TRANSMISSION/TRANSAXLE

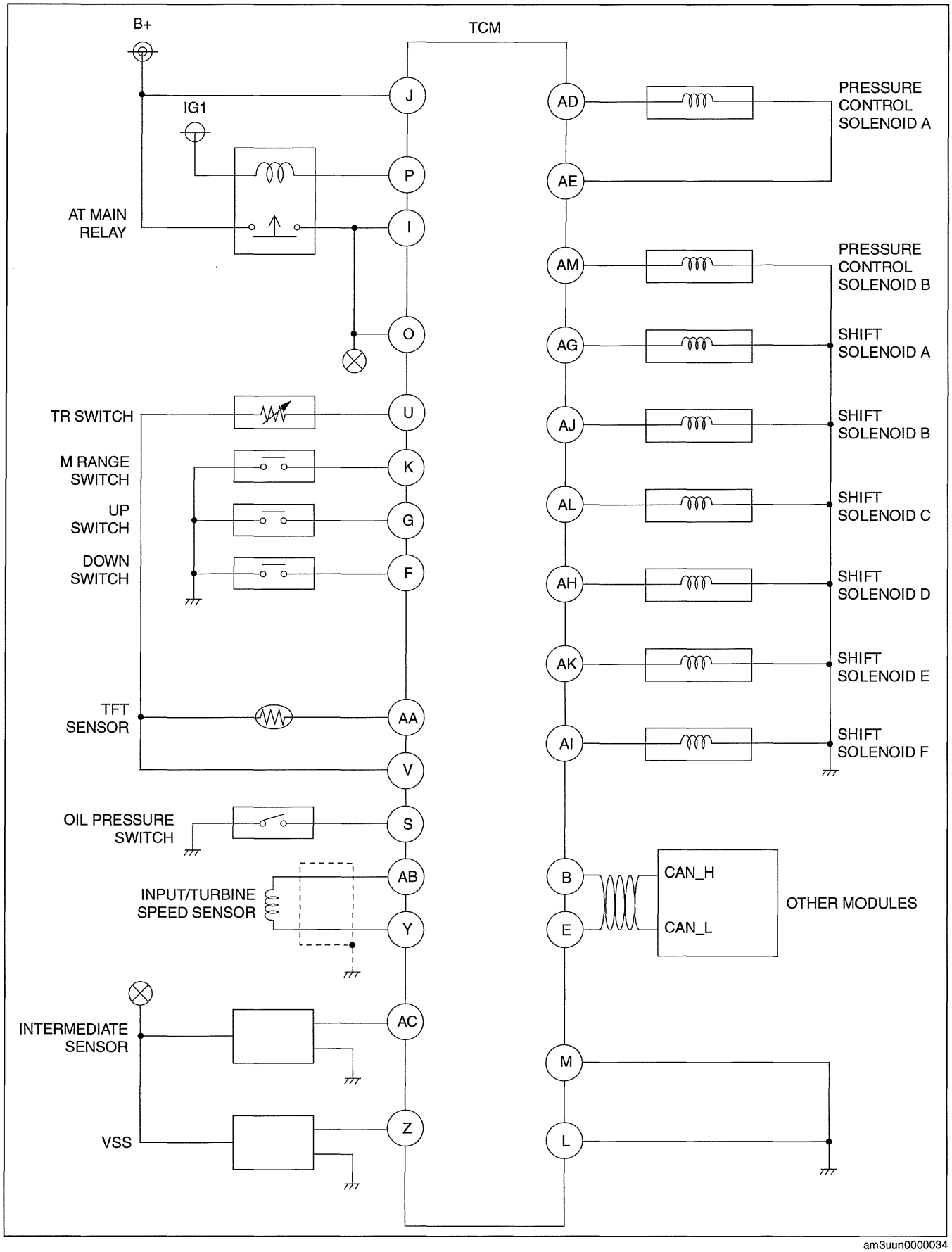
05 SECTION

05-02 ON-BOARD DIAGNOSTIC [FS5A-EL]

cardiagn.com

ON-BOARD DIAGNOSTIC SYSTEM WIRING DIAGRAM [FS5A-EL]

id050221290000



am3uun0000034

cardiagn.com

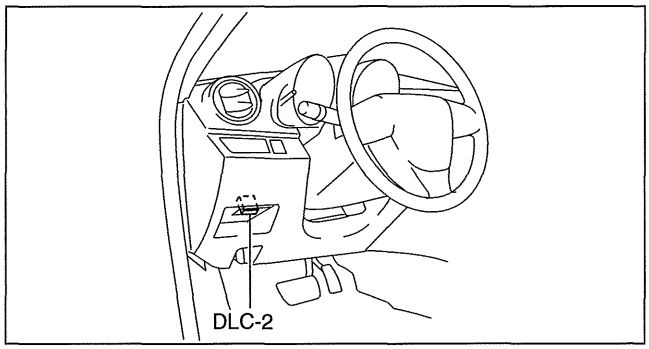
ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL]

id050221290100

Reading DTCs Procedure

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.

- When using the IDS (laptop PC)
  1. Select "Self Test".
  2. Select "Modules".
  3. Select "TCM".
- When using the PDS (Pocket PC)
  1. Select "Module Tests".
  2. Select "TCM".
  3. Select "Self Test".



am3uuw0000261

Note

- Freeze frame data/snapshot data appears at the top of the help screen when the displayed DTC is selected.

Freeze frame data

— The freeze frame data consists of data for vehicle and transaxle control system operation conditions when malfunctions in the transaxle control system are detected and stored in the TCM.

— Freeze frame data is stored at the instant the malfunction indicator lamp illuminates, and only a part of the DTC data is stored.

— For the freeze frame data, if there are several malfunctions in the transaxle control system, the data for the malfunction which occurred initially is stored. Thereafter, if a misfire or fuel injection control malfunction occurs, data from the misfire or fuel injection control malfunction is written over the initially stored data. However, if the initially stored freeze frame data is a misfire or fuel injection control malfunction, it is not overwritten.

Snapshot data

— The snap shot data stores the currently detected DTC data.

— The recording timing for the freeze frame data/snap shot data differs depending on the number of DTC drive cycles.

- For a DTC with a drive cycle number 1, only the malfunction determination data is recorded.
- For a DTC with a drive cycle number 2, both the malfunction determination and undetermined data is recorded.

3. Verify the DTC according to the directions on the M-MDS screen.

Freeze frame data table

Note

- Refer to PID monitor table for confirm the transaxle control system operation status while the TCM does not store the DTC. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL])
- Freeze frame data items are not displayed, according to detected DTC.

Freeze frame data item	Unit	Description	Corresponding PID data monitor item
LOAD	%	Calculated engine load	—
ECT	°C {°F}	Engine coolant temperature	ECT
RPM	RPM	Engine speed	RPM
VS	KPH {MPH}	Vehicle speed	VSS
SPARKADV	°	Ignition timing	—
IAT	°C {°F}	Intake air temperature	—
TP	%	Throttle valve position No.1	THOP
RUNTM	hh:mm:ss	Time from engine start	—
WARMUPS	—	Number of warm-up cycle after DTC cleared	—
CLRDIST	Km {mile}	Mileage after DTC cleared	—
VPWR	V	Module supply voltage	VPWR
APP_D	%	Accelerator pedal position No.1	—

cardiagn.com

Snapshot data table

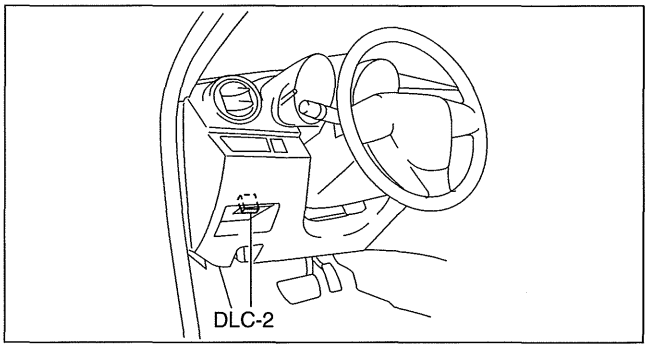
Note

- Refer to PID monitor table for confirm the transaxle control system operation status while the TCM does not store the DTC. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL])
- Snapshot data items are not displayed, according to detected DTC.

Snapshot data item	Unit	Definition	Corresponding PID data monitor item
LOAD	%	Calculated engine load	—
ECT	°C {°F}	Engine coolant temperature	ECT
RPM	RPM	Engine speed	RPM
VSS	KPH {MPH}	Vehicle speed	VSS
SPARKADV	°	Ignition timing	—
IAT	°C {°F}	Intake air temperature	—
TP1	%	Throttle valve position No.1	THOP
EG_RUN_TIME	—	Time from engine start	—
CLR_CNT	—	Number of warm-up cycle after DTC cleared	—
CLR_DIST	Km {mile}	Mileage after DTC cleared	—
VPWR	V	Module supply voltage	VPWR
APP1	%	Accelerator pedal position No.1	—

Clearing DTCs Procedure

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.
   - When using the IDS (laptop PC)
     1. Select "Self Test".
     2. Select "Modules".
     3. Select "TCM".
   - When using the PDS (Pocket PC)
     1. Select "Module Tests".
     2. Select "TCM".
     3. Select "Self Test".
3. Verify the DTC according to the directions on the M-MDS screen.
4. Press the clear button on the DTC screen to clear the DTC.



am3uuw0000261

ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL]

id050221290200

DTC No.	Definition	Page
P06B8:00	NVRAM malfunction	(See 05-02-9 DTC P06B8:00 [FS5A-EL].)
P0706:00	TR switch circuit range/performance	(See 05-02-9 DTC P0706:00 [FS5A-EL].)
P0707:00	TR switch circuit low input	(See 05-02-11 DTC P0707:00 [FS5A-EL].)
P0708:00	TR switch circuit high input	(See 05-02-13 DTC P0708:00 [FS5A-EL].)
P0711:00	TFT sensor circuit range/performance	(See 05-02-15 DTC P0711:00 [FS5A-EL].)
P0712:00	TFT sensor circuit low input	(See 05-02-17 DTC P0712:00 [FS5A-EL].)
P0713:00	TFT sensor circuit high input	(See 05-02-19 DTC P0713:00 [FS5A-EL].)
P0715:00	Input/turbine speed sensor circuit malfunction	(See 05-02-21 DTC P0715:00 [FS5A-EL].)
P0720:00	VSS circuit malfunction	(See 05-02-23 DTC P0720:00 [FS5A-EL].)
P0731:00	Gear 1 incorrect ratio	(See 05-02-26 DTC P0731:00 [FS5A-EL].)
P0732:00	Gear 2 incorrect ratio	(See 05-02-27 DTC P0732:00 [FS5A-EL].)
P0733:00	Gear 3 incorrect ratio	(See 05-02-29 DTC P0733:00 [FS5A-EL].)
P0734:00	Gear 4 incorrect ratio	(See 05-02-31 DTC P0734:00 [FS5A-EL].)
P0735:00	Gear 5 incorrect ratio	(See 05-02-33 DTC P0735:00 [FS5A-EL].)
P0741:00	TCC stuck off	(See 05-02-35 DTC P0741:00 [FS5A-EL].)
P0742:00	TCC stuck on	(See 05-02-37 DTC P0742:00 [FS5A-EL].)

cardiagn.com

DTC No.	Definition	Page
P0744:00	TCC slip control malfunction	(See 05-02-38 DTC P0744:00 [FS5A-EL].)
P0745:00	Pressure control solenoid A malfunction	(See 05-02-39 DTC P0745:00 [FS5A-EL].)
P0751:00	Shift solenoid A stuck off	(See 05-02-42 DTC P0751:00 [FS5A-EL].)
P0752:00	Shift solenoid A stuck on	(See 05-02-43 DTC P0752:00 [FS5A-EL].)
P0753:00	Shift solenoid A electrical malfunction	(See 05-02-45 DTC P0753:00 [FS5A-EL].)
P0756:00	Shift solenoid B stuck off	(See 05-02-47 DTC P0756:00 [FS5A-EL].)
P0757:00	Shift solenoid B stuck on	(See 05-02-48 DTC P0757:00 [FS5A-EL].)
P0758:00	Shift solenoid B electrical malfunction	(See 05-02-50 DTC P0758:00 [FS5A-EL].)
P0761:00	Shift solenoid C stuck off	(See 05-02-52 DTC P0761:00 [FS5A-EL].)
P0762:00	Shift solenoid C stuck on	(See 05-02-53 DTC P0762:00 [FS5A-EL].)
P0763:00	Shift solenoid C electrical malfunction	(See 05-02-55 DTC P0763:00 [FS5A-EL].)
P0766:00	Shift solenoid D stuck off	(See 05-02-57 DTC P0766:00 [FS5A-EL].)
P0767:00	Shift solenoid D stuck on	(See 05-02-58 DTC P0767:00 [FS5A-EL].)
P0768:00	Shift solenoid D electrical malfunction	(See 05-02-60 DTC P0768:00 [FS5A-EL].)
P0771:00	Shift solenoid E stuck off	(See 05-02-62 DTC P0771:00 [FS5A-EL].)
P0772:00	Shift solenoid E stuck on	(See 05-02-63 DTC P0772:00 [FS5A-EL].)
P0773:00	Shift solenoid E electrical malfunction	(See 05-02-65 DTC P0773:00 [FS5A-EL].)
P0777:00	Pressure control solenoid B stuck on	(See 05-02-67 DTC P0777:00 [FS5A-EL].)
P0778:00	Pressure control solenoid B electrical malfunction	(See 05-02-68 DTC P0778:00 [FS5A-EL].)
P0791:00	Intermediate sensor circuit malfunction	(See 05-02-70 DTC P0791:00 [FS5A-EL].)
P0841:00	Oil pressure switch circuit malfunction	(See 05-02-72 DTC P0841:00 [FS5A-EL].)
P0882:00	Battery back-up voltage low	(See 05-02-74 DTC P0882:00 [FS5A-EL].)
P0883:00	Battery voltage high	(See 05-02-76 DTC P0883:00 [FS5A-EL].)
P0884:00	Battery voltage low	(See 05-02-77 DTC P0884:00 [FS5A-EL].)
P0894:00	Transaxle component slipping	(See 05-02-79 DTC P0894:00 [FS5A-EL].)
P1783:00	ATF high oil temperature malfunction	(See 05-02-80 DTC P1783:00 [FS5A-EL].)
P2707:00	Shift solenoid F stuck off	(See 05-02-81 DTC P2707:00 [FS5A-EL].)
P2708:00	Shift solenoid F stuck on	(See 05-02-83 DTC P2708:00 [FS5A-EL].)
P2709:00	Shift solenoid F electrical malfunction	(See 05-02-84 DTC P2709:00 [FS5A-EL].)
U0073:00	Module communication error (CAN bus)	(See 09-02D-1 FOREWORD [MULTIPLEX COMMUNICATION SYSTEM].)
U0100:00	PCM communication error	
U0121:00	Lost communication with ABS HU/CM or DSC HU/CM	

ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL]

id050221290300

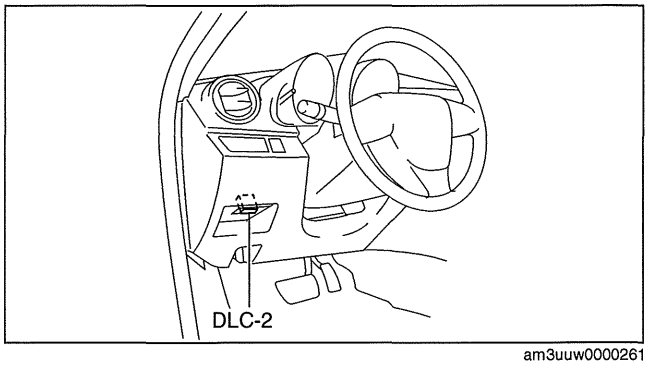
Note

- The PID data screen function is used for monitoring the calculated value of input/output signals in the module. Therefore, if the monitored value of the output parts is not within the specification, it is necessary to inspect the monitored value of input parts corresponding to the applicable output part control. In addition, because the system does not display an output part malfunction as an abnormality in the monitored value, it is necessary to inspect the output parts individually.

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.

- When using the IDS (laptop PC)
  1. Select "DataLogger".
  2. Select "Modules".
  3. Select "TCM".
- When using the PDS (Pocket PC)
  1. Select "Module Tests".
  2. Select "TCM".
  3. Select "DataLogger".

3. Select the applicable PID from the PID table.
4. Verify the PID data according to the detections on the screen.



am3uuw0000261

cardiagn.com

PID/DATA Monitor Table (Reference)

Monitor item	Unit/ Condition	Test condition	Specification	Inspection item
DWN SW	On/Off	Selector lever at shift down position	On	• Down switch (See 05-17-19 DOWN SWITCH INSPECTION [FS5A-EL].) • Related harness
		Except selector lever at shift down position	Off	
ECT	°C {°F}	ECT 20°C {68°F}	Approx.20°C {68°F}	• PCM (See 01-40A-8 PCM INSPECTION [LF, L5].)
GEAR_RA	—	1GR	Approx.3.620	• Following PIDs: — SSA/SS1 — SSB/SS2 — SSC/SS3 — SSD/SS4 — SSE_SS5 — SSF_SS6
		2GR	Approx.1.925	
		3GR	Approx.1.285	
		4GR	Approx.0.933	
		5GR	Approx.0.692	
GEAR_SEL	1st/2nd/3rd/ 4th/5th	1GR	1st	• Following PIDs: — SSA/SS1 — SSB/SS2 — SSC/SS3 — SSD/SS4 — SSE_SS5 — SSF_SS6
		2GR	2nd	
		3GR	3rd	
		4GR	4th	
		5GR	5th	
HTM_CNT	—	This PID indicates number of high oil temperature mode operations. High oil temperature mode is switched when ATF reaches approx.130 °C {266 °F} or more.		
HTM_DIS	km {mile}	This PID indicates travel distance after operation of high oil temperature mode. High oil temperature mode is switched when ATF reaches approx.130 °C {266 °F} or more.		
ISS	RPM	Vehicle stopped	0 RPM	• Intermediate sensor (See 05-17-25 INTERMEDIATE SENSOR INSPECTION [FS5A-EL].) • Related harness
		Vehicle speed 30 km/h {19 mph} in 3GR	Approx.1,300 RPM	
LINEDES	Pa {kgf/cm^2, psi}	Idle at P position after warm-up	Approx.400 kPa {4.08 kgf/ cm^2, 58.0 psi}	• Following PIDs: — SSA/SS1 — SSB/SS2 — SSC/SS3 — SSD/SS4 — SSE_SS5 — SSF_SS6
		Engine speed 2,000 rpm at P position	Approx.560 kPa {5.71 kgf/ cm^2, 81.2 psi}	
LPS	A	Idle at P position after warm-up	Approx.950 mA	• Pressure control solenoid A (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		Engine speed 2,000 rpm at P position	Approx.830 mA	
LPSB	%	Gear shifting from 4GR to 5GR	Approx.100 %	• Pressure control solenoid B (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		Gear shifting from 5GR to 4GR	Approx.50 %	
		Other conditions	0 %	
MNL SW	On/Off	Selector lever at P position	Off	• M range switch (See 05-17-18 M RANGE SWITCH INSPECTION [FS5A-EL].) • Related harness
		Selector lever at R position	Off	
		Selector lever at N position	Off	
		Selector lever at D range	Off	
		Selector lever at M range	On	
OP_SW_B	On/Off	1GR	On	• Oil pressure switch (See 05-17-22 OIL PRESSURE SWITCH INSPECTION [FS5A-EL].) • Related harness
		2GR	On	
		3GR	On	
		4GR	Off	
		5GR	Off	
OSS	RPM	Vehicle stopped	0 RPM	• VSS (See 05-17-27 VEHICLE SPEED SENSOR (VSS) INSPECTION [FS5A-EL].) • Related harness
		Vehicle speed 30 km/h {19 mph} in 3GR	Approx.250 RPM	

cardiagn.com

Monitor item	Unit/ Condition	Test condition	Specification	Inspection item
RPM	RPM	Engine speed 1,000 rpm	Approx.1,000 RPM	• PCM (See 01-40A-8 PCM INSPECTION [LF, L5].)
SSA/SS1	%	1GR at D range	0 %	• Shift solenoid A (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		2GR at D range	0 %	
		3GR at D range	0 %	
		4GR at D range	Approx.100 %	
		5GR at D range	Approx.100 %	
SSB/SS2	%	1GR at D range	Approx.100 %	• Shift solenoid B (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		2GR at D range	0 %	
		3GR at D range	0 %	
		4GR at D range	0 %	
		5GR at D range	0 %	
SSC/SS3	%	1GR at D range	Approx.100 %	• Shift solenoid C (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		2GR at D range	Approx.100 %	
		3GR at D range	0 %	
		4GR at D range	0 %	
		5GR at D range	0 %	
SSD/SS4	On/Off	1GR at D range	Off	• Shift solenoid D (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		2GR at D range	Off	
		3GR at D range	Off	
		4GR at D range	On	
		5GR at D range	On	
SSE_SS5	On/Off	TCC released	Off	• Shift solenoid E (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		TCC engaged	On	
SSF_SS6	On/Off	1GR at D range	Off	• Shift solenoid E (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		2GR at D range	Off	
		3GR at D range	Off	
		4GR at D range	Off	
		5GR at D range	On	
TFT	°C {°F}	ATF 20 °C {68°F}	Approx.20 °C {68°F}	• TFT sensor (See 05-17-20 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL].) • Related harness
		ATF 65 °C {149°F}	Approx.65 °C {149°F}	
TFTV	V	ATF 20 °C {68°F}	Approx.3.3 V	• TFT sensor (See 05-17-20 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL].) • Related harness
		ATF 65 °C {149°F}	Approx.1.3 V	
THOP	%	Accelerator pedal fully released	Approx.13 %	• PCM (See 01-40A-8 PCM INSPECTION [LF, L5].)
		Accelerator pedal fully depressed	Approx.84 %	
TR	P/R/N/D	Selector lever at P position	P	• TR switch (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) • Related harness
		Selector lever at R position	R	
		Selector lever at N position	N	
		Selector lever at D range	D	
		Selector lever at M range	D	
TR_SENS	V	Selector lever at P position	4.3—4.8	• TR switch (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) • Related harness
		Selector lever at R position	3.8—4.2	
		Selector lever at N position	3.0—3.5	
		Selector lever at D range	2.2—2.7	
		Selector lever at M range	2.2—2.7	

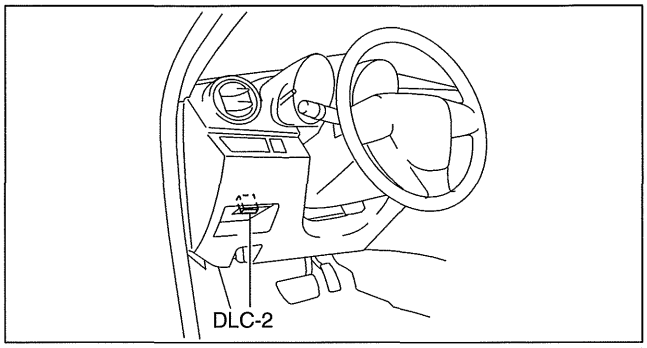
cardiagn.com

Monitor item	Unit/ Condition	Test condition	Specification	Inspection item
TSS	RPM	Engine speed 1,000 rpm at P position	Approx.950 RPM	• Input/turbine speed sensor (See 05-17-24 INPUT/TURBINE SPEED SENSOR INSPECTION [FS5A-EL].) • Related harness
		Vehicle stopped at D range	0 RPM	
UP SW	On/Off	Selector lever at shift up position	On	• Up switch (See 05-17-18 UP SWITCH INSPECTION [FS5A-EL].) • Related harness
		Except selector lever at shift up position	Off	
VPWR	V	Under any condition	B+	• Battery (See 01-17A-4 BATTERY INSPECTION [LF, L5].) • Related harness
VSS	KPH {MPH}	Vehicle stopped	Approx.0 KPH {0 MPH}	• VSS (See 05-17-27 VEHICLE SPEED SENSOR (VSS) INSPECTION [FS5A-EL].) • Related harness
		Vehicle speed 30 km/h {19 MPH}	Approx.30 KPH {19 MPH}	

ON-BOARD DIAGNOSTIC SYSTEM SIMULATION INSPECTION [FS5A-EL]

id050221290400

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.
- When using the IDS (laptop PC)
  1. Select "DataLogger".
  2. Select "Modules".
  3. Select "TCM".
- When using the PDS (Pocket PC)
  1. Select "Module Tests".
  2. Select "TCM".
  3. Select "DataLogger".
3. Select the simulation items from the PID table.
4. Perform the simulation function, inspect the operations for each parts.
   - If the operation of output parts cannot be verified after the active command mode inspection is performed, this could indicate the possibility of an open or short circuit, sticking, or operation malfunction in the output parts.



am3uuw0000261

Simulation table

Item	Related to	Unit/Condition	Test condition
LPS	Pressure control solenoid A	A	Idling at P or N position
LPSB	Pressure control solenoid B	%	Idling at P or N position
SSA/SS1	Shift solenoid A	%	Idling at P or N position
SSB/SS2	Shift solenoid B	%	Idling at P or N position
SSC/SS3	Shift solenoid C	%	Idling at P or N position
SSD/SS4	Shift solenoid D	On/Off	Idling at P or N position
SSE_SS5	Shift solenoid E	On/Off	Idling at P or N position
SSF_SS6	Shift solenoid F	On/Off	Idling at P or N position

cardiagn.com

DTC P06B8:00 [FS5A-EL]

id050221325000

DTC P06B8:00	NVRAM malfunction
DETECTION CONDITION	• The TCM detects NVRAM error. **Diagnostic support note:** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• NVRAM in TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
3	**VERIFY TROUBLESHOOTING OF DTC P06B8:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Idle the engine. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
4	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

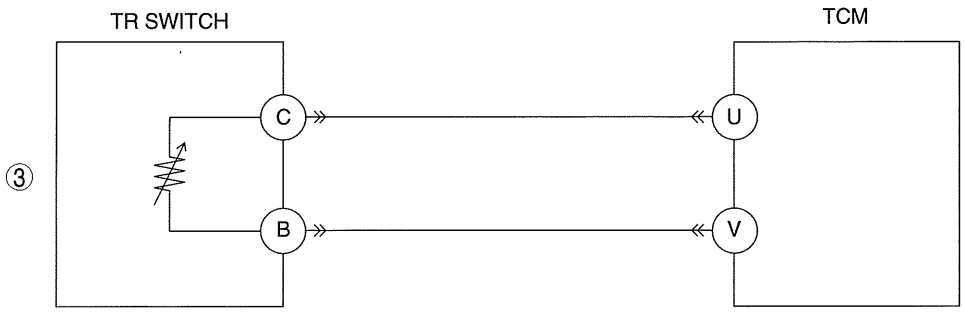
DTC P0706:00 [FS5A-EL]

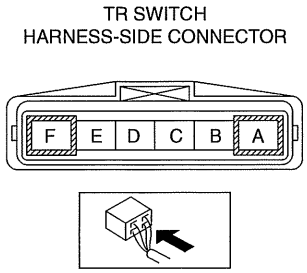
id050221817000

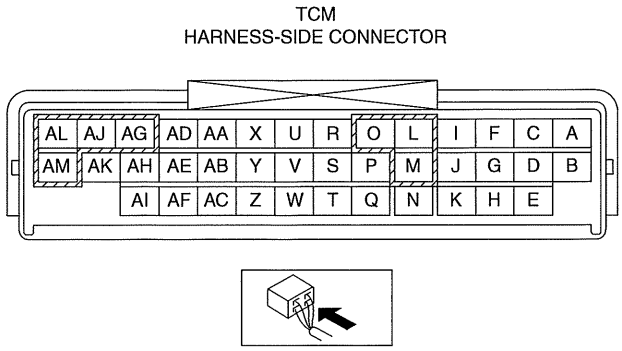
DTC P0706:00	TR switch circuit range/performance
DETECTION CONDITION	• The TCM detects no position/range signal for 100 s when the following conditions are met. — Vehicle speed: more than 20 km/h {12 mph} — Engine speed: more than 530 rpm — Input voltage from the TR switch: more than 0.49 V **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• TR switch maladjustment • TR switch malfunction • TCM malfunction

cardiagn.com

DTC P0706:00	TR switch circuit range/performance







Diagnostic procedure

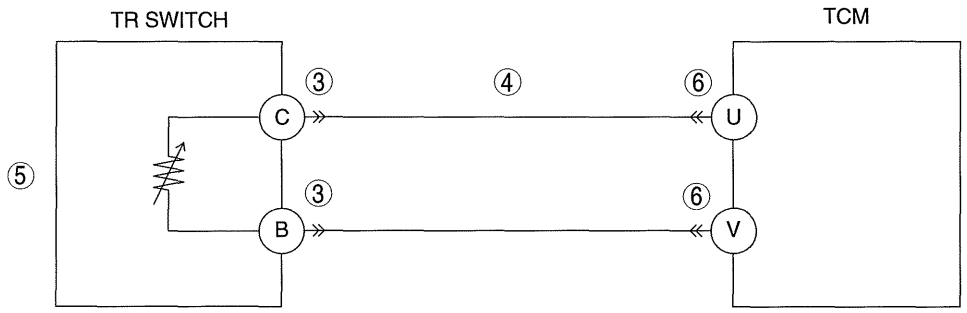
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT TR SWITCH** • Inspect the TR switch. (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Adjust or replace the TR switch, then go to the next step. (See 05-17-15 TRANSAXLE RANGE (TR) SWITCH ADJUSTMENT [FS5A-EL].) (See 05-17-16 TRANSAXLE RANGE (TR) SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
4	**VERIFY TROUBLESHOOTING OF DTC P0706:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle at more than 20 km/h {12 mph} for 100 s or more. • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

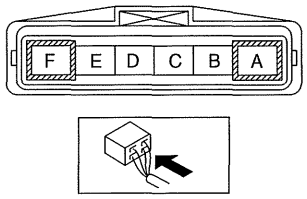
DTC P0707:00 [FS5A-EL]

id050221817100

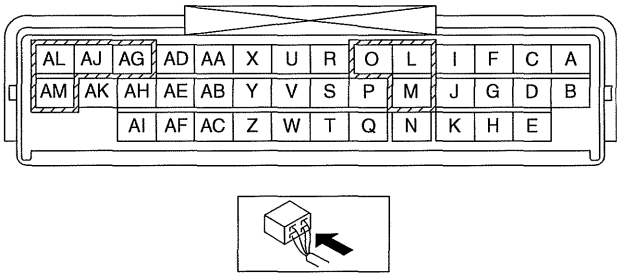
DTC P0707:00	TR switch circuit low input
DETECTION CONDITION	• The TCM detects that input voltage from the TR switch is less than 0.49 V for 100 s when the following conditions are met. — Vehicle speed: more than 20 km/h {12 mph} — Engine speed: more than 530 rpm **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• TR switch connector or terminal malfunction • Short to GND in wiring harness between TR switch terminal C and TCM terminal U • TR switch malfunction • TCM connector or terminal malfunction • TCM malfunction



TR SWITCH
HARNESS-SIDE CONNECTOR



TCM
HARNESS-SIDE CONNECTOR



cardiagn.com

Diagnostic procedure

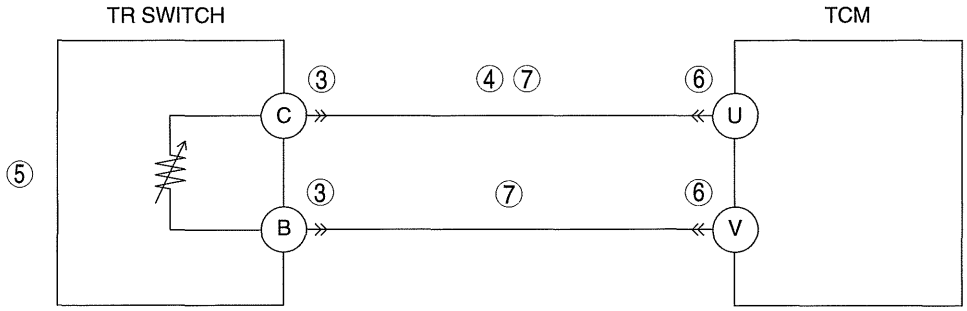
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT TR SWITCH CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TR switch connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 7.
		No	Go to the next step.
4	**INSPECT TR SWITCH SIGNAL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between TR switch terminal C (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 7.
		No	Go to the next step.
5	**INSPECT TR SWITCH** • Inspect the TR switch. (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the TR switch, then go to Step 7. (See 05-17-16 TRANSAXLE RANGE (TR) SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to the next step.
		No	Go to the next step.
7	**VERIFY TROUBLESHOOTING OF DTC P0707:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle at more than 20 km/h {12 mph} for 100 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
8	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

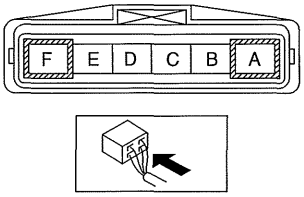
DTC P0708:00 [FS5A-EL]

id050221817200

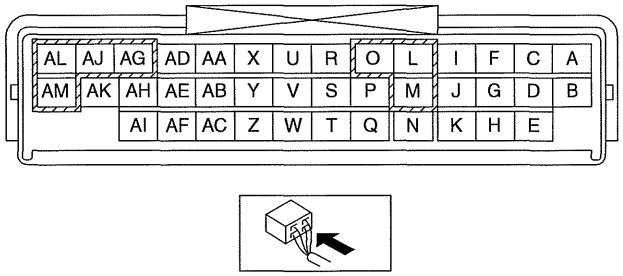
DTC P0708:00	TR switch circuit high input
DETECTION CONDITION	• The TCM detects that input voltage from the TR switch is more than 4.78 V for 100 s when the following conditions are met. — Vehicle speed: more than 20 km/h {12 mph} — Engine speed: more than 530 rpm **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• TR switch connector or terminal malfunction • Short to power supply in wiring harness between TR switch terminal C and TCM terminal U • TR switch malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between TR switch terminal C and TCM terminal U • Open circuit in wiring harness between TR switch terminal B and TCM terminal V • TCM malfunction



TR SWITCH
HARNESS-SIDE CONNECTOR



TCM
HARNESS-SIDE CONNECTOR



cardiagn.com

Diagnostic procedure

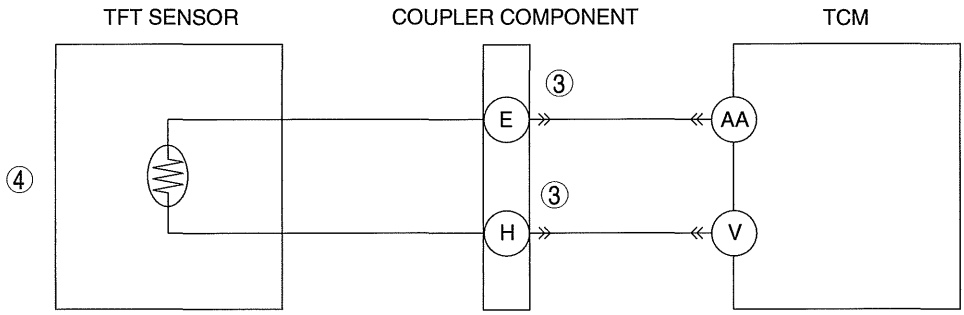
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT TR SWITCH CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TR switch connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
4	**INSPECT TR SWITCH CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between TR switch terminal C (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
		No	Go to the next step.
5	**INSPECT TR SWITCH** • Inspect the TR switch. (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the TR switch, then go to Step 8. (See 05-17-16 TRANSAXLE RANGE (TR) SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
7	**INSPECT TR SWITCH CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the following circuits: — TR switch terminal C (wiring harness-side) and TCM terminal U (wiring harness-side) — TR switch terminal B (wiring harness-side) and TCM terminal V (wiring harness-side) • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
8	**VERIFY TROUBLESHOOTING OF DTC P0708:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle at more than 20 km/h {12 mph} for 100 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

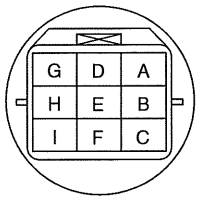
DTC P0711:00 [FS5A-EL]

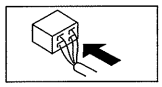
id050221817300

DTC P0711:00	TFT sensor circuit range/performance
DETECTION CONDITION	• The TCM detects that input voltage from the TFT sensor is less than 0.03 V when the following conditions are met. — Time since engine start: more than 180 s — Vehicle is driven for 90 s or more at vehicle speed between 25—59 km/h {15—36 mph}, and then 60 km/h {37 mph} or more for 60 s or more **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light does not illuminate. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • TFT sensor malfunction • TCM malfunction

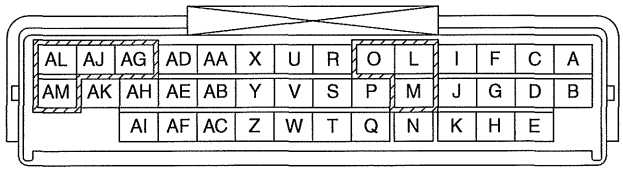


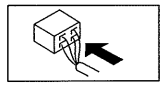
COUPLER COMPONENT
HARNESS-SIDE CONNECTOR





TCM
HARNESS-SIDE CONNECTOR





cardiagn.com

Diagnostic procedure

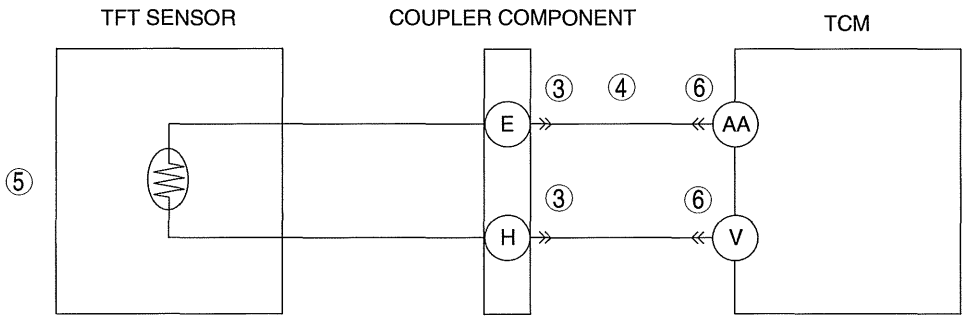
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 5.
		No	Go to the next step.
4	**INSPECT TFT SENSOR** • Inspect the TFT sensor. (See 05-17-20 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the coupler component, then go to next step. (See 05-17-21 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**VERIFY TROUBLESHOOTING OF DTC P0711:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Idle the engine for 180 s or more. 3. Drive the vehicle at within 25—59 km/h {16—36 mph} for 90 s or more. 4. Drive the vehicle at more than 60 km/h {37 mph} for 60 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

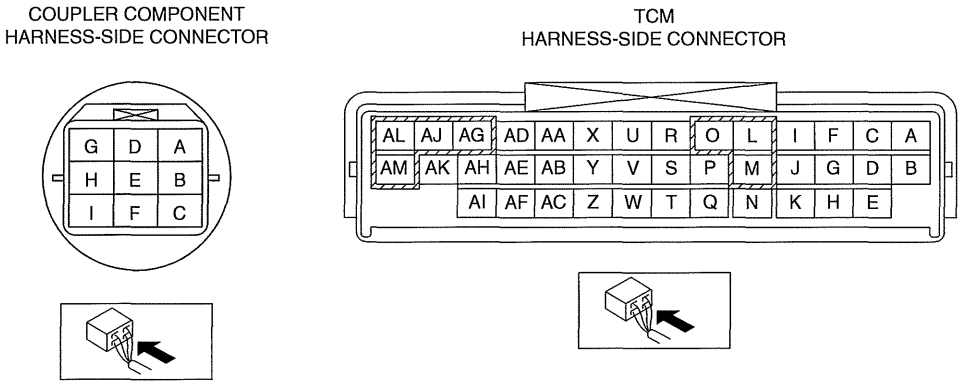
cardiagn.com

DTC P0712:00 [FS5A-EL]

id050221817400

DTC P0712:00	TFT sensor circuit low input
DETECTION CONDITION	• The TCM detects that input voltage from the TFT sensor is less than 0.12 V for 150 s at vehicle speed 20 km/h {12 mph} or more. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to GND in wiring harness between TFT sensor and TCM terminal AA • TFT sensor malfunction • TCM connector or terminal malfunction • TCM malfunction





05-02

cardiagn.com

Diagnostic procedure

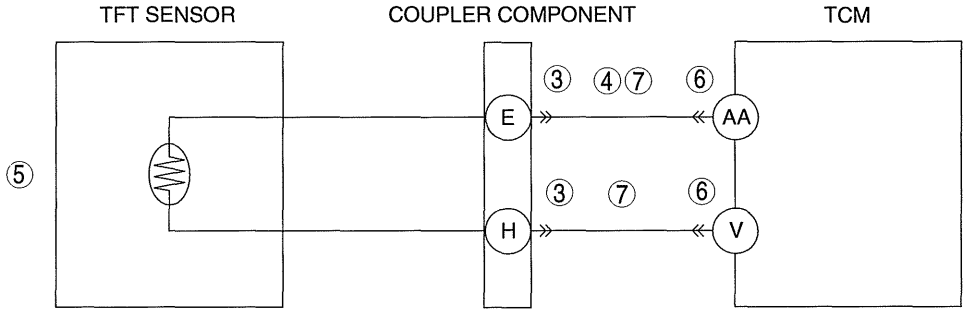
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 7.
		No	Go to the next step.
4	**INSPECT TFT SENSOR SIGNAL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between coupler component terminal E (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 7.
		No	Go to the next step.
5	**INSPECT TFT SENSOR** • Inspect the TFT sensor. (See 05-17-20 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the coupler component, then go to Step 7. (See 05-17-21 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to the next step.
		No	Go to the next step.
7	**VERIFY TROUBLESHOOTING OF DTC P0712:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle at more than 20 km/h {12 mph} for 150 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
8	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

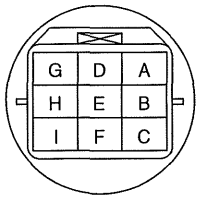
DTC P0713:00 [FS5A-EL]

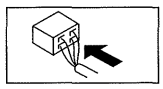
id050221817500

DTC P0713:00	TFT sensor circuit high input
DETECTION CONDITION	• The TCM detects that input voltage from the TFT sensor is more than 4.66 V for 150 s at vehicle speed 20 km/h {12 mph} or more. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between TFT sensor and TCM terminal AA • TFT sensor malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between TFT sensor and TCM terminal AA • Open circuit in wiring harness between TFT sensor and TCM terminal V • TCM malfunction

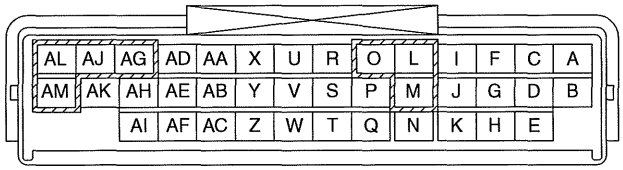


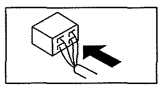
COUPLER COMPONENT HARNESS-SIDE CONNECTOR





TCM HARNESS-SIDE CONNECTOR





cardiagn.com

Diagnostic procedure

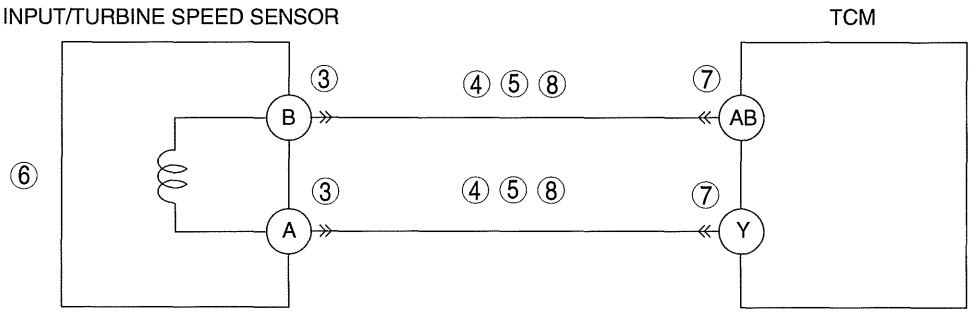
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
4	**INSPECT TFT SENSOR SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between coupler component terminal E (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
		No	Go to the next step.
5	**INSPECT TFT SENSOR** • Inspect the TFT sensor. (See 05-17-20 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the coupler component, then go to Step 8. (See 05-17-21 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
7	**INSPECT TFT SENSOR CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the following circuits: — Coupler component terminal E (wiring harness-side) and TCM terminal AA (wiring harness-side) — Coupler component terminal H (wiring harness-side) and TCM terminal V (wiring harness-side) • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
8	**VERIFY TROUBLESHOOTING OF DTC P0713:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle at more than 20 km/h {12 mph} for 150 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

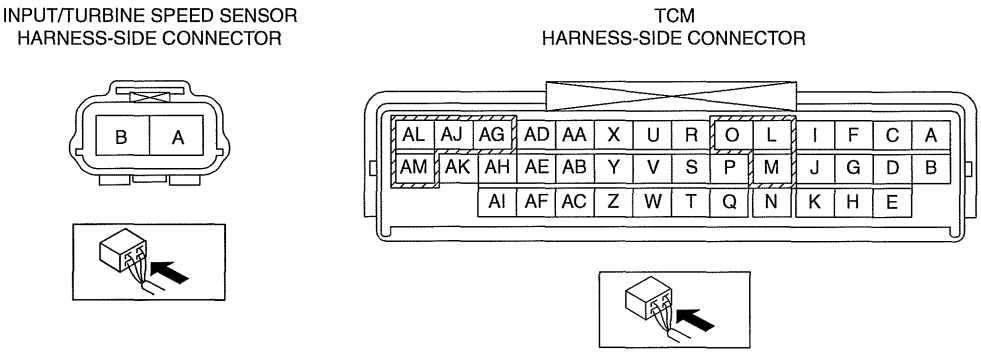
cardiagn.com

DTC P0715:00 [FS5A-EL]

id050221817600

DTC P0715:00	Input/turbine speed sensor circuit malfunction
DETECTION CONDITION	• The TCM detects no signal from the input/turbine speed sensor at vehicle speed 41 km/h {25 mph} or more. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Input/turbine speed sensor connector or terminal malfunction • Short to GND in wiring harness between input/turbine speed sensor terminal B and TCM terminal AB • Short to GND in wiring harness between input/turbine speed sensor terminal A and TCM terminal Y • Short to power supply in wiring harness between input/turbine speed sensor terminal B and TCM terminal AB • Short to power supply in wiring harness between input/turbine speed sensor terminal A and TCM terminal Y • Input/turbine speed sensor malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between input/turbine speed sensor terminal B and TCM terminal AB • Open circuit in wiring harness between input/turbine speed sensor terminal A and TCM terminal Y • TCM malfunction





05-02

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT INPUT/TURBINE SPEED SENSOR CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the input/turbine speed sensor connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT INPUT/TURBINE SPEED SENSOR CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the following circuits: — Input/turbine speed sensor terminal B (wiring harness-side) and body GND — Input/turbine speed sensor terminal A (wiring harness-side) and body GND • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
5	**INSPECT INPUT/TURBINE SPEED SENSOR CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between the following circuits: — Input/turbine speed sensor terminal B (wiring harness-side) and body GND — Input/turbine speed sensor terminal A (wiring harness-side) and body GND • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
6	**INSPECT INPUT/TURBINE SPEED SENSOR** • Inspect the input/turbine speed sensor. (See 05-17-24 INPUT/TURBINE SPEED SENSOR INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the input/turbine speed sensor, then go to Step 9. (See 05-17-25 INPUT/TURBINE SPEED SENSOR REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT INPUT/TURBINE SPEED SENSOR CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the following circuits: — Input/turbine speed sensor terminal B (wiring harness-side) and TCM terminal AB (wiring harness-side) — Input/turbine speed sensor terminal A (wiring harness-side) and TCM terminal Y (wiring harness-side) • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
9	**VERIFY TROUBLESHOOTING OF DTC P0715:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle at more than 41 km/h {25 mph} for 1 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

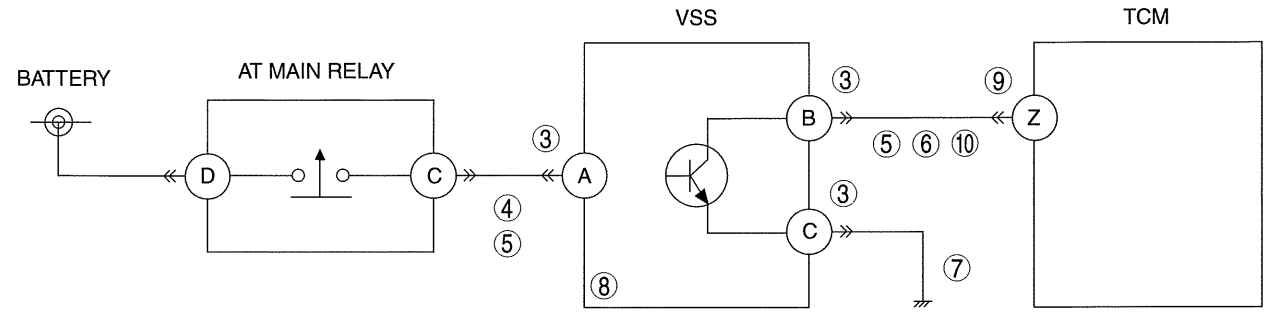
DTC P0720:00 [FS5A-EL]

id050221817700

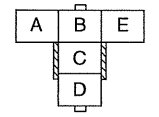
DTC P0720:00	VSS circuit malfunction
DETECTION CONDITION	• The TCM detects no signal from the VSS when the following conditions are met. — Engine coolant temperature: more than 60 °C {140 °F} — D or M range — Intermediate speed: more than 1,500 rpm **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• VSS connector or terminal malfunction • Open circuit in wiring harness between VSS terminal A and AT main relay terminal C • Short to GND in wiring harness between VSS terminal A and AT main relay terminal C • Short to GND in wiring harness between VSS terminal B and TCM terminal Z • Short to power supply in wiring harness between VSS terminal B and TCM terminal Z • Open circuit in wiring harness between VSS terminal C and body GND • VSS malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between VSS terminal B and TCM terminal Z • TCM malfunction

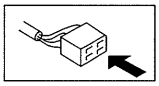
cardiagn.com

DTC P0720:00	VSS circuit malfunction

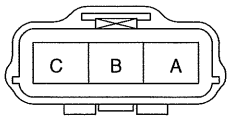


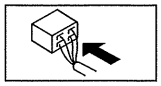
AT MAIN RELAY HARNESS-SIDE CONNECTOR



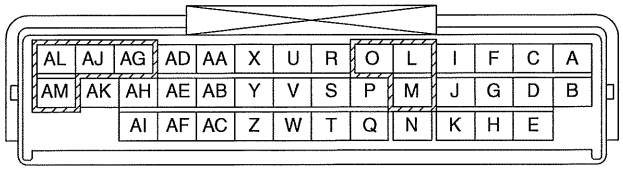


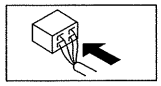
VSS HARNESS-SIDE CONNECTOR





TCM HARNESS-SIDE CONNECTOR





Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT VSS CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the VSS connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 11.
		No	Go to the next step.
4	**INSPECT VSS POWER CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition to ON (Engine off). • Measure the voltage between VSS terminal A (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 11.
5	**INSPECT VSS CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the following circuits: — VSS terminal A (wiring harness-side) and body GND — VSS terminal B (wiring harness-side) and body GND • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 11.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
6	**INSPECT VSS SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between VSS terminal B (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 11.
		No	Go to the next step.
7	**INSPECT VSS GND CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between VSS terminal C (wiring harness-side) and body GND • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 11.
8	**INSPECT VSS** • Inspect the VSS. (See 05-17-27 VEHICLE SPEED SENSOR (VSS) INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the VSS, then go to Step 11. (See 05-17-28 VEHICLE SPEED SENSOR (VSS) REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 11.
		No	Go to the next step.
10	**INSPECT VSS CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the VSS terminal B (wiring harness-side) and TCM terminal Z (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
11	**VERIFY TROUBLESHOOTING OF DTC P0720:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Warm-up the engine until the engine coolant temperature reaches 60 °C {140 °C} or more. 3. Select the selector lever to D or M range. 4. Drive the vehicle with turbine speed at more than 1,500 rpm for 5 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
12	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0731:00 [FS5A-EL]

id050221817800

DTC P0731:00	Gear 1 incorrect ratio
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is less than 2.157 four times when the following conditions are met. — 1GR — Accelerator opening angle: 3.17% or more (LF) / 3.68% or more (L5) **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Solenoid valve malfunction — Pressure control solenoid A — Shift solenoid A • Line pressure malfunction • Stall speed malfunction • Forward clutch slipping • One-way clutch No.1 slipping • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT SOLENOID VALVE** • Inspect the following solenoid valves: (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) — Pressure control solenoid A — Shift solenoid A • Is there any malfunction?	Yes	Replace the solenoid valve, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.
6	**INSPECT STALL SPEED** • Perform the "Stall Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
7	**INSPECT TURBINE SPEED WHILE DRIVING VEHICLE** • Connect the M-MDS. • Start the engine. • Measure the PID "TSS" while driving vehicle under the following conditions: — Selector lever position: D range — Gear position: 1GR — Vehicle speed: 20 km/h {12 mph} • Is the PID "TSS" approx.2,200 RPM (LF) / approx.2,300 RPM (L5)?	Yes	Go to Step 9.
		No	Go to the next step.
8	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
9	**VERIFY TROUBLESHOOTING OF DTC P0731:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 1 s or more. — 1GR — Accelerator opening angle: 3.17% or more (LF) / 3.68% or more (L5) 2. Stop the vehicle. 3. Repeat Step 1—2 three times. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0732:00 [FS5A-EL]

id050221817900

DTC P0732:00	Gear 2 incorrect ratio
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution in 2GR is more than 2.157 or less than 1.249 three times. **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.

cardiagn.com

DTC P0732:00	Gear 2 incorrect ratio
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Solenoid valve malfunction — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C • Line pressure malfunction • Stall speed malfunction • Forward clutch slipping • 2-4 brake band slipping • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT SOLENOID VALVE** • Inspect the following solenoid valves: (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C • Is there any malfunction?	Yes	Replace the solenoid valve, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.
6	**INSPECT STALL SPEED** • Perform the "Stall Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.
7	**INSPECT TURBINE SPEED WHILE DRIVING VEHICLE** • Connect the M-MDS. • Start the engine. • Measure the PID "TSS" while driving vehicle under the following conditions: — Selector lever position: D range — Gear position: 2GR — Vehicle speed: 40 km/h {25 mph} • Is the PID "TSS" approx.2,300 RPM (LF) / approx.2,450 RPM (L5)?	Yes	Go to Step 9.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
8	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
9	**VERIFY TROUBLESHOOTING OF DTC P0732:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle in 2GR for 1 s or more. 2. Stop the vehicle. 3. Repeat Step 1—2 two times. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0733:00 [FS5A-EL]

id050221818000

DTC P0733:00	Gear 3 incorrect ratio
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution in 3GR is more than 2.157. • The TCM detects that revolution ratio of the input revolution to output revolution is between 1.345—1.644 when the following conditions are met. — 3GR — Vehicle speed: more than 28 km/h {17 mph} (LF) / more than 27 km/h {17 mph} (L5) — TCC operation: Off • The TCM detects that revolution ratio of the input revolution to output revolution is less than 0.863 when the following conditions are met. — 3GR — Vehicle speed: more than 43 km/h {27 mph} (LF) / more than 41 km/h {25 mph} (L5) — TCC operation: Off **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Solenoid valve malfunction — Pressure control solenoid A — Shift solenoid A — Shift solenoid C • Line pressure malfunction • Stall speed malfunction • Forward clutch slipping • 3-4 clutch slipping • Primary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT SOLENOID VALVE** • Inspect the following solenoid valves: (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) — Pressure control solenoid A — Shift solenoid A — Shift solenoid C • Is there any malfunction?	Yes	Replace the solenoid valve, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.
6	**INSPECT STALL SPEED** • Perform the "Stall Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.
7	**INSPECT TURBINE SPEED WHILE DRIVING VEHICLE** • Connect the M-MDS. • Start the engine. • Measure the PID "TSS" while driving vehicle under the following conditions: — Selector lever position: D range — Gear position: 3GR — Vehicle speed: 60 km/h {37 mph} • Is the PID "TSS" approx.2,300 RPM (LF) / approx.2,450 RPM (L5)?	Yes	Go to Step 9.
		No	Go to the next step.
8	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
9	**VERIFY TROUBLESHOOTING OF DTC P0733:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 2 s or more. — 3GR — Vehicle speed: more than 28 km/h {17 mph} (LF) / more than 27 km/h {17 mph} (L5) — TCC operation: Off 2. Drive the vehicle under the following conditions for 5 s or more. — 3GR — Vehicle speed: more than 43 km/h {27 mph} (LF) / more than 41 km/h {25 mph} (L5) — TCC operation: Off • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0734:00 [FS5A-EL]

id050221818100

DTC P0734:00	Gear 4 incorrect ratio
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is more than 1.249 or less than 0.6 when the following conditions are met. — 4GR — Vehicle speed: more than 31 km/h {19 mph} (LF) / more than 28 km/h {17 mph} (L5) • The TCM detects that revolution ratio of the input revolution to output revolution is between 1.09—0.91 when the following conditions are met. — 4GR — Vehicle speed: more than 46 km/h {29 mph} — TCC operation: Off **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Solenoid valve malfunction — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C • Line pressure malfunction • Stall speed malfunction • Forward clutch slipping • 2-4 brake band slipping • 3-4 clutch slipping • Primary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 9. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT SOLENOID VALVE** • Inspect the following solenoid valves: (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C • Is there any malfunction?	Yes	Replace the solenoid valve, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.
6	**INSPECT STALL SPEED** • Perform the "Stall Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 9.
		No	Go to the next step.
7	**INSPECT TURBINE SPEED WHILE DRIVING VEHICLE** • Connect the M-MDS. • Start the engine. • Measure the PID "TSS" while driving vehicle under the following conditions: — Selector lever position: D range — Gear position: 4GR — Vehicle speed: 80 km/h {50 mph} • Is the PID "TSS" approx.2,250 RPM (LF) / approx.2,350 RPM (L5)?	Yes	Go to Step 9.
		No	Go to the next step.
8	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
9	**VERIFY TROUBLESHOOTING OF DTC P0734:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 1 s or more. — 4GR — Vehicle speed: more than 31 km/h {19 mph} (LF) / more than 28 km/h {17 mph} (L5) 2. Drive the vehicle under the following conditions for 5 s or more. — 4GR — Vehicle speed: more than 46 km/h {29 mph} — TCC operation: Off • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0735:00 [FS5A-EL]

id050221825100

DTC P0735:00	Gear 5 incorrect ratio
DETECTION CONDITION	• The TCM detects that revolution ratio of the intermediate revolution to output revolution is less than 1.11 when the following conditions are met. — 3GR or 4GR — Accelerator opening angle: 3.17% or more (LF) / 3.67% or more (L5) • The TCM detects that revolution ratio of the intermediate revolution to output revolution is more than 1.11 when the following conditions are met. — 5GR — Accelerator opening angle: 3.17% or more (LF) / 3.67% or more (L5) **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Solenoid valve malfunction — Pressure control solenoid B — Shift solenoid F • Line pressure malfunction • Stall speed malfunction • Direct clutch slipping • Reduction brake slipping • Secondary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 10. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 10. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT SOLENOID VALVE** • Inspect the following solenoid valves: (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) — Pressure control solenoid B — Shift solenoid F • Is there any malfunction?	Yes	Replace the solenoid valve, then go to Step 10. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 10.
		No	Go to the next step.
6	**INSPECT STALL SPEED** • Perform the "Stall Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 10.
		No	Go to the next step.
7	**INSPECT INTERMEDIATE SPEED WHILE DRIVING VEHICLE** • Connect the M-MDS. • Start the engine. • Measure the PID "ISS" while driving vehicle under the following conditions: — Selector lever position: D range — Gear position: 4GR — Vehicle speed: 80 km/h {50 mph} • Is the PID "ISS" approx.3,250 RPM (LF) / approx.3,450 RPM (L5)?	Yes	Go to Step 10.
		No	Go to the next step.
8	**INSPECT INTERMEDIATE SPEED WHILE DRIVING VEHICLE** • Connect the M-MDS. • Start the engine. • Measure the PID "ISS" while driving vehicle under the following conditions: — Selector lever position: D range — Gear position: 5GR — Vehicle speed: 90 km/h {56 mph} • Is the PID "ISS" approx.2,700 RPM (LF) / approx.2,850 RPM (L5)?	Yes	Go to Step 10.
		No	Go to the next step.
9	**INSPECT SECONDARY CONTROL VALVE BODY** • Remove the secondary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the secondary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
10	**VERIFY TROUBLESHOOTING OF DTC P0735:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — 3GR or 4GR — Accelerator opening angle: 3.17% or more (LF) / 3.67% or more (L5) 2. Drive the vehicle under the following conditions for 5 s or more. — 5GR — Accelerator opening angle: 3.17% or more (LF) / 3.67% or more (L5) • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
11	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0741:00 [FS5A-EL]

id050221818200

DTC P0741:00	TCC stuck off
DETECTION CONDITION	• The TCM detects that difference between the input revolution and output revolution is more than 100 rpm when the following conditions are met. — 4GR — Vehicle speed: 60—100 km/h {38.0—62.1 mph} — TCC operation: On — Shift solenoid A duty ratio: more than 99.2% **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Solenoid valve malfunction — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C — Shift solenoid D — Shift solenoid E • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 7. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 7. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT SOLENOID VALVE** • Inspect the following solenoid valves: (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C — Shift solenoid D — Shift solenoid E • Is there any malfunction?	Yes	Replace the solenoid valve, then go to Step 7. (See 05-17-33 SOLENOID VALVE REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 7.
		No	Go to the next step.
6	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FS5A-EL].)
7	**VERIFY TROUBLESHOOTING OF DTC P0741:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — 4GR — Vehicle speed: 60—100 km/h {38.0—62.1 mph} — TCC operation: On • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
8	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0742:00 [FS5A-EL]

id050221818300

DTC P0742:00	TCC stuck on
DETECTION CONDITION	• The TCM detects that difference between the input revolution and output revolution is less than 50 rpm when the following conditions are met. — 4GR — Accelerator opening angle: 6.25—3.125%, more than 6.25% or less than 0.78% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation: Off **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Solenoid valve malfunction — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C — Shift solenoid D — Shift solenoid E • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 7. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 7. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT SOLENOID VALVE** • Inspect the following solenoid valves: (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) — Pressure control solenoid A — Shift solenoid A — Shift solenoid B — Shift solenoid C — Shift solenoid D — Shift solenoid E • Is there any malfunction?	Yes	Replace the solenoid valve, then go to Step 7. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 7.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
6	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
7	**VERIFY TROUBLESHOOTING OF DTC P0742:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 3 s or more. — 4GR — Accelerator opening angle: 6.25—3.125% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation: Off 2. Drive the vehicle under the following conditions for 5 s or more. — 4GR — Accelerator opening angle: more than 6.25% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation: Off 3. Drive the vehicle under the following conditions for 5 s or more. — 4GR — Accelerator opening angle: less than 0.78% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation: Off • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
8	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0744:00 [FS5A-EL]

id050221818400

DTC P0744:00	TCC slip control malfunction
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution in 3GR is more than 1.09 or less than 0.91. • The TCM detects that revolution ratio of the input revolution to output revolution in 4GR is more than 0.817 or less than 0.636. **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.

cardiagn.com

DTC P0744:00	TCC slip control malfunction
POSSIBLE CAUSE	• Solenoid valve malfunction — Shift solenoid A — Shift solenoid D — Shift solenoid E • Forward clutch not engaged or slipped • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**VERIFY DTC HAVE BEEN PRESENTED** • Switch the ignition to ON (Engine off). • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are the following DTCs output? — P0752:00 (Shift solenoid A stuck on) — P0753:00 (Shift solenoid A electrical malfunction) — P0767:00 (Shift solenoid D stuck on) — P0768:00 (Shift solenoid D electrical malfunction) — P0771:00 (Shift solenoid E stuck off) — P0773:00 (Shift solenoid E electrical malfunction)	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	Replace the forward clutch, then go to the next step.
3	**VERIFY TROUBLESHOOTING OF DTC P0744:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle in 3GR for 1 s or more. 2. Drive the vehicle in 4GR for 1 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
4	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

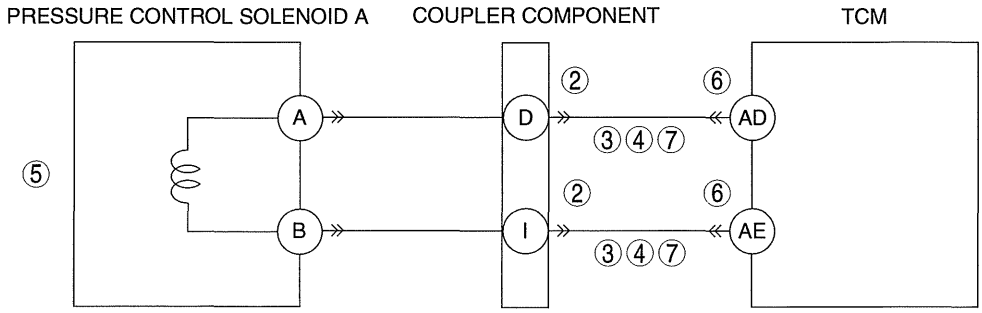
DTC P0745:00 [FS5A-EL]

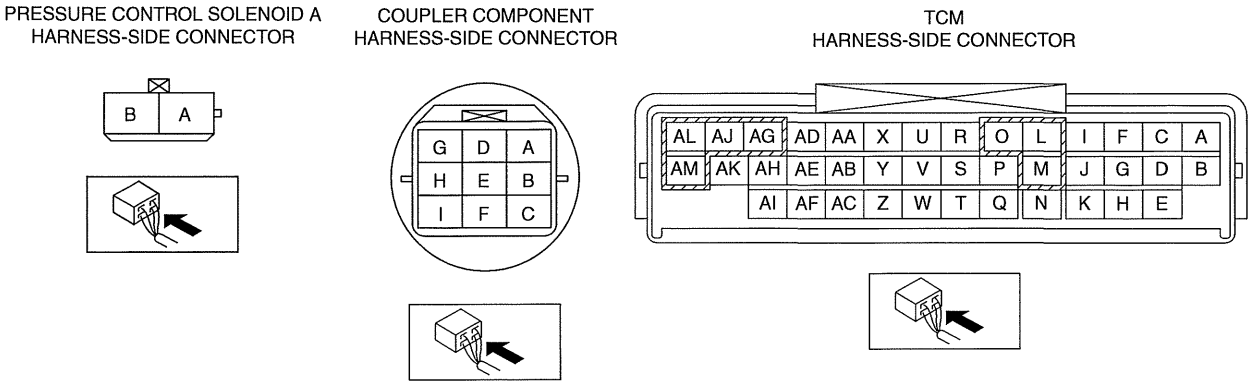
id050221818500

DTC P0745:00	Pressure control solenoid A malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the pressure control solenoid A is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.

cardiagn.com

DTC P0745:00	Pressure control solenoid A malfunction
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between pressure control solenoid A terminal A and TCM terminal AD • Short to power supply in wiring harness between pressure control solenoid A terminal B and TCM terminal AE • Short to GND in wiring harness between pressure control solenoid A terminal A and TCM terminal AD • Short to GND in wiring harness between pressure control solenoid A terminal B and TCM terminal AE • Pressure control solenoid A malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between pressure control solenoid A terminal A and TCM terminal AD • Open circuit in wiring harness between pressure control solenoid A terminal B and TCM terminal AE • TCM malfunction





Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
3	**INSPECT PRESSURE CONTROL SOLENOID A CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Measure the voltage between the following circuits: — Coupler component terminal D (wiring harness-side) and body GND — Coupler component terminal I (wiring harness-side) and body GND • Is the voltage **B+**?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
4	**INSPECT PRESSURE CONTROL SOLENOID A CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the following circuits: — Coupler component terminal D (wiring harness-side) and body GND — Coupler component terminal I (wiring harness-side) and body GND • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 8.
		No	Go to the next step.
5	**INSPECT PRESSURE CONTROL SOLENOID A** • Inspect pressure control solenoid A. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the pressure control solenoid A, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRESSURE CONTROL SOLENOID A CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the following circuits: — Coupler component terminal D (wiring harness-side) and TCM terminal AD (wiring harness-side) — Coupler component terminal I (wiring harness-side) and TCM terminal AE (wiring harness-side) • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
8	**VERIFY TROUBLESHOOTING OF DTC P0745:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0751:00 [FS5A-EL]

id050221818600

DTC P0751:00	Shift solenoid A stuck off
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is between 1.09—0.91 when the following conditions are met. — 4GR — Vehicle speed: more than 46 km/h {29 mph} — TCC operation: Off **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid A malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID A** • Inspect the shift solenoid A. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid A, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
8	**VERIFY TROUBLESHOOTING OF DTC P0751:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — 4GR — Vehicle speed: more than 46 km/h {29 mph} — TCC operation: Off • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0752:00 [FS5A-EL]

id050221818700

DTC P0752:00	Shift solenoid A stuck on
DETECTION CONDITION	• The TCM detects that turbine revolution is more than 187.5 rpm with the vehicle stopped in D range. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid A malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

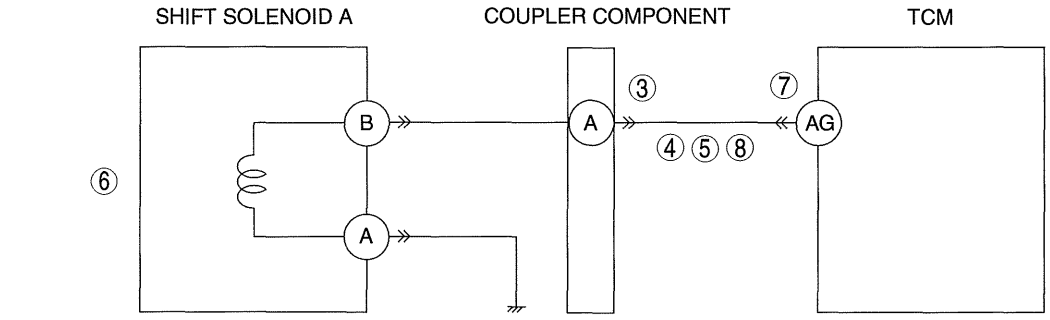
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID A** • Inspect the shift solenoid A. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid A, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
8	**VERIFY TROUBLESHOOTING OF DTC P0752:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Select the selector lever to D range. 3. Stop the vehicle for 3 s or more. • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

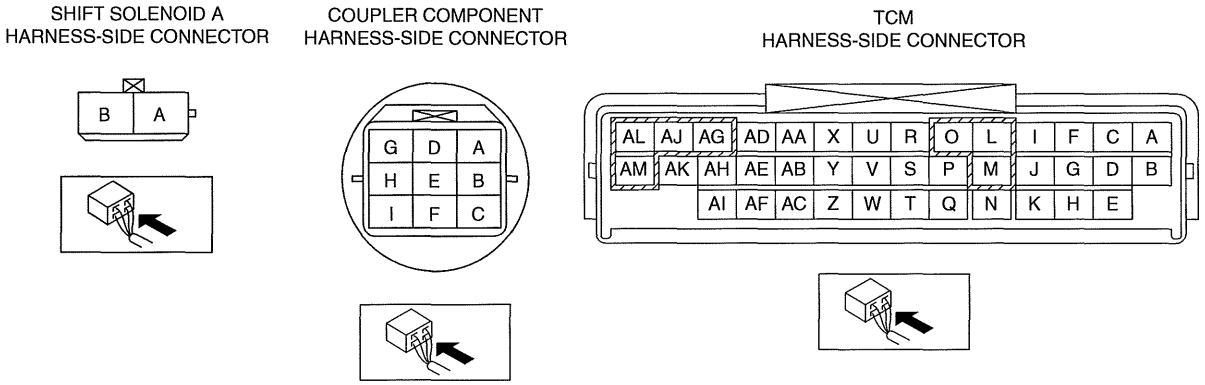
cardiagn.com

DTC P0753:00 [FS5A-EL]

id050221818800

DTC P0753:00	Shift solenoid A electrical malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the shift solenoid A is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid A terminal B and TCM terminal AG • Short to GND in wiring harness between shift solenoid A terminal B and TCM terminal AG • Shift solenoid A malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between shift solenoid A terminal B and TCM terminal AG • TCM malfunction





cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT SHIFT SOLENOID A CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Measure the voltage between the coupler component terminal A (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
5	**INSPECT SHIFT SOLENOID A CONTROL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the coupler component terminal A (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
6	**INSPECT SHIFT SOLENOID A** • Inspect the shift solenoid A. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid A, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT SHIFT SOLENOID A CONTROL CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the coupler component terminal A (wiring harness-side) and TCM terminal AG (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P0753:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0756:00 [FS5A-EL]

id050221818900

DTC P0756:00	Shift solenoid B stuck off
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is less than 2.157 four times when the following conditions are met. — D range — 1GR — Accelerator opening angle: 3.17% or more (LF) / 3.68% or more (L5) **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid B malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID B** • Inspect the shift solenoid B. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid B, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
8	**VERIFY TROUBLESHOOTING OF DTC P0756:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 1 s or more. — D range — 1GR — Accelerator opening angle: 3.17% or more (LF) / 3.68% or more (L5) 2. Stop the vehicle. 3. Repeat Step 1—2 three times. • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0757:00 [FS5A-EL]

id050221819000

DTC P0757:00	Shift solenoid B stuck on
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution in 2GR is more than 2.157 or less than 1.249 three times. • The TCM detects that revolution ratio of the input revolution to output revolution is more than 1.249 or less than 0.6 when the following conditions are met. — 4GR — Vehicle speed: more than 31 km/h {19 mph} (LF) / more than 28km/h {17 mph} (L5) **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid B malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

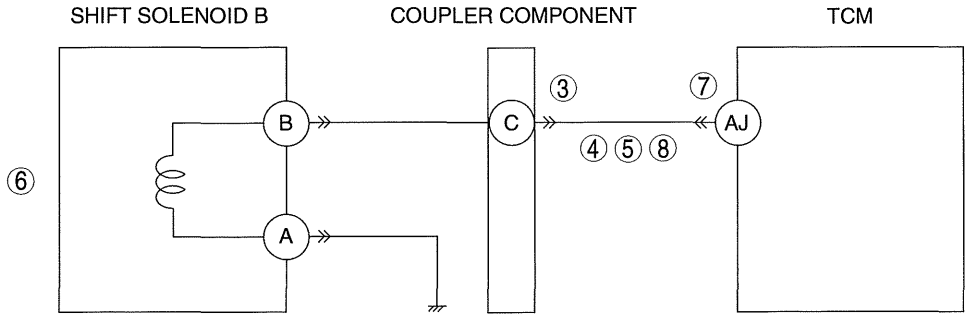
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID B** • Inspect the shift solenoid B. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid B, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
8	**VERIFY TROUBLESHOOTING OF DTC P0757:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle in 2GR for 1 s or more. 2. Stop the vehicle. 3. Repeat Step 1—2 two times. 4. Drive the vehicle under the following conditions for 1 s or more. — 4GR — Vehicle speed: more than 31 km/h {19 mph} (LF) / more than 28 km/h {17 mph} (L5) • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

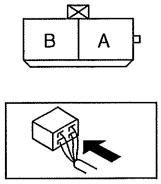
DTC P0758:00 [FS5A-EL]

id050221819100

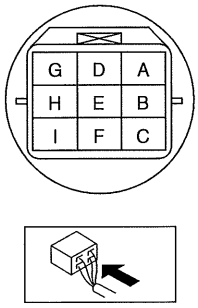
DTC P0758:00	Shift solenoid B electrical malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the shift solenoid B is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid B terminal B and TCM terminal AJ • Short to GND in wiring harness between shift solenoid B terminal B and TCM terminal AJ • Shift solenoid B malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between shift solenoid B terminal B and TCM terminal AJ • TCM malfunction



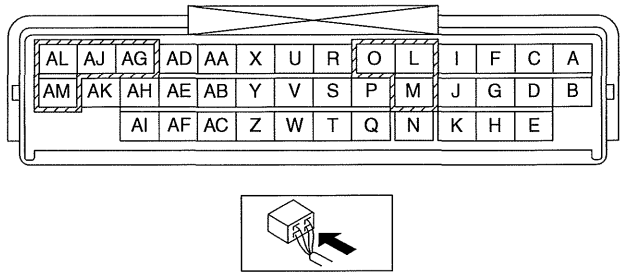
SHIFT SOLENOID B HARNESS-SIDE CONNECTOR



COUPLER COMPONENT HARNESS-SIDE CONNECTOR



TCM HARNESS-SIDE CONNECTOR



cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT SHIFT SOLENOID B CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Measure the voltage between the coupler component terminal C (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
5	**INSPECT SHIFT SOLENOID B CONTROL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the coupler component terminal C (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
6	**INSPECT SHIFT SOLENOID B** • Inspect the shift solenoid B. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid B, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT SHIFT SOLENOID B CONTROL CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the coupler component terminal C (wiring harness-side) and TCM terminal AJ (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P0758:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0761:00 [FS5A-EL]

id050221819200

DTC P0761:00	Shift solenoid C stuck off
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is less than 2.157 when the following conditions are met. — 1GR — Accelerator opening angle: 3.17% or more (LF) / 3.67% or more (L5) • The TCM detects that revolution ratio of the input revolution to output revolution in 2GR is more than 2.157 or less than 1.249. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid C malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID C** • Inspect the shift solenoid C. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid C, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
8	**VERIFY TROUBLESHOOTING OF DTC P0761:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 1 s or more. — 1GR — Accelerator opening angle: 3.17% or more (LF) / 3.67% or more (L5) 2. Drive the vehicle in 2GR for 1 s or more. • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0762:00 [FS5A-EL]

id050221819300

DTC P0762:00	Shift solenoid C stuck on
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is between 1.345?1.644 when the following conditions are met. — 3GR — Vehicle speed: more than 28 km/h {17 mph} (LF) / more than 27 km/h {17 mph} (L5) — TCC operation: Off **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid C malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

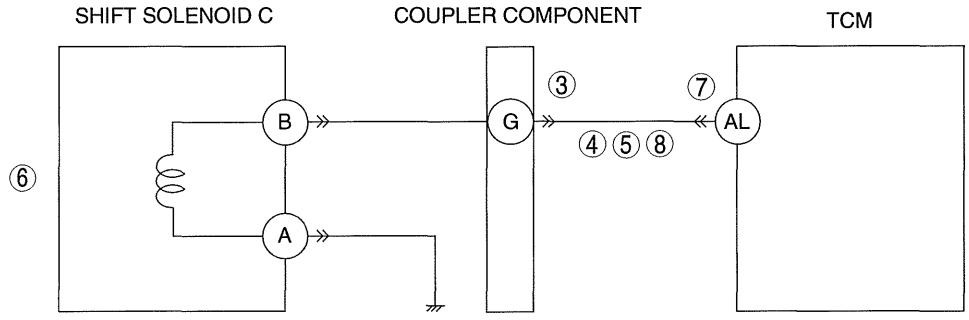
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID C** • Inspect the shift solenoid C. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid C, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
8	**VERIFY TROUBLESHOOTING OF DTC P0762:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 2 s or more. — 3GR — Vehicle speed: more than 28 km/h {17 mph} (LF) / more than 27 km/h {17 mph} (L5) — TCC operation Off • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

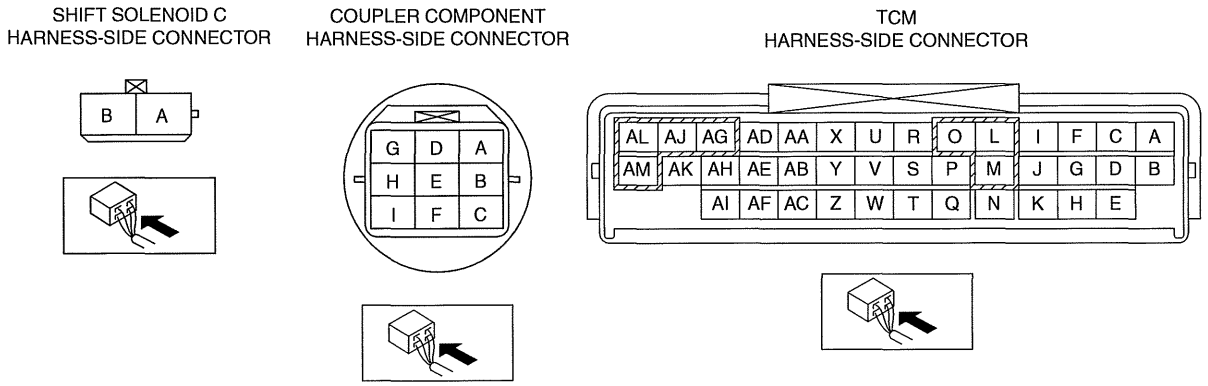
cardiagn.com

DTC P0763:00 [FS5A-EL]

id050221819400

DTC P0763:00	Shift solenoid C electrical malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the shift solenoid C is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid C terminal B and TCM terminal AL • Short to GND in wiring harness between shift solenoid C terminal B and TCM terminal AL • Shift solenoid C malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between shift solenoid C terminal B and TCM terminal AL • TCM malfunction





cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT SHIFT SOLENOID C CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Measure the voltage between the coupler component terminal G (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
5	**INSPECT SHIFT SOLENOID C CONTROL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the coupler component terminal G (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
6	**INSPECT SHIFT SOLENOID C** • Inspect the shift solenoid C. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid C, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT SHIFT SOLENOID C CONTROL CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the coupler component terminal G (wiring harness-side) and TCM terminal AL (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P0763:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0766:00 [FS5A-EL]

id050221819500

DTC P0766:00	Shift solenoid D stuck off
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is more than 1.249 or less than 0.6 when the following conditions are met. — 4GR — Vehicle speed: more than 31 km/h {19 mph} (LF) / more than 28 km/h {17mph} (L5) **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid D malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID D** • Inspect the shift solenoid D. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid D, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
8	**VERIFY TROUBLESHOOTING OF DTC P0766:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 1 s or more. — 4GR — Vehicle speed: more than 31 km/h {19 mph} (LF) / more than 28 km/h {17 mph} (L5) • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0767:00 [FS5A-EL]

id050221819600

DTC P0767:00	Shift solenoid D stuck off
DETECTION CONDITION	• The TCM detects that revolution ratio of the input revolution to output revolution is less than 0.863 when the following conditions are met. — 3GR — Vehicle speed: more than 43 km/h {27 mph} (LF) / more than 41 km/h {25 mph} (L5) — TCC operation: Off **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid D malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

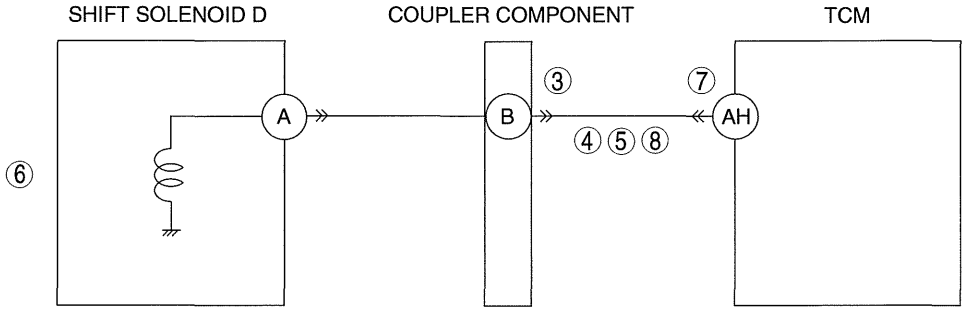
STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID D** • Inspect the shift solenoid D. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid D, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
8	**VERIFY TROUBLESHOOTING OF DTC P0767:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — 3GR — Vehicle speed: more than 43 km/h {27 mph} (LF) / more than 41 km/h {25 mph} (L5) — TCC operation: Off • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

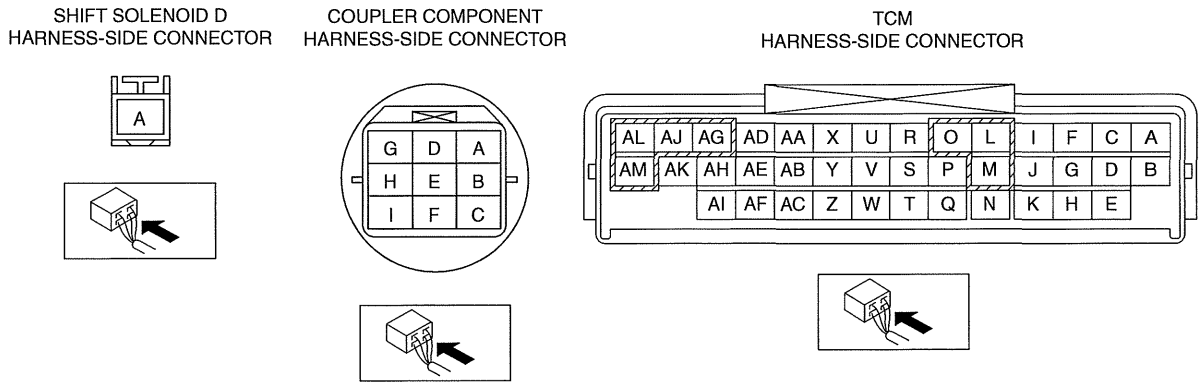
cardiagn.com

DTC P0768:00 [FS5A-EL]

id050221819700

DTC P0768:00	Shift solenoid D electrical malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the shift solenoid D is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid D terminal A and TCM terminal AH • Short to GND in wiring harness between shift solenoid D terminal A and TCM terminal AH • Shift solenoid D malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between shift solenoid D terminal A and TCM terminal AH • TCM malfunction





cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT SHIFT SOLENOID D CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Measure the voltage between the coupler component terminal B (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
5	**INSPECT SHIFT SOLENOID D CONTROL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the coupler component terminal B (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
6	**INSPECT SHIFT SOLENOID D** • Inspect the shift solenoid D. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid D, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT SHIFT SOLENOID D CONTROL CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the coupler component terminal B (wiring harness-side) and PCM terminal AH (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P0768:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0771:00 [FS5A-EL]

id050221819800

DTC P0771:00	Shift solenoid E stuck off
DETECTION CONDITION	• The TCM detects that difference between the engine revolution and turbine revolution is more than 100 rpm when the following conditions are met. — D range — 4GR — Vehicle speed: 60—100 km/h {38.0—62.1 mph} — TCC operation: On **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid E malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID E** • Inspect the shift solenoid E. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid E, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
8	**VERIFY TROUBLESHOOTING OF DTC P0771:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — D range — 4GR — Vehicle speed: 60—100 km/h {38.0—62.1 mph} — TCC operation: On • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0772:00 [FS5A-EL]

id050221819900

DTC P0772:00	Shift solenoid E stuck on
DETECTION CONDITION	• The TCM detects that difference between the engine revolution and turbine revolution is less than 50 rpm when the following conditions are met. — D range — 4GR — Accelerator opening angle: 6.25—3.125%, more than 6.25% or less than 0.78% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation: Off **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid E malfunction • Line pressure malfunction • Primary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])

cardiagn.com

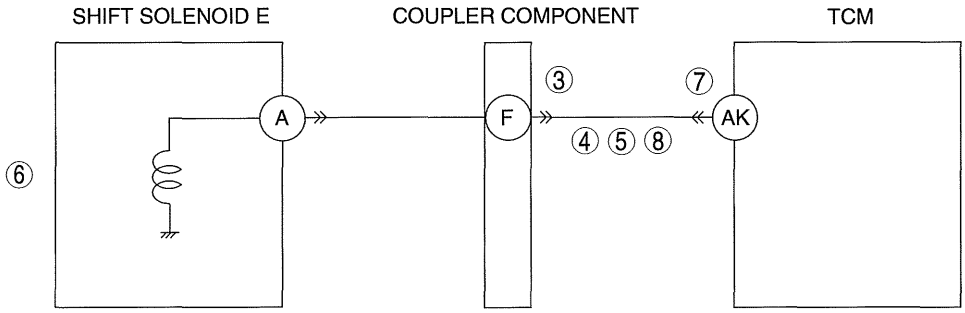
STEP	INSPECTION		ACTION
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID E** • Inspect the shift solenoid E. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid E, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT PRIMARY CONTROL VALVE BODY** • Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the primary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
8	**VERIFY TROUBLESHOOTING OF DTC P0772:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 3 s or more. — D range — 4GR — Accelerator opening angle: 6.25—3.125% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation Off 2. Drive the vehicle under the following conditions for 5 s or more. — D range — 4GR — Accelerator opening angle: more than 6.25% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation Off 3. Drive the vehicle under the following conditions for 5 s or more. — D range — 4GR — Accelerator opening angle: less than 0.78% — Vehicle speed: more than 66 km/h {41 mph} — TCC operation Off • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

