E3496

REV H 02/17/20

RSSM360, RSSD360, RSSM460, RSSD460, RSSM560, RSSD560, RSSM660, RSSD660, RSSM378, RSSD378, RSSM478, RSSD478, RSSM578, RSSD578, RSSM678, RSSD678,

Self-Contained & Remote Models
Includes Drop-In & NSSM

INSTALLATION & OPERATION INSTRUCTIONS

KEEP THIS MANUAL FOR FUTURE REFERENCE

Engineering and technical data are subject to change without notice.

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INTRODUCTION

Thank you for purchasing a Federal Industries Merchandiser. This manual contains important instructions for installing and servicing the RSSM, Refrigerated Self-Service Merchandisers. A repair parts list is 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 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.

NOTE: UNIT MUST BE GROUNDED

REGISTRATION & SERIAL NUMBER

It's important to keep a record of the model and serial number of your merchandiser for warranty and part identification. Please write them here for your quick reference.

Register your product online! Visit our website at www.federalindustries.com and register your product today.

Case Model_____ Serial Number_____

We're here to provide you with the best possible experience with your new product, however, we cannot cover everything about your merchandiser in this manual, so if you have any additional questions or issues, please see the SERVICE INFORMATION PAGE to find who you should contact.

WARNING LABELS AND 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 procedures.

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 warning and safety messages:

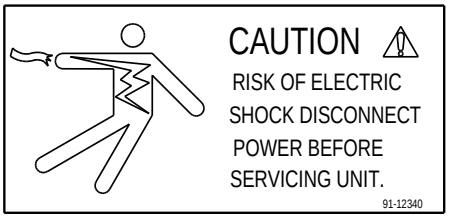
DANGER: Severe injury or death **will** occur if you ignore the message.

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

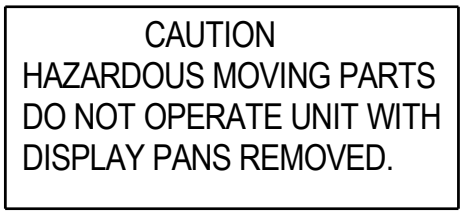
CAUTION: Minor injury or damage to your case **can** occur if you ignore the message.

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.



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



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 upon arrival. If there is damage to shipping crates, cartons, or if a shortage is found, note this on (all copies) of the Bill Of Lading 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 damaged item. Crating material must be retained and shown to the inspector from the truck line.

INSTALLATION INSTRUCTIONS

Locating the Display Case

NOTE: This case is designed for indoor use only.

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 condenser air inlet is located in the front center of the base. Do not block this inlet and do not locate the air inlet near a source of heat. Prior to 01/01/20 clearance of 6" minimum must be maintained at the back of the case for condenser discharge air. After 01/01/20 the case requires no clearance at the back of the unit unless it has rear condenser air intake and discharge. Clearance at the top of the case should also be at least 8".

Do not build this unit into an alcove and do not locate where condenser discharge air cannot escape or where warm condenser air is allowed to re-circulate.

Grill Removal

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

Must remove front and rear base grills for merchandiser installation. The front base side grilles are secured with self-threading screws located in the top grille rail, and the rear base grill is secured with self-threading screws.

These base grills must be replaced after merchandiser installation. Base grills must be in place for proper operation of the merchandiser.

Removing Case From Shipping Skid

CAUTION: If a Johnson bar or pry bar is used to move the case, make certain that the case is lifted under the welded steel frame, and not by the end panels of the case. Damage to the ends will result from lifting under the end panels.

Move the case as near as possible to the final location before removing it from the shipping skid. Having removed the front and rear compressor compartment grills. Remove the (three or four sets of bolts, nuts, and washers depending on case size) that secure the case to the shipping skid. Discard these bolts, nuts, and washers.

Removing Packaging Material

Remove bubble wrap and packing material for all shelves, etc. If it is necessary to remove tape residue from various materials, use cleaning compounds recommended in the cleaning section of this manual.

Leveling the Case

The case must be level for proper drainage of defrost water to the condensate evaporator or condensate pump.

Check the level of the case along the front rail and along the top of the display pan. Shim under the case frame as needed to level the case or if case is equipped with leg levelers, adjust them up or down to level the case. It is recommended that the leveled case be sealed to the floor with an NSF Listed Sealant.

Condensate Evaporator

NOTICE: Steam from the condensate evaporator may be visible around the base of the merchandiser during normal operation.

This merchandiser may be furnished with an electric condensate evaporator, or a electric condensate pump. Plumbing connections are not required, unless merchandiser is specifically ordered without a condensate evaporator or pump.

The condensate evaporator can be removed from the merchandiser and the condensate drain can be plumbed to an external drain to conserve energy. To remove the condensate evaporator disconnect the wires at the condensate evaporator. This must be done by a qualified electrician.

This is an open merchandiser and can produce a large amount of condensate water. To ensure that adequate evaporator capacity is available, a high wattage heater is used.

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

Lights

Standard Top Light

The case comes with one standard top light which is internally wired to the power source. The light switch is located in the top light housing under the top canopy. On RSSM'S the light switch is located on the left top ceiling behind the air discharge honey comb. On RSSD'S the light switch is located on the left of the top light housing.

Optional Shelf Lights

If optional shelf lights are furnished, make certain that the shelf light cords are completely inserted into the sockets in the back panel and end of led lights or lights will not work

The power supplies used on this case allow removal of one or more shelf lights without affecting the remaining lights.

When plugging or unplugging light cords, turn the light switch to the "off" position.

ELECTRICAL CONNECTION AND GROUNDING INSTRUCTIONS

Electrical Supply Wiring

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

THIS CASE MUST BE GROUNDED

Permanent Connection (Standard)

-Only a licensed electrician must perform all case electrical connections.

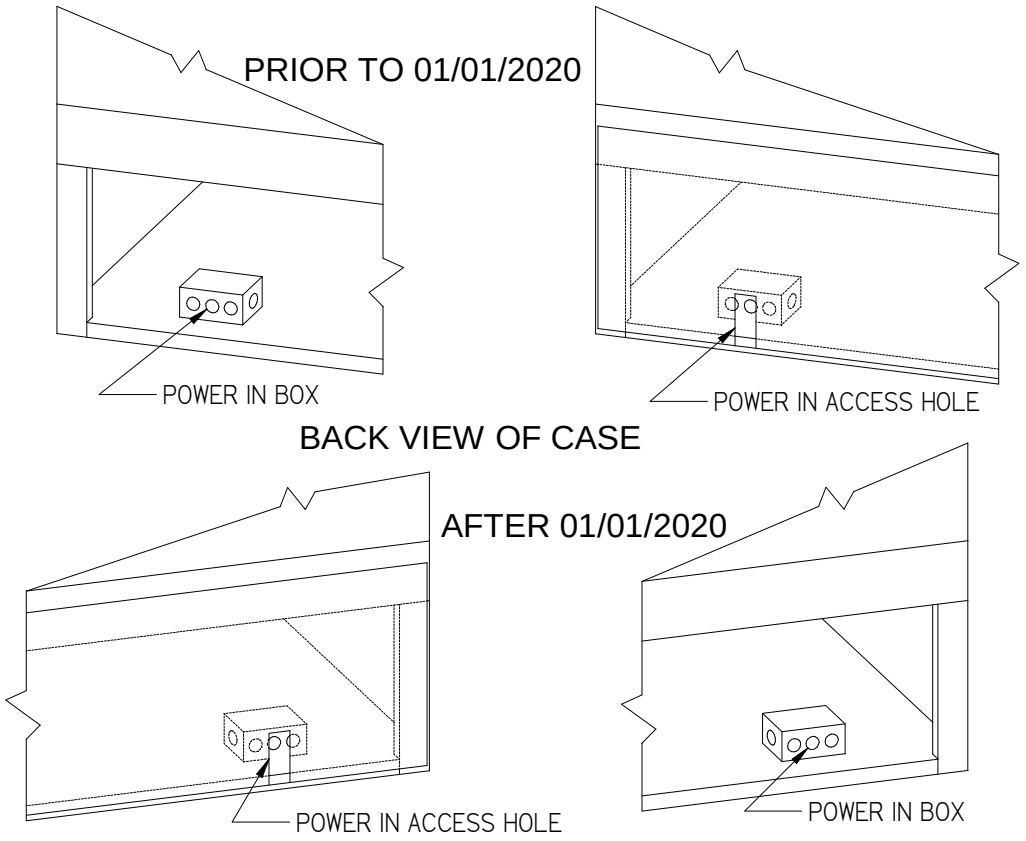
-All electrical wiring hookups must be done in accordance with all applicable local, regional, or national electrical standards.

-A separate circuit for each display case is required to prevent other appliances on the same circuit from overloading the circuit and causing malfunction.

-The electrical service must be grounded upon installation.

-See the electrical data plate located at the rear of the case for circuit load and wire current capacity.

-Standard Base Electrical Connection: The electrical connection box is accessible from the rear of the case. Power Supply Wiring can be routed through the floor of the base frame or through the access hole in the rear of the unit. Remove electrical box cover to access electrical connections.



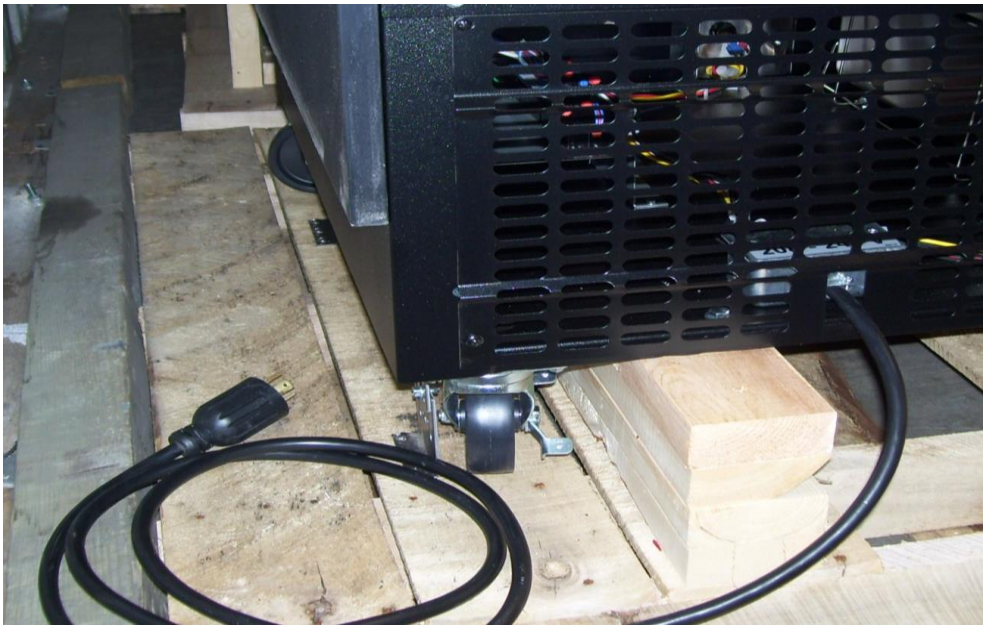
Cord Connection (Optional)

-A factory installed optional power cord is properly sized to the amperage requirements of the merchandiser. See the electrical data plate located on the ceiling of the merchandiser for the proper power requirements for each merchandiser.

- The cord is factory installed protruding from the rear of the merchandiser.

-A separate circuit for each display merchandiser is required to prevent other appliances on the same circuit from overloading the circuit and causing a power loss.

PRIOR TO 01/01/2020



AFTER 01/01/2020

OPERATING INSTRUCTIONS

Initial Start-Up

-After completing the items in the installation section of this manual. The case is ready to be put into service. On self-contained models, the service valves on the refrigeration system are back-seated when the unit leaves the factory.

-RSSM/RSSD cases are designed to operate at 40º to 41º F. under ambient conditions not to exceed 75º F. and 55% relative humidity.

-Nearly all open refrigerated merchandisers operate better when loaded with product than when empty. If a check is made of the case operating temperatures, perform this check with product in the case.

-Open refrigerated merchandisers are not intended as storage refrigerators and will not "pull down" room temperature products efficiently. Load case interior with pre-chilled product only.

Light Switch And Lights

The light switch is located in the ceiling. This switch operates the interior lights only. If optional shelf lights are installed, they are also controlled by this switch.

Led Light Replacement

The light is attached to the shelf with plastic spring clips. To remove a light, un plug cord from end of bulb and pull down.
When replacing lights, use direct equivalents to the original bulbs.

Digital Display

This unit is equipped with a CAREL temperature control with Digital Display.
The Display show a number 1 thru 9 to indicate temperature level.

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.

LOAD CASE INTERIOR WITH PRE-CHILLED 38deg OR COLDER PRODUCT ONLY.

Energy Saving Night Curtain

This unit is equipped with an energy saving night curtain.
The night curtain is located in the top inside front of the canopy.
To use the night-curtain pull down and latch on front panel just below the clear acrylic air deflector when case is not in use.

NOTICE: This refrigerated display case is designed to operate in a maximum environment of 75 DEG. F and 55% relative humidity. Exceeding these limits will cause poor case

User Control RANCO **REPLACEMENT PARTS FOR THIS CONTROL NO LONGER AVAILABLE - REPLACED BY THE CAREL CONTROL**

Using The Electronic Control

This control is located behind the front base panel.

Temperature Control Knob

This controls the temperature of the display interior of merchandiser.

-OFF: Turning the control counterclockwise to the “WARM” setting is an Off position, this position turns the refrigeration off and all indicator lights will also be off at this setting.

-ON; The control will be on from the warmest setting at “1” and the coldest setting at “COLD

Cooling light

This light will be on when control requires refrigeration to be on. The compressor / condensing unit should be running to cool the case.

Defrost light

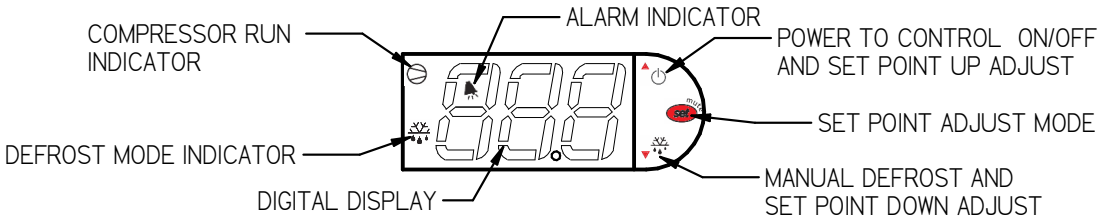
This light will be on when control when refrigeration is defrosting allowing ice to melt off of evaporator coil. The number of times and length of defrost will vary depending on case environment.

Alarm light

This light indicates that there is a problem with case or electronic control and service should be called.

User Control CAREL THIS CONTROL REPLACES THE RANCO CONTROL WHICH IS NO LONGER AVAILABLE

Electronic Temperature Control



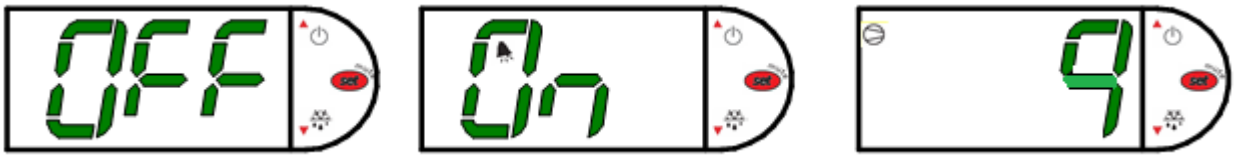
Button Overview

	Press and hold this button for three seconds to turn system on (if off) or off (if on). Also used to adjust set point when in set point adjust mode
mute set	Press to enter set point adjust mode, confirm set point changes, and mute alarms.
	Press and hold this button for three seconds to initiate a manual defrost (and cancel defrost if initiated), also adjusts set point down when in set point adjust mode

Powering on control

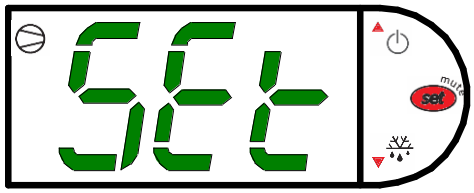
To turn refrigeration control power on, press and hold for approx. three seconds. The display will read “On” while the button is depressed. When the control powers on, the display will read the current set point (a number “1” thru “9”). The compressor run indicator will illuminate on the display, meaning that the compressor is running. (Note: the control may already be in the on mode when shipped from factory).

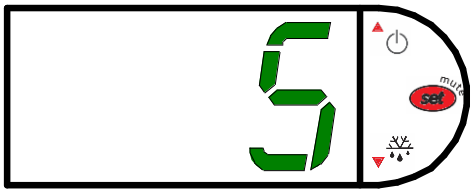
To turn refrigeration control power to off, press and hold for approx. three seconds. The display will read “Off” while the button is depressed. When the control powers off the display will flash back and forth between the relative current case temperature and “Off”. The compressor run indicator will be off on the display. When refrigeration control is in the off-mode cabinet lights and evaporator fans will still operate, but the compressor will not turn on causing the case to gradually reach room temperature.



Adjusting the set point

The set point is what determines how cold the display case will hold food and beverage. To adjust the set point press and hold the set button approx. three seconds until the display begins to flash a number. Then press the use the button to scroll number up (colder) or press the button to scroll number lower (warmer). There are nine (9) available set points numbers, the higher the number of the set point, the colder the display case will run, with setting "9" being the coldest and setting "1" being the warmest. Once you have chosen your desired setting press the set button again to confirm your choice.





Entering manual defrost mode

In order to initiate a manual defrost press and hold the button approx. three seconds. The control will read "dEF" while the button is being held. The defrost is initiated when the defrost mode indicator illuminates on the display. The control display will then return to reading the case temperature. When the defrost mode indicator turns off the defrost is complete and the compressor will turn back on illuminating the compressor run indicator .

Error codes

It is possible for error codes to be displayed on the control screen. In the event of a malfunction an alarm will sound and the alarm indicator will be displayed on the display. An error code or codes will flash intermittently on the display. If there are multiple codes, the display will continuously cycle through them. The following photo shows error code "E0" as an example.

Mute: You may mute the alarm by pressing and releasing the wrench button. The red ringing bell and all error codes will still be displayed. When the fault is remedied the control will return to normal operation and will automatically clear the codes from the display.

Ranco control

E1 = Air sensing probe - Open or Shorted and needs replacing
E2 = Evap. Coil probe - Open or Shorted and needs replacing

Carel Control

EO = Air sensing probe - Open or shorted
E1 = Evap. coil probe - Open or shorted

Code	Description	Cause	Resolution
E0	Temperature probe error	Probe signal is interrupted or short-circuited	Check to ensure probe wires and quick disconnect are secure in control. Check probe resistance to table below. If 0 resistance is present check wiring insulation. If infinite resistance is present check for breaks in wiring (meter will likely read overload or very high in the mega-ohm range). Ensure that probes are wired per the wiring diagram provided. Replace probe if other remedies fail, or if probe resistance deviates from "Table 3" below
E1	Defrost probe error	See E0	
EE	Unit parameter reading error	Operating conditions	Remedy abnormal operating conditions. The control is rated to operate in a range of 14 to 122°F (-10 to 50°C) and less than 90%RH non-condensing. Replace control if problem persists.
EF	Operating parameter reading error	See EE	

Dual Pressure Control (Self-Contained Models Only)

The dual pressure control is used as a safety device and is factory set. The pressure control works on a differential. The low-pressure side is a safety to protect the compressor in the case of refrigerant loss. The high-pressure side is a safety to protect from system failure causing too high of system pressure.

The high side of the pressure control is factory set to 400psi and is not adjustable.

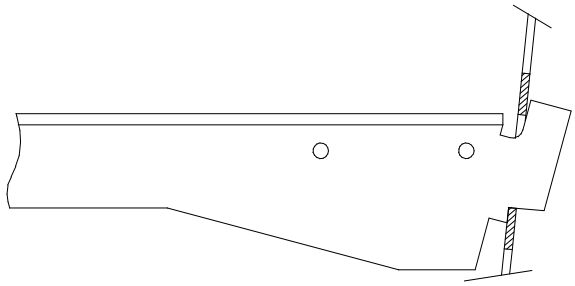
Low side setting for the R404a cases are set at 40psi differential for the cutout and 60psi for the cut-in.

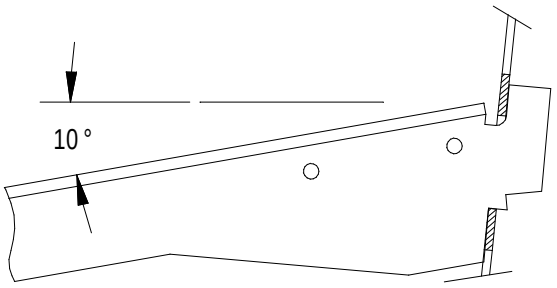
Shelves

The RSSM has 15” solid metal shelves as standard. These shelves are installed at the factory.

The shelves are adjustable in 1-5/8” increments. To adjust the shelves, first remove the shelf from the shelf brackets. Remove the shelf bracket from the shelf standard and reposition as desired. If optional shelf lights are installed, it will be necessary to unplug the shelf light cord before repositioning the shelf brackets.

The shelves can be installed horizontally or slanted at a 10º downward angle. To change the shelf slant, first remove the shelf from the shelf support. Lift the shelf supports up at the back until the brackets can be repositioned in the shelf standard slots. See diagram below





CAUTION:

Do not place more than 100 lbs. of product on a RSSM3 or RSSM4 Shelf.

Do not place more than 80 lbs. of product on a RSSM5 or RSSM6 Shelf.

Damage to the Shelf Standard may occur if the Shelf is overloaded.

CONTROL OPERATION

Electronic Control

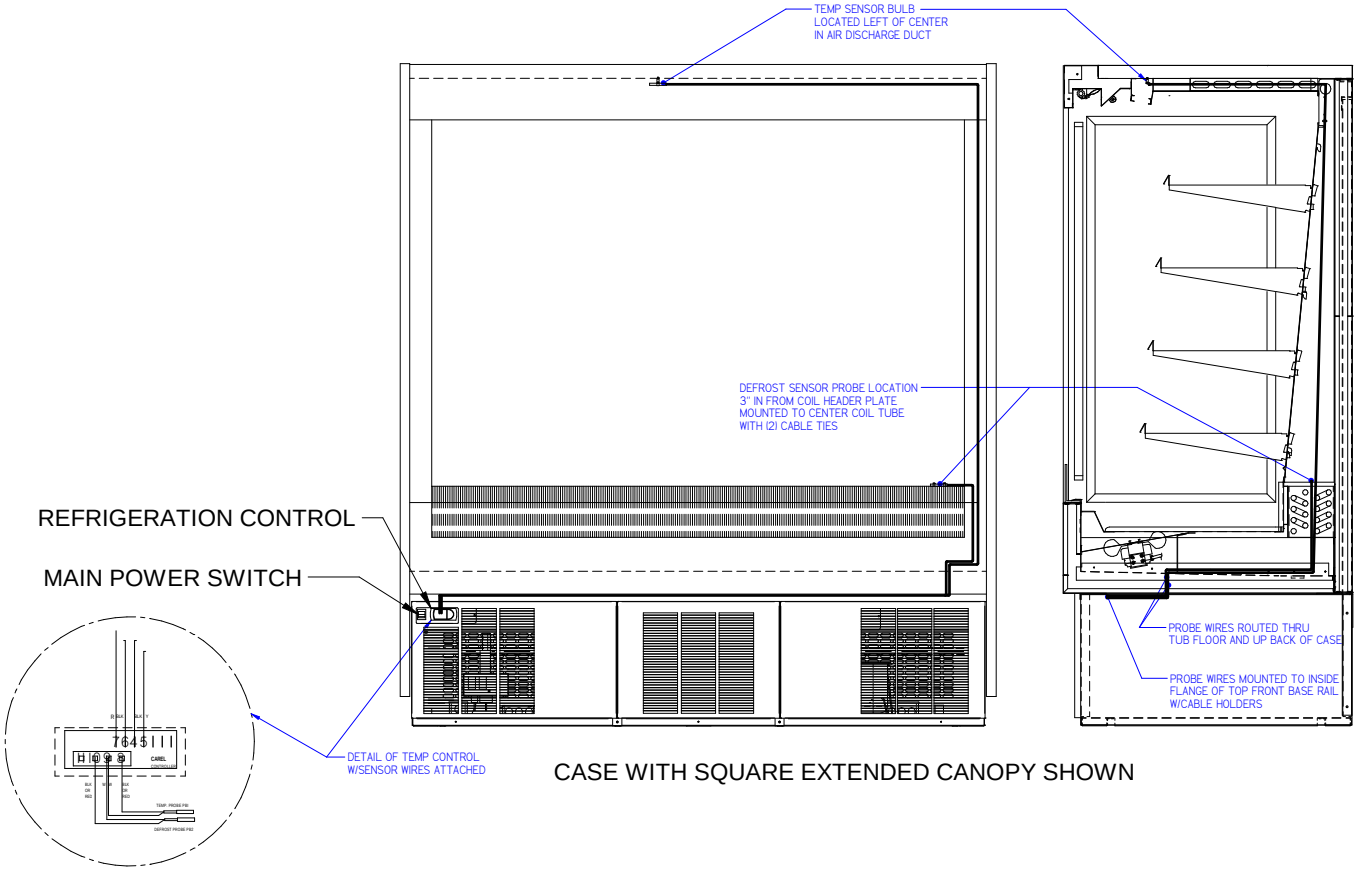
This unit is equipped with an Invensys – Ranco model E72R temperature control or a Carel temperature control. The control parameters are set at the factory and cannot be manually changed in the field. Control parameter changes can only be made by downloading a new set of parameters using a program chip supplied by Federal Industries. The pre-set control parameters are listed on the chart in the Settings Chart below.

