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## GROUP 35A

# BASIC BRAKE SYSTEM

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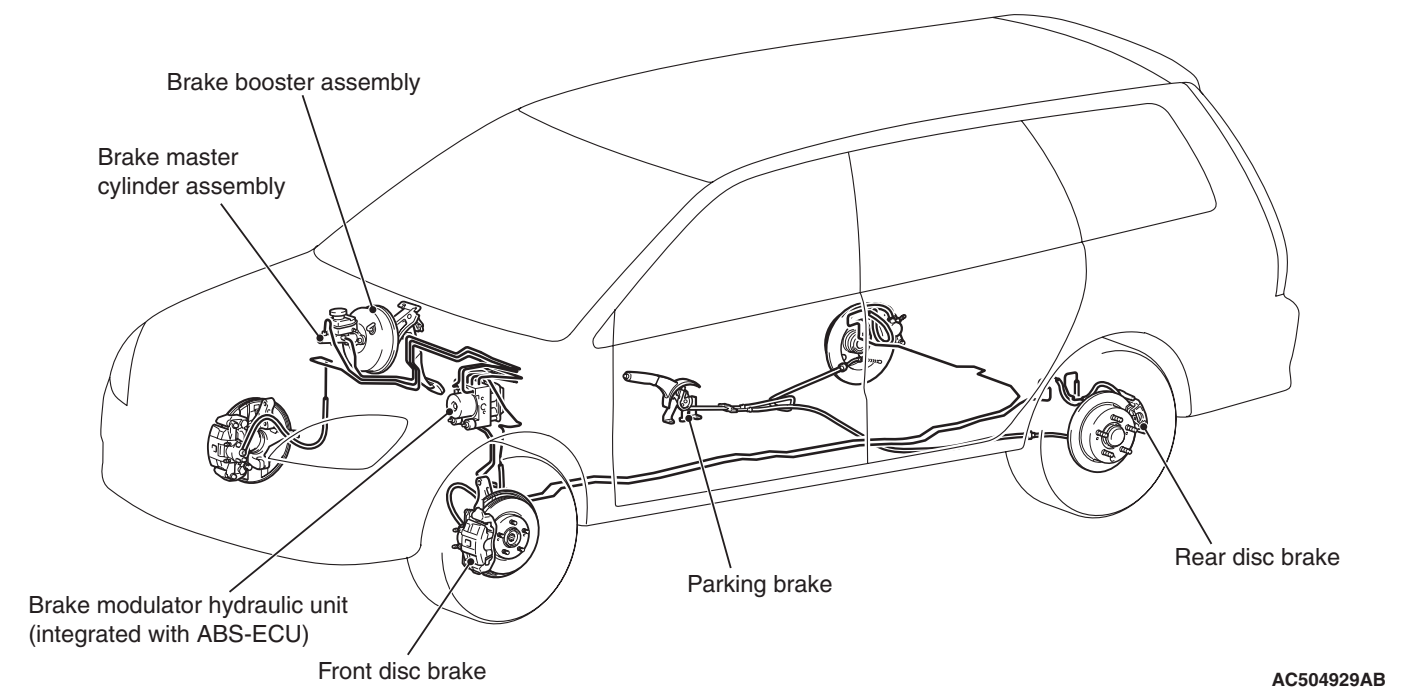
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GENERAL INFORMATION

M1351000100729

The brake system offers high dependability and durability along with improved braking performance and brake sensitivity.

CONFIGURATION DIAGRAM



SPECIFICATIONS

| Item                                |   | Specification                                |
|-------------------------------------|---|--|
| Master cylinder                     | Type                                    | Tandem type                                  |
|                                     | I.D. mm                                 | 25.4   |
| Brake booster                       | Type                                    | Vacuum type, single                          |
|                                     | Effective diameter of power cylinder mm | 255  |
|                                     | Boosting ratio                          | 7.0  |
| Rear wheel hydraulic control method |   | Electronic brake-force distribution (EBD)    |
| Front brakes                        | Type                                    | Floating calliper, 1 piston, ventilated disc |
|                                     | Disc effective diameter × thickness mm  | 222 × 26                                     |
|                                     | Cylinder I.D. mm                        | 60.3   |
|                                     | Pad thickness mm                        | 10.0   |
|                                     | Clearance adjustment                    | Automatic                                    |

| Item        |  | Specification                           |
|-------------|--|---|
| Rear brakes | Type                                   | Floating calliper, 1 piston, solid disc |
|             | Disc effective diameter × thickness mm | 226 × 10                                |
|             | Cylinder I.D. mm                       | 38.1                                    |
|             | Pad thickness mm                       | 10.0                                    |
|             | Clearance adjustment                   | Automatic                               |
| Brake fluid |  | DOT3 or DOT4                            |

## SERVICE SPECIFICATIONS

M1351000300831

| Item  |                   | Standard value | Limit |
|---|-------------------|----------------|-------|
| Brake pedal height mm                       |                   | 169.1 – 172.1  | –     |
| Brake pedal free play mm                    |                   | 3 – 8          | –     |
| Brake pedal to floor board clearance mm     |                   | 90 or more     | –     |
| Brake booster push rod protruding length mm |                   | 8.98 – 9.23    | –     |
| Wheel bearing axial play mm                 |                   | –              | 0.05  |
| Front disc brake                            | Pad thickness mm  | 10.0           | 2.0   |
|   | Disc thickness mm | 26.0           | 24.4  |
|   | Disc run-out mm   | –              | 0.015 |
|   | Drag force N      | 68 or less     | –     |
| Rear disc brake                             | Pad thickness mm  | 10.0           | 2.0   |
|   | Disc thickness mm | 10.0           | 8.4   |
|   | Disc run-out mm   | –              | 0.05  |
|   | Drag force N      | 68 or less     | –     |

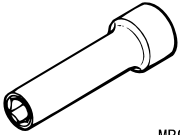
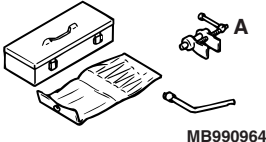
## LUBRICANTS

M1351000400593

| Item   | Specified lubricant |
|--|---------------------|
| Brake fluid                                    | DOT3 or DOT4        |
| Brake pin (guide pin)                          | Repair kit grease   |
| Brake pin (lock pin)                           |                     |
| Brake bushing (lock pin bushing) outer surface |                     |
| Pin boot inner surface                         |                     |
| Pin boot mounting grooves                      |                     |
| Piston boot inner surface                      |                     |

## SPECIAL TOOLS

M1351000600508

| Tool   | Number                  | Name  | Use  |
|--|-------------------------|---|--|
| <br>MB991568                | MB991568                | Push rod adjusting socket                       | Adjustment of the brake booster push rod protrusion amount |
| <br>MB990964<br>A: MB990520 | MB990964<br>A: MB990520 | Brake tool set<br>A: Disc brake piston expander | Pushing-in of the disc brake piston                        |

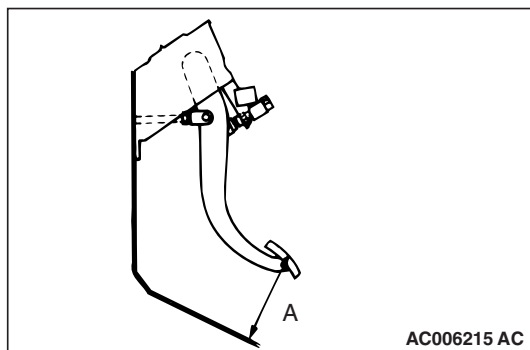
## ON-VEHICLE SERVICE

BRAKE PEDAL CHECK AND  
ADJUSTMENT

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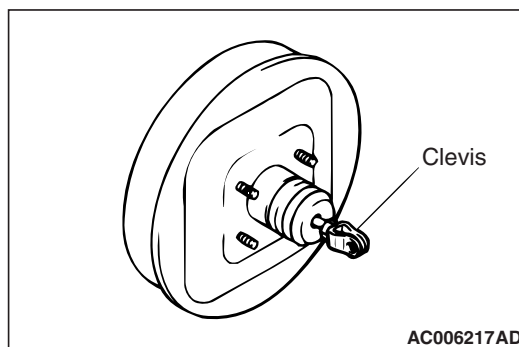
## BRAKE PEDAL HEIGHT

1. Turn up the carpet, etc. under the brake pedal.



2. Measure the brake pedal height as illustrated.  
**Standard value (A): 169.1 – 172.1 mm**  
**(From the surface of floor board to the face of pedal pad)**
3. If the brake pedal height is not within the standard value, follow the procedure below.
  - (1) Disconnect the stop lamp switch connector.
  - (2) Remove the brake booster (Refer to [P.35A-13](#)).

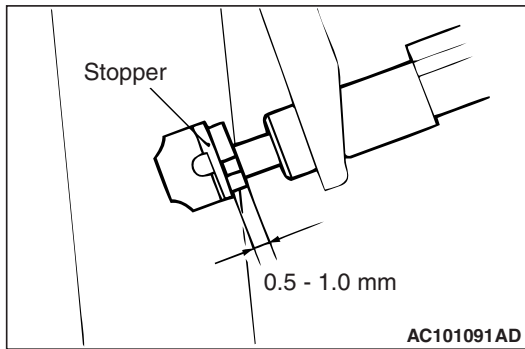
*NOTE: With the master cylinder and brake pipe connected, remove the brake booster only.*



- (3) Adjust the brake pedal height by turning the clevis.

*NOTE: When the clevis is turned 180°, the pedal height is changed approximately 2.4 mm.*

- (4) Install the brake booster (Refer to [P.35A-13](#)).
- (5) Measure the brake pedal height, and ensure that the measured value is within the standard value. When it is out of the standard value, repeat Step (2) - (5).



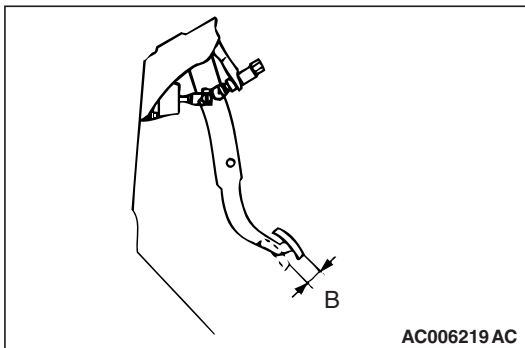
- (6) Screw in the stop lamp switch (until its thread contacts the stopper), and fix the stop lamp switch by turning it approximately one quarter of a turn clockwise.
- (7) Check that the clearance between the stop lamp switch and the stopper is as shown.

**⚠ CAUTION**

**Check that the stop lamp does not illuminate when the brake pedal is not depressed.**

- (8) Connect the connector at the stop lamp switch.
4. For A/T models, check the key interlock and shift lock mechanisms. (Refer to GROUP 23A, On-vehicle Service [P.23A-120.](#))
5. Return the carpet, etc.

