



## M.U.T.-III SE Function

### APPLICATION ITEMS

M.U.T.-III SE can display each diagnostic item using the diagnostic test modes as follows.

Diagnosis mode	Description
Self Diagnostic Result	Display DTC which ABS actuator and electric unit (control unit) memorizes
Data List	Displays ABS actuator and electric unit (control unit) input/output data in real time
Special Function *1	<ul style="list-style-type: none"> <li>• Enables an operational check of a load by transmitting a driving signal from the ABS actuator and electric unit (control unit) to the load</li> <li>• Displays ABS actuator and electric unit (control unit) part number</li> <li>• Displays causes of automatic system cancellation occurred during system control</li> </ul>
Configuration *1	The vehicle specification can be written when ABS actuator and electric unit (control unit) is replaced

\*1: After work, perform self-diagnosis for "Read All DTCs" and erase self-diagnosis result.

### SELF DIAGNOSTIC RESULT

Refer to [DTC Index](#) 

When “Active DTC” is displayed on self-diagnosis result

- The system is presently malfunctioning.

When “Stored DTC” is displayed on self-diagnosis result

- System malfunction in the past is detected, but the system is presently normal.

## Freeze frame data (FFD)

When DTC is detected, a vehicle state shown below is recorded and displayed on M.U.T.-III SE.

Item	Unit	Description
ODO/TRIP METER	km	Displays the total mileage (Odometer value) of the moment a particular.
DTC count	Count	Displays the number of times DTC is detected.

## DATA MONITOR

<b>note</b>	The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to M.U.T.-III SE display items.
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Item (Unit)	Note
Steering angle (deg)	Displays the steering angle.
Battery voltage (V)	Displays the voltage value applied to ABS actuator and electric unit (control unit).
FR LH wheel speed (km/h)	Displays the wheel speed calculated by front LH wheel sensor.
FR RH wheel speed	Displays the wheel speed calculated by front RH wheel sensor.

Item (Unit)	Note
(km/h)	
RR LH wheel speed (km/h)	Displays the wheel speed calculated by rear LH wheel sensor.
RR RH wheel speed (km/h)	Displays the wheel speed calculated by rear RH wheel sensor.
Vehicle speed (km/h)	Displays the vehicle speed.
Odometer (m)	Displays the odometer.
Decel G sensor (m/s <sup>2</sup> )	Displays the decel G.
Side G sensor (G)	Displays the side G.
Yaw rate sensor (deg/s)	Displays the yaw rate.
Mastewr cylinder pressure (bar)	Displays the brake fluid pressure.
Valve, pump motor (Off / On)	Displays the valve amd pimp moter status.
FL/RR valve (On / Off)	Displays the front LH and rear RH valve status.
FR/RL valve (On / Off)	Displays the front RH and rear LH valve status.
FL/RR pump (On / Off)	Displays the front LH and rear RH pump motor status.
FR/RL pump (On / Off)	Displays the front RH and rear LH pump motor status.
RR RH ABS OUT valve (On / Off)	Displays the ABS OUT valve status of rear RH.
RR RH AND IN valve (On / Off)	Displays the ABS IN valve status of rear RH.
RR LH ABS OUT valve (On / Off)	Displays the ABS OUT valve status of rear LH.

Item (Unit)	Note
RR LH ABS IN valve (On / Off)	Displays the ABS IN valve status of rear LH.
FR RH ABS OUT valve (On / Off)	Displays the ABS OUT valve status of front RH.
FR RH ABS IN valve (On / Off)	Displays the ABS IN valve status of front RH.
FR LH ABS OUT valve (On / Off)	Displays the ABS OUT valve status of front LH.
FR LH ABS IN valve (On / Off)	Displays the ABS IN valve status of front LH.
Front tire diameter (mm)	Displays the front tire diameter.
Transmission type (M/T / A/T / CVT / DCT / Not)	Displays the Transmission type.
Parking brake type (1 / 2 / 3 / 4 / 5)	Displays the parking brake type.
Stop light (On / Off)	Displays the Stop light status.
AEB/IEB max torque 4 (Nm)	Displays the maximum permissible braking torque of automatic emergency braking (moderate mode).
AEB/IEB max torque 3 (Nm)	Displays the maximum permissible braking torque of automatic emergency braking (strong mode).
AEB/IEB max torque 2 (Nm)	Displays the maximum permissible braking torque of automatic emergency braking (city mode).
AEB/IEB max torque 1 (Nm)	Displays the maximum permissible braking torque of automatic emergency braking (pedestrian mode).
Electric parking mode (Mode1 / Mode2)	Displays the electric parking mode.
ACTUATOR VOLT (RH) (V)	Displays the voltage value applied to the parking brake actuator (RH side).
ACTUATOR VOLT (LH) (V)	Displays the voltage value applied to the parking brake actuator (LH side).
ACTUATOR CURRENT (RH)	Displays the current value applied to the parking brake actuator (RH side).

