

V3800-CR-T-E4, V3307-CR-T-E4, V2607-CR-T-E4 12V-SYSTEM

DTC Code LIST

| DTC | ISO 14229 P-Code | J1939-73 | | SPN Name SAE J1939 | Detection item | DTC Set Preconditions | DTC set parameter | Time to action or number of error detection | Limp Home Action by engine ECU (system action) | Remark | HMI behavior (Recommendation) | Engine Warning Light | Behaviour During Malfunction | Recovery from error | Delay time for recovery |
|---|------------------|----------|-----|---|---|--|--|---|--|---|-------------------------------|----------------------|--|---------------------------|---|
| | | SPN | FMI | | | | | | | | | | | | |
| NE-G phase shift NE: Crankshaft position sensor G: Camshaft position sensor | P0016 | 636 | 7 | Engine Position Sensor | Large phase shift between NE pulse and G pulse | - Engine is operating low idle speed or more - Battery voltage is normal - Sensor supply voltage VCC# is normal - NE signal is normal - G signal is normal - Coolant temperature is 10 degC (50 degF) or more | (Approximately) Phase difference between NE pulse and G pulse is within +/- 15 degree | 10 times or more | Output limitation: Approximately 75% of normal condition | | | ON | (Invalid G signal) - Engine hesitates at start-up | Diagnostic counter = zero | Delay time varies with engine speed in proportional relation 30 sec at 800 rpm 15 sec at 1600 rpm |
| Pressure limiter emergency open | P0087 | 633 | 7 | Engine Fuel Actuator 1 Control Command | Pressure limiter emergency open | - Rail pressure sensor is normal - Sensor supply voltage VCC# is normal | Combination of below A and B A: Fuel leak (P0093) is detected B: Condition (1) or (2) is fulfilled; (1) Rail pressure exceeds 191 MPa (1950 kgf/cm2, 27700 psi) (2) Within 1 sec, after the rail pressure goes 191 MPa (1950 kgf/cm2, 27700 psi) or less [Before the pressure decrease, the rail pressure is 191 MPa (1950 kgf/cm2, 27700 psi) or more] | one time or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | To minimize PM emission to DPF Engine speed may go down due to lack of fuel pressure, regardless limp home de-rating | | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| High rail pressure | P0088 | 157 | 0 | Engine Injector Metering Rail 1 Pressure | Actual pressure exceeds the command pressure | - Rail pressure sensor is normal - Sensor supply voltage VCC# is normal | Actual pressure is 197 MPa (2010 kgf/cm2, 28600 psi) or more | one sec or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | To minimize PM emission to DPF | | ON | - Insufficient output - Worsening exhaust gas emissions | Diagnostic counter = zero | 30 sec |
| SCV stuck | P0089 | 1347 | 7 | Engine Fuel Pump Pressurizing Assembly #1 | SCV stuck at open position (Actual rail pressure continuously exceeds the command rail pressure) | - Supply pump is normal and pump calibration has been executed - Engine is operating (Q: 4 mm3/st or more) - Injector is normal - Battery voltage is normal - Sensor supply voltage VCC# is normal - Rail pressure sensor is normal | Discharge request of supply pump goes 0 mm3/st or less and the actual rail pressure is 10 MPa (100 kgf/cm2, 1400 psi) more than command pressure Above state continues for 26 seconds or more | one time or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | To minimize PM emission to DPF | | ON | - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| Fuel leak (in high pressured fuel system) | P0093 | 1239 | 1 | Engine Fuel Leakage 1 | Fuel leak from high pressured fuel system (Fuel consumption is calculated from the difference of fuel pressure of before and after the injection, and the error will be detected when excess fuel consumption is found) | - Battery voltage is normal - Sensor supply voltage VCC# is normal - Rail pressure sensor is normal - Supply pump (SCV) is normal - Injector and injector drive circuit are normal - NE signal is active [Engine is operating (700 rpm or more)] - No DTC of P0087, P0088, P0089 | (a) the flow volume which is calculated from the difference of rail pressure (decrease) (b) total volume of injection and leakage Fuel leak is judged with following conditions: In case, engine speed is more than 1200 rpm: when the difference of (a) and (b) is 120 mm3/st or more, (a) is more than (b), and fuel leak is not from opening pressure limiter In case, engine speed is 1200 rpm or less: when the difference of (a) and (b) is 400 mm3/st or more, (a) is more than (b), and fuel leak is not from opening pressure limiter | one time or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | To minimize PM emission to DPF | | ON | - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| Intake air temp. error: Low | P0112 | 172 | 4 | Engine Air Inlet Temperature | Ground short circuit of sensor or harness | - Battery voltage is normal | Voltage of intake air temperature sensor is 0.05 V or less | 2.8 sec or more | During start-up = -20 degC (-4 degF) [default value] Under other conditions = 40 degC (104 degF) [default value] | | | ON | - White smoke increases at low temperature | Diagnostic counter = zero | 30 sec |
| Intake air temp. error: High | P0113 | 172 | 3 | Engine Air Inlet Temperature | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal | Voltage of intake air temperature sensor is 4.9 V or more | 2.8 sec or more | During start-up = -20 degC (-4 degF) [default value] Under other conditions = 40 degC (104 degF) [default value] | | | ON | - White smoke increases at low temperature | Diagnostic counter = zero | 30 sec |