Operation

The control uses two sensors, one located in the air stream and one located on the evaporator coil. The sensor located in the air stream is referred to as the temperature control sensor. The sensor located on the evaporator coil is referred to as the coil sensor.

The temperature control sensor is located inside the top air duct behind the honeycomb material and is labeled (TEMP). The sensor location is critical for proper operation on the unit. Do not move or relocate this sensor.

The coil sensor is strapped to the evaporator coil and is labeled (DEFROST). This sensor location is critical for proper operation of the unit. Do not move or relocate this sensor.



CASE WITH SQUARE EXTENDED CANOPY SHOWN

The temperature control is set to cut in at 39 degrees F. The Temp control cuts out at 24 degrees F at the coldest setting' COLD' and 34 degrees F at the warmest setting, '1' on the control readout.

Defrost Cycle

The electronic control is programmed to initiate defrost by two different methods. There are (3) programmed defrost cycles in the control which will initiate a defrost cycle every 8 hours. The unit does not have a time clock so the defrost cycles cannot be set for any specific time of day.
The electronic controller uses time to initiate the defrost cycle, and temperature to terminate the defrost cycle. The controller also has an 'On demand' defrost feature that will initiate a defrost cycle when the temperature differential between the evaporator temperature and the air temperature is more than 15 degrees for 5 minutes after 30 minutes into the refrigeration cycle.

Control Factory Settings

The control parameters are set at the factory and cannot be manually changed in the field. Control parameter changes can only be made by downloading a new set of parameters using a program chip supplied by Federal Industries

TAB	PARAMETER DESCRIPTION	RSSL
CONFIGURATION	Controller Operation Temperature Units	Degrees Fahrenheit
	Defrost Termination Method	Evaporator Sensor
SET-POINTS	Cut-In Warm	39ºF
	Cut-Out Warm	**34ºF**
	Cut-In Cold	39ºF
	Cut-Out Cold	**24ºF**
COMPRESSOR	Compressor Minimum On Time	**5 minutes**
	Compressor Maximum On Time	**60 minutes**
DEFROST	Defrost Termination Temperature	45ºF
DEFROST	Time to First Defrost (hh:mm)	8 hr
	Time to subsequent Defrost	8 hr
	Defrost Max Duration	30 minutes

Control Display

The control display is located in the unit base. It is programmed to display the current set point associated with the control sensor located inside the air duct at the top of the case.

Minimum Run Timer Feature

The unit controller is programmed to have the condensing unit run a minimum of 5 minutes, regardless of the control temp being satisfied. If the temperature control reaches the cut out set point before 5 minutes, the minimum run time setting in the control will keep the unit in a run cycle mode until the timer reaches 5 minutes. The refrigeration cycle will be off until the temperature control cut in temperature is reached.

This timer typically comes into effect in low ambient conditions where the unit may cycle too frequently to maintain proper product temperature.

Maximum Run Timer Feature

The unit controller is programmed to have the condensing unit run a maximum of 60 minutes.
If the unit has not reached cut out temperature setting in 60 minutes, the unit goes into on off cycle.
This typically comes into effect in high ambient temperature and relative humidity conditions.

REFRIGERATION OPERATION

Self Contained Models

Refrigeration R404A Charge Prior To 01/01/2020	**See Refrigeration And Electrical Data Pages**
Refrigeration R449a Charge After 01/01/2020	**See Refrigeration And Electrical Data Pages**

The self-contained models are shipped from the factory with a completely operational refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self Contained Refrigeration Operation
The unit temperature is controlled by the Electronic control outlined in the control section of this manual.
Note: The condenser fan is factory wired to run continuously.

Remote Operation

Electronic Expansion Valve (EEV) After 1/20

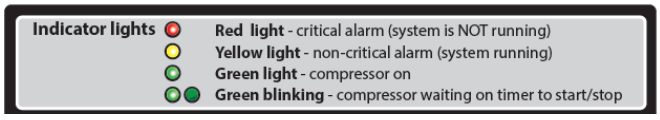
A traditional TXV uses springs and a temperature bulb to open and close a valve port that controls the flow of refrigerant entering the evaporator coil. An electronic expansion valve (EEV) controls the refrigerant flow much more precisely, increasing the performance and efficiency of the refrigeration system. The EEV controls the flow of Refrigerant by opening and closing the valve port based on the response to signals sent to the EEV by an electronic controller. The electronic Control bases these signals by processing information provided from a temperature sensor and pressure transducer located on the discharge side of the evaporator coil.
These sensors monitor the evaporator superheat and protects the compressor from any liquid flood back under low superheat conditions.

EEV Controller Settings

The electronic expansion valve controller also allows the use of different types of refrigerants without the need to change the expansion valve.
The controller is set from the factory to run on R449a refrigerant and will not need any changes to the control unless another refrigerant is used.
Note: Check your State and Local regulations for approved refrigerants for your install location. Federal Industries is not liable for any alternate refrigerants used.

The control is located on the base floor on the left hand side front view .

Note: Never change any of the other setting other than the refrigerant type. It may also be necessary to change the superheat setting only when using a different refrigerant.



Changing Refrigerant

- Access the set point mode by pressing and holding the ENTER button until Ctl displays on the screen.
- Use the ▲ up or ▼ down arrows to advance through the available set points until rFG displays on the screen and press the ENTER botton.
- Use the ▲ up or ▼ down arrows until the desired refrigeration displays on the screen and press and hold the ENTER button until rFG once again displays on the screen.
- Press the BACK to return to escape the settings menue.

Changing Superheat

- Access the set point mode by pressing and holding the ENTER button until Ctl displays on the screen.
- Use the ▲ up or ▼ down arrows to advance through the available set points until SSP displays on the screen and press the ENTER botton.
- Use the ▲ up or ▼ down arrows to set the desired superheat displays on the screen and press and hold the ENTER button until SSP once again displays on the screen.
- Press the BACK to return to escape the settings menue.

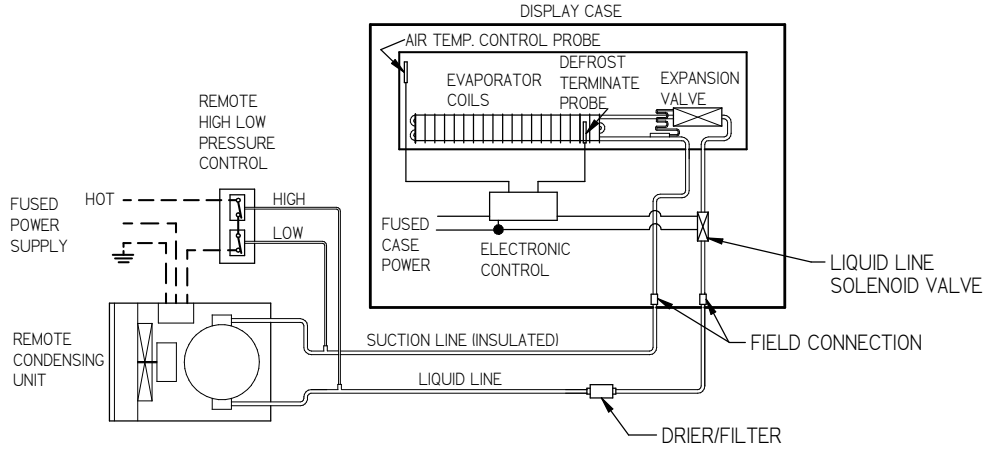
Remote Models Use pressure gauges to set pressure control.

Refrigeration R449 Charge	CHARGED IN FIELD
Remote Low Press. Switch Cut In	50 psi
Remote Low Press. Switch Cut Out	15 psi
Adjustable Head Master	200 psi
Remote High Press. Switch Cut Out	400 psi

The remote models are designed to use R449a refrigerant and shipped from the factory with the evaporator coil, expansion valve, and refrigerant solenoid valve. Filter Drier must be installed in the field. The electronic control runs identical to the Self-Contained models except the electronic control opens and closes a refrigeration solenoid valve located on the liquid line instead of turning on and off a compressor. The solenoid valve closes and shuts off the refrigeration flow to the unit and initiates a pump down cycle. This will allow the remote low-pressure switch at the condensing unit to open and shut off the remote compressor.

The condensing unit and pressure controls may be supplied from the factory for remote location installation. The condensing unit must be mounted and wired by the installer. The high low-pressure switch must be wired in series with the compressor power supply as shown in wiring diagram below.

1. Mount condensing unit as close to the remote display case as practical. The refrigeration line should be as short as possible and should not exceed 100 feet.
2. Refrigeration parts between condensing unit and case are typically supplied by installing contractor.
3. Route properly sized and designed refrigeration lines from the condensing unit to the cabinet. Horizontal suction lines should be pitched downward towards the condensing unit at least ½" per 10' run to aid the oil drainage. A "P" trap must be installed in the suction line at the foot of every riser to insure oil return. Dry nitrogen should be used through tubing while brazing refrigeration lines.
4. Suction line must be insulated the entire length with Armaflex (or equivalent). Do not run liquid line inside insulation with suction line.
5. If remote control is not supplied by Federal Industries, the remote high/low-pressure control must be mounted, wired and pressures set by the installer.
6. Leak check condensing unit, cabinet, and all connecting tubing. Cabinet and condensing unit tubing should be checked to insure no leaks occurred during shipping or from rough handling. Make certain all refrigeration valves are opened and evacuate system to 500 microns. Charge the system with refrigerant type specified on the data plates.

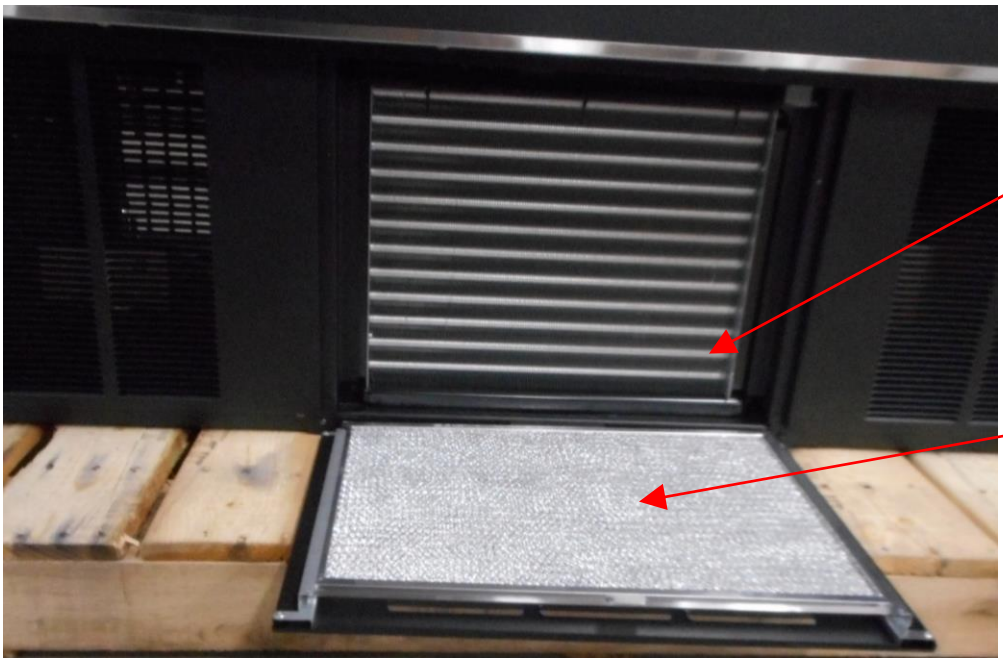


CLEANING INSTRUCTIONS

Cleaning the Condenser Filter

This refrigerated case is equipped with a reusable condenser coil filter, which filters large dust particles from the air before it enters the condenser coil fins. It is very important that this filter be cleaned every two weeks to maintain proper refrigeration performance and prevent compressor failure. **FAILURE TO CLEAN THE CONDENSER FILTER WILL VOID THE COMPRESSOR WARRANTY.**

1. The center grille in the base contains the condenser air filter. To access the filter lift grille from the bottom, tilt bottom forward and slide top of grille down and out of channel. The filter will slide out the top of the grille.
2. Wash the filter using warm soapy water. Rinse the filter and let it dry. **NOTE: Do not clean the filter in a dishwasher.**
3. Apply a generous coat of filter coat adhesive to both sides of the filter. (Filter coat adhesive is available through any restaurant supply chain distributor). **NOTE: Failure to coat the filter with a fresh coat of filter adhesive after cleaning will cause ineffective filter operation. This will lead to plugging of the condenser coil, affecting refrigeration performance and can cause compressor failure.**
4. Despite the presence of the filter, it is necessary to check and clean the condenser coil every 3 months or as necessary. Refer to the instructions outlined on next page in Cleaning Condenser Coil.
5. Reinstall the filter.



Cleaning Condenser Coil

1. Disconnect the power to the unit.
2. Remove the front grill and vacuum the front surface of the condenser coil, moving the vacuum nozzle vertically. This should be done every two weeks. **NOTE: Be careful not to bend or otherwise damage the condenser coil fins. Moving the vacuum nozzle horizontally will cause bend the fins. Bent coil fins will affect condensing unit performance.**

Cleaning Condenser Coil Continued

NOTICE: **Condenser coil or optional air filter must be cleaned a minimum of twice per month to insure proper refrigeration performance and prevent compressor failure. In some environments, it may be necessary to clean more frequently. FAILURE TO CLEAN CONDENSER COIL WILL VOID COMPRESSOR WARRANTY.**

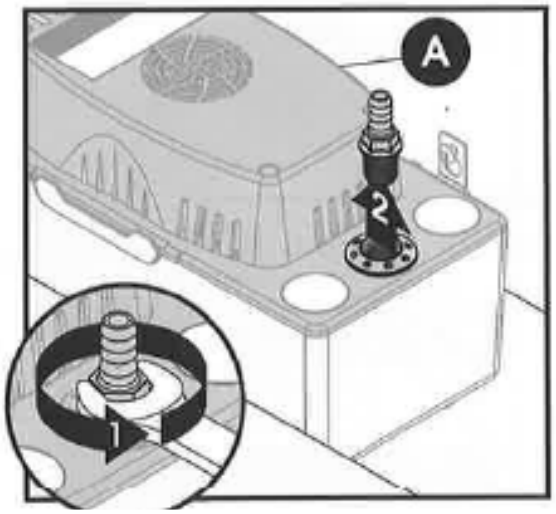
It is very important that the air filter is cleaned twice per month and the condenser coil every 3 months or as needed to insure proper refrigeration performance and to prevent compressor failure. In some environments, it may be necessary to clean more frequently. Failure to clean condenser filter and condenser coil will void condenser warranty. This procedure is for Self-Contained models. The remote condenser coil must also be cleaned at same intervals.

MAINTENANCE AND DISASSEMBLY OF CONDENSATE PUMP

Always disconnect power before performing maintenance. Pump and deck may be removed from tank by pushing tabs located on tank sides away from deck while lifting on pump cover.

Periodically inspect the condensate pump tank to assure it is free of accumulated dirt or sludge. **DO NOT** use solvent cleaners. Clean tank with soap and warm water only. Check valve may be removed for cleaning or replacement by unscrewing with a 9/16" wrench.

Clean inlet and outlet piping. Reassemble system and check for correct operation.



Acrylic Air Deflector Cleaning

NOTICE: **Clear acrylic air deflector requires special washing procedures to prevent hazing and yellowing of material.**

NEVER USE paper towels (wet or dry) for cleaning or drying and never use a dry towel.
NEVER USE glass cleaner of any kind.
Lightly dust (not wipe) surface with a damp Micro Fiber towel or chamois. The surface can then be washed using a small amount of dishwashing detergent such as Dawn or Joy and lukewarm water. Use a Micro Fiber towel or chamois, applying only light pressure. The cloth or chamois must be kept free of grit by frequently rinsing. Rinse surface with clear water and dry by blotting with a damp Micro Fiber towel or chamois.

Daily Cleaning

The case should be cleaned thoroughly, as described in the weekly cleaning section, before it is used for the first time.

NOTICE:	**Avoid splashing or soaking any electrical components with water to prevent electrical damage to the case.**

NOTICE:	**Shut off lights and power switches and remove all products from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.**

NOTICE:	**Remove all products from the case before proceeding with cleaning procedure.**

NOTICE:	**Acrylic air deflector requires special washing procedures to prevent hazing and yellowing of material. Clean as described in "Acrylic Air Deflector Cleaning" section of this manual.**

Note: For major spills or foreign material buildup use complete weekly cleaning instructions.

Note: Detergents are not recommended and do not use abrasive cleaners or pads to prevent scratching of surfaces.

1. Dip rag in warm soapy water and ring out thoroughly. Wipe complete interior of case and dry with soft dry towel.
2. The remaining exterior surface should be wiped down using any ammoniated cleaners or soapy warm water and dried with soft dry towel.
3. **IMPORTANT: Cleaning the clear acrylic plastic front air deflector requires special care to prevent hazing and yellowing of material. Clean as described in "Acrylic Air Deflector Cleaning" section of this manual.**

Weekly Cleaning

NOTICE:	**Avoid splashing or soaking any electrical components with water to prevent electrical damage to the case.**

NOTICE:	**Shut off lights and power switches and remove all products from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.**

NOTICE:	**Remove all products from case before proceeding with cleaning procedure.**

NOTICE:	**Acrylic front air deflector requires special washing procedures to prevent hazing and yellowing of material.**

Note: Detergents are not recommended and do not use abrasive cleaners or pads to prevent scratching of surfaces.

1. Remove interior shelving from unit as described in the "Shelving Installation and Removal" section of this manual.
2. Dip rag in warm soapy water and ring out thoroughly. Clean all shelves and shelf brackets and dry with soft dry towel.
3. Lift the display decks up and out of evaporator tub.
4. Clean the display deck(s) using warm soapy water and a brush. Rinse thoroughly and allow dry. Wipe off fan shroud assembly (do not rinse or submerge fan motors).
5. Clean the entire interior of the case using warm soapy water. Wipe off all soapy water with a damp cloth and allow to dry. (DO NOT use solvents such as Acetone, Benzene, Carbon Tetrachloride, and Lacquer Thinners)
6. **IMPORTANT: Cleaning the clear acrylic plastic front air deflector requires special care to prevent hazing and yellowing of material**. **Clean as described in "Acrylic Air Deflector Cleaning" section of this manual.**
7. Reassemble all components in reverse order.

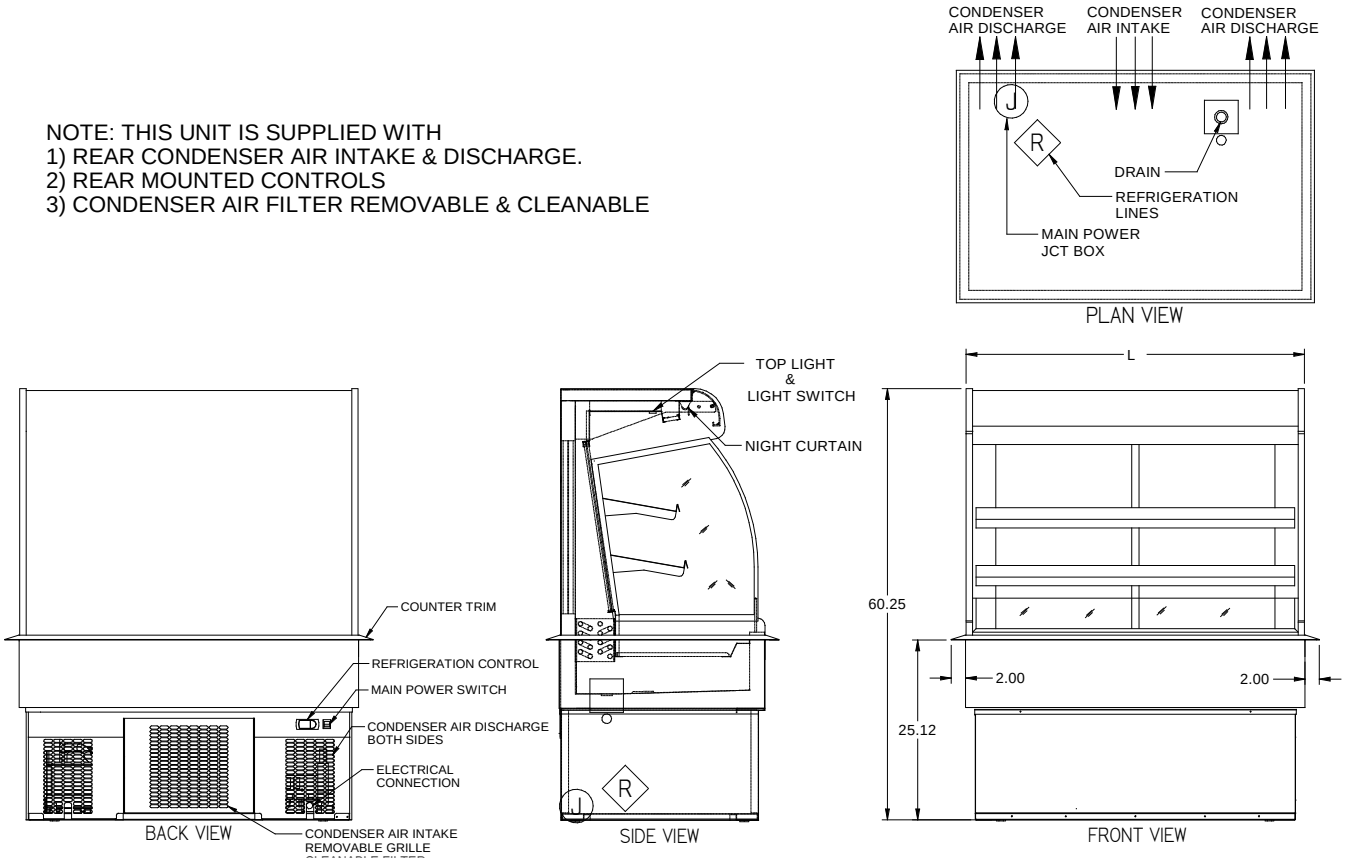
NOTE: Depending on the amount of usage and spillage of foreign material, some fasteners may have to be removed and parts disassembled to allow proper cleaning of the unit.

