

# DIAGNOSTIC TROUBLE CODE CHART

## 1. ENGINE TROUBLE CODES

### HINT:

Parameters listed in the chart may not be exactly the same as your reading due to the type of instrument or other factors.

If a malfunction code is displayed during the DTC check in check mode, check the circuit for that code listed in the table below. For details of each code, turn to the page referred to under the "See Page" for the respective "DTC No." in the DTC chart.

| DTC No.<br>(See Page)  | Detection Item                                                   | Trouble Area                                                                                                                                                                                                                                                                                        | CHK ENG<br>*1 | Memory |
|------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------|
| P0100/31<br>(★)        | Air Flow Circuit<br>Malfunction                                  | <ul style="list-style-type: none"> <li>• Open or short in air flow meter circuit</li> <li>• Air flow meter</li> <li>• Engine ECU</li> </ul>                                                                                                                                                         | ○             | ○      |
| P0110/24<br>(★)        | Intake Air Temp. Circuit<br>Malfunction                          | <ul style="list-style-type: none"> <li>• Open or short in intake air temp. sensor circuit</li> <li>• Intake air temp. sensor (inside air flow meter)</li> <li>• Engine ECU</li> </ul>                                                                                                               | –             | ○      |
| P0115/22<br>(★)        | Water Temp. Circuit<br>Malfunction                               | <ul style="list-style-type: none"> <li>• Open or short in water temp. sensor circuit</li> <li>• Water temp. sensor</li> <li>• Engine ECU</li> </ul>                                                                                                                                                 | ○             | ○      |
| P0116/22<br>(DI-29)    | Water Temp. Circuit Range/Per-<br>formance Problem               | <ul style="list-style-type: none"> <li>• Water temp. sensor</li> <li>• Cooling System</li> </ul>                                                                                                                                                                                                    | ○             | ○      |
| P0120/41<br>(★)        | Throttle Position<br>Sensor Circuit<br>Malfunction               | <ul style="list-style-type: none"> <li>• Open or short in throttle position sensor circuit</li> <li>• Throttle position sensor</li> <li>• Engine ECU</li> </ul>                                                                                                                                     | ○             | ○      |
| P0121/41<br>(★)        | Throttle Position<br>Sensor Circuit<br>Range/Performance Problem | <ul style="list-style-type: none"> <li>• Throttle position sensor</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                                  | ○             | ○      |
| P0125/91 *4<br>(DI-30) | Insufficient Coolant Temp. for<br>Closed Loop Fuel Control       | <ul style="list-style-type: none"> <li>• Air induction system</li> <li>• Fuel pressure</li> <li>• Injector injection</li> <li>• Gas leakage on exhaust system</li> <li>• Open or short in heated oxygen sensor (bank 1 sensor 1 )<br/>circuit</li> <li>• Oxygen sensor (bank 1 sensor 1)</li> </ul> | ○             | ○      |
| P0130/21 *2<br>(★)     | Oxygen Sensor Circuit<br>Malfunction (Bank 1 Sensor 1)           | <ul style="list-style-type: none"> <li>• Oxygen sensor</li> <li>• Fuel trim malfunction</li> </ul>                                                                                                                                                                                                  | –             | ○      |
| P0133/21 *3<br>(DI-36) | Oxygen Sensor Circuit Slow Re-<br>sponse (Bank 1 Sensor 1)       | <ul style="list-style-type: none"> <li>• Open or short in oxygen sensor circuit</li> <li>• Oxygen sensor</li> <li>• Air induction system</li> <li>• Fuel pressure</li> <li>• Injector</li> <li>• Engine ECU</li> </ul>                                                                              | ○             | ○      |
| P0135/21 *2<br>(DI-40) | Oxygen Sensor Heater<br>Circuit Malfunction<br>(Bank 1 Sensor 1) | <ul style="list-style-type: none"> <li>• Open or short in heater circuit of oxygen sensor</li> <li>• Oxygen sensor heater</li> <li>• Engine ECU</li> </ul>                                                                                                                                          | –             | ○      |
| P0136/27 *2<br>(★)     | Oxygen Sensor Circuit<br>Malfunction<br>(Bank 1 Sensor 2)        | <ul style="list-style-type: none"> <li>• Oxygen sensor</li> </ul>                                                                                                                                                                                                                                   | –             | ○      |

