

SERVICE BULLETIN

AFTERSALES SERVICE OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CORRECTION	ISSUE NO. : MSB-07E35-503	DATE : 2007-12-20
SUBJECT : BRAKE DISK GRINDING PROCEDURE	<div> <div><MODEL></div> <div>(EUR/RUSSIA)</div> <div>OUTLANDER</div> <div>(GS45X)(CW0W)</div> </div> <div> <div><M/Y></div> <div>07-</div> </div>	
GROUP : SERVICE BRAKE		

1. Description:

The brake disk grinding procedure has been added into the applicable Workshop Manuals. This Service Bulletin contains the modified procedure.

2. Applicable Manuals:

Manual	Pub. No.	Title (Info-ID)	Attachment
2007 OUTLANDER Workshop Manual CD-ROM	CGXE07E1-CD (English) CGXS07E1-CD (Spanish) CGXF07E1-CD (French) CGXG07E1-CD (German)	<ul style="list-style-type: none"> Brake Disc Thickness Check (M351-00-240-58800-01) Brake Disc Runout Inspection/Correction (M351-01-480-23700-01) 	Attachment 1-4
2008 OUTLANDER Workshop Manual CD-ROM	CGXE08E1-CD (English) CGXS08E1-CD (Spanish) CGXF08E1-CD (French) CGXG08E1-CD (German)	<ul style="list-style-type: none"> Brake Disc Thickness Check (M351-00-240-58800-01) Brake Disc Runout Inspection/Correction (M351-01-480-23700-01) 	

3. Corrected Specifications:

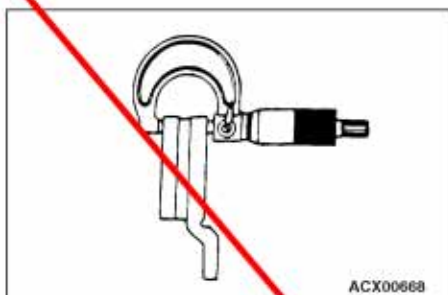
See Attachments1 to 4.

BASIC BRAKE SYSTEM ON-VEHICLE SERVICE

BRAKE DISC THICKNESS CHECK

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1. Remove any dirt and rust on the brake disc surface.



2. Measure thickness of the brake disc at the sliding area with the brake pad at four or more points.

Standard value:

<Front> 24.0 mm

<Rear> 10.0 mm

Limit:

<Front> 22.4 mm

<Rear> 8.4 mm

3. When any one of the thicknesses is lower than the limit value, replace both brake discs and pads (right and left) as a set.

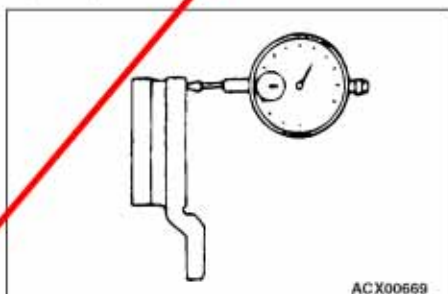
BRAKE DISC RUNOUT CHECK AND CORRECTION

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⚠ CAUTION

When working on the brake disc such as for replacement, make sure that the wheel speed detection magnetic encoder should not collect foreign materials.

1. Remove the caliper assembly and hold it with a wire.
2. Temporarily fix the brake disc with the hub nut.



3. Set a dial gauge on the brake disc approximately 5 mm inside the periphery, and measure the runout of the brake disc.

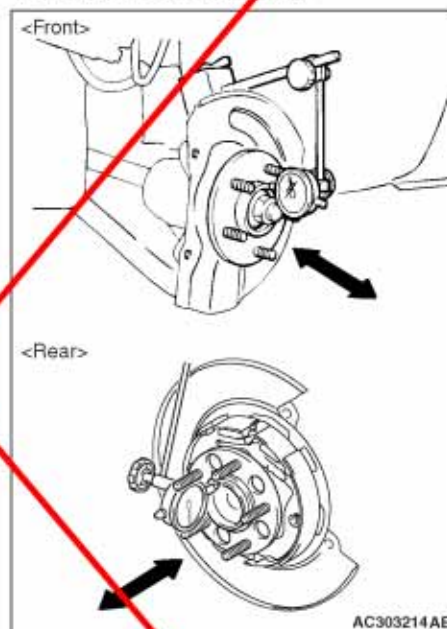
Limit:

