



SERVICE BULLETIN

AFTERSALES SERVICE OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CORRECTION	ISSUE NO. : MSB-08E37-503	DATE : 2008-06-20
SUBJECT : SPECIAL TOOL AND ASSEMBLY SERVICE POINT FOR POWER STEERING GEAR BOX AND LINKAGE	<div> <div><MODEL></div> <div>(EUR)</div> <div>OUTLANDER</div> <div>(GS45X)(CW0W)</div> </div> <div> <div><M/Y></div> <div>07</div> </div>	
GROUP : STEERING		

1. Description:

One of the special tools and the assembly service point for the power steering gear box and linkage are corrected in the applicable Workshop Manual. This Service Bulletin contains the modified descriptions.

2. Applicable Manual:

Manual	Pub. No.	Title (Info-ID)	Attachment
2007 OUTLANDER Workshop Manual	CGXE07E1-CD (English) CGXS07E1-CD (Spanish) CGXF07E1-CD (French) CGXG07E1-CD (German)	Special Tool (M372-00-060-91200-00), Power Steering Gear Box and Linkege Disassembly and Reassembly (M372-01-110-546000-00)	Attachment 1-5

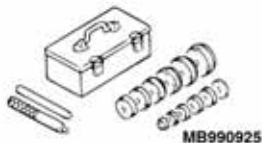

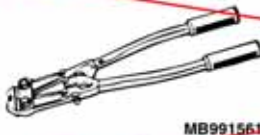
3. Effective Date:

From the first production model

4. Corrected Specifications:

See Attachments 1 to 5.

POWER STEERING ON-VEHICLE SERVICE

Tool	Number	Name	Use
	MB990925	Bearing and oil seal installer set	Pulling out or press-fitting of oil seal and bearing (Refer to GROUP 26 – Special Tool .)
	MB991203	Oil seal and bearing installer	Oil seal and bearing press-fitting
	MB991561	Boot band clipping tool	Tie-rod bellows band installation

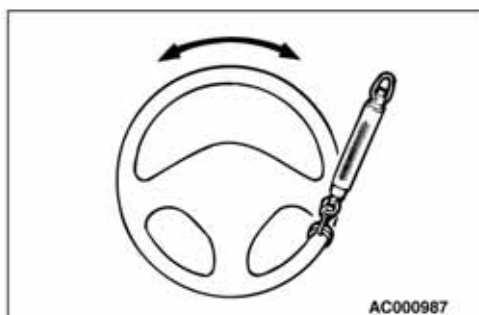
<Incorrect>

Insert Attachment 2-A.

ON-VEHICLE SERVICE

STEERING WHEEL PLAY CHECK

- With the engine running (hydraulic pressure applied), position the front wheel in the straight ahead direction.



- Measure the circumferential steering wheel play until the front wheels actually start operating while turning the steering wheel slightly in the left and right directions.

Limit value: 30 mm or less

- If the steering wheel play exceeds the limit value, check the steering shaft joint or steering linkage for looseness, and replace or repair the faulty components if necessary.

- If the steering wheel play still exceeds the limit value after Step 3 is performed, position the steering wheel in the straight ahead position, and then apply the force (approximately 5 N) in the circumferential direction.

At this time, check if the circumferential steering wheel play is within the standard value.

Standard value: 0 to 16.5 mm

- If the steering wheel play is outside the standard value after Step 4 is performed, remove the steering gear and linkage, and check and adjust the pinion total rotation torque. (Refer to)

STEERING ANGLE CHECK

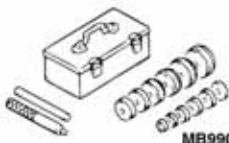


⚠ CAUTION

After adjusting the steering angle, always perform calibration to make ABS/ASC-ECU learn the neutral position of the steering wheel sensor. (Refer to GROUP 35C, On-vehicle Service – Steering Wheel Sensor Calibration .)

