TYLER

Allegro SERIES™

Installation & Service Manual

N2PSSC

SELF-CONTAINED MOBILE PRODUCE MERCHANDISERS
Medium Temperature Refrigerated Display Cases

This manual has been designed to be used in conjunction with the General (UL/NSF) Installation & Service Manual.
Save the Instructions in Both Manuals for Future Reference!!

This merchandiser conforms to the American National Standard Institute & NSF International Health and Sanitation standard ANSI/NSF 7 - 2003.

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Tyler Refrigeration * Niles, Michigan 49120

CONTENTS

The following Self-Contained Mobile Produce Merchandiser models are covered in this manual:

MODELS	DESCRIPTION
N2PSSC-4	**4’ SELF-CONTAINED MOBILE PRODUCE MERCHANDISER WITH 7 5/8” NON-LIGHTED TOP SHELF**
N2PSSC-6	**6’ SELF-CONTAINED MOBILE PRODUCE MERCHANDISER WITH 7 5/8” NON-LIGHTED TOP SHELF**

SPECIFICATIONS

N2PSSC Self-Contained Mobile Produce Merchandisers

Self-Contained Refrigeration & Defrost Data:

CASE USAGE	REFRIGERANT (R22) DESIGN PRESSURE		DISCHARGE AIR		DEFROSTS		THERMOSTAT SETTINGS		REFRIGERATION CHARGE (LBS / CASE)	
	LOW SIDE (PSIG)	HIGH SIDE (PSIG)	TEMPERATURE (°F)	VELOCITY (FPM)	DEFROSTS PER DAY	DURATION TIME (MIN.)	CUT-IN (°F)	CUT-OUT (°F)	N2PSSC4	N2PSSC6
BULK PRODUCE	183	400	+35	317*	4	18	34	39	N/A	9.75

* Air velocity measured 1 hour after defrost at the discharge air duct using an ALNOR JR. velometer with a scoop.

FOR SPECIFIC COMPRESSOR SIZING AND/OR LINE SIZING INFORMATION, REFER TO THE "GOLD" AND/OR "BUFF" SECTIONS IN THE TYLER SPECIFICATION GUIDE.

Electrical Data:

CASE ELECTRICAL CIRCUIT: One 120V Electrical Power Supply is required for this Self-Contained case.
This 120V Power Supply runs all circuits and components in this unit.

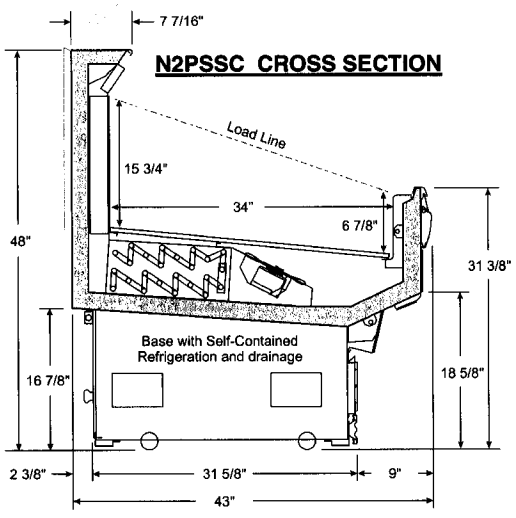
Self-Contained Electrical Data (120 Volt)

MODEL	SELF-CONTAINED COMPRESSOR			M.C.A.***	M.O.P.****	DISCHARGE AIR ANTI-SWEATS		DRAIN PAN HEATER	
	UNIT	R.L.A.*	L.R.A.**	AMPS	AMPS	AMPS	WATTS	AMPS	WATTS
N2PSSC-4	120V 60Hz 1 Ph, 1/2 HP	10.0	51.0	12.7	20.0	0.2	19.0	1.1	125.0
N2PSSC-6	120V 60Hz 1 Ph, 1/2 HP	10.0	51.0	12.8	20.0	0.3	31.0	1.1	125.0

