

TYLER

A^{series} Advantage

Installation & Service Manual



N5FGA, N5NGA, N5FGNA, N5NGNA

GLASS DOOR MERCHANDISERS (ARDCO)

Frozen Food & Medium Temp Cases With Reversible Doors

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 Frozen Food, Ice Cream and Medium Temperature Glass Door Merchandiser models are covered in this manual:

MODEL	DESCRIPTION
N5FG2A/N5NG2A	2-DR, GLASS DOOR MERCHANDISER (5', 2")
N5FG3A/N5NG3A	3-DR, GLASS DOOR MERCHANDISER (7', 8 7/16")
N5FG4A/N5NG4A	4-DR, GLASS DOOR MERCHANDISER (10', 2 7/8")
N5FG5A/N5NG5A	5-DR, GLASS DOOR MERCHANDISER (12', 9 5/16")
N5FGN2A/N5NGN2A	2-DR, NARROW GLASS DOOR MERCHANDISER (5', 2")
N5FGN3A/N5NGN3A	3-DR, NARROW GLASS DOOR MERCHANDISER (7', 8 7/16")
N5FGN4A/N5NGN4A	4-DR, NARROW GLASS DOOR MERCHANDISER (10', 2 7/8")
N5FGN5A/N5NGN5A	5-DR, NARROW GLASS DOOR MERCHANDISER (12', 9 5/16")

SPECIFICATIONS

N5FGA Glass Door Merchandisers

Refrigeration Data:

MODEL	CASE LENGTH	CASE USAGE	DOOR TYPE	CAPACITY (BTUH / DR)*	EVAPORATOR (°F)**	UNIT SIZING (°F)	DISCHARGE AIR (°F)		AVG. REF. CHARGE (LBS/DR)
							TEMPERATURE (°F)	VELOCITY (FPM)	
N5FGA	ALL	FROZEN	ARDCO SWING.	1604	-15	-18	-4	576	0.91***
N5FGA	ALL	FROZEN	ANTHONY 101	1690	-15	-18	-4	576	0.91***
N5FGA	ALL	FROZEN	ANTHONY ELM.	1484	-15	-18	-4	576	0.91***
N5FGA	ALL	ICE CREAM	ARDCO SWING.	1653	-23	-26	-12	576	0.91***
N5FGA	ALL	ICE CREAM	ANTHONY 101	1739	-23	-26	-12	576	0.91***
N5FGA	ALL	ICE CREAM	ANTHONY ELM.	1529	-23	-26	-12	576	0.91***

NOTES: * Capacity data listed is for cases with ECM fan motors and T-8 electronic vertical lighting (Prism). Lights remain on during defrost.

See Capacity Adjustments below:

ADD 106 Btuh/Dr for cases using standard fan motors.

ADD 916 Btuh per glass end for frozen food cases.

ADD 1000 Btuh per glass end for ice cream cases.

** Evaporator temperature is based on the saturated pressure leaving the case.

*** This is an average refrigeration charge per door based on R22 and R404A refrigerant usage.

FOR SPECIFIC COMPRESSOR SIZING AND/OR LINE SIZING INFORMATION, REFER TO THE "GOLD" AND/OR "BUFF" SECTIONS IN THE TYLER SPECIFICATION GUIDE.

Electrical Data:

Fans and T-8 Lighting with Electronic Ballasts (120 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	FANS / CASE	TOTAL FOR STANDARD FANS*				TOTAL FOR ECM FANS*				VERTICAL T-8 LIGHTING (58-WATT)	
			ELECTRIC DEFROST		HOT GAS DEFROST		ELECTRIC DEFROST		HOT GAS DEFROST		AMPS	WATTS
			AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS		
N5FGA	2	2	1.2	109	1.2	109	0.6	34	0.6	34	1.45	140
N5FGA	3	3	1.8	163	1.8	163	0.9	51	0.9	51	1.94	209
N5FGA	4	4	2.4	217	2.4	217	1.2	68	1.2	68	2.42	279
N5FGA	5	5	3.0	272	3.0	272	1.5	85	1.5	85	2.91	349

* The fans cycle OFF when the drain pan heater cycles ON.

Heaters (120 and 208 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	ANTI-SWEAT HEATERS (120 V)								DEFROST HEATERS (208 V)*				DRAIN PAN HEATER (120 V) HOT GAS	
		MAIN FRAME		ARDCO SWINGLINE*		ANTHONY 101*		ANTHONY ELIMINAATOR*		COIL		DRAIN PAN. (208 V) ELECTRIC		AMPS	WATTS
		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS		
N5FGA	2	1.9	228	1.5	180	1.8	216	0.5	60	5.8	1,200	0.84	175	1.46	175
N5FGA	3	2.5	300	2.3	276	2.7	324	0.8	96	9.6	2,000	1.20	250	2.08	250
N5FGA	4	3.3	396	3.1	372	3.6	432	1.0	120	13.5	2,800	1.56	325	2.71	325
N5FGA	5	3.9	468	3.9	468	4.6	552	1.3	156	17.3	3,600	1.92	400	3.33	400

* Only door anti-sweat heaters are cyclable. ** The drain pan heater cycles OFF when the fans cycle ON.

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	30.0 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	18.7 TG-3-30	22.3 TG-3-30	26.0 TG-3-40	29.7 TG-3-40	33.4 TG-3-50	29.7 TG-3-40	33.4 TG-3-50	33.4 TG-3-50	33.4 TG-3-50	33.4 TG-3-50	
CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING															
R404A FF	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"	1 1/8"	1 1/8"	1 1/8"	
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"	

CASE CIRCUITS: This case requires a separate 120V circuit for fans, lights, anti-sweats, and a 208V circuit for Electric Defrost including the drain pan heater. 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 and a jumper is removed to control the cyclable heaters.

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

UL SANITATION approved in accordance with ANSI/NSF - 7.

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

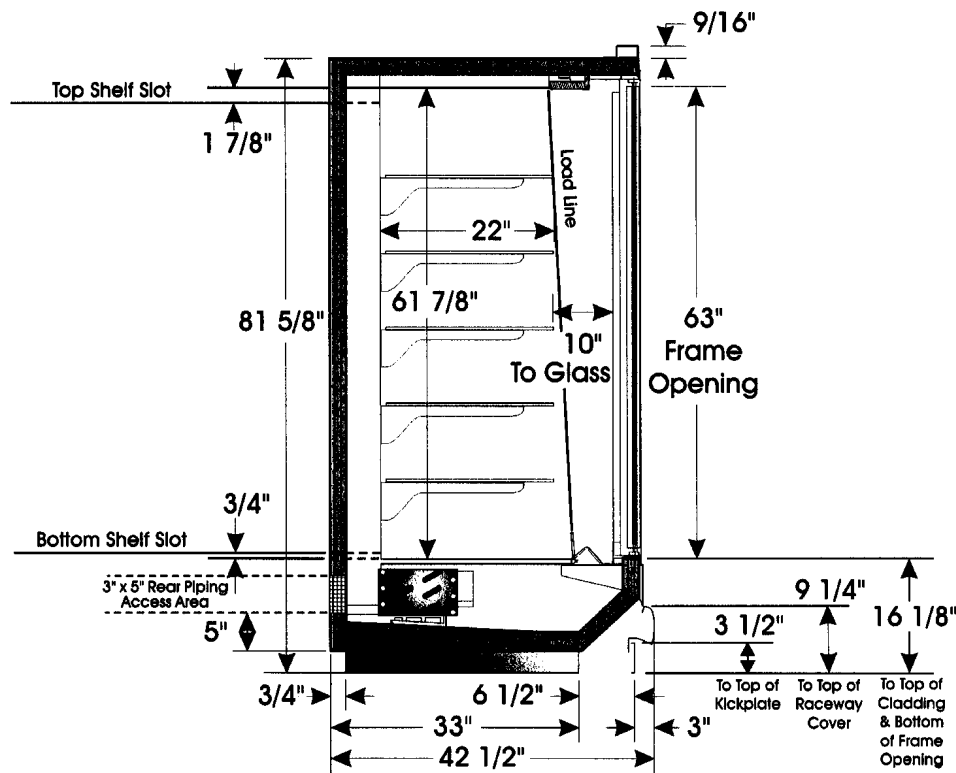
The information contained herein is based on technical data and tests that we believe are reliable, and is intended for use by persons having technical skill at their own discretion and risk. Since conditions of use are outside of Tyler's control, we cannot assume any liability for results obtained or damages incurred through the applications of the data presented. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Defrost Data:

DEFROST TYPE	DEFROSTS PER DAY	DURATION TIME (MIN)	TERMINATION TEMP. (°F)	EPR SETTINGS **		DEFROST WATER (LB / DR / DAY)
				R22 (PSIG)	R404A (PSIG)	
ELECTRIC / FF	1	60	60	12.0	20.7	N/A
ELECTRIC / IC	1	60	60	8.5	15.0	N/A
HOT GAS / FF	2	18-20	55*	12.0	20.7	N/A
HOT GAS / IC	2	20-25	55*	8.5	15.0	N/A

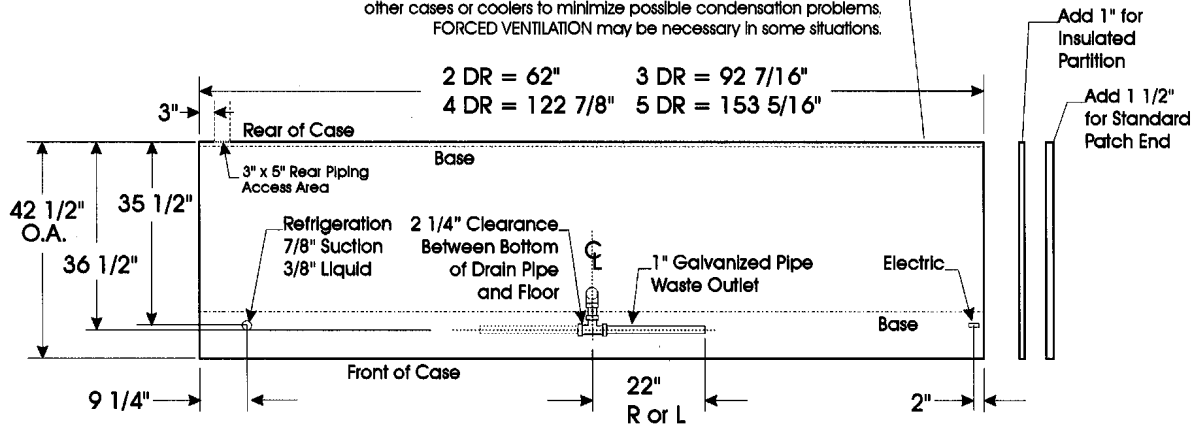
* If an Electronic Sensor is used for termination, it should be set at 70°F termination temperature.
** Set EPR to give this pressure at the case.

N5FGA CROSS SECTION



FLOOR PLAN

ALLOW 3" SPACE between the back of this case and the store wall, other cases or coolers to minimize possible condensation problems. FORCED VENTILATION may be necessary in some situations.



N5NGA Glass Door Merchandisers

Refrigeration Data:

MODEL	CASE LENGTH	CASE USAGE	DOOR TYPE	CAPACITY (BTUH / DR)	EVAPORATOR (°F)	UNIT SIZING (°F)	DISCHARGE AIR		AVG.REF. CHARGE (LBS/DR)
							TEMPERATURE (°F)	VELOCITY (FPM)	
N5NGA	ALL	MED TEMP	ARDCO SWING.	940*	+20**	+18	+30	576	0.91***
N5NGA	ALL	MED TEMP	ANTHONY 101	940*	+20**	+18	+30	576	0.91***

NOTES:

* Capacity data listed is for cases with ECM fan motors and T-8 electronic vertical lighting (Prism). Lights remain on during defrost.

See Capacity Adjustments below:

ADD 101 Btuh/Dr for cases using standard fan motors.

ADD 520 Btuh per glass end for medium temperature cases.

** Evaporator temperature is based on the saturated pressure leaving the case.

*** This is an average refrigeration charge per door based on R22 and R404A refrigerant usage.

FOR SPECIFIC COMPRESSOR SIZING AND/OR LINE SIZING INFORMATION, REFER TO THE "GOLD" AND/OR "BUFF" SECTIONS IN THE TYLER SPECIFICATION GUIDE.

Electrical Data:

Fans (120 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	FANS / CASE	TOTAL FOR STANDARD FANS		TOTAL FOR ECM FANS	
			AMPS	WATTS	AMPS	WATTS
N5NGA	2	2	1.06	96.0	0.64	34.0
N5NGA	3	3	1.59	144.0	0.96	51.0
N5NGA	4	4	2.12	192.0	1.28	68.0
N5NGA	5	5	2.65	240.0	1.60	85.0

Heaters (120 Volt) and T-8 Lighting with Electronic Ballasts (120 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	ANTI-SWEAT HEATERS (120 V)								VERTICAL T-8 (58-WATT)	
		ARDCO MAIN FRAME		ANTHONY MAIN FRAME		ARDCO SWINGLINE*		ANTHONY 101*			
		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
N5NGA	2	0.50	60.0	1.30	156.0	0.30	36.0	0.60	72.0	1.45	174.0
N5NGA	3	0.70	84.0	1.80	216.0	0.40	48.0	1.00	120.0	1.94	233.0
N5NGA	4	0.90	108.0	2.40	288.0	0.50	60.0	1.30	156.0	2.42	290.0
N5NGA	5	1.10	132.0	2.80	336.0	0.60	72.0	1.60	192.0	2.91	349.0

* Only door anti-sweat heaters are cyclable.

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 Data:

DEFROST TYPE	DEFROSTS PER DAY	DURATION TIME (MIN)	TERMINATION TEMP. (°F)	EPR SETTINGS *		DEFROST WATER (LB / DR / DAY)
				R22 (PSIG)	R404A (PSIG)	
TIME OFF	1	60	----	43	55.6	0.75

* Set EPR to give this pressure at the case.

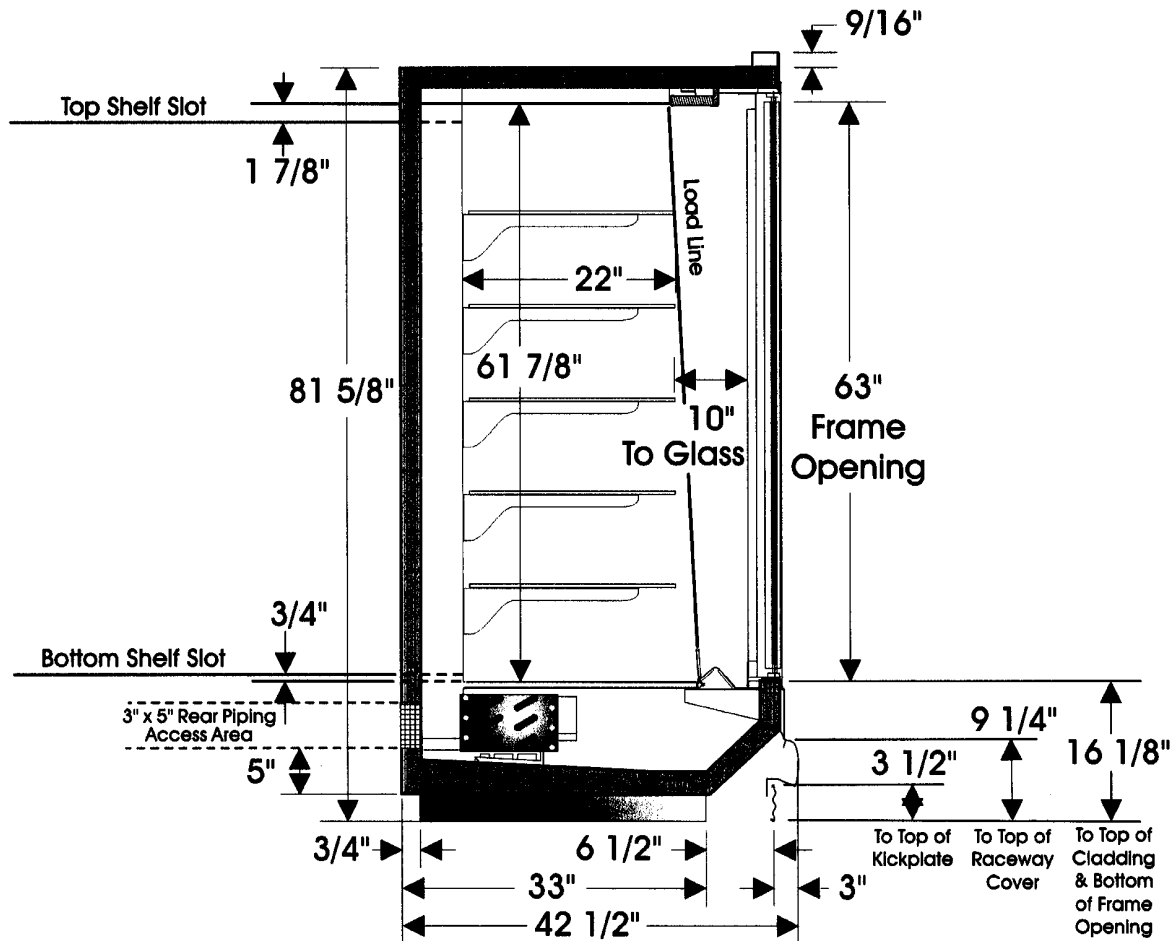
CASE CIRCUITS: This case requires a separate 120V circuit for the fans, lights and anti-sweats. The light circuit requires a switch in the back room for convenience in controlling the lights. The anti-sweat circuit feeds power to both the cyclable and non-cyclable heaters. When an Energy Saving Anti-Sweat Controller is used, a relay and a jumper are removed to control the cyclable heaters.

