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FEDERAL INDUSTRIES

134A

**INSTALLATION &
OPERATION INSTRUCTIONS**

RSS3 -2B & -3B

RSS4 -2B & -3B

RSS5 -2B & -3B

RSS6 -2B & -3B

Self-Contained & Remote Models

120V

KEEP THIS MANUAL FOR FUTURE REFERENCE

Engineering and technical data are subject to change without notice.

FEDERAL INDUSTRIES
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215 Federal Avenue
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RSS Open Refrigerated Displays

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Information contained in this manual covers models:

RSS3SC-2B	RSS4SC-2B	RSS5SC-2B	RSS6SC-2B
RSS3SC-3B	RSS4SC-3B	RSS5SC-3B	RSS6SC-3B
RSS3R-2B	RSS4R-2B	RSS5R-2B	RSS6R-2B
RSS3R-3B	RSS4R-3B	RSS5R-3B	RSS6R-3B

INTRODUCTION

Thank you for purchasing a Federal Industries display case. This manual contains important instructions for installing and servicing the RSS, Refrigerated Self-Service Merchandisers. A repair parts list and wiring diagram are also included in the manual. Read all of these documents carefully before installing or servicing your case.



NOTICE

Read this manual before installing your case. Keep this manual and refer to it before doing any service on the equipment. Failure to do so could result in personal injury or damage to the case.



NOTICE

Installation and service of the electrical components in the case must be performed by a licensed electrician.

The portions of this manual covering electrical components contain technical instructions intended only for persons qualified to perform electrical work.



DANGER

Improper or faulty hookup of electrical components in the case can result in severe injury or death.

All electrical wiring hookups must be done in accordance with all applicable local, regional, or national standards.

Serial Number

Record the model and serial numbers of the case for easy reference. Always refer to both model and serial numbers in your correspondence regarding the case.

Case Model _____ Serial Number _____
Condensing Unit Model _____ Serial Number _____

This manual cannot cover every installation, use, or service situation. If you need additional information, call or write us:

CUSTOMER SERVICE DEPARTMENT
Federal Industries
215 Federal Avenue
Belleville WI 53508
Toll Free (800) 356-4206 / WI Phone (608) 424-3331

WARNING LABELS & SAFETY INSTRUCTIONS



This is the safety-alert symbol. When you see this symbol on your case or in the manual, be alert to the potential for personal injury or damage to your equipment.

Be sure you understand all safety messages and always follow recommended precautions and safe operating practices.



Notice to Employers

You must make sure that everyone who installs, uses, or services your case is thoroughly familiar with all safety information and procedures.

Important safety information is presented in this section and throughout the manual. The following signal words are used in the warnings and safety messages:

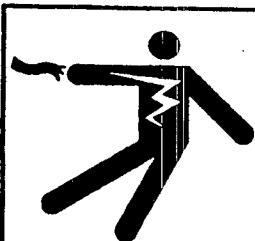
DANGER: Severe injury or death will occur if you ignore the message.

WARNING: Severe injury or death can occur if you ignore the message.

CAUTION: Minor injury or damage to your case can occur if you ignore the message.

NOTICE: This is important installation, operation, or service information. If you ignore the message, you may damage your case.

The warning and safety labels shown throughout this manual are placed on your Federal Industries case at the factory. Follow all warning label instructions. If any warning or safety labels become lost or damaged, call our customer service department at 1(800)356-4206 for replacements.



▲ DANGER
HIGH VOLTAGE.
Turn power off
before servicing.
May have more
than one disconnect
switch.

This label is located on the back of the case and on the front of the case behind the access panel.

RSS Open Refrigerated Displays

CAUTION
HAZARDOUS MOVING PARTS.
DO NOT OPERATE UNIT WITH
DISPLAY PANS REMOVED.

This label is located below the display pan.

PRE-INSTALLATION PROCEDURES

Inspection for Shipping Damage

You are responsible for filing all freight claims with the delivering truck line. Inspect all cartons and crates for damage as soon as they arrive. If damage is noted to shipping crates or cartons or if a shortage is found, note this on the bill of lading (all copies) prior to signing.

If damage is discovered when the case is uncrated, immediately call the delivering truck line and follow up the call with a written report indicating concealed damage to your shipment. Ask for an immediate inspection of your concealed damage item. Crating material must be retained to show the inspector from the truck line.

INSTALLATION INSTRUCTIONS

Locating the Display Case

The case should be located where it is not subjected to the direct rays of the sun, heating ducts, grills, radiators, or ceiling fans, nor should it be located near open doors or main door entrances. Avoid locations where there is excessive air movement or air disturbances and avoid high humidity locations such as near cases with water misting or fogging devices.

