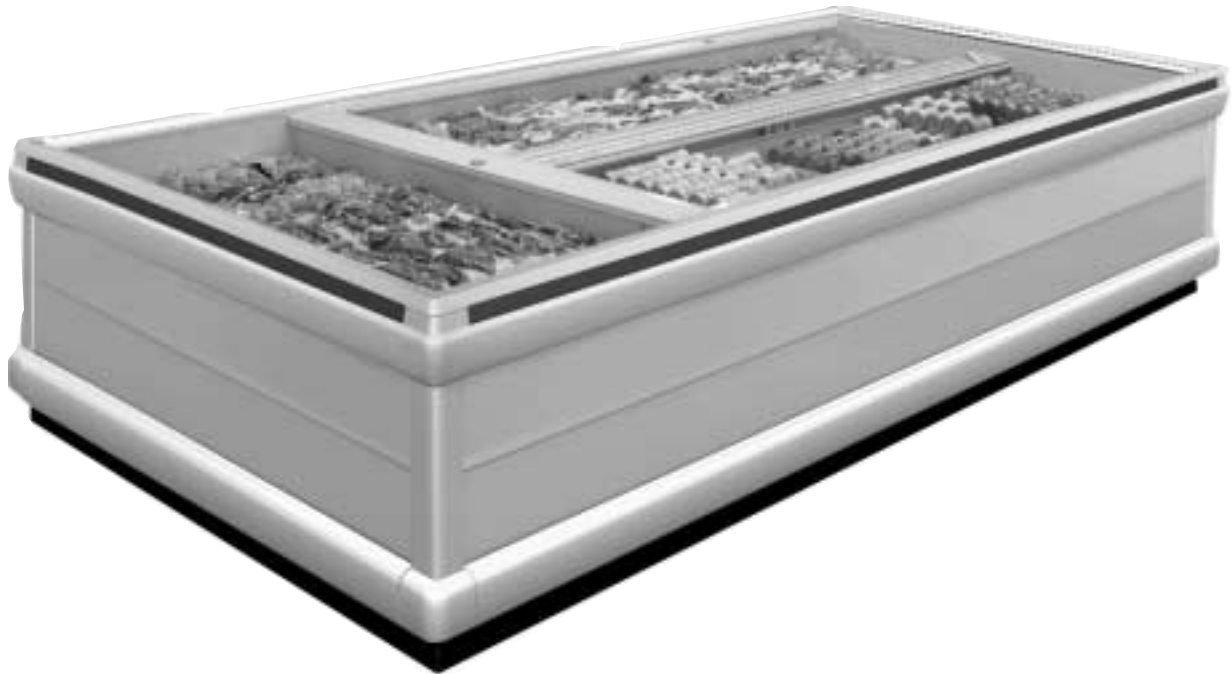


# TYLER

# Advantage<sup>series</sup>

## Installation & Service Manual



**NFJB, NCJB, NTJB, NFMJB, NFJEB, NCJEB**

**JUMBO ISLAND FROZEN FOOD/ICE CREAM/MEDIUM TEMP  
MERCHANTISERS**

**Low, Medium and Dual Temperature Self Serve 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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The following Low Temperature Frozen Food and/or Ice Cream, Medium Temperature and Dual Temperature Split Coil Merchandiser models are covered in this manual:

MODEL	DESCRIPTION
NFJB	8' & 12' JUMBO ISLAND FROZEN FOOD OR MEDIUM TEMP MERCHANDISERS
NCJB	8' & 12' JUMBO ISLAND ICE CREAM MERCHANDISERS
NTJB	8' & 12' JUMBO ISLAND LOW TEMPERATURE (FROZEN FOOD & ICE CREAM) DUAL TEMP SPLIT COIL MERCHANDISERS
NFMJB	8' & 12' JUMBO ISLAND LOW AND MEDIUM TEMPERATURE DUAL TEMP SPLIT COIL MERCHANDISERS
NFJEB	JUMBO ISLAND FROZEN FOOD OR MEDIUM TEMP END MERCHANDISER
NCJEB	JUMBO ISLAND ICE CREAM END MERCHANDISER

## SPECIFICATIONS

### NFJB/NCJB/NTJB/NFMJB/NFJEB/NCJEB Jumbo Island and End Frozen Food/ Ice Cream/Medium Temperature Merchandisers

**Refrigeration Data:**

MODEL	CASE LENGTH	CASE USAGE	CAPACITY (BTUH / FT)*		EVAPORATOR (°F)	UNIT SIZING (°F)	DISCHARGE AIR		AVG. REF. CHARGE (LBS/FT)
			PARALLEL	CONVENTIONAL			TEMPERATURE (°F)	VELOCITY (FPM)	
NFJB	8', 12'	FROZEN	544	568	-25**	-28	-15	230***	0.85
NCJB	8', 12'	ICE CREAM	636	652	-35**	-38	-25	230***	0.85
NFJB	8', 12'	MED TEMP	437	448	+15**	+13	+22	230***	0.85
NFJB/ NFMJB	8', 12'	FROZ / MED TEMP	272 / 218	284 / 224	-25** / +15**	-28 / +13	-15 / +22	230***	0.43 / 0.43
NTJB	8', 12'	FROZ / ICE CRM	272 / 318	284 / 326	-25** / -35**	-28 / -38	-15 / -25	230***	0.43 / 0.43
NFJEB	77 1/2"	FROZEN	2,266****	2,364****	-25**	-28	-15	230***	0.35
NCJEB	77 1/2"	ICE CREAM	2,883****	2,957****	-35**	-38	-25	230***	0.35
NFJEB	77 1/2"	MED TEMP	2,229****	2,286****	+15**	+13	+22	230***	0.35

\* For sizing all refrigeration equipment other than TYLER, use conventional BTUH values.

\*\* Evaporator temperature is based on the saturated pressure leaving the case.

\*\*\* Air velocity is measured 60 minutes after defrost at the Discharge Air Ducts.

\*\*\*\* BTUH rating is for entire end case.

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

**Electrical Data:**

Fans (120 Volt) and Optional T-8 Lighting with Electronic Ballasts (120 Volt)

MODEL	CASE LENGTH	FANS / CASE	TOTAL FOR STANDARD FANS		TOTAL FOR ECM FANS		T-8 LIGHTING FOR OPT. SUPERSTRUCTURE	
			AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
N(F/C/T/FM)JB	8'	4	1.36	120.8	0.88	44.0	2.00	240.0
N(F/C/T/FM)JB	12'	6	2.04	181.2	1.32	66.0	3.00	360.0
NFJEA/NCJEB	77 1/2"	2	0.68	60.4	0.44	22.0	0.30	36.0

Heaters (120 and 208 Volt)

MODEL	CASE LENGTH	ANTI-SWEAT HEATERS (120 V)						DEFROST HEATERS (208 V)				DRAIN PAN HEATER (120V) HG	
		DISCHARGE AIR		RETURN AIR		OPT. SUPERSTRUCTURE		COILS		DRAIN PAN (208V) Elec			
		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
NFJB/NFMJB	8'	1.92	230.4	0.60	72.0	3.80	456.0	13.80	2,860	2.24	466	5.00	600
NCJB/NTJB	8'	1.92	230.4	0.60	72.0	3.80	456.0	21.64	4,500	2.88	600	5.00	600
NFJB/NFMJB	12'	2.54	304.8	0.90	108.0	5.20	324.0	20.60	4,290	3.36	700	7.50	900
NCJB/NTJB	12'	2.54	304.8	0.90	108.0	5.20	324.0	34.62	7,200	4.33	900	7.50	900
NFJEB/NCJEB	77 1/2"	0.40	48.0	0.60	72.0	1.30	156.0	7.81	1,624	N/A	N/A	N/A	N/A

**CASE CIRCUITS:** In addition to a 208V defrost circuit, there is the 120V case fan circuit plus the 120V case anti-sweat circuit. Cases with Gas Defrost have a separate 120V circuit for the drain pan heater. Shelf or canopy lights require a separate 120V circuit which can be switched at the back room for convenience in controlling the lights.

208 VOLT DEFROST (AMPS)													
FEET	8	12	16	20	24	28	32	36	40	44	48	52	
FF/MED 1 PH TG-30	16.0 TG-30	24.0 TG-30	32.0 TG-40	40.0 TG-50	(Separate circuit recommended due to high amp draw) N/A								
FF/MED 3 PH TG-3-30	12.1 TG-3-30	20.7 TG-3-30	18.6 TG-3-30	18.2 TG-3-30	31.1 TG-3-40	32.8 TG-3-40	37.0 TG-3-50	15.6/15.6 TG-3-30-30	15.6/24.2 TG-3-30-30	26.8/26.8 TG-3-40-40	31.0/31.0 TG-3-40-40	32.0/32.0 TG-3-40-40	
IC 1 PH TG-30	24.5 TG-30	38.9 TG-50	(Separate circuit recommended due to high amp draw) N/A										
IC 3 PH TG-3-30	21.0 TG-3-30	34.0 TG-3-40	32.0 TG-3-40	38.0 TG-3-50	34/34 TG-3-40-40	28/28 TG-3-40-40	34/34 TG-3-40-40	34/34 TG-3-40-40	38/38 TG-3-50-50	34/34/34 TG-3-40-40-40	34/34/34 TG-3-40-40-40	38/38/38 TG-3-50-50-50	

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.