UL SANITATION approved in accordance with ANSI/NSF - 7.

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

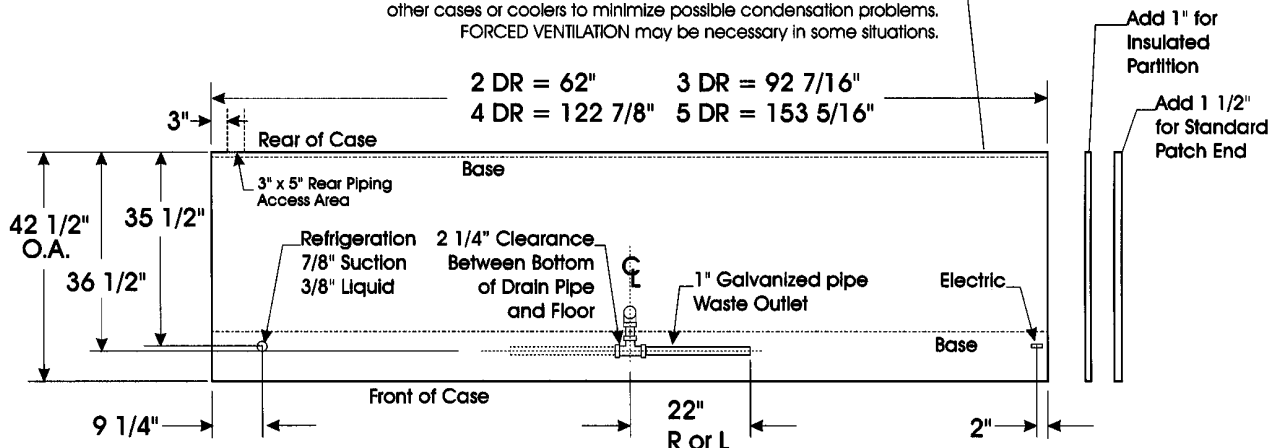
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N5NGA CROSS SECTION



FLOOR PLAN

ALLOW 3" SPACE between the back of this case and the store wall, other cases or coolers to minimize possible condensation problems. FORCED VENTILATION may be necessary in some situations.



N5FGNA Narrow Glass Door Merchandisers

Refrigeration Data:

MODEL	CASE LENGTH	CASE USAGE	DOOR TYPE	CAPACITY (BTUH / DR)*	EVAPORATOR (°F)**	UNIT SIZING (°F)	DISCHARGE AIR (°F)		AVG. REF. CHARGE (LBS/DR)
							TEMPERATURE (°F)	VELOCITY (FPM)	
N5FGNA	ALL	FROZEN	ARDCO SWING.	1355	-15	-18	-4	576	0.91***
N5FGNA	ALL	FROZEN	ANTHONY 101	1441	-15	-18	-4	576	0.91***
N5FGNA	ALL	FROZEN	ANTHONY ELM.	1253	-15	-18	-4	576	0.91***
N5FGNA	ALL	ICE CREAM	ARDCO SWING.	1390	-23	-26	-12	576	0.91***
N5FGNA	ALL	ICE CREAM	ANTHONY 101	1476	-23	-26	-12	576	0.91***
N5FGNA	ALL	ICE CREAM	ANTHONY ELM.	1285	-23	-26	-12	576	0.91***

NOTES: * Capacity data listed is for cases with ECM fan motors and T-8 electronic vertical lighting (Prism). Lights remain on during defrost.

See Capacity Adjustments below:

ADD 106 Btuh/Dr for cases using standard fan motors.

ADD 916 Btuh per glass end for frozen food cases.

ADD 1000 Btuh per glass end for ice cream cases.

** Evaporator temperature is based on the saturated pressure leaving the case.

*** This is an average refrigeration charge per door based on R22 and R404A refrigerant usage.

FOR SPECIFIC COMPRESSOR SIZING AND/OR LINE SIZING INFORMATION, REFER TO THE "GOLD" AND/OR "BUFF" SECTIONS IN THE TYLER SPECIFICATION GUIDE.

Electrical Data:

Fans and T-8 Lighting with Electronic Ballasts (120 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	FANS / CASE	TOTAL FOR STANDARD FANS*				TOTAL FOR ECM FANS*				VERTICAL T-8 LIGHTING (58-WATT)	
			ELECTRIC DEFROST		HOT GAS DEFROST		ELECTRIC DEFROST		HOT GAS DEFROST			
			AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
N5FGNA	2	2	1.2	108.7	1.2	108.7	0.6	34	0.6	34	1.45	174
N5FGNA	3	3	1.8	163	1.8	163	0.9	51	0.9	51	1.94	233
N5FGNA	4	4	2.4	217.4	2.5	217.4	1.2	68	1.2	68	2.42	290
N5FGNA	5	5	3.0	271.7	3.0	271.7	1.5	85	1.5	85	2.91	349

* The fans cycle OFF when the drain pan heater cycles ON.

Heaters (120 and 208 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	ANTI-SWEAT HEATERS (120 V)								DEFROST HEATER COIL (208 V) ELECTRIC		DRAIN PAN HEATER** (120 V) ELECTRIC OR HOT GAS	
		MAIN FRAME		ARDCO SWINGLINE*		ANTHONY 101*		ANTHONY ELIMINAATOR*		AMPS	WATTS	AMPS	WATTS
		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS				
N5FGNA	2	1.9	228	1.5	180	1.8	216	0.5	60	8.1	1,684	1.46	175
N5FGNA	3	2.5	300	2.3	276	2.7	324	0.8	96	13.1	2,726	2.08	250
N5FGNA	4	3.3	396	3.1	372	3.6	432	1.0	120	18.1	3,760	2.71	325
N5FGNA	5	3.9	468	3.9	468	4.6	552	1.3	156	23.1	4,800	3.33	400

* Only door anti-sweat heaters are cyclable. ** The drain pan heater cycles OFF when the fans cycle ON.

208 VOLT DEFROST (AMPS)														
DRS	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FF/IC 1 PH	8.1 TG-30	13.1 TG-30	18.1 TG-30	23.1 TG-30	26.2 TG-40	31.2 TG-40	36.2 TG-50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FF/IC 3 PH	N/A	N/A	N/A	N/A	22.7 TG-3-30	27.0 TG-3-40	31.3 TG-3-40	35.6 TG-3-50	39.9 TG-3-50	35.6 TG-3-50	39.9 TG-3-50	39.9 TG-3-50	39.9 TG-3-50	39.9 TG-3-50
CASE-TO-CASE SUCTION LINE SUB-FEED BRANCH LINE SIZING														
R404A FF	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"	1 1/8"	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"

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 Electric or 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 and a jumper is removed to control the cyclable heaters.

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

UL SANITATION approved in accordance with ANSI/NSF - 7.

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

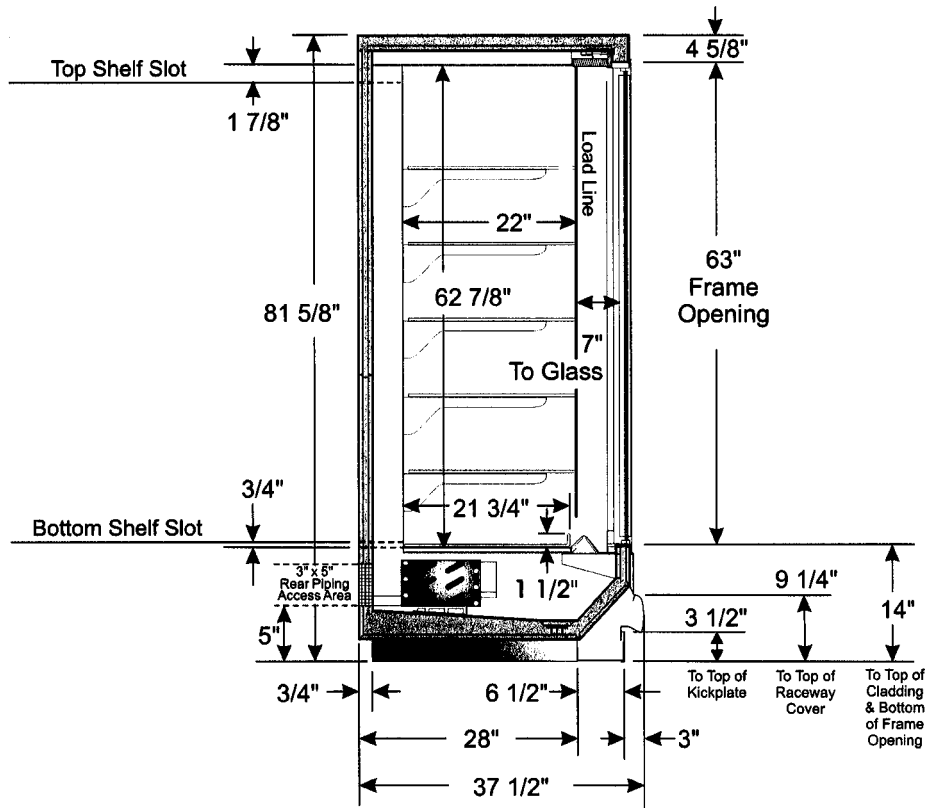
The information contained herein is based on technical data and tests that we believe are reliable, and is intended for use by persons having technical skill at their own discretion and risk. Since conditions of use are outside of Tyler's control, we cannot assume any liability for results obtained or damages incurred through the applications of the data presented. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Defrost Data:

DEFROST TYPE	DEFROSTS PER DAY	DURATION TIME (MIN)	TERMINATION TEMP. (°F)	EPR SETTINGS **		DEFROST WATER (LB / DR / DAY)
				R22 (PSIG)	R404A (PSIG)	
ELECTRIC / FF	1	60	60	12	20.7	N/A
ELECTRIC / IC	1	60	60	8.5	15	N/A
HOT GAS / FF	2	18-20	55*	12	20.7	N/A
HOT GAS / IC	2	20-25	55*	8.5	15	N/A

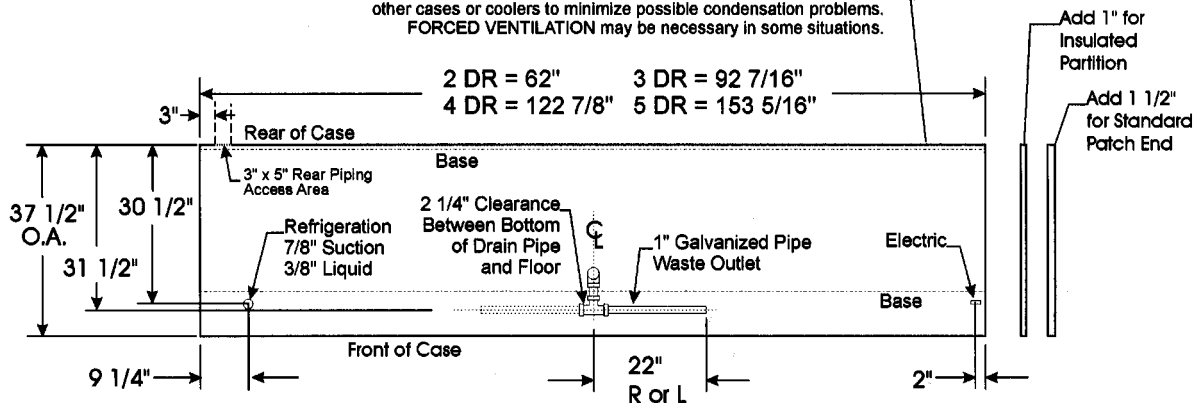
* If an Electronic Sensor is used for termination, it should be set at 70°F termination temperature.
** Set EPR to give this pressure at the case.

N5FGNA CROSS SECTION



FLOOR PLAN

ALLOW 3" SPACE between the back of this case and the store wall, other cases or coolers to minimize possible condensation problems. FORCED VENTILATION may be necessary in some situations.



N5NGNA Narrow Glass Door Merchandisers

Refrigeration Data:

MODEL	CASE LENGTH	CASE USAGE	DOOR TYPE	CAPACITY (BTUH / DR)	EVAPORATOR (°F)	UNIT SIZING (°F)	DISCHARGE AIR (°F)		AVG. REF. CHARGE (LBS/DR)
							TEMPERATURE (°F)	VELOCITY (FPM)	
N5NGNA	ALL	MED TEMP	ARDCO SWING.	793*	+20**	+18	+30	576	0.91***
N5NGNA	ALL	MED TEMP	ANTHONY 101	793*	+20**	+18	+30	576	0.91***

NOTES:

* Capacity data listed is for cases with ECM fan motors and T-8 electronic vertical lighting (Prism). Lights remain on during defrost.

See Capacity Adjustments below:

ADD 101 Btuh/Dr for cases using standard fan motors.

ADD 520 Btuh per glass end for medium temperature cases.

** Evaporator temperature is based on the saturated pressure leaving the case.

*** This is an average refrigerant charge per door based on R22 and R404A refrigerant usage.

FOR SPECIFIC COMPRESSOR SIZING AND/OR LINE SIZING INFORMATION, REFER TO THE "GOLD" AND/OR "BUFF" SECTIONS IN THE TYLER SPECIFICATION GUIDE.

Electrical Data:

Fans (120 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	FANS / CASE	TOTAL FOR STANDARD FANS		TOTAL FOR ECM FANS	
			AMPS	WATTS	AMPS	WATTS
N5NGNA	2	2	1.06	96.0	0.64	34.0
N5NGNA	3	3	1.59	144.0	0.96	51.0
N5NGNA	4	4	2.12	192.0	1.28	68.0
N5NGNA	5	5	2.65	240.0	1.60	85.0

Heaters (120 Volt) and T-8 Lighting with Electronic Ballasts (120 Volt) (ARDCO or ANTHONY)

MODEL	NO. OF DOORS	ANTI-SWEAT HEATERS (120 V)								VERTICAL T-8 (58-WATT)	
		ARDCO MAIN FRAME		ANTHONY MAIN FRAME		ARDCO SWINGLINE*		ANTHONY 101*			
		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
N5NGNA	2	0.50	60.0	1.30	156.0	0.30	36.0	0.60	72.0	1.45	174.0
N5NGNA	3	0.70	84.0	1.80	216.0	0.40	48.0	1.00	120.0	1.94	233.0
N5NGNA	4	0.90	108.0	2.40	288.0	0.50	60.0	1.30	156.0	2.42	290.0
N5NGNA	5	1.10	132.0	2.80	336.0	0.60	72.0	1.60	192.0	2.91	349.0

* Only door anti-sweat heaters are cyclable.