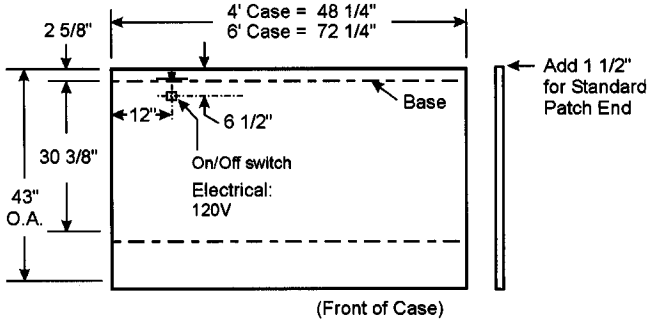
* Run Load Amperage (includes the condenser fan).
** Locked Rotor Amperage.
*** Minimum Circuit Ampacity (includes condenser fan, evaporator fans, drain pan heater and anti-sweat heaters)
**** Maximum Overcurrent Protection.

Self-Contained Evaporator Fans (120 Volt)

MODEL	CASE LENGTH	FANS / CASE	TOTAL STANDARD FANS		TOTAL ECM FANS	
			AMPS	WATTS	AMPS	WATTS
N2PSSC-4	4'	2	1.06	96.0	0.44	22.0
N2PSSC-6	6'	2	1.06	96.0	0.44	22.0



N2PSSC CROSS SECTION



N2PSSC FLOOR PLAN

UL SANITATION approved in accordance with ANSI/NSF – 7.

CASE BTUH REQUIREMENTS are calculated to produce approximately the indicated entering-air temperature with absolute maximum operating ambient limits of **75°F & 55RH.**

INSTALLATION PROCEDURES

Carpentry Procedures

CAUTION

- **Make sure case is level on flat floors. This prevents self-contained system problems and/or premature component failure.**
- **Do not move case during operation.**

The N2PSSC models are self-contained mobile cases. These cases require flat and level floor areas for set-up and operation. Cases should only be moved when they are not in operation.

Electrical Procedures

Self-Contained Case Circuit

This self-contained circuit is to be supplied by an uninterrupted, protected 120V circuit. The case circuit supplies power for case fans, condenser unit, anti-sweats and drain pan heater.

Defrost Information

See "General-UL/NSF I&S Manual" for operational descriptions for Off Time defrost control.

Defrost Control Chart

Defrost Type	Defrosts Per Day	Defrost Duration (Min)	Term. Temp.
Off Time	4	18	-----

