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TRANSAXLE & TRANSMISSION

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PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000013777234

Risk of injury

There is a risk of injury caused by parts becoming projectiles if uncontrolled deployment of air bag or seat belt pre-tensioner occurs, or by storing air bag with the deployment side facing downwards. When scrapping air bag or seat belt pre-tensioner by means of controlled deployment, there is also a danger present if a sufficiently safe distance is not maintained, or if opening using cutting torches or other cutting tools, or due to smelting or if parts that are not yet triggered are exposed to a blaze or a smoldering fire at landfills.

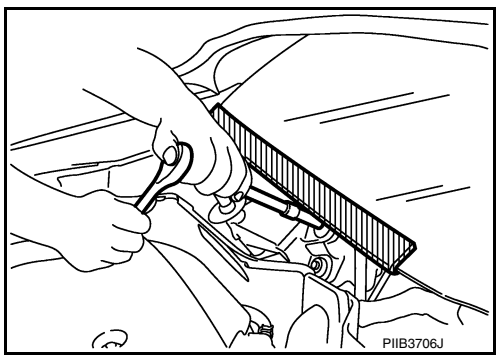
Safety instructions/precautions

- Removed air bag must always be stored with deployment side facing up.
- Acquisition, transportation, storage, testing and assembly work should only be performed or supervised by properly trained personnel.
- Install air bag or seat belt pre-tensioner immediately following retrieval from storage.
- Air bag and seat belt pre-tensioner must be protected from flying sparks, open fires and temperature exceeding 100°C (212°F).
- Never transport air bag and seat belt pre-tensioner in the passenger compartment. Store them securely in the luggage room of the vehicle in their original replacement part packaging and secure them so that they cannot slip around.
- Never allow air bag and seat belt pre-tensioner to come into contact with grease, oil, or cleaning agents.
- Perform system tests using approved testing equipment only, and only when the units are properly installed and the vehicle is unoccupied.
- Before the initial hookup of the battery or an external power supply, the ignition must be switched on and the vehicle unoccupied.
- Air bag and seat belt pre-tensioner that fall from a height of more than 0.5 m must be replaced.
- When scrapping by means of controlled deployment of air bag and seat belt pre-tensioner, a safe distance of at least 10 m must be maintained.
- Before starting work on air bag and seat belt pre-tensioner and work on components that are connected to air bag and seat belt pre-tensioner or require and intervention in their electric circuit (e.g. when removing the steering wheel):
  - Disconnect any external power sources (e.g. charger).
  - Disconnect and insulate ground line of battery
- Before starting bodywork in combination with welding or retrofitting, during which work is performed on uninsulated, current-carrying lines or require an intervention in their electric circuit (e.g. when removing the steering wheel):
  - Disconnect any external power sources (e.g. charger).
  - Disconnect and insulate ground line of battery.
  - During welding, disconnect plug connection and from control unit of air bag.
- When the air bag deploys, the pyrofuse activates and the power source from the battery is disconnected. This prevents possible fires caused by electric leakage after an accident occurs.

Precaution for Procedure without Cowl Top Cover

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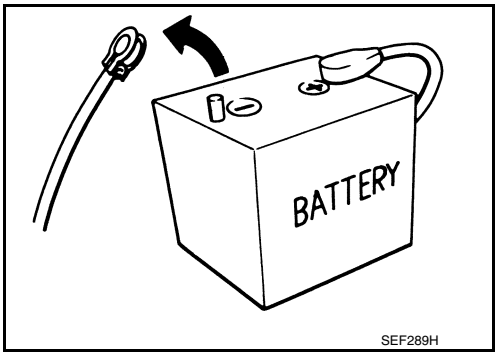
When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precautions for Removing Battery Terminal

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When disconnecting the battery terminal, pay attention to the following.
- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:



BR08DE	: 4 minutes	YD25DDTi	: 2 minutes
D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		

NOTE:
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

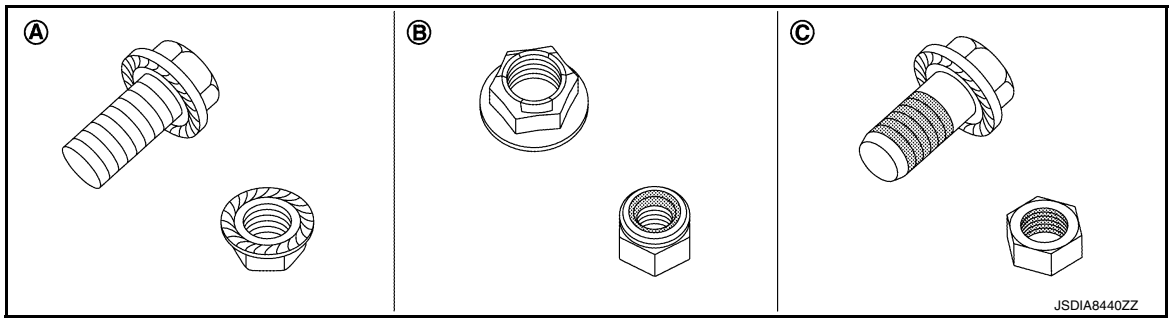
  NOTE:
  - Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
  - Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

  NOTE:
  The removal of 12V battery may cause a DTC detection error.

Precautions for Self-locking Nuts and Bolts

INFOID:0000000013777237



Ⓐ Bolt and nut with locking splines Ⓑ Self-locking nuts Ⓒ Adhesive coated bolt and nut

CAUTION:
Bolts and nuts with locking splines, self-locking nuts, and adhesive coated bolts and nuts must always be replaced after they have been used once. Also, the bolts must always be replaced on bolted connections with self-locking nuts made of all-metal.

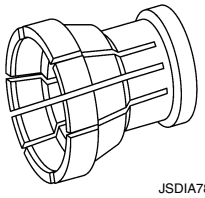
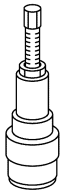
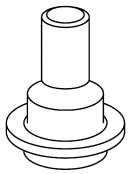
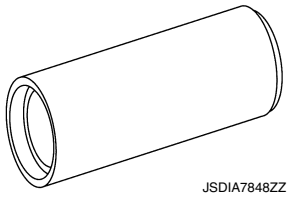
PREPARATION

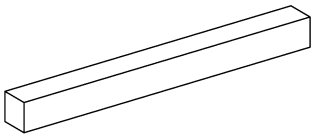
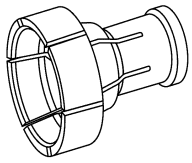
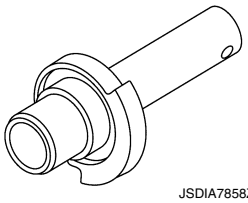
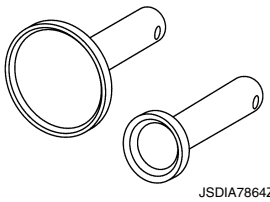
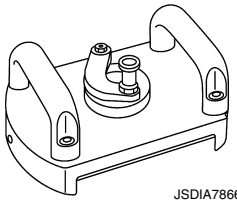
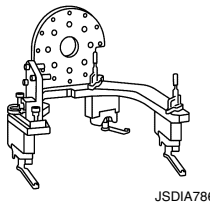
PREPARATION

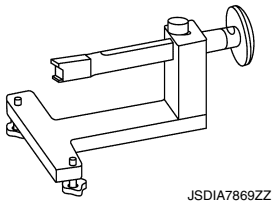
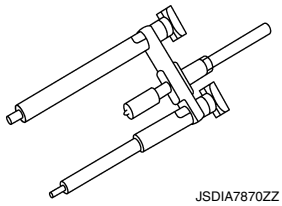
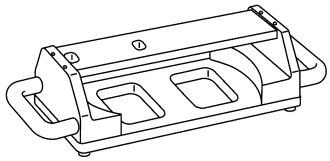
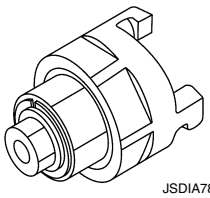
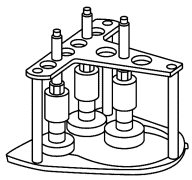
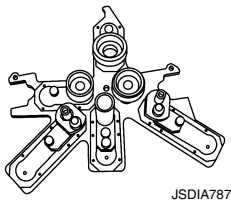
Special Service Tool

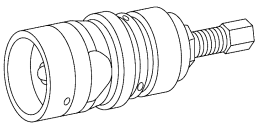
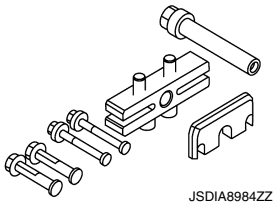
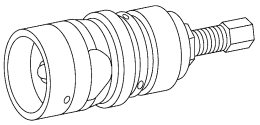
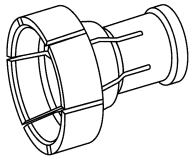
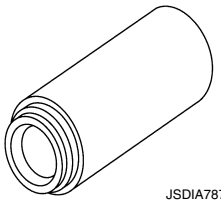
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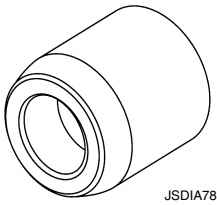
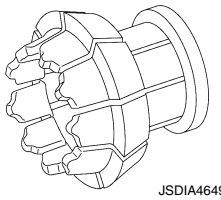
The actual shapes of TechMate tools may differ from those of special service tools illustrated here.

Tool number (TechMate No.) (DAIMLER tool No.) Tool name	Description
KV325H0660 (TechMate No. —) (DAIMLER tool No. 000 589 60 34 00) CHUCK  JSDIA7842ZZ	Removing bearing.
KV325H0050 (TechMate No. —) (DAIMLER tool No. 001 589 49 33 00) PULLER  JSDIA7843ZZ	Removing bearing.
KV325H0680 (TechMate No. —) (DAIMLER tool No. 124 589 06 15 00) DRIFT PUNCH  JSDIA7845ZZ	Installing bearing.
KV325H0700 (TechMate No. —) (DAIMLER tool No. 168 589 01 14 00) SLEEVE  JSDIA7848ZZ	• Removing 3rd gear. • Installing 3rd gear.
KV315H0340 (TechMate No. —) (DAIMLER tool No. 168 589 01 21 00) DIPSTICK  JSDIA8925ZZ	Checking oil level.

Tool number (TechMate No.) (DAIMLER tool No.) Tool name		Description
KV315H0160 (TechMate No. —) (DAIMLER tool No. 168 589 03 21 00) PLATE PARALLEL	 JSDIA7846ZZ	• Adjusting shim of dual clutch. • Adjusting lock ring of dual clutch.
KV325H0710 (TechMate No. —) (DAIMLER tool No. 201 589 04 34 00) COLLET CHUCK	 JSDIA7849ZZ	Removing bearing.
KV325H0780 (TechMate No. —) (DAIMLER tool No. 711 589 19 15 00) DRIFT	 JSDIA7858ZZ	Installing differential side oil seals.
KV315H0420 (TechMate No. —) (DAIMLER tool No. 724 589 00 15 00) DRIFT SET	 JSDIA7864ZZ	• Installing cover with oil duct. • Installing cover with cover.
KV315H0440 (TechMate No. —) (DAIMLER tool No. 724 589 00 31 00) ASSEMBLY TOOL	 JSDIA7866ZZ	• Removing dual clutch. • Installing dual clutch.
KV315H0460 (TechMate No. —) (DAIMLER tool No. 724 589 00 40 00) ASSEMBLY DEVICE	 JSDIA7868ZZ	• Dissassembling transaxle. • Assembling transaxle.

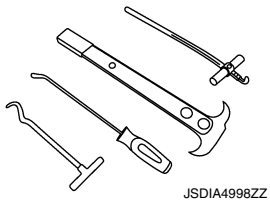
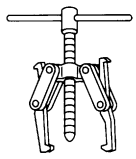
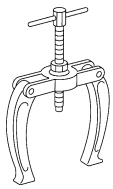
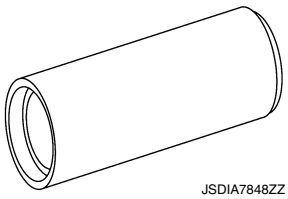
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KV315H0470 (TechMate No. —) (DAIMLER tool No. 724 589 00 59 00) REMOVAL AND INSTALLATION TOOL	 JSDIA7869ZZ	• Removing park pawl actuator. • Installing park pawl actuator.
KV315H0480 (TechMate No. —) (DAIMLER tool No. 724 589 00 63 00) REMOVAL AND INSTALLATION TOOL	 JSDIA7870ZZ	• Removing oil pump. • Installing oil pump.
KV315H0500 (TechMate No. —) (DAIMLER tool No. 724 589 01 31 00) SUPPORT	 JSDIA7872ZZ	Adjusting shim of dual clutch.
KV315H0510 (TechMate No. —) (DAIMLER tool No. 724 589 01 33 00) PULLER	 JSDIA7873ZZ	• Removing sensor rotor and nut. • Installing sensor rotor and nut.
KV315H0530 (TechMate No. —) (DAIMLER tool No. 724 589 02 31 00) SUPPORT FIXTURE	 JSDIA7875ZZ	Adjusting gear.
KV315H0540 (TechMate No. —) (DAIMLER tool No. 724 589 02 40 00) ASSEMBLY DEVICE	 JSDIA7876ZZ	• Dissassembling transaxle. • Assembling transaxle.

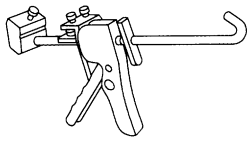
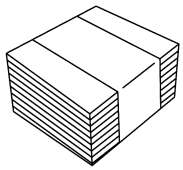
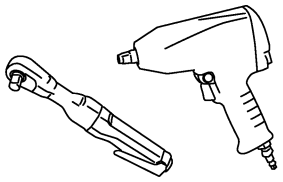
Tool number (TechMate No.) (DAIMLER tool No.) Tool name		Description
KV325H0060 (TechMate No. —) (DAIMLER tool No. 001 589 50 33 00) PULLER	 JSDIA4648ZZ	Removing bearing
KV315H0610 (TechMate No. —) (DAIMLER tool No. 724 589 02 33 00) PULLER	 JSDIA8984ZZ	• Removing oil pump gear and mounting nut. • Installing oil pump gear and mounting nut.
KV325H0050 (TechMate No. —) (DAIMLER tool No. 001 589 49 33 00) PULLER	 JSDIA4648ZZ	Removing bearing.
KV325H0260 (TechMate No. —) (DAIMLER tool No. 460 589 03 34 00) CLUMP BRG	 JSDIA7849ZZ	Removing bearing.
KV315H0350 (TechMate No. —) (DAIMLER TOOL NO. 203 589 00 14 00) SLEEVE	 JSDIA7874ZZ	Installing bearing.

Tool number (TechMate No.) (DAIMLER tool No.) Tool name	Description
KV315H0410 (TechMate No. —) (DAIMLER tool No. 724 589 00 14 00) ASSEMBLY SLEEVE  JSDIA7863ZZ	Installing cover of dual clutch.
KV325H0690 (TechMate No. —) (DAIMLER tool No. 168 589 00 34 00) COLLET CHUCK  JSDIA4649ZZ	Removing ball bearing.

Commercial Service Tool

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Tool name	Description
Oil seal remover  JSDIA4998ZZ	• Removing differential side oil seal • Removing input shaft oil seal
Puller  NT077	• Removing gear. • Removing bearing.
Puller  JSDIA4838ZZ	Removing bearing.
SLEEVE  JSDIA7848ZZ	• Removing 4th and 6th gear. • Removing 5th and 7th gear. • Removing sensor rotor.

Tool name	Description
Tube presser  S-NT052	Pressing the tube of liquid gasket
Lint-free paper  JSDIA4746ZZ	• Cleaning transaxle. • Checking transaxle fluid.
Power tool  PBIC0190E	Loosening bolts and nuts

Lubricant or/and Sealant

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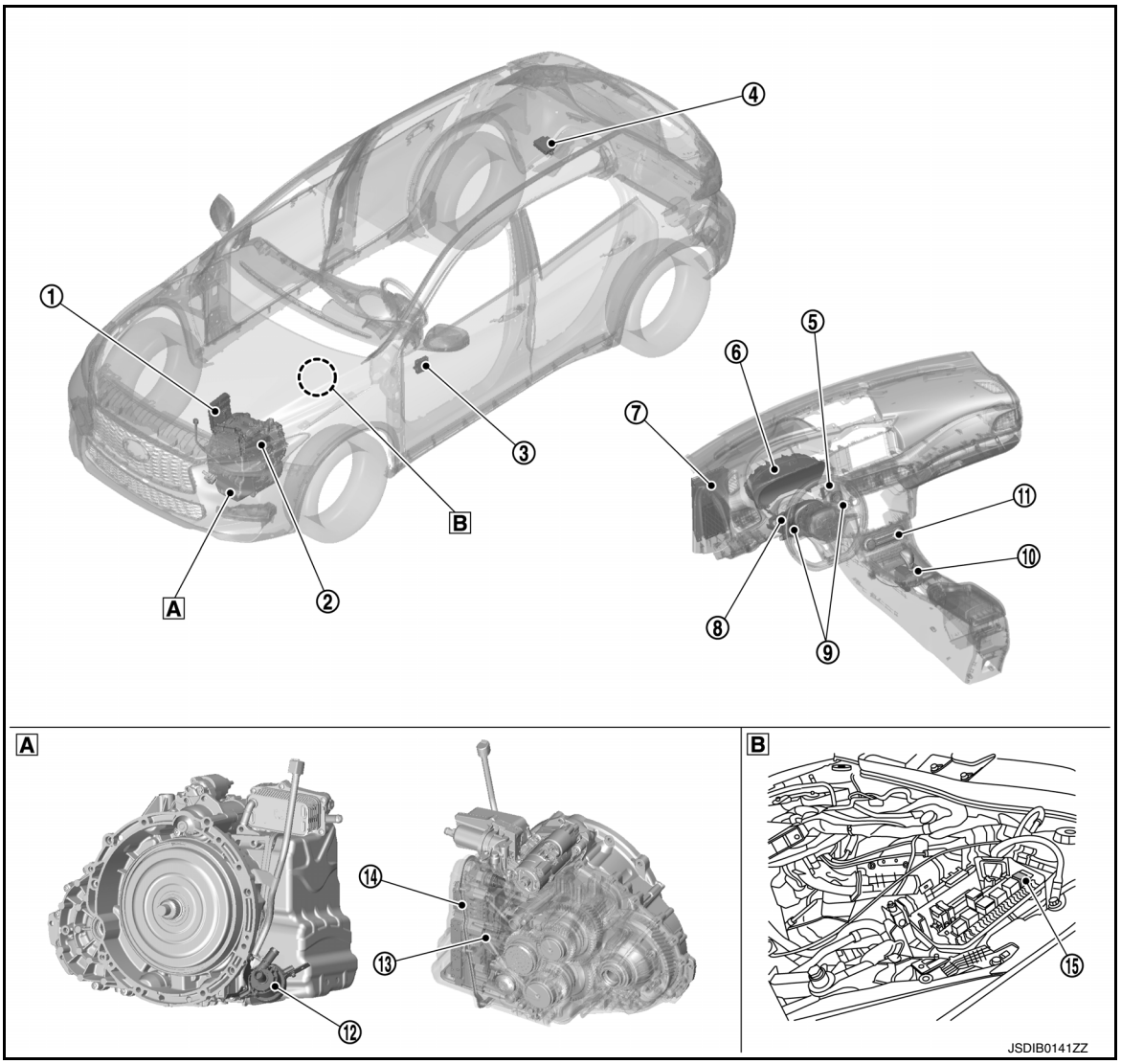
Item	Use
Loctite 5970 sealant or equivalent	Application to mating surface with transaxle case of clutch housing

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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A Transaxle assembly

B Engine room LH

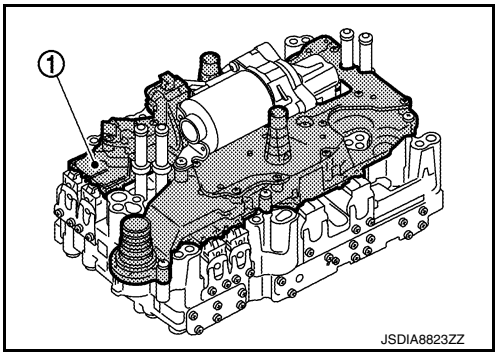
No.	Component	Function
①	ECM	Mainly transmits the following status to TCM via CAN communication. • Wheel speed • Paddle shifter • Shift position • Driver door switch • Transaxle mode switch • Start enable • Electric parking brake Refer to EC-27, "Component Parts Location" for detailed installation location.
②	Electronic stability program control unit	Transmits the wheel speed status to TCM via CAN communication. Refer to BRC-29, "Component Parts Location" for detailed installation location.

No.	Component	Function
③	Left front door control unit	Transmits the driver door switch status to TCM via CAN communication. Refer to DLK-10, "DOOR LOCK SYSTEM : Component Parts Location" for detailed installation location.
④	Electric parking brake control module	Transmits the electric parking brake status to TCM via CAN communication. Refer to PB-7, "Component Parts Location" for detailed installation location.
⑤	Electronic ignition switch control unit	Mainly transmits the following status to TCM via CAN communication. • Driver door switch • Transaxle mode switch Refer to PCS-5, "Component Parts Location" for detailed installation location.
⑥	Combination meter	Mainly transmits the warning and indicator lamp status to TCM via CAN communication. Refer to MWI-7, "METER SYSTEM : Component Parts Location" for detailed installation location.
⑦	BCM	Mainly transmits the driver door switch status to TCM via CAN communication. Refer to BCS-8, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
⑧	Steering column control module	Transmits the paddle shifter status to TCM via CAN communication. Refer to BCS-9, "STEERING COLUMN CONTROL SYSTEM : Component Parts Location" for detailed installation location.
⑨	Paddle shifter	TM-19, "Paddle Shifter"
⑩	Electric shift control unit	Transmits the shift position status to TCM via CAN communication. Refer to TM-20, "Electric Shift Control Unit".
⑪	A/C auto amp.	Refer to HAC-6, "Component Parts Location" for detailed installation location.
⑫	Water pump	TM-19, "Water Pump"
⑬	Control valve	TM-19, "Control Valve"
⑭	TCM	TM-18, "TCM"
⑮	Water pump relay	Water pump relay supplies motor drive voltage to water pump.

TCM

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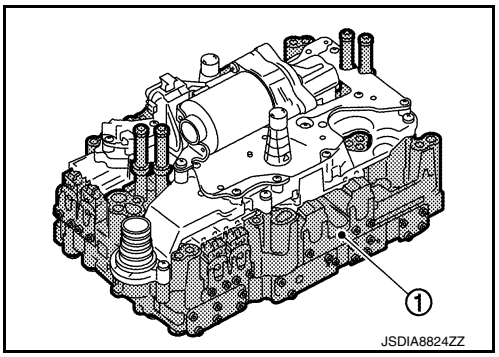
- The TCM ① is integral with the control valve assembly and built into the transaxle assembly.
- For TCM control items, refer to TM-32, "TRANSMISSION CONTROL SYSTEM : System Description".



Control Valve

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The control valve ① is integral with the TCM and built into the transaxle assembly.

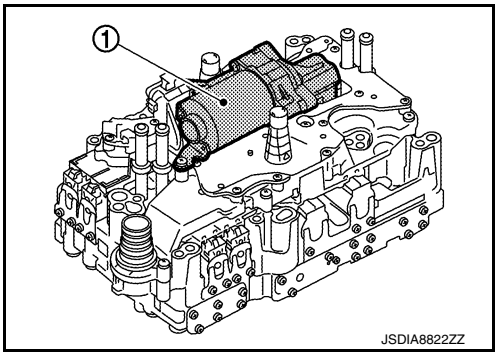


Electric Oil Pump

INFOID:0000000013777244

The electric oil pump ① is located centrally on the TCM and is connected to the TCM via an electrical connection.
The main task of the electric oil pump is to support the primary pump in the following operating conditions:

- At low rpms
- During start/stop operation
- At high transaxle fluid temperatures (support for clutch cooling)



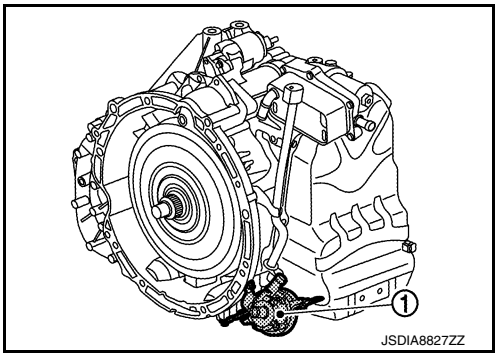
The TCM actuates the electric oil pump at low combustion engine speeds (coast down shifting and upshifting, clutch operation). This is carried out in order to compensate for the resulting low delivery rate of the primary pump and to ensure a constant oil pressure as well as optimal cooling and lubrication of the transaxle components. In start/stop mode with the engine off, all actuators return to their basic state under no load which means that no gear changes can be made and the dual clutch can no longer be actuated. In order to minimize the resulting delay between a start-off request and the start-off time, the electric oil pump provides the required oil pressure before the actual start-off process. In certain driving conditions (e.g. frequent start-off on uphill slopes or when driving with a trailer), the clutch needs to be cooled by an increased oil flow. The TCM deter-mines whether this is necessary based on the transaxle fluid temperature at the clutch plates. The increase in flow is also achieved by activating the electric oil pump.

NOTE:
The delivery pressure of the electric oil pump ranges from 0 kPa (0 bar) to 800 kPa (8 bar) and depends on the actuation by the TCM.

Water Pump

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The water pump ① is installed to the underside of clutch housing.



Paddle Shifter

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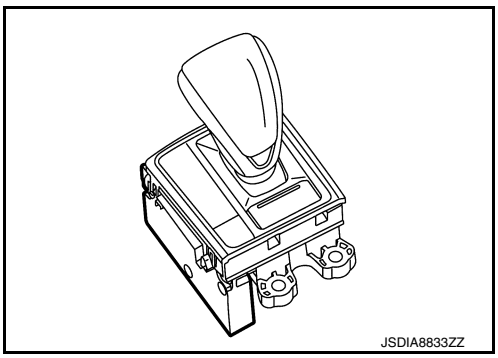
- The paddle shifter located on the rear of the steering wheel allow a certain gear (1st-7th gear) to be manually selected in transaxle mode M. The driver is also able to manually intervene in the shift operations any time in transaxle modes E and S (temporary transaxle mode M). However, if no more buttons are pressed within a certain period of time, the transaxle control system reverts to automatic mode (during downhill driving or when driving on twisty roads, this time period is extended according to the circumstances).

- When operating the paddle shifter (up/down), a paddle shifter upshift status or paddle shifter downshift status is transmitted to the steering column control module. Then, the TCM receives a paddle shifter upshift status or a paddle shifter downshift status from the combination meter.

Electric Shift Control Unit

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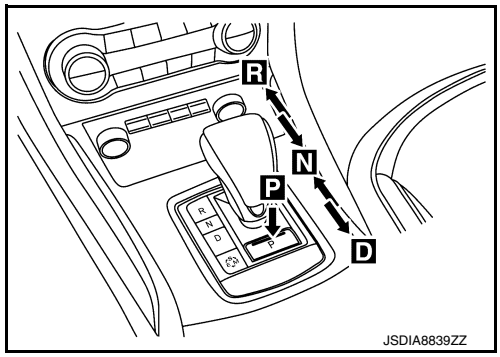
- The electric shift control unit is installed to underside of electric shift selector.
- The electric shift control unit transmits the shift position status to TCM via CAN communication.



Electric Shift Selector

INFOID:0000000013777248

Shift position	Operation/Function
P (P position switch)	Completely stop the vehicle and push the P position switch while depressing the brake pedal.
R	While depressing the brake pedal, slide the selector lever forward.
N	While depressing the brake pedal, slide the selector lever forward or backward.
D	While depressing the brake pedal, slide the selector lever backward.



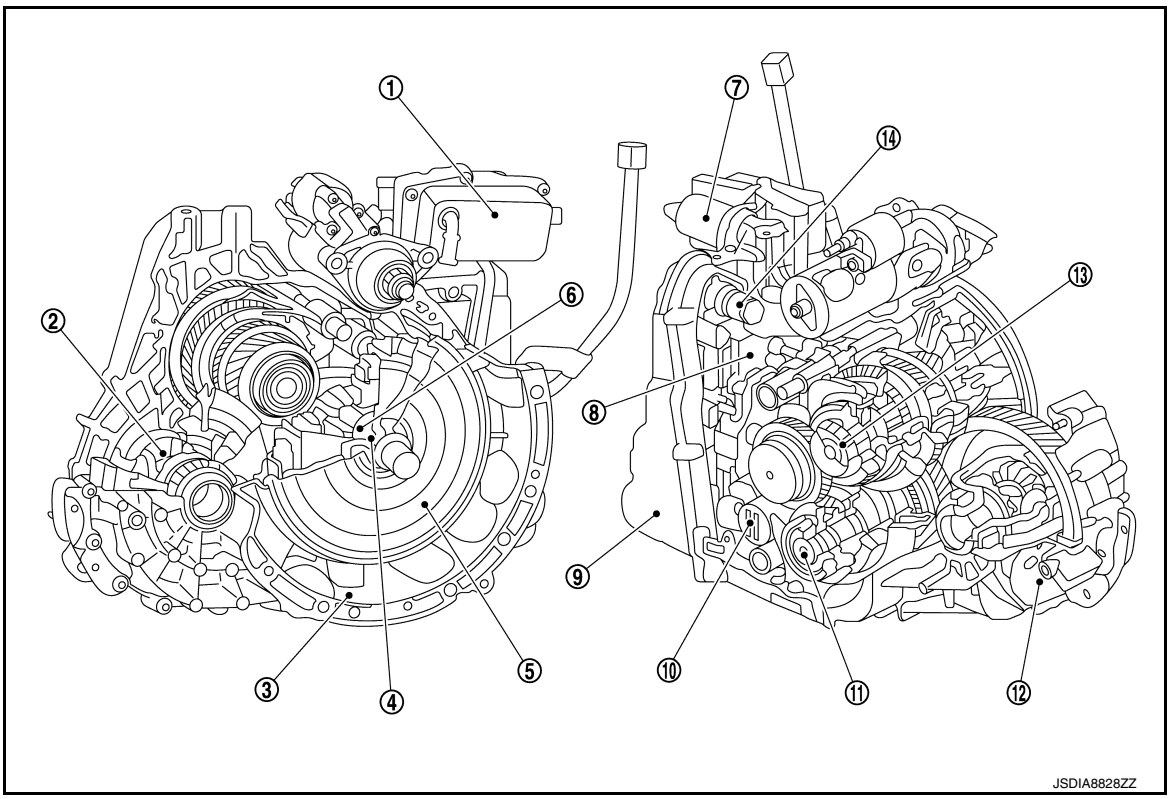
TRANSAXLE MODE SWITCH

By pressing the transaxle mode switch on the electric shift selector, the driver can choose whether shift operations take place automatically (E and S) or select the gears manually (M) via the paddle shifter.
Transaxle mode E produces a driving style oriented towards low rpms and fuel economy.
Transaxle mode S provides a more responsive and sporty driving style.

STRUCTURE AND OPERATION
TRANSMISSION CONTROL SYSTEM
TRANSMISSION CONTROL SYSTEM : Sectional View

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SECTIONAL VIEW



① Transaxle fluid heat exchanger	② Pinion differential	③ Clutch housing
④ Internal shaft	⑤ Dual clutch	⑥ Hollow shaft
⑦ Transaxle cooling module	⑧ TCM	⑨ Oil pan
⑩ Park pawl system	⑪ Output shaft 1	⑫ Transaxle housing
⑬ Output shaft 2	⑭ TCM connector	

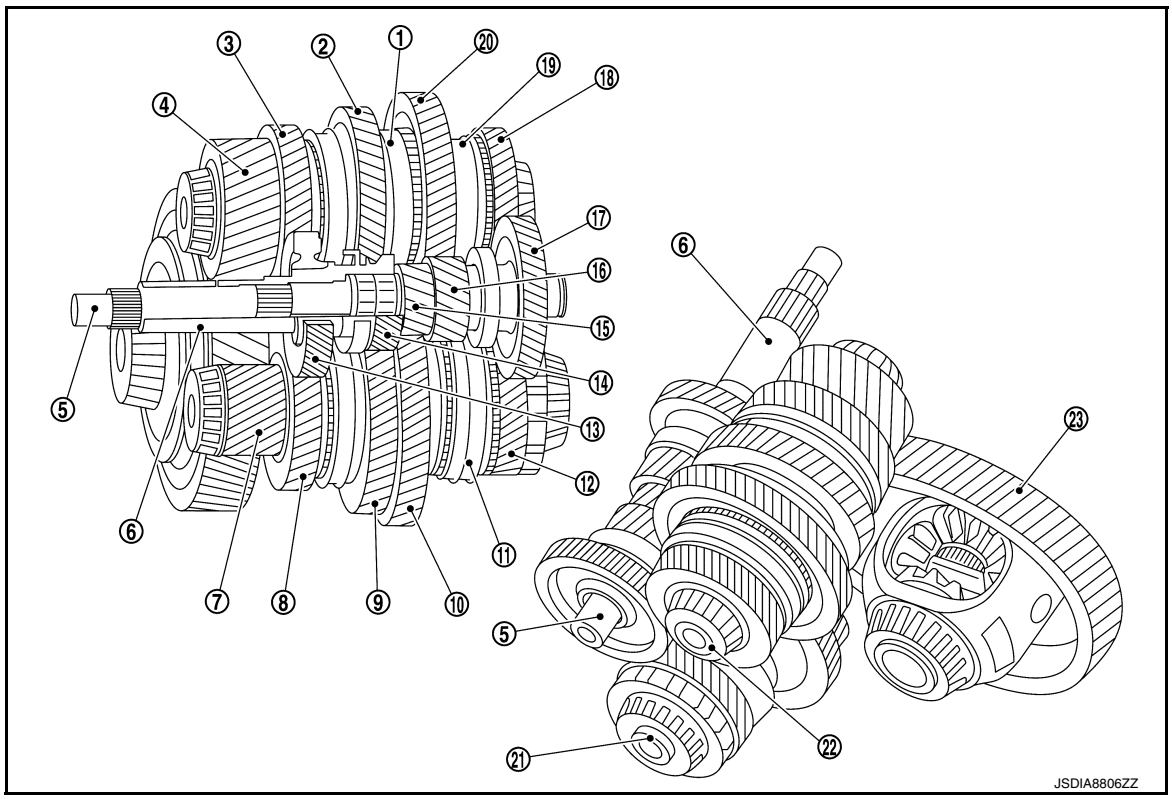
The dual clutch transaxle has seven forward gears and one reverse gear. Both clutch operation and gear changes take place on a fully automatic basis, providing the driver with shifting comfort and vehicle dynamics of the highest level.

An overview of the main features of the dual clutch transaxle:
- Compact transaxle housing
- A cooling module with integrated pressure fluid filter located on the dual clutch transaxle
- Two sub transaxles, each with multidisk clutch
- Internal and hollow shaft, two output shafts
- A pinion differential integrated in the transaxle housing
- Multi-cone synchronization (3 cones) for transferring high frictional forces during acceleration or during braking of the idler gears during gear changes (1st-3rd gear), dual-cone synchronization (4th-7th gear), single-cone synchronization (reverse gear)
- A wet, hydraulically operated dual clutch
- A shared transaxle fluid circuit (hydraulic control and lubrication of gear set) with one mechanical and one integrated electric oil pump
- A transmission control system with control and shift valves, sensors and actuators
- Electrohydraulically operated park pawl with an electrically actuated engagement device

Advantages of the dual clutch transaxle

- Short shift times
- Dynamic driving and gearshifting
- Compact design
- Integration of all transaxle relevant hydraulic, mechanical and electrical components
- Maximum comfort through smooth shift operations
- High level of efficiency

GEAR SET



① Sliding sleeve (reverse gear)	② Reverse idler gear	③ 6th idler gear
④ Output shaft fixed gear 2	⑤ Internal shaft	⑥ Hollow shaft
⑦ Output shaft fixed gear 1	⑧ 4th idler gear	⑨ 2nd idler gear
⑩ 1st idler gear	⑪ Sliding sleeve (1st gear/5th gear)	⑫ 5th idler gear
⑬ Hollow shaft fixed gear (4th gear/6th gear)	⑭ Hollow shaft fixed gear (2nd gear/reverse gear)	⑮ Internal shaft fixed gear (1st gear)
⑯ Internal shaft fixed gear (3rd gear)	⑰ Internal shaft fixed gear (5th gear/7th gear)	⑱ 7th idler gear
⑲ Sliding sleeve (3rd gear/7th gear)	⑳ 3rd idler gear	㉑ Output shaft 1
㉒ Output shaft 2	㉓ Spur gear (pinion differential)	

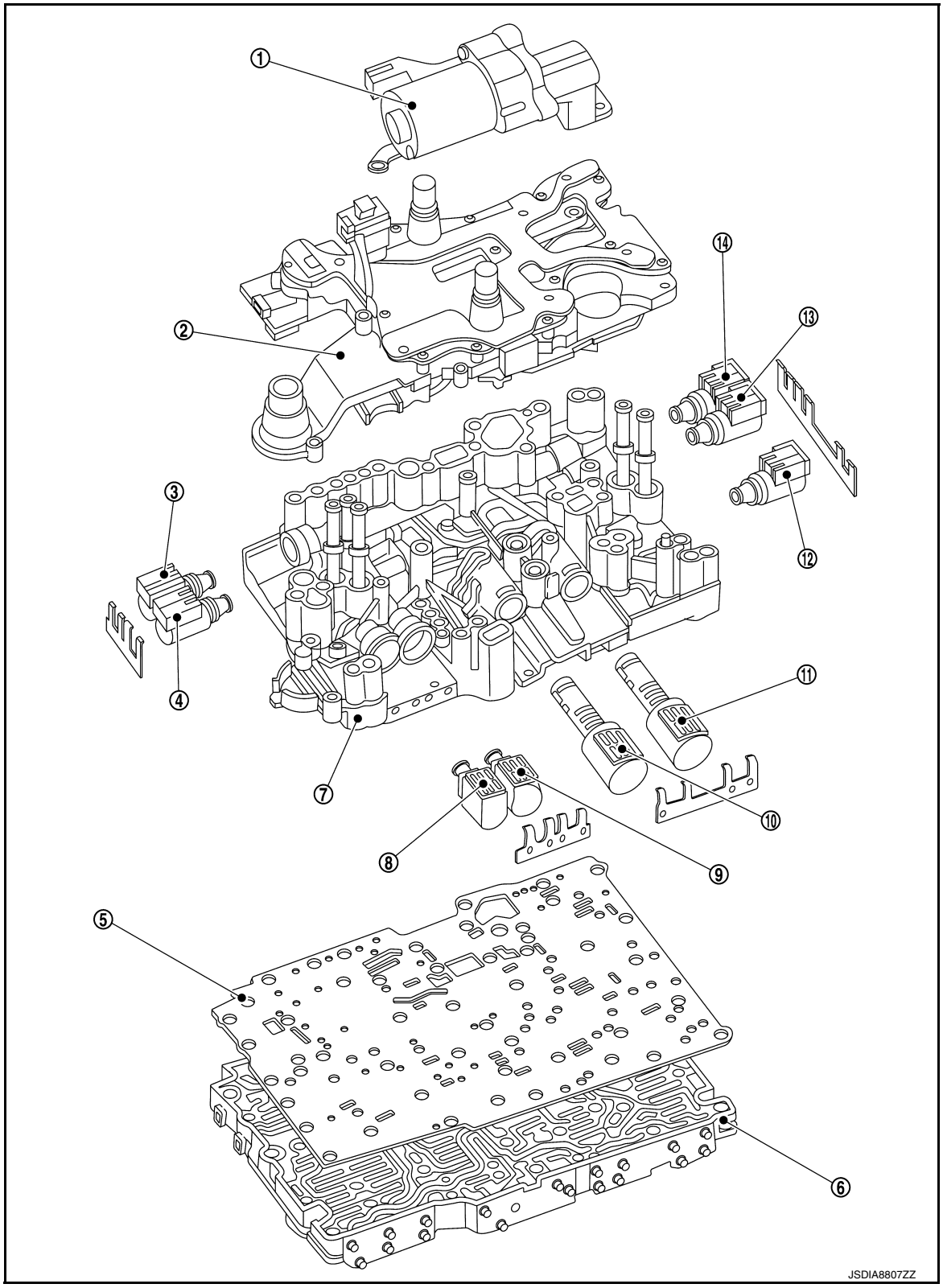
The engine torque is transferred from the crankshaft of the engine to the two-mass drive plate and on to the internal shaft or hollow shaft of the dual clutch transaxle depending on whether K1 clutch or K2 clutch is engaged. The dual clutch acts as an interface between the engine and transaxle and allows uninterrupted torque transfer during shift operations. The odd gears 1, 3, 5 and 7 are engaged via K1 clutch, the even gears 2, 4 and 6 as well as reverse gear are engaged via K2 clutch. Transfer of the drive torques from the clutches to the internal or hollow shaft takes place via the positive connection of the toothed profiles. The driver forces are transferred depending on the requested gear to output shafts 1 and 2 and on to the pinion differential via gear connections which can be engaged via the hydraulically operated internal shift mechanism.
Due to the location of the shafts and the compact gear set, it was possible to keep the dimensions of the transaxle housing small, both in terms of height and width. Despite the small installation space, seven forward gears and one reverse gear are provided.
The following components form part of the gear set:
- Internal shaft with three fixed gears and one sensor rotor

- Hollow shaft mounted on a needle roller bearing with two fixed gears and one sensor rotor
- Two output shafts with idler gears and synchronizers, each with a fixed gear, one park pawl gear (output shaft 1 only)
- Pinion differential with spur gear

Torque transfer takes place on alternating basis via K1 clutch (outer multidisk clutch) and K2 clutch (inner multidisk clutch). A “sub transaxle” is assigned to each clutch.
On sub transaxle 1 (gears 1, 3, 5 and 7) power flow takes place via the corresponding fixed gear of the internal shaft to the associated output shaft idler gears, and on sub transaxle 2 (gears 2, 4, 6 and reverse gear) via the fixed gear of the hollow shaft to the associated output shaft idler gears. During driving operation, only one “sub transaxle” is ever transmitting power.

NOTE:
All gears which are splined together with the respective shafts without the synchronizer engaged are designated fixed gears. The gears of gears 1-7 and reverse gear are idler gears which can be braked by synchronization devices and positively connected to the respective output shaft.

CONTROL VALVE ASSEMBLY



① Electric oil pump
② TCM
③ System pressure control valve
④ Shift rod control valve A
⑤ Intermediate panel
⑥ Shift valve body
⑦ Valve housing
⑧ Shift rod control valve C
⑨ Shift rod control valve B
⑩ K1 clutch regulation valve
⑪ K2 clutch regulation valve
⑫ Park pawl switchover valve
⑬ Gear cylinder pressure valve
⑭ Shift rod control valve D

The task of the TCM is to receive and evaluate incoming electrical status and actuate the control/switchover valves of the TCM accordingly. Via the control/switchover valves and the downstream control/shift valves (integrated in the shift valve body), the hydraulic flow to the respective gear actuator cylinders, the clutches and the park pawl system is enabled in order to initiate the gear (range) change.

Clutch operation

Operation of the dual clutch is not performed by a mechanical or hydraulic release device (central clutch release bearing, clutch release fork) as on “conventional” manual transaxles, but takes place on an entirely electrohydraulic basis. In order to transfer the drive torque of the engine to the internal or hollow shaft and then on to the respective sub-transaxle, one of the clutch packs first has to be frictionally connected via the application of hydraulic pressure.

The hydraulic pressure is controlled by the TCM via two control valves:

- K1 clutch regulation valve
- K2 clutch regulation valve

Depending on the gear being engaged, the hydraulic flow passes via a shift valve connected in series and on to the clutch hub and then to the corresponding pressure chambers of the clutch packs via a rotary connection. Furthermore, part of the pump flow is used to reduce the contact pressure of the clutch plates (dynamic pressure buildup, due to centrifugal forces at high rpms) and for clutch cooling.

Operation of internal shift mechanism

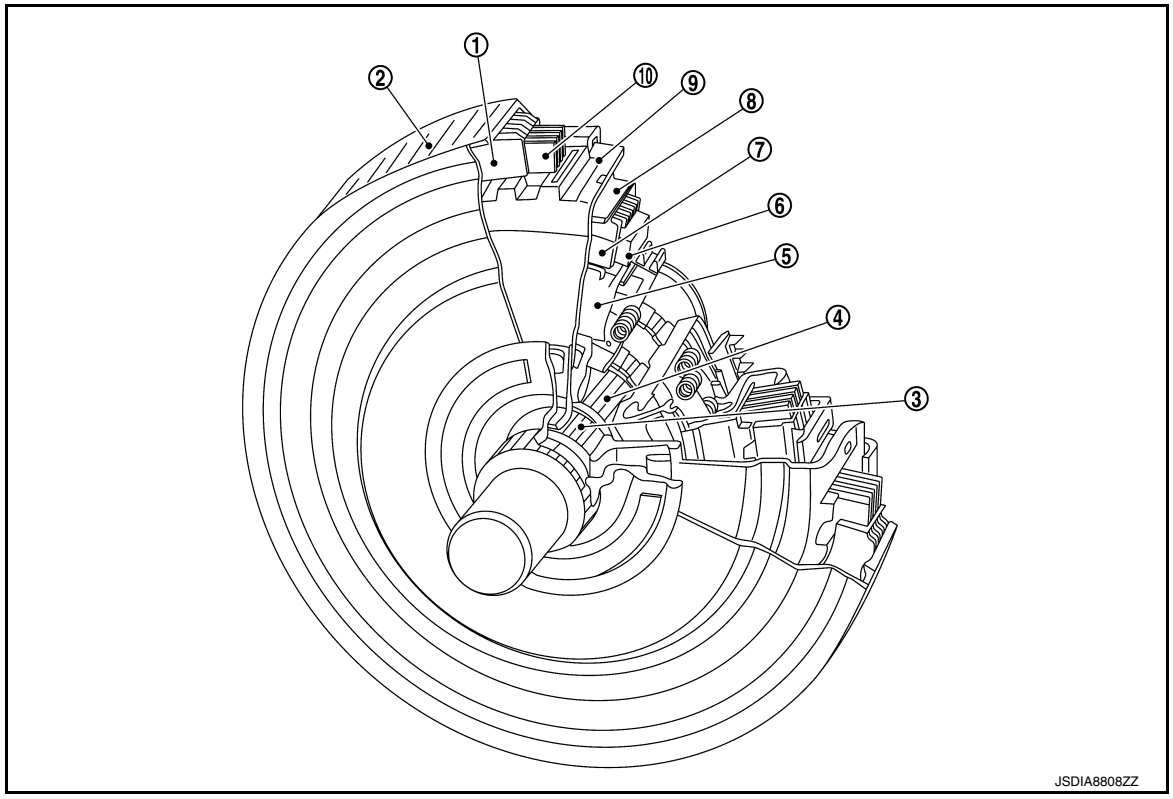
The internal shift mechanism includes all components within the transaxle housing which are involved in the actual shift operation or ensure a splined connection of the idler gears with the respective output shaft.

This includes:

- The gear actuator cylinders
- The shift forks
- The synchronization devices

In order to engage a gear, pressure is built up or released in the respective gear actuator cylinder so that the sliding sleeve of the synchronization device is moved by the shift fork. The shift fork is guided onto the shift rod and engages in the sliding sleeve. It moves the sliding sleeve in an axial direction and thus balances the rpm between the idler gear and output shaft so that the gear is engaged. Permanent magnets are attached to the shift forks via U-shaped brackets. The brackets transfer the axial movements of the shift forks during shift operations. Based on the position of the permanent magnets, the TCM can indirectly determine the position of the corresponding shift fork.

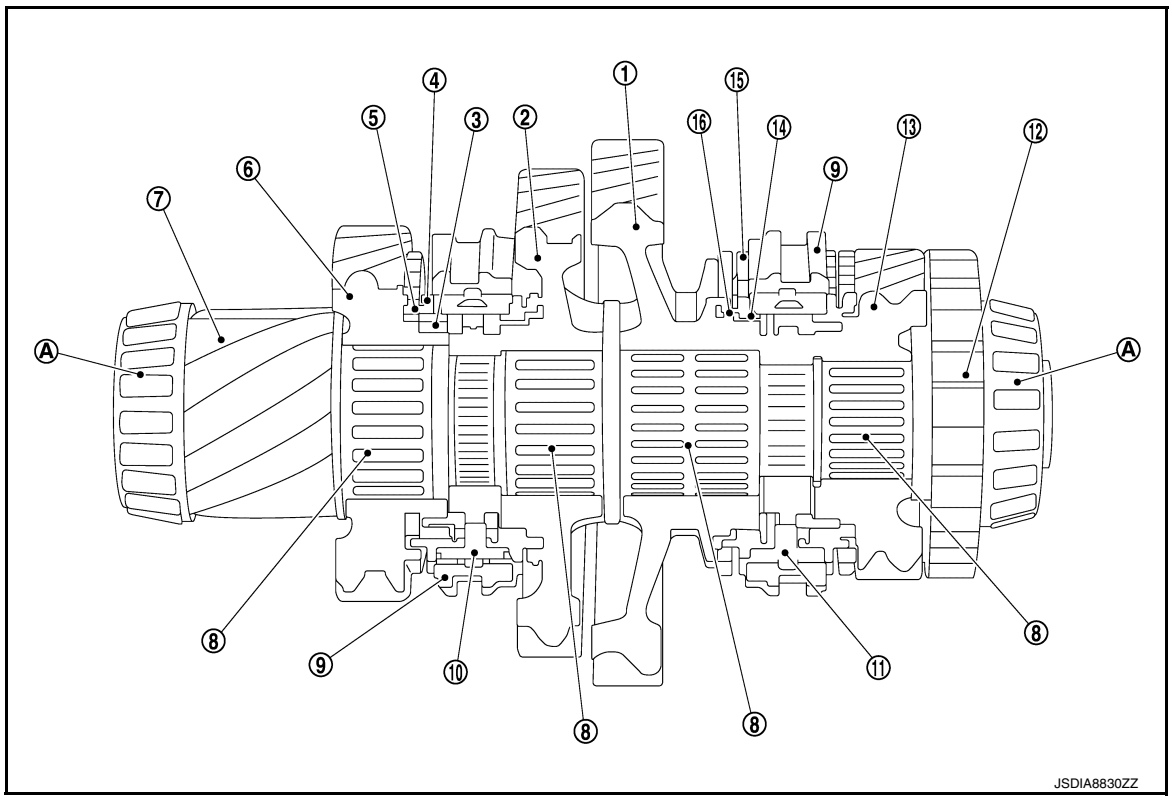
DUAL CLUTCH



① K1 clutch external plates
② K1 clutch external plate carrier
③ Internal shaft
④ Hollow shaft
⑤ K2 clutch internal plate carrier
⑥ K2 clutch internal plates
⑦ K2 clutch external plates
⑧ K2 clutch external plate carrier
⑨ K1 clutch internal plate carrier
⑩ K1 clutch internal plates

Instead of a conventional clutch with mechanical or hydraulic release mechanism like those usually installed on vehicles with manual transaxles, a dual clutch transaxle uses a clutch module with two combined multidisk clutches which are electrohydraulically actuated on alternating basis. Each multidisk clutch is coupled to a sub-transaxle 1 (K1 clutch engaged) contains the odd forward gears 1, 3, 5 and 7. Sub transaxle 2 (K2 clutch engaged) contains the even forward gears 2, 4, 6 and reverse gear. During driving operation and with the exception of reverse gear, only one gear of a sub transaxle is ever engaged, while the next expected gear is preengaged by the transaxle control system (associated clutch still open, no power transaxle takes place). Due to the high thermal load which arises when starting off in gear range “D” because of the frictional energy at the clutch plates, K1 clutch is located above K2 clutch. Due to this design measure, the friction surface of K1 clutch is correspondingly higher than that of K2 clutch, which reduces the specific thermal load. Starting off in gear range “R” is carried out via K2 clutch. This also results in high friction values and thus high temperatures at the clutch plates, but the effect of this is limited by the fact that the vehicle starts off less frequently in reverse gear. The main advantages achieved through these design features and functional characteristics include improved vehicle dynamics, greater comfort through jolt-free shifting, high efficiency and almost uninterrupted power transaxle.

SYNCHRONIZATION



Ⓐ Tapered roller bearing
① 1st idler gear
② 2nd idler gear
③ Friction ring (4th gear)
④ Synchronizer ring (4th gear)
⑤ Cone ring (4th gear)
⑥ 4th idler gear
⑦ Output shaft fixed gear 1
⑧ Needle roller bearing
⑨ Sliding sleeve
⑩ Synchronizer body with thrust piece (2nd gear/4th gear)
⑪ Synchronizer body with thrust piece (1st gear/5th gear)
⑫ Park pawl gear

⑬ 5th idler gear ⑭ Friction ring with friction lining (1st gear) ⑮ Synchronizer ring (1st gear)

⑯ Cone ring (1st gear)

Synchronization refers to the equalization of rotational speed and positive connection between the output shaft and respective idler gear. Frequent shift operations with short shift times in combination with reduced shift force require an effective synchronization system.
Generally, a distinction is made between the following synchronization types:
- Multiple-cone synchronization (1st to 3rd gear)
- Dual-cone synchronization (4th to 7th gear)
- Single-cone synchronization (reverse gear)

Multiple-cone synchronization (3 cones, 1st to 3rd gear)

A multiple-cone synchronizer is used to synchronize the 1st, 2nd and 3rd gear. The most important components of this are an additional cone ring between the friction ring and synchronizer ring and a friction lining on the friction ring. The three friction surfaces of the cone and friction ring are added together and allow the gears to be braked or accelerated more quickly and with less force on a multiple-cone synchronizer.

Dual-cone synchronization (4th to 7th gear)

A dual-cone synchronizer is used to synchronize the 4th, 5th, 6th and 7th gear.

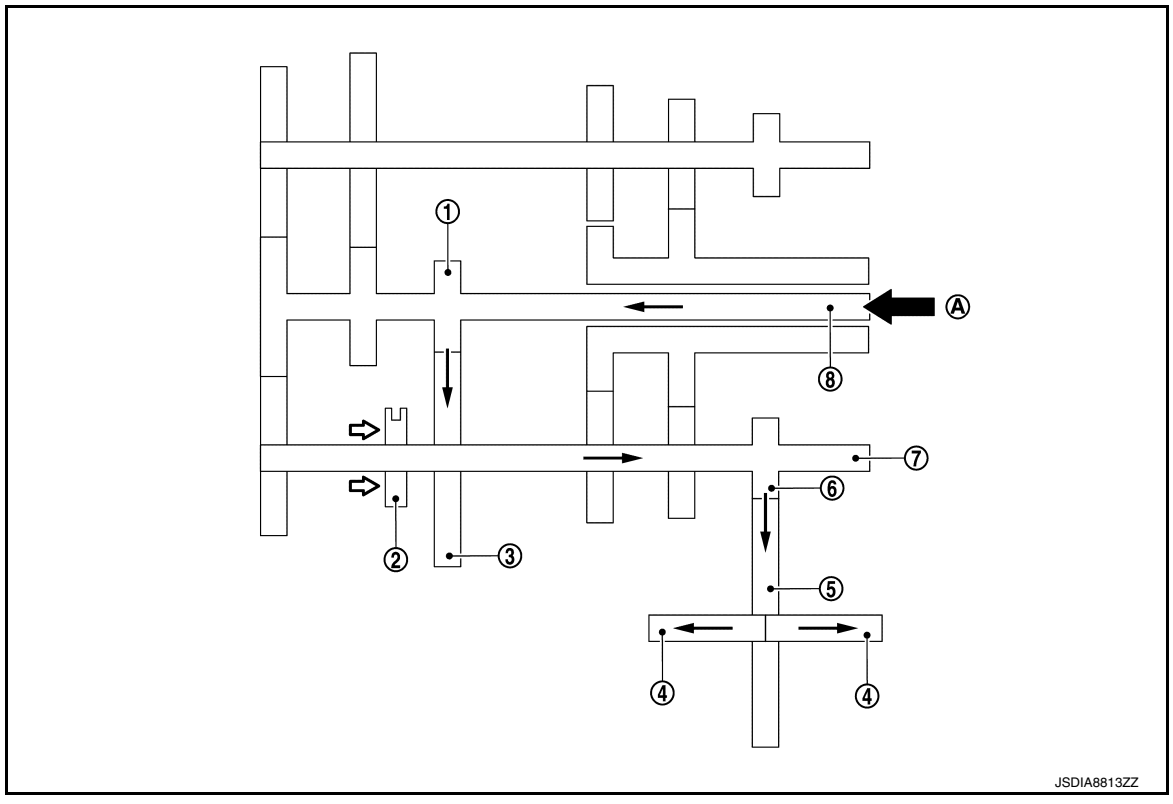
Single-cone synchronization (reverse gear)

A single-cone synchronizer is used to synchronize reverse gear.

