

**ISSUE DATE: 06/12**

**OPERATIONS AND MAINTENANCE MANUAL  
REPLACEMENT PARTS LIST  
FOR:**

**Quick  Switch**

**DROP IN HOT COLD PAN SYSTEM**

**Patent Pending**

**MODELS**

**CHP-1  
CHP-2  
CHP-3  
CHP-4**



**LOW TEMP INDUSTRIES, INC.  
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PO BOX 795 - JONESBORO, GA 30237  
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**CUSTOM FABRICATORS OF STAINLESS STEEL FOOD SERVICE EQUIPMENT**

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**\*\*\*\*\* INSPECTION \*\*\*\*\***

UPON RECEIPT, THE CRATE SHOULD BE INSPECTED FOR VISUAL DAMAGE. ANY DAMAGE SHOULD BE REPORTED IMMEDIATELY TO THE CARRIER.

**\*\*\*\*\* INSTALLATION INSTRUCTIONS \*\*\*\*\***

Quick/Switch units require a minimum opening of 13"X13" at condenser and discharge to supply the adequate fresh airflow across condenser and discharge of heat off the compressor. If a fan is needed for discharge it must be able to exhaust minimum of 210 CFM'S.

This unit also needs a service access to the back of counter as well. This unit has refrigeration valves located behind compressor and need an access for any service that is needed during warranty or in out of warranty period.

The Low Temp **\*\*QUICK/SWITCH\*\*** unit is a refrigeration and heating system designed for short term display and dispensing of cold & hot food products in maximum ambient temperature of (86) degree Fahrenheit.

This unit will maintain proper cold food product temperature when in the cold mode at 40 degree F or lower up to 4 hours when product is properly maintained.

This unit will maintain proper hot food temperatures when in the (Hot) mode at 150 degree F or higher for up to 2 hours when product is properly maintained.

Note: The cold mode is not intended to pull cold food products temperatures down but is designed to hold food at proper temperatures when pre-chilled food is placed into pans and placed into well of the Quick/Switch unit.

The hot mode is not intended to heat food products but is designed to hold hot food at proper temperatures when placed into food pans and pre-heated pans are placed into the Quick/Switch well.

The products both **HOT & COLD** should be carefully monitored and rotated as necessary to meet local Health Code Requirements.

**\*\*\*\*\* OPERATING INSTRUCTIONS \*\*\*\*\***

For operating instruction please refer to operation instruction page marked Operation Instruction for Quick/Switch in manual.

**\*\*\* WARNING \*\*\***

**NEVER POUR COLD WATER INTO A HOT FOOD PAN RECEPTACLE. IF THE WATER BOILS OUT, REFILL WITH HOT WATER OR WAIT UNTIL WELL HAS COOLED DOWN. IF COLD WATER IS Poured ON A HOT, EMPTY RECEPTACLE IT WILL CAUSE THE WELL TO SPLIT OR CRACK.**

**SHUTDOWN:**

At the end of day or Serving period place the control to **Standby** by long pressing the standby key. This has turned off the power to the cold & hot setting. To turn off power to the keypad press the Rocker switch to the "OFF" position.

Control will remember the last setting and when activated the next time will return to last setting.

**\*\*\*\*For Trouble Shooting of Quick/Switch Units\*\*\*\***

**Contact: Low Temp's Service Department at 888-584-2722 Ext. 251 or Ext. 278**

**ELECTRICAL SYSTEM:**

**\*\*\*\*\* WARNING \*\*\*\*\***

IN ORDER TO PREVENT ANY ELECTRICAL ACCIDENTS, THIS DISPENSER SHOULD BE INSTALLED AND SERVICED BY QUALIFIED MAINTENANCE PERSONNEL ONLY PER NATIONAL ELECTRICAL CODE STANDARDS

## **HOW TO CLEAN STAINLESS STEEL**

THE FOLLOWING INFORMATION WAS TAKEN FROM A PAMPHLET BY MR. RICHARD E. PARET, STAINLESS STEEL SPECIALIST, AMERICAN IRON AND STEEL INSTITUTE.

STAINLESS STEEL IS ONE OF THE EASIEST MATERIALS TO CLEAN AND KEEP CLEAN.

THE REASONS FOR STAINLESS STEEL'S EASE OF CLEANING ARE EASY TO SEE; THEY LIE IN THE NATURE OF THE METAL ITSELF.

1. IT'S HARD, TOUGH SURFACE. STAINLESS STEEL WILL WORK HARDER, THAT IS, THE MORE IT IS USED, THE MORE RESISTANT TO WEAR IT BECOMES. STAINLESS STEEL WILL NOT DEVELOP ROUGH SPOTS THAT HARBOR BACTERIA AND SOIL.
2. HIGH CORROSIVE RESISTANCE. STAINLESS STEEL IS PRACTICALLY UNTOUCHED BY THE CORROSIVE ATTACKS OF MOISTURE, DETERGENTS, FOOD ACIDS, BLOOD SALTS AND OTHER CORRODENTS CONNECTED WITH FOOD PREPARATION. THIS MEANS THAT STAINLESS STEEL ALWAYS HAS A BRIGHT SURFACE FREE FROM OXIDES THAT CAN AFFECT THE FLAVOR OF FOODS

THE SECRET OF MAINTAINING STAINLESS STEEL IS FREQUENT, SCHEDULED CLEANING THAT WILL PREVENT BUILD UP OF SURFACE DEPOSITS. SURFACE DEPOSITS, IF ALLOWED TO REMAIN FOR LONG PERIODS OF TIME CAN HARM STAINLESS STEEL. STAINLESS STEEL THRIVES ON EXPOSURE TO AIR; UNDER CERTAIN CONDITIONS, THE LENGTHY DEPRIVATION OF OXYGEN BY HEAVY SOIL DEPOSITS CAN CAUSE LOCALIZED PITTING OR STAINING.

NEGLECTING THE MATERIAL IN THIS MANNER IS **DEFINITE ABUSE**, WHICH EVEN STAINLESS STEEL IS NOT IMMUNE.

### **TWO BASIC RULES:**

1. CLEAN FREQUENTLY, AND ON A FIXED SCHEDULE.
2. SELECT THE SIMPLEST METHOD.

TO REMOVE ORDINARY DIRT AND FOOD RESIDUE FROM STAINLESS STEEL EQUIPMENT THAT OPERATES AT LOW TEMPERATURES, USE ORDINARY SOAP AND WATER AND APPLY WITH A SPONGE, FIBER BRUSH OR CLOTH. TO HASTEN ACTION, ADD EITHER SODA ASH, BAKING SODA, BORAX OR ANY OF SEVERAL NON-ABRASIVE COMMERCIAL CLEANSING AGENTS.

TO REMOVE SPLATTER OR CONDENSED VAPOR, WHICH HAVE "BAKED" ONTO THE EQUIPMENT, THE TREATMENT OUTLINED ABOVE IS OFTEN SUFFICIENT. IN OTHER CASES A GENTLE TO VIGOROUS POLISHING ACTION MAY BE NECESSARY.

FIRST TRY A PASTE MADE WITH WATER AND AMMONIA AS THE LIQUID AND EITHER MAGNESIUM OXIDE, FINELY POWDER PUMICE OR FRENCH CHALK AS THE SOLID. YOU CAN ALSO USE ONE OF SEVERAL COMMERCIAL CLEANERS LISTED IN THE FOLLOWING TABLE.

RUB AS GENTLY AS POSSIBLE IN THE DIRECTION OF THE POLISHING MARKS ON THE STEEL, USING A SOFT CLOTH. FOR MORE RESISTANT DEPOSITS, USE A STAINLESS STEEL SCOURING SPONGE OR STAINLESS STEEL WOOL OF THE FINEST POSSIBLE TEXTURE.

### **WHAT NOT TO DO:**

DO NOT USE COMMON STEEL WOOL, SCOURING PADS, SCRAPERS, WIRE BRUSHES, FILES OR OTHER STEEL TOOLS, SINCE THESE CAN MAR THE STAINLESS STEEL. THESE PARTICLES WILL EVENTUALLY RUST AND STAIN THE SURFACE, AND YOU MAY HAVE TO REFINISH IT.