The information contained herein is based on technical data and tests that we believe are reliable, and is intended for use by persons having technical skill at their own discretion and risk. Since conditions of use are outside of Tyler's control, we cannot assume any liability for results obtained or damages incurred through the applications of the data presented. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING												
FEET	8	12	16	20	24	28	32	36	40	44	48	52
R404A FF	7/8"	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"
R404A IC	7/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 5/8"	1 5/8"	1 5/8"	1 5/8"
R22 MED	7/8"	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"

**Defrost Data:**

DEFROST TYPE	DEFROSTS PER DAY	DURATION TIME (MIN)	TERMINATION TEMP. (°F)	EPR SETTINGS **		DEFROST WATER (LB / FT / DAY)
				R22 (PSIG)	R404A (PSIG)	
ELECTRIC / FF	1	60	50	7	14	0.68
ELECTRIC / IC	1	36	50	3	8	0.58
ELECTRIC / MED	1	36	50	37	50	0.45
HOT GAS / FF	2-3	20-25	55*	7	14	0.68
HOT GAS / IC	1	25-30	55*	3	8	0.58
HOT GAS / MED	2-3	16-20	55*	37	50	0.45

\* If an Electronic Sensor is used for termination, it should be set at 70°F termination temperature.  
 \*\* Set EPR to give this pressure at the case.

**NFJB / NCJB / NTJB APPLICATIONS:**

The NFJB, NCJB, NFMJB and NTJB cases can be used in a wide variety of applications as described below:

**NFJB/NCJB:** These models have front and rear coils piped together and both wells are run off one compressor system. Always pipe the compressor system that will supply the coldest application usage.

1. Frozen food on both sides.
2. Ice cream on both sides. (NCJB only)
3. Medium temp on both sides. No dual temp control is needed, but you must specify the proper expansion valve and size the compressor system accordingly.
4. Frozen food on one side and ice cream on the other side. (NCJB only)
5. Frozen food on one side and medium temp on the other side.
6. Frozen food on one side and dual temp on the other side. **NOTE:** Dual temp refers to frozen food or medium temp operation by use of a dual temp control. Dual temp also requires an expansion valve sized for the coldest dual temp operation.
7. Dual temp on both sides. **NOTE:** This requires either one or two dual temp controls. Use one dual temp control when both wells are controlled together. Use two separate dual temp controls when you want to control the front and rear wells separately on one compressor.

**NTJB/NFMJB:** These models have the front and rear coils piped separately. This case is designed to run off separate compressor systems and operate in dual temp applications. In addition, this version has an insulated center partition to aid in maintaining the temperature differences between the two sides. Both sides must defrost at the same time.

**TYPICAL USAGES:**

1. Frozen food on one side and ice cream on the other side. (NTJB only)
2. Frozen food on one side and medium temp on the other side. (NFMJB only)
3. Frozen food on one side and dual temp on the other side. **NOTE:** Dual temp refers to frozen food or medium temp operation by use of a dual temp control. Dual temp also requires an expansion valve sized for the coldest dual temp operation.
4. Dual temp on both sides. **NOTE:** This requires two dual temp controls to control both the front and rear wells on their respective compressor systems.

**NON-TYPICAL USAGES:**

5. Frozen food on both sides.
6. Ice cream on both sides. (NTJB only)
7. Medium temp on both sides. No dual temp control is needed, but you must specify the proper expansion valve and size each compressor system accordingly. (NFMJB only)

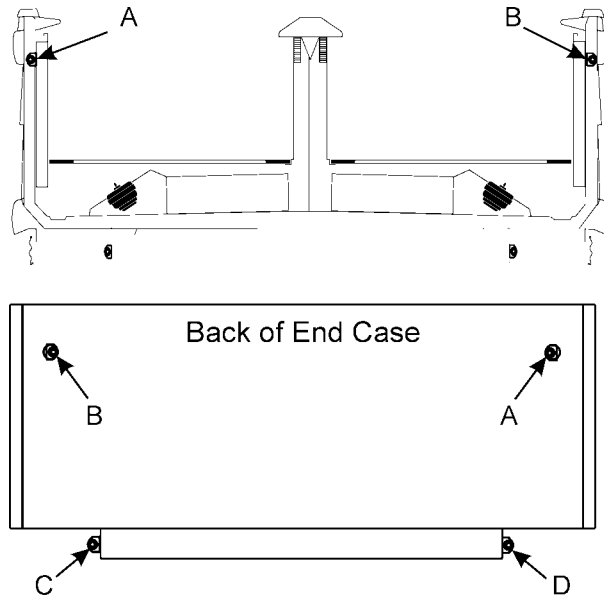
**DEFROST WIRING:** There are two defrost heater circuits in each case. The heater wiring stubs out in the 208V raceway as two pairs of wires. Defrost circuits can therefore be wired as a single phase load or they can be wired as an unbalanced 3-phase load. The 3-phase defrost information is based on dividing the heater loads as evenly as possible across the phases.

**NOTE:** Optional shelving superstructures with lights have the same electrical requirements per row of lights as the amps shown.



## INSTALLATION PROCEDURES

### Carpentry Procedures



### Case Pull-Up Locations

The NFJB/NCJB/NTJB/NFMJB models have two pull-ups at each end of the case. Pull-ups A and B are located as shown and used for joining all cases. The NFJEB/NCJEB models have four pull-ups at the rear of the case. Pull-ups A, B, C and D are located as shown and used for joining end cases. Pull-ups C and D are shipped loose. All pull-ups should be installed and tightened starting with A and finishing with B or D. After cases have been pulled together, fill and seal all gaps between cases and/or patch ends with caulking.

### 1" Solid Partition

A 1" insulated partition is required between adjacent gas defrost cases that are on different defrost schedules. 1" partitions are shipped installed as specified in the case order. Make sure the partitioned case is being installed in the proper location in the case line-up. This assures proper refrigeration to all parts of the case line-up.

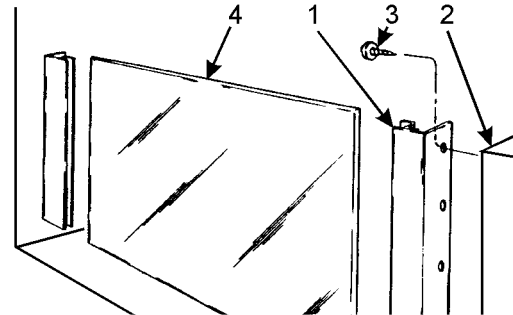
Apply sealant to outside surface of partition where the two surfaces of the adjoining case will contact the partition.

See "General-UL/NSF I&S Manual" for line-up assembly instructions.

After all case pull-ups have been secured, all interior wall joint seams should be sealed with duct tape.

### Plexiglas Partition

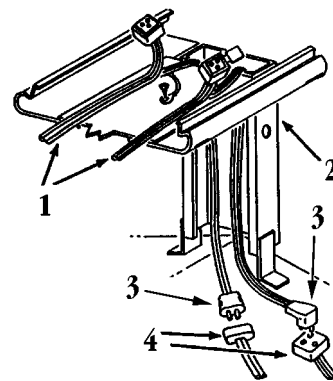
A plexiglas plug partition is required on adjacent electric defrost cases that are on different defrost schedules. These partitions can be installed after the cases have been joined.



1. Install partition brackets (1) at case joint on front, center and/or rear case wall (2) with screws (3)
2. Slide plexiglas partitions (4) into partition brackets (1).

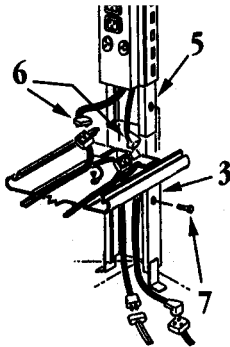
### Superstructure Installation

Make sure discharge air grids are removed. Remove top riser cap knockouts and insulation on top of center partition from the superstructure end sockets and upright support angles.



1. If the wiring harness has not been factory installed, remove insulation from top of center riser and lay wire harnesses (1) on top of the center partition (2). The 8' harness has three female plugs and one male plug. The 12' harness has four female plugs and one male plug. There is one harness for shelf anti-sweat heaters

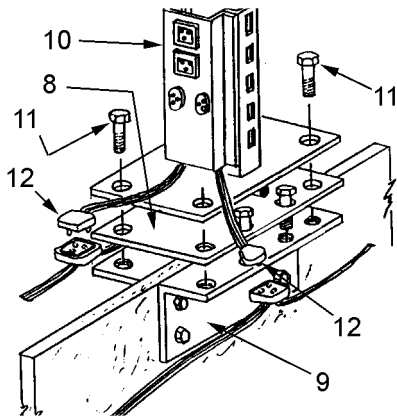
and one for the shelf lights. The sockets are not interchangeable. The anti-sweat harness male plug connects at the RH post socket. The light harness male plug goes down the RH post socket (3) and plugs into the matching receptacle in the 115V case wiring block (4). Replace insulation.



- Position the RH end post (5) in the RH superstructure hole in the center riser (3). Install the two plugs (6) and push them into the insulation. Push down the RH end post (5) until it seats into the center riser (3) and secure with four bolts (7).