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 Data:

DEFROST TYPE	DEFROSTS PER DAY	DURATION TIME (MIN)	TERMINATION TEMP. (°F)	EPR SETTINGS *		DEFROST WATER (LB / DR / DAY)
				R22 (PSIG)	R404A (PSIG)	
TIME OFF	1	60	----	43	55.6	0.75

* Set EPR to give this pressure at the case.

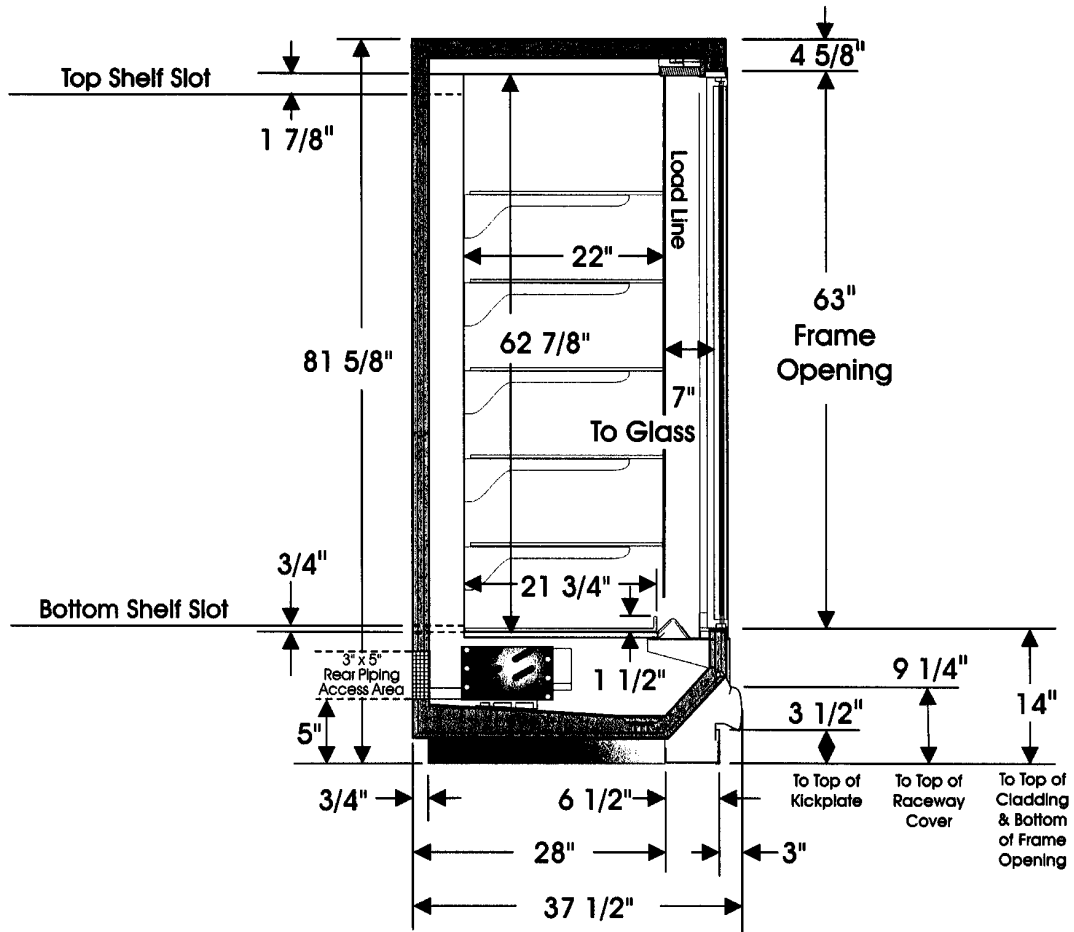
CASE CIRCUITS: This case requires a separate 120V circuit for the fans, lights and anti-sweats. The light circuit requires a switch in the back room for convenience in controlling the lights. The anti-sweat circuit feeds power to both the cyclable and non-cyclable heaters. When an Energy Saving Anti-Sweat Controller is used, a relay and a jumper are removed to control the cyclable heaters.

UL SANITATION approved in accordance with ANSI/NSF - 7.

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

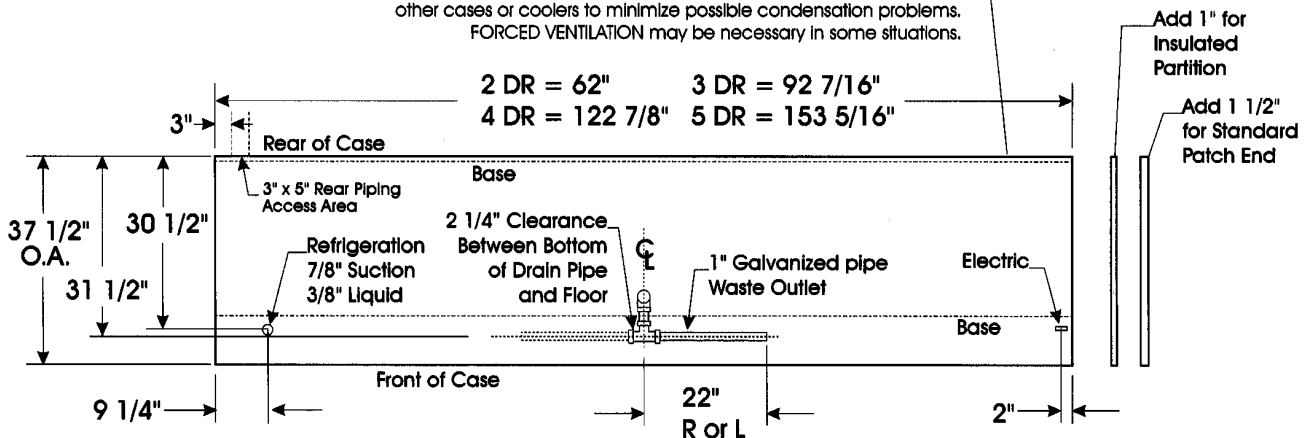
The information contained herein is based on technical data and tests that we believe are reliable, and is intended for use by persons having technical skill at their own discretion and risk. Since conditions of use are outside of Tyler's control, we cannot assume any liability for results obtained or damages incurred through the applications of the data presented. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

N5NGNA CROSS SECTION



FLOOR PLAN

ALLOW 3" SPACE between the back of this case and the store wall, other cases or coolers to minimize possible condensation problems. FORCED VENTILATION may be necessary in some situations.



INSTALLATION PROCEDURES

Carpentry Procedures

Case Line-Up

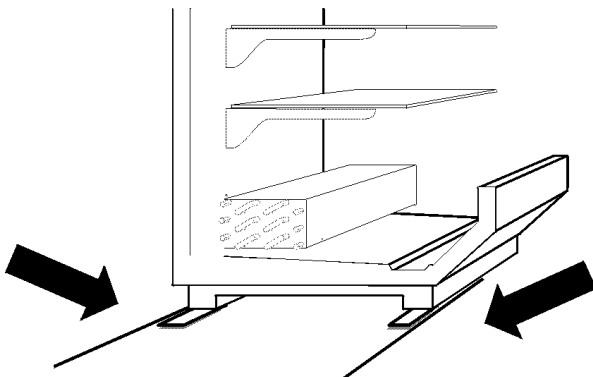
Before starting the case line-up, review the store layout floorplans and survey the areas where case line-ups are going to be installed.

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.

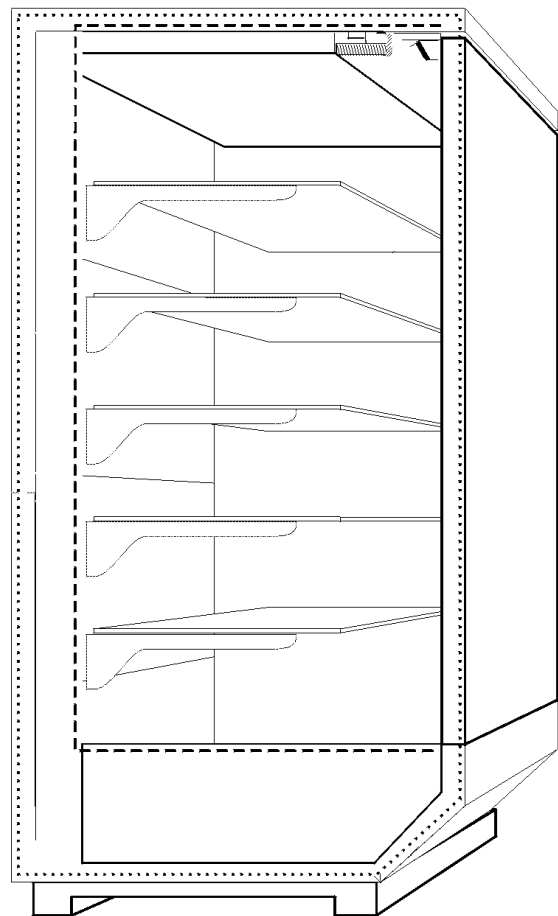
2. Locate highest point on chalk lines as a reference for determining the number of shims to be placed under the case base rails. Position first case at highest point on the chalk lines and shim case supports as required. Check leveling at hand rails and top of case and back of case.

CAUTION

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!

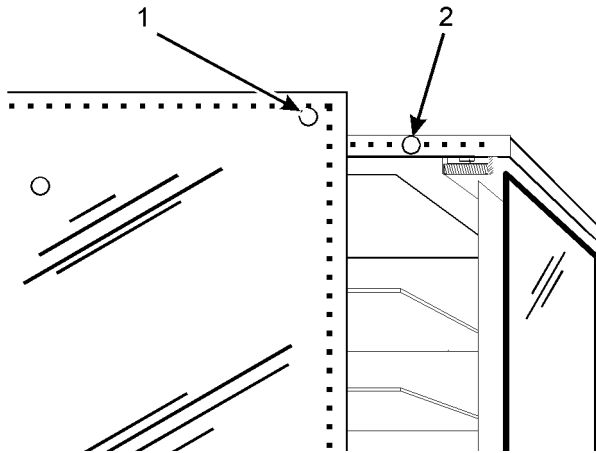


3. Apply two heavy beads of caulking compound from the Filler Kit to the end of case at dotted (. . .) and dashed (- - -) lines. Proper caulking provides good case refrigeration and sanitation.
4. If the case requires a plexiglas system divider or 1" partition, install as follows:

Plexiglas System Divider Installation

NOTE

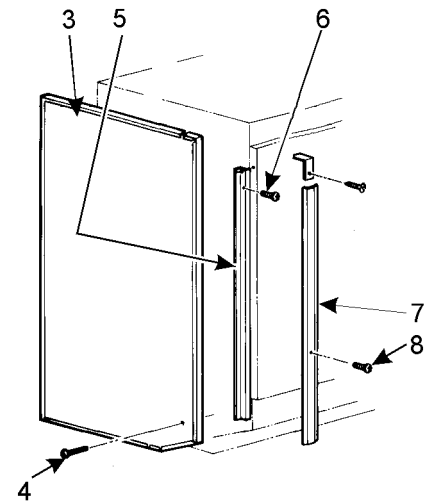
The holes in the divider will only line-up one way.



- 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

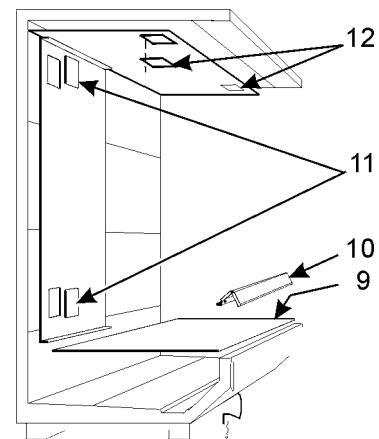
1" partitions are shipped installed as specified in the case order. Make sure the partitioned case is being installed in the proper location in the case line-up. This assures proper refrigeration to all parts of the case line-up.



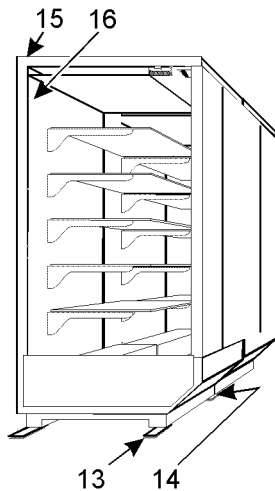
- a. Apply sealant to outside surface of partition (3) where the two surfaces of the adjoining case will contact the partition (3). Drill 3/16" holes through partition and secure to one of the cases with four screws (4).

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).



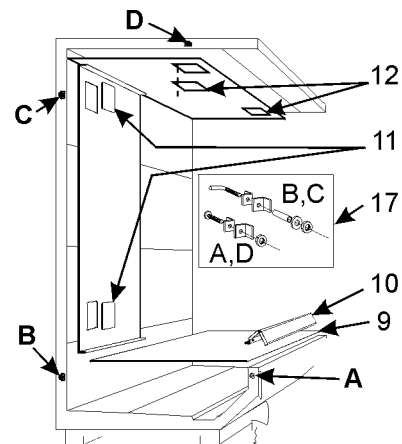
5. Remove bottom tray (9), front duct (10), rear pull-up access covers (11), and top pull-up access cover (12) from adjoining ends of both cases. This provides access to the case pull-ups.



6. Push cases tightly together making sure the pull-ups are aligned.
7. 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

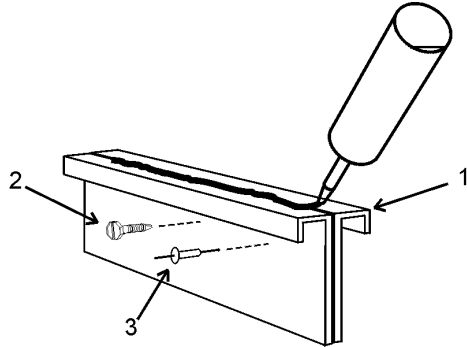
Do not drill or use other holes through the case end for pull-ups. This may deform the case end and could cause joint leaks and/or poor refrigeration.



8. 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.**
9. 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

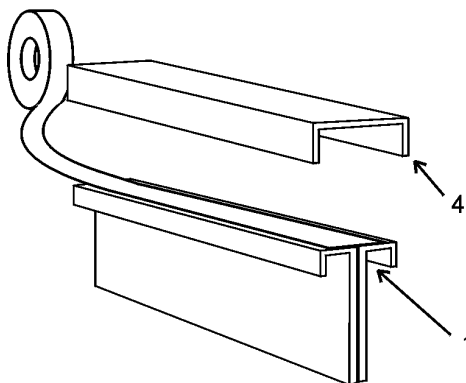
Horizontal & Vertical Joint Trim Installation



1. 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

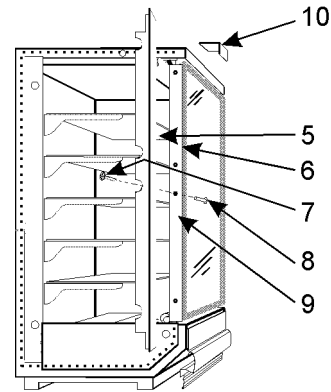
If additional sealing is preferred, 2" wide duct tape can be applied to the top of the internal bottom joint between cases. The tape will be covered by the horizontal joint trim. Duct tape is not furnished.



2. 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 13.



3. Position vertical joint trim (5) in front case line-up joint (6) and secure by tightening four screws (7) and screw nuts (8) through adjoining case door frames (9).
4. Install exterior top joint trim (10) after cases are joined.

NOTE

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

Refrigeration Procedures

NOTE

See "General-UL/NSF I&S Manual" for all other refrigeration procedure information.

N5FGA/N5FGNA 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 uninterrupted, protected 120V circuit. At case start-up,

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 fan control relay whenever the defrost cycle is initiated. On the N5FGNA models, the fan control 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 T8 Electronic Vertical (Prism) lamps. The standard lighting is 3 to 6 rows of vertical T8 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 N5FGA and N5FGNA glass door merchandisers. This is accomplished by cycling the anti-sweat heat in the door frames and door glass. Ardc0 Swingline doors use 90 watts of heat (.75 amps) per door that 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.

