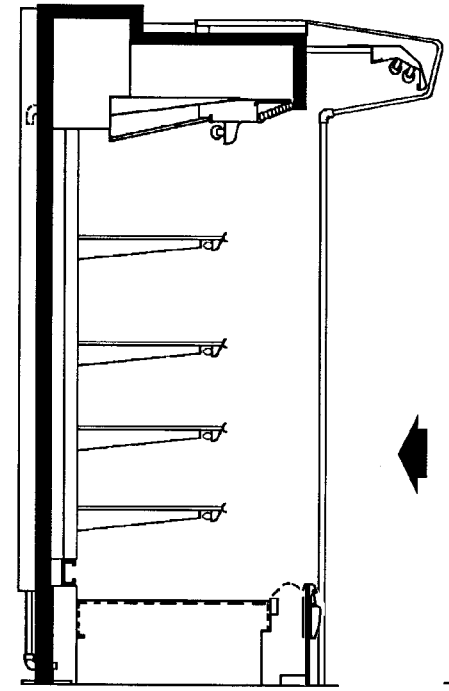
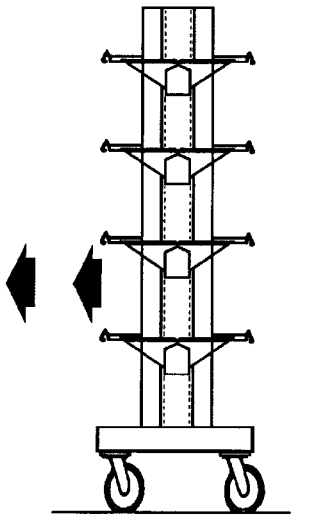
TYLER

series Advantage

Installation & Service Manual



FRONT LOAD W/SHELVES



ROLL-IN DAIRY CART

LDFL

FRONT LOAD ROLL-IN DAIRY MERCHANDISERS
Medium Temperature Refrigerated Display Cases

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

This merchandiser conforms to the Commercial Refrigeration Manufacturers Association Health and Sanitation standard CRS-S1-96.

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Tyler Refrigeration Corporation * Niles, Michigan 49120

CONTENTS

The following Medium Temperature Front Load Roll-In Dairy Merchandiser models are covered in this manual:

MODELS	DESCRIPTION
LDFL	**8’ & 12’ FRONT LOAD ROLL-IN DAIRY MERCHANDISER**

SPECIFICATIONS

LDFL Front Load Roll-In Dairy Merchandiser Specification Sheets

MODEL	LDFL	LDRL*
USAGE	DAIRY	DAIRY
BTUH/FT	1767	980
SUCTION°	+20F	+15F
ENTER AIR°	+36F	+28F

NOTE: FOR COMPRESSOR SIZING INFORMATION REFER TO THE "GOLD" SECTION & FOR LINE SIZING INFORMATION REFER TO THE "BUFF" SECTION OF THE TYLER SPECIFICATION GUIDE.

THE ABOVE RATINGS ARE FOR COMPRESSOR SELECTION ONLY. FOR ENERGY CALCULATION DATA REFER TO THE ENERGY SECTION.

DEFROST CONTROL			PRESSURE SETTING		EPR SETTINGS	
PER DAY	MODE	TIME	CUT IN	CUT OUT	R22	R404A
4	TIME OFF	45 MIN.	50-54# @ R22	25-32# @ R22	43	---
			64-67# @ R404A	33-42# @ R404A	---	55

CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING											
	8'	12'	16'	20'	24'	28'	32'	36'	40'	44'	48'
R22 FRONT LOAD	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"
R22 REAR LOAD	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"

STANDARD CASE LIGHTING: Two rows of T-8 electronic fluorescent lights in the canopy plus one row of lighting in the top of the case. Optional lighted shelves are available. Light amps shown in the chart do not include nose lights.

CASE FANS: Standard with shaded pole motors.

CASE CIRCUITS: LDFL case requires three separate 120v circuits: 1) a 120v Case Fan Circuit, 2) a 120v Case Anti-Sweat Heater Circuit, and 3) a 120v Shelf & Canopy Light Circuit. LDRL case requires four separate 120v circuits: 1) a 120v Upper Case Fan Circuit, 2) a 120v Lower Case Fan Circuit, 3) a 120v Anti-Sweat Heater Circuit, 4) a 120v Shelf & Canopy Light Circuit.

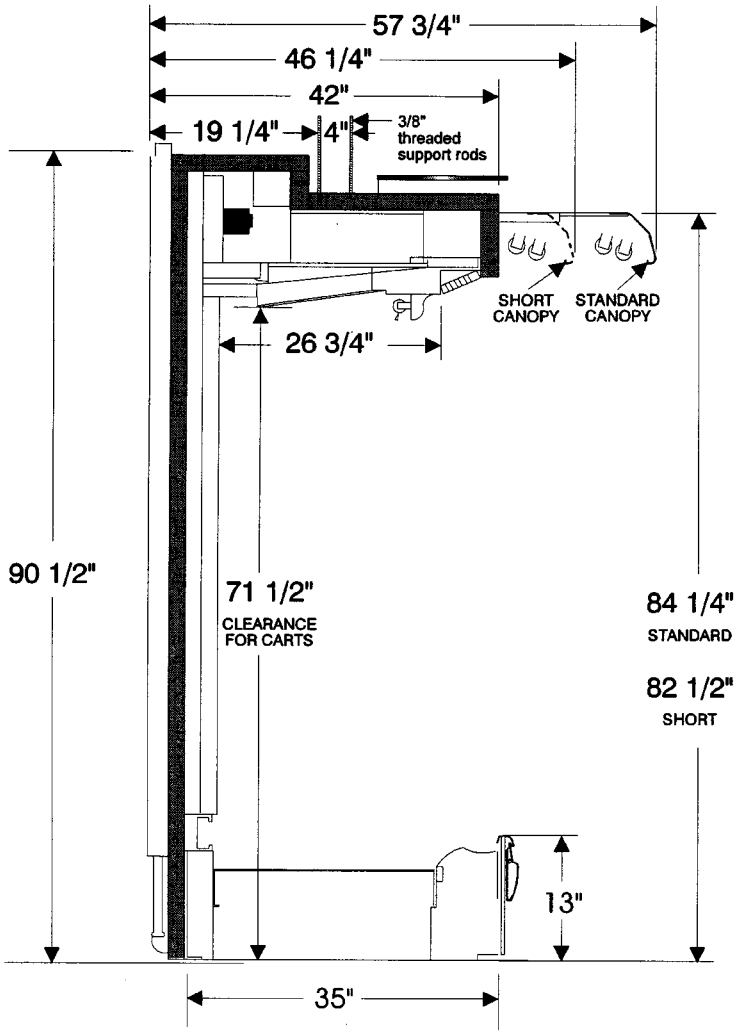
* ***NOTE: ADD 800 BTUH/FT OF CASE OPENING TO THE NORMAL WALK-IN COOLER LOAD. USE LOW VELOCITY COILS TO BACK UP THE REAR LOAD ROLL-IN CASE FOR CEILING HEIGHTS UNDER 9'. FOR CEILING HEIGHTS OVER 9' USE FORCED AIR STYLE COILS.***

The minimum size coils required behind the Roll-In case are; 8' case use a Model EFA - 130M and for a 12' case use a Model EFA - 190M. Upsize the coils as necessary based on the revised total load. Size at a 9°F temperature differential. The case coils and the cooler unit coils can be run on separate refrigeration circuits, but both must be defrosted at the same time.

NOTE: The cooler and case should be controlled by a Thermostat & Solenoid or EPR. Defrost needs to be at the same time.