**NOTE**

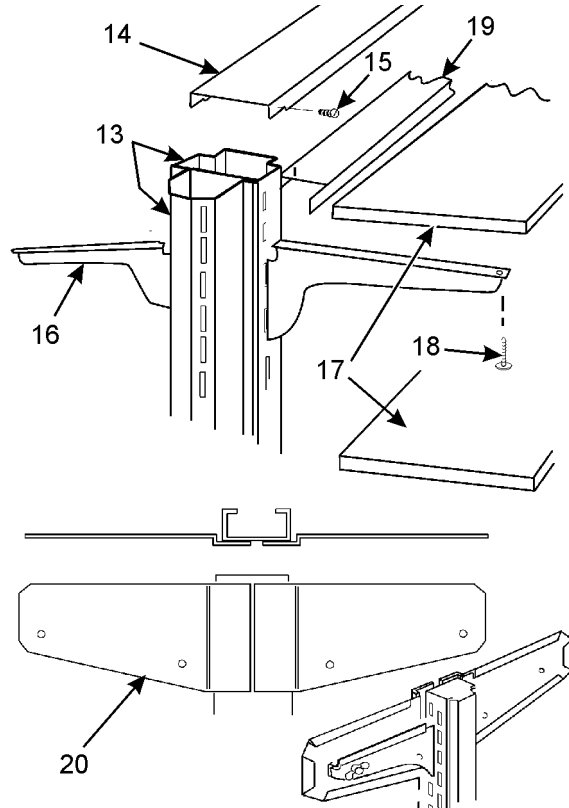
On 12' cases, the electrical outlets on the center posts must face the end posts.



- Install and align the center upright (10) to base plate (8) and angle brackets (9) with four bolts (11). (The four corner bolts are used for adjusting the center uprights.) The center uprights may face in either direction. Connect upright wire plugs (12) to harness. Route wires and harness around the uprights in the insulation.

**NOTE**

Items 8 and 9 will be shipped loose on superstructures ordered through TYLER Service Parts Department. Separate installation instructions will be provided with the superstructures.



- Install the LH end post (13) as described in step 2.

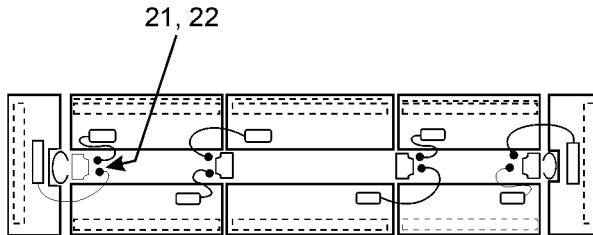
**NOTE**

Notches on upright alignment channel will help position the channels properly.

- Position the upright alignment channel (14) on top of the upright posts (13). Using the holes in the upright alignment channel as a guide, drill 1/8" pilot holes in the upright posts (13) and secure with screws (15).
- Install each pair of shelf brackets (16) in slots in upright posts (13). Use one RH and one LH bracket per shelf. Superstructures with end shelves have angled brackets on the end shelf uprights (13).
- Position shelves (17) on shelf brackets (16) and install front alignment screws (18).



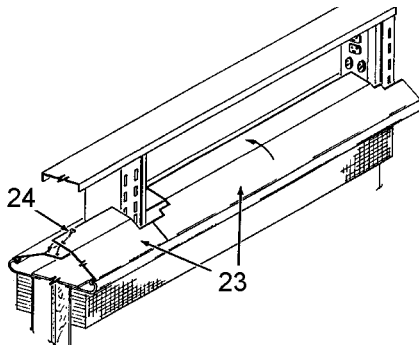
- Install shelving close-offs (19) in space between shelves. The close-offs are supported by the shelf brackets (16). If end close-offs (20) are supplied, they are also secured to the shelf brackets (16).



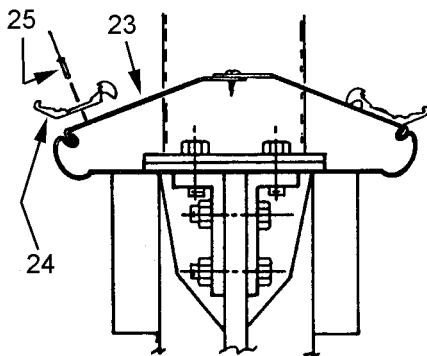
- Plug in the shelf anti-sweat heaters (21) and shelf lights (22).

**NOTE**

Notches on upright alignment channel will help position the channels properly.



- Install top riser caps (23) on top of the center partition. Drill pilot holes in the top center of the two riser caps and secure with screws (24).



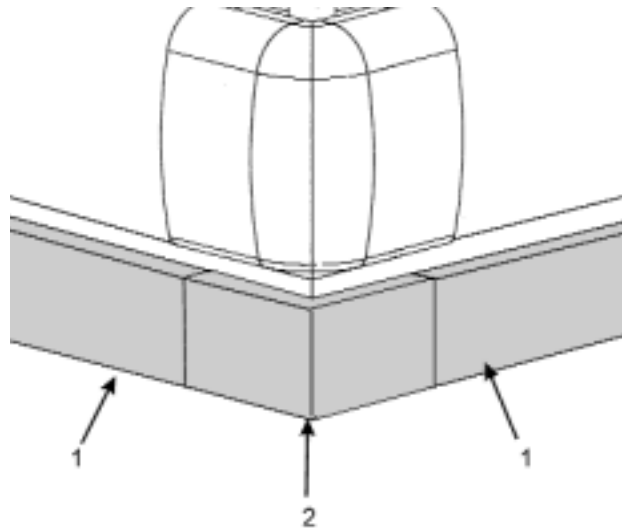
- Position card moulding (25) as shown and drill 1/8" pilot holes in riser caps (23). Secure card mouldings (25) to riser caps (23) with screws (26).

**Trim Installation/Alignment**

See "General-UL/NSF I&S Manual" for bumper, color band, raceway and kickplate installation.

**Corner Trim Installation**

Most corner trim on these cases comes factory installed. The kickplate corner trim requires field installation.



After kickplates (1) have been installed, position kickplate corner trim (2) over both ends of the kickplates (1) and secure with screws.

**Bottom Trays**

**CAUTION**

Placing product directly on bottom trays could break a bottom tray and/or cause damage to the case.

The bottom trays are made from polypropylene. They are designed to be non-weight bearing. After the bottom trays have been installed, be sure to install the bottom screens before stocking the case with product. The bottom trays should have the ribs up.

**Plumbing Procedures**

See "General-UL/NSF I&S Manual" for recommended drain practices.

## Refrigeration Procedures

See "General-UL/NSF I&S Manual" for general system, control and superheat information.

There are three standard versions of the 8' and 12' case.

NFJB is for frozen food or medium temp usage and is equipped with one electric defrost heater on each side. The entire case, both sides, will operate at low or medium temperatures.

NCJB is for ice cream usage and is equipped with one electric defrost heater on each side. The entire case, both sides, runs from a single refrigeration system.

NTJB and NFMJB are dual temp split coil cases. The NTJB version is for ice cream on one side and frozen food on the other. The NFMJB version is for frozen food on both sides. Both versions are equipped with one electric defrost heaters on each side. These cases also have an insulated center partition to aid in maintaining the temperature difference in the two sides. This allows either side of the case to be run from separate refrigeration systems.

The NTJB and NFMJB case can also be setup to display frozen food on one side and medium temp on the other. Either side can be optionally set up with a dual temperature control to allow one side to be switched between low temp and medium temp operations. The evaporator coils are piped individually so there are two refrigeration stub-ups.

The NFJB case can also be setup for dual temperature operations, but the evaporator coils are piped together so there is only one refrigeration stub-up. This case requires extra refrigeration components to allow it to perform dual temperature operations.

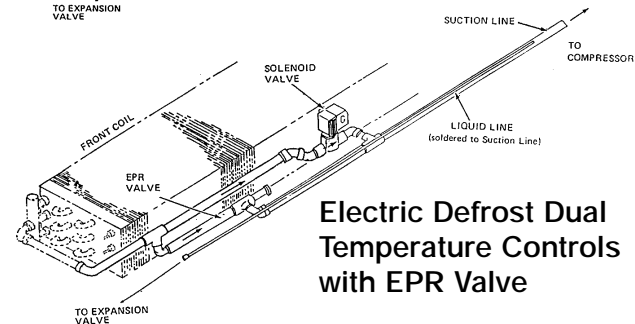
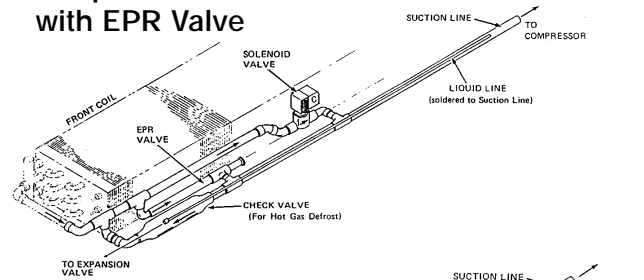
NFJB or NFMJB cases setup for electric defrost medium temp applications utilize the standard defrost heaters. Gas defrost medium temp. applications incorporate a fan delay klixon.

### Optional Dual Temperature Control

The dual temperature control unit is a factory installed option. This control allows the user

to easily switch from medium to low temperature operation by flipping a switch. The dual temperature control consists of an EPR valve in the suction line coming off the evaporator. The EPR valve can be bypassed with a solenoid controlled bypass line around it. The toggle switch opens or closes this solenoid.

