

DIAGNOSTIC AND FAULT CODES

GENERAL

FAULT CODE TABLE

PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
B2210	CLUSTER	Left keypad fault (Switch kept activated more than 60 seconds)	Problem with left keypad.	The switch may be defective, verify the functionality of the switch or the wires. Refer to the shop manual for switch diagnosis/testing procedure.
B2210	CLUSTER_CAFE	Left keypad fault (Switch kept activated more than 60 seconds)	Problem with left keypad.	The switch may be defective, verify the functionality of the switch or the wires. Refer to the shop manual for switch diagnosis/testing procedure.
B2211	CLUSTER	Suspension UP/DOWN or SPORT / ECO switches shorted to ground fault	Problem with left keypad.	Look for pin B if shorted to ground or pin C.
B2212	CLUSTER	Suspension UP/DOWN or SPORT / ECO switches disconnected fault	Problem with left keypad.	Look for pin B if disconnected to pin 14 on the cluster. Look for pin C if disconnected to pin 15 on the cluster .
B2213	CLUSTER	VTS UP/DOWN switches shorted to ground fault	Problem with left keypad.	Look for pin A if shorted to ground or pin C.
B2213	CLUSTER_CAFE	VTS UP/DOWN switches shorted to ground fault	Problem with left keypad.	Look for pin A if shorted to ground or pin C.
B2214	CLUSTER	VTS UP/DOWN switches disconnected fault	Problem with left keypad.	Look for pin A if disconnected to pin 13 on the cluster. Look for pin C if disconnected to pin 15 on the cluster .
B2214	CLUSTER_CAFE	VTS UP/DOWN switches disconnected fault	Problem with left keypad.	Look for pin A if disconnected to pin 13 on the cluster. Look for pin C if disconnected to pin 15 on the cluster .

B2220	CLUSTER	Right keypad fault (Switch kept activated more than 60 seconds)	Problem with right keypad.	The switch may be defective, verify the functionality of the switch or the wires. Refer to the shop manual for switch diagnosis/testing procedure.
B2221	CLUSTER	MODE/SET switches shorted to ground fault	Problem with right keypad.	Look for pin B if shorted to ground or pin C.
B2222	CLUSTER	MODE/SET switches disconnected fault	Problem with right keypad.	Look for pin B if disconnected to pin 17 on the cluster. Look for pin C if disconnected to pin 18 on the cluster.
B2223	CLUSTER	UP/DOWN switches shorted to ground fault	Problem with right keypad.	Look for pin A if shorted to ground or pin C.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
B2224	CLUSTER	UP/DOWN switches disconnected fault	Problem with right keypad.	Look for pin A if disconnected to pin 16 on the cluster. Look for pin C if disconnected to pin 18 on the cluster.
B2230	CLUSTER_CAFE	Main Cluster Switch kept activated more than 60 seconds	Problem with cluster button	The switch may be defective, verify the functionality of the switch (Button shape, defect, obstruction). Refer to the shop manual for switch diagnosis/testing procedure.
C0042	IBR	Brake Lever Sensor (BRLS) signals A open/shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.

C0042	IBR 2013	Brake Lever Sensor (BRLS) signals A open/shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C0042	IBR_II	Brake Lever Sensor (BRLS) signals A open/shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C0043	IBR	Brake Lever Sensor (BRLS) signals B open/shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C0043	IBR 2013	Brake Lever Sensor (BRLS) signals B open/shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
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C0043	IBR_II	Brake Lever Sensor (BRLS) signals B open/shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C0073	IBR	Torque request failure	CPS wires shorted. Bad connection on the engine coolant temp sensor.	Perform ECM software update if available. Verify CPS connection. Verify engine temperature if it is plausible. A bad connection with the CTS can generate this fault when the iBR is used.
C0073	IBR 2013	Torque request failure	CPS wires shorted. Bad connection on the engine coolant temp sensor.	Perform ECM software update if available. Verify CPS connection. Verify engine temperature if it is plausible. A bad connection with the CTS can generate this fault when the iBR is used.
C0073	IBR_II	Torque request failure	CPS wires shorted. Bad connection on the engine coolant temp sensor.	Perform ECM software update if available. Verify CPS connection. Verify engine temperature if it is plausible. A bad connection with the CTS can generate this fault when the iBR is used.
C2100	IBR	Sensors calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2100	IBR	Actuator movement	The reverse gate cannot move to the desired position. (stuck or motor open)	Clean and check for damage/wear parts in the reverse system and nozzle area. Check iBR electrical motor wiring. Isolate the iBR output shaft from the reverse system and activate the iBR, if the fault comes active, replace iBR. Refer to the service manual for more details.
C2100	IBR 2013	Sensors calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.

C2100	IBR_II	Sensors calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2101	IBR	Actuator movement warning	The reverse gate cannot move to the desired position within expected time.	Clean and check for damage/wear parts in the reverse system and nozzle area. Check iBR electrical motor wiring. Isolate the iBR output shaft from the reverse system and activate the iBR, if the fault comes active, replace iBR. Refer to the service manual for more details.
C2101	IBR 2013	Actuator movement warning	The reverse gate cannot move to the desired position within expected time.	Clean and check for damage/wear parts in the reverse system and nozzle area. Check iBR electrical motor wiring. Isolate the iBR output shaft from the reverse system and activate the iBR, if the fault comes active, replace iBR. Refer to the service manual for more details.
C2101	IBR_II	Actuator movement warning	The reverse gate cannot move to the desired position within expected time.	Clean and check for damage/wear parts in the reverse system and nozzle area. Check iBR electrical motor wiring. Isolate the iBR output shaft from the reverse system and activate the iBR, if the fault comes active, replace iBR. Refer to the service manual for more details.
C2102	IBR 2013	Actuator movement	The reverse gate cannot move to the desired position. (stuck or motor open)	Clean and check for damage/wear parts in the reverse system and nozzle area. Check iBR electrical motor wiring. Isolate the iBR output shaft from the reverse system and activate the iBR, if the fault comes active, replace iBR. Refer to the service manual for more details.

