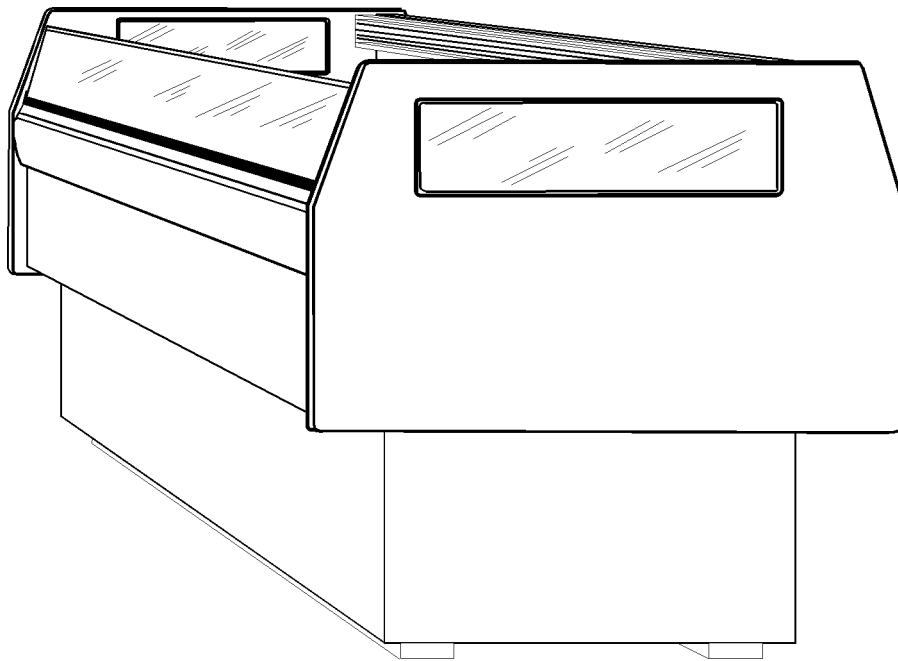


TYLER



Installation & Service Manual



LFSC5, LF5, LNSC5, LN5

SELF-SERVE SELF-CONTAINED & REMOTE SPOT MERCHANTISERS
Low and 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.

PRINTED IN U.S.A.	Specifications subject to change without notice.	REPLACES EDITION	1/97	ISSUE DATE	9/99	PART NO.	9027525	REV.	C
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The following Low and Medium Temperature Self-Contained and Remote Spot Merchandiser models are covered in this manual:

MODELS	DESCRIPTION
LFSC5	LOW/MEDIUM DUAL TEMP. SELF-CONTAINED SPOT MERCHANDISER
LF5	LOW/MEDIUM DUAL TEMP. REMOTE SPOT MERCHANDISER
LNSC5	MEDIUM TEMPERATURE SELF-CONTAINED SPOT MERCHANDISER
LF5	MEDIUM TEMPERATURE REMOTE SPOT MERCHANDISER

SPECIFICATIONS

LFSC5/LF5 Low Temperature Glass Top Spot Merchandiser Specification

MODEL	LFSC5/LF5	LFSC5/LF5
USAGE	FROZEN	ICE CREAM
BTUH	2590	3180
SUCTION°	-20F	-28F
ENTER AIR°	-10F	-19F

DATA BASED ON: Store Temp. of 75F & 55% Relative Humidity (Maximum). This case is designed to operate at dual temp. Desired medium temps can be achieved by adjusting the thermostat.

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.

DEFROST CONTROL (REMOTE)				BACKUP PRESSURE SETTINGS			EPR SETTINGS	
PER DAY	MODE	TIME	TERM.		CUT IN	CUT OUT	R22	R404A
2	ELECT / FF	36 MIN.	50F	FF	14# @ R404A	4# @ R404A	---	17.0
2	ELECT / IC	36 MIN.	50F	IC	9# @ R404A	0# @ R404A	---	12.0
2	HOT GAS / FF	15MIN.	55F*	FF	14# @ R404A	4# @ R404A	---	17.0
2	HOT GAS / IC	15 MIN.	55F*	IC	9# @ R404A	0# @ R404A	---	12.0

* If an Electronic Sensor is used for termination, it should be set at 70°F termination temperature.

SELF-CONTAINED DATA

Refrigerant	50 oz. R-404A
Defrost	See Above Table
Control Settings	See Above Table
Maximum Overcurrent Protection	115v - 20 amps
Minimum Circuit Capacity	115v - 16 amps
Electrical: 120v 60Hz 1ph	Fan amps = .5
	A-S Heater amps = .9
	Condensate Htr. amps = 3.5
	Defrost Heater amps = 8.7
Condensing Unit	Copeaweld FJAF-A075-CAA
Drain	No External Drain Required**

REMOTE DATA

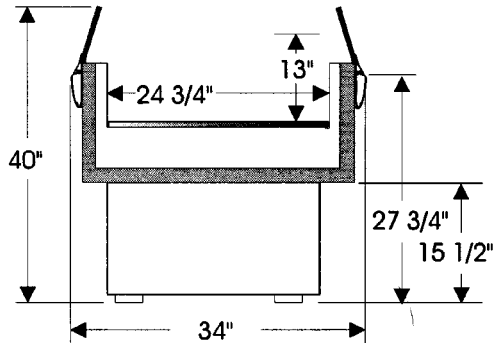
Defrost	See Above Table
Control Setting	See Above Table
Electrical: 120v 60Hz 1ph 220v 60Hz 1ph	Fan amps = .5
	A-S Heater amps = .9
	Total Fan & A-S = 1.4
Defrost Heater amps 4.5	
Drain	1 1/2" PVC

** Defrost water evaporated by 400w Condensate Heater Pan equipped with a float switch.

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.