**BRAKE PEDAL FREE PLAY**



1. Turn the ignition switch to the "LOCK" (OFF) position, depress the brake pedal two or three times. After eliminating the vacuum in the brake booster, press the pedal down by hand, and confirm that the amount of movement before resistance is met (free play) is within the standard value range.

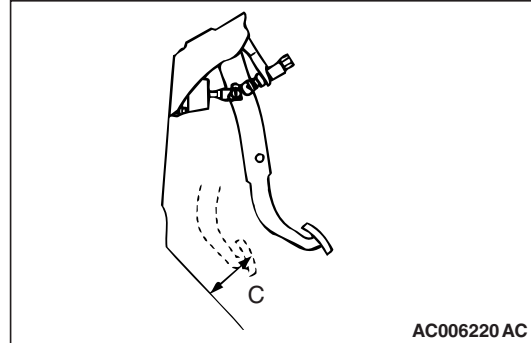
**Standard value: 3 – 8 mm**

2. If the brake pedal play is not within the standard value, check the following, and adjust or replace if necessary:
  - Excessive play between the brake pedal and the clevis pin, or between the clevis pin and the brake booster operating rod

- Brake pedal height
- Installation position of the stop lamp switch, etc.

**CLEARANCE BETWEEN BRAKE PEDAL AND FLOOR BOARD**

1. Turn up the carpet, etc. under the brake pedal.



2. Start the engine, depress the brake pedal with approximately 490 N of force, and measure the clearance between the brake pedal and the floor board.

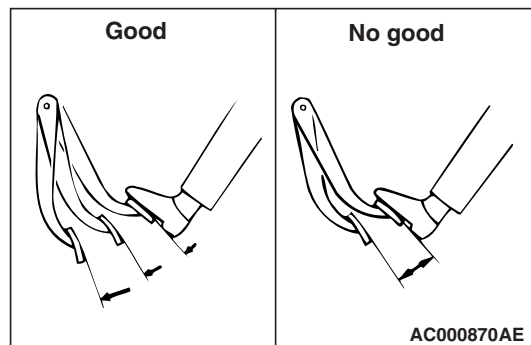
**Standard value (C): 90 mm or more  
(From the surface of floor board to the face of pedal pad)**

3. If the clearance is outside the standard value, check for air trapped in the brake line, thickness of the disc brake pad and dragging in the parking brake. And then adjust and replace defective parts as required.
4. Return the carpet etc. to its original position.

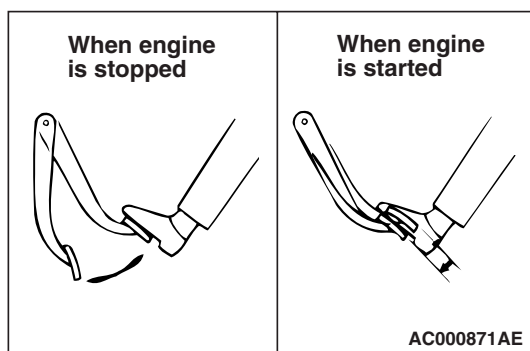
**BRAKE BOOSTER OPERATING TEST**

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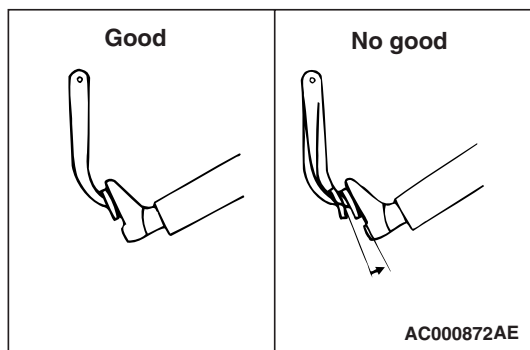
1. For simple checking of the brake booster operation, carry out the following tests:



- (1) Run the engine for one or two minutes, and then stop it. If the pedal depresses fully the first time but gradually becomes higher when depressed succeeding times, the booster is operating properly. If the pedal height remains unchanged, the booster is defective. Go to step 2.



- (2) With the engine stopped, step on the brake pedal several times. Then step on the brake pedal and start the engine. If the pedal moves downward slightly, the booster is in good condition. If there is no change, the booster is defective. Go to step 3.



- (3) With the engine running, step on the brake pedal and then stop the engine. Hold the pedal depressed for 30 seconds. If the pedal height does not change, the booster is in good condition, if the pedal rises, the booster is defective.
2. If the above three tests are okay, the booster performance can be determined as good. If one of the above three tests is not okay, the check valve, vacuum hose, or booster is defective. Check the check valve (Refer to P.35A-6), vacuum hose for leaks, high volume engine vacuum applied to booster. Repair or replace as necessary. If these are okay, replace the booster and repeat this test starting at Step 1.

## CHECK VALVE OPERATION CHECK

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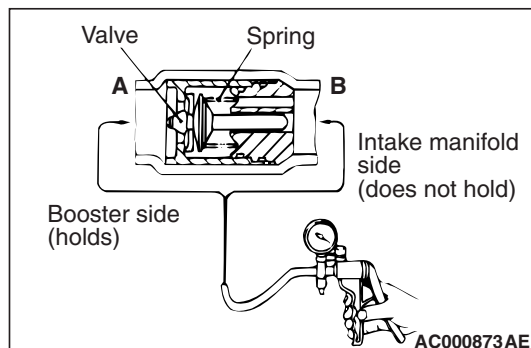
### CAUTION

The check valve should not be removed from the vacuum hose.

1. Remove the vacuum hose (Refer to P.35A-13).

### CAUTION

If the check valve is defective, replace it as an assembly unit together with the vacuum hose.



2. Check the operation of the check valve by using a vacuum pump.

| Vacuum pump connection                     | Accept/reject criteria                            |
|--|---|
| Connection at the brake booster side (A)   | A negative pressure (vacuum) is created and held. |
| Connection at the intake manifold side (B) | A negative pressure (vacuum) is not created.      |

## BLEEDING

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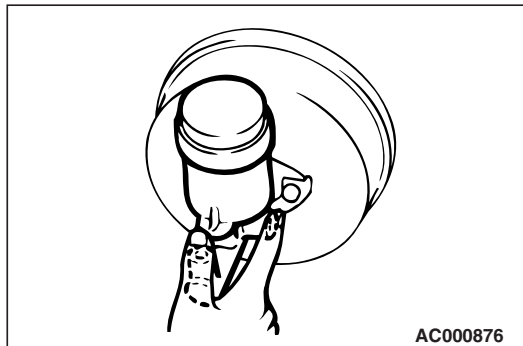
### CAUTION

Use only brake fluid DOT 3 or DOT 4. Never mix the specified brake fluid with other fluid as it will influence the braking performance significantly.

## MASTER CYLINDER BLEEDING

The master cylinder used has no check valve, so if bleeding is carried out by the following procedure, bleeding of air from the brake pipeline will become easier (When brake fluid is not contained in the master cylinder).

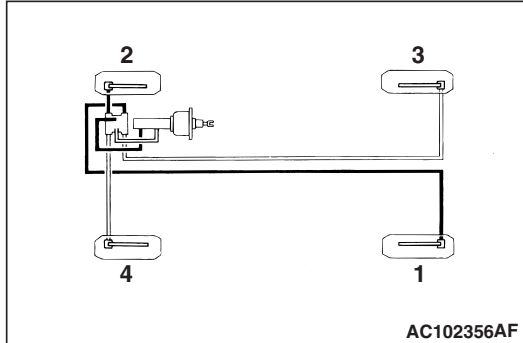
1. Fill the reserve tank with brake fluid.
2. Keep the brake pedal depressed.



3. Have another person cover the master cylinder outlet with a finger.

4. With the outlet still closed, release the brake pedal.
5. Repeat steps 2 – 4 three or four times to fill the inside of the master cylinder with brake fluid.

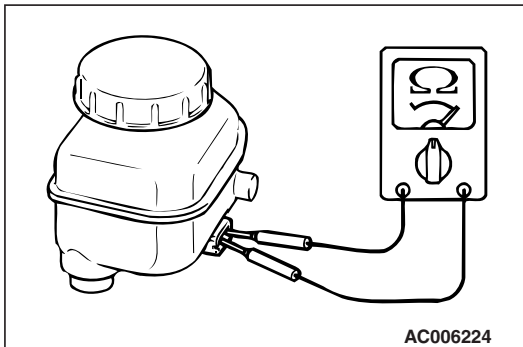
## BRAKE LINE BLEEDING



Start the engine and bleed the air in the sequence shown in the figure.

## BRAKE FLUID LEVEL SENSOR CHECK

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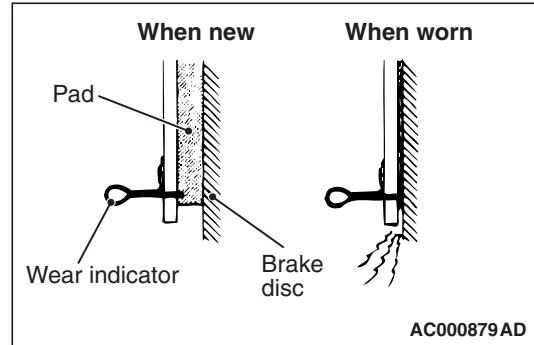


The brake fluid level sensor is in good condition if there is no continuity when the float surface is above "MIN" and if there is continuity when the float surface is below "MIN".

## DISC BRAKE PAD CHECK AND REPLACEMENT

M1351002300622

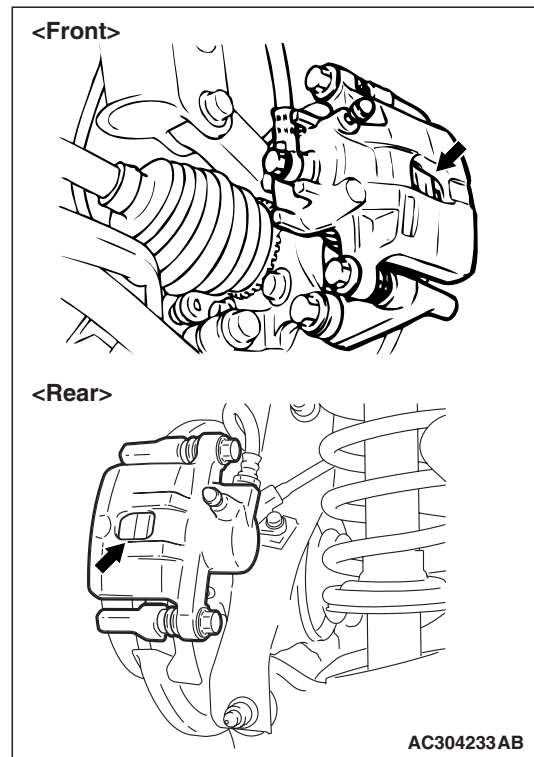
**NOTE:**



*The brake pads have indicators that contact the brake disc when the brake pad thickness becomes 2 mm, and emit a squealing sound to warn the driver.*

### **CAUTION**

- Whenever a pad must be replaced, replace both LH and RH wheel pads as a set to prevent the vehicle from pulling to one side when braking.
- If there is a significant difference in the thickness of the pads on the left and right sides, check the sliding condition of the piston and slide pins.