**HOW TO CLEAN STAINLESS STEEL  
(CONT.)**

SLIGHTLY DARKENED AREAS SOMETIMES APPEAR ON STAINLESS STEEL SURFACES WHERE HEAT HAS BEEN APPLIED DURING FABRICATION OR IN SERVICE.

THESE ARE CAUSED BY THICKENING OF THE PROTECTIVE SURFACE OF STAINLESS STEEL, AND ARE NOT HARMFUL. REMOVAL CALLS FOR ENERGETIC SCOURING, AGAIN USING STAINLESS STEEL WOOL OR SCOURING PAD, COMBINED WITH A SCOURING POWDER OR ONE OF THE HEAT-TINT REMOVERS LISTED IN THE TABLE.

THREE RULES WILL PREVENT HEAT TINTING:

- 1) USE ONLY ENOUGH HEAT TO DO THE JOB EFFICIENTLY.
- 2) DO NOT APPLY HEAT TO EMPTY EQUIPMENT.
- 3) AVOID CONCENTRATING HEAT ON A SMALL AREA.

**CAUTION IS ADVISED**

IN STERILIZING STAINLESS STEEL EQUIPMENT, PAY PARTICULAR ATTENTION TO AGENTS CONTAINING CHLORINE COMPOUNDS SUCH AS POTASSIUM HYPOCHLORITE. THESE COMPOUNDS MAY BREAK DOWN AND RELEASE FREE CHLORINE, OR HYDROLYZE TO FORM HYDROCHLORIC ACID.

STAINLESS STEEL RESISTS ATTACK BY SUCH COMPOUNDS FOR UP TO TWO HOURS. SEVERE LOCALIZED PITTING MAY OCCUR FROM LONGER EXPOSURE. FOR SAFE USE OF THESE AGENTS, KEEP CONTACT TIME SHORT, FLUSH THOROUGHLY WITH WATER, AND OPERATE EQUIPMENT NORMALLY BETWEEN APPLICATIONS. USING THESE PRECAUTIONS, THE STERILIZATION PROCESS CAN BE REPEATED ANY NUMBER OF TIMES.

## Cleaners and their effect on stainless steel

Cleaning agent	Method of Application	Effect on Finish
<b>1. Tightly adhering deposits of "baked on" spatter, oil, grease, weather stain, dyes or other light discoloration may be removed with any of the following cleaners.</b>		
Grade FFF Italian pumice whitening or bon ami	scour or rub with damp cloth	satisfactory for all finishes use light Pressure on no.7
Liquid NuSteel	scour with small amount on dry cloth	satisfactory for all finishes If rubbing pressure is light
Paste NuSteel or Temp.	scour with small amount on dry cloth	satisfactory for no. 4 finish. Will scratch no.7
House hold cleaners such as Old Dutch, Sunbrite, Wyandotte, Bob-O, Gold Dust and Sapolio	Rub with damp cloth	Will scratch no. 4 finish slightly
Grade F Italian Pumice	Rub with damp cloth	Will scratch no.4 finish slightly
Cooper's stainless steel polish	satisfactory	Rub with damp cloth for no.4 finish
Allen stainless steel polish	Rub with damp cloth considerably	Scratches but leaves mirror reflection
Best effect chemical co. cleaner & Passivator	Rub with damp cloth	May scratch no.4 finish slightly
<b>2. Heat tint or heavy discoloration with the following (see notes below)</b>		
Allen stainless polish	Small amount on damp cloth	Excellent heat tint remover
Birdsall's "Staybright"	Rub with damp cloth	Very good for heat tint removal. Does not scratch no.4 finish but does scratch no.7
Wyandotte or Bob-O	Rub with damp cloth heat	Good for tint removal
Oxalic acid (use warm) or 5-15% nitric acid	Swab or immerse. Always follow with a 5% sodium carbonate or neutralizer rinse	Good discoloration remover
Best effect chemical co. cleaner & Passivator	Rub with damp cloth	May scratch no 4 finish but leaves clean surface

**CLEANERS AND THEIR EFFECT ON  
STAINLESS STEEL  
(Cont.)**

Cleaning agent	Method of Application	Effect on Finish
<p>3. The following detergents and solvents are excellent removers of grease, oil and fatty acids, where swabbing or rubbing is not practical.</p>		
<p>4 to 6% solution of (sodium Metasilicate) (Trisodium Phosphate) (Sodium Metaphosphate) (Sodium Pyrophosphate)</p>		<p>All excellent removers of grease, oil, and milkstone</p>
<p>5-15% caustic soda (hot or cold)</p>		<p>Will remove grease and milkstone</p>
<p>4. The following organic solvents may be used for removing oils and grease deposits:</p>		
<p>Carbon-tetrachloride, Naphtha, Trichlorethylene Acetone, Kerosene, Gasoline, Ether, Alcohol, Benzene</p>		<p>No affect on finish However, take all precautions against fire.</p>

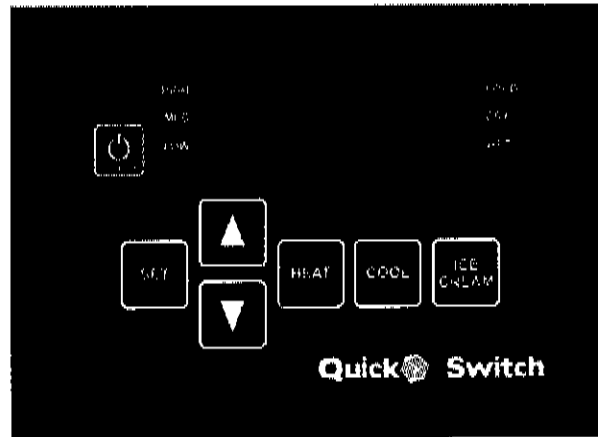
Notes: ordinary wool or steel brushes should never be used on stainless steel surfaces. Particles of steel may become imbedded in the stainless steel surface, and rusting of these particles will eventually appear as stains. Use stainless steel wool or sponge on stainless steel equipment. Heat tint removers will usually scratch stainless steel surfaces. This, however, is necessary in removing heat tint by hand. Oakite, a fibrous material, may be used in place of metal sponges or cloth pads for applying cleaners and polishes. This material is effective in aiding in removal of milkstone.

For heavy hard water deposits, 15-20% (by volume) nitric acid is very effective. Acid treatment should be followed by a thorough water rinse.

The action of soldering fluxes should be neutralized immediately with a 5% sodium carbonate solution. Soap and water followed by a water rinse will not harm stainless steel.



# Operating Instructions - QuickSwitch Controller



## General

The QuickSwitch controller has a STANDBY feature allowing easy management of power to individual food wells. When the instrument panel power switch is turned on each QuickSwitch food well starts in STANDBY mode.

Both heat and cool settings can be programmed for each food well. The controller will remember these settings for easy reuse.

## Key Presses

There are two types of key selection methods – short-press and long-press. A short-press is a momentary push and release of a key. A long-press is to push a key and hold it for one second then release it.

## STANDBY

At the upper-left of the controller face is the STANDBY key and the STANDBY LED. When the STANDBY LED is lighted the food well is idle.

- ▲ Long-press the STANDBY key to turn on the food well.

## ON

The controller will display 'On' when it is ready for you to select HEAT, COOL, or ICE CREAM.

## Selecting HEAT for a Food Well

- ▲ The controller displays 'On'.
- ▲ Long-press the HEAT key.
- ▲ The controller will display the last programmed heat setting and begin to heat.

## Selecting COOL for a Food Well

- ▲ The controller displays 'On'.
- ▲ Long-press the COOL key.
- ▲ The controller will display the last programmed cool setting and begin to refrigerate.

## Selecting ICE CREAM for a Food Well

- ▲ The controller displays 'On'.
- ▲ Long-press the ICE CREAM key.
- ▲ The controller will display 'ICE' and begin to refrigerate.

## Stopping HEAT, COOL, ICE CREAM

A long-press of HEAT, COOL, or ICE CREAM selects or stops each mode.