C2102	IBR_II	Actuator movement	The reverse gate cannot move to the desired position. (stuck or motor open)	Clean and check for damage/wear parts in the reverse system and nozzle area. Check iBR electrical motor wiring. Isolate the iBR output shaft from the reverse system and activate the iBR, if the fault comes active, replace iBR. Refer to the service manual for more details.
C2110	IBR	Reverse gate position sensor error	iBR malfunction.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2110	IBR	Angle position sensor warning	iBR malfunction.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2110	IBR	iBR overheat	iBR cooling system failure. iBR unit failure.	Check iBR cooling circuit. Refer to the service manual for more details.
C2110	IBR	Monitoring CPU message timeout or validity	iBR malfunction.	Perform an iBR software update if available and clear the fault. Replace the iBR unit if the fault remains active. Refer to the service manual for more details.
C2110	IBR	Monitoring CPU limp force	iBR malfunction.	Perform an iBR software update if available. Replace the iBR unit if the fault remains active. Refer to the service manual for more details.
C2110	IBR 2013	Reverse gate position sensor error	iBR malfunction.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.

C2110	IBR_II	Reverse gate position sensor error	iBR malfunction.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2111	IBR	ECM erratic RPM signal	RPM signal received from engine ECM not plausible.	Check CPS sensor connection
C2112	IBR 2013	Angle position sensor warning	iBR malfunction.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2112	IBR_II	Angle position sensor warning	iBR malfunction.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2113	IBR 2013	iBR overheat	iBR cooling system failure. iBR unit failure.	Check iBR cooling circuit. Refer to the service manual for more details.
C2113	IBR_II	iBR overheat	iBR cooling system failure. iBR unit failure.	Check iBR cooling circuit. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2114	IBR 2013	Monitoring CPU message timeout or validity	iBR malfunction.	Perform an iBR software update if available and clear the fault. Replace the iBR unit if the fault remains active. Refer to the service manual for more details.
C2114	IBR_II	Monitoring CPU message timeout or validity	iBR malfunction.	Perform an iBR software update if available and clear the fault. Replace the iBR unit if the fault remains active. Refer to the service manual for more details.

C2115	IBR 2013	Monitoring CPU limp force	iBR malfunction.	Perform an iBR software update if available. Replace the iBR unit if the fault remains active Refer to the service manual for more details.
C2115	IBR_II	Monitoring CPU limp force	iBR malfunction.	Perform an iBR software update if available. Replace the iBR unit if the fault remains active Refer to the service manual for more details.
C2120	IBR	Application calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2120	IBR 2013	Application calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2120	IBR_II	Application calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iBR is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2121	IBR	Application parameters corrupted (backup #1 or #2)	Unexpected battery power lost or memory failure. Ignore fault if "occurred"	Verify starting and charging system circuits. Clear fault Refer to the service manual for more details.
C2121	IBR 2013	Application parameters corrupted (backup #1 or #2)	Unexpected battery power lost or memory failure. Ignore fault if "occurred"	Verify starting and charging system circuits. Clear fault Refer to the service manual for more details.
C2121	IBR_II	Application parameters corrupted (backup #1 or #2)	Unexpected battery power lost or memory failure. Ignore fault if "occurred"	Verify starting and charging system circuits. Clear fault Refer to the service manual for more details.

PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2130	IBR 2013	Motor current software breaker	iBR motor current too high. Battery power failure. iBR unit failure.	Clean and check for damage in the reverse gate and nozzle area. Refer to the service manual for more details.
C2130	IBR_II	Motor current software breaker	iBR motor current too high. Battery power failure. iBR unit failure.	Clean and check for damage in the reverse gate and nozzle area. Refer to the service manual for more details.
C2130	IBR	Motor current software breaker	iBR motor current too high. Battery power failure. iBR unit failure.	Clean and check for damage in the reverse gate and nozzle area. Refer to the service manual for more details.
C2130	IBR	Internal motor drive failure	Motor voltage feedback not fitting with the command.	
C2131	IBR	iBR DC motor shorted to ground or 12V	iBR motor failure. iBR motor wires damaged. Battery power failure. iBR unit failure.	Perform an iBR update with BUDS Check iBR battery power Check iBR Motor Wiring Refer to the service manual for more details.
C2131	IBR 2013	iBR DC motor shorted to ground or 12V	iBR motor failure. iBR motor wires damaged. Battery power failure. iBR unit failure.	Perform an iBR update with BUDS Check iBR battery power Check iBR Motor Wiring Refer to the service manual for more details.
C2131	IBR_II	iBR DC motor shorted to ground or 12V	iBR motor failure. iBR motor wires damaged. Battery power failure. iBR unit failure.	Perform an iBR update with BUDS Check iBR battery power Check iBR Motor Wiring Refer to the service manual for more details.
C2132	IBR	Motor Open	No current while activated.	Verify if the motor is properly connected to the iBR housing
C2132	IBR 2013	Motor Open	No current while activated.	Verify if the motor is properly connected to the iBR housing
C2132	IBR_II	Motor Open	No current while activated.	Verify if the motor is properly connected to the iBR housing

C2133	IBR 2013	Internal motor drive failure	Motor voltage feedback not fitting with the command.	
C2133	IBR_II	Internal motor drive failure	Motor voltage feedback not fitting with the command.	

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2142	IBR	Brake Lever Sensor (BRLS) signals A shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C2142	IBR 2013	Brake Lever Sensor (BRLS) signals A shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C2142	IBR_II	Brake Lever Sensor (BRLS) signals A shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.

C2143	IBR	Brake Lever Sensor (BRLS) signals B shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C2143	IBR 2013	Brake Lever Sensor (BRLS) signals B shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C2143	IBR_II	Brake Lever Sensor (BRLS) signals B shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2144	IBR	Brake Lever Sensor (BRLS) power shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 4.5 to 5 volts on sensor connector pin A & D. Refer to the service manual for more details.

