

GROUP 35A

SERVICE BRAKES

CONTENTS

GENERAL INFORMATION	35A-2	BRAKE PEDAL	35A-14
SERVICE SPECIFICATIONS	35A-3	REMOVAL AND INSTALLATION	35A-14
LUBRICANTS	35A-4	INSPECTION	35A-15
SEALANT	35A-4	MASTER CYLINDER ASSEMBLY AND BRAKE BOOSTER	35A-16
SPECIAL TOOLS	35A-4	REMOVAL AND INSTALLATION	35A-16
ON-VEHICLE SERVICE	35A-5	MASTER CYLINDER	35A-18
BRAKE PEDAL CHECK AND ADJUSTMENT	35A-5	INSPECTION	35A-18
BRAKE BOOSTER OPERATING TEST . . .	35A-6	FRONT DISC BRAKE ASSEMBLY . .	35A-19
CHECK VALVE OPERATION CHECK . . .	35A-7	REMOVAL AND INSTALLATION	35A-19
BLEEDING	35A-7	INSPECTION	35A-19
BRAKE FLUID LEVEL SENSOR CHECK . .	35A-8	DISASSEMBLY AND REASSEMBLY	35A-20
FRONT DISC BRAKE PAD CHECK AND REPLACEMENT	35A-8	INSPECTION	35A-21
DISC BRAKE ROTOR CHECK	35A-10	REAR DISC BRAKE ASSEMBLY . . .	35A-22
BRAKE DISC THICKNESS CHECK	35A-11	REMOVAL AND INSTALLATION	35A-22
BRAKE DISC RUN-OUT CHECK AND CORRECTION	35A-12	INSPECTION	35A-22
		DISASSEMBLY AND REASSEMBLY	35A-23
		INSPECTION	35A-24

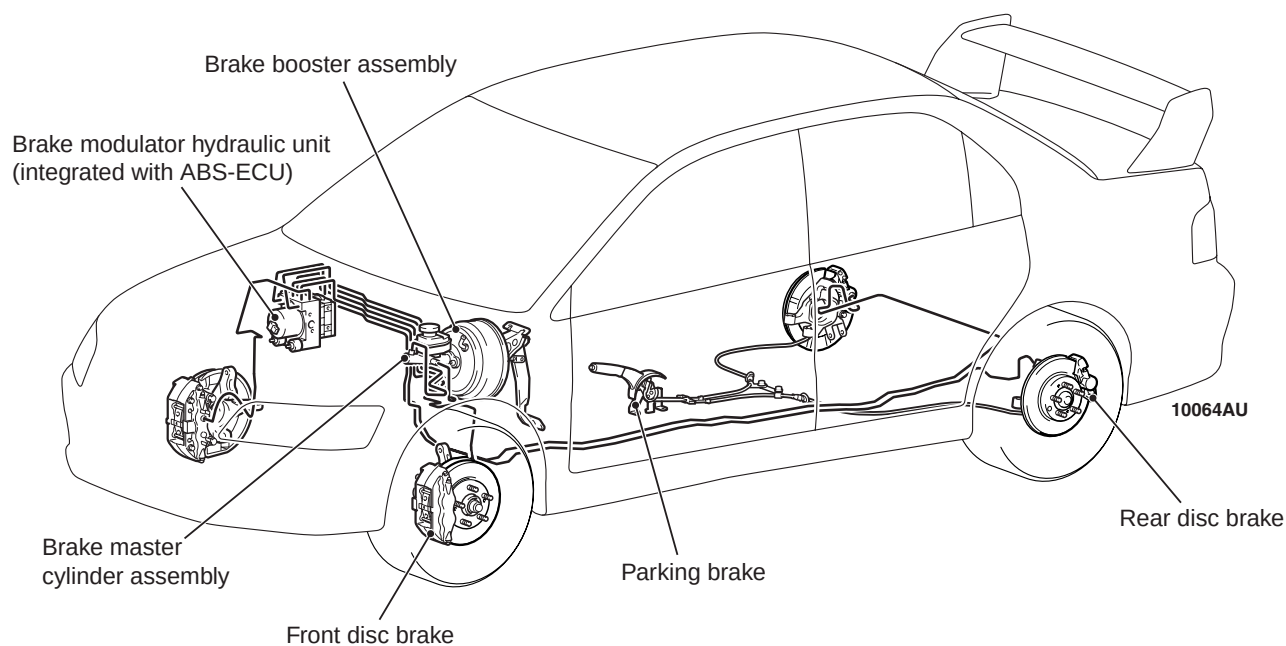
GENERAL INFORMATION

M1351000100536

⚠ CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched.

Top components such as Brembo™ brakes, EBD and sports ABS improve braking power and braking stability.

CONSTRUCTION DIAGRAM

AC211387AD

SPECIFICATIONS

Item		Specification
Master cylinder	Type	Tandem type
	I.D. mm	26.9
Brake booster	Type	Vacuum type, tandem
	Effective dia. of power cylinder mm	205 + 230
	Boosting ratio	4.5 (Brake pedal depressing force: 230 N)
Rear wheel hydraulic control method		Electronic brake-force distribution (EBD)
Front brakes	Type	4-opposed piston, ventilated disc
	Disc effective dia. × thickness mm	263 × 32
	Wheel cylinder I.D. mm	40.0 × 2, 46.0 × 2
	Pad thickness mm	10.0
	Clearance adjustment	Automatic
Rear brakes	Type	2-opposed piston, ventilated disc
	Disc effective dia. × thickness mm	252 × 22
	Wheel cylinder I.D. mm	40.0 × 2
	Pad thickness mm	9.0
	Clearance adjustment	Automatic

SERVICE SPECIFICATIONS

M1351000300574

Item	Standard value	Limit
Brake pedal height mm	169.1 – 172.1	–
Brake pedal free play mm	3 – 8	–
Brake pedal to floorboard clearance mm	90 or more	–
Front disc brake pad thickness mm	10.0	Minimum 2.0
Front disc brake disc thickness mm	32.0	Minimum 29.8
Front disc brake disc run-out mm	–	0.03
Front disc brake drag force N	69 or less	–
Rear disc brake pad thickness mm	9.0	Minimum 2.0
Rear disc brake disc thickness mm	22.0	Minimum 20.4
Rear disc brake disc run-out mm	–	0.03
Rear disc brake drag force N	69 or less	–
Front wheel bearing axial play mm	–	0.05
Rear wheel bearing axial play mm	–	0.05
Brake booster push rod protruding amount mm	8.98 – 9.23	–

LUBRICANTS

M1351000400504

Item	Specified lubricant
Brake fluid	DOT3 or DOT4
Pad assembly	Repair kit grease

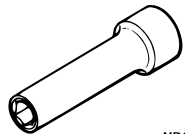
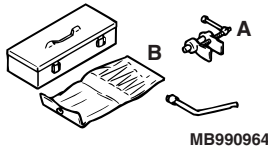
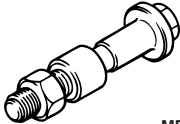
SEALANT

M1351000500415

Item	Specified sealant	Remark
Fitting	3M ATD Part No.8661 or equivalent	Semi-drying sealant

SPECIAL TOOLS

M1351000600434

Tool	Number	Name	Use
 MB991568	MB991568	Push rod adjusting socket	Adjustment of the brake booster push rod protrusion amount
 MB990964	MB990964 A: MB990520 B: MB990619	Brake tool set A: Disc brake piston expander B: Installer	- Pushing-in of the disc brake piston - Installation of the drum brake wheel cylinder piston cup
 MB990998	MB990998	Front hub remover and installer	Provisional holding of the wheel bearing

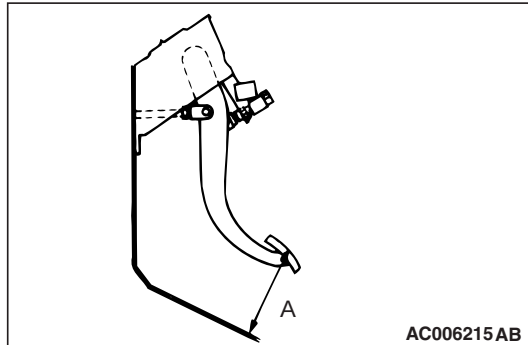
ON-VEHICLE SERVICE

BRAKE PEDAL CHECK AND ADJUSTMENT

M1351000900510

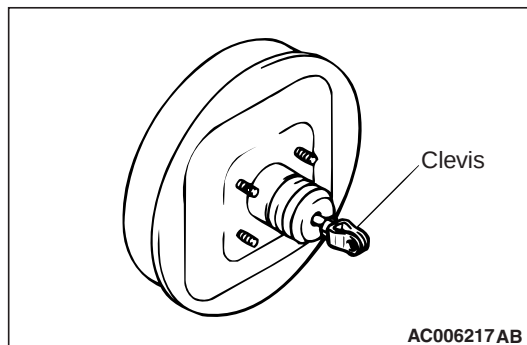
BRAKE PEDAL HEIGHT

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 melting sheet (floorboard) 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) Loosen the stop lamp switch by turning it approximately 1/4 turn anticlockwise.
 - (3) Remove the brake booster (Refer to [P.35A-16](#)).