The case requires a minimum of six (6") inch clearance at the rear of the unit for air discharge. Do not locate case with back tight against a wall. No clearance is needed on the sides of the unit.

Leveling the Case

The case must be level for proper drainage of defrost water to the condensate evaporator or floor drain. The case can be leveled by placing metal shims under welded steel frame as required.

To comply with NSFI requirements, the base of the unit should be sealed to the floor with NSFI listed sealant after installing and leveling unless a minimum of 6" high legs or casters are provided.

Grill Removal



DANGER: Electrical shock hazard. Do not operate unit with panels removed.

The front and rear grill require removal for case installation. Both grills are secured with self tapping machine screws.

Both grills must be in place for proper operation of the case. Grills must be reinstalled after initial case installation.

Condensate Evaporator



NOTICE: During normal defrost cycles, steam from the condensate evaporator may be visible around the case.

This case is furnished with an electric condensate evaporator. A separate 120 Volt power supply is required for this device. Plumbing connections are not required.

The condensate evaporator can be removed from the case and the condensate drain can be plumbed to a drain to conserve energy if desired. Disconnect the condensate evaporator wires at the condensate evaporator to remove. Also, disconnect the power supply to the condensate evaporator. This must be done by a qualified electrician.

This is an open merchandiser and at times can produce a large amount of condensate water. To ensure that adequate evaporator capacity is available, a 1200 watt heater is used. The heater turns off automatically when the water level in the pan drops.

Check that the float is positioned correctly and that the switch operates at time of installation.

Make sure that the drain line has not been dislodged during shipment and that the drain trap terminates properly over the water pan.

Defrost Time Clock

A solid-state defrost timer is furnished with self-contained models.

The timer will initiate a 20 minute defrost if the compressor runs continuously for two (2) hours without shutting off. This timer is nonadjustable and is located in the machine compartment at the base of the unit.

ELECTRICAL INFORMATION & GROUNDING

This Case Must Be Grounded



DANGER: Improper or faulty hookup of electrical components in the display case can result in severe injury or death.

All of the case electrical connections must be performed only by a licensed electrician.

All electrical wiring hookups must be done in accordance with all applicable local, regional, or national standards.

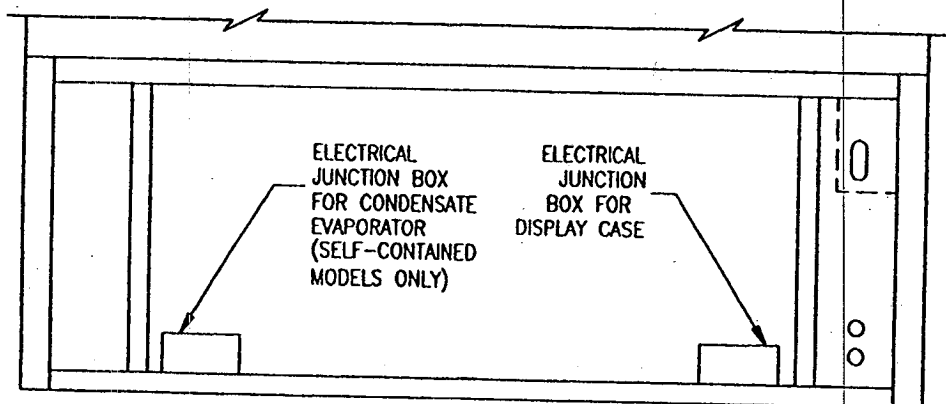
A separate circuit for each case is recommended to avoid the possibility of other appliances on the same circuit from overloading the circuit and causing malfunction.

The electrical service must be grounded upon installation.

This unit is designed for permanent connection to a power source. See the electrical data plate at the rear of the unit for proper circuit size and wire ampacity.

On self-contained models two (2) power supplies are required. Connect a separate 120 volt, 60 HZ, 1 Phase power supply to the display case junction box and a separate 120 volt, 60 HZ, 1 Phase power supply to the condensate evaporator junction box.

On remote models, one (1) power supply is required. Connect a 120 volt, 60 HZ, 1 Phase power supply to the electrical junction box.



REAR VIEW OF CASE

OPERATING INSTRUCTIONS

Initial Start-Up

After all the checks outlined in the installation section of this manual have been made, the case is ready to be put into service. On self-contained models, the service valves on the refrigeration system are backseated when the unit leaves the factory.

Controls

Refrigeration System Power Switch

This switch is located in the back of the unit and is accessible through an oval slot. This switch controls the refrigeration system, the evaporator fans, lights, and anti-sweat heaters. It does not control the power to the condensate water evaporator.

Light Switch (Optional Case Light)

If the unit is supplied with the optional light, it can be turned on and off by a switch located at the top light housing.

