POWER BRAKE UNIT REMOVAL/INSTALLATION

A3U041143800W02

1. Remove the battery and battery cover.
2. Remove the master cylinder. (See 04-11-6 MASTER CYLINDER REMOVAL/INSTALLATION.)
3. Remove in the order indicated in the table.

1	Vacuum hose
2	Snap pin
3	Clevis pin
4	Nut
5	Power brake unit
6	Gasket
7	Fork
8	Nut

4. Install in the reverse order of removal.



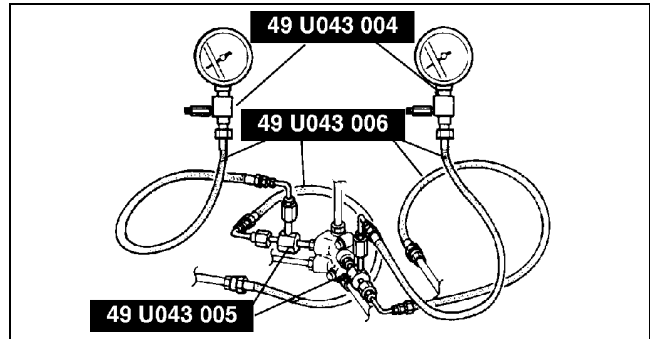
X3U411WAK

04-11

DUAL PROPORTIONING VALVE (WITHOUT ABS) INSPECTION

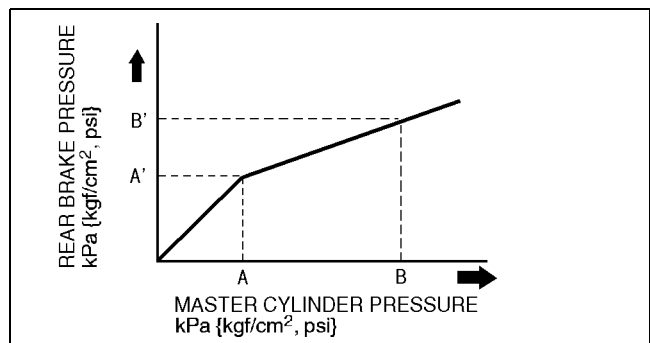
A3U041143900W01

1. Connect the **SSTs** to the brake pipes as shown in the figure.
2. Bleed the air from the brake system.



X3U411WAL

3. Measure the fluid pressure of the master cylinder and the rear brake.
 - If not within the specification, replace the dual proportioning valve.



A3U0411W003

Fluid pressure

kPa {kgf/cm², psi}

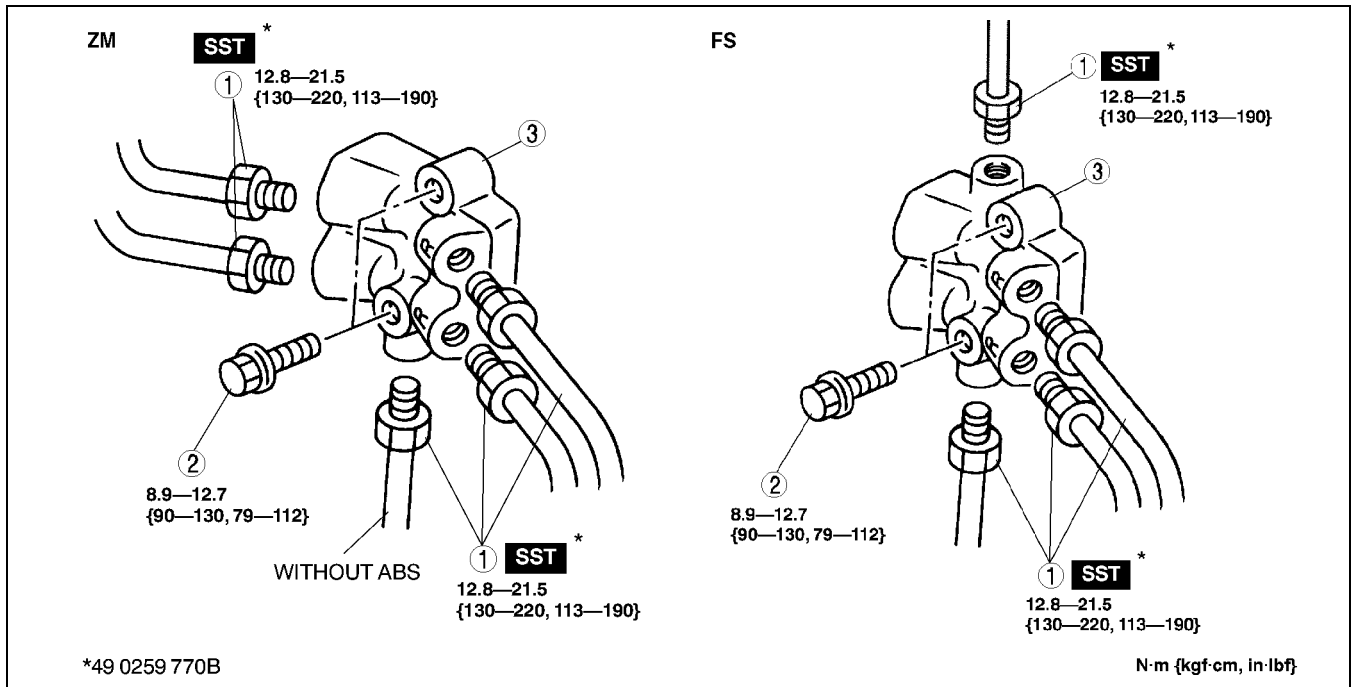
Engine type	A	A'	B	B'
ZM	2,900 {30, 430}	2,900 {30, 430}±200 {2, 30}	5,900 {60, 850}	3,800 {39, 550}±300 {3, 40}
FS	3,400 {35, 500}	3,400 {35, 500}±300 {3, 40}	5,900 {60, 850}	4,200 {42.5, 600}±400 {4, 60}

CONVENTIONAL BRAKE SYSTEM

DUAL PROPORTIONING VALVE (WITHOUT ABS) AND BRAKE PIPE JOINT (WITH ABS) REPLACEMENT

A3U041143900W02

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.



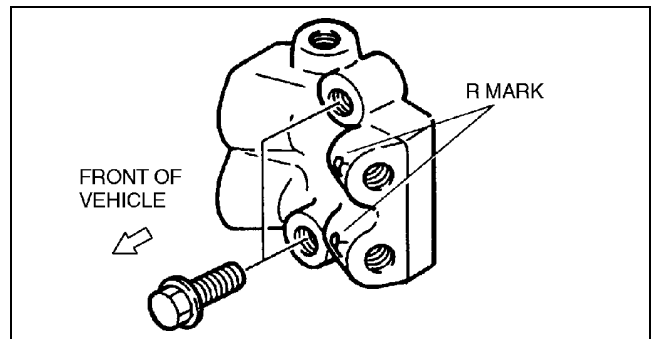
Z3U0411W001

1	Brake pipe
2	Bolt

3	Dual proportioning valve (without ABS) or brake pipe joint (with ABS) (See 04-11-14 Dual Proportioning Valve (Without ABS) or Brake Pipe Joint (With ABS) Installation Note)
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Dual Proportioning Valve (Without ABS) or Brake Pipe Joint (With ABS) Installation Note

1. Install the dual proportioning valve so that the R mark faces the left side of the vehicle.



X3U411WAP

FRONT BRAKE (DISC) INSPECTION

Brake Judder Repair Hint

Description

1. Brake judder concern has the following 3 characteristics:

Steering wheel vibration

1. Steering wheel vibrates in the direction of its rotation. This characteristic is most noticeable when applying brakes at a vehicle speed of **100—140 km/h {62.1—86.8 mph}**.

