

L5FGA, L5NGA

GLASS DOOR MERCHANDISER (ANTHONY) Frozen Food & Normal Temp Cases With Reversible Doors

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.

PRINTED IN	I Specifications subject to	REPLACES	S	ISSUE		PART		
IN U.S.A.	change without notice.	EDITION	3/99	DATE	10/99	NO.	9027521	rev. D

Tyler Refrigeration Corporation * Niles, Michigan 49120

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The following Frozen Food and Normal Temperature Glass Door Merchandiser models are covered in this manual:

MODEL	DESCRIPTION
L5FGA/L5NGA	2-DR, GLASS DOOR MERCHANDISER (5', 2")
L5FGA/L5NGA	3-DR, GLASS DOOR MERCHANDISER (7', 8 7/16")
L5FGA/L5NGA	4-DR, GLASS DOOR MERCHANDISER (10', 2 7/8")
L5FGA/L5NGA	5-DR, GLASS DOOR MERCHANDISER (12', 9 5/16")

SPECIFICATIONS

L5FGA Glass Door Merchandiser (ANTHONY) Specification Sheets

MODEL	L5FGA	L5FGA
USAGE	FROZEN	ICE CREAM
BTUH/DR	1538	1656
SUCTION®	-16F	-23F
ENTER AIR°	-5F	-12F

Capacity data listed is for cases with T-8 electronic vertical lighting (Prism). Lights remain on during defrost. See Capacity Adjustments below:

Add 916 Btuh per glass end for frozen food cases

Add 1000 Btuh per glass end for ice cream cases

Add 100 Btuh/Dr for opt. 800MA horizontal lighting

Add 200 Btuh/Dr for opt. 800MA vertical lighting

Add 318 Btuh/Dr for opt. VHO 1500MA horiz. lighting

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

	208 VOLT DEFROST (AMPS)													
DRS	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FF/IC 1 PH	6.6 TG-30	10.8 TG-30	15.0 TG-30	19.3 TG-30	21.6 TG-30	25.8 TG-40	30.1 TG-40	34.3 TG-50	38.6 TG-50	N/A	N/A	N/A	N/A	N/A
FF/IC 3 PH	N/A	N/A	N/A	N/A	19.0 TG-3 -30	23.0 TG-3 -30	26.0 TG-3 -40	30.0 TG-3 -40	34.0 TG-3 -40	26.0 TG-3 -40	30.0 TG-3 -40	34.0 TG-3 -40	34.0 TG-3 -40	34.0 TG-3 -40
			CASE-1	TO-CAS	E SUCI	TION LI	NE SUB	-FEED	BRANC	H LINE	SIZING			
R404A FF	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1 1/8"	1 3/8"						
R404A IC	5/8"	7/8"	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"

DEFROST CONTROL					PRESSURE SE	EPR SETTINGS		
PER DAY	MODE	TIME	TERM.		CUT IN	CUT OUT	R22	R404A
1	ELECT / FF	60 MIN.	60F	FF	16# @ R22	8# @ R22	12#	
2	ELECT / IC	60 MIN.	60F	IC	12# @ R22	4# @ R22	8#	
2	HOT GAS / FF	18-20 MIN.	55F	FF	23# @ R404A	14# @ R404A		19#
2	HOT GAS / IC	20-25 MIN.	55F	IC	19# @ R404A	9# @ R404A		14#

CASE CIRCUITS: This case requires a separate 120V circuit for fans, lights, anti-sweats, and a 208V circuit for Electric Defrost (if used). The fan circuit for Gas Defrost includes the drain pan heater which is on only when the fans are off. The anti-sweat circuit feeds power to both the cyclable and non-cyclable heaters. When an Energy Saving Anti-Sweat Controller is used a relay is added and a jumper is removed to control the cyclable heaters.

The temperature control mode used should prevent excessively low discharge air temps which irritates product frosting. This limit should be -12F.

CASE BTUH REQUIREMENTS are calculated to produce approximately the indicated entering air temperature 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.

L5FGA Glass Door Merchandiser (ANTHONY)



	120 VOLT ELECTRICAL DATA (AMPS)												
DBC	STD.	FANS	ECM	ECM FANS									
	H.G.	ELEC.	H.G.	ELEC.									
2	1.5	1.2	.9	.6	3.2								
3	2.2	1.8	1.3	.9	4.7								
4	2.8	2.5	1.5	1.2	6.2								
5	3.5	3.0	2.0	1.5	7.8								

	120 VOLT LIGHTING DATA (AMPS)										
DRS	HORIZ	ONTAL	VERT T8	VERT H.O.							
	V.H.O.	H.O.									
2	2.9	1.6	2.2	3.2							
3	2.9	2.1	2.9	3.2							
4	5.8	3.1	3.7	4.8							
5	6.0	3.1	4.3	4.8							