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

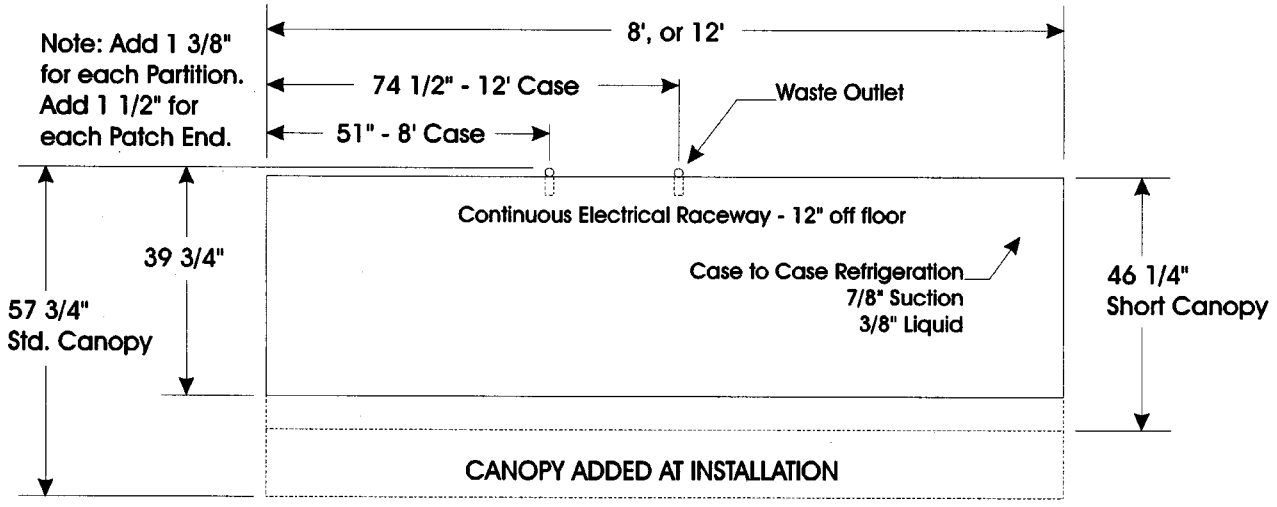
LDFL Front Load Roll-In Dairy Merchandiser



120 VOLT ELECTRICAL DATA (AMPS)		
LENGTH	STD. FANS	ANTI-SWT
8' LDFL	1.8	.9
8' LDRL	3.8	1.0
12' LDFL	2.4	1.2
12' LDRL	5.4	1.3

STANDARD 120 VOLT LIGHTING (AMPS) T-8/ ELECTRONIC BALLASTS (CANOPY)		
ROW	8'	12'
3	1.7	1.8

LDFL FLOOR PLAN



INSTALLATION PROCEDURES

Carpentry Procedures

Leveling the Cases

Check the levelness of the floor area to be used. The floor surface where this case is to be located should be as smooth and level as possible. Be sure there are no large bumps or dips in the floor. Insert shims under the case where necessary. The highest area of the line-up will have to be the determining high level point. The cases can then be leveled and joined from a level case at the high point. Level cases are necessary for both case pull-ups and proper operation. Small metal shims are furnished in the pull-up parts kit.

Joining Cases

Pull-up parts are shipped with the case in a "Blister-pack". A list of parts furnished and where they are used is in the pack. Not all parts may be necessary for a particular case. Access panels must be removed to install pull-up hardware.

CAUTION

Cases must be pushed together as close as possible before pulling them together with the pull-up bolt hardware.

Pull-up angles in the cases are factory installed for ease of field installation. Adjacent foam cases in a line-up may require different amounts of shimming to bring the cases into proper alignment.

Joint and end trims are shown elsewhere in this manual. Follow these instructions to complete assembly of these cases.

Patch ends are shipped loose because of shipping height limitations. Patch end kit drawings are provided in this manual.

Sealing Joints

Tubes of caulking compound are furnished in the blister pack. The best time to make a waterproof case joint is at installation. It is recommended that two beads of caulking be used, one inside of the foam gasket for sanitation and one outside of the foam gasket for refrigeration. For an added measure of sealing, air-conditioning/heating duct tape can be used under inside joint trims.

See "General I&S Manual" for proper refrigeration line installation and sealing.

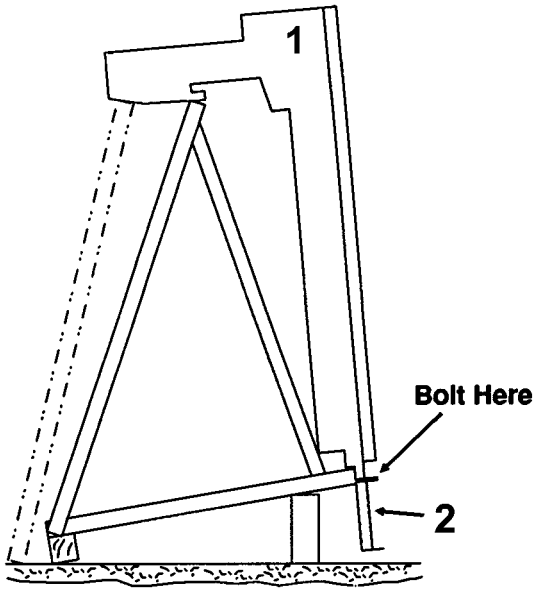
Special Instructions

Be sure to read and understand the special instructions on handling these cases in this manual. Pay particular attention to the sections dealing with the anchoring of these cases to walls and/or roof structures.

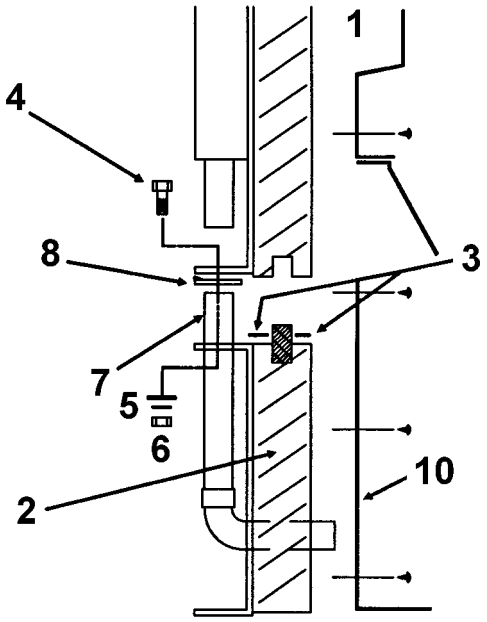
WARNING

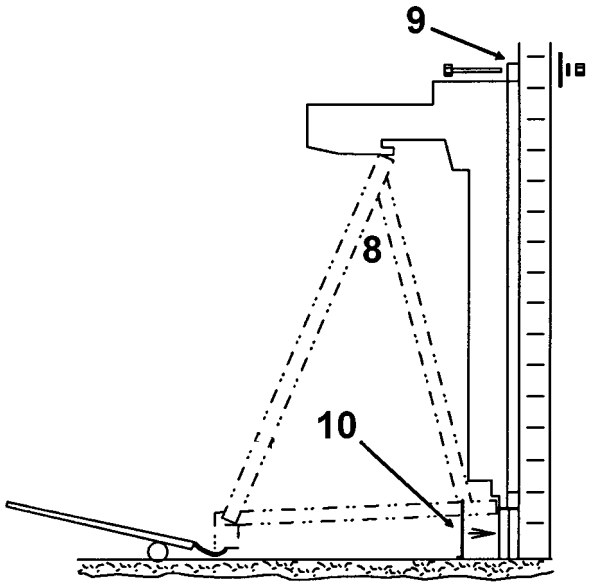
These cases are top heavy and require two or more people to move and/or position them. Improper handling of these cases could result in personal injury.