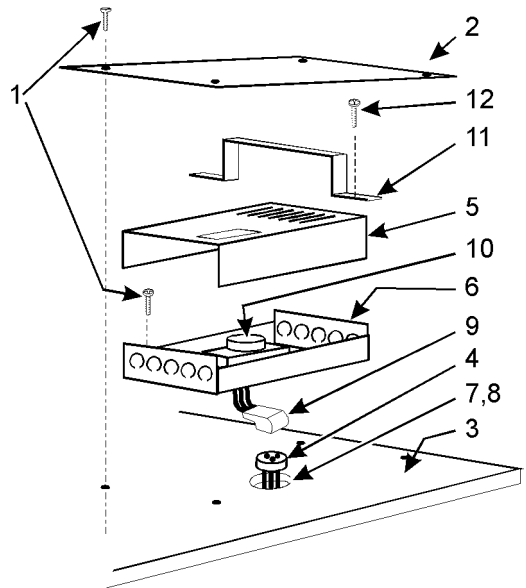
Installation of the ESM Controller

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.



1. 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).
2. 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.
6. 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

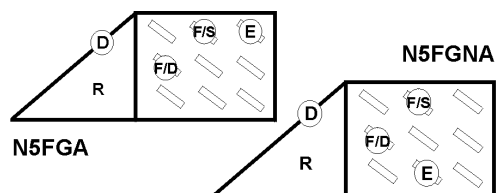
See "General-UL/NSF I&S Manual" for operational descriptions for each type of defrost control.

Defrost Control Charts

Defrost Option Settings

Defrost Type	Defrosts Per Day	Defrost Duration (Min)	Term. Temp.
N5FGA/N5FGNA			
Electric (FF)	1	60	60°F
Electric (IC)	1	60	60°F
Gas (FF)	2	18-20	55°F
Gas (IC)	2	20-25	55°F
N5NGA/N5NGNA			
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
N5FGA (60/30)
N5FGNA (50/30)
- F/D = Defrost Fan Delay
Electric Defrost (40/20)
Gas Defrost (25/10)
- D = Gas Defrost Drain Pan Heater (70/40)
- 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 electric drain pan heater. On the N5FGA, 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 klixon senses 25°F, it turns off the fans and activates the drain pan heater. 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.

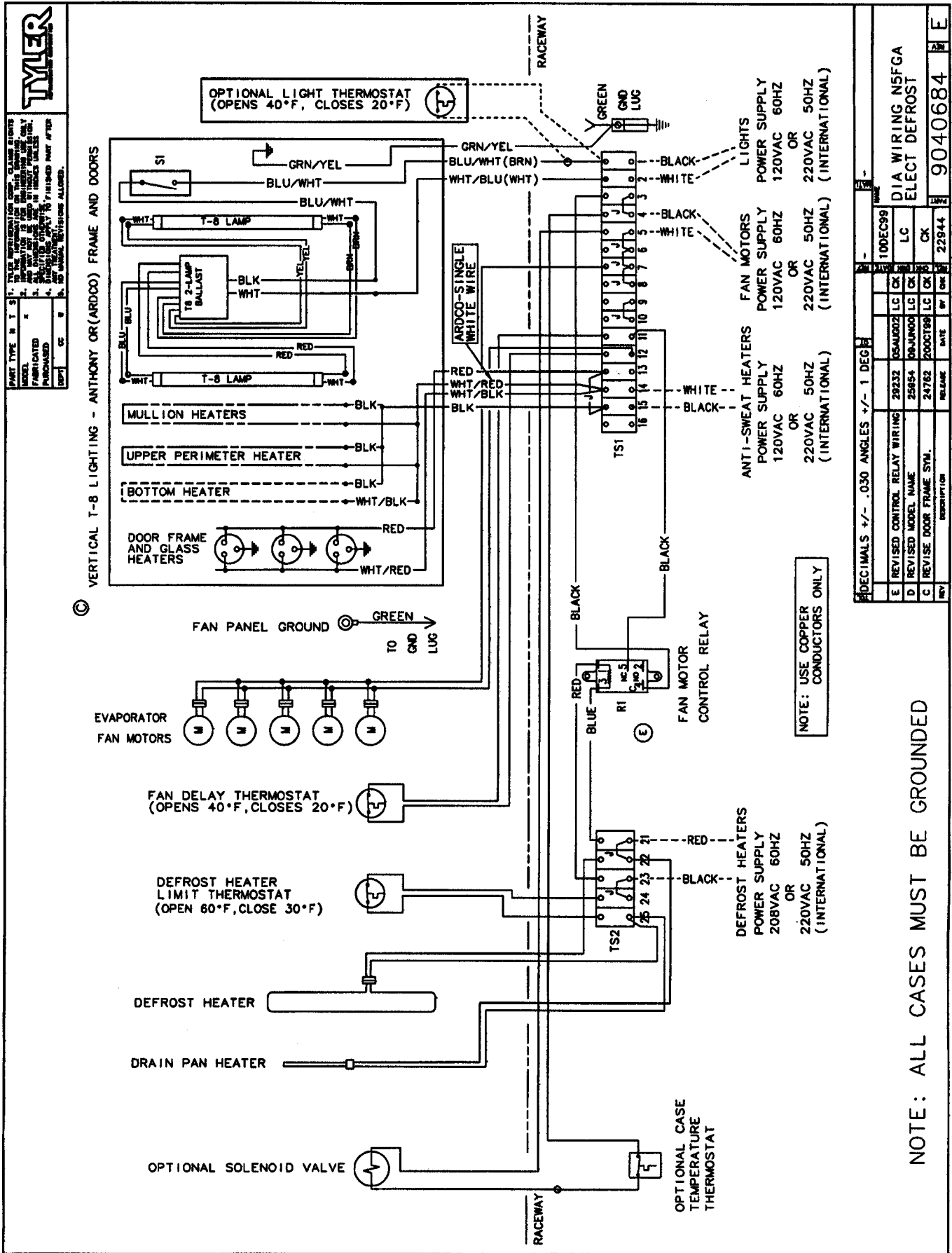
- The fan circuit for Gas Defrost includes the drain pan heater which is on only when the fans are off. Since the heater draws more current than the fans, the entire circuit is marked to show the highest load rating.
- The fan/heater delay klixon shuts off the fans at 25°F, and turns the heater on.
- The drain pan heater will shut off if the drain pan heater klixon exceeds 70°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 19 thru 29 will cover all N5FG(N)A and N5NG(N)A case circuits.

N5FGA Domestic & Export (50Hz) Case Circuits (Electric Defrost)



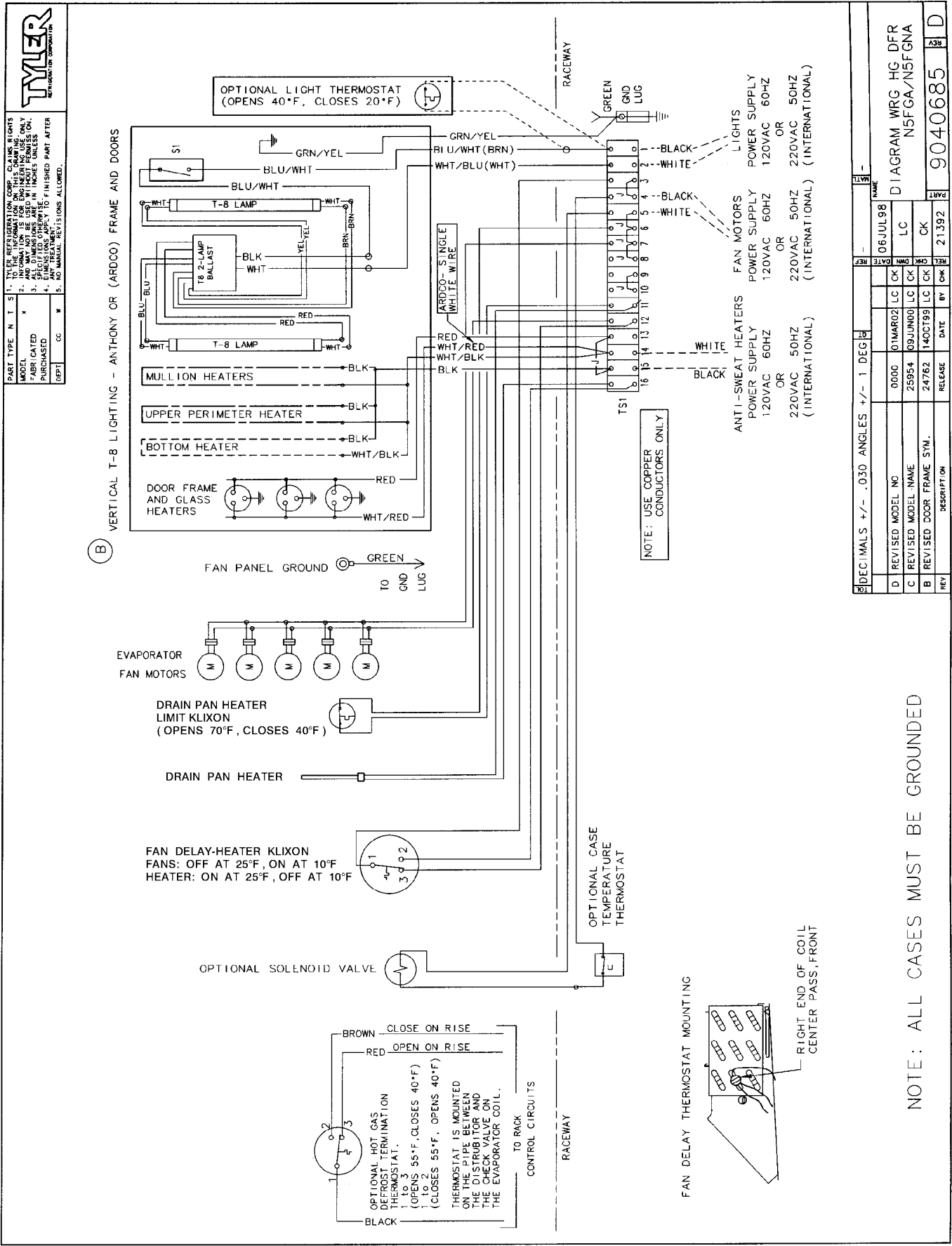
TYLER
ELECTRIC COMPANY

PART TYPE N I S
 1. TYLER WIRING FOR COMP. CLAIM REPORTS
 2. THIS WIRING IS FOR INFORMATION ONLY
 3. THIS WIRING IS FOR INFORMATION ONLY
 4. ALL DIMENSIONS ARE IN INCHES UNLESS
 OTHERWISE SPECIFIED
 5. FINISHED POINT AFTER
 6. ALL DIMENSIONS ARE IN INCHES UNLESS
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 7. FINISHED POINT AFTER
 8. ALL DIMENSIONS ARE IN INCHES UNLESS
 OTHERWISE SPECIFIED

REV	DESCRIPTION	DATE	BY	CHK
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NOTE: ALL CASES MUST BE GROUNDED

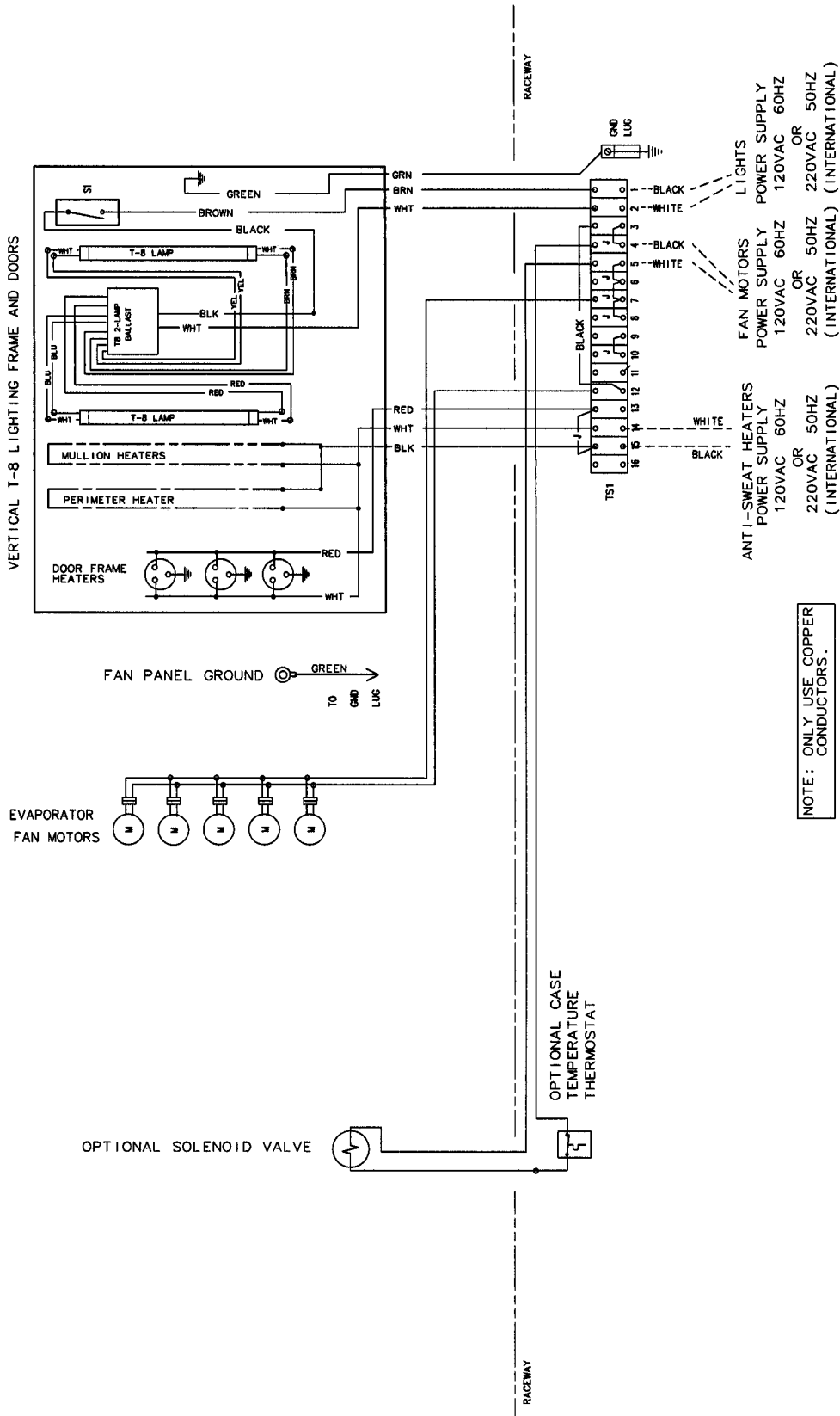
N5FGA/N5FGNA Domestic & Export (50Hz) Case Circuits (Gas Defrost)