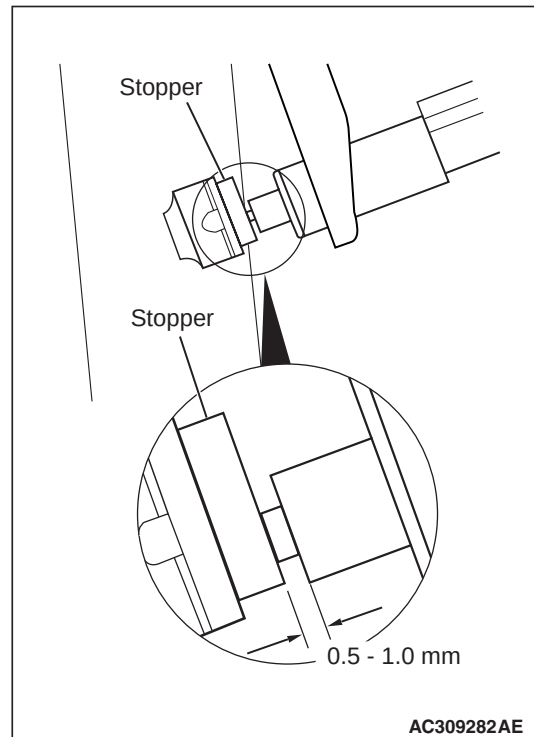
NOTE: With the master cylinder and brake pipe connected, remove the brake booster only.



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

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

- (5) Install the brake booster (Refer to [P.35A-16](#)).
- (6) Measure the brake pedal height, and ensure that the measured value is within the specified value. When it is out of the specified value, repeat Step (3) - (6).

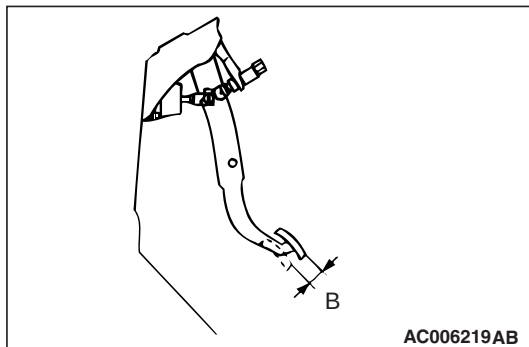


- (7) Insert the stop lamp switch until its threaded part touches the stopper. Then lock the stop lamp switch by turning it approximately 1/4 turn clockwise, and confirm that the clearance between the switch plunger and the stopper is as shown.

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. Return the carpet, etc.

BRAKE PEDAL FREE PLAY

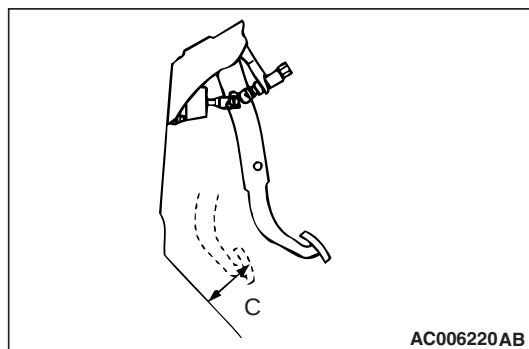
1. With the engine stopped, depress the brake pedal two or three times. After eliminating the vacuum in the power brake booster, press the pedal down by hand, and confirm that the amount of movement before resistance is met (the free play) is within the standard value.

Standard value (B): 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 FLOORBOARD

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



2. Start the engine, depress the brake pedal with approximately 500 N of force, and measure the clearance between the brake pedal and the floorboard.

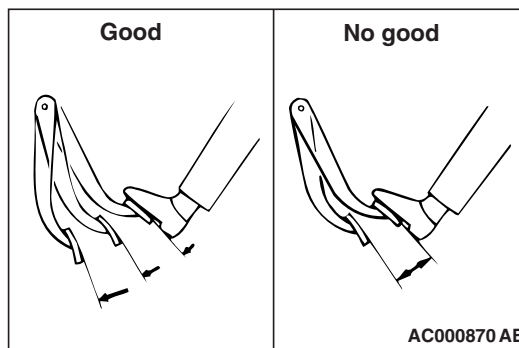
Standard value (C): 90 mm or more [From the surface of the floorboard to the face of pedal pad]

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

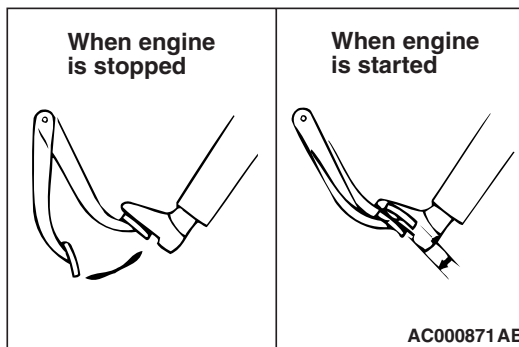
BRAKE BOOSTER OPERATING TEST

M1351001000435

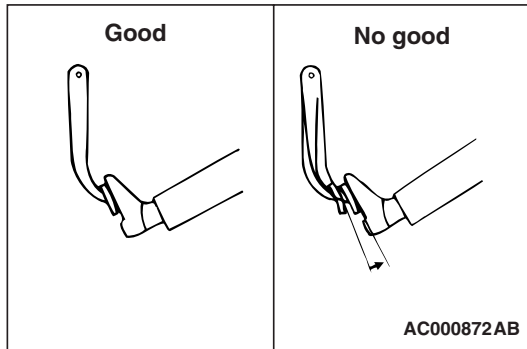
1. For simple checking of the brake booster operation, carry out the following tests:



- (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 is OK. If one of the above three tests is not okay, the check valve, vacuum hose, or booster is defective. Check the check valve operation (Refer to P.35A-7), vacuum hose for leaks, high volume engine vacuum applied to booster. Repair or replace as necessary. If these are OK, replace the booster and repeat this test starting at Step 1.

CHECK VALVE OPERATION CHECK

M1351009000462

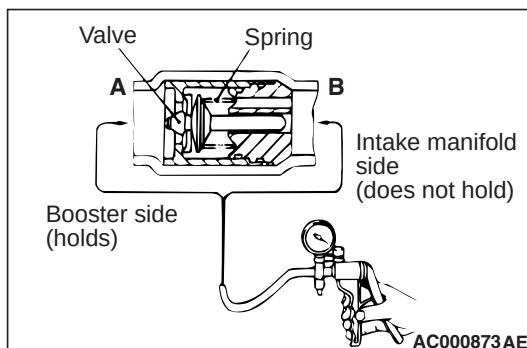
CAUTION

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

1. Remove the vacuum hose (Refer to P.35A-16).

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

M1351001400552

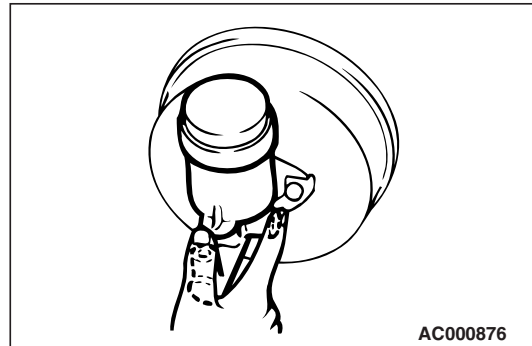
CAUTION

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

MASTER CYLINDER BLEEDING

The master cylinder 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.

