HOBART

SERVICE

Traulsen G - Series

1, 2 & 3 Section Reach-in Refrigerators

Customer Maintenance Manual

SPECIFICATION SHEETS

OPERATOR MANUALS

SERVICE MANUALS

HOBART SERVICE PARTS STORE

PART CATALOGS

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

1, 2 & 3 Section Display Refrigerators
Self-Contained Hinged Glass Door(s)

*3 Section Not Pictured

This unit is listed to the applicable UL, CSA and NSF Standards by an approved NRTL. Consult the factory or unit's data plate for approval information.

STANDARD PRODUCT FEATURES

- High Performance, Energy Efficient Refrigeration System
- Reliable Microprocessor Control With LED Temperature Display
- Evaporator Coil Outside Food Zone Provides More Usable Space
- Load-Sure Guard Prevents Problems From Improper Loading
- Stainless Steel Front, Anodized Aluminum Sides & Interior
- Full Height Length Hinged Glass Doors With Locks
- Patented LED Display Door
- Long Life EZ Clean Door Gaskets
- Three (3) Epoxy Coated Shelves Per Section (factory installed)
- Easy to Maintain Front Facing Condenser Coil
- 6" High Locking Casters
- Guaranteed for Life Door Hinges
- 3-Year Parts & Labor Warranty
- 2-Years Additional Compressor Parts Warranty

ACCESSORIES & OPTIONS (*field installed)

- Tray Slides for 18" x 26" Sheet Pans*
- Tray Slides for 12" x 20" Food Pans*
- Tray Slides for 14" x 18" Sheet Pans*
- Additional Shelves*
- 6" High Legs*
- Optional Remote Applications

*Please refer to form number TR35872 for precise kit details. See back page for tray slide versatility chart.

AVAILABLE CONFIGURATIONS

Single Section Models	Hinging
G11010-043	Right
G11011-043	Left

Two Section Model	Hinging
G21010-043	Left/Right

Three Section Models	Hinging
G32010-043	Left/Right/Right
G32011-043	Left/Left/Right

SECTION 4-28

Approved by_____ Date_____ Approved by_____ Date_____

MODELS

One Section Models: G11010-043 & G11011-043

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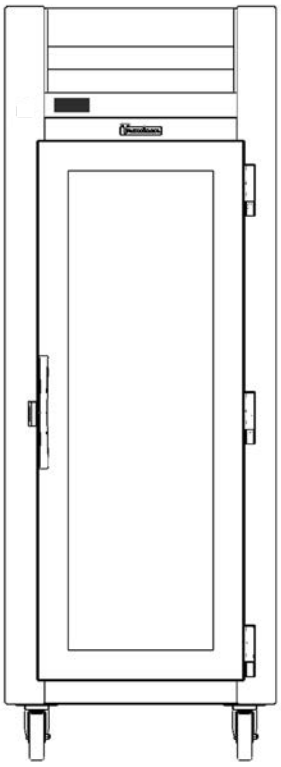

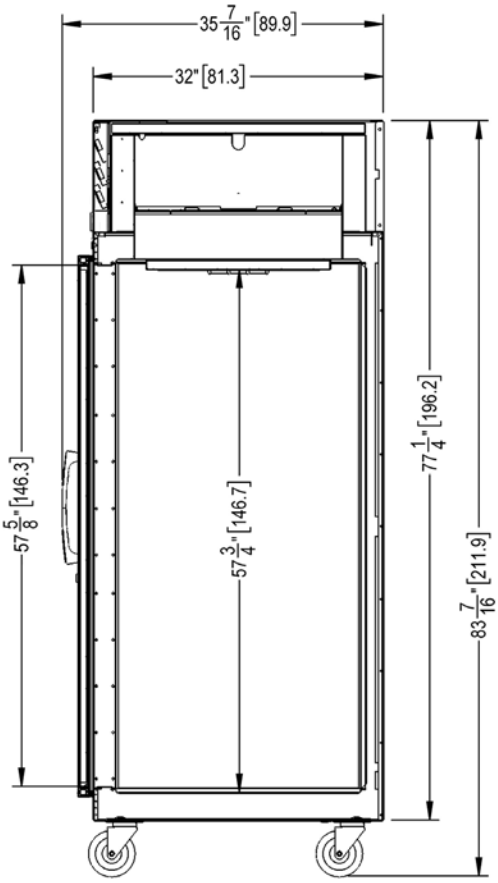

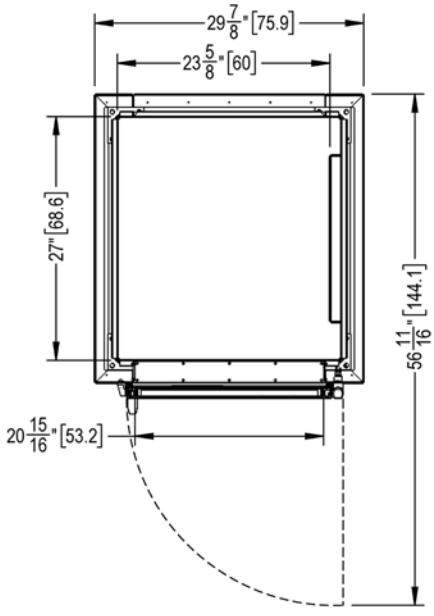

MODELS

Two Section Model: G21010-043

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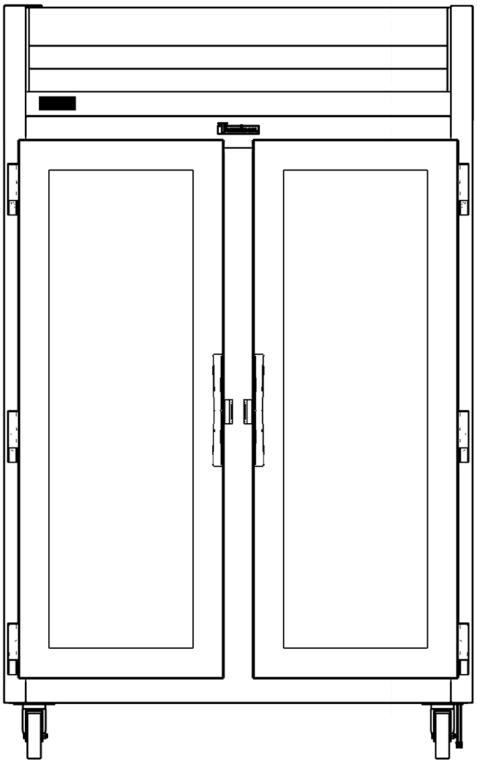
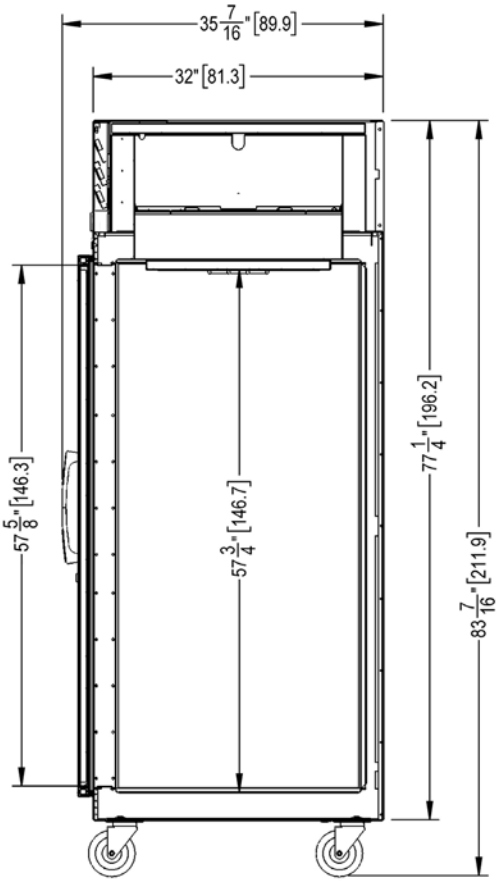
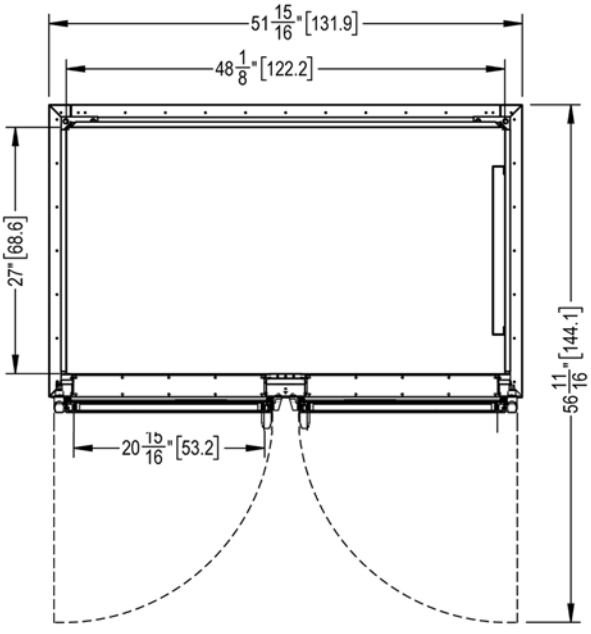




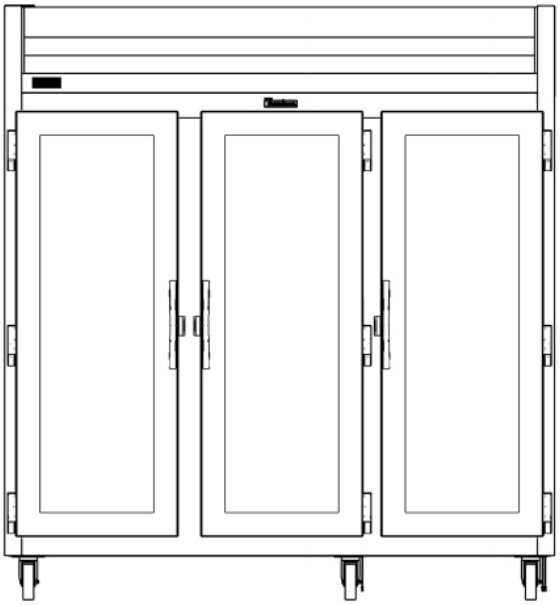


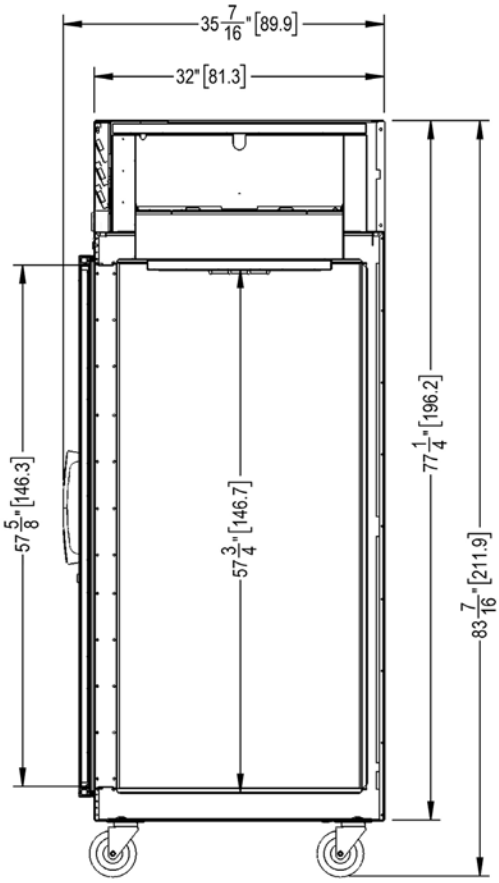
G-SERIES

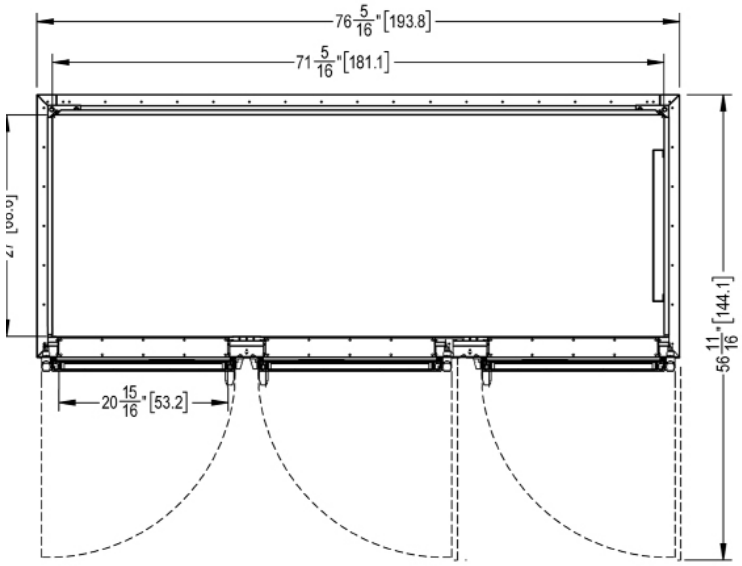
1, 2 & 3 Section Display Refrigerators
Self-Contained Hinged Glass Door(s)

MODELS

Three Section Models: G32010-043 & G32011-043







CONTINUED PRODUCT DEVELOPMENT MAY NECESSITATE SPECIFICATION CHANGES WITHOUT NOTICE.

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

1, 2 & 3 Section Display Refrigerators
Self-Contained Hinged Glass Door(s)

MODELS	G1101_043 | G21010-043| G3201_043
DIMENSIONAL DATA	
Net Capacity cu. ft. (l)	23.57 (667) | 46.90 (1328) | 70.67 (2001)
G1101_043 L x D x H in.	29⅞ (75.9 cm) x 35 7/16 (89.9 cm) x 83 7/16 (211.9 cm)
G21010-043 L x D x H in.	52⅛ (132.4 cm) x 35 7/16(89.9 cm) x 83 7/16 (211.9 cm)
G3201_043 L x D x H in.	76 5/16 (193.8 cm) x 35 7/16 (89.9 cm) x 83 7/16 (211.9 cm)
Depth - over body in.	32 (81.3 cm)
Depth - door open 90° in.	56⅞ (144.5 cm)
Clear full-door W X H in.	57⅝ (146.3 cm)
No. Standard Shelves	3 | 6 | 9
Shelf Area sq. ft.[2]	18.8 (1.75sq m) | 34.6 (3.21sq m) | 51.9 (4.82sq m)
ELECTRICAL DATA	
Voltage | Plug	115/60/1 | NEMA 5-15P (attached)
Feed wires with ground	3
Full Load Amperes	7.3 amps | 9.2 amps | 16 amps
MDEC[3]	3.06 | 5.27 | 7.53
REFRIGERATION DATA	
Refrigerant	R-450A
BTU/HR | H.P.[4]	1945 1/3 HP | 4100 3/4 HP| 5330 1/2 HP
Required Clearance	12" Above
SHIPPING DATA	
G1101_043 L x D x H Crated in.	48 (122 cm) x 42 (107 cm) x 85(216 cm)
G21010-043 L x D x H Crated in.	62 (158 cm) x 42 (107 cm) x 85 (216 cm)
G3201_043 L x D x H Crated in.	91(231 cm) x 42 (107 cm) x 85 (216 cm)
Volume Crated cu. ft.	71 cu. ft. | 133 cu. ft. | 188 cu. ft.
Uncrated / Crated Weight lbs.	310/355 | 450/510 | 610/630

EQUIPMENT SPECIFICATIONS

CONSTRUCTION, HARDWARE, INSULATION
Cabinet exterior front and louver assembly are constructed of 20 gauge stainless steel. Cabinet sides (including returns) and interior are constructed of anodized aluminum. The exteriorcabinet top, back and bottom are constructed of heavy gauge galvanized steel. A set of four (4) 6" high casters are included.

Patented door design includes built-in LED display lights, removable plug cylinder locks and guaranteed for life cam-lift, gravity action, self-closing metal, glide hinges with stay open feature at 120 °. An exterior mounted switch is provided to operate the LED lighting. Each door includes a vertically mounted stainless steel handle.

Gasket profile and durable long life material simplify cleaning and increase overall gasket life. Anti condensate heaters are located behind each door opening. The cabinet is insulated with an average of 2" thick high density, non-CFC, foamed in place polyurethane.

SELF-CONTAINED REFRIGERATION SYSTEM
A top mounted, self-contained, balanced refrigeration system using R-450A refrigerant is conveniently located behind the one piece louver assembly. It features an easy to clean front facing condenser, thermostatic expansion valve, air-cooled hermetic compressor, large, high humidity evaporator coil located outside the food zone and a top mounted non-electric condensate evaporator. A 9' cord and plug is provided. Standard operating temperature is 36 to 38°F.

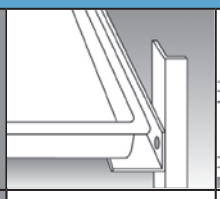
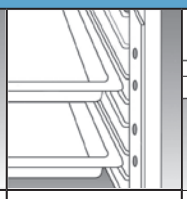
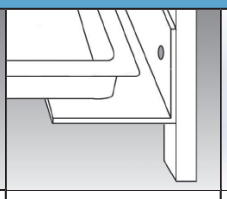
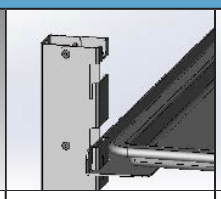
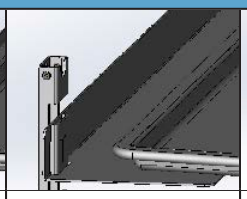
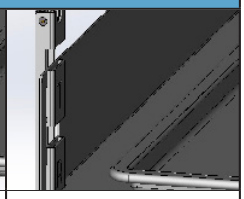
CONTROL
The easy to use water resistant microprocessor control system is supplied standard. It includes a 3-Digit LED Display, and a Fahrenheit or Celsius Temperature Scale Display Capability.

INTERIOR ARRANGEMENTS
Standard interior arrangements include three (3) epoxy coated steel wire shelves, mounted on shelf pins, installed at the factory. Recommended load limit per shelf should not exceed 225 lbs.

DOMESTIC WARRANTY
Both a three year parts and labor warranty and an additional two year compressor parts warranty (for a total of five on self-contained models) are provided standard.

NOTES:
1. Height shown when mounted on standard 6" high casters.
2. Figure shown reflects the area of standard shelf compliment.
3. MDEC = Maximum Daily Energy Consumption
4. Based on a 90°F ambient and 20°F evaporator.

OPTIONAL ACCESSORY TRAY SLIDE VERSATILITY CHART

TRAY SLIDE DRAWINGS						
TRAY SLIDE OFFERING	#1 (1) 18" x26" or (2) 14"x18"	#4 (Rod Type) (1) 18" x26"	Universal (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	#1 EZ-Change (1) 18" x26" or (2) 14"x18"	Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	HD Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"
SPACING CAPACITY DOOR SIZE	2" 28 Pairs Full Door 3" 19 Pairs Full Door 4" 14 Pairs Full Door 5" 11 Pairs Full Door	1 1/2" 38 Pairs Full Door (2 pair)	4" 14 Pairs Full Door 4" 14 Pairs Full Door 5" 11 Pairs Full Door 6" 09 Pairs Full Door	2" 26 Pairs Full Door 4" 13 Pairs Full Door	2 1/4" 22 Pairs Full Door 4 1/2" 11 Pairs Full Door	4 1/2" 11 Pairs Full Door 9" 05 Pairs Full Door

Approved by_____ Date_____ Approved by_____ Date_____

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

1-Section Refrigerator Reach-In Self-Contained Hinged Glass Door(s)

G11010-043 model shown with LED display doors

ENERGY STAR

Many models are ENERGY STAR® listed. Please refer to www.energystar.gov to view the most up-to-date product listing and performance data.

Intertek 4004142

CERTIFIED TO ANSI/NSF 7

3-YEAR PARTS & LABOR WARRANTY

This unit is listed to the applicable UL, CSA and NSF Standards by an approved NRTL. Consult the factory or unit's data plate for approval information.

AVAILABLE CONFIGURATIONS

Half-Height Door Models	**Hinging**
G11000	Right
G11001	Left

Full-Height Door Models	**Hinging**
G11010	Right
G11011	Left

STANDARD PRODUCT FEATURES

- High Performance, Energy Efficient Refrigeration System
- Reliable Microprocessor Control With LED Temperature Display
- Evaporator Coil Outside Food Zone Provides More Usable Space
- Load-Sure Guard Prevents Problems From Improper Loading
- Stainless Steel Front & Louver Panel, Triple Pane Glass Door, Anodized Aluminum Sides & Interior
- Full Height Length Hinged Glass Doors With Locks
- Long Life EZ Clean Door Gaskets
- Three (3) Epoxy Coated Shelves Per Section (factory installed)
- Easy to Maintain Front Facing Condenser Coil
- 6" High Locking Casters
- Guaranteed for Life Door Hinges
- 3-Year Parts & Labor Warranty
- 2-Years Additional Compressor Parts Warranty

ACCESSORIES & OPTIONS (*field installed)

- Tray Slides for 18" x 26" Sheet Pans*
- Tray Slides for 12" x 20" Food Pans*
- Tray Slides for 14" x 18" Sheet Pans*
- Additional Shelves*
- 6" High Legs*
- Optional Remote Applications

*Please refer to form number TR35872 for precise kit details. See back page for tray slide versatility chart.

SECTION 4-7

Approved by_____ Date_____ Approved by_____ Date_____

MODELS

Half Height Door Models: G11000, G11001

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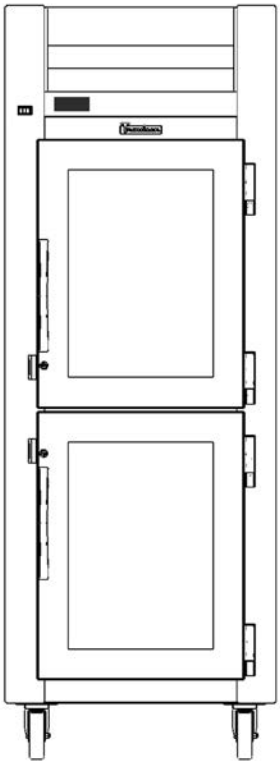

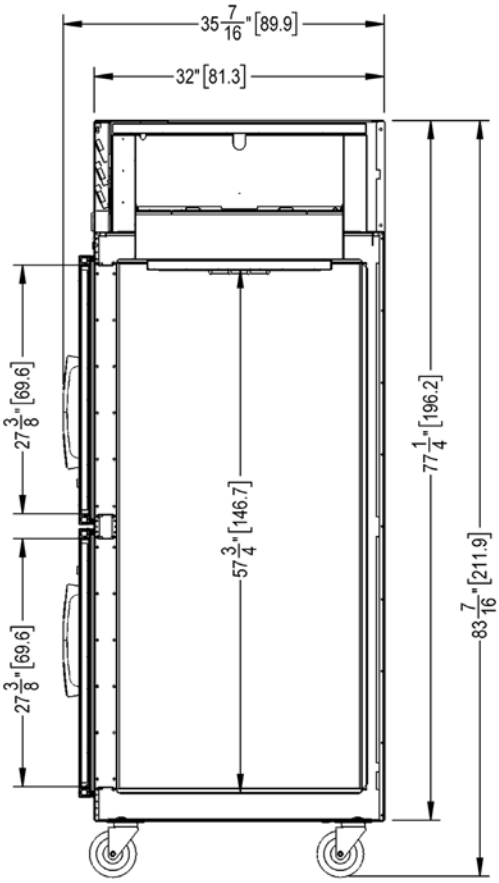

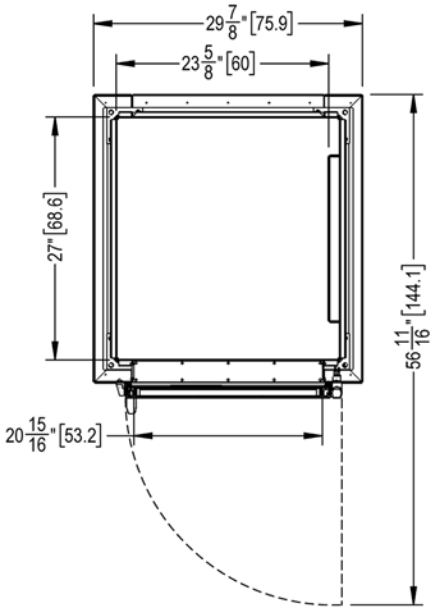

MODELS

Full Height Door Models: G11010, G11011

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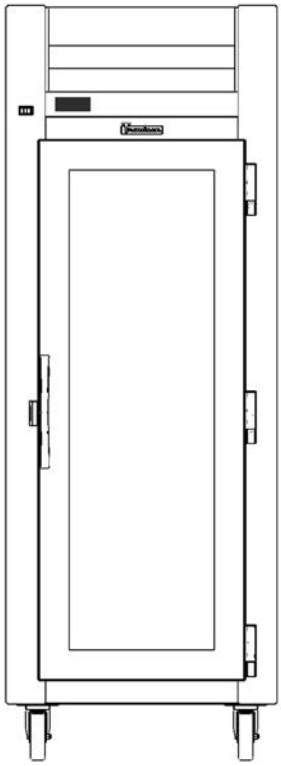
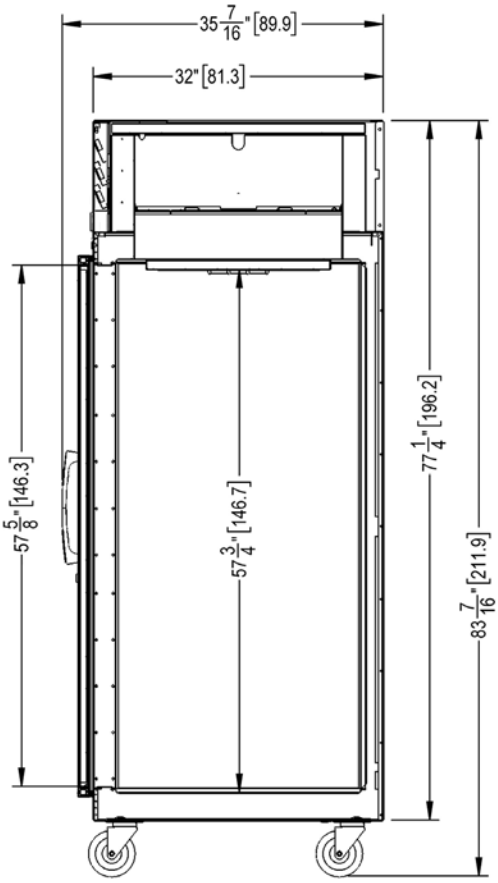
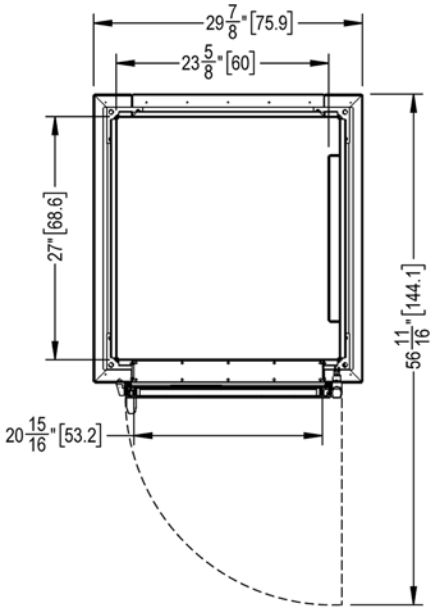






G-SERIES

1-Section Refrigerator Reach-In
Self-Contained Hinged Glass Door(s)

MODELS

Half Height Door Models: G11000, G11001
Full Height Door Models: G11010, G11011

MODELS	G110_ _
DIMENSIONAL DATA	
Net Capacity cu. ft.[1]	23.67 (670 l) | 23.57 (667 l)
L x D x H - Overall in.[2]	29⅞ (75.9 cm) x 35 (88.8 cm) x 83 7/16 (211.9 cm)
Depth - over body in.	32 (81.3 cm)
Depth - door open 90⁰ in.	56⅞ (144.5 cm)
Clear half-door W X H in.	21⅛ (53.6 cm) x 27½ (69.9 cm)
Clear full-door W X H in.	21⅛ (53.6 cm) x 57⅝ (146.3 cm)
No. Standard Shelves	3
Shelf Area sq. ft.[3]	18.8 (1.75 sq m)
ELECTRICAL DATA	
Voltage | Plug	115/60/1 | NEMA 5-15P (attached)
Feed wires with ground	3
Full Load Amperes | MDEC[4]	7.4 | 3.06 KWH/Day
REFRIGERATION DATA	
Refrigerant	R-450A
Refrigerant Charge Amount	16 oz
BTU/HR | H.P.[5]	2240 | 1/3 HP
Required Clearance	12" Above
SHIPPING DATA	
L x D x H Crated in.	48 (122 cm) x 42 (107 cm) x 85(216 cm)
Volume Crated cu. ft.	99 (2803 l)
Uncrated | Crated Weight lbs.	305 (138 kg) | 350 (159 kg)

NOTES:
1. Net Capacity cu. ft. = Half Height Door | Full Height Door models.
2. Height shown when mounted on standard 6" high casters.
3. Figure shown reflects the area of standard shelf compliment.
4. MDEC = Maximum Daily Energy Consumption
5. Based on a 90⁰F ambient and 20⁰F evaporator. For remote data please refer to spec sheet TR35837.

EQUIPMENT SPECIFICATIONS

CONSTRUCTION, HARDWARE, INSULATION

Cabinet exterior front and louver assembly are constructed of 20 gauge stainless steel. Cabinet sides (including returns) and interior are constructed of anodized aluminum. The exterior cabinet top, back and bottom are constructed of heavy gauge galvanized steel. A set of four (4) 6" high casters are included.

Doors are equipped with removable plug cylinder locks and guaranteed for life cam-lift, gravity action, self-closing metal, glide hinges with stay open feature at 120 degrees. An exterior mounted switch is provided to operate the interior LED lighting. Each door includes a vertically mounted stainless steel handle.

Gasket profile and durable long life material simplify cleaning and increase overall gasket life. Anti-condensate heaters are located behind each door opening. The cabinet is insulated with an average of 2" thick high density, non-CFC, foamed in place polyurethane.

SELF-CONTAINED REFRIGERATION SYSTEM

A top mounted, self-contained, balanced refrigeration system using environmentally friendly, non-flammable R-450A refrigerant is conveniently located behind the one piece louver assembly. It features an easy to clean front facing condenser, thermostatic expansion valve, air-cooled hermetic compressor, large, high humidity evaporator coil located outside the food zone and a top mounted non-electric condensate evaporator. A 9' cord and plug is provided. Standard operating temperature is 34 to 38°F.

CONTROL

The easy to use water resistant microprocessor control system is supplied standard. It includes a 3-Digit LED Display, and a Fahrenheit or Celsius Temperature Scale Display Capability.

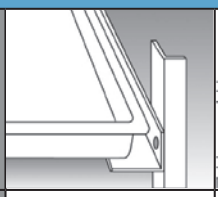
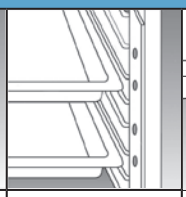
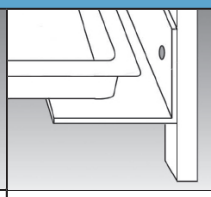
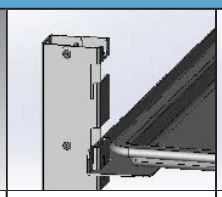
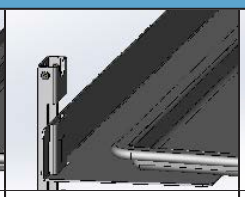
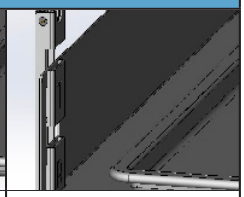
INTERIOR ARRANGEMENTS

Standard interior arrangements include three (3) epoxy coated steel wire shelves, mounted on shelf pins, installed at the factory. Recommended load limit per shelf should not exceed 225 lbs.

DOMESTIC WARRANTY

Both a three year parts and labor warranty and an additional two year compressor parts warranty (for a total of five on self-contained models) are provided standard.

OPTIONAL ACCESSORY TRAY SLIDE VERSATILITY CHART

TRAY SLIDE DRAWINGS						
TRAY SLIDE OFFERING	#1 (1) 18" x26" or (2) 14"x18"	#4 (Rod Type) (1) 18" x26"	Universal (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	#1 EZ-Change (1) 18" x26" or (2) 14"x18"	Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	HD Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"
SPACING CAPACITY DOOR SIZE	2" 28 Pairs Full Door & 13 Half 3" 19 Pairs Full Door & 09 Half 4" 14 Pairs Full Door & 07 Half 5" 11 Pairs Full Door & 05 Half	1 1/2" 38 Pairs Full Door (2 Pair) 1 1/2" 18 Pairs Half Door (1 Pair)	4" 14 Pairs Full Door & 06 Half[1] 4" 14 Pairs Full Door & 07 Half[2] 5" 11 Pairs Full Door & 05 Half 6" 09 Pairs Full Door & 04 Half	2" 26 Pairs Full Door & 12 Half 4" 13 Pairs Full Door & 06 Half	2 1/4" 22 Pairs Full Door & 11 Half 4 1/2" 11 Pairs Full Door & 05 Half	4 1/2" 11 Pairs Full Door & 05 Half 9" 05 Pairs Full Door & 02 Half

- **Upper Half Height Door[1]**
- **Lower Half Height Door[2]**

CONTINUED PRODUCT DEVELOPMENT MAY NECESSITATE SPECIFICATION CHANGES WITHOUT NOTICE.

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

1-Section Refrigerator Reach-In Self-Contained Solid Door(s)

ENERGY STAR

Many models are ENERGY STAR® listed. Please refer to www.energystar.gov to view the most up-to-date product listing and performance data.

Intertek 4004142

This unit is listed to the applicable UL, CSA and NSF Standards by an approved NRTL. Consult the factory or unit's data plate for approval information.

STANDARD PRODUCT FEATURES

- High Performance, Energy Efficient Refrigeration System
- Reliable Microprocessor Control With LED Temperature Display
- Evaporator Coil Outside Food Zone Provides More Usable Space
- Load-Sure Guard Prevents Problems From Improper Loading
- Durable All Metal Construction
- Stainless Steel Front & Doors, Anodized Aluminum Sides & Interior
- Full or Half Height Door Models with a Variety of Hinging Configurations
- Long Life EZ Clean Door Gaskets
- Three (3) Epoxy Coated Shelves Per Section (factory installed)
- Easy to Maintain Front Facing Condenser Coil
- 6" High Locking Casters
- Guaranteed for Life Door Handles & Hinges
- 3-Year Parts & Labor Warranty
- 2-Years Additional Compressor Parts Warranty

ACCESSORIES & OPTIONS (*field installed)

- Tray Slides for 18" x 26" Sheet Pans*
- Tray Slides for 12" x 20" Food Pans*
- Tray Slides for 14" x 18" Sheet Pans*
- Tray Slides for 18" x 26, 12" x 20" & 14" x 18" Pans*
- Additional Shelves*
- 6" High Legs*
- Lower Height Casters*
- Optional Remote Applications

*Please refer to form number TR35872 for precise kit details. See back page for tray slide versatility chart.

AVAILABLE CONFIGURATIONS

Half-Height Door Models	Hinging
G10000	Right
G10001	Left

Full-Height Door Models	Hinging
G10010	Right
G10011	Left

SECTION 4-1

Approved by_____ Date_____ Approved by_____ Date_____

MODELS

Half Height Door Models: G10000, G10001

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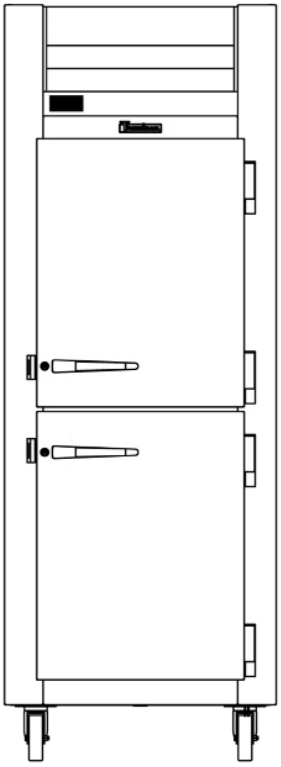

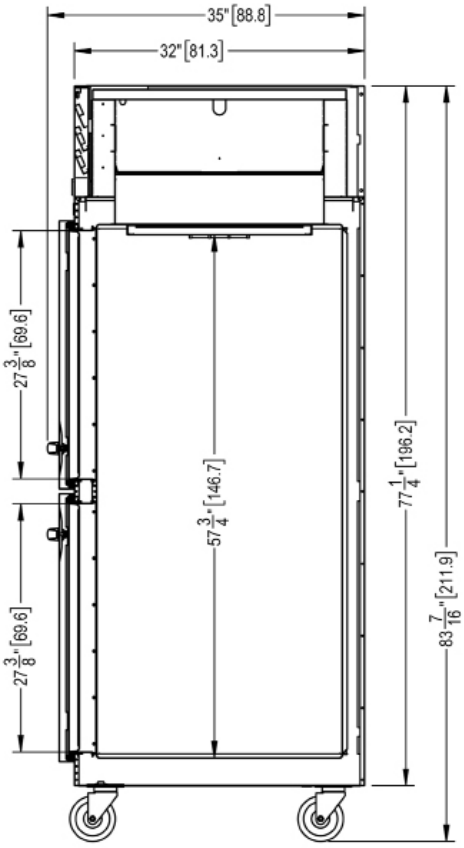

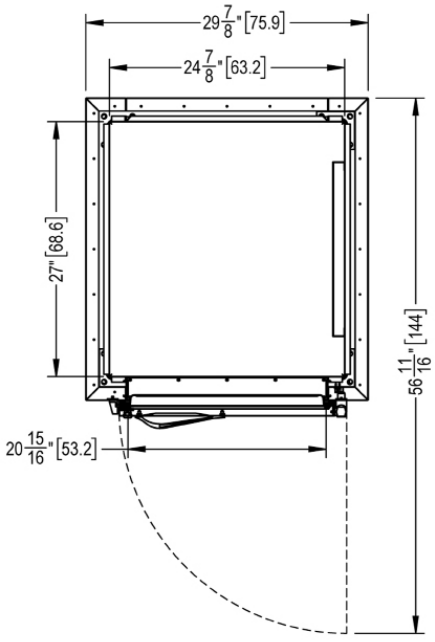

MODELS

Full Height Door Models: G10010, G10011

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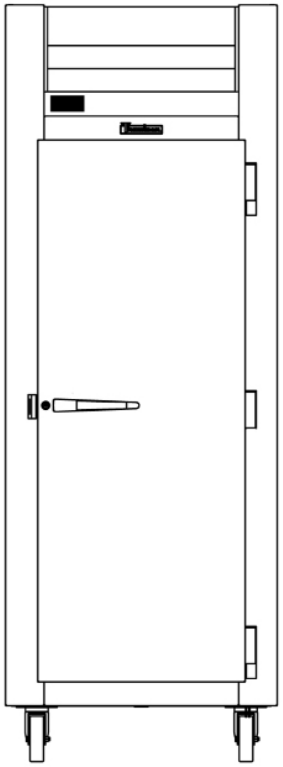
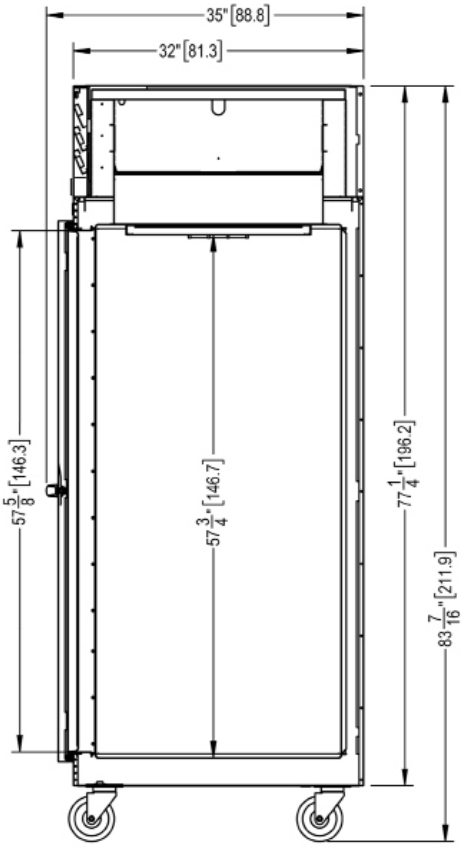
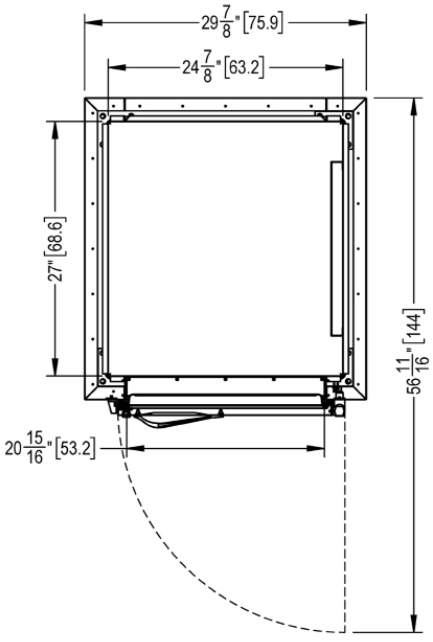






G-SERIES
1-Section Refrigerator Reach-In
Self-Contained Solid Door(s)

MODELS

Half Height Door Models: G10000, G10001
Full Height Door Models: G10010, G10011

MODELS	G100_ _
DIMENSIONAL DATA	
Net Capacity cu. ft.[1]	23.37 (661.8 l) | 23.43 (663.5 l)
L x D x H - Overall in.[2]	29⅞ (75.9 cm) x 35 (88.8 cm) x 83 7/16 (211.9 cm)
Depth - over body in.	32 (81.3 cm)
Depth - door open 90⁰ in.	57⅝ (146.3 cm)
Clear half-door W x H in.	21⅛ (53.6 cm) x 27½ (69.9 cm)
Clear full-door W X H in.	21⅛ (53.6 cm) x 57⅝ (146.3 cm)
No. Standard Shelves	3
Shelf Area sq. ft.[3]	18.8 (1.75 sq m)
ELECTRICAL DATA	
Voltage | Plug	115/60/1 | NEMA 5-15P (attached)
Feed wires with ground	3
Full Load Amperes | MDEC[4]	4.9 | 1.76 KWH/Day
REFRIGERATION DATA	
Refrigerant	R-450A
Refrigerant Charge Amount	16 oz
BTU/HR | H.P.[5]	1650 | 1/5 HP
Required Clearance	12" Above
SHIPPING DATA	
L x D x H Crated in.	48 (122 cm) x 42 (107 cm) x 85 (216cm)
Volume Crated cu. ft.	99 (2803 l)
Uncrated | Crated Weight lbs.	305 (138 kg) | 350 (150 kg)

NOTES:
1. Net Capacity cu. ft. = Half Height Door | Full Height Door models.
2. Height shown when mounted on standard 6" high casters.
3. Figure shown reflects the area of standard shelf compliment.
4. MDEC = Maximum Daily Energy Consumption
5. Based on a 90⁰F ambient and 20⁰F evaporator. For remote data please refer to spec sheet TR35837.

EQUIPMENT SPECIFICATIONS

CONSTRUCTION, HARDWARE, INSULATION
Cabinet exterior front, louver assembly and door(s) are constructed of 20 gauge stainless steel. Cabinet sides (including returns), interior and door liners are constructed of anodized aluminum. The exterior cabinet top, back and bottom are constructed of heavy gauge galvanized steel. A set of four (4) 6" high locking casters are included. Doors are equipped with a gasket protecting, raised metal door pan, cylinder locks, and guaranteed for life self-closing cam-lift hinges with a stay open feature at 120 degrees. Hinges include a concealed switch to automatically activate the interior LED lighting. Guaranteed for life, metal work flow door handles are mounted horizontally over recess in door which limits protrusion into aisle ways. Gasket profile and durable long life material simplify cleaning and increase overall gasket life. Anti-condensate heaters are located behind each door opening. Both the cabinet and door(s) are insulated with an average of 2" thick high density, non-CFC, 100% foamed in place polyurethane.

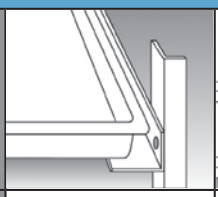
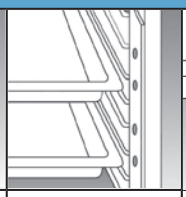
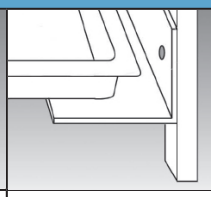
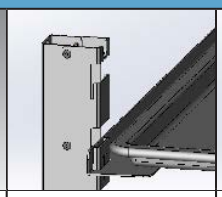
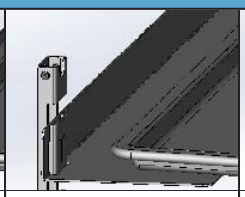
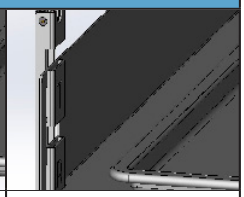
SELF-CONTAINED REFRIGERATION SYSTEM
A top mounted, self-contained, balanced refrigeration system using environmentally friendly, non-flammable R-450A refrigerant is conveniently located behind the one piece louver assembly. It features an easy to clean front facing condenser, thermostatic expansion valve metering device, air-cooled hermetic compressor, large, high humidity evaporator coil located outside the food zone and a top mounted non-electric condensate evaporator. A 9' cord and plug is provided. Standard operating temperature is 34 to 38°F.

CONTROL
The easy to use water resistant microprocessor control is supplied standard. It includes a 3-Digit LED Display, and a Fahrenheit or Celsius Temperature Scale Display Capability.

INTERIOR ARRANGEMENTS
Standard interior arrangements include three (3) epoxy coated steel wire shelves, mounted on shelf pins, installed at the factory. Recommended load limit per shelf should not exceed 225 lbs.

DOMESTIC WARRANTY
Both a three year parts and labor warranty and an additional two year compressor parts warranty (for a total of five on self-contained models) are provided standard.

OPTIONAL ACCESSORY TRAY SLIDE VERSATILITY CHART

TRAY SLIDE DRAWINGS						
TRAY SLIDE OFFERING	#1 (1) 18" x26" or (2) 14"x18"	#4 (Rod Type) (1) 18" x26"	Universal (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	#1 EZ-Change (1) 18" x26" or (2) 14"x18"	Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	HD Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"
SPACING CAPACITY DOOR SIZE	2" 28 Pairs Full Door & 13 Half 3" 19 Pairs Full Door & 09 Half 4" 14 Pairs Full Door & 07 Half 5" 11 Pairs Full Door & 05 Half	1 1/2" 38 Pairs Full Door (2 Pair) 1 1/2" 18 Pairs Half Door (1 Pair)	4" 14 Pairs Full Door & 06 Half[1] 4" 14 Pairs Full Door & 07 Half[2] 5" 11 Pairs Full Door & 05 Half 6" 09 Pairs Full Door & 04 Half	2" 26 Pairs Full Door & 12 Half 4" 13 Pairs Full Door & 06 Half	2 1/4" 22 Pairs Full Door & 11 Half 4 1/2" 11 Pairs Full Door & 05 Half	4 1/2" 11 Pairs Full Door & 05 Half 9" 05 Pairs Full Door & 02 Half

- **Upper Half Height Door[1]**
- **Lower Half Height Door[2]**

CONTINUED PRODUCT DEVELOPMENT MAY NECESSITATE SPECIFICATION CHANGES WITHOUT NOTICE.

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

2-Section Refrigerator Reach-In Self-Contained Hinged Glass Door(s)

G21010-043 model shown with LED display doors

ENERGY STAR

Many models are ENERGY STAR® listed. Please refer to www.energystar.gov to view the most up-to-date product listing and performance data.

Intertek 4004142

This unit is listed to the applicable UL, CSA and NSF Standards by an approved NRTL. Consult the factory or unit's data plate for approval information.

STANDARD PRODUCT FEATURES

- High Performance, Energy Efficient Refrigeration System
- Reliable Microprocessor Control With LED Temperature Display
- Evaporator Coil Outside Food Zone Provides More Usable Space
- Load-Sure Guard Prevents Problems From Improper Loading
- Durable All Metal Construction
- Stainless Steel Front & Louver Panel, Triple Pane Glass Doors, Anodized Aluminum Sides & Interior
- Full or Half Height Length Hinged Glass Doors With Locks
- Long Life EZ Clean Door Gaskets
- Three (3) Epoxy Coated Shelves Per Section (factory installed)
- Easy to Maintain Front Facing Condenser Coil
- 6" High Locking Casters
- Guaranteed for Life Door Hinges
- 3-Year Parts & Labor Warranty
- 2-Years Additional Compressor Parts Warranty

ACCESSORIES & OPTIONS (*field installed)

- Tray Slides for 18" x 26" Sheet Pans*
- Tray Slides for 12" x 20" Food Pans*
- Tray Slides for 14" x 18" Sheet Pans*
- Additional Shelves*
- 6" High Legs*
- Optional Remote Applications

*Please refer to form number TR35872 for precise kit details. See back page for tray slide versatility chart.

AVAILABLE CONFIGURATIONS

Half-Height Door Models	Hinging
G21000	Left-Right
G21001	Right-Left
G21002	Right-Right
G21003	Left-Left

Full-Height Door Models	Hinging
G21010	Left-Right
G21011	Right-Left
G21012	Right-Right
G21013	Left-Left

SECTION 4-8

Approved by_____ Date_____ Approved by_____ Date_____

MODELS

Half Height Door Models: G21000, G21001, G21002, G21003

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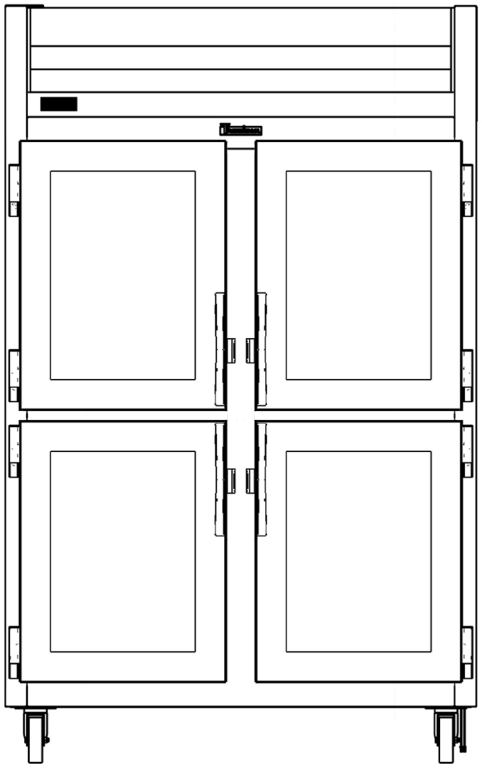

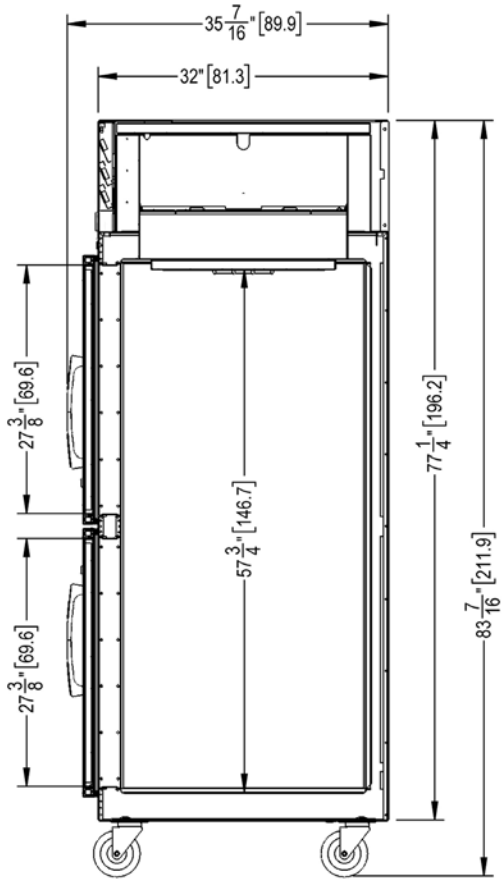

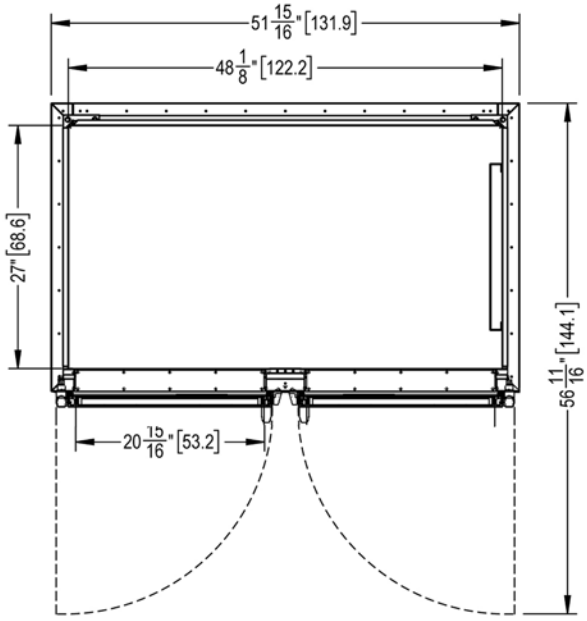

MODELS

Full Height Door Models: G21010, G21011, G21012, G21013

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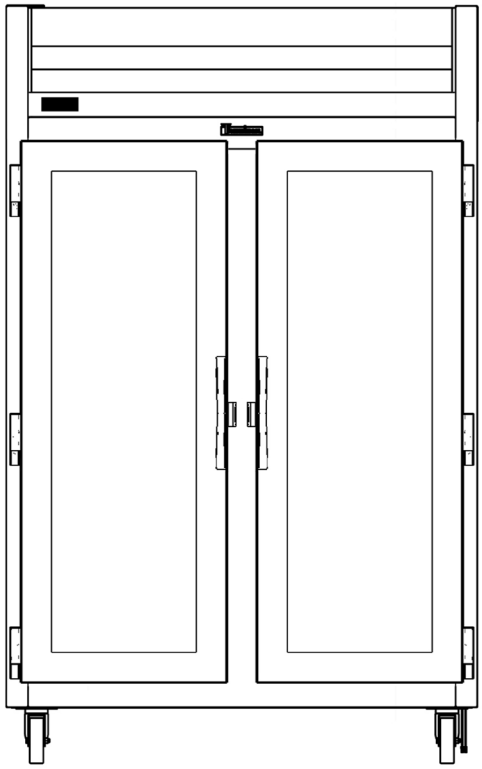
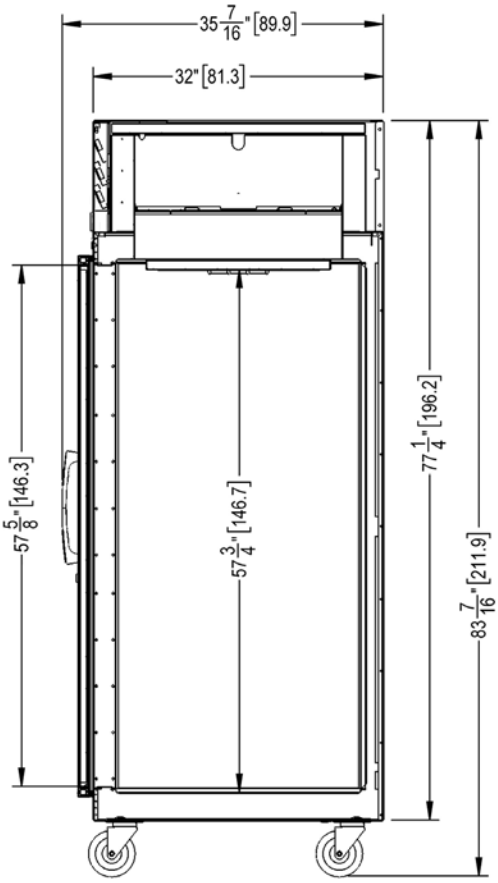
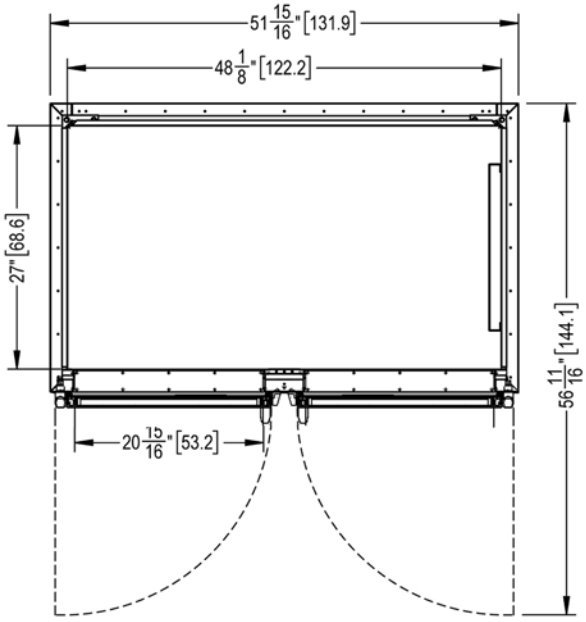






G-SERIES

2-Section Refrigerator Reach-In
Self-Contained Hinged Glass Door(s)

MODELS

Half Height Door Models: G21000, G21001, G21002, G21003
Full Height Door Models: G21010, G21011, G21012, G21013

MODELS	G210_ _
DIMENSIONAL DATA	
Net Capacity cu. ft.[1]	46.51 (1317 l) | 46.90 (1328 l)
L x D x H - Overall in.[2]	52⅛ (132.4 cm) x 35 (88.8 cm) x 83⅞ (211.9 cm)
Depth - over body in.	32 (81.3 cm)
Depth - door open 90⁰ in.	56⅞ (144.5 cm)
Clear half-door W x H in.	21⅛ (53.6 cm) x 27½ (69.9 cm)
Clear full-door W X H in.	21⅛ (53.6 cm) x 57⅝ (146.3 cm)
No. Standard Shelves	6
Shelf Area sq. ft.[3]	34.6 (3.21 sq m)
ELECTRICAL DATA	
Voltage | Plug	115/60/1 | NEMA 5-15P (attached)
Feed wires with ground	3
Full Load Amperes | MDEC[4]	8.4 | 5.27 KWH/Day
REFRIGERATION DATA	
Refrigerant	R-450A
Refrigerant Charge Amount	24 oz
BTU/HR | H.P.[5]	4610 | 5/8 HP
Required Clearance	12" Above
SHIPPING DATA	
L x D x H Crated in.	62 (157 cm) x 42 (107 cm) x 85 (216 cm)
Volume Crated cu. ft.	128 (3625 l)
Uncrated | Crated Weight lbs.	444 (201 kg) | 504 (229 kg)

NOTES:
1. Net Capacity cu. ft. = Half Height Door | Full Height Door models.
2. Height shown when mounted on standard 6" high casters.
3. Figure shown reflects the area of standard shelf compliment.
4. MDEC = Maximum Daily Energy Consumption
5. Based on a 90⁰F ambient and 20⁰F evaporator. For remote data please refer to spec sheet TR35837.

EQUIPMENT SPECIFICATIONS

CONSTRUCTION, HARDWARE, INSULATION

Cabinet exterior front and louver assembly are constructed of 20 gauge stainless steel. Cabinet sides (including returns) and interior are constructed of anodized aluminum. The exterior cabinet top, back and bottom are constructed of heavy gauge galvanized steel. A set of four (4) 6" high casters are included.

Doors are equipped with removable plug cylinder locks and guaranteed for life cam-lift, gravity action, self-closing metal, glide hinges with stay open feature at 120 degrees. An exterior mounted switch is provided to operate the interior LED lighting. Each door includes a vertically mounted stainless steel handle.

Gasket profile and durable long life material simplify cleaning and increase overall gasket life. Anti-condensate heaters are located behind each door opening. The cabinet is insulated with an average of 2" thick high density, non-CFC, foamed in place polyurethane.

SELF-CONTAINED REFRIGERATION SYSTEM

A top mounted, self-contained, balanced refrigeration system using environmentally friendly, non-flammable R-450A refrigerant is conveniently located behind the one piece louver assembly. It features an easy to clean front facing condenser, thermostatic expansion valve, air-cooled hermetic compressor, large, high humidity evaporator coil located outside the food zone and a top mounted non-electric condensate evaporator. A 9' cord and plug is provided. Standard operating temperature is 34 to 38°F.

CONTROL

The easy to use water resistant microprocessor control system is supplied standard. It includes a 3-Digit LED Display, and a Fahrenheit or Celsius Temperature Scale Display Capability.

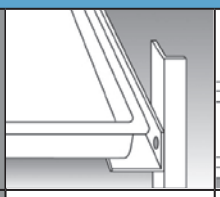
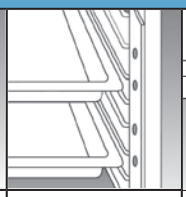
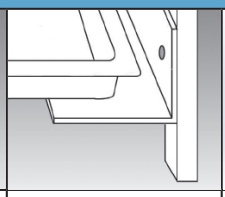
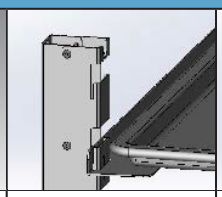
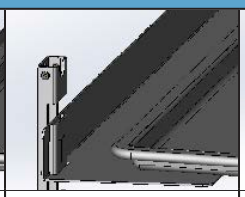
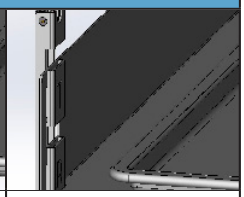
INTERIOR ARRANGEMENTS

Standard interior arrangements include three (3) epoxy coated steel wire shelves, mounted on shelf pins, installed at the factory. Recommended load limit per shelf should not exceed 225 lbs.

DOMESTIC WARRANTY

Both a three year parts and labor warranty and an additional two year compressor parts warranty (for a total of five on self-contained models) are provided standard.

OPTIONAL ACCESSORY TRAY SLIDE VERSATILITY CHART

TRAY SLIDE DRAWINGS						
TRAY SLIDE OFFERING	#1 (1) 18" x26" or (2) 14"x18"	#4 (Rod Type) (1) 18" x26"	Universal (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	#1 EZ-Change (1) 18" x26" or (2) 14"x18"	Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	HD Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"
SPACING CAPACITY DOOR SIZE	2" 28 Pairs Full Door & 13 Half 3" 19 Pairs Full Door & 09 Half 4" 14 Pairs Full Door & 07 Half 5" 11 Pairs Full Door & 05 Half	1 1/2" 38 Pairs Full Door (2 Pair) 1 1/2" 18 Pairs Half Door (1 Pair)	4" 14 Pairs Full Door & 06 Half[1] 4" 14 Pairs Full Door & 07 Half[2] 5" 11 Pairs Full Door & 05 Half 6" 09 Pairs Full Door & 04 Half	2" 26 Pairs Full Door & 12 Half 4" 13 Pairs Full Door & 06 Half	2 1/4" 22 Pairs Full Door & 11 Half 4 1/2" 11 Pairs Full Door & 05 Half	4 1/2" 11 Pairs Full Door & 05 Half 9" 05 Pairs Full Door & 02 Half

- **Upper Half Height Door[1]**
- **Lower Half Height Door[2]**

CONTINUED PRODUCT DEVELOPMENT MAY NECESSITATE SPECIFICATION CHANGES WITHOUT NOTICE.

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

2-Section Refrigerator Reach-In Self-Contained Solid Door(s)

ENERGY STAR

Many models are ENERGY STAR® listed. Please refer to www.energystar.gov to view the most up-to-date product listing and performance data.

Intertek 4004142

CERTIFIED TO ANSI/NSF 7

3-YEAR PARTS & LABOR WARRANTY

This unit is listed to the applicable UL, CSA and NSF Standards by an approved NRTL. Consult the factory or unit's data plate for approval information.

STANDARD PRODUCT FEATURES

- High Performance, Energy Efficient Refrigeration System
- Reliable Microprocessor Control With LED Temperature Display
- Evaporator Coil Outside Food Zone Provides More Usable Space
- Load-Sure Guard Prevents Problems From Improper Loading
- Durable All Metal Construction
- Stainless Steel Front & Doors, Anodized Aluminum Sides & Interior
- Full or Half Height Door Models with a Variety of Hinging Configurations
- Long Life EZ Clean Door Gaskets
- Three (3) Epoxy Coated Shelves Per Section (factory installed)
- Easy to Maintain Front Facing Condenser Coil
- 6" High Locking Casters
- Guaranteed for Life Door Handles & Hinges
- 3-Year Parts & Labor Warranty
- 2-Years Additional Compressor Parts Warranty

ACCESSORIES & OPTIONS (*field installed)

- Tray Slides for 18" x 26" Sheet Pans*
- Tray Slides for 12" x 20" Food Pans*
- Tray Slides for 14" x 18" Sheet Pans*
- Tray Slides for 18" x 26, 12" x 20" & 14" x 18" Pans*
- Additional Shelves*
- 6" High Legs*
- Lower Height Casters*
- Optional Remote Applications

*Please refer to form number TR35872 for precise kit details. See back page for tray slide versatility chart.

AVAILABLE CONFIGURATIONS

Half-Height Door Models	Hinging
G20000	Left/Right
G20001	Right/Left
G20002	Right/Right
G20003	Left/Left

Full-Height Door Models	Hinging
G20010	Left/Right
G20011	Right/Left
G20012	Right/Right
G20013	Left/Left

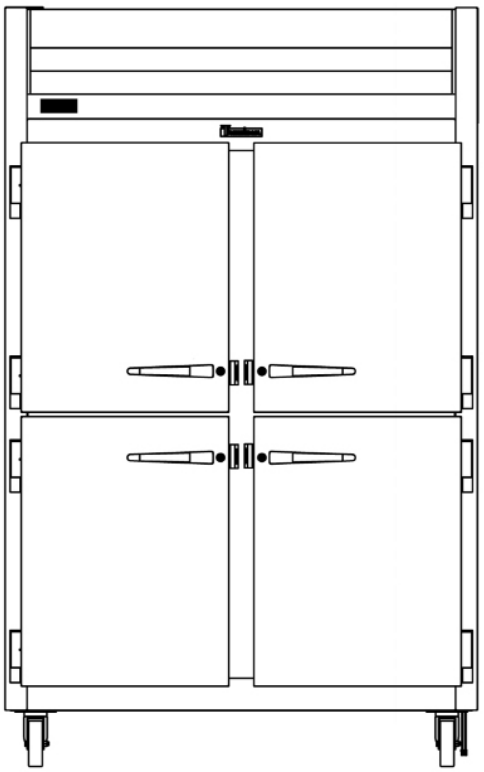
SECTION 4-3

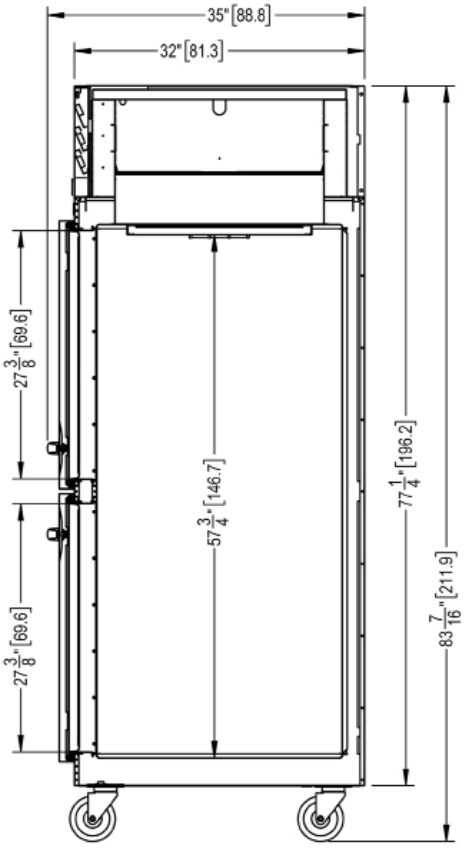
Approved by_____ Date_____ Approved by_____ Date_____

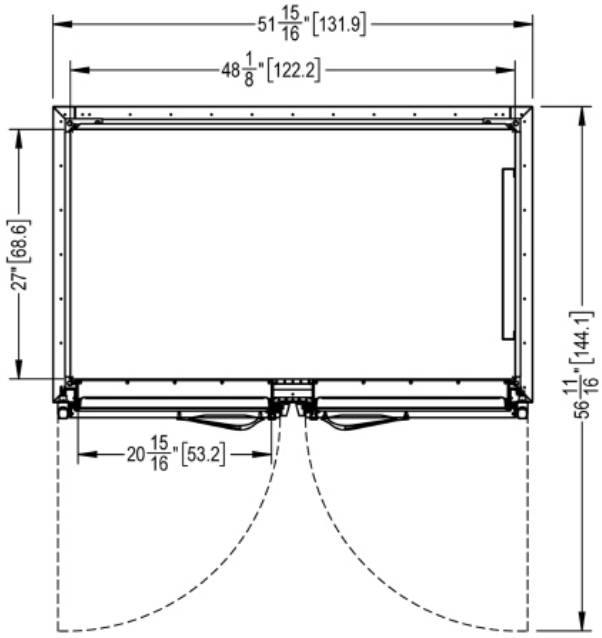
MODELS

Half Height Door Models: G20000, G20001, G20002, G20003

CLICK
TRANSFER
For KCL CADalog Website







MODELS

Full Height Door Models: G20010, G20011, G20012, G20013

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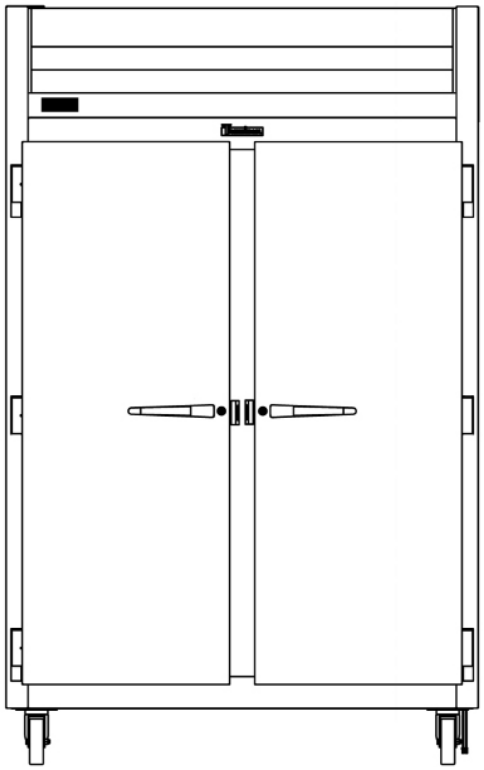
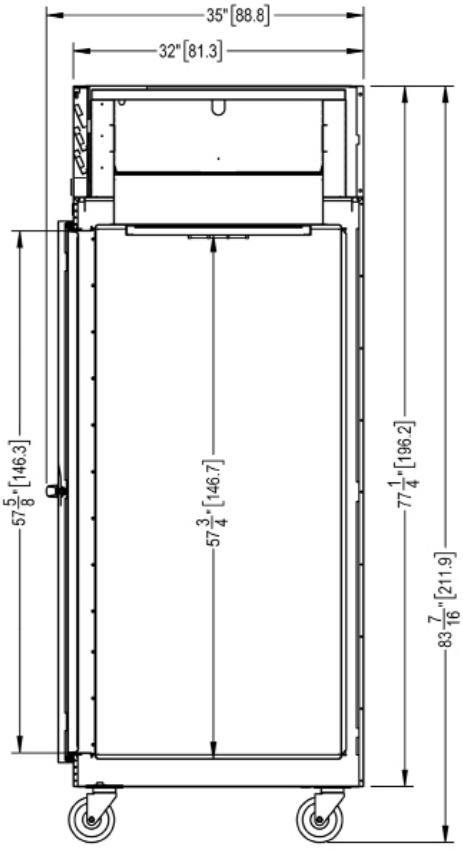
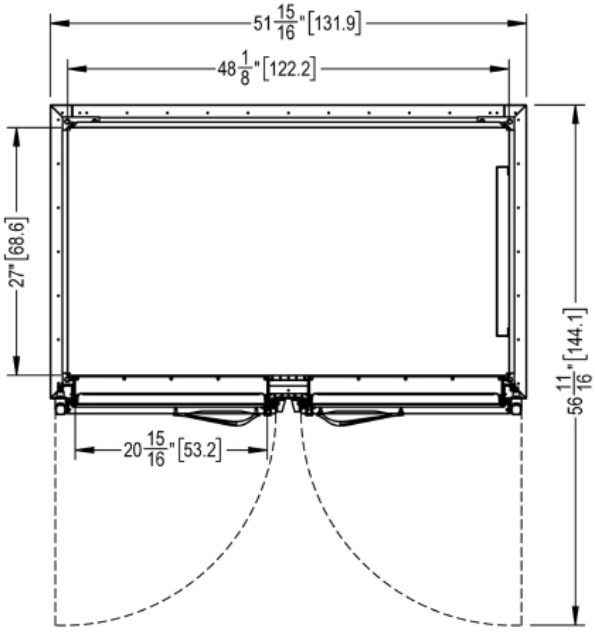
For KCL CADalog Website







G-SERIES

2-Section Refrigerator Reach-In Self-Contained Solid Door(s)

MODELS

Half Height Door Models: G20000, G20001, G20002, G20003
Full Height Door Models: G20010, G20011, G20012, G20013

MODELS	G200_ _
DIMENSIONAL DATA	
Net Capacity cu. ft.[1]	45.89 (1300 l) | 46.02 (1303 l)
L x D x H - Overall in.[2]	52⅛ (132.4 cm) x 35 (88.8 cm) x 83⅞₁₆ (211.9 cm)
Depth - over body in.	32 (81.3 cm)
Depth - door open 90⁰ in.	57⅝ (146.3 cm)
Clear half-door W x H in.	21⅛ (53.6 cm) x 27½ (69.9 cm)
Clear full-door W X H in.	21⅛ (53.6 cm) x 57⅝ (146.3 cm)
No. Standard Shelves	6
Shelf Area sq. ft.[3]	34.6 (3.21 sq m)
ELECTRICAL DATA	
Voltage | Plug	115/60/1 | NEMA 5-15P (attached)
Feed wires with ground	3
Full Load Amperes | MDEC[4]	7.4 | 3.48 KWH/Day
REFRIGERATION DATA	
Refrigerant	R-450A
Refrigerant Charge Amount	16 oz
BTU/HR | H.P.[5]	2240 | 1/3 HP
Required Clearance	12" Above
SHIPPING DATA	
L x D x H Crated in.	62 (158 cm) x 42(107 cm) x 85(216 cm)
Volume Crated cu. ft.	128 (3625 l)
Uncrated | Crated Weight lbs.	450 (204 kg) | 480 (218 kg)

NOTES:
1. Net Capacity cu. ft. = Half Height Door \| Full Height Door models.
2. Height shown when mounted on standard 6" high casters.
3. Figure shown reflects the area of standard shelf compliment.
4. MDEC = Maximum Daily Energy Consumption
5. Based on a 90⁰F ambient and 20⁰F evaporator. For remote data please refer to spec sheet TR35837.

EQUIPMENT SPECIFICATIONS

CONSTRUCTION, HARDWARE, INSULATION
Cabinet exterior front, louver assembly and door(s) are constructed of 20 gauge stainless steel. Cabinet sides (including returns), interior and door liners are constructed of anodized aluminum. The exterior cabinet top, back and bottom are constructed of heavy gauge galvanized steel. A set of four (4) 6" high locking casters are included. Doors are equipped with a gasket protecting, raised metal door pan, cylinder locks, and guaranteed for life self-closing cam-lift hinges with a stay open feature at 120 degrees. Hinges include a concealed switch to automatically activate the interior LED lighting. Guaranteed for life, metal work flow door handles are mounted horizontally over recess in door which limits protrusion into aisle ways. Gasket profile and durable long life material simplify cleaning and increase overall gasket life. Anti-condensate heaters are located behind each door opening. Both the cabinet and door(s) are insulated with an average of 2" thick high density, non-CFC, 100% foamed in place polyurethane.

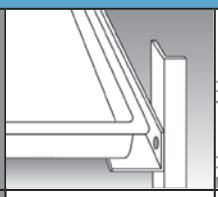
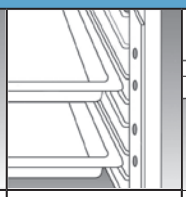
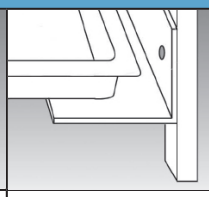
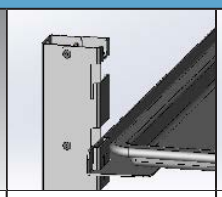
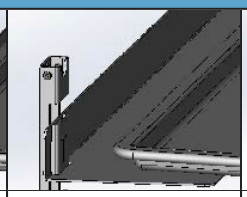
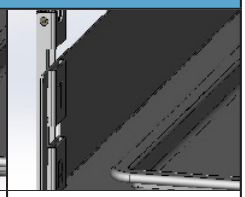
SELF-CONTAINED REFRIGERATION SYSTEM
A top mounted, self-contained, balanced refrigeration system using environmentally friendly, non-flammable R-450A refrigerant is conveniently located behind the one piece louver assembly. It features an easy to clean front facing condenser, thermostatic expansion valve metering device, air-cooled hermetic compressor, large, high humidity evaporator coil located outside the food zone and a top mounted non-electric condensate evaporator. A 9' cord and plug is provided. Standard operating temperature is 34 to 38°F.

CONTROL
The easy to use water resistant microprocessor control is supplied standard. It includes a 3-Digit LED Display, and a Fahrenheit or Celsius Temperature Scale Display Capability.

INTERIOR ARRANGEMENTS
Standard interior arrangements include three (3) epoxy coated steel wire shelves per section, mounted on shelf pins, installed at the factory. Shelves are full-width, and do not have any large gaps between them requiring the use of "bridge" or "junior shelves." Recommended load limit per shelf should not exceed 225 lbs.

DOMESTIC WARRANTY
Both a three year parts and labor warranty and an additional two year compressor parts warranty (for a total of five on self-contained models) are provided standard.

OPTIONAL ACCESSORY TRAY SLIDE VERSATILITY CHART

TRAY SLIDE DRAWINGS						
TRAY SLIDE OFFERING	#1 (1) 18" x26" or (2) 14"x18"	#4 (Rod Type) (1) 18" x26"	Universal (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	#1 EZ-Change (1) 18" x26" or (2) 14"x18"	Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	HD Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"
SPACING CAPACITY DOOR SIZE	2" 28 Pairs Full Door & 13 Half 3" 19 Pairs Full Door & 09 Half 4" 14 Pairs Full Door & 07 Half 5" 11 Pairs Full Door & 05 Half	1 1/2" 38 Pairs Full Door (2 Pair) 1 1/2" 18 Pairs Half Door (1 Pair)	4" 14 Pairs Full Door & 06 Half[1] 4" 14 Pairs Full Door & 07 Half[2] 5" 11 Pairs Full Door & 05 Half 6" 09 Pairs Full Door & 04 Half	2" 26 Pairs Full Door & 12 Half 4" 13 Pairs Full Door & 06 Half	2 1/4" 22 Pairs Full Door & 11 Half 4 1/2" 11 Pairs Full Door & 05 Half	4 1/2" 11 Pairs Full Door & 05 Half 9" 05 Pairs Full Door & 02 Half

- **Upper Half Height Door[1]**
- **Lower Half Height Door[2]**

CONTINUED PRODUCT DEVELOPMENT MAY NECESSITATE SPECIFICATION CHANGES WITHOUT NOTICE.