Floor vibration

1. When applying brakes, the vehicle body shakes back and forth. The seriousness of shake is not influenced by vehicle speed.

A3U041133980W01

CONVENTIONAL BRAKE SYSTEM

Brake pedal vibration

1. When applying brakes, a pulsating force tries to push the brake pad back occurs. The pulsation is transmitted to the brake pedal.
2. The following are the main possible causes of brake judder:

Due to an excessive runout (side-to-side wobble) of disc plate, the thickness of disc plate is uneven.

1. If the runout is **more than 0.05 mm {0.002 in} 10 mm {0.39 in}** from the disc plate edge, an uneven wear occurs on the disc plate because the pad contacts the plate unevenly.
2. If the runout is **less than 0.05 mm {0.002 in}**, uneven wear does not occur.

The disc plate is deformed by heat.

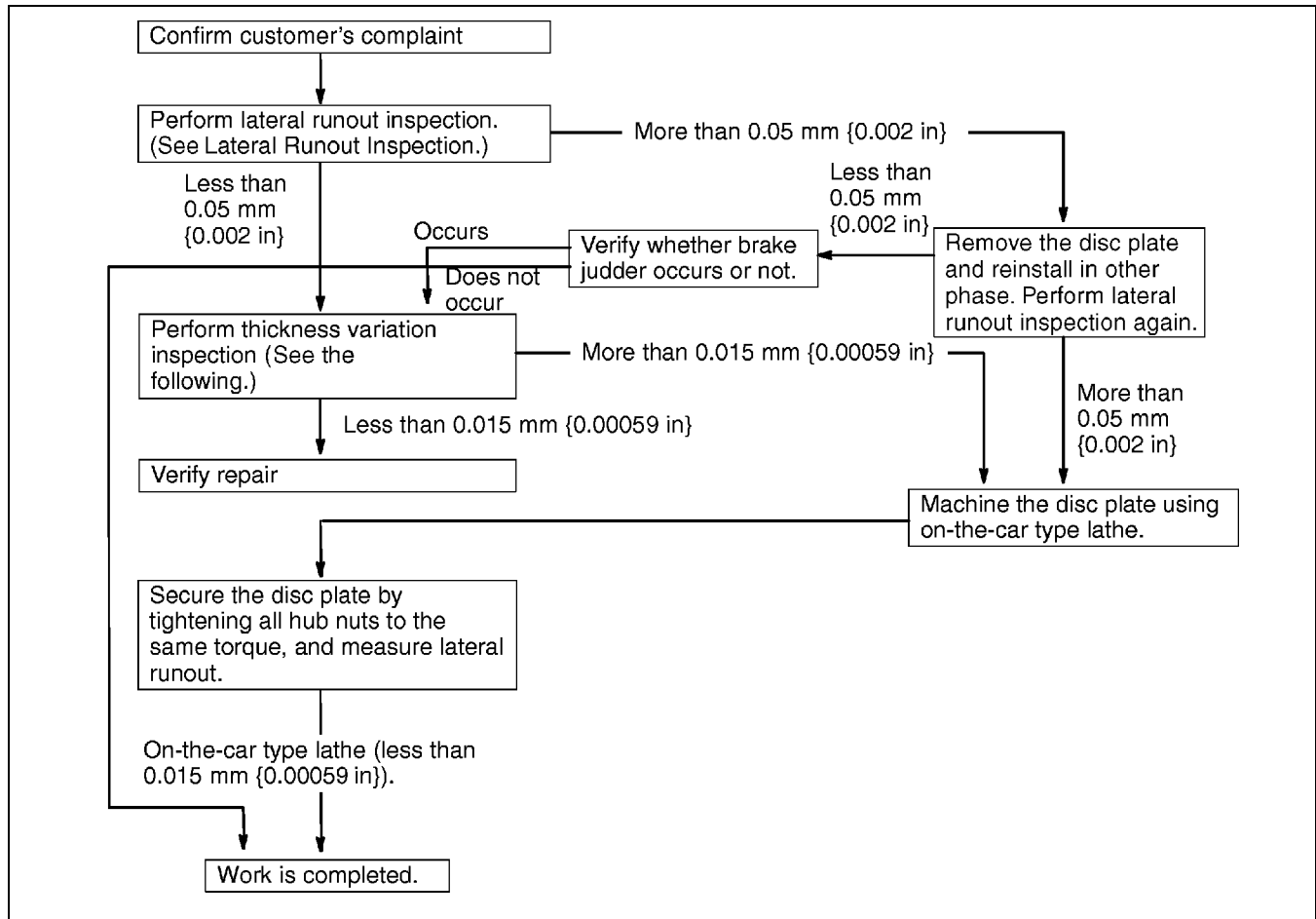
1. Repeated panic braking may raise the temperature in some portions of disc plate by **approximately 1,000 °C {1,832 °F}**. This results in deformed disc plate.

Due to corrosion, the thickness and friction coefficient of disc plate change.

1. If a vehicle is parked under damp conditions for a long time, corrosion occurs on the friction surface of disc plate.
2. The thickness of corrosion is uneven and sometimes appears like a wave pattern, which changes the friction coefficient and causes a reaction force.

04-11

Inspection and repair procedure



Y3U411WA4

CONVENTIONAL BRAKE SYSTEM

Lateral runout inspection

1. To secure the disc plate and the hub, tighten the hub nuts upside down or insert a washer (thickness **10 mm {0.39 in}**, inner diameter **more than 12 mm {0.47 in}**) between the hub bolt and the hub nut.

Note

- The component parts of the **SST** (49 B017 001 or 49 G019 003) can be used as a suitable washer.

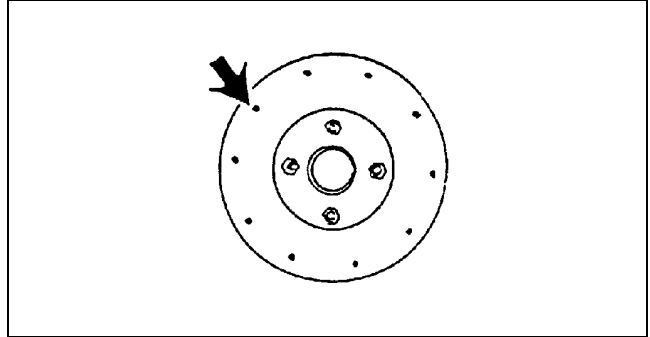
2. After tightening all the hub nuts to the same torque, put the dial gauge on the friction surface of disc plate **10 mm {0.39 in}** from the disc plate edge.
3. Rotate the disc plate one time and measure the runout.

Runout limit

0.05 mm {0.002 in}

Thickness variation inspection

1. Clean the disc plate-to-pad friction surface using a brake cleaner.
2. Measure the points indicated in the illustration using a caliper (micrometer).
3. Subtract the minimum value from the maximum, and if the result is not within specification, machine the disc plate using a lathe.



