

TYLER

1 series Advantage

Installation & Service Manual



N5D, N5DH, N5DL, N5DSC

NARROW MULTI-DECK DAIRY/DELI 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 - 1999.

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The following Narrow Medium Temperature Dairy and Deli Merchandiser models are covered in this manual:

MODELS	DESCRIPTION
N5D	4', 6' & 8' REMOTE MULTI-DECK DAIRY/DELI MERCHANDISER
N5DH	4', 6' & 8' REMOTE DEEP WELL MULTI-DECK DAIRY/DELI MERCHANDISER
N5DL	4', 6' & 8' REMOTE LOW FRONT MULTI-DECK DAIRY/DELI MERCHANDISER
N5DSC	4' & 6' SELF-CONTAINED MULTI-DECK DAIRY/DELI MERCHANDISER

SPECIFICATIONS

N5D/N5DH/N5DL/N5DSC Multi-Deck Dairy/Deli Merchandiser

MODEL	N5D	N5DH	N5DL
USAGE	DAIRY/DELI	DAIRY/DELI	DAIRY/DELI
CAPACITY (BTUH/FT)*	1435	1462	1507
EVAPORATOR***	+15F	+15F	+15F
ENTER AIR°	+35F	+35F	+35F

NOTES:

* Capacity data listed with one row of 800MA Canopy Lighting and 4 rows of optional T-8 Lighted Shelves. If Lighted Shelves are not used, **DEDUCT** 20 BTUH/FT per row of Unlighted Shelves.

** Evaporator temperature is defined as the saturated suction temperature leaving the case.

NOTE: COMPRESSOR SIZING SHOULD ALLOW FOR SUCTION LINE PRESSURE DROP.

THE ABOVE RATINGS ARE FOR COMPRESSOR SELECTION ONLY. FOR ENERGY CALCULATION DATA REFER TO THE ENERGY SECTION. FOR COMPRESSOR SIZING INFORMATION REFER TO THE "GOLD" SECTION & FOR LINE SIZING INFORMATION REFER TO THE "BUFF" SECTION OF THE TYLER SPECIFICATION GUIDE.

CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING											
FT	4	6	8	10	12	14	16	18	20	22	24
R22	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"

DEFROST CONTROL			BACKUP PRESSURE SETTINGS*		EPR SETTINGS**	
PER DAY	MODE	TIME	CUT IN	CUT OUT	R22	R404A
4	TIME OFF	24 MIN.	34# @ R22	24# @ R22	37#	---
			45# @ R404A	35# @ R404A	---	48#

* Used with Thermostat or EPR Control. ** Set EPR to give this pressure at the case.

MAXIMUM LIGHT AMPS include allowances for one row of canopy lights and four rows of lighted shelves.

Top shelf and tilted shelving **MUST HAVE** gaskets.

Thermostat Settings: CUT IN @ 36-38°F, CUT OUT @ 28°F (Standard on Self-Contained or Optional on Remote Models).

SELF-CONTAINED ELECTRICAL SPECIFICATIONS:

NOTE: Two Electrical Circuits are required for Self-Contained cases; a 220V Circuit is required for the Condensing Unit and a 120V Circuit is required for the Lights and Fans.

	N5DSC4	N5DSC6
220V Min. Circuit Ampacity	15.5 A	22 A
220V Max. Overcurrent Protection	20 A	30 A

NOTE: 4' = 1 1/4 HP 6' = 1 3/4 HP
N5DL not available as Self-Contained unit.

The refrigeration charge for the 4' and 6' N5DSC cases are 8 lbs. and 10 lbs. respectively (R22).