### Gas Defrost Dual Temperature Controls with EPR Valve



### Electric Defrost Dual Temperature Controls with EPR Valve

When the solenoid is open, the evaporator is connected directly to the compressor suction that allows for low temperature operation. When the solenoid is closed, the evaporator must operate through the EPR valve which has been preset to the desired medium temperature.

**EXAMPLE: R-404A system with 14 psig of suction pressure.** With the suction line solenoid open, the coil pressure operates at 14 psig with a temperature of -25°F. When the toggle switch is flipped, the solenoid closes directing the flow through the EPR valve. If the EPR valve is set for 49.5 psig, the evaporator will see a coil temperature of 15°F and will operate at a discharge air temperature of about 22°F.

When gas defrost is used, an additional check valve is mounted around the EPR valve to allow reverse flow for the defrosting gas. A fan delay is also connected with gas defrost to cycle the fans off, but only during the medium temperature mode.

**Electrical Procedures**

**Electrical Considerations**

**CAUTION**

Make sure all electrical connections at components and terminal blocks are tight. This prevents burning of electrical terminals and/or premature component failure.

**NOTE**

The raceway houses the electrical wiring, components and terminal blocks for the case. All raceway covers will be shipped loose.

**Case Fan Circuit**

This circuit is to be supplied by an uninterrupted, protected 120V circuit. Cases being used for Low Temp applications with electric or gas defrost, keep fans on all the time. Cases being used for Medium Temp applications with electric defrost, also keep fans on all the time. Cases being used for Medium Temp applications with gas defrost, cycle fans with a 50/40 klixon.

**Anti-Sweat Circuit**

NFJB/NCJB/NTJB/NFMJB cases have one anti-sweat heater on each side of the top of the center riser (discharge air) and one in each rub rail (return air). When cases are equipped with an optional superstructure, there is an anti-sweat heater on the superstructure.

NFJEB/NCJEB end cases have one anti-sweat heater in the rear riser (discharge air) and one in the rub rail (return air). Anti-sweat heaters are wired directly to the main power supply so they can operate at all times.

**Superstructure Shelf Lamp Circuit**

Optional superstructures can be equipped with one row of 430MA T-12 or 265MA T-8 shelf lights.

**Defrost Information**

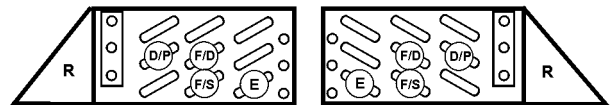
See "General-UL/NSF I&S Manual" for operational descriptions for each type of defrost control.

**Defrost Control Chart**

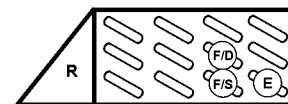
Defrost Type	Defrosts Per Day	Defrost Duration (Min)	Term. Temp.
Electric/FF	1	60	50°F
Electric/IC	1	36	50°F
Electric/MED	1	36	50°F
Gas/FF	2-3	20-25	55°F
Gas/IC	2-3	25-30	55°F
Gas/MED	2-3	16-20	55°F

Most klixons are located on the right end of the evaporator coil. The diagram shows the location for each defrost type that uses a klixon.

**NFJB-NCJB-NTJB-NFMJB**



**NFJEB-NCJEB**



**E = Electric Defrost Termination**  
**F/S = Electric Defrost Failsafe (Opt.)**  
**F/D = Gas Defrost (Fan Delay)**  
**D/P = Gas Defrost (Drain Pan Heater)**

**NOTE**

The defrost termination klixon for gas defrost is located at the bypass check valve.

**CAUTION**

If electronic sensors are used in place of the klixons, the sensors must be located in the same location as the klixons for that defrost type. Any other locations will effect the refrigeration efficiency of the case.

## Defrost Schedules

For satisfactory performance, both sides of the case should be scheduled to defrost at the same time. This holds true even when both sides run from different machines.

**Two Single Machines** use the defrost clock which controls one of the machines and run a relay to control the other machine. Defrost load is spread across clock contacts and extra contactors (as required).

**Parallel with Electric Defrost and Dual Temp or Dual Temp Split Coil Operation** use one station of the multi-circuit time clock to control the defrost circuit breakers for the cases defrost heaters. This ensures both sides defrost at the same time.

**Parallel with Gas Defrost (NTJB or NFMJB only)** Make sure that only 25% of the combined load (frozen food & ice cream) is on one circuit. Use one station of the multi-circuit time clock to control the booster circuit and that portion of the frozen food cases opposite the ice cream side.

Gas defrosting is only available as an option on cases operated from a parallel system. About 25% of the cases can be defrosted at one time. This allows the refrigeration heat being removed from the cases to be used to defrost the others.

## NOTE

**Insulated partitions must be used between case line-ups that have gas defrost!**

Gas defrost cases (NFJB/NCJB/NFJEB/NCJEB) are piped individually and are to be joined at installation when both sides are on the same system. Dual Temp Split Coil cases (NTJB/NFMJB) with gas defrost should be piped to their respective systems and defrosts should be scheduled at the same time. Each coil requires a separate defrost termination klixon at the check valve.

## WIRING DIAGRAMS

### ELECTRICIAN NOTE - OVERCURRENT PROTECTION

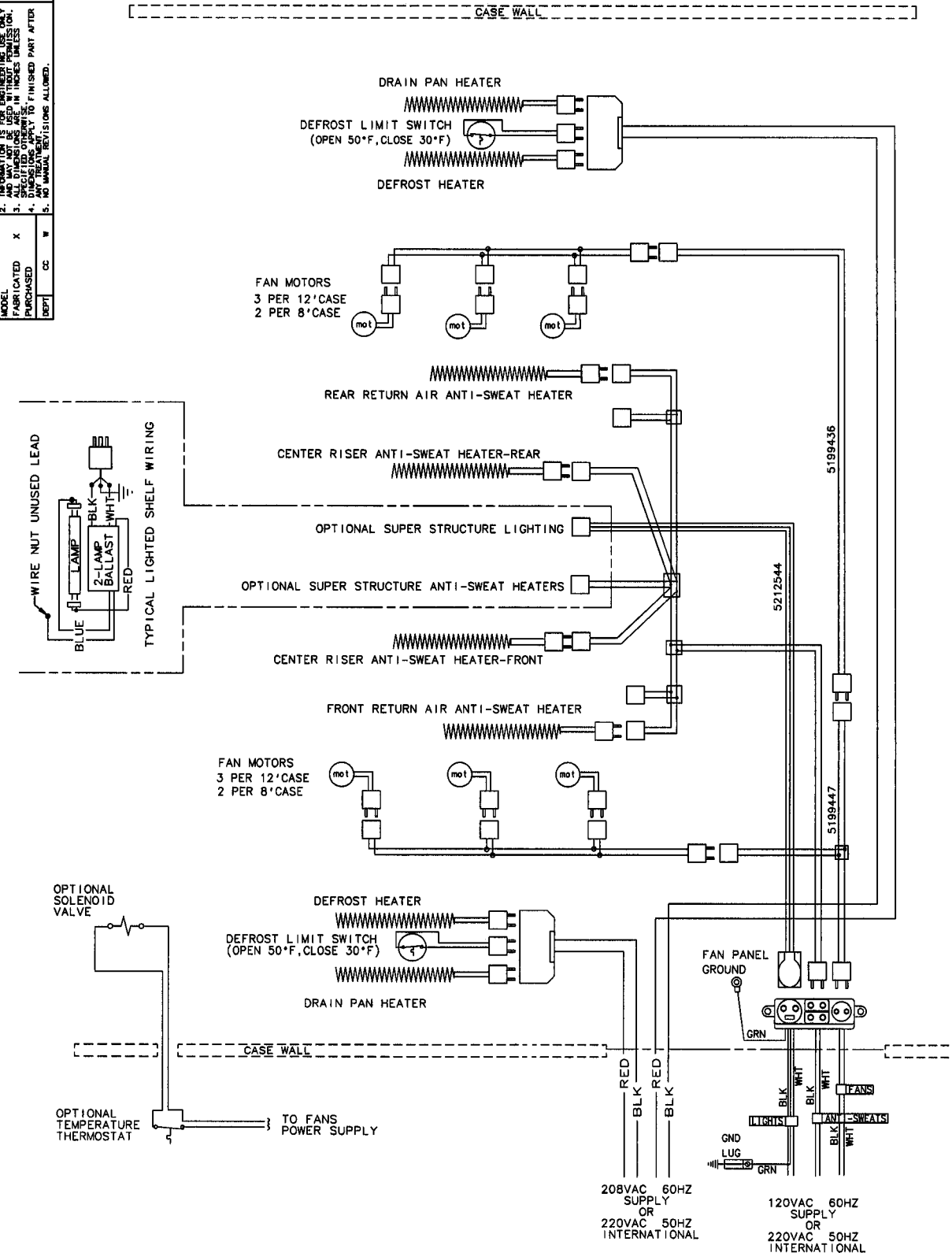
120V circuits should be protected by 15 or 20 Amp devices per the requirements noted on the cabinet nameplate or the National Electrical Code, Canadian Electrical Code - Part 1, Section 28. 208V defrost circuits employ No. 12 AWG field wire leads for field connections. On remote cases intended for end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

The following wiring diagrams on pages 13 thru 19 will cover the NFJB/NCJB/NTJB/NFMJB/NFJEB/NCJEB case circuits, electric defrost circuit, gas defrost circuit, dual temperature control circuits and the superstructure wiring circuit.