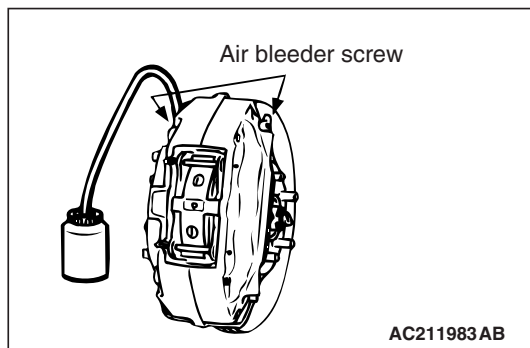


3. Have another person cover the master cylinder outlet with a finger.
4. With the outlet still closed, release the brake pedal.
5. Repeat steps 2 – 4 three or four times to fill the inside of the master cylinder with brake fluid.

DISC BRAKE BLEEDING

⚠ CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.

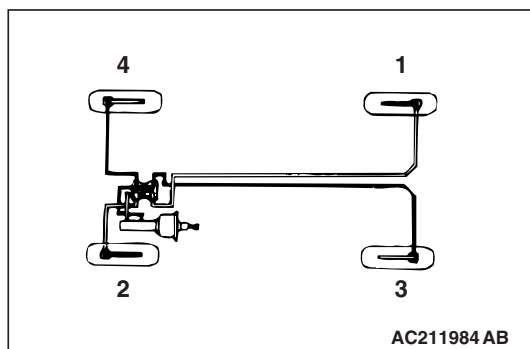


Connect a vinyl tube to the outer end of the air bleeder screw to bleed the circuit of air. Then, connect the vinyl tube to the inner end and bleed the circuit of air. Except for these, the conventional procedures shall be followed. After the circuit has been bled of air, tighten both air bleeder screws securely.

BRAKE LINE BLEEDING

⚠ CAUTION

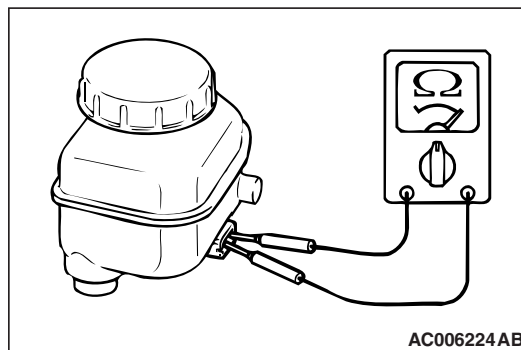
Be sure to filter/strain the brake fluid being added to the master cylinder reservoir tank. Debris may damage the hydraulic unit.



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

BRAKE FLUID LEVEL SENSOR CHECK

M1351009100447

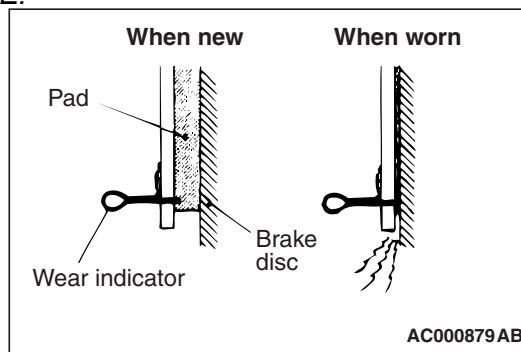


The brake fluid level sensor is in good condition if there is no continuity when the float surface is above "MIN" and if there is continuity when the float surface is below "MIN".

FRONT DISC BRAKE PAD CHECK AND REPLACEMENT

M1351002300484

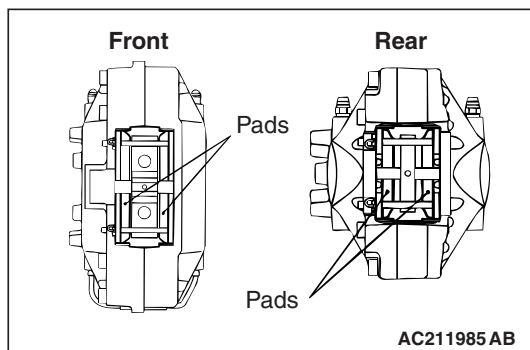
NOTE:



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

- Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.
- 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 thicknesses of the pads on the left and right sides, check moving parts.



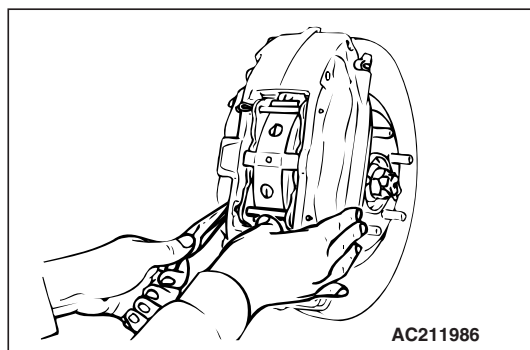
1. Check the brake pad thickness through the caliper body check port.

Standard value:

<Front> 10.0 mm

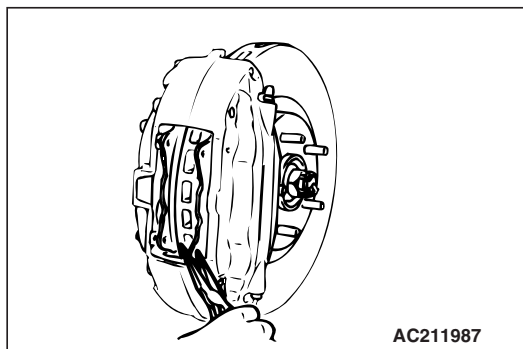
<Rear> 9.0 mm

Minimum limit: 2.0 mm

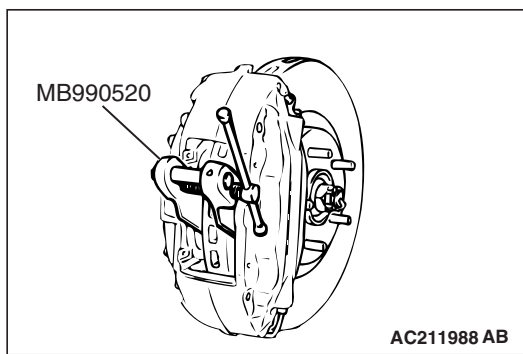


2. When the thickness is less than the limit, always replace the pads at an axle set.

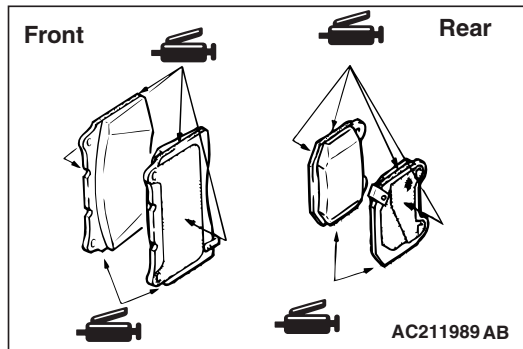
- (1) Holding the cross spring with one hand, pull the pin out of the caliper.



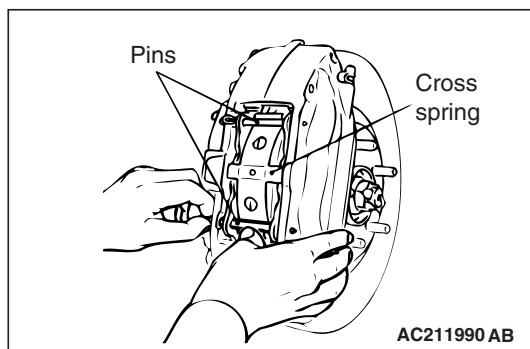
- (2) Remove the pad from the caliper.
- (3) To measure brake drag force after new pads have been installed, use a spring scale to measure the turning sliding resistance of the hub with the pads removed.



