

# Norcold Repair Guide for Ice Maker

## Section 10

### Table of Contents

Page:

10-2	General Description
10-2	Refrigerator Specifications
10-2	Refrigerator Operating Limits
10-2	Refrigerator Current Draws
10-2	Ice Maker Specifications
10-2	Ice Maker Requirements
10-2	Ice Maker Location
10-3	Location of Ice maker's Related Components
10-3	Water Supply Connection
10-3	Operating Instructions
10-4	Trouble Shooting
10-5	Trouble Shooting Procedures
10-5	Location of Test Points
10-5	Wire Harness Check
10-6	Water Valve Check
10-6	Motor Check
10-7	Mold Heater
10-7	Testing Motor and Cycle Function

## General Description

The Ice maker is installed by Norcold as optional equipment. The refrigerator installer is required to connect a cold water supply to the water solenoid valve at the rear of the refrigerator.

The Ice Maker requires 120 volts AC to operate (even when the refrigerator is operating on gas) and is fully automatic. When the refrigerator's freezer reaches ice freezing temperatures, the ice maker will signal the water valve to fill the mold cavity. When the ice bin is full, the shut-off arm will stop the ice making process until the ice bin is emptied and the shut-off arm is returned to the down position.

## Refrigerator Specifications

LP Gas Mode: 11" W.C.  
 LP16 Orifice  
 12 Volts DC control voltage

AC Mode: 110 Volts AC, 300 Watts  
 12 Volts DC control voltage

DC Mode: (3-Way only): 12 Volts DC

## Refrigerator Operating Limits

AC Mode: 132 VAC Max., 108 VAC Min.  
 15.4 VDC Max., 10.5 VDC Min.  
 DC Mode: 15.4 VDC Max., 11.5 VDC Min.  
 Gas Mode: 11" W.C., 15.4 VDC Max., 10.5 VDC Min.

## Refrigerator Current Draws

Automatic Ignition - .50 amps  
 Humidity Heater - .24 amps  
 Interior Lamp (when door open) - .30 amps  
 AC Heating Element - 2.7 amps at 110 Volts AC  
 2.9 amps at 120 Volts AC  
 DC Heating Element - 13.8 amps at 12 Volts DC  
 16.1 amps at 14 Volts DC

## Ice Maker Specifications

Volts: 120 volts AC  
 Amp Draw - cycle on, heater off: .03 amps  
 Amp Draw - cycle on, heater on: 1.6 amps  
 Amp Draw - cycle off: 0 amps  
 Inlet water pressure: 15 - 125 psi.  
 Duration of 1 cycle: 3.5 to 7 minutes  
 Ice Yield: 3 lbs./24 hours

## Ice Maker Requirements:

1. Cold potable water supply at pressures between 15 psi and 125 psi.
2. 120 Volts AC supply - 108 VAC minimum - 132 VAC maximum.
3. 1/4" O.D. cooper tubing (compression nut, compression sleeve, and 90° degree tubing adapter supplied with refrigerator) or an approved plastic tubing.
4. 1/4" Shut-off valve in water supply line. (Should be accessible when the lower vent door is open.)