N5NGA Domestic & Export (50Hz) Case Circuits



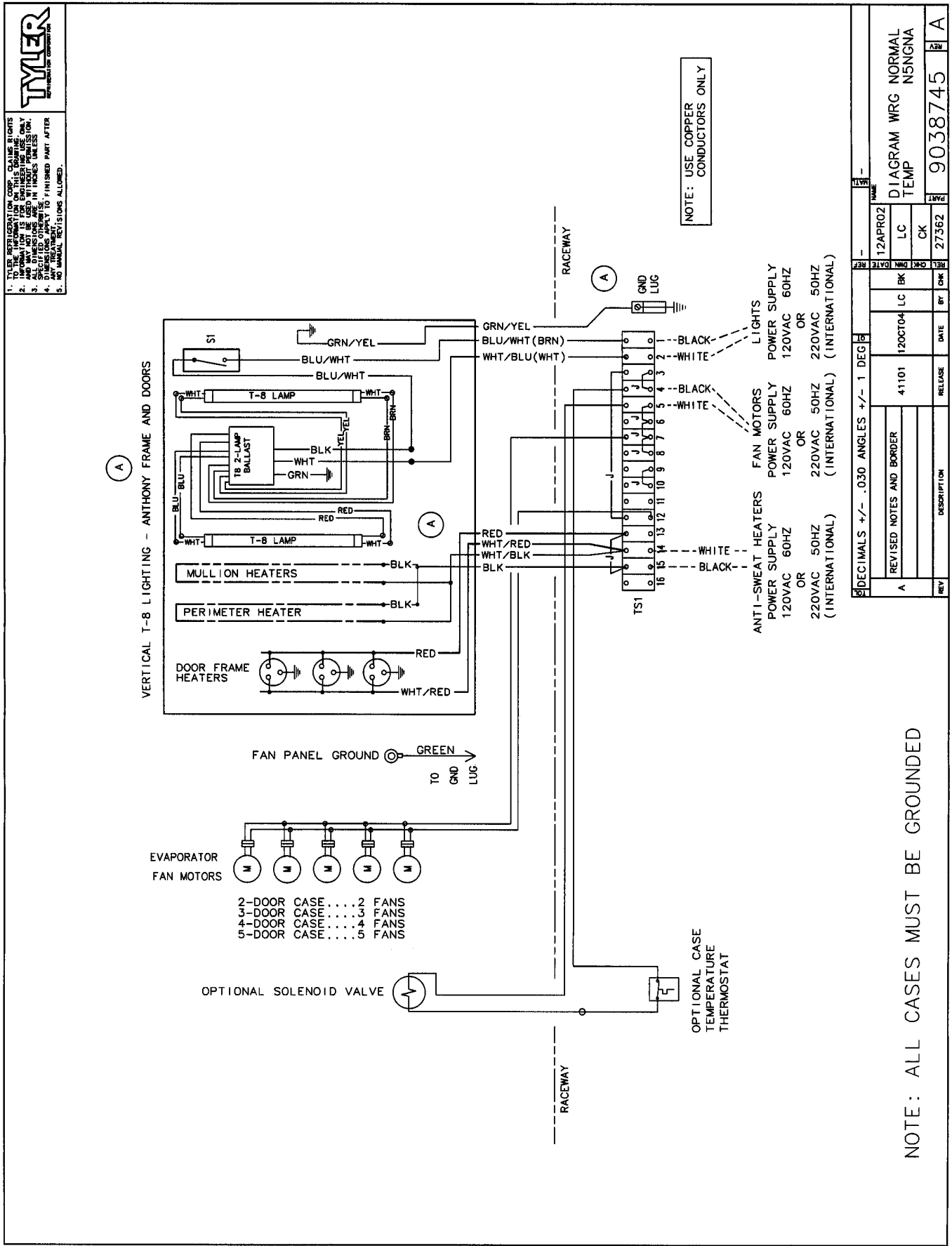
1. THESE REVISIONS ARE FOR CASES, EXCEPT THOSE LISTED IN THE "REVISIONS" SECTION OF THIS DRAWING.
2. ANY DIMENSIONS NOT SPECIFIED ARE TO BE TAKEN FROM THE UNFINISHED SURFACE UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
4. DIMENSIONS APPLY TO FINISHED PART AFTER ANY NECESSARY TOLERANCES ARE APPLIED.
5. NO MANUAL REVISIONS ALLOWED.



REV	DESCRIPTION	RELEASE	DATE	BY	CHK	REL	CHK	DATE	REF
A	UPDATED BORDER ADDED COPPER LABEL	40974	05OCT04	LC	WK	LC	CK	27APR98	NAME
									DIAGRAM WRG MED N5NGA
									TEMP
									9040686
									REV A

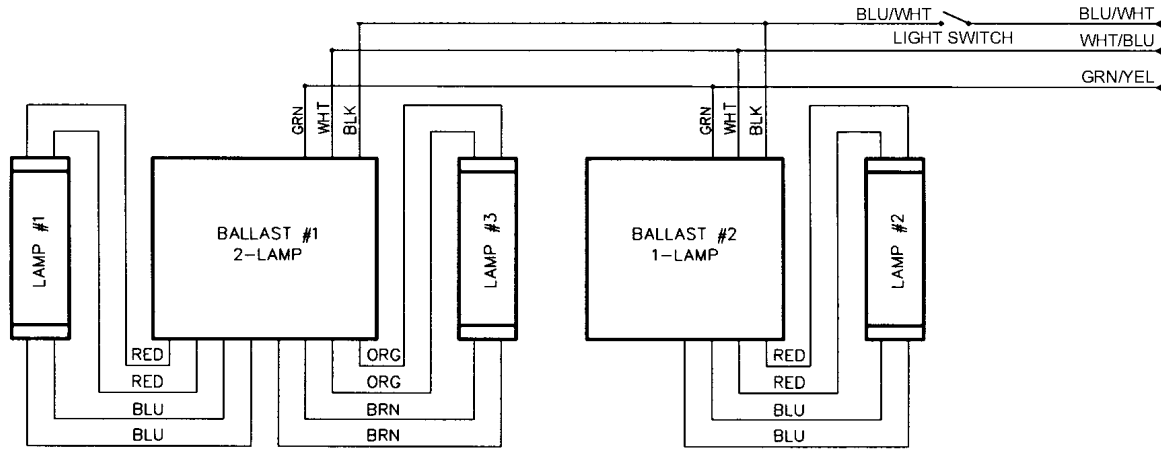
NOTE: ALL CASES MUST BE GROUNDED

N5NGNA Domestic & Export (50Hz) Case Circuits



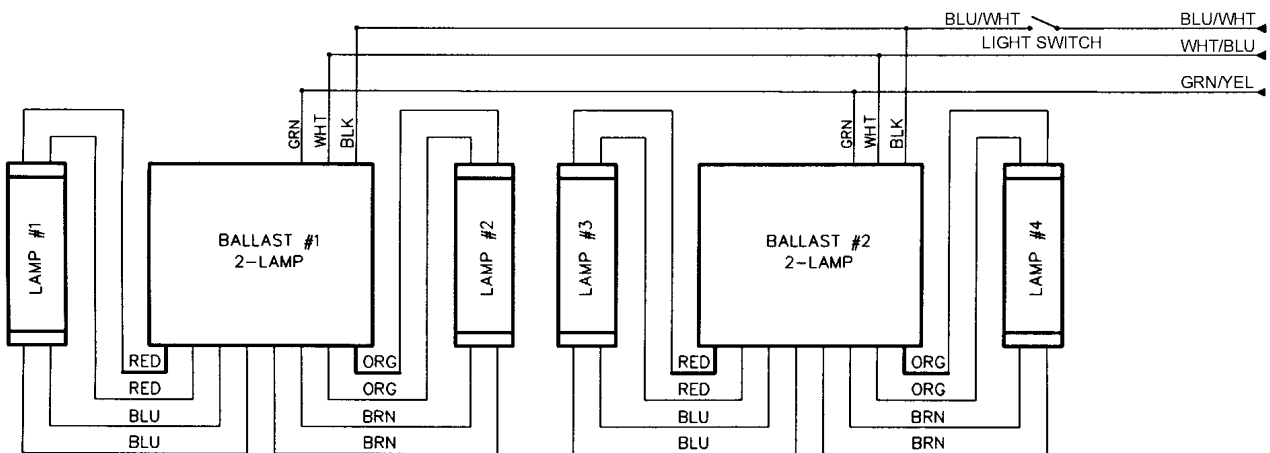
NOTE: ALL CASES MUST BE GROUNDED

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



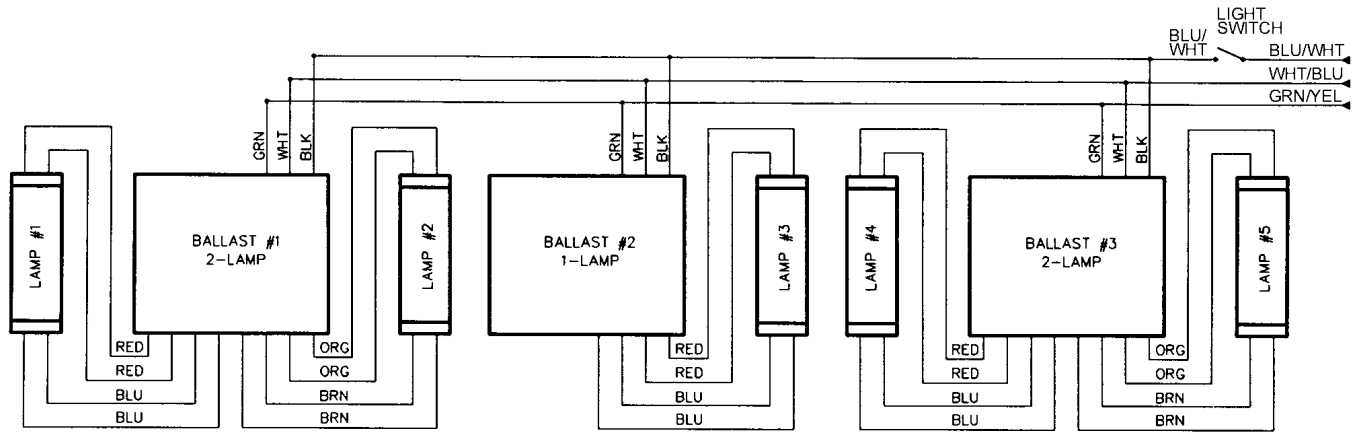
- NOTES:
 1. BALLAST 1 IS MOUNTED IN CENTER MULLION
 2. BALLAST 2 IN MOUNTED IN CENTER MULLION

3-Door Electronic Ballast Circuit



- NOTES:
 1. BALLAST 1 IS MOUNTED IN LEFT MULLION
 2. BALLAST 2 IS MOUNTED IN RIGHT MULLION

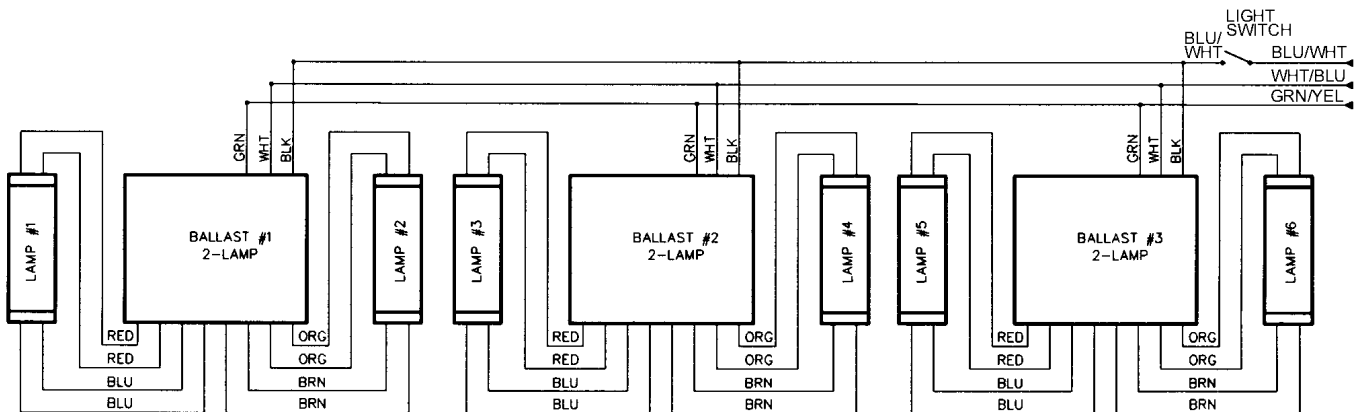
4-Door Electronic Ballast Circuit



NOTES:

1. BALLAST 1 IS MOUNTED IN LEFT MULLION
2. BALLAST 2 IS MOUNTED IN CENTER MULLION
3. BALLAST 3 IS MOUNTED IN RIGHT MULLION

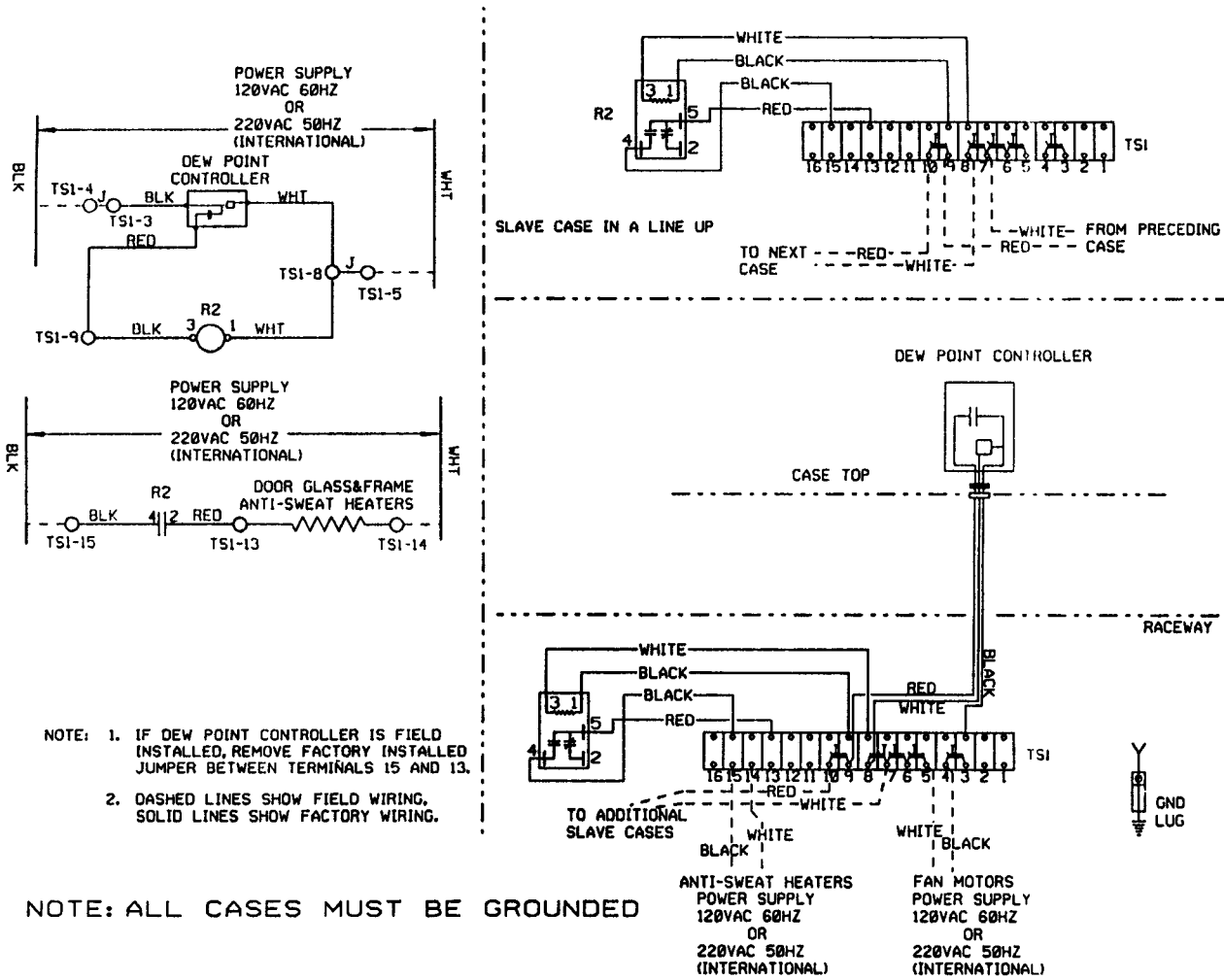
5-Door Electronic Ballast Circuit



NOTES:

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

ESM/ESS Anti-Sweat Circuit



CLEANING AND SANITATION

Component Removal and Installation Instructions for Cleaning

Shelves and Shelf Brackets

1. Open door and remove product from shelves.
2. Push shelves back and then lift up and out to remove them from the shelf brackets. Carefully remove shelves through the door openings.
3. Remove shelf brackets from slots in rear uprights.
4. 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 and carefully remove through the door openings
3. After cleaning, replace in reverse order.

Front Air Ducts

1. Remove lower trays, see this page.
2. Lift out front air duct sections and carefully remove through door openings.
3. After cleaning, replace in reverse order.

Rear Duct Panels

1. Remove shelves and bottom trays, see above.
2. Remove mounting screws from rear duct panel.
3. Carefully remove rear duct panels through the door openings.
4. After cleaning, replace 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.

NSF Product Thermometer

Remove two screws and product thermometer from left top location in the case. After cleaning, replace product thermometer and secure with two screws.

