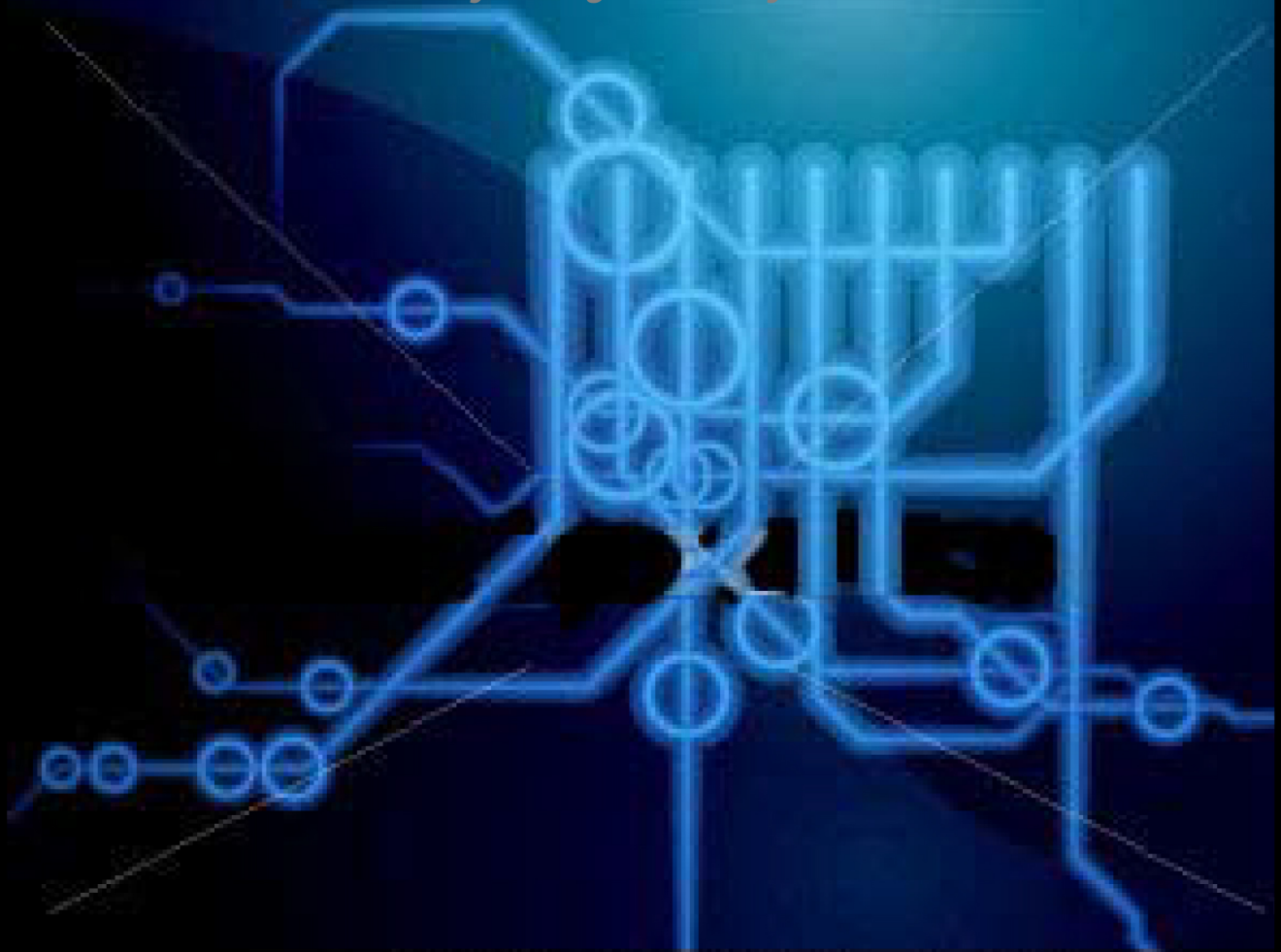
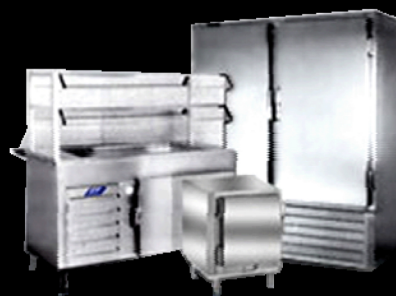


*State-of-the-Art Quality Refrigeration Systems for the Marine Industry*



**RTF** Manufacturing Superior Refrigerators and Freezers  
*ENGINEERED TO THE HIGHEST MILITARY SPECIFICATIONS*





## Price and Value

We deliver reliability, durability and quality at a competitive price.

## Technical Assistance

Have a question or problem? No problem! Call our toll free support hotline: 1-800-836-0744 and our engineering or service department will be happy to assist you. Our staff of highly qualified experts are available from 6:30 a.m. to 5:00 p.m. Eastern Standard Time. Experience the finest in technical support.