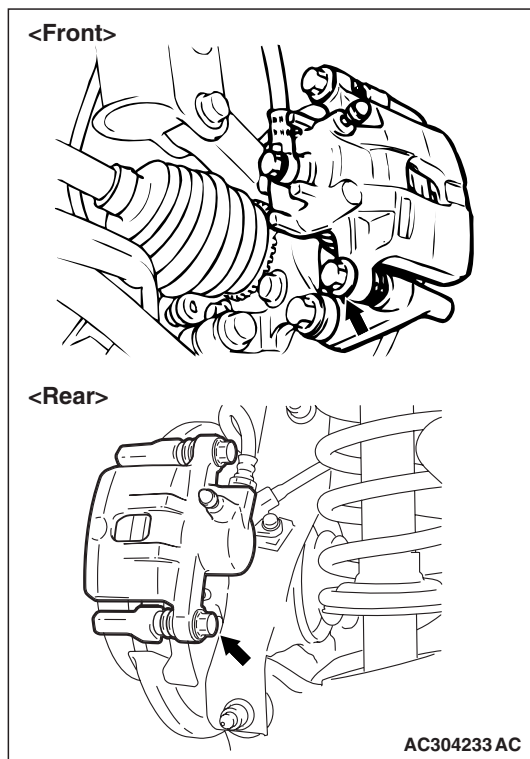
1. Check the brake pad thickness through the calliper body check port.

**Standard value: 10.0 mm**

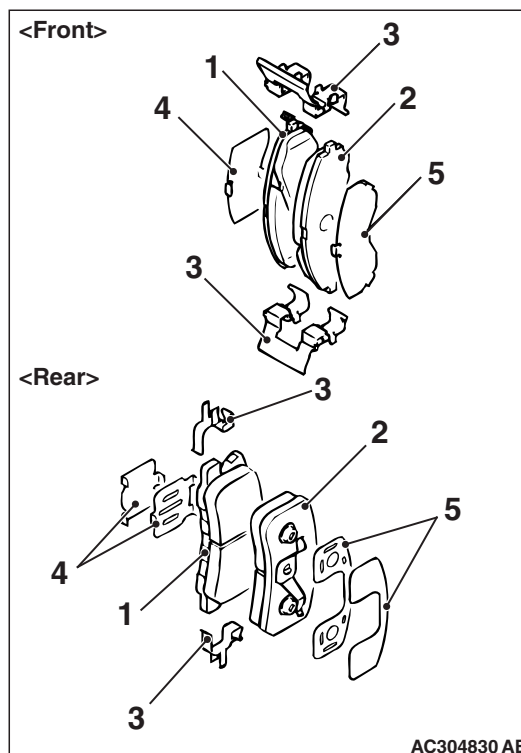
**Minimum limit: 2.0 mm**

**⚠ CAUTION**

Do not wipe off the special grease that is on the lock pin or allow it to contaminate the lock pin.



2. Remove the front brake bolt/rear brake pin (lock pin). Pivot the calliper assembly and hold it with wires.



3. Remove the following parts from calliper support.
  - (1) Pad and wear indicator assembly or pad assembly
  - (2) Pad assembly
  - (3) Front brake clip/rear brake clip
  - (4) Inner shim
  - (5) Outer shim
4. In order to measure the brake drag force after pad installation, measure the rotary-sliding resistance of the hub with the pads removed. For the front brakes, refer to [P.35A-16](#). For the rear brakes, refer to [P.35A-21](#).
5. Install the pads and calliper assembly, and then check the brake drag force. For the front brakes, refer to [P.35A-16](#). For the rear brakes, refer to [P.35A-21](#).



## DISC BRAKE ROTOR CHECK

M1351002900486

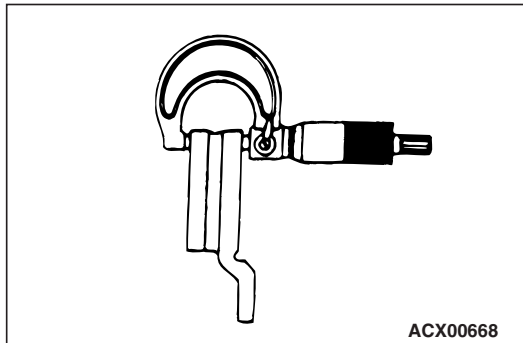
### **CAUTION**

**Disc brakes must be kept within the allowable service values in order to maintain normal brake operation.**

Before turning the brake disc, the following conditions should be checked.

| Inspection item                                      | Remark   |
|--|--|
| Scratches, rust, saturated lining materials and wear | <ul style="list-style-type: none"> <li>If the vehicle is not driven for a long period of time, sections of the discs that are not in contact with the pads will become rusty, causing noise and shuddering.</li> <li>If grooves and scratches resulting from excessive disc wear are not removed prior to installing a new pad assembly, there will be inadequate contact between the disc and the lining (pad) until the pads conform to the disc.</li> </ul> |
| Run-out  | Excessive run-out of the discs will increase the pedal depression resistance due to piston kick-back.  |
| Change in thickness (parallelism)                    | If the thickness of the disc changes, this will cause pedal pulsation, shuddering and surging.   |
| Inset or warping (flatness)                          | Overheating and improper handling while servicing will cause warping or distortion.  |

## BRAKE DISC THICKNESS CHECK



**Standard value:**

**<Front> 26.0 mm**

**<Rear> 10.0 mm**

**Minimum limit:**

**<Front> 24.4 mm**

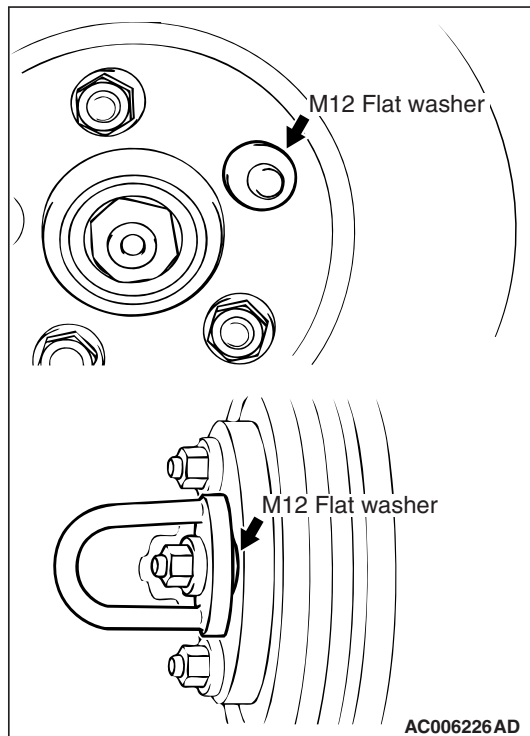
**<Rear> 8.4 mm**

*NOTE: Thickness variation (at least 8 positions) should not be more than 0.015 mm.*

- Using a micrometer, measure disc thickness at eight positions, approximately 45° apart and 10 mm in from the outer edge of the disc.

**CAUTION**

- After a new brake disc is installed, always grind the brake disc with on-the-car type brake lathe. If this step is not carried out, the brake disc run-out exceeds the specified value, resulting in judder.

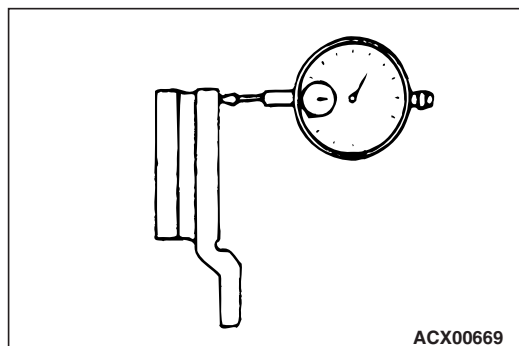


- When the on-the-car type lathe is used, first install M12 flat washer on the stud bolt in the brake disc side according to the figure, and then install the adapter. If the adapter is installed with M12 flat washer not seated, the brake disc rotor may be deformed, resulting in inaccurate grinding.
  - Grind the brake disc with all wheel nuts diagonally and equally tightened to the specified torque 100 N·m. When all numbers of wheel nuts are not used, or the tightening torque is excessive or not equal, the brake disc rotor or drum may be deformed, resulting in judder.
2. If the disc thickness is less than the limits, replace it with a new one.

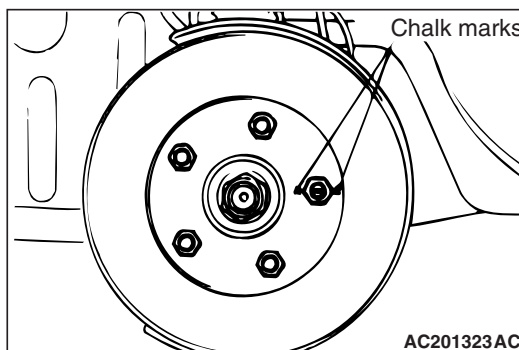
If thickness variation exceeds the specification, turn rotor with an on-the-car type brake lathe ("MAD, DL-8700PF" or equivalent). If the calculated final thickness after turning the rotor is less than the standard value, replace the disc.

**BRAKE DISC RUN-OUT CHECK AND CORRECTION**

- Remove the brake calliper assembly, and then hold it with wire.
- Temporarily install the disc with the hub nut.

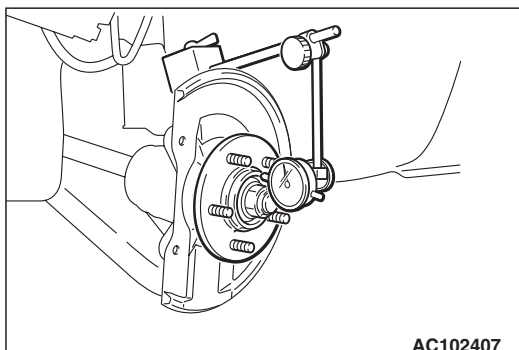


- Place a dial gauge approximately 5 mm from the outer circumference of the brake disc, and measure the run-out of the disc.

**Limit:****<Front> 0.015 mm****<Rear> 0.05 mm**

- If the brake disc run-out exceeds the limit, correct it as follows:

- Chalk phase marks on the wheel stud and the brake disc, which run-out is excessive as shown.