DROP-IN UNITS AFTER 01/01/2020
RSSM360-6, RSSM460-6

MODEL	DIMENSIONS L X W X H in / L X W X H mm						SHELVING L X W in / L X W mm					INTERIOR VOLUME CUFT
RSSM360	39.00	X	32.50	X	60.25		2 TIER	10	X	34		9.27
	991	X	826	X	1530			254	X	864		
RSSM460	50.00	X	32.50	X	60.25		2 TIER	10	X	45		12.46
	1270	X	826	X	1530			254	X	1143		

SELF CONTAINED					REMOTE			
2-WIRE + GROUND 208-240/60/1 MAX FUSE SIZE	REFRIGERANT	C.U. HP	APPROXIMATE CASE WEIGHT	OPTIONAL CORD & PLUG NEMA	2-WIRE + GROUND 208-240/60/1 MAX FUSE SIZE	REFRIGERANT	BTU'S @+20°	APPROXIMATE CASE WEIGHT
20 AMPS	R449a	1/2HP	600 LBS	NEMA 6-20P	15 AMPS	R449a	5400	550 LBS
			272 KILO					249 KILO
20 AMPS	R449a	3/4HP	700 LBS	NEMA 6-20P	15 AMPS	R449a	7500	650 LBS
			317 KILO					295 KILO

NOTE: THIS UNIT IS SUPPLIED WITH
1) REAR CONDENSER AIR INTAKE & DISCHARGE.
2) REAR MOUNTED CONTROLS
3) CONDENSER AIR FILTER REMOVABLE & CLEANABLE

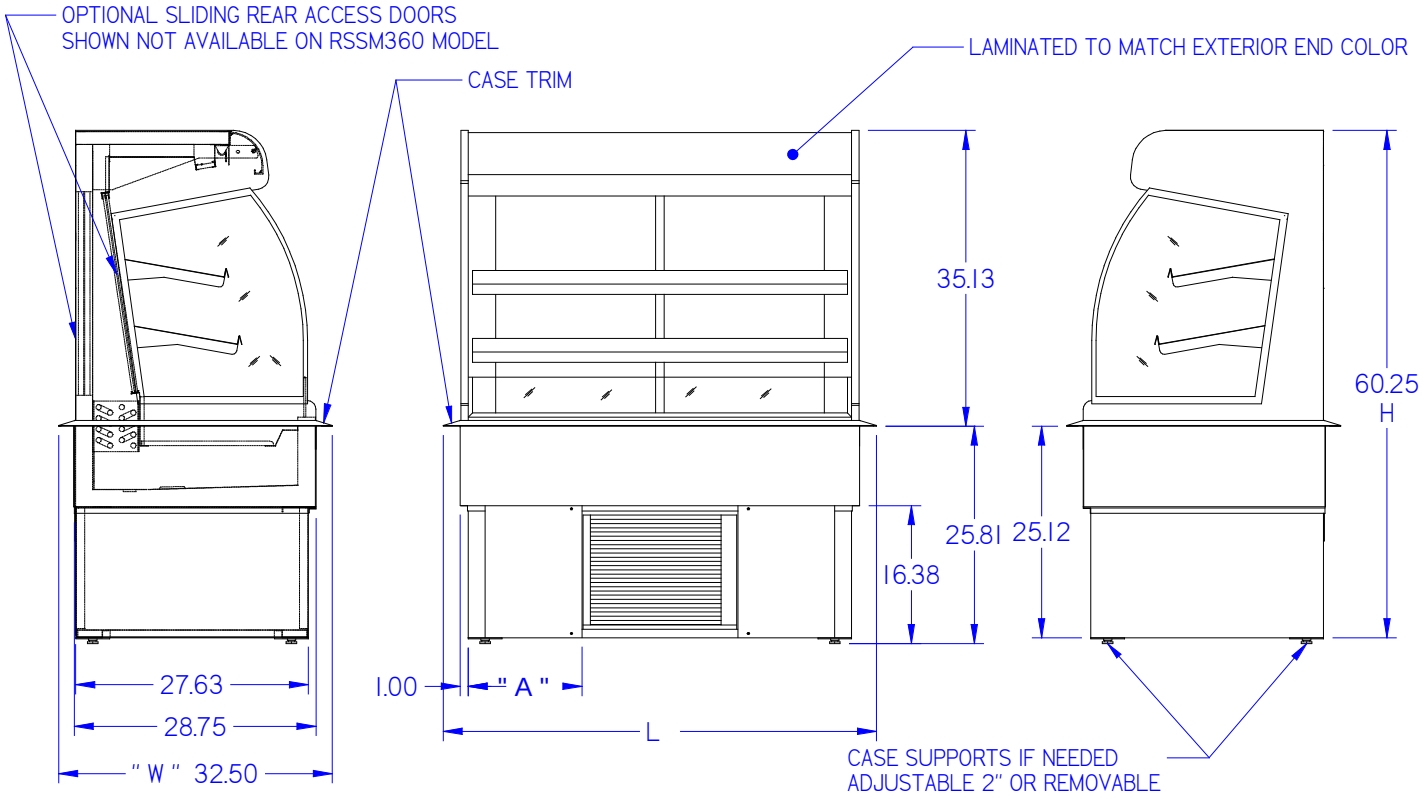


After 01/01/2020 no counter front cutout required case is vented from the back.
Rear counter cutout required for control & filter access.

DROP-IN UNITS PRIOR TO 01/01/2020
RSSM360, RSSM460, RSSM560, RSSM660

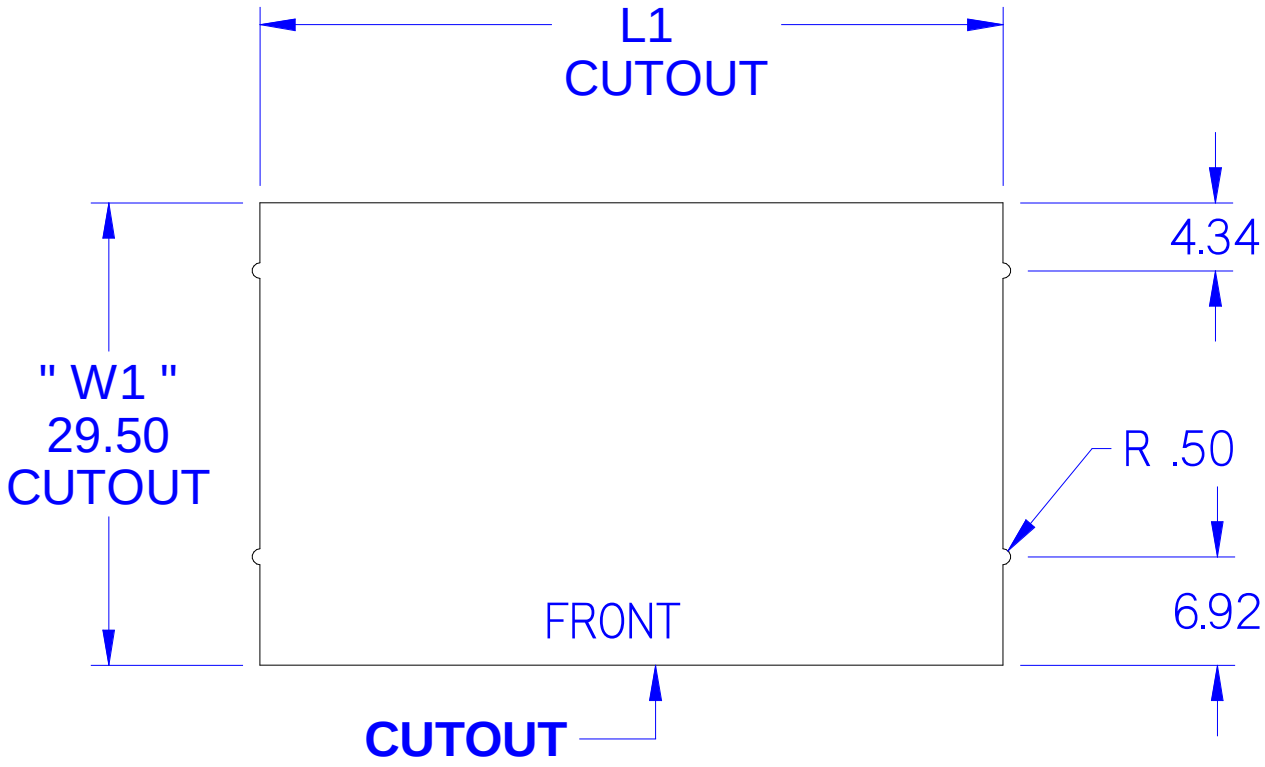
MODEL	DIMENSIONS L X W X H	COUNTER CUTOUT L1 X W1	FRONT CUTOUT LOCATION " A "	APPROXIMATE CASE WEIGHT	SHELVING	SELF CONTAINED 3-WIRE + GROUND 120/208-240/60/1 MAX FUSE SIZE	REMOTE 120/60/1 MAX FUSE SIZE
RSSM360	39.00 X 32.50 X 60.25	36.50 X 29.50	7"	600 LBS	2 TIER (10" X 34")	20 AMPS	15 AMPS
RSSM460	50.00 X 32.50 X 60.25	47.50 X 29.50	13"	700 LBS	2 TIER (10" X 45")	20 AMPS	15 AMPS
RSSM560	62.00 X 32.50 X 60.25	59.50 X 29.50	8"	850 LBS	2 TIER (10" X 57")	30 AMPS	15 AMPS
RSSM660	74.00 X 32.50 X 60.25	71.50 X 29.50	14"	950 LBS	2 TIER (10" X 68")	30 AMPS	15 AMPS

NOTE: ALL DROP-IN'S ARE AVAILABLE WITH CONDENSATE PUMP ONLY STEAM GENERATED FROM A CONDENSATE EVAPORATOR COULD DAMAGE COUNTER.



COUNTER DROP-IN CUTOUT

MODEL	COUNTER CUTOUT L1 X W1
RSSM360	36.50 X 29.50
RSSM460	47.50 X 29.50
RSSM560	59.50 X 29.50
RSSM660	71.50 X 29.50



LOCATING CASE IN THE COUNTER

- Remove two-piece trim from around case.
- The 1/2: radiuses shown in the cutout are for clearance of weld nuts attaches to the side flanges on the case. These weld nuts accept the eye bolts supplied with the case for lifting the case to drop-in thru the cutout made in the counter top.
- Once the case is positioned the eye bolts will need to be removed so the two-piece trim can be installed.
- **Alternate install** – case can be slid into an opening in the counter and a removable panel or swing doors can be in installed for accessing and or servicing some components in the base including electronic temperature control.

COUNTER VENTING SELF-CONTAINED MODELS PRIOR TO 01/01/2020

REAR-VIEW

IMPORTANT:
Customer base design must provide access to both front and back of base to allow for service and to clean condenser coil.

FRONT-VIEW

COUNTER BASE ACCESS CUTOUTS SELF-CONTAINED

Required

Counter front cutout - the vent opening in the front of the counter must have A minimum of 140 sq" of opening.
size 16 3/8" tall x 23" wide to allow for servicing of condensing unit.
See diagram on page 21 for location of cutout.

Counter rear cutout - the vent opening in the back of the counter must have A minimum of 140 sq" of opening similar to what is shown in the rear-view picture with removable vented panel to Enclose compartment. Digital temperature control will be located on the back-right hand side of the base.

Counter rear alternate - vented swing doors are acceptable as long as there is a minimum of 140 sq" of vented opening in them located directly behind the base.

COUNTER BASE ACCESS CUTOUTS REMOTE

Counter front cutout – none required

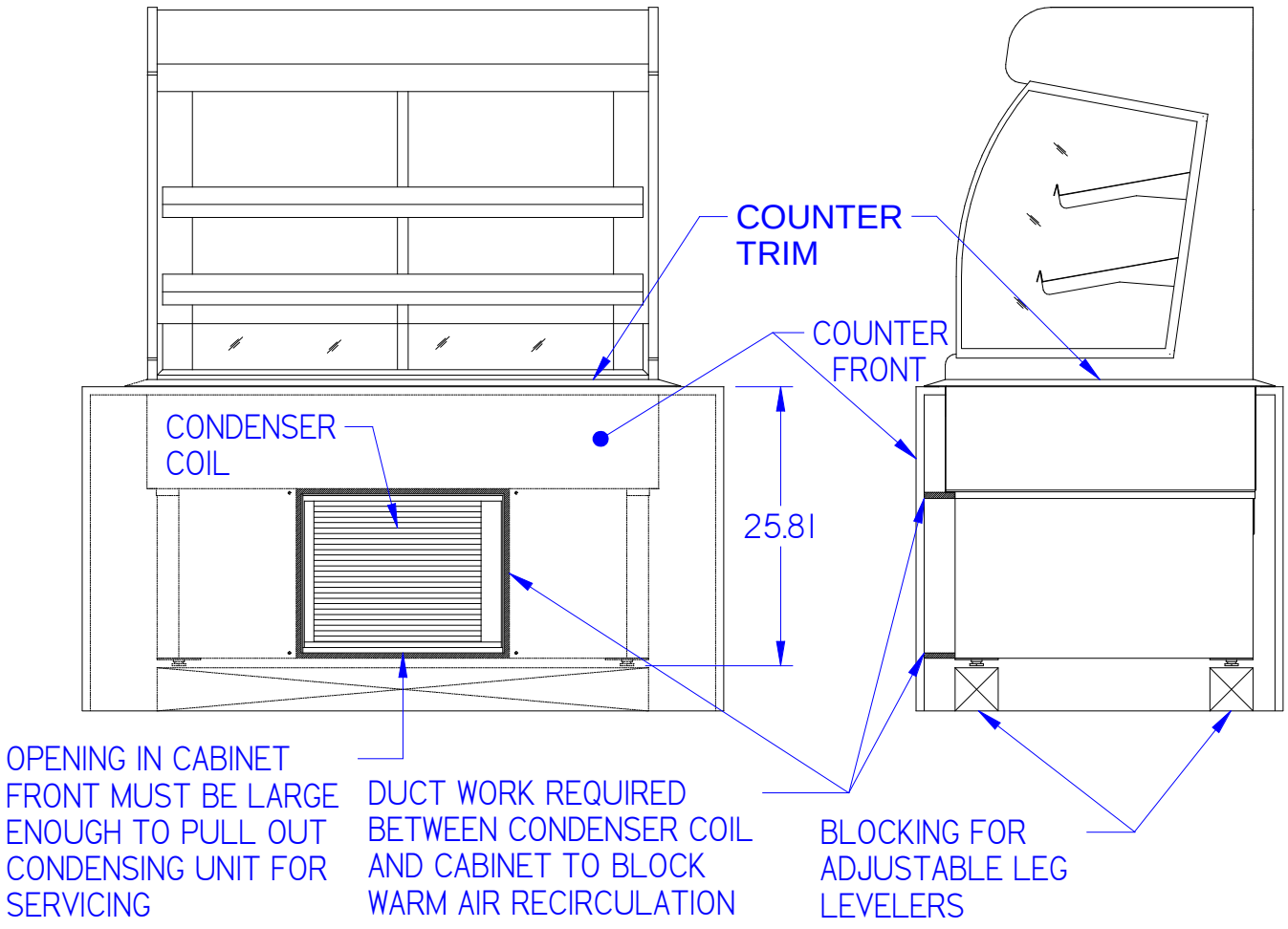
Counter rear cutout – required to access temperature control and base components for Service.

LEVELING CASE

The drop-in cases are equipped with adjustable leg levelers with 2” adjustment for leveling the case with the counter. Blocking may need to be added under the leg levelers for support.

DUCTING CONDENSER AIR INTAKE

Ducting is **REQUIRED** on the inside of the cabinet between the inner front wall of the cabinet and the base front panels as shown in the diagram above. This is needed to prevent warm condenser air from recirculating thru the condenser coil. If this is not done it will affect case temperature performance, shorten the life of the compressor and void the compressor warranty.



SERVICE INFORMATION

CAUTION
RISK OF ELECTRIC SHOCK

DISCONNECT POWER
BEFORE SERVICING UNIT

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

To find a service company in your area, please visit our website at www.federalindustries.com. There you can also find self-service tools to help you get the answers you need faster!

For Warranty Service Requests & ALL Technical Support please contact:

- **Phone: (800) 356-4206 and choose the Tech Support/Warranty Option**
- **Email: Service@federalind.com**

For Warranty Compressors please contact the Parts Department:

- **Phone: (800) 356-4206 and choose the Warranty Parts Option**
- **Email: Parts@Federalind.com**

Federal Industries has partnered with Parts Town for ALL Non-Warranty Part Identification, Pricing, Lead Times, Orders & Freight Quotes. Please contact Parts Town directly if you need parts:

- **Website: PartsTown.com**
- **Email: CustomerService@PartsTown.com**
- **Phone: 833-809-8188**

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.

CAUTION: Before servicing case turn off power at the main breaker of fuse box.

Case Does Not Operate

-Check for disconnected power supply.

-Check for tripped breaker or blown fuse.

Case Temperature Too Warm

-Check that top air discharge grill and/or bottom air intake grill are not blocked.

-Check for a blocked or dirty condenser coil.

-Check that there are no outside air disturbances in or around cases. 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 installed inside the 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 case.

Lights Do Not Operate

-Check that light switch located in top light housing is “on”.

-Check that all optional shelf light cords are securely plugged into sockets in back panel.

-Check that all light bulbs are properly seated in the light holders.

Overflow of Condensate Evaporator

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

-Check that store conditions do not exceed 75° and/or 55% relative humidity for prolonged periods of time.

-Check that condensate pan heaters are operating. Exterior base of condensate pan should be evenly warm on both long sides of pan.

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 hydrofluorocarbons (HFC's) from being released into the atmosphere. The release of HFC's into the atmosphere is a source of greenhouse gases.

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 (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 source of greenhouse gases.

REFRIGERATION AND ELECTRICAL DATA

AFTER 01/01/2020

Model	**RSSM360SC-6** **RSSD360SC-6** **RSSM378SC-6** **RSSD378SC-6**	**RSSM360R-6** **RSSD360R-6** **RSSM378R-6** **RSSD378-R**
ELECTRICAL		
Power Supply, Volts	208-240Volts	208-240Volts
Frequency	60 Hertz	60 Hertz
Phase	1 Phase	1 Phase
Number of Wires	2 + ground	2 + ground

	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	4.3	208-240	----	----
LRA	31.0	208-240	----	----
Condenser Fan Motor	0.6	208-240	----	----
Evaporator Fan Motor	0.4	208-240	0.4	208-240
Lights	1.0	208-240	1.0	208-240
(Includes Optional Shelf Lights)				
Condensate Pan Heater	5.0	208-240	----	----
Condensate Pump	0.5	208-24	0.5	208-240

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

REFRIGERATION

Self-Contained Models

After 01/01/2020 Refrigeration R449a Charge Self-Contained	**3 Pounds**

The self-contained models are shipped from the factory with a completely operational R449a refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**5400 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**5400 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

BEFORE 01/01/2020

Model	**RSSM360SC** **RSSD360SC** **RSSM378SC** **RSSD378SC**	**RSSM360R** **RSSD360R** **RSSM378R** **RSSD378R**
ELECTRICAL		
Power Supply, Volts	120**/**208-240Volts	120Volts
Frequency	60 Hertz	60 Hertz
Phase	1 Phase	1 Phase
Number of Wires	3 + ground	2 + ground

	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	4.3	208-240	----	----
LRA	31.0	208-240	----	----
Condenser Fan Motor	0.6	208-240	----	----
Evaporator Fan Motor	0.4	120	0.4	120
Lights	1.0	120	1.0	120
(Includes Optional Shelf Lights)				
Condensate Pan Heater	5.0	240	----	----
Condensate Pump	0.5	240	1.0	120

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

REFRIGERATION

Self-Contained Models

Before 01/01/2020 Refrigeration R404A Charge Self Contained	**3 Pounds**

The self-contained models are shipped from the factory with a completely operational R404A refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**5400 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**5400 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

After 01/01/2020

Model	**RSSM460SC-6** **RSSD460SC-6** **RSSM478SC-6** **RSSD478SC-6**	**RSSM460R-6** **RSSD460R-6** **RSSM478R-6** **RSSD478R-6**
Power Supply, Volts	208-240 Volts	208-240 Volts
Frequency	60 Hertz	60 Hertz
Phase	1 Phase	1 Phase
Number of Wires	2 + ground	2 + ground

	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	5.7	208-240	----	----
LRA	31.0	208-240	----	----
Condenser Fan Motor	0.7	208-240	----	----
Evaporator Fan Motor (2)	0.4ea	208-240	0.4ea	208-240
Lights (includes optional Shelf lights)	1.2	208-240	1.2	208-240
Condensate Pan Heater	5.0	208-240	----	----
Condensate Pump	0.5	208-240	0.5	208-240

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

REFRIGERATION

Self-Contained Models

Refrigeration R449a Charge Self Contained	**4 Pounds**

The self-contained models are shipped from the factory with a completely operational R449a figuration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**7500 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449A After 01/01/18	**7500 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

Before 01/01/2020

Model	**RSSM460SC** **RSSD460SC** **RSSM478SC** **RSSD478SC**	**RSSM460-R** **RSSD460-R** **RSSM478-R** **RSSD478-R**
Power Supply, Volts	120/208-240 Volts	120 Volts
Frequency	60 Hertz	60 Hertz
Phase	1 Phase	1 Phase
Number of Wires	3 + ground	2 + ground

	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	5.7	208-240	----	----
LRA	31.0	208-240	----	----
Condenser Fan Motor	0.7	208-240	----	----
Evaporator Fan Motor (2)	0.4ea	120	0.4ea	120
Lights (includes optional Shelf lights)	1.2	120	1.2	120
Condensate Pan Heater	5.0	240	----	----
Condensate Pump	0.5	240	1.0	120

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

REFRIGERATION

Self-Contained Models

Refrigeration R404A Charge Self Contained	**4 Pounds**

The self-contained models are shipped from the factory with a completely operational R404A refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**7500 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449A After 01/01/18	**7500 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

AFTER 01/01/2020

Model	**RSSM560SC-6** **RSSD560SC-6** **RSSM578SC-6** **RSSD578SC-6**		**RSSM560R-6** **RSSD560R-6** **RSSM578R-6** **RSSD578R-6**	
ELECTRICAL				
Power Supply, Volts	208-240 Volts		208-240 Volts	
Frequency	60 Hertz		60 Hertz	
Phase	1 Phase		1 Phase	
Number of Wires	2 + ground		2 + ground	
	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	7.7	208-240	----	----
LRA	54.0	208-240	----	----
Condenser Fan Motor	0.7	208-240	----	----
Evaporator Fan Motor (2)	0.4ea	208-240	0.4ea	208-240
Lights (includes optional Shelf lights)	2.0	208-240	2.0	208-240
Condensate Pan Heater	5.0	208-240	----	----
Condensate Pump	0.5	208-240	0.5	208-240

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

REFRIGERATION

Self-Contained Models

AFTER 01/01/2020 Refrigeration R449a Charge Self-Contained	**4 Pounds**

The self-contained models are shipped from the factory with a completely operational R449a refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**9000 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**9000 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

BEFORE 01/01/2020

Model	**RSSM560SC** **RSSD560SC** **RSSM578SC** **RSSD578SC**		**RSSM560-R** **RSSD560-R** **RSSM578-R** **RSSD578-R**	
ELECTRICAL				
Power Supply, Volts	120/208-240 Volts		120 Volts	
Frequency	60 Hertz		60 Hertz	
Phase	1 Phase		1 Phase	
Number of Wires	3 + ground		2 + ground	
	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	7.7	208-240	----	----
LRA	54.0	208-240	----	----
Condenser Fan Motor	0.7	208-240	----	----
Evaporator Fan Motor (2)	0.4ea	120	0.4ea	120
Lights (includes optional Shelf lights)	2.0	120	2.0	120
Condensate Pan Heater	5.0	240	----	----
Condensate Pump	0.5	240	1.0	120