TRANSMISSION CONTROL SYSTEM : System Description

INFOID:0000000013777250

1ST GEAR



Ⓐ Engine torque

① Internal shaft fixed gear (1st gear) ② Sliding sleeve (1st gear/5th gear) ③ 1st idler gear

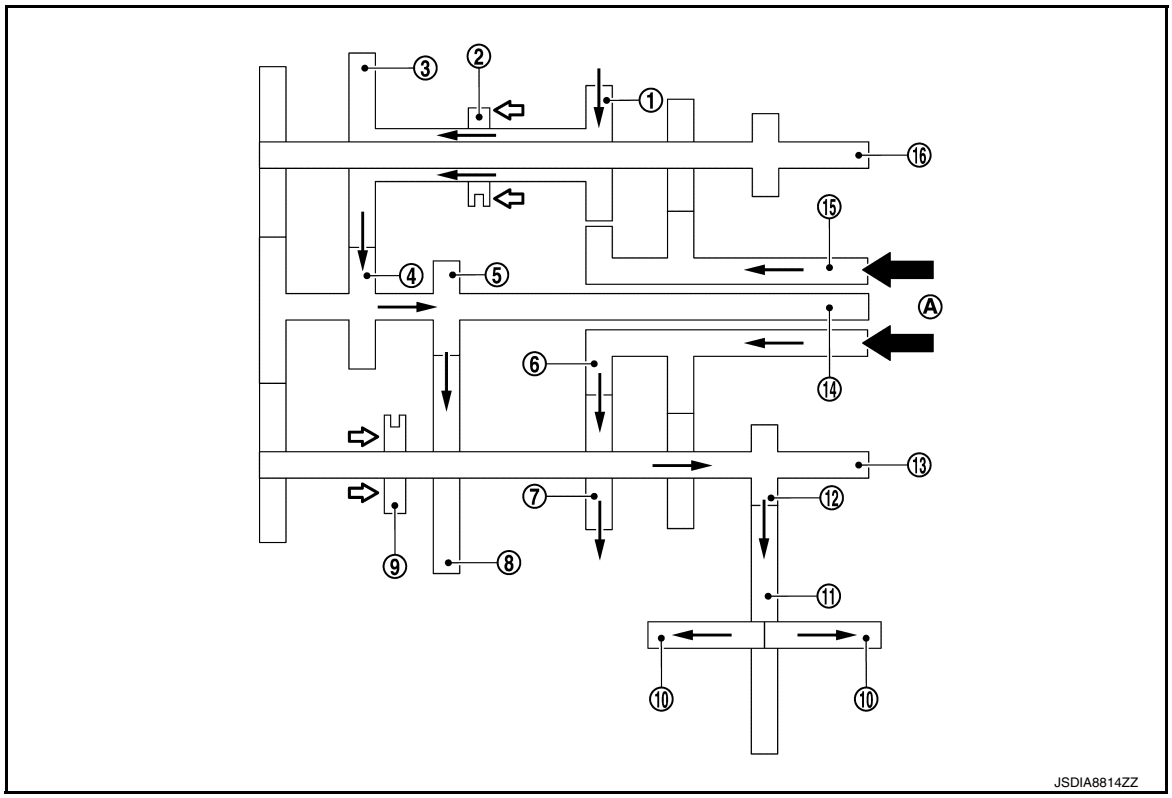
④ Left and right drive shaft ⑤ Spur gear (pinion differential) ⑥ Output shaft fixed gear 1

⑦ Output shaft 1 ⑧ Internal shaft

The following clutch/shift fork is engaged/actuated in order to provide power flow in 1st gear.
- K1 clutch (outer clutch)
- Shift fork (1st gear/5th gear)

NOTE:
- Output shaft fixed gears 1 and 2 are rigidly connected to the respective output shafts. The gears of gears 1-7 and reverse gear are idler gears which can be braked by synchronization devices and positively connected to the respective output shaft.
- The power flow via the individual components of the dual clutch transaxle is symbolized by the ⬅ arrows. The list of the components is in numerical order and illustrates the position of the respective component on the gear set in combination with the figure “GEAR SET”. Refer to TM-21, "TRANSMISSION CONTROL SYSTEM : Sectional View".

REVERSE GEAR



Ⓐ Engine torque		
① Reverse idler gear	② Sliding sleeve (reverse gear)	③ 3rd idler gear
④ Internal shaft fixed gear (3rd gear)	⑤ Internal shaft fixed gear (1st gear)	⑥ Hollow shaft fixed gear (2nd gear/reverse gear)
⑦ 2nd idler gear	⑧ 1st idler gear	⑨ Sliding sleeve (1st gear/5th gear)
⑩ Left and right drive shaft	⑪ Spur gear (pinion differential)	⑫ Output shaft fixed gear 1
⑬ Output shaft 1	⑭ Internal shaft	⑮ Hollow shaft
⑯ Output shaft 2		

- A reversing gear has not been used for the reverse gear. This reduces weight and friction as well as internal operating noises.
- The following clutches/shift forks are engaged/actuated to provide power flow in reverse gear.

- K2 clutch (inner clutch)
- Shift fork (1st gear/5th gear)
- Dual shift fork (6th gear/reverse gear)

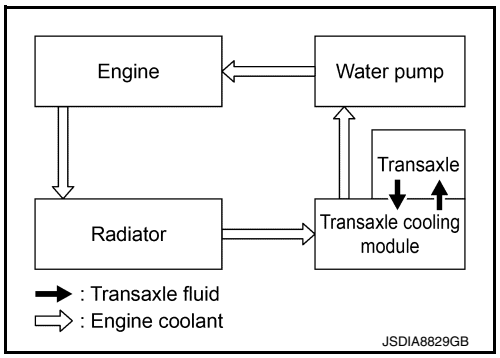
FLUID COOLER SYSTEM

FLUID COOLER SYSTEM : System Description

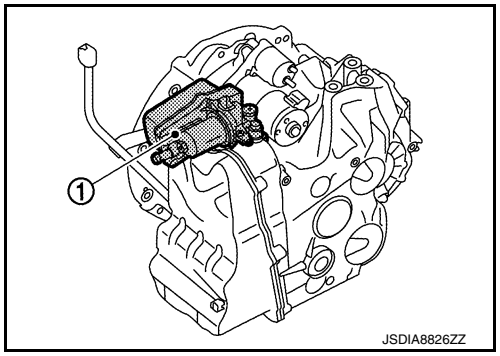
INFOID:0000000013777251

DESCRIPTION

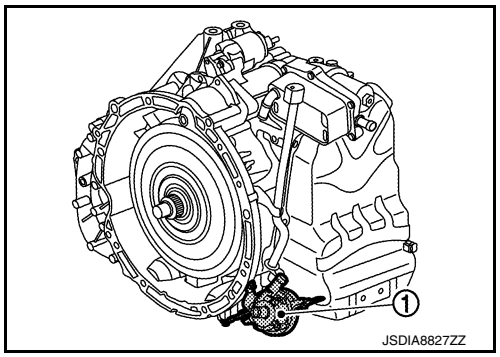
The task of the transaxle cooling system is to maintain the transaxle fluid temperature at an optimal level and protect both the mechanical and electrical components of the dual clutch transaxle from damage due to overheating. A major component of the transaxle cooling system is the transaxle fluid heat exchanger. This makes up the cooling module together with the pressure fluid filter. The transaxle fluid heat exchanger is designed as a stacked plate cooler and is located on the top of the transaxle housing. It acts as an inter-face between the coolant and transaxle fluid circuit. A regulated flow of coolant is pumped from the cooler through the transaxle fluid heat exchanger by the water pump depending on the transaxle fluid temperature. This coolant flow absorbs the waste heat of the heated transaxle fluid and passes it on to the coolant circuit.



① Transaxle cooling module



① Water pump

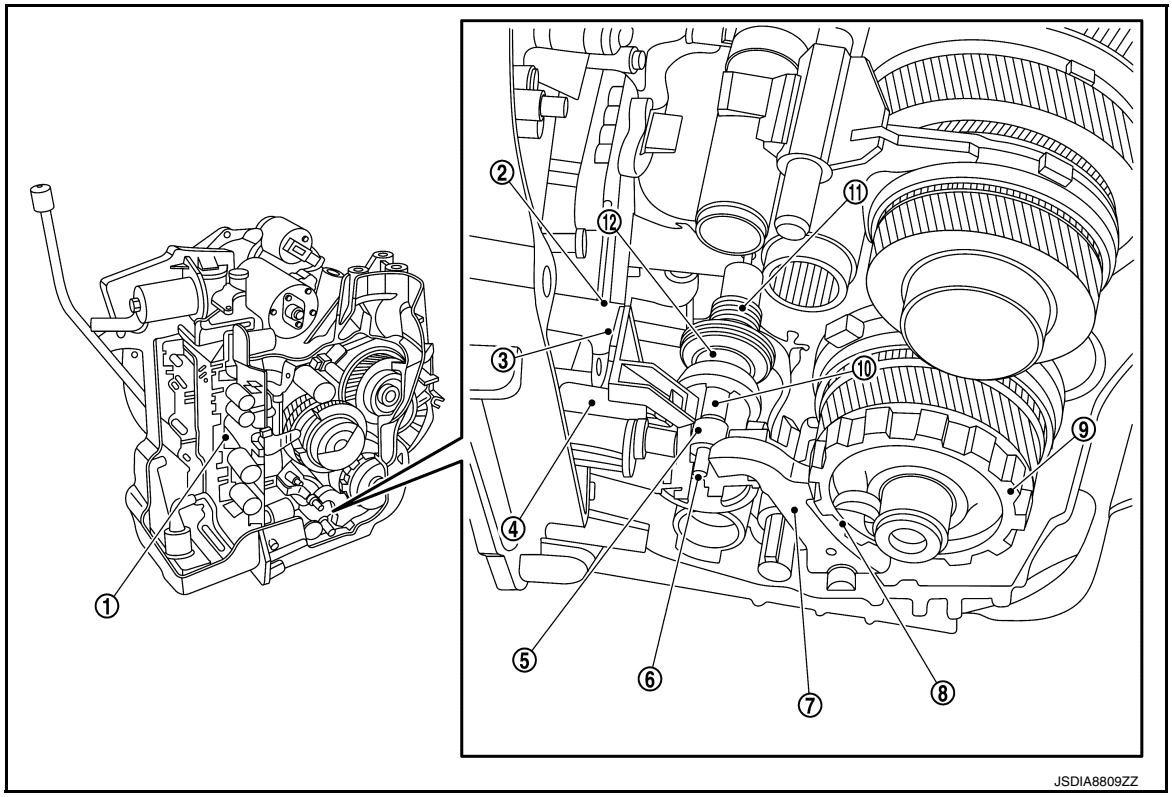


PARK LOCK SYSTEM

PARK LOCK SYSTEM : Sectional View

INFOID:0000000013777252

PARK PAWL



① TCM	② Park pawl position sensor	③ Permanent magnet
④ Park pawl lift solenoid	⑤ Pressure cone	⑥ Pull rod
⑦ Park detent	⑧ Coil spring	⑨ Park pawl gear
⑩ Pressure cone spring	⑪ Piston spring	⑫ Piston

On the dual clutch transaxle, the park pawl is no longer engaged by the driver via a mechanical cable connection/linkage but is instead actuated electrohydraulically by the TCM.
The park pawl system (park-by-wire) consists of the following components:
- The electric shift selector
- The TCM and electrohydraulic park pawl switchover valve
- The park pawl lift solenoid
- The park pawl position sensor
- The parking lock mechanism

The park pawl is engaged or released either through actuation of the P position switch on the electric shift selector or depending on various factors such as opening of the driver door with the engine running. All components of the park pawl system, except the electric shift selector, are integrated in the dual clutch transaxle.
In general, a distinction is made between the operating conditions:
- Park pawl position “P”
- Park pawl position “Not P”

Park pawl position “P”

In park pawl position “P”, the vehicle is secured against the possibility of rolling away by the park pawl. In this state, the park detent blocks the park pawl gear. The park detent is held in the teeth of the park pawl gear by the exterior contour of the spring-loaded pressure cone. A locking pin locks the piston in place, which provides the preload on the pressure cone via the pressure cone spring. The locking pin system also safeguards park pawl position “P” even if there is no hydraulic actuation pressure.

Park pawl position “Not P”

In park pawl position “Not P”, the pressure cone and the park detent are in the basic position and the park pawl gear can rotate freely. The piston is pushed against the spring force of the piston spring and is locked in place by the locking pin, which is actuated by the park pawl lift solenoid.
NOTE:

The park pawl positions “P” and “Not P” are recorded by the park pawl position sensor by the permanent magnet attached to the piston and this information is transferred to the TCM.

Condition change between “P” and “Not P”

In order to change the park pawl position, the TCM actuates the lift solenoid which presses the locking pin out of the catch of the piston. The piston is then pressurized on one side with hydraulic pressure in accordance with the required actuation direction, “P” or “Not P”. The TCM energizes the park pawl switchover valve and thus enables the hydraulic flow to the corresponding pressure chamber for piston actuation.

NOTE:

If the power supply or hydraulic pressure control system fails, the park pawl lift solenoid can be energized via an external power supply to release the park pawl piston in order to engage the park pawl via the piston spring. It is not possible to release the park pawl without hydraulic pressure.

SYSTEM

TRANSMISSION CONTROL SYSTEM

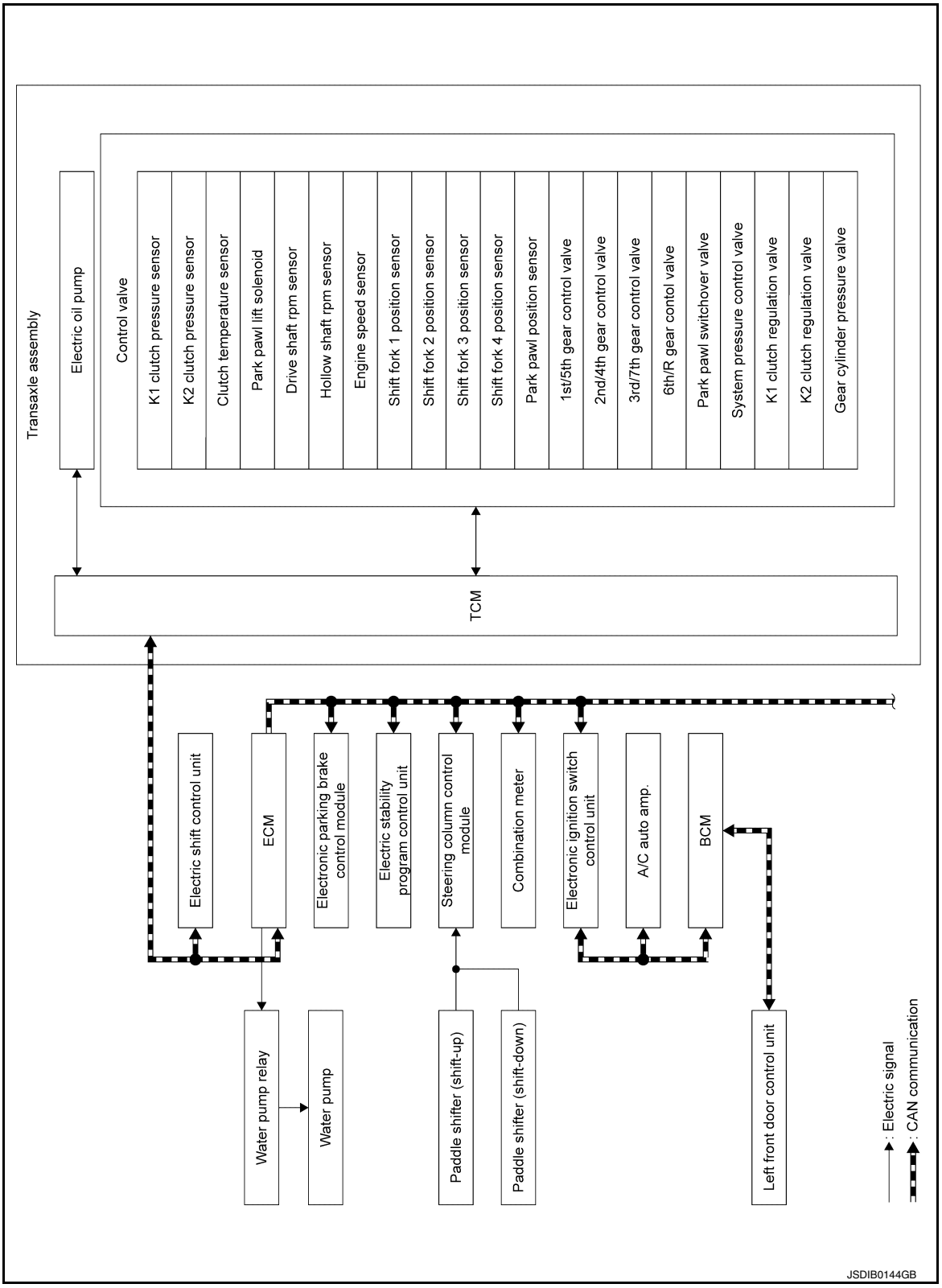
TRANSMISSION CONTROL SYSTEM : System Description

INFOID:0000000013777253

The transmission system (TCM) is connected to the CAN network of the vehicle and evaluates the incoming signals and requests from other control units, actuating the internal actuators accordingly depending on this information. It also evaluates the signals of the sensor system and forwards them to the associated ECUs.
The TCM actuates the following actuators and/or performs the following functions depending on the sensor and CAN input signals:

- Shift and control solenoid valves
- Electric oil pump
- Hydraulic park pawl actuation
- Electric park pawl release
- Actuation of clutches

SYSTEM DIAGRAM

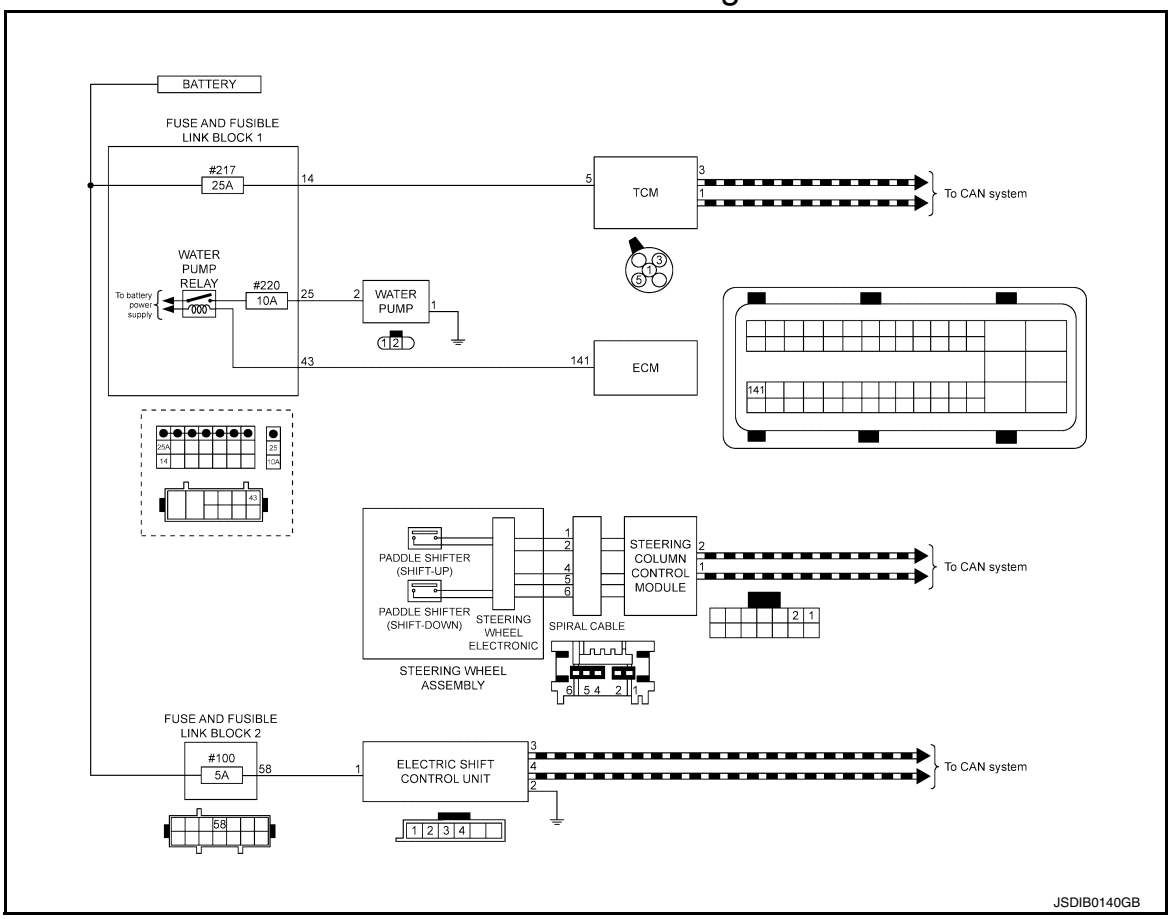


MAIN CONTROL OF TCM

Controls	Reference
Self-diagnosis	TM-36, "CONSULT Function"
CONSULT communication	TM-36, "CONSULT Function"

TRANSMISSION CONTROL SYSTEM : Circuit Diagram

INFOID:0000000013777254



ON BOARD DIAGNOSTIC (OBD) SYSTEM

Description

INFOID:0000000013777255

This is an on board diagnosis system which records diagnosis information related to the exhaust gases. It detects malfunctions related to sensors and actuators. The malfunctions are indicated by means of the malfunction indicator lamp (MIL) and are stored as DTC in the ECU memory. The diagnosis information can be checked using a diagnosis tool (GST: Generic Scan Tool).

GST (Generic Scan Tool)

INFOID:0000000013777256

The GST is connected to the diagnosis connector on the vehicle and communicates with the on-board control-units to perform diagnosis. The diagnosis connector is the same as for CONSULT. Refer to GI-64, "Description".

DIAGNOSIS SYSTEM (TCM)

CONSULT Function

INFOID:0000000013777257

APPLICABLE ITEM

Conditions	Function
All DTC Reading	Display all DTCs or diagnostic items that all ECUs are recording and judging.
Work Support	This mode enables a technician to adjust some devices faster and more accurately.
Self Diagnostic Results	Retrieve DTC from ECU and display diagnostic items.
Data Monitor	Monitor the input/output signal of the control unit in real time.
CAN Diagnosis	This mode displays a network diagnosis result about CAN by a diagram.
Active Test	Enables an operational check of a load by transmitting a driving signal from the TCM to the load.
ECU Identification	Display the ECU identification number (part number etc.) of the selected system.
Programming	This function can write control program to new ECU. New ECU does not operate if programming of new ECU is not completed, though it is installed to the vehicle. For new ECU, for which programming operation is specified, programming operation is always necessary after installation to the vehicle.
Configration	Function to READ/WRITE vehicle configuration.

SELF DIAGNOSTIC RESULTS

Refer to TM-45, "DTC Index".

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item		Value	
CONSUL screen terms	Full spell	CONSUL screen terms	Full spell
Occurrence Flag	Occurrence Flag	Error	Error
		Occurrence	Occurrence
Frequency Counter	Frequency Counter	NOT AVLBL / DEFAULT	Frequency counter not available / Default
Ignition Cycle Counter	Operation Cycle Counter	—	—
Symptom first occurrence	Symptom first occurence	—	—
Time since start or reset of ECU 1st occr	Time since start or reset of electric control unit first occurrence	—	—
MAIN ODOMETER READING - FIRST OCCURRENCE	Main odometer reading first occurence	Odo vl ip	Odometer value implausible
Supply voltage first occurence	Supply voltage first occurence	—	—
Oil temperature of transmission first occurrence	Oil temperature of transmission first occurrence	—	—

Item		Value	
CONSUL screen terms	Full spell	CONSUL screen terms	Full spell
Actual gear first occurence	Actual gear first occurence	NEUTRAL	Neutral
		1	1. Gear step
		2	2. Gear step
		3	3. Gear step
		4	4. Gear step
		5	5. Gear step
		6	6. Gear step
		7	7. Gear step
		R GEAR	Reverse Gear
		Not defined	not defined
		SNA	SNA
Target gear first occurrence	Target gear first occurence	NEUTRAL	Neutral
		1	1. Gear step
		2	2. Gear step
		3	3. Gear step
		4	4. Gear step
		5	5. Gear step
		6	6. Gear step
		7	7. Gear step
		R GEAR	Reverse Gear
		Not defined	not defined
		SNA	SNA
Engine speed first occurence	Engine speed first occurence	—	—
Rpm of inner shaft first occurrence	Rpm of inner shaft first occurrence	—	—
Rpm of hollow shaft first occurrence	Rpm of hollow shaft first occurence	—	—
Selector lever slider first occurrence	Selector lever slider first occurrence	Snv/idle/init	Snv/idle/init
		P	P
		R	R
		N	N
		D	D
		Invalid signal	Invalid signal
Selector lever position first occurrence	Selector lever position first occurence	Snv/idle/init	Snv/idle/init
		P	P
		R	R
		N	N
		D	D
		Invalid signal	Invalid signal
Pressure of clutch k1 first occurrence	Pressure of clutch k1 first occurrence	—	—
Pressure of clutch k2 first occurrence	Pressure of clutch k2 first occurrence	—	—
Time since start or reset of ECU last occr	Time since start or reset of control unit last occurrence	—	—

Item		Value	
CONSUL screen terms	Full spell	CONSUL screen terms	Full spell
MAIN ODOMETER READING - LAST OCCURRENCE	Main odometer reading last occurence	Odo vl ip	Odometer value implausible
Supply voltage last occurence	Supply voltage last occurence	—	—
Oil temperature of transmission last occurrence	Oil temperature of transmission last occurrence	—	—
Actual gear last occurrence	Actual gear last occurence	NEUTRAL	Neutral
		1	1. Gear step
		2	2. Gear step
		3	3. Gear step
		4	4. Gear step
		5	5. Gear step
		6	6. Gear step
		7	7. Gear step
		R GEAR	Reverse Gear
		Not defined	not defined
		SNA	SNA
Target gear last occurrence	Target gear last occurence	NEUTRAL	Neutral
		1	1. Gear step
		2	2. Gear step
		3	3. Gear step
		4	4. Gear step
		5	5. Gear step
		6	6. Gear step
		7	7. Gear step
		R GEAR	Reverse Gear
		Not defined	not defined
		SNA	SNA
Engine speed last occurence	Engine speed last occurence	—	—
Rpm of inner shaft last occurrence	Rpm of inner shaft last occurrence	—	—
Rpm of hollow shaft last occurrence	Rpm of hollow shaft last occurence	—	—
Selector lever slider last occurrence	Selector lever slider last occurence	Snv/idle/init	Snv/idle/init
		P	P
		R	R
		N	N
		D	D
		Invalid signal	Invalid signal
CHECK COMMUNICATION WITH CDI CONTROL UNIT	Selector lever position last occurence	Snv/idle/init	Snv/idle/init
		P	P
		R	R
		N	N
		D	D
		Invalid signal	Invalid signal

Item		Value	
CONSUL screen terms	Full spell	CONSUL screen terms	Full spell
Pressure of clutch k1 last occurrence	Pressure of clutch k1 last occurrence	—	—
Pressure of clutch k2 last occurrence	Pressure of clutch k2 last occurrence	—	—

DATA MONITOR

NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item	(Unit)	Full spell
ACTUAL GEAR		Actual Gear
Park pawl		Park pawl
PARKING BRAKE STATUS		Parking Brake Status
POWER SUPPLY VOLTAGE	(V)	Supply Voltage
Temp at component (TCM)	(°C or °F)	Temperature at component (transmission control module)
Sliding sleeve gearshift 2 - 6	(mm)	Sliding sleeve 'Gearshift 2 - 6'
Sliding sleeve gearshift R - 4	(mm)	Sliding sleeve 'Gearshift R - 4'
Sliding sleeve gearshift 5 - 7	(mm)	Sliding sleeve 'Gearshift 5 - 7'
Sliding sleeve gearshift 3 - 1	(mm)	Sliding sleeve 'Gearshift 3 - 1'
Park pawl position sensor	(mm)	Park pawl position sensor
Pressure of clutch K1	(bar)	Pressure of clutch 'K1'
Pressure of clutch K2	(bar)	Pressure of clutch 'K2'
Rpm of coolant pump of T/M	(1/min)	Rpm of coolant pump of transmission
Operating mode of control unit		Operating mode of control unit
MAIN ODOMETER READING	(km or MPH)	Odometer (CAN)
INPUT SPEED	(1/min)	Input speed
Rpm of hollow shaft	(1/min)	Rpm of hollow shaft
Rpm of inner shaft	(1/min)	Rpm of inner shaft

WORK SUPPORT

Item name	Description
VIN REGISTRATION	Used for writing VIN data to TCM after the replacement of transaxle, TCM, or control valve.
WRITE CALL ID	Used for writing CALL ID data to TCM after the replacement of transaxle, TCM, or control valve.
Normalization and adaptation	Used for performing the initial learning of interior transaxle after the replacement of transaxle, TCM, or control valve.
Oil level check	Used for adjusting transaxle fluid amount.
Clutch adaptation value writing procedure	Used for writing clutch adaptation value to TCM after the replacement of transaxle, TCM, or dual clutch.
SAVING DATA FOR REPLC CPU	In this mode, save data that is in TCM.
WRITING DATA FOR REPLC CPU	In this mode, write data stored by “SAVING DATA FOR REPLC CPU” in work support mode to TCM.

ACTIVE TEST

Item name	Full spell
Test of speed transmission	Test of speed transmission
Test of control valve for system press reg valve	Test of control valve for system pressure regulating valve
Test of clutch emergency shift mode swithover valve	Test of clutch emergency shift mode swithover valve
SHIFT TRANSMISSION TO NEUTRAL	Shift transmission to neutral

DIAGNOSIS SYSTEM (ELECTRIC SHIFT)

CONSULT Function

INFOID:0000000013777258

APPLICABLE ITEMS

Mode	Function description
All DTC Reading	Display all DTCs or diagnostic items that all ECUs are recording and judging.
Self Diagnostic Results	Retrieve DTC from ECU and display diagnostic items.
Data Monitor	Monitor the input/output signal of the control unit in real time.
CAN Diagnosis	This mode displays a network diagnosis result about CAN by diagram.
CAN Diagnosis Support Monitor	It monitors the status of CAN communication.
Active Test	Send the drive signal from CONSULT to the actuator. The operation check can be performed.
ECU Identification	Display the ECU identification number (part number etc.) of the selected system.

SELF DIAGNOSTIC RESULTS

Display Item List
Refer to TM-50, "DTC Index".

How to Read DTC
DTC is displayed on “Self Diagnostic results” of CONSULT.
When DTC is currently detected, “CRNT” is displayed. If “PAST” is displayed, it shows a malfunction occurred in the past.

How to Erase DTC
NOTE:
If the power switch is kept ON after repair operation, operate the power switch to OFF. Operate the power switch to ON again after waiting at least 10 seconds.
1. Touch “SHIFT” of CONSULT.
2. Touch “Self Diagnostic Results”.
3. Touch “Erase”. (DTC memorized in electric shift control module is erased.)

Freeze Frame Data (FFD)
The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name		Value/Unit
CONSULT screen item	Full spell	
Occurrence flag	Occurrence flag	Error
		Occurrence
Original Odometer Value	Original odometer value	km (mph)
Most Recent Odometer Value	Most recent odometer value	km (mph)
Frequency Counter	Frequency counter	—
Ignition cycle counter	Ignition cycle counter	—
Selector lever position last occurrence	Selector lever position last occurrence	IDLE
		R
		N up
		N down
		Ini
		D
		SNA
Time elapse since ign was sw on last occr	Time elapsed since the ignition was switched on last occurrence	min
BATTERY VOLTAGE	Battery voltage last occurence	V

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicableto this vehicle, refer to CONSULT display items.

Item name		Value/Unit	
CONSULT screen item	Full spell	CONSULT screen item	Full spell
Supply voltage of cntrl module	Supply voltage of control module	V	—
Button P in position 1	Button P in position 1	On	—
		Off	—
Button P in position 2	Button P in position 2	On	—
		Off	—
ACTUAL GEAR	Actual gear	Auto radr	D auto radar recup
		Man min	D man min recup
		Man dflt	D man default recup
		Man max	D man max recup
		Man sprt	D man sport recup
		Green	D green
		D1	D1
		D2	D2
		D3	D3
		D4	D4
		D5	D5
		D6	D6
		D7	D7
		D8	D8
		D9	D9
		D	D
		N	N
		P	P
		R	R
		SNA	Sna
MAIN ODOMETER READING	Main odometer reading	km (mph)	—
CAN signal light sensor	CAN signal light sensor	DAY	Day
		NIGHT	Night
Brghtnss val of sw and cntrls ill	Brightness value of switch and controls illumination	%	—
BATTERY VOLTAGE	Battery voltage	V	—
Selector lever position	Selector lever position	Npsd	Npsd
		PLUS	Plus
		MINUS	Minus
		+ –	Plus minus
		Ndef4	Ndef4
		NDef5	Ndef5
		NDef6	Ndef6
		SNA	Sna

Item name		Value/Unit	
CONSULT screen item	Full spell	CONSULT screen item	Full spell
Function ill of slctr lever posi D	Function illumination of selector lever position d	On	—
		Off	—
Function ill of slctr lever posi N	Function illumination of selector lever position n	On	—
		Off	—
Function ill of slctr lever posi R	Function illumination of selector lever position r	On	—
		Off	—
Function ill of slctr lever posi P	Function illumination of selector lever position p	On	—
		Off	—
Swtch and controls illumination	Switch and controls illumination	On	—
		Off	—
Nmbr of programming attempts	Nmbr of programming attempts	—	—
Max no of rprgrng atmpt-cntr #0	Max number of reprogramming attempts - counter #0	—	—

ACTIVE TEST

Item name	Description
Actuation of function illumination	This active test can lighting up position indicator on electric shift selector.

ECU DIAGNOSIS INFORMATION

TCM

Reference Value

INFOID:0000000013777259

VALUES ON THE DIAGNOSIS TOOL

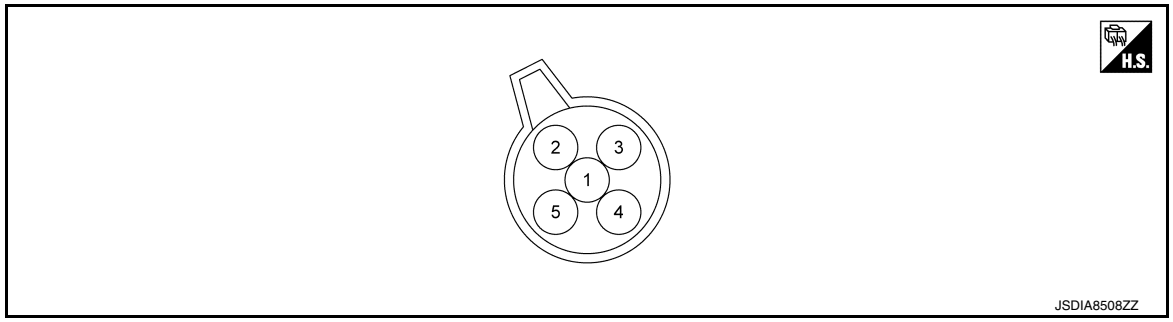
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition	Value/Status (Approx.)
ACTUAL GEAR	N position	NEUTRAL
	1GR	1
	2GR	2
	3GR	3
	4GR	4
	5GR	5
	6GR	6
	7GR	7
	R position	R GEAR
	—	NOT DEFINED
	—	SNA
Park pawl	Selector lever in P position	ENGAGE
	—	Undefined
	—	Disengd
PARKING BRAKE STATUS	—	No end p
	—	INC
	—	DEC
	—	ENGAGE
	—	Release
	—	Ndef5
	—	Ndef6
	—	SNA
POWER SUPPLY VOLTAGE	Ignition switch: ON	Battery voltage
Temp at component (TCM)	—	Almost same as the transaxle fluid temperature.
Sliding sleeve gearshift 2 - 6	—	—
Sliding sleeve gearshift R - 4	—	—
Sliding sleeve gearshift 5 - 7	—	—
Sliding sleeve gearshift 3 - 1	—	—
Park pawl position sensor	—	—
Pressure of clutch K1	—	—
Pressure of clutch K2	—	—
Rpm of coolant pump of T/M	—	—

Monitor item	Condition	Value/Status (Approx.)
Operating mode of control unit	—	NORMAL
	—	SLAVE
	—	SAFETY
	—	Initiation
	—	Trsprtmd
	—	Testing
	—	Bypass
MAIN ODOMETER READING	—	Odometer value
INPUT SPEED	—	—
Rpm of hollow shaft	—	—
Rpm of inner shaft	—	—

TERMINAL LAYOUT



INPUT/OUTPUT SIGNAL STANDARD

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal	Input/ Output		
1 (L)	—	CAN-L	Input/ Output	—	—
2 (V)	Ground	NOT P	Output	—	—
3 (GR)	—	CAN-H	Input/ Output	—	—
5 (W)	Ground	Battery power supply	Input	Always	10 – 16 V

DTC Index

INFOID:0000000013777260

DTC*		Items (CONSULT screen terms)	Reference
P0218	00	T/M fluid temperature sensor A	TM-87
P0513	00	Immobilizer	TM-88
P0562	00	System voltage	TM-89
P0563	00	System voltage	TM-90
P0602	00	Control module programming error	TM-91
P0607	00	CONTROL MODULE	TM-92
P060A	00	CONTROL MODULE	TM-93

DTC*		Items (CONSULT screen terms)	Reference
P0610	00	Control module vehicle options error	TM-94
P061B	00	CONTROL MODULE	TM-95
P0634	00	CONT MODULE INTERNAL TEMP A	TM-96
P0666	00	CONT MODU INTERNAL TEMP SEN A	TM-97
P0667	00	Cont module internal temp sen A	TM-98
P06A6	00	Sensor reference voltage A	TM-99
P06A7	00	Sensor reference voltage B	TM-100
P06A8	00	Sensor reference voltage C	TM-101
P06A9	00	Sensor reference voltage D	TM-102
P06AB	01	Control module internal temp sensor B	TM-103
P06D5	00	Sensor reference voltage E	TM-104
P0702	46	Transmission control system	TM-105
P0710	00	T/M fluid temperature sensor A	TM-106
P0711	00	T/M fluid temperature sensor A	TM-107
P0714	00	T/M fluid temperature sensor A	TM-108
P0715	00	Input/Turbine speed sensor A	TM-109
	01		TM-109
	64		TM-109
P0716	00	Input/Turbine speed sensor A	TM-111
P0745	00	FUEL PRESSURE REGULATOR 1	TM-112
P0746	00	Pressure control solenoid A	TM-113
P0760	77	Shift solenoid C	TM-114
P0763	00	Shift solenoid C	TM-115
P0775	00	Pressure control solenoid B	TM-116
P0776	00	Pressure control solenoid B	TM-117
P0791	00	Intermediate shaft speed sensor A	TM-118
P0792	00	Intermediate shaft speed sensor A	TM-119
P0795	00	Pressure control solenoid C	TM-120
P079A	00	Transmission friction element A	TM-121
P079B	00	Transmission friction element B	TM-122
P07A3	00	Transmission friction element A	TM-123
P07A5	00	Transmission friction element B	TM-125
P07A7	71	Transmission friction element C	TM-126
P07B5	00	T/M park position sensor/switch A	TM-127
	71		TM-127
P07E4	00	Unable to engage park	TM-129
P07E6	00	Unable to engage park	TM-130
P081C	00	Park input circuit	TM-131
P0840	00	T/M fluid pressure sensor/switch A	TM-132
P0841	00	T/M fluid pressure sensor/switch A	TM-133
P0845	00	T/M fluid pressure sensor/switch B	TM-134
P0846	00	T/M fluid pressure sensor/switch B	TM-135
P0921	00	Gear shift forward actuator	TM-138
P0925	00	Gear shift reverse actuator	TM-139

DTC*		Items (CONSULT screen terms)	Reference
P0B09	00	Electric/auxiliary T/M fluid pump A	TM-140
P0B0D	00	Elctrc/aux T/M fluid pmp mtr cntrl mdl	TM-141
P0C2A	00	Electric/auxiliary T/M fluid pump A	TM-142
P267F	00	Control module internal temp sensor A	TM-143
P2711	00	Unexpected mechanical gear	TM-144
P2713	00	Pressure control solenoid D	TM-145
P2745	00	Intermediate shaft speed sensor B	TM-146
P2746	00	Intermediate shaft speed sensor B	TM-147
P2787	98	CLUTCH TEMPERATURE	TM-150
P2807	00	Pressure control solenoid G	TM-151
P2816	00	Pressure control solenoid H	TM-152
P281F	00	Pressure control solenoid J	TM-153
P2828	00	Pressure control solenoid K	TM-154
P2831	00	Shift fork A	TM-155
P2832	00	Shift fork A	TM-156
P2836	00	Shift fork B	TM-157
P2837	00	Shift fork B	TM-158
P283B	00	Shift fork C	TM-159
P283C	00	Shift fork C	TM-160
P2840	00	Shift fork D	TM-161
P2841	00	Shift fork D	TM-162
P284D	00	Shift fork A	TM-163
P2857	00	Clutch A	TM-164
P2859	00	Clutch A	TM-165
P287C	00	Adaptation was not completed	TM-166
U0001	00	Drivetrain CAN communication	TM-167
U0100	00	Communication error	TM-169
U0102	87	COMMUNICATION ERROR (LOST)	TM-170
U0103	00	COMMUNICATION ERROR (LOST)	TM-171
U0104	87	Lost comm (cruise control module)	TM-172
U010F	87	COMMUNICATION ERROR (LOST)	TM-173
U0111	87	COMMUNICATION ERROR (LOST)	TM-174
U0115	00	Communication error (lost)	TM-175
U0121	00	COMMUNICATION ERROR (LOST)	TM-176
U0128	87	COMMUNICATION ERROR (LOST)	TM-177
U0129	87	Lost comm (brake system cont module)	TM-178
U0141	87	Lost comm (body control module A)	TM-179
U0146	87	COMMUNICATION ERROR (LOST)	TM-180
U0155	87	COMMUNICATION ERROR (LOST)	TM-181
U025D	00	Lost comm (Fr cntrls interface modl B)	TM-183
U0291	00	COMMUNICATION ERROR (LOST)	TM-184
U0404	00	COMMUNICATION ERROR (INVALID)	TM-185
U0416	00	COMMUNICATION ERROR (INVALID)	TM-186
U0428	00	Invalid data rcvd frm strg angl sen mdl	TM-189

DTC*		Items (CONSULT screen terms)	Reference
U0429	00	COMMUNICATION ERROR (INVALID)	TM-190
U1082	00	Sig prk pos ws rcvd elctrnc ign lck ecu	TM-193
U108B	00	Sig park posi was received e-pkb ecu.	TM-194
U113B	00	Direct select lever has malf	TM-195
U1401	00	Sig eng rpm cmbstn eng ecu not rcvd	TM-196
U1402	00	Sig eng tmp cmbstn eng ecu not rcvd	TM-197
U1404	00	Sig eng trq cmbstn eng ecu not rcvd	TM-198
U1405	00	Sig eng trq cmbstn eng ecu not rcvd	TM-199
U1406	00	Sig eng trq cmbstn eng ecu not rcvd	TM-200
U1407	00	Engine torque signal	TM-201
U1408	00	BRAKE SW A/B CORRELATION	TM-202
U1409	00	An implausible FL whl spd sig ws rcvd	TM-203
U140A	00	An implausible FR whl spd sig ws rcvd	TM-204
U140B	00	An implausible RL whl spd sig ws rcvd	TM-205
U140C	00	An implausible RR whl spd sig ws rcvd	TM-206
U140D	64	WHEEL SPEED SIGNAL	TM-207
U1420	00	Implsbl sig ws rcvd frm elc slctr lvr mdl	TM-208
U1425	00	Acl pd sn sig cmbsn eng cu ws nt rcvd	TM-209
U1433	00	SIG 'STATUS OF CIRCUIT 15'	TM-210
U144D	00	Trq rqst cmbstn eng ecu ws nt rcvd	TM-211

*: These numbers are specified by SAE J2012/ISO 15031-6.

ELECTRIC SHIFT CONTROL UNIT

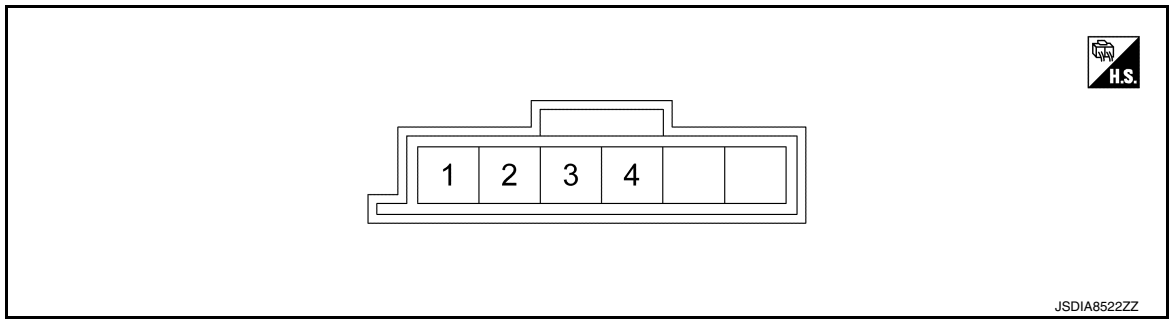
Reference Value

INFOID:0000000013777261

CONSULT DATA MONITOR STANDARD VALUE

Monitor item	Condition	Value / Status (Approx.)
Supply voltage of cntrl module	Ignition switch: ON	Battery voltage
Button P in position 1	—	—
Button P in position 2	—	—
ACTUAL GEAR	—	—
MAIN ODOMETER READING	Ignition switch: ON	Almost same as the odometer display.
CAN signal light sensor	—	—
Brghtnss val of sw and cntrls ill	—	—
BATTERY VOLTAGE	Ignition switch: ON	Battery voltage
Selector lever position	—	—
Function ill of slctr lever posi D	—	—
Function ill of slctr lever posi N	—	—
Function ill of slctr lever posi R	—	—
Function ill of slctr lever posi P	—	—
Swtch and controls illumination	—	—
Nmbr of programming attempts	—	—
Max no of rprgrng atmpt-cntr #0	—	—

TERMINAL LAYOUT



INPUT/OUTPUT SIGNAL STANDARD

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal	Input/ Output		
1 (P)	Ground	Battery power supply	Input	Always	Battery voltage
2 (BR)	Ground	Ground	—	Always	0 V
3 (W)	—	CAN-H	Input/ Output	—	—
4 (L)	—	CAN-L	Input/ Output	—	—

Fail-Safe

INFOID:0000000013777262

DTC		Vehicle behavior
B1692	11	—
	12	—
	13	—
B1795	11	—
	12	—
	13	—
B210A	00	No impact to vehicle behavior
B210B	00	No impact to vehicle behavior
B210C	16	—
	17	—
P0607	00	No impact to vehicle behavior
P0850	11	No impact to vehicle behavior
	15	No impact to vehicle behavior
	2A	No impact to vehicle behavior
	64	No impact to vehicle behavior
U0001	88	No impact to vehicle behavior
U0141	00	No impact to vehicle behavior
U0155	00	No impact to vehicle behavior
U0168	00	No impact to vehicle behavior
U0423	00	No impact to vehicle behavior
U0427	00	No impact to vehicle behavior
U0504	00	No impact to vehicle behavior
U0505	00	No impact to vehicle behavior
U1198	87	—
U1400	00	—
	01	—

DTC Index

INFOID:0000000013777263

DTC*		Items (CONSULT screen terms)	Reference
B1692	11	Circuit 58d	TM-81
	12		
	13		
B1795	11	Output for illumi of gear indicator	TM-82
	12		
	13		
B210A	00	Power Supply circuit	TM-83
B210B	00	Power Supply circuit	TM-84
B210C	16	The power supply is outside the valid range	TM-85
	17		
P0607	00	CONTROL MODULE	TM-92

DTC*		Items (CONSULT screen terms)	Reference
P0850	11	Park/neutral switch	TM-136
	15		
	2A		
	64		
U0001	88	Drivetrain CAN comm	TM-167
U0141	00	Communication error	TM-179
U0155	00	COMMUNICATION ERROR (LOST)	TM-181
U0168	00	COMMUNICATION ERROR (LOST)	TM-182
U0423	00	COMMUNICATION ERROR (INVALID)	TM-187
U0427	00	COMMUNICATION ERROR (INVALID)	TM-188
U0504	00	Communication error	TM-191
U0505	00	Communication error	TM-192

*: These numbers are specified by SAE J2012/ISO 15031-6.