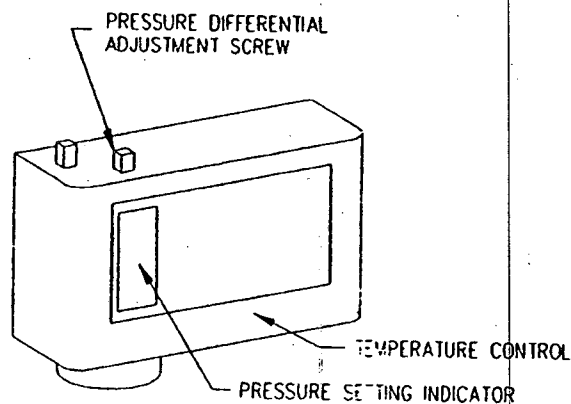
Condensate Evaporator

The condensate evaporator is controlled by a float switch that will energize the heater when the water level in the pan reaches approximately one inch (1"). Make certain that the float is positioned correctly for proper operation.

Temperature Control (Self-Contained Models Only)

This device is a dual pressure control located on the left side of the base. The low pressure control portion of the device controls the temperature of the case. The low pressure control is factory set to cut in (turn compressor on) at 32 PSIG and cut out (turn compressor off) at 15 PSIG. This setting will give an operating temperature of 40° to 42° F.

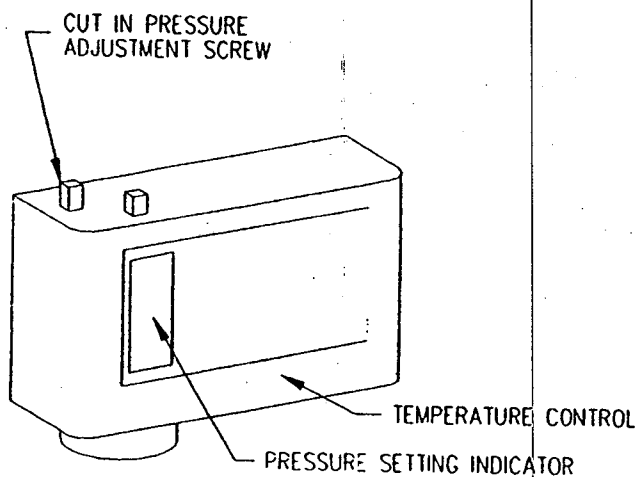
If a warmer or colder temperature is desired, the cut out pressure can be raised or lowered by changing the pressure differential setting. Turn the pressure differential adjustment screw (or knob) clockwise for a colder setting and counter clockwise for a warmer setting. It is advisable not to turn the adjustment more than ½ turn at a time. After each minor adjustment allow the case to run at least four hours before making further adjustments.



The high pressure control portion of this device is factory set at 385 PSIG. This is a safety device and is not adjustable.

Under normal conditions, the evaporator coil will clear itself of frost during the off cycles.

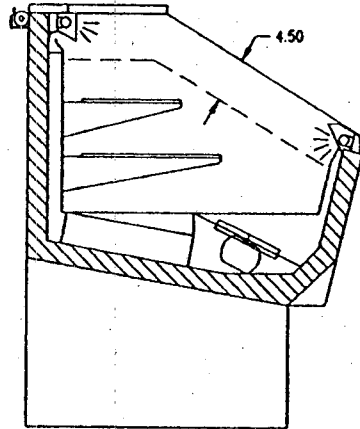
If the unit cycles but does not clear itself of frost during the off cycle, the cut in pressure should be raised to allow more time for frost to clear. Turn the cut in pressure adjustment screw counterclockwise to raise the cut in pressure. Do not adjust more than ½ turn at a time and allow the unit to run for four (4) hours minimum before making further adjustments.



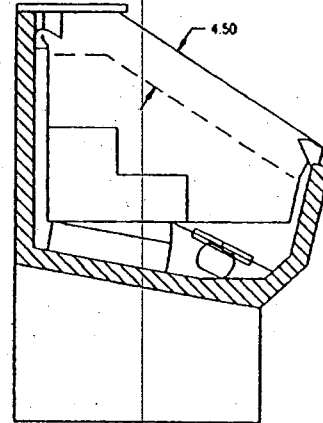
Placing Product in Case

Do not overload the case with product to a point where the top air discharge grill or the bottom air intake grill are blocked or where the air curtain created by the discharge air is blocked. The following diagram shows proper product loading.

DO NOT LOAD PRODUCT ABOVE DOTTED LINE.



RSS-3



RSS-2

Open refrigerated merchandisers are not intended as storage refrigerators and will not "pull down" product that is warm or at room temperature. Load case interior with only pre-chilled product.

Periodic Maintenance

Cleaning Condenser Coil

Turn power switch "off".

