

# Installation & Service Manual



## **LD48, LD54, LD60, LD72**

### **MULTI-DECK SELF-SERVICE 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 - 2003.

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The following Multi-Deck, Self-Service, Medium Temperature Deli Merchandiser models are covered in this manual:

<b>MODELS</b>	<b>DESCRIPTION</b>
<b>LD48</b>	<b>4', 6', 8' &amp; 12' MULTI-DECK SELF-SERVICE DELI MERCHANDISERS</b>
<b>LD54</b>	<b>4', 6', 8' &amp; 12' MULTI-DECK SELF-SERVICE DELI MERCHANDISERS</b>
<b>LD60</b>	<b>4', 6', 8' &amp; 12' MULTI-DECK SELF-SERVICE DELI MERCHANDISERS</b>
<b>LD72</b>	<b>4', 6', 8' &amp; 12' MULTI-DECK SELF-SERVICE DELI MERCHANDISERS</b>

## SPECIFICATIONS

### LD48/LD54/LD60/LD72 Multi-Deck Self-Service Deli 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)	
LD48	4'6"/8'12'	Deli	913*	996*	18**	16	32	200***	0.53
LD54	4'6"/8'12'	Deli	985*	1,075*	18**	16	33	185***	0.53
LD60	4'6"/8'12'	Deli	1,381*	1,507*	18**	16	34	167***	0.53
LD72	4'6"/8'12'	Deli	1,580*	1,724*	18**	16	35	150***	0.53

\* Capacity data listed for cases with 1 row of T-8 Canopy Lights and optional lighted shelves.

If case has unlighted shelves, DEDUCT 20 BTUH/FT per row of unlighted shelves on the case.

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

\*\*\* Air velocity measured 1 hour after defrost at the vertical part of the Rear Duct.

FOR SPECIFIC COMPRESSOR SIZING INFORMATION, REFER TO TYLER APPLICATIONS FOR RACK SYSTEM COMPRESSORS AND/OR THE COMPRESSOR MANUFACTURERS FOR SINGLE COMPRESSORS. FOR LINE SIZING INFORMATION, REFER TO THE MISCELLANEOUS SECTION "BUFF" IN THE TYLER SPECIFICATION GUIDE.

#### Electrical Data:

Fans & Heaters (120 Volt)

MODEL	CASE LENGTH	FANS / CASE	TOTAL STANDARD FANS		TOTAL ECM FANS		TOTAL ANTI-SWEATS	
			AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
LD48/54/60/72	4'	1	0.53	48.0	0.32	17.0	0.07	7.3
LD48/54/60/72	6'	2	1.06	96.0	0.64	34.0	0.10	11.4
LD48/54/60/72	8'	2	1.06	96.0	0.64	34.0	0.13	15.6
LD48/54/60/72	12'	3	1.59	144.0	0.96	51.0	0.21	24.6

T8 Lighting with Electronic Ballasts (120 Volt)

MODEL	CASE LENGTH	CANOPY LIGHTS 1-ROW		SHELF LIGHTS - PER ROW										MAXIMUM LIGHTING	
		AMPS	WATTS	AMPS - (ROWS OF SHELVES)					WATTS - (ROWS OF SHELVES)					AMPS	WATTS
				1	2	3	4	5	1	2	3	4	5		
LD48/54	4'	.35	42	.35	.70	1.05	N/A	N/A	42	84	126	N/A	N/A	1.40*	168*
LD48/54	6'	.40	48	.60	1.20	1.80	N/A	N/A	72	144	216	N/A	N/A	2.20*	264*
LD48/54	8'	.50	60	.70	1.40	2.10	N/A	N/A	84	168	252	N/A	N/A	2.60*	312*
LD48/54	12'	.70	84	1.05	2.10	3.15	N/A	N/A	126	252	378	N/A	N/A	3.85*	462*
LD60	4'	.35	42	.35	.70	1.05	1.40	N/A	42	84	126	168	N/A	1.75**	210**
LD60	6'	.40	48	.60	1.20	1.80	2.40	N/A	72	144	216	288	N/A	2.80**	336**
LD60	8'	.50	60	.70	1.40	2.10	2.80	N/A	84	168	252	336	N/A	3.30**	396**
LD60	12'	.70	84	1.05	2.10	3.15	4.20	N/A	126	252	378	504	N/A	4.90**	588**
LD72	4'	.35	42	.35	.70	1.05	1.40	1.75	42	84	126	168	210	2.10***	252***
LD72	6'	.40	48	.60	1.20	1.80	2.40	3.00	72	144	216	288	360	3.40***	408***
LD72	8'	.50	60	.70	1.40	2.10	2.80	3.50	84	168	252	336	420	4.00***	480***
LD72	12'	.70	84	1.05	2.10	3.15	4.20	5.25	126	252	378	504	630	5.95***	714***

\* For cases with 1 row of canopy lights and 3 rows of shelf lights.