L5NGA Glass Door Merchandiser (ANTHONY) Specification Sheets

MODEL	L5NGA
USAGE	MEDIUM TEMP
BTUH/DR	1305
SUCTION®	+20F
ENTER AIR°	+30F

Capacity data listed is for cases with T-8 electronic vertical lighting (Prism). Lights remain on during defrost. See Capacity Adjustments below:

Add 520 Btuh per glass end for medium temperature cases

Add 100 Btuh/Dr for optional 800MA horizontal lighting

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													
DRS	2	3	4	5	6	7	8	9	10	11	12	13	14	15
R22	3/8"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"

DEFROST CONTROL			PRESSUR	E SETTING	EPR SETTINGS		
PER DAY	MODE	TIME	CUT IN	СИТ ОИТ	R22	R404A	
1	TIME OFF	60 MIN.	64# @ R22	29-38# @ R22	43	•••	
	- A.S. A.	a constant	80# @ R404A	39-49# @ R404A		55	

CASE CIRCUITS: There is a 120v Case Fan Circuit plus the 120v Case Anti-sweat Heater Circuit. Interior lights require a separate 120v circuit which can be switched at the back room for convenience in controlling the lights.

CASE BTUH REQUIREMENTS are calculated to produce approximately the indicated entering air temperature 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.

L5NGA Glass Door Merchandiser (ANTHONY)



120 VOLT ELECTRICAL DATA (AMPS)							
DRS	ANTI-SWEAT						
2	1.2	.6	1.9				
3	1.8	.9	2.8				
4	2.5	1.2	3.7				
5	3.0	1.5	4.5				

120 VOLT LIGHTING DATA (AMPS)							
DRS	HORIZ	ONTAL	VERT TR				
	УНО	но					
2	2.9	1.6	2.2				
3	2.9	2.1	2.9				
4	5.8	2.1	3.7				
5	6.0	3.1	4.3				



INSTALLATION PROCEDURES

Carpentry Procedures

Case Line-Up

Before starting the case line-up, review the store layout floorplans and survey the areas where case line-ups are going to be installed.

WARNING

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

NOTE

Allow at least 3" of air space between the back of these cases and store walls or other cases to minimize possible condensation problems. Forced ventilation might be necessary in some situations.



1. Snap chalk lines where the front and rear base rails of the cases are to be located for the entire line-up.

NOTE

Front and rear edges of base rails should always be used to line-up cases. 6" shims allow adjoining ends of cases to be shimmed together.

Locate highest point on chalk lines as a reference for determining the number of shims to be placed under the case base rails. Position first case at highest point on the chalk lines and shim case supports as required. Check leveling at hand rails and top of case and back of case.

<u>CAUTION</u>

Shipping braces should only be removed from case ends that are to be joined. This protects the cases from possible damage during the line-up procedure.

NOTE

A foam gasket is factory installed on one end of the case. This gasket fits into a groove on the adjoining case when cases are pulled together. Do not depend on the foam gasket alone to make a good seal!



3. Apply two heavy beads of caulking compound from the Filler Kit to the end of case at dotted (. . .) and dashed (- - -) lines. Proper caulking provides good case refrigeration and sanitation. 4. If the case requires a plexiglas system divider or 1" partition, install as follows:

Plexiglas System Divider Installation

NOTE

The holes in the divider will only line-up one way.



- a. Line-up the four holes in the divider (1) with the four holes for the case pull-ups (2). Position divider on sealant on case end.
- b. Apply sealant to outside surface of divider (1) in same position as the case sealant application.

1" Partition Installation

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.



a. Apply sealant to outside surface of partition (3) where the two surfaces of the adjoining case will contact the partition (3). Drill 3/16" holes through partition and secure to one of the cases with four screws (4).

After cases are joined, install the partition trim:

- b. Install vertical trim support (5) on front edge of partition (3) with four screws (6).
- c. Install vertical joint trim (7) to vertical trim support (5) with four screws (8).



5. Remove bottom tray (9), front duct (10), rear pull-up access covers (11), and top pull-up access cover (12) from adjoining ends of both cases. This provides access to the case pull-ups.

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- 6. Push cases tightly together making sure the pull-ups are aligned.
- Add shims (13), as required, under the adjoining case base rails (14). Check leveling at top of case (15), and back of case (16).

CAUTION

Do not drill or use other holes through the case end for pull-ups. This may deform the case end and could cause joint leaks and/or poor refrigeration.



- Position all pull-up bolts and mounting hardware (17) at pull-up locations A, B, C, and D. Do not tighten any pull-up hardware until all of it has been installed. Tighten all pull-up hardware equally starting at point A and finishing at point D. Do not overtighten.
- Install top pull-up access cover (12), rear pull-up access covers (11), front duct (10), and bottom tray (9).
- 10. Remove shipping tape from fluorescent lamps.