C2144	IBR 2013	Brake Lever Sensor (BRLS) power shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 4.5 to 5 volts on sensor connector pin A & D. Refer to the service manual for more details.
C2144	IBR_II	Brake Lever Sensor (BRLS) power shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 4.5 to 5 volts on sensor connector pin A & D. Refer to the service manual for more details.
C2145	IBR	Brake Lever Sensor (BRLS) power shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 4.5 to 5 volts on sensor connector pin A & D. Refer to the service manual for more details.
C2145	IBR 2013	Brake Lever Sensor (BRLS) power shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 4.5 to 5 volts on sensor connector pin A & D. Refer to the service manual for more details.
C2145	IBR_II	Brake Lever Sensor (BRLS) power shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault	Check for 4.5 to 5 volts on sensor connector pin A & D. Refer to the service manual for more details.

			detected when the engine is running or stopped.	
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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2146	IBR	Brake Lever Sensor (BRLS) signals A/B reading difference	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C2146	IBR 2013	Brake Lever Sensor (BRLS) signals A/B reading difference	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C2146	IBR_II	Brake Lever Sensor (BRLS) signals A/B reading difference	Damaged sensor, damaged circuit wires, damaged connector or damaged iBR pins. Fault detected when the engine is running or stopped.	Check for 0,5 to 3V on pin F and 0,25 to 1.5 on pin C.
C2150	IBR	System current software breaker	iBR input current too high.	Clean and check for damage in the reverse gate and nozzle area. Refer to the service manual for more details.
C2150	IBR 2013	System current software breaker	iBR input current too high.	Clean and check for damage in the reverse gate and nozzle area. Refer to the service manual for more details.

C2150	IBR_II	System current software breaker	iBR input current too high.	Clean and check for damage in the reverse gate and nozzle area. Refer to the service manual for more details.
C2151	IBR	System disabled and need activation	System is locked. Need activation.	Use B.U.D.S. iBR unlock function. Refer to the service manual for more details.
C2151	IBR 2013	System disabled and need activation	System is locked. Need activation.	Use B.U.D.S. iBR unlock function. Refer to the service manual for more details.
C2151	IBR_II	System disabled and need activation	System is locked. Need activation.	Use B.U.D.S. iBR unlock function. Refer to the service manual for more details.
C2152	IBR_II	System not fit in ECM	iBR System is not fit in the ECM	Use the correct ECM. If available use the "upgrade" to fit/unfit iBR
C2155	IBR	Water temperature sensor overheat	iBR cooling system failure. iBR unit failure.	Check iBR cooling circuit. Replace iBR unit. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2155	IBR 2013	Water temperature sensor overheat	iBR cooling system failure. iBR unit failure.	Check iBR cooling circuit. Replace iBR unit. Refer to the service manual for more details.
C2155	IBR_II	Water temperature sensor overheat	iBR cooling system failure. iBR unit failure.	Check iBR cooling circuit. Replace iBR unit. Refer to the service manual for more details.
C2161	IBR	Low voltage detected	Battery failure, rectifier failure, damaged circuit wires, battery terminal connection, damaged AC generator or damaged connectors. Ignore fault if "occurred"	Check fuses #6 (REFER TO WIRING DIAGRAM). Check ground continuity to the engine block. Refer to the service manual for more details.

C2161	IBR 2013	Low voltage detected	Battery failure, rectifier failure, damaged circuit wires, battery terminal connection, damaged AC generator or damaged connectors. Ignore fault if "occurred"	Check fuses #6 (REFER TO WIRING DIAGRAM). Check ground continuity to the engine block. Refer to the service manual for more details.
C2161	IBR_II	Low voltage detected	Battery failure, rectifier failure, damaged circuit wires, battery terminal connection, damaged AC generator or damaged connectors. Ignore fault if "occurred"	Check fuses #6 (REFER TO WIRING DIAGRAM). Check ground continuity to the engine block. Refer to the service manual for more details.
C2200	IS	Sensors calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iS is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2210	IS	Bridge/CPU temperature sensor overheat	Hardware failure or external heat source.	Check for over utilization / heat.
C2220	IS	Application calibration is corrupted	Incompatible firmware or memory failure.	If the fault comes active when the iS is activated and stays active, verify if a software update is available. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2221	IS	Application parameters corrupted (backup #1 or #2)	Unexpected battery power lost or memory failure. Ignore fault if "occurred"	Verify starting and charging system circuits. Clear fault. Refer to the service manual for more details.

C2230	IS	Internal motor drive failure	Motor voltage feedback not fitting with the command.	If the fault comes active when the iS is activated and stays active, verify if a software update is available. Refer to the service manual for more details.
C2231	IS	Motor shorted to ground/battery	Current leak detected when the bridge is off.	Check suspension actuator pump wiring.
C2232	IS	Motor open	No current while activated.	Check suspension actuator pump and/or wiring.
C2233	IS	Motor current software breaker	Motor current too high.	Check suspension actuator pump.
C2240	IS	Seat position sensor error Open, Shorted to Gnd	Sensor not connected.	Check system circuit at iS module. (REFER TO WIRING DIAGRAM)
C2250	IS	System current software breaker	Battery input current too high.	Check suspension actuator pump.
C2251	IS	System disabled and need activation	System is locked for safety. Need activation.	Activate iS using B.U.D.S. activation function.
C2252	IS	TOPS active	Warning only: TOPS detected by the system, the suspension is disable while the TOPS is "ON".	Refer to the service manual for more details.
C2260	IS	System under voltage	System under voltage warning.	Check battery and charging system.
C2310	WSM	Motor current software breaker	The Weedless system sense an output current over 15 amps.	Check Weedless actuator
C2320	WSM	Application calibration is corrupted	The system was shutdown improperly	If inactive, do nothing and clear the fault. If active, close BUDS and wait for complete shutdown. If the fault is still active, look for software update, if not available, replace module
C2325	WSM	Maximum activation timer fault	The system detected a Weedless cycle too long (over 22 seconds). The fault is set to	Check Weedless actuator or position sensor

			INACTIVE at every retry.	
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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
C2326	WSM	Maximum deactivation timer fault	The system detected a too long delay to return at the stored position (over 22 seconds). The fault is set to INACTIVE at every retry.	Check Weedless actuator or position sensor
C2327	WSM	Position sensor not calibrated	Position sensor not calibrated properly	Follow the procedure to calibrate the sensor using BUDS
C2328	WSM	Actuator current sensor not calibrated	Incompatible firmware or memory failure.	If inactive, do nothing and clear the fault. If active, close BUDS and wait for complete shutdown. If the fault is still active, look for software update, if not available, replace module
C2329	WSM	System current sensor not calibrated	Incompatible firmware or memory failure.	If inactive, do nothing and clear the fault. If active, close BUDS and wait for complete shutdown. If the fault is still active, look for software update, if not available, replace module
C2330	WSM	Internal motor drive failure	Motor voltage feedback not fitting with the command.	If inactive, do nothing and clear the fault. If active, close BUDS and wait for complete shutdown. If the fault is still active, look for software update, if not available, replace module
C2331	WSM	Motor short circuit	The Weedless system detect a short circuit on the output (actuator)	Check Weedless actuator
C2332	WSM	Motor open circuit	The Weedless system detect an open circuit on the output (actuator)	Check Weedless actuator