LNSC5/LN5 Medium Temperature Glass Top Spot Merchandisers



MODEL	LNSC5/LN5
USAGE	DELI/DAIRY
BTUH	1925
SUCTION°	+13F
ENTER AIR°	+20F

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

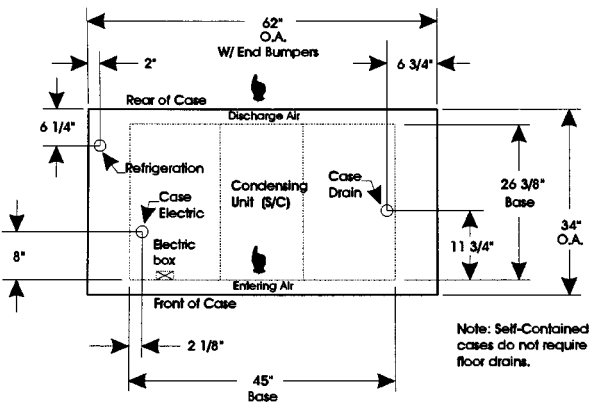
THE ABOVE RATINGS ARE FOR COMPRESSOR SELECTION ONLY. FOR

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.

DATA BASED ON: Store Temperature of 75°F & 55% Relative Humidity (Maximum)

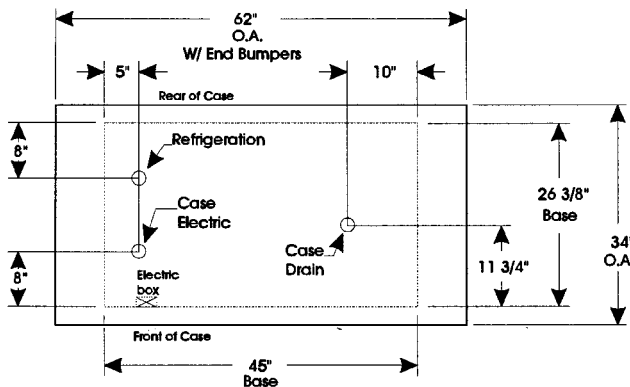
PER DAY	DEFROST CONTROL		BACKUP PRESSURE SETTING		EPR SETTINGS	
	MODE	TIME	CUT IN	CUT OUT	R22	R404A
2	ELECTRIC	30 MIN.	40# @ R22	30# @ R22	43	---
2	HOT GAS	15 MIN.	40# @ R22	30# @ R22	43	---

* If an Electronic Sensor is used for termination, it should be set at 70°F termination temperature.



SELF-CONTAINED DATA

120 VOLT ELECTRICAL DATA (AMPS)			
FANS	ANTI-SWT	DEFROST HEATER	CONDENSING UNIT
.5	.7	8.3	8.2



REMOTE DATA

120 VOLT ELECTRICAL DATA (AMPS)		
FANS	ANTI-SWT	TOTAL FANS & ANTI-SWEAT
.5	.7	1.2
220 VOLT ELECTRICAL DATA (AMPS)		
DEFROST HEATER		
4.5		

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.

INSTALLATION PROCEDURES

Carpentry Procedures

NOTE

If installing LF5 or LN5 remote models, see the plumbing and refrigeration procedure sections in the "General I&S Manual".

Electrical Procedures

Electrical Considerations

CAUTION

Make sure all electrical connections are tight. This will prevent burning of electrical terminals and/or premature component failure.

Case Fan Circuit (LF5/LN5 Only)

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.

Self-Contained Circuit (LFSC5/LNSC5 Only)

LFSC5 and LNSC5 cases are self-contained units. Specific electrical information pertaining to self-contained units should be obtained directly from TYLER Refrigeration.

LFSC5/LNSC5 Condensing Unit Start-Up and Maintenance

1. Condensing unit access is obtained by removing the front and rear ventilation panels.
2. Electrical supply should be wired directly to the terminal block alongside the defrost clock. Electrical supply should be a 40A, 115V 60Hz circuit. **Be sure the case is properly grounded.**

NOTE

See "Wiring Diagrams" in this manual for wiring specifics.

3. The compressor is mounted on rubber grommets. **Do not loosen the nuts.**
4. Set the thermostat for 0°F to 5°F for LFSC5 or 35°F for LNSC5. A screwdriver will be required to turn the slotted dial.

NOTE

The sensing bulb should be located in the return air. After the air passes through the coil, it will be about 10° lower.

5. Set defrost control for two defrosts per day at 36 minutes failsafe for the LFSC5 or 30 minutes failsafe for the LNSC5. There is a 1000W electric heater which defrosts the coil. The defrost limit switch opens at 50°F and turns off the heater. The unit will resume the refrigeration cycle when the failsafe is expired.