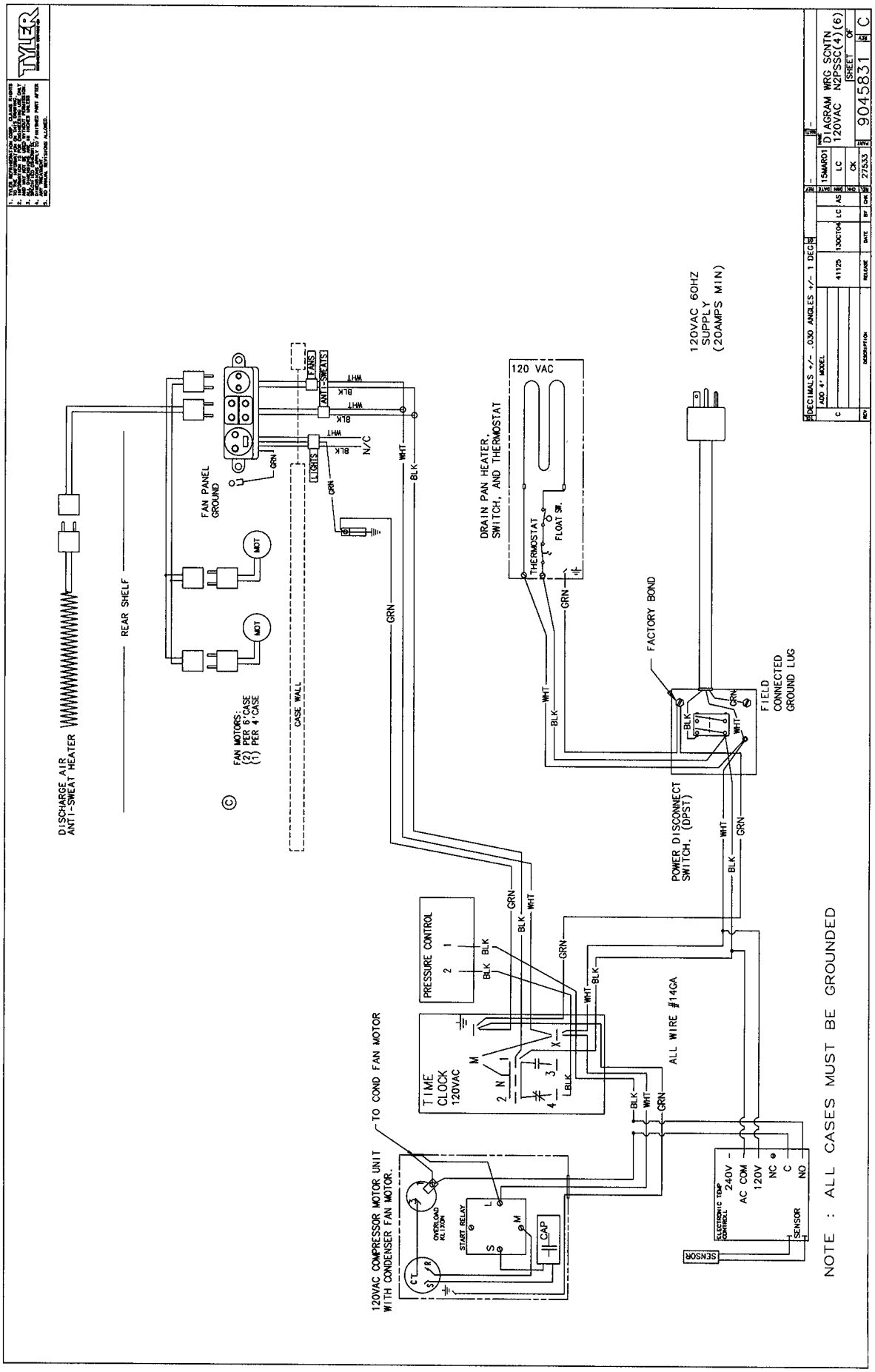
WIRING DIAGRAMS

ELECTRICIAN NOTE - OVERCURRENT PROTECTION

120V circuits should be protected by 15 or 20 Amp devices per the requirements noted on the cabinet nameplate or the National Electrical Code, Canadian Electrical Code - Part 1, Section 28. 208V defrost circuits employ No. 12 AWG field wire leads for field connections. On remote cases intended for end to end line-ups, bonding for ground may rely upon the pull-up bolts.

The following wiring diagram on page 6 will cover the N2PSSC case circuits.

N2PSSC Domestic & Export (50Hz) Case Circuits (6' Cases)



CLEANING AND SANITATION

Component Removal and Installa-tion Instructions for Cleaning

Optional Shelves and Shelf Brackets

1. Remove product from shelves.
2. If shelf has a light, unplug the light cord from the socket in the rear duct panel. Completely insert socket cover in the light socket to protect the receptacle.
3. Push shelves back and then lift up and out to remove them from the shelf brackets.
4. Remove shelf brackets from slots in rear uprights.
5. After cleaning, replace in reverse order.

Screens and Bottom Trays

1. Remove product from screens or bottom of case.
2. To remove screen, push up until bottom tabs clear holes in front duct, then remove screen from case.

   To remove bottom tray, grasp and lift out each of the bottom trays from the case interior.
3. After cleaning, replace bottom trays and or screens in reverse order.

Front Air Ducts

1. Remove screens and lower trays, see this page.
2. Lift out front air duct sections.
3. After cleaning, replace in reverse order.

Rear Duct Panels

1. Remove mirrors, shelves and/or bottom trays, see above.
2. Remove mounting screws and rear duct panels from case.
3. After cleaning, replace and secure rear duct panels in reverse order.

Discharge Air Honeycomb

1. Loosen screws securing rear retainer plate.

NOTE

Note position of the honeycomb grid during removal so it can be reinstalled the same way.

2. Slide rear retainer plate back until the honeycomb grid sections can be removed from the top duct.

CAUTION

Improper installation of the honeycomb grid section could result in improper air flow and/or poor refrigeration.

3. After cleaning, replace honeycomb grid sections as they were removed and secure with the rear retainer plate and screws.

Lower Front Panel and Air Grid

1. Remove kickplate from kickplate supports. (See General-UL/NSF I&S Manual.)
2. Lift panel up and out to remove from panel supports.
3. After cleaning, replace in reverse order.