## Service Capability

RTF refrigerators and freezers are built using only the highest quality material and components. A network of wholesalers throughout the US and Canada means your motor or compressor can be replaced or repaired fast—with no need to go anywhere else.

## Modular Construction

RTF offers the availability of modular construction to meet the needs of special installation challenges. Confined space and limited accessibility to doorways, hulls, bulkheads and decks is not a problem when installing our expertly engineered modular units.

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IDXIN® Vacuum Insulation Panel (VIP) is a new high-efficient ultra thin (8 to 30mm) thermal insulation material using the latest vacuum insulation technique. VIPs are manufactured by inserting a low thermal conductivity core material in a highly impermeable gas barrier which is evacuated and sealed. The result is a highly thermal insulation panel delivering ten fold the thermal performance and 25% energy savings compared to conventional insulation materials, while increasing the usable volume by 20%–30%. VIPs offer extremely low thermal conductivity (only 1/8 of PU), are not harmful to the environment and meet government regulations. RTF's state-of-the-art, quality-designed refrigeration systems continue to provide a full line of reliable, efficient and environmentally safe products and now offer this additional superior insulation to their manufacturing process. Decrease your energy use and energy cost.

---

## RTF Manufacturing is Your Source for Refrigeration and Freezer Equipment for the Marine Industry. Built to Fit Your Plans.

**Call 1-800-836-0744** or **email: [info@rtfmanufacturing.com](mailto:info@rtfmanufacturing.com)** to request a quote today.

RTF has trained personnel available to assist you in product selection, installation and maintenance. Our RTF service department is available to take your call. Discuss your requirements with an RTF engineer and we will provide the assistance you need. A detailed quote and specifications will be provided for each job.

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## INTRODUCTION

### General Product and Manufacturing Information

**RTF Superior Design Refrigerators and Freezers** are constructed with heavy gauge stainless steel interior and exterior with foamed in place with CFC free urethane insulation. Fully hermetic compressors, extra heavy duty with chrome plated two point hinges. Positive keyed locking handles provides best door seal. All units are available in modular/hatchable construction.

**Complete Size and Style** offering from 4 cubic to 90 cubic feet capacity. RTF Refrigerators and Freezers are available in a verity of sizes and styles. Whether it's a 5 cubic foot under counter or a MODULAR 40 cubic foot freezer, the same exacting standards and quality you expect are built into everyone. Our units are used for Navy Vessels, Coast Guard Vessels, Crew-Off Shore Supply Vessels, Container Ships, Push Boats, Fishing Vessels, and Jack-up Drill rigs. Our units are tough to beat and easy to find from a choice from over 80 models.

**New Pricing and Value** is effective immediately. All of our most popular models have been priced lower to enhance your RTF value package. We offer Reliability, Durability, and quality at a competitive price.

**Stock Availability** of many of our most popular RTF models is available for immediate shipment.

**Technical Assistance** is always available. If you have a question or problem, RTF is there for you. Just call our Toll Free Support Hotline at 1-800-836-0744 and our service department will be happy to assist you. Experience the finest in technical support. Our staff of highly qualified experts is available to you from 6:30AM to 5:00PM Eastern Standard Time.

**Service Capability** RTF Refrigerators and Freezers are built using only the highest grade of materials and are fully hermetic compressors with a network of wholesalers throughout the US and Canada. You can get your motor or compressor repaired or replaced fast with no need to go anywhere else.

**Custom or Special Sizes** are made to fit. RTF can build or modify a Refrigerator or Freezer to fit your requirements. Our CAD drawing department will be happy to assist you in providing all the drawings for your next special project.

**Durability** of RTF Refrigerators and Freezers is possible, because they are engineered to the highest military standards and specifications. Our continued commitment to the marine industry allows us first hand to witness to some of the harshest conditions this equipment operates in and we are proud to say that we pass the test.

**Complete Line of Equipment** offered by RTF includes a wide range of Refrigerators and Freezers. You may call or write for a full line catalog.

**Our Promise** is that all RTF Refrigerators and Freezers exceed the industry standards. You can be confident that the unit you are getting has met the quality level you deserve



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## CHAPTER 1

# MARINE REFRIGERATORS



## MARINE REFRIGERATOR FEATURES AND DESCRIPTION

### OPTIONAL EQUIPMENT:

- Modular Design
- Aluminum Construction
- Digital Thermometer
- Spring Assist Hinges

### HEAVY DUTY REFRIGERATION SYSTEM:

- Ozone safe R-134A refrigerant
- Wrapped refrigeration system
- Sealed, condensing unit, air or water cooled with pull out design
- Preset temperature controls
- Thermostatic expansion valve

### CONSTRUCTION:

- Heavy gauge stainless steel #304 interior and exterior
- Formed in place, CFC Free Urethane insulation, highest R-value
- Stainless steel spill proof shelves
- 2" exterior reading dial thermometer
- Extra heavy duty chrome plated hinges
- Positive keyed locking handle provides best seal
- Interior lighting activated by door switch
- Vinyl extruded replacement gaskets
- Heavy base frame