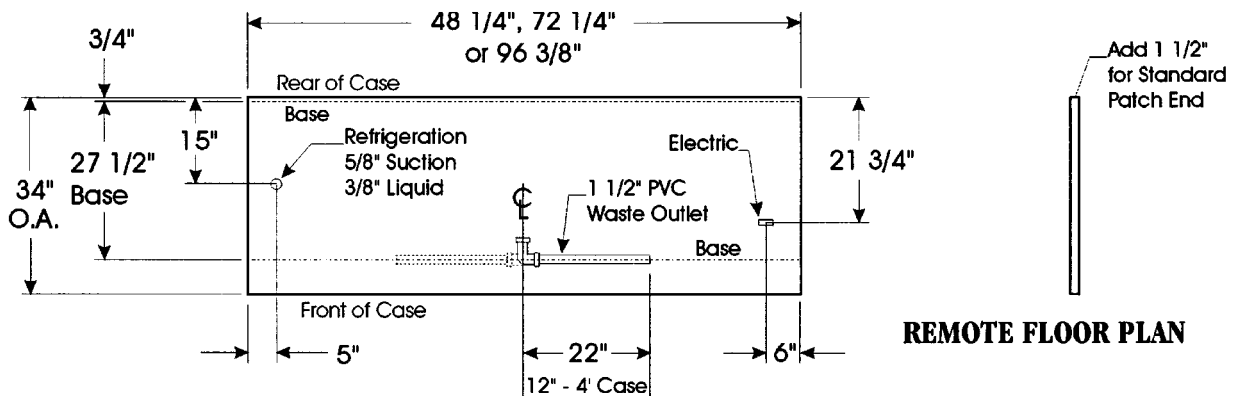
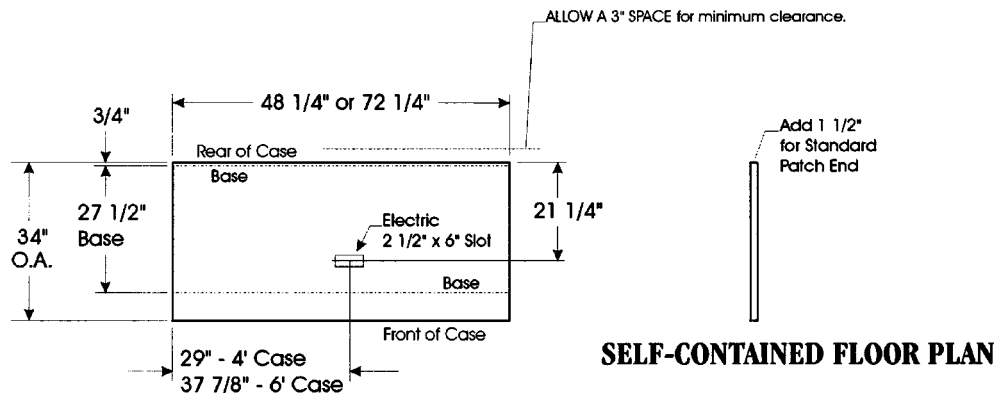
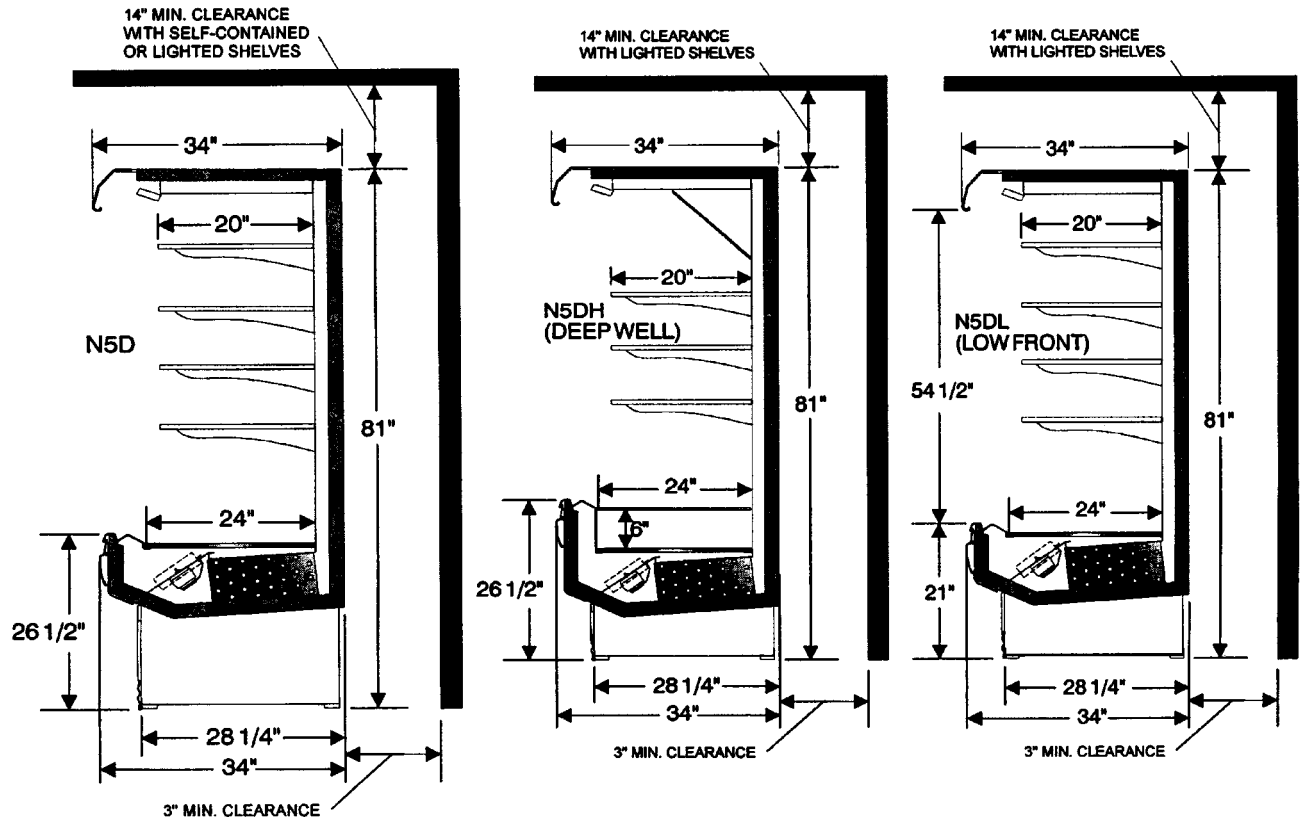
120 VOLT ELECTRICAL DATA (AMPS)		
LENGTH	STD. FANS	ECM FANS
4'	1.0	.4
6'	1.0	.4
8'	1.5	.6

STANDARD 120 VOLT LIGHTING (AMPS) HIGH OUTPUT 800MA (CANOPY)			
ROW	4'	6'	8'
1	1.0	1.3	1.3
OPTIONAL 120 VOLT LIGHTING (AMPS) T-8 / ELECTRONIC BALLASTS (SHELVES)			
ROWS	4'	6'	8'
1	.5	1.0	1.0
2	.6	1.5	1.9
3	.75	1.5	1.9
4	1.1	1.8	2.4

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

The information contained herein is based on technical data and tests which we believe to be reliable and is intended for use by persons having technical skill, at their own discretion and risk. Since conditions of use are outside Tyler's control, we can assume no liability for results obtained or damages incurred through the applications of the data presented. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

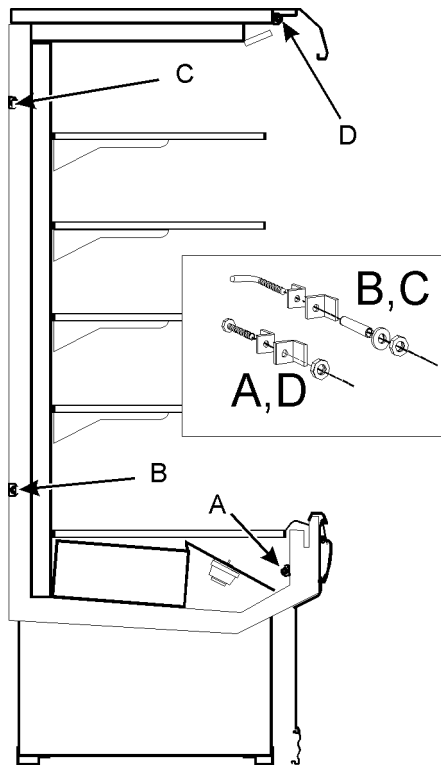
N5D/N5DH/N5DL/N5DSC Multi-Deck Dairy/Deli Merchandiser



INSTALLATION PROCEDURES

Carpentry Procedures

Case Pull-Up Locations



The N5D, N5DH, N5DL and N5DSC models have four pull-ups at each end of the case. Pull-ups A, B, C and D are located as shown and should be installed and tightened starting with A and finishing with D.

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

Electrical Procedures

Electrical Considerations

CAUTION

Make sure all electrical connections at components and terminal blocks are tight.

NOTE

Since the lower front cladding is shipped loose, the wiring has immediate access.

Case Fan Circuit

This circuit is to be supplied by an uninterrupted, protected 120V circuit. The case fan circuit is not cycled during defrost on any of these models.

Fluorescent Lamp Circuit

N5D/N5DH/N5DL/N5DSC case lighting is supplied by 800MA HO horizontal lights. It is controlled by a light switch in each case. The standard lighting is 1-row of high output 800MA canopy lights.