Lower Cladding

1. Remove mounting screws from top of lower cladding.
2. Lift bottom of lower cladding off top of kickplate support brackets and remove lower cladding.
3. After cleaning, replace in reverse order.

Upper Cladding

1. Remove color band, bumper and bumper retainer from case. (See General-UL/NSF I&S Manual.)
2. Remove mounting screws from top and bottom of upper cladding and remove upper cladding.
3. After cleaning, replace upper cladding and remaining components in reverse order.

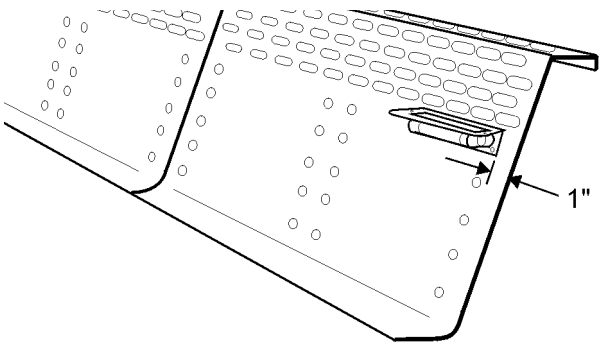
Drain Preparation for Cleaning

1. Remove kickplate and lower front panel and air grid, see page 7.
2. Lift up and pull off lower front panel from upper and lower panel supports.
3. Remove drain cap from bottom of drain trap.
4. Attach hose to threads on bottom of drain trap. Place other end of hose in drain, drain trough or bucket.
5. Clean and thoroughly rinse case interior and bottom tub.
6. After case has completely drained, remove hose and replace drain cap, lower front panel and kickplate.

GENERAL INFORMATION

NSF Product Thermometer Installation

1. Unwrap the thermometer and bracket assembly shipped loose with the case.
2. Remove left front return air duct.



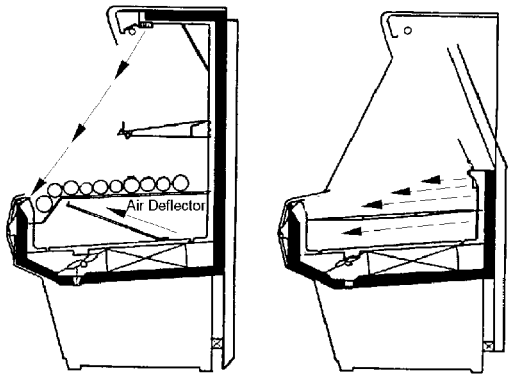
3. Position bracket 1” in from left edge and just under the bottom return air duct holes.
4. Mount the bracket to the return air duct with self-tapping screws.
5. Replace the front return air duct.

Produce Handling Tips

Fresh fruits and vegetable are living things, even after they have been harvested. They continue the process of respiration and transpiration after harvesting. Respiration is the process of self feeding to provide energy for maintaining life. (EXAMPLE: Asparagus and sweet corn generate heat after they are picked.) Transpiration is the process of water loss through vapor from the plant tissues. Post-harvest life can be maintained by slowing the rate of water loss. Refrigeration lowers the rate of respiration and transpiration. Store most types of produce close to freezing prior to display. There are a number of explanations (ex. Cucumbers can be kept relatively cool by themselves, but could be damaged by temperatures below 40°F). See chart on following pages for specifics.

Non-refrigerated produce cases are called “Dry” cases. They are used to display potatoes, dry onions, bananas, avocados and other products which don’t need refrigeration. These cases can also be used with a bed of cracked ice to display perishables.

Refrigerated produce cases displays produce products that require refrigeration. The refrigeration coil is below the display and fans are used to circulate air through the case display. This moving air will pick up moisture from unwrapped produce and carry it to the coil. It is necessary to replace this moisture by using a water spray several times during the day. At night the produce should be covered wih a wet cloth. The alternate to sprinkling is to wrap the produce.



In order to maintain case air flow, the return air duct must not be blocked by product. An important aid to improve air circulation is to use air deflectors below the elevated screens in the case. These deflectors will direct the air flow into the display and prevent cool air from "short circuiting" the display. Deflectors are furnished with hump screen option. See illustration above.

