REELMASTER 7000 DIAGNOSTIC FAULT CODE QUICK REFERENCE TABLE

Directions:

Perform the Service Actions in the order they are presented. Every Service Action has the potential to repair the fault completely. Test the machine after the completion of each Service Action to verify the active fault remains. If the fault is still active, perform the next Service Action step. Continue this process until the fault is no longer reported.

Fault Number	Fault Title	Controller Affected	Fault Condition/ Circuit Description	Additional Notes	Service Actions (Repair or replace any worn or damaged parts)
1	Engine Coolant Temperature High – CRM Stop	Master TEC	This fault is reported when the engine coolant temperature reaches or exceeds 220 ºF (104.4 ºC) for 10 seconds or longer.	The cutting units will be disabled when this fault is reported.	1) Check the cooling system, including the cooling fan, the radiator airflow passages, and the coolant level. 2) Test the coolant temperature sender.
2	Engine Coolant Temperature High – Engine Shutdown	Master TEC	This fault is reported when the engine coolant temperature reaches or exceeds 240 ºF (115 ºC) for 10 seconds or longer.	The engine will be shut off to prevent damage when this fault is reported.	1) Check the cooling system, including the cooling fan, the radiator airflow passages, and the coolant level. 2) Test the coolant temperature sender.
3	Fuse Failure	Master TEC	This fault is reported when the fuse is blown on one of the power supply circuits on the master TEC.		1) Test all three 7.5 amp fuses protecting outputs 1 through 14 on the master TEC.
4	Input Pull-up Enable (IPE) Voltage Too High	Master TEC	This fault is reported when the inputs are not being properly powered within the TEC-5002.	Use Toro DIAG to save the machine timers and counters file before replacing the TEC-5002 controller. The engine will be disabled to prevent damage when this fault is reported.	1) Replace the TEC-5002.

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5	Main Power Relay Failure	Master TEC	This fault is reported when the TEC-5002 detects all 3 of the 12 Vdc battery voltage circuits to the master TEC are open.	Use Toro DIAG to save the machine timers and counters file before replacing the TEC-5002 controller.	1) Check all 3 of the 7.5 amp fuses. 2) Test the main power relay. 3) Test the wiring harness. 4) Replace the TEC-5002.
6	Key Start Timeout	Master TEC	This fault is reported when the ignition switch is held in the START position for more than 30 seconds.	The engine will be disabled to prevent damage when this fault is reported.	1) Cycle the ignition switch. 2) Test the ignition switch using the InfoCenter. 3) Test the ignition switch and circuit wiring manually.
7	Software Incompatible	Master TEC	This fault is reported when one or more controller's software is incompatible with another.	The machine will be disabled when this fault is reported.	1) Update the machine software using Toro DIAG.
8	12 Vdc Charging System Voltage Too High	Master TEC	This fault is reported when the TEC-5002 detects that the 12 Vdc charging system (alternator) is generating more than 16.3 Vdc.		1) Test the alternator. 2) Test the wiring harness.
9	12 Vdc Charging System Voltage Too Low	Master TEC	This fault is reported when the TEC-5002 detects that the 12 Vdc charging system (alternator) is generating less than 8.8 Vdc.		1) Check the alternator drive belt. 2) Test the alternator. 3) Test the wiring harness.
10	CAN Bus Timeout - Engine	Master TEC	This fault is reported when the master TEC has lost communication with the engine control unit (ECU).	Yanmar engines will go to idle when this fault is reported.	1) Check CAN connection to the ECU. 2) Verify power to engine controller. 3) Check the resistance of the CAN bus.

