



# **OPERATION & MAINTENANCE MANUAL**

*Site name*

*Site City*

**Serial #:  
20-01-75555**

**CANADIAN CURTIS  
REFRIGERATION INC.**

**NATIONAL SALES OFFICE**

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**PRODUCTION PLANT**

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For service/warranty issues, please call  
905-643-1977 ext. 328

For parts, please call  
905-643-1977 ext. 335

Thank you for purchasing Canadian Curtis Refrigeration Inc. products. We are dedicated, exclusively to manufacturing high quality refrigeration equipment. Efficient design and construction, fast delivery and set-up, and superb customer service are what we are known for since 1934.

Your Curtis product is approved by Intertek to CSA C22.2 No 120 refrigeration equipment requirements as well as Energy Performance Verified to Enercan 2020 standards.

### **ELECTRICAL INSTALLATION:**

It is the owner's responsibility to have a professional, licensed electrical contractor connect the unit and check the buildings electrical service for proper wire sizing and circuit protection.

Each Curtis top-mounted, self-contained, factory installed refrigeration system requires a minimum of three (3) service connections. The condensing unit requires a non-fused "service disconnect switch" prior to junction box on top of the walk-in. The second connection is to the junction box for the evaporator fans, defrost and control. The third connection is to the interior light above the door, this powers the Smart Door Control and door perimeter heater for freezer applications. In addition, freezers will require a fourth connection for the condensate drain heater, this must be a GFI protected power supply.

For Curtis top mount penthouse units, the power supply requirements will be listed on the nameplate of the refrigeration unit as well as in the Curtis documentation. A separate power supply is still required for the door and any additional lighting.

### **PLUMBING INSTALLATION:**

Curtis Penthouse refrigeration units do not require a condensate drain connection. These units feature a coil that is raised above the ceiling space to allow condensate to flow into a pan near the compressor. The water then evaporates by using the hot refrigerant piping from the compressor.

Curtis standard evaporator coils require a condensate drain line in the cooler and freezer. The drain should be installed by a qualified Refrigeration or Plumbing contractor and run to an exterior drain. A "P-trap" is required on most coils and should not be installed in walk in freezer space. Freezer condensate drains must have a heated trace wire to prevent freezing.

**CAUTION:** Please review shelving layout before installing drain lines.

**PANEL INSTALLATION:** Review instructions supplied.

## **START-UP:**

Curtis Top-mount, self-contained units and Penthouse units are pre-charged and run tested before installation and do not require start-up. Once proper power is supplied, simply switch on the units and they will begin to refrigerate the space. Remote refrigeration units will require a technician to perform a site start-up. Please arrange with them once electrical and plumbing are completed.

Loading your unit will result in a temporary rise in temperature which is normal. It is important that all food products in the Curtis unit be properly covered and contained to reduce product shrinkage and drying. In addition, all acidic or corrosive products (salad dressings, vinegars, etc.) must be sealed from direct air contact as the acidic vapours will quickly corrode the evaporator coil fins and copper.

➔ Do not use the top of walk-in as storage shelf! Air cooled condensing unit require proper ventilation and should not be obstructed. Packing material around the coil and restricting airflow will result in higher internal temperatures and reduced component life.

Curtis Walk-in Coolers/Freezers and their refrigeration systems are designed to hold chilled products at 3°C to 4°C and hold already frozen product at -18°C or -23°C. Standard systems do not allow for excessive product load unless specified at the time of engineering.

## **OPERATION:**

Curtis controls and valves are factory pre-set. Adjustments are not necessary under normal conditions. However, in the event adjustments are needed they should be made only by a qualified refrigeration technician.

Curtis wal-ins are equipped with thermostats that open and close a solenoid valve at the evaporator coil. When refrigeration is required this solenoid opens allowing refrigerant to flow. A pressure switch on the condensing unit responds by turning the compressor off. When the thermostat is satisfied, the solenoid will close. This causes the refrigerant to stop and the resulting drop in pressure signals the compressor to shut down.

**COOLERS:** Designed to operate 3.3°C/38°F

Defrost is accomplished by closing the solenoid and allowing the refrigeration to shut down. The evaporator fans continue to allow the room air to melt any ice they may have developed on the coils. This is typically done 3-4 times a day for roughly 15 minutes or on some controls, only as needed.

