SERVICE BULLETIN

MITSUBISHI MOTORS

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : INFORMATION	ISSUE NO. : MSB-13EX23-001	DATE : 2013-02-12
SUBJECT : TORQUE CONVERTER STALL TEST(CVT)		<Destination/Model> (AS PER ATTACHED) <M/Y> 08-13
GROUP : AUTOMATIC TRANSMISSION		CY0A/CX0A/GA0W

1. Description:

See the attached document for the information about the change of mention in the applicable service manual.

2. Applicable manual:

See the attached document

3. Details:

See the attached document

EU/RUSSIA

Applicable manual	Pub. No.	Applicable title (INFO ID)	Contents
2008 LANCER Workshop Manual	CG1E08E2-CD (English) CG1S08E2-CD (Spanish) CG1F08E2-CD (French) CG1G08E2-CD (German) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-13700-01)	Attached sheet 4 (1/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-19500-01)	Attached sheet 4 (2/12)
2009 LANCER Workshop Manual	CG1E09E1-CD (English) CG1S09E1-CD (Spanish) CG1F09E1-CD (French) CG1G09E1-CD (German) CG1I09E1-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-26700-01)	Attached sheet 4 (1/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-19500-01)	Attached sheet 4 (2/12)
2009 LANCER SPORTBACK Workshop Manual	CG4E09E1-CD (English) CG4S09E1-CD (Spanish) CG4F09E1-CD (French) CG4G09E1-CD (German) CG4I09E1-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-27800-01)	Attached sheet 4 (3/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-19500-01)	Attached sheet 4 (4/12)
2010 LANCER Workshop Manual	CG1E10E1-CD (English) CG1S10E1-CD (Spanish) CG1F10E1-CD (French) CG1G10E1-CD (German) CG1I10E1-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-37500-01)	Attached sheet 4 (1/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-31100-01)	Attached sheet 4 (2/12)
2010 LANCER SPORTBACK Workshop Manual	CG4E10E1-CD (English) CG4S10E1-CD (Spanish) CG4F10E1-CD (French) CG4G10E1-CD (German) CG4I10E1-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-37500-01)	Attached sheet 4 (3/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-31100-01)	Attached sheet 4 (4/12)
2011 LANCER/ LANCER SPORTBACK Workshop Manual	CGSE11E1-CD (English) CGSS11E1-CD (Spanish) CGSF11E1-CD (French) CGSG11E1-CD (German) CGSI11E1-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-48300-01)	Attached sheet 4 (5/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-31100-01)	Attached sheet 4 (2/12)
2012 LANCER/ LANCER SPORTBACK Workshop Manual	CGSE12E1-CD (English) CGSS12E1-CD (Spanish) CGSF12E1-CD (French) CGSG12E1-CD (German) CGSI12E1-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-48300-01)	Attached sheet 4 (6/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-31100-01)	Attached sheet 4 (7/12)
2013 LANCER/ LANCER SPORTBACK Workshop Manual	CGSE13E1-CD (English) CGSS13E1-CD (Spanish) CGSF13E1-CD (French) CGSG13E1-CD (German) CGSI13E1-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-48300-01)	Attached sheet 4 (6/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-31100-01)	Attached sheet 4 (7/12)

EU/RUSSIA

2011 ASX Workshop Manual	CGWE11E2-CD (English) CGWS11E2-CD (Spanish) CGWF11E2-CD (French) CGWG11E2-CD (German) CGWI11E2-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-44900-01)	Attached sheet 4 (1/12)
2012 ASX Workshop Manual	CGWE12E2-CD (English) CGWS12E2-CD (Spanish) CGWF12E2-CD (French) CGWG12E2-CD (German) CGWI12E2-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-44900-01)	Attached sheet 4 (1/12)
2013 ASX Workshop Manual	CGWE13E2-CD (English) CGWS13E2-CD (Spanish) CGWF13E2-CD (French) CGWG13E2-CD (German) CGWI13E2-CD (Italian) N/A (Russia)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-44900-01)	Attached sheet 4 (1/12)