\*\* For cases with 1 row of canopy lights and 4 rows of shelf lights.

\*\*\* For cases with 1 row of canopy lights and 5 rows of shelf lights

#### Defrost Data:

DEFROST TYPE	DEFROSTS PER DAY	DURATION TIME (MIN)	TERMINATION TEMP. (°F)	EPR SETTINGS *		DEFROST WATER (LB / FT / DAY)
				R22 (PSIG)	R404A (PSIG)	
TIME OFF	6	20	N/A	41	53	6.75 lb

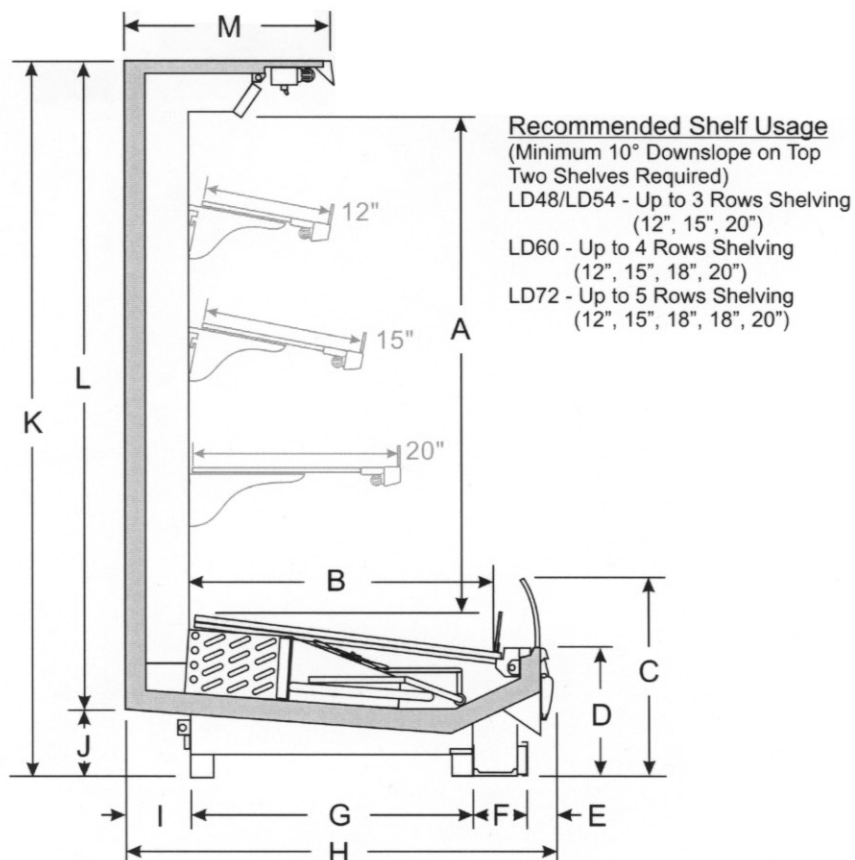
\* Set EPR to give this pressure at the case.

CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING												
MODEL	6'	8'	12'	16'	20'	24'	28'	32'	36'	40'	44'	52'
LD48/54/60/72	1/2"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"

CASE BTUH REQUIREMENTS are calculated to produce approximately the indicated performance 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.