## LED LOAD

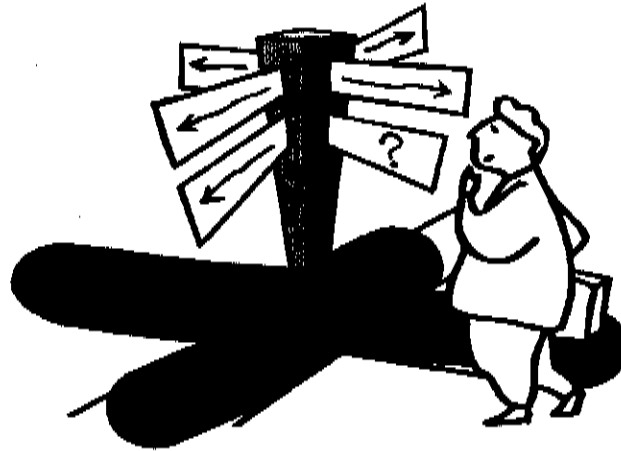
The LOAD LED indicates when the controller calls for heat or refrigerant.

## Programming HEAT

- ▲ Make sure controller displays 'On'.
- ▲ Long-press the SET key.
- ▲ The SET LED will blink while programming.
- ▲ Short-press the HEAT key.
- ▲ The HEAT LED will blink while programming the HEAT setting.
- ▲ Use arrow keys to modify the setting; range 1 through 6.
- ▲ Long-press the SET key to exit to 'On'.
- ▲ Long-press Heat key
- ▲ Setting will appear & well will begin to heat.

## Programming COOL

- ▲ Make sure controller displays 'On'.
- ▲ Long-press the SET key.
- ▲ The SET LED will blink while programming.
- ▲ Short-press the COOL key.
- ▲ The COOL LED will blink while programming the COOL setting.
- ▲ Use arrow keys to modify the setting; range 1 through 3.
- ▲ Long-press the SET key to exit to 'On'.
- ▲ Long press COOL key
- ▲ Setting will appear & well will begin to cool.



# **NEW QUICK/SWITCH HOT FOOD PAN WATER TEMPERATURES**

**TEMPERATURES WITH ONE INCH OF WATER IN BOTTOM OF HEATED WELL COVERED.**

## **SETTINGS:**

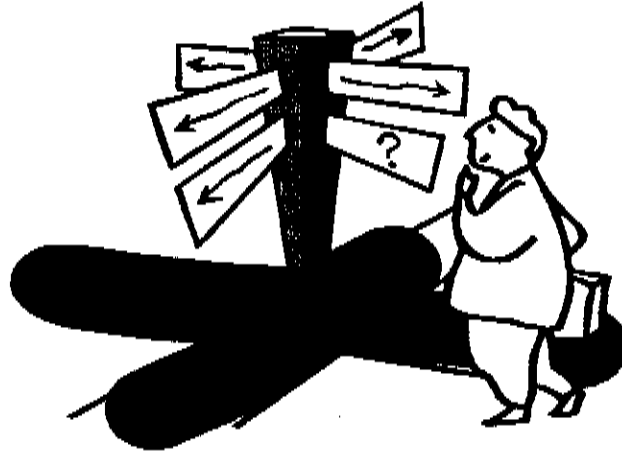
- 1. WET = 180 Degree F Water Temp.**
- 2. WET = 190 Degree F Water Temp.**
- 3. WET = 210 Degree F Water Temp.**
  
- 4. DRY = 180 Degree F Chamber Temp.**
- 5. DRY = 200 Degree F Chamber Temp.**
- 6. DRY = 250 Degree F Chamber Temp**

**UNITS CAN BE USED WET OR DRY. BEST PERFORMANCE  
FOR BEST PERFORMANCE FACTORY RECOMMENDS SETTING:**

**FOR WET SETTING No. 3 WITH 1 INCH OF WATER IN BOTTOM OF WELL**

**FOR DRY SETTING No. 6**

**TO SET CONTROLLER REFER TO OPERATING INSTRUCTIONS IN MANUAL**



## **NEW QUICK/SWITCH COLD PAN**

### **TEMPERATURES OF REFRIGERATED WELL COVERED**

#### **SETTINGS:**

- 1. COLD SETTING = 30 Degree Chamber Temp**
- 2. COLD SETTING = 33 Degree Chamber Temp**
- 3. COLD SETTING = 38 Degree Chamber Temp**

**Press ICE CREAM for to hold ice cream**

**Factory Recommends the No. 3 Setting for most Salad Bar Type Products**

**TO SET CONTROLLER REFER TO OPERATING INSTRUCTIONS IN MANUAL**

## Replacement parts for Quick Switch units

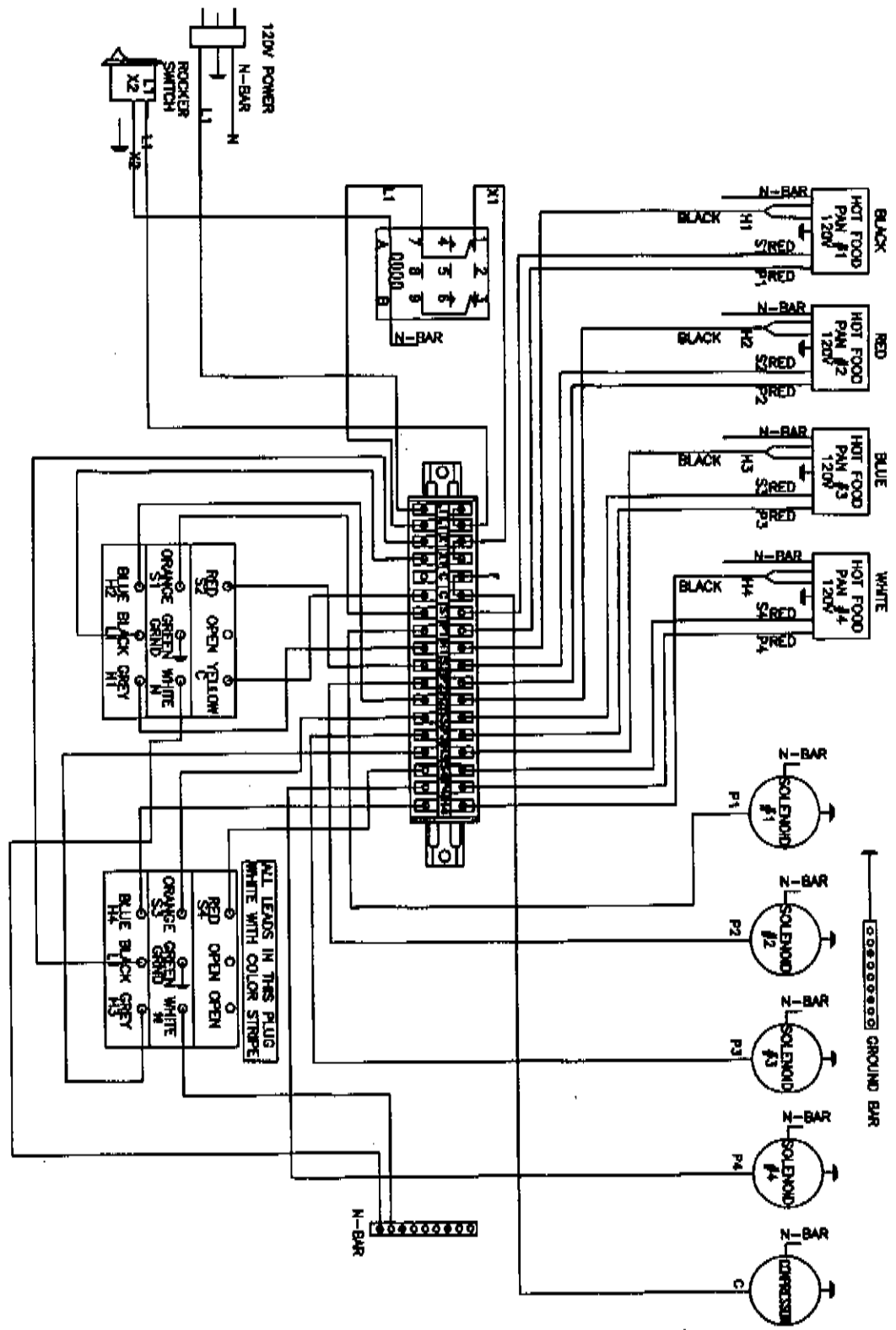
### (Refrigeration Parts)