<Front> 0.06 mm

<Rear> 0.08 mm

4. When the runout exceeds the limit value, correct the brake disc runout in the following procedure.

- (1) Before removing the brake disc, mark the wheel stud on the side of greater runout and its both sides with a chalk.



- (2) Remove the brake disc. Set a dial gauge as shown in the figure, and measure looseness of the hub in the axial direction.

Limit: 0.05 mm

- (3) When the looseness exceeds the limit value, replace the front or rear hub assembly.
- (4) When the looseness is within the limit value, install the brake disc after changing the phase between the hub and the brake disc, then check the runout of the brake disc again.
5. If the runout cannot be corrected by changing the phase of the brake disc, replace the brake disc.

Insert Attachment 2-4.

BASIC BRAKE SYSTEM ON-VEHICLE SERVICE

DISC BRAKE ROTOR CHECK

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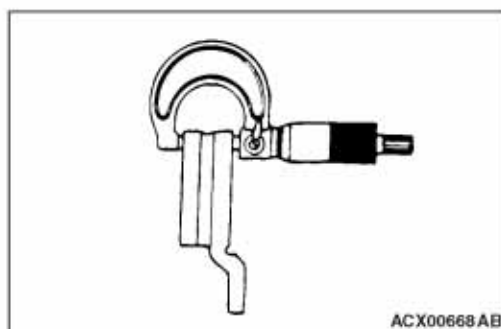
CAUTION

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"> 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



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

Standard value:

24.0 mm <Front>

10.0 mm <Rear>

Limit:

22.4 mm <Front>

8.4 mm <Rear>

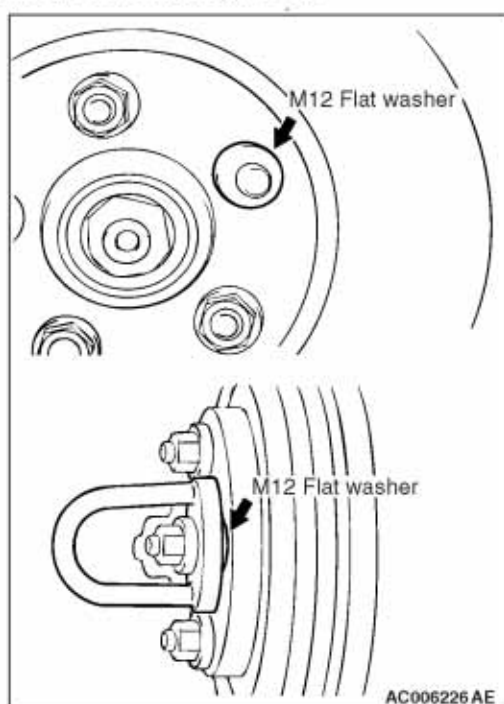
NOTE: Thickness variation (at least 8 positions) should not be more than 0.015 mm.

- If the disc thickness is less than the limits, replace it with a new one.

BASIC BRAKE SYSTEM ON-VEHICLE SERVICE

⚠ 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.

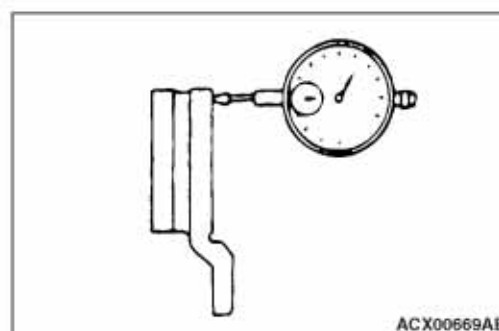


When the on-the-car type lathe is used, first install M12 flat washer on the stud bolt in the brake disc side according to the figure, and then install the adapter. If the adapter is installed with M12 flat washer not seated, the brake disc rotor may be deformed, resulting in inaccurate grinding.