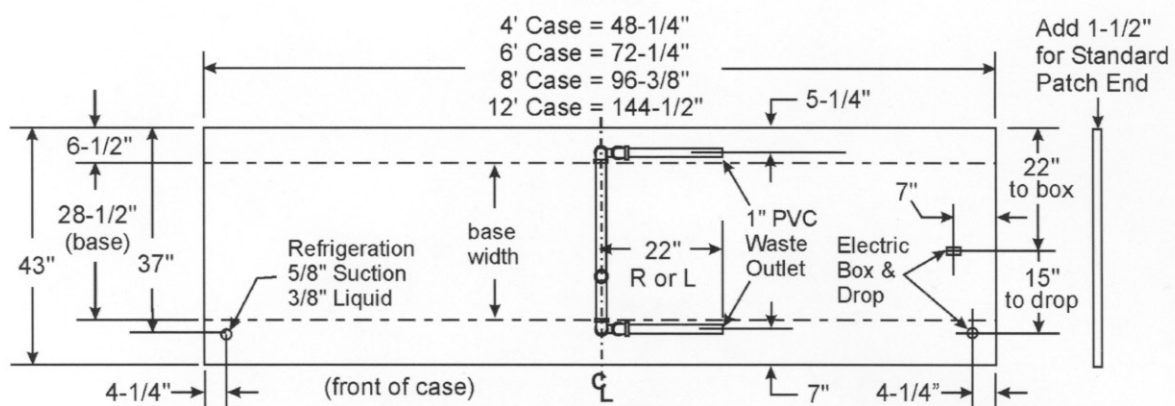
**LD CROSS SECTION**



**CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING**

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M
LD48	27-1/8"	31-5/8"	20"	13"	2-1/2"	5-1/2"	28-1/2"	43"	6-1/2"	6-3/4"	48"	41-1/4"	20-3/4"
LD54	33-1/8"	31-5/8"	20"	13"	2-1/2"	5-1/2"	28-1/2"	43"	6-1/2"	6-3/4"	54"	47-1/4"	20-3/4"
LD60	39-1/8"	31-5/8"	20"	13"	2-1/2"	5-1/2"	28-1/2"	43"	6-1/2"	6-3/4"	60"	53-1/4"	20-3/4"
LD72	51-1/8"	31-5/8"	20"	13"	2-1/2"	5-1/2"	28-1/2"	43"	6-1/2"	6-3/4"	72"	59-1/4"	20-3/4"

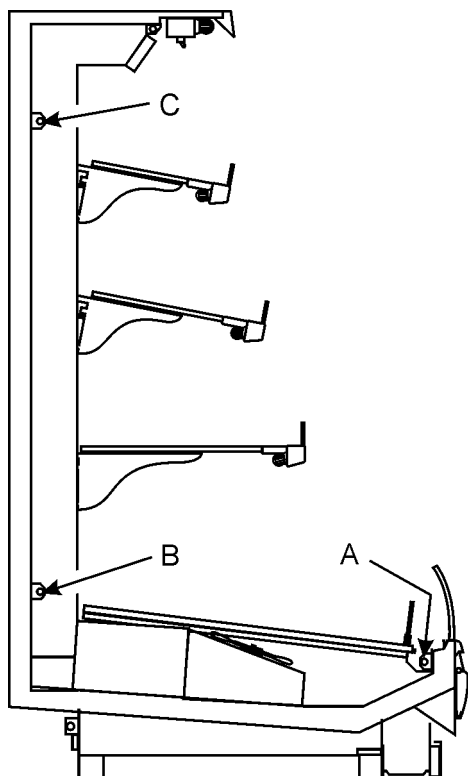
**FLOOR PLAN**



## INSTALLATION PROCEDURES

### Carpentry Procedures

#### Case Pull-Up Locations



The LD models have three pull-ups at each end of the case. Pull-ups A, B and C are located as shown and should be installed and tightened starting with A and finishing with C.

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 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

LD case lighting is supplied by T-8 electronic ballast lights. It is controlled by a light switch in each case. The standard lighting is 1-row of T-8 canopy lights. Optional T-8 shelf lights are also available on the LD cases. Up to 3 rows on the LD48 and LD54; up to 4 rows on the LD60; and up to 5 rows on the LD72 models.