STEERING COLUMN CONTROL MODULE

List of ECU Reference

INFOID:0000000013777264

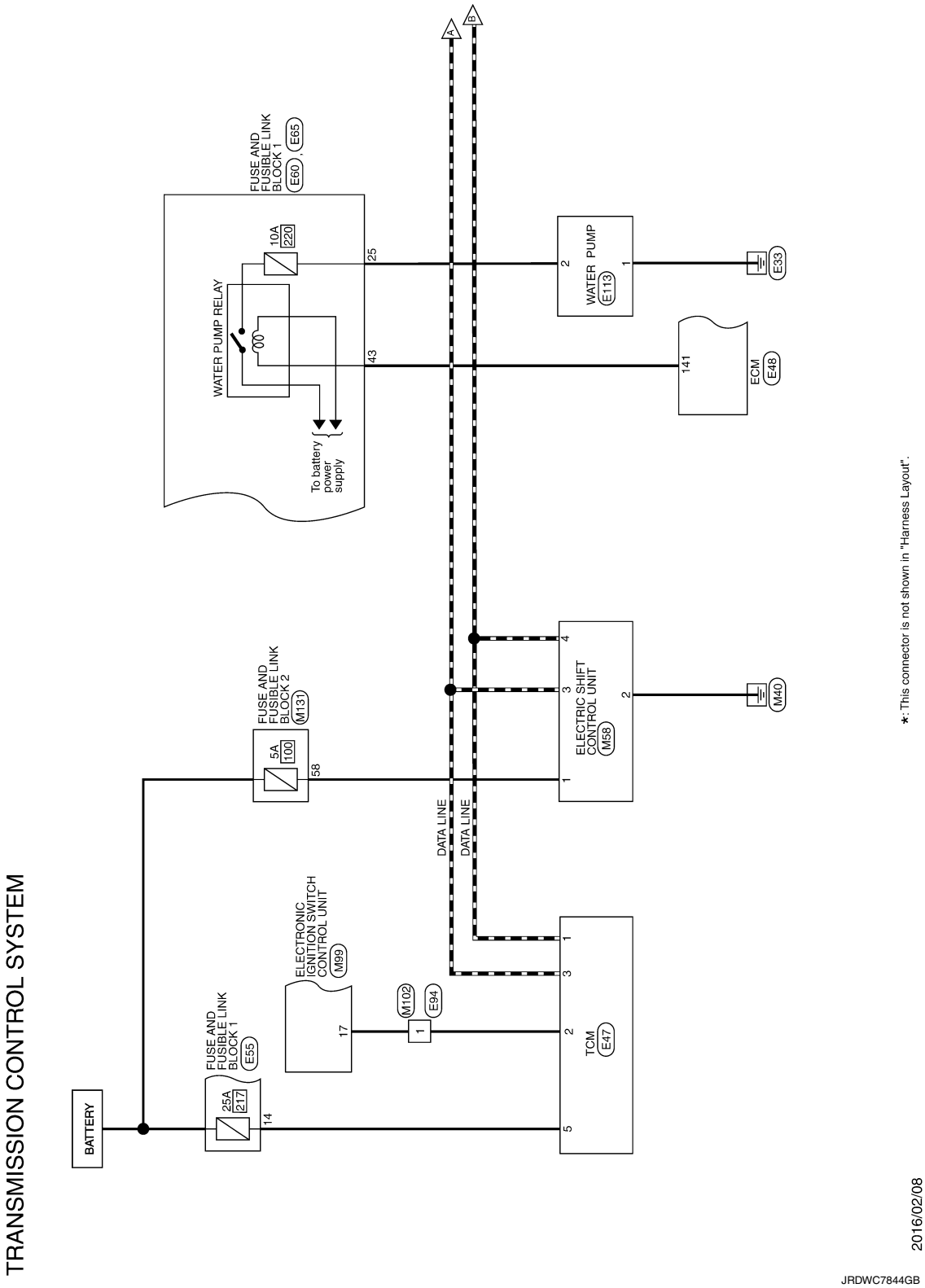
ECU	Reference
Steering column control module	BCS-59, "Reference Value"
	BCS-61, "DTC Index"

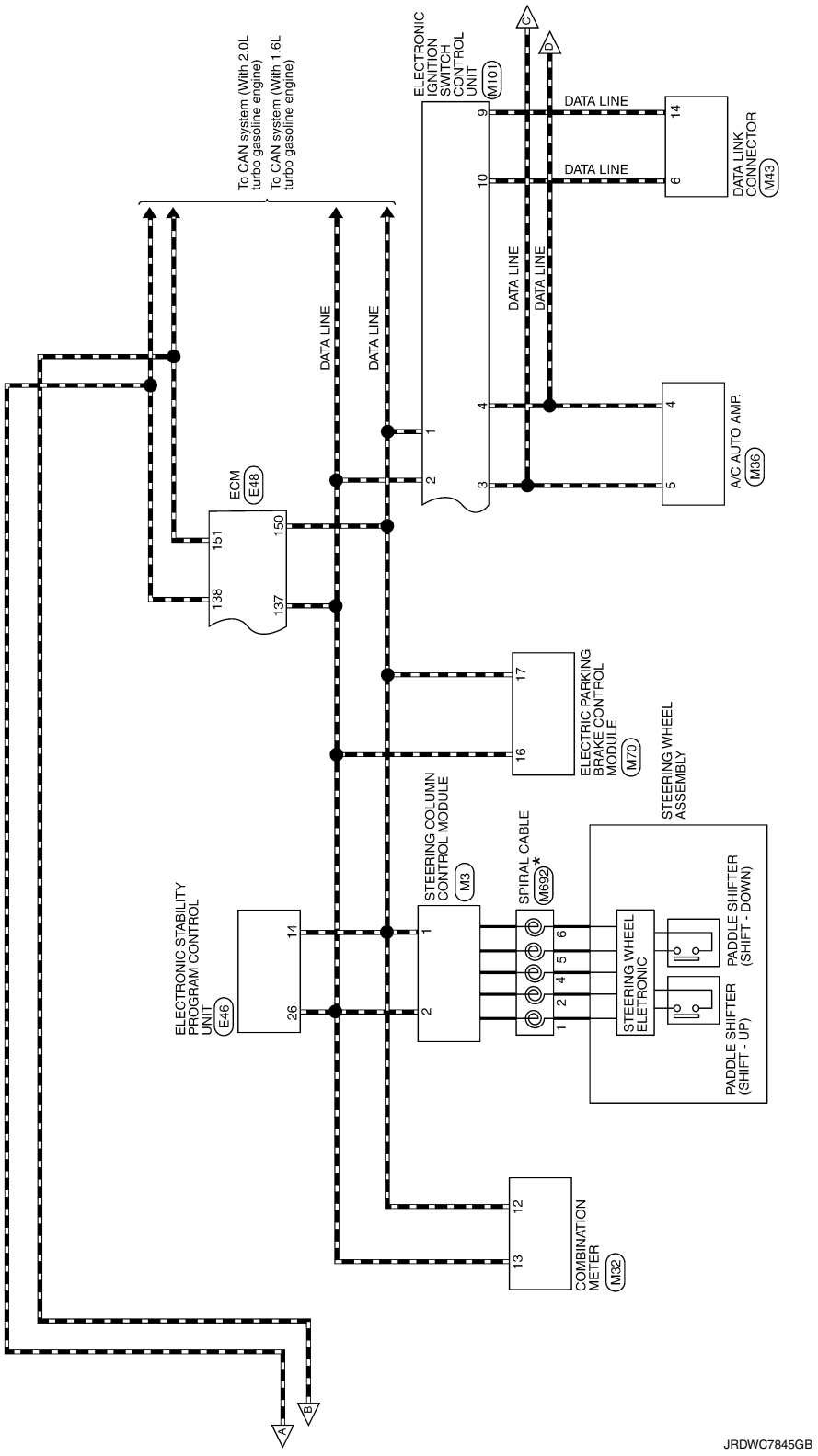
WIRING DIAGRAM

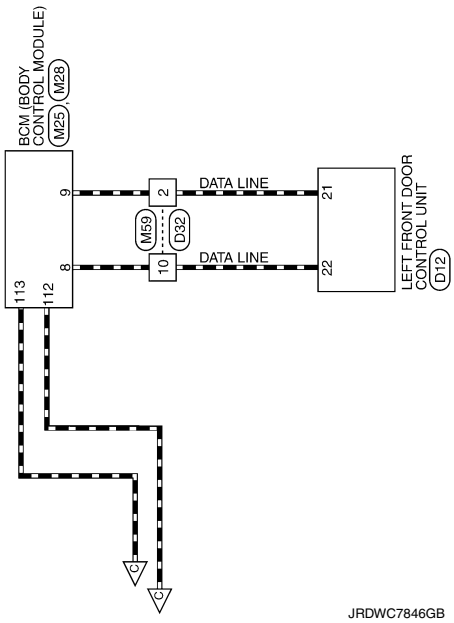
TRANSMISSION CONTROL SYSTEM

Wiring Diagram

INFOID:0000000013777265




To CAN system (With 2.0L turbo gasoline engine)
To CAN system (With 1.6L turbo gasoline engine)
ELECTRONIC IGNITION SWITCH CONTROL UNIT M101
DATA LINE
DATA LINK CONNECTOR M43
A/C AUTO AMP. M36
ECM E48
ELECTRIC PARKING BRAKE CONTROL MODULE M70
STEERING WHEEL ASSEMBLY
STEERING COLUMN CONTROL MODULE M3
SPIRAL CABLE* M692
STEERING WHEEL ELETRONIC
PADDLE SHIFTER (SHIFT - DOWN)
PADDLE SHIFTER (SHIFT - UP)
ELECTRONIC STABILITY PROGRAM CONTROL UNIT E46
COMBINATION METER M32
JRDWC7845GB


BCM (BODY CONTROL MODULE)
M25
M28
9
8
113
112
2
10
M59
D32
DATA LINE
DATA LINE
21
22
LEFT FRONT DOOR CONTROL UNIT
D12
JRDWC7846GB

TRANSMISSION CONTROL SYSTEM

Connector No.	D12
Connector Name	LEFT FRONT DOOR CONTROL UNIT
Connector Type	MB_A0025406281

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
21	BR	BODY CAN 2-L
22	R	BODY CAN 2-H
23	L	ROTARY CATCH SIGNAL
24	BR	GROUND
25	R	BATTERY POWER SUPPLY

Connector No.	D32
Connector Name	WIRE TO WIRE
Connector Type	AMP_953892-1

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	BR	-
3	P	-
4	GR	- [Without BOSE audio]
4	V	- [With BOSE audio]
5	P	-
6	L	-
7	R	-
8	W	-
9	B	-
10	R	-
11	G	-
12	BR	- [Without BOSE audio]
12	P	- [With BOSE audio]

13	B	-
15	B	-
16	SHIELD	-

Connector No.	E46
Connector Name	ELECTRONIC STABILITY PROGRAM CONTROL UNIT
Connector Type	MB_A2465400581

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	MOTOR POWER SUPPLY
2	W	BRAKE PEDAL
4	P	RIGHT FRONT AXLE RPM SENSOR SIGNAL
5	GR	BRAKE VACUUM SENSOR POWER SUPPLY
6	B	BRAKE LIGHT SWITCH-L
7	R	BATTERY POWER SUPPLY
8	Y	LEFT FRONT AXLE RPM SENSOR SIGNAL
10	O	STANDSTILL CONTROL (SSC) STATUS
12	P	BRAKE VACUUM SENSOR SIGNAL
13	BR	GROUND (MOTOR)
14	G	CAN-L
16	B	RIGHT FRONT AXLE RPM SENSOR POWER SUPPLY
17	Y	RIGHT REAR AXLE RPM SENSOR POWER SUPPLY
18	BR	LEFT REAR AXLE RPM SENSOR SIGNAL
19	W	LEFT FRONT AXLE RPM SENSOR POWER SUPPLY
23	B	BRAKE VACUUM SENSOR GROUND
25	P	VALVE RELAY POWER SUPPLY
26	W	CAN-H
28	R	BATTERY POWER SUPPLY
29	P	RIGHT REAR AXLE RPM SENSOR SIGNAL
30	V	BRAKE LIGHT SWITCH-H
31	GR	LEFT REAR AXLE RPM SENSOR POWER SUPPLY
32	L	BRAKE LIGHT SWITCH GROUND
35	R	BRAKE LIGHT SWITCH POWER SUPPLY
38	B	GROUND (VALVE)

Connector No.	E47
Connector Name	TCM
Connector Type	MB_A2465450026

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-L
2	V	NOT P
3	GR	CAN-H
5	W	BATTERY POWER SUPPLY

Connector No.	E48
Connector Name	ECM
Connector Type	MB_A0075406981

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	POWER SUPPLY (ECM)
98	BR	ECM GROUND
99	V	POWER SUPPLY (ECM)
100	BR	ECM GROUND
101	R	POWER SUPPLY (ECM)
102	B	ECM GROUND
103	L	COOLING FAN CONTROL SIGNAL
104	R	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
105	G	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2)
106	BR	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR1)
111	B	IGNITION SIGNAL
112	Y	POWER SUPPLY (BATTERY)
116	W	STARTER RELAY-L
119	GR	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2)
120	O	SENSOR GROUND

122	R	HOT START SIGNAL
123	GR	MOTOR RELAY CONTROL SIGNAL
127	O	FUEL PUMP ON SIGNAL
132	G	ACCELERATOR PEDAL POSITION SENSOR 1
136	Y	POWERTRAIN SENSOR CAN-H
137	W	CAN-H
138	GR	POWERTRAIN CAN-H
141	B	WATER PUMP RELAY CONTROL SIGNAL
145	W	ACCELERATOR PEDAL POSITION SENSOR 2
146	G	FUEL TANK PRESSURE SENSOR
147	L	CRASH SIGNAL
148	W	STARTER RELAY-H
149	B	POWERTRAIN SENSOR CAN-L
150	G	CAN-L
151	L	POWERTRAIN CAN-L
152	V	EVAP CANISTER VENT CONTROL VALVE
153	BR	EVAP PURGE CONTROL VALVE

Connector No.	E55
Connector Name	FUSE AND FUSIBLE LINK BLOCK 1
Connector Type	MB_A0055459901

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
9	G	-
10	L	-
11	V	-
13	Y	-
14	W	-

JRDWC7847GB

TRANSMISSION CONTROL SYSTEM

Connector No.	E60
Connector Name	FUSE AND FUSIBLE LINK BLOCK 1
Connector Type	MB_A0065451301

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
25	R	-

Connector No.	E65
Connector Name	FUSE AND FUSIBLE LINK BLOCK 1
Connector Type	MB_A0315459926

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
43	B	-
44	BR	-
45	GR	-
49	W	-
51	R	-

Connector No.	E94
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205459928

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	GR	-
3	L	-
4	W	-
6	BR	-
7	L	-
9	P	-
10	Y	-
12	GR	-
13	O	-
14	P	-

Connector No.	E113
Connector Name	WATER PUMP
Connector Type	MB_A0225452426

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	R	-

Connector No.	M3
Connector Name	STEERING COLUMN CONTROL MODULE
Connector Type	MB_A2045401281

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	CAN-L (CHASIS)
2	W	CAN-H (CHASIS)
3	BR	GND
4	R	KL30G
6	R	KL30
7	BR	GND
8	L	AB1+
9	Y	AB1-
10	V	AB2+
11	G	AB2-

Connector No.	M25
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	MB_A0075405081

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	ROTARY LIGHT SW GND
2	O	ROTARY LIGHT SW (PL/PR/TAL)
3	R	ROTARY LIGHT SW (AUTO/LOW)
4	G	ROTARY LIGHT SW (FR FOG)
5	Y	-
7	GR	SWITCH INDICATOR
8	R	CAN-H (BODY 2)
9	BR	CAN-L (BODY 2)
12	O	LIN (IBS)
14	G	FOOT LAMP

Connector No.	M28
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	MB_A1665400481

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
67	V	BACK DOOR UNLOCK
69	GR	STOP LAMP (BODY RH)
70	B	REAR TURN SIGNAL LH
71	GR	BACK-UP LAMP RH
72	Y	LICENSE PLATE LAMP RH
73	L	RR POWER WINDOW SW RH UP
74	B	RR POWER WINDOW SW RH DOWN
75	L	RR POWER WINDOW SW RH GND
76	GR	HALL SENSOR RH POWER SUPPLY
77	R	SUB BAT-
78	B	TERMINAL RELAY 15R1 CONT
80	B	REAR WIPER RELAY CONT
82	GR	TAIL LAMP (BODY LH)
83	P	TERMINAL RELAY 15R2 CONT
85	B	TAIL LAMP (BK LH)
87	R	BAT (VIA LATCHING TERMINAL RELAY 30G)
89	O	HALL SENSOR RH GND
90	V	HALL SENSOR RH SIGNAL
91	P	FUEL LEVEL SENSOR GND
92	L	FUEL LEVEL SENSOR
93	GR	FUEL LEVEL SENSOR
94	Y	FUEL FILLER LID STATUS
97	G	LATCHING TERMINAL RELAY 30G CONT 1
98	B	LATCHING TERMINAL RELAY 30G GND 1
99	W	LATCHING TERMINAL RELAY 30G GND 2
100	V	LATCHING TERMINAL RELAY 30G CONT 2
101	Y	REAR DOOR INSIDE HANDLE LAMP CONT
102	GR	AMBIENT LAMP CONT
103	V	SUB BAT RELAY CONT
105	G	RR DOOR LH UNLOCK
106	W	FUEL FILLER LID UNLOCK
107	L	RR DOOR LH LOCK
108	R	SUB BAT+
109	O	LIN (ROOF)
112	BR	CAN-L (BODY 1)
113	R	CAN-H (BODY 1)

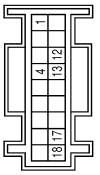
JRDWC7848GB

TRANSMISSION CONTROL SYSTEM

114	B	INJECTION RELAY CONT

Connector No.	M32
Connector Name	COMBINATION METER
Connector Type	MB_A0525452726

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	GROUND
4	R	BATTERY POWER SUPPLY
12	GR	CAN-L
13	W	CAN-H
17	BR	CAN-L
18	R	CAN-H

Connector No.	M36
Connector Name	A/C AUTO AMP.
Connector Type	MB_A0025405581

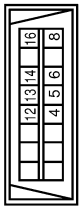
H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	REFRIGERANT PRESSURE SENSOR GROUND
2	B	REFRIGERANT PRESSURE SENSOR SIGNAL
4	BR	CAN-L
5	R	CAN-H
6	V	COMPRESSOR [ECV] CONTROL SIGNAL
8	L	REFRIGERANT PRESSURE SENSOR POWER SUPPLY
10	Y	REAR WINDOW DEFOGGER RELAY CONTROL SIGNAL
11	V	LIN [BLOWER MOTOR]
12	G	COMPRESSOR [ECV] GROUND
13	P	COMPRESSOR [MAGNET CLUTCH] CONTROL SIGNAL
14	R	COOLANT CIRCULATION PUMP CONTROL SIGNAL

15	BR	GROUND
16	O	BATTERY POWER SUPPLY

Connector No.	M43
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

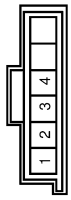
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	CHASSIS_GND
5	B	ELECTRONICS_GND
6	GR	DIAGNOSTICS-CAN_H_DAI
8	W	IGN_SW
12	L	DIAGNOSTIC-CAN-L_NIS
13	V	DIAGNOSTIC-CAN_H_NIS
14	GR	DIAGNOSTICS-CAN_L_DAI
16	R	BATTERY

Connector No.	M58
Connector Name	ELECTRIC SHIFT CONTROL UNIT
Connector Type	MB_A0385457228

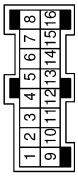
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	BATTERY POWER SUPPLY
2	BR	GROUND
3	W	CAN-H
4	L	CAN-L

Connector No.	M59
Connector Name	WIRE TO WIRE
Connector Type	AMP_953893-1

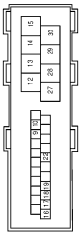
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	BR	-
3	O	-
4	V	- [With BOSE audio]
4	W	- [Without BOSE audio]
5	P	-
6	L	-
7	R	-
8	W	-
9	B	-
10	R	-
11	G	-
12	L	- [Without BOSE audio]
12	P	- [With BOSE audio]
13	B	-
15	B	-
16	SHIELD	-

Connector No.	M70
Connector Name	ELECTRIC PARKING BRAKE CONTROL MODULE
Connector Type	MB_A0085409281

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
9	G	ELECTRIC PARKING BRAKE SWITCH 1
10	P	ELECTRIC PARKING BRAKE SWITCH 2
12	R	MOTOR RH (+)
13	W	MOTOR POWER SUPPLY (RH)
14	R	MOTOR LH (+)
15	R	MOTOR POWER SUPPLY (LH)
16	W	CAN-H
17	G	CAN-L
18	O	ELECTRIC PARKING BRAKE SWITCH 3
19	G	ELECTRIC PARKING BRAKE SWITCH 4
22	B	POWER SUPPLY
27	Y	MOTOR RH (-)
28	BR	GROUND (MOTOR RH)
29	V	MOTOR LH (-)
30	BR	GROUND (MOTOR LH)

Connector No.	M99
Connector Name	ELECTRONIC IGNITION SWITCH CONTROL UNIT
Connector Type	MB_A0255459026

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
14	R	POWER SUPPLY
15	B	GND
16	L	ROTARY CATCH
17	P	NOT P
19	V	POWER SUPPLY

Connector No.	M101
Connector Name	ELECTRONIC IGNITION SWITCH CONTROL UNIT
Connector Type	MB_A0265458426

H.S.

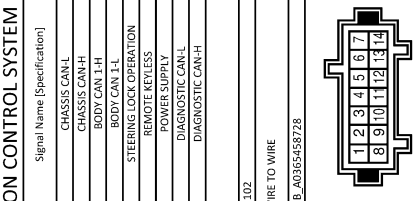
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TRANSMISSION CONTROL SYSTEM

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	CHASSIS CAN-L
2	W	CHASSIS CAN-H
3	R	BODY CAN 1-H
4	BR	BODY CAN 1-L
6	W	STEERING LOCK OPERATION
9	GR	REMOTE KEYLESS
10	W	POWER SUPPLY
11	BR	DIAGNOSTIC CAN-L
12	L	DIAGNOSTIC CAN-H

Connector No.	M102
Connector Name	WIRE TO WIRE
Connector Type	MB_A0365458728

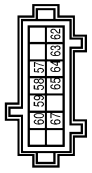
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	V	-
3	Y	-
4	BR	-
6	BR	-
7	W	-
9	W	-
10	L	-
12	GR	-
13	L	-
14	P	-

Connector No.	M131
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB_A2205459928

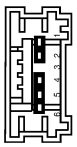
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
57	R	-
58	P	-
59	O	-
60	R	-
62	W	-
63	V	-
64	G	-
65	B	-
67	Y	-

Connector No.	M692
Connector Name	SPIRAL CABLE
Connector Type	A2040041699BLATT2

H.S.



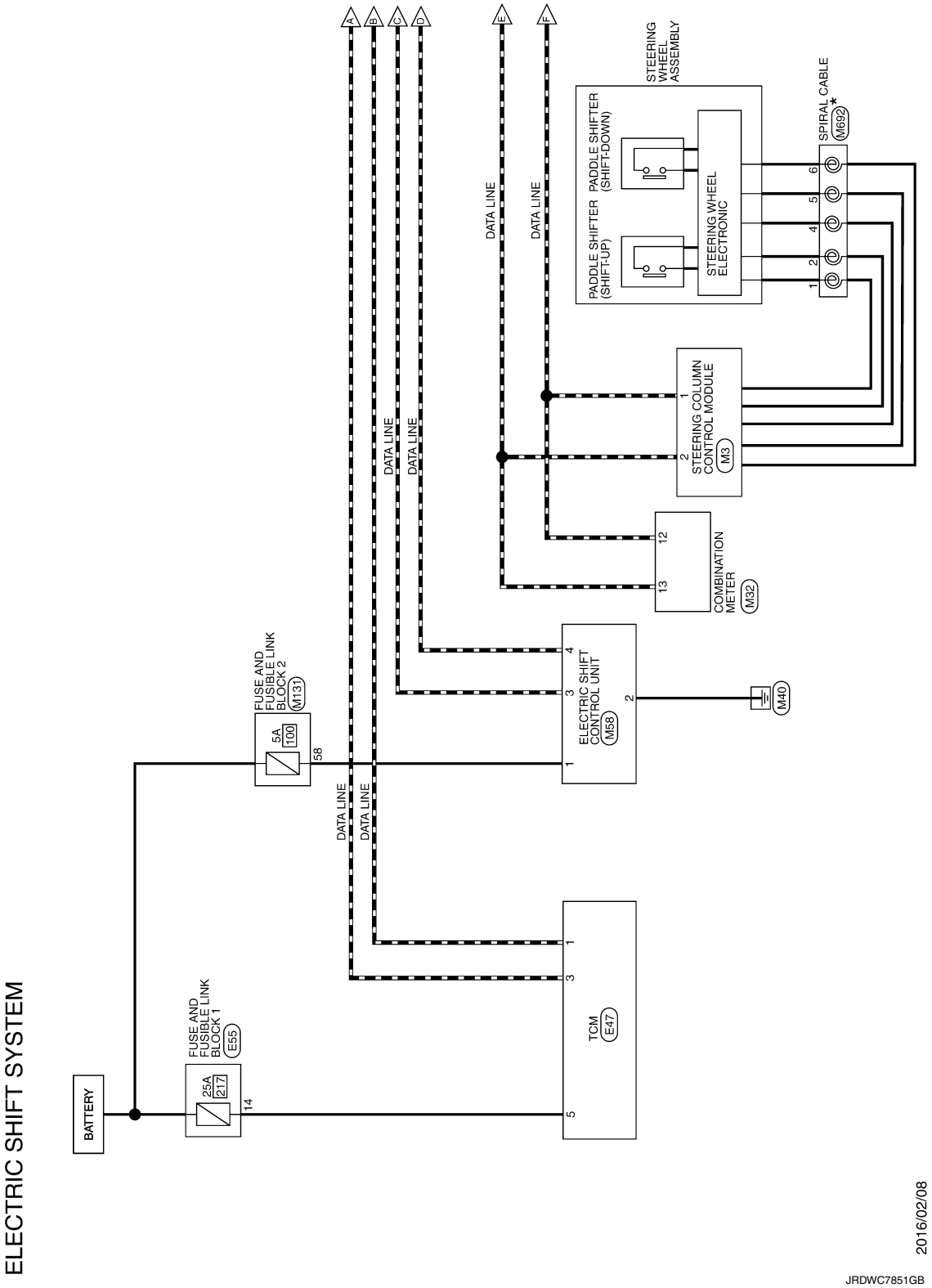
Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

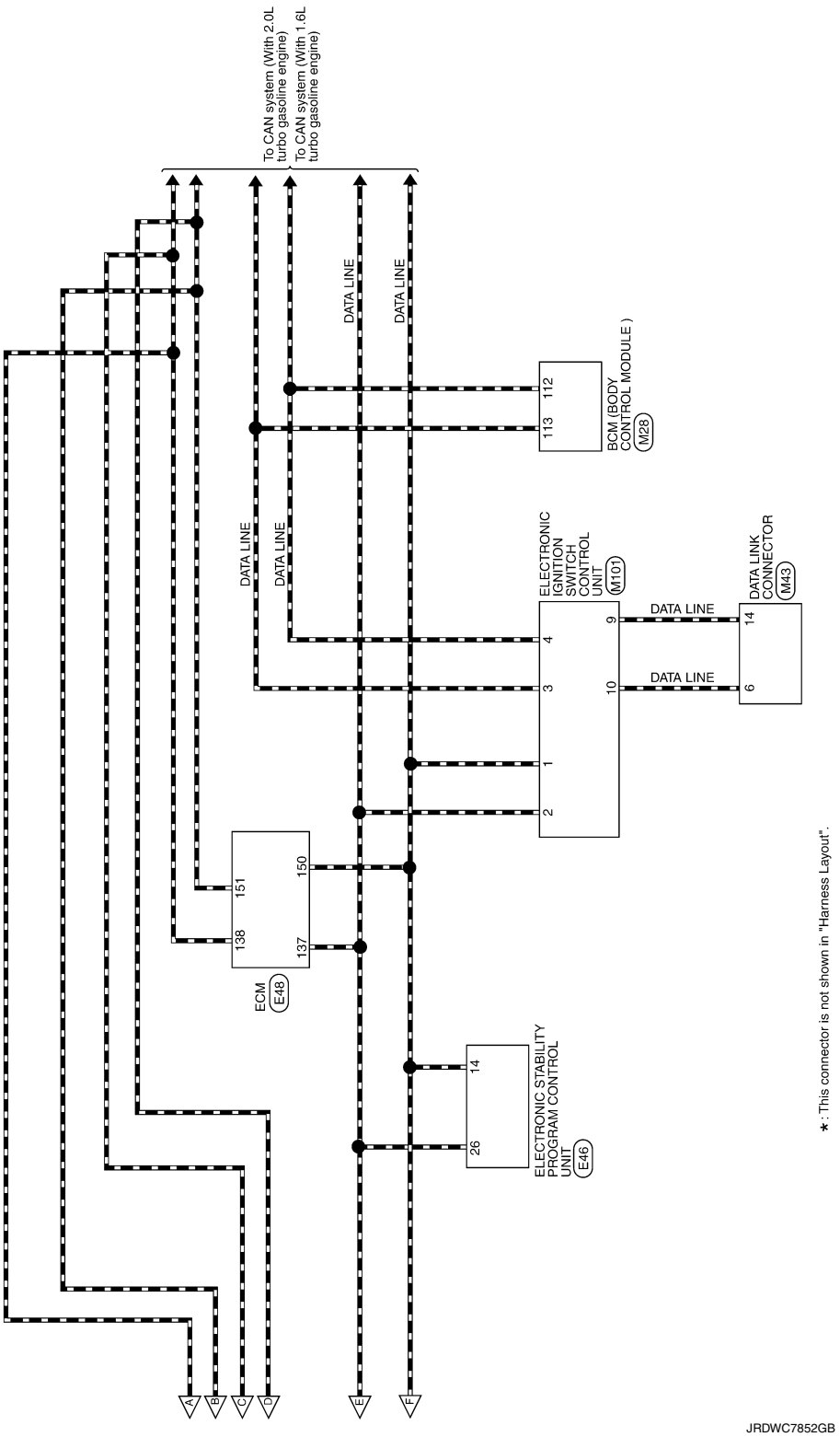
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ELECTRIC SHIFT SYSTEM

Wiring Diagram

INFOID:0000000013777266




To CAN system (With 2.0L turbo gasoline engine)
To CAN system (With 1.6L turbo gasoline engine)
DATA LINE
DATA LINE
DATA LINE
DATA LINE
DATA LINE
DATA LINE
DATA LINE
BCM (BODY CONTROL MODULE)
M28
112
113
ELECTRONIC IGNITION SWITCH CONTROL UNIT
M101
4
3
1
2
9
10
DATA LINK CONNECTOR
M43
14
6
ECM
E48
151
138
150
137
ELECTRONIC STABILITY PROGRAM CONTROL UNIT
E46
14
26
A
B
C
D
E
F
∗ : This connector is not shown in "Harness Layout".
JRDWC7852GB

ELECTRIC SHIFT SYSTEM

Connector No.	E46
Connector Name	ELECTRONIC STABILITY PROGRAM CONTROL UNIT
Connector Type	MB_A2465400581

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	MOTOR POWER SUPPLY
2	W	BRAKE PEDAL
4	P	RIGHT FRONT AXLE RPM SENSOR SIGNAL
5	GR	BRAKE VACUUM SENSOR POWER SUPPLY
6	B	BRAKE LIGHT SWITCH-L
7	R	BATTERY POWER SUPPLY
8	Y	LFET FRONT AXLE RPM SENSOR SIGNAL
10	O	STANDSTILL CONTROL (SSC) STATUS
12	P	BRAKE VACUUM SENSOR SIGNAL
13	BR	GROUND (MOTOR)
14	G	CAN-L
16	B	RIGHT FRONT AXLE RPM SENSOR POWER SUPPLY
17	Y	RIGHT REAR AXLE RPM SENSOR POWER SUPPLY
18	BR	LFET REAR AXLE RPM SENSOR SIGNAL
19	W	LFET FRONT AXLE RPM SENSOR POWER SUPPLY
23	B	BRAKE VACUUM SENSOR GROUND
25	P	VALVE RELAY POWER SUPPLY
26	W	CAN-H
28	R	BATTERY POWER SUPPLY
29	P	RIGHT REAR AXLE RPM SENSOR SIGNAL
30	V	BRAKE LIGHT SWITCH-H
31	GR	LFET REAR AXLE RPM SENSOR POWER SUPPLY
32	L	BRAKE LIGHT SWITCH GROUND
35	R	BRAKE LIGHT SWITCH POWER SUPPLY
38	B	GROUND (VALVE)

Connector No.	E47
Connector Name	TCM
Connector Type	MB_A2465450026

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-L
2	V	NOT P
3	GR	CAN-H
5	W	BATTERY POWER SUPPLY

Connector No.	E48
Connector Name	ECM
Connector Type	MB_A0075406981

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	POWER SUPPLY (ECM)
98	BR	ECM GROUND
99	V	POWER SUPPLY (ECM)
100	BR	ECM GROUND
101	R	POWER SUPPLY (ECM)
102	B	ECM GROUND
103	L	COOLING FAN CONTROL SIGNAL
104	R	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
105	G	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2)
106	BR	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR1)
111	B	IGNITION SIGNAL
112	Y	POWER SUPPLY (BATTERY)
116	W	STARTER RELAY-L
119	GR	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2)
120	O	SENSOR GROUND
122	R	HOT START SIGNAL
123	GR	MOTOR RELAY CONTROL SIGNAL
127	O	FUEL PUMP ON SIGNAL
132	G	ACCELERATOR PEDAL POSITION SENSOR 1
136	Y	POWERTRAIN SENSOR CAN-H
137	W	CAN-H
138	GR	POWERTRAIN CAN-H
141	B	WATER PUMP RELAY CONTROL SIGNAL
145	W	ACCELERATOR PEDAL POSITION SENSOR 2
146	G	FUEL TANK PRESSURE SENSOR
147	L	CRASH SIGNAL
148	W	STARTER RELAY-H
149	B	POWERTRAIN SENSOR CAN-L
150	G	CAN-L
151	L	POWERTRAIN CAN-L
152	V	EVAP CANISTER VENT CONTROL VALVE
153	BR	EVAP PURGE CONTROL VALVE

Connector No.	E55
Connector Name	FUSE AND FUSIBLE LINK BLOCK 1
Connector Type	MB_A0055459901

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
9	G	-
10	L	-
11	V	-
13	Y	-
14	W	-

Connector No.	M3
Connector Name	STEERING COLUMN CONTROL MODULE
Connector Type	MB_A2045401281

H.S.

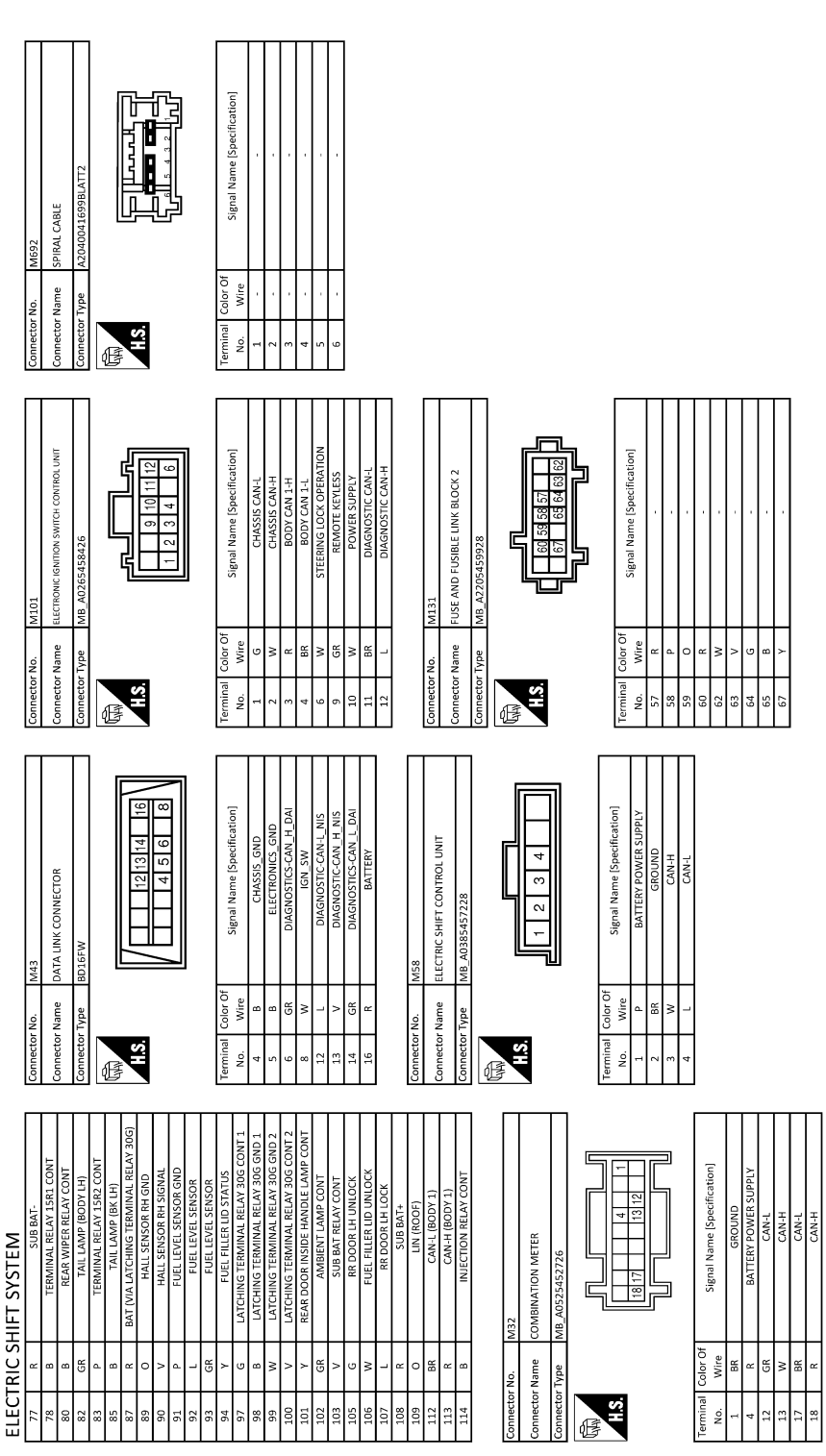
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	CAN-L (CHASIS)
2	W	CAN-H (CHASIS)
3	BR	GND
4	R	KL30G
6	R	KL30
7	BR	GND
8	L	AB1+
9	Y	AB1-
10	V	AB2+
11	G	AB2-

Connector No.	M28
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	MB_A1665400481

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
67	V	BACK DOOR UNLOCK
69	GR	STOP LAMP (BODY RH)
70	B	REAR TURN SIGNAL LH
71	GR	BACK-UP LAMP RH
72	Y	LICENSE PLATE LAMP RH
73	L	RR POWER WINDOW SW RH UP
74	B	RR POWER WINDOW SW RH DOWN
75	L	RR POWER WINDOW SW RH GND
76	GR	HALL SENSOR RH POWER SUPPLY

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000013777267

1.OBTAIN INFORMATION ABOUT SYMPTOM

Refer to TM-64, "Diagnostic Work Sheet" and interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings in the vehicle.

>> GO TO 2.

2.CHECK DTC

1. Before checking the malfunction, check whether any DTC exists.
2. If DTC exists, perform the following operations.

- Records the DTCs.

3. Check the relevant information including TB, etc.

>> GO TO 3.

3.REPRODUCE MALFUCTION SYSTEM

Check the malfunction described by the customer on the vehicle.
Diagnostic work sheet can be used effectively when reproduce malfunction conditions. Refer to TM-64, "Diagnostic Work Sheet".
Verify the relationship between the symptom and the conditions in which the malfunction described by the customer occurs.

>> GO TO 4.

4.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the detected malfunctioning parts.
Reconnect parts or connector after repairing or replacing, and then erase DTC if necessary.

>> GO TO 5.

5.FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 3.

Is DTC or malfunction symptom reproduced?

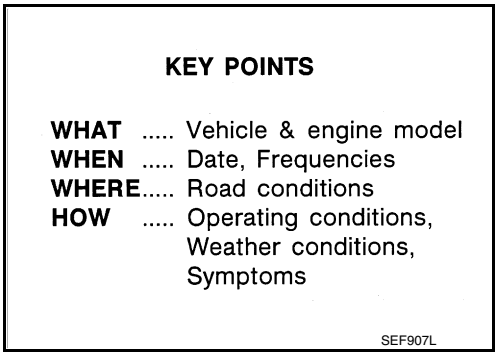
YES >> GO TO 4.
NO >> Before delivering the vehicle to the customer, make sure that DTC is erased.

Diagnostic Work Sheet

INFOID:0000000013777268

DESCRIPTION

There are many operating conditions that may cause a malfunction of the transaxle parts. By understanding those conditions properly, a quick and exact diagnosis can be achieved.
In general, customers have their own criteria for a problem. Therefore, it is important to understand the symptom and status well enough by asking the customer about the concerns carefully. In order to systemize all the information for the diagnosis, prepare the question sheet referring to the question points.



WORKSHEET SAMPLE

Question Sheet						
Customer name MR/MS		Engine #		Manuf. Date		
		Incident Date		VIN		
		Model & Year		In Service Date		
		Trans.		Mileage		km/Mile
Symptoms		☐ Vehicle does not move (☐ Any position ☐ Particular position)				
		☐ No upshift (☐ 1GR → 2GR ☐ 2GR → 3GR ☐ 3GR → 4GR ☐ 4GR → 5GR ☐ 5GR → 6GR ☐ 6GR → 7GR)				
		☐ No downshift (☐ 7GR → 6GR ☐ 6GR → 5GR ☐ 5GR → 4GR ☐ 4GR → 3GR ☐ 3GR → 2GR ☐ 2GR → 1GR)				
		☐ Lock-up malfunction				
		☐ Shift point too high or too low				
		☐ Shift shock or slip				
		☐ Noise or vibration				
		☐ No kick down				
		☐ No pattern select				
		☐ Others				
Frequency		☐ All the time	☐ Under certain conditions	☐ Sometimes (times a day)		
Weather conditions		☐ Not affected				
	Weather	☐ Fine	☐ Clouding	☐ Raining	☐ Snowing	☐ Other ( )
	Temp.	☐ Hot	☐ Warm	☐ Cool	☐ Cold	☐ Temp. (Approx. °C/°F)
	Humidity	☐ High	☐ Middle	☐ Low		
Transaxle conditions		☐ Not affected				
		☐ Cold	☐ During warm-up	☐ After warm-up		
		☐ Engine speed (rpm)				
Road conditions		☐ Not affected				
		☐ In town	☐ In suburbs	☐ Freeway	☐ Off road (Up/Down)	
Driving conditions		☐ Not affected				
		☐ At starting	☐ While idling	☐ While engine racing	☐ At racing	☐ While cruising
		☐ While accelerating	☐ While decelerating	☐ While turning (Right/Left)		
		☐ Vehicle speed [km/h (MPH)]				
Other conditions						

ADDITIONAL SERVICE WHEN REPLACING TCM

Description

INFOID:0000000013777269

When replacing TCM, the procedures of BEFORE REPLACEMENT and AFTER REPLACEMENT must be performed. For work procedure, refer to the following:
- Before TCM replacement: TM-66, "Work Procedure (Before Replace TCM)"
- After TCM replacement: TM-66, "Work Procedure (After Replace TCM)"

BEFORE REPLACEMENT

Before replacing TCM, the following items must be performed:
- SAVING DATA FOR REPLC CPU
- Save ‘Operation log’

AFTER REPLACEMENT

After replacing TCM, the following items must be performed:
- TCM programming
- Configuration
- Key ID registration
- VIN registration
- Write call ID
- Oil level check
- Normalization and adaptation
- WRITING DATA FOR REPLC CPU
- Clutch adaptation value writing procedure

Work Procedure (Before Replace TCM)

INFOID:0000000013777270

1.SAVE TCM DATA

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “SAVING DATA FOR REPLC CPU”.

NOTE:
- Necessary data in TCM is copied and saved to CONSULT.
- Go to Step 2 regardless of with or without success in saving data.

>> GO TO 2.

2.SAVE ‘OPERATION LOG’

With CONSULT
Save Operation Log, according to the procedure of “Programming” in CONSULT Operation Manual.

NOTE:
- Log in to the network, according to the CONSULT screen.
- TCM part number is saved in Operating Log saved in CONSULT.
- After replacing TCM, perform necessary work.

>> • Replace TCM. Refer to TM-216, "Removal and Installation".
• After replacing TCM, perform necessary work. Refer to TM-66, "Work Procedure (After Replace TCM)".

Work Procedure (After Replace TCM)

INFOID:0000000013777271

1.CHECK ‘OPERATION LOG’

With CONSULT
Check Operation Log saved before replacing TCM, according to the procedure of “Programming” in CONSULT Operation Manual.

NOTE:
- Log in to the network, according to the CONSULT screen.

- For the vehicle that the programming is to be performed, check if Operation Log of Vehicle Identification Number (VIN) is in Saved Data List.

Is there an applicable Operation Log in the Saved Data List?

YES >> GO TO 2.
NO >> GO TO 3.

2. PERFORM TCM PROGRAMMING

With CONSULT
Perform TCM programming, according to “Programming” of CONSULT Operation Manual. Refer to CONSULT Operation Manual.

CAUTION:
During programming, maintain the following conditions:
- **Ignition switch: ON**
- **Electric load: OFF**
- **Brake pedal: Not depressed**
- **Battery voltage: 12 – 13.5 V (Check the value displayed on the CONSULT screen.)**

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 5.

3. READ IN TCM PART NUMBER BY ‘FAST LINKED’

Obtain TCM part number by NISSAN PARTS CATALOGUE GLOBAL Web-FAST, according to the procedure of ‘FAST linked’ in CONSULT Operation Manual. Refer to CONSULT Operation Manual.

NOTE:
‘FAST linked’ allows an appropriate programming by obtaining ECU part number from NISSAN PARTS CATALOGUE GLOBAL Web-FAST even when the part number cannnot be abtained from the lod ECU used before replacing with a new one.

>> GO TO 4.

4. PERFORM PROGRAMMING (FAST LINKED)

With CONSULT
Perform TCM programming according to the procedure of FAST linked in CONSULT Operation Manual. Refer to CONSULT Operation Manual.

CAUTION:
During programming, maintain the following conditions:
- **Ignition switch: ON**
- **Electric load: OFF**
- **Brake pedal: Not depressed**
- **Battery voltage: 12 – 13.5 V (Check the value displayed on the CONSULT screen.)**

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 5.

5. PERFORM CONFIGURATION (WRITING VEHICLE SPECIFICATION)

With CONSULT
Perform configuration. Refer to TM-78, "Description".

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 6.

6. PERFORM INITIALIZATION OF INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) AND REGISTRATION OF ALL IVIS (NATS) IGNITION KEY IDS

Perform initialization of INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) and registration of all IVIS (NATS) ignition key IDs. Refer to CONSULT Operation Manual.

>> GO TO 7.

7.PERFORM VIN REGISTRATION

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “VIN Registration”.

>> GO TO 8.

8.PERFORM WRITE CALL ID

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “WRITE CALL ID”.

>> GO TO 9.

9.PERFORM OIL LEVEL CHECK

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Oil level check”.

>> GO TO 10.

10.PERFORM NORMALIZATION AND ADAPTATION

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Normalization and adaptation”.

>> GO TO 11.

11.CHECK TCM DATA STATUS

Check if the data is successfully copied from the TCM at before replacement and saved in CONSULT.

Is the data saved successfully?

YES >> GO TO 12.
NO >> GO TO 13.

12.WRITE TCM DATA

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “WRITING DATA FOR REPLC CPU”.

NOTE:
The data saved by “SAVING DATA FOR REPLC CPU” is written to TCM.

>> WORK END

13.PERFORM CLUTCH ADAPTATION VALUE WRITING PROCEDURE

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Clutch adaptation value writing procedure”.

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE

Description

INFOID:0000000013777272

When replacing control valve, the procedures of AFTER REPLACEMENT must be performed. For work procedure, refer to the following:

- After control valve replacement: TM-69, "Work Procedure (After Replace Control Valve)"

AFTER REPLACEMENT

After replacing control valve, the following items must be performed:

- VIN registration
- Write call ID
- Oil level check
- Normalization and adaptation

Work Procedure (After Replace Control Valve)

INFOID:0000000013777273

1. PERFORM VIN REGISTRATION

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “VIN Registration”.

>> GO TO 2.

2. PERFORM WRITE CALL ID

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “WRITE CALL ID”.

>> GO TO 3.

3. PERFORM OIL LEVEL CHECK

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Oil level check”.

>> GO TO 4.

4. PERFORM NORMALIZATION AND ADAPTATION

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Normalization and adaptation”.

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE & TCM

Description

INFOID:0000000013777274

When replacing control valve and TCM, the procedures of BEFORE REPLACEMENT and AFTER REPLACEMENT must be performed. For work procedure, refer to the following:

- Before control valve and TCM replacement: TM-70, "Work Procedure (Before Replace Control Valve and TCM)"
- After control valve and TCM replacement: TM-70, "Work Procedure (After Replace Control Valve and TCM)"

BEFORE REPLACEMENT

Before replacing TCM, the following items must be performed:

- SAVING DATA FOR REPLC CPU
- Save ‘Operation log’

AFTER REPLACEMENT

After replacing control valve and TCM, the following items must be performed:

- TCM programming
- Configuration
- Key ID registration
- VIN registration
- Write call ID
- Oil level check
- Normalization and adaptation
- WRITING DATA FOR REPLC CPU
- Clutch adaptation value writing procedure

Work Procedure (Before Replace Control Valve and TCM)

INFOID:0000000013777275

1.SAVE TCM DATA

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “SAVING DATA FOR REPLC CPU”.

NOTE:

- Necessary data in TCM is copied and saved to CONSULT.
- Go to Step 2 regardless of with or without success in saving data.

>> GO TO 2.

2.SAVE ‘OPERATION LOG’

With CONSULT

Save Operation Log, according to the procedure of “Programming” in CONSULT Operation Manual.

NOTE:

- Log in to the network, according to the CONSULT screen.
- TCM part number is saved in Operating Log saved in CONSULT.
- After replacing control valve and TCM, perform necessary work.

>> • Replace control valve and TCM. Refer to TM-216, "Removal and Installation".
• After replacing control valve and TCM, perform necessary work. Refer to TM-70, "Work Procedure (After Replace Control Valve and TCM)".

Work Procedure (After Replace Control Valve and TCM)

INFOID:0000000013777276

1.CHECK ‘OPERATION LOG’

With CONSULT

Check Operation Log saved before replacing control valve and TCM, according to the procedure of “Programming” in CONSULT Operation Manual.

NOTE:

- Log in to the network, according to the CONSULT screen.

- For the vehicle that the programming is to be performed, check if Operation Log of Vehicle Identification Number (VIN) is in Saved Data List.

Is there an applicable Operation Log in the Saved Data List?

YES >> GO TO 2.
NO >> GO TO 3.

2. PERFORM TCM PROGRAMMING

With CONSULT
Perform TCM programming, according to “Programming” of CONSULT Operation Manual. Refer to CONSULT Operation Manual.

CAUTION:
During programming, maintain the following conditions:
- **Ignition switch: ON**
- **Electric load: OFF**
- **Brake pedal: Not depressed**
- **Battery voltage: 12 – 13.5 V (Check the value displayed on the CONSULT screen.)**

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 5.

3. READ IN TCM PART NUMBER BY ‘FAST LINKED’

Obtain TCM part number by NISSAN PARTS CATALOGUE GLOBAL Web-FAST, according to the procedure of ‘FAST linked’ in CONSULT Operation Manual. Refer to CONSULT Operation Manual.

NOTE:
‘FAST linked’ allows an appropriate programming by obtaining ECU part number from NISSAN PARTS CATALOGUE GLOBAL Web-FAST even when the part number cannnot be abtained from the lod ECU used before replacing with a new one.

>> GO TO 4.

4. PERFORM PROGRAMMING (FAST LINKED)

With CONSULT
Perform TCM programming according to the procedure of FAST linked in CONSULT Operation Manual. Refer to CONSULT Operation Manual.

CAUTION:
During programming, maintain the following conditions:
- **Ignition switch: ON**
- **Electric load: OFF**
- **Brake pedal: Not depressed**
- **Battery voltage: 12 – 13.5 V (Check the value displayed on the CONSULT screen.)**

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 5.

5. PERFORM CONFIGURATION (WRITING VEHICLE SPECIFICATION)

With CONSULT
Perform configuration. Refer to TM-78, "Description".

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 6.

6. PERFORM INITIALIZATION OF INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) AND REGISTRATION OF ALL IVIS (NATS) IGNITION KEY IDS

Perform initialization of INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) and registration of all IVIS (NATS) ignition key IDs. Refer to CONSULT Operation Manual.

>> GO TO 7.

7. PERFORM VIN REGISTRATION

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “VIN Registration”.

>> GO TO 8.

8. PERFORM WRITE CALL ID

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “WRITE CALL ID”.

>> GO TO 9.

9. PERFORM OIL LEVEL CHECK

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Oil level check”.

>> GO TO 10.

10. PERFORM NORMALIZATION AND ADAPTATION

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Normalization and adaptation”.

>> GO TO 11.

11. PERFORM CLUTCH ADAPTATION VALUE WRITING PROCEDURE

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Clutch adaptation value writing procedure”.

>> GO TO 12.

12. CHECK TCM DATA STATUS

Check if the data is successfully copied from the TCM at before replacement and saved in CONSULT.

Is the data saved successfully?

YES >> GO TO 13.
NO >> GO TO 14.

13. WRITE TCM DATA

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.
2. Perform “WRITING DATA FOR REPLC CPU”.

NOTE:
The data saved by “SAVING DATA FOR REPLC CPU” is written to TCM.

>> WORK END

14. PERFORM CLUTCH ADAPTATION VALUE WRITING PROCEDURE

With CONSULT
1. Select “Work Support” in “TRANSMISSION”.

2. Perform “Clutch adaptation value writing procedure”.

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

Description

INFOID:0000000013777277

When replacing transaxle assembly, the procedures of BEFORE REPLACEMENT and AFTER REPLACEMENT must be performed. For work procedure, refer to the following:
- Before transaxle assembly replacement: TM-74, "Work Procedure (Before Replace Transaxle Assembly)"
- After transaxle assembly replacement: TM-74, "Work Procedure (After Replace Transaxle Assembly)"

BEFORE REPLACEMENT

Before replacing transaxle assembly, save ‘Operation log.’

AFTER REPLACEMENT

After replacing transaxle assembly, the following items must be performed:
- TCM programming
- Configuration
- Key ID registration
- VIN registration
- Write call ID
- Oil level check
- Normalization and adaptation

Work Procedure (Before Replace Transaxle Assembly)

INFOID:0000000013777278

1.SAVE ‘OPERATION LOG’

With CONSULT

Save Operation Log, according to the procedure of “Programming” in CONSULT Operation Manual.

NOTE:
- Log in to the network, according to the CONSULT screen.
- TCM part number is saved in Operating Log saved in CONSULT.
- After replacing transaxle assembly, perform necessary work.

>> • Replace transaxle assembly. Refer to TM-228, "Removal and Installation".
• After replacing transaxle assembly, perform necessary work. Refer to TM-74, "Work Procedure (After Replace Transaxle Assembly)".

Work Procedure (After Replace Transaxle Assembly)

INFOID:0000000013777279

1.CHECK ‘OPERATION LOG’

With CONSULT

Check Operation Log saved before replacing transaxle assembly, according to the procedure of “Programming” in CONSULT Operation Manual.

NOTE:
- Log in to the network, according to the CONSULT screen.
- For the vehicle that the programming is to be performed, check if Operation Log of Vehicle Identification Number (VIN) is in Saved Data List.

Is there an applicable Operation Log in the Saved Data List?

YES >> GO TO 2.
NO >> GO TO 3.

2.PERFORM TCM PROGRAMMING

With CONSULT

Perform TCM programming, according to “Programming” of CONSULT Operation Manual. Refer to CONSULT Operation Manual.

CAUTION:

During programming, maintain the following conditions:
- **Ignition switch: ON**
- **Electric load: OFF**
- **Brake pedal: Not depressed**

- **Battery voltage: 12 – 13.5 V (Check the value displayed on the CONSULT screen.)**

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 5.

3. READ IN TCM PART NUMBER BY 'FAST LINKED'

Obtain TCM part number by NISSAN PARTS CATALOGUE GLOBAL Web-FAST, according to the procedure of 'FAST linked' in CONSULT Operation Manual. Refer to CONSULT Operation Manual.

NOTE:
'FAST linked' allows an appropriate programming by obtaining ECU part number from NISSAN PARTS CATALOGUE GLOBAL Web-FAST even when the part number cannnot be abtained from the lod ECU used before replacing with a new one.

>> GO TO 4.

4. PERFORM PROGRAMMING (FAST LINKED)

With CONSULT
Perform TCM programming according to the procedure of FAST linked in CONSULT Operation Manual. Refer to CONSULT Operation Manual.

CAUTION:
During programming, maintain the following conditions:
- **Ignition switch: ON**
- **Electric load: OFF**
- **Brake pedal: Not depressed**
- **Battery voltage: 12 – 13.5 V (Check the value displayed on the CONSULT screen.)**

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 5.

5. PERFORM CONFIGURATION (WRITING VEHICLE SPECIFICATION)

With CONSULT
Perform configuration. Refer to TM-78, "Description".

NOTE:
Log in to the network, according to the CONSULT screen.

>> GO TO 6.

6. PERFORM INITIALIZATION OF INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) AND REGISTRATION OF ALL IVIS (NATS) IGNITION KEY IDS

Perform initialization of INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) and registration of all IVIS (NATS) ignition key IDs. Refer to CONSULT Operation Manual.

>> GO TO 7.

7. PERFORM VIN REGISTRATION

With CONSULT
1. Select "Work Support" in "TRANSMISSION".
2. Perform "VIN Registration".

>> GO TO 8.

8. PERFORM WRITE CALL ID

With CONSULT
1. Select "Work Support" in "TRANSMISSION".
2. Perform "WRITE CALL ID".

>> GO TO 9.

9. PERFORM OIL LEVEL CHECK

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Oil level check”.

>> GO TO 10.

10. PERFORM NORMALIZATION AND ADAPTATION

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Normalization and adaptation”.

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING DUAL CLUTCH

Description

INFOID:0000000013995252

When replacing dual clutch, the procedures of AFTER REPLACEMENT must be performed. For work procedure, refer to the following:

- After dual clutch replacement: TM-77, "Work Procedure (After Replace Dual Clutch)"

AFTER REPLACEMENT

After replacing dual clutch, the following items must be performed:

- Clutch adaptation value writing procedure

Work Procedure (After Replace Dual Clutch)

INFOID:0000000013995253

1. PERFORM CLUTCH ADAPTATION VALUE WRITING PROCEDURE

With CONSULT

1. Select “Work Support” in “TRANSMISSION”.
2. Perform “Clutch adaptation value writing procedure”.

>> WORK END

CONFIGURATION (TCM)

Description

INFOID:0000000013777280

Vehicle specification needs to be written with CONSULT because it is not written after replacing the TCM.
The configuration requires network connection. CONSULT connects to network and then it downloads the configuration data from the server. Then CONSULT writes the vehicle specification to the TCM.
Refer to TM-78, "Work Procedure".

NOTE:
For details the network connection and operation, refer to “CONSULT Operation Manual”.
The configuration no need to “save” configuration data from the TCM. The configuration data is always generated freshly at the server and then downloaded to the CONSULT.

CAUTION:
Follow the instructions listed below.
- **Complete the procedure of “Read / Write Configuration” in order.**
- **If incorrect “Read / Write Configuration”, incidents might occur.**
- **Never perform “Read / Write Configuration” except for new TCM.**

Work Procedure

INFOID:0000000013777281

1.WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “WRITE CONFIGURATION” for CONTROL UNIT according to “CONSULT Operation Manual”.

NOTE:
- Log in the network according to CONSULT guidance.
- For details the network connection and operation, refer to “CONSULT Operation Manual”.

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING ELECTRIC SHIFT CONTROL UNIT

Description

INFOID:0000000013777282

When replacing electric shift control unit, the procedures of AFTER REPLACEMENT must be performed. For work procedure, refer to the following:

- After electric shift control unit replacement: TM-79, "Work Procedure (After Replace Electric Shift Control Unit)"

AFTER REPLACEMENT

After replacing electric shift control unit, the following items must be performed:

- Key ID registration

Work Procedure (After Replace Electric Shift Control Unit)

INFOID:0000000013777283

1. PERFORM INITIALIZATION OF INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) AND REGISTRATION OF ALL IVIS (NATS) IGNITION KEY IDS

Perform initialization of INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) and registration of all IVIS (NATS) ignition key IDs. Refer to CONSULT Operation Manual.