# NFJB/NCJB Domestic & Export (50Hz) Case Circuits



- PART TYPE N T S 1. THE INFORMATION ON THIS DRAWING IS TO BE USED ONLY FOR THE INFORMATION OF THE ENGINEER. THE USER SHALL BE RESPONSIBLE FOR THE PROPER USE OF THIS INFORMATION. 2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. 3. DIMENSIONS APPLY TO FINISHED PART AFTER DEPT. 4. NO UNUSUAL REVISIONS ALLOWED.



NOTE: ALL CASES MUST BE GROUNDED

REV	DATE	BY	CHK	DESCRIPTION
A	9039557			
REF	DATE	BY	CHK	DESCRIPTION
1	17DEC03	LC		DIAGRAM WRG ELEC DFR NFJ/NCJ (A) (B) 8&12FT
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4		4MAR04		
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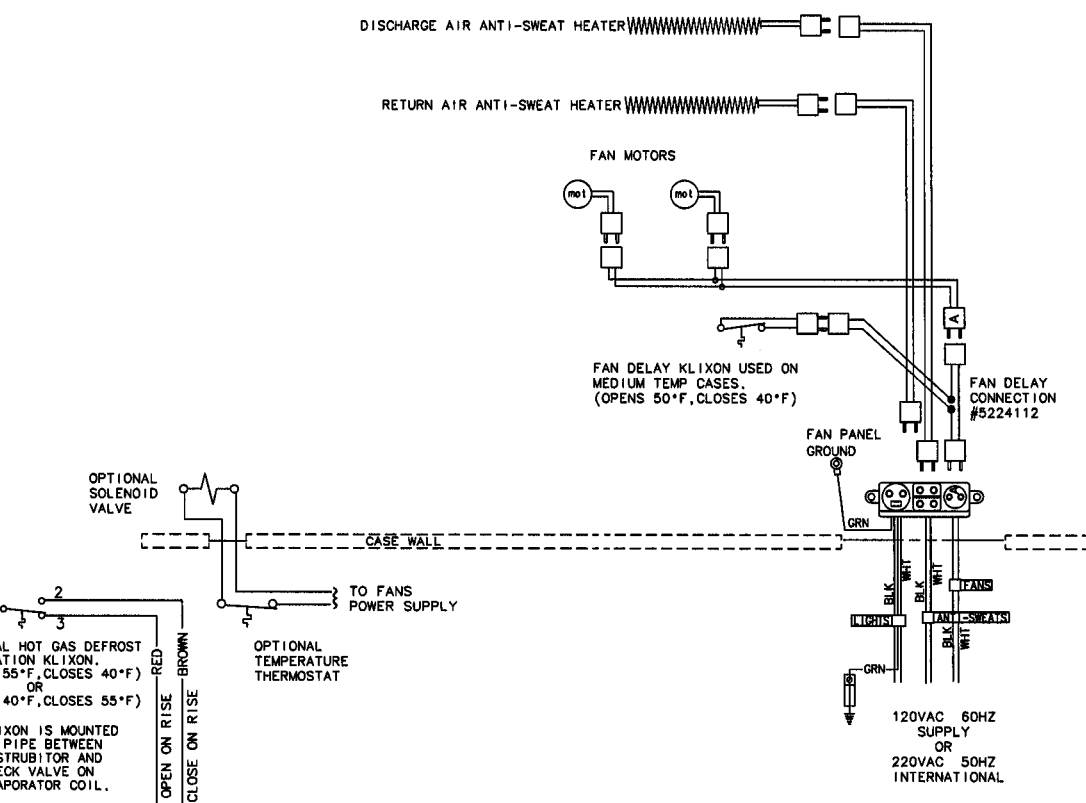




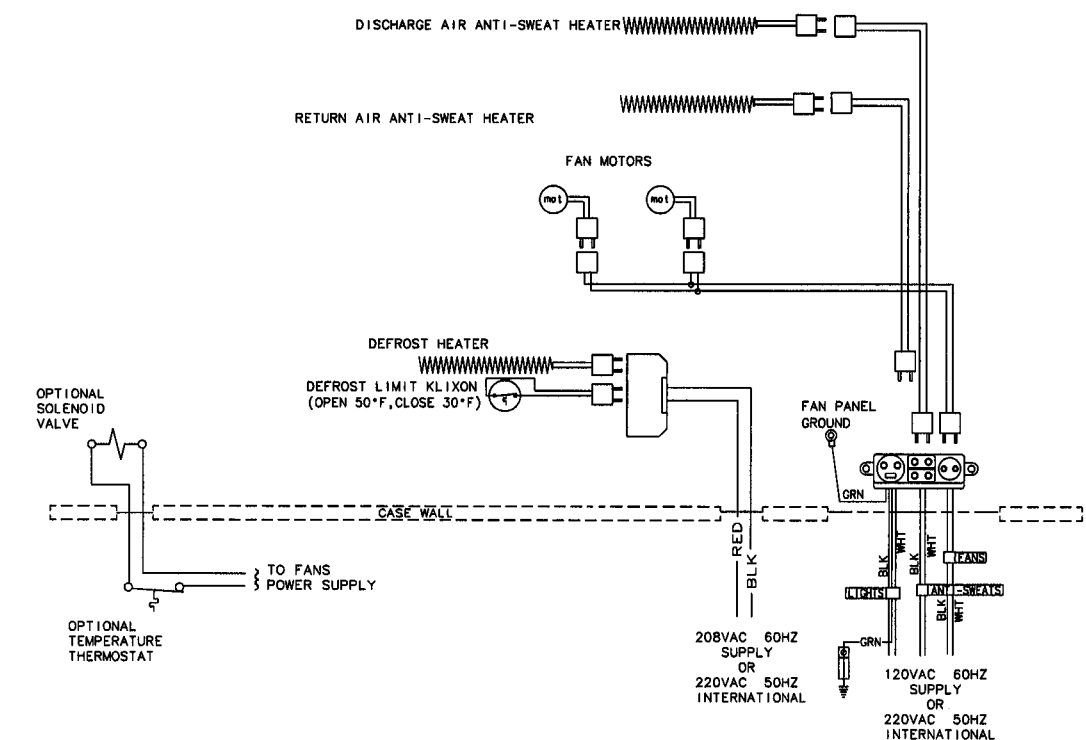
# NFJEB/NCJEB Domestic & Export (50Hz) Case Circuits



PART TYPE N T S  
 MODEL  
 PURCHASED X  
 DEPT  
 CC W  
 1. THE INFORMATION ON THIS DRAWING IS FOR INFORMATION ONLY. IT IS NOT TO BE USED FOR FABRICATION UNLESS SPECIFICALLY NOTED OTHERWISE.  
 2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.  
 3. DIMENSIONS APPLY TO FINISHED PART AFTER ALL NECESSARY TOLERANCES ALLOWED.  
 4. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.  
 5. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.



## HOT GAS DEFOST



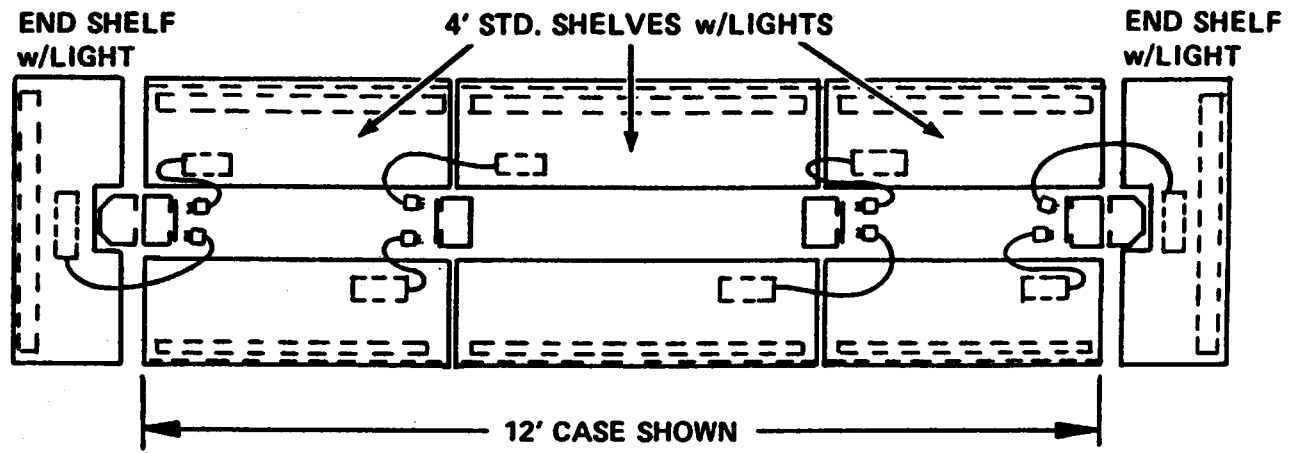
## ELECTRIC DEFOST

NOTE: ALL CASES MUST BE GROUNDED

REV	DATE	BY	CHK	DESCRIPTION
B	05MAR04	LC	SA	REVISE DIA TO NEW CASE MODEL
A	04FEB05	LC	JL	ADDED MODEL
NAME	29DEC03	LC	SA	DIAGRAM WRC ELE OR HG DFR NFJ/NCJE (A) (B)
DATE	32045	SA	AS	
REV	9039565			



Optional Superstructure Wiring Circuit



## CLEANING AND SANITATION

### Component Removal and Installation Instructions for Cleaning

#### Bottom Screens and Trays

1. Remove product from bottom screens.
2. Push screens up until bottom screen tabs clear the holes in the front duct.
3. Remove bottom screens from holes in center riser panel and from case.
4. Grasp and lift out each bottom tray from the case interior.
5. After cleaning, replace in reverse order. Bottom tray should have ribs up.