## DIAGNOSTICS – ENGINE

|                        |                                                                     |                                                                                                                                                                                                                                                                                                                                                          |   |   |
|------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| P0153/28 *3<br>(DI-36) | Oxygen Sensor Circuit Slow Response (Bank 2 Sensor 1)               | <ul style="list-style-type: none"> <li>• Open or short in oxygen sensor circuit</li> <li>• Oxygen sensor</li> <li>• Air induction system</li> <li>• Fuel pressure</li> <li>• Injector</li> <li>• Engine ECU</li> </ul>                                                                                                                                   | ○ | ○ |
| P0141/21 *2<br>(DI-40) | Oxygen Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)          | <ul style="list-style-type: none"> <li>• Same as DTC No. P0135/21</li> </ul>                                                                                                                                                                                                                                                                             | – | ○ |
| P0150/28 *2<br>(★)     | Oxygen Sensor Circuit Malfunction (Bank 2 Sensor 1)                 | <ul style="list-style-type: none"> <li>• Same as DTC No. P0130/21</li> </ul>                                                                                                                                                                                                                                                                             | – | ○ |
| P0155/28 *2<br>(DI-40) | Oxygen Sensor Heater Circuit Malfunction (Bank 2 Sensor 1)          | <ul style="list-style-type: none"> <li>• Same as DTC No. P0135/21</li> </ul>                                                                                                                                                                                                                                                                             | – | ○ |
| P0156/29 *2<br>(★)     | Oxygen Sensor Circuit Malfunction (Bank 2 Sensor 2)                 | <ul style="list-style-type: none"> <li>• Same as DTC No. P0136/27</li> </ul>                                                                                                                                                                                                                                                                             | – | ○ |
| P0161/28 *2<br>(DI-40) | Oxygen Sensor Heater Circuit Malfunction (Bank 2 Sensor 2)          | <ul style="list-style-type: none"> <li>• Same as DTC No. P0135/21</li> </ul>                                                                                                                                                                                                                                                                             | – | ○ |
| P0171/25 *2<br>(DI-42) | Fuel Trim System too Lean (Air–Fuel Ratio Lean Malfunction, Bank 1) | <ul style="list-style-type: none"> <li>• Air intake (hose loose)</li> <li>• Fuel line pressure</li> <li>• Injector blockage</li> <li>• Oxygen sensor malfunction</li> <li>• Air flow meter</li> <li>• Water temp. sensor</li> </ul>                                                                                                                      | – | ○ |
| P0172/26 *3<br>(DI-42) | System too Rich (Air–Fuel Ratio Rich Malfunction, Bank 1)           | <ul style="list-style-type: none"> <li>• Injector leak, blockage</li> <li>• Air flow meter</li> <li>• Engine coolant temp. sensor</li> <li>• Ignition system</li> <li>• Fuel pressure</li> <li>• Gas leakage on exhaust system</li> <li>• Open or short in oxygen sensor (bank 1 sensor 1) circuit</li> <li>• Open sensor (bank 1 sensor1)</li> </ul>    | ○ | ○ |
| P0174/25 *2<br>(DI-42) | Fuel Trim System too Rich (Air–Fuel Ratio Lean Malfunction, Bank 2) | <ul style="list-style-type: none"> <li>• Air intake (hose loose)</li> <li>• Fuel line pressure</li> <li>• Injector blockage</li> <li>• Oxygen sensor malfunction</li> <li>• Air flow meter</li> <li>• Water temp. sensor</li> </ul>                                                                                                                      | – | ○ |
| P0175/26 *3<br>(DI-42) | System too Rich (Air–Fuel Ratio Rich Malfunction, Bank 2)           | <ul style="list-style-type: none"> <li>• Injector leak, blockage</li> <li>• Air flow meter</li> <li>• Engine coolant temp. sensor</li> <li>• Ignition system</li> <li>• Fuel pressure</li> <li>• Gas leakage on exhaust system</li> <li>• Open or short in oxygen sensor (bank 2 sensor 1) circuit</li> <li>• Oxygen sensor (bank 2 sensor 1)</li> </ul> | ○ | ○ |