>> WORK END

HOW TO ERASE PERMANENT DTC

Description

INFOID:0000000013826594

When a DTC is stored in TCM

the DTCs must first be erased by the CONSULT from the normal malfunction memory. After that perform the driving condition to reach the test prerequisites for the DTCs so the OBD-System can confirm that the malfunction is no longer present. Only then it will delete the malfunction from the permanent DTC memory.

Work Procedure

INFOID:0000000013826595

CAUTION:
Permanent DTC can only be erased by a legally stipulated driving cycle.

1.CHECK DTC

Check DTC.

Is any DTC detected?

YES >> Repair malfunction(s) and erase DTC. Refer to TM-45, "DTC Index".
NO >> GO TO 2.

2.CHECK PERMANENT DTC

With CONSULT
1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select “Permanent DTC Status” of “SRT & P-DTC” mode with CONSULT.

Is any permanent DTC detected?

YES >> GO TO 3.
NO >> END

3.DRIVE DRIVING PATTERN

CAUTION:
Always drive at a safe speed.

With CONSULT
1. Start engine and warm it up to normal operating temperature.
2. Use “Permanent DTC Status” of “SRT & P-DTC” mode with CONSULT.
3. Drive the vehicle according to driving cycle.
   The driving cycle must be performed under the following conditions:

- The state of driving at 40 km/h (25 MPH) reaches 300 seconds or more in total.
- Idle speed lasts 15 seconds or more.
- A lapse of 600 seconds or more after engine start.

>> GO TO 4.

4.CHECK PERMANENT DTC

With CONSULT
1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select “Permanent DTC Status” of “SRT & P-DTC” mode with CONSULT.

Is any permanent DTC detected?

YES >> GO TO 3.
NO >> END

DTC/CIRCUIT DIAGNOSIS

B1692 CIRCUIT 58D

DTC Description

INFOID:0000000013777284

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
B1692	11	Circuit 58d (Output circuit 58d has a malfunction)	CIRC SHORT TO GRND	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is a short circuit to ground.
				Diagnosis delay time	500 msec
B1692	12	Circuit 58d (Output circuit 58d has a malfunction)	CIRC SHORT TO BATTERY	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is a short circuit to positive.
				Diagnosis delay time	500 msec
B1692	13	Circuit 58d (Output circuit 58d has a malfunction)	CIRC OPEN	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is an open circuit.
				Diagnosis delay time	500 msec

POSSIBLE CAUSE

The electric shift control unit has an internal hardware malfunction.

FAIL-SAFE

—

Diagnosis Procedure

INFOID:0000000013777285

B1692-11

1. REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

B1692-12

1. REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

B1692-13

1. REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

B1795 OUTPUT FOR ILLUMI OF GEAR INDICATOR

DTC Description

INFOID:0000000013777286

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
B1795	11	Output for illumi of gear indicator (The output for illumination of the gear indicator has a malfundtion)	CIRC SHORT TO GRND	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is a short circuit to ground.
				Diagnosis delay time	500 msec
B1795	12	Output for illumi of gear indicator (The output for illumination of the gear indicator has a malfundtion)	CIRC SHORT TO BATTERY	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is a short circuit to positive.
				Diagnosis delay time	500 msec
B1795	13	Output for illumi of gear indicator (The output for illumination of the gear indicator has a malfundtion)	CIRC OPEN	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is an open circuit.
				Diagnosis delay time	500 msec

POSSIBLE CAUSE

The electric shift control unit has an internal hardware malfunction.

FAIL-SAFE

—

Diagnosis Procedure

INFOID:0000000013777287

B1795-11

1. REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

B1795-12

1. REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

B1795-13

1. REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

B210A POWER SUPPLY CIRCUIT

DTC Description

INFOID:0000000013777288

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
B210A	00	Power Supply circuit (The power supply in the system is too low)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Power supply in the system < 10 V
				Diagnosis delay time	—

POSSIBLE CAUSE

The power supply in the system is too low.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777289

1.CHECK ELECTRIC SHIFT CONTROL UNIT POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect the electric shift control unit connector.
3. Check voltage between electric shift control unit harness connector terminal and ground.

+		−	Condition	Voltage
Electric shift control unit				
Connector	Terminal			
M58	1	Ground	Turn ignition switch ON	11.5 – 16 V
			Turn ignition switch OFF	

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.DETECT MALFUNCTIONING ITEM

Check the following items:

- Open circuit or short circuit in harness between electric shift control unit harness connector terminal 1 and fuse and fusible link block 2 harness connector terminal 58.
- Open circuit or short circuit in harness between fuse and fusible link block 2 and battery.
- 5A fuse (No.100)
- Battery

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts.

B210B POWER SUPPLY CIRCUIT

DTC Description

INFOID:0000000013777290

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
B210B	00	Power Supply circuit (The power supply in the system is too high)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Power supply in the system > 16 V
				Diagnosis delay time	—

POSSIBLE CAUSE

The power supply in the system is too high.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777291

1.CHECK ELECTRIC SHIFT CONTROL UNIT POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect the electric shift control unit connector.
3. Check voltage between electric shift control unit harness connector terminal and ground.

+		−	Condition	Voltage
Electric shift control unit				
Connector	Terminal			
M58	1	Ground	Turn ignition switch ON	11.5 – 16 V
			Turn ignition switch OFF	

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.DETECT MALFUNCTIONING ITEM

Check the following items:

- Open circuit or short circuit in harness between electric shift control unit harness connector terminal 1 and fuse and fusible link block 2 harness connector terminal 58.
- Open circuit or short circuit in harness between fuse and fusible link block 2 and battery.
- 5A fuse (No.100)
- Battery

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts.

B210C POWER SUPPLY IS OUTSIDE VALID RANGE

DTC Description

INFOID:0000000013777292

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
B210C	16	Power supply is outside valid range (The power supply is outside the valid range)	CIRC VOLT BELOW THRESHOLD	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Power supply < 10 V
				Diagnosis delay time	—
B210C	17	Power supply is outside valid range (The power supply is outside the valid range)	CIRC VOLT ABOVE THRESHOLD	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Power supply > 16 V
				Diagnosis delay time	—

POSSIBLE CAUSE

16 CIRC VOLT BELOW THRESHOLD
The limit value for electrical voltage has not been attained.

17 CIRC VOLT ABOVE THRESHOLD
The limit value for electrical voltage has been exceeded.

FAIL-SAFE

—

Diagnosis Procedure

INFOID:0000000013777293

B210C-16

1.CHECK ELECTRIC SHIFT CONTROL UNIT POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect the electric shift control unit connector.
3. Turn ignition switch ON.
4. Check voltage between electric shift control unit harness connector terminals.

Electric shift control unit			Voltage
Connector	Terminal		
	+	–	
M58	1	2	10 – 16 V

Is the inspection result normal?

YES >> Replace the electric shift control unit (electric shift selector). Refer to TM-227, "Removal and Installation".
NO >> GO TO 2.

2.CHECK ELECTRIC SHIFT CONTROL UNIT GROUND CIRCUIT

Check continuity between electric shift control unit vehicle side harness connector terminal and ground.

Electric shift control unit		—	Continuity
Connector	Terminal		
M58	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace damaged parts.

3.DETECT MALFUNCTIONING ITEM

Check the following items:
- Open circuit or short circuit in harness between electric shift control unit harness connector terminal 1 and fuse and fusible link block 2 harness connector terminal 58.
- Open circuit or short circuit in harness between fuse and fusible link block 2 and battery.
- 5A fuse (No.100)
- Battery

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts.

B210C-17

1.CHECK ELECTRIC SHIFT CONTROL UNIT POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect the electric shift control unit connector.
3. Turn ignition switch ON.
4. Check voltage between electric shift control unit harness connector terminals.

Electric shift control unit			Voltage
Connector	Terminal		
	+	–	
M58	1	2	10 – 16 V

Is the inspection result normal?

YES >> Replace the electric shift control unit (electric shift selector). Refer to TM-227, "Removal and Installation".
NO >> GO TO 2.

2.CHECK ELECTRIC SHIFT CONTROL UNIT GROUND CIRCUIT

Check continuity between electric shift control unit vehicle side harness connector terminal and ground.

Electric shift control unit		—	Continuity
Connector	Terminal		
M58	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace damaged parts.

3.DETECT MALFUNCTIONING ITEM

Check the following items:
- Open circuit or short circuit in harness between electric shift control unit harness connector terminal 1 and fuse and fusible link block 2 harness connector terminal 58.
- Open circuit or short circuit in harness between fuse and fusible link block 2 and battery.
- 5A fuse (No.100)
- Battery

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts.

P0218 T/M FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000013777294

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0218	00	T/M fluid temperature sensor A (Transmission Fluid Temperature Sensor "A" Over Temperature Condition)	—	Diagnosis condition	Ignition switch: ON
				Signal (terminal)	—
				Threshold	Transaxle fluid temperature exceeds limit value 132°C (269.6°F)
				Diagnosis delay time	—

POSSIBLE CAUSE

- Water pump
- Water pump relay
- Water pump power supply circuit
- Water pump relay control signal circuit

Diagnosis Procedure

INFOID:0000000013777295

1.CHECK WATER PUMP POWER SUPPLY CIRCUIT

Check the following parts. Refer to TM-53, "Wiring Diagram".

- Water pump relay
- Water pump power supply harness
- Water pump relay control circuit

Is the inspection result normal?

YES >> Replace the water pump. Refer to TM-225, "Removal and Installation".
NO >> Repair or replace damaged parts.

P0513 IMMOBILIZER

DTC Description

INFOID:0000000013777296

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0513	00	Immobilizer (Incorrect Immobilizer Key)	—	Diagnosis condition	Ignition switch: ON → OFF
				Signal (terminal)	—
				Threshold	Communication with the electronic ignition switch control unit has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Electronic ignition switch control unit

Diagnosis Procedure

INFOID:0000000013777297

1.CHECK DTC OF ELECTRONIC IGNITION SWITCH CONTROL UNIT

Check DTC detected item. Refer to PCS-10, "Reference Value".

>> WORK END

P0562 SYSTEM VOLTAGE

DTC Description

INFOID:0000000013777298

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0562	00	System voltage (System Voltage Low)	—	Diagnosis condition	Selector lever : R or D
				Signal (terminal)	—
				Threshold	Voltage below 7.5 V
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM power supply circuit

Diagnosis Procedure

INFOID:0000000013777299

1.CHECK TCM POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check voltage between TCM harness connector terminal and ground.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
E47	5	Ground	Turn ignition switch ON	10 – 16 V
			Turn ignition switch OFF	

Is the inspection result normal?

YES >> Check DTC with BCM. Refer to BCS-51, "DTC Index".
NO >> GO TO 2.

2.DETECT MALFUNCTIONING ITEM

Check the following items:

- Open circuit or short circuit in harness between TCM harness connector terminal 5 and fuse and fusible link block 1 harness connector terminal 14.
- Open circuit or short circuit in harness between fuse and fusible link block 1 and battery.
- 25A fuse (No.217)
- Battery

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts.

P0563 SYSTEM VOLTAGE

DTC Description

INFOID:0000000013777300

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0563	00	System voltage (System Voltage High)	—	Diagnosis condition	Selector lever : R or D
				Signal (terminal)	—
				Threshold	Voltage over 16 V
				Diagnosis delay time	—

POSSIBLE CAUSE

- Alternator

Diagnosis Procedure

INFOID:0000000013777301

1.CHECK ALTERNATOR

Check alternator. Refer to CHG-21, "Work Flow (With EXP-800 NI or GR8-1200 NI)" (With EXP-800 NI or GR8-1200 NI) or CHG-25, "Work Flow (Without EXP-800 NI or GR8-1200 NI)" (Without EXP-800 NI or GR8-1200 NI)

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts.

P0602 CONTROL MODULE PROGRAMMING ERROR

DTC Description

INFOID:0000000013777302

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0602	00	Control module programming error (Control Module Programming Error)	—	Diagnosis condition	Diagnostic since switching on is always possible.
				Signal (terminal)	—
				Threshold	TCM configuration unfinished.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM configuration unfinished
- TCM

Diagnosis Procedure

INFOID:0000000013777303

1.PERFORM CONFIGURATION

1. Select “Re/programming, Configuration”.
2. Select “Write Configuration”.
3. Perform configuration according to the CONSULT display.

Is P0602 detected?

YES >> Replace the TCM. Refer to TM-216, "Removal and Installation".
NO >> WORK END

P0607 CONTROL MODULE

TCM

TCM : DTC Description

INFOID:0000000013777304

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0607	00	CONTROL MODULE (Control Module Performance)	—	Diagnosis condition	Diagnostic since switching on is always possible.
				Signal (terminal)	—
				Threshold	The TCM has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE
- TCM

TCM : Diagnosis Procedure

INFOID:0000000013777305

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

ELECTRIC SHIFT CONTROL UNIT

ELECTRIC SHIFT CONTROL UNIT : DTC Description

INFOID:0000000013777306

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0607	00	CONTROL MODULE (Control Module Performance)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	The electric shift control unit has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE
The electric shift control unit has an internal hardware malfunction.

FAIL-SAFE
No impact to vehicle behavior

ELECTRIC SHIFT CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013777307

1.REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

P060A CONTROL MODULE

DTC Description

INFOID:0000000013777308

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P060A	00	CONTROL MODULE (Internal Control Module Monitoring Processor Performance)	—	Diagnosis condition	Diagnostic since switching on is always possible.
				Signal (terminal)	—
				Threshold	The monitoring function in the ECU has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM connector
- ECM connector

Diagnosis Procedure

INFOID:0000000013777309

1.CHECK INTERMITTENT INCIDENT

Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace damaged parts.

P0610 CONTROL MODULE VEHICLE OPTIONS ERROR

DTC Description

INFOID:0000000013777310

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0610	00	Control module vehicle options error (Control Module Vehicle Options Error)	—	Diagnosis condition	Diagnostic is only possible, when the TCM was coded [no error (P060200) active].
				Signal (terminal)	—
				Threshold	Coded variant is implausible or does not fit not the vehicle specifications.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM configuration unfinished

Diagnosis Procedure

INFOID:0000000013777311

1.PERFORM CONFIGURATION

1. Select “Re/programming, Configuration”.
2. Select “Write Configuration”.
3. Perform configuration according to the CONSULT display.

>> WORK END

P061B CONTROL MODULE

DTC Description

INFOID:0000000013777312

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P061B	00	CONTROL MODULE (Internal Control Module Torque Calculation Performance)	—	Diagnosis condition	Diagnostic since switching on is always possible.
				Signal (terminal)	—
				Threshold	The torque calculation of the TCM has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Other DTC
- TCM

Diagnosis Procedure

INFOID:0000000013777313

1.CHECK DTC

Check if DTC other than P061B is detected.

Is DTC other than P061B detected?

YES >> Repair the detected DTC. Refer to TM-45, "DTC Index".
NO >> GO TO 2.

2.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0634 CONT MODULE INTERNAL TEMP A

DTC Description

INFOID:0000000013777314

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0634	00	CONT MODULE INTERNAL TEMP A (Control Module Internal Temperature "A" Too High)	—	Diagnosis condition	Ignition switch: ON
				Signal (terminal)	—
				Threshold	Transaxle fluid temperature exceeds limit value 145°C (293°F).
				Diagnosis delay time	—

POSSIBLE CAUSE

- Water pump
- Water pump relay
- Water pump power supply circuit
- Water pump relay control signal circuit

Diagnosis Procedure

INFOID:0000000013777315

1.CHECK WATER PUMP POWER SUPPLY CIRCUIT

Check the following parts. Refer to TM-53, "Wiring Diagram".

- Water pump relay
- Water pump power supply harness
- Water pump relay control circuit

Is the inspection result normal?

YES >> Replace the water pump. Refer to TM-225, "Removal and Installation".
NO >> Repair or replace damaged parts.

P0666 CONT MODU INTERNAL TEMP SEN A

DTC Description

INFOID:0000000013777316

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0666	00	CONT MODU INTERNAL TEMP SEN A (Control Module Internal Temperature Sensor "A" Circuit)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	When any of 1 or 2 is detected: 1. TCM internal temperature ≤ -40°C (-40°F) 2. TCM internal temperature ≥ 150°C (302°F)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777317

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0667 CONT MODULE INTERNAL TEMP SEN A

DTC Description

INFOID:0000000013777318

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0667	00	Cont module internal temp sen A (Control Module Internal Temperature Sensor "A" Range/ Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • No temperature error (P066600), (P267F00) active or in filtration. • Sensor supply is not active or in filtration.
				Signal (terminal)	—
				Threshold	Difference to TCM temperature > 20°C (68°F).
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777319

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P06A6 SENSOR REFERENCE VOLTAGE A

DTC Description

INFOID:0000000013777320

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P06A6	00	Sensor reference voltage A (Sensor Reference Voltage "A" Circuit Range/Performance)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering.
				Signal (terminal)	—
				Threshold	All sensors supplied by this voltage reports a voltage error.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777321

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P06A7 SENSOR REFERENCE VOLTAGE B

DTC Description

INFOID:0000000013777322

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P06A7	00	Sensor reference voltage B (Sensor Reference Voltage "B" Circuit Range/Performance)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	All of this voltage supplied sensors announces a voltage error.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777323

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P06A8 SENSOR REFERENCE VOLTAGE C

DTC Description

INFOID:0000000013777324

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P06A8	00	Sensor reference voltage C (Sensor Reference Voltage "C" Circuit Range/Performance)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering.
				Signal (terminal)	—
				Threshold	All sensors supplied by this voltage reports a voltage error.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777325

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P06A9 SENSOR REFERENCE VOLTAGE D

DTC Description

INFOID:0000000013777326

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P06A9	00	Sensor reference voltage D (Sensor Reference Voltage "D" Circuit Range/Performance)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	All of this voltage supplied sensors announces a voltage error.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777327

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P06AB CONTROL MODULE INTERNAL TEMP SENSOR B

DTC Description

INFOID:0000000013777328

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P06AB	01	Control module internal temp sensor B (Control Module Internal Temperature Sensor "B" Circuit)	ELECTRICAL MALFUNCTION	Diagnosis condition	Ignition switch: ON
				Signal (terminal)	—
				Threshold	When any of 1 or 2 is detected: 1. TCM internal temperature ≤ -40°C (-40°F) 2. TCM internal temperature ≥ 150°C (302°F)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777329

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P06D5 SENSOR REFERENCE VOLTAGE E

DTC Description

INFOID:0000000013777330

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P06D5	00	Sensor reference voltage E (Sensor Reference Voltage "E" Circuit Range/Performance)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	All sensors supplied by this voltage reports a voltage error.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777331

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0702 TRANSMISSION CONTROL SYSTEM

DTC Description

INFOID:0000000013777332

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0702	46	Transmission control system (Transmission Control System Electrical)	CALIBRATION/PARAMETER MEMORY FAILURE	Diagnosis condition	Diagnostic takes place only at access to the EEPROM.
				Signal (terminal)	—
				Threshold	An error occured by reading or writing to the EEPROM.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777333

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0710 T/M FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000013777334

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0710	00	T/M fluid temperature sensor A (Transmission Fluid Temperature Sensor "A" Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtration and error (P06A800) not active or in filtration.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3 or 4 is detected: 1. TCM internal temperature ≤ -40°C (-40°F) 2. TCM internal temperature ≥ 150°C (302°F) 3. Supply voltage too small 4. Supply voltage too big
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777335

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0711 T/M FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000013777336

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0711	00	T/M fluid temperature sensor A (Transmission Fluid Temperature Sensor "A" Circuit Range/Performance)	—	Diagnosis condition	Time after ignition On, engine Off time > 50 minutes, no sensor error (P071000), gradient error (P071400) and sensor supply error (P06A800) active or in filtration.
				Signal (terminal)	—
				Threshold	Difference of clutch and TCM temperature within the range [15 - 35°C (59 - 95°F)] according to a characteristic for 5000 msec after ignition On.
				Diagnosis delay time	—

POSSIBLE CAUSE
- TCM

Diagnosis Procedure

INFOID:0000000013777337

1.ERASE DTC

With CONSULT
NOTE:
- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0714 T/M FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000013777338

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0714	00	T/M fluid temperature sensor A (Transmission Fluid Temperature Sensor "A" Circuit Intermittent)	—	Diagnosis condition	When any of 1, 2 or 3 is satisfied: 1. Waiting time at start of 400 msec. 2. ECU temperature below 0 °C. 3. When the following conditions are all satisfied. - Sensor error (P071000) active or in filtration. - Error (P056200) (P056300) not active or in filtration and error (P06A800) not active or in filtration.
				Signal (terminal)	—
				Threshold	Temperature gradient > 30 °/40 msec
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777339

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0715 INPUT SPEED SENSOR A

DTC Description

INFOID:0000000013777340

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0715	00	Input/Turbine speed sensor A (Input/Turbine Shaft Speed Sensor "A" Circuit)	—	Diagnosis condition	When the following conditions are all satisfied. • Ignition switch: ON • Error (P056200) (P056300) not active or in filtration and error (P06A700) not active or in filtration.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3 or 4 is detected: 1. Supply voltage too high 2. Supply voltage too low 3. Rotational speed too high 4. Malfunction of the rotational speed signal or maximal rotational speed motor dependent from 7000 - 10000 rpm exceeded
				Diagnosis delay time	—
	01	Input/Turbine speed sensor A (Input/Turbine Shaft Speed Sensor "A" Circuit)	ELECTRICAL MALFUNCTION	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3 or 4 is detected: 1. Supply voltage too high 2. Supply voltage too low 3. Rotational speed too high 4. Malfunction of the rotational speed signal or maximal rotational speed motor dependent from 7000 - 10000 rpm exceeded
				Diagnosis delay time	—
	64	Input/Turbine speed sensor A (Input/Turbine Shaft Speed Sensor "A" Circuit)	SIGNAL PLAUSIBILITY FAILURE	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Difference clutch rotational speed to motor rotational speed > 50 - 500 rpm.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Starter motor
- Sensor rotor
- Drive plate

Diagnosis Procedure

INFOID:0000000013777341

1.CHECK STARTER MOTOR

Check the mounting surface of starter motor for burrs and scratches.

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK SENSOR ROTOR

Check sensor rotor for damage.

Is the inspection result normal?

YES >> Replace the TCM. Refer to TM-216, "Removal and Installation".
NO >> Replace the sensor rotor. Refer to TM-264, "Disassembly and Assembly".

3.CHECK DRIVE PLATE

Check drive plate for damage.

Is the inspection result normal?

YES >> Replace the starter motor. Refer to STR-18, "1.6L/2.0L TURBO ENGINE : Removal and Installation".
NO >> Replace the starter motor and drive plate. For starter moter: Refer to STR-18, "1.6L/2.0L TURBO ENGINE : Removal and Installation". For drive plate: EM-100, "Removal and Installation".

P0716 INPUT SPEED SENSOR A

DTC Description

INFOID:0000000013777342

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0716	00	Input/Turbine speed sensor A (Input/Turbine Shaft Speed Sensor "A" Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • Motor speed > 400 rpm • No sensor error (P071500) active or in filtration. • Sensor supply OK (P06A700). • No CAN-Error (U010000), (U140100) active or in filtration. • No Bus-Off-Error (U000100) active or in filtration.
				Signal (terminal)	—
				Threshold	Difference between clutch speed and motor speed > 80 - 500 rpm
				Diagnosis delay time	—

POSSIBLE CAUSE

- Starter motor
- Sensor rotor
- Drive plate

Diagnosis Procedure

INFOID:0000000013777343

1.CHECK STARTER MOTOR

Check the mounting surface of starter motor for burrs and scratches.

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK SENSOR ROTOR

Check sensor rotor for damage.

Is the inspection result normal?

YES >> Replace the TCM. Refer to TM-216, "Removal and Installation".
NO >> Replace the sensor rotor. Refer to TM-264, "Disassembly and Assembly".

3.CHECK DRIVE PLATE

Check drive plate for damage.

Is the inspection result normal?

YES >> Replace the starter motor. Refer to STR-18, "1.6L/2.0L TURBO ENGINE : Removal and Installation".
NO >> Replace the starter motor and drive plate. For starter moter: Refer to STR-18, "1.6L/2.0L TURBO ENGINE : Removal and Installation". For drive plate: EM-100, "Removal and Installation".

P0745 FUEL PRESSURE REGULATOR 1

DTC Description

INFOID:0000000013777344

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0745	00	FUEL PRESSURE REGULATOR 1 (Pressure Control Solenoid "A")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777345

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0746 PRESSURE CONTROL SOLENOID A

DTC Description

INFOID:0000000013777346

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0746	00	Pressure control solenoid A (Pressure Control Solenoid "A" Performance/Stuck Off)	—	Diagnosis condition	When the following conditions are all satisfied. • Engine speed > 500 rpm or pump speed > 750 rpm • Limp home state odd not active. • No pressure sensor error (P084001) active or in filtration. • No pressure sensor error (P084085) active or in filtration. • Error (P06D500) not active or in filtration. • No valve error (P074501), (P079501).
				Signal (terminal)	—
				Threshold	ABS (Sensor clutch odd pressure - clutch odd set pressure) • Transaxle fluid 80 °C (176 °F) > 120 kPa (1200 mbar) • Transaxle fluid -40 °C (-40 °F) > 160 kPa (1600 mbar)
				Diagnosis delay time	—

POSSIBLE CAUSE

- Transaxle fluid level

Diagnosis Procedure

INFOID:0000000013777347

1.CHECK TRANSAXLE FLUID LEVEL

Check transaxle fluid level.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check transaxle fluid leakage. Refer to TM-212, "Inspection".

2.PERFORM LEARNING OF TCM

1. Turn ignition switch ON.
2. Select the “Normalization and adaptation” in “Work Support” in “TRANSMISSION”.
3. Touch “START”.

>> WORK END

P0760 SHIFT SOLENOID C

DTC Description

INFOID:0000000013777348

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0760	77	Shift solenoid C (Shift Solenoid "C")	COMMAND POSITION NOT REACHABLE	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	System reaction was successful and the reason can be assigned to the valve.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Magnet
- TCM

Diagnosis Procedure

INFOID:0000000013777349

1.REPLACE MAGNET

Replace the magnet. Refer to TM-264, "Disassembly and Assembly".

>> GO TO 2.

2.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0763 SHIFT SOLENOID C

DTC Description

INFOID:0000000013777350

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0763	00	Shift solenoid C (Shift Solenoid "C" Electrical)	—	Diagnosis condition	Diagnostic since switching on is always possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777351

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0775 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000013777352

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0775	00	Pressure control solenoid B (Pressure Control Solenoid "B")	—	Diagnosis condition	Diagnostic only with ignition switch on possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777353

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0776 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000013777354

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0776	00	Pressure control solenoid B (Pressure Control Solenoid "B" Performance/Stuck Off)	—	Diagnosis condition	When the following conditions are all satisfied. • Engine speed > 500 rpm or pump speed > 750 rpm • Limp home state even not active. • No pressure sensor error (P084501) active or in filtration. • No pressure sensor error (P084585) active or in filtration. • Error (P06D500) not active or in filtration. • No valve error (P077501), (P271301).
				Signal (terminal)	—
				Threshold	ABS (Sensor clutch odd pressure - clutch odd set pressure) • Transaxle fluid 80 °C (176 °F) > 120 kPa (1200 mbar) • Transaxle fluid -40 °C (-40 °F) > 160 kPa (1600 mbar)
				Diagnosis delay time	—

POSSIBLE CAUSE

- Transaxle fluid level

Diagnosis Procedure

INFOID:0000000013777355

1.CHECK TRANSAXLE FLUID LEVEL

Check transaxle fluid level.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check transaxle fluid leakage. Refer to TM-212, "Inspection".

2.PERFORM LEARNING OF TCM

1. Turn ignition switch ON.
2. Select the “Normalization and adaptation” in “Work Support” in “TRANSMISSION”.
3. Touch “START”.

>> WORK END

P0791 INTERMEDIATE SHAFT SPEED SENSOR A

DTC Description

INFOID:0000000013777356

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0791	00	Intermediate shaft speed sensor A (Intermediate Shaft Speed Sensor "A" Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering and Error (P06A900) not active or in filtering.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3, 4 or 5 is detected: 1. Pulse width unvalid 2. Supply voltage too high 3. Supply voltage too low 4. Rotational speed too high 5. Error of the rotational speed signals or rotational speed <- 10000 or >+ 11000 rpm
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777357

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0792 INTERMEDIATE SHAFT SPEED SENSOR A

DTC Description

INFOID:0000000013777358

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0792	00	Intermediate shaft speed sensor A (Intermediate Shaft Speed Sensor "A" Circuit Range/Performance)	—	Diagnosis condition	Gears engaged on odd shaft and error (P06A600) (P079100) (P283C00) (P284100) (U012100) (U140900) (U140A00) not active or in filtration.
				Signal (terminal)	—
				Threshold	Wheel rotational speed valid and Wheel rotational speed > 30 rpm and difference to back converted wheel rotational speed > 150 - 1500 rpm) and (difference to shaft rotational speed even at put in gears > 100 - 600 rpm)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777359

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0795 PRESSURE CONTROL SOLENOID C

DTC Description

INFOID:0000000013777360

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0795	00	Pressure control solenoid C (Pressure Control Solenoid "C")	—	Diagnosis condition	Diagnostic only with ignition switch on possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777361

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P079A TRANSMISSION FRICTION ELEMENT A

DTC Description

INFOID:0000000013777362

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P079A	00	Transmission friction element A (Transmission Friction Element "A" Slip Detected)	—	Diagnosis condition	When the following conditions are all satisfied. • Motor torque > 150 Nm • Clutch torque > 200 Nm • Status dreep or launch. • No shifting active. • Error (P079500), (P077500), (P084500), (P084600), (P077600), (P071600), (P071500), (P274600), (P274500). • Error (P06A700) not active or in filtration. • Error (P06A600) not acitve or in filtration. • Error (P06D500) not active or in filtration.
				Signal (terminal)	—
				Threshold	Actual slip on the clutch is in driving operation permanent too big
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777363

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P079B TRANSMISSION FRICTION ELEMENT B

DTC Description

INFOID:0000000013777364

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P079B	00	Transmission friction element B (Transmission Friction Element "B" Slip Detected)	—	Diagnosis condition	When the following conditions are all satisfied. • Motortorque > 150 Nm • Clutch torque > 200 Nm • Status dreep or launch. • No shifting active. • No valve error (P074500), (P079500), (P074600) activ or in filtration. • No pressuresensor error (P084000), (P084100) active or in filtration. • Error (P06D500) not active or in filtration. • No input speed error (P071600), (P071500) active or in filtration. • Error (P06A700) not active or in filtration. • No shaft speed error (P079200), (P079100) active or in filtration. • Error (P06A600) not active or in filtration.
				Signal (terminal)	—
				Threshold	Actual-slip on the clutch is in drive operation permanent too big.Clutch odd slip integral [(real clutch slip - desired clutch slip - offset value) integrated over time] > 9000 rpm, 80 rpm Offset
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777365

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P07A3 TRANSMISSION FRICTION ELEMENT A

DTC Description

INFOID:0000000013777366

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P07A3	00	Transmission friction element A (Transmission Friction Element "A" Stuck On)	—	Diagnosis condition	When the following conditions are all satisfied. • During microslipoperation: if the motor torque exceeds a threshold value and the difference between motor torque and nominal-clutch torque exceeds a threshold value.- At shifting up: if the status is "Torque Transfer" or "Wait Synchronous".- No valve error (P079500), (P077500), (P077600) active or in filtration. • No pressure sensor error (P084500), (P084600) active or in filtration. • Error (P06D500) not active or in filtration. • No speed sensor error (P071600), (P071500) active or in filtration. • Error (P06A700) not active or in filtration. • No speed sensor error (P274600), (P274500) active or in filtration. • Error (P06A600) not active or in filtration.
				Signal (terminal)	—
				Threshold	• During Micro Slip Operation: If the clutch clings (micro slip cannot be adjusted) • During a shifting up: if the clutch slip is < 50 rpm and the difference between nominal-clutch torque coming and going clutch exceeds a threshold.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777367

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".

NO >> INSPECTION END

P07A5 TRANSMISSION FRICTION ELEMENT B

DTC Description

INFOID:0000000013777368

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P07A5	00	Transmission friction element B (Transmission Friction Element "B" Stuck On)	—	Diagnosis condition	When the following conditions are all satisfied. • Motortorque ≤ 150 Nm • Clutch even micro-slippage 9 rpm. • Oil temperature > 20°C (68°F) • Status = creep or launch. • No valve error (P074500), (P079500), (P074600) active or in filtration. • Error (P084000), (P084100), (P071500), (P071600), (P079100), (P079200) not active. • Error (P06D500) not active or in filtration. • Error (P06A700) not active or in filtration. • Error (P06A600) not active or in filtration.
				Signal (terminal)	—
				Threshold	• During micro slip operation: If the clutch clings (micro slip cannot be adjusted). • During a shifting up: if the clutch slip is < 50 rpm and the difference between nominal-clutch torque coming and going clutch exceeds a threshold.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777369

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P07A7 TRANSMISSION FRICTION ELEMENT C

DTC Description

INFOID:0000000013777370

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P07A7	71	Transmission friction element C (Transmission Friction Element "C" Stuck On)	ACTUATOR STUCK	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Multidisc clutch does not open. The actuator is blocked.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Control valve assembly

Diagnosis Procedure

INFOID:0000000013777371

1.REPLACE CONTROL VALVE

Replace the control valve assembly. Refer to TM-216, "Removal and Installation".

>> WORK END

P07B5 T/M PARK POSITION SENSOR/SWITCH A

DTC Description

INFOID:0000000013777372

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P07B5	00	T/M park position sensor/switch A (Transmission Park Position Sensor/ Switch "A" Circuit Performance/Low)	—	Diagnosis condition	Diagnostic since switching on is always possible.
				Signal (terminal)	—
				Threshold	The park pawl solenoid has a malfunction.
				Diagnosis delay time	—
	71	T/M park position sensor/switch A (Transmission Park Position Sensor/ Switch "A" Circuit Performance/Low)	ACTUATOR STUCK	Diagnosis condition	When any of the following conditions are satisfied. • Error (P081C01), (P07B501), (P076001) active. • Basic measurement error (P287C 00).
				Signal (terminal)	—
				Threshold	The park pawl solenoid has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Park pawl solenoid
- TCM

Diagnosis Procedure

INFOID:0000000013777373

P07B5-00

1.CHECK PARK PAWL SOLENOID

Check the connection condition of park pawl solenoid.

Is the check result normal?

YES >> Replace park pawl solenoid. Refer to TM-263, "Exploded View".
NO >> Replace TCM. Refer to TM-216, "Removal and Installation".

P07B5-71

1.REPLACE PARK PAWL SOLENOID

Replace the park pawl solenoid. Refer to TM-263, "Exploded View".

>> GO TO 2.

2.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P07E4 UNABLE TO ENGAGE PARK

DTC Description

INFOID:0000000013777374

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P07E4	00	Unable to engage park (Unable to Engage Park)	—	Diagnosis condition	When any of the following conditions are satisfied. • Error (P081C01), (P07B501), (P076001) active. • Basic measurement error (P287C00).
				Signal (terminal)	—
				Threshold	P is left not allowed or switching time after P was exceeded
				Diagnosis delay time	—

POSSIBLE CAUSE

- Malfunctioning part of P0760 or P07B5

Diagnosis Procedure

INFOID:0000000013777375

1.PERFORM DTC P0760 AND P07B5

Perform DTC P0760 and P07B5. Refer to TM-114, "DTC Description" (P0760) or TM-127, "DTC Description" (P07B5).

>> WORK END

P07E6 UNABLE TO ENGAGE PARK

DTC Description

INFOID:0000000013777376

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P07E6	00	Unable to engage park (Stuck in Park)	—	Diagnosis condition	When any of the following conditions are satisfied. • Error (P081C01), (P07B501), (P076001) active. • Basic measurement error (P287C00).
				Signal (terminal)	—
				Threshold	Not-P was left not allowed [>3 mm (0.12 in)] or switching time after Not-P was exceeded (characteristic line, always 2400 msec)
				Diagnosis delay time	—

POSSIBLE CAUSE

- Malfunctioning part of P0760 or P07B5

Diagnosis Procedure

INFOID:0000000013777377

1.PERFORM DTC P0760 AND P07B5

Perform DTC P0760 and P07B5. Refer to TM-114, "DTC Description" (P0760) or TM-127, "DTC Description" (P07B5).

>> WORK END

P081C PARK INPUT CIRCUIT

DTC Description

INFOID:0000000013777378

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P081C	00	Park input circuit (Park Input Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtration and error (P06A800) not active or in filtration.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3, 4 or 5 is detected: 1. Signal voltage too small 2. Signal voltage too big 3. No sensor supply 4. Sensor supply voltage too low 5. Sensor supply voltage too high or sensor signal > 11.45 mm (0.4508 in) or sensor signal < 0.1 mm (0.004 in)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM
- Magnet

Diagnosis Procedure

INFOID:0000000013777379

1.CHECK PARK PAWL POSITION SENSOR

With CONSULT

1. Turn ignition switch ON.
2. Select “Data Monitor” in “TRANSMISSION”.
3. Select “Park pawl position sensor”.
4. Confirm that the Park pawl position sensor is in the following range.

Park pawl position sensor : 0.1 - 11.45 mm (0.004 - 0.4508 in)

Is the inspection result normal?

YES >> Replace the TCM. Refer to TM-216, "Removal and Installation".
NO >> GO TO 2.

2.REPLACE MAGNET

Replace the magnet. Refer to TM-264, "Disassembly and Assembly".

>> GO TO 3.

3.PERFORM LEARNING OF TCM

1. Turn ignition switch ON.
2. Select the “Normalization and adaptation” in “Work Support” in “TRANSMISSION”.
3. Touch “START”.

>> WORK END

P0840 T/M FLUID PRESSURE SENSOR/SWITCH A

DTC Description

INFOID:0000000013777380

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0840	00	T/M fluid pressure sensor/switch A (Transmission Fluid Pressure Sensor/ Switch "A" Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtration and error (P06D500) not active or in filtration.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3 or 4 is detected: 1. Value too small 2. Value too big 3. Supply voltage too big 4. Supply voltage too small or Sensor value 1.9 kPa (19 bar) or Sensor value -0.1 kPa (-1 bar)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777381

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0841 T/M FLUID PRESSURE SENSOR/SWITCH A

DTC Description

INFOID:0000000013777382

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0841	00	T/M fluid pressure sensor/switch A (Transmission Fluid Pressure Sensor/ Switch "A" Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • Pump speed valid < 1 rpm • CAN-motor status valid: STOP • Ignition switch: ON • Error (P084000), (P06D500) not active or in filtration.
				Signal (terminal)	—
				Threshold	Sensor value > 0.22 kPa (2.2 bar)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777383

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0845 T/M FLUID PRESSURE SENSOR/SWITCH B

DTC Description

INFOID:0000000013777384

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0845	00	T/M fluid pressure sensor/switch B (Transmission Fluid Pressure Sensor/ Switch "B" Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtration and error (P06D500) not active or in filtration.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3 or 4 is detected: 1. Value too small 2. Value too big 3. Supply voltage too big 4. Supply voltage too small or Sensor value 1.9 kPa (19 bar) or Sensor value -0.1 kPa (-1 bar)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777385

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P0846 T/M FLUID PRESSURE SENSOR/SWITCH B

DTC Description

INFOID:0000000013777386

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0846	00	T/M fluid pressure sensor/switch B (Transmission Fluid Pressure Sensor/ Switch "B" Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • Pump speed valid < 1 rpm • CAN-motor status valid: STOP • Ignition switch: ON • Error (P084500), (P06D500) not active or in filtration.
				Signal (terminal)	—
				Threshold	Sensor value > 0.22 kPa (2.2 bar)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777387

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0850 PARK/NEUTRAL SWITCH

DTC Description

INFOID:0000000013777388

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0850	11	Park/neutral switch (The button Gear range P has a malfunction)	CIRC SHORT TO GRND	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is a short circuit to ground.
				Diagnosis delay time	50 msec
P0850	15	Park/neutral switch (The button Gear range P has a malfunction)	CIRC SHORT TO BATTERY OR OPEN	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	There is a short circuit to positive or an open circuit.
				Diagnosis delay time	50 msec
P0850	2A	Park/neutral switch (The button Gear range P has a malfunction)	SIGNAL STUCK IN RANGE	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	The P position switch was pressed for too long. (There is no signal change.)
				Diagnosis delay time	50 seconds
P0850	64	Park/neutral switch (The button Gear range P has a malfunction)	SIGNAL PLAUSIBILITY FAILURE	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	The P position switch was pressed for too long. (There is an implausible signal.)
				Diagnosis delay time	1000 msec

POSSIBLE CAUSE

The electric shift control unit has an internal hardware malfunction.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777389

P0850-11

1.REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

P0850-15

1.REPLACE ELECTRIC SHIFT CONTROL UNIT (ELECTRIC SHIFT SELECTOR)

Replace the electric shift selector. Refer to TM-227, "Removal and Installation".

>> WORK END

P0850-2A

1.CHECK ELECTRIC SHIFT SELECTOR

1. Erace the DTC.
2. Visually inspect P position switch for blockage.
3. Operate the P position switch.
4. Wait at least 60 seconds.

Is P0850-2A detected?

YES >> Replace the electric shift selector. Refer to TM-227, "Removal and Installation".
NO >> INSPECTION END

P0850-64

1.CHECK ELECTRIC SHIFT SELECTOR

1. Erace the DTC.
2. Visually inspect P position switch for blockage.
3. Operate the P position switch.
4. Wait at least 60 seconds.

Is P0850-64 detected?

YES >> Replace the electric shift selector. Refer to TM-227, "Removal and Installation".
NO >> INSPECTION END

P0921 GEAR SHIFT FORWARD ACTUATOR

DTC Description

INFOID:0000000013777390

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0921	00	Gear shift forward actuator (Gear Shift Forward Actuator Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • Error (P056200) (P056300) not active or in filtration. • Motor speed > 300 rpm • No scavenging process on the odd transmission. • Error (P280700), (P281600), (P281F007), (P282800), (P283C00), (P284100), (P283B00), (P284000), (P06A800) already active.
				Signal (terminal)	—
				Threshold	Gear 7th/3rd or 5th/1st not insertable or outable or leaves unwanted the set position
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777391

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0925 GEAR SHIFT REVERSE ACTUATOR

DTC Description

INFOID:0000000013777392

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0925	00	Gear shift reverse actuator (Gear Shift Reverse Actuator Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • Error (P056200) (P056300) not active or in filtration. • Motor speed > 300 rpm • No scavenging process on the odd transmission. • Error (P280700), (P281600), (P281F00), (P282800), (P283100), (P283600), (P283200), (P283700), (P06A700).
				Signal (terminal)	—
				Threshold	Gear 4th/2nd or 6th/7th not insertable or outable or leaves unwanted the set position.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777393

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P0B09 ELECTRIC/AUXILIARY T/M FLUID PUMP A

DTC Description

INFOID:0000000013777394

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0B09	00	Electric/auxiliary T/M fluid pump A (Electric/Auxiliary Transmission Fluid Pump "A" Motor Supply Voltage Circuit/ Open)	—	Diagnosis condition	Pump is not controlled from -20 °C (-4°F) and cannot be diagnosticated then.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- Electric oil pump

Diagnosis Procedure

INFOID:0000000013777395

1.CHECK DTC WITH ECM 1

Check DTC P0562 with ECM.

Is DTC P0562 detected?

YES >> Perform the trouble diagnosis for DTC P0562. Refer to EC-638, "DTC Description".
NO >> GO TO 2.

2.CHECK ELECTRIC OIL PUMP HARNESS CONNECTOR

Check electric oil pump harnness connector visually and tactualy.

Is the inspection normal?

YES >> Replace electric oil pump. Refer to TM-254, "Disassembly and Assembly".
NO >> Repair or replace damaged parts.

P0B0D ELCTRC/AUX T/M FLUID PMP MTR CNTRL MDL

DTC Description

INFOID:0000000013777396

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0B0D	00	Elctrc/aux T/M fluid pmp mtr cntrl mdl (Electric/Auxiliary Transmission Fluid Pump Motor Control Module)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	TCM has detected an undervoltage.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM power supply
- DTC of BCM

Diagnosis Procedure

INFOID:0000000013777397

1.CHECK TCM POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check voltage between TCM harness connector terminal and ground.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
E47	5	Ground	Turn ignition switch ON	10 – 16 V
			Turn ignition switch OFF	

Is the inspection result normal?

YES >> Check DTC with BCM. Refer to BCS-51, "DTC Index".
NO >> GO TO 2.

2.DETECT MALFUNCTIONING ITEM

Check the following items:

- Open circuit or short circuit in harness between TCM harness connector terminal 5 and fuse and fusible link block 1 harness connector terminal 14.
- Open circuit or short circuit in harness between fuse and fusible link block 1 and battery.
- 25A fuse (No.217)
- Battery

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts.

P0C2A ELECTRIC/AUXILIARY T/M FLUID PUMP A

DTC Description

INFOID:0000000013777398

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P0C2A	00	Electric/auxiliary T/M fluid pump A (Electric/Auxiliary Transmission Fluid Pump "A" Motor Stalled)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	The electric oil pump has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Electric oil pump

Diagnosis Procedure

INFOID:0000000013777399

1.REPLACE ELECTRIC OIL PUMP

Replace the electric oil pump. Refer to TM-216, "Removal and Installation".

>> WORK END

P267F CONTROL MODULE INTERNAL TEMP SENSOR A

DTC Description

INFOID:0000000013777400

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P267F	00	Control module internal temp sensor A (Control Module Internal Temperature Sensor "A" Circuit Intermittent/Erratic)	—	Diagnosis condition	Error (P066600) not active or in filtration.
				Signal (terminal)	—
				Threshold	Temperature-gradient > 25 °/40 msec
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777401

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2711 UNEXPECTED MECHANICAL GEAR

DTC Description

INFOID:0000000013777402

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2711	00	Unexpected mechanical gear (Unexpected Mechanical Gear Disengagement)	—	Diagnosis condition	When the following conditions are all satisfied. • Motor speed > 300 rpm • No purge process active.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777403

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P2713 PRESSURE CONTROL SOLENOID D

DTC Description

INFOID:0000000013777404

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2713	00	Pressure control solenoid D (Pressure Control Solenoid "D")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777405

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2745 INTERMEDIATE SHAFT SPEED SENSOR B

DTC Description

INFOID:0000000013777406

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2745	00	Intermediate shaft speed sensor B (Intermediate Shaft Speed Sensor "B" Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering and Error (P06A900) not active or in filtering.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3, 4 or 5 is detected: 1. Pulse width unvalid 2. Supply voltage too high 3. Supply voltage too low 4. Rotational speed too high 5. Error of the rotational speed signals or rotational speed <- 10000 or >+ 11000 rpm
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777407

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P2746 INTERMEDIATE SHAFT SPEED SENSOR B

DTC Description

INFOID:0000000013777408

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2746	00	Intermediate shaft speed sensor B (Intermediate Shaft Speed Sensor "B" Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • Gears engaged on even shaft. • Error (P06A600), (P283100), (P283600), (P274500), (U012100), (U140A00), (U140900) not active or in filtration.
				Signal (terminal)	—
				Threshold	(Wheel rotational speed valid and wheel rotational speed > 30 rpm and difference to back converted wheel rotational speed >150 -1500 rpm) and (difference to shaft rotational speed odd at put in gears > 100 - 600 rpm)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777409

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P2775 PADDLE SHIFTER

DTC Description

INFOID:0000000013777410

DTC DETECTION LOGIC

DTC		CONSULT screen terms		DTC detection condition	
		(Trouble diagnosis content)	[Malfunction type]		
P2775	00	Steering wheel shift button (+) (Upshift Switch Circuit Range/ Performance)	—	Diagnosis condition	Ignition switch is ON
				Signal (terminal)	—
				Threshold	Paddle shifter (shift-up switch) detected as pressed over a period of time larger than 45 seconds
				Diagnosis delay time	45 seconds

POSSIBLE CAUSE

Paddle shifter (shift-up switch) stuck

Diagnosis Procedure

INFOID:0000000013777411

1.REPLACE STEERING WHEEL

Replace steering wheel. Refer to ST-8, "Removal and Installation".

>> WORK END

P2779 PADDLE SHIFTER

DTC Description

INFOID:0000000013777412

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2779	00	Steering wheel shift button (-) (Downshift Switch Circuit Range/Performance)	—	Diagnosis condition	Ignition switch is ON
				Signal (terminal)	—
				Threshold	Paddle shifter (shift-down switch) detected as pressed over a period of time larger than 45 seconds
				Diagnosis delay time	45 seconds

POSSIBLE CAUSE

Paddle shifter (shift-down switch) stuck

Diagnosis Procedure

INFOID:0000000013777413

1.REPLACE STEERING WHEEL

Replace steering wheel. Refer to ST-8, "Removal and Installation".

>> WORK END

P2787 CLUTCH TEMPERATURE

DTC Description

INFOID:0000000013777414

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2787	98	CLUTCH TEMPERATURE (Clutch Temperature Too High)	COMPONENT/SYS OVER TEMP	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	Disc temperature ≥ 250°C (482°F), too high energy or power entry or over temperature symptom
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777415

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.
- DTC may be detected with the following vehicle condition.

- Trailer during operation
- Holding the position of the vehicle on an uphill gradient by operating the accelerator pedal.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P2807 PRESSURE CONTROL SOLENOID G

DTC Description

INFOID:0000000013777416

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2807	00	Pressure control solenoid G (Pressure Control Solenoid "G")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777417

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2816 PRESSURE CONTROL SOLENOID H

DTC Description

INFOID:0000000013777418

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2816	00	Pressure control solenoid H (Pressure Control Solenoid "H")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777419

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P281F PRESSURE CONTROL SOLENOID J

DTC Description

INFOID:0000000013777420

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P281F	00	Pressure control solenoid J (Pressure Control Solenoid "J")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777421

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2828 PRESSURE CONTROL SOLENOID K

DTC Description

INFOID:0000000013777422

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2828	00	Pressure control solenoid K (Pressure Control Solenoid "K")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777423

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2831 SHIFT FORK A

DTC Description

INFOID:0000000013777424

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2831	00	Shift fork A (Shift Fork "A" Position Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering and Error (P06A700) not active or in filtering.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3, 4 or 5 is detected: 1. Signal voltage too low 2. Signal voltage too high 3. No sensor supply 4. Sensor supply voltage too low 5. Sensor supply voltage too high or Sensor signal (Hi) > 26 mm (1.02 in) or Sensor signal (HI) < 6 mm (0.24 in) or sensor signal (Lo) > 26 mm (1.02 in) or sensor signal (Lo) < 6 mm (0.24 in)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777425

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2832 SHIFT FORK A

DTC Description

INFOID:0000000013777426

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2832	00	Shift fork A (Shift Fork "A" Position Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • No sensor supply error (P06A700) active or in filtration. • No position sensor error (P283100) active or in filtration. • No speed sensor error (P274500) active or in filtration. • No speed signal error (P2746 00) active or in filtration. • No wheel speed error (U140A00), (U140900), (U140C00), (U140B00) active or in filtration. • No communication error ESP (U012100) active or in filtration. • Wheel speed > 60 rpm • Difference speed frot to rear < 5 rpm • Rotation direction of the rear wheels identical.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777427

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P2836 SHIFT FORK B

DTC Description

INFOID:0000000013777428

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2836	00	Shift fork B (Shift Fork "B" Position Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering and Error (P06A700) not active or in filtering.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3, 4 or 5 is detected: 1. Signal voltage too low 2. Signal voltage too high 3. No sensor supply 4. Sensor supply voltage too low 5. Sensor supply voltage too high or Sensor signal (Hi) > 26 mm (1.02 in) or Sensor signal (Hi) < 6 mm (0.24 in) or sensor signal (Lo) > 26 mm (1.02 in) or sensor signal (Lo) < 6 mm (0.24 in)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777429

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2837 SHIFT FORK B

DTC Description

INFOID:0000000013777430

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2837	00	Shift fork B (Shift Fork "B" Position Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • No sensor-supply error (P06A700) active or in filtration. • No position sensor error (P283600) active or in filtration. • No speed sensor error (P274500) active or in filtration. • No speed signal error (P274600) active or in filtration. • No wheel speed error (U140A00), (U140C00), (U140B00), (U140900) active or in filtration. • No communication error ESP (U012100) active or in filtration. • Wheel speed > 60 rpm • Difference speed frot to rear < 5 rpm • Rotation direction of the rear wheels identical.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777431

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P283B SHIFT FORK C

DTC Description

INFOID:0000000013777432

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P283B	00	Shift fork C (Shift Fork "C" Position Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering and Error (P06A600) not active or in filtering.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3, 4 or 5 is detected: 1. Signal voltage too low 2. Signal voltage too high 3. No sensor supply 4. Sensor supply voltage too low 5. Sensor supply voltage too high or Sensor signal (Hi) > 26 mm (1.02 in) or Sensor signal (Hi) < 6 mm (0.24 in) or sensor signal (Lo) > 26 mm (1.02 in) or sensor signal (Lo) < 6 mm (0.24 in)
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777433

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P283C SHIFT FORK C

DTC Description

INFOID:0000000013777434

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P283C	00	Shift fork C (Shift Fork "C" Position Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • No sensor-supply error (P06A800) active or in filtration. • No position sensor error (P283B00) active or in filtration. • No speed sensor error (P079100) active or in filtration. • No speed signal error (P079200) active or in filtration. • No wheel speed error (U140A 00), (U140C00), (U140B00), (U140900) active or in filtration. • No communication error ESP (U012100) active or in filtration. • Wheel speed > 60 rpm • Difference speed frot to rear < 5 rpm • Rotation direction of the rear wheels identical.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777435

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P2840 SHIFT FORK D

DTC Description

INFOID:0000000013777436

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2840	00	Shift fork D (Shift Fork "D" Position Circuit)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering and error (P06A600) not active or in filtering.
				Signal (terminal)	—
				Threshold	When any of 1, 2, 3, 4 or 5 is detected: 1. Signal voltage too low 2. Signal voltage too high 3. No sensor supply 4. Sensor supply voltage too low 5. Sensor supply voltage too high or Sensor signal (Hi) > 26 mm (1.02 in) or Sensor signal (Hi) < 6 mm (0.24 in) or sensor signal (Lo) > 26 mm (1.02 in) or sensor signal (Lo) < 6 mm (0.24 in)
				Diagnosis delay time	—

POSSIBLE CAUSE
- TCM

Diagnosis Procedure

INFOID:0000000013777437

1.REPLACE TCM

Replace the TCM. Refer to TM-216, "Removal and Installation".

>> WORK END

P2841 SHIFT FORK D

DTC Description

INFOID:0000000013777438

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2841	00	Shift fork D (Shift Fork "D" Position Circuit Range/Performance)	—	Diagnosis condition	When the following conditions are all satisfied. • No sensor-supply error (P06A800) active or in filtration. • No position sensor error (P284000) active or in filtration. • No speed sensor error (P079100) active or in filtration. • No speed signal error (P079200) active or in filtration. • No wheel speed error (U140A00), (U140C00), (U140B00), (U140900) active or in filtration. • No communication error ESP (U012100) active or in filtration. • Wheel speed > 60 rpm • Difference speed frot to rear < 5 rpm • Rotation direction of the rear wheels identical.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777439

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P284D SHIFT FORK A

DTC Description

INFOID:0000000013777440

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P284D	00	Shift fork A (Shift Fork "A" Unrequested Movement)	—	Diagnosis condition	Error (P092177), (P092577), (P271100) not active.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777441

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P2857 CLUTCH A

DTC Description

INFOID:0000000013777442

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2857	00	Clutch A (Clutch "A" Pressure Engagement Performance/Too Low)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- Transaxle fluid level

Diagnosis Procedure

INFOID:0000000013777443

1.CHECK TRANSAXLE FLUID LEVEL

Check transaxle fluid level.