Top Duct

1. Remove shelves and shelf brackets, see above.
2. Remove screws, rear retainer plate and honeycomb grid sections from top front 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 and raceway cover.
2. Remove screws from bottom of front cladding and pull cladding down to remove it from behind the bottom of the door frame assembly.
3. After cleaning, replace front cladding and remaining front components in reverse order.

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>	<u>TTL. LGTH. 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>	<u>TTL. LGTH. 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 N5FGA and N5FGNA cases.

1. Use solid shelves or solid F.R.P. overlays on top of shelf screens for all rows of shelving.
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 build up of frost on product. 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.

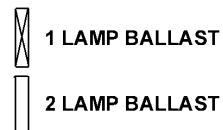
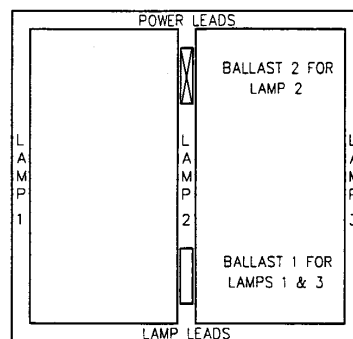
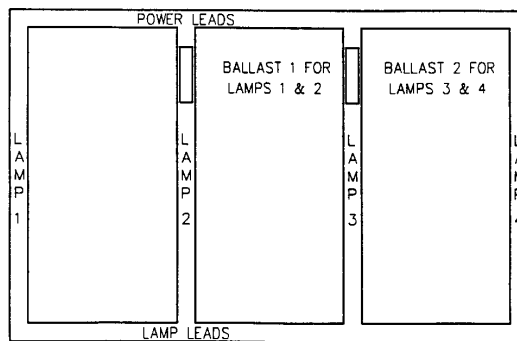
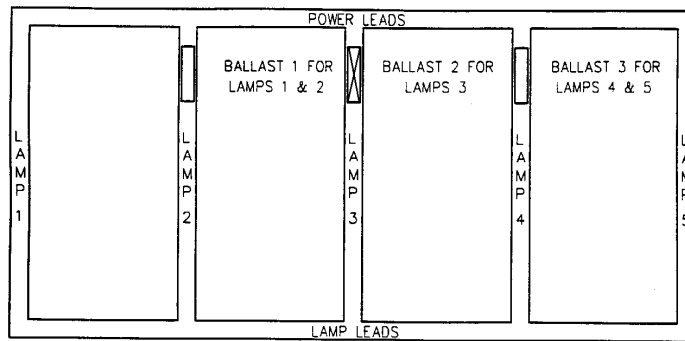
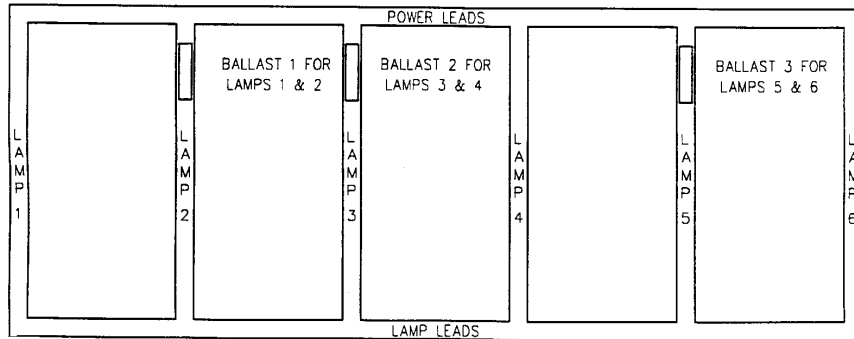
SERVICE INSTRUCTIONS

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

Light Servicing

Ballast and Lighting Locations

Vertical T-8 Electronic Lighting Lighting



ALL LAMPS ARE
T-8 60" BULBS

Lamp Replacement

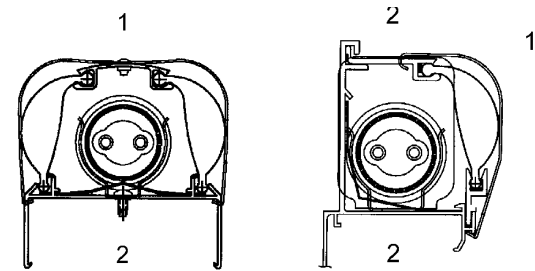
CAUTION

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.

T-8 Electronic Vertical Lamp (Prism) for *Connexion™ II*

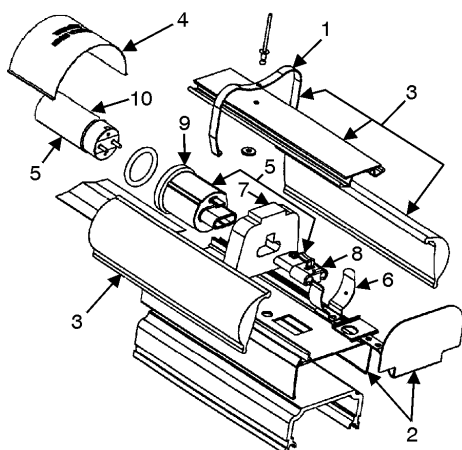
NOTE

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

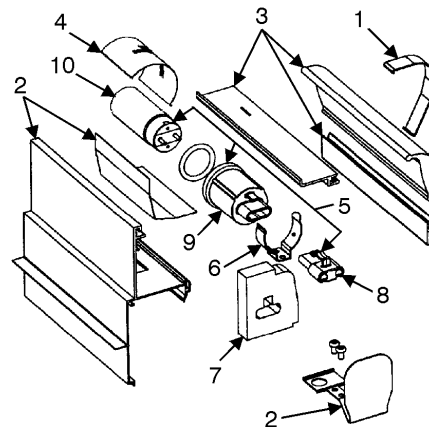


- Using a small flathead screwdriver, release or remove the three spring steel clips (1) from both sides of the light fixture assembly (2).

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 mullion lights, rotate front of light cover assembly back until rear side of assembly can be pulled from light fixture.
- 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).
- Remove both sockets (9) from lamp (10) by carefully grasping lamp and pulling both sockets one at a time.

CAUTION

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.

6. 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.
7. 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 *Connexion™* II)**

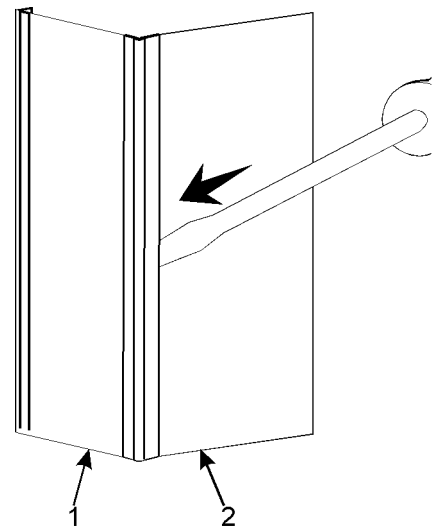
WARNING

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.

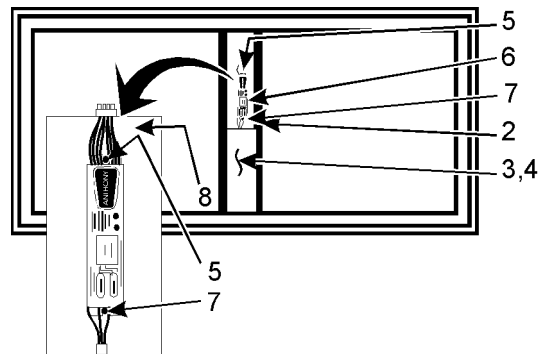
NOTE

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.

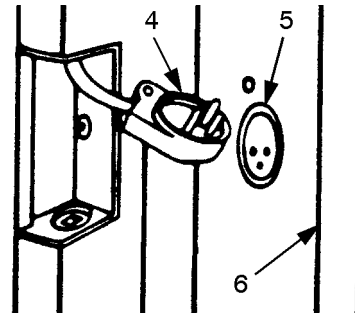


2. Using a flat-headed screwdriver under the back edge of the contact plate retainer (1), gently pull up to unsnap both sides of retainer (1) from mullion (2).

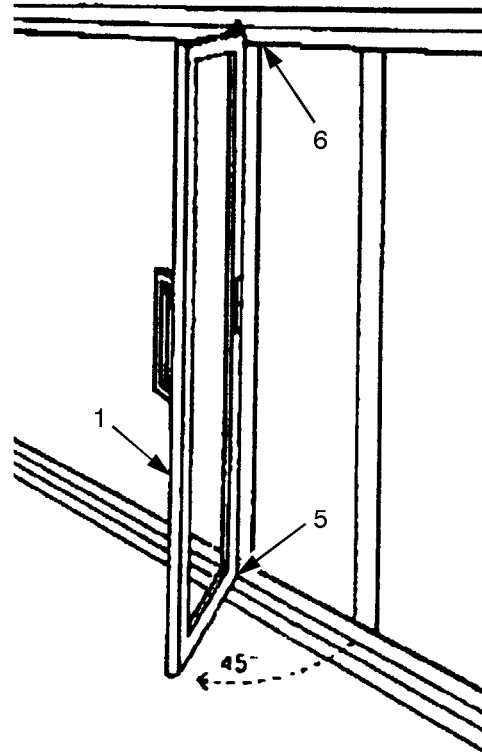


3. Remove contact plate (3) and heat barrier (4) from mullion (2).
4. Remove screw (5) on top end of ballast (6). Slide ballast (6) up and out of punched tabs (7) in mullion (2).
5. Disconnect all wire leads (8) at connectors to ballast (6).
6. Insert bottom of new ballast (6) in bottom tabs (7) on mullion (2) and secure with screw (5) in top end of ballast (6).
7. 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).
9. 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.

2. Disconnect the hold open spring (2) by inserting a flat-headed screwdriver between the legs of the spring. Push screwdriver up until the hold open spring (2) disconnects from the pin (3) on top of the door (1).



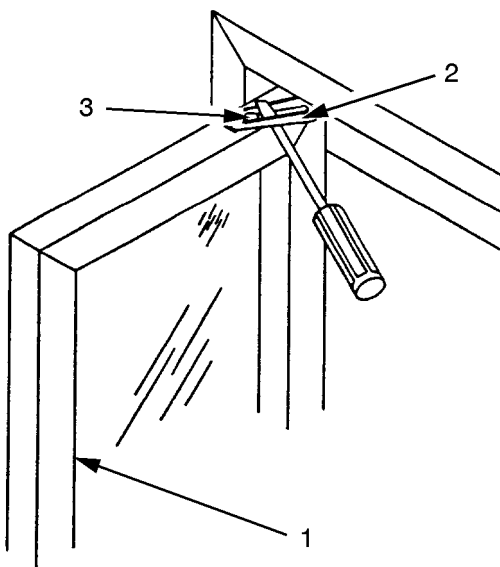
3. Remove retaining screw and unplug door power cord (4) from receptacle (5) in mullion or door frame (6).



4. Lift door (1) up and out of bottom hinge plate (5) to disengage bottom of door (1). Carefully pull out bottom of door (1) and lower the door (1) until it clears the top hinge plate (6).
5. Place door (1) face down on a soft cloth to protect door finish and glass.

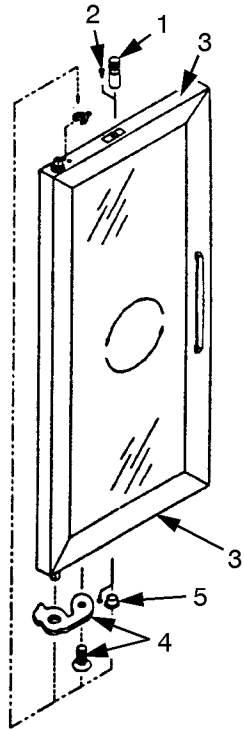
Door Servicing

Door Removal



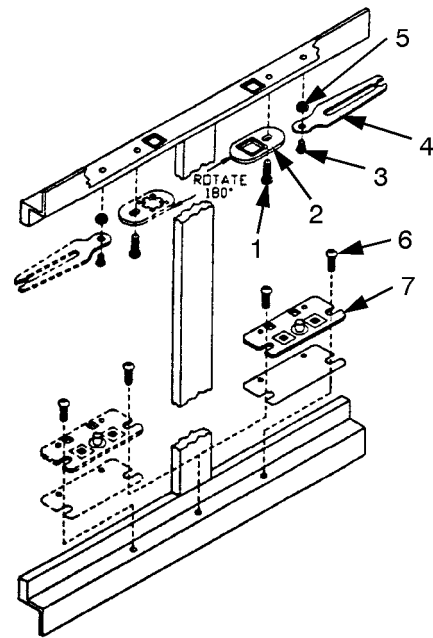
1. Open and hold door (1) at approximately 45°.

Reversing Door Hardware

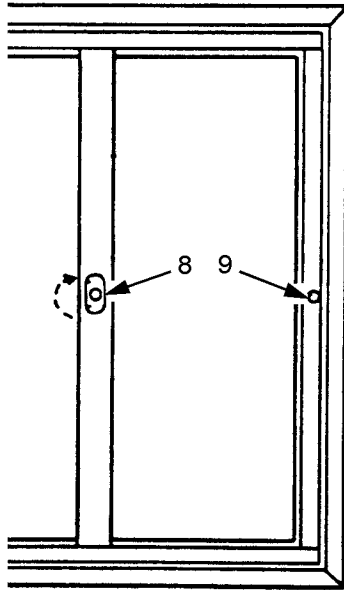


1. Remove the hold open pin (1) and screw (2) from the top of the door (3). Reinstall in the bottom of the door.
2. Remove the door stop plate and screw (4) and plug button (5) from the bottom of the door (3). Reinstall in the top of the door.
3. Turn door (3) upside down before re-installing on the case.

Reversing Frame Hardware

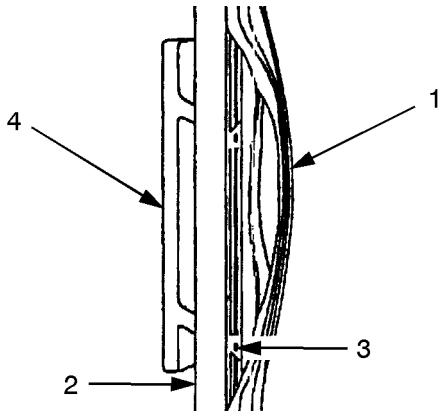


1. Remove screw (1) and top hinge plate (2). Rotate top hinge plate 180° and reinstall on opposite side of door opening with screw (1).
2. Remove screw (3), hold open spring (4) and washer (5) and reinstall on opposite side of door opening.
3. Remove two screws (6) and bottom hinge mounting plate (7) and reinstall on opposite side of door opening.



4. Remove two screws and rotate electrical outlet coverplate (8) 180° and reinstall with screws. Reposition electrical outlet cap (9) to opposite end of the frame.

Door Handle Replacement



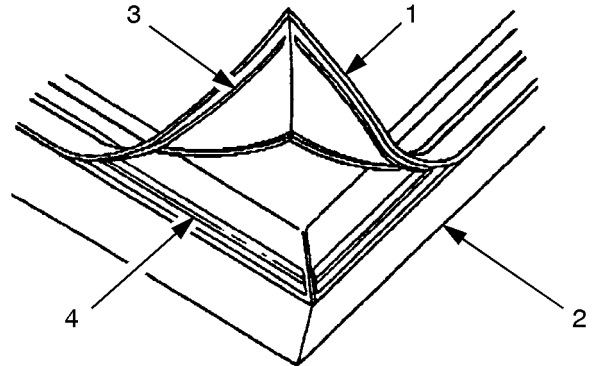
1. Peel the gasket (1) away from the door frame (2) to expose the handle screws (3).

NOTE

Be careful not to drop the handle screws inside the door channel.

2. Remove two handle screw (3) and handle (4) from door frame (2) from retainer strip (2) on handle side of the door (3).
3. Install new handle (4) in reverse order.