X3U411WAR

Thickness variation limit

0.015 mm {0.00059 in}

Warning

- **Do not exceed minimum disc plate thickness.**

Disc Plate Thickness Inspection

Caution

- **Excessive runout may result if the disc plate is removed from the vehicle then machined. Machine the disc plate while installed on the vehicle.**

1. Measure the thickness of the disc plate.
 - If the thickness is not within the specification, replace the disc plate.

Minimum

ZM: 20 mm {0.78 in}

FS: 22 mm {0.87 in}

Minimum thickness after machining using a brake lathe on-vehicle

ZM: 20.8 mm {0.82 in}

FS: 22.8 mm {0.90 in}

Disc Pad Thickness Inspection

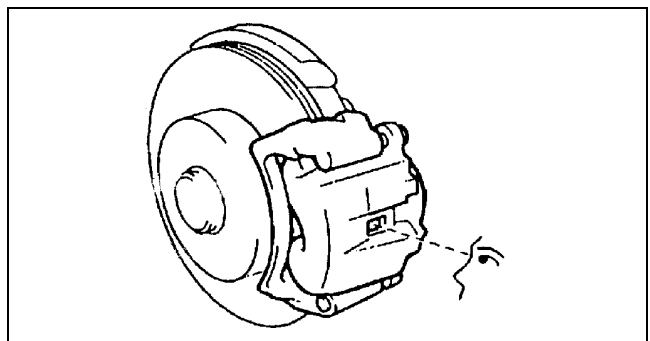
1. Jack up the front of the vehicle and support it with safety stands.
2. Remove the wheel and tires.
3. Verify the remaining thickness of the pads.

Minimum thickness

ZM: 1.5 mm {0.059 in} min.

FS: 2.0 mm {0.079 in} min.

4. Replace the pads as a set: right and left wheels, if either one is at or less than the minimum thickness.



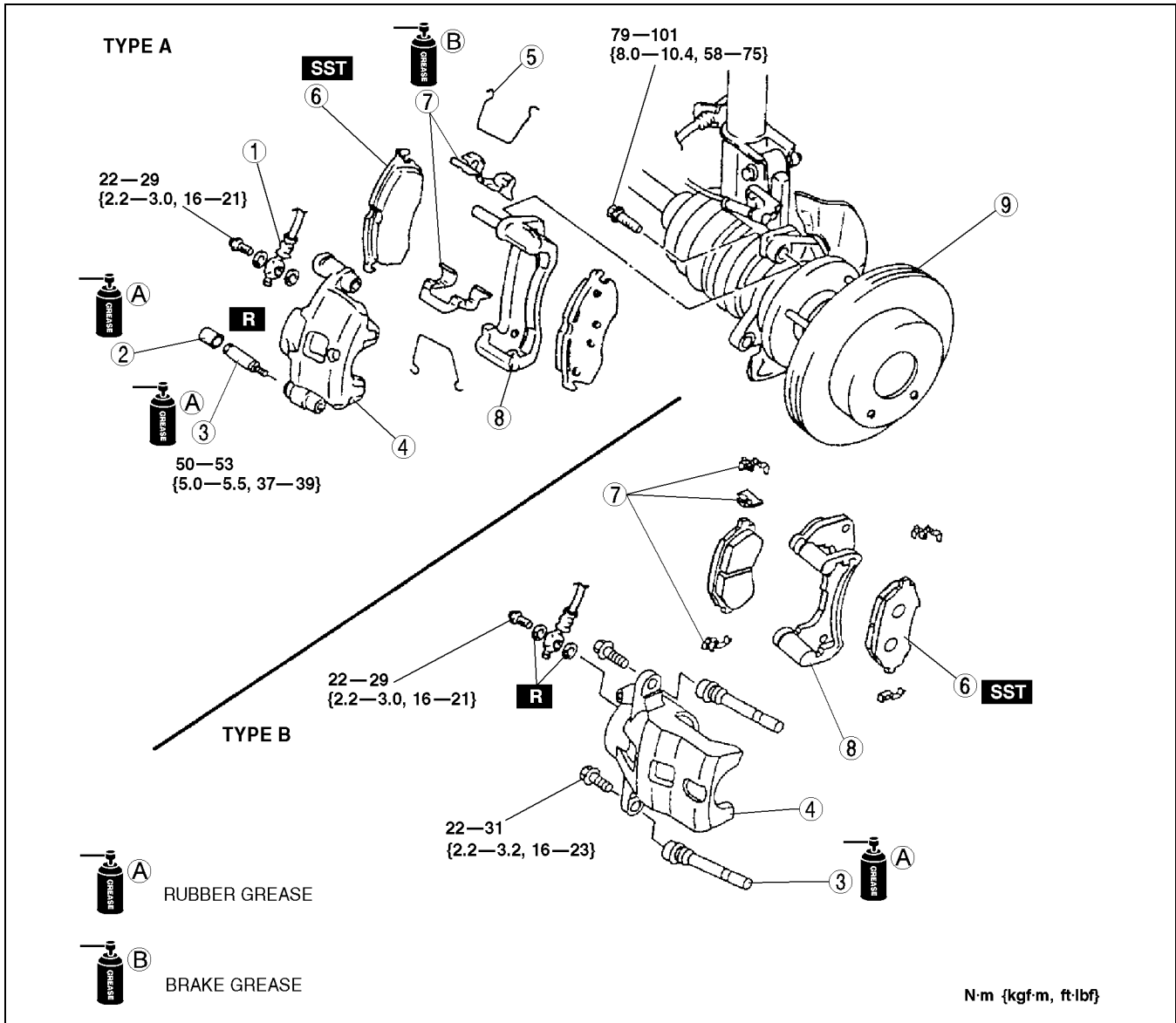
X3U411WAS

CONVENTIONAL BRAKE SYSTEM

FRONT BRAKE (DISC) REMOVAL/INSTALLATION

A3U041133980W02

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.
3. After installation, depress the pedal a few times, rotate the wheel by hand, and verify that the brake does not drag.



04-11

Z3U0411W003

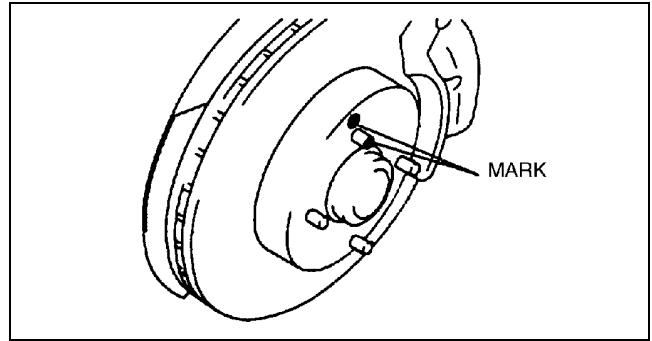
1	Flexible hose
2	Cap (type A only)
3	Guide pin
4	Caliper
5	M-spring (type A only)

6	Disc pad (See 04-11-18 Disc Pad Installation Note)
7	Guide plate
8	Mounting support
9	Disc plate (See 04-11-18 Disc Plate Removal Note) (See 04-11-18 Disc Plate Installation Note)

CONVENTIONAL BRAKE SYSTEM

Disc Plate Removal Note

1. Mark the wheel hub bolt and disc plate before removal for reference during installation.



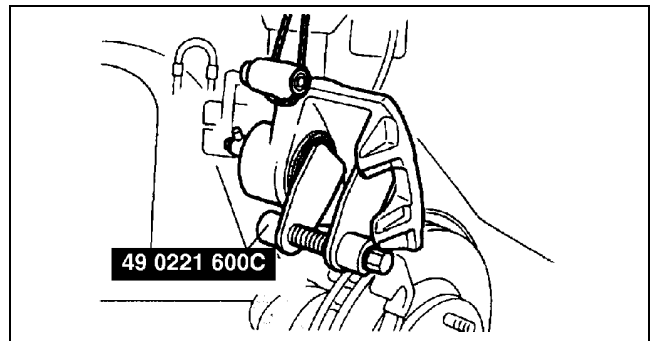
X3U411WAU

Disc Plate Installation Note

1. Remove any rust or grime on the contact face of the disc plate and wheel hub.
2. Install the disc plate and align the marks made before removal.