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

REFRIGERATION

Self-Contained Models

BEFORE 01/01/2020 Refrigeration R404A Charge Self-Contained	**4 Pounds**

The self-contained models are shipped from the factory with a completely operational R404A refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**9000 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**9000 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

AFTER 01/01/2020

Model	**RSSM660SC-6** **RSSD660SC-6** **RSSM678SC-6** **RSSD678SC-6**		**RSSM660R-6** **RSSD660R-6** **RSSM678R-6** **RSSD678R-6**	
ELECTRICAL				
Power Supply, Volts	208-240 Volts		208-240 Volts	
Frequency	60 Hertz		60 Hertz	
Phase	1 Phase		1 Phase	
Number of Wires	2 + ground		2 + ground	
	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	7.7	208-240	----	----
LRA	54.0	208-240	----	----
Condenser Fan Motor	0.7	208-240	----	----
Evaporator Fan Motor (3)	0.4ea	208-240	0.4ea	208-240
Lights (includes optional Shelf lights)	2.0	208-240	2.0	208-240
Condensate Pan Heater	5.0	208-240	----	----
Condensate Pump	0.5	208-240	0.5	208-240

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

REFRIGERATION

Self-Contained Models

AFTER 01/01/2020 Refrigeration R449a Charge Self-Contained	**4.25 Pounds**

The self-contained models are shipped from the factory with a completely operational R449a refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**10500 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**10500 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

BEFORE 01/01/2020

Model	**RSSM660SC** **RSSD660SC** **RSSM678SC** **RSSD678SC**	**RSSM660-R** **RSSD660-R** **RSSM678-R** **RSSD678-R**
ELECTRICAL		
Power Supply, Volts	120/208-240 Volts	120 Volts
Frequency	60 Hertz	60 Hertz
Phase	1 Phase	1 Phase
Number of Wires	3 + ground	2 + ground

	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	7.7	208-240	----	----
LRA	54.0	208-240	----	----
Condenser Fan Motor	0.7	208-240	----	----
Evaporator Fan Motor (3)	0.4ea	120	0.4ea	120
Lights (includes optional Shelf lights)	2.0	120	2.0	120
Condensate Pan Heater	5.0	240	----	----
Condensate Pump	0.5	240	1.0	120

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

REFRIGERATION

Self-Contained Models

BEFORE 01/01/2020 Refrigeration R404A Charge Self-Contained	**4.25 Pounds**

The self-contained models are shipped from the factory with a completely operational R404A refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**10500 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**10500 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

AFTER 01/01/2020

Model	**RSSM878SC** **RSSD878SC**		**RSSM878R-6** **RSSD878R-6**	
ELECTRICAL				
POWER SUPPLY, VOLTS	N/A		208-240Volts	
Frequency	N/A		60 Hertz	
Phase	N/A		1 Phase	
Number of Wires	N/A		2 + ground	
	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	N/A	N/A	----	----
LRA	N/A	N/A	----	----
Condenser Fan Motor	N/A	N/A	----	----
Evaporator Fan Motor (4)	N/A	N/A	0.4ea	208-240
Lights (includes optional Shelf lights)	N/A	N/A	2.0	208-240
Condensate Pan Heater	N/A	N/A	----	----
Condensate Pump	N/A	N/A	0.5	208-240

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

REFRIGERATION

Self-Contained Models

AFTER 01/01/2020 N/A	

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**15000 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**15000 BTU'S @20°F Evap/90° Ambient**

REFRIGERATION AND ELECTRICAL DATA

BEFORE 01/01/2020

Model	**RSSM878SC** **RSSD878SC**		**RSSM878-R** **RSSD878-R**	
ELECTRICAL				
POWER SUPPLY, VOLTS	120/208-240 Volts		120 Volts	
Frequency	60 Hertz		60 Hertz	
Phase	1 Phase		1 Phase	
Number of Wires	3 + ground		2 + ground	
	AMPS	**VOLTS**	**AMPS**	**VOLTS**
Compressor				
RLA	6.15	208-240	----	----
LRA	34	208-240	----	----
Condenser Fan Motor	1.1	208-240	----	----
Evaporator Fan Motor (4)	0.4ea	120	0.4ea	120
Lights (includes optional Shelf lights)	2.0	120	2.0	120
Condensate Pan Heater	5.0	240	----	----
Condensate Pump	0.5	240	1.0	120

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

REFRIGERATION

Self-Contained Models

BEFORE 01/01/2020 Refrigeration R404A Charge Self-Contained	**(2) @ 5 POUNDS EACH**

The self-contained models are shipped from the factory with a completely operational R404A refrigeration system and require no modifications or adjustments upon installation. Case must be installed as per the installation section of this manual to provide proper condensing air cooling.

Self-Contained Refrigeration Operation

The unit temperature is controlled by the Electronic control and timers outlined in the control section of this manual.

Note: The condenser fan runs continuously.

Remote Models

Refrigerant & BTU Requirements

Refrigerant R404A Before 01/01/18	**15000 BTU'S @20°F Evap/90° Ambient**
Refrigerant R449a After 01/01/18	**15000 BTU'S @20°F Evap/90° Ambient**

REPLACEMENT PARTS AFTER 01/01/2020
MODEL RSSM360-6, RSSD360-6, RSSM378-6, & RSSD378-6
AND NSSM VERSIONS

Part Description	Part # RSSM360	Part # RSSM378
Refrigeration System		
Condensing Unit (Self-Contained Only)	30-20512	30-20512
Compressor (Replacement)	30-20623	30-20623
Evaporator Coil	33-13283	33-13283
Expansion Valve (Self-Contained R449a)	32-21172	32-21172
Expansion Valve Electronic (Remote R449a)	32-21228	32-21228
Evaporator Fan Motor 240V	41-15925	41-15925
Evaporator Fan Blade	72-32507	72-32507
Filter Drier	32-12626	32-12626
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (Remote)	41-14324	41-14324
Electronic Expansion Valve Control (Remote)	32-21223	32-21223
Temperature Sensor (Remote)	32-21224	32-21224
Pressure Transducer (Remote)	32-21225	32-21225
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 240V(remote) (CAREL)	32-19865-1	32-19865-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V (self-contained)	40-19392	40-19392
**Light Switch (On/Off)	41-11066	41-11066
Power Switch	41-18186	41-18186
Heater Wire Assembly 240v	43-19467	43-19467
**Led Strip Light 3500K 24V Top & Shelf lights	42-20871-25C35	42-20871-25C35
**Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
**Power supply 24V 60W	39-20986	39-20986
Field Installed Condensate Pan	47-19541	47-19541
Base Fan Assembly (Remote W/Condensate Pan Only)	SA-2106-1	SA-2106-1
Miscellaneous Components		
Condenser Filter	16-13647	16-13647
Front Base Grille Center	SA5964-2	SA5964-2
Rear Base Grille Center (Drop-In & Rear Intake & Discharge)	M21304-2	M21304-2
**Price Tag Molding Black	W11329-21	W11329-21
**Price Tag Molding White	W11329-21A	W11329-21A
**Shelf Bracket, Left Side	M-8864-L	M-8829-L
**Shelf Bracket, Right Side	M-8864-R	M-8829-R
Thermometer	32-13662	32-13662
Condensate Pan 240V (self-contained)	SA5125	SA5125
Condensate Pump 240V (self-contained & remote)	47-15687	47-15687
**Light Clip LED Strip	67-20869	67-20868
Optional Parts		
Energy Savings Night Curtain	479-904	479-904
**Security Night Cover	479-902	484-920
**Shelf light cord black LED strip	43-20862-3B	43-20862-3B
**Shelf light cord white LED strip	43-20862-3W	43-20862-3W
**Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
**Top Light Cord white LED strip	43-20860-1W	43-20860-1W
**Shelf light socket black LED strip	43-20996-B	43-20996-B
**Shelf light socket white LED Strip	43-20996-W	43-20996-W

**** INDICATES REPLACEMENT PARTS USED ON THE NSSM DRY CASE**

REPLACEMENT PARTS BEFORE 01/01/2020
MODEL RSSM360, RSSD360, RSSM378, & RSSD378

Part Description	Part # RSSM360	Part # RSSM378
Refrigeration System		
Condensing Unit (Self-Contained Only)	30-20512	30-20512
Compressor (Replacement)	30-20623	30-20623
Evaporator Coil	33-13283	33-13283
Expansion Valve (Self-Contained & remote R404A)	32-19419	32-19419
Expansion Valve (Remote R449A) after 01/01/18	32-20877	32-20877
Evaporator Fan Motor	41-11628	41-11628
Evaporator Fan Blade	72-32507	72-32507
Filter Drier	32-12626	32-12626
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 120V(remote) (CAREL)	32-19864-1	32-19864-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V	40-19392	40-19392
Condensate PTC Heater 120V (remote)	40-19331	40-19331
Light Bulb Fluorescent	42-11519	42-11519
Ballast Two Lamps Fluorescent	39-12902	39-12902
Ballast Three Lamps Fluorescent	39-12903	39-12903
Ballast Four Lamps Fluorescent	39-12904	39-12904
Lamp holder – Spring-Loaded (Shelf Light) Fluorescent	42-10833	42-10833
Lamp holder – Stationery (Shelf Light) Fluorescent	42-10834	42-10834
Tombstone Socket (Top Light) Fluorescent	42-19125	42-19125
Cap. Tombstone Socket Fluorescent	42-15441	42-15441
Lamp Shield Fluorescent	42-15638	42-15638
Light Switch (On/Off)	41-11066	41-11066
Heater Wire Assembly	43-14892	43-14892
Led Strip Light 3500K 24V Top & Shelf lights	42-20871-25C35	42-20871-25C35
Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Price Tag Molding Black	W11329-21	W11329-21
Price Tag Molding White	W11329-21A	W11329-21A
Shelf Bracket, Left Side	M-8864-L	M-8829-L
Shelf Bracket, Right Side	M-8864-R	M-8829-R
Thermometer	32-13662	32-13662
Condensate Pan 240V	SA5125	SA5125
Condensate Pan 120V (remotes)	SA5107	SA5107
Condensate Pump 240V	47-15687	47-15687
Condensate Pump 120V (remotes)	47-15686	47-15686
Light Clip LED Strip	67-20869	67-20868
Optional Parts		
White Shelf Lamp Cord	43-19079-A	43-19079-A
White Shelf Lamp Socket/Receptacle	43-19080-A	43-19080-A
Black Shelf Lamp Cord	43-19079-B	43-19079-B
Black Shelf Lamp Socket/Receptacle	43-19080-B	43-19080-B
Black Shelf Lamp Cord Led	43-19079-B	43-19079-B
Energy Savings Night Curtain	479-904	479-904
Security Night Cover	479-902	484-920
Shelf light cord black LED strip	43-20862-3B	43-20862-3B
Shelf light cord white LED strip	43-20862-3W	43-20862-3W
Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
Top Light Cord white LED strip	43-20860-1W	43-20860-1W
Shelf light socket black LED strip	43-20996-B	43-20996-B
Shelf light socket white LED Strip	43-20996-W	43-20996-W
Front Counter Grille For Drop-Ins	SA4867	SA4867

REPLACEMENT PARTS AFTER 01/01/2020
MODEL RSSM460-6, RSSD460-6, RSSM478-6, & RSSD478-6
AND NSSM VERSIONS

Part Description	Part Number	
Refrigeration System	**RSSM460**	**RSSM478**
Condensing Unit (Self-Contained Only)	30-17888	30-17888
Compressor (Replacement)	30-18053	30-18053
Evaporator Coil	33-11541	33-11541
Expansion Valve (Self-Contained R449a)	32-20887	32-20887
Expansion Valve Electronic (Remote R449a)	32-21228	32-21228
Evaporator Fan Motor	41-15925	41-15925
Evaporator Fan Blade	72-13316	72-13316
Filter Drier	32-11561	32-11561
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electronic Expansion Valve Control (Remote)	32-21223	32-21223
Temperature Sensor (Remote)	32-21224	32-21224
Pressure Transducer (Remote)	32-21225	32-21225
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 240 (remote) (CAREL)	32-19865-1	32-19865-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V (self-contained)	40-19392	40-19392
**Light Switch (On/Off)	41-11066	41-11066
Power Switch	41-18186	41-18186
Heater Wire Assembly	43-15926	43-15926
**Led Strip Light 3500K 24V Top & Shelf lights	42-20871-38C35	42-20871-38C35
**Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
**Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Condenser Filter	16-13647-2	16-13647-2
Front Base Grille Center	SA5964-3	SA5964-3
Rear Base Grille Center (Drop-In & Rear Intake & Discharge)	M21304-3	M21304-3
**Price Tag Molding Black	W11329-22	W11329-22
**Price Tag Molding White	W11329-22A	W11329-22A
**Shelf Bracket, Left Side	M-8864-L	M-8829-L
**Shelf Bracket, Right Side	M-8864-R	M-8829-R
Thermometer	32-13662	32-13662
Condensate Pan 240V (Self-Contained)	SA5125	SA5125
Condensate Pump 240V (Self-Contained & Remote)	47-15687	47-15687
Field Installed Condensate Pan	47-19541	47-19541
Base Fan Assembly (Remote W/Condensate Pan Only)	SA-2106-1	SA-2106-1
**Light Clip LED Strip	67-20869	67-20868
Condensate Pan Hot Gas W/800 Watt Heater	SA5833	N/A
Tube Hot Gas	06-20866	N/A
Wick, Evaporative	15-19469	N/A
Heater Ptc 800 Watt	40-19997-2	N/A
Switch, Straight Lever	41-13022	N/A
Float Assembly	SA2928-2	N/A
Optional Parts		
Energy Saving Night Curtain	480-905	481-905
**Security Night Cover	480-906	481-906
**Shelf light cord black LED strip	43-20862-3B	43-20862-3B
**Shelf light cord white LED strip	43-20862-3W	43-20862-3W
**Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
**Top Light Cord white LED strip	43-20860-1W	43-20860-1W
**Shelf light socket black LED strip	43-20996-B	43-20996-B
**Shelf light socket white LED Strip	43-20996-W	43-20996-W

**** INDICATES REPLACEMENT PARTS USED ON THE NSSM DRY CASE**

REPLACEMENT PARTS BEFORE 01/01/2020
MODEL RSSM460, RSSD460, RSSM478, & RSSD478

Part Description	Part Number	
Refrigeration System	**RSSM460**	**RSSM478**
Condensing Unit (Self-Contained Only)	30-17888	30-17888
Compressor (Replacement)	30-18053	30-18053
Evaporator Coil	33-11541	33-11541
Expansion Valve (Self-Contained & remote R404A)	32-19419	32-19419
Expansion Valve (Remote R449A) after 01/01/18	32-20877	32-20877
Evaporator Fan Motor	41-11628	41-11628
Evaporator Fan Blade	72-13316	72-13316
Filter Drier	32-11561	32-11561
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 120V(remote) (CAREL)	32-19864-1	32-19864-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V	40-19392	40-19392
Condensate PTC Heater 120V (remote)	40-19331	40-19331
Light Bulb Fluorescent	42-11069	42-11069
Ballast Two Lamps Fluorescent	39-12902	39-12902
Ballast Three Lamps Fluorescent	39-12903	39-12903
Ballast Four Lamps Fluorescent	39-12904	39-12904
Lamp holder – Spring-Loaded (Shelf Lights)	42-10833	42-10833
Lamp holder – Stationery (Shelf Lights)	42-10834	42-10834
Light Switch (On/Off)	41-11066	41-11066
Tombstone Socket (Top Light) Fluorescent	42-19125	42-19125
Cap. Tombstone Socket Fluorescent	42-15441	42-15441
Lamp Shield Fluorescent	42-15503	42-15503
Heater Wire Assembly	43-14891	43-14891
Led Strip Light 3500K 24V Top & Shelf lights	42-20871-38C35	42-20871-38C35
Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Price Tag Molding Black	W11329-22	W11329-22
Price Tag Molding White	W11329-22A	W11329-22A
Shelf Bracket, Left Side	M-8864-L	M-8829-L
Shelf Bracket, Right Side	M-8864-R	M-8829-R
Thermometer	32-13662	32-13662
Condensate Pan 240V	SA5125	SA5125
Condensate Pan 120V (remotes)	SA5107	SA5107
Condensate Pump 240V	47-15687	47-15687
Condensate Pump 120V (remotes)	47-15686	47-15686
Light Clip LED Strip	67-20869	67-20868
Optional Parts		
White Shelf Lamp Cord Fluorescent	43-19079-A	43-19079-A
White Shelf Lamp Socket/Receptacle Fluorescent	43-19080-A	43-19080-A
Black Shelf Lamp Cord Fluorescent	43-19079-B	43-19079-B
Black Shelf Lamp Socket/Receptacle Fluorescent	43-19080-B	43-19080-B
Energy Saving Night Curtain	480-905	481-905
Security Night Cover	480-906	481-906
Shelf light cord black LED strip	43-20862-3B	43-20862-3B
Shelf light cord white LED strip	43-20862-3W	43-20862-3W
Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
Top Light Cord white LED strip	43-20860-1W	43-20860-1W
Shelf light socket black LED strip	43-20996-B	43-20996-B
Shelf light socket white LED Strip	43-20996-W	43-20996-W
Front Counter Grille For Drop-Ins	SA4867	SA4867

REPLACEMENT PARTS AFTER 01/01/2020
MODEL RSSM560-6, RSSD560-6, RSSM578-6, & RSSD578-6
AND NSSM VERSIONS

Part Description	Part Number	
Refrigeration System	**RSSM560**	**RSSM578**
Condensing Unit (Self-Contained Only)	30-17889	30-17889
Compressor (Replacement)	30-18054	30-18054
Evaporator Coil	33-18024	33-18024
Expansion Valve (Self-Contained R449a)	32-20877	32-20877
Expansion Valve Electronic (Remote R449a)	32-21228	32-21228
Evaporator Fan Motor 240V	41-15925	41-15925
Evaporator Fan Blade	72-32507	72-32507
Filter Drier	32-12626	32-12626
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electronic Expansion Valve Control (Remote)	32-21223	32-21223
Temperature Sensor (Remote)	32-21224	32-21224
Pressure Transducer (Remote)	32-21225	32-21225
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 240V (remote)(CAREL)	32-19865-1	32-19865-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V (self-contained)	40-19392	40-19392
Heater Wire Assembly	43-20356	43-20356
**Light Switch (On/Off)	41-11066	41-11066
Power Switch	41-18186	41-18186
**Led Strip Light 3500K 24V Top & Shelf lights	42-20871-48C35	42-20871-48C35
**Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
**Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Condenser Filter	16-13647-2	16-13647-2
Front Base Grille Center	SA5964-3	SA5964-3
Rear Base Grille Center (Drop-In & Rear Intake & Discharge)	M21304-3	M21304-3
**Price Tag Molding Black	W11329-23	W11329-23
**Price Tag Molding White	W11329-23A	W11329-23A
**Shelf Bracket, Left Side Black	M-8864-LA	M-8829-LA
**Shelf Bracket, Right Side Black	M-8864-RA	M-8829-RA
Thermometer	32-13662	32-13662
Condensate Pan 240V (Self-Contained)	SA5125	SA5125
Condensate Pump 240V (Self-Contained & Remote)	47-15687	47-15687
Field Installed Condensate Pan	47-19541	47-19541
Base Fan Assembly (Remote W/Condensate Pan Only)	SA-2106-1	SA-2106-1
**Light Clip LED Strip	67-20869	67-20868
Condensate Pan Hot Gas W/800 Watt Heater	SA5833	N/A
Tube Hot Gas	06-20866	N/A
Wick, Evaporative	15-19469	N/A
Heater Ptc 800 Watt	40-19997-2	N/A
Switch, Straight Lever	41-13022	N/A
Float Assembly	SA2928-2	N/A
Optional Parts		
Energy Saving Night Curtain	454-904	454-904
**Security Night Cover	453-901	454-901
**Shelf light cord black LED strip	43-20862-3B	43-20862-3B
**Shelf light cord white LED strip	43-20862-3W	43-20862-3W
**Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
**Top Light Cord white LED strip	43-20860-1W	43-20860-1W
**Shelf light socket black LED strip	43-20996-B	43-20996-B
**Shelf light socket white LED Strip	43-20996-W	43-20996-W

**** INDICATES REPLACEMENT PARTS USED ON THE NSSM DRY CASE**

REPLACEMENT PARTS BEFORE 01/01/2020
MODEL RSSM560, RSSD560, RSSM578, & RSSD578

Part Description	Part Number	
Refrigeration System	**RSSM560**	**RSSM578**
Condensing Unit (Self-Contained Only)	30-17889	30-17889
Compressor (Replacement)	30-18054	30-18054
Evaporator Coil	33-18024	33-18024
Expansion Valve (Self-Contained & remote R404A)	32-19416	32-19416
Expansion Valve (Remote R449A) after 01/01/18	32-20876	32-20876
Evaporator Fan Motor	41-11628	41-11628
Evaporator Fan Blade	72-32507	72-32507
Filter Drier	32-12626	32-12626
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 120V(remote)(CAREL)	32-19864-1	32-19864-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V	40-19392	40-19392
Condensate PTC Heater 120V (remote)	40-19331	40-19331
Light Bulb Fluorescent	42-11070	42-11070
Ballast Two Lamps Fluorescent	39-12902	39-12902
Ballast Three Lamps Fluorescent	39-12903	39-12903
Ballast Four Lamps Fluorescent	39-12904	39-12904
Lamp holder – Spring-Loaded (Shelf Light) Fluorescent	42-10833	42-10833
Lamp holder – Stationery (Shelf Light) Fluorescent	42-10834	42-10834
Tombstone Socket (Top Light) Fluorescent	42-19125	42-19125
Cap. Tombstone Socket Fluorescent	42-15441	42-15441
Lamp Shield Fluorescent	42-15640	42-15640
Heater Wire Assembly	43-18043	43-18043
Light Switch (On/Off)	41-11066	41-11066
Led Strip Light 3500K 24V Top & Shelf lights	42-20871-48C35	42-20871-48C35
Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Price Tag Molding Black	W11329-23	W11329-23
Price Tag Molding White	W11329-23A	W11329-23A
Shelf Bracket, Left Side Black	M-8864-LA	M-8829-LA
Shelf Bracket, Right Side Black	M-8864-RA	M-8829-RA
Thermometer	32-13662	32-13662
Condensate Pan 240V	SA5125	SA5125
Condensate Pan 120V (remotes)	SA5107	SA5107
Condensate Pump 240V	47-15687	47-15687
Condensate Pump 120V (remotes)	47-15686	47-15686
Light Clip LED Strip	67-20869	67-20868
Optional Parts		
White Shelf Lamp Cord Fluorescent	43-19079-A	43-19079-A
White Shelf Lamp Socket/Receptacle Fluorescent	43-19080-A	43-19080-A
Black Shelf Lamp Cord Fluorescent	43-19079-B	43-19079-B
Black Shelf Lamp Socket/Receptacle Fluorescent	43-19080-B	43-19080-B
Energy Saving Night Curtain	454-904	454-904
Security Night Cover	453-901	454-901
Shelf light cord black LED strip	43-20862-3B	43-20862-3B
Shelf light cord white LED strip	43-20862-3W	43-20862-3W
Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
Top Light Cord white LED strip	43-20860-1W	43-20860-1W
Shelf light socket black LED strip	43-20996-B	43-20996-B
Shelf light socket white LED Strip	43-20996-W	43-20996-W
Front Counter Grille For Drop-Ins	SA4867	SA4867

