



Factsheet updated 28 May 2019

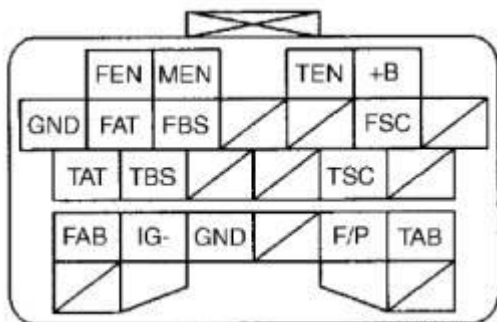
Engine Diagnostics



In the same way that the Hold Light also acts as a warning system for gearbox problems, if your glow plug light is flashing, it could mean that you have a problem with your engine.

But before reading any further, it might be worth checking the temperature sensor that lives under the centre console. If this fails it can lead to the coil light flashing and the sensor may need replacing. But if it's fully operational, then see below.

The electronic control unit (ECU) is found in the passenger foot well. The closed lid has the inscription "Diagnostic", and under the lid you will find this diagram:



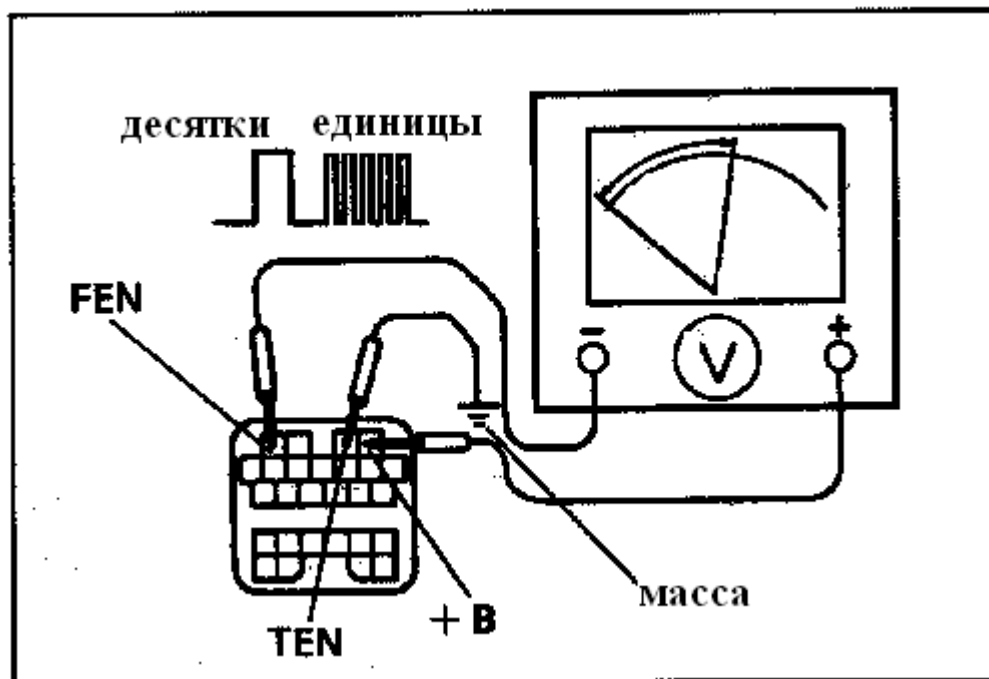
Diesel Vehicles

For diesel vehicles produced up to September 1999, the diagnostic codes are established by using a voltmeter. For diesel models released after September 1999 the diagnostic codes appear on the dashboard; the glowplug light will be flashing a sequence.

Up to September 99

Set the ignition to "off"

Install a jump lead connection as shown in the diagram below



Turn the ignition on. The following fault codes may then be displayed.

01	
09	
11	
12	
14	
16	
36	
38	

See the end of this article for a full description of these codes.

After September 99

The glow plug light will flash a coded sequence. For instance:

1 long flash 2 sec gap 1 short flash

1 long flash 2 sec gap 6 short flash

1 long flash 2 sec gap 4 short flash

1 long flash 2 sec gap 9 short flash

This sequence would show code 1649.

The full list of codes is:

-0105 -

-0110 -

-0115 -

-0120 -

-0180 -

-0251 -

-0335 -

-0400 -

-0510 -

-0606 -

-1114 -

-1182 -

-1189 -

-1195 -

-1226 -

-1227 -

-1228 -

-1312 -

-1318 -

-1402 -

-1478 -













-1649

See the end of this article for a full description of these codes.

Petrol Vehicles
















For all petrol vehicles the diagnostic codes are established by using a voltmeter.
See instructions for diesel vehicles (above).

2.0 litre (Engine FE-E):

0100	
0110	
0115	
0120	
0134	
0340	
0443	
0505	
1170	
1114	
1478	
1608	

See the end of this article for a full description of these codes.