- (4) Clean the piston and, using special tool piston expander (MB990520), push the piston into the cylinder.



- (5) Apply repair kit grease to the portions of the pads indicated. At this time, make sure that the grease will not be applied to any other surfaces.
- (6) Mount the pads to the caliper so that its side with the wear indicator is on the outside of the vehicle. With the rear pads, ensure that the arrow on the pad faces in the same direction as the brake disc turns when the vehicle moves forward.



- (7) Holding the cross spring with one hand, fit pins in the caliper.

- (8) Using a spring scale, measure the turning sliding resistance of the hub in the forward direction.
- (9) Find the brake disc drag force [the difference in measurements taken in step(3) and in step(8)].

Standard value: 69 N or less

- (10) If that drag force exceeds the standard value, disassemble the caliper assembly. Then check the piston for contamination or rust, and confirm if the piston or the piston seal is deteriorated.

DISC BRAKE ROTOR CHECK

M1351002900408

⚠ 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.

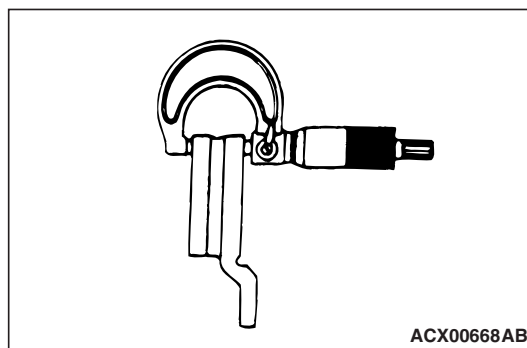
Inspection item	Remark
Scratches, rust, saturated lining materials and wear	- If the vehicle is not driven for a long period of time, sections of the discs that are not in contact with the pads will become rusty, causing noise and shuddering. - If grooves and scratches resulting from excessive disc wear 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.
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

M1351002400469

CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.



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

Standard value:

<Front> 32.0 mm

<Rear> 22.0 mm

Minimum limit:

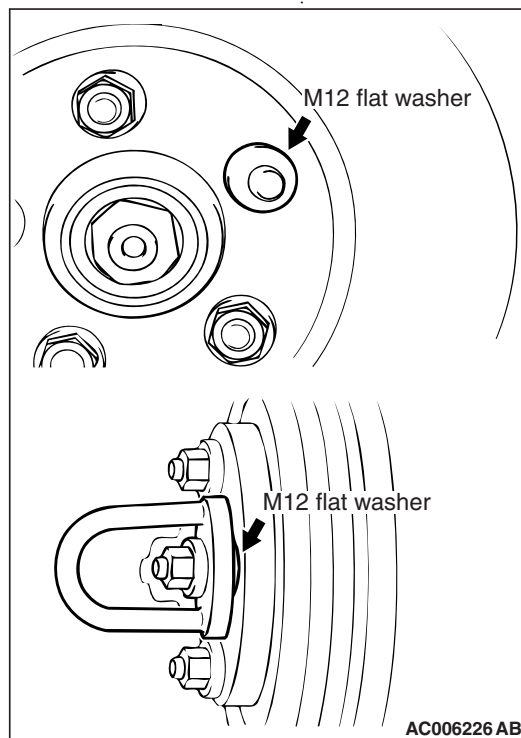
<Front> 29.8 mm

<Rear> 20.4 mm

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

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 a 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 ("Accuturn-8750" or equivalent). If the calculated final thickness after turning the rotor is less than the standard value, replace the disc.

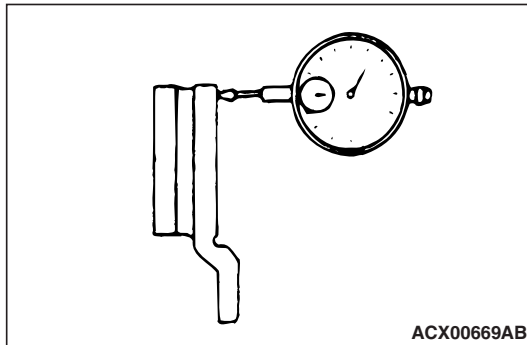
BRAKE DISC RUN-OUT CHECK AND CORRECTION

M1351009400534

CAUTION

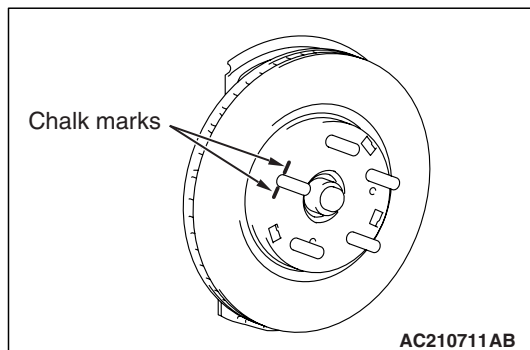
Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.

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



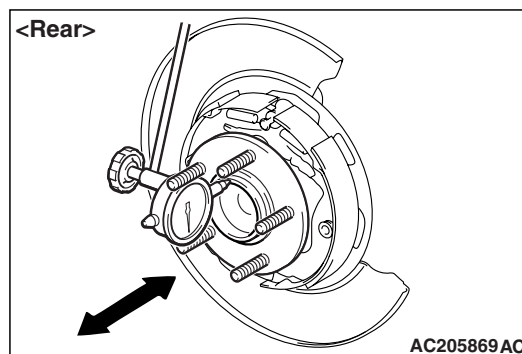
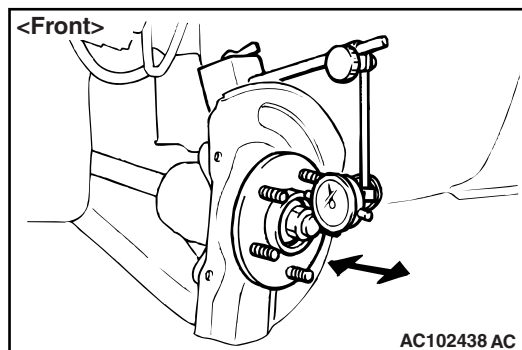
3. Place a dial gauge approximately 5 mm from the outer circumference of the brake disc, and measure the run-out of the disc.

Limit: 0.03 mm



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

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



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

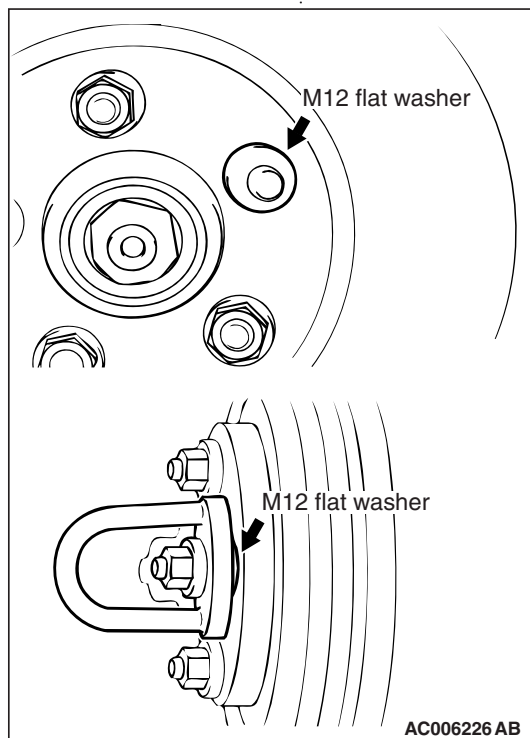
Limit: 0.05 mm

- (3) If the axial play exceeds the limit, disassemble the hub and knuckle assembly to check each part.
- (4) If the axial play does not exceed the limit, dephase 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.

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 ("Accuturn-8750" or equivalent).



When the on-the-car type lathe is used, first install a 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.