6. On the LFSC5, the condensate pan is stainless steel and is equipped with a 400W heater. The heater is connected to a 190°F limit switch and a float switch to prevent the it from operating when water is not present.

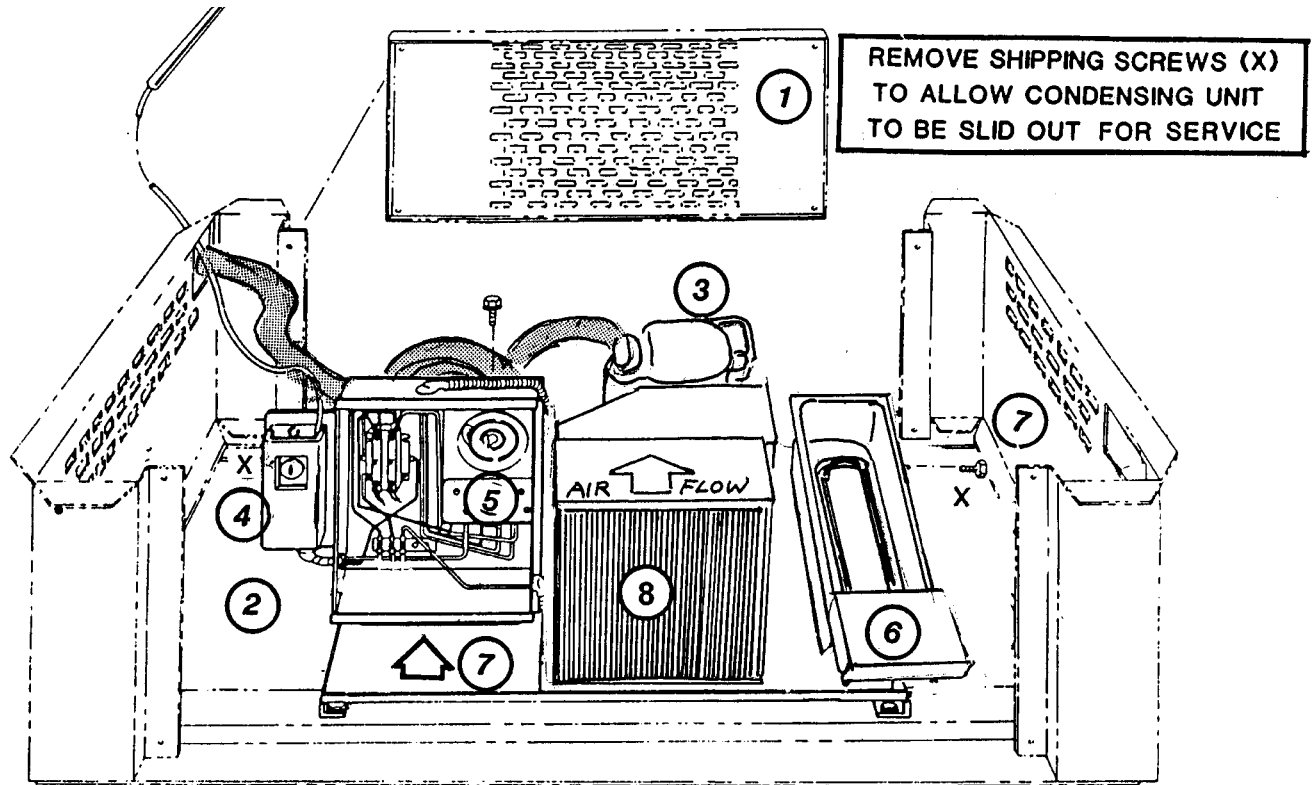
On the LNSC5, the condensate water is eliminated using the heat from the compressor. No resistance electrical heat is required. The water from the case coil defrosting makes the unit more efficient when water is in the pan.

The pan in either case will not handle wash water! The plastic drain hose can be pulled out to drain case interior to a bucket during cleaning. Be sure to replace the plastic hose securely after cleaning.