C2341	WSM	Position sensor shorted to Vcc	The Weedless system detect a position sensor shorten to Battery +12V	Check position sensor
C2360	WSM	System under-voltage	The Weedless system detect a voltage under 7 volts	Check battery and charging system.
C2370	WSM	Actuator stored position error	One second after power up or at the end of a weedless cycle, if the gate position is not at the stored position, the fault will come active	Check Weedless actuator or position sensor

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0001	CLUSTER	Port side ballast sensor disconnected fault		
P0002	CLUSTER	Starboard side ballast sensor disconnected fault		
P0008	ECM	Engine phase detection fault		
P0030	ECM	Heater Power Stage fault for lambda sensor upstreams of catalyst		
P0031	ECM	Heater Power Stage fault for lambda sensor upstreams of catalyst - short circuit to GND		
P0032	ECM	Heater Power Stage fault for lambda sensor upstreams of catalyst - short circuit to V+		
P0036	ECM	Heater Power Stage fault for lambda sensor downstreams of catalyst		
P0037	ECM	Heater Power Stage fault for lambda sensor downstreams		

		of catalyst - short circuit to GND		
P0038	ECM	Heater Power Stage fault for lambda sensor downstreams of catalyst - short circuit to V+		
P0106	ECM	Manifold Intake pressure sensor out of range	Sensing port dirty or blocked. Sensor failure or unexpected reading at idle. Sensor fallen out of housing or leaking inlet. For a leak of the Intake Manifold, the ECM will diagnose it only if the RPM is greater than 5000 RPM.	Check system circuits A-B4, A-G4, A-H2. Make sure that the sensor housing is correctly inserted into the manifold. Check sensor connector for: a) 5 volts supply from ECM on pin 1. b) Ground supply from ECM on pin 2. c) Analog voltage from sensor to ECM on pin 3. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current.
P0107	ECM	Manifold absolute pressure sensor shorted to ground or not connected.	Sensing port dirty or blocked. Sensor failure or unexpected reading at idle. Sensor fallen out of housing or leaking inlet. Connector disconnected.	Check system circuits A-B4, A-G4, A-H2. Make sure that the sensor housing is correctly inserted into the manifold. Check sensor connector for: a) 5 volts on pin 1. b) 0 volt on pin 2. c) 0 volt on pin 3. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current.

Subsection XX (DIAGNOSTIC AND FAULT CODES)

PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
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P0108	ECM	Manifold absolute pressure sensor open circuit or shorted to battery	Sensing port dirty or blocked. Sensor failure or unexpected reading at idle. Sensor fallen out of housing or leaking inlet.	Check system circuits A-B4, A-G4, A-H2. Make sure that the sensor housing is correctly inserted into the manifold. Check sensor connector for: a) 5 volts on pin 1. b) 0 volt on pin 2. c) 0 volt on pin 3. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current.
P0112	ECM	Intake manifold temperature sensor shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check the sensor for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F). Check for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F) between ECM connector pins A-H3 and A-J3. Refer to the service manual for more details.
P0113	ECM	Intake manifold temperature sensor open circuit or shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check the sensor for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F). Check for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F) between ECM connector pins A-H3 and A-J3. Refer to the service manual for more details.
P0116	ECM	Engine coolant temperature signal not plausible	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check for debris or blockage in cooling system. Check the sensor for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F). Check for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F) between ECM connector pins A-A1 and A-J2. Refer to the service manual for more details.

P0117	ECM	Engine coolant temperature sensor fault - Short circuit to GND	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check for debris or blockage in cooling system. Check the sensor for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F). Check for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F) between ECM connector pins A-A1 and A-J2. Refer to the service manual for more details.
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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0118	ECM	Engine coolant temperature sensor fault - Short circuit to V+ or connector disconnected.	Engine overheated or damaged sensor. Connector disconnected.	Check for debris or blockage in cooling system. Check the sensor for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F). Check for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F) between ECM connector pins A-A1 and A-J2. Refer to the service manual for more details.
P0122	ECM	TAS (Throttle Accelerator sensor) 1 fault (short circuit to GND)	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check system circuits B-E1, B-K1, B-K3. Check for 0 volt on sensor connector pin E. Check for 5 volts on sensor connector pin D. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Check for 0.5 to 3 volts on sensor connector pin F. Refer to the service manual for more details.

P0123	ECM	TAS (Throttle Accelerator sensor) 1 fault (short circuit to battery)	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check system circuits B-E1, B-K1, B-K3. Check for 0 volt on sensor connector pin E. Check for 5 volts on sensor connector pin D. The 5 volt supply is shared between the TLS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Check for 0.5 to 3 volts on sensor connector pin F. Refer to the service manual for more details.
P0127	ECM	Intercooler system fault	High air intake temperature detected. Fault detected when the engine is running and stopped. Blocked intercooler water circuit.	Clean intercooler water circuit system. Refer to the service manual for more details.
P0130	ECM	Lambda Sensor fault upstreams of catalyst - signal not plausible		
P0131	ECM	Lambda Sensor fault upstreams of catalyst - short circuit to GND		
P0132	ECM	Lambda Sensor fault upstreams of catalyst - short circuit to V+		

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0133	ECM	Oxygen sensor upstreams of catalyst reacts to slow --> contaminated		
P0134	ECM	Oxygen sensor upstreams of catalyst reacts to slow --> defective		
P0135	ECM	Lambda Sensor heating fault upstreams of catalyst		
P0136	ECM	Lambda Sensor fault downstream of catalyst -		