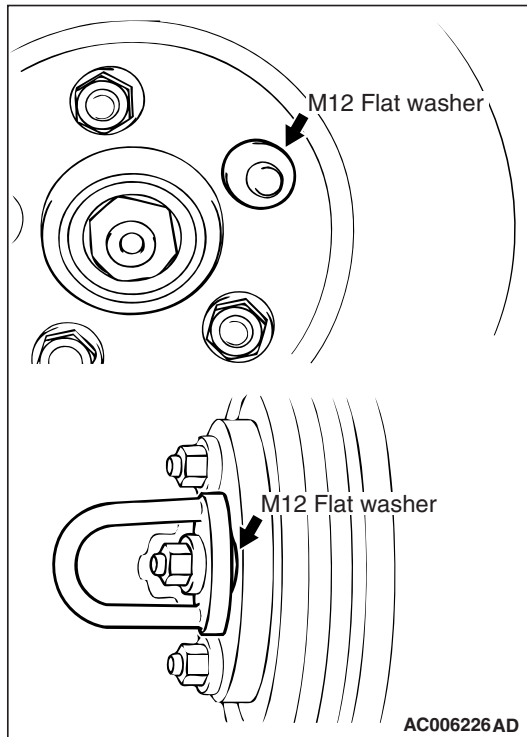
- Remove the brake disc. Then place a dial gauge as shown, and measure the wheel bearing axial play by pushing and pulling the wheel hub.

**Limit: 0.05 mm**

- (3) If the axial play exceeds the limit, disassemble the hub and knuckle/trailing arm assembly to check each part.
- (4) If the axial play does not exceed the limit, dipphase the brake disc and secure it. Then recheck the brake disc run-out.

**⚠ CAUTION**

- After a new brake disc is installed, always grind the brake disc with on-the-car type brake lathe. If this step is not carried out, the brake disc run-out exceeds the specified value, resulting in judder.



- When the on-the-car type lathe is used, first install M12 flat washer on the stud bolt in the brake disc side according to the figure, and then install the adapter. If the adapter is installed with M12 flat washer not seated, the brake disc rotor may be deformed, resulting in inaccurate grinding.
  - Grind the brake disc with all wheel nuts diagonally and equally tightened to the specified torque 100 N·m. When all numbers of wheel nuts are not used, or the tightening torque is excessive or not equal, the brake disc rotor or drum may be deformed, resulting in judder.
5. If the run-out cannot be corrected by changing the phase of the brake disc, replace the brake disc or grind it with the on-the-car type brake lathe ("MAD, DL-8700PF" or equivalent).

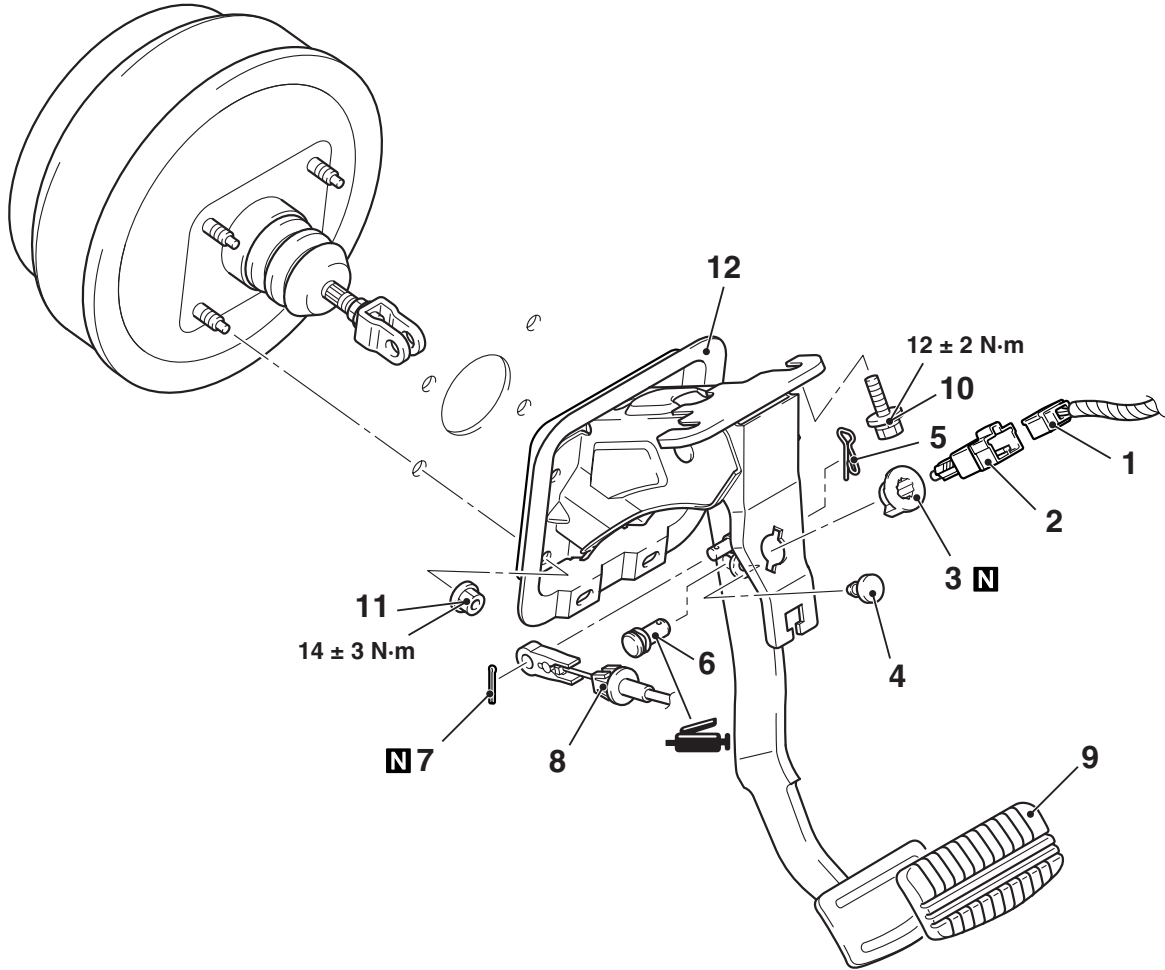
## BRAKE PEDAL

## REMOVAL AND INSTALLATION

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**Post-installation Operation**

- Brake Pedal Adjustment (Refer to P.35A-4).



AC304235 AB

**Removal steps**

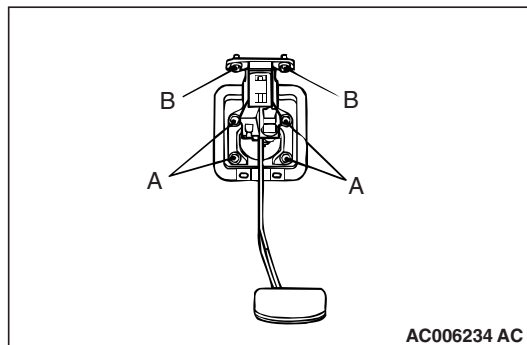
1. Harness connector
2. Stop lamp switch
3. Brake pedal clip
4. Brake pedal stopper
5. Brake booster pin
6. Pin assembly
7. Split pin <A/T>

**Removal steps (Continued)**

8. Shift lock cable <A/T>
9. Brake pedal pad
- >>A<< 10. Brake pedal bolt
- >>A<< 11. Brake booster nut
- >>A<< 12. Brake pedal and pedal support member

## INSTALLATION SERVICE POINT

### >>A<< BRAKE PEDAL AND PEDAL SUPPORT MEMBER/BRAKE BOOSTER NUT/BRAKE PEDAL BOLT INSTALLATION



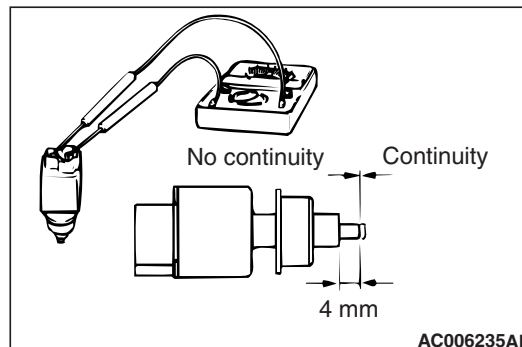
Tighten the brake booster nuts (A), and then the brake pedal bolts (B).

*NOTE: The pedal support member cannot be positioned correctly if the brake pedal bolts (B) are tightened first as their holes are oblong holes.*

## INSPECTION

### STOP LAMP SWITCH CHECK

M1351003500340



1. Connect an ohmmeter between the stop lamp switch connector terminals.
2. There should be no continuity between the terminals when the plunger is pushed in as shown. There should be continuity when it is released.

## MASTER CYLINDER ASSEMBLY AND BRAKE BOOSTER REMOVAL AND INSTALLATION

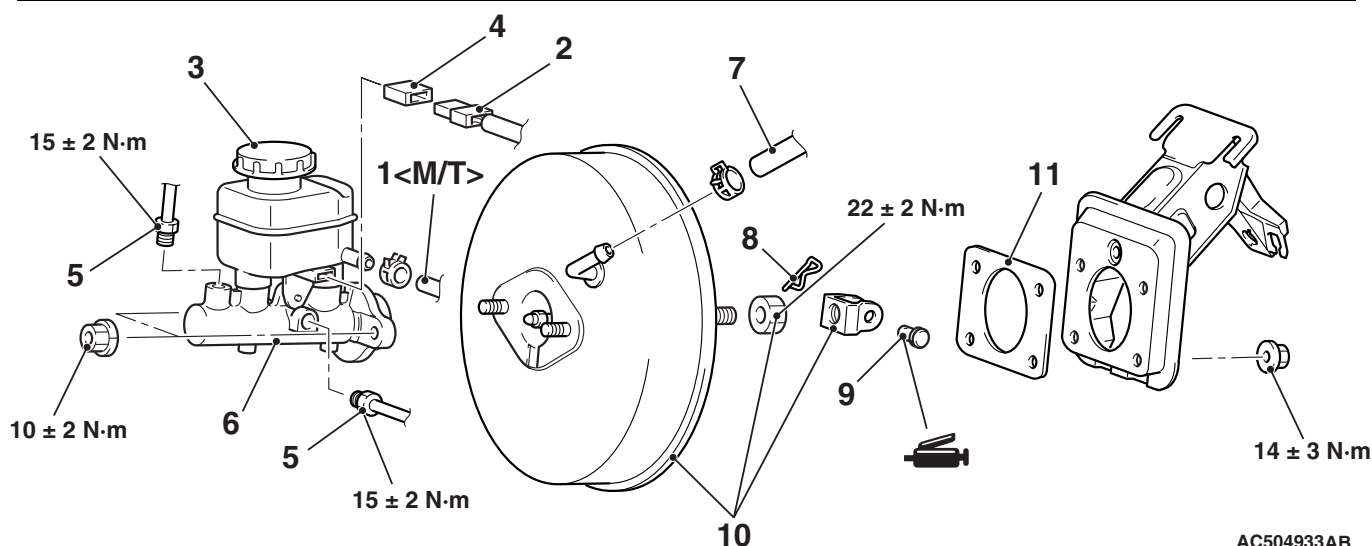
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### Pre-removal Operation

- Brake Fluid Draining

### Post-installation Operation

- Brake Fluid Supplying and Air Bleeding (Refer to [P.35A-6](#)).
- Brake Pedal Adjustment (Refer to [P.35A-4](#)).