REPLACEMENT PARTS AFTER 01/01/2020
MODEL RSSM660-6, RSSD660-6, RSSM678-6, & RSSD678-6
AND NSSM VERSIONS

Part Description	Part Number	
Refrigeration System	**RSSM660**	**RSSM678**
Condensing Unit (Self-Contained Only)	30-17889	30-17889
Compressor (Replacement)	30-18054	30-18054
Evaporator Coil	33-11542	33-11542
Expansion Valve (Self-Contained)	32-20877	32-20877
Expansion Valve Electronic (Remote R449A)	32-21226	32-21226
Evaporator Fan Motor	41-15925	41-15925
Evaporator Fan Blade	72-13316	72-13316
Filter Drier	32-11561	32-11561
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electronic Expansion Valve Control (Remote)	32-21223	32-21223
Temperature Sensor (Remote)	32-21224	32-21224
Pressure Transducer (Remote)	32-21225	32-21225
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 240V(remote)(CAREL)	32-19865-1	32-19865-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V (Self-Contained)	40-19392	40-19392
**Light Switch (On/Off)	41-11066	41-11066
Power Switch	41-18186	41-18186
Heater Wire Assembly	43-19113	43-19113
**Led Strip Light 3500K 24V Shelf Lights	42-20871-25C35	42-20871-25C35
**Led Strip Light 3500K 24V Top Light	42-20871-60C35	42-20871-60C35
**Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
**Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Condenser Filter	16-13647-2	16-13647-2
Front Base Grille Center	SA5964-3	SA5964-3
Rear Base Grille Center (Drop-In & Rear Intake & Discharge)	M21304-3	M21304-3
**Price Tag Molding Black	W11329-24	W11329-24
**Price Tag Molding White	W11329-24A	W11329-24A
**Shelf Bracket, Left Side	M-8864-L	M-8829-L
**Shelf Bracket, Right Side	M-8864-R	M-8829-R
Thermometer	32-13662	32-13662
Condensate Pan 240V (Self-Contained)	SA5125	SA5125
Condensate Pump 240V (Self-Contained & Remote)	47-15687	47-15687
Field Installed Condensate Pan	47-19541	47-19541
Base Fan Assembly (Remote W/Condensate Pan Only)	SA-2106-1	SA-2106-1
**Light Clip LED Strip	67-20869	67-20868
Condensate Pan Hot Gas W/800 Watt Heater	SA5833	N/A
Tube Hot Gas	06-20866	N/A
Wick, Evaporative	15-19469	N/A
Heater Ptc 800 Watt	40-19997-2	N/A
Switch, Straight Lever	41-13022	N/A
Float Assembly	SA2928-2	N/A
Optional Parts		
Energy Saving Night Curtain	483-905	483-905
**Security Night Cover	482-906	483-906
**Shelf light cord black LED strip	43-20862-3B	43-20862-3B
**Shelf light cord white LED strip	43-20862-3W	43-20862-3W
**Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
**Top Light Cord white LED strip	43-20860-1W	43-20860-1W
**Shelf light socket black LED strip	43-20996-B	43-20996-B
**Shelf light socket white LED Strip	43-20996-W	43-20996-W

**** INDICATES REPLACEMENT PARTS USED ON THE NSSM DRY CASE**

REPLACEMENT PARTS BEFORE 01/01/2020
MODEL RSSM660, RSSD660, RSSM678, & RSSD678

Part Description	Part Number	
Refrigeration System	**RSSM660**	**RSSM678**
Condensing Unit (Self-Contained Only)	30-17889	30-17889
Compressor (Replacement)	30-18054	30-18054
Evaporator Coil	33-11542	33-11542
Expansion Valve (Self-Contained & remote R404A)	32-19416	32-19416
Expansion Valve (Remote R449A) after 01/01/18	32-20876	32-20876
Evaporator Fan Motor	41-11628	41-11628
Evaporator Fan Blade	72-13316	72-13316
Filter Drier	32-11561	32-11561
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 120V(remote)(CAREL)	32-19864-1	32-19864-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V	40-19392	40-19392
Condensate PTC Heater 120V (remote)	40-19331	40-19331
Light Bulb Fluorescent	42-11519	42-11519
Ballast Two Lamps Fluorescent	39-12902	39-12902
Ballast Three Lamps Fluorescent	39-12903	39-12903
Ballast Four Lamps Fluorescent	39-12904	39-12904
Lamp holder – Spring-Loaded (Shelf Light) Fluorescent	42-10833	42-10833
Lamp holder – Stationery (Shelf Light) Fluorescent	42-10834	42-10834
Light Switch (On/Off)	41-11066	41-11066
Tombstone Socket (Top Light) Fluorescent	42-19125	42-19125
Cap.Tombstone Socket Fluorescent	42-15441	42-15441
Lamp Shield Fluorescent	42-15638	42-15638
Heater Wire Assembly	43-14893	43-14893
Led Strip Light 3500K 24V Shelf Lights	42-20871-25C35	42-20871-25C35
Led Strip Light 3500K 24V Top Light	42-20871-60C35	42-20871-60C35
Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Price Tag Molding Black	W11329-24	W11329-24
Price Tag Molding White	W11329-24A	W11329-24A
Shelf Bracket, Left Side	M-8864-L	M-8829-L
Shelf Bracket, Right Side	M-8864-R	M-8829-R
Thermometer	32-13662	32-13662
Condensate Pan 240V	SA5125	SA5125
Condensate Pan 120V (remotes)	SA5107	SA5107
Condensate Pump 240V	47-15687	47-15687
Condensate Pump 120V (remotes)	47-15686	47-15686
Light Clip LED Strip	67-20869	67-20868
Optional Parts		
White Shelf Lamp Cord Fluorescent	43-19079-A	43-19079-A
White Shelf Lamp Socket/Receptacle Fluorescent	43-19080-A	43-19080-A
Black Shelf Lamp Cord Fluorescent	43-19079-B	43-19079-B
Black Shelf Lamp Socket/Receptacle Fluorescent	43-19080-B	43-19080-B
Energy Saving Night Curtain	483-905	483-905
Security Night Cover	482-906	483-906
Shelf light cord black LED strip	43-20862-3B	43-20862-3B
Shelf light cord white LED strip	43-20862-3W	43-20862-3W
Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
Top Light Cord white LED strip	43-20860-1W	43-20860-1W
Shelf light socket black LED strip	43-20996-B	43-20996-B
Shelf light socket white LED Strip	43-20996-W	43-20996-W
Front Counter Grille For Drop-Ins	SA4867	SA4867

REPLACEMENT PARTS AFTER 01/01/2020
MODEL RSSM878R-6, & RSSD878R-6 REMOTE ONLY
AND NSSM VERSIONS

Part Description		Part Number	
Refrigeration System		**RSSM878R-6**	**RSSD878R-6**
Evaporator Coil		33-17457	33-17457
Expansion Valve Electronic (Remote R449A)		32-21228	32-21228
Evaporator Fan Motor		41-11628	41-11628
Evaporator Fan Blade		72-32507	72-32507
Solenoid Valve (remote)		32-14325	32-14325
Coil Solenoid Valve (remote)		41-14324	41-14324
Electronic Expansion Valve Control (Remote)		32-21223	32-21223
Temperature Sensor (Remote)		32-21224	32-21224
Pressure Transducer (Remote)		32-21225	32-21225
Electrical Components			
Temperature Control 240V	(CAREL)	32-19865-1	32-19865-1
Control Probes	(CAREL)	32-19866	32-19866
Condensate PTC Heater 240V		40-19392	40-19392
**Light Switch (On/Off)		41-11066	41-11066
Power Switch		41-18186	41-18186
Heater Wire Assembly		43-15926	43-15926
**Led Strip Light 3500K 24V Top & Shelf lights		42-20871-38C35	42-20871-38C35
**Led Strip Light 3500K 24V Vertical Lights		42-20871-42C35	42-20871-42C35
**Power supply 24V 60W		39-20986	39-20986
Miscellaneous Components			
**Price Tag Molding Black		W11329-22	W11329-22
**Price Tag Molding White		W11329-22A	W11329-22A
**Shelf Bracket, Left Side		M-8864-L	M-8829-L
**Shelf Bracket, Right Side		M-8864-R	M-8829-R
Thermometer		32-13662	32-13662
Condensate Pan 240V		SA5125	SA5125
Condensate Pump 240V		47-15687	47-15687
Field Installed Condensate Pan		47-19541	47-19541
Base Fan Assembly (Remote W/Condensate Pan Only)		SA-2106-1	SA-2106-1
**Light Clip LED Strip		67-20869	67-20868
Optional Parts			
Energy Saving Night Curtain		483-905	483-905
**Security Night Cover		482-906	483-906
**Shelf light cord black LED strip		43-20862-3B	43-20862-3B
**Shelf light cord white LED strip		43-20862-3W	43-20862-3W
**Top Light Cord black LED Strip		43-20860-1B	43-20860-1B
**Top Light Cord white LED strip		43-20860-1W	43-20860-1W
**Shelf light socket black LED strip		43-20996-B	43-20996-B
**Shelf light socket white LED Strip		43-20996-W	43-20996-W

**** INDICATES REPLACEMENT PARTS USED ON THE NSSM DRY CASE**

REPLACEMENT PARTS BEFORE 01/01/2020
MODEL RSSM878, & RSSD878

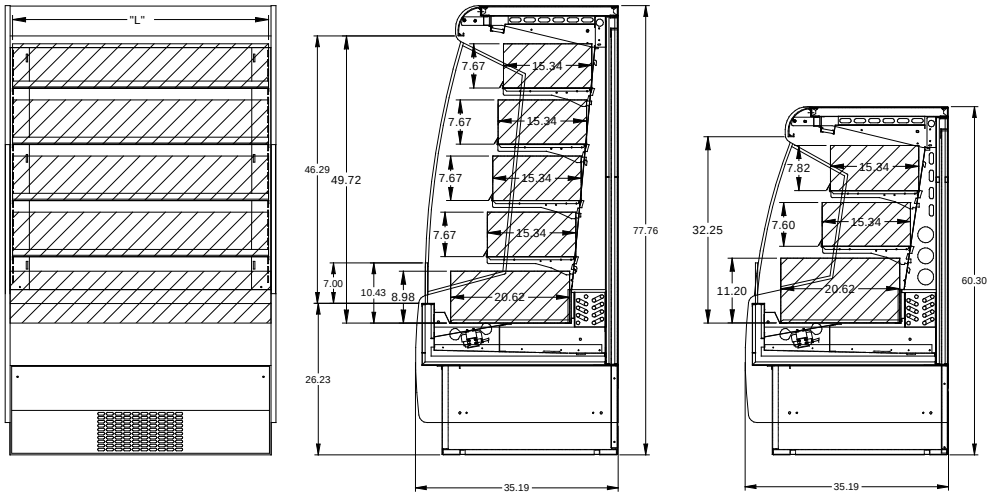
Part Description	Part Number	
Refrigeration System	**RSSM878**	**RSSD878**
Condensing Unit (Self-Contained Only)	30-17541	30-17541
Compressor (Replacement)	30-19116	30-19116
Evaporator Coil	33-17457	33-17457
Expansion Valve (Self-Contained & Remote R404A)	32-19419	32-19419
Expansion Valve (Remote R449A) after 01/01/18	32-20877	32-20877
Evaporator Fan Motor	41-11628	41-11628
Evaporator Fan Blade	72-32507	72-32507
Filter Drier	32-11561	32-11561
Dual Pressure Control	32-51009	32-51009
Solenoid Valve (remote)	32-14325	32-14325
Coil Solenoid Valve (remote)	41-14324	41-14324
Electrical Components		
Temperature Control 240V (CAREL)	32-19865-1	32-19865-1
Temperature Control 120V(remote) (CAREL)	32-19864-1	32-19864-1
Control Probes (CAREL)	32-19866	32-19866
Condensate PTC Heater 240V	40-19392	40-19392
Condensate PTC Heater 120V (remote)	40-19331	40-19331
Light Bulb Fluorescent	42-11069	42-11069
Ballast Two Lamps Fluorescent	39-12902	39-12902
Ballast Three Lamps Fluorescent	39-12903	39-12903
Ballast Four Lamps Fluorescent	39-12904	39-12904
Lamp holder – Spring-Loaded (Shelf Light) Fluorescent	42-10833	42-10833
Lamp holder – Stationery (Shelf Light) Fluorescent	42-10834	42-10834
Light Switch (On/Off)	41-11066	41-11066
Tombstone Socket (Top Light) Fluorescent	42-19125	42-19125
Cap. Tombstone Socket Fluorescent	42-15441	42-15441
Lamp Shield Fluorescent	42-15503	42-15503
Heater Wire Assembly	43-14891	43-14891
Led Strip Light 3500K 24V Top & Shelf lights	42-20871-38C35	42-20871-38C35
Led Strip Light 3500K 24V Vertical Lights	42-20871-42C35	42-20871-42C35
Power supply 24V 60W	39-20986	39-20986
Miscellaneous Components		
Price Tag Molding Black	W11329-22	W11329-22
Price Tag Molding White	W11329-22A	W11329-22A
Shelf Bracket, Left Side	M-8864-L	M-8829-L
Shelf Bracket, Right Side	M-8864-R	M-8829-R
Thermometer	32-13662	32-13662
Condensate Pan 240V	SA5125	SA5125
Condensate Pan 120V (remotes)	SA5107	SA5107
Condensate Pump 240V	47-15687	47-15687
Condensate Pump 120V (remotes)	47-15686	47-15686
Light Clip LED Strip	67-20869	67-20868
Optional Parts		
White Shelf Lamp Cord Fluorescent	43-19079-A	43-19079-A
White Shelf Lamp Socket/Receptacle Fluorescent	43-19080-A	43-19080-A
Black Shelf Lamp Cord Fluorescent	43-19079-B	43-19079-B
Black Shelf Lamp Socket/Receptacle Fluorescent	43-19080-B	43-19080-B
Energy Saving Night Curtain	483-905	483-905
Security Night Cover	482-906	483-906
Shelf light cord black LED strip	43-20862-3B	43-20862-3B
Shelf light cord white LED strip	43-20862-3W	43-20862-3W
Top Light Cord black LED Strip	43-20860-1B	43-20860-1B
Top Light Cord white LED strip	43-20860-1W	43-20860-1W
Shelf light socket black LED strip	43-20996-B	43-20996-B
Shelf light socket white LED Strip	43-20996-W	43-20996-W

RSSM DISPLAY AREA AND VOLUME

RSSM STANDARD DEPTH

36" DEEP RSSM	RSSM360	RSSM378	RSSM460	RSSM478	RSSM560	RSSM578	RSSM660	RSSM678	RSSM878
CUBIC FT. PER SHELF	2.32	2.28	3.08	3.03	3.92	3.84	4.73	4.64	6.06
CUBIC FT. DISPLAY DECK	4.45	3.59	5.95	4.77	7.53	6.04	9.16	7.34	9.54
TOTAL CUBIC FT.	9.09	12.71	12.11	16.89	15.37	21.4	18.62	25.90	33.78
SQUARE INCHES PER SHELF	512.97	512.97	681.71	681.71	681.71	681.71	1045.88	1045.88	1363.42
SQUARE INCHES DISPLAY DECK	689.96	689.96	917.33	917.33	1162.56	1162.56	1413.41	1413.41	1834.66
TOTAL SQUARE INCHES	1715.90	2741.84	2280.75	3644.17	2525.98	3889.40	3505.17	5596.93	7288.34
SHELF WIDTH "L"	33.44	33.44	44.44	44.44	56.44	56.44	68.44	68.44	88.88

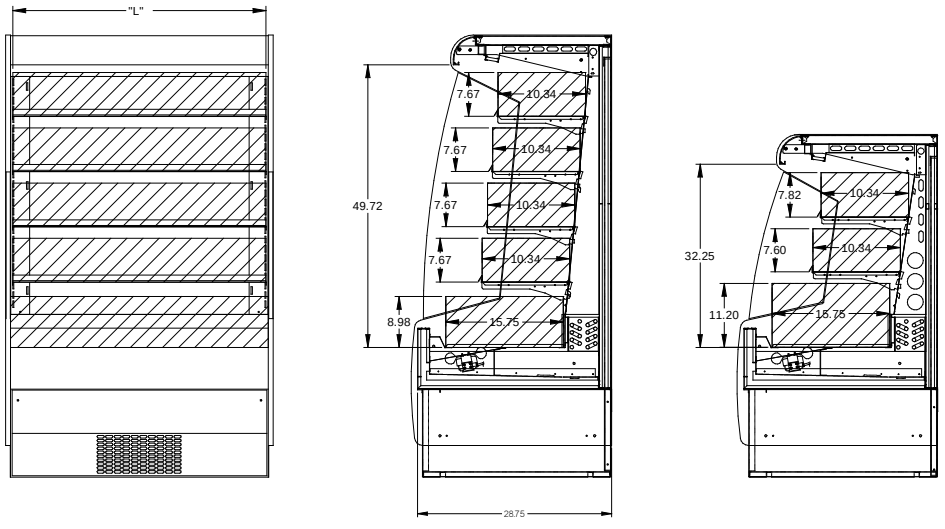
NOTE: CUBIC FEET IS MEASURED WITH 2" CLEARANCE BETWEEN SHELVES



RSSM SLIM PROFILE 30" DEEP

30" DEEP RSSM	RSSM360	RSSM378	RSSM460	RSSM478	RSSM560	RSSM578	RSSM660	RSSM678
CUBIC FT. PER SHELF	1.55	1.52	2.05	2.02	2.62	2.56	3.15	3.09
CUBIC FT. DISPLAY DECK	3.34	2.69	4.19	3.58	5.65	6.04	6.94	5.51
TOTAL CUBIC FT.	6.44	8.77	8.29	11.66	10.89	16.28	13.24	17.87
SQUARE INCHES PER SHELF	345.77	345.77	459.51	459.51	583.59	583.59	707.67	707.67
SQUARE INCHES DISPLAY DECK	526.68	526.68	699.93	699.93	888.93	888.93	1077.93	1077.93
TOTAL SQUARE INCHES	1218.42	1909.76	1618.95	2537.97	2056.11	3223.29	2493.27	3908.61
SHELF WIDTH "L"	33.44	33.44	44.44	44.44	56.44	56.44	68.44	68.44