		signal not plausible		
P0137	ECM	Lambda Sensor fault downstream of catalyst - short circuit to GND		
P0138	ECM	Lambda Sensor fault downstreams of catalyst - short circuit to V+		
P0141	ECM	Lambda Sensor heating fault downstreams of catalyst		
P0171	ECM	Multiplicative mixture adaptation exceeds upper limit--> mixture too lean		An open signal on the Engine coolant temperature (CTS) can trigger that fault
P0172	ECM	Multiplicative mixture adaptation below lower limit--> mixture too rich		An open signal on the Engine coolant temperature (CTS) can trigger that fault
P0201	ECM	Injection Power Stage fault - open line / Cylinder 1	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 2 and ECM connector pin A-B3. Check for 12 volts on pin 2 of injector connector. Check FUSE #13 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.
P0202	ECM	Injection Power Stage fault - open line / Cylinder 2	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 2 and ECM connector pin A-K1. Check for 12 volts on pin 2 of injector connector. Check FUSE #14 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
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P0203	ECM	Injection Power Stage fault - open line / Cylinder 3	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 3 and ECM connector pin A-J1. Check for 12 volts on pin 2 of injector connector. Check FUSE #15 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.
P0217	ECM	High engine coolant temperature detected	High engine coolant temperature detected	Check for debris or blockage in cooling system. Check the sensor for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F). Check for approximately 2280 to 2736 ohms at 19 to 21°C (66 to 70°F) between ECM connector pins A-A1 and A-J2. Refer to the service manual for more details.
P0222	ECM	TAS (Throttle Accelerator sensor) 2 fault (short circuit to GND)	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check system circuits B-A3, B-B3, B-J3. Check for 0 volt on sensor connector pin B. Check for 5 volts on sensor connector pin A. Check for 0.25 to 1.5 volts on sensor connector pin C. Refer to the service manual for more details.
P0223	ECM	TAS (Throttle Accelerator Sensor) 2 fault (short circuit to battery)	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check system circuits B-A3, B-B3, B-J3. Check for 0 volt on sensor connector pin B. Check for 5 volts on sensor connector pin A. Check for 0.25 to 1.5 volts on sensor connector pin C. Refer to the service manual for more details.
P0231	ECM	Fuel pump open circuit or short to ground	Damaged pump, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for approximately 1 ohm between pins A and B of the fuel pump connector. Check FUSE #18 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Check for damaged connector, damaged ECM output pins or ECM failure. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0232	ECM	Fuel pump short circuit to battery	Damaged pump, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for approximately 1 ohm between pins A and B of the fuel pump connector. Check FUSE #18 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Check for damaged connector, damaged ECM output pins or ECM failure. Refer to the service manual for more details.
P0261	ECM	Injector 1 open circuit or shorted to ground	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 1 and ECM connector pin A-B3. Check for 12 volts on pin 2 of injector connector. Check FUSE #13 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.
P0262	ECM	Injector 1 shorted to battery	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 1 and ECM connector pin A-B3. Check for 12 volts on pin 2 of injector connector. Check FUSE #13 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.
P0264	ECM	Injector 2 open circuit or shorted to ground	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 2 and ECM connector pin A-K1. Check for 12 volts on pin 2 of injector connector. Check FUSE #14 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.

P0265	ECM	Injector 2 shorted to battery	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 2 and ECM connector pin A-K1. Check for 12 volts on pin 2 of injector connector. Check FUSE #14 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.
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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0267	ECM	Injector 3 open circuit or shorted to ground	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 3 and ECM connector pin A-J1. Check for 12 volts on pin 2 of injector connector. Check FUSE #15 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.
P0268	ECM	Injector 3 shorted to battery	Damaged injector, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 11.4 to 12.6 ohms between engine connector pin 3 and ECM connector pin A-J1. Check for 12 volts on pin 2 of injector connector. Check FUSE #15 (REFER TO WIRING DIAGRAM) Check for damaged circuit wires. Refer to the service manual for more details.
P0300	ECM	Multiple misfire detected		
P0301	ECM	Misfire cylinder 2 (physical cylinder 1)		
P0302	ECM	Misfire cylinder 0 (physical cylinder 2)		
P0303	ECM	Misfire cylinder 1 (physical cylinder 3)		

P0325	ECM	Knock sensor 1 fault	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM output pins. Open circuit.	Bring engine to 5000 RPM. If fault code appears then check for approximately 5 Mohms between system circuits A-C3 and A-G2. Refer to the service manual for more details.
P0335	ECM	Crankshaft signal error	Damaged sensor, damaged circuit wires, damaged connector, damaged ECM pins or damaged tooth wheel. Connector disconnected.	For the CPS, check for 700 to 900 ohms between terminals A-H1 and A-K2 of ECM connector. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0340	ECM	Camshaft 1 signal error	Damaged sensor, damaged circuit wires, damaged connector, damaged ECM pins or damaged tooth wheel. Connector disconnected.	For the CAPS, check for 12 volts on sensor connector pin 3. Check continuity for circuits A-D4, A-E2 and terminal 4 on engine connector. Check FUSE #12 (REFER TO WIRING DIAGRAM) Engine must run to erase the corrected fault. Refer to the service manual for more details.
P0351	ECM	Ignition coil 1 open circuit or shorted to ground or to battery	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M4. Check for 12 volts on pin 2 of coil connector. Check FUSE #13 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.

P0352	ECM	Ignition coil 2 open circuit or shorted to ground or to battery	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M2. Check for 12 volts on pin 2 of coil connector. Check FUSE #14 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0353	ECM	Ignition coil 3 open circuit or shorted to ground or to battery	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 3 and ECM connector pin A-M1. Check for 12 volts on pin 2 of coil connector. Check FUSE #15 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0354	ECM	Ignition Power Stage fault - short circuit to GND / Cylinder 1	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M4. Check for 12 volts on pin 2 of coil connector. Check FUSE #13 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0355	ECM	Ignition Power Stage fault - short circuit to GND / Cylinder 2	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M2. Check for 12 volts on pin 2 of coil connector. Check FUSE #14 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0356	ECM	Ignition Power Stage fault - short circuit to GND / Cylinder 3	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 3 and ECM connector pin A-M1. Check for 12 volts on pin 2 of coil connector. Check FUSE #15 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.