Item No.	Description	Stock No.	MFG. No.	Manufacturer
1.	Condensing Unit	311946	M4CL-0040-IAA	Copeland
1A.	Compressor	311999	AFE13C3-IAA-901	Copeland
2.	Pressure Control	280610	012-4834-000	Ranco
3.	Filter/Drier	282300	C-052-S-T	Sporlan
4.	Sight Glass	282400	SA-12S	Sporlan
5.	Accumulator	281700	3616	Ref. Research
6.	Liquid line solenoid	281610	E3S120	Sporlan
7.	TXV Valve	282572	Y1017-FP-1/6-ZP W/MKC-1-120	Sporlan
8.	Quick/Switch Pan	MF310029	CHP-Pan	Low Temp

### (Electrical)

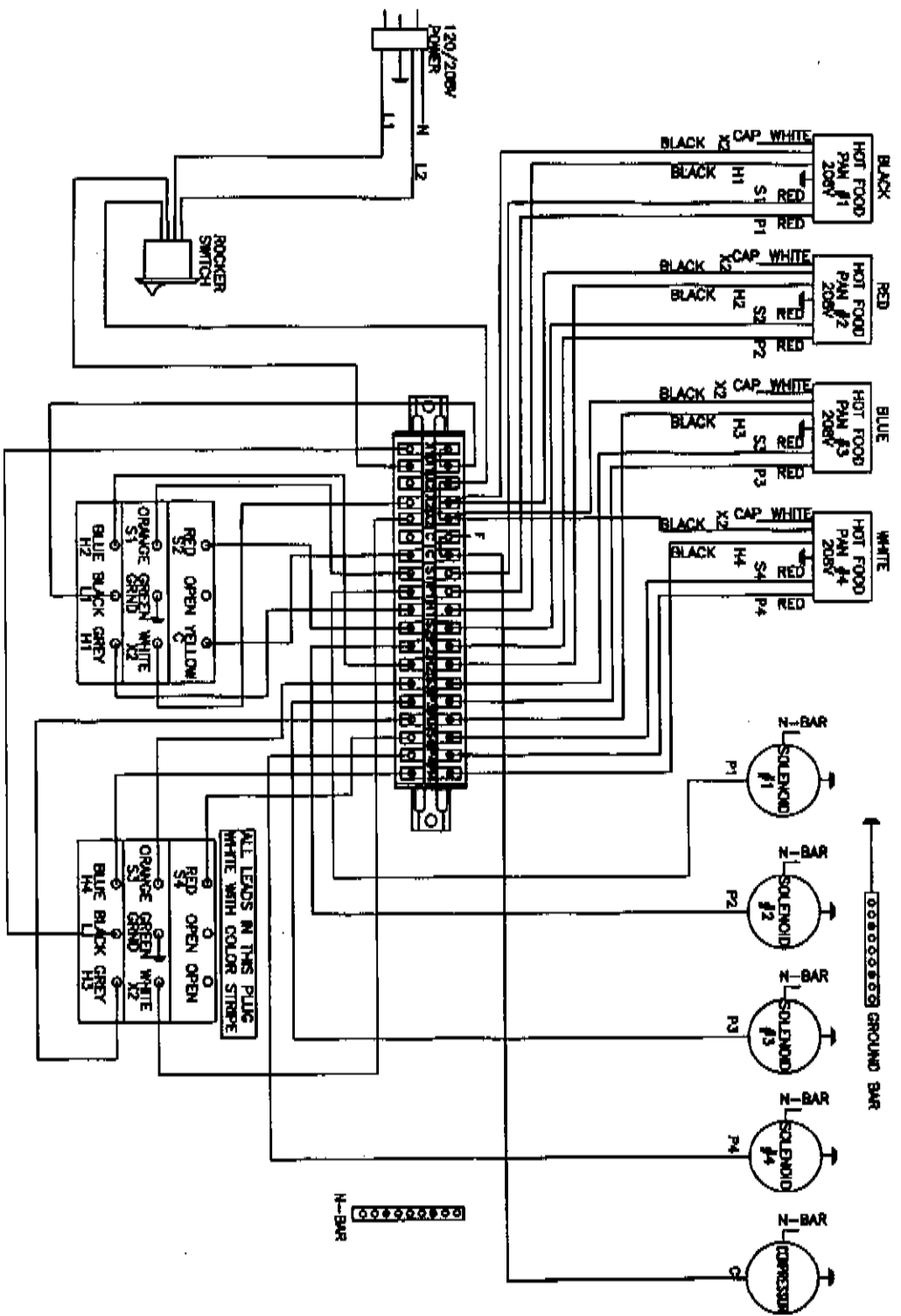
1.	Rocker Switch	335912	RSCA201-V3-B-1-V	Carling
	Rocker Switch	335915	RA581-RB-B-A-N	Carling
2.	Key Pad Q/S	195446	NS55-39F9-K9J	330 Electronics
3.	Single Mother Board (1-2 pans)	195448	NS53-RBEH-9E91	330 Electronics
4.	Double Mother Board (3-4 pans)	195449	NS53-RBEH-9E92	330 Electronics
5.	Power Female Connector, (12")	250613	LT-060110	EMF
6.	Power Male Connector (72")	250614	LT-060110-1	EMF
7.	35A Relay (120-volt units only)	515855		20844-8 Deltrol
8.	Signal Cable 72"	195452	330-HMI-HW-001	330 Electronics
9.	Bulk Head Connector	195452	330-CBL-003	330 Electronics

DRAWN BY: OTH	SCALE: NONE	PROJECT: QUICK SWITCH 4 WELL 120V - WIRING DIAGRAM
REVISIONS:	SHEET / K1 OF 1	DEALER: LOW TEMP ENGINEERING
DATE: 5-20-12	DRWG: QS-WD-4-120	



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REVISIONS:	SHEET # K1 OF 1	DEALER: LOW TEMP ENGINEERING
DATE: 8-20-12	DRG# QS-WD-4-120/208A	