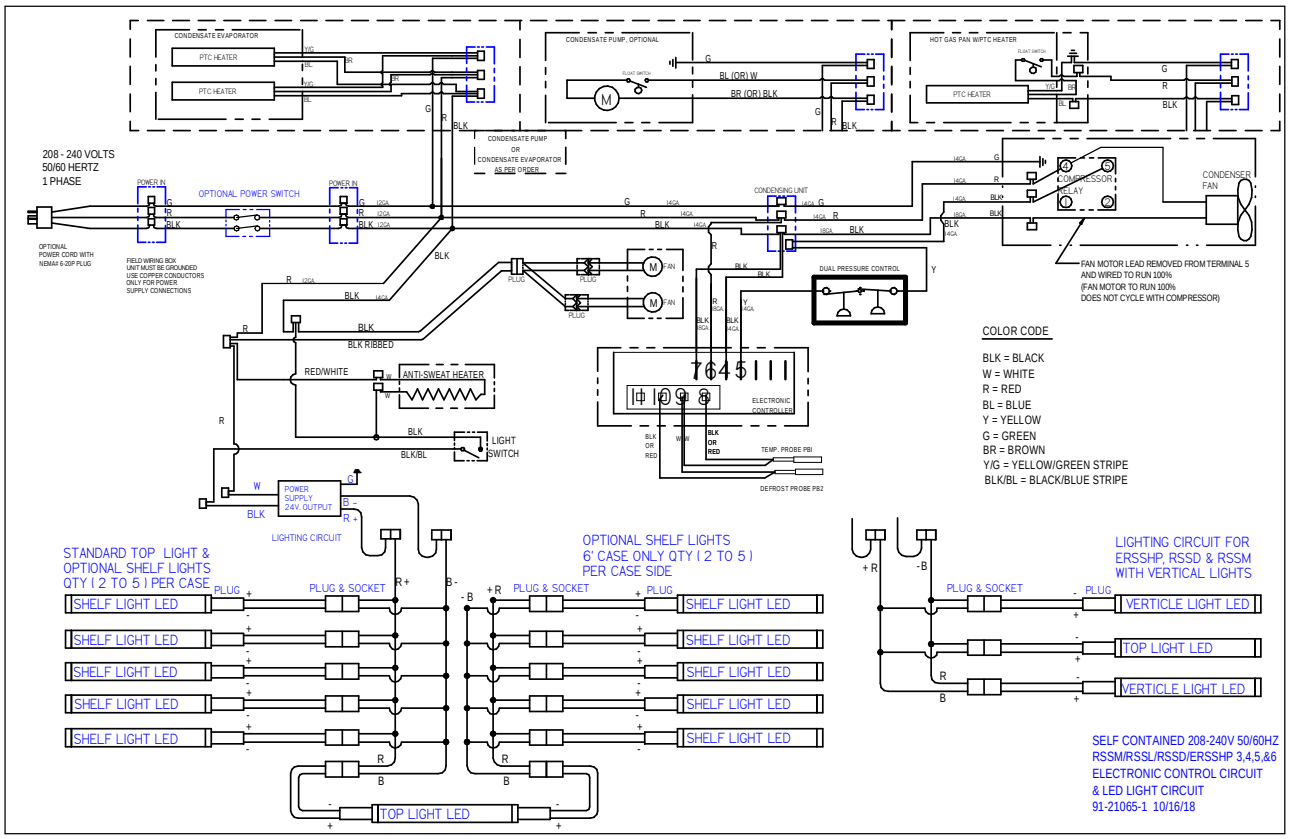
NOTE: CUBIC FEET IS MEASURED WITH 2" CLEARANCE BETWEEN SHELVES



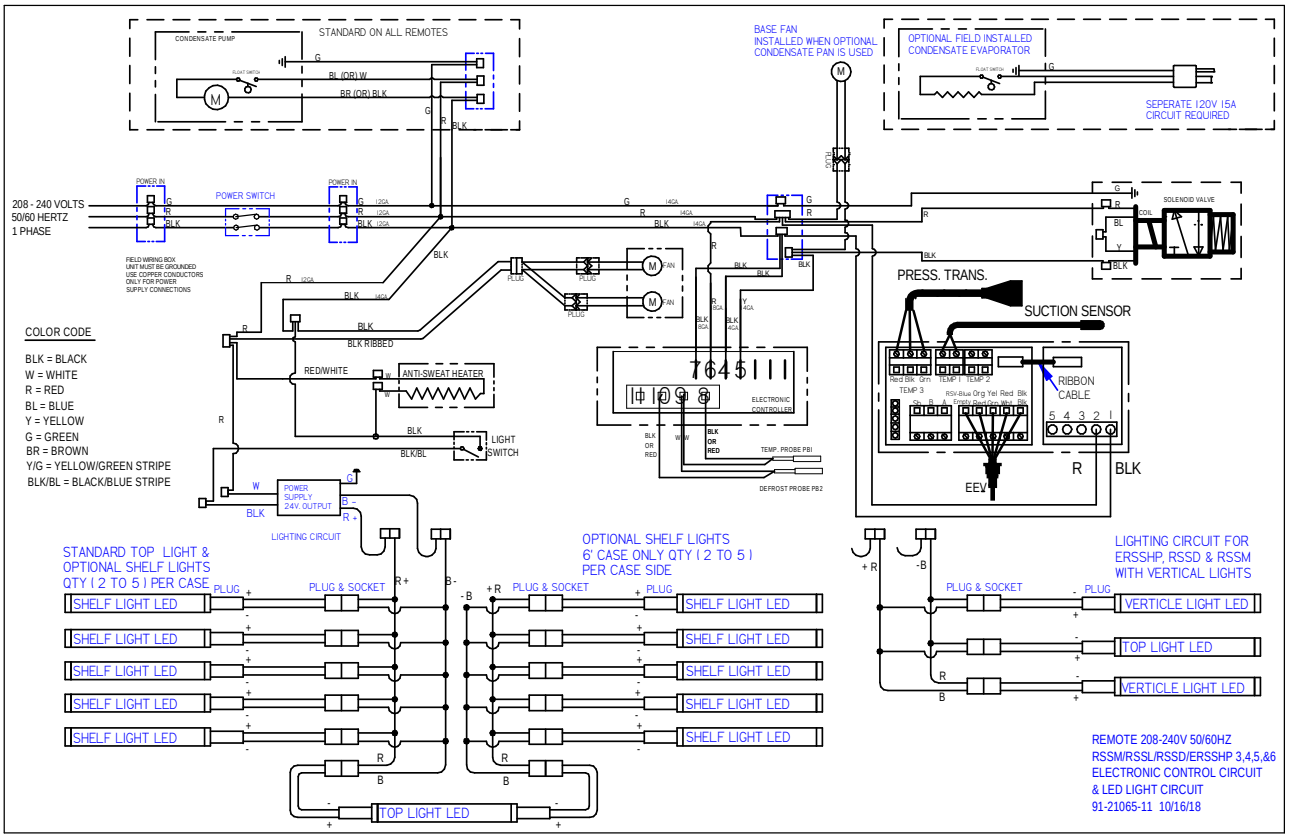
WIRING DIAGRAMS AFTER 01/01/2020

WIRING DIAGRAM

RSSM & RSSD SELF-CONTAINED

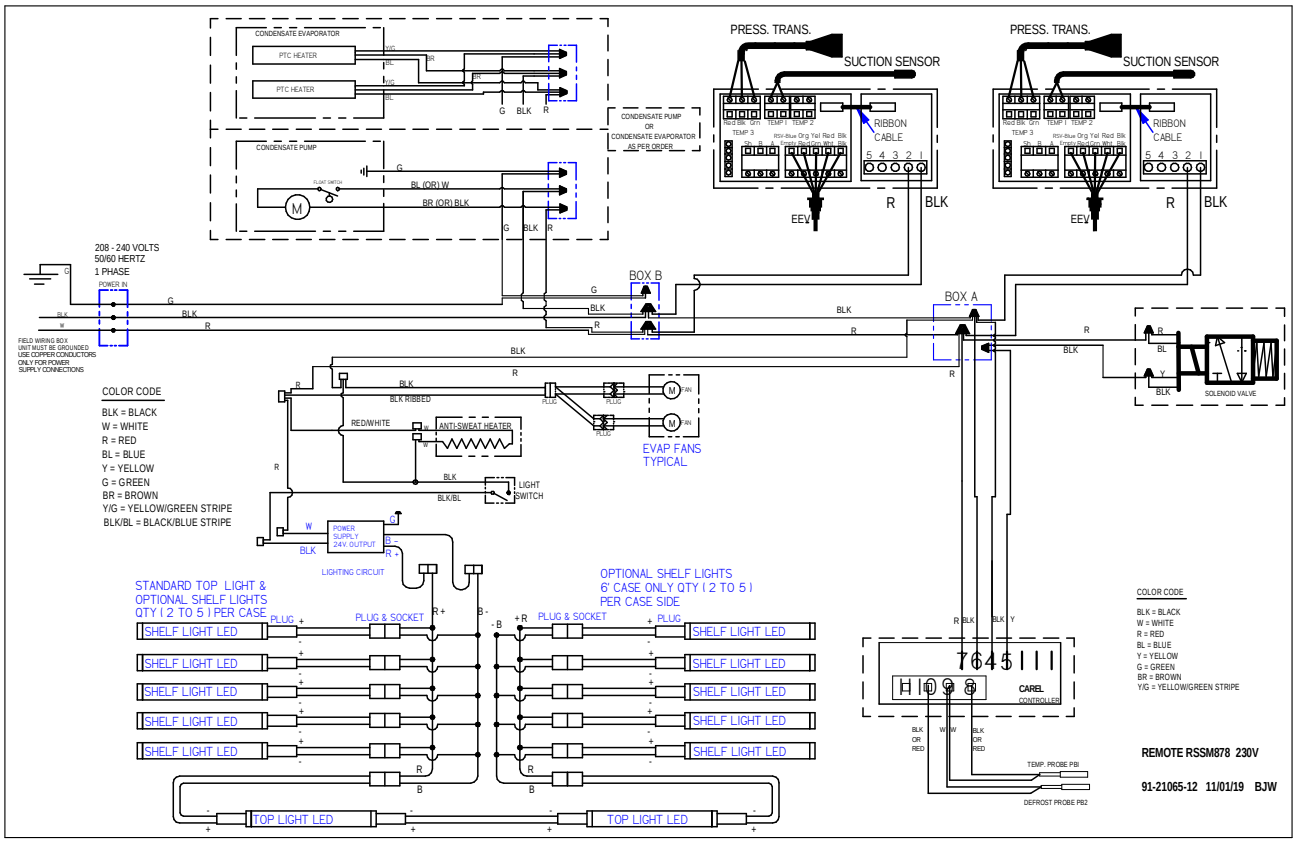


WIRING DIAGRAM
RSSM & RSSD REMOTE



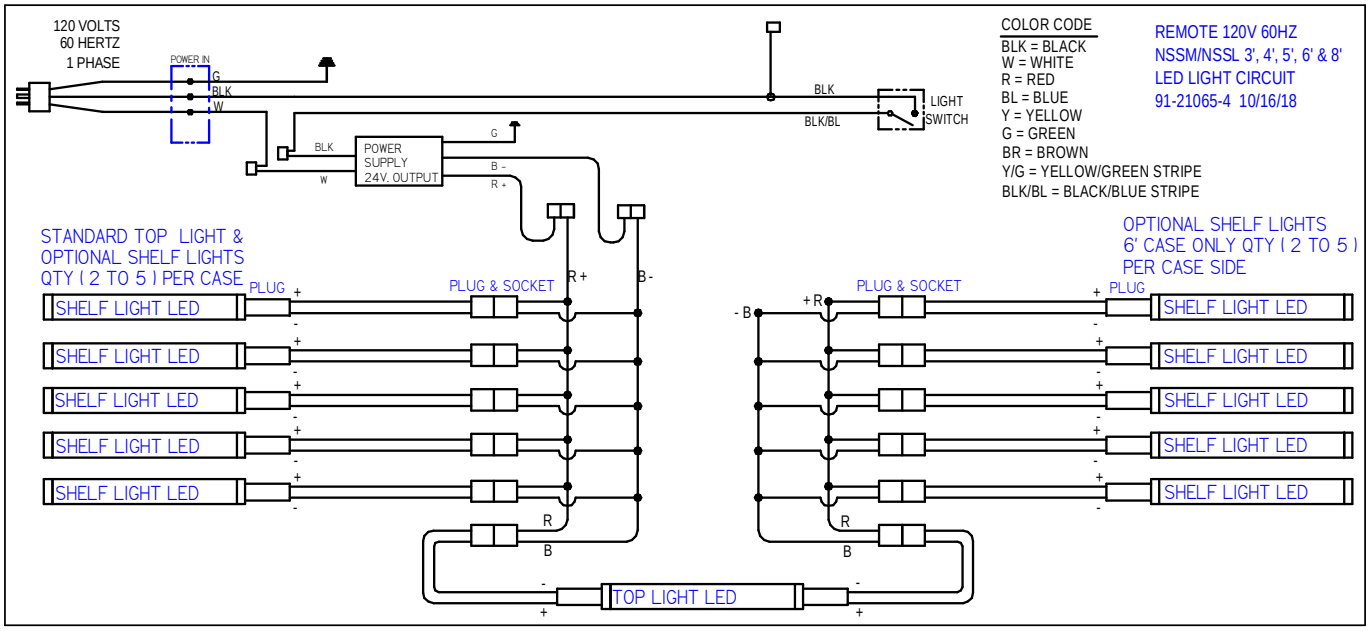
WIRING DIAGRAM

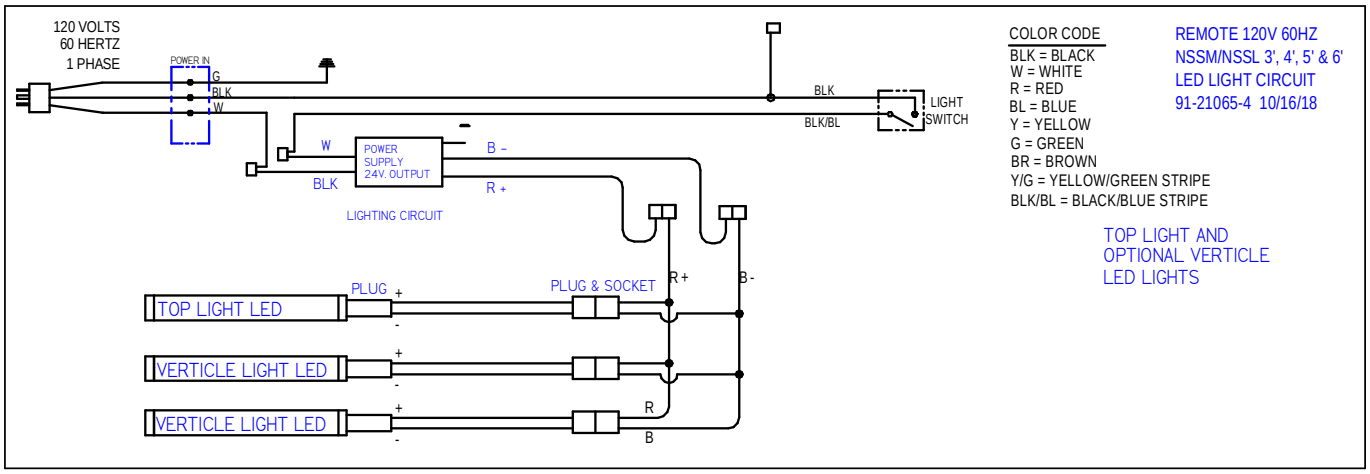
RSSM878R-6 & RSSD878R-6 REMOTE



WIRING DIAGRAM

NSSM

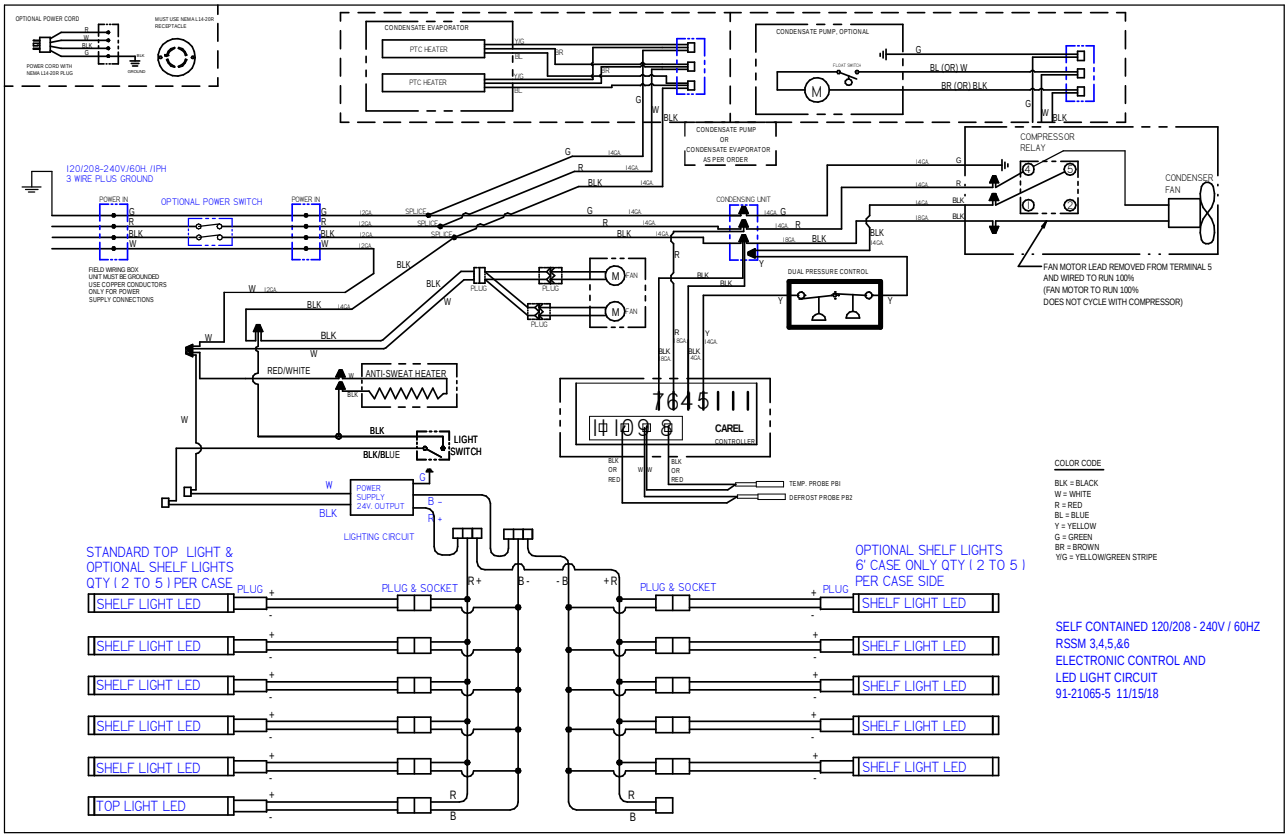




WIRING DIAGRAMS PRIOR TO 01/01/2020

WIRING DIAGRAM

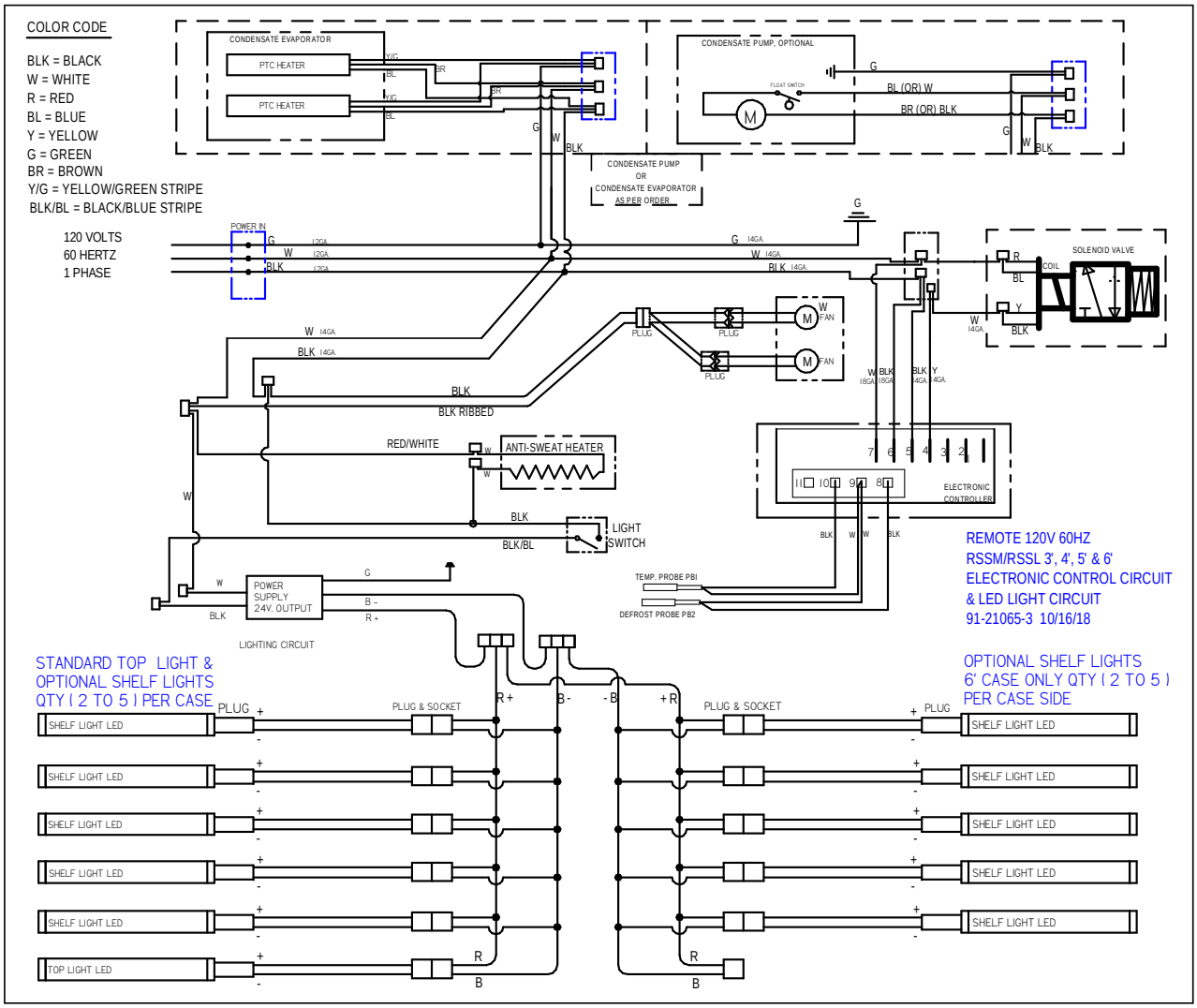
RSSM360SC, RSSM460SC, RSSM560SC, RSSM660SC, RSSM378SC, RSSM478SC, RSSM578SC & RSSM678SC SELF CONTAINED W/LED STRIP LIGHTS



WIRING DIAGRAM

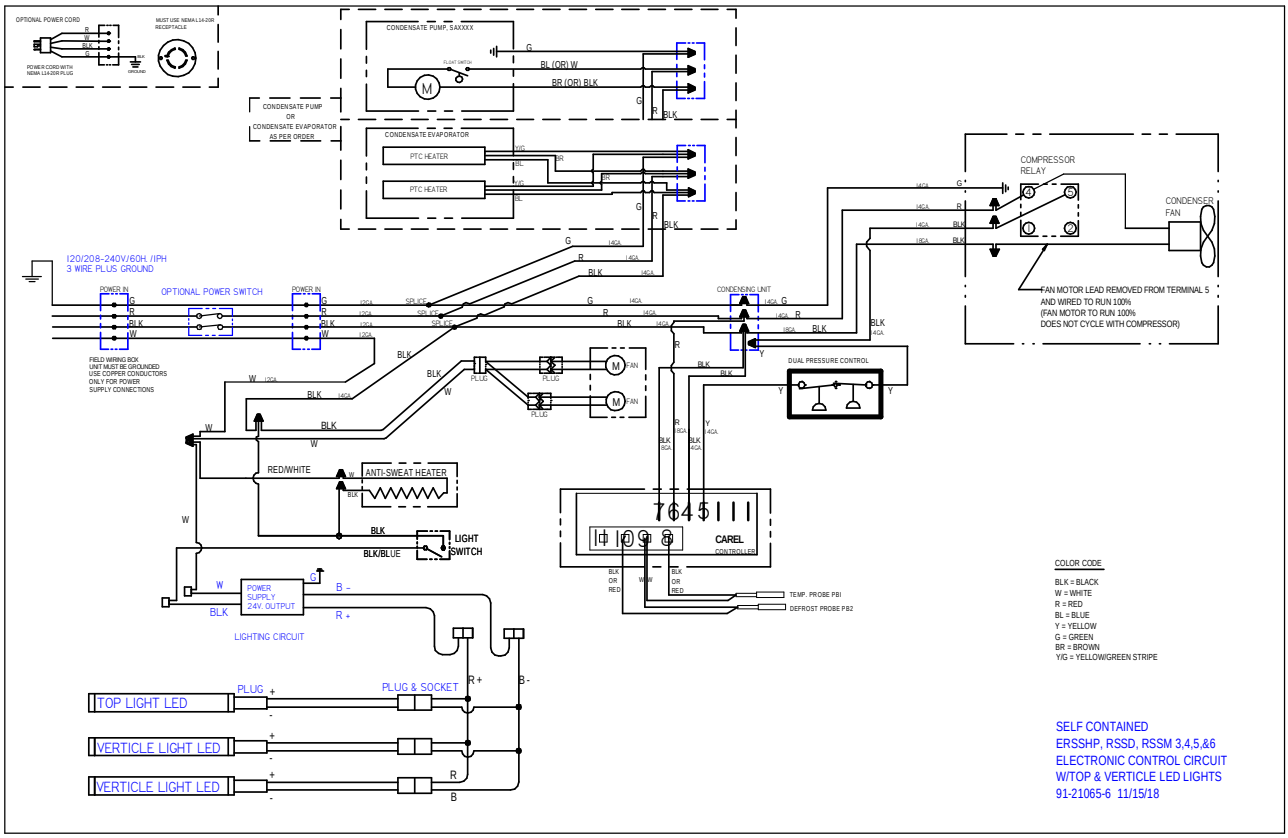
RSSM360R, RSSM460R, RSSM560R, RSSM660R, RSSM378R, RSSM478R, RSSM578R, RSSM678R & RSSM878R

SELF CONTAINED W/LED STRIP LIGHTS



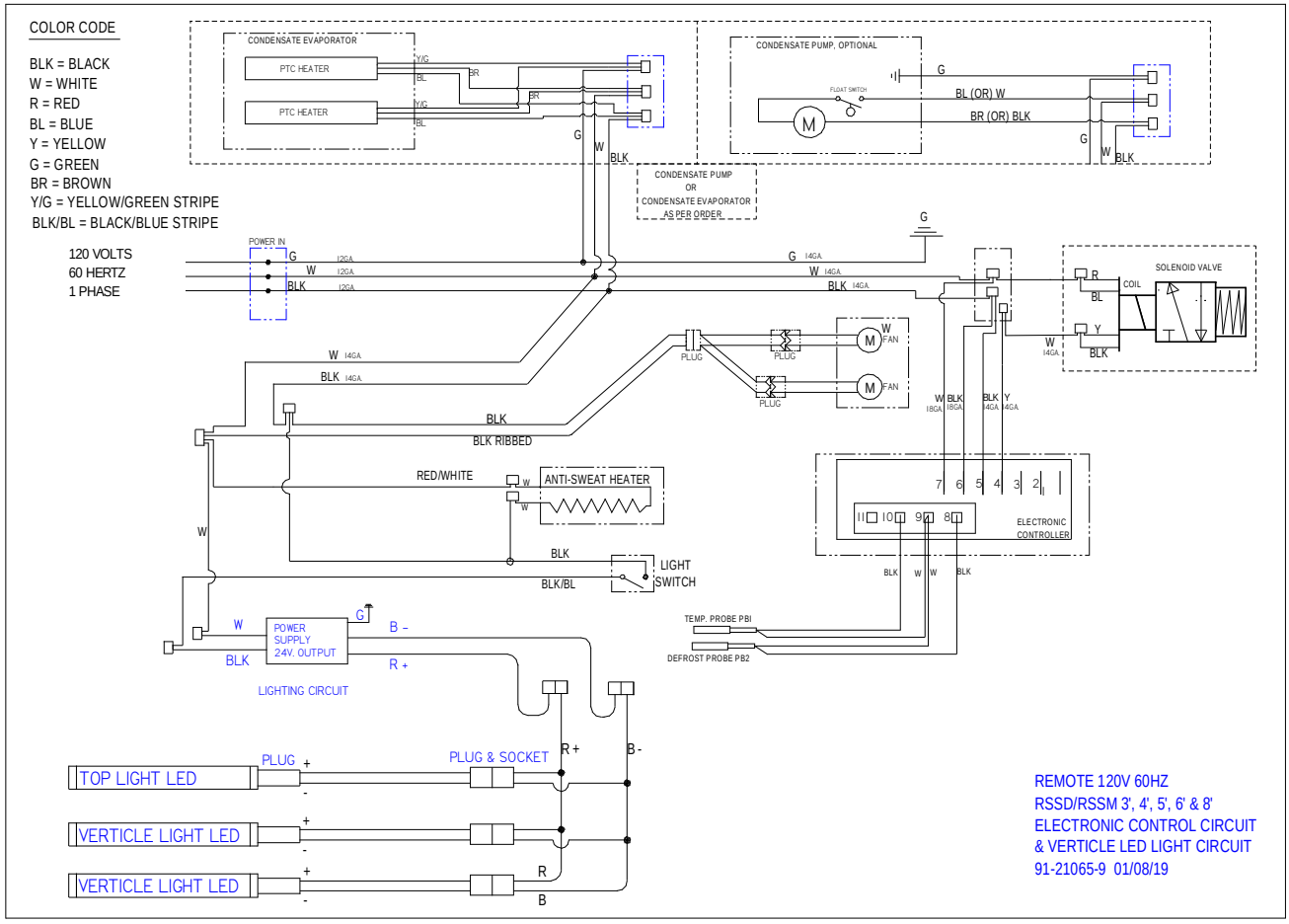
WIRING DIAGRAM

RSSD360SC, RSSD460SC, RSSD560SC, RSSD660SC, RSSD378SC, RSSD478SC, RSSD578SC & RSSD678SC SELF CONTAINED W/LED VERTICAL STRIP LIGHTS