Trim Installation/Alignment

Horizontal & Vertical Joint Trim Installation



 Apply bead of caulking compound from the Filler Kit to the top of each horizontal joint (1). If gap at horizontal joint is too large, pull together with sheet metal screws (2) or pop-rivets (3).

NOTE

If additional sealing is preferred, 2" wide duct tape can be applied to the top of the internal bottom joint between cases. The tape will be covered by the horizontal joint trim. Duct tape is not furnished.



 Apply sealer to horizontal joint trim (4) and install joint trim (4) on the horizontal joint (1).

NOTE

The following information is for joining cases without 1" partitions. For cases with 1" partition between them, see page 9.



- Position vertical joint trim (5) in front case line-up joint (6) and secure with four screws (7) and screw nuts (8) through adjoining case door frames (9).
- 4. Install top backer (10) before joining cases, or install external top joint trim after cases are joined.

NOTE

See "General I&S Manual" for raceway cover, kickplate and end closeoff installation instructions.

Refrigeration Procedures

NOTE

See "General I&S Manual" for all other refrigeration procedure information.

L5FGA Application Requirements

Temperature Control Strategy

- A suction stop EPR valve is the preferred method for maintaining temperature control on parallel compressor system applications.
- When using a thermostat and liquid line solenoid for temperature control, the maximum line-up length that may be controlled is 24 feet.
- The discharge air temperature shall be maintained between -3°F to -5°F for frozen food applications and between -10°F to -12°F for ice cream applications.

Temperature Sensor Locations

- The sensor used for temperature control shall be located in the discharge air.
- If a case controller is used, the sensor used for defrost termination MUST be insulated and located where the standard defrost termination klixon is located. If a case controller is used and the case is defrosted using electric heaters, the defrost termination klixon must be replaced with a 70°F fail safe klixon. This meets the safety requirements.

Defrost Control Strategy

- High door openings loads associated with high food product sales may require two defrost periods per 24 hour period.
- Pumping down the refrigeration circuit at the beginning of the defrost period is not recommended.

Electrical Procedures

Electrical Considerations

Case Fan Circuit

This circuit is to be supplied by an uninter-

rupted, protected 120V circuit. At case startup, the fans will not come on until the fan delay thermostat on the coil senses 20°F. After the case has been running, the fan operation is interrupted by the defrost relay whenever the defrost cycle is initiated. The defrost relay activates the defrost and drain pan heaters at the same time it shuts off the fans. After defrost, the defrost and drain heaters will shut off and refrigeration will resume.

NOTE

The fans will not restart until the coil temperature reaches 20°F at the fan delay thermostat.

Fluorescent Lamp Circuit

The standard case lighting system is T-8 Electronic Vertical (Prism) lamps. The standard lighting is 3 to 6 rows of vertical T-8 lighting located on each side of all doors.

ATTENTION: INSTALLER

- Do not turn on the lights inside the case unless operating temperature has been reached. Ballast failure may occur when the lights are operating without refrigeration in the case.
- Do not leave power on to the door and frame heaters unless operating temperature inside the case has been reached. Failure to follow this instruction could cause damage to the door frame.
- The light switch should be left off if refrigeration is turned off for periods longer than normal defrosting times. This prevents possible distortion and/or damage to non-metal parts from lighting heat.

NOTE

All lighting options, except Prism Lighting, have a 100°F klixon built into the door frame. This klixon keeps the case lighting from becoming too hot, especially during the installation process. Lights will remain on during defrost cycle.

ESM/ESS Anti-Sweat Control System

When a line-up of cases are ordered with the optional ESM/ESS control system, up to 10 cases can be controlled by one master unit (ESM). The ESM should be mounted on the top right hand end of one of the cases in the line-up. By pulling the two required wires from the ESM to the first slave unit (ESS) in the line-up, you can daisy chain all the ESS together at their individual terminal blocks. The ESS terminal blocks are located in the lower raceway of each case (see ESM/ ESS wiring diagram in this manual).

The TYLER ESM/ESS control system is designed to effect energy savings in the operation of L5FGA glass door merchandisers. This is accomplished by cycling the antisweat heat in the door frames and door glass. 522 watts of heat - (0.87 amps per door) in a 5 door case can be cycled on and off based on the dewpoint. Less energy is used as the dewpoint lowers. The ESM draws its very small requirements of 3 watts @ 120 volts (0.03A) from the case.

Installation of the ESM Controller

WARNING

Make sure all power supplies to the case are disconnected to avoid possible product damage and/or personal injury.

NOTES

- ESM dewpoint controller should be installed by an authorized service person.
- The ESM controller must only be connected to the case it was shipped with.