### Brake master cylinder assembly removal steps

1. Clutch hose connection <M/T>
2. Brake fluid level indicator switch connector
3. Brake fluid reservoir cap

### Brake master cylinder assembly removal steps (Continued)

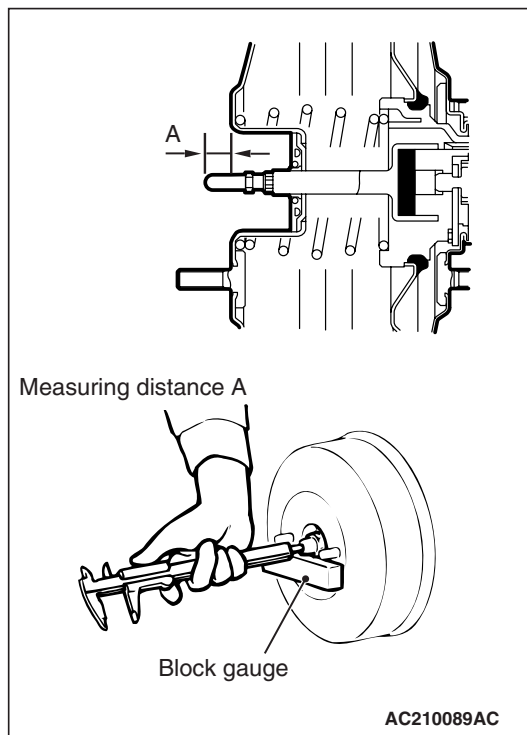
4. Brake fluid level indicator switch
5. Brake pipe connection
6. Brake master cylinder assembly

**Brake booster assembly removal steps**

2. Brake fluid level indicator switch connector
5. Brake pipe connection
6. Brake master cylinder assembly
- >>B<< • Push rod protrusion amount check and adjustment
- >>A<< 7. Brake booster vacuum hose (with built-in check valve)
8. Brake booster pin
9. Pin assembly
  - A/C liquid pipe B clamp (Refer to GROUP 55, Refrigerant Line P.55A-63).
10. Brake booster assembly
11. Brake booster body seal

**INSTALLATION SERVICE POINTS****>>A<< BRAKE BOOSTER VACUUM HOSE CONNECTION**

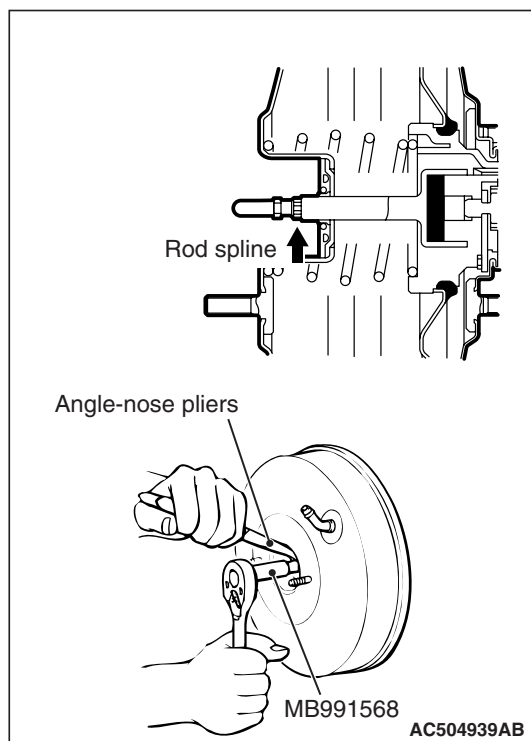
Insert the brake booster vacuum hose with its paint mark facing upward.

**>>B<< PUSH ROD PROTRUSION AMOUNT CHECK AND ADJUSTMENT**

1. Measure dimension (A).

**Standard value (A): 8.98 – 9.23 mm**

*NOTE: When a negative pressure of 66.7 kPa is applied to the brake booster, the push rod should protrude 10.28 - 10.53 mm.*

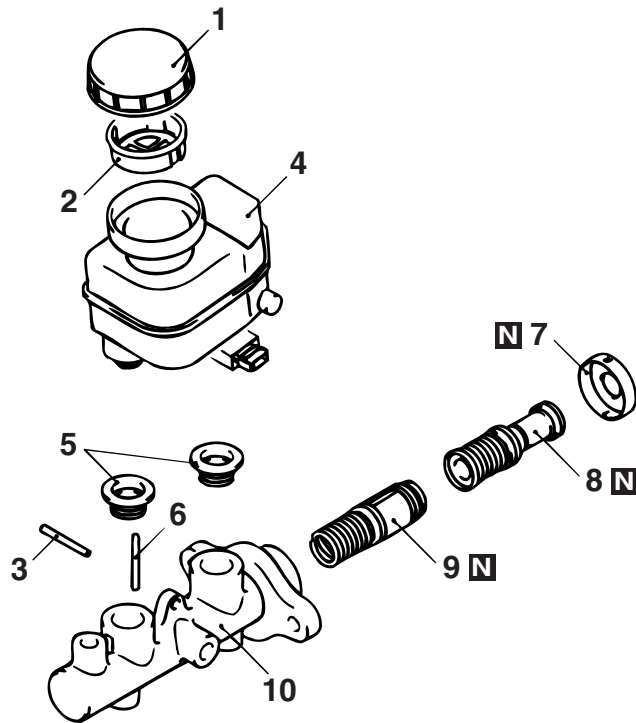


2. If the protrusion amount is not within the standard value range, adjust the push rod length by turning the push rod. Use special tool push rod adjusting socket (MB991568) to turn the push rod while holding the rod spline with angle-nose pliers.

## MASTER CYLINDER

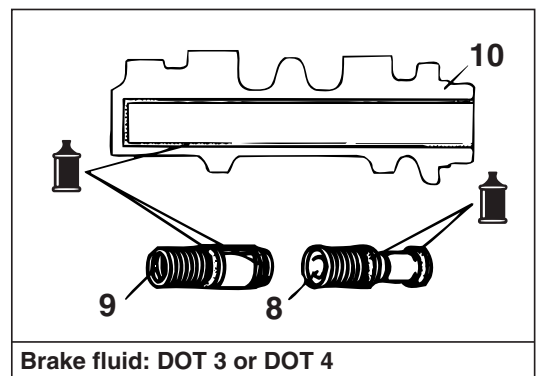
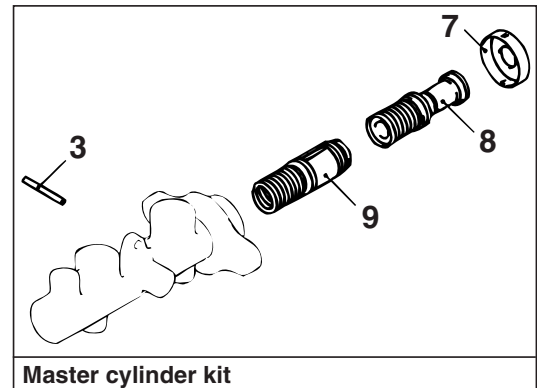
M1351004200568

## DISASSEMBLY AND REASSEMBLY



### Disassembly steps

1. Brake fluid reservoir cap
2. Brake master cylinder pin
3. Brake fluid reservoir
4. Brake master cylinder to fluid reservoir seal
5. Brake master cylinder pin
6. Piston retainer
7. Primary piston assembly



AC006239 AD

### Disassembly steps (Continued)

8. Secondary piston assembly
9. Master cylinder body

## INSPECTION

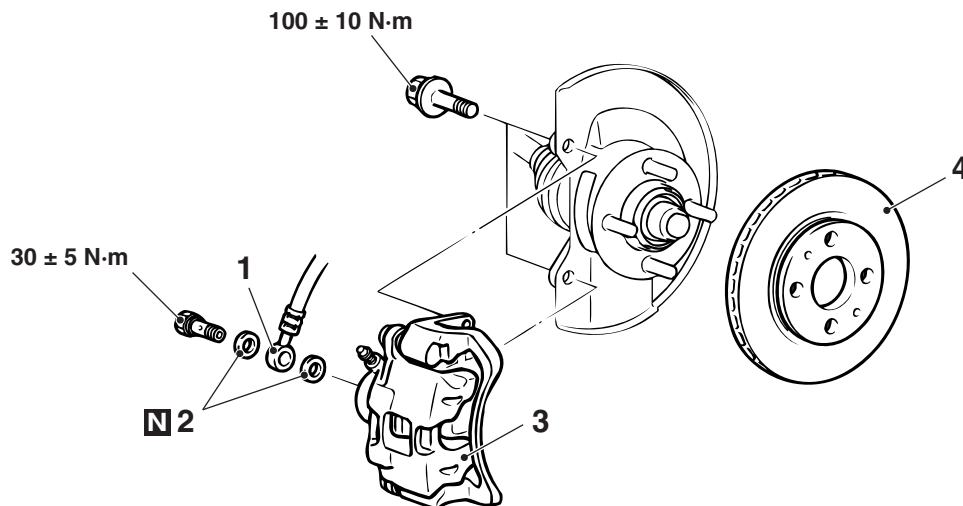
M1351004300383

- Check the inner surface of master cylinder body for rust or pitting.
- Check the primary and secondary pistons for rust, scoring, wear or damage.