Remove front grill on front air intake models, rear grill on rear air intake models, and vacuum the front surface of the condenser coil. Replace grill when done.

This should be done every one or two months as necessary.

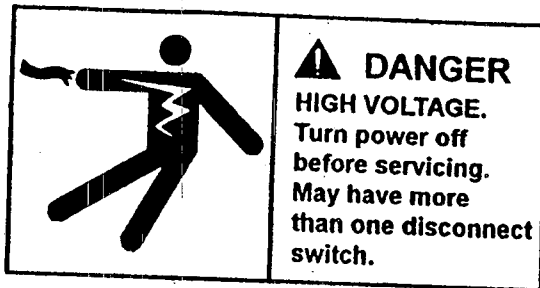
Cleaning Case Interior

Turn power switch "off".

Clean interior surfaces with mild detergent and water. Do not use abrasive cleansers on case interior.

Step pans may be lifted out of case for easy cleaning.

SERVICE INFORMATION



Before any service work is performed on the case, make sure all power is disconnected to the case.

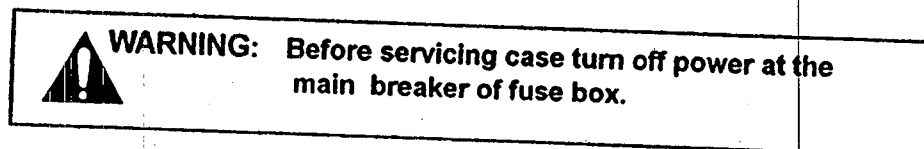
Service problems or request for repair parts from authorized service agencies, trained service personnel, or owners should be referred to:

CUSTOMER SERVICE DEPARTMENT
Federal Industries
215 Federal Avenue
Belleville WI 53508
Toll Free: (800) 356-4206 / WI Phone (608) 424-3331
Fax: (608) 424-3234

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Pre-Service Checklist

You may avoid the cost and inconvenience of an unnecessary service call by first reviewing this checklist of frequently encountered situations that can cause unsatisfactory case performance.



Pre-Service Checklist

Case Does Not Operate

Check for disconnected power supply.

Check that power switch is "on".

Case Temperature Too Warm

Check that top air discharge opening and/or bottom air intake grille are not blocked.

Check for a blocked or dirty condenser coil.

Check that there are no outside air disturbances in or around case. These disturbances can be caused by nearby doors or entrances, overhead ceiling fans, or air diffuser vents, direct sunlight or other heat sources. The location of open refrigerated merchandisers is critical to case performance.

Make sure that warm product is not being placed inside case. All product must be pre-chilled prior to loading for proper case performance.

Check temperature/pressure control for proper settings.

Check cold air flow. Lack of, or no air flow may indicate a blocked evaporator coil or defective evaporator fan motor. Contact a qualified service company if there is no air flow inside the case.

Lights Do Not Operate (Optional Equipment)

Check that light switch is "on".

Check that light bulb(s) are properly seated in the lightholders.

Overflow of Condensate Evaporator

Check that there is a power supply to the condensate evaporator assembly. On self-contained models this is on a separate electrical circuit.

Check that the float is positioned correctly inside the water reservoir.

Check that the drain line is properly located over the water reservoir.

Check room ambient conditions. The room environment should not exceed 75°F ambient and 55% humidity conditions.

Special Service Situations

There are rare occasions when the refrigerant charge must be evacuated from a case in order to perform service work. In those situations, Federal Industries recommends that the refrigerant charge be evacuated into a recovery system to prevent the possibility of hydrochlorofluorocarbons (HFC's) from being released into the atmosphere. The release of HFC's into the atmosphere is a potential source of global warming.

If moisture or liquid is observed around or under a Federal Industries case, an immediate investigation should be made by qualified personnel to determine the source of the moisture or liquid. The investigation made should determine if the case is malfunctioning or if there is a simple housekeeping problem.

Moisture or liquid around or under a case is a potential slip/fall hazard for persons walking by or working in the general area of the case. Any case malfunction or housekeeping problem that creates a slip/fall hazard around or under a case should be corrected immediately.

SALE & DISPOSAL

Owner Responsibility

If you sell or give away your Federal Industries case you must make sure that all safety labels and the Installation-Service Manual are included with it. If you need replacement labels or manuals, Federal Industries will provide them free of charge. Contact the Customer Service Department at Federal Industries at 1(800)356-4206.

The Customer Service Department at Federal Industries should be contacted at the time of sale or disposal of your case so records may be kept of its new location.

If you sell or give away your Federal Industries case and you evacuate the refrigerant charge before shipment, Federal Industries recommends that the charge be evacuated into a recovery system to reduce the possibility of HFC's from being released into the atmosphere. The release of HFC's into the atmosphere is a potential source of global warming.