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

3-Section Refrigerator Reach-In Self-Contained Hinged Glass Door(s)

ENERGY STAR

Many models are ENERGY STAR® listed. Please refer to www.energystar.gov to view the most up-to-date product listing and performance data.

Intertek 4004142

NSF CERTIFIED TO ANSI/NSF 7

3-YEAR PARTS & LABOR WARRANTY

This unit is listed to the applicable UL, CSA and NSF Standards by an approved NRTL. Consult the factory or unit's data plate for approval information.

STANDARD PRODUCT FEATURES

- High Performance, Energy Efficient Refrigeration System
- Reliable Microprocessor Control With LED Temperature Display
- Evaporator Coil Outside Food Zone Provides More Usable Space
- Load-Sure Guard Prevents Problems From Improper Loading
- Durable All Metal Construction
- Stainless Steel Front & Louver Panel, Triple Pane Glass Doors, Anodized Aluminum Sides & Interior
- Full or Half Height Length Hinged Glass Doors With Locks
- Long Life EZ Clean Door Gaskets
- Three (3) Epoxy Coated Shelves Per Section (factory installed)
- Easy to Maintain Front Facing Condenser Coil
- 6" High Locking Casters
- Guaranteed for Life Door Hinges
- 3-Year Parts & Labor Warranty
- 2-Years Additional Compressor Parts Warranty

ACCESSORIES & OPTIONS (*field installed)

- Tray Slides for 18" x 26" Sheet Pans*
- Tray Slides for 12" x 20" Food Pans*
- Tray Slides for 14" x 18" Sheet Pans*
- Additional Shelves*
- 6" High Legs*
- Optional Remote Applications

*Please refer to form number TR35872 for precise kit details. See back page for tray slide versatility chart.

AVAILABLE CONFIGURATIONS

Half-Height Door Models	Hinging
G32000	Left-Right-Right
G32001	Left-Left-Right
G32002	Right-Right-Right
G32003	Left-Left-Left

Full-Height Door Models	Hinging
G32010	Left-Right-Right
G32011	Left-Left-Right
G32012	Right-Right-Right
G32013	Left-Left-Left

SECTION 4-9

Approved by_____ Date_____ Approved by_____ Date_____

MODELS

Half Height Door Models: G32000, G32001, G32002, G32003

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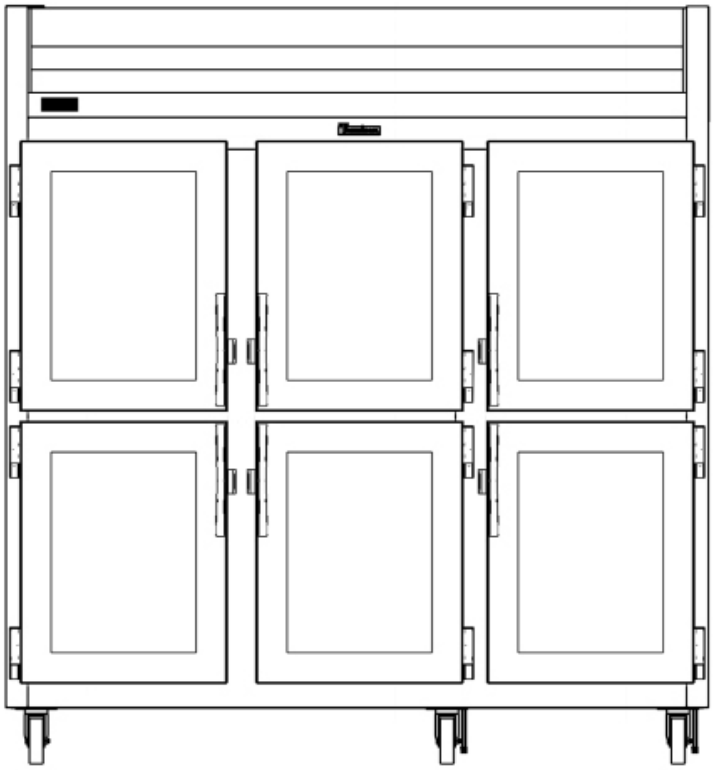

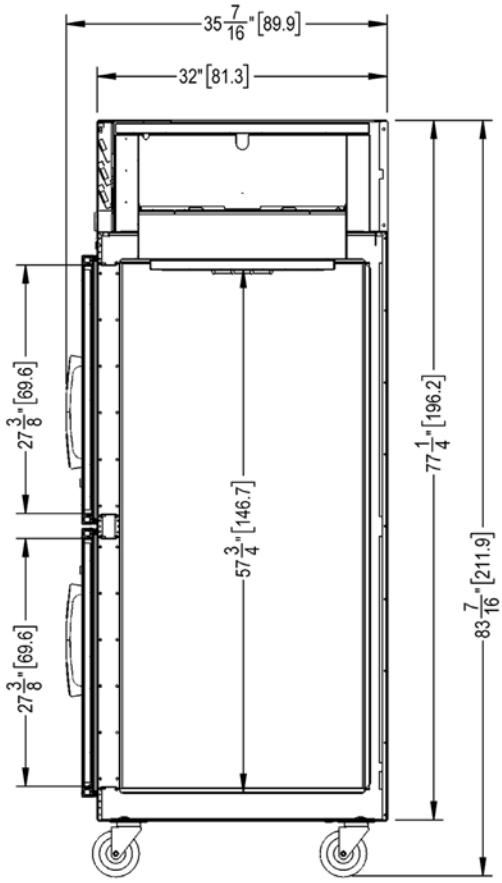

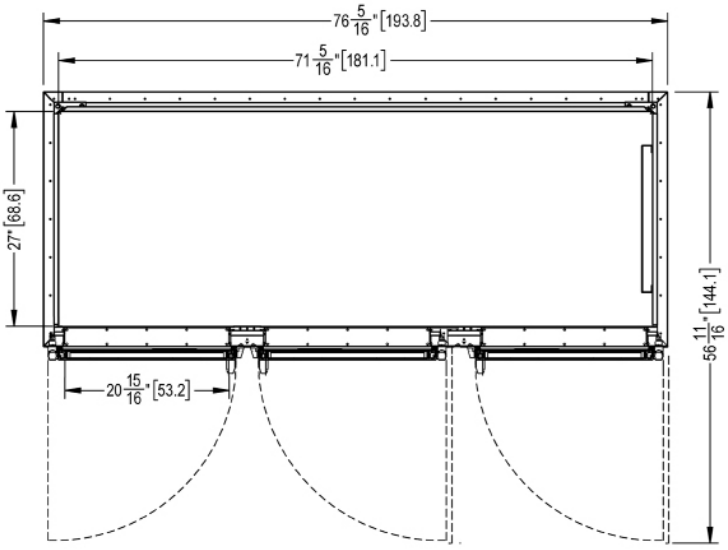

MODELS

Full Height Door Models: G32010, G32011, G32012, G32013

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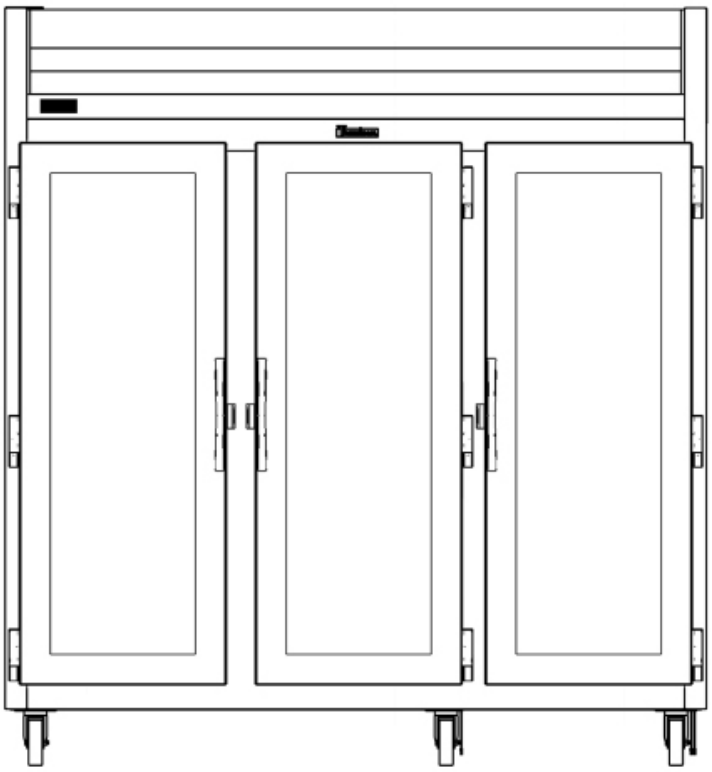
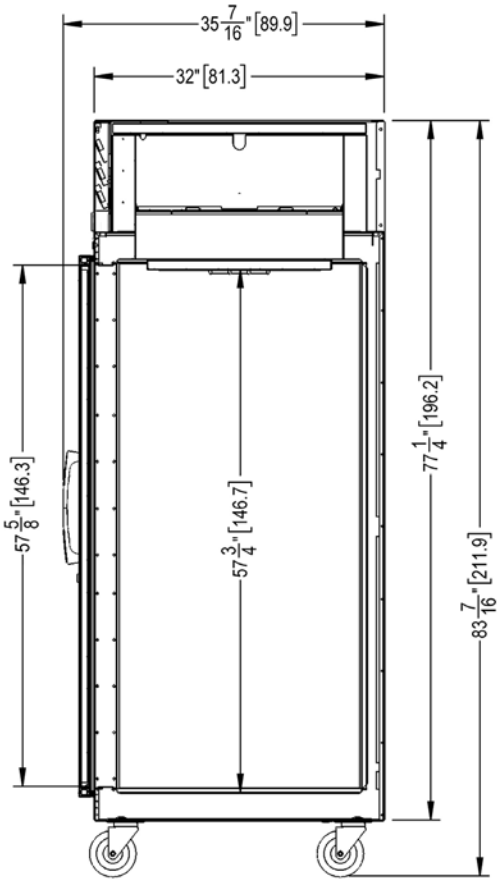
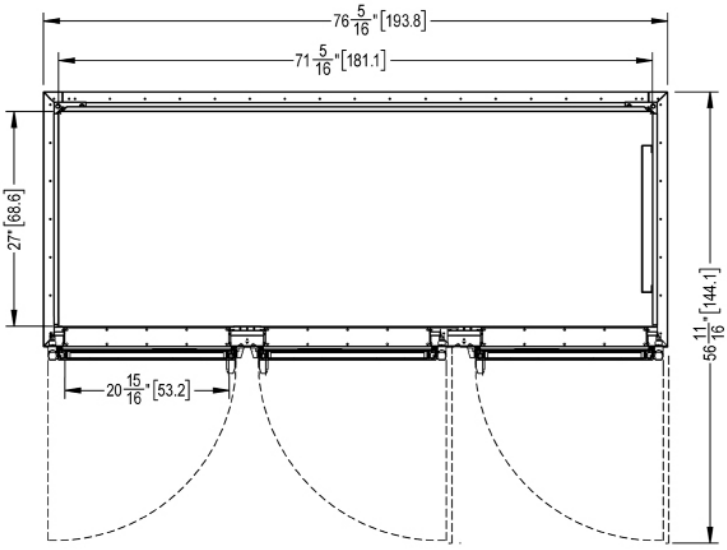






G-SERIES

3-Section Refrigerator Reach-In
Self-Contained Hinged Glass Door(s)

MODELS

Half Height Door Models: G32000, G32001, G32002, G32003
Full Height Door Models: G32010, G32011, G32012, G32013

MODELS	G320_ _
DIMENSIONAL DATA	
Net Capacity cu. ft.[1]	70.07 (1984 l) | 70.67 (2001 l)
L x D x H[1] - Overall in.[2]	76 5/16 (193.8 cm) x 35 (88.8 cm) x 83 7/16 (211.9 cm)
Depth - over body in.	32 (81.3 cm)
Depth - door open 90[0] in.	56 7/8 (144.5 cm)
Clear half-door W x H in.	21 1/8 (53.6 cm) x 27 1/2 (69.9 cm)
Clear full-door W X H in.	21 1/8 (53.6 cm) x 57 5/8 (146.3 cm)
No. Standard Shelves	9
Shelf Area sq. ft.[3]	51.9 (4.82 sq m)
ELECTRICAL DATA	
Voltage | Plug	115/60/1 | NEMA 5-15P (attached)
Feed wires with ground	3
Full Load Amperes | MDEC[4]	10.7 | 7.53 KWH/Day
REFRIGERATION DATA	
Refrigerant	R-450A
Refrigerant Charge Amount	30 oz
BTU/HR | H.P.[5]	5990 | 3/4 HP
Required Clearance	12" Above
SHIPPING DATA	
L x D x H Crated in.	91(231 cm) x 42 (107 cm) x 85 (216 cm)
Volume Crated cu. ft.	188 (5324 l)
Uncrated | Crated Weight lbs.	581 (264 kg) | 666 (302 kg)

NOTES:
1. Net Capacity cu. ft. = Half Height Door \| Full Height Door models.
2. Height shown when mounted on standard 6" high casters.
3. Figure shown reflects the area of standard shelf compliment.
4. MDEC = Maximum Daily Energy Consumption
5. Based on a 90[0]F ambient and 20[0]F evaporator. For remote data please refer to spec sheet TR35837.

EQUIPMENT SPECIFICATIONS

CONSTRUCTION, HARDWARE, INSULATION

Cabinet exterior front and louver assembly are constructed of 20 gauge stainless steel. Cabinet sides (including returns) and interior are constructed of anodized aluminum. The exterior cabinet top, back and bottom are constructed of heavy gauge galvanized steel. A set of four (4) 6" high casters are included.

Doors are equipped with removable plug cylinder locks and guaranteed for life cam-lift, gravity action, self-closing metal, glide hinges with stay open feature at 120 degrees. An exterior mounted switch is provided to operate the interior LED lighting. Each door includes a vertically mounted stainless steel handle.

Gasket profile and durable long life material simplify cleaning and increase overall gasket life. Anti-condensate heaters are located behind each door opening. The cabinet is insulated with an average of 2" thick high density, non-CFC, foamed in place polyurethane.

SELF-CONTAINED REFRIGERATION SYSTEM

A top mounted, self-contained, balanced refrigeration system using environmentally friendly, non-flammable R-450A refrigerant is conveniently located behind the one piece louver assembly. It features an easy to clean front facing condenser, thermostatic expansion valve, air-cooled hermetic compressor, large, high humidity evaporator coil located outside the food zone and a top mounted non-electric condensate evaporator. A 9' cord and plug is provided. Standard operating temperature is 34 to 38°F.

CONTROL

The easy to use water resistant microprocessor control system is supplied standard. It includes a 3-Digit LED Display, and a Fahrenheit or Celsius Temperature Scale Display Capability.

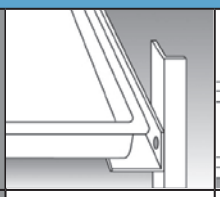
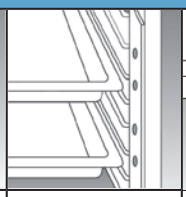
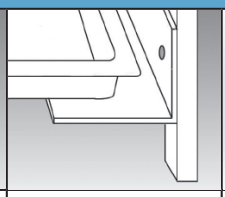
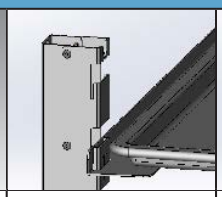
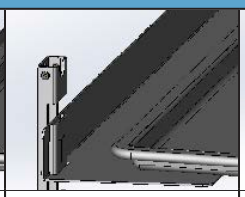
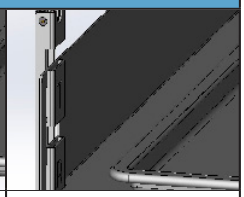
INTERIOR ARRANGEMENTS

Standard interior arrangements include three (3) epoxy coated steel wire shelves, mounted on shelf pins, installed at the factory. Recommended load limit per shelf should not exceed 225 lbs.

DOMESTIC WARRANTY

Both a three year parts and labor warranty and an additional two year compressor parts warranty (for a total of five on self-contained models) are provided standard.

OPTIONAL ACCESSORY TRAY SLIDE VERSATILITY CHART

TRAY SLIDE DRAWINGS						
TRAY SLIDE OFFERING	#1 (1) 18" x26" or (2) 14"x18"	#4 (Rod Type) (1) 18" x26"	Universal (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	#1 EZ-Change (1) 18" x26" or (2) 14"x18"	Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	HD Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"
SPACING CAPACITY DOOR SIZE	2" 28 Pairs Full Door & 13 Half 3" 19 Pairs Full Door & 09 Half 4" 14 Pairs Full Door & 07 Half 5" 11 Pairs Full Door & 05 Half	1 1/2" 38 Pairs Full Door 1 1/2" 18 Pairs Half Door	4" 14 Pairs Full Door & 06 Half[1] 4" 14 Pairs Full Door & 07 Half[2] 5" 11 Pairs Full Door & 05 Half 6" 09 Pairs Full Door & 04 Half	2" 26 Pairs Full Door & 12 Half 4" 13 Pairs Full Door & 06 Half	2 1/4" 22 Pairs Full Door & 11 Half 4 1/2" 11 Pairs Full Door & 05 Half	4 1/2" 11 Pairs Full Door & 05 Half 9" 05 Pairs Full Door & 02 Half

- **Upper Half Height Door[1]**
- **Lower Half Height Door[2]**

CONTINUED PRODUCT DEVELOPMENT MAY NECESSITATE SPECIFICATION CHANGES WITHOUT NOTICE.

Project _____

AIA #_____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

COMMERCIAL REFRIGERATION

DEALERS CHOICE G-SERIES

G-SERIES

3-Section Refrigerator Reach-In Self-Contained Solid Door(s)

ENERGY STAR

Many models are ENERGY STAR® listed. Please refer to www.energystar.gov to view the most up-to-date product listing and performance data.

Intertek 4004142

This unit is listed to the applicable UL, CSA and NSF Standards by an approved NRTL. Consult the factory or unit's data plate for approval information.

STANDARD PRODUCT FEATURES

- High Performance, Energy Efficient Refrigeration System
- Reliable Microprocessor Control With LED Temperature Display
- Evaporator Coil Outside Food Zone Provides More Usable Space
- Load-Sure Guard Prevents Problems From Improper Loading
- Durable All Metal Construction
- Stainless Steel Front & Doors, Anodized Aluminum Sides & Interior
- Full or Half Height Door Models with a Variety of Hinging Configurations
- Long Life EZ Clean Door Gaskets
- Three (3) Epoxy Coated Shelves Per Section (factory installed)
- Easy to Maintain Front Facing Condenser Coil
- 6" High Locking Casters
- Guaranteed for Life Door Handles & Hinges
- 3-Year Parts & Labor Warranty
- 2-Years Additional Compressor Parts Warranty

ACCESSORIES & OPTIONS (*field installed)

- Tray Slides for 18" x 26" Sheet Pans*
- Tray Slides for 12" x 20" Food Pans*
- Tray Slides for 14" x 18" Sheet Pans*
- Tray Slides for 18" x 26, 12" x 20" & 14" x 18" Pans*
- Additional Shelves*
- 6" High Legs*
- Lower Height Casters*
- Optional Remote Applications

*Please refer to form number TR35872 for precise kit details. See back page for tray slide versatility chart.

AVAILABLE CONFIGURATIONS

Half-Height Door Models	Hinging
G30000	Left/Right/Right
G30001	Left/Left/Right
G30002	Right/Right/Right
G30003	Left/Left/Left

Full-Height Door Models	Hinging
G30010	Left/Right/Right
G30011	Left/Left/Right
G30012	Right/Right/Right
G30013	Left/Left/Left

SECTION 4-5

Approved by_____ Date_____ Approved by_____ Date_____

MODELS

Half Height Door Models: G30000, G30001, G30002, G30003

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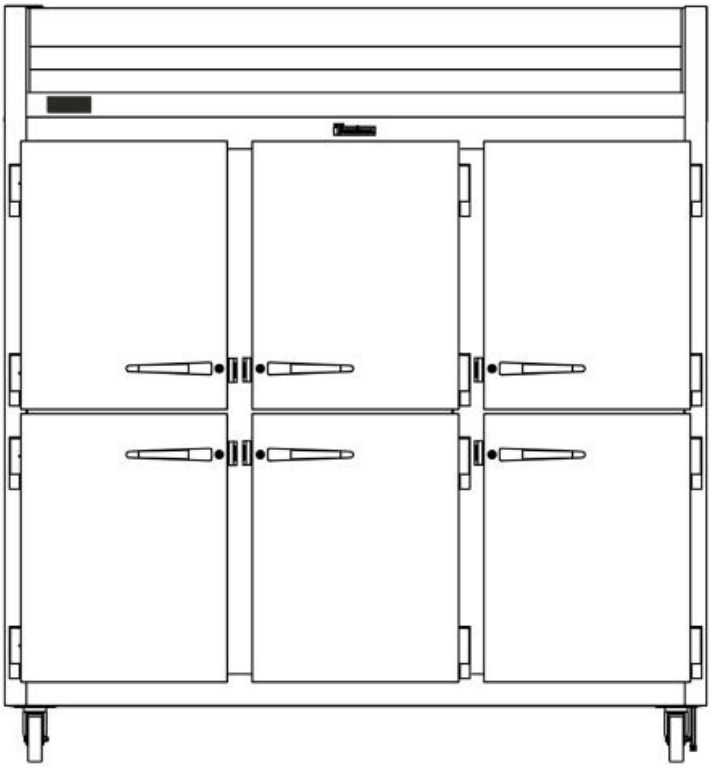

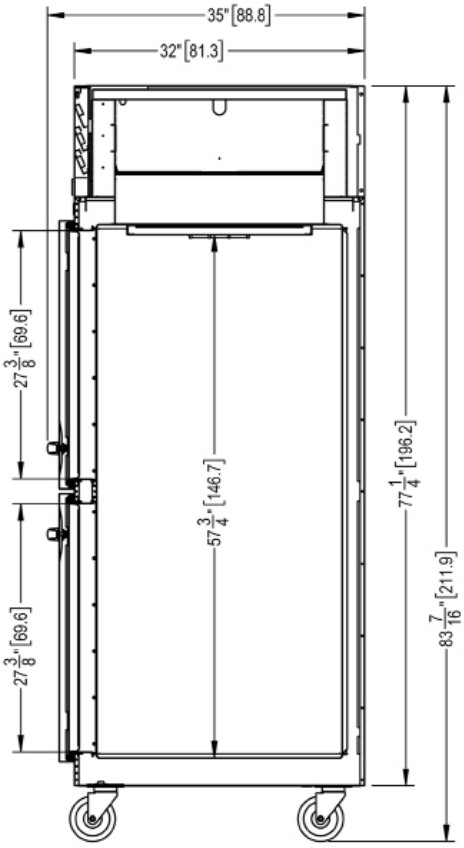

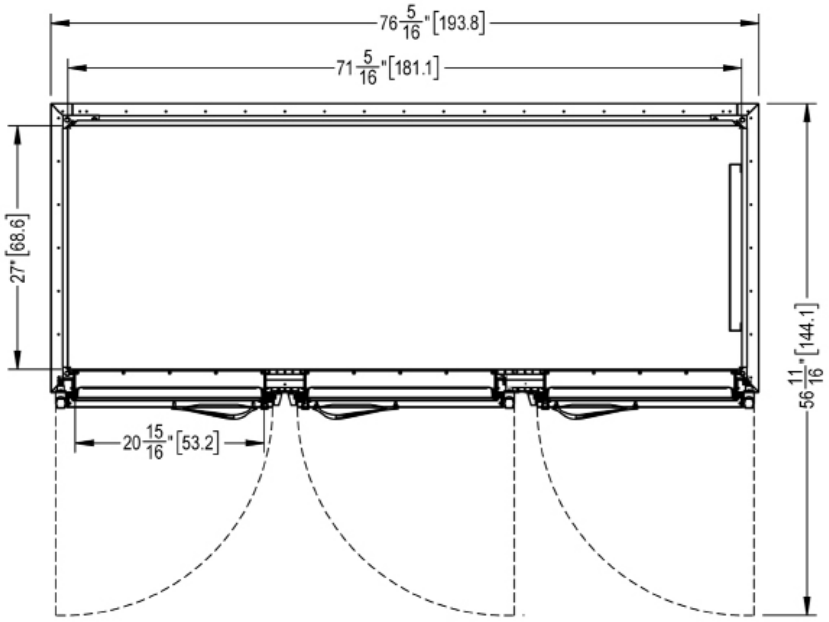

MODELS

Full Height Door Models: G30010, G30011, G30012, G30013

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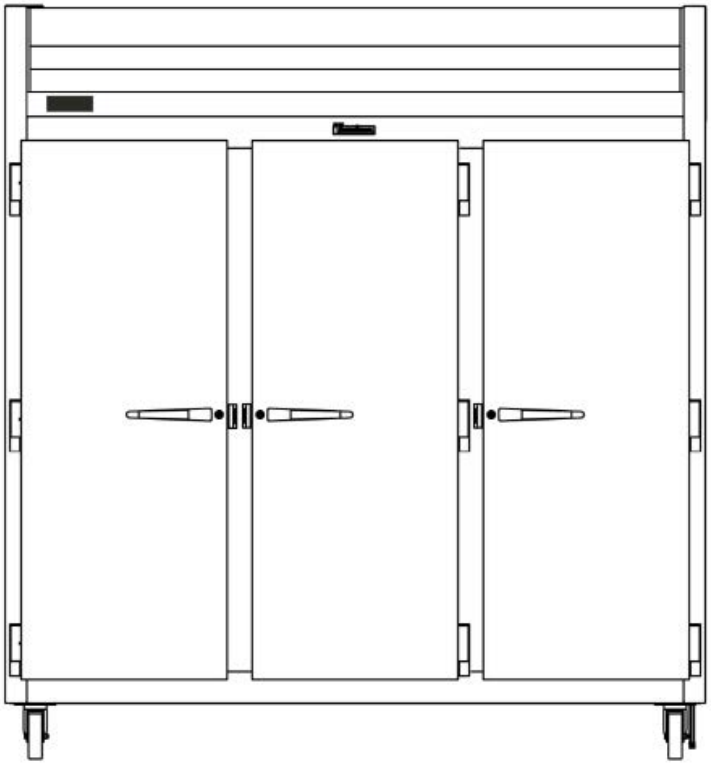
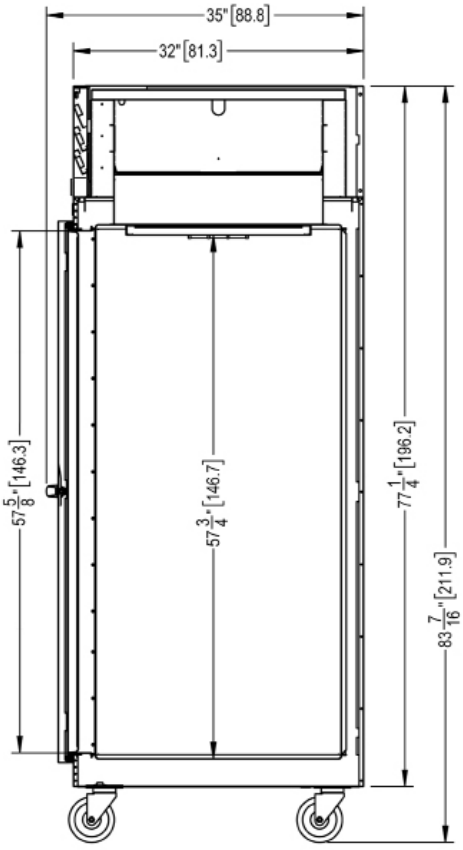
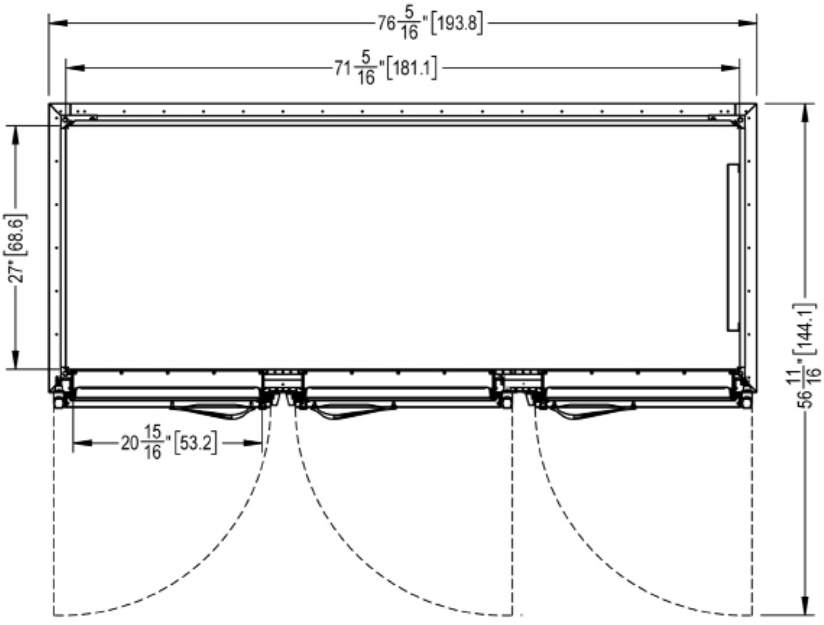






G-SERIES

3-Section Refrigerator Reach-In
Self-Contained Solid Door(s)

MODELS

Half Height Door Models: G30000, G30001, G30002, G30003
Full Height Door Models: G30010, G30011, G30012, G30013

MODELS	G300_ _
DIMENSIONAL DATA	
Net Capacity cu. ft.[1]	69.15 (1958 l) | 69.35 (1964 l)
L x D x H - Overall in.[2]	76 5/16 (193.8 cm) x 35 (88.8 cm) x 83 7/16 (211.9 cm)
Depth - over body in.	32 (81.3 cm)
Depth - door open 90⁰ in.	57 5/8 (146.3 cm)
Clear half-door W x H in.	21 1/8 (53.6 cm) x 27 1/2 (69.9 cm)
Clear full-door W X H in.	21 1/8 (53.6 cm) x 57 5/8 (146.3 cm)
No. Standard Shelves	9
Shelf Area sq. ft.[3]	51.9 (4.82 sq m)
ELECTRICAL DATA	
Voltage | Plug	115/60/1 | NEMA 5-15P (attached)
Feed wires with ground	3
Full Load Amperes | MDEC[4]	8.4 | 3.38 KWH/Day
REFRIGERATION DATA	
Refrigerant	R-450A
Refrigerant Charge Amount	24 oz
BTU/HR | H.P.[5]	4610 | 1/2 HP
Required Clearance	12" Above
SHIPPING DATA	
L x D x H Crated in.	91(231 cm) x 42 (107 cm) x 85(216 cm)
Volume Crated cu. ft.	188 (5324 l)
Uncrated | Crated Weight lbs.	610 (277 kg) | 630 (286 kg)

NOTES:
1. Net Capacity cu. ft. = Half Height Door | Full Height Door models.
2. Height shown when mounted on standard 6" high casters.
3. Figure shown reflects the area of standard shelf compliment.
4. MDEC = Maximum Daily Energy Consumption
5. Based on a 90⁰F ambient and 20⁰F evaporator. For remote data please refer to spec sheet TR35837.

EQUIPMENT SPECIFICATIONS

CONSTRUCTION, HARDWARE, INSULATION
Cabinet exterior front, louver assembly and door(s) are constructed of 20 gauge stainless steel. Cabinet sides (including returns), interior and door liners are constructed of anodized aluminum. The exterior cabinet top, back and bottom are constructed of heavy gauge galvanized steel. A set of four (4) 6" high locking casters are included. Doors are equipped with a gasket protecting, raised metal door pan, cylinder locks, and guaranteed for life self-closing cam-lift hinges with a stay open feature at 120 degrees. Hinges include a concealed switch to automatically activate the interior LED lighting. Guaranteed for life, metal work flow door handles are mounted horizontally over recess in door which limits protrusion into aisle ways. Gasket profile and durable long life material simplify cleaning and increase overall gasket life. Anti-condensate heaters are located behind each door opening. Both the cabinet and door(s) are insulated with an average of 2" thick high density, non-CFC, 100% foamed in place polyurethane.

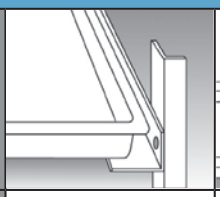
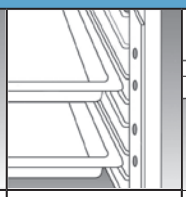
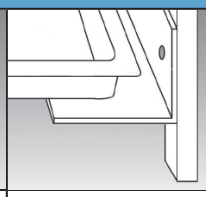
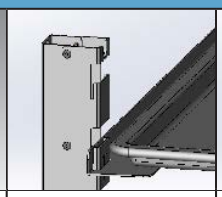
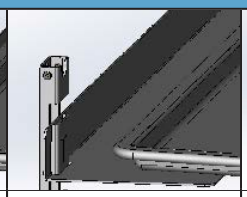
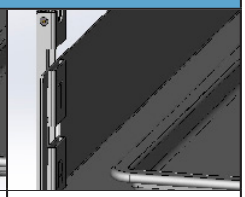
SELF-CONTAINED REFRIGERATION SYSTEM
A top mounted, self-contained, balanced refrigeration system using environmentally friendly, non-flammable R-450A refrigerant is conveniently located behind the one piece louver assembly. It features an easy to clean front facing condenser, thermostatic expansion valve metering device, air-cooled hermetic compressor, large, high humidity evaporator coil located outside the food zone and a top mounted non-electric condensate evaporator. A 9' cord and plug is provided. Standard operating temperature is 34 to 38°F.

CONTROL
The easy to use water resistant microprocessor control is supplied standard. It includes a 3-Digit LED Display, and a Fahrenheit or Celsius Temperature Scale Display Capability.

INTERIOR ARRANGEMENTS
Standard interior arrangements include three (3) epoxy coated steel wire shelves per section, mounted on shelf pins, installed at the factory. Shelves are full-width, and do not have any large gaps between them requiring the use of "bridge" or "junior shelves." Recommended load limit per shelf should not exceed 225 lbs.

DOMESTIC WARRANTY
Both a three year parts and labor warranty and an additional two year compressor parts warranty (for a total of five on self-contained models) are provided standard.

OPTIONAL ACCESSORY TRAY SLIDE VERSATILITY CHART

TRAY SLIDE DRAWINGS						
TRAY SLIDE OFFERING	#1 (1) 18" x26" or (2) 14"x18"	#4 (Rod Type) (1) 18" x26"	Universal (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	#1 EZ-Change (1) 18" x26" or (2) 14"x18"	Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"	HD Universal EZ-Change (1) 18" x26" or (2) 14"x18" or (2) 12"x20"
SPACING CAPACITY DOOR SIZE	2" 28 Pairs Full Door & 13 Half 3" 19 Pairs Full Door & 09 Half 4" 14 Pairs Full Door & 07 Half 5" 11 Pairs Full Door & 05 Half	1 1/2" 38 Pairs Full Door (2 Pair) 1 1/2" 18 Pairs Half Door (1 Pair)	4" 14 Pairs Full Door & 06 Half[1] 4" 14 Pairs Full Door & 07 Half[2] 5" 11 Pairs Full Door & 05 Half 6" 09 Pairs Full Door & 04 Half	2" 26 Pairs Full Door & 12 Half 4" 13 Pairs Full Door & 06 Half	2 1/4" 22 Pairs Full Door & 11 Half 4 1/2" 11 Pairs Full Door & 05 Half	4 1/2" 11 Pairs Full Door & 05 Half 9" 05 Pairs Full Door & 02 Half

- **Upper Half Height Door[1]**
- **Lower Half Height Door[2]**

CONTINUED PRODUCT DEVELOPMENT MAY NECESSITATE SPECIFICATION CHANGES WITHOUT NOTICE.

Quality Refrigeration

OWNER'S MANUAL

Instructions for the installation, operation and maintenance of all Traulsen:

G-Series Reach-In Refrigerators*
G-Series Reach-In Freezers*
G-Series Hinged Glass Door Refrigerators*

*

For equipment manufactured after 3/9/04 only.

This Traulsen unit is built to our highest quality standards. We build our refrigerators, freezers and heated cabinets this way as a matter of pride. This philosophy has made Traulsen the leader in commercial refrigeration since 1938. We thank you for your choice and confidence in Traulsen equipment and we know you will receive many years of utility from this equipment.

All Traulsen units are placed on a permanent record file with the service department. In the event of any future questions you may have, please refer to the model and serial number found on the name tag affixed to the unit. Should you need service, however, call us on our toll free number, 800-825-8220 between 7:30 a.m. and 4:30 p.m. CST, Monday thru Friday. It is our pleasure to help and assist you in every possible way.

INSTALLER
COMPLETE THE FOLLOWING INFORMATION PRIOR TO UNIT INSTALLATION

INITIAL START DATE:_____ SERIAL NO. _____

MODEL TYPE: _____

COMPANY/INDIVIDUAL NAME: _____

INSTALLER: _____

FORM NUMBER TR35748 REV. 10/04

P/N 375-60184-00

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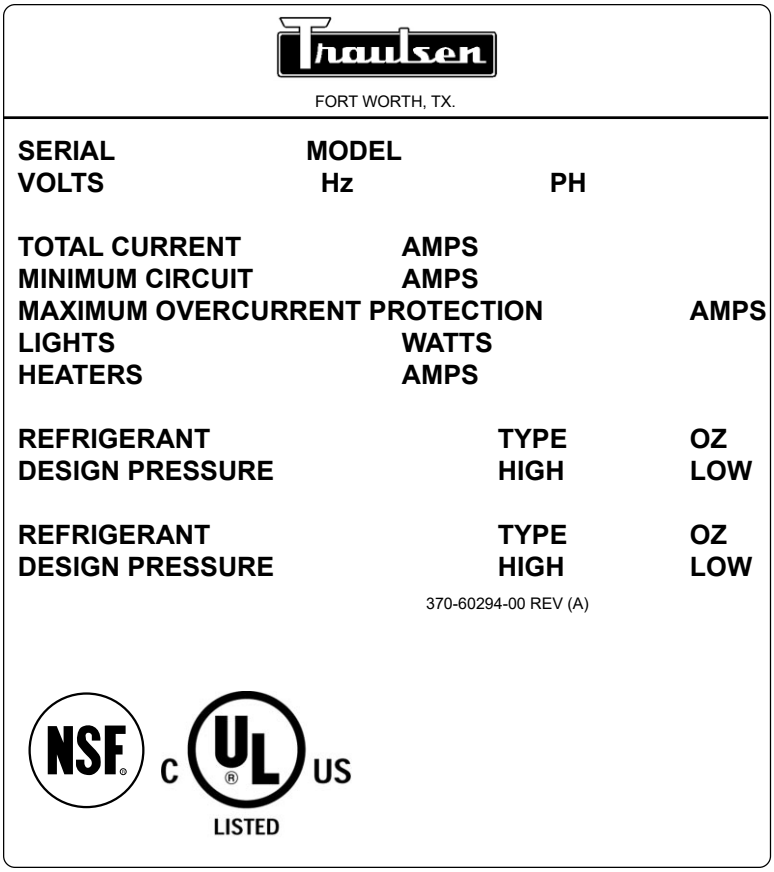


I. THE SERIAL TAG

The serial tag is a permanently affixed label upon which is recorded vital electrical and refrigeration data about your Traulsen product, as well as the model and serial number. This tag is located in the upper right interior compartment on all Traulsen G-Series refrigerator and freezer models.

READING THE SERIAL TAG

- Serial = The permanent ID# of your Traulsen
- Model = The model # of your Traulsen
- Volts = Voltage
- Hz = Cycle
- PH = Phase
- Total Current = Maximum amp draw
- Minimum Circuit = Minimum circuit ampacity
- Lights = Light wattage
- Heaters = Heater amperage (Hot Food units only)
- Refrigerant = Refrigerant type used
- Design Pressure = High & low side operating pressures and refrigerant charge
- Agency Labels = Designates agency listings

II. RECEIPT INSPECTION

All Traulsen products are factory tested for performance and are free from defects when shipped. The utmost care has been taken in crating this product to protect against damage in transit. All interior fittings have been carefully secured and the legs are boxed and strapped inside to prevent damage. Door keys will be attached to the handle with a nylon strip. The handle is protected by an easily removable nylon netting.

You should carefully inspect your Traulsen unit for damage during delivery. If damage is detected, you should save all the crating materials and make note on the carrier's Bill Of Lading describing this. A freight claim should be filed immediately. If damage is subsequently noted during or immediately after installation, contact the respective carrier and file a freight claim. Under no condition may a damaged unit be returned to Traulsen & Co. without first obtaining written permission (return authorization).

III. INSTALLATION

III. a - <u>LOCATION</u>:
Select a proper location for your Traulsen unit, away from extreme heat or cold. Allow enough clearance between the unit and the side wall in order to make use of the door stay open feature at 120° (self-closing feature operates up to 90°). The door(s) must be able to open a minimum of 90° in order to make use of the maximum clear door width available.

III. b - <u>PACKAGING</u>:
All Traulsen units are shipped from the factory bolted to a sturdy wooden pallet and packaged in a durable cardboard container. The carton is attached to the wooden skid with the use of large staples. These should first be removed to avoid scratching the unit when lifting off the crate.

Most exterior stainless steel surfaces have a protective vinyl covering to prevent scratching during manufacturing, shipping and installation. After the unit is installed in place of service, remove and discard the covering from all surfaces.

To remove the wooden pallet, first if at all possible, we suggest that the cabinet remain bolted to the pallet during all transportation to the point of final installation. The bolts can then be removed with a 3/4" socket wrench. Avoid laying the unit on its front, side or back for removal of the pallet.

NOTE: Traulsen does not recommend laying the unit down on its front, side or back. However, if you must please be certain to allow the unit to remain in an upright position afterwards for 24 hours before plugging it in so that the compressor oils and refrigerant may settle.

III. INSTALLATION (continued)

III. c - <u>INSTALLING LEGS OR CASTERS</u>:
Adjustable 6" high legs are supplied standard for all Traulsen G-Express units. These are shipped from the factory packed inside a cardboard box which is strapped inside the cabinet to the lower shelf. Inside it should contain four (4) legs.

Casters in lieu of legs are available as an optional accessory kit for the same models. These are shipped inside a separate cardboard box. Inside it should contain four (4) casters and sixteen (16) bolts.

WARNING: THE CABINET MUST BE BLOCKED AND STABLE BEFORE INSTALLING LEGS OR CASTERS.

To install the legs or casters, first raise and block the reach-in a minimum of 7" from the floor. For installing legs, thread the legs into the threaded holes on the bottom of the cabinet (see figure 1). Be certain that all legs are tightly secured. When the unit is set in its final position, it is important for proper operation that the unit be level. The legs are adjustable for this purpose, turn the bottom of the leg counterclockwise to raise it, clockwise to lower it. Level the unit from front to back as well as side to side in this manner, using a level placed in the bottom of the cabinet.

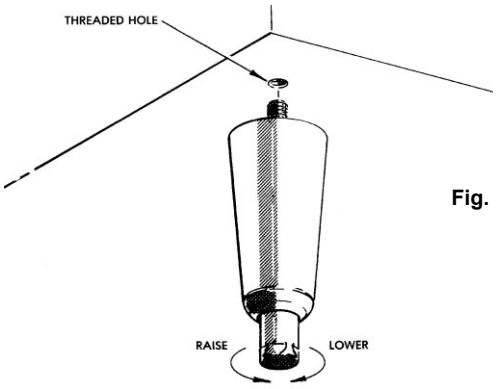


Fig. 1

Please note that Traulsen units are not designed to be moved while on legs. If the unit requires moving, a pallet jack or forklift should be used to prevent damage. For installing casters, the casters are "plate" type, and require the use of four (4) bolts each to secure them firmly to the cabinet bottom at each corner (see figure 2). The caster bolts are tightened using a 1/2" socket wrench.

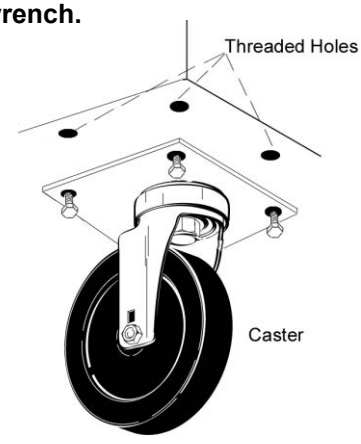


Fig. 2

III. d - SHELF PINS:
The unit is supplied with shelves and shelf pins installed. Check all shelf pins to assure they are tightened down as they may have come loose during shipping. Rotate the pins clockwise until they are secured against the side of the cabinet.

III. e - REMOVING THE DOORS & HARDWARE:
In order to fit through narrow (less than 35") doorways, it may be sometimes be necessary to remove the door(s), and/or hinges. To remove any solid door, begin by removing the plug at the bottom of the top hinge. Inside the hinge there is a small screw which secures the door in place. Remove this with a flat head screwdriver and the door can then be lifted off the hinge (see figure 3).

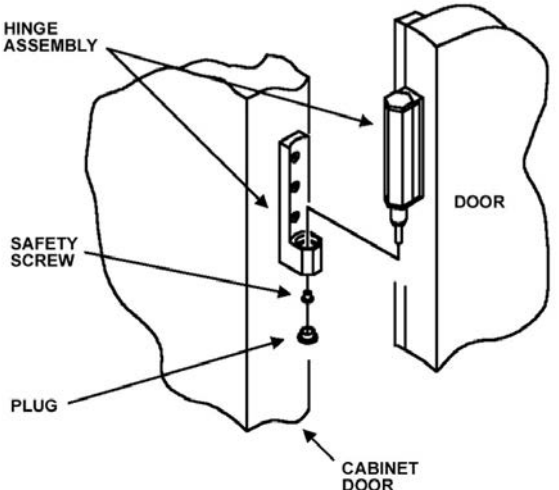


Fig. 3

After removing the door, it is now necessary to remove the hinge assembly and hardware from the door itself.

To remove the door portion of the hinge from the door, lift off the hinge cover and then remove the three Phillips head screws which secure the hinge in place on the door (see figure 4).

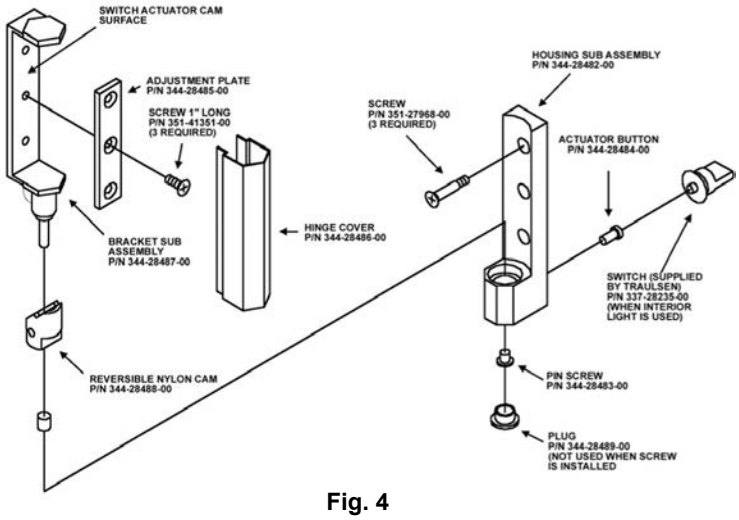


Fig. 4

III. e - REMOVING THE DOORS & HARDWARE (cont'd):
If it is also necessary to remove the hinge hardware from the cabinet as well, begin by removing the three Phillips head screws which hold it in place. Set these components aside for later reassembly (see figure 4).

NOTE: All solid door units include a microswitch for controlling the interior lighting in the top hinge(s). Special care should be taken to not damage the wiring for this during the hinge removal process.

The lock keeper will also need to be removed in order to reduce theroverall cabinet depth to 32".

Begin by removing the two (2) Phillips head screws which secure the lock keeper actuator to the lock keeper bracket.

Next remove the lock keeper bracket by removing the two (2) flat head screws which secure it in place. Set these components aside for later reassembly.

To re-install the door and/or hinges, please reverse the appropriate sections of the preceding procedure.

III. f - CORD & PLUG:
Most self-contained models are supplied with a cord & plug attached. It is shipped coiled at the top of the cabinet, secured by a nylon strip. For your safety and protection, all units supplied with a cord and plug include a special three-prong grounding plug on the service cord. Select only a dedicated electrical outlet with grounding plug for power source. NOTE: Do not under any circumstances, cut or remove the round grounding prong from the plug, or use an extension cord.

III. g - POWER SUPPLY:
The supply voltage should be checked prior to connection to be certain that proper voltage for the cabinet wiring is available (refer to the serial tag to determine correct unit voltage). Make connections in accordance with local electrical codes. Use qualified electricians.

Use of a separate, dedicated circuit is required. Size wiring to handle indicated load and provide necessary overcurrent protector in circuit (see amperage requirements on the unit's serial tag).

III. h - WIRING DIAGRAM:
Refer to the wiring diagram for any service work performed on the unit. Should you require one, please contact Traulsen Service at (800) 825-8220, and provide the model and serial number of the unit involved.

III. i - CLEARANCE:
In order to assure optimum performance, the condensing unit of your Traulsen unit MUST have an adequate supply of air for cooling purposes. Therefore, the operating location must either have a minimum of 12" clearance overhead of the condensing unit or allow for unrestricted air flow at the back of the unit. Clearance of at least 12" above is required in order to perform certain maintenance tasks.

III. j - INSTALLING OPTIONAL INTERIOR KITS:
In addition to their standard interiors, G-Express models also offer the option for additional shelves or tray slides. If ordered, these are shipped as kits along with the unit, packaged in a separate cardboard box which contains all the necessary parts and hardware for on-site installation.

To install additional shelves, first remove the white plastic covers from inside the cabinet. These are located along the same vertical line as the pins already in place on the interior side walls, back and center mullion (two and three-section models). This exposes threaded holes in which you may position the new shelves. Next insert the gray plastic shelf pins into these holes and tighten by turning clockwise with your fingers. After all four pins are in place, the new shelf should be placed to rest on top of them. The unused plastic covers may be discarded or saved for future changes to the cabinet interior.

Installation of optional tray slides varies with each cabinet, and with each type of tray slide ordered. To install optional tray slides, follow the directions packaged inside the kit carton.

III. k - ON/OFF SWITCH:
An ON/OFF toggle switch for the power supply is provided. It is located on top of the unit, mounted to the side of the evaporator housing. This is shipped from the factory in the ON position.

IV. OPERATION

IV. a - REFRIGERATORS:
Both refrigerators and freezers do not require manual defrosting. During normal operation, a refrigerator continuously circulates above freezing cabinet air through the coil. A compressor "OFF" cycle occurs every hour to melt any frost which may accumulate on the coil during the compressor "ON" cycle. The control will read "dEF" when this occurs. With standard holding refrigerators, high relative humidity is also maintained to prevent dehydration of stored product.

IV. b - FREEZERS:
During normal operation, a freezer continuously circulates below freezing cabinet air through the coil. The coil requires a periodic defrosting for proper operation. This is accomplished by an automatic, time activated, temperature/time terminated, defrost program. The controller is preset at the factory for six equally spaced defrost cycles within each 24-hour period.

At the start of a freezer defrost cycle, both the compressor and evaporator fans are off. The microprocessor control will read "dEF" (see figure 5).

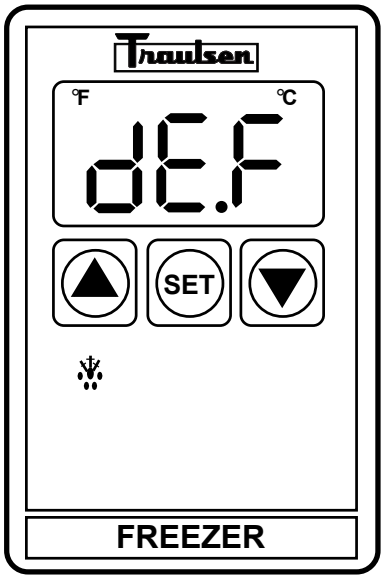


Fig. 5

The electric heater (attached to the coil) is energized. When a temperature device affixed to the coil senses 70°F (models with electric defrost), the coil is fully defrosted and the compressor operation is resumed, defrost heaters are automatically turned off. The coil fans are delayed from starting at the termination of a defrost cycle. Fan operation is automatically resumed, or they can also be started by a time or temp delay (whichever comes first). In case of temp delay, it uses the same coil sensor and starts at 32°F. The total refrigeration system operation is then resumed. During freezer defrost operation, heat is confined to the coil enclosure to prevent any significant rise in temperature within the food zone. The fan delay controls function upon termination of a defrost cycle is twofold. First, to prevent blowing warm air into the food storage area. Second, to prevent any condensation on the defrost coil from being blown into the food storage area.

The microprocessor control is set from the factory to terminate defrost at 20 minutes in the event of a sensor failure. This setting should never be tampered with, without first consulting the factory.

IV. OPERATION (continued)

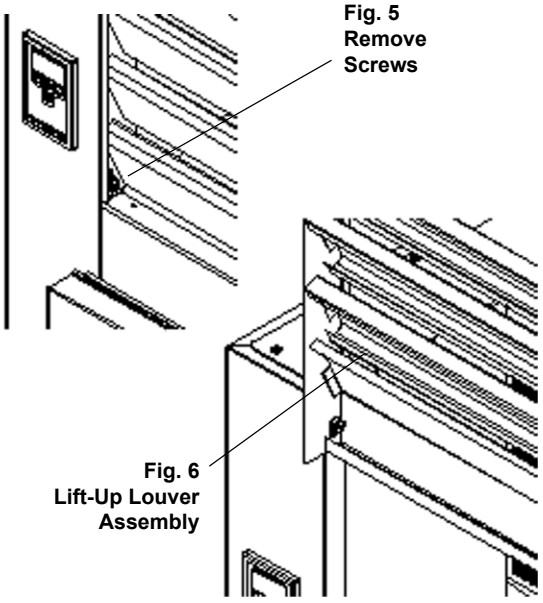
IV. d - LIGHT SWITCHES:
All G-Express models (except sliding glass door models) include a concealed light switch mounted in the top door hinge(s), which automatically activates the interior light when the door is opened. When the door is closed, the lights are not operating.

In addition, on glass door models, an exterior mounted, illuminated red switch is included for manual light control. In the ON position, the lights are illuminated whether the doors are open or not. In the OFF position, the lights are controlled by the hinge switch as described in the first paragraph.

V. CARE & MAINTENANCE

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING ANY PARTS OF THE UNIT.

V. a - CLEANING THE CONDENSER:
The most important thing you can do to insure a long, reliable service life for your Traulsen is to regularly clean the condenser coil.



The condensing unit requires regularly scheduled cleaning to keep the finned condenser clean of lint and dust accummulation. Keeping the condenser clean allows the cabinet to operate more efficiently and use less energy. To clean the condenser, first disconnect electrical power to the cabinet and lift up the front louver assembly. To lift this, remove the two screws located on both sides at the bottom of the louver assembly (see figure 5). Once the screws are removed, the panel can be pivoted upwards allowing full access to the front facing condenser (see figure 6).

V. CARE & MAINTENANCE (cont'd)

V. a - CLEANING THE CONDENSER (cont'd):
Vacuum or brush any dirt, lint or dust from the finned condenser coil, the compressor and other cooling system parts. If significant dirt is clogging the condenser fins, use compressed air to blow this clear. Care should be taken not to bend any of the condenser fins, as this will reduce performance and compressor life. Lower louver assembly and replace screws to hold it in place.

V. b - HINGE REPLACEMENT:
Both the door and hinge can be easily removed from the cabinet. To remove the door, remove the plug at the bottom of the top hinge. Inside the hinge there is a small screw which secures the door in place. Remove this with a flat head screwdriver and the door can then be lifted off the hinge. To remove the door portion of the hinge from the door, lift off the hinge cover and then remove the three Phillips head screws which secure the hinge in place on the door. To remove the cabinet portion of the hinge, remove the three Phillips head screws which hold it in place. On solid door units, the top hinge(s) contains a microswitch for controlling the interior lighting.

To reassemble the hinge reverse the previous procedure.

V. c - REPLACING THE GASKETS:
To remove the gasket to be replaced, grasp it firmly by one corner and pull it out. Before attempting to install a new gasket, both the unit and the gasket itself must be at room temperature. Insert the four corners first by using a rubber mallet (or hammer with a block of wood). After the corners are properly inserted, work your way towards the center from both ends by gently hitting with a mallet until the gasket is completely seated in place (see figure 7 for proper gasket placement).

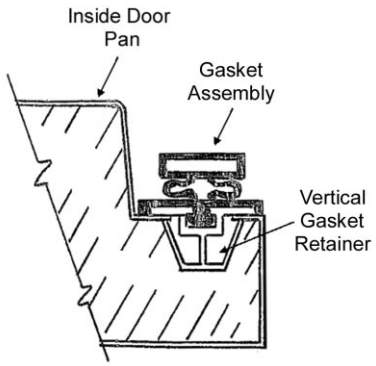


Fig. 7

NOTE: The gasket may appear too large, but if it is installed as indicated above it will slip into place.

V. CARE & MAINTENANCE (cont'd)

V. d - CLEANING THE EXTERIOR:
Exterior stainless steel should be cleaned with warm water, mild soap and a soft cloth. Apply with a dampened cloth and wipe in the direction of the metal grain.

Avoid the use of strong detergents and gritty, abrasive cleaners as they may tend to mar and scratch the surface. Do NOT use cleansers containing chlorine, this may promote corrosion of the stainless steel.

Care should also be taken to avoid splashing the unit with water, containing chlorinated cleansers, when mopping the floor around the unit.

For stubborn odor spills, use baking soda and water (mixed to a 1 TBSP baking soda to 1 pint water ratio).

V. e - CLEANING THE INTERIOR:
For cleaning anodized aluminum interiors, the use of baking soda as described in section "V. d" is recommended. Use on breaker strips as well as door gaskets. All interior fittings are removable without tools to facilitate cleaning.

V. f - ADJUSTING THE SHELVES:
For shelves mounted on pins, first select the desired location and remove the white plastic covers in the interior back and sides by rotating them counter-clockwise. Remove the shelf pins by rotating them counter-clockwise. Install the pins in the desired location by rotating clockwise. Make sure the pin is securely tightened down. Do not over tighten. Slide the shelf into its new position, and replace the white plastic covers into the holes vacated by the shelf pins.

VI. OTHER

VI. a - SERVICE INFORMATION:
Before calling for service, please check the following:

VI. OTHER (cont'd)

VI. a - SERVICE INFORMATION (cont'd):

- ☐ **Is the electrical cord plugged in?**
- ☐ **Is the fuse OK or circuit breaker on?**
- ☐ **Is the power switch "ON"?**

If after checking the above items and the unit is still not operating properly, please contact an authorized Traulsen service agent. A complete list of authorized service agents was provided along with your Traulsen unit. If you cannot locate this, you may also obtain the name of a service agent from the Tech Service page of our website: www.traulsen.com.

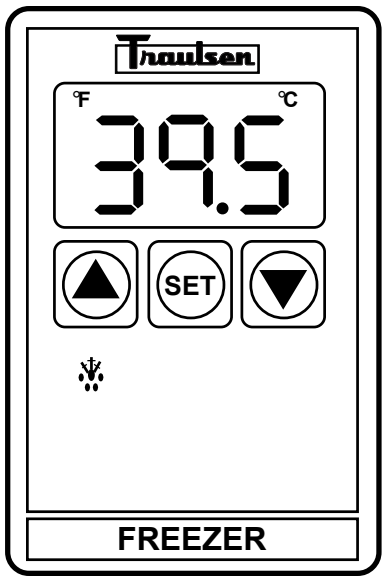
If service is not satisfactory, please contact our in-house service department at:

Traulsen
4401 Blue Mound Road
Fort Worth, TX 76106
(800) 825-8220

Traulsen reserves the right to change specifications or discontinue models without notice.

VI. b - SPARE PARTS:
Spare or replacement parts may be obtained through a parts supplier or one of our authorized service agents. A complete list of authorized service agents accompanies this manual and is also posted on our company's official website @ www.traulsen.com.

VI. c - WARRANTY REGISTRATION:
For your convenience, the warranties on your new Traulsen unit may be registered with us by one of two methods. Completing the enclosed warranty card (shipped with the unit), or by filling out the on-line warranty registration form located on the Technical Service page of our website (www.traulsen.com).



VII. MICROPROCESSOR CONTROL

Your new Traulsen G-Series Refrigerator or Freezer is equipped with an electronic microprocessor control, which precisely regulates operation. It is supplied from the factory completely ready for use. See pages 6 thru 15 for more information.

VIII. a - MICROPROCESSOR CONTROL FEATURES:

Internal Time Clock

- **Eliminates defrost time clock (refrigerator and freezer models only).**
- **Will display only at "Start Up".**
- **Battery Back-up (eliminates the need to reset the control after a power failure).**
- **See "Setting The 24-Hour Clock" on Page 11. (Also required at "Start Up")**
- **Will automatically update for Daylight Savings Time. See "Setting Daylight Savings Time" on page 12.**

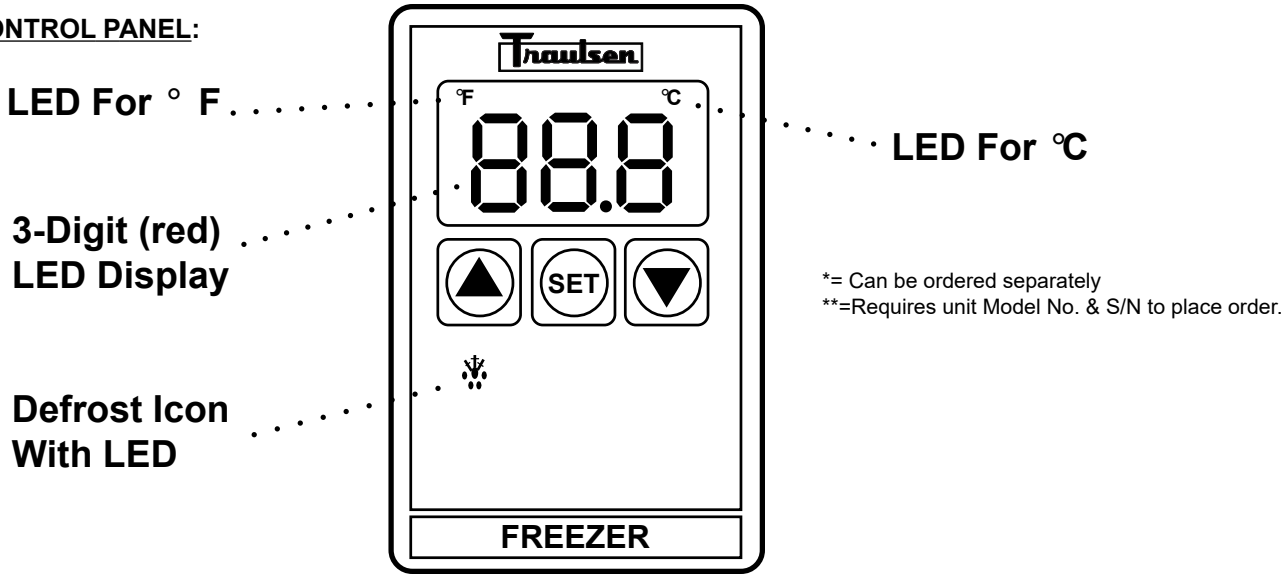
VII. MICROPROCESSOR CONTROL (continued)

VII. a - MICROPROCESSOR CONTROL FEATURES (cont'd):
Water Resistant Housing
The digital controller is water resistant not only from the face of the control, but also from the rear of the housing.

Parameter/Service Levels
• See "Customer/Service Parameters" on Page 8 - 9.

Defrost Lockouts - See "Setting Defrost Lockouts" on page 14
• Customers can set up to 4 different defrost lockout periods. The lockout prevents the unit from going into a defrost cycle during peak kitchen use. Note: The 24-hour clock must be set for this feature to operate correctly.

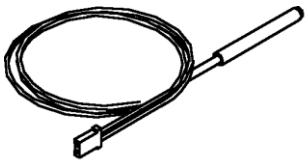
VII. b - CONTROL PANEL:



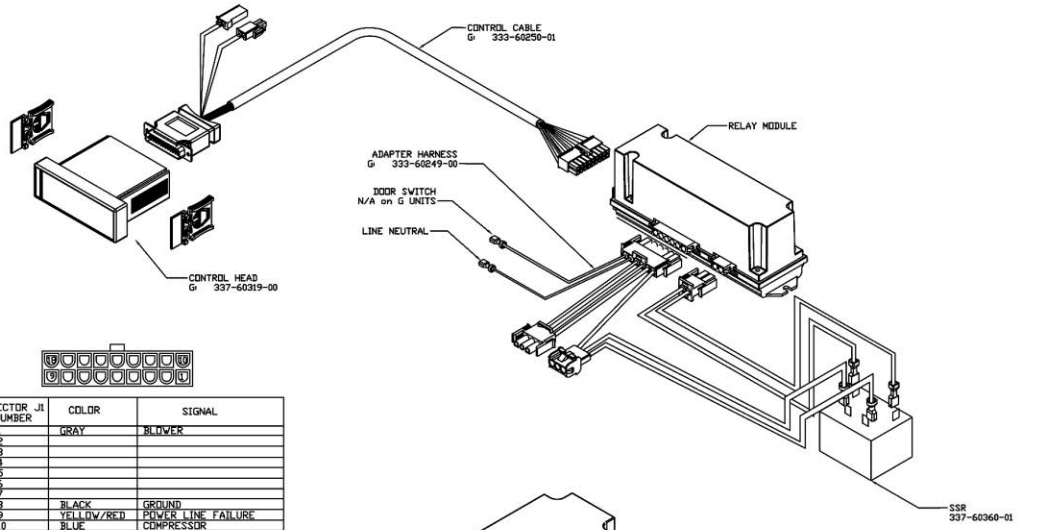
*= Can be ordered separately
**=Requires unit Model No. & S/N to place order.

VII. c - PARTS ASSEMBLY:

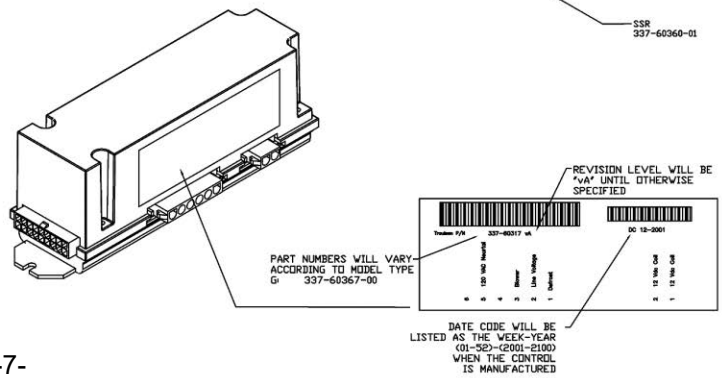
COIL SENSOR*
337-60071-02
(freezer models only)



CABINET SENSOR*
337-60069-02



CONNECTOR J1 PIN NUMBER	COLOR	SIGNAL
1	GRAY	BLOWER
2		
3		
4		
5		
6		
7		
8	BLACK	GROUND
9	YELLOW/RED	POWER LINE FAILURE
10	BLUE	COMPRESSOR
11	PURPLE	DEFROST
12		
13		
14	ORANGE	5 VDC FROM CONTROLLER
15		
16		
17	RED	12 VDC TO CONTROLLER
18		



VII. MICROPROCESSOR CONTROL (continued)

VII. d - NOTES TO THE USER:

You only have 20-30 seconds between button pushes. If you take longer than 30 seconds, the controller will revert back to displaying the cabinet temperature.If you enter the wrong security code, the controller will revert back to displaying the cabinet temperature. You can exit the parameters at any time by waiting 20-30 seconds for the control to return to normal operation.

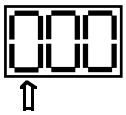
VII. e - ENTER THE CUSTOMER ACCESS:

This is required to set any of the control parameters.

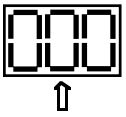
Use the security code "0, A, 1"  and the following instructions:

Press the set button  . The display will read  Customer/Service Access.

Press the set button  .

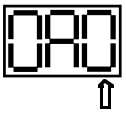
The display will show three zeros with the left zero flashing  .

Press the set button  .

The display will show three zeros with the center zero flashing  .

Press the down arrow key  to sequence through F, E, d, C, b, A, 9, 8, 7,…etc.

When you reach "A" press set  .

The display will show "zero, A, zero" with the right zero flashing  .

Press the up arrow key  to sequence through 1, 2, 3, 4, 5, 6, 7, 8, 9, A, b,…etc.

When you reach "1" press set  .

The display will read  Thermostat Set Point High.

You are now in the **CUSTOMER / SERVICE PARAMETERS.**

VII. MICROPROCESSOR CONTROL (continued)

VII. f - CUSTOMER SERVICE PARAMETERS:

Listed below are the available parameters in the order they appear, using the down arrow key on the controller. You can use either the up or down arrow keys to scroll through the options.

 Thermostat Set Point High*

 Thermostat Set Point Low

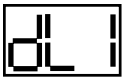
 Temperature Scale

 Time (24-hour clock)

 Date (month - day - year)

 Daylight Savings

 Start Manual Defrost

 Defrost Lockout 1

 Defrost Lockout 2

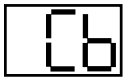
 Defrost Lockout 3

 Defrost Lockout 4

 Room Temperature Offset

 Evaporator Coil Sensor Temperature

 Dewpoint Compensation Factor
(n/a on G-Series models)

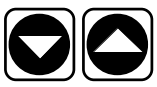
 Cabinet Air Temperature

VII. g - ADJUSTING THE THERMOSTAT SET POINT HIGH:

This parameter sets the high point of the desired cabinet temperature range. Typically, freezers will range from -3°F to 0°F (-19°C to -18°C) and refrigerators will range from 36°F to 40°F (2°C to 4°C) for this parameter setting. This parameter is preset at the factory and does not have to be adjusted unless the customer chooses to do so. Note: Set Point Low and Set Point High **cannot** be set to the same temperature. There will be at least 1-2 degree difference between the two settings.

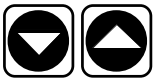
Follow the instructions to enter the customer access code on page 8. When the control

display reads  Thermostat Set Point High. Press the set button  .

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button  .

The display will then read  Thermostat Set Point High.

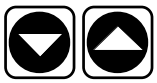
You can use the up or down arrow keys to scroll to the next parameter 

or wait 30 seconds for the control to return to normal operation.

VII. h - <u>ADJUSTING THE THERMOSTAT SET POINT LOW</u>:

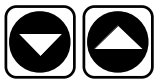
This parameter sets the low point of the desired cabinet temperature range. Typically, freezers will range from -6°F to -4°F (-21°C to -20°C) and refrigerators will range from 32°F to 34°F (0°C to 1°C) for this parameter setting. This parameter is preset at the factory and does not have to be adjusted unless the customer chooses to do so. Note: Set Point Low and Set Point High **cannot** be set to the same temperature. There will be at least 1-2 degree difference between the two settings.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Thermostat Set Point Low. Press the set button  .

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button  .

The display will then read  Thermostat Set Point Low.

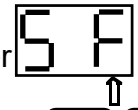
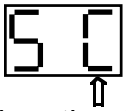
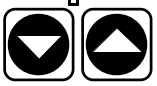
You can use the up or down arrow keys to scroll to the next parameter 

or wait 30 seconds for the control to return to normal operation.

VII. i - <u>Changing The Temperature Scale</u>:

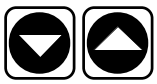
The temperature scale determines if the temperature displayed will be in degrees Fahrenheit or degrees Celsius.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Temperature Scale. Press the set button  .

The display will start with the current setting either  for degrees Fahrenheit or  for degrees Celsius. Use the arrow keys  to toggle between the options.

When the display shows the scale you want press the set button  .

The display will then read  Temperature Scale.

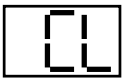
You can use the up or down arrow keys  to scroll to the next parameter

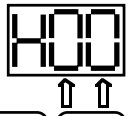
or wait 30 seconds for the control to return to normal operation.

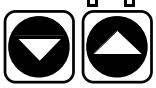
VII. j - <u>SETTING THE 24-HOUR CLOCK</u>:

The internal timeclock must be set in order for the data storage memory to correctly log events and to allow any defrost lock out to occur at the correct time of day. If the clock is not set, the control assumes the time is 12 a.m. at the time power is supplied to the unit. The hours on a 24-hour timeclock read the following way:

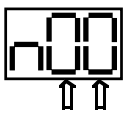
H01 = 1:00 a.m.	H07 = 7:00 a.m.	H13 = 1:00 p.m.	H19 = 7:00 p.m.
H02 = 2:00 a.m.	H08 = 8:00 a.m.	H14 = 2:00 p.m.	H20 = 8:00 p.m.
H03 = 3:00 a.m.	H09 = 9:00 a.m.	H15 = 3:00 p.m.	H21 = 9:00 p.m.
H04 = 4:00 a.m.	H10 = 10:00 a.m.	H16 = 4:00 p.m.	H22 = 10:00 p.m.
H05 = 5:00 a.m.	H11 = 11:00 a.m.	H17 = 5:00 p.m.	H23 = 11:00 p.m.
H06 = 6:00 a.m.	H12 = 12:00 p.m.	H18 = 6:00 p.m.	H24 = 12:00 a.m.

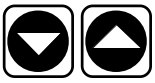
Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Clock. Press the set button  .

The display will show  Hours. The right two numbers will be flashing.

Use the arrow keys  to set the hour.

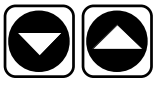
When the correct hour is displayed, press the set button  .

The display will show  Minutes. The right two numbers will be flashing.

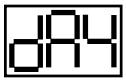
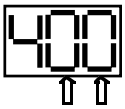
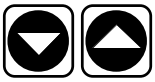
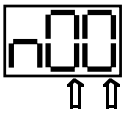
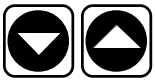
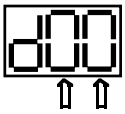
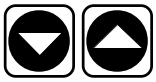
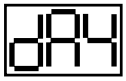
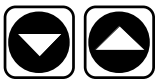
Use the arrow keys to set the minutes  .

When the correct minutes are displayed, press the set button  .

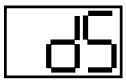
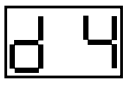
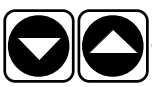
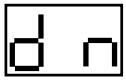
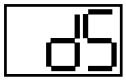
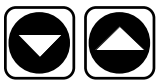
The display will then read  Clock.

You can use the up or down arrow keys  to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.

VII. k - SETTING THE DATE:

The date must be set in order for the data storage memory to correctly log events. Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point High, press the down arrow key  until the control display reads  Date. Press the set button  . The display will show  (year). The right two numbers will be flashing. Press the arrow keys  to set the year. When the correct year is displayed, press the set button  . The display will show  (month). The right two numbers will be flashing. Use the arrow keys  to set the month. When the correct month is displayed, press the set button  . The display will show  (day). The right two numbers will be flashing. Press the arrow keys  to set the day. When the correct day is displayed, press the set button  . The display will then read  Date. You can use the up or down arrow keys  to scroll to the next parameter, or wait 30 seconds for the control to return to normal operation.

VIII. l - SETTING DAYLIGHT SAVINGS TIME:

This parameter is preset at the factory to automatically adjust the 24-hour clock for Daylight Savings Time. Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point High, press the down arrow key  until the display reads  Daylight Savings Time. Press the set button  . The display will show  Daylight Savings Time (Yes, automatically adjust for Daylight Savings Time). For "YES," press the set button  , for "NO" press the up or down arrow key  . The display will read  Daylight Savings Time (no). Press the set button  . The display will read  Daylight Savings Time. You can press the the up or down arrow keys  to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.

VII. m - <u>STARTING A MANUAL DEFROST CYCLE</u>:

This parameter allows a service technician to start a defrost cycle at any time. This parameter will override any lockout settings.

Follow the instructions to enter the customer access code on page 8. When the control displays SPH Thermostat Set High, press the down arrow key until the control display reads Sd Start Manual Defrost.

Press the set button SET .

The display will show oFF (OFF).

Press either arrow key (ON).

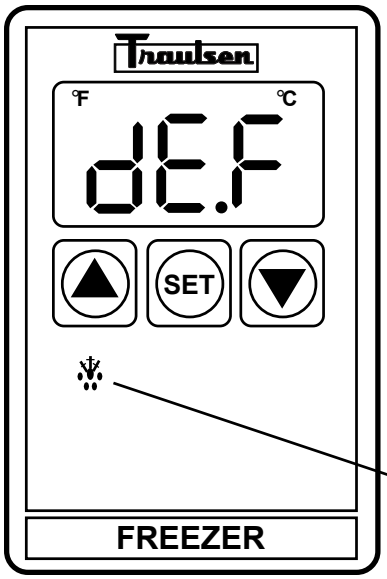
The display will show on.

Press the set button SET.

The display will then read Sd Start Manual Defrost.

You can use the up or down arrow keys to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.



The defrost icon will be lit,

and the display will read

dEF when the unit is in defrost.

DEFROST ICON

NOTE: Traulsen refrigerator units also have an off-cycle defrost once an hour, at which time the control will read dEF . This defrost cycle is time or temperature terminated and generally lasts from 3 - 10 minutes in duration (time terminated only on refrigerator models).

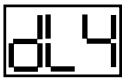
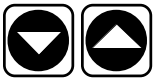
VII. n - <u>SETTING THE DEFROST LOCKOUTS</u>:

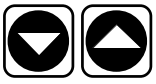
The defrost lockout parameters allow the customer to prevent the unit from going into a defrost cycle for two hours during a set timeframe. Customers can set up to four defrost lockout parameters. They are all programmed the same way. The parameters will be set for the time the lockout is to start. The controller automatically calculates 2 hours from that setting. The options are similar to the 24-hour clock settings and are in 30-minute increments. Each of the lockout parameters covers 6 hours of the 24-hour clock. Note: The 24-hour clock must be set for this feature to operate at the correct time of day. See **"Setting the 24-Hour Clock"** on page 11.

dL 1	dL2	dL3	dL4
OFF	OFF	OFF	OFF
020 = 2:00 a.m.	080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.
023 = 2:30 a.m.	083 = 8:30 a.m.	143 = 2:30 p.m.	203 = 8:30 p.m.
030 = 3:00 a.m.	090 = 9:00 a.m.	150 = 3:00 p.m.	210 = 9:00 p.m.
033 = 3:30 a.m.	093 = 9:30 a.m.	153 = 3:30 p.m.	213 = 9:30 p.m.
040 = 4:00 a.m.	100 = 10:00 a.m.	160 = 4:00 p.m.	220 = 10:00 p.m.
043 = 4:30 a.m.	103 = 10:30 a.m.	163 = 4:30 p.m.	223 = 10:30 p.m.
050 = 5:00 a.m.	110 = 11:00 a.m.	170 = 5:00 p.m.	230 = 11:00 p.m.
053 = 5:30 a.m.	113 = 11:30 a.m.	173 = 5:30 p.m.	233 = 11:30 p.m.
060 = 6:00 a.m.	120 = 12:00 p.m.	180 = 6:00 p.m.	240* = 12:00 a.m.
063 = 6:30 a.m.	123 = 12:30 p.m.	183 = 6:30 p.m.	243* = 12:30 a.m.
070 = 7:00 a.m.	130 = 1:00 p.m.	190 = 7:00 p.m.	010 = 1:00 a.m.
073 = 7:30 a.m.	133 = 1:30 p.m.	193 = 7:30 p.m.	013 = 1:30 a.m.
080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.	020 = 2:00 a.m.

* Denotes not available.

A lockout cannot be programmed to start at 12:00 a.m. or 12:30 a.m. due to conflicts with other internal programs. The defrost lockouts cannot be programmed to run back-to-back. For example, if dL1 is set to 080, then a defrost cycle would be locked out from 8:00 a.m. to 10:00 a.m. Because of the dL1 setting the dL2 parameter would not let the user choose a lockout start time before 10:30 a.m. All lockouts are preset at the factory to OFF.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control the control display reads    or  . Press the set button  . The display will show  Off. Press the arrow keys  to set the start time. When the correct time is displayed, press the set button  . The display will then read  Thermostat Set Point High.

