



Technical Service Information

MITSUBISHI FUSO DUONIC CODE RETRIEVAL PROCEDURE

With the start of production for the 2012 model year Mitsubishi Fuso introduced the Duonic Direct Shift Gearbox transmission in the FE and FG models with the 3.0 Liter diesel engine. It is still currently used in the same vehicles. Being a fully electronically controlled transmission, the system is capable of setting any one of many diagnostic trouble codes.

The diagnosis connector is located just to the right of the throttle pedal as seen in figure 1. Code retrieval for the transmission ECU as well as the engine ECU and ABS controller and any other modules that may be present is relatively simple with the use of a capable scan tool such as the factory Fuso Connect seen in figure 2. It is used in conjunction with a lap top computer.

If a capable scan tool is not available, diagnostic trouble codes can be manually retrieved by using the SELECT, MODE and SET/RES switches located in the lower front of the meter cluster as shown in figure 3. This will put the meter cluster into diagnosis mode. Follow the instructions and illustrations on the following pages to retrieve and erase codes, code definitions follow.

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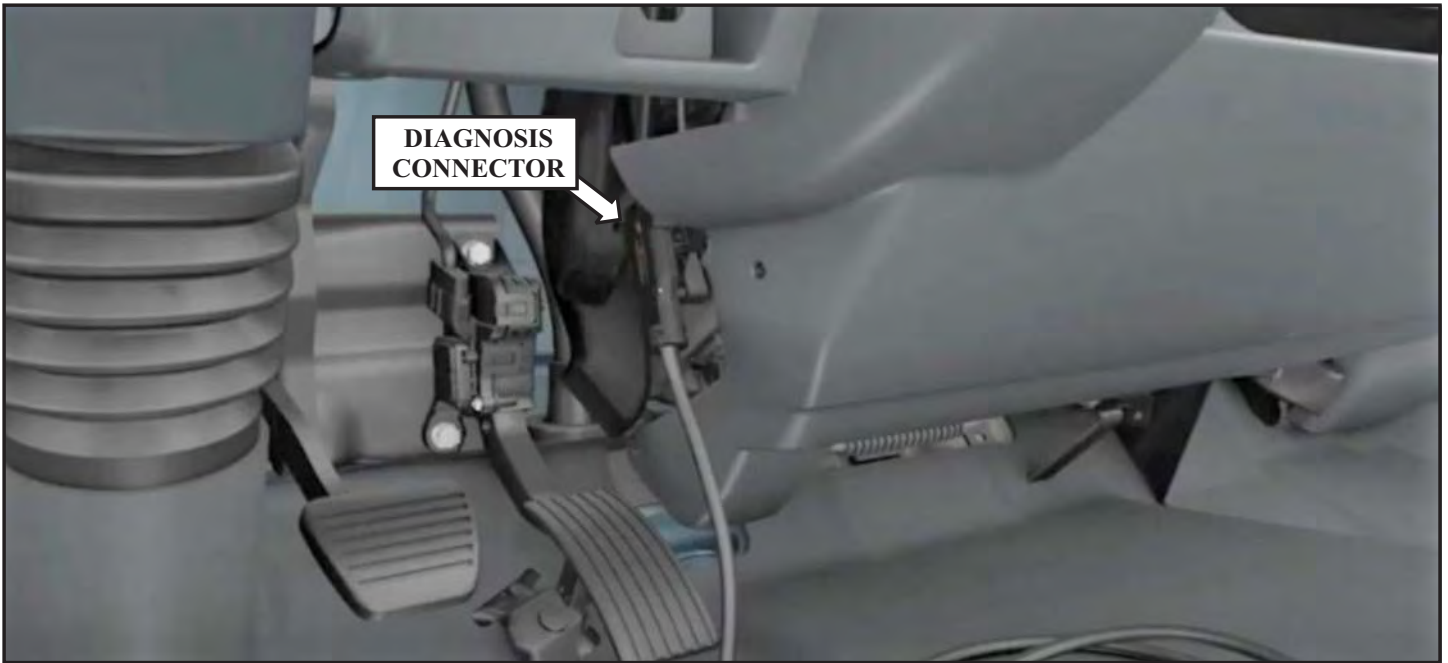