Standard value:

Inner wheel	38° 40' ± 1° 30'
Outer wheel	32° 20'
<Reference>	

POWER STEERING ON-VEHICLE SERVICE

Tool	Number	Name	Use
 MB990925	MB990925	Bearing and oil seal installer set	Pulling out or press-fitting of oil seal and bearing (Refer to GROUP 26 – Special Tool .)
 MB991203	MB991203	Oil seal and bearing installer	Oil seal and bearing press-fitting
 MB992209	MB992209	Bellows band clipping tool	Tie-rod bellows band installation

<Correct>

A

ON-VEHICLE SERVICE

STEERING WHEEL PLAY CHECK

1. With the engine running (hydraulic pressure applied), position the front wheel in the straight ahead direction.



2. Measure the circumferential steering wheel play until the front wheels actually start operating while turning the steering wheel slightly in the left and right directions.

Limit value: 30 mm or less

3. If the steering wheel play exceeds the limit value, check the steering shaft joint or steering linkage for looseness, and replace or repair the faulty components if necessary.

4. If the steering wheel play still exceeds the limit value after Step 3 is performed, position the steering wheel in the straight ahead position, and then apply the force (approximately 5 N) in the circumferential direction. At this time, check if the circumferential steering wheel play is within the standard value.

Standard value: 0 – 16.5 mm

5. If the steering wheel play is outside the standard value after Step 4 is performed, remove the steering gear and linkage, and check and adjust the pinion total rotation torque (Refer to).

STEERING ANGLE CHECK

CAUTION

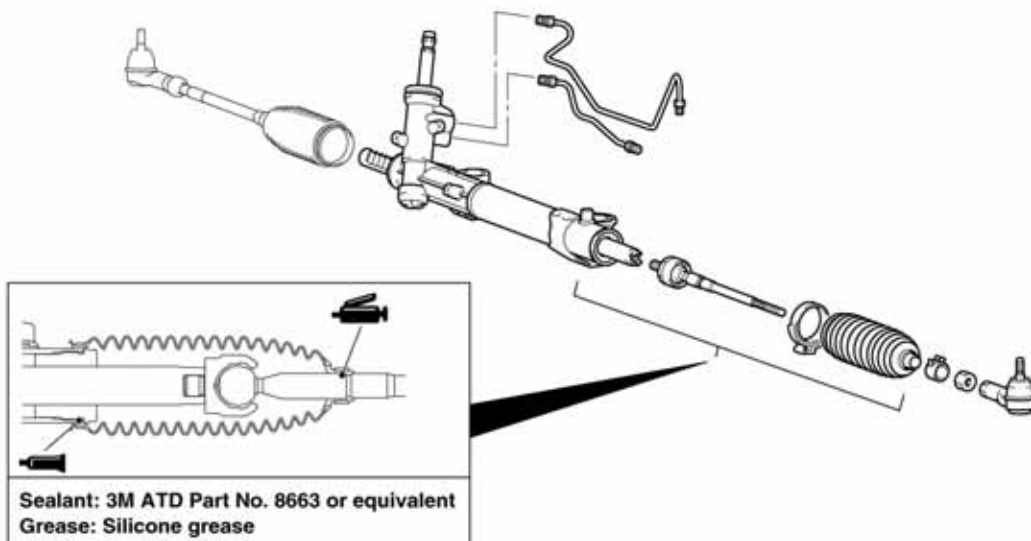
After adjusting the steering angle, always perform calibration to make ASC-ECU learn the neutral position of the steering wheel sensor (Refer to GROUP 35C, On-vehicle Service – Steering Wheel Sensor Calibration).