Produce Handling Chart

	Ideal Storage Conditions			Display Rack Care		
Produce	**Temperature (°F)**	**Relative Humidity (%)**	**Sell Quickly (1-2 days)**	**Refrigerate (40°F)**	**Sprinkle with Water**	**Special Notes**
Apples	30-32	85-95		Helpful	No advantage	Avoid bruising
Apricots	31-32	85-90	Yes	Helpful	No	
Asparagus	32-36	90-95	Yes	Profitable	No	Trim butts and stand in ice or shallow water
Avocados	40-55	85-90	Yes	No	No	Display on padded surface
Bananas, Ripe	56-58	85-90	Yes	No	No	Display on padded surface
For Ripening	58-68	90-95		No	No	Avoid bruising
Beans, Lima	32-40	85-90	Yes	Profitable	No	Shake up to aerate
Beans, Snap	40-45	90-95	Yes	Profitable	Yes	
Beets	32	85-95	Yes	Profitable	Yes	Moisten roots only
Berries	31-32	90-95	Yes	Helpful	No	Keep well ventilated
Broccoli	32-35	90-95	Yes	Profitable	Yes	Keep out of sun
Brussel Sprouts	32-35	90-95	Yes	Profitable	Yes	Remove yellow leaves
Cabbage	32	90-95		Helpful	Yes	
Carrots	32	90-95		Profitable	Yes	Moisten roots only of bunches
Cauliflower	32	90-95	Yes	Profitable	Yes	Sprinkle only if refrigerated
Celery	31-32	90-95	Yes	Profitable	Yes	
Cherries	31-32	90-95	Yes	Helpful	No	Keep well ventilated
Corn, Sweet	31-32	90-95	Yes	Profitable	Yes	Keep cold to keep sweetness
Cucumbers	45-50	85-90	Yes	No	No advantage	
Eggplants	45-50	85-90	Yes	No	No advantage	Do not bruise, keep on ice
Grapefruit	50-60	85-90		Helpful	No advantage	Remove decayed fruit
Grapes	30-32	85-95	Yes	Helpful	No	Keep well ventilated
Honeydews	45-50	85-90		Helpful	No	Cover cut melons with transparent film
Lemons	38-40	85-90		Helpful	Yes	Sprinkling may be helpful
Lettuce	32	90-95	Yes	Profitable	Yes	Avoid soaking with water
Limes	48-50	85-90		Helpful	No advantage	

	Ideal Storage Conditions			Display Rack Care		
Produce	Temperature (°F)	Relative Humidity (%)	Sell Quickly (1-2 days)	Refrigerate (40°F)	Sprinkle with Water	Special Notes
Mushrooms	32-35	80-90	Yes	Helpful	No	Handle carefully, keep dry
Muskmelons	32-35	85-90	Yes	Helpful	No	Cover cut melons with transparent film
Onions, Dry	32	65-70		No	No	Remove loose wrappers, keep dry
Onions, Green	32	90-95	Yes	Profitable	Yes	Keep well ventilated
Oranges	34-38	85-90		Helpful	No advantage	Remove decayed fruit
Parsnips	32	90-95		Helpful	Yes	Moisten roots only
Peaches, Ripe	31-32	90	Yes	Helpful	No	Ripen at room temperature before storage
Pears	29-31	90-95	Yes	Helpful	No	Display in single or double layer on pads
Peas, Green	32	90-95	Yes	Profitable	Yes	Shake up to aerate, keep cold
Peppers	45-50	90-95	Yes	Profitable	Yes	
Pineapples, Ripe	45-55	85-90	Yes	No	No	Remove decayed fruit
Plums	31-32	90-95	Yes	Helpful	No	Remove decayed fruit
Potatoes	40-50	85-90		No	No	Keep out of sun
Radishes	32	90-95	Yes	Profitable	Yes	Keep water off tops, avoid tight packing
Rhubarb	32	90-95	Yes	Profitable	No	Trim thin slice off stems and stand in cold water
Squash, Summer	40-50	85-95	Yes	Helpful	Yes	
Winter & Pmpkns	50-55	50-75		No	No	
Spinach	32	90-95	Yes	Profitable	Yes	Keep ventilated
Sweet Potatoes	55-60	85-90		No	No	Keep ventilated
Tangerines	32	85-90	Yes	Profitable	Yes	Remove decayed fruit
Tomatoes, Ripe	45-50	85-90	Yes	Helpful	No	Sell quickly, refrigerate to hold
Tomatoes, Green	55-70	85-90		No	No	Ripen in back room, sort frequently
Turnips	32	90-95		Profitable	Yes	Sprinkle roots only
Watermelons	40-45	80-85		Helpful	No	Cover cut melons with transparent film

The "Produce Handling Chart" is courtesy of Produce Marketing Association, Inc., Newark, Delaware 19711, from their 1973 Yearbook. This book is published as a service to the Fresh Produce Industry.