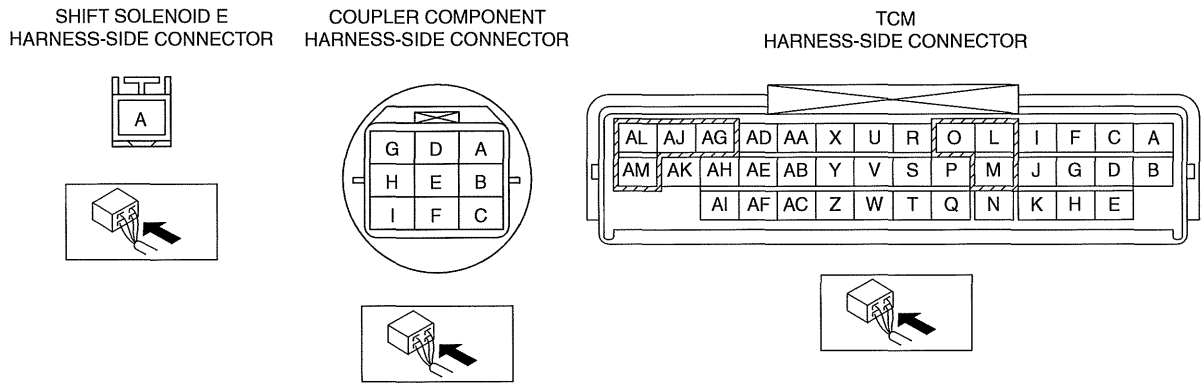
cardiagn.com

DTC P0773:00 [FS5A-EL]

id050221820000

DTC P0773:00	Shift solenoid E electrical malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the shift solenoid E is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid E terminal A and TCM terminal AK • Short to GND in wiring harness between shift solenoid E terminal A and TCM terminal AK • Shift solenoid E malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between shift solenoid E terminal A and TCM terminal AK • TCM malfunction





cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT SHIFT SOLENOID E CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Measure the voltage between the coupler component terminal F (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
5	**INSPECT SHIFT SOLENOID E CONTROL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the coupler component terminal F (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
6	**INSPECT SHIFT SOLENOID E** • Inspect the shift solenoid E. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid E, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT SHIFT SOLENOID E CONTROL CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the coupler component terminal F (wiring harness-side) and TCM terminal AK (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P0773:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P0777:00 [FS5A-EL]

id050221825200

DTC P0777:00	Pressure control solenoid B stuck on
DETECTION CONDITION	• The TCM detects that revolution ratio of the intermediate revolution to output revolution is more than 1.11 when the following conditions are met. — 5GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Pressure control solenoid B malfunction • Line pressure malfunction • Secondary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT PRESSURE CONTROL SOLENOID B** • Inspect the pressure control solenoid B. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the pressure control solenoid B, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT SECONDARY CONTROL VALVE BODY** • Remove the secondary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the secondary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
8	**VERIFY TROUBLESHOOTING OF DTC P0777:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — 5GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

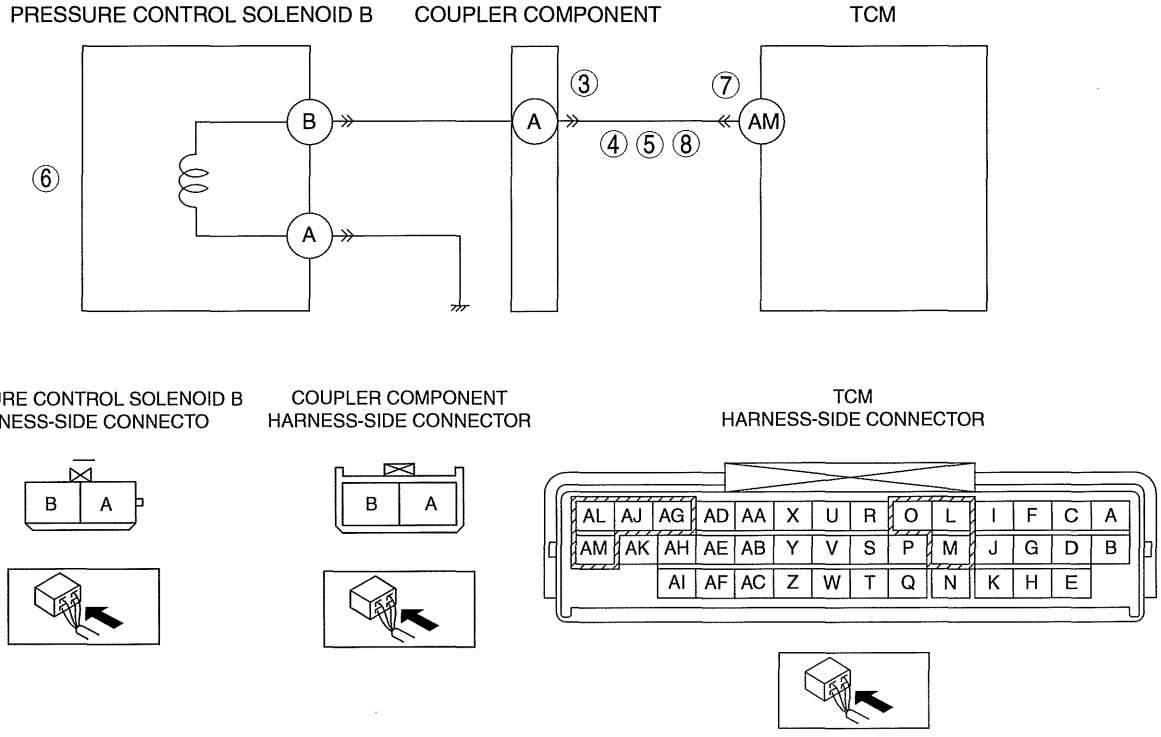
DTC P0778:00 [FS5A-EL]

id050221825300

DTC P0778:00	Pressure control solenoid B electrical malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the pressure control solenoid B is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between pressure control solenoid B terminal B and TCM terminal AM • Short to GND in wiring harness between pressure control solenoid B terminal B and TCM terminal AM • Pressure control solenoid B malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between pressure control solenoid B terminal B and TCM terminal AM • TCM malfunction

cardiagn.com

DTC P0778:00	Pressure control solenoid B electrical malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT PRESSURE CONTROL SOLENOID B CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Measure the voltage between the coupler component terminal A (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
5	**INSPECT PRESSURE CONTROL SOLENOID B CONTROL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the coupler component terminal A (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
6	**INSPECT PRESSURE CONTROL SOLENOID B** • Inspect the pressure control solenoid B. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the pressure control solenoid B, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT PRESSURE CONTROL SOLENOID B CONTROL CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the coupler component terminal A (wiring harness-side) and TCM terminal AM (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P0778:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

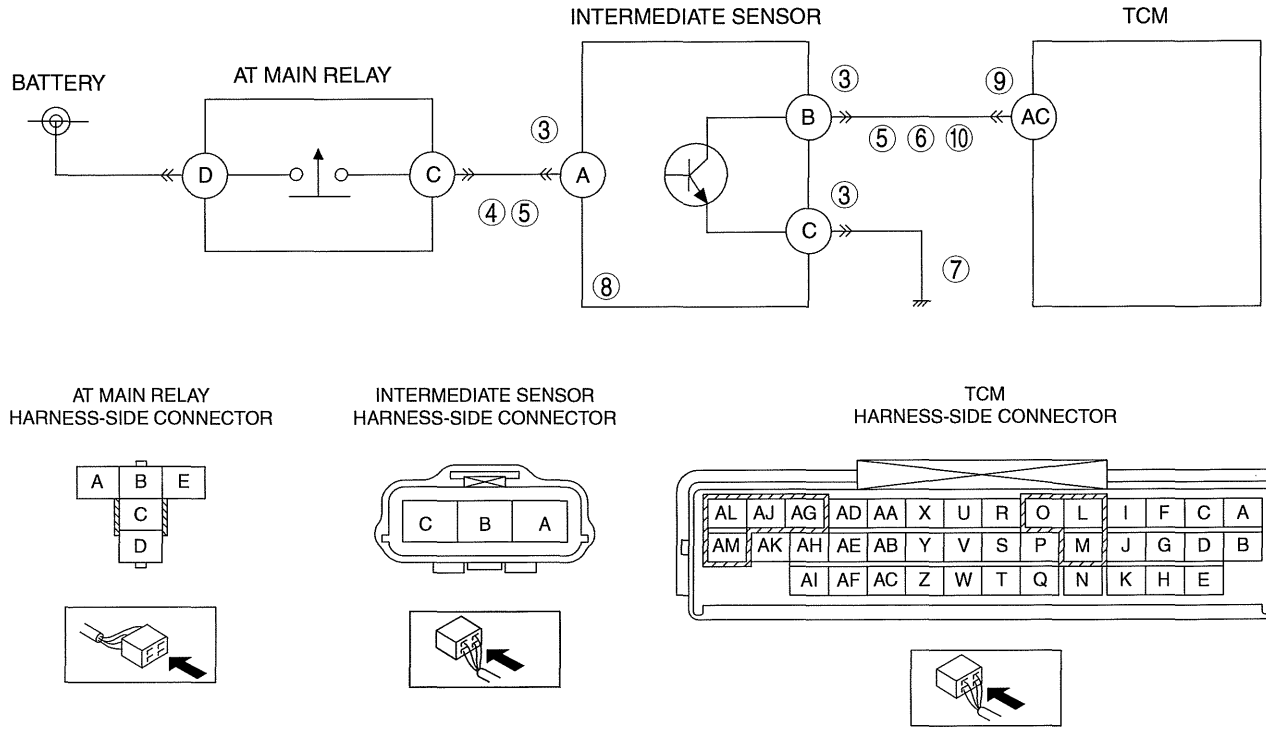
DTC P0791:00 [FS5A-EL]

id050221825400

DTC P0791:00	Intermediate sensor circuit malfunction
DETECTION CONDITION	• The TCM detects no signal from the intermediate sensor at vehicle speed 40 km/h {25 mph} or more. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Intermediate sensor connector or terminal malfunction • Open circuit in wiring harness between intermediate sensor terminal A and AT main relay terminal C • Short to GND in wiring harness between intermediate sensor terminal A and AT main relay terminal C • Short to GND in wiring harness between intermediate sensor terminal B and TCM terminal AC • Short to power supply in wiring harness between intermediate sensor terminal B and TCM terminal AC • Open circuit in wiring harness between intermediate sensor terminal C and body GND • Intermediate sensor malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between intermediate sensor terminal B and TCM terminal AC • TCM malfunction

cardiagn.com

DTC P0791:00	Intermediate sensor circuit malfunction



05-02

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT INTERMEDIATE SENSOR CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the intermediate sensor connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 11.
		No	Go to the next step.
4	**INSPECT INTERMEDIATE SENSOR POWER CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition to ON (Engine off). • Measure the voltage between intermediate sensor terminal A (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 11.
5	**INSPECT INTERMEDIATE SENSOR CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the following circuits: — Intermediate sensor terminal A (wiring harness-side) and body GND — Intermediate sensor terminal B (wiring harness-side) and body GND • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 11.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
6	**INSPECT INTERMEDIATE SENSOR SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between intermediate sensor terminal B (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 11.
		No	Go to the next step.
7	**INSPECT INTERMEDIATE SENSOR GND CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between intermediate sensor terminal C (wiring harness-side) and body GND • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 11.
8	**INSPECT INTERMEDIATE SENSOR** • Inspect the intermediate sensor. (See 05-17-25 INTERMEDIATE SENSOR INSPECTION [FS5A-EL]) • Is there any malfunction?	Yes	Replace the intermediate sensor, then go to Step 11. (See 05-17-26 INTERMEDIATE SENSOR REMOVAL/ INSTALLATION [FS5A-EL])
		No	Go to the next step.
9	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 11.
		No	Go to the next step.
10	**INSPECT INTERMEDIATE SENSOR CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the intermediate sensor terminal B (wiring harness-side) and TCM terminal AC (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
11	**VERIFY TROUBLESHOOTING OF DTC P0791:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle at more than 40 km/h {25 mph} for 5 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
12	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

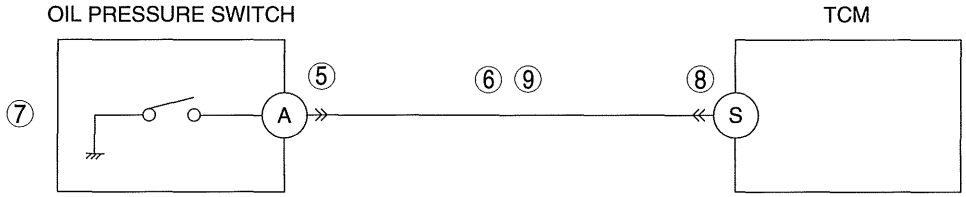
DTC P0841:00 [FS5A-EL]

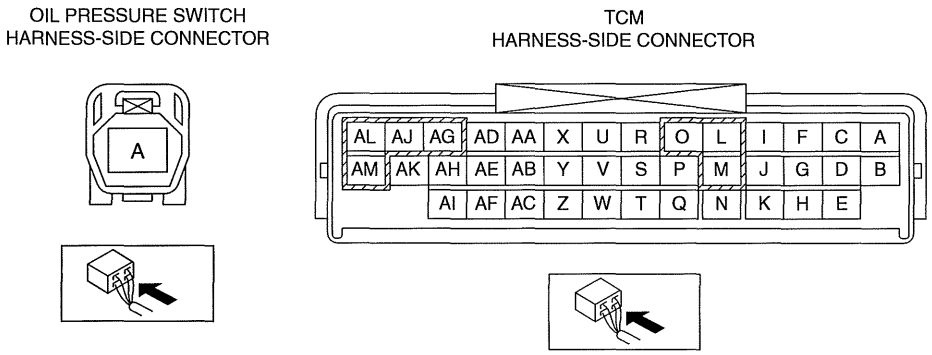
id050221822500

DTC P0841:00	Oil pressure switch circuit malfunction
DETECTION CONDITION	• The TCM detects no signal from the oil pressure switch when the following conditions are met. — 1GR, 2GR or 3GR — Revolution ratio of the input revolution to output revolution: 0.91—3.07 • The TCM detects input signal from the oil pressure switch when the following conditions are met. — 4GR or 5GR — Revolution ratio of the input revolution to output revolution: 0.64—0.81 **Diagnostic support note** • The MIL does not illuminate. • The AT warning light does not illuminate. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.

cardiagn.com

DTC P0841:00	Oil pressure switch circuit malfunction
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Line pressure malfunction • Oil pressure switch connector or terminal malfunction • Short to GND in wiring harness between oil pressure switch terminal A and TCM terminal S • Oil pressure switch malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between oil pressure switch terminal A and TCM terminal S • TCM malfunction





Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 10. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
3	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 10. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 10.
		No	Go to the next step.
5	**INSPECT OIL PRESSURE SWITCH CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the oil pressure switch connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 10.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
6	**INSPECT OIL PRESSURE SWITCH CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between oil pressure switch terminal A (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 10.
		No	Go to the next step.
7	**INSPECT OIL PRESSURE SWITCH** • Inspect the oil pressure switch. (See 05-17-22 OIL PRESSURE SWITCH INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the oil pressure switch, then go to Step 10. (See 05-17-24 OIL PRESSURE SWITCH REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
8	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 10.
		No	Go to the next step.
9	**INSPECT OIL PRESSURE SWITCH CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between oil pressure switch terminal A (wiring harness-side) and TCM terminal S (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
10	**VERIFY TROUBLESHOOTING OF DTC P0841:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle in 1GR for 1 s or more. 2. Drive the vehicle in 2GR for 1 s or more. 3. Drive the vehicle in 3GR for 1 s or more. 4. Drive the vehicle in 4GR for 1 s or more. 5. Drive the vehicle in 5GR for 1 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
11	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

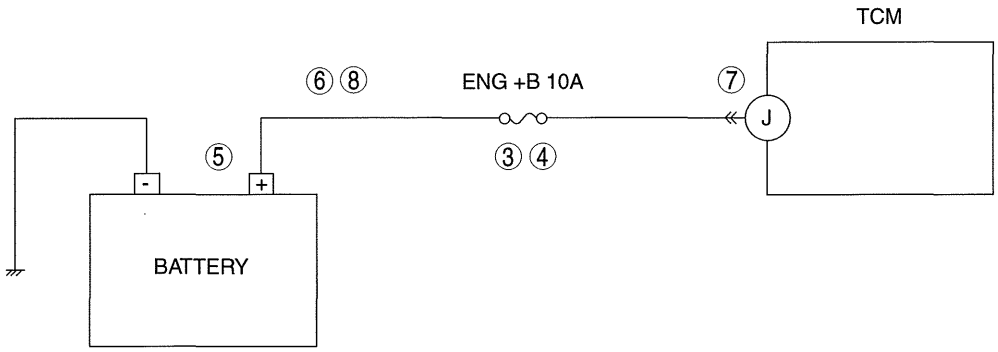
DTC P0882:00 [FS5A-EL]

id050221823100

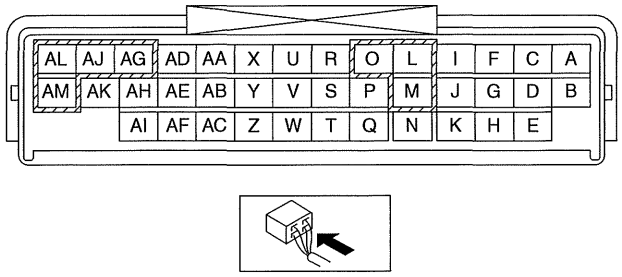
DTC P0882:00	Battery back-up voltage low
DETECTION CONDITION	• The TCM detects that battery back-up voltage is less than 2.5 V. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light does not illuminate. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Melt down ENG +B 10A fuse • ENG +B 10A fuse connector or terminal malfunction • Battery positive terminal malfunction • Battery malfunction • Short to GND in wiring harness between battery positive terminal and TCM terminal J • TCM connector or terminal malfunction • Open circuit in wiring harness between battery positive terminal and TCM terminal J • TCM malfunction

cardiagn.com

DTC P0882:00	Battery back-up voltage low



TCM
HARNESS-SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ENG +B 10A FUSE** • Switch the ignition off. • Disconnect the negative battery cable. • Inspect the ENG +B 10A fuse for proper installation and failure. • Is it normal?	Yes	Go to the next step.
		No	• If the fuse is not installed correctly, install it correctly, then go to Step 9. • If fuse has been melted, replace it, then go to Step 9.
4	**INSPECT ENG +B 10A FUSE TERMINAL FOR POOR CONNECTION** • Switch the ignition off. • Inspect for poor connection (such as damaged, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
5	**INSPECT BATTERY POSITIVE TERMINAL FOR POOR CONNECTION** • Switch the ignition off. • Inspect for poor connection (such as damaged, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
6	**INSPECT BATTERY POSITIVE CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Disconnect the battery positive terminal. • Inspect for continuity between the battery positive terminal (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT BATTERY POSITIVE CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Disconnect the battery positive terminal. • Inspect for continuity between battery positive terminal (wiring harness-side) and TCM terminal J (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P0882:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Idle the engine for 2 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0883:00 [FS5A-EL]

id050221820100

DTC P0883:00	Battery voltage high
DETECTION CONDITION	• The TCM detects that battery voltage is more than 16.02 V. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Generator malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**VERIFY DTC HAVE BEEN PRESENTED** • Switch the ignition to ON (Engine off). • Read the DTC in the PCM. • Is the DTC P2504:00 output?	Yes	Perform the "DTC P2504:00 Troubleshooting". (See 01-02A-275 DTC P2504:00 [LF, L5].)
		No	Go to the next step.
4	**VERIFY TROUBLESHOOTING OF DTC P0883:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Idle the engine for 5 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
5	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

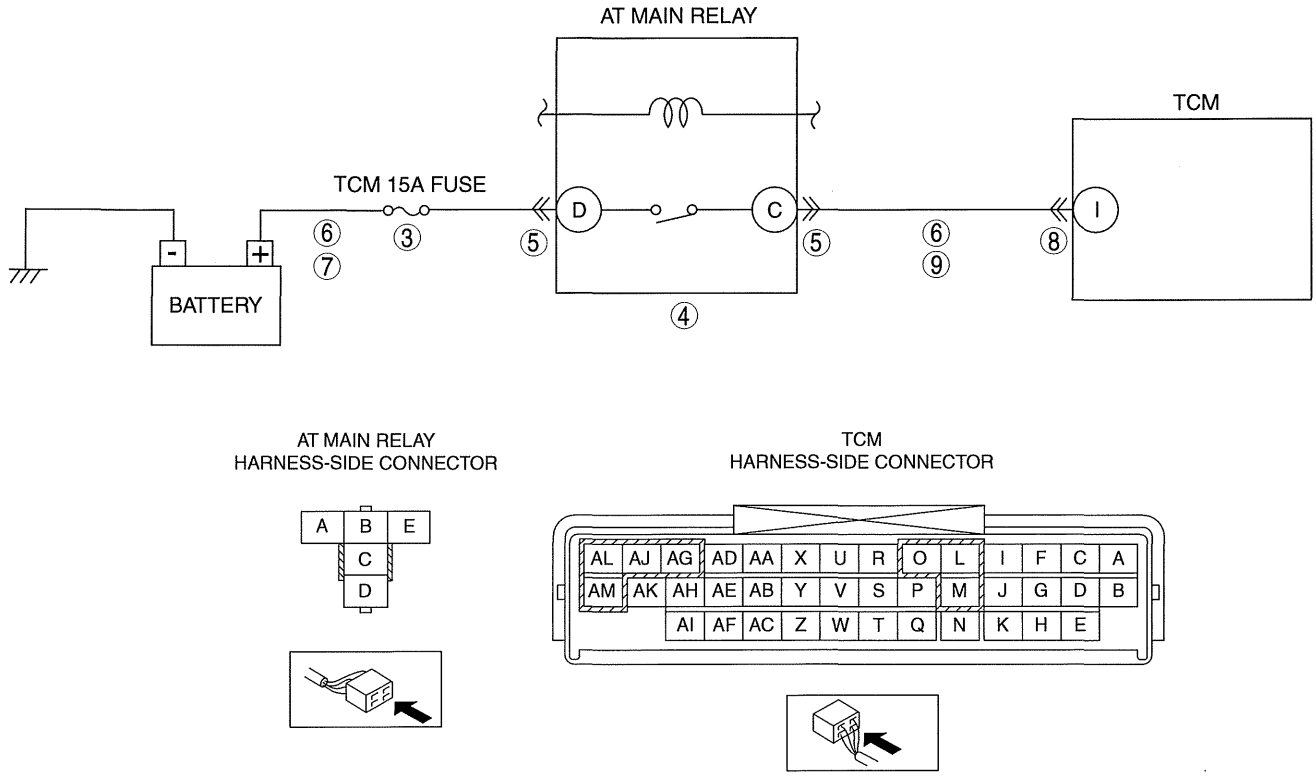
DTC P0884:00 [FS5A-EL]

id050221824700

DTC P0884:00	Battery voltage low
DETECTION CONDITION	• Battery voltage is less than 9.78 V when ATF temperature is 90 °C {194 °F} or less at engine speed 500 rpm or more. **Diagnostic support note:** • The MIL illuminates if the TCM detects the above malfunction conditions during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The AT warning light illuminates if the TCM detects the above malfunction conditions during the first drive cycle. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Melt down TCM 15A fuse • AT main relay malfunction • AT main relay connector or terminal malfunction • Short to GND in wiring harness between battery positive terminal and TCM terminal I • Open circuit in wiring harness between battery positive terminal and TCM terminal I • TCM connector or terminal malfunction • TCM malfunction

cardiagn.com

DTC P0884:00	Battery voltage low



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT TCM 15A FUSE** • Switch the ignition off. • Disconnect the battery negative cable. • Inspect the TCM 15A fuse for proper installation and failure. • Is the TCM 15A fuse normal?	Yes	Go to the next step.
		No	• If the TCM 15A fuse is not installed correctly, install it correctly. Then go to Step 10. • If the TCM 15A fuse has melted down, replace it. Then go to Step 10.
4	**INSPECT AT MAIN RELAY** • Remove the AT main relay. • Inspect the AT main relay. (See 09-21-17 RELAY INSPECTION.) • Is the AT main relay normal?	Yes	Go to the next step.
		No	Replace the AT main relay, then go to Step 10.
5	**INSPECT AT MAIN RELAY CONNECTOR FOR POOR CONNECTION** • Inspect for poor connection (such as damaged/ pulled-out pins, and corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 10.
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
6	**INSPECT POWER SUPPLY CIRCUIT FOR SHORT TO GND** • Disconnect the battery positive cable. • Inspect for continuity between the following circuits: — AT main relay terminal D (wiring harness-side) and body GND — AT main relay terminal C (wiring harness-side) and body GND • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 10.
		No	Go to the next step.
7	**INSPECT POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT** • Inspect for continuity between AT main relay terminal D (wiring harness-side) and battery positive terminal (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 10.
8	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, and corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 10.
		No	Go to the next step.
9	**INSPECT POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT** • Inspect for continuity between AT main relay terminal C (wiring harness-side) and TCM terminal I (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to next step.
10	**VERIFY TROUBLESHOOTING OF DTC P0884:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC from the TCM memory using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Idle the engine for 10 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
11	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P0894:00 [FS5A-EL]

id050221820200

DTC P0894:00	Transaxle component slipping
DETECTION CONDITION	• The TCM detects that turbine revolution is more than 187 rpm when the following conditions are met. — Vehicle stopped (brake pedal is depressed) — Accelerator pedal is fully released — Engine running at idle — Selector lever position moved to D range from N position **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Shift solenoid A malfunction • Forward clutch not engaged or slipped • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**VERIFY DTC HAVE BEEN PRESENTED** • Switch the ignition to ON (Engine off). • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are the following DTCs output? — P0720:00 (VSS circuit malfunction) — P0752:00 (Shift solenoid A stuck on) — P0753:00 (Shift solenoid A electrical malfunction)	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	Replace the forward clutch, then go to the next step.
3	**VERIFY TROUBLESHOOTING OF DTC P0894:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Release the accelerator pedal and depress the brake pedal. 3. Select the selector lever from N position to D range. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
4	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P1783:00 [FS5A-EL]

id050221820700

DTC P1783:00	ATF high oil temperature malfunction
DETECTION CONDITION	• The TCM detects that ATF temperature is more than 149.5 °C {301.1 °F} when the following conditions are met. — TFT sensor circuit malfunction: not stored — Input voltage from the TFT sensor is more than 0.12 V **Diagnostic support note** • The MIL does not illuminate. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is not available. • FREEZE FRAME DATA is not available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• High engine load drive (Driving a steep gradient at a low speed.) • Deteriorated ATF • Insufficient or excess level of ATF • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**VERIFY VEHICLE DRIVING CONDITIONS** • Verify each PID of "HTM_CNT" and "HTM_DIS". • Verify vehicle driving conditions when a DTC P1783:00 is output. • Has the vehicle been driven at a high engine load?	Yes	Go to Step 5. Inform the customer that the transaxle temperature is high due to high engine load driving.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 5. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 5. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**VERIFY TROUBLESHOOTING OF DTC P1783:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Start the engine. 2. Idle the engine for 1 s or more. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

DTC P2707:00 [FS5A-EL]

id050221825600

DTC P2707:00	Shift solenoid F stuck off
DETECTION CONDITION	• The TCM detects that revolution ratio of the intermediate revolution to output revolution is less than 1.11 when the following conditions are met. — 3GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) • The TCM detects that revolution ratio of the intermediate revolution to output revolution is less than 1.11 when the following conditions are met. — 4GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid F stuck off • Line pressure malfunction • Secondary control valve body malfunction • TCM malfunction

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID F** • Inspect the shift solenoid F. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid F, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT SECONDARY CONTROL VALVE BODY** • Remove the secondary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the secondary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)
8	**VERIFY TROUBLESHOOTING OF DTC P2707:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — 3GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) 2. Drive the vehicle under the following conditions for 5 s or more. — 4GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

cardiagn.com

DTC P2708:00 [FS5A-EL]

id050221825700

DTC P2708:00	Shift solenoid F stuck on
DETECTION CONDITION	• The TCM detects that revolution ratio of the intermediate revolution to output revolution is more than 1.11 when the following conditions are met. — 5GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • The AT warning light illuminates if the TCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the TCM. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Deteriorated ATF • ATF level low • Shift solenoid F stuck off • Line pressure malfunction • Secondary control valve body malfunction • TCM malfunction

Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT ATF CONDITION** • Inspect the ATF condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Replace the ATF, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
4	**INSPECT ATF LEVEL** • Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) • Is it normal?	Yes	Go to the next step.
		No	Add ATF to the specified level, then go to Step 8. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL])
5	**INSPECT SHIFT SOLENOID F** • Inspect the shift solenoid F. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid F, then go to Step 8. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.
6	**INSPECT LINE PRESSURE** • Perform the "Line Pressures Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to test result, then go to Step 8.
		No	Go to the next step.
7	**INSPECT SECONDARY CONTROL VALVE BODY** • Remove the secondary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].) • Disassemble the secondary control valve body. • Inspect the following parts: — Shift valve — Return spring — Hydraulic passage • Is there any malfunction?	Yes	Repair or replace malfunctioning part according to inspection result, then go to next step.
		No	Replace the transaxle, then go to the next step. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [FS5A-EL].)

cardiagn.com

STEP	INSPECTION		ACTION
8	**VERIFY TROUBLESHOOTING OF DTC P2708:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Drive the vehicle under the following conditions for 5 s or more. — 5GR — Accelerator opening angle: 3.67% or more (LF) / 3.17% or more (L5) • Is the PENDING CODE same as the DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
9	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

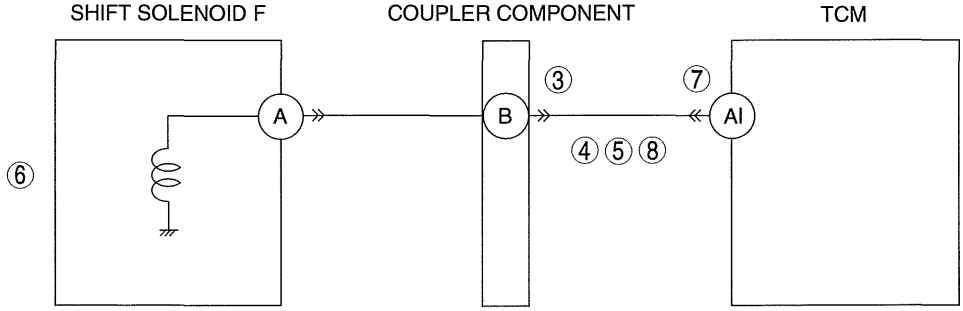
DTC P2709:00 [FS5A-EL]

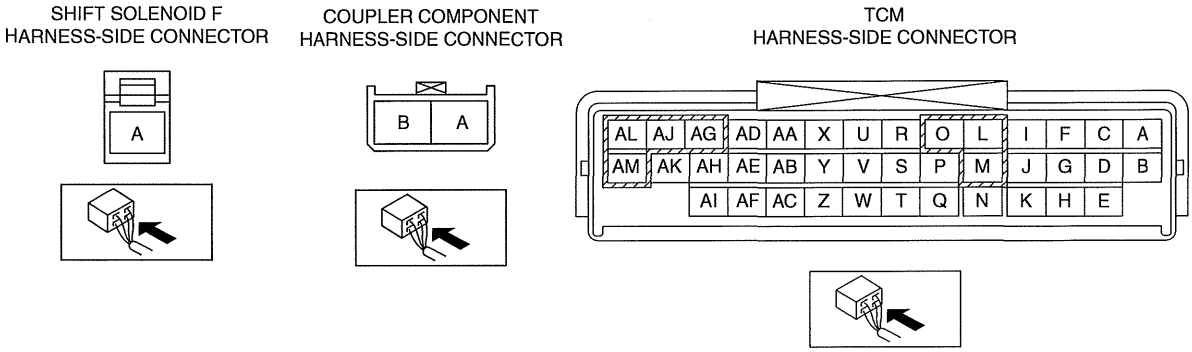
id050221825800

DTC P2709:00	Shift solenoid F electrical malfunction
DETECTION CONDITION	• The TCM detects that output voltage to the shift solenoid F is stuck at 0 V or B+ when the solenoid valve operates according to TCM calculation. **Diagnostic support note** • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates if the TCM detects the above malfunction condition during the first drive cycle. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to power supply in wiring harness between shift solenoid F terminal A and TCM terminal AI • Short to GND in wiring harness between shift solenoid F terminal A and TCM terminal AI • Shift solenoid F malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between shift solenoid F terminal A and TCM terminal AI • TCM malfunction

cardiagn.com

DTC P2709:00	Shift solenoid F electrical malfunction





Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA been recorded on the repair order?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the coupler component connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	**INSPECT SHIFT SOLENOID F CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between the coupler component terminal B (wiring harness-side) and body GND. • Is the voltage B+?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
5	**INSPECT SHIFT SOLENOID F CONTROL CIRCUIT FOR SHORT TO GND** • Switch the ignition off. • Inspect for continuity between the coupler component terminal B (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
6	**INSPECT SHIFT SOLENOID F** • Inspect the shift solenoid F. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Is there any malfunction?	Yes	Replace the shift solenoid F, then go to Step 9. (See 05-17-33 SOLENOID VALVE REMOVAL/ INSTALLATION [FS5A-EL].)
		No	Go to the next step.

cardiagn.com

STEP	INSPECTION		ACTION
7	**INSPECT TCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition off. • Disconnect the TCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion) • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
8	**INSPECT SHIFT SOLENOID F CONTROL CIRCUIT FOR OPEN CIRCUIT** • Switch the ignition off. • Inspect for continuity between the coupler component terminal B (wiring harness-side) and TCM terminal AI (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
		No	Go to the next step.
9	**VERIFY TROUBLESHOOTING OF DTC P2709:00 COMPLETED** • Make sure to reconnect all the disconnected connectors. • Clear the DTC using the M-MDS. • Perform the following procedure to ensure that the DTC has been resolved: 1. Make sure that the gears shift smoothly from 1GR to 5GR. 2. Make sure that TCC operates smoothly. • Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Go to the next step.
10	**VERIFY NO DTC HAS BEEN PRESENTED** • Perform the "Reading DTCs Procedure". (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
		No	DTC troubleshooting completed.

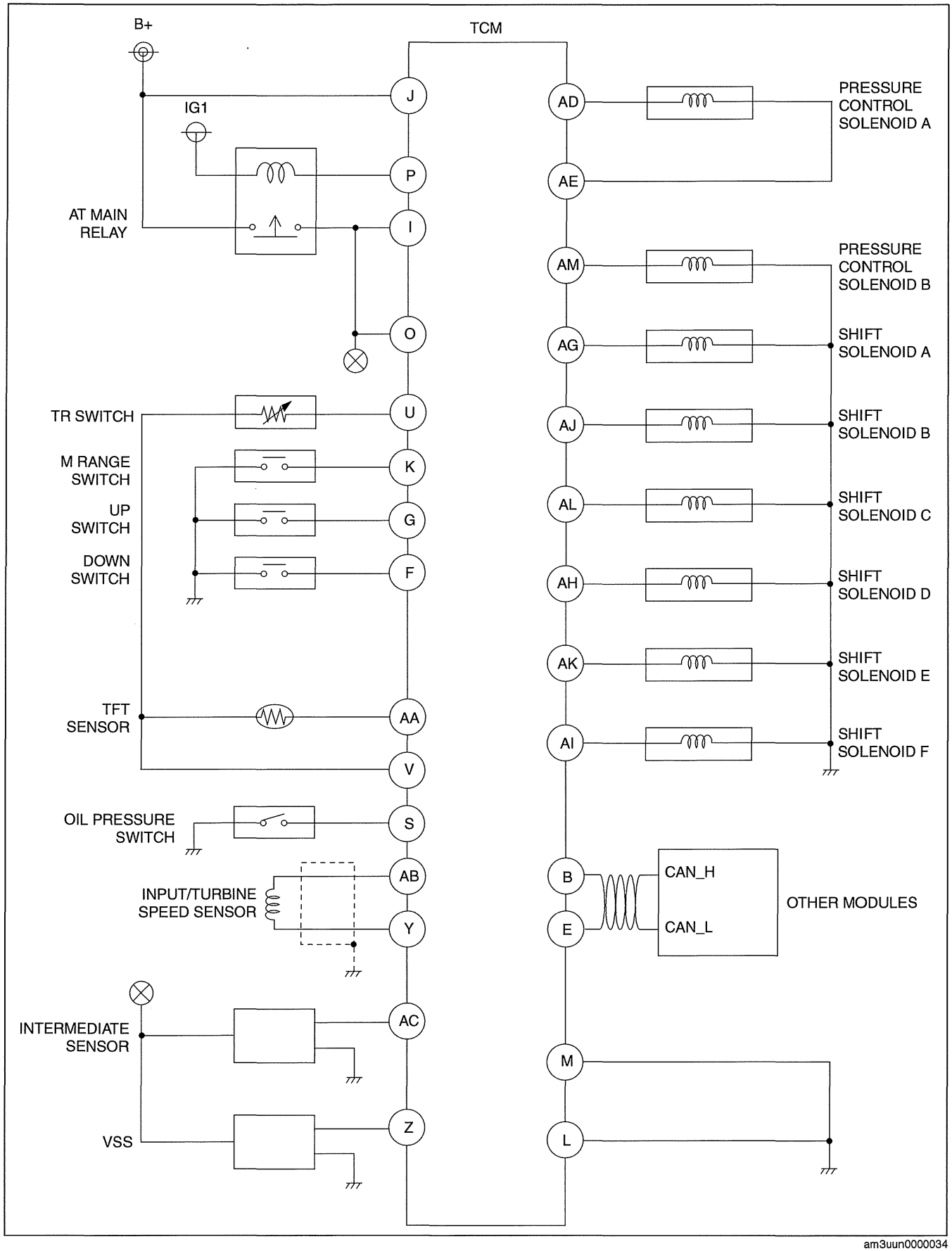
cardiagn.com

05-03 SYMPTOM TROUBLESHOOTING [FS5A-EL]

cardiagn.com

AUTOMATIC TRANSAXLE CONTROL SYSTEM WIRING DIAGRAM [FS5A-EL]

id050308800100



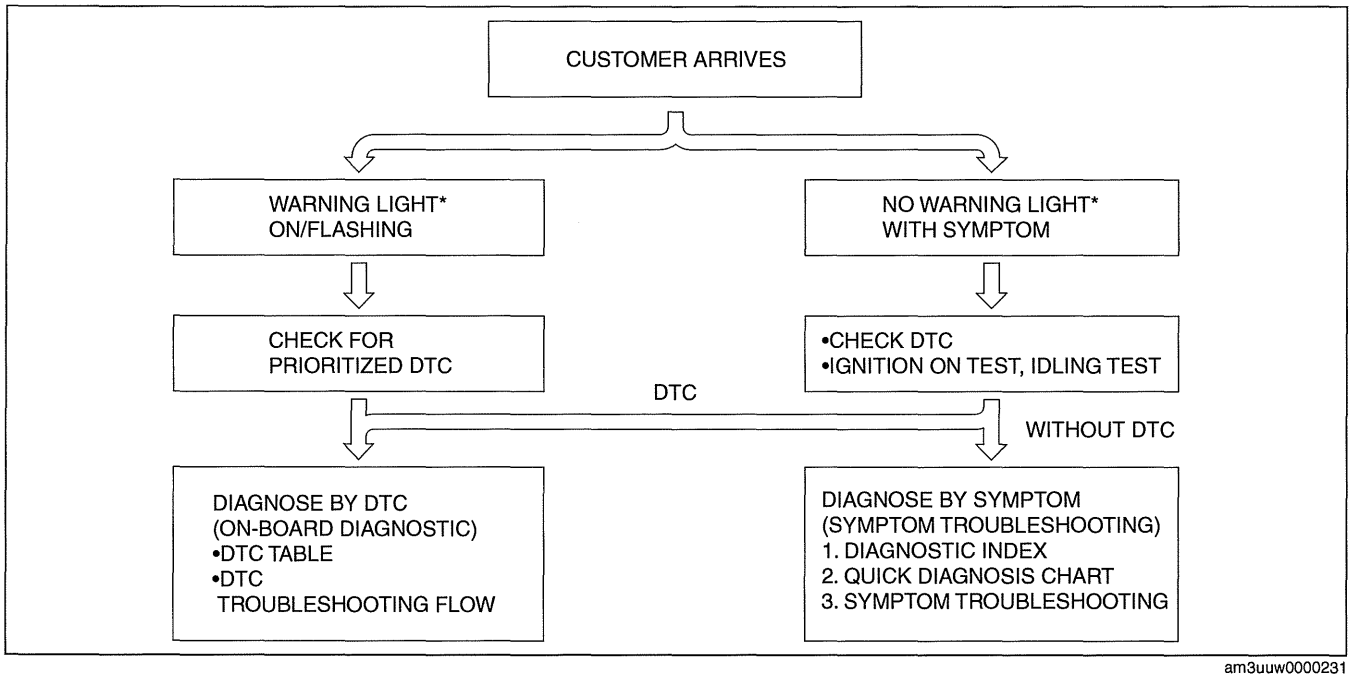
am3uun0000034

cardiagn.com

FOREWORD [FS5A-EL]

id050308800200

- When the customer reports a vehicle malfunction, inspect the malfunction indicator lamp (MIL) indication, AT warning indicator light flash, and diagnostic trouble code (DTC), then diagnose the malfunction according to following flowchart.
  - — If a DTC exists, diagnose the applicable DTC inspection. (See 05-02-4 ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL].)
  - — If a DTC does not exist, the MIL does not illuminate and the AT warning indicator light illuminate, diagnose the applicable symptom troubleshooting. (See 05-03-4 SYMPTOM TROUBLESHOOTING ITEM TABLE [FS5A-EL].)



am3uuw0000231

*: Malfunction Indicator Lamp (MIL), AT warning light.

BASIC INSPECTION [FS5A-EL]

id050308800300

STEP	INSPECTION		ACTION
1	Perform the mechanical system test. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) Is the mechanical system normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts according to the inspection result.
2	Switch the ignition to ON. When the selector lever is moved, does the gear position indicator light indication correspond to the selector lever position? Also, when other ranges are selected from N or P during idling, does the vehicle move **within 1—2 s**?	Yes	Go to the next step.
		No	Inspect the selector lever and TR switch. (See 05-18-11 SELECTOR LEVER INSPECTION.) (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) If the selector lever and TR switch have a malfunction: • Repair or replace malfunctioning parts. (See 05-17-16 TRANSAXLE RANGE (TR) SWITCH REMOVAL/INSTALLATION [FS5A-EL].) If the selector lever and TR switch are normal: • Go to the next step.
3	Inspect the ATF color and condition. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) Are the ATF color and odor normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts according to the inspection result. Flush the ATX and cooler line if necessary.
4	Perform the line pressure test. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) Is the line pressure normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts according to the inspection result.

cardiagn.com

STEP	INSPECTION		ACTION
5	Perform the stall test. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) Is the stall speed normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts according to the inspection result.
6	Inspect the following PCM and TCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) **PCM PIDs:** • APP • TP REL • ECT • RPM • VPWR **TCM PIDs:** • TFT • TFTV • TR • TR_SENS • MNL SW • DWN SW • UP SW • THOP • TSS • OSS • VPWR Are the PID values normal? (See 01-40A-8 PCM INSPECTION [LF, L5].)	Yes	Perform the symptom troubleshooting and follow the procedures.
		No	Repair or replace any malfunctioning parts according to the inspection result.

SYMPTOM TROUBLESHOOTING ITEM TABLE [FS5A-EL]

id050308800400

- Use the chart below to verify the symptoms of the trouble in order to diagnose the appropriate area.

No.	Troubleshooting Item	Description	Reference
1	Vehicle does not move in D, M ranges, or in R position	• Vehicle does not move when accelerator pedal is depressed.	(See 05-03-10 NO.1 VEHICLE DOES NOT MOVE IN D, M RANGES, OR IN R POSITION [FS5A-EL].)
2	Vehicle moves in N position	• Vehicle creeps in N position. • Vehicle creeps if brake pedal is not depressed in N position.	(See 05-03-11 NO.2 VEHICLE MOVES IN N POSITION [FS5A-EL].)
3	Vehicle moves in P position, or parking gear does not disengage when P position is disengaged	• Vehicle rolls when on a downward slope and tires do not lock in P position. • Tires locked when P position is disengaged, vehicle does not move in D, M ranges, and R position when accelerator pedal is depressed, and engine remains in stalled condition.	(See 05-03-11 NO.3 VEHICLE MOVES IN P POSITION, OR PARKING GEAR DOES NOT DISENGAGE WHEN P IS DISENGAGED [FS5A-EL].)
4	Excessive creep	• Vehicle accelerates in D, M ranges and R position when accelerator pedal is not depressed.	(See 05-03-11 NO.4 EXCESSIVE CREEP [FS5A-EL].)
5	No creep at all	• Vehicle does not move in D, M ranges, or R position when idling on flat paved road.	(See 05-03-12 NO.5 NO CREEP AT ALL [FS5A-EL].)
6	Low maximum speed and poor acceleration	• Vehicle acceleration is poor at start. • Delayed acceleration when accelerator pedal is depressed while driving.	(See 05-03-13 NO.6 LOW MAXIMUM SPEED AND POOR ACCELERATION [FS5A-EL].)
7	No shifting	• Single shift range only. • Sometimes shifts correctly.	(See 05-03-15 NO.7 NO SHIFTING [FS5A-EL].)

cardiagn.com

No.	Troubleshooting Item	Description	Reference
8	Does not shift to 5GR	• Vehicle does not upshift from 4GR to 5GR even though vehicle speed is increased. • Vehicle does not shift to 5GR even though accelerator pedal is released in D range at **60 km/h {37 mph}**.	(See 05-03-16 NO.8 DOES NOT SHIFT TO 5GR [FS5A-EL].)
9	Abnormal shifting	• Shifts incorrectly (incorrect shift pattern).	(See 05-03-17 NO.9 ABNORMAL SHIFTING [FS5A-EL].)
10	Frequent shifting	• Downshifting occurs suddenly even when accelerator pedal is depressed slightly in D range.	(See 05-03-18 NO.10 FREQUENT SHIFTING [FS5A-EL].)
11	Shift point is high or low	• Shift point considerably different from automatic shift diagram. • Shift delays when accelerating. • Shift occurs suddenly when accelerating and engine speed does not increase.	(See 05-03-18 NO.11 SHIFT POINT IS HIGH OR LOW [FS5A-EL].)
12	Torque converter clutch (TCC) non-operation	• TCC does not operate when vehicle reaches TCC operation range.	(See 05-03-19 NO.12 TORQUE CONVERTER CLUTCH (TCC) NON-OPERATION [FS5A-EL].)
13	No kickdown	• Does not downshift when accelerator pedal is fully depressed within kickdown range.	(See 05-03-20 NO.13 NO KICKDOWN [FS5A-EL].)
14	Engine flares up or slips when upshifting or downshifting	• When accelerator pedal is depressed, engine speed increases normally but vehicle speed increases slowly. • When accelerator pedal is depressed while driving, engine speed increases but vehicle speed does not.	(See 05-03-21 NO.14 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING [FS5A-EL].)
15	Engine flares up or slips when accelerating vehicle	• Engine flares up when accelerator pedal is depressed for upshifting. • Engine flares up suddenly when accelerator pedal is depressed for downshifting.	(See 05-03-22 NO.15 ENGINE FLARES UP OR SLIPS WHEN ACCELERATING VEHICLE [FS5A-EL].)
16	Judder upon torque converter clutch (TCC) operation	• Vehicle jolts when TCC is engaged.	(See 05-03-22 NO.16 JUDDER UPON TORQUE CONVERTER CLUTCH (TCC) OPERATION [FS5A-EL].)
17	Excessive shift shock from N to D or N to R position/range	• Strong shock is felt when shifting from N to D or N to R position/range at idle.	(See 05-03-24 NO.17 EXCESSIVE SHIFT SHOCK FROM N TO D OR N TO R POSITION/RANGE [FS5A-EL].)
18	Excessive shift shock is felt when upshifting and downshifting	• Excessive shift shock is felt when depressing accelerator pedal to accelerate at upshifting. • During cruising, excessive shift shock is felt when depressing accelerator pedal at downshifting.	(See 05-03-25 NO.18 EXCESSIVE SHIFT SHOCK IS FELT WHEN UPSHIFTING AND DOWNSHIFTING [FS5A-EL].)
19	Excessive shift shock on torque converter clutch (TCC)	• Strong shock is felt when TCC is engaged.	(See 05-03-26 NO.19 EXCESSIVE SHIFT SHOCK ON TORQUE CONVERTER CLUTCH (TCC) [FS5A-EL].)
20	Noise occurs at idle when vehicle is stopped in all positions/ranges	• Transaxle is noisy in all positions and ranges when vehicle idling.	(See 05-03-26 NO.20 NOISE OCCURS AT IDLE WHEN VEHICLE IS STOPPED IN ALL POSITIONS/RANGES [FS5A-EL].)
21	Noise occurs at idle when vehicle is stopped in D, M ranges, or in R position	• Transaxle is noisy in driving ranges when vehicle is idling.	(See 05-03-27 NO.21 NOISE OCCURS AT IDLE WHEN VEHICLE IS STOPPED IN D, M RANGES, OR IN R POSITION [FS5A-EL].)

cardiagn.com

No.	Troubleshooting Item	Description	Reference
22	No engine braking in 1GR position of M range	• Engine speed drops to idle but vehicle coasts when accelerator pedal is released when in M range (1GR) at low vehicle speed.	(See 05-03-28 NO.22 NO ENGINE BRAKING IN 1GR POSITION OF M RANGE [FS5A-EL].)
23	Transaxle overheats	• Burnt smell emitted from the transaxle. • Smoke is emitted from the transaxle.	(See 05-03-29 NO.23 TRANSAXLE OVERHEATS [FS5A-EL].)
24	Engine stalls when shifted to D, M ranges, or in R position	• Engine stalls when shifting from N or P position to D, M ranges or R position at idle.	(See 05-03-30 NO.24 ENGINE STALLS WHEN SHIFTED TO D, M RANGES, OR IN R POSITION [FS5A-EL].)
25	Engine stalls when driving at slow speeds or stopping	• Engine stalls when brake pedal is depressed while driving at low speed or stopping.	(See 05-03-30 NO.25 ENGINE STALLS WHEN DRIVING AT SLOW SPEEDS OR STOPPING [FS5A-EL].)
26	Starter does not work	• Starter does not work even when in P or N position.	(See 05-03-30 NO.26 STARTER DOES NOT WORK [FS5A-EL].)
27	Gear position indicator light does not illuminate in M range	• Gear position indicator light in instrument cluster does not illuminate in M range with the ignition is ON.	(See 05-03-31 NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE [FS5A-EL].)
28	Gear position indicator light illuminates in P, R,N position and D range	• Gear position indicator light in instrument cluster illuminates in P, R and N position and D range with the ignition is ON.	(See 05-03-31 NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE [FS5A-EL].)
29	Does not upshift in M range	• Gear position indicator light in instrument cluster illuminates but vehicle does not upshift when selector lever is pushed to "+" side.	(See 05-03-32 NO.29 DOES NOT UPSHIFT IN M RANGE [FS5A-EL].)
30	Does not downshift in M range	• Gear position indicator light in instrument cluster illuminates but vehicle does not downshift when selector lever is pushed to "–" side.	(See 05-03-33 NO.30 DOES NOT DOWNSHIFT IN M RANGE [FS5A-EL].)
31	M range position indicator light dose not illuminate in M range/ M range position indicator light illuminates in D range	• M range position indicator light in instrument cluster dose not illuminate in M range or M range position indicator light in instrument cluster in D range with the ignition is ON.	(See 05-03-33 NO.31 M RANGE POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE/M RANGE POSITION INDICATOR LIGHT ILLUMINATES IN D RANGE [FS5A-EL].)

cardiagn.com

QUICK DIAGNOSIS CHART [FS5A-EL]

id050308800500

X : Applied

No.	Item	Selector lever mis-adjusted	Parking mechanism malfunction	Not within line pressure specification	Engine control system malfunction (not within idle speed specification)	Poor installation or worn of engine mount, exhaust mount	Instrument cluster malfunction	Excessive amount of ATF	Electrical system components: ATX outer parts: TP sensor: No signal input	TP sensor: Abnormal signal input	APP sensor: No signal input	APP sensor: Abnormal signal input	Input/turbine speed sensor: No signal input	Input/turbine speed sensor: Abnormal signal input	VSS: No signal input	VSS: Abnormal signal input	ECT sensor: No signal input	ECT sensor: Abnormal signal input
1	Vehicle does not move in D, M ranges, or in R position	X	X	X														
2	Vehicle moves in N position	X																
3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged	X																
4	Excessive creep				X													
5	No creep at all			X									X	X	X	X		
6	Low maximum speed and poor acceleration			X					X	X		X	X	X	X	X		
7	No shifting			X					X	X	X	X	X	X	X	X		
8	Does not shift to 5GR	X		X					X	X	X	X	X	X	X	X	X	X
9	Abnormal shifting	X		X					X	X	X	X	X	X	X	X		
10	Frequent shifting			X					X	X	X	X	X	X	X	X		
11	Shift point is high or low					X			X	X	X	X	X	X	X	X		
12	Torque converter clutch (TCC) non-operation							X	X	X	X	X	X	X	X	X	X	X
13	No kickdown								X	X	X	X						
14	Engine flares up or slips when upshifting or downshifting	X		X					X	X	X	X	X	X	X	X		
15	Engine flares up or slips when accelerating vehicle	X		X					X	X	X	X	X	X	X	X		
16	Judder upon torque converter clutch (TCC) operation			X					X	X	X	X	X	X	X	X		
17	Excessive shift shock from N to D or N to R position/range	X		X	X		X		X	X	X	X	X	X	X	X		
18	Excessive shift shock is felt when upshifting and downshifting			X			X		X	X	X	X	X	X	X	X		
19	Excessive shift shock on torque converter clutch (TCC)			X					X	X	X	X	X	X	X	X		
20	Noise occurs at idle when vehicle is stopped in all positions/ranges				X													
21	Noise occurs at idle when vehicle is stopped in D, M ranges, or in R position				X													
22	No engine braking in 1GR position of M range			X					X	X	X	X	X	X	X	X		
23	Transaxle overheats			X				X										
24	Engine stalls when shifted to D, M ranges, or in R position				X								X	X				
25	Engine stalls when driving at slow speeds or stopping				X													
26	Starter does not work	X																
27	Gear position indicator light does not illuminate in M range					X												
28	Gear position indicator light illuminates in P, R, N position and D range					X												
29	Does not upshift in M range																	
30	Does not downshift in M range																	
31	M range position indicator light dose not illuminate in M range/ M range position indicator light illuminates in D range					X												

Symptom / Cause of trouble

am3uuw0000231

cardiagn.com

X : Applied

No.	Item	Mis-adjusted	Not operating properly	No signal input	Abnormal signal input	No signal input	Abnormal signal input	No signal input	Abnormal signal input	Always ON	Poor GND	No signal input	Malfunction signal input	Shift solenoid D malfunction
	Symptom / Cause of trouble	Electrical system components												
		ATX outer parts												
		TR switch		M range switch		Up switch		Down switch		Brake switch		TFT sensor		
1	Vehicle does not move in D, M ranges, or in R position										X			X
2	Vehicle moves in N position													
3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged													
4	Excessive creep													
5	No creep at all										X			X
6	Low maximum speed and poor acceleration	X	X	X	X						X	X	X	X
7	No shifting			X	X						X			X
8	Does not shift to 5GR	X	X	X	X						X	X	X	X
9	Abnormal shifting	X	X								X			X
10	Frequent shifting										X			
11	Shift point is high or low										X			
12	Torque converter clutch (TCC) non-operation									X	X	X	X	
13	No kickdown													
14	Engine flares up or slips when upshifting or downshifting	X	X								X			X
15	Engine flares up or slips when accelerating vehicle	X	X								X			X
16	Judder upon torque converter clutch (TCC) operation										X		X	
17	Excessive shift shock from N to D or N to R position/range										X			X
18	Excessive shift shock is felt when upshifting and downshifting										X		X	X
19	Excessive shift shock on torque converter clutch (TCC)										X		X	
20	Noise occurs at idle when vehicle is stopped in all positions/ranges													
21	Noise occurs at idle when vehicle is stopped in D, M ranges, or in R position	X	X											
22	No engine braking in 1GR position of M range			X	X						X			X
23	Transaxle overheats												X	
24	Engine stalls when shifted to D, M ranges, or in R position													
25	Engine stalls when driving at slow speeds or stopping													
26	Starter does not work	X	X											
27	Gear position indicator light does not illuminate in M range			X										
28	Gear position indicator light illuminates in P, R, N position and D range				X									
29	Does not upshift in M range			X		X	X							
30	Does not downshift in M range			X				X	X					
31	M range position indicator light dose not illuminate in M range/ M range position indicator light illuminates in D range			X	X									

am3uuw0000231

cardiagn.com

X : Applied

No.	Item	Shift solenoid E malfunction	Shift solenoid F malfunction	Shift solenoid A malfunction	Shift solenoid B malfunction	Shift solenoid C malfunction	Pressure control solenoid B malfunction	Pressure control solenoid A malfunction	Control valve is not operating properly	Forward accumulator is not operating properly	Servo apply accumulator is not operating properly	Oil pressure switch malfunction	Oil cooler is not operating properly	Slipping (Brake, clutch)	Burnt (Brake, clutch)	Torque converter is not operating properly	TCC burnt Inspection method
		Electrical system components							Hydraulic system components					Powertrain system			
		ATX inner parts															
1	Vehicle does not move in D, M ranges, or in R position			X	X		X	X	X					X	X	X	
2	Vehicle moves in N position								X						X		
3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged																
4	Excessive creep																
5	No creep at all			X	X	X		X	X					X	X	X	
6	Low maximum speed and poor acceleration		X	X	X	X		X	X					X	X	X	X
7	No shifting		X	X	X	X	X	X	X					X	X		
8	Does not shift to 5GR		X	X	X				X					X	X		
9	Abnormal shifting	X	X	X	X	X	X		X	X	X			X	X		
10	Frequent shifting													X	X		
11	Shift point is high or low													X			
12	Torque converter clutch (TCC) non-operation	X		X					X							X	X
13	No kickdown																
14	Engine flares up or slips when upshifting or downshifting	X	X	X	X	X		X	X					X	X		
15	Engine flares up or slips when accelerating vehicle	X	X	X	X	X		X	X					X	X		
16	Judder upon torque converter clutch (TCC) operation	X		X					X							X	X
17	Excessive shift shock from N to D or N to R position/range			X	X	X		X	X	X	X	X			X		
18	Excessive shift shock is felt when upshifting and downshifting	X		X	X	X	X	X	X	X	X	X		X	X		
19	Excessive shift shock on torque converter clutch (TCC)	X		X					X							X	X
20	Noise occurs at idle when vehicle is stopped in all positions/ranges																
21	Noise occurs at idle when vehicle is stopped in D, M ranges, or in R position																
22	No engine braking in 1GR position of M range	X				X	X		X					X	X		
23	Transaxle overheats								X				X			X	X
24	Engine stalls when shifted to D, M ranges, or in R position															X	X
25	Engine stalls when driving at slow speeds or stopping	X							X							X	X
26	Starter does not work																
27	Gear position indicator light does not illuminate in M range																
28	Gear position indicator light illuminates in P, R, N position and D range																
29	Does not upshift in M range																
30	Does not downshift in M range																
31	M range position indicator light dose not illuminate in M range/ M range position indicator light illuminates in D range																

Symptom / Cause of trouble

am3uuw0000231

cardiagn.com

NO.1 VEHICLE DOES NOT MOVE IN D, M RANGES, OR IN R POSITION [FS5A-EL]

id050308808500

1	Vehicle does not move in D, M ranges, or in R position
DESCRIPTION	• Vehicle does not move when the accelerator pedal is depressed.
POSSIBLE CAUSE	• If the vehicle does not move in D, M ranges or R position, basically, the malfunction is in the ATX. (Vehicle will move even with a malfunction in the TCM.) Since a malfunction is in the sensor circuit or output circuit is the cause of the malfunction in the ATX, inspect the sensors, output circuit, and the related wiring harnesses. 1. Clutch slippage, worn (D, M ranges-Forward clutch, R position-Reverse clutch, Low and reverse brake) • Line pressure low • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid D malfunction • Pressure control solenoid A malfunction • Pressure control solenoid B malfunction • Body ground malfunction • Control valve body malfunction 2. Selector lever malfunction 3. Improper operation of parking mechanism 4. Torque converter malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	When the vehicle is stopped on a flat, level road and the engine is off, does the vehicle move when pushed (in D range or N, R positions with the brake pedal released)?	Yes	Go to the next step.
		No	Inspect for parking mechanism. (See Automatic Transaxle Workshop Manual FS5A-EL.)
2	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
3	Verify the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
4	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.2 VEHICLE MOVES IN N POSITION [FS5A-EL]

id050308800700

2	Vehicle moves in N position
DESCRIPTION	• Vehicle creeps in N position. • Vehicle creeps if brake pedal is not depressed in N position.
POSSIBLE CAUSE	• If the vehicle moves in N position, basically, the malfunction is in the ATX. Since a malfunction in the sensor circuit or output circuit is the cause of the malfunction in the ATX, inspect the sensors, output circuit, and the related wiring harnesses. 1. Clutch burnt (Forward clutch) • Control valve body malfunction 2. Selector lever position disparity (Although the selector indicator shows N position, the hydraulic circuit shows D range or R position) **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Does the vehicle creep when the selector lever is moved slightly in N position?	Yes	Go to the next step.
		No	Adjust the selector cable. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)
2	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
3	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
4	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.3 VEHICLE MOVES IN P POSITION, OR PARKING GEAR DOES NOT DISENGAGE WHEN P IS DISENGAGED [FS5A-EL]

id050308800800

3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged
DESCRIPTION	• Vehicle rolls when on a downward slope and tires do not lock in P position. • Tires locked when P position is disengaged, vehicle does not move in D, M ranges, and R position when accelerator pedal is depressed, and engine remains in stalled condition.
POSSIBLE CAUSE	1. Parking mechanism malfunction (May have effect on noise or shock from transaxle) 2. Improper adjustment of selector lever 3. If vehicle moves in N position, perform the symptom troubleshooting "NO.2 VEHICLE MOVES IN N POSITION" (See 05-03-11 NO.2 VEHICLE MOVES IN N POSITION [FS5A-EL].)

NO.4 EXCESSIVE CREEP [FS5A-EL]

id050308800900

4	Excessive creep
DESCRIPTION	• Vehicle accelerates in D, M ranges and R position when accelerator pedal is not depressed.
POSSIBLE CAUSE	1. Engine idle speed is high (Transaxle system is not cause of problem) 2. Perform the symptom troubleshooting "NO.9 FAST IDLE/RUNS ON" (See 01-03A-47 NO.9 FAST IDLE/RUNS ON [LF, L5].)

cardiagn.com

NO.5 NO CREEP AT ALL [FS5A-EL]

id050308801000

5	No creep at all
DESCRIPTION	• Vehicle does not move in D, M ranges, or R position when idling on flat paved road.
POSSIBLE CAUSE	• Either transaxle is stuck in 3GR or 4GR position, or there is clutch circuit slippage due to a stuck 3—4 clutch. 1. Clutch burnt • Line pressure low • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid C malfunction • Shift solenoid D malfunction • Pressure control solenoid A malfunction • Body ground malfunction • Control valve body malfunction 2. Transaxle fixed in 3GR (Operation of fail-safe function) • Short or open circuit in wiring harness • Poor connection of connector • Malfunction of electronic parts of output and input system 3. There is no engine torque • Torque converter malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Does the vehicle creep in any range/position?	Yes	Go to the next step.
		No	Inspect or adjust the selector lever. (See 05-18-11 SELECTOR LEVER INSPECTION.) (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)
2	Inspect the THOP PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
3	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
4	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
5	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.6 LOW MAXIMUM SPEED AND POOR ACCELERATION [FS5A-EL]

id050308801100

6	Low maximum speed and poor acceleration
DESCRIPTION	• Vehicle acceleration is poor at start. • Delayed acceleration when accelerator pedal is depressed while driving.
POSSIBLE CAUSE	• If the clutch is stuck or does not stay in 3GR, the malfunction is in the engine circuit. 1. Clutch slippage, burnt • Line pressure low • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid C malfunction • Shift solenoid D malfunction • Shift solenoid F malfunction • Pressure control solenoid A malfunction • Body ground malfunction • Control valve body malfunction 2. Signal malfunction • VSS malfunction • Sensor ground malfunction • TP sensor malfunction • APP sensor malfunction • Input/turbine speed sensor malfunction 3. Transaxle fixed in 3GR (Operation of fail-safe function) • Short or open circuit in wiring harness • Poor connection of connector • Malfunction of electronic parts of output and input system 4. Transaxle fixed in 4GR (Operation of fail-safe function) • Forward clutch slippage • VSS malfunction • Shift solenoid A malfunction (Stuck on) • Poor connection of connector 5. Insufficient starting torque (Suspected when in-gear condition, shift control and engine circuit are normal) • Torque converter malfunction (Poor operation, stuck) 6. Engagement of TCC operation range (Operation of fail-safe function) • TFT sensor malfunction (Short or open circuit) 7. Transaxle fixed in M range • M range switch (built-in selector lever component) malfunction 8. TR switch adjustment incorrect **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Does the gear position indicator light indication correspond to the selector lever position with the ignition at the ON?	Yes	Go to the next step.
		No	Perform the symptom troubleshooting "NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE" or "NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE". (See 05-03-31 NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE [FS5A-EL].) (See 05-03-31 NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE [FS5A-EL].)
2	Perform the symptom troubleshooting "NO.12 LACK/LOSS OF POWER-ACCELERATION/ CRUISE". (See 01-03A-55 NO.12 LACK/LOSS OF POWER-ACCELERATION/CRUISE [LF, L5].) Is the CIS system normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.

cardiagn.com

STEP	INSPECTION		ACTION
3	Disconnect the solenoid connector. Does the vehicle operate as follows? • D range: 3GR (fixed) • R position: Reverse	Yes	Go to the next step.
		No	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
4	Drive the vehicle in D range. Does the vehicle start from stop in first gear?	Yes	Go to the next step.
		No	Inspect the following PCM and TCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) **PCM PIDs:** • APP • TP REL **TCM PIDs:** • THOP • OSS • TSS • TR Repair or replace any malfunctioning parts. (See 01-40A-8 PCM INSPECTION [LF, L5].)
5	Inspect the following TCM PID values using the M-MDS: (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) • SSA/SS1 • SSB/SS2 • SSC/SS3 • SSF_SS6 Are the PID values normal?	Yes	Go to the next step.
		No	Inspect the following PCM and TCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) **PCM PIDs:** • APP • TP REL **TCM PIDs:** • THOP • OSS • TSS Repair or replace any malfunctioning parts. (See 01-40A-8 PCM INSPECTION [LF, L5].)
6	Perform the stall test. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) Is the stall speed normal?	Yes	Reverify symptoms of malfunction.
		No	Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
7	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.7 NO SHIFTING [FS5A-EL]

id050308801200

7	No shifting
DESCRIPTION	• Single shift range only. • Sometimes it shifts correctly.
POSSIBLE CAUSE	• When the gear position is fixed in 3GR due to the fail-safe operation, the malfunction is in the ATX. • Perform the malfunction diagnosis according to the symptom troubleshooting "NO.6 LOW MAXIMUM SPEED AND POOR ACCELERATION". (See 05-03-13 NO.6 LOW MAXIMUM SPEED AND POOR ACCELERATION [FS5A-EL].) 1. Clutch slippage, burnt • Line pressure low • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid C malfunction • Shift solenoid D malfunction • Shift solenoid F malfunction • Pressure control solenoid A malfunction • Pressure control solenoid B malfunction • Body ground malfunction • Control valve body malfunction 2. Signal malfunction • VSS malfunction • Sensor ground malfunction • APP sensor malfunction • TP sensor malfunction • Input/turbine speed sensor malfunction 3. Transaxle fixed in 3GR (Operation of fail-safe function) • Short or open circuit in wiring harness • Poor connection of connector • Disconnected shift solenoid connector • Poor ground of shift solenoid 4. Transaxle fixed in 4GR (Operation of fail-safe function) • Forward clutch slippage • VSS malfunction • Shift solenoid A malfunction (Stuck on) • Poor connection of connector 5. Transaxle fixed in M range • M range switch (built-in selector lever component) malfunction

cardiagn.com

NO.8 DOES NOT SHIFT TO 5GR [FS5A-EL]

id050308809300

8	Does not shift to 5GR
DESCRIPTION	• Vehicle does not upshift from 4GR to 5GR even though vehicle speed is increased. • Vehicle does not shift to 5GR even though accelerator pedal is released in D range at **60 km/h {37 mph}**.
POSSIBLE CAUSE	• Basically, TCC does not operate when the fail-safe is operating. Verify the DTCs first. If the TCC operates when driving at high speeds only, the malfunction (improper adjustment) is in the TR switch circuit. **Caution** • **If the TCC is stuck, inspect it. In addition, inspect the oil cooler for foreign particles which may have mixed in with the ATF.** 1. TCC piston slippage, burned • Line pressure low • TP sensor malfunction • APP sensor malfunction • ECT sensor malfunction • VSS malfunction • Input/turbine speed sensor malfunction • Sensor ground malfunction 2. TFT sensor malfunction • Short or open circuit in wiring harness • Poor connection of connector • Sensor malfunction 3. TR switch malfunction • Short or open circuit in wiring harness • Poor connection of connector • Sensor malfunction • TR switch adjustment incorrect 4. Shift solenoid A, shift solenoid B, shift solenoid D, Shift solenoid F valve malfunction • Short or open circuit in wiring harness • Poor connection of connector • Solenoid valve stuck 5. M range switch (built-in selector lever component) malfunction 6. Control valve body malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Does the gear position indicator light indication correspond to the selector lever position with the ignition at the ON?	Yes	Go to the next step.
		No	Perform the symptom troubleshooting "NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE" or "NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE". (See 05-03-31 NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE [FS5A-EL].) (See 05-03-31 NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE [FS5A-EL].)
2	Inspect the following TCM PID values using the M-MDS: (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) • TFT • TFTV Are the PID values normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.

cardiagn.com

STEP	INSPECTION		ACTION
3	Inspect the following TCM PID values using the M-MDS: (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) • SSA/SS1 • SSB/SS2 • SSD/SS4 • SSF_SS6 Are the PID values normal?	Yes	Go to the next step.
		No	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
4	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Inspect the following TCM PID values using the M-MDS: (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) • TR • TSS • OSS Repair or replace any malfunctioning parts.
		No	Repair or replace the wiring harness for a possible open circuit.
5	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.9 ABNORMAL SHIFTING [FS5A-EL]

id050308801400

9	Abnormal shifting
DESCRIPTION	• Shifts incorrectly (incorrect shift pattern).
POSSIBLE CAUSE	• There is a malfunction in the signal circuit which controls shifting (TP sensor, input/turbine speed sensor, VSS), the control valve is stuck, the accumulator (forward or servo apply) is stuck, or the clutch circuit is stuck. 1. Clutch slippage, burnt • Line pressure low • Control valve body malfunction • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid C malfunction • Shift solenoid D malfunction • Shift solenoid E malfunction • Shift solenoid F malfunction • Pressure control solenoid B malfunction • Body ground malfunction 2. Signal malfunction • VSS malfunction • Sensor ground malfunction • APP sensor malfunction • TP sensor malfunction • Input/turbine speed sensor malfunction 3. TR switch malfunction • Selector lever adjustment incorrect • TR switch adjustment incorrect **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
2	Inspect the following PCM and TCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) **PCM PIDs:** • APP • TP REL **TCM PIDs:** • THOP • TSS • OSS • VSS Are the PID values normal? (See 01-40A-8 PCM INSPECTION [LF, L5].)	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
3	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.10 FREQUENT SHIFTING [FS5A-EL]

id050308801500

10	Frequent shifting
DESCRIPTION	• Downshifting occurs suddenly even when accelerator pedal is depressed slightly in D range.
POSSIBLE CAUSE	• The malfunctioning circuit is basically the same as the symptom troubleshooting "NO.9 ABNORMAL SHIFTING [FS5A-EL]". (See 05-03-17 NO.9 ABNORMAL SHIFTING [FS5A-EL].) However, a malfunction of the input signal to the TP sensor, APP sensor, input/turbine speed sensor, VSS (including the sensor ground, sensor wiring harness and connector), or clutch slippage (clutch stuck, low pressure in line) may also be the cause.

NO.11 SHIFT POINT IS HIGH OR LOW [FS5A-EL]

id050308801600

11	Shift point is high or low
DESCRIPTION	• Shift point considerably different from automatic shift diagram. • Shift delays when accelerating. • Shift occurs quickly when accelerating and engine speed does not increase.
POSSIBLE CAUSE	• If the transaxle does not shift abnormally, there is a malfunction of the input signal to the TP sensor, APP sensor, input/turbine speed sensor, or VSS (including sensor ground). • If the engine speed is high or low, regardless of normal shifting, inspect the tachometer. • Verify that the output signal of the TP sensor and APP sensor changes linearly. • Clutch or brake slippage.

cardiagn.com

NO.12 TORQUE CONVERTER CLUTCH (TCC) NON-OPERATION [FS5A-EL]

id050308801700

12	Torque converter clutch (TCC) non-operation
DESCRIPTION	• TCC does not operate when vehicle reaches TCC operation range.
POSSIBLE CAUSE	• Basically, the TCC does not operate when the fail-safe is operating. Verify the DTC first. **Caution** • **If the TCC is stuck, inspect it. In addition, inspect the oil cooler for foreign particles which may have mixed in with the ATF.** 1. TCC burnt (1) Input sensor system malfunction • TFT sensor • VSS • Input/turbine speed sensor • Sensor ground (2) Output solenoid valve system malfunction (Sticking) • Shift solenoid A malfunction • Shift solenoid E malfunction (3) Control valve body malfunction system (Poor operation, stuck) • TCC hydraulic pressure system 2. TP sensor malfunction (Not operating linear) 3. APP sensor malfunction (Not operating linear) 4. Input/turbine speed sensor or VSS malfunction 5. Brake switch malfunction (Always ON) 6. ECT sensor malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Does the gear position indicator light indication correspond to the selector lever position with the ignition at the ON?	Yes	Go to the next step.
		No	Perform the symptom troubleshooting "NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE" or "NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE". (See 05-03-31 NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE [FS5A-EL].) (See 05-03-31 NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE [FS5A-EL].)
2	Inspect the following PCM and TCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) **PCM PIDs:** • APP • TP REL **TCM PIDs:** • THOP • OSS • TSS Are the PID values normal? (See 01-40A-8 PCM INSPECTION [LF, L5].)	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
3	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.

cardiagn.com

STEP	INSPECTION		ACTION
4	Measure the resistance between shift solenoid A and E control circuit at the TCM connector and control valve body connector. Measure the resistance between shift solenoid A and E circuit at the TCM connector and control valve body connector. Are the resistances **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the shift solenoid A or E control circuit.
5	Inspect the shift solenoid A and E. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) Are the shift solenoids operating properly?	Yes	Replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
		No	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
6	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.13 NO KICKDOWN [FS5A-EL]

id050308801800

13	No kickdown
DESCRIPTION	• Does not downshift when accelerator pedal is fully depressed within kickdown range.
POSSIBLE CAUSE	• If transaxle does not downshift though shifting is normal, the malfunction is in the TP sensor and APP sensor circuit (including sensor ground, sensor wiring harness and connector).

cardiagn.com

NO.14 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING [FS5A-EL]

id050308801900

14	Engine flares up or slips when upshifting or downshifting
DESCRIPTION	• When accelerator pedal is depressed, engine speed increases normally but vehicle speed increases slowly. • When accelerator pedal is depressed while driving, engine speed increases but vehicle speed does not.
POSSIBLE CAUSE	• There is clutch slippage because the clutch is stuck or the line pressure is low. 1. Clutch stuck, slippage (Forward clutch, 3–4 clutch, 2–4 brake band, one-way clutch) • Line pressure low • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid C malfunction • Shift solenoid D malfunction • Shift solenoid E malfunction • Shift solenoid F malfunction • Pressure control solenoid A malfunction • Body ground malfunction • Control valve body malfunction 2. Signal malfunction • VSS malfunction • Sensor ground malfunction • APP sensor malfunction • TP sensor malfunction • Input/turbine speed sensor malfunction 3. Poor operation of mechanical pressure • Selector lever position disparity • TR switch position disparity **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Is the shift point normal?	Yes	Go to the next step.
		No	Perform the symptom troubleshooting "NO.9 ABNORMAL SHIFTING". (See 05-03-17 NO.9 ABNORMAL SHIFTING [FS5A-EL].)
2	Inspect the THOP PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
3	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
4	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
5	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.15 ENGINE FLARES UP OR SLIPS WHEN ACCELERATING VEHICLE [FS5A-EL]

id050308802000

15	Engine flares up or slips when accelerating vehicle
DESCRIPTION	• Engine flares up when the accelerator pedal is depressed for upshifting. • Engine flares up suddenly when the accelerator pedal is depressed for downshifting.
POSSIBLE CAUSE	• The malfunction is basically the same as the symptom troubleshooting "NO.14 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING". (See 05-03-21 NO.14 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING [FS5A-EL].) If conditions for No.14 worsen, the malfunction will develop to No.15.

NO.16 JUDDER UPON TORQUE CONVERTER CLUTCH (TCC) OPERATION [FS5A-EL]

id050308802100

16	Judder upon torque converter clutch (TCC) operation
DESCRIPTION	• Vehicle jolts when TCC is engaged.
POSSIBLE CAUSE	• Poor TCC engagement due to either slippage because the TCC is stuck or the line pressure is low. **Caution** • **If the TCC is stuck, inspect it. In addition, inspect the oil cooler for foreign particles which may have mixed in with the ATF.** 1. TCC piston slippage, burnt • Line pressure high • Shift solenoid A malfunction • Shift solenoid E malfunction • Control valve body malfunction • Body ground malfunction • Pressure control solenoid A malfunction 2. Signal malfunction • VSS malfunction • Sensor ground malfunction • TFT sensor malfunction • APP sensor malfunction • TP sensor malfunction • Input/turbine speed sensor malfunction 3. Torque converter malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the TSS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
2	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
3	Measure the resistance between shift solenoid A and E control circuit at the TCM connector and control valve body connector. Measure the resistance between shift solenoid A/E circuit at the TCM connector and control valve body connector. Are the resistances **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the shift solenoid A and/or E circuit.
4	Inspect the shift solenoid. (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) Is the solenoid valve operating properly?	Yes	Go to the next step.
		No	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
5	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)
6	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.17 EXCESSIVE SHIFT SHOCK FROM N TO D OR N TO R POSITION/RANGE [FS5A-EL]

id050308802200

17	Excessive shift shock from N to D or N to R position/range
DESCRIPTION	• Strong shock felt when shifting from N to D or N to R position/range at idle.
POSSIBLE CAUSE	• Shift shock may worsen when the fail-safe is operating. If no DTC is output, the shift shock may worsen due to poor operation of the control valve body or sticking of the clutch. 1. Clutch burnt (N→D: Forward clutch, N→R: Reverse clutch or low and reverse brake) • Line pressure low, high • APP sensor malfunction • TP sensor malfunction • VSS malfunction • Input/turbine speed sensor malfunction • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid C malfunction • Shift solenoid D malfunction • Pressure control solenoid A malfunction • Control valve body malfunction • Sensor ground malfunction • Body ground malfunction 2. Poor hydraulic operation (Malfunction in range change) • Forward accumulator malfunction • Servo apply accumulator malfunction • Oil pressure switch malfunction 3. Idle speed high 4. Poor tightening torque of engine mount, exhaust mount 5. Poor operation of mechanical pressure • Selector lever position disparity **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Does the shift shock occur only when the engine is cold?	Yes	Go to the next step.
		No	Go to Step 3.
2	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Inspect the following PCM and TCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) **PCM PIDs:** • APP • TP REL **TCM PIDs:** • THOP • TFT • TFTV Repair or replace any malfunctioning parts. (See 01-40A-8 PCM INSPECTION [LF, L5].)
		No	Repair or replace the wiring harness for a possible open circuit.
3	Perform the stall test. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) Is the stall speed normal?	Yes	Go to the next step.
		No	Go to Step 5.
4	Inspect the TR PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.

cardiagn.com

STEP	INSPECTION		ACTION
5	Inspect the THOP PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
6	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
7	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
8	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.18 EXCESSIVE SHIFT SHOCK IS FELT WHEN UPSHIFTING AND DOWNSHIFTING [FS5A-EL]

id050308804600

18	Excessive shift shock is felt when upshifting and downshifting
DESCRIPTION	• Excessive shift shock is felt when depressing the accelerator pedal at upshifting. • During cruising, excessive shift shock is felt when depressing the accelerator pedal at downshifting.
POSSIBLE CAUSE	• Shift shock may worsen when the fail-safe is operating. The shift shock has worsened if the TP sensor, input/turbine speed sensor, or VSS signal malfunctions. 1. Clutch slippage, burnt (Forward clutch, 2—4 brake band, 3—4 clutch) • Line pressure low, high • Shift solenoid A malfunction • Shift solenoid B malfunction • Shift solenoid C malfunction • Shift solenoid D malfunction • Shift solenoid E malfunction • Pressure control solenoid A malfunction • Pressure control solenoid B malfunction • Control valve body malfunction • Body ground malfunction 2. Signal malfunction • TFT sensor malfunction • VSS malfunction • Sensor ground malfunction • TP sensor malfunction • APP sensor malfunction • Input/turbine speed sensor malfunction 3. Poor hydraulic operation (Malfunction in range change) • Oil pressure switch malfunction • Forward accumulator malfunction • Servo apply accumulator malfunction 4. Engine mounts installation • Loose attaching bolts • Worn parts **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the engine mounts for loose tightening bolts or worn parts. Are all engine mounts normal?	Yes	Go to the next step.
		No	Readjust, retighten or replace the engine mounts.
2	Perform the stall test. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) Is the stall speed normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
3	Inspect the following PCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) • APP • TP REL Are the PID values normal? (See 01-40A-8 PCM INSPECTION [LF, L5].)	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
4	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
5	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
6	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.19 EXCESSIVE SHIFT SHOCK ON TORQUE CONVERTER CLUTCH (TCC) [FS5A-EL]

id050308802400

19	Excessive shift shock on torque converter clutch (TCC)
DESCRIPTION	• Strong shock is felt when TCC is engaged.
POSSIBLE CAUSE	• The troubleshooting flow is the same as the symptom troubleshooting "NO.16 JUDDER UPON TORQUE CONVERTER CLUTCH (TCC) OPERATION". (See 05-03-22 NO.16 JUDDER UPON TORQUE CONVERTER CLUTCH (TCC) OPERATION [FS5A-EL].)

NO.20 NOISE OCCURS AT IDLE WHEN VEHICLE IS STOPPED IN ALL POSITIONS/RANGES [FS5A-EL]

id050308802500

20	Noise occurs at idle when vehicle is stopped in all positions/ranges
DESCRIPTION	• Transaxle is noisy in all positions and ranges when vehicle is idling.
POSSIBLE CAUSE	• The malfunction is in the oil pump which causes a high-pitched noise to be emitted from the transaxle at idle. **Note** • If a noise is emitted during shifting only, the malfunction is in shift solenoid D, E or shift solenoid A, B, C. If a noise is emitted during shifting at certain gears only or during deceleration only, it is gear noise. • Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the engine condition. Is there any engine concern (i. e. rough idle)?	Yes	Go to the appropriate symptom troubleshooting. (See 01-03A-4 SYMPTOM DIAGNOSTIC INDEX [LF, L5].)
		No	Go to the next step.
2	Does the noise stop when the solenoid connector is disconnected?	Yes	Go to the next step.
		No	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
3	Inspect the following PCM and TCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) **PCM PIDs:** • APP • TP REL **TCM PIDs:** • THOP • OSS • TSS Are the PID values normal? (See 01-40A-8 PCM INSPECTION [LF, L5].)	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
4	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
5	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
6	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.21 NOISE OCCURS AT IDLE WHEN VEHICLE IS STOPPED IN D, M RANGES, OR IN R POSITION [FS5A-EL]

id050308808600

21	Noise occurs at idle when vehicle is stopped in D, M ranges, or in R position
DESCRIPTION	• Transaxle is noisy in driving ranges when vehicle is idling.
POSSIBLE CAUSE	• Although the malfunction is basically the same as the symptom troubleshooting "NO.20 NOISE OCCURS AT IDLE WHEN VEHICLE IS STOPPED IN ALL POSITIONS/RANGES", other causes may include selector lever position disparity or TR switch position disparity. (See 05-03-26 NO.20 NOISE OCCURS AT IDLE WHEN VEHICLE IS STOPPED IN ALL POSITIONS/RANGES [FS5A-EL].)

cardiagn.com

NO.22 NO ENGINE BRAKING IN 1GR POSITION OF M RANGE [FS5A-EL]

id050308802700

22	No engine braking in 1GR position of M range
DESCRIPTION	• Engine speed drops to idle but the vehicle coasts when accelerator pedal is released when in M range (1GR) at low vehicle speed.
POSSIBLE CAUSE	1. Clutch slippage, burnt (low and reverse brake) • Line pressure low • Shift solenoid C malfunction • Shift solenoid D malfunction • Shift solenoid E malfunction • Pressure control solenoid B malfunction • Control valve body malfunction • Body ground malfunction 2. Signal malfunction • TP sensor malfunction • APP sensor malfunction • VSS malfunction • Sensor ground malfunction • Input/turbine speed sensor malfunction 3. TCM does not determine that the M range switch is ON (short, or open circuit, poor operation) • M range switch (built-in selector lever component) signal malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Do the following symptoms occur concurrently? • Engine flares up or slips during acceleration. • Engine flares up or slips when shifting.s	Yes	Perform the symptom troubleshooting "NO.14 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING" or "NO.15 ENGINE FLARES UP OR SLIPS WHEN ACCELERATING VEHICLE". (See 05-03-21 NO.14 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING [FS5A-EL].) (See 05-03-22 NO.15 ENGINE FLARES UP OR SLIPS WHEN ACCELERATING VEHICLE [FS5A-EL].)
		No	Repeat the basic inspection and repair or replace any malfunctioning parts according to the inspection result. (See 05-03-3 BASIC INSPECTION [FS5A-EL].)
2	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.23 TRANSAXLE OVERHEATS [FS5A-EL]

id050308802800

23	Transaxle overheats
DESCRIPTION	• Burnt smell emitted from the transaxle. • Smoke emitted from the transaxle.
POSSIBLE CAUSE	• The malfunction is restricted to the hindrance of coolant at the oil cooler. In addition, overheating of the transaxle may be caused by a malfunction of the TFT sensor. 1. Burnt (TCC) • Line pressure low • Control valve body malfunction 2. Oil cooler malfunction (Foreign material mixed in ATF) 3. TFT sensor malfunction 4. Excessive amount of ATF 5. Torque converter malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect for bending, damage, corrosion or kinks of the oil cooler pipes. Are the oil cooler pipes normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
2	Perform the stall test. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) Is the stall speed normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
3	Inspect the following PCM PID values using the M-MDS: (See 01-02A-7 ON-BOARD DIAGNOSTIC TEST [LF, L5].) • APP • TP REL Are the PID values normal? (See 01-40A-8 PCM INSPECTION [LF, L5].)	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
4	Disconnect the TCM connector. Measure the resistance between ground terminal at the TCM connector and body ground. Is the resistance **less than 5.0 ohms**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit.
5	Inspect the LPS PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Overhaul the control valve body and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.) If any problem remains: • Overhaul the transaxle and repair or replace any malfunctioning parts. (See Automatic Transaxle Workshop Manual FS5A-EL.)
		No	Repair or replace any malfunctioning parts.
6	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.24 ENGINE STALLS WHEN SHIFTED TO D, M RANGES, OR IN R POSITION [FS5A-EL]

id050308808700

24	Engine stalls when shifted to D, M ranges, or in R position
DESCRIPTION	• Engine stalls when shifting from N or P position to D, M ranges or R position at idle.
POSSIBLE CAUSE	• The malfunction is on the engine control side (i.e. electronic throttle control system). Otherwise, the malfunction is in the input/turbine speed sensor (engine sometimes starts) or the TCC circuit (engine always stalls).