Item (Unit)	Note
(A)	
ACTUATOR CURRENT (LH) (A)	Displays the current value applied to the parking brake actuator (LH side).
SLOPE RATIO (%)	Displays the slope ratio.
BR FORCE EST (RH) (KN)	Displays the estimated braking force applied to the rear brake (RH side).
BR FORCE EST (LH) (KN)	Displays the estimated braking force applied to the rear brake (LH side).
PB SW (PULL / N / PUSH / MALF)	Displays the parking brake switch status.
MALF LEVEL (NORMAL / REPAIR / STOP)	Displays the malfunction level of electric parking brake system.
BRAKE STATUS (LH) (ACT 1 / ACT 2 / ACT 3 / RLS 1 / RLS 2 / RLS 3 / RLS 4 / UNKNO / INT)	Displays the electric parking brake system status (LH side).
BRAKE STATUS (RH) (ACT 1 / ACT 2 / ACT 3 / RLS 1 / RLS 2 / RLS 3 / RLS 4 / UNKNO / INT)	Displays the electric parking brake system status (RH side).
BR DISC TEMP 1 (°C)	Displays the (current) temperature of the brake disc rotor.
BR DISC TEMP 2 (—)	Displayed but not used.
PB ACTIVE STATUS DISP (REL / ACT 1 / ACT 2 / UNCON)	Displays the active status of electric parking brake system.
PB MALF DISP (NORMAL / MALF 1 / MALF 2)	Displays the malfunction status of electric parking brake system displayed on the information display in the combination meter.
VEHICLE STATUS (NOT / WARN)	Displays the vehicle status.

Item (Unit)	Note
EPB warning 1 (Warning / Off)	Displays the information display in the combination meter displaying status.
PB WARNING 1 (NO / WARN 1 / WARN 2)	Displays the information display in the combination meter displaying status.
PB WARNING 2 (NO / WARN 1 / WARN 2)	Displays the information display in the combination meter displaying status.
PB WARNING 3 (NO / WARN)	Displays the information display in the combination meter displaying status.
PB WARNING 4 (NO / WARN 1 / WARN 2)	Displays the information display in the combination meter displaying status.
PB SW indicator (On / Blink / Off)	Displays the status of parking brake switch indicator.
EPB warning 2 (Not / Warn 1 / Warn 2 / Warn 3)	Displays the information display in the combination meter displaying status.

## ACTIVE TEST

The active test is used to determine and identify details of a malfunction, based on self-diagnosis test results and data obtained in the data monitor. In response to instructions from M.U.T.-III SE, instead of those from ABS actuator and electric unit (control unit) on the vehicle, a drive signal is sent to the actuator to check its operation.

<b>caution</b>	<ul style="list-style-type: none"> <li>• Never perform active test while driving the vehicle.</li> <li>• Always bleed air from brake system before active test.</li> <li>• Never perform active test when system is malfunctioning.</li> </ul>
<b>note</b>	<ul style="list-style-type: none"> <li>• "TEST IS STOPPED" is displayed approximately 10 seconds after operation start.</li> <li>• When performing active test again after "TEST IS STOPPED" is displayed, select "BACK".</li> <li>• ABS warning light, brake warning light and ASC warning light may turn ON during active test. This is not a malfunction.</li> </ul>

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## ABS MOTOR

When "On" or "Off" is selected on display screen, the following items are displayed when system is normal.

Test item	Display item	Display	
ABS MOTOR	MOTOR RELAY	On	Off
	ACTUATOR RLY	On	On

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## PARKING BRAKE SWITCH INDICATOR

When "On" or "Off" is selected on display screen, the following items are displayed when system is normal.

Test item	Display item	Description
PB SW indicator ON	On	Parking brake switch indicator is turned ON.
	Off	Parking brake switch indicator is turned OFF.

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## ELECTRIC PARKING BRAKE OPERATION

When "On" or "Off" is selected on display screen, the following items are displayed when system is normal.

Test item	Display item	Description
BRAKE OPERATION	On	Electric parking brake is applies.
	Off	Electric parking brake is stops.

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## ELECTRIC PARKING BRAKE RELEASE

When “On” or “Off” is selected on display screen, the following items are displayed when system is normal.

Test item	Display item	Description
BRAKE RELEASE	On	Electric parking brake is releases.
	Off	Electric parking brake is stops.

## WORK SUPPORT

Function name	Item	Description
ECU Information	—	Displays ABS actuator and electric unit (control unit) part number
Actuator Test	—	Enables an operational check of a load by transmitting a driving signal from the ABS actuator and electric unit (control unit) to the load
Learning	INITIALIZATION POSITION ADJUSTMENT	Perform the initial position adjustment of the piston of the rear caliper assembly.
	START BRAKE PAD REPLACEMENT	Return the piston of the brake caliper assembly before replacing rear brake pad.
	FINISH BRAKE PAD REPLACEMENT	Push out the piston of the brake caliper assembly after replacing rear brake pad.
Sensor calibration	ST ANGLE SENSOR ADJUSTMENT	Perform neutral position adjustment of steering angle sensor.
	DECEL G SEN CALIBRATION	Perform decel G sensor calibration.
	SIDE G SEN CALIBRATION	Perform side G sensor calibration.



## ECU IDENTIFICATION

ABS actuator and electric unit (control unit) part number can be read.

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