#### **CAUTION**

**Do not place product directly on bottom trays. Doing so could break a bottom tray and/or cause damage to the case.**

#### NSF Product Thermometer

Remove two screws and product thermometers from top, right end of front and rear return air ducts. After cleaning, replace product thermometer on front and rear ducts and secure with screws.

#### Discharge Air Honeycomb

1. Remove screws and bottom retainer strips from both sides of the top of the center riser.

#### **NOTE**

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

2. Remove honeycomb grid sections from both sides of the center riser.

#### **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 bottom retainer strips and screws.

#### Discharge Air Duct Panels

1. Remove bottom trays and discharge air honeycomb, see above.
2. Remove mounting screws and discharge air duct panels from both sides of the center riser (NFJB/NCJB/NTJB/NFMJB).  
-- or --  
Remove mounting screws and discharge air duct panels (NFJEB/NCJEB).
3. After cleaning, replace in reverse order.

#### Return Air Duct Panels

1. Remove bottom trays, see this page.
2. Remove mounting screws and front and rear return air duct panels (NFJB/NCJB/NTJB/NFMJB).  
-- or --  
Remove mounting screws and front return air duct panels (NFJEB/NCJEB).
3. After cleaning, replace in reverse order.

#### Corner Trim

1. See page 21 for corner trim removal instructions.
2. After cleaning trim and cladding components, replace front cladding and corner trim components in reverse order using instructions below and on page 21.

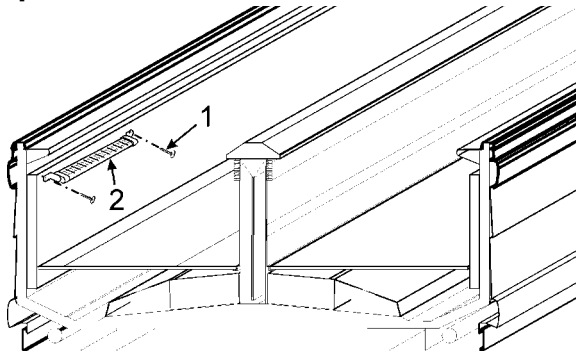
#### Front Cladding

1. Remove front kickplate and raceway cover.
2. Remove screws from bottom and top of front cladding and pull cladding down to remove it from behind the bottom edge of the bumper retainer.
3. After cleaning, replace front cladding and remaining front components in reverse order.

## SERVICE INSTRUCTIONS

See "General-UL/NSF I&S Manual" for fan blade and motor replacement, color band and bumper replacement and raceway cover removal instructions.

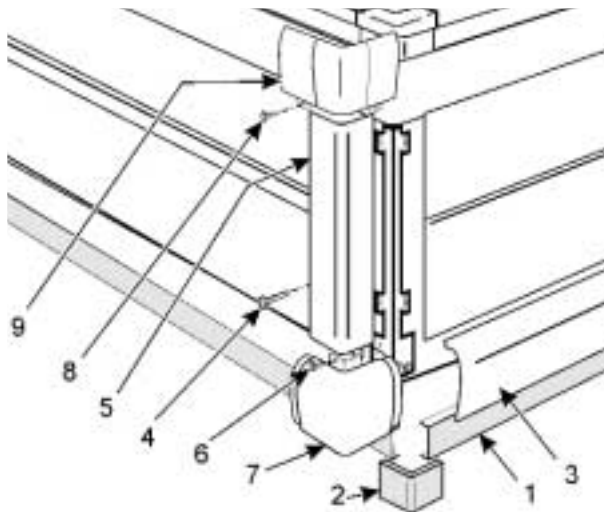
### NSF Product Thermometer Replacement



1. Remove two screws (1) and thermometer (2) from top right end of front or rear return air ducts.
2. Install and secure a new product thermometer (2) on front or rear return air ducts with two screws (1).

### Corner Trim Replacement

Since some of the corner trim fasteners are hidden, remove the trim and hardware in the following sequence.



1. Remove mounting screws and kickplates (1) and kickplate corner trim (2) from both sides of the corner trim.
2. Remove raceway covers (3) from both sides of the corner trim.

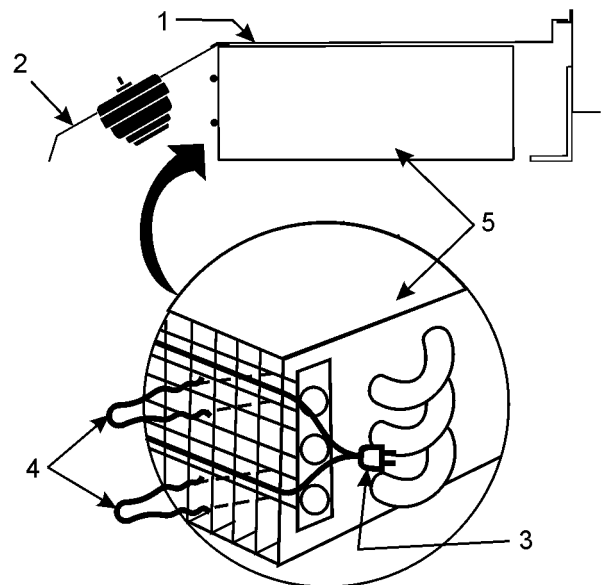
3. Remove four screws (4) and corner cladding trim (5)
4. Remove two top screws (6) from the raceway corner trim (7), then lift and remove the raceway corner trim (7) from the retainers in the bottom slots.
5. Remove two bottom screws (8) and lift off the bumper corner trim (9).
6. Replace bumper corner trim, raceway corner trim, corner cladding trim, raceway covers, kickplates, kickplate corner trim and mounting hardware in reverse order.

### Defrost Heater Replacement

#### WARNING

Always shut off electricity to case before replacing a defrost heater. Automatic cycling of fans or electrical power to wire ends could cause personal injury and/or death.

1. Remove bottom trays from case.



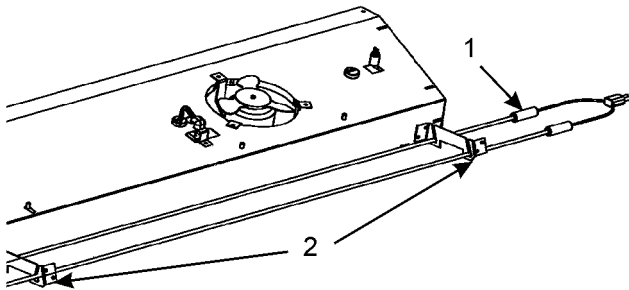
2. Unscrew and remove top coil cover (1).
3. Unscrew and lift up fan plenum (2).
4. Disconnect defective defrost heater (3) and remove mounting clips (4) and defrost heater (3) from front of coil assembly (5).
5. Install new defrost heater (3) in reverse order.
6. Restore electrical power to case.

### Drain Pan Heater Replacement

#### WARNING

Always shut off electricity to case before replacing a drain pan heater. Automatic cycling of fans or electrical power to wire ends could cause personal injury and/or death.

1. Remove bottom trays from case.



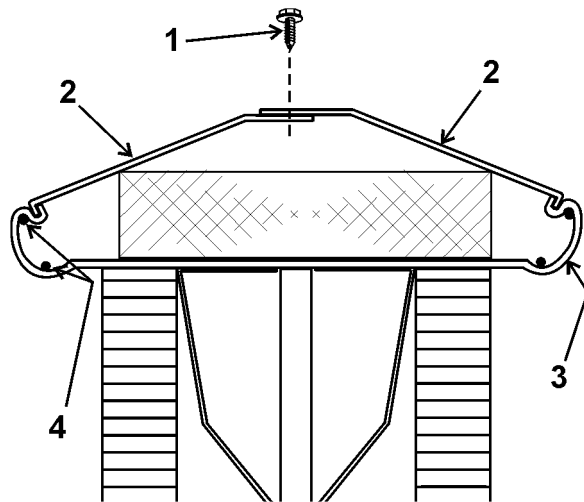
2. Unplug defective drain pan heater (1) and remove from slots in bracket supports (2).
3. Install new drain pan heater (1) in reverse order.
4. Restore electrical power to case.

### Anti-Sweat Replacement

#### WARNING

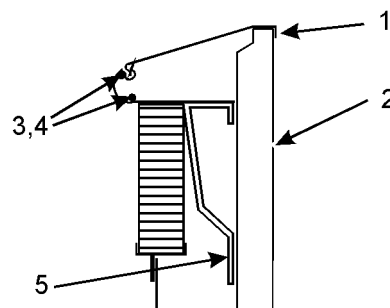
Shut off or disconnect power supply to case before changing an anti-sweat. Electrical power from wire ends could damage other components and/or cause personal injury or death.

