

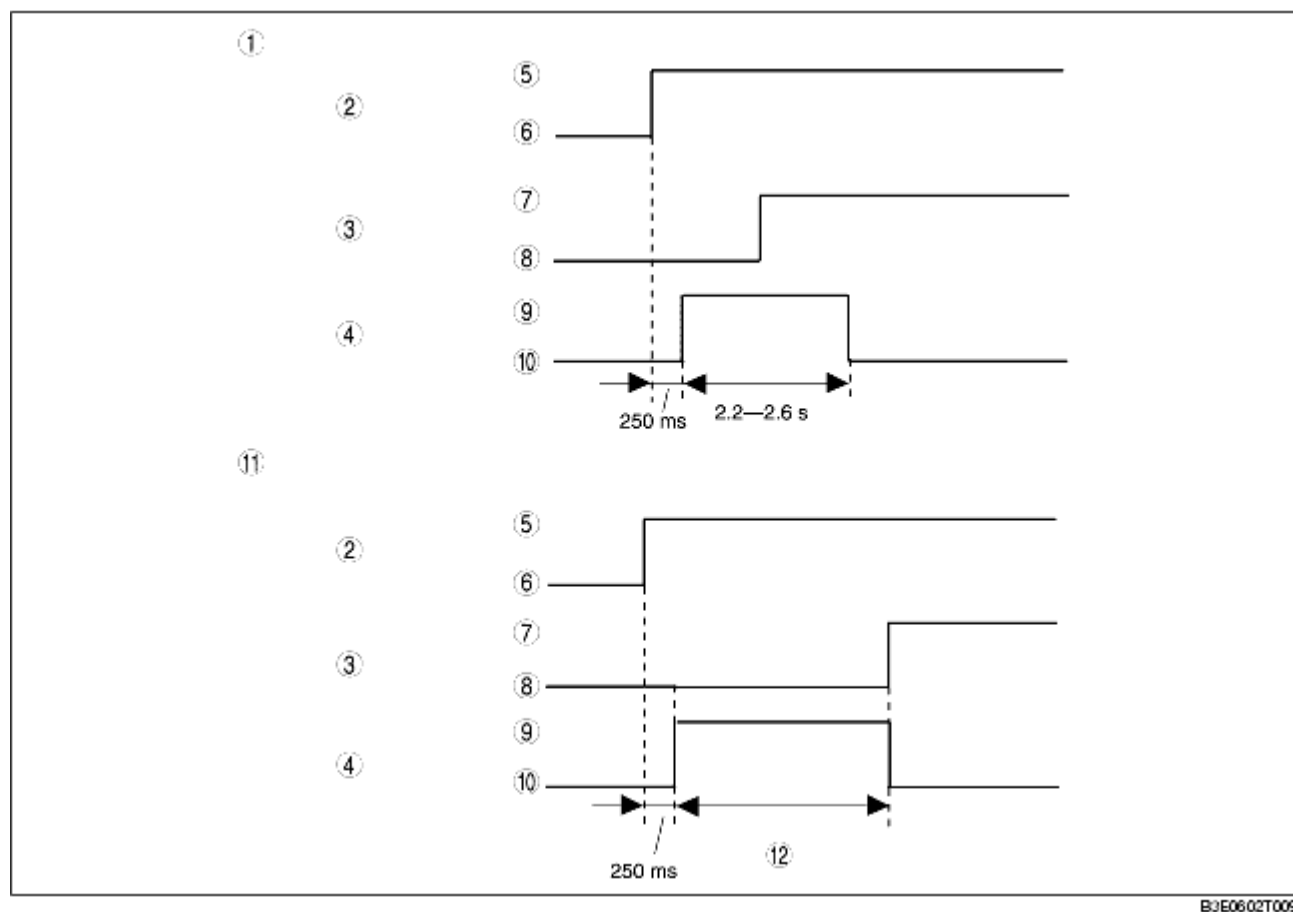
# ON-BOARD DIAGNOSTIC SYSTEM FUNCTION (ELECTRO HYDRAULIC POWER ASSIST STEERING)

B3E060201038T02

## Malfunction Detection Function

• The malfunction detection function detects malfunctions in the input/output signal system of the EHPAS control module (built into the electric power steering oil pump) when the ignition switch is at the ON position or driving the vehicle.