REFRIGERATION & ELECTRICAL DATA

SELF-CONTAINED MODELS

Model	RSS3SC-2B RSS3SC-3B	RSS4SC-2B RSS4SC-3B	RSS5SC-2B RSS5SC-3B	RSS6SC-2B RSS6SC-3B
Refrigerant Charge (R134A)	26 oz. 15	30 oz. 15	40 oz. 26	40 oz. 26

ALL MODELS ARE 120 VOLTS, 1 PHASE, 60 HERTZ, 2 WIRE

	AMPS	AMPS	AMPS	AMPS
Compressor				
RLA	8.1	8.8	10.1	10.1
LRA	40.0	58.8	68.0	68.0
Condenser Fan Motor	0.5	0.5	1.3	1.3
Evaporator Fan Motor	0.3	0.3	0.3	0.3 ea. (2)
Anti-Sweat Heater	0.1	0.1	0.2	0.2
Lights (Optional) (-2A Models)	0.2	0.4	0.6	0.6
Condensate Evaporator (Separate Power Supply)	10.0	10.0	10.0	10.0

Refer to the rating plate data attached to the rear of the case for Maximum Fuse Size and Minimum Circuit Ampacity.

REFRIGERATION & ELECTRICAL DATA

REMOTE MODELS

**Model
Refrigerant**

**All Remotes
R-134A**

ALL REMOTE MODELS ARE 120 VOLTS, 1 PHASE, 60 HERTZ, 2 WIRE

AMPS

**Anti-Sweat
Heater**

0.2

**Evaporator
Fan Motor**

0.3 ea.

Lights (Optional)

0.6

**Condensate
Evaporator**

10.0

Refer to the rating plate data attached to the rear of the case for Maximum Fuse Size and Minimum Circuit Ampacity.