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Perform the symptom troubleshooting "NO.10 LOW IDLE/STALLS DURING DECELERATION". (See 01-03A-49 NO.10 LOW IDLE/STALLS DURING DECELERATION [LF, L5].) Is the engine control system normal?	Yes	Repeat the basic inspection and repair or replace any malfunctioning parts according to the inspection result. (See 05-03-3 BASIC INSPECTION [FS5A-EL].)
		No	Repair or replace any malfunctioning parts.
2	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.25 ENGINE STALLS WHEN DRIVING AT SLOW SPEEDS OR STOPPING [FS5A-EL]

id050308805800

25	Engine stalls when driving at slow speeds or stopping
DESCRIPTION	• Engine stalls when the brake pedal is depressed while driving at low speed or stopping.
POSSIBLE CAUSE	• Malfunction is in engine control system (e.g. Fuel injection control, electronic throttle control system). Otherwise, the malfunction is in the control valve body, shift solenoid E or TCC.

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Perform the symptom troubleshooting "NO.10 LOW IDLE/STALLS DURING DECELERATION". (See 01-03A-49 NO.10 LOW IDLE/STALLS DURING DECELERATION [LF, L5].) Is the engine control system normal?	Yes	Go to the next step.
		No	Repair or replace any malfunctioning parts.
2	Perform the symptom troubleshooting "NO.5 ENGINE STALLS-AFTER START/AT IDLE". (See 01-03A-33 NO.5 ENGINE STALLS-AFTER START/AT IDLE [LF, L5].) Is the engine control system normal?	Yes	Repeat the basic inspection and repair or replace any malfunctioning parts according to the inspection result. (See 05-03-3 BASIC INSPECTION [FS5A-EL].)
		No	Repair or replace any malfunctioning parts.
3	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.26 STARTER DOES NOT WORK [FS5A-EL]

id050308803100

26	Starter does not work
DESCRIPTION	• Starter does not work even when in P or N position.
POSSIBLE CAUSE	• Selector lever mis-adjustment • TR switch mis-adjustment • Open or short circuit in TR switch terminal

cardiagn.com

NO.27 GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE [FS5A-EL]

id050308803200

27	Gear position indicator light does not illuminate in M range
DESCRIPTION	• Gear position indicator light in instrument cluster does not illuminate in M range with the ignition is ON.
POSSIBLE CAUSE	• M range switch (built-in selector lever component), instrument cluster, or related wiring harness malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].) • If the ATF temperature reaches **130 °C {266 °F} or more** while driving in manual shift mode, the gear position indicator light turns off and the TCM switches to automatic shift mode to reduce load on the ATX. After the ATF temperature decreases to **120 °C {248 °F} or less** and a period of time has passed, the gear position indicator light turns back on and driving in manual shift mode is restored.

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the MNL SW PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Go to Step 3.
		No	Go to the next step.
2	Inspect the M range switch. (See 05-17-18 M RANGE SWITCH INSPECTION [FS5A-EL]05-18-11 SELECTOR LEVER INSPECTION.) Is the M range switch normal?	Yes	Inspect the wiring harness between TCM terminal K and selector lever component terminal A. Repair or replace the any malfunctioning parts.
		No	Replace the M range switch. (See 05-17-18 M RANGE SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
3	Inspect the instrument cluster. (See 09-22-8 INSTRUMENT CLUSTER INSPECTION.) Is the instrument cluster normal?	Yes	Go to the next step.
		No	Replace the instrument cluster. (See 09-22-3 INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
4	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.28 GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R, N POSITION AND D RANGE [FS5A-EL]

id050308815700

28	Gear position indicator light illuminate in P, R, N position and D range
DESCRIPTION	• Gear position indicator light in instrument cluster illuminates in P, R and N position and D range with the ignition is ON.
POSSIBLE CAUSE	• M range switch (built-in selector lever component), instrument cluster, or related wiring harness malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the MNL SW PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Go to Step 3.
		No	Go to the next step.
2	Inspect the M range switch. (See 05-17-18 M RANGE SWITCH INSPECTION [FS5A-EL].) Is the M range switch normal?	Yes	Inspect the wiring harness between TCM terminal K and selector lever component terminal A. Repair or replace the any malfunctioning parts.
		No	Replace the M range switch. (See 05-17-18 M RANGE SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
3	Inspect the instrument cluster. (See 09-22-8 INSTRUMENT CLUSTER INSPECTION.) Is the instrument cluster normal?	Yes	Go to the next step.
		No	Replace the instrument cluster. (See 09-22-3 INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
4	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.29 DOES NOT UPSHIFT IN M RANGE [FS5A-EL]

id050308803400

29	Does not upshift in M range
DESCRIPTION	• Gear position indicator light in instrument cluster illuminates but vehicle does not upshift when selector lever is pushed to "+" side.
POSSIBLE CAUSE	• Up switch or related wiring harness malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the UP SW PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Inspect the instrument cluster. (See 09-22-8 INSTRUMENT CLUSTER INSPECTION.)
		No	Inspect the up switch. (See 05-17-18 UP SWITCH INSPECTION [FS5A-EL].) If the up switch is normal: • Inspect for continuity between TCM terminal G and selector lever component terminal B.
2	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

cardiagn.com

NO.30 DOES NOT DOWNSHIFT IN M RANGE [FS5A-EL]

id050308803500

30	Does not downshift in M range
DESCRIPTION	• Gear position indicator light in instrument cluster illuminates but vehicle does not downshift when selector lever is pushed to "–" side.
POSSIBLE CAUSE	• Down switch or related wiring harness malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the DWN SW PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Inspect the instrument cluster. (See 09-22-8 INSTRUMENT CLUSTER INSPECTION.)
		No	Inspect the down switch. (See 05-17-19 DOWN SWITCH INSPECTION [FS5A-EL].) If the down switch is normal: • Inspect for continuity between TCM terminal F and selector lever component terminal C.
2	• Verify the test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

NO.31 M RANGE POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN M RANGE/M RANGE POSITION INDICATOR LIGHT ILLUMINATES IN D RANGE [FS5A-EL]

id050308932000

31	M range position indicator light dose not illuminate in M range/ M range position indicator light illuminates in D range
DESCRIPTION	• M range position indicator light in instrument cluster dose not illuminate in M range or M range position indicator light in instrument cluster in D range with the ignition is ON.
POSSIBLE CAUSE	• M range switch (built-in selector lever component) or related wiring harness malfunction • Instrument cluster malfunction **Note** • Before following the troubleshooting steps, make sure that the Automatic Transaxle ON-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].) (See 05-03-3 BASIC INSPECTION [FS5A-EL].)

cardiagn.com

Diagnostic procedure

STEP	INSPECTION		ACTION
1	Inspect the MNL SW PID value using the M-MDS. (See 05-02-5 ON-BOARD DIAGNOSTIC SYSTEM PID/DATA MONITOR INSPECTION [FS5A-EL].) Is the PID value normal?	Yes	Go to Step 3.
		No	Go to the next step.
2	Inspect the M range switch. (See 05-17-18 M RANGE SWITCH INSPECTION [FS5A-EL].) Is the M range switch normal?	Yes	Inspect the wiring harness between TCM terminal K and selector lever component terminal A. Repair or replace the any malfunctioning parts.
		No	Replace the M range switch. (See 05-17-18 M RANGE SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
3	Inspect the instrument cluster. (See 09-22-8 INSTRUMENT CLUSTER INSPECTION.) Is the instrument cluster normal?	Yes	Go to the next step.
		No	Replace the instrument cluster. (See 09-22-3 INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
4	• Verify test results. — If normal, return to the diagnostic index to service any additional symptoms. — If the malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM. (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)		

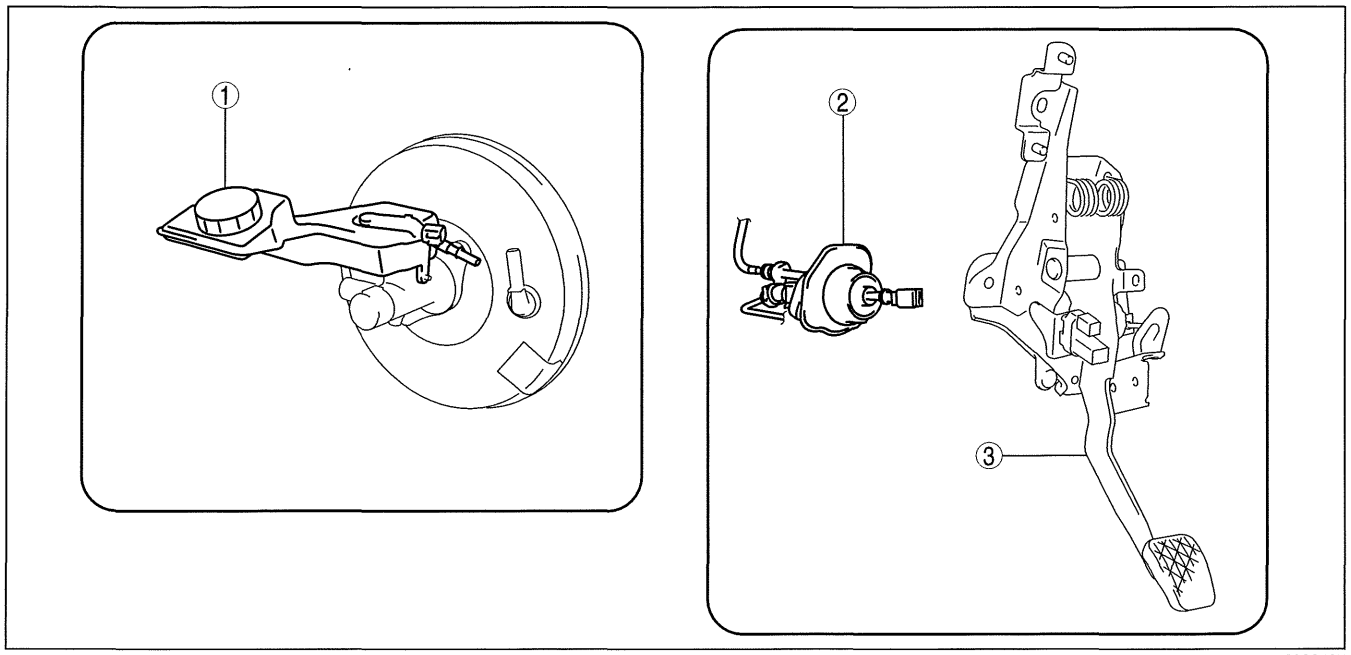
cardiagn.com

05-10 CLUTCH

cardiagn.com

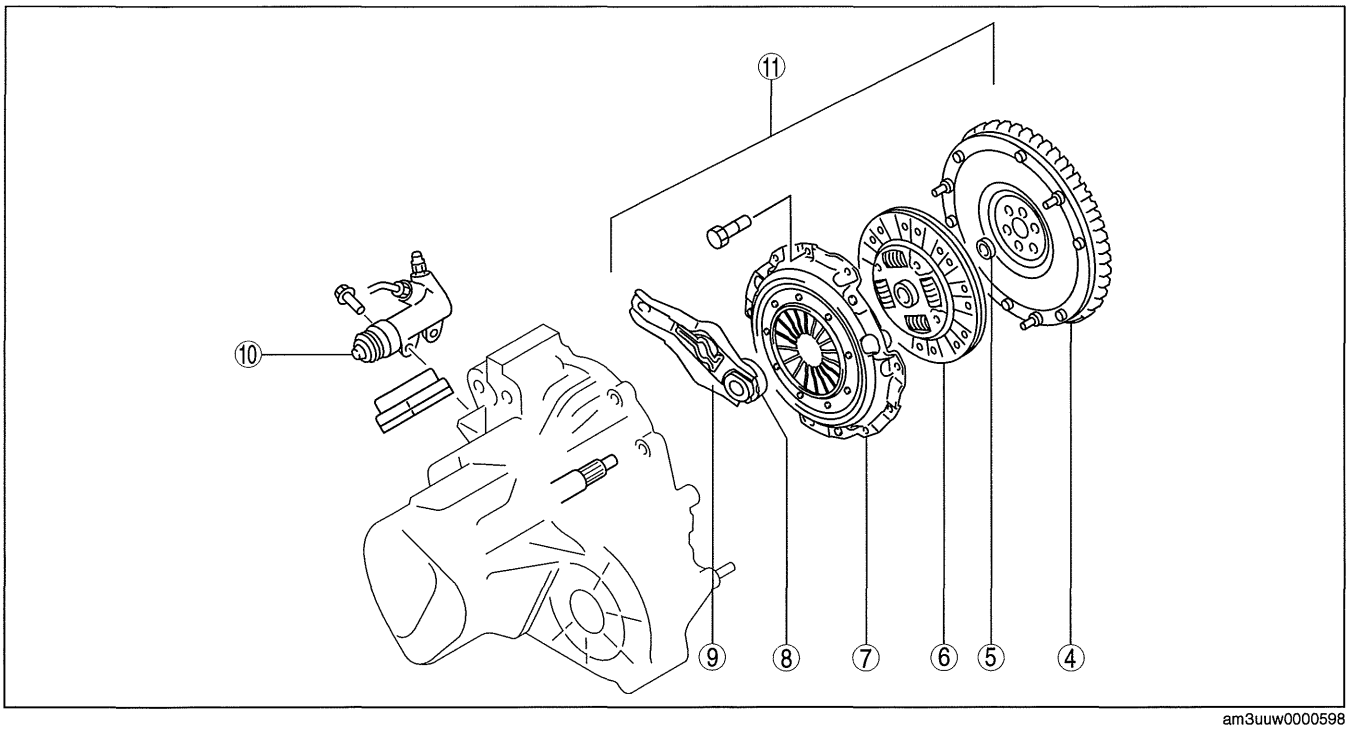
CLUTCH LOCATION INDEX

id051000800400



am3uuw0000597

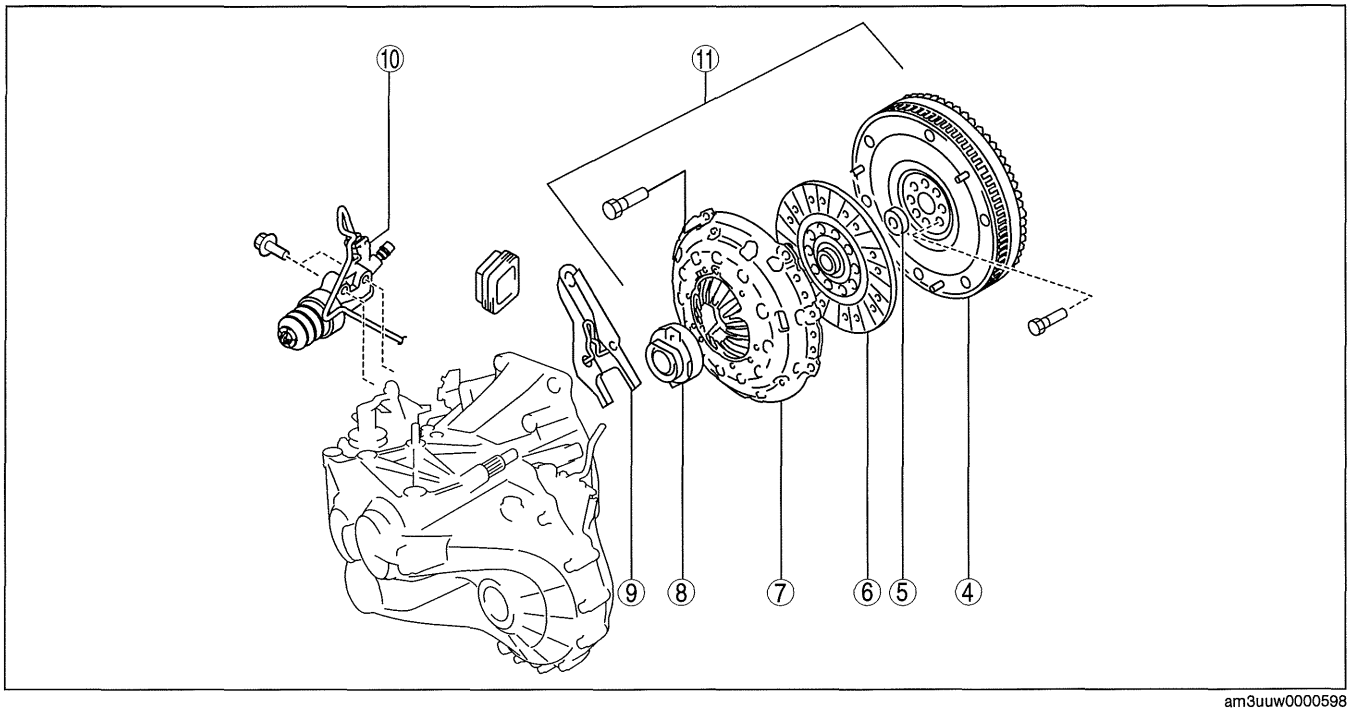
G35M-R, G66M-R



am3uuw0000598

cardiagn.com

A26M-R



am3uuw0000598

1	Reserve tank (See 05-10-4 CLUTCH FLUID INSPECTION.) (See 05-10-4 CLUTCH FLUID AIR BLEEDING/ REPLACEMENT.)
2	Clutch master cylinder (See 05-10-10 CLUTCH MASTER CYLINDER REMOVAL/INSTALLATION.)
3	Clutch pedal (See 05-10-5 CLUTCH PEDAL INSPECTION/ ADJUSTMENT.) (See 05-10-6 CLUTCH PEDAL REMOVAL/ INSTALLATION.)
4	Flywheel (See 05-10-31 FLYWHEEL INSPECTION [G35M-R, G66M-R].) (See 05-10-32 FLYWHEEL INSPECTION [A26M-R].)
5	Pilot bearing (See 05-10-29 PILOT BEARING INSPECTION [G35M-R, G66M-R].) (See 05-10-30 PILOT BEARING INSPECTION [A26M-R].)
6	Clutch disc (See 05-10-26 CLUTCH DISC INSPECTION [G35M-R, G66M-R].) (See 05-10-27 CLUTCH DISC INSPECTION [A26M-R].)
7	Clutch cover (See 05-10-24 CLUTCH COVER INSPECTION [G35M-R, G66M-R].) (See 05-10-25 CLUTCH COVER INSPECTION [A26M-R].)
8	Clutch release collar (See 05-10-28 CLUTCH RELEASE COLLAR INSPECTION [G35M-R, G66M-R].) (See 05-10-29 CLUTCH RELEASE COLLAR INSPECTION [A26M-R].)
9	Clutch release fork (See 05-10-16 CLUTCH UNIT REMOVAL/ INSTALLATION [G35M-R, G66M-R].) (See 05-10-20 CLUTCH UNIT REMOVAL/ INSTALLATION [A26M-R].)
10	Clutch release cylinder (See 05-10-13 CLUTCH RELEASE CYLINDER REMOVAL/INSTALLATION [G35M-R, G66M-R].) (See 05-10-14 CLUTCH RELEASE CYLINDER REMOVAL/INSTALLATION [A26M-R].)
11	Clutch unit (See 05-10-16 CLUTCH UNIT REMOVAL/ INSTALLATION [G35M-R, G66M-R].) (See 05-10-20 CLUTCH UNIT REMOVAL/ INSTALLATION [A26M-R].)

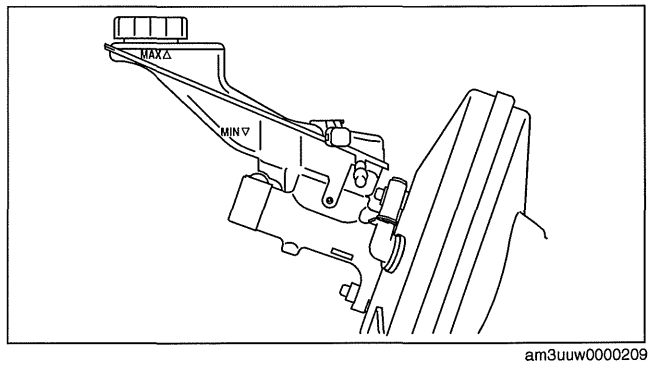
cardiagn.com

CLUTCH FLUID INSPECTION

id051000800600

Note
- A common reservoir is used for the clutch and brake system fluid.

1. The fluid in the reservoir must be maintained between the MIN/MAX level during replacement.



am3uuw0000209

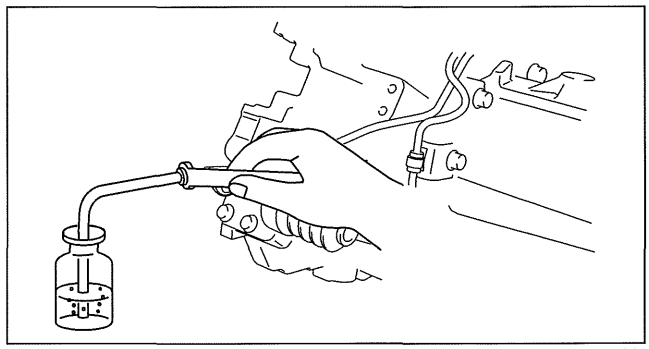
CLUTCH FLUID AIR BLEEDING/REPLACEMENT

id051000800700

Caution
- **Fluid will damage painted surfaces. Be careful not to spill any on painted surfaces. If it is spilled, wipe it off immediately.**
- **Keep the fluid level in the reserve tank at 3/4 full or more during the air bleeding.**
- **Do not mix different types of fluid, otherwise the clutch may not operate normally.**
- **Do not reuse old fluid, otherwise the clutch may not operate normally.**

Clutch fluid
SAE J1703 or FMVSS116 DOT-3

1. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
2. Draw the fluid from the reserve tank with a suction pump.
3. Remove the bleeder cap from the bleeder plug and attach a vinyl hose to the bleeder plug.
4. Place the other end of the vinyl hose into a container.
5. Slowly pump the clutch pedal several times.
6. With the clutch pedal depressed, loosen the bleeder screw to let fluid escape.
7. Tighten the bleeder screw to stop the fluid.
8. Repeat Steps 5, 6 and 7 until only clean fluid without air is seen.
9. Tighten the bleeder screw.



am3uuw0000209

Tightening torque
5—10 N·m {51—101 kgf·cm, 45—88 in·lbf}

10. Add fluid to the MAX mark.
11. After air bleeding, inspect the following:
    — Clutch operation
    — Fluid leakage
    — Fluid level
12. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

cardiagn.com

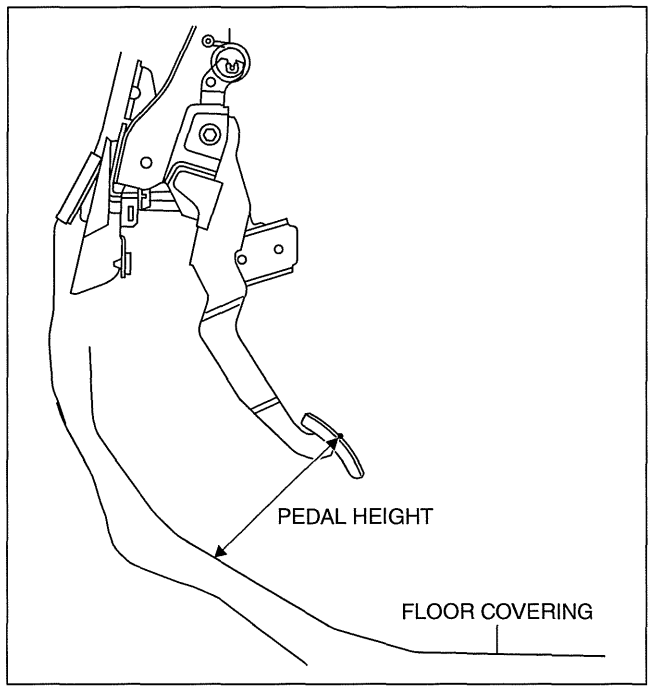
CLUTCH PEDAL INSPECTION/ADJUSTMENT

id051000802100

Clutch Pedal Height Inspection

1. Measure the distance from the center of the upper surface of the pedal pad to the floor covering.
   - If the clutch pedal height is not with the specification, replace the clutch pedal.

Clutch pedal height (Reference value)
142.8 mm {5.622 in}

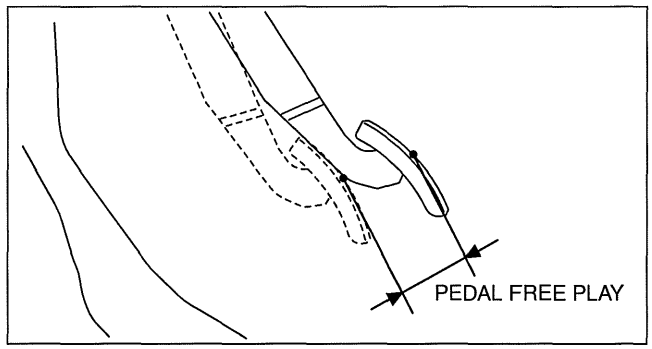


am3uuw0000330

Clutch Pedal Free Play Inspection

1. Depress the clutch pedal by hand until clutch resistance is felt.
   - If the clutch pedal free play is not within the specification, replace the clutch pedal.

Clutch pedal free play (Reference value)
15 mm {0.59 in} or less



am3uuw0000330

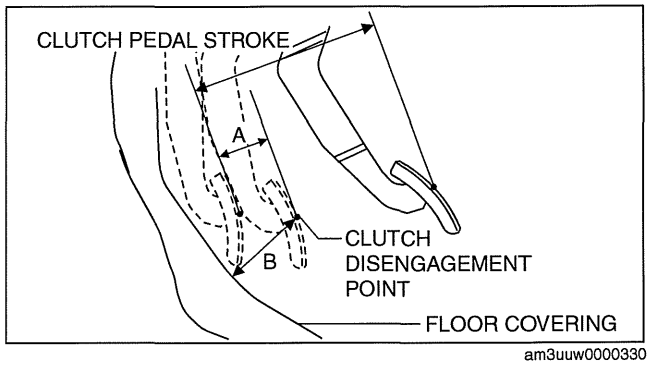
Clutch Pedal Disengagement Point

Caution
- **When performing inspections, always set the wheel blocks, set the parking brake, depress the brake pedal, and then perform the inspection with the brakes in operation. Otherwise, the vehicle could lurch and cause an accident.**

1. Apply the parking brake and fix the front and rear of the wheels with the wheel chocks.
2. Start the engine.
3. With the clutch pedal depressed, move the shift lever to the position just before engaging the reverse gear. (Do not shift completely to reverse position)
4. Gradually release the clutch pedal and then hold it at the point where the sound of gear-grinding begins (clutch disengagement point).

cardiagn.com

5. Measure the distances indicated as follows from the clutch disengagement point and verify that they are within the specification.
   - If the measurement is not within the specification, inspect the clutch fluid level and the fluid lines for air infiltration.



am3uuw0000330

Distance A, from clutch disengagement point to full stroke
23 mm {0.91 in} or more (Reference value)

Distance B, from clutch disengagement point to floor mat
64.9 mm {2.56 in} or more (Reference value)

Clutch pedal stroke
LF, L3 WITH TC: 135 mm {5.31 in} (Reference value)
L5: 126.1 mm {4.965 in} (Reference value)

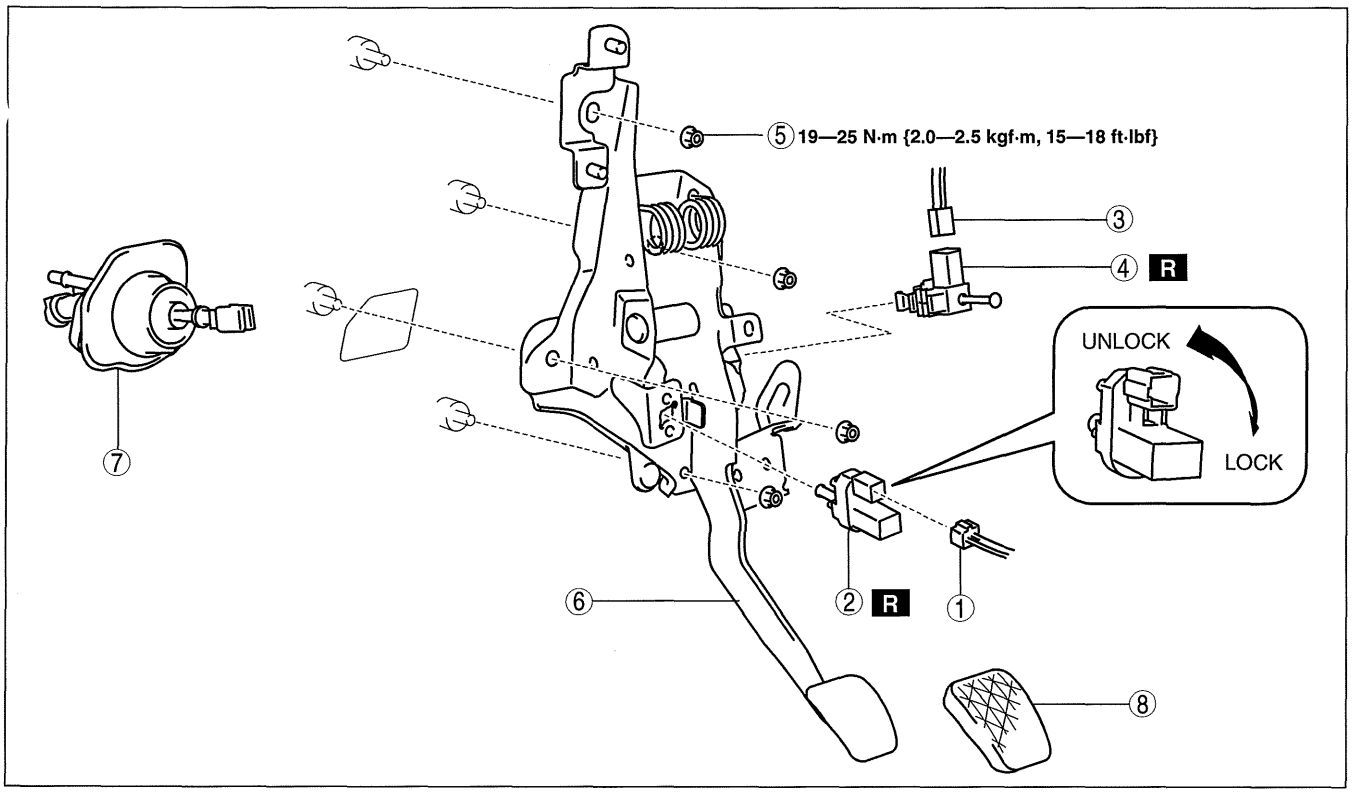
CLUTCH PEDAL REMOVAL/INSTALLATION

id051000801200

Caution
- **Fluid will damage painted surfaces. Be careful not to spill any on painted surfaces. If it is spilled, wipe it off immediately.**

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)(See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)(See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)(See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
4. Separate the steering shaft. (See 06-14-8 STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION [WITHOUT ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM].)(See 06-14-11 STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION [WITH ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM].)
5. Separate the clutch pipe and reserve hose. (See 05-10-10 CLUTCH MASTER CYLINDER REMOVAL/INSTALLATION.)
6. Remove in the order indicated in the table.
7. Install in the reverse order of removal.
8. Bleed the air from the system. (See 05-10-4 CLUTCH FLUID AIR BLEEDING/REPLACEMENT.)
9. After installation, inspect the clutch pedal. (See 05-10-5 CLUTCH PEDAL INSPECTION/ADJUSTMENT.)

cardiagn.com



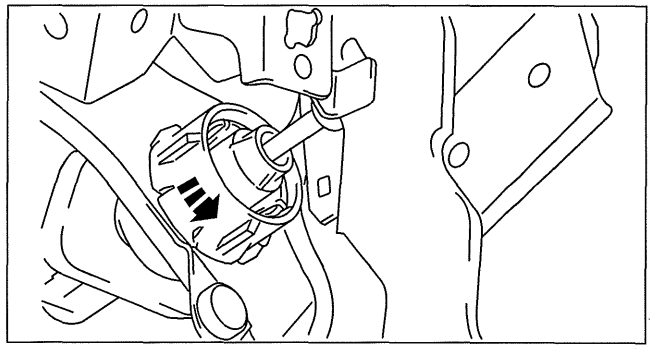
am3uuw0000209

1	Clutch pedal position switch connector
2	Clutch pedal position switch (See 05-10-10 Clutch Pedal Position Switch Installation Note.)
3	Starter interlock switch connector
4	Starter interlock switch (See 05-10-9 Starter Interlock Switch Installation Note.)

5	Nuts
6	Clutch pedal component
7	Clutch master cylinder (See 05-10-7 Clutch Master Cylinder Removal Note.) (See 05-10-8 Clutch Master Cylinder Installation Note.)
8	Pedal pad

Clutch Master Cylinder Removal Note

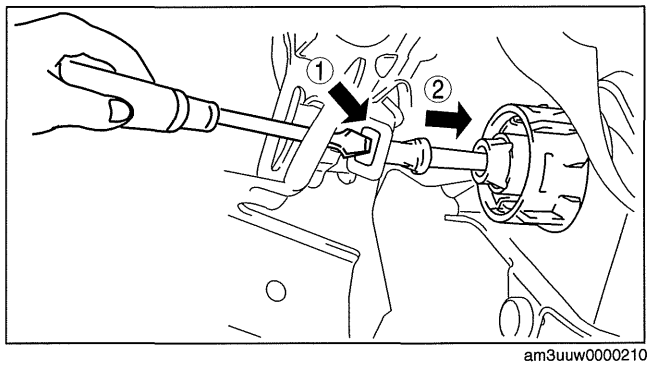
1. Rotate the clutch master cylinder in the direction shown and remove.



am3uuw0000210

cardiagn.com

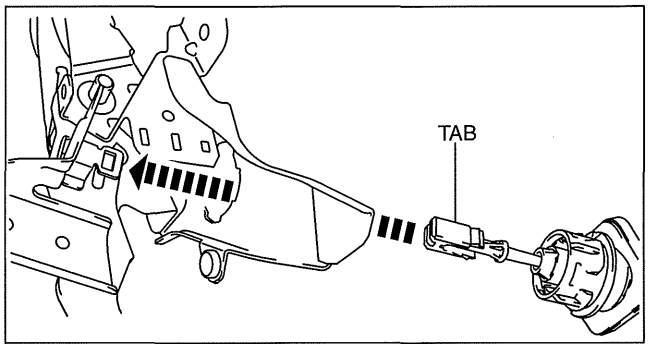
2. Press on the tabs on the left and right sides of the push rod using a flathead screwdriver and remove the rod.



am3uuw0000210

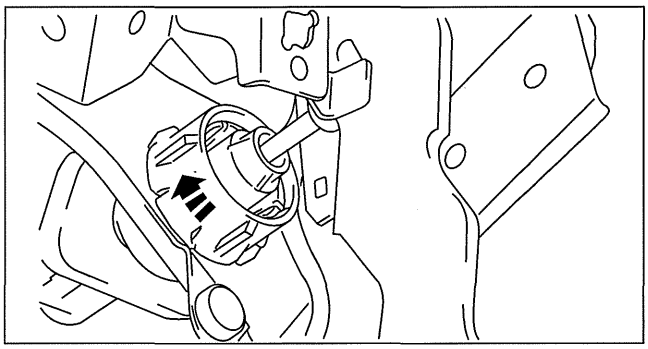
Clutch Master Cylinder Installation Note

1. Push the push rod in until the tabs lock.



am3uuw0000210

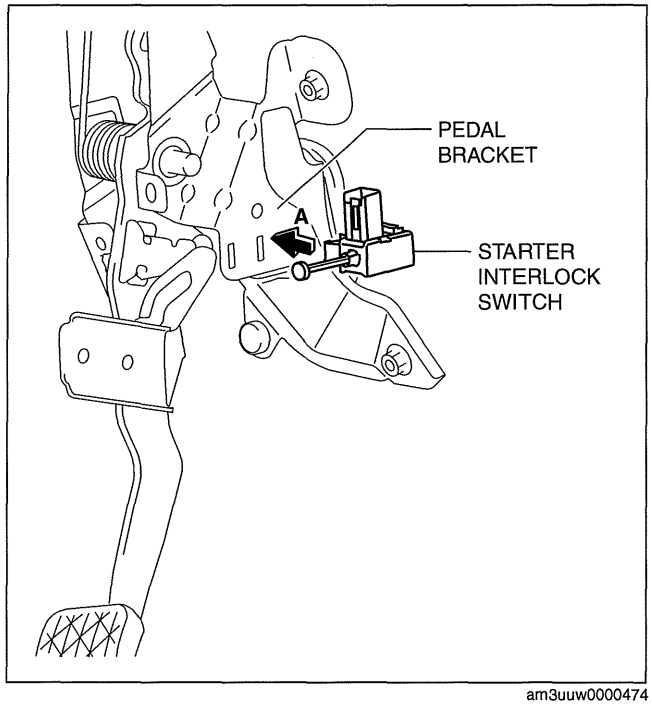
2. Rotate the clutch master cylinder in the direction shown until it stops.


am3uuw0000210

cardiagn.com

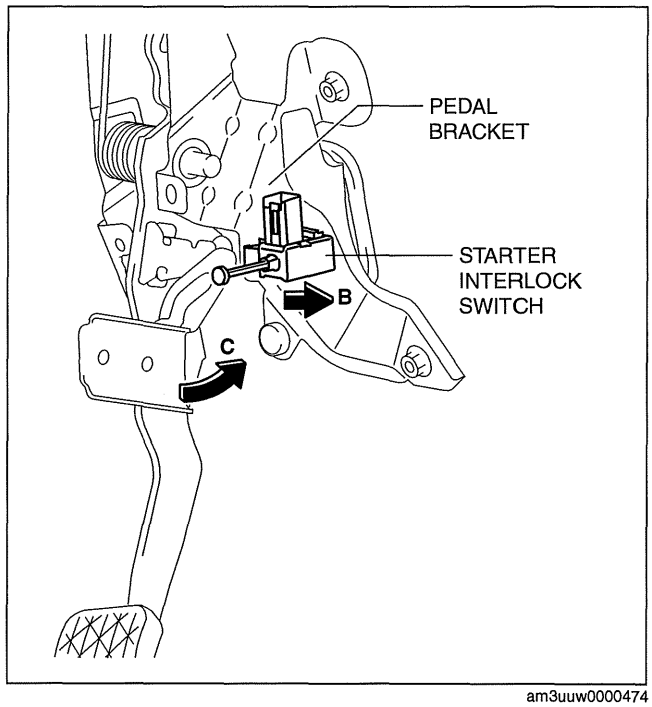
Starter Interlock Switch Installation Note

1. Insert the new starter interlock switch into the pedal bracket hole in the direction indicated by arrow A.



am3uuw0000474

2. Slide the starter interlock switch pressing it in the direction indicated by arrow B until it is locked.
3. Press the clutch pedal fully in the direction indicated by arrow C and adjust the starter interlock switch terminal.

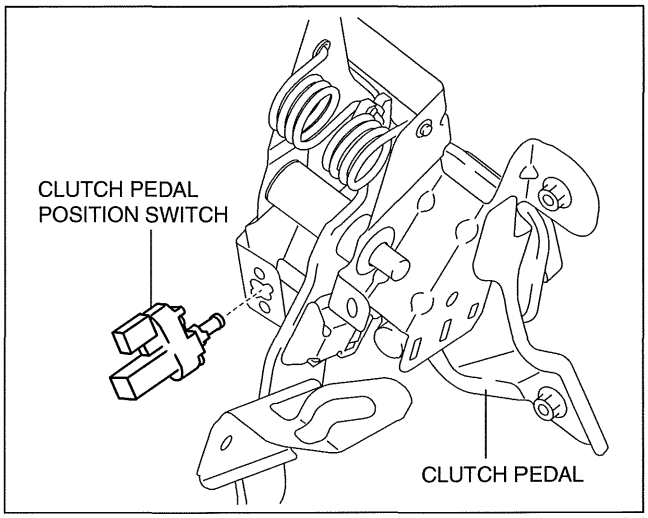


am3uuw0000474

cardiagn.com

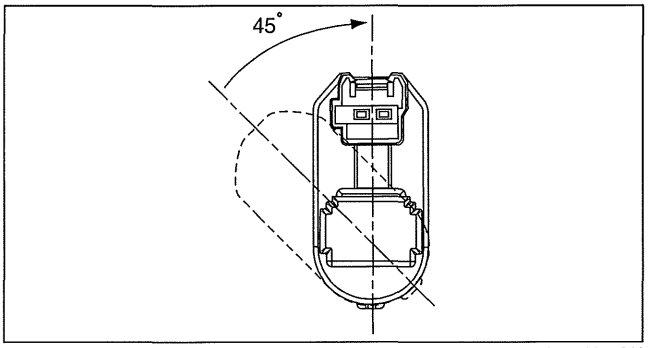
Clutch Pedal Position Switch Installation Note

1. Insert the new clutch pedal position switch into the pedal bracket hole until the switch stops.



am3uuw0000474

2. Rotate the clutch pedal position switch **45°** clockwise.
3. Verify that the clutch pedal position switch is locked securely.



am3uuw0000018

CLUTCH MASTER CYLINDER REMOVAL/INSTALLATION

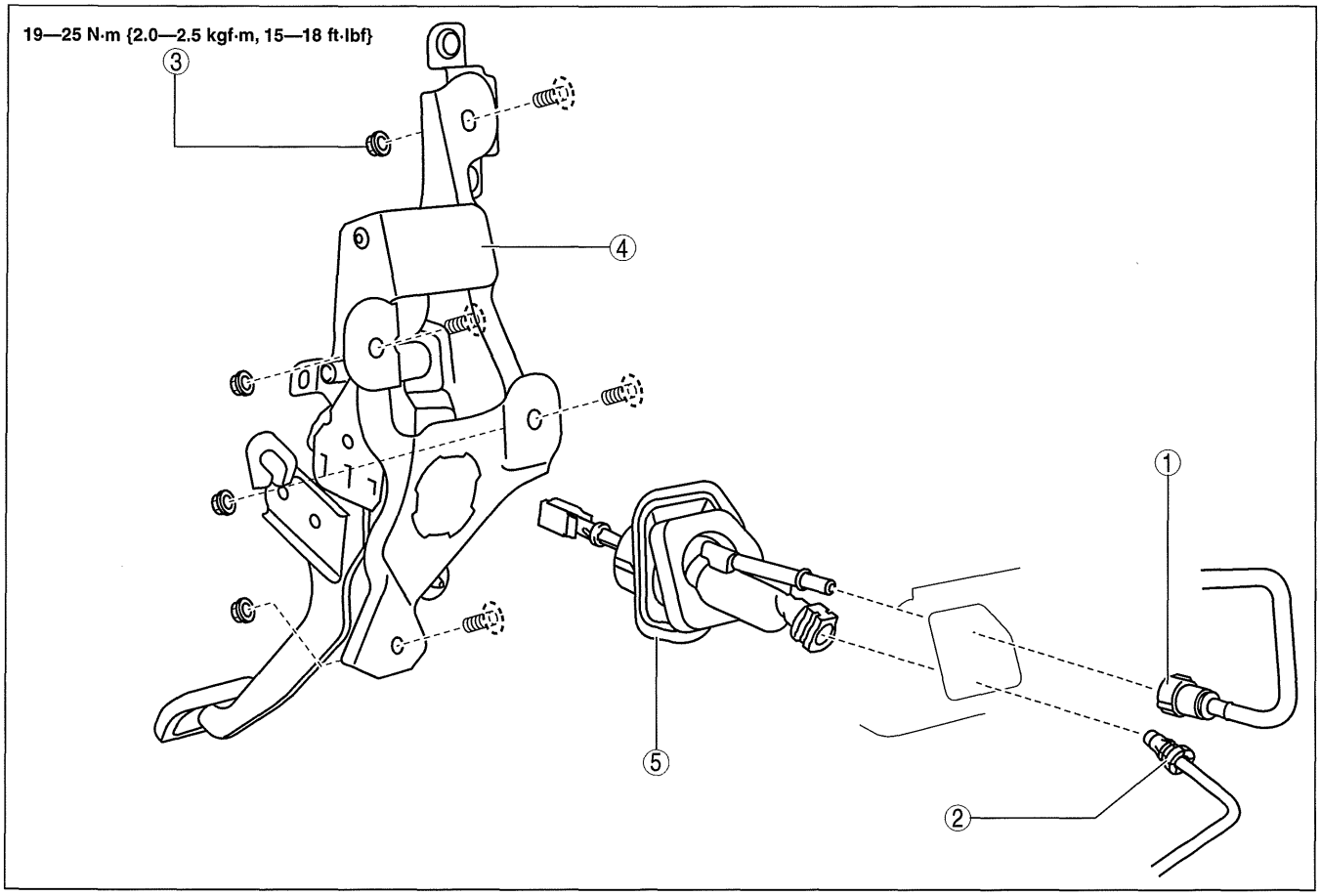
id051000801400

Caution

- **Fluid will damage painted surfaces. Be careful not to spill any on painted surfaces. If it is spilled, wipe it off immediately.**

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)(See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)(See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)(See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
4. Separate the steering shaft. (See 06-14-8 STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION [WITHOUT ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM].)(See 06-14-11 STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION [WITH ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM].)
5. Remove in the order indicated in the table.
6. Plug the clutch pipe after removing it to avoid leakage.
7. Install in the reverse order of removal.
8. Bleed the air from the system. (See 05-10-4 CLUTCH FLUID AIR BLEEDING/REPLACEMENT.)
9. After installation, inspect the clutch pedal. (See 05-10-5 CLUTCH PEDAL INSPECTION/ADJUSTMENT.)

cardiagn.com



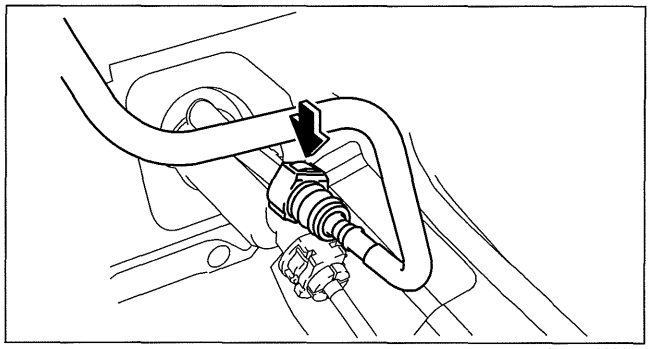
am3uuw0000533

1	Reserve hose (See 05-10-11 Clutch Pipe and Clutch Reserve Hose Removal Note.) (See 05-10-13 Clutch Pipe and Clutch Reserve Hose Installation Note.)
2	Clutch pipe (See 05-10-11 Clutch Pipe and Clutch Reserve Hose Removal Note.) (See 05-10-13 Clutch Pipe and Clutch Reserve Hose Installation Note.)
3	Nuts

4	Clutch pedal component (See 05-10-6 CLUTCH PEDAL REMOVAL/ INSTALLATION.)
5	Clutch master cylinder (See 05-10-12 Clutch Master Cylinder Removal Note.) (See 05-10-12 Clutch Master Cylinder Installation Note.)

Clutch Pipe and Clutch Reserve Hose Removal Note

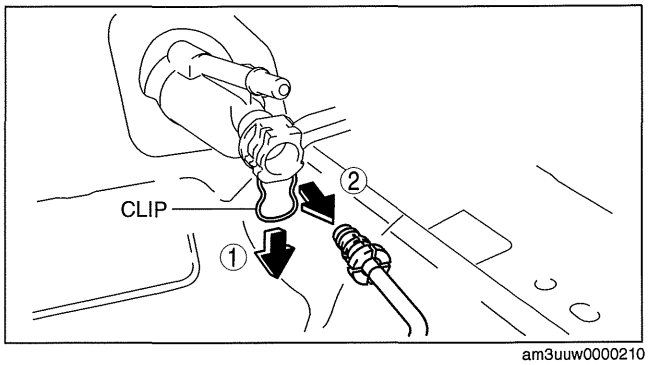
1. Remove the reserve hose from the master cylinder while pressing the point indicated by the arrow in the figure.



am3uuw0000210

cardiagn.com

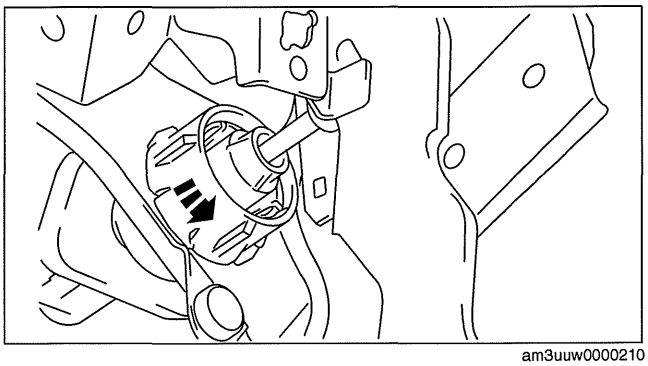
2. Pull the clutch master cylinder clip to the position shown in the figure and pull out the clutch pipe connector straight to detach it.



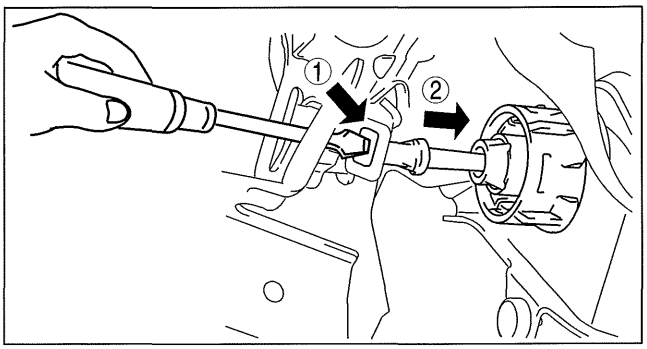
am3uuw0000210

Clutch Master Cylinder Removal Note

1. Rotate the clutch master cylinder in the direction shown and remove.


am3uuw0000210

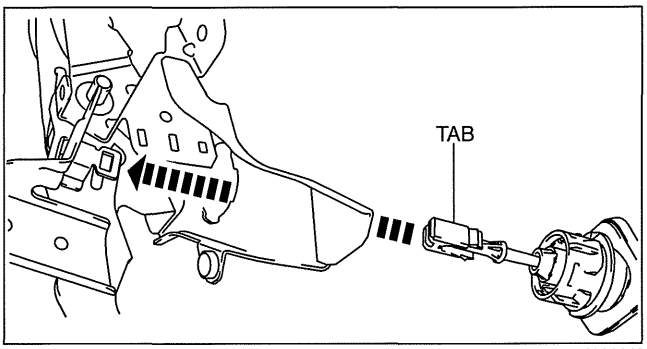
2. Press on the tabs on the left and right sides of the push rod using a flathead screwdriver and remove the rod.



am3uuw0000210

Clutch Master Cylinder Installation Note

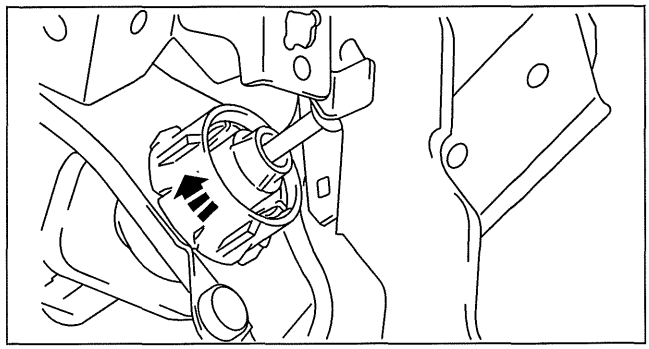
1. Push the push rod in until the tabs lock.



am3uuw0000210

cardiagn.com

2. Rotate the clutch master cylinder in the direction shown until it stops.



am3uuw0000210

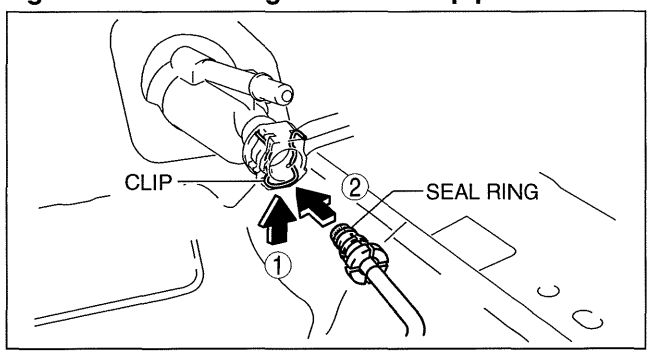
Clutch Pipe and Clutch Reserve Hose Installation Note

1. Return the clutch master cylinder clip to the position shown in the figure.

Caution

- **Verify that there is no chipping, damage, or falling off of the seal ring in the clutch pipe connector.**

2. Insert the clutch pipe connector straight.
3. Pull the clutch pipe to verify that it does not come off, and reinsert it completely.
4. Insert the reserve hose connector straight until a click is heard.
5. Pull the reserve hose to verify that it does not come off, and reinsert it completely.



am3uuw0000211

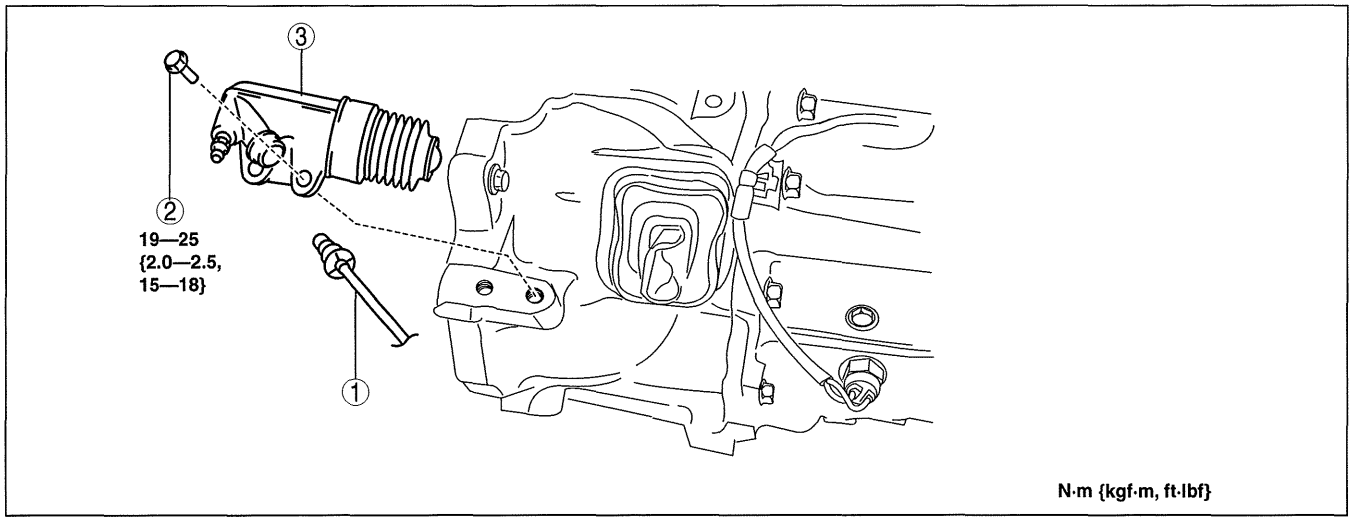
CLUTCH RELEASE CYLINDER REMOVAL/INSTALLATION [G35M-R, G66M-R]

id0510008013j1

Caution

- **Fluid will damage painted surfaces. Be careful not to spill any on painted surfaces. If it is spilled, wipe it off immediately.**

1. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.
4. Bleed the air from the system. (See 05-10-4 CLUTCH FLUID AIR BLEEDING/REPLACEMENT.)
5. After installation, inspect the clutch pedal. (See 05-10-5 CLUTCH PEDAL INSPECTION/ADJUSTMENT.)



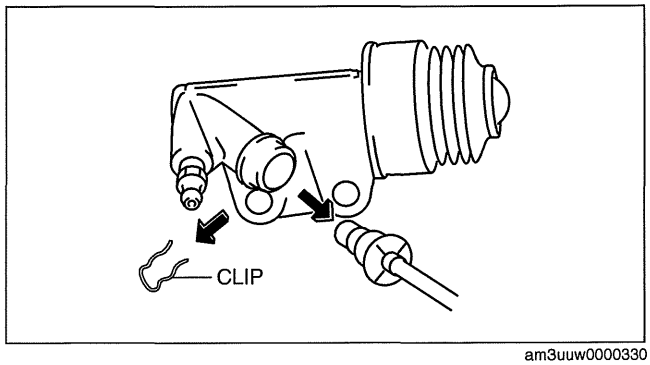
am3uuw0000623

cardiagn.com

1	Clutch pipe (See 05-10-14 Clutch Pipe Removal Note.) (See 05-10-14 Clutch Pipe Installation Note.)
2	Bolt
3	Clutch release cylinder

Clutch Pipe Removal Note

1. Pull out the clip and, then pull out the clutch pipe connector straight to detach it.



am3uuw0000330

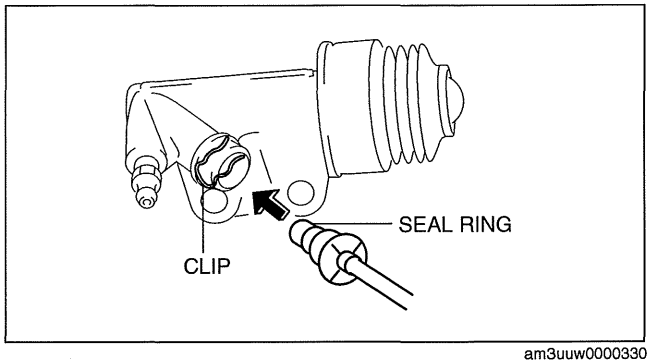
Clutch Pipe Installation Note

1. Return the clip to the position shown in the figure.

Caution

- **Verify that there is no chipping, damage, or falling off of the seal ring in the clutch pipe connector.**

2. Insert the clutch pipe connector straight.
3. Pull the clutch pipe to verify that it does not come off, and reinsert it completely.



am3uuw0000330

CLUTCH RELEASE CYLINDER REMOVAL/INSTALLATION [A26M-R]

id0510008013m8

Caution

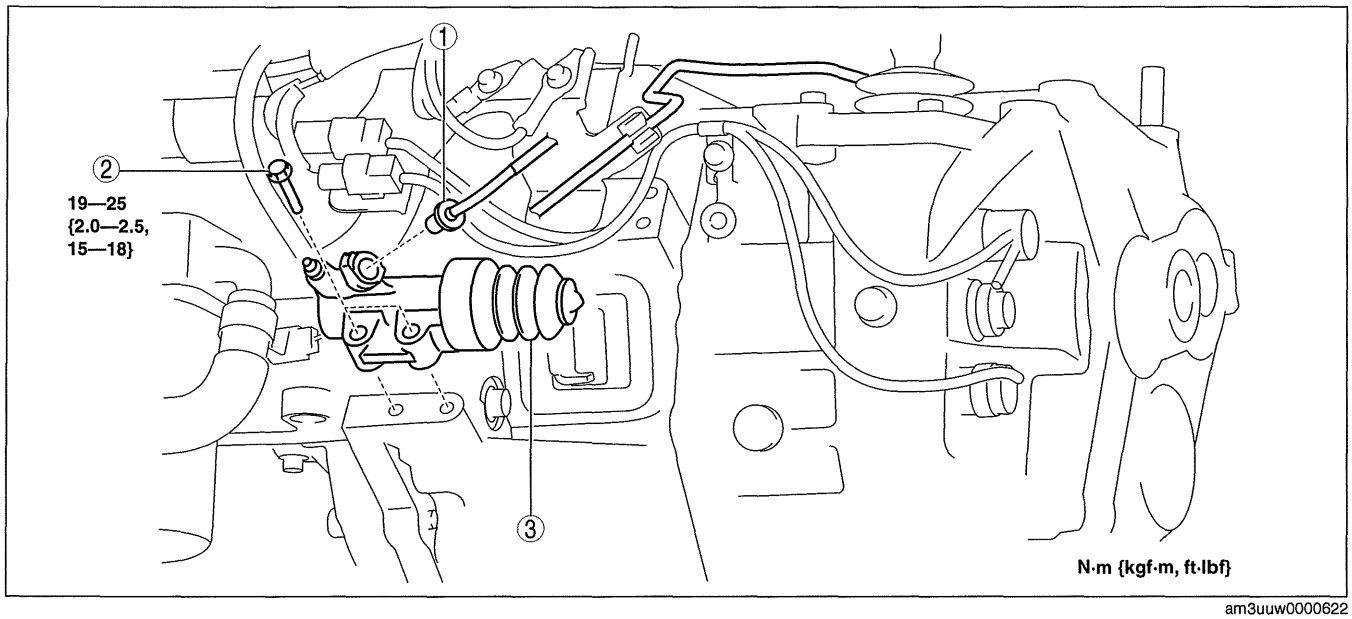
- **Fluid will damage painted surfaces. Be careful not to spill any on painted surfaces. If it is spilled, wipe it off immediately.**

Note

- If clutch system-related hydraulic parts are removed, supply brake fluid, bleed air, and inspect for fluid leakage after the installation.

1. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.
4. Bleed the air from the system. (See 05-10-4 CLUTCH FLUID AIR BLEEDING/REPLACEMENT.)
5. After installation, inspect the clutch pedal. (See 05-10-5 CLUTCH PEDAL INSPECTION/ADJUSTMENT.)

cardiagn.com

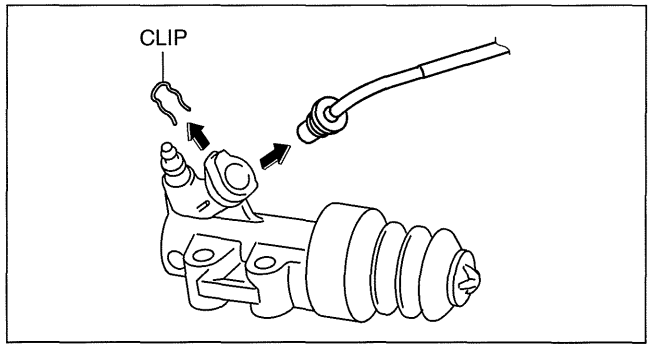


am3uuw0000622

1	Clutch pipe
2	Bolt
3	Clutch release cylinder

Clutch Pipe Removal Note

1. Pull out the clip and, then pull out the clutch pipe connector straight to detach it.



am3uuw0000623

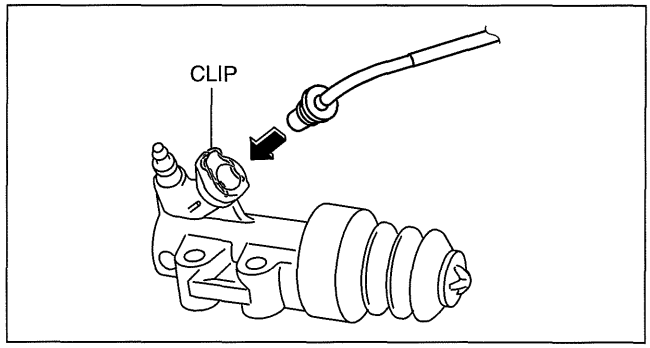
Clutch Pipe Installation Note

1. Return the clip to the position shown in the figure.

Caution

- **Verify that there is no chipping, damage, or falling off of the seal ring in the clutch pipe connector.**

2. Insert the clutch pipe connector straight.
3. Pull the clutch pipe to verify that it does not come off, and reinsert it completely.



am3uuw0000623

cardiagn.com

CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R]

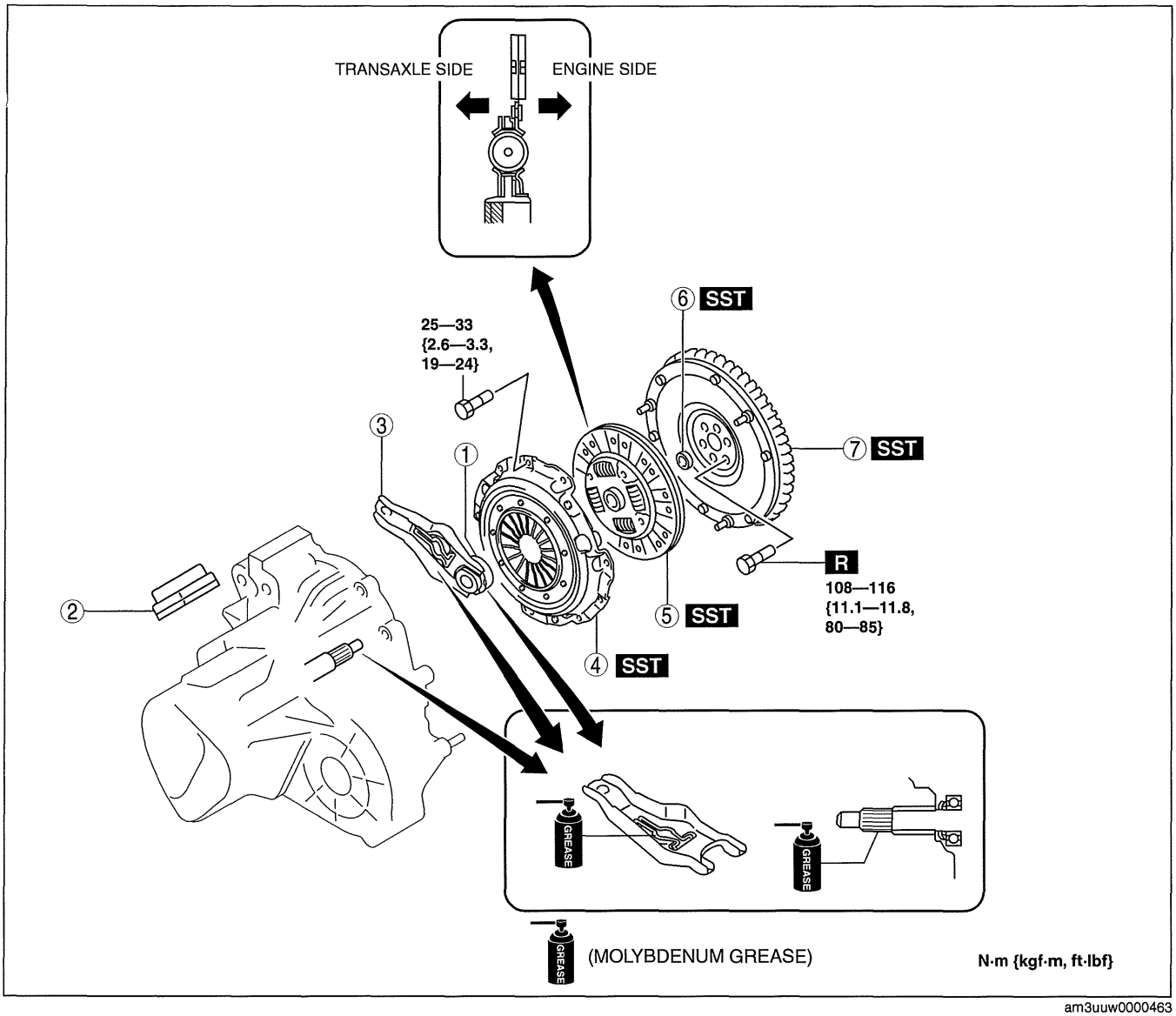
id0510008003j1

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:
   (1) Exhaust manifold bracket (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (2) Front splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)
7. Drain the transaxle oil into a suitable container. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)(See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
8. Remove the manual transaxle. (See 05-15A-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R].)(See 05-15B-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G66M-R].)
9. Remove in the order indicated in the table.
10. Install in the reverse order of removal.
11. Add the specified amount of specified transaxle oil. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)(See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)

Note

- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE INSTALLATION' and verify that there is no abnormality. (See 05-15A-10 INSPECTION AFTER TRANSAXLE INSTALLATION [G35M-R].)(See 05-15B-10 INSPECTION AFTER TRANSAXLE INSTALLATION [G66M-R].)

cardiagn.com



am3uuw0000463

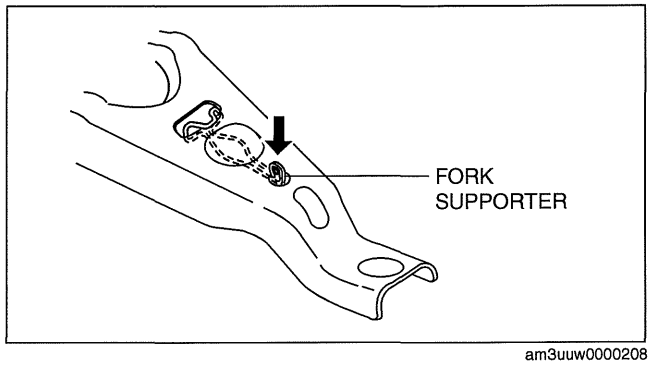
1	Clutch release collar (See 05-10-13 CLUTCH RELEASE CYLINDER REMOVAL/INSTALLATION [G35M-R, G66M-R].)
2	Boot
3	Clutch release fork (See 05-10-18 Clutch Release Fork Removal Note.)
4	Clutch cover (See 05-10-18 Clutch Cover and Disc Removal Note.) (See 05-10-20 Clutch Cover Installation Note.)

5	Clutch disc (See 05-10-18 Clutch Cover and Disc Removal Note.) (See 05-10-20 Clutch Disc Installation Note.)
6	Pilot bearing (See 05-10-18 Pilot Bearing Removal Note.) (See 05-10-19 Pilot Bearing Installation Note.)
7	Flywheel (See 05-10-18 Flywheel Removal Note.) (See 05-10-19 Flywheel Installation Note.)

cardiagn.com

Clutch Release Fork Removal Note

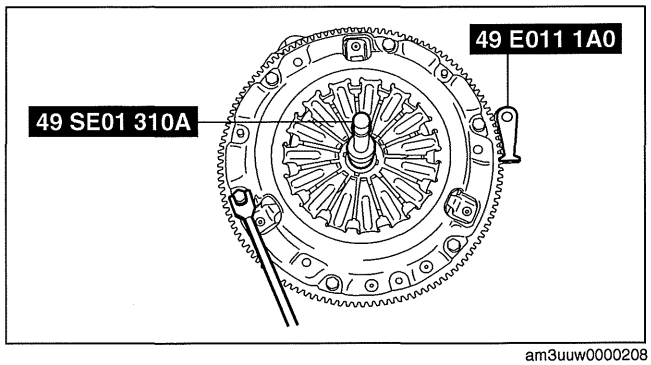
1. Remove the fork supporter before disassembling the release fork.



am3uuw0000208

Clutch Cover and Disc Removal Note

1. Install the **SSTs**.
2. Loosen each bolt one turn at a time in a crisscross pattern until spring tension is released.
3. Remove the clutch cover and disc.



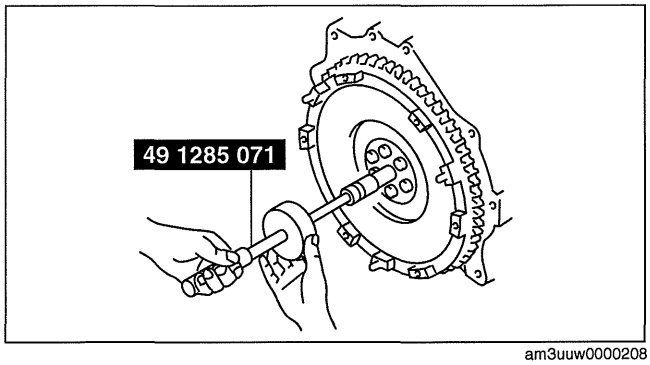
am3uuw0000208

Pilot Bearing Removal Note

Note

- The pilot bearing does not need to be removed unless you are replacing it.

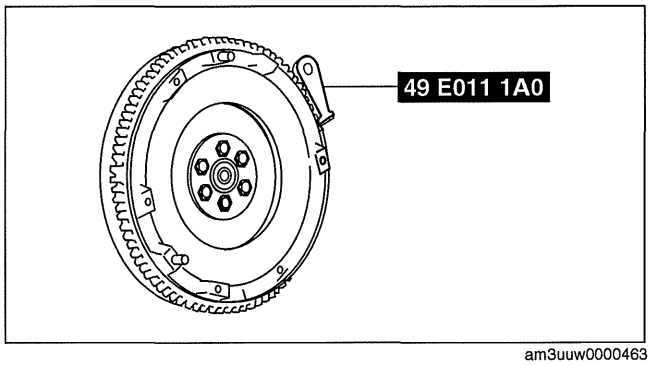
1. Use the **SST** to remove the pilot bearing.



am3uuw0000208

Flywheel Removal Note

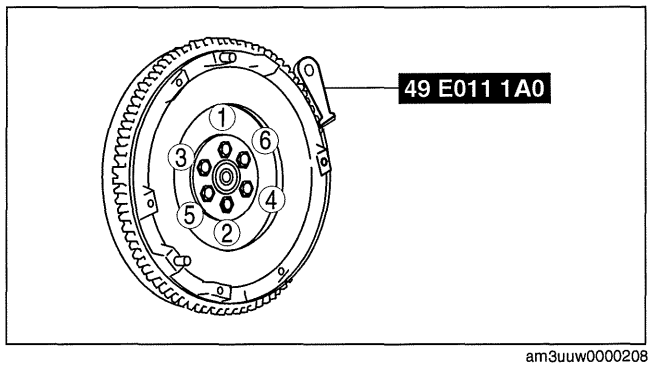
1. Hold the flywheel using the **SST**.
2. Remove the bolts evenly and gradually in a crisscross pattern.



am3uuw0000463

cardiagn.com

3. Remove the flywheel.
4. Inspect for oil leakage from the crankshaft rear oil seal.
   - If there is any malfunction, replace the crankshaft rear oil seal. (See 01-10A-38 REAR OIL SEAL REPLACEMENT [LF, L5].)

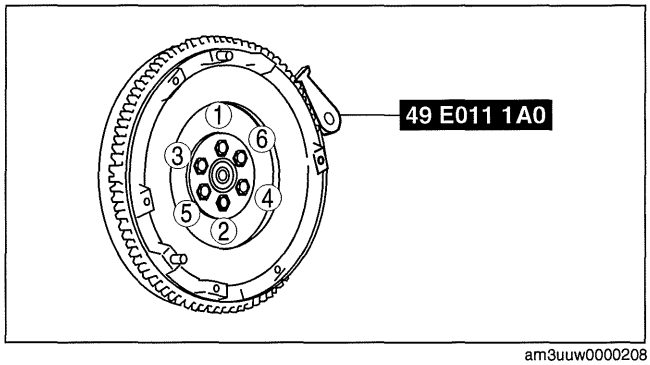


am3uuw0000208

Flywheel Installation Note

1. Install the flywheel to the crankshaft.
2. Clean the crankshaft thread holes before installing the new lock bolts.
3. Hand-tighten the flywheel lock bolts.
4. Install the **SST** to the flywheel.
5. Gradually tighten the flywheel lock bolts in a crisscross pattern.

Tightening torque
108—116 N·m {11.1—11.8 kgf·m, 80—85 ft·lbf}



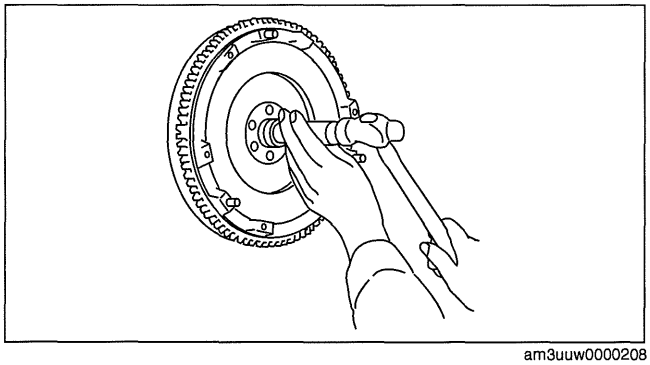
am3uuw0000208

Pilot Bearing Installation Note

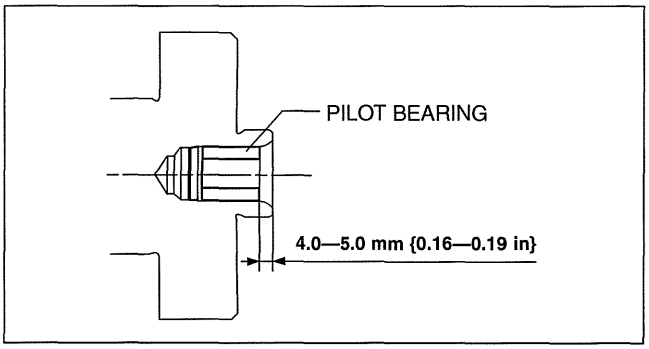
1. Install the pilot bearing using the Snap-on brand millimeter size bushing driver set (A160M) adapter A160M7 (**20—22 mm**).

Caution
- **Use the adapter with the 20 mm side of the A160M7 (20—22 mm) facing the pilot bearing side.**

Substitution tool
Outer diameter: 21 mm {0.83 in}
Inner diameter: 19 mm {0.75 in}


am3uuw0000208

2. As shown in the figure, press-fit the pilot bearing to the position which is **4.0—5.0 mm {0.16—0.19 in}** from the crankshaft end.

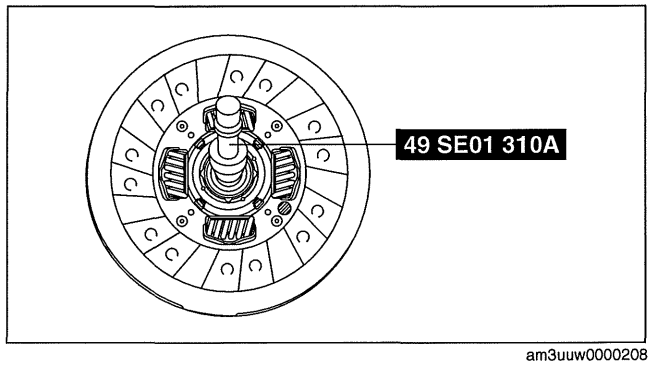


am3uuw0000208

cardiagn.com

Clutch Disc Installation Note

1. Hold the clutch disc position using the **SST**.

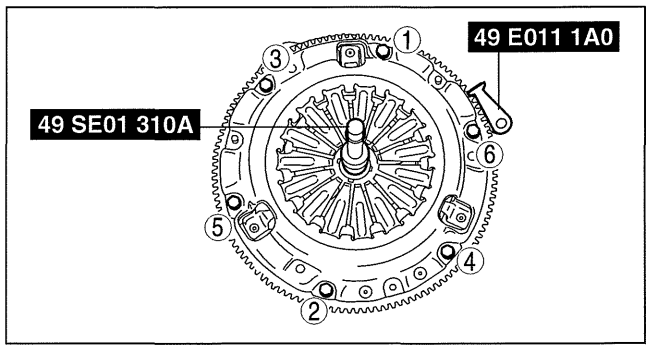


am3uuw0000208

Clutch Cover Installation Note

1. Install the **SSTs**.
2. Tighten the bolts in Min. 2 stages.
   (1) Tighten partially with a crisscross pattern.
   (2) Fully tighten to specified torque with a crisscross pattern.

Tightening torque
25—33 N·m {2.6—3.3 kgf·m, 19—24 ft·lbf}



am3uuw0000208

CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R]

id0510008003m8

Caution

- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**
- **When newly replacing the clutch cover or the clutch disc, replace the clutch cover and the clutch disc as a set.**
- **Due to the automatic adjustment function of clutch cover, if the old cover assembly is reused, if must be reinstalled together with its original clutch disc.**

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the PCM cover No.1. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
4. Disconnect the PCM connector. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the following parts:
   (1) Battery tray and PCM component (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
   (2) Air cleaner component (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (3) Charge air cooler cover (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (4) Charge air cooler (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (5) Fuel pump resistor (See 01-14B-16 FUEL PUMP RESISTOR REMOVAL/INSTALLATION [L3 WITH TC].)
   (6) Front tires (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
   (7) Splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (8) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (9) WU-TWC bracket (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (10)Starter (See 01-19B-2 STARTER REMOVAL/INSTALLATION [L3 WITH TC].)
   (11)Front auto leveling sensor (See 09-18-50 AUTO LEVELING SENSOR REMOVAL/INSTALLATION.)
6. Drain the transaxle oil into a suitable container. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
7. Remove the manual transaxle. (See 05-15C-5 MANUAL TRANSAXLE REMOVAL/INSTALLATION [A26M-R].)
8. Remove in the order indicated in the table.
9. Install in the reverse order of removal.
10. Perform the auto leveling system initialization. (See 09-18-51 AUTO LEVELING SYSTEM INITIALIZATION.)

cardiagn.com

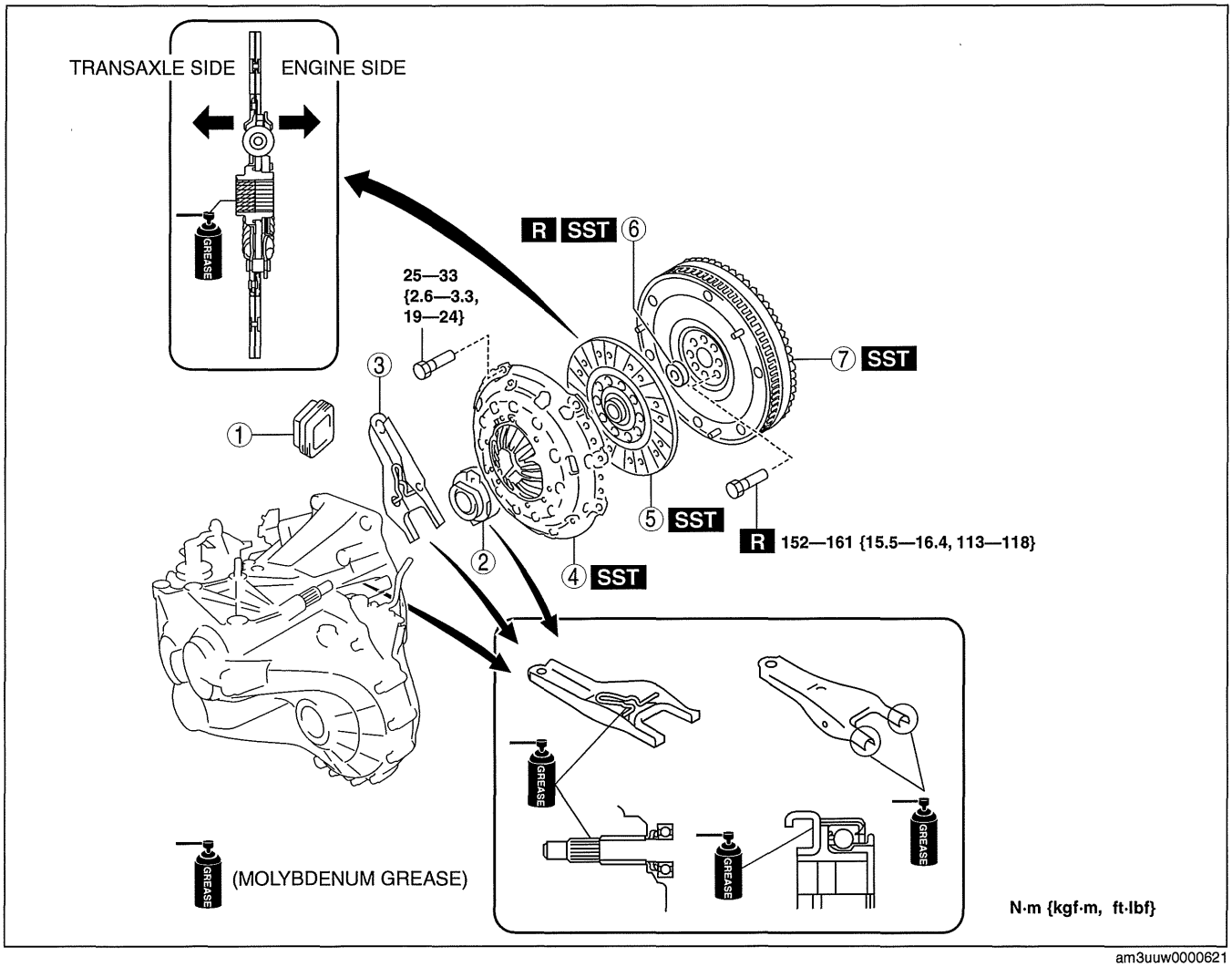
11. Add the specified amount of specified transaxle oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
12. Warm up the engine and transaxle, inspect for oil leakage, and inspect the transaxle operation.

Warning

- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

Note

- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE OVERHAUL' and verify that there is no abnormality. (See 05-15C-13 INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R].)



am3uuw0000621

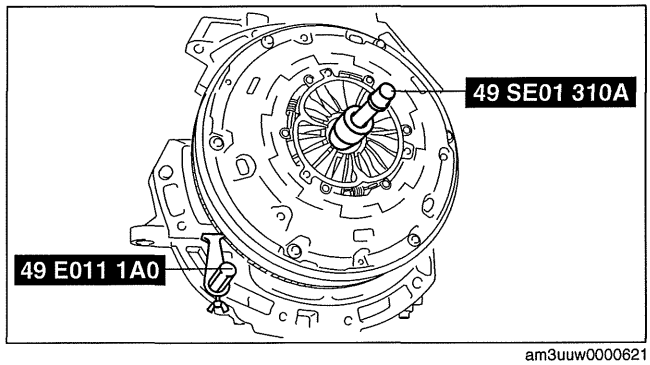
1	Boot
2	Clutch release collar
3	Clutch release fork
4	Clutch cover (See 05-10-22 Clutch Cover and Disc Removal Note.) (See 05-10-24 Clutch Cover Installation Note.)