• The EHPAS warning light illuminates according to the following figure when the ignition switch is turned to the ON position to inspect for open circuits in the light.



B3E0602T009

1	Period until engine rotation determined: shorter than 2.2-2.6 s
2	Ignition switch
3	Engine rotation determined
4	EHPAS warning light
5	ON
6	OFF
7	Rotating
8	Stopped

9	Illuminated
10	Not illuminated
11	Period until engine rotation determined: longer than 2.2-2.6 s
12	Period until engine rotation determined

## Malfunction Display Function

• When the malfunction detection function detects a malfunction, the EHPAS warning light illuminates to advise the driver. Using the external tester communication function, DTCs can be output to the DLC-2 via the CAN line. At the same time, malfunction detection results are sent to the memory and fail-safe functions.

## Memory Function

• The memory function stores DTCs of malfunctions in input/output signal systems. With this function, once a DTC is stored it is not cleared after the ignition switch has been turned off (LOCK position), even if the malfunctioning signal system has returned to normal.

• Since the EHPAS control module has a built-in non-volatile memory, DTCs are not cleared even if the battery is removed. Therefore, it is necessary to clear the memory after performing repairs. Refer to the Workshop Manual for the DTC clearing procedure.

## Fail-safe Function

• When the malfunction detection function determines a malfunction, the EHPAS warning light illuminates to advise the driver. At this time, the fail-safe function disables system control or gradually reduces the assist power.

**DTC Table**

System malfunction location	DTC (WDS or equivalent display)	Fail-safe function	
		EHPAS warning light illumination status	Control status
Electric power steering oil pump	B1238	Illuminated	Control disabled
Battery power supply	B1317	Illuminated* <sup>5</sup>	Control disabled* <sup>3</sup>
	B1318	Illuminated* <sup>6</sup>	Control disabled* <sup>3</sup>
Electric power steering oil pump (control module)	B1342	Illuminated	Control disabled
IG power supply	B1352	Illuminated	Control continues
Module configuration	B2141	Illuminated	Control continues
	B2477	Illuminated	Control continues
Electric power steering oil pump (motor)	C1099	Illuminated	Control disabled
P/S angle sensor	C1278	Illuminated	Control disabled* <sup>4</sup>
	C1956	Illuminated	Control disabled* <sup>4</sup>
	U0073	Illuminated	Control disabled* <sup>1</sup>

CAN line	U0100	Illuminated	Control disabled <sup>*1</sup>
	U2023	Illuminated	Control disabled <sup>*2</sup>

<sup>\*1</sup> : Motor is stopped: Maintained at condition when stopped. Motor is rotating: Controlled vehicle speed is increased to **20 km/h {12 mph} per s** until it is set at **200 km/h {124 mph}** , engine speed is set at **1,000 rpm** , and control continues.

<sup>\*2</sup> : Motor is stopped: Engine speed and vehicle speed assimilation stops. After the motor is restarted, vehicle speed is set at **200 km/h {124 mph}** and engine speed is set at **1,000 rpm** , and control continues. Motor is rotating: Engine speed and vehicle speed assimilation stops. Engine speed is set at **1,000 rpm** and vehicle speed is set at **200 km/h {124 mph}** , and control continues.

<sup>\*3</sup> : Controlled motor speed is decreased to **391 rpm/s per s** until it is set at **0 rpm**, and control is disabled.

<sup>\*4</sup> : Controlled steering speed is decreased to **100 degree/s per s** until it is set at **0 degree**, and control continues.

<sup>\*5</sup> : Illuminates when battery voltage is more than **17 V** .

<sup>\*6</sup> : Illuminates when battery voltage is less than **9 V** .