### 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.
LD(48/54/60/72)			
Off Time	6	20	-----

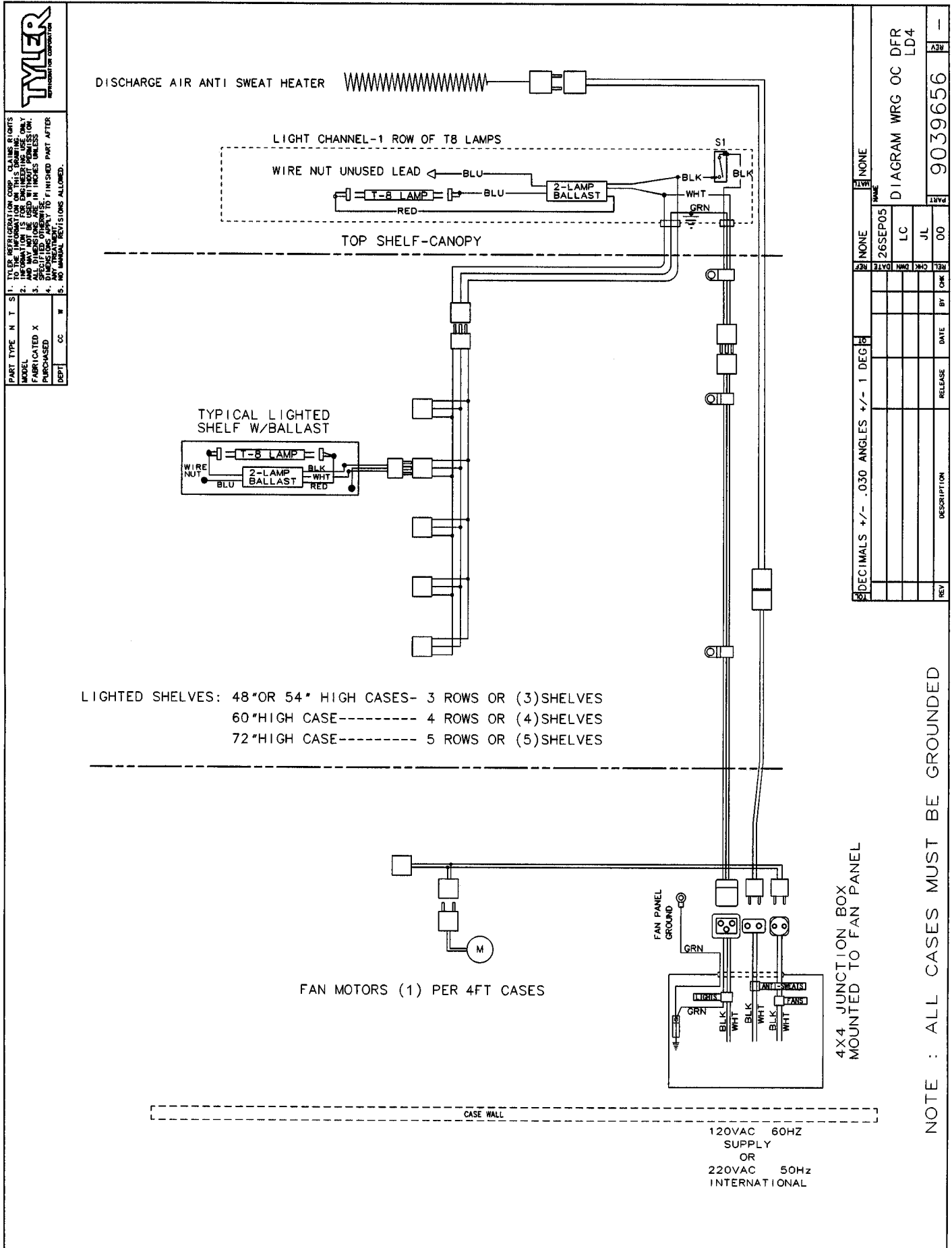
## WIRING DIAGRAMS

### 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 9 will cover the LD48, LD54, LD60 and LD72 case and lighting circuits.