N5D/N5DH/N5DL/N5DSC also offers up to 4 rows of T-8 shelf lights with remote electronic ballasts.

Self-Contained Circuit

N5DSC cases are self-contained units. Information pertaining to self-contained units should be obtained directly from TYLER Refrigeration.

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	24	-----

WIRING DIAGRAMS

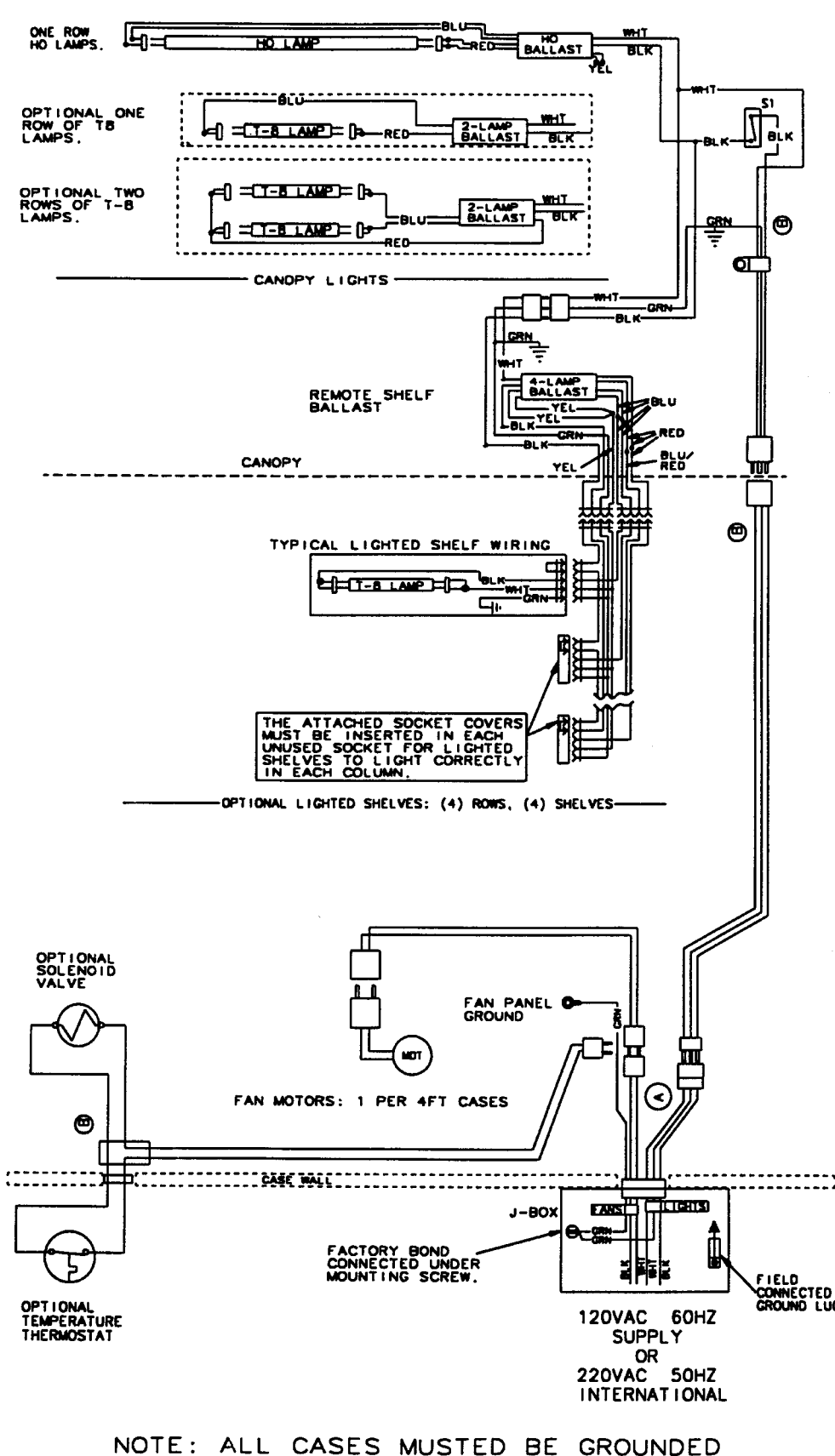
ELECTRICIAN NOTE - OVERCURRENT PROTECTION

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 7 thru 12 will cover the N5D, N5DH, N5DL and N5DSC case circuits and the lighting circuits.