G.EXP/GCC/THAILAND/CHINA

Applicable manual	Pub. No.	Applicable title (INFO ID)	Contents
2009 LANCER Workshop Manual <Thailand KD>	DRAFT	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-43800-01)	Attached sheet 4 (1/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-32200-01)	Attached sheet 4 (2/12)
2010 LANCER EX Workshop Manual <China KD>	DRAFT	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-43800-01)	Attached sheet 4 (8/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-32200-01)	
2011 LANCER/ LANCER EX Workshop Manual <G.EXP/GCC>	PWME1010R (English) PWMS1011R (Spanish)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-43800-01)	Attached sheet 4 (9/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-32200-01)	Attached sheet 4 (10/12)
2012 LANCER/ LANCER EX Workshop Manual <G.EXP/GCC>	PWME1111R (English) PWMS1112R (Spanish)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-43800-01)	Attached sheet 4 (11/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-32200-01)	Attached sheet 4 (12/12)
2011 OUTLANDER SPORT/ASX Workshop Manual <G.EXP/GCC>	PWPE1006R (English) PWPS1007R (Spanish)	Gr23C: SERVICE SPECIFICATIONS (M231-20-030-45000-01)	Attached sheet 4 (1/12)
		Gr23C: TORQUE CONVERTER STALL TEST (M231-20-540-33300-01)	Attached sheet 4 (2/12)

SERVICE SPECIFICATIONS

Item		Standard value
CVT fluid temperature sensor resistance kΩ	at 0°C	Approximately 15.5
	at 20°C	Approximately 6.5
	at 40°C	Approximately 3.1
	at 60°C	Approximately 1.6
	at 80°C	Approximately 0.9
	at 100°C	Approximately 0.5
Line pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Secondary pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Lockup/select switching solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 25.5 to 29.3
Lockup solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Engine stall speed r/min <Incorrect>	D range	2,400 – 2,900
	R range	2,400 – 2,900
Opening temperature of thermo valve °C		75 ± 1.5
Full opening temperature of thermo valve °C		95 or more
Thermo valve opening dimension when it is fully opened mm		3 or more

<Correct>

D range	4B10	2,300 — 2,800
	4B11	2,400 — 2,900
R range	4B10	2,300 — 2,800
	4B11	2,400 — 2,900

TORQUE CONVERTER STALL TEST

This test measures the maximum engine speed at the time the torque converter stalls with the selector lever in the D or R position. With this test, the holding abilities of the clutch and brake that are incorporated in the transmission can be checked.

⚠ *WARNING*

For safety, operators must not stand in front of and at the rear of the vehicle during this test.

1. Check the CVT fluid level, CVT fluid temperature, and engine coolant temperature.
   - CVT fluid level: In the "H" range on the oil level gauge
   - CVT fluid temperature: 70 to 80°C
   - Engine coolant temperature: 80 to 100°C

   NOTE: Use M.U.T.-III. to measure the CVT fluid temperature.
2. Raise the vehicle.
3. Pull the parking brake lever, and then fully depress the brake pedal.
4. Start the engine.

⚠ CAUTION

- **Do not maintain the WOT condition for 5 seconds or longer.**
- **When continuing the stall test, make sure that the fluid temperature does not exceed 80°C. If the CVT fluid temperature exceeds 80°C, run the engine at around 1,000 r/min for 1 minute or longer to lower the CVT fluid temperature to 80°C or less.**

5. Move the selector lever to the D range and fully depress the accelerator pedal. Quickly read the maximum engine speed at this time.

<Incorrect>

~~**Standard value – Stall speed: 2,400 – 2,900 r/min**~~

6. Move the selector lever to the R range, and then repeat the previous step.

<Incorrect>

~~**Standard value – Stall speed: 2,400 – 2,900 r/min**~~

JUDGEMENT OF TORQUE CONVERTER STALL TEST RESULTS

1. Stall speed is high when selector lever is in both D and R ranges.
   - Malfunction of the torque converter (Torque converter and input shaft spline are slipping)
   - Malfunction of the valve body
   - Damaged wiring harness and connectors
   - Malfunction of CVT-ECU
2. Stall speed is high only when selector lever is in the D ranges.
   - Forward clutch is slipping
3. Stall speed is high only when the selector lever is in the R ranges.
   - Reverse brake is slipping
4. Stall speed is low when selector lever is in both D and R ranges.
   - Malfunction of the torque converter
   - Line pressure is low.
   - Low engine power