P0357	ECM	Ignition Power Stage fault - short circuit to V+ / Cylinder 1	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M4. Check for 12 volts on pin 2 of coil connector. Check FUSE #13 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0358	ECM	Ignition Power Stage fault - short circuit to V+ / Cylinder 2	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M2. Check for 12 volts on pin 2 of coil connector. Check FUSE #14 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0359	ECM	Ignition Power Stage fault - short circuit to V+ / Cylinder 3	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 0.85 to 1.15 ohms between engine connector pin 3 and ECM connector pin A-M1. Check for 12 volts on pin 2 of coil connector. Check FUSE #15 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0360	ECM	Ignition Power stage max error & false detection of low battery voltage / Cylinder 1	Signal not plausible, verify battery voltage too low during ignition.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M4. Check for 12 volts on pin 2 of coil connector. Check FUSE #13 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0361	ECM	Ignition Power stage max error & false detection of low battery voltage / Cylinder 2	Signal not plausible, verify battery voltage too low during ignition.	Check for 0.85 to 1.15 ohms between engine connector pin 1 and ECM connector pin A-M2. Check for 12 volts on pin 2 of coil connector. Check FUSE #14 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
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P0362	ECM	Ignition Power stage max error & false detection of low battery voltage / Cylinder 3	Signal not plausible, verify battery voltage too low during ignition.	Check for 0.85 to 1.15 ohms between engine connector pin 3 and ECM connector pin A-M1. Check for 12 volts on pin 2 of coil connector. Check FUSE #15 (REFER TO WIRING DIAGRAM) Refer to the service manual for more details.
P0420	ECM	Catalyst conversion insufficient		
P0512	ECM	Starter power stage detects high current	Damaged solenoid, damaged circuit wires, damaged connector or damaged ECM.	Verify FUSE #16 (5 AMP). Check for 12 volts on pin 2 of the starter relay. Refer to the service manual for more details.
P0513	ECM	Invalid D.E.S.S. Key detected	Key not programmed in ECU.	Program a good key
P0520	ECM	Oil pressure switch functional problem	Engine leak, oil pump failure, damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check resistance at 0 RPM and above 3500 RPM. Switch is normally closed, ECM connector pin A-E3 Refer to the service manual for more details.
P0523	ECM	Oil pressure sensor fault	Engine leak, oil pump failure, damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins. Fault detected when the engine is running or stopped.	Check resistance at 0 RPM and above 3500 RPM. Refer to the service manual for more details.
P0524	ECM	Low oil pressure condition	Low oil level, engine leak, oil pump fault.	Check oil level. Check impedance of sensor. Refer to the service manual for more details.
P0544	ECM	Exhaust gas temperature sensor functional problem	Damaged sensor, damaged circuit wires, damaged connector or	Check for approximately 2280 to 2736 ohms at temperature of 19 to 21°C (66 to 70°F) between system circuits A-H4 and A-J4. Refer to the service manual for more details.

			damaged ECM output pins.	
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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P0545	ECM	Exhaust gas temperature sensor shorted to ground	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for approximately 2280 to 2736 ohms at temperature of 19 to 21°C (66 to 70°F) between system circuits A-H4 and A-J4. Refer to the service manual for more details.
P0546	ECM	Exhaust gas temperature sensor open circuit or shorted to battery	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for approximately 2280 to 2736 ohms at temperature of 19 to 21°C (66 to 70°F) between system circuits A-H4 and A-J4. Refer to the service manual for more details.
P0560	ECM	Battery voltage not plausible	Battery failure, rectifier failure, damaged circuit wires, battery terminal connection, damaged AC generator or damaged connectors.	Check fuses #6 (REFER TO WIRING DIAGRAM). Check ground continuity to the engine block. Refer to the service manual for more details.
P0562	ECM	Battery voltage too low	Battery failure, rectifier failure, damaged circuit wires, battery terminal connection, damaged AC generator or damaged connectors.	Check fuses #6 (REFER TO WIRING DIAGRAM). Check ground continuity to the engine block. Refer to the service manual for more details.
P0563	ECM	Battery voltage too high	Battery failure, rectifier failure or battery terminal connection.	Check for regulator-rectifier failure. Refer to the service manual for more details.
P0564	CLUSTER	Cruise switch fault	The cruise switch is shorted or activated more	Verify the cruise switch if it is normally open and close when activated.

			than 60 seconds.	
P0606	ECM	ECM ADC fault	Damaged ECM.	Replace ECM

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P060D	ECM	TAS (Throttle Accelerator sensor) synchronization error	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM pins.	Check system circuits B-E1, B-K1, B-K3, B-A3, B-B3, B-J3 Check for 0 volt on sensor connector pin B & E. Check for 5 volts on sensor connector pin A & D. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Check for 0.5 to 3 volts on sensor connector pin F and 0.25 to 1.5 on C Refer to the service manual for more details.
P060E	ECM	Throttle Actuator - Controller Fault- digital position control exceeds limit		
P0610	ECM	Variant coding fault		
P0629	CLUSTER	Fuel sensor disconnected fault	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 2.6 ohms (full tank) to 93.6 ohms (empty tank) between pin C and pin D at the fuel pump connector. Check system circuit at the gauge Pin 19 and 20. (REFER TO WIRING DIAGRAM)
P0629	CLUSTER_CAFE	Fuel sensor disconnected fault	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for 2.6 ohms (full tank) to 93.6 ohms (empty tank) between pin C and pin D at the fuel pump connector. Check system circuit at the gauge Pin 19 and 20. (REFER TO WIRING DIAGRAM)
P062F	ECM	ECM EEPROM fault - exchange ECM	Damaged ECM.	Replace ECM.

P06B6	ECM	ECM Fast ADC fault (knock detection line)		
P1030	ECM	Heater Power Stage fault for lambda sensor upstreams of catalyst - open line		
P1036	ECM	Heater Power Stage fault for lambda sensor downstreams of catalyst - open line		
P1106	ECM	Altitude correction factor (fho) not plausible - out of range		
P1120	ECM	Throttle positions calculated from TPS 1 and TPS 2 not corresponding	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P1130	ECM	Lambda Sensor fault upstreams of catalyst - open line		
P1136	ECM	Lambda Sensor fault downstream of catalyst - open line		
P1171	ECM	Additive mixture adaptation exceeds upper limit --> mixture too lean		An open signal on the Engine coolant temperature (CTS) can trigger that fault
P1172	ECM	Additive mixture adaptation below lower limit --> mixture too rich		An open signal on the Engine coolant temperature (CTS) can trigger that fault
P1264	ECM	Ignition Power stage overload	Damaged coil, damaged circuit wires, damaged connector or damaged ECM output pins. Fault detected when the engine is running.	