# LD48/54/60/72 Domestic & Export (50Hz) Case Circuits (4' Cases)

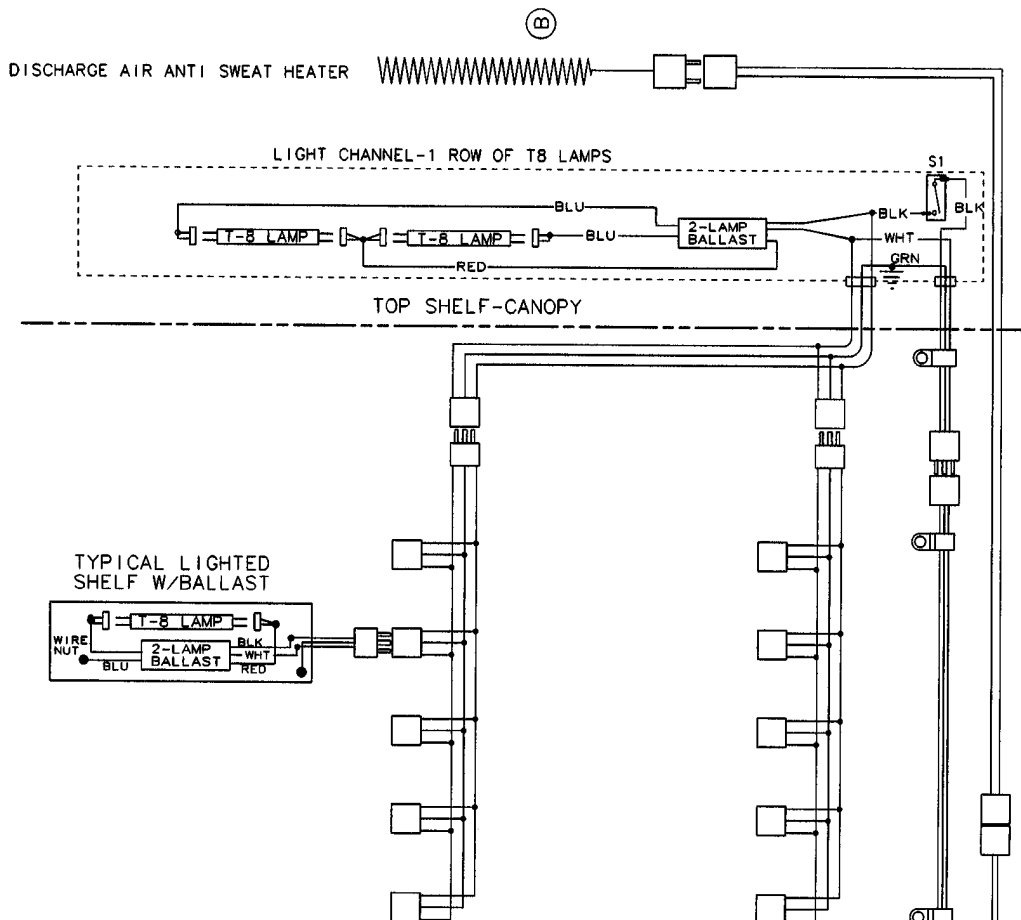


# LD48/54/60/72 Domestic & Export (50Hz) Case Circuits (6' & 8' Cases)

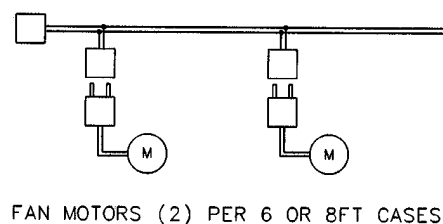
**TYLER**  
DESIGNER OF CASECIRCUITS

PART TYPE N T S  
MODEL  
FABRICATED X  
PURCHASED  
DEPT

1. TO THE REFRIGERATION OWNER, CLAIMS RIGHTS  
2. INFORMATION IS FOR ENGINEERING USE ONLY.  
3. ALL DIMENSIONS ARE IN INCHES UNLESS  
4. DIMENSIONS APPLY TO FINISHED PART AFTER  
5. ANY TREATMENT, REVISIONS ALLOWED.



LIGHTED SHELVES: 48" OR 54" HIGH CASES- 3 ROWS OR (6) SHELVES  
60" HIGH CASE----- 4 ROWS OR (8) SHELVES  
72" HIGH CASE----- 5 ROWS OR (10) SHELVES



