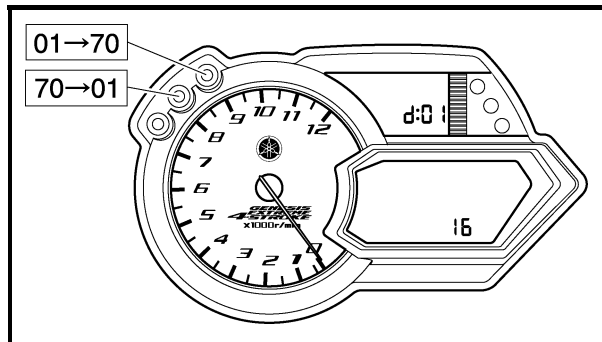
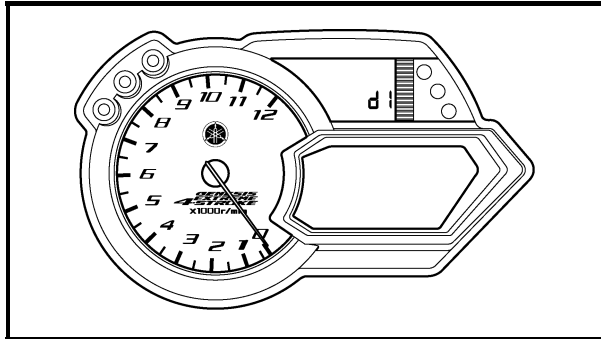




DIAGNOSTIC MODE

It is possible to monitor the sensor output data or check the activation of actuators without connecting the measurement equipment by simply switching the meter indication from the normal mode to the diagnostic monitoring mode.



Setting the diagnostic mode

1. Turn the main switch to “OFF” and set the engine stop switch to “ON”.
2. Disconnect the wire harness coupler from the fuel pump.
3. Simultaneously press and hold the “SELECT” and “RESET” buttons, turn the main switch to “ON”, and continue to press the buttons for 8 seconds or more.
4. After selecting “dI”, simultaneously press the “SELECT” and “RESET” buttons for 2 seconds or more to execute the selection.
5. Select the diagnostic code number that applies to the item that was verified with the fault code number by pressing the “SELECT” and “RESET” buttons.

NOTE:

- The diagnostic code number appears on the LCD meter (01-70).
- To decrease the selected diagnostic code number, press the “RESET” button. Press the “RESET” button for 1 second or longer to automatically decrease the diagnostic code numbers.
- To increase the selected diagnostic code number, press the “SELECT” button. Press the “SELECT” button for 1 second or longer to automatically increase the diagnostic code numbers.



6. Verify the operation of the sensor or actuator.
 - Sensor operation
The data representing the operating conditions of the sensor appears on the trip LCD.
 - Actuator operation
Set the grip warmer adjustment down side switch to “ON” to operate the actuator.
 - * If the grip warmer adjustment down side switch is set to “ON”, set it to “OFF”, and then set it to “ON” again.
7. Turn the main switch to “OFF” to cancel the diagnostic mode.

NOTE: _____
To perform a reliable diagnosis, make sure to turn “OFF” the power supply before every check and then start right from the beginning.