You can press the up or down arrow keys  to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (continued)

VII. o - ADJUSTING THE ROOM TEMPERATURE OFFSET:

The room temperature offset parameter allows a service technician or end user the ability to have the display show a temperature that is within three degrees of the actual temperature being read by the cabinet air sensor. This allows for continuity of reading between different temperature reading devices. (i.e.: thermistor Vs thermocouple Vs handheld thermometer) This parameter is preset at the factory to "0" or no offset.

Follow the instructions to enter the customer access code on page 8. When the control displays SPH Thermostat Set High, press the down arrow key until the control display reads rO Room Temperature Offset. Press the set button SET. Use the arrow keys to adjust the offset to your desired setting. When the display shows the offset you want press the set button SET. The display will then read rO Room Temperature Offset. You can use the up or down arrow keys to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.

VII. p - VIEWING SENSOR TEMPERATURES:

These parameters allow a service technician or customer to view the temperature of all sensors within the unit. The temperatures cannot be adjusted.

Follow the instructions to enter the customer access code on page 8. When the control displays Thermostat Set Point High SPH, press the DOWN arrow key unit the display reads Evaporator Coil Sensor EL or Cabinet Air Cb or press the SET button SET. The display will read Thermostat Set Point High SPH.

Press the UP or DOWN arrow keys to scroll through the parameters or wait 30 seconds for the control to return to normal operation.

VIII. TROUBLE SHOOTING GUIDE

FIND YOUR PROBLEM HERE	REMEDY
1. Condensing unit fails to start.	a. Check if cord & plug has been disconnected. b. Check control temperature setting.
2. Condensing unit operates for prolonged periods or continuously.	a. Are doors closing properly? b. Dirty condenser or filter. Clean properly. c. Evaporator coil iced. Needs to defrost. See instructions for setting a manual defrost cycle on page 13. d. Shortage of refrigerant, call service.
3. Food compartment is too warm.	a. Check door(s) and gasket(s) for proper seal b. Perhaps a large quantity of warm food has recently been added or the door was kept open for a long period of time, in both cases, allow adequate time for the cabinet to recover its normal operating temperature. c. Control setting too high, readjust per instructions on page 9. d. Check that condensing coil is clean.
4. Food compartment is too cold.	a. Perhaps a large quantity of very cold or frozen food has recently been added. Allow adequate time for the cabinet to recover its normal operating temperature. b. Adjust the control to a warmer setting, see page 10.
5. Condensation on the exterior surface.	a. Check door alignment and gaskets for proper seal. b. Condensation on the exterior surface of the unit is perfectly normal during periods of high humidity.
6. Compressor hums but does not start.	a. Call for service.
7. No Power To Unit	a. Check if cord & plug has been disconnected. b. Check power supply breaker. c. Check ON/OFF switch.

IX. SPARE & REPLACEMENT PARTS LISTING

	G100/G110	G120XX	G200/G210	G220XX	G300/G320	G313XX/G310XX
	1 SEC REF	1 SEC FRZ	2 SEC REF	2 SEC FRZ	3 SEC REF	3 SEC FRZ
FULL HEIGHT SOLID DOOR	200-60142-00	200-60142-00	200-60142-00	200-60142-00	200-60142-00	200-60142-00
FULL HEIGHT GLASS DOOR	200-42192-00	N/A	200-42192-00	N/A	200-42192-00	N/A
HALF HEIGHT SOLID DOOR[1]	200-60140-00	200-60140-00	200-60140-00	200-60140-00	200-60140-00	200-60140-00
HALF HEIGHT GLASS DOOR[1]	200-60141-00	N/A	200-60141-00	N/A	200-60141-00	N/A
HALF HEIGHT SOLID DOOR[2]	200-60140-01	200-60140-01	200-60140-01	200-60140-01	200-60140-01	200-60140-01
HALF HEIGHT GLASS DOOR[2]	200-60141-01	N/A	200-60141-01	N/A	200-60141-01	N/A
FULL HEIGHT SOLID DOOR GASKET	341-60059-00	341-60059-00	341-60059-00	341-60059-00	341-60059-00	341-60059-00
HALF-HEIGHT SOLID DOOR GASKET	341-60060-00	341-60060-00	341-60060-00	341-60060-00	341-60060-00	341-60060-00
FULL HEIGHT GLASS DOOR GASKET	341-42090-02	N/A	341-42090-02	N/A	341-42090-02	N/A
HALF-HEIGHT GLASS DOOR GASKET	341-42090-01	N/A	341-42090-01	N/A	341-42090-01	N/A
HINGE ASSEMBLY FOR ALL DOORS	SER-28583-00	SER-28583-00	SER-28583-00	SER-28583-00	SER-28583-00	SER-28583-00
LOCKKEEPER	SER-60433-00	SER-60433-00	SER-60433-00	SER-60433-00	SER-60433-00	SER-60433-00
LOCK CYLINDER FOR ALL DOORS	346-13186-42	346-13186-42	346-13186-42	346-13186-42	346-13186-42	346-13186-42
T-42 KEY FOR ABOVE	346-28924-42	346-28924-42	346-28924-42	346-28924-42	346-28924-42	346-28924-42
EPOXY COATED SHELF (pin mounted)	340-60070-02	340-60070-02	340-60074-02	340-60074-02	See Notes[3]	See Notes[3]
SHELF MOUNTING PIN (4 req'd per shelf)	344-24759-02	344-24759-02	344-24759-02	344-24759-02	344-24759-02	344-24759-02
6" HIGH LEG (4 req'd. per unit)	344-13168-02	344-13168-02	344-13168-02	344-13168-02	344-13168-02	344-13168-02
SET OF FOUR 6" HIGH CASTERS	CK1	CK1	CK1	CK1	CK1	CK1
LOUVER ASSEMBLY	500-70002-00	500-70002-00	500-70008-00	500-70008-00	500-70011-00	500-70011-00
CABINET SENSOR	337-60069-02	337-60069-02	337-60069-02	337-60069-02	337-60069-02	337-60069-02
COIL SENSOR	337-60071-02	337-60071-02	337-60071-02	337-60071-02	337-60071-02	337-60071-02
MICROPROCESSOR CONTROLLER	CONSULT FACTORY FOR PART NUMBER					
LAMPHOLDER	333-60241-00	333-60241-00	333-60241-00	333-60241-00	333-60241-00	333-60241-00
LIGHT COVER	337-30858-00	337-30858-00	337-30858-00	337-30858-00	337-30858-00	337-30858-00
INCANDESCENT LIGHT BULB	378-29776-00	378-29776-00	378-29776-00	378-29776-00	378-29776-00	378-29776-00
HEATER FOR FULL-HEIGHT DOOR	329-60020-13	329-60020-32	329-60020-13	329-60020-32	329-60020-13	329-60020-32
HEATER FOR HALF-HEIGHT DOOR	329-60020-10	329-60020-26	329-60020-10	329-60020-26	329-60020-10	329-60020-26
DEFROST HEATER	N/A	329-60022-00	N/A	329-60021-00	N/A	329-60021-00
EVAPORATOR COIL	322-60003-00	322-60003-00	322-60003-00	322-60020-00	322-60020-00	322-60020-00
EXPANSION VALVE	325-60080-00	325-60080-16	325-60080-00	325-60080-15	325-60080-01	325-60080-02
EVAPORATOR BLOWER ASSEMBLY[4]	325-60072-02	325-60072-02	325-60071-02	325-60071-02	325-60071-02	325-60071-02
EVAPORATOR MOTOR ASSEMBLY[5]	433670	433670	433670	433670	325-60071-02	325-60071-02
EVAPORATOR MOTOR ONLY[5]	430061-2	430061-2	430061-2	430061-2	N/A	N/A
EVAPORATOR FAN BLADE[5]	433090	433090	433090	433090	N/A	N/A
EVAPORATOR MOTOR BRACKET[5]	283439	283439	283439	283439	N/A	N/A
PLUNGER SWITCH[6]	337-28235-00	337-28235-00	337-28235-00	337-28235-00	337-28235-00	337-28235-00
ON/OFF SWITCH	337-60346-00	337-60346-00	337-60346-00	337-60346-00	337-60346-00	337-60346-00
EXTERIOR LIGHT SWITCH[7]	337-20265-00	N/A	337-20265-00	N/A	337-20265-00	N/A
4 PAIRS #1 TYPE TRAY SLIDES[8]	TK1	TK1	TK1	TK1	TK1	TK1
2 PAIRS #4 TYPE TRAY SLIDES[8]	TK2	TK2	TK2	TK2	TK2	TK2
4 PAIRS UNIVERSAL TRAY SLIDES[8]	TK4	TK4	TK4	TK4	TK4	TK4
3 EPOXY COATED SHELVES[9]	SK30	SK30	N/A	N/A	SK30[10]	SK30[10]
3 EPOXY COATED SHELVES[9]	N/A	N/A	SK31	SK31	SK31[11]	SK31[11]
3 CHROME PLATED SHELVES[9]	SK30C	SK30C	N/A	N/A	SK30C[10]	SK30C[10]
3 CHROME PLATED SHELVES[9]	N/A	N/A	SK31C	SK31C	SK31C[11]	SK31C[11]
HOT GAS LOOP	326-60102-00	326-60102-00	326-60102-00	326-60099-00	326-60102-00	326-60099-00
WIRING DIAGRAM	379-60385-00	379-60385-00	379-60385-00	379-60385-00	379-60319-00	379-60338-00
REFRIGERANT	R-134a	R-404A	R-134a	R-404A	R-134a	R-404A
COMPRESSOR	AR37C1E-IAA-908	RS43C1E-IAA	AR37C1E-IAA-908	RS54C1E-CAA	RS401E-IAA	KAJB-010E-CAV
RELAY	940-0411-82	040-0102-00	940-0411-82	010-0001-80	040-0102-00	040-0001-48
START CAPACITOR	914-0038-00	014-0008-57	914-0038-00	014-0008-74	014-0008-71	014-0008-63
CONDENSOR FAN MOTOR	050-0258-10	050-0258-10	050-0258-10	050-0267-00	050-0276-00	050-0259-11
CONDENSOR FAN BLADE	083-0122-00	083-0130-00	083-0122-00	083-0133-00	083-0143-00	083-0245-08
CONDENSOR	566-1195-00	066-0336-00	566-1195-00	066-0338-00	066-0338-00	066-0226-00

NOTE

All condensing unit parts are available locally from a Copeland distributor

IX. SPARE & REPLACEMENT PARTS LISTING - CONTINUED

SPARE & REPLACEMENT PARTS LISTING NOTATIONS

1= This half half height door can be used as hinged right if mounted on top or hinged left on the bottom.
2= This half half height door can be used as hinged left if mounted on top or hinged right on the bottom.
3= Three section models use a combination of p/n 340-60074-02 in the left and right sections, and p/n 340-70-02 in the center section.
4= Part number applied to units built between August 2001 and March 2004 only.
5= Part numbers apply to units built after March 2004 only.
6= Plunger switch is mounted in hinge and used for automatic light operation.
7= Available for use with glass door models only.
8= If mounting hardware is also required, please specify model and mounting location at time of order to insure provision of correct standards.
9= These shelf kits are intended for mounting on pilasters and clips. If mounting hardware is also required, please specify model and mounting location at time of order to insure provision of correct standards.
10= Mounting of these shelves is possible in the center section only of three section models.
11= Mounting of these shelves is possible in the left and/or right sections only of three section models.

X. INDEX

XI. WARRANTY INFORMATION

STANDARD DOMESTIC WARRANTY

TRAULSEN warrants new equipment to the original purchaser, when installed within the United States against defective material and workmanship for one (1) year from the date of original installation. Under this warranty, TRAULSEN will repair or replace, at its option, including service and labor, all parts found to be defective and subject to this warranty. The compressor part is warranted for an additional four (4) years. During this period TRAULSEN will supply replacement compressor(s) if deemed defective; however, all installation, recharging, and repair costs will remain the responsibility of the owner.

This warranty does not apply to units altered from the original equipment design or to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and does not apply to food loss

THERE ARE NO ORAL, STATUTORY OR IMPLIED WARRANTIES APPLICABLE TO TRAULSEN, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. TRAULSEN SHALL HAVE NO OBLIGATION OR LIABILITY FOR CONSEQUENTIAL OR SPECIAL DAMAGES, GROWING OUT OF OR WITH RESPECT TO THE EQUIPMENT OR ITS SALE, OPERATION OR USE, AND TRAULSEN NEITHER ASSUMES NOR AUTHORIZES ANYONE ELSE TO ASSUME FOR IT ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE EQUIPMENT OR ITS SALE, OPERATION OR USE OTHER THAN AS STATED HEREIN.

G-SERIES MICROPROCESSOR CONTROL WARRANTY

TRAULSEN warrants to the original purchaser of the G-Series Microprocessor control when installed as part of the Refrigeration Equipment manufactured and sold by TRAULSEN, to be free of defects in material and workmanship under normal service and use for a period of one (1) year from the date of installation, not to exceed fifteen (15) months from the original date of shipment. Under this warranty statement, TRAULSEN will repair or exchange at TRAULSEN'S discretion, F.O.B. factory, any part of said control, which proves to be defective. Inspection by the TRAULSEN Service Department of parts claimed defective shall be final in determining warranty status. The warranty is to include repair or exchange of any defective In-Warranty control or part(s) of said control for:

Part(s) - Any TRAULSEN G-Series Microprocessor Control supplied part(s) found to be defective.

Labor - The labor charges from a TRAULSEN Certified Service Agent to effect the repair or exchange of the defective part(s).

"Defective Part Return" - All claimed defective part(s) must be returned to TRAULSEN for defect validation within 30 days from the date of the repair. Failure to return all claimed defective part(s) to TRAULSEN will invalidate the warranty claim, this warranty statement, and forfeit payment for those repairs effected.

This warranty does not apply to units altered from the original equipment design or to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and does not apply to food loss, and will not apply if said equipment is located outside The United States.

INTERNATIONAL COMMERCIAL WARRANTY

(for Canadian warranties see domestic US warranty)

TRAULSEN warrants to the original purchaser the Refrigeration Equipment manufactured and sold by it to be free from defects in material and workmanship under normal use and service for a period of one (1) year from date of shipment. Under this warranty, TRAULSEN will reimburse the purchaser for the replacement of any part of said equipment (excluding dryers & refrigerant gas) which then proves to be defective. This warranty does not apply to units altered from the original equipment design or to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and does not apply to food loss.

TRAULSEN'S standard warranty does not apply to Export Sales. Rather, for a period of one (1) year from date of original installation not to exceed Fifteen (15) months from date of shipment from factory, TRAULSEN:

will replace, F.O.B. factory, any defective parts normally subject to warranty.

will not cover the cost of packing, freight or labor such costs being the sole responsibility of the dealer.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED AND CONSTITUTES TRAULSEN'S FULL OBLIGATION AND LIABILITY.

HOURS OF OPERATION:
Monday thru Friday 7:30 am - 4:30 pm CST

Traulsen
Quality Refrigeration

Traulsen
4401 Blue Mound Road Fort Worth, TX 76106
Phone: (800) 825-8220 Fax-Svce: (817) 740-6757
Website: www.traulsen.com

Quality Refrigeration

OWNER'S MANUAL

Instructions for the installation, operation and maintenance of all Traulsen:

G-Series Reach-In & Pass-Thru Refrigerators*
G-Series Reach-In & Pass-Thru Hot Food Holding Cabinets
G-Series Reach-In Freezers*
G-Series Hinged Glass Door Refrigerators*

For equipment* manufactured after 10/1/2008 only.

This Traulsen unit is built to our highest quality standards. We build our refrigerators, freezers and heated cabinets this way as a matter of pride. This philosophy has made Traulsen the leader in commercial refrigeration since 1938. We thank you for your choice and confidence in Traulsen equipment and we know you will receive many years of utility from this equipment.

All Traulsen units are placed on a permanent record file with the service department. In the event of any future questions you may have, please refer to the model and serial number found on the name tag affixed to the unit. Should you need service, however, call us on our toll free number, 800-825-8220 between 7:30 a.m. and 4:30 p.m. CST, Monday thru Friday. It is our pleasure to help and assist you in every possible way.

INSTALLER
COMPLETE THE FOLLOWING INFORMATION PRIOR TO UNIT INSTALLATION

INITIAL START DATE:_____ SERIAL NO. _____

MODEL TYPE: _____

COMPANY/INDIVIDUAL NAME: _____

INSTALLER: _____

FORM NUMBER TR35748 REV. 3/09

P/N 375-60184-00

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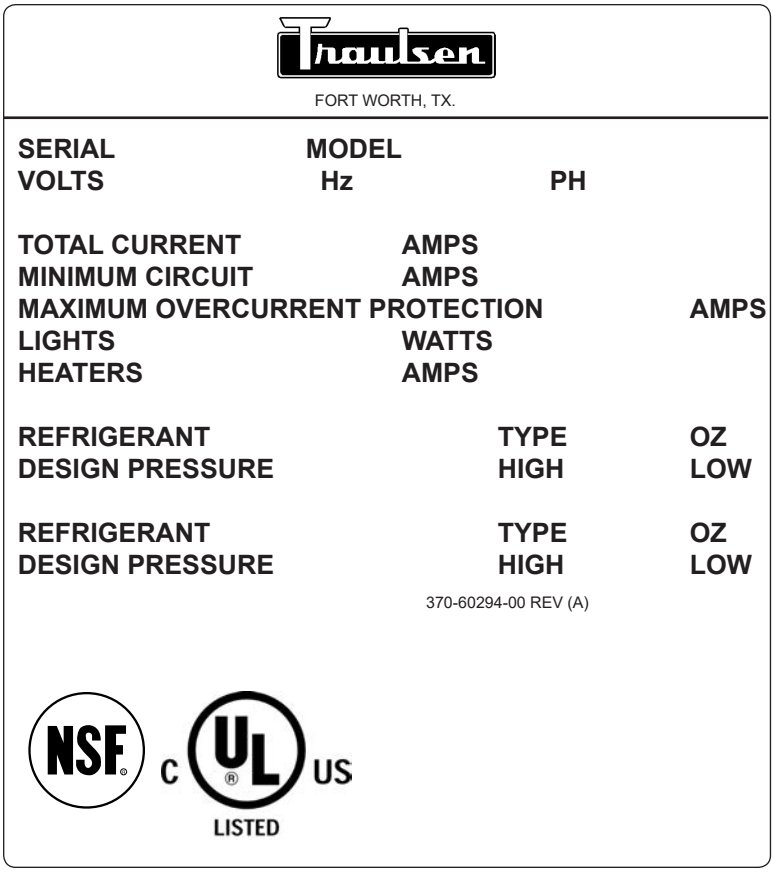


I. THE SERIAL TAG

The serial tag is a permanently affixed label upon which is recorded vital electrical and refrigeration data about your Traulsen product, as well as the model and serial number. This tag is located in the upper right interior compartment on all Traulsen G-Series refrigerator and freezer models.

READING THE SERIAL TAG

- Serial = The permanent ID# of your Traulsen
- Model = The model # of your Traulsen
- Volts = Voltage
- Hz = Cycle
- PH = Phase
- Total Current = Maximum amp draw
- Minimum Circuit = Minimum circuit ampacity
- Lights = Light wattage
- Heaters = Heater amperage (Hot Food units only)
- Refrigerant = Refrigerant type used
- Design Pressure = High & low side operating pressures and refrigerant charge
- Agency Labels = Designates agency listings

II. RECEIPT INSPECTION

All Traulsen products are factory tested for performance and are free from defects when shipped. The utmost care has been taken in crating this product to protect against damage in transit. All interior fittings have been carefully secured and the legs are boxed and strapped inside to prevent damage. Door keys will be attached to the handle with a nylon strip. The handle is protected by an easily removable nylon netting.

You should carefully inspect your Traulsen unit for damage during delivery. If damage is detected, you should save all the crating materials and make note on the carrier's Bill Of Lading describing this. A freight claim should be filed immediately. If damage is subsequently noted during or immediately after installation, contact the respective carrier and file a freight claim. Under no condition may a damaged unit be returned to Traulsen & Co. without first obtaining written permission (return authorization).

III. INSTALLATION

III. a - <u>LOCATION</u>:
Select a proper location for your Traulsen unit, away from extreme heat or cold. Allow enough clearance between the unit and the side wall in order to make use of the door stay open feature at 120° (self-closing feature operates up to 90°). The door(s) must be able to open a minimum of 90° in order to make use of the maximum clear door width available.

III. b - <u>PACKAGING</u>:
All Traulsen units are shipped from the factory bolted to a sturdy wooden pallet and packaged in a durable cardboard container. The carton is attached to the wooden skid with the use of large staples. These should first be removed to avoid scratching the unit when lifting off the crate.

Most exterior stainless steel surfaces have a protective vinyl covering to prevent scratching during manufacturing, shipping and installation. After the unit is installed in place of service, remove and discard the covering from all surfaces.

To remove the wooden pallet, first if at all possible, we suggest that the cabinet remain bolted to the pallet during all transportation to the point of final installation. The bolts can then be removed with a 3/4" socket wrench. Avoid laying the unit on its front, side or back for removal of the pallet.

NOTE: Traulsen does not recommend laying the unit down on its front, side or back. However, if you must please be certain to allow the unit to remain in an upright position afterwards for 24 hours before plugging it in so that the compressor oils and refrigerant may settle.

III. INSTALLATION (continued)

III. c - <u>INSTALLING CASTERS OR LEGS</u>:
A set of four (4) 6" high casters are supplied standard for all Traulsen G-Series units. These are shipped from the factory packed inside a cardboard box which is strapped inside the cabinet to the lower shelf. Inside it should contain four (4) casters and sixteen (16) bolts.

Legs in lieu of casters are available as an optional accessory kit for the same models. These are shipped inside a separate cardboard box. Inside it should contain four (4) legs.

WARNING: THE CABINET MUST BE BLOCKED AND STABLE BEFORE INSTALLING LEGS OR CASTERS.

To install the legs or casters, first raise and block the reach-in a minimum of 7" from the floo . For installing legs, thread the legs into the threaded holes on the bottom of the cabinet (see figure 1). Be certain that all legs are tightly secured. When the unit is set in its final position, it is important for proper operation that the unit be level. The legs are adjustable for this purpose, turn the bottom of the leg counterclockwise to raise it, clockwise to lower it. Level the unit from front to back as well as side to side in this manner, using a level placed in the bottom of the cabinet.

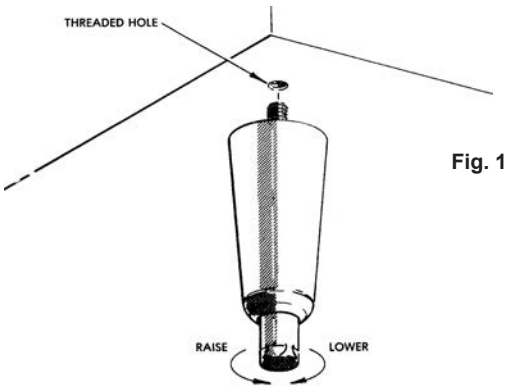


Fig. 1

Please note that Traulsen units are not designed to be moved while on legs. If the unit requires moving, a pallet jack or forklift should be used to prevent damage. For installing casters, the casters are "plate" type, and require the use of four (4) bolts each to secure them firmly to the cabinet bottom at each corner (see figure 2). The caster bolts are tightened using a 1/2" socket wrench.

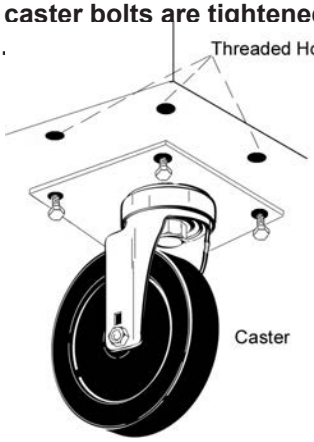


Fig. 2

III. d - SHELF PINS:
The unit is supplied with shelves and shelf pins installed. Check all shelf pins to assure they are tightened down as they may have come loose during shipping. Rotate the pins clockwise until they are secured against the side of the cabinet.

III. e - REMOVING THE DOORS & HARDWARE:
In order to fit through narrow (less than 35") doorways, it may be sometimes be necessary to remove the door(s), and/or hinges. To remove any solid door, begin by removing the plug at the bottom of the top hinge. Inside the hinge there is a small screw which secures the door in place. Remove this with a flat head screwdriver and the door can then be lifted off the hinge (see figure 3).

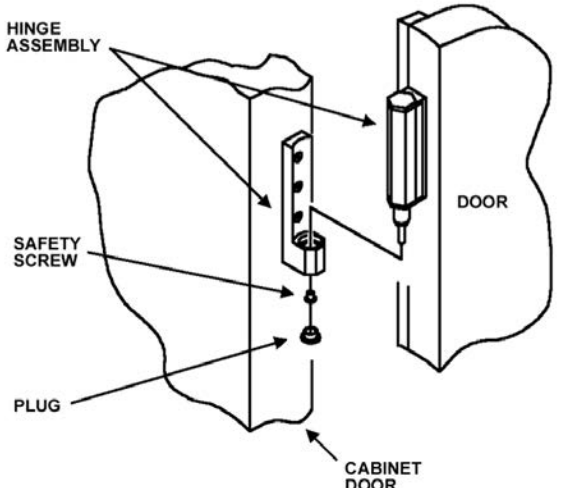


Fig. 3

After removing the door, it is now necessary to remove the hinge assembly and hardware from the door itself.

To remove the door portion of the hinge from the door, lift off the hinge cover and then remove the three Phillips head screws which secure the hinge in place on the door (see figure 4)

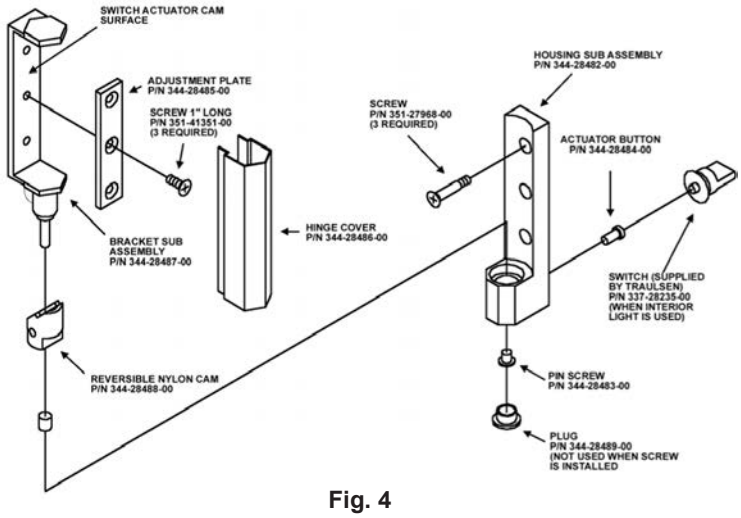


Fig. 4

III. e - REMOVING THE DOORS & HARDWARE (cont'd):
If it is also necessary to remove the hinge hardware from the cabinet as well, begin by removing the three Phillips head screws which hold it in place. Set these components aside for later reassembly (see figure 4).

NOTE: All solid door units include a microswitch for controlling the interior lighting in the top hinge(s). Special care should be taken to not damage the wiring for this during the hinge removal process.

The lock keeper will also need to be removed in order to reduce theroverall cabinet depth to 32".

Begin by removing the two (2) Phillips head screws which secure the lock keeper actuator to the lock keeper bracket.

Next remove the lock keeper bracket by removing the two (2) flat head screws which secure it in place. Set these components aside for later reassembly.

To re-install the door and/or hinges, please reverse the appropriate sections of the preceding procedure.

III. f - CORD & PLUG:
All G-Series models are supplied with a cord & plug attached. It is shipped coiled at the top of the cabinet, secured by a nylon strip. For your safety and protection, all units supplied with a cord and plug include a special three-prong grounding plug on the service cord. Select only a dedicated electrical outlet with grounding plug for power source. NOTE: Do not under any circumstances, cut or remove the round grounding prong from the plug, or use an extension cord.

III. g - POWER SUPPLY:
The supply voltage should be checked prior to connection to be certain that proper voltage for the cabinet wiring is available (refer to the serial tag to determine correct unit voltage). Make connections in accordance with local electrical codes. Use qualified electricians.

Use of a separate, dedicated circuit is required. Size wiring to handle indicated load and provide necessary overcurrent protector in circuit (see amperage requirements on the unit's serial tag).

III. h - WIRING DIAGRAM:
Refer to the wiring diagram for any service work performed on the unit. Should you require one, please contact Traulsen Service at (800) 825-8220, and provide the model and serial number of the unit involved.

III. i - CLEARANCE:
In order to assure optimum performance, the condensing unit of your Traulsen unit MUST have an adequate supply of air for cooling purposes. Therefore, the operating location must either have a minimum of 12" clearance overhead of the condensing unit or allow for unrestricted air flow at the back of the unit. Clearance of at least 12" above is required in order to perform certain maintenance tasks.

III. j - INSTALLING OPTIONAL INTERIOR KITS:
In addition to their standard interiors, G-Series models also offer the option for additional shelves or tray slides. If ordered, these are shipped as kits along with the unit, packaged in a separate cardboard box which contains all the necessary parts and hardware for on-site installation.

To install additional shelves, first remove the white plastic covers from inside the cabinet. These are located along the same vertical line as the pins already in place on the interior side walls, back and center mullion (two and three-section models). This exposes threaded holes in which you may position the new shelves. Next insert the gray plastic shelf pins into these holes and tighten by turning clockwise with your fingers. After all four pins are in place, the new shelf should be placed to rest on top of them. The unused plastic covers may be discarded or saved for future changes to the cabinet interior.

Installation of optional tray slides varies with each cabinet, and with each type of tray slide ordered. To install optional tray slides, follow the directions packaged inside the kit carton.

III. k - ON/OFF SWITCH:
An ON/OFF toggle switch for the power supply is provided. It is located on top of the unit, mounted to the side of the evaporator housing. This is shipped from the factory in the ON position.

IV. OPERATION

IV. a - REFRIGERATORS:
Both refrigerators and freezers do not require manual defrosting. During normal operation, a refrigerator continuously circulates above freezing cabinet air through the coil. A compressor "OFF" cycle occurs every hour to melt any frost which may accumulate on the coil during the compressor "ON" cycle. The control will read "dEF" when this occurs. With standard holding refrigerators, high relative humidity is also maintained to prevent dehydration of stored product.

IV. b - FREEZERS:
During normal operation, a freezer continuously circulates below freezing cabinet air through the coil. The coil requires a periodic defrosting for proper operation. This is accomplished by an automatic, time activated, temperature/time terminated, defrost program. The controller is preset at the factory for six equally spaced defrost cycles within each 24-hour period.

At the start of a freezer defrost cycle, both the compressor and evaporator fans are off. The microprocessor control will read "dEF" (see figure 5).

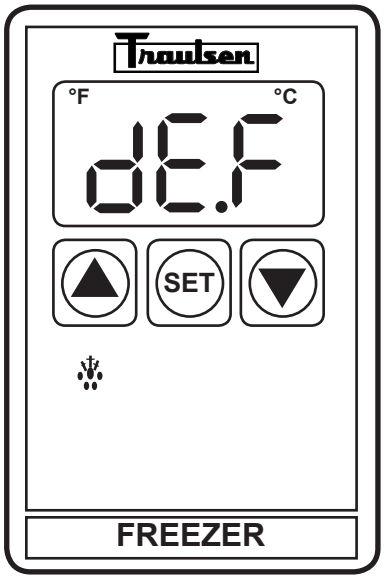


Fig. 5

The electric heater (attached to the coil) is energized. When a temperature device affixed to the coil senses 70°F (models with electric defrost), the coil is fully defrosted and the compressor operation is resumed, defrost heaters are automatically turned off. The coil fans are delayed from starting at the termination of a defrost cycle. Fan operation is automatically resumed, or they can also be started by a time or temp delay (whichever comes first). In case of temp delay, it uses the same coil sensor and starts at 32°F. The total refrigeration system operation is then resumed. During freezer defrost operation, heat is confined to the coil enclosure to prevent any significant rise in temperature within the food zone. The fan delay controls function upon termination of a defrost cycle is two-fold. First, to prevent blowing warm air into the food storage area. Second, to prevent any condensation on the defrost coil from being blown into the food storage area.

The microprocessor control is set from the factory to terminate defrost at 20 minutes in the event of a sensor failure. This setting should never be tampered with, without first consulting the factor .

IV. OPERATION (continued)

IV. c - LIGHT SWITCHES:
All G-Series models include a concealed light switch mounted in the top door hinge(s), which automatically activates the interior light when the door is opened. When the door is closed, the lights are not operating.

In addition, on hinged glass door models, an exterior mounted, illuminated red switch is included for manual light control. In the ON position, the lights are illuminated whether the doors are open or not. In the OFF position, the lights are controlled by the hinge switch as described in the first paragraph.

IV. d - SPECIAL DISPLAY OPERATING MODE:
G-Series models built during the summer of 2009 and beyond will include a special control mode which disables the external temperature display. Note that before doing so you must install an interior mounted thermometer in order to conform with local health codes.

To initiate this mode press the up and down arrows simultaneously for 1 second until the temperature display goes blank. The temperature display will remain disabled indefinately until such time as the operator wishes to restore normal operation. To do so simply repeat the process of pressing the up and down arrows simultaneously for 1 second until the temperature display illuminates.

Note that in the event power is interrupted for any reason the display will return to standard operating mode where it displays the correct cabinet air temperature.

V. CARE & MAINTENANCE

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING ANY PARTS OF THE UNIT.

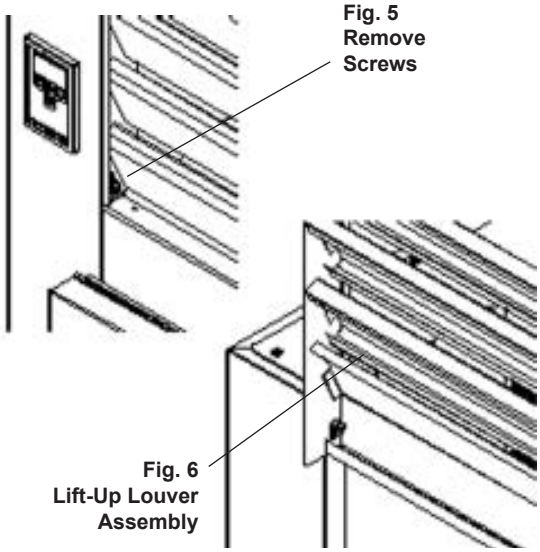
V. a - CLEANING THE CONDENSER:
The most important thing you can do to insure a long, reliable service life for your Traulsen is to regularly clean the condenser coil.

The condensing unit requires regularly scheduled cleaning to keep the finned condenser clean of lint and dust accummulation. Keeping the condenser clean allows the cabinet to operate more efficiently and use less energy. To clean the condenser, first disconnect electrical power to the cabinet and lift up the front louver assembly. To lift this, remove the two screws located on both sides at the bottom of the louver assembly (see figure 5). Once the screws are removed, the panel can be pivoted upwards allowing full access to the front facing condenser (see figure 6).

Vacuum or brush any dirt, lint or dust from the finned condenser coil, the compressor and other cooling

V. CARE & MAINTENANCE (cont'd)

V. a - CLEANING THE CONDENSER (cont'd):



system parts. If significant dirt is clogging the condenser fin , use compressed air to blow this clear. Care should be taken not to bend any of the condenser fins, as this will reduce performance and compressor life. Lower louver assembly and replace screws to hold it in place.

V. b - HINGE REPLACEMENT:
To remove the door, remove the plug at the bottom of the top hinge. Behind this is a screw which secures the door in place. Remove this with a flat head screwdriver and then lift the door off the hinge. To remove the door portion of the hinge, lift off the hinge cover and then remove the 3 x Phillips head screws which secure the hinge in place. To remove the cabinet portion of the hinge, remove the 3 x Phillips head screws which hold it in place. On solid door units, the top hinge(s) contains a switch for controlling the lights.

To reassemble the hinge reverse the procedure.

V. c - REPLACING THE GASKETS:
To remove the gasket to be replaced, grasp it firmly by one corner and pull it out. Before attempting to install a new gasket, both the unit and gasket must be at room temperature. Insert the four corners first by using a rubber mallet (or hammer with a block of wood). After the corners are properly inserted, work your way towards the center from both ends by gently hitting with a mallet until the gasket is completely seated in place (see figure 7 for proper gasket placemen‘`

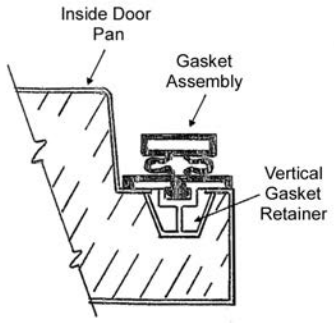


Fig. 7

V. CARE & MAINTENANCE (cont'd)

V. d - CLEANING THE EXTERIOR:
Exterior stainless steel should be cleaned with warm water, mild soap and a soft cloth. Apply with a dampened cloth and wipe in the direction of the metal grain.

Avoid the use of strong detergents and gritty, abrasive cleaners as they may tend to mar and scratch the surface. Do NOT use cleansers containing chlorine, this may promote corrosion of the stainless steel.

Care should also be taken to avoid splashing the unit with water, containing chlorinated cleansers, when mopping the floor around the unit.

For stubborn odor spills, use baking soda and water (mixed to a 1 TBSP baking soda to 1 pint water ratio).

V. e - CLEANING THE INTERIOR:
For cleaning anodized aluminum interiors, the use of baking soda as described in section "V. d" is recommended. Use on breaker strips as well as door gaskets. All interior fittings are removable without tools to facilitate cleaning.

V. f - ADJUSTING THE SHELVES:
For shelves mounted on pins, first select the desired location and remove the white plastic covers in the interior back and sides by rotating them counter-clockwise. Remove the shelf pins by rotating them counter- clockwise. Install the pins in the desired location by rotating clockwise. Make sure the pin is securely tightened down. Do not over tighten. Slide the shelf into its new position, and replace the white plastic covers into the holes vacated by the shelf pins.

VI. OTHER

VI. a - SERVICE INFORMATION:

VI. OTHER (cont'd)

VI. a - SERVICE INFORMATION (cont'd):

- ☐ **Is the electrical cord plugged in?**
- ☐ **Is the fuse OK or circuit breaker on?**
- ☐ **Is the power switch "ON"?**

If after checking the above items and the unit is still not operating properly, please contact an authorized Traulsen service agent. A complete list of authorized service agents was provided along with your Traulsen unit. If you cannot locate this, you may also obtain the name of a service agent from the Tech Service page of our website: www.traulsen.com.

If service is not satisfactory, please contact our in-house service department at:

Traulsen
4401 Blue Mound Road
Fort Worth, TX 76106
(800) 825-8220

Traulsen reserves the right to change specifications or discontinue models without notice.

VI. b - SPARE PARTS:
Spare or replacement parts may be obtained through a parts supplier or one of our authorized service agents. A complete list of authorized service agents accompanies this manual and is also posted on our company's official website @ ww .traulsen.com.

VI. c - WARRANTY REGISTRATION:
The warranties for your new Traulsen unit may be registered with us by completing the enclosed warranty card (shipped with the unit).

VII. MICROPROCESSOR CONTROL

Your new Traulsen G-Series Refrigerator or Freezer is equipped with an electronic microprocessor control, which precisely regulates operation. It is supplied from the factory completely ready for use. See pages 6 thru 15 for more information.

VIII. a - MICROPROCESSOR CONTROL FEATURES:

Internal Time Clock

- **Eliminates defrost time clock (refrigerator and freezer models only).**
- **Will display only at "Start Up".**
- **Battery Back-up (eliminates the need to reset the control after a power failure).**
- **See "Setting The 24-Hour Clock" on Page 11. (Also required at "Start Up")**
- **Will automatically update for Daylight Savings Time. See "Setting Daylight Savings Time" on page 12.**

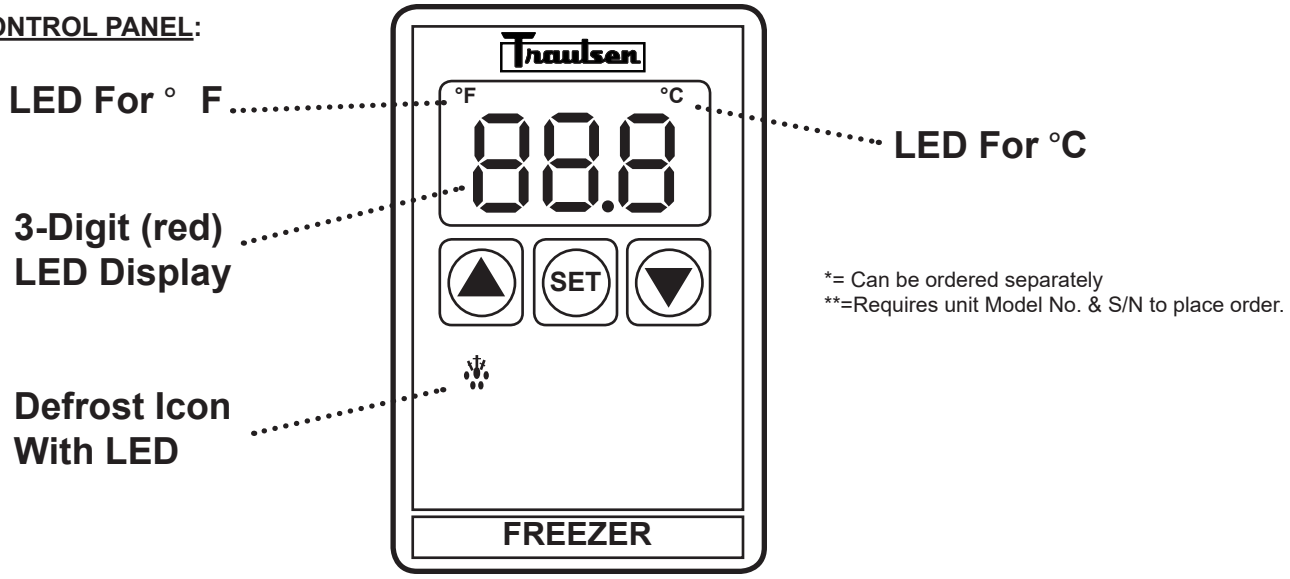
VII. MICROPROCESSOR CONTROL (continued)

VII. a - MICROPROCESSOR CONTROL FEATURES (cont'd):
Water Resistant Housing
The digital controller is water resistant not only from the face of the control, but also from the rear of the housing.

Parameter/Service Levels
• See "Customer/Service Parameters" on Page 8 - 9.

Defrost Lockouts - See "Setting Defrost Lockouts" on page 14
• Customers can set up to 4 different defrost lockout periods. The lockout prevents the unit from going into a defrost cycle during peak kitchen use. Note: The 24-hour clock must be set for this feature to operate correctly.

VII. b - CONTROL PANEL:

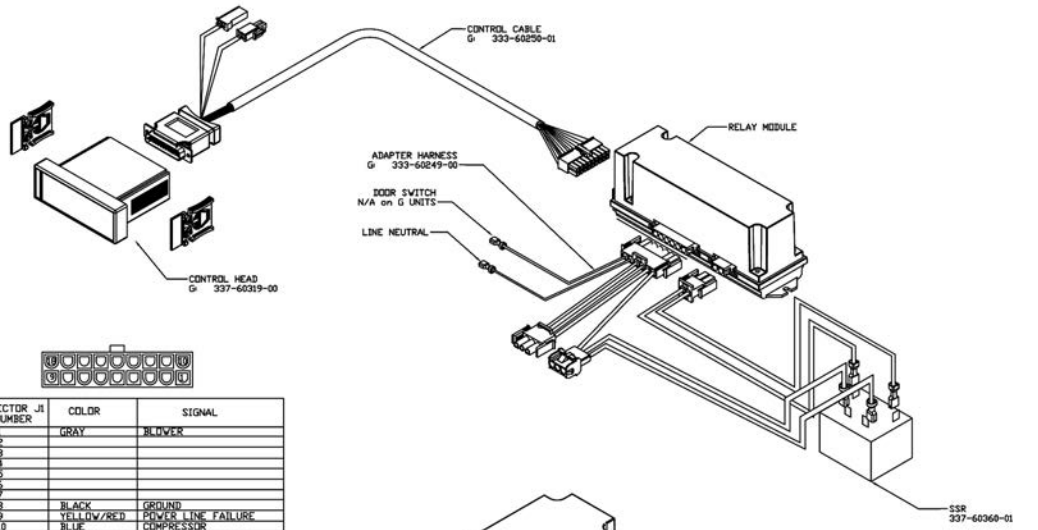


*= Can be ordered separately
**=Requires unit Model No. & S/N to place order.

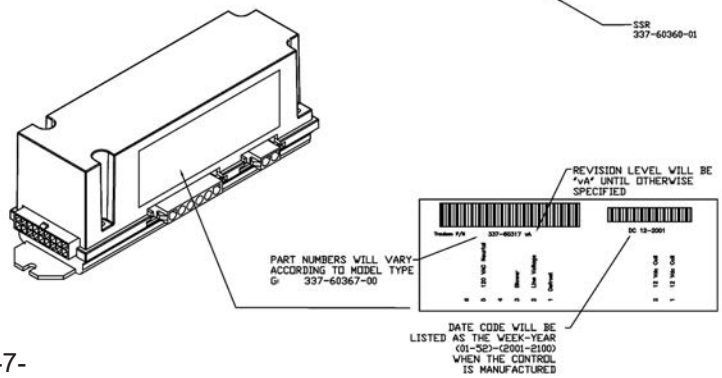
VII. c - PARTS ASSEMBLY:

COIL SENSOR*
337-60071-02
(freezer models only)

CABINET SENSOR*
337-60069-02



CONNECTOR J1 PIN NUMBER	COLOR	SIGNAL
1	GRAY	BLOWER
2		
3		
4		
5		
6		
7		
8	BLACK	GROUND
9	YELLOW/RED	POWER LINE FAILURE
10	BLUE	COMPRESSOR
11	PURPLE	DEFROST
12		
13		
14	ORANGE	5 VDC FROM CONTROLLER
15		
16		
17	RED	12 VDC TO CONTROLLER
18		



VII. MICROPROCESSOR CONTROL (continued)

VII. d - NOTES TO THE USER:

You only have 20-30 seconds between button pushes. If you take longer than 30 seconds, the controller will revert back to displaying the cabinet temperature.If you enter the wrong security code, the controller will revert back to displaying the cabinet temperature. You can exit the parameters at any time by waiting 20-30 seconds for the control to return to normal operation.

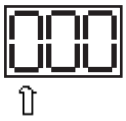
VII. e - ENTER THE CUSTOMER ACCESS:

This is required to set any of the control parameters.

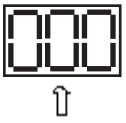
Use the security code "0, A, 1"  and the following instructions:

Press the set button  . The display will read  Customer/Service Access.

Press the set button  .

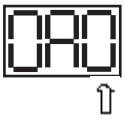
The display will show three zeros with the left zero flashin  .

Press the set button  .

The display will show three zeros with the center zero flashin  .

Press the down arrow key  to sequence through F, E, d, C, b, A, 9, 8, 7,…etc.

When you reach "A" press set  .

The display will show "zero, A, zero" with the right zero flashin  .

Press the up arrow key  to sequence through 1, 2, 3, 4, 5, 6, 7, 8, 9, A, b,…etc.

When you reach "1" press set  .

The display will read  Thermostat Set Point High.

You are now in the **CUSTOMER / SERVICE PARAMETERS.**

VII. MICROPROCESSOR CONTROL (continued)

VII. f - CUSTOMER SERVICE PARAMETERS:

Listed below are the available parameters in the order they appear, using the down arrow key on the controller. You can use either the up or down arrow keys to scroll through the options.


Thermostat Set Point High*


Thermostat Set Point Low


Temperature Scale


Time (24-hour clock)


Date (month - day - year)


Daylight Savings


Start Manual Defrost


Defrost Lockout 1


Defrost Lockout 2


Defrost Lockout 3


Defrost Lockout 4


Room Temperature Offset


Evaporator Coil Sensor Temperature


Dewpoint Compensation Factor
(n/a on G-Series models)


Cabinet Air Temperature

VII. g - ADJUSTING THE THERMOSTAT SET POINT HIGH:

This parameter sets the high point of the desired cabinet temperature range. Typically, freezers will range from -3° F to 0° F (-19° C to -18° C) and refrigerators will range from 36° F to 40° F (2° C to 4° C) for this parameter setting. This parameter is preset at the factory and does not have to be adjusted unless the customer chooses to do so. Note: Set Point Low and Set Point High **cannot** be set to the same temperature. There will be at least 1-2 degree difference between the two settings.

Follow the instructions to enter the customer access code on page 8. When the control display reads  Thermostat Set Point High. Press the set button 

.

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button 

.

The display will then read  Thermostat Set Point High.

You can use the up or down arrow keys to scroll to the next parameter 

or wait 30 seconds for the control to return to normal operation.

VII. h - <u>ADJUSTING THE THERMOSTAT SET POINT LOW</u>:

This parameter sets the low point of the desired cabinet temperature range. Typically, freezers will range from -6° F to -4° F (-21° C to -20° C) and refrigerators will range from 32° F to 34° F (0° C to 1° C) for this parameter setting. This parameter is preset at the factory and does not have to be adjusted unless the customer chooses to do so. Note: Set Point Low and Set Point High **cannot** be set to the same temperature. There will be at least 1-2 degree difference between the two settings.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Thermostat Set Point Low. Press the set button  .

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button  .

The display will then read  Thermostat Set Point Low.

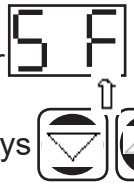
You can use the up or down arrow keys to scroll to the next parameter 

or wait 30 seconds for the control to return to normal operation.

VII. i - <u>Changing The Temperature Scale</u>:

The temperature scale determines if the temperature displayed will be in degrees Fahrenheit or degrees Celsius.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Temperature Scale. Press the set button  .

The display will start with the current setting either  for degrees Fahrenheit or  for degrees Celsius. Use the arrow keys  to toggle between the options.

When the display shows the scale you want press the set button  .

The display will then read  Temperature Scale.

You can use the up or down arrow keys  to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (continued)

VII. j - <u>SETTING THE 24-HOUR CLOCK</u>:

The internal timeclock must be set in order for the data storage memory to correctly log events and to allow any defrost lock out to occur at the correct time of day. If the clock is not set, the control assumes the time is 12 a.m. at the time power is supplied to the unit. The hours on a 24-hour timeclock read the following way:

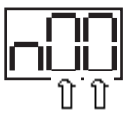
H01 = 1:00 a.m.	H07 = 7:00 a.m.	H13 = 1:00 p.m.	H19 = 7:00 p.m.
H02 = 2:00 a.m.	H08 = 8:00 a.m.	H14 = 2:00 p.m.	H20 = 8:00 p.m.
H03 = 3:00 a.m.	H09 = 9:00 a.m.	H15 = 3:00 p.m.	H21 = 9:00 p.m.
H04 = 4:00 a.m.	H10 = 10:00 a.m.	H16 = 4:00 p.m.	H22 = 10:00 p.m.
H05 = 5:00 a.m.	H11 = 11:00 a.m.	H17 = 5:00 p.m.	H23 = 11:00 p.m.
H06 = 6:00 a.m.	H12 = 12:00 p.m.	H18 = 6:00 p.m.	H24 = 12:00 a.m.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Clock. Press the set button  .

The display will show  Hours. The right two numbers will be flashing

Use the arrow keys  to set the hour.

When the correct hour is displayed, press the set button  .

The display will show  Minutes. The right two numbers will be flashing

Use the arrow keys to set the minutes  .

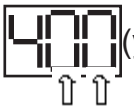
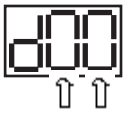
When the correct minutes are displayed, press the set button  .

The display will then read  Clock.

You can use the up or down arrow keys  to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.

VII. k - SETTING THE DATE:

The date must be set in order for the data storage memory to correctly log events. Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point High, press the down arrow key  until the control display reads  Date. Press the set button  . The display will show  (year). The right two numbers will be flashing. Press the arrow keys  to set the year. When the correct year is displayed, press the set button  . The display will show  (month). The right two numbers will be flashing. Use the arrow keys  to set the month. When the correct month is displayed, press the set button  The display will show  (day). The right two numbers will be flashing. Press the arrow keys  to set the day. When the correct day is displayed, press the set button  . The display will then read  Date. You can use the up or down arrow keys  to scroll to the next parameter, or wait 30 seconds for the control to return to normal operation.

VIII. l - SETTING DAYLIGHT SAVINGS TIME:

This parameter is preset at the factory to automatically adjust the 24-hour clock for Daylight Savings Time. Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point High, press the down arrow key  until the display reads  Daylight Savings Time. Press the set button  . The display will show  Daylight Savings Time (Yes, automatically adjust for Daylight Savings Time). For “YES,” press the set button  , for “NO” press the up or down arrow key  . The display will read  Daylight Savings Time (no). Press the set button  . The display will read  Daylight Savings Time. You can press the the up or down arrow keys  to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.

VII. m - <u>STARTING A MANUAL DEFROST CYCLE</u>:

This parameter allows a service technician to start a defrost cycle at any time. This parameter will override any lockout settings.

Follow the instructions to enter the customer access code on page 8. When the control displays SPH Thermostat Set High, press the down arrow key until the control display reads Sd Start Manual Defrost.

Press the set button SET .

The display will show oFF (OFF).

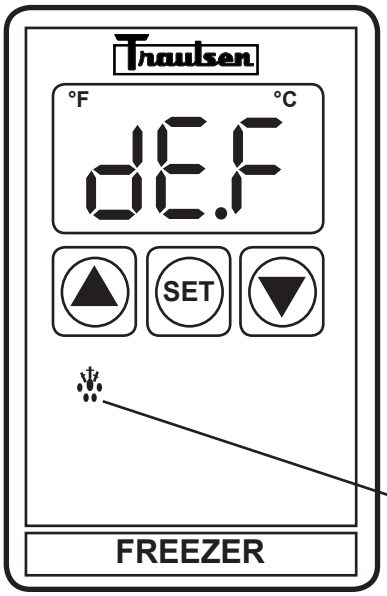
Press either arrow key (ON).

The display will show on .

Press the set button SET .

The display will then read Sd Start Manual Defrost.

You can use the up or down arrow keys to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.



The defrost icon will be lit, and the display will read dEF

DEFROST ICON

NOTE: Traulsen refrigerator units also have an off-cycle defrost once an hour, at which time the control will read dEF . This defrost cycle is time or temperature terminated and generally lasts from 3 - 10 minutes in duration (time terminated only on refrigerator models).

VII. MICROPROCESSOR CONTROL (continued)

VII. n - <u>SETTING THE DEFROST LOCKOUTS</u>:

The defrost lockout parameters allow the customer to prevent the unit from going into a defrost cycle for two hours during a set timeframe. Customers can set up to four defrost lockout parameters. They are all programmed the same way. The parameters will be set for the time the lockout is to start. The controller automatically calculates 2 hours from that setting. The options are similar to the 24-hour clock settings and are in 30-minute increments. Each of the lockout parameters covers 6 hours of the 24-hour clock. Note: The 24-hour clock must be set for this feature to operate at the correct time of day. See "**Setting the 24-Hour Clock**" on page 11.

dL 1	dL2	dL3	dL4
OFF	OFF	OFF	OFF
020 = 2:00 a.m.	080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.
023 = 2:30 a.m.	083 = 8:30 a.m.	143 = 2:30 p.m.	203 = 8:30 p.m.
030 = 3:00 a.m.	090 = 9:00 a.m.	150 = 3:00 p.m.	210 = 9:00 p.m.
033 = 3:30 a.m.	093 = 9:30 a.m.	153 = 3:30 p.m.	213 = 9:30 p.m.
040 = 4:00 a.m.	100 = 10:00 a.m.	160 = 4:00 p.m.	220 = 10:00 p.m.
043 = 4:30 a.m.	103 = 10:30 a.m.	163 = 4:30 p.m.	223 = 10:30 p.m.
050 = 5:00 a.m.	110 = 11:00 a.m.	170 = 5:00 p.m.	230 = 11:00 p.m.
053 = 5:30 a.m.	113 = 11:30 a.m.	173 = 5:30 p.m.	233 = 11:30 p.m.
060 = 6:00 a.m.	120 = 12:00 p.m.	180 = 6:00 p.m.	240* = 12:00 a.m.
063 = 6:30 a.m.	123 = 12:30 p.m.	183 = 6:30 p.m.	243* = 12:30 a.m.
070 = 7:00 a.m.	130 = 1:00 p.m.	190 = 7:00 p.m.	010 = 1:00 a.m.
073 = 7:30 a.m.	133 = 1:30 p.m.	193 = 7:30 p.m.	013 = 1:30 a.m.
080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.	020 = 2:00 a.m.

* Denotes not available.

A lockout cannot be programmed to start at 12:00 a.m. or 12:30 a.m. due to conflicts with other inte - nal programs. The defrost lockouts cannot be programmed to run back-to-back. For example, if dL1 is set to 080, then a defrost cycle would be locked out from 8:00 a.m. to 10:00 a.m. Because of the dL1 setting the dL2 parameter would not let the user choose a lockout start time before 10:30 a.m. All lockouts are preset at the factory to OFF.

Follow the instructions to enter the customer access code on page 8. When the control

displays  Thermostat Set High, press the down arrow key  until the control the

control display reads    or  . Press the set button  .

The display will show  Off. Press the arrow keys  to set the start time.

When the correct time is displayed, press the set button  .

The display will then read  Thermostat Set Point High.

You can press the up or down arrow keys  to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (continued)

VII. o - <u>ADJUSTING THE ROOM TEMPERATURE OFFSET</u>:

The room temperature offset parameter allows a service technician or end user the ability to have the display show a temperature that is within three degrees of the actual temperature being read by the cabinet air sensor. This allows for continuity of reading between different temperature reading devices. (i.e.: thermistor Vs thermocouple Vs handheld thermometer) This parameter is preset at the factory to "0" or no offset.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Room Temperature Offset. Press the set button  . Use the arrow keys  to adjust the offset to your desired setting. When the display shows the offset you want press the set button  . The display will then read  Room Temperature Offset. You can use the up or down arrow keys  to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.

VII. p - <u>VIEWING SENSOR TEMPERATURES</u>:

These parameters allow a service technician or customer to view the temperature of all sensors within the unit. The temperatures cannot be adjusted.

Follow the instructions to enter the customer access code on page 8. When the control displays Thermostat Set Point High  , press the DOWN arrow key  unit the display reads Evaporator Coil Sensor  or Cabinet Air  or press the SET button  . The display will read Thermostat Set Point High  .

Press the UP or DOWN arrow keys  to scroll through the parameters or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (continued)

VII. q - HOT FOOD UNITS, ADJUSTING THE THERMOSTAT & TURNING THE UNIT OFF/ON:

This parameter sets the desired cabinet temperature. Please note that hot food units are delivered from the factory set to the OFF position.

Follow the instructions to enter the customer access code on page 8. When the control reads  Thermostat Set Point High, press the set button  . Use the arrow keys  to adjust the temperature to your desired setting. When the display shows the temperature you want press the set button  . The display will then read  Thermostat Set Point High. You can use the up or down  arrow keys to scroll to the next parameter or press the alarm cancel button  to exit.

VII. r - HOT FOOD UNITS, TURNING THE UNIT OFF/ON:

After the temperature has been set, the customer can continuously turn the unit OFF and then back ON to the same temperature. To turn the unit ON /OFF press the alarm cancel button  , (please note that this feature is not available on versions of the control manufactured prior to September 2000), or if an alarm warning condition is present, use the alternative ON/OFF activation method.

To turn the unit ON/OFF using the alternative method, press both arrows  at the same time, the set temperature will remain in memory.

VII. s - HOT FOOD UNITS, TEMPERATURE ADJUSTMENT:

Press the **SET** button  and the **UP ARROW** button  at the same time. The display will flash the current temperature setting or **OFF** (if the unit is turned off). Use the **UP**  or **DOWN ARROW**  buttons to adjust your desired temperature setting (temperature range is 140° thru 180° F, and OFF) then press the **SET** button  . The display will go back to reading cabinet temperature. If **OFF** is selected. the display will then read **OFF**. **NOTE:** If you wish to change the set temperature at anytime follow this procedure.

These models also include a “One-Time Temperature Setting Adjustment” feature. Upon start-up, the unit will warm-up to the last temperature you had set for it, unless changed.

VIII. SPARE & REPLACEMENT PARTS LISTING

	G100/G110 1 SEC REF	G120XX 1 SEC FRZ	G200/G210 2 SEC REF	G220XX 2 SEC FRZ	G300/G320 3 SEC REF	G313XX/G310XX 3 SEC FRZ
FULL HEIGHT SOLID DOOR	200-60142-00	200-60142-00	200-60142-00	200-60142-00	200-60142-00	200-60142-00
FULL HEIGHT GLASS DOOR	200-42192-00	N/A	200-42192-00	N/A	200-42192-00	N/A
HALF HEIGHT SOLID DOOR[1]	200-60140-00	200-60140-00	200-60140-00	200-60140-00	200-60140-00	200-60140-00
HALF HEIGHT GLASS DOOR[1]	200-60141-00	N/A	200-60141-00	N/A	200-60141-00	N/A
HALF HEIGHT SOLID DOOR[2]	200-60140-01	200-60140-01	200-60140-01	200-60140-01	200-60140-01	200-60140-01
HALF HEIGHT GLASS DOOR[2]	200-60141-01	N/A	200-60141-01	N/A	200-60141-01	N/A
FULL HEIGHT SOLID DOOR GASKET	341-60059-00	341-60059-00	341-60059-00	341-60059-00	341-60059-00	341-60059-00
HALF-HEIGHT SOLID DOOR GASKET	341-60060-00	341-60060-00	341-60060-00	341-60060-00	341-60060-00	341-60060-00
FULL HEIGHT GLASS DOOR GASKET	341-42090-02	N/A	341-42090-02	N/A	341-42090-02	N/A
HALF-HEIGHT GLASS DOOR GASKET	341-42090-01	N/A	341-42090-01	N/A	341-42090-01	N/A
HINGE ASSEMBLY FOR ALL DOORS	SER-28583-00	SER-28583-00	SER-28583-00	SER-28583-00	SER-28583-00	SER-28583-00
LOCKKEEPER	SER-60433-00	SER-60433-00	SER-60433-00	SER-60433-00	SER-60433-00	SER-60433-00
LOCK CYLINDER FOR ALL DOORS	346-13186-42	346-13186-42	346-13186-42	346-13186-42	346-13186-42	346-13186-42
T-42 KEY FOR ABOVE	346-28924-42	346-28924-42	346-28924-42	346-28924-42	346-28924-42	346-28924-42
EPOXY COATED SHELF (pin mounted)	340-60070-02	340-60070-02	340-60074-02	340-60074-02	See Notes[3]	See Notes[3]
SHELF MOUNTING PIN (4 req'd per shelf)	344-24759-02	344-24759-02	344-24759-02	344-24759-02	344-24759-02	344-24759-02
6" HIGH LEG (4 req'd. per unit)	344-13168-02	344-13168-02	344-13168-02	344-13168-02	344-13168-02	344-13168-02
SET OF FOUR 6" HIGH CASTERS	CK1	CK1	CK1	CK1	CK1	CK1
LOUVER ASSEMBLY	500-70002-00	500-70002-00	500-70008-00	500-70008-00	500-70011-00	500-70011-00
CABINET SENSOR	337-60069-02	337-60069-02	337-60069-02	337-60069-02	337-60069-02	337-60069-02
COIL SENSOR	337-60071-02	337-60071-02	337-60071-02	337-60071-02	337-60071-02	337-60071-02
MICROPROCESSOR CONTROLLER	CONSULT FACTORY FOR PART NUMBER					
LAMPHOLDER	333-60241-00	333-60241-00	333-60241-00	333-60241-00	333-60241-00	333-60241-00
LIGHT COVER	337-30858-00	337-30858-00	337-30858-00	337-30858-00	337-30858-00	337-30858-00
INCANDESCENT LIGHT BULB	378-29776-00	378-29776-00	378-29776-00	378-29776-00	378-29776-00	378-29776-00
HEATER FOR FULL-HEIGHT DOOR	329-60020-13	329-60020-32	329-60020-13	329-60020-32	329-60020-13	329-60020-32
HEATER FOR HALF-HEIGHT DOOR	329-60020-10	329-60020-26	329-60020-10	329-60020-26	329-60020-10	329-60020-26
DEFROST HEATER	N/A	329-60022-00	N/A	329-60021-00	N/A	329-60021-00
EVAPORATOR COIL	322-60003-00	322-60003-00	322-60003-00	322-60020-00	322-60020-00	322-60020-00
EXPANSION VALVE	325-60080-00	325-60080-16	325-60080-00	325-60080-15	325-60080-01	325-60080-02
EVAPORATOR BLOWER ASSEMBLY[4]	325-60072-02	325-60072-02	325-60071-02	325-60071-02	325-60071-02	325-60071-02
EVAPORATOR MOTOR ASSEMBLY[5]	433670	433670	433670	433670	325-60071-02	325-60071-02
EVAPORATOR MOTOR ONLY[5]	430061-2	430061-2	430061-2	430061-2	N/A	N/A
EVAPORATOR FAN BLADE[5]	433090	433090	433090	433090	N/A	N/A
EVAPORATOR MOTOR BRACKET[5]	283439	283439	283439	283439	N/A	N/A
PLUNGER SWITCH[6]	337-28235-00	337-28235-00	337-28235-00	337-28235-00	337-28235-00	337-28235-00
ON/OFF SWITCH	337-60346-00	337-60346-00	337-60346-00	337-60346-00	337-60346-00	337-60346-00
EXTERIOR LIGHT SWITCH[7]	337-20265-00	N/A	337-20265-00	N/A	337-20265-00	N/A
4 PAIRS #1 TYPE TRAY SLIDES[8]	TK1	TK1	TK1	TK1	TK1	TK1
2 PAIRS #4 TYPE TRAY SLIDES[8]	TK2	TK2	TK2	TK2	TK2	TK2
4 PAIRS UNIVERSAL TRAY SLIDES[8]	TK4	TK4	TK4	TK4	TK4	TK4
3 EPOXY COATED SHELVES[9]	SK30	SK30	N/A	N/A	SK30[10]	SK30[10]
3 EPOXY COATED SHELVES[9]	N/A	N/A	SK31	SK31	SK31[11]	SK31[11]
3 CHROME PLATED SHELVES[9]	SK30C	SK30C	N/A	N/A	SK30C[10]	SK30C[10]
3 CHROME PLATED SHELVES[9]	N/A	N/A	SK31C	SK31C	SK31C[11]	SK31C[11]
HOT GAS LOOP	326-60102-00	326-60102-00	326-60102-00	326-60099-00	326-60102-00	326-60099-00
WIRING DIAGRAM	379-60385-00	379-60385-00	379-60385-00	379-60385-00	379-60319-00	379-60338-00
REFRIGERANT	R-134a	R-404A	R-134a	R-404A	R-134a	R-404A
COMPRESSOR	AR37C1E-IAA-908	RS43C1E-IAA	AR37C1E-IAA-908	RS54C1E-CAA	RS401E-IAA	KAJB-010E-CAV
RELAY	940-0411-82	040-0102-00	940-0411-82	010-0001-80	040-0102-00	040-0001-48
START CAPACITOR	914-0038-00	014-0008-57	914-0038-00	014-0008-74	014-0008-71	014-0008-63
CONDENSOR FAN MOTOR	050-0258-10	050-0258-10	050-0258-10	050-0267-00	050-0276-00	050-0259-11
CONDENSOR FAN BLADE	083-0122-00	083-0130-00	083-0122-00	083-0133-00	083-0143-00	083-0245-08
CONDENSOR	566-1195-00	066-0336-00	566-1195-00	066-0338-00	066-0338-00	066-0226-00

NOTE

All condensing unit parts are available locally from a Copeland distributor

VIII. SPARE & REPLACEMENT PARTS LISTING - CONTINUED

SPARE & REPLACEMENT PARTS LISTING NOTATIONS

1= This half half height door can be used as hinged right if mounted on top or hinged left on the bottom.

2= This half half height door can be used as hinged left if mounted on top or hinged right on the bottom.

3= Three section models use a combination of p/n 340-60074-02 in the left and right sections, and p/n 340-70-02 in the center section.

4= Part number applied to units built between August 2001 and March 2004 only.

5= Part numbers apply to units built after March 2004 only.

6= Plunger switch is mounted in hinge and used for automatic light operation.

7= Available for use with glass door models only.

8= If mounting hardware is also required, please specify model and mounting location at time of order to insure provision of correct standards.

9= These shelf kits are intended for mounting on pilasters and clips. If mounting hardware is also required, please specify model and mounting location at time of order to insure provision of correct standards.

10= Mounting of these shelves is possible in the center section only of three section models.

11= Mounting of these shelves is possible in the left and/or right sections only of three section models.

IX. TROUBLE SHOOTING GUIDE

FIND YOUR PROBLEM HERE	REMEDY
1. Condensing unit fails to start.	a. Check if cord & plug has been disconnected. b. Check control temperature setting.
2. Condensing unit operates for prolonged periods or continuously.	a. Are doors closing properly? b. Dirty condenser or filte . Clean properly. c. Evaporator coil iced. Needs to defrost. See instructions for setting a manual defrost cycle on page 13. d. Shortage of refrigerant, call service.
3. Food compartment is too warm.	a. Check door(s) and gasket(s) for proper seal b. Perhaps a large quantity of warm food has recently been added or the door was kept open for a long period of time, in both cases, allow adequate time for the cabinet to recover its normal operating temperature. c. Control setting too high, readjust per instructions on page 9. d. Check that condensing coil is clean.
4. Food compartment is too cold.	a. Perhaps a large quantity of very cold or frozen food has recently been added. Allow adequate time for the cabinet to recover its normal operating temperature. b. Adjust the control to a warmer setting, see page 10.
5. Condensation on the exterior surface.	a. Check door alignment and gaskets for proper seal. b. Condensation on the exterior surface of the unit is perfectly normal during periods of high humidity.
6. Compressor hums but does not start.	a. Call for service.
7. No Power To Unit	a. Check if cord & plug has been disconnected. b. Check power supply breaker. c. Check ON/OFF switch.

X. WARRANTY INFORMATION

STANDARD DOMESTIC WARRANTY

TRAULSEN warrants new equipment to the original purchaser, when installed within the United States against defective material and workmanship for one (1) year from the date of original installation. Under this warranty, TRAULSEN will repair or replace, at its option, including service and labor, all parts found to be defective and subject to this warranty. The compressor part is warranted for an additional four (4) years. During this period TRAULSEN will supply replacement compressor(s) if deemed defective; however, all installation, recharging, and repair costs will remain the responsibility of the owner.

This warranty does not apply to units altered from the original equipment design or to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and does not apply to food loss

THERE ARE NO ORAL, STATUTORY OR IMPLIED WARRANTIES APPLICABLE TO TRAULSEN, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. TRAULSEN SHALL HAVE NO OBLIGATION OR LIABILITY FOR CONSEQUENTIAL OR SPECIAL DAMAGES, GROWING OUT OF OR WITH RESPECT TO THE EQUIPMENT OR ITS SALE, OPERATION OR USE, AND TRAULSEN NEITHER ASSUMES NOR AUTHORIZES ANYONE ELSE TO ASSUME FOR IT ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE EQUIPMENT OR ITS SALE, OPERATION OR USE OTHER THAN AS STATED HEREIN.

G-SERIES MICROPROCESSOR CONTROL WARRANTY

TRAULSEN warrants to the original purchaser of the G-Series Microprocessor control when installed as part of the Refrigeration Equipment manufactured and sold by TRAULSEN, to be free of defects in material and workmanship under normal service and use for a period of one (1) year from the date of installation, not to exceed fifteen (15) months from the original date of shipment. Under this warranty statement, TRAULSEN will repair or exchange at TRAULSEN'S discretion, F.O.B. factory, any part of said control, which proves to be defective. Inspection by the TRAULSEN Service Department of parts claimed defective shall be final in determining warranty status. The warranty is to include repair or exchange of any defective In-Warranty control or part(s) of said control for:

Part(s) - Any TRAULSEN G-Series Microprocessor Control supplied part(s) found to be defective.

Labor - The labor charges from a TRAULSEN Certified Service Agent to effect the repair or exchange of the defective part(s).

"Defective Part Return" - All claimed defective part(s) must be returned to TRAULSEN for defect validation within 30 days from the date of the repair. Failure to return all claimed defective part(s) to TRAULSEN will invalidate the warranty claim, this warranty statement, and forfeit payment for those repairs effected.

This warranty does not apply to units altered from the original equipment design or to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and does not apply to food loss, and will not apply if said equipment is located outside The United States.

INTERNATIONAL COMMERCIAL WARRANTY

(for Canadian warranties see domestic US warranty)

TRAULSEN warrants to the original purchaser the Refrigeration Equipment manufactured and sold by it to be free from defects in material and workmanship under normal use and service for a period of one (1) year from date of shipment. Under this warranty, TRAULSEN will reimburse the purchaser for the replacement of any part of said equipment (excluding dryers & refrigerant gas) which then proves to be defective. This warranty does not apply to units altered from the original equipment design or to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and does not apply to food loss.

TRAULSEN'S standard warranty does not apply to Export Sales. Rather, for a period of one (1) year from date of original installation not to exceed Fifteen (15) months from date of shipment from factory, TRAULSEN:

will replace, F.O.B. factory, any defective parts normally subject to warranty.

will not cover the cost of packing, freight or labor such costs being the sole responsibility of the dealer.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED AND CONSTITUTES TRAULSEN'S FULL OBLIGATION AND LIABILITY.

X. NOTES

XI. INDEX

HOURS OF OPERATION:
Monday thru Friday 7:30 am - 4:30 pm CST

Quality Refrigeration

Traulsen
4401 Blue Mound Road Fort Worth, TX 76106
Phone: (800) 825-8220 Fax-Svce: (817) 740-6757
Website: www.traulsen.com

Quality Refrigeration

OWNER'S MANUAL

Instructions for the installation, operation and maintenance of all Traulsen:

G-Series Reach-In & Pass-Thru Refrigerators*
G-Series Reach-In & Pass-Thru Hot Food Holding Cabinets
G-Series Reach-In Freezers*
G-Series Hinged Glass Door Refrigerators*

***For equipment manufactured after 1-2010 only.**

This Traulsen unit is built to our highest quality standards. We build our refrigerators, freezers and heated cabinets this way as a matter of pride. This philosophy has made Traulsen the leader in commercial refrigeration since 1938. We thank you for your choice and confidence in Traulsen equipment and we know you will receive many years of utility from this equipment.

All Traulsen units are placed on a permanent record file with the service department. In the event of any future questions you may have, please refer to the model and serial number found on the name tag affixed to the unit. Should you need service, however, call us on our toll free number, 800-825-8220 between 7:30 a.m. and 4:30 p.m. CST, Monday thru Friday. It is our pleasure to help and assist you in every possible way.

INSTALLER
COMPLETE THE FOLLOWING INFORMATION PRIOR TO UNIT INSTALLATION

INITIAL START DATE: _____ SERIAL NO. _____

MODEL TYPE: _____

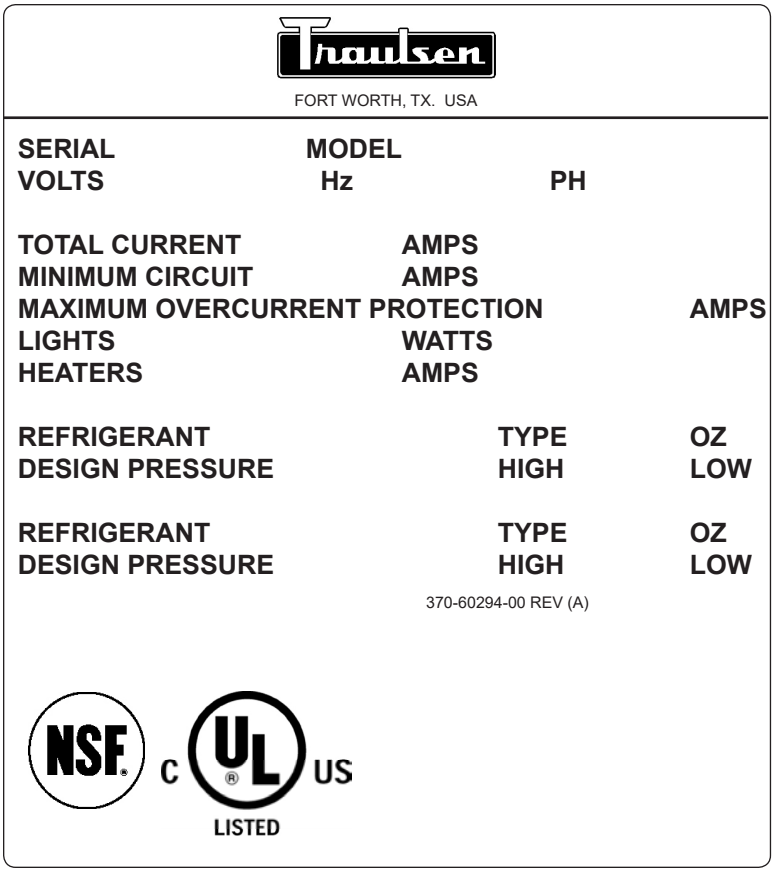
COMPANY/INDIVIDUAL NAME: _____

INSTALLER: _____

FORM NUMBER TR35748 (REV. 11-22-13)

P/N 375-60184-00

TABLE OF CONTENTS



I. THE SERIAL TAG

The serial tag is a permanently affixed label upon which is recorded vital electrical and refrigeration data about your Traulsen product, as well as the model and serial number. This tag is located in the upper right interior compartment on all Traulsen G-Series refrigerator and freezer models.

READING THE SERIAL TAG

- Serial = The permanent ID# of your Traulsen
- Model = The model # of your Traulsen
- Volts = Voltage
- Hz = Cycle
- PH = Phase
- Total Current = Maximum amp draw
- Minimum Circuit = Minimum circuit ampacity
- Lights = Light wattage
- Heaters = Heater amperage (Hot Food units only)
- Refrigerant = Refrigerant type used
- Design Pressure = High & low side operating pressures and refrigerant charge
- Agency Labels = Designates agency listings

II. RECEIPT INSPECTION

All Traulsen products are factory tested for performance and are free from defects when shipped. The utmost care has been taken in crating this product to protect against damage in transit. All interior fittings have been carefully secured and the casters/legs are boxed and strapped inside to prevent damage. Door keys will be attached to the handle with a nylon strip. The handle is protected by an easily removable nylon netting.

You should carefully inspect your Traulsen unit for damage during delivery. If damage is detected, you should save all the crating materials and make note on the carrier's Bill Of Lading describing this. A freight claim should be filed immediately. If damage is subsequently noted during or immediately after installation, contact the respective carrier and file a freight claim. Under no condition may a damaged unit be returned to Traulsen without first obtaining written permission (return authorization).

III. INSTALLATION

III. a - <u>LOCATION</u>:
Select a proper location for your Traulsen unit, away from extreme heat and allow proper clearance for air circulation (see page 4). Allow enough clearance between the unit and the side wall in order to make use of the door stay open feature at 120° (self-closing feature operates up to 90°). The door(s) must be able to open a minimum of 90° in order to make use of the maximum clear door width available.

III. b - <u>PACKAGING</u>:
All Traulsen units are shipped from the factory bolted to a sturdy wooden pallet and packaged in a durable Styrofoam backed cardboard wrap.

Most exterior stainless steel and aluminum surfaces have a protective vinyl covering to prevent scratching during manufacturing, shipping and installation. After the unit is installed in place of service, remove and discard the covering from all surfaces.

