C. NELSON MFG. CO.
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LIMITED WARRANTY

C. Nelson Manufacturing Company warrants, for a period of (12) months from original shipment from it's factory, all products manufactured to be free from inherent defects in workmanship and materials, and will replace without charge, f.o.b. Oak Harbor, Ohio, a part or parts returned transportation charges prepaid which our inspection proves to be thus defective.

C. Nelson, warrants for a period of (5) years after original shipment from it's factory, prorated insulation integrity, leaks in any internal tubing, and leaks or failures of cold plates installed by the factory. C. Nelson will repair or replace, at it's option, based on the depreciated value of the equipmnet over a 5-year period.

This warranty shall not apply to any of our products, repaired or altered outside of our factory in any way so as, in our judgement, to affect its reliability, nor to any product which has been subject to misuse, negligence, or accident, nor shall this warranty apply to any product installed or connected otherwise than in accordance with instructions furnished by us. It will not be resposible for refrigerant expense or labor incident to the replacement of parts under this warranty.

Parts and/or product will be repaired or replaced at the option of C. Nelson Mfg. Co.

This warranty does not cover consequential damages or loss of products resulting from any warranty claims against C. Nelson Mfg. Co.

The return of parts or complete product for any reason must be made with our consent, and the return of such parts must be made with the transportation charges prepaid.

CARE OF THE CABINET

Your new C. Nelson mfg. low temperature cabinet represents the finest in engineering design, quality of material and crafsmanship effort. It will give you many years of trouble free service with a minimum of attention.

The easy-to-clean exterior surfaces should be wiped off regularly with a likewarm, mild detergent solution. Do not use any solvent-type cleaners which could attack the plastic and vinyl parts of the cabinet. Never clean the lids or cabinet with steam or extremely hot water.

From a sanitation standpoint, it is important that the interior of the cabinet also be cleaned periodically. Most of our models are manual defrosting where a shutdown will permit complete frost removal with a resultant increase in operating efficiency. To clean the interior of the cabinet remove the lids and the product and unplug the unit, or turn the temperature control to the off position. When the cabinet has warmed up, any remaining frost accumulation may be scraped off the walls with a plastic or wood scraper. Never use a sharp or pointed metal scraper since it could damage the finish or possibly pierce the walls. The same type of lukewarm detergent solution used for the exterior can be used on the interior. Wipe the interior of the cabinet dry, replace the lids and turn the temperature control back to the desired setting and plug in the cabinet. Wait several hours before reloading the cabinet with product.

No oiling of the equipment is required.

Since each and every self-contained C. Nelson Mfg. Co. cabinet is chart tested on its own temperature recording clock before shipment, service attention is reduced to a minimum. Further, each cabinet carries a part guarantee of one year (unless otherwise provided for) as outlined in the standard C. Nelson Mfg. Co. warranty.

NOTE: Should parts be required, it is important that correct model and cabinet serial number is given.

INSTALLATION INSTRUCTIONS

UNCRATING

a. Check crate for apparent damage (If damage exists, refuse delivery or have carrier note damage on Bill of Lading for small dents or scratches. If you accept damged freight, the freight claim will be handled between you and the carrier. For major damage, the freight company will return the goods to us for repair/replacement)

b. Carefully remove all nails from base of crate

c. Carefully lift entire crate from cabinet

d. Check cabinet for concealed damage and notify carrier if necessary

e. Remove bolts or steel banding which secure crate to skid channel base of cabinet and slide cabinet from base.

LOCATION AND WIRING

a. Be sure the cabinet is not exposed to any sources of excessive heat, such as radiators, steam pipes or unit heaters. Failure to follow these precautions will impair the performance of the cabinet and will increase operating costs.

b. CAUTION - Leave three to four inches behind cabinet to allow condenser discharge air to escape.

c. CAUTION - Check the amperage rating on the serial plate. Make sure the wiring is large enough to carry this load.

d. WARNING - A grounded type of service cord is used for simple plug-in starting. If an appliance service type grounded receptacle is not available, an adaptor must then be grounded to a positive ground.

e. CAUTION - If the cabinet has been in an excessivly hot place prior to installation, allow it to cool to room temperature before plugging it in.

f. CAUTION - The condensing units supplied with the cabinet on this contract, must not be operated on any power supply other than specified on the serial plate. If wall plate doesn't match the amperage rating on the serial plate, don't plug in! Check for proper voltage on unit before plugging into outlet.

OPERATION

The compressor service valves are open and the unit can be started by inserting the service cord attachment into the receptacle.

If adjustment of the temperature control is necessary, turn the dial on the control in direction indicated by arrow on the dial, for warmer or colder temperature. (For ETC electronic temperature controls, see separate programming directions in pocket in compressor tunnel.)

If temperature control adjustment does not achieve desired temperature, adjust internal range screw counter clockwise for colder, clockwise for warmer.

temperature range of control:

lowest cut-out -16 deg F Highest cut-out +10 deg. F

GENERAL SERVICE INFORMATION

This section is presented as a guide for servicing all C. Nelson Mfg. Company cabinet. It deals with types of troubles that are common to the entire line of cabinets, such as electrical problems of the unit, plugged cap tubes, moiture, etc.