Figure 1



Figure 2

MITSUBISHI FUSO DUONIC CODE RETRIEVAL PROCEDURE

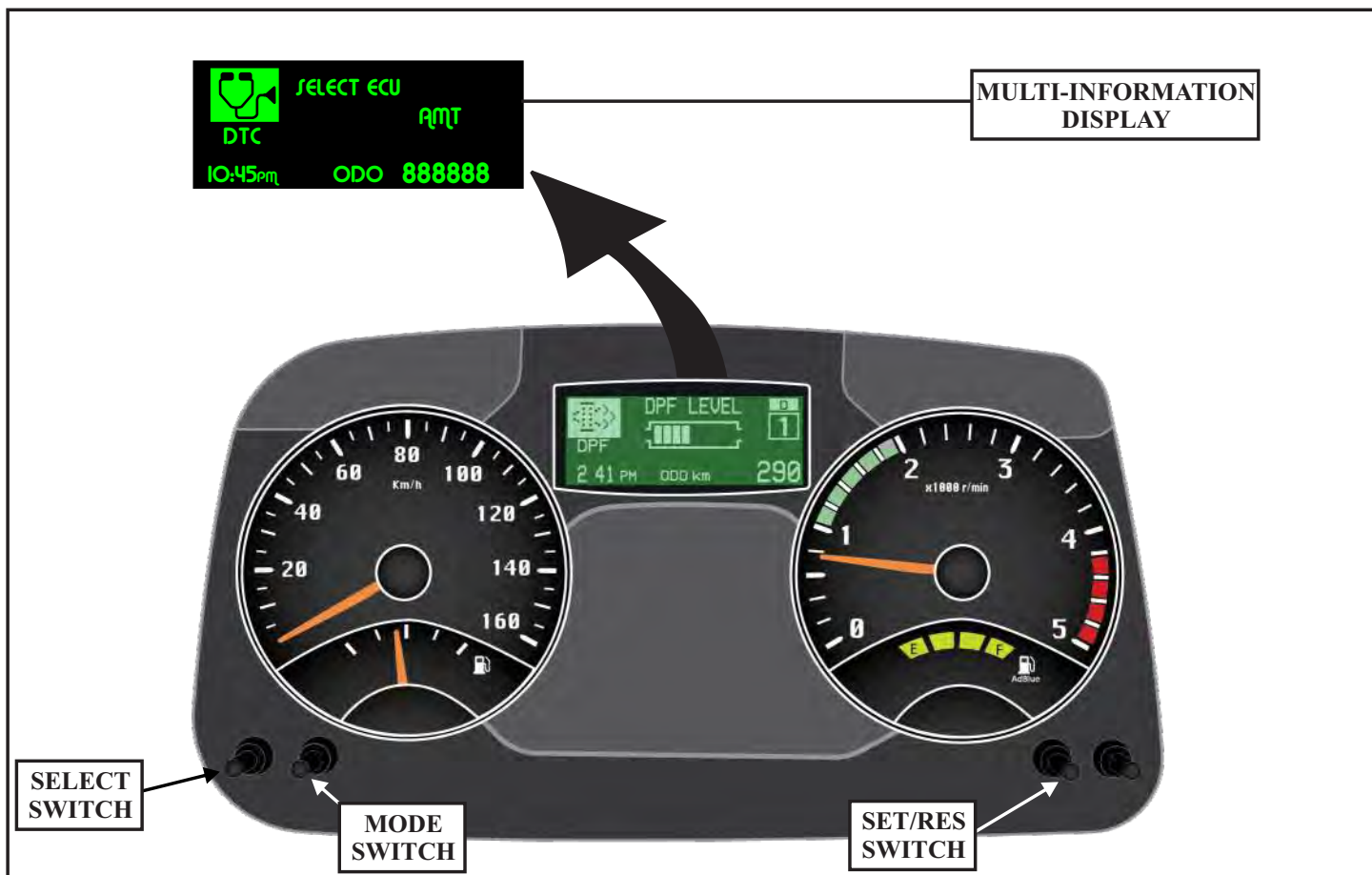


Figure 3

1. Preparation To Enter The Diagnostic Mode:

- Make certain vehicle is in park.
- Turn starter switch on.
- Press the SELECT, MODE and SET/RES switches simultaneously.