5	Clutch disc (See 05-10-22 Clutch Cover and Disc Removal Note.) (See 05-10-23 Clutch Disc Installation Note.)
6	Pilot bearing (See 05-10-22 Pilot Bearing Removal Note.) (See 05-10-23 Pilot Bearing Installation Note.)
7	Flywheel (See 05-10-22 Flywheel Removal Note.) (See 05-10-22 Flywheel Installation Note.)

cardiagn.com

Clutch Cover and Disc Removal Note

1. Install the **SSTs**.
2. Loosen each bolt one turn at a time in a crisscross pattern until spring tension is released.
3. Remove the clutch cover and disc.



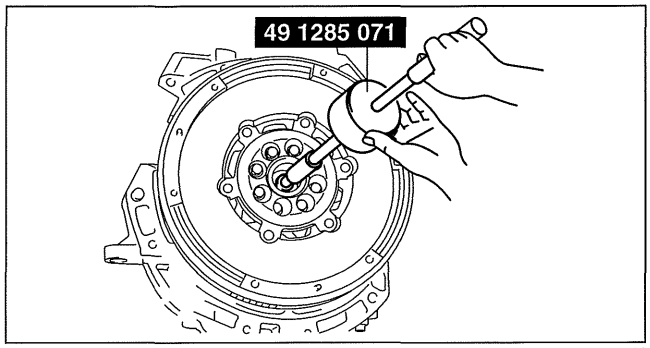
am3uuw0000621

Pilot Bearing Removal Note

Note

- The pilot bearing does not need to be removed unless you are replacing it.

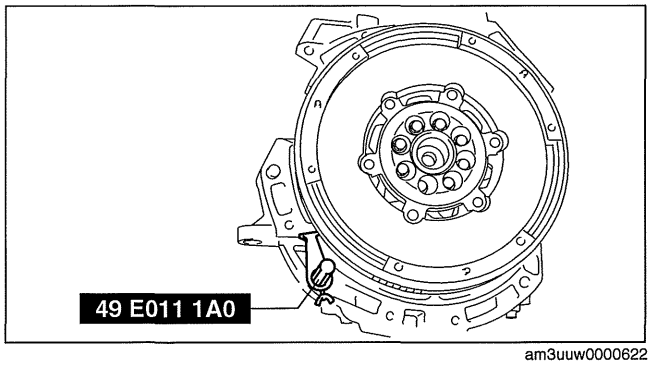
1. Use the **SST** to remove the pilot bearing.



am3uuw0000622

Flywheel Removal Note

1. Hold the flywheel using the **SST**.
2. Remove the bolts evenly and gradually in a crisscross pattern.
3. Remove the flywheel.



am3uuw0000622

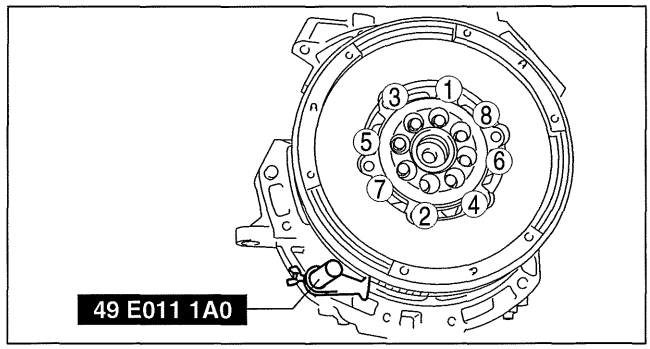
Flywheel Installation Note

1. Clean the crankshaft thread holes.
2. Install the flywheel to the crankshaft.
3. Hand-tighten the new flywheel lock bolts.

cardiagn.com

4. Install the **SST** to the flywheel.
5. Gradually tighten the flywheel lock bolts in a crisscross pattern.

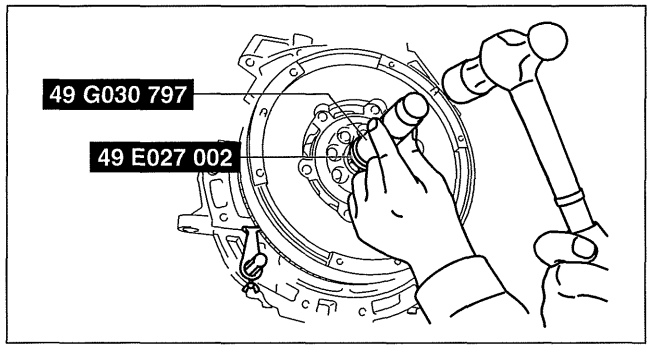
Tightening torque
152—161 N·m {15.5—16.4 kgf·m, 113—118 ft·lbf}



am3uuw0000622

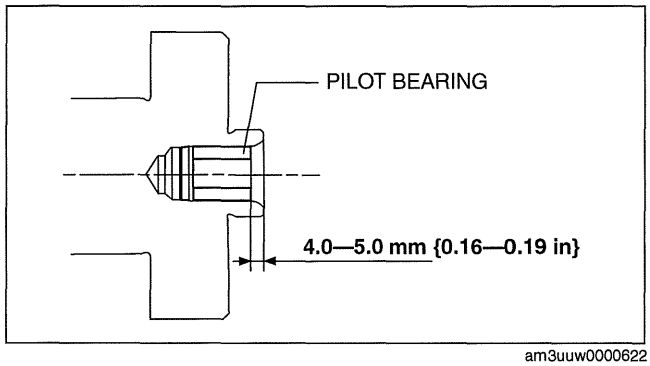
Pilot Bearing Installation Note

1. Use the **SSTs** to install the pilot bearing.



am3uuw0000622

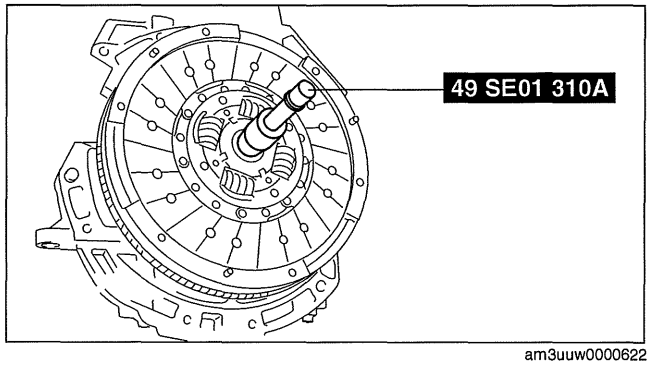
2. As shown in the figure, press-fit the pilot bearing to the position which is **4.0—5.0 mm {0.16—0.19 in}** from the crankshaft end.



am3uuw0000622

Clutch Disc Installation Note

1. Clean the splines of the clutch disc and the main drive gear with a brush.
2. Spread a thin layer of clutch grease on the splines.
3. Hold the clutch disc position using the **SST**.



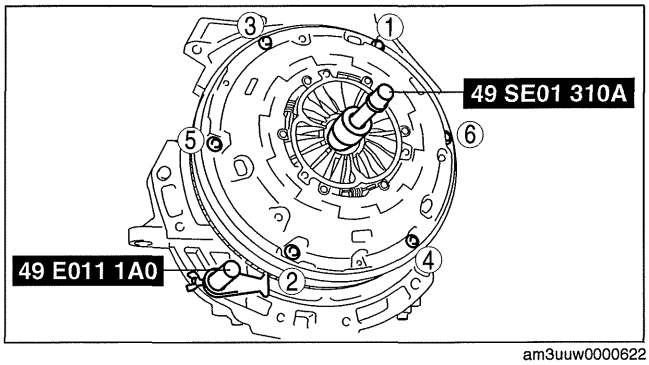
am3uuw0000622

cardiagn.com

Clutch Cover Installation Note

1. Install the **SSTs**.
2. Tighten the bolts in Min. 2 stages.
3. Tighten partially with a crisscross pattern.
4. Fully tighten to specified torque with a crisscross pattern.

Tightening torque
25—33 N·m {2.6—3.3 kgf·m, 19—24 ft·lbf}



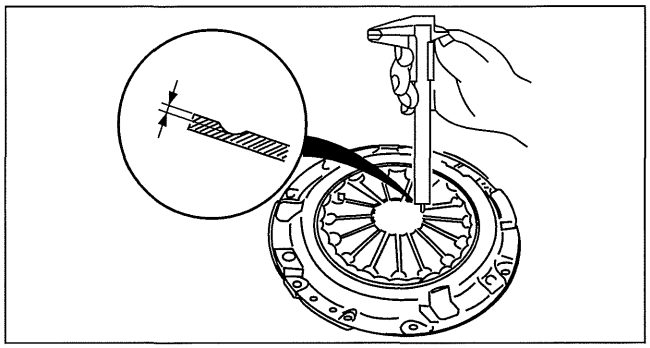
am3uuw0000622

CLUTCH COVER INSPECTION [G35M-R, G66M-R]

id0510008008j1

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:
   (1) Exhaust manifold bracket (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (2) Front splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)
7. Drain the transaxle oil into a suitable container. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)(See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
8. Remove the manual transaxle. (See 05-15A-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R].)(See 05-15B-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G66M-R].)
9. Remove the clutch cover. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)
10. Measure the wear of the diaphragm spring fingers.
    - If it exceeds the maximum specification, replace the clutch cover.

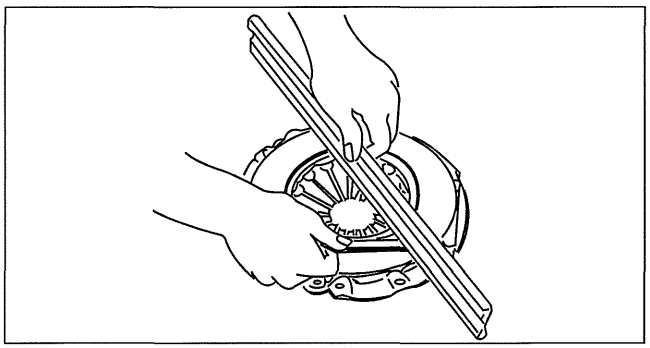
Clutch cover diaphragm spring fingers maximum depth
0.6 mm {0.02 in}



am3uuw0000209

11. Measure the flatness of the pressure plate with a straight edge and a feeler gauge.
    - If it exceeds the maximum specification, replace the clutch cover. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)

Maximum clearance of flatness of the pressure plate
0.5 mm {0.02 in}

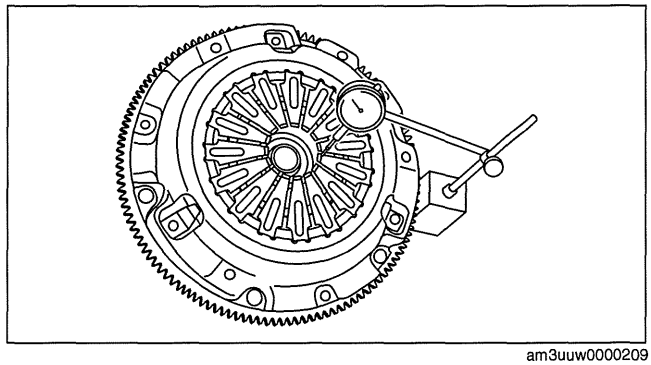


am3uuw0000209

cardiagn.com

12. When checking the diaphragm spring fingers, mount a dial gauge on the cylinder block.
13. Rotate the flywheel and check for misaligned diaphragm spring fingers.
    - If it exceeds the maximum specification, replace the clutch cover. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)

Clutch cover diaphragm spring fingers maximum height difference
1.0 mm {0.039 in}



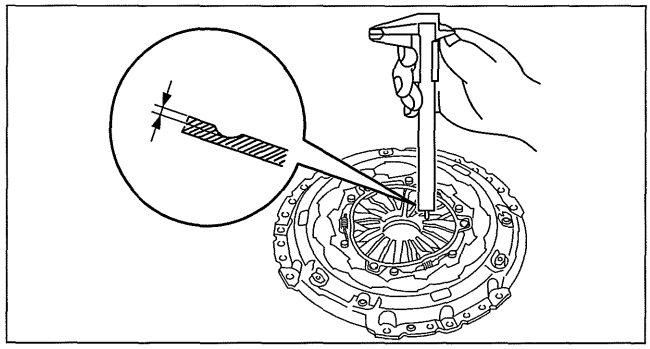
am3uuw0000209

CLUTCH COVER INSPECTION [A26M-R]

id0510008008m8

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the PCM cover No.1. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
4. Disconnect the PCM connector. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the following parts:
   (1) Battery tray and PCM component (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
   (2) Air cleaner component (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (3) Charge air cooler cover (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (4) Charge air cooler (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (5) Fuel pump resistor (See 01-14B-16 FUEL PUMP RESISTOR REMOVAL/INSTALLATION [L3 WITH TC].)
   (6) Front tires (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
   (7) Splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (8) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (9) WU-TWC bracket (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (10)Starter (See 01-19B-2 STARTER REMOVAL/INSTALLATION [L3 WITH TC].)
   (11)Front auto leveling sensor (See 09-18-50 AUTO LEVELING SENSOR REMOVAL/INSTALLATION.)
6. Drain the transaxle oil into a suitable container. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
7. Remove the manual transaxle. (See 05-15C-5 MANUAL TRANSAXLE REMOVAL/INSTALLATION [A26M-R].)
8. Remove the clutch cover. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
9. Measure the wear of the diaphragm spring fingers.
   - If it exceeds the maximum specification, replace the clutch cover. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

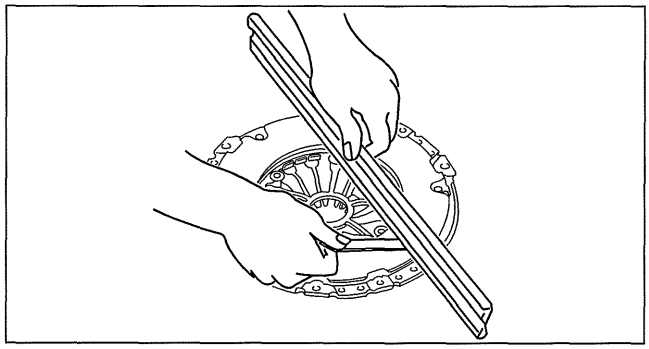
Clutch cover diaphragm spring fingers maximum depth
0.6 mm {0.02 in} max.



am3zzw0000621

10. Measure the flatness of the pressure plate with a straight edge and a feeler gauge.
    - If it exceeds the maximum specification, replace the clutch cover. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

Maximum clearance of flatness of the pressure plate
0.3 mm {0.01 in} max.

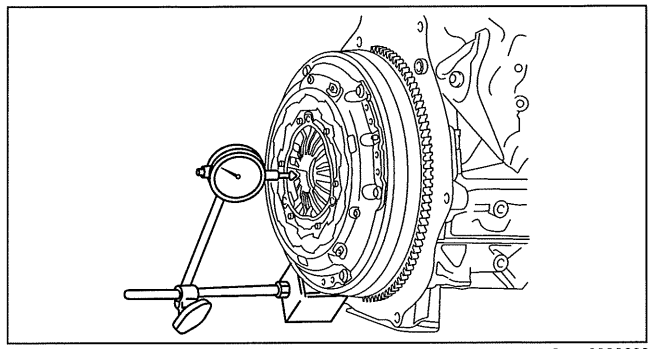


am3zzw0000622

cardiagn.com

11. When checking the diaphragm spring fingers, mount a dial gauge on the cylinder block.
12. Rotate the flywheel and check for misaligned diaphragm spring fingers.
    - If it exceeds the maximum specification, replace the clutch cover. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

Clutch cover diaphragm spring fingers maximum misalignment
1.0 mm {0.039 in} max.


am3zzw0000622

13. Install in the reverse order of removal.
14. Perform the auto leveling system initialization. (See 09-18-51 AUTO LEVELING SYSTEM INITIALIZATION.)
15. Add the specified amount of specified transaxle oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
16. Warm up the engine and transaxle, inspect for oil leakage, and inspect the transaxle operation.

Warning
- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

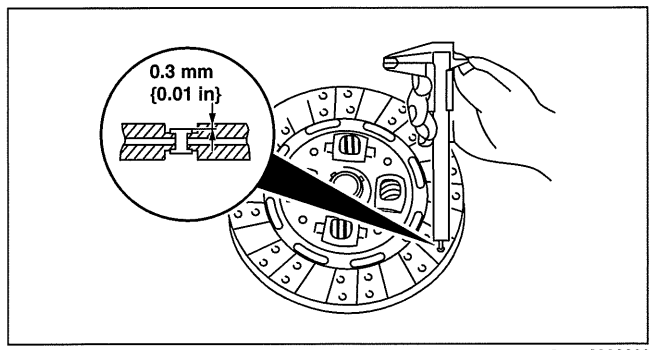
Note
- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE OVERHAUL' and verify that there is no abnormality. (See 05-15C-13 INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R].)

CLUTCH DISC INSPECTION [G35M-R, G66M-R]

id0510008009j1

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:
   (1) Exhaust manifold bracket (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (2) Front splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)
7. Drain the transaxle oil into a suitable container. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)(See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
8. Remove the manual transaxle. (See 05-15A-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R].)(See 05-15B-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G66M-R].)
9. Remove the clutch disc. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)
10. Inspect the lining surface for discoloration and grease adhesion.
11. Inspect the torsion spring for weakness and the rivet for looseness.
12. Using a vernier caliper, measure the depth between the lining surface and the rivet head.
    - If it is less than the minimum specification, replace the clutch disc.

Clutch disc minimum depth
0.3 mm {0.01 in}



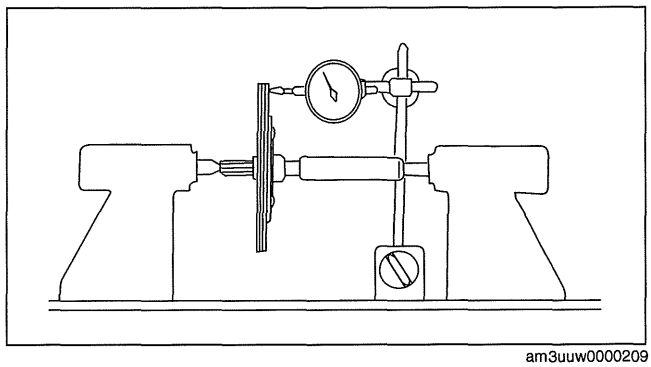
am3uuw0000209

cardiagn.com

13. Measure the clutch disc runout using a dial gauge.
    - If it exceeds the maximum specification, replace the clutch disc.

    Clutch disc maximum runout
    0.7 mm {0.03 in}

14. Install the clutch disc.



am3uuw0000209

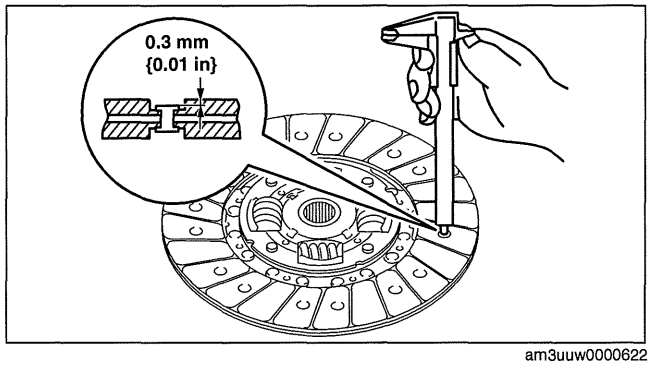
CLUTCH DISC INSPECTION [A26M-R]

id0510008009m8

Caution
- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the PCM cover No.1. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
4. Disconnect the PCM connector. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the following parts:
   (1) Battery tray and PCM component (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
   (2) Air cleaner component (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (3) Charge air cooler cover (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (4) Charge air cooler (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (5) Fuel pump resistor (See 01-14B-16 FUEL PUMP RESISTOR REMOVAL/INSTALLATION [L3 WITH TC].)
   (6) Front tires (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
   (7) Splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (8) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (9) WU-TWC bracket (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (10)Starter (See 01-19B-2 STARTER REMOVAL/INSTALLATION [L3 WITH TC].)
   (11)Front auto leveling sensor (See 09-18-50 AUTO LEVELING SENSOR REMOVAL/INSTALLATION.)
6. Drain the transaxle oil into a suitable container. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
7. Remove the manual transaxle. (See 05-15C-5 MANUAL TRANSAXLE REMOVAL/INSTALLATION [A26M-R].)
8. Remove the clutch cover. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
9. Remove the clutch disk. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
10. Using vernier calipers, measure the thickness of the lining at a rivet head on both sides.
    - If it less than the minimum specification, replace the clutch disc. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

    Minimum clutch disc thickness
    0.3 mm {0.01 in}

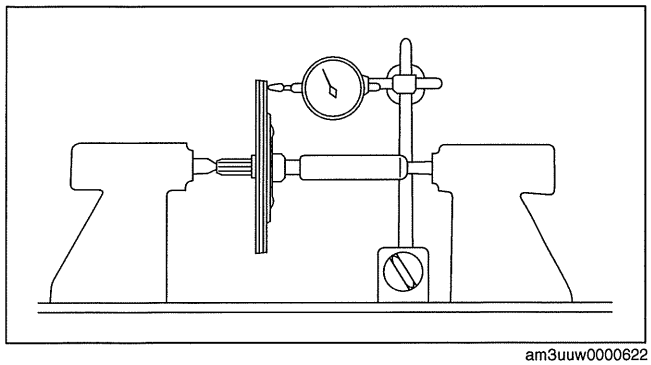


am3uuw0000622

cardiagn.com

11. Measure the clutch disc runout using a dial gauge.
    - If it exceeds the maximum specification, replace the clutch disc. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

    Maximum clutch disc runout
    0.7 mm {0.03 in}


am3uuw0000622

12. Install in the reverse order of removal.
13. Perform the auto leveling system initialization. (See 09-18-51 AUTO LEVELING SYSTEM INITIALIZATION.)
14. Add the specified amount of specified transaxle oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
15. Warm up the engine and transaxle, inspect for oil leakage, and inspect the transaxle operation.

Warning
- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

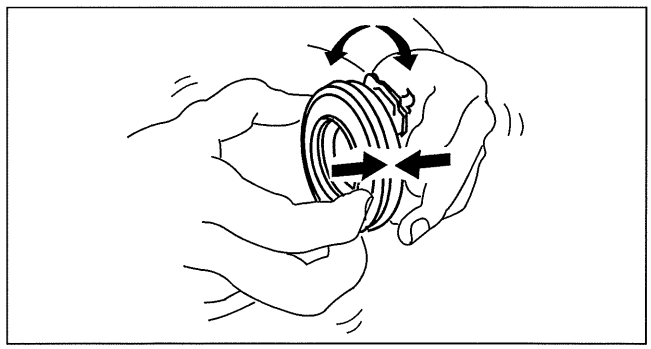
Note
- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE OVERHAUL' and verify that there is no abnormality. (See 05-15C-13 INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R].)

CLUTCH RELEASE COLLAR INSPECTION [G35M-R, G66M-R]

id0510008010j1

Caution
- **Do not clean the clutch release collar with cleaning fluids or a steam cleaner because it is filled with grease.**

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:
   (1) Exhaust manifold bracket (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (2) Front splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)
7. Drain the transaxle oil into a suitable container. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)(See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
8. Remove the manual transaxle. (See 05-15A-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R].)(See 05-15B-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G66M-R].)
9. Remove the clutch release collar. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)
10. Turn the collar while applying force in the axial direction, and inspect for sticking, excessive resistance, and an abnormal noise.
    - If there is any malfunction, replace the clutch release collar.
11. Install the clutch release collar. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)


am3uuw0000209

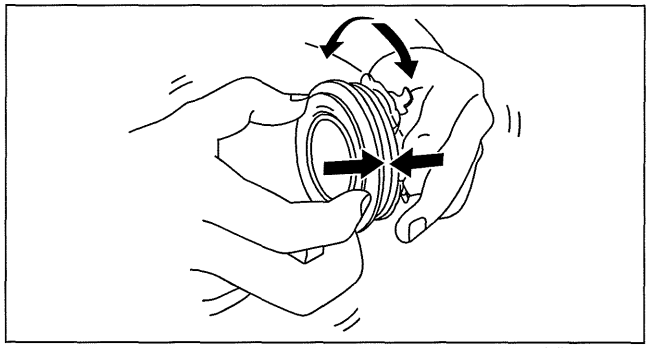
cardiagn.com

CLUTCH RELEASE COLLAR INSPECTION [A26M-R]

id0510008010m8

Caution
- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**
- **Cleaning the clutch release collar with cleaning fluids or a steam cleaner can wash the grease out of the sealed bearing.**

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the PCM cover No.1. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
4. Disconnect the PCM connector. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the following parts:
   (1) Battery tray and PCM component (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
   (2) Air cleaner component (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (3) Charge air cooler cover (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (4) Charge air cooler (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (5) Fuel pump resistor (See 01-14B-16 FUEL PUMP RESISTOR REMOVAL/INSTALLATION [L3 WITH TC].)
   (6) Front tires (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
   (7) Splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (8) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (9) WU-TWC bracket (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (10)Starter (See 01-19B-2 STARTER REMOVAL/INSTALLATION [L3 WITH TC].)
   (11)Front auto leveling sensor (See 09-18-50 AUTO LEVELING SENSOR REMOVAL/INSTALLATION.)
6. Drain the transaxle oil into a suitable container. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
7. Remove the manual transaxle. (See 05-15C-5 MANUAL TRANSAXLE REMOVAL/INSTALLATION [A26M-R].)
8. Remove the clutch release coller. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
9. Turn the collar while applying force in the axial direction.
   - If the collar sticks or has excessive resistance, replace the clutch release collar. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
10. Install the clutch release collar.
11. Install in the reverse order of removal.
12. Perform the auto leveling system initialization. (See 09-18-51 AUTO LEVELING SYSTEM INITIALIZATION.)
13. Add the specified amount of specified transaxle oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
14. Warm up the engine and transaxle, inspect for oil leakage, and inspect the transaxle operation.



adejjw00001005

Warning
- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

Note
- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE OVERHAUL' and verify that there is no abnormality. (See 05-15C-13 INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R].)

PILOT BEARING INSPECTION [G35M-R, G66M-R]

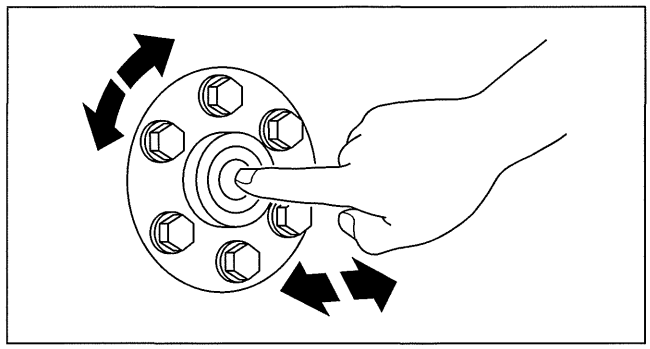
id0510008002j1

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:

cardiagn.com

(1) Exhaust manifold bracket (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
(2) Front splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
(3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
(4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)

7. Drain the transaxle oil into a suitable container. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)(See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
8. Remove the manual transaxle. (See 05-15A-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R].)(See 05-15B-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G66M-R].)
9. Without removing the pilot bearing, turn the bearing while applying force in the axial direction.
   - If there is any malfunction, replace the pilot bearing. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)



am3uuw0000207

PILOT BEARING INSPECTION [A26M-R]

id0510008002m8

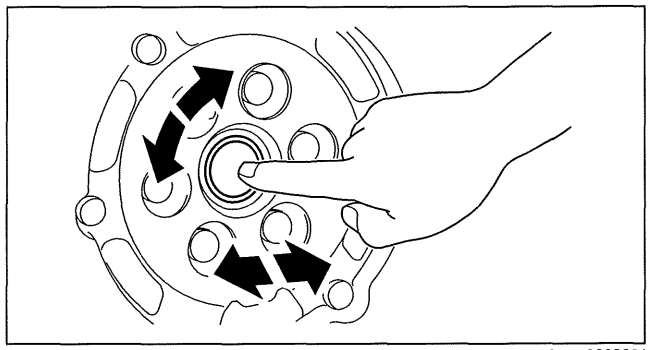
Caution
- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**

Note
- Perform the pilot bearing inspection with the crankshaft or flywheel installed.

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the PCM cover No.1. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
4. Disconnect the PCM connector. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the following parts:
   (1) Battery tray and PCM component (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
   (2) Air cleaner component (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (3) Charge air cooler cover (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (4) Charge air cooler (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (5) Fuel pump resistor (See 01-14B-16 FUEL PUMP RESISTOR REMOVAL/INSTALLATION [L3 WITH TC].)
   (6) Front tires (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
   (7) Splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (8) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (9) WU-TWC bracket (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (10)Starter (See 01-19B-2 STARTER REMOVAL/INSTALLATION [L3 WITH TC].)
   (11)Front auto leveling sensor (See 09-18-50 AUTO LEVELING SENSOR REMOVAL/INSTALLATION.)
6. Drain the transaxle oil into a suitable container. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
7. Remove the manual transaxle. (See 05-15C-5 MANUAL TRANSAXLE REMOVAL/INSTALLATION [A26M-R].)
8. Remove the clutch cover. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
9. Remove the clutch disk. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

cardiagn.com

10. Inspect the rotation condition of the pilot bearing for damage or wear.
    - If there is any malfunction, replace the pilot bearing. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
11. Install in the reverse order of removal.
12. Perform the auto leveling system initialization. (See 09-18-51 AUTO LEVELING SYSTEM INITIALIZATION.)
13. Add the specified amount of specified transaxle oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
14. Warm up the engine and transaxle, inspect for oil leakage, and inspect the transaxle operation.


am3uuw0000621

Warning
- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

Note
- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE OVERHAUL' and verify that there is no abnormality. (See 05-15C-13 INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R].)

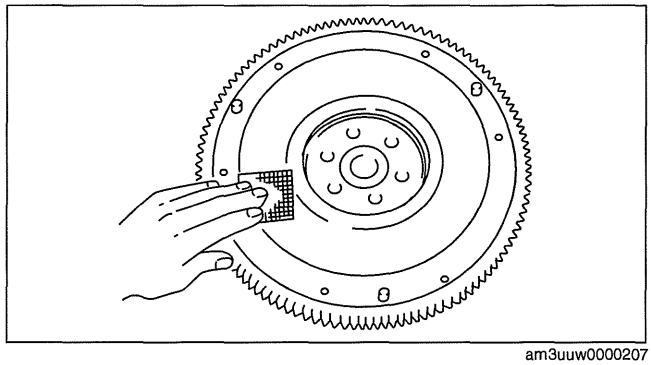
FLYWHEEL INSPECTION [G35M-R, G66M-R]

id0510008001j1

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:
   (1) Exhaust manifold bracket (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (2) Front splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)
7. Drain the transaxle oil into a suitable container. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)(See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
8. Remove the manual transaxle. (See 05-15A-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R].)(See 05-15B-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G66M-R].)
9. Remove the flywheel. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)

Note
- Correct slight scratches and discoloration using sandpaper.
- Inspect the runout of the surface that contacts the clutch disc with the flywheel installed to the crankshaft.

10. Inspect the surface that contacts the clutch disc for scratches, nicks, and discoloration.
11. Inspect the ring gear teeth for damage and wear.


am3uuw0000207

cardiagn.com

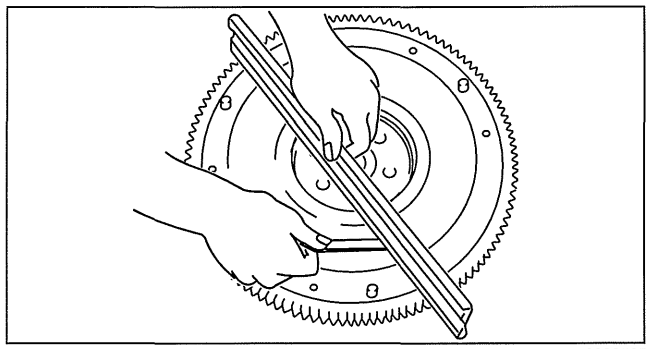
12. Measure the flatness of the flywheel with a straight edge and a feeler gauge.
    - If there is any malfunction, replace the flywheel. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)

    Maximum clearance of flatness of the flywheel
    0.06 mm {0.002 in}

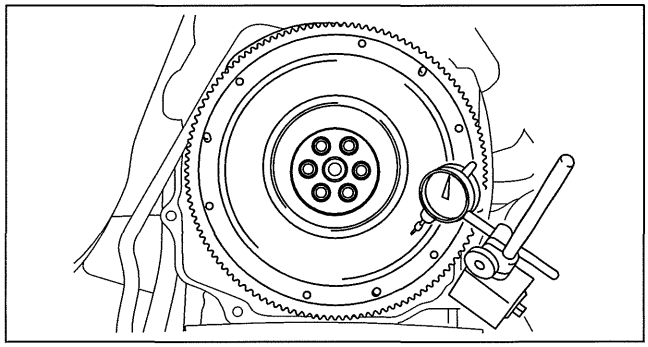
13. Install the flywheel. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)

14. Measure the runout of the surface that contacts the clutch disc using a dial gauge.
    - If it exceeds the maximum specification, replace the flywheel. (See 05-10-16 CLUTCH UNIT REMOVAL/INSTALLATION [G35M-R, G66M-R].)

    Flywheel maximum runout
    0.1 mm {0.004 in}



am3uuw0000525



am3uuw0000207

FLYWHEEL INSPECTION [A26M-R]

id0510008001m8

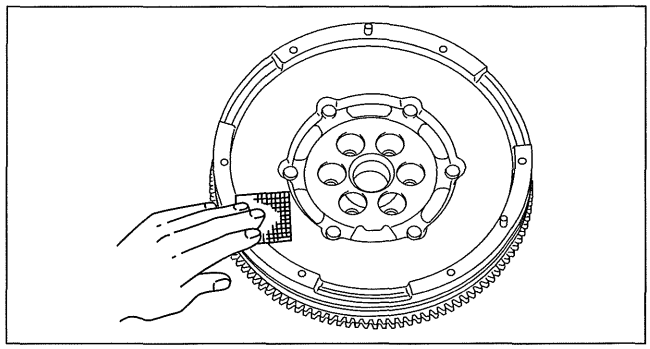
Caution
- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**
- **Do not rework the dual-mass flywheel if it is distorted.**
- **Do not clean the dual-mass flywheel with any kind of fluid. Clean the dual-mass flywheel with a dry cloth only.**
- **Do not clean the gap between the primary and secondary mass. Only clean the bolt connection surface and the clutch surface.**

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the PCM cover No.1. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
4. Disconnect the PCM connector. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the following parts:
   (1) Battery tray and PCM component (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
   (2) Air cleaner component (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (3) Charge air cooler cover (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (4) Charge air cooler (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (5) Fuel pump resistor (See 01-14B-16 FUEL PUMP RESISTOR REMOVAL/INSTALLATION [L3 WITH TC].)
   (6) Front tires (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
   (7) Splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (8) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (9) WU-TWC bracket (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (10) Starter (See 01-19B-2 STARTER REMOVAL/INSTALLATION [L3 WITH TC].)
   (11) Front auto leveling sensor (See 09-18-50 AUTO LEVELING SENSOR REMOVAL/INSTALLATION.)
6. Drain the transaxle oil into a suitable container. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
7. Remove the manual transaxle. (See 05-15C-5 MANUAL TRANSAXLE REMOVAL/INSTALLATION [A26M-R].)
8. Remove the clutch cover. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
9. Remove the clutch disk. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

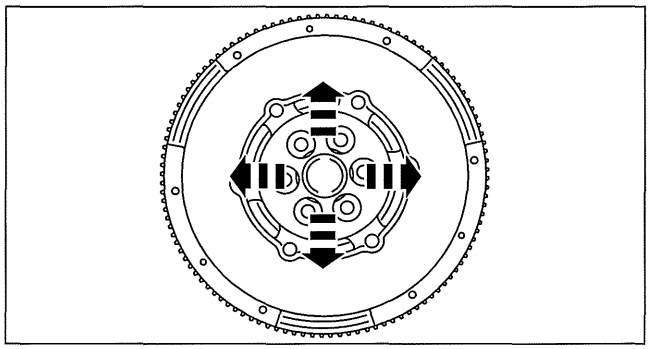
cardiagn.com

10. Remove the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

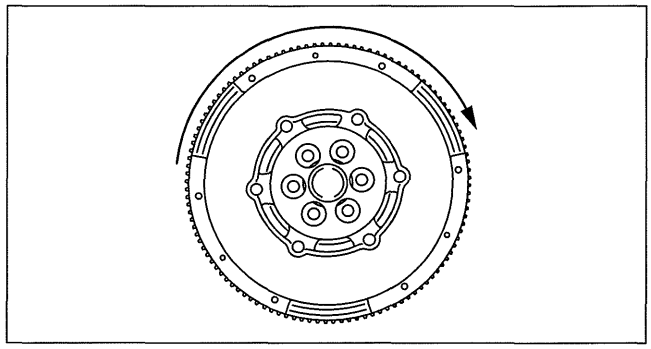
Note
- Correct slight scratches and discoloration using sandpaper.
- Inspect the runout of the surface that contacts the clutch disc with the dual-mass flywheel installed to the crankshaft.


am3zzw0000839

11. Inspect the dual-mass flywheel.
    — Cracks
    — Worn ring gear teeth
    — Chipped or cracked ring gear teeth
    — Surface that contacts the clutch disc for scratches, nicks, and discoloration.
    - If there is any malfunction, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
12. Verify that the center of the dual-mass flywheel does not move.
    (1) Rotate the dual-mass flywheel or attempt to move it up and down, and left and right to verify that the center of the dual-mass flywheel does not move.
        - If there is any movement as indicated by the arrows in the figure, replace the dual-mass flywheel with a new one. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)


am3zzw0000839

13. Verify that the secondary mass rotates by 15 teeth or more.
    - If it rotates by 15 teeth or more, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

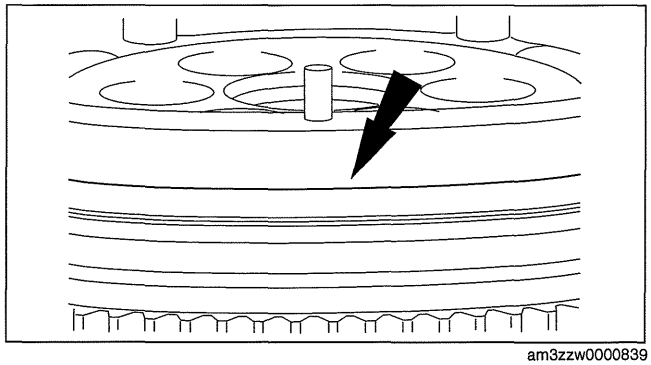

am3zzw0000839

14. Inspect for locating dowels touching the primary mass of the dual-mass flywheel.

Caution
- **Make sure that the three locating dowels are installed.**

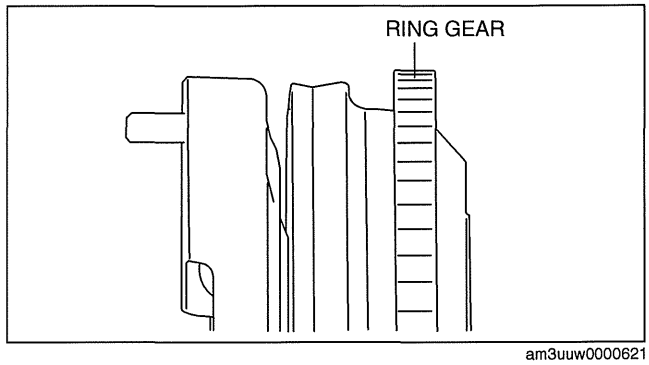
- If the locating dowels are touching the primary mass of the dual-mass flywheel, replace the dual-mass flywheel with a new one.

15. Visually inspect the secondary mass.
    - If there is any damage, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)


am3zzw0000839

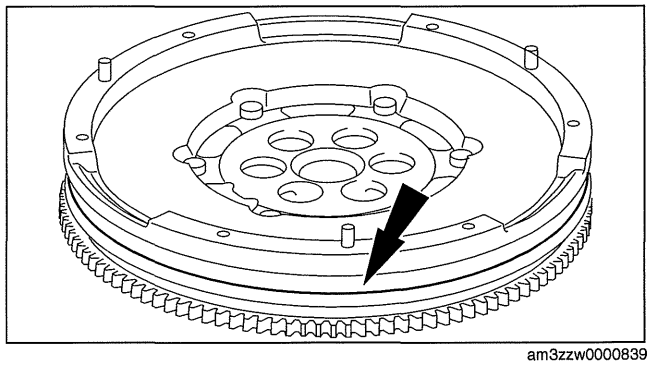
cardiagn.com

16. Visually inspect the ring gear on the dual-mass flywheel.
    - If there is any damage, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)



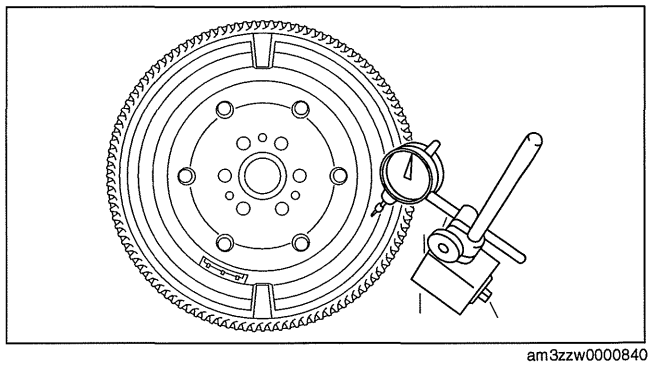
am3uuw0000621

17. Inspect the welded area of the dual-mass flywheel for grease leakage.
    - If there is grease leakage, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

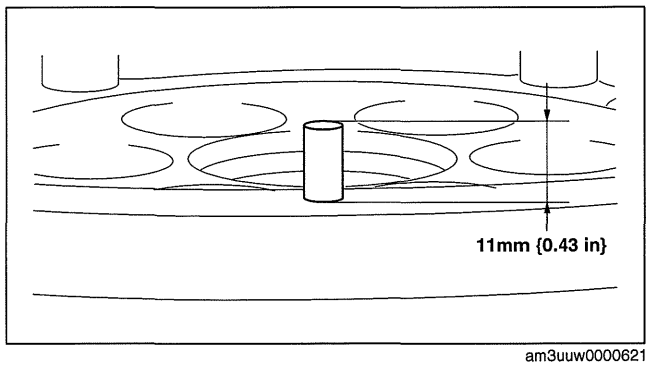

am3zzw0000839

18. Inspect the dual-mass flywheel runout.
    - If it is more than the maximum specification, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)

    Flywheel maximum runout [A26M-R]
    1.5 mm {0.059 in}

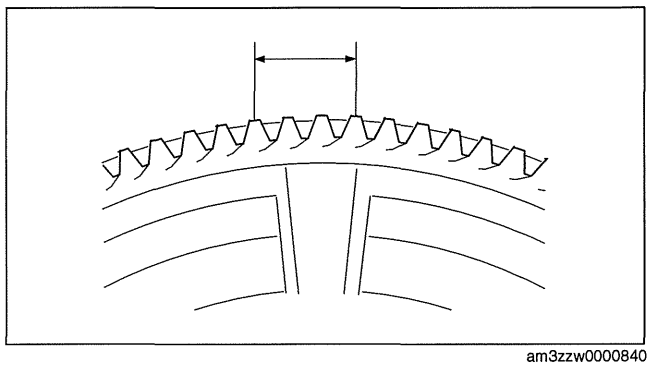

am3zzw0000840

19. Inspect the dual-mass flywheel for the amount of guide pin projection.
    - If not within the specification, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)



am3uuw0000621

20. Rotate the secondary mass left and right and verify that it rotates within a range of three teeth without resistance.
    - If there is any malfunction, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
21. Inspect the dual-mass flywheel for cracks.
    - If there are cracks, replace the dual-mass flywheel. (See 05-10-20 CLUTCH UNIT REMOVAL/INSTALLATION [A26M-R].)
22. Install in the reverse order of removal.


am3zzw0000840

cardiagn.com

23. Perform the auto leveling system initialization. (See 09-18-51 AUTO LEVELING SYSTEM INITIALIZATION.)
24. Add the specified amount of specified transaxle oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
25. Warm up the engine and transaxle, inspect for oil leakage, and inspect the transaxle operation.

Warning

- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

Note

- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE OVERHAUL' and verify that there is no abnormality. (See 05-15C-13 INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R].)

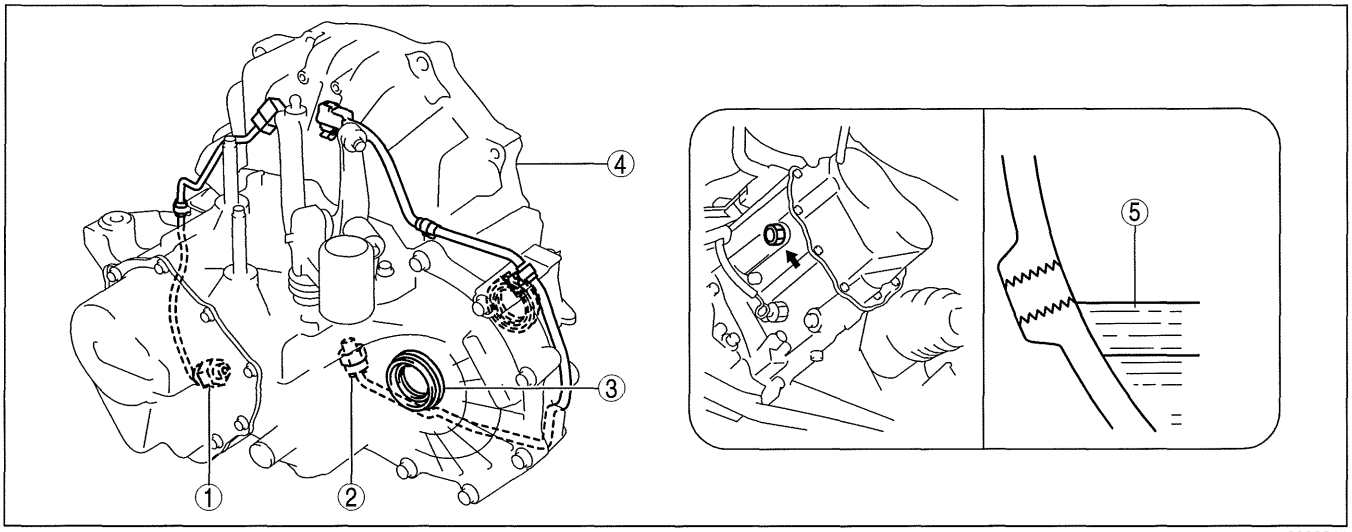
cardiagn.com

cardiagn.com

05-15A MANUAL TRANSAXLE [G35M-R]

MANUAL TRANSAXLE LOCATION INDEX [G35M-R]

id0515b1800500



am3uuw0000211

1	Back-up light switch (See 05-15A-2 BACK-UP LIGHT SWITCH REMOVAL/INSTALLATION [G35M-R].) (See 09-18-55 BACK-UP LIGHT SWITCH INSPECTION.)
2	Neutral switch (See 05-15A-1 NEUTRAL SWITCH REMOVAL/INSTALLATION [G35M-R].) (See 01-40A-23 NEUTRAL SWITCH INSPECTION [LF, L5].)

3	Oil seal (differential) (See 05-15A-3 OIL SEAL (DIFFERENTIAL) REPLACEMENT [G35M-R])
4	Manual transaxle (See 05-15A-4 MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R])
5	Transaxle oil (See 05-15A-2 TRANSAXLE OIL INSPECTION [G35M-R]) (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R])

NEUTRAL SWITCH REMOVAL/INSTALLATION [G35M-R]

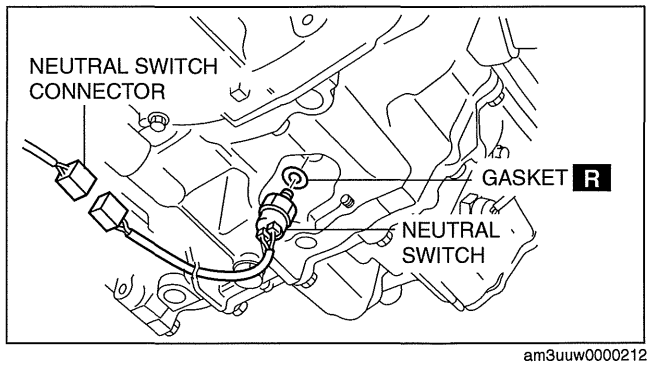
id0515b1800700

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
5. Drain the oil from the transaxle. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)

cardiagn.com

6. Disconnect the neutral switch connector and remove the neutral switch.
7. Install the neutral switch (with a new gasket) to the transaxle case.

Tightening torque
20—29 N·m {2.1—2.9 kgf·m, 15—21 ft·lbf}



am3uuw0000212

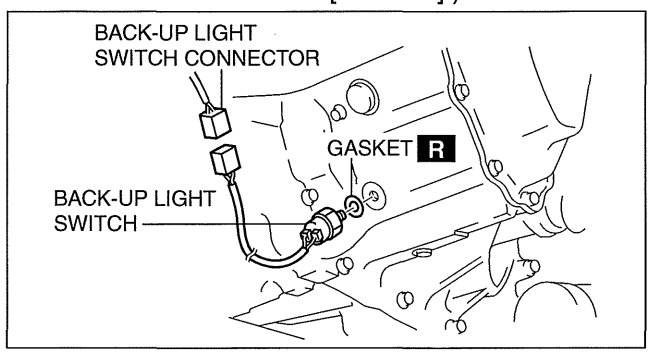
8. Install the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
9. Install the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
10. Add the specified amount and type of oil. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)
11. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

BACK-UP LIGHT SWITCH REMOVAL/INSTALLATION [G35M-R]

id0515b1800800

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
5. Drain the oil from the transaxle. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)
6. Disconnect the back-up light switch connector and remove the back-up light switch.
7. Install the back-up light switch (with a new gasket) to the transaxle case.

Tightening torque
20—29 N·m {2.1—2.9 kgf·m, 15—21 ft·lbf}



am3uuw0000212

8. Install the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
9. Install the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
10. Add the specified amount and type of oil. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)
11. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

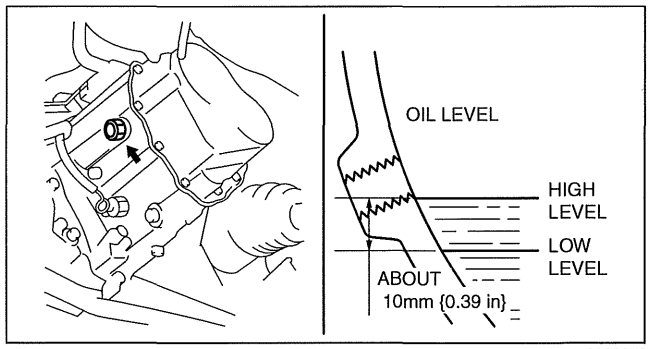
TRANSAXLE OIL INSPECTION [G35M-R]

id0515b1800000

1. Park the vehicle on level ground.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Remove the oil level plug and washer.
4. Verify that the oil is near the brim of the plug port.
   - If the oil level is lower than the low level, add the specified amount and type of oil through the oil level plug hole.

Manual transaxle oil Grade
API GL-4

Manual transaxle oil Viscosity
SAE 75W-80



am3uuw0000072

cardiagn.com

5. Install a new washer and the oil level plug.

Tightening torque
39—59 N·m {4.0—6.0 kgf·m, 29—43 ft·lbf}

6. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

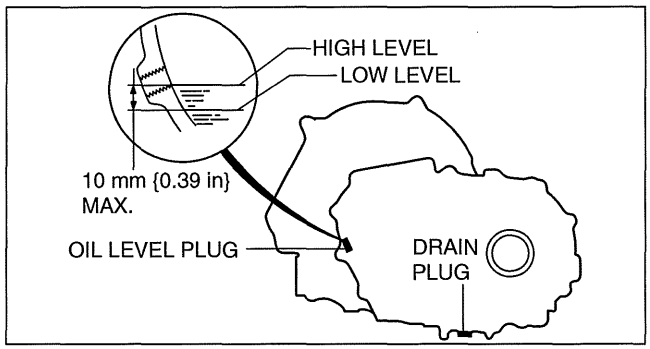
TRANSAXLE OIL REPLACEMENT [G35M-R]

id0515b1800100

1. Park the vehicle on level ground.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Remove the drain plug with the washer.
4. Drain the oil into a suitable container.
5. Install a new washer and the drain plug.

Tightening torque
39—59 N·m {4.0—6.0 kgf·m, 29—43 ft·lbf}

6. Remove the oil level plug with washer and add the specified amount and type of oil through the oil level plug hole until the level reaches the bottom of the oil level plug hole.



am6zzw0000052

Manual transaxle oil Grade
API GL-4

Manual transaxle oil Viscosity
SAE 75W-80

Manual transaxle oil capacity (approx. quantity)
2.77 L {2.93 US qt, 2.44 Imp qt}

7. Install a new washer and the oil level plug.

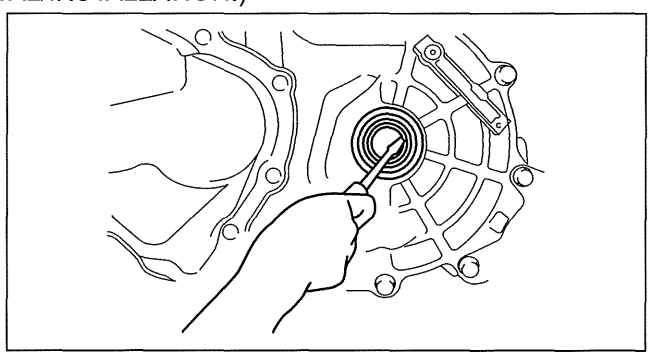
Tightening torque
39—59 N·m {4.0—6.0 kgf·m, 29—43 ft·lbf}

8. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

OIL SEAL (DIFFERENTIAL) REPLACEMENT [G35M-R]

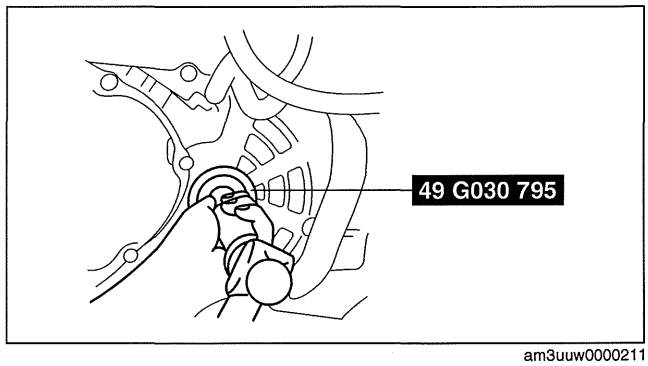
id0515b1800200

1. On level ground, jack up the vehicle and support it evenly on safety stands.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Drain the oil from the transaxle. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)
4. Remove the front splash shield. (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
5. Separate the drive shaft and joint shaft from the transaxle. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.) (See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)
6. Remove the oil seals using a screwdriver.


am3uuw0000072

cardiagn.com

7. Using the **SST** and a hammer, tap each new oil seal in evenly until the **SST** contacts the transaxle case.
8. Coat the lip of each oil seal with transaxle oil.
9. Insert the drive shaft and joint shaft to the transaxle. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.) (See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)
10. Install the front splash shield. (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
11. Add the specified amount and type of oil. (See 05-15A-3 TRANSAXLE OIL REPLACEMENT [G35M-R].)
12. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)



am3uuw0000211

MANUAL TRANSAXLE REMOVAL/INSTALLATION [G35M-R]

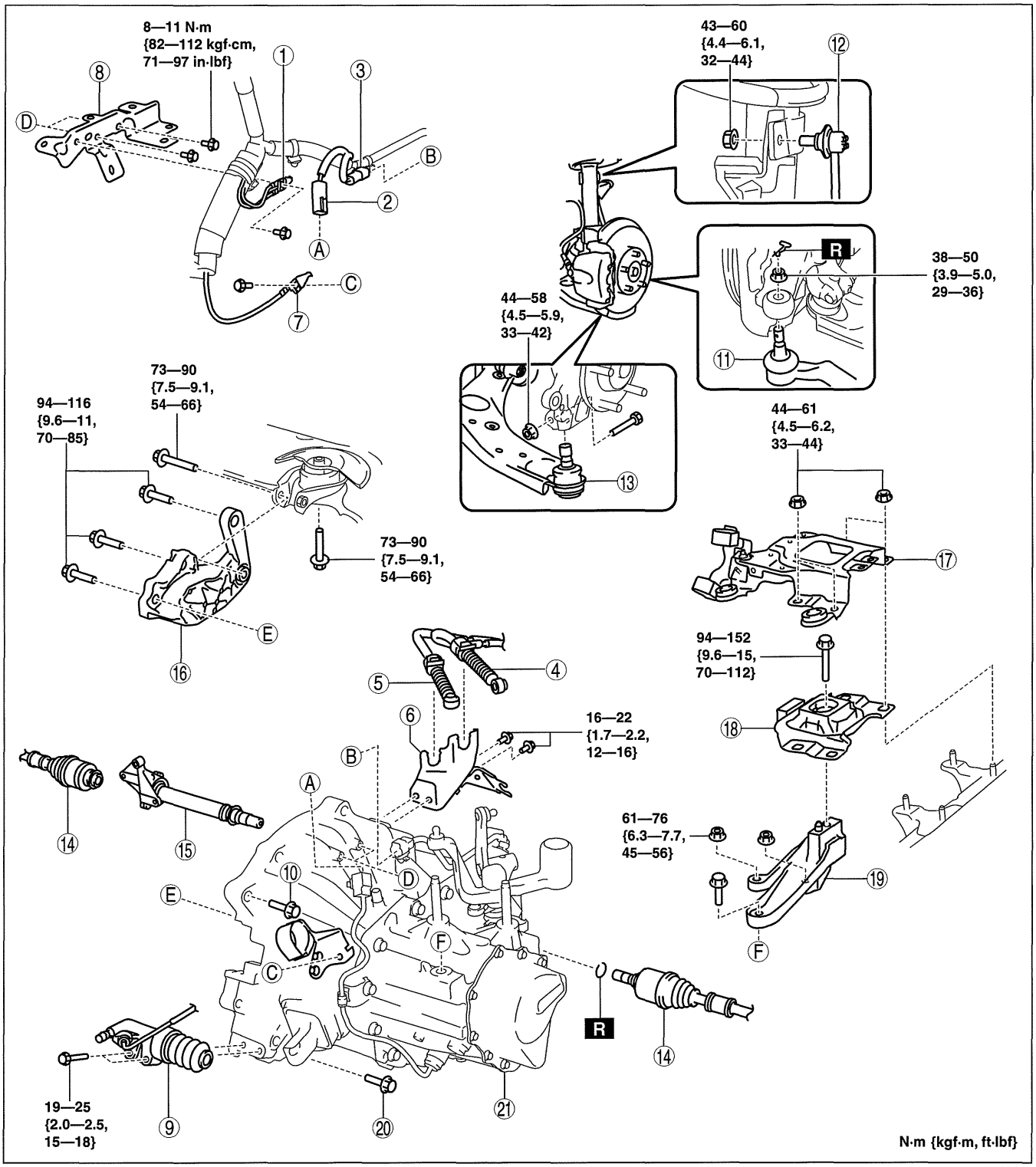
id0515b1800600

Caution
- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:
   (1) Exhaust manifold bracket (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (2) Front splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)
7. Drain the transaxle oil into a suitable container.
8. Remove in the order indicated in the table.
9. Install in the reverse order of removal.
10. Add the specified amount of specified transaxle oil.

Note
- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE INSTALLATION' and verify that there is no abnormality. (See 05-15A-10 INSPECTION AFTER TRANSAXLE INSTALLATION [G35M-R].)

cardiagn.com



am3uuw0000211

1	Ground
2	Back-up light switch connector
3	Neutral switch connector
4	Select cable (See 05-15A-6 Shift Cable And Select Cable Removal Note.)
5	Shift cable (See 05-15A-6 Shift Cable And Select Cable Removal Note.)
6	Cable bracket

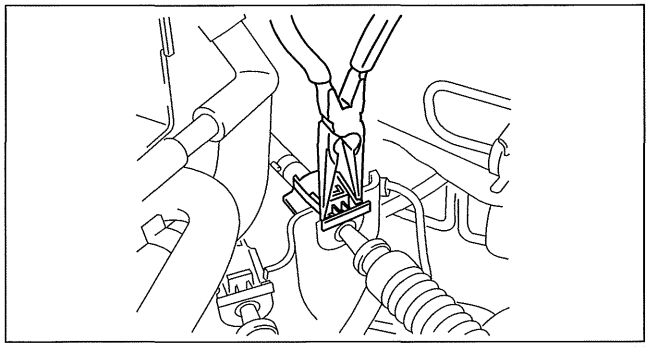
7	Ground
8	Harness bracket
9	Clutch release cylinder
10	Transaxle mounting bolt (upper side)
11	Tie-rod end ball joint (See 02-13-13 FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
12	Stabilizer control link
13	Lower arm ball joint

cardiagn.com

14	Drive shaft (See 03-13-3 DRIVE SHAFT REMOVAL/ INSTALLATION.)
15	Joint shaft (See 03-13-13 JOINT SHAFT REMOVAL/ INSTALLATION.)
16	No.1 engine mount bracket (See 05-15A-8 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
17	Battery bracket
18	No.4 engine mount rubber (See 05-15A-6 No.4 Engine Mount Removal Note.) (See 05-15A-8 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
19	No.4 engine mount bracket (See 05-15A-6 No.4 Engine Mount Removal Note.) (See 05-15A-8 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
20	Transaxle mounting bolt (lower side)
21	Manual transaxle (See 05-15A-7 Manual Transaxle Removal Note.) (See 05-15A-8 Manual Transaxle Installation Note.)

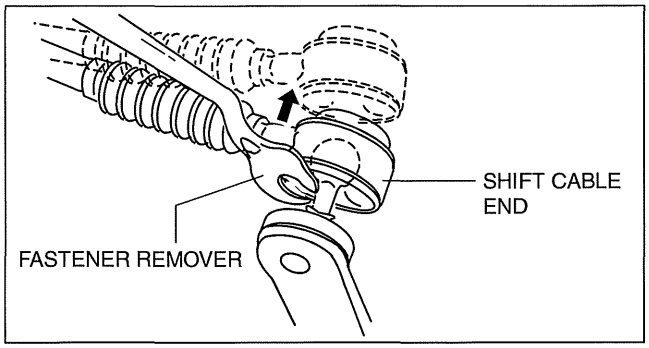
Shift Cable And Select Cable Removal Note

1. Remove the shift and selector cable outer ends as shown in the figure.



am3uuw0000211

2. Remove the both shift cable end and select cable end using a fastener remover.



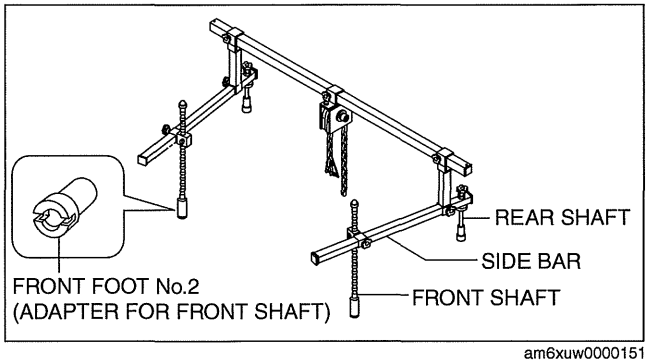
am3uuw0000330

No.4 Engine Mount Removal Note

1. Install the **SST** using the following procedure.

Caution

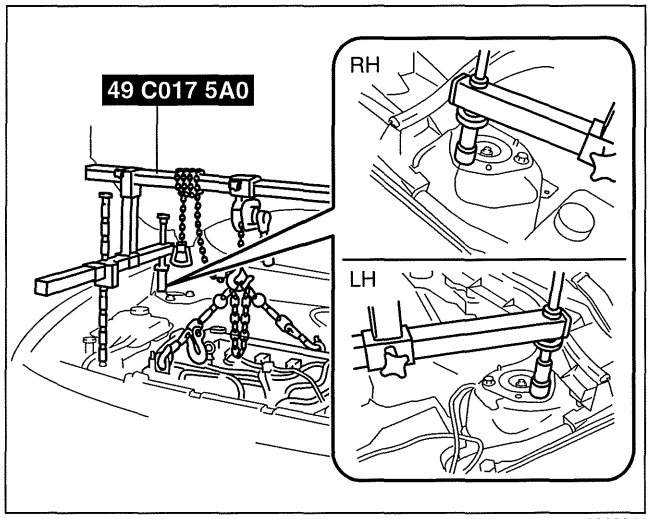
- **Refer to the SST instruction manual for the basic handing procedure.**



am6xuw0000151

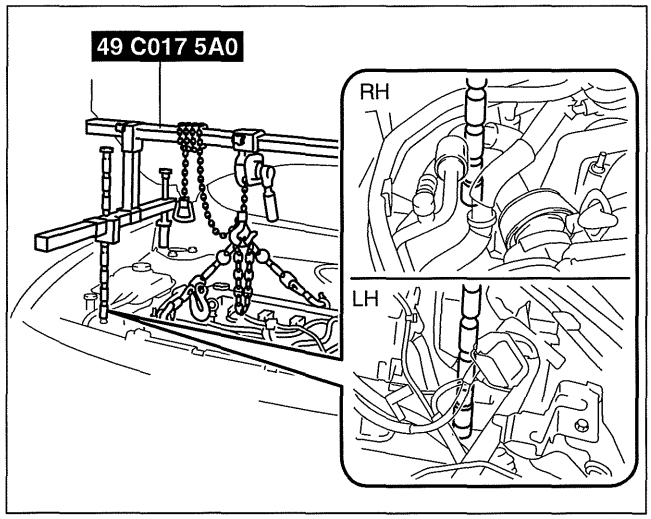
cardiagn.com

(1) Align the bolt of the shock absorber (right side) shown in the figure with the rear shaft bolt for the right side of the **SST**.
(2) Align the bolt of the shock absorber (left side) shown in the figure with the rear shaft bolt for the left side of the **SST**.



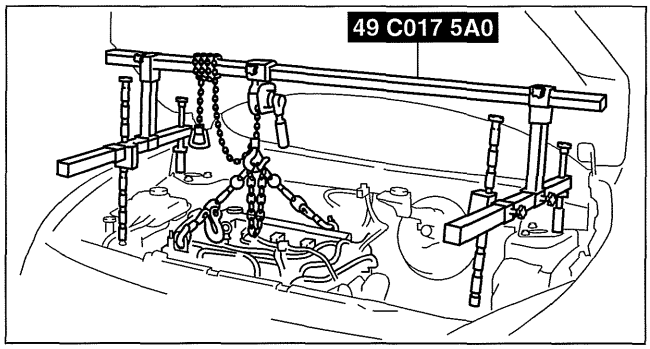
am3uuw0000211

(3) Install one front foot No.2 to each of the left and right front shafts of the **SST**, and then align the holes of the **SST** front shafts with the bolt on the left and right side of each front side frame.
(4) Adjust the height of the left and right side bars so that they are leveled, then tighten each part of the **SST**.
(5) Make sure each joint is securely tightened.



am3uuw0000211

2. Suspend the engine using the **SST**.
3. Remove the battery bracket, No.4 engine mount rubber and No.4 engine mount bracket.



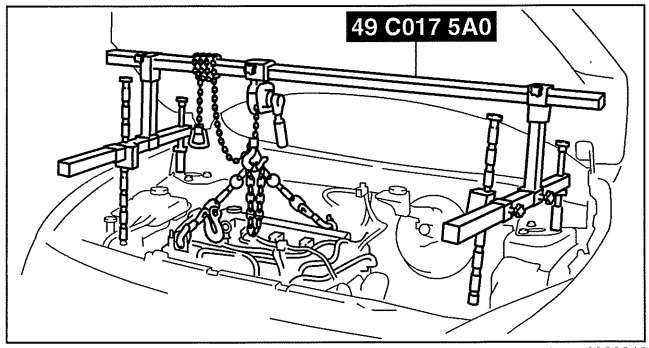
am3uuw0000212

Manual Transaxle Removal Note

Warning
- **Remove the transaxle carefully, holding it steady. If the transaxle falls it could be damaged or cause injury.**

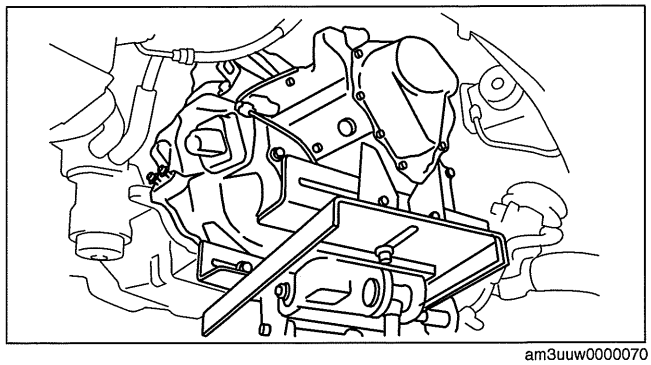
cardiagn.com

1. Lean the engine toward the transaxle.



am3uuw0000212

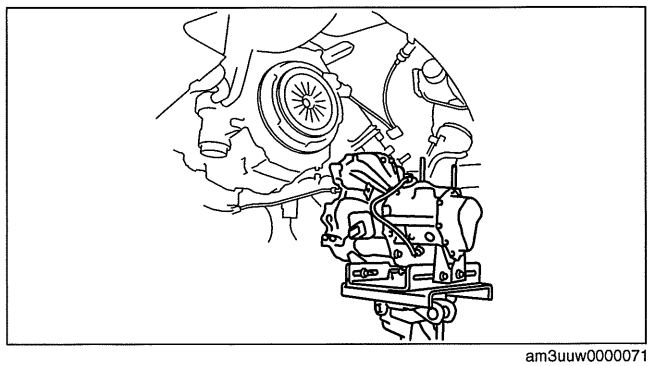
2. Support the transaxle on a jack.
3. Remove the transaxle mounting bolts.
4. Remove the transaxle.


am3uuw0000070

Manual Transaxle Installation Note

Warning
- **Install the transaxle carefully, holding it steady. If the transaxle falls it could be damaged or cause injury.**

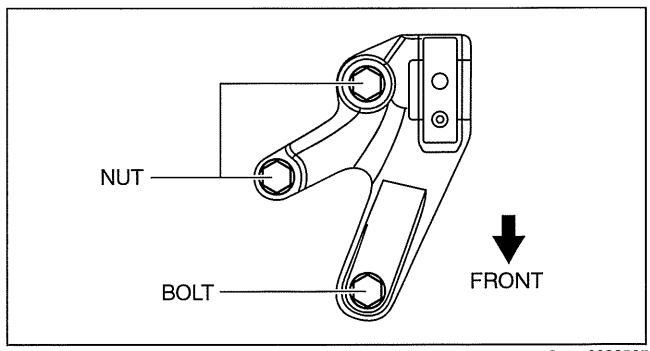
1. Set the transaxle on a jack and lift into place.
2. Install the transaxle mounting bolts.
3. Adjust the **SST** (49 C017 5A0) so that the engine is located at the specified position.


am3uuw0000071

No.1 Engine Mount and No.4 Engine Mount Installation Note

1. Install the No.4 engine mount bracket on the transaxle case and tighten bolt and nuts.

Tightening torque
61—76 N·m {6.3—7.7 kgf·m, 45—56 ft·lbf}

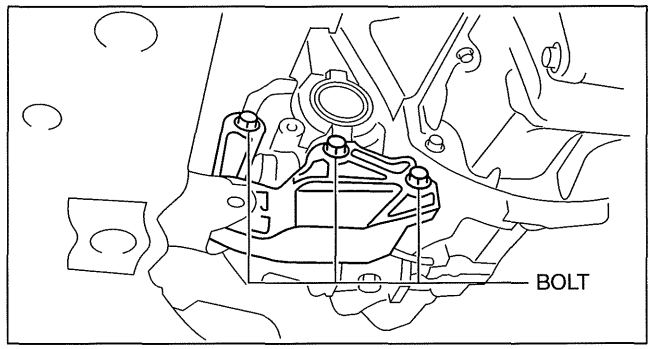


am3uuw0000525

cardiagn.com

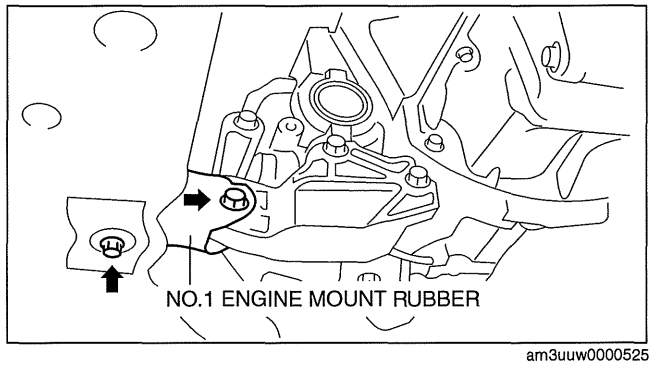
2. Install the No.1 engine mount bracket to the transaxle case, and then tighten the bolts.

   Tightening torque
   94—116 N·m {9.6—11 kgf·m, 70—85 ft·lbf}



am3uuw0000525

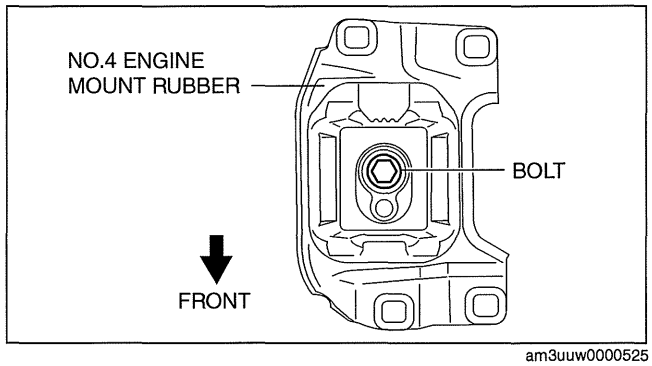
3. Install the No.1 engine mount rubber to the front crossmember, and then temporarily tighten the bolts.



am3uuw0000525

4. Place the No.4 engine mount rubber with the body stud bolts passing through the holes and tighten the bolt in the figure.

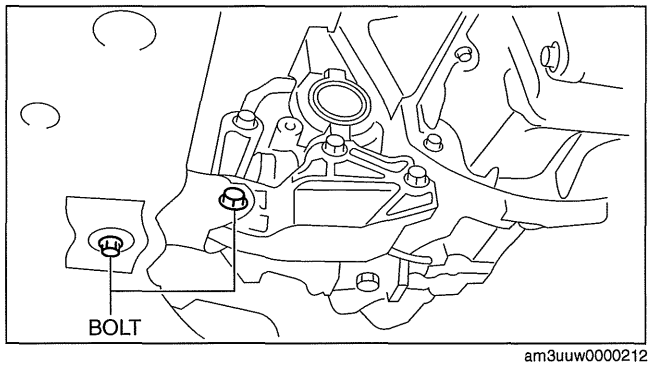
   Tightening torque
   94—152 N·m {9.6—15 kgf·m, 70—112 ft·lbf}



am3uuw0000525

5. Fully tighten the bolts.

   Tightening torque
   73—90 N·m {7.5—9.1 kgf·m, 54—66 ft·lbf}

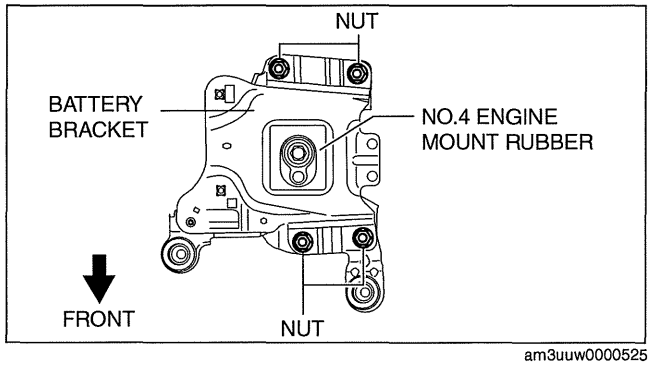


am3uuw0000212

6. Place the battery bracket on the No.4 Engine mount rubber with the body stud bolts passing through the holes and tighten bolts and nuts in the order shown in the figure.

   Tightening torque
   73—90 N·m {7.5—9.1 kgf·m, 54—66 ft·lbf}

7. Remove the **SST** (49 C017 5A0).



am3uuw0000525

cardiagn.com

INSPECTION AFTER TRANSAXLE INSTALLATION [G35M-R]

id0515b1800300

Note
- Perform the following inspection only when the transaxle has been overhauled.

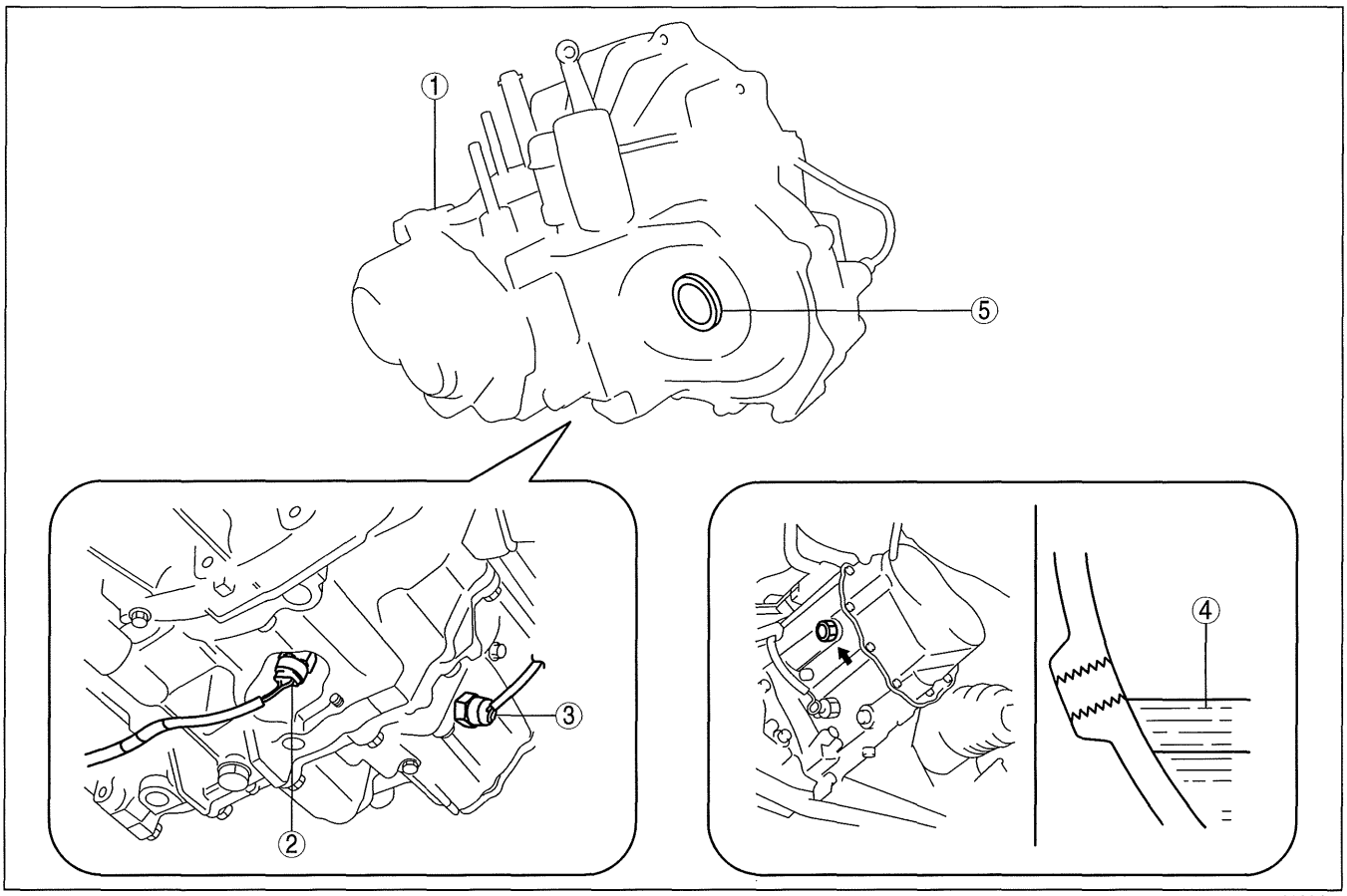
1. Perform a road test and inspect the following items:
   (1) No abnormal noise in each shift position.
   (2) Smooth shift operation when shifting gears.
   (3) No gear slipout after shifting gears.
   (4) Back-up light switch operates correctly.

cardiagn.com

05-15B MANUAL TRANSAXLE [G66M-R]

MANUAL TRANSAXLE LOCATION INDEX [G66M-R]

id0515k1800500



am3uuw0000463

1	Manual transaxle (See 05-15B-4 MANUAL TRANSAXLE REMOVAL/ INSTALLATION [G66M-R].)
2	Neutral switch (See 05-15B-2 NEUTRAL SWITCH REMOVAL/ INSTALLATION [G66M-R].) (See 01-40A-23 NEUTRAL SWITCH INSPECTION [LF, L5].)
3	Back-up light switch switch (See 05-15B-2 BACK-UP LIGHT SWITCH REMOVAL/INSTALLATION [G66M-R].) (See 09-18-55 BACK-UP LIGHT SWITCH INSPECTION.)

4	Transaxle oil (See 05-15B-2 TRANSAXLE OIL INSPECTION [G66M-R].) (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
5	Oil seal (differential) (See 05-15B-3 OIL SEAL (DIFFERENTIAL) REPLACEMENT [G66M-R].)

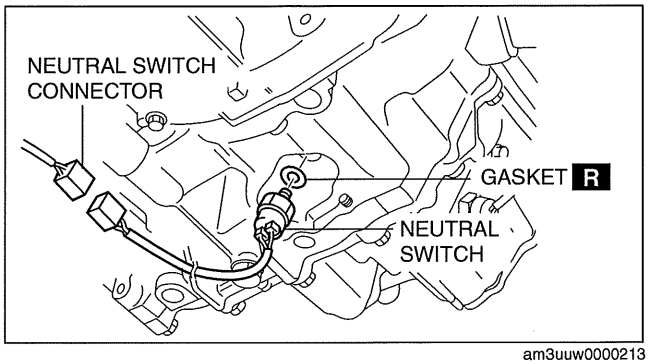
cardiagn.com

NEUTRAL SWITCH REMOVAL/INSTALLATION [G66M-R]

id0515k1800700

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
5. Drain the oil from the transaxle. (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
6. Remove the neutral switch.
7. Install the neutral switch (with a new gasket) to the transaxle case.

   Tightening torque
   20—29 N·m {2.1—2.9 kgf·m, 15—21 ft·lbf}



am3uuw0000213

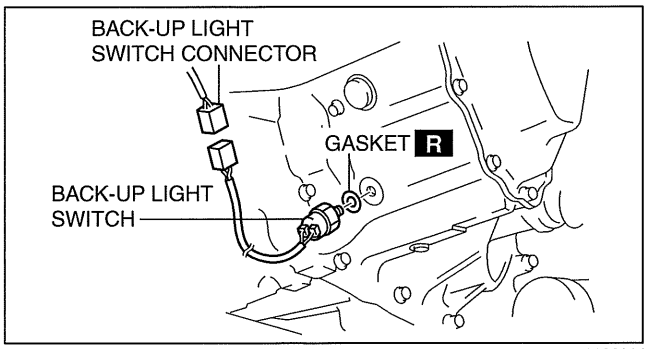
8. Install the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
9. Install the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
10. Add the specified amount and type of oil. (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
11. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

BACK-UP LIGHT SWITCH REMOVAL/INSTALLATION [G66M-R]

id0515k1800800

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
5. Drain the oil from the transaxle. (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
6. Disconnect the back-up light switch connector and remove the back-up light switch.
7. Install the back-up light switch (with a new gasket) to the transaxle case.

   Tightening torque
   20—29 N·m {2.1—2.9 kgf·m, 15—21 ft·lbf}



am3uuw0000214

8. Install thebattery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
9. Install the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
10. Add the specified amount and type of oil. (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
11. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

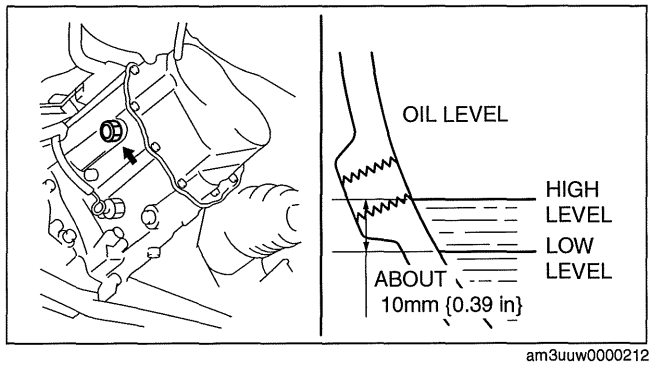
TRANSAXLE OIL INSPECTION [G66M-R]

id0515k1800000

1. Park the vehicle on level ground.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Remove the oil level plug and washer.

cardiagn.com

4. Verify that the oil is near the brim of the plug port.
   - If the oil level is lower than the low level, add the specified amount and type of oil through the oil level plug hole.



am3uuw0000212

Manual transaxle oil Grade
API GL-4

Manual transaxle oil Viscosity
SAE 75W-80

5. Install a new washer and the oil level plug.

Tightening torque
39—59 N·m {4.0—6.0 kgf·m, 29—43 ft·lbf}

6. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

05-15B

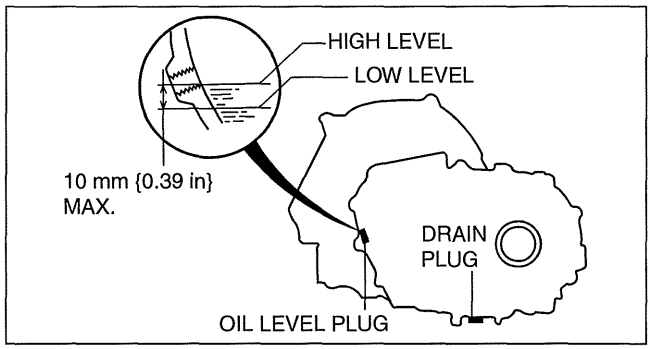
TRANSAXLE OIL REPLACEMENT [G66M-R]

id0515k1800100

1. Park the vehicle on level ground.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Remove the drain plug with the washer.
4. Drain the oil into a suitable container.
5. Install a new washer and the drain plug.