Disc Pad Installation Note

1. Push the piston fully inward using the **SST**.
2. Install the disc pad.



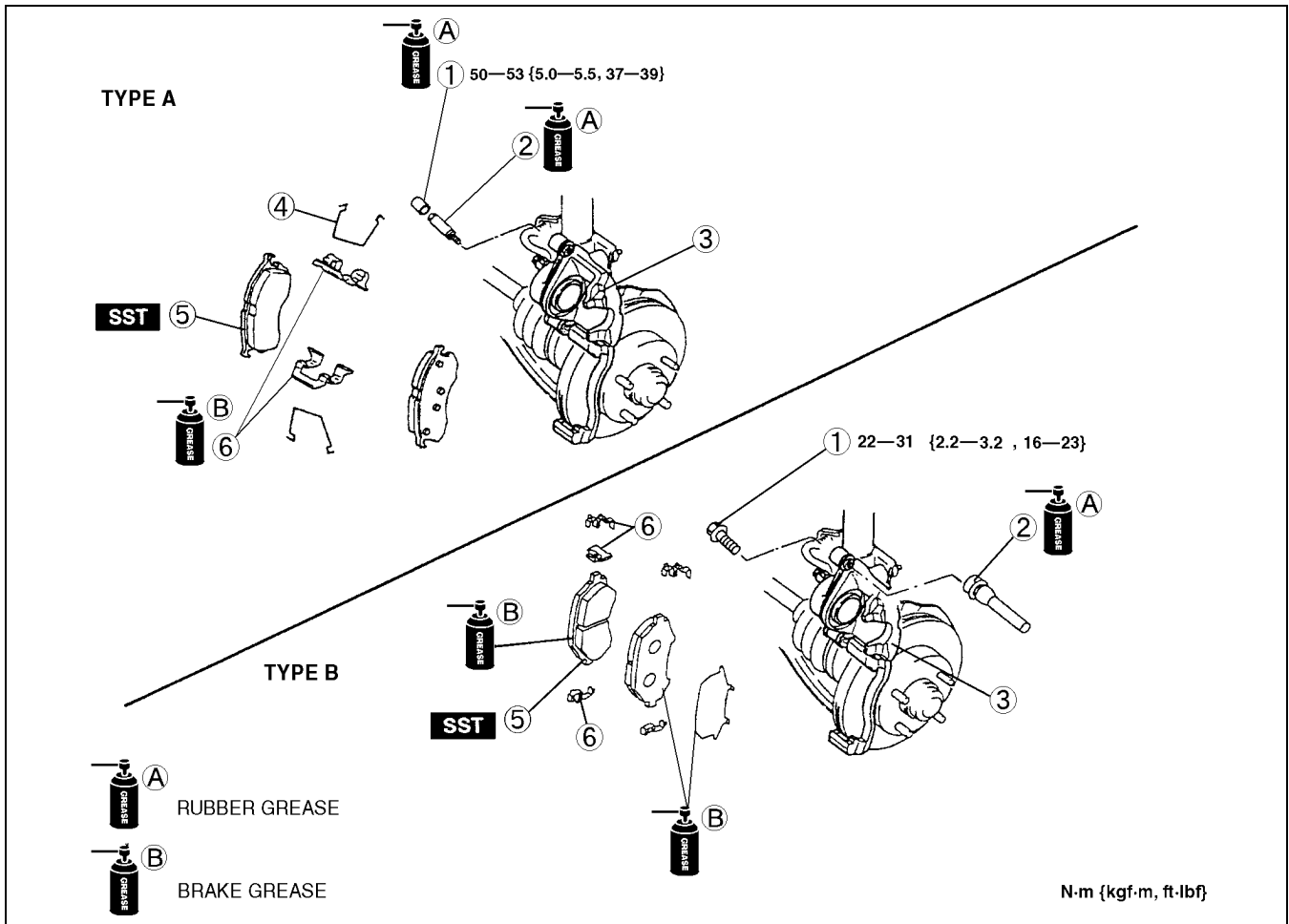
X3U411WAV

CONVENTIONAL BRAKE SYSTEM

DISC PAD (FRONT) REPLACEMENT

A3U041133630W01

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.



04-11

Z3U0411W004

1	Cap (type A), bolt (type B)
2	Guide pin
3	Caliper

4	M-spring (type A only)
5	Disc pad (See 04-11-18 Disc Pad Installation Note)
6	Guide plate

CONVENTIONAL BRAKE SYSTEM

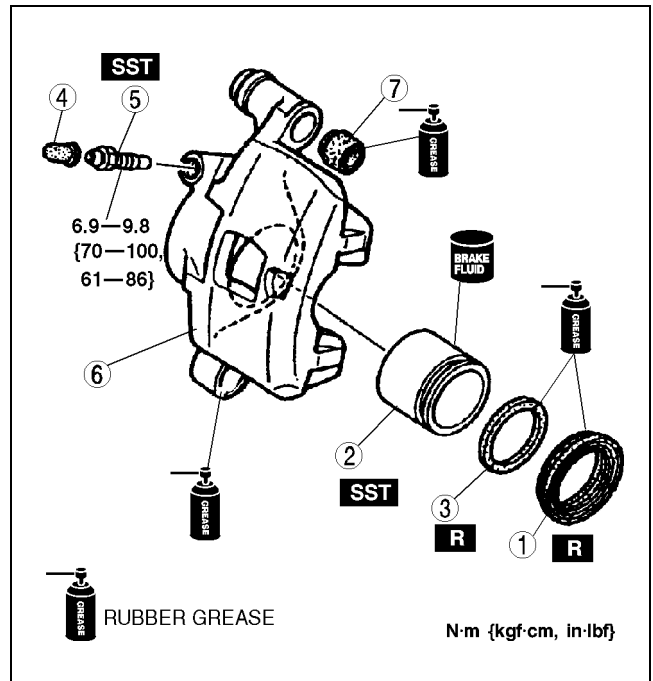
CALIPER (FRONT) DISASSEMBLY/ASSEMBLY

A3U041133990W01

1. Disassemble in the order indicated in the table.

1	Dust seal
2	Piston (See 04-11-20 Piston Disassembly Note)
3	Piston seal (See 04-11-20 Piston Seal Disassembly Note)
4	Bleeder cap
5	Bleeder screw (See 04-11-21 Bleeder Screw Assembly Note)
6	Caliper body
7	Boot

2. Assemble in the reverse order of removal.



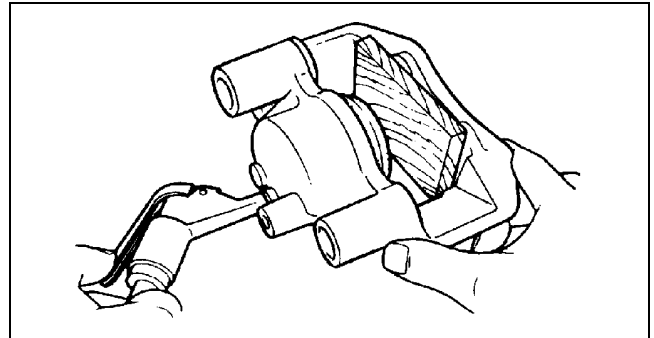
Z3U0411W005

Piston Disassembly Note

Caution

- Blow the compressed air slowly to prevent the piston from suddenly popping out.

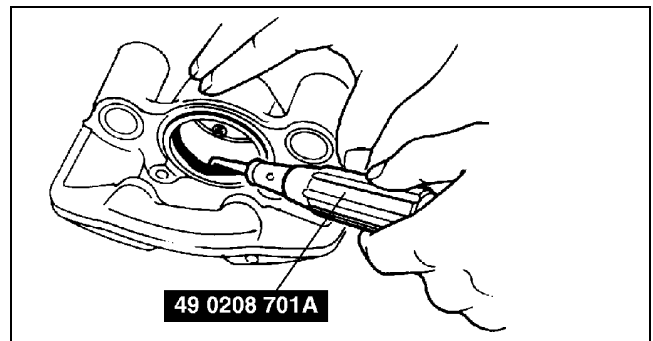
1. Place a piece of wood in the caliper, then blow compressed air through the hole to force the piston out of the caliper.