<Correct>

Standard value — Stall speed:
2,300 — 2,800 r/min <4B10>
2,400 — 2,900 r/min <4B11>

SERVICE SPECIFICATIONS

Item		Standard value
CVT fluid temperature sensor resistance kΩ	at 0°C	Approximately 15.5
	at 20°C	Approximately 6.5
	at 40°C	Approximately 3.1
	at 60°C	Approximately 1.6
	at 80°C	Approximately 0.9
	at 100°C	Approximately 0.5
Line pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Secondary pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Lockup/select switching solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 25.5 to 29.3
Lockup solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Engine stall speed r/min	D range	~~2,400 – 2,900~~
	R range	~~2,400 – 2,900~~
Opening temperature of thermo valve °C		75 ± 1.5
Full opening temperature of thermo valve °C		95 or more
Thermo valve opening dimension when it is fully opened mm		3 or more

<Incorrect>

<Correct>

2,300 — 2,800
2,300 — 2,800

TORQUE CONVERTER STALL TEST

This test measures the maximum engine speed at the time the torque converter stalls with the selector lever in the D or R position. With this test, the holding abilities of the clutch and brake that are incorporated in the transmission can be checked.

⚠ *WARNING*

For safety, operators must not stand in front of and at the rear of the vehicle during this test.

1. Check the CVT fluid level, CVT fluid temperature, and engine coolant temperature.
   - CVT fluid level: In the "H" range on the oil level gauge
   - CVT fluid temperature: 70 to 80°C
   - Engine coolant temperature: 80 to 100°C

   NOTE: Use M.U.T.-III. to measure the CVT fluid temperature.
2. Raise the vehicle.
3. Pull the parking brake lever, and then fully depress the brake pedal.
4. Start the engine.

⚠ CAUTION

- **Do not maintain the WOT condition for 5 seconds or longer.**
- **When continuing the stall test, make sure that the fluid temperature does not exceed 80°C. If the CVT fluid temperature exceeds 80°C, run the engine at around 1,000 r/min for 1 minute or longer to lower the CVT fluid temperature to 80°C or less.**

5. Move the selector lever to the D range and fully depress the accelerator pedal. Quickly read the maximum engine speed at this time.

<Incorrect>

~~**Standard value – Stall speed: 2,400 – 2,900 r/min**~~

6. Move the selector lever to the R range, and then repeat the previous step.

<Incorrect>

~~**Standard value – Stall speed: 2,400 – 2,900 r/min**~~

JUDGEMENT OF TORQUE CONVERTER STALL TEST RESULTS

1. Stall speed is high when selector lever is in both D and R ranges.
   - Malfunction of the torque converter (Torque converter and input shaft spline are slipping)
   - Malfunction of the valve body
   - Damaged wiring harness and connectors
   - Malfunction of CVT-ECU
2. Stall speed is high only when selector lever is in the D ranges.
   - Forward clutch is slipping
3. Stall speed is high only when the selector lever is in the R ranges.
   - Reverse brake is slipping
4. Stall speed is low when selector lever is in both D and R ranges.
   - Malfunction of the torque converter
   - Line pressure is low.
   - Low engine power

<Correct>

Standard value — Stall speed: 2,300 — 2,800 r/min

SERVICE SPECIFICATIONS

Item		Standard value
Line pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Secondary pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Lockup/select switching solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 25.5 to 29.3
Lockup solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
CVT fluid temperature sensor resistance kΩ	at 0°C	Approximately 15.5
	at 20°C	Approximately 6.5
	at 40°C	Approximately 3.1
	at 60°C	Approximately 1.6
	at 80°C	Approximately 0.9
	at 100°C	Approximately 0.5
Engine stall speed r/min <Incorrect>	D range	~~2,400 – 2,900~~
	R range	~~2,400 – 2,900~~
Shift lock solenoid resistance Ω		24 ± 1.2
Opening temperature of thermo valve °C		75 ± 1.5
Full opening temperature of thermo valve °C		95 or more
Thermo valve opening dimension when it is fully opened mm		3 or more

<Correct>

D range	4B10	2,300 — 2,800
	4B11	2,400 — 2,900
R range	4B10	2,300 — 2,800
	4B11	2,400 — 2,900