## FRONT DISC BRAKE ASSEMBLY

## REMOVAL AND INSTALLATION

M1351006000667



AC006240 AC

**Removal steps**

- Brake fluid draining
- 1. Brake hose connection
- 2. Brake fluid line gasket
- 3. Front brake assembly
- 4. Front brake disc

**Installation steps**

- 4. Front brake disc
- >>A<< 3. Front brake assembly
- 2. Brake fluid line gasket
- 1. Brake hose connection
- Brake fluid supplying and air bleeding (Refer to P.35A-6).
- >>B<< • Brake drag force check

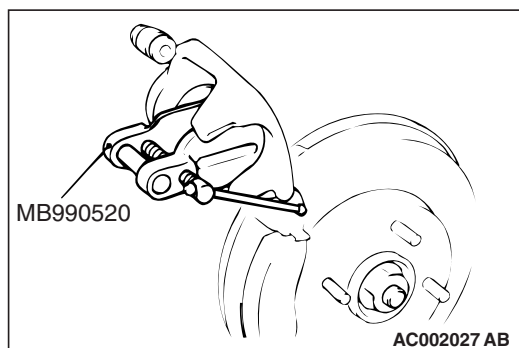
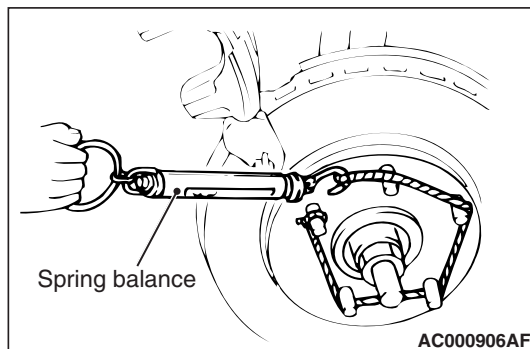
1. In order to measure the brake drag torque, measure the hub torque with the pads removed by the following procedure.

- (1) Use a spring balance to measure the hub torque in the forward direction.
- (2) Record hub torque with pads removed.

**CAUTION**

**Do not let any oil, grease or other contamination get onto the friction surfaces of the pads and brake discs.**

2. After re-installing the calliper support to the knuckle, install the pad clips and the pads to the calliper support.

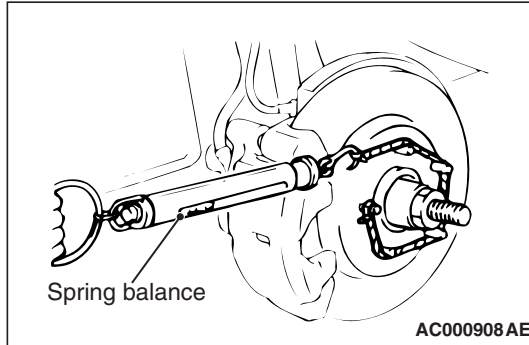
**INSTALLATION SERVICE POINTS****>>A<< FRONT BRAKE ASSEMBLY INSTALLATION**

3. Clean the piston and insert into cylinder with special tool disc brake piston expander (MB990520).
4. Be careful that the piston boot does not become caught, when lowering the calliper assembly and installing the guide pin bolt.



## >>B<< BRAKE DRAG FORCE CHECK

1. Check the brake drag force as follows.
  - (1) Start the engine and hold the brake pedal down for 5 seconds. (Pedal depression force: approximately 200 N)
  - (2) Stop the engine.
  - (3) Turn the brake disc forward 10 times.



- (4) Use a spring balance to measure the hub torque with pads installed in the same direction as earlier.
  - (5) Calculate the drag force of the disc brake [difference between hub torque with pads installed and hub torque with pads removed].

**Standard value: 68 N or less**

2. If the brake drag force exceeds the standard value, disassemble and clean the piston. Check for corrosion or worn piston seal, and check the sliding condition of the lock pin and guide pin.

## INSPECTION

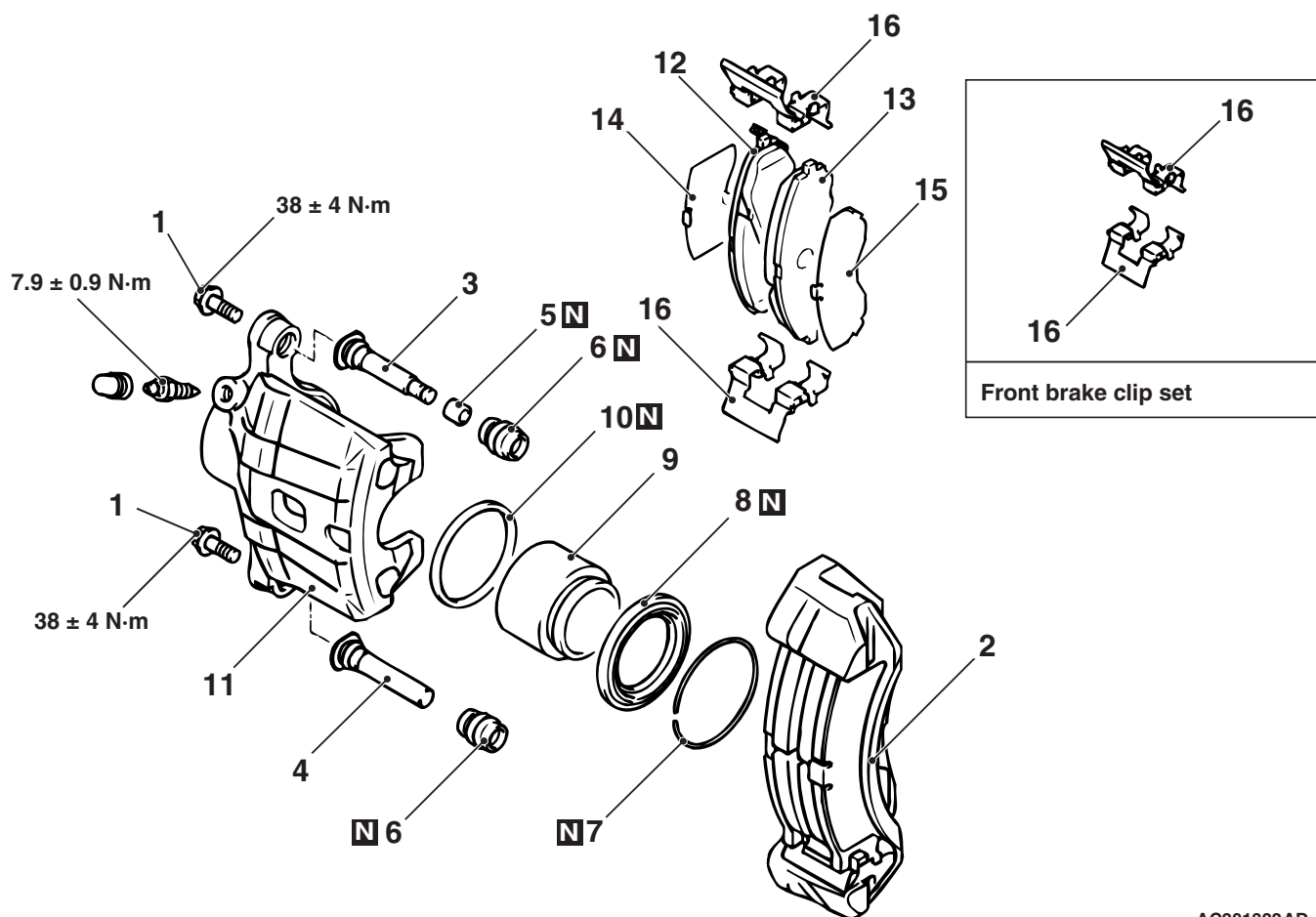
M1351006100415

### BRAKE DISC CHECK

Disc wear (Refer to [P.35A-9](#)).  
Disc run-out (Refer to [P.35A-9](#)).

## DISASSEMBLY AND REASSEMBLY

M1351006200713



AC201322AD

|                          |                     |                      |                               |
|--------------------------|---------------------|----------------------|-------------------------------|
|                          |                     |                      |                               |
| Front brake calliper kit | Front brake pad set | Front brake shim set | Front brake calliper seal kit |

**Disassembly steps**

1. Front brake bolt
2. Front brake calliper support (including pad, clip and shim)
3. Front brake pin (lock pin)
4. Front brake pin (guide pin)
5. Front brake bushing
6. Pin boot
7. Boot ring
8. Piston boot

**Disassembly steps (Continued)**

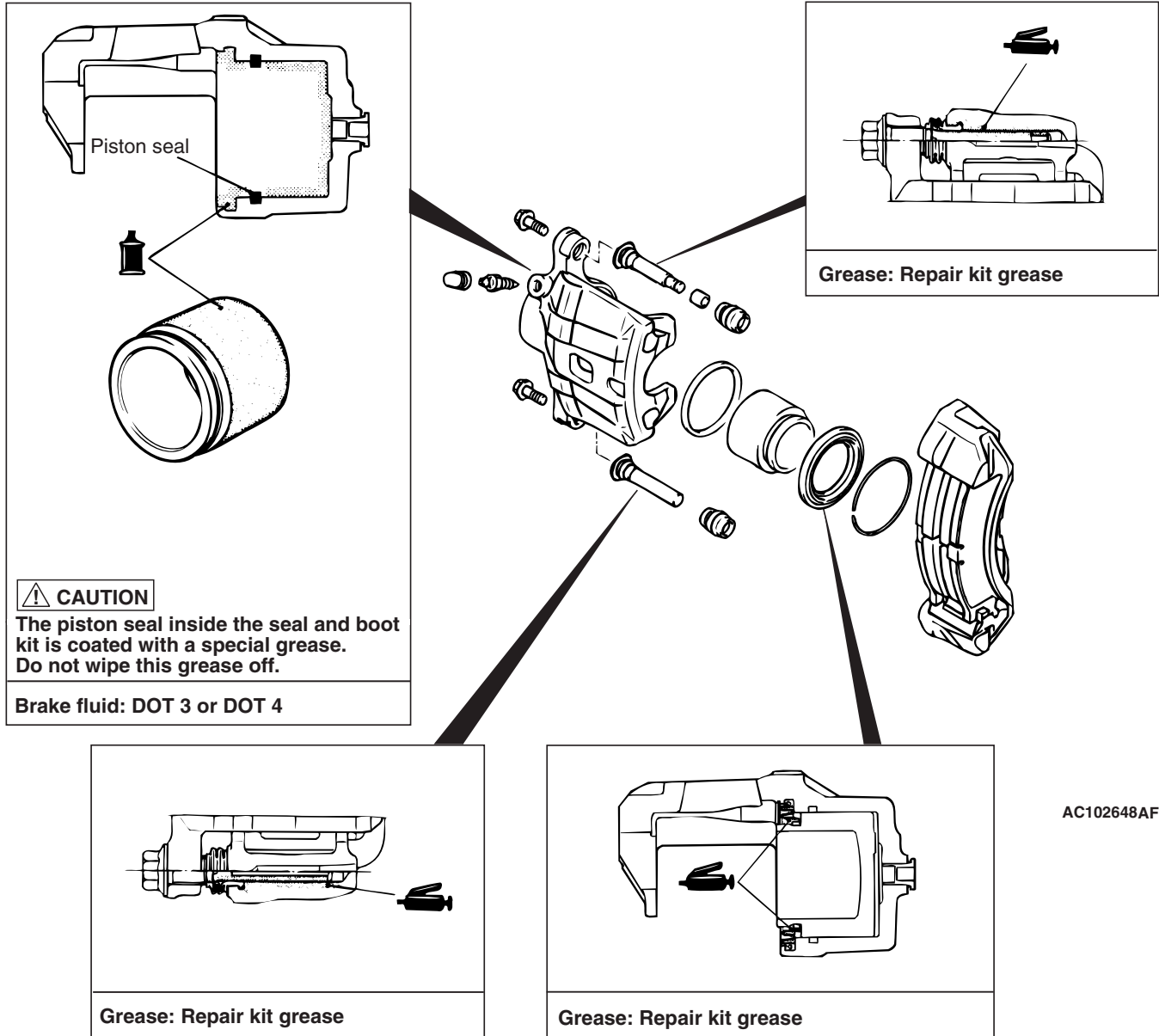
9. Front brake calliper piston
10. Piston seal
11. Calliper body
12. Pad and wear indicator assembly or pad assembly
13. Pad assembly
14. Inner shim
15. Outer shim
16. Front brake clip