REPLACEMENT PARTS MODELS RSS3 & RSS4

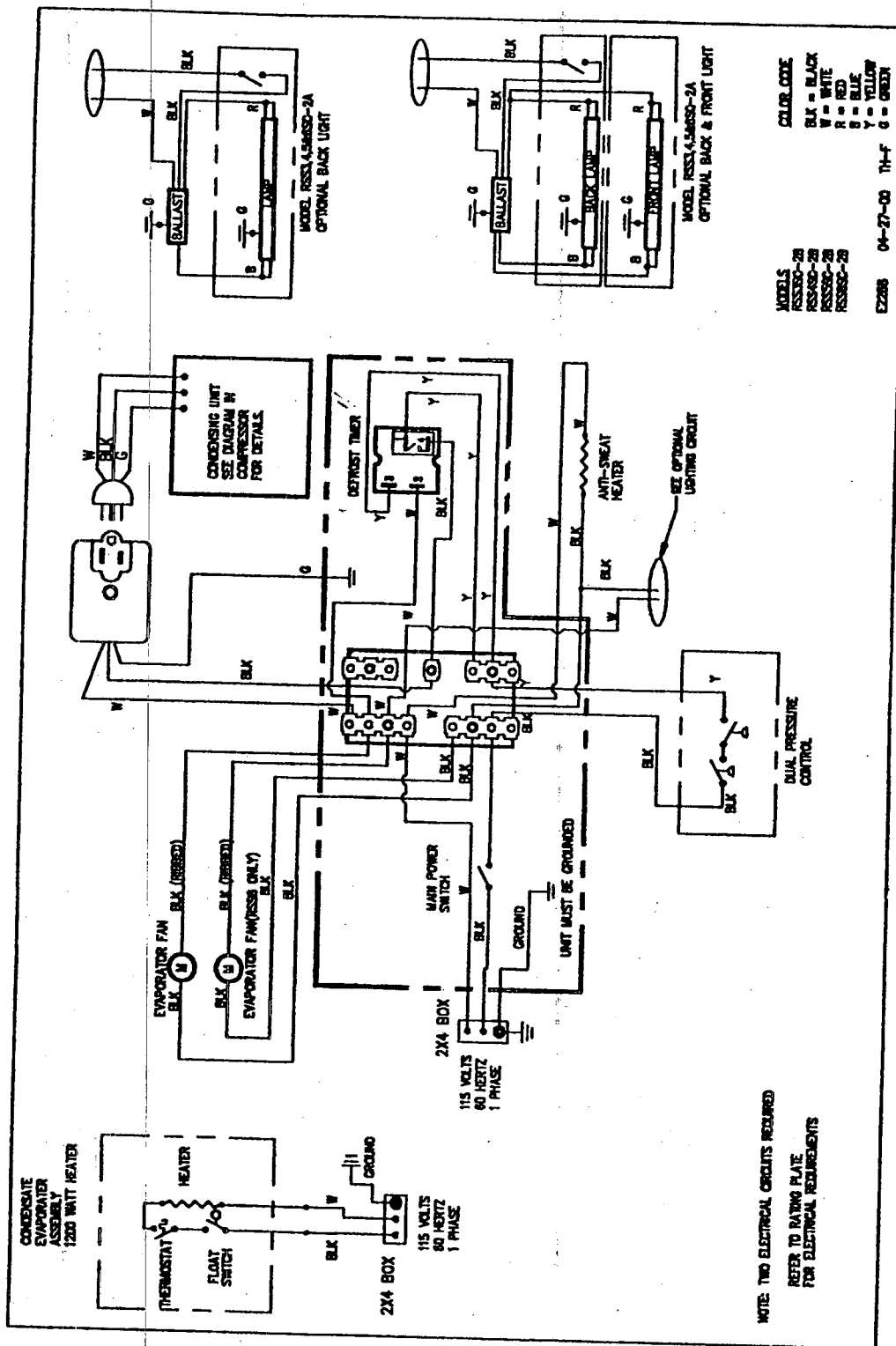
Part Description	Part Number	
	RSS3	RSS4
<u>Refrigeration System</u>		
Condensing Unit (Self-Contained Only)	30-14217	30-14218
Compressor (Replacement)	30-15034	30-15036
Pressure Control	32-51009	32-51009
Evaporator Coil	33-10946	33-50042
Expansion Valve	32-12625	32-12625
Evaporator Fan Motor	41-11628	41-11628
Evaporator Fan Blade	72-11462	72-11450
Filter Drier	32-12626	32-12626
Solid State Timer (Self-Contained Only)	41-11555	41-11555
Toggle Switch	41-10974	41-10974
Anti-Sweat Heater	43-14892	43-14891
Terminal Block	45-11056	45-11056
Thermometer	32-13662	32-13662
<u>Condensate Evaporator</u>		
Heating Element	40-13020	40-13020
Float Switch	41-13022	41-13022
Safety Control Assembly	SA-1880	SA-1880
Float Assembly (Float & Rod)	SA-2928	SA-2928
Entire Assembly	SA-1878	SA-1878
Condensate Steam Notice Tag	91-13038	91-13038
<u>Optional Light (-2B Models)</u>		
Lamp	42-11519	42-11069
Ballast	39-12901 <i>use ECN# 593</i>	39-12901 <i>use ECN# 593</i>
Lamp Holder	42-15440 <i>39-12902</i>	42-15440
Light Switch	41-11066	41-11066
Lamp Holder Cap	42-15441	42-15441
<u>Standard Lights (-3B Models)</u>		
Lamp	42-11519 (2)	42-11069 (2)
Ballast	39-12902	39-12902
Lamp Holder	42-15440 (4)	42-15440 (4)
Light Switch	41-11066	41-11066
Lamp Holder Cap	42-15441 (4)	42-15441 (4)