### Center Riser Discharge Air Anti-Sweat (NFJB/NCJB/NTJB/NFMJB)



1. Remove screws (1) and top riser caps (2) and insulation from top of center riser (3).
2. Disconnect or cut the defective anti-sweat wire (4) from the case wires.
3. Remove and replace the aluminum tape and defective anti-sweat wire (4) from the bottom of the top riser cap (2).
4. Reconnect the new anti-sweat wires to case wires and reinstall the insulation, top riser caps and screws.

### Discharge Air Anti-Sweat (NFJEB/NCJEB)

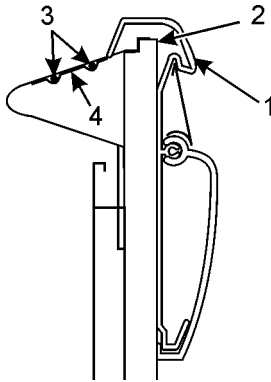


1. Remove screws and rear guard trim (1) from top of rear case wall (2).
2. Disconnect or cut the defective anti-sweat wire (3) from the case wires.
3. Remove and replace the aluminum tape (4) and defective anti-sweat wire (3) from top of rail and wire trim assembly (5).
4. Reconnect anti-sweat wires to case wires and reinstall rear guard trim with screws.

**Return Air Duct Anti-Sweat  
(NFJB/NCJB/NTJB/NFMJB)**

**NOTE**

Cladding joint trim, raceway cover, cladding, bumper and front and bumper retainer must be removed from front and/or rear of case.

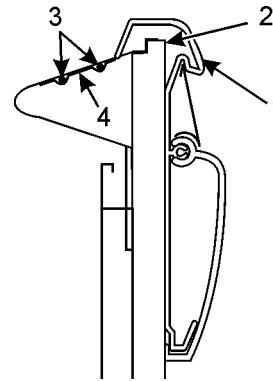


1. Remove screws and trim assembly (1) from top of front and/or rear case wall (2).
2. Cut the defective anti-sweat wire (3) from the case wires.
3. Remove and replace the aluminum tape (4) and defective anti-sweat wire (3) from inside of front and/or rear trim assembly (1).
4. Reconnect anti-sweat wire (3) to case wires and reinstall front and/or rear trim assembly (1) with screws.
5. Install bumper retainer, bumper, cladding raceway cover and cladding joint trim to front and/or rear of case.

**Return Air Duct Anti-Sweat  
(NFJEB/NCJEB)**

**NOTE**

Cladding corner trim, bumper corner trim, front bumper and front bumper retainer must be removed from the end case.



1. Remove screws and front trim assembly (1) from top of front case wall (2).
2. Cut the defective anti-sweat wire (3) from the case wires.
3. Remove and replace the aluminum tape (4) and defective anti-sweat wire (3) from inside of front trim assembly (1).
4. Reconnect anti-sweat wire (3) to case wires and reinstall front trim assembly (1) with screws.
5. Install front bumper retainer, front bumper and all other removed corner trim.

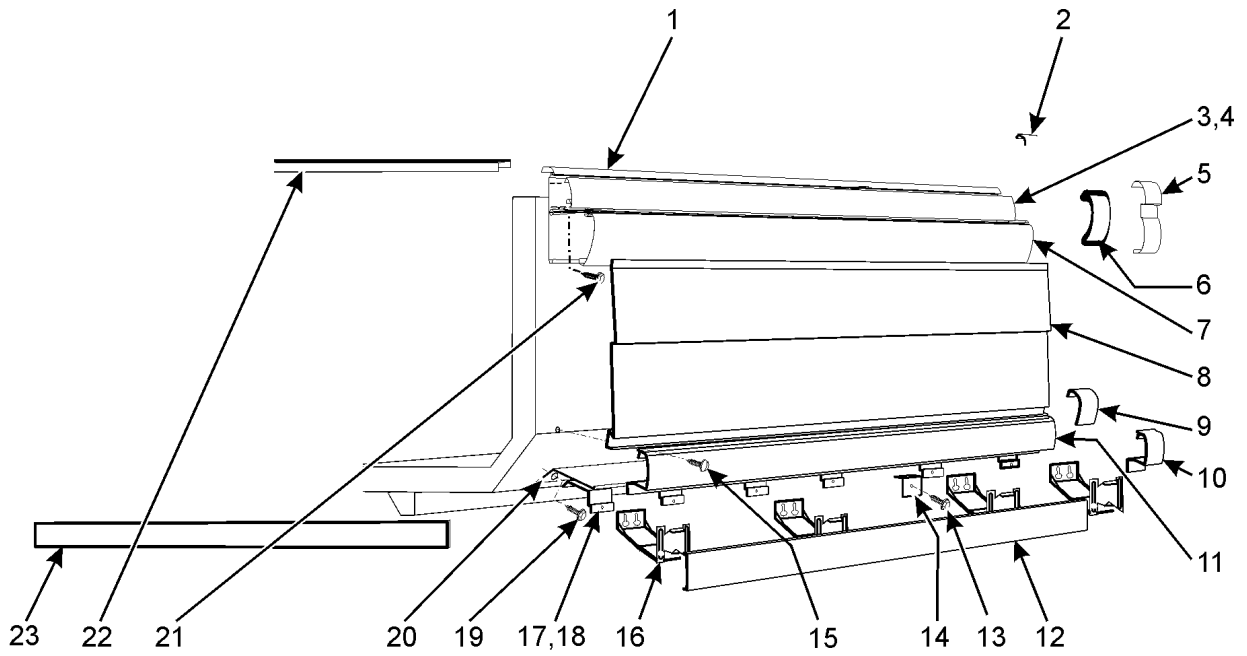
## PARTS INFORMATION

### Cladding and Trim Parts Lists

Item Description	NFJB/NCJB/NTJB/NFMJB	
	8'	12'
1 Bumper Retainer	color per order	
2 Bumper Retainer/Hand Rail Backer	9025316 (2)	9025316 (2)
3 Color Band, Painted	9023798 (2)	9023800 (2)
4 Color Band Backer, Ptd.	9040223 (2)	9040223 (2)
5 Bumper End Trim	color per order	
6 Bumper Backer	color per order	
7 Bumper	color per order	
8 Front Cladding, Ptd.	9041965 (2)	9041966 (2)
9 Raceway Cover Backer	color per order	
10 Raceway Cover End Trim	color per order	
11 Raceway Cover	color per order	
12 Kickplate, Ptd. (per side)	9313317	9313310
13 Screw (per retainer)	5183536 (2)	5183536 (2)
14 Raceway Cover Retainer (per case)	9023841 (4)	9023841 (6)
15 Screw (per side)	5183536 (8)	5183536 (12)
16 Kickplate Support Assy. (per side)	9323069 (4)	9323069 (4)
Shoulder Screw	9025833 (8)	9025833 (8)
17 Screw (per support)	5183536	5183536
18 Raceway Support (per side)	9041322 (4)	9041322 (6)
19 Screw	5183536 (12)	5183536 (18)
20 Raceway	9300243	9300244
21 Shoulder Screw (per side)	9025833 (8)	9025833 (10)
22 Horizontal End Trim	5196166	5196166
23 Base End Closeoff - LH (for flat end)	9027925	9027925
Base End Closeoff - RH (for flat end)	9027926	9027926

For additional information on parts not listed above contact the TYLER Service Parts Dept.