## Ice Maker Location

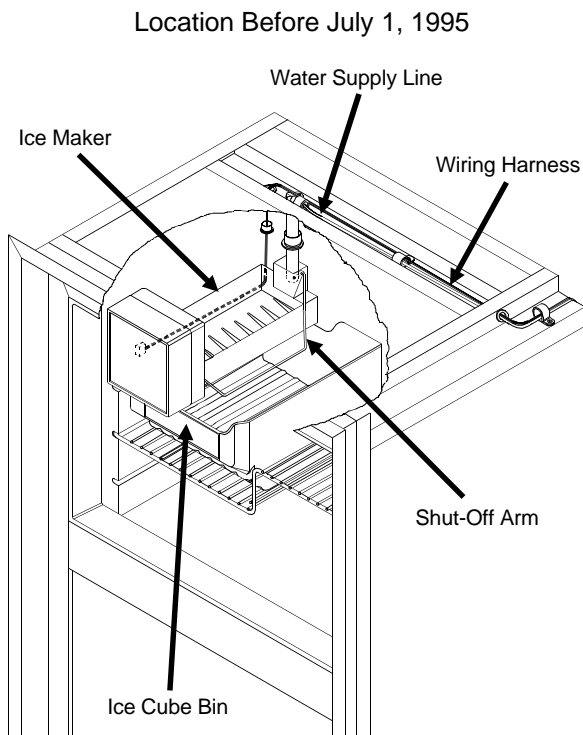
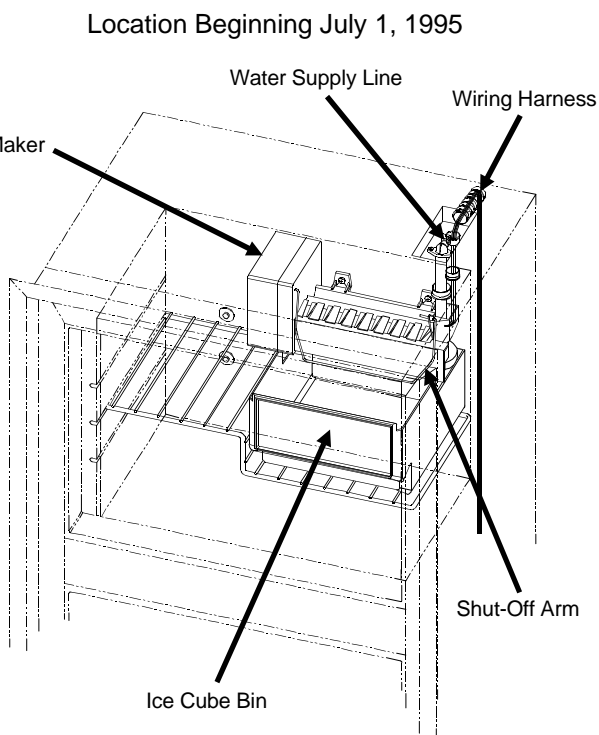
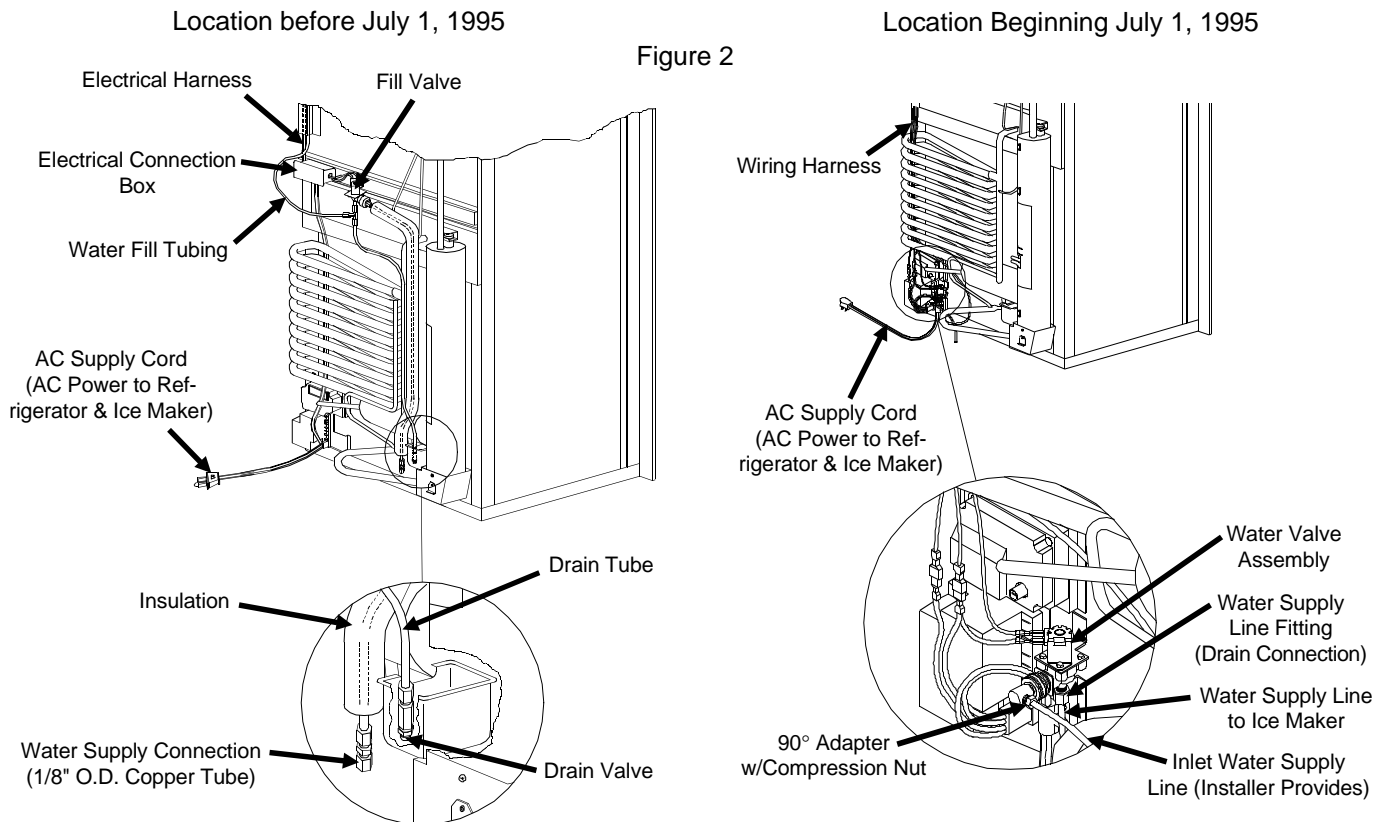