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK TRANSAXLE FLUID LEAKAGE

Check transaxle fluid leakage. Refer to TM-212, "Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-56, "Intermittent Incident".
NO >> Repair or replace damaged parts and adjust transaxle fluid level. Refer to TM-214, "Adjustment".

P2859 CLUTCH A

DTC Description

INFOID:0000000013777444

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P2859	00	Clutch A (Clutch "A" Pressure Disengagement Performance/Too Low)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Multidisc clutch has a malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE

- TCM

Diagnosis Procedure

INFOID:0000000013777445

1.ERASE DTC

With CONSULT

NOTE:

- If the malfunction has occurred once and no customer complaint has been received, erase the DTC.
- If the malfunction has occurred multiple times or if a customer complaint has been raceived, replace TCM.

1. Erase the DTC.
2. Turn ignition switch OFF.
3. Perform drive test.
4. Check DTC.

Is the DTC detected again?

YES >> Replace TCM. Refer to TM-216, "Removal and Installation".
NO >> INSPECTION END

P287C ADAPTATION WAS NOT COMPLETED SUCCESSFULLY.

DTC Description

INFOID:0000000013777446

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
P287C	00	Adaptation was not completed successfully (Transmission Adaptive Values Not Learned)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Adaptation was not completed.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Lerning of TCM

Diagnosis Procedure

INFOID:0000000013777447

1.PERFORM LEARNING OF TCM

1. Turn ignition switch ON.
2. Select the “Normalization and adaptation” in “Work Support” in “TRANSMISSION”.
3. Touch “START”.

>> WORK END

U0001 DRIVETRAIN CAN COMMUNICATION

TCM

TCM : DTC Description

INFOID:0000000013777448

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0001	00	Drivetrain CAN communication (High Speed CAN Communication Bus)	—	Diagnosis condition	Error (P056200) (P056300) not active or in filtering and not during motorstart.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication
- TCM

TCM : Diagnosis Procedure

INFOID:0000000013777449

1.CAN COMMUNICATION SYSTEM DIAGNOSIS

Perform the trouble diagnosis for CAN communication system. Refer to LAN-58, "Trouble Diagnosis Flow Chart".

Is the inspection result normal?

YES >> Replace the TCM. Refer to TM-216, "Removal and Installation".
NO >> Repair or replace the malfunctioning parts.

ELECTRIC SHIFT CONTROL UNIT

ELECTRIC SHIFT CONTROL UNIT : DTC Description

INFOID:0000000013777450

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0001	88	Drivetrain CAN comm (High Speed CAN Communication Bus)	BUS OFF	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Drivetrain CAN communication has malfunction.
				Diagnosis delay time	—

POSSIBLE CAUSE

- Drivetrain CAN communication has malfunction.
- Electric shift control unit

FAIL-SAFE

No impact to vehicle behavior

DTC CONFIRMATION PROCEDURE

Refer to TM-168, "ELECTRIC SHIFT CONTROL UNIT : Diagnosis Procedure".

ELECTRIC SHIFT CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013777451

1.CAN COMMUNICATION SYSTEM DIAGNOSIS

Perform the trouble diagnosis for CAN communication system. Refer to LAN-58, "Trouble Diagnosis Flow Chart".

Is the inspection result normal?

YES >> Replace the electric shift control unit (electric shift selector). Refer to TM-227, "Removal and Installation".

NO >> Repair or replace the malfunctioning parts.

U0100 COMMUNICATION ERROR

DTC Description

INFOID:0000000013777452

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0100	00	Communication error (Lost Communication With ECM/PCM "A")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777453

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0102 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777454

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0102	87	COMMUNICATION ERROR (LOST) (Lost Communication with Transfer Case Control Module)	MISSING MESSAGE	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777455

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0103 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777456

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0103	00	COMMUNICATION ERROR (LOST) (Lost Communication With Gear Shift Control Module "A")	—	Diagnosis condition	No diagnostic for 120 msec after voltage on and vehicle not in status off and ignition not in status ignition lock.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777457

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0104 LOST COMM (CRUISE CONTROL MODULE)

DTC Description

INFOID:0000000013777458

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0104	87	Lost comm (cruise control module) (Lost Communication With Cruise Control Module)	MISSING MESSAGE	Diagnosis condition	Diagnostic only with ignition switch on possible.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777459

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U010F COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777460

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U010F	87	COMMUNICATION ERROR (LOST) (Lost Communication With Air Conditioning Control Module)	MISSING MESSAGE	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777461

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0111 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777462

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0111	87	COMMUNICATION ERROR (LOST) (Lost Communication With Battery Energy Control Module "A")	MISSING MESSAGE	Diagnosis condition	No diagnostic for 120 msec after voltage On and vehicle not in status Off and Ignition not in status ignition lock.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777463

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0115 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777464

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0115	00	Communication error (lost) (Lost Communication With ECM/PCM "B")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777465

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0121 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777466

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0121	00	COMMUNICATION ERROR (LOST) [Lost Communication With Anti-Lock Brake System (ABS) Control Module]	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777467

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0128 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777468

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0128	87	COMMUNICATION ERROR (LOST) (Lost Communication With Park Brake Control Module)	MISSING MESSAGE	Diagnosis condition	No diagnostic for 120 msec after voltage on and vehicle not in status off and Ignition not in status ignition lock.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777469

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0129 LOST COMM (BRAKE SYSTEM CONT MODULE)

DTC Description

INFOID:0000000013777470

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0129	87	Lost comm (brake system cont module) (Lost Communication With Brake System Control Module)	MISSING MESSAGE	Diagnosis condition	Diagnostic only with Ignition switch on possible.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777471

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0141 LOST COMM (BODY CONTROL MODULE A)

TCM

TCM : DTC Description

INFOID:0000000013777472

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0141	87	Lost comm (body control module A) (Lost Communication With Body Control Module "A")	MISSING MESSAGE	Diagnosis condition	No diagnostic for 120 msec after voltage On.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

TCM : Diagnosis Procedure

INFOID:0000000013777473

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

ELECTRIC SHIFT CONTROL UNIT

ELECTRIC SHIFT CONTROL UNIT : DTC Description

INFOID:0000000013777474

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0141	00	Communication error (Lost Communication With Body Control Module A)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Communication with the BCM has a malfunction.
				Diagnosis delay time	3 seconds

POSSIBLE CAUSE

Communication with the BCM has a malfunction.

FAIL-SAFE

No impact to vehicle behavior

ELECTRIC SHIFT CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013777475

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0146 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777476

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0146	87	COMMUNICATION ERROR (LOST) (Lost Communication With Gateway "A")	MISSING MESSAGE	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777477

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0155 COMMUNICATION ERROR (LOST)

TCM

TCM : DTC Description

INFOID:0000000013777478

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0155	87	COMMUNICATION ERROR (LOST) [Lost Communication With Instrument Panel Cluster (IPC) Control Module]	MISSING MESSAGE	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

TCM : Diagnosis Procedure

INFOID:0000000013777479

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

ELECTRIC SHIFT CONTROL UNIT

ELECTRIC SHIFT CONTROL UNIT : DTC Description

INFOID:0000000013777480

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0155	00	COMMUNICATION ERROR (LOST) [Lost Communication With Instrument Panel Cluster (IPC) Control Module]	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Communication with the combination meter has a malfunction.
				Diagnosis delay time	3 seconds

POSSIBLE CAUSE

Communication with the combination meter has a malfunction.

FAIL-SAFE

No impact to vehicle behavior

ELECTRIC SHIFT CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013777481

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0168 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777482

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0168	00	COMMUNICATION ERROR (LOST) (Lost Communication With Vehicle Security Control Module)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Communication with the electronic ignition switch control unit has a malfunction.
				Diagnosis delay time	2 seconds

POSSIBLE CAUSE

Communication with the electronic ignition switch control unit has a malfunction.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777483

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U025D LOST COMM (FR CNTRLS INTERFACE MODL B)

DTC Description

INFOID:0000000013777484

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U025D	00	Lost comm (Fr cntrls interface modl B) (Lost Communication With Front Controls Interface Module "B")	—	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777485

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0291 COMMUNICATION ERROR (LOST)

DTC Description

INFOID:0000000013777486

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0291	00	COMMUNICATION ERROR (LOST) (Lost Communication With Gear Shift Control Module "B")	—	Diagnosis condition	No diagnostic for 120 msec after voltage On and vehicle not in status Off and Ignition not in status ignition lock.
				Signal (terminal)	—
				Threshold	Message incorrect
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777487

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0404 COMMUNICATION ERROR (INVALID)

DTC Description

INFOID:0000000013777488

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0404	00	COMMUNICATION ERROR (INVALID) (Invalid Data Received From Gear Shift Control Module "A")	—	Diagnosis condition	No error (U000100) and [(U02900) or (U010300)] active.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777489

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0416 COMMUNICATION ERROR (INVALID)

DTC Description

INFOID:0000000013777490

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0416	00	COMMUNICATION ERROR (INVALID) (Invalid Data Received From Vehicle Dynamics Control Module)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777491

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0423 COMMUNICATION ERROR (INVALID)

DTC Description

INFOID:0000000013777492

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0423	00	COMMUNICATION ERROR (INVALID) (Invalid Data Received From Instrument Panel Cluster Control Module)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Implausible data were received from the combination meter.
				Diagnosis delay time	3 seconds

POSSIBLE CAUSE

Communication with the combination meter has a malfunction.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777493

1.CHECK DTC (COMBINATION METER)

1. Turn ignition switch ON.
2. Select “Self Diagnostic Results” in “METER/M&A”.
3. Check DTC detected item. Refer MWI-85, "DTC Index".

>> INSPECTION END

U0427 COMMUNICATION ERROR (INVALID)

DTC Description

INFOID:0000000013777494

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0427	00	COMMUNICATION ERROR (INVALID) (Invalid Data Raceived From Vehicle Security Control Module)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Implausible data were received from the electronic ignition switch control unit.
				Diagnosis delay time	2 seconds

POSSIBLE CAUSE

Communication with the electronic ignition switch control unit has a malfunction.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777495

1.CHECK DTC (ELECTRONIC IGNITION SWITCH CONTROL UNIT)

1. Turn ignition switch ON.
2. Select “Self Diagnostic Results” in “Electronic ign switch cont unit”.
3. Check DTC detected item. Refer PCS-12, "DTC Index".

>> INSPECTION END

U0428 INVALID DATA RCVD FRM STRG ANGL SEN MDL

DTC Description

INFOID:0000000013777496

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0428	00	Invalid data rcvd frm strg angl sen mdl (Invalid Data Received From Steering Angle Sensor Module)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777497

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0429 COMMUNICATION ERROR (INVALID)

DTC Description

INFOID:0000000013777498

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0429	00	COMMUNICATION ERROR (INVALID) (Invalid Data Received From Steering Column Control Module)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777499

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U0504 COMMUNICATION ERROR

DTC Description

INFOID:0000000013777500

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0504	00	Communication error (Invalid Data Received From Door Control Module E)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Implausible data were received from left front door control unit.
				Diagnosis delay time	3 seconds

POSSIBLE CAUSE

Communication with left front door control unit has malfunction.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777501

1.CHECK DTC (LEFT FRONT DOOR CONTROL UNIT)

1. Turn ignition switch ON.
2. Select “Self Diagnostic Results” in “Left front door control unit”.
3. Check DTC detected item. Refer DLK-60, "DTC Index".

>> INSPECTION END

U0505 COMMUNICATION ERROR

DTC Description

INFOID:0000000013777502

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U0505	00	Communication error (Invalid Data Received From Door Control Modure F)	—	Diagnosis condition	—
				Signal (terminal)	—
				Threshold	Implausible data were received from right front door control unit.
				Diagnosis delay time	3 seconds

POSSIBLE CAUSE

Communication with right front door control unit has malfunction.

FAIL-SAFE

No impact to vehicle behavior

Diagnosis Procedure

INFOID:0000000013777503

1.CHECK DTC (RIGHT FRONT DOOR CONTROL UNIT)

1. Turn ignition switch ON.
2. Select “Self Diagnostic Results” in “Right front door control unit”.
3. Check DTC detected item. Refer DLK-60, "DTC Index".

>> INSPECTION END

U1082 SIG PRK POS WS RCVD ELCTRNC IGN LCK ECU

DTC Description

INFOID:0000000013777504

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1082	00	Sig prk pos ws rcvd elctrnc ign lck ecu (Signal park position was received electronic ign lock ecu)	—	Diagnosis condition	Diagnostic since switching on is always possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electronic ignition switch control unit

Diagnosis Procedure

INFOID:0000000013777505

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U108B SIG PARK POSI WAS RECEIVED E-PKB ECU.

DTC Description

INFOID:0000000013777506

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U108B	00	Sig park posi was received e-pkb ecu. (Signal park position was received electric parking brake ecu.)	—	Diagnosis condition	No diagnostic for 120 msec after voltage On and vehicle not in status Off and Ignition not in status ignition lock.
				Signal (terminal)	—
				Threshold	The electric parking brake control module has requested the inserting of P.
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electric parking brake control module

Diagnosis Procedure

INFOID:0000000013777507

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U113B DIRECT SELECT LEVER HAS MALF

DTC Description

INFOID:0000000013777508

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U113B	00	Direct select lever has malf (Communication with the DIRECT SELECT lever has a malfunction)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electric shift control unit

Diagnosis Procedure

INFOID:0000000013777509

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1401 SIG ENG RPM CMBSTN ENG ECU NOT RCVD

DTC Description

INFOID:0000000013777510

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1401	00	Sig eng rpm cmbstn eng ecu not rcvd (Signal eng rpm combustion eng ecu was not received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- ECM

Diagnosis Procedure

INFOID:0000000013777511

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1402 SIG ENG TMP CMBSTN ENG ECU NOT RCVD

DTC Description

INFOID:0000000013777512

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1402	00	Sig eng tmp cmbstn eng ecu not rcvd (Signal eng temp combustion eng ecu was not received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- ECM

Diagnosis Procedure

INFOID:0000000013777513

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1404 SIG ENG TRQ CMBSTN ENG ECU NOT RCVD

DTC Description

INFOID:0000000013777514

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1404	00	Sig eng trq cmbstn eng ecu not rcvd (The signal “engine torque” from control unit “combustion engine” was not received.)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- ECM

Diagnosis Procedure

INFOID:0000000013777515

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1405 SIG ENG TRQ CMBSTN ENG ECU NOT RCVD

DTC Description

INFOID:0000000013777516

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1405	00	Sig eng trq cmbstn eng ecu not rcvd (The signal “engine torque” from control unit “combustion engine” was not received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- ECM

Diagnosis Procedure

INFOID:0000000013777517

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1406 SIG ENG TRQ CMBSTN ENG ECU NOT RCVD

DTC Description

INFOID:0000000013777518

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1406	00	Sig eng trq cmbstn eng ecu not rcvd (Signal eng torque combustion eng ecu was not received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- ECM

Diagnosis Procedure

INFOID:0000000013777519

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1407 ENGINE TORQUE SIGNAL

DTC Description

INFOID:0000000013777520

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1407	00	Engine torque signal (Implausible signal “Engine torque” was received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- ECM

Diagnosis Procedure

INFOID:0000000013777521

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1408 BRAKE SW A/B CORRELATION

DTC Description

INFOID:0000000013777522

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1408	00	BRAKE SW A/B CORRELATION (An implausible signal from switch “Brake lights” was received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electronic stability program control unit

Diagnosis Procedure

INFOID:0000000013777523

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1409 AN IMPLAUSIBLE FL WHL SPD SIG WS RCVD

DTC Description

INFOID:0000000013777524

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1409	00	An implausible FL whl spd sig ws rcvd (An implausible FL wheel speed sig was received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electronic stability program control unit

Diagnosis Procedure

INFOID:0000000013777525

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U140A AN IMPLAUSIBLE FR WHL SPD SIG WS RCVD

DTC Description

INFOID:0000000013777526

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U140A	00	An implausible FR whl spd sig ws rcvd (An implausible FR wheel speed sig was received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electronic stability program control unit

Diagnosis Procedure

INFOID:0000000013777527

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U140B AN IMPLAUSIBLE RL WHL SPD SIG WS RCVD

DTC Description

INFOID:0000000013777528

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U140B	00	An implausible RL whl spd sig ws rcvd (An implausible RL wheel speed sig was received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electronic stability program control unit

Diagnosis Procedure

INFOID:0000000013777529

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U140C AN IMPLAUSIBLE RR WHL SPD SIG WS RCVD

DTC Description

INFOID:0000000013777530

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U140C	00	An implausible RR whl spd sig ws rcvd (An implausible RR wheel speed sig was received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electronic stability program control unit

Diagnosis Procedure

INFOID:0000000013777531

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U140D WHEEL SPEED SIGNAL

DTC Description

INFOID:0000000013777532

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U140D	64	WHEEL SPEED SIGNAL (An implausible wheel speed signal was received)	SIGNAL PLAUSIBILITY FAILURE	Diagnosis condition	Diagnostic only with ignition switch On possible.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit
- Electronic stability program control unit
- Transaxle assembly

Diagnosis Procedure

INFOID:0000000013777533

1.CHECK DTC OF ELECTRONIC STABILITY PROGRAM CONTROL UNIT

Perform “Self Diagnostic Result” in “ABS”.

Is any DTC detected?

YES >> Check DTC detected item. Refer to BRC-59, "DTC Index".
NO >> Replace the transaxle assembly. Refer to TM-228, "Removal and Installation".

U1420 IMPLSBL SIG WS RCVD FRM ELC SLCTR LVR MDL

DTC Description

INFOID:0000000013777534

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1420	00	Implsbl sig ws rcvd frm elc slctr lvr mdl (An implausible sig was received from electronic selector lever module)	—	Diagnosis condition	When the following conditions are all satisfied. • Electric shift control unit installed. • Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777535

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1425 ACL PD SN SIG CMBSN ENG CU WS NT RCVD

DTC Description

INFOID:0000000013777536

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1425	00	Acl pd sn sig cmbsn eng cu ws nt rcvd (Signal of acceler pedal sen combustion eng ecu was not received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777537

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U1433 SIG ’STATUS OF CIRCUIT 15’

DTC Description

INFOID:0000000013777538

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U1433	00	SIG “STATUS OF CIRCUIT 15” (An implausible signal “Status of circuit 15” was received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777539

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

U144D TRQ RQST CMBSTN ENG ECU WS NT RCVD

DTC Description

INFOID:0000000013777540

DTC DETECTION LOGIC

DTC		CONSULT screen terms (Trouble diagnosis content)	CONSULT screen terms [Malfunction type]	DTC detection condition	
U144D	00	Trq rqst cmbstn eng ecu ws nt rcvd (Torque request combustion eng ecu was not received)	—	Diagnosis condition	Message was received at least once.
				Signal (terminal)	—
				Threshold	—
				Diagnosis delay time	—

POSSIBLE CAUSE

- CAN communication circuit

Diagnosis Procedure

INFOID:0000000013777541

For the diagnosis procedure, refer to LAN-58, "Trouble Diagnosis Flow Chart".

PERIODIC MAINTENANCE

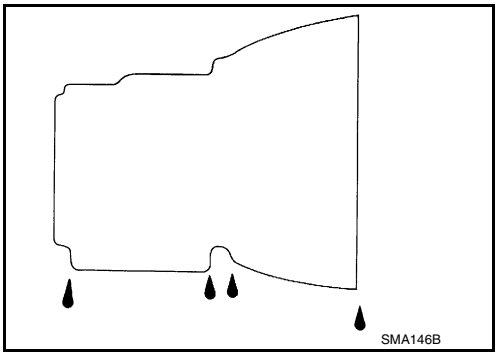
TRANSAXLE FLUID

Inspection

INFOID:0000000013777542

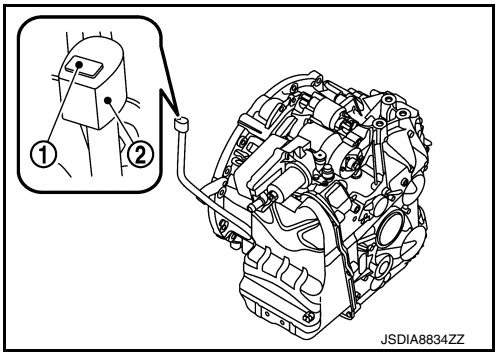
FLUID LEAKAGE

- Check transaxle surrounding area (oil seal and plug etc.) for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust transaxle fluid level. Refer to TM-214, "Adjustment".

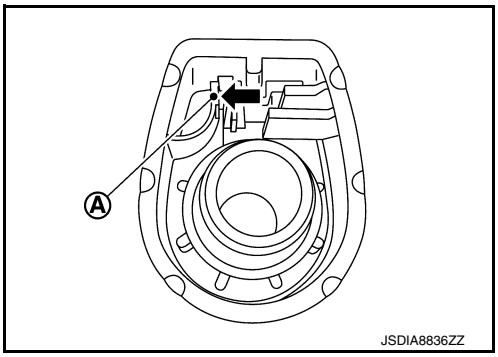


TRANSAXLE FLUID LEVEL

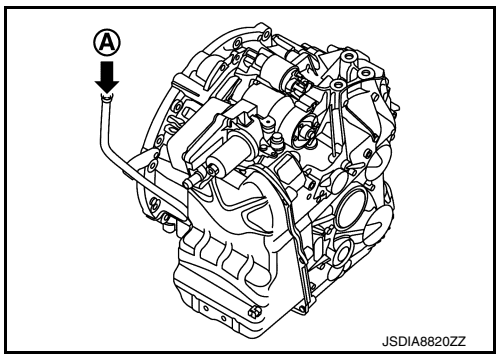
1. Remove air duct (dust side). Refer to EM-23, "Removal and Installation".
2. Connect CONSULT. Refer to GI-64, "Description".
3. Apply the parking brake and start the engine.
4. Select “TRANSMISSION”, “Work Support”, “Oil level check” in this order.
5. Proceed to “Oil level check”, according to instructions shown on the CONSULT screen.
6. Remove locking pin ① and remove cap ② from transaxle fluid charging pipe.
   CAUTION:
   Never reuse locking pin.



NOTE:
Locking pin can be removable by pressing lock plate Ⓐ of cap in the direction shown by arrow.



7. Insert dipstick [SST: KV315H0340 (TechMate No. -) (DAIMLER tool No. 168 589 012 100)] into hole Ⓐ of transaxle fluid charging pipe.
NOTE:
Inset dipstick all the way to the base.

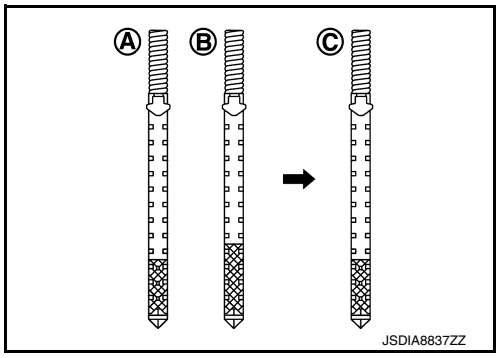


8. Measure transaxle fluid level three times with a dipstick.

Engine type			1.6L turbo engine	2.0L turbo engine
Transaxle fluid level	Transaxle fluid temeperature	40 °C (104 °F)	3 scales	4 scales
		70 °C (158 °F)	4 scales	5 scales

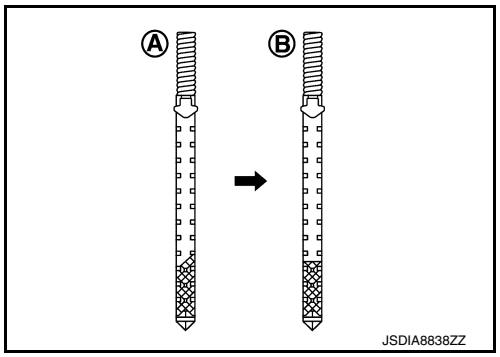
NOTE:
- Wipe out transaxle fluid adhered to dipstick each time by using a lint-free waste.
- How to read scales.
- If there are variations in the measurement results:

Ⓐ : 3.5 scales
Ⓑ : 4.5 scales
Ⓒ : Actual scale (3.5 scales)



- If the measurement results show that oil level is slanted:

Ⓐ : 3 - 4 scales
Ⓑ : Actual scale (3.5 scales)



9. Adjust transaxle fluid level, if necessary. Refer to TM-214, "Adjustment".
10. Complete “Oil level check”, according to instructions shown on the CONSULT screen.
11. Stop the engine.

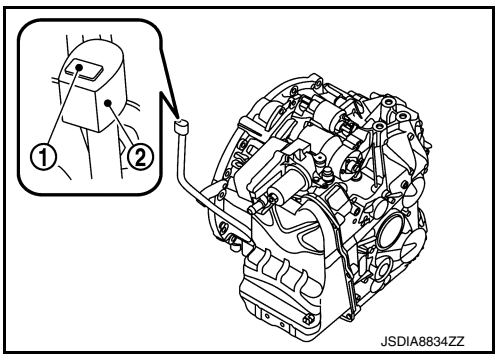
Changing

INFOID:0000000013777543

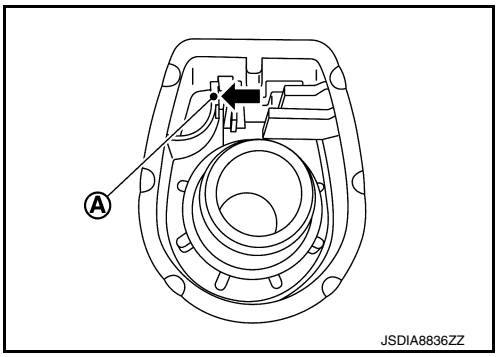
Recommended fluid and fluid capacity	: Refer to MA-12, "FOR NORTH AMERICA : Fluids and Lubricants" (for North America) or MA-13, "FOR MEXICO : Fluids and Lubricants" (for Mexico)

1. Apply the parking brake and start the engine.
2. Warm up the engine.
3. Shift through P-R-N-D several times with the vehicle stationary and the engine idling.
4. Select the N position.
5. Stop the engine.
6. Lift up the vehicle.
7. Remove engine under cover. Refer to EXT-44, "ENGINE UNDER COVER : Removal and Installation".

8. Remove the drain plug from the transaxle case, and then drain the transaxle fluid.
CAUTION:
Never get burn yourself, as transaxle fluid may be hot.
9. Remove the oil pan. Refer to TM-216, "Removal and Installation".
10. Remove the transaxle fluid filter. Refer to TM-216, "Removal and Installation".
11. Lift down the vehicle.
12. Remove the transaxle cooling module cap. Refer to TM-223, "Removal and Installation".
13. Remove the transaxle cooling module element. Refer to TM-223, "Removal and Installation".
14. Clean the oil pan.
15. Clean the drain plug.
16. Lift up the vehicle.
17. Install the new transaxle fluid filter with new O-ring. Refer to TM-216, "Removal and Installation".
18. Install the oil pan. Refer to TM-216, "Removal and Installation".
19. Install the drain plug with new oil seal. Refer to TM-216, "Removal and Installation".
20. Install the engine under cover.
21. Lift down the vehicle.
22. Install the new transaxle cooling module element. Refer to TM-216, "Removal and Installation".
23. Install the transaxle cooling module cap with new O-ring. Refer to TM-223, "Removal and Installation".
24. Remove locking pin ① and remove cap ② from transaxle fluid charging pipe.



NOTE:
Locking pin can be removable by pressing lock plate Ⓐ of cap in the direction shown by arrow.



25. Fill the new transaxle fluid.
CAUTION:
Never start the engine while filling the transaxle fluid.

Transaxle fluid : 4 liters

26. Adjust transaxle fluid level, if necessary. Refer to TM-214, "Adjustment".

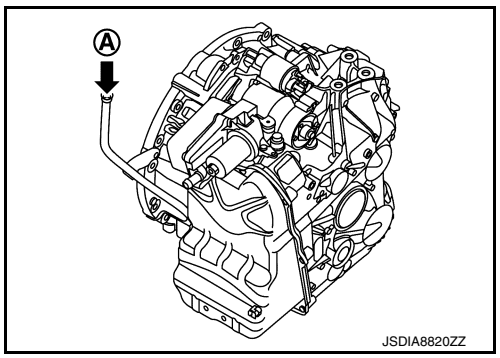
Adjustment

INFOID:0000000013777544

Recommended fluid and fluid capacity	: Refer to MA-12, "FOR NORTH AMERICA : Fluids and Lubricants" (for North America) or MA-13, "FOR MEXICO : Fluids and Lubricants" (for Mexico)

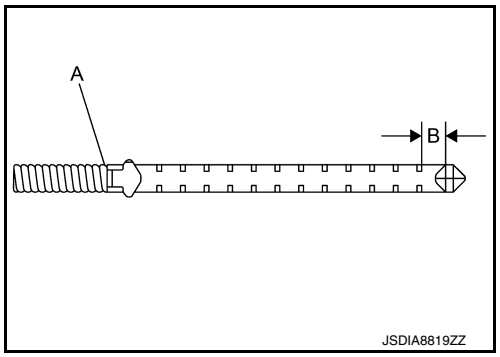
1. Remove air duct (dust side). Refer to EM-23, "Removal and Installation".
2. Connect CONSULT. Refer to GI-64, "Description".
3. Apply the parking brake and start the engine.
4. Select “TRANSMISSION”, “Work Support”, “Oil level check” in this order.
5. Proceed to “Oil level check”, according to instructions shown on the CONSULT screen.
6. Check the transaxle fluid level. Refer to TM-212, "Inspection".

7. Adjust transaxle fluid level by injecting/discharging transaxle fluid from hole Ⓐ of transaxle fluid charging pipe by using an appropriate tool.



NOTE:
- The scales (B) on dipstick [SST: KV315H0340 (TechMate No. -) (DAIMLER tool No. 168 589 012 100)] (A) are marked at intervals of 5 mm (0.20 in).
- To increase transaxle fluid level by 1 mm (0.04 in), it is necessary to inject approximately 50 ml of transaxle fluid.

8. Complete “Oil level check”, according to instructions shown on the CONSULT screen.
9. Stop the engine.

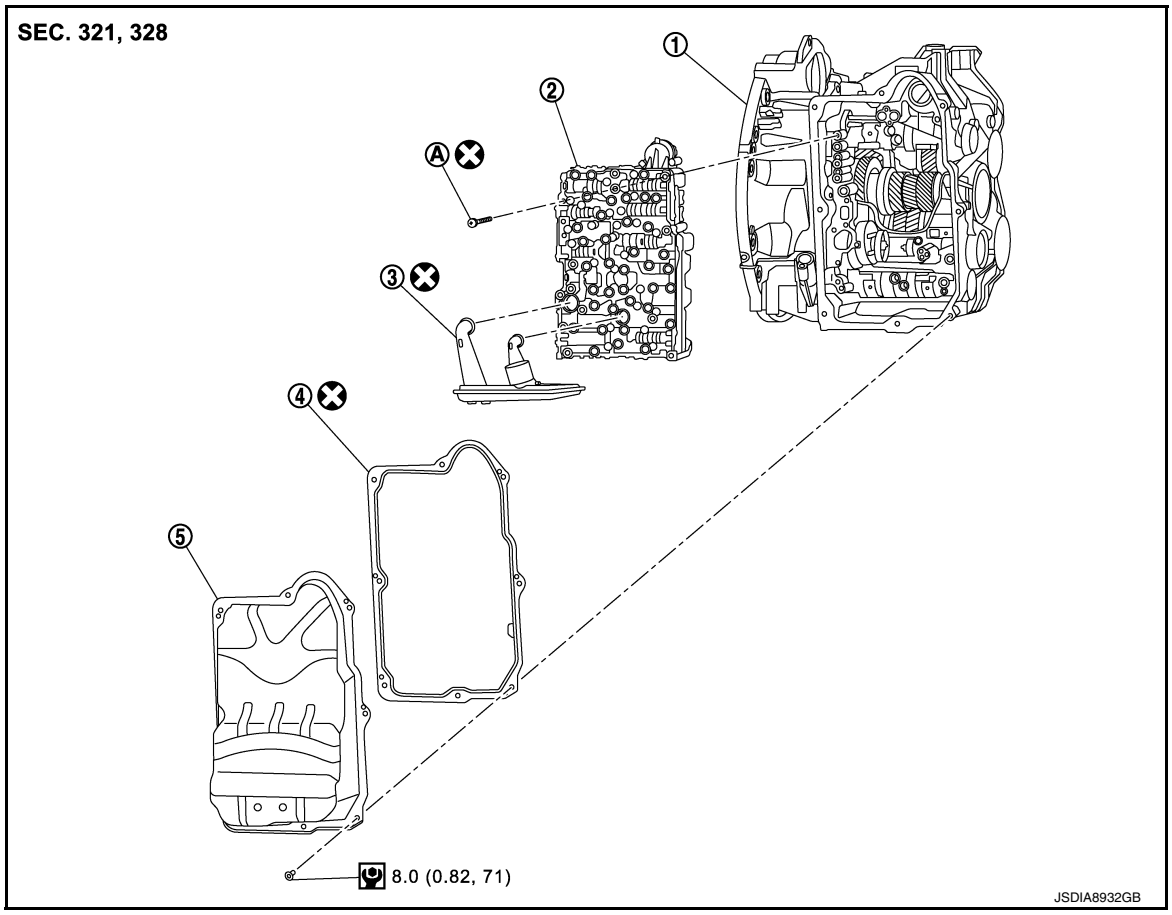


REMOVAL AND INSTALLATION

OIL PAN, ELECTRIC OIL PUMP & CONTROL VALVE & TCM

Exploded View

INFOID:0000000013777545



①	Transaxle assembly	②	Electric oil pump, control valve, and TCM assembly	③	Oil filter
④	Gasket	⑤	Oil pan		

Ⓐ : For the tightening torque, refer to TM-216, "Removal and Installation".

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000013777546

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

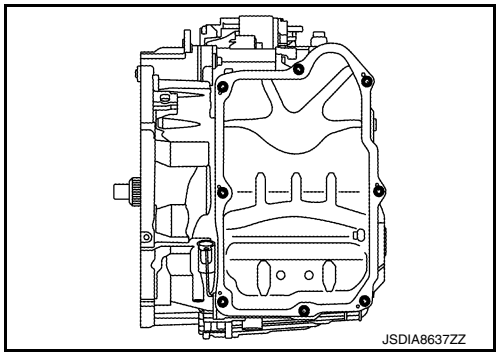
CAUTION:

- **Perform when the engine is cold.**
- **When replacing TCM and transaxle assembly simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE AND TCM" before work. Refer to TM-70, "Description".**

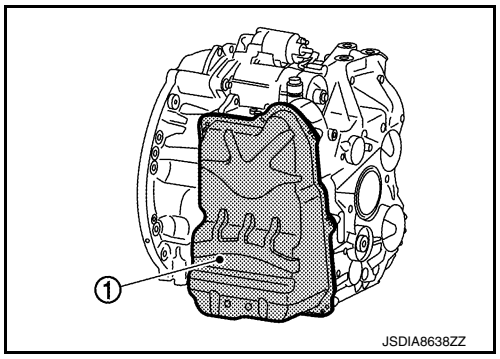
NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Turn ignition switch OFF.
2. Remove ECM. Refer to EC-963, "Removal and Installation".
3. Remove engine air duct and air cleaner housing. Refer to EM-23, "Removal and Installation".
4. Disconnect TCM harnnes connector.
5. Remove left charge air tube. Refer to EM-23, "Removal and Installation".
6. Remove engine under cover. Refer to EXT-44, "ENGINE UNDER COVER : Removal and Installation".
7. Drain transaxle fluid. Refer to TM-213, "Changing".
8. Remove oil pan mounting bolts.

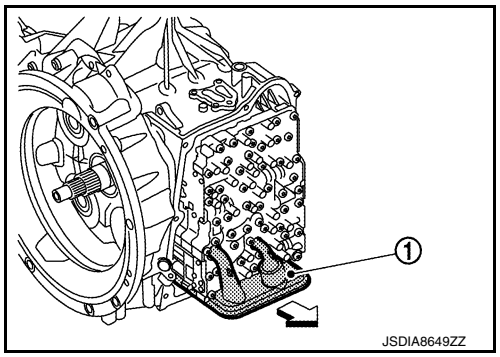

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9. Remove oil pan ①.



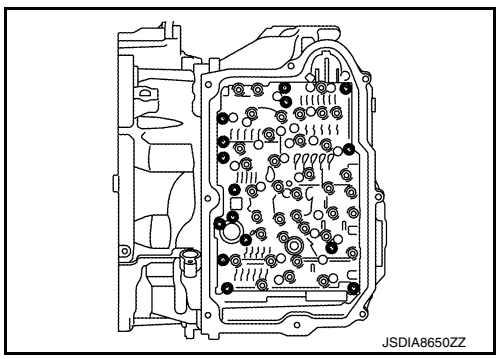
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10. Remove the oil filter ① in the direction shown by arrow.

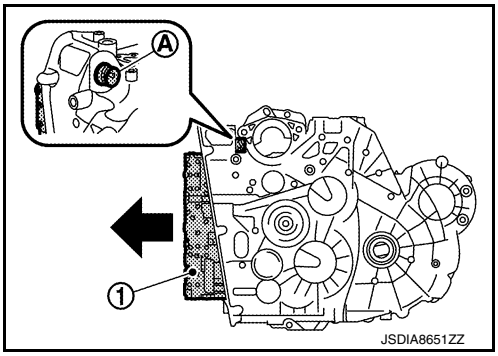


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11. Remove control valve mounting bolts.


JSDIA8650ZZ

12. Remove the control valve assembly ① in the direction shown by arrow.
CAUTION:
Remove the control valve vertically without tilting, press and hold the Ⓐ portion of TCM connector if necessary.



INSTALLATION

Note the following, and install in the reverse order of removal.
Install control valve with the following procedure.
CAUTION:
Never reuse bolts.

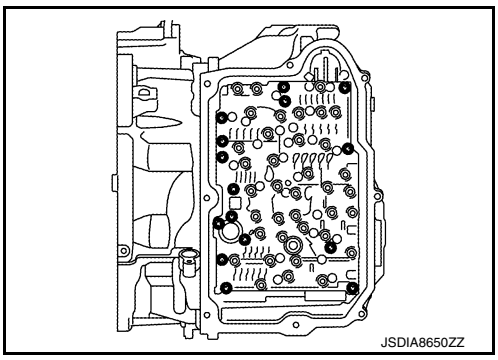
1. Tighten control valve mounting bolts.

Quantity	**: 15**
Tightening torque N·m (kg-m, in-lb)	**: 4 (0.41, 35)**

NOTE:
Tighten mounting bolts in diagonal order.

2. Turn control valve mounting bolts clockwise.

Angle tightening	**: 180°**



CAUTION:
- **For non-reusable parts, refer to TM-216, "Exploded View".**
- **Apply transaxle fluid to the O-ring.**
- **After replacement, always perform transaxle fluid leakage check. Refer to TM-212, "Inspection".**
- **Perform inspection after installation. Refer to TM-218, "Inspection and Adjustment".**

Inspection and Adjustment

INFOID:0000000013777547

INSPECTION AFTER INSTALLATION

Check the following items:
- Transaxle fluid leakage, refer to TM-212, "Inspection".
- Start the engine and check for coolant leakage from the parts which are removed and reinstalled.

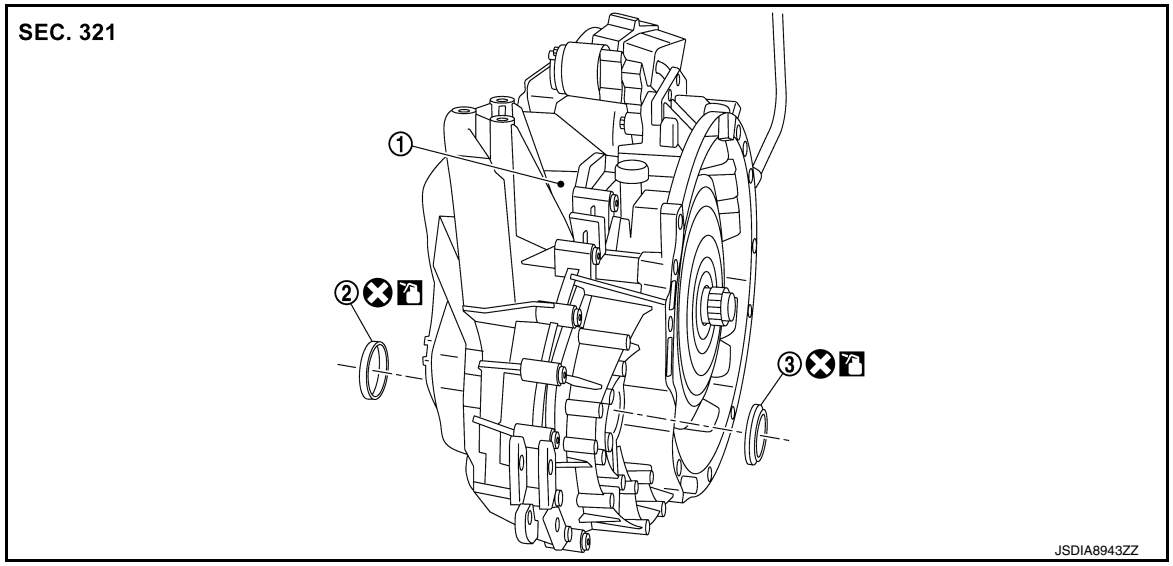
ADJUSTMENT AFTER INSTALLATION

- Adjust the transaxle fluid level. Refer to TM-214, "Adjustment".
- When replaced transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE AND TCM". Refer to TM-70, "Description".

DIFFERENTIAL SIDE OIL SEAL

Exploded View

INFOID:0000000013777548



① Transaxle assembly
② Differential side oil seal (transaxle case side)
③ Differential side oil seal (clutch housing side)

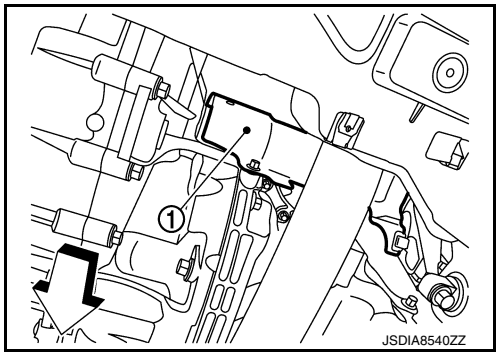
: Always replace after every disassembly.
: Apply transaxle fluid

Removal and Installation

INFOID:0000000013777549

REMOVAL

1. Remove engine under cover. Refer to EXT-44, "ENGINE UNDER COVER : Removal and Installation".
2. Drain transaxle fluid. Refer to TM-213, "Changing".
3. Remove front drive shafts. Refer to FAX-16, "LEFT SIDE : Removal and Installation" (Left side), FAX-19, "RIGHT SIDE : Removal and Installation" (Right side).
4. Remove heat insulator ①. Refer to FAX-15, "Exploded View".



⇦ : Vehicle front

NOTE:
When working right side only.

5. Remove differential side oil seals from transaxle assembly, using oil seal remover (commercial service tool).
CAUTION:
Never damage transaxle assembly.

INSTALLATION

Note the following, and install in the reverse order of removal.
- Before installing differential side oil seal, check the seat surface for damage.
- Install differential side oil seals to transaxle assembly, using the drift [SST: KV325H0780 (TechMate No. -) (DAIMLER tool No. 711 589 19 15 00)].

CAUTION:
- **Never reuse differential side oil seal.**
- **Never incline differential side oil seal.**
- **Apply transaxle fluid onto oil seal lip**
- **Never damage transaxle assembly.**

- Perform inspection after installation. Refer to TM-220, "Inspection".

Inspection

INFOID:0000000013777550

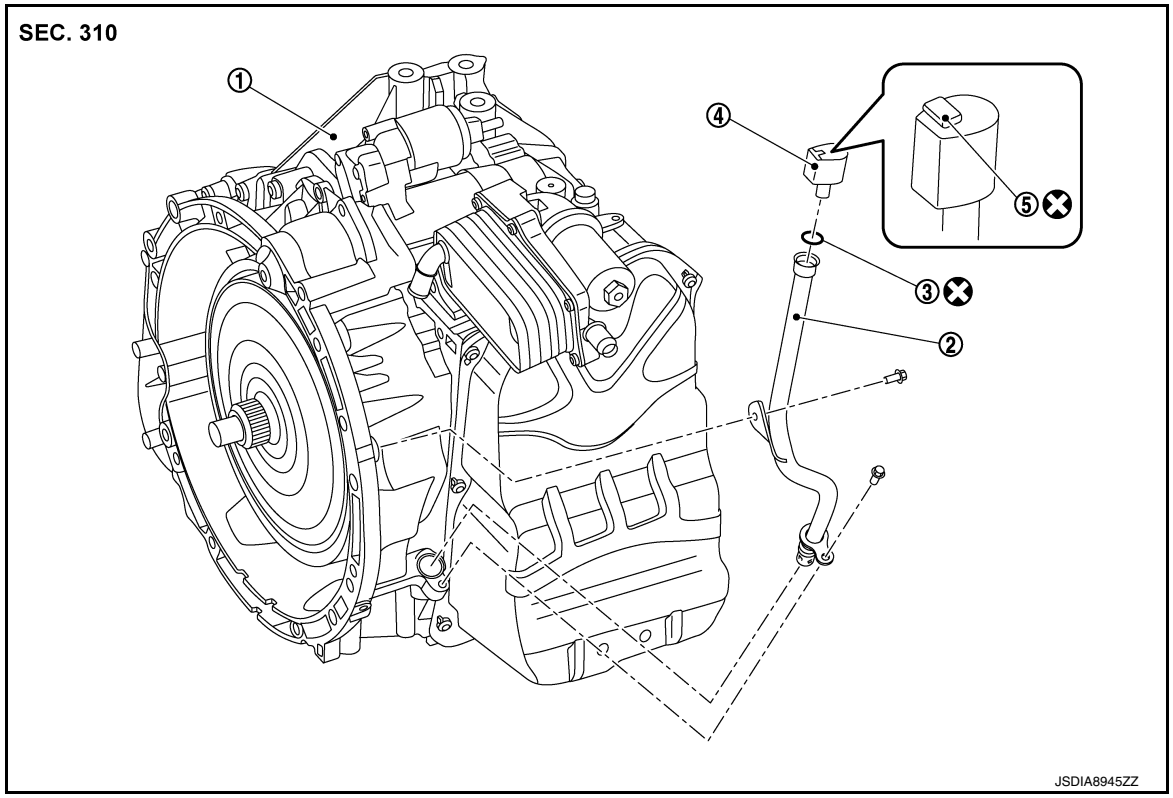
INSPECTION AFTER INSTALLATION

Check the transaxle fluid level and the transaxle fluid leakage. Refer to TM-212, "Inspection".

TRANSAXLE FLUID CHARGING PIPE

Exploded View

INFOID:0000000013777551



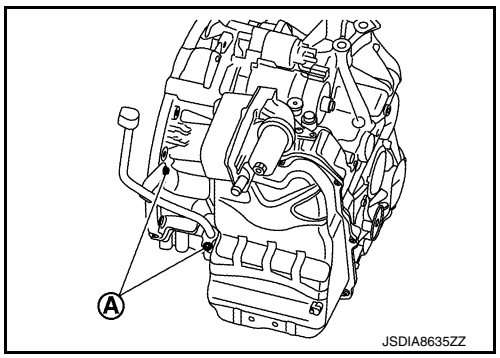
① Transaxle assembly ② Transaxle fluid charging pipe ③ O-ring
④ Cap ⑤ Lock pin
⊗ : Always replace after every disassembly.

Removal and Installation

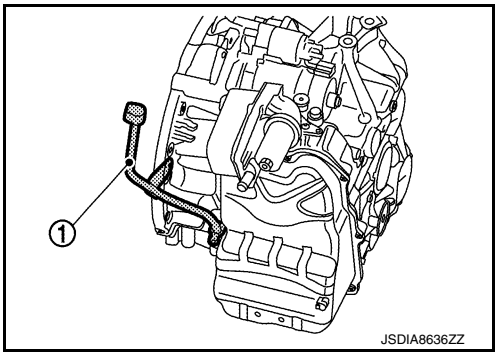
INFOID:0000000013777552

REMOVAL

1. Remove engine under cover. Refer to EXT-44, "ENGINE UNDER COVER : Removal and Installation".
2. Remove bolt, securing transaxle fluid charging pipe to transmission assembly.
3. Remove transaxle oil charging pipe mounting bolts Ⓐ.



4. Remove transaxle oil charging pipe ①.



INSTALLATION

Note the following, and install in the reverse order of removal.

- For non-reusable parts, refer to TM-221, "Exploded View".
- Perform inspection after installation. Refer to TM-222, "Inspection and Adjustment".

Inspection and Adjustment

INFOID:0000000013777553

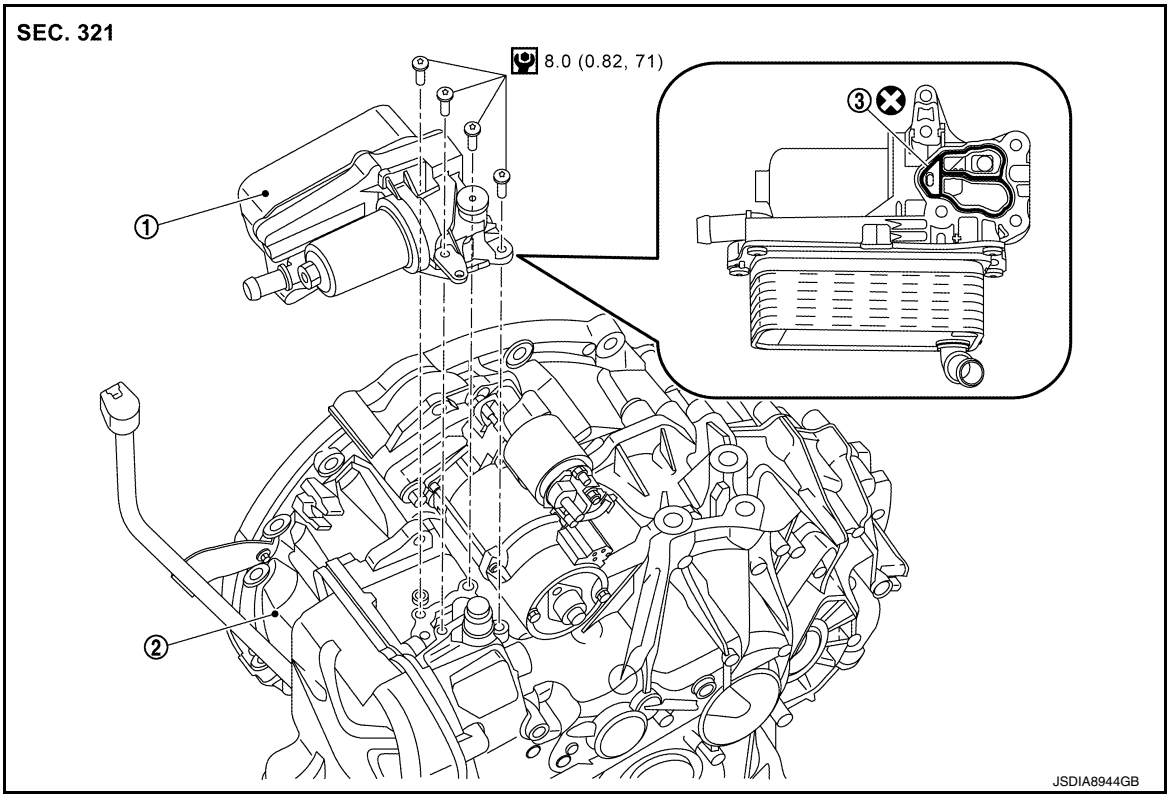
INSPECTION AFTER INSTALLATION

Check the transaxle fluid level and the transaxle fluid leakage. Refer to TM-212, "Inspection".

TRANSAXLE COOLING MODULE

Exploded View

INFOID:0000000013777554



① Transaxle cooling module ② Transaxle assembly ③ Seal

: Always replace after every disassembly.

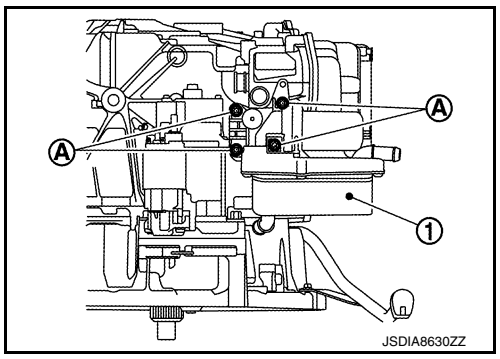
: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000013777555

REMOVAL

1. Remove ECM. Refer to EC-963, "Removal and Installation".
2. Remove engine air duct and air cleaner housing. Refer to EM-23, "Removal and Installation".
3. Drain engine coolant. Refer to CO-7, "Draining".
4. Disconnect coolant hoses from transaxle cooling module ①.
5. Remove bolts Ⓐ.
6. Remove transaxle cooling module from transaxle assembly.



INSTALLATION

Note the following, and install in the reverse order of removal.

- Perform inspection after installation. Refer to TM-224, "Inspection and Adjustment".
- Check condition of coolant hoses and clamps of coolant hoses, replace if necessary.

- Replace the seal of the transaxle cooling module.