If at all possible we suggest that the cabinet remain bolted to the pallet during all transportation to the point of final installation. To remove the wooden pallet, the bolts can then be removed with a 3/4" socket wrench. Avoid laying the unit on its front, side or back for removal of the pallet.

NOTE: DO NOT LAY THE UNIT ON ITS SIDE DURING TRANSPORTATION OR INSTALLATION.

III. INSTALLATION (cont'd)

III. c - <u>INSTALLING CASTERS OR LEGS</u>:
A set of four (4) 6" high casters and sixteen (16) bolts are supplied standard for all Traulsen G-Series units. These are shipped from the factory packed inside a cardboard box which is strapped inside the cabinet to the lower shelf.

Legs in lieu of casters are available as an optional accessory kit for the same models. These are shipped inside a separate cardboard box. Inside it should contain four (4) legs and sixteen (16) bolts.

WARNING: THE CABINET MUST BE BLOCKED AND STABLE BEFORE INSTALLING LEGS OR CASTERS.

To install the legs or casters, first raise and block the reach-in a minimum of 7" from the floo . For installing legs, thread the legs into the threaded holes on the bottom of the cabinet (see figure 1). Be certain that all legs are tightly secured. When the unit is set in its final position, it is important for proper operation that the unit be level. The legs are adjustable for this purpose, turn the bottom of the leg counterclockwise to raise it, clockwise to lower it. Level the unit from front to back as well as side to side in this manner.

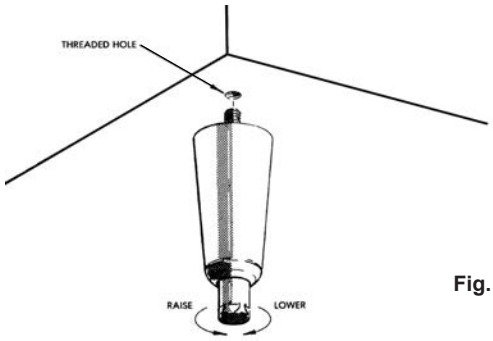


Fig. 1

Please note that Traulsen units are not designed to be moved while on legs. If the unit requires moving, a pallet jack or forklift should be used to prevent damage. For installing casters, the casters are a "plate" type, and require the use of four (4) bolts each to secure them firmly to the cabinet bottom at each corner (see figure 2). The caster bolts are tightened using a 1/2"socket wrench.

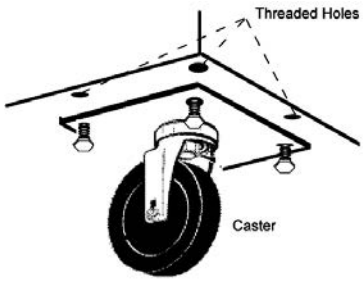


Fig. 2

III. INSTALLATION (cont'd)

III. d - SHELF PINS:
The unit is supplied with shelves and shelf pins installed. Check all shelf pins to assure they are tightened down as they may have come loose during shipping. Rotate the pins clockwise until they are secured against the side of the cabinet.

III. e - REMOVING THE DOORS & HARDWARE:
In order to fit through narrow (less than 35") doorways, it may be necessary to remove the door(s), and/or hinges. To remove any solid door, begin by removing the plug at the bottom of the top hinge. Inside the hinge there is a small screw which secures the door in place. Remove this with a flat head screwdriver and the door can then be lifted off the hinges (see figure 3)

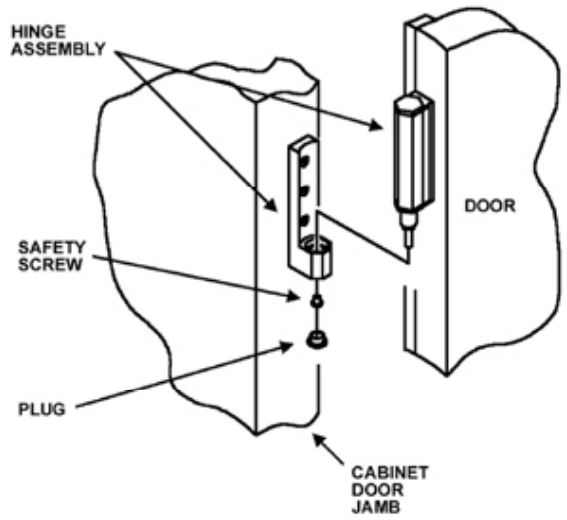


Fig. 3

After removing the door, it maybe necessary to remove the hinge assembly and hardware from the door itself.

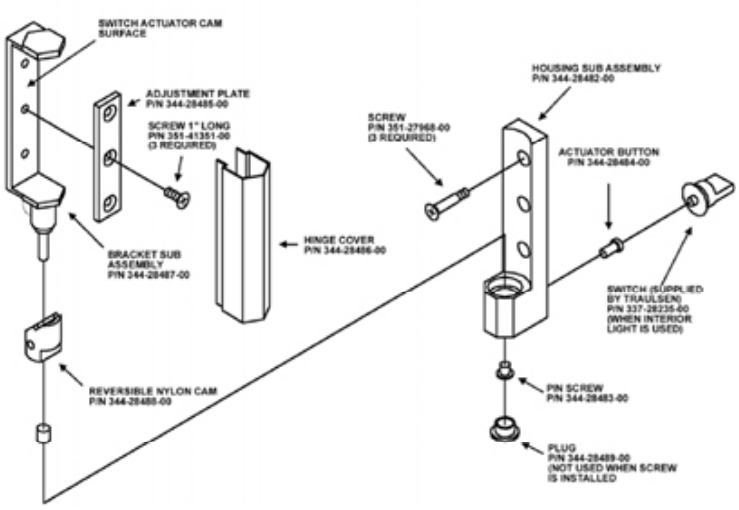


Fig. 4

III. e - REMOVING THE DOORS & HARDWARE (cont'd):
If it is necessary to remove the hinge hardware from the cabinet, begin by removing the three Phillips head screws which hold it in place. Set these components aside for later reassembly. Pay special attention not to loose the door switch actuator button controls evaporator fan and interior light operation (see figure 4)

NOTE: All solid door units include a microswitch for controlling the interior lighting in the top hinge(s). Special care should be taken to not damage the wiring for this during the hinge removal process.

The lock keeper may also require removal in order to reduce the overall cabinet depth to 32".

Next remove the lock keeper bracket by removing the two (2) flat head screws which secure it in place. Set these components aside for later reassembly.

To re-install the door and/or hinges, please reverse the appropriate sections of the preceding procedure.

III. f - CORD & PLUG:
All G-Series models are supplied with a cord & plug attached. It is shipped coiled at the top of the cabinet, secured by a nylon strip. For your safety and protection, all units supplied with a cord and plug include a special three-prong grounding plug on the service cord. Select only a dedicated electrical outlet with grounding plug for power source.

NOTE: Do not under any circumstances, cut or remove the round grounding prong from the plug, or use an extension cord.

III. g - POWER SUPPLY:
The supply voltage should be checked prior to connection to be certain that proper voltage for the cabinet wiring is available (refer to the serial tag to determine correct unit voltage). Make connections in accordance with local electrical codes. Use qualified electricians

Use of a separate, dedicated circuit is required. Size wiring to handle indicated load and provide necessary overcurrent protector in circuit (see amperage requirements on the unit's serial tag).

III. h - WIRING DIAGRAM:
Refer to the wiring diagram for any service work performed on the unit. Should you require one, please contact Traulsen Service at (800) 825-8220, and provide the model and serial number of the unit involved.

III. i - CLEARANCE:
In order to assure optimum performance, the condensing unit of your Traulsen unit **MUST** have an adequate supply of air for cooling purposes. Therefore, the operating location must either have a minimum of 12" clearance overhead of the condensing unit or allow for unrestricted air flow at the back of the unit. Clearance of at least 12" above is required in order to perform certain maintenance tasks.

III. j - INSTALLING OPTIONAL INTERIOR KITS:
In addition to their standard interiors, G-Series models also offer the option for additional shelves or tray slides. If ordered, these are shipped as kits along with the unit, packaged in a separate cardboard box which contains all the necessary parts and hardware for on-site installation.

To install additional shelves, first remove the white plastic covers from inside the cabinet. These are located along the same vertical line as the pins already in place on the interior side walls, back and center mullion (two and three-section models). This exposes threaded holes in which you may position the new shelves. Next insert the gray plastic shelf pins into these holes and tighten by turning clockwise with your fingers. After all four pins are in place, the new shelf should be placed to rest on top of them. The unused plastic covers may be discarded or saved for future changes to the cabinet interior.

Installation of optional tray slides varies with each cabinet, and with each type of tray slide ordered. To install optional tray slides, follow the directions packaged inside the kit carton.

III. k - ON/OFF SWITCH:
An **ON/OFF** toggle switch for the power supply is provided. It is located on top of the unit, mounted to the side of the evaporator housing. This is shipped from the factory in the **ON** position.

IV. OPERATION

IV. a - REFRIGERATORS:
Both refrigerators and freezers do not require manual defrosting. During normal operation, a refrigerator continuously circulates above freezing cabinet air through the evaporator coil. An electric defrost occurs every 8 hours for a maximum length of 25 minutes to melt any frost which may accumulate on the coil during the compressor "ON" cycle. With standard holding refrigerators, high relative humidity is also maintained to prevent dehydration of stored product.

IV. b - FREEZERS:
During normal operation, a freezer continuously circulates below freezing cabinet air through the evaporator coil. The coil requires a periodic defrosting for proper operation. This is accomplished by an automatic, time activated, temperature/time terminated, defrost program. The controller is preset at the factory for six equally spaced defrost cycles within each 24-hour period.

The evaporator fan(s) cycle off with each door opening. The evaporator fan(s) will cycle on (15 seconds) and off (45 seconds) during the compressor off cycle. During the compressor on cycle the evaporator fan(s) will run continuously.

At the start of a refrigerator or freezer defrost cycle, both the compressor and evaporator fans are off. The microprocessor control will read "dEF" (see figure 5). When this occurs the green defrost icon (snow flake) will be illuminated

Fig. 5

The electric heater (attached to the coil) is energized. When the temperature sensor affixed to the coil senses 45°F, the coil is fully defrosted and the compressor operation is resumed, defrost heaters are automatically turned off. The evaporator coil fans are delayed from starting at the termination of a defrost cycle. Fan operation is automatically resumed, after a short time or temp delay (whichever comes first). After completion, the total refrigeration system operation is then resumed. During defrost operation, heat is confined to the coil enclosure to prevent any significant rise in temperature within the food zone. The fan delay control function upon termination of a defrost cycle is two-fold. First, to prevent blowing warm air into the food storage area. Second, to prevent any condensation on the defrost coil from being blown into the food storage area.

The microprocessor control is set from the factory to terminate defrost at 25 minutes for refrigerators and 30 minutes for freezers in the event of a sensor failure. This setting should never be tampered with, without first consulting the factor .

IV. c - LIGHT SWITCHES:
All G-Series models include a concealed light switch mounted in the top door hinge(s), which automatically activates the interior light when the door is opened. When the door is closed, the lights are not operating.

In addition, on hinged glass door models, an exterior mounted, illuminated red switch is included for manual light control. In the **ON** position, the lights are illuminated whether the doors are open or not. In the **OFF** position, the lights are controlled by the hinge switch as described in the first paragraph.

IV. d - SPECIAL DISPLAY OPERATING MODE:
G-Series models built during the summer of 2009 and beyond will include a special control mode which disables the external temperature display. Note that before doing so you must install an interior mounted thermometer in order to conform with local health codes.

To initiate this mode press the up and down arrows simultaneously for 1 second until the temperature display goes blank. The temperature display will remain disabled indefinately until such time as the operator wishes to restore normal operation. To do so simply repeat the process of pressing the up and down arrows simultaneously for 1 second until the temperature display illuminates.

NOTE: In the event power is interrupted for any reason the display will return to standard operating mode where it displays the correct cabinet air temperature.

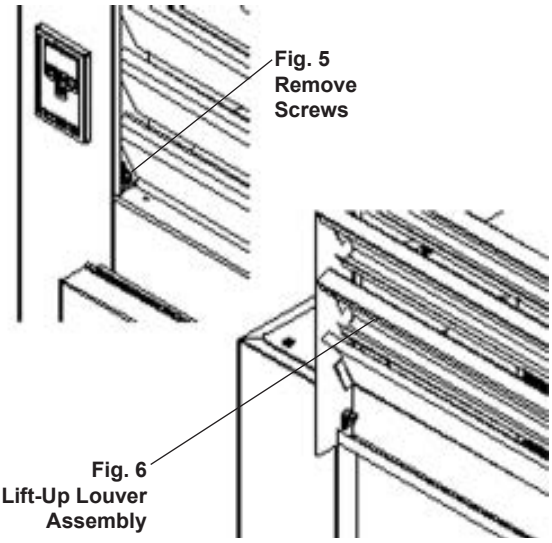
V. CARE & MAINTENANCE

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING ANY PARTS OF THE UNIT.

V. a - CLEANING THE CONDENSER:
The most important thing you can do to insure a long, reliable service life for your Traulsen is to regularly clean the condenser coil.

The condensing unit requires regularly scheduled cleaning to keep the finned condenser clean of lint and dust accummulation. Keeping the condenser clean allows the cabinet to operate more efficiently and use less energy. To clean the condenser, first disconnect electrical power to the cabinet and lift up the front louver assembly. To lift this, remove the two screws located on both sides at the bottom of the louver assembly (see figure 5). Once the screws are removed, the panel can be pivoted upwards allowing full access to the front facing condenser (see figure 6).

V. a - CLEANING THE CONDENSER (cont'd):



Vacuum or brush any dirt, lint or dust from the finned condenser coil, the compressor and other cooling system parts. If significan dirt is clogging the condenser fins use compressed air to blow this clear. Care should be taken not to bend any of the condenser fins, as this will reduce performance and compressor life. Lower louver assembly and replace screws to hold it in place.

V. b - HINGE REPLACEMENT:
To remove the door, remove the plug at the bottom of the top hinge. Behind this is a screw which secures the door in place. Remove this with a flat head screwdriver and then lift the door off the hinge. To remove the door portion of the hinge, lift off the hinge cover and then remove the 3 Phillips head screws which secure the hinge in place. To remove the cabinet portion of the hinge, remove the 3 Phillips head screws which hold it in place. On solid door units, the top hinge(s) contains a switch for controlling the lights.To reassemble the hinge reverse the procedure.

V. c - REPLACING THE GASKETS:
To remove the gasket to be replaced, grasp it firmly by one corner and pull it out. Before attempting to install a new gasket, both the unit and gasket must be at room temperature. Insert the four corners first by using a rubber mallet (or hammer with a block of wood). After the corners are properly inserted, work your way towards the center from both ends by gently hitting with a mallet until the gasket is completely seated in place (see figure 7 for proper gasket placement).

NOTE: The gasket may appear too large, but if it is installed as indicated above it will slip into place.

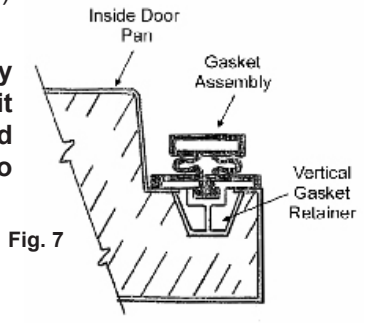


Fig. 7

V. d - CLEANING THE EXTERIOR:
Exterior stainless steel and aluminum should be cleaned with warm water, mild soap and a soft cloth. Apply with a dampened cloth and wipe in the direction of the metal grain.

Avoid the use of strong detergents and gritty, abrasive cleaners as they may tend to mar and scratch the surface. **Do NOT** use cleansers containing chlorine, this may promote corrosion of the stainless steel.

Care should also be taken to avoid splashing the unit with water, containing chlorinated cleansers, when mopping the floor around the unit.

For stubborn odor spills, use baking soda and water (mixed to a 1 TBSP baking soda to 1 pint water ratio).

V. e - CLEANING THE INTERIOR:
For cleaning anodized aluminum interiors, the use of baking soda as described in section "V. d" is recommended. Use on breaker strips as well as door gaskets. All interior fittings are removable without tools to facilitate cleaning.

V. f - ADJUSTING THE SHELVES:
For shelves mounted on pins, first select the desired location and remove the white plastic covers in the interior back and sides by rotating them counterclockwise. Remove the shelf pins by rotating them counterclockwise. Install the pins in the desired location by rotating clockwise. Make sure the pin is securely tightened down. Do not over tighten. Slide the shelf into its new position, and replace the white plastic covers into the holes vacated by the shelf pins.

VI. OTHER

VI. a - SERVICE INFORMATION:
Before calling for service, please check the following:

- ☐ Is the electrical cord plugged in?
- ☐ Is the fuse OK or circuit breaker on?
- ☐ Is the power switch "ON"?

If after checking the above items and the unit is still not operating properly, please contact an authorized Traulsen service agent. A complete list of authorized service agents was provided along with your Traulsen unit. If you cannot locate this, you may also obtain the name of a service agent from the Tech Service page of our website: www.traulsen.com.

VI. a - SERVICE INFORMATION (cont'd):
If service is not satisfactory, please contact our in-house service department at: **Traulsen**
4401 Blue Mound Road
Fort Worth, TX 76106
(800) 825-8220
Traulsen reserves the right to change specific tions or discontinue models without notice.

VI. b - SPARE PARTS:
Spare or replacement parts may be obtained through a parts supplier or one of our authorized service agents. A complete list of authorized service agents accompanies this manual and is also posted on our company's official website at ww .traulsen.com.

VI. c - WARRANTY REGISTRATION:
The warranty for your new Traulsen unit may be registered with us by completing the enclosed warranty card (shipped with the unit), registering on-line or calling us direct at 800-825-8220.

VII. MICROPROCESSOR CONTROL

Your new Traulsen G-Series Refrigerator or Freezer is equipped with an electronic microprocessor control, which precisely regulates operation. It is supplied from the factory completely ready for use. See pages 6 thru 15 for more information.

VIII. a - MICROPROCESSOR CONTROL FEATURES:
Internal Time Clock

- Eliminates defrost time clock (refrigerator and freezer models only).
- See "Setting The 24-Hour Clock" on Page 11. (Also required at "Start Up")
- Will automatically update for Daylight Savings Time. See "Setting Daylight Savings Time" on page 12.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. a - **MICROPROCESSOR CONTROL FEATURES** (cont'd):

Water Resistant Housing

The digital controller is water resistant not only from the face of the control, but also from the rear of the housing.

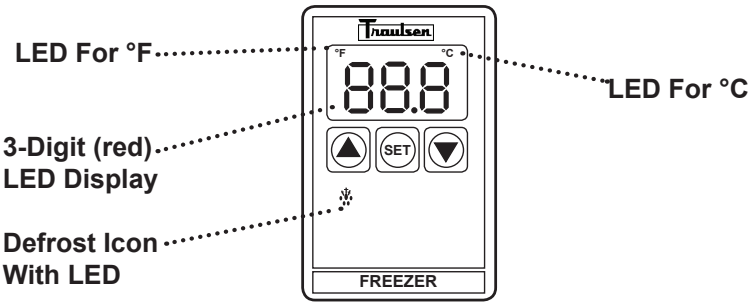
Parameter/Service Levels

• See "Customer/Service Parameters" on Page 8 - 9.

Defrost Lockouts - See "Setting Defrost Lockouts" on page 14

• Customers can set up to 4 different defrost lockout periods. The lockout prevents the unit from going into a defrost cycle during peak kitchen use. **NOTE: The 24-hour clock must be set for this feature to operate correctly.**

VII. b - **CONTROL PANEL**:

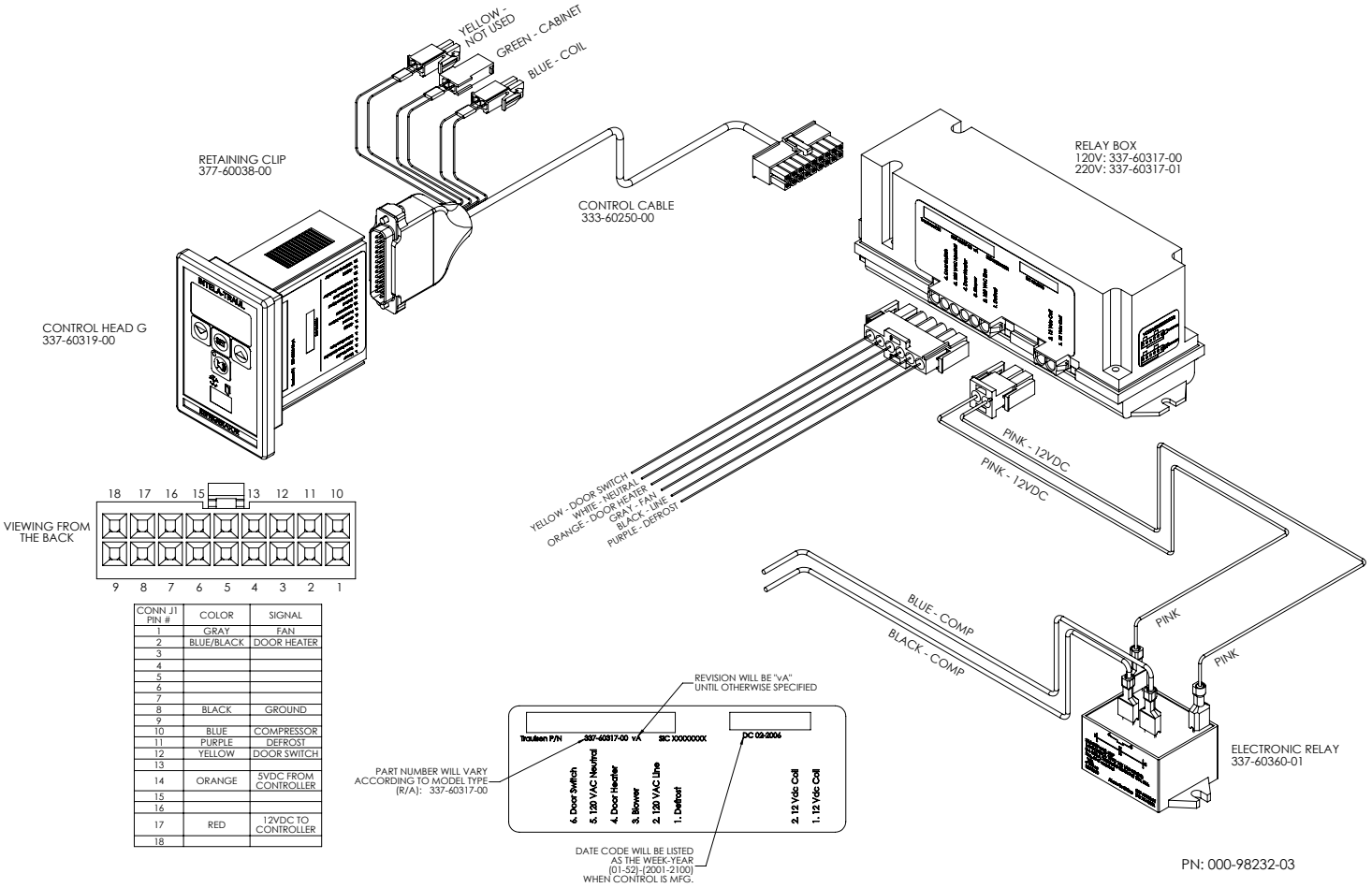


VII. c - **PARTS ASSEMBLY**:

NOTE: Parts can be ordered separately by calling Traulsen at 800-825-8220. Requires unit model and serial to place order. Please contact factory direct for hot food control drawing if required.

Coil Sensor* 337-60406-XX **(refrigerator & freezer models)**

Cabinet Sensor* 337-60405-XX



CONN J1 PIN #	COLOR	SIGNAL
1	GRAY	FAN
2	BLUE/BLACK	DOOR HEATER
3		
4		
5		
6		
7		
8	BLACK	GROUND
9		
10	BLUE	COMPRESSOR
11	PURPLE	DEFROST
12	YELLOW	DOOR SWITCH
13		
14	ORANGE	5VDC FROM CONTROLLER
15		
16		
17	RED	12VDC TO CONTROLLER
18		

VII. MICROPROCESSOR CONTROL (cont'd)

VII. d - NOTES TO THE USER:

You only have 20-30 seconds between button pushes. If you take longer than 30 seconds, the controller will revert back to displaying the cabinet temperature.If you enter the wrong security code, the controller will revert back to displaying the cabinet temperature. You can exit the parameters at any time by waiting 20-30 seconds for the control to return to normal operation.

VII. e - ENTER THE CUSTOMER ACCESS CODE:

This is required to set any of the control parameters.

Use the security code "0, A, 1"  and the following instructions:

Press the set button  . The display will read  Customer/Service Access.

Press the set button  .

The display will show three zeros with the left zero flashing  .

Press the set button  .

The display will show three zeros with the center zero flashing  .

Press the down arrow key  to sequence through F, E, d, C, b, A, 9, 8, 7,…etc.

When you reach "A" press set  .

The display will show "zero, A, zero" with the right zero flashing 

Press the up arrow key  to sequence through 1, 2, 3, 4, 5, 6, 7, 8, 9, A, b,…etc.

When you reach "1" press set  .

The display will read  Thermostat Set Point.

You are now in the **CUSTOMER / SERVICE PARAMETERS menu.**

VII. MICROPROCESSOR CONTROL (cont'd)

VII. f - **CUSTOMER SERVICE PARAMETERS**:

Listed below are the available parameters in the order they appear, use the down arrow key on the controller to sequence through their position. You can use either the up or down arrow keys to scroll through the options.


Thermostat Set Point*


Thermostat Set Point Differential


Temperature Scale


Time (24-hour clock)


Date (month - day - year)


Daylight Savings


Start Manual Defrost


Defrost Lockout 1


Defrost Lockout 2


Defrost Lockout 3


Defrost Lockout 4


Room Temperature Offset


Dewpoint Compensation Factor


Evaporator Coil Sensor Temperature


Cabinet Air Temperature


Cabinet Serial Number

VII. g - **ADJUSTING THE THERMOSTAT SET POINT**:

This parameter sets the low point of the desired cabinet temperature range. Typically, freezers will range from -3° F to 0° F (-19° C to -18° C) and refrigerators will range from 35° F to 38° F (2° C to 4° C) for this parameter setting. This parameter is preset at the factory and does not require adjustment unless the customer chooses to do so.

Follow the instructions to enter the customer access code on page 8. When the control

display reads  Thermostat Set Point. Press the set button 

.

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button 

.

The display will then read  Thermostat Set Point.

You can use the up or down arrow keys to scroll to the next parameter 

or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. h – **ADJUSTING THE SET POINT DIFFERENTIAL**:

This parameter sets the number of degrees the air temp will rise above set point before the refrigeration system will cycle on. The set point differential is set at 2 for both refrigerator and freezer models which will allow the air temperature to rise 2 degrees above SP (set point) setting before cycling refrigeration on. This parameter is preset at the factory and does not require adjustment unless the customer chooses to do so.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point, press the down arrow key  until the control display reads  Thermostat Set Point Differential. Press the set button  .

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button  .

The display will then read  Thermostat Set Point Differential.

You can use the up or down arrow keys to scroll to the next parameter 

or wait 30 seconds for the control to return to normal operation.

VII. i - **CHANGING THE TEMPERATURE SCALE DISPLAY MODE**:

The temperature scale determines if the temperature displayed will be in degrees

Fahrenheit or degrees Celsius.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point, press the down arrow key  until the control display reads  Temperature Scale. Press the set button  .

The display will start with the current setting either  for degrees Fahrenheit

or  for degrees Celsius. Use the arrow keys  to toggle between the options.

When the display shows the scale you want press the set button  .

The display will then read  Temperature Scale.

You can use the up or down arrow keys  to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. j - **SETTING THE 24-HOUR CLOCK**:

The internal timeclock must be set in order to allow any defrost lock out to occur at the correct time of day. If the clock is not set, the control assumes the time is 12 a.m. at the time power is supplied to the unit. The hours on a 24-hour timeclock read the following way:

H01 = 1:00 a.m.	H07 = 7:00 a.m.	H13 = 1:00 p.m.	H19 = 7:00 p.m.
H02 = 2:00 a.m.	H08 = 8:00 a.m.	H14 = 2:00 p.m.	H20 = 8:00 p.m.
H03 = 3:00 a.m.	H09 = 9:00 a.m.	H15 = 3:00 p.m.	H21 = 9:00 p.m.
H04 = 4:00 a.m.	H10 = 10:00 a.m.	H16 = 4:00 p.m.	H22 = 10:00 p.m.
H05 = 5:00 a.m.	H11 = 11:00 a.m.	H17 = 5:00 p.m.	H23 = 11:00 p.m.
H06 = 6:00 a.m	H12 = 12:00 p.m.	H18 = 6:00 p.m.	H24 = 12:00 a.m.

Follow the instructions to enter the customer access code on page 8. When the control

displays  Thermostat Set Point, press the down arrow key  until the control

display reads  Clock. Press the set button  .

The display will show  Hours. The right two numbers will be flashing

Use the arrow keys  to set the hour.

When the correct hour is displayed, press the set button  .

The display will show  Minutes. The right two numbers will be flashing

Use the arrow keys to set the minutes  .

When the correct minutes are displayed, press the set button  .

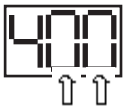
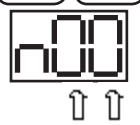
The display will then read  Clock.

You can use the up or down arrow keys  to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. k - **SETTING THE DATE**:

The date must be set in order for the daylight savings time mode to function correctly. Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point, press the down arrow key  until the control display reads  Date. Press the set button  . The display will show  (year). The right two numbers will be flashing. Press the arrow key  to set the year. When the correct year is displayed, press the set button  . The display will show  (month). The right two numbers will be flashing. Use the arrow key  to set the month. When the correct month is displayed, press the set button  The display will show  (day). The right two numbers will be flashing. Press the arrow keys  to set the day. When the correct day is displayed, press the set button  . The display will then read  Date. You can use the up or down arrow keys  to scroll to the next parameter, or wait 30 seconds for the control to return to normal operation.

VIII. l - **SETTING DAYLIGHT SAVINGS TIME**:

This parameter is preset at the factory to automatically adjust the 24-hour clock for Daylight Savings Time. To disable follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point, press the down arrow key  until the display reads  Daylight Savings Time. Press the set button  . The display will show  Daylight Savings Time (Yes, automatically adjust for Daylight Savings Time). For "YES," press the set button  , for "NO" press the up or down arrow key  . The display will read  Daylight Savings Time (no). Press the set button  . The display will read  Daylight Savings Time. You can press the the up or down arrow keys  to scroll to the next para-meter or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. m - **STARTING A MANUAL DEFROST CYCLE**:

This parameter allows a service technician to start a defrost cycle at any time. This parameter will override any lockout settings.

Follow the instructions to enter the customer access code on page 8. When the control displays SP Thermostat Set Point, press the down arrow key until the control display reads Sd Start Manual Defrost.

Press the set button SET

The display will show oFF (OFF).

Press either arrow key (ON).

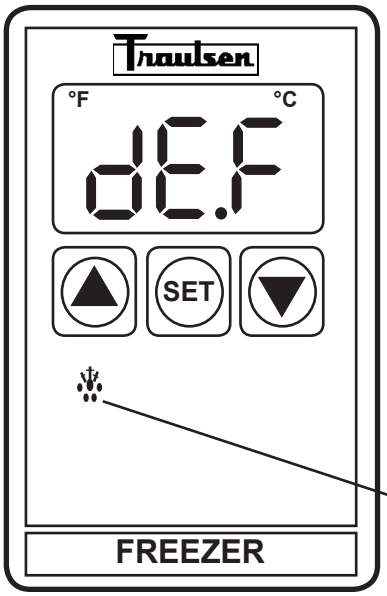
The display will show on .

Press the set button SET .

The display will then read Sd Start Manual Defrost.

You can use the up or down arrow keys to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.



The defrost icon (snow flake) will be lit, and the display will read dEF when the unit is in defrost.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. n - **SETTING THE DEFROST LOCKOUTS**:

The defrost lockout parameters allow the customer to prevent the unit from going into a defrost cycle for two hours during a set timeframe. Customers can set up to four defrost lockout parameters. They are all programmed the same way. The parameters will be set for the time the lockout is to start. The controller automatically calculates 2 hours from that setting. The options are similar to the 24-hour clock settings and are in 30-minute increments. Each of the lockout parameters covers 6 hours of the 24-hour clock. Note: The 24-hour clock must be set for this feature to operate at the correct time of day. See "Setting the 24-Hour Clock" on page 11.

			
OFF	OFF	OFF	OFF
020 = 2:00 a.m.	080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.
023 = 2:30 a.m.	083 = 8:30 a.m.	143 = 2:30 p.m.	203 = 8:30 p.m.
030 = 3:00 a.m.	090 = 9:00 a.m.	150 = 3:00 p.m.	210 = 9:00 p.m.
033 = 3:30 a.m.	093 = 9:30 a.m.	153 = 3:30 p.m.	213 = 9:30 p.m.
040 = 4:00 a.m.	100 = 10:00 a.m.	160 = 4:00 p.m.	220 = 10:00 p.m.
043 = 4:30 a.m.	103 = 10:30 a.m.	163 = 4:30 p.m.	223 = 10:30 p.m.
050 = 5:00 a.m.	110 = 11:00 a.m.	170 = 5:00 p.m.	230 = 11:00 p.m.
053 = 5:30 a.m.	113 = 11:30 a.m.	173 = 5:30 p.m.	233 = 11:30 p.m.
060 = 6:00 a.m.	120 = 12:00 p.m.	180 = 6:00 p.m.	240* = 12:00 a.m.
063 = 6:30 a.m.	123 = 12:30 p.m.	183 = 6:30 p.m.	243* = 12:30 a.m.
070 = 7:00 a.m.	130 = 1:00 p.m.	190 = 7:00 p.m.	010 = 1:00 a.m.
073 = 7:30 a.m.	133 = 1:30 p.m.	193 = 7:30 p.m.	013 = 1:30 a.m.
080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.	020 = 2:00 a.m.
			* Denotes not available.

A lockout cannot be programmed to start at 12:00 a.m. or 12:30 a.m. due to conflic s with other internal programs. The defrost lockouts cannot be programmed to run back-to-back. For example, if dL1 is set to 080, then a defrost cycle would be locked out from 8:00 a.m. to 10:00 a.m. Because of the dL1 setting the dL2 parameter would not let the user choose a lockout start time before 10:30 a.m. All lockouts are preset at the factory to OFF.

Follow the instructions to enter the customer access code on page 8. When the control

displays  Thermostat Set Point, press the down arrow key  until the control the

control display reads    or  . Press the set button  .

The display will show  Off. Press the arrow keys  to set the start time.

When the correct time is displayed, press the set button  .

You can press the up or down arrow keys  to scroll to the next parameter

or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. o - **ADJUSTING THE ROOM TEMPERATURE OFFSET**:

The room temperature offset parameter allows a service technician or end user the ability to have the display show a temperature that is within three degrees of the actual temperature being read by the cabinet air sensor. This allows for continuity of reading between different temperature reading devices. (i.e.: thermistor Vs thermocouple Vs handheld thermometer) This parameter is preset at the factory to "0" or no offset.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point, press the down arrow key  until the control display reads  Room Temperature Offset. Press the set button  . Use the arrow keys  to adjust the offset to your desired setting. When the display shows the offset you want press the set button  . The display will then read  Room Temperature Offset. You can use the up or down arrow keys  to scroll to the next parameter or wait 30 seconds for the control to return to normal operation.

VII. p - **VIEWING SENSOR TEMPERATURES**:

These parameters allow a service technician or customer to view the temperatures of all sensors within the unit. The temperatures cannot be adjusted. Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point, press the DOWN arrow key  unit the display reads Evaporator Coil Sensor  or Cabinet Air  or press the SET button  . To view the current sensor value press the SET button  when done. Press the UP or DOWN arrow keys  to scroll through the parameters or wait 30 seconds for the control to return to normal operation.

VII. MICROPROCESSOR CONTROL (cont'd)

VII. q - **HOT FOOD UNITS, ADJUSTING THE THERMOSTAT**:

This parameter sets the desired cabinet temperature. Please note that hot food units are delivered from the factory set to the OFF position.

Follow the instructions to enter the customer access code on page 8. When the control reads 

Thermostat Set Point , press the set button 

.
Use the arrow keys  to adjust the temperature to your desired setting. When the display shows the temperature you want press the set button 

. The display will then read 

Thermostat Set Point. You can use the up or down  arrow keys to scroll to the next parameter or press the alarm cancel button  to exit.

VII. r - HOT FOOD UNITS, TURNING THE UNIT OFF/ON:

After the temperature has been set, the customer can continuously turn the unit OFF and then back ON to the same temperature. To turn the unit ON /OFF press the alarm cancel button  , (please note that this feature is not available on versions of the control manufactured prior to September 2000), or if an alarm warning condition is present, use the alternative ON/OFF activation method.

To turn the unit ON/OFF using the alternative method, press both arrows  at the same time, the set temperature will remain in memory.

VII. s - **HOT FOOD UNITS, TEMPERATURE ADJUSTMENT**:

Press the SET button 

and the UP ARROW button  at the same time. The display will flash the current te - perature setting or OFF (if the unit is turned off). Use the UP  or DOWN ARROW  buttons to adjust your desired temperature setting (temperature range is 140° thru 180° F, and OFF) then press the SET button 

. The display will go back to reading cabinet temperature. If OFF is selected. the display will then read OFF. NOTE: If you wish to change the set temperature at anytime follow this procedure. These models also include a "One-Time Temperature Setting Adjustment" feature. Upon start-up, the unit will warm-up to the last temperature you had set for it, unless changed.

VIII. SPARE & REPLACEMENT PARTS LISTING

ITEM/DESCRIPTION	G100/G110 1 SEC REF	G120XX 1 SEC FRZ	G200/G210 2 SEC REF	G2200XX 2 SEC FRZ	G300/G320 3 SEC REF	G313XX/ G310XX 3 SEC FRZ
DOORS						
Full Height Solid Door	200-60142-00	all models	all models	all models	all models	all models
Full Height Glass Door	200-42192-00	call factory	200-42192-00	not available	200-42192-00	not available
Half Height Solid Door[1]	200-60140-00	all models	all models	all models	all models	all models
Half Height Glass Door[1]	200-60141-00	call factory	200-60141-00	not available	200-60141-00	not available
Half Height Solid Door[2]	200-60140-01	all models	all models	all models	all models	all models
Half Height Glass Door[2]	200-60141-01	call factory	200-60141-01	call factory	200-60141-01	call factory
GASKETS						
Full Height Solid Door Gasket	SVC-60059-00	all models	all models	all models	all models	all models
Half Height Solid Door Gasket	SVC-60060-00	all models	all models	all models	all models	all models
Full Height Solid Door Gasket	341-42090-02	call factory	341-42090-02	call factory	341-42090-02	call factory
Half Height Solid Door Gasket	341-42090-01	call factory	341-42090-01	call factory	341-42090-01	call factory
HINGE ASSY	SER-28583-00	all models	all models	all models	all models	all models
LOCK						
Lockkeeper	SER-60433-00	all models	all models	all models	all models	all models
Lock Cylinder	346-13186-42	all models	all models	all models	all models	all models
Key T42	358-28924-42	all models	all models	all models	all models	all models
SHELVES/TRAY SLIDES						
Epoxy Coated Shelf	340-60070-02	340-60070-02	340-60074-02	340-60074-02	see note [3]	see note [3]
Shelf Pin (4 per shelf)	344-24759-02	all models	all models	all models	all models	all models
3 Epoxy Coated Shelves[7]	SK30	SK30	not available	not available	SK30	SK30
3 Epoxy Coated Shelves[7]	not available	not available	SK31	SK31	SK31	SK31
3 Plated Shelves[7]	SK30C	SK30C	not available	not available	SK30C	SK30C
3 Plated Shelves[7]	not available	not available	SK31C	SK31C	SK31C	SK31C
#1 Tray Slides 4 Pairs[6]	TK1	all models	all models	all models	all models	all models
#4 Tray Slides 2 Pairs[6]	TK2	all models	all models	all models	all models	all models
Universal Tray Slides 4 Pairs[6]	TK4	all models	all models	all models	all models	all models
LEGS/CASTERS						
Leg 6” High (4 per unit)	344-13168-02	all models	all models	all models	all models	all models
Casters 6” High (4 per unit)	CK1	all models	all models	all models	all models	all models
LOUVER ASSY	500-70002-00	500-70002-00	500-70008-00	500-70008-00	500-70011-00	500-70011-00
SENSORS						
Cabinet Sensor	337-60405-02	all models	all models	all models	all models	all models
Coil Sensor	337-60406-02	all models	all models	all models	all models	all models
LIGHT						
Lampholder	333-60241-00	all models	all models	all models	all models	all models
Light Cover	337-30858-00	all models	all models	all models	all models	all models
Incandescent Light Bulb	378-29776-00	all models	all models	all models	all models	all models
HEATER						
Heater Full Height Door	329-60020-13	329-60020-32	329-60020-13	329-60020-32	call factory	call factory
Heater Half-Height Door	329-60020-10	329-60020-26	329-60020-10	329-60020-26	call factory	call factory
Defrost Heater	329-60022-00	329-60022-00	329-60022-00	329-60021-00	call factory	call factory
EVAPORATOR						
EVAPORATOR COIL	322-60003-00	322-60003-00	322-60003-00	322-60047-00	322-60047-00	322-60047-00
EXPANSION VALVE	325-60080-25	325-60080-25	call factory	326-60310-00	326-60310-00	326-60099-50

VIII. SPARE & REPLACEMENT PARTS LISTING (cont'd)

ITEM/DESCRIPTION	G100/G110 1 SEC REF	G120XX 1 SEC FRZ	G200/G210 2 SEC REF	G2200XX 2 SEC FRZ	G300/G320 3 SEC REF	G313XX/ G310XX 3 SEC FRZ
EVAPORATOR MOTOR ASSY	433670	433670	433670	433670	433670	433670
EVAPORATOR MOTOR ONLY	338-60054-00	338-60054-00	338-60054-00	338-60054-00	338-60054-00	338-60054-00
EVAPORATOR FAN BLADE	433090	433090	433090	433090	433090	433090
EVAPORATOR MOTOR BRACKET	701-60837-00	701-60837-00	701-60837-00	701-60837-00	701-60837-00	701-60837-00
ACTUATOR PLUNGER SWITCH[4]	344-28484-00	all models	all models	all models	all models	all models
ON/OFF SWITCH	337-60346-00	all models	all models	all models	all models	all models
EXTERIOR LIGHT SWITCH[5]	334-20265-00	not available	334-20265-00	not available	334-20265-00	not available
HOT GAS LOOP	326-60307-00	326-60307-00	call factory	326-60310-00	326-60310-00	326-60099-00
REFRIGERANT	R-134a	R-404a	R-134a	R-404a	R-134a	R-404a
COMPRESSOR	call factory	call factory	call factory	call factory	call factory	call factory
RELAY	940-0411-82	040-0102-00	940-0411-82	010-0001-80	040-0102-00	040-0001-48
START CAPACITOR	914-0038-00	014-0008-57	914-0038-00	014-0008-74	014-0008-71	014-008-63
CONDENSOR FAN MOTOR	338-60049-00	338-60049-00	338-60049-00	338-60049-00	call factory	050-0259-10
CONDENSOR FAN BLADE	325-60088-00	325-60088-00	325-60088-00	325-60088-00	call factory	083-C245-08
CONDENSOR	325-60123-00	325-60123-00	call factory	325-60122-00	call factory	066-0226-00

NOTE

All condensing unit parts are available locally from a Copeland distributor

SPARE & REPLACEMENT PARTS LISTING NOTATIONS

1= This half half height door can be used as hinged right if mounted on top or hinged left on the bottom.
2= This half half height door can be used as hinged left if mounted on top or hinged right on the bottom.
3= Three section models use a combination of p/n 340-60074-02 in the left and right sections, and p/n 340-70-02 in the center section.
4= Plunger switch is mounted in hinge and used for automatic light operation.
5= Available for use with glass door models only.
6= If mounting hardware is also required, please specify model and mounting location at time of order to insure provi sion of correct standards.
7= These shelf kits are intended for mounting on pilasters and clips. If mounting hardware is also required, please specify model and mounting location at time of order to insure provision of correct standards.

IX. TROUBLE SHOOTING GUIDE

FIND YOUR PROBLEM HERE	REMEDY
1. Condensing unit fails to start.	a. Check if cord & plug has been disconected. b. Check control temperature setting.
2. Condensing unit operates for prolonged periods or continuously.	a. Are doors closing properly? b. Dirty condenser or filte . Clean properly. c. Evaporator coil iced. Needs to defrost. See instructions for setting a manual defrost cycle on page 13.
3. Food compartment is too warm.	a. Check door(s) and gasket(s) for proper seal b. Perhaps a large quantity of warm food has recently been added or the door was kept open for a long period of time, in both cases, allow adequate time for the cabinet to recover its normal operating temperture. c. Control setting too high, readjust per instructions on page 10. d. Check that condensing coil is clean.
4. Food compartment is too cold.	a. Perhaps a large quantity of very cold or frozen food has recently been added. Allow adequate time for the cabinet to recover its normal operating temperature. b. Adjust the control to a warmer setting, see page 10.
5. Condensation on the exterior surface.	a. Check door alignment and gaskets for proper seal. b. Condensation on the exterior surface of the unit is perfectly normal during periods of high humidity.
6. Compressor hums but does not start.	a. Call for service.
7. No Power To Unit	a. Check if cord & plug has been disconnected. b. Check power supply breaker. c. Check ON/OFF switch.

X. WARRANTY INFORMATION

STANDARD DOMESTIC WARRANTY

TRAULSEN warrants new equipment to the original purchaser, when installed within the United States against defective material and workmanship for three (3) years from the date of original installation. Under this warranty, TRAULSEN will repair or replace, at its option, including service and labor, all parts found to be defective and subject to this warranty. Warranty term begins upon the date of Installation, the date of End User Invoice or the date of Dealer Invoice, whichever is proven to occur latest, not to exceed 18 months from Dealer Invoice date (the "Warranty Period"). Warranty excludes components that are removable without tools.

The compressor part is warranted for an additional two (2) years. During this period TRAULSEN will supply replacement compressor(s) if deemed defective, however all installation, recharging and repair costs will remain the responsibility of the owner.

This warranty does not apply to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and does not apply to food loss.

For Traulsen units purchased with a remote feature, standard warranty will apply only to those components contained within the unit to the point of connection of the refrigeration lines leading to the remote condenser.

"Defective Part Return" – All claimed defective replacement part(s) must be returned to TRAULSEN for inspection within 30 days from the date of the repair. Failure to return all claimed defective part(s) to TRAULSEN will invalidate the warranty claim, this warranty statement, and forfeit payment for those repairs affected.

INTERNATIONAL COMMERCIAL WARRANTY

TRAULSEN warrants to the original purchaser the Refrigeration Equipment shall be manufactured free from defects in material and workmanship under normal use and service for a period of one (1) year from date of shipment. Under this warranty, TRAULSEN will reimburse the purchaser for the replacement of any part of said equipment (excluding dryers & refrigerant gas) which then proves to be defective. This warranty does not apply to damage resulting from fire, water, burglary, accident, abuse, misuse, transit, acts of God, terrorism, attempted repairs, improper installation by unauthorized persons, and will not apply to food loss.

TRAULSEN'S standard warranty does not apply to Export Sales. Rather, for a period of one (1) year from date of original installation not to exceed Fifteen (15) months from date of shipment from factory, TRAULSEN: will, at Traulsen's sole discretion, replace or repair, F.O.B. factory, any defective parts normally subject to warranty and will not cover the cost of packing, freight or labor, such costs being the sole responsibility of the dealer.

THERE ARE NO ORAL, STATUTORY OR IMPLIED WARRANTIES APPLICABLE TO TRAULSEN, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. TRAULSEN SHALL HAVE NO OBLIGATION OR LIABILITY FOR CONSEQUENTIAL OR SPECIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, PUNITIVE DAMAGES, LOSS OF USE, LOSS OF PRODUCT, DOWN TIME OR LOST PROFITS, GROWING OUT OF OR WITH RESPECT TO THE EQUIPMENT OR ITS SALE, OPERATION OR USE, AND TRAULSEN NEITHER ASSUMES NOR AUTHORIZES ANYONE ELSE TO ASSUME FOR IT ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE EQUIPMENT OR ITS SALE, OPERATION OR USE OTHER THAN AS STATED HEREIN.

NOTES

NOTES

HOURS OF OPERATION:
Monday thru Friday 7:30 am - 4:30 pm CST

Quality Refrigeration

Traulsen
4401 Blue Mound Road Fort Worth, TX 76106
Phone: (800) 825-8220 Fax-Svce: (817) 740-6757
Website: www.traulsen.com

Traulsen

Quality Refrigeration

OWNER'S MANUAL

G-Series Reach-In & Pass Thru

Refrigerator, Freezer & Hot Holding

For equipment produced after 09-15-2017 only.*

4401 Blue Mound Road Fort Worth, Texas 76106 (USA)

Phone: 800.825.8220 | Service Fax: 817.740.6757 | E-mail: service@traulsen.com | Website: traulsen.com

Hours Of Operation: Monday - Friday 7:30 a.m. - 4:30 p.m. (CST)

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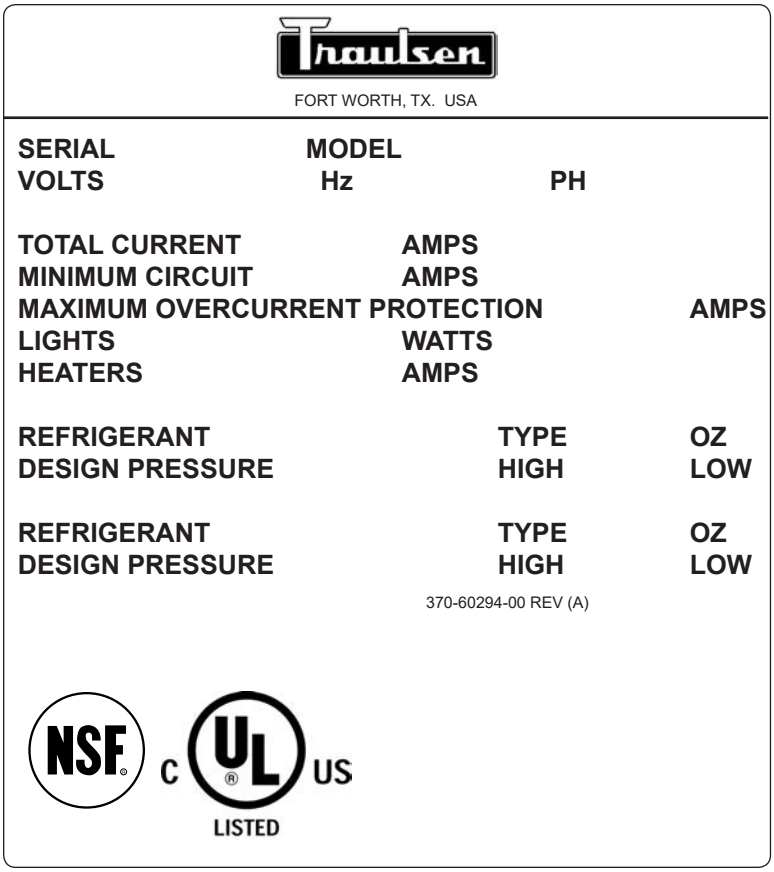


1. THE SERIAL TAG

The serial tag is a permanently affixed label upon which is recorded vital electrical and refrigeration data about your Traulsen product, as well as the model and serial number. This tag is located in the upper right interior compartment on all Traulsen G-Series refrigerator and freezer models.

READING THE SERIAL TAG

- Serial = The permanent ID# of your Traulsen
- Model = The model # of your Traulsen
- Volts = Voltage
- Hz = Cycle
- PH = Phase
- Total Current = Maximum amp draw
- Minimum Circuit = Minimum circuit ampacity
- Lights = Light wattage
- Heaters = Heater amperage (Hot Food units only)
- Refrigerant = Refrigerant type used
- Design Pressure = High & low side operating pressures and refrigerant charge
- Agency Labels = Designates agency listings

2. RECEIPT INSPECTION

All Traulsen products are factory tested for performance and are free from defects when shipped. The utmost care has been taken in crating this product to protect against damage in transit. All interior fittings have been carefully secured and the casters/legs are boxed and strapped inside to prevent damage. Door keys will be attached to the handle with a nylon strip. The handle is protected by an easily removable nylon netting.

You should carefully inspect your Traulsen unit for damage during delivery. If damage is detected, you should save all the crating materials and make note on the carrier's Bill Of Lading describing this. A freight claim should be filed within 5 days. If damage is subsequently noted during or immediately after installation, contact the respective carrier and file a freight claim. Under no condition may a damaged unit be returned to Traulsen without first obtaining written permission (return authorization). You may contact Traulsen customer care at (800) 333-7447 to request a return.

3. INSTALLATION

3A - <u>LOCATION</u>:
Select a proper location for your Traulsen unit, away from extreme heat and allow proper clearance for air circulation (see page 4). Allow enough clearance between the unit and the side wall in order to make use of the door stay open feature at 120° (self-closing feature operates up to 90°). The door(s) must be able to open a minimum of 90° in order to make use of the maximum clear door width available.

3B - <u>PACKAGING</u>:
All Traulsen units are shipped from the factory bolted to a sturdy wooden pallet and packaged in a durable Styrofoam backed cardboard wrap.

Most exterior stainless steel and aluminum surfaces have a protective vinyl covering to prevent scratching during manufacturing, shipping and installation. After the unit is installed in place of service, remove and discard the covering from all surfaces.

If at all possible we suggest that the cabinet remain bolted to the pallet during all transportation to the point of final installation. To remove the wooden pallet, the bolts can then be removed with a 3/4" socket wrench. Avoid laying the unit on its front, side or back for removal of the pallet.

NOTE: DO NOT LAY THE UNIT ON ITS SIDE DURING TRANSPORTATION OR INSTALLATION.

3. INSTALLATION (cont'd)

3C - <u>INSTALLING CASTERS OR LEGS</u>:
A set of four (4) 6" high casters and sixteen (16) bolts are supplied standard for all Traulsen G-Series units. These are shipped from the factory packed inside a cardboard box which is strapped inside the cabinet to the lower shelf.

Legs in lieu of casters are available as an optional accessory kit for the same models. These are shipped inside a separate cardboard box. Inside it should contain four (4) legs and sixteen (16) bolts.

WARNING: THE CABINET MUST BE BLOCKED AND STABLE BEFORE INSTALLING LEGS OR CASTERS.

To install the legs or casters, first raise and block the reach-in a minimum of 7" from the floo . For installing legs, thread the legs into the threaded holes on the bottom of the cabinet (see figure 1). Be certain that all legs are tightly secured. When the unit is set in its final position, it is important for proper operation that the unit be level. The legs are adjustable for this purpose, turn the bottom of the leg counterclockwise to raise it, clockwise to lower it. Level the unit from front to back as well as side to side in this manner.

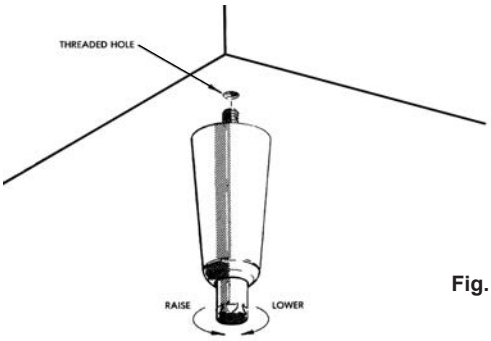


Fig. 1

Please note that Traulsen units are not designed to be moved while on legs. If the unit requires moving, a pallet jack or forklift should be used to prevent damage. For installing casters, the casters are a "plate" type, and require the use of four (4) bolts each to secure them firmly to the cabinet bottom at each corner (see figure 2). The caster bolts are tightened using a 1/2"socket wrench.

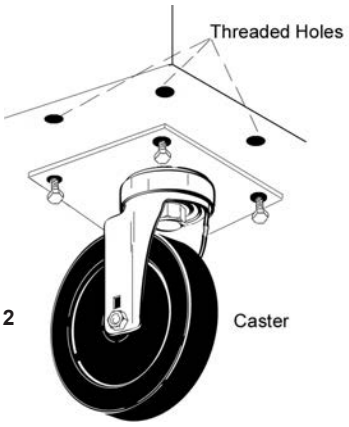


Fig. 2

3D - SHELF PINS:
The unit is supplied with shelves and shelf pins installed. Check all shelf pins to assure they are tightened down as they may have come loose during shipping. Rotate the pins clockwise until they are secured against the side of the cabinet.

3E - REMOVING THE DOORS & HARDWARE:
In order to fit through narrow (less than 35") doorways, it may be necessary to remove the door(s), and/or hinges. To remove any solid door, begin by removing the plug at the bottom of the top hinge. Inside the hinge there is a small screw which secures the door in place. Remove this with a flat head screwdriver and the door can then be lifted off the hinges (see figure 3)

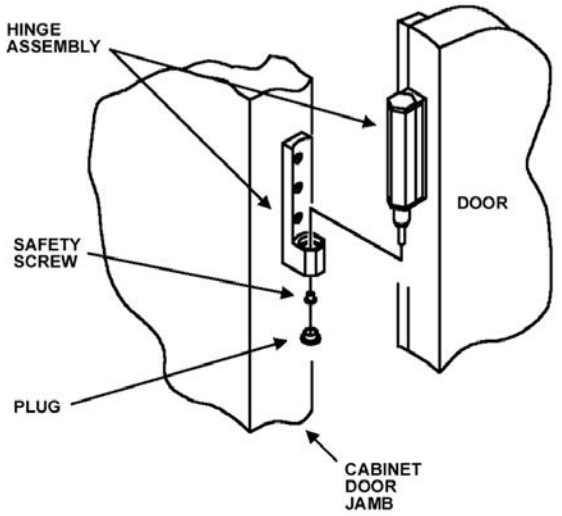


Fig. 3

After removing the door, it maybe necessary to remove the hinge assembly and hardware from the door itself.

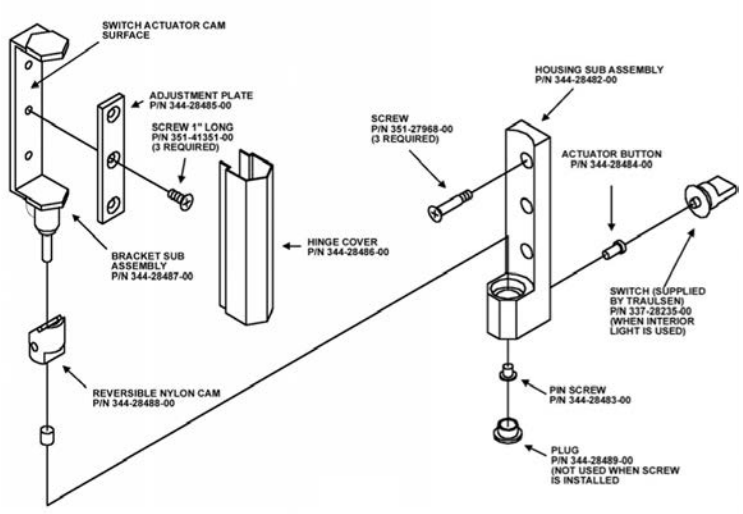


Fig. 4

3E - REMOVING THE DOORS & HARDWARE (cont'd):
If it is necessary to remove the hinge hardware from the cabinet, begin by removing the three Phillips head screws which hold it in place. Set these components aside for later reassembly. Pay special attention not to loose the door switch actuator button controls evaporator fan and interior light operation (see figure 4)

NOTE: All solid door units include a microswitch for controlling the interior lighting in the top hinge(s). Special care should be taken to not damage the wiring for this during the hinge removal process.

The lock keeper may also require removal in order to reduce the overall cabinet depth to 32".

Next remove the lock keeper bracket by removing the two (2) flat head screws which secure it in place. Set these components aside for later reassembly.

To re-install the door and/or hinges, please reverse the appropriate sections of the preceding procedure.

3F - CORD & PLUG:
All G-Series models are supplied with a cord & plug attached. It is shipped coiled at the top of the cabinet, secured by a nylon strip. For your safety and protection, all units supplied with a cord and plug include a special three-prong grounding plug on the service cord. Select only a dedicated electrical outlet with grounding plug for power source.

NOTE: Do not under any circumstances, cut or remove the round grounding prong from the plug, or use an extension cord.

3G - POWER SUPPLY:
The supply voltage should be checked prior to connection to be certain that proper voltage for the cabinet wiring is available (refer to the serial tag to determine correct unit voltage). Make connections in accordance with local electrical codes. Use qualified electricians

Use of a separate, dedicated circuit is required. Size wiring to handle indicated load and provide necessary over current protector in circuit (see amperage requirements on the unit's serial tag).

3H - WIRING DIAGRAM:
Refer to the wiring diagram located on the exterior back of the cabinet for any service work performed on the unit. Should you require one, please contact Traulsen Service at (800) 825-8220, and provide the model and serial number of the unit involved.

3. INSTALLATION (cont'd)

3I - CLEARANCE:
In order to assure optimum performance, the condensing unit of your Traulsen unit **MUST** have an adequate supply of air for cooling purposes. Therefore, the operating location must either have a minimum of 12" clearance overhead of the condensing unit or allow for unrestricted air flow at the back of the unit. Clearance of at least 12" above is required in order to perform certain maintenance tasks.

3J - INSTALLING OPTIONAL INTERIOR KITS:
In addition to their standard interiors, G-Series models also offer the option for additional shelves or tray slides. If ordered, these are shipped as kits along with the unit, packaged in a separate cardboard box which contains all the necessary parts and hardware for on-site installation.

To install additional shelves, first remove the white plastic covers from inside the cabinet. These are located along the same vertical line as the pins already in place on the interior side walls, back and center mullion (two and three-section models). This exposes threaded holes in which you may position the new shelves. Next insert the gray plastic shelf pins into these holes and tighten by turning clockwise with your fingers. After all four pins are in place, the new shelf should be placed to rest on top of them. The unused plastic covers may be discarded or saved for future changes to the cabinet interior.

Installation of optional tray slides varies with each cabinet, and with each type of tray slide ordered. To install optional tray slides, follow the directions packaged inside the kit carton.

3K - ON/OFF SWITCH:
An **ON/OFF** toggle switch for the power supply is provided. It is located on top of the unit, mounted to the side of the evaporator housing. This is shipped from the factory in the **ON** position.

4. OPERATION

4A - REFRIGERATORS:
Both refrigerators and freezers do not require manual defrosting. During normal operation, a refrigerator continuously circulates above freezing cabinet air through the evaporator coil. An electric defrost occurs every 8 hours for a maximum length of 25 minutes to melt any frost which may accumulate on the coil during the compressor "ON" cycle. With standard holding refrigerators, high relative humidity is also maintained to prevent dehydration of stored product.

4. OPERATION (cont'd)

4B - FREEZERS:
During normal operation, a freezer continuously circulates below freezing cabinet air through the evaporator coil. The coil requires a periodic defrosting for proper operation. This is accomplished by an automatic, time activated, temperature/time terminated, defrost program. The controller is preset at the factory for six equally spaced defrost cycles within each 24-hour period.

The evaporator fan(s) cycle off with each door opening. The evaporator fan(s) will cycle on (15 seconds) and off (45 seconds) during the compressor off cycle. During the compressor on cycle the evaporator fan(s) will run continuously.

At the start of a refrigerator or freezer defrost cycle, both the compressor and evaporator fans are off. The microprocessor control will read "dEF" (see figure 5).

Fig. 5

The electric heater (attached to the coil) is energized. When the temperature sensor affixed to the coil senses 45°F, the coil is fully defrosted and the compressor operation is resumed, defrost heaters are automatically turned off. The evaporator coil fans are delayed from starting at the termination of a defrost cycle. Fan operation is automatically resumed, after a short time or temp delay (whichever comes first). After completion, the total refrigeration system operation is then resumed. During defrost operation, heat is confined to the coil enclosure to prevent any significant rise in temperature within the food zone. The fan delay control function upon termination of a defrost cycle is two-fold. First, to prevent blowing warm air into the food storage area. Second, to prevent any condensation on the defrost coil from being blown into the food storage area.

The microprocessor control is set from the factory to terminate defrost at 25 minutes for refrigerators and 30 minutes for freezers in the event of a sensor failure. This setting should never be tampered with, without first consulting the factor .

4. OPERATION (cont'd)

4C - LIGHT SWITCHES:
All G-Series models include a concealed door switch mounted in the top door hinge(s), which automatically activates the interior light when the door is opened. When the door is closed, the lights are not operating.

In addition, on hinged glass door models, an exterior mounted, illuminated red switch is included for manual light control. In the **ON** position, the lights are illuminated whether the doors are open or not. In the **OFF** position, the lights are controlled by the hinge switch as described in the first paragraph.

4D - TURN OFF TEMPERATURE DISPLAY-MAIN DISPLAY SHORT CUT: There is a short cut to disable the external temperature display. Note that before doing so you must install an interior mounted thermometer in order to conform with local health codes.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Unlock Key
	Keypad Unlock LED

- Press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap").
- The **Keypad Unlock LED** will turn on to indicate the keypad is now live.
- Press and hold the **Unlock Key** for 3 seconds until the temperature display goes blank.

To restore the temperature display, press any key except the **Unlock Key**:

- Press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap").
- The **Keypad Unlock LED** will turn on to indicate the keypad is now live.
- Press any key except the Unlock Key to restore the temperature display.

5. CARE & MAINTENANCE

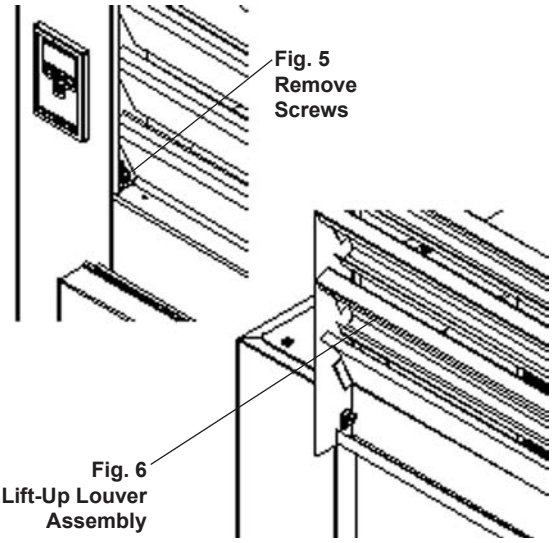
WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING ANY PARTS OF THE UNIT.

5A - CLEANING THE CONDENSER:
The most important thing you can do to insure a long, reliable service life for your Traulsen is to regularly clean the condenser coil.

The condensing unit requires regularly scheduled cleaning to keep the finne condenser clean of lint and dust accumulation. Keeping the condenser clean allows the cabinet to operate more efficiently and use less energy. To clean the condenser, first disconnect electrical power to the cabinet and lift up the front louver assembly. To lift this, remove the two screws located on both sides at the bottom of the louver assembly (see figure 5). Once the screws are removed, the panel can be pivoted upwards allowing full access to the front facing condenser (see figure 6).

5. CARE & MAINTENANCE (cont'd)

5A - CLEANING THE CONDENSER (cont'd):



Vacuum or brush any dirt, lint or dust from the finned condenser coil, the compressor and other cooling system parts. If significan dirt is clogging the condenser fins use compressed air to blow this clear. Care should be taken not to bend any of the condenser fins, as this will reduce performance and compressor life. Lower louver assembly and replace screws to hold it in place.

5B - HINGE REPLACEMENT:
To remove the door, remove the plug at the bottom of the top hinge. Behind this is a screw which secures the door in place. Remove this with a flat head screwdriver and then lift the door off the hinge. To remove the door portion of the hinge, lift off the hinge cover and then remove the 3 Phillips head screws which secure the hinge in place. To remove the cabinet portion of the hinge, remove the 3 Phillips head screws which hold it in place. On solid door units, the top hinge(s) contains a switch for controlling the lights.To reassemble the hinge reverse the procedure.

5C - REPLACING THE GASKETS:
To remove the gasket to be replaced, grasp it firmly by one corner and pull it out. Before attempting to install a new gasket, both the unit and gasket must be at room temperature. Insert the four corners first by using a rubber mallet (or hammer with a block of wood). After the corners are properly inserted, work your way towards the center from both ends by gently hitting with a mallet until the gasket is completely seated in place (see figure 7 for proper gasket placement).

NOTE: The gasket may appear too large, but if it is installed as indicated above it will slip into place.

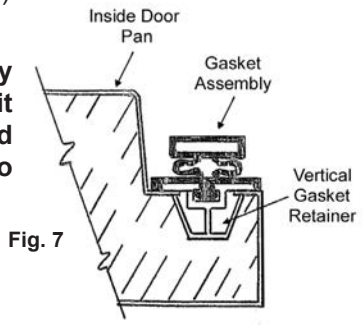


Fig. 7

5. CARE & MAINTENANCE (cont'd)

5D - CLEANING THE EXTERIOR:
Exterior stainless steel and aluminum should be cleaned with warm water, mild soap and a soft cloth. Apply with a dampened cloth and wipe in the direction of the metal grain.

Avoid the use of strong detergents and gritty, abrasive cleaners as they may tend to mar and scratch the surface. **Do NOT** use cleansers containing chlorine, this may promote corrosion of the stainless steel.

Care should also be taken to avoid splashing the unit with water, containing chlorinated cleansers, when mopping the floor around the unit.

For stubborn odor spills, use baking soda and water (mixed to a 1 TBSP baking soda to 1 pint water ratio).

5E - CLEANING THE INTERIOR:
For cleaning anodized aluminum interiors, the use of baking soda as described in section "V. d" is recommended. Use on breaker strips as well as door gaskets. All interior fittings are removable without tools to facilitate cleaning.

5F - ADJUSTING THE SHELVES:
For shelves mounted on pins, first select the desired location and remove the white plastic covers in the interior back and sides by rotating them counterclockwise. Remove the shelf pins by rotating them counterclockwise. Install the pins in the desired location by rotating clockwise. Make sure the pin is securely tightened down. Do not over tighten. Slide the shelf into its new position, and replace the white plastic covers into the holes vacated by the shelf pins.

6. OTHER

6A - SERVICE INFORMATION:
Before calling for service, please check the following:

- ☐ Is the electrical cord plugged in?
- ☐ Is the fuse OK or circuit breaker on?
- ☐ Is the power switch "ON"?

If after checking the above items and the unit is still not operating properly, please contact an authorized Traulsen service agent. You may obtain the name of a service agent from the Service tab of our website: www.traulsen.com.

6. OTHER (cont'd)

6A - SERVICE INFORMATION (cont'd):
If service is not satisfactory, please contact our in-house service department at: **Traulsen**
4401 Blue Mound Road Fort Worth, TX 76106
(800) 825-8220
Traulsen reserves the right to change specific tions or discontinue models without notice.

6B - SPARE PARTS:
Spare or replacement parts may be obtained through a parts supplier or one of our authorized service agents (see page 17-18 for parts listing). A list of authorized service agents is posted on our company's official website Service tab at www.traulsen.com.

6C - WARRANTY REGISTRATION:
The warranty for your new Traulsen unit may be registered with us by completing warranty information online, via our website www.traulsen.com click on Service Tab or calling us direct at 800-825-8220.

7. MICROPROCESSOR CONTROL

Your new Traulsen G-Series Refrigerator, Freezer or Hot Food is equipped with an electronic microprocessor control, which precisely regulates operation. It is supplied from the factory completely ready for use. See pages 6 thru 14 for more information.

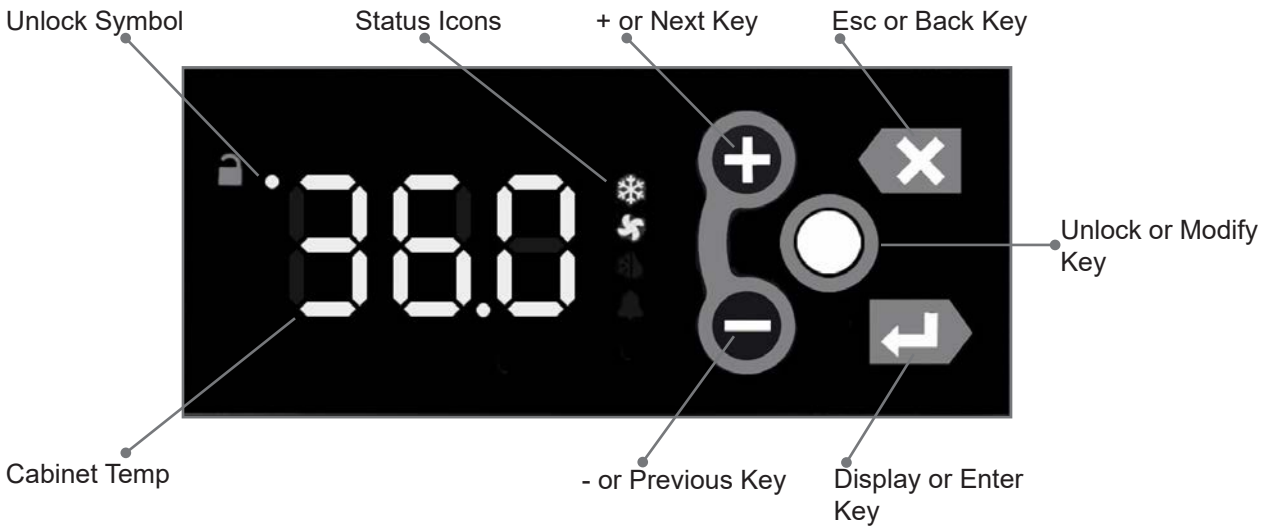
7A - CONTROL FEATURES:
Internal Time Clock
- Eliminates defrost time clock (refrigerator and freezer models only).
- See "Setting The 24-Hour Clock" on Page 11. (Also required at "Start Up")

Parameter/Service Levels
- See "Customer/Service Parameters" on Page 8 - 9.

Defrost - See "Setting Defrost" on page 12
- Customers can set up to 6 different defrost schedules. The defrost schedule allows the customer to decide when defrosts will take, preventing a defrost cycle during peak kitchen use. **NOTE: The 24-hour clock must be set for this feature to operate correctly.**

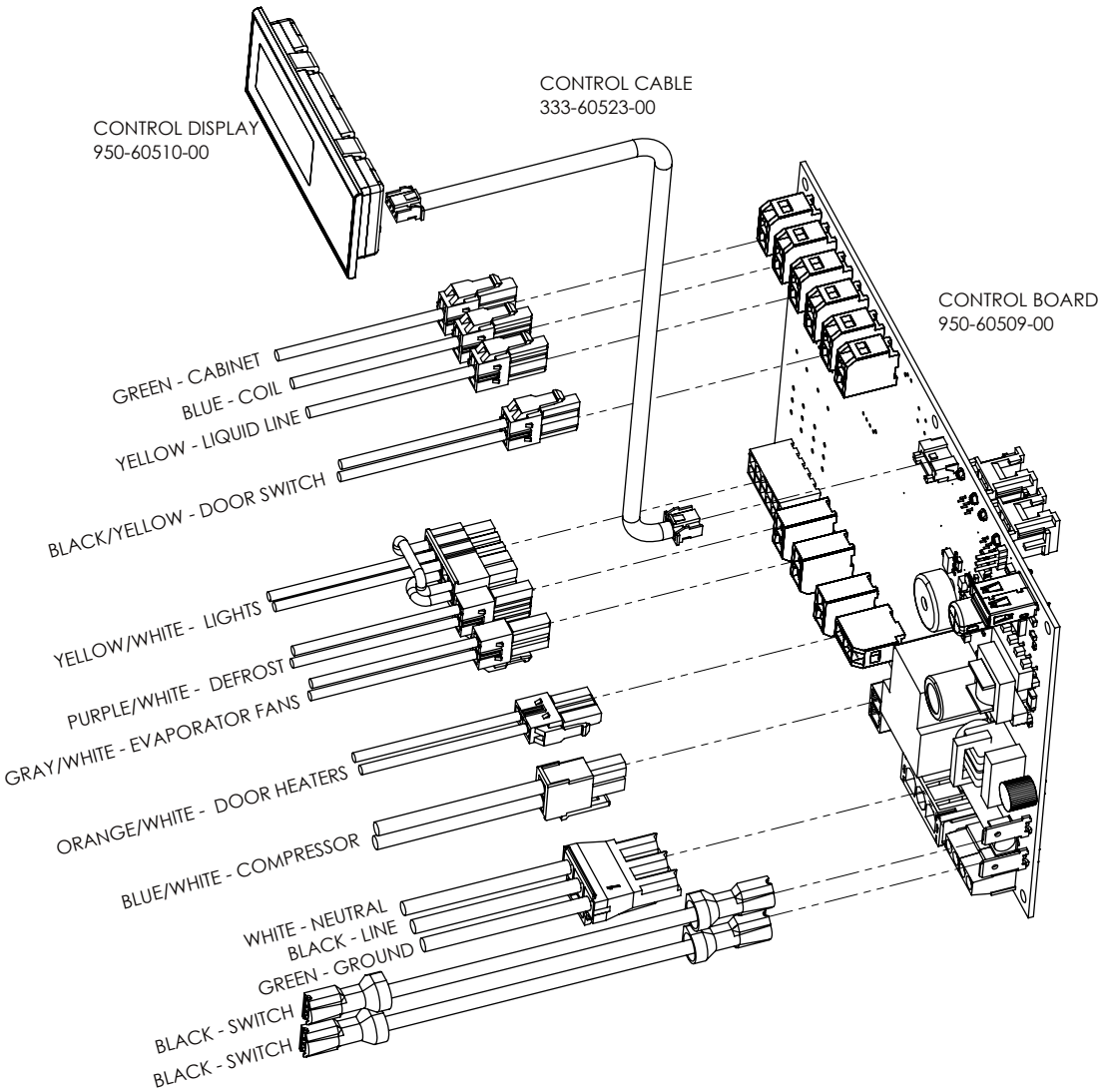
7. MICROPROCESSOR CONTROL (cont'd)

7B - **CONTROL PANEL**:



7C - **PARTS ASSEMBLY**:

NOTE: Parts can be ordered separately by calling Traulsen at 800-825-8220. Requires unit model and serial to place order. Please contact factory direct for hot food control drawing if required.



7. MICROPROCESSOR CONTROL (cont'd)

7D - NOTES TO THE USER:

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	ESC Key
	Unlock Key

You only have 3 minutes between button pushes. If you take longer than 3 minutes, the keypad will lock. The Menu System has a 10 minute timeout. After 10 minutes of inactivity, the controller will revert back to displaying the cabinet temperature. You can exit the Menu System at any time by pressing the **Esc Key** until the cabinet temperature is displayed. If you are making changes and the keypad locks, press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap").

7E - ENTER THE CUSTOMER PASSWORD:

In order to access the menu system, the user must enter a password first. Once the password is entered, it remains in effect until the user returns to the Main Display (the cabinet temperature). If the user does not exit the menu system, the controller will time-out after 10 minutes of inactivity. The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Unlock Key
	Keypad Unlock LED
	Enter Key
	SEn
	Plus (+) /Next Key
	SEt/Settings
	AL
	SdF
	Minus (-) /Previous Key

- Press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap")
- The **Keypad Unlock LED** will turn on to indicate the keypad is now live
- To enter the Menu System, press the **Enter Key**
- The display will show **"SEn"**
- Press the **Plus Key** to scroll through the menu system. The choices are:
    - o **"SEn"** for the Sensors submenu
    - o **"SEt"** for the Settings submenu
    - o **"AL"** for the Alarm submenu
    - o **"SdF"** to start a defrost
- **Enter Key** to select the desired submenu
- The display will show "000". The first "0" will flas
- Use the **Plus Key** or the **Minus Key** to modify the flashing digit until it reads "1"
- Press the **Enter Key** to accept the value
- Repeat for the 2nd and 3rd digits until the displays shows "111".
- Press the **Enter Key** to enter the desired submenu.