SERVICE SPECIFICATIONS

Item		Standard value
Line pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Secondary pressure solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
Lockup/select switching solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 25.5 to 29.3
Lockup solenoid valve coil resistance (fluid temperature: 20°C) Ω		Approximately 5.6 to 6.6
CVT fluid temperature sensor resistance kΩ	at 0°C	Approximately 15.5
	at 20°C	Approximately 6.5
	at 40°C	Approximately 3.1
	at 60°C	Approximately 1.6
	at 80°C	Approximately 0.9
	at 100°C	Approximately 0.5
Engine stall speed r/min <Incorrect>	D range	~~2,400 – 2,900~~
	R range	~~2,400 – 2,900~~
Shift lock solenoid resistance Ω		24 ± 1.2
Opening temperature of thermo valve °C		75 ± 1.5
Full opening temperature of thermo valve °C		95 or more
Thermo valve opening dimension when it is fully opened mm		3 or more

<Correct>

D range	4B10	2,300 — 2,800
	4B11	2,400 — 2,900
	4J10	2,200 — 2,700
R range	4B10	2,300 — 2,800
	4B11	2,400 — 2,900
	4J10	2,200 — 2,700

TORQUE CONVERTER STALL TEST

This test measures the maximum engine speed at the time the torque converter stalls with the selector lever in the D or R position. With this test, the holding abilities of the clutch and brake that are incorporated in the transmission can be checked.

⚠ *WARNING*

For safety, operators must not stand in front of and at the rear of the vehicle during this test.

1. Check the CVT fluid level, CVT fluid temperature, and engine coolant temperature.
   - CVT fluid level: In the "H" range on the oil level gauge
   - CVT fluid temperature: 70 to 80°C
   - Engine coolant temperature: 80 to 100°C

   NOTE: Use M.U.T.-III. to measure the CVT fluid temperature.
2. Raise the vehicle.
3. Pull the parking brake lever, and then fully depress the brake pedal.
4. Start the engine.

⚠ CAUTION

- **Do not maintain the WOT condition for 5 seconds or longer.**
- **When continuing the stall test, make sure that the fluid temperature does not exceed 80°C. If the CVT fluid temperature exceeds 80°C, run the engine at around 1,000 r/min for 1 minute or longer to lower the CVT fluid temperature to 80°C or less.**

5. Move the selector lever to the D range and fully depress the accelerator pedal. Quickly read the maximum engine speed at this time.

<Incorrect>

~~**Standard value – Stall speed: 2,400 – 2,900 r/min**~~

6. Move the selector lever to the R range, and then repeat the previous step.

<Incorrect>

~~**Standard value – Stall speed: 2,400 – 2,900 r/min**~~

JUDGEMENT OF TORQUE CONVERTER STALL TEST RESULTS

1. Stall speed is high when selector lever is in both D and R ranges.
   - Malfunction of the torque converter (Torque converter and input shaft spline are slipping)
   - Malfunction of the valve body
   - Damaged wiring harness and connectors
   - Malfunction of CVT-ECU
2. Stall speed is high only when selector lever is in the D ranges.
   - Forward clutch is slipping
3. Stall speed is high only when the selector lever is in the R ranges.
   - Reverse brake is slipping
4. Stall speed is low when selector lever is in both D and R ranges.
   - Malfunction of the torque converter
   - Line pressure is low.
   - Low engine power

<Correct>

Standard value — Stall speed:
2,300 — 2,800 r/min <4B10>
2,400 — 2,900 r/min <4B11>
2,200 — 2,700 r/min <4J10>

GENERAL INFORMATION

The air-cooled oil cooler has been eliminated (the water-cooled oil cooler and air-cooled oil cooler were used previously). The other service procedures are the same as before.

<Added>

SERVICE SPECIFICATIONS

Item		Standard value
Engine stall speed r/min <4B10>	D range	2,300 – 2,800
	R range	2,300 – 2,800

ON-VEHICLE SERVICE

TORQUE CONVERTER STALL TEST <4B10>

<D range>
Standard value – Stall speed: 2,300 – 2,800 r/min

<R range>
Standard value – Stall speed: 2,300 – 2,800 r/min

GENERAL INFORMATION

OUTLINE OF CHANGE

Due to the following change, the new service procedure has been established. The other service procedures are the same as before.