P1502	ECM	T.O.P.S. functional problem	Boat or sensor upside down, damaged circuit wires, damaged connector or damaged ECM output pins.	Check continuity for circuits A-C4, A-G1, A-F4. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Refer to the service manual for more details.
P1503	ECM	T.O.P.S. switch short circuit to 12V	Boat or sensor upside down, damaged circuit wires, damaged connector or damaged ECM output pins.	Check continuity for circuits A-C4, A-G1, A-F4. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Refer to the service manual for more details.
P1504	ECM	T.O.P.S. switch short circuit ground	Boat or sensor upside down, damaged circuit wires, damaged connector or damaged ECM output pins.	Check continuity for circuits A-C4, A-G1, A-F4. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Refer to the service manual for more details.
P1505	ECM	T.O.P.S. switch fault non plausible state	Boat or sensor upside down, damaged circuit wires, damaged connector or damaged ECM output pins. Open circuit.	Check continuity for circuits A-C4, A-G1, A-F4. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P1506	ECM	T.O.P.S. switch open circuit	Boat or sensor upside down, damaged circuit wires, damaged connector or damaged ECM output pins. Open circuit.	Check continuity for circuits A-C4, A-G1, A-F4. The 5 volt supply is shared between the TAS signal 1, TOPS and MAPS. Verify all three sensor if one is pulling too much current. Refer to the service manual for more details.

P1550	ECM	Otas sensor voltage not plausible	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM. Open circuit.	Check continuity for circuits B-H3, B-H1 and FUSE #12. Refer to the service manual for more details.
P1606	ECM	ECM ADC fault - exchange ECM	Damaged ECM.	No service action available for fault P1606.
P160E	ECM	Throttle Actuator - Controller Fault - digital position control below limit	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1610	ECM	Throttle Actuator - Power Stage fault	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1611	ECM	Throttle Actuator - Power Stage fault	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1612	ECM	Throttle Actuator - Power Stage fault	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1613	ECM	Throttle Actuator - Power Stage fault	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.

P1614	ECM	Throttle Actuator - Return-Spring check not passed / Spring does not close	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P1615	ECM	Throttle Actuator - Position monitoring fault	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1616	ECM	Throttle Actuator - Default position check or learning fault	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1619	ECM	Throttle Actuator - Adaptation of upper mechanical limit failed	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1620	ECM	Throttle Actuator - Adaptation of lower mechanical limit failed	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1621	ECM	Throttle Actuator - Abortion of adaptation	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.

P1622	ECM	Throttle Actuator - Repeated abortion of adaptation	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P1654	ECM	Voltage of D.E.S.S. key switch out of range	Damaged D.E.S.S. key switch, damaged circuit wires, damaged connector or damaged ECM output pins.	Remove D.E.S.S. key and check system circuit B-B2. Refer to the service manual for more details.
P1657	ECM	Electrical fault of D.E.S.S. key communication line	Damaged D.E.S.S. key switch, damaged circuit wires, damaged connector or damaged ECM output pins.	Remove D.E.S.S. key and check system circuit B-B2. Refer to the service manual for more details.

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Subsection XX (DIAGNOSTIC AND FAULT CODES)

PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P1658	ECM	Faulty D.E.S.S. key communication	Damaged D.E.S.S. key switch, damaged circuit wires, damaged connector or damaged ECM output pins.	Remove D.E.S.S. key and check system circuit B-B2. Refer to the service manual for more details.
P1661	ECM	iBR malfunction	iBR fault detected by ECM.	Remove D.E.S.S. key Perform an electrical system shut down. Clear fault.
P1662	ECM	iBR torque request is not plausible	iBR fault detected by ECM.	Perform iBR software update if available or replace iBR.
P1679	ECM	Main Relay Sticking	Permanent 12V is present on ECM Pin B-M4.	ECU pin B-M4 is permanently supplied thru 15 amp fuse and it should be accessory 12 Vdc.
P16B6	ECM	ECU Fast ADC fault (knock detection line)		

P16B7	ECM	ECU Fast ADC fault (knock detection line)		
P16B8	ECM	ECU Fast ADC fault (knock detection line)		
P16C0	ECM	Fault of ECM ADC		
P16C1	ECM	Fault of ECM ADC		
P16C2	ECM	Fault of ECM monitoring module		
P16C3	ECM	Monitoring fault due to Accelerator Sensor check		
P16C4	ECM	Monitoring fault due to engine speed check		
P16C5	ECM	Safety fuel cut off activ - Monitoring level 1		
P16C6	ECM	Safety fuel cut off activ - Monitoring level 2		
P16C7	ECM	Monitoring fault due to throttle valve plausibility check	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.
P16C8	ECM	Monitoring fault due to exceeding permitted throttle valve position	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P16C9	ECM	Monitoring detected non plausible D.E.S.S. key state	Damaged D.E.S.S. key switch, damaged circuit wires, damaged connector or damaged ECM output pins.	Remove D.E.S.S. key and check system circuit B-B2. Refer to the service manual for more details.
P16CA	ECM	ECU detected faulty watch	Damaged ECM.	Replace ECM.

		dog line - ECU defect		
P16CB	ECM	ECU switch off through watch dog line (hardware fault) - ECU defect	Damaged ECM.	Replace ECM.
P2080	ECM	Exhaust temperature not plausible	Damaged sensor, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for approximately 2280 to 2736 ohms at temperature of 19 to 21°C (66 to 70°F) between system circuits A-H4 and A-J4. Refer to the service manual for more details.
P2081	ECM	Exhaust temperature sensor fault	Intermittent connection. Damaged sensor, damaged circuit wires, damaged connector or damaged ECM output pins.	Check for approximately 2280 to 2736 ohms at temperature of 19 to 21°C (66 to 70°F) between system circuits A-H4 and A-J4. Refer to the service manual for more details.
P212C	ECM	Electrical lower-range violation TPS 2	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM
P212D	ECM	Electrical upper-range violation TPS 2	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM
P2159	ECM	TAS (Throttle Accelerator sensor) signal not plausible		
P2245	ECM	Lambda Sensor aging fault downstreams of catalyst - Sensor Voltage too low		
P2246	ECM	Lambda Sensor aging fault downstreams of catalyst - Sensor Voltage too high		
P2279	ECM	Air intake manifold leak downstream of throttle		

Subsection XX (DIAGNOSTIC AND FAULT CODES)

PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
P2428	ECM	High exhaust temperature detected	Exhaust overheat, damaged sensor or damaged circuit wires.	Check cooling system for blockage. Check if the exhaust injection valve is properly calibrated. Refer to the service manual for more details.
P2620	ECM	TPS value not plausible	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM
P2621	ECM	Electrical lower-range violation TPS 1	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM
P2622	ECM	Electrical upper-range violation TPS 1	Damaged throttle actuator, damaged circuit wires, damaged connector or damaged ECM.	Check system circuit, perform closed throttle with B.U.D.S. Replace throttle actuator, replace ECM
U0100	ECM	ECU could not establish CAN communication with partner ECU		
U0129	ECM	CAN communication error between ECM and iBR module	iBR fault detected by ECM. C.A.N. circuit failure, iBR or ECM failure. Disconnected connector.	Check C.A.N. circuits wires. Replace iBR. Refer to the service manual for more details.
U0129	IS	iBR CAN messages timeout or validity	Warning only: the iS module lost communication with the iBR.	If fault ACTIVE, verify CAN connection between iBR and iS
U0300	ECM	Exchange security - Wrong	Incorrect ECM	Install proper