Standard value:

Inner wheel	38° 40' ± 1° 30'
Outer wheel <Reference value>	32° 20'

**POWER STEERING
POWER STEERING GEAR BOX AND LINKAGE**

**GREASE/SEALANT APPLICATION
POINTS**

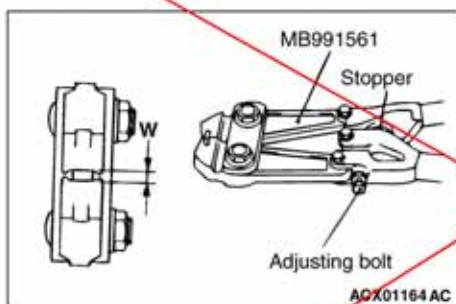


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ASSEMBLY SERVICE POINT

>>A<< BAND INSTALLATION

1. Turn the adjusting bolt for the boot band clipping tool (Special tool: MB991561) to adjust the opening dimension (W) to the standard value.



Standard value (W): 2.9 mm

<When opening dimension is more than 2.9 mm>

Tighten the adjusting bolt.

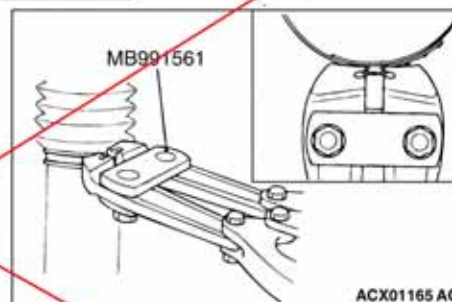
<When opening dimension is less than 2.9 mm>

Loosen the adjusting bolt.

NOTE:

- The adjusting bolt changes W approximately 0.7 mm for each rotation.
- Do not rotate the adjusting bolt more than one rotation.

CAUTION



Secure the gear housing, and crimp the crimping part of the band firmly with the tip of the special tool.

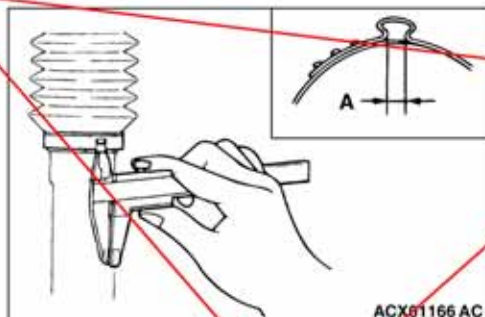
- Crimp the boot band securely until the special tool contacts the stopper.

2. Use the special tool to crimp the boot band.

<Incorrect>

Insert Attachment 5-A.

POWER STEERING POWER STEERING OIL PUMP ASSEMBLY



3. Check that the crimping width of the boot band (A) is within the range of the standard value.

Standard value (A): 2.4 to 2.8 mm

<When the crimping width is greater than 2.8 mm>

Readjust the value W described in Step 1 to the following formula, and perform the operation in Step 2 again.

$W = 5.5 - A$ (Example: When A is 2.9, W is 2.6.)

<When the crimping width is less than 2.4 mm>

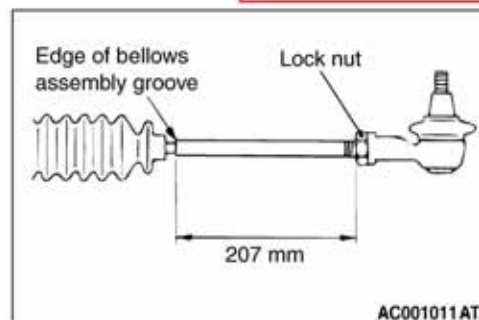
Remove the boot band, readjust the value W described in Step 1 to the following formula, and perform the Steps 2 and 3 using a new boot band.

$W = 5.5 - A$ (Example: When A is 2.3, W is 3.2.)

<Incorrect>

>>B<< TIE-ROD END/LOCKING NUT INSTALLATION

Insert Attachment 5-A.



Screw in the tie-rod to the length shown in the figure, and hand-tighten the locking nut.

NOTE: Install the steering gear & linkage to the body, adjust the toe-in, and then tighten the locking nut to the specified torque.

POWER STEERING OIL PUMP ASSEMBLY

REMOVAL AND INSTALLATION

Pre-removal operation

- Power Steering Fluid Draining (Refer to - .)
- Engine Cover Removal (Refer to GROUP 11A – Camshaft .)