- Remove four screws (1) and metal cover (2) from top of case (3). Do not discard the screws. This will expose the female receptacle (4).
- Remove ESM cover (5) from ESM controller (6), then remove knock out (7) nearest the wiring leads. Install 7/8" plastic bushing (8) in the knock out hole (7).
- 3. Position the ESM controller (6) over the female receptacle (4).
- 4. Connect controller plug (9) to female receptacle (4).
- 5. Set selector (10) on "C" setting.
- Secure ESM controller (6) to top of case (3) with four screws (1). Install the ESM cover (5).
- 7. Position metal bracket (11) over the grill area on the ESM cover (5) and secure to top of case (3) with two screws (12).

Defrost Information

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

Defrost Control Charts

L5FGA/L5NGA Defrost Option Settings

		Defrost	
Defrost	Defrosts	Duration	Term.
<u>Type</u>	<u>Per Day</u>	<u>(Min)</u>	<u>Temp.</u>
L5FGA			
Electric (FF) 1	60	60°F
Electric (IC) 2	60	60°F
Gas (FF)	2	18-20	55°F
Gas (IC)	2	20-25	55°F
L5NGA			
Off Time	1	60	

Most klixons are located on the right end of the evaporator coil. The diagram shows the location for each klixon.



E = Electric Defrost Termination F/D = Defrost Fan Delay Electric Defrost (40/20) Gas Defrost (25/10) D = Gas Drain Heater F/S = Electric Defrost Failsafe (Opt.)

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.

Optional Gas Defrost

The area over the drain trough is heated by an auxiliary electric heater. The drain pan is also heated by four passes of suction line which acts as a heat exchanger for incoming liquid during the refrigeration cycle and as a drain pan heater during gas defrosting.

At the initiation of a defrost cycle, a reversing valve introduces hot gas into the suction line as normal flow is reversed. When the fan/heater delay thermostat senses 25°F, it turns off the fans and activates the auxiliary heaters. The defrost continues until the coil and drain pan are completely clear. A gas defrost termination klixon senses the gas leaving the coil. When termination temperature is reached, a contact closure signals the rack to close a hot gas valve and terminate defrosting. (See BUFF section in Spec Guide.) This valve should be allowed to cycle, if needed, until fail safe time is reached.

When fail safe time elapses, the refrigeration cycle resumes. Case fans will not run until the coil temperature is brought down to 10°F.

- Fan circuit powers auxiliary heater fan and auxiliary heater circuit. Since the heater draws more current than the fans, the entire circuit is marked to show the highest load rating.
- The fan/heater delay thermostat shuts off the fans at 25°F, and turns the heater on.
- The heater will shut off if the safety klixon exceeds 55°F, but stays on below 40°F.
- The fan resume running when coil temperature pulls down to 10°F.

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 wiring diagrams on pages 15 thru 25 will cover all L5FGA/L5NGA case circuits.





L5FGA Domestic & Export (50Hz) Case Circuits (Electric Defrost for Albertson)









Electric Defrost Circuit (L5FGA only)



Horizontal 800MA H.O. Fluorescent Lighting Circuit

2-Door or 3-Door Case Lighting

2 DR OR 3 DR CASE LIGHT WIRING DIAGRAM



4-Door or 5-Door Case Lighting

4 DR 0R 5 DR CASE LIGHT WIRING DIAGRAM



T-8 Prism Lighting Circuits for Connexxion™ II 2-Door Electronic Ballast Circuit



3-Door Electronic Ballast Circuit



NOTES:

1. BALLAST 1 IS MOUNTED IN LEFT MULLION 2. BALLAST 2 IS MOUNTED IN RIGHT MULLION

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4-Door Electronic Ballast Circuit



3. BALLAST 3 IS MOUNTED IN RIGHT MULLION

5-Door Electronic Ballast Circuit



NOTES:

BALLAST 1 IS MOUNTED IN LEFT MULLION
 BALLAST 2 IS MOUNTED IN SECOND MULLION FROM LEFT
 BALLAST 3 IS MOUNTED IN RIGHT MULLION