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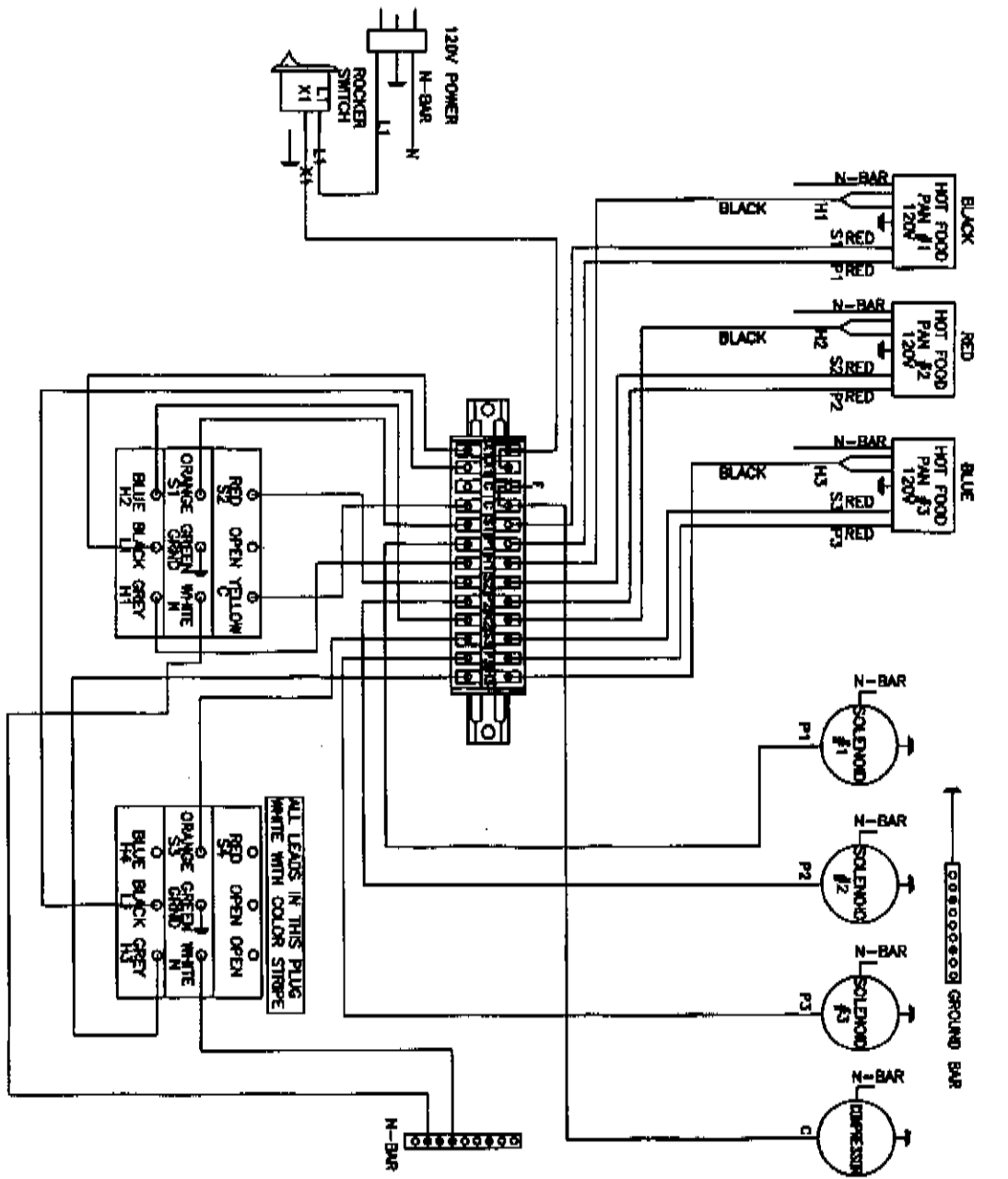
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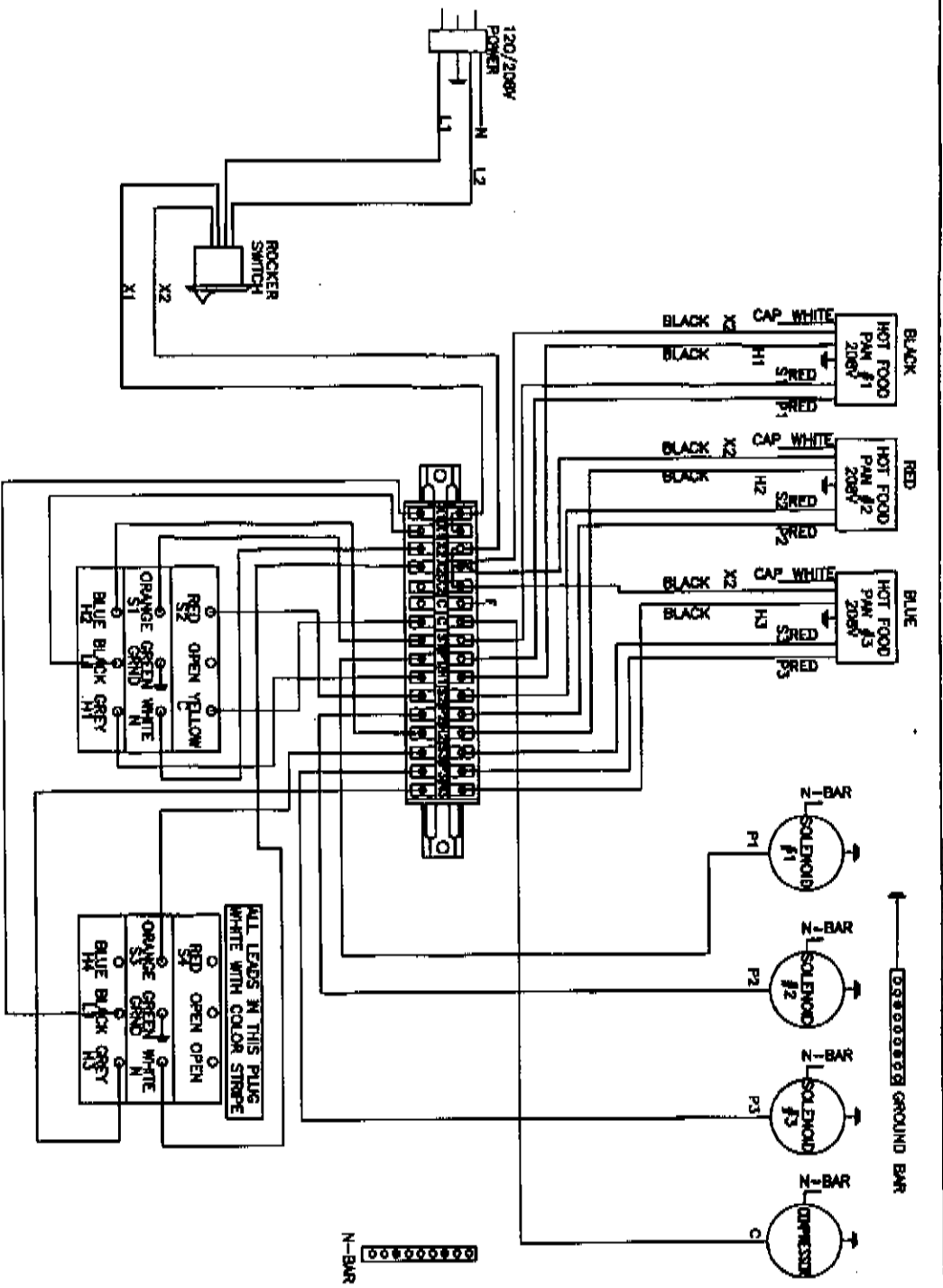
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SCALE: NONE  
 SHEET: K1 OF 1  
 DWG#: OS-WD-3-120

PROJECT: QUICK SWITCH 3 WELL 120V - WIRING DIAGRAM  
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 SHEET # K1 OF 1  
 DATE: 6-20-12  
 DWG# 05-WO-3-120/208

PROJECT: QUICK SWITCH 3 WELL 120/208V - WIRING DIAGRAM  
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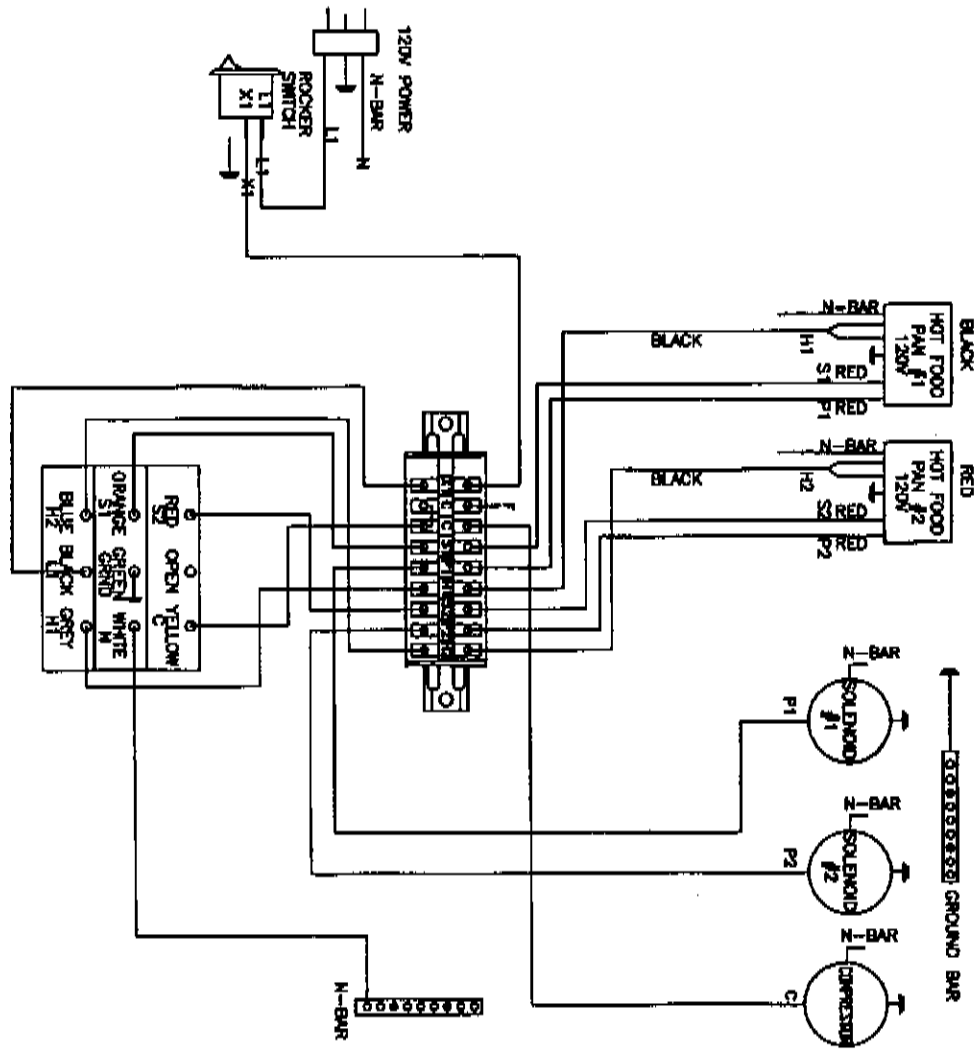