Post-installation operation

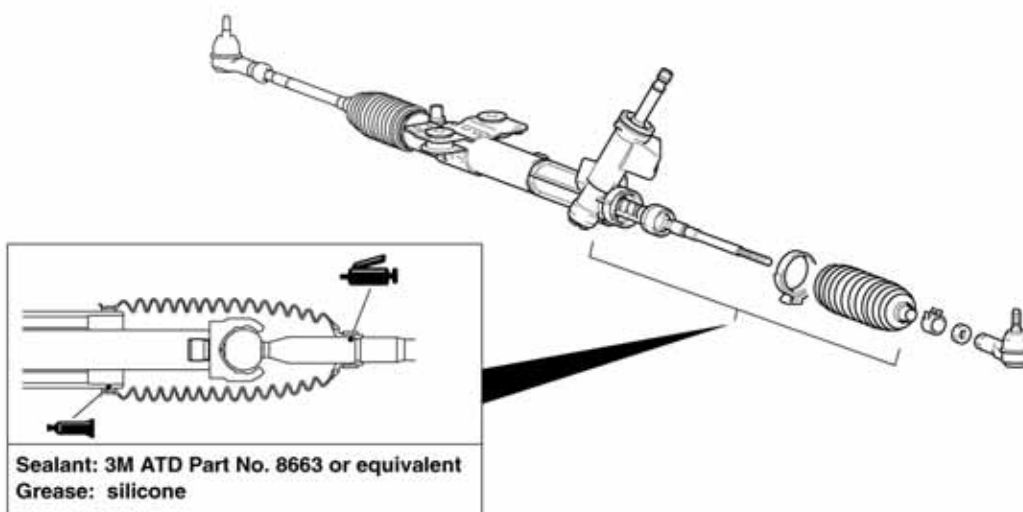
- Engine Cover Installation (Refer to GROUP 11A – Camshaft .)
- Power Steering Fluid Refilling and Bleeding (Refer to .)
- Drive Belt Tension Adjustment (Refer to GROUP 11A – Engine Adjustment .)

POWER STEERING POWER STEERING GEAR BOX AND LINKAGE

- Disassembly steps**
- >>B<< 1. Feed pipe
>>B<< 2. Tie-rod end
>>B<< 3. Locking nut
>>A<< 4. Clip
>>A<< 5. Band

- Disassembly steps**
6. Bellows
7. Gear housing

GREASE/SEALANT APPLICATION POINTS



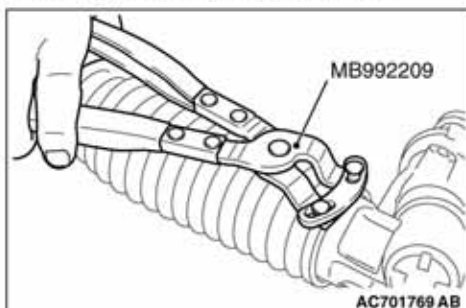
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ASSEMBLY SERVICE POINTS

>>A<< BAND INSTALLATION

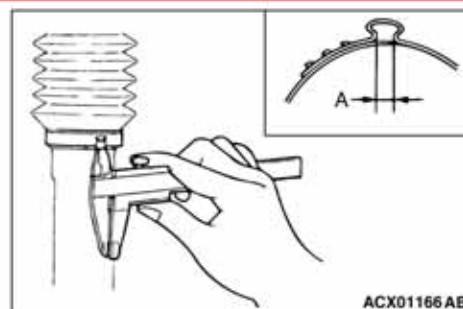
CAUTION

- Hold the rack housing, and use special tool bellows band crimping tool (MB992209) to crimp the bellows band securely.
- Crimp the bellows band until special tool (MB992209) touches the stopper.



1. Use special tool (MB992209) to crimp the bellows band.

>>B<< TIE-ROD END/LOCKING NUT INSTALLATION



2. Check that crimped width (A) is within the standard value.

Standard value (A): 2.4 – 2.8 mm

<Correct>

A