Figure 1



## Location of Ice Maker's Related Components



### Water Supply Connection - Figure 2

Install 1/4" O.D. copper tubing (or an approved plastic tubing) from the cold water supply to the shut-off valve, and from the shut-off valve to the ice maker's water valve located at the rear of the refrigerator.

To install, remove the compression nut and sleeve from the 90° adapter connected to the water solenoid valve. Slip the compression nut and sleeve onto the supply tubing. Before connecting the tubing to the refrigerator, flush the tubing until the water is clear. Insert the end of the tube with sleeve into the opening of the adapter (90° adapter will rotate 360° degrees). Using two wrenches, tighten the compression nut. Turn on water supply. Check for leaks; correct if necessary.

### Operating Instructions - Figure 3

1. Make sure 120 volts AC is available to the refrigerator.
2. Turn the water supply on.
3. Move the shut-off arm down to the "On" position. Do not allow food packages to *interfere with the shut-off arm*.

**⚠ Caution:** If refrigerator is to be operated before the water connection is made or before the water is turned on, insure the ice maker's shut-off arm is in the up "Off" position.

4. Allow the freezer to reach ice freezing temperatures. This may take a minimum of 24 hours from initial refrigerator start-up. When the freezer temperature is satisfactory, the ice maker will start.

5. When the bin is filled with ice, the ice maker will stop ice production.

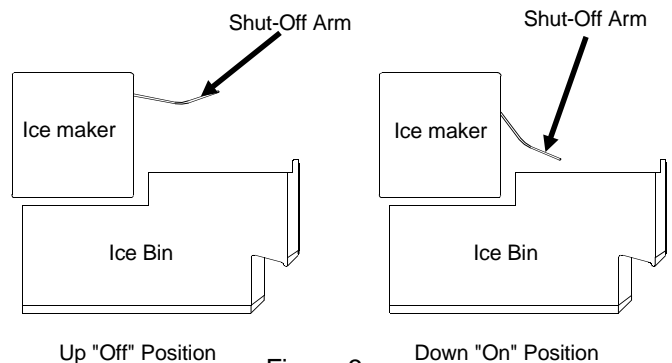


Figure 3

6. The first ice yield may be discolored or have an odd flavor because of the new plumbing connections or because of impurities remaining in the water lines after winterizing.
7. To stop the ice maker, raise the shut-off arm to the up "Off" position.
8. When operation of the refrigerator is to be discontinued for any length of time (storing the RV for the winter), empty and dry the ice maker.