		ECM	or cluster for engine.	recommended ECM or cluster for vehicle.
U0401	IBR	ECM CAN messages timeout or validity	C.A.N. circuit failure, ECM software failure.	Check C.A.N. circuits wires. Replace ECM. Refer to the service manual for more details.
U0401	IS	ECM CAN messages timeout or validity	Warning only: the iS module lost communication with the engine ECU.	If fault ACTIVE, verify CAN connection between ECM and iS
U0401	IBR 2013	ECM CAN messages timeout or validity	C.A.N. circuit failure, ECM software failure.	Check C.A.N. circuits wires. Replace ECM. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
U0401	IBR_II	ECM CAN messages timeout or validity	C.A.N. circuit failure, ECM software failure.	Check C.A.N. circuits wires. Replace ECM. Refer to the service manual for more details.
U0402	IBR_II	ECM CAN messages timeout or validity (320)	C.A.N. circuit failure, ECM software failure.	Check C.A.N. circuits wires. Replace ECM. Refer to the service manual for more details.
U0403	IBR_II	ECM CAN messages timeout or validity (516)	C.A.N. circuit failure, ECM software failure.	Check C.A.N. circuits wires. Replace ECM. Refer to the service manual for more details.
U0457	IBR	Cluster CAN messages timeout or validity	C.A.N. circuit failure, Cluster software failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.
U0457	IS	Cluster CAN messages timeout or validity	Warning only: the iS module lost communication with the Cluster.	If fault ACTIVE, verify CAN connection between Cluster and iS
U0457	IBR 2013	Cluster CAN messages timeout or validity	C.A.N. circuit failure, Cluster software failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.

U0457	IBR_II	Cluster CAN messages timeout or validity	C.A.N. circuit failure, Cluster software failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.
U1301	ECM	Software / Data compatibility error between starboard and port ECUs		
U16A1	ECM	Cluster CAN Timeout error-Missing CAN ID 514h	Cluster fault detected by ECM. C.A.N. circuit failure, Instrument cluster or ECM failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.
U16A2	ECM	Cluster CAN Timeout error-Missing CAN ID 230h	Cluster fault detected by ECM. C.A.N. circuit failure, Instrument cluster or ECM failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.
U16A3	ECM	Cluster CAN Timeout error-Missing CAN ID 408h	Cluster fault detected by ECM. C.A.N. circuit failure, Instrument cluster or ECM failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
U16A4	ECM	iBR CAN Timeout error-Missing CAN ID 010h	iBR fault detected by ECM. C.A.N. circuit failure, iBR or ECM failure. Disconnected connector.	Check C.A.N. circuits wires. Replace iBR. Refer to the service manual for more details.
U16A5	ECM	iBR CAN Timeout error-Missing CAN ID 012h	iBR fault detected by ECM. C.A.N. circuit failure, iBR or ECM failure. Disconnected connector.	Check C.A.N. circuits wires. Replace instrument iBR. Refer to the service manual for more details.

U16A6	ECM	Cluster check sum error - CAN ID230h	Cluster fault detected by ECM. C.A.N. circuit failure, Instrument cluster or ECM failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.
U16A7	ECM	Cluster check sum error - CAN ID408h	Cluster fault detected by ECM. C.A.N. circuit failure, Instrument cluster or ECM failure.	Check C.A.N. circuits wires. Replace instrument Cluster. Refer to the service manual for more details.
U16A8	ECM	iBR check sum error - CAN ID010h	iBR fault detected by ECM. C.A.N. circuit failure, ECM software failure.	Check C.A.N. circuits wires. Replace iBR. Refer to the service manual for more details.
U16A9	ECM	iBR check sum error - CAN ID012h	iBR fault detected by ECM. C.A.N. circuit failure, ECM software failure.	Check C.A.N. circuits wires. Replace iBR. Refer to the service manual for more details.
U16AA	ECM	Cluster CAN Timeout error-Missing CAN ID 410h		
U16AB	ECM	Cluster check sum error - CAN ID410h		
U16AC	ECM	Starboard ECU - Check sum error - CAN ID 014h		
U16AD	ECM	Port ECU - Check sum error - CAN ID 015h		
U16AE	ECM	Starboard ECU - Check sum error - CAN ID 016h		
U16AF	ECM	Port ECU - Check sum error - CAN ID 017h		
U16B0	ECM	Starboard ECU - Check sum error - CAN ID 01Ah		

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PCODE	MODULE	DESCRIPTION	CAUSE	ACTION
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U16B1	ECM	Port ECU - Check sum error - CAN ID 01Bh		
U16B2	ECM	Starboard ECU - Check sum error - CAN ID 102h		
U16B3	ECM	Port ECU - Check sum error - CAN ID 1A2h		
U16B4	ECM	Starboard ECU - CAN Timeout error-Missing CAN ID 014h		
U16B5	ECM	Port ECU - CAN Timeout error-Missing CAN ID 015h		
U16B6	ECM	Starboard ECU - CAN Timeout error-Missing CAN ID 016h		
U16B7	ECM	Port ECU - CAN Timeout error-Missing CAN ID 017h		
U16B8	ECM	Starboard ECU - CAN Timeout error-Missing CAN ID 01Ah		
U16B9	ECM	Port ECU - CAN Timeout error-Missing CAN ID 01Bh		
U16BA	ECM	Starboard ECU - CAN Timeout error-Missing CAN ID 102h		
U16BB	ECM	Port ECU - CAN Timeout error-Missing CAN ID 1A2h		
U16BC	ECM	Cluster CAN Timeout error-Missing CAN ID 5B4h		
U16BD	ECM	CAN Timeout or Check sum error of synchronization messages (Twin engine vehicles)		
U1700	ECM	ECU could not detect its position (starboard/port)		
U1701	ECM	Partner ECU could not detect its position (starboard/port)		
U1702	ECM	Both ECUs detected same installation position (starboard/port)		