**FREEZERS:** Designed to operate -18°C/0°F or -23°C/-10°F

Defrost is accomplished by also shutting off the refrigeration system but to remove the ice, electric heaters are energized. During defrost the, evaporator fans are off. When the coil has removed any accumulated ice, the system will restart. This is typically also 3 – 4 times a day for 45 minutes (maximum) or with optional Adaptive controls, only when needed.

## **CURTIS SMART DOOR CONTROL:**

Located on the front of the box, this control will display the temperature in the box at all times. In addition it will control the lighting. Opening the door will initiate the lighting circuit and keep them on for a predetermined amount of time. This is adjustable. In the last 30 seconds that the lights are on, they will begin to flash. This will alert you that the lights will be going out. On freezer applications, the control will also switch the door and vent heaters on only when needed based on temperature.

Curtis Smart Door with Keeprite ESP System: If your system is equipped with the ESP system, our Curtis Smart Door Control will communicate with it. In addition to displaying the temperature, it will indicate when the unit is in defrost mode. The display will show **dEFr**. When the unit has completed defrost, the display will alternate **dEFr** and the room temperature until the set point has been reached.

The evaporator coil fans will shut down when the door is open. If the door is left open for XX minutes, the solenoid will close to shut down the refrigeration. This will minimize the amount of ice buildup on the coils. If the door is left open by accident the refrigeration will restart regardless of door position.

Any refrigeration related alarms that would appear on the coil display will also appear on the door display.

Temperature Alarms: The Curtis Smart Door Control can be set to give an audible and visual alarm when the temperature is out of range for an extended period of time. These parameters are adjustable.

Door alarm: The Curtis Smart Door Control can be set to give an audible and visual alarm when the door has been left open for an extended period of time. These parameters are adjustable.

## **CLEANING:**

Prior to cleaning, ensure all electrical power sources to the unit are shut off. Don not use excessive water on interior or exterior (damp clothe only). Allow your unit to dry thoroughly before restarting.

*White steel or Aluminum panels* – Clean exterior surfaces using soft cloth with warm water and mild soap. Rinse surfaces thoroughly and dry. Never use chemical cleaning agents or abrasives.

*Stainless Steel Panels* – Clean exterior stainless surfaces using soft cloth and any recognized stainless steel cleaner.

Condensing Unit (top of walk-in) – Remove any debris or obstructions from around the condenser inlet and outlet. Remove dust and debris periodically from the coil surface. Be careful not to damage fins. Inspect the area often to ensure free air circulation. Regular cleaning is critical to long equipment life. A refrigeration contractor should clean and inspect the complete refrigeration system yearly.

**Trouble shooting:**

If you continue to have operating difficulties after checking these items, please call for service. Do not leave your service call until late afternoon if you require same day service. For out of warranty units, please call your local refrigeration contractor.

<b>PROBLEM</b>	<b>CAUSE/REMEDY</b>
Prolonged excessive ice formation on evaporator coil	<ul style="list-style-type: none"><li>○ High ambient humidity.</li><li>○ Loaded with high temperature, high moisture content product.</li><li>○ Opening door excessively.</li><li>○ Door left open for prolonged periods.</li></ul>
Water dripping from coils	<ul style="list-style-type: none"><li>○ Coil drain frozen or kinked.</li><li>○ Evaporator pan frozen.</li><li>○ Drain line heater not working (GFIC tripped)</li><li>○ Coil drain pan plugged due to dirt.</li><li>○ Coil drain outlet connection cracked or broken.</li><li>○ Loose drain connection at coil.</li></ul>
Frost/Ice formation on product on freezer walls	<ul style="list-style-type: none"><li>○ Excessive high humidity.</li><li>○ Opening door excessively.</li><li>○ Air leakage from exterior, check for openings.</li><li>○ Door not sealing, check gasket.</li></ul>
Compressor is not running	<ul style="list-style-type: none"><li>○ Electrical switch or breaker off, check.</li><li>○ High ambient temperature causing high pressure control trip (ventilate area)</li><li>○ Unit on defrost (45 minute maximum time).</li></ul>
Temperature is too high	<ul style="list-style-type: none"><li>○ Electrical switch or breaker off, check.</li><li>○ Unit loaded with high temperature product.</li><li>○ Water supply to water cooled system is off.</li><li>○ Air cooled condensing unit dirty or obstructed.</li><li>○ Air cooled condensing unit inlet air too warm (above 30°C).</li></ul>
Condensation around exterior of door frame	<ul style="list-style-type: none"><li>○ Excessive ambient humidity.</li><li>○ Door frame heater not working (freezers).</li><li>○ Door gasket not sealing properly to door frame</li><li>○ Door not closing tight.</li></ul>
Coil fan not operating	<ul style="list-style-type: none"><li>○ Evaporator coil in defrost (freezers only)</li><li>○ Evaporator power off, check switch on back of coil.</li><li>○ Evaporator power supply off, check breaker/fuse.</li></ul>
Condensing unit noisy	<ul style="list-style-type: none"><li>○ Debris in or on condensing unit.</li><li>○ Ambient temperature too warm (above 30°C).</li></ul>