WIRING DIAGRAM

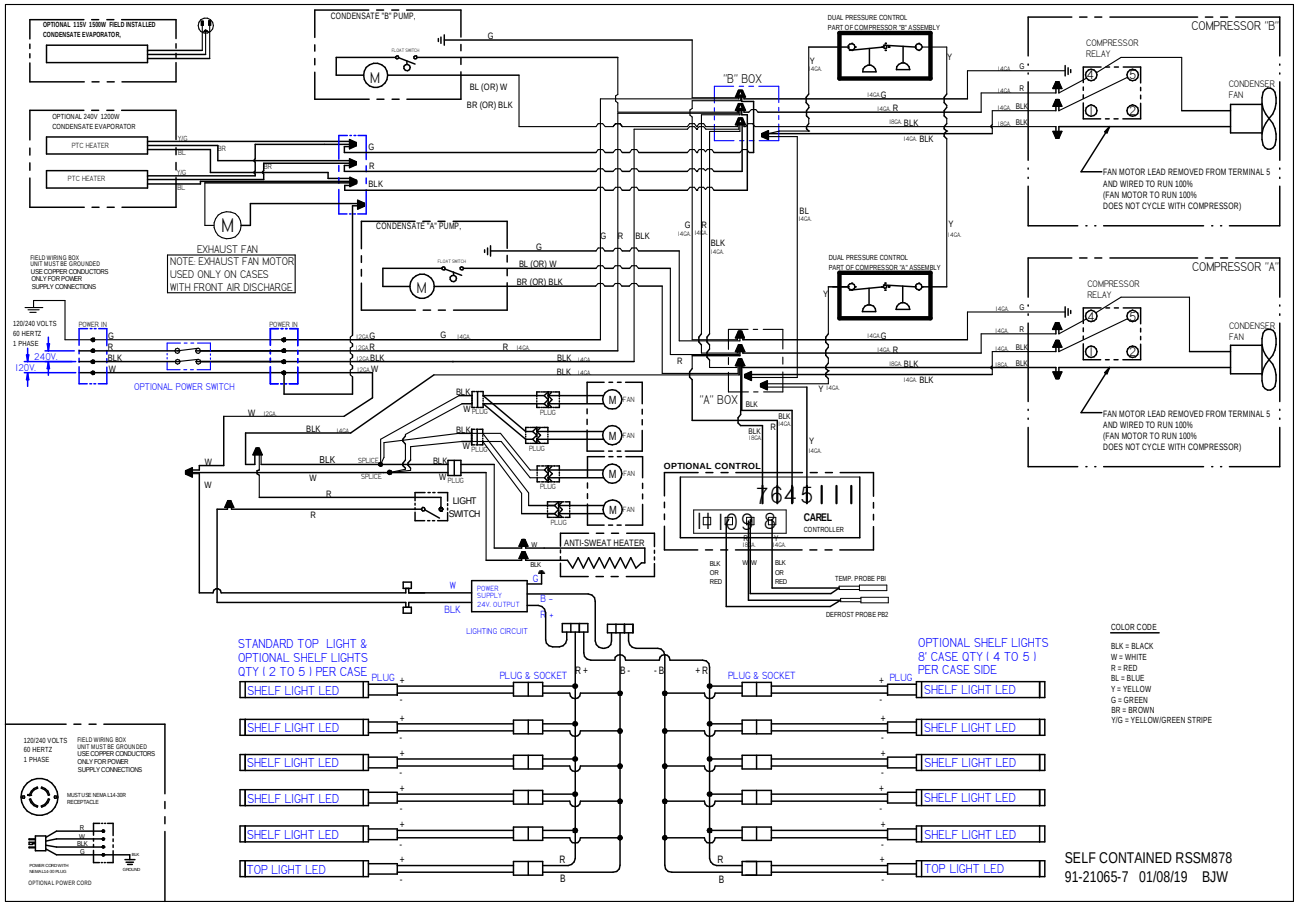
RSSD360R, RSSD460R, RSSD560R, RSSD660R, RSSD378R, RSSD478R, RSSD578R, RSSD678R & RSSD878R SELF CONTAINED W/LED VERTICAL STRIP LIGHTS



WIRING DIAGRAM

RSSM878

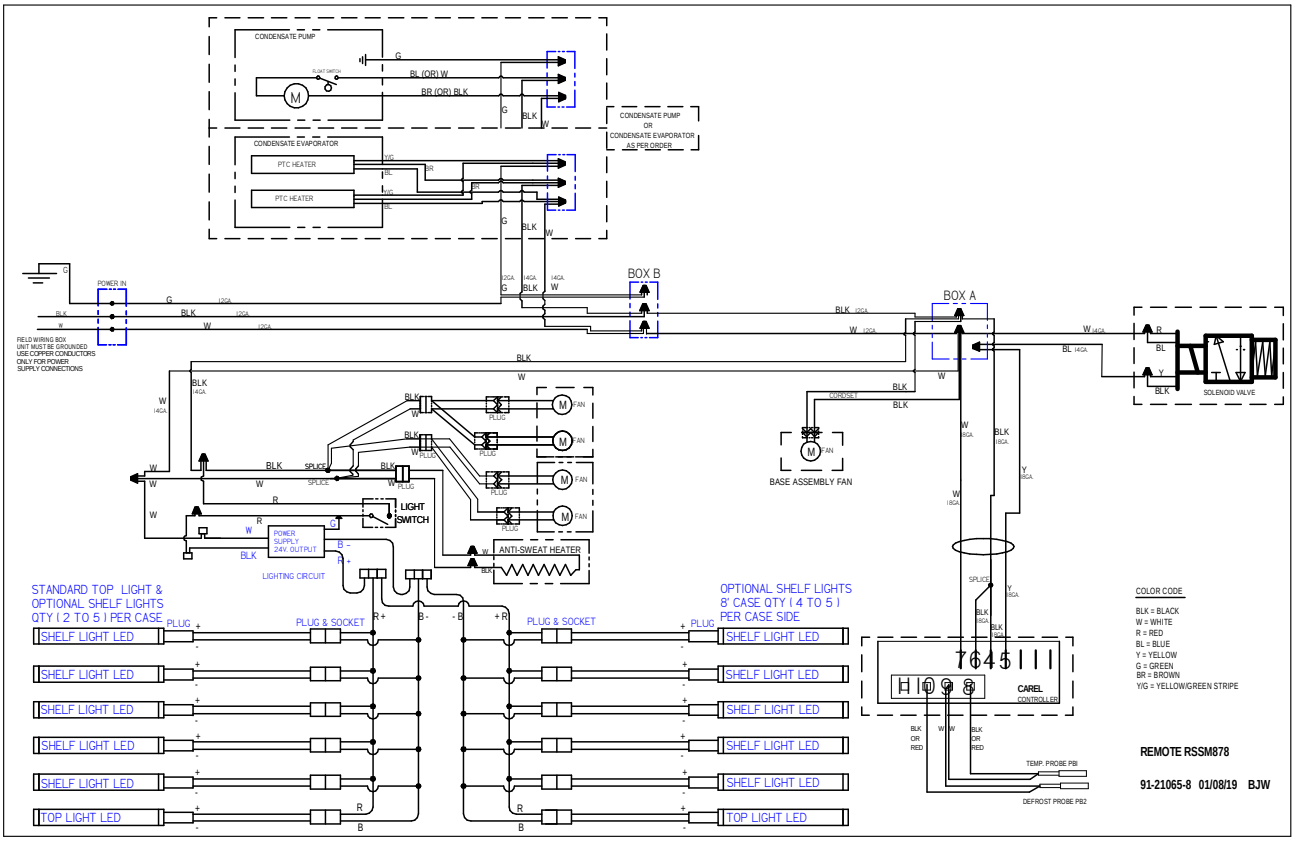
SELF CONTAINED W/LED STRIP LIGHTS



WIRING DIAGRAM

RSSM878

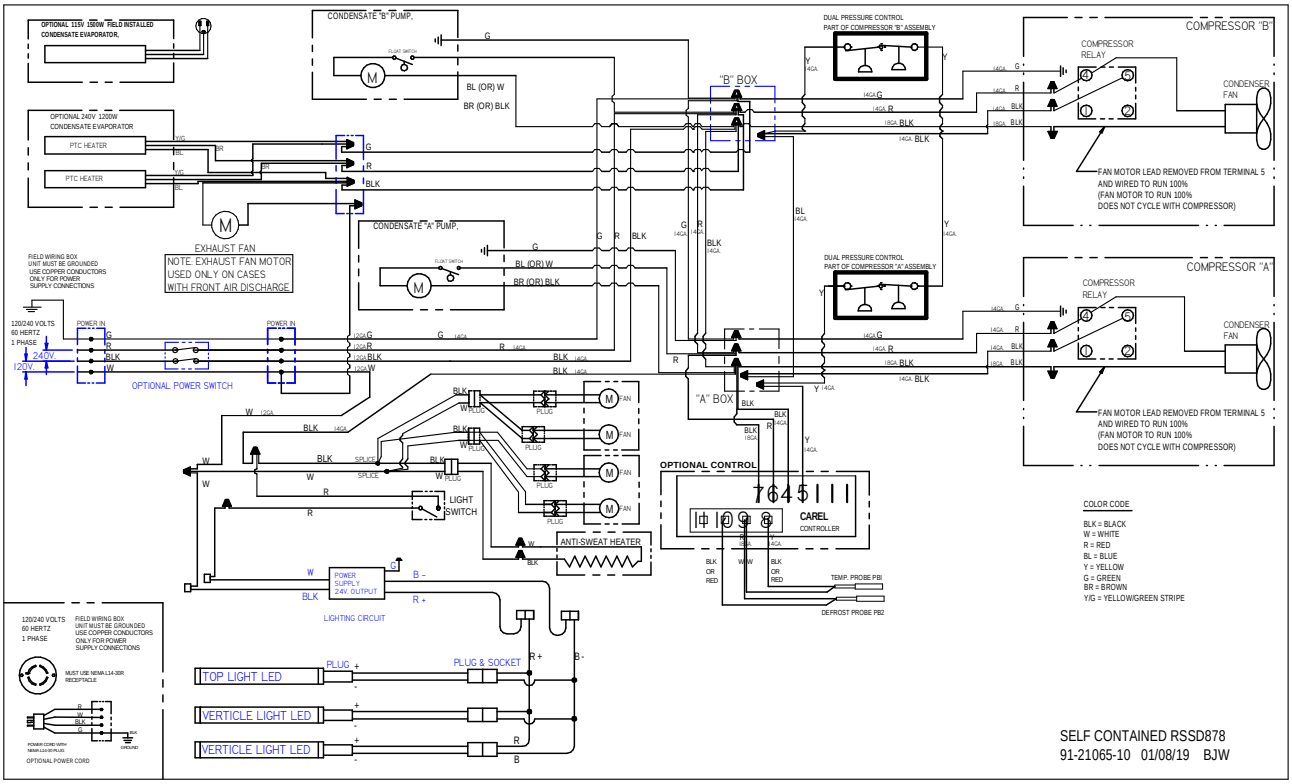
REMOTE W/LED STRIP LIGHTS



WIRING DIAGRAM

RSSD878

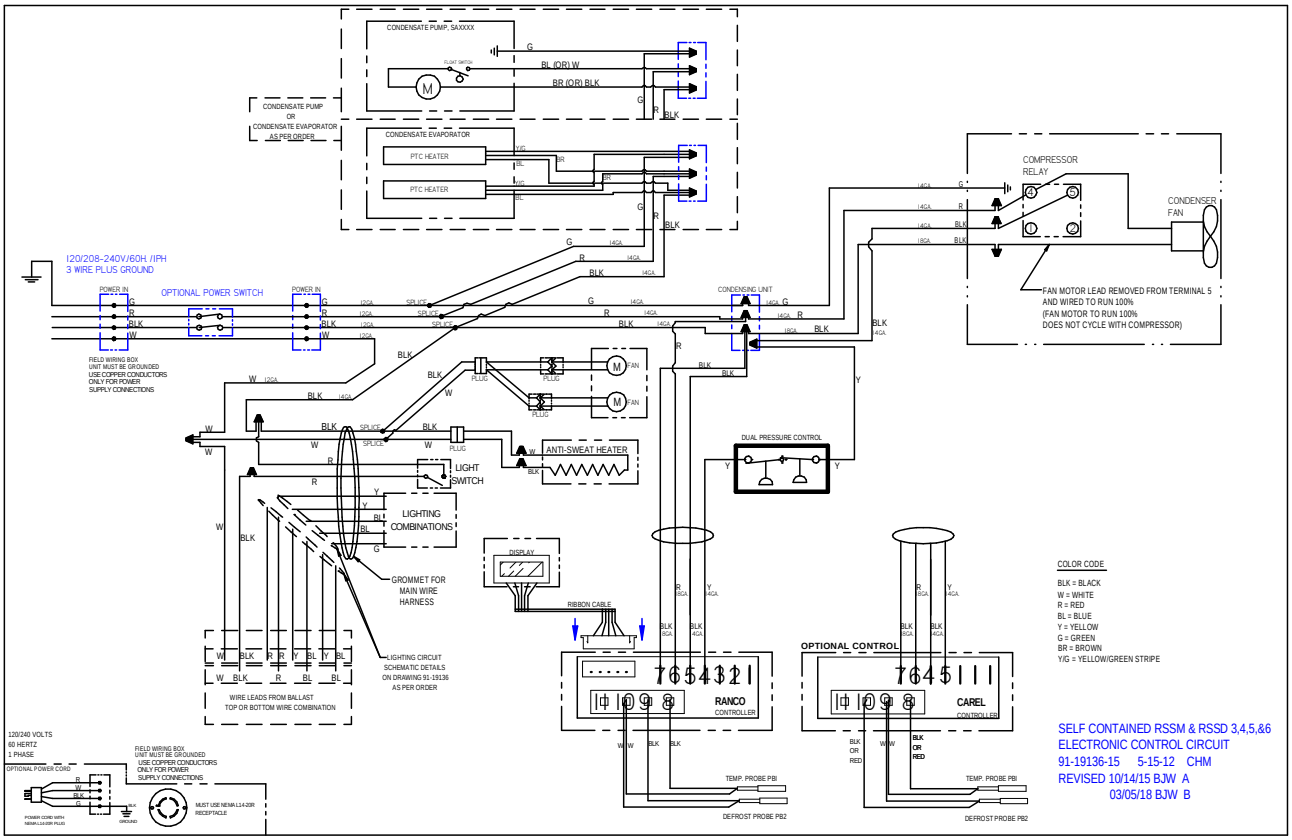
REMOTE W/LED VERTICAL STRIP LIGHTS



WIRING DIAGRAMS PRIOR TO 02/01/19

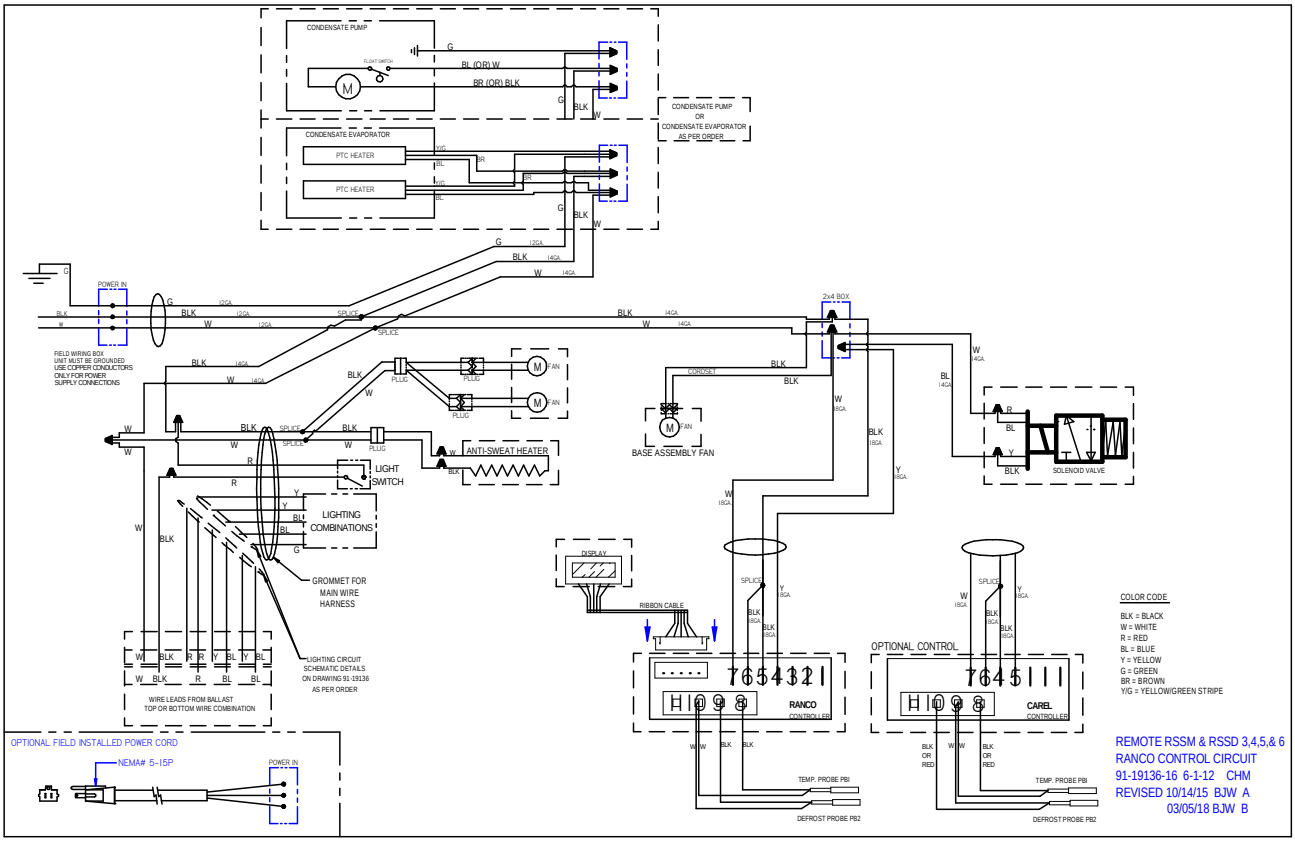
WIRING DIAGRAM SELF-CONTAINED

RSSM360SC, RSSD360SC, RSSM460SC, RSSD460SC, RSSM560SC, RSSD560SC, RSSM660SC, RSSD660SC, RSSM378SC, RSSD378SC, RSSM478SC, RSSD478SC, RSSM578SC, RSSD578SC, RSSM678SC, & RSSD678SC



WIRING DIAGRAM REMOTE

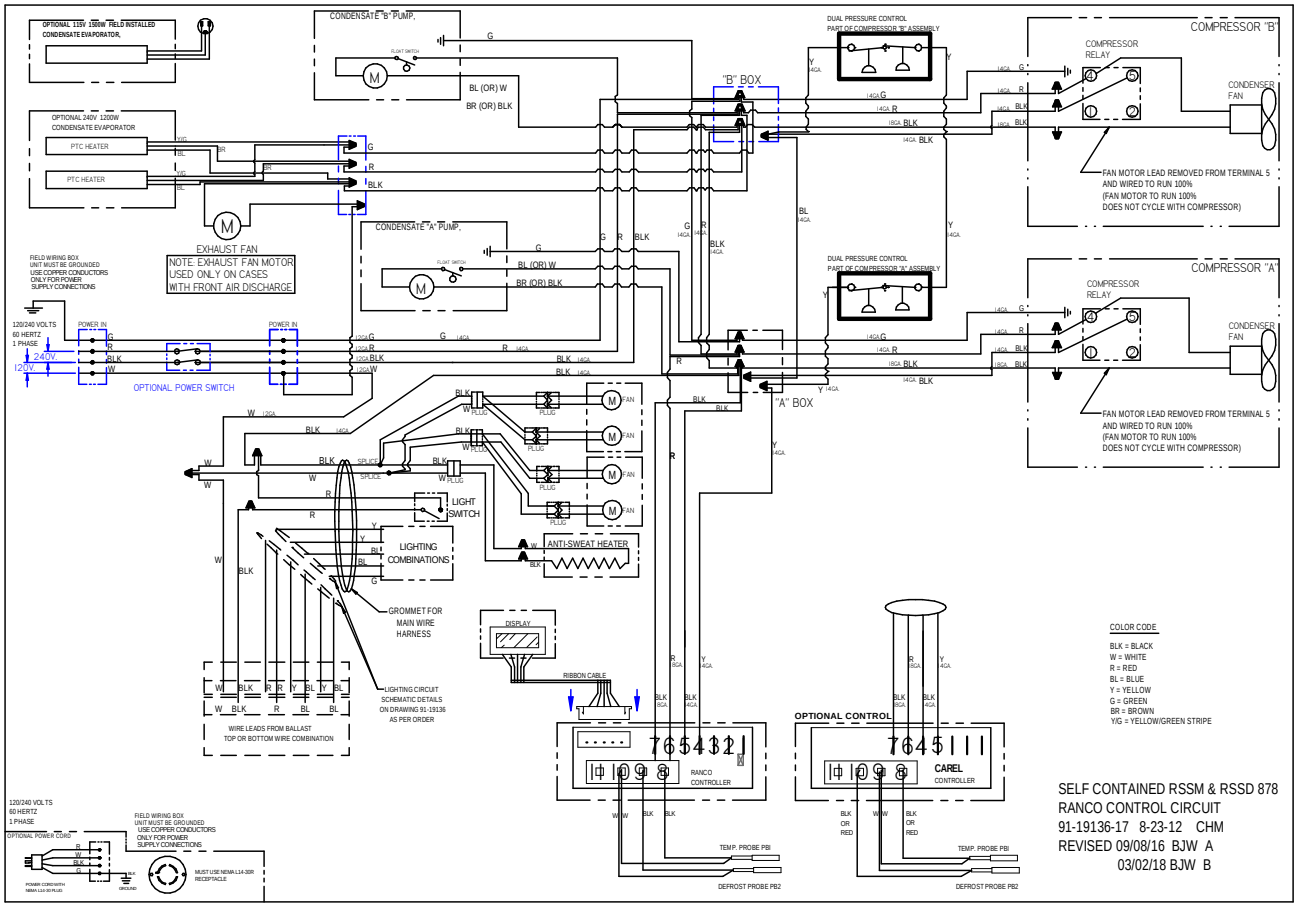
RSSM360R, RSSD360R, RSSM460R, RSSD460R, RSSM560R, RSSD560R, RSSM660R, RSSD660R, RSSM378R, RSSD378R, RSSM478R, RSSD478R, RSSM578R, RSSD578R, RSSM678R, & RSSD678R