**⚠ Caution:** *Operating the ice maker when ambient temperatures reach 32 ° F (0 ° C) or below can cause irreparable damage to the ice maker's water valve and*

*inlet water line. Winterize in accordance with the procedures below.*

9. To drain the ice maker, move the ice maker's shut-off arm to the up "Off" position.
10. Turn off the water at the supply line shut-off valve.
11. Loosen and disconnect the inlet fitting from the water valve. Drain water from the supply line..
12. Loosen and disconnect the outlet fitting (line from valve to ice maker)from water valve. Drain water from line.
13. Reconnect the inlet and outlet fittings to water valve.
14. Leave water supply "Off" until outside temperatures are above freezing (32 ° F- 0 ° C). Dry ice maker with dry cloth.

## Trouble Shooting

Problem	Probable Cause	Remedy
1. Refrigerator Cooling: No ice in bin	<ol style="list-style-type: none"> <li>1. A/C power disconnected.</li> <li>2. Broken wire or loose connection.</li> <li>3. Shut off arm in storage position.</li> <li>4. Water supply shut off.</li> <li>5. Inoperative water valve.</li> <li>6. Excessive frost build-up causing Shut-off arm to hang up.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect A/C power.</li> <li>2. Locate and repair.</li> <li>3. Place in normal operation position.</li> <li>4. Restore water supply.</li> <li>5. Check valve and inlet filter for restrictions or solenoid coil failure. Repair or replace.</li> <li>6. Defrost unit - inspect for door gasket leak.</li> </ol>
2. Low ice yield.	<ol style="list-style-type: none"> <li>1. Ventilation of refrigeration not in accordance with Norcold's Venting Requirements. See Section 2.</li> <li>2. Insufficient refrigeration.</li> <li>3. Not enough water supply pressure.</li> <li>4. Thermostat setting too warm.</li> </ol>	<ol style="list-style-type: none"> <li>1. Install in accordance with Section 2 of this manual.</li> <li>2. Check 120 VAC power 108 VAC min. - 132 max. 12 VDC Power 10.5 VDC min. - 15.4 VDC max.</li> <li>3. A. Check for restrictions in water lines or water valve. B. Check for correct water pressure. min. 15 PSI; max. 125 PSI</li> <li>4. Adjust Thermostat setting.</li> </ol>
3. Excessive water dripping on ice cubes or from Ice Maker mold.	<ol style="list-style-type: none"> <li>1. Excessive water pressure.</li> <li>2. Water valve sticking open.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct water pressure min. 15 PSI max. 125 PSI</li> <li>2. Check for contaminated inlet filter or replace water valve.</li> </ol>
4. Ice maker mold overflowing with water.	<ol style="list-style-type: none"> <li>1. Defective water valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace water valve.</li> </ol>
5. Ice cubes are milky or have taste.	<ol style="list-style-type: none"> <li>1. Water hardness or food stored in ice bin.</li> </ol>	<ol style="list-style-type: none"> <li>1. Advise customer to have water supply inspected and refrain from storing food in the ice bin.</li> </ol>

## Trouble Shooting Procedures

These check-out procedures are based on the following:

- \* 12 Volts DC (Control Voltage) is available to the Refrigerator.
- \* 120 Volts AC is available to the refrigerator and to the Ice Maker.
- \* Water pressure to the ice maker is at 15 psi min. - 125 psi max.
- \* Thermostat is set at mid-range setting or higher.
- \* Refrigerator is performing satisfactory and has been operating long enough to reach ice making temperatures.
- \* The Ice Maker's shut-off arm in the down (on) position.