Tightening torque
39—59 N·m {4.0—6.0 kgf·m, 29—43 ft·lbf}

6. Remove the oil level plug with washer and add the specified amount and type of oil through the oil level plug hole until the level reaches the bottom of the oil level plug hole.



am6xuw0000151

Manual transaxle oil Grade
API GL-4

Manual transaxle oil Viscosity
SAE 75W-80

Manual transaxle oil Capacity (approx. quantity)
2.85 L {3.01 US qt, 2.51 Imp qt}

7. Install a new washer and the oil level plug.

Tightening torque
39—59 N·m {4.0—6.0 kgf·m, 29—43 ft·lbf}

8. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

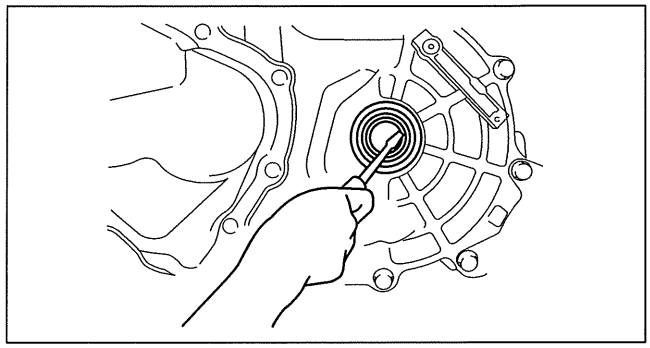
OIL SEAL (DIFFERENTIAL) REPLACEMENT [G66M-R]

id0515k1800200

1. On level ground, jack up the vehicle and support it evenly on safety stands.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Drain the oil from the transaxle. (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
4. Remove the front splash shield. (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
5. Separate the drive shaft and joint shaft from the transaxle. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.) (See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)

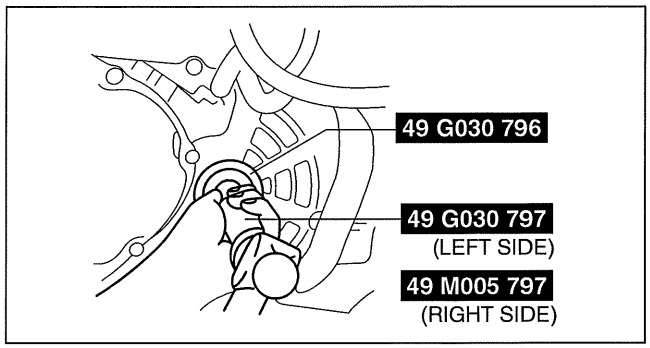
cardiagn.com

6. Remove the oil seals using a screwdriver.



am6xuw0000151

7. Using the **SST** and a hammer, tap each new oil seal in evenly until the **SST** contacts the transaxle case.
8. Coat the lip of each oil seal with transaxle oil.
9. Insert the drive shaft and joint shaft to the transaxle. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.) (See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)
10. Install the front splash shield. (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
11. Add the specified amount and type of oil. (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)
12. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)



am6xuw0000151

MANUAL TRANSAXLE REMOVAL/INSTALLATION [G66M-R]

id0515k1800600

Caution

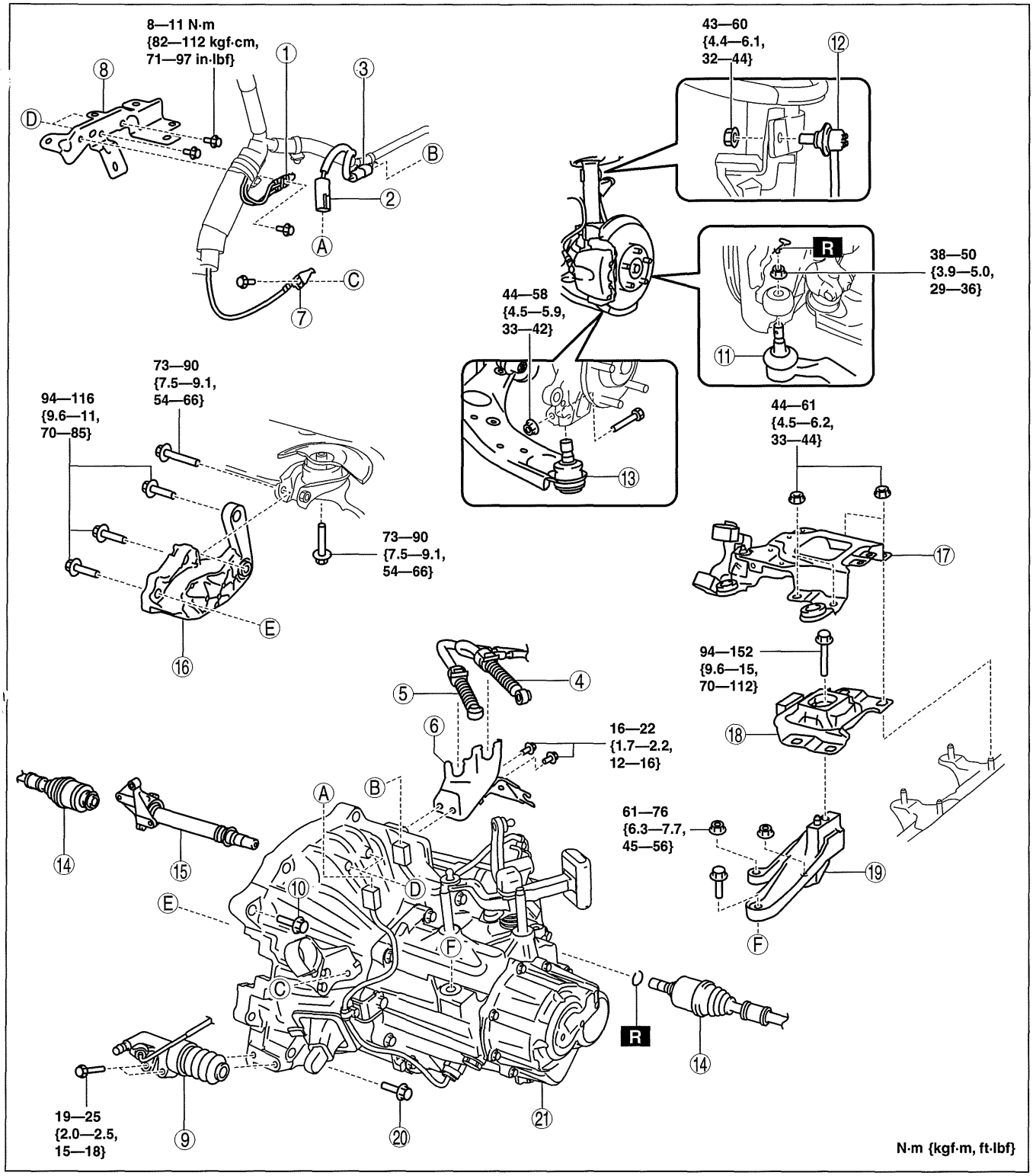
- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component)(See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the exhaust manifold insulator installation bolts and set the exhaust manifold insulator aside.
6. Remove the following parts:
   (1) Exhaust manifold bracket
   (2) Front splash shields (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (3) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Starter (See 01-19A-2 STARTER REMOVAL/INSTALLATION [LF, L5].)
7. Drain the transaxle oil into a suitable container.
8. Remove in the order indicated in the table.
9. Install in the reverse order of removal.
10. Add the specified amount of specified transaxle oil. (See 05-15B-3 TRANSAXLE OIL REPLACEMENT [G66M-R].)

Note

- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE INSTALLATION' and verify that there is no abnormality. (See 05-15B-10 INSPECTION AFTER TRANSAXLE INSTALLATION [G66M-R].)

cardiagn.com



am3uuw0000212

1	Ground
2	Back-up light switch connector
3	Neutral switch connector
4	Select cable (See 05-15B-6 Shift Cable And Select Cable Removal Note.)
5	Shift cable (See 05-15B-6 Shift Cable And Select Cable Removal Note.)
6	Cable bracket

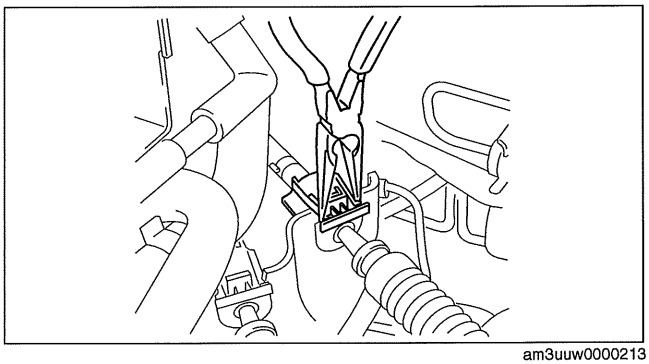
7	Ground
8	Harness bracket
9	Clutch release cylinder
10	Transaxle mounting bolt (upper side)
11	Tie-rod end ball joint (See 02-13-13 FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
12	Stabilizer control link
13	Lower arm ball joint

cardiagn.com

14	Drive shaft (See 03-13-3 DRIVE SHAFT REMOVAL/ INSTALLATION.)
15	Joint shaft (See 03-13-13 JOINT SHAFT REMOVAL/ INSTALLATION.)
16	No.1 engine mount bracket (See 05-15B-8 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
17	Battery tray bracket
18	No.4 engine mount rubber (See 05-15B-6 No.4 Engine Mount Removal Note.) (See 05-15B-8 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
19	No.4 engine mount bracket (See 05-15B-6 No.4 Engine Mount Removal Note.) (See 05-15B-8 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
20	Transaxle mounting bolt (lower side)
21	Manual transaxle (See 05-15B-7 Manual Transaxle Removal Note.) (See 05-15B-8 Manual Transaxle Installation Note.)

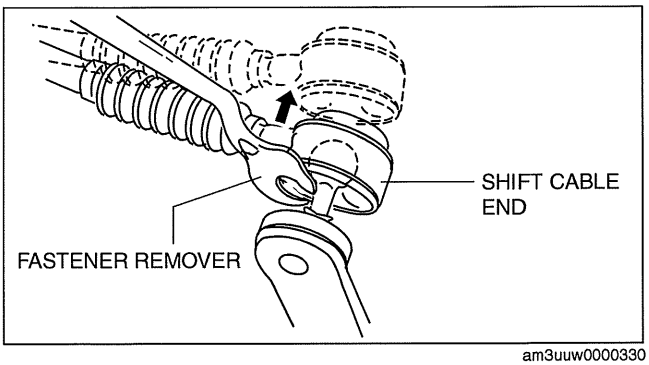
Shift Cable And Select Cable Removal Note

1. Remove the shift and selector cable outer ends as shown in the figure.



am3uuw0000213

2. Remove the both shift cable end and select cable end using a fastener remover.



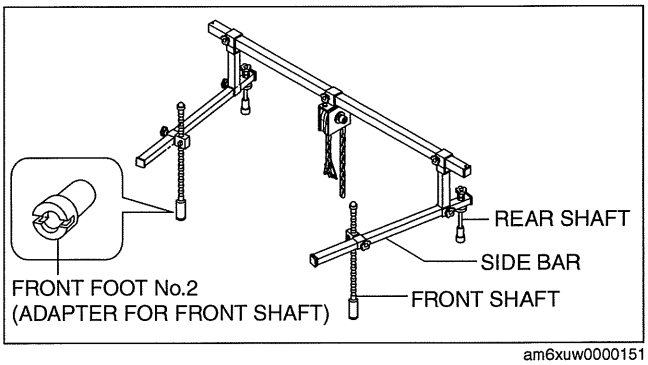
am3uuw0000330

No.4 Engine Mount Removal Note

1. Install the **SST** using the following procedure.

Caution

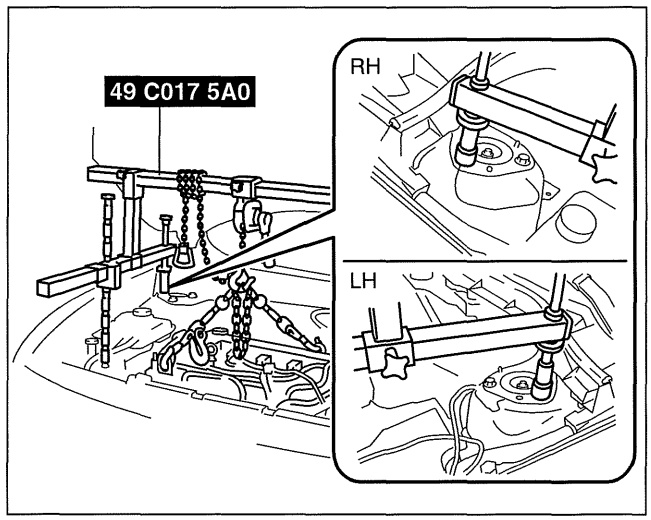
- **Refer to the SST instruction manual for the basic handing procedure.**



am6xuw0000151

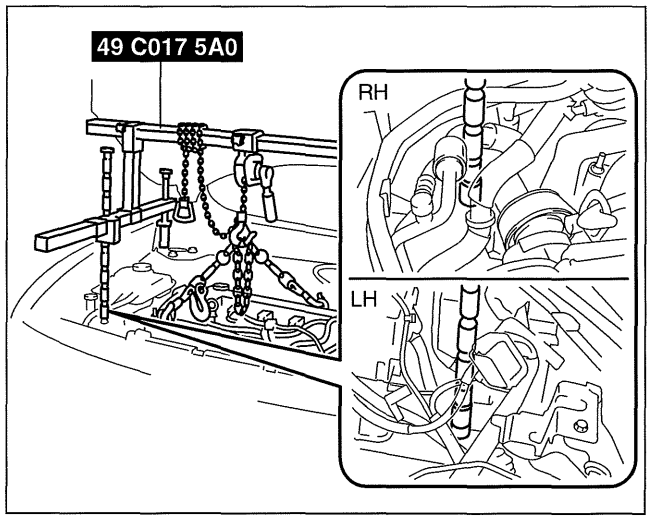
cardiagn.com

(1) Align the bolt of the shock absorber (right side) shown in the figure with the rear shaft hole for the right side of the **SST**.
(2) Align the bolt of the shock absorber (left side) shown in the figure with the rear shaft hole for the left side of the **SST**.



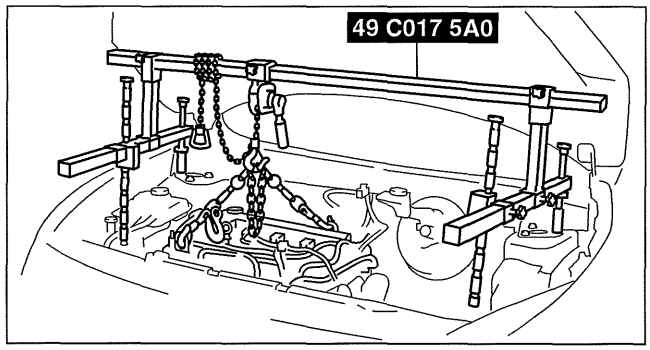
am3uuw0000213

(3) Install one front foot No.2 to each of the left and right front shafts of the **SST**, and then align the holes of the **SST** front shafts with the bolt on the left and right side of each front side frame.
(4) Adjust the height of the left and right side bars so that they are leveled, then tighten each part of the **SST**.
(5) Make sure each joint is securely tightened.



am3uuw0000213

2. Support the engine using the **SST**.
3. Remove the No.4 engine mount rubber and bracket.



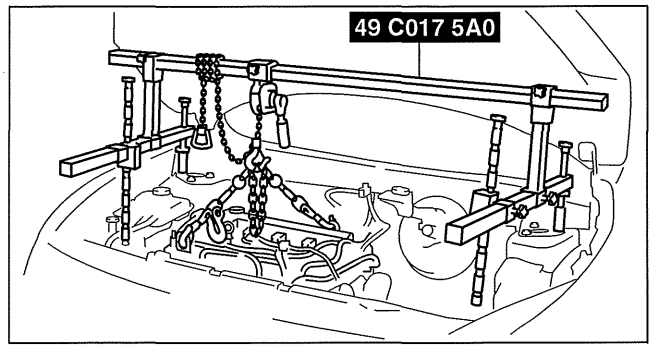
am3uuw0000213

Manual Transaxle Removal Note

Warning
- **Remove the transaxle carefully, holding it steady. If the transaxle falls it could be damaged or cause injury.**

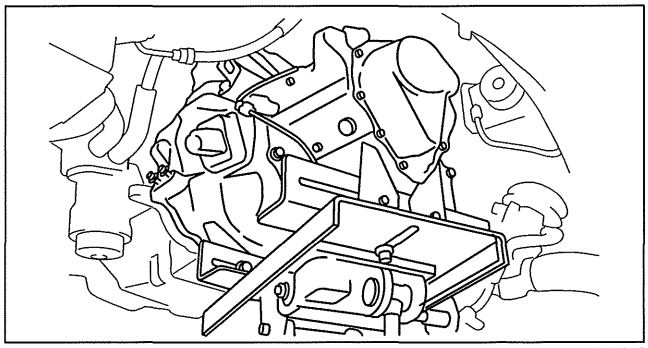
cardiagn.com

1. Adjust the **SST** and lean the engine toward the transaxle.



am3uuw0000213

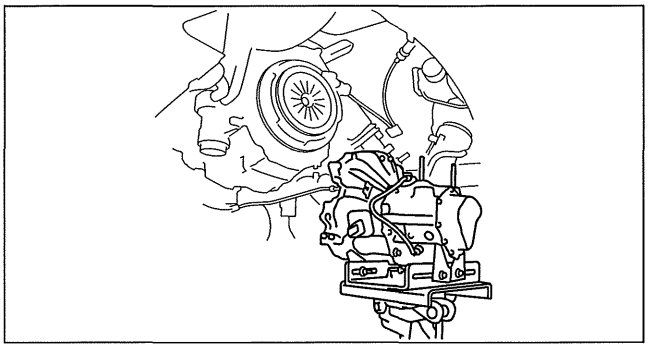
2. Support the transaxle on a jack.
3. Remove the transaxle mounting bolts.
4. Remove the transaxle.


am6xuw0000150

Manual Transaxle Installation Note

Warning
- **Install the transaxle carefully, holding it steady. If the transaxle falls it could be damaged or cause injury.**

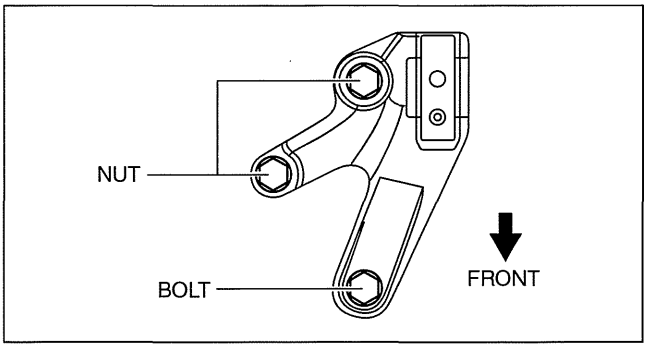
1. Set the transaxle on a jack and lift into place.
2. Install the transaxle mounting bolts.
3. Adjust the **SST** (49 C017 5A0) so that the engine is located at the specified position.


am6xuw0000150

No.1 Engine Mount and No.4 Engine Mount Installation Note

1. Install the No.4 engine mount bracket on the transaxle case and tighten bolt and nuts.

Tightening torque
61—76 N·m {6.3—7.7 kgf·m, 45—56 ft·lbf}

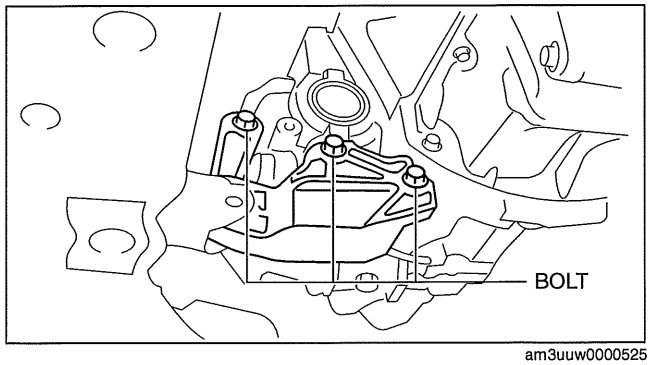


am3uuw0000525

cardiagn.com

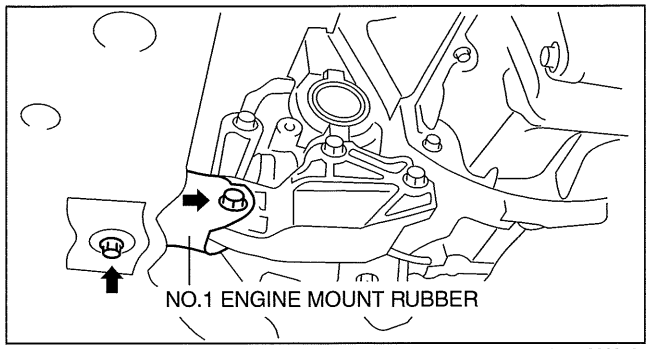
2. Install the No.1 engine mount bracket to the transaxle case, and then tighten the bolts.

   Tightening torque
   94—116 N·m {9.6—11 kgf·m, 70—85 ft·lbf}



am3uuw0000525

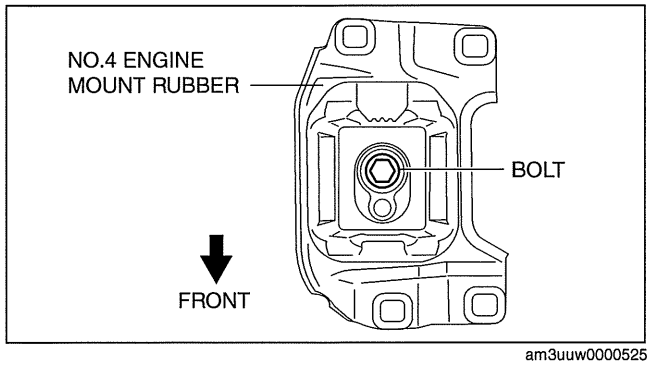
3. Install the No.1 engine mount rubber to the front crossmember, and then temporarily tighten the bolts.



am3uuw0000525

4. Place the No.4 engine mount rubber with the body stud bolts passing through the holes and tighten the bolt in the figure.

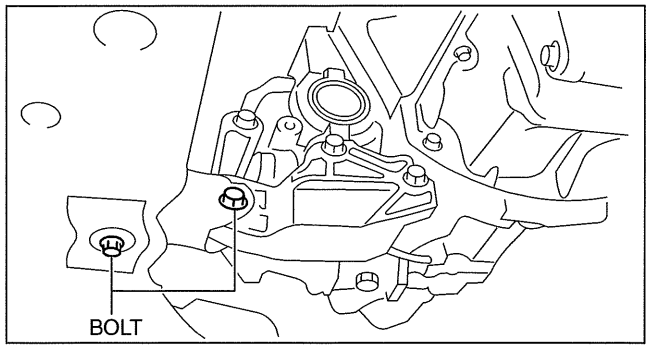
   Tightening torque
   94—152 N·m {9.6—15 kgf·m, 70—112 ft·lbf}



am3uuw0000525

5. Fully tighten the bolts.

   Tightening torque
   73—90 N·m {7.5—9.1 kgf·m, 54—66 ft·lbf}

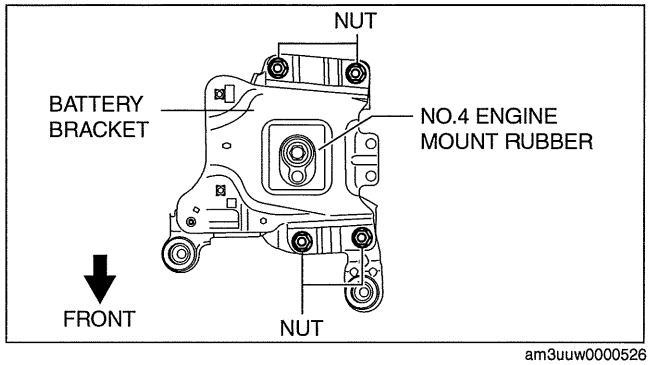


am3uuw0000526

6. Place the battery bracket on the No.4 Engine mount rubber with the body stud bolts passing through the holes and tighten bolts and nuts in the order shown in the figure.

   Tightening torque
   73—90 N·m {7.5—9.1 kgf·m, 54—66 ft·lbf}

7. Remove the **SST** (49 C017 5A0).



am3uuw0000526

cardiagn.com

INSPECTION AFTER TRANSAXLE INSTALLATION [G66M-R]

id0515k1800300

Note
- Perform the following inspection only when the transaxle has been overhauled.

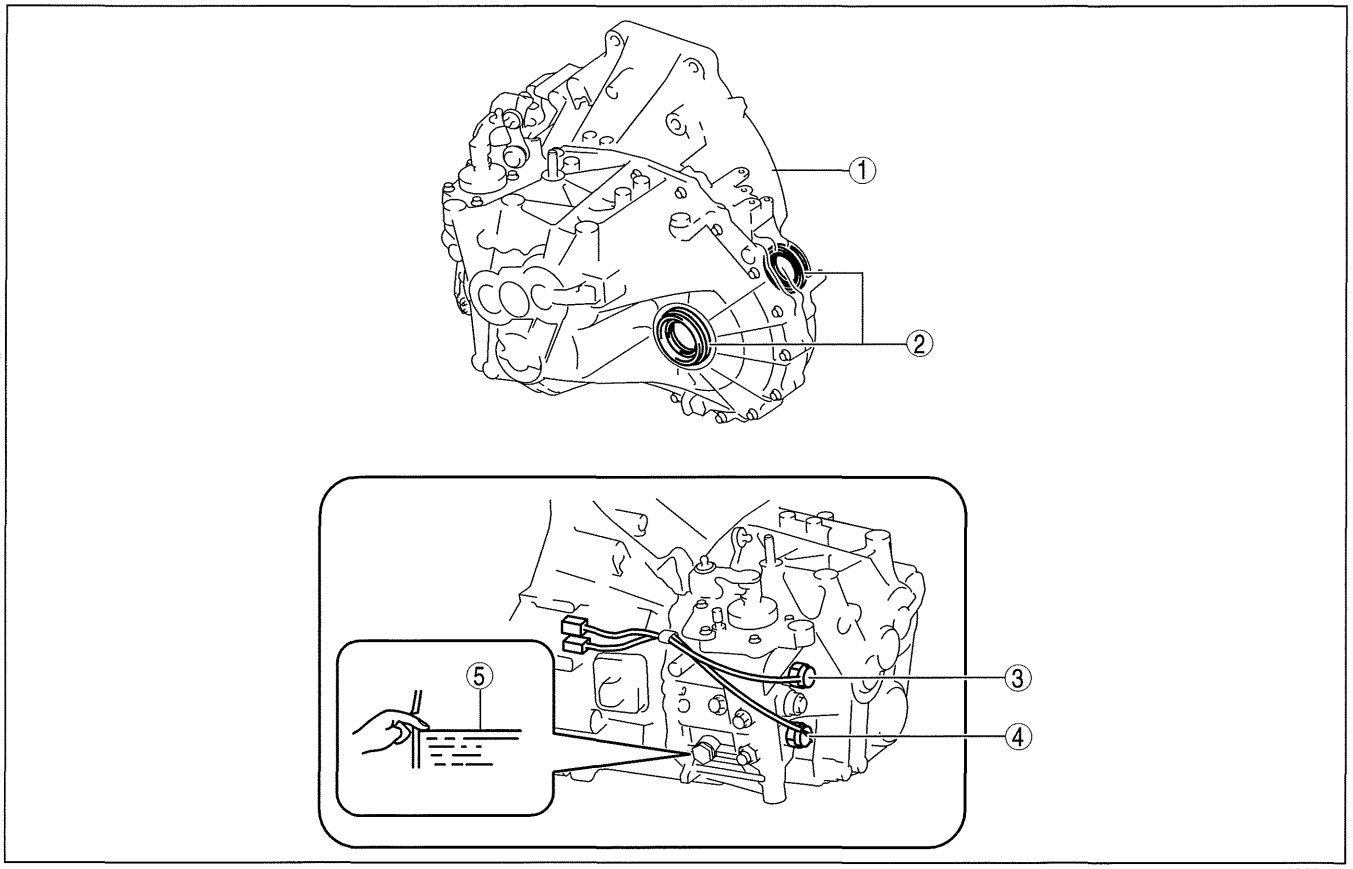
1. Perform a road test and inspect the following items:
   (1) No abnormal noise in each shift position.
   (2) Smooth shift operation when shifting gears.
   (3) No gear slipout after shifting gears.
   (4) Back-up light switch operates correctly.

cardiagn.com

05-15C MANUAL TRANSAXLE [A26M-R]

MANUAL TRANSAXLE LOCATION INDEX [A26M-R]

id0515l1800500



am3zzw0000593

1	Manual transaxle (See 05-15C-5 MANUAL TRANSAXLE REMOVAL/ INSTALLATION [A26M-R])
2	Oil seal (differential) (See 05-15C-3 OIL SEAL (DIFFERENTIAL) REPLACEMENT [A26M-R])
3	Back-up light switch (See 05-15C-2 BACK-UP LIGHT SWITCH REMOVAL/INSTALLATION [A26M-R].) (See 09-18-55 BACK-UP LIGHT SWITCH INSPECTION.)

4	Neutral switch (See 05-15C-2 NEUTRAL SWITCH REMOVAL/ INSTALLATION [A26M-R]) (See 01-40B-23 NEUTRAL SWITCH INSPECTION [L3 WITH TC])
5	Transaxle oil (See 05-15C-2 TRANSAXLE OIL INSPECTION [A26M-R]) (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R])

cardiagn.com

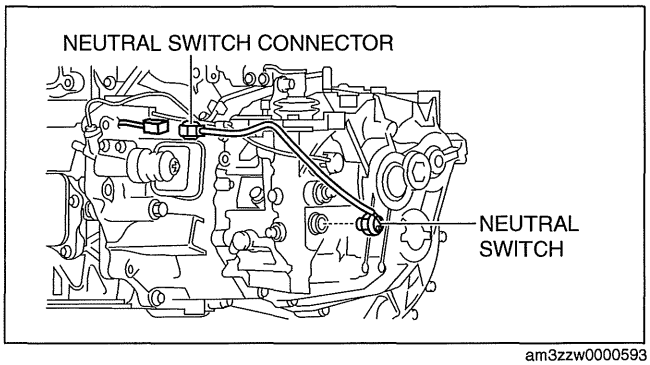
NEUTRAL SWITCH REMOVAL/INSTALLATION [A26M-R]

id0515l1800700

1. Disconnect the negative battery cable.
2. Disconnect the neutral switch connector.
3. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
4. Remove the neutral switch.
5. Install the neutral switch to the transaxle case.

   Tightening torque
   29—52 N·m {2.9—5.3 kgf·m, 21—38 ft·lbf}

6. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
7. Connect the negative battery cable.



am3zzw0000593

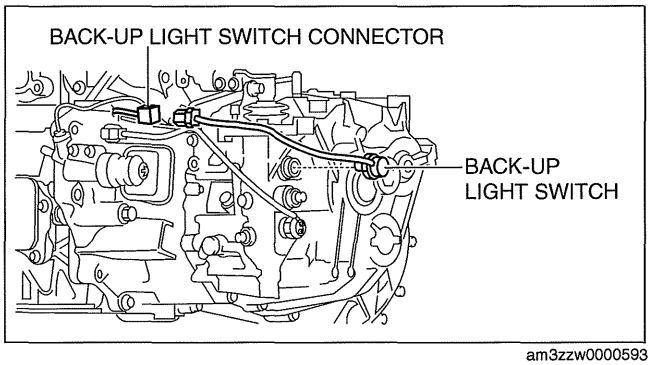
BACK-UP LIGHT SWITCH REMOVAL/INSTALLATION [A26M-R]

id0515l1800800

1. Disconnect the negative battery cable.
2. Disconnect the back-up light switch connector.
3. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
4. Remove the back-up light switch.
5. Install the back-up light switch to the transaxle case.

   Tightening torque
   29—52 N·m {2.9—5.3 kgf·m, 21—38 ft·lbf}

6. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
7. Connect the negative battery cable.



am3zzw0000593

TRANSAXLE OIL INSPECTION [A26M-R]

id0515l1800000

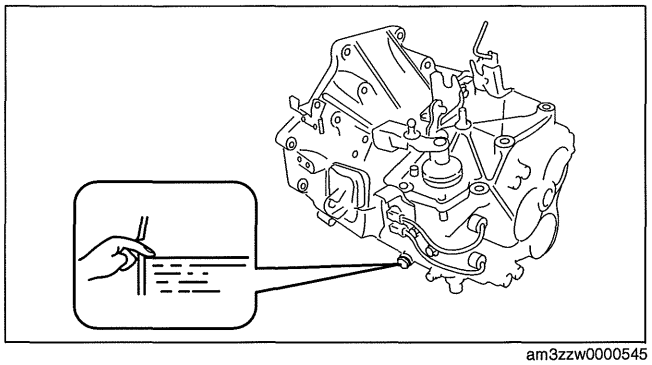
1. Park the vehicle on level ground.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Remove the oil level plug and washer.
4. Verify that the oil is near the brim of the plug port.
   - If the oil level is low, add the specified amount and type of oil through the filler plug hole.

   Manual transaxle oil grade
   API service GL-4

   Manual transaxle oil viscosity
   SAE 75W-80

5. Tighten the oil level plug with a new washer.

   Tightening torque
   28—50 N·m {2.9—5.1 kgf·m, 21—37 ft·lbf}



am3zzw0000545

6. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

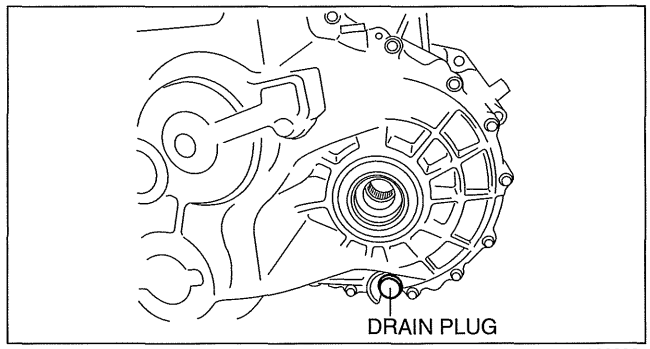
cardiagn.com

TRANSAXLE OIL REPLACEMENT [A26M-R]

id0515l1800100

1. Park the vehicle on level ground.
2. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
3. Remove the drain plug with the washer.
4. Drain the oil into a suitable container.
5. Install a new washer and the drain plug.

   Tightening torque
   28—50 N·m {2.9—5.1 kgf·m, 21—37 ft·lbf}



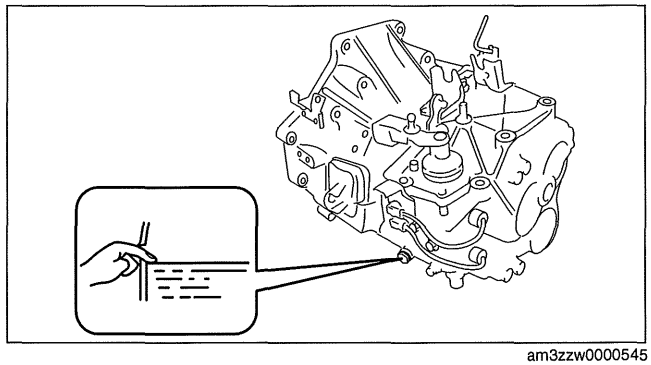
am6zzw0000325

6. Remove the oil level plug with washer and add the specified amount and type of oil through the oil level plug hole until the level reaches the bottom of the oil level plug hole.

   Manual transaxle oil grade
   API service GL-4

   Manual transaxle oil viscosity
   SAE 75W-80

   Manual transaxle oil capacity (approx. quantity)
   2.4—2.6 L {2.6—2.7 US qt, 2.12—2.28 Imp qt}



am3zzw0000545

7. Install a new washer and the oil level plug.

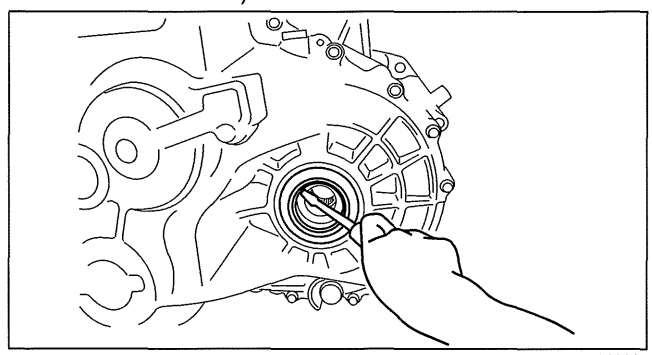
   Tightening torque
   28—50 N·m {2.9—5.1 kgf·m, 21—37 ft·lbf}

8. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

OIL SEAL (DIFFERENTIAL) REPLACEMENT [A26M-R]

id0515l1800200

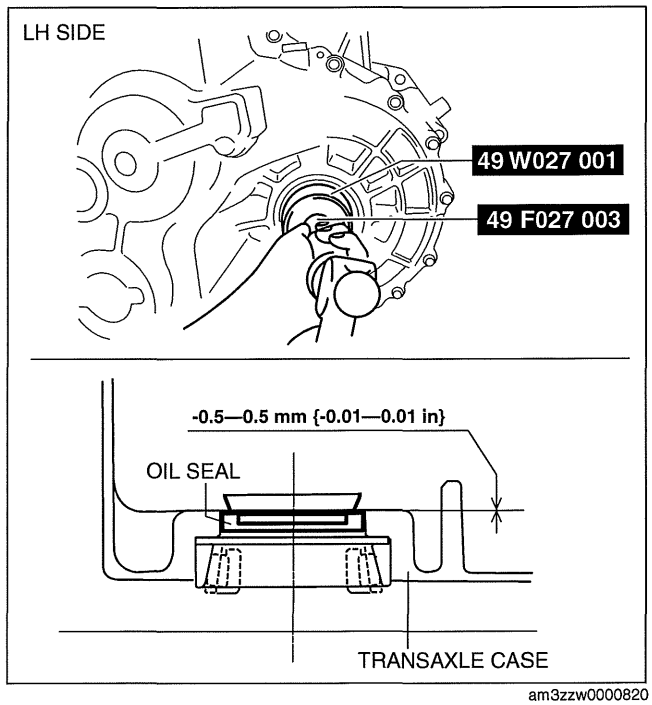
1. On level ground, jack up the vehicle and support it evenly on safety stands.
2. Drain the oil from the transaxle. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
3. Remove the front tires. (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
4. Remove the splash shield. (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
5. Remove the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
6. Separate the drive shaft and joint shaft from the transaxle. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.) (See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)
7. Remove the oil seals using a screwdriver.



am6zzw0000325

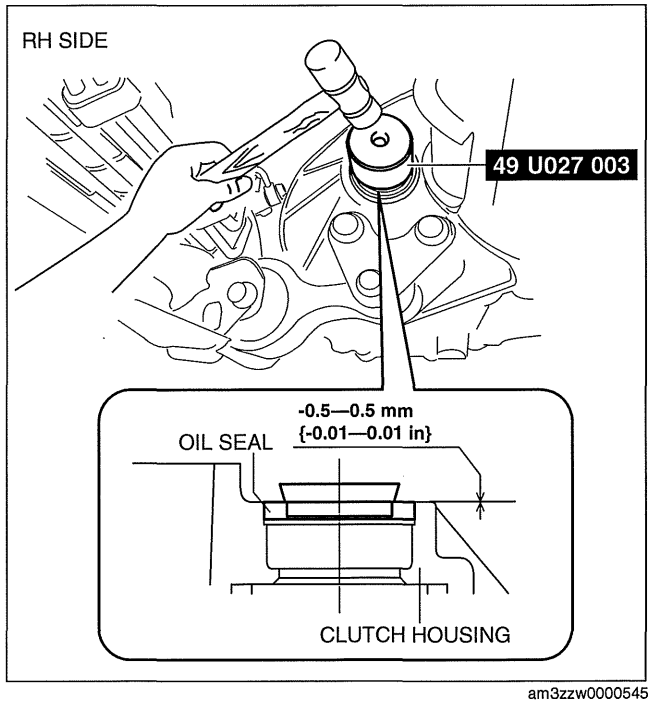
cardiagn.com

8. Using the **SSTs** and a hammer, tap each new oil seal in evenly until the **SSTs** contact the transaxle case.



am3zzw0000820

9. Coat the lip of each oil seal with transaxle oil.
10. Insert the drive shaft and joint shaft to the transaxle. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION) (See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION)
11. Install the aerodynamic under cover No.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
12. Install the splash shield. (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
13. Install the front tires. (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
14. Add the specified amount and type of oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)



am3zzw0000545

cardiagn.com

MANUAL TRANSAXLE REMOVAL/INSTALLATION [A26M-R]

id0515l1800600

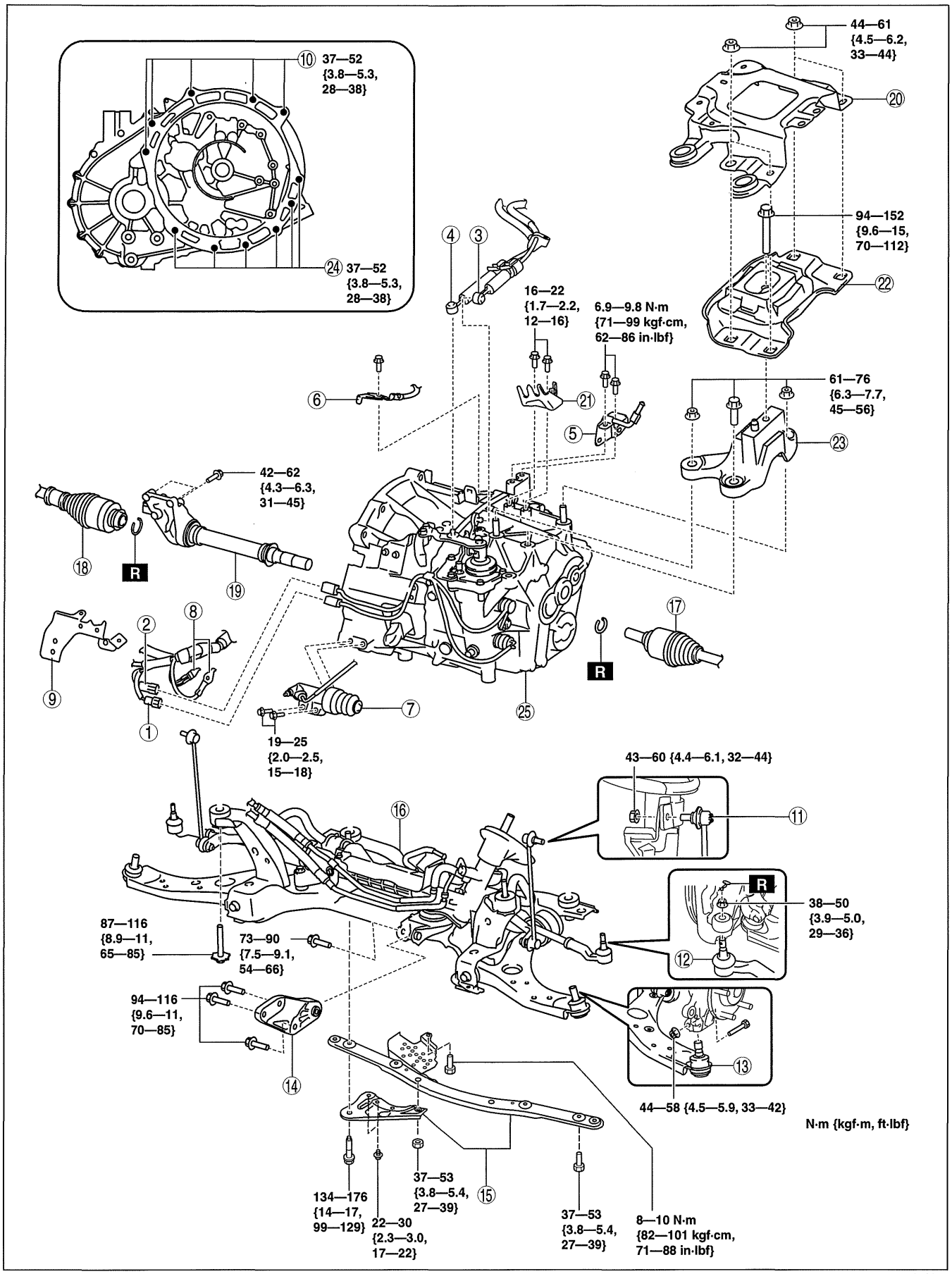
Caution
- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
3. Remove the PCM cover No.1. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
4. Disconnect the PCM connector. (See 01-40B-7 PCM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the following parts:
   (1) Battery tray and PCM component (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
   (2) Air cleaner component (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (3) Charge air cooler cover (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (4) Charge air cooler (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (5) Fuel pump resistor (See 01-14B-16 FUEL PUMP RESISTOR REMOVAL/INSTALLATION [L3 WITH TC].)
   (6) Front tires (See 02-10-1 GENERAL PROCEDURES (SUSPENSION).)
   (7) Splash shield (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
   (8) Aerodynamic under cover No.2 (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (9) WU-TWC bracket (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
   (10) Starter (See 01-19B-2 STARTER REMOVAL/INSTALLATION [L3 WITH TC].)
   (11) Front auto leveling sensor (See 09-18-50 AUTO LEVELING SENSOR REMOVAL/INSTALLATION.)
6. Drain the transaxle oil into a suitable container. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
7. Remove in the order indicated in the table.
8. Install in the reverse order of removal.
9. Perform the auto leveling system initialization. (See 09-18-51 AUTO LEVELING SYSTEM INITIALIZATION.)
10. Add the specified amount of specified transaxle oil. (See 05-15C-3 TRANSAXLE OIL REPLACEMENT [A26M-R].)
11. Warm up the engine and transaxle, inspect for oil leakage, and inspect the transaxle operation.

Warning
- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

Note
- If the transaxle is overhauled and installed to the vehicle, perform the 'INSPECTION AFTER TRANSAXLE INSTALLATION' and verify that there is no abnormality. (See 05-15C-13 INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R].)

cardiagn.com



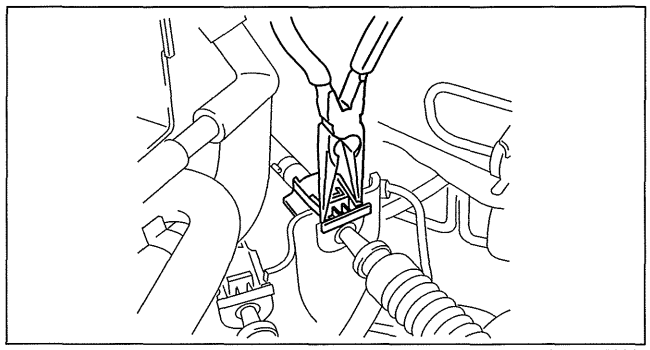
am3uuw0000623

cardiagn.com

1	Neutral switch connector
2	Back-up light switch connector
3	Selector cable (See 05-15C-7 Shift Cable and Select Cable Removal Note.)
4	Shift cable (See 05-15C-7 Shift Cable and Select Cable Removal Note.)
5	Cable rubber bracket
6	GND wiring harness
7	Clutch release cylinder
8	GND wiring harness
9	Wiring harness bracket
10	Transaxle mounting bolt (upper side)
11	Tie-rod end ball joint (See 02-13-13 FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
12	Stabilizer control link
13	Lower arm ball joint
14	No.1 engine mount (See 05-15C-8 No.1 Engine Mount Rubber Removal Note.) (See 05-15C-11 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
15	Crossmember bracket
16	Crossmember component (See 02-13-13 FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
17	Drive shaft (LH) (See 03-13-3 DRIVE SHAFT REMOVAL/ INSTALLATION)
18	Drive shaft (RH) (See 03-13-3 DRIVE SHAFT REMOVAL/ INSTALLATION.)
19	Joint shaft (See 03-13-13 JOINT SHAFT REMOVAL/ INSTALLATION.)
20	Battery tray bracket
21	Cable bracket
22	No.4 engine mount rubber (See 05-15C-8 No.4 Engine Mount Removal Note.) (See 05-15C-11 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
23	No.4 engine mount bracket (See 05-15C-8 No.4 Engine Mount Removal Note.) (See 05-15C-11 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
24	Transaxle mounting bolt (lower side)
25	Manual transaxle (See 05-15C-10 Manual Transaxle Removal Note.) (See 05-15C-11 Manual Transaxle Installation Note.)

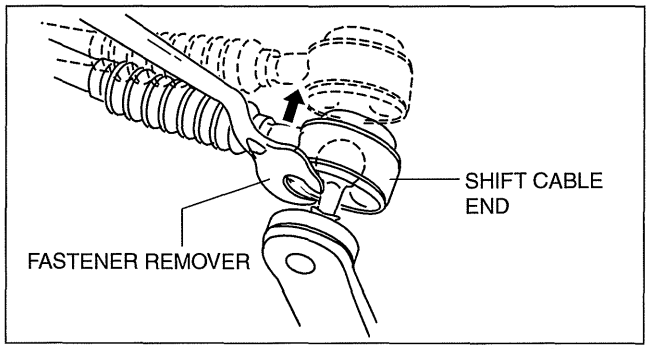
Shift Cable and Select Cable Removal Note

1. Remove the shift and selector cable outer ends as shown in the figure.



am3uuw0000213

2. Remove the both shift cable end and select cable end using a fastener remover.

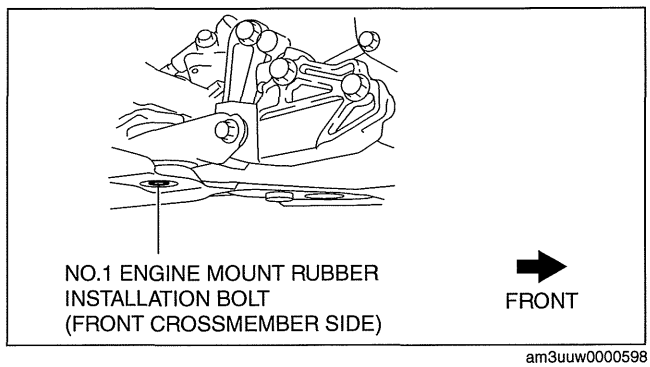


am6zzw0000326

cardiagn.com

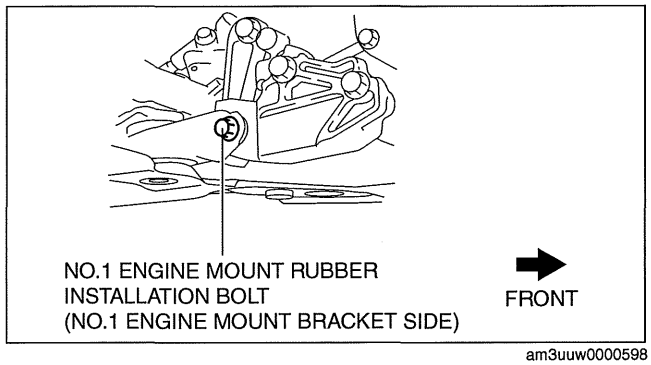
No.1 Engine Mount Rubber Removal Note

1. Loosen the No.1 engine mount rubber installation bolt (front crossmember side) shown in the figure.



am3uuw0000598

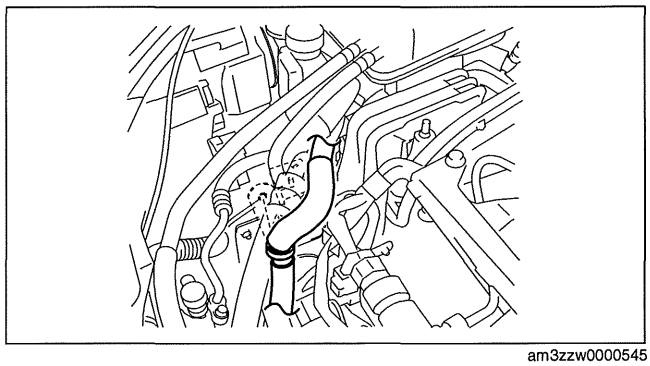
2. Remove the No.1 engine mount rubber installation bolt (No.1 engine mount bracket side) shown in the figure.
3. Remove the No.1 engine mount rubber and the front crossmember component as a single unit.



am3uuw0000598

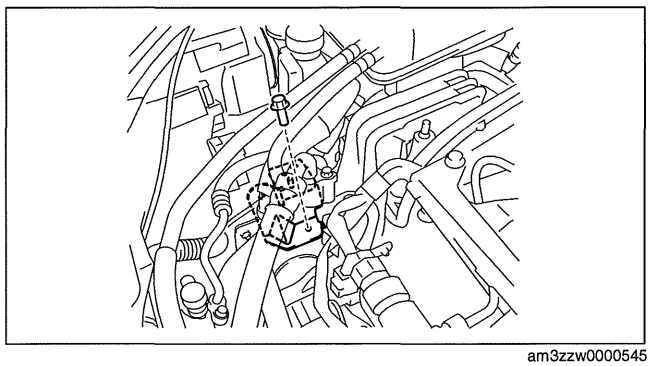
No.4 Engine Mount Removal Note

1. Detach the hose clip shown in the figure.



am3zzw0000545

2. Remove the bracket bolt shown in the figure and set the bracket aside to prevent interference with the **SST**.

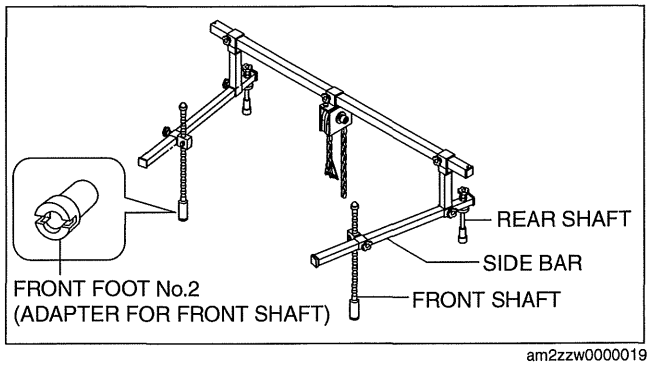


am3zzw0000545

cardiagn.com

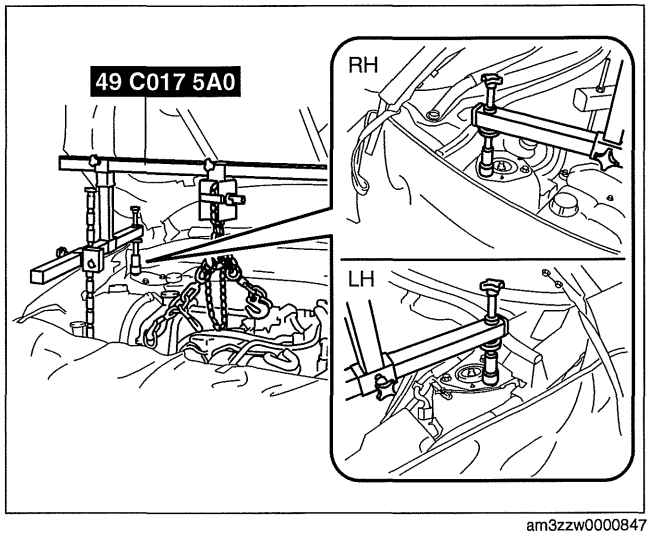
3. Install the **SST** using the following procedure.

Caution
- **Refer to the SST instruction manual for the basic handing procedure.**



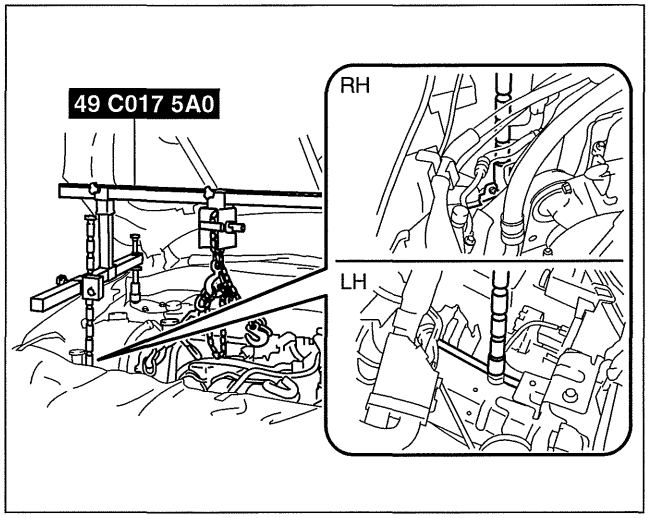
am2zzw0000019

(1) As shown in the figure, set the rear shafts of the **SST** to the left and right shock absorber installation nut.



am3zzw0000847

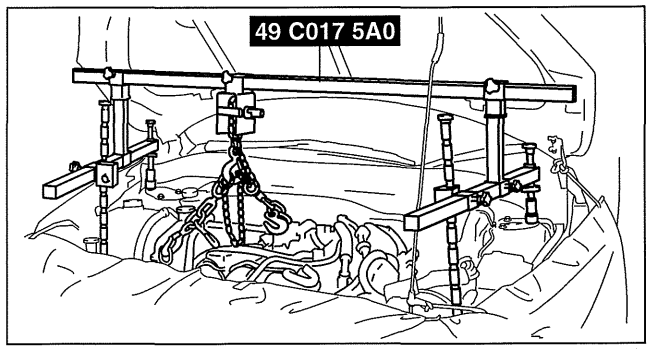
(2) Install front foot No.2 to the left/right front shaft of the **SST**, then align the groove of the front shaft of the **SST** with the folded up part of the vehicle as shown in the figure.
(3) Adjust the positions of the **SST** side bars so that they are the same height (left and right) and horizontal.
(4) Make sure each joint is securely tightened.



am3zzw0000840

cardiagn.com

4. Support the engine using the **SST**.
5. Remove the battery tray bracket, No.4 engine mount rubber and bracket.

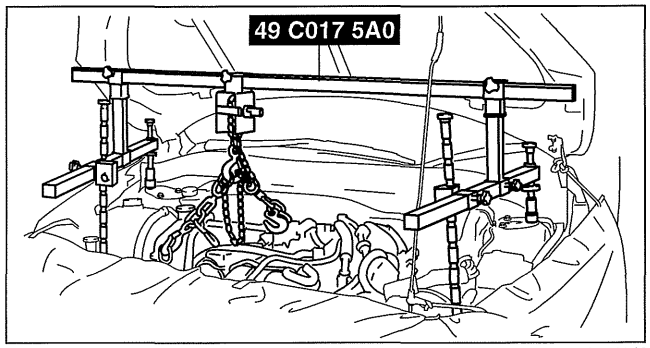


am3zzw0000840

Manual Transaxle Removal Note

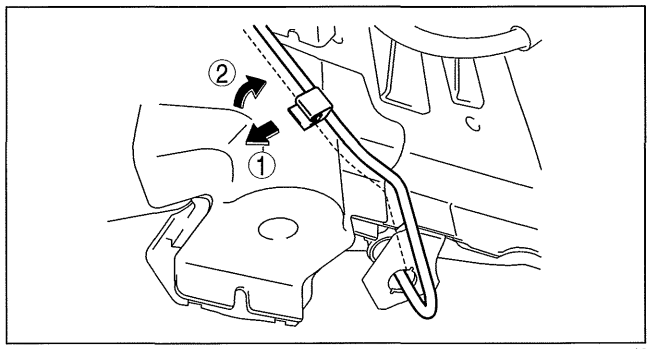
Warning
- **Remove the transaxle carefully, holding it steady. If the transaxle falls it could be damaged or cause injury.**

1. Adjust the **SST** and lean the engine toward the transaxle.



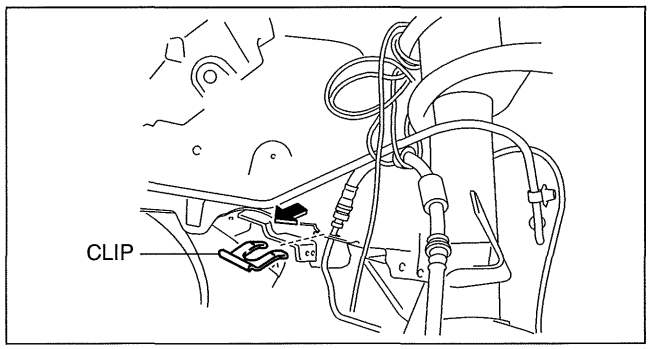
am3zzw0000840

2. To prevent interference when removing the transaxle, remove the brake pipe from the clip as shown in the figure and set it in a place out of the way.



am3zzw0000546

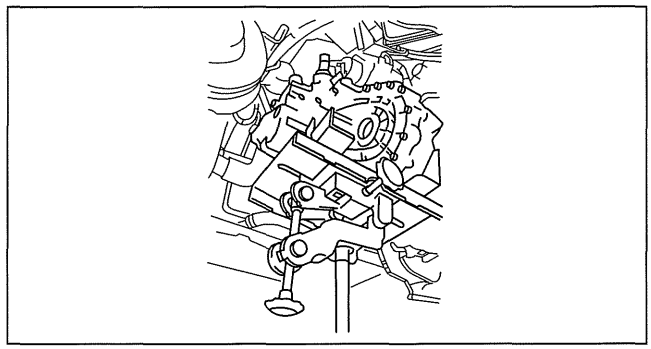
3. Remove the clip and suspend the brake hose as shown in the figure using a cable or similar item.



am3zzw0000601

cardiagn.com

4. Support the transaxle on a jack.
5. Remove the transaxle mounting bolts.
6. Remove the transaxle.



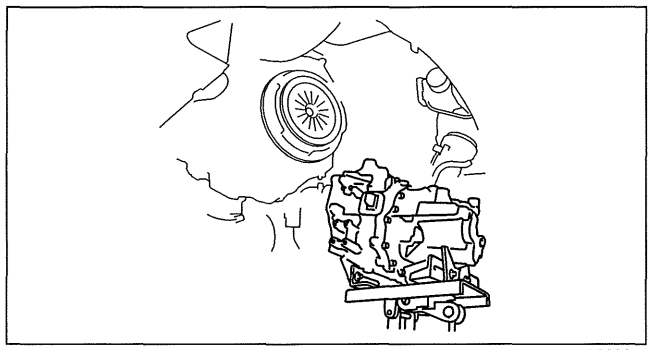
am6zzw0000326

Manual Transaxle Installation Note

Warning

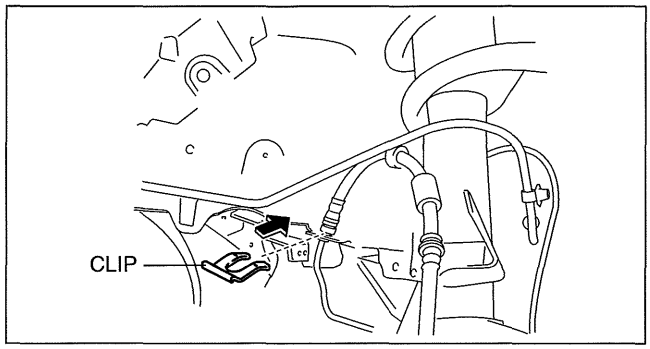
- **Install the transaxle carefully, holding it steady. If the transaxle falls it could be damaged or cause injury.**

1. Set the transaxle on a jack and lift into place.
2. Install the transaxle mounting bolts.
3. Adjust the **SST** (49 C017 5A0) so that the engine is located at the specified position.



am3uuw0000623

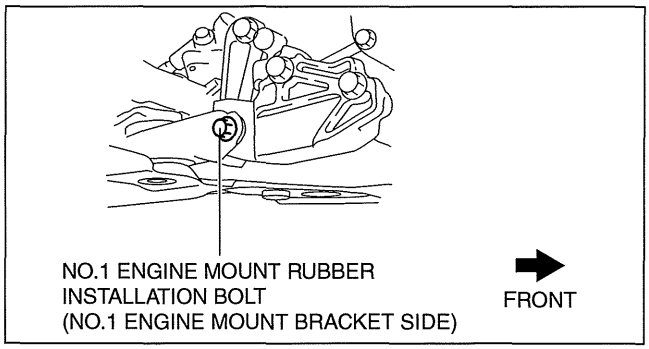
4. Install the brake hose to the bracket as shown in the figure and install the clip.



am3zzw0000601

No.1 Engine Mount and No.4 Engine Mount Installation Note

1. Install the front crossmember component. (See 02-13-13 FRONT CROSSMEMBER REMOVAL/ INSTALLATION.)
2. Temporarily tighten the No.1 engine mount rubber installation bolts.

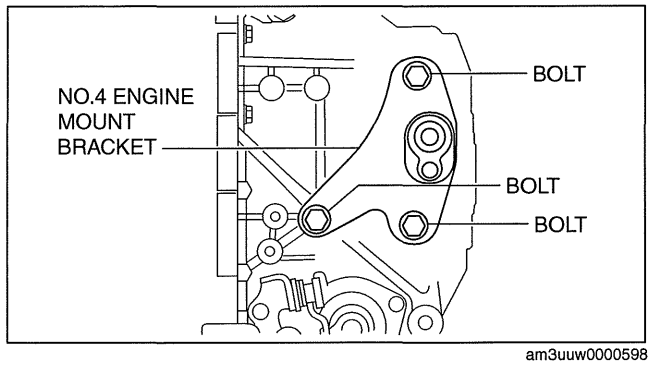


am3uuw0000598

cardiagn.com

3. Tighten the bolt shown in the figure.

Tightening torque
61—76 N·m {6.3—7.7 kgf·m, 45—56 ft·lbf}



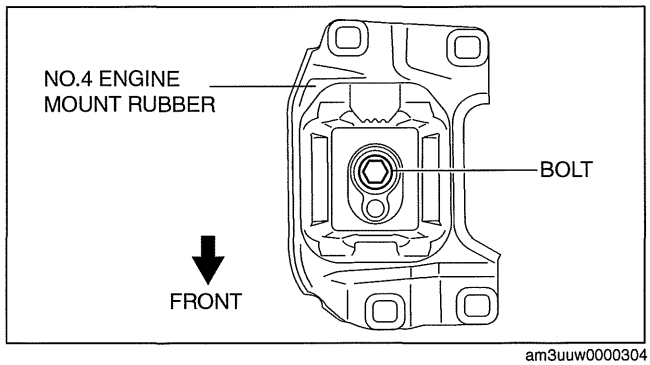
am3uuw0000598

4. Tighten the No.4 engine mount rubber installation bolt.

Tightening torque
94—152 N·m {9.6—15 kgf·m, 70—112 ft·lbf}

5. Tighten the No.1 engine mount rubber installation bolts in the order shown.

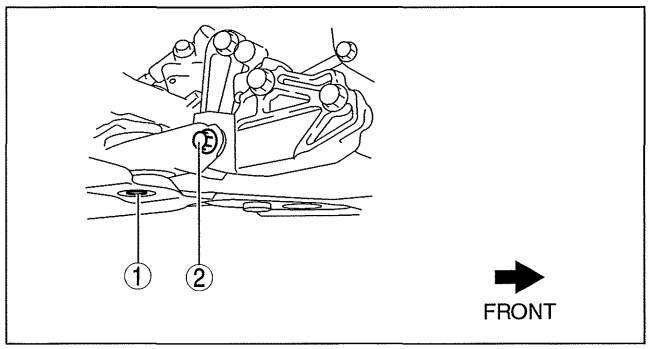
Caution
- **Tighten the bolts in the order shown in the figure to prevent abnormal noise and vibration after assembly.**
- **Tighten the bolts while being careful of their length to prevent interference between the steering gear housing and bolt.**



am3uuw0000304

Bolt stem length
Front crossmember side: 62mm {2.4 in}
No.1 engine mount bracket side: 65mm {2.6 in}

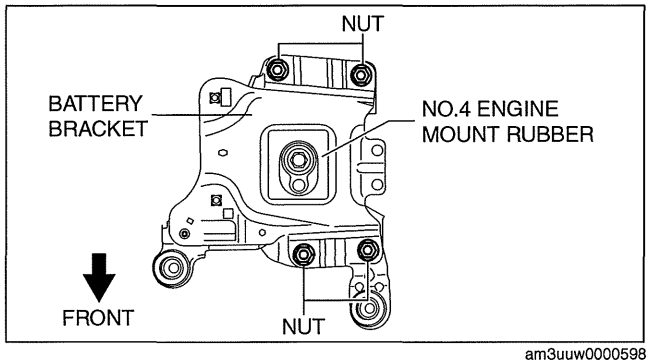
Tightening torque
73—90 N·m {7.5—9.1 kgf·m, 54—66 ft·lbf}



am3uuw0000623

6. Tighten the No.4 engine mount rubber and battery tray bracket installation nuts as shown in the figure.

Tightening torque
44—61 N·m {4.5—6.2 kgf·m, 33—44 ft·lbf}



am3uuw0000598

cardiagn.com

INSPECTION AFTER TRANSAXLE INSTALLATION [A26M-R]

id0515l1800300

Note
- Perform the following inspection only when the transaxle has been overhauled.

1. Perform a road test and inspect the following items:
   (1) No abnormal noise in each shift position.
   (2) Smooth shift operation when shifting gears.
   (3) No gear slipout after shifting gears.
   (4) Back-up light switch operates correctly.

cardiagn.com

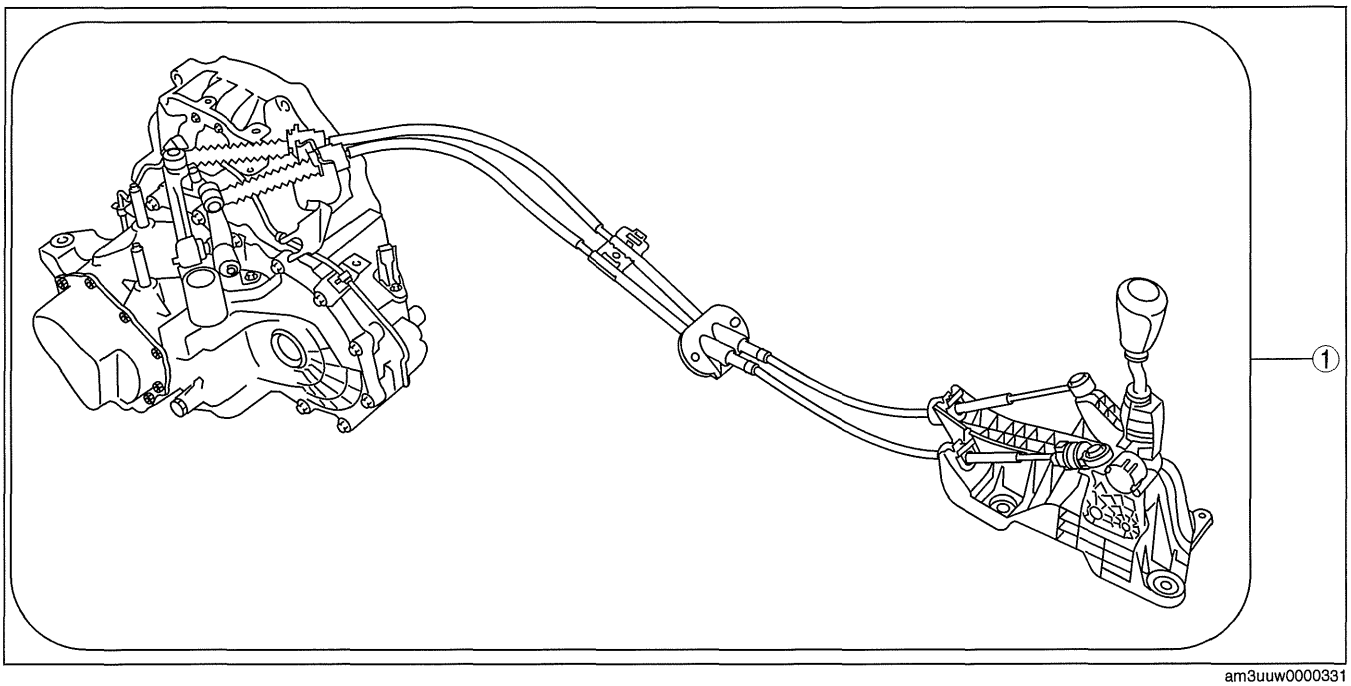
cardiagn.com

05-16 MANUAL TRANSAXLE SHIFT MECHANISM

MANUAL TRANSAXLE SHIFT MECHANISM LOCATION INDEX

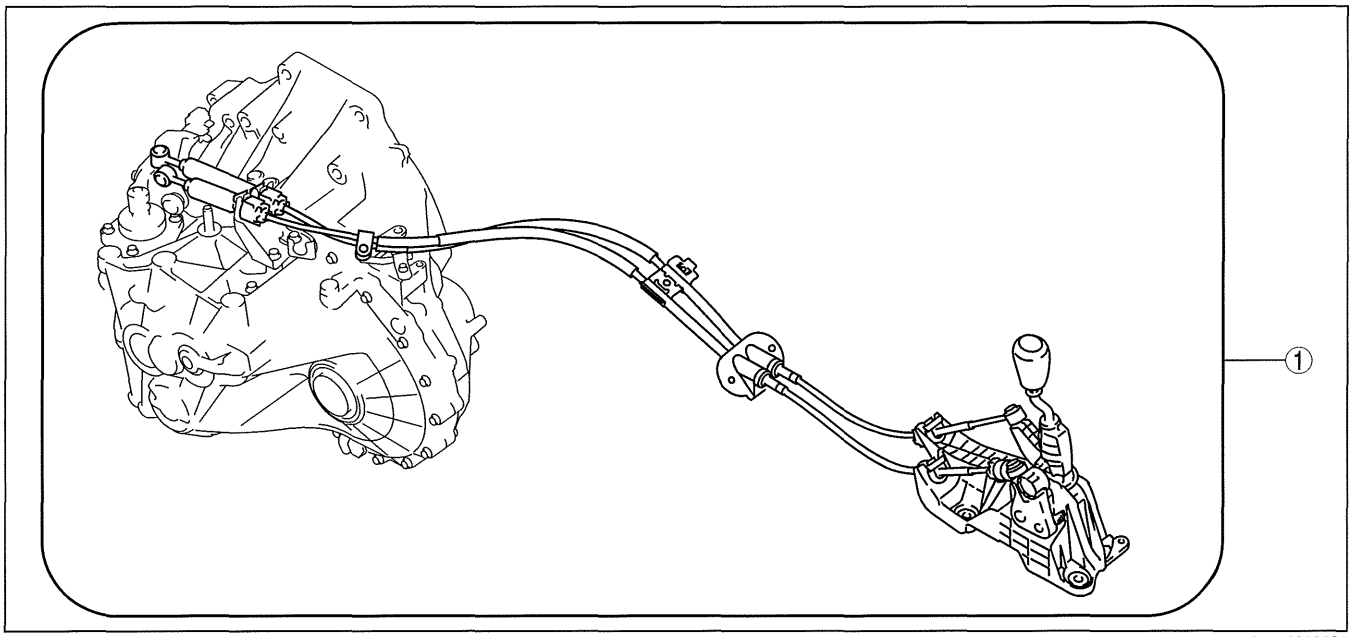
id051600800100

G35M-R, G66M-R



am3uuw0000331

A26M-R



am3zzw0000593

1	Shift mechanism (See 05-16-2 MANUAL TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)

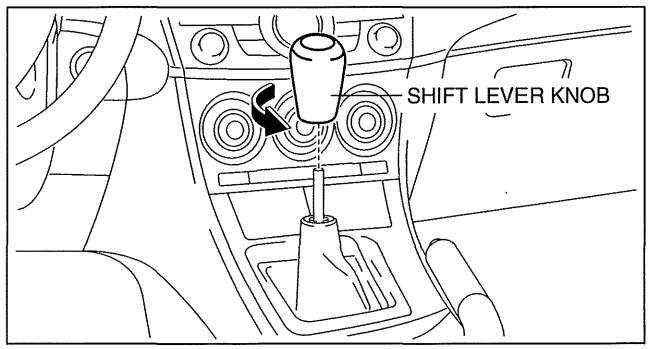
cardiagn.com

MANUAL TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION

id051600800200

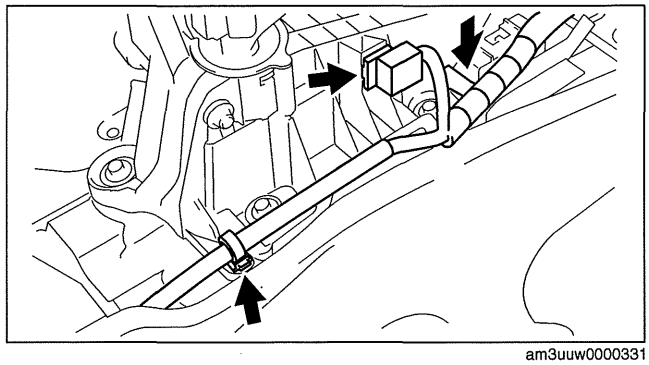
G35M-R, G66M-R

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component. (ex: battery, battery tray and PCM component) (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
6. Remove the tunnel member. (rear) (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
7. Remove the upper panel. (See 09-17-40 UPPER PANEL REMOVAL/INSTALLATION.)
8. Remove the shift lever knob.
9. Remove the shift panel. (See 09-17-42 SHIFT PANEL REMOVAL/INSTALLATION.)
10. Remove the side wall. (See 09-17-37 SIDE WALL REMOVAL/INSTALLATION.)
11. Remove the console. (See 09-17-45 CONSOLE REMOVAL/INSTALLATION.)



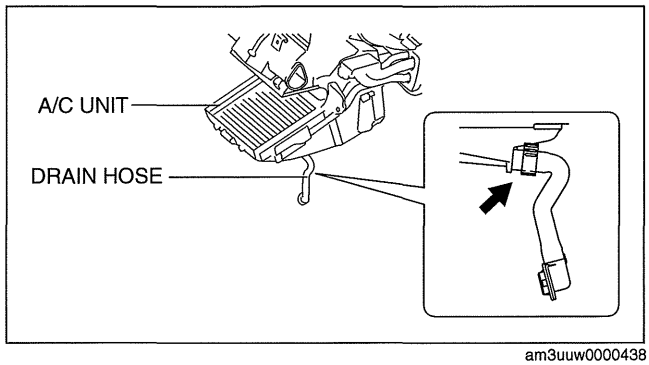
am3uuw0000331

12. Detach the clip as shown in the figure.



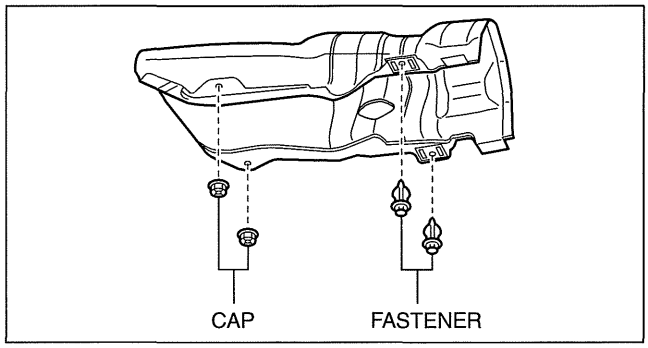
am3uuw0000331

13. Disconnect the drain hose connected to A/C unit. (See 07-11-4 A/C UNIT REMOVAL/INSTALLATION.)



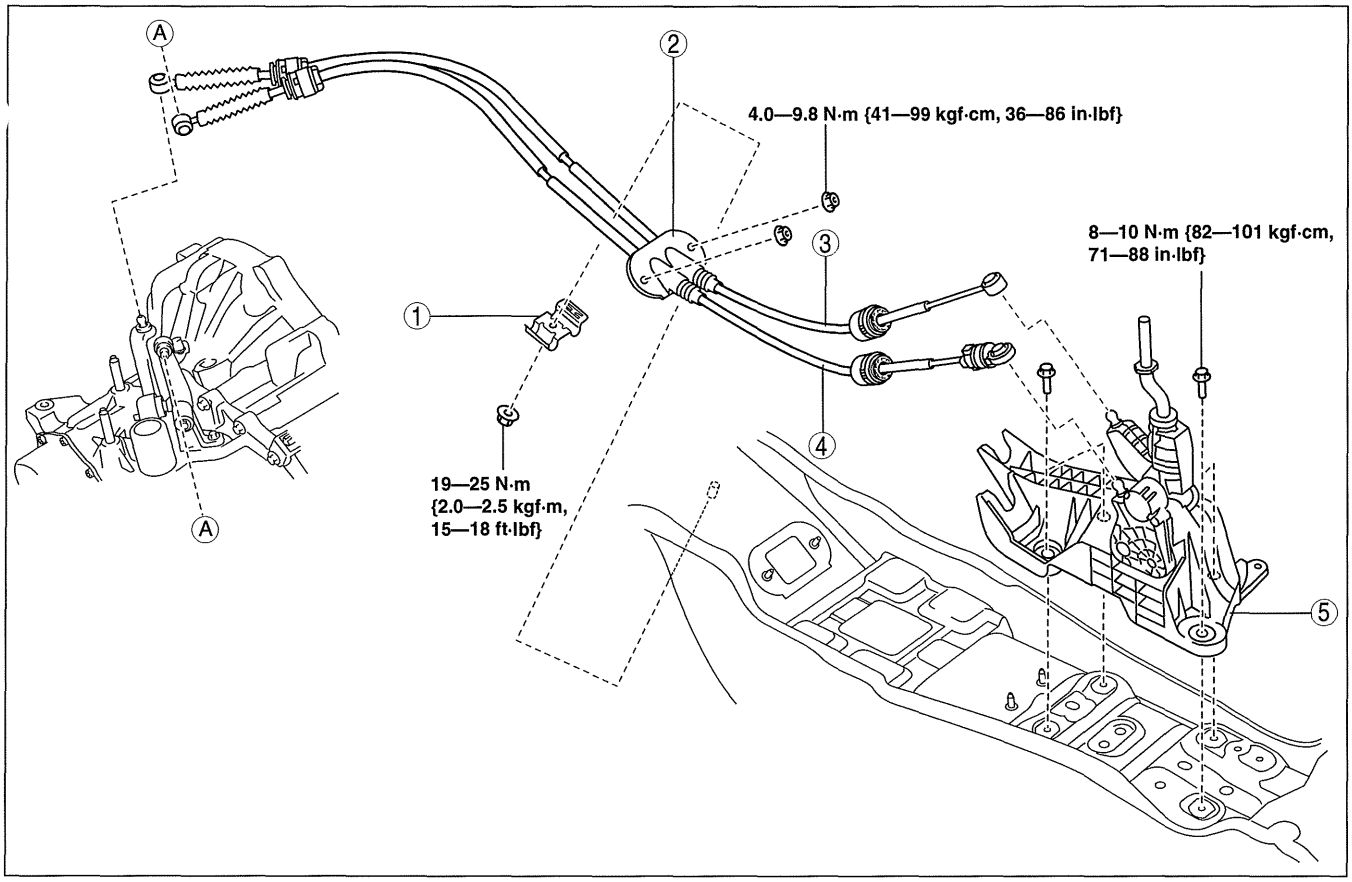
am3uuw0000438

14. Remove the cap and fastener securing the insulator (front) and set the insulator (front) aside.
15. Remove in the order indicated in the table.
16. Install in the reverse order of removal.
17. After installation, verify that the shift lever can be shifted smoothly into each position.



am3uuw0000331

cardiagn.com

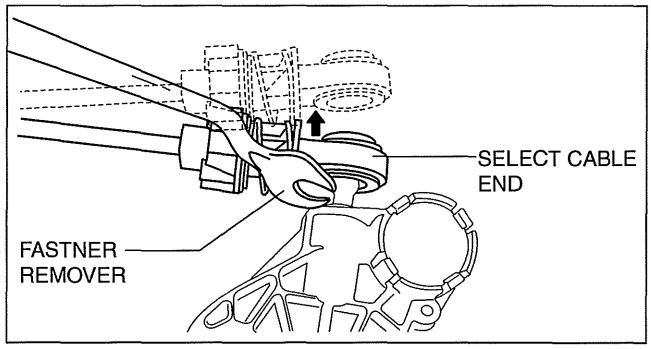


am3uuw0000214

1	Clip
2	Grommet
3	Main shift cable (See 05-16-3 Main shift cable and main select cable removal note.)
4	Main select cable (See 05-16-3 Main shift cable and main select cable removal note.)
5	Shift lever component

Main shift cable and main select cable removal note

1. Remove the both shift cable end and select cable end using a fastener remover.



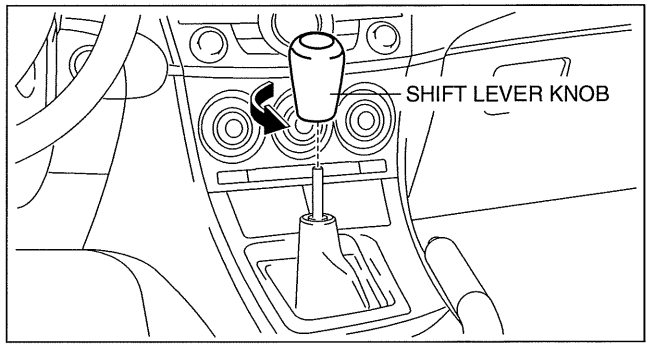
am3uuw0000214

A26M-R

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
2. Disconnect the negative battery cable.
3. Remove the battery and battery tray. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [L3 WITH TC].)
4. Remove the air cleaner and air inlet hose. (See 01-13B-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
5. Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

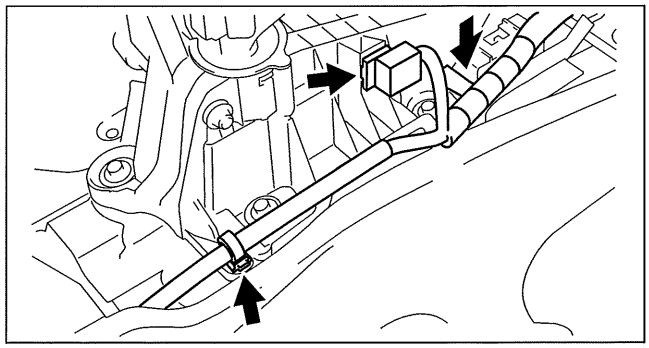
cardiagn.com

6. Remove the tunnel member (rear). (See 01-15B-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [L3 WITH TC].)
7. Remove the upper panel. (See 09-17-40 UPPER PANEL REMOVAL/INSTALLATION.)
8. Remove the shift lever knob.
9. Remove the shift panel (See 09-17-42 SHIFT PANEL REMOVAL/INSTALLATION.)
10. Remove the side wall. (See 09-17-31 SIDE PANEL REMOVAL/INSTALLATION.)