&lt;&lt;A&gt;&gt;

&lt;&lt;A&gt;&gt;

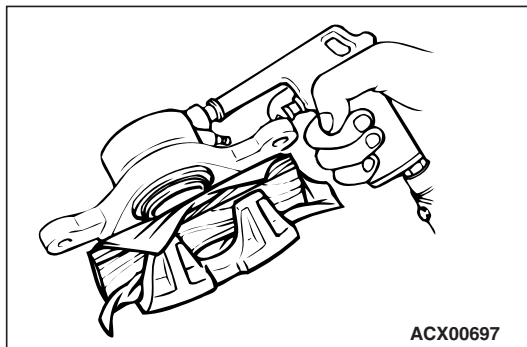
&lt;&lt;B&gt;&gt;

## LUBRICATION POINTS



## DISASSEMBLY SERVICE POINTS

When disassembling the disc brakes, disassemble both sides (left and right) as a set.

<<A>> PISTON BOOT/FRONT BRAKE  
CALLIPER PISTON REMOVAL**CAUTION**

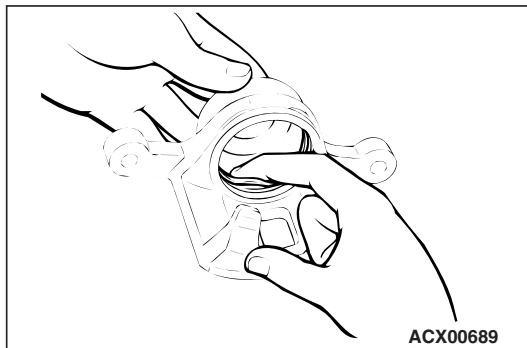
Blow air little by little to remove the piston. The piston will rush out if a force of air is applied suddenly.

Place a piece of wood, etc. against the calliper body as shown. Blow compressed air through the brake hose to remove the piston boot and piston.

## &lt;&lt;B&gt;&gt; PISTON SEAL REMOVAL

**CAUTION**

Do not use a flat-tipped screwdriver or similar tool to remove the piston seal. These may damage the inner side of the cylinder.



1. Remove the piston seal with your finger tip.

2. Clean the piston surface and inner cylinder with alcohol or brake fluid DOT 3 or DOT 4.

## INSPECTION

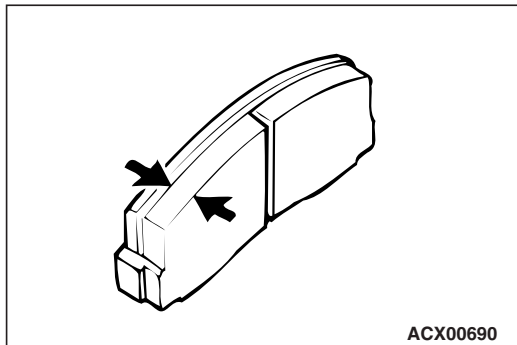
M1351006300527

- Check the cylinder for wear, damage or rust.
- Check the piston surface for wear, damage or rust.
- Check the calliper body or sleeve for wear.
- Check the pad for damage or adhesion of grease, check the shim for damage.

## PAD WEAR CHECK

**WARNING**

- ***Always replace both brake pads on each wheel as a set. Failure to do so will result in uneven braking, which may cause unreliable brake operation.***
- ***If there is significant difference in the thickness of the pads on the left and right sides, check the sliding condition of the piston and slide pins.***



1. Measure thickness at the thinnest and most worn area of the pad.

**Standard value: 10.0 mm**

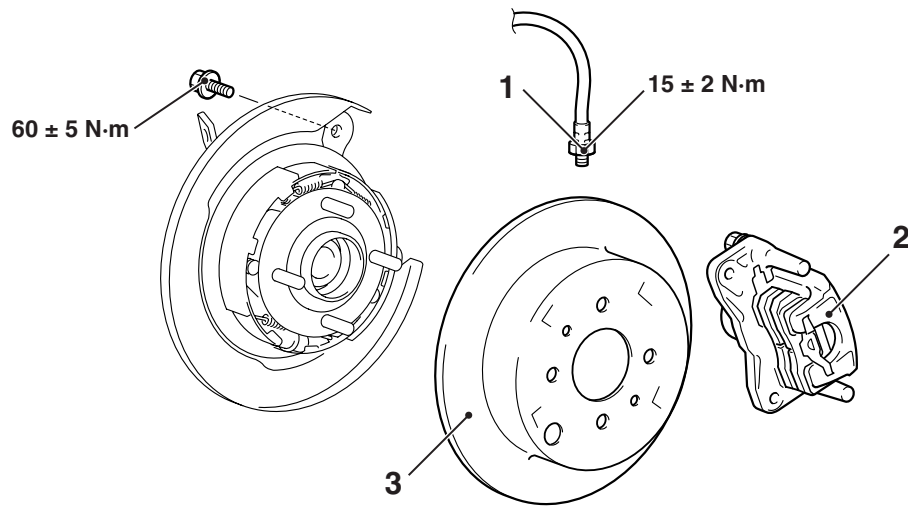
**Minimum limit: 2.0 mm**

2. Replace the pad assembly if pad thickness is less than the limit value.

# REAR DISC BRAKE ASSEMBLY

## REMOVAL AND INSTALLATION

M1351007000507



AC304237 AB

### Removal steps

- Brake fluid draining
- 1. Brake hose connection
- 2. Rear brake assembly
- 3. Rear brake disc

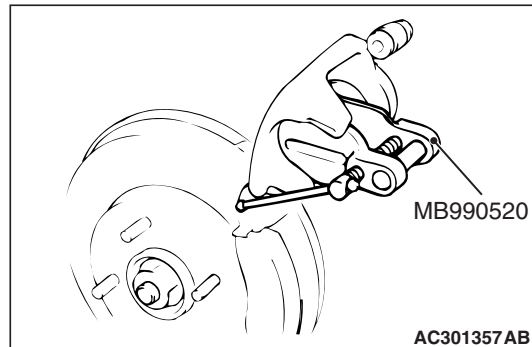
### Installation steps

- 3. Rear brake disc
- >>A<< 2. Rear brake assembly
- 1. Brake hose connection
- Brake fluid supplying and air bleeding (Refer to P.35A-6).
- >>B<< • Brake drag force check

### ⚠ CAUTION

Do not let any oil, grease or other contamination get onto the friction surfaces of the pads and brake discs.

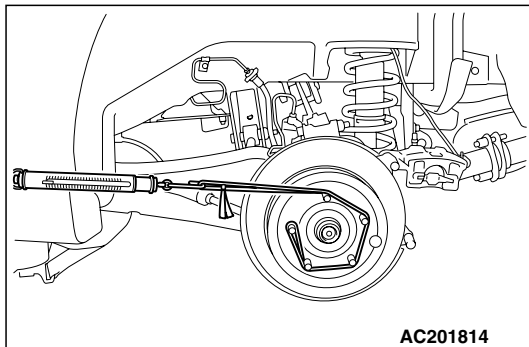
2. After re-installing the calliper support to the backing plate, install the pad clips and the pads to the calliper support.



AC301357 AB

## INSTALLATION SERVICE POINTS

### >>A<< REAR BRAKE ASSEMBLY INSTALLATION



AC201814

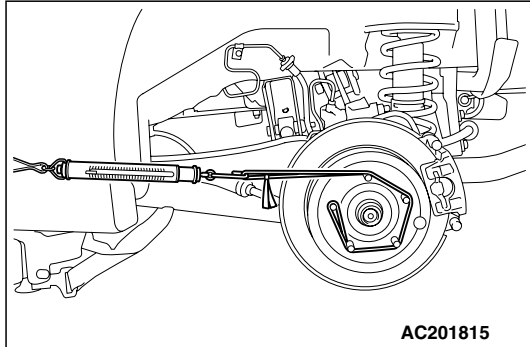
1. In order to measure the brake drag torque, measure the hub torque with the pads removed by the following procedure.

Use a spring balance to measure the hub torque in the forward direction. Record hub torque with pads removed.

3. Clean the piston and insert into cylinder with special tool disc brake piston expander (MB990520).
4. Be careful that the piston boot does not become caught, when lowering the calliper assembly and installing the lock pin.

## &gt;&gt;B&lt;&lt; BRAKE DRAG FORCE CHECK

1. Check the brake drag force as follows.
  - (1) Start the engine and hold the brake pedal down for 5 seconds. (Pedal depression force: approximately 200 N)
  - (2) Stop the engine.
  - (3) Turn the brake disc forward 10 times.



- (4) Use a spring balance to measure the hub torque with pads installed in the same direction as earlier.
  - (5) Calculate the drag force of the disc brake [difference between hub torque with pads installed and hub torque with pads removed].

**Standard value: 68 N or less**

2. If the brake drag force exceeds the standard value, disassemble and clean the piston. Check for corrosion or worn piston seal, and check the sliding condition of the lock pin and guide pin.