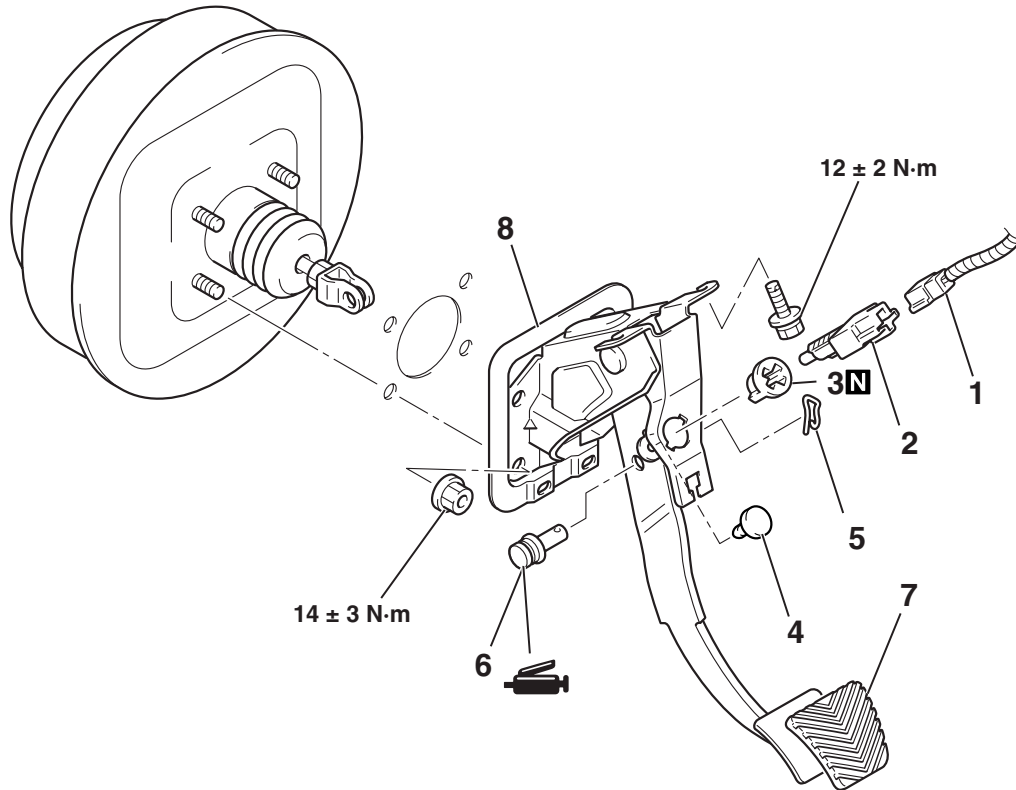
- Grind the brake disc with all wheel nuts diagonally and equally tightened to the specified torque 100 N·m. When all numbers of wheel nuts are not used, or the tightening torque is excessive or not equal, the brake disc rotor or drum may be deformed, resulting in judder.

BRAKE PEDAL**REMOVAL AND INSTALLATION**

M1351003400473

Post-installation Operation

- Brake Pedal Adjustment (Refer to [P.35A-5](#)).



AC211554 AB

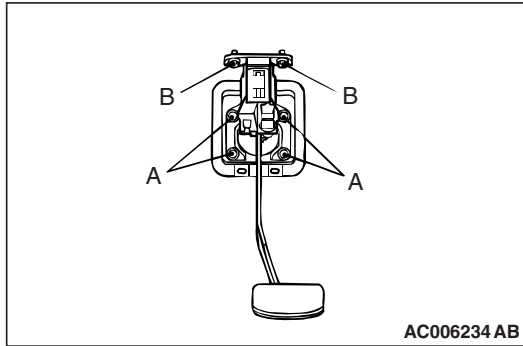
Removal steps

1. Harness connector
2. Stoplamp switch
3. Brake pedal clip
4. Brake pedal stopper

Removal steps (Continued)

5. Brake booster pin
 6. Brake pin assembly
 7. Brake pedal pad
 8. Brake pedal assembly
- >>A<<

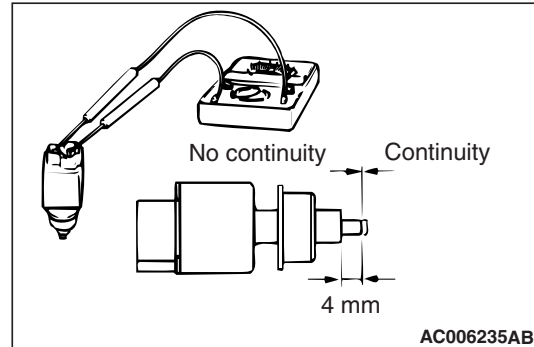
INSTALLATION SERVICE POINT >>A<< BRAKE PEDAL ASSEMBLY INSTALLATION



Tighten the brake booster mounting nuts (A), and then the brake pedal assembly mounting bolts (B).
NOTE: The brake pedal assembly cannot be positioned correctly if the brake pedal assembly mounting bolts (B) are tightened first, as their holes are oblong holes.