1. Remove the items packed on the skid.



2. Carefully raise the case (1) by tilting forward far enough to get enough clearance for the rear wall extension (2).

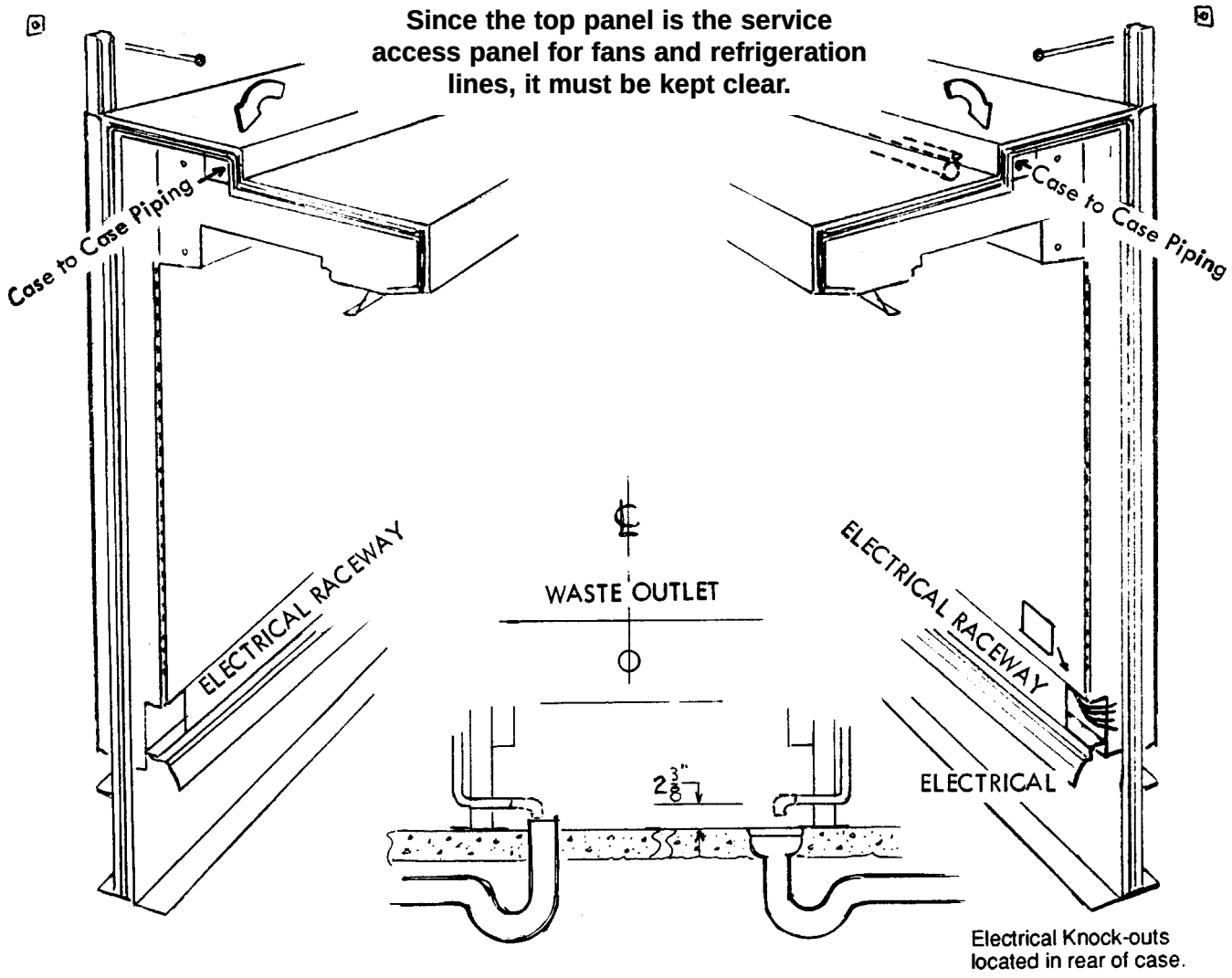




3. Apply the grey pressure sensative gasket (3) on both sides of the black foam gasket on the rear wall extension (2).
4. Install the rear wall extension (2) to the bottom of the case (1) with four bolts (4), washers (5) and nuts (6).
5. Install drain extension (7) on the bottom of the case (1) and secure with a hose clamp (8).
6. Move the case against the wall where it is to be located. Raise the telescoping extensions (9) and secure the case to the wall (or specifically designed structure).
7. Remove the rest of the skid.
8. Pilot drill 3/16” holes in rear wall extension (2) and install the base cladding (10) with self tapping screws.
9. Install joint trims and pull-ups per joint trim kit drawing.
10. Install patch ends per the patch end kit drawing.

NOTE

Since the top panel is the service access panel for fans and refrigeration lines, it must be kept clear.



Waste Outlet - Floor Drain

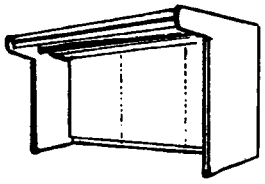
The preferred method is an in floor drain. Position drain so floor sweepings can not be swept into the drain.

The alternate method is a flush drain, where permitted. **NOTE: Do not slope floors, since trucks need a flat platform.**

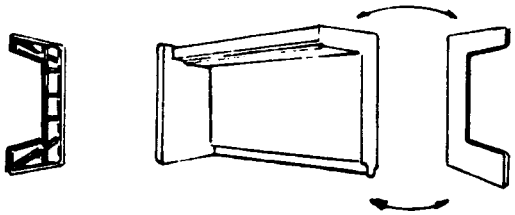
IMPORTANT

The information herein is only a general recommendation since store structures vary in strength and design. It is therefore necessary that the installing contractor and user assure themselves of the structural integrity of a chosen means of supporting these cases. TYLER can assume no liability for the consequences which may result from failure of structures or structural connections between this case and parts of a building.

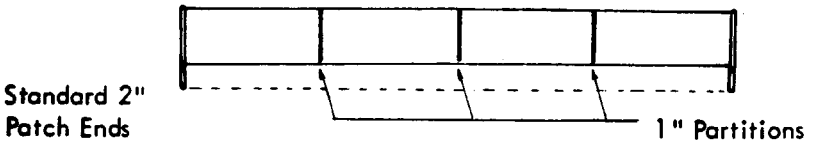
Patch Ends

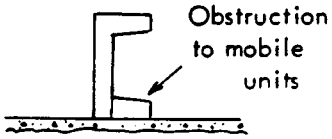


A single case is self-supporting with the ends carrying the weight. Shipping height limitations make it necessary to ship the case without ends. They must be installed on location after the rear wall extension is added to the case.



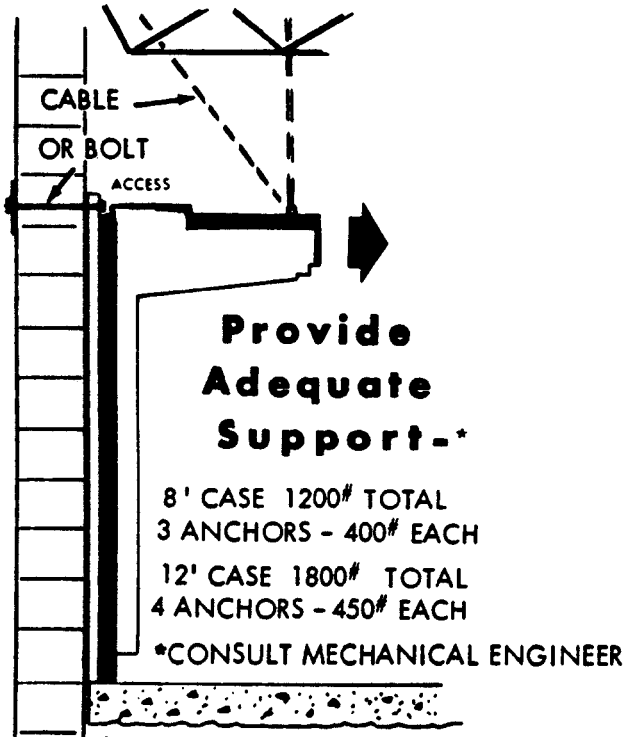
One inch structural partitions are available for use on line-ups.





The one inch structural partition can be used between every case so that the entire line-up will be self-supporting. A drawback is that the partitions limit flexibility.

The recommended method of supporting cases calls for supporting the cases from existing or specially constructed structures.



Copy of label attached to each front load air skreen display case.

IMPORTANT NOTICE

This case was designed to provide a high degree of display flexibility in shelving and in roll-in carts. The base structure has been eliminated, making the merchandiser dependent upon support from walls and/or roof members. Single 8' or 12' cases can also be supported from patch ends.

When two or more cases are to be installed and assembled, the cases must be attached to structural walls and/or structural portions of the roof . This meets the case weight requirement of 150 lb. per lineal foot .

