Scotsman®

Bulletin Number: PS - 3 - 2005
Bulletin Date: March 2005

SERVICE BULLETIN

Subject: CM^3 Controller Revision Change

The controller used in SCE275, CME256, CME306, CME456, CME506, CME656, CME686, CME806, CME810, CME1056, CME1356, CME1386, CME1656, CME1686, CME1856, CME2006 and CME2086 has been changed. The service controller, 12-2838-23, has also been changed.

The change is a revision to the existing controller. No part numbers change. The new revision, number 9, **adds a new diagnostic procedure**. All other prior features remain as they were.

New Diagnostic

The new diagnostic procedure checks two functions of the controller:

1. At the beginning of the diagnostic, all the controller's relays are automatically switched on in a particular sequence for a short time to confirm that power is going to the electrical component and that the component is operating.

2. At the end of that test the water level sensor is checked. The green light display on the controller changes as the float stem is moved up and down in the sensor.

Electrical Component Test Sequence:

1. **Water inlet valve test**. Verifies that the water inlet solenoid valve opens and water fills the sump. Some water may overflow into the bin.
2. **Water Pump test**. With water in the sump from the prior test, the pump starts and circulates water.
3. **Purge valve test**. Purge valve opens to discharge water. No effect on overflow models.
4. **Compressor test**. Compressor starts, hot gas valve open for short time.
5. **Harvest bypass valve test**. Compressor on, check valve remote systems verify that the harvest by-pass valve opens.
6. **All off test**. Verifies that the relays open.
7. **Hot gas valve test.** Verifies that the hot gas valve opens.
8. **Fan motor test.** The fan motor is switched on to verify its operation.

To start the diagnostic process

1. Push and hold the Off button until the unit shuts off.
2. Push and hold the Off button again until the Purge indicator lights (green lights) switch on.
3. Push and hold the Clean button until the bin full light starts to blink, that starts the diagnostic. The test will begin and end automatically.

Part One, Electrical Component Test. It can be confirmed visibly, audibly or by volt or amp meter

		Model Type - See Notes Below			
Test	Seconds On	**A.** Air or Water Cooled	**B**. Check Valve Remote	**C**. Pump Down Remote	**D**. Eclipse
1	30	Water inlet valve	same as A	same as A	same as A
2	10	Water Pump	same as A	same as A	same as A
3	10	Pump, Hot gas valve (and purge valve when used)	same as A	same as A - but no purge valve	same as A, but vapor inlet valve in place of hot gas valve, and adding cond. bypass and receiver inlet valves
4	5	Hot gas valve, compressor	same as A	same as A, plus the liquid line valve	same as A, but vapor inlet valve in place of hot gas valve, and adding cond. bypass and receiver inlet valves
5	15	Compressor	same as A (plus fan motor), also harvest by pass valve	same as A (plus fan motor), also liquid line valve	same as A (plus fan motor)
6	5	None	same as A	same as A	same as A
7	10	Hot gas valve	same as A	same as A	same as A, but vapor inlet valve in place of hot gas valve, and adding cond. bypass and receiver inlet valves
8	5 or 10	Fan motor (10 secs)	By pass valve (5)	Liquid line valve (5)	none

Results:

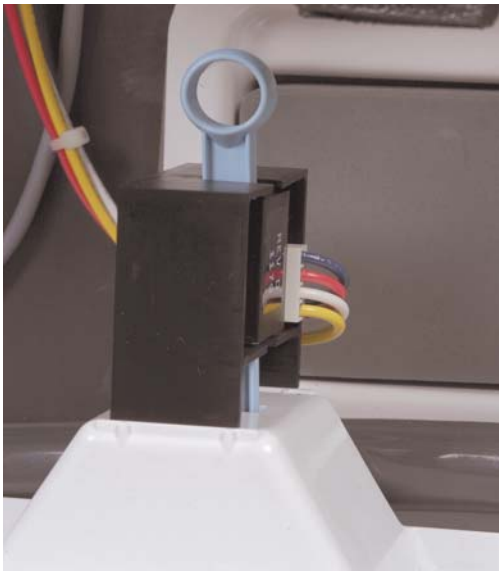
- If all the components operated as listed, the controller passed the test.
- If a component does not operate when it should, check its electrical connection. Check for open circuit or physical damage. If OK, refer to the product's wiring diagram and repeat the test with a voltmeter at the controller end of the harness. Check with one voltmeter lead on the proper terminal and the other to ground.
- If no voltage is present during the suspect component's turn in the second test, the controller needs to be replaced. If there is voltage at the controller end but none at the component, the harness needs to be replaced.

Notes:

- **Check Valve Remote** models are the CME456R, CME1056R, CME1356R, CME1656R and the CME2006R.
- **Pump Down Remote** models are the CME506R, CME656R and the CME806R.
- **Eclipse** models are the CME686, CME810, CME1386, CME1686 and the CME2086.
- Water cooled and Eclipse models in test 8 have nothing operating.

Part Two: Water Level Sensor Test. Covers: All Models: The water float's position is indicated by the green lights on the controller. Refer to this table:

Column One: Float Position	**Column Two**: Green Lights On	**Column Three**: Jumper Test
Over filled or dry sump (float all the way up or down), all of the slot is visible	Freeze, Harvest, Clean and Off	Unplugging sensor harness from #2 on controller.
Full sump	Harvest, Clean and Off	Jump pins one (bottom) and two
Mid position	Clean and Off	Jump pins one (bottom) and three, and pins one and two
Sump needs refill or end of freeze	Off	Jump pins one and three



Water Level Sensor Test.

Example:

Float depressed or at low point, results in only the Off light on.

To Test: Move the float stick slowly up and down and observe the light display on the controller.

Results:

- If the lights change as listed in column two, the system has passed the test.
- If the test failed, perform the jumper test in column three. If that test results in the lights on as listed in column two, the controller is OK but the sensor or harness needs to be replaced. The harness can be checked the same way by unplugging the connection at the sensor and testing again.
- If the lights do not glow as indicated after the jumper test, the controller has failed and needs to be replaced.

Overall Notes:

- **Water valve test** may result in overfilling the sump, causing water to spill into the bin.
- **Test will stop** after 60 seconds of no input or whenever the Off button is pushed. Bin full light will stop blinking when the test is complete.