X3U411WAY

Piston Seal Disassembly Note

1. Remove the piston seal from the brake caliper using the SST.



X3U411WAZ

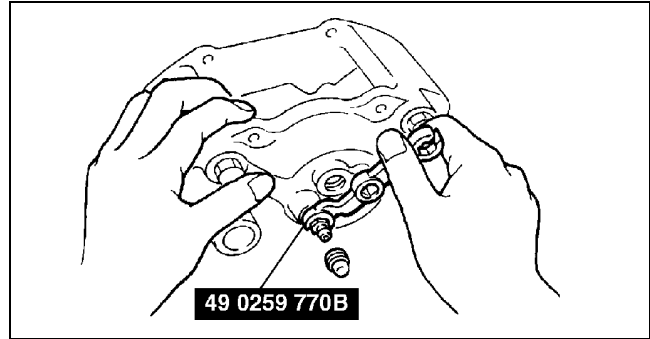
CONVENTIONAL BRAKE SYSTEM

Bleeder Screw Assembly Note

1. Assemble the bleeder screw to the caliper using the **SST**.

Tightening torque

6.9—9.8 N·m {70—100 kgf·cm, 61—86 in·lbf}



X3U411WB0

04-11

REAR BRAKE (DISC) INSPECTION

Brake Judder Repair Hint

(See 04-11-14 Brake Judder Repair Hint.)

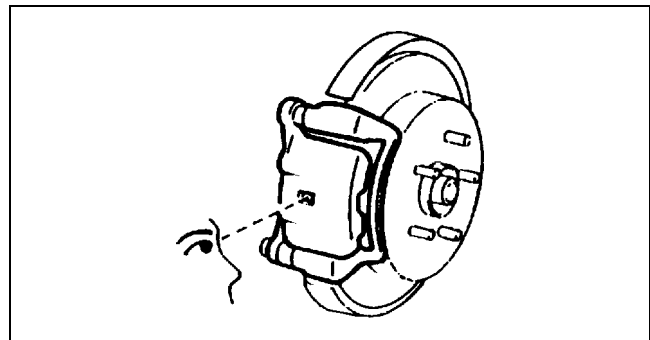
A3U041126980W01

Disc Pad Thickness Inspection

1. Jack up the rear of the vehicle and support it on safety stands.
2. Remove the wheel and tires.
3. Look through the caliper inspection hole and inspect the remaining thickness of the pads.
 - Replace the pads as a set (right and left wheels) if either is less than the minimum thickness.

Minimum thickness

1.0 mm {0.039 in}



W6U411WB7

Disc Plate Thickness Inspection

1. Measure the thickness of the disc plate.
 - If the thickness is not within the specification, replace the disc plate.

Caution

- When it is necessary to machine the disc plate, and the disc plate is removed from the vehicle then machined, excessive runout may result. Machine the disc plate which is installed on the vehicle.

Minimum

8 mm {0.31 in}

Minimum thickness after machining by using a brake lathe on-vehicle

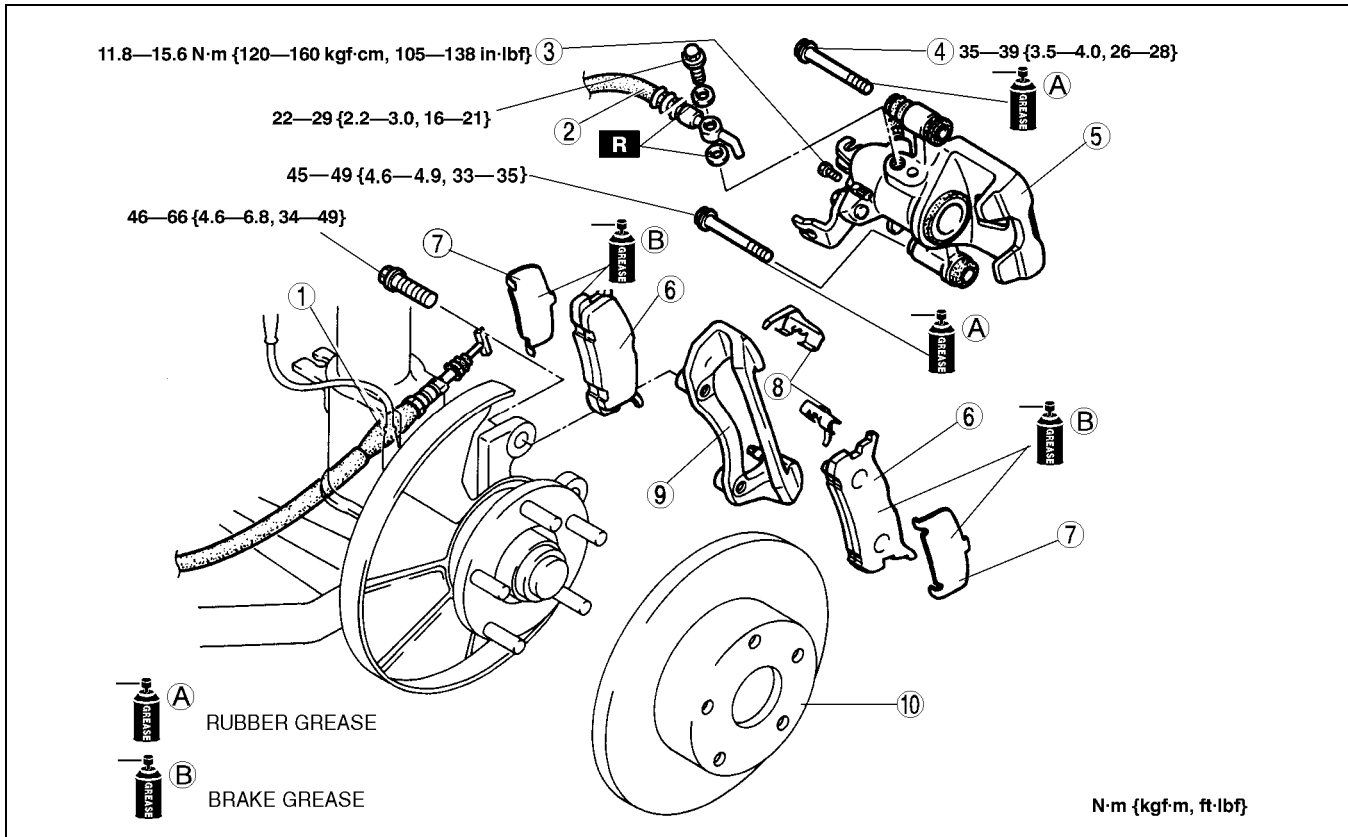
8.8 mm {0.35 in}

CONVENTIONAL BRAKE SYSTEM

A3U041126980W02

REAR BRAKE (DISC) REMOVAL/INSTALLATION

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.
3. After installation, depress the pedal several times, rotate the wheel by hand, and verify that the brake does not drag.