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12	CAN Bus Timeout - InfoCenter	Master TEC	This fault is reported when the master TEC has lost communication with the InfoCenter.		1) Check the CAN connection to the InfoCenter. 2) Verify power to InfoCenter. 3) Check the resistance of the CAN bus.
13	Ignition switch malfunction	Master TEC	This fault is reported when the TEC-5002 detects the key START input is active but the key RUN input is off.	The ignition switch has 2 output pins. The key RUN input needs to be active when the key START input is activated. If the key START input is active without the key RUN input being active, this fault is reported. The machine will be shut down when this fault reports.	1) Test the ignition switch using the InfoCenter. 2) Test the ignition switch manually. 3) Test the ignition switch circuit wiring.
14	Low Engine Oil Pressure	Master TEC	This fault is reported when engine oil pressure is low.	The engine will shut down after 10 seconds of run time with this fault reported.	1) Check engine oil level. 2) Test engine oil pressure at idle. 3) Replace oil pump.
15	Engine Speed Switch (Throttle) Broken	Master TEC	This fault is reported when the TEC-5002 detects an engine speed increase signal and an engine speed decrease signal at the same time.	The engine speed switch may be shorted internally, or the outputs of the engine speed switch may be shorted together in the seat wire harness.	1) Test the engine speed switch. 2) Test the engine speed switch wiring.
16	12 Vdc Alternator Malfunction	Master TEC	This fault is reported when the alternator is not charging properly.	The engine will shut down after 10 seconds of run time with this fault reported.	1) Test the alternator. 2) Test the wiring harness.
18	Hydraulic Fluid Temperature Out of Range	Master TEC	This fault is reported when the hydraulic fluid temperature sensor is either open or shorted.	The temperature sensor is also called a temperature sender. The cooling fan speed will be increased to maximum rpm when this fault reports.	1) Test the temperature sensor wiring. 2) Replace the temperature sensor.
19	Engine Coolant Temperature Out of Range	Master TEC	This fault is reported when the engine coolant temperature sensor is either open or shorted.	The temperature sensor is also called a temperature sender. The cooling fan speed will be increased to maximum rpm when this fault reports.	1) Test the temperature sensor wiring. 2) Replace the temperature sensor.

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24	Joystick Broken	Master TEC	This fault is reported when the joystick switch is broken or shorted internally.	The rear switch under the joystick is used to lower (and engage) the cutting units. The front switch is used to raise (and disengage) them. The deck will continue in the direction the switch is shorted to.	1) Test the joystick switches. 2) Test the joystick circuit wiring.
26	Engine Start Output Signal Current is Too High	Master TEC	This fault is reported when the current from the TEC-5002 that is used to energize the starter relay coil is greater than 5 amps.	If the fusible link connected to the starter motor is faulty, all electrical power to the machine (including the InfoCenter) is shut off. Use Toro DIAG to save the machine timers and counters file before replacing the TEC-5002 controller.	1) Test the engine start output signal using the InfoCenter. 2) Test the start relay. 3) Test the engine start output signal (Out 1) wiring. 4) Replace the TEC-5002 controller.
27	Engine Run Output Circuit Fault to Fuel Actuator	Master TEC	This fault is reported when the engine run output circuit from the TEC-5002 is supplying more than 5 amps of current to the fuel actuator.	If a problem occurs with the fuel actuator, the engine mechanical governor will control engine speed above high idle (3,150 rpm). Use Toro DIAG to save the machine timers and counters file before replacing the TEC-5002 controller.	1) Test the engine start output signal using the InfoCenter. 2) Test the start relay. 3) Test the key run output signal (Out 2) wiring. 4) Replace the TEC-5002 controller.
28	Range Select Output High	Master TEC	This fault is reported when current through the Range Select output is greater than 5 amps.	Use Toro DIAG to save the machine timers and counters file before replacing the TEC-5002 controller.	1) Test the Range High output signal using the InfoCenter. 2) Test the range 2WD/4WD output signal (Out 14) wiring. 3) Replace the TEC-5002 controller.

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35	Fan Reverse Output High	Master TEC	This fault is reported when current output to the fan reverse direction circuit is greater than 5 amps.		1) Test the fan direction output signal using the InfoCenter. 2) Test the start relay. 3) Test the fan direction output signal (Out 3) wiring. 4) Replace the TEC-5002 controller.
37	TEC Output Current to Glow Plug Relay is Excessive	Master TEC	This fault is reported when the TEC-5002 output current to energize the glow plug relay exceeds 5 amps.	Use Toro DIAG to save the machine timers and counters file.	1) Test the glow relay. 2) Test the glow relay wiring. 3) Test the glow relay output signal (Out 11). 4) Replace the TEC-5002 controller.
53	Enable Out	Master TEC	This fault is reported when the output current exceeds 5 amps from the TEC-5002 to the enable circuit.	Use Toro DIAG to save the machine timers and counters file.	1) Test the Out 13 signal using the InfoCenter. 2) Test the Lower Reels control function. 3) Inspect the wiring and connectors for corrosion. 4) Replace the TEC-5002 controller.
55	Front Out	Master TEC	This fault is reported when the output current exceeds 5 amps from the TEC-5002 to the front PTO circuit.	Use Toro DIAG to save the machine timers and counters file.	1) Test the Out 5 signal using the InfoCenter. 2) Test the front reels for function. 3) Inspect the wiring and connectors for function. 4) Replace the TEC-5002 controller.