Inspection and Adjustment

INFOID:0000000013777556

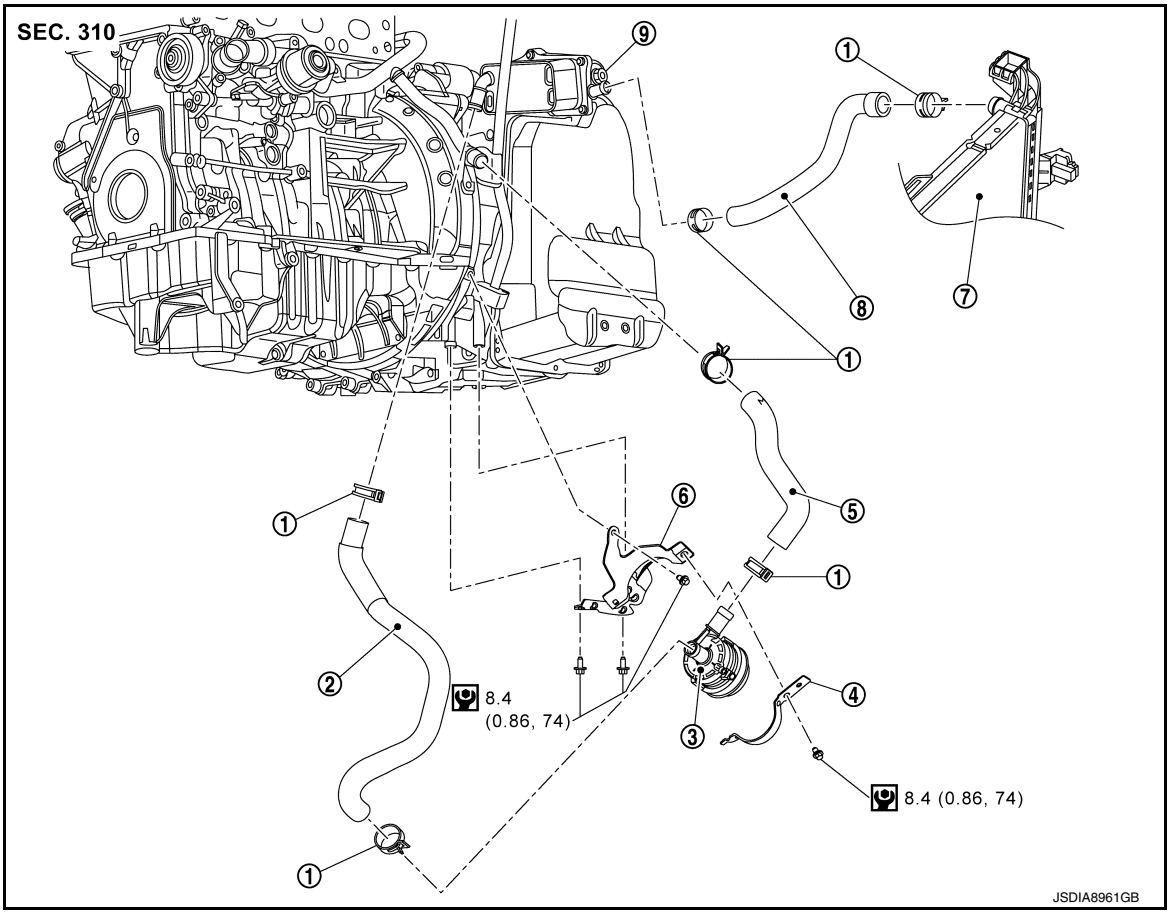
INSPECTION AFTER INSTALLATION

- Check the transaxle fluid level and the transaxle fluid leakage. Refer to TM-212, "Inspection".
- Check the engine coolant leakage. Refer to CO-7, "Inspection".

TRANSAXLE FLUID COOLER SYSTEM

Exploded View

INFOID:0000000013777557



① Hose clamp	② Water hose A	③ Water pump
④ Bracket	⑤ Water hose B	⑥ Bracket
⑦ Radiator	⑧ Water hose C	⑨ Transaxle assembly

: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000013777558

REMOVAL

1. Remove engine under cover. Refer to EXT-44, "ENGINE UNDER COVER : Removal and Installation".
2. Drain engine coolant. Refer to CO-7, "Draining".
3. Disconnect water pump connector from water pump.
4. Disconnect water hoses.
5. Remove water pump mounting braket and water pump.
6. Remove water pump braket from water pump.

INSTALLATION

Note the following, and install in the reverse order of removal.

- Perform inspection after installation. Refer to TM-225, "Inspection and Adjustment".

Inspection and Adjustment

INFOID:0000000013777559

INSPECTION AFTER INSTALLATION

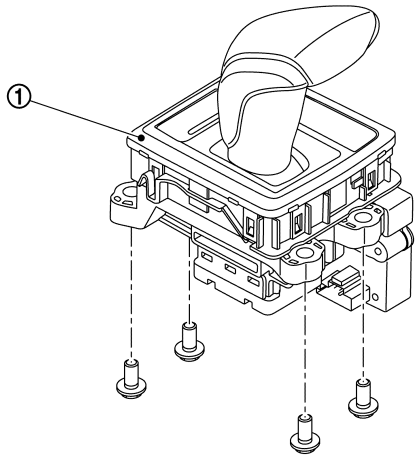
Check the engine coolant leakage. Refer to CO-7, "Inspection".

ELECTRIC SHIFT SELECTOR

Exploded View

INFOID:0000000013777560

SEC. 265



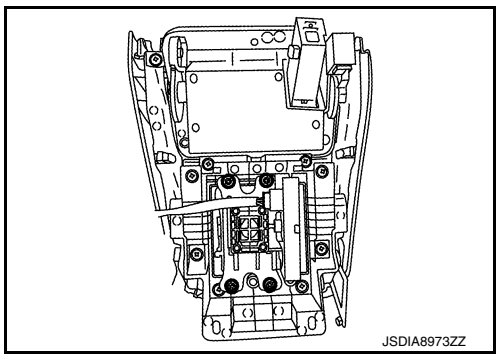
① Electric shift selector

Removal and Installation

INFOID:0000000013777561

REMOVAL

1. Disconnect the negative terminal from 12V battery. Refer to TM-10, "Precautions for Removing Battery Terminal".
2. Remove the center console front finisher. Refer to IP-22, "Removal and Installation".
3. Remove electric shift selector fixing screws.
4. Remove electric shift selector from center console front finisher.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

When replaced electric shift selector, perform "ADDITIONAL SERVICE WHEN REPLACING ELECTRIC SHIFT CONTROL UNIT". Refer to TM-227, "Adjustment".

Adjustment

INFOID:0000000013777562

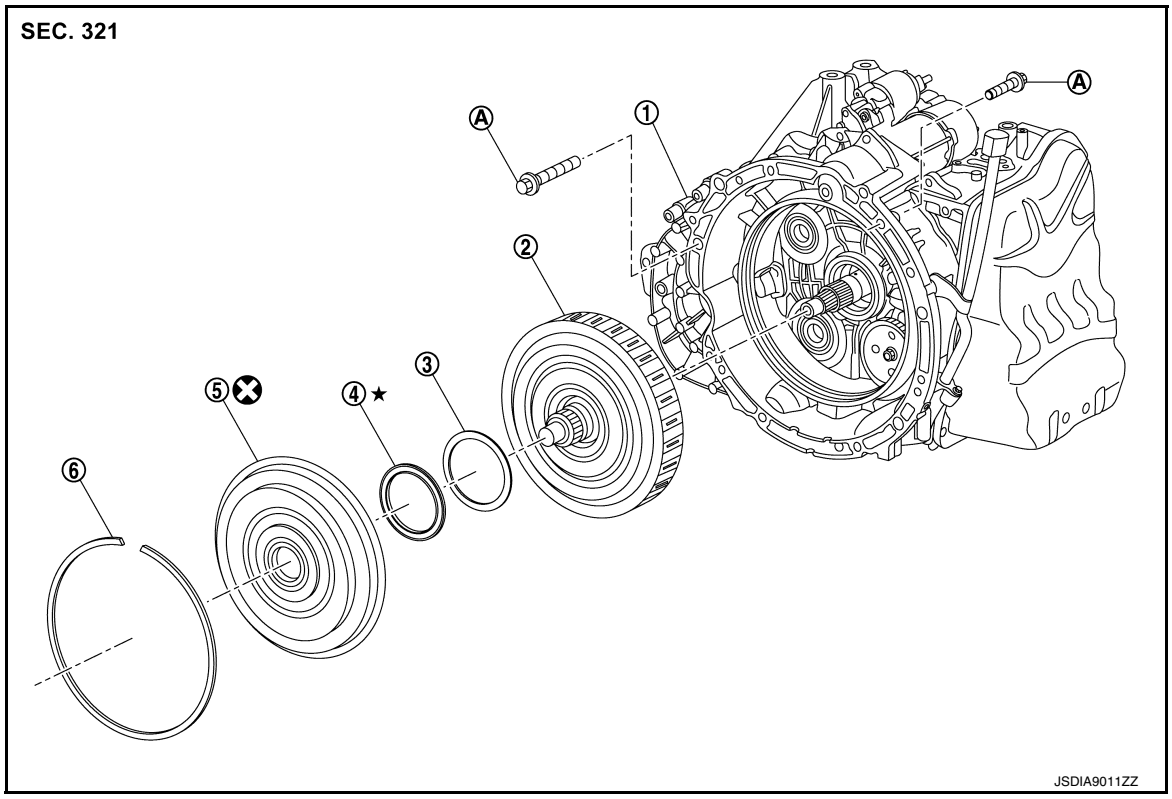
Perform initialization of INFINITI VEHICLE IMMOBILIZER SYSTEM (NATS) and registration of all IVIS (NATS) ignition key IDs. Refer to TM-79, "Description".

UNIT REMOVAL AND INSTALLATION

TRANSAXLE ASSEMBLY

Exploded View

INFOID:0000000013777563



① Transaxle assembly	② Dual clutch	③ Bearing
④ Shim	⑤ Cover	⑥ Snap ring

Ⓐ : For the tightening torque, refer to TM-228, "Removal and Installation".

⊠ : Always replace after every disassembly.

★ : Select with proper thickness.

Removal and Installation

INFOID:0000000013777564

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

CAUTION:

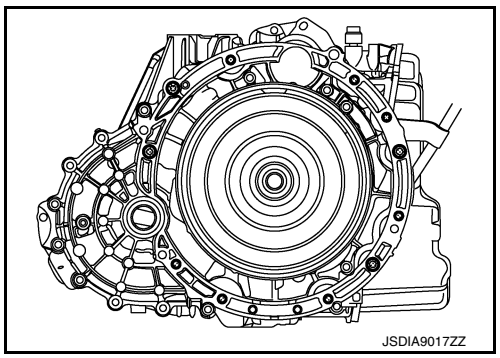
- **Perform when the engine is cold.**
- **When replacing transaxle assembly simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY" before work. Refer to TM-74, "Description".**

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Drain transaxle fluid if necessary. Refer to TM-213, "Changing".
2. Remove the engine and transaxle assembly as a unit. Refer to EM-95, "Removal and Installation".
3. Remove starter motor. Refer to STR-18, "1.6L/2.0L TURBO ENGINE : Removal and Installation".
4. Remove water hoses. Refer to TM-225, "Removal and Installation".

5. Remove the transaxle to engine and engine to transaxle bolts.
6. Remove following parts from transaxle assembly.
   - Dual clutch. Refer to TM-232, "Disassembly and Assembly".
   - Transaxle charging pipe. Refer to TM-221, "Removal and Installation".
   - Transaxle cooling module. Refer to TM-223, "Removal and Installation".
   - Water pump. Refer to TM-225, "Removal and Installation".


JSDIA9017ZZ

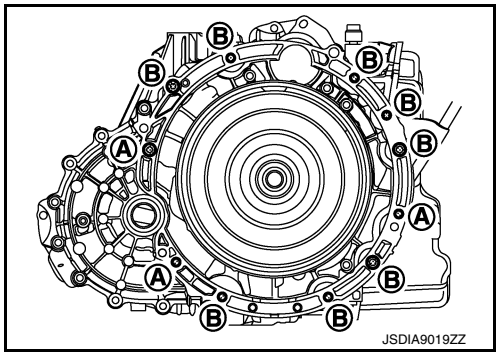
INSTALLATION

Note the followings and installation is in the reverse order of removal.

CAUTION:

- **Never reuse removed bolt or nut if it is self-locking. Refer to TM-10, "Precautions for Self-locking Nuts and Bolts".**
- **Never reuse cover.**
- **After installation dual clutch, perform inspection and adjustment. Refer to TM-251, "Inspection and Adjustment".**
- Install the fixing bolts of transaxle assembly and engine according to the following standards.

Bolt symbol	Ⓐ	Ⓑ
Quantity	3	8
Insertion direction	Engine to transaxle	Transaxle to engine
Tightening torque N·m (kg-m, ft-lb)	39 (4.0, 29)	



JSDIA9019ZZ

Inspection and Adjustment

INFOID:0000000013777565

INSPECTION AFTER INSTALLATION

Check the following items:

- Transaxle fluid leakage, refer to TM-212, "Inspection".
- Start the engine and check for coolant leakage from the parts which are removed and reinstalled.

ADJUSTMENT AFTER INSTALLATION

- Adjust the transaxle fluid level. Refer to TM-214, "Adjustment".
- When replaced transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY". Refer to TM-74, "Description".

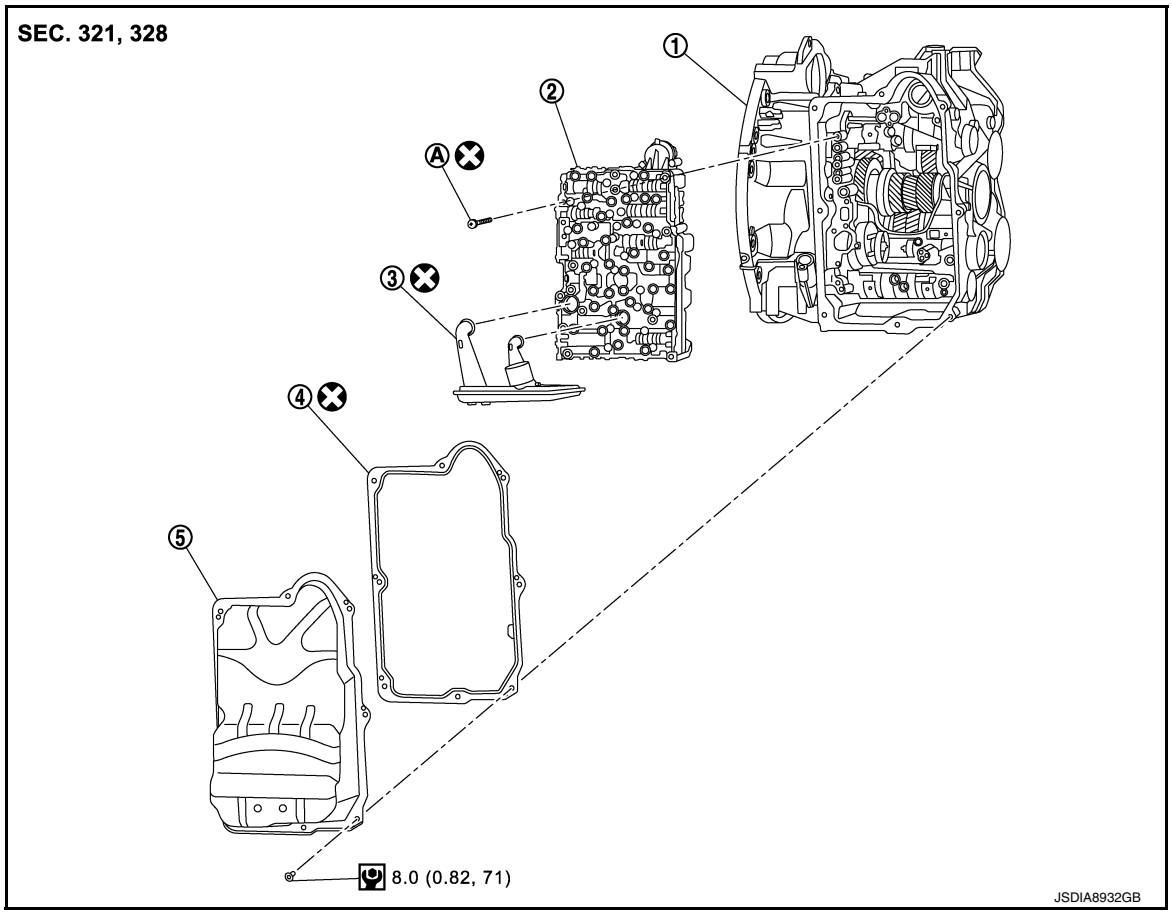
UNIT DISASSEMBLY AND ASSEMBLY

TRANSAXLE ASSEMBLY

Exploded View

INFOID:0000000013777566

TRANSAXLE CASE SIDE 1



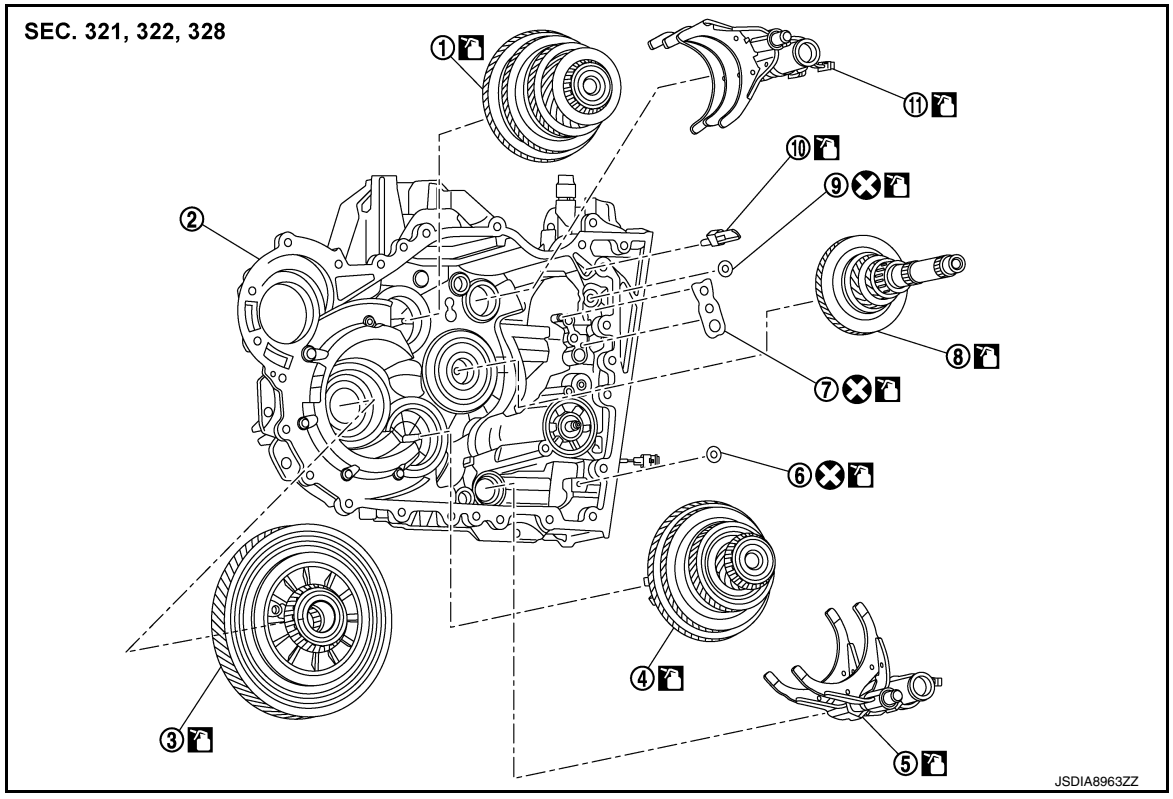
①	Transaxle assembly	②	Electric oil pump, control valve, and TCM assembly	③	Oil filter
④	Gasket	⑤	Oil pan		

Ⓐ : For the tightening torque, refer to TM-232, "Disassembly and Assembly".

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

TRANSAXLE CASE SIDE 2

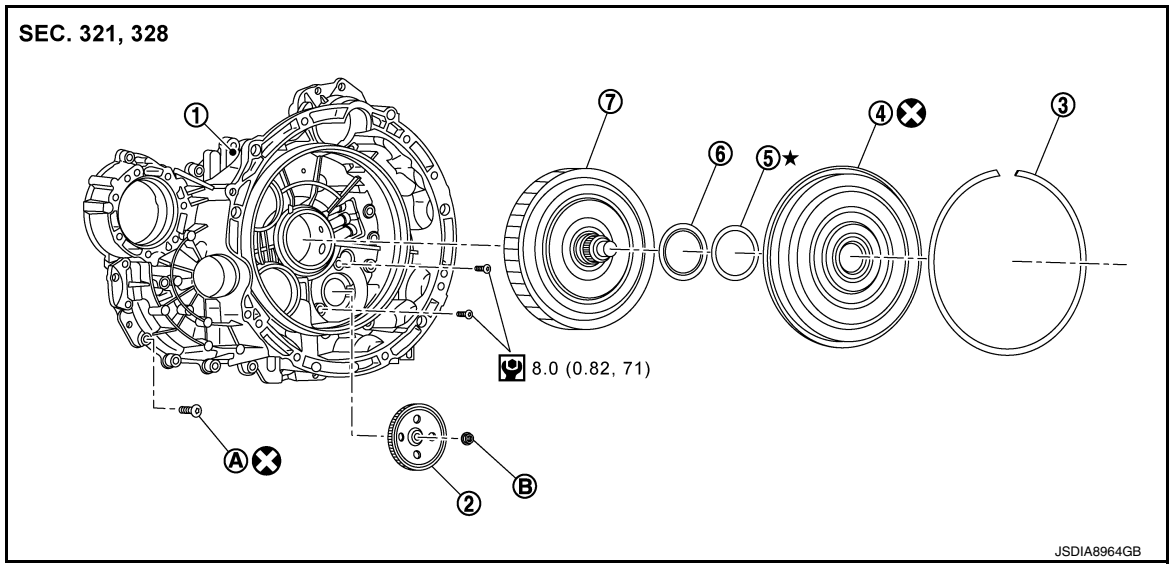


①	3rd, 6th, 7th, and reverse gear output shaft	②	Transaxle case	③	Final drive
④	1st, 2nd, 4th, and 5th gear output shaft	⑤	Shift fork 1	⑥	Gasket
⑦	Gasket	⑧	Input shaft	⑨	Gasket
⑩	Oil cooling	⑪	Shift fork 2		

: Always replace after every disassembly.

: Apply transaxle fluid

CLUTCH HOUSING SIDE



① Clutch housing ② Oil pump gear ③ Snap ring
④ Cover ⑤ Shim ⑥ Bearing
⑦ Dual clutch
: Always replace after every disassembly.
Ⓐ : For the tightening torque, refer to TM-232, "Disassembly and Assembly".
Ⓑ : For the tightening torque, refer to TM-232, "Disassembly and Assembly".
: N·m (kg-m, in-lb)
★ : Select with proper thickness.

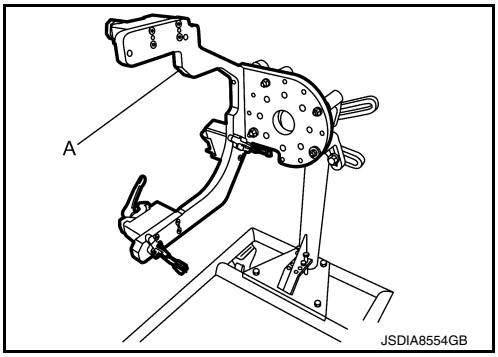
Disassembly and Assembly

INFOID:0000000013777567

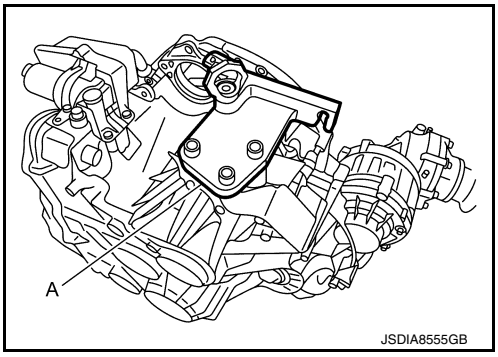
CAUTION:
Never reuse removed bolt or nut if it is self-locking. Refer to TM-10, "Precautions for Self-locking Nuts and Bolts".

DISASSEMBLY

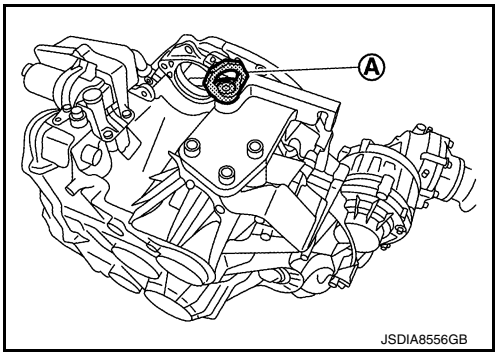
1. Install assembly device (A) [SST: KV315H0460 (TechMate No. -) (DAIMLER tool No. 724 589 00 40 00)] to engine stand.



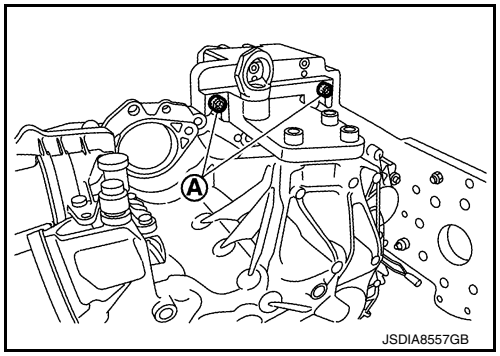
2. Remove housing carrier (A) from assembly device and install to transaxle.



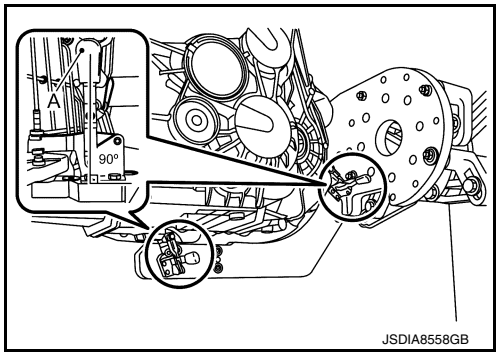
3. Connect hoist to the hole of Ⓐ and lift transaxle.



4. Tighten bolt Ⓐ and install transaxle to assembly device.

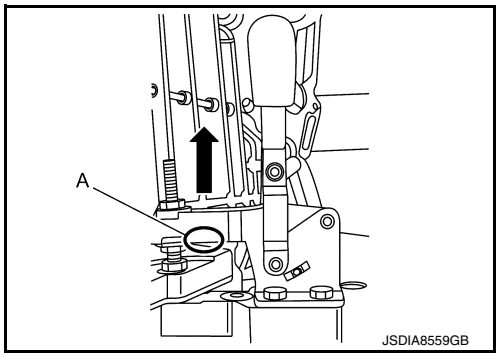


5. Vertically position lever (A) of assembly device and allow transaxle case to firmly contact with assembly device.

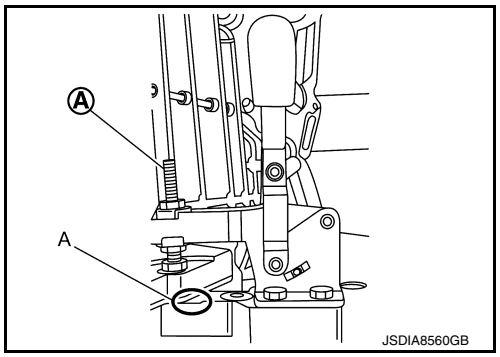


CAUTION:

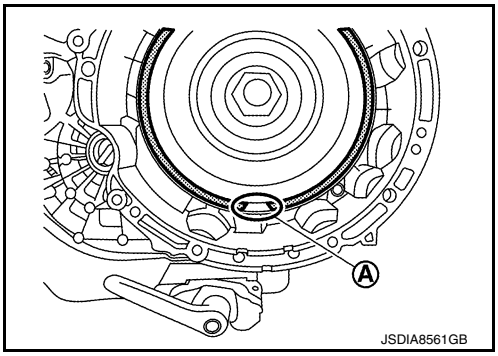
- **Push (A) in the direction shown by arrow and check that lever cannot be moved.**



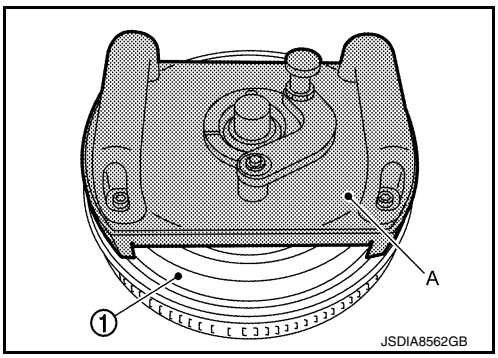
- **If the lever cannot be positioned vertically under the condition that no clearance exists between transaxle case and assembly device (A), adjust bolt position of Ⓐ the lever vertically.**
- **If the lever cannot be positioned vertically under the condition that some clearance exists between transaxle case and assembly device, eliminate the clearance between transaxle case and assembly device by rotating engine stand to position the lever vertically.**



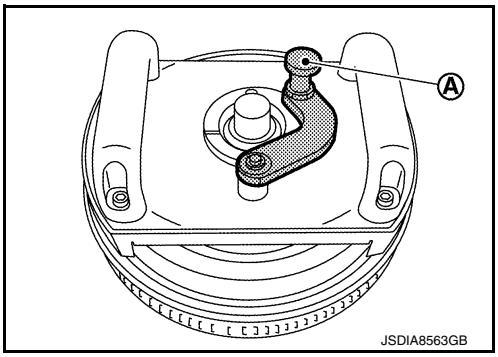
6. Insert an appropriate tool into Ⓐ of snap ring to remove snap ring.
7. Remove cover by using a suitable tool.
   CAUTION:
   Never reuse cover.



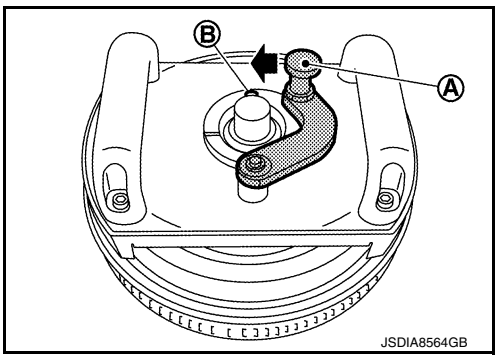
8. Install assembly tool (A) [SST: KV315H0440 (TechMate No. -) (DAIMLER tool No. 724 589 00 31 00)] to dual clutch ①.
   CAUTION:
   The periphery of dual clutch is sharp. Be careful not to touch it.



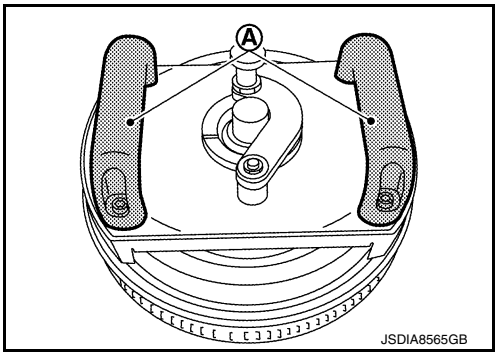
9. Pull lever Ⓐ in the vertical direction to release the lock.
   CAUTION:
   The periphery of dual clutch is sharp. Be careful not to touch it.



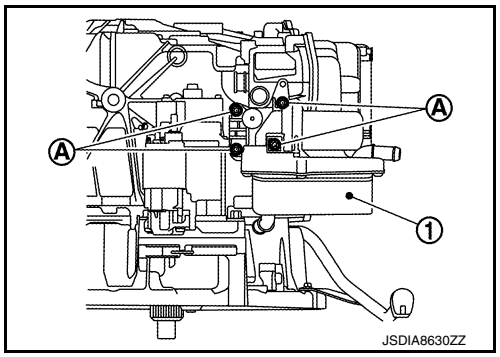
10. Move lever Ⓐ in the direction shown by arrow and engage the tip of lever with hole Ⓑ.
    CAUTION:
    The periphery of dual clutch is sharp. Be careful not to touch it.



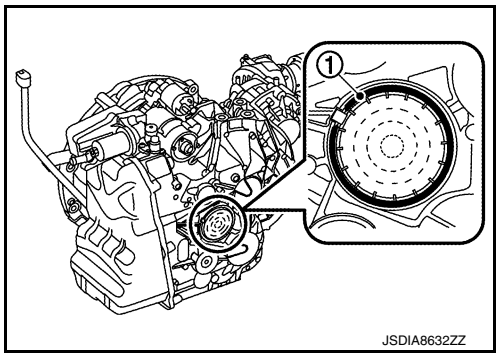
11. Hold Ⓐ and remove dual clutch from the transaxle.
    CAUTION:
    The periphery of dual clutch is sharp. Be careful not to touch it.



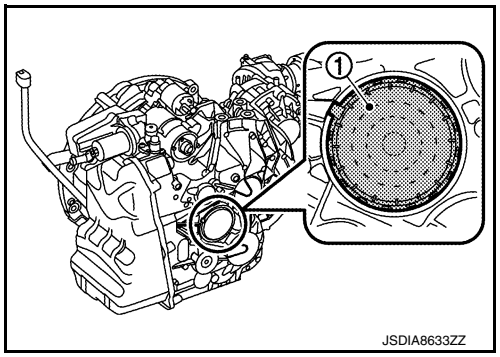
12. Remove transmission cooling module mounting bolts Ⓐ.
13. Remove transmission cooling module ①.
14. Remove transfer assembly. Refer to DLN-74, "Removal and Installation". (For AWD models)



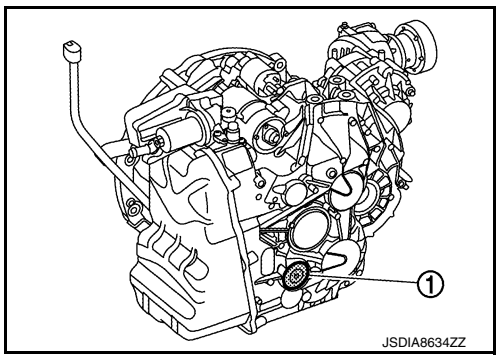
15. Remove snap ring ①.



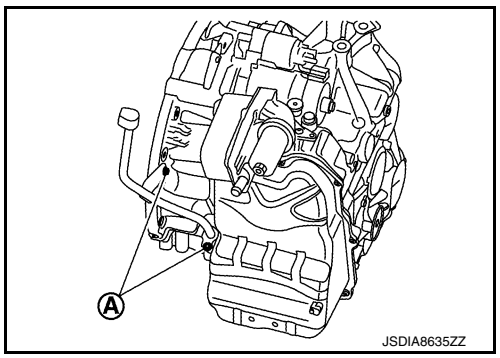
16. Using suitable tool remove the cover with oil duct ①.
CAUTION:
Never reuse cover with oil duct.



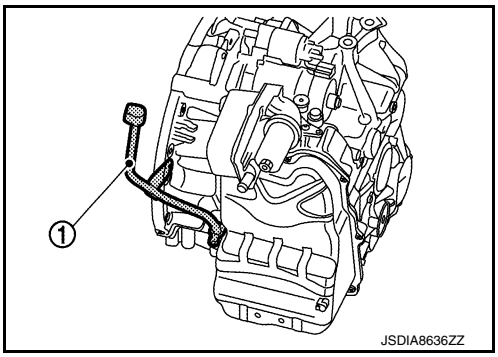
17. Using suitable tool remove the cover ①.
CAUTION:
Never reuse cover.



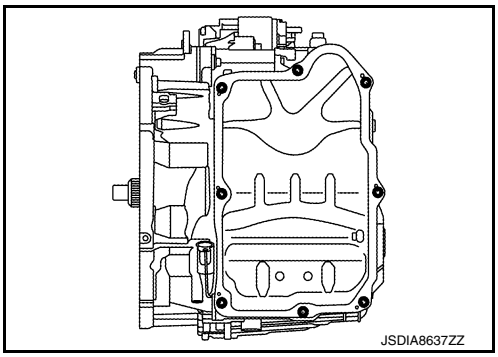
18. Remove transaxle oil charging pipe mounting bolts Ⓐ.



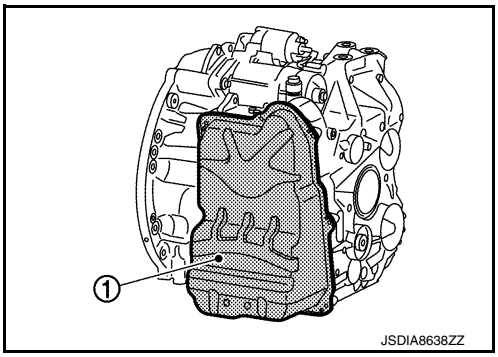
19. Remove transaxle oil charging pipe ①.



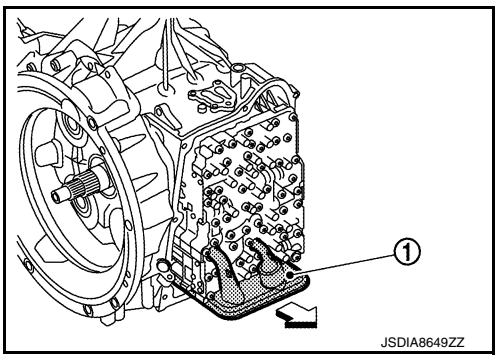
20. Remove oil pan mounting bolts.



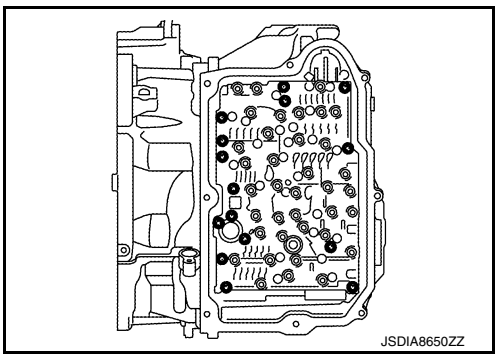
21. Remove oil pan ①.



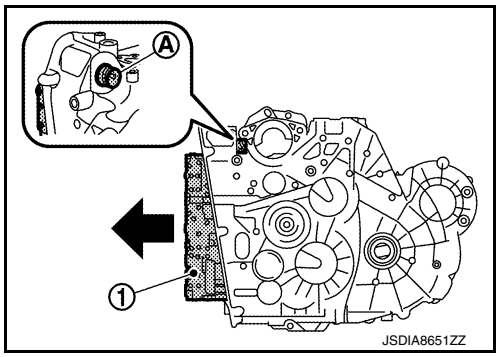
22. Remove the oil filter ① in the direction shown by arrow.



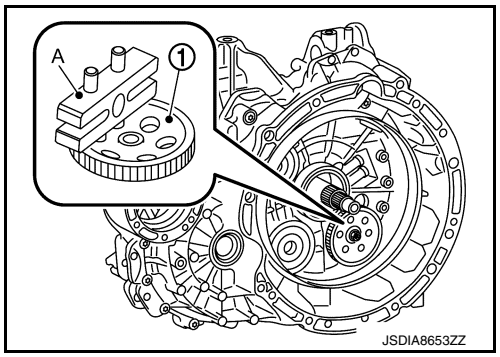
23. Remove control valve mounting bolts.



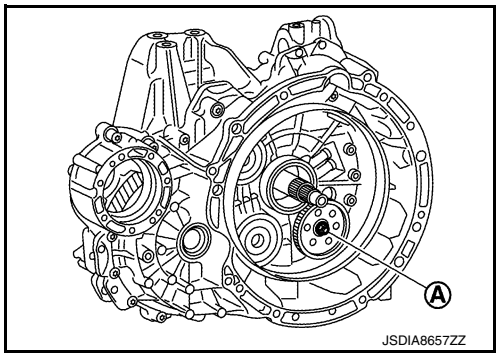
24. Remove the control valve assembly ① in the direction shown by arrow.
CAUTION:
Remove the control valve vertically without tilting, press and hold the Ⓐ portion of TCM connector if necessary.



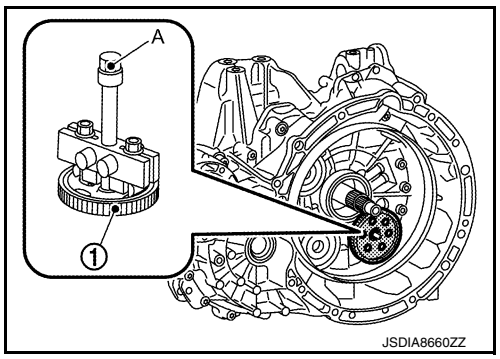
25. Install the oil pump gear ① using puller (A) [SST: KV315H0610 (TechMate No. -) (DAIMLER tool No. 724 589 02 33 00)] installed to the oil pump gear.



26. Remove nut Ⓐ.
NOTE:
Be careful that the nut is a left-hand thread.

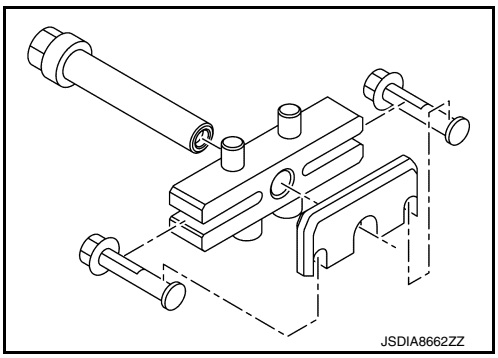


27. Install puller (A) to the oil pump gear ①.

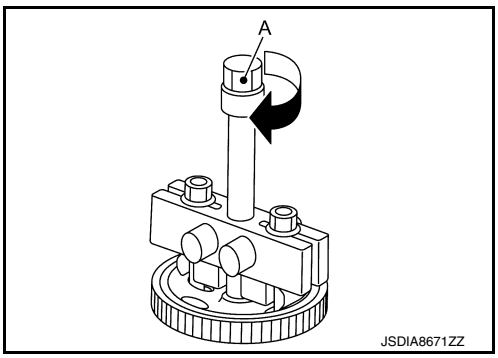


NOTE:

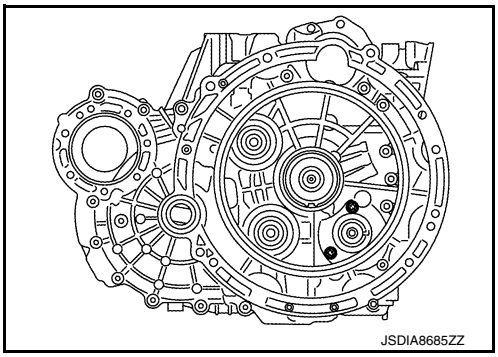
Assemble puller as shown in the figure.



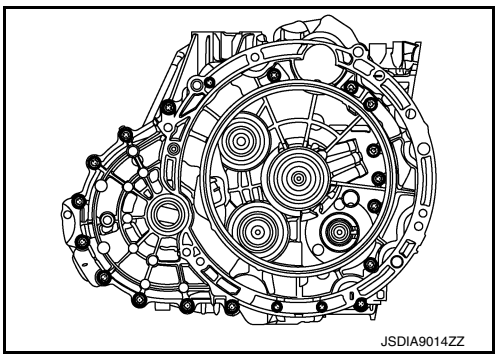
28. Remove the oil pump gear by turning the spindle (A) of puller to the direction shown by figure.



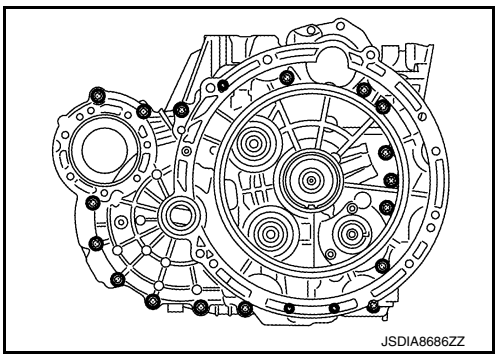
29. Remove oil pump mouting bolts.



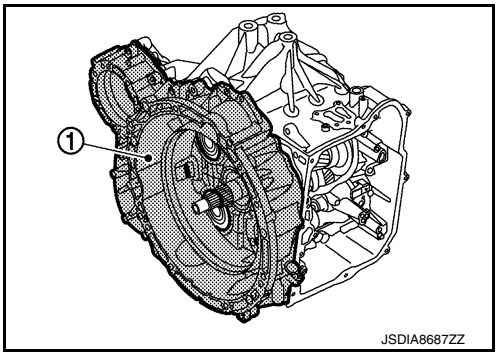
30. Remove clutch housing mounting bolts.
    - 2WD models



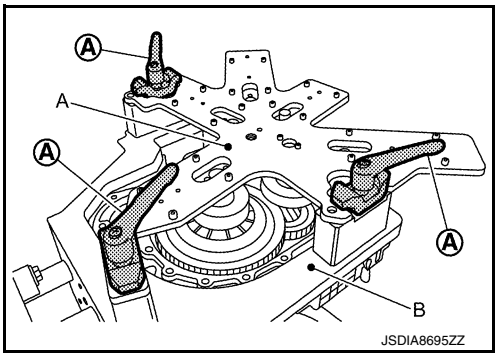
- AWD models



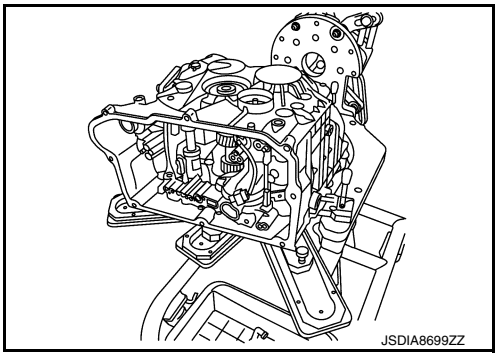
31. Using suitable tool remove the clutch housing ①.



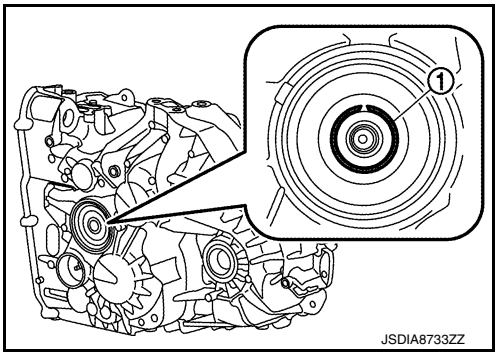
32. Set assembly device (A) [SST: KV315H0540 (TechMate No. -) (DAIMLER tool No. 724 589 02 40 00)] on to assembly device (B) [SST: KV315H0460 (TechMate No. -) (DAIMLER tool No. 724 589 00 40 00)], then fasten the lever Ⓐ to fix the assembly device (A).



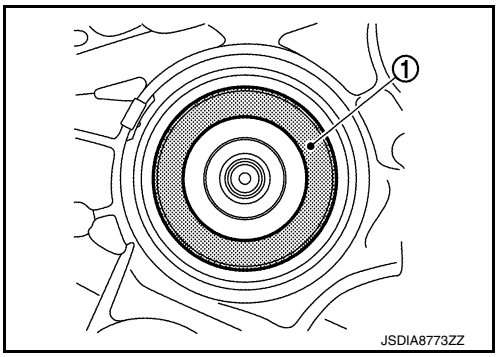
33. Turn the engine stand up to the position shown by figure.



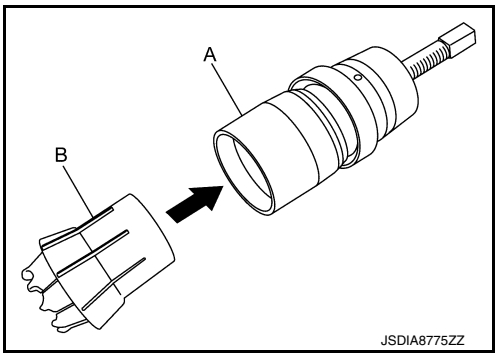
34. Remove snap ring ①.



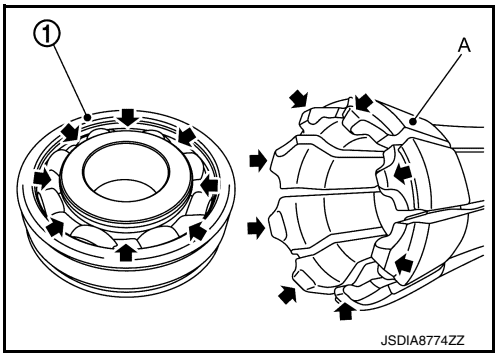
35. Remove the dust washer ①.



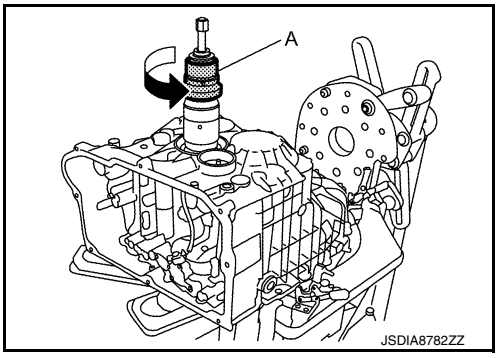
36. Install collet chuck (B) [SST: KV325H0690 (TechMate No. -) (DAIMLER tool No. 168 589 00 34 00)] to puller (A) [SST: KV325H0050 (TechMate No. -) (DAIMLER tool No. 001 589 49 33 00)].



37. Engage the tips of collet chuck (A) to ball bearing ①.

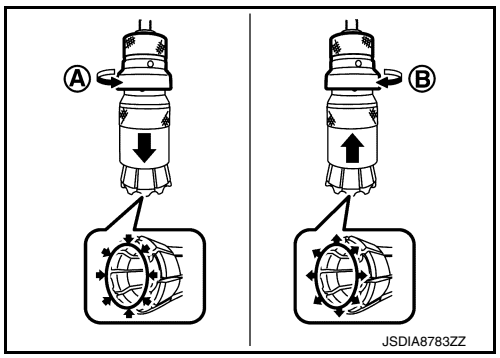


38. Tighten the ball bearing with collet chuck by turning puller (A) to the direction shown by figure.

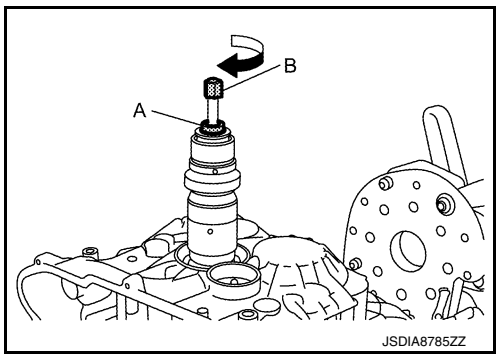


NOTE:

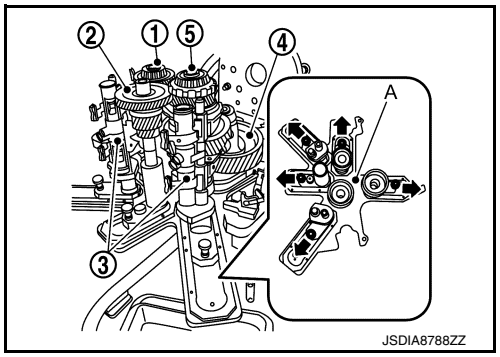
Collet chuck are tightened by turning puller to direction Ⓐ, loosened by turning to direction Ⓑ.



39. Remove transaxle case by holding the portion (A) with suitable tool and turn the portion (B) to the direction shown by figure.

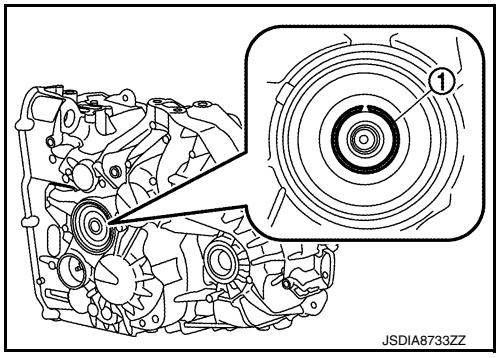


40. Remove 3rd, 6th, 7th, and reverse gear output shaft ①, input shaft ②, Shift fork ③, final drive ④, 1st, 2nd, 4th, and 5th gear output shaft ⑤ by pulling the lever of assembly device (A) to the directions shown by arrows.

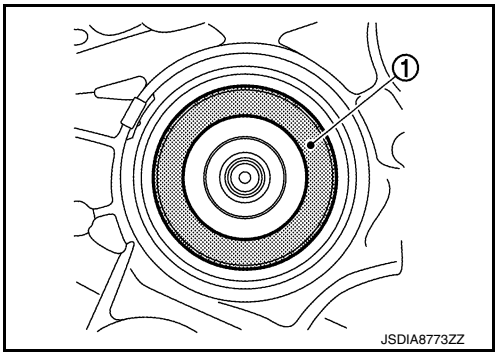


ASSEMBLY

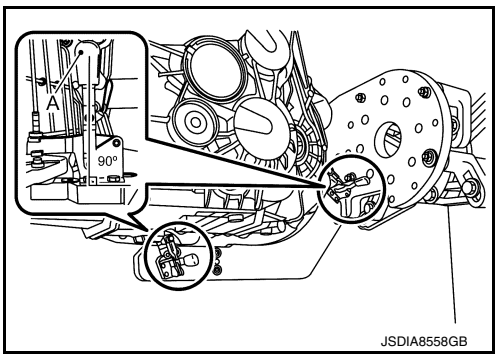
1. Use a scraper to remove old liquid gasket from surfaces of transaxle case and clutch housing.
2. Set 3rd, 6th, 7th, and reverse gear output shaft, input shaft, Shift fork, final drive, 1st, 2nd, 4th, and 5th gear output shaft to the assembly device [SST: KV315H0540 (TechMate No. -) (DAIMLER tool No. 724 589 02 40 00)].
3. Set back the transaxle case and insert input shaft to the transaxle side ball bearing.
4. Install snap ring ①.
   CAUTION:
   Never reuse snap ring.



5. Install the dust washer ①.

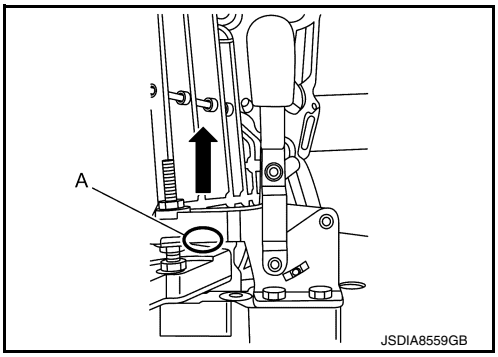


6. Vertically position lever (A) of assembly device and allow transaxle case to firmly contact with assembly device.

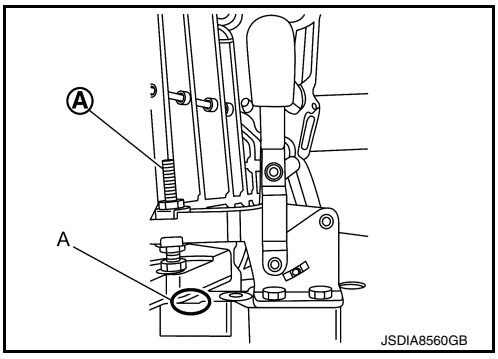


CAUTION:

- **Push (A) in the direction shown by arrow and check that lever cannot be moved.**

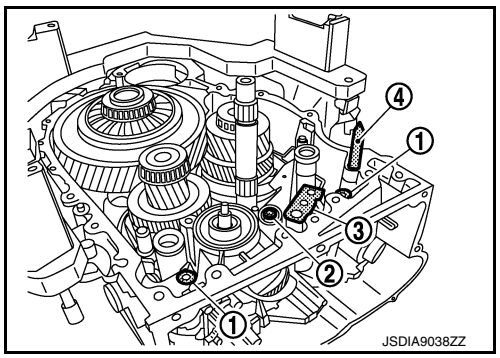


- **If the lever cannot be positioned vertically under the condition that no clearance exists between transaxle case and assembly device (A), adjust bolt position of Ⓐ the lever vertically.**
- **If the lever cannot be positioned vertically under the condition that some clearance exists between transaxle case and assembly device, eliminate the clearance between transaxle case and assembly device by rotating engine stand to position the lever vertically.**



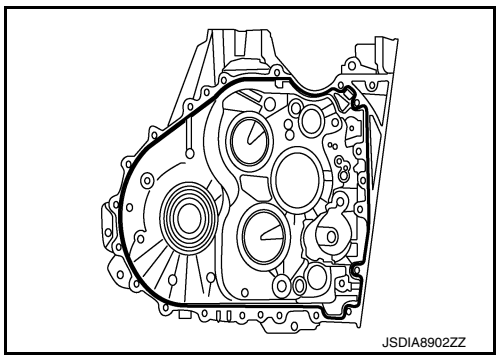
7. Perform inspection and adjustment of gear. Refer to TM-247, "Inspection and Adjustment".