REPLACEMENT PARTS

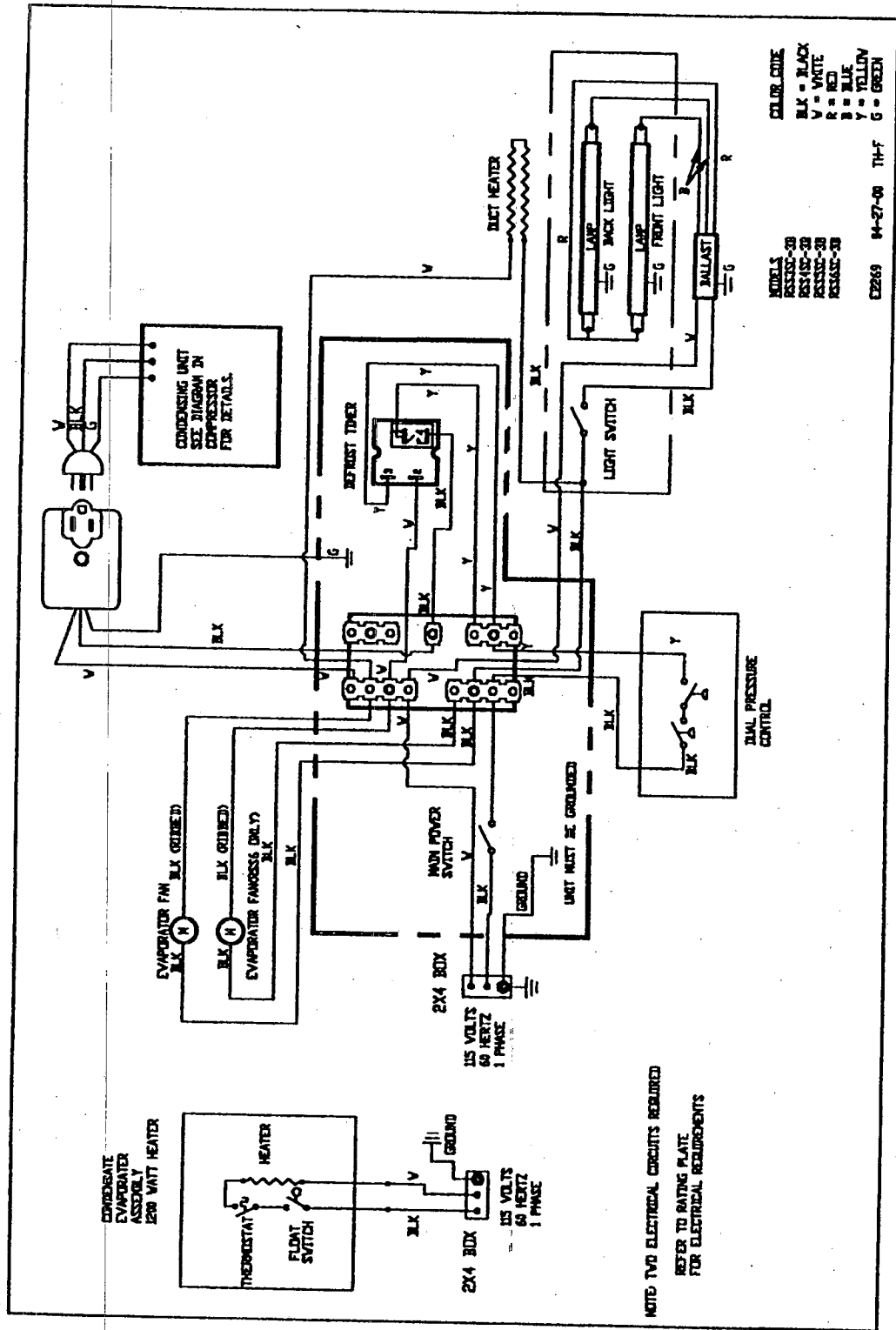
MODELS RSS5 & RSS6

Part Description	Part Number	
	<u>RSS5</u>	<u>RSS6</u>
<u>Refrigeration System</u>		
Condensing Unit (Self-Contained Only)	30-14219	30-14219
Compressor (Replacement)	30-15038	30-15038
Pressure Control	32-51009	32-51009
Evaporator Coil	33-12068	33-12068
Expansion Valve	32-12625	32-12625
Evaporator Fan Motor	41-11628	41-11628 (2)
Evaporator Fan Blade	72-12254	72-11450 (2)
Filter Drier	32-11561	32-11561
Solid State Timer (Self-Contained Only)	41-11555	41-11555
Toggle Switch	41-10974	41-10974
Anti Sweat Heater	43-12317	43-14893
Terminal Block	45-11056	45-11056
Thermometer	32-13662	32-13662
<u>Condensate Evaporator</u>		
Heating Element	40-13020	40-13020
Float Switch	41-13022	41-13022
Safety Control Assembly	SA-1880 <i>SW 41-34005</i>	SA-1880
Float Assembly (Float & Rod)	SA-2928	SA-2928
Entire Assembly	SA-1878	SA-1878
Condensate Steam Notice Tag	91-13038	91-13038
<u>Optional Light (-2B Models)</u>		
Lamp	42-11070	42-11071
Ballast	39-12901 <i>use ECND 523</i>	39-13902
Lamp Holder	42-15440	42-15440
Light Switch	41-11066	41-11066
Lamp Holder Cap	42-15441	42-15441
<u>Standard Lights (-3B Models)</u>		
Lamp	42-11070 (2)	42-11071 (2)
Ballast	39-12902	39-13902
Lamp Holder	42-15440 (4)	42-12776 (4)
Light Switch	41-11066	41-11066
Lamp Holder Cap	42-15441 (4)	42-15441 (4)

