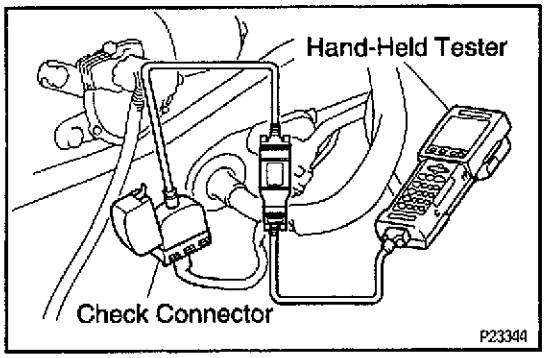
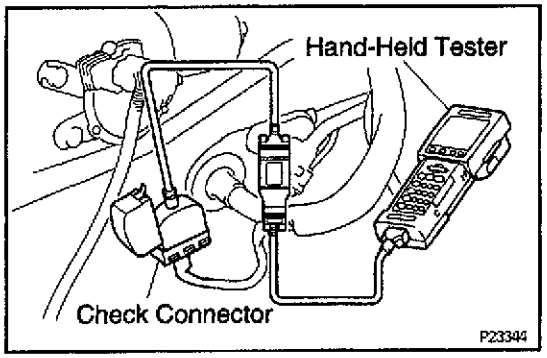




DIAGNOSIS SYSTEM

DIAGNOSTIC CODE CHECK USING HAND-HELD TESTER

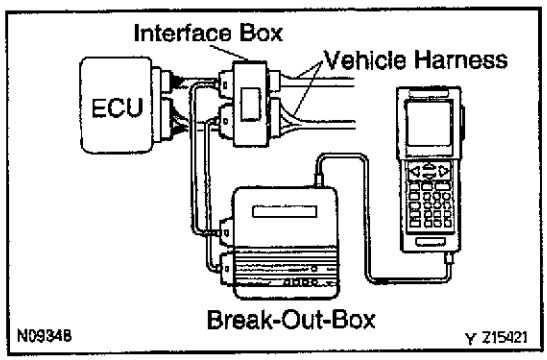
EG30V-00

1. Hook up the hand-held tester to the check connector.
2. Read the diagnostic codes by following the prompts on the tester screen.
   Please refer to the hand-held tester operator's manual for further details.

ECU DATA MONITOR USING HAND-HELD TESTER

EG30X-00

1. Hook up the hand-held tester to the check connector.
2. Monitor the ECU data by following the prompts on the tester screen.
   HINT: Hand-held tester has a "Snapshot" function which records the monitored data.
   Please refer to the hand-held tester operator's manual for further details.



ECU TERMINAL VALUES MEASUREMENT USING BREAK-OUT-BOX AND HAND-HELD TESTER

EG30Y-07

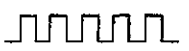
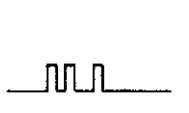
1. Hook up the break-out-box and hand-held tester to the vehicle.
2. Read the ECU input/output values by following the prompts on the tester screen.
   HINT: Hand-held tester has a "Snapshot" function. This records the measured values and is effective in the diagnosis of intermittent problems.
   Please refer to the hand-held tester/break-out-box operator's manual for further details.

EG5M0-01

DIAGNOSTIC CODES (Station Wagon)

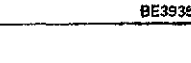
HINT:

- If a malfunction is detected during the diagnostic code check, refer to the circuit indicated in the table, and turn to the corresponding page.
- Your readings may vary from the parameters listed in the table, depending on the instruments used.