2.5 V6 (Engine J5-DE):

0100	
0110	
0115	
0120	
0134	
0335	
0443	
0505	
1170	
1114	
1250	
1345	
1478	
1521	
1608	

See the end of this article for a full description of these codes.

Disconnection

Remove the wire from the negative terminals on all batteries (including leisure battery if installed) for at least 20 seconds.

Click on the brake pedal and release.

Re-connect negative battery terminal.

Start engine, and run for 3 minutes at 2,000 rpm idle.

Check all fault codes have cleared.

Checking Fault Codes

To check your fault code, you must use the letter "P" followed by a 4-digit fault code. For instance, fault code 16 must be entered as P0016.

Fault code ready? Here's the list of codes courtesy of the Equus website

<http://www.iequus.com/Dtc>

Code	Description
P0001	Fuel Volume Regulator Control Circuit / Open
P0009	Engine Position System Performance - Bank 2
P0011	Intake Camshaft Position Timing - Over-Advanced (Bank 1)
P0012	Intake Camshaft Position Timing - Over-Retarded (Bank 1)
P0014	Camshaft Reset Valve
P0016	Crankshaft Position - Camshaft Position Correlation - Bank 1 Sensor A
P0036	HO2S B1 S2 HEATER CIRCUIT MALFUNCTION
P0038	HO2S Heater Control Circuit High (Bank 1, Sensor 2)
P0100	Mass or Volume Air Flow Circuit
P0105	Manifold Absolute Pressure/BARO Circuit
P0110	Intake Air Temperature Sensor 1 Circuit
P0115	Engine Coolant Temperature Circuit
P0120	Throttle/Pedal Position Sensor A Circuit
P0134	Lambda Sensor Upstream Catalyst, Bank 1 - Signal Missing
P0180	Fuel Temperature Sensor A Circuit
P0251	Injection Pump Fuel Metering Control A
P0335	Crankshaft Position (NE) Sensor Circuit Malfunction
P0340	Camshaft Position Sensor Circuit Malfunction
P0400	Exhaust EGR System Malfunction
P0443	EVAP CANISTER PURGE VALVE CIRCUIT MALFUNCTION
P0505	IDLE AIR CONTROL SYSTEM
P0510	Closed Throttle Position Switch
P0606	ECM / PCM Processor
P1114	Intake Air Temperature 2 Circuit Low Input (Super/Turbo Charged engines)
P1170	Engine Shut Off Solenoid
P1182	Fuel Shut Off Solenoid Circuit
P1189	Pump Speed Signal
P1195	EGR Boost Sensor Circuit Malfunction
P1226	Control Sleeve Sensor Circuit
P1227	Wastegate Failed Closed (Over pressure)
P1228	Wastegate Failed Open (Under pressure)
P1250	Fuel Pressure Regulator Control Solenoid

P1312	Timer control valve - circuit malfunction
P1318	Timer position sensor - circuit malfunction
P1345	Cylinder Discrimination Signal (Signal From Camshaft Position Sensor)
P1402	Exhaust Gas Recirculation Metering Orifice Restricted
P1478	Cooling Fan Driver
P1608	Powertrain Control Module (ECM CPU) DTC Test Fault
P1649	Injection pump EPROM-malfunction

Added February 2018:

