**ROYAL VENDORS**

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| **SUBJECT:** RVV NG Test Diagnostics | # of People Required |
| **MODELS:** RVV NG | |
| **TOOLS REQUIRED:** None | |
| **ESTIMATED TIME:** variable | |

*The following areas of this vender contain voltage which can cause serious injury or even death: the main power cord, supplying 110 VAC to the evaporator, EMI filter, and refrigeration system; the power line from the EMI filter to the ballast and transformer; and the ballast, which can produce upwards of 600 volts. Remove power from vender before working in any of these areas.*

## REASON FOR HELPFUL HINT:
The Test Diagnostics routines in the RVV NG venders are important tools for ensuring vending reliability and function. This Helpful Hint describes, step-by-step, all of the routines included in the Test Diagnostics menu.
**NOTE:** *Only software revisions 67241-4 and higher and 67246-4 and higher will include the Test Diagnostics routines.*

## INSTRUCTIONS:
*For more detailed programming instructions, refer to the appropriate RVV NG Service and Parts Manual.*

Enter the Service Menu and scroll to `Test Modes`. Press <enter>. The controller will enter the test modes, and `Test Vend` will be displayed. Press <up> until `Test Diagnostics` is displayed.

Pressing <enter> at the `Test Diagnostics` prompt will cause the controller to enter the diagnostic test routine. The display will show `Perimeter Test`. Use <up> or <down> to cycle through the available diagnostic tests. The door can be shut while in this part of the service menu. *Note: If no activity is noticed after five minutes, the controller will exit the service menu.*

*Note: If the DMC does not support the diagnostics command or the vender is currently busy and cannot respond to the diagnostics command, `Unavailable` will be displayed upon the initiation of the test. If the door is not in the correct state for this test to be carried out, either `DOOR MUST BE SHUT` or `DOOR MUST BE OPEN` will be displayed upon initiation of the test. If the test could not be carried out for whatever reason, the test must be reinitiated in order to try again. The system does not auto-detect that the problem has been fixed.*

1. `Perimeter Test`
   Pressing <enter> at `Perimeter Test` will cause the vender to move the cup around the perimeter of the vending area once. This allows service personnel to observe if there are any obstructions around the perimeter of the vender that would inhibit vending. `Testing` will be displayed while this test is carried out. `Test Complete` will be displayed when the vender has completed this test. This is purely a visual test. Pressing <exit> will terminate the test. *Note: The perimeter test will only start if the door is CLOSED.*

2. `Delivery Test`
   Pressing <enter> at `Delivery Test` will cause the vender to move the cup to the delivery position and attempt a delivery. If no product is dispensed, the vender will attempt to deliver two more times. This allows service personnel to observe if there are any obstructions around the delivery position of the vender that would inhibit vending. `Testing` will be displayed while this test is carried out. `Test Complete` will be displayed when the vender has completed this test. This is purely a visual test. Pressing <exit> will terminate the test. *Note: The delivery test will only start if the door is CLOSED.*

3. `Cup Test`
   Pressing <enter> at `Cup Test` will cause the vender to actuate the plunger in the cup. This allows service personnel to observe if there are any problems with the cup plunger that would inhibit vending. `Testing` will be displayed while this test is carried out. `Test Complete` will be displayed when the vender has completed this test. This is purely a visual test. Pressing <exit> will terminate the test. *Note: The cup test will only start if the door is OPEN.*

**ANY QUESTIONS???** CONTACT ROYAL VENDORS' CUSTOMER SERVICE DEPARTMENT
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# Helpful Hints 0040
## clear & easy

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**SUBJECT:**  RVV NG Test Diagnostics

**MODELS:**  RVV NG

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4.  Sensor Test
    Pressing <enter> at Sensor Test will display in real time the settings of the sensors on the DMC.  The following will be displayed:

    MAG (0/1) Y (0/1) CS (0/1)
       PDOOR (0/1) BIN (0/1)

    a.  MAG corresponds to the Hall Effect home sensor that is used for finding the home position in the X-axis.
    b.  Y corresponds to the Y-axis home sensor.
    c.  CS corresponds to the cup sensor.
    d.  PDOOR corresponds to the port door.
    e.  BIN corresponds to the delivery bin.
    f.  0 or 1 corresponds to the sensor's state:  "0" = off, "1" = on.

    This allows service personnel to observe if there are any problems with any of the sensors on the DMC.  Pressing <exit> will terminate the test and return the display to "Sensor Test."  ***Note:***  *The sensor test can be performed with the door OPEN or CLOSED.*

5.  Motor / Encoder Test
    Pressing <enter> at Motor / Encoder Test will display in real time the encoder counts of the cup's position.  Pressing <up> will move the cup +450 encoder ticks, or +1 foot (+305 mm), in the Y-axis direction.  Pressing <down> will move the cup -450 encoder ticks, or -1 foot (-305 mm), in the Y-axis direction.  Pressing <right> will move the cup +300 encoder ticks, or +6 inches (+153 mm), in the X-axis direction.  Pressing <left> will move the cup -300 encoder ticks, or -6 inches (-153 mm), in the X-axis direction.  If the encoder's count is off by more than +/-3 ticks from what is expected, there is a problem with the motor / encoder.  Pressing <exit> will terminate the test, home the motors, and return the display to Motor / Encoder Test.  ***Note:***  *The motor / encoder test can be performed with the door OPEN or CLOSED.*

6.  Production Test
    Pressing <enter> at Production Test will cause the vender to execute the production test.  Testing will be displayed while this test is carried out.  Pass will be displayed if the vender passes the test.  Upon a failure in the test, the test will be terminated and a failure reason will be displayed.  This test only displays the last failure that caused the test to be terminated.  Following is a list of potential failures.

    1.  Failure X# indicates a failure in the X-axis.
    2.  Failure Y# indicates a failure in the Y-axis.
    3.  MAGNET RC indicates a failure to find the magnet corresponding to the position for row "R" and cell "C."
    4.  EOT RC indicates a failure to get to the end of travel of row "R" and cell "C."
    5.  SPEED indicates a failure to adjust motor speed.
    6.  SIDE S indicates a failure in the perimeter test to move along side "S."

    This test allows manufacturing to run an all-over test of the machine settings.  Pressing <exit> will terminate the test and return the display to Production Test.  ***Note:***  *The production test will only start if the door is CLOSED.*

7.  Multiple Home Test
    Pressing <enter> at Multiple Home Test will cause the vender to home multiple times.  Testing will be displayed while this test is carried out.  Pass will be displayed if the vender passes the test.  Fail ## will be displayed if the vender fails this test, where "##" represents a failure reason.  This test allows service personnel to observe if there is any consistency in finding home.  Pressing <exit> will terminate the test and return the display to Multiple Home Test.  ***Note:***  *The production test will only start if the door is CLOSED.*

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