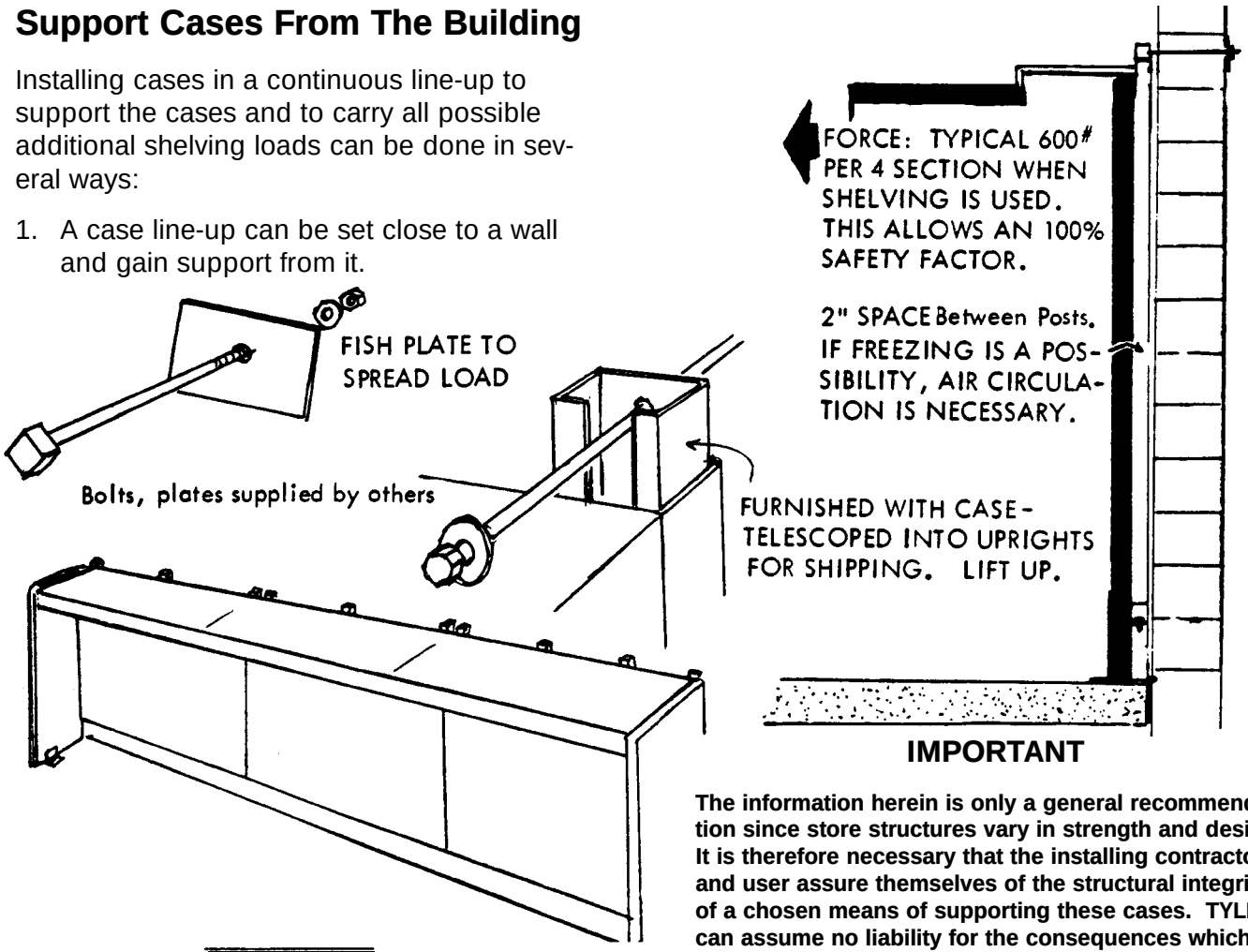
WARNING

If this case is part of a line-up that requires disassembly, use great care during disassembly. The case line-up is not self-supporting and could injure or cause death if it fell.

Support Cases From The Building

Installing cases in a continuous line-up to support the cases and to carry all possible additional shelving loads can be done in several ways:

1. A case line-up can be set close to a wall and gain support from it.



IMPORTANT

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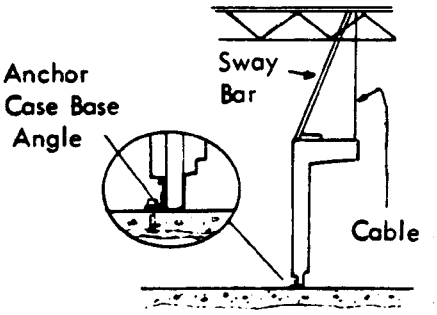
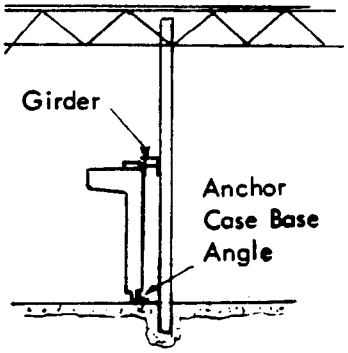
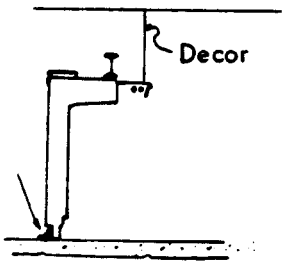
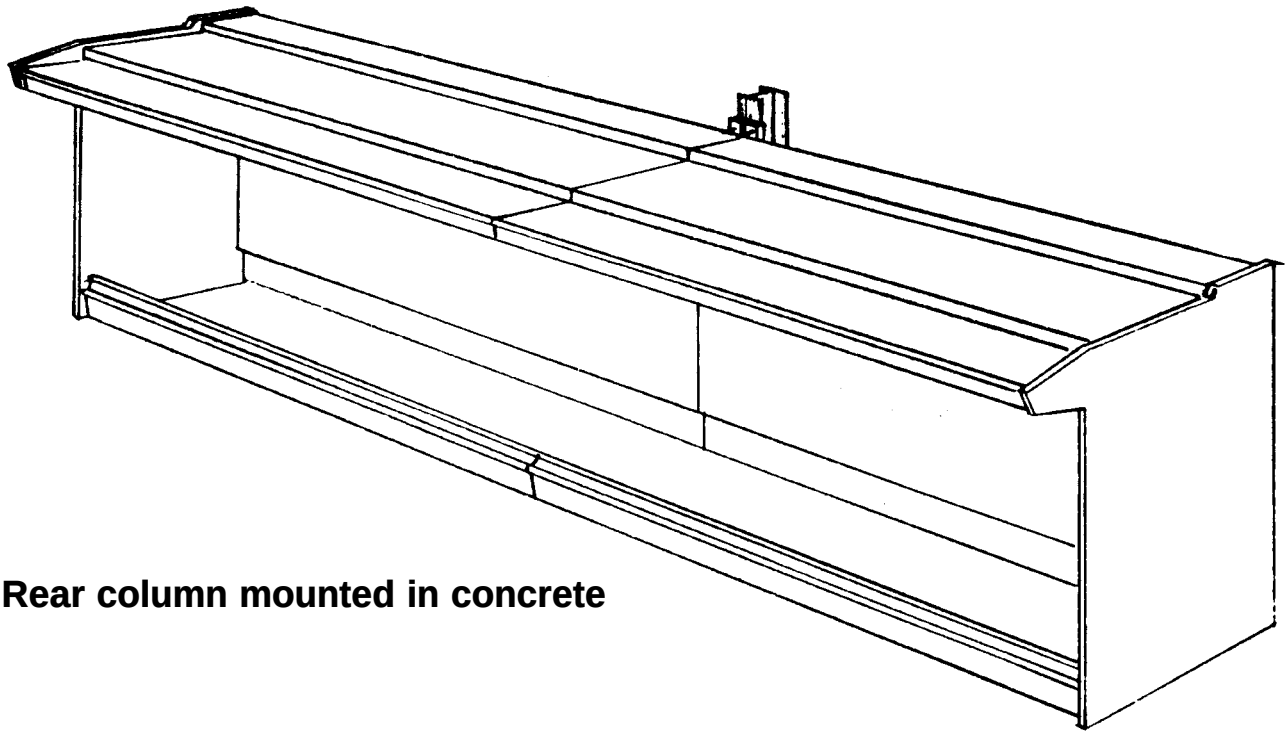


2. When no building wall is available, the case may be cable attached to the roof structure. Truss work might also be used. There are pre-drilled holes on the ends of each case so that 3/8" eyebolts or other bolts (up to 1/2") can be used. 1/4" cable with a minumum 2000 lb. tensile strength is recommended. The base must be anchored to the floor and sway bars as necessary must be used.



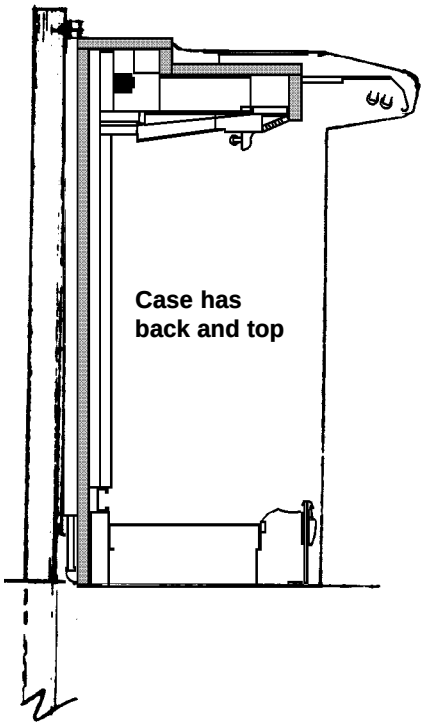


3. Columns may be run from floor to ceiling with a girder for case attachment.
4. Overhead structures can be used to support the cases and/or store decor from above.