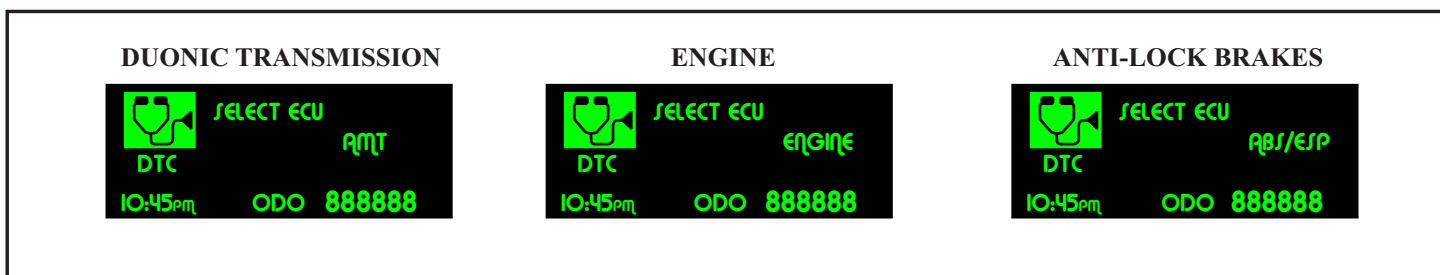


Figure 4

2. System Selection Mode:

- Press the SELECT switch to select the system to be diagnosed, see figure 4.
- Press the SET/RES switch to enter the function selection mode.

Note: Other modules will be available based on vehicle build specifications.

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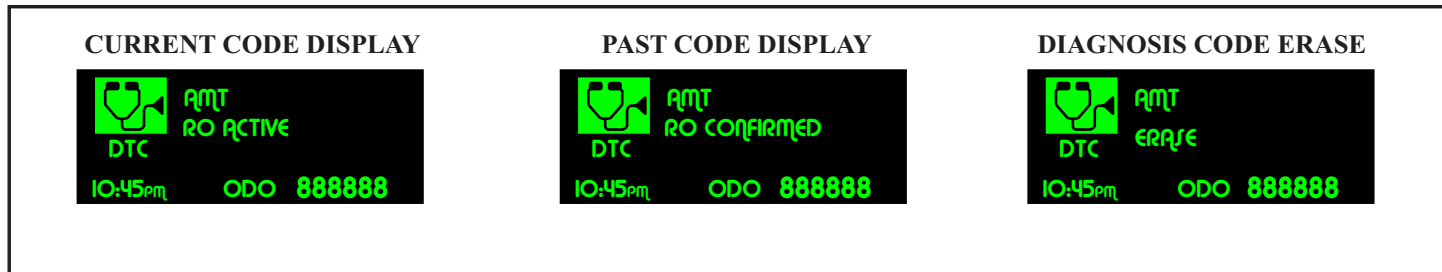


Figure 5

3. Function Selection Mode:

- Press the SELECT switch to select the desired mode.
- Press the SET/RES switch to enter one of the following modes, see figure 5:
 - Current diagnosis code display mode.
 - Past diagnosis code display mode.
 - Diagnosis code erase mode.
- When the MODE switch is pressed, the system selection mode will be entered.

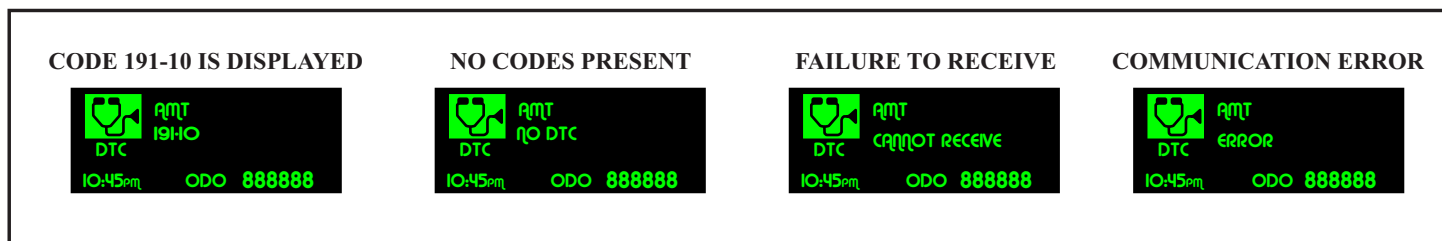


Figure 6

4. Current & Past Diagnosis Code Display Modes:

- Generated diagnosis codes are displayed. When two or more diagnosis codes have been generated, they are displayed in turns at 3 second intervals. If there is no diagnosis code, NO DTC is displayed, see figure 6.
- If ERROR or CANNOT RETRIEVE is displayed during communication, perform the operation again, see figure 6.
- When the MODE switch is pressed, the function selection mode will be entered.