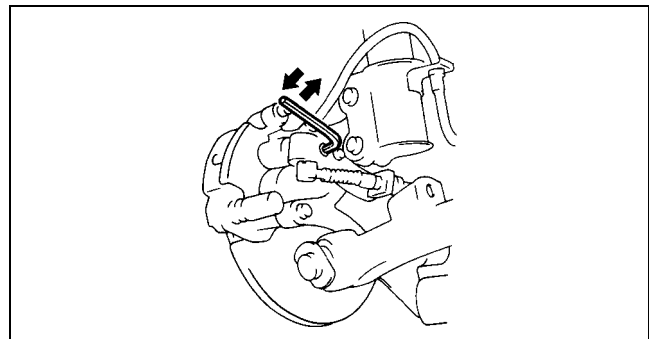
A3U0411W101

1	Parking brake cable, clip
2	Flexible hose
3	Screw plug
4	Lock bolt
5	Caliper
6	Disc pad (See 04-11-22 Disc Pad Installation Note)

7	Shim
8	Guide plate
9	Mounting support
10	Disc plate (See 04-11-18 Disc Plate Removal Note) (See 04-11-18 Disc Plate Installation Note)

Disc Pad Installation Note

1. Turn the manual adjustment gear counterclockwise with an Allen wrench to pull the brake caliper piston inward. (Turn until it stops.)
2. Install the disc pads.
3. Turn the manual adjustment gear clockwise until the brake pads just touch the disc plate. Turn the manual adjustment gear back 1/3-turn.



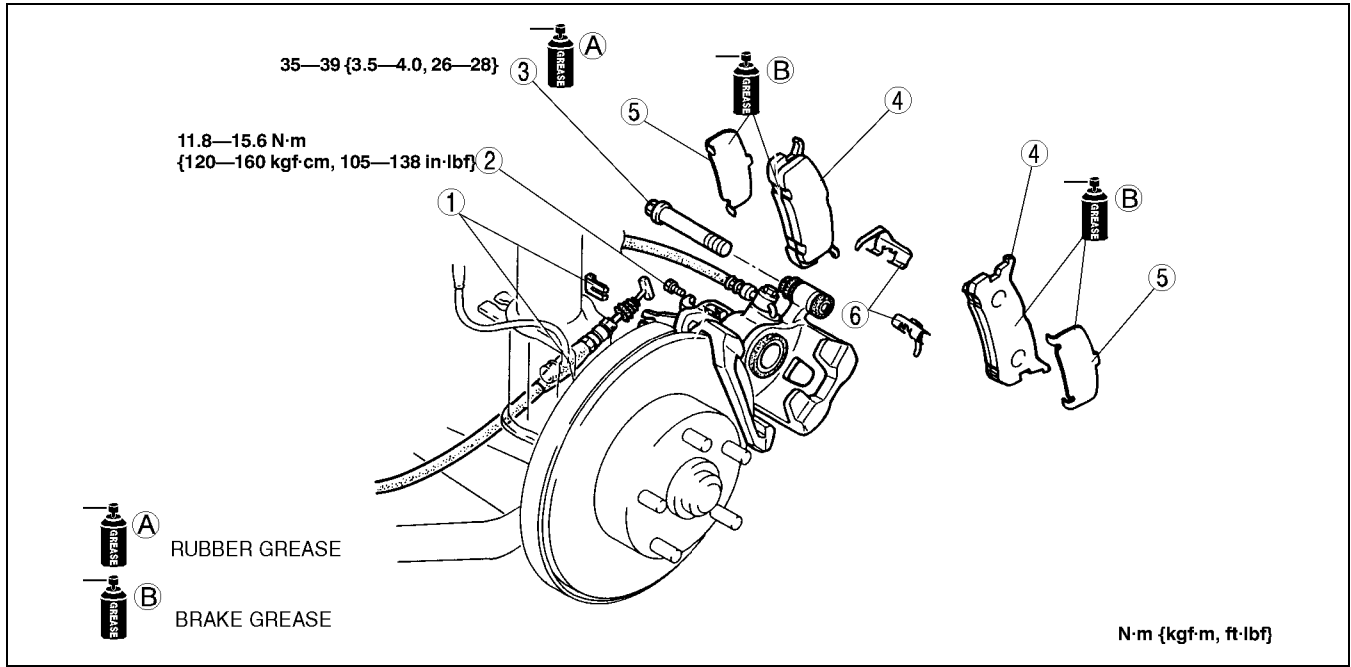
W6U411WB9

CONVENTIONAL BRAKE SYSTEM

DISC PAD (REAR) REPLACEMENT

A3U041126630W01

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.



04-11

Z3U0411W009

1	Parking brake cable, clip
2	Screw plug
3	Lock bolt

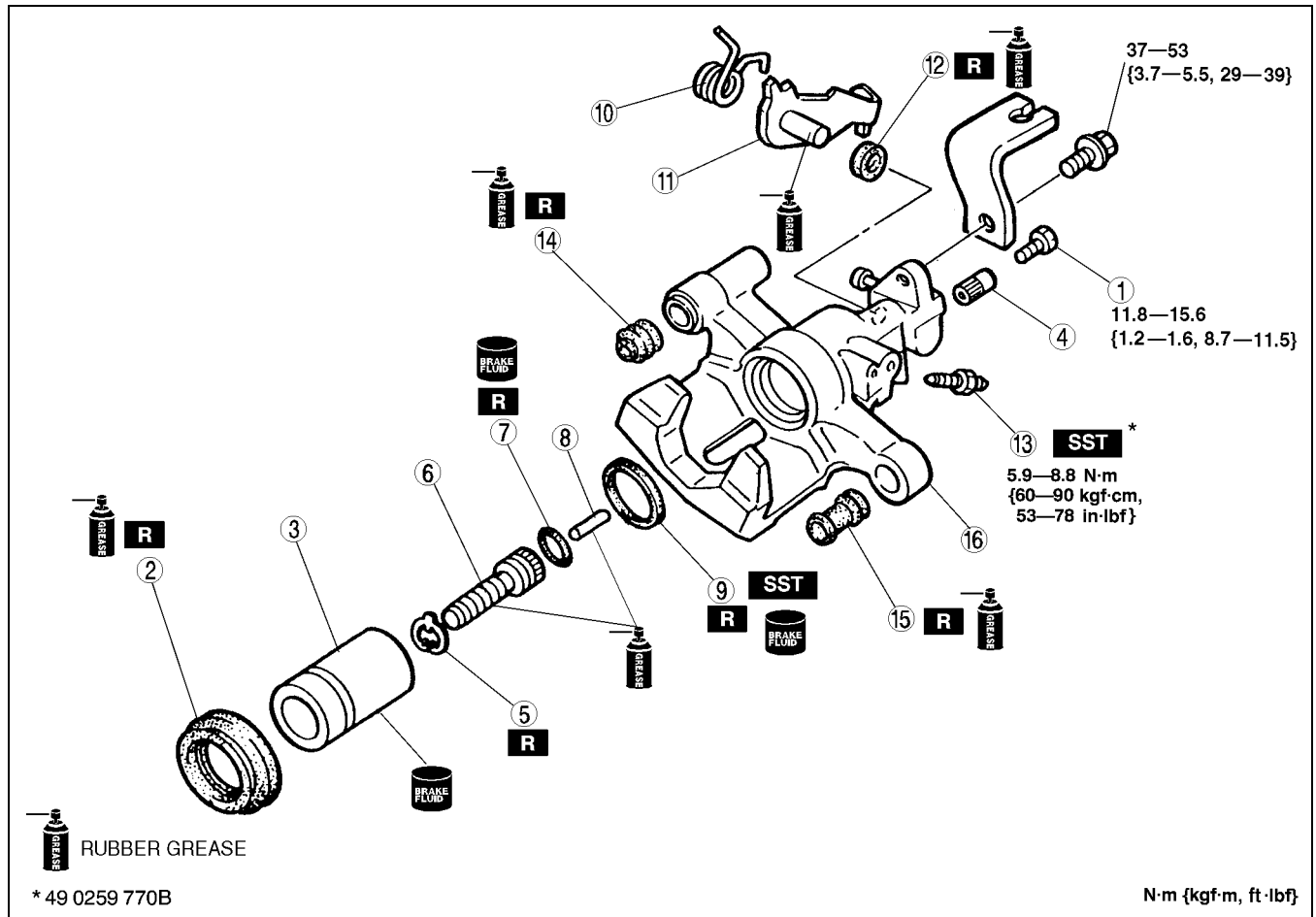
4	Disc pad (See 04-11-22 Disc Pad Installation Note)
5	Shim
6	Guide plate