7. MICROPROCESSOR CONTROL (cont'd)

7F - ENTER THE TECHNICIAN PASSWORD:

In order to access the menu system, the user must enter a password first. Once the password is entered, it remains in effect until the user returns to the Main Display (the cabinet temperature). If the user does not exit the menu system, the controller will time-out after 10 minutes of inactivity. The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Unlock Key
	Keypad Unlock LED
	Enter Key
	SEn
	Plus (+) /Next Key
	SEt
	AL
	SdF

- Press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap").
- The **Keypad Unlock LED** will turn on to indicate the keypad is now live.
- To enter the Menu System, press the **Enter Key**.
- The display will show **"SEn"**.
- Press the **Plus Key** to scroll through the menu system. The choices are:
    - o **"SEn"** for the Sensors submenu
    - o **"SEt"** for the Settings submenu
    - o **"AL"** for the Alarm submenu
    - o **"SdF"** to start a defrost

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Enter Key
	Plus (+) /Next Key
	Minus (-) /Previous Key

- **Enter Key** to select the desired submenu.
- The display will show "000". The first "0" will flas
- Use the **Plus Key** or the **Minus Key** to modify the flashing digit until it reads "5"
- Press the **Enter Key** to accept the value
- Repeat for the 2nd and 3rd digits until the displays shows "555".
- Press the **Enter Key** to enter the desired submenu.

7. MICROPROCESSOR CONTROL (cont'd)

7G - SERVICE PARAMETERS-MENU SYSTEM:

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Plus (+) /Next Key
	Keypad Unlock
	SEt/Settings
	Enter Key
	Set Point
	Plus (+) /Next Key
	Set Point Differential
	Modify Key

Listed below are the available parameters in the order they appear, use the **Plus Key** on the controller to sequence through menu system. The **Keypad must be Unlocked** to access the menu system.

- Follow the instructions to enter the technician password (see page 9).
- Use the **Plus Key** to move to the **Settings** submenu.
- Press the **Enter Key** to enter the **Settings** submenu.
- The first parameter displayed will be the **Set Point** parameter is displayed.
- Press the **Enter Key** to display the value of the **Set Point**.
- Use the **Plus Key** to move to the next parameter (**Set Point Differential**).
- Press the **Enter Key** to display the value of the **Set Point Differential**.
- Press the **Modify Key** to change a setting. The value will flash, indicatin it is being modified
- Use the **Plus Key** to move through the settings parameters.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Set Point
	Set Point Differential
	Aux Device Set Point
	Aux Device Set Point Differential
	Cabinet Fan Door Action
	Defrost Set Point
	Defrost Mode
	Defrost Interval
	Defrost Time1
	Defrost Time2
	Defrost Time3
	Defrost Time4
	Defrost Time5
	Defrost Time6
	Door Heater Mode
	Door Heater Delay
	Serial Number
	Software Version
	Temp Units
	Time Zone
	Daylight Savings Flag

The following parameters are available:

- o Cabinet Set Point
- o Set Point Differential
- o Aux Device Set Point
- o Aux Device Set Point Differential
- o Cabinet Fan Door Action
- o Defrost Set Point
- o Defrost Mode
- o Defrost Interval
- o Defrost Time1
- o Defrost Time2
- o Defrost Time3
- o Defrost Time4
- o Defrost Time5
- o Defrost Time6
- o Door Heater Mode
- o Door Heater Delay
- o Serial Number
- o Software Version
- o Temp Units
- o Time Zone
- o Daylight Savings Flag

In General:

- Use the **Plus Key** and the **Minus Key** to move through the Menu System.
- Press the **Enter Key** to display the value of the selected parameter.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Plus (+) /Next Key
	Minus (-) /Previous Key
	Enter Key
	Modify Key
	Esc Key

- Press the **Modify Key** to change a setting. The value will flash, indicating it is being modifie
- Once the value is flashing, use the **Plus Key** and the **Minus Key** to change the setting.
- When the display shows the desired setting, press the **Enter Key** to accept the value.
- Press the **Esc Key** to abort an edit operation.

7. MICROPROCESSOR CONTROL (cont'd)

7H - **ADJUST THE SETPOINT - MENU SYSTEM**:
This parameter sets the low point of the desired cabinet temperature range. The set point can be configured from the Main Display using the short cut (see section XX), or from the Menu System.

Typically, freezers will range from -3° F to 0° F (-19° C to -18° C) and refrigerators will range from 35° F to 38° F (2° C to 4° C) for this parameter setting. This parameter is preset at the factory and does not require adjustment unless the customer chooses to do so. The setpoint for the unit can be changed from the Menu System. There will be a minimum and maximum value allowed for the set point. The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	SEt/Settings
	Enter Key
	Plus (+) /Next Key
	Set Point
	Value Of Set Point
	Modify Key
	Minus (-) /Previous Key

- Follow the instructions to enter the customer password and **Settings** submenu.
- Press the **Enter Key** to enter the Settings submenu.
- Use the **Plus Key** until the **Setpoint** parameter is displayed
- Press the **Enter Key** to display the **value of the setpoint**.
- Press the **Modify Key** and the value will flash, indicating it is being modifi
- To raise the setpoint, press the **Plus Key** to increment to the set point. Press the **Minus Key** to lower the setpoint.
- When the desired value is reached, press the **Enter Key** to lock in the value.

7I - **ADJUST THE SETPOINT DIFFERENTIAL - MENU SYSTEM**:
This parameter sets the number of degrees the air temp will rise above set point before the refrigeration system will cycle on. The set point differential is set at 2 for both refrigerator and freezer models which will allow the air temperature to rise 2 degrees above SP (set point) setting before cycling refrigeration on. This parameter is preset at the factory and does not require adjustment unless the customer chooses to do so. The setpoint differential can be changed from the Menu System. There will be a minimum and maximum value allowed for the set point differential. The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	SEt/Settings
	Plus (+) /Next Key
	Set Point Differential
	Enter Key
	2.O Set Point Value
	Modify Key
	Minus (-) /Previous Key

- Follow the instructions to enter the technician password and **Settings** submenu.
- Use the **Plus Key** until the **Setpoint Different** parameter is displayed
- Press the **Enter Key** to display the value of the set point **2.0**.
- Press the **Modify Key** and the value will flash, indicating it is being modifi
- To raise the set point differential, press the **Plus Key** to increment to the set point differential. Press the **Minus Key** to lower the set point differential.
- When the desired value is reached, press the Enter Key to lock in the value.

7J - **CHANGE THE TEMPERATURE SCALE - MENU SYSTEM**:
The temperature scale determines if the temperature displayed will be in degrees **Fahrenheit** or degrees **Celsius**.
The keypad must be unlocked to access the menu system.

- Follow the instructions to enter the technician password and **Settings** submenu.
- Use the **Minus Key** until the **Temperature Units** parameter is displayed.
- Press the **Enter Key** to display the **value of the temperature units**.
- Press the **Modify Key** and the value will flash, indicating it is being modifie
- To change the temperature units, press the **Plus Key** to step through the list of choices: **Fahrenheit** or **Celsius**.
- When the desired setting is reached, press the **Enter Key** to lock in the value.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	SEt/Settings
	Minus (-) /Previous Key
	Temp Units
	Enter Key
	Value Of Temp Units
	Modify Key
	Plus (+) /Next Key

7. MICROPROCESSOR CONTROL (cont'd)

7K - **SET DATE & TIME - MENU SYSTEM**:
The internal timeclock must be set in order to allow defrost schedule feature to occur at the correct time of day. If the clock is not set, the control assumes the time is 12 a.m. at the time power is supplied to the unit. The hours on a 24-hour timeclock read the following way:

h01 = 1:00 a.m.	h07 = 7:00 a.m.	h13 = 1:00 p.m.	h19 = 7:00 p.m.
h02 = 2:00 a.m.	h08 = 8:00 a.m.	h14 = 2:00 p.m.	h20 = 8:00 p.m.
h03 = 3:00 a.m.	h09 = 9:00 a.m.	h15 = 3:00 p.m.	h21 = 9:00 p.m.
h04 = 4:00 a.m.	h10 = 10:00 a.m.	h16 = 4:00 p.m.	h22 = 10:00 p.m.
h05 = 5:00 a.m.	h11 = 11:00 a.m.	h17 = 5:00 p.m.	h23 = 11:00 p.m.
h06 = 6:00 a.m	h12 = 12:00 p.m.	h18 = 6:00 p.m.	h24 = 12:00 a.m.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Sensor
	Minus Key
	Time Parameter
	Enter Key

- Follow the instructions to enter the technician password and **Sensor** submenu.
- Use the **Minus Key** until the **Time parameter** is displayed.
- Press and hold the **Enter Key** to display the current time in the controller. The Month will be displayed first, followed by the Day and then the Year. The Hours, Minutes and Seconds will be displayed next. Continue to hold the **Enter Key** to display all fields i the Date and Time. The fields are identified by the first charact
    - o Month
    - o Day
    - o Year
    - o Hours
    - o Minutes
    - o Seconds

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Modify Key
	Plus Key
	Minus Key
	Enter Key

- Press the **Modify Key** and the Months field will flash, indicating it is being modifi
- To change a particular Date/Time field, press the **Plus Key** or the **Minus Key** to set the field to the desired value
- When a Date/Time field is acceptable, press the **Enter Key** to use the value.
- You must step through all six Date/Time fields to change any one fiel

7L - **SET DAYLIGHT SAVINGS - MENU SYSTEM**:
This parameter is used to adjust the 24-hour clock for Daylight Savings Time. Daylight Savings does not automatically adjust and must be set manually. The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	SEt/Settings
	Minus (-) /Previous Key
	Enter Key
	Modify Key
	Plus (+) /Next Key
	Daylight Savings Time
	Daylight Standard Time

- Follow the instructions to enter the technician password and **Settings** submenu.
- Use the **Minus Key** until the Daylight Savings Time Flag is displayed.
- Press the **Enter Key** to display the value of the Daylight Savings **Time Flag**.
- Press the **Modify Key** and the value will flash, indicating it is being modifi
- To change the temperature units, press the **Plus Key** to step through the list of choices: **daylight savings time** or **daylight standard time**.
- When the desired setting is reached, press the **Enter Key** to lock in the value.

7. MICROPROCESSOR CONTROL (cont'd)

7M - **START A DEFROST - MENU SYSTEM**:

Defrost can be initiated from the Menu System. Defrost can also be initiated from the Menu System using the short cut (see section below). The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Defrost Submenu
	Enter Key
	Defrost Symbol

- Follow the instructions to enter the customer password and **Defrost submenu**.
- Press the **Enter Key** to start the defrost operation.
- The **Defrost Symbol** will illuminate letting you know defrost is in effect.
- Depending on the settings, the unit may also show **"dEF"** (see below).

7N - **SET DEFROST MODE - MENU SYSTEM**:

The Defrost Mode is used to configure the way in which the controller determines when to defrost. The possible settings are:

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Optimize
	Time
	Schedule
	Count

- **Optimize** – Defrost based on the ambient conditions (temp & rH)
- **Time** – Defrost every X hours (fixed interval
- **Schedule** – Defrost at specific time
- **Count** – Defrost every X compressor cycles

Note 1: The user assumes full responsibility for properly configuring the defrost operation when using the Defrost Schedule feature. The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	SEt/Settings
	Minus (-) /Previous Key
	Defrost Mode
	Enter Key
	Modify Key
	Plus (+) /Next Key

- Follow the instructions to enter the technician password and **Settings** submenu.
- Use the **Minus Key** until the **Defrost Mode** parameter is displayed.
- Press the **Enter Key** to display the value of the **Defrost Mode** parameter.
- Press the **Modify Key** and the value will flash, indicating it is being modifie
- To change the **Defrost Mode**, press the **Plus Key** to step through the list of choices: **Optimize, Time, Schedule or Count** (see above).
- When the desired setting is reached, press the **Enter Key** to lock in the value.

7O - **SET DEFROST SCHEDULE - MENU SYSTEM**:

The Defrost Schedule parameters allow the customer to configure the controller to defrost the unit at specific times. C - tomers can set up to six defrost times. They are all programmed the same way. The parameters set the time the defrost is to start. The options are similar to the 24-hour clock settings. **Note 1:** the user assumes full responsibility for properly configuring the defrost operation when using the Defrost Schedule feature. **Note 2:** The 24-hour clock must be set for this feature to operate at the correct time of day. See **"Set Date & Time"** on page 11. **Note 3:** The Defrost Mode must be set to "Schedule" to use the Defrost Schedule feature. See **"Set Defrost Mode"** on page 12. The keypad must be unlocked to access the menu system.

7. MICROPROCESSOR CONTROL (cont'd)

7O - <u>SET DEFROST SCHEDULE - MENU SYSTEM</u>: (cont'd)

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	SEt/Settings
	Plus (+) /Next Key
	Defrost Time 1
	Enter Key
	Hours (value of defrost trime)

- Follow the instructions to enter the technician password and **Settings** submenu.
- Use the **Plus Key** until the **Defrost Time 1** is displayed.
- Press and hold the **Enter Key** to display the **value of the defrost time** in the controller.

The Hours will be displayed first, followed by the Minutes and then the Seconds. Continue to hold the **Enter Key** to display all fields in the Date and Time. The fields are identified by th first character

- o Hours
- o Minutes
- o Seconds

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Hours
	Minutes
	Seconds

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Modify Key
	Plus (+) /Next Key
	Minus (-) /Previous Key
	Enter Key

- Press the **Modify Key** and the Hours field will flash, indicating it is being modifi
- To change a particular Time field, press the **Plus Key** or the **Minus Key** to set the field t the desired value.
- When a Time field is acceptable, press the **Enter Key** to use the value.
- You must step through all three Time fields to change any one fiel
- When the desired setting is reached, press the **Enter Key** to lock in the value.
- Use the **Plus Key** until the Defrost Time 2 is displayed .
- Repeat the steps to program Defrost 2 – Defrost 6

A time of 00:00:00 disables the defrost time (it is not used). To program midnight, enter 24:00:00. The Defrost Times 1 – 6 can be entered in any order. As few as one or as many as six Defrost Times may be entered.

7P - <u>VIEW THE SENSOR TEMPERATURES - MENU SYSTEM:</u>

These parameters allow a service technician or customer to view the temperatures of all sensors within the unit. The temperatures cannot be adjusted. The keypad must be unlocked to access the menu system.

- Follow the instructions to enter the customer password and **Sensors** submenu.
- Press the **Enter Key** to enter the **Sensors** submenu.
- The first parameter displayed will be the **Cabinet Temp** (TC = TempCab).
- Press the **Enter Key** to display the value of the **Cabinet Temp**.
- Use the **Plus Key** to move to the next parameter **(Evaporator Temp)**.
- Press the **Enter Key** to display the value of the **Evaporator Temp**.
- Use the **Plus Key** to move through the sensor parameters. The following parameters are available:

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Cabinet Temp
	Evaporator Temp
	Liquid Line Temp
	Dew Point
	Compressor Command
	Evaporator Fan Command
	Condenser Fan Command
	Defrost Heater Command
	Door Heater Command
	Door Switch Status
	Aux Device Command
	Light Command

- o Cabinet Temp
- o Evaporator Temp
- o Liquid Line Temp
- o Dew Point
- o Compressor Command
- o Evaporator Fan Command
- o Condenser Fan Command
- o Defrost Heater Command
- o Door Heater Command
- o Door Switch Status
- o Aux Device Command
- o Light Command

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Plus (+) /Next Key
	Minus (-) /Previous Key
	Enter Key

In General:

- Use the **Plus Key** and the **Minus Key** to move through the Menu System.
- Press the **Enter Key** to display the value of the selected parameter.

7. MICROPROCESSOR CONTROL (cont'd)

7Q - HOT FOOD - UNLOCKING THE KEYPAD:

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Unlock Key
	Keypad Unlock LED

Normally, the keypad is locked to prevent inadvertent changes to settings. The **Unlock Key** is a white dot on the right side of the display, centered between the other 4 keys.

- Press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap").
- The **Keypad Unlock LED** will turn on to indicate the keypad is now live.

The keypad lock is different from the menu password. The keypad is locked to prevent accidental changes. Once the keypad is unlocked, it is possible to access the menu system. The menu system is password protected. It is necessary to enter a password in order to view or modify parameters.
The keypad will stay unlocked until there is 3 minutes of inactivity, at which time the controller will automatically lock the keypad.

7R - HOT FOOD - ADJUST THE SETPOINT - MENU SYSTEM:

This parameter sets the desired cabinet temperature. Please note that hot food units are delivered from the factory set to the ON position. This parameter is preset at the factory to 145 °F and should set to meet the customer's requirements. The setpoint for the unit can be changed from the Menu System. There will be a minimum and maximum value allowed for the set point. The keypad must be unlocked to access the menu system.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	SEt/Settings
	Enter Key
	Modify Key
	Plus (+) /Next Key
	Minus (-) /Previous Key

- Follow the instructions to enter the customer password and **Settings submenu**.
- Press the **Enter Key** to enter the **Settings submenu**.
- Use the **Plus Key** until the **Setpoint parameter** is displayed.
- Press the **Enter Key** to display the value of the setpoint .
- Press the **Modify Key** and the value will flash, indicating it is being modifi
- To raise the setpoint, press the **Plus Key** to increment to the set point.
  Press the **Minus Key** to lower the setpoint.
- When the desired value is reached, press the **Enter Key** to lock in the value.

7S - HOT FOOD - CHANGE THE TEMPERATURE SET POINT (SHORT CUT):

The simplest way to change the temperature set point is using the short cut from the Main Display. The set point can also be configured from the Menu System (see page 10). The setpoint to the unit can be changed by pressing and holding the **Plus Key** or the **Minus Key**. Their will be a slight delay at first to prevent an accidental change, so it will be necessary to hold the key for 2 – 3 seconds until the value starts to flash. The flashing value indicates the setting is being modified. The keypad must be unlocked in order to change the setpoint using the shortcut method.

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Plus (+) /Next Key
	Minus (-) /Previous Key
	Unlock Key
	Keypad Unlock LED
	Enter Key
	ESC Key

- Press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap").
- The **Keypad Unlock LED** will turn on to indicate the keypad is now live.
- To raise the setpoint, press and hold the **Plus Key** to increment to the set point.
  Press the **Minus Key** to lower the setpoint.
- The value on the display will flash
- When the desired value is reached, press the **Enter Key** to lock in the value.
- Pressing the **Esc Key** at any step will abort the process (before the **Enter Key** is pressed).

7T - HOT FOOD - TURN THE UNIT OFF:

DISPLAY SYMBOL	DISPLAY DESCRIPTION
	Unlock Key
	Keypad Unlock LED
	oFF
	Temperature

After the temperature has been set, the customer can continuously turn the unit OFF and then back ON to the same temperature. The keypad must be unlocked in order to de-activate the hot food unit.

- Press the **Unlock Key** twice within a second in order to unlock the keypad (think "tap-tap").
- The **Keypad Unlock LED** will turn on to indicate the keypad is now live.
- Press and hold the **Unlock Key** until the display shows **"oFF"**.
- To turn the unit ON, press the **Unlock Key** until the display shows the **temperature**.

8. SPARE & REPLACEMENT PARTS LISTING

ITEM/DESCRIPTION	G100/G110 1 SEC REF	G120XX 1 SEC FZR	G200/G210 2 SEC REF	G220XX 2 SEC FZR	G300/G320 3 SEC REF	G313XX/G310XX 3 SEC FZR
DOORS						
Full Height Glass Door	200-60954-01	call factory	all models	not available	all models	not available
Half Hight Glass Door	200-60953-00	call factory	all models	not available	all models	not available
Half Height Glass Door	200-60953-01	call factory	all models	not available	all models	not available
GASKETS						
Full Height Door	SVC-60256-00	all models	all models	all models	all models	all models
Half Height Door	SVC-60257-00	all models	all models	all models	all models	all models
Note: Same Gaskets on both solid and glass doors						
LOCK						
Lockkeeper	358-60707-00	all models	all models	all models	all models	all models
Lock Cylinder	358-13186-42	all models	all models	all models	all models	all models
Lock Cylinder Assy with Key	SER-13186-42	all models	all models	all models	all models	all models
SHELVES/TRAY SLIDES						
Epoxy Coated Shelf (with Pins & Clips)	G1ACC-SHLF5	G1ACC-SHLF5	LFT SEC: G23ACC-SHLF9 RHT SEC: G23ACC-SHLF11	LFT SEC: G23ACC-SHLF9 RHT SEC: G23ACC-SHLF11	LFT SEC: G23ACC-SHLF9 CEN SEC: G3ACC-SHLF15 RHT SEC: G23ACC-SHLF11	LFT SEC: G23ACC-SHLF9 CEN SEC: G3ACC-SHLF15 RHT SEC: G23ACC-SHLF11
Shelf Pin	358-24759-02	all models	all models	all models	all models	all models
3 Epoxy Coated Shelves (with Pins)	G1ACC-SHLF3	G1ACC-SHLF3	LFT SEC: G23ACC-SHLF1 RHT SEC: G23ACC-SHLF5	LFT SEC: G23ACC-SHLF1 RHT SEC: G23ACC-SHLF5	LFT SEC: G23ACC-SHLF1 CEN SEC: G3ACC-SHLF5 RHT SEC: G23ACC-SHLF5	LFT SEC: G23ACC-SHLF1 CEN SEC: G3ACC-SHLF5 RHT SEC: G23ACC-SHLF5
3 Epoxy Coated Shelves (with Pilasters & Clips)	G1ACC-SHLF2	G1ACC-SHLF2	LFT SEC: G23ACC-SHLF2 RHT SEC: G23ACC-SHLF6	LFT SEC: G23ACC-SHLF2 RHT SEC: G23ACC-SHLF6	LFT SEC: G23ACC-SHLF2 CEN SEC: G3ACC-SHLF6 RHT SEC: G23ACC-SHLF6	LFT SEC: G23ACC-SHLF2 CEN SEC: G3ACC-SHLF6 RHT SEC: G23ACC-SHLF6
3 Plated Shelves (With Pins)	G1ACC-SHLF3	G1ACC-SHLF3	LFT SEC: G23ACC-SHLF3 RHT SEC: G23ACC-SHLF7	LFT SEC: G23ACC-SHLF3 RHT SEC: G23ACC-SHLF7	LFT SEC: G23ACC-SHLF3 CEN SEC: G3ACC-SHLF7 RHT SEC: G23ACC-SHLF7	LFT SEC: G23ACC-SHLF3 CEN SEC: G3ACC-SHLF7 RHT SEC: G23ACC-SHLF7
3 Plated Shleves (with Pilasters & Clips)	G1ACC-SHLF4	G1ACC-SHLF4	LFT SEC: G23ACC-SHLF4 RHT SEC: G23ACC-SHLF8	LFT SEC: G23ACC-SHLF4 RHT SEC: G23ACC-SHLF8	LFT SEC: G23ACC-SHLF4 CEN SEC: G3ACC-SHLF8 RHT SEC: G23ACC-SHLF8	LFT SEC: G23ACC-SHLF4 CEN SEC: G3ACC-SHLF8 RHT SEC: G23ACC-SHLF8
#1 Tray Slides - 8 Pairs (with Pilasters)	G1ACC-TK1	G1ACC-TK1	LFT/RHT SEC: G23ACC-TK1LR	LFT/RHT SEC: G23ACC-TK1LR	LFT/RHT SEC: G23ACC-TK1LR CEN SEC: G3ACC-TK1C	LFT/RHT SEC: G23ACC-TK1LR CEN SEC: G3ACC-TK1C
#4 Tray Slides - 2 Pair (with Pilasters)	G1ACC-TK2	G1ACC-TK2	LFT/RHT SEC: G23ACC-TK2LR	LFT/RHT SEC: G23ACC-TK2LR	LFT/RHT SEC: G23ACC-TK2LR CEN SEC: G3ACC-TK2C	LFT/RHT SEC: G23ACC-TK2LR CEN SEC: G3ACC-TK2C
Universal Tray Slides - 7 Pairs (with Pilasters)	G1ACC-TK4	G1ACC-TK4	LFT/RHT SEC: G23ACC-TK4LR	LFT/RHT SEC: G23ACC-TK4LR	LFT/RHT SEC: G23ACC-TK4LR CEN SEC: G3ACC-TK4C	LFT/RHT SEC: G23ACC-TK4LR CEN SEC: G3ACC-TK4C
LEGS/CASTERS						
Legs 6" high (set of 4)	LK1	all models	all models	all models	all models	all models
LOUVER ASSY	SK-500-60827-00	SK-500-60827-00	SK-500-60827-02	SK-500-60827-02	SK-500-60827-03	SK-500-60827-03
SENSORS						
Cabinet Sensor	334-60083-01	334-60083-01	334-60083-02	334-60083-02	334-60083-03	G313: 334-60083-03 G310: 334-60405-02
Coil Sensor	334-60084-01	334-60084-01	334-60084-02	334-60084-02	334-60084-03	G313: 334-60084-03 G310: 334-60406-02
LIGHT						
Light Buld - LED	358-60691-00	all models	all models	all models	all models	all models
EVAPORATOR						
Expansion Valve	325-60080-37	325-60080-25	325-60080-37	325-60080-26	325-60080-38	325-60080-34
Evaporator Motor Assy (Sheetmetal Box and Fan Assy)	SK-600-61081-00	SK-600-61081-00	SK-600-61081-00	SK-600-61081-01	SK-600-61081-01	SK-600-61081-01
Evaporator Motor Assy (Motor And Blade Assy)	338-60061-00	all models	all models	all models	all models	all models
Note: Fan blade and motor bracket are no longer needed						
Exterior Light Switch	337-20265-00	not available	337-20265-00	not available	337-20265-00	not available
Hot Gass Loop	315-60307-00	315-60307-00	315-60307-00	315-60310-00	G300: 315-60310-00 G320: 315-10041-02	315-10041-02
Relay	call factory	call factory	call factory	call factory	call factory	call factory
Start Capacitor	call factory	call factory	call factory	call factory	call factory	call factory

9. TROUBLE SHOOTING GUIDE

FIND YOUR PROBLEM HERE	REMEDY
1. Condensing unit fails to start.	a. Check if cord & plug has been disconected. b. Check control temperature setting.
2. Condensing unit operates for prolonged periods or continuously.	a. Are doors closing properly? b. Dirty condenser or filte . Clean properly. c. Evaporator coil iced. Needs to defrost. See instructions for setting a manual defrost cycle on page 13.
3. Food compartment is too warm.	a. Check door(s) and gasket(s) for proper seal b. Perhaps a large quantity of warm food has recently been added or the door was kept open for a long period of time, in both cases, allow adequate time for the cabinet to recover its normal operating temperture. c. Control setting too high, readjust per instructions on page 10. d. Check that condensing coil is clean.
4. Food compartment is too cold.	a. Perhaps a large quantity of very cold or frozen food has recently been added. Allow adequate time for the cabinet to recover its normal operating temperature. b. Adjust the control to a warmer setting, see page 10.
5. Condensation on the exterior surface.	a. Check door alignment and gaskets for proper seal. b. Condensation on the exterior surface of the unit is perfectly normal during periods of high humidity.
6. Compressor hums but does not start.	a. Call for service.
7. No Power To Unit	a. Check if cord & plug has been disconnected. b. Check power supply breaker. c. Check ON/OFF switch.

Traulsen

Quality Refrigeration

4401 Blue Mound Road Fort Worth, Texas 76106 (USA)
Phone: 800.825.8220 | Service Fax: 817.740.6757 | E-mail: service@traulsen.com | Website: traulsen.com

Form Number: TR35748 | Part Number: 375-60184-00 | Revision Date: 08-21-19

Quality Refrigeration

OWNER'S MANUAL ADDENDUM

Instructions for re-hinging the doors of all Traulsen Refrigerator and Freezer models built with an optional rehinging feature

- IMPORTANT NOTICE -

This Manual is prepared for the use of trained Authorized Traulsen Service Agents and should not be used by those not properly qualified. This manual is not intended to be all encompassing, but is written to supplement the formal training, on-the-job experience and other product knowledge acquired by Authorized Traulsen Service Agents. Before proceeding with any work, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed only by a trained Authorized Traulsen Service Agent.

P/N 375-60230-00 Rev. A - Form No. TR35857, Revised October 2004

I. REHINGING THE DOORS - REMOVING THE HARDWARE

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE PROCEEDING WITH REHINGING ANY DOOR(S).

I. a - <u>REMOVING THE DOOR(S)</u>:
To remove any solid door, begin by removing the plug at the bottom of the top hinge. Inside the hinge there is a small screw which secures the door in place. Remove this with a flat head screwdriver and the door can then be lifted off the hinge (see figure 1).

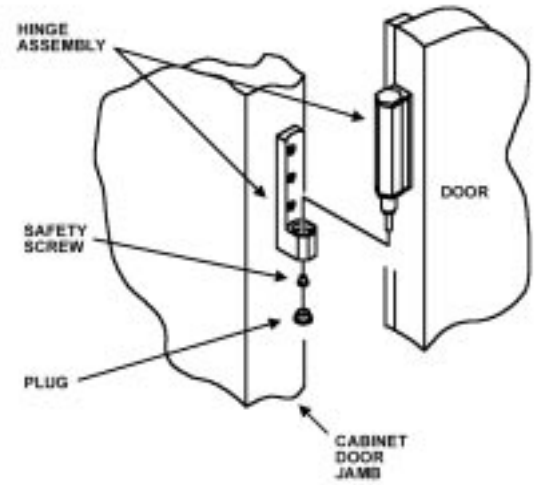


Fig. 1

I. b - <u>REMOVING THE DOOR HINGES</u>:
After removing the door, it is now necessary to remove the hinge assembly and hardware from the door itself.

To remove the door portion of the hinge from the door, lift off the hinge cover and then remove the three Phillips head screws which secure the hinge in place on the door (see figure 2).

Next, the hinges must be reinstalled in an inverted position. Rotate the hinge assembly 180 degrees, and install these back into the the original location. Secure with the same three Phillips head screws which were removed originally.

Set the door(s) with hinges set in the new position aside for later re-assembly.

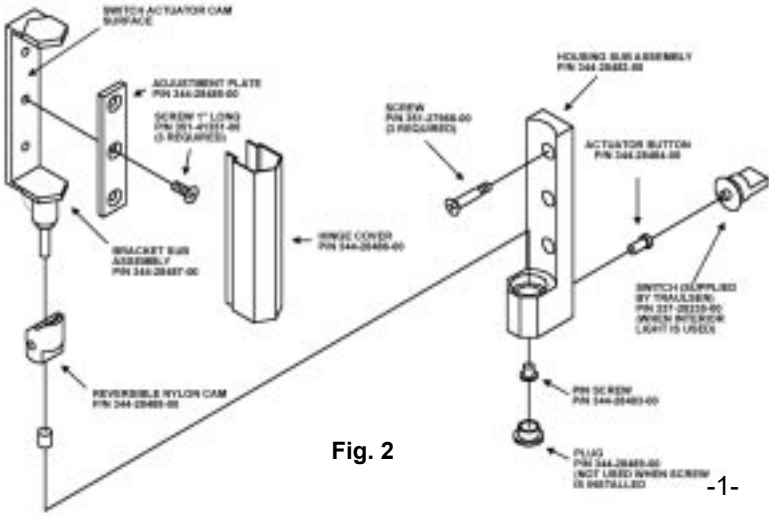


Fig. 2

I. c - <u>REMOVING THE HINGE BODY FROM THE CABINET</u>:
It is now necessary to remove the hinge hardware from the cabinet itself. To remove the cabinet portion of the hinge, remove the three Phillips head screws which hold it in place. Set these components aside for later reassembly (see figure 2).

NOTE: All solid door units include a microswitch for controlling the interior lighting in the top hinge(s). Special care should be taken to not damage the wiring for this during the hinge removal process.

I. d - <u>REMOVING THE LOCK KEEPER</u>:
The lock keeper must be removed in order to allow for the doors to be re-hinged.

Begin by removing the two (2) Phillips head screws which secure the lock keeper actuator to the lock keeper bracket.

Next remove the lock keeper bracket by removing the two (2) flat head screws which secure it in place.

Set these components aside for later reassembly.

I. e - <u>REMOVING THE FINISHING SCREWS</u>:
The locations for the hinges and lock keepers to be remounted are concealed behind the flat head type finishing screws with washers, which are used to protect these when not in use.

Remove all screws and washers, setting them aside for later re-assembly.

II. REHINGING THE DOORS - REASSEMBLY

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE PROCEEDING WITH REHINGING ANY DOOR(S).

II. a - REPLACING THE HINGE BODY:
The hinge body hardware must now be re-installed on the cabinet in their new locations (i.e. on the side adjacent to their former location. To install the cabinet portion of the hinge, set the hinge body into place, and secure in place with the three Phillips head screws which were removed previously. Rotate the hinge cam 180 degrees by using a flat head screwdriver.

NOTE: A redundant light switch is included as part of the re-hinging feature, on the side not used as shipped. Special care must be taken to insure that the microswitch for controlling the interior lighting in the top hinge(s) on the new hinged side is correctly placed.

II. b - REPLACING THE LOCK KEEPER:
Invert the lock keeper bracket 180 degrees and set it in place adjacent to its original position. Next, secure it in place using the two (2) flat heads screws which were removed previously.

Next, invert the lock keeper actuater 180 degrees and set it in place above the newly installed bracket. Secure it in place using the two (2) Phillips head screws removed previously.

II. c - INSTALLING THE DOOR(S):
Rotate the door(s) 180 degrees from its original position. The upper half length door will now be placed on the bottom, and the lower half length door will now be placed on the top. Set each in place, guiding the door section of the hinge into the correct position of the cabinet hinge section cam.

Re-install the small screws, which were removed previously, in the bottom of the door hinges to secure the door(s) in place, using a flat head screwdriver.

Replace the hinge covers by pressing these into position on each door hinge.

II. d - REPLACING THE FINISHING SCREWS:
The previous locations where the hinges and lock keepers were mounted need to be concealed using the flat head type finishing screws and washers, which were removed previously. Replace all screws and washers in these now vacant locations.

II. e - ACTIVATING THE REDUNDANT LIGHT SWITCH:
As shipped from the factory, the redundant light switch included as part of the re-hinging feature is not wired to the power supply/wiring harness of the cabinet. To activate the light switch included in the new top hinge locations follow this procedure:

II. e - ACTIVATING THE REDUNDANT LIGHT SWITCH (cont'd):
STEP 1 - At front of unit, remove two (2) slot head thumbscrews from bottom corners of louver assembly. Set thumbscrews aside.

STEP 2 - Swing louver assembly up and away from front of unit until it stops.

STEP 3 - Remove two (2) Slot head thumbscrews from top of louver assembly. Set thumbscrews and louver assembly aside.

STEP 4- At the top of the junction box, remove three (3) Phillips head screws. Set screws aside.

STEP 5 - Locate one (1) Phillips head screw at bottom of junction box, and remove. Set screw aside.

STEP 6 - Carefully slide junction box away from front of unit until all wiring and connections to the controller are exposed (see figure 3).

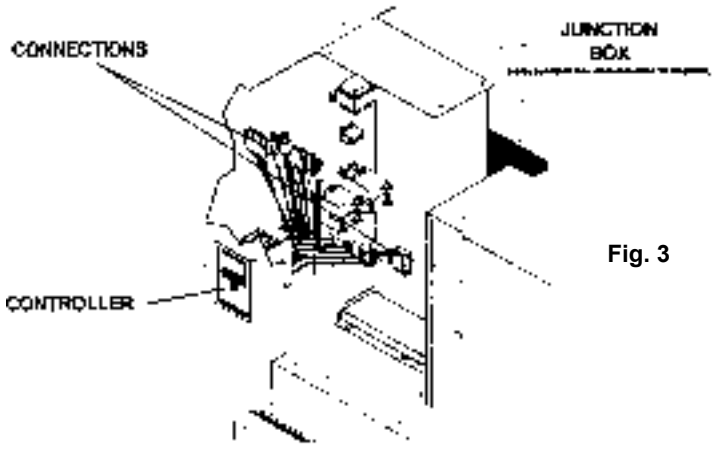


Fig. 3

STEP 7 - Disconnect the existing light switch connection from the harness.

STEP 8 - The redundant light switch harness is located in the junction box unconnected. Connect this in place of the light switch connector removed in STEP 9.

STEP 9 - Reverse STEPS 4 thru 6 to reinstall the junction box cover.

STEP 10 - Reverse steps 1 thru 3 in order to return the louver assembly to its proper position.

STEP 11 - Return power to the unit and test the new light switch location by opening the doors. If the interior lighting is activated whenever the door is opened the switch is correctly installed.

HOURS OF OPERATION:
Monday thru Friday 7:30 am - 4:30 pm CST

Quality Refrigeration

Traulsen
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Phone: (800) 825-8220 Fax-Svce: (817) 740-6757
Website: www.traulsen.com

SERVICE MANUAL

G22010 MODEL SHOWN

TRAULSEN G SERIES FREEZER

G12000 Model Series

G22000 Model Series

G31300 Model Series

This Manual is prepared for the use of trained Hobart Service Technicians and should not be used by those not properly qualified.

This manual is not intended to be all encompassing. If you have not attended a Hobart Service School for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Hobart Service Technician.

This manual has been provided to you by ITW Food Equipment Group LLC ("ITW FEG") without charge and remains the property of ITW FEG, and by accepting this manual you agree that you will return it to ITW FEG promptly upon its request at any time in the future.

A product of TRAULSEN Fort Worth, TX 76106-1988
F25393 (August 2010)

TABLE OF CONTENTS

GENERAL

INTRODUCTION

General

All G series freezers are Energy Star efficient and include a wide range of one, two, & three sectional reach in freezers. All models are capable of -10°F in up to 90°F ambient. The cabinets are equipped with anti-condensate door perimeter heaters.

These units aid in preserving food quality, texture and nutritional value.

All of the information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing.

LOCATION

Refer to the Installation Instructions for specific location requirements.

OPERATION

Refer to the Operation Manual for specific operating instructions.

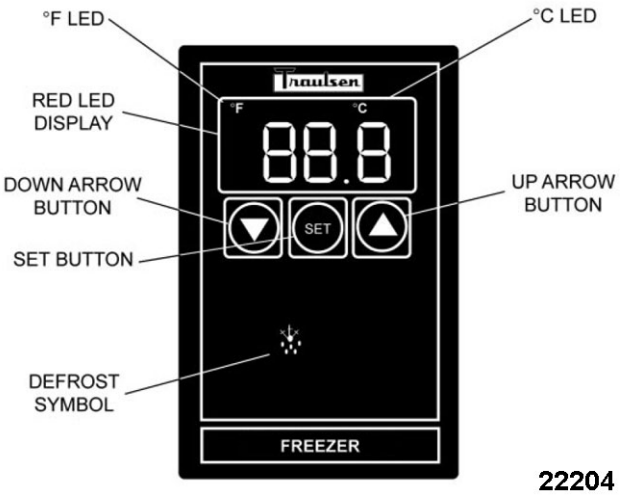
CLEANING

Refer to the Operation Manual for specific cleaning instructions. The condenser coil must be cleaned every six months. This can be done with a vacuum cleaner using a fin comb or condenser coil brush.

TOOLS

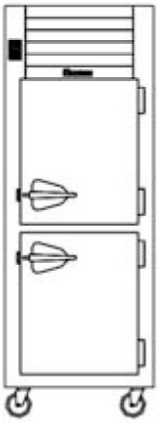
- Standard set of hand tools
- Clamp meter Part No. 00-541069 Grainger No. 1ND81 or equivalent
- Grounding kit - Static Control Kit Grainger No. 4KK44
- Micro amp meter
- VOM with AC current tester (sensitivity of at least 20,000 ohms per volt)
- Refrigeration tool kit Part No. 00-913093-15
- Digital thermometer with quad inputs Model DT304 Part No. 00-913093-12
- Inficon D-Tek Select refrigerant leak detector Part No. 00-913093-2
- Vacuum Cleaner - Shop Vac
- Fin comb Grainger Part No. 2YJ78 or equivalent
- Condenser coil brush Grainger Part No. 3HHE8 or equivalent

CONTROL PANEL

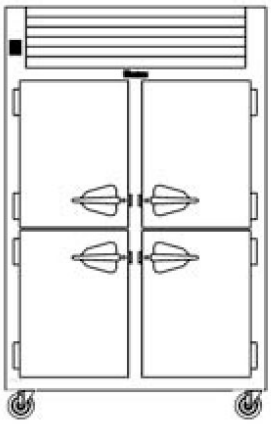


SPECIFICATIONS

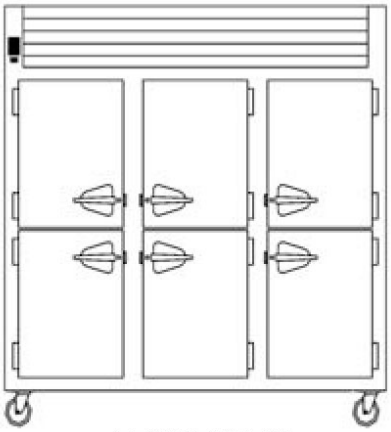
DIMENSIONS	1 Section Cabinet	2 Section Cabinet	3 Section Cabinet
Height- overall on casters	83-1/4" (211.46cm)	83- 1/4" (211.46cm)	83- 1/4" (211.46cm)
Width	29- 7/8" (75.9cm)	52- 1/8" (132.4cm)	76- 5/16" (193.8cm)
Depth	35" (88.8cm)	35" (88.8cm)	35" (88.8cm)
Net Capacity cu. ft.	24.2	46.0	69.1



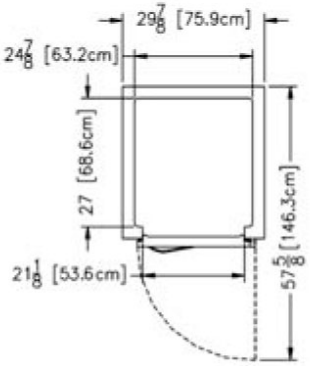
FRONT VIEW
ONE SECTION
CABINET



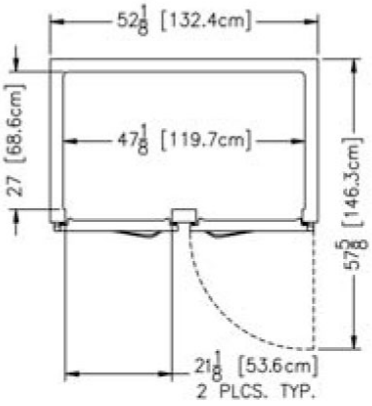
FRONT VIEW
TWO SECTION
CABINET



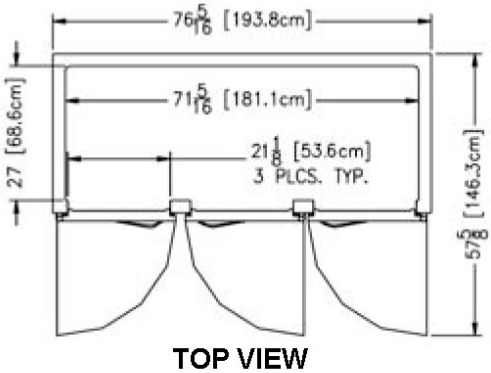
FRONT VIEW
THREE SECTION
CABINET



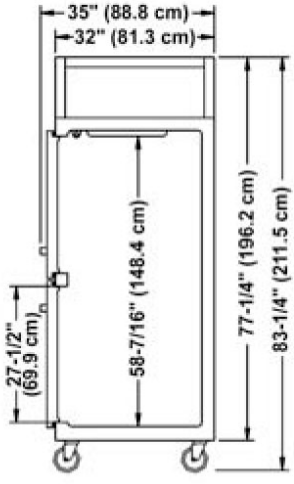
TOP VIEW
ONE SECTION
CABINET



TOP VIEW
TWO SECTION
CABINET



TOP VIEW
THREE SECTION CABINET



SIDE VIEW
ALL CABINET SECTIONS

22156

DATA	1 Section Cabinet	2 Section Cabinet	3 Section Cabinet	3 Section Cabinet
Voltage	115/60/1	115/60/1	115/60/1	208/60/1
Amps Full Load	9.5	11.2	16.0	11.0

OPERATING DATA	1 Section Cabinet	2 Section Cabinet	3 Section Cabinet
Refrigerant Type	R-404A	R-404A	R-404A
High Pressure (psi) 90°F Operating Temperature	500	500	500
Low Pressure (psi) 90°F Operating Temperature	250	250	250
BTU/HR (HP)	1930 @ -20°F Evaporator Temp. & 90°F Ambient (1/2HP)	2970 @-20°F Evaporator Temp. & 90°F Ambient (3/4HP)	4710 @-20°F Evaporator Temp. & 90°F Ambient (1HP)

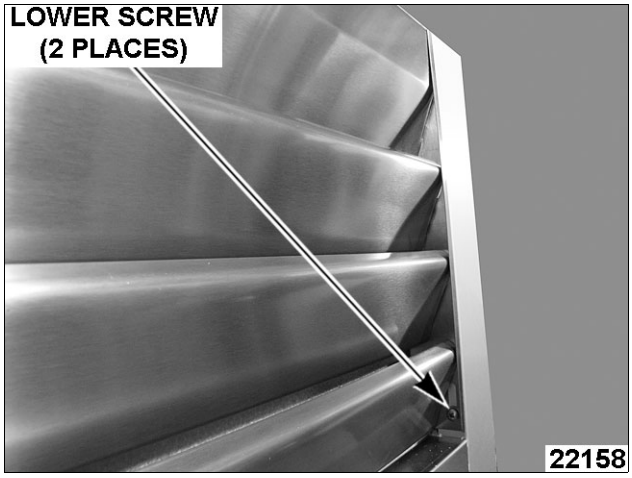
REMOVAL AND REPLACEMENT OF PARTS

COVERS & PANELS

Front Panel

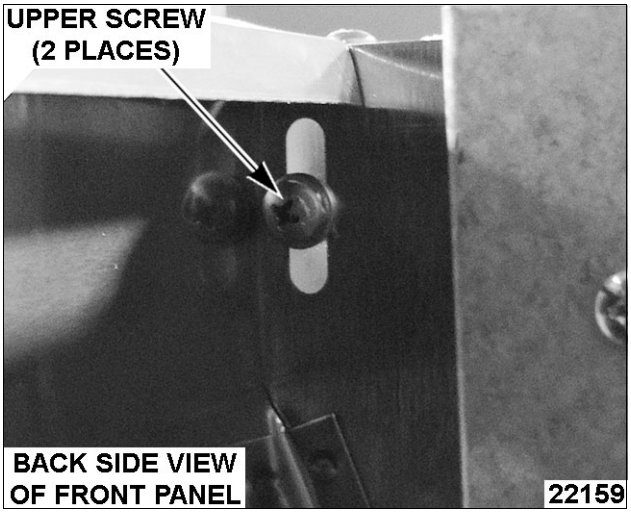
⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Remove lower panel screws from cabinet.



2. Remove upper panel screws from cabinet.

NOTE: Upper panel screws are accessed from the back side of front panel.

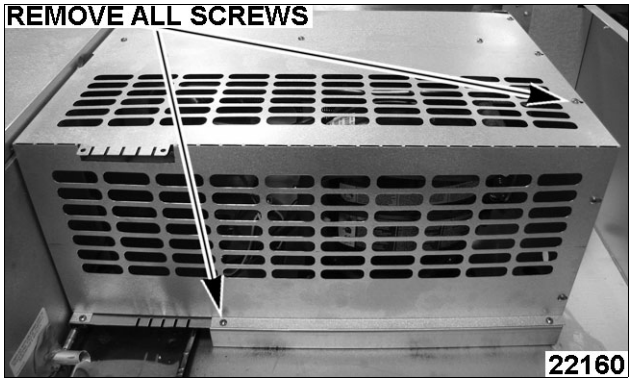


3. Remove panel from cabinet.
4. Reverse the procedure to install.

Condenser / Compressor Cover

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Access condenser cover at top of cabinet.
2. Remove all screws securing condenser cover to cabinet.

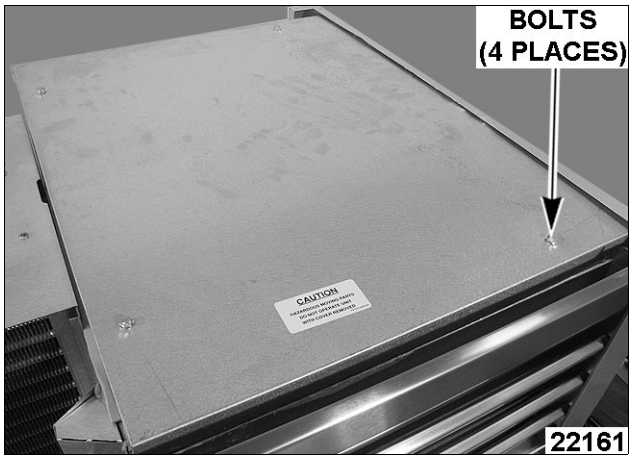


3. Lift cover from cabinet.
4. Reverse the procedure to install.

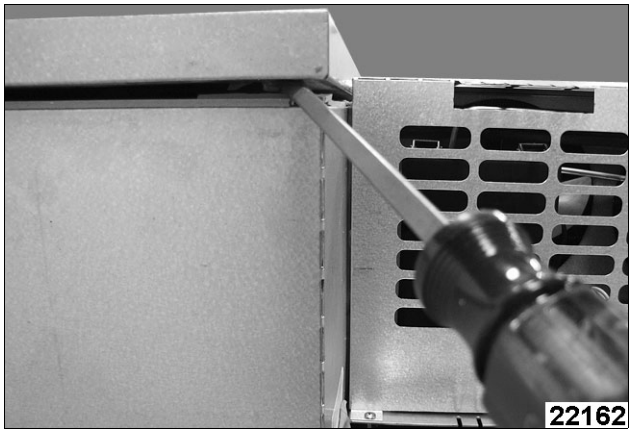
Evaporator Cover

⚠WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Access evaporator cover at top of cabinet.
2. Remove bolts securing evaporator cover to cabinet.



3. Use of a screw driver to aid in prying up cover to break adhesive seal then lift cover from cabinet.

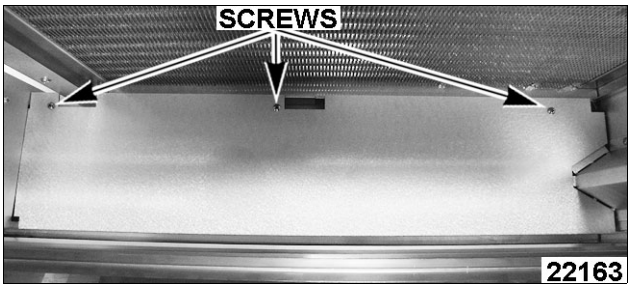


4. Reverse the procedure to install.

NOTE: Replace adhesive seal as needed.

Harness Raceway Cover

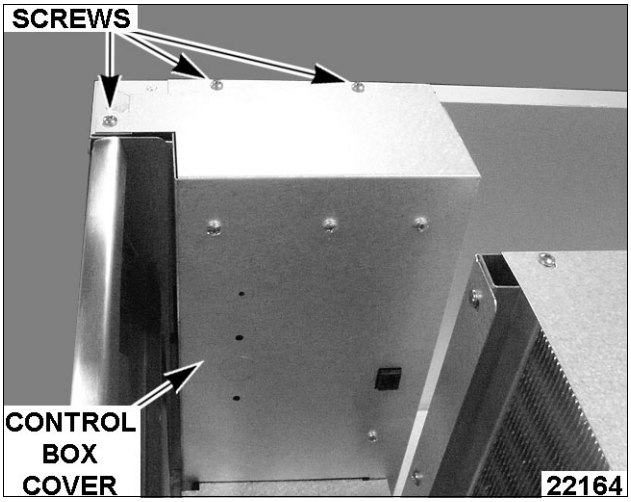
1. Access harness raceway cover at top of cabinet.
2. Remove screws securing cover to raceway housing.



3. Lift cover up from raceway housing.
4. Reverse the procedure to install.

Control Box Cover

1. Access control box cover at top of cabinet.
2. Remove screws securing cover to cabinet.

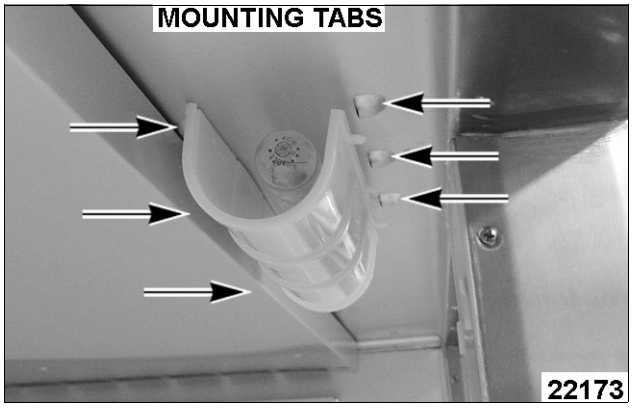


3. Lift cover up from control box.
4. Reverse the procedure to install.

CABINET LAMP

⚠WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Open cabinet door to gain access to cabinet light.
2. Reach up and carefully squeeze lamp lens inward to release lens from mounting tabs.



3. Remove lens from cabinet.
4. Turn lamp to remove from lamp socket.
5. Reverse the procedure to install.

INTELA-TRAUL CONTROL

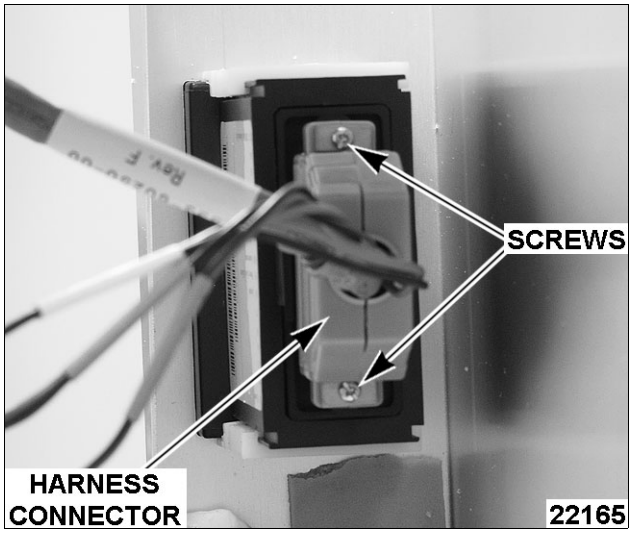
⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

Removal

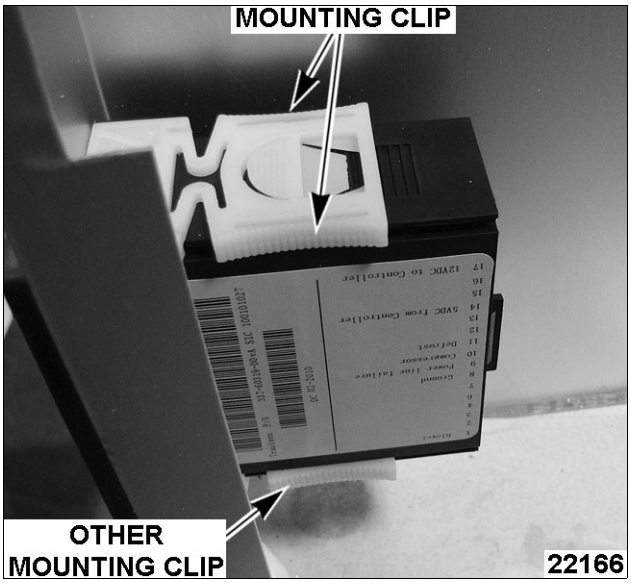
1. Remove front panel as outlined under COVERS & PANELS.
2. Access control at top of cabinet.
3. Remove control box cover as outlined under COVERS & PANELS.

NOTE: Use care not to damage lead wires.

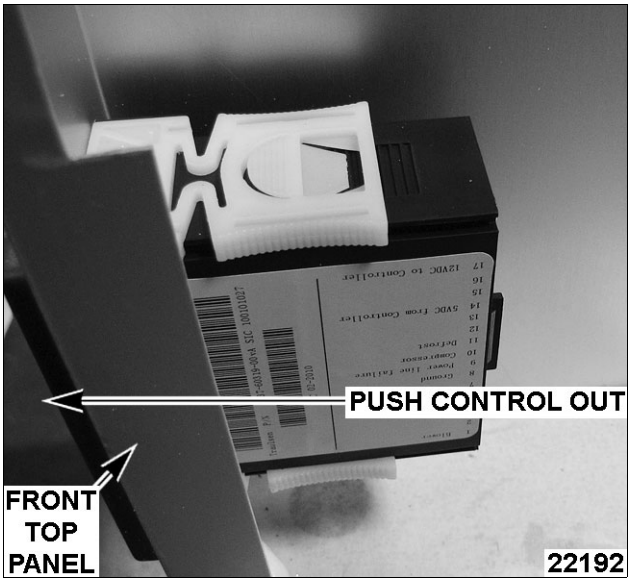
4. Loosen screws securing harness connector to Intela-Traul Control.
5. Disconnect harness connector from Intela-Traul Control.



6. Compress in both sides of mounting clip, while sliding clip off Intela-Traul control. Repeat for other mounting clip.



7. Push Intela-Traul control out from front top panel.



8. Reverse the procedure to install.

INTELA-TRAUL RELAY MODULE

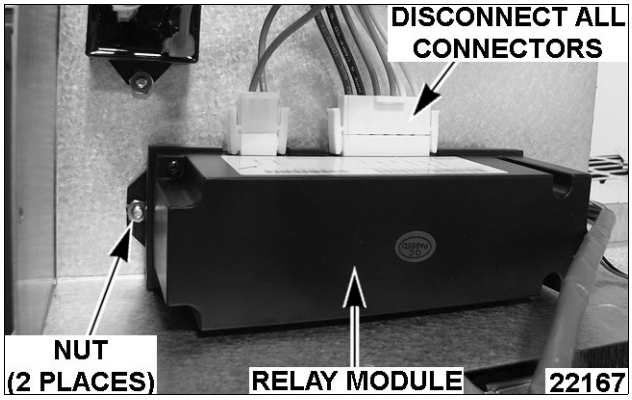
⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

Removal

1. Remove front panel as outlined under COVERS & PANELS.
2. Access Intela-Traul relay module at top of cabinet.
3. Remove control box cover as outlined under COVERS & PANELS.

NOTE: Use care not to damage lead wires.

4. Disconnect all lead wire connectors from Intela-Traul relay box.
5. Remove both nuts securing Intela-Traul relay module to control box cover.

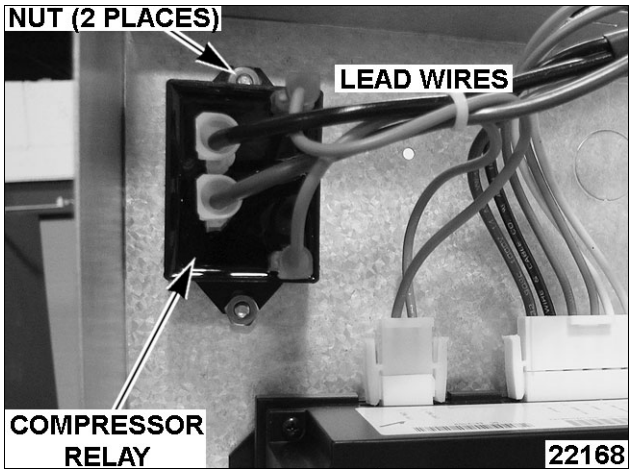


6. Reverse the procedure to install.

COMPRESSOR RELAY

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Remove front panel as outlined under COVERS & PANELS.
2. Access compressor relay at top of cabinet.
3. Remove control box cover as outlined under COVERS & PANELS.
4. Disconnect all lead wires from compressor relay.
5. Remove nuts from compressor relay.

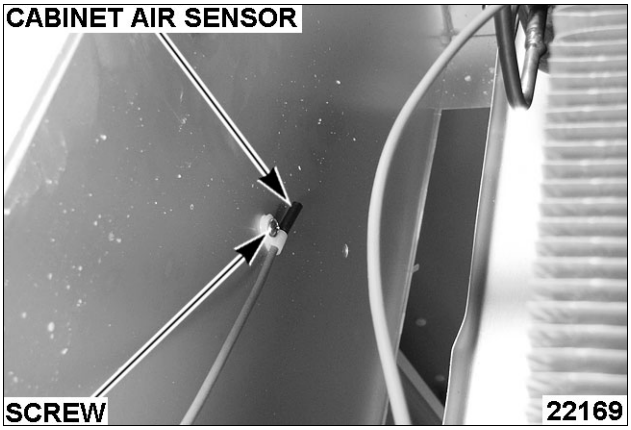


6. Reverse the procedure to install.

CABINET AIR SENSOR

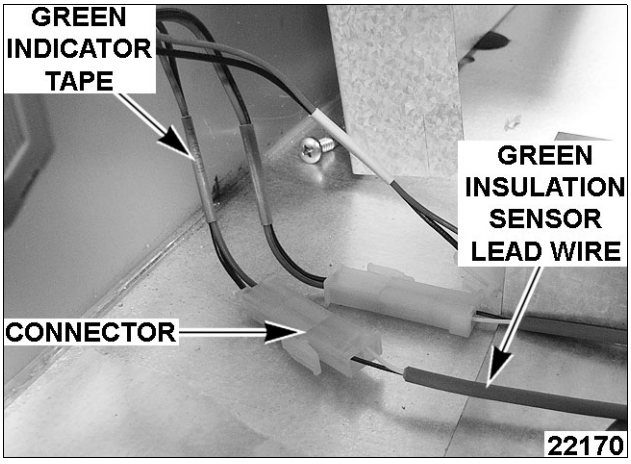
⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Access cabinet air sensor at top of cabinet.
2. Remove evaporator cover as outlined under COVERS & PANELS.
3. Remove screw securing sensor & mounting clip to evaporator compartment.



4. Remove harness raceway cover as outlined under COVERS & PANELS.
5. Remove control box cover as outlined under COVERS & PANELS.
6. Route sensor out from evaporator compartment.
7. Disconnect sensor lead wire connector.

NOTE: The green insulation lead wire to green indicator tape on connector for proper connection.



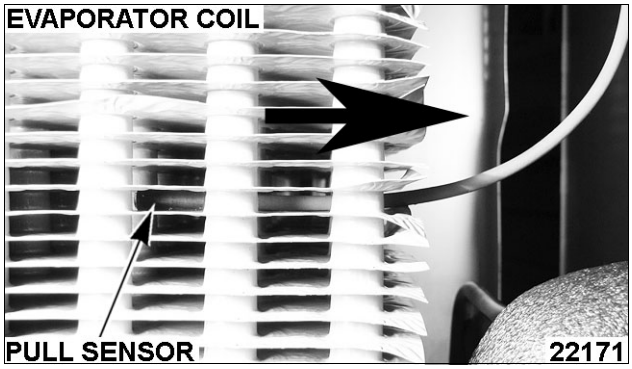
8. Reverse the procedure to install.

EVAPORATOR COIL SENSOR

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

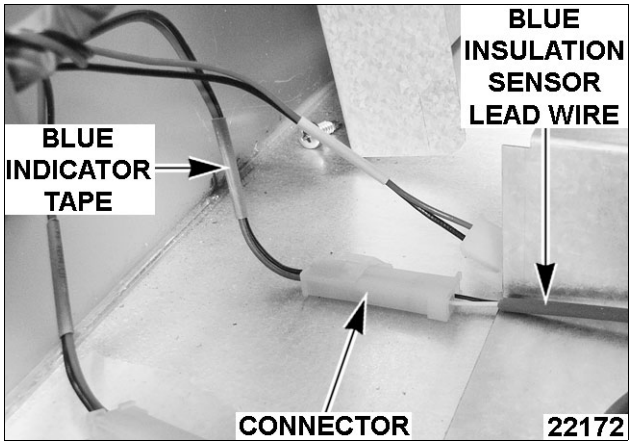
1. Access cabinet coil sensor at top of cabinet.
2. Remove evaporator cover as outlined under COVERS & PANELS.
3. Pull sensor out from evaporator fins.

NOTE: Sensor location for replacement.



4. Remove harness raceway cover as outlined under COVERS & PANELS.
5. Remove control box cover as outlined under COVERS & PANELS.
6. Route sensor out from evaporator compartment.
7. Disconnect sensor lead wire connector.

NOTE: The blue insulation lead wire to blue indicator tape on connector for proper connection.

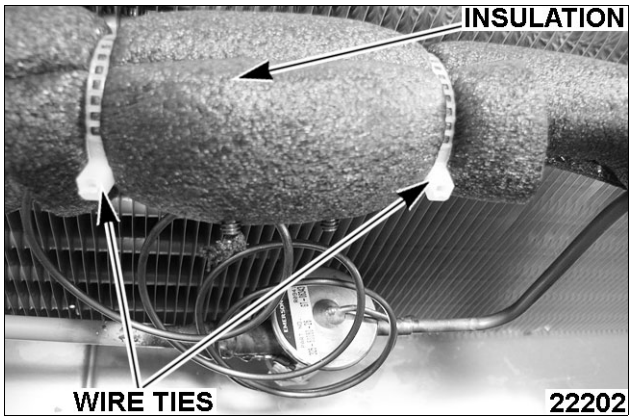


8. Reverse procedure to install.

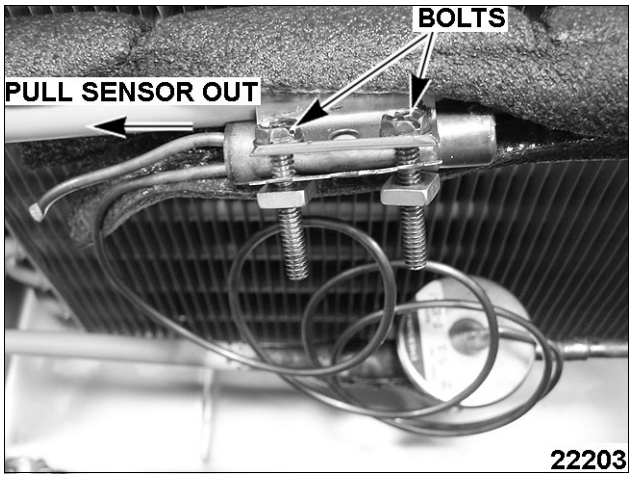
THERMAL EXPANSION VALVE

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Access thermal expansion valve at top of cabinet.
2. Remove evaporator cover as outlined under COVERS & PANELS.
3. Cut wire ties off from refrigerant line insulation.
4. Remove pipe insulation from refrigerant line.
5. Remove insulation from refrigerant line.



6. Loosen bolts securing sensor from refrigerant line.
7. Pull sensor out from mounting bracket.



8. Remove expansion valve from the liquid line at inlet and outlet of valve.
9. Install replacement expansion valve into inlet and fasten sensor to suction line.
10. Recharge unit and check for leaks.
11. Put system back into operation and check the superheat as outlined under CHECK REFRIGERANT CHARGE in SERVICE PROCEDURES AND ADJUSTMENTS.

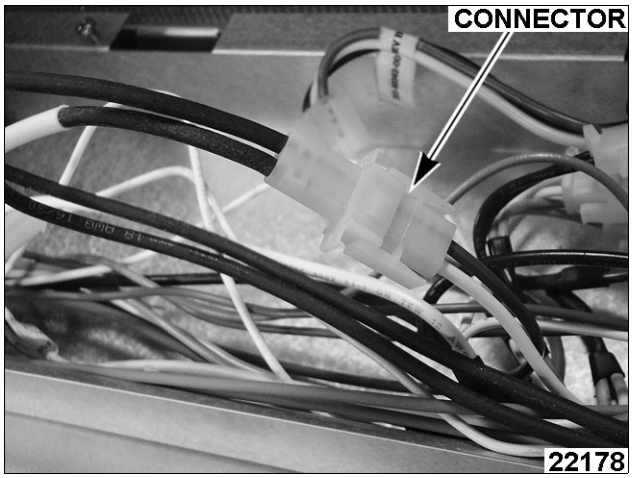
NOTE: Sensor must be insulated.

NOTE: It is recommended that the filter/drier be changed when this part is replaced.

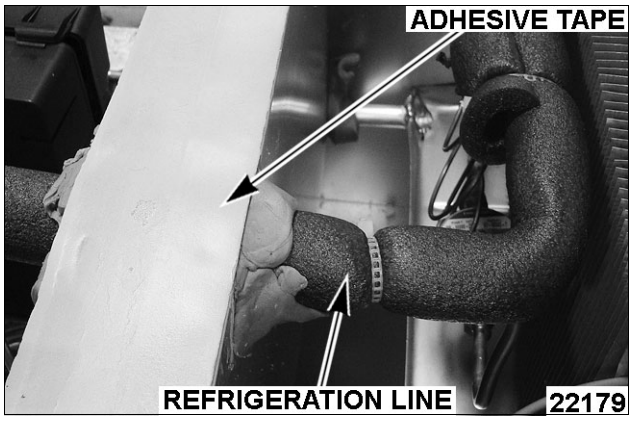
EVAPORATOR COIL / DEFROST HEATER

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Access defrost heater at top of cabinet.
2. Remove evaporator cover as outlined under COVERS & PANELS.
3. Remove harness raceway cover as outlined under COVERS & PANELS.
4. Disconnect heater lead wire connector.

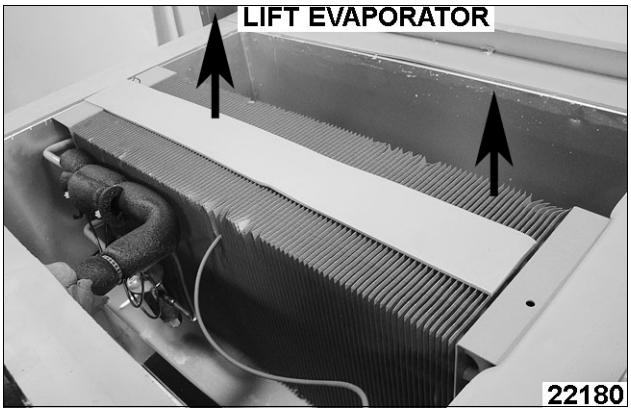


5. Remove adhesive tape over refrigeration lines.

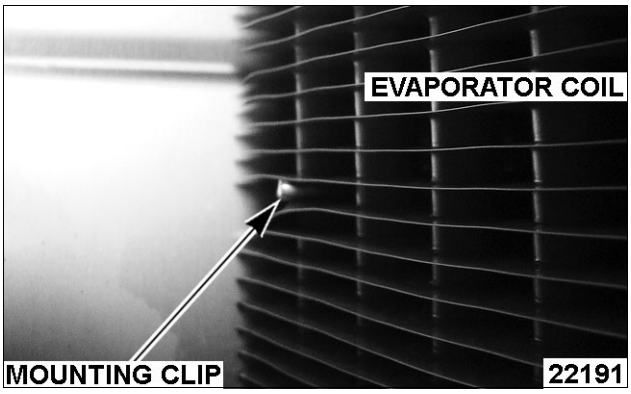


6. Lift evaporator coil up and out from evaporator compartment to expose bottom of evaporator coil.

NOTE: Do Not kink refrigeration lines or damage lead wires.



7. Remove defrost heater mounting clips from evaporator coil to release defrost heater.



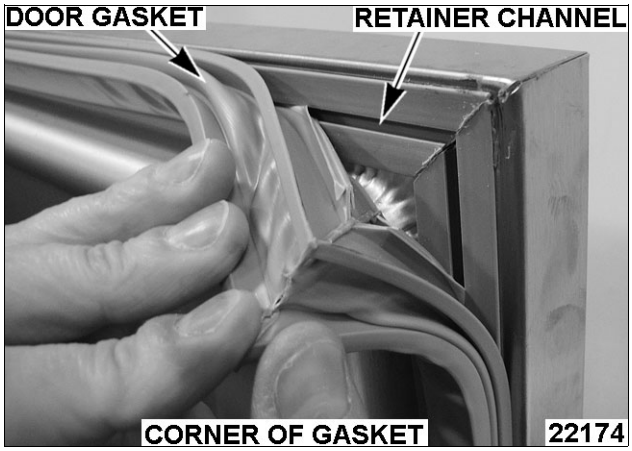
8. Route heater lead wires out from evaporator compartment.
9. Reverse the procedure to install.

DOOR GASKET

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

To Remove:

1. Open cabinet door to gain access to door gasket.
2. Start at one corner of the gasket and pull gasket out from the gasket retaining channel.
   A. Continue to pull gasket from door until gasket is completely out of gasket retaining channel.



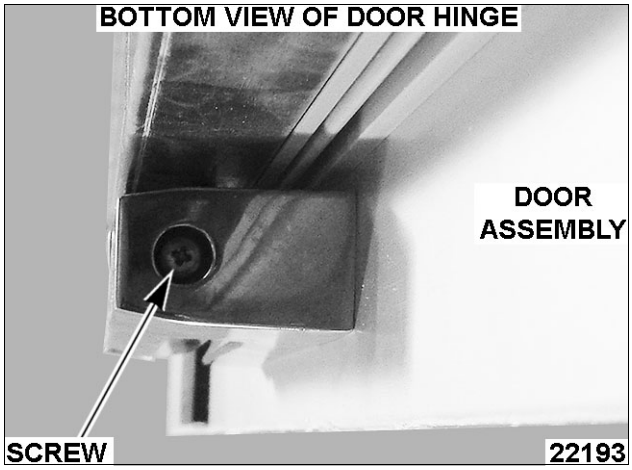
To Install:

1. Run a small bead of food grade silicone in gasket retainer channel.
2. Install gasket starting at corners pressing into retainer gasket channel and work towards center.

DOOR ASSEMBLY

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Remove screw from upper door hinge.



2. Lift door assembly upward off hinges and set door assembly aside.
3. Reverse the procedure to install.

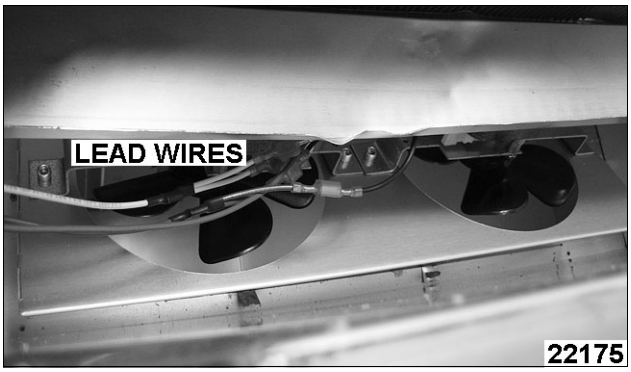
NOTE: Install original hinge assemblies onto replacement door.

EVAPORATOR FAN

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

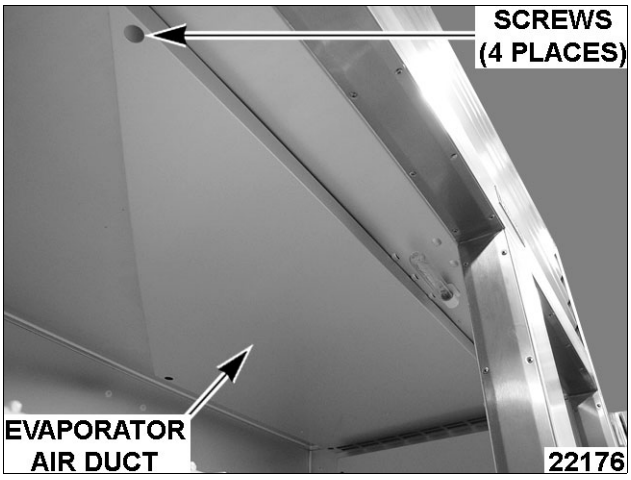
1. Access evaporator fan lead wires at top of cabinet.
2. Remove evaporator cover as outlined under COVERS & PANELS.
3. Disconnect lead wires to evaporator fans.

NOTE: Mark lead wires for later installation.

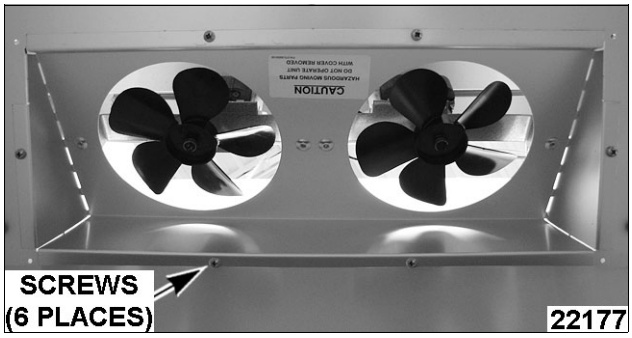


4. Open cabinet door to gain access to evaporator fan housing.
5. Loosen screws securing evaporator air duct to cabinet.
   A. Slide evaporator air duct away from right side cabinet wall and allow duct to lower into cabinet.

NOTE: Mounting holes in evaporator air duct are keyhole slots.



6. Remove screws securing evaporator fan housing to evaporator compartment.



7. Allow evaporator fan housing to lower out of cabinet.
8. Reverse the procedure to install.

CONDENSING UNIT COMPONENTS

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

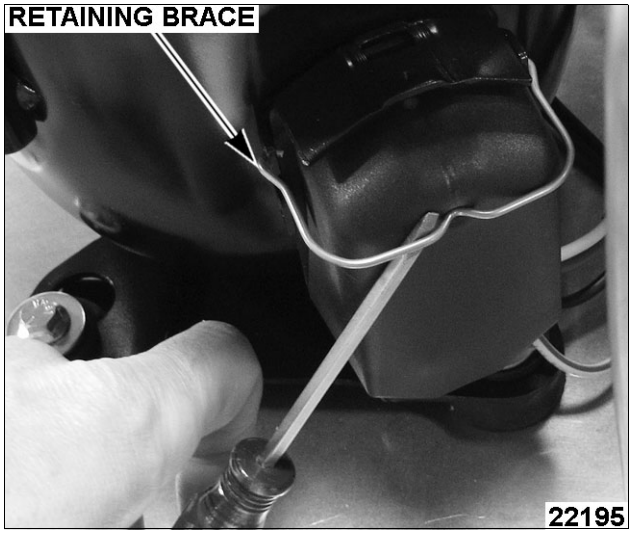
⚠ WARNING This procedure requires the use of refrigerants. Be certain the work area is well ventilated. Safety goggles and gloves shall be worn since refrigerants may cause burns to the skin

Compressor

1. Remove condenser / compressor cover as outlined under COVERS & PANELS.
2. Evacuate refrigeration system.

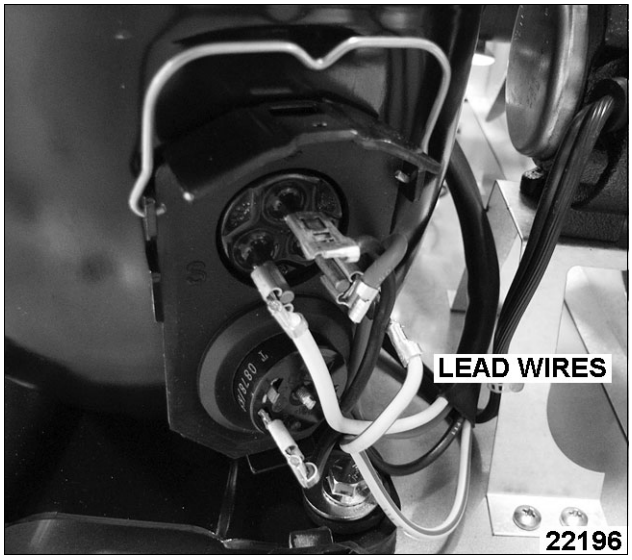
NOTE: The use of reclaiming equipment is mandatory.