INSPECTION STOPLAMP SWITCH CHECK

M1351003500254



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

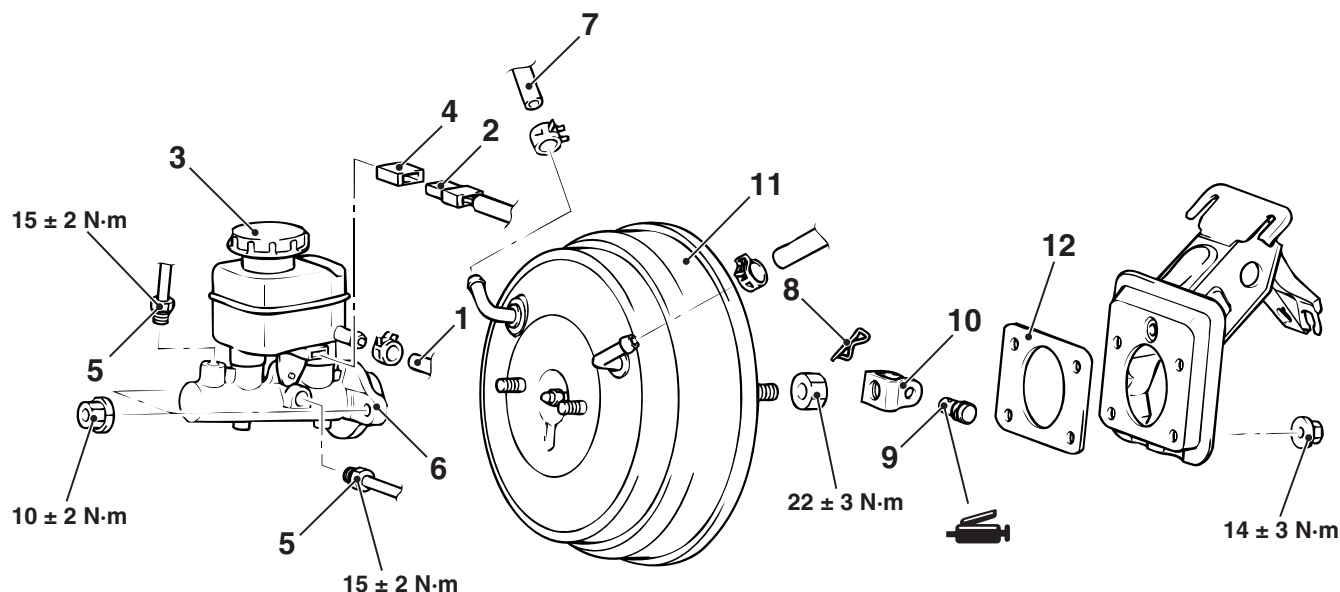
M1351003700537

Pre-removal Operation

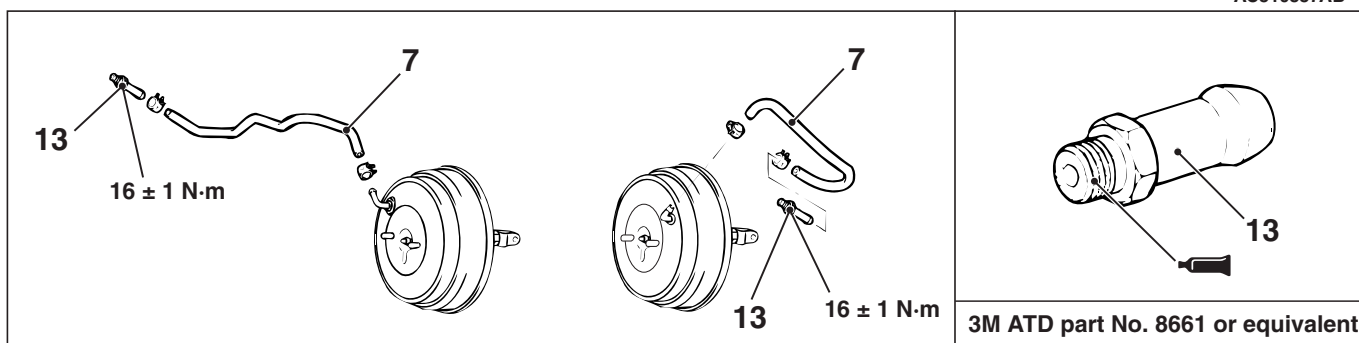
- Brake Fluid Draining
- Air Intake Hose and Air Cleaner Removal (Refer to GROUP 15, Air Cleaner P.15-5).
- Strut Tower Bar Removal (Refer to GROUP 42, Strut Tower Bar P.42-9).

Post-installation Operation

- Brake Pedal Adjustment (Refer to P.35A-5).
- Air Intake Hose and Air Cleaner Installation (Refer to GROUP 15, Air Cleaner P.15-5).
- Strut Tower Bar Removal (Refer to GROUP 42, Strut Tower Bar P.42-9).
- Brake Fluid Supplying and Air Bleeding (Refer to P.35A-7).



AC310837AB

**Master cylinder removal steps**

1. Clutch hose connection
2. Brake fluid level indicator switch connector
3. Brake fluid reservoir cap
4. Brake fluid level indicator switch
5. Brake tube connection
6. Brake master cylinder assembly

Brake booster removal steps

1. Clutch hose connection
2. Brake fluid level indicator switch connector
5. Brake tube connection
6. Brake master cylinder assembly

>>B<<

>>A<<

Brake booster removal steps

- Push rod protrusion amount check and adjustment
- 7. Brake booster vacuum hose (With built-in check valve)
- 8. Brake booster pin
- 9. Brake booster pin assembly
- 10. Clevis
- Remove A/C liquid pipe B from the retaining clip (Refer to GROUP 55, Refrigerant Line P.55-128).
- 11. Brake booster assembly
- 12. Brake booster body seal

3M ATD part No. 8661 or equivalent

Fitting removal steps

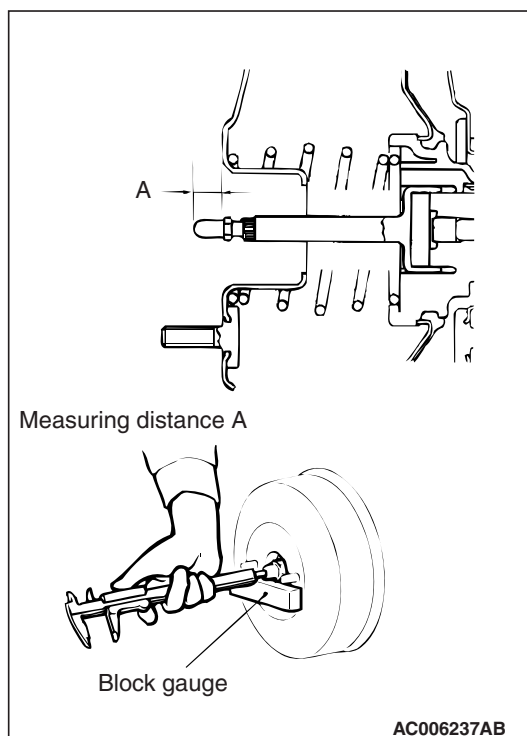
- >>A<< 7. Brake booster vacuum hose
(With built-in check valve)
13. Brake booster vacuum hose fitting

INSTALLATION SERVICE POINTS

>>A<< BRAKE BOOSTER VACUUM HOSE CONNECTION

Insert the brake booster vacuum hose to the brake booster assembly with its paint mark facing upward, and then secure the hose by using the hose clip.

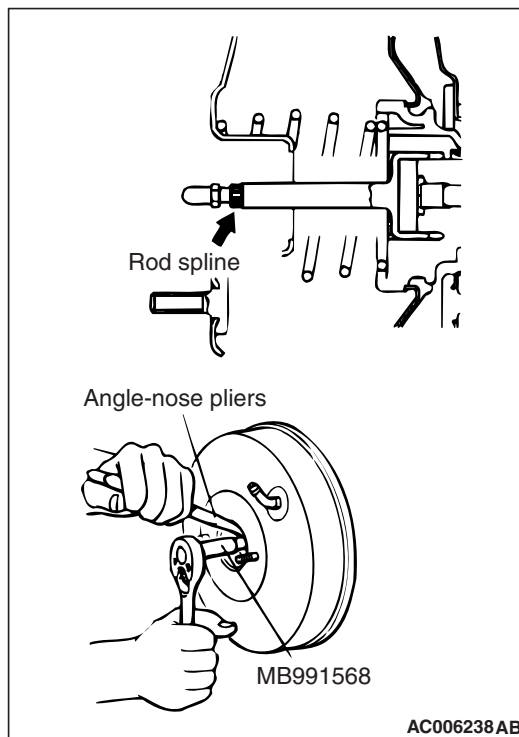
>>B<< PUSH ROD PROTRUSION AMOUNT CHECK AND ADJUSTMENT



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 10.27 - 10.53 mm.

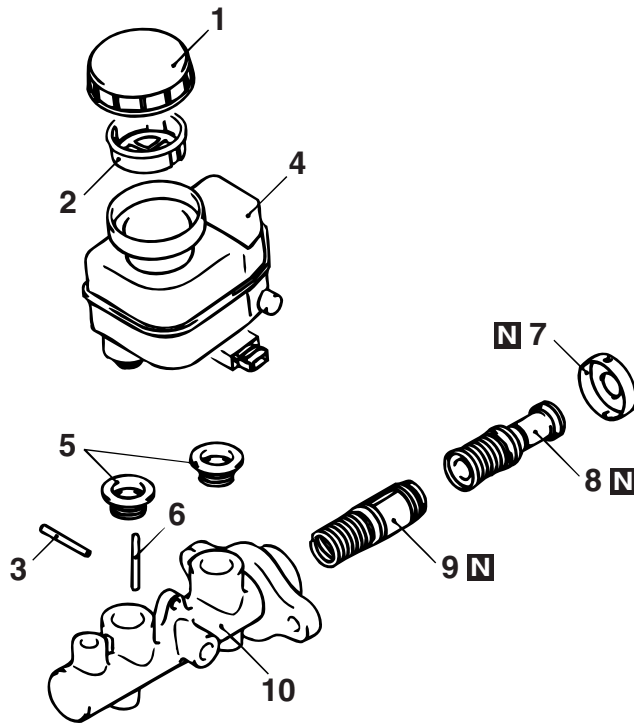


2. If the protrusion amount is not within the standard value range, adjust the push rod length by turning the push rod. Use special tool push rod adjusting socket (MB991568) to turn the push rod while holding the rod spline with angle-nose pliers.