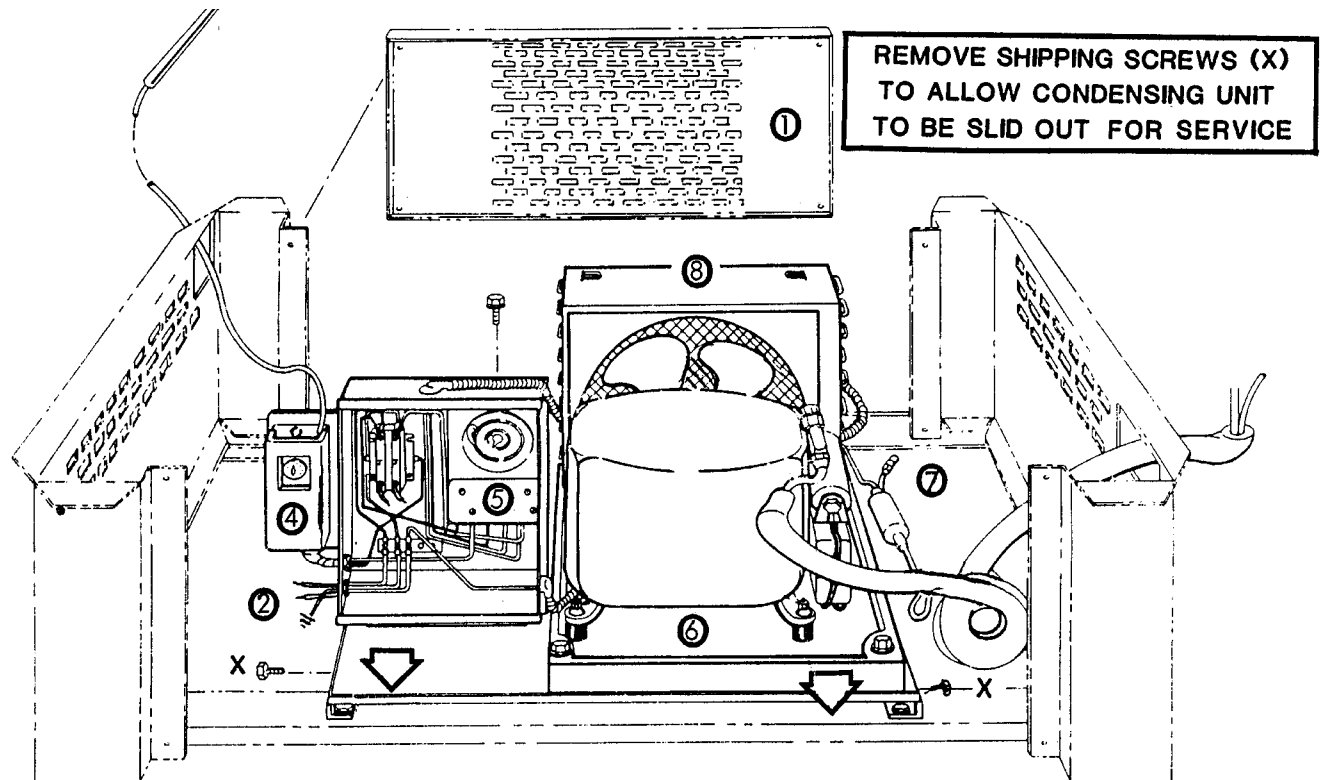
7. Service pressure access to the system is through the Schrader valve and the suction service valve on the compressor. The condensing unit is on a slide-out base.
8. Keep the condenser efficient by cleaning it regularly, at least every six months. Clean more frequently if it gets clogged with dust in less time. Use a shop vacuum and/or air pressure to clear the finned coil of dust and dirt.

Installation & Service Manual LFSC5, LF5, LNSC5, LN5,

LFSC5 Self-Contained Unit



LNSC5 Self-Contained Unit



Defrost Information

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

Defrost Control Chart

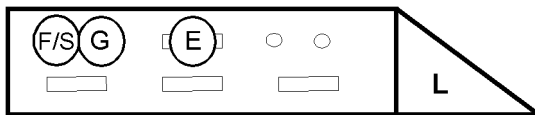
LFSC5/LF5 Defrost Option Settings

Defrost Type	Defrost		
	Defrosts Per Day	Duration (Min)	Term. Temp.
Electric/FF	2	36	50°F
Electric/IC	2	36	50°F
Gas/FF	2	15	55°F
Gas/IC	2	15	55°F

LNSC5/LN5 Defrost Option Settings

Defrost Type	Defrost		
	Defrosts Per Day	Duration (Min)	Term. Temp.
Electric	2	30	-----
Gas	2	15	-----

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



- E = Electric Defrost Termination
- G = Gas Defrost Fan Delay (Dual Temp.)
- F/S = Electric Defrost Failsafe (Optional)