This may also be useful. It's a list of Mazda generic codes

P1000 OBD II Monitor Testing Not Completed P1001 Unable to Achieve Self-Test Function or SCP Error P1100 Mass Airflow Sensor Circuit Intermittent P1101 Mass Airflow Sensor Circuit out of Self-Test Range P1102 Mass Airflow Sensor Signal Inconsistent with Throttle Position Sensor P1103 Mass Airflow Sensor Signal Inconsistent with Engine Speed P1110 Intake Air Temperature Sensor Signal (Dynamic Chamber) Circuit P1112 Intake Air Temperature Sensor Circuit Intermittent P1113 Intake Air Temperature Sensor Signal (Dynamic Chamber) Circuit P1114 Intake Air Temperature Sensor Circuit Low Input P1116 ECT Sensor Circuit Out of Self Test Range P1117 ECT Sensor Signal Intermittent P1120 Throttle Position Sensor out of Range Low P1121 Throttle Position Sensor Signal Not Consistent with Mass Airflow Signal P1122 Throttle Position Stuck Closed P1123 Throttle Position Stuck Open P1124 Throttle Position Sensor Signal Out of Self Test Range P1125 Throttle Position Sensor Signal Intermittent P1127 HO2S Bank 1 Sensor 2 Heater Not On During Key On Engine Running Self Test P1128 HO2S Bank 1 Sensor 1 Signals Swapped in Key On Engine Running Self Test P1130 HO2S Bank 1 Sensor 1 Not Switching (Fuel Control Limit Reached) P1131 HO2S Bank 1 Sensor 1 Signal Below 0.45v (A/F Ratio Too Lean) P1132 HO2S Bank 1 Sensor 1 Signal Above 0.45v (A/F Ratio Too Rich) P1135 HO2S Bank 1 Sensor 1 Heater Circuit Low Input P1136 HO2S Bank 1 Sensor 1 Heater Circuit High Input P1137 HO2S Bank 1 Sensor 2 Not Switching (Fuel Control Limit Reached) P1138 HO2S Bank 1 Sensor 2 Signal Above 0.45v (A/F Ratio Too Rich) P1141 HO2S Bank 1 Sensor 2 Heater Circuit Low Input P1142 HO2S Bank 1 Sensor 2 Heater Circuit High Input P1143 HO2S Bank 1 Sensor 3 Signal Below 0.45v (A/F Ratio Too Lean) P1144 HO2S Bank 1 Sensor 3 Signal Above 0.45v (A/F Ratio Too Rich) P1150 HO2S Bank 2 Sensor 1 Not Switching (Fuel Control Limit Reached) P1151 HO2S Bank 2 Sensor 1 Signal Below 0.45v (A/F Ratio Too Lean) P1152 HO2S Bank 2 Sensor 1 Signal Above 0.45v (A/F Ratio Too Rich) P1169 HO2S Bank 1 Sensor 1 Circuit Fixed (Bank 1 Sensor 1) P1170 HO2S Bank 1 Sensor 1 Circuit Fixed (Bank 1 Sensor 1) P1173 HO2S Bank 2 Sensor 1 Circuit Fixed (Bank 2 Sensor 1) P1195 EGR Boost Sensor Circuit P1196 Ignition Switch Start Circuit P1235 Fuel Pump Control Circuit P1236 Fuel Pump Control Out Range P1250 Pressure Regulator Control Solenoid Circuit P1252 Pressure Regulator Control Solenoid '2' Circuit P1260 Anti-Theft System Signal Detected - Engine Disabled P1270 Engine RPM or Vehicle Speed Limit Reached P1309 Misfire Detection Monitor P1345 No CMP or SGC Signal P1351 Ignition Diagnostic Monitor Signal Lost to PCM or Out Of Range P1352 Ignition Coil 'A' Primary Circuit P1353 Ignition Coil 'B' Primary Circuit P1354 Ignition Coil 'C' Primary Circuit P1358 Ignition Diagnostic Monitor Signal Out Of Self Test Range P1359 SPOUT Signal Lost To Powertrain Control Module Or Out Of Range P1360 Ignition Coil 'A' Secondary Circuit P1361 Ignition Coil 'B' Secondary Circuit P1362 Ignition Coil 'C'