3. Use of screwdriver to lift retaining brace upward off junction box cover.

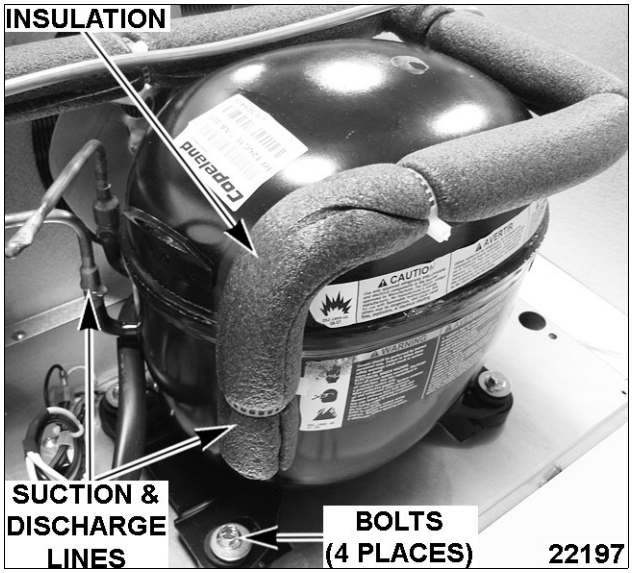


4. Disconnect lead wires from compressor junction box.

NOTE: Mark wire location for installation.



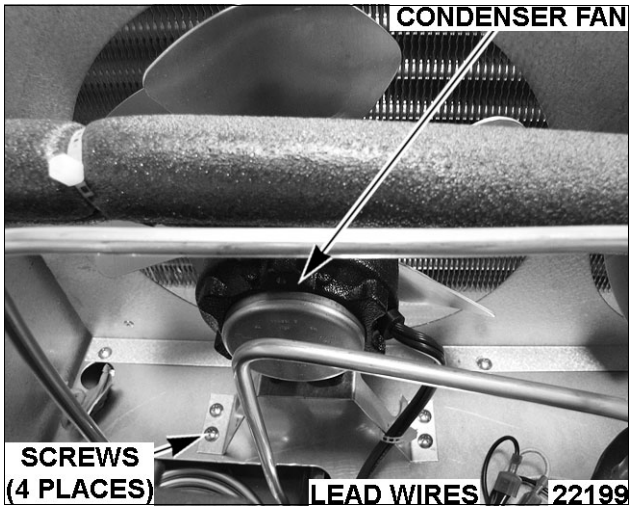
5. Remove insulation from refrigerant line.
6. Disconnect suction and discharge lines from compressor.
7. Remove bolts securing compressor to cabinet.



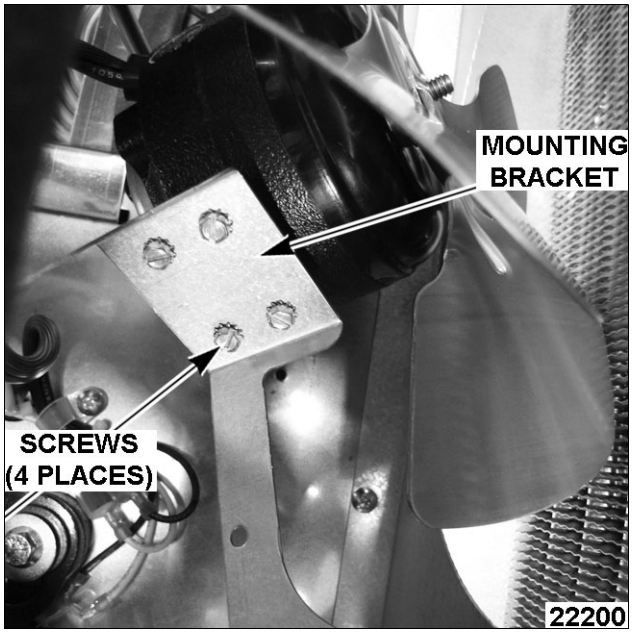
8. Install new compressor and connect wire leads at compressor junction box.
9. Install new filter drier.
10. Evacuate refrigeration system.
11. Charge system and put unit into operation.
12. Check for proper operation.

Condenser Fan Assembly

1. Remove condenser / compressor cover as outlined under COVERS & PANELS.
2. Disconnect lead wires to condenser fan.
3. Remove screws securing condenser fan mounting bracket to cabinet.



4. Remove the screws securing mounting bracket to condenser fan.



5. Reverse the procedure to install.

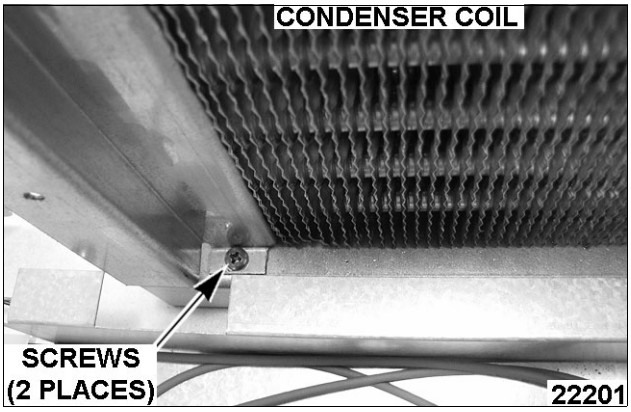
Condenser Coil

⚠WARNING This procedure requires the use of refrigerants. Be certain the work area is well ventilated. Safety goggles and gloves shall be worn since refrigerants may cause burns to the skin

1. Evacuate refrigeration system.

NOTE: The use of reclaiming equipment is mandatory.

2. Remove condenser / compressor cover as outlined under COVERS & PANELS.
3. Disconnect inlet and outlet lines at the soldered connections nearest the condenser coil.
4. Remove screws securing coil to mounting plate.



5. Reverse procedure to install coil, then proceed to next step.

NOTE: It is recommended that the filter drier be changed when this part is replaced.

6. Evacuate refrigeration system.

NOTE: The use of reclaiming equipment is mandatory.

7. Charge system and put unit into operation.

Filter Drier

⚠WARNING This procedure requires the use of refrigerants. Be certain the work area is well ventilated. Safety goggles and gloves shall be worn since refrigerants may cause burns to the skin

⚠WARNING After pump-down, refrigerant lines will contain pressure.

1. Remove condenser / compressor cover as outlined under COVERS & PANELS.
2. Remove filter drier from liquid lines.
3. Install a new filter direr.
4. Evacuate refrigeration system.

NOTE: The use of reclaiming equipment is mandatory.

5. Charge system and put unit into operation.

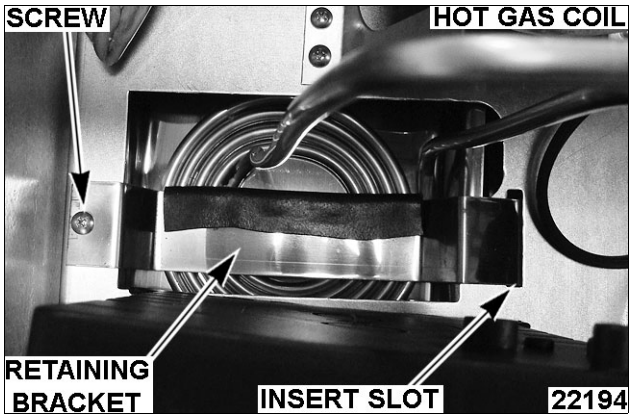
HOT GAS CONDENSATE PAN

⚠WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Remove condenser / compressor cover as outlined under COVERS & PANELS.
2. Remove screw securing hot gas coil retaining bracket to the cabinet.

NOTE: Do not damage the coil during removal.

3. Lift the retaining bracket up out from insert slot in cabinet.



4. Lift the hot gas coil out of condensate pan.
5. Pull hot gas pan from cabinet.
6. Reverse procedure to install.

SERVICE PROCEDURES AND ADJUSTMENTS

⚠ WARNING Certain procedures in this section require electrical test or measurements while power is applied to the machine. Exercise extreme caution at all times. If test points are not easily accessible, disconnect power and follow lockout / tagout procedures, attach test equipment and reapply power to test.

CHECK REFRIGERANT CHARGE (SUPERHEAT, SUB COOLING & SPLIT TEMPERATURES)

Introduction

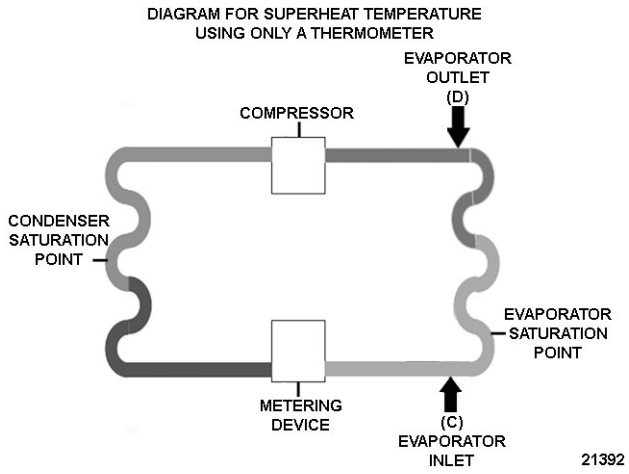
Superheat is the heat that the refrigerant vapor absorbs above the boiling point.

Helpful Hints

- 7 degrees F is a desirable superheat at coil outlet, but superheat for the TXV's are set at the factory.

Procedure

1. **Superheat Temperature**



2. Connect a temperature probe thermocouple to the evaporator coil outlet (D).
   A. Install a piece of pipe insulation around the thermocouple probe.
3. Connect a temperature probe thermocouple to the evaporator coil inlet (C).
   A. Install a piece of pipe insulation around the thermocouple probe.
4. If applicable, install all evaporator box covers over evaporator.

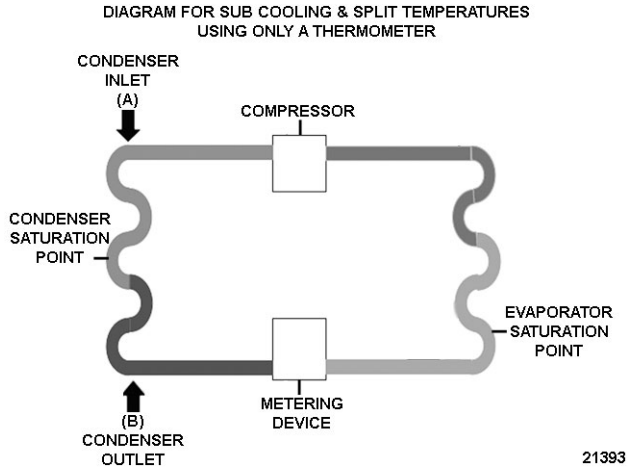
5. Let refrigerant system run. Temperature readings should be taken after the cabinet is at pull down temperature & just before the compressor cycles off.
6. Take readings of evaporator coil inlet (C) & evaporator coil outlet (D) lines.
   A. Subtract temperature reading of evaporator coil outlet temperature (D) to the evaporator coil inlet temperature (C) reading to obtain a superheat temperature.

Example: evaporator outlet temp. (D) - evaporator inlet temp. (C) = superheat temp.

NOTE: TXV superheat is set at the factory and is not adjustable.

   B. If superheat temperature reading is out of spec, call Refrigeration Service Support.
7. Remove thermocouples and install all covers & panels.

Sub Cooling & Split Temperatures



1. Connect a temperature probe thermocouple to the condenser coil inlet (A).
   A. Install a piece of pipe insulation around the thermocouple probe.
2. Connect a temperature probe thermocouple to the condenser coil outlet (B).
   A. Install a piece of pipe insulation around the thermocouple probe.
3. If applicable, install all evaporator box covers over evaporator.
4. Let refrigerant system run for approximately 3 to 5 minutes before taking temperature readings.
5. Take readings of condenser coil inlet (A) & condenser coil outlet (B) lines.
   A. To obtain a sub cooling temperature reading: add condenser coil inlet (A) & condenser coil outlet (B) readings divide by 2 and then subtract condenser coil outlet (B) reading.

Example: [(condenser inlet (A) + condenser outlet temp. (B)) / 2] - condenser outlet (B) = sub cooling temperature.

   B. To obtain a split temperature reading: add condenser coil inlet (A) & condenser coil outlet (B) readings divide by 2 and then subtract ambient temperature reading.

Example: [(condenser inlet (A) + condenser outlet (B)) / 2] - ambient temp. = split temperature.

6. If split temperature reading is out of spec, call Refrigeration Service Support.
7. Remove thermocouples and install all covers & panels.

CHECKING FOR LEAKS

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

⚠ WARNING This procedure requires the use of refrigerants. Be certain the work area is well ventilated. Safety goggles and gloves shall be worn since refrigerants may cause burns to the skin

1. Access the refrigeration system.
2. Connect the low (blue) side of gauge manifold to schrader valve.
3. Connect refrigerant bottle to center of gauge manifold and open valve on bottle.
4. Open valve on low side of gauge manifold and charge system with a small amount of refrigerant (1 to 2 ounces).
5. Close bottle valve and gauge valve.
6. Disconnect refrigerant bottle and connect nitrogen bottle.
7. Set output valve on nitrogen bottle to 120 psi.
8. Open nitrogen bottle valve and gauge manifold valve (low side) and allow pressure to equalize.
9. Shut off both valves and disconnect the nitrogen bottle.
10. Using a leak detector or a thick soapy solution, check for leaks at all tubing connections.
    A. If any leaks are detected, repair the leak and recheck.
    B. If no leaks are discovered, evacuate system as outlined under EVACUATING SYSTEM.
11. Charge system as outlined under CHARGING SYSTEM.

EVACUATING SYSTEM

Introduction

Refrigeration reclaiming equipment is required.

The goal in system evacuation is to remove all the non-condensables as possible. No evacuation method will remove 100% of the moisture and air from within the refrigeration circuit. Because of this, guidelines and methods must be developed and adhered to ensuring only harmless amounts of contaminants remain in the system.

Guidelines

⚠ WARNING Do not pressurize system above 150 PSIG prior to evacuation or during leak test procedures.

- Use only a two stage vacuum pump (2 CFM or greater) and electronic micron gauge integrated into a refrigeration reclaiming system.
- Evacuate from high to low sides of system.
- No chemical additives or alcohols are to be used to Dry Up a system.
- No Flushing with solvents or any type of Freon alien to system. Blow down of system with DRY NITROGEN prior to evacuation is acceptable and many times desirable. See SYSTEM CLEAN UP.
- Evacuate to 500 microns of mercury.

Procedure

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

⚠ WARNING This procedure requires the use of refrigerants. Be certain the work area is well ventilated. Safety goggles and gloves shall be worn since refrigerants may cause burns to the skin

1. Access the refrigeration system.
2. Connect low (blue) side of gauge manifold to schrader valve on compressor access line and high (red) side of gauge manifold to schrader valve on filter drier line.
3. Connect center line of gauge manifold to vacuum pump.
4. Turn vacuum pump on and open both sides of gauge manifold.
5. Pull a vacuum to 500 microns.
6. Break the vacuum with 3 psig of operating refrigerant. On remote systems DRY NITROGEN may be preferred.
7. Repeat steps 5 and 6 once.
8. Pull vacuum to 500 microns.
9. Charge system and check for proper operation.

CHARGING SYSTEM

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

⚠ WARNING This procedure requires the use of refrigerants. Be certain the work area is well ventilated. Safety goggles and gloves shall be worn since refrigerants may cause burns to the skin

1. Access the refrigeration system.
2. Be sure system is properly leak checked and evacuated before charging as outlined under LEAK CHECK and EVACUATING SYSTEM.
3. Connect high side of gauge manifold to the receiver valve. Make certain both valves are closed on the gauge manifold.

NOTE: Charge the system through the high side to prevent liquid refrigerant from reaching the compressor.

4. Connect refrigerant bottle to center connection of gauge manifold.
5. Turn the refrigerant bottle upside down.
6. Open valves on bottle, gauge manifold and receiver.
7. Allow the proper amount of refrigerant to enter the system, then shut the gauge and bottle valves.
8. Disconnect the hose from the receiver valve.
9. Reconnect power to the unit and check for proper operation and high pressure leaks.
10. Disconnect power to the unit and replace any covers removed.
11. Reconnect power to the unit.

SYSTEM CLEAN UP

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

Introduction

When a compressor burn-out is encountered, the service person must make the determination as to the degree of system contamination.

Normally a compressor burn-out will fit in one of three categories:

- Contained - compressor oil not acidic, no oil discoloration.
- Contaminated compressor - oil acidic, discoloration of oil, contamination limited to compressor.
- Massive contamination - contaminated oil and / or refrigerant pumped into system.

Contained

1. Replacement of liquid line drier.
2. Install suction line filter drier.
3. Replacement of compressor.
4. Evacuation (to 500 microns).
5. Charge by weight.

Contaminated Compressor

The Contaminated Compressor requires the same procedure as the Contained Burn-Out. Plus, the system must be flushed after the compressor and drier have been removed.

Massive Contamination

The replacement compressor MUST NOT be installed until after system clean-up procedures have been completed.

1. Remove the burned-out compressor as outlined under COMPRESSOR in REMOVAL AND REPLACEMENT OF PARTS.
2. Remove any of the in-line refrigerant controls.
3. Flush high and low sides of system until acidic oil has been removed from the remaining components of the system.
4. Reassemble refrigeration system.
5. Evacuate refrigeration system as outlined under EVACUATING SYSTEM.
6. Charge system as outlined under CHARGING SYSTEM.
7. Reconnect power and check for proper operation.
8. Disconnect power and install any panels removed.
9. Reconnect power. After 24 hours of operation check system for acid and proper operation.
10. Once the system is determined clean, remove the suction line drier.

SOFTWARE VERSION

The control program software version can be determined by:

1. Turn power on to the Intela-Traul control.
2. While control powers up the control display will show the software version for a second (C32 and above).

CONTROL CALIBRATION

NOTICE Certain components in this system are subject to damage by electrostatic discharge during field repairs. A field service grounding kit is available to prevent damage. The field service grounding kit must be used anytime the control board is handled.

1. Verify that the cabinet air sensor is functioning properly as outlined under CABINET AIR, & CABINET COIL, SENSOR TEST.
2. Place a thermocouple of a temperature tester in the center of right incoming air slot of the cabinet.
   A. Route thermocouple through hinge side of door to the outside of the cabinet and close the door(s).
3. Set the control temperature to 0°F.
4. Allow the cabinet temperature to stabilize (minimum 3 cycles).
5. Note temperature reading on temperature tester and control display at the exact time the refrigeration system turns off.
6. If the temperature difference between the two readings is greater than ±2°F or ±1°C, adjust if:
   A. If temperature test shows a temperature higher than control, increase.
   B. If temperature test shows a temperature lower than control, decrease.
   C. If temperature difference is greater than the range of the control, replace controller (range ±50°F. or ±10°C.).
7. Check for proper operation.
8. Remove temperature tester thermocouple from the cabinet.

CONTROL PARAMETERS

NOTE: Not all control parameters can be adjusted at the customer level of access. To adjust parameters not at the customer level it will be necessary to access the engineering level.

NOTE: If 30 seconds elapse between keypad presses, the controller will revert to a cabinet temperature display (normal operation). If the wrong security code is entered, the controller will revert to a cabinet temperature display (normal operation). To save settings & exit customer access mode, press the alarm cancel keypad or not pressing any keypads for 30 seconds.

To Access Customer Level

1. Use security code 0A1 by:
2. Pressing the Set keypad until CUS is displayed.
3. Press the Set keypad until left zero is flashing with three zeros displayed.
4. Press the Set keypad until center zero is flashing with three zeros displayed.
5. Press the Down Arrow until A is shown in center display.
6. Press Set keypad until right zero is flashing with 0A0 displayed.
7. Press the Up Arrow until 1 is flashing in right display.
8. Press the Set keypad. Display should read SP (Thermostat Set Point) indicating controller is in Customer Access Mode.

To Access Engineering Level

1. Press the Set keypad until CUS is displayed.
2. Press the DOWN ARROW keypad until ENG is displayed.
3. Press the Set keypad until 000 is displayed with the left digit flashing.
4. Press the DOWN ARROW keypad until left digit displays 9.
5. Press the Set keypad until the center digit flashes.
6. Press the DOWN ARROW keypad until center digit displays 9.
7. Press the Set keypad until the right digit flashes.
8. Press the DOWN ARROW keypad until the right digit displays E.
9. Press SET keypad then the DOWN ARROW keypad until FOC is displayed.

NOTE: Hex File GF1 (Standard) and GF3 (-10 °F Freezer).

10. Use the DOWN ARROW keypad to scroll through control parameters.

PARAMETER DISPLAYED	DESCRIPTION / ACCESS LEVEL	RANGE	DEFAULT PARAMETER SETTINGS (FREEZER MODEL SERIES)	
			Standard Freezer Model G1, G2, & G3 Hex File GF1	**-10 °F Freezer Model G1 & G2 Hex File GF3**
SPH software ver. C28	Temperature set point high / Cus. level	SHH to SHL	0 °F	-5.0°F
SPL software ver. C28	Temperature set point low / Cuc. level	SLH to SLL	-4.0°F	-10.0°F
SP software ver. C32 & above	Set point cut out temperature		-3.0 °F	-10.0 °F
SPD software ver. C32 & above	Set point differential	SP TO SPD	2.0 °F	4.0 °F
SHL software ver. C28	Set point high-low / Eng. level	-40°F. up to current setting for SHH	-2.0 °F	-8.0 °F
SHH software ver. C28	Set point high-high / Eng. level	From current setting for SHL up to 266°F.	2.0 °F	-5.0 °F

PARAMETER DISPLAYED	DESCRIPTION / ACCESS LEVEL	RANGE	DEFAULT PARAMETER SETTINGS (FREEZER MODEL SERIES)	
			Standard Freezer Model G1, G2, & G3 Hex File GF1	**-10 °F Freezer Model G1 & G2 Hex File GF3**
SLL software ver. C28	Set point low-low/ Eng. level	-40°F. up to current setting for SLH	-6.0 °F	-13.0 °F
SLH software ver. C28	Set point low-high/ Eng. level	from current setting for SLL up to 266 °F	-2.5 °F	-10 °F
RO	Room ambient offset / Cuc. level	±3°F. in 1/2°F. increments	0 °F	0 °F
HI	Upper temperature limit / Eng. level	-40 °F. to 266°F.	10.0°F	5.0 °F
LO	Lower temperature limit / Eng. level	-40 °F. to 266°F.	-15.0 °F	-15.0 °F
SCL	Temperature scale °F or °C / Cuc. level	°F. or °C.	°F	°F
AC	Anti-cycling- minute / Eng. level	1-10 min. in 1 min. increments	3	3
DEF	Defrost type- ele., gas, none, off cycle / Eng. level	ELE, GAS, NONE or OFF	ELE	ELE
IBD	Intervals between defrosts- hours / Eng. level	1-9 hrs. in 1 hr. increments	4.0	4.0
DDC	Maximum defrost duration- minute / Eng. level	0-30 min. in 5 min. increments	30	30
CDE	Coil temperature at end of defrost cycle / Eng. level	40 °F. to 80 °F. in 5 °F. increments	45 °F	45 °F
DDE	Drip time at end of defrost cycle- minute / Eng. level	1-5 min. in 1 min. increments	4	4
BDD	Blower delay at drip time-minute / Eng. level	0-5 min. in 1 min. increments	6	7
BSD	BSD after defrost end / Eng. level	30 °F. to 40 °F. in 1 °F. increments	20.0 °F	10.0 °F
ODD	Display hold after defrost-minute / Eng. level	0-30 min. in 5 min. increments	10	10
SD	Start-Stop defrost / Cus. level	YES / NO	Start a new defrost cycle at any time or stops a current defrost cycle.	
CL	Set the clock time / Cus. level	00:00 to 23:59 Setting for 12hr. or 24 hr. time (H=hours, N=min., S=sec.)	Set the clock for standard time or military time.	

PARAMETER DISPLAYED	DESCRIPTION / ACCESS LEVEL	RANGE	DEFAULT PARAMETER SETTINGS (FREEZER MODEL SERIES)	
			Standard Freezer Model G1, G2, & G3 Hex File GF1	**-10 °F Freezer Model G1 & G2 Hex File GF3**
DAY	Set the clock date / Cus. level	(Y=year, N=month, E=day # in week example: Sun=1 Sat=7)	Set the year, month, day of the month and day of the week.	
DS	Daylight Savings / Cus. level	ON / OFF	ON	ON
DL1	Defrost lockout 1 / Cus. level	2:00 to 8:00 in. 30 min. increments & OFF	OFF	OFF
DL3	Defrost lockout 3 / Cus. level	14:00 to 20:00 in. 30 min. increments & OFF	OFF	OFF
DL4	Defrost lockout 4 / Cus. level	2:00 to 20:00 in. 30 min. increments & OFF	OFF	OFF
DCF software ver. C28	Dewpoint correction factor / Cus. level	0 to 100	100	100
CON	Compressor default On time / Eng. level	5-30 min. in 1 min. increments	20	20
COF	Compressor Off time / Eng. level	5-30 min. in 1 min. increments	5	5
EL	Evaporator coil temperature / Cus. level	n/a	Displays evaporator coil temperature in real time every time an arrow keypad is pressed.	
CB	Cabinet air temperature / Cus. level	n/a	Displays cabinet air temperature in real time every time an arrow keypad is pressed.	
PLn software ver. C28	Display line voltage / Eng. level	n/a	Displays power line voltage in real time every time an arrow keypad is pressed.	
RCO	Cycle compressor relay / Eng. level	n/a	Turns On/Off the compressor relay for 10 seconds or until an arrow keypad is pressed.	
RdF	Cycle defrost relay / Eng. level	n/a	Turns On/Off the defrost relay for 10 seconds or until an arrow keypad is pressed.	
RFA	Cycle fan relay / Eng. level	n/a	Turns On/Off the blower relay for 10 seconds or until an arrow keypad is pressed.	
RDH	Cycle door heater relay / Eng. level	n/a	Turns On/Off the door heater for 10 seconds or until an arrow keypad is pressed.	
CEP	Clear EPROM & load defaults / Eng. level	n/a	Clear all control memories and reloads the factory default parameters.	
Ref	Software version, revision, step / n/a level	n/a	Firmware revision in the format X9.9 (X=version, 9=major revision, .9= minor revision).	
Sn	Cabinet serial number / Cus. level	n/a	n/a	

11. To exit, press the alarm cancel keypad or not pressing any keypads for 30 seconds.

EVAPORATOR COIL SENSOR TEST

1. Access the customer level by pressing the Set keypad until CUS is displayed.
2. Press the Set keypad until left zero is flashing with three zeros displayed.
3. Press the Set keypad until center zero is flashing with three zeros displayed.
4. Press the Down Arrow until A is shown in center display.
5. Press Set keypad until right zero is flashing with 0A0 displayed.
6. Press the Up Arrow until 1 is flashing in right display.
7. Press Up Arrow until EL is displayed then press Set keypad.
   A. If display shows -40 check for loose wire connections and retest.
   B. If display shows 266 OR higher replace the evaporator coil sensor.

NOTE: Erratic display readings indicate an open or short in the control.

CABINET AIR SENSOR TEST

1. Access the customer level by pressing the Set keypad until CUS is displayed.
2. Press the Set keypad until left zero is flashing with three zeros displayed.
3. Press the Set keypad until center zero is flashing with three zeros displayed.
4. Press the Down Arrow until A is shown in center display.
5. Press Set keypad until right zero is flashing with 0A0 displayed.
6. Press the Up Arrow until 1 is flashing in right display.
7. Press Up Arrow until AA is displayed then press Set keypad.
   A. If display shows 111 check for loose wire connections and retest.
   B. If display shows 32.0 correct inadequate air flow through the condenser, replace the cabinet air sensor, or condenser fan assembly.

NOTE: Erratic display readings indicate an open or short in the control.

CABINET AIR, CABINET COIL, & SENSOR RESISTANCE TEST

1. Gain access to the sensor.
2. Disconnect sensor lead wires from connector.
3. Set the multi meter to ohm scale and connect leads to sensor lead wires.
4. Verify multi meter reading to the temperature conversion chart as follows.

Temperature °F	Ohm Reading K Ohms	Temperature °C
-5.0	99.9	-20.5
0	85.2	-17.7
5.0	72.9	-15.0
10.0	62.4	-12.2
15.0	53.7	-9.4
20.0	46.2	-6.7
25.0	39.9	-3.9
30.0	34.6	-1.1
32.0	32.7	0.0
35.0	30.1	1.7
40.0	26.1	4.4
45.0	22.8	7.2
50.0	19.9	10.0
55.0	17.4	12.8
60.0	15.3	15.6
65.0	13.5	18.3
70.0	11.9	21.1

5. If multi meter reading indicates an open or is outside the ohm range ±10%, replace the sensor.

COMPRESSOR RELAY TEST

1. Turn supply power Off.
2. Gain access to the compressor relay.
3. Disconnect N.O. & COM lead wires from relay.
4. Set the multi meter to ohm scale and connect leads to relay N.O. & COM terminals .
5. Verify the multi meter reading indicates an open circuit. If not, replaced the relay .

DOOR SWITCH TEST

1. Turn supply power Off.
2. Open the cabinet doors.
3. Gain access to the door switch.
4. Disconnect lead wires from switch.
5. Set the multi meter to ohm scale and connect leads to switch terminals .
6. Verify the multi meter reading indicates an open circuit. If not, replaced the switch.

ELECTRICAL OPERATION

COMPONENT FUNCTION

Intela-Traul Control . . . . . Performs the following functions:

A. Displays all data for the current software revision & mode of operation.

B. Cycles refrigeration system to maintain cabinet temperatures.

C. Cycles defrost relay to defrost evaporator coil.

D. Monitors power losses as well as component malfunctions.

E. Monitors door position.

Compressor . . . . . Pumps refrigerant through refrigeration system lines and components.

Start Capacitor . . . . . Wired in series with the start windings to help start compressor motor.

Run Capacitor . . . . . Continually in circuit to help compressor motor during operation.

Compressor Relay . . . . . Senses current of run winding of compressor motor. Normally open contacts close when the run winding draws a high amperage at start and brings the start capacitor and start windings into the circuit. As the motor reaches operating speed (less amperage through run winding), the normally open contacts open and removes the start capacitor and start windings from the circuit.

Evaporator Fan . . . . . Draws air from the cabinet and moves the air through the evaporator coil back into cabinet.

Condenser Fan . . . . . Draws air across condenser coil to aid in removing heat from the refrigerant and move air across compressor to aid in cooling the compressor.

Defrost Heater . . . . . Defrosts evaporator coil and prevents water droplets from evaporator coil to freeze before they can drain to the condensate pan. Operates only during defrost cycle.

Cabinet Air Sensor . . . . . Monitors air temperature inside cabinet.

Cabinet Coil Sensor . . . . . Monitors the evaporator coil while the cabinet is powered.

. . . . . .

Door Switch . . . . . Monitors door for open or closed position. Evaporator fans stop when door is open.

Solenoid Valve . . . . . Normally closed when energized, allows refrigerant to flow from receiver to evaporator coil.

Door Perimeter Heater . . . . . Prevents condensate from forming on door frame.

Intela-Traul Relay Module . . . Controls power to the following components:

A. Evaporator fan(s).

B. Door heater.

C. Defrost heater.

D. Compressor relay.

E. Solenoid valve.

Main Switch . . . . . Controls power to intela-traul relay box, compressor relay, door switch, & auxiliary components. Removes power from listed components.

Heated Glass Doors . . . . . Auxiliary component, prevents condensate from forming on glass door.

Condensate Evaporator . . . . . Auxiliary component, when energized dissipates condensate in the evaporator pan.

SEQUENCE OF OPERATION

Refrigeration System

1. The control must be powered on.
2. The control monitors cabinet air temperature and senses a need for cooling.
3. The compressor motor is energized and refrigerant is pumped through the system.
4. The TXV monitors the evaporator superheat and meters the amount of refrigerant entering the evaporator.
5. The control senses the cabinet air temperature requirements have been met.
6. Compressor motor de-energized by the compressor relay.
7. System is cycled by control.

Freezer Mode

1. Main switch closed.
   A. Relay module energized.
   B. Control energized.
   C. Compressor relay.
   D. Condenser fan(s) energized.
   E. Compressor motor energized.
2. Control displays software revision & then cabinet temperature.
3. After 2-1/2 minutes evaporator fan(s) energized.
4. The refrigeration system will cycle on the air temperature of the cabinet.
   A. On at the high set point (SP + D) temperature.
   B. Off at the low set point (SP) temperature.

NOTE: Set points are selected in the parameter menu.

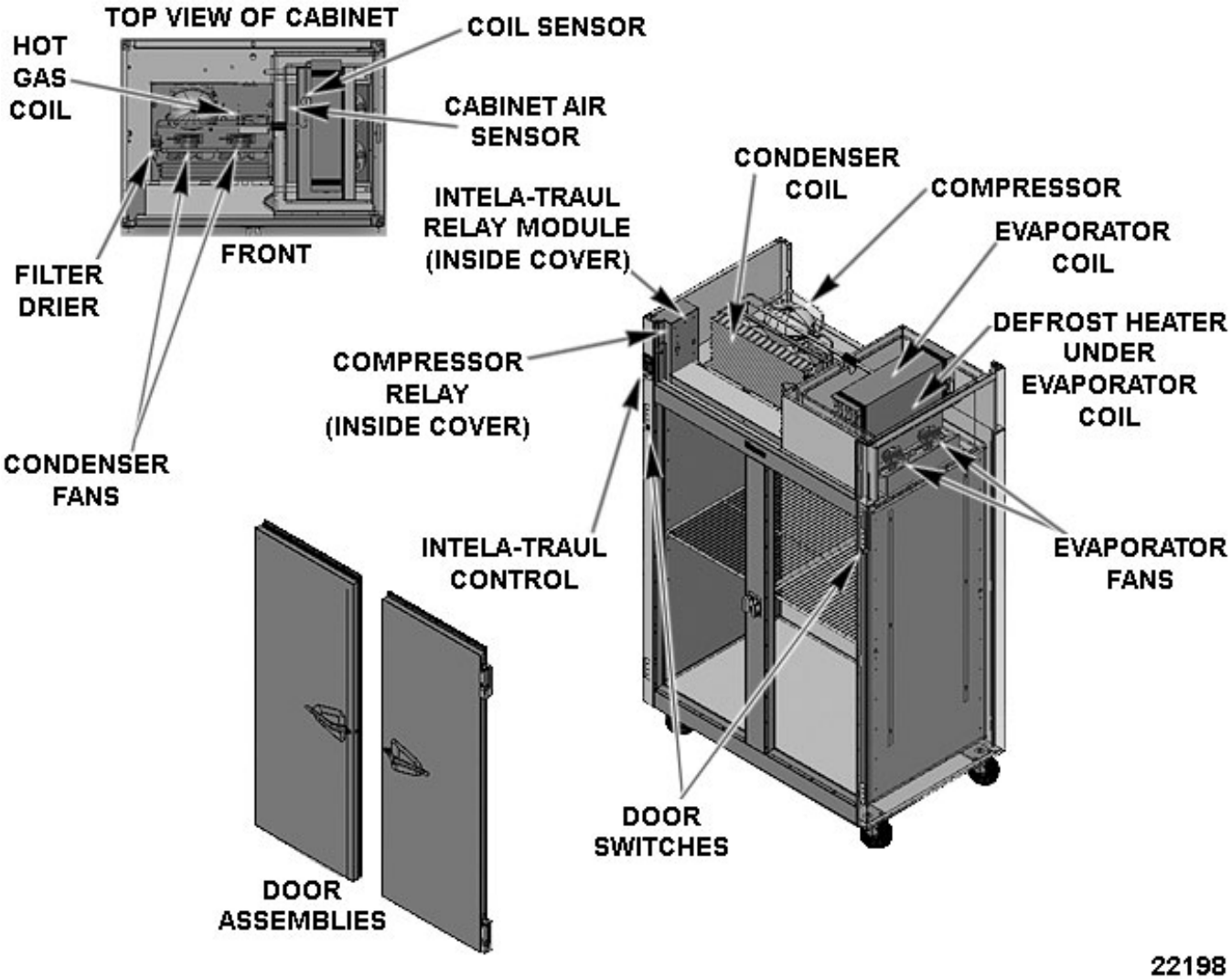
NOTE: If the cabinet door is opened during operation, the evaporator fan(s) will shut Off.

5. Evaporator fan(s) cycled on time and or temperature.
6. Unit is cycled by control.

Defrost Mode

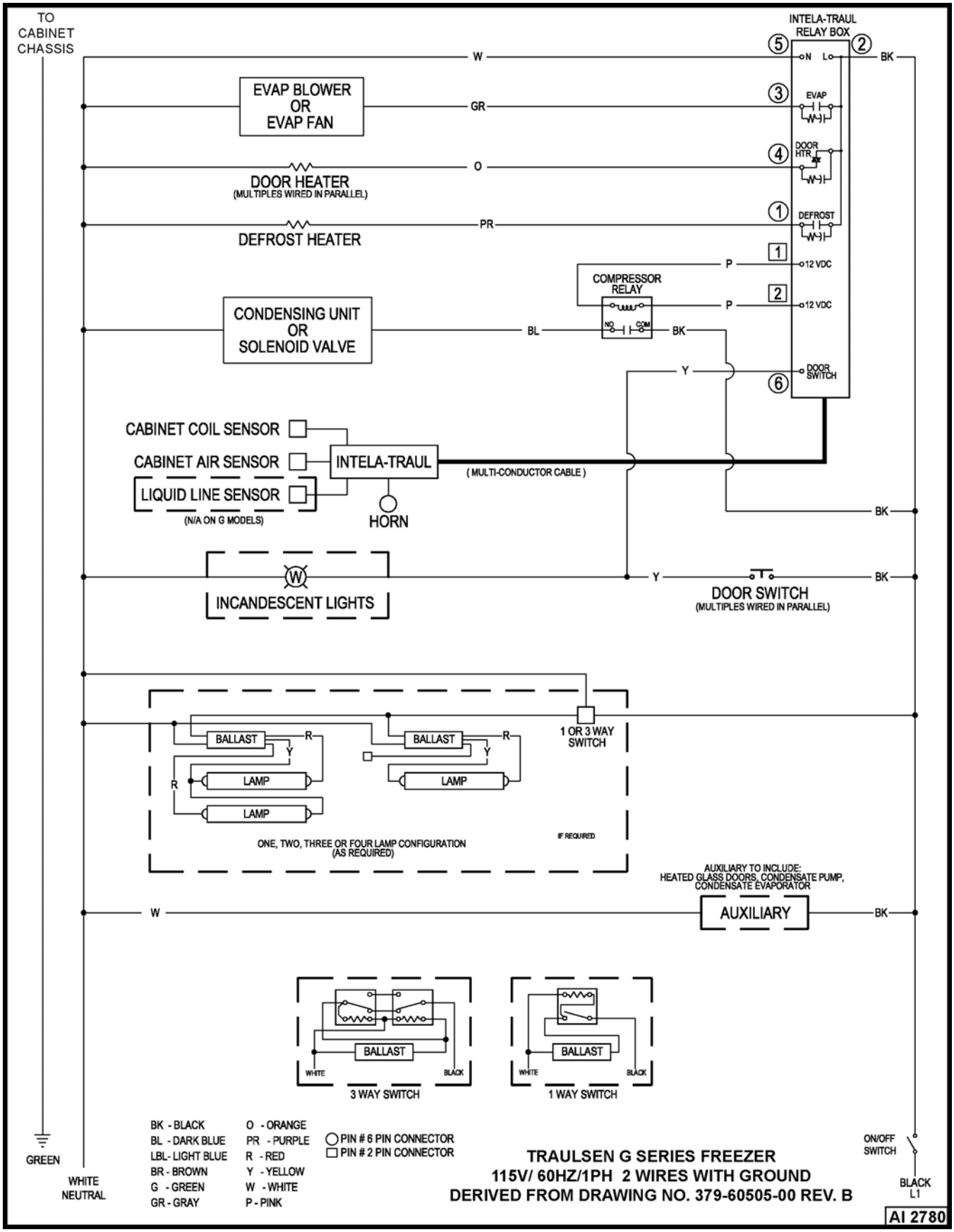
1. The defrost mode can be entered manually or run automatically.
2. When control initiates a defrost cycle, the control snowflake is illuminated.
   A. Defrost heater energized.
   B. Compressor motor de-energized.
   C. Evaporator fan(s) de-energized.
3. Defrost cycle operates until the EL temperature setting is reached or the maximum DDC time setting has elapsed.
4. Defrost mode cycled by control.

COMPONENT LOCATION

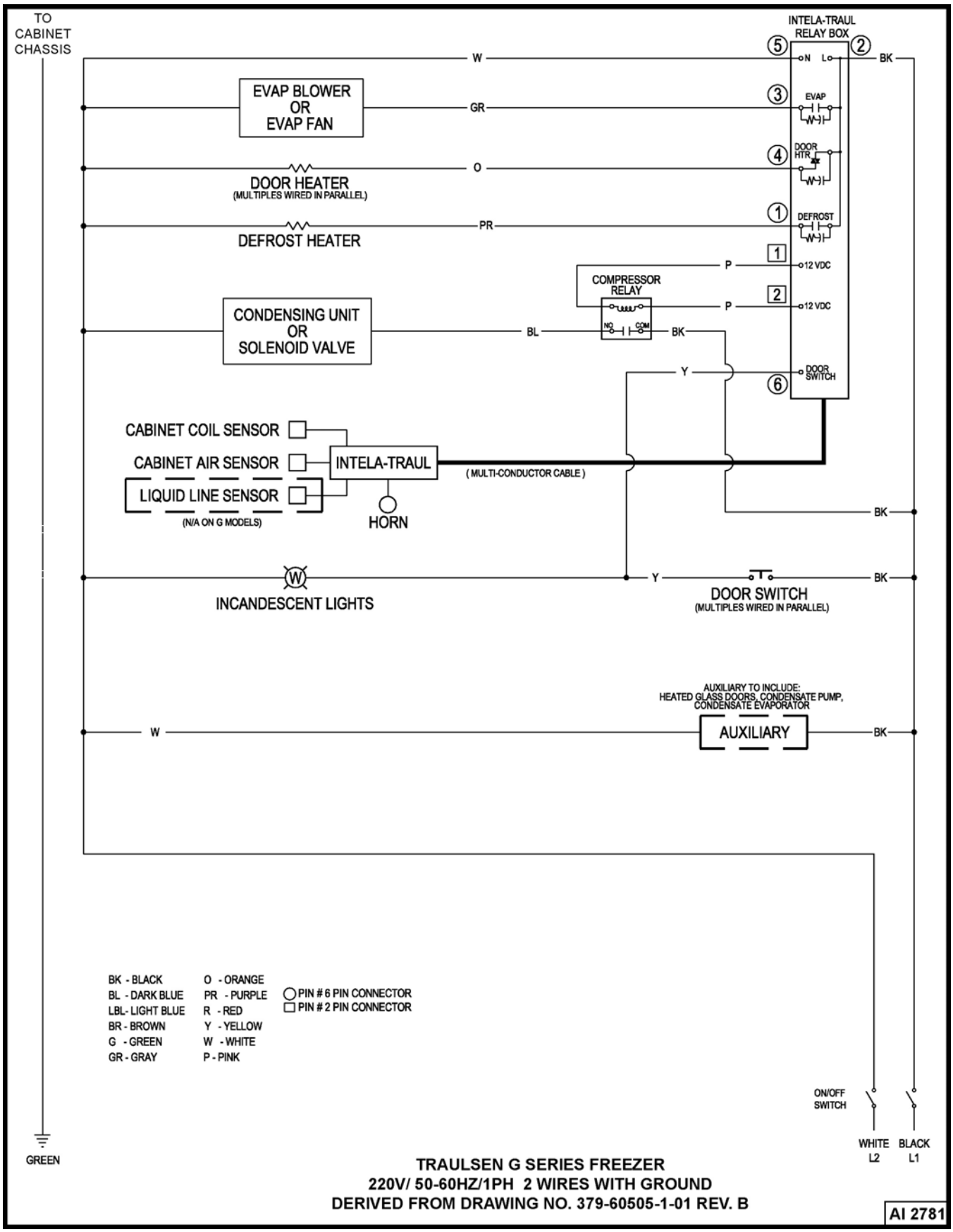


WIRING DIAGRAMS

115V/60HZ/1PH



220V/50-60HZ/1PH



TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSES
Nothing runs, blank control.	1. Main circuit breaker open. 2. Main on/off switch off. 3. Power cord unplugged.
Compressor will not run, no current draw.	1. Cabinet temperature satisfied. 2. Door open or malfunction door switch, with display on control. 3. Incorrect wiring. 4. Cabinet air sensor malfunctioned. 5. Start component malfunctioned. 6. Compressor motor windings open. 7. Control malfunctioned. 8. Compressor relay malfunctioned. 9. Relay module malfunctioned.
Compressor will not run, current draw and trips breaker.	1. Start component malfunctioned. 2. Compressor motor windings shorted. 3. Locked rotor.
Defrost time too long.	1. Evaporator coil sensor malfunctioned. 2. Incorrect wiring. 3. Control malfunctioned. 4. Defrost heater malfunctioned.
Compressor short cycles.	1. Improper air flow over evaporator coil. 2. Expansion valve malfunctioned. 3. Low ambient conditions. 4. Evaporator fan(s) malfunctioned. 5. Cabinet air sensor malfunctioned. 6. Evaporator coil sensor malfunctioned. 7. Control malfunctioned.
Compressor run time lengthy.	1. Partial loss of refrigerant. 2. High ambient conditions. 3. Improper air flow over condenser coil. 4. Excessive product load. 5. Excessive door openings. 6. Door gasket(s) need replaced. 7. Condenser fan(s) malfunctioned. 8. Cabinet air sensor malfunctioned. 9. Cabinet coil sensor malfunctioned. 10. Contaminates in refrigeration system. 11. Control malfunctioned. 12. Relay module malfunctioned.
Continuous compressor operation.	1. Loss of refrigerant. 2. Excessive door openings. 3. Cabinet air sensor malfunction. 4. Control malfunctioned.
Low suction pressure.	1. Restriction in refrigeration system. 2. Loss of refrigerant. 3. Expansion valve blocked.
High head pressure.	1. Improper air flow across condenser. 2. Extreme ambient conditions. 3. Overcharge of refrigerant. 4. Air in refrigerant system. 5. Condenser fan(s) malfunctioned.

SYMPTOM	POSSIBLE CAUSES
Iced Evaporator coil.	1. Evaporator fan(s) malfunctioned. 2. Verify defrost control parameter settings. 3. Evaporator coil sensor malfunctioned. 4. Compressor relay malfunctioned. 5. Control relay module. 6. Cabinet air sensor malfunctioned. 7. Control malfunctioned. 8. Refrigerant system malfunctioned.
Will not defrost.	1. Defrost heater(s) malfunction. 2. Incorrect wiring. 3. Compressor relay malfunctioned. 4. Evaporator coil sensor malfunctioned. 5. Control malfunctioned.
Control display blank.	1. Main power supply. 2. Relay module malfunctioned. 3. On/off switch malfunctioned. 4. Control malfunctioned.

-NOTES-

-NOTES-

-NOTES-

Quality Refrigeration

INTELA-TRAUL®
MASTER SERVICE MANUAL

For All Full Size Undercounter, G-Series and R&A Series Refrigerator, Freezer, Dual-Temp and Hot Food Unit Controllers

Traulsen
4401 Blue Mound Road - Fort Worth, Texas 76106
Phone: (800) 825-8220 or (817) 625-9671
Fax-Service (817) 740-6757

Form Number TR35705, revised 10/04

TABLE OF CONTENTS

I. GENERAL INFORMATION

I. a - HOW TO USE THIS MANUAL:

Traulsen provides this manual as an aid to the service technician in installation, operation, and maintenance of INTELA-TRAUL® Controllers. When used properly, this service manual can help the service technician maintain, troubleshoot and diagnose most of the problems and malfunctions that may occur with the Controllers.

This manual covers the four different types of Controllers (**Full Size Undercounter, G-Series, R&A Series Refrigerator & Freezer,** and **R&A Series Hot Food**). These vary slightly from one another, all exceptions are noted, and where appropriate separate sections are provided.

While we believe that most aspects of the controllers are covered in this manual, should you encounter a condition not addressed, or require a wiring diagram please contact:

Traulsen
4401 Blue Mound Road Fort Worth, TX 76106
Attn: Service Department
Phone: (800) 825-8220 or (817) 625-9671
Fax: (817) 740-6757

All service communication must include:

- Model Number & Serial Number Of Unit
- A detailed explanation of the problem

I. b - ABOUT INTELA-TRAUL:

The Traulsen INTELA-TRAUL and G-Series microprocessor controls are microprocessor based systems which replace several electromechanical components typically built into refrigeration products, such as: time clocks, thermometers, defrost limit switches and temperature controls, all combined into one solid state modular unit.

These microprocessor controls both monitor a cabinet air sensor and a coil sensor. The INTELA-TRAUL on the R & A Series also includes a discharge line sensor and a relative humidity sensor (H1 versions only). In conjuction with the programmed parameters of the control, and the information received, it cycles the refrigeration system ON and OFF at set temperatures, initiates and/or terminates defrost cycles, and initiates one of several alarm features if a problem is sensed (R & A Series only). R & A Series controls also allow the operator to cycle the door perimeter heaters ON/OFF as needed.

I. c - OPERATING THE CONTROLLER:

When operating the controller it is important to note that you only have approximately 20-30 seconds between button pushes. If you take longer than 30 seconds, the controller will revert back to displaying the cabinet temperature.If you enter the wrong security code, the controller will revert back to displaying the cabinet temperature. You can exit the parameters at any time by waiting 20-30 seconds for the control to return to normal operation.

II. BASIC SERVICE PROCEDURES

II. a - ADJUSTING THE TEMPERATURE:

The Display Will Read

Step 1: Press SET. Display will read "CUS." 

Step 2: Press SET. Display will read "000" with the left digit flashing. 

Step 3: Press SET. Display will read "000" with the center digit flashing. 

Step 4: Press ▼ until the center digit changes to an "A". 

Step 5: Press SET. Display will read "0A0" with the right digit flashing. 

Step 6: Press ▲ until the right digit changes to an "1". 

Step 7: Press SET. Display will read "SPH". 

Step 8: Press SET again.

Step 9: Press ▲ or ▼ to adjust temperature to desired setting.

(NOTE: SPH should be set at 38 to 40℉ for refrigerators and 0℉ for freezers)

Step 10: When display reads the desired temperature press SET. 

Step 11: Press ▼ until display reads "SPL". 

Step 12: Press SET.

Step 13: Press ▲ or ▼ to adjust temperature to desired setting. 

(NOTE: SPL should be set at 34℉ for refrigerators and -4℉ for freezers)

Step 14: Press SET.

Step 15: Press ◄ to exit (R & A Series only). On G-Series models the controller will automatically revert back to normal temperature display operation after a delay of approximately 20-30 seconds.

II. BASIC SERVICE PROCEDURES

II. b - STARTING A MANUAL DEFROST CYCLE (R & A Series):

	The Display Will Read
Step 1: Press SET. Display will read "CUS."	CUS
Step 2: Press SET. Display will read "000" with the left digit flashing.	000
Step 3: Press SET. Display will read "000" with the center digit flashing.	000
Step 4: Press ▼ until the center digit changes to an "A".	0A0
Step 5: Press SET. Display will read "0A0" with the right digit flashing.	0A0
Step 6: Press ▲ until the right digit changes to an "1".	0A1
Step 7: Press SET. Display will read "SPH".	SPH
Step 8: Press ▼ until the control reads "Sd," Start Manual Defrost.	Sd
Step 9: Press SET . Display will read "n" (NO).	n
Step 10: Press ▲ or ▼. Display will read "4" (YES).	4
Step 11: Press SET. Controller will display "SPH" for 30 seconds and then "DEF" will appear.	SPH

NOTE: The controller will automatically revert back to normal operation after a delay of approximately 20-30 seconds.

NOTE:
Traulsen R & A Series refrigerator models also include an off-cycle defrost feature, which occurs once an hour. This is indicated by the control display, is time or temperature terminated, and generally is of 3 - 10 minutes in duration.

II. BASIC SERVICE PROCEDURES

II. c - STARTING A MANUAL DEFROST CYCLE (G-Series):

	The Display Will Read
Step 1: Press SET. Display will read "CUS."	CUS
Step 2: Press SET. Display will read "000" with the left digit flashing.	000
Step 3: Press SET. Display will read "000" with the center digit flashing.	000
Step 4: Press ▼ until the center digit changes to an "A".	0A0
Step 5: Press SET. Display will read "0A0" with the right digit flashing.	0A0
Step 6: Press ▲ until the right digit changes to an "1".	0A1
Step 7: Press SET. Display will read "SPH".	SPH
Step 8: Press ▼ until the control reads "Sd," Start Manual Defrost.	Sd
Step 9: Press SET. Display will read "n" (NO).	n
Step 10: Press ▲ or ▼. Display will read "4" (YES).	4
Step 11: Press SET. Display will then read "SPH," Start Manual Defrost.	SPH

Step 14: Press ▲ or ▼ to scroll to the next parameter, otherwise the controller will automatically revert back to normal operation after a delay of approximately 20-30 seconds.

NOTE:
Traulsen G-Series refrigerator models also include an off-cycle defrost feature, which occurs once an hour. This is indicated by the control display, is time terminated, and is generally of 3 - 10 minutes in duration.

The defrost cycle on Traulsen G-Series freezer models can be either time or temperature terminated.

III. TROUBLESHOOTING

III. a - CHECKING FOR DEFECTIVE SENSORS:

The Display Will Read

Step 1: Press SET. Display will read "CUS." 

Step 2: Press SET. Display will read "000" with the left digit flashing. 

Step 3: Press SET. Display will read "000" with the center digit flashing. 

Step 4: Press ▼ until the center digit changes to an "A". 

Step 5: Press SET. Display will read "0A0" with the right digit flashing. 

Step 6: Press ▲ until the right digit changes to an "1". 

Step 7: Press SET.

Step 8: Press ▲ until display reads "EL". Press SET. 

If the display now reads "-40," check for loose connection on the EVAPORATOR sensor. If the display has a very high reading such as "266," replace the evaporator sensor.

NOTE: Erroneous readings may be the result of a faulty sensing circuit (open or shorted) in the Controller.

Step 9: Press ▲ until the display reads "DL[1]". Press SET. 

In the event that the display now reads "-40," check for a loose connection on the DISCHARGE LINE sensor. If the display has a reading of "220" or higher, check for lack of adequate air-flow through the condenser, a bad condenser motor, or any other condition around the unit which could cause a high temperature, such as a steam table or a crossdraft. Otherwise, proceed with replacing the DISCHARGE LINE sensor.

NOTE: Erroneous readings may be the result of a faulty sensing circuit (open or shorted) in the Controller.

Step 10: Press ▲ until the display reads "AA[2]". Press SET. 

Display should read the approximate ambient air temperature behind the louver panel. If the display reads "111" check for a loose connection on the RH/AMBIENT AIR sensor. If the display reads "32.0" check the sensor for a short circuit.

NOTE: If display reads -40 or 266 the cabinet sensor is defective and requires replacement.

NOTE: Ambient Air Sensor not included on MIT version controllers.

NOTE: Erroneous readings may be the result of a faulty sensing circuit (open or shorted) in the Controller (on H1 control version only).

1= DL is not included on G-Series controllers.
2= AA is not available with MIT version controllers.

III. TROUBLESHOOTING

III. b - CHECKING FOR FAILED RELAYS:

Checking For A Failed Internal Controller Relay:

1. **Gain access to Controller compressor relay (see REMOVAL INSTRUCTIONS within this service manual for the specific type of controller your are servicing).**
2. **Locate the connector with the black/blue/purple wires and unplug it. Refer to the schematic on the side of the controller, or refer to the appropriate wiring diagram (to obtain this please contact the factory, referencing the serial numberof the unit involved).**
3. **Using a volt/ohm meter (VOM) with the power OFF, check the resistance across the black to blue wires of the Controller connector. If completed circuit is indicated (with no power to the Controller), the contacts are stuck closed and the Controller should be replaced (on MIT versions either the relay box or one of the other relays within the unit need to be replaced).**

Checking For A Failed External "Slave" Relay or Solid State Relay (SSR), p/n 337-60360-01 (MIT II Only):

1. **Gain access to the controller compressor relay (see REMOVAL INSTRUCTIONS within this service manual for the specific type of controller your are servicing).**
2. **Locate the external "slave" relay and unplug the harness connectors.**
3. **Using a volt/ohm meter (VOM), check the resistance from the "COM" terminal to the "NO" terminal. If a completed circuit is indicated, the contacts are stuck closed and the slave relay should be replaced.**
4. **For the SSR, remove the black and blue wires from terminals 3 & 4. Using a volt/ohm meter, and with the power OFF, measure the resistance across the terminals. A completed circuit indicates that the circuit is closed and that the relay should be replaced. A reading of 25 mΩ to 35 mΩ is considered normal for an open circuit in the SSR.**

Checking For A Failed Door/Light Relay (R & A Series models only):

1. **Gain access to Controller door relay (see REMOVAL INSTRUCTIONS within this service manual for the specific type of controller your are servicing).**
2. **Remove the wire from the door relay coil.**
3. **Using a volt/ohm meter (VOM), check across the relay contacts. If an open across the contacts is not indicated, replace the door relay.**

NOTE: Equipment manufactured with the MIT II controller version do not include a Door/Light relay).

4. **Physically check the switch for evidence of water. If switch has water in it, proceed with replacing the switch.**

III. TROUBLESHOOTING

III. c - CHECKING FOR OTHER FAILED COMPONENTS:

Checking For A Failed Door Switch:

1. **Remove the door(s) from the unit involved.**
2. **Locate the door switch, which is located behind the top door hinge(s).**
3. **Remove the switch from the cabinet.**
4. **Using a volt/ohm meter (VOM), check across the switch contacts. "COM" to "NO" should read open. If not, replace the switch.**
5. **Reinstall the switch and hinge onto the cabinet.**

NOTE: If the unit has more than one door, check ALL door switches in the same manner as described in steps 1 thru 5 above.

Checking For A Failed Controller Transformer (H1 & MIT I control versions only):

1. **Check incoming voltage. Voltage at the unit must be within the ranges shown in the table below.**

VOLTAGE		
MIN	**MAX**	**STANDARD**
104 VAC	**126 VAC**	**115/60/1**
187 VAC	**253 VAC**	**208-230/60/1**
10.2 Volts (MIT 12.4)	**13.8 Volts (MIT 14.7)**	**Transformer Output Voltage**

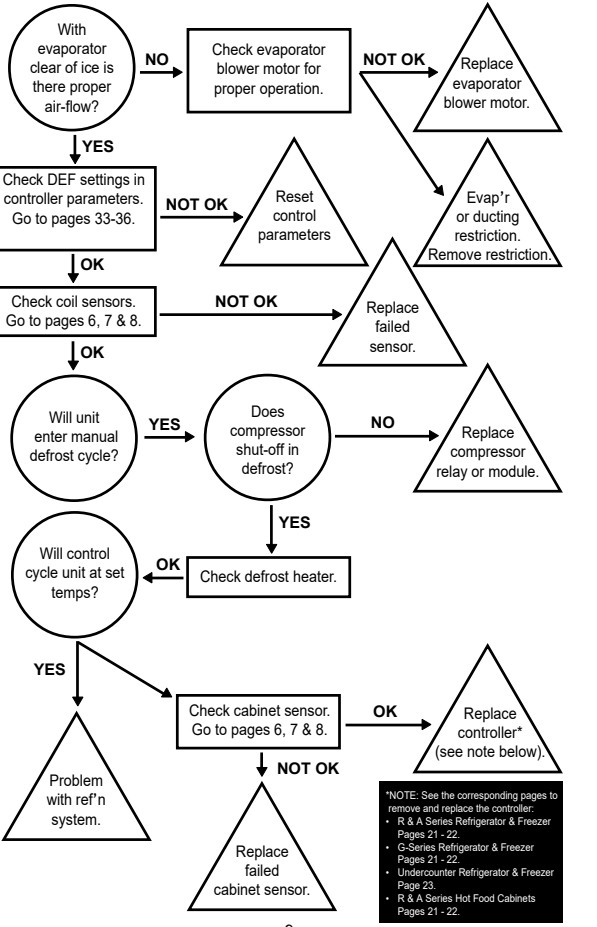
2. **If the controller display does not come back on, use a volt/ohm meter (VOM) and check the output voltage of the controller transformer.**
3. **If the output voltage from the transformer is not within the range shown in the table above, replace the transformer. If the transformer tests OK, replace the controller instead.**
4. **For equipment manufactured with the MIT II controller version the transformer is mounted inside the relay module. Check between 17 and 8 on 18 pin connector on relay module for 12V DC.**

Checking Cabinet, Coil or Discharge Line Sensors:

1. **Gain access to CABINET, COIL or DISCHARGE LINE sensor and disconnect it.**
2. **Place tip if sensor probe in a mixture of icewater for several minutes. Allow enough time for sensor probe to aclimate to the icewater.**
3. **At 32 ℉, probe resistance shoud be 32.7K Ohms, +/- 10%. If resistance is not within this range, repalce the sensor.**

III. TROUBLESHOOTING

III. d - CHECKING FOR ICED EVAPORATOR COIL:

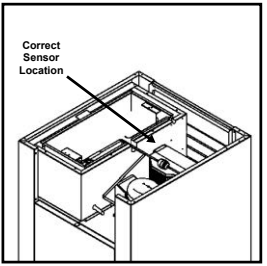


III. TROUBLESHOOTING

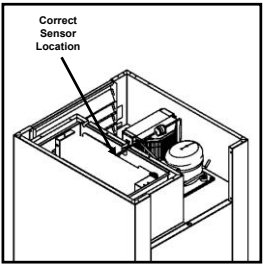
III. e - PROPER SENSOR PLACEMENT:

Coil Sensor:
The coil sensor should be inserted into the return air side of the evaporator coil. On freezer models only this sensor should be centered approximately 2" (two inches) from the top (horizontally through coil - centered in coil).

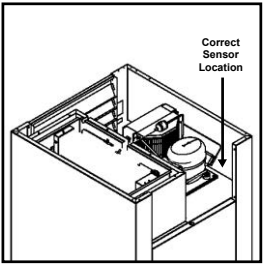
On refrigerator models this sensor should be mounted on top of the coil.



Cabinet Air Sensor:
The cabinet air sensor should be mounted inside the evaporator housing (hump) on the return air side of the evaporator coil.

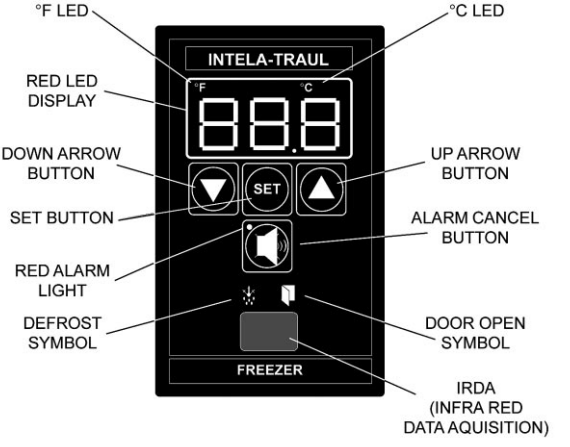


Discharge Sensor (R & A Series Only):
The discharge air sensor should be mounted on the hot gas side of the compressor. Placement should be as close to the compressor as possible and must be placed prior to the beginning of the hot gas loop. Please note that discharge sensors must be insulated.



IV. CONTROL ARCHITECTURE

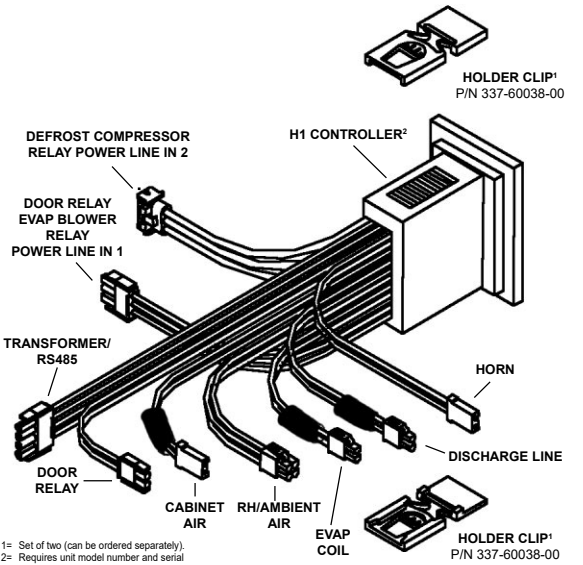
IV. a - R & A SERIES REFRIGERATOR & FREEZER VERTICAL CONTROLLER:



NOTES: IRDA not included on equipment manufactured with the MIT II control version.

See parts assembly on pages 12-13.

IV. CONTROL ARCHITECTURE



1= Set of two (can be ordered separately).
2= Requires unit model number and serial number to place order.

COIL SENSOR[3]
P/N 337-60071-02

DISCHARGE SENSOR[3]
P/N 337-60072-00

CABINET SENSOR[3]
P/N 337-60069-02

GREEN SHRINK TUBE

HORN[3]
P/N 337-60070-00

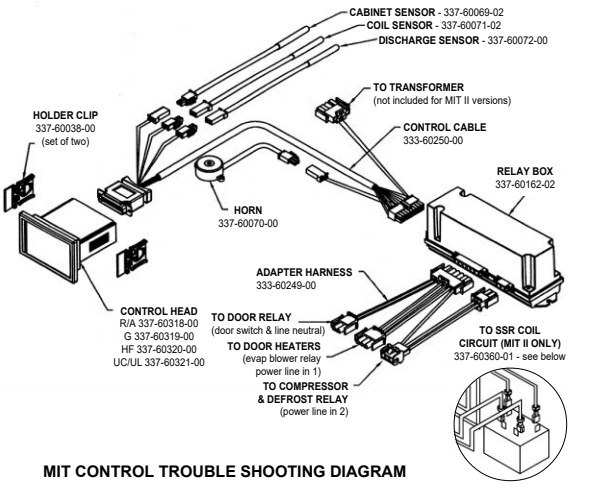
RH SENSOR[3]
P/N 337-60080-00
(control versions H only)

3= Component can be ordered separately.

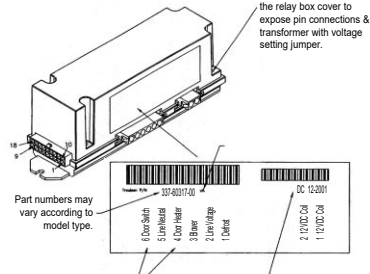
IV. CONTROL ARCHITECTURE

IV. b - R & A SERIES REFRIGERATOR & FREEZER VERTICAL CONTROLLER:

Parts assembly for H1 thru MIT control versions only

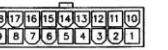


MIT CONTROL TROUBLE SHOOTING DIAGRAM



NOTE

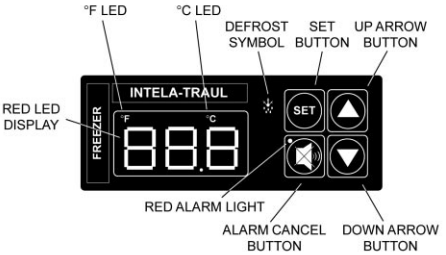
All pins in this connection should not read more than 20 VAC

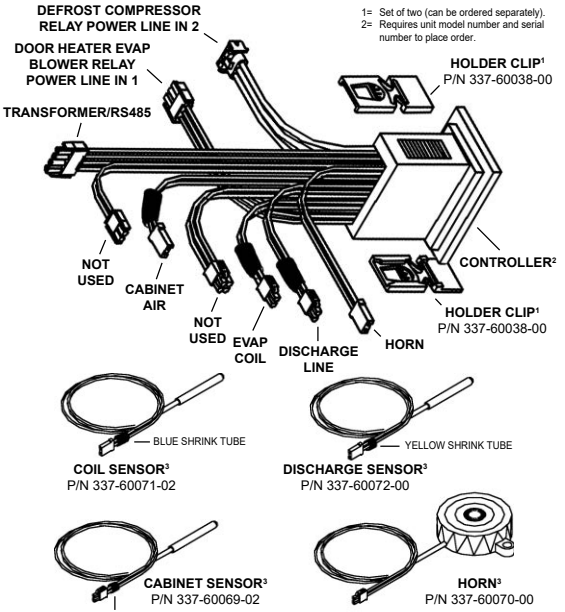


Connector Pin No.	Color	Signal
1	Gray	Blower*
2	Orange	Door Heater*
3	Green	Alarm From Controller
4		
5		
6	Brown	
7	White/Purple	-RS485
8	Black	Ground
9	Yellow/Red	12 VAC
10	Blue	Compressor*
11	Purple	Defrost*
12	Yellow	Door Open Signal
13	Red	Power to Horn
14	Orange	
15	White	
16	Pink	+RS485
17	Red	12 VDC to Controller
18		

IV. CONTROL ARCHITECTURE

IV. c - <u>UC & UL (UNDERCOUNTER) HORIZONTAL CONTROLLER</u>:



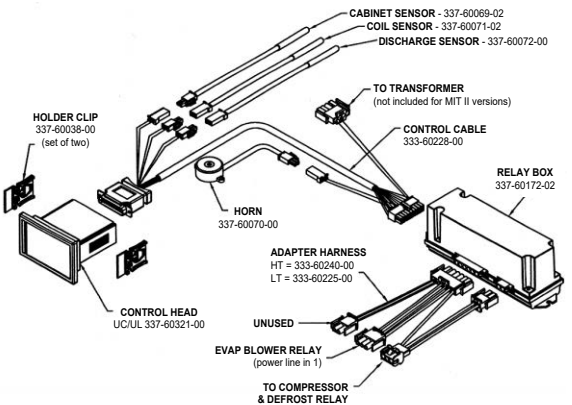


1= Set of two (can be ordered separately).
2= Requires unit model number and serial number to place order.

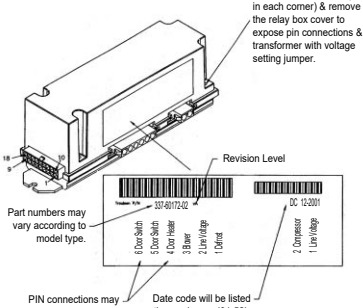
3= Component can be ordered separately.

IV. CONTROL ARCHITECTURE

IV. c - UC & UL (UNDERCOUNTER) HORIZONTAL CONTROLLER:
Parts assembly for MIT control version only



MIT CONTROL TROUBLE SHOOTING DIAGRAM



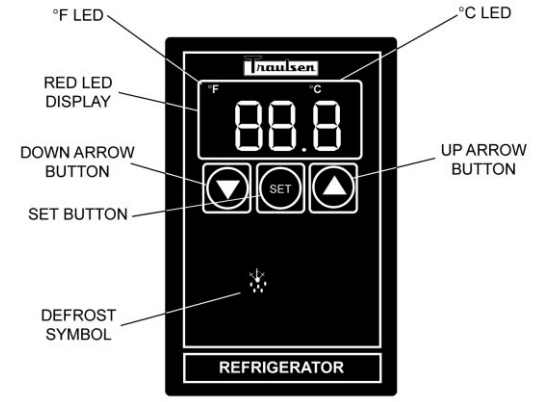
NOTE
All pins in this connection should not read more than 20 VAC

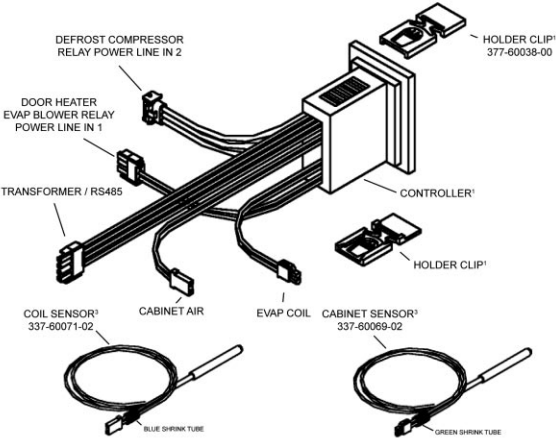
Connector Pin No.	Color	Signal
1	Gray	Blower*
2	Orange	Door Heater*
3	Green	Alarm From Controller
4	Black	Return From Horn
5		
6		
7	White/Purple	-RS485
8	Black	Ground
9	White	12 VAC
10	Blue	Compressor*
11	Purple	Defrost*
12	Yellow	Door Open Signal
13	Red	Power to Horn
14		
15		
16	Pink	+RS485
17	Red	12 VDC to Controller
18	Black	12 VAC

*Voltage should not be more than 5 DC when measured to ground (pin 8).

IV. CONTROL ARCHITECTURE

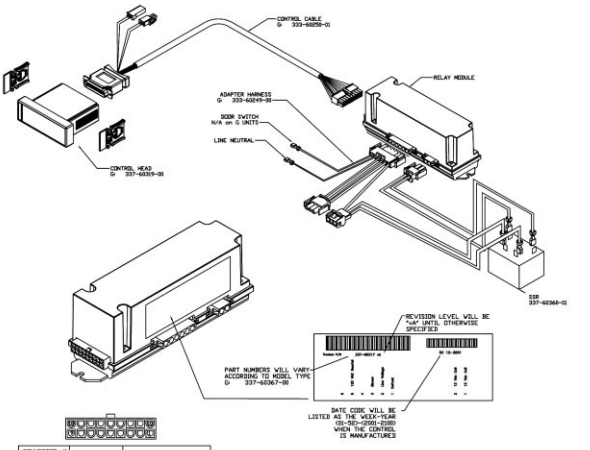
IV. d - G-SERIES REFRIGERATOR & FREEZER VERTICAL CONTROLLER:





IV. CONTROL ARCHITECTURE

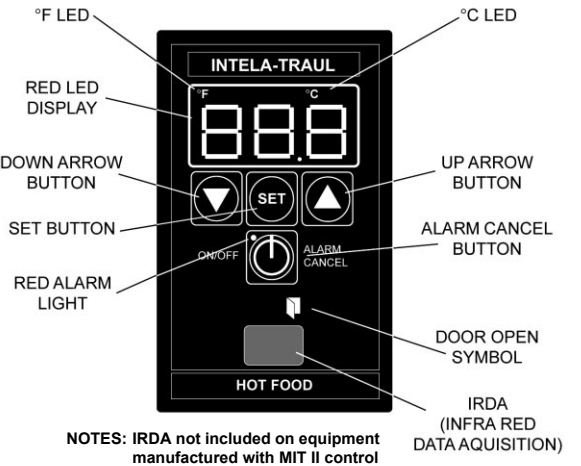
IV. d - G-SERIES REFRIGERATOR & FREEZER VERTICAL CONTROLLER:



CONNECTOR J1 PIN NUMBER	COLOR	SIGNAL
	GRAY	BLOWER
1		
2		
3		
4		
5		
6		
7	BLACK	GROUND
8	YELLOW/RED	POWER LINE FAILURE
9	BLUE	DOOR LINE
10	PURPLE	DEFROST
11		
12		
13		
14	ORANGE	5 VDC FROM CONTROLLER
15		
16		
17	RED	12 VDC TO CONTROLLER
18		

IV. CONTROL ARCHITECTURE

IV. e - R-SERIES HEATED CABINET VERTICAL CONTROLLER:



NOTES: IRDA not included on equipment manufactured with MIT II control version.

See parts assembly on pages 17-18.

HOT FOOD CABINET START-UP (pre-MIT version):
When power is first applied to the unit, you must set the temperature by pressing the "SET" and "UP ARROW" buttons at the same time using equal pressure with both thumbs, until the temperature appears on the display. Next, use the "UP" button to reach the desired temperature (maximum 180°), then press and release the "SET" button to lock it in.

After this is done you can turn the control ON and OFF by pressing and releasing the "ALARM CANCEL" button.

Be aware to watch for the display constantly reading "OFF". This is an indication of a possible faulty cabinet sensor. To remedy, replace the sensor and reset the operating temperature.

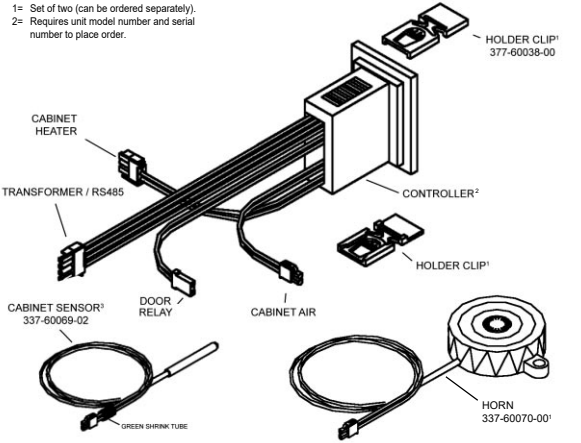
HOT FOOD CABINET START-UP (MIT version):
The MIT control offers an additional means of turning the cabinet heaters ON and OFF. After the operating temperature has been set, the operator can continuously turn the unit OFF and then back ON again to the same operating temperature by pressing the "ON/OFF" button on the face of the control.

Please note that this feature will not function if the control is in an alarm state with the alarm LED illuminated.

IV. CONTROL ARCHITECTURE

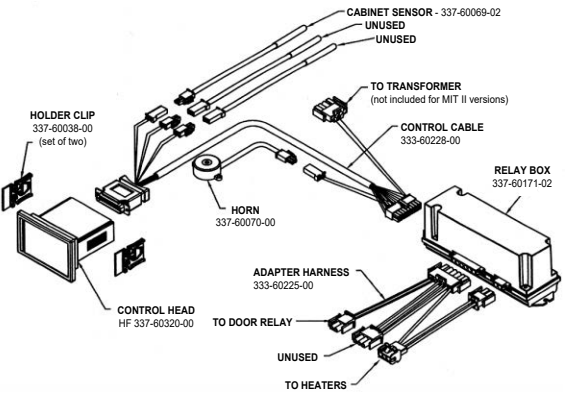
IV. e - <u>R-SERIES HEATED CABINET VERTICAL CONTROLLER</u>:
Parts assembly for H1 control versions only

1= Set of two (can be ordered separately).
2= Requires unit model number and serial number to place order.

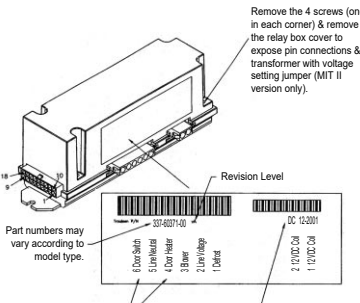


IV. CONTROL ARCHITECTURE

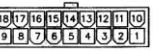
IV. e - R-SERIES HEATED CABINET VERTICAL CONTROLLER:
Parts assembly for MIT control versions only



MIT CONTROL TROUBLE SHOOTING DIAGRAM



NOTE
All pins in this connection should not read more than 20 VAC



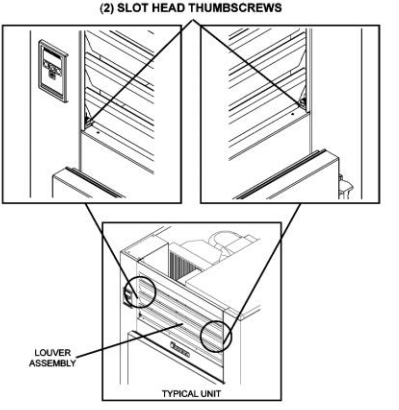
Connector Pin No.	Color	Signal
1	Gray	Blower*
2	Orange	Door Heater*
3	Green	Alarm From Controller
4	Black	Return To Horn
5		
6		
7	White/Purple	-RS485
8	Black	Ground
9	White	12 VAC
10	Blue	Compressor*
11	Purple	Defrost*
12	Yellow	Door Open Signal
13	Red	Power to Horn
14		
15		
16	Pink	+RS485
17	Red	12 VDC to Controller
18	Black	12VAC

*Voltage should not be more than 5 DC when measured to ground (pin 8).