120VAC 60Hz  
SUPPLY  
OR  
220VAC 50Hz  
INTERNATIONAL

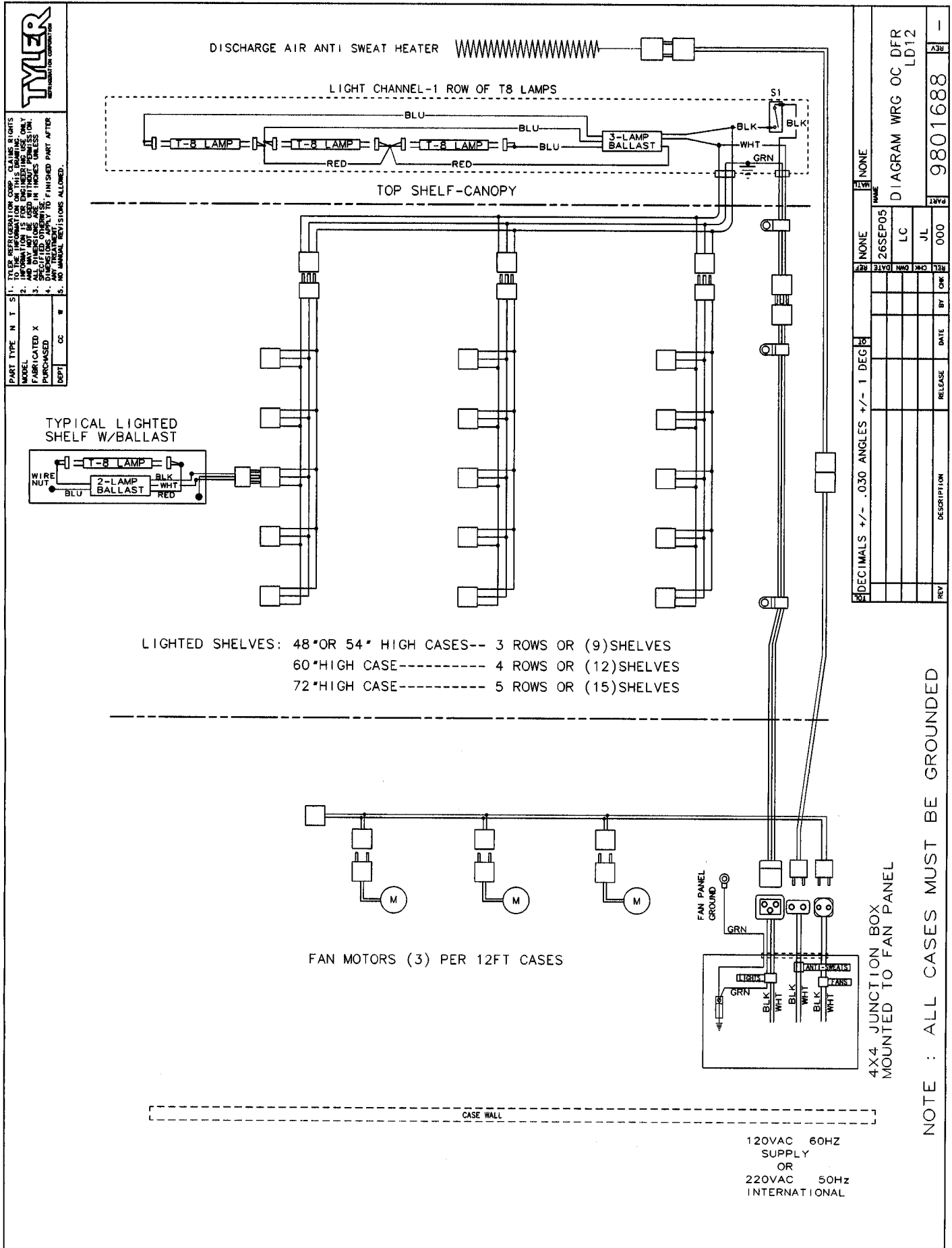
4X4 JUNCTION BOX  
MOUNTED TO FAN PANEL

REV	DESCRIPTION	DATE	BY	CHK	DATE	CHK	NAME	REV	REV
B	ADD ASMET HTR. R'MD NOTE	000	26SEP05	JL	15MAY02	NONE	DIAGRAM WRG OC DFR	LD 688	B
A	ADDED NOTE	29152	02JUL02	LC	28795	28795	9801687		

NOTE : ALL CASES MUST BE GROUNDED



# LD48/54/60/72 Domestic & Export (50Hz) Case Circuits (12' Cases)



## **CLEANING AND SANITATION**

### **Component Removal and Installation Instructions for Cleaning**

#### **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 above.
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.

**Front Cladding**

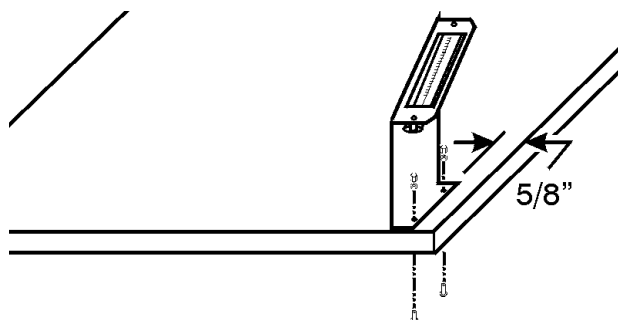
1. Remove front kickplate from kickplate supports. (See General-UL/NSF I&S Manual.)
2. Remove mounting screws from top and bottom of front cladding and remove front cladding.
3. After cleaning, replace in reverse order.

**GENERAL INFORMATION****NSF Product Thermometer Installation**

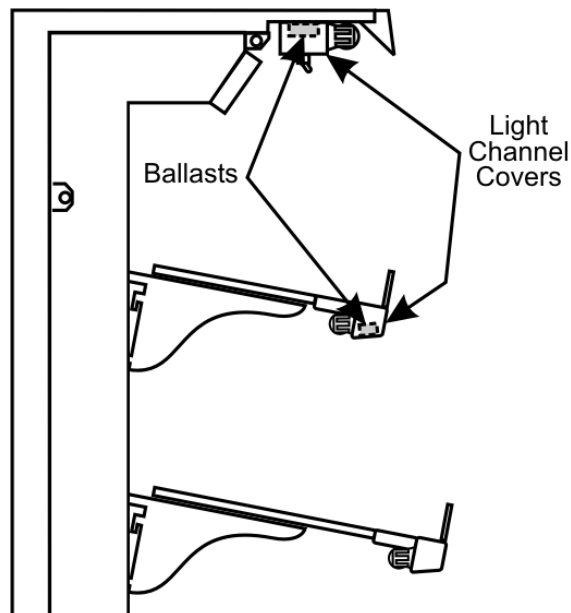
1. Unwrap the thermometer and bracket assembly shipped loose with the case.
2. Position bracket in front right corner of the right-most bottom tray. Making sure the bracket is 5/8" in from the right edge, use the bracket holes as a template for where to drill the holes.
3. Drill two .196" holes in the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