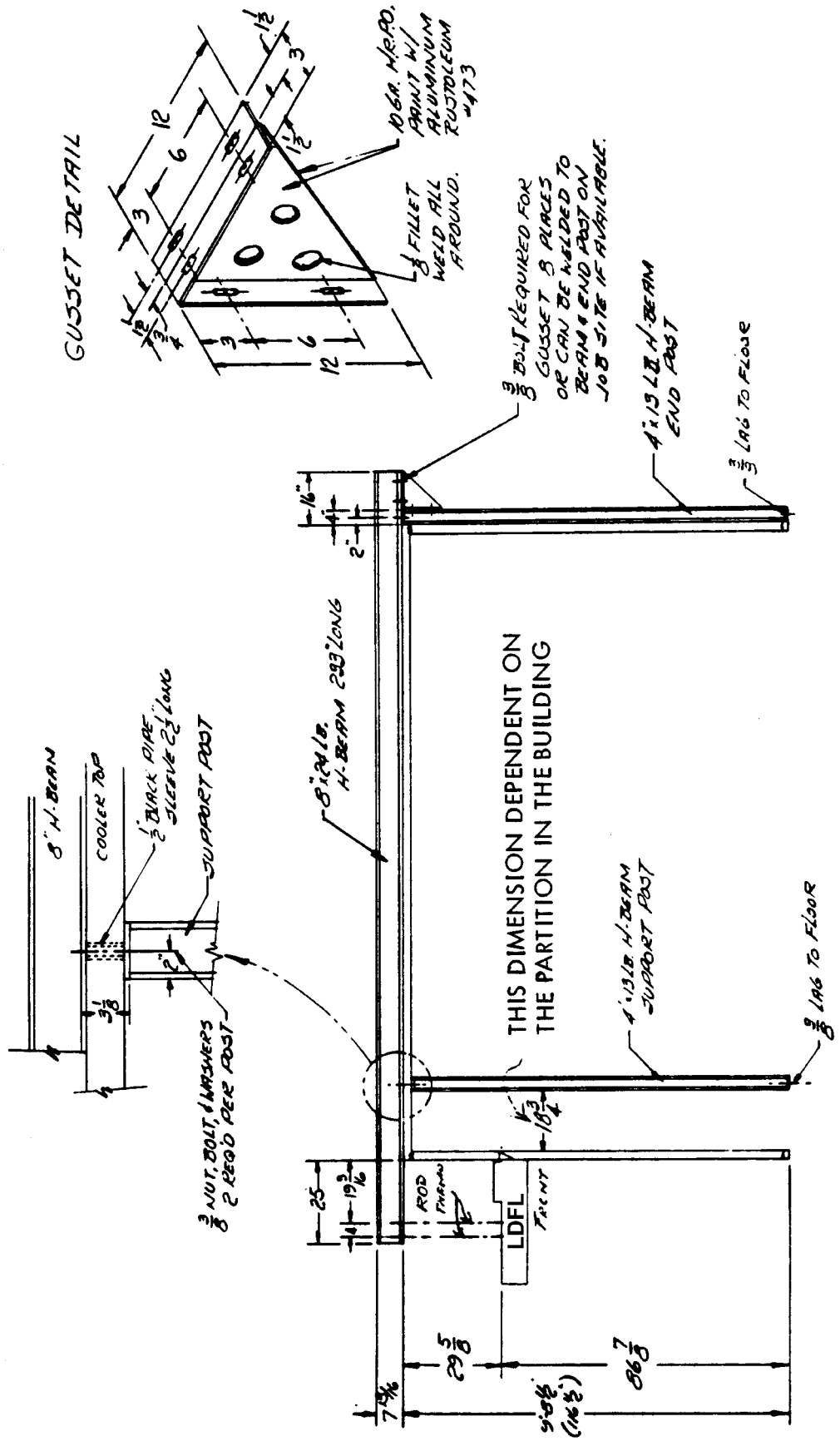


Rear column mounted in concrete

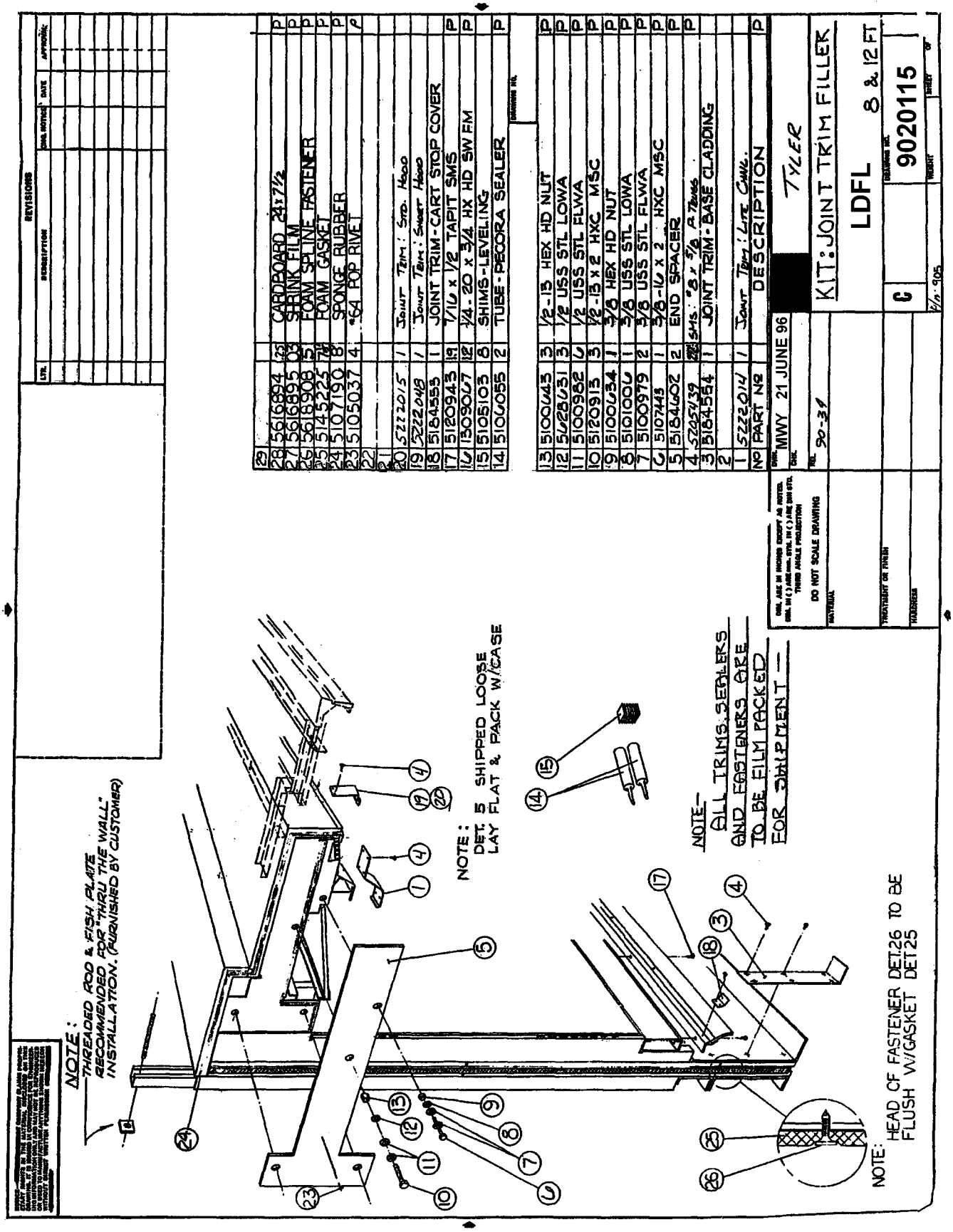
Line-up may be supported by various beam details



LDFL suspension system rear mounted column



Cantilever - Front Load Suspension


KIT: JOINT TRIM FILLER
LDFL 8 & 12 FT
9020115
TYLER
MWY 21 JUNE 96
DESCRIPTION
PART NO
CARDBOARD 24x72
SHRINK FILM
FOAM SPLINE FASTENER
FOAM GASKET
SPONGE RUBBER
POP RIVET
JOINT TRIM-CART STOP COVER
1/16 x 1/2 TAPIT SMS
1/4-20 x 3/4 HX HD SW FM
SHIMS-LEVELING
TUBE-PECORA SEALER
1/2-13 HEX HD NUT
1/2 USS STL LOWA
1/2-13 x 2 HXC MSC
3/8 HEX HD NUT
3/8 USS STL LOWA
3/8 USS STL FLWA
3/8-16 x 2 HXC MSC
END SPACER
JOINT TRIM-BASE CLADDING
NOTE: DET. 5 SHIPPED LOOSE LAY FLAT & PACK W/CASE
NOTE- ALL TRIMS, SEALERS AND FASTENERS ARE TO BE FILM PACKED FOR SHIPMENT
NOTE: THREADED ROD & FISH PLATE RECOMMENDED FOR "THRU THE WALL" INSTALLATION. (FURNISHED BY CUSTOMER)
NOTE: HEAD OF FASTENER DET 26 TO BE FLUSH W/GASKET DET 25