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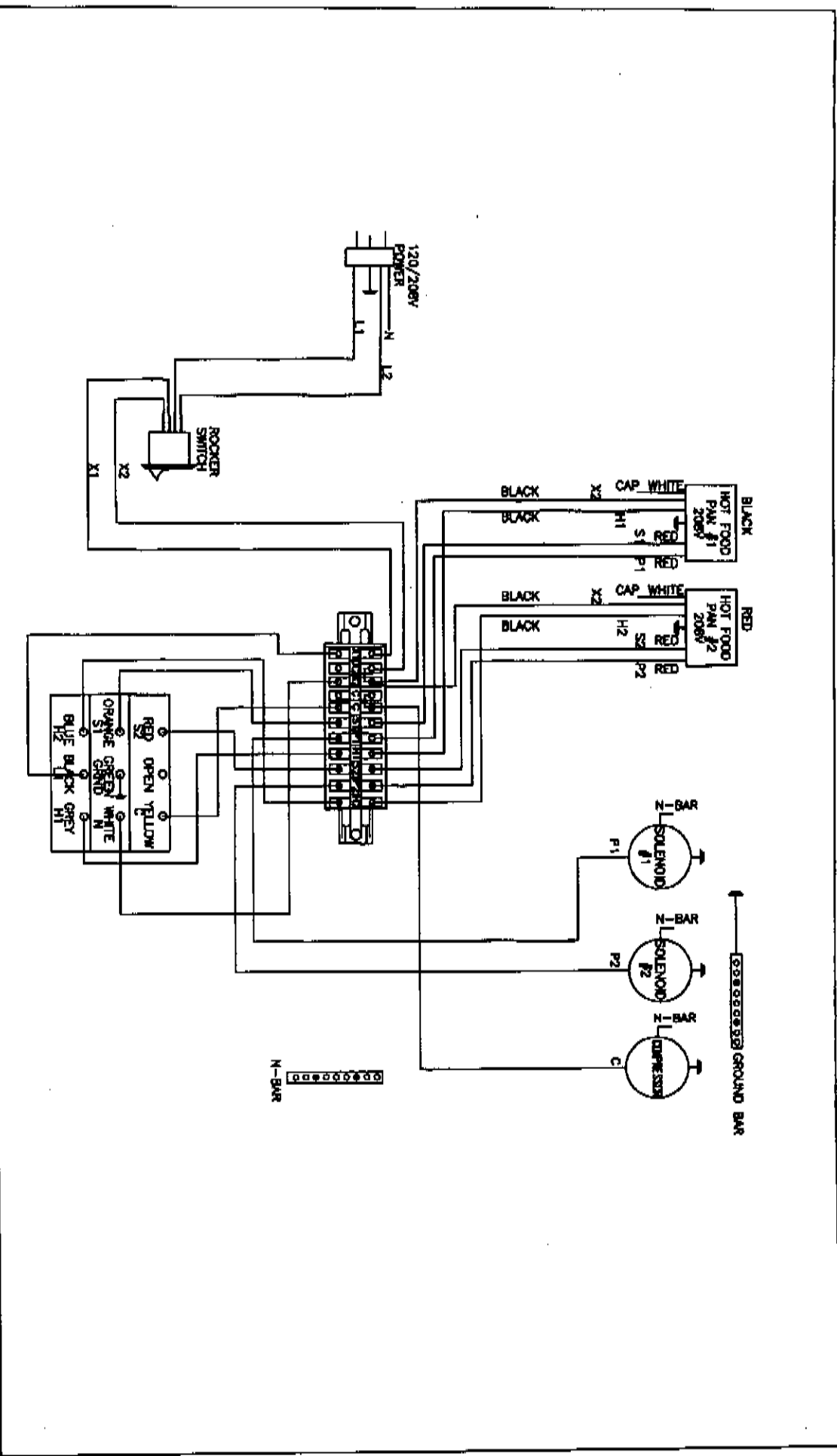
PROJECT: QUICK SWITCH 2 WELL 120V - WIRING DIAGRAM  
 DEALER: LOW TEMP ENGINEERING

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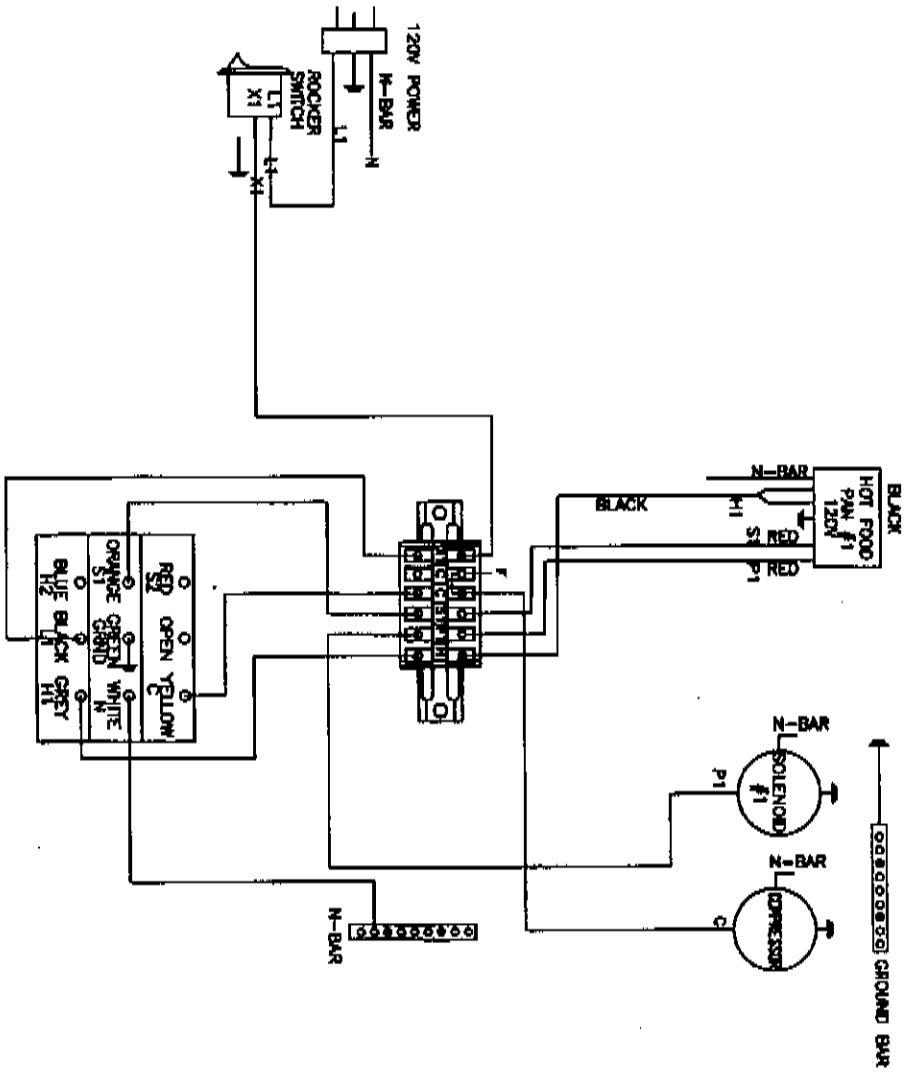