CONVENTIONAL BRAKE SYSTEM

A3U041126990W01

CALIPER (REAR) DISASSEMBLY/ASSEMBLY

1. Disassemble in the order indicated in the table.
2. Assemble in the reverse order of disassembly.



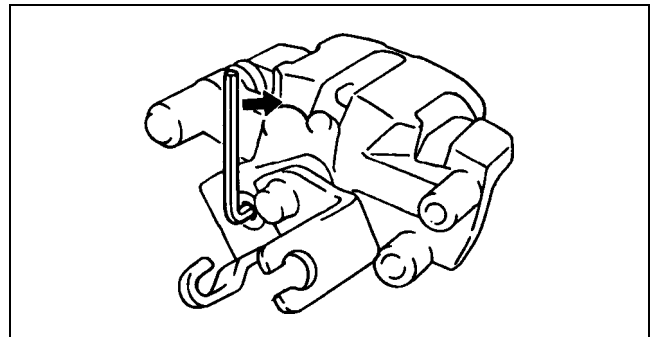
Z3U0411W010

1	Screw plug
2	Dust seal
3	Piston (See 04-11-24 Piston Disassembly Note) (See 04-11-25 Piston Assembly Note)
4	Manual adjustment gear
5	Snap ring
6	Adjusting bolt
7	O-ring
8	Connecting link

9	Piston seal (See 04-11-20 Piston Seal Disassembly Note)
10	Spring
11	Operating lever
12	Boot
13	Bleeder screw
14	Boot
15	Boot
16	Caliper body

Piston Disassembly Note

- Turn the adjustment gear clockwise with an Allen wrench to remove the piston from the adjustment gear. (Turn the adjustment gear until it becomes easy to turn.)

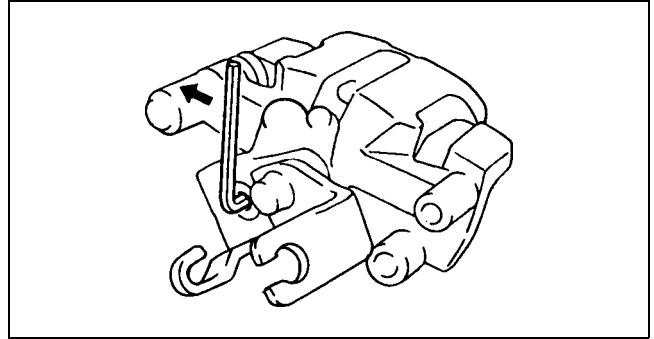


W6U411WBC

CONVENTIONAL BRAKE SYSTEM

Piston Assembly Note

- Insert the piston into the caliper and turn the adjustment gear counterclockwise with an Allen wrench to pull the piston inward. (Turn until it stops.)



W6U411WBD

A3U041126250W01

04-11

REAR BRAKE (DRUM) INSPECTION

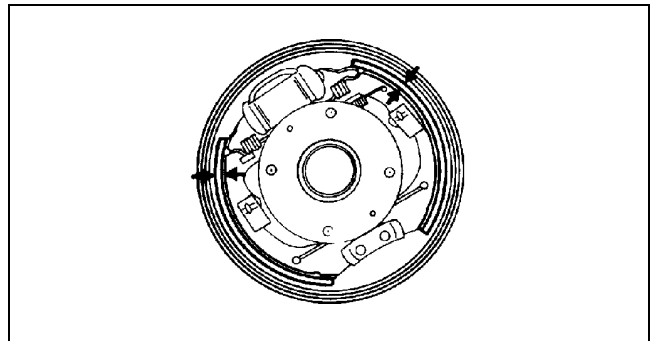
Brake Lining Thickness Inspection

1. Remove the brake drum.
2. Inspect the remaining thickness of the lining.

Thickness

1.0 mm {0.039 in} min.