PART NO.	QTY.	DESCRIPTION	P/C
1	5100913	5	1 3/8 PLUG BUTTON	P
2	5122125	3	1/2-13 x 3 HX HD MSC ZP	P
3	5100982	6	1/2 USS STL. FLWA	P
4	5128681	3	1/2 USS STL. LOWA	P
5	5100643	3	1/2-13 HEX NUT	P
6	5101000	4	1/4 USS STL. LOWA	P
7	5205439	39	#8 x 5/8 P TRUSS HD SMS	P
8	5183475	1	END JT. TRIM-OUTSIDE CLR.	P
9	5105054	1	1" PLUG BUTTON	P
10	5149341	1	3/8-16 x 2 1/2 HXC MSC	P
11	5100979	2	3/8 USS STL. FLWA	P
12	5101006	1	3/8 USS STL. LOWA	P
13	5100634	1	3/8-16 HEX HD NUT	P
14	5113835	1	FLOOR ANGLE	P
15	5111030	2	#8 x 1 1/2 TRUSS HD. NIP SMS	P
16	5099303	1	END TRIM: GRID REAR	
17	5186732	1	END TRIM: GRID FRT.	
18				
19	5210994	1	END TRIM: FRT. CLADING.	
20	5148997	4	#14 x 2 1/2 SLH HX HD	P
21				
22	5183536	2	#8-18 x 5/8 HXWSHD	P
23	5107190	5'	1/8 x 1/2 SPONGE RUBBER	P
24	5145225	90"	GASKET: ETHOFOAM (IN.)	P
25	5189966	6	FSTR. FOAM SPLINE	P
26		1	CLS.F. CANOPY END R.H.	
27	REF.	1	CLS.F. CANOPY END L.H.	
28				
29	5105103	10	SHIMS-LEVELING	
30	5106055	2	TUBE-LIMESTONE PECORA	P
31	5116894.25		CARDBOARD 7 1/2 x 24	P
32	5116895.03		LB. SHRINK FILM	P
33				
34	5100918	4	PLUG BUTTON	P
35	5184301	1	END TRIM BASE EXTEN.	
36	5184600	1	END TRIM CART STOP COVER	
37	5186734	1	END TRIM HTR. WIRE ENCLOSURE	
38	5149724	1	SEALANT (SILASTIC) / FUSE	P
39				
40				

TYLER REFRIGERATION CORPORATION NILES • MICHIGAN • 49120

DWN. NL | DATE 12 SEPT 96 | CHK. LWP 9-12-96

REL. 96-015 | MATL

NAME ASSY: FILLER KIT (PATCH END TRIM) (FOR SHORT HOOD)

LDFL 8'12' | SIM OPT. | PART NO. 9030256

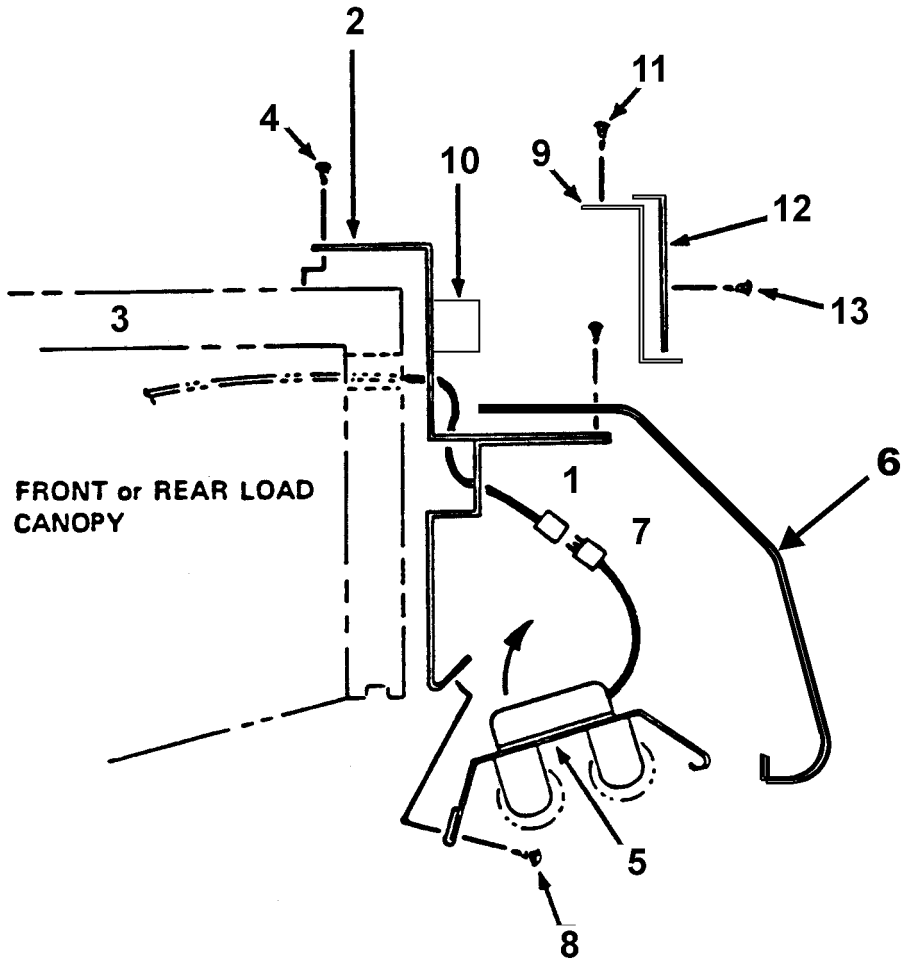
Rev.	DESCRIPTION	RELEASE	DATE	BY	CHK.	P/P

NOTICE—Tyler Refrigeration Corporation claims proprietary rights in the information disclosed on this drawing. It is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without direct written permission from Tyler to the user.

Hood Assembly

WARNING

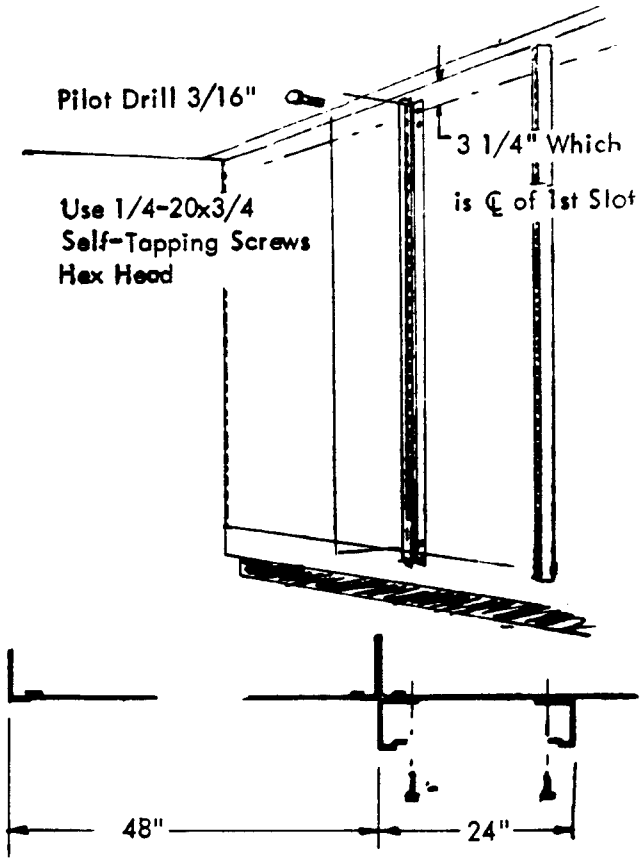
Make sure all power is off to the case. Electrical servicing should always be done by a qualified electrician. Improper servicing could result in product damage and/or personal injury.