ESM/ESS Anti-Sweat Circuit



GENERAL INFORMATION

Preferred Line-up Combinations*

TYLER - Glass Door Merchandiser

<u>DRS</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	TTL. LGTH. <u>W/O ENDS</u>
2	1	0	0	0	5′ - 2″
3	0	1	0	0	7' - 8 7/16"
4	0	0	1	0	10' - 2 7/8"
5	0	0	0	1	12' - 9 5/16"
6	0	2	0	0	15' - 4 7/8"
7	0	1	1	0	17' - 11 5/16
8	0	1	0	1	20' - 5 3/4"
9	0	0	1	1	23' - 3/16"
10	0	0	0	2	25' - 6 5/8"
11	0	2	0	1	28' - 2 3/16"
12	0	1	1	1	30' - 8 5/8"
13	0	1	0	2	33' - 3 1/16"
14	0	0	1	2	35' - 9 1/2"
15	0	0	0	3	38' - 3 15/16"
16	0	2	0	2	40' - 11 1/2"
17	0	1	1	2	43' - 5 15/16"
18	0	1	0	3	46' - 3/8"
19	0	0	1	3	48' - 6 13/16"
20	0	0	0	4	51' - 1 1/4"
21	0	2	0	3	53' - 8 13/16"
22	0	1	1	3	56' - 3 1/4"
23	0	1	0	4	58' - 9 11/16"
24	0	0	1	4	61' - 4 1/8"
25	0	0	0	5	63' - 10 9/16"
26	0	2	0	4	66' - 6 1/8"
27	0	1	1	4	69' - 9/16"
28	0	1	0	5	71′ - 7″
29	0	0	1	5	74' - 1 7/16"
30	0	0	0	6	76' - 7 7/8"
31	0	2	0	5	79' - 3 7/16"
32	0	1	1	5	81' - 9 7/8"

<u>DRS</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	TTL. LGTH. <u>W/O ENDS</u>
33	0	1	0	6	84' - 4 5/16"
34	0	0	1	6	86' - 10 3/4"
35	0	0	0	7	89' - 5 3/16"
36	0	2	0	6	92' 3/4"
37	0	1	1	6	94' - 7 3/16"
38	0	1	0	7	97' - 1 5/8"
39	0	0	1	7	99' - 8 1/16"
40	0	0	0	8	102' - 2 1/2"
					Add 1 1/2"

Per End

*Based on cost effectiveness.

Ice Cream Recommendations

Use the following recommendations for merchandising ice cream products in L5FGA cases.

- 1. Use solid shelves or solid F.R.P. overlays on top of screens.
- 2. Never position top shelf more than 12" from the top of the case.
- 3. Proper termination of defrost is an absolute must to prevent overdefrosting and product frosting. Set the thermostat termination as described in this manual.
- 4. Ice cream products should be placed in the case at the desired temperature. The product should be properly rotated to avoid frost accumulation on the packaging.

SERVICE INSTRUCTIONS

See "General I&S Manual" for fan blade and motor replacement and raceway cover removal instructions.

Light Servicing

Ballast and Lighting Locations Optional Horizontal H.O. Lighting



Optional Vertical T-8 Electronic Lighting for Connexxion™ II



Lamp Replacement

<u>CAUTION</u>

Shut off light switch or disconnect power supply before changing a lamp. Lighting system power and/or ballast surges can burn out adjacent lamps if power is left on.

800MA (H.O.) Horizontal Lamp



- Slide burned out lamp assembly (1) to one side or the other against spring loaded lampholder (2) and carefully remove lamp assembly (1) from the lampholders (2).
- 2. Remove two end caps (3), lampshield (4) and two heat sink screens (5) from the lamp (6).
- 3. Insert one heat sink screen (5) on each end of the new lamp (6).
- Position lamp (6) in lampshield (4) and install two end caps (3) on each end of the lampshield (4).
- Insert end of lamp assembly (1) in spring loaded lampholder (2) and push in until opposite end of lamp assembly (1) can be inserted into the lampholder (2)
- 6. Turn on the light switch or reconnect the power to the lights.

T-8 Electronic Vertical Lamp (Prism) for *Connexxion*[™] II

NOTE

Center mullion spring clips are secured to the light cover assembly. End mullion spring clips are separate parts that remove completely.



 Using a small flathead screwdriver, release or remove the three spring steel clips (1) from both sides of the light fixture assembly (2).

CENTER MULLION LIGHT ASSEMBLY



END MULLION LIGHT ASSEMBLY



NOTE

Light cover assemblies do not require disassembly for removal.

- Starting at top, remove light cover assembly (3) from light fixture assembly (2). For center mullion lights, pull light cover assembly straight out. For end mulion lights, rotate front of light cover assembly back until rear side of assembly can be pulled from light fixture.
- 3. Remove mylar warning label covers (4) over ends of lamp/socket assemblies (5).
- Carefully remove lamp/socket assembly
 (5) by pulling from top and bottom retaining clips (6).

Move foam center seals (7) away from top and bottom electrical connectors (8).

Disconnect top and bottom electrical connectors (8) by depressing locking tab and pulling away from socket (9).

5. Remove both sockets (9) from lamp (10) by carefully grasping lamp and pulling both sockets one at a time.

<u>CAUTION</u>

Sockets and foam center seals must be properly installed. Improper installation of these components could decrease lamp efficiency and/or product life.

NOTE

Make sure the text printed on both sockets is facing the same way.