- The shift lock system has been changed. (Abolition of shift lock control relay and P position detection switch)
- The Shift switch assembly has been changed.
- The installation procedure for selector lever knob has been changed from screw-in type to plug-in type.

<Added>

SERVICE SPECIFICATIONS

Item		Standard value
Engine stall speed r/min <4B10>	D range	2,300 – 2,800
	R range	2,300 – 2,800

ON-VEHICLE SERVICE

<Added>

TORQUE CONVERTER STALL TEST <4B10>

<D range>
Standard value – Stall speed: 2,300 – 2,800 r/min

<R range>
Standard value – Stall speed: 2,300 – 2,800 r/min

SHIFT LOCK MECHANISM CHECK

SYSTEM CHECK

Inspection procedure	Check condition		Items to be checked (Normal condition)	Possible cause of abnormality
1	Brake pedal not depressed	Ignition switch position: Other than "ON"	The selector lever cannot be moved out of the "P" position	• Abnormality in the shift lock link (stuck, disengaged, broken, etc.) • Abnormality in the electrical circuit • Abnormality in the key interlock mechanism
2	Brake pedal depressed			• Abnormality in the electrical circuit • Abnormality in the key interlock mechanism
3	Brake pedal not depressed	Ignition switch position: "ON"		• Abnormality in the shift lock link (stuck, disengaged, broken, etc.) • Abnormality in the electrical circuit
4	Brake pedal depressed		The selector lever can be moved from the "P" position to other positions smoothly.	• Abnormality in the shift lock link (stuck, disengaged, broken, etc.) • Abnormality in the electrical circuit
5	Shift lock release button pressed			• Abnormality in the shift lock link (stuck, disengaged, broken, etc.)
6	Brake pedal depressed / not depressed		The selector lever can be moved from the "R" position to the "P" position smoothly.	• Abnormality in the shift lock link (stuck, disengaged, broken, etc.)

<Added>

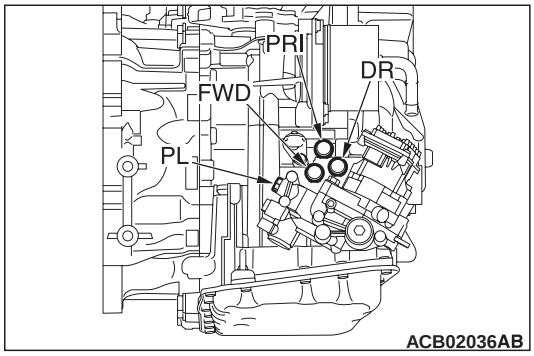
SERVICE SPECIFICATIONS

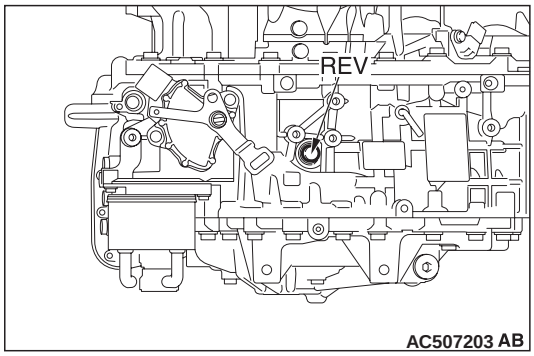
Item		Standard value
Engine stall speed r/min <4J10>	D range	2,200 – 2,700
	R range	2,200 – 2,700

LUBRICANT

Item	Brand name	Capacity dm^3
CVT fluid	DIA QUEEN CVTF-J4	7.1

HYDRAULIC PRESSURE TEST





The service procedures other than for the hydraulic pressure outlet ports remain the same as before.

NOTE:

DR: Torque converter output pressure port
PRI: Primary pressure port
PL: Line pressure port
FWD: Forward clutch pressure port
REV: Reverse brake pressure port

<Added>

TORQUE CONVERTER STALL TEST <4J10>

<D range>
Standard value – Stall speed: 2,200 – 2,700 r/min

<R range>
Standard value – Stall speed: 2,200 – 2,700 r/min