Code No.	Number of "CHECK" Engine Warning Light Blinks	System	"CHECK" Engine*1 Warning Light		Diagnosis	Trouble Area	Memory*2
			Normal Mode	Test Mode			
–	 FI1604	Normal	–	–	No malfunctions detected.	–	–
12	 FI1606	RPM Signal	ON	N.A.	No "NE" or "G1", "G2" signal to ECU for 2 sec. or more after cranking the engine.	• Distributor circuit • Distributor • Starter signal circuit • ECU	○
13	 FI1607	RPM Signal	ON	ON	No "NE" signal to ECU for 0.05 sec. or more when engine speed is above 1,000 rpm.	• Distributor circuit • Distributor • ECU	○
14	 FI1608	Ignition Signal	ON	N.A.	No "IGF" signal to ECU 6 times in succession, and no signal input within 256 msec.	• Igniter and Ignition coil circuit • Igniter and ignition coil • ECU	○
16*3	 FI3600	ECT Control Signal	ON	N.A.	Normal signal is not output from ECT CPU.	• ECU	○
21*4	 FI1609	Oxygen Sensor Signal	ON	ON	At normal driving speed (below 100 km/h and engine speed is above 1,400 rpm), amplitude of oxygen sensor signal (OX1) is reduced to between 0.35 – 0.70 V continuously for 60 seconds or more. (2 trip detection logic)	• Oxygen sensor circuit • Oxygen sensor • ECU	○
		Oxygen Sensor Heater Signal			Open or short circuit in oxygen sensor heater for 0.5 sec. or more. (HT1)	• Oxygen sensor circuit • Oxygen sensor • ECU	○
22	 FI1610	Water Temp. Sensor Signal	ON	ON	Open or short circuit in water temp. sensor signal for 0.5 sec. or more. (THW)	• Water temp. sensor circuit • Coolant temp. sensor • ECU	○
24	 FI1611	Intake Air Temp. Sensor Signal	OFF	ON	Open or short circuit in intake air temp. sensor signal for 0.5 sec. or more. (THA)	• Intake air temp. sensor circuit • Intake air temp. sensor • ECU	○
25*4	FI2562	Air-Fuel Ratio Lean Malfunction	ON	ON	Oxygen sensor output in less than 0.45 V for at least 90 secs. when oxygen sensor is warmed up (racing at 1,500 rpm). (2 trip detection logic)	• Engine ground bolt loose • Open in E1 circuit • Injector circuit • Injector • Fuel line pressure • Air flow meter • Oxygen sensor circuit • Oxygen sensor • Ignition system • ECU	○
31	 FI1612	Air Flow Meter Signal	ON	N.A.	Open or short in air flow meter circuit for 16 sec. or more with engine speed less than 3,000 rpm.	• Air flow meter circuit • Air flow meter • ECU	○

EC

DIAGNOSTIC CODES (Station Wagon) (Cont'd)

Code No.	Number of "CHECK" Engine Warning Light Blinks	System	"CHECK" Engine*1 Warning Light		Diagnosis	Trouble Area	Memory*2
			Normal Mode	Test Mode			
41	 FI1614	Throttle Position Sensor Signal	OFF	ON	Open or short circuit in throttle position sensor signal for 0.5 sec. or more.	• TP sensor circuit • TP sensor • ECU	○
42	 FI1615	Vehicle Speed Sensor Signal	OFF	OFF	For ECT All conditions below are detected continuously for 8 sec. or more. (a) No. 1 speed signal: 0 km/h (mph) (b) Engine speed: 2,450 rpm or more (c) Neutral start switch: OFF (d) Stop light switch: OFF For M/T All conditions below are detected continuously for 8 sec. or more. (a) No. 1 speed signal: 0 km/h (mph) (b) Engine speed: Between 2,300 rpm and 4,000 rpm (c) Water temp.: 80°C (176°F) or more (d) Load driving	• Vehicle speed sensor circuit • Vehicle speed sensor • ECU	○
43	 FI1616	Starter Signal	N.A.	OFF	Starter signal (STA) is not input to ECU until TE1 and E1 are connected.	• Ignition switch circuit • Ignition switch • ECU	X
52	 BE3935	No. 1 Knock Sensor Signal (front side)	ON	N.A.	No No. 1 Knock sensor signal to ECU for 8 crank revolutions with engine speed between 1,920 rpm and 5,200 rpm.	• Open or short in No. 1 knock sensor circuit. • No. 1 knock sensor (looseness) • ECU	○
53	 BE3936	Knock Control Signal	ON	N.A.	No knock control signal to ECU for 6 crank revolutions with engine speed between 1,800 rpm and 5,200 rpm.	• ECU	X
55	 BE3936	No. 2 Knock Sensor Signal (rear side)	ON	N.A.	No No. 2 knock sensor signal to ECU for 8 crank revolutions with engine speed between 1,920 rpm and 5,200 rpm.	• Open or short in No. 2 knock sensor circuit • No. 2 knock sensor (looseness) • ECU	○
51	 FI1617	Switch Condition Signal	N.A.	OFF	No "IDL" signal, "NSW" signal or "A/C" signal to ECU with the check connector terminals E1 and TE1 connected.	• Throttle position sensor IDL circuit • Accelerator pedal and cable • Neutral start switch • A/C switch circuit • ECU	X

REMARKS:

*1 "ON" displayed in the diagnosis mode column indicates that the check engine warning light is lit up when a malfunction is detected. "OFF" indicates that the check engine warning light does not light up during malfunction diagnosis, even if a malfunction is detected. "N.A." indicates that the item is not included in malfunction diagnosis.

*2 "○" in the memory column indicates that a diagnostic code is recorded in the ECU memory when a malfunction occurs. "X" indicates that a diagnostic code is not recorded in the ECU memory even if a malfunction occurs. Accordingly, output of diagnostic results in normal or test mode is performed with the ignition switch ON.