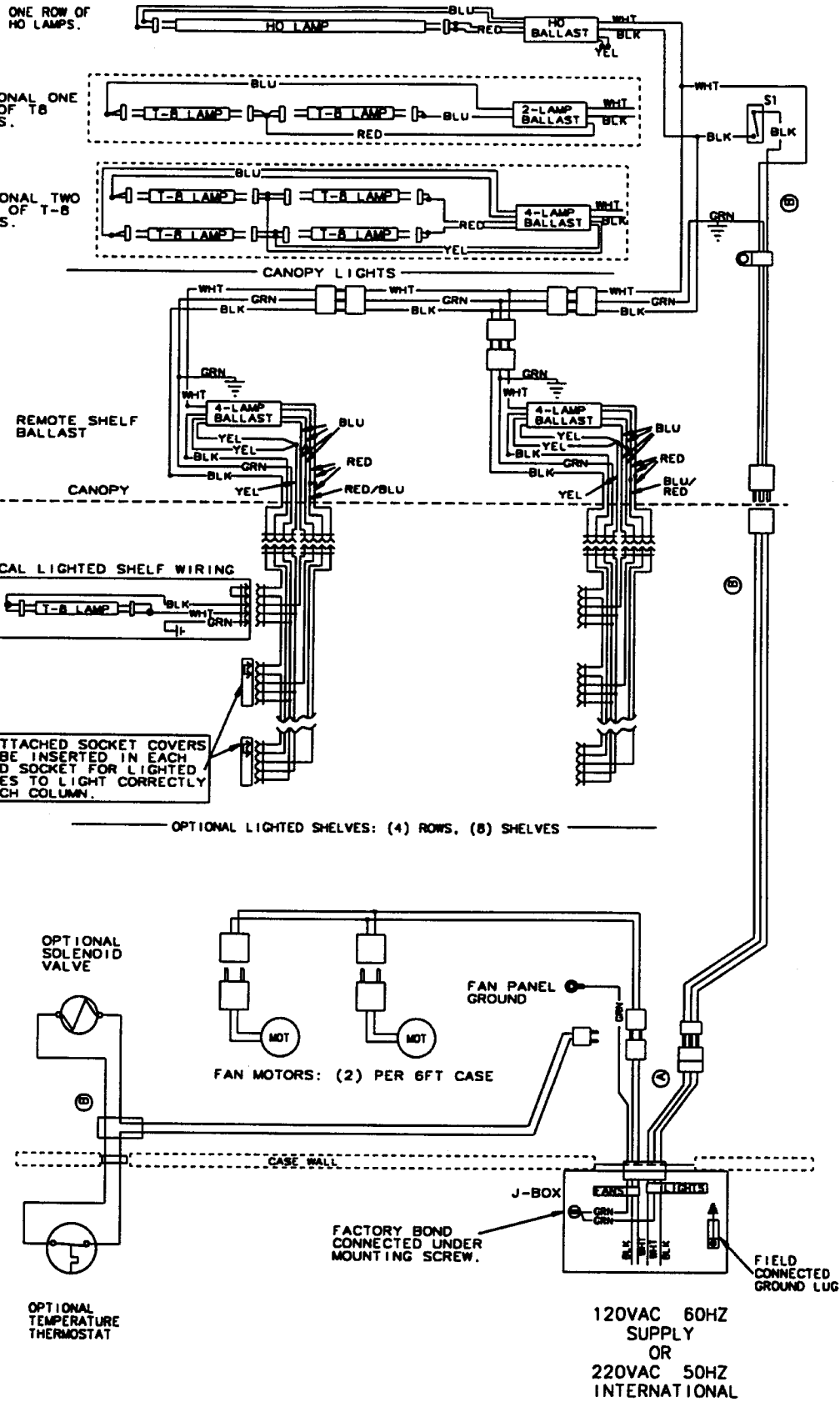
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REV	DESCRIPTION	DATE	BY	CHK	APP
3	REVISED PWR HARNESS	87-018	27MAR87	LC	CK
2	REVISED PER ECH	23164	23MAR88	LC	CK
1	REVISED TO NSF MODEL	28887	20NOV88	LC	CK
0	DIAGRAM WRG N5D(H,L) 4FT.	230CT96			

1. ALL REVISIONS FOR CORP. CLAIMS RIGHTS TO THE TYLER COMPANY. THE COMPANY SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PATENT RIGHTS. THE COMPANY SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PATENT RIGHTS. THE COMPANY SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PATENT RIGHTS.



NOTE: ALL CASES MUST BE GROUNDED

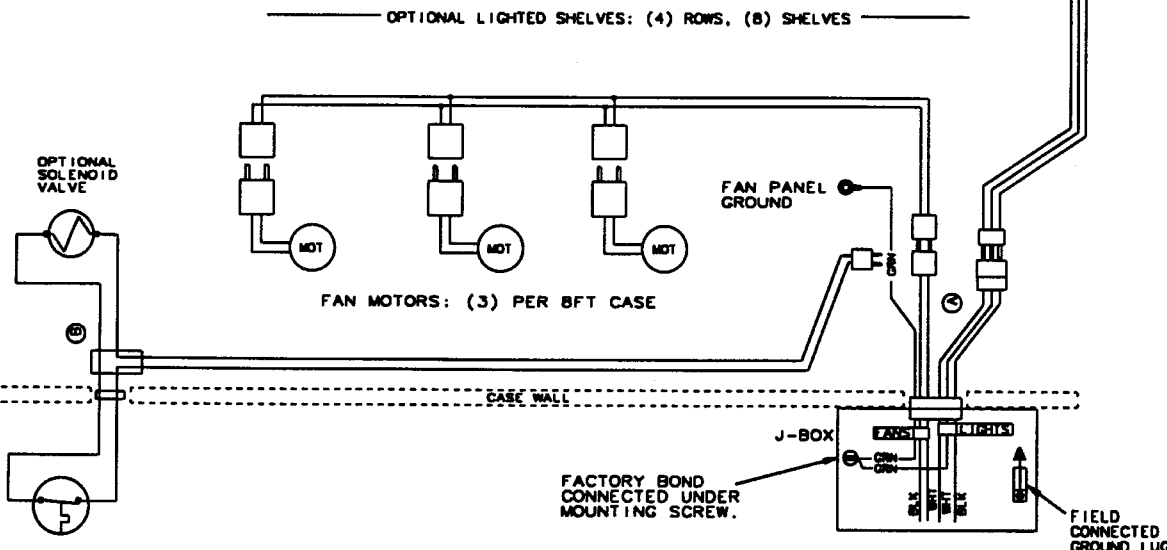
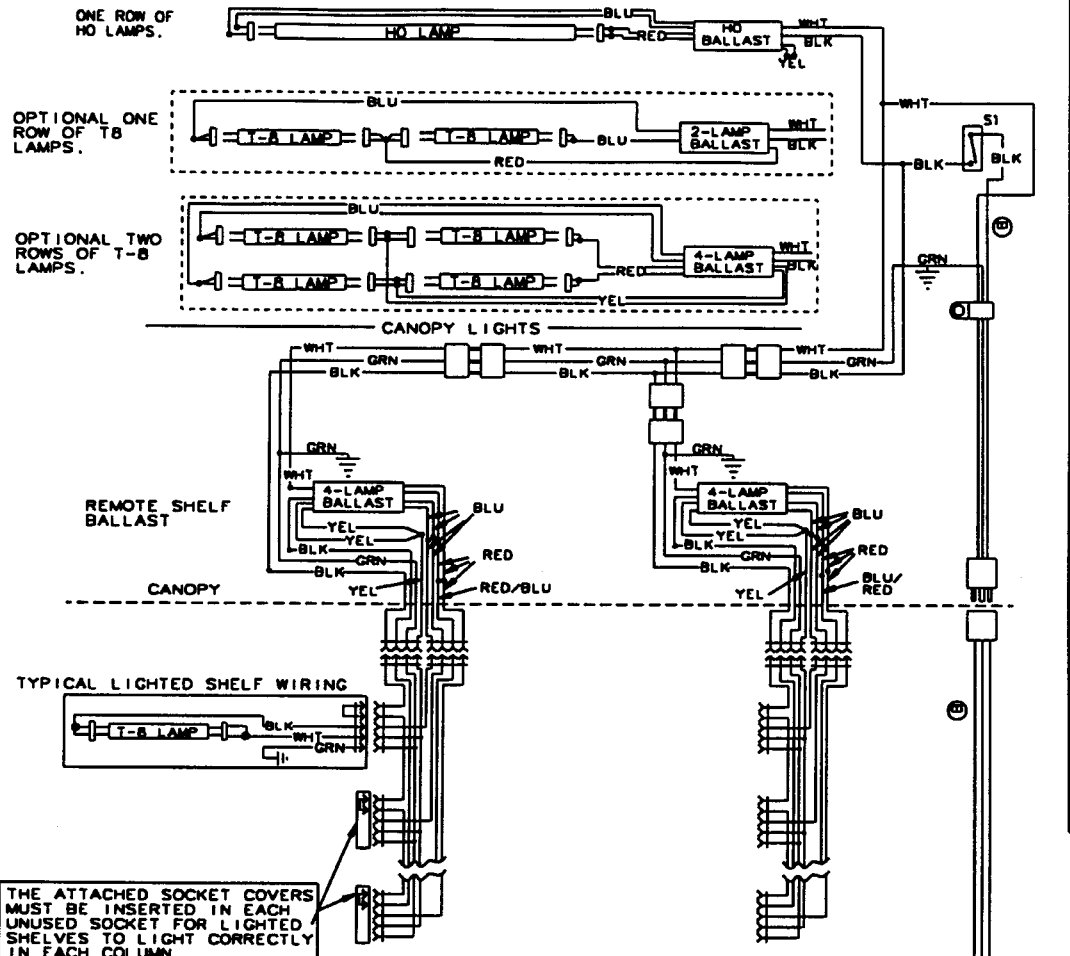
REVISIONS	DATE	DESCRIPTION
1	23OCT96	NONE
2	28867	200400 LC CK
3	23164	23MAR99 LC CK
4	97-018	27MAR97 LC CK
5	96-104	WELFARE WTC