## INSPECTION

M1351007100388

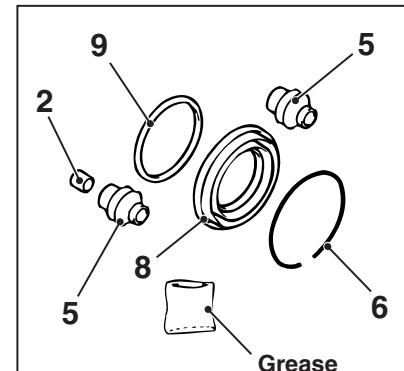
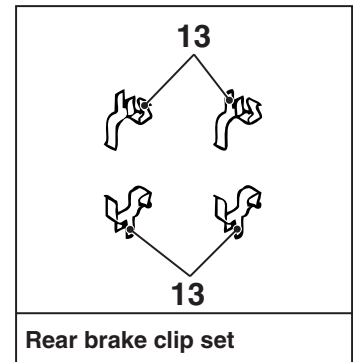
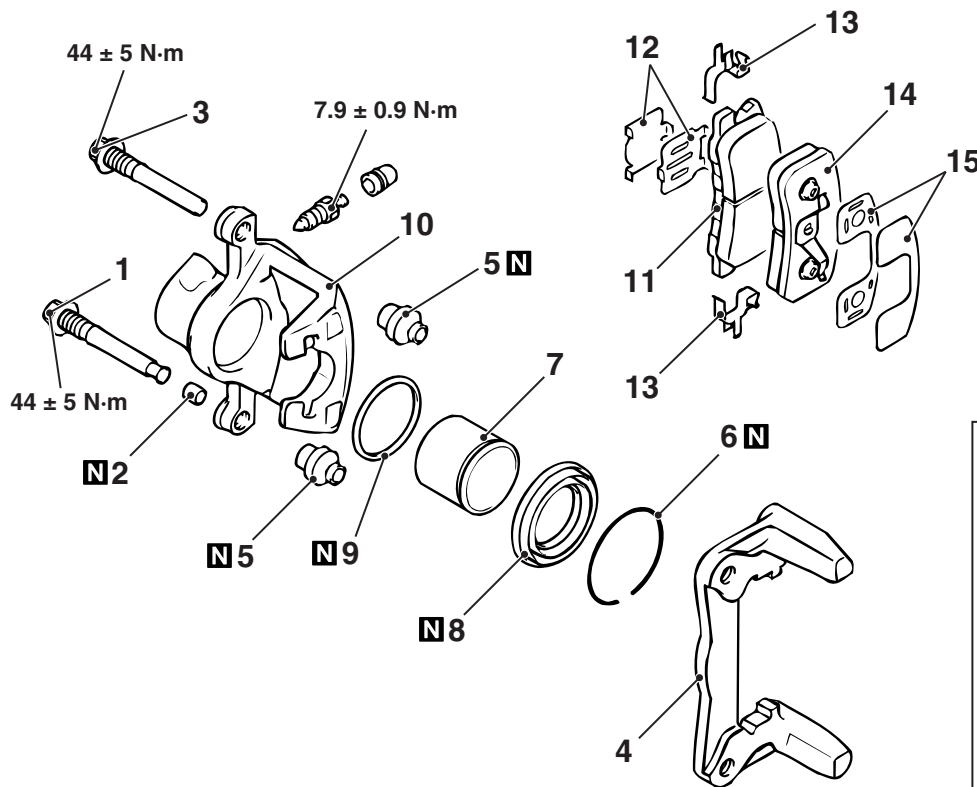
## BRAKE DISC CHECK

Disc wear (Refer to [P.35A-9](#)).

Disc run-out (Refer to [P.35A-9](#)).

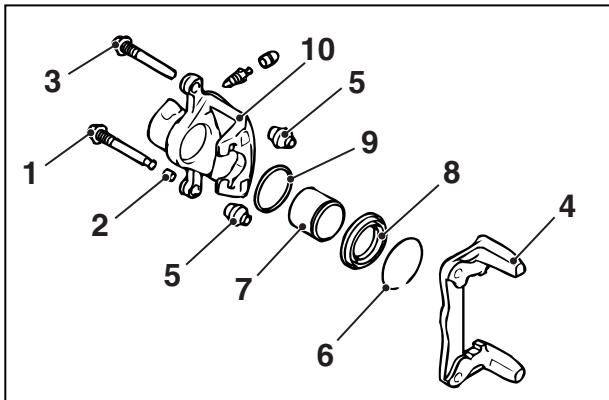
# DISASSEMBLY AND REASSEMBLY

M1351007200459

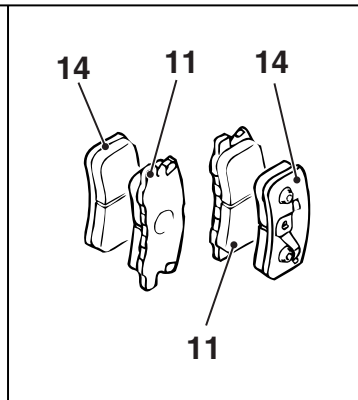


AC203578 AF

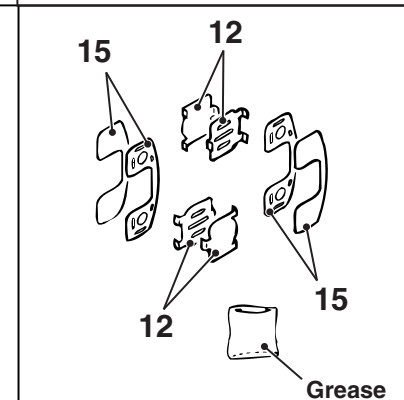
Rear brake calliper seal kit



Rear brake calliper kit



Rear brake pad set



Rear brake shim set

## Disassembly steps

1. Rear brake pin (lock pin)
2. Rear brake bushing
3. Rear brake pin (guide pin)
4. Rear brake calliper support
5. Pin boot
6. Boot ring
7. Rear brake calliper piston
8. Piston boot

<<A>>

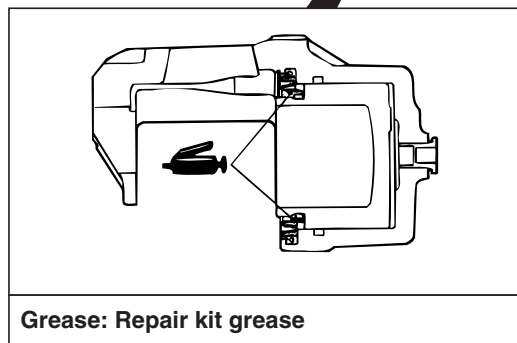
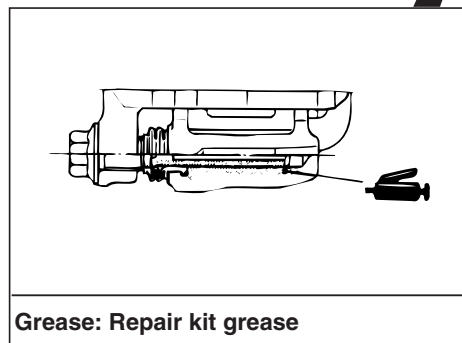
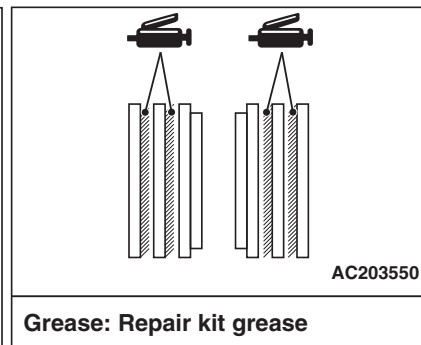
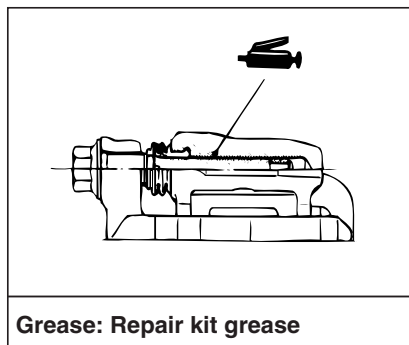
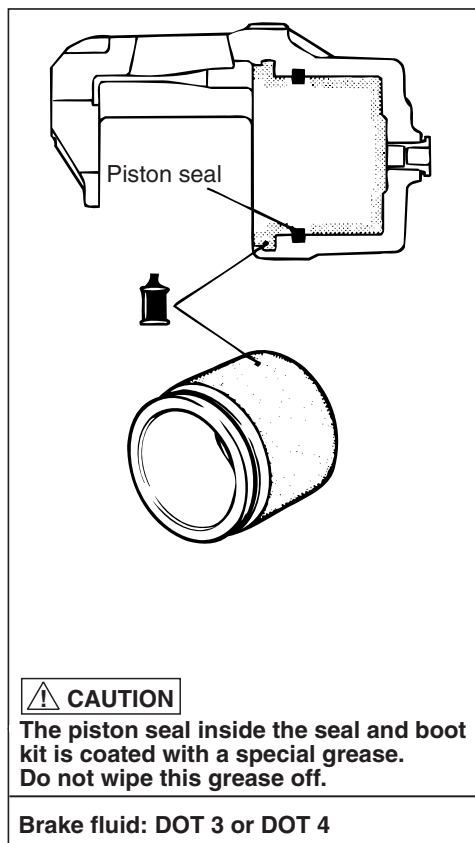
<<A>>

<<B>>

## Disassembly steps (Continued)

9. Piston seal
10. Calliper body
11. Pad and wear indicator assembly
12. Inner shim
13. Rear brake clip
14. Pad assembly
15. Outer shim

## LUBRICATION POINTS



## DISASSEMBLY SERVICE POINTS

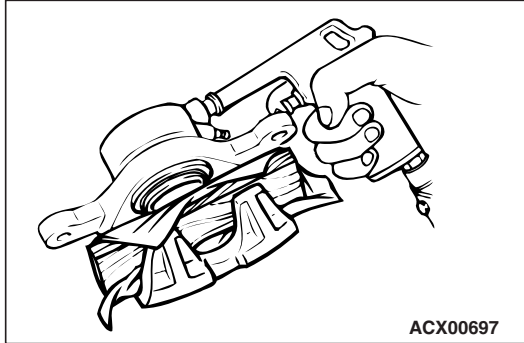
When disassembling the disc brakes, disassemble both sides (left and right) as a set.



## <<A>> REAR BRAKE CALLIPER PISTON/PISTON BOOT REMOVAL

### CAUTION

Blow air little by little to remove the piston. The piston will rush out if a force of air is applied suddenly.

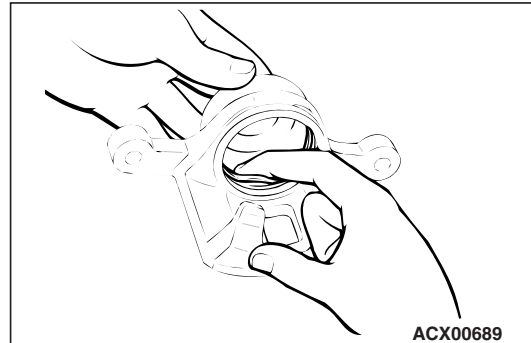


Place a piece of wood, etc. against the calliper body as shown. Blow compressed air through the brake hose to remove the piston boot and piston.

## <<B>> PISTON SEAL REMOVAL

### CAUTION

Do not use a flat-tipped screwdriver or similar tool to remove the piston seal. These may damage the inner side of the cylinder.



1. Remove the piston seal with your finger tip.
2. Clean the piston surface and inner cylinder with alcohol or brake fluid DOT 3 or DOT 4.

## INSPECTION

Refer to [P.35A-20](#).

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