**Light Servicing****Ballast and Lighting Locations**

All light ballasts for the canopy lights and optional shelf lights are located inside each of the light channel assemblies. To access the light ballasts, remove the screws and the light channel cover from the light channel assembly. The canopy lights 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.

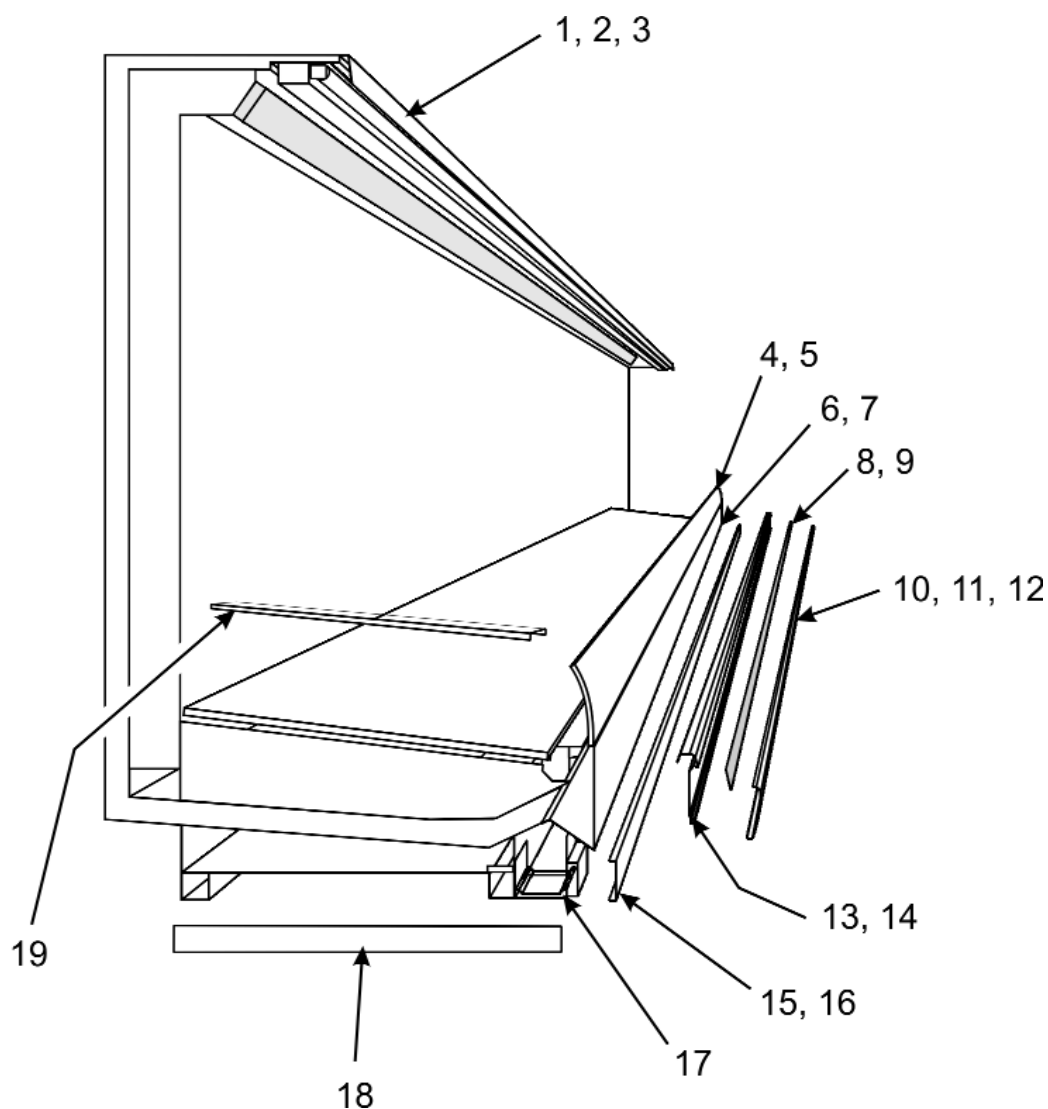
**NOTE**

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

**PARTS INFORMATION****Cladding and Optional Trim Parts List**

		<b>LD48/LD54/LD60/LD72</b>			
<b>Item</b>	<b>Description</b>	<b>4'</b>	<b>6'</b>	<b>8'</b>	<b>12'</b>
1	Front Top Cladding, Ptd.	9802550	9802580	9801330	9802582
	Screw	9024814 (3)	9024814 (3)	9024814 (3)	9024814 (4)
2	Close-off, RH Top Shelf	9802328	9802328	9802328	9802328
	Close-off, LH Top Shelf	9802329	9802329	9802329	9802329
	Screw	9024814 (2)	9024814 (2)	9024814 (2)	9024814 (2)
3	Top Joint Trim, Ptd.	9802312	9802312	9802312	9802312
	Screw	9024814 (4)	9024814 (4)	9024814 (4)	9024814 (4)
4	Plexiglas, Curved	9802560	9800193	9800194	9800193 (2)
	RH Plexiglas Trim Assembly	9800225	9800225	9800225	9800225 (2)
	LH Plexiglas Trim Assembly	9800226	9800226	9800226	9800226 (2)
	Plexiglas Retainer	9802561	9800203	9053834	9800203 (2)
5	Plexiglas Joint Trim	9800211	9800211	9800211	9800211
	Screw	5100217 (2)	5100217 (2)	5100217 (2)	5100217 (2)
6	Lower Front Cladding, Ptd.	9806245	9801369	9801370	9801371
	Screw	5183536 (6)	5183536 (8)	5183536 (10)	5183536 (12)
7	Lwr. Frt. Cladding Joint Trim, Ptd.	9801250	9801250	9801250	9801250
	Screw	5205439 (2)	5205439 (2)	5205439 (2)	5205439 (2)
8	Color Band, Ptd.	9023791	9023796	9023799	9023801
9	Color Band Backer, Ptd.	9040223	9040223	9040223	9040223
10	Bumper	-----	color by order	-----	-----