|                        |                                                                            |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
|------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| P0300/93 *3<br>(DI-48) | Random/Multiple Cylinder Misfire Detected                                  | <ul style="list-style-type: none"> <li>• Open or short engine wire</li> <li>• Connector connection</li> <li>• Vacuum hose connection</li> <li>• Ignition system</li> <li>• Injector</li> <li>• Fuel pressure</li> <li>• Vacuum sensor</li> <li>• Water temp. sensor</li> <li>• Compression pressure</li> <li>• Valve clearance</li> <li>• Valve timing</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P0301/93 *3<br>(DI-48) | Cylinder 1 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0302/93 *3<br>(DI-48) | Cylinder 2 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0303/93 *3<br>(DI-48) | Cylinder 3 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0304/93 *3<br>(DI-48) | Cylinder 4 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0305/93 *3<br>(DI-48) | Cylinder 5 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0306/93 *3<br>(DI-48) | Cylinder 6 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0307/93 *3<br>(DI-48) | Cylinder 7 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0308/93 *3<br>(DI-48) | Cylinder 8 Misfire Detected                                                |                                                                                                                                                                                                                                                                                                                                                                                         |   |   |
| P0325/52<br>(★)        | Knock Sensor 1 Circuit Malfunction (Bank 1)                                | <ul style="list-style-type: none"> <li>• Open or short in knock sensor 1 circuit</li> <li>• Knock sensor 1 (looseness)</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                                                                 | ○ | ○ |
| P0330/55<br>(★)        | Knock Sensor 2 Circuit Malfunction (Bank 2)                                | <ul style="list-style-type: none"> <li>• Open or short in knock sensor 2 circuit</li> <li>• Knock sensor 2 (looseness)</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                                                                 | ○ | ○ |
| P0335/12, 13<br>(★)    | Crankshaft Position Sensor Circuit Malfunction                             | <ul style="list-style-type: none"> <li>• Open or short in crankshaft position sensor circuit</li> <li>• Crankshaft position sensor</li> <li>• Starter</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                                  | ○ | ○ |
| P0340/12<br>(★)        | Camshaft Position Sensor Circuit Malfunction                               | <ul style="list-style-type: none"> <li>• Open or short in camshaft position sensor circuit</li> <li>• Camshaft position sensor</li> <li>• Starter</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                                      | ○ | ○ |
| P0420/94 *3<br>(DI-54) | Catalyst System Efficiency Below Threshold (Bank 1)                        | <ul style="list-style-type: none"> <li>• Gas leakage on exhaust system</li> <li>• Oxygen sensor</li> <li>• Three-way catalytic converter</li> </ul>                                                                                                                                                                                                                                     | ○ | ○ |
| P0430/94 *3<br>(DI-54) | Catalyst System Efficiency Below Threshold (Bank 2)                        | <ul style="list-style-type: none"> <li>• Same as DTC No. P0420/94</li> </ul>                                                                                                                                                                                                                                                                                                            | ○ | ○ |
| P0443/94 *3<br>(DI-57) | Evaporative Emission Control System Purge Control Vent Control Malfunction | <ul style="list-style-type: none"> <li>• Open or short in VSV circuit for EVAP</li> <li>• VSV for EVAP</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                                                                                 | ○ | ○ |
| P0500/42<br>(★)        | Vehicle Speed Sensor Malfunction                                           | <ul style="list-style-type: none"> <li>• Open or short in No.1 vehicle speed sensor circuit</li> <li>• No.1 vehicle speed sensor</li> <li>• Combination meter</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                          | - | ○ |
| P0505/33 *3<br>(DI-60) | Idle Control System Malfunction                                            | <ul style="list-style-type: none"> <li>• Air induction system</li> <li>• Electric throttle control system</li> </ul>                                                                                                                                                                                                                                                                    | ○ | ○ |
| P1120/19<br>(★)        | Accelerator Pedal Position Sensor Circuit Malfunction                      | <ul style="list-style-type: none"> <li>• Open or short in accelerator pedal position sensor circuit</li> <li>• Accelerator pedal position sensor</li> <li>• Engine ECU</li> </ul>                                                                                                                                                                                                       | ○ | ○ |