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REVISIONS:	SHEET/ K1 OF 1	DEALER: LOW TEMP ENGINEERING
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 REVISIONS:  
 DATE: 8-20-12


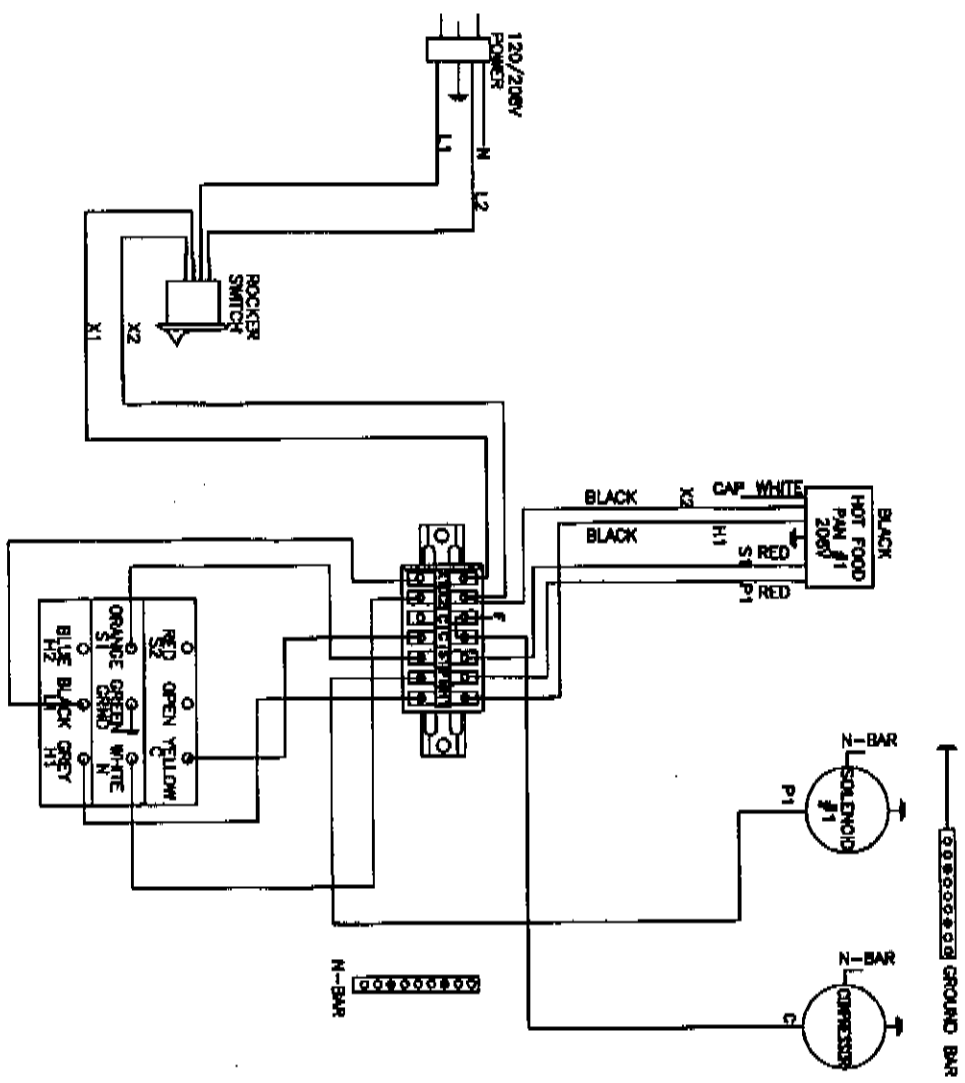
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PROJECT: QUICK SWITCH 1 WELL 120/208V - WIRING DIAGRAM  
 DEALER: LOW TEMP ENGINEERING

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## **BASIC SYSTEM OPERATION (REFRIGERATION SYSTEM)**

FOLLOWING SECTION IS DESIGNED TO GIVE A BASIC WORKING KNOWLEDGE OF OUR SYSTEM. IT SHOULD NOT BE USED AS A TRAINING MANUAL FOR NON-QUALIFIED REFRIGERATION TECHNICIANS.

ALL LOW TEMP IND REFRIGERATED EQUIPMENT EMPLOY A COMPRESSION CYCLE SYSTEM. THERE ARE TWO PRESSURES, WHICH EXIST IN A COMPRESSION SYSTEM; THE EVAPORATING OR LOW PRESSURE, AND THE CONDENSING OR HIGH PRESSURE.

THE REFRIGERANT WORKS AS A TRANSPORTATION MEDIUM TO MOVE HEAT FROM THE EVAPORATOR TO THE CONDENSER WHERE IT IS GIVEN OFF TO THE AMBIENT AIR. THE CHANGE OF STATE FROM LIQUID TO VAPOR AND BACK ALLOWS THE REFRIGERANT TO ABSORB AND DISCHARGE LARGE QUANTITIES OF HEAT EFFICIENTLY.

THE BASIC SYSTEM OPERATES AS FOLLOWS:

HIGH PRESSURE LIQUID REFRIGERANT IS FED FROM THE RECEIVER THROUGH THE LIQUID LINE AND THROUGH THE FILTER DRIER AND SIGHT GLASS TO THE EXPANSION VALVE, WHICH WORKS AS A METERING DEVICE SEPARATING THE HIGH PRESSURE SIDE OF THE SYSTEM FROM THE LOW PRESSURE EVAPORATOR.

THE THERMOSTATIC EXPANSION VALVE CONTROLS THE FEED OF LIQUID REFRIGERANT TO THE EVAPORATOR, AND BY MEANS OF AN ORIFICE REDUCES THE PRESSURE OF THE REFRIGERANT TO THE EVAPORATING OR LOW PRESSURE SIDE.

THE REDUCTION OF PRESSURE ON THE LIQUID REFRIGERANT CAUSES IT TO BOIL OR VAPORIZE UNTIL THE REFRIGERANT IS AT THE SATURATED TEMPERATURE CORRESPONDING TO ITS PRESSURE. AS THE LOW TEMPERATURE REFRIGERANT PASSES THROUGH THE EVAPORATOR COIL, HEAT FLOWS THROUGH THE WALLS OF THE EVAPORATOR TUBING TO THE REFRIGERANT, CAUSING THE BOILING ACTION TO CONTINUE UNTIL THE REFRIGERANT IS COMPLETELY VAPORIZED.

THE EXPANSION VALVE REGULATES THE FLOW THROUGH THE EVAPORATOR AS NECESSARY TO MAINTAIN A PRESET TEMPERATURE DIFFERENCE OR SUPER HEAT BETWEEN THE EVAPORATING REFRIGERANT AND VAPOR LEAVING THE EVAPORATOR. AS THE TEMPERATURE OF THE GAS LEAVING THE EVAPORATOR VARIES THE EXPANSION VALVE POWER ELEMENT BULB SENSES ITS TEMPERATURE, AND ACTS TO MODULATE THE FEED THROUGH THE EXPANSION VALVE AS REQUIRED.

THE REFRIGERANT VAPOR LEAVING THE EVAPORATOR TRAVELS THROUGH THE SUCTION LINE TO THE COMPRESSOR INLET. THE COMPRESSOR TAKES THE LOW PRESSURE VAPOR AND COMPRESSES IT, INCREASING BOTH THE PRESSURE AND THE TEMPERATURE. THE HOT, HIGH PRESSURE GAS IS FORCED OUT THE COMPRESSOR DISCHARGE VALVE AND INTO THE CONDENSER.