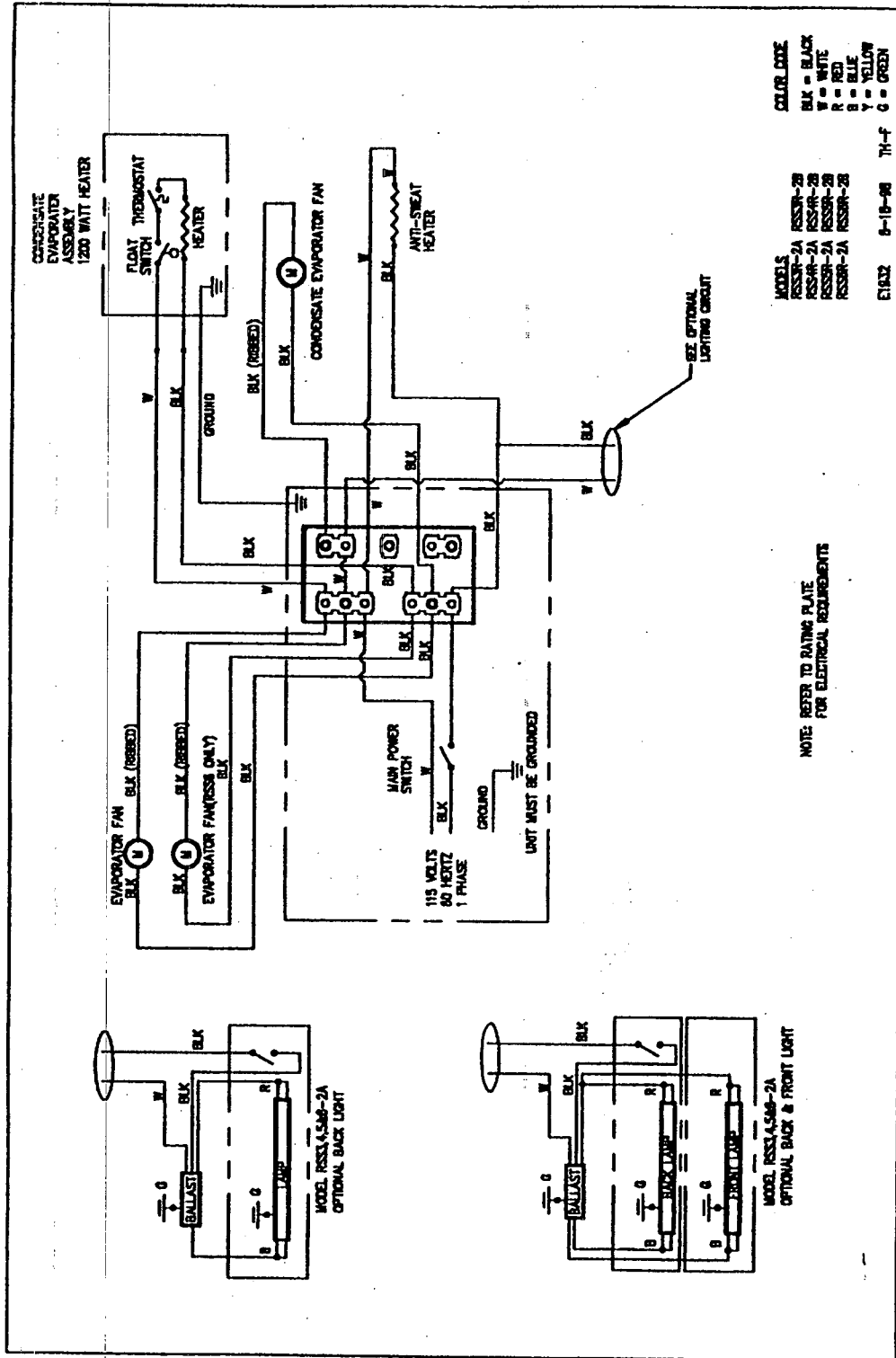
WIRING DIAGRAM - RSS3,4,5,6 SC-2B



WIRING DIAGRAM - RSS3, 4, 5, 6 SC-3B



WIRING DIAGRAM - RSS3, 4, 5, 6 R-2B

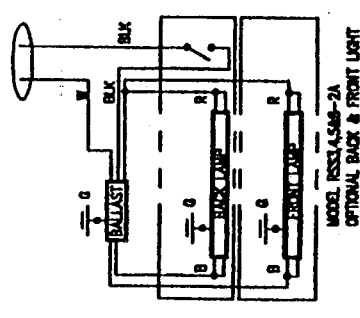
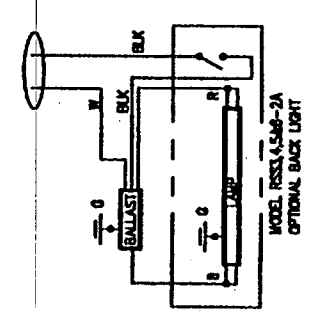


COLOR CODE
 BLK = BLACK
 W = WHITE
 R = RED
 B = BLUE
 Y = YELLOW
 G = GREEN

MODELS
 RSS3-2A
 RSS4-2A
 RSS5-2A
 RSS6-2A

ET1612 6-18-98 TH-F

NOTE: REFER TO RATING PLATE FOR ELECTRICAL REQUIREMENTS



WIRING DIAGRAM - RSS3, 4, 5, 6 R-3B