Generally a customer's complaint will fall into one of the following catagories:

1. Cabinet warm - unit does not run
2. Cabinet warm - unit runs
3. Cabinet too cold
4. Noisy

A test cord, consisting of plug. test points and lamp will prove very useful in diagnosing electrical troubles. It has many uses such as testing for power at the receptacle and checking for grounded or open windings.

Trouble - cabinet warm, Unit does not run

Check power supply to unit

Check power at receptacle by inserting plug of test cord into receptacle and touch pointers together; lamp should light. If there is power at receptacle then check for power at motor terminals (use same terminals that condenser fan is attached to). Preferably use a voltmeter so the amount of voltage can be checked, but if no voltmeter is avaiable, use the test cord. Put a jumper across the prongs of the plug and put pointers on compressor terminals.

If there is power at the receptacle but no power at the unit terminals, it is an indication of a defective control or service cord; to determine which, place a jumper across the control terminals and check again for power at the unit. If you then have power, it is a n indication of a defective control.

NOTE: In order to have a satifactory power supply, the voltage should be 90% of the rated name plate voltage, found on the compressor body, *at the time the compressor is trying to start.*

If voltage appears normal but drops excessively during start iup, to below the 90% of the compressor rating, it indicates high line resistance due to one or more of the following:

1. Undersize line from power supply to wall outlet
2. Too long a line
3. Bad connections
4. Line Overloaded with other appliances

It is strongly urged to run individual lines to all cream cabinets

Problem	**Probable Cause**	**Remedy**
1. Condensing unit will not start and fan will not start	1. Power cord is diconnected or no voltage at power source.	1. Verify power cord OK proper voltage at source
	2. Compressor cord disconnected	2. Reconnect compressor cord
	3. Control in “off” position (turned Clockwise)	3. Rotate control clockwise to turn on
	4. Control stuck in on position	4. Replace control*
	5. Loose wire on temp. control	5. Check/tighten all connections
2. Compressor will not start but fan motor starts	1. Loose wires on compressor connections	1. Check and tighten all compressors
	2. Low voltage	2. Measure voltage at compressor, voltage must be +/-10% of name plate voltage
	3. Start capacitor bad	3. Replace
	4. Relay bad	4. Replace
	5. Defective compressor	5. Replace

IMPORTANT: LOWLINE VOLTAGE WiLL CAUSE START CAPACITOR FAILURES AND EVENTUALLY LEAD TO PREMATURE COMPRESSOR FAILURE. VOLTAGE MUST BE CHECKED AT COMPRESSOR WHILE COMPRESSOR IS RUNNING TO INSURE PROPER SUPPLY VOLTAGE.

34. Condensing Unit starts but short cycles	1. Overload defective	1. Replace
	2. Defective thermostat	2. Replace*
	3. Plugged caplillary tube	3. Replace capillary tube AND filter drier
	4. Low voltage	4. Correct problem
	5. Defect in compressor winding	5. Replace Compressor*
	6. Loose connections on control or compressor housing	6. Check and tighten all electrical connections
	7. Unit too hot	7. Reference staring proceedures in high ambient temperatures

4. Compressor operates continuously, too warm	1. Low refrigerant level	1. Check for leaks and, as necessary, charge with proper amount of refrigerant as shown on name plate.
	2. Poor ventilation	2. Install according to “LOCATION AND WIRING”
	3. Plugged condensor	3. Clean condensor
	4. Fan motor not operating properly a. motor not running or too noisy b. fan blade unbalanced or loose	4. a. replace fan motor b. Replace fan blade
	5. Weak compressor	5. Replace*
	6. Capillary tube plugged	6. Replace capillary tube AND filter drier
5. Compressor operates continuously, too cold	1. Thermostat stuck in closed position	1. Recharge system to level on nameplate
	2. Short in wire harness or comp cord	2. Replace*
	3. Thermostat improperly located	3. Call factory
6. Wide temperature variations	1. Improper refrigerant levels	1. Recharge system to level on nameplate
	2. Defective thermostat	2. Replace*
	3. Plugged capillary tube	3. Replace capillary tube AND filter Drier
7. Frosted suction valve	1. Too much refrigerant	1. Correct refrigerant charge per nameplate

IMPORTANT: EXCESSIVE REFRIGERANT CHARGE WILL CAUSE PREMATURE COMPRESSOR FAILURE - THIS CONDITION MUST BE CORRECTED

8. Noisy Unit	1. fasteners loose	1. Repair as required
	2. Fan noise	2. a. replace fan motor if bearing shows signs of wear b. replace fan blade if unbalanced or mounting hole is worn
	3. Tubing Rattles	3. Locate problem & correct

IMPORTANT: TUBING RATTLES CAN LEAD TO RUPTURE OF TUBING AND LEAKING OF REFRIGERANT CAUSING LOSS OF PRODUCT AND EVENTUAL COMPRESSOR FAILURE. ALL TUBING RATTLES OF ANY KIND MUST BE CORRECTED AS SOON AS THEY ARE NOTICED

CAUTION: DISCONNECT POWER CORD BEFORE PROCEEDING.
TO SERVICE THE CONDENSING UNIT AND MOTOR COMPRESSOR, PROCEED AS FOLLOWS:

1. Remove service grille by pulling out firmly at the top and liftin same up until it is clear of the holes in the base frame.
2. Back out the thumb screw, which is located in the front center of the unit opening compartment. This will release the unit “hold-down” which should be removed to allow the condensing unit to slide out for servicing.