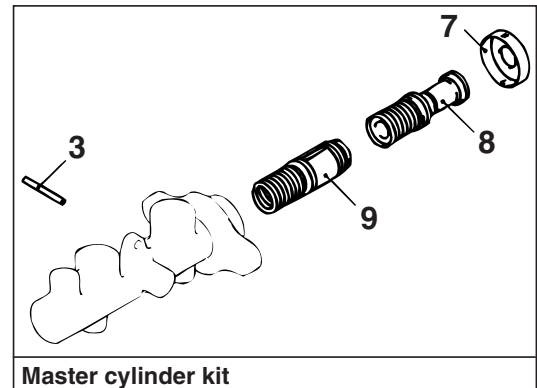
MASTER CYLINDER

M1351004200449

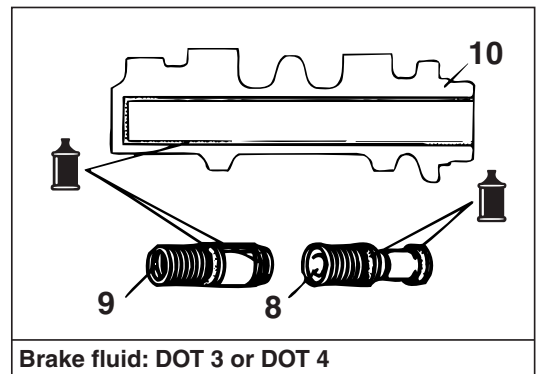
DISASSEMBLY AND REASSEMBLY

**Disassembly steps**

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



Master cylinder kit



Brake fluid: DOT 3 or DOT 4

AC006239AB

Disassembly steps (Continued)

9. Secondary piston assembly
10. Master cylinder body

INSPECTION

M1351004300338

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

FRONT DISC BRAKE ASSEMBLY

REMOVAL AND INSTALLATION

M1351006000526

⚠ CAUTION

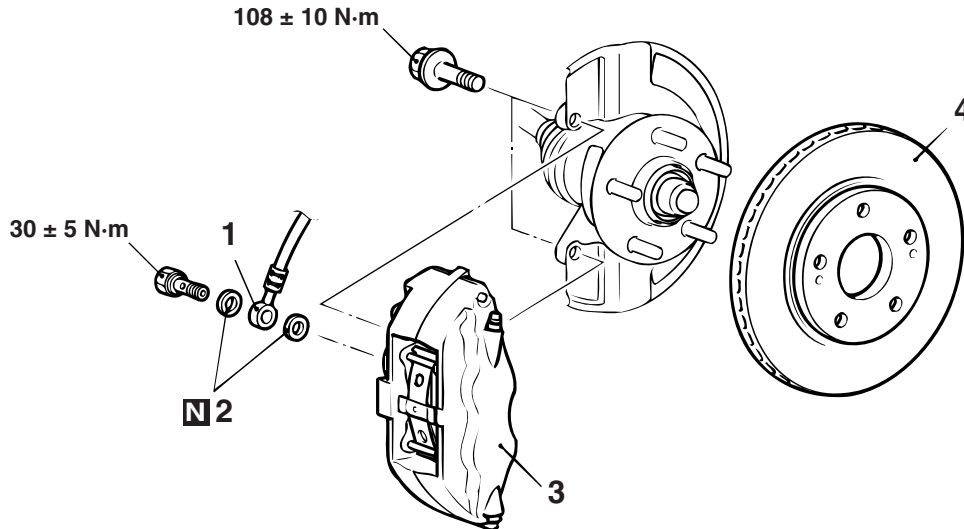
Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.

Pre-removal Operation

- Brake Fluid Draining

Post-installation Operation

- Brake Fluid Supplying and Air Bleeding (Refer to [P.35A-7](#)).



AC211991 AB

Removal steps

1. Brake hose connection
2. Gasket
- >>A<< 3. Brake caliper assembly
4. Brake disc

2. If that drag force exceeds the standard value, disassemble the caliper assembly. Then check the piston for contamination or rust, and confirm if the piston or the piston seal is deteriorated.

INSTALLATION SERVICE POINT

>>A<< BRAKE CALIPER ASSEMBLY INSTALLATION

1. Find the drag force of the disc brake (Refer to [P.35A-8](#)).

Standard value: 69 N or less

INSPECTION

BRAKE DISC CHECK

- Disc wear (Refer to [P.35A-11](#)).
- Disc run-out (Refer to [P.35A-12](#)).

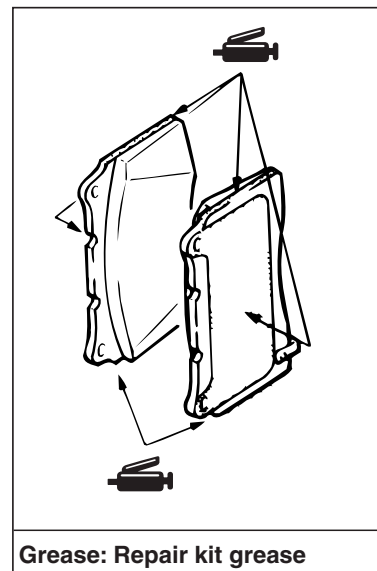
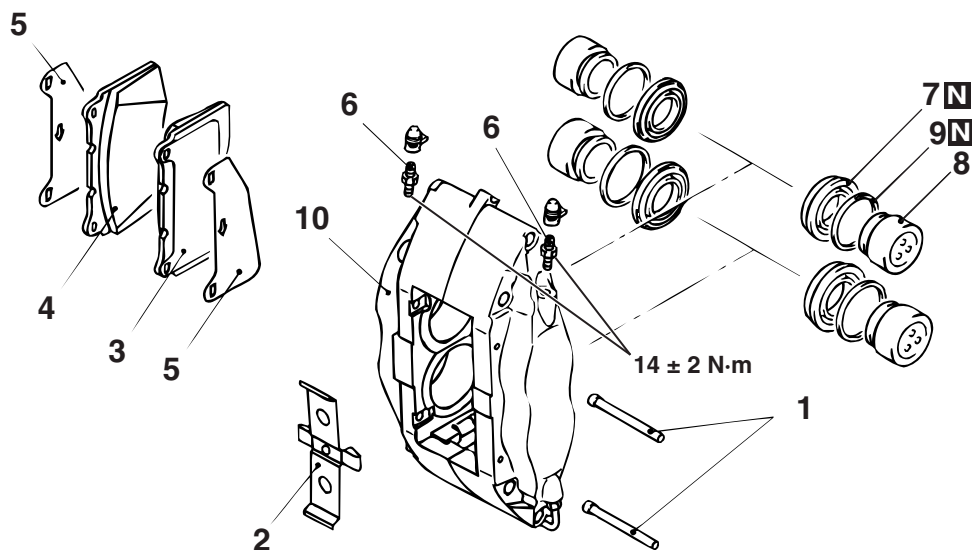
M1351006100341

DISASSEMBLY AND REASSEMBLY

M1351006200586

CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.



AC211994 AB

Brake caliper kit	Seal and boot repair kit	Shim set
Clip set	Pad set	

Disassembly steps

1. Pin
2. Pad anti-squeak spring
3. Pad and wear indicator assembly
4. Pad assembly
5. Shim
6. Caliper bleeder
7. Piston boot
8. Piston
9. Piston seal
10. Caliper body

<<A>>

<<A>>

<>

DISASSEMBLY SERVICE POINTS

⚠ CAUTION

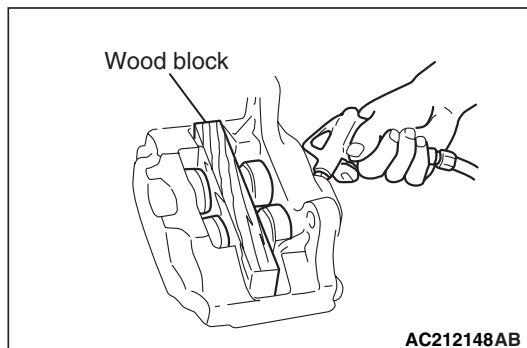
Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.

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

<<A>> PISTON BOOT/PISTON REMOVAL

⚠ CAUTION

Do not remove one piston completely before trying to remove the other piston, because it will become impossible to remove other pistons.



Remove the pistons by pumping in air slowly from the brake hose connection. Be sure to use a wood block and adjust the height of the four pistons so that the pistons protrude evenly.

<> PISTON SEAL REMOVAL

⚠ CAUTION

To prevent damage to inner cylinder, do not use a flat-tipped screwdriver or other tool.