- Align holes in bottom of socket (9) with pins on lamp ends (10). Carefully grasp new lamp close to one of the ends and slide on the socket until it is seated (approx. 1 5/16") (Fig 13). Repeat for other end.
- Position lamp (10) with sockets (9) so text on sockets faces away from the light fixture assembly (2) and the socket marked "Top" is up. Insert top and bottom electrical connectors (8) into ends of sockets (9) until the locking tabs snap into place.

Position both foam center seals (7) back on the electrical connectors (8).

WARNING

Make sure that wires are not routed between the clips and the sockets. Improper routing of the wires could result in product damage and/or personal injury.

Carefully secure the lamp/socket assembly (5) in the top and bottom retaining clips (6).

10. Re-install mylar warning label covers (4) over ends of lamp/socket assembly (5).

NOTE

Make sure light cover assembly is securely assembled before installing.

- 11. Install light cover assembly (3) in light fixture assembly (2). Secure by snapping both sides of three steel spring clips (1) in light fixture slots or over light fixture lip.
- 12. Turn on the light switch or reconnect the power to the lights.

Electronic Ballast Replacement (Prism Lighting for *Connexxion*[™] II)

WARNING

Before replacing a ballast, 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.

NOTE

Refer to T-8 ballast location page and wiring diagrams in this manual for specific model information.

1. Remove door following the door removal instructions in this manual.



 Using a flat-headed screwdriver under the back edge of the contact plate retainer (1), gently pull up to unsnap both sides of retainer (1) from mullion (2).



- Remove contact plate (3) and heat barrier
 (4) from mullion (2).
- Remove screw (5) on top end of ballast (6). Slide ballast (6) up and out of punched tabs (7) in mullion (2).
- 5. Disconnect all wire leads (8) at connectors to ballast (6).
- Insert bottom of new ballast (6) in bottom tabs (7) on mullion (2) and secure with screw (5) in top end of ballast (6).
- Reconnect wire leads (8) at connectors to new ballast (6) following the wiring diagram on the new ballast (6).
- 8. Position heat barrier (4) in the mullion (3).
- Position contact plate (3) flat on the mullion (2). While holding contact plate (3), insert retainer (1) into front edge of mullion (3), then snap retainer (1) into back edge of mullion (3). Repeat process to install retainer (1) on opposite side.
- 10. Replace door following the door installation instructions in this manual.
- 11. Reconnect power to the case.

800MA Ballast Replacement (Horizontal Lighting)

WARNING

Before replacing a ballast, 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.

NOTE

- Refer to 800MA horizontal lighting for ballast location page and wiring diagrams in this manual for specific model information.
- If wire leads are cut during removal, make sure to leave enough wire to reconnect a new ballast with a wire nut.

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Tyler Refrigeration

1. Remove raceway cover following the raceway cover removal instructions in this manual.



- 2. Remove four screws (1) and defective ballast (2) from support bracket (3).
- 3. Disconnect or cut all wire leads (4) to ballast (2).
- 4. Install new ballast (2) on support bracket(3) with four screws (1).
- Reconnect wire leads (4) to new ballast
 (2) following the horizontal lighting wiring diagram in this manual.
- Replace raceway cover following the raceway cover installation instructions in this manual.
- 7. Reconnect power to the case.

Door Servicing

Door Removal

CAUTION

Before removing door, decrease torque tension clockwise to prevent possible damage to the door.



 Release tension on Torquemaster[™] (1) by turning screw (2) clockwise.



2. Open door (3) and lock into the holdopen position.



3. Remove two screws (6) and hold-open (4) from frame and door standoffs (7 & 8).



 Compress and pull hinge pin plug (9) with needle nose pliers to release top of door (3) from frame (10).

Installation & Service Manual



 Lift door (3) out of Torquemaster[™] (1) and remove from case. Place door (3) on its side and lean against a stable surface.

Reversing Door Hardware



 Remove hinge pin plug access covers (1) from both side of door (2).



- Unplug connectors (3) to door and/or glass heater (4) and remove hinge pin plug (5) through top of door (2).
- 3. Reroute lead wires (6) to new hinge pin location in opposite end of door (2).



- 4. Install hinge pin plug (5) and attach connectors (3) to lead wires (6).
- 5. Carefully replace hinge pin plug access covers (1).



6. Slide out torque rod (7) from bottom of door (2) and insert back into opposite end of door (2).

Reversing Frame Hardware



- Turn center screw (1) counter-clockwise and remove Torquemaster[™] (2) from bottom door frame (3).
- 2. Pry out cover plate (4) from opposite end of bottom door frame (3).
- Reverse positions and install Torquemaster[™] (2) and cover plate (4) in bottom door frame (3).