Secondary Circuit P1364 Ignition Coil Primary Circuit P1365 Ignition Coil
Secondary Circuit P1390 Octane Adjust Shorting Bar Out or Circuit Open
P1400 DPFE Sensor Circuit Low Input P1401 DPFE Sensor Circuit High Input
P1402 EGR Valve Position Sensor Circuit P1405 DPFE Sensor Upstream Hose
Off Or Plugged P1406 DPFE Sensor Downstream Hose Off or Plugged P1407
No EGR Flow Detected P1408 EGR System Flow Out of Key On Engine
Running Self Test Range P1409 EGR Vacuum Regulator Solenoid Circuit
P1410 EGR Boost Solenoid Valve Stuck P1443 EVAP System Purge Flow Fault
P1444 EVAP Purge Flow Sensor Circuit Low Voltage P1446 EVAP Purge Flow
Sensor Circuit High Voltage P1449 CDCV or Throttle Position CV Circuit P1450
EVAP Control System Fault P1451 Canister Vent Solenoid Circuit P1455 Fuel
Tank Level Sensor Circuit P1460 Wide Open Throttle A/C Cut-Off Relay Circuit
P1464 Air Conditioning Control Signal Circuit P1474 Fan Control (Primary
Winding) Circuit P1479 Fan Control (Condenser Primary) Circuit P1485 EGR
Vacuum Solenoid Circuit P1486 EGR Vent Solenoid Circuit P1487 EGR-CHK
(Boost) Solenoid Circuit P1496 EGR Valve Motor Coil '1' Open or Shorted
P1497 EGR Valve Motor Coil '2' Open or Shorted P1498 EGR Valve Motor Coil
'3 Open or Shorted P1499 EGR Valve Motor Coil '4' Open or Shorted P1500
Vehicle Speed Sensor Intermittent Signal P1501 Vehicle Speed Sensor Out of
Self Test Range P1502 Vehicle Speed Sensor Circuit Error P1504 Idle Air
Control Solenoid Circuit Intermittent P1505 Idle Air Control System at
Adaptive Clip P1506 Idle Air Control System Overspeed Detected P1507 Idle
Air Control System Underspeed Detected P1508 Bypass Air Solenoid '1' Circuit
P1509 Bypass Air Solenoid '2' Circuit P1512 VTCS Fault P1521 VRIS Solenoid
'1' Circuit P1522 VRIS Solenoid '2' Circuit P1523 VICS Solenoid Circuit P1524
Charge Air Cooler Bypass Solenoid Circuit P1525 ABV Vacuum Solenoid Circuit
P1526 ABV Vent Solenoid Circuit P1529 L/C Atmospheric Balance Air Control
Valve Circuit P1540 ABV System Fault P1562 Powertrain Control Module +BB
Voltage Low P1569 VTCS Circuit Low Input P1570 VTCS Circuit High Input
P1601 Powertrain Control Module Communication Line to TCM Error P1602
Powertrain Control Module Communication Line to TCM Error P1602
Immobilizer System Communication Error with Powertrain Control Module
P1603 Immobilizer System Fault P1604 Immobilizer System Fault P1605
Powertrain Control Module Keep Alive Memory Test Error P1608 Powertrain
Control Module (ECM CPU) DTC Test Fault P1609 Powertrain Control Module
(ECM CPU) Knock Sensor Circuit P1621 Immobilizer System Fault P1622
Immobilizer System Fault P1623 Immobilizer System Fault P1624 Immobilizer
System Fault P1627 Powertrain Control Module (ECM/TCS) Line
Communication Error P1628 Powertrain Control Module (ECM/TCS) Any Line
Communication Error P1631 Generator Output Voltage Signal (No Output)
P1632 Battery Voltage Monitor Circuit P1633 Battery Overcharge Fault P1634
Generator Terminal 'B' Circuit Open P1650 Power Steering Pressure Switch
Out of Range Fault P1651 Power Steering Pressure Switch Circuit P1652
Power Steering Pressure Switch Circuit P1701 Transmission Range Sensor
Reverse Engagement Error P1702 Transmission Range Sensor Circuit
Intermittent P1703 Brake On/Off Switch Out of Self Test Range P1705
Transmission Range Sensor out of Self Test Range P1709 Clutch Pedal
Position Switch Circuit P1711 Transmission Fluid Temperature Sensor Circuit
out of Self Test Range P1713 Transmission Fluid Temperature Sensor Circuit
P1714 Shift Solenoid '1' Mechanical Fault P1715 Shift Solenoid '2' Mechanical
Fault P1716 Shift Solenoid '3' Mechanical Fault P1717 Shift Solenoid '4'
Mechanical Fault P1718 Transmission Fluid Temperature Sensor Circuit P1720
Vehicle Speed Sensor '2' Signal Error P1729 Transmission 4x4 Low Switch
Error P1740 Torque Converter Clutch Solenoid Mechanical Fault P1741 Torque

Converter Clutch Control Electrical Fault P1742 Torque Converter Clutch Solenoid Shorted P1743 Torque Converter Clutch Failed On - TCIL is On P1744 Torque Converter Clutch Solenoid Mechanical Fault P1746 Electronic Pressure Control Solenoid Circuit Open P1747 Electronic Pressure Control Solenoid Circuit P1749 Electronic Pressure Control Solenoid Circuit Low P1751 Transmission Shift Solenoid 'A' Mechanical Fault P1752 Transmission Shift Solenoid 'A' Circuit Shorted P1754 Transmission Coast Clutch Solenoid Electrical Fault P1756 Transmission Shift Solenoid 'B' Mechanical Fault P1757 Transmission Shift Solenoid 'B' Circuit Shorted P1761 Transmission Shift Solenoid '3' Mechanical Fault P1762 Transmission SS3/SS4/OD Band Fault P1765 Transmission 3-2 Timing Solenoid Valve P1767 Torque Converter Clutch Solenoid Circuit P1771 Throttle Position Sensor Circuit Open to Transmission Control Module P1772 Throttle Position Sensor Circuit Shorted to Transmission Control Module P1780 Transmission Control Switch Circuit P1780 Overdrive Off Switch not Cycled during the Self Test P1781 Transmission 4x4 Low Switch out of Range Fault P1783 Transmission Fluid Temperature High Input P1788 3-2T/CCS Circuit Open P1789 3-2T/CCS Circuit Shorted P1794 Powertrain Control Module Battery Direct Power Circuit P1797 P/N Switch Open or Short Circuit P1900 Turbine Speed Sensor Circuit Intermittent P1901 Torque Converter Clutch Circuit Intermittent

Read more at: https://www.obd-codes.com/trouble_codes/mazda/
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