| HMI behavior (Recommendation) | Warning | Caution | Engine stop |
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| Coolant temperature sensor: Low | P0117 | 110 | 4 | Engine Coolant Temperature | Ground short circuit of sensor or harness | - Battery voltage is normal | Voltage of coolant temperature sensor is 0.1 V or less | 2.8 sec or more | During start-up = -25 degC (-13 degF) [default value] Under other conditions = 80 degC (176 degF) [default value] Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | | ON | - White smoke increases at low temperature - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Coolant temperature sensor: High | P0118 | 110 | 3 | Engine Coolant Temperature | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal | Voltage of coolant temperature sensor is 4.9 V or more | 2.8 sec or more | During start-up = -25 degC (-13 degF) [default value] Under other conditions = 80 degC (176 degF) [default value] Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | | ON | - White smoke increases at low temperature - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Fuel temperature sensor: Low | P0182 | 174 | 4 | Engine Fuel Temperature 1 | Ground short circuit of sensor or harness | - Battery voltage is normal | Voltage of temperature sensor in supply pump is 0.1 V or less | 2.8 sec or more | During start-up = -20 degC (-4 degF) [default value] Under other conditions = 45 degC (113 degF) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Diagnostic counter = zero | 30 sec |
| Fuel temperature sensor: High | P0183 | 174 | 3 | Engine Fuel Temperature 1 | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal | Voltage of temperature sensor in supply pump is 4.9 V or more | 2.8 sec or more | During start-up = -20 degC (-4 degF) [default value] Under other conditions = 45 degC (113 degF) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Diagnostic counter = zero | 30 sec |
| Rail pressure sensor: Low | P0192 | 157 | 4 | Engine Injector Metering Rail 1 Pressure | Ground short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal | Voltage of rail pressure sensor is 0.7 V or less | transient | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open Engine forcibly stopped 60 sec later | To minimize PM emission to DPF | ON | - Insufficient output - Worsening exhaust gas emissions - Engine running noise increases - White smoke increases - Engine stops | Key switch turn OFF | — |
| Rail pressure sensor: High | P0193 | 157 | 3 | Engine Injector Metering Rail 1 Pressure | Open circuit or +B short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal | Voltage of rail pressure sensor is 4.9 V or more | transient | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open Engine forcibly stopped 60 sec later | To minimize PM emission to DPF | ON | - Insufficient output - Worsening exhaust gas emissions - Engine running noise increases - White smoke increases - Engine stops | Key switch turn OFF | — |
| Injector charge voltage: High | P0200 | 523535 | 0 | proprietary | Injector charge voltage: High | - Battery voltage is normal - CPU is normal | Injector charge voltage: High | 10 sec or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open Engine forcibly stopped 60 sec later | | ON | - Insufficient output - Worsening exhaust gas emissions - Engine stops | Key switch turn OFF | — |

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| Open circuit of harness or coil in 1st cylinder injector | P0201 | 651 | 3 | Engine Injector Cylinder #01 | Open circuit of harness Open circuit of injector coil | - Engine is operating - Battery voltage is normal - During injection - CPU is normal | Open circuit of harness or Open circuit of injector coil | 8 times or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Open circuit of harness or coil in 3rd cylinder injector | P0202 | 653 | 3 | Engine Injector Cylinder #03 | Open circuit of harness Open circuit of injector coil | - Engine is operating - Battery voltage is normal - During injection - CPU is normal | Open circuit of harness or Open circuit of injector coil | 8 times or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Open circuit of harness or coil in 4th cylinder injector | P0203 | 654 | 3 | Engine Injector Cylinder #04 | Open circuit of harness Open circuit of injector coil | - Engine is operating - Battery voltage is normal - During injection - CPU is normal | Open circuit of harness or Open circuit of injector coil | 8 times or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Open circuit of harness or coil in 2nd cylinder injector | P0204 | 652 | 3 | Engine Injector Cylinder #02 | Open circuit of harness Open circuit of injector coil | - Engine is operating - Battery voltage is normal - During injection - CPU is normal | Open circuit of harness or Open circuit of injector coil | 8 times or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Engine overheat | P0217 | 110 | 0 | Engine Coolant Temperature | Overheat of engine coolant temperature | - Coolant temperature sensor is normal | Engine coolant temperature is 120 degC (248 degF) or more | 5 sec or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | | ON | - Insufficient output - Overheat | Diagnostic counter = zero | 30 sec |
| Engine overrun | P0219 | 190 | 0 | Engine Speed | Engine speed exceeds threshold speed | - Key switch is ON | Engine speed is 3500 rpm or more | 3 revolutions or more | Stop injection (Q = 0 mm3/st) | | ON | - Overrun | Diagnostic counter = zero | Immediately |
| Boost pressure sensor: Low | P0237 | 102 | 4 | Engine Intake Manifold #1 Pressure | Ground short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal | Voltage of boost pressure sensor is 0.2 V or less | 2.8 sec or more | 65 kPa (0.663 kgf/cm2, 9.43 psi) [default value] | Default value is set in consideration with high altitude usage | ON | - Insufficient output | Key switch turn OFF | — |
| Boost pressure sensor: High | P0238 | 102 | 3 | Engine Intake Manifold #1 Pressure | Open circuit or +B short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal | Voltage of boost pressure sensor is 4.9 V or more | 2.8 sec or more | 65 kPa (0.663 kgf/cm2, 9.43 psi) [default value] | Default value is set in consideration with high altitude usage | ON | - Insufficient output | Key switch turn OFF | — |
| No input of NE sensor (Crank position sensor) pulse | P0335 | 636 | 8 | Engine Position Sensor | Open circuit or short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal - Engine is not stalled | No recognition of Ne sensor pulse | 10 times or more | Output limitation: Approximately 75% of normal condition | | ON | (Running only with G signal) - Faulty starting - Engine Vibration increases slightly - Insufficient output | Diagnostic counter = zero | Delay time varies with engine speed in proportional relation 30 sec at 800 rpm 15 sec at 1600 rpm |
| NE sensor (Crank position sensor) pulse number error | P0336 | 636 | 2 | Engine Position Sensor | Open circuit or short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal - Engine speed is 350 rpm or more | Pulse count per rotation is not 56 teeth | 10 times or more | Output limitation: Approximately 75% of normal condition | | ON | (Running only with G signal) - Faulty starting - Engine Vibration increases slightly - Insufficient output | Diagnostic counter = zero | Delay time varies with engine speed in proportional relation 30 sec at 800 rpm 15 sec at 1600 rpm |
| No input of G sensor (Camshaft position sensor) pulse | P0340 | 723 | 8 | Engine Speed 2 | Open circuit or short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal - Engine is not stalled | No recognition of G sensor pulse | 10 times or more | None | | ON | (Invalid G signal) - Engine hesitates at start-up | Diagnostic counter = zero | Delay time varies with engine speed in proportional relation 30 sec at 800 rpm 15 sec at 1600 rpm |