Diagnostic fault code table

Fault Code No.	Symptom	Probable cause of malfunction	Diagnostic code
11	No normal signals are received from the cylinder identification sensor.	<ul style="list-style-type: none"> • Open or short circuit in wiring sub lead. • Open or short circuit in wiring harness. • Defective cylinder identification sensor. • Malfunction in ECU. • Improperly installed sensor. 	—
12	No normal signals are received from the crankshaft position sensor.	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Defective crankshaft position sensor. • Malfunction in pickup rotor. • Malfunction in ECU. • Improperly installed sensor. 	—
13	Intake air pressure sensor-open or short circuit detected.	<ul style="list-style-type: none"> • Open or short circuit in wiring sub lead. • Open or short circuit in wiring harness. • Defective intake air pressure sensor. • Malfunction in ECU. 	03
14	Faulty intake air pressure sensor hose system; a hose is detached, causing constant application of the atmospheric pressure to the sensor; or, the hose is clogged.	<ul style="list-style-type: none"> • Intake air pressure sensor hose is detached, clogged, kinked, or pinched. • Malfunction in ECU. 	03
15	Throttle position sensor-open or short circuit detected.	<ul style="list-style-type: none"> • Open or short circuit in wiring sub lead. • Open or short circuit in wiring harness. • Defective throttle position sensor. • Malfunction in ECU. • Improperly installed throttle position sensor. 	01
16	A stuck throttle position sensor is detected.	<ul style="list-style-type: none"> • Stuck throttle position sensor. • Malfunction in ECU. 	01
20	When the main switch is turned to ON, the atmospheric sensor voltage and intake air pressure sensor voltage differ greatly.	<ul style="list-style-type: none"> • Atmospheric pressure sensor hose is clogged. • Intake air pressure sensor hose is clogged, kinked, or pinched. • Malfunction of the atmospheric pressure sensor in the intermediate electrical potential. • Malfunction of the intake air pressure sensor in the intermediate electrical potential. • Malfunction in ECU. 	03 02
21	Coolant temperature sensor-open or short circuit detected.	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Defective coolant temperature sensor. • Malfunction in ECU. 	06
22	Intake temperature sensor-open or short circuit detected.	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Defective intake temperature sensor. • Malfunction in ECU. 	05
23	Atmospheric pressure sensor-open or short circuit detected.	<ul style="list-style-type: none"> • Open or short circuit in wiring sub lead. • Defective atmospheric pressure sensor. • Malfunction in ECU. 	02
30	Oil pressure dropped.	<ul style="list-style-type: none"> • Oil pressure dropped. 	
33	Open circuit is detected in the primary lead of the ignition coil (#1).	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system. 	30
34	Open circuit is detected in the primary lead of the ignition coil (#2).	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system. 	31
35	Open circuit is detected in the primary lead of the ignition coil (#3).	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system. 	32
36	Open circuit is detected in the primary lead of the ignition coil (#4).	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system. 	33

FUEL INJECTION SYSTEM

FI



Fault Code No.	Symptom	Probable cause of malfunction	Diagnostic code
42	No normal signals are received from the speed sensor.	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Defective speed sensor. • Malfunction in vehicle speed sensor detected unit. • Malfunction in ECU. 	07
43	The ECU is unable to monitor the battery voltage (an open circuit in the monitor line to the ECU).	<ul style="list-style-type: none"> • Open circuit in wiring harness. • Malfunction in ECU. 	09
44	An error is detected while reading or writing on EEPROM.	<ul style="list-style-type: none"> • Malfunction in ECU. (The CO adjustment value is not properly written on or read from the internal memory). 	60
46	Power supply to the FI system is not normal.	<ul style="list-style-type: none"> • Malfunction in "CHARGING SYSTEM". 	—
50	Faulty ECU memory. When this malfunction is detected, the code number might not appear on the meter.	<ul style="list-style-type: none"> • Malfunction in ECU. (The program and data are not properly written on or read from the internal memory.) 	—
80	The grip warmer switch is not normal.	<ul style="list-style-type: none"> • Short circuit in wiring harness. • Defective grip warmer switch. • Malfunction in ECU. 	—
81	The grip warmer is not normal.	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Defective grip warmer. • Malfunction in ECU. 	26
82	The thumb warmer switch is not normal.	<ul style="list-style-type: none"> • Short circuit in wiring harness. • Defective thumb warmer switch. • Malfunction in ECU. 	—
83	The thumb warmer is not normal.	<ul style="list-style-type: none"> • Short circuit in wiring harness. • Defective thumb warmer. • Malfunction in ECU. 	27
84	T.O.R.S.	<ul style="list-style-type: none"> • Detecting conditions for T.O.R.S. are satisfied. 	1 24 42
85	The oil pressure switch is not normal.	<ul style="list-style-type: none"> • Open circuit in wiring harness. • Defective oil pressure switch. • Malfunction in ECU. 	—
Er-1	No signal are received from the ECU.	<ul style="list-style-type: none"> • Open or short circuit in wiring harness. • Malfunction in meter. • Malfunction in ECU. • Defective wire connection of the ECU coupler. 	—
Er-2	No signal are received from the ECU within the specified duration.	<ul style="list-style-type: none"> • Improper connection in wiring harness. • Malfunction in meter. • Malfunction in ECU. 	—
Er-3	Data from the ECU can not be received correctly.	<ul style="list-style-type: none"> • Improper connection in wiring harness. • Malfunction in meter. • Malfunction in ECU. 	—
Er-4	Non-registered data has been received from the meter.	<ul style="list-style-type: none"> • Improper connection in wiring harness. • Malfunction in meter. • Malfunction in ECU. 	—