### Location of Test points - Figure 4

To gain access to the Ice Maker's test points, remove the white front cover plate.

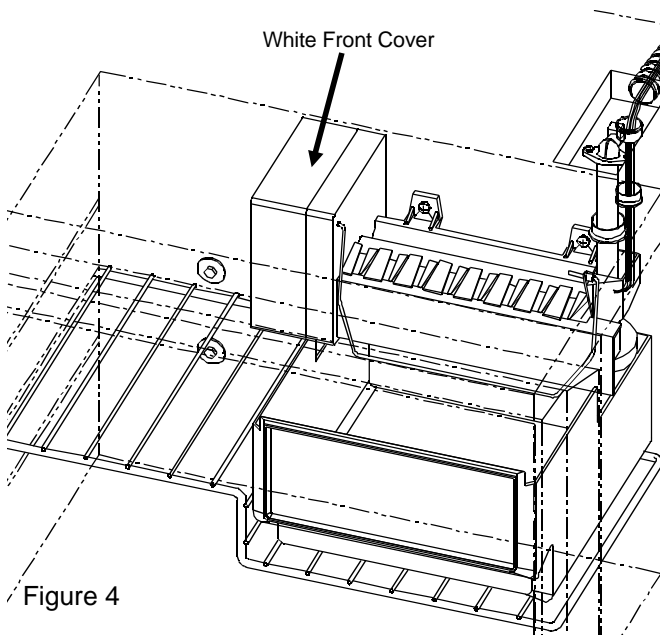


Figure 4

### Ice Maker's Test Points - Figure 5

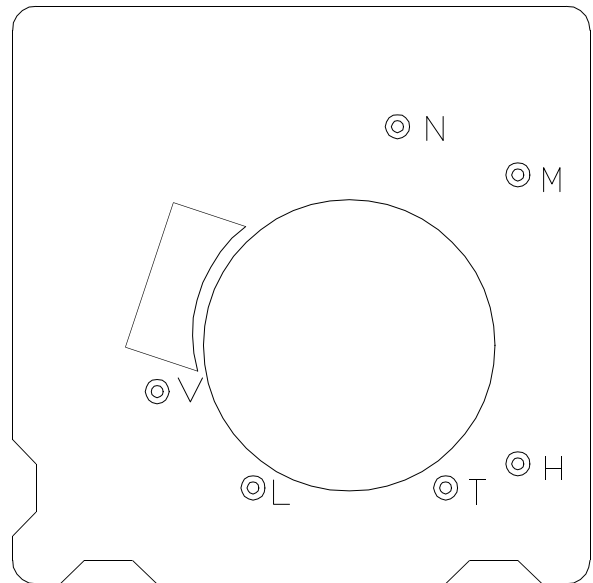


Figure 5

### Wire Harness Check - Figure 6

The wire harness is equipped with a thermal fuse. The fuse protects the ice maker mold from overheating. If the fuse is open, the wire harness requires replacement.

Use a volt ohmmeter and check for 120 volts AC between test points L and N.

Note: Insure your meter leads contact the surfaces of the test points.

If 120 volts is present, proceed to "Water Valve" check out.

If 120 volts is not present, replace the ice maker's wiring harness.