For additional information, consult:

"The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks", USDA Handbook No. 66, 1968.

"The Shelf Life of Fresh Fruits and Vegetables - Retail Store Display Cases", USDA HT&S Office Report No. 247, October 1951.

"Fresh Fruits and Vegetables - Handling and Care", Corporate Extension Service, Michigan State University.

SERVICE INSTRUCTIONS

Troubleshooting Self-Contained Units

WARNING

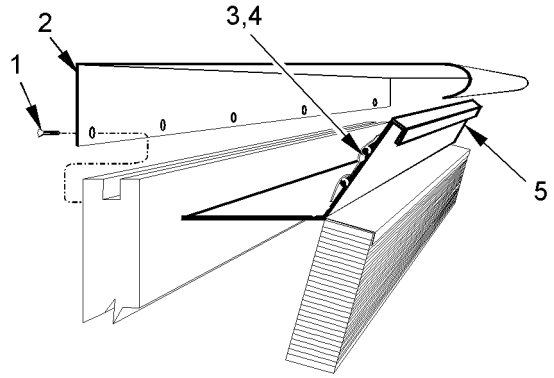
Never work on electrically powered equipment while it is energized! Electrical shock could cause personal injury and/or death.

TROUBLE	COMMON CAUSE	REMEDY
1. Unit will not run	Blown fuse	Replace fuse.
	Low voltage	Check outlet with voltmeter. Voltage should be 115V (±10%).
	Inoperative motor or temperature control	Check connections.
2. Refrigerated section is too warm	Shelves overloaded; blocked air flow	Make sure items do not block the air flow.
	Case fans not operating	Check terminal block connections.
3. Noisy operation	Loose baffles	Tighten or brace baffles.
	Tubing contacting cabinet or other tubing	Move tubing.
	Cabinet not level	Level cabinet.
4. Frost or ice on evaporator coil	Defrost clock doesn't work	Check electrical conections. Have unit serviced by a qualified service technician.
5. Water dripping from case drain	Drain cap not properly installed	Tighten or reinstall drain cap.

Anti-Sweat Heater Replacement

WARNING

Shut off or disconnect power supply to case before changing an anti-sweat. Electrical power from wire ends could damage other components and/or cause personal injury or death.