NOTE

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

CAUTION

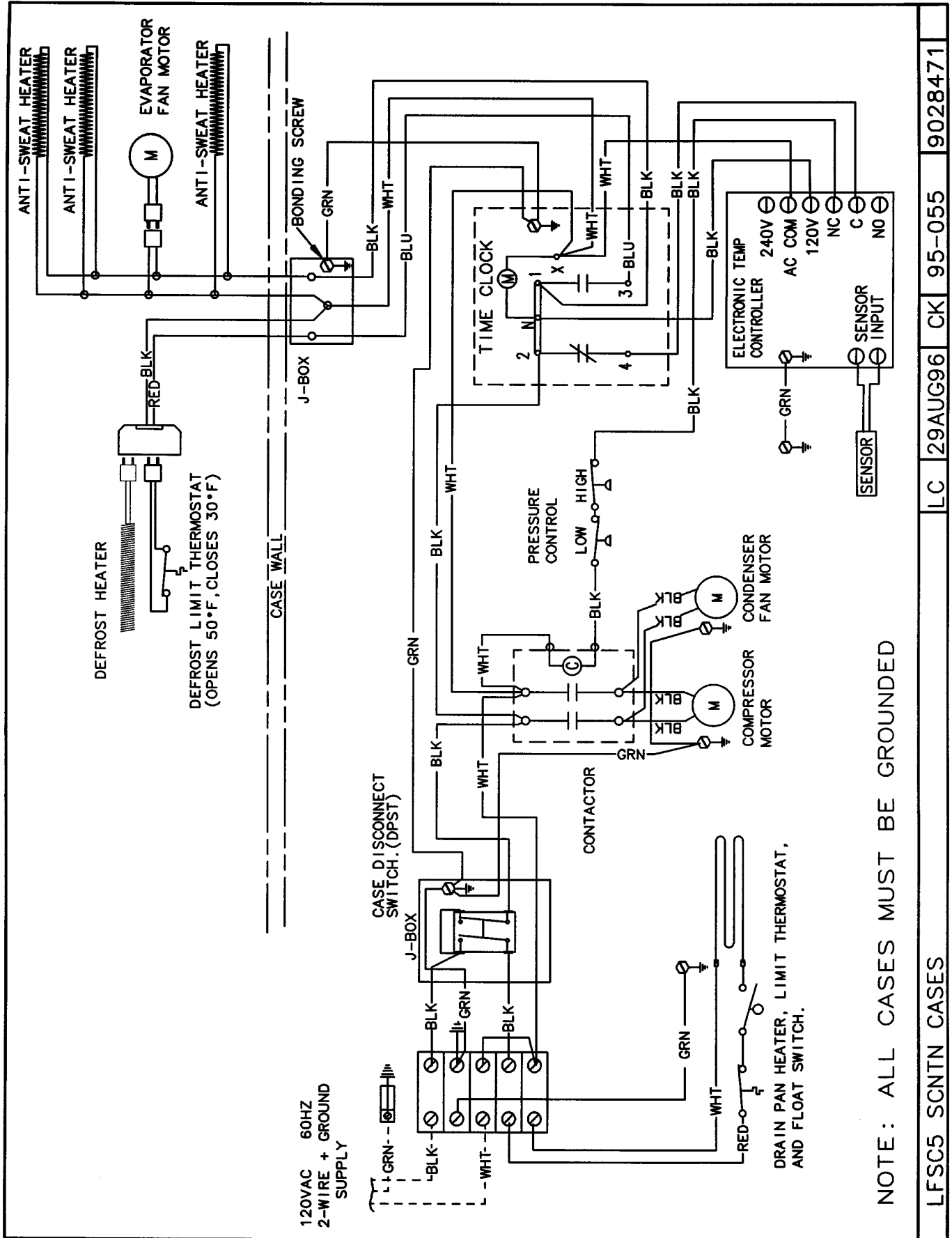
If electronic sensors are used in place of the klixons, the sensors must be located in the same location as the klixons for that defrost type. Any other location will effect the refrigeration efficiency of the case.

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.

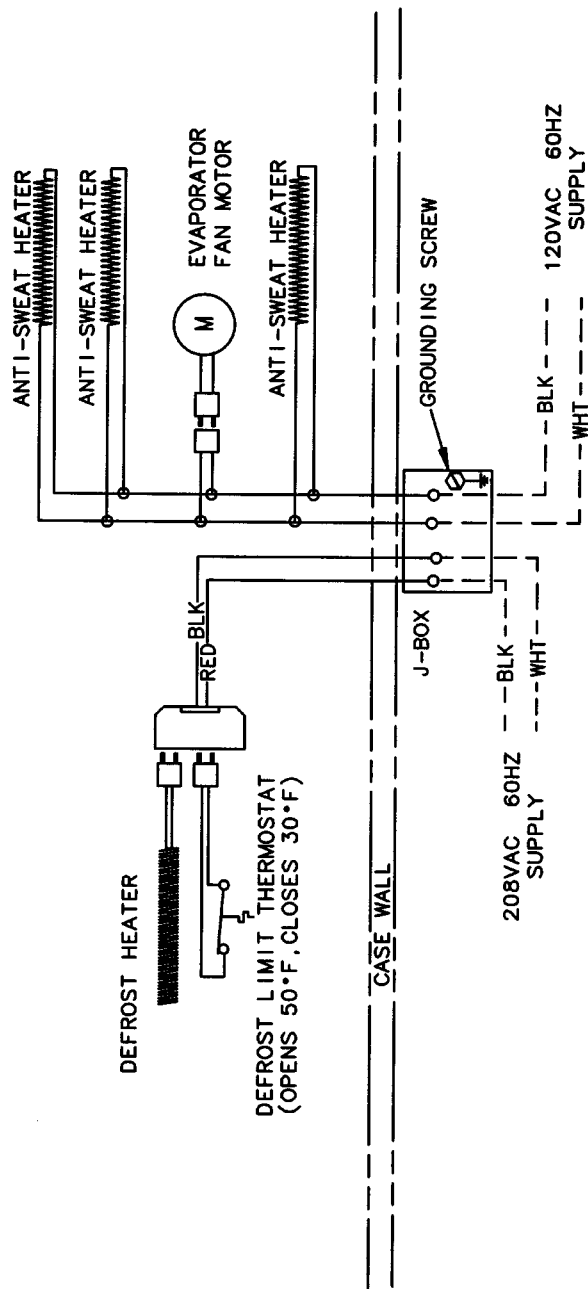
The following wiring diagrams on pages 11 thru 14 will cover the LFSC5/LF5/LNSC5/LN5 case circuits. The defrost circuits are shown in the case circuits.