1. Pull the 3-prong female receptacle (1) through the hood extension weld assembly (2).
2. Fasten hood extension weld assembly (2) to the canopy (3) with tappit screws (4).
3. Hook the light channel assembly (5) into the front lip of the front hood (6).
4. Plug the light channel wire (7) into the female receptacle (1).
5. Swing the light channel assembly (5) up into place and secure with truss head screws (8).
6. Install top front cladding (9) over ballast (10) with screws (11).
7. Complete the assembly by installing the hood extension joint trim (12) with truss head screws (13).

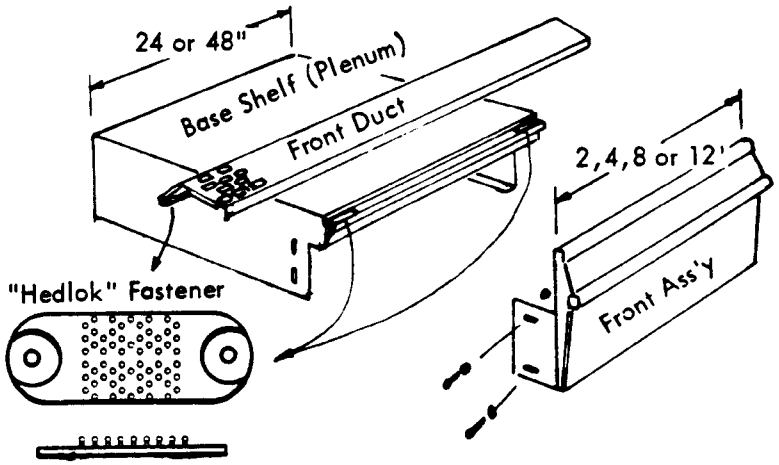
Shelving and Shelf Base Installation

When 48” shelving is to be used, installation is as in conventional cases. 24” and 48” shelf bases can be used, or shelves can be mounted above roll-in carts. If 24” shelves are used, it is necessary to attach uprights at a 24” spacing as shown to the right. The uprights are symetrical so they can be used for right or left hand applications just by reversing them. Pilot drill 3/16” on a line 3 1/4” down from the top. This also coincides with the centerline of the top slot on the built-in shelving uprights. Attach the uprights with the provided hex head screws at top and bottom using the upper hole in each pair of holes in the upright.



Shelf Bases

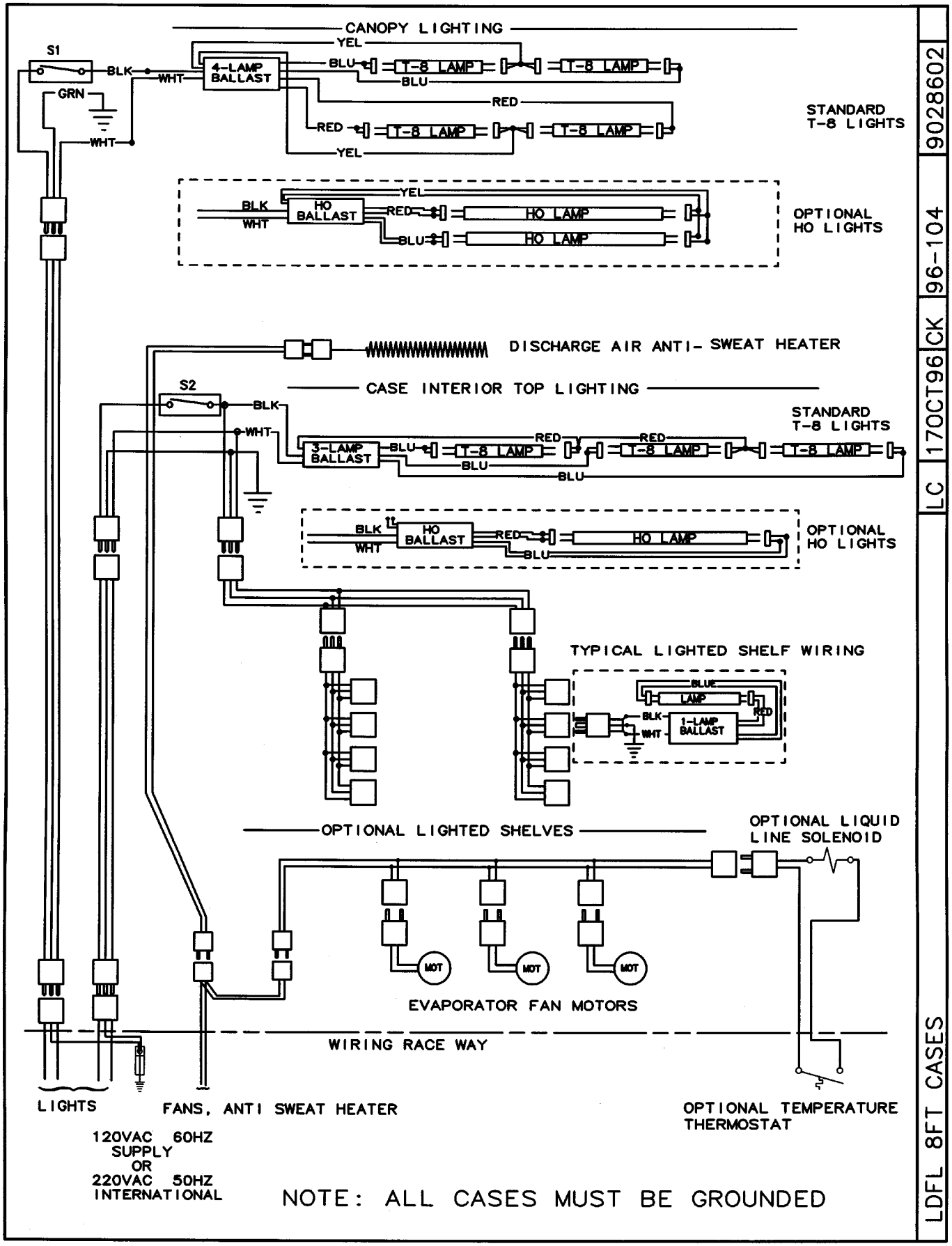
Shelf bases are 24” or 48” wide. Fronts for the shelf bases are 24, 48, 96 or 144” wide. Front ducts attach to the bases with “Hedlok” fasteners. These plastic interlocking devices provide easy removal, yet hold the front ducts securely. Just pry up to remove. Push in place to install.