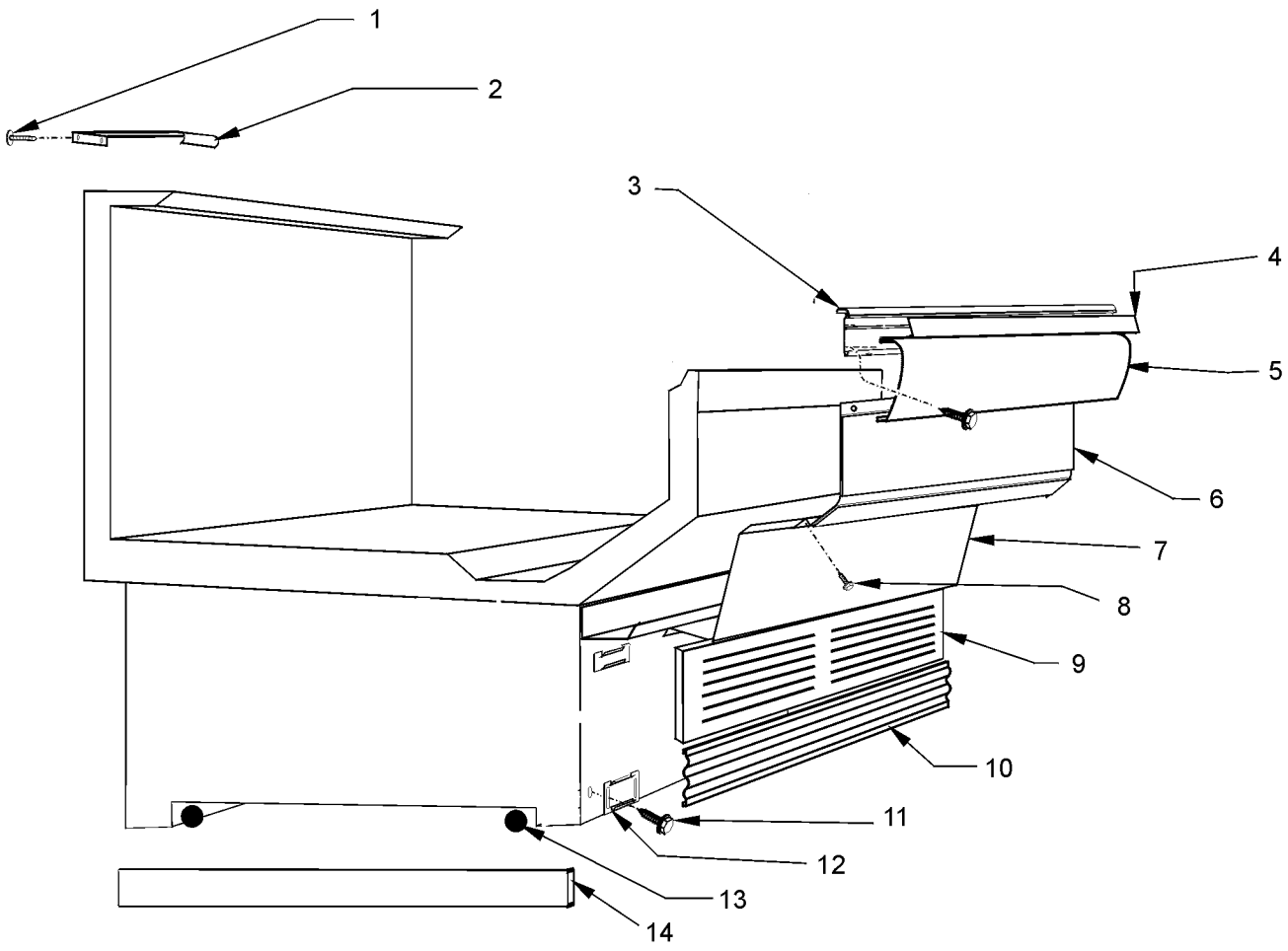


1. Remove screws (1) and upper rear riser trim (2) from top of case.
2. Disconnect or cut the defective anti-sweat wires (3) from the case wires.
3. Remove and replace the aluminum tape (4) and defective anti-sweat wire (3) from the back of rear riser support trim (5).
4. Reconnect the anti-sweat wires (3) to case wires and reinstall the rear riser trim (2) with screws (1).
5. Restore electrical power to the case.

PARTS INFORMATION

Cladding and Optional Trim Parts List

Item	Description	N2PSSC 6’
1	Screw	5100217 (4)
2	Rear Riser End Trim, MB	9046814 (2)
3	Bumper Retainer / Handrail	color per order
4	Color Band, Painted	9023796
5	Bumper	color per order
6	Upr. Frt. Cladding, Painted	9025132
7	Lwr. Frt. Cladding, Painted	9045862
8	Screw	5183536 (16)
9	Lwr. Base Cladding, Painted	9045828
10	Kickplate	color per order
11	Screw	5183536 (6)
12	Kickplate Support	9041329 (3)
13	Caster	5207728 (6)
14	Base End Trim, Painted	9602572 (2)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Operational Parts List

Case Usage	Domestic
Electrical Circuit	115 Volt 60 Hertz
Case Size	6’
Fan Motor	5243498 9 Watt
Fan Motor Brackets	5962268
Fan Bracket Plate	9041077
Fan Blades (7” 30° 5B)	9045855
Opt. ECM Fan Motor	9025002 8 Watt
Opt. ECM Fan Motor Brackets	9025005
Opt. ECM Fan Blades (7” 30° 5B)	9045855
Condensing Unit	Copeland FJEF-0050-IAA-201
Drain Pan Heater, 125W	9045863
Anti-Sweat Heater (rear riser)	9043426
NSF Product Thermometer	5967100

For information on operational parts not listed above contact the TYLER Service Parts Department.