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| G-sensor (Camshaft position sensor) pulse number error | P0341 | 723 | 2 | Engine Speed 2 | Open circuit or short circuit of sensor or harness Failure of sensor | - Battery voltage is normal - Sensor supply voltage VCC# is normal - Engine speed is 350 rpm or more | Pulse count per rotation is not 5 teeth | 10 times or more | None | | | | ON | (Invalid G signal) - Engine hesitates at start-up | Diagnostic counter = zero | Delay time varies with engine speed in proportional relation 30 sec at 800 rpm 15 sec at 1600 rpm |
| +B short of air heater relay driving circuit | P0380 | 523544 | 3 | proprietary | +B short of air heater relay driving circuit | - Battery voltage is normal - During air heater relay drive command is activated | +B short circuit of harness | one sec or more | None | | | | ON | (At low temperature) - Faulty starting - White smoke increases | Key switch turn OFF | — |
| Ground short of air heater relay driving circuit | P0380 | 523544 | 4 | proprietary | Ground short or open circuit of air heater relay driving circuit | - Battery voltage is normal - Other than during air heater relay drive command is activated | Ground short or open circuit of harness | one sec or more | None | | | | ON | (At low temperature) - Faulty starting - White smoke increases | Key switch turn OFF | — |
| Oil pressure error | P0524 | 100 | 1 | Engine Oil Pressure | Oil pressure switch | - Battery voltage is normal - Key switch turn ON - Starter switch signal (ECU: V12 terminal) is not activated - 10 sec or more after engine start [700 rpm or more] | Oil pressure switch ON: continues one sec or more | transient | None | | | | ON | - Engine stops | Key switch turn OFF | — |
| Battery voltage: Low | P0562 | 168 | 4 | Battery Potential / Power Input 1 | Open circuit, short circuit or damage of harness Failure of battery | - Key switch is ON - Starter switch signal (ECU: V12 terminal) is not activated | ECU recognition of battery voltage is 8 V or less Not monitored during cranking | one sec or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | | | | ON | - Faulty starting - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases | Diagnostic counter = zero | 30 sec |
| Battery voltage: High | P0563 | 168 | 3 | Battery Potential / Power Input 1 | Open circuit, short circuit or damage of harness Failure of battery | - Key switch is ON - Starter switch signal (ECU: V12 terminal) is not activated | ECU recognition of battery voltage is 16 V or more | one sec or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | | | | ON | - Faulty starting - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| QR data error | P0602 | 523538 | 2 | proprietary | QR data read error | - Key switch is ON | QR data read error from EEPROM | transient | Nozzle correction is not executed Output limitation: Approximately 75% of normal condition | To cover each injector dispersion | | | ON | - Insufficient output | Key switch turn OFF | — |
| No QR data | P0602 | 523538 | 7 | proprietary | QR data is unwritten | - Key switch is ON | Area of QR data on EEPROM is vacant | transient | Nozzle correction factor = 0 [default value] Output limitation: Approximately 75% of normal condition | | | | ON | - Insufficient output | Key switch turn OFF | — |
| ECU FLASH ROM error | P0605 | 628 | 2 | Program Memory | FLASH ROM error | - Key switch is ON | Check-sum error | one time or more | Engine stops without delay | | | | ON | - Engine stops | Key switch turn OFF | — |
| ECU CPU (Main IC) error | P0606 | 1077 | 2 | Engine Fuel Injection Pump Controller | Failure of CPU | - Key switch is ON - Battery voltage is 10 V or more - Starter switch signal (ECU: V12 terminal) is not activated | CPU fatal error | one time or more | Engine stop | | | | ON | - Engine stops | Key switch turn OFF | — |
| ECU CPU (Monitoring IC) error | P0606 | 523527 | 2 | proprietary | Failure of monitoring IC of CPU | - Key switch is ON - Battery voltage is 10 V or more - Starter switch signal (ECU: V12 terminal) is not activated | Failure of monitoring IC of CPU | one time or more | Engine stop | | | | ON | - Engine stops | Key switch turn OFF | — |
| Injector charge voltage: Low | P0611 | 523525 | 1 | proprietary | Injector charge voltage: Low Failure of charge circuit of ECU | - Battery voltage is normal - CPU is normal | Injector charge voltage: Low Failure of charge circuit of ECU | transient | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF | | | ON | - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |

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| SCV drive system error | P0628 | 1347 | 4 | Engine Fuel Pump Pressurizing Assembly #1 | Open circuit or ground short circuit of SCV | - Battery voltage is normal - Key switch is ON - Starter switch signal (ECU: V12 terminal) is not activated | Open circuit or ground short of SCV | 2.6 sec or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open Engine forcibly stopped 60 sec later | | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| +B short circuit of SCV | P0629 | 1347 | 3 | Engine Fuel Pump Pressurizing Assembly #1 | +B short circuit of SCV | - Battery voltage is normal - Key switch is ON - Starter switch signal (ECU: V12 terminal) is not activated | +B short circuit of SCV | 2.6 sec or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open Engine forcibly stopped 60 sec later | Engine speed may go down due to low fuel pressure regardless limp home de-rating Engine may stop automatically before stopped forcibly by ECU | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Sensor supply voltage 1: Low | P0642 | 3509 | 4 | Sensor supply voltage 1 | Sensor supply voltage 1 error or recognition error | - Battery voltage is normal - Key switch turn ON - Starter Switch signal (ECU: V12 terminal) is not activated | Voltage to sensor is 4.375 V or less | transient | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | Emission related | ON | - Faulty starting - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| Sensor supply voltage 1: High | P0643 | 3509 | 3 | Sensor supply voltage 1 | Sensor supply voltage 1 error or recognition error | - Battery voltage is normal - Key switch turn ON - Starter switch signal (ECU: V12 terminal) is not activated | Voltage to sensor is 5.625 V or more | transient | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | Emission related | ON | - Faulty starting - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| Sensor supply voltage 2: Low | P0652 | 3510 | 4 | Sensor supply voltage 2 | Sensor supply voltage 2 error or recognition error | - Battery voltage is normal - Key switch turn ON - Starter switch signal (ECU: V12 terminal) is not activated | Voltage to sensor is 4.375 V or less | transient | Output limitation: Approximately 75% of normal condition | Emission related | ON | - Faulty starting - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Sensor supply voltage 2: High | P0653 | 3510 | 3 | Sensor supply voltage 2 | Sensor supply voltage 2 error or recognition error | - Battery voltage is normal - Key switch turn ON - Starter switch signal (ECU: V12 terminal) is not activated | Voltage to sensor is 5.625 V or more | transient | Output limitation: Approximately 75% of normal condition | Emission related | ON | - Faulty starting - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Main relay is locked in closed position | P0687 | 1485 | 2 | ECM Main Relay | Failure of main relay | - Key switch turn OFF - Engine stops | Main relay stays active longer than 1 sec without command | 2 times or more | None | | ON | - Battery goes dead | Diagnostic counter = zero | 5.3 sec |
| Pump seizing 1 | P1274 | 523539 | 2 | proprietary | High pressure 1 error | - Sensor supply voltage VCC# is normal - Rail pressure sensor is normal | (Approximate parameter) Rail pressure of 230 MPa (2350 kgf/cm2, 33400 psi) or more continues 1 sec under the condition of 800 rpm or more Rail pressure of 220 MPa (2250 kgf/cm2, 31900 psi) or more continues 1 sec under the condition of less than 800 rpm [Threshold changes depending on the engine speed. 700 rpm should be used as a reference] | one time or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation:50%) EGR stop Intake throttle 100% open | To minimize PM emission to DPF To avoid extremely high pressure in injection system | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |

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| Pump seizing 2 | P1275 | 523540 | 2 | proprietary | High pressure 2 error | - Sensor supply voltage VCC# is normal - Rail pressure sensor is normal | (Approximate parameter) Rail pressure of more than 197 MPa (2010 kgf/cm2, 28600 psi), and less than 230 MPa (2350 kgf/cm2, 33400 psi) continues total time for 35 seconds under condition of 800 rpm or more [Threshold changes depending on the engine speed. 2000 rpm should be used as a reference] Or, rail pressure of more than 220 MPa (2250 kgf/cm2, 31900 psi) continues total time for 1.7 second under condition of less than 800 rpm [Threshold changes depending on the engine speed. 700 rpm should be used as a reference] | one time or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | To minimize PM emission to DPF To avoid extremely high pressure in injection system | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Accelerator position sensor 1: Low | P2122 | 91 | 4 | Accelerator Pedal Position 1 | Ground short circuit or open circuit of sensor or harness | - Battery voltage is normal - Sensor supply voltage VCC2 is normal | Voltage of accelerator position sensor 1 is 0.3 V or less | transient | Forced Idle (Accelerator = 0%) | | ON | - Insufficient output | Diagnostic counter = zero | 3 sec |
| Accelerator position sensor 1: High | P2123 | 91 | 3 | Accelerator Pedal Position 1 | +B short circuit of sensor or harness | - Battery voltage is normal - Sensor supply voltage VCC2 is normal | Voltage of accelerator position sensor 1 is 4.8 V or more | transient | Forced Idle (Accelerator = 0%) | | ON | - Insufficient output | Diagnostic counter = zero | 3 sec |
| Accelerator position sensor 2: Low | P2127 | 29 | 4 | Accelerator Pedal Position 2 | Ground short circuit or open circuit of sensor or harness | - Battery voltage is normal - Sensor supply voltage VCC1 is normal | Voltage of accelerator position sensor 2 is 0.3 V or less | transient | Forced Idle (Accelerator = 0%) | | ON | - Insufficient output | Diagnostic counter = zero | 3 sec |
| Accelerator position sensor 2: High | P2128 | 29 | 3 | Accelerator Pedal Position 2 | +B short circuit of sensor or harness | - Battery voltage is normal - Sensor supply voltage VCC1 is normal | Voltage of accelerator position sensor 2 is 4.8 V or more | transient | Forced Idle (Accelerator = 0%) | | ON | - Insufficient output | Diagnostic counter = zero | 3 sec |
| Accelerator position sensor error (CAN) | P2131 | 523543 | 2 | proprietary | Accelerator position sensor signal error (sensor or harness open circuit, ground short circuit etc.) | - Battery voltage is normal - Key switch turn ON - Starter switch signal (ECU: V12 terminal) is not activated | Accelerator position sensor error signal received by CAN | transient | Not applicable | | ON | - Insufficient output | Diagnostic counter = zero (CAN signal recovers) | Immediately |
| Injector drive circuit open in No.1 & 4 cylinder simultaneously | P2146 | 523523 | 2 | proprietary | Wiring harness open circuit | - Engine is operating - Battery voltage is normal - During injection - CPU is normal | Wiring harness open circuit | 8 times or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| No. 1 & 4 cylinder injector short to ground at power supply side, or all cylinder injector short to ground | P2147 | 523523 | 4 | proprietary | Wiring harness short to ground | - Engine is operating - Battery voltage is normal | Wiring harness short to ground | 8 times or more | Injectors which have error stop injection Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| No. 1 & 4 cylinder injector short to +B at power supply side, or all cylinder injector short to +B | P2148 | 523523 | 3 | proprietary | Wiring harness short to +B | - Engine is operating - Battery voltage is normal | Wiring harness short to +B | 8 times or more | Injectors which have error stop injection Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| Injector drive circuit open in No.2 & 3 cylinder simultaneously | P2149 | 523524 | 2 | proprietary | Wiring harness open circuit | - Engine is operating - Battery voltage is normal - During injection - CPU is normal | Wiring harness open circuit | 8 times or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |

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| No. 2 & 3cylinder injector short to ground at power supply side, or all cylinder injector short to ground | P2150 | 523524 | 4 | proprietary | Wiring harness short to ground | - Engine is operating - Battery voltage is normal | Wiring harness short to ground | 8 times or more | Injectors which have error stop injection Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| No. 2 & 3cylinder injector short to +B at power supply side, or all cylinder injector short to +B | P2151 | 523524 | 3 | proprietary | Wiring harness short to +B | - Engine is operating - Battery voltage is normal | Wiring harness short to +B | 8 times or more | Injectors which have error stop injection Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | To minimize PM emission to DPF Injectors which have no error are operated | ON | - Insufficient output - Engine vibration increases - Worsening exhaust gas emissions - Engine stops in some cases | Key switch turn OFF | — |
| Barometric pressure sensor error (Low side) | P2228 | 108 | 4 | Barometric Pressure | Sensor or ECU internal circuit short to ground | - Battery voltage is normal | Barometric pressure sensor voltage: 1.6 V or less | 2.8 sec or more | 65 kPa (0.663 kgf/cm2, 9.43 psi) [default value] | Default value is set in consideration with high altitude usage | ON | - Insufficient output | Diagnostic counter = zero | Immediately |
| Barometric pressure sensor error (High side) | P2229 | 108 | 3 | Barometric Pressure | Sensor or ECU internal circuit short to +B | - Battery voltage is normal | Barometric pressure sensor voltage: 4.4 V or more | 2.8 sec or more | 65 kPa (0.663 kgf/cm2, 9.43 psi) [default value] | Default value is set in consideration with high altitude usage | ON | - Insufficient output | Diagnostic counter = zero | Immediately |
| CAN1 Bus off | U0077 | 523604 | 2 | proprietary | CAN1 +B or GND short circuit or high traffic error | - Battery voltage is normal - Key switch is ON | CAN1 Bus off | 2 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | ON | - Insufficient output - Transmitted CAN data are invalid | Key switch turn OFF | — |
| CAN2 Bus off | U0075 | 523547 | 2 | proprietary | CAN2 +B or GND short circuit or high traffic error | - Battery voltage is normal - Key switch is ON | CAN2 Bus off | 2 sec or more | Forced Idle (Accelerator = 0%) | | ON | - Insufficient output - Transmitted CAN data are invalid | Key switch turn OFF | — |
| CAN-KBT Frame error | U0081 | 523548 | 2 | proprietary | CAN-KBT original frame open circuit error | - Battery voltage is normal - Key switch turn OFF to ON - Starter switch signal (ECU: V12 terminal) is not activated - NO error of "CAN2 Bus off" | CAN2 KBT Frame open circuit error | transient | Forced Idle (Accelerator = 0%) | | ON | - Insufficient output | Key switch turn OFF | — |

DTC Code LIST (After treatment related)

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| Intake air temp. built-in MAF sensor: Low | P0072 | 171 | 4 | Ambient Air Temperature | Ground short circuit of sensor or harness | - Battery voltage is normal | Intake air temp. built-in MAF sensor voltage: 0.1 V or less | 2.8 sec or more | 25 degC (77 degF) [default value] | | ON | - | Diagnostic counter = zero | Immediately |
| Intake air temp. built-in MAF sensor: High | P0073 | 171 | 3 | Ambient Air Temperature | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal | Intake air temp. built-in MAF sensor voltage: 4.9 V or more | 2.8 sec or more | 25 degC (77 degF) [default value] | | ON | - | Diagnostic counter = zero | Immediately |
| Intake air volume: Low | P0101 | 132 | 1 | Engine Inlet Air Mass Flow Rate | Engine inlet air mass flow rate lacking (Disconnect turbo blower intake hose) | - Engine is operating 1000 rpm or more - Coolant temp. is 15 degC (59 degF) or more (Coolant temp. sensor is normal) - MAF sensor is normal - EGR valve is normal - Intake throttle valve is normal - Battery voltage is normal | Engine Inlet Air Mass Flow Rate: less than half of target value | 10.0 sec or more | Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | | ON | - Insufficient output | Key switch turn OFF | — |
| MAF sensor: Low | P0102 | 132 | 4 | Engine Inlet Air Mass Flow Rate | Open circuit or ground short circuit of sensor or harness | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated - Sensor supply voltage is normal | Mass air flow sensor voltage: 0.1 V or less | 2.8 sec or more | Sensor output: 0.7 times of target value at normal condition [default value] Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | Engine is not stopped forcibly by ECU However KUBOTA strongly recommends operator to stop engine as soon as possible | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| MAF sensor: High | P0103 | 132 | 3 | Engine Inlet Air Mass Flow Rate | +B short circuit of sensor or harness | - Battery voltage is normal - Engine speed is between 700 rpm and 2800 rpm - Target intake mass air flow is 460 or less and it continues for 3 sec - Sensor supply voltage is normal | Mass air flow sensor voltage: 4.9 V or more at normal operation condition | 2.8 sec or more | Sensor output: 0.7 times of target value at normal condition [default value] Output limitation: Approximately 75% of normal condition EGR stop Intake throttle 100% open | Engine is not stopped forcibly by ECU However KUBOTA strongly recommends operator to stop engine as soon as possible | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |

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|---|-------|--------|----|--|--|---|--|-----------------|---|------------------------|----|---|--|---------------------------|-------|
| Intake air temp: High Intercooler model only | P0111 | 172 | 0 | Air Inlet Temperature | Intake air temp too high | - Battery voltage is normal - Key switch is ON | Intake air temp, more than amb. temp +60 degC | 10 sec or more | Output limitation: Approximately 75% of normal condition | Intercooler model only | ON | - | Key switch turn OFF | — | |
| Fuel high temp. | P0181 | 174 | 0 | Fuel Temperature | Fuel temp high | - Passed 300 sec after cranking - Engine speed is 800 rpm or more - Fuel temp. sensor is normal | Fuel temp more than 90 degC | 10 sec or more | Output limitation: Approximately 75% of normal condition | | ON | - | Diagnostic counter = zero | 30 sec | |
| EGR actuator open circuit | P0403 | 523574 | 3 | proprietary | EGR actuator open circuit | - Battery voltage is normal - NO DTC of U0077 "CAN1 Bus off" - EGR control line is normal | EGR actuator open error signal received via CAN | 2.8 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | ON | - | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| EGR actuator coil short | P0404 | 523574 | 4 | proprietary | EGR actuator coil short | - Battery voltage is normal - NO DTC of U0077 "CAN1 Bus off" - EGR control line is normal | EGR actuator coil short error signal received via CAN | 2.8 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | ON | - | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| EGR position sensor failure | P0409 | 523572 | 4 | proprietary | EGR position sensor failure | - Battery voltage is normal - NO DTC of U0077 "CAN1 Bus off" - EGR control line is normal | EGR position sensor error signal received via CAN | 2.8 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | ON | - | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Exhaust gas temperature sensor 1: Low | P0543 | 3242 | 4 | After treatment 1 Diesel Particulate Filter Intake Gas Temperature | Ground short circuit of sensor or harness | - Battery voltage is normal | DPF inlet temp. sensor (T1) voltage: 0.08 V or less | 5 sec or more | 0 degC (32 degC) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — | |
| Exhaust gas temperature sensor 1: High | P0544 | 3242 | 3 | After treatment 1 Diesel Particulate Filter Intake Gas Temperature | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal - Coolant temp. is 65 degC (149 degF) or more continues longer than 10 min after engine starting - T0 is between 100 degC (212 degF) and 800 degC (1472 degF): continues longer than 10 sec or - T2 is between 100 degC (212 degF) and 800 degC (1472 degF): continues longer than 10 sec | DPF inlet temp. sensor (T1) voltage: 4.92 V or more | 120 sec or more | 0 degC (32 degF) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — | |
| Exhaust gas temperature sensor 0: Low | P0546 | 4765 | 4 | After treatment 1 Diesel Oxidation Catalyst Intake Gas Temperature | Ground short circuit of sensor or harness | - Battery voltage is normal | DOC inlet temp. sensor (T0) voltage: 0.08 V or less | 5 sec or more | 0 degC (32 degF) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — | |
| Exhaust gas temperature sensor 0: High | P0547 | 4765 | 3 | After treatment 1 Diesel Oxidation Catalyst Intake Gas Temperature | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal - Coolant temp. is 65 degC (149 degF) or more continues longer than 5 min after engine starting - T1 is between 100 degC (212 degF) and 800 degC (1472 degF): continues longer than 10 sec or - T2 is between 100 degC (212 degF) and 800 degC (1472 degF): continues longer than 10 sec | DOC inlet temp. sensor (T0) voltage: 4.92 V or more | 120 sec or more | 0 degC (32 degF) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — | |
| EEPROM check sum error | P1990 | 523700 | 13 | proprietary | KBT-EEPROM check sum error | - Battery voltage is normal | EEPROM check sum error | transient | None | | ON | - | Key switch turn OFF | — | |
| Intake throttle feedback error | P2108 | 523580 | 2 | proprietary | Intake throttle feedback error | - Battery voltage is normal | (Approximate parameter) Deviation of throttle position is not corrected in 20 times of duty error recovery action | 5 sec or more | Output limitation: Approximately 75% of normal condition Intake throttle 100% open | | ON | - | Key switch turn OFF | — | |
| Accelerator position sensor correlation error | P2135 | 91 | 2 | Accel Pedal Sensor 1 | Deviation from designed correlation in two sensors | - Battery voltage is normal - Accelerator position sensor 1 is normal - Accelerator position sensor 2 is normal | Deviation from designed correlation in two sensors | transient | Forced Idle (Accelerator = 0%) | | ON | - | - Insufficient output | Diagnostic counter = zero | 3 sec |
| EGR actuator valve stuck | P2413 | 523575 | 7 | proprietary | EGR actuator valve stuck | - Battery voltage is normal - NO DTC of U0077 "CAN1 Bus off" - EGR control line is normal | EGR actuator valve stuck error signal received via CAN | 2.8 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | ON | - | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |