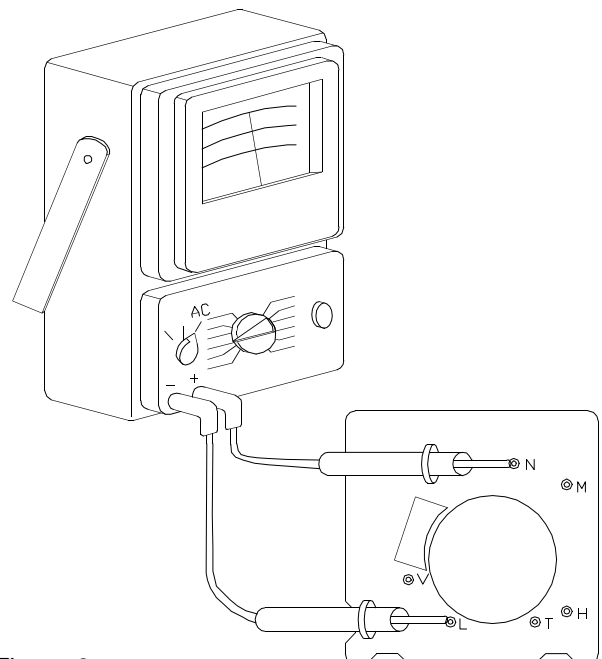


Figure 6

## Water Valve Check - Figure 7

Energizing the Water Valve

**⚠ Caution:** To prevent an electrical shock, use an insulated jumper wire.

**Note:** If water is available to the water valve, performing the procedure below may overflow the ice maker's mold.

Insert an insulated jumper wire between test points L & V to energize the water valve. If an audible click or buzzing is observed, the water valve is functional.

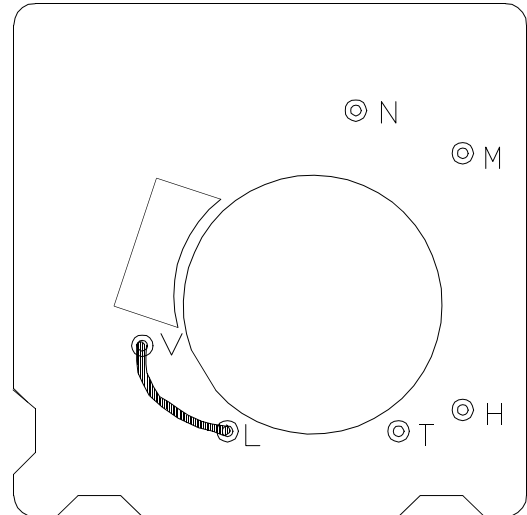


Figure 7

## Ohm Readings - Figure 8

If the water valve is not functional:

1. Disconnect the refrigerator's AC power cord from the wall receptacle.
2. Use a volt ohmmeter; insert meter leads into test points V & N.
3. Reading between 295 and 360 ohms indicate water valve is functional.
4. Reading is infinity (maximum reading) there is a loose wire connection at the water valve's terminals or the water valve is defective. Repair loose connection or replace water valve.
5. Reading of "0" indicates a short in the wiring from the ice maker to the water valve or a defective water valve. Repair the short or replace the water valve.

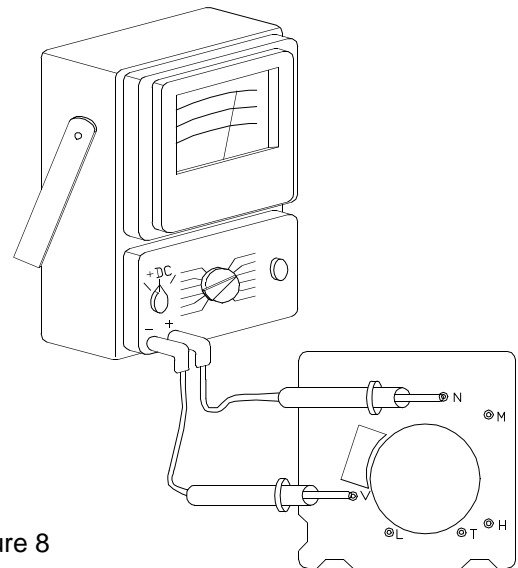


Figure 8

## Mold Heater - Figure 9

Use a volt ohmmeter and insert meter leads into test points L & H.

1. 75 ohm reading indicates the mold heater is functional.
2. Reading either an open or a short requires replacement of the ice maker assembly.