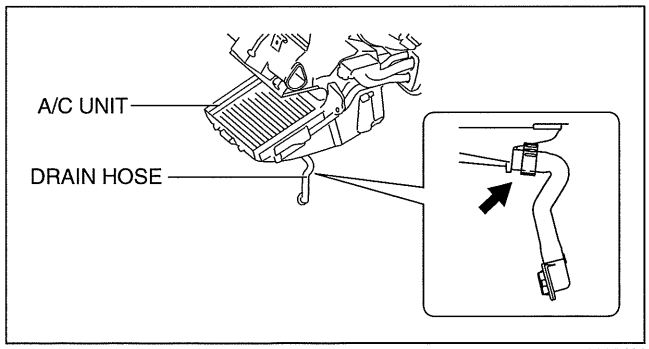


am3uuw0000331

11. Detach the clip as shown in the figure.

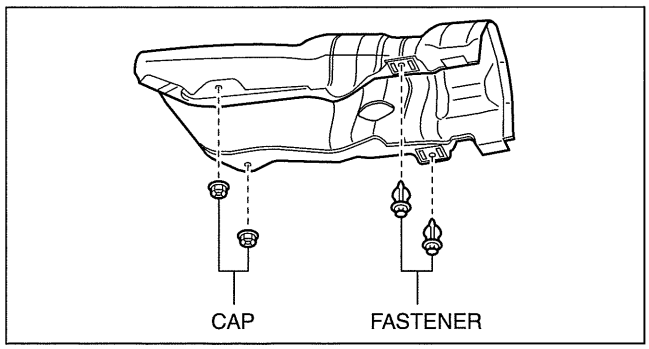

am3uuw0000331

12. Disconnect the drain hose connected to A/C unit. (See 07-11-4 A/C UNIT REMOVAL/ INSTALLATION.)



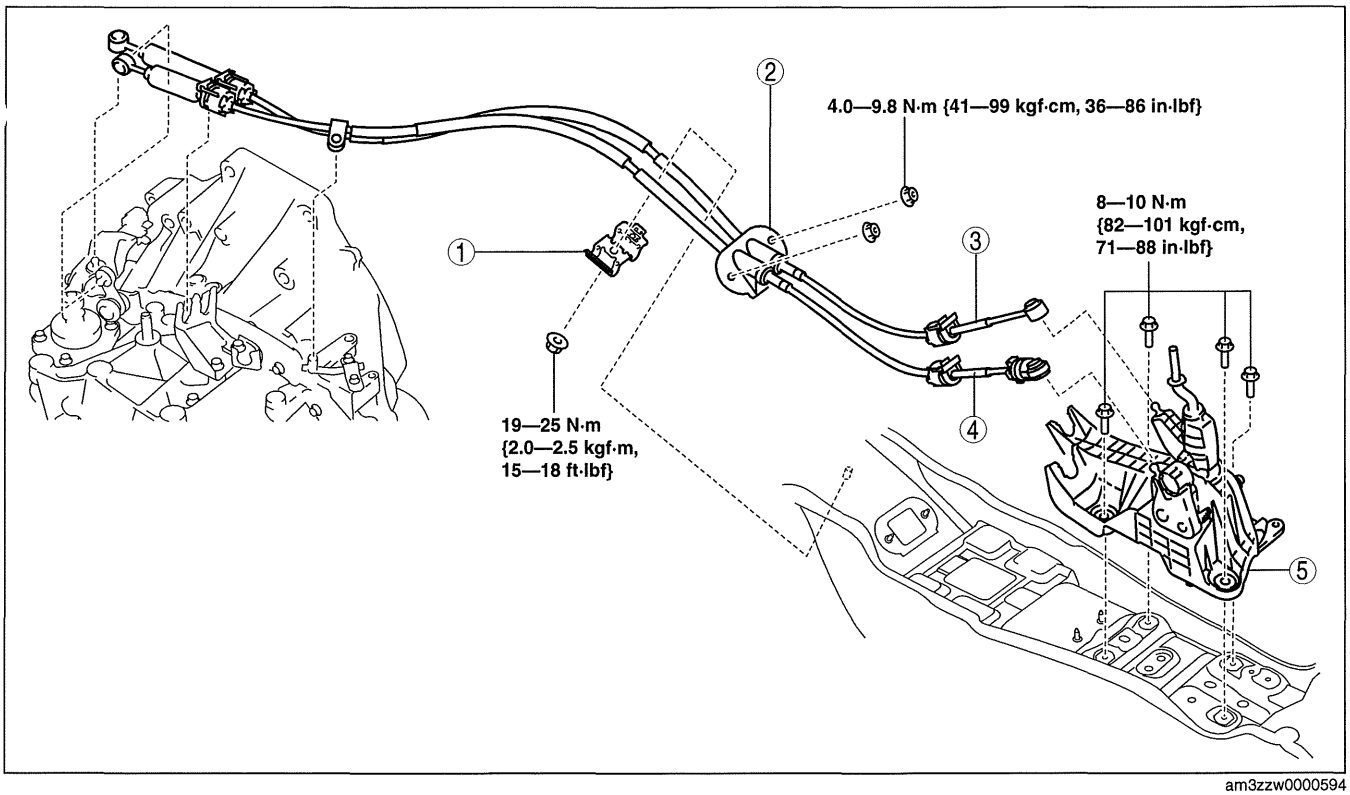
am3uuw0000438

13. Remove the cap and fastener securing the insulator (front) and set the insulator (front) aside.
14. Remove in the order indicated in the table.
15. Install in the reverse order of removal.
16. After installation, verify that the shift lever can be shifted smoothly into each position.



am3uuw0000331

cardiagn.com

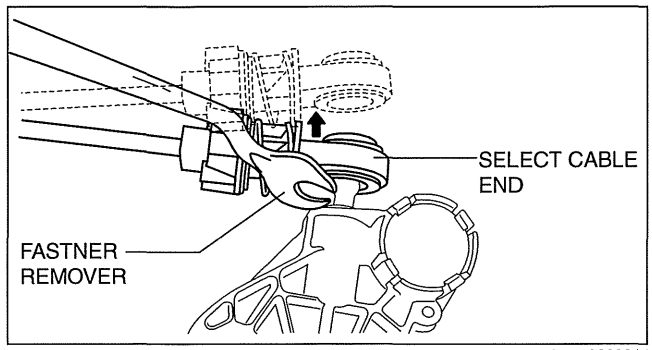


am3zzw0000594

1	Clip
2	Grommet
3	Main shift cable (See 05-16-5 Main shift cable and main select cable removal note.)
4	Main select cable (See 05-16-5 Main shift cable and main select cable removal note.)
5	Shift lever component

Main shift cable and main select cable removal note

1. Remove the both shift cable end and select cable end using a fastener remover.



am3uuw0000214

cardiagn.com

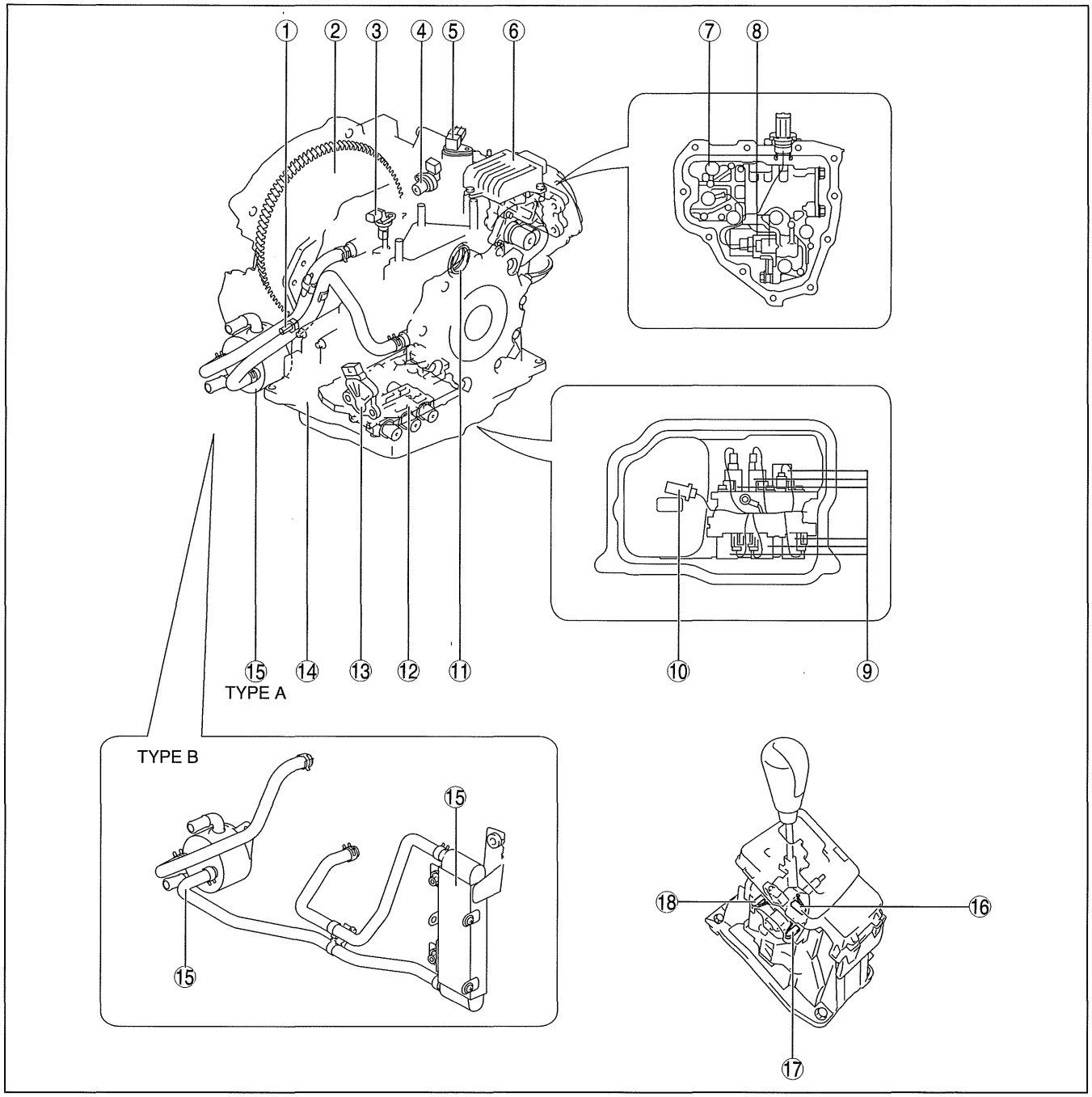
cardiagn.com

05-17 AUTOMATIC TRANSAXLE [FS5A-EL]

cardiagn.com

AUTOMATIC TRANSAXLE LOCATION INDEX [FS5A-EL]

id051721290500



am3uuw0000304

1	Oil pressure switch (See 05-17-22 OIL PRESSURE SWITCH INSPECTION [FS5A-EL].) (See 05-17-24 OIL PRESSURE SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
2	Drive plate (See 05-17-46 DRIVE PLATE REMOVAL/ INSTALLATION [FS5A-EL].)
3	Input/turbine speed sensor (See 05-17-24 INPUT/TURBINE SPEED SENSOR INSPECTION [FS5A-EL].) (See 05-17-25 INPUT/TURBINE SPEED SENSOR REMOVAL/INSTALLATION [FS5A-EL].)

4	VSS (See 05-17-27 VEHICLE SPEED SENSOR (VSS) INSPECTION [FS5A-EL].) (See 05-17-28 VEHICLE SPEED SENSOR (VSS) REMOVAL/INSTALLATION [FS5A-EL].)
5	Intermediate sensor (See 05-17-25 INTERMEDIATE SENSOR INSPECTION [FS5A-EL].) (See 05-17-26 INTERMEDIATE SENSOR REMOVAL/INSTALLATION [FS5A-EL].)
6	TCM (See 05-17-34 TCM INSPECTION [FS5A-EL].) (See 05-17-39 TCM REMOVAL/INSTALLATION [FS5A-EL].)

cardiagn.com

7	Secondary control valve body (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)
8	Pressure control solenoid B Shift solenoid F (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) (See 05-17-33 SOLENOID VALVE REMOVAL/INSTALLATION [FS5A-EL].)
9	Pressure control solenoid A Shift solenoid A Shift solenoid B Shift solenoid C Shift solenoid D Shift solenoid E (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) (See 05-17-33 SOLENOID VALVE REMOVAL/INSTALLATION [FS5A-EL].)
10	TFT sensor (See 05-17-20 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL].) (See 05-17-21 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR REMOVAL/INSTALLATION [FS5A-EL].)
11	Oil seal (See 05-17-47 OIL SEAL REPLACEMENT [FS5A-EL].)
12	Primary control valve body (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)
13	TR switch (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) (See 05-17-15 TRANSAXLE RANGE (TR) SWITCH ADJUSTMENT [FS5A-EL].) (See 05-17-16 TRANSAXLE RANGE (TR) SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
14	Automatic transaxle (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].) (See 05-17-7 ROAD TEST [FS5A-EL].) (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].) (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].) (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FS5A-EL].)
15	Oil cooler (See 05-17-47 OIL COOLER REMOVAL/INSTALLATION [FS5A-EL].) (See 05-17-51 OIL COOLER FLUSHING [FS5A-EL].)
16	M range switch (See 05-17-18 M RANGE SWITCH INSPECTION [FS5A-EL].) (See 05-17-18 M RANGE SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
17	Up switch (See 05-17-18 UP SWITCH INSPECTION [FS5A-EL].) (See 05-17-19 UP SWITCH REMOVAL/INSTALLATION [FS5A-EL].)
18	Down switch (See 05-17-19 DOWN SWITCH INSPECTION [FS5A-EL].) (See 05-17-20 DOWN SWITCH REMOVAL/INSTALLATION [FS5A-EL].)

MECHANICAL SYSTEM TEST [FS5A-EL]

id051721290600

Mechanical System Test Preparation

1. Engage the parking brake and use wheel chocks at the front and rear of the wheels.
2. Inspect the engine coolant. (See 01-12A-2 ENGINE COOLANT LEVEL INSPECTION [LF, L5].)
3. Inspect the engine oil. (See 01-11A-3 ENGINE OIL LEVEL INSPECTION [LF, L5].)
4. Inspect the ATF. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].)
5. Inspect the idle speed. (See 01-10A-3 ENGINE TUNE-UP [LF, L5].)
6. Inspect the ignition timing. (See 01-10A-3 ENGINE TUNE-UP [LF, L5].)
7. Verify that no DTCs recorded. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].)

Line Pressure Test

1. Perform "Mechanical System Test Preparation". (See 05-17-3 Mechanical System Test Preparation.)

Warning

- **Removing the square-head plug when the ATF is hot can be dangerous. Hot ATF can come out of the opening and badly burn you. Before removing the square-head plug, allow the ATF to cool.**

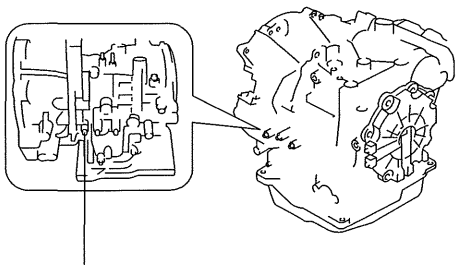
Note

- Use a suitable oil pressure gauge that corresponds to the line pressure because the maximum scale value differs depending on the oil pressure gauge.

2. Perform the line pressure test with the engine idle at D range.

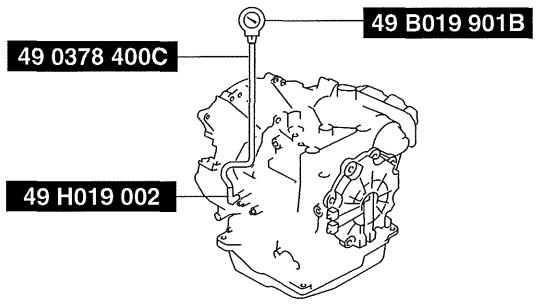
cardiagn.com

(1) Remove the square-head plug from the line pressure inspection port.
(2) Connect the SSTs as following:
- When using the oil pressure gauge set (49 0378 400C), connect the SSTs (49 H019 002, 49 0378 400C, 49 B019 901B) to the line pressure inspection port as shown in the figure.
- When using the oil pressure gauge set (49 D019 9A2), connect the SSTs (49 D019 910, 49 D019 911, 49 D019 913, 49 D019 909, 49 D019 908) to the line pressure inspection port as shown in the figure.

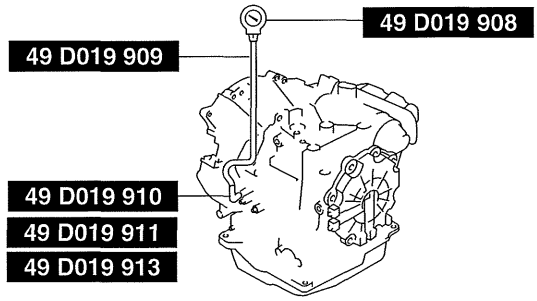


am3uuw0000229

USING OIL PRESSURE GAUGE SET (49 0378 400C)



USING OIL PRESSURE GAUGE SET (49 D019 9A2)



· 49 0378 400C
— 49 B019 901B (LOW Pressure Gauge): 0—1,000 kPa {0.00—10.19 kgf/cm^2, 0.0—145.0 psi}
— 49 B019 902A (HIGH Pressure Gauge): 0—2,500 kPa {0.00—25.49 kgf/cm^2, 0.0—362.5 psi}

· 49 D019 9A2
— 49 D019 908 (LOW Pressure Gauge): 0—1,000 kPa {0.00—10.19 kgf/cm^2, 0.0—145.0 psi}
— 49 D019 907 (HIGH Pressure Gauge): 0—3,000 kPa {0.00—30.59 kgf/cm^2, 0.0—435.1 psi}

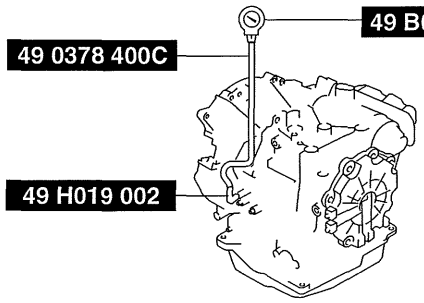
am6xuw0000280

(3) Start the engine.
(4) Warm-up the transaxle until the ATF temperature reaches at 60—70 °C {140—158 °F}.
(5) Select the selector lever to D range.
(6) Read the line pressure with the engine idle.

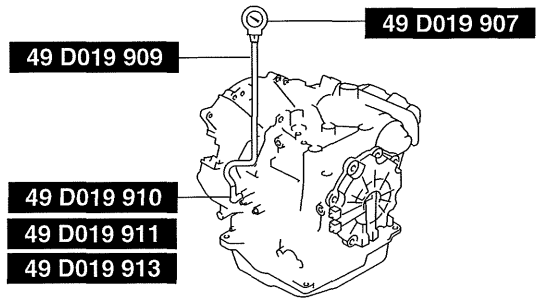
3. Perform the line pressure test at the engine idle at each position/range in the same manner.
4. Stop the engine.
5. Perform the line pressure test with the engine stall at D range.
   (1) Replace the oil pressure gauge as following:
   - When using the oil pressure gauge set (49 0378 400C), replace the SST (49 B019 901B) with SST (49 B019 902A).
   - When using the oil pressure gauge set (49 D019 9A2), replace the SST (49 D019 908) with SST (49 D019 907).

cardiagn.com

USING OIL PRESSURE GAUGE SET (49 0378 400C)



USING OIL PRESSURE GAUGE SET (49 D019 9A2)



· 49 0378 400C
— 49 B019 901B (LOW Pressure Gauge): 0—1,000 kPa {0.00—10.19 kgf/cm^2, 0.0—145.0 psi}
— 49 B019 902A (HIGH Pressure Gauge): 0—2,500 kPa {0.00—25.49 kgf/cm^2, 0.0—362.5 psi}

· 49 D019 9A2
— 49 D019 908 (LOW Pressure Gauge): 0—1,000 kPa {0.00—10.19 kgf/cm^2, 0.0—145.0 psi}
— 49 D019 907 (HIGH Pressure Gauge): 0—3,000 kPa {0.00—30.59 kgf/cm^2, 0.0—435.1 psi}

am6xuw0000280

(2) Start the engine.
(3) Firmly depress the brake pedal with the left foot.
(4) Select the selector lever to D range.

Caution
- **If the accelerator pedal is pressed for longer than 5 s while the brake pedal is pressed, the transaxle could be damaged. Therefore, perform Steps (5)—(6) within 5 s.**

(5) Gradually depress the accelerator pedal with the right foot.
(6) When the engine speed no longer increases, quickly read the line pressure and release the accelerator pedal.
(7) Select the selector lever to N position and let the engine idle for 1 min or more to cool the ATF.

6. Perform the line pressure test with the engine stall at each position/range in the same manner.
   - If there is any malfunction, inspect the following "possible cause" according to the condition.

Condition		Possible Cause
Low pressure	In all ranges	• Worn oil pump • Oil leakage from oil pump, control valve body, and/or transaxle case • Pressure regulator valve sticking • Pressure control solenoid A malfunction
	In D range and M range (1GR, 2GR)	• Oil leakage from forward clutch hydraulic circuit
	In M range (2GR)	• Oil leakage from 2-4 brake band hydraulic circuit
	In M range (1GR), R position	• Oil leakage from low and reverse brake hydraulic circuit
	In R position	• Oil leakage from reverse clutch hydraulic circuit
High pressure	In all ranges	• Pressure regulator valve stuck • Pressure control solenoid A malfunction

cardiagn.com

Line Pressure

Test Condition		Specification (kPa {kgf/cm^2, psi})	
		LF	L5
Idle	D range	330—470 {3.37—4.79, 47.9—68.1}	
	M range (1GR, 2GR)	330—470 {3.37—4.79, 47.9—68.1}	
	R position	490—710 {5.00—7.23, 71.1—102.0}	
Stall	D range	1,200—1,320 {12.24—13.46, 174.1—191.4}	
	M range (1GR, 2GR)	1,200—1,320 {12.24—13.46, 174.1—191.4}	
	R position	1,630—1,950 {16.63—19.88, 236.5—282.8}	1,820—2,090 {18.56—21.31, 264.0—303.1}

7. Stop the engine.

Warning
- **Removing the square-head plug when the ATF is hot can be dangerous. Hot ATF can come out of the opening and badly burn you. Before removing the square-head plug, allow the ATF to cool.**

8. Remove the SSTs.

Note
- Do not reuse the square-head plug because it is coated.

9. Install a new square-head plug in the inspection port.

Tightening torque
4.8—9.8 N·m {49—99 kgf·cm, 43—86 in·lbf}

Stall Test
1. Perform "Mechanical System Test Preparation". (See 05-17-3 Mechanical System Test Preparation.)
2. Start the engine.
3. Perform the stall test at D range.
   (1) Firmly depress the brake pedal with the left foot.
   (2) Select the selector lever to D range.

Caution
- **If the accelerator pedal is pressed for longer than 5 s while the brake pedal is pressed, the transaxle could be damaged. Therefore, perform Steps (3)—(4) within 5 s.**

   (3) Gently depress the accelerator pedal with the right foot.
   (4) When the engine speed no longer increases, quickly read the speed and release the accelerator pedal.
   (5) Select the selector lever to N position and let the engine idle for 1 min or more to cool the ATF.
4. Perform the stall test at each position/range in the same manner.
   - If there is any malfunction, inspect the following "possible cause" according to the condition.

Condition		Possible Cause	
Above specification	In all ranges	Insufficient line pressure	• Worn oil pump • Oil leakage from oil pump, control valve body, and/or transaxle case • Pressure regulator valve sticking • Converter relief valve sticking • Pressure control solenoid A malfunction
	In D range and M range (1GR, 2GR)	• Forward clutch slipping	
	In M range (2GR)	• 2-4 brake band slipping	
	In M range (1GR), R position	• Low and reverse brake slipping	
	In R position	• Perform "ROAD TEST" to determine whether problem is in reverse clutch or low and reverse brake — Engine braking felt in M range (1GR): Reverse clutch is defective — Engine braking not felt in M range (1GR): Low and reverse brake is defective	
Below specification		• Engine lack of power	

cardiagn.com

Stall Speed

Test Condition	Specification (rpm)	
	LF	L5
D range	2,200—2,800	2,400—3,000
M range	2,200—2,800	2,400—3,000
R position	2,200—2,800	2,400—3,000

Time Lag Test

1. Perform "Mechanical System Test Preparation". (See 05-17-3 Mechanical System Test Preparation.)
2. Start the engine.
3. Perform the time lag test when selecting the selector lever from N position to D range.
   (1) Select the selector lever from N position to D range while the brake pedal is depressed.
   (2) Measure the time it takes from selecting until shock is felt when shifting the selector lever from N position to D range.
4. Perform the time lag test when selecting the selector lever from N position to R position in the same manner.
   - If there is any malfunction, inspect the following "possible cause" according to the condition.

Condition		Possible Cause
From N position to D range	More than specification	• Low line pressure • Oil leakage from forward clutch hydraulic circuit • Forward clutch slipping • Shift solenoid A malfunction
	Less than specification	• High line pressure • Shift solenoid A malfunction • Forward accumulator malfunction
From N position to R position	More than specification	• Low line pressure • Low and reverse brake slipping • Reverse clutch slipping
	Less than specification	• High line pressure • Servo apply accumulator malfunction • Shift solenoid B malfunction

Time Lag

Test Condition	Specification (s)	
	LF	L5
From N position to D range	0.4—0.7	
From N position to R position	0.4—0.7	

ROAD TEST [FS5A-EL]

id051721290700

Warning

- **When performing a road test, be aware of other vehicles, people, impediments, etc. to avoid an accident.**

Note

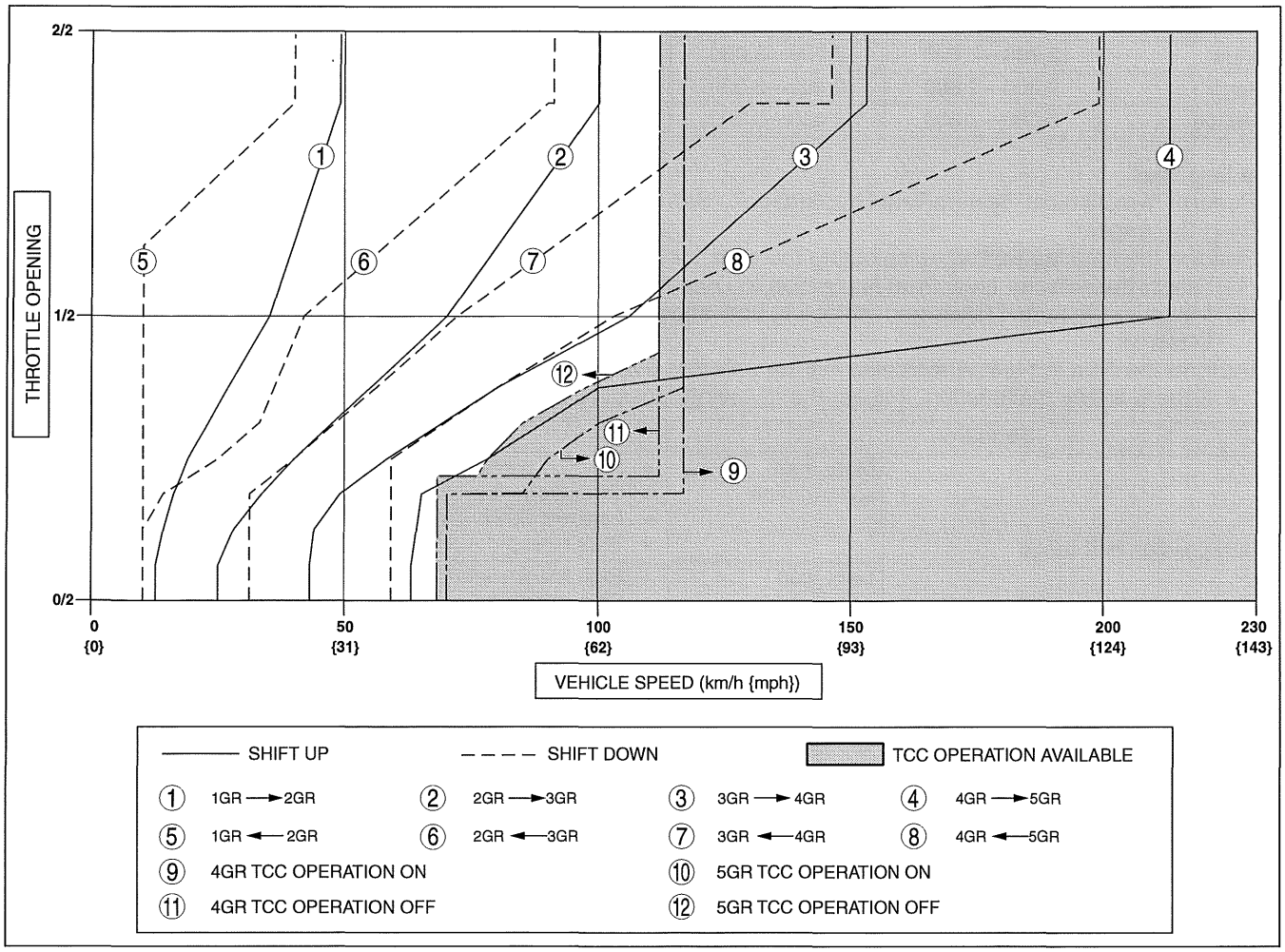
- When the legal speed limit must be exceeded, use a chassis dynamometer instead of performing a road test.

Road Test Preparation

1. Inspect the engine coolant. (See 01-12A-2 ENGINE COOLANT LEVEL INSPECTION [LF, L5].)
2. Inspect the engine oil. (See 01-11A-3 ENGINE OIL LEVEL INSPECTION [LF, L5].)
3. Inspect the ATF. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].)
4. Inspect the idle speed. (See 01-10A-3 ENGINE TUNE-UP [LF, L5].)
5. Inspect the ignition timing. (See 01-10A-3 ENGINE TUNE-UP [LF, L5].)
6. Verify that no DTCs recorded. (See 05-02-3 ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL].)

cardiagn.com

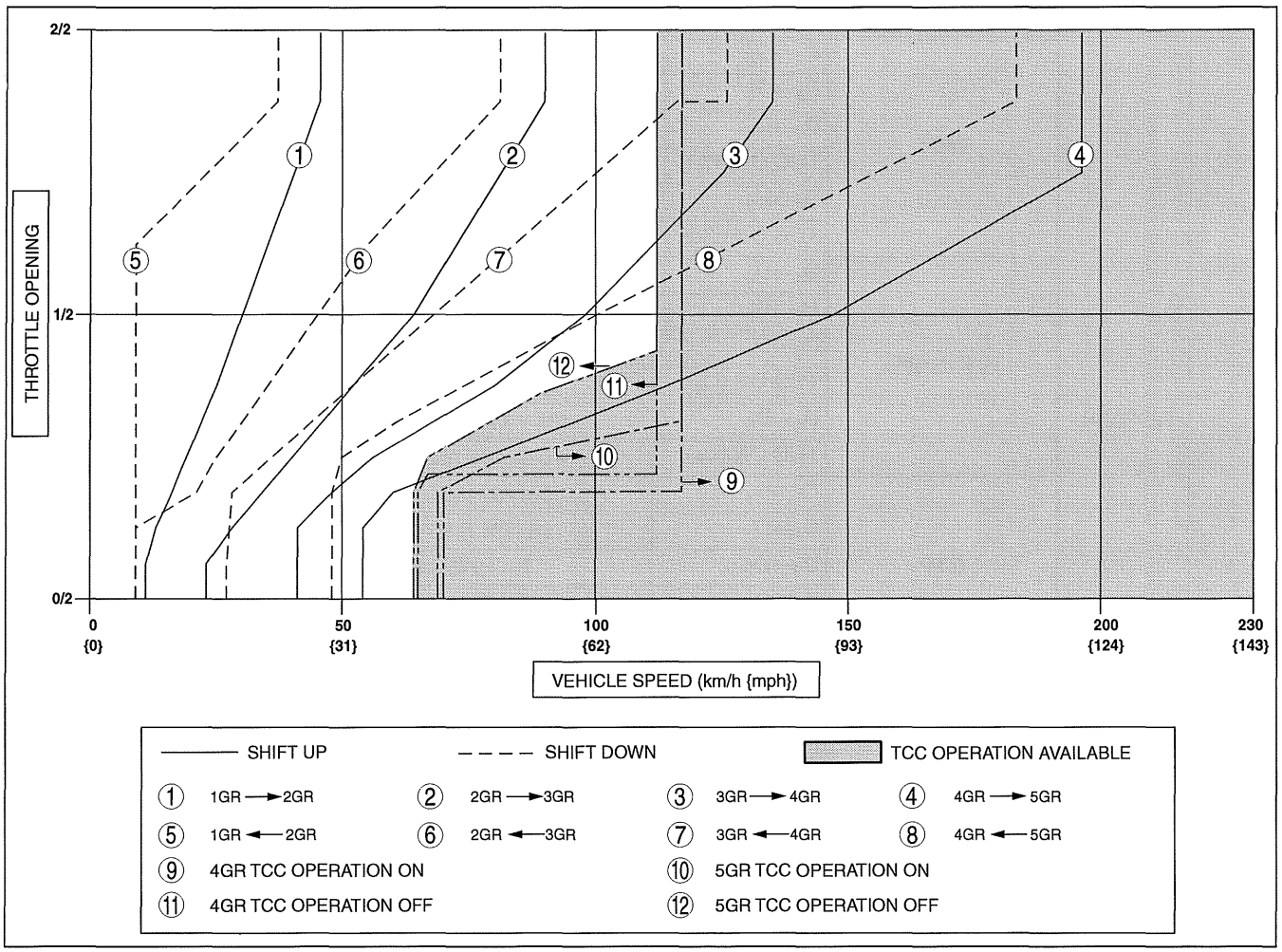
Shift Diagram (Normal Mode at D Range)
LF



am3uuw0000303

cardiagn.com

L5



am3uuw0000303

D Range Test

1. Perform "Road Test Preparation". (See 05-17-7 Road Test Preparation.)
2. Warm-up the transaxle until the ATF temperature reaches at 60—70 °C.
3. Select the selector lever to D range.
4. Perform the road test at D range.
   - If there is any malfunction, perform the "Symptom Troubleshooting".
   (1) Accelerate the vehicle with half and WOT, then verify that 1GR—2GR, 2GR—3GR, 3GR—4GR, and 4GR—5GR upshifts can be obtained. The shift points must be as shown in the table below.
   (2) Decelerate the vehicle in 5GR, then verify that 5—4, 4—3, 3—2 and 2—1 downshifts can be obtained. The shift points must be as shown in the table below.
   (3) Drive the vehicle in 5GR, 4GR, 3GR, and 2GR and verify that kickdown occurs for 5GR—4GR, 4GR—3GR, 3GR—2GR, 2GR—1GR downshifts, and that the shift points are as shown in the table below.
   (4) Decelerate the vehicle and verify that engine braking effect is felt in 5GR, 4GR, 3GR and 2GR.
   (5) Drive the vehicle and verify that TCC operation is obtained. The operation points must be as shown in the table below.

cardiagn.com

Shift point (LF)

Range/Mode		Throttle cindition	Shift	Vehicle speed (km/h {mph})	Turbine speed (rpm)
D	NORMAL	WOT	$D_1 \rightarrow D_2$	48—54 {30—33}	5,250—5,850
			$D_2 \rightarrow D_3$	98—106 {61—65}	5,700—6,100
			$D_3 \rightarrow D_4$	150—160 {93—99}	5,850—6,150
			TCC ON (D_4)	114—124 {71—76}	3,250—3,450
			$D_4 \rightarrow D_5$	210—220 {131—136}	5,900—6,150
			TCC ON (D_5)	114—124 {71—76}	2,400—2,550
		Half throttle	$D_1 \rightarrow D_2$	29—38 {18—23}	3,150—4,150
			$D_2 \rightarrow D_3$	59—76 {37—47}	3,400—4,400
			$D_3 \rightarrow D_4$	87—115 {54—71}	3,400—4,450
			TCC ON (D_4)	108—126 {67—78}	3,050—3,500
			$D_4 \rightarrow D_5$	134—179 {84—110}	3,750—5,000
			TCC ON (D_5)	108—126 {67—78}	2,250—2,600
		CTP	$D_5 \rightarrow D_4$	56—62 {35—38}	1,200—1,250
			$D_4 \rightarrow D_3$	28—34 {18—21}	800—950
			$D_3 \rightarrow D_2$	7—13 {5—8}	300—500
			$D_2 \rightarrow D_1$	7—13 {5—8}	450—750
			$D_3 \rightarrow D_1$	7—13 {5—8}	300—500
		Kickdown (WOT)	$D_5 \rightarrow D_4$	194—204 {121—126}	4,050—4,200
			$D_4 \rightarrow D_3$	141—151 {88—93}	4,000—4,200
			$D_3 \rightarrow D_2$	87—95 {54—58}	3,400—3,650
			$D_2 \rightarrow D_1$	37—43 {23—26}	2,150—2,450
	AAS	WOT	$D_1 \rightarrow D_2$	48—54 {30—33}	5,250—5,850
			$D_2 \rightarrow D_3$	98—106 {61—65}	5,700—6,100
			$D_3 \rightarrow D_4$	150—160 {93—99}	5,850—6,150
			$D_4 \rightarrow D_5$	210—220 {131—136}	5,900—6,150
		Half throttle	$D_1 \rightarrow D_2$	29—38 {18—23}	3,150—4,150
			$D_2 \rightarrow D_3$	59—76 {37—47}	3,400—4,400
			$D_3 \rightarrow D_4$	87—115 {54—71}	3,400—4,450
			$D_4 \rightarrow D_5$	134—179 {84—110}	3,750—5,000
		CTP	$D_5 \rightarrow D_4$	56—62 {35—38}	1,200—1,250
			$D_4 \rightarrow D_3$	28—34 {18—21}	800—950
			$D_3 \rightarrow D_2$	7—13 {5—8}	300—500
			$D_2 \rightarrow D_1$	7—13 {5—8}	450—750
			$D_3 \rightarrow D_1$	7—13 {5—8}	300—500
		Kickdown (WOT)	$D_5 \rightarrow D_4$	194—204 {121—126}	4,050—4,200
			$D_4 \rightarrow D_3$	141—151 {88—93}	4,000—4,200
			$D_3 \rightarrow D_2$	87—95 {54—58}	3,400—3,650
			$D_2 \rightarrow D_1$	37—43 {23—26}	2,150—2,450

cardiagn.com

Shift point (L5)

Range/Mode		Throttle cindition	Shift	Vehicle speed (km/h {mph})	Turbine speed (rpm)
D	NORMAL	WOT	$D_1 \rightarrow D_2$	45—50 {28—31}	5,150—5,800
			$D_2 \rightarrow D_3$	88—96 {55—59}	5,400—5,850
			$D_3 \rightarrow D_4$	132—142 {82—88}	5,400—5,750
			TCC ON (D_4)	114—124 {71—76}	3,400—3,650
			$D_4 \rightarrow D_5$	193—203 {120—125}	5,750—6,000
			TCC ON (D_5)	114—124 {71—76}	2,550—2,700
		Half throttle	$D_1 \rightarrow D_2$	26—34 {17—21}	3,000—3,900
			$D_2 \rightarrow D_3$	54—71 {34—44}	3,300—4,350
			$D_3 \rightarrow D_4$	83—109 {52—67}	3,400—4,450
			TCC ON (D_4)	108—126 {67—78}	3,250—3,700
			$D_4 \rightarrow D_5$	127—159 {79—98}	3,800—4,700
			TCC ON (D_5)	108—126 {67—78}	2,400—2,750
		CTP	$D_5 \rightarrow D_4$	45—51 {28—31}	1,000—1,100
			$D_4 \rightarrow D_3$	24—30 {15—18}	750—850
			$D_3 \rightarrow D_2$	6—12 {4—7}	250—450
			$D_2 \rightarrow D_1$	6—12 {4—7}	400—700
			$D_3 \rightarrow D_1$	6—12 {4—7}	250—450
		Kickdown (WOT)	$D_5 \rightarrow D_4$	178—188 {111—116}	3,950—4,100
			$D_4 \rightarrow D_3$	121—131 {76—81}	3,600—3,850
			$D_3 \rightarrow D_2$	77—85 {48—52}	3,150—3,450
			$D_2 \rightarrow D_1$	34—40 {22—24}	2,100—2,400
	AAS	WOT	$D_1 \rightarrow D_2$	45—50 {28—31}	5,150—5,800
			$D_2 \rightarrow D_3$	88—96 {55—59}	5,400—5,850
			$D_3 \rightarrow D_4$	132—142 {82—88}	5,400—5,750
			$D_4 \rightarrow D_5$	193—203 {120—125}	5,750—6,000
		Half throttle	$D_1 \rightarrow D_2$	26—34 {17—21}	3,000—3,900
			$D_2 \rightarrow D_3$	54—71 {34—44}	3,300—4,350
			$D_3 \rightarrow D_4$	83—109 {52—67}	3,400—4,450
			$D_4 \rightarrow D_5$	127—159 {79—98}	3,800—4,700
		CTP	$D_5 \rightarrow D_4$	45—51 {28—31}	1,000—1,100
			$D_4 \rightarrow D_3$	25—31 {16—19}	750—900
			$D_3 \rightarrow D_2$	6—12 {4—7}	250—450
			$D_2 \rightarrow D_1$	6—12 {4—7}	400—700
			$D_3 \rightarrow D_1$	6—12 {4—7}	250—450
		Kickdown (WOT)	$D_5 \rightarrow D_4$	178—188 {111—116}	3,950—4,100
			$D_4 \rightarrow D_3$	121—131 {76—81}	3,600—3,850
			$D_3 \rightarrow D_2$	77—85 {48—52}	3,150—3,450
			$D_2 \rightarrow D_1$	34—40 {22—24}	2,100—2,400

M Range Test

1. Perform "Road Test Preparation". (See 05-17-7 Road Test Preparation.)
2. Warm-up the transaxle until the ATF temperature reaches at 60—70 °C.
3. Select the selector lever to M range.
4. Perform the road test at M range.
   - If there is any malfunction, perform the "Symptom Troubleshooting".
   (1) Verify that upshifts and downshifts are obtained by manual shifting of the selector lever forward and back.
   (2) Decelerate the vehicle in 5GR, then verify that 5—4, 4—3, 3—2 and 2—1 downshifts can be obtained. The shift points must be as shown in the table below.
   (3) Decelerate the vehicle and verify that engine braking effect is felt in all geat position.
   (4) Drive the vehicle and verify that TCC operation is obtained in 4GR and 5GR.

cardiagn.com

Shift point (LF)

Range/Mode		Throttle cindition	Shift	Vehicle speed (km/h {mph})	Turbine speed (rpm)
M	MANUAL	WOT	TCC ON (M_4)	114—124 {71—76}	3,250—3,450
			TCC ON (M_5)	114—124 {71—76}	2,400—2,550
		Half throttle	TCC ON (M_4)	108—126 {67—78}	3,050—3,500
			TCC ON (M_5)	108—126 {67—78}	2,250—2,600
		CTP	$M_5 \rightarrow M_4$	28—34 {18—21}	600—700
			$M_4 \rightarrow M_3$	28—34 {18—21}	800—950
			$M_3 \rightarrow M_2$	7—13 {5—8}	300—500
			$M_2 \rightarrow M_1$	7—13 {5—8}	450—750
			$M_3 \rightarrow M_1$	7—13 {5—8}	300—500

Shift point (L5)

Range/Mode		Throttle cindition	Shift	Vehicle speed (km/h {mph})	Turbine speed (rpm)
M	MANUAL	WOT	TCC ON (M_4)	114—124 {71—76}	3,400—3,650
			TCC ON (M_5)	114—124 {71—76}	2,550—2,700
		Half throttle	TCC ON (M_4)	108—126 {67—78}	3,250—3,700
			TCC ON (M_5)	108—126 {67—78}	2,400—2,750
		CTP	$M_5 \rightarrow M_4$	28—34 {18—21}	650—700
			$M_4 \rightarrow M_3$	28—34 {18—21}	850—1,000
			$M_3 \rightarrow M_2$	7—13 {5—8}	300—500
			$M_2 \rightarrow M_1$	7—13 {5—8}	450—750
			$M_3 \rightarrow M_1$	7—13 {5—8}	300—500

P Position Test

1. Select the selector lever to P position on a gentle slope.
2. Release the brake and verify that the vehicle does not roll.
   - If the vehicle rolls, inspect the parking mechanism in the transaxle.

AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL]

id051721290800

Automatic Transaxle Fluid (ATF) Condition Inspection

1. One way of determining whether the transaxle should be disassembled is by noting:
   - If the ATF is muddy or varnished.
   - If the ATF smells strange or unusual.

ATF Condition			Possible cause
Clear red		Normal	—
Light red: pink		Contaminated with water	• Broken oil cooler inside of radiator • Poor filler tube installation: — Problem could be occurring to parts inside the transaxle by water contamination. It is necessary to overhaul transaxle and detect defected parts. If necessary, exchange transaxle.
Reddish brown	Has burnt smell and metal specks are found	Deteriorated ATF	• Defect powertrain components inside of transaxle: Specks cause wide range of problems by plugging up in oil pipe, control valve body and oil cooler in radiator. — When large amount of metal specks are found, overhaul transaxle and detect defected parts. If necessary, exchange transaxle. — Implement flushing operation as there is a possibility to have specks plugging up oil pipe and/or oil cooler inside of radiator.
	Has no burnt smell	Normal	• Discoloration by oxidation

cardiagn.com

Automatic Transaxle Fluid (ATF) Level Inspection

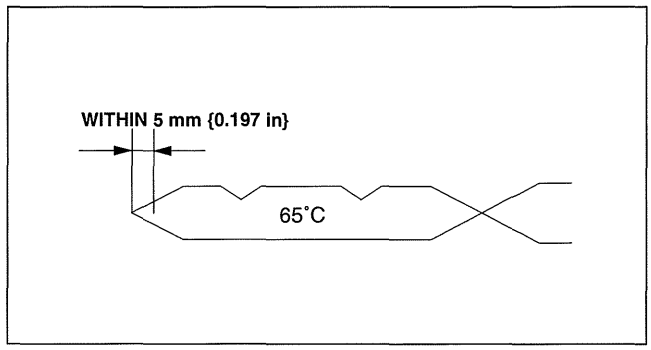
Caution
- **If there is no ATF adhering to the dipstick after warming-up the engine, there is insufficient ATF. Therefore do not drive the vehicle as it could damage the transaxle.**
- **If a final inspection of the ATF level is performed without driving the vehicle, or the ATF amount is inspected while the ATF temperature is not at about 60—70 °C {140—158 °F}, the transaxle could be damaged because the ATF level inspection would be incorrect.**
- **If too much ATF is added, the ATF temperature will increase and ATF could leak from the breather hose.**

Note
- The dipstick of the FS5A-EL type measures the ATF level on the differential side and, under the condition that the ATF temperature on the differential side does not rise even after warming up the engine, ATF adhering to the end of the dipstick is normal.

1. Inspect the ATF level before driving the vehicle.
   (1) Park the vehicle on level ground, and then engage the parking brake and use wheel chocks at the front and rear of the wheels.
   (2) Verify visually that there is no ATF leakage from the oil hose or housing.
   (3) Start the engine and warm it up in the P position.

Caution
- **If the oil level decreases dramatically while warming-up the engine, do not select the selector lever as it could damage the transaxle.**

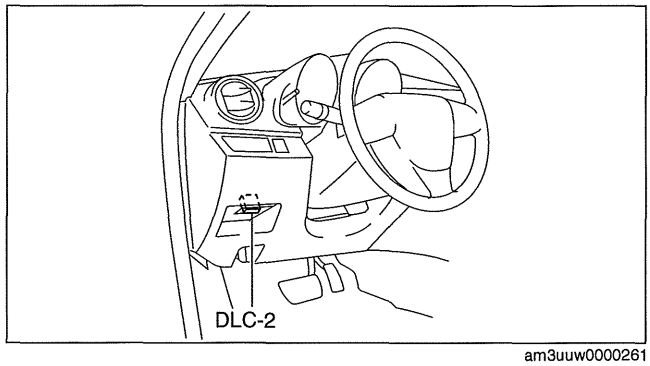
   (4) Remove the dipstick and wipe it clean while the engine is idling.
   (5) Install the dipstick and remove it again.
   (6) Verify that the ATF level is in the range as shown in the figure.
      - If the ATF level is out of the range, adjust the ATF to the specification.



am8rrw00002326

ATF type
ATF M-V

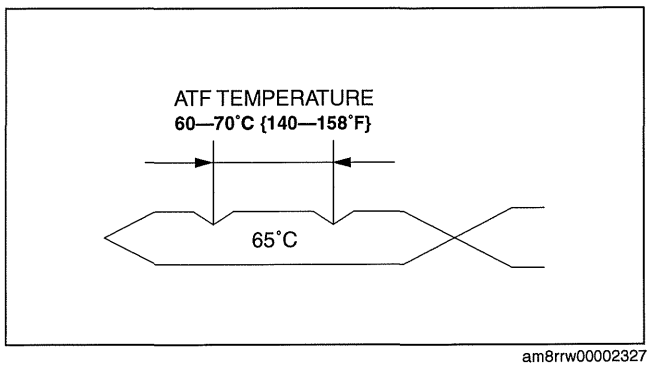
2. Inspect the ATF level after driving the vehicle.
   (1) Select the selector lever and pause momentarily in each position/range (from P position to D range) while depressing the brake pedal.
   (2) Drive on city roads at a minimum of 5 km {3 mile}.
   (3) Connect the M-MDS to the DLC-2.
   (4) Verify that the ATF temperature is 60—70 °C {140—158 °F} using the M-MDS.
   (5) Remove the dipstick and wipe it clean while the engine is idling.



am3uuw0000261

cardiagn.com

(6) Verify that the ATF level is in the range as shown in the figure.
- If the ATF level is out of the range, adjust the ATF to the specification.



am8rrw00002327

ATF type
ATF M-V

AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL]

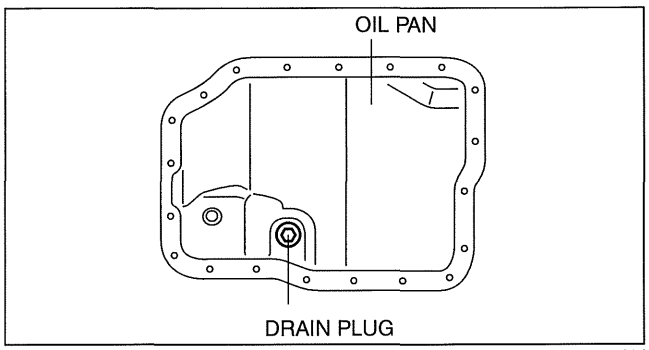
id051721290900

Warning
- **A hot transaxle and ATF can cause severe burns. Turn off the engine and wait until they are cool before changing the ATF.**

1. Drain the ATF.
   (1) Remove the oil dipstick.
   (2) Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (3) Remove the drain plug and washer to drain the ATF into a container.
2. Add the ATF.
   (1) Install a new washer and the drain plug.

Tightening torque
30—41 N·m {3.1—4.1 kgf·m, 23—30 ft·lbf}

   (2) Add the specified ATF through the oil filler tube.



am6xuw0000194

ATF Type
ATF M-V
ATF Capacity (Reference)
Draining ATF from drain plug: 3.0 L {3.2 US qt, 2.6 Imp qt}
Overhauling transaxle: 5.0 L {5.3 US qt, 4.4 Imp qt}

3. Install the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
4. Install the oil dipstick.
5. Inspect the ATF level. (See 05-17-12 AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [FS5A-EL].)

TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL]

id051721291800

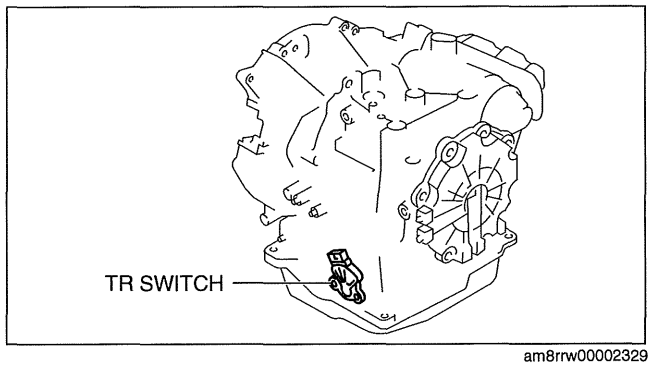
Caution
- **Water or foreign objects entering the connector can cause a poor connection or corrosion. Be sure not to drop water or foreign objects on the connector when disconnecting it.**

Operation Inspection
1. Perform the following procedures to inspect the TR switch.
   - If there is any malfunction, adjust the TR switch. (See 05-17-15 TRANSAXLE RANGE (TR) SWITCH ADJUSTMENT [FS5A-EL].)
   (1) Verify that the starter operates only when the ignition is switched to START with the selector lever in P or N position.
   (2) Verify that the back-up lights illuminate when selected to R position with the ignition at ON.
   (3) Verify that the positions of the selector lever and the selector indicator light are aligned.

On-Vehicle Inspection
1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.

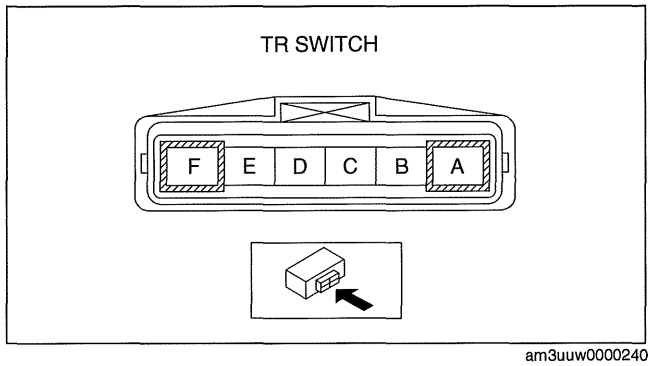
cardiagn.com

(3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
(4) Disconnect the TR switch connector.



am8rrw00002329

2. Inspect continuity as indicated in the table.



am3uuw0000240

○—○ : Continuity

Position/ Range	Terminal				B—C
	A	F	D	E	Resistance (Ω)
P	○—○				4,085—4,515
R			○—○		1,425—1,575
N	○—○				713—788
D					371—410

am3uuw0000240

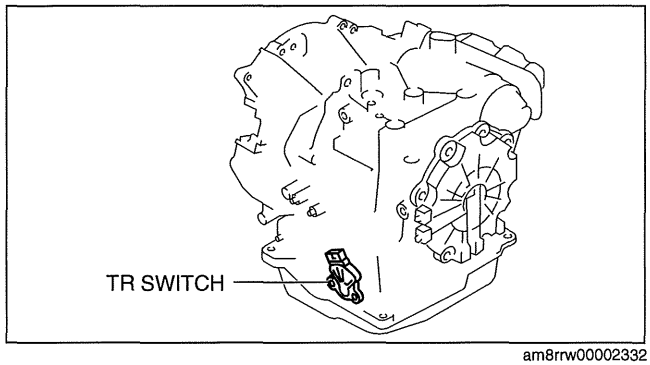
- If there is any malfunction, adjust the TR switch. (See 05-17-15 TRANSAXLE RANGE (TR) SWITCH ADJUSTMENT [FS5A-EL].)

TRANSAXLE RANGE (TR) SWITCH ADJUSTMENT [FS5A-EL]

id051721291900

Caution
- **Water or foreign objects entering the connector can cause a poor connection or corrosion. Be sure not to drop water or foreign objects on the connector when disconnecting it.**

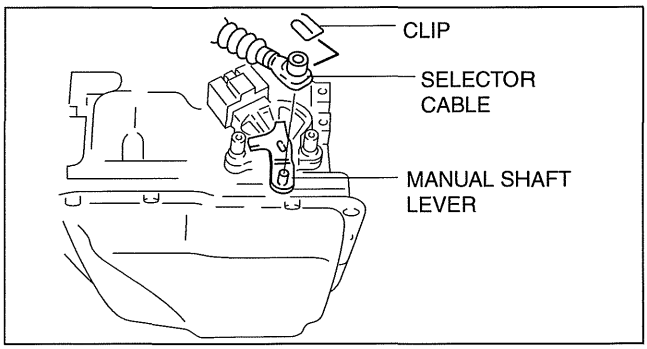
1. Select the selector lever to N position.
2. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the TR switch connector.
3. Loosen the TR switch.
   (1) Remove the clip from the selector cable.



am8rrw00002332

cardiagn.com

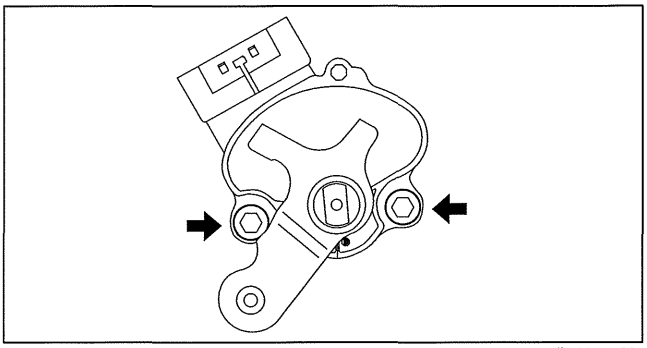
(2) Disconnect the selector cable from manual shaft lever.



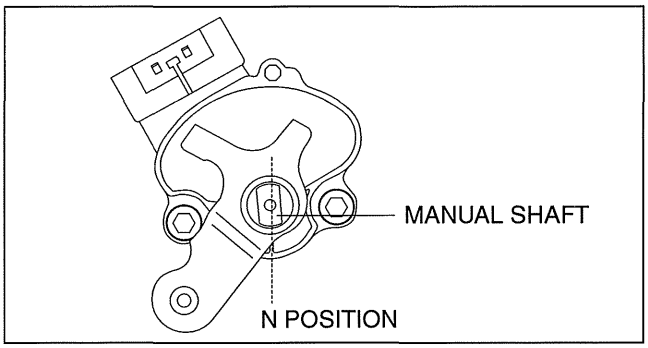
am3uuw0000240

(3) Loosen the TR switch installation bolts.

4. Adjust the TR switch.


ampjjw00005635

(1) Verify that the manual shaft is aligned with N position.



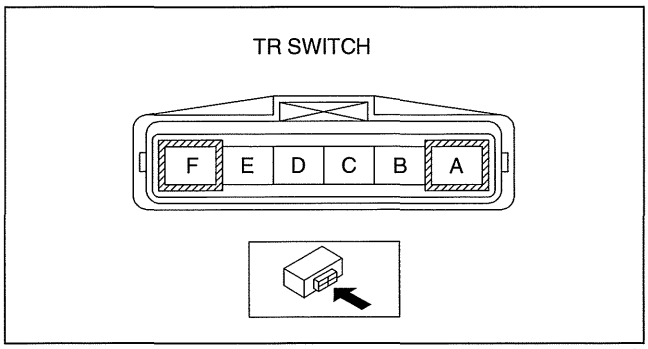
am3uuw0000240

(2) Adjust the TR switch between terminals B and C until the resistance becomes specification.

TR switch specification
713—788 ohms

(3) Tighten the TR switch installation bolts.

Tightening torque
8—11 N·m {82—112 kgf·cm, 71—97 in·lbf}



am3uuw0000240

TRANSAXLE RANGE (TR) SWITCH REMOVAL/INSTALLATION [FS5A-EL]

id051721292000

Caution
- **Water or foreign objects entering the connector can cause a poor connection or corrosion. Be sure not to drop water or foreign objects on the connector when disconnecting it.**

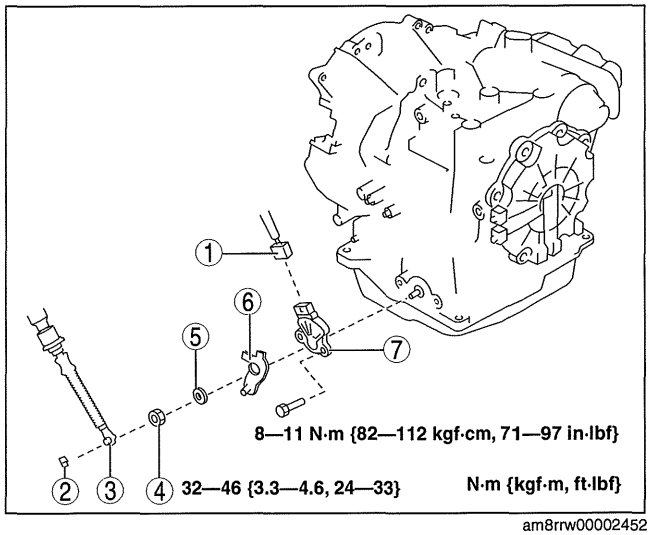
1. Select the selector lever to N position.
2. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)

cardiagn.com

3. Remove in the order indicated in the table.

1	Connector
2	Clip
3	Selector cable
4	Manual shaft nut (See 05-17-17 Manual Shaft Nut Removal Note.) (See 05-17-18 Manual Shaft Nut Installation Note.)
5	Washer
6	Manual shaft lever
7	TR switch (See 05-17-17 TR switch Installation Note.)

4. Install in the reverse order of removal.
5. Inspect the TR switch. (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].)



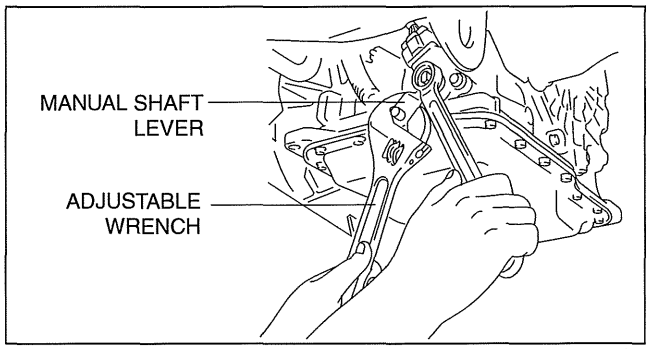
am8rrw00002452

Manual Shaft Nut Removal Note

1. Set the adjustable wrench as shown to hold the manual shaft lever and loosen the manual shaft nut.

Caution

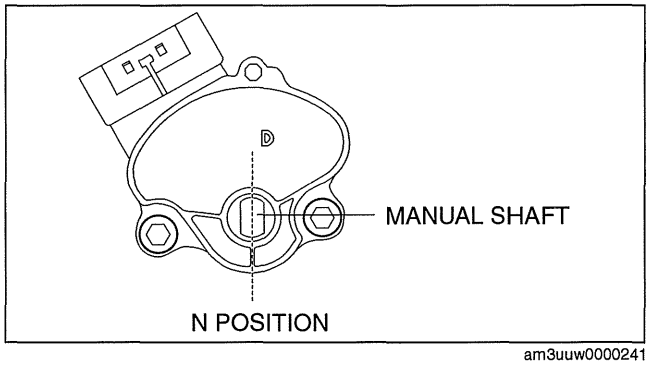
- **Do not use an impact wrench. Hold the manual shaft lever when removing the manual shaft nut, or the transaxle may be damaged.**



am6xuw0000194

TR switch Installation Note

1. Verify that the manual shaft is aligned with N position.



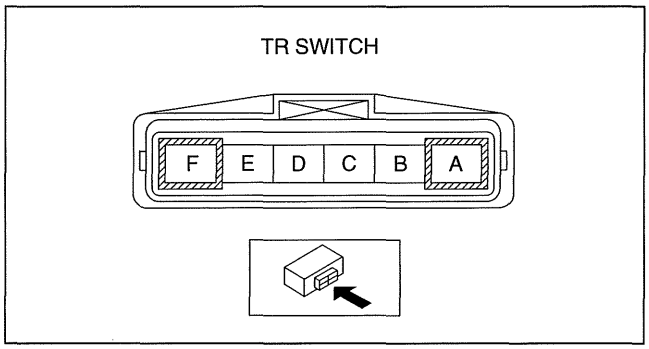
am3uuw0000241

2. Adjust the TR switch between terminals B and C until the resistance becomes specification.

TR switch specification
713—788 ohms

3. Tighten the TR switch installation bolts.

Tightening torque
8—11 N·m {82—112 kgf·cm, 71—97 in·lbf}



am3uuw0000241

cardiagn.com

Manual Shaft Nut Installation Note

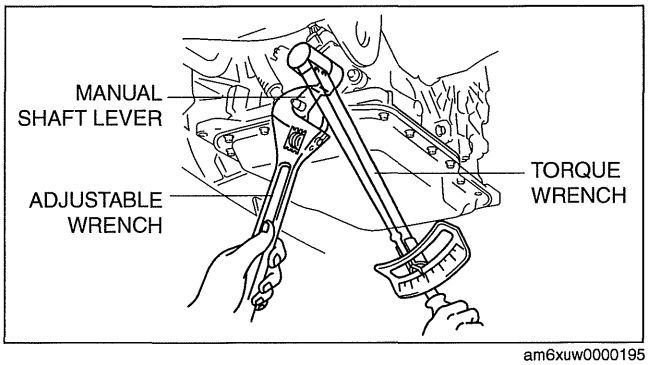
1. Set the adjustable wrench as shown to hold the manual shaft lever and tighten the manual shaft nut.

Caution

- **Do not use an impact wrench. Hold the manual shaft lever when installing the manual shaft nut, or the transaxle may be damaged**

Tightening torque

32—46 N·m {3.3—4.6 kgf·m, 24—33 ft·lbf}

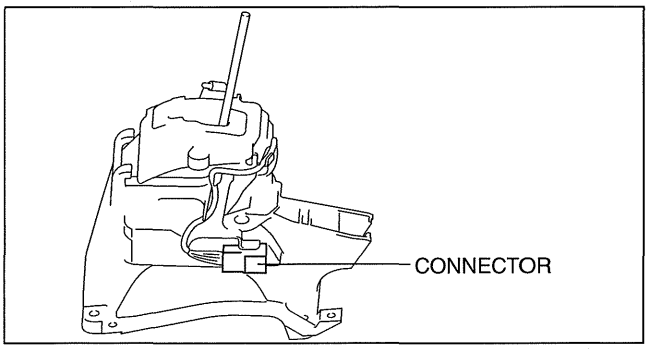


am6xuw0000195

M RANGE SWITCH INSPECTION [FS5A-EL]

id051721291400

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the console. (See 09-17-45 CONSOLE REMOVAL/INSTALLATION.)
   (4) Disconnect the selector lever component connector.

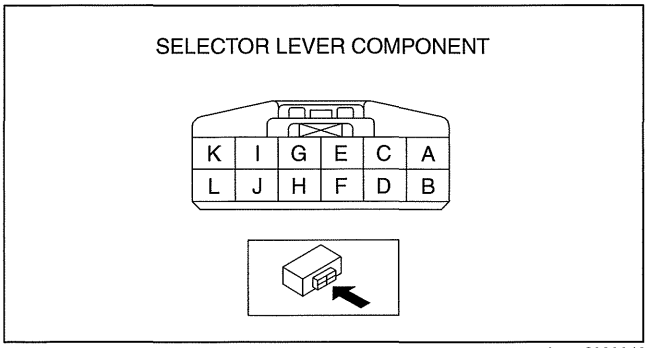


am3uuw0000299

2. Inspect the continuity between the selector lever component terminals A and H.
   - If there is any malfunction, replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)

M range switch specification

Test condition	Continuity
M range	Continuity
Except M range	No continuity



am3uuw0000243

M RANGE SWITCH REMOVAL/INSTALLATION [FS5A-EL]

id051721291500

Note

- The M range switch is built into the selector lever component.

1. Replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)

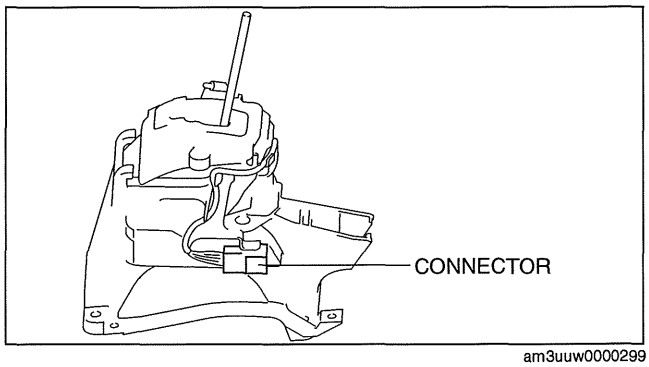
UP SWITCH INSPECTION [FS5A-EL]

id051721310000

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the console. (See 09-17-45 CONSOLE REMOVAL/INSTALLATION.)

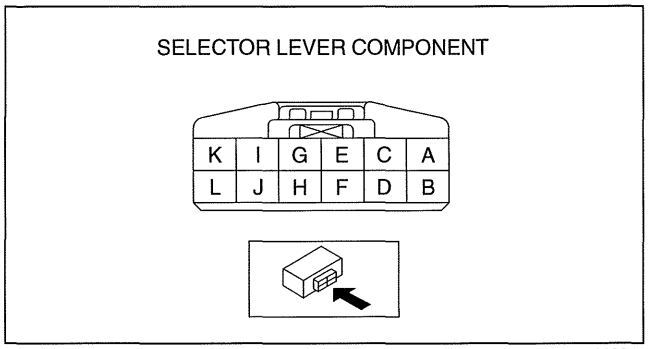
cardiagn.com

(4) Disconnect the selector lever component connector.



am3uuw0000299

2. Inspect the continuity between the selector lever component terminals B and H.
   - If there is any malfunction, replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)



am3uuw0000243

Up switch specification

Test condition	Continuity
Selector lever is in the M range (+) side position	Continuity
Selector lever is not in the M range (+) side position	No continuity

UP SWITCH REMOVAL/INSTALLATION [FS5A-EL]

id051721310100

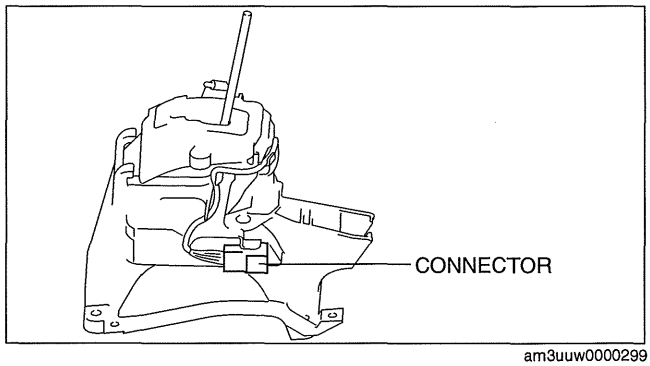
Note
- The up switch is built into the selector lever component.

1. Replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)

DOWN SWITCH INSPECTION [FS5A-EL]

id051721310200

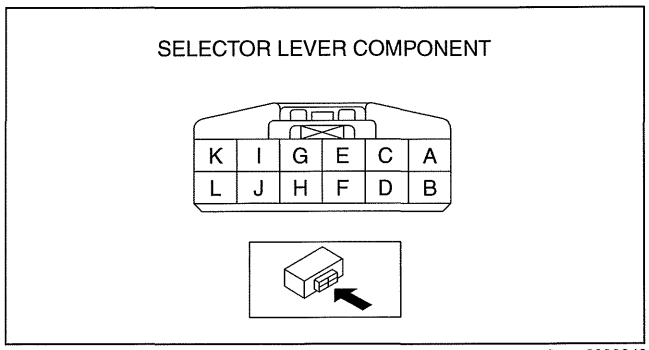
1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the console. (See 09-17-45 CONSOLE REMOVAL/INSTALLATION.)
   (4) Disconnect the selector lever component connector.



am3uuw0000299

cardiagn.com

2. Inspect the continuity between the selector lever component terminals C and H.
   - If there is any malfunction, replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)



am3uuw0000243

Up switch specification

Test condition	Continuity
Selector lever is in the M range (-) side position	Continuity
Selector lever is not in the M range (-) side position	No continuity

DOWN SWITCH REMOVAL/INSTALLATION [FS5A-EL]

id051721310300

Note
- The down switch is built into the selector lever component.

1. Replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)

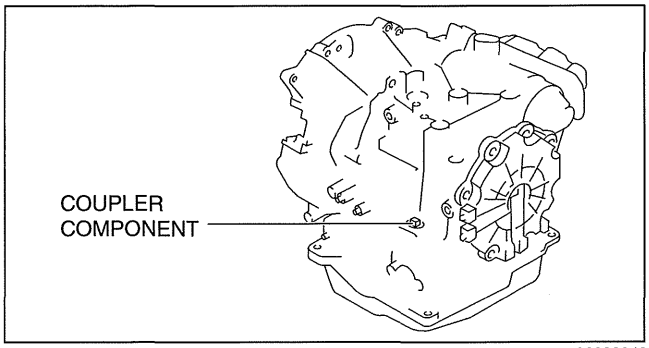
TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL]

id051721292100

Caution
- **Water or foreign objects entering the connector can cause a poor connection or corrosion. Be sure not to drop water or foreign objects on the connector when disconnecting it.**

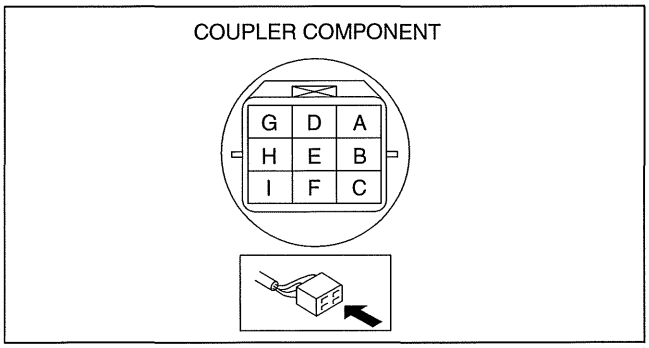
On-Vehicle Inspection

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the coupler component connector.



am8rrw00002340

2. Measure the resistance between the coupler component terminals E and H.
   - If there is any malfunction, replace the TFT sensor. (See 05-17-21 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR REMOVAL/INSTALLATION [FS5A-EL].)



am3uuw0000241

cardiagn.com

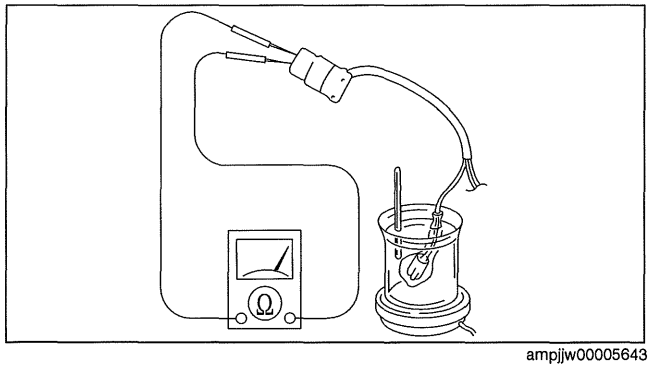
TFT sensor specification

ATF temperature (°C{°F})	Resistance (kilohm)
-20 {-4}	236—324
0 {32}	84.3—110
20 {68}	33.5—42.0
40 {104}	14.7—17.9
60 {140}	7.08—8.17
80 {176}	3.61—4.15
100 {212}	1.96—2.24
120 {248}	1.13—1.28
130 {266}	0.87—0.98

Off-Vehicle Inspection

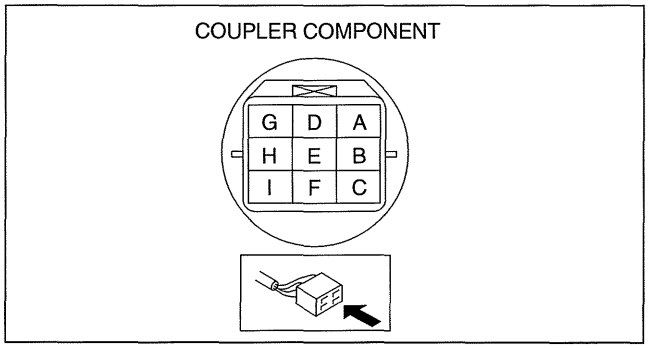
1. Place the TFT sensor and a thermometer in ATF as shown, and heat the ATF gradually.

Warning
- **A hot ATF and beaker can cause severe burns. Do not touch them.**



ampjjw00005643

2. Measure the resistance between the coupler component terminals E and H.
   - If there is any malfunction, replace the TFT sensor. (See 05-17-21 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR REMOVAL/INSTALLATION [FS5A-EL].)



am3uuw0000241

TFT sensor specification

ATF temperature (°C{°F})	Resistance (kilohm)
-20 {-4}	236—324
0 {32}	84.3—110
20 {68}	33.5—42.0
40 {104}	14.7—17.9
60 {140}	7.08—8.17
80 {176}	3.61—4.15
100 {212}	1.96—2.24
120 {248}	1.13—1.28
130 {266}	0.87—0.98

TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR REMOVAL/INSTALLATION [FS5A-EL]

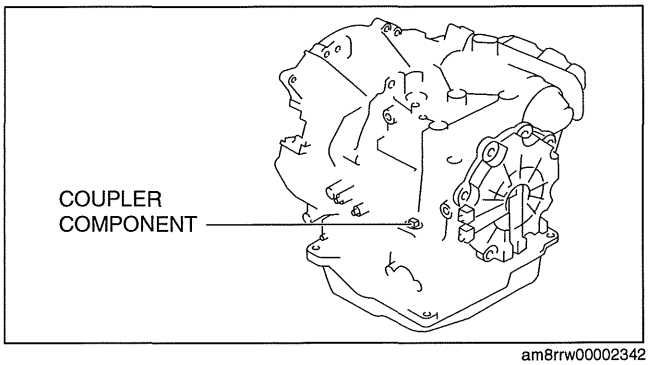
id051721292200

Warning
- **A hot transaxle and ATF can cause severe burns. Turn off the engine and wait until they are cool.**

1. Remove the primary control valve body.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Clean the transaxle exterior throughout with a steam cleaner or cleaning solvents.
   (5) Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
   (6) Remove the oil pan.
   (7) Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)

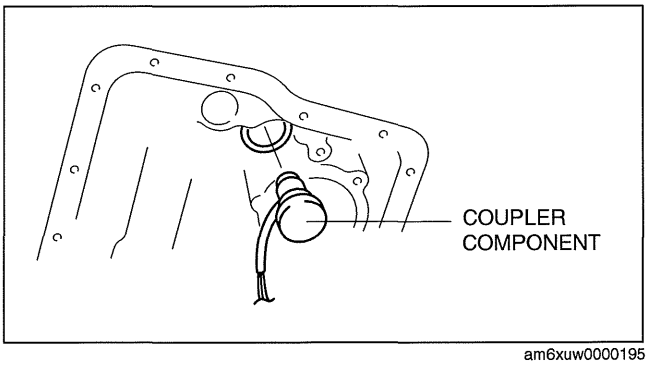
cardiagn.com

(8) Disconnect the coupler component connector.



am8rrw00002342

2. Remove the coupler component from transaxle case.
3. Remove the O-ring from the coupler component.
4. Install the primary control valve body.
   (1) Apply ATF to a new O-ring and install it on the coupler component.
   (2) Install the coupler component to transaxle case.
   (3) Connect the coupler component connector.
   (4) Install the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)

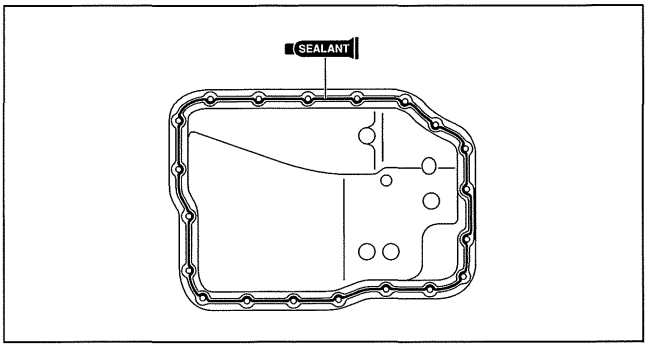


am6xuw0000195

5. Apply a light coat of silicon sealant (TB1217E) to the contact surfaces of the oil pan and transaxle case.

Caution
- **If any old sealant gets into the transaxle during installation of the oil pan, trouble may occur in the transaxle case and oil pan, and clean with cleaning fluids.**

6. Install the oil pan before the applied sealant starts to harden.



am6xuw0000195

Tightening torque
6—8 N·m {62—81 kgf·cm, 54—70 in·lbf}

7. Add ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
8. Install the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
9. Connect the negative battery cable.
10. Install the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
11. Perform the “Mechanical System Test”. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)

OIL PRESSURE SWITCH INSPECTION [FS5A-EL]

id051721292300

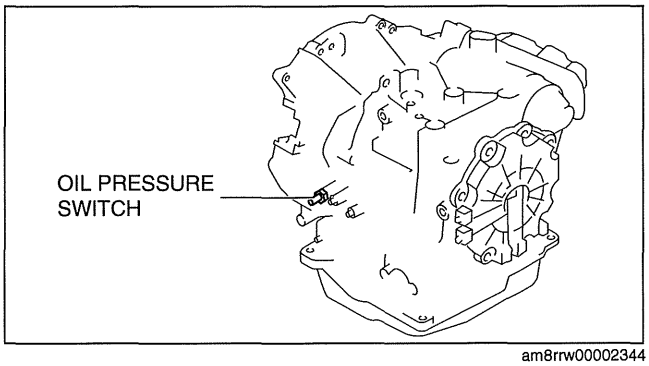
Caution
- **Water or foreign objects entering the connector can cause a poor connection or corrosion. Be sure not to drop water or foreign objects on the connector when disconnecting it.**

On-Vehicle Inspection

1. Perform the following procedures.
   (1) Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)

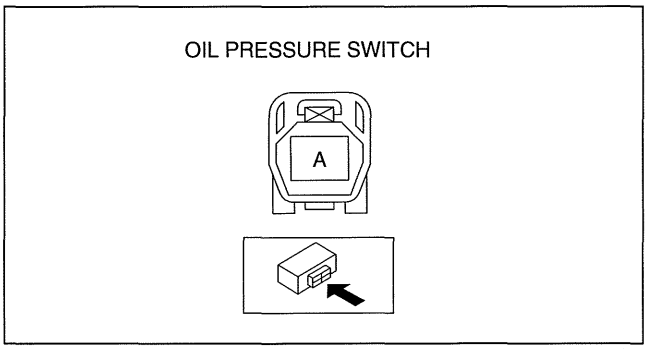
cardiagn.com

(2) Disconnect the oil pressure switch connector.
2. Start the engine.



am8rrw00002344

3. Inspect the continuity between the oil pressure switch terminal A and body GND.
   - If there is any malfunction, replace the oil pressure switch. (See 05-17-24 OIL PRESSURE SWITCH REMOVAL/ INSTALLATION [FS5A-EL].)



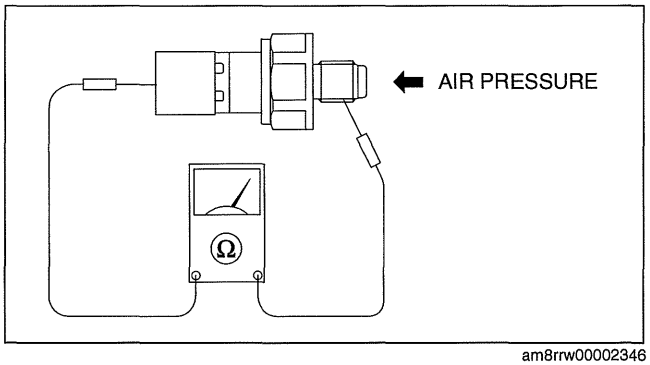
am3uuw0000241

Oil pressure switch specification

Test Condition	Continuity
In P position	No continuity
In R position	No continuity
In N position	No continuity
In D range	Continuity

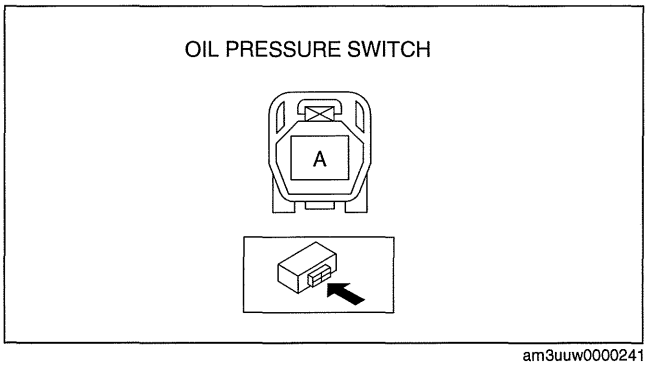
Off-Vehicle Inspection

1. Apply air pressure at 400—440 kPa {4.08—4.48 kgf/cm^2,58.1—63.8 psi} as shown in the figure.



am8rrw00002346

2. Inspect continuity between the oil pressure switch terminal A and screw part.
   - If there is any malfunction, replace the oil pressure switch. (See 05-17-24 OIL PRESSURE SWITCH REMOVAL/ INSTALLATION [FS5A-EL].)



am3uuw0000241

Oil pressure switch specification

Test Condition	Continuity
Applying air pressure	No continuity
Applying no air pressure	Continuity

cardiagn.com

OIL PRESSURE SWITCH REMOVAL/INSTALLATION [FS5A-EL]

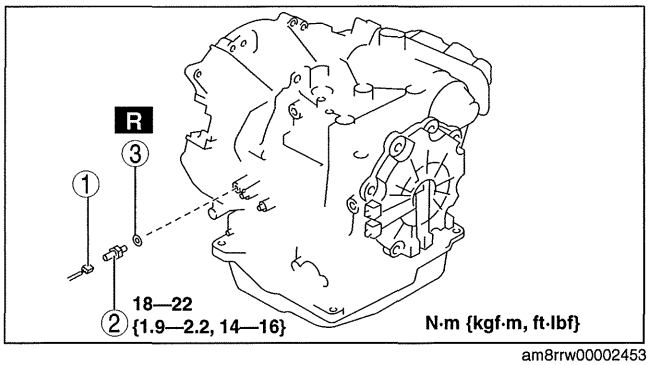
id051721292400

Warning
- **A hot transaxle and ATF can cause severe burns. Turn off the engine and wait until they are cool.**

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
2. Remove in the order indicated in the table.

1	Connector
2	Oil pressure switch
3	Washer

3. Install in the reverse order of removal.



am8rrw00002453

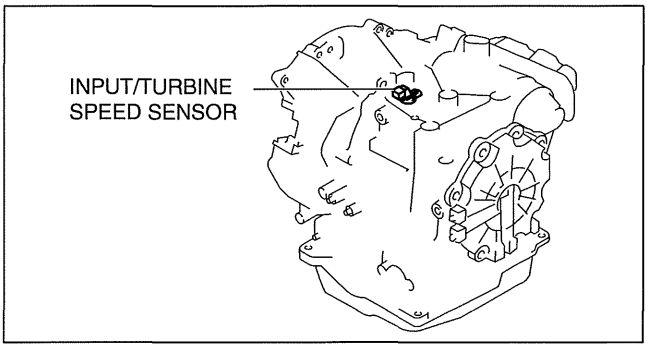
INPUT/TURBINE SPEED SENSOR INSPECTION [FS5A-EL]

id051721292500

Caution
- **Water or foreign objects entering the connector can cause a poor connection or corrosion. Be sure not to drop water or foreign objects on the connector when disconnecting it.**

On-Vehicle Inspection

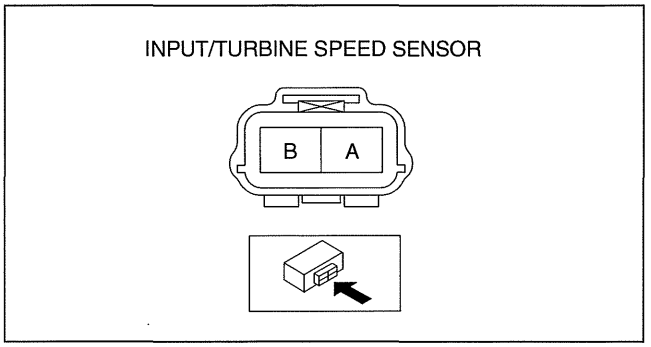
1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the input/turbine speed sensor connector.



am8rrw00002347

2. Measure the resistance between the input/turbine speed sensor terminals A and B.
   - If there is any malfunction, replace the input/turbine speed sensor. (See 05-17-25 INPUT/TURBINE SPEED SENSOR REMOVAL/INSTALLATION [FS5A-EL].)

   Input/turbine speed sensor specification
   250—600 ohms



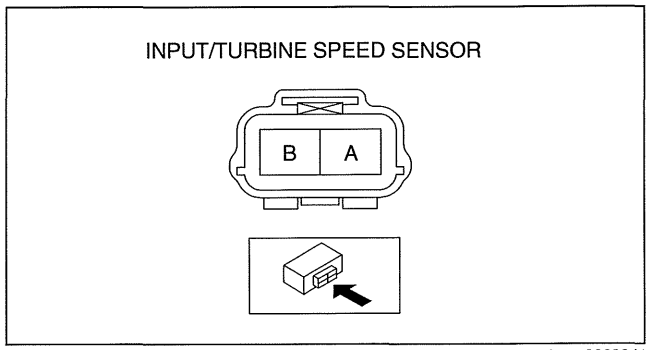
am3uuw0000241

cardiagn.com

Off-Vehicle Inspection

1. Measure the resistance between the input/turbine speed sensor terminals A and B.
   - If there is any malfunction, replace the input/turbine speed sensor. (See 05-17-25 INPUT/TURBINE SPEED SENSOR REMOVAL/INSTALLATION [FS5A-EL].)