*3 A/T only

*4 Europe only

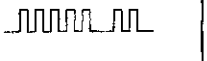
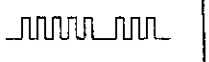
DIAGNOSTIC CODES (Hardtop)

HINT:

- If a malfunction is detected during the diagnostic code check, refer to the circuit indicated in the table, and turn to the corresponding page.
- Your readings may vary from the parameters listed in the table, depending on the instruments used.

Code No.	Number of "CHECK" Engine Warning Light Blinks	System	"CHECK" Engine*1 Warning Light		Diagnosis	Trouble Area	Memory*2
			Normal Mode	Test Mode			
–	 FI1604	Normal	–	–	No malfunctions detected.	–	–
12	 FI1606	RPM Signal	ON	N.A.	No "NE" or "G1", "G2" signal to ECU for 2 sec. or more after cranking the engine.	• Distributor circuit • Distributor • Starter signal circuit • ECU	○
13	 FI1607	RPM Signal	ON	ON	No "NE" signal to ECU for 0.05 sec. or more when engine speed is above 1,000 rpm.	• Distributor circuit • Distributor • ECU	○
14	 FI1608	Ignition Signal	ON	N.A.	No "IGF" signal to ECU 8 times in succession, and no signal input put within 256 msec.	• Igniter and ignition coil circuit • Igniter and ignition coil • ECU	○
22	 FI1610	Water Temp. Sensor Signal	ON	ON	Open or short circuit in water temp. sensor signal for 0.5 sec. or more. (THW)	• Water temp. sensor circuit • Coolant temp. sensor • ECU	○
24	 FI1611	Intake Air Temp. Sensor Signal	OFF	ON	Open or short circuit in intake air temp. sensor signal for 0.5 sec. or more. (THA)	• Intake air temp. sensor circuit • Intake air temp. sensor • ECU	○
31	 FI1612	Air Flow Meter Signal	ON	ON	When idle contacts are closed and engine speed is 1,500 rpm or less, there is an open circuit in VC and VS signal or a short circuit between VS and E2.	• Air flow meter circuit • Air flow meter • ECU	○
32	 FI1613	Air Flow Meter Signal	ON	ON	Open circuit in E2 or short circuit between VC and VS.	• Air flow meter circuit • Air flow meter • ECU	○
41	 FI1614	Throttle Position Sensor Signal	OFF	ON	Open or short circuit in throttle position sensor signal for 0.5 sec. or more.	• TP sensor circuit • TP sensor • ECU	○
42	 FI1615	Vehicle Speed Sensor Signal	OFF	OFF	No "SPD" signal for 8 seconds when engine speed 2,700 rpm or more and with vehicle not moving.	• Vehicle speed sensor circuit • Vehicle speed sensor • ECU	○
43	 FI1616	Starter Signal	N.A.	OFF	Starter signal (STA) is not input to ECU until TE1 and E1 are connected.	• Ignition switch circuit • Ignition switch • ECU	X

DIAGNOSTIC CODES (Hardtop) (Cont'd)

Code No.	Number of "CHECK" Engine Warning Light Blinks	System	"CHECK" Engine*1 Warning Light		Diagnosis	Trouble Area	Memory*2
			Normal Mode	Test Mode			
52	 BE3935	No. 1 Knock Sensor Signal (front side)	ON	N.A.	No No. 1 knock sensor signal to ECU for 6 crank revolutions with engine speed between 1,800 rpm and 5,200 rpm.	• Open or short in No. 1 knock sensor circuit. • No. 1 knock sensor (looseness) • ECU	○
53	 BE3935	Knock Control Signal	ON	N.A.	No knock control signal to ECU for 12 crank revolutions with engine speed between 1,800 rpm and 5,200 rpm.	• ECU	X
55	 BE3935	No. 2 Knock Sensor Signal (rear side)	ON	N.A.	No No. 2 knock sensor signal to ECU for 6 crank revolutions with engine speed between 1,800 rpm and 5,200 rpm.	• Open or short in No. 2 knock sensor circuit • No. 2 knock sensor (looseness) • ECU	○
51	 FI1617	Switch Condition Signal	N.A.	OFF	No "IDL" signal, "NSW" signal or "A/C" signal to ECU with the check connector terminals E1 and TE1 connected.	• Throttle position sensor IDL circuit • Accelerator pedal and cable • Neutral start switch • A/C switch circuit • ECU	X

REMARKS:

*1 "ON" displayed in the diagnosis mode column indicates that the check engine warning light is lit up when a malfunction is detected. "OFF" indicates that the check engine warning light does not light up during malfunction diagnosis, even if a malfunction is detected. "N.A." indicates that the item is not included in malfunction diagnosis.

*2 "○" in the memory column indicates that a diagnostic code is recorded in the ECU memory when a malfunction occurs. "X" indicates that a diagnostic code is not recorded in the ECU memory even if a malfunction occurs. Accordingly, output of diagnostic results in normal or test mode is performed with the ignition switch ON.

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