3. Replace both left and right brake shoes if either is at or less than the minimum thickness.



X3U411WB1

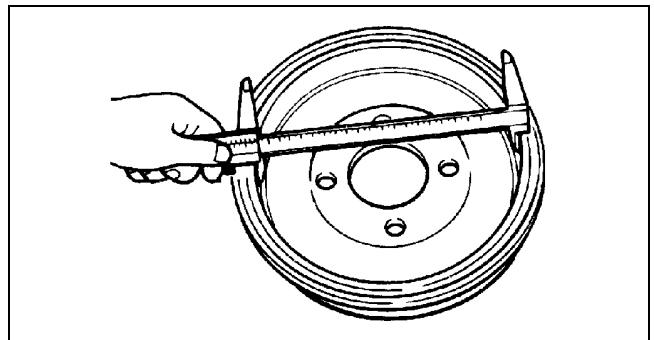
Brake Drum Inspection

1. Measure the inner diameter of the drum.

Maximum diameter

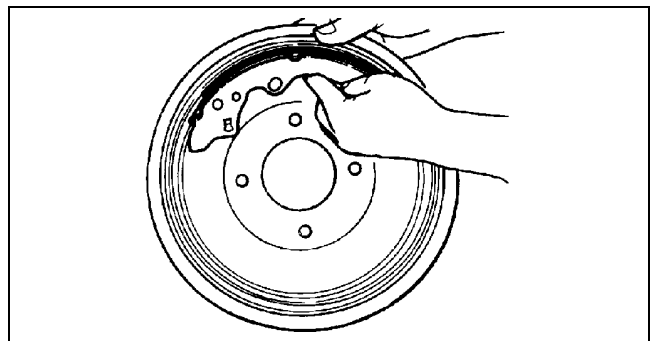
201.5 mm {7.933 in}

2. Inspect for scratches and uneven or abnormal wear inside the drum.
3. Repair or replace the drum if necessary.



X3U411WB2

4. When repairing or replacing the drum, inspect the contact with the shoes.



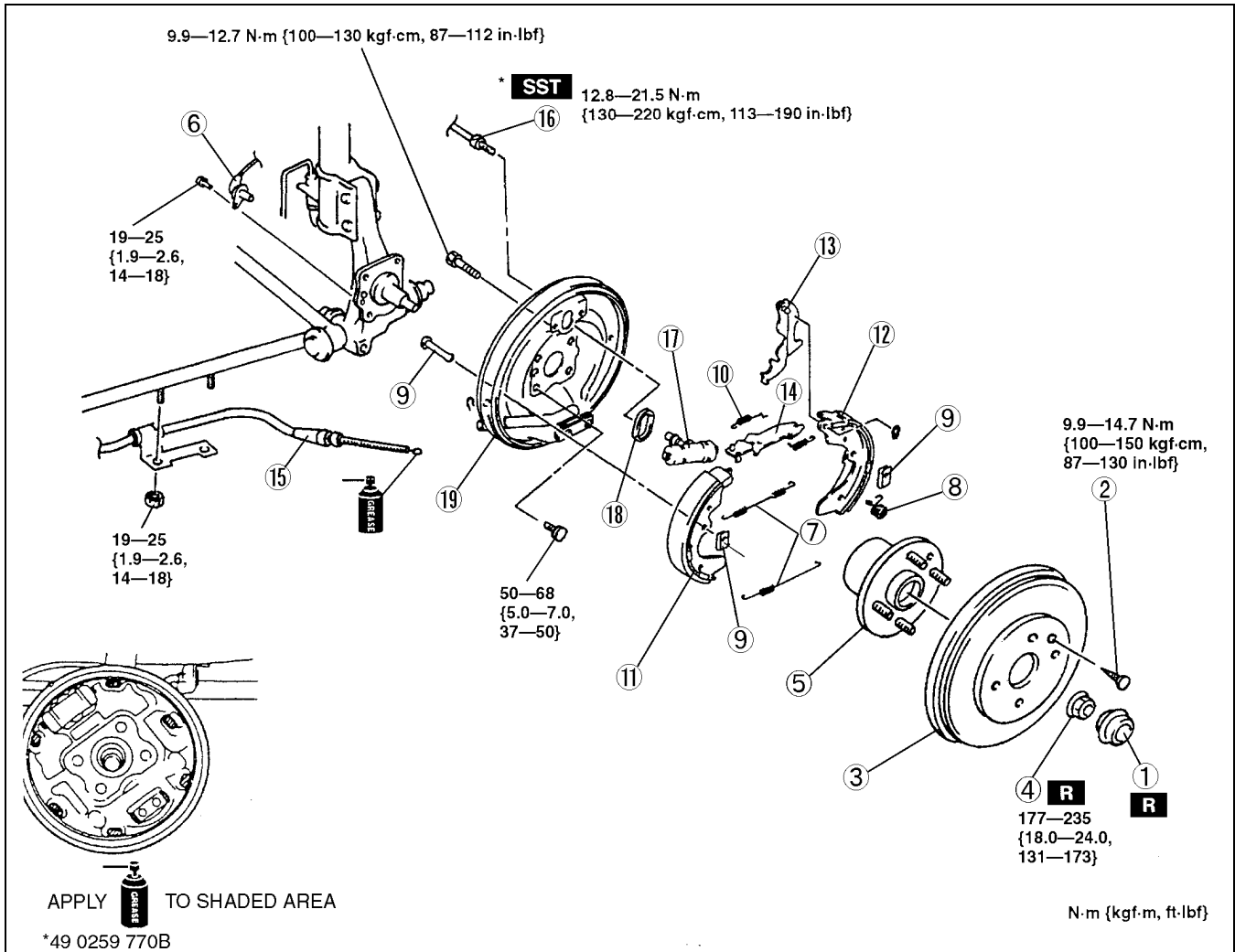
X3U411WB3

CONVENTIONAL BRAKE SYSTEM

A3U041126250W02

REAR BRAKE (DRUM) REMOVAL/INSTALLATION

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.
3. Perform the following.
 - (1) Depress the brake pedal a few times. Then verify that the brakes do not drag.
 - (2) Inspect the pedal-to-floor clearance.
 - (3) Inspect the parking brake lever stroke.



Y3U411WA6

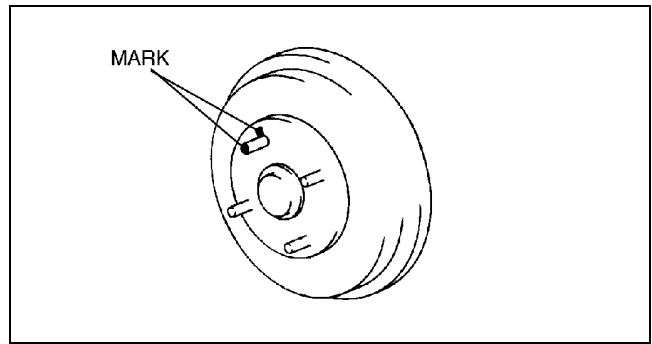
1	Hub cap
2	Screw
3	Brake drum (See 04-11-27 Brake Drum Removal Note) (See 04-11-27 Brake Drum Installation Note)
4	Locknut (See 03-11-4 Locknut Removal Note) (See 03-11-7 Locknut Installation Note)
5	Wheel hub
6	ABS wheel-speed sensor (if equipped)
7	Return spring
8	Lever spring

9	Hold pin and hold spring
10	Anti-rattle spring
11	Leading shoe
12	Trailing shoe
13	Operating lever
14	Adjuster
15	Parking brake cable
16	Brake pipe
17	Wheel cylinder
18	O-ring
19	Backing plate

CONVENTIONAL BRAKE SYSTEM

Brake Drum Removal Note

1. Mark the wheel hub bolt and brake drum before removal for reference during installation.



X3U411WB5

Brake Drum Installation Note

1. Remove any rust or grime on the contact face of the drum brake.
2. Install the brake drum and align the marks made before removal.

04-11

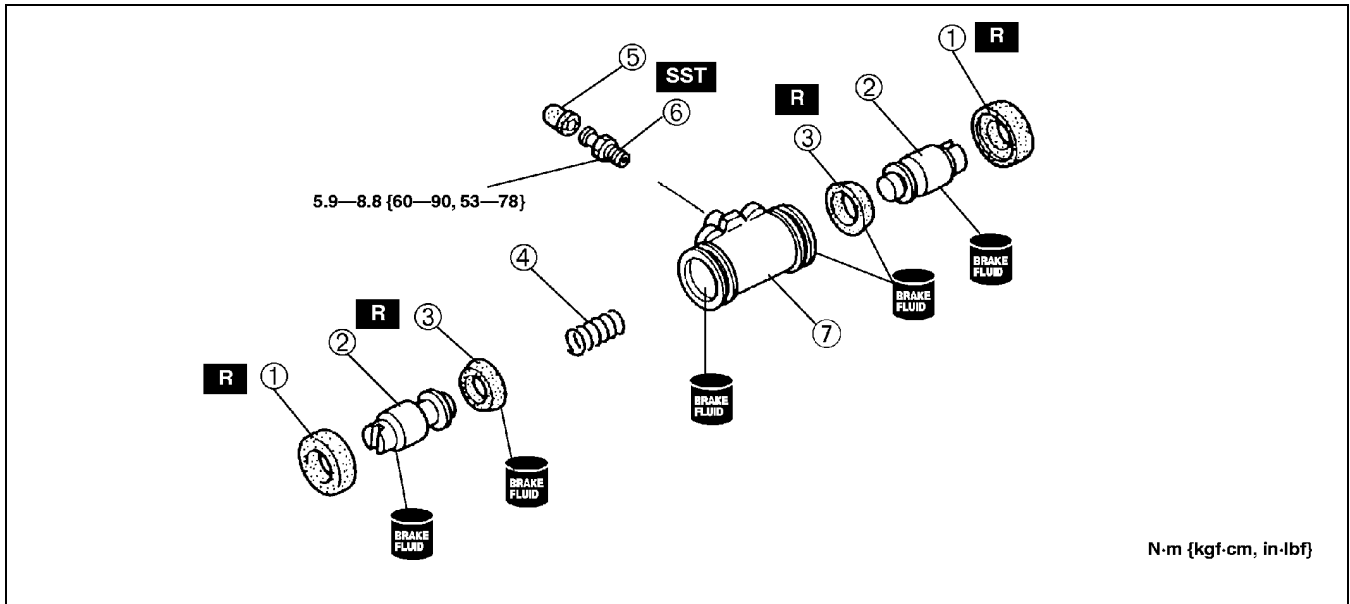
WHEEL CYLINDER DISASSEMBLY/ASSEMBLY

A3U041126610W01

Caution

- Replace the wheel cylinder component if a problem is found.

1. Disassemble in the order indicated in the table.
2. Assemble in the reverse order of disassembly.



N·m {kgf·cm, in·lbf}

X3U411WB6

1	Boot
2	Wheel cylinder piston
3	Piston cup
4	Wheel cylinder spring

5	Bleeder cap
6	Bleeder screw (See 04-11-21 Bleeder Screw Assembly Note)
7	Wheel cylinder body