11	Bumper Backer	-----	color by order	-----	-----
12	Bumper End Trim	-----	color by order	-----	-----
13	Bumper Retainer	-----	color by order	-----	-----
	Shoulder Screw	9025833 (8)	9025833 (12)	9025833 (16)	9025833 (24)
14	Bumper Retainer Backer, Ptd.	9025316	9025316	9025316	9025316
15	Metal Kickplate, Ptd.	9039267	9039268	9039269	9039270

Item	Description	4'	6'	8'	12'
16	Kickplate Joint Trim, Ptd.	9039020	9039020	9039020	9039020
	Screw, Blk.	9037551 (4)	9037551 (5)	9037551 (6)	9037551 (6)
17	Kickplate Support	9043461 (2)	9043461 (3)	9043461 (4)	9043461 (4)
	Screw	5183536 (4)	5183536 (6)	5183536 (8)	5183536 (8)
18	Base End Close-off, Ptd.	9801693 (2)	9801693 (2)	9801693 (2)	9801693 (2)
	Screw (per end close-off)	5048626 (2)	5048626 (2)	5048626 (2)	5048626 (2)
19	Horizontal End Trim	5964733	5964733	5964733	5964733



**Operational Parts List****Case Usage****Domestic**

Electrical Circuit

115 Volt 60 Hertz

Case Size	4'	6'	8'	12'
Fan Motors (LD48/LD54/LD60/LD72)	5243498 9 Watt	5243498 9 Watt	5243498 9 Watt	5243498 9 Watt
Fan Motor Brackets	5205112	5205112	5205112	5205112
Fan Bracket Plate	9041077	9041077	9041077	9041077
Fan Blades (8.75" 30° 5B)	9407319	9407319	9407319	9407319
Opt. ECM Fan Motors (LD48/LD54/LD60/LD72)	9025000 12 Watt	9025000 12 Watt	9025000 12 Watt	9025000 12 Watt
Opt. ECM Motor Brackets	5205112	5205112	5205112	5205112
Opt. ECM Fan Blades (8.75" 30° 5B)	9407319	9407319	9407319	9407319
T-8 Lamp Ballast (canopy & shelf) (can. 1-row)	5991029	5991029	5991029	9322286
(shelf)	5966635	5966635	5966635	9322288
T-8 Lampholder (canopy)	9041897	9041897	9041897	9041897
(shelf)	9041897	9041897	9041897	9041897
NSF Product Thermometer	5967100	5967100	5967100	5967100

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