4. Insert dummy plug (5) into old top hinge pin receptacle (6).

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Door Handle Replacement



- Starting at a corner, remove the gasket (1) from retainer strip (2) on handle side of the door (3).
- 2. Starting at corner, remove retainer strip (2) from handle side of door (3).



- 3. Remove plastic hole plugs (4) from handle access holes (5).
- 4. Using a 5/32" allen wrench, remove two screws (6) and handle (7) from door (2).
- 5. Install new handle (7) in reverse order.

Door and Mullion Heater Replacement

All glass door cases use the same door and mullion heaters. Medium and low temperature cases run different wattages through them. Low temperature cases also use electrically heated door glass. Mullion heaters are located in four different locations. Door frame heater is a full length wire in each door frame. Perimeter heater is a full length wire around the entire case frame. Threshold heater is a additional wire across the lower part of the case frame. Vertical heater has a separate heater and wire in each vertical mullion between the doors.

Door Heater

1. Remove door from case following the door removal instruction in this manual.



- 2. Starting at corner, remove gasket (1) from retainer strip (2).
- 3. Starting at a corner, remove all retainer strips (2) from the door (3).



- Disconnect or cut solid heater lead wire

 (4) and remove from door
 (3). Insert and connect new solid lead wire
 (4) in door
 (3).
- 5. Replace retainer strips (2) and gasket (1) on the door (3).
- 6. Replace door on case following the door installation instructions in this manual.

Mullion Heater

1. Remove necessary door(s) following the door removal instructions in this manual.



 Using a screwdriver, remove necessary contact plate retainers (1) and contact plates (2) and heat barriers (3), where applicable, from mullions (4) to expose heater wire(s). Vertical wire requires removal of vertical contact plate and two adjacent top contact plates. Threshold wire requires removal of bottom and end contact plates. Perimeter wire requires removal of all contact plate (top, bottom, end, and center).



- 3. Disconnect or cut defective heater wire (5) and remove from mullion (4).
- 4. Connect and install new heater wire (5) in mullion (4).
- Replace heat barriers (3), where applicable, and contact plates (2) and contactplate retainers (1) on mullions (4)
- 6. Replace door(s) following the door installation instructions in this manual.

Door Installation



 Insert door torque rod (1) on bottom of door (2) into Torquemaster[™] (3) at base of door frame (4).



 Insert hinge pin plug (5) on top of door
 (2) into hinge pin plug receptacle (6) at top of door frame (7). Push in top of door
 (2) until hinge pin plug (5) snaps into place.



- 3. Apply loctite to threads of two screws (8).
- Install hold-open (9) on door and frame standoffs (10 & 11) and secure with two screws (8). Do not overtighten the screws.

NOTE

- Do not use power tools to adjust the Torquemaster™.
- When Torquemaster[™] is properly adjusted, the door will securely close without slamming. Over adjusting will cause the door to slam during closing.



- Align door (10) in frame (11) by adjusting screw (12) on side of Torquemaster[™] (3).
- Adjust closing force by turning the screw (13) on the front of the Torquemaster[™] (3). Turn screw (13) counter-clockwise to increase, or clockwise to decrease the closing force.

Defrost & Drain Pan Heater Replacement

WARNING

Before replacing defrost or drain pan heater, shut off electrical power to the case to avoid personal injury and/or death.



- Remove raceway cover (1) following the "Raceway Cover Removal" instructions in the "General I&S Manual".
- 2. Remove bottom trays (2) from case (3).

Drain Pan Heater Replacement



 Disconnect heater wire (4) from terminal block (5) in raceway (6).



- 2. Lift up drain trap heater support (7) and remove defective heater (8) from mounting brackets (9).
- Install new heater (8) in mounting brackets (9) and lower drain trap heater support (7).
- 4. Connect heater wire (4) to terminal block(5) in raceway (6).
- 5. Install bottom trays (2) in case (3).
- 6. Install raceway cover (1) following raceway cover installation instructions in this manual.
- 7. Reconnect power to the case.

Electric Defrost Heater Replacement



1. Disconnect heater wire (4) from terminal block (5) in raceway (6).



2. Lift up fan plenum (7) and slide out bottom closeoff assembly (8) from under the coil (9).



 Remove screws (10), heater clamps (11) and defrost heater (12) from bottom closeoff assembly (8).

NOTE

Defrost heater should extend at least 2" beyond ends of the closeoff assembly.

- Install new defrost heater (12) on bottom closeoff assembly (8) with heater clamps (11) and screws (10).
- Completely push in bottom closeoff assembly (8) under the coil (9) and lower fan plenum (7).
- 6. Connect heater wire (4) to terminal block(5) in raceway (6).
- 7. Install bottom trays (2) in case (3).
- 8. Install raceway cover (1) following raceway cover installation instructions in this manual.
- 9. Reconnect power to the case.