Door Gasket Replacement



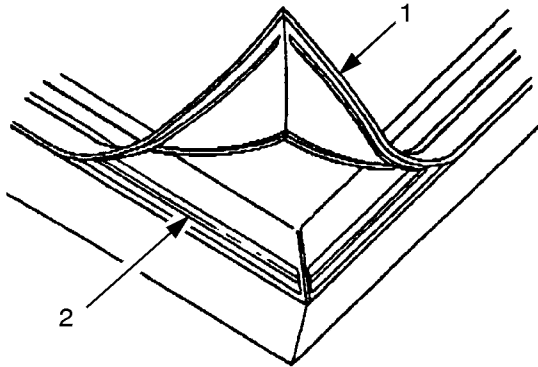
1. **To remove**, start at a corner and peel the gasket (1) away from the door (2).
2. **To install**, start each of the new gasket (1) by pulling the gasket dart (3) into the dart groove (4) in the aluminum back molding that faces the glass.
3. Push the gasket dart (3) into the dart groove (4).
4. Notch the new gasket (1) in the adjustment cut-out area.

Door and Mullion Heater Replacement

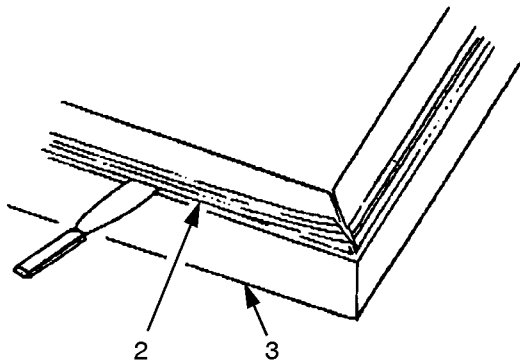
All glass door cases use the same door and mullion heaters. Medium and low temperature cases run different wattages through them. Low temperature cases also use electrically heated door glass. Frame and mullion heaters are located in four different locations. Door frame heater is a full length wire in each door frame. Frame "U" heater is a wire that runs up one side, across the top and down the other side of the case frame. Frame bottom heater is a wire across the lower part of the case frame. Mullion heaters have a separate wire in each vertical mullion between the doors.

Door Heater

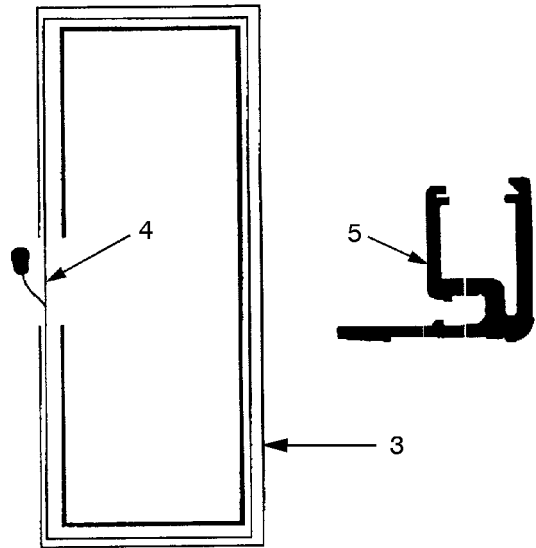
1. Remove door from case following the door removal instruction in this manual.



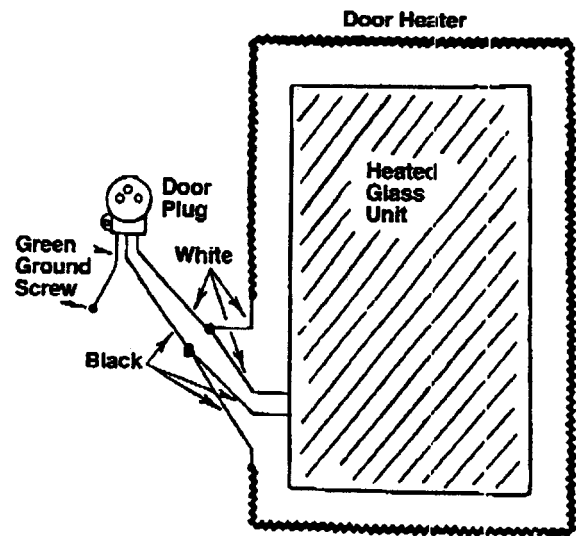
2. Starting at corner, remove gasket (1) from aluminum molding (2).



3. Insert a putty knife under the aluminum molding (2) at a corner. Pry entire length of the aluminum molding (2) to remove it from the door frame (3). Repeat this step until all four pieces of aluminum molding have been removed from the door frame.



4. Disconnect or cut solid heater lead wire (4). Remove heater wire (4) and retainers (5) from channel in the door frame (3).



Glass Door Wiring Diagram

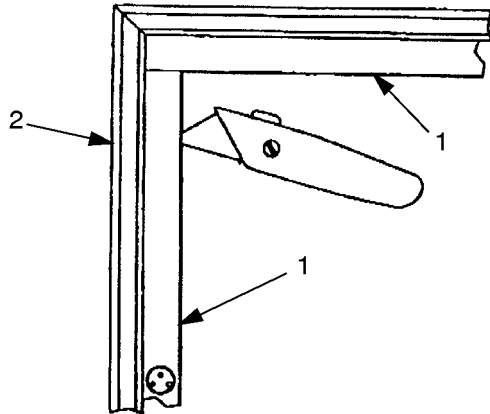
5. Insert and connect new heater wire (4) in door frame channel (3) and secure with retainers (5) in same locations as removed.
5. Reinstall aluminum molding (2) and gasket (1) on door frame (3).
6. Replace door on case following the door installation instructions in this manual.

Mullion Heaters

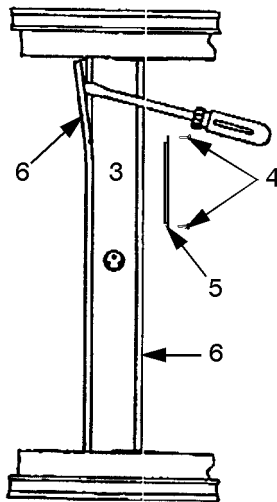
WARNING

Before replacing mullion heaters, shut off electrical power to the case to avoid personal injury and/or death.

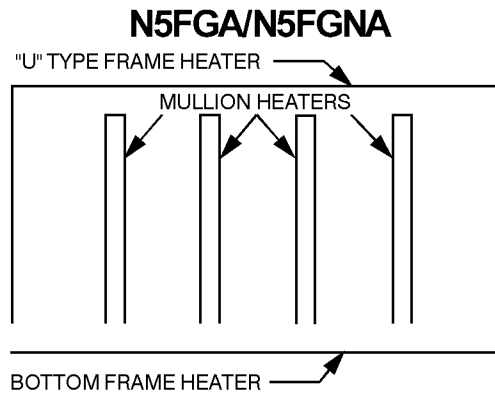
1. Remove necessary door(s) following the door removal instructions in this manual.



2. To remove the top, bottom and end height coverplates (1), use a utility knife. These coverplates are attached to the frame (2) with double-sided tape. Remove and discard the double-sided tape.



3. To remove the mullion coverplates (3), remove any screws (4) and/or ballast cover(s) (5) from both sides of the side vinyl (6). Using a screwdriver under the front edge of the side vinyl (6), slide downward until entire mullion coverplate (3) can be removed.



4. Disconnect or cut defective heater wire and remove from mullion or frame.

NOTE

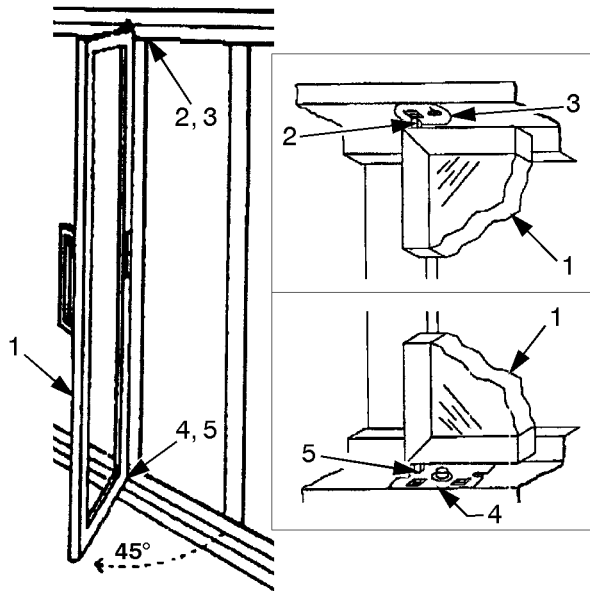
Use care to prevent the heater wire from touching itself. It may be necessary to use permagum between the wire ends to keep them from touching.

5. Connect and install new heater wire in the groove in the mullion or frame. Check the heater wire for continuity.
6. Replace the mullion coverplates (3) under the front edges of the side vinyl (6). Replace ballast cover(s) (5) and screws (4) in the side vinyl (6).
7. When replacing the top, bottom and end height coverplates (1), apply new double-sided tape to the coverplates (1) where it contacts the frame (2). Line-up and install the end height, bottom and top coverplates (1).
8. Replace door(s) following the door installation instructions in this manual.
9. Reconnect power to the case.

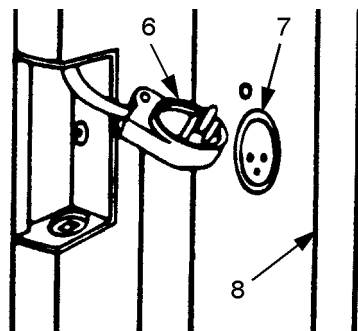
Door Installation

WARNING

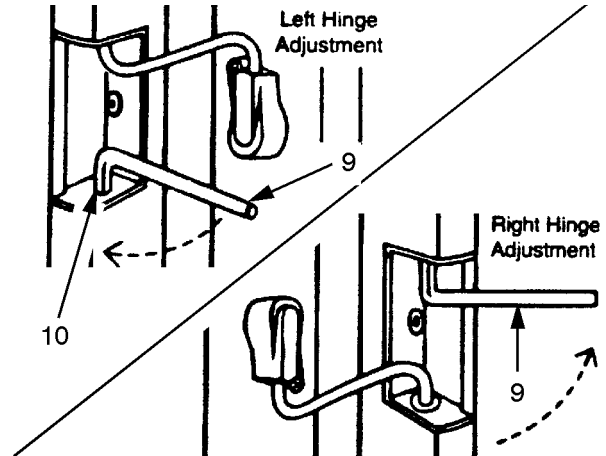
Door is heavy! Use two people when lifting and positioning the door to avoid product damage and/or personal injury.



1. Lift door (1) and place top door hinge pin (2) into top hinge plate (3). Reset door on bottom hinge plate (4). Open door to approximately 45° to align bottom door pin (5) with correct hole in bottom hinge plate (4). Swing door (1) open or closed to drop into proper position.



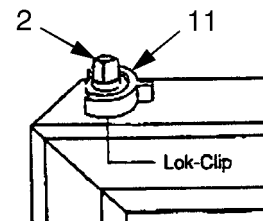
2. Plug power cord (6) into receptacle (7) in mullion or frame (8) and secure with retaining screw.



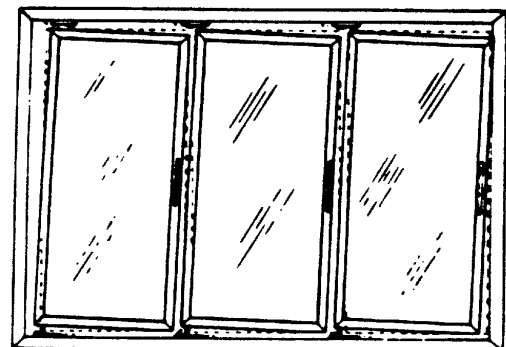
3. Adjust the door closing tension with a 5/16" allen wrench. Insert tool (9) into adjusting nut (10) (recessed location in door frame opposite power cord). Rotate tool in direction door opens 3 to 4 ratchet "clicks" for the approximate proper tension. Increase tension until positive closing occurs with door open approximately one inch.

WARNING

Doors are heavy and require Lok-Clips to be in place. Properly installed Lok-Clips prevent doors from accidentally falling out of frames. Premature release of a door could cause product damage and/or personal injury or death.



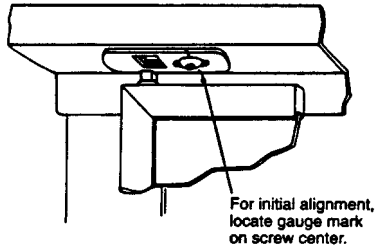
4. Install Lok-Clip (11) on top door hinge pin (2).



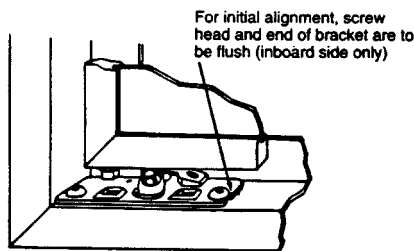
NOTE

If door(s) sag, complete step 5 to correct the problem. If door(s) are aligned properly, skip to step 6.

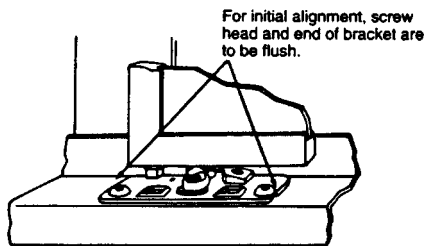
5. Check the top and bottom hinge plates for proper positioning.



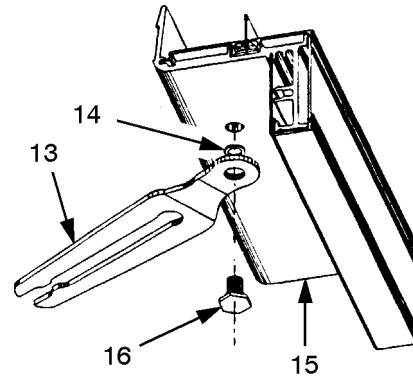
- The mounting screw in the top hinge plate should be centered with the gauge mark on the plate.



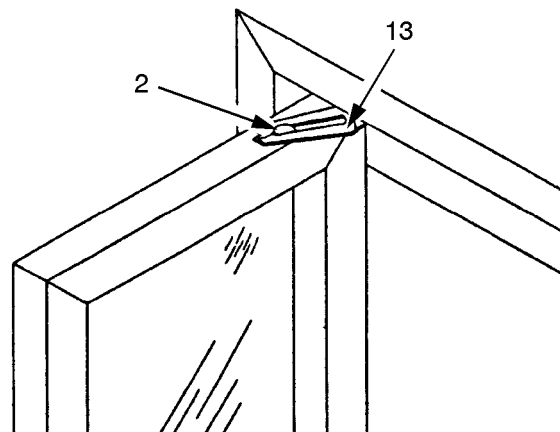
- When the hinge is at an end frame, the bottom hinge plate should have the inboard side of the plate flush with the mounting screws.



- When the hinge is at a mullion, the bottom hinge plate should have the mounting screw flush with the ends of bottom hinge plate.
- To correct the problem shown, shift top hinge plates to the left. If additional adjustment is needed, shift bottom hinge plates to the right.



6. Open door to approximately 45° and locate the door open spring (13). If the hold open spring is not on the top frame, install washer (14) and hold open spring (13) in top frame (15) with screw (16).

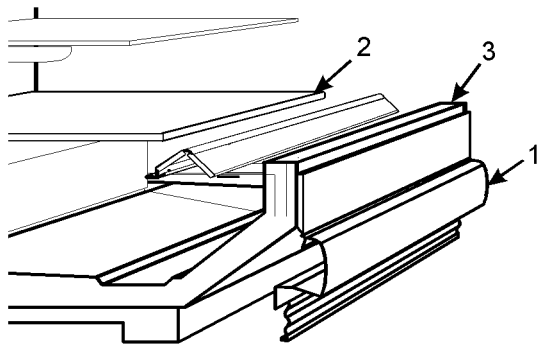


7. Place one side of the hold open spring (13) into the groove on the top door hinge pin (2) in top of the door. Apply pressure to the other side of the hold open spring (13) until it snaps into the pin groove. Close the door.
8. Remove all protective tape on door(s) before energizing it for any extended period of operation.