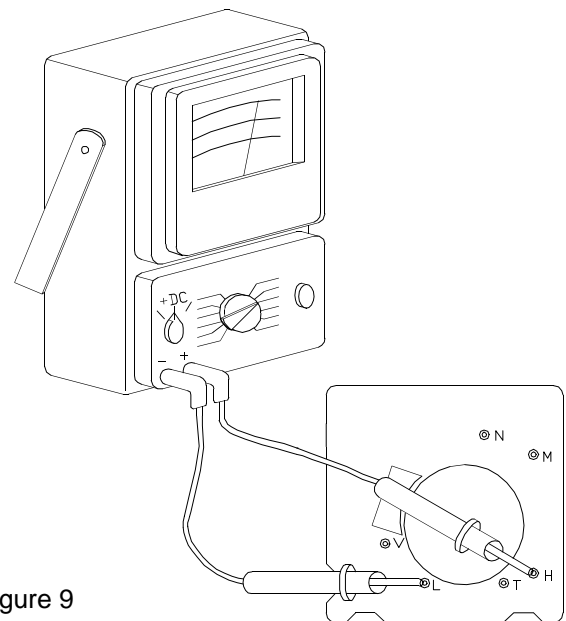


Figure 9

### Motor Check-Out - Figure 10

Use a volt ohmmeter and insert meter leads into test points M & N. 120 volts should be present. If 120 volts is not present, replace the Ice Maker assembly.

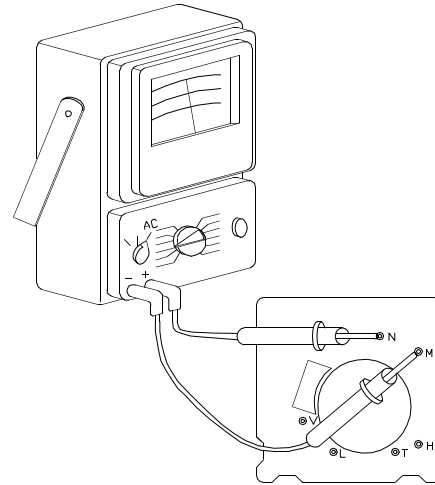


Figure 10

### Testing Motor and Cycle Function Figure 11

This test procedure is to be performed while the ice maker is dry and at room temperature.

The test cycle will take approximately 3-7 minutes to complete. During the cycle the shut-off arm will raise and lower slowly while the mold heater is on and the ejector mechanism simulates ejecting the ice. Approximately 3/4 through the cycle, the water valve will energize for 7 seconds, allowing water (if available to the valve) to fill the ice maker mold cavity.

Note: If water is available to the water valve, performing the procedure below may overflow the ice maker's mold.

To perform this test:

**⚠ Caution:** To prevent an electrical shock, use an insulated jumper wire.

1. Insert an insulated jumper wire between and into test points T & H. Within 15-20 seconds an audible click will be observed indicating the start of the ice ejection cycle. **Remove the insulated jumper wire once the cycle begins.**
2. If an audible click is not heard, start with the "Wire Harness Check" procedure to locate the problem.
3. If an audible click is heard, the ice maker assembly is functional and does not require repair.

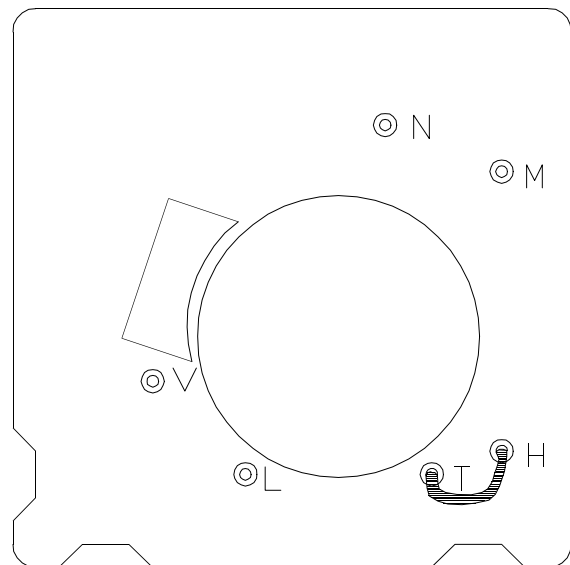


Figure 11