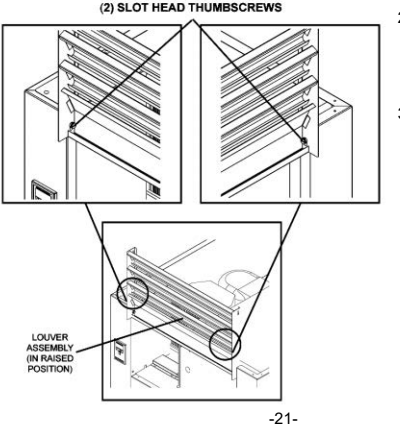
V. REMOVAL/INSTALLATION

V. a - ALL VERTICAL CONTROLLERS:

To remove INTELA-TRAUL® (p/n's 337-60090-00, 337-60091-00 and 337-60092-00) and G-Series (p/n's 337-60093-00, 337-60094-00 and 337-60095-00) Vertical Controller from the unit in which it is installed, proceed as follows (If unable to access the unit from the rear perform steps 1 through 3, otherwise, proceed to step 4):



1. At front of unit, remove two (2) slot head thumb screws from bottom corners of louver assembly. Set thumbscrews aside.



2. Swing louver assembly up and away from front of unit until it stops.

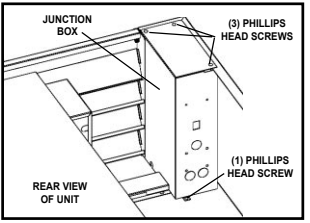
3. Remove two (2) Slot head thumb-screws from top of louver assembly. Set thumbscrews and louver assembly aside.

V. REMOVAL/INSTALLATION

WARNING: DISCONNECT ALL POWER BEFORE PROCEEDING

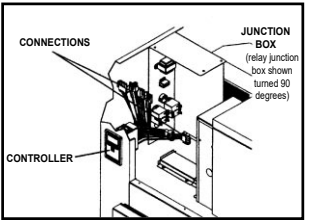
4. At the top of the junction box, remove three (3) Phillips head screws. Set screws aside.

5. Locate one (1) Phillips head screw at bottom of junction box, and remove. Set screw aside.



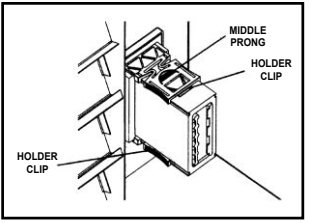
6. Carefully slide junction box away from front of unit until all wiring and connections to the controller are exposed.

7. Locate all nine (9) Controller connections (five for G-Series), then carefully disconnect each one.

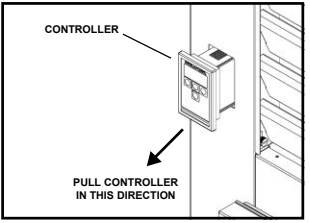


8. Firmly grasp and compress the rounded portion of the middle prong on each holder clip. Slowly slide each holder clip off the controller. Set clips aside.

NOTE:
Be sure ALL components have been disconnected from the Controller before performing the next step.



9. Slowly pull Controller through mounting hole and set aside.

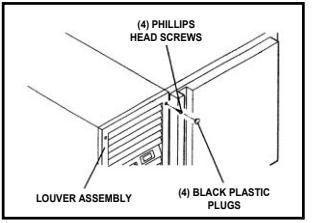


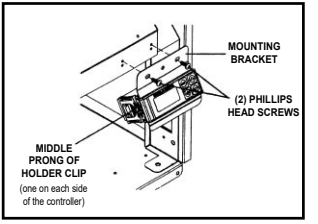
TO RE-INSTALL CONTROLLER, REVERSE THE PRECEEDING PROCEDURE.

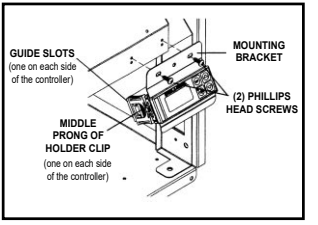
V. REMOVAL/INSTALLATION

V. a - ALL HORIZONTAL CONTROLLERS:
To remove INTELA-TRAUL® (p/n's 337-60096-00 and 337-60097-00) Horizontal Controller from the unit in which it is installed, proceed as follows:

WARNING: DISCONNECT ALL POWER BEFORE PROCEEDING







1. Check to make sure that the power cable is disconnected from the wall.
2. Remove the four (4) black plugs that are located in each corner of the power pack louver assembly. Set plugs aside.
3. Remove the four (4) Phillips head screws holding the louver assembly in place. Set screws and louver assembly aside.
4. Remove the two (2) Phillips head screws thathold the Controller and the bracket assembly to the condenser fan assembly. Set screws aside.
5. Locate all nine (9) Controller connections, then carefully disconnect each one.
6. Firmly grasp and compress the rounded portion of the middle prong on each holder clip. Slowly slide each holder clip off the Controller. Set clips aside.

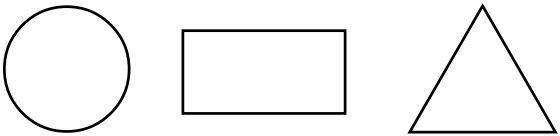
TO RE-INSTALL CONTROLLER, REVERSE THE PRECEEDING PROCEDURE.

VI. PROBLEM DIAGNOSIS

VI. a - HOW TO USE THE TROUBLESHOOTING TREES:

The troubleshooting trees on the following pages were developed as an aid to the service technician in determining the exact solution to a certain problem or malfunction. When used as designed, the troubleshooting trees can lead you from a general symptom to the most likely component to suspect as the cause of the problem.

The trees are made up of three different types of boxes:



QUESTION **CHECK** **SOLUTION**

QUESTION

Boxes ask a yes/no question and the answer will lead to either another question box, a check box, or a solution box.

CHECK

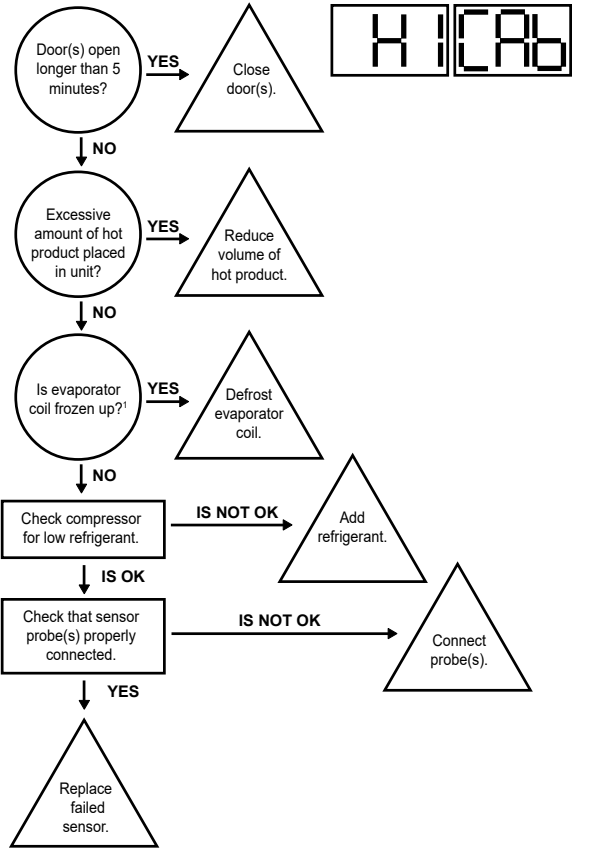
Boxes will suggest a point to check for proper operation, and will often refer you to a page in either the SERVICE INFORMATION or the REMOVAL/INSTALLATION sections of this manual. The result of the check may lead to another box, or a solution box.

SOLUTION

Boxes suggest the most likely component to cause the malfunction described in the heading of the tree. When reaching a solution box, do not immediately assume the component is defective. The final step is to use the SERVICE INFORMATION section of this manual to verify that the component is defective.

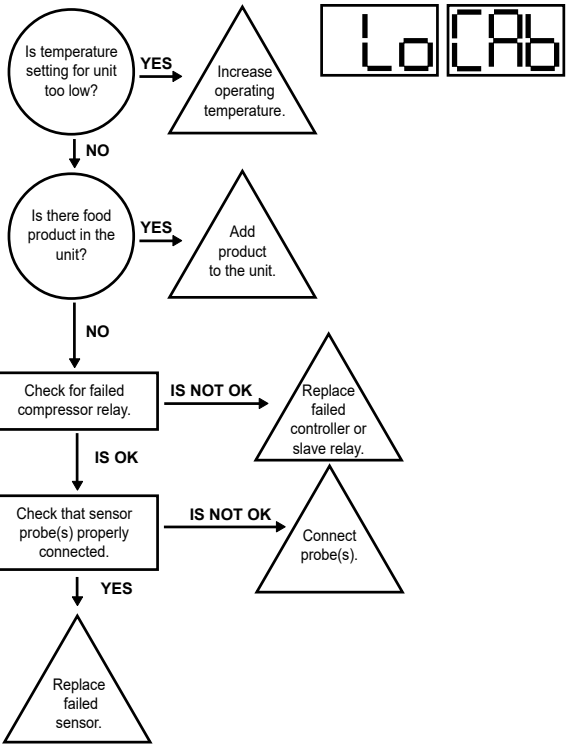
To use the troubleshooting trees, first find the page with the heading describing the type of problem occurring. Begin at the top of the page and follow the tree, step-by-step. When a check box is reached, refer to the suggested section to make the check suggested. Once a solution box is reached, refer to the suggested section to verify that the component in the solution box is indeed defective, and repair or replace per the direction in that section.

VI. b- HIGH TEMPERATURE ALARM



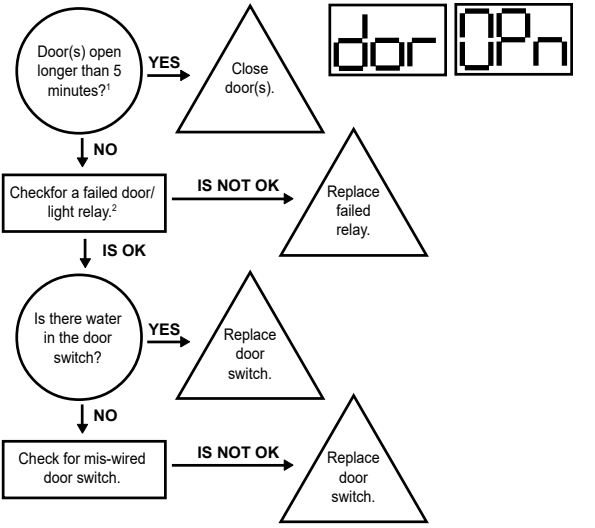
1= See procedure on page 9.

VI. c- LOW TEMPERATURE ALARM



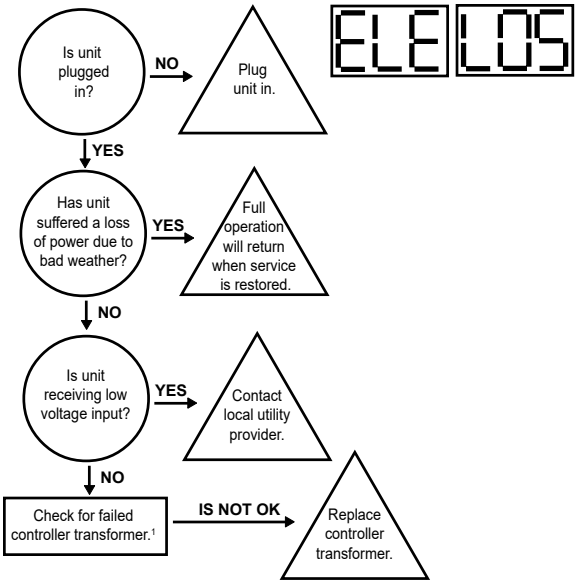
NOTE ON HOT FOOD UNITS ONLY
Hot food units are designed to hold hot food at set temperature. The cabinet is not designed to heat cold products.

VI. d- DOOR OPEN ALARM



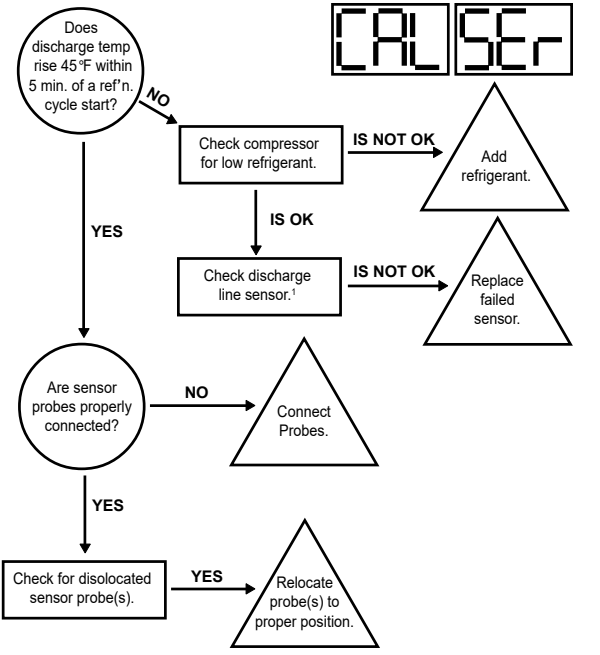
1= H1 and MIT 1 control versions only.
2= See procedure on page 7.

VI. e- POWER LOSS ALARM



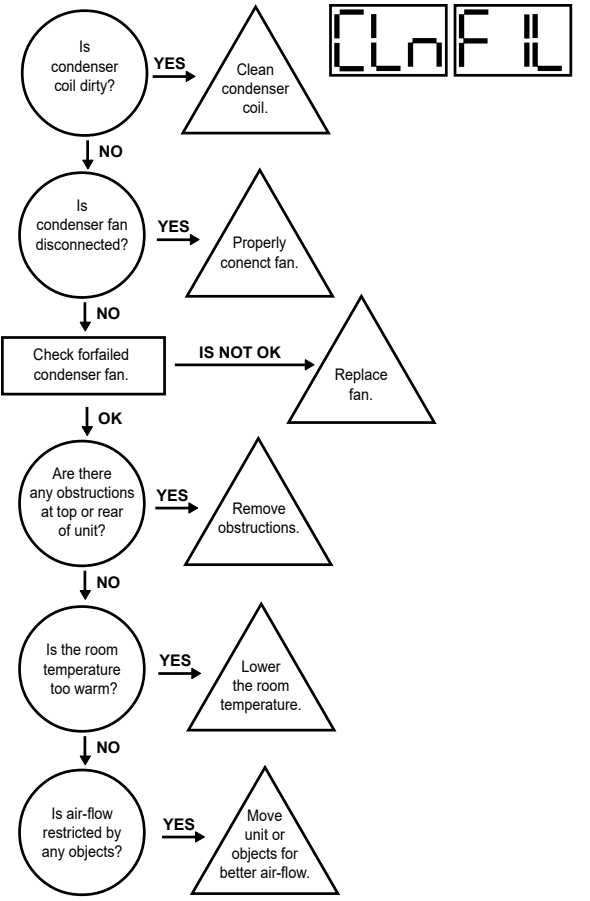
1= See procedure on page 8.

VI. f- SYSTEM LEAK ALARM



1= See procedure on page 8.

VI. g - CONDENSERCLEAN ALARM



VII. ACCESSING THE ENGINEERING LEVEL

VII. a - ACCESSING THE ENGINEERING LEVEL:
Not all control parameters can be adjusted at the customers level of access. To adjust these other parameters it is first necessary to gain access to the ENGINEERING LEVEL. Please follow the below procedure in order to enter this level.

	The Display Will Read
Step 1: Press SET . Display will read "CUS."	
Step 2: Press ▼ until "EnG" is displayed.	
Step 3: Press SET . Display will read "000" with the left digit flashing.	
Step 4: Press ▼ until the left digit changes to an "9".	
Step 5: Press SET . Display will read "900" with the center digit flashing.	
Step 6: Press ▼ until the center digit changes to an "9".	
Step 7: Press SET . Display will read "990" with the right digit flashing.	
Step 8: Press ▼ until the right digit changes to an "E".	
Step 9: The display will read (99E), press SET .	
Step 10: Press ◐ . The display will now read "FOC" - See Note.	

NOTE: R & A Series Only, for G-Series models press ▼ for the control to display "FOC."

VIII. CONTROL PARAMETERS

VIII. a - <u>PARAMETER DESCRIPTIONS</u>:

FOC 3-digit code which identifies the .hex file loaded at the factory.
ADR Device address for NAFEM networks.
BAU Communications rate when connected into a NAFEM network.
NAF Allow the control to communicate with a NAFEM network.
SPH High value of desired cabinet temperature range.
SPL Low value of desired cabinet temperature range.
SHL Lowest temperature of allowed range for setting of SPH.
SHH Highest temperature of allowed range for setting of SPH.
SLL Lowest temperature of allowed range for setting of SPL.
SLH Highest temperature of allowed range for setting of SPL.
RO Difference, in degrees, between displayed & measured temperature.
HI The highest temperature the cabinet air temperature is allowed to reach before triggering a High-Temp alarm.
LO The lowest temperature the cabinet air temperature is allowed to reach before triggering a Low-Temp alarm.
SCL Sets the temperature display scale (fahrenheit or celsius).
HAD Time, in minutes, that the controller delays triggering the High-Temp alarm at any start-up or at the end of a defrost cycle.
LAD Time, in minutes, that the controller delays triggering the Low-Temp alarm if cabinet air temperature equal or below SPL setting.
AC The amount of time, in minutes, that the compressor must be off between cycles.
DEF Defines the type of heat used to defrost the coil: Electric, Hot Gas, None or Off-Cycle.
IBD The amount of time, in hours, between the end of the drip time& start of the next defrost cycle.
DDC The maximum amount of time, in minutes, that the heat will be on during a defrost cycle.
CDE The temperature of the evaporator coil that indicates the end of a defrost heat cycle.
DDE The amount of time, in minutes, between the defrost heat being turned off and the compressor turning on.
BDD The delay time, in minutes, between the end of the drip time and and before the evaporator blower turns on.
BSD The temperature of the evaporator coil that triggers the evaporator blower to turn on after drip time ends.
ODD The maximum amount of time, in minutes, that the display will read the last temperature recorded before entering the defrost cycle.
SD Allows a techinician to start or stop a defrost cycle.
CFA Alows the customer to turn the clogged filter alram ON/OFF (R & A Series only).
CCR The minium amount of time, in minutes, that the compressor must be running before generating a clogged filter alarm.
CDL The discharge line temperature that will trigger a clogged filter alarm.
DOA Allows the customer to turn the door open alarm ON/OFF in units equipped with the appropriate hardware.
DAD The time, in minutes, that a door must be open before triggering a door open alarm.

VIII. CONTROL PARAMETERS

VIII. a - <u>PARAMETER DESCRIPTIONS (continued)</u>:

APD	The amount of time, in seconds, that a visual alarm text will be displayed.
ATD	Alarm temperature delay.
AAS	Allows the customer to set the type of audible alarm style, either Blast, OFF or Continuous.
CL	Allows the customer to set the time of day.
DAY	Allows the customer to set the date.
DS	Sets daylight savings time On or OFF.
DL1	Selects the time to start a defrost lockout.
DL2	Selects the time to start a defrost lockout.
DL3	Selects the time to start a defrost lockout.
DL4	Selects the time to start a defrost lockout.
DCF	Allows the customer to set the percentage of time that the door perimeter heaters will operate, to control surface condensation.
CON	The amount of time the compressor will run in the event of a cabinet air sensor failure.
COF	The amount of time, in minutes, that the compressor will be OFF in the event of a cabinet air sensor failure.
EL	Displays the evaporator temperature at the time (press set or the up arrow button to display this feature).
DL	Displays the discharge line temperature at the time (press set or the up arrow button to display this feature).
CB	When activated (by pressing the set or up arrow buttons), will display the cabinet air temperature at the time the button is pressed.
PLn	When activated will display the approximate line voltage.
RCO	Will energize the compressor relay for 10 seconds when activated.
RdF	Will energize the heater relay for 10 seconds when activated.
RFA	Will energize the blower relay for 10 seconds when activated.
RDH	Will energize the door heater relay for 10 seconds when activated.
Pro	Parameter used only when reflashing the program memory.
CEP	When activated, will return all of the parameters to the initial factory settings.
REF	Displays the revision level of the software loaded into memory.

VIII. CONTROL PARAMETERS

VIII. b - PARAMETER ACCCESS & UNITS OF MEASUREMENT:

H1, MIT I & MIT II CONTROL VERSIONS ONLY

Control Parameter	Description	Access	Unit of Measure
ADR*	Device Address	ENG	
BAU*	Comm. Baud Rate in K	ENG	KBaud
NAF*	NAFEM Communications Enable	ENG	On/Off
SPH	Temperature Set-Point High	CUS	Degree
SPL	Temperature Set-Point Low	CUS	Degree
SHL	Set-Point High/Low	ENG	Degree
SHH	Set-Point High/High	ENG	Degree
SLL	Set-Point Low/Low	ENG	Degree
SLH	Set-Point Low/High	ENG	Degree
RO	Room Offset	CUS	Degree
HI	Upper Temperature Limit	ENG	Degree
LO	Lower Temperature Limit	ENG	Degree
SCL	Temperature Scale	CUS	F or C
HAD	High-Temperature Alarm Delay	ENG	Minute
LAD	Low-Temperature Alarm Delay	ENG	Minute
AC	Anticylcing	ENG	Minute
DEF	Defrost Type	ENG	Electric/Gas/Off
IBD	Intervals Between Defrosts	ENG	Hours
DDC	Maximum Defrost Duration	ENG	Minute
CDE	Coil Temperature At End of Defrost Cycle	ENG	Degree
DDE	Drip Time At End of Defrost Cycle	ENG	Minute
BDD	Blower Delay At Drip Time	ENG	Minute
BSD	BSD After Defrost End	ENG	Degree
ODD	Display Hold After Defrost	ENG	Minute
SD	Start/Stop Defrost	CUS	Start/Stop
CFA	Clogged Filter Alarm	n/a	On/Off
CCR	Clogged Filter Compressor Run Time	n/a	Minute
CDL	Clogged Filter Alarm Temperature	n/a	Degree
DOA	Door Open Alarm	ENG	On/Off
DAD	Door Display Alarm Delay	ENG	Minute
APD	Alarm Pause Delay	ENG	Second
ATD	Alarm Temperature Delay	ENG	Second
AAS	Audible Alarm Style	CUS	On/Off
CL	Set The Clock Time	CUS	H/N/S
DAY	Set The Clock Date	CUS	Y/N/D
DS	Daylight Savings	CUS	On/Off
DL1	Defrost Lockout 1	CUS	Time/Off
DL2	Defrost Lockout 2	CUS	Time/Off
DL3	Defrost Lockout 3	CUS	Time/Off
DL4	Defrost Lockout 4	CUS	Time/Off
DCF	Dewpoint Correction Factor	CUS	%
CON	Compressor Default On Time	ENG	Minute
COF	Compressor Off Time	ENG	Minute
EL	Evaporator Coil Temperature	CUS	Degree
DL	Discharge Line Temperature	CUS	Degree
CB	Cabinet Air Temperature	CUS	Degree
PLn*	Display Line Voltage	ENG	Volts
RCO*	Cycle Compressor Relay	ENG	On/Off
RdF*	Cycle Defrost Relay	ENG	On/Off
RFA*	Cycle Blower/Fan Relay	ENG	On/Off
RDH*	Cycle Door Heater Relay	ENG	On/Off
PRO*	Go To Bootloader For Programming	ENG	
CEP*	Clear EEPROM & Load Defaults	ENG	
REF*	Software Version/Revision/Step	n/a	

*MIT II control version only.

VIII. CONTROL PARAMETERS

VIII. c - G-SERIES PARAMETER SETTINGS (MIT II Control Version):

Control	Freezer Models				Refrigerator Models		
Parameter	GF1	GF2	GF3	GF4	GR1	GR2	GR3
ADR*	2	2	2	2	2	2	2
BAU*	9.6	9.6	9.6	9.6	9.6	9.6	9.6
NAF*	ON	ON	ON	ON	ON	ON	ON
SPH	-5.2	0.1	0.1	32	38.1	39.2	39.2
SPL	-10	-4	-4	26.1	34	37	37
SHL	-8	-3.1	-3.1	30.2	36	39.2	39.2
SHH	-5.2	0.1	0.1	34	40	40	40
SLL	-13	-6.2	-6.2	26.1	32	34	34
SLH	-10	-4	-4	28	34	37	37
RO	0	0	0	0	0	0	0
HI	0.1	5	5	35.2	41	41	41
LO	-18.4	-10	-10	20	30.2	30.2	30.2
SCL	F	F	F	F	F	F	F
HAD	n/a	n/a	n/a	n/a	n/a	n/a	n/a
LAD	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AC	3	3	3	3	3	3	3
DEF	ELE	ELE	ELE	ELE	OFF	ELE	OFF
IBD	4.0	4.0	4.0	4.0	1.0	2.0	1.0
DDC	20	20	20	20	10	20	10
CDE	75	75	75	75	45.1	70	45.1
DDE	2	2	2	2	2	2	2
BDD	1	1	1	1	0	0	0
BSD	32	32	32	32	32	32	32
ODD	10	10	10	10	10	10	10
SD	Starts a new defrost cycle at any time or stops a current defrost cycle.						
CFA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CCR	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CDL	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DOA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DAD	n/a	n/a	n/a	n/a	n/a	n/a	n/a
APD	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ATD	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AAS	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CL	Set the hours and minutes in military time.						
DAY	Set the year, month, day of the month and day of the week.						
DS	ON	ON	ON	ON	ON	ON	ON
DL1	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DL2	OFF	11:30am	OFF	OFF	OFF	OFF	OFF
DL3	OFF	5:30pm	OFF	OFF	OFF	OFF	OFF
DL4	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DCF	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CON	19	19	19	19	11	11	11
COF	7	7	7	7	10	10	10
EL	Will display evaporator coil temp in real time every time an arrow is pressed.						
DL	Will display discharge line temp in real time every time an arrow is pressed.						
CB	Will display cabinet air temp in real time every time an arrow is pressed.						
PLn*	Will display power line voltage in real time every time an arrow is pressed.						
RCO*	Turns ON/OFF the compressor relay for 10-seconds or until an arrow is pressed.						
RdF*	Turns ON/OFF the defrost relay for 10-seconds or until an arrow is pressed.						
RFA*	Turns ON/OFF the blower relay for 10-seconds or until an arrow is pressed.						
RDH*	Turns ON/OFF the door heater triac for 10-seconds or until an arrow is pressed.						
PRO*	Set the controller in receiving mode for programming.						
CEP*	Clear all controller memories and reloads the factory default parameters.						
REF*	Firmware revision in the format X9.9 (X=version, 9=major revision, 9=minor revision).						

*MIT II control version only.

VIII. CONTROL PARAMETERS

VIII. d - R-SERIES PARAMETER SETTINGS (MIT II Control Version):

Control	Refrigerator Models							
Parameter	RA1	RA2	RA3	RA4	RA5	RA6	RA7	RA8
ADR	2	2	2	2	2	2	2	2
BAU	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
NAF	ON	ON	ON	ON	ON	ON	ON	ON
SPH	39.2	39.2	39.2	39.2	38.1	38.1	39.2	39.2
SPL	37	37	37	37	34	34	37	37
SHL	39.2	39.2	39.2	39.2	36	36	39.2	39.2
SHH	40	40	40	40	40	40	40	40
SLL	34	34	34	34	32	32	34	34
SLH	37	37	37	37	34	34	37	37
RO	0	0	0	0	0	0	0	0
HI	41	41	41	41	41	41	41	41
LO	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2
SCL	F	F	F	F	F	F	F	F
HAD	15	15	15	15	15	15	15	15
LAD	2	2	2	2	2	2	2	2
AC	3	3	3	3	3	3	3	3
DEF	OFF	OFF	OFF	OFF	OFF	OFF	ELE	ELE
IBD	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0
DDC	10	10	10	10	10	10	20	20
CDE	45.1	45.1	45.1	45.1	45.1	45.1	70	70
DDE	2	2	2	2	2	2	2	2
BDD	0	0	0	0	0	0	0	0
BSD	32	32	32	32	32	32	32	32
ODD	10	10	10	10	10	10	10	10
SD	Starts a new defrost cycle at any time or stops a current defrost cycle.							
CFA	OFF	ON	OFF	ON	ON	ON	OFF	ON
CCR	20	20	20	20	20	20	20	20
CDL	220.1	220.1	220.1	220.1	220.1	220.1	220.1	220.1
DOA	ON	ON	ON	ON	ON	ON	ON	ON
DAD	15	15	15	15	15	15	15	15
APD	2	2	2	2	2	2	2	2
ATD	10	10	10	10	10	10	10	10
AAS	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
CL	Set the hours and minutes in military time.							
DAY	Set the year, month, day of the month and day of the week.							
DS	ON	ON	ON	ON	ON	ON	ON	ON
DL1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DL2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DL3	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DL4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DCF	100	100	100	100	100	100	100	100
CON	11	11	11	11	11	11	11	11
COF	10	10	10	10	10	10	10	10
EL	Will display evaporator coil temp in real time every time an arrow is pressed.							
DL	Will display discharge line temp in real time every time an arrow is pressed.							
CB	Will display cabinet air temp in real time every time an arrow is pressed.							
PLn*	Will display power line voltage in real time every time an arrow is pressed.							
RCO*	Turns ON/OFF the compressor relay for 10-seconds or until an arrow is pressed.							
RdF*	Turns ON/OFF the defrost relay for 10-seconds or until an arrow is pressed.							
RFA*	Turns ON/OFF the blower relay for 10-seconds or until an arrow is pressed.							
RDH*	Turns ON/OFF the door heater triac for 10-seconds or until an arrow is pressed.							
PRO*	Set the controller in receiving mode for programming.							
CEP*	Clear all controller memories and reloads the factory default parameters.							
REF*	Firmware revision in the format X9.9 (X=version, 9=major revision, 9=minor revision).							

*MIT II control version only.

VIII. CONTROL PARAMETERS

VIII. e - R-SERIES PARAMETER SETTINGS (MIT II Control Version):

Control Parameter	Freezer Models RF1	RF2	RF3	RF4	RF5
ADR	2	2	2	2	2
BAU	9.6	9.6	9.6	9.6	9.6
NAF	ON	ON	ON	ON	ON
SPH	-15.4	-10	0.1	0.1	-5.2
SPL	-20.2	-15.4	-4	-4	-10
SHL	-15.4	-13.6	-2.2	-2.2	-8
SHH	-10	-10	0.1	0.1	-5.2
SLL	-20.2	-20.2	-6.2	-6.2	-13
SLH	-17	-15.4	-4	-4	-10
RO	0	0	0	0	0
HI	5.2	5.2	5	5	0.1
LO	-25.6	-25.6	-10	-10	-17.8
SCL	F	F	F	F	F
HAD	15	15	15	15	15
LAD	2	2	2	2	2
AC	3	3	3	3	3
DEF	ELE	ELE	ELE	ELE	ELE
IBD	4.0	4.0	4.0	4.0	4.0
DDC	30	20	20	20	20
CDE	55	75	75	70	70
DDE	5	2	2	2	2
BDD	1	1	1	1	1
BSD	-10	32	32	32	32
ODD	10	10	10	10	10
SD	Starts a new defrost cycle at any time or stops a current defrost cycle.				
CFA	ON	OFF	OFF	ON	ON
CCR	20	20	20	20	20
CDL	220.1	220.1	220.1	220.1	220.1
DOA	ON	ON	ON	ON	ON
DAD	15	15	15	15	15
APD	2	2	2	2	2
ATD	10	10	10	10	10
AAS	OFF	OFF	OFF	OFF	OFF
CL	Set the hours and minutes in military time.				
DAY	Set the year, month, day of the month and day of the week.				
DS	ON	ON	ON	ON	ON
DL1	OFF	OFF	OFF	OFF	OFF
DL2	OFF	OFF	OFF	OFF	OFF
DL3	OFF	OFF	OFF	OFF	OFF
DL4	OFF	OFF	OFF	OFF	OFF
DCF	100	100	100	100	100
CON	19	19	19	19	19
COF	7	7	7	7	7
EL	Will display evaporator coil temp in real time every time an arrow is pressed.				
DL	Will display discharge line temp in real time every time an arrow is pressed.				
CB	Will display cabinet air temp in real time every time an arrow is pressed.				
PLn	Will display power line voltage in real time every time an arrow is pressed.				
RCO	Turns ON/OFF the compressor relay for 10-seconds or until an arrow is pressed.				
RdF	Turns ON/OFF the defrost relay for 10-seconds or until an arrow is pressed.				
RFA	Turns ON/OFF the blower relay for 10-seconds or until an arrow is pressed.				
RDH	Turns ON/OFF the door heater triac for 10-seconds or until an arrow is pressed.				
PRO	Set the controller in receiving mode for programming.				
CEP	Clear all controller memories and reloads the factory default parameters.				
REF	Firmware revision in the format X9.9 (X=version, 9=major revision, 9=minor revision).				

VIII. CONTROL PARAMETERS

VIII. f - UNDERCOUNTER PARAMETER SETTINGS (MIT II Control Version):

Control Parameter	UF1	UF2	UP1	UP2
ADR	2	2	2	2
BAU	9.6	9.6	9.6	9.6
NAF	ON	ON	ON	ON
SPH	0.1	38.1	38.1	38.1
SPL	-4	33.8	33.8	33.8
SHL	-0.31	36	36	36
SHH	0.1	40	40	40
SLL	-6.2	32	32	32
SLH	-4	34	34	34
RO	0	0	0	0
HI	5	41	41	41
LO	-10	30.2	30.2	30.2
SCL	F	F	F	F
HAD	15	15	15	15
LAD	2	2	2	2
AC	3	3	3	3
DEF	GAS	GAS	OFF	OFF
IBD	4.0	4.0	1.0	1.0
DDC	20	20	10	10
CDE	75	75	45.1	45.1
DDE	5	2	2	2
BDD	1	1	0	0
BSD	-10	32	32	32
ODD	10	10	10	10
SD	Starts a new defrost cycle at any time or stops a current defrost cycle.			
CFA	OFF	OFF	N/A	OFF
CCR	20	20	N/A	20
CDL	220.1	220.1	N/A	220.1
DOA	OFF	OFF	N/A	OFF
DAD	15	15	N/A	15
APD	2	2	2	2
ATD	10	10	N/A	10
AAS	OFF	OFF	N/A	OFF
CL	Set the hours and minutes in military time.			
DAY	Set the year, month, day of the month and day of the week.			
DS	ON	ON	ON	ON
DL1	OFF	OFF	OFF	OFF
DL2	OFF	OFF	OFF	OFF
DL3	OFF	OFF	OFF	OFF
DL4	OFF	OFF	OFF	OFF
DCF	100	100	100	100
CON	19	19	11	11
COF	7	7	10	10
EL	Will display evaporator coil temp in real time every time an arrow is pressed.			
DL	Will display discharge line temp in real time every time an arrow is pressed.			
CB	Will display cabinet air temp in real time every time an arrow is pressed.			
PLn	Will display power line voltage in real time every time an arrow is pressed.			
RCO	Turns ON/OFF the compressor relay for 10-seconds or until an arrow is pressed.			
RdF	Turns ON/OFF the defrost relay for 10-seconds or until an arrow is pressed.			
RFA	Turns ON/OFF the blower relay for 10-seconds or until an arrow is pressed.			
RDH	Turns ON/OFF the door heater triac for 10-seconds or until an arrow is pressed.			
PRO	Set the controller in receiving mode for programming.			
CEP	Clear all controller memories and reloads the factory default parameters.			
REF	Firmware revision in the format X9.9 (X=version, 9=major revision, 9=minor revision).			

HOURS OF OPERATION:
Monday thru Friday 7:30 am - 4:30 pm CST

Quality Refrigeration

Traulsen
4401 Blue Mound Road Fort Worth, TX 76106
Phone: (800) 825-8220 Fax-Svce: (817) 740-6757
Website: www.traulsen.com

TRAULSEN TECHNICAL BULLETIN

PRODUCT SERVICE DEPARTMENT **TROY, OH. 45374-0001**

THERMAL EXPANSION VALVE CHANGE TO INTERNAL EQUALIZER

Introduction

Thermal expansion valves used on all R404a refrigeration systems were externally equalized type. New builds and service parts are now internal equalizer type TXV.

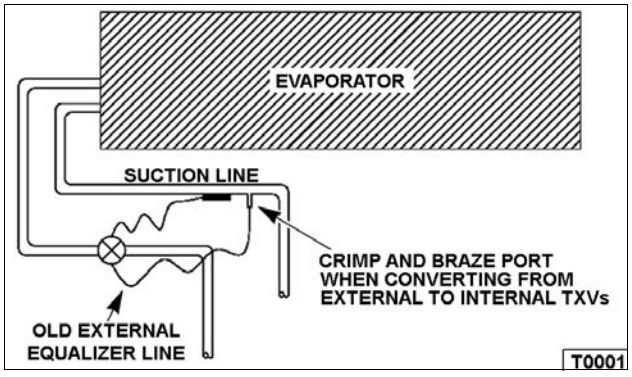
Service Parts

If you order any of the external equalized valves, the appropriate internal equalized valve will be sent.

External Equalizer	Description	Internal Equalizer	Description
325-60080-15	TXV, FBSE 1/4 ZP	325-60080-26	TXV, AA 1/4 SW35
325-60080-16	TXV, FBSE 1/8 ZP	325-60080-25	TXV, AA 1/8 SW35
325-60080-20	TXV, AAE 1/8 SW30	325-60080-25	TXV, AA 1/8 SW35
325-60080-21	TXV, AAE 1/4 SW30	325-60080-26	TXV, AA 1/4 SW35
325-60080-22	TXV, AAE 1/4 SW50	325-60080-36	TXV, AA 1/4 SW50
325-60080-23	TXV, AAE 1/2 SW50	325-60080-34	TXV, AA 1/2 SW50

Procedure

1. Recover refrigerant or pump system down.
2. Remove thermal expansion valve and external equalizer line from system.
3. Install replacement TXV in high pressure line.
4. Crimp the external equalization port closed and braze shut.
5. Place the refrigeration system back into operation using approved refrigeration system service procedures.



TRAULSEN TECHNICAL BULLETIN

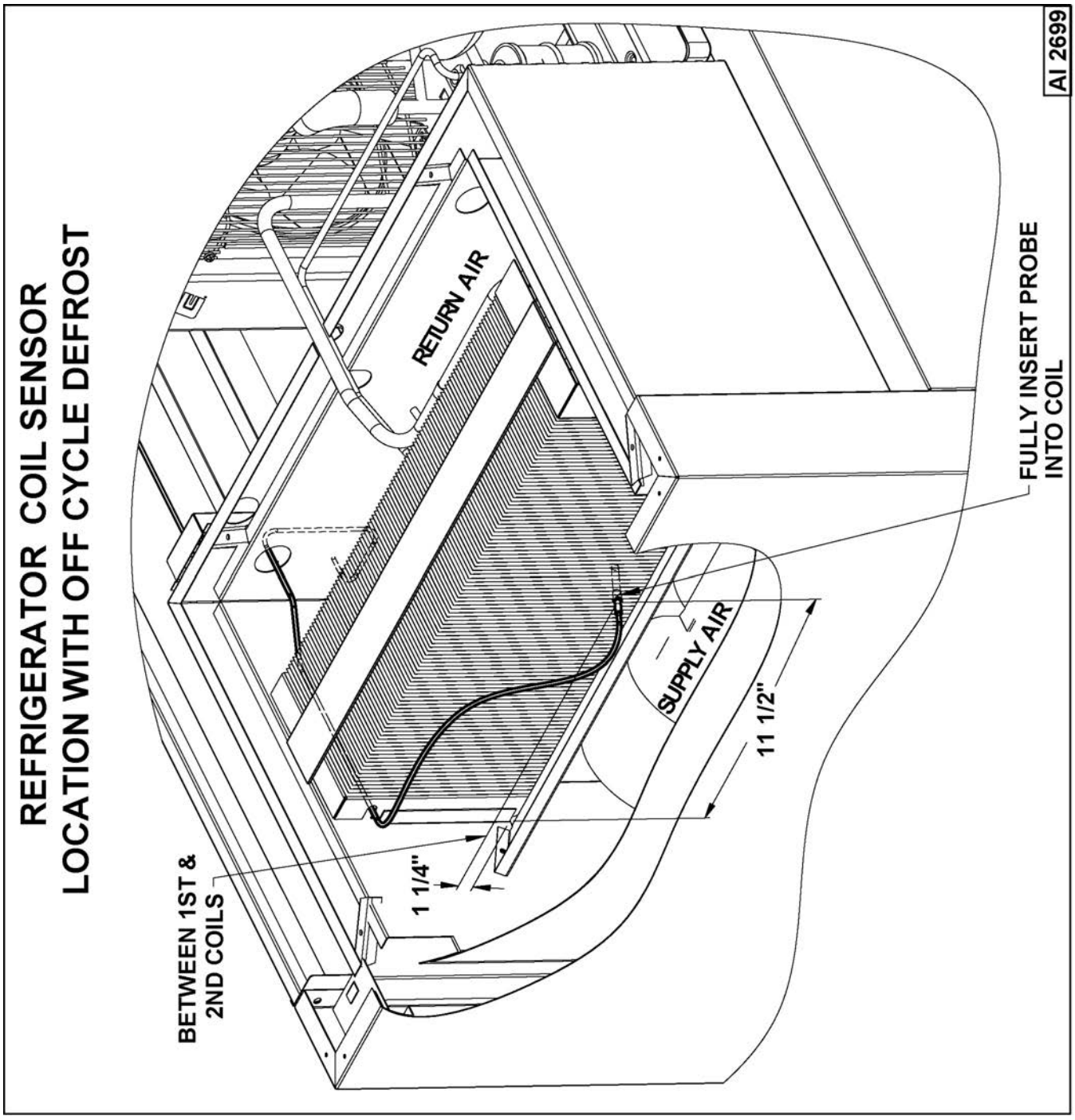
PRODUCT SERVICE DEPARTMENT TROY, OH. 45374-0001

TRAULSEN EQUIPMENT TEMPERATURE SENSOR LOCATIONS

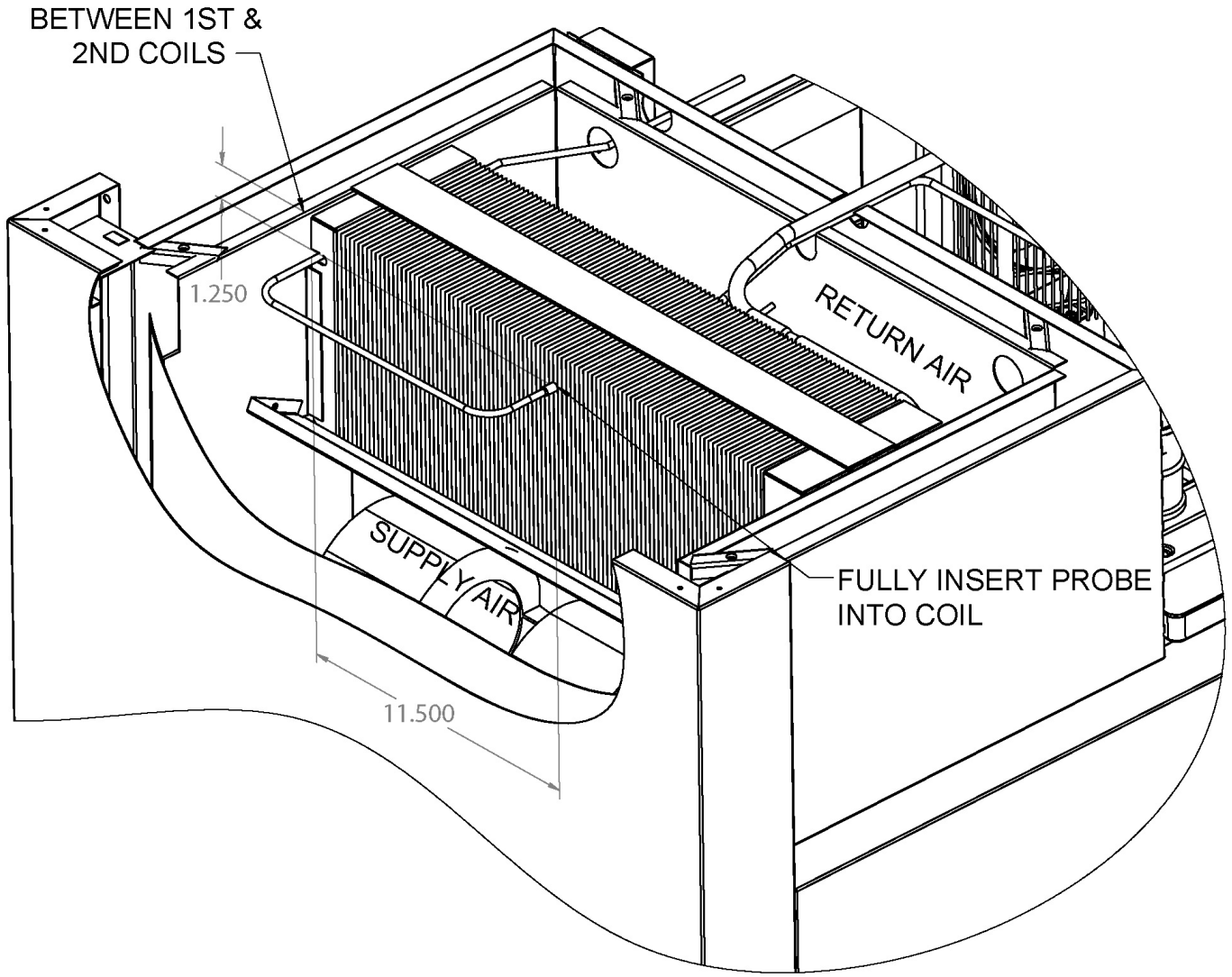
Introduction

To inform the field of proper sensor locations on Traulsen refrigeration systems.

Service Information

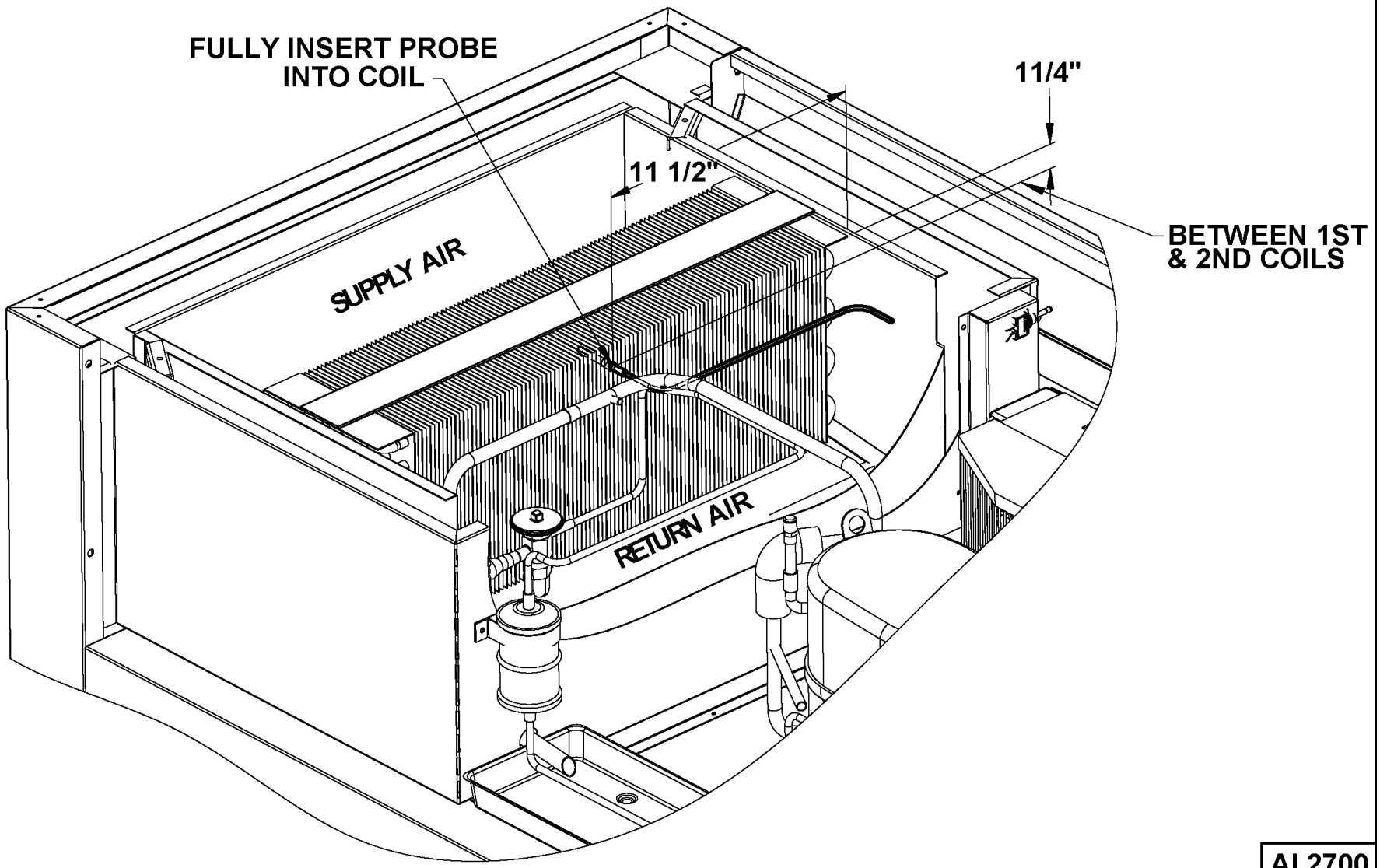


REFRIGERATOR COIL SENSOR LOCATION WITH ELECTRIC DEFROST

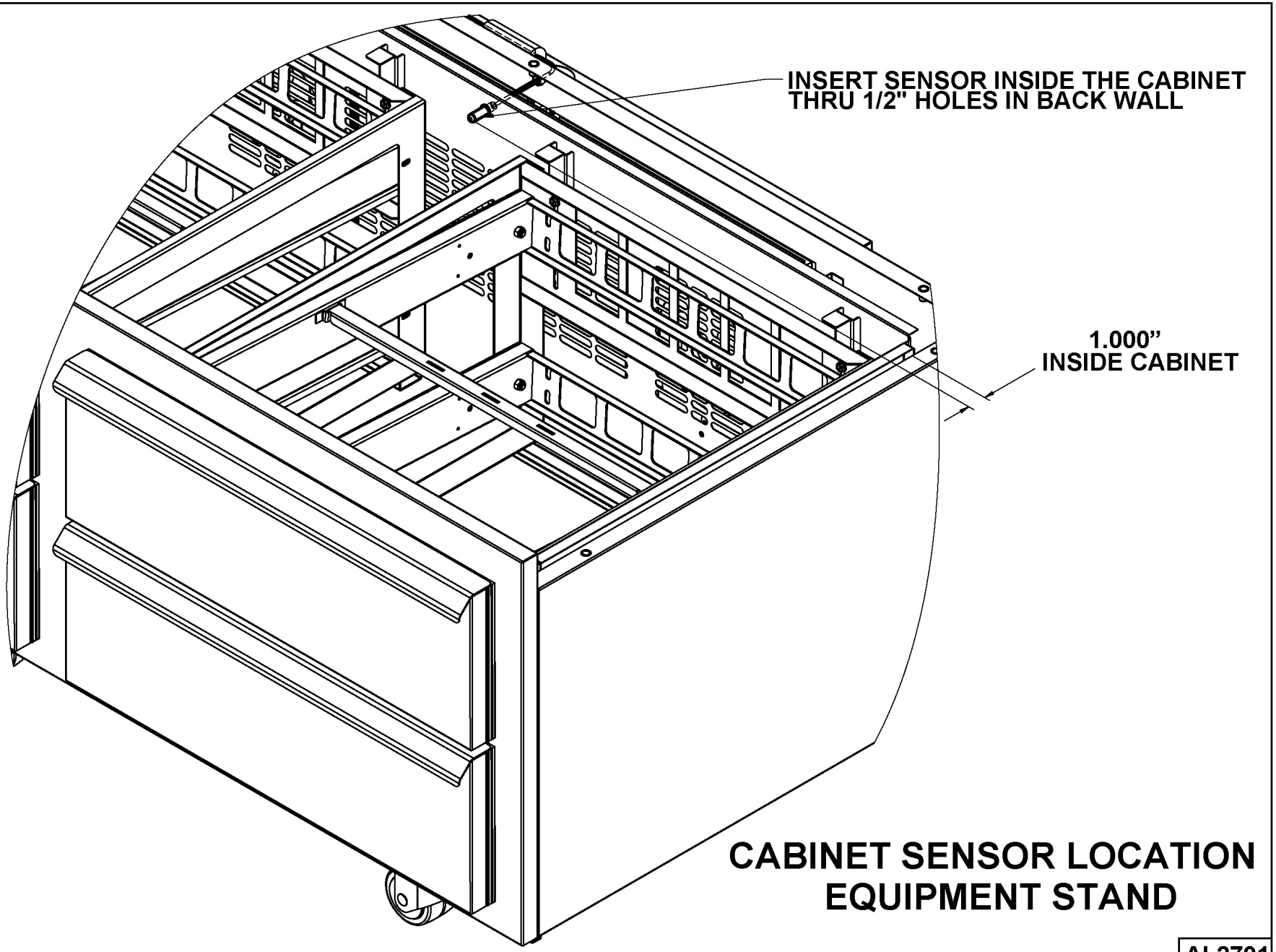


AI 2714

FREEZER COIL SENSOR LOCATION

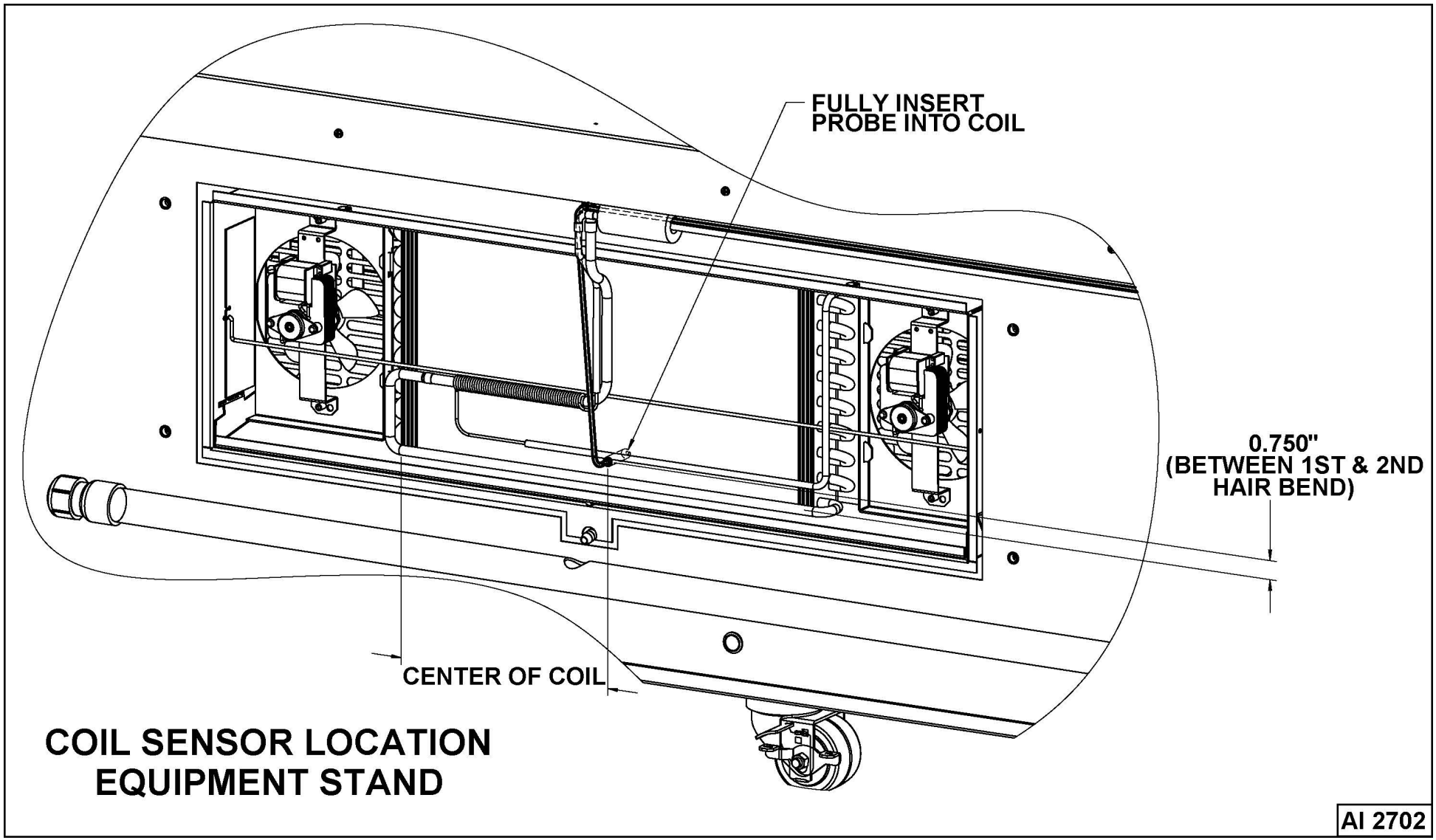


AI 2700



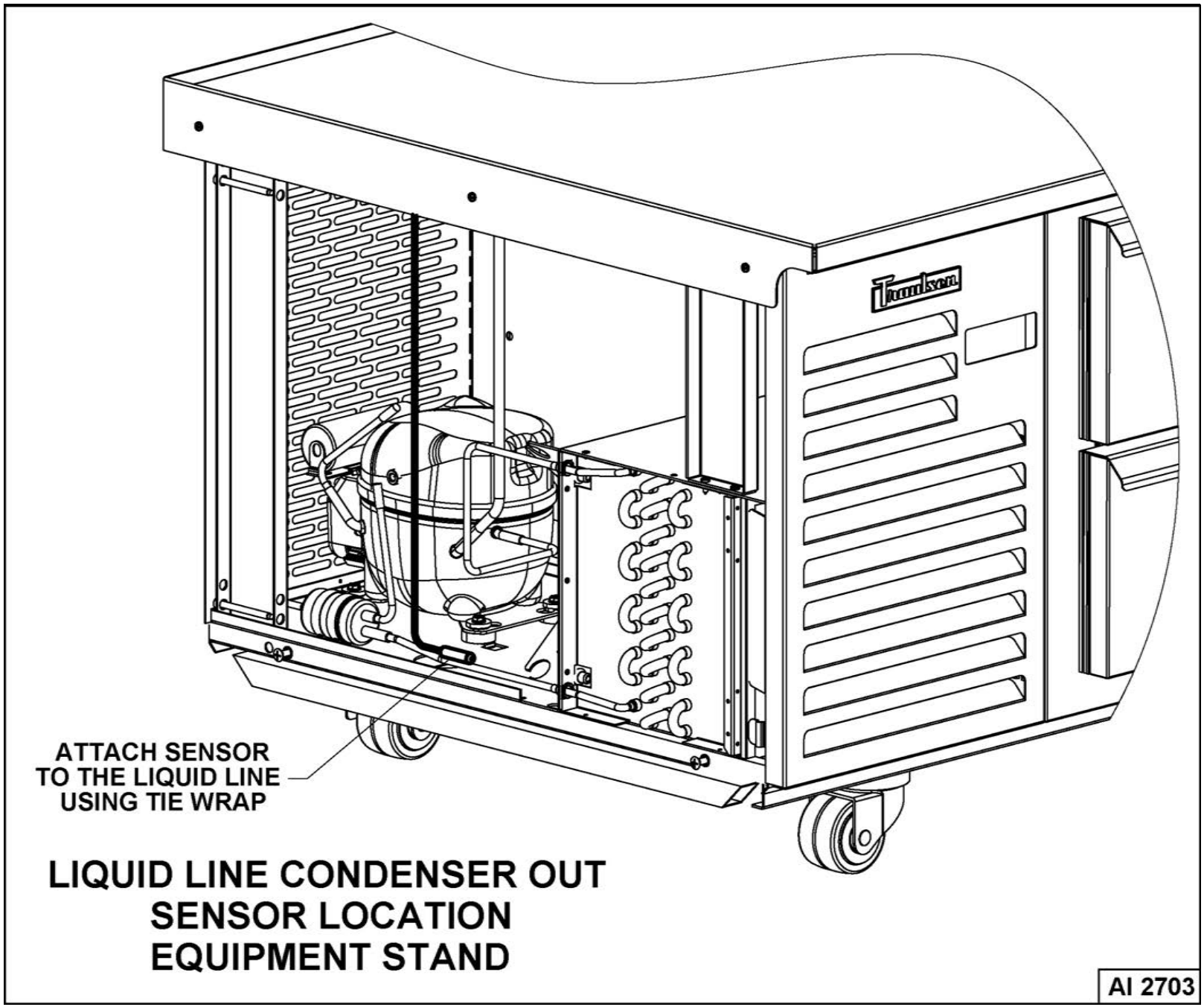
CABINET SENSOR LOCATION
EQUIPMENT STAND

AI 2701



COIL SENSOR LOCATION
EQUIPMENT STAND

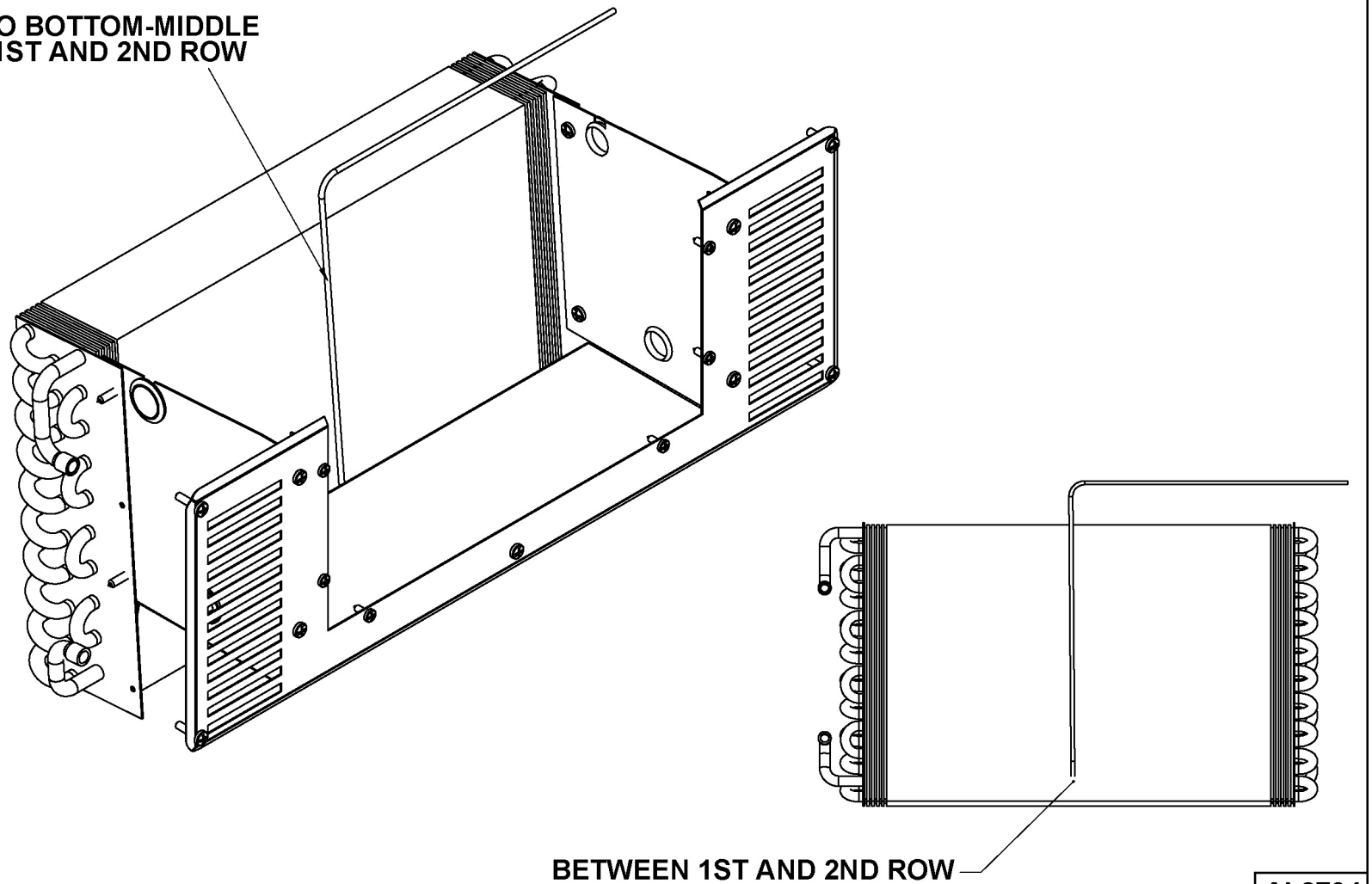
AI 2702



LIQUID LINE CONDENSER OUT
SENSOR LOCATION
EQUIPMENT STAND

AI 2703

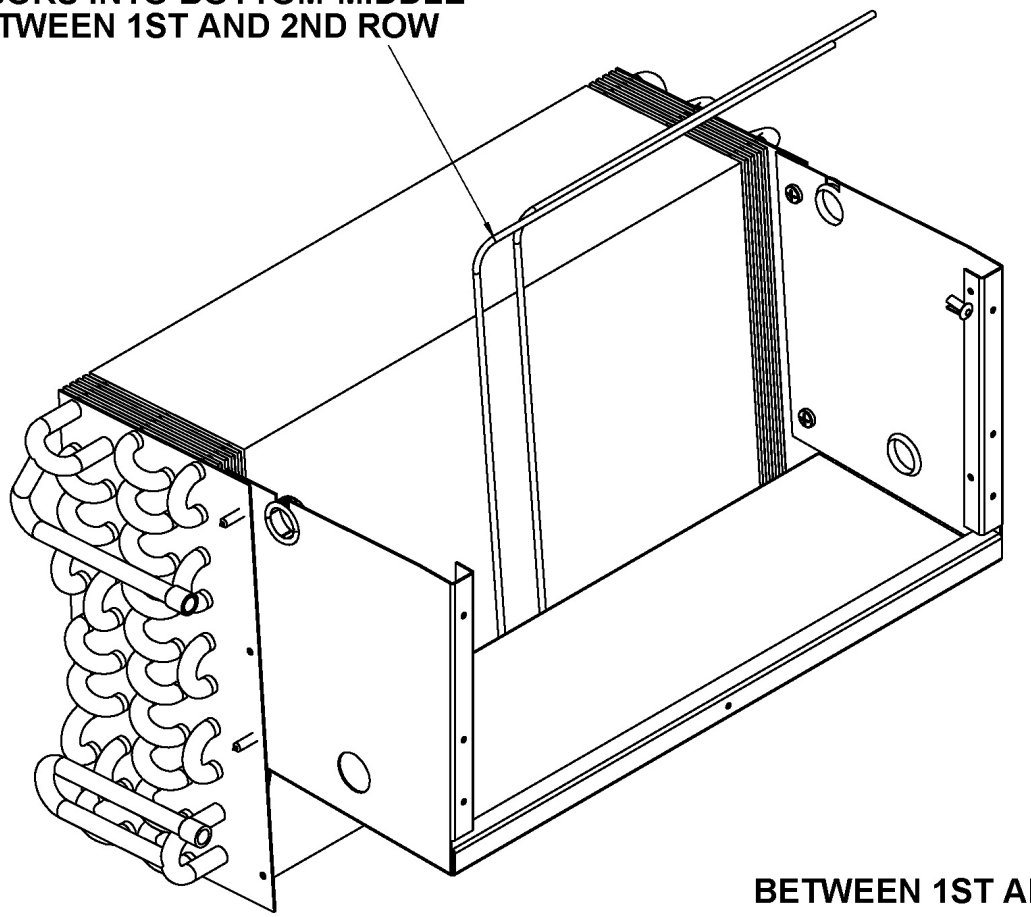
SENSOR PLACEMENT, COIL, FULL SIZE UNDERCOUNTERS

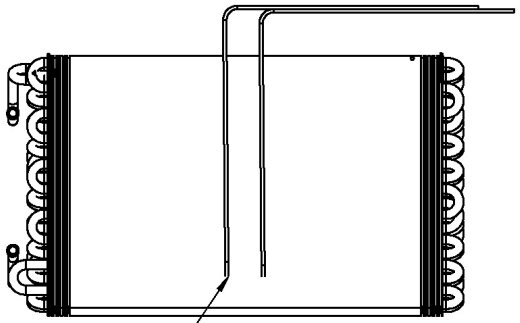


AI 2704

SENSOR PLACEMENT, COIL, RBC50

INSERT SENSORS INTO BOTTOM-MIDDLE
OF COIL, BETWEEN 1ST AND 2ND ROW



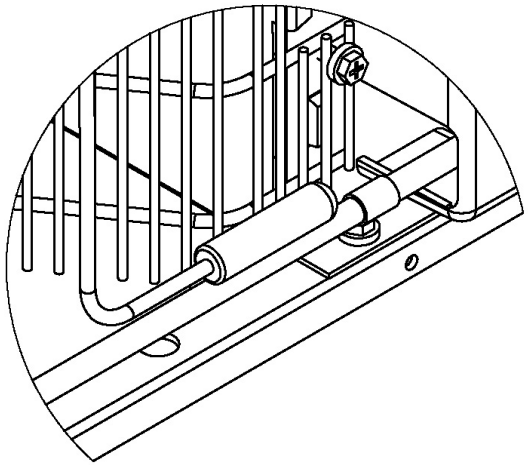


BETWEEN 1ST AND 2ND ROW

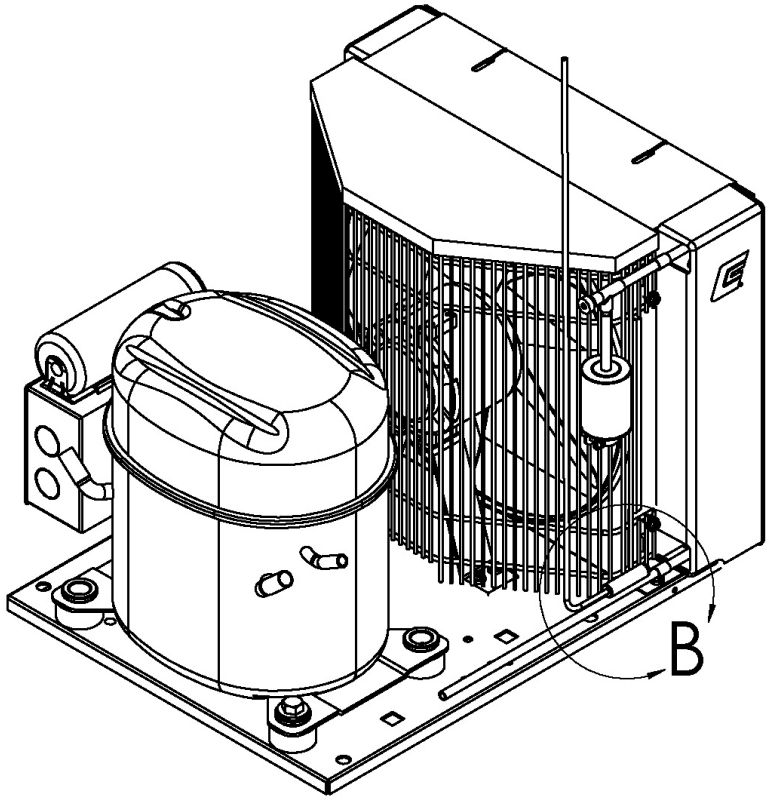
AI 2705

SENSOR PLACEMENT, LIQUID LINE SENSOR, ALL UPRIGHT CABINETS WITH COPELAND CONDENSING SYSTEMS

INSTRUCTIONS: PLACEMENT OF P/N 337-60072-TAB (337-60407-TAB) IS CRITICAL. PLACE ON COPPER TUBING EXITING THE CONDENSER, CLOSE TO THE DRIER. HOLD IN PLACE WITH METAL TAPE, INSULATE WITH GREY FOAM TAPE, AND USE SCREW-ON CLAMP.



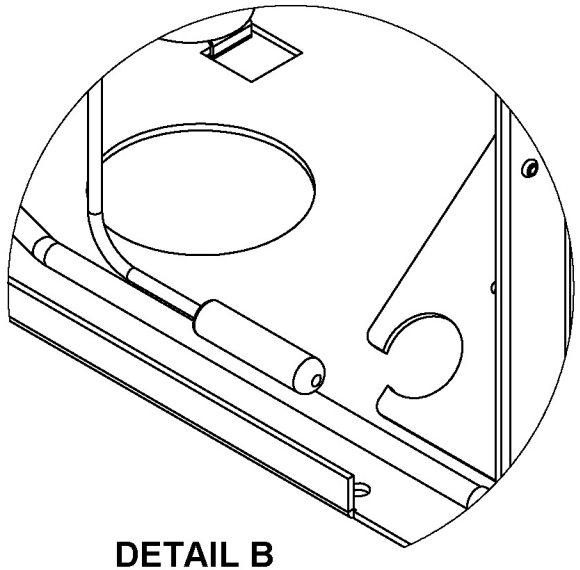
DETAIL B
SCALE 1 : 2
NOTE TAPE AND CLAMP
NOT SHOWN



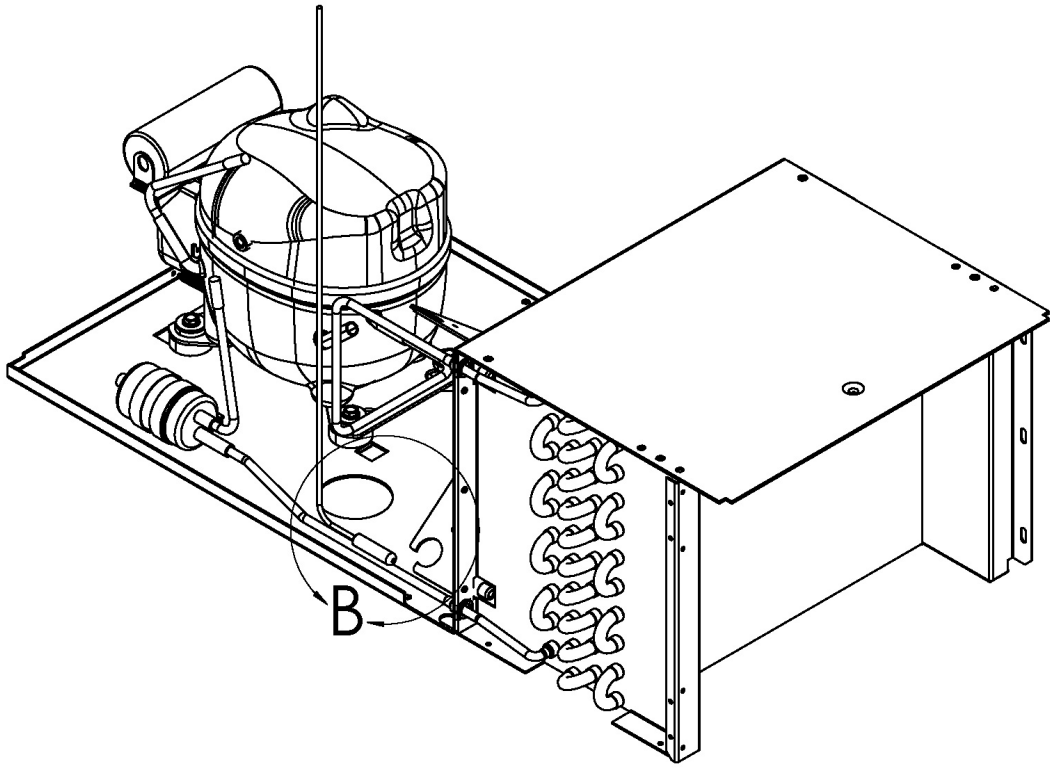
AI 2706

SENSOR PLACEMENT, LIQUID LINE SENSOR, ALL FULL SIZE UNDERCOUNTERS

INSTRUCTIONS: PLACEMENT OF P/N 337-60072-TAB (337-60407-TAB) IS CRITICAL. PLACE ON COPPER TUBING EXITING THE CONDENSER, CLOSE TO THE DRIER. HOLD IN PLACE WITH METAL TAPE, INSULATE WITH GREY FOAM TAPE, AND USE SCREW-ON CLAMP.



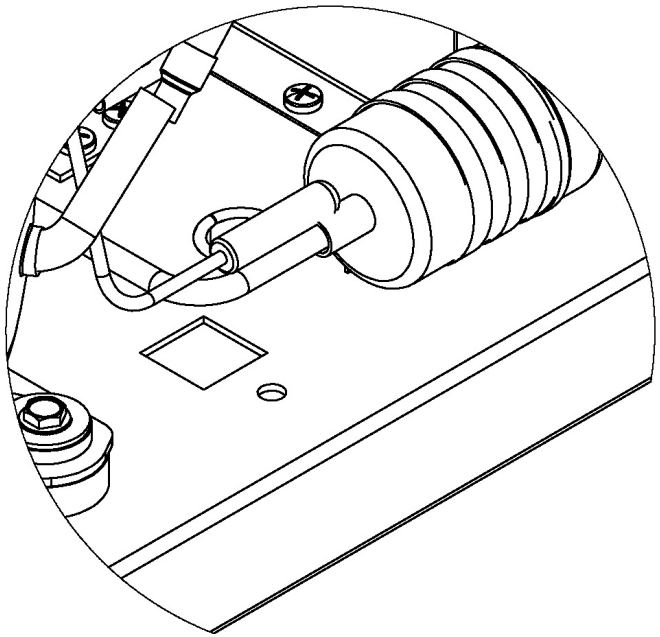
DETAIL B
SCALE 1 : 2
NOTE: TAPE AND CLAMP NOT SHOWN



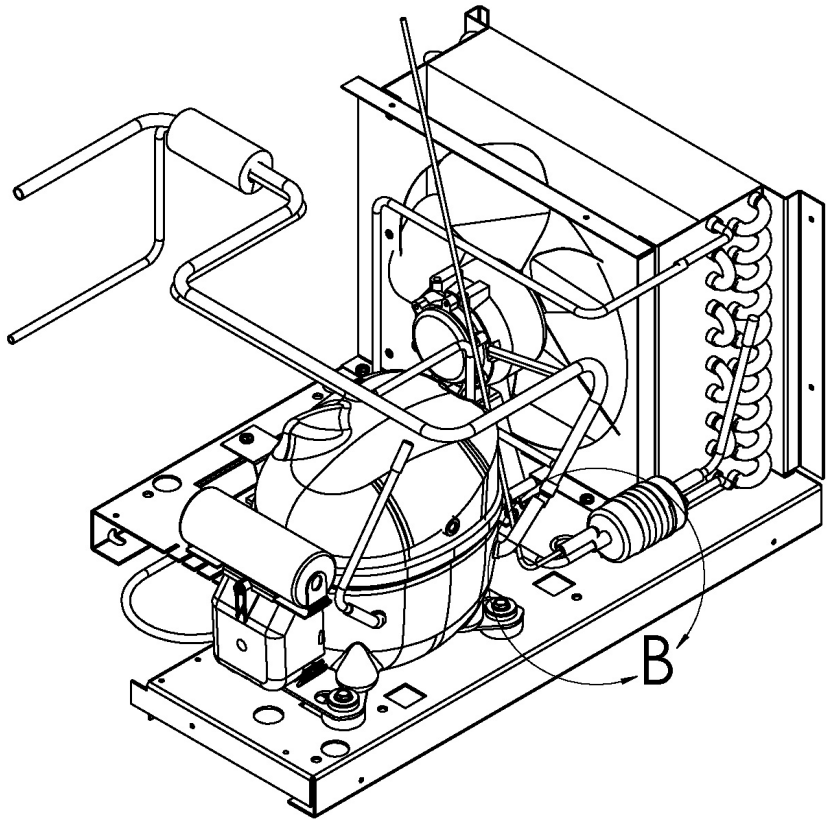
AI 2707

SENSOR PLACEMENT, LIQUID LINE SENSOR, ALL UPRIGHT CABINETS WITH TRAULSEN CONDENSING SYSTEMS

INSTRUCTIONS: PLACEMENT OF P/N 337-60072-TAB (337-60407-TAB) IS CRITICAL. PLACE ON COPPER TUBING EXITING THE CONDENSER, CLOSE TO THE DRIER. HOLD IN PLACE WITH METAL TAPE, INSULATE WITH GREY FOAM TAPE, AND USE SCREW-ON CLAMP.