Defrost & Drain Pan Heater Replacement

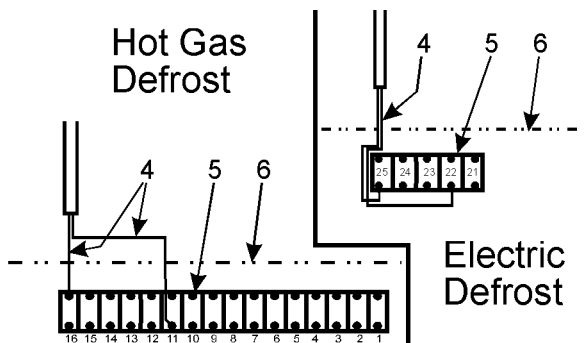
WARNING

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

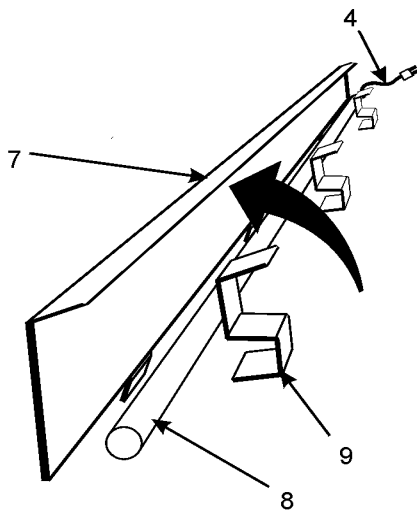


1. Remove raceway cover (1) following the "Raceway Cover Removal" instructions in the "General-UL/NSF I&S Manual".
2. Remove bottom trays (2) from case (3).

Drain Pan Heater Replacement (N5FGA)



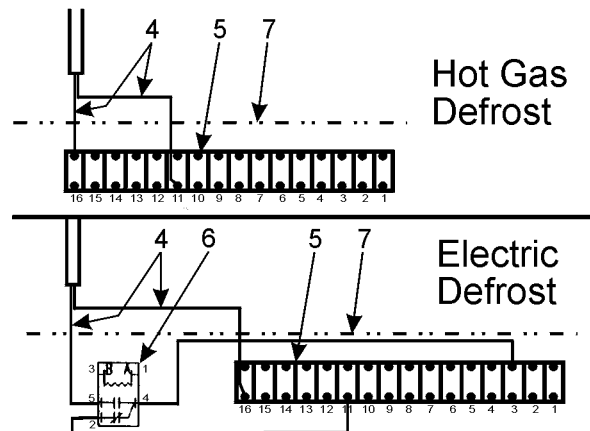
1. Disconnect heater wire (4) from terminal block (5) in raceway (6).



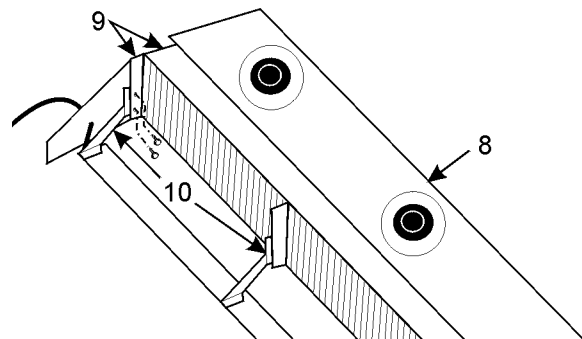
2. Lift up drain trap heater support (7) and remove defective heater (8) from mounting brackets (9).

3. 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.

Drain Pan Heater Replacement (N5FGNA)



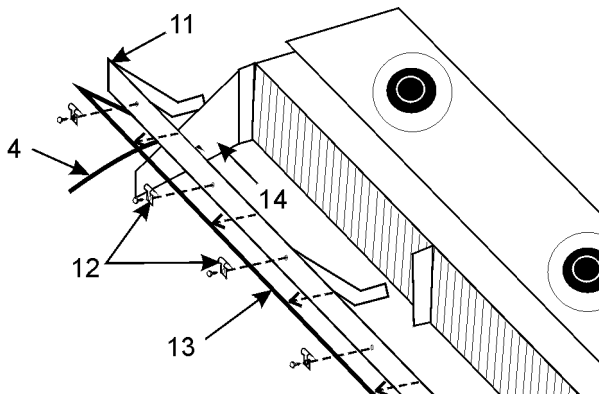
1. Disconnect heater wire (4) from terminal block (5) and fan motor control relay (6) (electric defrost circuit) in raceway (7).



2. Remove mounting screws and carefully lift and place fan panel (8) on top of coil assembly (9).
3. Remove screws and heater shield support brackets (10) from coil assembly (9).

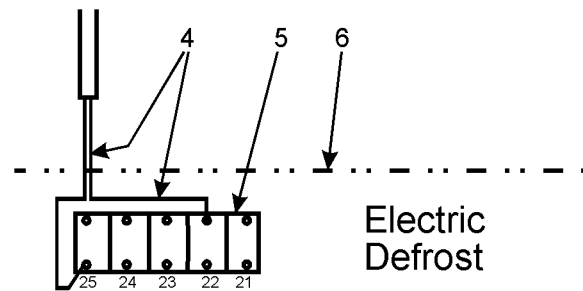
NOTE:

Heater wires for the drain pan heater go through both the RH and LH fan panel closeoffs, then to the right and left side of the raceway. Note routing of wires before removing the drain pan heater, so new heater can be installed the same way.

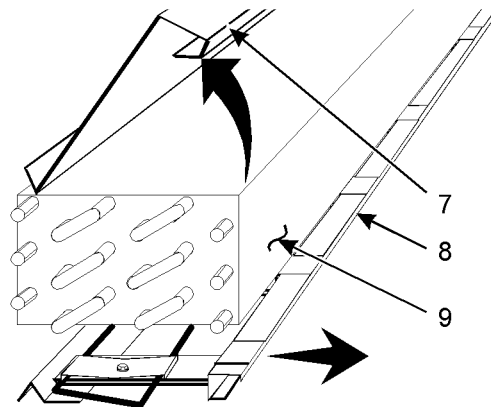


4. Carefully tilt up front of heater shield assembly (11) until screws and heater clips (12) can be removed from bottom of heater shield assembly (11).
5. Remove drain pan heater (13) from heater clips (12) and wires (4) from RH and LH fan panel closeoffs (14).
6. Position heater clips (12) on new drain pan heater (13). Install heater clips (12) on bottom of heater shield assembly (11) with screws.
7. Install heater shield support brackets (10) on coil assembly (9) with screws.
8. Feed heater wires (4) through the RH and LH fan panel closeoffs (14) and into right and left side of raceway (7).
9. Carefully reposition fan panel (8) and secure with mounting screws.
10. Connect heater wires (4) to terminal block (5) and fan motor contrl relay (6) (electric defrost circuit) in raceway (7).
11. Install bottom trays (2) in case (3).
12. Install raceway cover (1) following raceway cover installation instructions in this manual.
13. Reconnect power to the case.

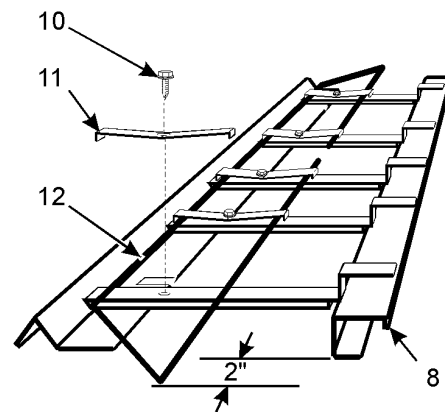
Electric Defrost Heater Replacement (N5FGA)



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).



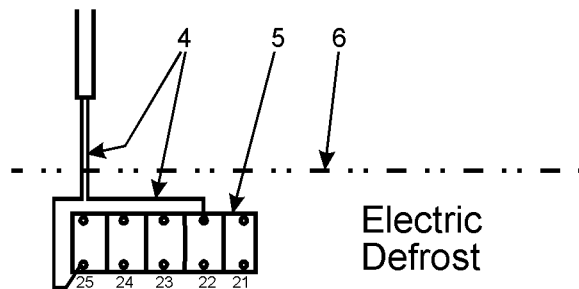
3. Remove screws (10), heater clamps (11) and defrost heater (12) from bottom closeoff assembly (8).

NOTE

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

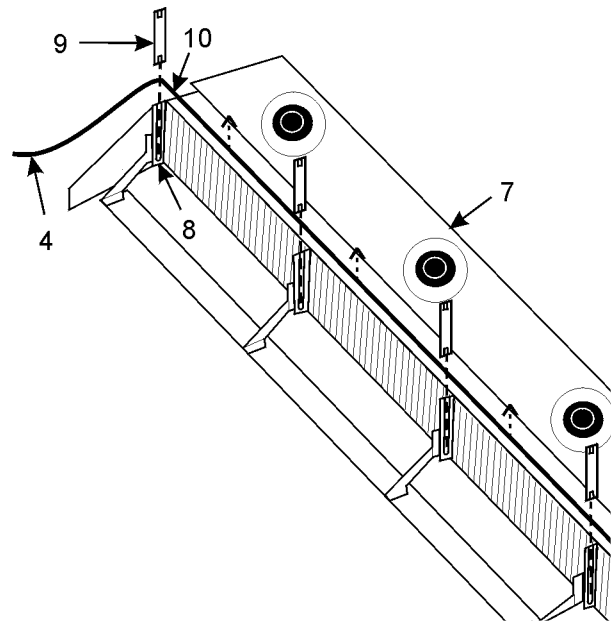
4. Install new defrost heater (12) on bottom closeoff assembly (8) with heater clamps (11) and screws (10).
5. Completely push in bottom closeoff assembly (8) under the coil (9) and lower fan plenum (7).
6. Connect heater wire (4) to terminal block (5) in raceway (6).
7. Install bottom trays (2) in case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

Front and Rear Electric Defrost Heater Replacement (N5FGNA)



1. Disconnect front and/or rear heater wire (4) from terminal block (5) in raceway (6).

Front Defrost Heater (N5FGNA)



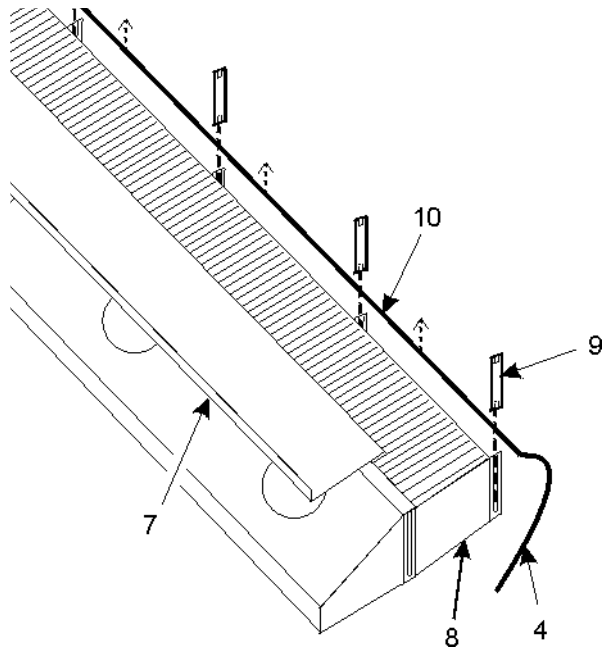
2. Remove mounting screws and carefully lift and place fan panel (7) on top of coil assembly (8).

NOTE:

Heater wires for the defrost heater go to the right and left side of the raceway. Note routing of wires before removing the defrost heater, so new heater can be installed the same way.

3. Remove heater retainer clips (9) and lift out front defrost heater (10) from slots in front of coil assembly (8).
4. Install new defrost heater (10) in bottom of slots in front of coil assembly (8). Secure new defrost heater (10) with heater retainer clips (9).
5. Carefully reposition fan panel (7) and secure with mounting screws.
6. Connect heater wires (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.

Rear Defrost Heater (N5FGNA)



2. Remove mounting screws and top coil closeoff (7) from coil assembly (8).

NOTE:

Heater wires for the defrost heater go to the right and left side of the raceway. Note routing of wires before removing the defrost heater, so new heater can be installed the same way.

3. Remove heater retainer clips (9) and lift out rear defrost heater (10) from slots in rear of coil assembly (8).
4. Install new defrost heater (10) in bottom of slots in rear of coil assembly (8). Secure new defrost heater (10) with heater retainer clips (9).
5. Install top coil closeoff (7) on top of coil assembly (8) and secure with mounting screws.
6. Connect heater wires (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

Operational Parts List

<u>Desc. (Domestic & Export)</u>	<u>2DR</u>	<u>3DR</u>	<u>4DR</u>	<u>5DR</u>
Electric Defrost Heater (N5FGA)	9029930 1200W/208V	9029931 2000W/208V	9029932 2800W/208V	9029933 3600W/208V
Electric Defrost Heater (N5FGNA)	9330370 842W/208V	9330369 1363W/208V	9330368 1880W/208V	9330349 2400W/208V
Elec. Drain Pan Heater (N5FGA)	5236464	5236462	5236465	5236463
Hot Gas or Elec. Drain Pan Heater (N5FGNA)	9330377	9330376	9330371	9330350
Hot Gas Drain Pan Heater (N5FGA)	5239252	5239254	5239253	5239255
Elec. Defrost 60/30 Klixon (N5FGA)	9029929	9029929	9029929	9029929
Elec. Defrost 50/30 Klixon (N5FGNA)	5246348	5246348	5246348	5246348
Electric Defrost Fan Delay T'Stat*	5236993	5236993	5236993	5236993
T8 Vert. Ballast (1 lamp)	5875111		5875110	
T8 Vert. Ballast (2 lamp)	5875111	5875111**	5875111**	5875111†
T8 Vert. Flrscent. Lamp F040/841	5093932	5093932	5093932	5093932
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 Bracket Plate	9041077	9041077	9041077	9041077
Fan Control 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
NSF Product Thermometer	5967100	5967100	5967100	5967100

*N5FGA/N5FGNA **Quantity = 2 †Quantity = 3

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

Cladding and Trim Parts List

<u>Item</u>	<u>Description</u>	<u>2DR</u>	<u>3DR</u>	<u>4DR</u>	<u>5DR</u>
1	Screw	5183536 (5)	5183536 (6)	5183536 (7)	5183536 (7)
2	Hood Canopy, Ptd. (N5FGA/N5NGA)	9025454	9025455	9025456	9025457
	(N5FGNA)	9330543	9330540	9330537	9330434
3	External Top Joint Trim (N5FGA/N5NGA)	9302743	9302743	9302743	9302743
	(N5FGNA/N5NGNA)	9303411	9303411	9303411	9303411
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, Ptd. (N5FGA/N5NGA)	9025450	9025451	9025452	9025453
	(N5FGNA/N5NGNA)	9330522	9330519	9330516	9330435
8	RCWY Cover Retainer Plate	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 per order	-----	-----
12	Raceway Cover End Trim	-----	color per order	-----	-----
13	Raceway Cover Backer	-----	color per order	-----	-----
14	Kickplate Joint Trim, Ptd.	9324550	9324550	9324550	9324550
15	Metal Kickplate, Ptd.	9324480	9324483	9324486	9324489
16	Raceway Cover Support	9041323 (4)	9041323 (6)	9041323 (8)	9041323 (10)
17	Kickplate Support Assy.	9041323 (2)	9041323 (4)	9041323 (4)	9041323 (4)
18	Shoulder Screw	9025833 (6)	9025833 (8)	9025833 (8)	9025833 (8)
19	Door Joint Trim	9320568	9320568	9320568	9320568
20	Horizontal Joint Trim (N5FGA/N5NGA)	5238229	5238229	5238229	5238229
	(N5FGNA/N5NGNA)	9303430	9303430	9303430	9303430
21	LH End Close-off, Ptd. (N5FGA/N5NGA)	9022461	9022461	9022461	9022461
	(N5FGNA/N5NGNA)	9330558	9330558	9330558	9330558
	RH End Close-off, Ptd. (N5FGA/N5NGA)	9022468	9022468	9022468	9022468
	(N5FGNA/N5NGNA)	9330560	9330560	9330560	9330560
22	Binding Screw	5076411 (6)	5076411 (6)	5076411 (6)	5076411 (6)