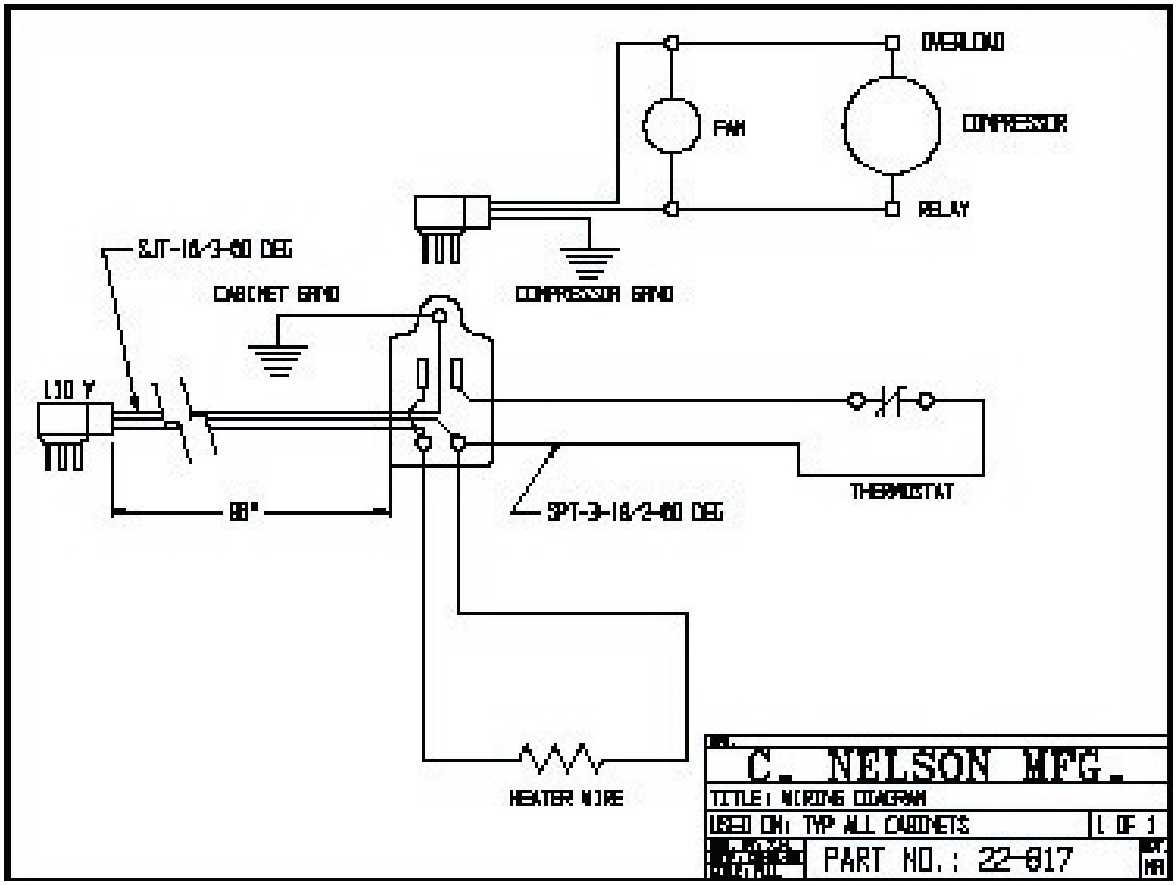
If it should be necessary to remove the condensing unit from the compartment for replacement or bench work - first disconnect the power supply. Then open the terminal box at the side of the unit by prying off the retainer clip and remove the plastic terminal cover. After this has been done, back off the nuts which secure the lead wires to the terminal posts. The lead wires to the temperature control should also be removed at this time.

The capillary \line is attached to the condensing unit with a flare nut, and a small clip at the base of the unit. When this flare nut and clip is released, the entire condensing unit can be removed from the cabinet

Reinstallation of the condensing unit should be made in the reverse order.

To replace the temperature control (refer to figure 1.), remove the two screws that secure the temperature control to the cabinet.Remove terminal cover exposing the attached lead wires.

After the lead wires have been disconnected, the sealant should be removed from the end of the feeler tube, which is located in the upper side of the unit compartment. Now carefully pull down the capillary tube from the feeler tube. When this has been done, insert the capillary tube of the replacement control, inside the feeler tube. Be careful not to kink the capillary tube, and be sure that the coiled end is well seated in the upper end of the feeler tube. Now seal the end of the feeler tube with the sealant and proceed to make the re-installation of the replacement control in the reverse order.



For more information on compressor installation see manufacturers website:
www.techumseh
www.danfoss