Input/turbine speed sensor specification
250—600 ohms



am3uuw0000241

INPUT/TURBINE SPEED SENSOR REMOVAL/INSTALLATION [FS5A-EL]

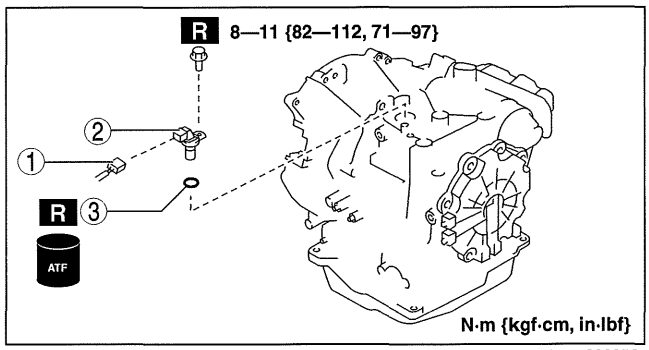
id051721292600

Caution
- **Always use a new bolt. If the removed input/turbine speed sensor installation bolt is reused, it may cause oil leakage.**
- **A sealant coating is applied to the input/turbine speed sensor installation bolt to prevent oil leakage from the installation bolt hole which passes through the component.**

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
2. Remove in the order indicated in the table.

1	Connector
2	Input/turbine speed sensor
3	O-ring

3. Install in the reverse order of removal.



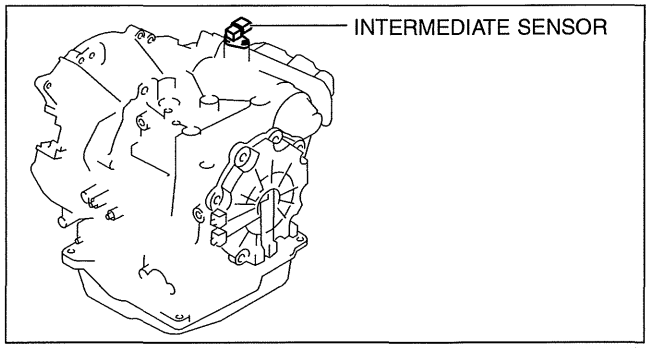
am3uuw0000563

INTERMEDIATE SENSOR INSPECTION [FS5A-EL]

id051721292700

On-Vehicle Inspection

1. Inspect the power supply circuit for the intermediate sensor.
   (1) Set the battery component (ex: battery, battery tray and PCM component) out of the way.
   (2) Disconnect the intermediate sensor connector.
   (3) Switch the ignition to ON (engine off).



am8rrw00002349

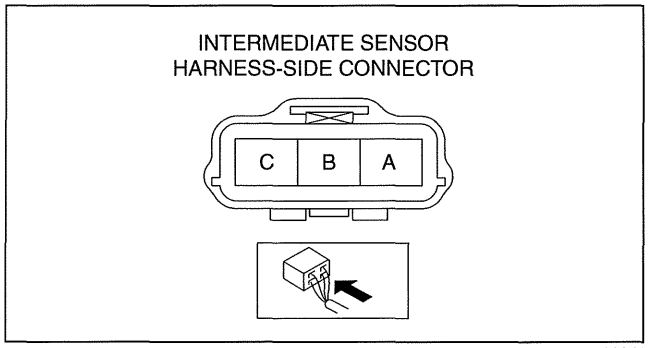
cardiagn.com

(4) Measure the voltage at intermediate sensor connector terminal A (harness-side).
- If there is any malfunction, repair wiring harness between intermediate sensor and TCM.

Intermediate sensor specification
4.5—5.5 V

(5) Switch the ignition to off.
(6) Connect the intermediate sensor connector.

2. Inspect the GND circuit for the intermediate sensor.
(1) Switch the ignition to off.
(2) Measure the voltage at intermediate sensor connector terminal C (harness-side).
- If there is any malfunction, repair wiring harness between intermediate sensor and TCM.

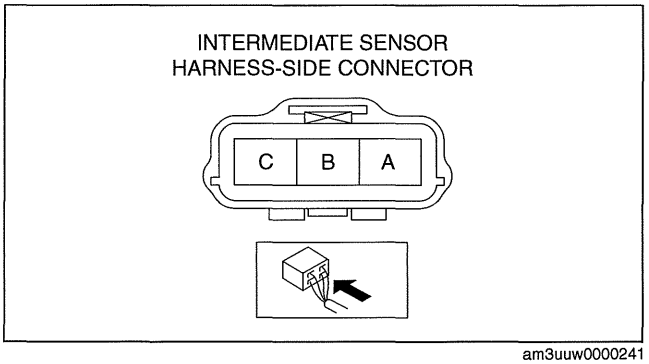


am3uuw0000241

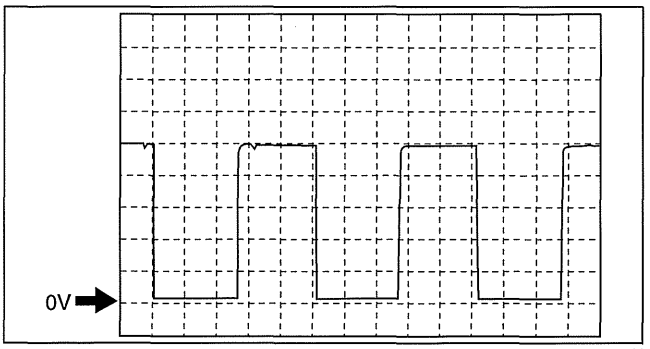
Intermediate sensor specification
Below 1.0 V

3. Inspect the signal circuit for the intermediate sensor.
(1) Connect the oscilloscope to the following TCM connector terminals and set it as below.
- (+) lead: TCM terminal AC
- (-) lead: battery negative terminal
- Oscilloscope setting: 1 V/DIV (Y), 2 ms/DIV (X), DC range

(2) Start the engine.
(3) Measure the wave form when vehicle speed at 30 km/h {19 mph}.
- If there is any malfunction, replace the intermediate sensor. (See 05-17-26 INTERMEDIATE SENSOR REMOVAL/INSTALLATION [FS5A-EL].)



am3uuw0000241



am3uuw0000241

INTERMEDIATE SENSOR REMOVAL/INSTALLATION [FS5A-EL]

id051721292800

Caution
- **If foreign materials are stuck to the sensor, disturbance by magnetic flux can cause sensor output to be abnormal and thereby negatively affect control. Make sure that foreign materials such as iron filings are not stuck to the sensor during installation.**

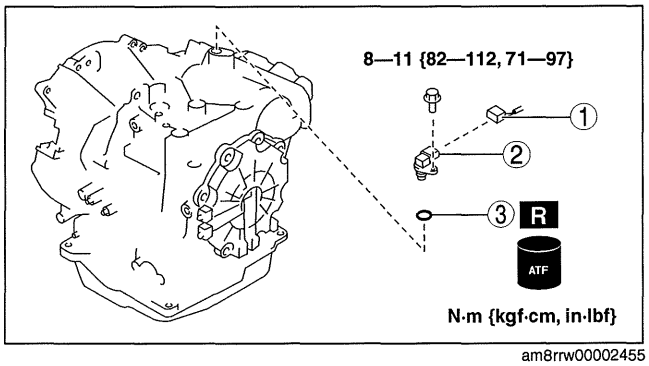
1. Perform the following procedures.
(1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
(2) Disconnect the negative battery cable.
(3) Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)

cardiagn.com

2. Remove in the order indicated in the table.

1	Connector
2	Intermediate sensor
3	O-ring

3. Install in the reverse order of removal.



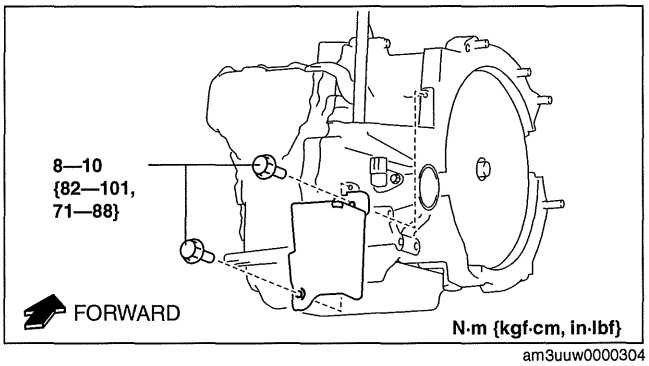
am8rrw00002455

VEHICLE SPEED SENSOR (VSS) INSPECTION [FS5A-EL]

id051721292900

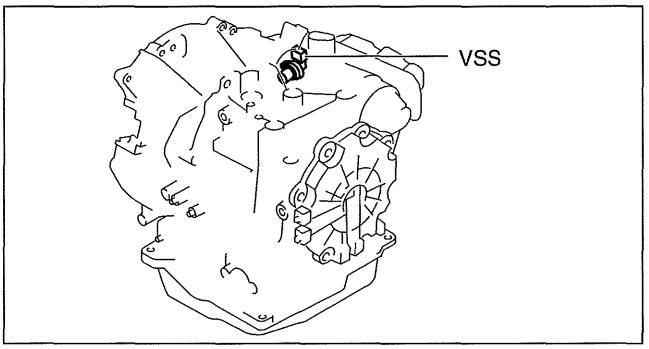
On-Vehicle Inspection

1. Inspect the power supply circuit for the VSS.
   (1) Remove the insulator from the transaxle.



am3uuw0000304

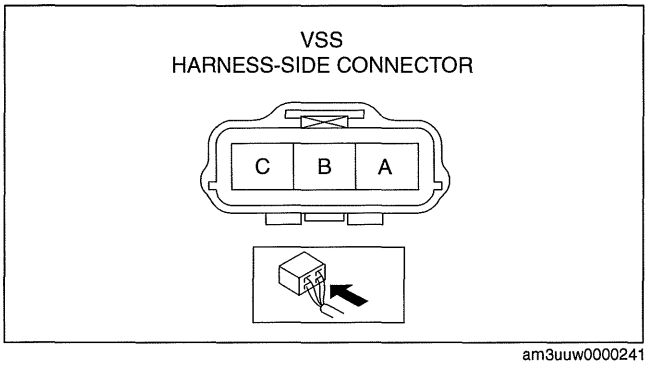
   (2) Disconnect the VSS connector.
   (3) Switch the ignition to ON (engine off).



am8rrw00002351

   (4) Measure the voltage at VSS connector terminal A (harness-side).
   - If there is any malfunction, repair wiring harness between VSS and TCM.

VSS specification
4.5—5.5 V



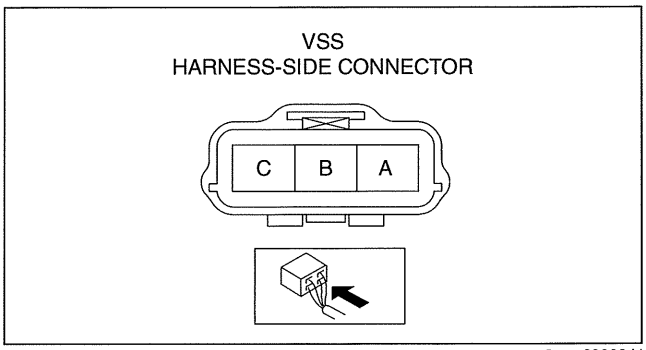
am3uuw0000241

   (5) Switch the ignition to off.
   (6) Connect the VSS connector.

cardiagn.com

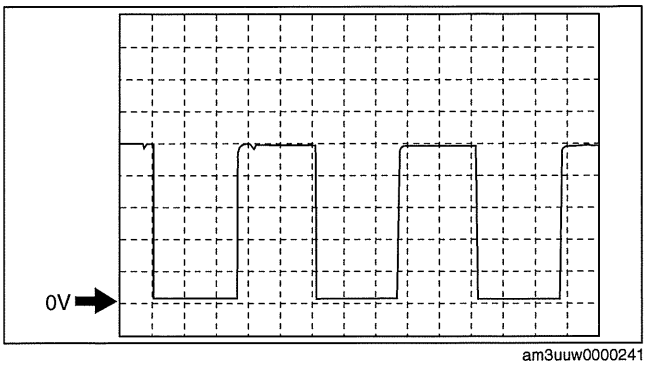
2. Inspect the GND circuit for the VSS.
   (1) Switch the ignition to off.
   (2) Measure the voltage at intermediate sensor connector terminal C (harness-side).
      • If there is any malfunction, repair wiring harness between intermediate sensor and TCM.

   Intermediate sensor specification
   Below 1.0 V



am3uuw0000241

3. Inspect the signal circuit for the VSS.
   (1) Connect the oscilloscope to the following TCM connector terminals and set it as below.
      • (+) lead: TCM terminal Z
      • (-) lead: battery negative terminal
      • Oscilloscope setting: 1 V/DIV (Y), 2 ms/DIV (X), DC range
   (2) Start the engine.
   (3) Measure the wave form when vehicle speed at 30 km/h {19 mph}.
      • If there is any malfunction, replace the VSS. (See 05-17-28 VEHICLE SPEED SENSOR (VSS) REMOVAL/INSTALLATION [FS5A-EL].)



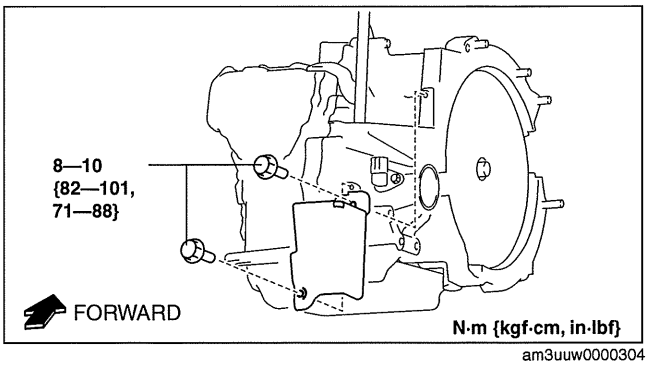
am3uuw0000241

VEHICLE SPEED SENSOR (VSS) REMOVAL/INSTALLATION [FS5A-EL]

id051721293000

Caution
- **If foreign materials are stuck to the sensor, disturbance by magnetic flux can cause sensor output to be abnormal and thereby negatively affect control. Make sure that foreign materials such as iron filings are not stuck to the sensor during installation.**

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the insulator from the transaxle.



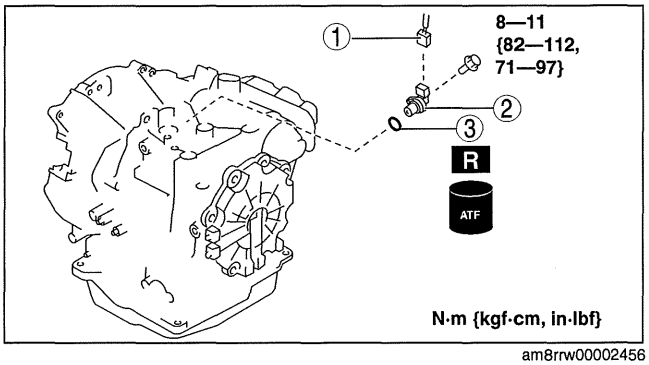
am3uuw0000304

cardiagn.com

2. Remove in the order indicated in the table.

1	Connector
2	VSS
3	O-ring

3. Install in the reverse order of removal.



am8rrw00002456

SOLENOID VALVE INSPECTION [FS5A-EL]

id051721293100

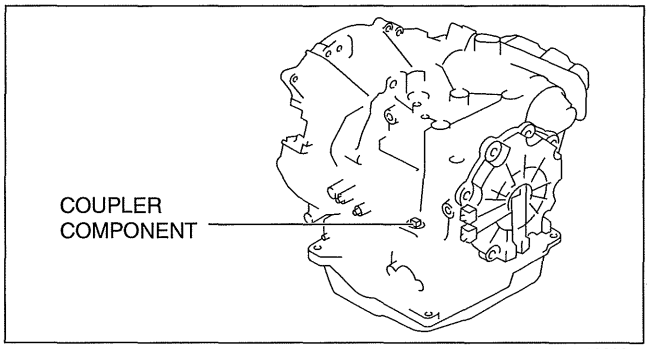
Caution

- **Water or foreign objects entering the connector can cause a poor connection or corrosion. Be sure not to drop water or foreign objects on the connector when disconnecting it.**

Primary Control Valve Body

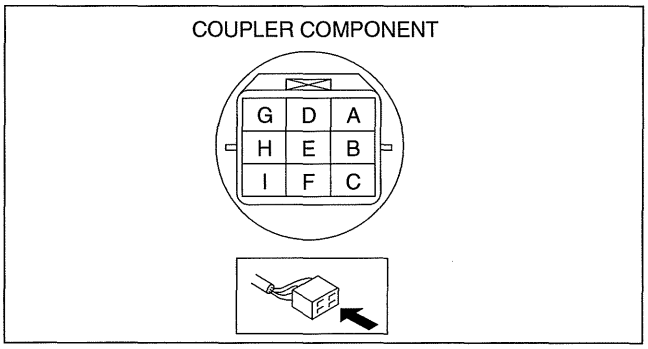
On-vehicle inspection

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the coupler component connector.



am8rrw00002353

2. Measure the resistance between the coupler component terminals.
   - If there is any malfunction, inspect the coupler component for continuity.
   - If coupler component has no malfunction, perform the "Off-vehicle inspection". (See 05-17-30 Off-Vehicle inspection.)



am3uuw0000241

Solenoid valve specification

Solenoid valve	Terminal	Resistance (ohm)
Pressure control solenoid A	D⇔I	2.4—7.3
Shift solenoid A	A⇔GND	1.0—4.2
Shift solenoid B	C⇔GND	1.0—4.2
Shift solenoid C	G⇔GND	1.0—4.2
Shift solenoid D	B⇔GND	10.9—26.2
Shift solenoid E	F⇔GND	10.9—26.2

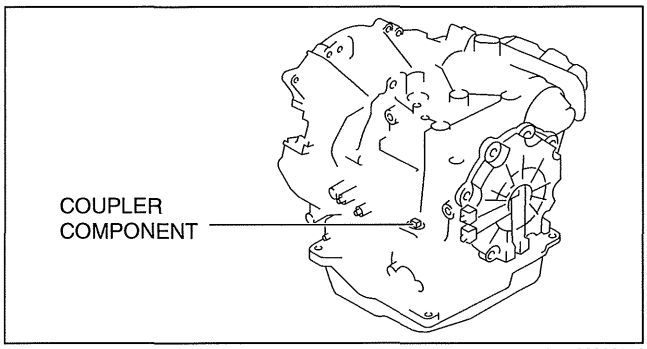
cardiagn.com

Operating inspection

Caution
- **Do not apply battery position voltage to terminals for more than 3 s.**

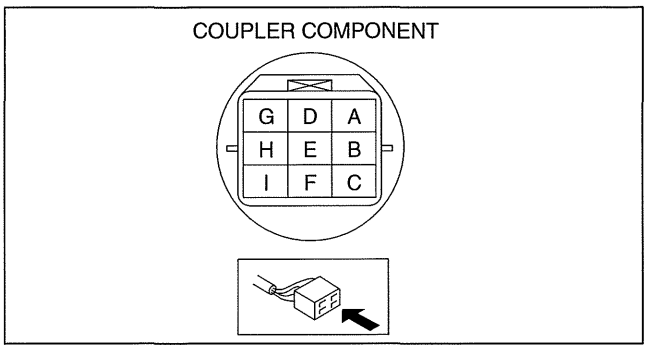
Note
- Because the operation sound of the solenoid valve is small, perform inspection in a quiet place.

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the coupler component connector.



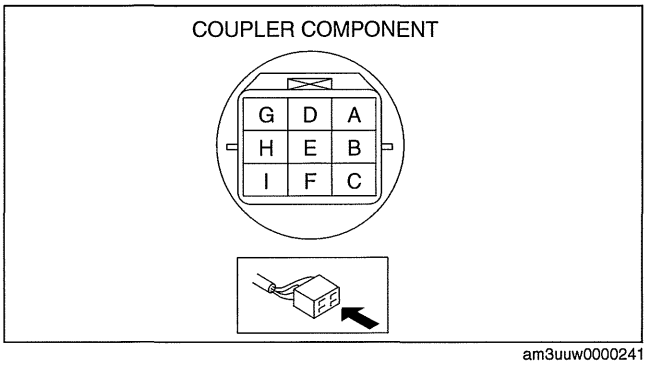
am8rrw00002353

2. Apply battery positive voltage to the coupler component terminals A, B, C, F or G and battery negative voltage to GND, and verify that operating sound is heard from solenoid valve.
   - If the operation sound is not heard, inspect the coupler component for continuity.
   - If coupler component has no malfunction, perform the "Off-vehicle inspection". (See 05-17-30 Off-Vehicle inspection.)



am3uuw0000241

3. Apply battery positive voltage to the coupler component terminal D and battery negative voltage to terminal I, and verify that operating sound is heard from solenoid valve.
   - If the operation sound is not heard, inspect the coupler component for continuity.
   - If coupler component has no malfunction, perform the "Off-vehicle inspection". (See 05-17-30 Off-Vehicle inspection.)

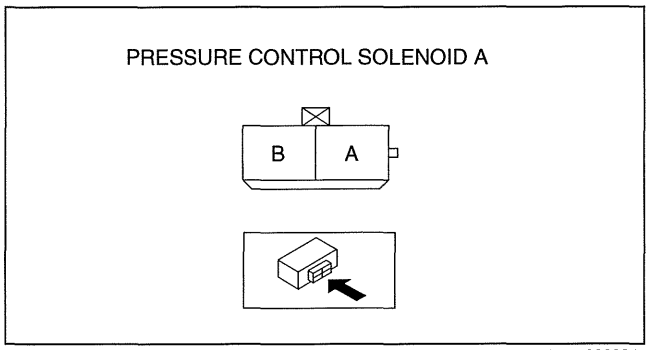


am3uuw0000241

Off-Vehicle inspection
1. Measure the resistance between the solenoid valve terminals.
   - If there is any malfunction, replace the solenoid valve. (See 05-17-33 SOLENOID VALVE REMOVAL/INSTALLATION [FS5A-EL].)

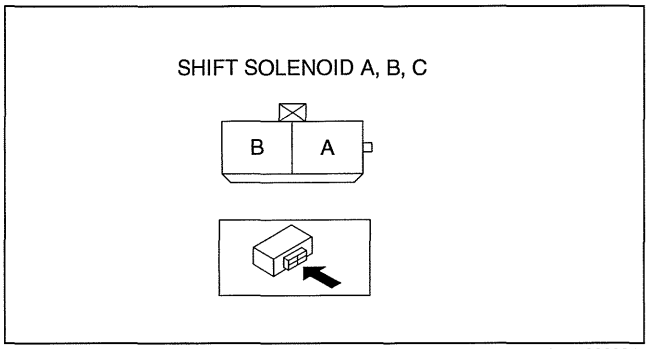
cardiagn.com

Pressure control solenoid A specification
2.4—7.3 ohms



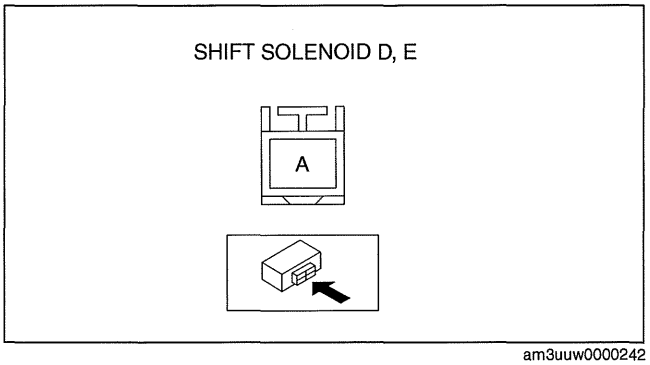
am3uuw0000242

Shift solenoid A, B, C specification
1.0—4.2 ohms



am3uuw0000242

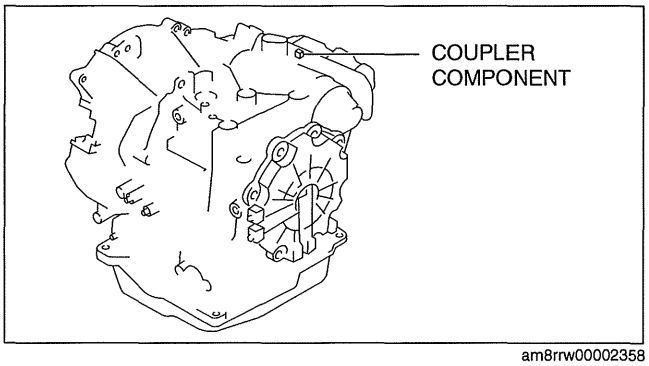
Shift solenoid D, E specification
10.9—26.2 ohms



am3uuw0000242

Secondary Control Valve Body
On-vehicle inspection

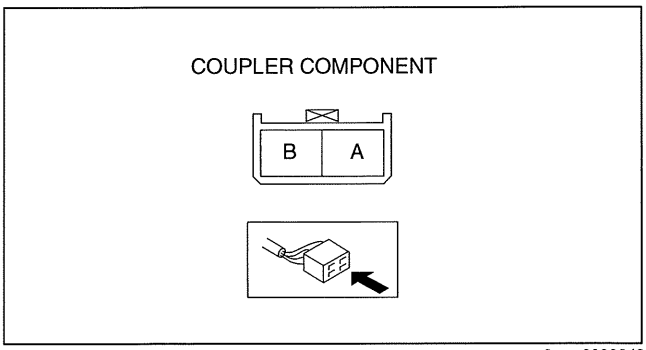
1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the coupler component connector.



am8rrw00002358

cardiagn.com

2. Measure the resistance between the coupler component terminals A and B.
   - If there is any malfunction, inspect the coupler component for continuity.
   - If coupler component has no malfunction, perform the "Off-vehicle inspection". (See 05-17-33 Off-Vehicle inspection.)



am3uuw0000242

Solenoid valve specification

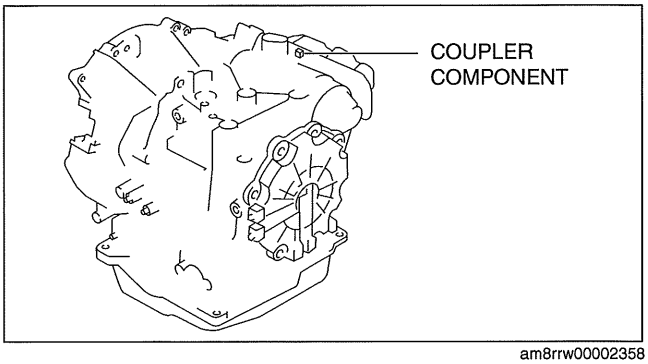
Solenoid valve	Terminal	Resistance (ohm)
Pressure control solenoid B	A⇔GND	1.0—4.2
Shift solenoid F	B⇔GND	8.4—21.8

Operating inspection

Caution
- **Do not apply battery position voltage to terminals for more than 3 s.**

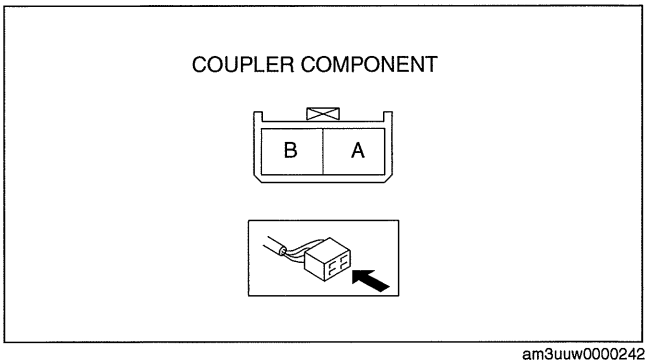
Note
- Because the operation sound of the solenoid valve is small, perform inspection in a quiet place.

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the coupler component connector.



am8rrw00002358

2. Apply battery positive voltage to the coupler component terminals A, B and battery negative voltage to GND, and verify that operating sound is heard from solenoid valve.
   - If the operation sound is not heard, inspect the coupler component for continuity.
   - If coupler component has no malfunction, perform the "Off-vehicle inspection". (See 05-17-33 Off-Vehicle inspection.)



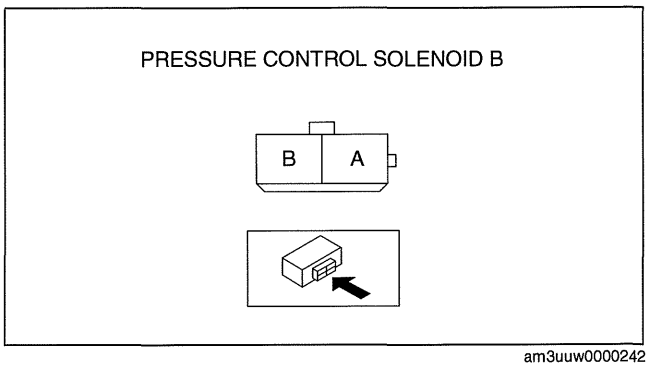
am3uuw0000242

cardiagn.com

Off-Vehicle inspection

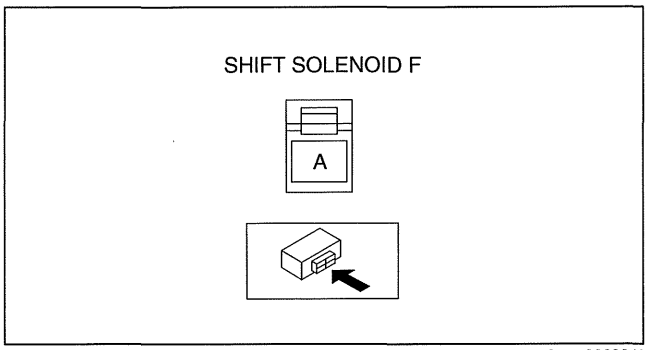
1. Measure the resistance between the solenoid valve terminals.
   - If there is any malfunction, replace the solenoid valve. (See 05-17-33 SOLENOID VALVE REMOVAL/INSTALLATION [FS5A-EL].)

Pressure control solenoid B specification
1.0—4.2 ohms



am3uuw0000242

Shift solenoid F specification
8.4—21.8 ohms



am3uuw0000242

SOLENOID VALVE REMOVAL/INSTALLATION [FS5A-EL]

id051721293200

Warning

- **A hot transaxle and ATF can cause severe burns. Turn off the engine and wait until they are cool.**

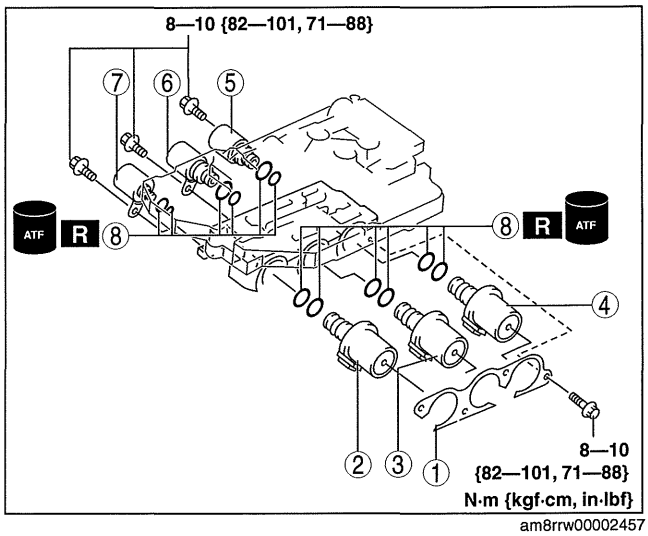
Primary Control Valve Body

1. Remove the primary control valve body.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (4) Clean the transaxle exterior throughout with a steam cleaner or cleaning solvents.
   (5) Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
   (6) Remove the oil pan. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)
   (7) Remove the primary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)

cardiagn.com

2. Remove in the order indicated in the table.

1	Bracket
2	Shift solenoid A
3	Shift solenoid C
4	Shift solenoid B
5	Shift solenoid E
6	Shift solenoid D
7	Pressure control solenoid A
8	O-ring



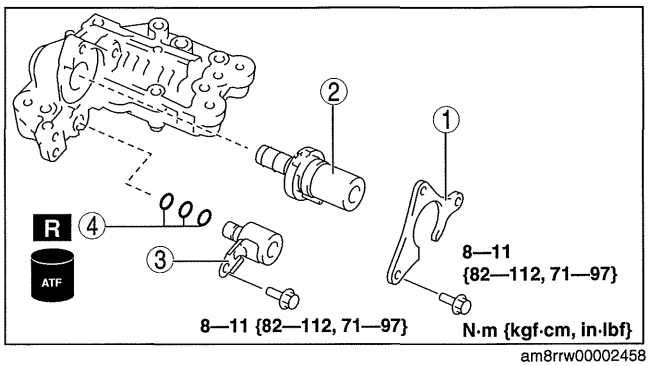
am8rrw00002457

3. Install in the reverse order of removal.
4. Add ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
5. Perform the "Mechanical System Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)
6. Perform the "Road Test". (See 05-17-7 ROAD TEST [FS5A-EL].)

Secondary Control Valve Body

1. Remove the secondary control valve body.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (4) Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
   (5) Clean the transaxle exterior throughout with a steam cleaner or cleaning solvents.
   (6) Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
   (7) Remove the oil cover. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)
   (8) Remove the secondary control valve body. (See 05-17-52 CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL].)
2. Remove in the order indicated in the table.

1	Bracket
2	Pressure control solenoid B
3	Shift solenoid F
4	O-ring



am8rrw00002458

3. Install in the reverse order of removal.
4. Add ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
5. Perform the "Mechanical System Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)
6. Perform the "Road Test". (See 05-17-7 ROAD TEST [FS5A-EL].)

TCM INSPECTION [FS5A-EL]

id051721293800

Note

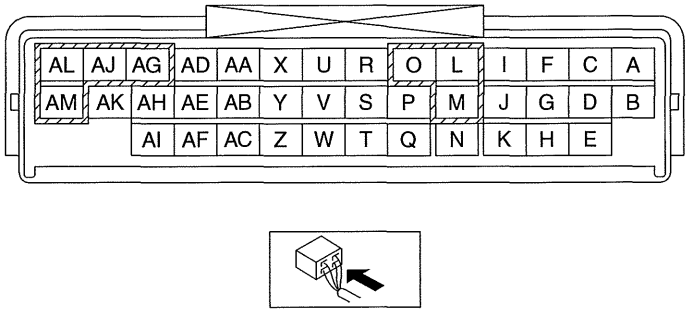
- The TCM terminal voltage can vary with conditions when measuring and changes due to age deterioration on the vehicle, causing false diagnosis. Therefore a comprehensive inspection of the input and output systems, and the TCM is necessary to determine where the malfunction occurs.

1. Connect the voltmeter (-) lead to body GND.
2. Measure the voltage at each terminal.
   - If any incorrect voltage is detected, inspect the related system(s), wiring harnesses and connector(s) referring to the "Inspection Item" column in the "TCM Terminal Voltage".

cardiagn.com

TCM Terminal Voltage (Reference)

TCM
HARNESS-SIDE CONNECTOR



am3uuw0000244

Terminal	Connected to	Test Condition	Voltage (V)	Inspection Item
A	—	—	—	—
B	CAN module	Because this terminal is for CAN, no valid determination of terminal voltage is possible.		
C	—	—	—	—
D	—	—	—	—
E	CAN module	Because this terminal is for CAN, no valid determination of terminal voltage is possible.		
F	Down switch	Selector lever down-shift position	Below 1.0	• Down switch (See 05-17-19 DOWN SWITCH INSPECTION [FS5A-EL].) • Related harness
		Except selector lever down-shift position	B+	
G	Up switch	Selector lever up-shift position	Below 1.0	• Up switch (See 05-17-18 UP SWITCH INSPECTION [FS5A-EL].) • Related harness
		Except selector lever up-shift position	B+	
H	—	—	—	—
I	AT main relay	Ignition switch off	Below 1.0	• AT main relay (See 09-21-17 RELAY INSPECTION.) • Related harness
		Ignition switch ON	B+	
J	Battery	Under any condition	B+	• Battery (See 01-17B-4 BATTERY INSPECTION [LF, L5].) • Related harness
K	M range switch	M range	Below 1.0	• M range switch (See 05-17-18 M RANGE SWITCH INSPECTION [FS5A-EL].) • Related harness
		Except M range	B+	
L	GND	Under any condition	Below 1.0	• Related harness
M	GND	Under any condition	Below 1.0	• Related harness
N	—	—	—	—
O	AT main relay	Ignition switch off	Below 1.0	• AT main relay (See 09-21-17 RELAY INSPECTION.) • Related harness
		Ignition switch ON	B+	
P	AT main relay	Ignition switch off	Below 1.0	• AT main relay (See 09-21-17 RELAY INSPECTION.) • Related harness
		Ignition switch ON	B+	
Q	—	—	—	—
R	—	—	—	—

cardiagn.com

Terminal	Connected to	Test Condition	Voltage (V)	Inspection Item
S	Oil pressure switch	1GR	Below 1.0	• Oil pressure switch (See 05-17-22 OIL PRESSURE SWITCH INSPECTION [FS5A-EL].) • Related harness
		2GR	Below 1.0	
		3GR	Below 1.0	
		4GR	B+	
		5GR	B+	
T	—	—	—	—
U	TR switch	P position	4.3—4.8	• TR switch (See 05-17-14 TRANSAXLE RANGE (TR) SWITCH INSPECTION [FS5A-EL].) • Related harness
		R position	3.8—4.2	
		N position	3.0—3.5	
		D range	2.2—2.7	
		M range	2.2—2.7	
V	TR switch, TFT sensor	Under any condition	Below 1.0	• Related harness
W	—	—	—	—
X	—	—	—	—
Y	Input/turbine speed sensor (-)	(See 05-17-39 Input/turbine speed sensor.)		• Input/turbine speed sensor (See 05-17-24 INPUT/TURBINE SPEED SENSOR INSPECTION [FS5A-EL].) • Related harness
Z	VSS	(See 05-17-39 VSS.)		• VSS (See 05-17-27 VEHICLE SPEED SENSOR (VSS) INSPECTION [FS5A-EL].) • Related harness
AA	TFT sensor	ATF temperature 20 °C	Approx.3.3	• TFT sensor (See 05-17-20 TRANSAXLE FLUID TEMPERATURE (TFT) SENSOR INSPECTION [FS5A-EL].) • Related harness
		ATF temperature 65 °C	Approx.1.3	
AB	Input/turbine speed sensor (+)	(See 05-17-39 Input/turbine speed sensor.)		• Input/turbine speed sensor (See 05-17-24 INPUT/TURBINE SPEED SENSOR INSPECTION [FS5A-EL].) • Related harness
AC	Intermediate sensor	(See 05-17-39 Intermediate sensor.)		• Intermediate sensor (See 05-17-25 INTERMEDIATE SENSOR INSPECTION [FS5A-EL].) • Related harness
AD	Pressure control solenoid A (+)	(See 05-17-38 Pressure control solenoid A (+).)		• Pressure control solenoid A (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
AE	Pressure control solenoid A (-)	(See 05-17-38 Pressure control solenoid A (-).)		• Pressure control solenoid A (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
AF	—	—	—	—
AG	Shift solenoid A	(See 05-17-37 Shift solenoid A.)		• Shift solenoid A (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
AH	Shift solenoid D	D range 1GR	Below 1.0	• Shift solenoid D (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		D range 2GR	Below 1.0	
		D range 3GR	Below 1.0	
		D range 4GR	B+	
		D range 5GR	B+	

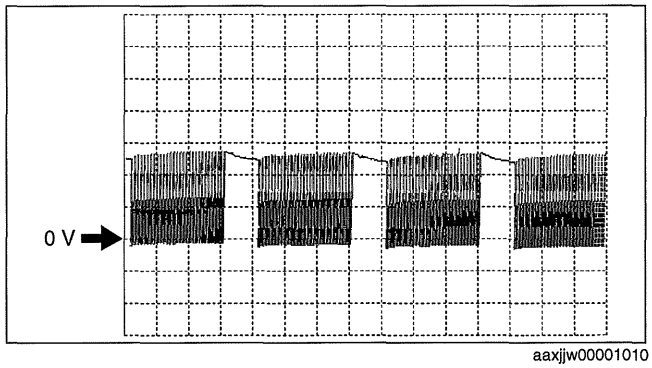
cardiagn.com

Terminal	Connected to	Test Condition	Voltage (V)	Inspection Item
AI	Shift solenoid F	D range 1GR	B+	• Shift solenoid F (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		D range 2GR	B+	
		D range 3GR	B+	
		D range 4GR	B+	
		D range 5GR	Below 1.0	
AJ	Shift solenoid B	(See 05-17-37 Shift solenoid B.)		• Shift solenoid B (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
AK	Shift solenoid E	TCC released	Below 1.0	• Shift solenoid E (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
		TCC engaged	B+	
AL	Shift solenoid C	(See 05-17-38 Shift solenoid C.)		• Shift solenoid C (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness
AM	Pressure control solenoid B	(See 05-17-38 Pressure control solenoid B.)		• Pressure control solenoid B (See 05-17-29 SOLENOID VALVE INSPECTION [FS5A-EL].) • Related harness

Input/Output Wave From (Reference)

Shift solenoid A

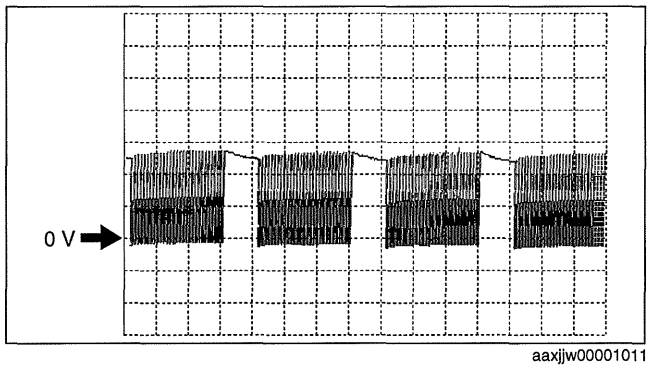
- TCM terminals
  AG (+)—body GND (-)
- Oscilloscope setting
  5 V/DIV (Y), 5 ms/DIV (X), DC range
- Test Condition
  D range 4GR



aaxjjw00001010

Shift solenoid B

- TCM terminals
  AJ (+)—body GND (-)
- Oscilloscope setting
  5 V/DIV (Y), 5 ms/DIV (X), DC range
- Test Condition
  D range 1GR

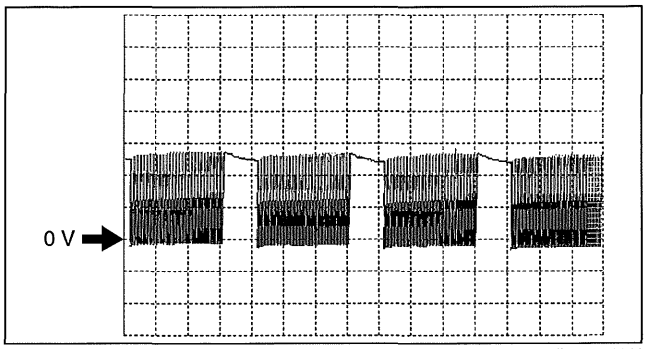


aaxjjw00001011

cardiagn.com

Shift solenoid C

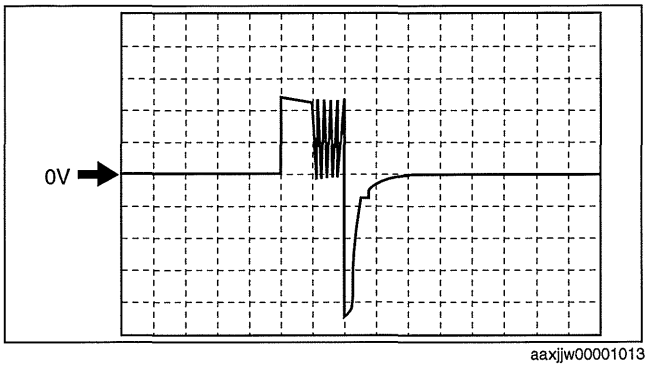
- TCM terminals
  AL (+)—body GND (-)
- Oscilloscope setting
  5 V/DIV (Y), 5 ms/DIV (X), DC range
- Test Condition
  D range 1GR



aaxjjw00001012

Pressure control solenoid B

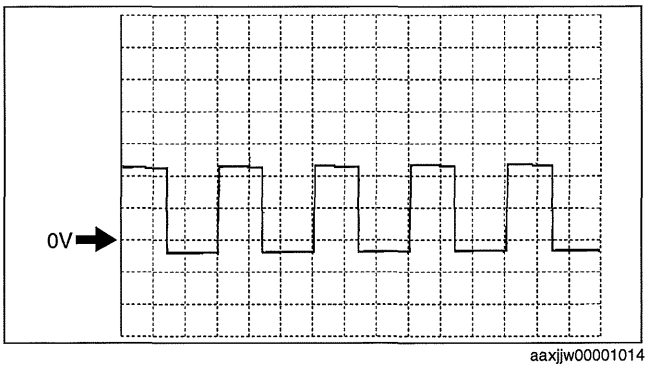
- TCM terminals
  AM (+)—body GND (-)
- Oscilloscope setting
  5 V/DIV (Y), 5 ms/DIV (X), DC range
- Test Condition
  Shifting from 4GR to 5GR or from 5GR to 4GR



aaxjjw00001013

Pressure control solenoid A (+)

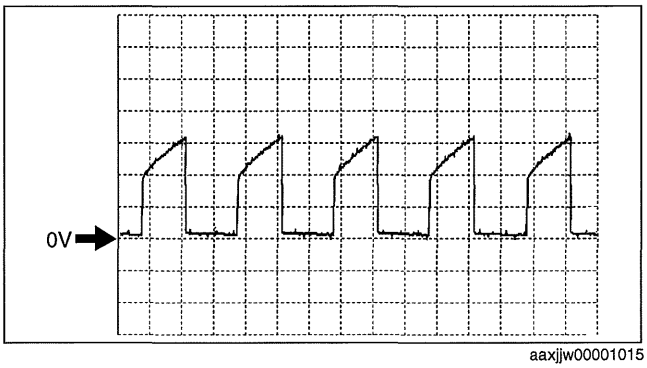
- TCM terminals
  AD (+)—body GND (-)
- Oscilloscope setting
  5 V/DIV (Y), 1 ms/DIV (X), DC range
- Test Condition
  The following conditions are met:
  — Ignition switch ON (engine off)
  — P position
  — Accelerator pedal fully depressed



aaxjjw00001014

Pressure control solenoid A (-)

- TCM terminals
  AE (+)—body GND (-)
- Oscilloscope setting
  200 mV/DIV (Y), 1 ms/DIV (X), DC range
- Test Condition
  The following conditions are met:
  — Ignition switch ON (engine off)
  — P position
  — Accelerator pedal fully depressed

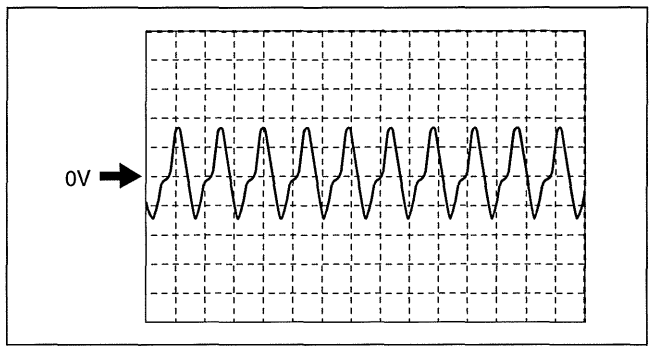


aaxjjw00001015

cardiagn.com

Input/turbine speed sensor

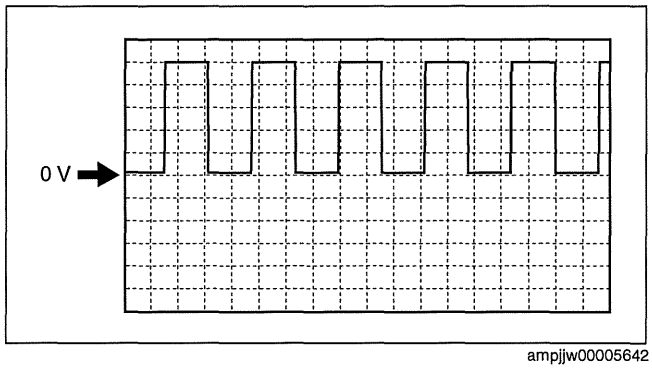
- TCM terminals
  AB (+)—Y (-)
- Oscilloscope setting
  1 V/DIV (Y), 2 ms/DIV (X), DC range
- Test Condition
  Idle at P position after warm-up



ampjjw00005641

Intermediate sensor

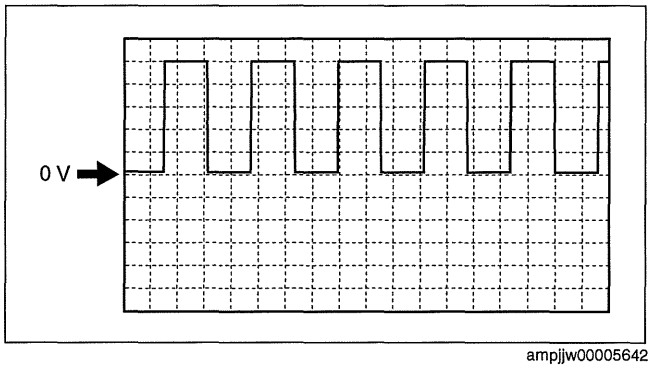
- TCM terminals
  AC (+)—body GND (-)
- Oscilloscope setting
  1 V/DIV (Y), 2.5 ms/DIV (X), DC range
- Test Condition
  Vehicle speed at 30 km/h {19 mph}.



ampjjw00005642

VSS

- TCM terminals
  Z (+)—body GND (-)
- Oscilloscope setting
  1 V/DIV (Y), 2.5 ms/DIV (X), DC range
- Test Condition
  Vehicle speed at 30 km/h {19 mph}.



ampjjw00005642

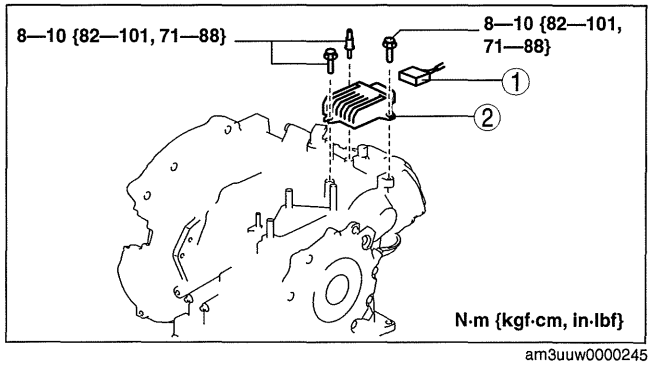
TCM REMOVAL/INSTALLATION [FS5A-EL]

id051721294000

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Remove in the order indicated in the table.

1	Connector
2	TCM

3. Install in the reverse order of removal.



am3uuw0000245

cardiagn.com

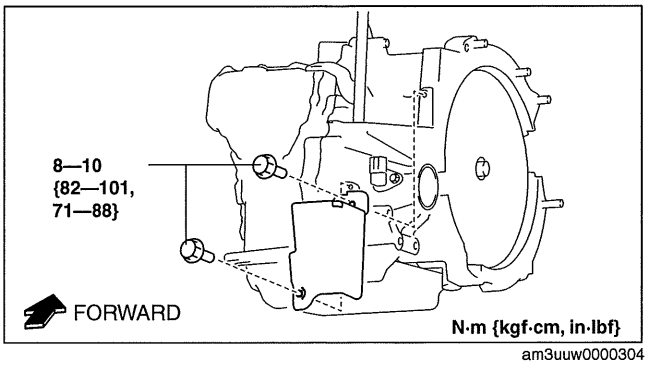
AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FS5A-EL]

id051721294100

Caution

- **Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.**

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the aerodynamic under cover No. 2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
4. Remove the front splash shield. (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
5. Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
6. Disconnect and/or remove the following parts in the engine compartment.
   (1) Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
   (3) Disconnect the selector cable from the transaxle.
   (4) Remove the insulator from the transaxle.
   (5) Disconnect the connectors and GND wiring harness from the transaxle.
   (6) Remove the bracket from the transaxle.
   (7) Disconnect the oil hoses from the transaxle.
   (8) Remove the water-cooled oil cooler from the transaxle with the hose connected. (See 05-17-47 OIL COOLER REMOVAL/INSTALLATION [FS5A-EL].)
   (9) Remove the filler tube from the transaxle.
   (10) Remove the starter. (See 01-19B-2 STARTER REMOVAL/INSTALLATION [LF, L5].)

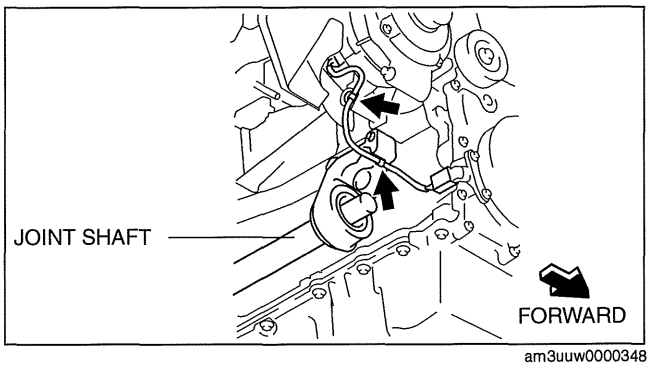


am3uuw0000304

7. Disconnect and/or remove the following parts related to the suspension and axle.
   (1) Remove the front tires. (See 03-10-1 GENERAL PROCEDURES (FRONT AND REAR AXLES).)
   (2) Disconnect the ABS wheel-speed sensors from the steering knuckles. (See 04-13-7 FRONT ABS WHEEL-SPEED SENSOR REMOVAL/INSTALLATION.)
   (3) Disconnect the clip securing the brake hose (LH) from the shock absorber. (See 04-11-31 BRAKE HOSE (FRONT) REMOVAL/INSTALLATION [LF, L5].)
   (4) Disconnect the brake hose (LH) from the shock absorber. (See 04-11-31 BRAKE HOSE (FRONT) REMOVAL/INSTALLATION [LF, L5].)
   (5) Disconnect the tie-rod end ball joints from the steering knuckles. (See 02-13-13 FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
   (6) Disconnect the front lower arms from the steering knuckles. (See 02-13-8 FRONT LOWER ARM REMOVAL/INSTALLATION.)
   (7) Disconnect the stabilizer control links from the shock absorbers. (See 02-13-3 FRONT SHOCK ABSORBER AND COIL SPRING REMOVAL/INSTALLATION.)
   (8) Disconnect the drive shaft (LH) from the transaxle. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.)
   (9) Disconnect the drive shaft (RH) from the joint shaft. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.)

cardiagn.com

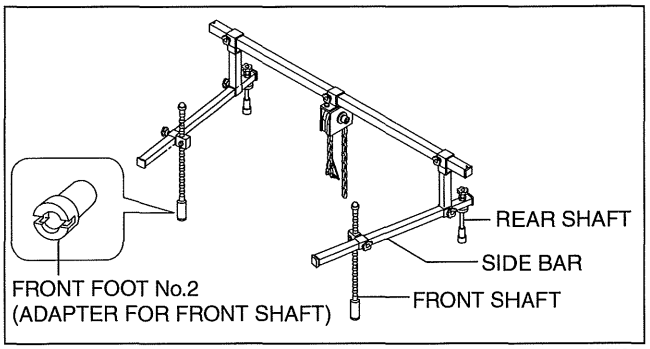
(10)Disconnect the clips to set the CKP sensor harness out of the way to prevent interference with the joint shaft. (L5).
(11)Remove the joint shaft. (See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)



am3uuw0000348

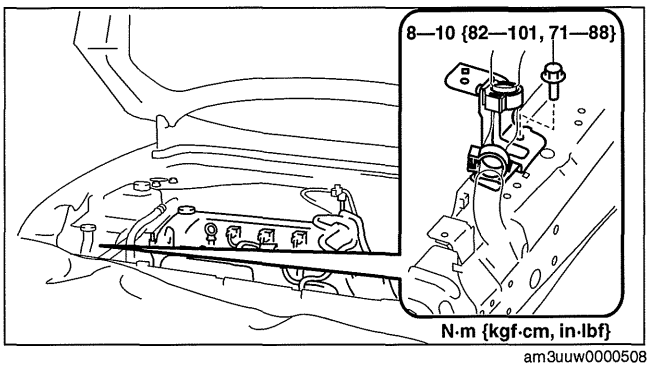
8. Install the SST using the following procedures.

Caution
- **Refer to the SST instruction manual for the basic handing procedure.**



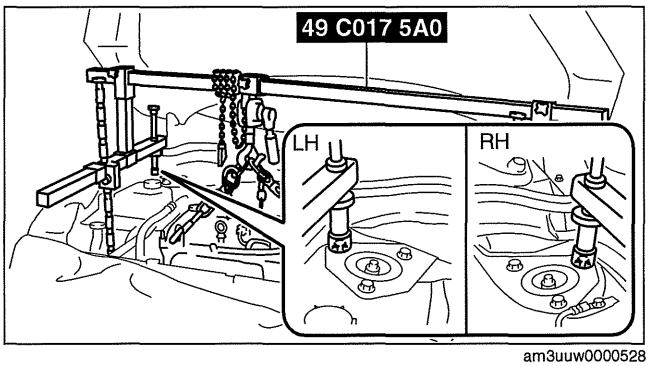
am6xuw0000068

(1) Remove the installation bolt for the bracket securing the lower radiator hose.
(2) Set the bracket securing the lower radiator hose aside to prevent it from interfering with the front shaft of the SST (right side)



am3uuw0000508

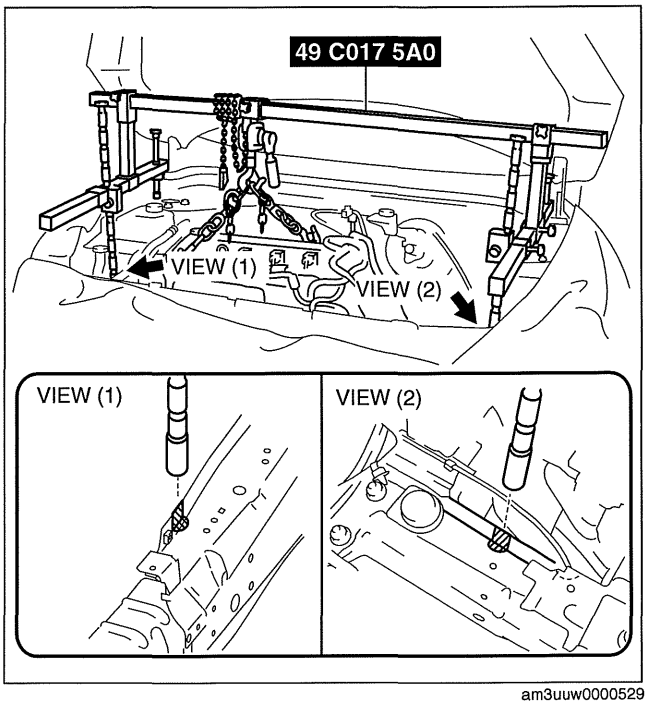
(3) As shown in the figure, set the rear shafts of the SST to the left and right shock absorber bolts.



am3uuw0000528

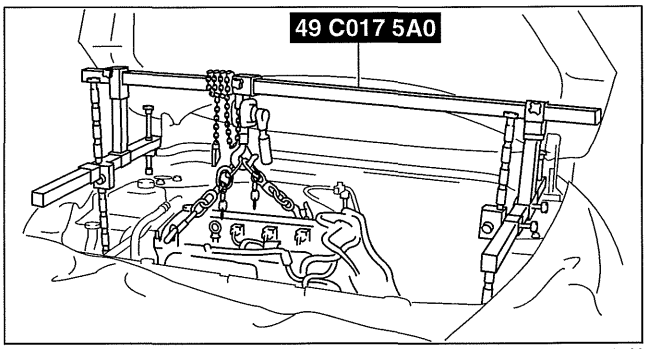
cardiagn.com

(4) Install front foot No.2 to the left/right front shaft of the SST, then align the groove of the front shaft of the SST with the folded up part of the vehicle as shown in the figure.



am3uuw0000529

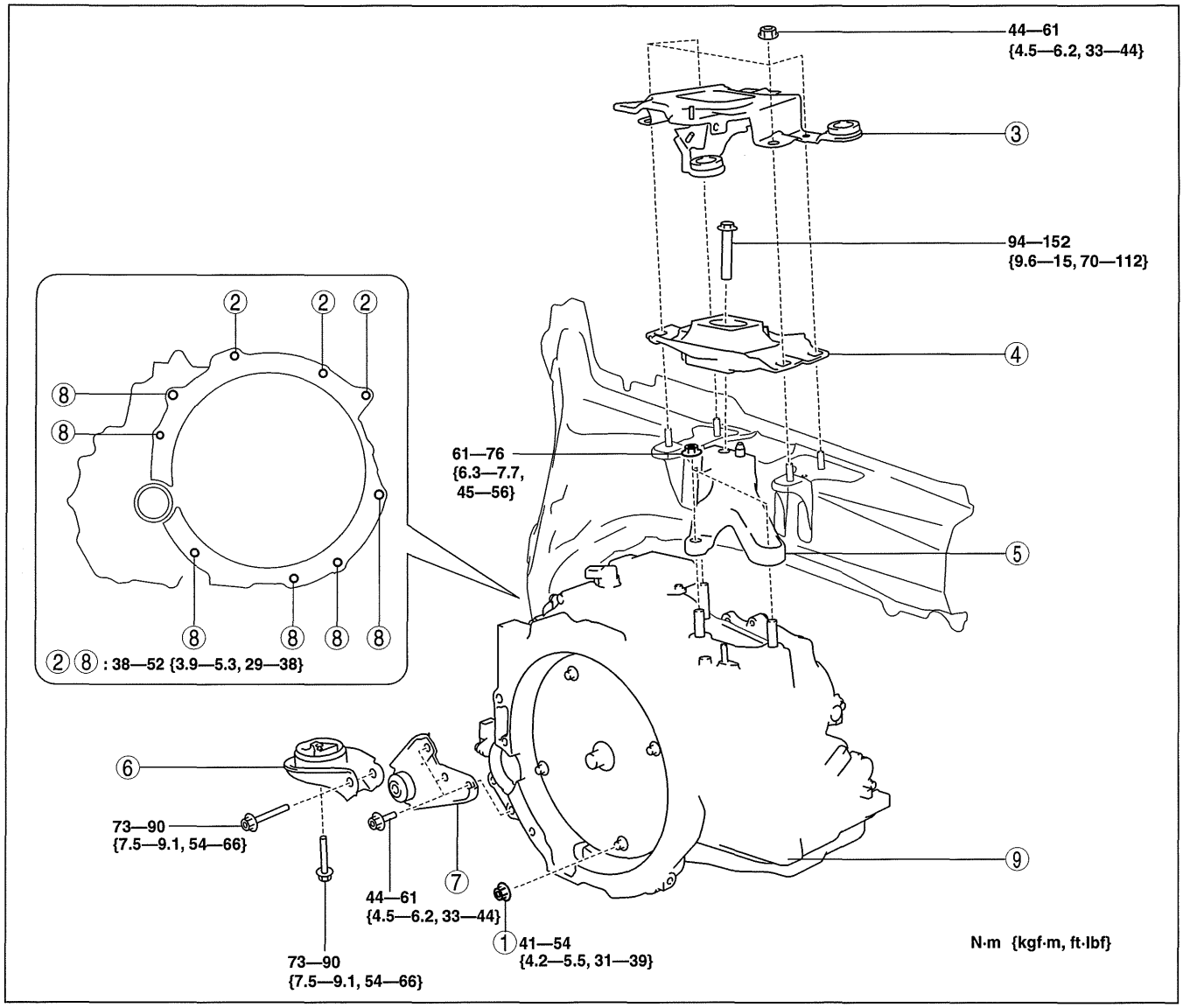
(5) Adjust the positions of the SST side bars so that they are the same height (left and right) and horizontal. Make sure each joint is securely tightened.



am3uuw0000529

cardiagn.com

9. Remove in the order indicated in the table.



am3uuw0000519

1	Torque converter installation nuts (See 05-17-44 Torque Converter Installation Nuts Removal Note.)
2	Transaxle mounting bolts (upper side)
3	Battery tray bracket (See 05-17-45 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
4	No.4 engine mount rubber (See 05-17-45 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
5	No.4 engine mount bracket (See 05-17-45 No.1 Engine Mount and No.4 Engine Mount Installation Note.)

6	No.1 engine mount rubber (See 05-17-45 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
7	No.1 engine mount bracket (See 05-17-45 No.1 Engine Mount and No.4 Engine Mount Installation Note.)
8	Transaxle mounting bolts (lower side) (See 05-17-44 Transaxle Mounting Bolts (Lower Side) Removal Note.)
9	Transaxle (See 05-17-44 Transaxle Mounting Bolts (Lower Side) Removal Note.)

Warning

- **Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.**

Caution

- **To prevent the torque converter and transaxle from separating, remove the transaxle without tilting it toward the torque converter.**

cardiagn.com

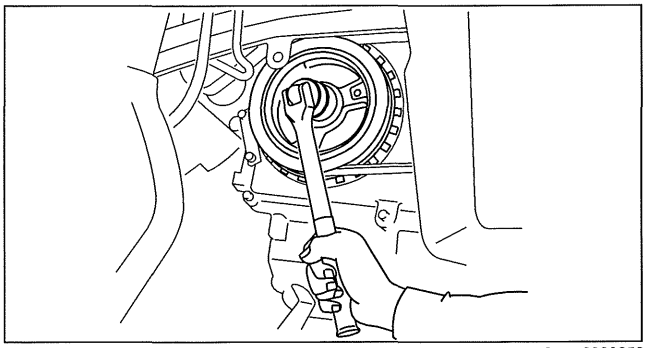
10. Install in the reverse order of removal.
11. Add ATF to the specified level. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
12. Perform the following test according to the service item. (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)(See 05-17-7 ROAD TEST [FS5A-EL].)

Service item	Test item			
	Line pressure test	Stall test	Time lag test	Road test
ATX replacement	×			
ATX overhaul	×	×	×	×
Torque converter replacement	×	×		
Oil pump replacement	×			
Clutch system replacement	×		×	×

× : Test to be performed after the service work

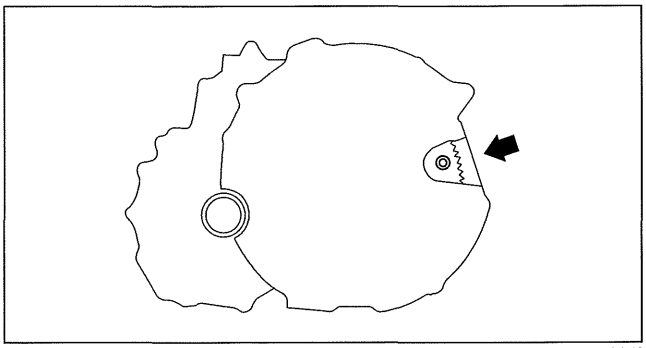
Torque Converter Installation Nuts Removal Note

1. Hold the crankshaft pulley to prevent drive plate from rotating.



am3uuw0000258

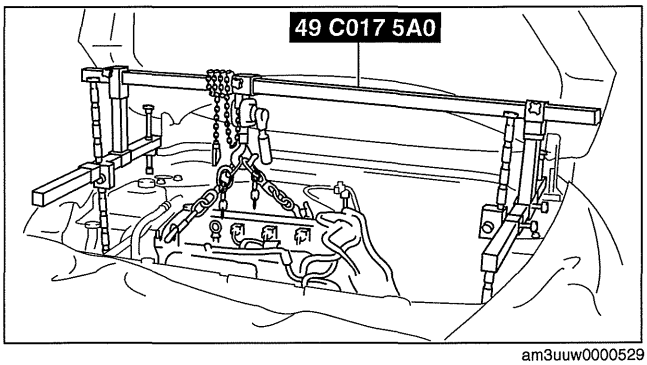
2. Remove the torque converter nuts from the starter installation hole.



am3uuw0000258

Transaxle Mounting Bolts (Lower Side) Removal Note

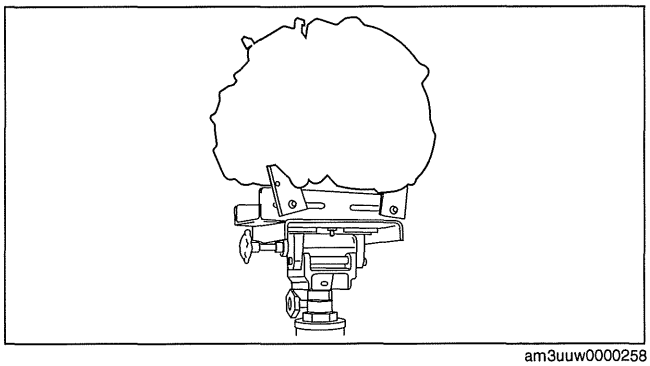
1. Adjust the SST (49 C017 5A0) and lean the engine toward the transaxle.
2. Support the transaxle on a jack.
3. Remove the transaxle mounting bolts (lower side).



am3uuw0000529

cardiagn.com

4. Remove the transaxle.

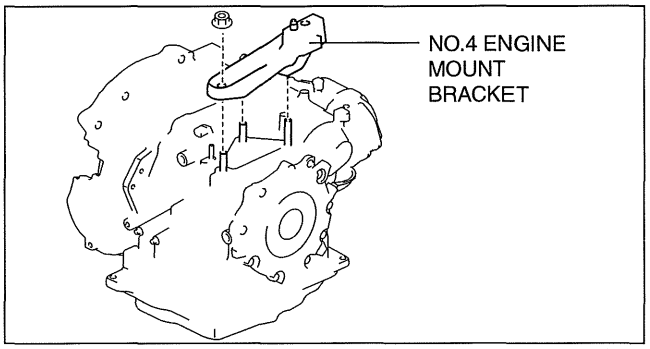


am3uuw0000258

No.1 Engine Mount and No.4 Engine Mount Installation Note

1. Install the No.4 engine mount bracket to the transaxle case, and then tighten the nuts.

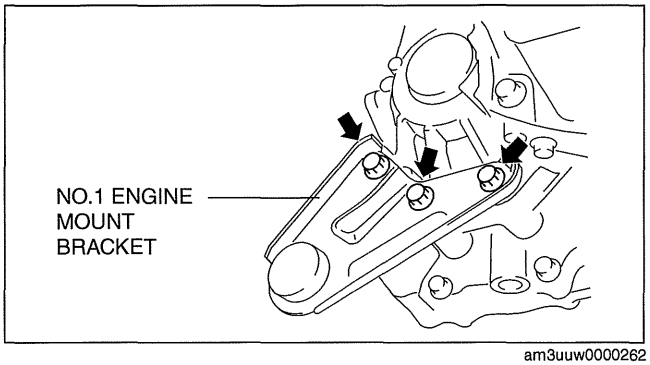
   Tightening torque
   61—76 N·m {6.3—7.7 kgf·m, 45—56 ft·lbf}



am3uuw0000261

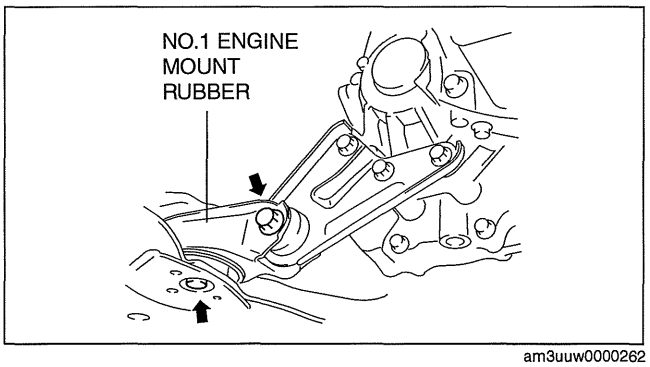
2. Install the No.1 engine mount bracket to the converter housing, and then tighten the bolts.

   Tightening torque
   44—61 N·m {4.5—6.2 kgf·m, 33—44 ft·lbf}



am3uuw0000262

3. Install the No.1 engine mount rubber to the front crossmember, and then temporarily tighten the bolts.

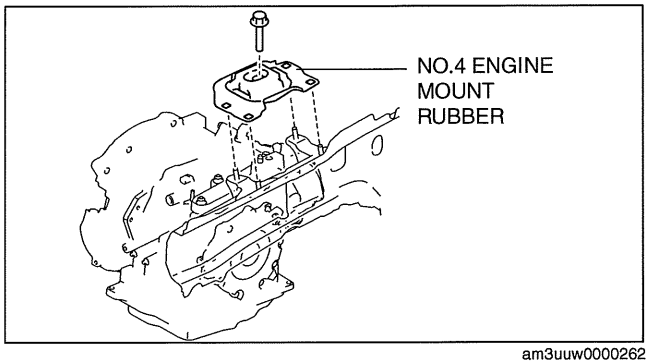


am3uuw0000262

cardiagn.com

4. Align the No.4 engine mount rubber installation hole to the stud bolts on the body.
5. Install the No.4 engine mount rubber to the No.4 engine mount bracket, and then tighten the bolt.

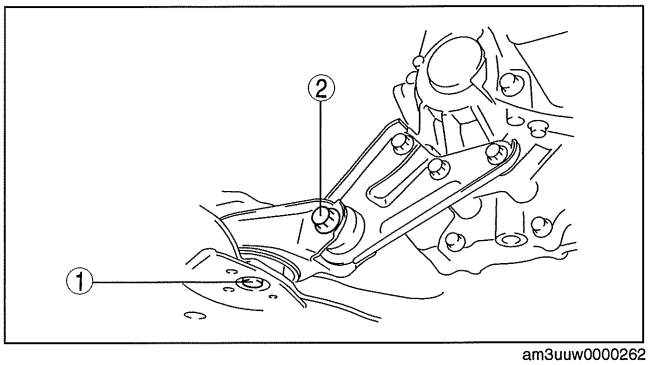
Tightening torque
94—152 N·m {9.6—15 kgf·m, 70—112 ft·lbf}



am3uuw0000262

6. Tighten the No.1 engine mount rubber installation bolts in the order shown.

Tightening torque
73—90 N·m {7.5—9.1 kgf·m, 54—66 ft·lbf}

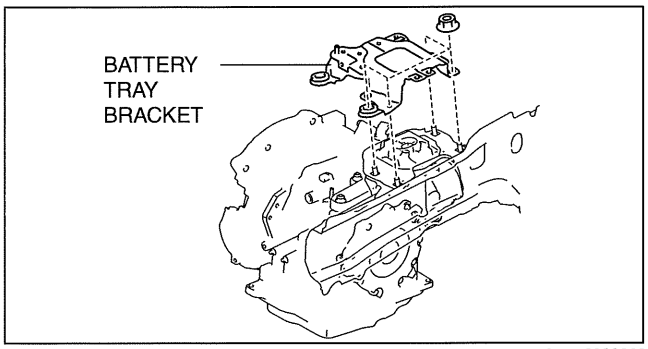


am3uuw0000262

7. Align the battery tray bracket installation hole to the stud bolts on the body.
8. Install the battery tray bracket to the No.4 engine mount rubber, and then tighten the nuts.

Tightening torque
44—61 N·m {4.5—6.2 kgf·m, 33—44 ft·lbf}

9. Remove the SST (49 C017 5A0).



am3uuw0000262

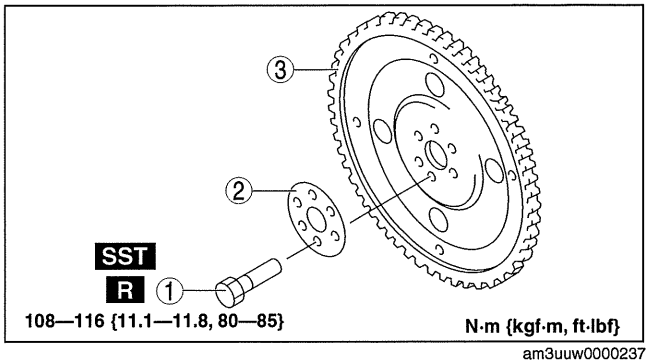
DRIVE PLATE REMOVAL/INSTALLATION [FS5A-EL]

id051721294200

1. Remove the transaxle. (See 05-17-40 AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [FS5A-EL].)
2. Remove in the order indicated in the table.

1	Drive plate installation bolts (See 05-17-47 Drive Plate Installation Bolts Removal Note.) (See 05-17-47 Drive Plate Installation Bolts Installation Note.)
2	Backing plate
3	Drive plate

3. Install in the reverse order of removal

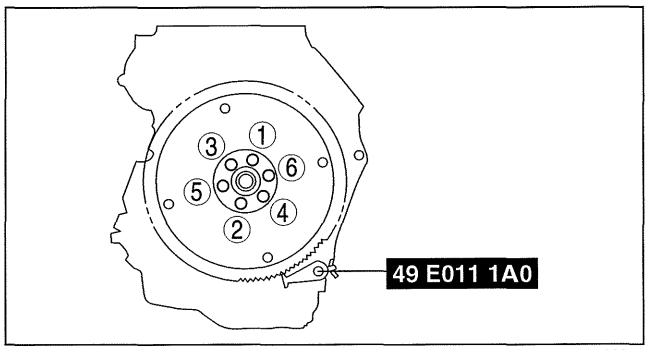


am3uuw0000237

cardiagn.com

Drive Plate Installation Bolts Removal Note

1. Set the SST against the drive plate.
2. Loosen the drive plate installation bolts in two or three steps in the order as shown in the figure, then remove the bolts and the drive plate.

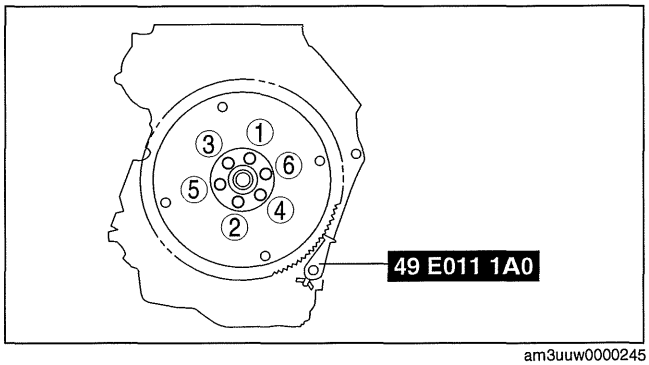


am3uuw0000245

Drive Plate Installation Bolts Installation Note

1. Set the SST against the drive plate.
2. Tighten the drive plate mounting bolts in two or three steps in the order as shown in the figure.

Tightening torque
108—116 N·m {11.1—11.8 kgf·m, 80—85 ft·lbf}



am3uuw0000245

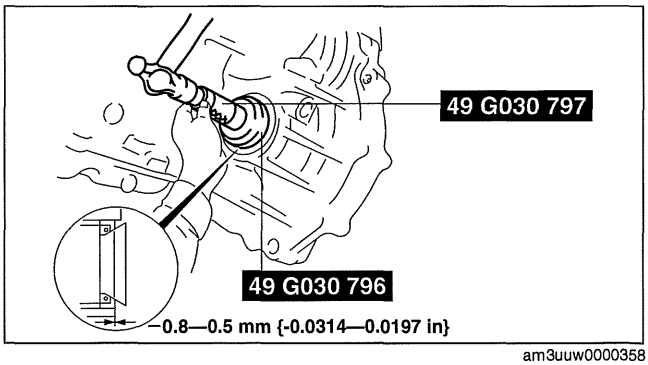
OIL SEAL REPLACEMENT [FS5A-EL]

id051721294300

1. Remove the aerodynamic under cover No. 2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
2. Remove the oil seal.
   (1) Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
   (2) Remove the drive shaft and/or joint shaft. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.)(See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)

Caution
- **The oil seal is easily damaged by the sharp edges of the drive shaft splines. Do not let the splines contact the oil seal.**

   (3) Remove the oil seal using a flathead screwdriver.
3. Using the SSTs and a hammer, tap a new oil seal in evenly until the SST (body) contacts the transaxle case.
4. Coat the lip of the oil seal with ATF.
5. Install the drive shaft and/or joint shaft. (See 03-13-3 DRIVE SHAFT REMOVAL/INSTALLATION.)(See 03-13-13 JOINT SHAFT REMOVAL/INSTALLATION.)
6. Add the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
7. Install the aerodynamic under cover No. 2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
8. Perform the "Mechanical System Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)



am3uuw0000358

OIL COOLER REMOVAL/INSTALLATION [FS5A-EL]

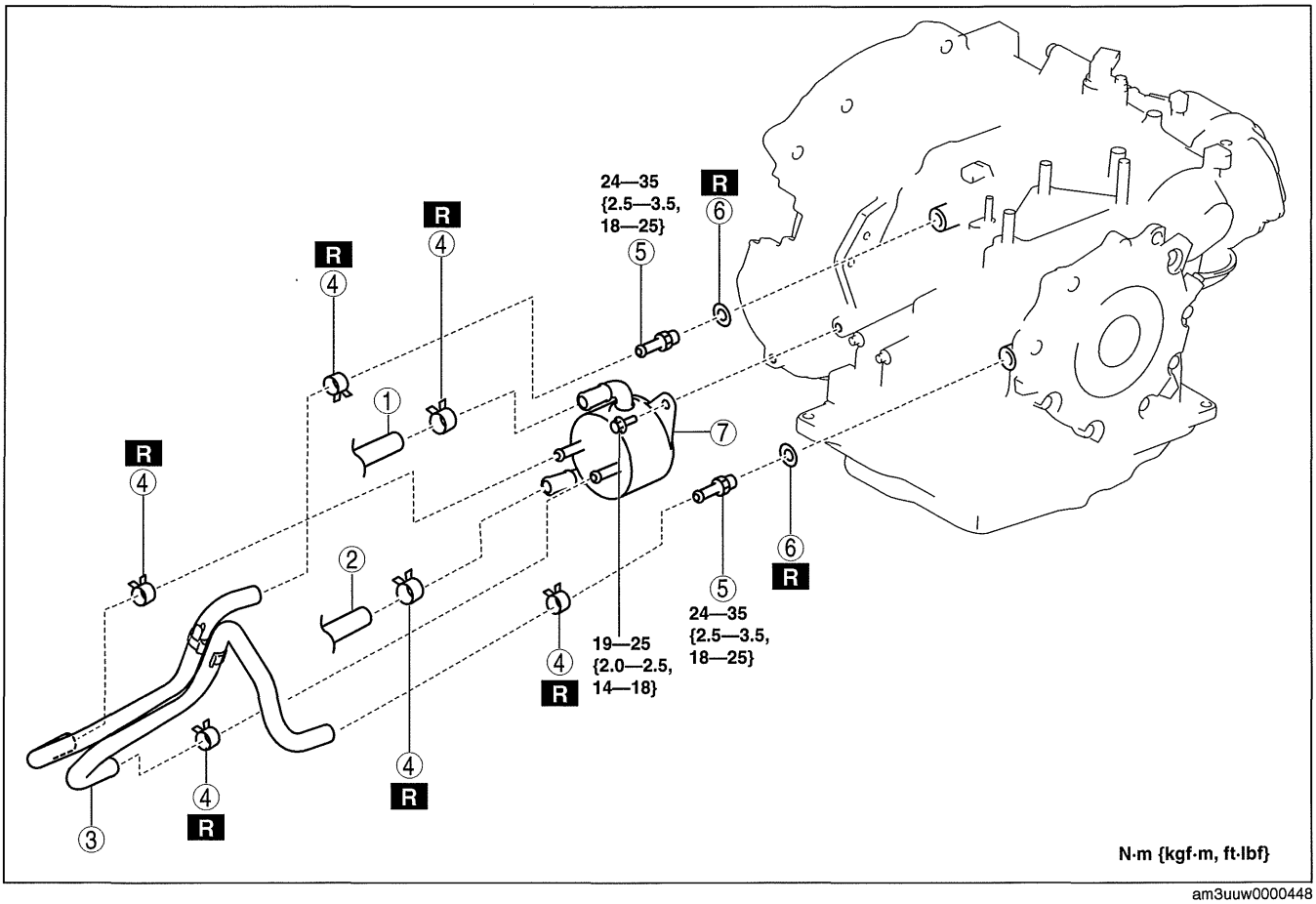
id051721294400

Type A

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)

cardiagn.com

4. Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
5. Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
6. Drain the engine coolant. (See 01-12A-4 ENGINE COOLANT REPLACEMENT [LF, L5].)
7. Remove in the order indicated in the table.



am3uuw0000448

1	Water hose (connected to the outlet)
2	Water hose (connected to the thermostat)
3	Oil hose (See 05-17-48 Oil Hose Installation Note.)

4	Hose clamp (See 05-17-48 Oil Hose Installation Note.)
5	Connector bolt
6	Packing
7	Water-cooled oil cooler

8. Install in the reverse order of removal.
9. Add the engine coolant. (See 01-12A-4 ENGINE COOLANT REPLACEMENT [LF, L5].)
10. Add the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
11. Perform the "Mechanical System Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)

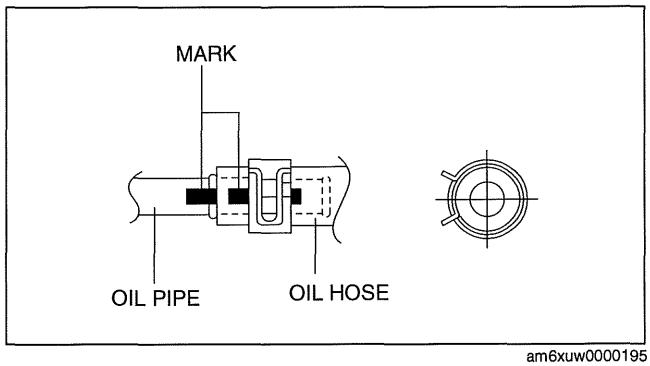
Oil Hose Installation Note

Note

- If reusing the hose, install the new hose clamp exactly on the mark left by the previous hose clamp. Then apply force to the hose clamp in the direction of the arrow in order to fit the clamp in place.