## DIAGNOSTICS – ENGINE

|                    |                                                                        |                                                                                                                                                                                                               |   |   |
|--------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| P1121/19<br>(★)    | Accelerator Pedal Position Sensor Range/Performance Problem            | <ul style="list-style-type: none"> <li>• Accelerator pedal position sensor</li> <li>• Engine ECU</li> </ul>                                                                                                   | ○ | ○ |
| P1125/89 *5<br>(★) | Throttle Control Motor Circuit Malfunction                             | <ul style="list-style-type: none"> <li>• Open or short in throttle control motor circuit</li> <li>• Throttle control motor</li> <li>• Engine ECU</li> </ul>                                                   | ○ | ○ |
| P1126/89 *5<br>(★) | Magnetic Clutch Circuit Malfunction                                    | <ul style="list-style-type: none"> <li>• Open or short in magnetic clutch circuit</li> <li>• Magnetic clutch</li> <li>• Engine ECU</li> </ul>                                                                 | ○ | ○ |
| P1127/89 *5<br>(★) | ETCS Actuator Power Source Circuit Malfunction                         | <ul style="list-style-type: none"> <li>• Open in ETCS power source circuit</li> <li>• Engine ECU</li> </ul>                                                                                                   | ○ | ○ |
| P1128/89 *5<br>(★) | Throttle Control Motor Lock Malfunction                                | <ul style="list-style-type: none"> <li>• Throttle control motor</li> <li>• Throttle body</li> <li>• Engine ECU</li> </ul>                                                                                     | ○ | ○ |
| P1129/89 *5<br>(★) | Electric Throttle Control System Malfunction                           | <ul style="list-style-type: none"> <li>• Electric throttle control system</li> <li>• Engine ECU</li> </ul>                                                                                                    | ○ | ○ |
| P1200/78<br>(★)    | Fuel Pump Relay/ECU Circuit Malfunction (Except Europe)                | <ul style="list-style-type: none"> <li>• Open or short in fuel pump relay</li> <li>• Fuel pump relay</li> <li>• Engine ECU</li> </ul>                                                                         | – | ○ |
| P1300/14<br>(★)    | Igniter Circuit Malfunction (No.1)                                     | <ul style="list-style-type: none"> <li>• Open or short in IGF1 or IGT1 circuit from No.1 ignition coil with igniter to engine ECU</li> <li>• No.1 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1305/15<br>(★)    | Igniter Circuit Malfunction (No.2)                                     | <ul style="list-style-type: none"> <li>• Open or short in IGF2 or IGT2 circuit from No.2 ignition coil with igniter to engine ECU</li> <li>• No.2 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1310/14<br>(★)    | Igniter Circuit Malfunction (No.3)                                     | <ul style="list-style-type: none"> <li>• Open or short in IGF2 or IGT3 circuit from No.3 ignition coil with igniter to engine ECU</li> <li>• No.3 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1315/14<br>(★)    | Igniter Circuit Malfunction (No.4)                                     | <ul style="list-style-type: none"> <li>• Open or short in IGF1 or IGT4 circuit from No.4 ignition coil with igniter to engine ECU</li> <li>• No.4 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1320/14<br>(★)    | Igniter Circuit Malfunction (No.5)                                     | <ul style="list-style-type: none"> <li>• Open or short in IGF2 or IGT5 circuit from No.5 ignition coil with igniter to engine ECU</li> <li>• No.5 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1325/14<br>(★)    | Igniter Circuit Malfunction (No.6)                                     | <ul style="list-style-type: none"> <li>• Open or short in IGF1 or IGT6 circuit from No.6 ignition coil with igniter to engine ECU</li> <li>• No.6 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1330/14<br>(★)    | Igniter Circuit Malfunction (No.7)                                     | <ul style="list-style-type: none"> <li>• Open or short in IGF1 or IGT7 circuit from No.7 ignition coil with igniter to engine ECU</li> <li>• No.7 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1335/13<br>(★)    | Crankshaft Position Sensor Circuit Malfunction (during engine running) | <ul style="list-style-type: none"> <li>• Open or short in crankshaft position sensor circuit</li> <li>• Crankshaft position sensor</li> <li>• Starter</li> <li>• Engine ECU</li> </ul>                        | – | ○ |