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|--|-------|--------|---|--|---|--|---|-----------------|--|--|----|--|--------------------------------------|---|
| EGR (DC motor) overheat | P2414 | 523576 | 2 | proprietary | EGR (DC motor) overheat | - Battery voltage is normal - NO DTC of U0077 "CAN1 Bus off" - EGR control line is normal | EGR (DC motor) temp. error signal (thermistor: 125 degC or more) received via CAN | 2.8 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| EGR (DC motor) temp. sensor failure | P2415 | 523577 | 2 | proprietary | EGR (DC motor) temp. sensor failure | - Battery voltage is normal - NO DTC of U0077 "CAN1 Bus off" - EGR control line is normal | EGR (DC motor) temp. sensor error signal received via CAN | 2.8 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | ON | - Insufficient output - Worsening exhaust gas emissions | Key switch turn OFF | — |
| Exhaust gas temperature sensor 2: Low | P242C | 3246 | 4 | After treatment 1 Diesel Particulate Filter Outlet Gas Temperature | Ground short circuit of sensor or harness | - Battery voltage is normal | DPF outlet temp. sensor (T2) voltage: 0.08 V or less | 5 sec or more | 0 degC (32 degC) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — |
| Exhaust gas temperature sensor 2: High | P242D | 3246 | 3 | After treatment 1 Diesel Particulate Filter Outlet Gas Temperature | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal - Coolant temp. is 65 degC (149 degF) or more: continues longer than 10 min after engine starting - T0 is between 100 degC (212 degF) and 800 degC (1472 degF): continues longer than 10 sec or - T1 is between 100 degC (212 degF) and 800 degC (1472 degF): continues longer than 10 sec | DPF outlet temp. sensor (T2) voltage: 4.92 V or more | 120 sec or more | 0 degC (32 degF) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — |
| Differential pressure sensor 1: Low | P2454 | 3251 | 4 | After treatment 1 Diesel Particulate Filter Differential Pressure | Ground short circuit of sensor or harness | - Battery voltage is normal - Sensor supply voltage VCC# is normal - Starter switch signal (ECU: V12 terminal) is not activated | DPF differential pressure sensor voltage: 0.21 V or less | 2.8 sec or more | 0 kPa (0.0 kgf/cm2, 0.0 psi) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — |
| Differential pressure sensor 1: High | P2455 | 3251 | 3 | After treatment 1 Diesel Particulate Filter Differential Pressure | Open circuit or +B short circuit of sensor or harness | - Battery voltage is normal - Sensor supply voltage VCC# is normal - Starter switch signal (ECU: V12 terminal) is not activated | DPF differential pressure sensor voltage: 4.7 V or more | 2.8 sec or more | 0 kPa (0.0 kgf/cm2, 0.0 psi) [default value] Output limitation: Approximately 75% of normal condition | | ON | - | Key switch turn OFF | — |
| Intake throttle lift sensor: Low | P2621 | 523582 | 4 | proprietary | Intake throttle lift sensor: Low | - Battery voltage is normal - Sensor supply voltage VCC# is normal | Intake throttle lift sensor voltage: 0.1 V or less | 2.8 sec or more | Output limitation: Approximately 75% of normal condition Intake throttle 100% open | | ON | - | Key switch turn OFF | — |
| Intake throttle lift sensor: High | P2622 | 523582 | 3 | proprietary | Intake throttle lift sensor: High | - Battery voltage is normal - Sensor supply voltage VCC# is normal | Intake throttle lift sensor voltage: 4.89 V or more | 2.8 sec or more | Output limitation: Approximately 75% of normal condition Intake throttle 100% open | | ON | - | Key switch turn OFF | — |
| Emission deterioration | P3001 | 3252 | 0 | After treatment 1 Exhaust Gas Temperature 2 Preliminary FMI | DOC is heated up due to unburned fuel | - Other than during regeneration mode - Coolant temp. is 65 degC (149 degF) or more continues longer than 5min after engine starting | T1 - T0 is 250 degC (482 degF) or more | 60 sec or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation: 50%) EGR stop Intake throttle 100% open | To minimize PM emission to DPF | ON | - Insufficient output | Key switch turn OFF | — |
| Emergency Exhaust gas temperature sensor 0: High | P3002 | 4765 | 0 | After treatment 1 Exhaust Gas Temperature 1 Preliminary FMI | DOC inlet temp. (T0): High | - Exhaust gas temp. sensor T0, T1 and T2 are normal - Battery voltage is normal | DOC inlet temp. (T0): 700 degC (1292 degF) or more | 2.0 sec or more | Stop injection (Q = 0 mm3/st) Engine stop Inhibit starter relay activation until exhaust temp. reduces down to 300 degC (572 degF) | In case engine ECU is not involved to drive starter, starter activation should be inhibited by other way until exhaust temp. reduces down to 300 degC (572 degF) | ON | - Engine stops - Inhibited cranking until down to 300 degC (572 degF) | Under 300 degC & Key switch turn OFF | — |

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|--|-------|--------|----|---|--|--|--|-----------------|---|--|----|--|--|-------------|
| Emergency Exhaust gas temperature sensor 1: High | P3003 | 3242 | 0 | After treatment 1 Exhaust Gas Temperature 2 Preliminary FMI | DPF inlet temp. (T1): High | - Exhaust gas temp. sensor T0, T1 and T2 are normal - Battery voltage is normal | DPF inlet temp. (T1): 715 degC (1319 degF) or more | 9.0 min or more | Stop injection (Q = 0 mm3/st) Engine stop Inhibit starter relay activation until exhaust temp. reduces down to 300 degC (572 degF) | In case engine ECU is not involved to drive starter, starter activation should be inhibited by other way until exhaust temp. reduces down to 300 degC (572 degF) | ON | - Engine stops - Inhibited cranking until down to 300 degC (572 degF) | Under 300 degC & Key switch turn OFF | — |
| Emergency Exhaust gas temperature sensor 2: High | P3004 | 3246 | 0 | After treatment 1 Exhaust Gas Temperature 3 Preliminary FMI | DPF outlet temp. (T2): High | - Exhaust gas temp. sensor T0, T1 and T2 are normal - Battery voltage is normal | DPF outlet temp. (T2): 820 degC (1508 degF) or more | 2.0 sec or more | Stop injection (Q = 0 mm3/st) Engine stop EGR stop Intake throttle 0% open (Close) Inhibit starter relay activation until exhaust temp. reduces down to 300 degC (572 degF) | In case engine ECU is not involved to drive starter, starter activation should be inhibited by other way until exhaust temp. reduces down to 300 degC (572 degF) | ON | - Engine stops - Inhibited cranking until down to 300 degC (572 degF) | Under 300 degC & Key switch turn OFF | — |
| Excessive PM3 | P3006 | 3701 | 15 | Diesel Particulate Filter Status | PM accumulation level 3 | - Battery voltage is normal | PM accumulation more than trigger level Regeneration level = 3 | transient | Output limitation: Approximately 50% of normal condition | To minimize PM emission | ON | - Insufficient output | Diagnostic counter = zero | Immediately |
| Excessive PM4 | P3007 | 3701 | 16 | Diesel Particulate Filter Status | PM accumulation level 4 | - Battery voltage is normal | PM accumulation more than trigger level Regeneration level = 4 | transient | Output limitation: Approximately 50% of normal condition | To minimize PM emission | ON | - Insufficient output | Diagnostic counter = zero | Immediately |
| Excessive PM5 | P3008 | 3701 | 0 | Diesel Particulate Filter Status | PM accumulation level 5 | - Battery voltage is normal | PM accumulation more than trigger level Regeneration level = 5 | transient | Output limitation: Approximately 50% of normal condition | Engine is not stopped forcibly by ECU However KUBOTA strongly recommends operator to stop engine as soon as possible | ON | - Insufficient output | Key switch turn OFF (Reset by Service tool) | — |
| Boost pressure low | P3011 | 132 | 15 | Engine Inlet Air Mass Flow Rate | Disconnect the hose between the turbo blower out and intake flange | - Other than during regeneration mode - Engine speed is 1600 rpm or more - Target intake air flow value is 950 mg/cyl or more - MAF sensor is normal - EGR valve is normal - Intake throttle valve is normal - Boost pressure sensor is normal - Barometric pressure sensor is normal - Coolant temp. sensor is normal | Boost pressure sensor output is less than target level in high air flow operating condition | 10 sec or more | Output limitation: Approximately 50% of normal condition Speed limitation (Accelerator limitation:50%) EGR stop Intake throttle 100% open | Engine power is restricted by boost pressure signal accordingly To minimize PM emission to DPF | ON | - Insufficient output | Key switch turn OFF | — |
| Low coolant temp. in parked regeneration | P3012 | 523589 | 17 | proprietary | During regeneration mode, Engine warm-up condition is not satisfied (coolant temp. is low) | - During parked active regeneration mode | Engine coolant temp. stays less than 65 degC (149 degF) for 1500 seconds or more under parked regeneration process | transient | None | | ON | - | Diagnostic counter = zero (Leaving from Parked active regeneration status) | Immediately |
| Parked regeneration time out | P3013 | 523590 | 16 | proprietary | Time out error: regeneration incomplete due to low temperature of DPF | - During parked active regeneration mode - Coolant temp. is 65 degC (149 degF) or more | Regeneration process is not completed within 2700 sec | transient | None | | ON | - | Diagnostic counter = zero (Leaving from Parked active regeneration status) | Immediately |
| All exhaust temp. sensor failure | P3018 | 523599 | 0 | proprietary | All exhaust temp. sensor failure simultaneously | - Engine speed is 1400 rpm or more - Quantity of injection is 30 mm3/st or more - Coolant temp. is 65 degC (149 degF) or more: continues longer than 300 sec - Intake air temp. is 0 degC (32 degF) or more - Passed 100 sec after cranking | All exhaust temp. sensor failure (sensor low) simultaneously | 100 sec or more | Output limitation: Approximately 75% of normal condition | | ON | - | Diagnostic counter = zero | Immediately |