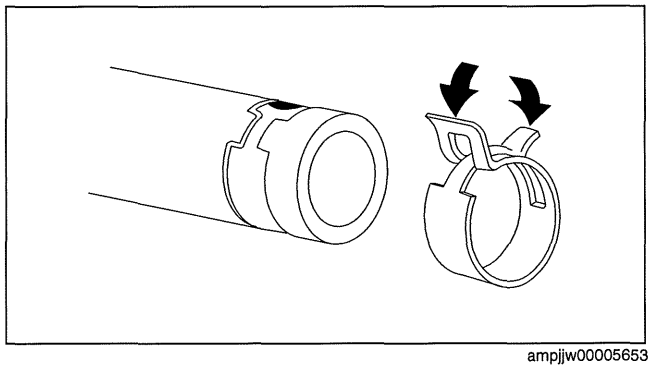
cardiagn.com

1. Align the marks, and slide the oil hose onto the oil pipe until it is fully seated as shown.
2. Install the hose clamp.



am6xuw0000195

3. Install the hose clamp onto the hose.
4. Verify that the hose clamp does not interfere with any other components.

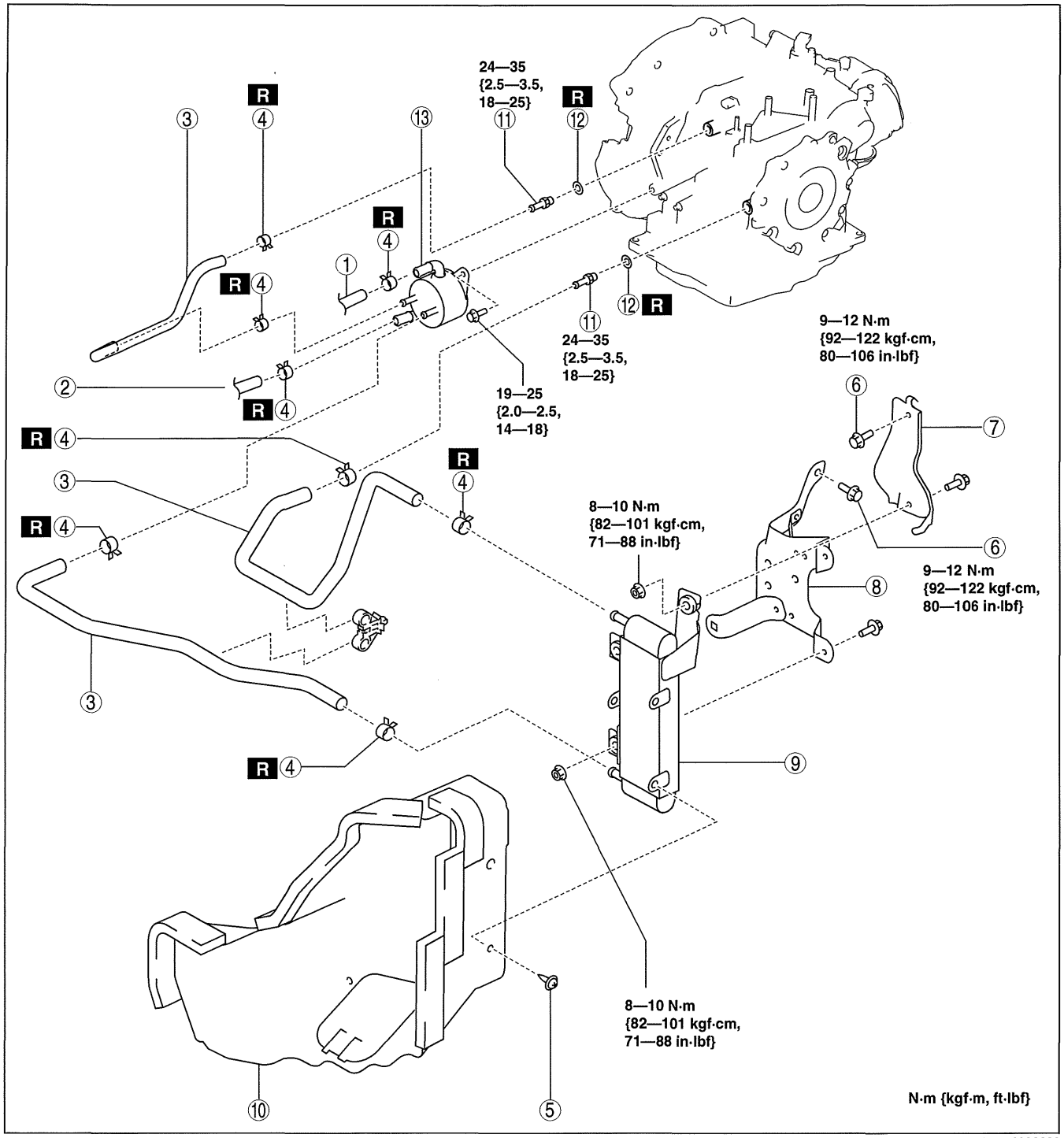

ampjjw00005653

Type B

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
4. Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
5. Remove the front splash shield (LH). (See 09-16-30 SPLASH SHIELD REMOVAL/INSTALLATION.)
6. Remove the front mudguard (LH). (See 09-16-17 FRONT MUDGUARD REMOVAL/INSTALLATION.)
7. Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
8. Drain the engine coolant. (See 01-12A-4 ENGINE COOLANT REPLACEMENT [LF, L5].)

cardiagn.com

9. Remove in the order indicated in the table.



am3uuw0000262

1	Water hose (connected to the outlet)
2	Water hose (connected to the thermostat)
3	Oil hose (See 05-17-48 Oil Hose Installation Note.)
4	Hose clamp (See 05-17-48 Oil Hose Installation Note.)
5	Fastener
6	Bracket installation bolt

7	Bracket
8	Bracket
9	Air-cooled oil cooler
10	Oil cooler duct
11	Connector bolt
12	Packing
13	Water-cooled oil cooler

10. Install in the reverse order of removal.
11. Add the engine coolant. (See 01-12A-4 ENGINE COOLANT REPLACEMENT [LF, L5].)

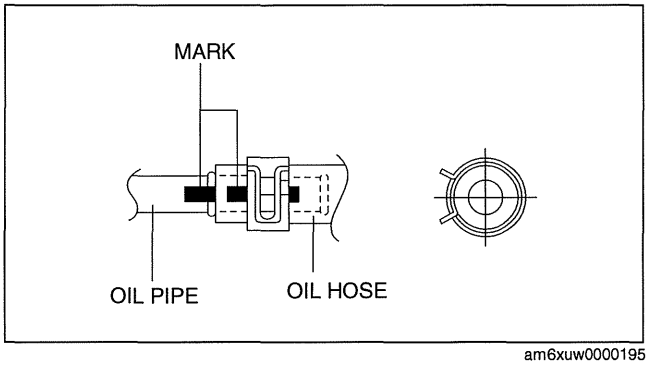
cardiagn.com

12. Add the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
13. Perform the "Mechanical System Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)

Oil Hose Installation Note

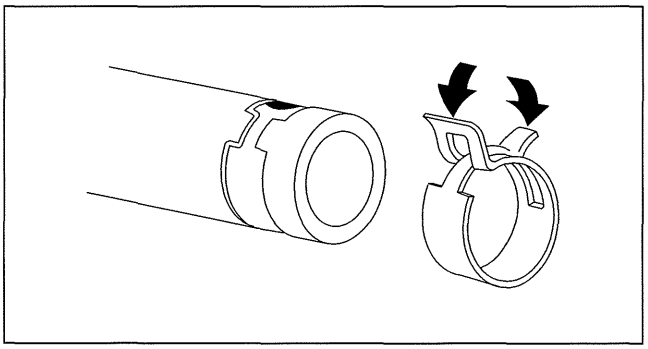
Note
- If reusing the hose, install the new hose clamp exactly on the mark left by the previous hose clamp. Then apply force to the hose clamp in the direction of the arrow in order to fit the clamp in place.

1. Align the marks, and slide the oil hose onto the oil pipe until it is fully seated as shown.
2. Install the hose clamp.



am6xuw0000195

3. Install the hose clamp onto the hose.
4. Verify that the hose clamp does not interfere with any other components.

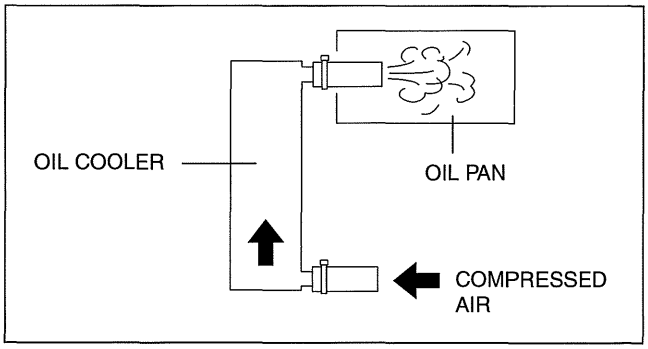

ampjjw00005653

OIL COOLER FLUSHING [FS5A-EL]

id051721294500

Note
- If the automatic transaxle is replaced, flush and inspect the oil cooler.
- When replacing the automatic transaxle, inspect the oil cooler together with flushing it using the following procedures, and with the oil cooler hose removed.

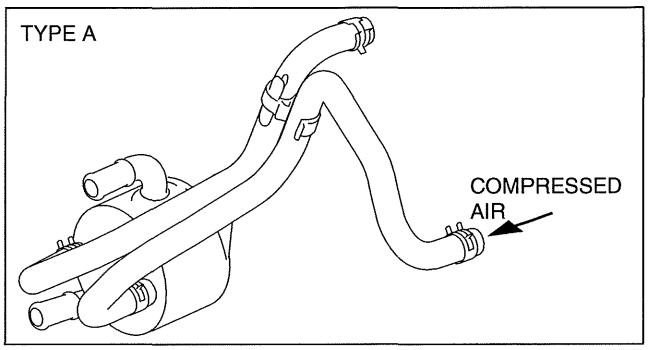
1. Disconnect the oil hose.
2. Set a clean oil pan up to the oil hose inlet.
3. Blow 491—882 kPa {5—9 kgf/cm2, 72—127 psi} of compressed air from the oil hose outlet to drain remaining oil.



am3uuw0000245

cardiagn.com

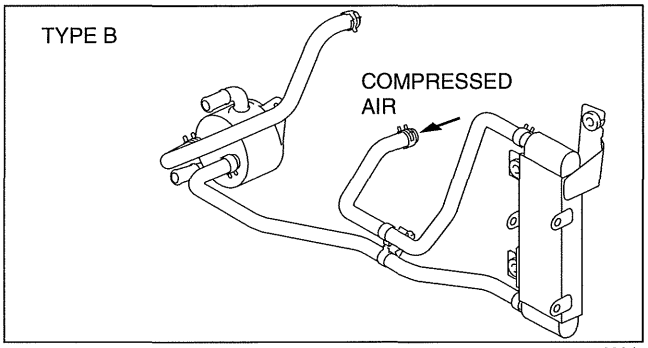
Type A



am3uuw0000245

Type B

4. Add new ATF from the oil cooler hose outlet and blow 491—882 kPa {5—9 kgf/cm2, 72—127 psi} of compressed air to flush. (Repeat 2 or 3 times)
5. Verify that none of the following foreign material is mixed in with the drained ATF:
   - Large metal fragments of ϕ 0.5 mm {0.02 mm} or more that cannot pass through the oil strainer
   - Fibrous clutch facing
6. Repeat the procedures from Step 3 to 4 and flush the inside of the oil cooler.
   - If foreign material such as metal fragments or clutch facing remains even after the oil cooler is flushed repeatedly, replace the oil cooler.



am3uuw0000245

CONTROL VALVE BODY REMOVAL/INSTALLATION [FS5A-EL]

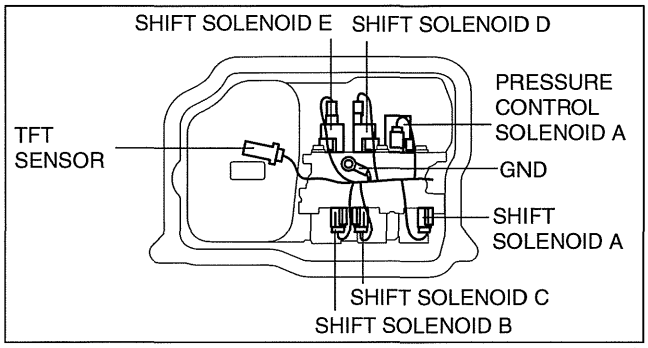
id051721294600

Primary Control Valve Body On-Vehicle Removal

Warning

- **A hot transaxle and ATF can cause severe burns. Turn off the engine and wait until they are cool.**
- **Using compressed air can cause dirt and other particles to fly out, causing injury to the eyes. Wear protective eyeglasses whenever using compressed air.**

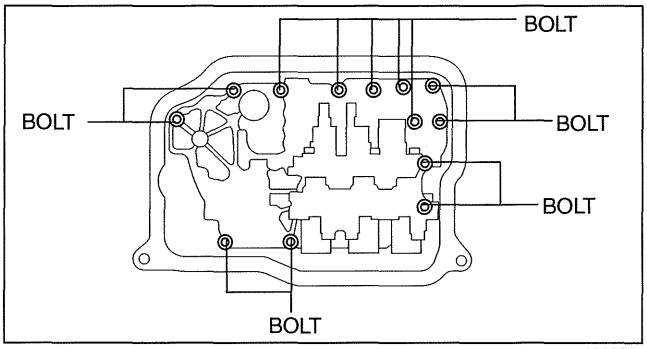
1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
4. Clean the transaxle exterior throughout with a steam cleaner or cleaning solvents.
5. Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
6. Remove the oil pan.
7. Remove the oil strainer.
8. Disconnect each solenoid valve connector and GND.



am3uuw0000242

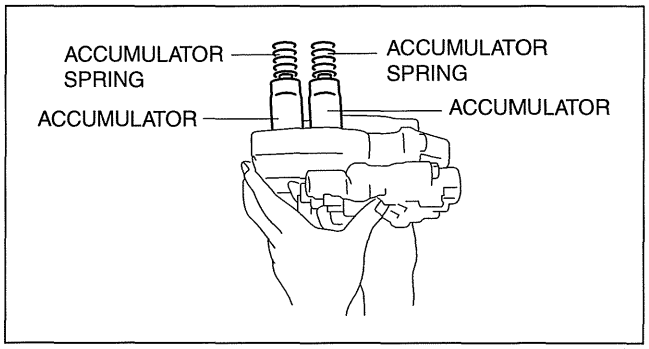
cardiagn.com

9. Remove the bolts as shown, then remove the primary control valve body.



am3uuw0000246

10. Remove the accumulators and accumulator springs.

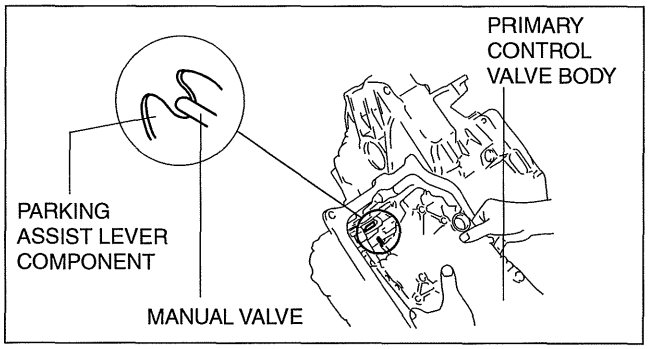


am6xuw0000195

Primary Control Valve Body On-Vehicle Installation

Caution

- **Be sure to align the parking rod and the manual valve.**

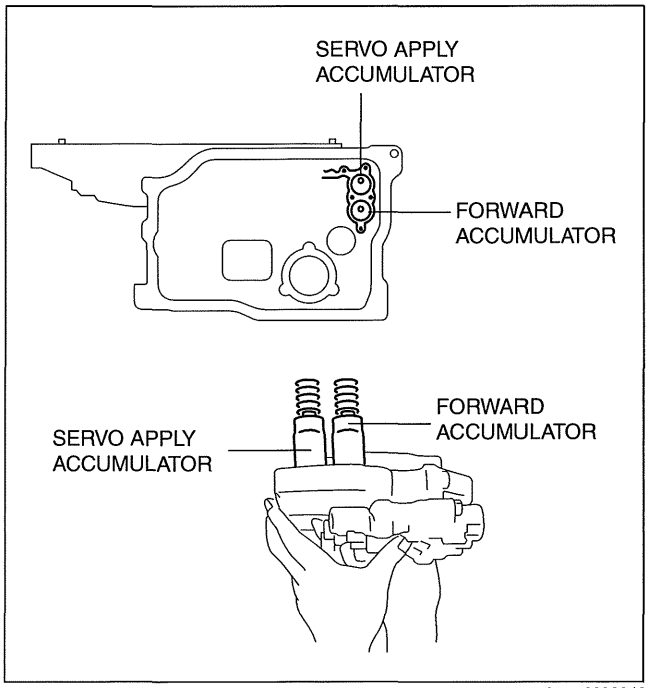


am6xuw0000195

cardiagn.com

1. Install the accumulator springs, accumulators and primary control valve body.

Accumulator spring specification



am3uuw0000246

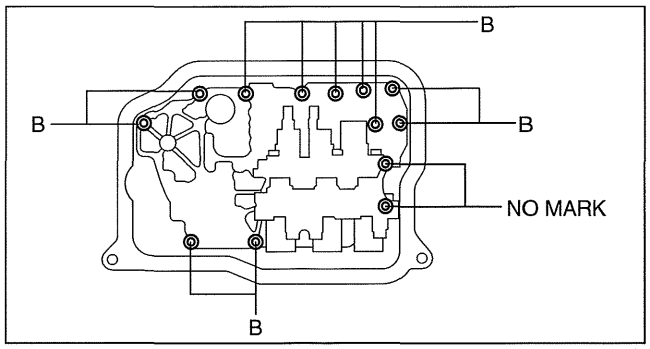
Spring	Outer diameter (mm {in})	Free Length (mm {in})	No. of coils	Wire diameter (mm {in})
Servo apply accumulator large spring	21.0 {0.827}	67.8 {2.669}	10.3	3.5 {0.138}
Servo apply accumulator small spring	13.0 {0.512}	67.8 {2.669}	17.1	2.2 {0.087}
Forward accumulator large spring	21.0 {0.827}	75.0 {2.953}	10.7	2.3 {0.091}
Forward accumulator small spring	15.6 {0.614}	49.0 {1.929}	7.7	2.4 {0.094}

2. Tighten the bolts as shown to install the primary control valve body.

Tightening torque
8—10 N·m {82—101 kgf·cm, 71—88 in·lbf}

Bolt length measured from below the head

Mark	Length measured from below the head
B	40mm {1.575 in}
No mark	70mm {2.756 in}



am3uuw0000246

cardiagn.com

3. Match the harness colors, then connect each solenoid valves connector.

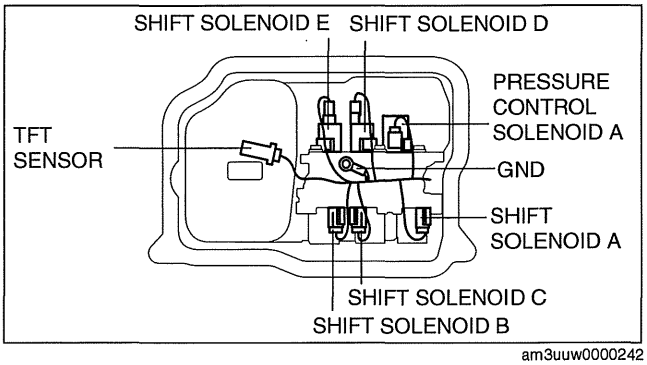
Connector color (harness-side)

Solenoid valve	Connector color
Pressure control solenoid A	Black
Shift solenoid A	White
Shift solenoid B	Blue
Shift solenoid C	Green
Shift solenoid D	White
Shift solenoid E	Black

4. Install the GND.

Tightening torque
8—10 N·m {82—101 kgf·cm, 71—88 in·lbf}

5. Install the TFT sensor to the oil strainer.
6. Install the oil strainer.

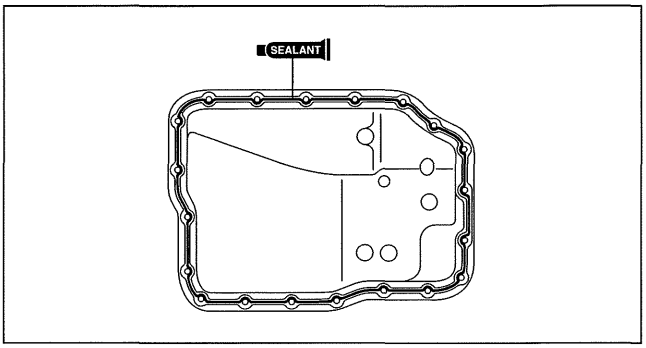


am3uuw0000242

7. Apply a light coat of silicon sealant (TB1217E) to the contact surfaces of the oil pan and transaxle case.

Caution
- **If any old sealant gets into the transaxle during installation of the oil pan, trouble may occur in the transaxle case and oil pan, and clean with cleaning fluids.**

8. Install the oil pan before the applied sealant starts to harden.



am3uuw0000242

Tightening torque
6—8 N·m {62—81 kgf·cm, 54—70 in·lbf}

9. Add ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
10. Install the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
11. Connect the negative battery cable.
12. Install the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
13. Perform the "Mechanical System Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)
14. Perform the "Road Test". (See 05-17-7 ROAD TEST [FS5A-EL].)

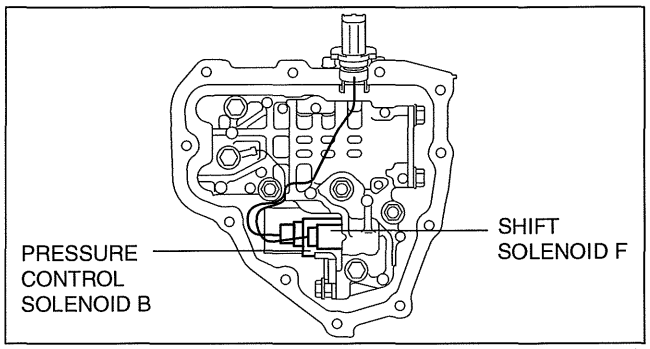
Secondary Control Valve Body On-Vehicle Removal

Warning
- **A hot transaxle and ATF can cause severe burns. Turn off the engine and wait until they are cool.**
- **Using compressed air can cause dirt and other particles to fly out, causing injury to the eyes. Wear protective eyeglasses whenever using compressed air.**

1. Remove the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
5. Clean the transaxle exterior throughout with a steam cleaner or cleaning solvents.
6. Drain the ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)

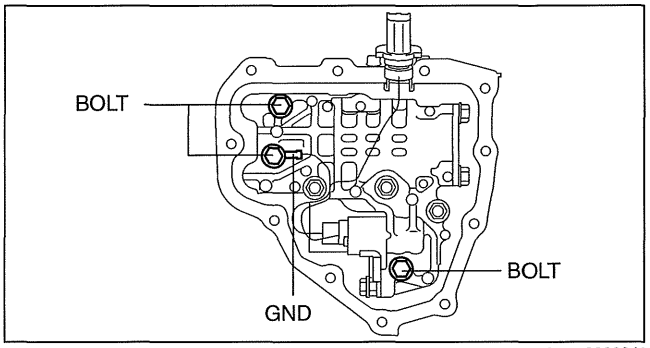
cardiagn.com

7. Disconnect each solenoid valve connector.



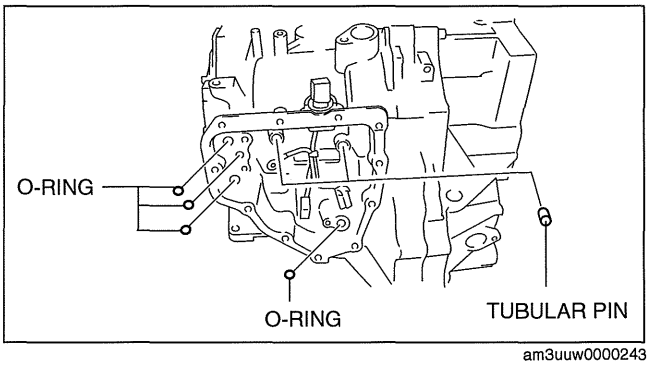
am3uuw0000242

8. Remove the bolts and GND as shown, then remove the secondary control valve body.



am3uuw0000242

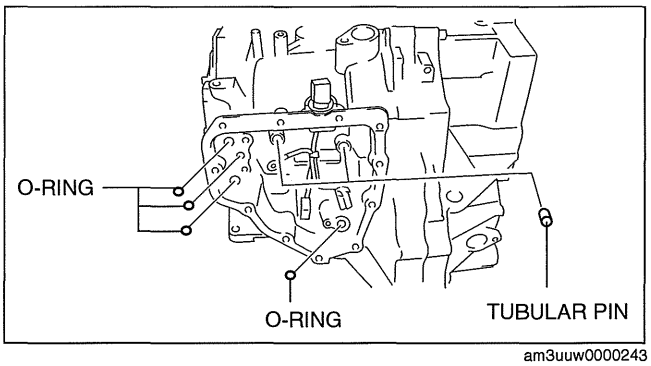
9. Remove the tubular pin and O-ring.



am3uuw0000243

Secondary Control Valve Body On-Vehicle Installation

1. Install the tubular pin and new O-rings to the transaxle case.
2. Install the secondary control valve body.



am3uuw0000243

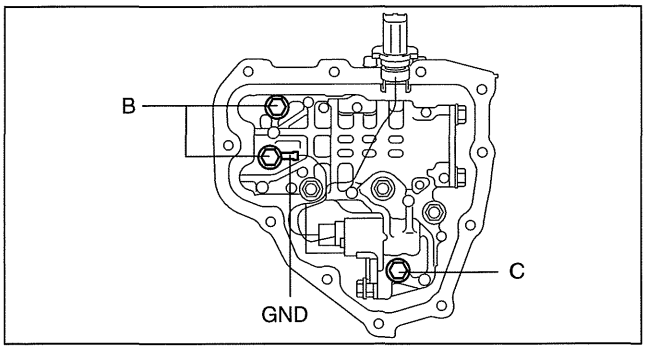
cardiagn.com

3. Tighten the bolts and GND as shown to install the secondary control valve body.

Tightening torque
8—10 N·m {82—101 kgf·cm, 71—88 in·lbf}

Bolt length measured from below the head

Mark	Length measured from below the head
B	40mm {1.575 in}
C	50mm {1.967 in}

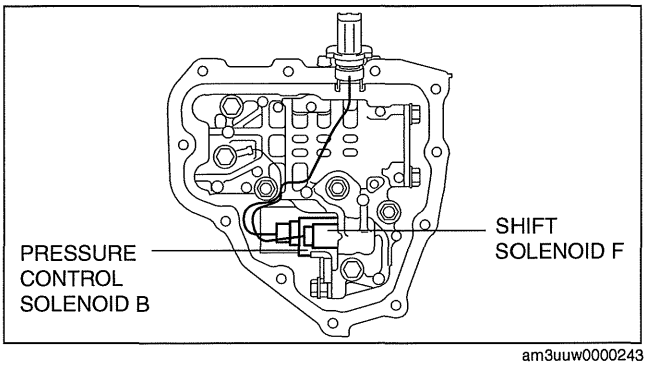


am3uuw0000243

4. Connect each solenoid valve connector.

Connector color (harness-side)

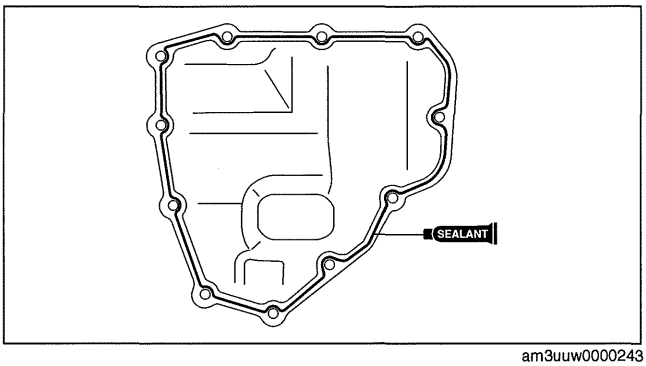
Solenoid valve	Connector color
Pressure control solenoid B	White
Shift solenoid F	Black



am3uuw0000243

5. Apply a light coat of silicon sealant (TB1217E) to the contact surfaces of the oil cover and transaxle case.
6. Install the oil cover.

Tightening torque
8—10 N·m {82—101 kgf·cm, 71—88 in·lbf}



am3uuw0000243

7. Add ATF. (See 05-17-14 AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [FS5A-EL].)
8. Install the aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
9. Install the battery component (ex: battery, battery tray and PCM component). (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
10. Connect the negative battery cable.
11. Install the battery cover. (See 01-17B-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
12. Perform the "Mechanical System Test". (See 05-17-3 MECHANICAL SYSTEM TEST [FS5A-EL].)
13. Perform the "Road Test". (See 05-17-7 ROAD TEST [FS5A-EL].)

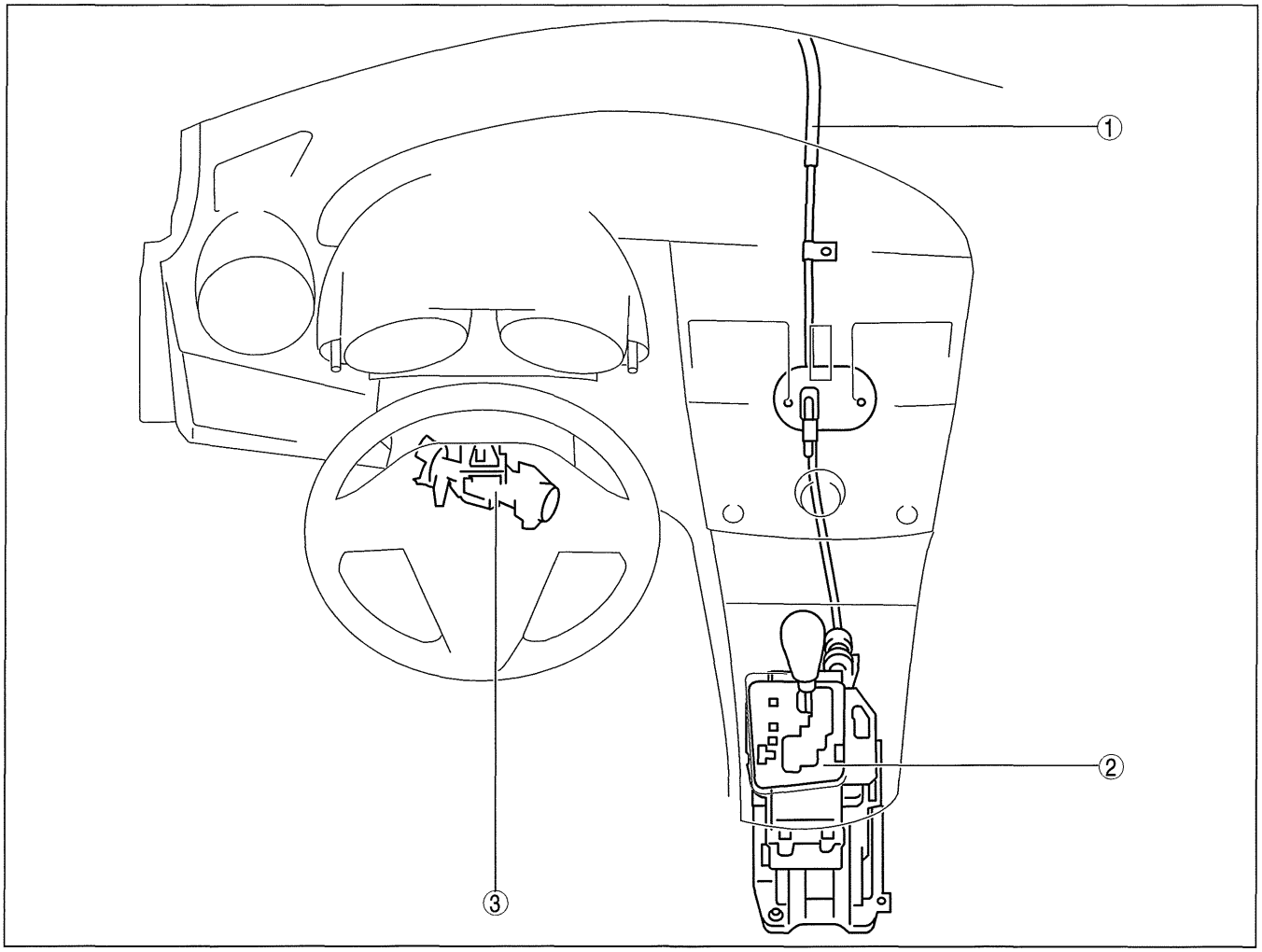
cardiagn.com

cardiagn.com

05-18 AUTOMATIC TRANSAXLE SHIFT MECHANISM

AUTOMATIC TRANSAXLE SHIFT MECHANISM LOCATION INDEX

id051800296800



am3uuw0000314

1	Selector cable (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)
2	Selector lever component (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.) (See 05-18-11 SELECTOR LEVER INSPECTION.) (See 05-18-11 SHIFT-LOCK SYSTEM INSPECTION.)
3	Steering lock (See 05-18-12 KEY INTERLOCK SYSTEM INSPECTION.)

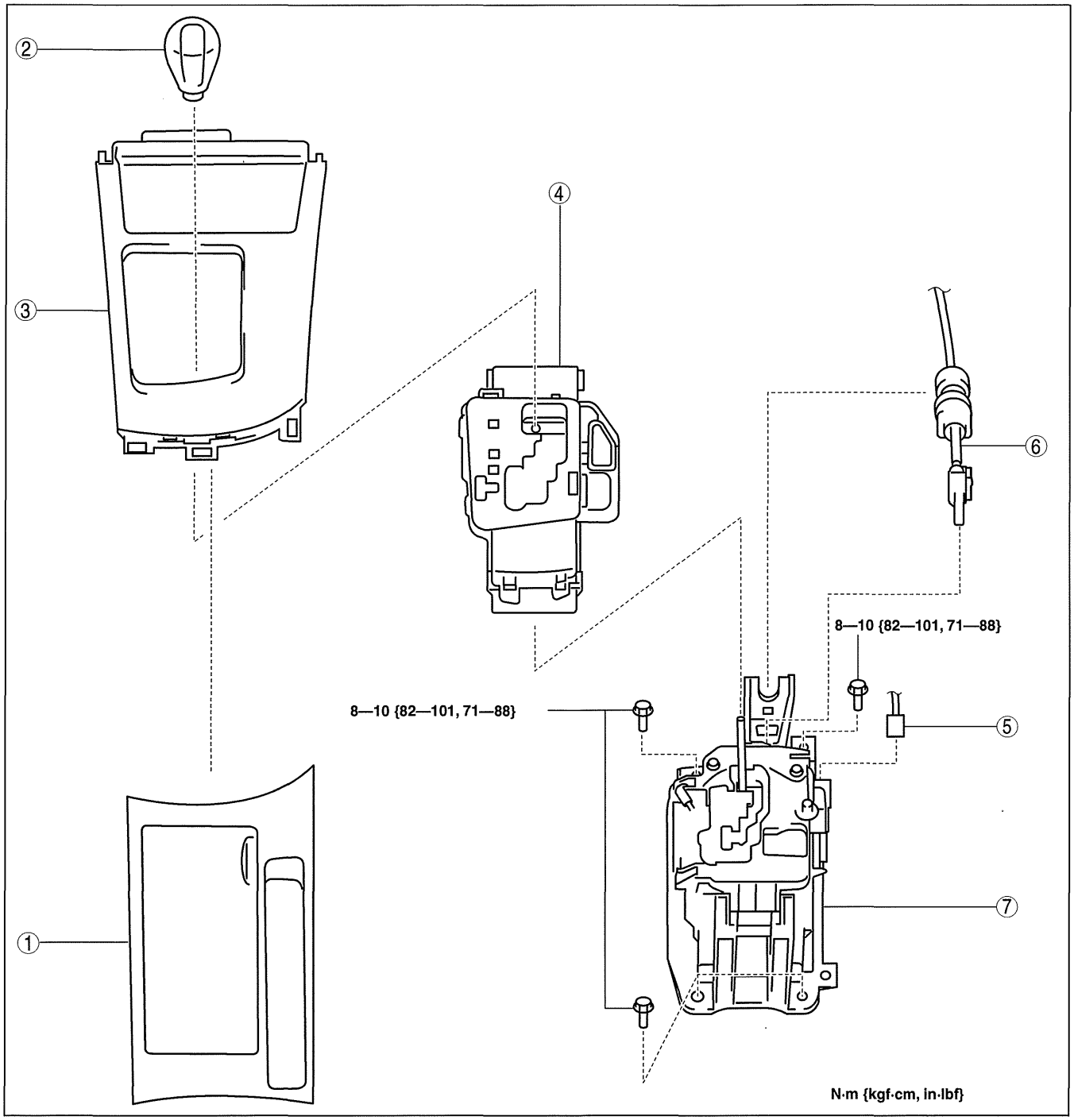
cardiagn.com

AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION

id051800296900

Selector Lever Removal/Installation

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.



am3uuw0000304

1	Upper panel (See 09-17-40 UPPER PANEL REMOVAL/ INSTALLATION.)
2	Knob

3	Shift panel (See 05-18-3 Shift panel and indicator panel removal note.) (See 05-18-5 Indicator panel and shift panel installation note.)

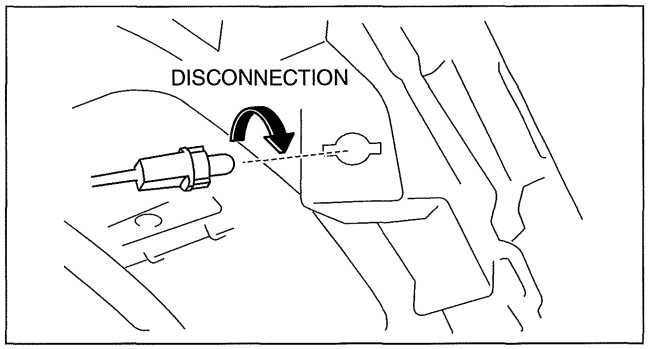
cardiagn.com

4	Indicator panel (See 05-18-3 Shift panel and indicator panel removal note.) (See 05-18-5 Indicator panel and shift panel installation note.)
5	Connector

6	Selector cable (selector lever side) (See 05-18-4 Selector cable (selector lever side) installation note.)
7	Selector lever (See 05-18-4 Selector lever installation note.)

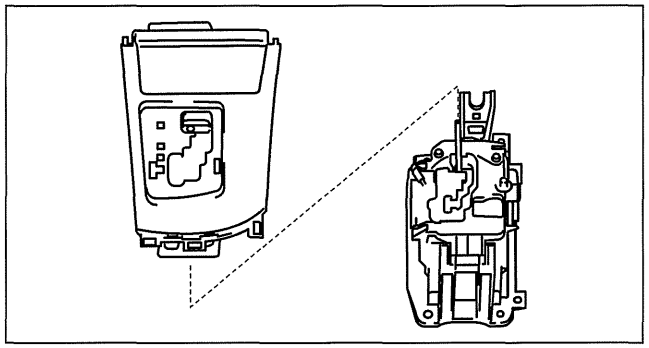
Shift panel and indicator panel removal note

1. Remove the shift panel and indicator panel as a single unit.
   (1) Release the hooks securing the shift panel and console, and then release the hooks securing the shift panel and ashtray panel. (See 09-17-42 SHIFT PANEL REMOVAL/INSTALLATION.)
   (2) Lift up the shift panel and indicator panel and disconnect the bulb socket from the indicator panel.

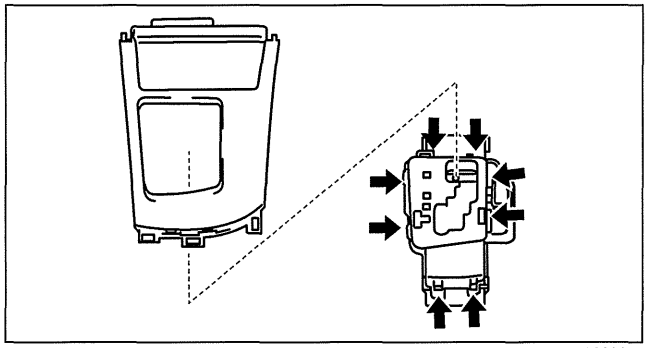


am3uuw0000304

   (3) Remove the shift panel and indicator panel from the selector lever as a single unit.


am3uuw0000305

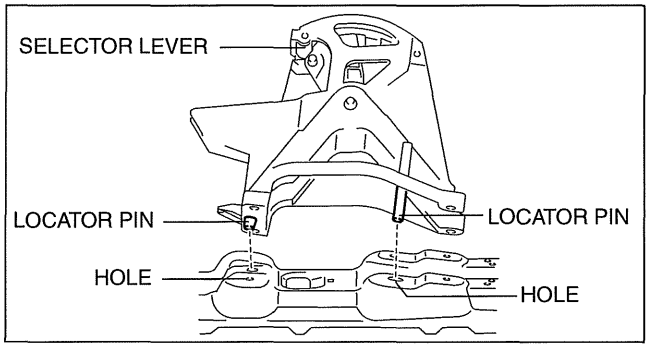
2. Detach the hooks as shown in the figure and remove the indicator panel from the shift panel.


am3uuw0000305

cardiagn.com

Selector lever installation note

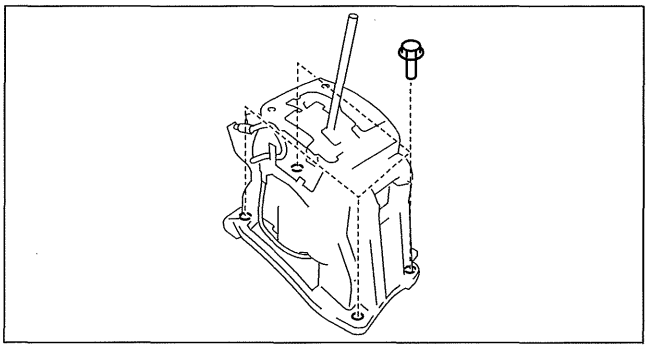
1. Align the locator pin with the hole in the floor as shown in the figure and install the selector lever.



am3uuw0000305

2. Tighten the selector lever installation bolts.

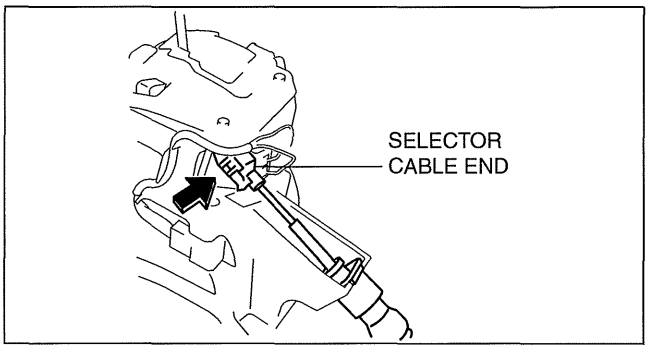
   Tightening torque
   8—10 N·m {82—101 kgf·cm, 71—88 in·lbf}



am3uuw0000305

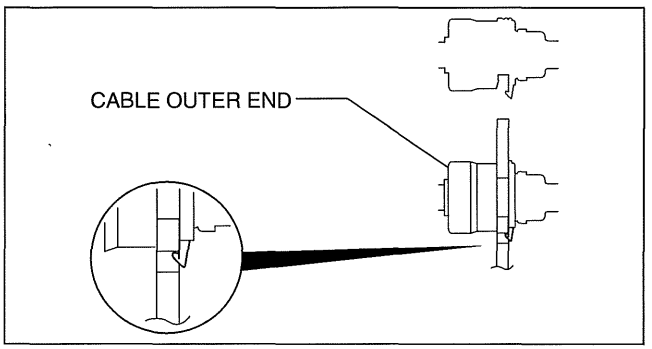
Selector cable (selector lever side) installation note

1. Install the selector cable end (selector lever side) as shown in the figure.



am3uuw0000306

2. Install the cable outer end (selector lever side) to the selector cable bracket as shown in the figure.
3. Adjust the selector cable. (See 05-18-10 Selector Cable Adjustment.)

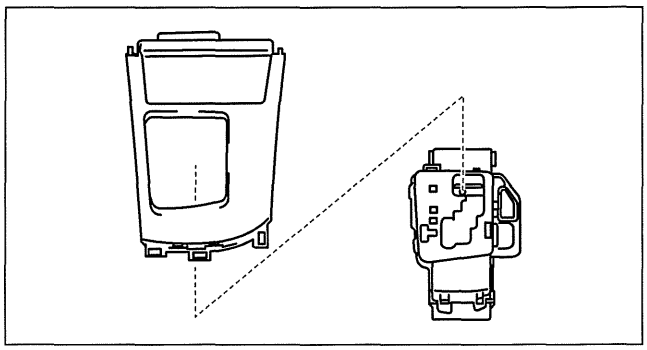


am3uuw0000306

cardiagn.com

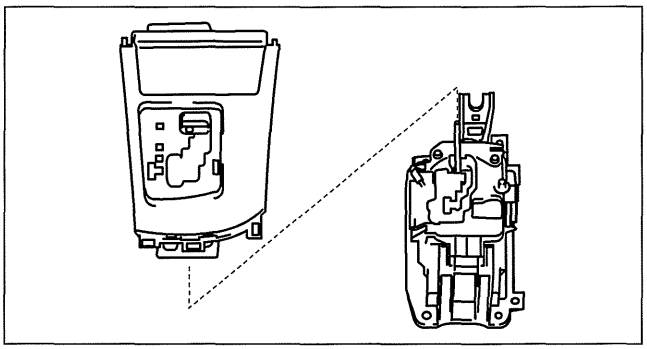
Indicator panel and shift panel installation note

1. Install the shift panel to the indicator panel.



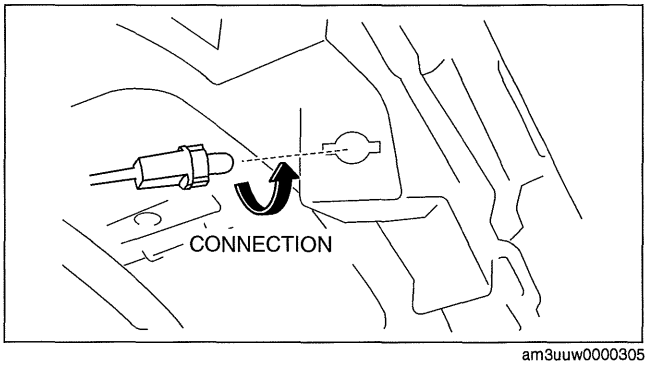
am3uuw0000305

2. Install the shift panel and indicator panel to the selector lever as a single unit.



am3uuw0000305

3. Connect the bulb socket to the indicator panel.
4. Install the shift panel and indicator panel to the console and ashtray panel as a single unit. (See 09-17-42 SHIFT PANEL REMOVAL/INSTALLATION)



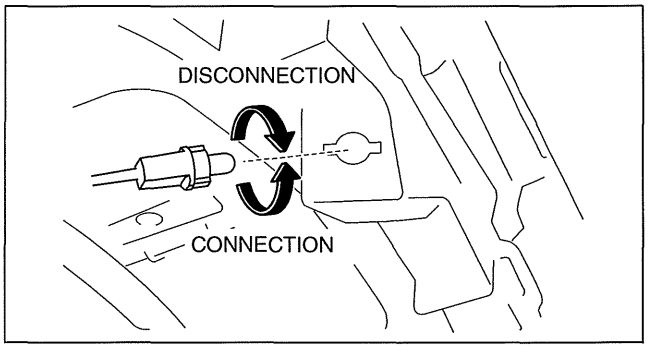
am3uuw0000305

Selector Cable Removal/Installation

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the battery component (ex: battery, battery tray and PCM component). (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
4. Remove the air cleaner component. (See 01-13A-4 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [LF, L5].)
5. Remove the Aerodynamic under cover NO.2. (See 09-16-29 AERODYNAMIC UNDER COVER NO.2 REMOVAL/INSTALLATION.)
6. Remove the tunnel member (rear). (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
7. Remove the insulator (front) installation nuts and set the insulator (front) aside. (See 01-15A-1 EXHAUST SYSTEM REMOVAL/INSTALLATION [LF, L5].)
8. Remove the upper panel. (See 09-17-40 UPPER PANEL REMOVAL/INSTALLATION.)
9. Remove the knob. (See 05-18-2 Selector Lever Removal/Installation.)
10. Remove the shift panel and indicator panel as a single unit.
    (1) Release the hooks securing the shift panel and console, and then release the hooks securing the shift panel and ashtray panel. (See 09-17-42 SHIFT PANEL REMOVAL/INSTALLATION.)

cardiagn.com

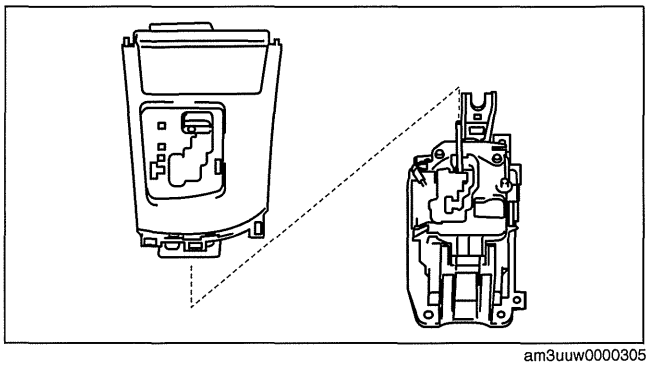
(2) Lift up the shift panel and indicator panel and disconnect the bulb socket from the indicator panel.



am3uuw0000305

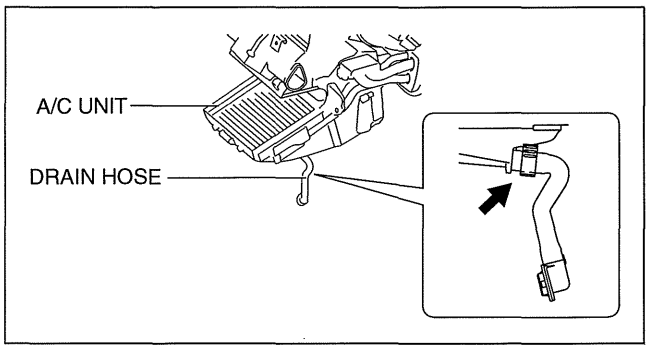
(3) Remove the shift panel and indicator panel from the selector lever as a single unit.

11. Remove the console. (See 09-17-45 CONSOLE REMOVAL/INSTALLATION.)

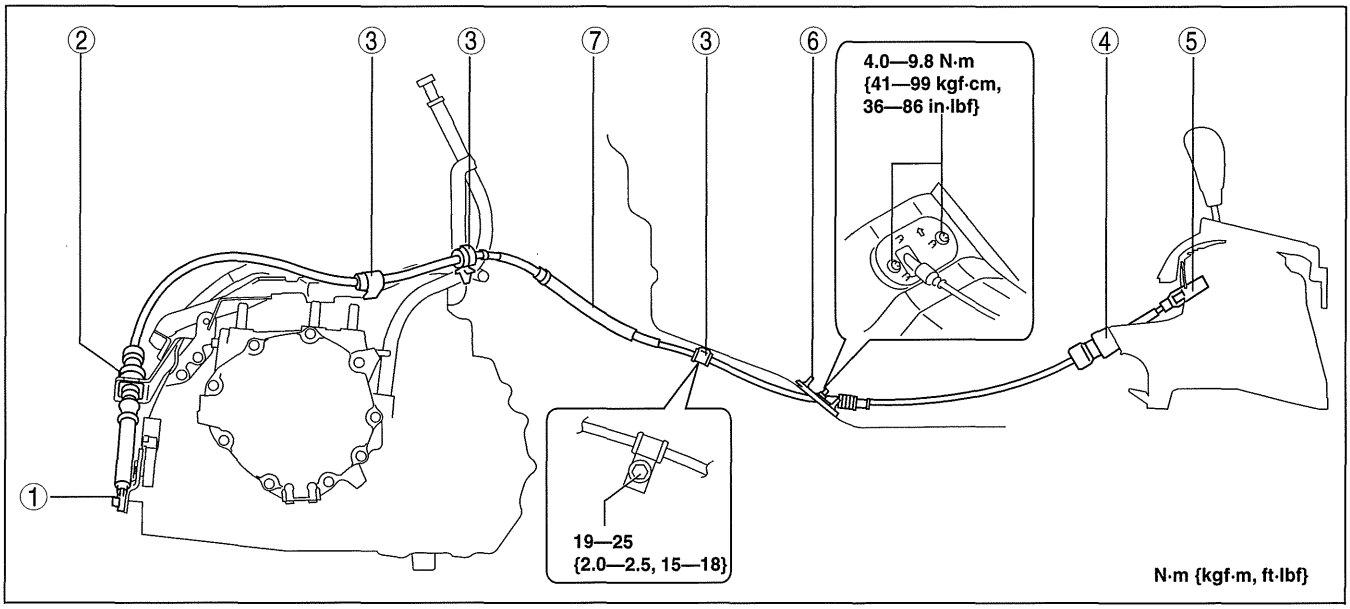


am3uuw0000305

12. Disconnect the drain hose connected to A/C unit. (See 07-11-4 A/C UNIT REMOVAL/ INSTALLATION.)
13. Remove in the order indicated in the table.
14. Install in reverse of removal.



am3uuw0000438



am3uuw0000519

1	Selector cable end (transaxle side) (See 05-18-7 Selector cable end (transaxle side) removal note.)

2	Cable outer end (transaxle side)
3	Clip
4	Cable outer end (selector lever side)

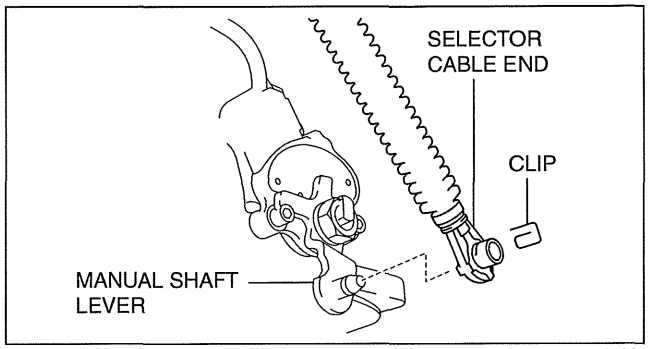
cardiagn.com

5	Selector cable end (selector lever side)
6	Grommet

7	Selector cable (See05-18-7 Selector cable installation note.)

Selector cable end (transaxle side) removal note

1. Remove the clip, and then disconnect the selector cable end from the manual shaft lever.

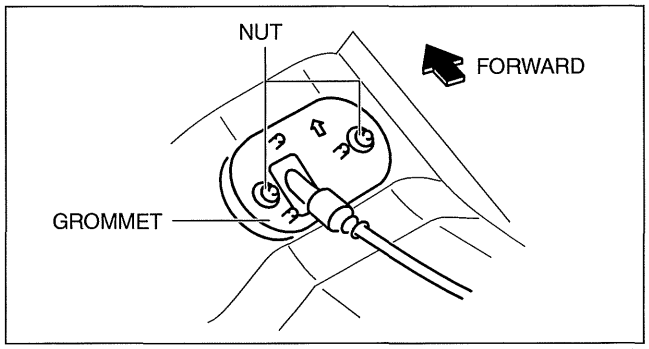


am3uuw0000306

Selector cable installation note

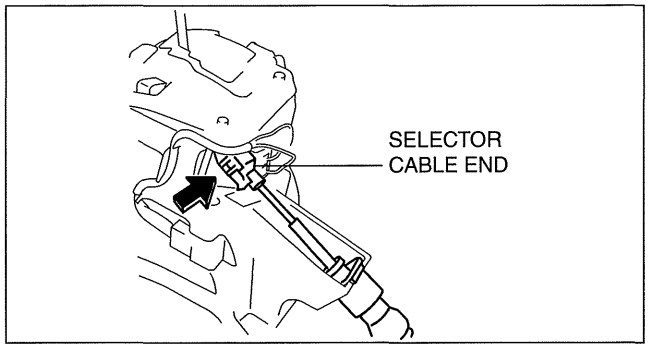
1. Install the grommet as shown in the figure.

   Tightening torque
   4.0—9.8 N·m {41—99 kgf·cm, 36—86 in·lbf}



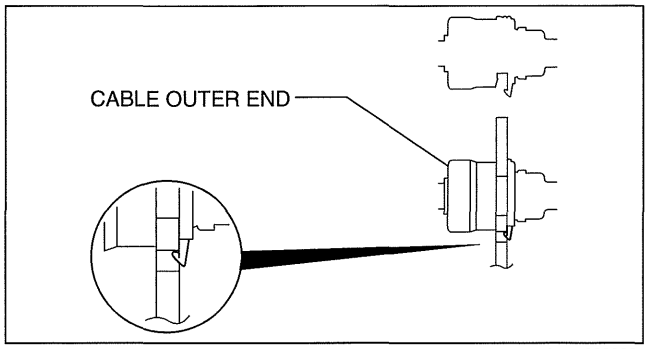
am3uuw0000306

2. Install the selector cable end (selector lever side) as shown in the figure.



am3uuw0000306

3. Install the cable outer end (selector lever side) to the selector cable bracket as shown in the figure.

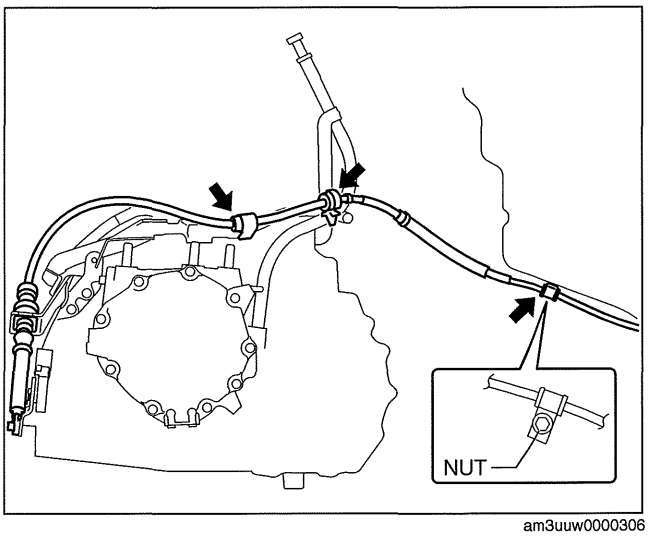


am3uuw0000306

cardiagn.com

4. Install the clip as shown in the figure and tighten the nut.

Tightening torque
19—25 N·m {2.0—2.5 kgf·m, 15—18 ft·lbf}

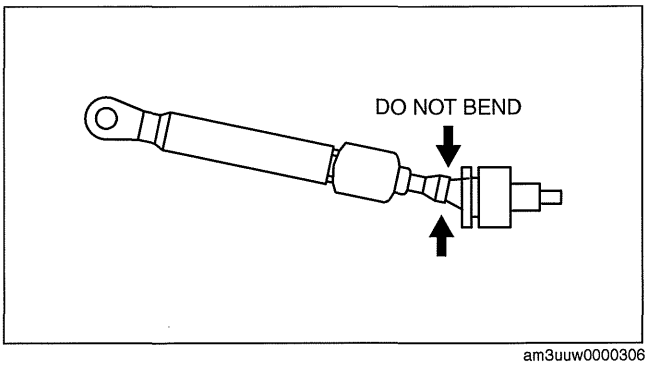


am3uuw0000306

5. Install the selector cable end (transaxle side) and the cable outer end (transaxle side).

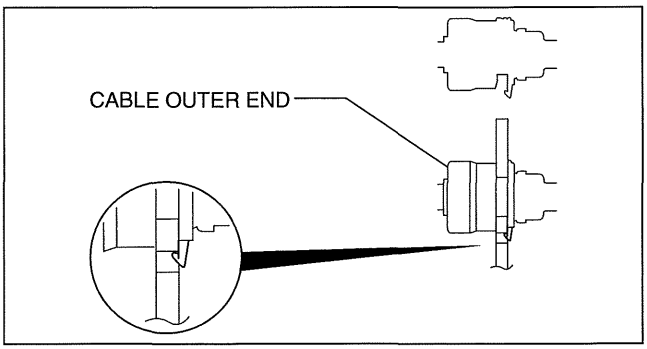
Caution
- **When installing selector cable, make sure the boot is not twisted.**

- **Bending the selector cable in the manner shown in the figure will damage the cable and it may become loose when shifted. When installing the selector cable, hold it straight.**



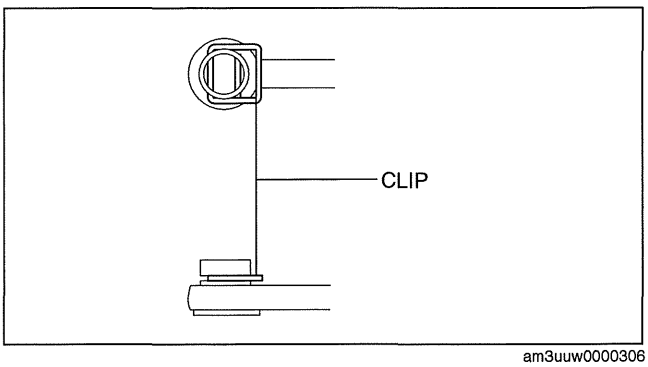
am3uuw0000306

(1) Install the cable outer end (transaxle side) to the selector cable bracket as shown in the figure.



am3uuw0000306

(2) Install the clip to the selector cable end (transaxle side) as shown in the figure.

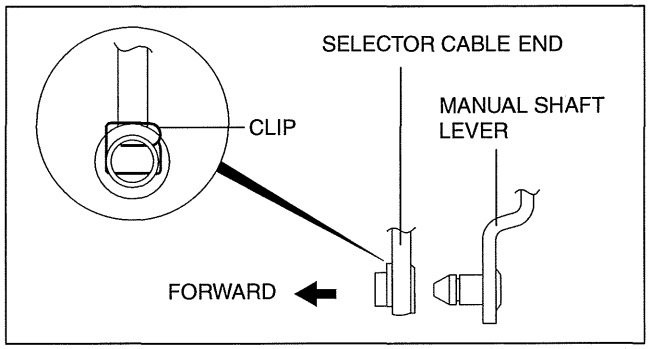


am3uuw0000306

cardiagn.com

(3) Install the selector cable end (transaxle side) to the manual shaft lever as shown in the figure.

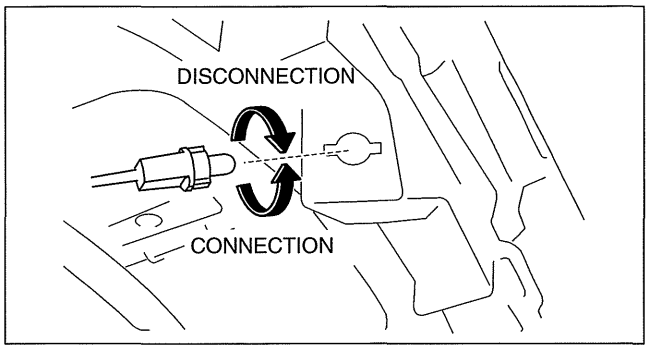
6. Verify that the selector cable is securely installed.
7. Adjust the selector cable. (See 05-18-10 Selector Cable Adjustment.)



am3uuw0000306

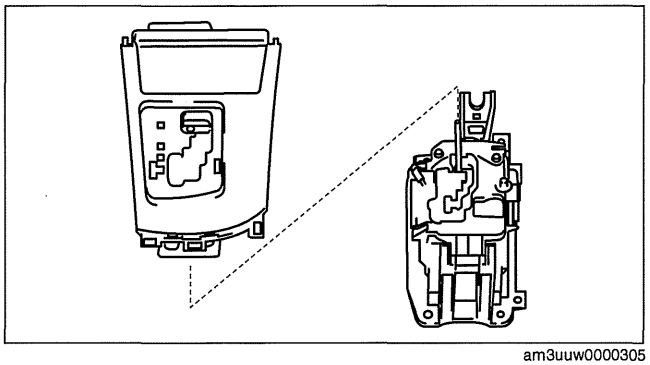
Bulb Removal/Installation

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the upper panel. (See 09-17-40 UPPER PANEL REMOVAL/INSTALLATION.)
4. Remove the knob. (See 05-18-2 Selector Lever Removal/Installation.)
5. Remove the shift panel and indicator panel as a single unit.
   (1) Release the hooks securing the shift panel and console, and then release the hooks securing the shift panel and ashtray panel. (See 09-17-42 SHIFT PANEL REMOVAL/INSTALLATION)
   (2) Lift up the shift panel and indicator panel and disconnect the bulb socket from the indicator panel.

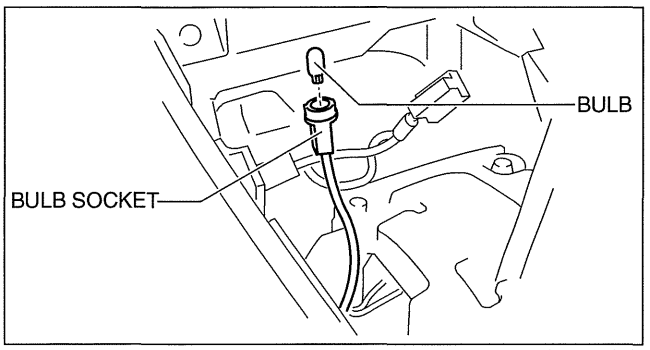


am3uuw0000305

   (3) Remove the shift panel and indicator pane from the selector lever as a single unit.


am3uuw0000305

6. Remove the bulb from the bulb socket.
7. Install in the reverse order of removal.

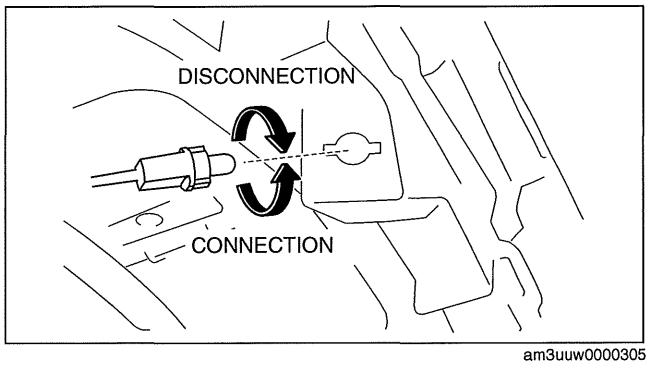


am3uuw0000528

cardiagn.com

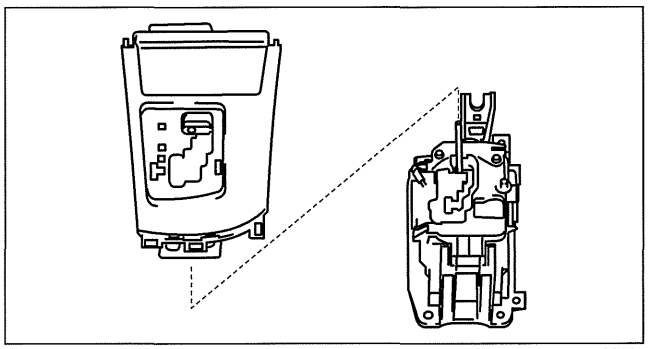
Selector Cable Adjustment

1. Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
2. Disconnect the negative battery cable.
3. Remove the upper panel. (See 09-17-40 UPPER PANEL REMOVAL/INSTALLATION.)
4. Remove the knob. (See 05-18-2 Selector Lever Removal/Installation.)
5. Remove the shift panel and indicator panel as a single unit.
   (1) Release the hooks securing the shift panel and console, and then release the hooks securing the shift panel and ashtray panel. (See 09-17-42 SHIFT PANEL REMOVAL/INSTALLATION.)
   (2) Lift up the shift panel and indicator panel and disconnect the bulb socket from the indicator panel.

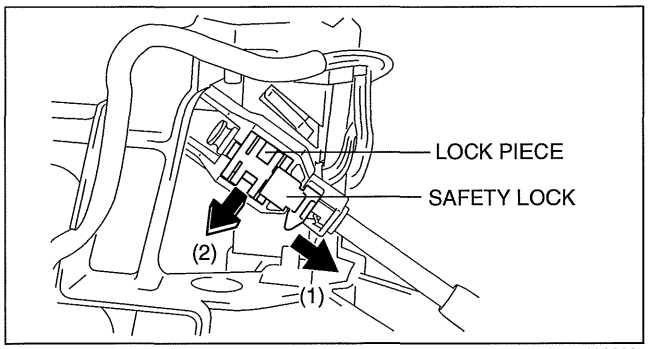


am3uuw0000305

   (3) Remove the shift panel and indicator panel from the selector lever as a single unit.
6. Shift the selector lever to the P position.

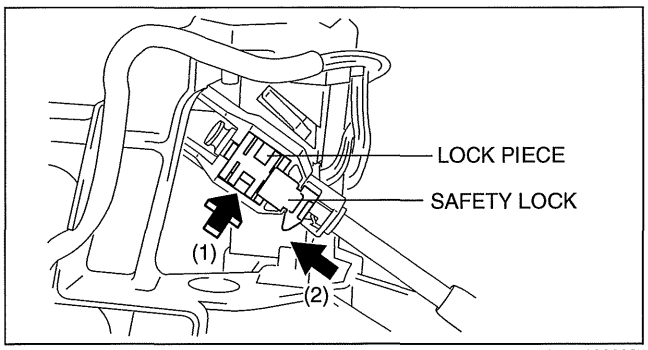

am3uuw0000305

7. Unlock the lock piece of the selector cable end (selector lever side) in the order as shown in the figure.
8. Verify that the manual shaft is in the P position.



am3uuw0000307

9. Lock the lock piece and safety lock of the selector cable end (selector lever side) in the order as shown in the figure.



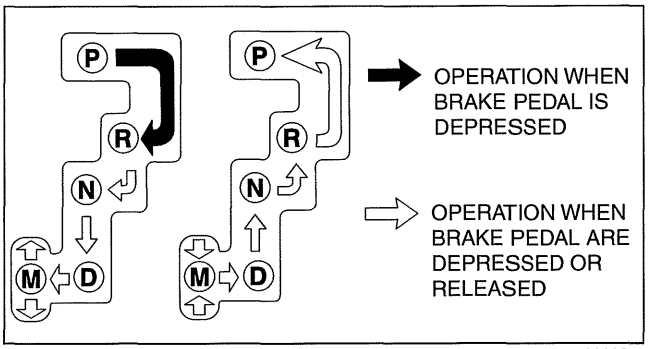
am3uuw0000307

cardiagn.com

SELECTOR LEVER INSPECTION

id051800297000

1. Switch the ignition to ON.
2. Perform the following procedures to inspect the selector lever.
   - If there is any malfunction, adjust the selector cable. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)
   (1) Verify that the selector lever can be operated as shown in the figure.
   (2) Verify that the selector lever can be operated smoothly and moderately.



am3uuw0000230

SHIFT-LOCK SYSTEM INSPECTION

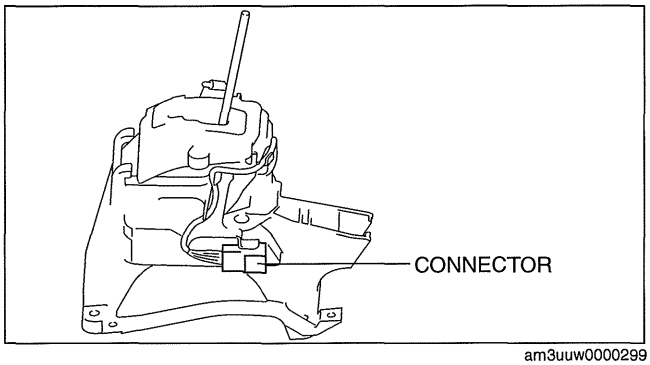
id051800297100

Shift-Lock System Inspection

1. Switch the ignition to ON.
2. Shift the selector lever to the P position.
3. Perform the following procedures to inspect the shift-lock system.
   - If there is any malfunction, inspect the shift-lock solenoid and P position switch. (See 05-18-11 Shift-Lock Solenoid and P Position Switch Inspection.)
   (1) Verify that the selector lever cannot be shifted from P to R position when the brake pedal is released.
   (2) Verify that the selector lever can be shifted from P to R position when the brake pedal is depressed.

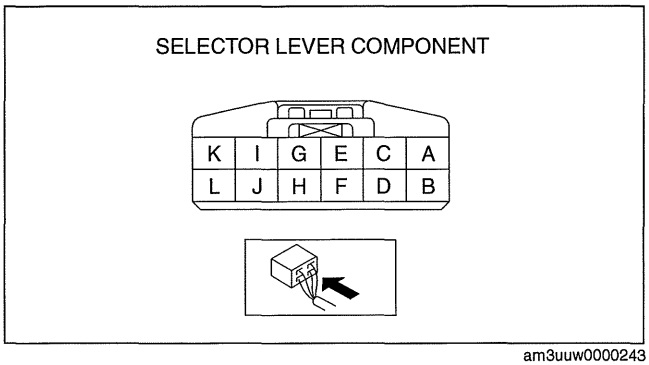
Shift-Lock Solenoid and P Position Switch Inspection

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the console. (See 09-17-45 CONSOLE REMOVAL/INSTALLATION.)
   (4) Disconnect the selector lever component connector.



am3uuw0000299

2. Measure the voltage between the selector lever component terminals.
   - If there is any malfunction, repair or replace the related wiring harness.
   - If there is no malfunction even though the shift-lock system has any malfunction, replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)



am3uuw0000243

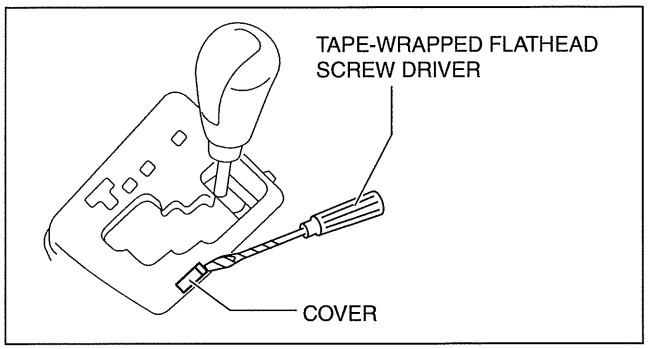
cardiagn.com

Shift-lock solenoid specification

Terminals	Connected to	Test condition	Voltage (V)
E—GND	Brake switch	Brake pedal released	Below 1.0
		Brake pedal depressed	B+
I—GND	Ignition switch	Switch the ignition to off	Below 1.0
		Switch the ignition to ACC or ON	B+
K—GND	GND	Under any condition	Below 1.0

Emergency Override Button Inspection

1. Switch the ignition to off.
2. Verify that the selector lever is in the P position.
3. Without the brake pedal depressed, verify that the selector lever cannot be shifted from the P position.
4. Remove the cover using a tape-wrapped flathead screwdriver.
5. Insert the flathead screwdriver into the emergency override hole and push it down.
6. Verify that the selector lever can be shifted from the P position.
   - If there is any malfunction, replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)



am3uuw0000230

KEY INTERLOCK SYSTEM INSPECTION

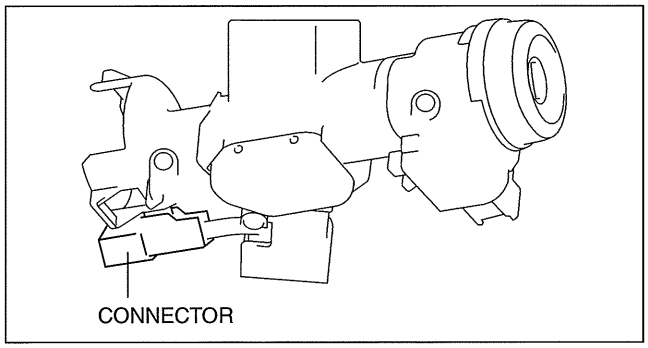
id051800297200

Key Interlock System Inspection

1. Switch the ignition to ON.
2. Perform the following procedures to inspect the key interlock system.
   - If there is any malfunction, inspect the key interlock solenoid and NOT P position switch. (See 05-18-12 Key Interlock Solenoid Inspection.)(See 05-18-13 NOT P Position Switch Inspection.)
   (1) Verify that the ignition cannot be switched to off when the selector lever is not in the P position.
   (2) Verify that the ignition can be switched to off when the selector lever is in the P position.

Key Interlock Solenoid Inspection

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the column cover. (See 09-17-22 COLUMN COVER REMOVAL/INSTALLATION.)
   (4) Disconnect the key interlock solenoid connector.

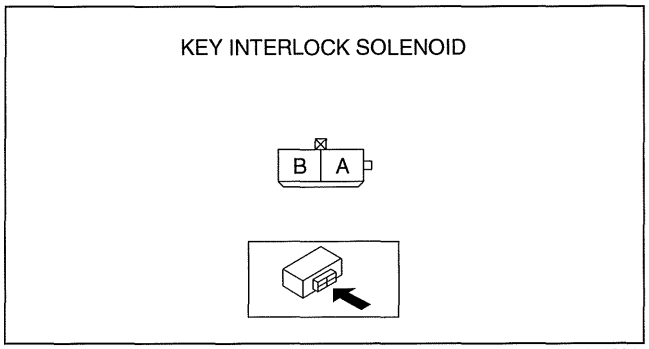


am3uuw0000300

cardiagn.com

2. Measure the resistance between the key interlock solenoid terminals A and B.
   - If there is any malfunction, replace the steering lock. (See 06-14-8 STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION [WITHOUT ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM].)

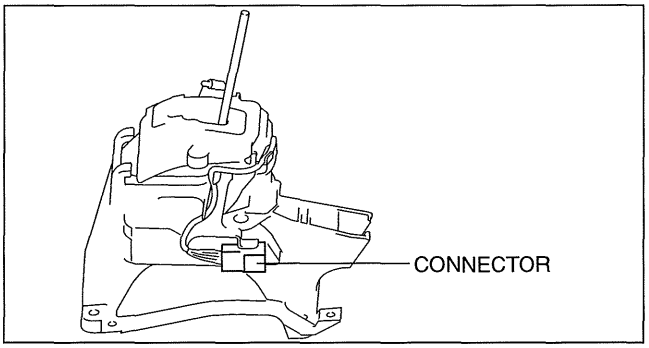
Key interlock solenoid specification
Approx.36 ohms



am3uuw0000243

NOT P Position Switch Inspection

1. Perform the following procedures.
   (1) Remove the battery cover. (See 01-17A-2 BATTERY REMOVAL/INSTALLATION [LF, L5].)
   (2) Disconnect the negative battery cable.
   (3) Remove the console. (See 09-17-45 CONSOLE REMOVAL/INSTALLATION.)
   (4) Disconnect the selector lever component connector.

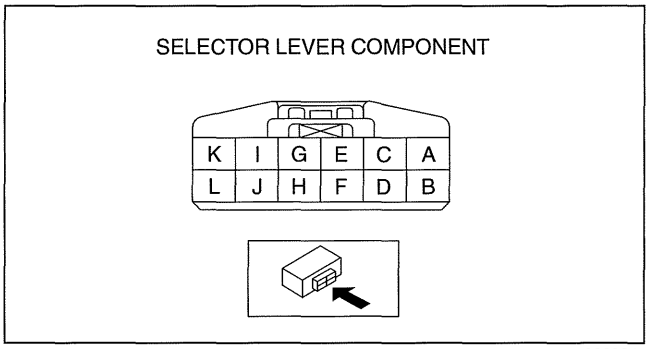


am3uuw0000300

2. Inspect the continuity between the selector lever component terminals G and K.
   - If there is any malfunction, replace the selector lever component. (See 05-18-2 AUTOMATIC TRANSAXLE SHIFT MECHANISM REMOVAL/INSTALLATION.)

NOT P position switch specification

Test condition	Continuity
P position	No continuity
Except P position	Continuity



am3uuw0000243

cardiagn.com

cardiagn.com

05-50 TECHNICAL DATA

TRANSMISSION/TRANSAXLE TECHNICAL DATA

id055000800100

Clutch

Item	Specification
Clutch fluid	SAE J1703 or FMVSS116 DOT-3
Clutch pedal height (Reference value)	142.8 mm {5.622 in}
Distance A, from clutch disengagement point to full stroke (Reference value)	23 mm {0.906 in} or more
Distance B, from clutch disengagement point to floor mat (Reference value)	64.9 mm {2.56 in} or more
Clutch pedal stroke (Reference value)	LF, L3 WITH TC: 135 mm {5.31 in} L5: 126.1 mm {4.965 in}
Clutch cover diaphragm spring fingers maximum depth	0.6 mm {0.024 in}
Maximum clearance of flatness of the pressure plate [G35M-R, G66M-R]	0.5 mm {0.020 in}
Maximum clearance of flatness of the pressure plate [A26M-R]	0.3 mm {0.01 in}
Clutch cover diaphragm spring fingers maximum height difference	1.0 mm {0.039 in}
Clutch disc minimum depth	0.3 mm {0.012 in}
Clutch disc maximum runout	0.7 mm {0.03 in}
Flywheel maximum runout [G35M-R, G66M-R]	0.1 mm {0.004 in}
Flywheel maximum runout [A26M-R]	1.5 mm {0.059 in}

Manual Transaxle [G35M-R]

Item	Specification
Manual transaxle oil Grade	API service GL-4
Manual transaxle oil Viscosity	SAE 75W-80
Manual transaxle oil capacity (approx. quantity)	2.77 L {2.93 US qt, 2.44 Imp qt}

Manual Transaxle [G66M-R]

Item	Specification
Manual transaxle oil Grade	API service GL-4
Manual transaxle oil Viscosity	SAE 75W-80
Manual transaxle oil Capacity (approx. quantity)	2.85 L {3.01 US qt, 2.51 Imp qt}

Manual Transaxle [A26M-R]

Item	Specification
Manual transaxle oil Grade	API service GL-4
Manual transaxle oil Viscosity	SAE 75W-80
Manual transaxle oil Capacity (approx. quantity)	2.4—2.6 L {2.6—2.7 US qt, 2.12—2.28 Imp qt}

cardiagn.com

Automatic Transaxle [FS5A-EL]

Item	Specification
ATF Type	ATF M-V Draining ATF from drain plug: 3.0 L {3.2 US qt, 2.6 Imp qt} Overhauling transaxle: 5.0 L {5.3 US qt, 4.4 Imp qt}

Line Pressure

Test Condition		Specification (kPa {kgf/cm^2, psi})	
		LF	L5
Idle	D range	330—470 {3.37—4.79, 47.9—68.1}	
	M range (1GR, 2GR)	330—470 {3.37—4.79, 47.9—68.1}	
	R position	490—710 {5.00—7.23, 71.1—102.0}	
Stall	D range	1,200—1,320 {12.24—13.46, 174.1—191.4}	
	M range (1GR, 2GR)	1,200—1,320 {12.24—13.46, 174.1—191.4}	
	R position	1,630—1,950 {16.63—19.88, 236.5—282.8}	1,630—1,950 {16.63—19.88, 236.5—282.8}

Stall Speed

Test Condition	Specification (rpm)	
	LF	L5
D range	2,200—2,800	2,400—3,000
M range	2,200—2,800	2,400—3,000
R position	2,200—2,800	2,400—3,000

Time Lag

Test Condition	Specification (s)	
	LF	L5
From N position to D range	0.4—0.7	
From N position to R position	0.4—0.7	

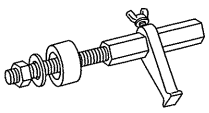
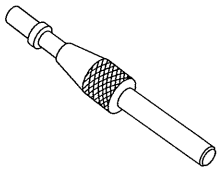
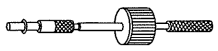
cardiagn.com

05-60 SERVICE TOOLS

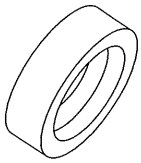
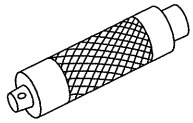
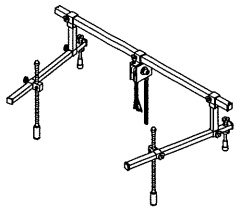
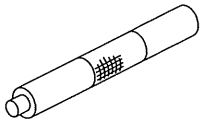
TRANSMISSION/TRANSAXLE SST

id056000804200

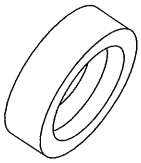
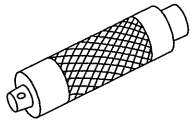
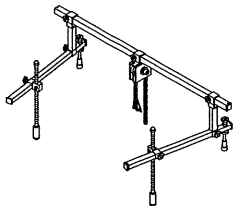
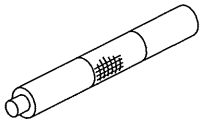
Clutch

49 E011 1A0 Ring gear brake set 	49 SE01 310A Clutch disc centering tool 	49 1285 071 Bearing puller 

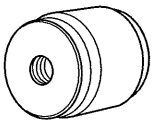
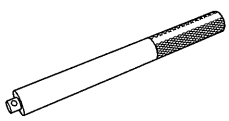
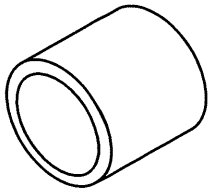
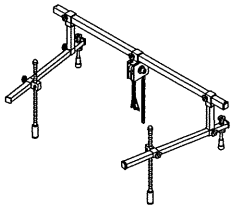
Manual Transaxle [G35M-R]

49 G030 796 Body 	49 G030 797 Handle 	49 C017 5A0 Engine support 
49 M005 797 Handle 	–	–

Manual Transaxle [G66M-R]

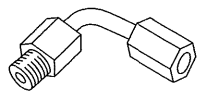
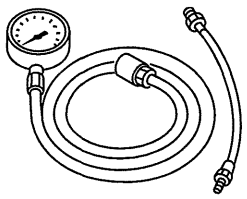
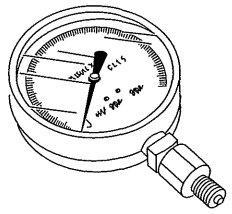
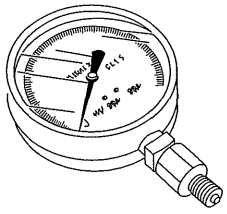
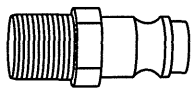
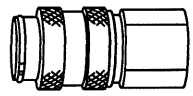
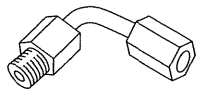
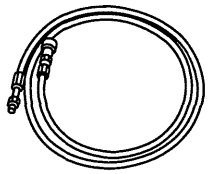
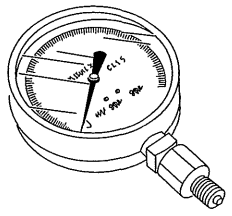
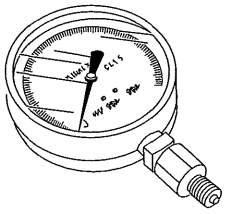
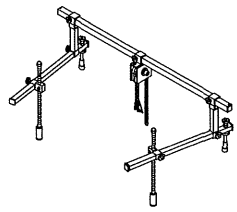
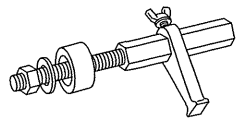
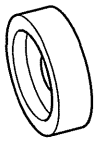
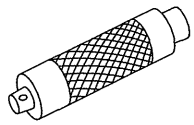
49 G030 796 Body 	49 G030 797 Handle 	49 C017 5A0 Engine support 
49 M005 797 Handle 	–	–

Manual Transaxle [A26M-R]

49 W027 001 Body 	49 F027 003 Handle 	49 U027 003 Oil Seal Installer 
49 C017 5A0 Engine support 	–	–

cardiagn.com

Automatic Transaxle [FS5A-EL]

49 H019 002 Adapter 	49 0378 400C Oil pressure gauge set 	49 B019 901B Oil pressure gauge 
49 B019 902A Oil pressure gauge 	49 D019 910 Adapter (Part of 49 D019 9A2) 	49 D019 911 Adapter (Part of 49 D019 9A2) 
49 D019 913 Adapter (Part of 49 D019 9A2) 	49 D019 909 Hose (Part of 49 D019 9A2) 	49 D019 908 Oil pressure gauge (Part of 49 D019 9A2) 
49 D019 907 Oil pressure gauge (Part of 49 D019 9A2) 	49 C017 5A0 Engine support 	49 E011 1A0 Ring gear brake set 
49 G030 796 Body (Part of 49 G030 795) 	49 G030 797 Handle (Part of 49 G030 795) 	–

cardiagn.com