|                        |                                        |                                                                                                                                                                                                               |   |   |
|------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| P1340/14<br>(★)        | Igniter Circuit Malfunction<br>(No.8)  | <ul style="list-style-type: none"> <li>• Open or short in IGF2 or IGT8 circuit from No.8 ignition coil with igniter to engine ECU</li> <li>• No.8 ignition coil with igniter</li> <li>• Engine ECU</li> </ul> | ○ | ○ |
| P1520/95 *3<br>(DI-61) | Stop Light Switch Signal Malfunction   | <ul style="list-style-type: none"> <li>• Short in stop light switch signal circuit</li> <li>• Stop light switch</li> <li>• Engine ECU</li> </ul>                                                              | ○ | ○ |
| P1565/32<br>(★)        | Short in Cruise Control Switch Circuit | <ul style="list-style-type: none"> <li>• Cruise control switch</li> <li>• Harness or connector between ECM and cruise control switch circuit</li> <li>• ECM</li> </ul>                                        | ○ | ○ |
| P1566/54               | Input Signal Circuit                   | • ECM                                                                                                                                                                                                         | ○ | ○ |
| P1600/96 *3<br>(DI-64) | Engine ECU BATT Malfunction            | <ul style="list-style-type: none"> <li>• Open in back up power source circuit</li> <li>• Engine ECU</li> </ul>                                                                                                | – | ○ |
| P1633/89 *5<br>(★)     | ECU Malfunction (ETCS Circuit)         | • Engine ECU                                                                                                                                                                                                  | ○ | ○ |
| P1780/97<br>(DI-66)    | Neutral Start Switch Malfunction       | <ul style="list-style-type: none"> <li>• Short in neutral start switch circuit</li> <li>• Neutral start switch</li> <li>• Engine ECU</li> </ul>                                                               | ○ | ○ |

\*1: ○ ... Check engine warning light (CHK ENG) light up  
 – ... Check engine warning light (CHK ENG) does not light up

\*2: Only for Europe, Turkey, Russia, Saudi Arabia

\*3: Only for Europe

\*4: Only for Europe, Turkey

\*5: If the DTC No.89 is indicated on the instrument panel, read the DTC for ETCS, from 2nd STRT indicator (only for A/T)/ ETCS indicator (only for M/T) to get detail of the DTC No.89. If use the hand-held tester, the detail DTC for ETCS are displayed by the hand-held tester

★: See Pub. No. RM630E

## 2. ETCS TROUBLE CODES (When not use hand-held tester)

| DTC No.<br>(See Page) | Detection Item                                 | Trouble Area               | CHK ENG<br>*1 | Memory |
|-----------------------|------------------------------------------------|----------------------------|---------------|--------|
| 21<br>(★)             | Throttle Control Motor Circuit Malfunction     | • Same as DTC No. P1125/89 | ○             | ○      |
| 22<br>(★)             | Magnetic Clutch Circuit Malfunction            | • Same as DTC No. P1126/89 | ○             | ○      |
| 23<br>(★)             | ETCS Actuator Power Source Circuit Malfunction | • Same as DTC No. P1127/89 | ○             | ○      |
| 31<br>(★)             | Throttle Control Motor Lock Malfunction        | • Same as DTC No. P1128/89 | ○             | ○      |
| 32<br>(★)             | Electric Throttle Control System Malfunction   | • Same as DTC No. P1129/89 | ○             | ○      |
| 33<br>(★)             | ECU Malfunction (ETCS)                         | • Same as DTC No. P1633/89 | ○             | ○      |

\*1: ○ ... Check engine warning light (CHK ENG) light up

★: See Pub. No. RM630E