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|---|-------|--------|----|-------------|---|---|---|-----------------|--|--|--|----|---|--|-------------|
| initial pump-calibration incomplete | P3019 | 523600 | 0 | proprietary | Pump-calibration history | - Battery voltage is normal | Initial pump calibration incomplete | transient | None | | | ON | - | Diagnostic counter = zero | Immediately |
| High exhaust gas temp. after emergency high temp. DTC | P3023 | 523601 | 0 | proprietary | Exhaust gas temperature sensor 0, 1, 2 output | - Battery voltage is normal | All exhaust temp. (T0, T1, T2) reduce to 300 degC (572 degF) | transient | Engine stop Inhibit starter relay activation until all exhaust temp. (T0, T1, T2) reduces down to 300 degC (572 degF) | | | ON | - | Diagnostic counter = zero | Immediately |
| High frequency of regeneration | P3024 | 523602 | 0 | proprietary | Time interval from the end time to the start time of the regeneration | - Battery voltage is normal - Key switch is ON | Regeneration time interval within 30 min. occurs three times continuously | transient | Output limitation: Approximately 50% of normal condition EGR stop | | | ON | - | - Worsening exhaust gas emissions (NOx) Key switch turn OFF (Reset by Service tool) | — |
| Over heat pre-caution | P3025 | 523603 | 15 | proprietary | Coolant temp. | - Coolant temp. sensor is normal | Engine coolant temperature is 110 degC (230 degF) or more | transient | None | | | ON | - | - Worsening exhaust gas emissions (NOx) Diagnostic counter = zero | Immediately |
| No communication with EGR | U0076 | 523578 | 2 | proprietary | No communication with EGR | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | Interruption of CAN | 1.3 sec or more | Output limitation: Approximately 75% of normal condition EGR stop | | | ON | - | - Insufficient output - Worsening exhaust gas emissions Key switch turn OFF | — |
| CAN CCVS (Parking SW and Vehicle speed) frame error | U0082 | 523591 | 2 | proprietary | CAN_CCVS communication stopping | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | CAN CCVS frame time out error | 0.5 sec or more | Parking SW = OFF, Vehicle speed = 0 [default value] | | | ON | - | Key switch turn OFF | — |
| CAN CM1 (Regen SW) frame error | U0083 | 523592 | 2 | proprietary | CAN_CM1 communication stopping | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | CAN CM1 frame time out error | 2.0 sec or more | Regeneration inhibit = ON, Parked regeneration SW = OFF [default value] | | | ON | - | Key switch turn OFF | — |
| CAN DDC1 (Transmission) frame error | U0084 | 523593 | 2 | proprietary | CAN_DDC1 communication stopping | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | CAN DDC1 frame time out error | 0.5 sec or more | Accelerator non-linear processing flag = 0 [default value] Accelerator non-linear processing invalid | | | ON | - | Key switch turn OFF | — |
| CAN ETC2 (Neutral SW) frame error | U0085 | 523594 | 2 | proprietary | CAN_ETC2 communication stopping | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | CAN ETC2 frame time out error | 0.5 sec or more | Neutral SW = OFF [default value] | | | ON | - | Key switch turn OFF | — |
| CAN ETC5 (Neutral SW) frame error | U0086 | 523595 | 2 | proprietary | CAN_ETC5 communication stopping | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | CAN ETC5 frame time out error | 0.5 sec or more | Neutral SW = OFF [default value] | | | ON | - | Key switch turn OFF | — |
| CAN TSC1 frame error | U0087 | 523596 | 2 | proprietary | CAN_TSC1 communication stopping | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | No request to "TSC1 buffer" continues 3 times after over-ride control request (other than 0x00) | 60 msec or more | Override control mode = Normal mode [default value] | | | ON | - | Diagnostic counter = zero | Immediately |
| CAN EBC1 frame error | U0089 | 523598 | 2 | proprietary | CAN_EBC1 communication stopping | - Battery voltage is normal - Starter switch signal (ECU: V12 terminal) is not activated | CAN EBC1 frame time out error | 0.5 sec or more | Non shutdown [default value] Output limitation: Approximately 75% of normal condition | | | ON | - | Diagnostic counter = zero | Immediately |

Note: If any DTC occurred, Automatic active regeneration is inhibited. In case, "Excessive PM3" and "Excessive PM4", "High frequency of regeneration", Parked active regeneration function is allowed.