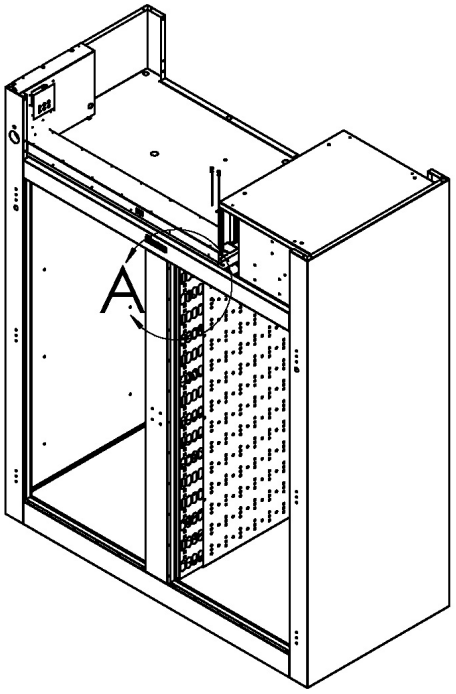


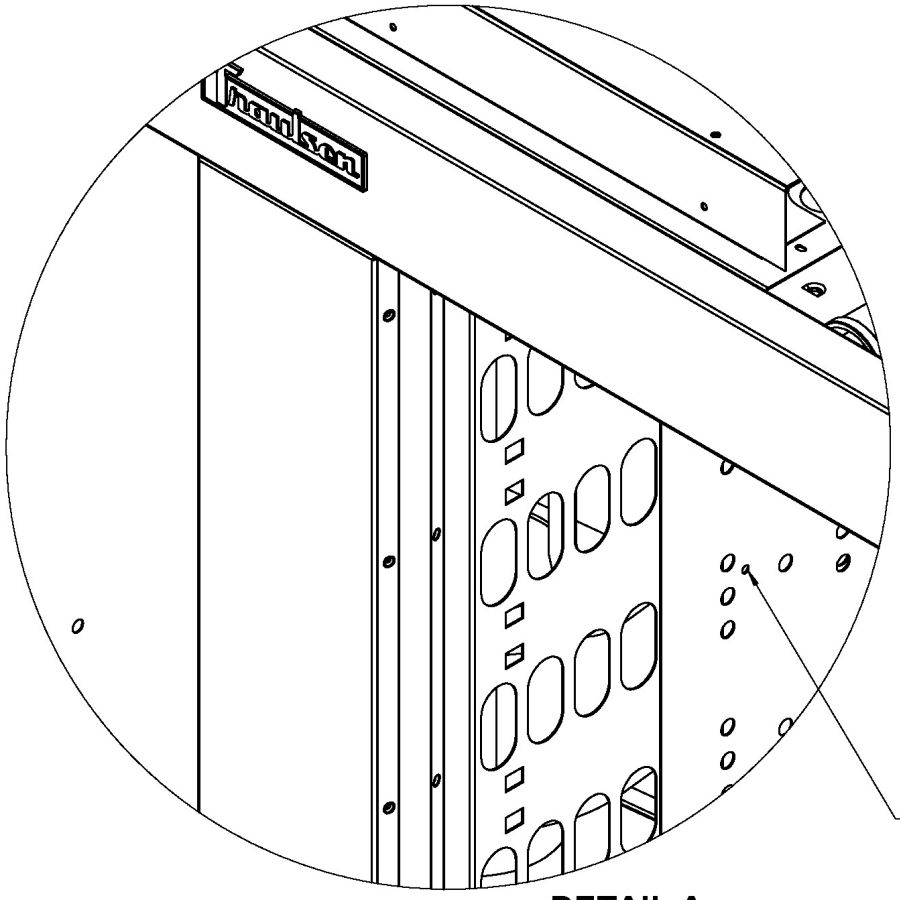
DETAIL B
SCALE 1 : 2
NOTE: TAPE AND CLAMP NOT SHOWN



AI 2708

CABINET SENSOR LOCATION, EVENTHAW





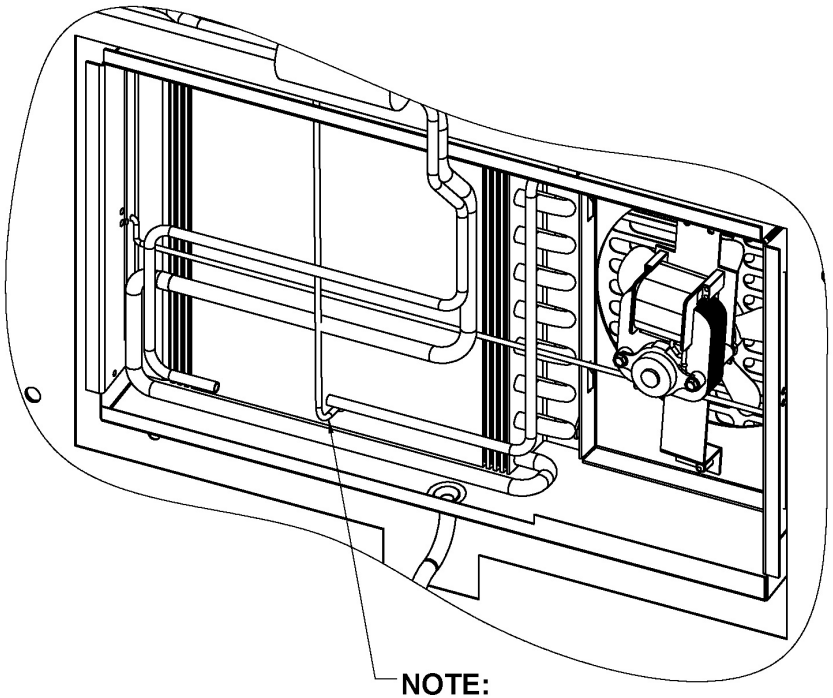
DETAIL A
SCALE 1 : 4

NOTE: MOUNT SENSOR INSIDE RIGHT HAND SIDE AIR CHAMBER.
SENSOR WILL BE IN PATH OF BLOWER OUTLET AIR.
SENSOR MOUNTED POINTING DOWN.

AI 2709

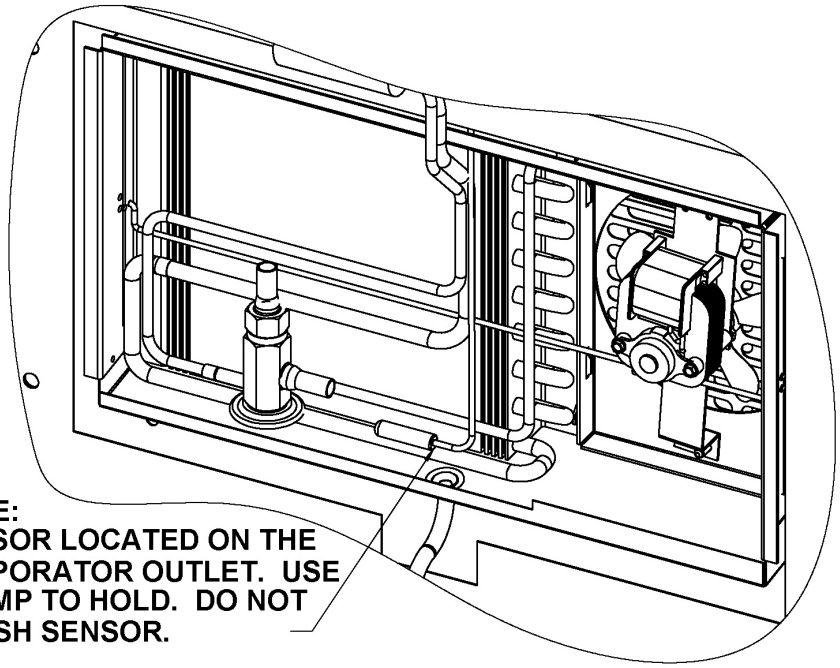
COIL SENSOR LOCATION, 1 SECTION DUAL TEMP

REFRIGERATOR COIL SENSOR LOCATION



NOTE:
SENSOR LOCATED IN THE MIDDLE OF THE EVAPORATOR COIL, BETWEEN 1ST AND 2ND PASS.

FREEZER COIL SENSOR LOCATION



NOTE:
SENSOR LOCATED ON THE EVAPORATOR OUTLET. USE CLAMP TO HOLD. DO NOT CRUSH SENSOR.

AI 2710

ALL MODELS
VOL. 1 NO. 003A
February 2010
Supercedes TTB003

TRAULSEN TECHNICAL BULLETIN

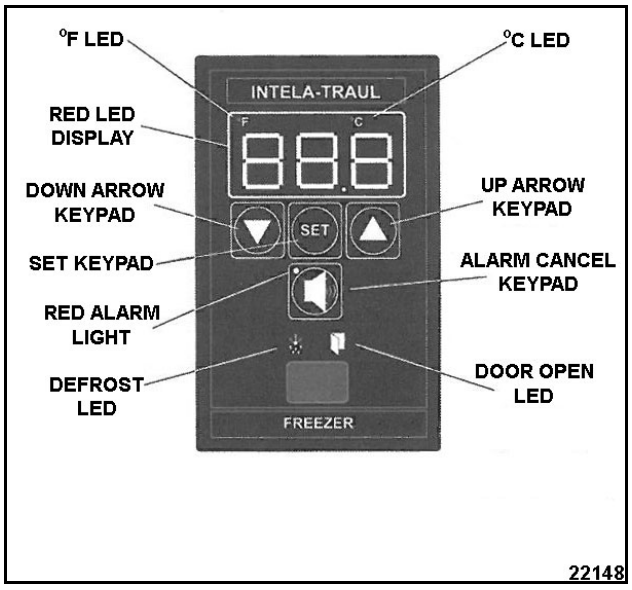
PRODUCT SERVICE DEPARTMENT TROY, OH. 45374-0001

TRAULSEN INTELA-TRAUL REFRIGERATOR & FREEZER CONTROLS CABINET TEMPERATURE SET POINT CHANGE

Introduction

To inform the field of instructions to change cabinet temperature set point on Traulsen Intela-Traul refrigerator & freezer controls (control software revision code C32 & above) manufactured after January 4th 2010.

Enter Customer Access Mode



NOTE: If 30 seconds elapse between keypad presses, the controller will revert to a cabinet temperature display (normal operation). If the wrong security code is entered, the controller will revert to a cabinet temperature display (normal operation). To save settings & exit customer access mode, press the alarm cancel keypad or not pressing any keypads for 30 seconds.

1. Use security code 0A1 by.

2. Pressing the Set keypad until CUS is displayed.

3. Press the Set keypad until left zero is flashing with three zeros displayed.

4. Press the Set keypad until center zero is flashing with three zeros displayed.

5. Press the Down Arrow until A is shown in center display.

6. Press Set keypad until right zero is flashing with 0A0 displayed.

7. Press the Up Arrow until 1 is flashing in right display.

8. Press the Set keypad. Display should read SP (Thermostat Set Point) indicating controller is in Customer Access Mode.

Change Cabinet Temperature Set Point

1. Press the Up or Down Arrows until SP is shown in the display.

2. Press Set keypad to change set point cutout cabinet temperature value.
3. Press the Up or Down Arrows until the desired cabinet set point is displayed (Example -10°F). This will be the current cabinet temperature set point at cutout.

4. Press the Set keypad to save the change.
5. Allow controller to return to the cabinet temperature display (normal operation).
6. Check for proper operation.

REFRIGERATION / FREEZER MODELS
VOL. 1 NO. 004
October 4, 2010

TRAULSEN TECHNICAL BULLETIN

PRODUCT SERVICE DEPARTMENT TROY, OH. 45374-0001

TRAULSEN 2010 DOE COMPLIANT INTELA - TRAUL CONTROL REVISION C32 OR GREATER

Introduction

To comply with 2010 Department of Energy requirements on Traulsen refrigerator / freezer equipment manufactured after January 1, 2010, changes were made to the control for all R, A, & G series refrigerator / freezer models. The changes have been made to the defrost, fan cycling, door frame heater, and set point adjustment outlined under this TTB.

Traulsen has taken precaution during this designing process to ensure that product longevity and temperature performance stay consistent with prior designs. These are mainstays of Traulsen's product & philosophy and have not been negatively affected as we strive for energy efficient products and operation. For questions regarding these changes please contact Traulsen at 1-800-825-8220 option 3.

Identifying 2010 DOE Compliant Control

Control Version Method

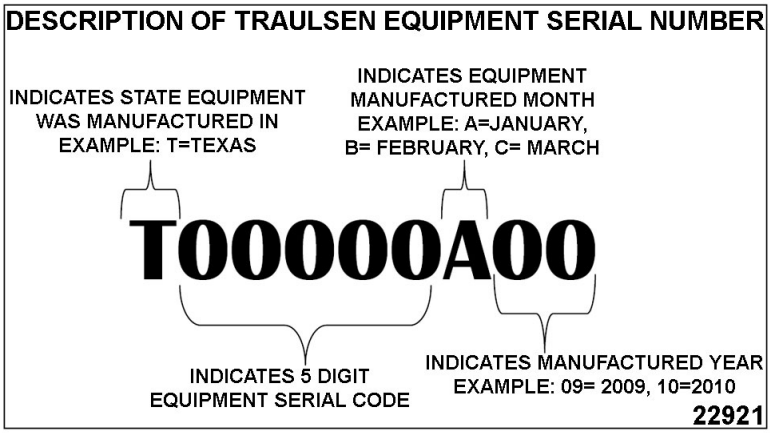
1. Turn control power on by cycling the cabinet On/Off power switch.
2. Verify control display revision number (C ##) during power up.

NOTE: If control revision is C32 or greater, the control is DOE compliant and will function as outlined in this TTB.

Serial Number Method

1. Access equipment data plate.
2. Verify the equipment manufacturing date from the equipment serial number. Refer to following diagram on how to verify the equipment manufactured date.

NOTE: If serial number manufacturing date is January 2010 or later, the control is DOE compliant and will function as outlined in this TTB.



Refrigerator Function with DOE Compliant Control

Refrigerators with Intela-Traul control with revision C32 or greater will have an electric defrost cycle that occurs every 8 hrs. for 25 minutes. The evaporator fans will cycle Off with cabinet door openings; The evaporator fan(s) will cycle On & Off during a compressor Off cycle. Evaporator fans will remain On during a compressor On cycle

unless the door is opened. Door frame heaters will cycle On an Off with the compressor.

DEFROST FUNCTION REFRIGERATOR		
Parameter	Value	Description
Def	ELE	Defrost type: Electric
Ibd	8	Defrost intervals: 8hrs.
ddc	25	Defrost length: 25mins.
Cde	45	Defrost termination temperature 45°F.

REFRIGERATOR FUNCTION				
	Evaporator Fans		Door Frame Heaters	
	On	Off	On	Off
Compressor On	100%	0%	100%	0%
Compressor Off	Fan(s) cycle (On/Off)	Fan(s) cycle (On/Off)	0%	100%
Door Open	0%	100%	N/A	N/A
Door Closed	Compressor cycle state (On/Off)		N/A	N/A

Freezer Function with DOE Compliant Control

Freezer with Intela-Traul control with revision C32 or greater will have an electric defrost cycle that occurs every 4 hrs. for 30 minutes. The evaporator fans will cycle Off with cabinet door openings. The evaporator fan(s) will cycle On & Off during a compressor Off cycle. Evaporator fans will remain On during a compressor On cycle unless the door is opened. Door frame heaters will cycle On and Off with the compressor.

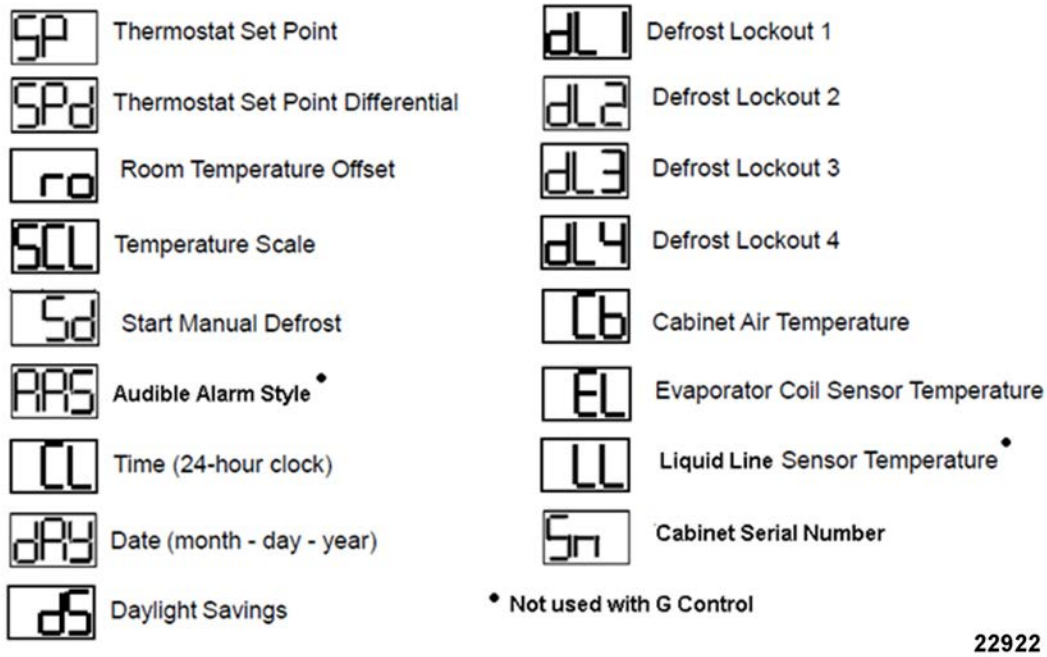
DEFROST FUNCTION FREEZER		
Parameter	Value	Description
Def	ELE	Defrost type: Electric
Ibd	4	Defrost intervals: 4hrs.
ddc	30	Defrost length: 30mins.
Cde	45	Defrost termination temperature 45°F.

FREEZER FUNCTION				
	Evaporator Fans		Door Frame Heaters	
	On	Off	On	Off
Compressor On	100%	0%	100%	0%
Compressor Off	Fan(s) cycle (On/Off)	Fan(s) cycle (On/Off)	0%	100%
Door Open	0%	100%	N/A	N/A
Door Closed	Compressor cycle state (On/Off)		N/A	N/A

Set Point Adjustments

Previous versions of the Intela-Traul control (before revision C32) used SPH (Set Point High) and SPL (Set Point Low) for set point adjustments. The DOE compliant Intela-Traul control (revision C32 or later) uses SP (Set Point) and SPd (Set Point Differential) for adjustment of the set point. SPd default setting is 2. SP default setting is (35 for refrigerators) (-3 for freezers) which cycles the thermostat at a cabinet temperature of (37°F On and 35°F Off for refrigerators) (-1°F On and -3°F Off for freezers).

The following are the parameters that will appear in the customer menu control display with a DOE compliant Intela-Traul control with software revision C32 or greater.



ONLINE PARTS CATALOG

Order parts online at our Hobart Service Parts store: http://thesmartpartsestore.hobartservice.com/

Quality Refrigeration

CATALOG OF REPLACEMENT PARTS

G SERIES REFRIGERATOR/FREEZER

REFRIGERATORS	FREEZERS
G100XX	G120XX
G110XX	G220XX
G200XX	G310XX
G210XX	G313XX
G300XX	
G320XX	

Note: The last two digits of the model number denote half height or full height doors and their hinging options.

4401 BLUE MOUND RD. • FT. WORTH, TX 76106 • 1-800-825-8220

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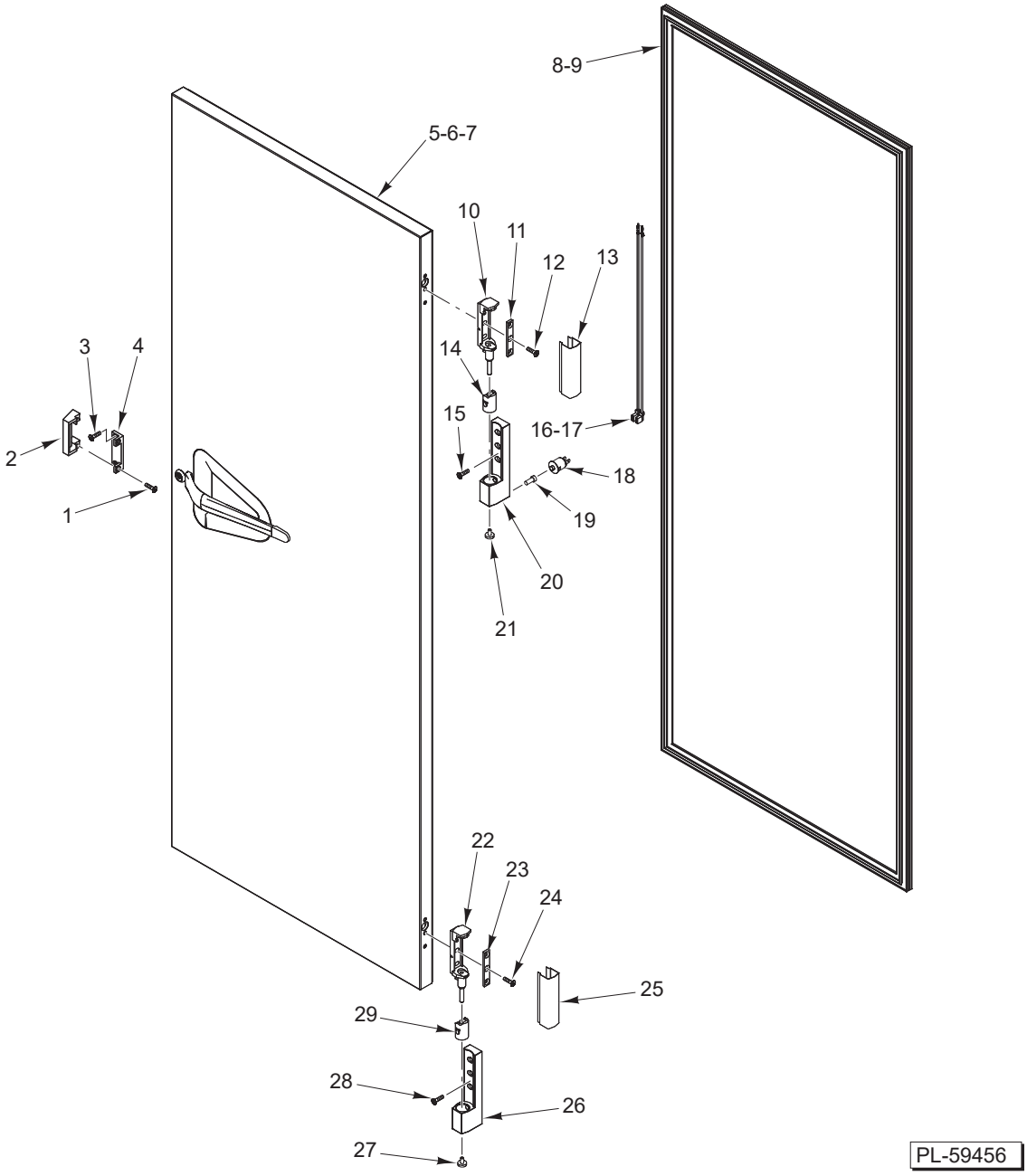
8-9
5-6-7
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16-17
2
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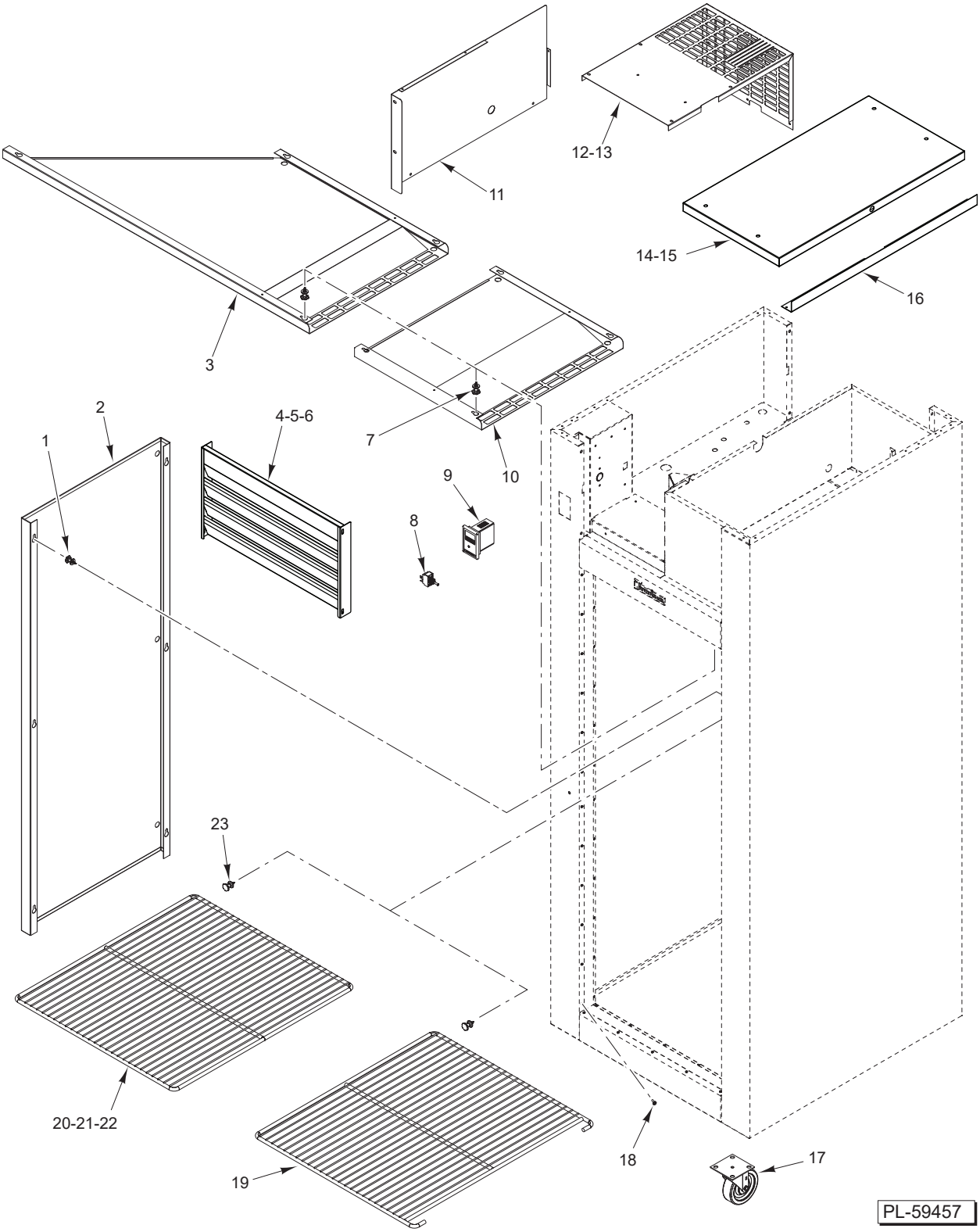
1
19
20
21
22
23
24
25
29
28
26
27
PL-59456

DOOR

DOOR

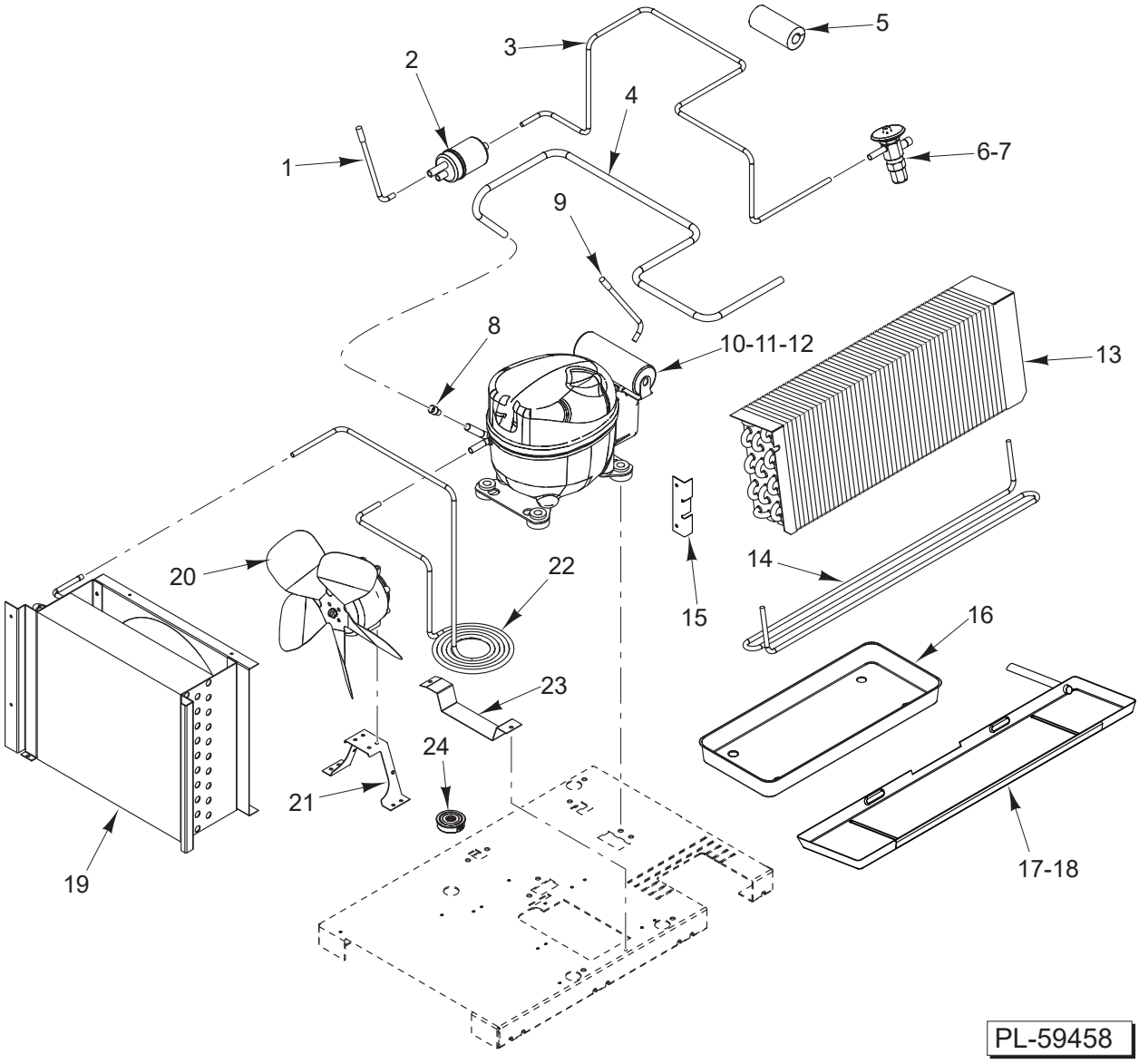
ILLUS. PL-59456	PART NO.	NAME OF PART	AMT.
1	351-60002-01	Mach. Screw 10-32 x 1/2 Phil. Flat Hd. (SST)	2
2	346-60017-00	Lock Keeper	1
3	351-60001-07	Mach. Screw 10-32 x 1/2 Phil. Flat Hd. (SST)	2
4	346-60019-00	Bracket	1
5	SK-200-60142-00	Assy – Door (Incls. Item 8)	1
6	SK-200-60140-00	Assy – Half Door (RH Top, LH Bottom) (Incls. Item 9)	1
7	SK-60140-01	Assy – Half Door (LH Top, RH Bottom) (Incls. Item 9)	1
8	SVC-60059-00	Gasket – Door	1
9	SVC-60060-00	Gasket – Half Door	2
10	344-28487-00	Hinge – Door	1
11	344-28485-00	Plate	1
12	351-60002-07	Mach. Screw 10-32 x 3/4	3
13	344-28486-00	Cover – Hinge	1
14	344-28488-00	Cam	1
15	351-60002-07	Mach. Screw 10-32 x 3/4 Phil. Flat Hd.	3
16	333-60408-02	Harness – Light Switch (Full Height Door)	1
17	333-60409-02	Harness – Light Switch (Half Height Door)	1
18	337-28235-00	Switch – Door	1
19	344-28484-00	Adapter – Switch	1
20	344-28482-00	Hinge – Upper	1
21	344-28483-00	Screw – Safety	1
22	344-28487-00	Hinge – Door	1
23	344-28485-00	Plate	1
24	351-60002-07	Mach. Screw 10-32 x 3/4 Phil. Flat Hd.	3
25	344-28486-00	Cover – Hinge	1
26	344-28487-00	Hinge – Lower	1
27	344-28483-00	Screw – Safety	1
28	351-60002-07	Mach. Screw 10-32 x 3/4 Phil. Flat Hd.	3
29	344-28488-00	Cam	1
	SER-28583-00	Hinge Assy. (Incls. Items 10, 11, 13, 14, 19, 20, & 21)	1



PANELS AND RACKS

PANELS AND RACKS

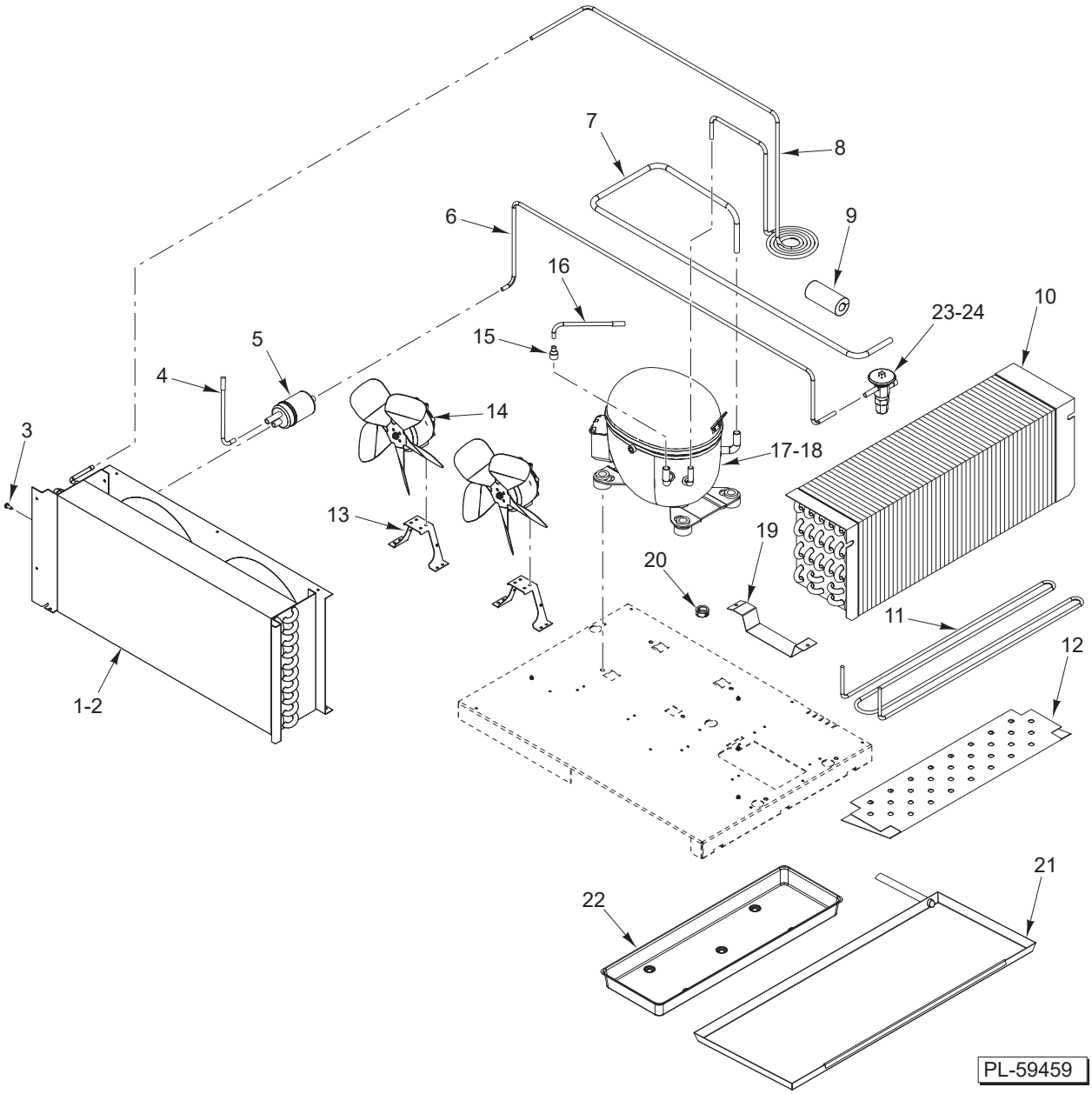
ILLUS. PL-59457	PART NO.	NAME OF PART	AMT.
1	351-60045-00	Mach. Screw 10-32 x 1/2 Sq. Cone Washer	6
2	614-60141-00	Panel – Duct Down	1
3	600-60835-01	Duct – Air Top (Includes Support Baff e) (G2 Series)	1
4	500-70002-00	Assembly – Louver (G1 Series)	1
5	500-70008-00	Assembly – Louver (G2 Series)	1
6	500-70011-00	Assembly – Louver (G3 Series)	1
7	351-60045-00	Mach. Screw 10-32 x 1/2 Sq. Cone Washer	4
8	337-60346-00	Switch – Toggle 20 Amp. 1 1/2 Hp. (SPST)	1
9	337-60319-00	Control – Head MIT 2 (G Series)	1
10	600-60835-00	Duct – Air Top (Includes Support Baff e) (G1 Series)	1
11	701-61354-00	Side – Cover Cond. Unit (G2 Series)	1
12	701-60972-90	Cover – Condensing Unit (G1 & G2 Series)	1
13	701-60975-90	Cover – Condensing Unit (G3 Series)	1
14	500-70004-00	Assy – Hump Cover (G1 Series)	1
15	500-70006-00	Assy – Hump Cover (G2 & G3 Series)	1
16	506-70001-00	Support – Angle Exterior Air Chamber	1
17	CK1	Caster (Set of 4)	1
18	351-29384-00	Self-Tapping Screw #4 x 7/16 Phil. Oval Hd	AR
19	340-60179-02	Rack	AR
20	340-60074-02	Rack	AR
21	340-26000-02	Rack	AR
22	340-60070-02	Rack	AR
23	344-24759-02	Screw – Mounting	4



CONDENSER, COMPRESSOR, AND EVAPORATOR
(G10010, G11000, G12000, AND G20010)

CONDENSER, COMPRESSOR, AND EVAPORATOR (G10010, G11000, G12000, AND G20010)

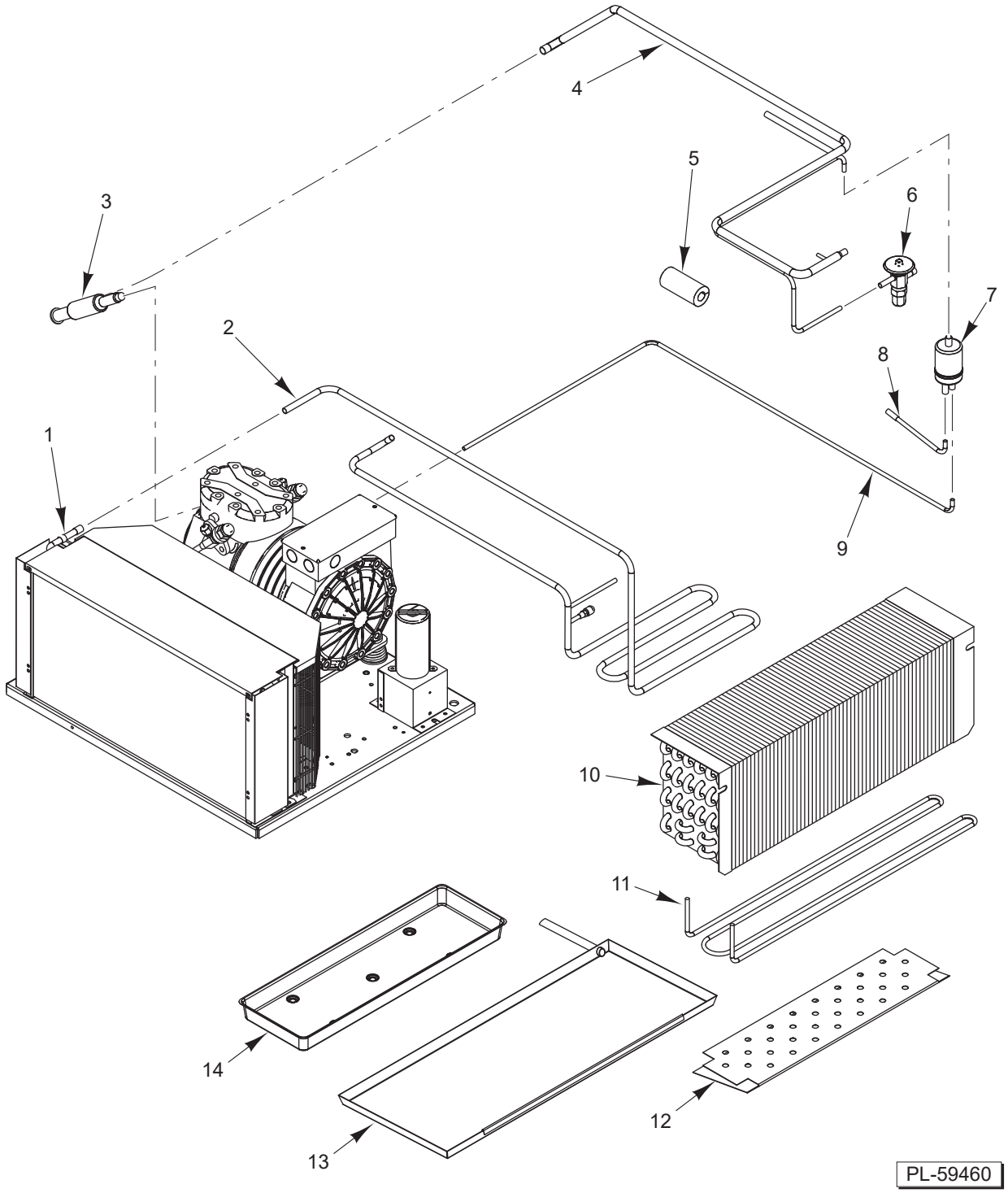
ILLUS. PL-59458	PART NO.	NAME OF PART	AMT.
1	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
2	325-60103-00	Drier 032S (1/4 In. x 1/4 In. O.D.)	1
3	326-60305-01	Tubing – Liquid Line	1
4	326-60306-00	Tubing – Suction	1
5	327-60003-01	Wrap – Insulation	1
6	325-60080-37	TXV – Valve (AA 1/8 MW35)	1
7	325-60080-25	TXV – Valve (AA 1/8 SW30) (G12000)	1
8	326-60420-00	Reducer – Copper 3/8 In. x 1/4 In.	1
9	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
10	321-60203-10	Compressor (G10010, & G20010)	1
11	321-60204-00	Compressor (G12000)	1
12	321-60205-10	Compressor (G11000)	1
13	322-60003-00	Coil – Evaporator	1
14	329-60022-00	Heater Defrost (500 W. 115 V.)	1
15	610-70003-00	Bracket – Coil	2
16	SK-701-13694-00	Pan – Condenser	1
17	SER-28015-00	Pan – Drip (G10010, G11000, & G12000)	1
18	SER-28012-00	Pan – Drip (G20010)	1
19	325-60128-00	Coil – Condenser	1
20	SK-325-60124-00	Fan Assy. (Incls. Item 21)	1
21	510-10461-00	Bracket – Fan Mount	1
22	326-60307-00	Loop – Hot Gas	1
23	510-10317-90	Bracket – Condensate Pan	1
24	334-12213-07	Bushing 7/8 In. (Heyco)	1



CONDENSER, COMPRESSOR, AND EVAPORATOR
(G21000, G22000, AND G30010)

CONDENSER, COMPRESSOR, AND EVAPORATOR (G21000, G22000, AND G30010)

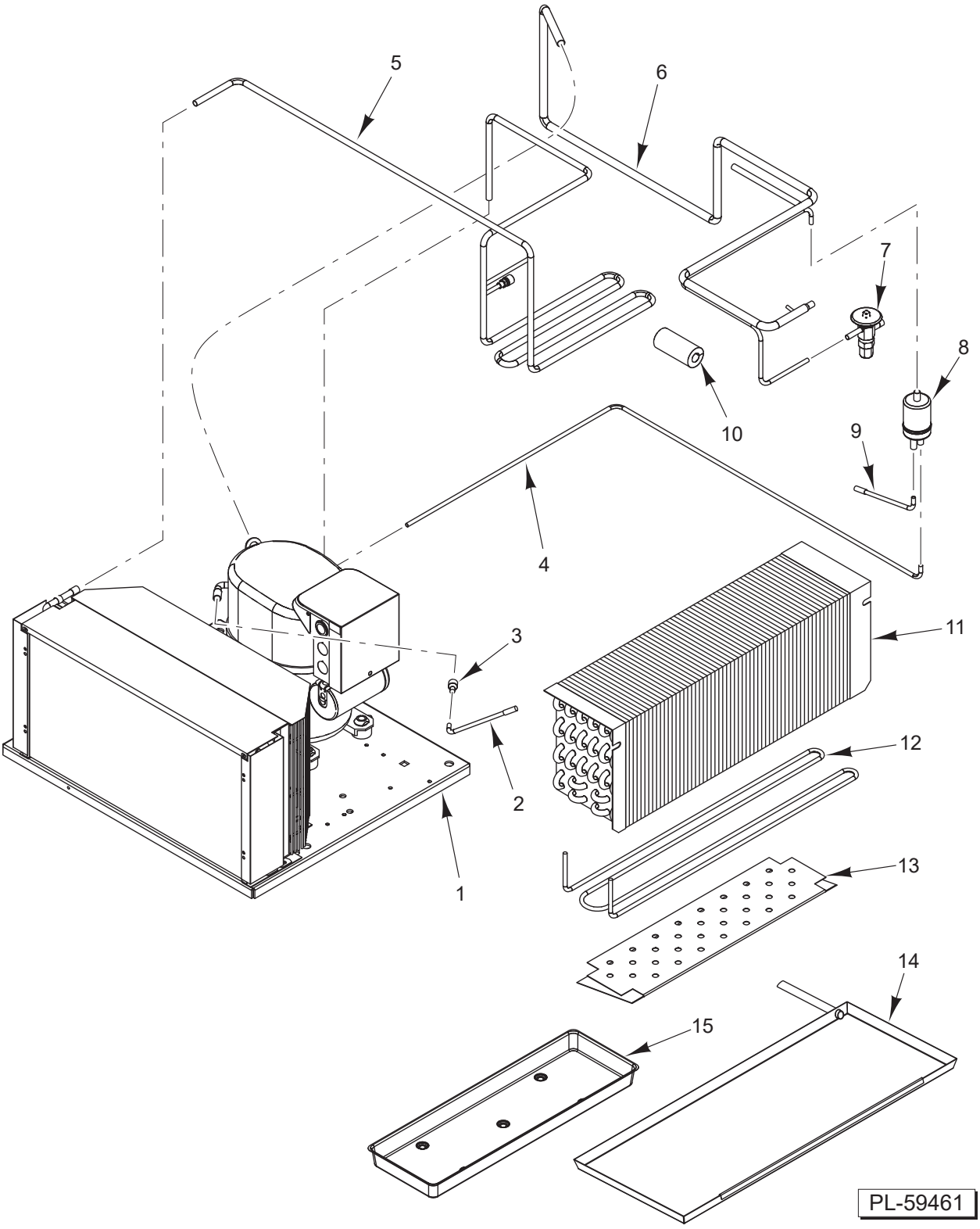
ILLUS. PL-59459	PART NO.	NAME OF PART	AMT.
1	325-60122-00	Coil – Condenser (G21000, G22000, & G30010)	1
2	701-60964-90	Shroud – Condenser Fan (2 Section)	1
3	351-60003-02	Self-Tapping Screw 8-18 x 1/2 Phil. Pan Hd	1
4	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
5	325-60103-00	Drier 1/4 In. x 1/4 In. O.D. (032S)	1
6	326-60308-01	Tubing – Liquid Line	1
7	326-60309-00	Tubing – Suction	1
8	326-60310-00	Loop – Hot Gas	1
9	327-60003-01	Wrap – Insulation	1
10	322-60047-00	Coil – Evaporator	1
11	329-60021-00	Heater Defrost (500 W., 115 V.)	1
12	701-60450-00	Baff e Defrost Heater Heatsink 18 In.	1
13	510-10461-00	Bracket – Fan Mount	2
14	SK-325-60124-00	Fan – Assembly (Incls. Item 13)	2
15	326-32756-00	Reducer – Copper 1/2 In. x 1/4 In.	1
16	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
17	321-60215-10	Compressor (G21000 & G30010)	1
18	321-60206-10	Compressor (G22000)	1
19	510-10317-00	Bracket – Condensate Pan	1
20	334-12213-07	Bushing 7/8 In. (Heyco)	1
21	SER-28012-00	Pan – Drip	1
22	SK-701-13694-00	Pan – Condensate	1
23	325-60080-38	TXV – Valve (AA 1/4 MW35) (G21000 & G30010)	1
24	325-60080-26	TXV – Valve (AA 1/4 SW30) (G22000)	1



CONDENSER, COMPRESSOR, AND EVAPORATOR
(G31000)

CONDENSER, COMPRESSOR, AND EVAPORATOR (G31000)

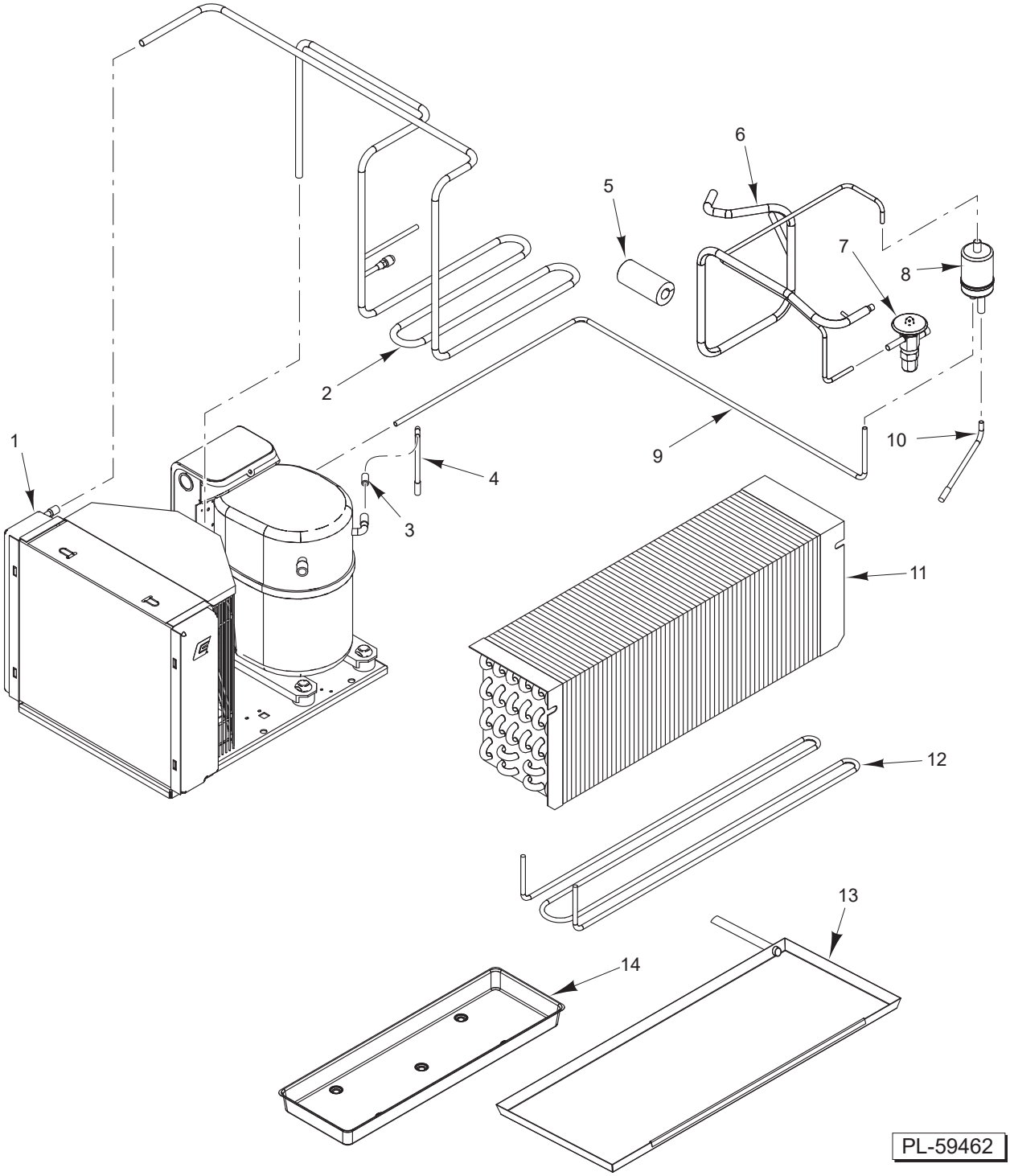
ILLUS. PL-59460	PART NO.	NAME OF PART	AMT.
1	321-60131-00	Unit – Condensing (DJAL-0076-IAA-140)	1
2	326-60099-50	Loop – Hot Gas	1
3	325-60051-02	CRO – Valve CRO 1/2 In O.D.F. (Preset)	1
4	323-60055-00	Tubing – Suction Line	1
5	327-60003-01	Wrap – Insulation	1
6	325-60080-34	TXV – Valve (AA 1/2 SW50)	1
7	325-60103-00	Drier 1/4 In. x 1/4 In. O.D. (032S)	1
8	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
9	323-60061-00	Tubing – Liquid Line	1
10	322-60047-00	Coil – Evaporator	1
11	329-60021-00	Heater Defrost (750 W., 115 V.)	1
12	SK-701-60450-00	Baff e Defrost Heater Heatsink 18 In.	1
13	SER-28012-00	Pan – Drip	1
14	SK-701-13694-00	Pan – Condensate	1
	SK-701-25940-00	Bracket – Condensate Pan	1



CONDENSER, COMPRESSOR, AND EVAPORATOR (G31300)

CONDENSER, COMPRESSOR, AND EVAPORATOR (G31300)

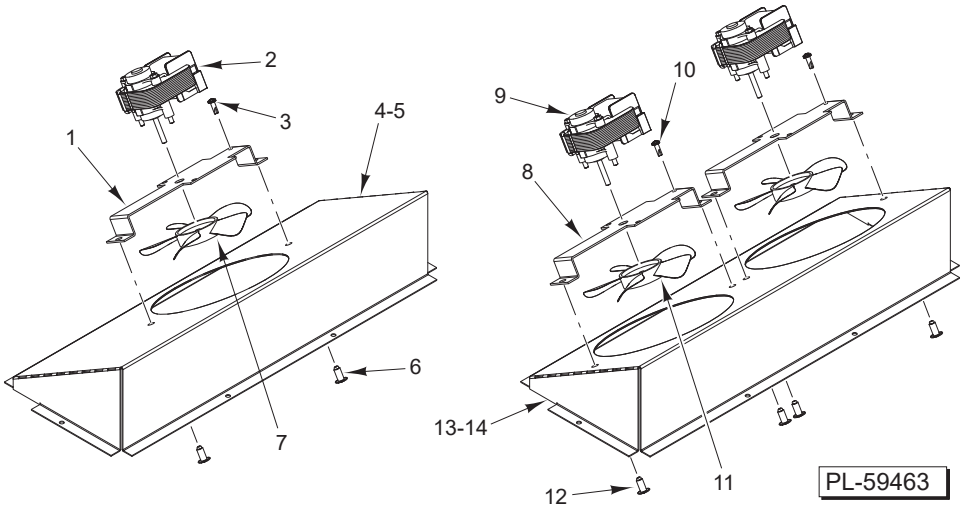
ILLUS. PL-59461	PART NO.	NAME OF PART	AMT.
1	321-60199-00	Unit – Condensing (FEAL-0090-CAV-140)	1
2	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
3	326-32756-00	Reducer – Copper 1/2 In. x 1/4 In.	1
4	323-60061-00	Tubing – Liquid Line	1
5	326-60205-00	Loop – Hot Gas	1
6	326-60206-00	Tubing – Suction Line	1
7	325-60080-34	TXV – Valve (AA 1/2 SW50)	1
8	325-60103-00	Drier 1/4 In. x 1/4 In. O.D. (032S)	1
9	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
10	327-60003-01	Wrap – Insulation	1
11	322-60047-00	Coil – Evaporator	1
12	329-60024-00	Heater Defrost (750 W., 115 V.)	1
13	SK-701-60450-00	Baff e Defrost Heater Heatsink 18 In.	1
14	SER-28012-00	Pan – Drip	1
15	SK-701-13694-00	Pan – Condensate	1
	SK-701-25940-00	Bracket – Condensate Pan	1



CONDENSER, COMPRESSOR, AND EVAPORATOR
(G32000)

CONDENSER, COMPRESSOR, AND EVAPORATOR (G32000)

ILLUS. PL-59462	PART NO.	NAME OF PART	AMT.
1	321-60134-00	Unit – Condensing (FTAH-A074-IAA-141)	1
2	326-60099-60	Loop – Hot Gas	1
3	326-60420-04	Reducer – Copper 3/8 In. x 1/4 In.	1
4	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
5	327-60003-01	Wrap – Insulation	1
6	323-60053-60	Tubing – Suction Line.	1
7	325-60080-38	TXV – Valve (AA 1/4 MW35)	1
8	325-60103-00	Drier 1/4 In. x 1/4 In. O.D. (032S)	1
9	323-60051-60	Line – Liquid	1
10	326-60270-00	Tubing – Process (6 In. Lg.) (1/4 In. O.D.)	1
11	322-60047-00	Coil – Evaporator	1
12	329-60021-00	Heater Defrost (750 W., 115 V.)	1
13	SER-28012-00	Pan – Drip	1
14	SK-701-13694-00	Pan – Condensate	1
	SK-701-25940-00	Bracket – Condensate Pan	1



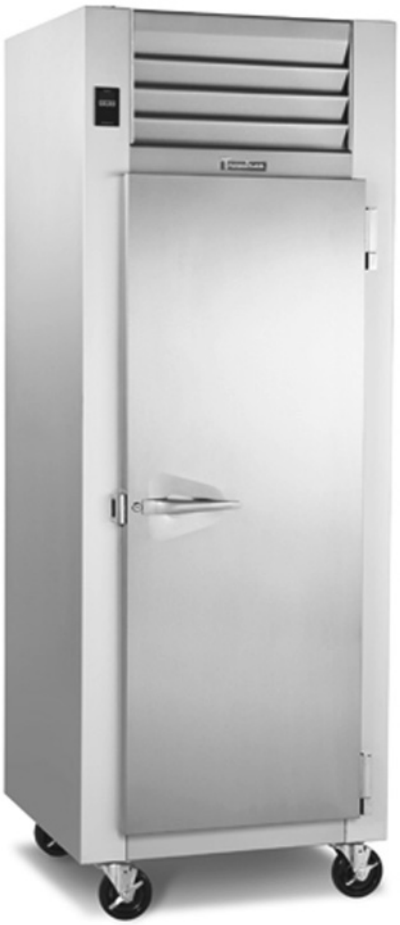
EVAPORATOR FAN ASSEMBLY

EVAPORATOR FAN ASSEMBLY

ILLUS. PL-59463	PART NO.	NAME OF PART	AMT.
1	SK-701-60837-00	Bracket – Fan Mount (G1 Series)	1
2	338-60054-00	Motor – Fan (G1 Series)	1
3	351-60038-00	Screw – Grounding 8-32 x 1/2 (G1 Series)	1
4	605-50016-01	Box – Fan Recessed (30 Deg.) (G1 Series)	1
5	370-29550-00	Decal – Caution (G1 Series)	1
6	358-10003-00	Rivet (G1 Series)	2
7	433090	Blades – Fan (Plastic) (G1 Series)	1
8	SK-701-60837-00	Bracket – Fan Mount (G2 & G3 Series)	2
9	338-60054-00	Motor – Fan (G2 & G3 Series)	2
10	351-60038-00	Screw – Grounding (G2 & G3 Series)	2
11	433090	Blades – Fan (G2 & G3 Series)	2
12	354-60033-00	Rivet (G2 & G3 Series)	4
13	605-50016-02	Box – Fans Recessed (30 Deg.) (G2 & G3 Series)	1
14	370-29550-00	Decal – Caution (G2 & G3 Series)	1
	SK-600-60841-00	Fan Assy. (1 Fan) (G1 Series)	1
	SK-600-70023-00	Fan Assy. (2 Fan) (G2 Series)	1

Quality Refrigeration

CATALOG OF REPLACEMENT PARTS



G SERIES HOT FOOD CABINET

G143XX
G243XX

Note: The last two digits of the model number denote half height or full height doors and their hinging options.

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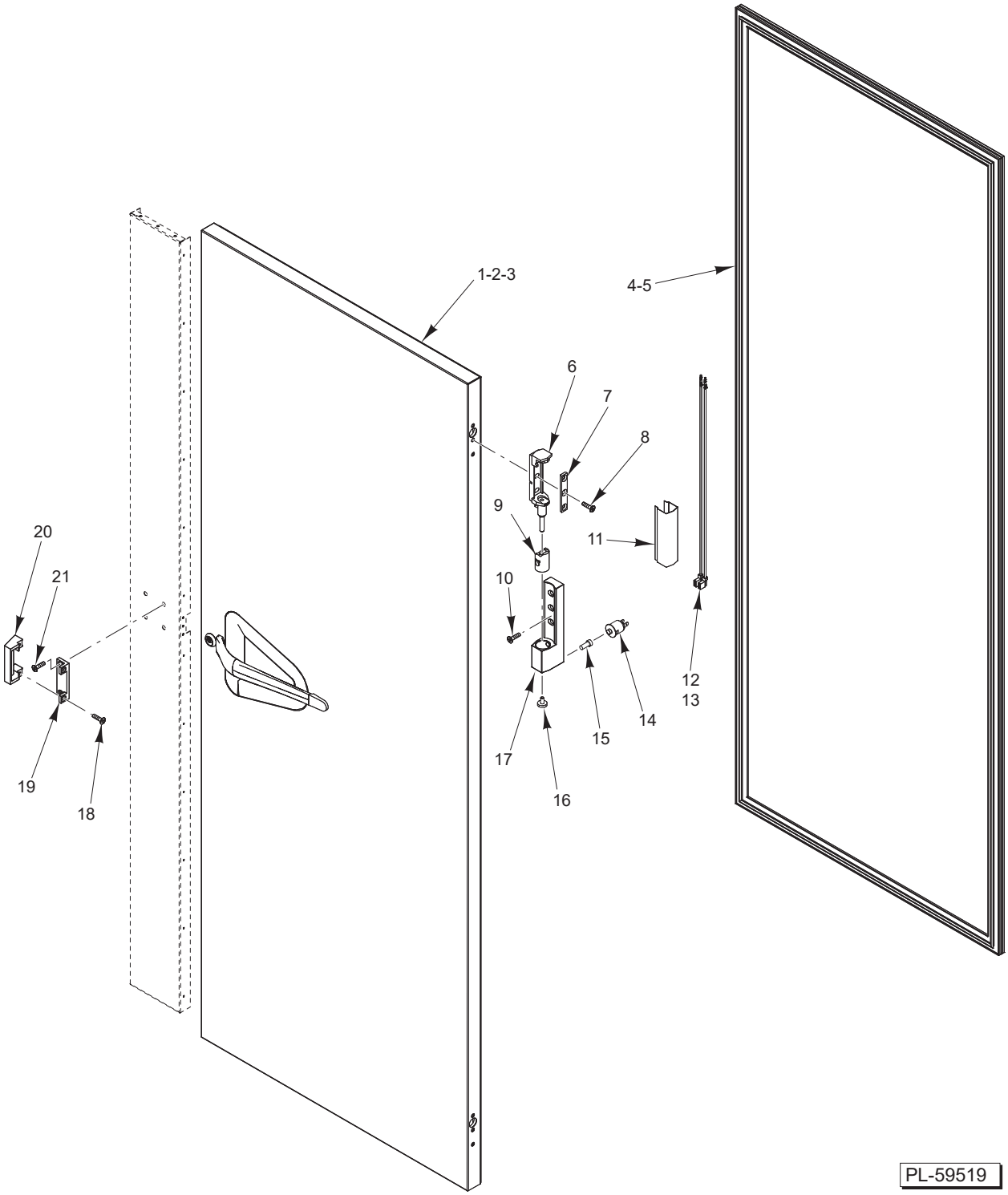
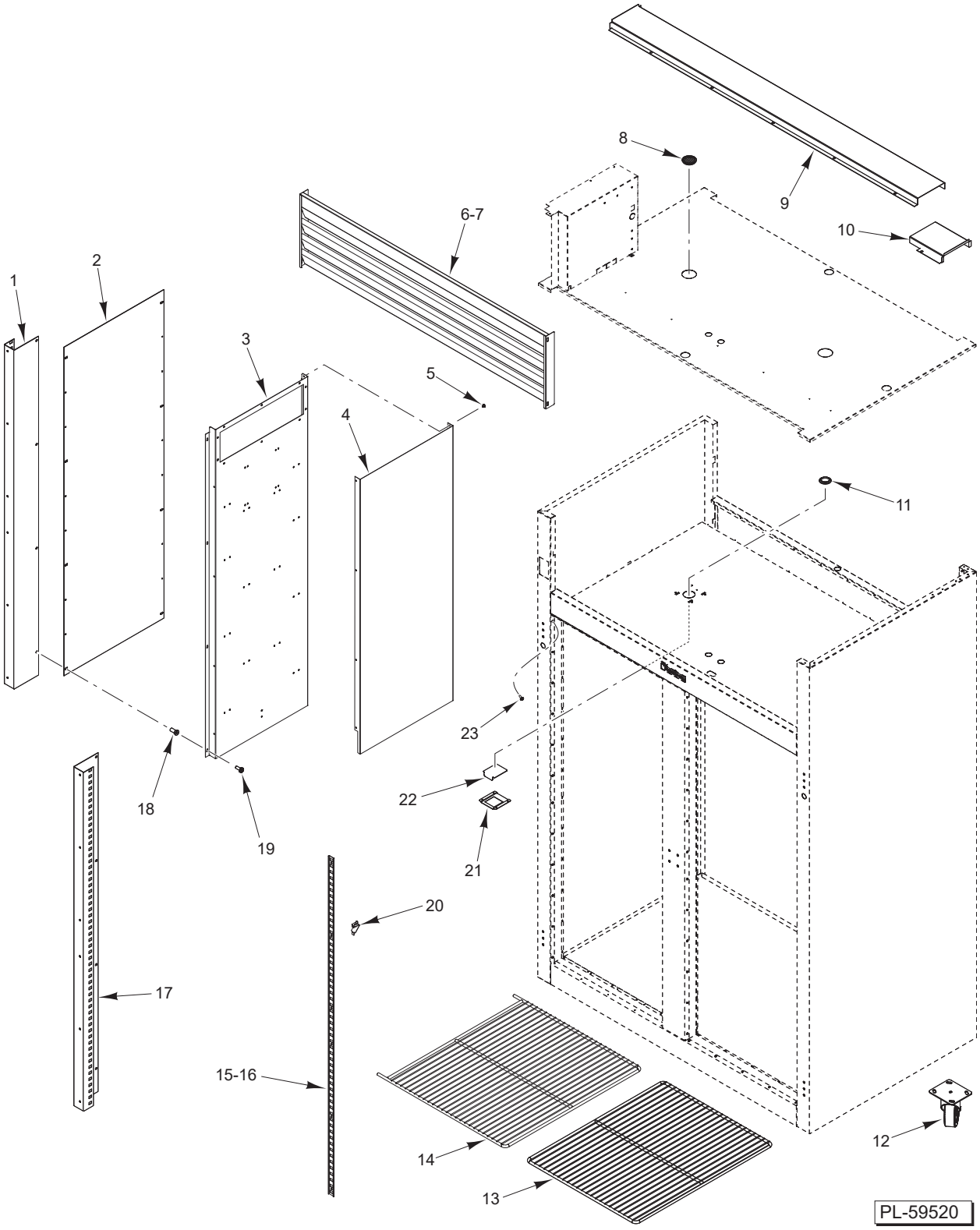


DOOR

DOOR

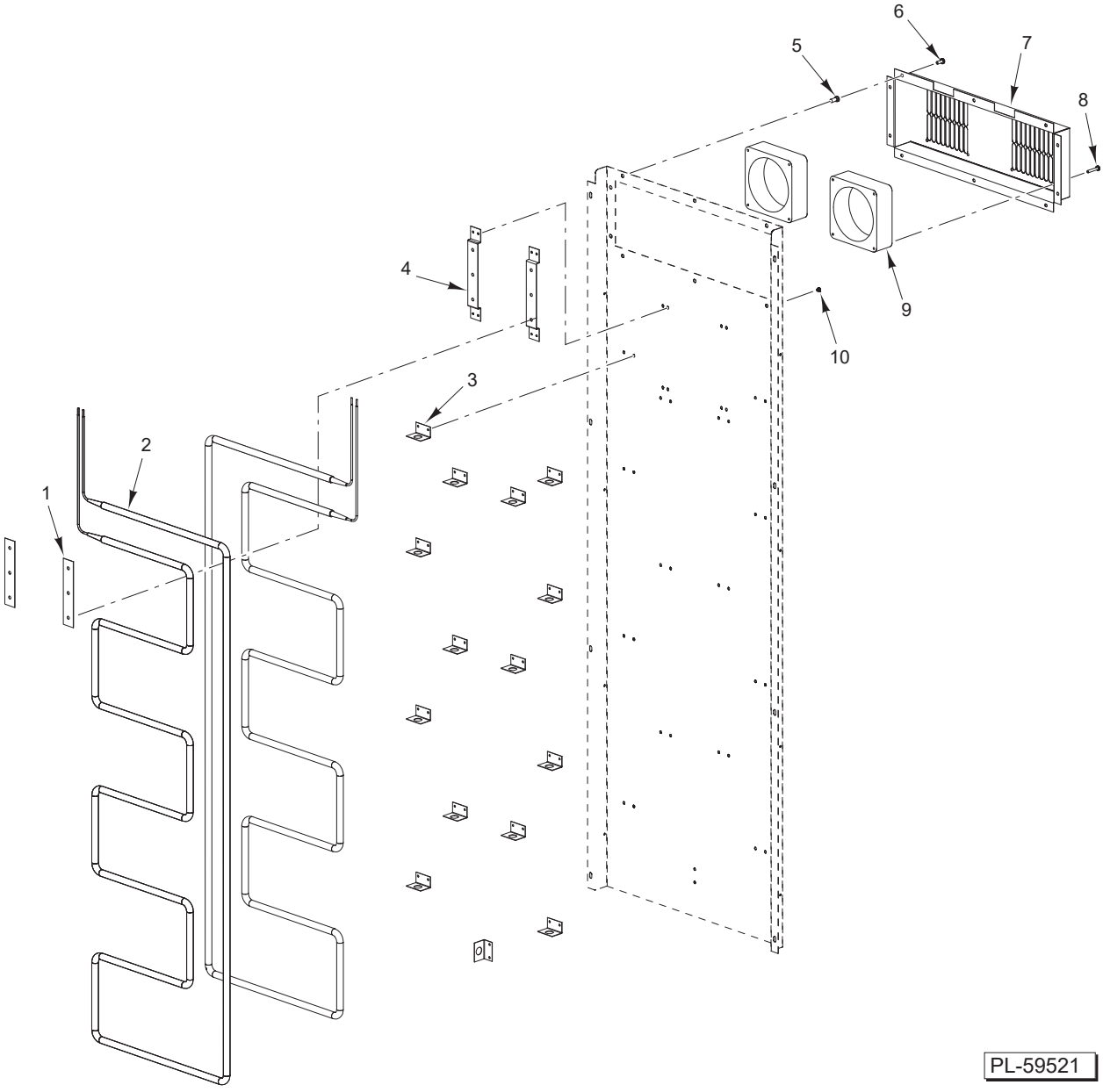
ILLUS. PL-59519	PART NO.	NAME OF PART	AMT.
1	200-60142-01	Assy – Door (Incls. Item 4)	1
2	200-60140-02	Assy – Half Door Upper (Incls. Item 5)	1
3	200-60140-03	Assy – Half Door Lower (Incls. Item 5)	1
4	341-60083-00	Gasket – Full Door	1
5	341-60084-00	Gasket – Half Door	2
6	344-28487-00	Hinge – Door	2
7	344-28485-00	Plate	2
8	351-60002-06	Mach. Screw 10-32 x 3/4	6
9	344-28488-00	Hinge – Cam (White Nylon)	2
10	351-60002-07	Mach. Screw 10-32 x 3/4 Phil. Flat Hd.	6
11	344-28486-00	Cover – Hinge	2
12	333-60408-02	Harness – Light Switch (Full Height Door)	AR
13	333-60409-02	Harness – Light Switch (Half Height Door)	AR
14	337-28235-00	Switch – Door	AR
15	344-28484-00	Actuator	AR
16	344-28483-00	Screw – Safety	2
17	344-28482-00	Hinge – Upper	2
18	351-60002-01	Mach. Screw 10-32 x 1/2 Phil. Flat Hd. (SST)	AR
19	346-60019-00	Bracket	AR
20	346-60017-00	Lock Keeper	AR
21	351-60001-07	Mach. Screw 10-32 x 1/2 Phil. Flat Hd. (SST)	AR



PANELS AND RACKS

PANELS AND RACKS

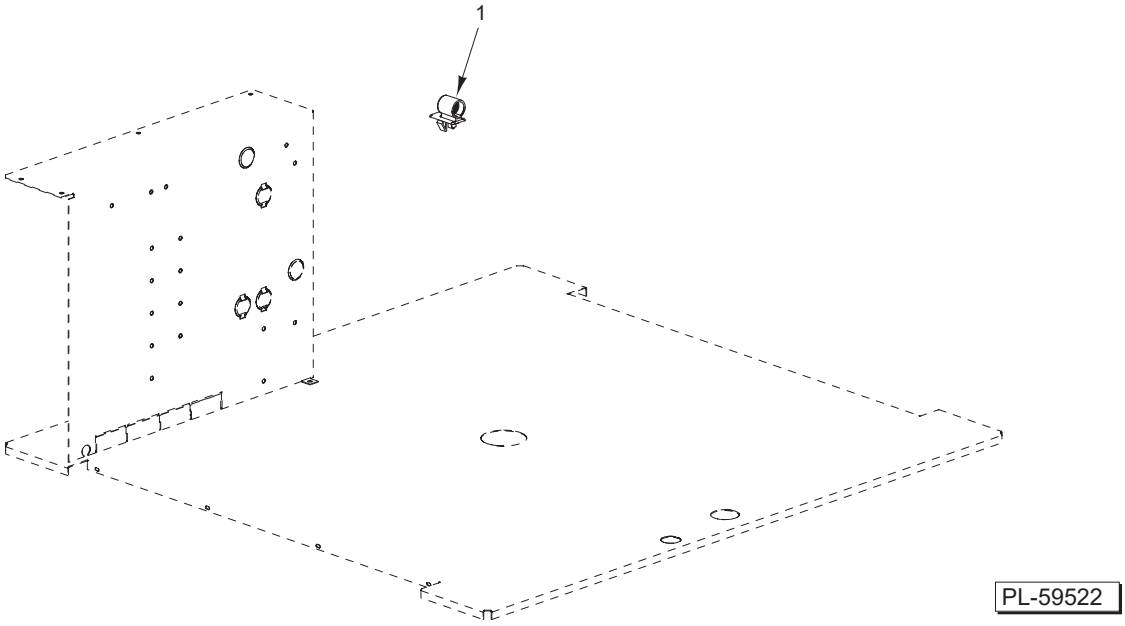
ILLUS. PL-59520	PART NO.	NAME OF PART	AMT.
1	342-60098-00	Pilaster – Rack Mount Mullion (Inner) (Front LH/Rear RH) (G2 Series)	2
2	614-60188-00	Back – Heater Duct (G2 Series)	2
3	614-60048-00	Duct – Down (Hot Food)	AR
4	614-60043-00	Baff e – Air	AR
5	358-10000-00	Rivet	AR
6	500-70002-00	Louver – Front (G1 Series)	1
7	500-70008-00	Louver – Front (G2 Series)	1
8	344-60184-00	Vent – Aluminum 2 In. (Hot Food)	AR
9	701-60985-00	Chase – Electrical (G2 Series)	1
10	701-60192-00	Chase – Electrical (G2 Series)	1
11	353-60033-00	Plug – Screened (Interior Vent) (Hot Food)	AR
12	CK1	Kit – Casters 6 In. (With Lock) (Set of Four)	1
13	340-26000-00	Shelf – Wire 24 1/2 In. x 26 3/8 In. (Chrome) (G1 Series)	AR
14	340-05340-00	Shelf – Wire 20 3/4 In. x 25 7/8 In. (Chrome) (G2 Series)	AR
15	342-60025-00	Pilaster – Rack Mount (G1 Series)	4
16	342-60030-00	Pilaster – Rack Mount (Outer) (G2 Series)	4
17	342-60097-00	Pilaster – Rack Mount Mullion (Inner) (Front RH/Rear LH) (G2 Series)	2
18	356-12954-00	Rivnut 10-32 (Closed End)	8
19	351-60001-00	Mach. Screw 1/4-20 x 3/4 Phil. Pan Hd.	8
20	344-08982-00	Clip – Shelf	AR
21	601-61183-00	Plate – Interior Vent (Hot Food)	AR
22	601-61175-01	Cover – Interior Vent (Hot Food)	AR
23	351-29384-00	Self-Tapping Screw #4 x 7/16 Phil. Oval Hd	AR



HEATER ELEMENT

HEATER ELEMENT

ILLUS. PL-59521	PART NO.	NAME OF PART	AMT.
1	614-60058-00	Bracket – Bonding	2
2	329-60056-00	Element – Heater (240 V., 2000 W.)	2
3	614-60046-00	Bracket – Heater Mount	15
4	614-60057-00	Bracket – Bonding	2
5	356-12954-00	Rivnut 10-32 (Closed End)	10
6	351-60001-00	Mach. Screw 1/4-20 x 3/4 Phil. Pan Hd.	10
7	614-60042-00	Panel – Fan Mount	1
8	351-60001-06	Mach. Screw 8-32 x 1 Phil. Pan Hd.	8
9	338-60030-00	Motor – Fan (115 V., 90 Deg.) (Blade Not Shown)	2
10	358-10000-00	Rivet – Pop 1/8	30



ELECTRICAL COMPONENTS

ELECTRICAL COMPONENTS

ILLUS. PL-59522	PART NO.	NAME OF PART	AMT.
1	333-60241-00	Lampholder	1
	333-60250-00	Harness (MIT II To Relay Module)	1
	337-60070-00	Horn	1
	337-60317-00	Relay – Module (MIT II) (110 VAC)	1
	337-60320-00	Head – Control (MIT II) (Hot Food)	1
	337-60360-01	Relay – Hybrid (With Surge Damper)	1
	377-60038-00	Clip – Mounting (Intela-Traul)	2
	337-31075-00	Fuse – Thermal (G5AP0200128C)	1
	337-60405-02	Sensor – Cabinet Temperature (74 In.) (Green)	1
	337-40739-00	Bulb – Shatterproof (130 V., 25 W.)	1