**STANDARD ONE YEAR PARTS WARRANTY**

Canadian Curtis Refrigeration Inc. warrants to the original purchaser, when sold by an authorized Curtis dealer or agent providing start-up and service, that its product is free from defects in material and workmanship under normal use. If any part or parts of this product should prove defective during the period of one year from date of shipment, with the exceptions as outlined below, the Company hereby guarantees to replace or repair without charge. F.O.B. Stoney Creek, Ontario, such part or parts. This warranty shall not apply to any equipment, or any part thereof, which has been subject to any accident, alteration, abuse, misuse or improper installation. Curtis is not responsible for labour and transportation charges in connection with replacements made by the purchaser without our written consent, nor for any delays, losses or damages caused by defects. Liability is expressly limited to repair or replacement as outlined in this guarantee. The Company, its servants, agents or authorized representatives shall not be liable for any claims for personal injuries or consequential damages or loss, however caused. All Curtis warranties are only valid in Canada FOB Stoney Creek, Ontario.

**Curtis warranty does not apply to any loss of product, food or contents due to equipment failure for any reason.**

EXPIRY DATE -----

**CANADIAN CURTIS REFRIGERATION INC.**

**FIVE YEAR COMPRESSOR WARRANTY**

In addition to the standard one year warranty on the complete refrigeration equipment, Canadian Curtis Refrigeration Inc. agree, subject to payment of the stipulated premium, to repair or replace, for the original purchaser only, at any time during the five years following date of shipment to the original purchaser-user, one time only basis F.O.B. Our Factory, if motor compressor assembly is returned prepaid to us, the defective motor/compressor assembly, or any part thereof, which proved defective due to defects in material or workmanship. The term "motor/compressor assembly" consists of the stator, rotor eccentric shaft, eccentric rod, piston, wrist pin, suction and discharge valves and the housing in which these parts are enclosed. Warranty does not cover electric controls, such as relay, capacitors, pressure control, or fan and motor assembly, condenser, receiver, etc. This warranty does not include labour charges incidental to the replacement parts. This warranty is invalid if, in the opinion of Canadian Curtis Refrigeration Inc., the compressor failure was due to non-standard operating conditions or environment for which the equipment was not designed.

**Curtis warranty does not apply to any loss of product, food or contents due to equipment failure for any reason.**

EXPIRY DATE -----

**CANADIAN CURTIS REFRIGERATION INC.**

**ONE YEAR SERVICE WARRANTY**

Subject to payment of the stipulated premium at the time of equipment purchase, the authorized local service agent of Canadian Curtis Refrigeration Inc. agrees to provide free service to the refrigeration system for a period of one year from date of shipment. Failures due to the malfunction of electrical or plumbing facilities are not covered by this warranty. Normal maintenance as contained in the Operating Instructions is the responsibility of the purchaser, and any such work carried out by the service agent will be charged for at current rates.

**Curtis warranty does not apply to any loss of product, food or contents due to equipment failure for any reason.**

EXPIRY DATE -----

**CANADIAN CURTIS REFRIGERATION INC.**

**PANEL WARRANTY**

**Curtis warrants panels for a total of 15 years against manufacturing defect  
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