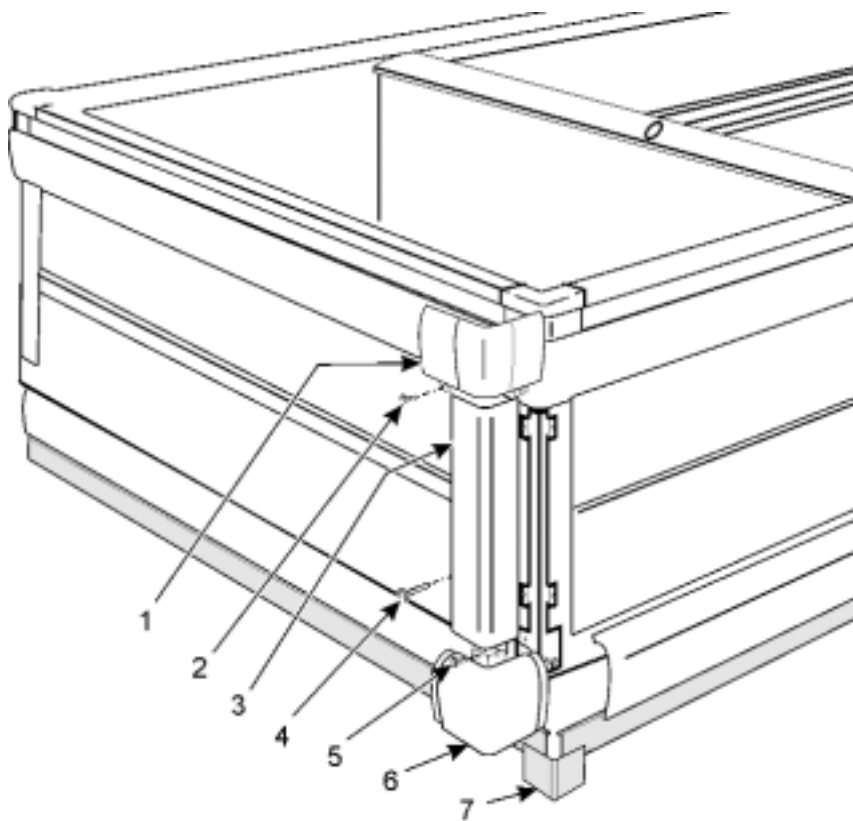
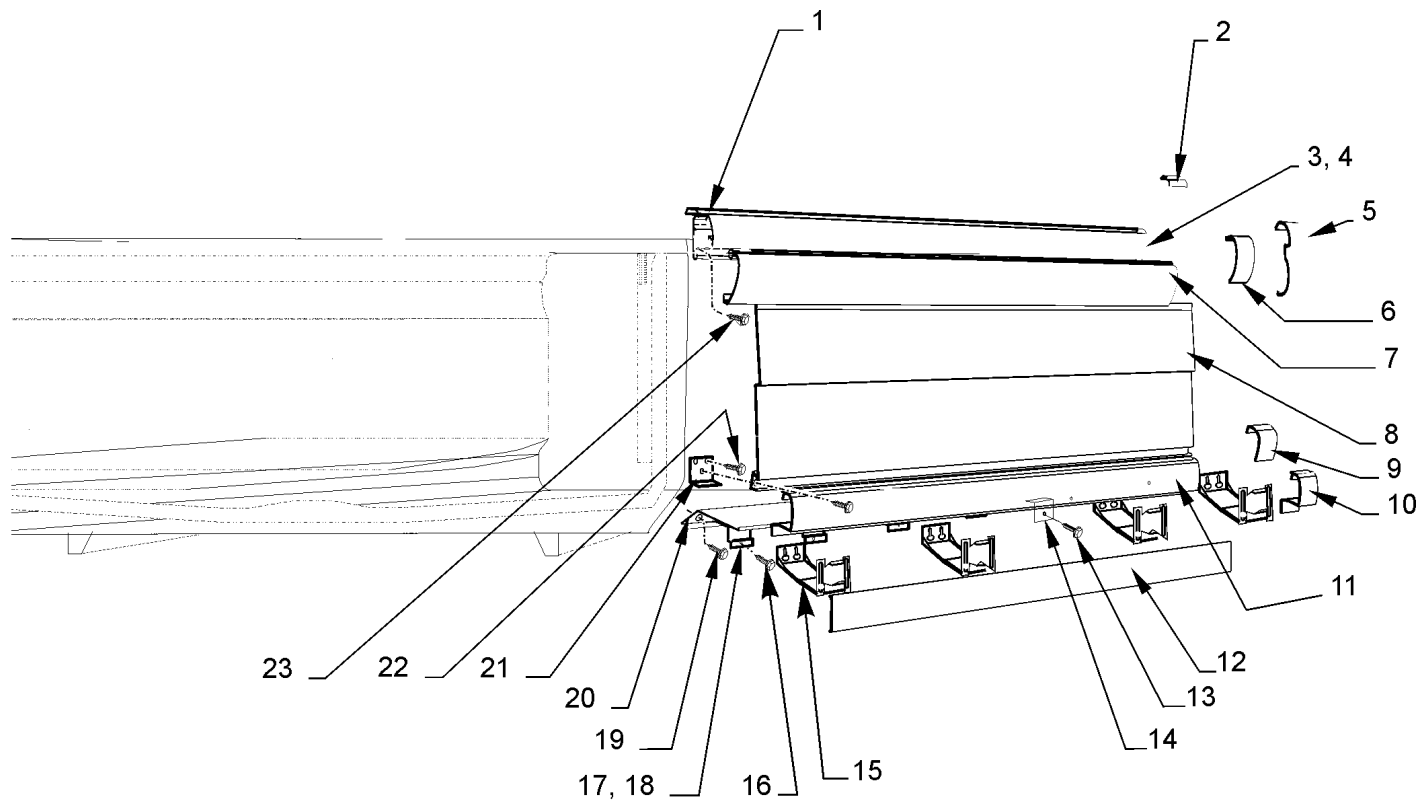
Item Description	NFJEB/NCJEB	
	Front	Side
1 Bumper Retainer	color per order	
2 Bumper Retainer/Hand Rail Backer	9025316	9025316
3 Color Band, Painted	9023795	9023789
4 Color Band Backer, Ptd.	9040223	9040223
5 Bumper End Trim	color per order	
6 Bumper Backer	color per order	
7 Bumper	color per order	
8 Front Cladding, Ptd.	9025642	9025640
9 Raceway Cover Backer	color per order	
10 Raceway Cover End Trim	color per order	
11 Raceway Cover	color per order	
12 Kickplate, Ptd.	9329436	9329437 (2)
Screw (per kickplate)	9324612 (4)	9324612 (2)
13 Screw (per retainer)	5183536 (2)	5183536 (2)
14 Raceway Cover Retainer (per side)	9023841 (3)	9023841 (2)
15 Kickplate Support Assy. (per side)	9043402 (2)	9323069 (2)
Shoulder Screw	9025833 (8)	9025833 (4)
16 Screw (per side)	5183536 (6)	5183536 (4)
17 Raceway Support	9041465 (4)	9041465 (2)
18 Screw (per support)	5183536 (2)	5183536 (2)
19 Screw	5120943 (10)	5120943 (8)
20 Raceway	5205386	5203747 (2)
21 Cladding Retainer (per side)	9300197 (3)	9300197 (2)
22 Screw (per retainer)	5183536	5183536
23 Shoulder Screw (per side)	9025833 (6)	9025833 (3)

**Corner Trim Parts List**

Item Description	Per Corner
1 Upper Corner Trim (bumper)	color per order
2 Screw	9025833 (2)
3 Corner Cladding Trim	9041336
4 Screw	5048626 (4)
5 Screw	9025833 (2)
6 Raceway Corner Trim	color per order
7 Kickplate Corner Trim, Ptd.	9324546 (2)

For additional information on parts not listed above contact the TYLER Service Parts Dept.

*Installation & Service Manual*      NFJB, NCJB, NTJB,  
NFMJB, NFJEB, NCJEB



**Operational Parts List**

Case Usage	Domestic			Export		
	115 Volt 60 Hertz			220 Volt 50 Hertz		
Electrical Circuit	8'	12'	End Case	8'	12'	End Case
Fan Motor	5644521 5 Watt	5644521 5 Watt	5644521 5 Watt	5126572 5 Watt	5126572 5 Watt	5126572 5 Watt
Fan Motor Brackets	5213132	5213132	5213132	5213532	5213532	5213532
Fan Bracket Plate	9041077	9041077	9041077	9041077	9041077	9041077
Fan Blades (6" 19° 5B)	9313752	9313752	----	----	----	----
(6" 21° 3B)	----	----	5105621	----	----	----
(6" 27° 3B)	----	----	----	5104294	5104294	5104294
Opt. ECM Fan Motors	9025002 8 Watt	9025002 8 Watt	9025002 8 Watt	----	----	----
Opt ECM Fan Motor Brackets	5205279	5205279	5205279	----	----	----
Opt. ECM Fan Blades (6" 15° 5B)	9408191	9408191	9408191	----	----	----
Anti-Sweat Heater Wire						
(Discharge Air) (NFJB/NCJB/NTJB/NFMJB)	9313417	9313416	----	5081149	5081150	----
(Discharge Air) (NFJEB/NCJEB)	----	----	5080970	----	----	5081201
(Return Air)(Lo-Watt) (NFJB/NCJB/NTJB/NFMJB)	5124216	5124217	----	5081147	5081148	----
(Return Air)(NFJEB/NCJEB)	----	----	5028893	----	----	5081271
Electric Def. Heater						
(NFJB/NFMJB)	9313431	9313430	----	9313431	9313430	----
(NCJB/NTJB)	9313263	9313262	----	9313263	9313262	----
(NFJEB/NCJEB)	----	----	9313164	----	----	9313164
Electric Def. Term. Klixon	9036670	9036670	9036670	9036670	9036670	9036670
Opt. Gas Def. Fan Delay Klixon (Med or Dual Temp only)	9303208	9303208	9303208	9303208	9303208	9303208
Opt. Gas Def. Term. Klixon	9023508	9023508	----	9023508	9023508	----
Opt. Gas Def. Drain Pan Heater 50/30 Klixon	5246348	5246348	----	5246348	5246348	----
Drain Pan Heater						
(120V Hot Gas) (All Models)	9313385	9313384	----	----	----	----
(208V Elec.) (NFJB/NFMJB)	9313436	9313437	----	----	----	----
(208V Elec.) (NCJB/NTJB)	9313349	9313348	----	----	----	----
Opt. Superstructure Lighting						
430MA Ballast (20W/1 lamp)	----	----	5102019	----	----	5102019
430MA Ballast (40W/1 lamp)	5627909	5627909	----	5627909	5627909	----
T-12 Lampholder	5217544	5217544	5217544	5217544	5217544	5217544
NSF Product Thermometer	5967100	5967100	5967100	5967100	5967100	5967100

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