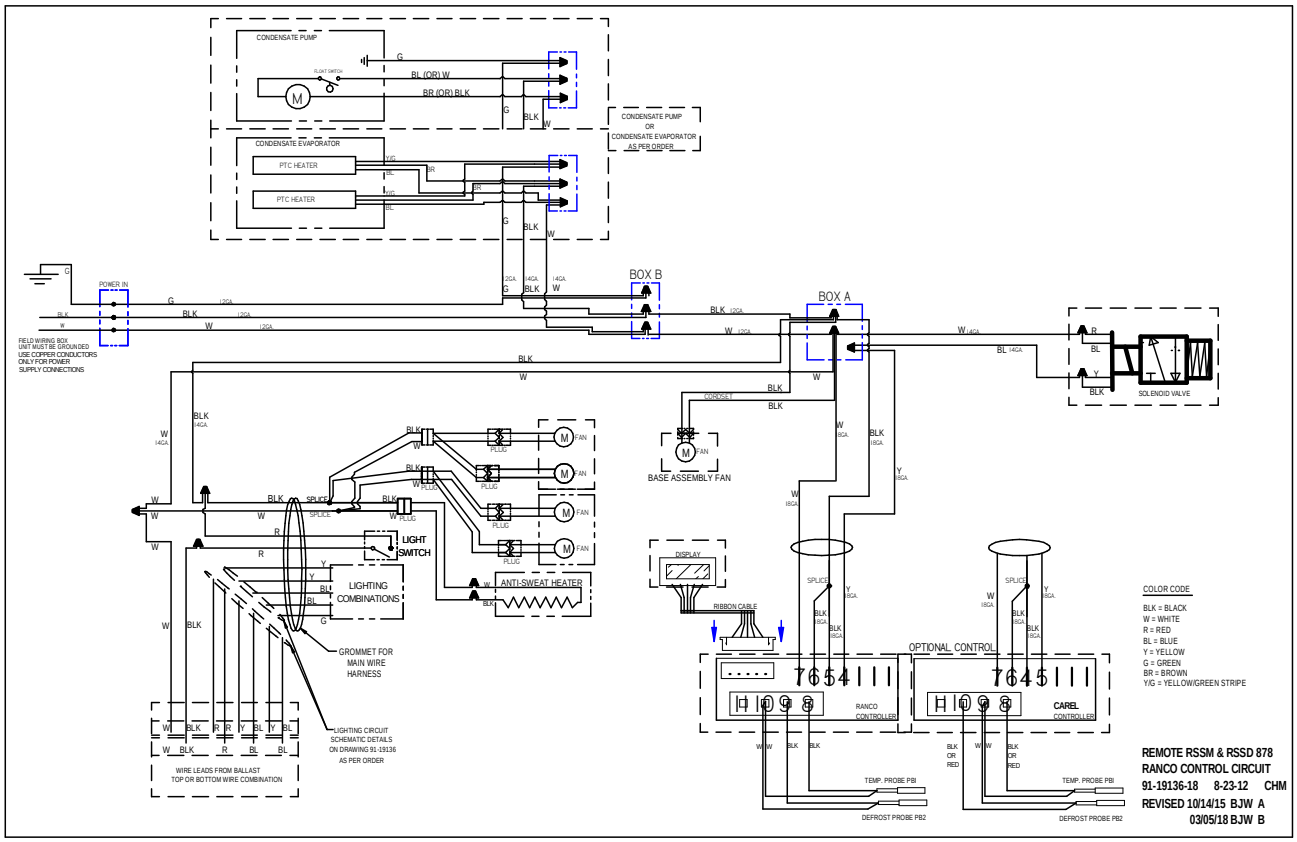
WIRING DIAGRAM – RSSM878SC, RSSD878SC

ELECTRONIC TEMPERATURE CONTROL

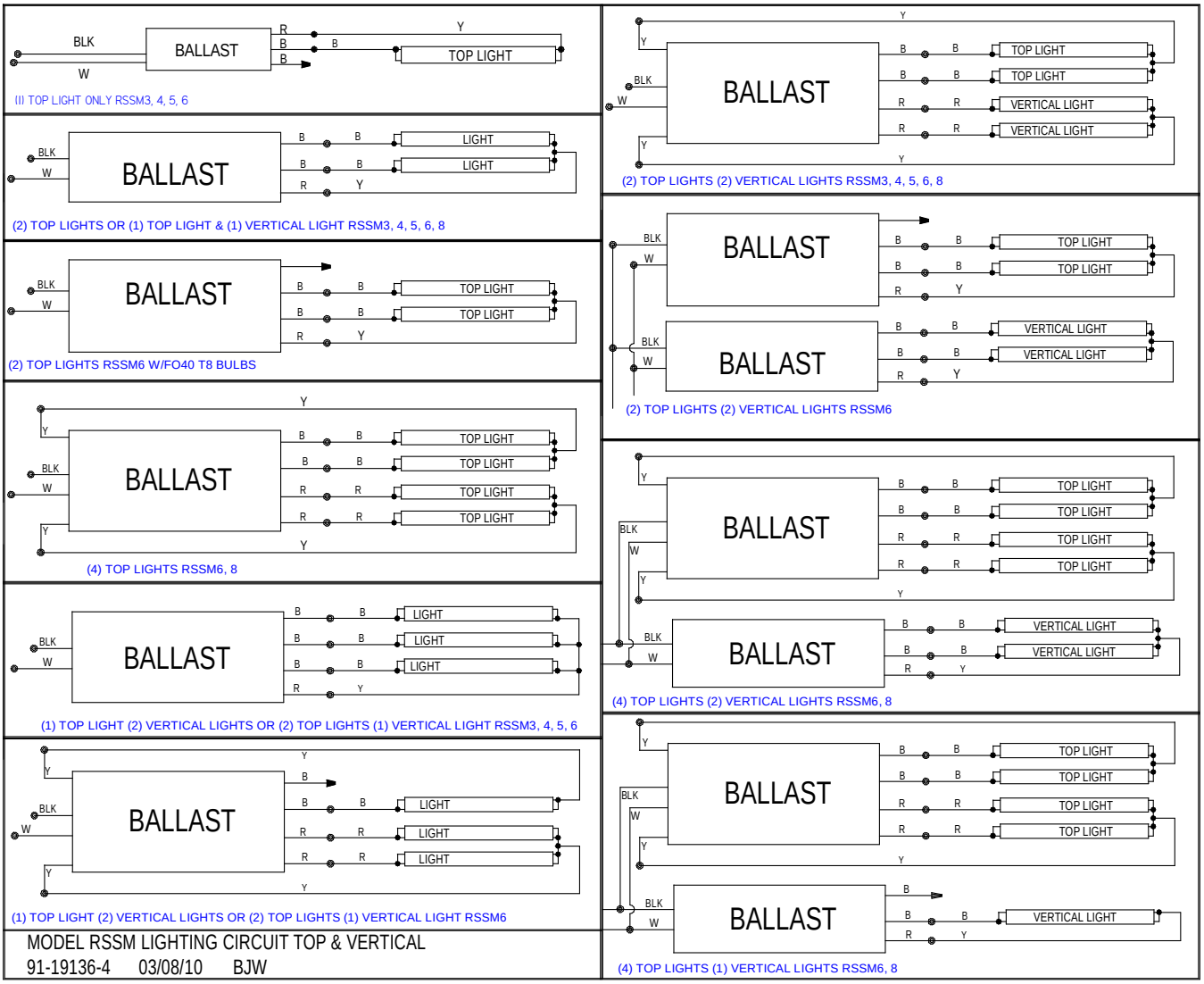
SELF CONTAINED



WIRING DIAGRAM REMOTE
RSSM878R, RSSD878R

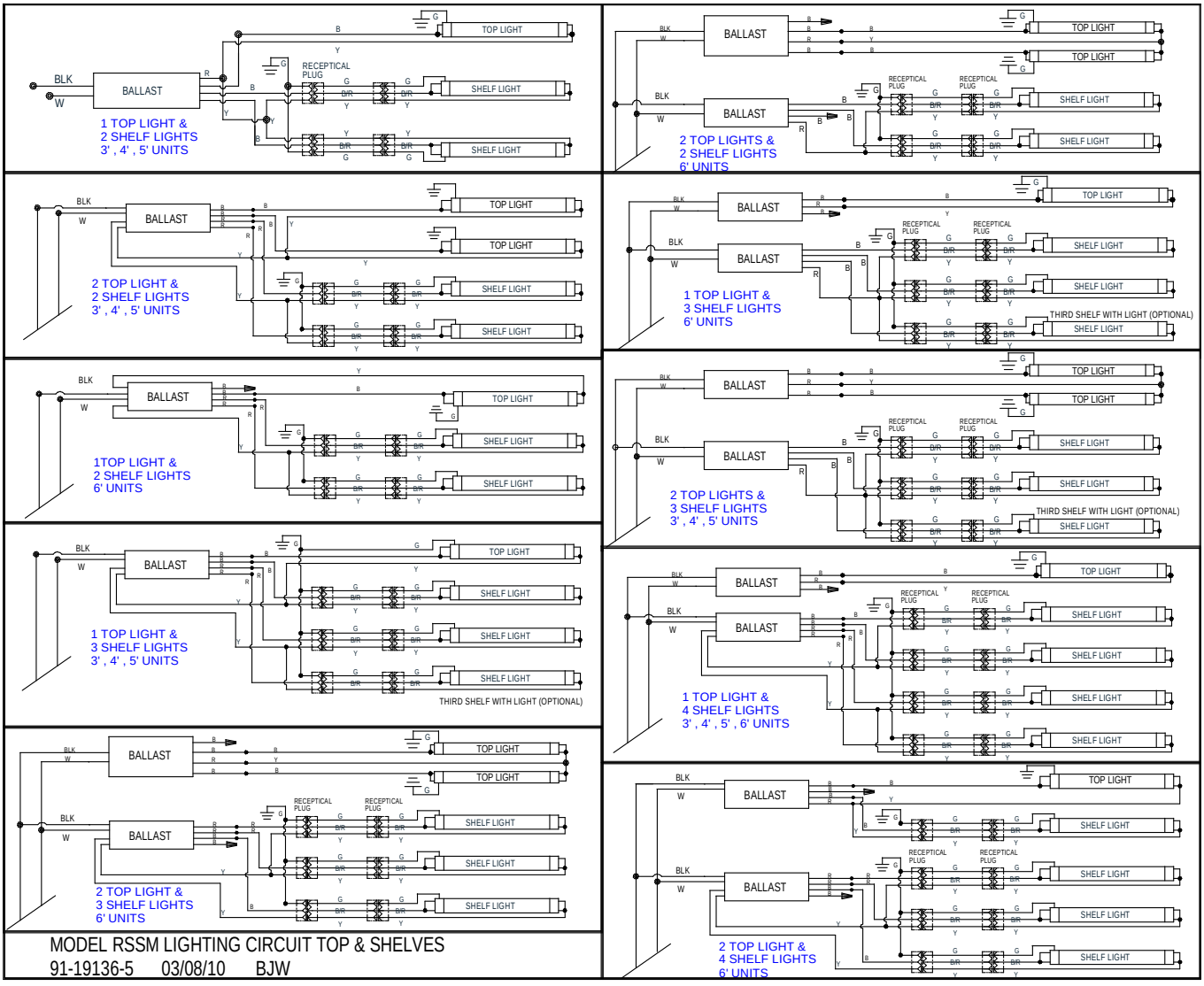


WIRING DIAGRAM – LIGHTING CIRCUIT
TOP LIGHTS & VERTICAL LIGHTS

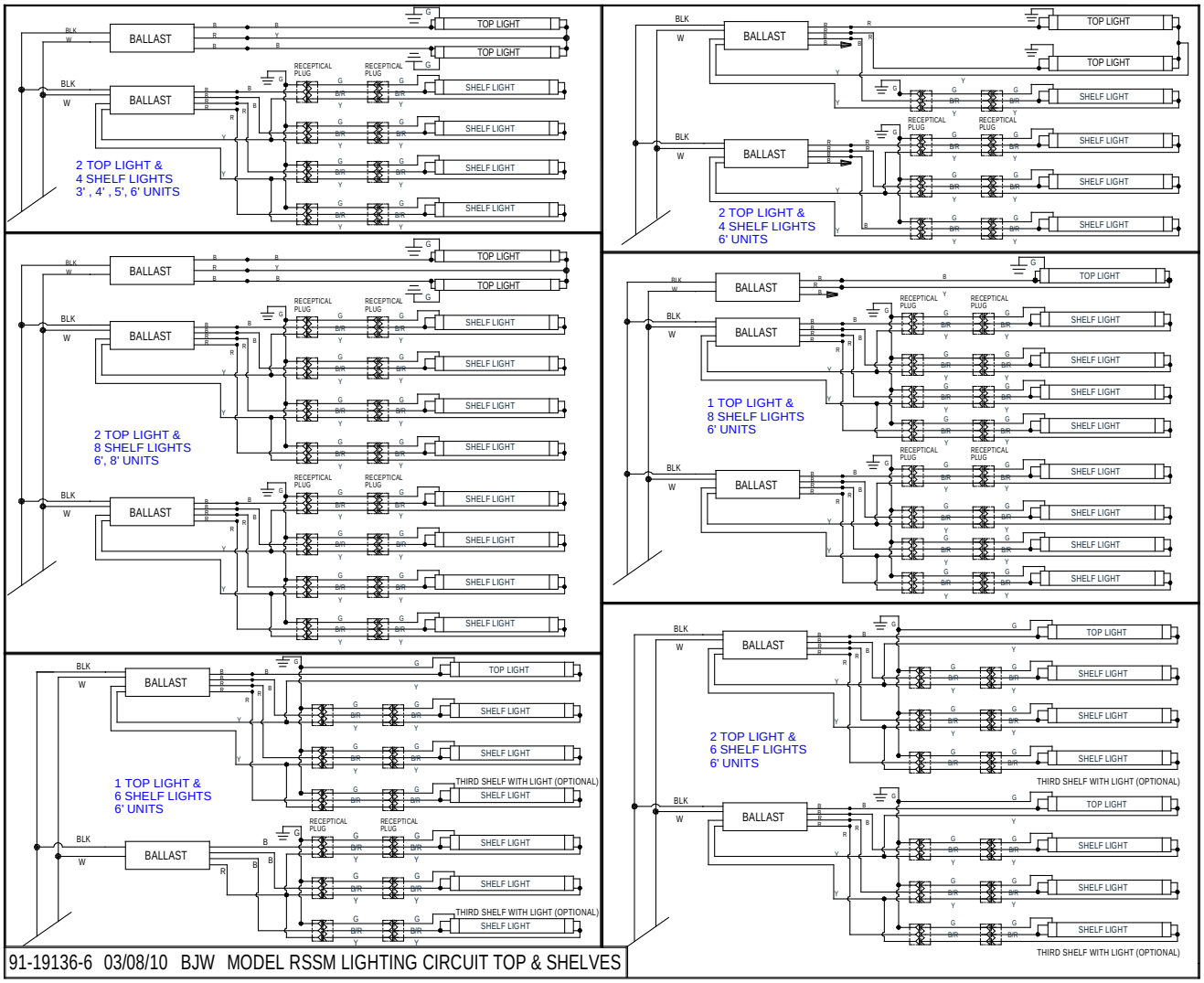


MODEL RSSM LIGHTING CIRCUIT TOP & VERTICAL
91-19136-4 03/08/10 BJW

WIRING DIAGRAM – OPTIONAL LIGHTING CIRCUIT
TOP LIGHTS & SHELF LIGHTS

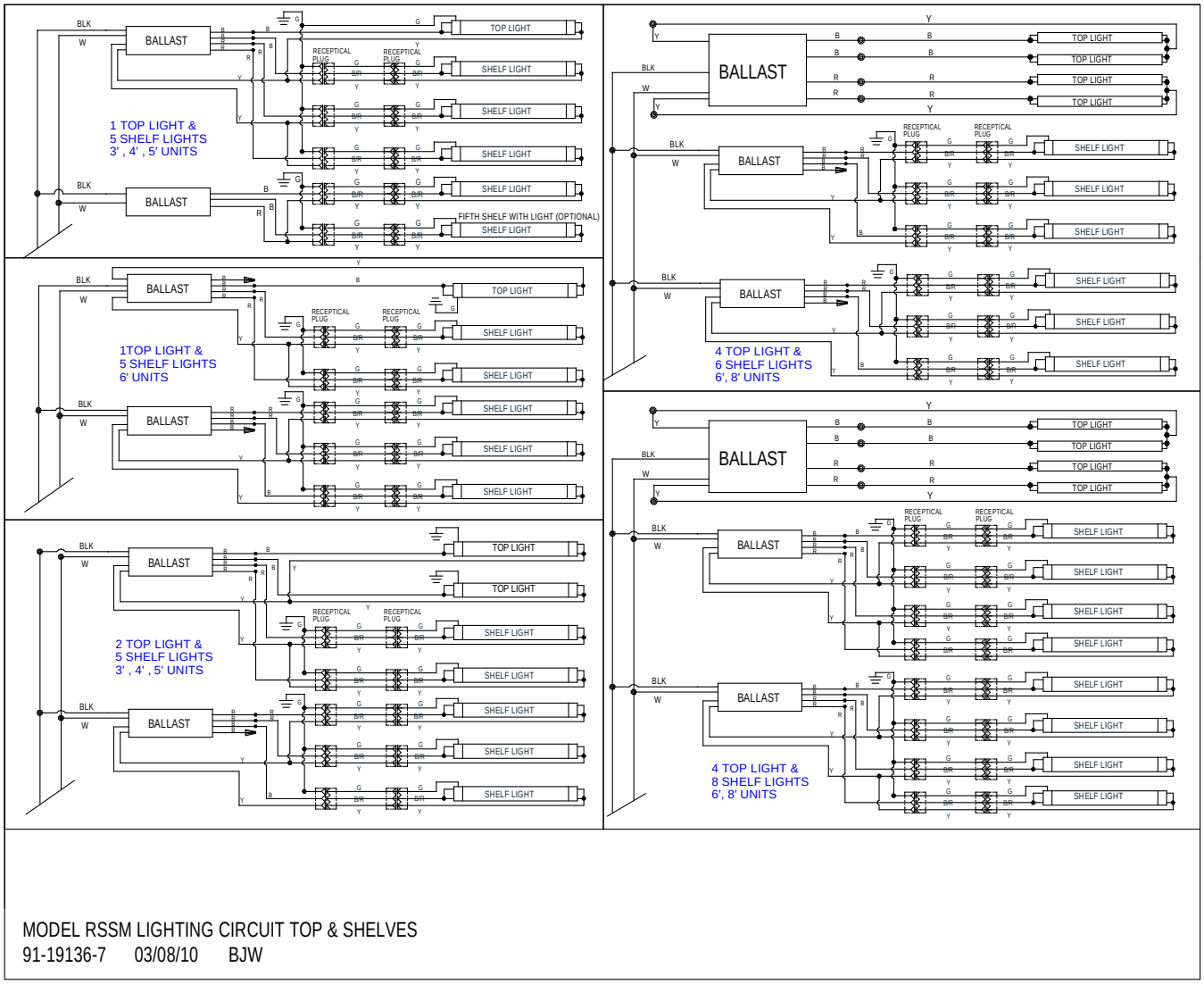


WIRING DIAGRAM – OPTIONAL LIGHTING CIRCUIT
TOP LIGHTS & SHELF LIGHTS



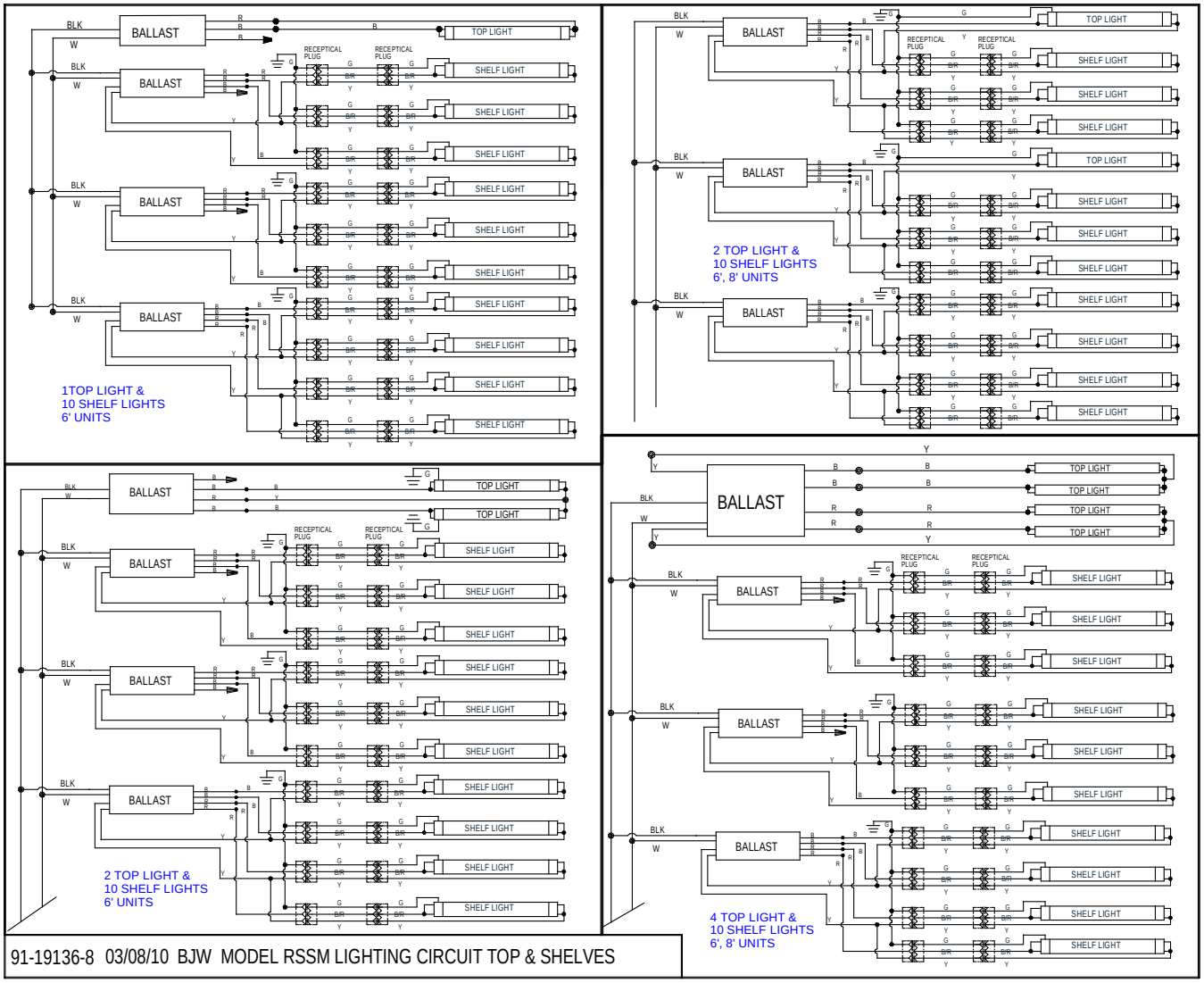
91-19136-6 03/08/10 BJW MODEL RSSM LIGHTING CIRCUIT TOP & SHELVES

WIRING DIAGRAM – OPTIONAL LIGHTING CIRCUIT
TOP LIGHTS & SHELF LIGHTS



MODEL RSSM LIGHTING CIRCUIT TOP & SHELVES
91-19136-7 03/08/10 BJW

WIRING DIAGRAM – OPTIONAL LIGHTING CIRCUIT
TOP LIGHTS & SHELF LIGHTS



91-19136-8 03/08/10 BJW MODEL RSSM LIGHTING CIRCUIT TOP & SHELVES

California Residents Only.

WARNING

This product can expose you to chemicals including chromium which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to

www.P65Warnings.ca.gov

REV	CHANGE RECORD	APP'D	DATE	ECN#
B	LED LIGHT UPDATE	BJW	11/01/18	3420
C	USER CONTROL, WARRANTY/SERVICE/PARTS UPDATE	BJW	05/10/19	
D	ADDED DROP-IN INFORMATION	BJW	06/06/19	
E	CHANGED R449A TXV	BJW	06/13/19	3497
F	UPDATED DUAL PRESSURE CONTROL INFO	ADC	8/6/19	3506
G	UPDATED REFRIGERANT TO R449a AND ELECTRICAL TO 208-240V/60HZ 2 WIRE +GRND ON SELF-CONTAINED & REMOTE	BJW	01/10/20	3569
H	UPDATED CUT-IN & CUT-OUT SET POINTS PAGES 14 & 15	BJW	02/17/20	