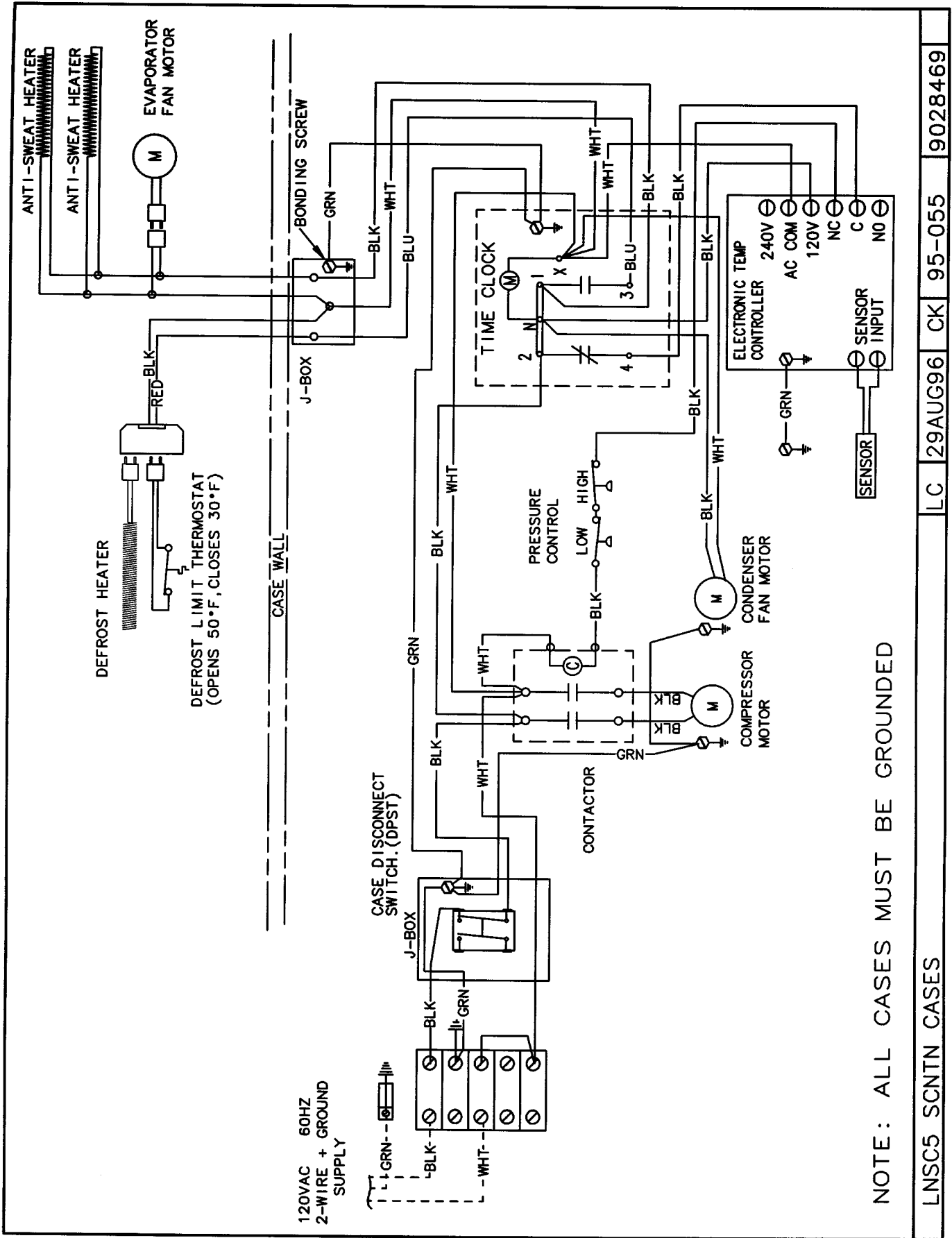
9028471

LC 29AUG96 CK 95-055

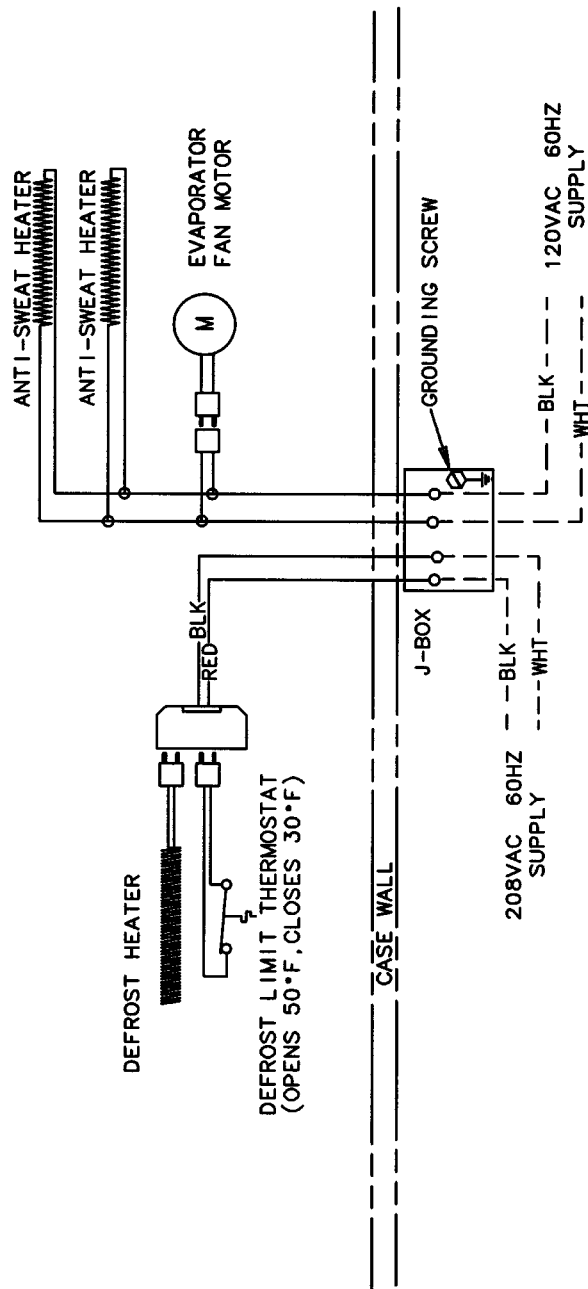
LFSC5 SCNTN CASES



NOTE: ALL CASES MUST BE GROUNDED



NOTE: ALL CASES MUST BE GROUNDED



NOTE: ALL CASES MUST BE GROUNDED

SERVICE INSTRUCTIONS

Troubleshooting Self-Contained Units (LFSC5/LN5C5 Only)

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.

NOTE

See "General I&S Manual" for fan blade & motor and color band & bumper replacement instructions.

PARTS INFORMATION

Cladding and Trim Parts Lists

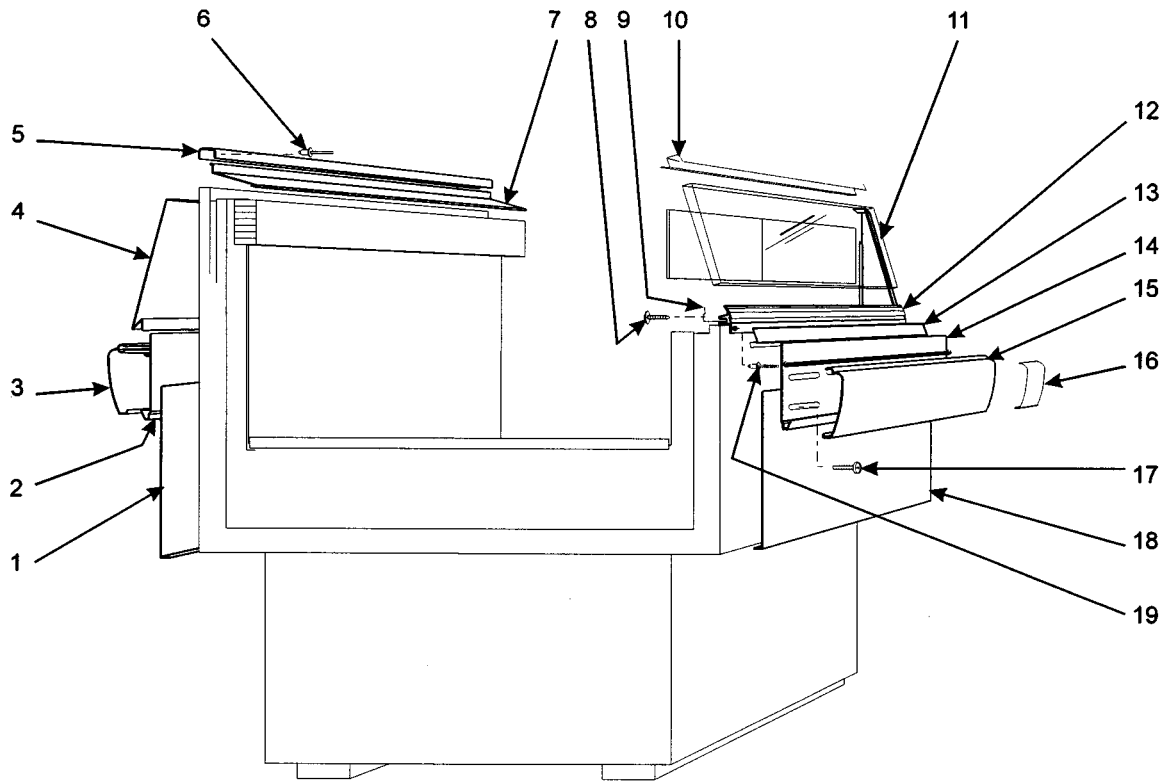
Item	Description	LFSC5/LF5	Item	Description	LFSC5/LF5
1	Rear Cladding, Painted	9022761	11	RH Front Glass Support	5217453
2	Rear Bumper Retainer	9025147		LH Front Glass Support	5217454
3	Bumper	color per order	12	Frnt. Glass Retainer Assy.	5217662
4	Rear Color Band, Pntd.	9022762	13	Frnt. Color Band, Pntd.	9020966
5	Rear Trim Rail	9022806	14	Frnt. Bumper Retainer	9025047
6	Rivet	5104702 (21)	15	Bumper	color per order
7	Rear Riser Trim Assy.	5960862	16	Bumper Backer	color per order
8	Screw	5203018 (5)	17	Screw	9025833 (16)
9	Rear Glass Retainer	5217422	18	Frnt. Cladding, Pntd.	9022761
10	Frnt. Glass Trim Rail Assy.	9022803	19	Rivet	5105037 (4)