DECIMALS +/- .030 ANGLES +/- 1 DEGE
 NONE
 23OCT96
 28867 200400 LC CK
 23164 23MAR99 LC CK
 97-018 27MAR97 LC CK
 96-104 WELFARE WTC

DIAGRAM WRG
 NSD(H.L.) 6FT
 9026363 C

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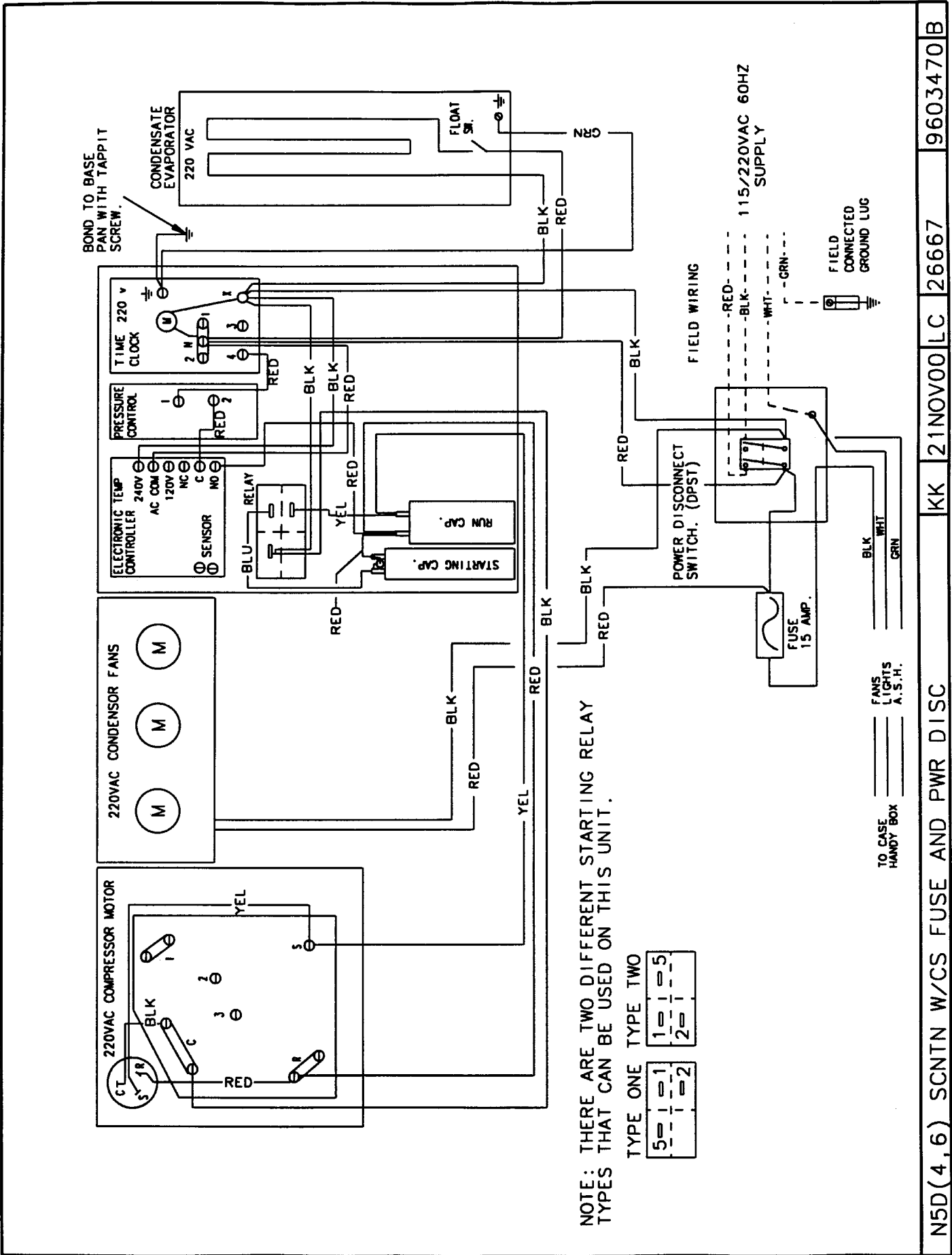
PART TYPE H T S
 TO BE KEPT WITH THE CASE FOR SERVICE PURPOSES
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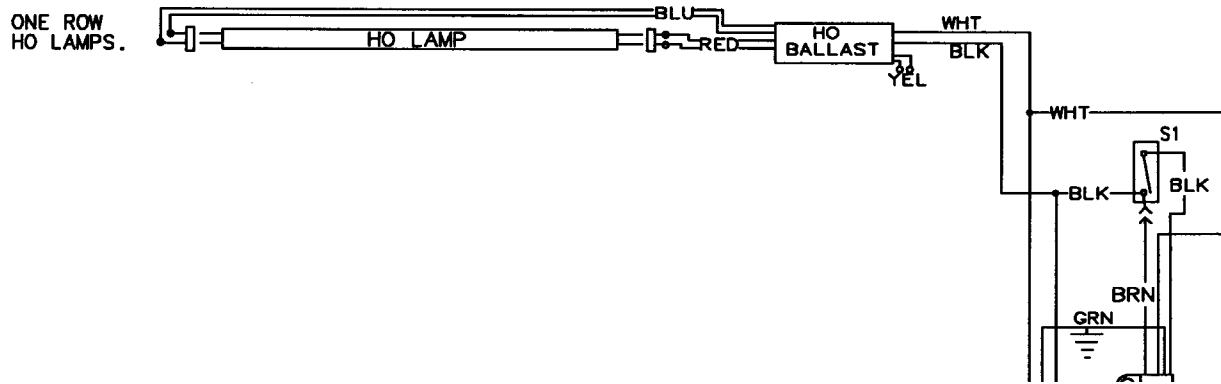
120VAC 60HZ
 SUPPLY
 OR
 220VAC 50HZ
 INTERNATIONAL