Diagnostic mode table

Switch the meter display from the regular mode to the diagnosis mode. To switch the display, refer to “DIAGNOSTIC MODE”.

NOTE:

- Check the intake air temperature and coolant temperature as close as possible to the intake air temperature sensor and the coolant temperature sensor respectively.
- If it is not possible to check it with an atmospheric pressure gauge, judge it by using 101.3 kPa as the standard.
- If it is not possible to check the intake air temperature, use the ambient temperature as reference.

Diagnostic code	Item	Description of action	Data displayed on meter (reference value)
01	Throttle angle	Displays the throttle angle. • Check with throttle fully closed. • Check with throttle fully open.	0 ~ 125 degrees • Fully closed position (15 ~ 18) • Fully open position (95 ~ 100)
02	Atmospheric pressure	Displays the atmospheric pressure. * Use an atmospheric pressure gauge to check the atmospheric pressure.	Compare it to the value displayed on the meter.
03	Intake air pressure	Displays the intake air pressure. Engine stop switch is on. * Generate the pressure difference by cranking the engine with the starter, without actually starting the engine.	• Not cranking-atmospheric pressure • Cranking-intake air pressure It changes at the value which is smaller than in the atmospheric pressure.
05	Intake temperature	Displays the intake air temperature. * Check the temperature in the air cleaner case.	Compare it to the value displayed on the meter. (min-30 [°C])
06	Coolant temperature	Displays the coolant temperature. * Check the temperature of the coolant.	Compare it to the value displayed on the meter. (min-30 [°C])
07	Vehicle speed pulse	Displays the accumulation of the vehicle pulses that are generated when the tire is spun.	(0 ~ 999; resets to 0 after 999) OK if the numbers appear on the meter.
09	Fuel system voltage (battery voltage)	Displays the fuel system voltage (battery voltage). Engine stop switch is on.	0 ~ 18.7 V Normally, approximately 12.0 V
24	Throttle switch	The meter displays the following items: During the throttle switch ON (throttle open): ON During the throttle switch OFF (throttle close): OFF	–
26	Grip warmer drive	Drive the grip warmer when 1 second has passed after the grip warmer down side switch is changed from OFF to ON. However, if the input of grip warmer down side switch (Grip warmer down side switch: from OFF to ON) changed before the operation as mentioned above is finished, stop the driving operation and start the operation newly. Light the engine warning lamp while the grip warmer down side switch is turned ON. When it is moved to other code, the operation as mentioned above should be stopped immediately. The operation mentioned above is repeated every time the grip warmer down side switch is changed from OFF to ON.	–
27	Thumb warmer drive	Drive the grip warmer when 1 second has passed after the grip warmer down side switch is changed from OFF to ON. However, if the input of grip warmer down side switch (Grip warmer down side switch: from OFF to ON) changed before the operation as mentioned above is finished, stop the driving operation and start the operation newly. Light the engine warning lamp while the grip warmer down side switch is turned ON. When it is moved to other code, the operation as mentioned above should be stopped immediately. The operation mentioned above is repeated every time the grip warmer down side switch is changed from OFF to ON.	–