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

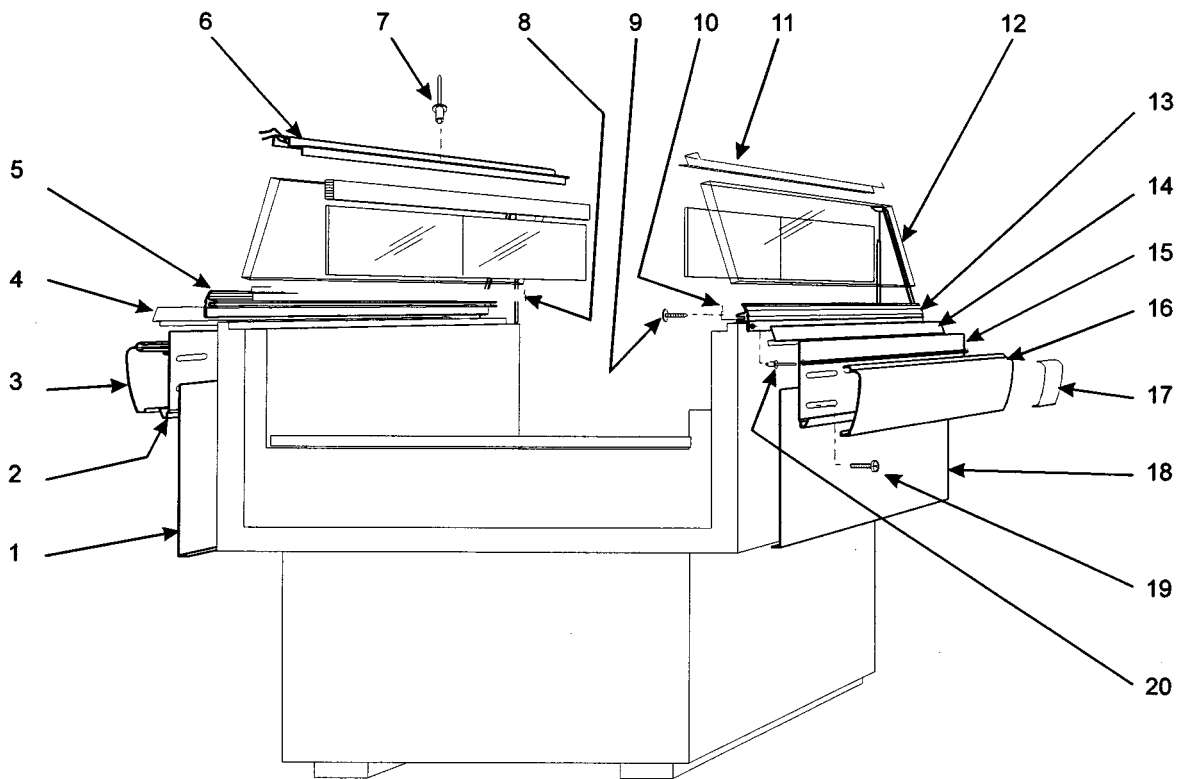
Item	Description	LNSC5/LN5	Item	Description	LNSC5/LN5
1	Rear Cladding, Painted	9022761	12	RH Front Glass Support	5217448
2	Bumper Retainer	9025047		LH Front Glass Support	5217449
3	Bumper	color per order		RH 3-Pane Glass Support	5217453
4	Color Band, Pntd.	9020966		LH 3-Pane Glass Support	5217454
5	Rear Glass Retainer Assy.	5991856	13	Front Glass Retainer	5217423
6	Rear Glass Trim Rail Assy.	5991860	14	Color Band, Painted	9020966
7	Rivet	5104702 (2)	15	Bumper Retainer	9025047
8	Rear Glass Retainer	5955527	16	Bumper	color per order
9	Screw	5203018 (10)	17	Bumper Backer	color per order
10	Rear Glass Retainer	5955527	18	Front Cladding, Painted	9022761
11	Frnt. Glass Trim Rail Assy.	5991858	19	Screw	9025833 (16)
			20	Rivet	5105037 (4)

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

LFSC5/LF5



LN5C5/LN5



Operational Parts List

Domestic

Case Usage	LFSC5/LF5	LNSC5/LN5
Electrical Circuit	115 Volt 60 Hertz	115 Volt 60 Hertz
Fan Motor	5125532 5 Watt	5125532 5 Watt
Fan Motor Brackets	5962269	5962269
Fan Blades (7" 20° 5B)	5960943	5960943
Anti-Sweat Heater Wire (Lo-Watt)	5217424	5217424
(Hi-Watt)	5136615	5136615
Electric Defrost Heater (LFSC5/LNSC5)	5108188	5108188
(LF5/LN5)	5109046	5109046
Electric Defrost Limit Switch	5125211	5125211
Opt. Gas Defrost Thermostat	9023508	9023508
Self-Contained Unit Parts (LFSC5/LNSC5 Only)		
Defrost Time Clock	5161076	5161076
Magnetic Contactor	5960949	5960949
Condensing Unit	5932118	5234874
Condensing Unit Fan Motor	SP-B6SE192	SP-B6SE192
Condensate Pan Thermostat	5216455	----
Condensate Pan Float Switch	5900533	----
Condensate Pan Heater	5217665	----

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