NOTE: ALL CASES MUST BE GROUNDED

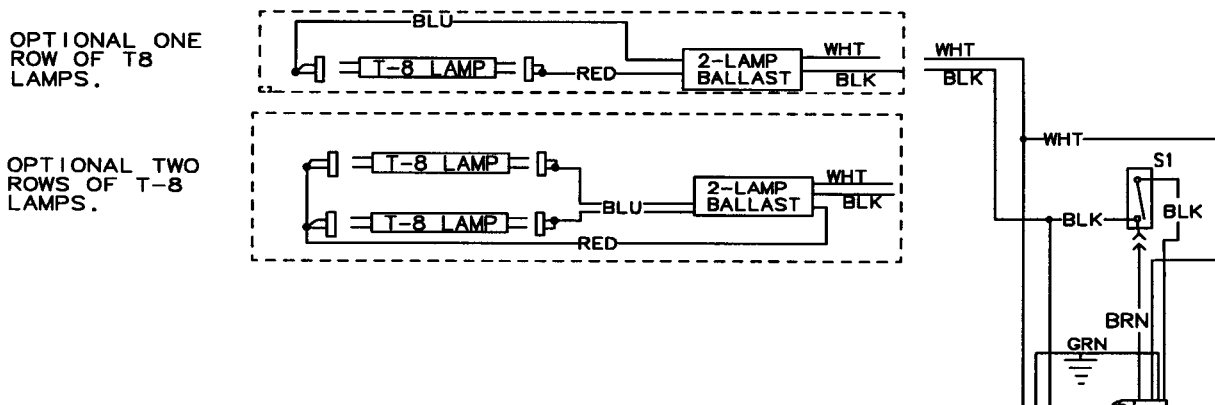
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B	23184	ZEMAR97 LC [X] [X]
A	97-D18	Z7MAR97 LC [X] [X]
REV	DATE	DESCRIPTION
3	98-104	
DIAGRAM WRG N5D(H.L) 8FT		
9028589		