AS THE HIGH PRESSURE GAS PASSES THROUGH THE CONDENSER, A FAN BLOWING OVER A FIN-TYPE CONDENSER SURFACE COOLS IT. AS THE TEMPERATURE OF THE REFRIGERANT VAPOR REACHES THE SATURATION TEMPERATURE CORRESPONDING TO THE HIGH PRESSURE IN THE CONDENSER, THE VAPOR CONDENSES INTO A LIQUID AND FLOWS BACK INTO THE RECEIVER TO REPEAT THE CYCLE.

THE REFRIGERATION PROCESS IS CONTINUED AS LONG AS THE COMPRESSOR OPERATES. THE COMPRESSOR OPERATION IS CONTROLLED BY A LOW PRESSURE CONTROL. WHEN THE REFRIGERANT VAPOR ENTERING THE SUCTION SIDE OF THE COMPRESSOR REACHES A PRESET VALUE ON THE CONTROL, IT WILL OPEN A SET OF CONTACTS AND SHUT THE COMPRESSOR OFF.

THE LOW PRESSURE IS SET BY A "CUT-IN" AND A "DIFFERENTIAL" SETTING. THE "CUT-IN" IS THE PRESSURE AT WHICH YOU WANT THE COMPRESSOR TO START. THIS PRESSURE CORRESPONDS TO THE TEMPERATURE OF THE EVAPORATOR SURFACE, WHICH MUST BE MAINTAINED. NOTE THAT AS A RULE OF THUMB ALL COLORPOINT UNITS HAVE APPROXIMATELY A 10 DEGREE FAHRENHEIT TEMPERATURE DIFFERENCE. BETWEEN THE EVAPORATOR COILS AND THE WORKING SURFACE. SO THE PRESSURE CORRESPONDING TO THE "CUT-IN" SHOULD BE 10 DEGREES LESS THAT THE OPERATING TEMPERATURE OF THE REFRIGERATED SURFACE. TO CUT THE UNIT OFF THE "DIFFERENTIAL" SETTING IS USED. FIRST CHOOSE THE TEMPERATURE SETTING AT, WHICH YOU WANT THE UNIT TO CUT OFF. THEN SUBTRACT FROM THE "CUT-IN" SETTING. THAT IS THE VALUE OF THE DIFFERENTIAL.

## **WARRANTY**

ALL LOW TEMP FOOD SERVICE EQUIPMENT IS FULLY WARRANTED BY THE MANUFACTURER AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF **TWO (2) YEARS FOR PARTS AND LABOR** FROM THE DATE OF PURCHASE BY THE ORIGINAL USER AND ONLY TO THE ORIGINAL PURCHASER PROVIDED IT IS INSTALLED AND OPERATED IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED WITH THE UNIT. ALSO, IT MUST NOT BE MISUSED, ALTERED OR NEGLECTED AND USED ONLY ON CIRCUITS AND VOLTAGES REQUIRED FOR THAT UNIT.

OUR OBLIGATION UNDER THIS WARRANTY SHALL BE LIMITED TO ONE OF THE FOLLOWING PROCEDURES. SELECTION OF A PROCEDURE SHALL BE AT THE SOLE DISCRETION OF LOW TEMP INDUSTRIES INC.

**LOW TEMP INDUSTRIES, INC. WARRANTY SERVICE DEPARTMENT MUST BE NOTIFIED PRIOR TO ANY SERVICE WORK FOR A WARRANTY AUTHORIZATION NUMBER. ANY REQUESTS FOR WARRANTY CLAIMS WITHOUT A WARRANTY AUTHORIZATION NUMBER WILL NOT BE HONORED.**

- A. REPLACEMENT OF DEFECTIVE PARTS, SHIPPED F.O.B. FACTORY, IN EXCHANGE FOR THE RETURNED DEFECTIVE PART, SHIPPED PREPAID FREIGHT.
- B. FREE REPLACEMENT OF DEFECTIVE PART, SHIPPED F.O.B. FACTORY.
- C. DEFECTIVE PART SHIPPED PREPAID FREIGHT TO FACTORY, REPAIRED AND RETURNED, SHIPPED F.O.B. . FACTORY.
- D. ALL LABOR COSTS SHALL BE COVERED FOR A PERIOD OF 2 YEARS FROM THE DATE OF PURCHASE.

LOW TEMP INDUSTRIES INC. SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY FIRE, FLOOD, WINDSTORM, OR ANY OTHER ACT OF GOD; WAR, WHETHER DECLARED OR UNDECLARED NOR SHALL WE BE RESPONSIBLE FOR THE LOSS OF FOOD OR OTHER PRODUCTS DUE TO POWER OR MECHANICAL FAILURE. THIS WARRANTY SHALL NOT COVER ANY DAMAGE CAUSED DURING SHIPMENT, THAT SHOULD BE REPORTED TO THE DELIVERING CARRIER.

### **LOW TEMP MANUFACTURING COMPANY**

**A DIVISION OF LOW TEMP INDUSTRIES INC.  
9192 TARA BOULEVARD  
JONESBORO, GEORGIA 30236  
(770) 478-8803**

## **FIVE YEAR COMPRESSOR WARRANTY**

ALL LOW TEMP MECHANICALLY REFRIGERATED EQUIPMENT CARRIES AN EXTENDED COMPRESSOR WARRANTY BY LOW TEMP INDUSTRIES, INC.

THIS EXTENDED WARRANTY BEGINS ON THE EXPIRATION DATE OF THE TWO (2) YEAR WARRANTY BY THE COMPRESSOR MANUFACTURER AND WARRANTS THE COMPRESSOR AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF THREE (3) YEARS TO THE ORIGINAL USER AND ONLY TO THE ORIGINAL PURCHASER PROVIDED IT IS INSTALLED AND OPERATED IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED WITH THE UNIT.

THIS WARRANTY COVERS ONLY THE COMPRESSOR AND DOES NOT INCLUDE ANY RETURN SHIPPING CHARGES, OTHER TRANSPORTATION CHARGES, ANY EXTERNAL PARTS OR ELECTRICAL COMPONENTS, LABOR, REFRIGERANTS OR TAXES.

WARRANTY SHALL BE VOID IF THE UNIT HAS BEEN MISUSED, ALTERED OR NEGLECTED. THE SERIAL NUMBER SHALL NOT BE REMOVED OR DEFACED, AND THE UNIT SHALL BE USED ONLY ON CIRCUITS AND VOLTAGES REQUIRED FOR THAT UNIT.

OUR OBLIGATION UNDER THIS EXTENDED WARRANTY SHALL BE LIMITED TO ONE OF THE FOLLOWING PROCEDURES:

A. REPLACEMENT OF DEFECTIVE COMPRESSOR, SHIPPED FREIGHT PREPAID, IN EXCHANGE FOR THE RETURNED DEFECTIVE COMPRESSOR, SHIPPED PREPAID FREIGHT.

B. REPLACEMENT OF DEFECTIVE COMPRESSOR AT A LOCAL REFRIGERATION SUPPLY HOUSE, IN EXCHANGE FOR THE DEFECTIVE COMPRESSOR.

NO REPLACEMENT OF COMPRESSOR(S) WILL BE AUTHORIZED UNDER EXTENDED WARRANTY WITHOUT ACCURATE VERIFICATION OF SERIAL NUMBER(S) OF DEFECTIVE COMPRESSOR(S).

**LOW TEMP INDUSTRIES, INC. MUST BE NOTIFIED PRIOR TO COMPRESSOR REPLACEMENT FOR A WARRANTY AUTHORIZATION NUMBER. ANY REQUESTS FOR WARRANTY CLAIMS WITHOUT A WARRANTY AUTHORIZATION NUMBER, WILL NOT BE HONORED.**

THIS EXTENDED WARRANTY DOES NOT COVER ANY DAMAGES CAUSED BY FIRE, FLOOD, WINDSTORM, OR ANY OTHER ACT OF GOD; WAR, WHETHER DECLARED OR UNDECLARED NOR SHALL BE RESPONSIBLE FOR THE LOSS OF FOOD OR OTHER PRODUCTS DUE TO POWER OR MECHANICAL FAILURE.

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