FUEL INJECTION SYSTEM

FI



Diagnostic code	Item	Description of action	Data displayed on meter (reference value)
29	Suspension for the adjustment of damping force	The following connection judgment result is transmitted to the meter. When the connection judgment is "Connected": H'00 When the connection judgment is "Not connected": H'F0 The following item is performed only when the connection judgment is "Connected". Set ECS to Hard when 1 second has passed after the grip warmer down side switch is changed from OFF to ON. (Pattern 1): Set ECS to Soft when 5000 ms has passed after the power is supplied. (Pattern 2): Turn ECS OFF when 5000 ms has passed after the power is supplied. However, if the switch input (Grip warmer down side switch: from OFF to ON) changed before the operation as mentioned above is finished, stop the driving operation and start the operation newly. Light the engine warning lamp while the condition (Pattern 1) as mentioned above is turned ON. Blink the engine warning lamp while the condition (Pattern 2) as mentioned above is turned ON. (Period: 1 s, Duty: 50%) When it is moved to other code, the operation as mentioned above should be stopped immediately. The operation mentioned above is repeated every time the grip warmer down side switch is changed from OFF to ON.	-
30	Ignition coil #1	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #1 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
31	Ignition coils #2	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #2 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
32	Ignition coil #3	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #3 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
33	Ignition coil #4	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #4 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
36	Injector #1	After the engine stop switch has been turned from OFF to ON, it actuates the injector #1 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.
37	Injector #2	After the engine stop switch has been turned from OFF to ON, it actuates the injector #2 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.
38	Injector #3	After the engine stop switch has been turned from OFF to ON, it actuates the injector #3 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.
39	Injector #4	After the engine stop switch has been turned from OFF to ON, it actuates the injector #4 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.

FUEL INJECTION SYSTEM

FI



Diagnostic code	Item	Description of action	Data displayed on meter (reference value)
50	Fuel injection system relay	After the engine stop switch has been turned from OFF to ON, it actuates the fuel injection system relay five times every second and illuminates the engine trouble warning light (the light is OFF when the relay is ON, and the light is ON when the relay is OFF). * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the fuel injection system relay operating sound 5 times with the engine stop switch ON.
51	Radiator fan motor relay	After the engine stop switch has been turned from OFF to ON, it actuates the radiator fan motor relay five times every 5 seconds and illuminates the engine trouble warning light. (ON 2 seconds, OFF 3 seconds) * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the radiator fan motor relay operating sound 5 times with the engine stop switch ON. (At that time, the fan motor rotates.)
52	Headlight relay 1	After the engine stop switch has been turned from OFF to ON, it actuates the headlight relay five times every 5 seconds and illuminates the engine trouble warning light. (ON 2 seconds, OFF 3 seconds) * If the engine stop switch is ON, turn it OFF once, and then turn it back ON.	Check the headlight relay operating sound 5 times with the engine stop switch ON. (At that time, the headlight turns ON.)
58	Odometer	Odometer is displayed on the meter.	—
60	EEPROM fault code display	<ul style="list-style-type: none"> Transmits the abnormal portion of the data in the E2PROM that has been detected as a self-diagnostic fault code 44. If multiple malfunctions have been detected, different codes are displayed at 2-second intervals, and this process is repeated. 	(01 ~ 04) Displays the cylinder number. (00) Displays when there is no malfunction.
61	Malfunction history code display	<ul style="list-style-type: none"> Displays the codes of the history of the self-diagnosis malfunctions (i.e., a code of a malfunction that occurred once and which has been corrected). If multiple malfunctions have been detected, different codes are displayed at 2-second intervals, and this process is repeated. 	11 ~ 85 (00) Displays when there is no malfunction.
62	Malfunction history code erasure	<ul style="list-style-type: none"> Displays the total number of codes that are being detected through self diagnosis and the fault codes in the past history. Erases only the history codes when the engine stop switch is turned from OFF to ON. If the engine stop switch is ON, turn it OFF once, and then turn it back ON. 	00 ~ 27 (00) Displays when there is no malfunction.
70	Control number	<ul style="list-style-type: none"> Displays the program control number. 	00 ~ 255