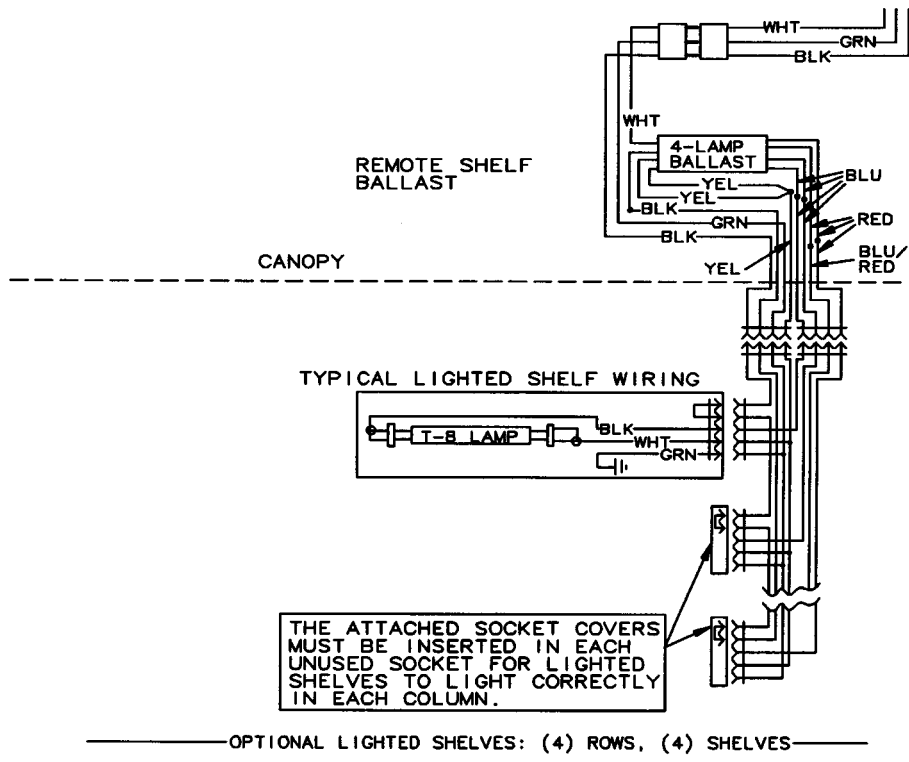
800MA Canopy Lighting Circuit



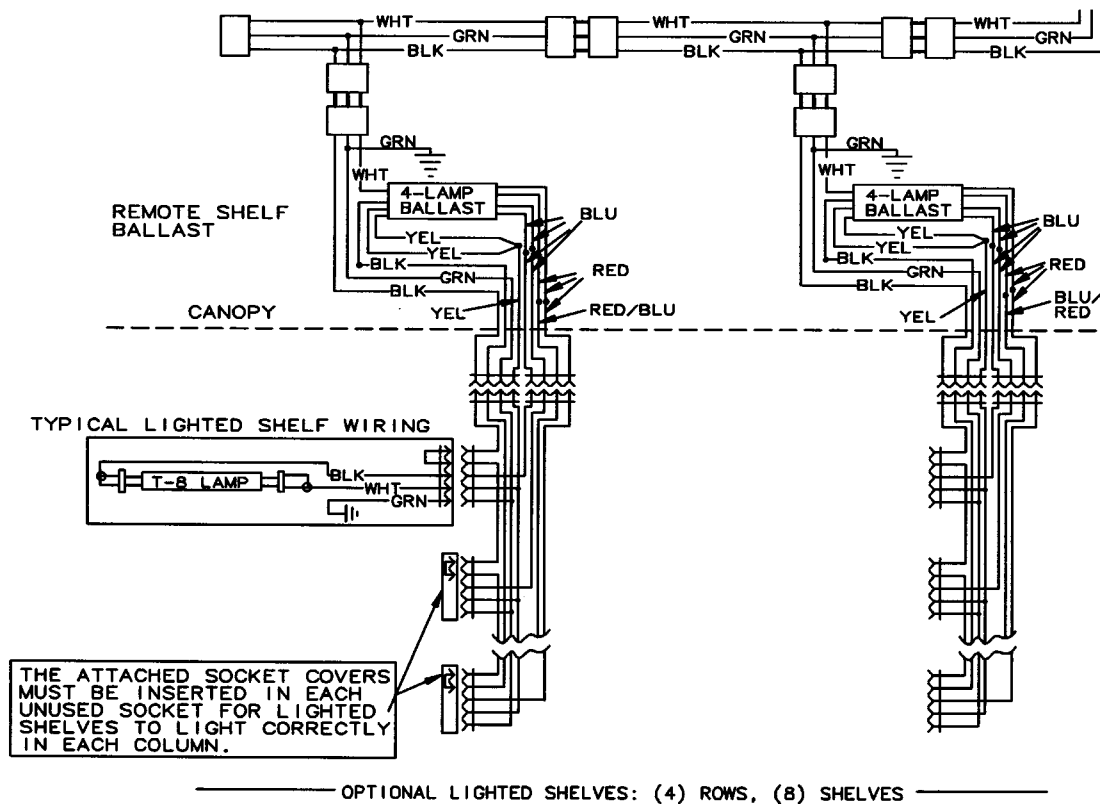
Optional Canopy Lighting Circuit



Optional Shelf Lighting Circuits 4' Cases



6' & 8' Cases



CLEANING AND SANITATION

Component Removal and Installation Instructions for Cleaning

Mirrors

1. Remove mounting screws and end molding of mirror line-up.
2. Carefully grasp and lift mirror section until bottom edge clears the lower mirror track.
3. Carefully lower mirror out of upper mirror track and remove from case.
4. After cleaning, replace in reverse order.

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.

Bottom Trays

1. Remove product from bottom of case.
2. Grasp and lift out each of the bottom trays from the case interior.
3. After cleaning, replace in reverse order.

Front Air Ducts

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

Rear Duct Panels (w/o Shelf Light Sockets)

1. Remove shelves and 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.

(with Shelf Light Sockets)

1. Remove mirrors, shelves and bottom trays, see this page.
2. Remove mounting screws from rear duct panel.
3. Slowly lift out rear duct panel until the shelf harness connector near the top of the panel can be accessed.
4. Disconnect shelf harness connector and complete removing the rear duct panel.

WARNING

Rear duct panels with electrical receptacles can be cleaned without removing the electrical receptacles. Do not get moisture on electrical wires when cleaning under this cover. Moisture on wires could cause premature product failure and/or personal injury or death from electrical shock.

5. After cleaning, reconnect the shelf harness connector: install the top socket assembly: 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.

Top Duct

1. Remove shelves and shelf brackets, see page 13.
2. Remove screws, rear retainer plate and honeycomb grid sections from top of case.
3. Remove screws and top duct from case.
4. After cleaning, replace top duct and remaining components in reverse order.

Lower Cladding

1. Remove front kickplate from kickplate supports. (See General-UL/NSF I&S Manual.)
2. Remove mounting screws from top and bottom of lower cladding and remove lower cladding.
3. After cleaning, replace in reverse order.

Upper Cladding

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

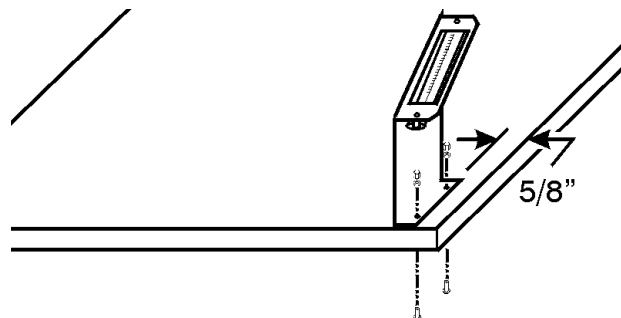
GENERAL INFORMATION

NSF Product Thermometer Installation

1. Unwrap the thermometer and bracket assembly shipped loose with the case.
2. Position bracket in front right corner of the right-most bottom tray. Making sure the bracket is 5/8" in from the right edge, use the bracket holes as a template for where to drill the holes.
3. Drill two .196" holes in the bottom tray.

NOTE

For ease of installation, position the washers and capnuts on the top side of the bracket and bottom tray.