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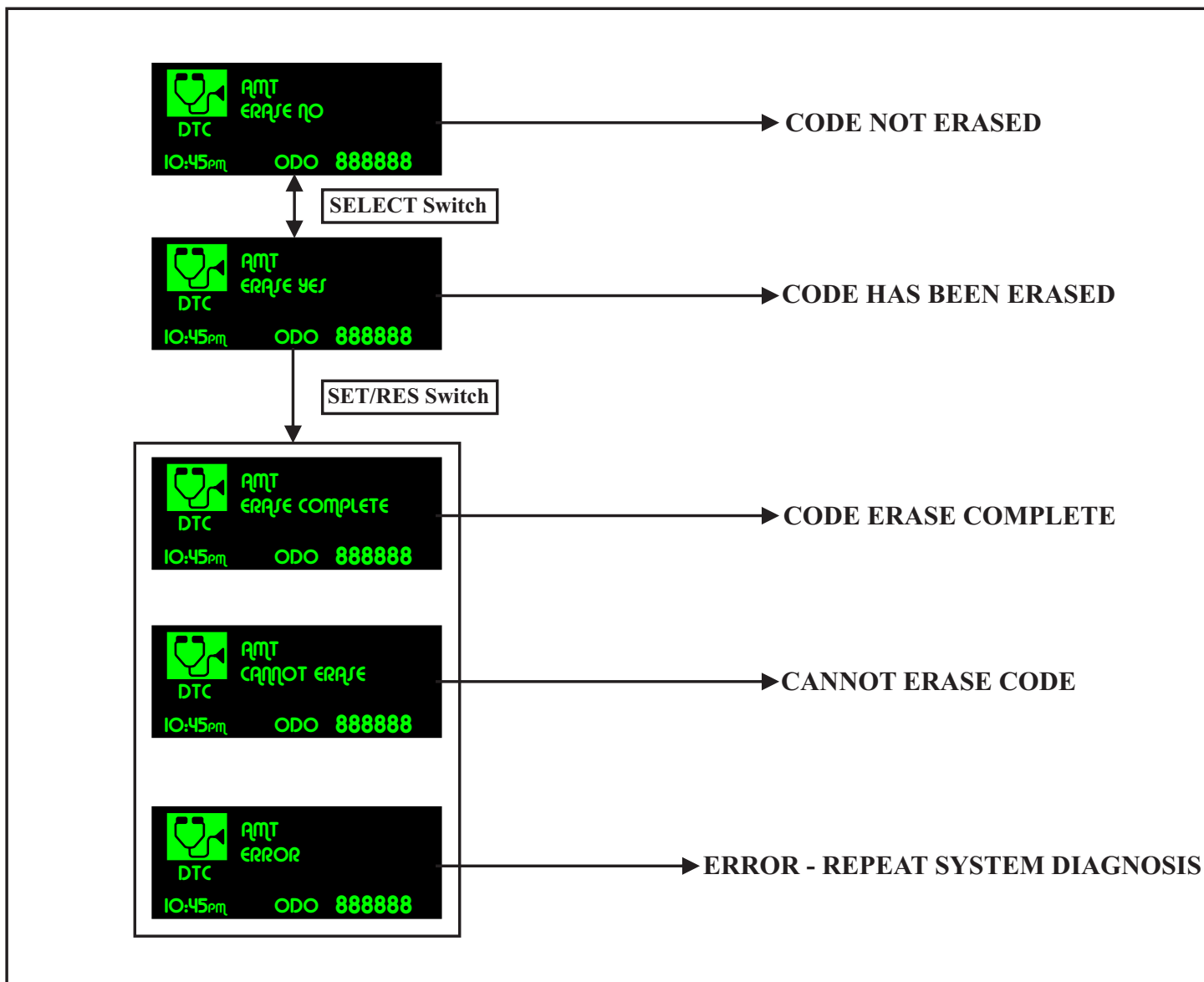


Figure 7

5. Diagnosis Code Erase Mode:

- If the SET/RES switch is pressed in the ERASE YES screen, all diagnosis codes stored in the selected module will be erased and ERASE COMPLETE will be displayed, see figure 7.
- If CANNOT ERASE or ERROR screen is displayed, recheck for active codes and take the necessary action.
- When the MODE switch is pressed, the function selection mode will be entered.
- When the SET/RES switch is pressed in the ERASE NO screen, the function selection will be entered.