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

INSPECTION

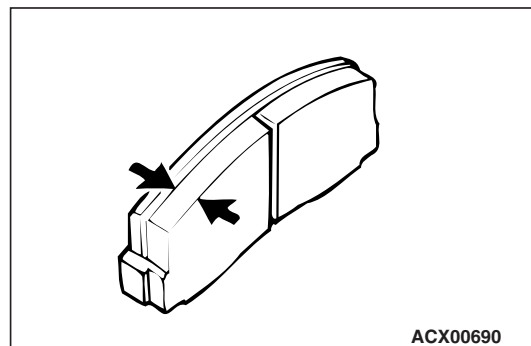
M1351006300431

- Check the cylinder for wear, damage or rust.
- Check the piston surface for wear, damage or rust.
- Check the caliper body for wear.
- Check the pad for damage or adhesion of grease, check the backing metal for damage.

PAD WEAR CHECK

⚠ WARNING

- *Always replace both brake pads on each wheel as a set (both front wheels or both rear wheels). 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 moving parts.*



Measure thickness at the thinnest, most worn area of the pad. Replace the pad assembly if pad thickness is less than the limit value.

Standard value: 10.0 mm

Minimum limit: 2.0 mm

REAR DISC BRAKE ASSEMBLY

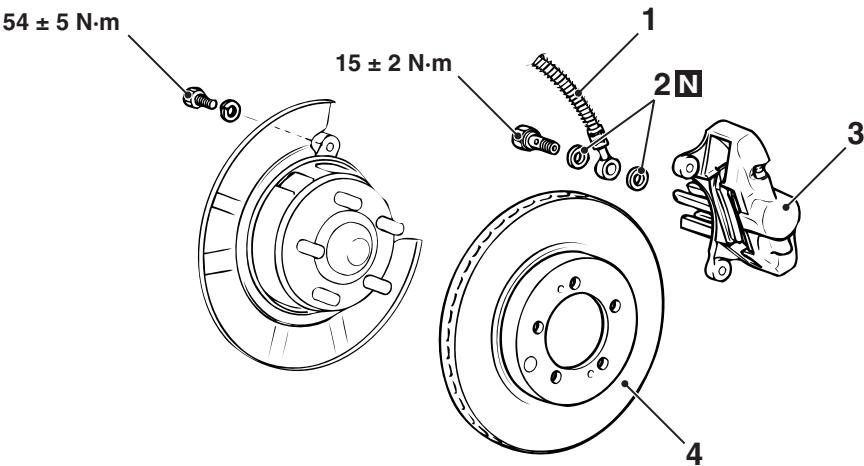
REMOVAL AND INSTALLATION

M1351007000411

CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.

Pre-removal Operation • Brake Fluid Draining	Post-installation Operation • Brake Fluid Filling and Air Bleeding (Refer to P.35A-7).
---	---



AC403344AB

Removal steps

1. Brake hose connection
2. Gasket
- >>A<< 3. Brake caliper assembly
4. Brake disc

Standard value: 69 N or less

2. If that drag force exceeds the standard value, disassemble the caliper assembly. Then check the piston for contamination or rust, and confirm if the piston or the piston seal is deteriorated.

INSTALLATION SERVICE POINT

>>A<< BRAKE CALIPER ASSEMBLY
INSTALLATION

1. Find the drag force of the disc brake (Refer to [P.35A-8](#)).

INSPECTION

BRAKE DISC CHECK

- Disc wear: Refer to [P.35A-11](#).
Disc run-out: Refer to [P.35A-12](#).

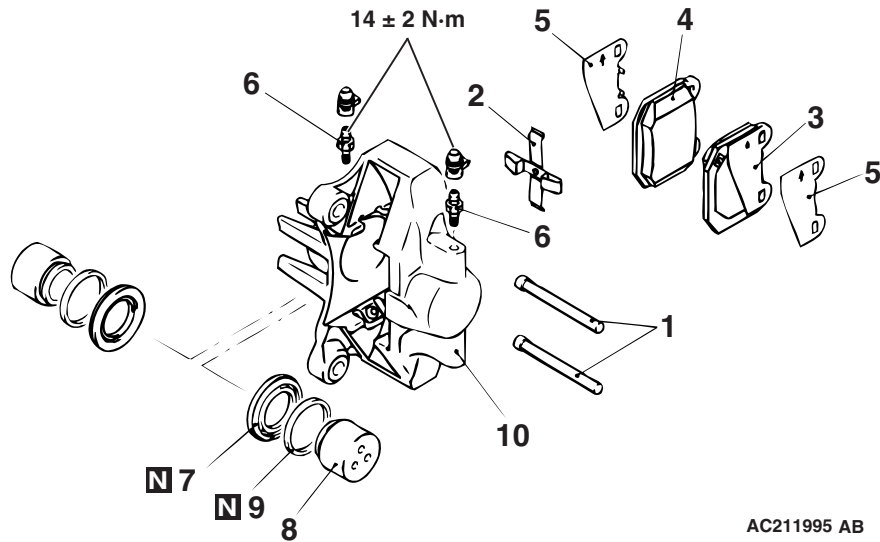
M1351007100300

DISASSEMBLY AND REASSEMBLY

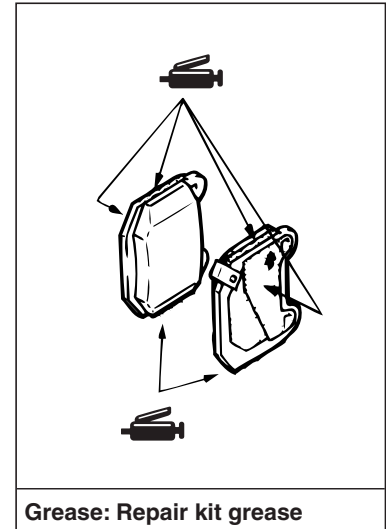
M1351007200374

CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.



AC211995 AB



Brake caliper kit	Seal and boot repair kit	Shim set
Clip set	Pad set	

Disassembly steps

1. Pin
2. Pad anti-squeak spring
3. Pad and wear indicator assembly
4. Pad assembly
5. Shim

<<A>>

<<A>>

<>

Disassembly steps (Continued)

6. Caliper bleeder
7. Piston boot
8. Piston
9. Piston seal
10. Caliper body

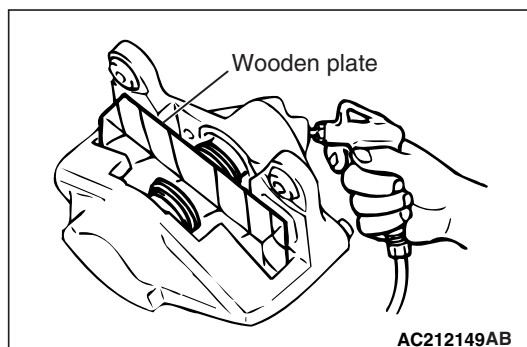
DISASSEMBLY SERVICE POINTS

⚠ CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.

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

<<A>> PISTON BOOT/PISTON REMOVAL



Remove the pistons by pumping in air slowly from the brake hose connection. Be sure to use a wood plate and adjust the height of the two pistons while so that the pistons protrude evenly.

<> PISTON SEAL REMOVAL

⚠ CAUTION

To prevent damage to inner cylinder, do not use a flat-tipped screwdriver or other tool.

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

INSPECTION

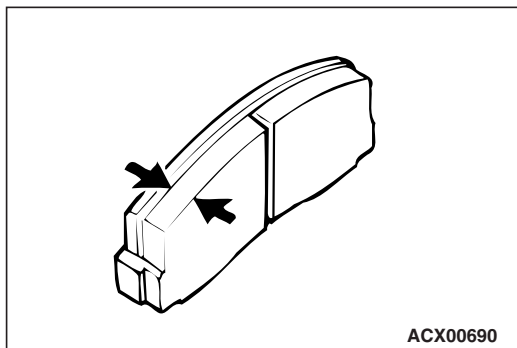
M1351007300296

- Check the cylinder for wear, damage or rust.
- Check the piston surface for wear, damage or rust.
- Check the caliper body for wear.
- Check the pad for damage or adhesion of grease, check the backing metal for damage.

PAD WEAR CHECK

⚠ WARNING

- *Always replace both brake pads on each wheel as a set (both front wheels or both rear wheels). 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 moving parts.*



Measure thickness at the thinnest, most worn area of the pad. Replace the pad assembly if pad thickness is less than the limit value.

Standard value: 9.0 mm**Minimum limit: 2.0 mm**