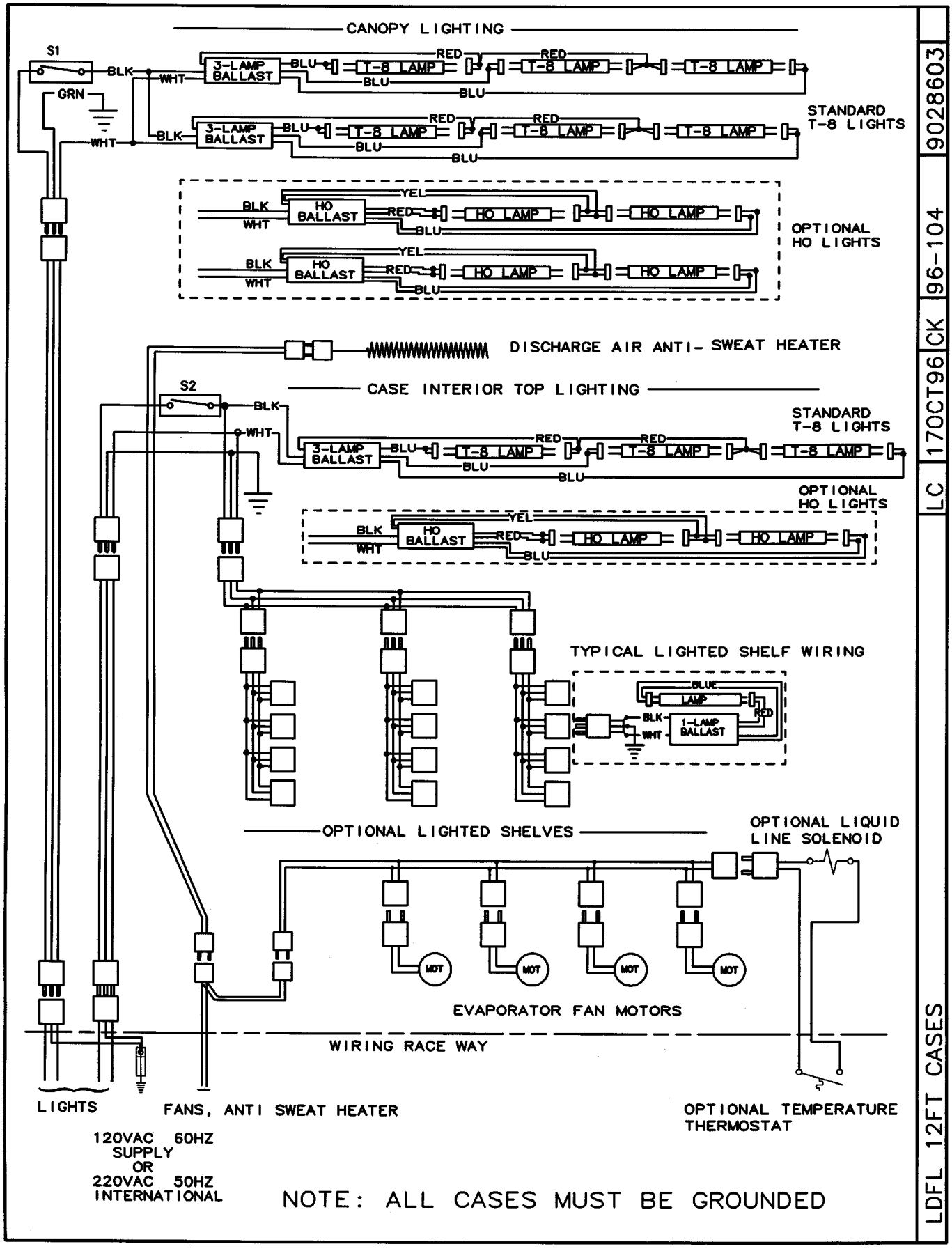


WIRING DIAGRAM

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.


CANOPY LIGHTING
S1
BLK
WHT
GRN
WHT
4-LAMP BALLAST
YEL
BLU
T-8 LAMP
T-8 LAMP
BLU
RED
RED
T-8 LAMP
T-8 LAMP
YEL
STANDARD T-8 LIGHTS
BLK
WHT
HO BALLAST
YEL
RED
HO LAMP
BLU
HO LAMP
OPTIONAL HO LIGHTS
DISCHARGE AIR ANTI- SWEAT HEATER
S2
CASE INTERIOR TOP LIGHTING
BLK
WHT
STANDARD T-8 LIGHTS
3-LAMP BALLAST
BLU
T-8 LAMP
RED
RED
T-8 LAMP
T-8 LAMP
BLU
BLU
BLK
WHT
HO BALLAST
RED
HO LAMP
BLU
OPTIONAL HO LIGHTS
TYPICAL LIGHTED SHELF WIRING
BLUE LAMP
RED
BLK
WHT
1-LAMP BALLAST
OPTIONAL LIGHTED SHELVES
OPTIONAL LIQUID LINE SOLENOID
MOT
MOT
MOT
EVAPORATOR FAN MOTORS
WIRING RACE WAY
LIGHTS
FANS, ANTI SWEAT HEATER
OPTIONAL TEMPERATURE THERMOSTAT
120VAC 60HZ SUPPLY OR 220VAC 50HZ INTERNATIONAL
NOTE: ALL CASES MUST BE GROUNDED
LDFL 8FT CASES
LC 170CT96 CK 96-104 9028602


CANOPY LIGHTING
S1
BLK
WHT
GRN
3-LAMP BALLAST
BLU
T-8 LAMP
RED
STANDARD T-8 LIGHTS
HO BALLAST
YEL
HO LAMP
OPTIONAL HO LIGHTS
DISCHARGE AIR ANTI- SWEAT HEATER
S2
CASE INTERIOR TOP LIGHTING
TYPICAL LIGHTED SHELF WIRING
BLUE LAMP
1-LAMP BALLAST
OPTIONAL LIGHTED SHELVES
OPTIONAL LIQUID LINE SOLENOID
MOT
EVAPORATOR FAN MOTORS
WIRING RACE WAY
LIGHTS
FANS, ANTI SWEAT HEATER
OPTIONAL TEMPERATURE THERMOSTAT
120VAC 60HZ SUPPLY OR 220VAC 50HZ INTERNATIONAL
NOTE: ALL CASES MUST BE GROUNDED
LDFL 12FT CASES
LC 17OCT96 CK 96-104 9028603

PARTS INFORMATION

Operational Parts List

Case Usage	**Domestic**		**Export**	
Electrical Circuit	115 Volt 60 Hertz		220 Volt 50 Hertz	
Case Size	8’	12’	8’	12’
Fan Motor	5243498 9 Watt	5243498 9 Watt	5223696 18.3 Watt	5223696 18.3 Watt
Fan Motor Brackets	5205112	5205112	5205112	5205112
Fan Blades (8.75” 31° 3B)	5104858	5104858	----	----
(8.75” 26° 3B)	----	----	5054140	5154140
T-8 Lamp Ballast (canopy) (1st & 2nd row)	5966635	5991030	9028439	9028438
(3rd row)	5991029	5991030	9028437	9028438
Opt. 800MA Lamp Ballast (canopy)(1st & 2nd row)	5204769	5049140	5204859	5204859
(3rd row)	5049140	5049140	5989796	5989796
T-8 Lampholder (canopy)	5232279	5232279	5232279	5232279
800MA Lampholder (canopy) (telescoping)	5614628	5614628	5614628	5614628
(stationary)	5614629	5614629	5614629	5614629
Light Switch (SPST)	5100565	5100565	5100565	5100565
Anti-Sweat Heater (air grid retainer)	5124818	5124819	5081149	5081150

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

Cladding and Trim Parts List

Item	Description	LDFL 8’	LDFL 12’
1	Screw (per close-off panel assy)	1309067 (9)	1309067 (12)
2	Close-off Panel Assembly	9026544	9026546
3	Screw (per top cover)	5183536 (5)	5183536 (5)
4	Top Cover	5186277	5186278
5	Lower Close-off Panel	9026548	9026548
	Screw (per lower close-off)	5183536 (2)	5183536 (2)
6	Close-off Panel Assembly	9026544	9026546
	Screw (per close-off panel assy)	1309067 (9)	1309067 (12)
7	Screw (per canopy)	5183536 (4)	5183536 (6)
8	Front Canopy Hood, Painted	9025223	9025224
9	Canopy Hood Backer, Painted	9025983	9025983
10	Screw (per backer)	5205439 (2)	5205439 (2)
11	Standard Hood Joint Trim	5222015	5222015
	Short Hood Joint Trim	5222048	5222048
12	Screw (per hood joint trim)	5205439 (6)	5205439 (6)
13	Light Channel Joint Trim	5222014	5222014
14	Bumper Retainer	9025504	9025506
15	Color Band, Painted	NA	NA
16	Color Band Backer, Painted	NA	NA
17	Bumper End Trim	---- color by order ----	
18	Bumper Backer	---- color by order ----	
19	Bumper	---- color by order ----	
20	Front Lower Cladding, Painted	NA	NA
21	Rivet (per lower cladding)	5104702 (6)	5104702 (6)
22	Shoulder Screw (per lower cladding)	9025833 (16)	9025833 (24)
23	Base Extension Assembly	5055027	5055028
	Foam Base Extension	5054973	5054974
	Reinforcement Channel	5055031	5055032
24	Screw (per channel)	1309067 (6)	1309067 (8)
25	Screw (per cart stop joint trim)	5205439 (2)	5205439 (2)
26	Cart Stop Joint Trim	5184553	5184553
27	Cart Stop Assembly	5184559	5184560
28	Screw (per cart stop assembly)	5183536 (6)	5183536 (10)
29	Raceway Cover	5184498	5184499
	Screw (per raceway cover)	5111197 (7)	5111197 (9)
30	Raceway Assembly	5184500	5184501

Item	Description	8’	12’
31	Screw (per raceway assembly)	5183536 (6)	5183536 (8)
32	Screw (raceway cover plate)	5111197 (7)	5111197 (9)
33	Raceway Cover Plate	5184497 (2)	5184497 (2)
34	Nut (per end spacers)	5100634 (2)	5100634 (2)
35	Lock Washer (per end spacers)	5101006 (2)	5101006 (2)
36	Flat Washer (per end spacers)	5100979 (4)	5100979 (4)
37	Machine Screw (per end spacers)	5107443 (2)	5107443 (2)
38	Nut (per end spacers)	5100643 (6)	5100643 (6)
39	Lock Washer (per end spacers)	5628631 (6)	5628631 (6)
40	Flat Washer (per end spacers)	5100982 (12)	5100982 (12)
41	Machine Screw (per end spacers)	5120913 (6)	5120913 (6)
42	Rivet (per end spacers)	5105037 (8)	5105037 (8)
43	End Spacer	5184602 (2)	5184602 (2)