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MITSUBISHI FUSO DUONIC CODE DEFINITIONS

DIAGNOSIS CODE	DIAGNOSIS CODE DEFINITION
70-19	Out Of Range CAN Reception Data From Parking Brake Switches
84-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
86-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
91-19	Out Of Range CAN Reception Data From Accelerator Pedal Position Sensor
110-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
158-2	Battery Voltage Is Either Too Low Or Too High
158-3	Battery Voltage Is Too High
158-4	Battery Voltage Is Too Low
177-2	Oil Temperature Sensor Has An Electrical Fault
177-3	Oil Temperature Sensor Signal Voltage Is Too High
177-4	Oil Temperature Sensor Signal Voltage Is Too Low
177-9	Oil Temperature Sensor Has An Electrical Fault
188-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
190-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
191-2	Transmission RPM Sensor Has An Electrical Fault
191-7	Vehicle Speed Sensor Has An Electrical Fault
191-8	Transmission RPM Sensor Signal Voltage Too Low
191-10	Vehicle Speed Sensor Has An Electrical Fault
191-12	Vehicle Speed Sensor Has An Electrical Fault
512-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
513-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
514-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
522-7	Inner Clutch Slip
526-2	Gear Ratio Double Failure
544-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
563-19	Out Of Range CAN Reception Data From Anti-Lock Brake Control Unit
595-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
597-19	Out Of Range CAN Reception Data From Brake Light Switches
600-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
602-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
681-12	Out Of Range CAN Reception Data From Shift Lock Solenoid
684-7	Outer Clutch Slip
740-7	No Response Of Outer Clutch Torque
772-3	Gear Shift Unit Solenoid (MV1F) Always ON
772-4	Gear Shift Unit Solenoid (MV1F) Always OFF
781-7	Gear Shift Not Possible Due To Low Pressure Of The Line Pressure Solenoid
783-3	Gear Shift Unit Solenoid (MV1R) Always ON
783-4	Gear Shift Unit Solenoid (MV1R) Always OFF
785-3	Line Pressure Control Solenoid Is Always ON
785-4	Line Pressure Control Solenoid Is Always OFF
788-3	Inner Clutch Control Linear Solenoid Is Always ON

Figure 8



Technical Service Information

MITSUBISHI FUSO DUONIC CODE DEFINITIONS

DIAGNOSIS CODE	DIAGNOSIS CODE DEFINITION
788-4	Inner Clutch Control Linear Solenoid Is Always OFF
788-7	No Response Of Inner Clutch Torque
788-12	Inner & Outer Clutch Control Linear Solenoid Faulty Component
904-19	Out Of Range CAN Reception Data From Anti-Lock Brake System
907-19	Out Of Range CAN Reception Data From Anti-Lock Brake System
908-19	Out Of Range CAN Reception Data From Anti-Lock Brake System
973-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
1438-12	Anti-Lock Control Unit Reports a Fault
1619-2	Vehicle Speed Sensor Has A Electrical Fault
1619-8	Vehicle Speed Sensor Signal Voltage Is Too Low
1810-2	Acceleration Sensor Has An Electrical Fault
1810-3	Acceleration Sensor Signal Voltage Too High
1810-4	Acceleration Sensor Signal Voltage Too Low
1852-19	Out Of Range CAN Reception Data From Combustion Engine Control Unit
1852-31	Internal Error - The Data Record Is Faulty
2580-2	Brake Pressure Sensor Has An Electrical Fault
2580-3	Brake Pressure Sensor Signal Voltage Is Too High
2580-4	Brake Pressure Sensor Signal Voltage Is Too Low
2910-3	Transmission Power Take-Off 3-Way Solenoid Is Always ON
2910-4	Transmission Power Take-Off 3-Way Solenoid Is Always OFF
3187-19	Out Of Range CAN Reception Data From Selector Lever
3452-19	Out Of Range CAN Reception Data From Power Take-Off Control Switch
3453-19	Out Of Range CAN Reception Data From Power Take-Off Indicator Lamp Switch
520704-2	M Contact Voltage Is Either Too High Or Too Low
520705-2	M Contact Voltage Is Either Too High Or Too Low
520706-2	ACC Contact Voltage Is Either Too High Or Too Low
520707-3	Oil Cooler Flow Control Solenoid Is Always ON
520707-4	Oil Cooler Flow Control Solenoid Is Always OFF
520708-7	Neutral Control Not Possible MV1F - MV1R Solenoid Fault
520709-7	Neutral Control Not Possible MV2F - MV2R Solenoid Fault
520710-7	Neutral Control Not Possible MV3F - MV3R Solenoid Fault
520714-3	Gearshift Unit Solenoid MV2F Is Always ON
520714-4	Gearshift Unit Solenoid MV2F Is Always OFF
520715-3	Gearshift Unit Solenoid MV2R Is Always ON
520715-4	Gearshift Unit Solenoid MV2R Is Always OFF
520716-3	Gearshift Unit Solenoid MV3F Is Always ON
520716-4	Gearshift Unit Solenoid MV3F Is Always OFF
520717-3	Gearshift Unit Solenoid MV3R Is Always ON
520717-4	Gearshift Unit Solenoid MV3R Is Always OFF
520718-3	Outer Clutch Control Linear Solenoid Is Always ON
520718-4	Outer Clutch Control Linear Solenoid Is Always OFF