4. Mount the bracket to the bottom tray with two screws, washers and capnuts.

SERVICE INSTRUCTIONS

Troubleshooting Self-Contained Units

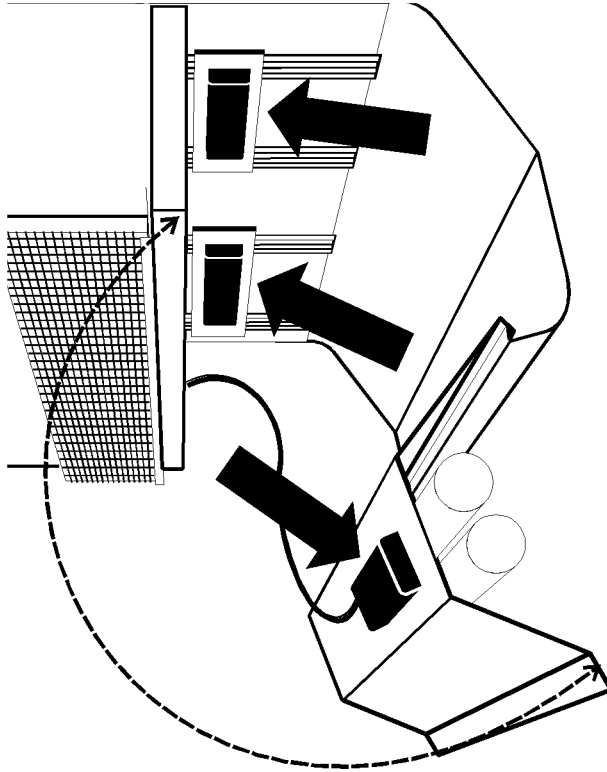
WARNING

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

<u>TROUBLE</u>	<u>COMMON CAUSE</u>	<u>REMEDY</u>
1. Unit will not run	Blown fuse	Replace fuse.
	Low voltage	Check outlet with voltmeter. Voltage should be 115V or 220V ($\pm 10\%$).
	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.
	Thermostat set incorrectly	Check setting.
	Pressure control set incorrectly	Check setting.
3. Refrigerated section too cold	Case fans not operating	Check terminal block connections.
	Thermostat set incorrectly	Check setting.
	Pressure control set incorrectly	Check setting.
4. Unit runs all the time	Inadequate air circulation	Relocate cabinet or remove obstruction. Check installation requirements.
	Room temperature too warm	Ventilate room appropriately.
	Thermostat set incorrectly	Reset thermostat.
	Refrigerant charge low	Have unit serviced by a qualified service technician.
5. Noisy operation	Loose baffles	Tighten or brace baffles.
	Tubing contacting cabinet or other tubing	Move tubing.
	Cabinet not level	Level cabinet.
6. Frost or ice on evaporator coil	Defrost clock doesn't work	Check electrical connections. Have unit serviced by a qualified service technician.
7. Water dripping from case drain	Condensate drain clogged	Clear drain.
	Dissipator not functioning	Check electrical supply. Check float assembly.

Light Servicing

Ballast and Lighting Locations



All light ballasts are located under the canopy and mounted on the top of the canopy light channel. This includes remote ballasts for optional shelf lights. The canopy light(s) are under the canopy light channel in the top of the case. The optional shelf lights are mounted in separate light channels under the front of each shelf section.

NOTE

See "General-UL/NSF I&S Manual" for 800MA and T-8 ballast and lamp, fan blade & motor and color band & bumper replacement instructions.

PARTS INFORMATION

Operational Parts List

Case Usage	Domestic			Export		
	115 Volt 60 Hertz			220 Volt 50 Hertz		
Electrical Circuit						
Case Size	4'	6'	8'	4'	6'	8'
Fan Motors (N5D/N5DH/N5DL)	5125532 5 Watt	5125532 5 Watt	5125532 5 Watt	5126572 5 Watt	5126572 5 Watt	5126572 5 Watt
Fan Motors (N5DSC)	5125532 5 Watt	5125532 5 Watt	----	----	----	----
Fan Motor Brackets	5962269	5962269	5962269	5962269	5962269	5962269
Fan Bracket Plate	9041077	9041077	9041077	9041077	9041077	9041077
Fan Blades (7" 40° 5B)	5221604	5221604	5221604	5221604	5221604	5221604
Opt. ECM Fan Motors (N5D/N5DH/N5DL)	9025002 8 Watt	9025002 8 Watt	9025002 8 Watt	9025002 8 Watt	9025002 8 Watt	9025002 8 Watt
Opt. ECM Fan Motors (N5DSC)	9025002 8 Watt	9025002 8 Watt	----	9025002 8 Watt	9025002 8 Watt	----
Opt. ECM Motor Brackets	9025005	9025005	9025005	9025005	9025005	9025005
Opt. ECM Fan Blades (7" 30° 5B)	5223370	5223370	5223370	5223370	5223370	5223370
800MA Ballast (canopy)	5049140	5049140	5049140	5232195	5232195	5232195
Opt. T-8 Ballast (can. 1-row)	5991029	5991029	5991029	9322286	9322286	9322286
(can. 2-row)	5966635	5966635	5966635	9322286	9322286	9322286
(shelf)	5966635	5966635	5966635	9322288	9322288	9322288
800MA Lampholder (telescoping)	5614628	5614628	5614628	5614628	5614628	5614628
(stationary)	5614629	5614629	5614629	5614629	5614629	5614629
T-8 Lampholder (canopy)	9041897	9041897	9041897	9041897	9041897	9041897
(shelf)	9041897	9041897	9041897	9041897	9041897	9041897
Self-Cont. Compressor (N5DSC)	5965977	5965978	----	----	----	----
Compressor Model No. (N5DSC)	REK3-0125-PFV	REY3-0175-PFV	----	----	----	----
Condensate Pan (N5DSC)	9601926	5966037	----	----	----	----
NSF Product Thermometer	5967100	5967100	5967100	5967100	5967100	5967100

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

Cladding and Optional Trim Parts List

Item Description	N5D/N5DH/N5DL			N5DSC	
	4'	6'	8'	4'	6'
1 Screw	5183536(3)	5183536(4)	5183536(6)	5183536(3)	5183536(4)
2 Close-off, Hood	9026366	9026367	9026368	9026366	9026367
3 Canopy Backer, Ptd.	9026364	9026364	9026364	9026364	9026364
4 Canopy Hood, Ptd.	9025968	9025969	9025970	9025968	9025969
5 Screw	9025833	9025833	9025833	9025833	9025833
6 Bumper Retainer/Hand Rail	-----	-----	color by order	-----	-----
7 Hand Rail Backer, Ptd.	9025316	9025316	9025316	9025316	9025316
8 Color Band, Ptd.	9023791	9023796	9023799	9023791	9023796
9 Color Band Backer, Ptd.	9040223	9040223	9040223	9040223	9040223
10 Bumper	-----	-----	color by order	-----	-----
11 Bumper Backer	-----	-----	color by order	-----	-----
12 Bumper End Trim	-----	-----	color by order	-----	-----
13 Lwr. Frt. Cladding, Ptd. (N5D / N5DSC)	9025459	9025460	9025461	-----	-----
(N5DH)	9026305	9026306	9026307	-----	-----
(N5DSC)	-----	-----	-----	9603773	9603774
14 Upr. Frt. Cladding, Ptd. (N5D / N5DL)	9025462	9025463	9025464	-----	-----
(N5DH)	9026308	9026309	9026310	-----	-----
(N5DSC)	-----	-----	-----	9025462	9025463
15 Screw	5183536(10)	5183536(12)	5183536(15)	5183536(10)	5183536(12)
16 Kickplate	-----	-----	color by order	-----	-----
Kickplate Backer	9023569	9023569	9023569	9023569	9023569
17 Screw	9029131(6)	9029131(6)	9029131(8)	9029131(6)	9029131(6)
18 Kickplate Support	9023565(3)	9023565(3)	9023565(4)	9023565(3)	9023565(3)
19 LH End Close-off, Ptd.	9022469	9022469	9022469	9022469	9022469
RH End Close-off, Ptd.	9022471	9022471	9022471	9022471	9022471
20 Screw	5048626(2)	5048626(2)	5048626(2)	5048626(2)	5048626(2)