8. Install following parts.
CAUTION:
Never reuse gasket.

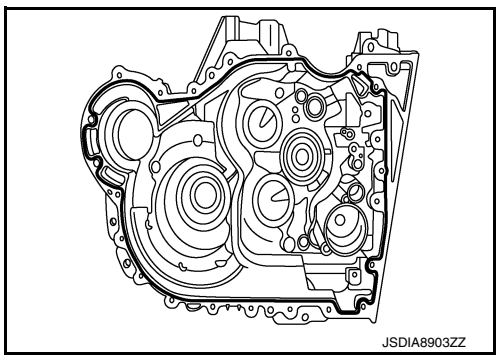


① : Gasket
② : Shift valve and shift valve spring
③ : Gasket
④ : Oil cooling

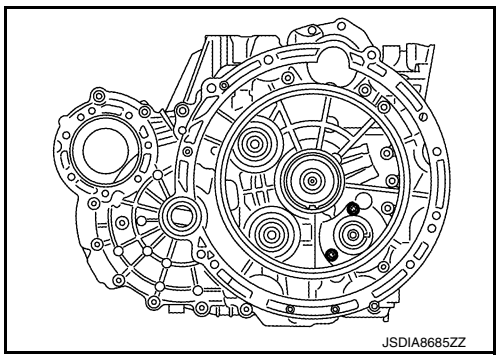
9. Apply liquid gasket with the tube presser (commercial service tool) to the surface of transaxle case to a limited portion as shown in the figure.
NOTE:
Apply liquid gasket with 1 mm (0.04 in) width.
• 2WD models



• AWD models

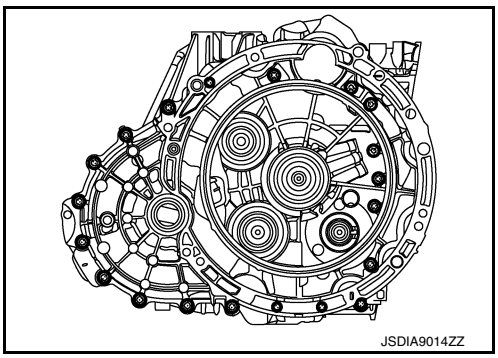


10. Install oil pump mouting bolts.

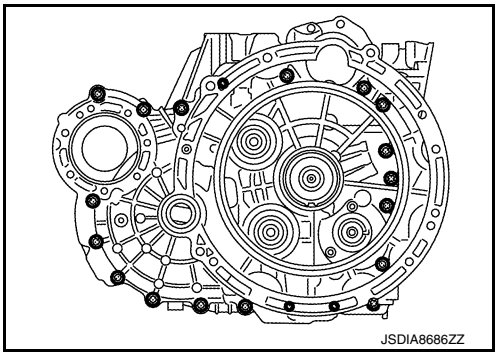


11. Install the clutch housing to the transaxle case.
CAUTION:
Never reuse bolts.
NOTE:
Install the clutch housing within 10 minutes after applying liquid gasket on the transaxle case.

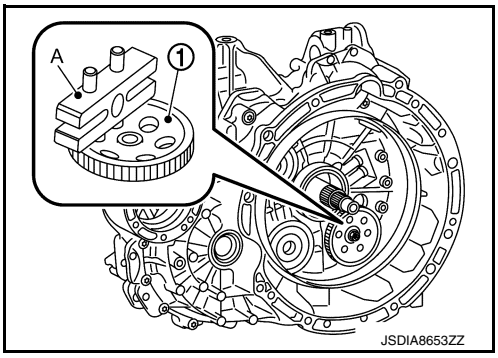
- 2WD models



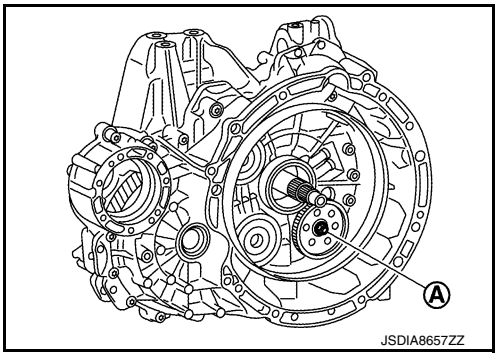
- AWD models



12. Install oil pump gear.
13. Install the oil pump gear ① using puller (A) [SST: KV315H0610 (TechMate No. -) (DAIMLER tool No. 724 589 02 33 00)] installed to the oil pump gear.



14. Install nut Ⓐ.
NOTE:
Be careful that the nut is a left-hand thread.



15. Install control valve with the following procedure.
CAUTION:
Never reuse bolts.

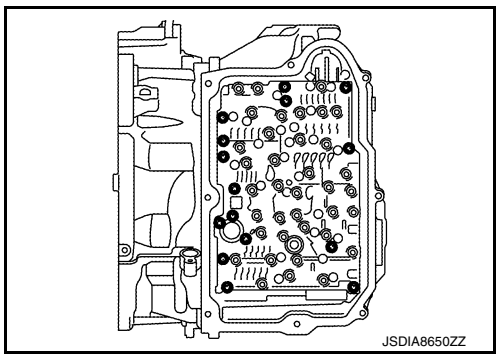
a. Tighten control valve mounting bolts.

Quantity : 15
Tightening torque N·m (kg-m, in-lb) : 4 (0.41, 35)

NOTE:
Tighten mounting bolts in diagonal order.

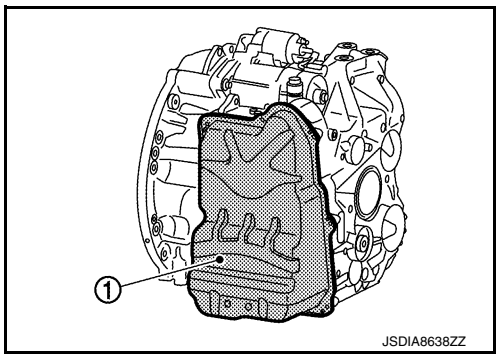
b. Turn control valve mounting bolts clockwise.

Angle tightening : 180°

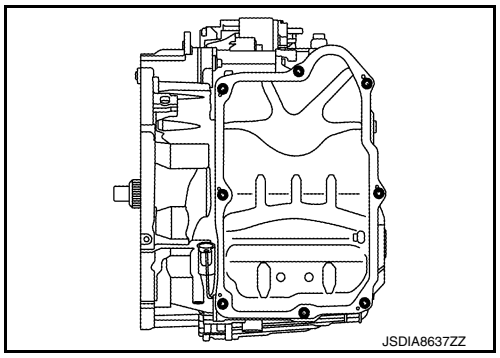


16. Install oil filter.
CAUTION:
Never reuse oil filter.

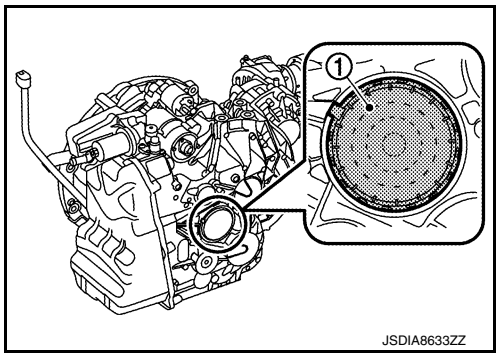
17. Install oil pan ① and gasket.
CAUTION:
Never reuse gasket.



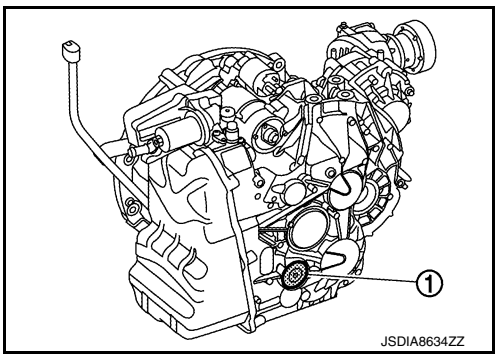
18. Install oil pan mounting bolts.
CAUTION:
Never reuse bolts.



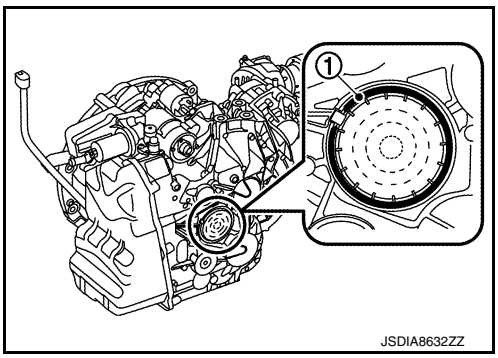
19. Using drift [SST: KV315H0420 (TechMate No. -) (DAIMLER tool No. 724 589 00 15 02)] install cover with oil duct to transaxle case ①.
CAUTION:
Never reuse cover with oil duct.



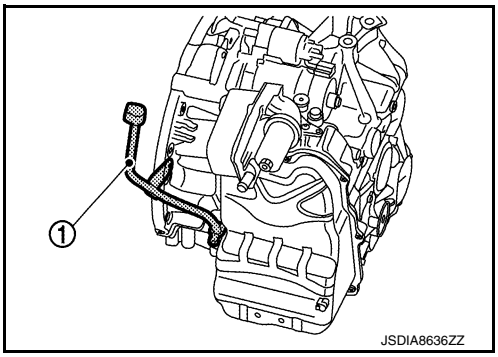
20. Using drift [SST: KV315H0420 (TechMate No. -) (DAIMLER tool No. 724 589 00 15 01)] install cover ①.
CAUTION:
Never reuse cover.



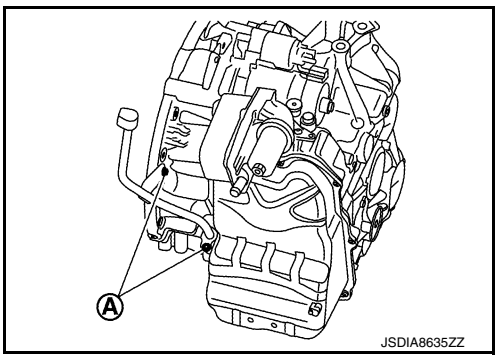
21. Install snap ring ①.



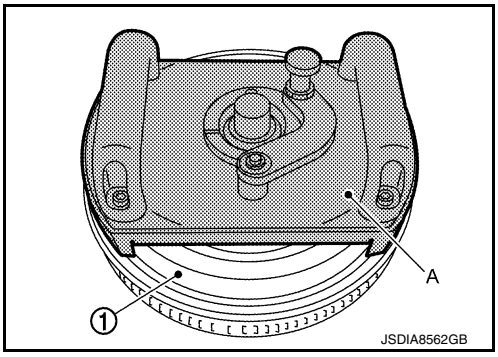
22. Install transaxle oil charging pipe ①.



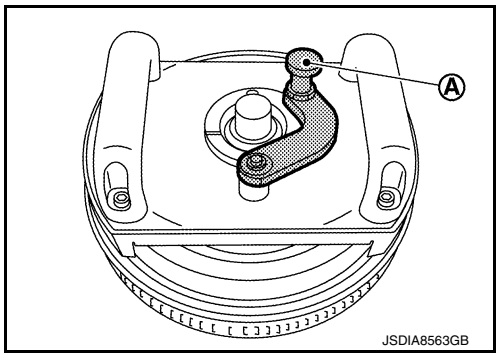
23. Install transaxle oil charging pipe mounting bolts Ⓐ.



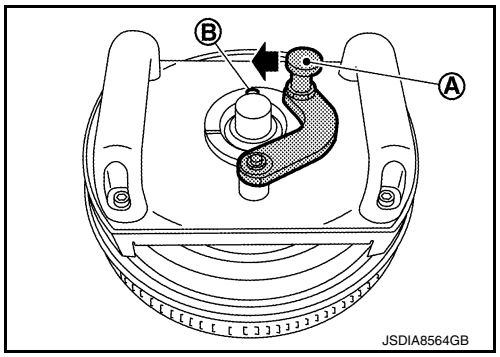
24. Install assembly tool (A) [SST: KV315H0440 (TechMate No. -) (DAIMLER tool No. 724 589 00 31 00)] to dual clutch ①.
CAUTION:
The periphery of dual clutch is sharp. Be careful not to touch it.



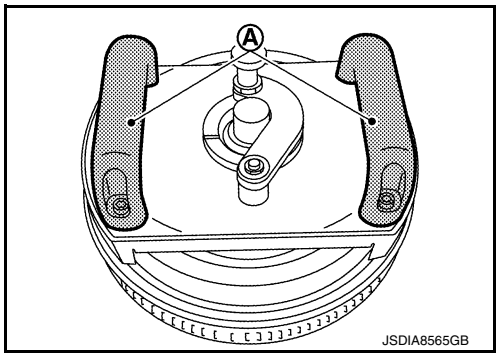
25. Pull lever Ⓐ in the vertical direction to release the lock.
CAUTION:
The periphery of dual clutch is sharp. Be careful not to touch it.



26. Move lever Ⓐ in the direction shown by arrow and engage the tip of lever with hole Ⓑ.
CAUTION:
The periphery of dual clutch is sharp. Be careful not to touch it.



27. Hold Ⓐ and install dual clutch to the transaxle assembly.
CAUTION:
The periphery of dual clutch is sharp. Be careful not to touch it.
28. Install bearing.
29. Select proper thickness of shim so that axial play is within specifications. Refer to TM-251, "Inspection and Adjustment".
30. Install shim.
31. Using assembly sleeve [SST: KV315H0410 (TechMate No. -) (DAIMLER tool No. 724 589 00 14 00)] install cover.
CAUTION:
Never reuse cover.
32. Install snap ring.

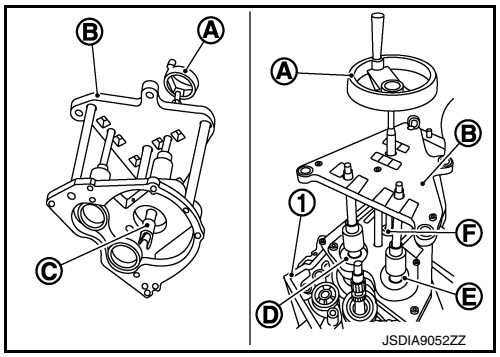


Inspection and Adjustment

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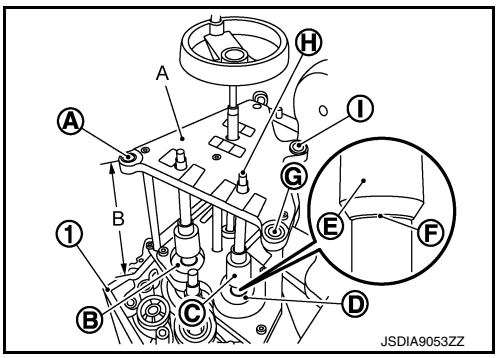
ADJUSTMENT OF GEAR

① : Transaxle case
Ⓐ : Turning device
Ⓑ : Support fixture
Ⓒ : Driver
Ⓓ : Thrust piece for output shaft (1st, 2nd, 4th, 5th gear)
Ⓔ : Thrust piece for output shaft (3rd, 6th, 7th, and reverse gear)
Ⓕ : Thrust piece (differential)



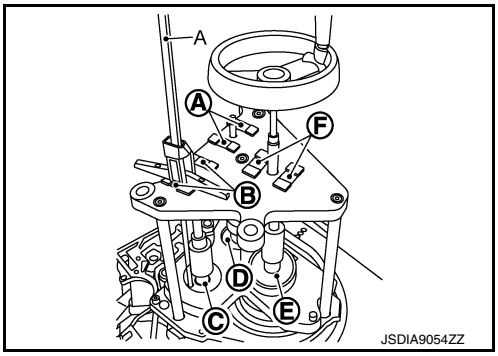
1. Clean contact surface of transaxle case and support fixture [SST: KV315H0530 (TechMate No. -) (DAIMLER tool No. 724 589 02 31 00)].
2. Install driver to final drive.
3. Install support fixture to transaxle case.

4. Insert bearing shells from clutch housing into thrust piece.
5. Place driver of turning device on shaft of differential.
6. Mount thrust pieces with bearing shells onto shafts.
7. Screw in spindles of support fixture until they lie against shafts of transaxle and lower edges of circumferential grooves are covered by sealing sleeves.



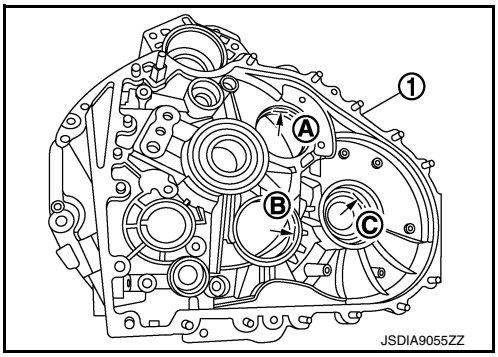
① : Transaxle case
(A) : Support fixture
(B) : Zero position
Ⓐ : Hole for zero position (for 1st, 2nd, 4th, 5th gear output shaft)
Ⓑ : Thrust piece (for 1st, 2nd, 4th, and 5th gear output shaft)
Ⓒ : Sealing sleeve (for 3rd, 6th, 7th, and reverse gear output shaft)
Ⓓ : Thrust piece (for 3rd, 6th, 7th, and reverse gear output shaft)
Ⓔ : Sealing sleeve
Ⓕ : Thrust piece (for final drive)
Ⓖ : Hole for zero position (for 3rd, 6th, 7th, and reverse gear output shaft)
Ⓘ : Hole for zero position (for final drive)

8. Turn main shaft of transaxle 20 to 30 times using driver.
9. Move digital depth micrometer to zero position.



(A) : Digital depth micrometer
Ⓐ : Measuring hole
Ⓑ : Measuring hole
Ⓒ : Thrust piece (for 3rd, 6th, 7th, and reverse gear output shaft)
Ⓓ : Thrust piece (for 1st, 2nd, 4th, and 5th gear output shaft)
Ⓔ : Thrust piece (for final drive)
Ⓕ : Measuring hole

10. Mesure gear set using digital depth michrometer and note down value.
11. Place parallel gauges on sealing flange of clutch housing ①.



Ⓐ : Bearing seat (for 3rd, 6th, 7th, and reverse gear output shaft)
Ⓑ : Bearing seat (for 1st, 2nd, 4th, and 5th gear output shaft)
Ⓒ : Bearing seat (for final drive)

12. Move digital depth michrometer to zero position.
NOTE:
The zero position is the dimension from the parallel gauges to the sealing flange on the clutch housing.
13. Mesure bearing seat in clutch housing using digital depth michrometer and note down value.
14. Calculate adjusting disk size “S” for differential. Calculate shaft gap dimension for differential: The mean value for the dimension from support fixture to differential thrust piece minus the basic dimension of the thrust piece gives the shaft gap dimension.

Example
65.36 mm (2.5732 in) − 25.00 mm (0.98 in) = 40.36 mm (1.7858 in) (shaft gap dimension)

NOTE:

Spacer rings are available in sizes from 1.10 mm (0.0433 in) to 1.90 mm (0.0748 in) in increments of 0.05 mm (0.0002 in). In the above-mentioned calculation example, a 1.30 mm (0.0512 in) spacer ring is installed on the differential.

15. Calculate adjusting disk size "S" of spacer rings for 1st, 2nd, 4th and 5th gear output shaft (arranged at bottom of transaxle case). Calculate shaft gap dimension: The mean value for the dimension from support fixture to differential thrust piece minus the basic dimension of the thrust piece gives the shaft gap dimension.

Example

32.92 mm (1.2961 in) – 25.00 mm (0.98 in) = 7.92 mm (0.3118 in) (shaft gap dimension)

NOTE:
Spacer rings are available in sizes from 1.10 mm (0.0433 in) to 1.90 mm (0.0748 in) in increments of 0.05 mm (0.0002 in). In the above-mentioned calculation example, a spacer ring is installed on the differential.

16. Calculate adjusting disk size “S” of spacer rings for 3rd, 6th, 7th and reverse gear output shaft (arranged at top of transaxle case). Calculate adjusting disk size for 3rd, 6th, 7th and reverse gear output shaft: The mean value for clutch housing to bearing seat minus the shaft gap dimension plus the tolerance value gives the adjusting disk size “S”. Calculate shaft gap dimension: The mean value for the dimension from support fixture to differential thrust piece minus the basic dimension of the thrust piece gives the shaft gap dimension.

Example

36.60 mm (1.4409 in) – 25.00 mm (0.98 in) = 11.60 mm (0.4567) (shaft gap dimension)

12.78 mm 11.60 mm + 0.16 mm = 1.34 mm (adjusting disk size "S" for 3rd, 6th, 7th and reverse gear output shaft)

NOTE:
Spacer rings are available in sizes from 1.10 mm (0.0433 in) to 1.80 mm (0.0709 in) in increments of 0.05 mm (0.0002 in). In the above-mentioned calculation example, a 1.35 mm (0.0531 in) spacer ring is installed on the differential.

INSPECTION AFTER INSTALLATION

Check the following items:
- Transaxle fluid leakage, refer to TM-212, "Inspection".
- Start the engine and check for coolant leakage from the parts which are removed and reinstalled.

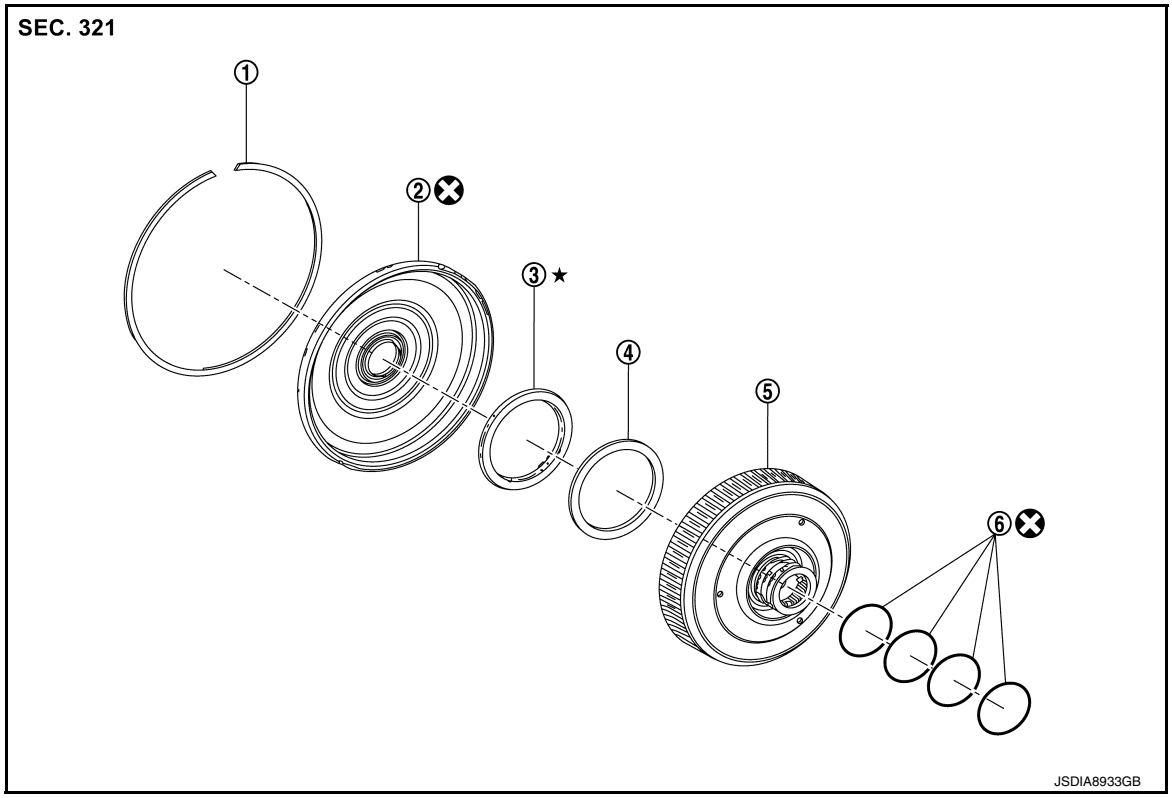
ADJUSTMENT AFTER INSTALLATION

- Adjust the transaxle fluid level. Refer to TM-214, "Adjustment".
- When replaced TCM, perform "ADDITIONAL SERVICE WHEN REPLACING TCM". Refer to TM-66, "Description".
- When replaced control valve, perform "ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE". Refer to TM-69, "Description".
- When replaced transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE AND TCM". Refer to TM-70, "Description".

DUAL CLUTCH

Exploded View

INFOID:0000000013777569



① Snap ring ② Cover ③ Shim
④ Bearing ⑤ Dual clutch ⑥ Sealing ring
⊠ : Always replace after every disassembly.
★ : Select with proper thickness.

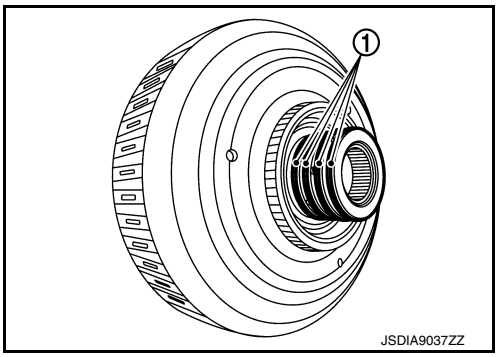
Disassembly and Assembly

INFOID:0000000013777570

CAUTION:
The periphery of dual clutch is sharp. Be careful not to touch it.

DISASSEMBLY

Remove sealing rings ①.



ASSEMBLY

Note the followings and installation is in the reverse order of removal.

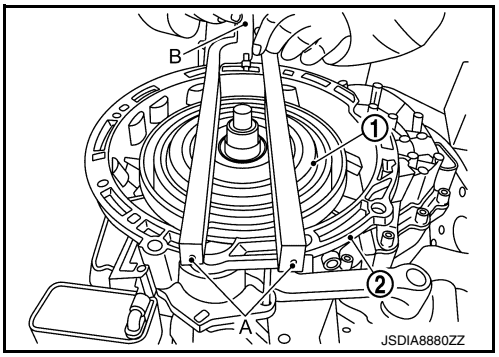
CAUTION:
Never reuse sealing ring and cover.

Inspection and Adjustment

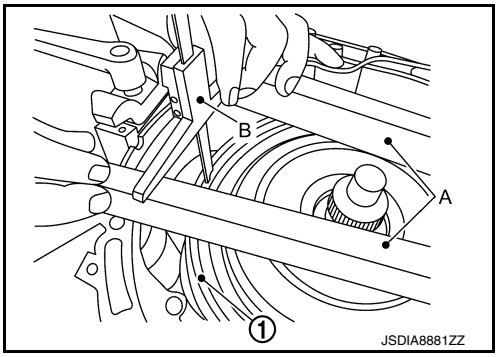
INFOID:0000000013777571

INSPECTION BEFORE INSTALLATION

1. Install dual clutch ① to the transaxle assembly.
2. Set the plate pallael (A) [SST: KV315H0160 (TechMate No. -) (DAIMLER tool No. 168 589 03 21 00)] on to the clutch housing ②.
3. Put a digital depth micrometer (B) on the plate pallael, and set the distance to the clutch housing as “zero position”.



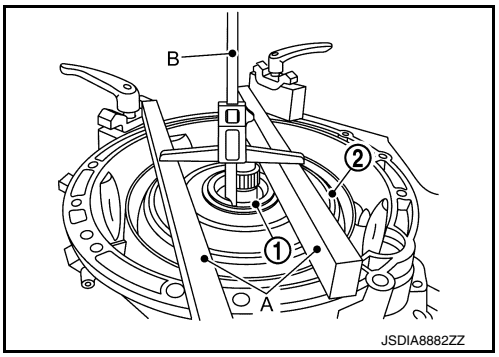
4. Install snap ring ① with cover removed.
5. Put a digital depth micrometer (B) on the plate pallael (A), and measure the distance to the snap ring.
   NOTE:
   Perform the measuring with the snap ring is lifted upward.
6. Measure 3 points and calculate the average. Note down the average value as “A”.



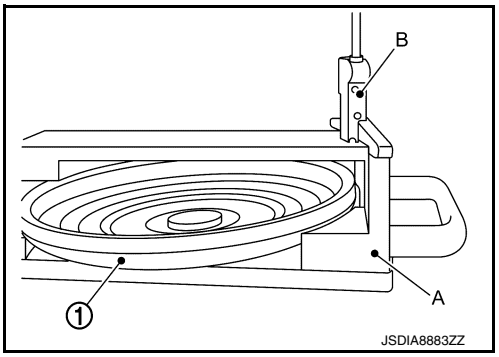
7. Install bearing ①.

   ② : Dual clutch

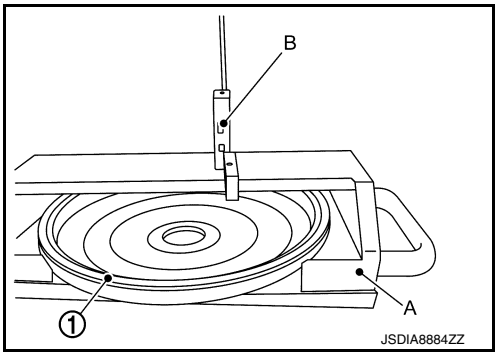
8. Put a digital depth micrometer (B) on the plate pallael (A), and measure the distance to the bearing ①.
   NOTE:
   Perform the measuring with the contact surface of the bearing and the digital depth micrometer is vertical.
9. Measure 3 points and calculate the average. Note down the average value as “B”.



10. Fit new cover ① into support (A) [SST: KV315H0500 (TechMate No. -) (DAIMLER tool No. 724 589 01 31 00)].
11. Let a digital depth micrometer (B) through the hole of Support as shown by figure, and set the distance to contact surface as “zero position”.
    NOTE:
    Perform the measuring with the contact surface of support and the digital depth micrometer is vertical.



12. Measure the distance to the cover ① with setting digital depth micrometer through the hole of Support (A).
NOTE:
Perform the measuring with the contact surface of support and the digital depth micrometer (B) is vertical.
13. Measure 3 points and calculate the average. Note down the average value as “C”.



14. Calculate the suitable thickness of shim using the measured values.

Required thickness of shim (S)	**=B + C – A – 3 mm (0.12 in)**
Oversize allowance	**: 0.0 mm (0 in) - 0.2 mm (0.008 in)**
Prepared shim thickness	**: Available in the range of 0.8 mm (0.031 in) - 2.6 mm (0.102 in) with every 0.2 mm (0.008 in) difference.**
Actual shim thickness to be selected	**= S + Oversize allowance**

Example:

Required thickness of shim (S)	**= 14.80 mm (0.5827 in) + 20.06 mm (0.7898 in) – 30.65 mm (1.2067 in) – 3 mm (0.12 in) = 1.21 mm (0.0476 in)**
Actual shim thickness to be selected	**1.21 mm (0.0476 in) + 0.19 mm (0.0075 in) = 1.4 mm (0.055 in)**

NOTE:
Since the prepared shim thicknesses are every 0.2 mm (0.008 in), if the required thickness is 1.21 mm (0.0476 in) such as example, 1.20 mm (0.047 in) shim can't be selected. In this case, add 0.19 mm (0.0075 in) as oversize allowance and use 1.4 mm (0.055 in) shim.

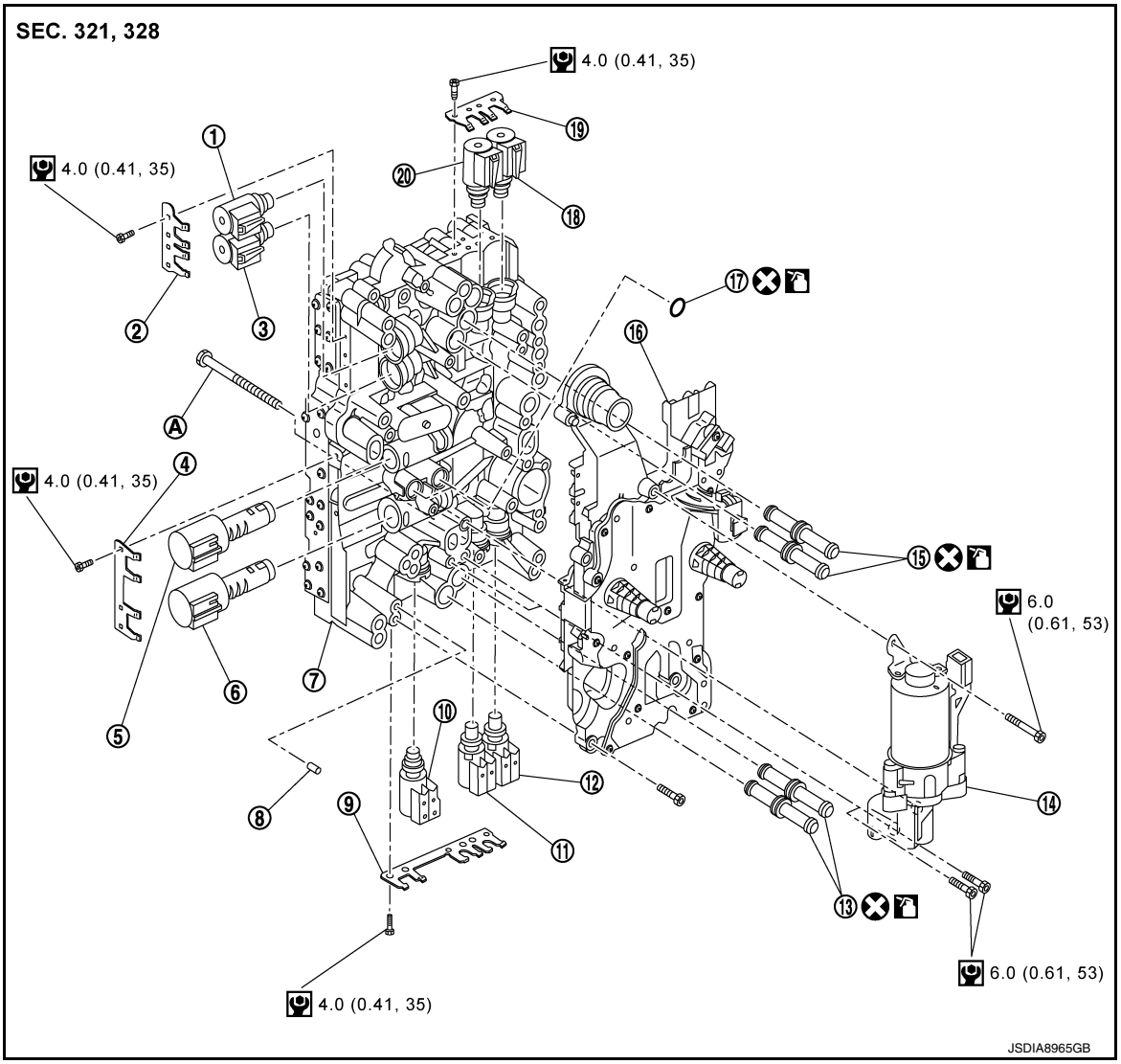
ADJUSTMENT AFTER INSTALLATION

When replaced dual clutch, perform "ADDITIONAL SERVICE WHEN REPLACING DUAL CLUTCH". Refer to TM-77, "Description".

CONTROL VALVE, TCM, ELECTRIC OIL PUMP

Exploded View

INFOID:0000000013777572



① Shift rod control valve C	② End panel	③ Shift rod control valve B
④ End panel	⑤ K1 clutch regulation valve	⑥ K2 clutch regulation valve
⑦ Valve housing	⑧ Guide sleeve	⑨ End panel
⑩ Park pawl switchover valve	⑪ Gear cylinder pressure valve	⑫ Shift rod control valve D
⑬ Pipe	⑭ Electric oil pump	⑮ Pipe
⑯ TCM	⑰ O-ring	⑱ System pressure control valve
⑲ End panel	⑳ Shift rod control valve A	

Ⓐ : For the tightening torque, refer to TM-254, "Disassembly and Assembly".

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

: Apply transaxle fluid

Disassembly and Assembly

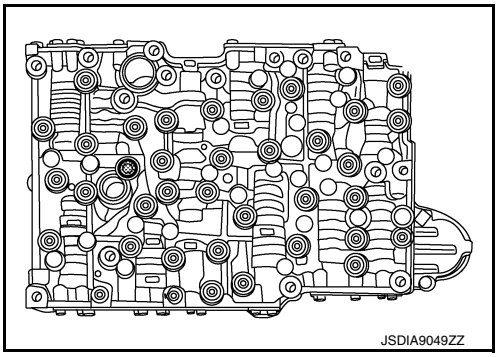
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DISASSEMBLY

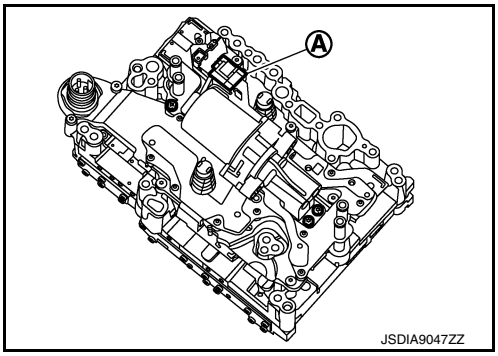
CAUTION:

- **When replacing TCM simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING TCM" before work. Refer to TM-66, "Description".**
- **When replacing control valve simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE" before work. Refer to TM-69, "Description".**
- **When replacing control valve and TCM simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING CONTROL VALVE & TCM" before work. Refer to TM-70, "Description".**

1. Remove electric oil pump mounting bolt.

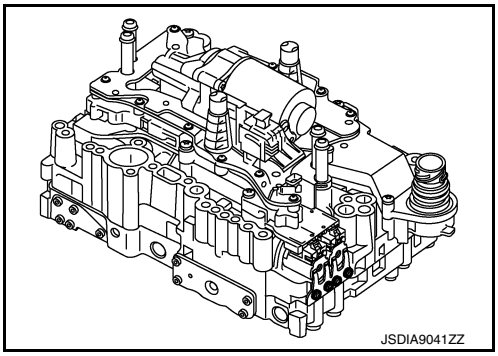

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2. Remove connector Ⓐ and remove electric oil pump bolts.
3. Remove electric oil pump.

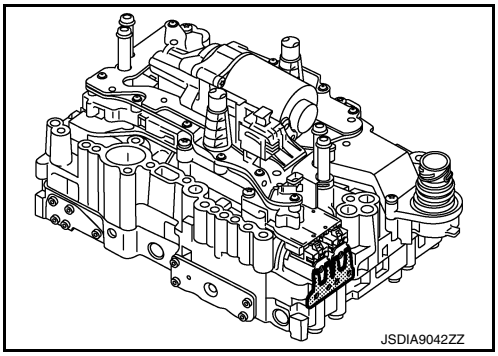


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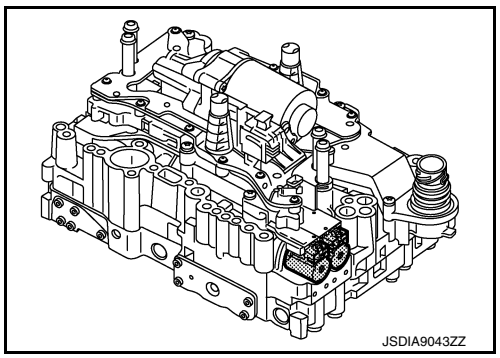
4. Remove bolts.


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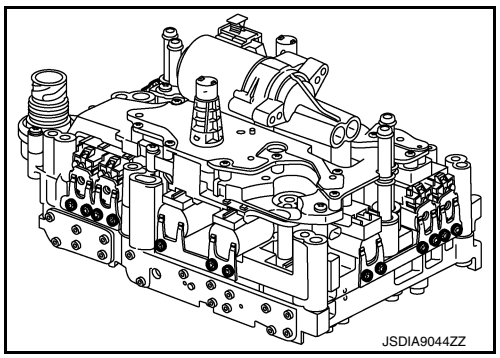
5. Remove end panels.


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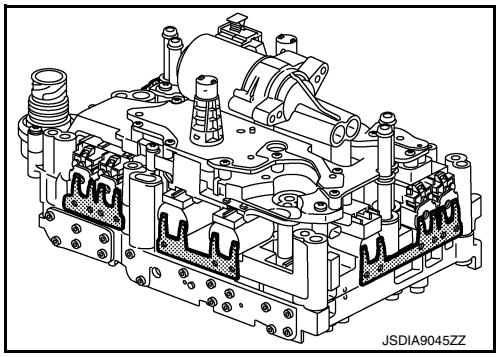
6. Remove system pressure control valve and shift rod control valve A.


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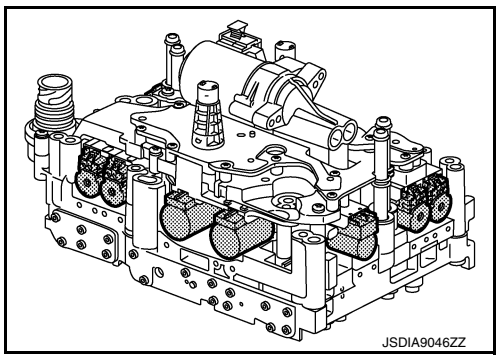
7. Remove bolts.


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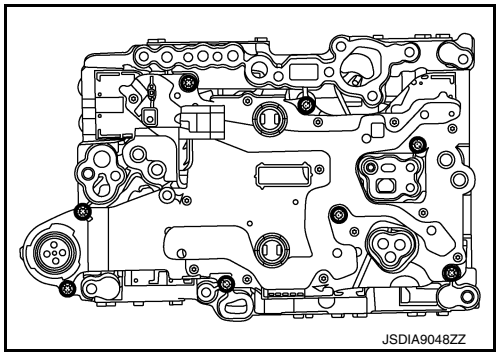
8. Remove end panels.


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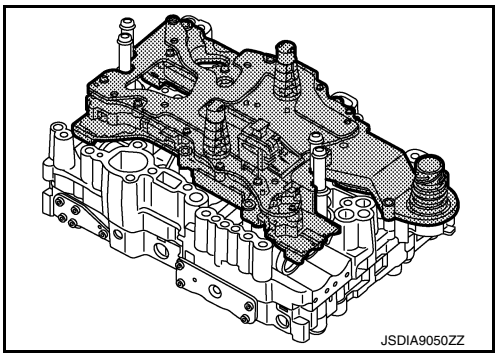
9. Remove following parts.
   - Shift rod control valve C
   - Shift rod control valve B
   - Shift rod control valve D
   - K1 clutch regulation valve
   - K2 clutch regulation valve
   - Park pawl switchover valve
   - Gear cylinder pressure valve


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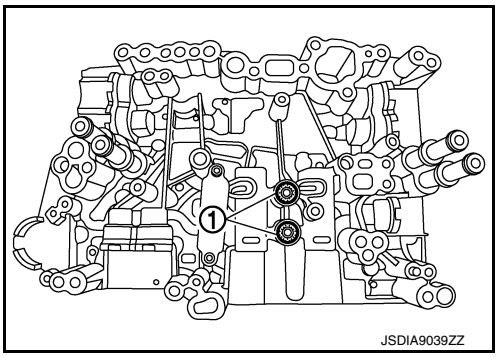
10. Remove TCM mounting bolts.


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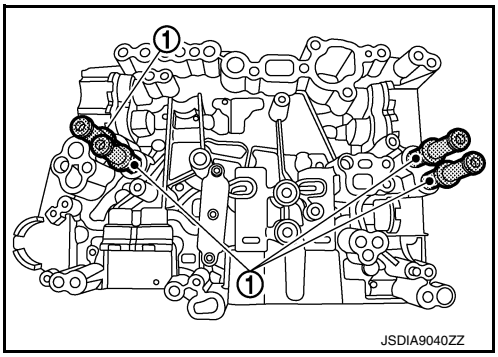
11. Remove TCM



12. Remove O-rings ①.

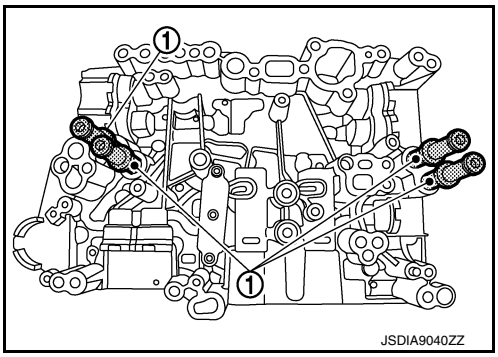


13. Remove pipes ①.

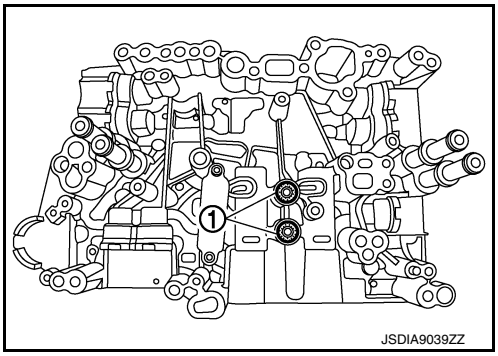


ASSEMBLY

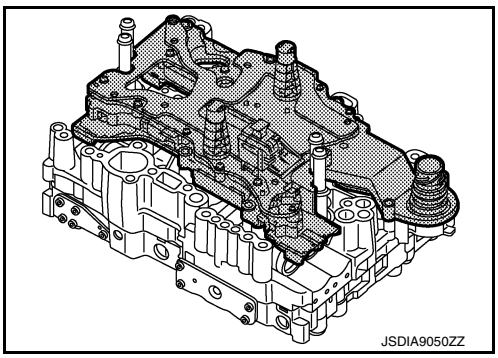
1. Install pipes ①.
   CAUTION:
   Never reuse pipes.



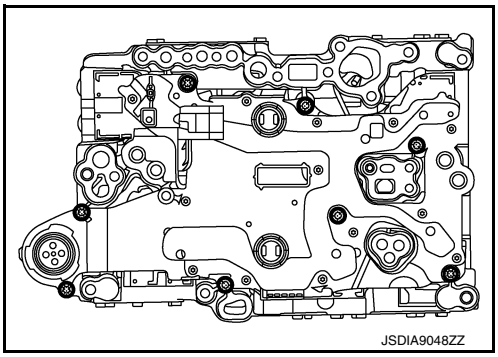
2. Install O-rings ①.
CAUTION:
Never reuse O-rings.



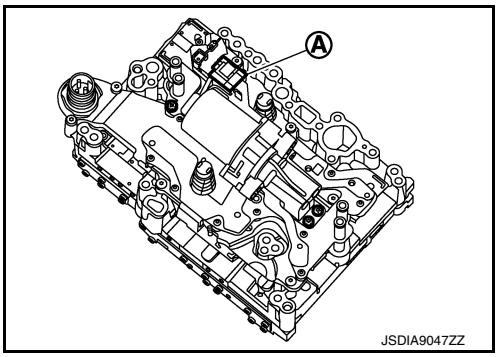
3. Install TCM.



4. Install TCM mounting bolts.



5. Install electric oil pump.
6. Install connector Ⓐ and install electric oil pump bolts.

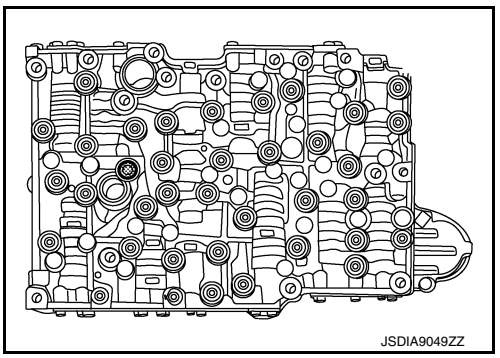


7. Install electric oil pump mounting bolt with the following procedure.
   1. Tighten electric oil pump mounting bolt.

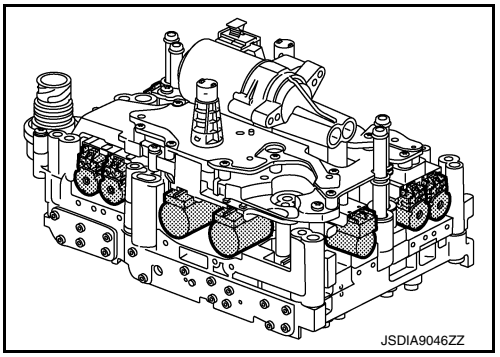
      Tightening torque N·m (kg-m, in-lb) : 4 (0.41, 35)

   2. Tighten electric oil pump mounting bolt.

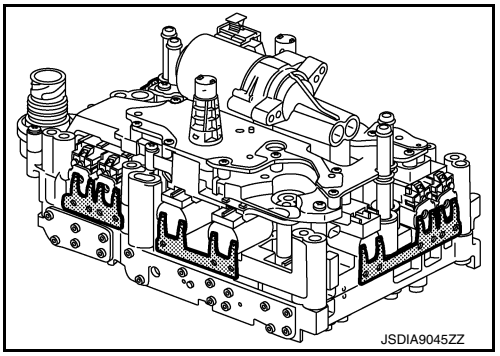
      Angle tightening : 180°


JSDIA9049ZZ

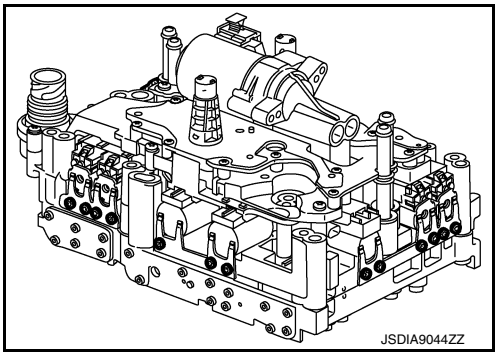
8. Perform inspection of valves. Refer to TM-259, "Inspection and Adjustment".
9. Install following parts.
   - Shift rod control valve C
   - Shift rod control valve B
   - Shift rod control valve D
   - K1 clutch regulation valve
   - K2 clutch regulation valve
   - Park pawl switchover valve
   - Gear cylinder pressure valve


JSDIA9046ZZ

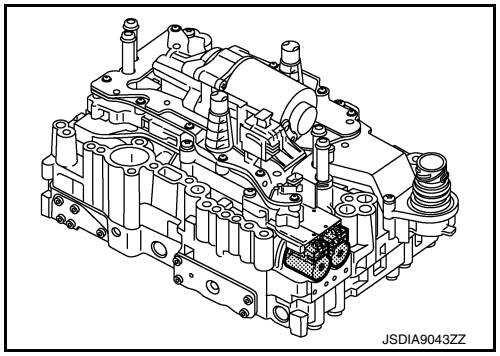
10. Install end panels.


JSDIA9045ZZ

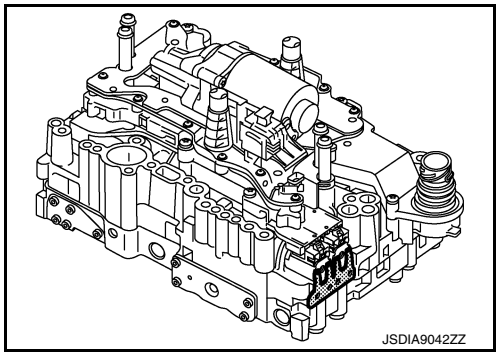
11. Install bolts.


JSDIA9044ZZ

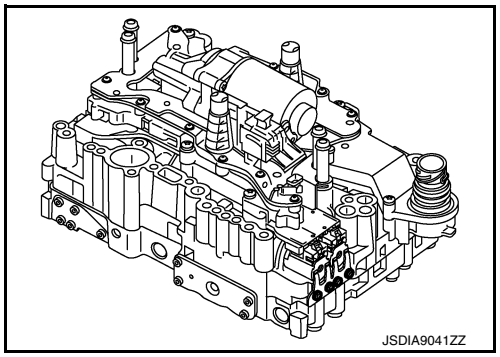
12. Install system pressure control valve and shift rod control valve A.



13. Install end panels.



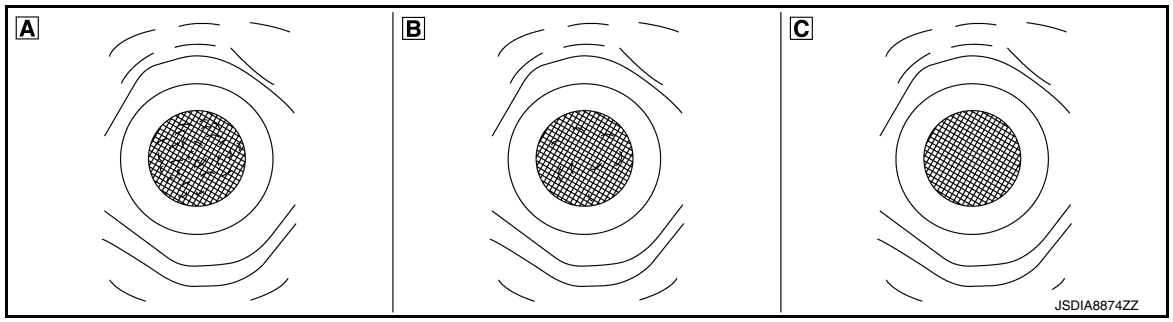
14. Install bolts.



Inspection and Adjustment

INFOID:0000000013777574

INSPECTION BEFORE INSTALLATION



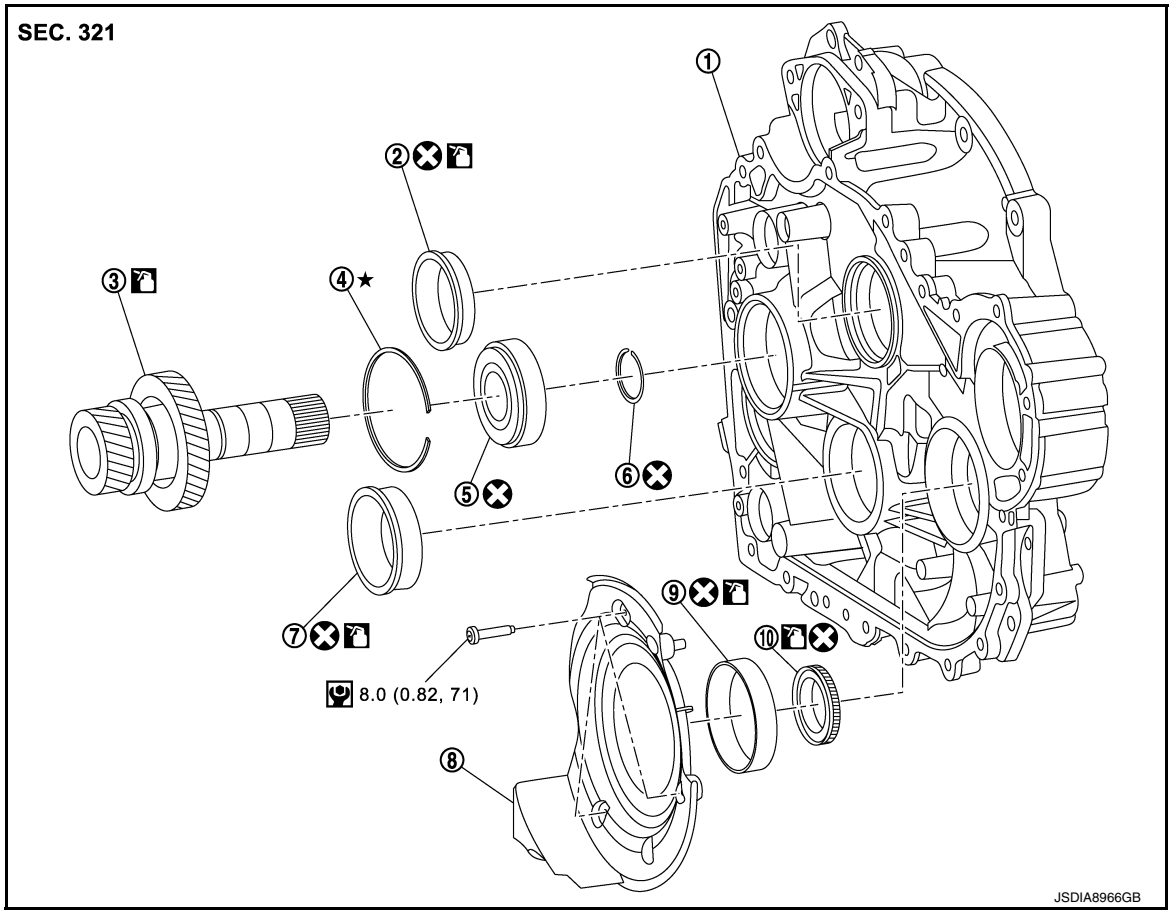
A Strong soiling or damage B Light soiling C No soiling or damege

Check the mesh part of valve, then perform the following procedures according to the check result.
- A: Replace valve
- B: Clean valve
- C: Inspection end

CLUTCH HOUSING

Exploded View

INFOID:0000000013777575



① Clutch housing ② Bearing ③ Hollow shaft
④ Lock ring ⑤ Ball bearing ⑥ Snap ring
⑦ Bearing ⑧ Cover ⑨ Bearing
⑩ Differential side oil seal

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

: Apply transaxle fluid

★ : Select with proper thickness.