Figure 9



Technical Service Information

MITSUBISHI FUSO DUONIC CODE DEFINITIONS

DIAGNOSIS CODE	DIAGNOSIS CODE DEFINITION
520719-2	Incorrect 1st Gear Ratio
520720-2	Incorrect 2nd Gear Ratio
520721-2	Incorrect 3rd Gear Ratio
520722-2	Incorrect 4th Gear Ratio
520723-2	Incorrect 5th Gear Ratio
520724-2	Incorrect 6th Gear Ratio
520725-2	Incorrect Reverse/Low Gear Ratio
520726-2	Incorrect Reverse/High Gear Ratio
520727-2	Error In CAN Reception From Signal Detection & Actuation Module (SAM)
520728-2	Error In CAN Reception From Signal Detection & Actuation Module (SAM)
520729-2	Error In CAN Reception From Signal Detection & Actuation Module (SAM)
520730-2	Error In CAN Reception From Signal Detection & Actuation Module (SAM)
520731-19	Out Of Range CAN Reception Data From Economy Mode Switch
520732-2	Error In CAN Reception From Combustion Engine Control Unit
520733-2	Error In CAN Reception From Combustion Engine Control Unit
520734-2	Out Of Range CAN Reception Data From Combustion Engine Control Unit
520735-2	Error In CAN Reception From Combustion Engine Control Unit
520736-2	Error In CAN Reception From Combustion Engine Control Unit
520738-2	Error In CAN Reception From Anti-Lock Brake Control Unit
520739-2	Error In CAN Reception From Anti-Lock Brake Control Unit
520740-3	Parking Gear Switch Is Always ON
520740-4	Parking Gear Switch Is Always OFF
520741-2	Error In CAN Reception From Anti-Lock Brake Control Unit
520742-2	Error In CAN Reception From Combustion Engine Control Unit
520743-2	Error In CAN Reception From Combustion Engine Control Unit
520744-31	Default Setting Failed To Be Executed
520745-3	The Signal Voltage Of The Acceleration Sensor 2 Is Too High
520745-4	The Signal Voltage Of The Acceleration Sensor 2 Is Too Low
520746-3	The Signal Voltage Of The Gear Shift Unit Stroke Sensor 1 Is Too High
520746-4	The Signal Voltage Of The Gear Shift Unit Stroke Sensor 1 Is Too Low
520747-3	The Signal Voltage Of The Gear Shift Unit Stroke Sensor 2 Is Too High
520747-4	The Signal Voltage Of The Gear Shift Unit Stroke Sensor 2 Is Too Low
520748-3	The Signal Voltage Of The Gear Shift Unit Stroke Sensor 3 Is Too High
520748-4	The Signal Voltage Of The Gear Shift Unit Stroke Sensor 3 Is Too Low
520749-2	Error In CAN Reception From Combustion Engine Control Unit
520750-2	Faulty DUONIC Control Unit
520751-7	Forward Gear Shift Not Possible (5th & 6th)
520752-7	Backward Gear Shift Not Possible (3rd)
520753-7	Forward Gear Shift Not Possible (1st, 6th & Lo/Reverse)
520754-7	Backward Gear Shift Not Possible (4th)
520755-7	Forward Gear Shift Not Possible (Reverse)
520756-7	Backward Gear Shift Not Possible (1st & 2nd)
520759-19	The CAN Message From Hill Start Assist Control Unit Is Faulty

Figure 10