PARTS INFORMATION

Cladding and Trim Parts List

<u>Item</u>	Description	<u>2DR</u>	<u>3DR</u>	<u>4DR</u>	<u>5DR</u>
1	Screw	5183536 (5)	5183536 (6)	5183536 (7)	5183536 (7)
2	Top Cladding, Painted	9025454	9025455	9025456	9025457
3	Top Cladding Backer,	9025656	9025656	9025656	9025656
	or External Top Joint Trim	9302743	9302743	9302743	9302743
4	Cladding Retainer	9300197 (2)	9300197 (3)	9300197 (4)	9300197 (5)
5	Screw	5183536 (6)	5183536 (9)	5183536 (12)	5183536 (15)
6	Raceway Assembly	9300221	9300222	9300223	9300224
7	Front Cladding, Painted	9025450	9025451	9025452	9025453
8	RCWY Cover Plate Retainer	9023841 (4)	9023841 (4)	9023841 (5)	9023841 (5)
9	Screw	5183536 (8)	5183536 (8)	5183536 (10)	5183536 (10)
10	Screw	5183536 (2)	5183536 (3)	5183536 (4)	5183536 (5)
11	Raceway Cover		color p	per order	
12	Raceway Cover End Trim		color p	per order	
13	Raceway Cover Backer		color p	per order	
14	Kickplate		color p	per order	
	Kickplate Backer	9041790	9041790	9041790	9041790
15	Raceway Cover Support	9041323 (4)	9041323 (6)	9041323 (8)	9041323 (10)
16	Kickplate Support Assy.	9042416 (3)	9042416 (4)	9042416(4)	9042416 (4)
17	Shoulder Screw	9025833 (6)	9025833 (8)	9025833 (8)	9025833 (8)
18	Door Joint Trim	5238239	5238239	5238239	5238239
19	Horizontal Joint Trim	5238229	5238229	5238229	5238229
20	LH End Close-off, Painted	9022461	9022461	9022461	9022461
	RH End Close-off, Painted	9022468	9022468	9022468	9022468
21	Binding Screw	5076411 (6)	5076411 (6)	5076411 (6)	5076411 (6)



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Operational Parts List

Desc. (Domestic & Export)	<u>2DR</u>	<u>3DR</u>	<u>4DR</u>	<u>5DR</u>
Electric Defrost Heater*	9029930 1200W/208V	9029931 2000W/208V	9029932 2800W/208V	9029933 3600W/208V
Elec. Drain Pan Heater* - Rod Type	5236464	5236462	5236465	5236463
Electric Defrost 60/30 Klixon*	9029929	9029929	9029929	9029929
Electric Defrost 30/60 Klixon* (Albertson)	5644541	5644541	5644541	5644541
Electric Defrost Fan Delay T'Stat*	5236993	5236993	5236993	5236993
800MA Ballast (domestic)	5049140	5204769	5049140	5204769
T8 Vert. Ballast (1 lamp)	5875110		5875110	
T8 Vert. Ballast (2 lamp)	5875111	5875111**	5875111**	5875111 †
Flrscnt. Lamp T12 HO CW	5218576 60″	5239138 84″	5218576 60″	5215231 72″
T8 Vert. Flrscnt. Lamp F040/841	5093932	5093932	5093932	5093932
800MA Hor. Dbl. Lt. Shld. Upr/Lwr (L5FGA)	5644091 (2) 60″	5644093 (2) 84″	5644091 (4) 60″	5644092 (4) 72″
800MA Hor. Sgl. Lt. Shld. Upr/Lwr (L5NGA))	5644087 (2) 60″	5644089 (2) 84″	5644087 (4) 60″	5644088 (4) 72″
Hot Gas Drain Pan Heater Klixon*	9023506	9023506	9023506	9023506
Fan Motors (domestic)	5243498	5243498	5243498	5243498
Fan Motors (export)	5647901	5647901	5647901	5647901
Fan Blades 8.75" x 25	5984399	5984399	5984399	5984399
Fan Motor Brackets	5235087	5235087	5235087	5235087
Fan Relay* (electric defrost)	5236978	5236978	5236978	5236978
Hot Gas Fan Delay Klixon*	9023509	9023509	9023509	9023509
Hot Gas Termination Klixon*	9023508	9023508	9023508	9023508
Opt. ECM Fan Motors 12W 8.75"	9025000	9025000	9025000	9025000
Opt. ECM Fan Blades 8.75" x 25	5984399	5984399	5984399	5984399
Opt. ECM Fan Motor Brackets	5205112	5205112	5205112	5205112
Hot Gas Drain Pan Heater*	5239252	5239254	5239253	5239255
*L5FGA only **Quantity = 2	†Quant	tity = 3		

*L5FGA only **Quantity = 2

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