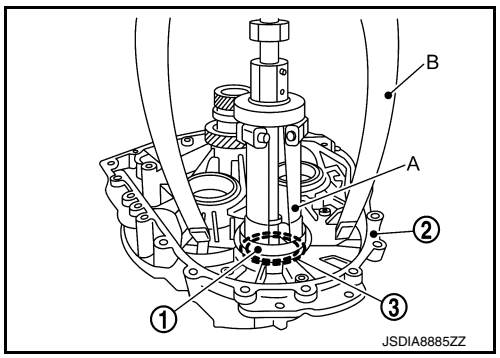
Disassembly and Assembly

INFOID:0000000013777576

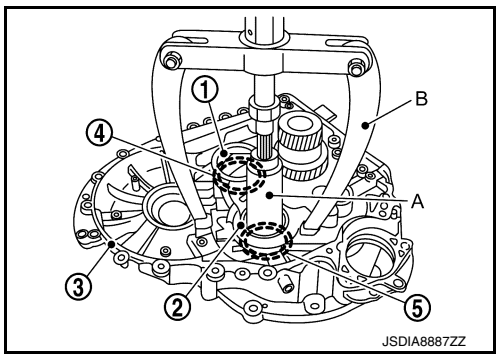
DISASSEMBLY

1. Remove cover.

2. Using puller (B), remove bearing ① with putting the remover (A) at the gap ③ between bearing and clutch housing ②.



3. Using puller (B), remove bearing ② with putting the remover (A) at the gap ⑤ between bearing and clutch housing ③.
4. Using puller (B), remove bearing ① with putting the remover (A) at the gap ④ between bearing and clutch housing ③.
5. Remove snap ring.
6. Using suitable tool remove the hollow shaft.
7. Remove lock ring.
8. Remove ball bearing.
9. Using suitable tool remove the differential side oil seal.



ASSEMBLY

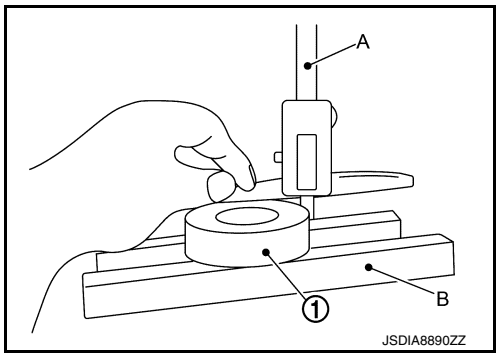
1. Using drift [SST: KV325H0780 (TechMate No. -) (DAIMLER tool No. 711 589 19 15 00)] install the differential side oil seal to clutch housing.
   CAUTION:
   Never reuse differential side oil seal.
2. Install ball bearing to clutch housing.
3. Perform inspection and adjustment of lock ring. Refer to TM-261, "Inspection and Adjustment".
4. Install lock ring to clutch housing.
5. Install hollow shaft.
6. Install snap ring to hollow shaft.
   CAUTION:
   Never reuse snap ring.
7. Install bearings.
   CAUTION:
   Never reuse bearings.

Inspection and Adjustment

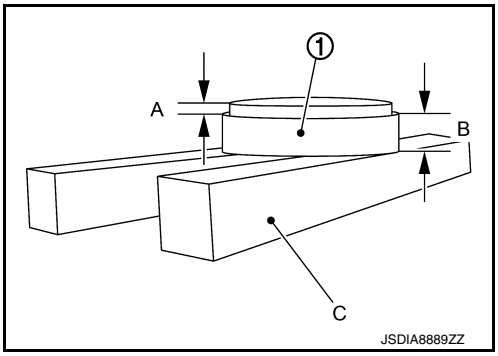
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INSPECTION BEFORE INSTALLATION

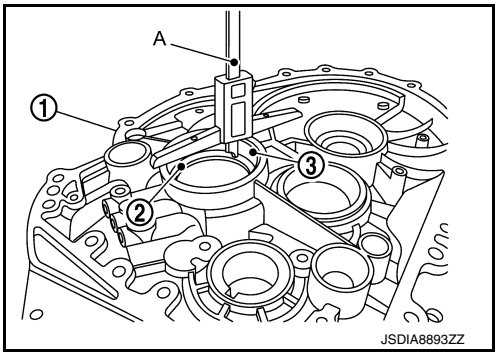
1. Clean contact surface of ball bearing and clutch housing.
2. Set the ball bearing ① on to the plate pallael (B) [SST: KV315H0160 (TechMate No. -) (DAIMLER tool No. 168 589 03 21 00)].
3. Put a digital depth micrometer (A) on the ball bearing, and set the distance to the bearing groove as “zero position”.
4. Put a digital depth micrometer on the ball bearing, and measure the distance to the plate pallael. Measure 3 points and calculate the average. Note down the average value as “A”.



① : Ball bearing
(A) : Zero position
(B) : Value “A”
(C) : Plate pallael

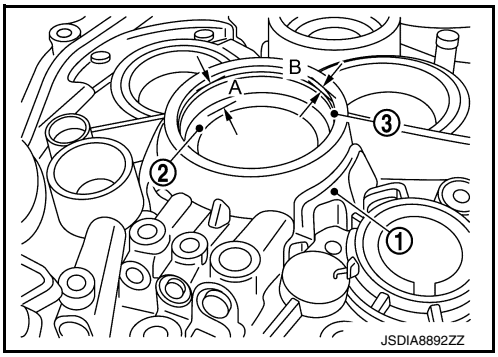


5. Install lock ring ③ to clutch housing ①.
6. Put a digital depth micrometer (A) on the bearing seat of clutch housing, and set the distance to the lock ring as “zero position”.
NOTE:
Perform the measuring with the lock ring is lifted upward.



7. Put a digital depth micrometer on the bearing seat of clutch housing, and measure the distance to the oil line sleeve. Measure 3 points and calculate the average. Note down the average value as “B”.

① : Clutch housing
② : Oil line sleeve
③ : Lock ring
(A) : Value “B”
(B) : Zero position



8. Calculate the suitable thickness of lock ring using the measured values.

Required thickness of lock ring (S)	**: B − A**
Prepared lock ring thickness	**: Available in the range of 1.65 mm (0.0650 in) - 1.95 mm (0.0768 in) with every 0.05 mm (0.0020 in) difference.**

Example

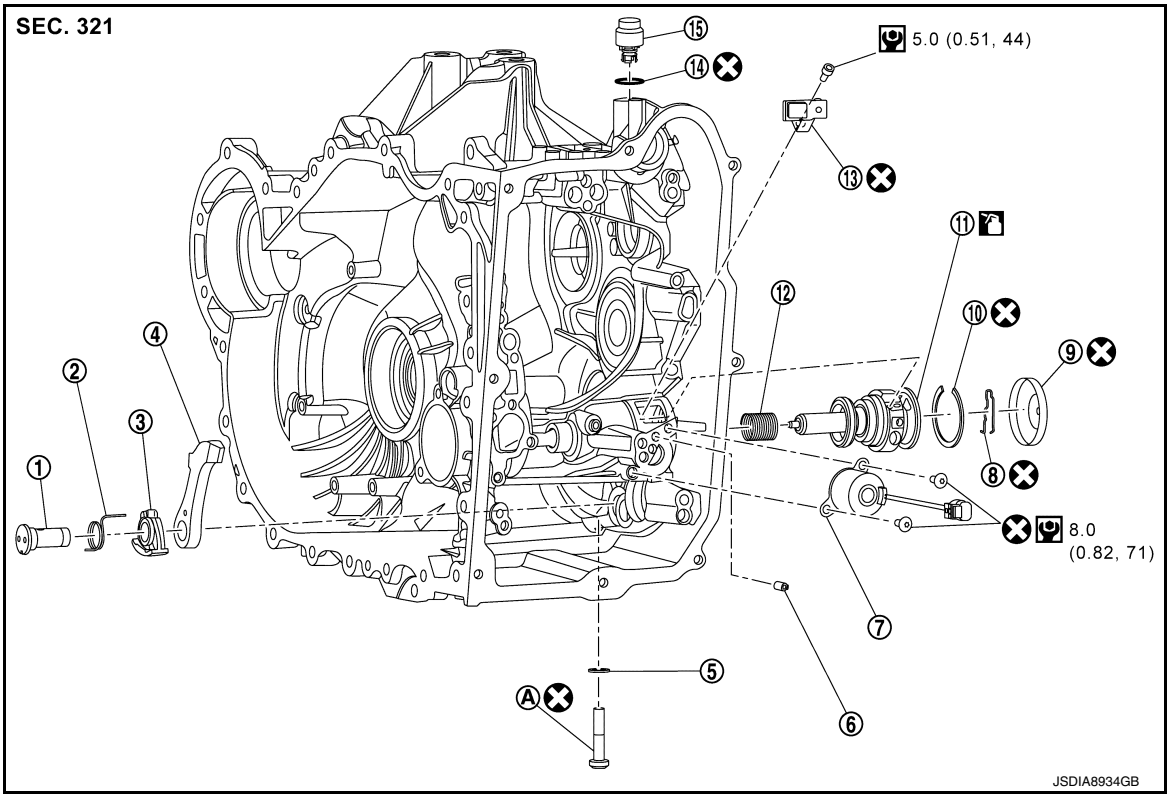
Required thickness of lock ring (S)	**: 16.76 mm (0.6598 in) − 14.92 mm (0.5874 mm) = 1.84 mm (0.0724 in)**
Actual lock ring thickness to be selected:	**: 1.85 mm (0.0728 in)**

NOTE:
Since the prepared lock ring thicknesses are every 0.05 mm (0.0020 in), if the required thickness is 1.84 mm (0.0724 in) such as Example, 1.84 mm (0.0724 in) lock ring can't be selected. In this case, add 0.01 mm (0.0004 in) as oversize allowance and use 1.85 mm (0.0728 in) rock ring.

TRANSAXLE CASE

Exploded View

INFOID:0000000013777578



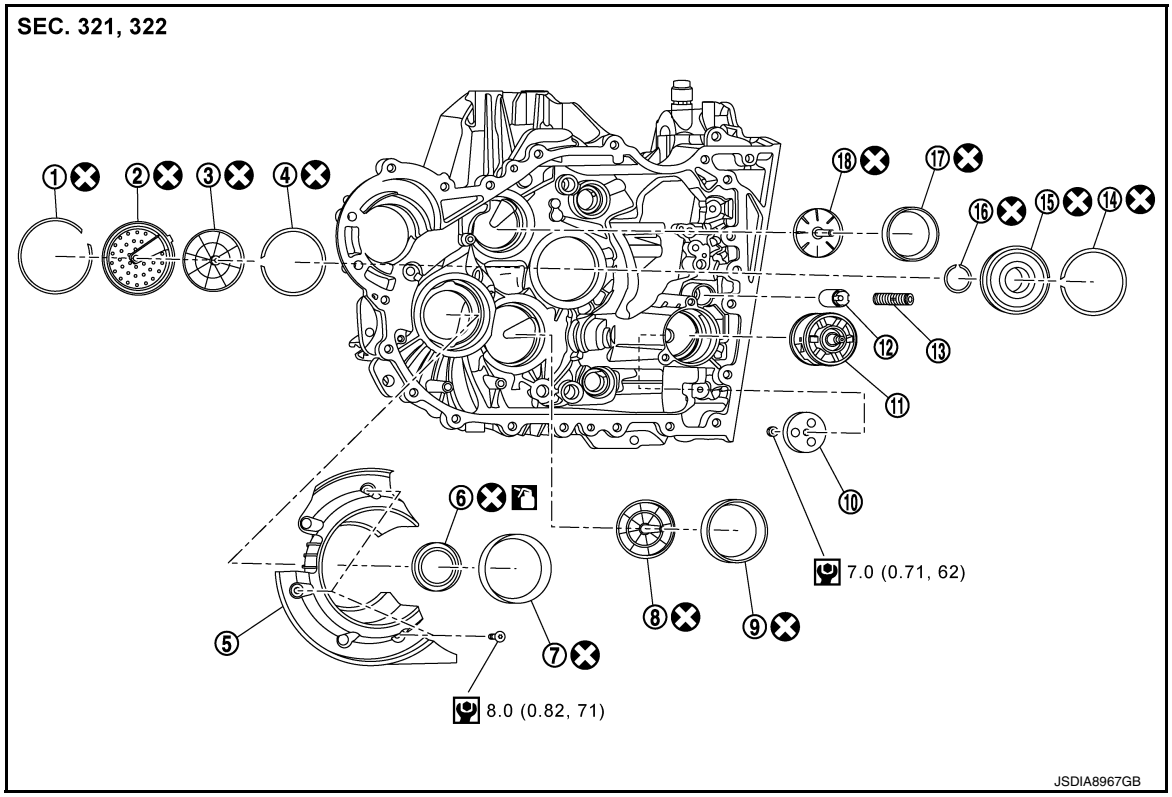
① Lock pawl pin	② Coil spring	③ Bearing bracket
④ Lock pawl	⑤ Washer	⑥ Lock pin
⑦ Park pawl lift solenoid	⑧ Pin	⑨ Cover
⑩ Snap ring	⑪ Park pawl actuator	⑫ Compression spring
⑬ Parmanent magnet	⑭ O-ring	⑮ Air breather

Ⓐ : For the tightening torque, refer to TM-264, "Disassembly and Assembly".

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

: Apply transaxle fluid



① Snap ring	② Cover with oil duct	③ Oil funnel
④ Snap ring	⑤ Cover	⑥ Differential side oil seal
⑦ Bearing	⑧ Oil funnel	⑨ Bearing
⑩ Snap ring	⑪ Oil pump	⑫ Shift valve
⑬ Shift valve spring	⑭ Snap ring	⑮ Ball bearing
⑯ Snap ring	⑰ Bearing	⑱ Oil duct

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

: Apply transaxle fluid

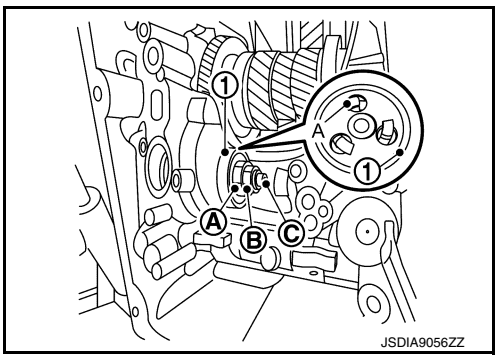
Disassembly and Assembly

INFOID:0000000013777579

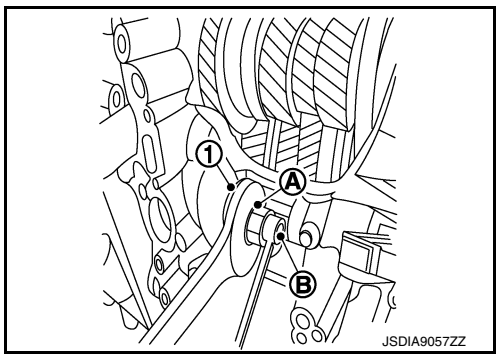
DISASSEMBLY

1. Remove cover.
2. Using suitable tool remove the differential side oil seal.
3. Install puller (A) [SST: KV315H0510 (TechMate No. -) (DAIMLER tool No. 724 589 01 33 00)] to sensor rotor ①.

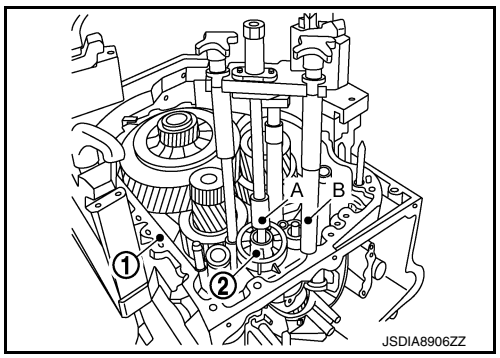
Ⓐ : Nut 1
Ⓑ : Nut 2
Ⓒ : Nut 3



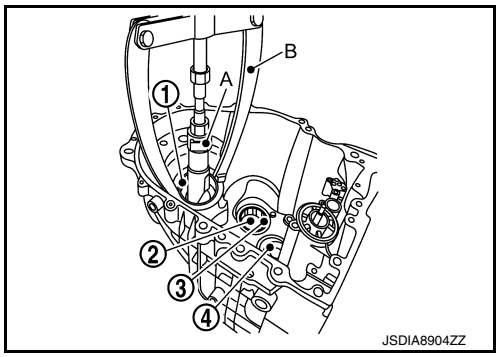
4. Fix nut 1 Ⓐ, then using suitable tool, remove the sensor rotor ① mounting nut by turning nut 3 Ⓑ.
5. Fix nut 1, then using suitable tool, remove the sensor rotor by turning nut 2.



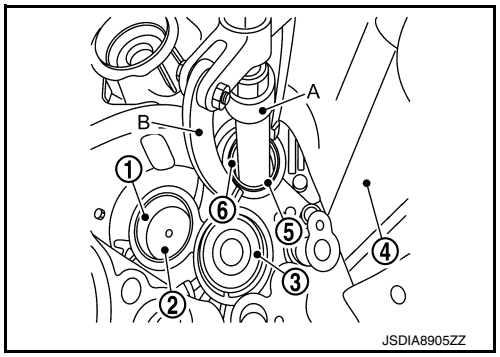
6. Install removal and installation tool (B) [SST: KV315H0480 (TechMate No. -) (DAIMLER tool No. 724 589 00 63 00)] to transaxle case ①.
7. Install sleeve (A) to oil pump shaft.
8. Remove oil pump ② from transaxle case.
9. Remove parmanent magnet.
10. Remove park pawl lift solenoid.
11. Remove bearing bracket mounting bolt.
12. Remove lock pawl pin, coil spring, bearing bracket, and lock pawl as a unit.



13. Install removal and installation tool (B) [SST: KV315H0470 (TechMate No. -) (DAIMLER tool No. 724 589 00 59 00)] to transaxle case.
14. Remove cover.
15. Remove snap ring of park pawl actuator.
16. Remove pin of park pawl actuator.
17. Using bolt (M5) remove lock pin of park pawl actuator.
18. Remove park pawl actuator from transaxle case.
19. Remove compression spring.
20. Using puller (B), remove bearing ① with putting the remover (A) at the gap between bearing and transaxle housing ④.
21. Remove oil duct ②.
22. Using puller, remove bearing ③ with putting the remover at the gap between bearing and transaxle case.



23. Remove oil duct ⑥.
24. Using puller (B), remove bearing ⑤ with putting the remover (A) at the gap between bearing and transaxle case ④.
25. Remove oil duct ②.
26. Using puller, remove bearing ① with putting the remover at the gap between bearing and transaxle case.
27. Remove snap ring, and remove ball bearing ③.
28. Remove air breather.



ASSEMBLY

1. Replace O-ring and then install air breather.

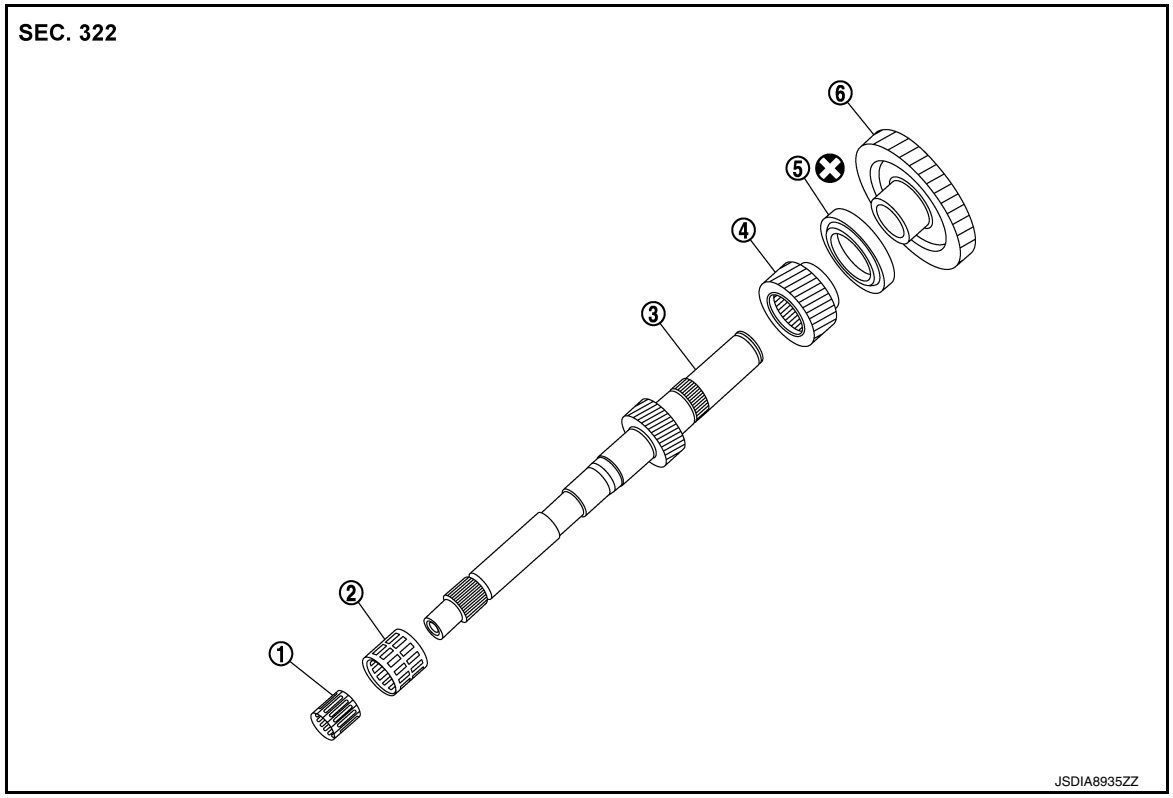
CAUTION:
Never reuse O-ring.

2. Using drift [SST: KV325H0780 (TechMate No. -) (DAIMLER tool No. 711 589 19 15 00)] install the differential side oil seal to transaxle case.
CAUTION:
Never reuse differential side oil seal.
3. Install ball bearing.
4. Install snap ring.
5. Install oil ducts and oil funnel.
CAUTION:
- **Never reuse oil ducts.**
- **Never reuse oil funnel.**
6. Install bearings.
CAUTION:
Never reuse bearings.
7. Install compression spring.
8. Install removal and installation tool [SST: KV315H0470 (TechMate No. -) (DAIMLER tool No. 724 589 00 59 00)] to transaxle case.
9. Insert park pawl actuator with removal and installation tool to transaxle case.
10. Using bolt (M5) install lock pin to park pawl actuator.
11. Install pin to park pawl actuator.
CAUTION:
Never reuse pin.
12. Install snap ring to park pawl actuator.
CAUTION:
Never reuse snap ring.
13. Install cover.
CAUTION:
Never reuse cover.
14. Install parmanent magnet.
CAUTION:
Never reuse parmanent magnet.
15. Install park pawl lift solenoid.
CAUTION:
Never reuse bolts.
16. Install lock pawl pin, coil spring, bearing bracket, and lock pawl as a unit.
17. Install bearing bracket mounting bolt with washer.
CAUTION:
Never reuse bearing bracket mounting bolt.
18. Install removal and installation tool [SST: KV315H0480 (TechMate No. -) (DAIMLER tool No. 724 589 00 63 00)] to transaxle case.
19. Insert oil pump with removal and installation tool to transaxle case.
20. Install sensor rotor.
21. Install puller [SST: KV315H0510 (TechMate No. -) (DAIMLER tool No. 724 589 01 33 00)] to sensor rotor.
22. Install sensor rotor nut.
23. Install cover.

INPUT SHAFT

Exploded View

INFOID:0000000013777580



① Needle bearing ② Needle bearing ③ Drive shaft
④ 3rd gear ⑤ Sensor rotor ⑥ 5th and 7th gear
⊗ : Always replace after every disassembly.

Disassembly and Assembly

INFOID:0000000013777581

DISASSEMBLY

1. Remove needle bearings.
2. Remove 5th and 7th gear from drive shaft.
3. Using suitable tool remove the sensor rotor from drive shaft.
4. Using sleeve [SST: KV325H0700 (TechMate No. -) (DAIMLER tool No. 168 589 01 14 00)] remove the 3rd gear from drive shaft.

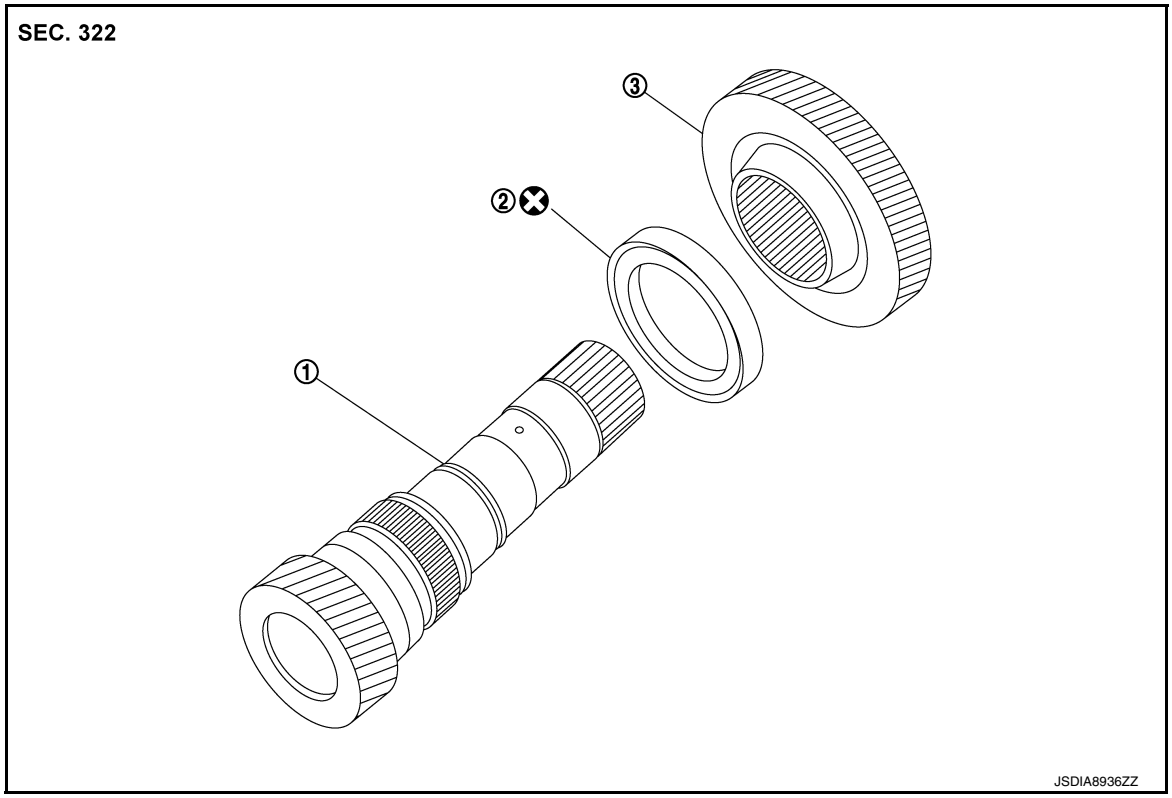
ASSEMBLY

1. Using sleeve [SST: KV325H0700 (TechMate No. -) (DAIMLER tool No. 168 589 01 14 00)] install the 3rd gear from drive shaft.
2. Using suitable tool install the sensor rotor from drive shaft.
   CAUTION:
   Never reuse sensor rotor.
3. Install 5th and 7th gear from drive shaft.
4. Install needle bearings.

HOLLOW SHAFT

Exploded View

INFOID:0000000013777582



① Hollow shaft ② Sensor rotor ③ 4th and 6th gear

⊗ : Always replace after every disassembly.

Disassembly and Assembly

INFOID:0000000013777583

DISASSEMBLY

1. Using suitable tool remove the 4th and 6th gear from hollow shaft.
2. Using suitable tool remove the sensor rotor from hollow shaft.

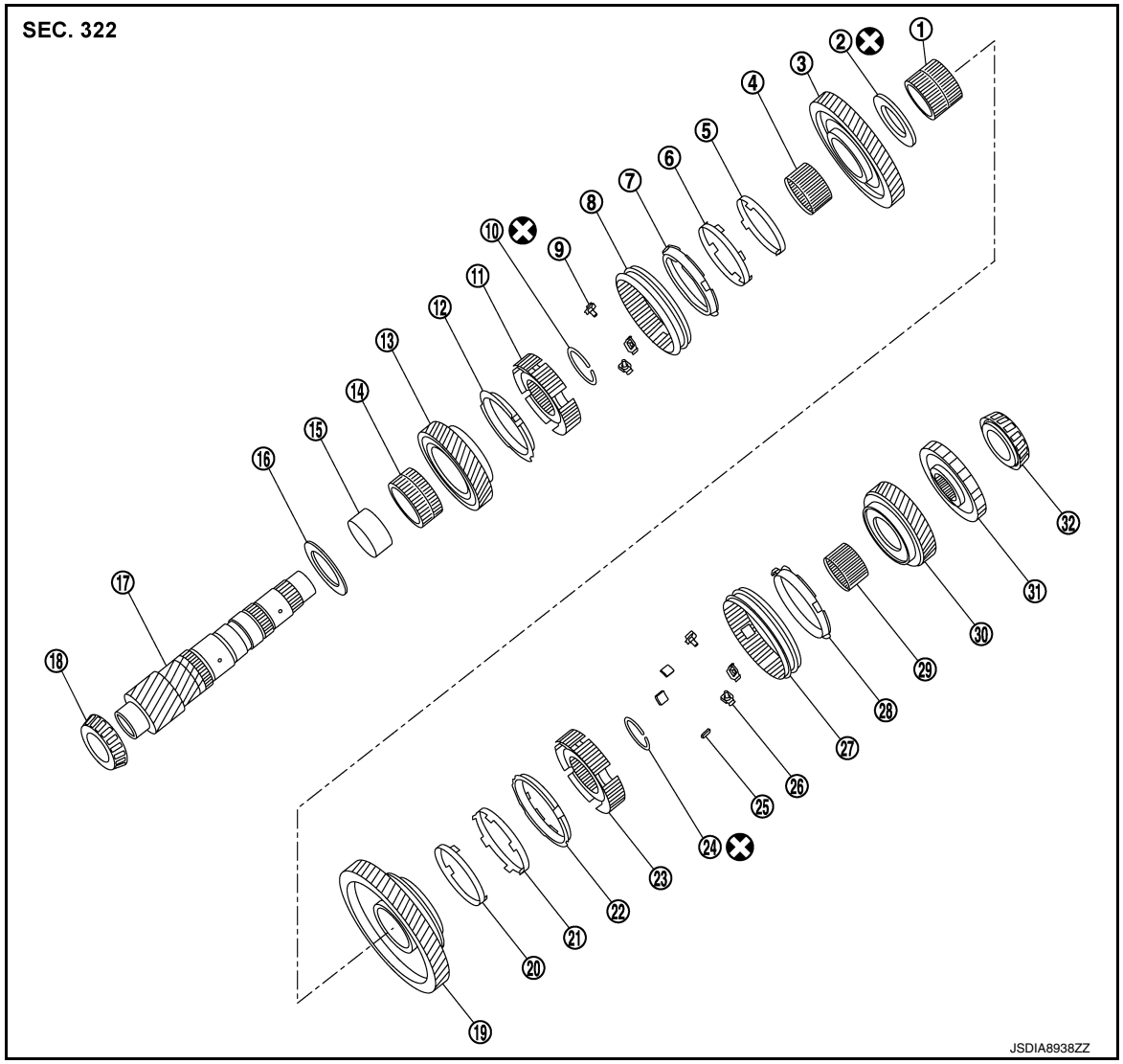
ASSEMBLY

1. Using suitable tool install the sensor rotor from hollow shaft.
   CAUTION:
   Never reuse sensor rotor.
2. Using suitable tool install the 4th and 6th gear from hollow shaft.

1ST, 2ND, 4TH, AND 5TH GEAR OUTPUT SHAFT

Exploded View

INFOID:0000000013777584



① Needle bearing	② Thrust plate	③ 2nd idler gear
④ Needle bearing	⑤ Synchronizer ring	⑥ Synchronizer ring
⑦ Synchronizer ring	⑧ Coupling sleeve	⑨ Thrust piece
⑩ Snap ring	⑪ Synchronizer hub	⑫ Synchronizer ring
⑬ 4th idler gear	⑭ Needle bearing	⑮ Sleeve
⑯ Thrust plate	⑰ Output shaft	⑱ Bearing
⑲ 1st idler gear	⑳ Synchronizer ring	㉑ Synchronizer ring
㉒ Synchronizer ring	㉓ Synchronizer hub	㉔ Snap ring
㉕ Insert key	㉖ Thrust piece	㉗ Coupling sleeve
㉘ Synchronizer ring	㉙ Needle bearing	㉚ 5th idler gear
㉛ Ratchet wheel	㉜ Bearing	

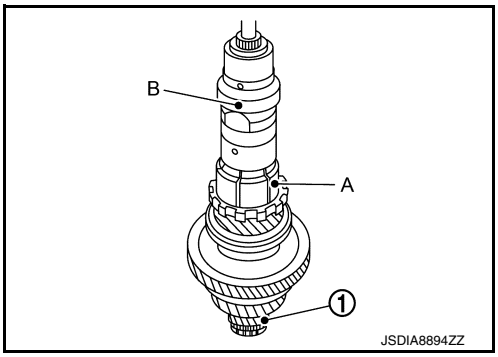
⊗ : Always replace after every disassembly.

Disassembly and Assembly

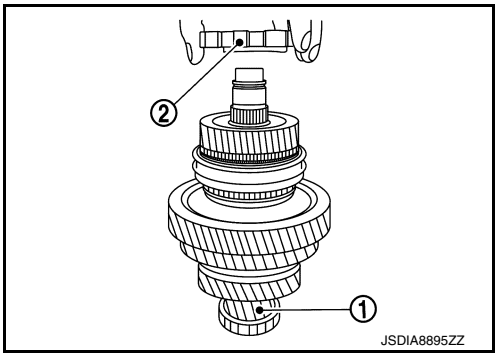
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DISASSEMBLY

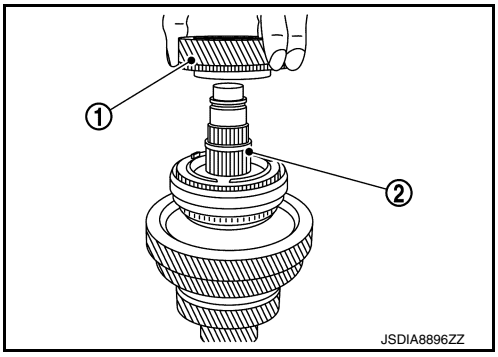
1. Using collet chuck (A) [SST: KV325H0710 (TechMate No. -) (DAIMLER tool No. 201 589 04 34 00)] and puller (B) [SST: KV325H0050 (TechMate No. -) (DAIMLER tool No. 001 589 49 33 00)] remove bearing from output shaft ①.



2. Remove ratchet ② wheel from output shaft ①.



3. Remove 5th idler gear ① and needle bearing ②.
4. Remove snap ring.
5. Remove synchronizer ring.
6. Remove coupling sleeve, thrust piece, and insert key.
7. Remove synchronizer hub.
8. Remove synchronizer rings.
9. Remove 1st idler gear.
10. Remove needle bearing and thrust plate.
11. Using puller remove thrust plate and 2nd idler gear as a unit.
12. Remove needle bearing.
13. Remove synchronizer rings.
14. Remove snap ring.
15. Remove coupling sleeve, thrust piece, and insert key.
16. Remove 4th idler gear, synchronizer ring, and synchronizer hub as a unit.
17. Remove needle bearing.
18. Remove sleeve and thrust plate as a unit.
19. Using collet chuck [SST: KV325H0710 (TechMate No. -) (DAIMLER tool No. 201 589 04 34 00)] and puller [SST: KV325H0050 (TechMate No. -) (DAIMLER tool No. 001 589 49 33 00)] remove bearing from output shaft.



ASSEMBLY

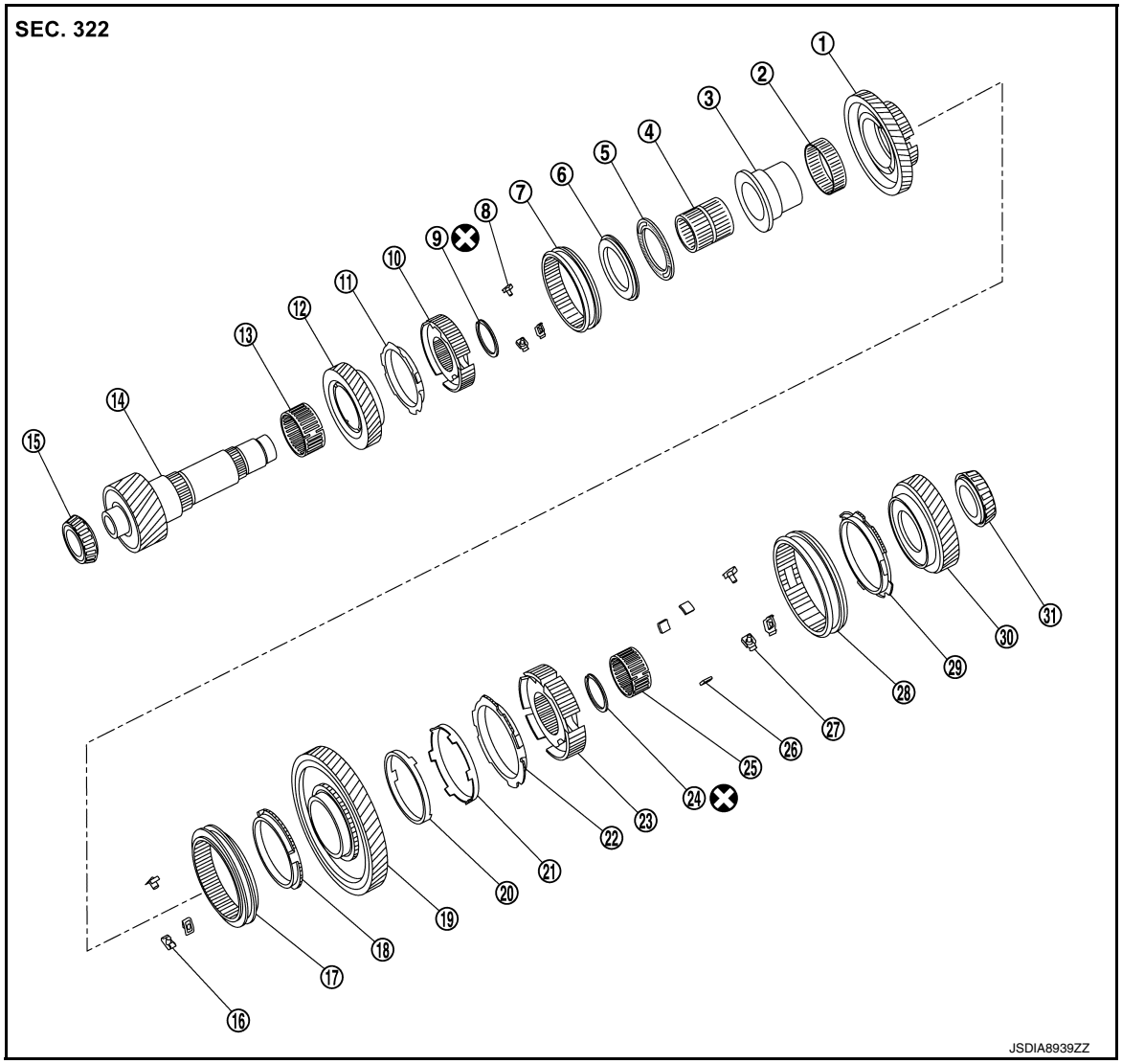
1. Using drift punch [SST: KV325H0680 (TechMate No. -) (DAIMLER tool No. 124 589 06 15 00)] install bearing to output shaft gear side.
2. Install sleeve and plate as a unit.
3. Install needle bearing.
4. Install 4th idler gear.
5. Install synchronizer ring.

6. Install synchronizer hub.
7. Install snap ring.
   CAUTION:
   Never reuse snap ring.
8. Install coupling sleeve, thrust piece, and insert key.
9. Install synchronizer rings.
10. Install needle bearing.
11. Install 2nd idler gear.
12. Install thrust plate.
13. Install needle bearing.
14. Install 1st idler gear.
15. Install synchronizer rings.
16. Install synchronizer hub.
17. Install coupling sleeve, thrust piece, and insert key.
18. Install synchronizer ring.
19. Install snap ring.
    CAUTION:
    Never reuse snap ring.
20. Install needle bearing.
21. Install 5th idler gear.
22. Install ratchet wheel to output shaft.
23. Using drift punch [SST: KV325H0680 (TechMate No. -) (DAIMLER tool No. 124 589 06 15 00)] install bearing to output shaft ratchet wheel side.

3RD, 6TH, 7TH, AND REVERSE GEAR OUTPUT SHAFT

Exploded View

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① Reverse idler gear
② Needle bearing
③ Distance sleeve
④ Needle bearing
⑤ Needle bearing
⑥ Bearing race
⑦ Coupling sleeve
⑧ Thrust piece
⑨ Snap ring
⑩ Synchronizer hub
⑪ Synchronizer ring
⑫ 6th idler gear
⑬ Needle bearing
⑭ Output shaft
⑮ Bearing
⑯ Thrust piece
⑰ Coupling sleeve
⑱ Synchronizer ring
⑲ 3rd idler gear
⑳ Synchronizer ring
㉑ Synchronizer ring
㉒ Synchronizer ring
㉓ Synchronizer hub
㉔ Snap ring
㉕ Needle bearing
㉖ Insert key
㉗ Thrust piece
㉘ Coupling sleeve
㉙ Synchronizer ring
㉚ 7th idler gear
㉛ Bearing

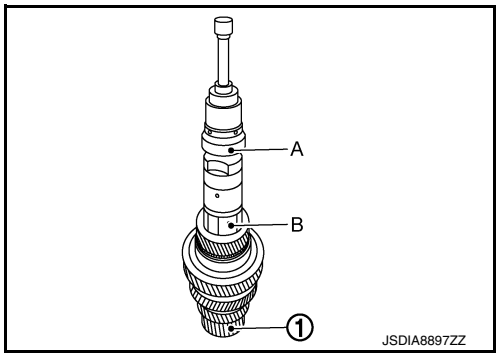
⊗ : Always replace after every disassembly.

Disassembly and Assembly

INFOID:0000000013777587

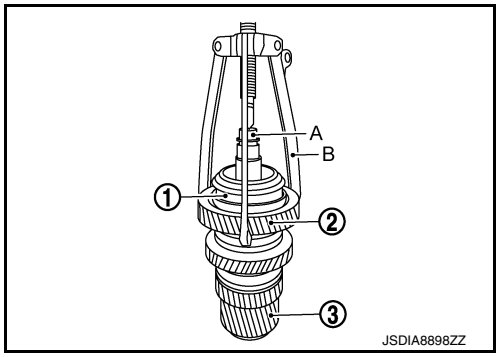
DISASSEMBLY

1. Using clamp BRG (B) [SST: KV325H0260 (TechMate No. -) (DAIMLER tool No. 460 589 03 34 00)] and puller (A) [SST: KV325H0050 (TechMate No. -) (DAIMLER tool No. 001 589 49 33 00)] remove bearing from output shaft ①.



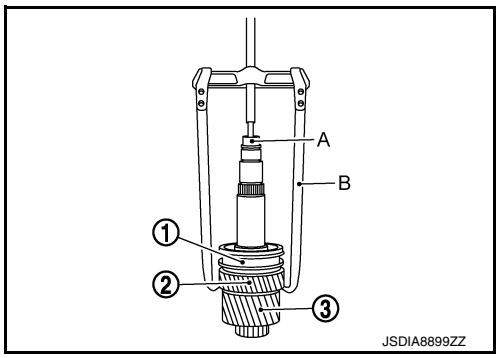
2. Remove 7th idler gear.
3. Remove needle bearing.
4. Remove snap ring.
5. Using puller (B) remove synchronizer rings, coupling sleeve ①, thrust piece, insert key, synchronizer hub, and 3rd idler gear ② as a unit from output shaft ③.

   (A) : Thrust piece

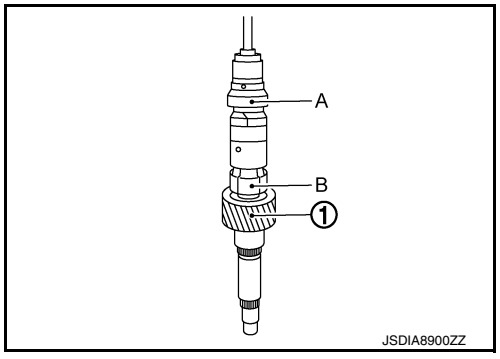


6. Remove synchronizer ring.
7. Remove coupling sleeve, thrust piece, and reverse idler gear as a unit.
8. Remove needle bearing.
9. Remove distance sleeve.
10. Remove needle bearings.
11. Remove snap ring.
12. Using puller (B) remove bearing race, coupling sleeve ①, thrust piece, synchronizer hub, synchronizer ring, and 6th idler gear ② as a unit from output shaft ③.

    (A) : Thrust piece



13. Remove needle bearing.
14. Using clamp BRG (B) [SST: KV325H0260 (TechMate No. -) (DAIMLER tool No. 460 589 03 34 00)] and puller (A) [SST: KV325H0050 (TechMate No. -) (DAIMLER tool No. 001 589 49 33 00)] remove bearing from output shaft ①.



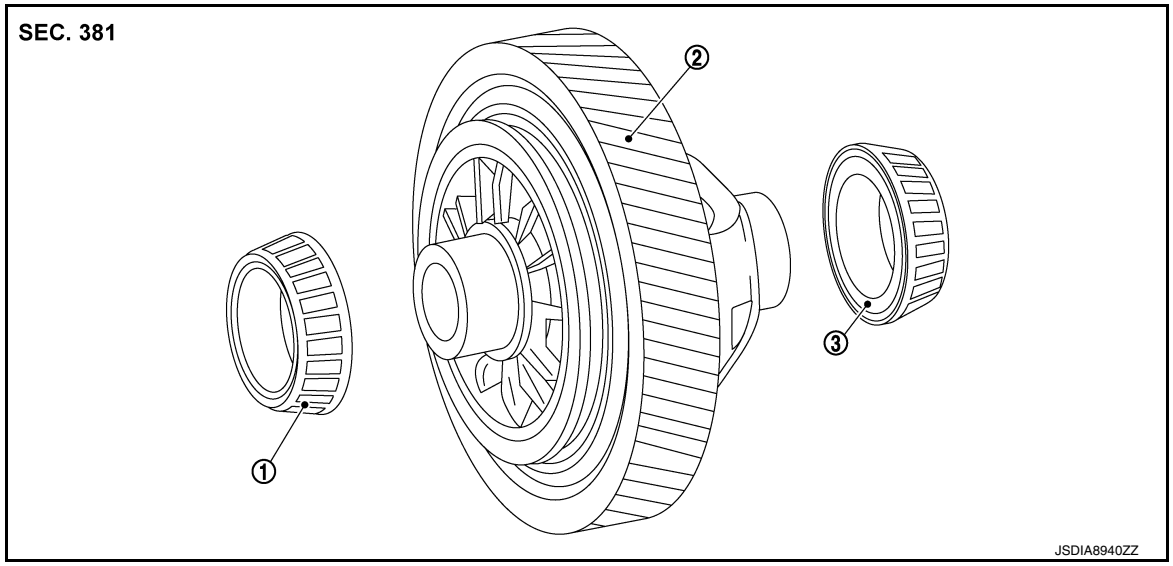
ASSEMBLY

1. Using drift punch [SST: KV325H0680 (TechMate No. -) (DAIMLER tool No. 124 589 06 15 00)] install bearing to output shaft gear side.
2. Install needle bearing.
3. Install 6th idler gear.
4. Install synchronizer ring.
5. Install coupling sleeve, thrust piece, and synchronizer hub.
6. Install bearing race.
7. Install snap ring.
   CAUTION:
   Never reuse snap ring.
8. Install needle bearings.
9. Install distance sleeve.
10. Install needle bearing.
11. Install coupling sleeve, thrust piece, and reverse idler gear.
12. Install synchronizer ring.
13. Install 3rd idler gear.
14. Install synchronizer rings.
15. Install synchronizer hub.
16. Install snap ring.
    CAUTION:
    Never reuse snap ring.
17. Install coupling sleeve, thrust piece, and insert key.
18. Install needle bearing.
19. Install synchronizer ring.
20. Install 7th idler gear.
21. Using drift punch [SST: KV325H0680 (TechMate No. -) (DAIMLER tool No. 124 589 06 15 00)] install bearing to output shaft 7th idler gear side.

FINAL DRIVE

Exploded View

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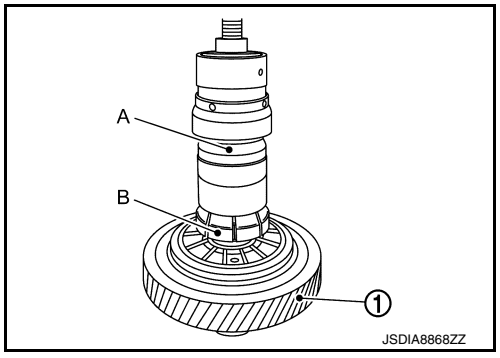
① Differential side bearing ② Final drive assembly ③ Differential side bearing

Removal and Installation

INFOID:0000000013777589

DISASSEMBLY

1. Install chuck (B) [SST: KV325H0660 (TechMate No. -) (DAIMLER tool No. 000 589 60 34 00)] to puller (A) [SST: KV325H0060 (TechMate No. -) (DAIMLER tool No. 001 589 50 33 00)].
2. Install chuck and puller to differential side bearing.
3. Remove differential side bearing from final drive assembly ①.

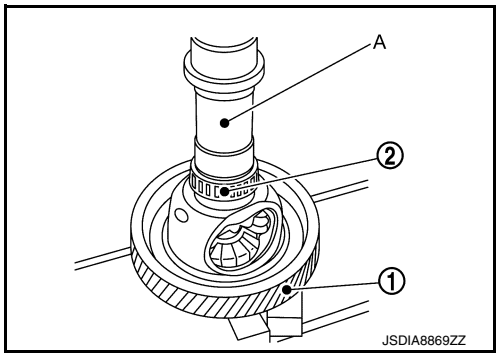


ASSEMBLY

Press inner race of each differential side bearing ② to final drive assembly ① all the way to the end, using the sleeve (A) [SST: KV315H0350 (TechMate No. -) (DAIMLER tool No. 203 589 00 14 00)].

NOTE:

Check the appearance for abnormality and damage, and check that the rotating part rotates smoothly. Replace if any malfunction is found.



SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification

INFOID:0000000013777590

Engine type		1.6L turbo engine	2.0L turbo engine	
Drive type		2WD	2WD	4WD
Transaxle model		GE7F30A		
Transmission gear ratio	1st	3.8571		
	2nd	2.4286		
	3rd	2.9048	2.6667	
	4th	1.1892	1.0488	
	5th	0.8723	0.7755	
	6th	1.1622	1.0488	
	7th	0.9362	0.8367	
	Reverse	3.0984	3.3750	
Final gear	3rd, 6th, and 7th	2.654		
	1st, 2nd, 4th, 5th, and reverse	4.6		
Recommended fluid		MA-12, "FOR NORTH AMERICA : Fluids and Lubricants" (for Northh America) or MA-13, "FOR MEXICO : Fluids and Lubricants" (for Mexico)		
Fluid capacity				

Vehicle Speed at Which Gear Shifting Occurs

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2.0L TURBO ENGINE

Unit: km/h (MPH)

Gear position	Throttle position	
	Full throttle	Half throttle
$D_1 \rightarrow D_2$	34 – 36 (21 – 22)	16 – 18 (10 – 11)
$D_2 \rightarrow D_3$	63 – 65 (39 – 40)	25 – 27 (16 – 17)
$D_3 \rightarrow D_4$	94 – 97 (58 – 60)	41 – 43 (25 – 27)
$D_4 \rightarrow D_5$	141 – 144 (88 – 89)	64 – 66 (40 – 41)
$D_5 \rightarrow D_6$	191 – 194 (119 – 121)	86 – 88 (53 – 55)
$D_6 \rightarrow D_7$	247 – 249 (153 – 155)	111 – 113 (69 – 70)
$D_7 \rightarrow D_6$	209 – 212 (130 – 132)	90 – 92 (56 – 57)
$D_6 \rightarrow D_5$	161 – 164 (100 – 102)	69 – 71 (43 – 44)
$D_5 \rightarrow D_4$	119 – 121 (74 – 75)	50 – 52 (31 – 32)
$D_4 \rightarrow D_3$	81 – 83 (50 – 52)	31 – 33 (19 – 21)
$D_3 \rightarrow D_2$	42 – 44 (26 – 27)	19 – 21 (12 – 13)
$D_2 \rightarrow D_1$	0 (0)	0 (0)

- At half throttle, the accelerator opening is 4/8 of the full opening.

1.6L TURBO ENGINE

Unit: km/h (MPH)

Gear position	Throttle position	
	Full throttle	Half throttle
$D_1 \rightarrow D_2$	35 – 38 (22 – 24)	17 – 19 (11 – 12)
$D_2 \rightarrow D_3$	57 – 60 (35 – 37)	27 – 29 (17 – 18)

Gear position	Throttle position	
	Full throttle	Half throttle
$D_3 \rightarrow D_4$	84 – 86 (52 – 53)	43 – 45 (27 – 28)
$D_4 \rightarrow D_5$	119 – 121 (74 – 75)	64 – 66 (40 – 41)
$D_5 \rightarrow D_6$	163 – 165 (101 – 103)	86 – 88 (53 – 55)
$D_6 \rightarrow D_7$	202 – 205 (126 – 127)	111 – 113 (69 – 70)
$D_7 \rightarrow D_6$	191 – 194 (119 – 121)	90 – 92 (56 – 57)
$D_6 \rightarrow D_5$	151 – 153 (94 – 95)	68 – 70 (42 – 43)
$D_5 \rightarrow D_4$	106 – 109 (66 – 68)	47 – 49 (29 – 30)
$D_4 \rightarrow D_3$	66 – 68 (41 – 42)	32 – 34 (20 – 21)
$D_3 \rightarrow D_2$	32 – 34 (20 – 21)	20 – 22 (12 – 14)
$D_2 \rightarrow D_1$	0 (0)	0 (0)

- At half throttle, the accelerator opening is 4/8 of the full opening.