- 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.
- 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.

FRONT BRAKE DISC RUN-OUT CHECK AND CORRECTION

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



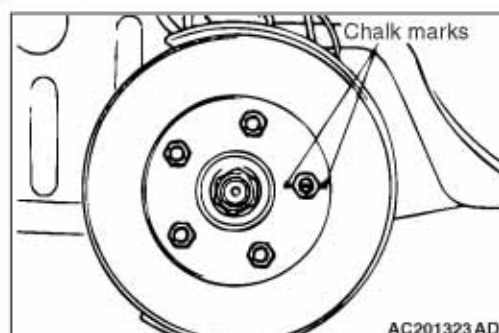
- Place a dial gauge approximately 5 mm from the outer circumference of the brake disc, and measure the run-out of the disc.

Limit:

0.06 mm <Front>

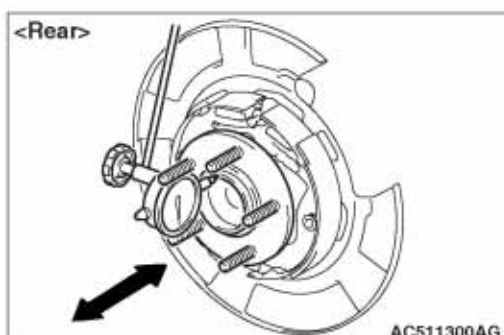
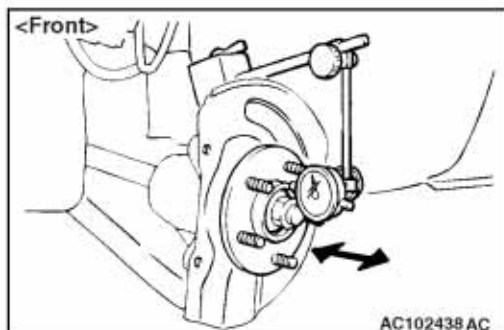
0.08 mm <Rear>

- 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.

BASIC BRAKE SYSTEM ON-VEHICLE SERVICE



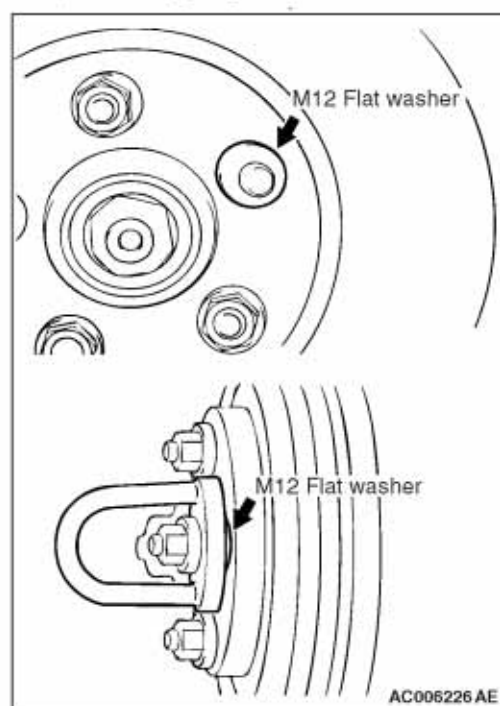
- (2) Remove the brake disc. Set a dial gauge as shown in the figure, and measure looseness of the hub in the axial direction.

Limit: 0.05 mm

- (3) When the looseness exceeds the limit value, replace the front or rear hub assembly.
- (4) When the looseness is within the limit value, install the brake disc after changing the phase between the hub and the brake disc, then check the runout of the brake disc again.

⚠ 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).