## Model NAV-5-HT-B REFRIGERATION UNIT

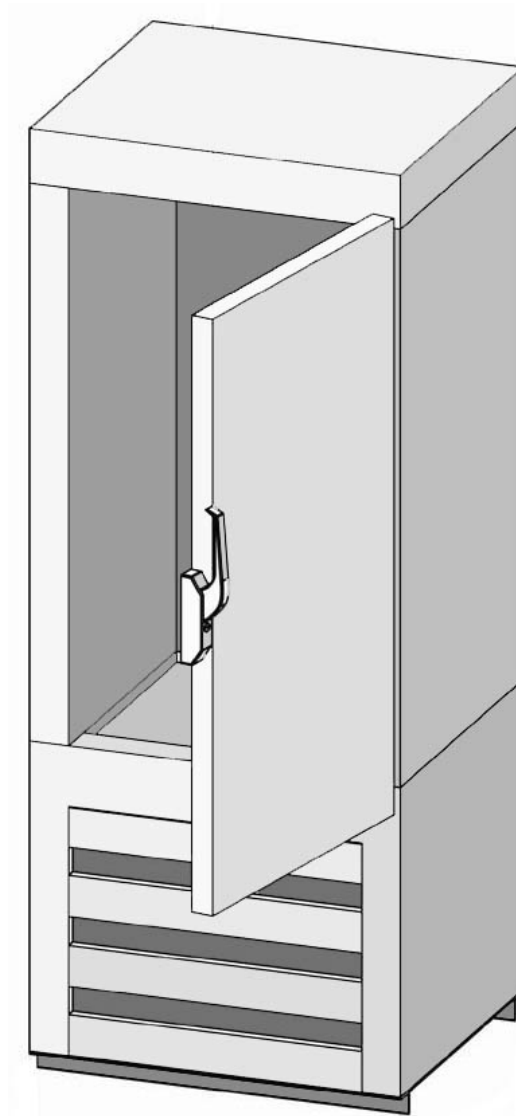


Figure 1 – NAV-5-HT-B Refrigeration Unit

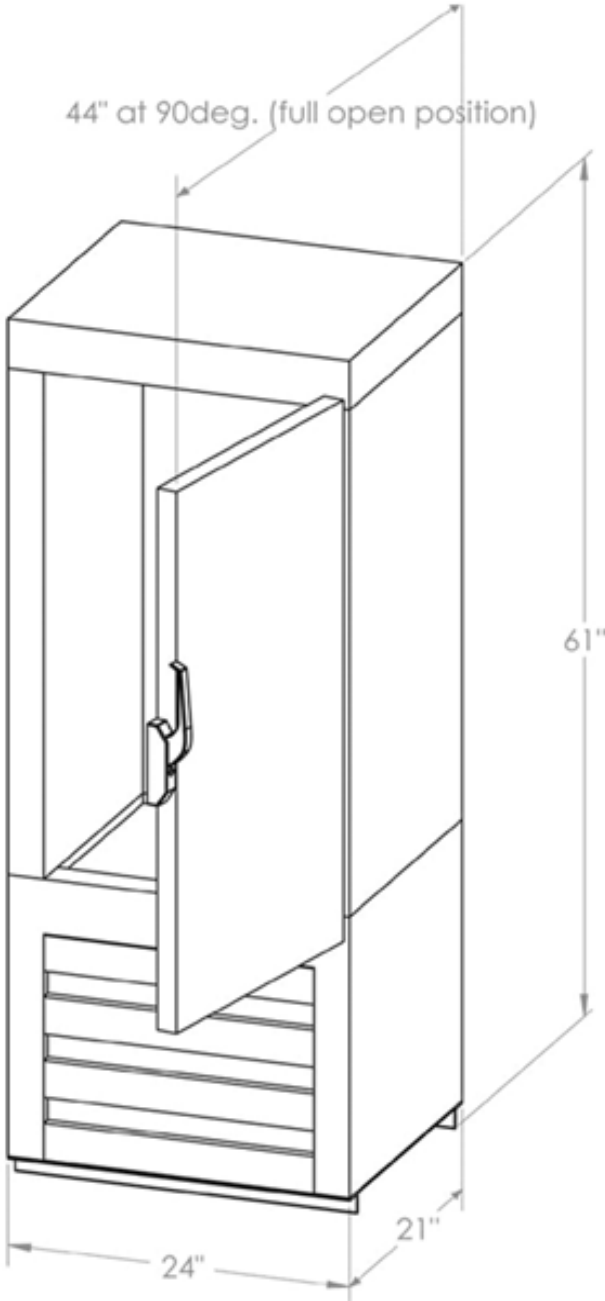


Figure 1A – NAV-5-HT-B Modular Assembly

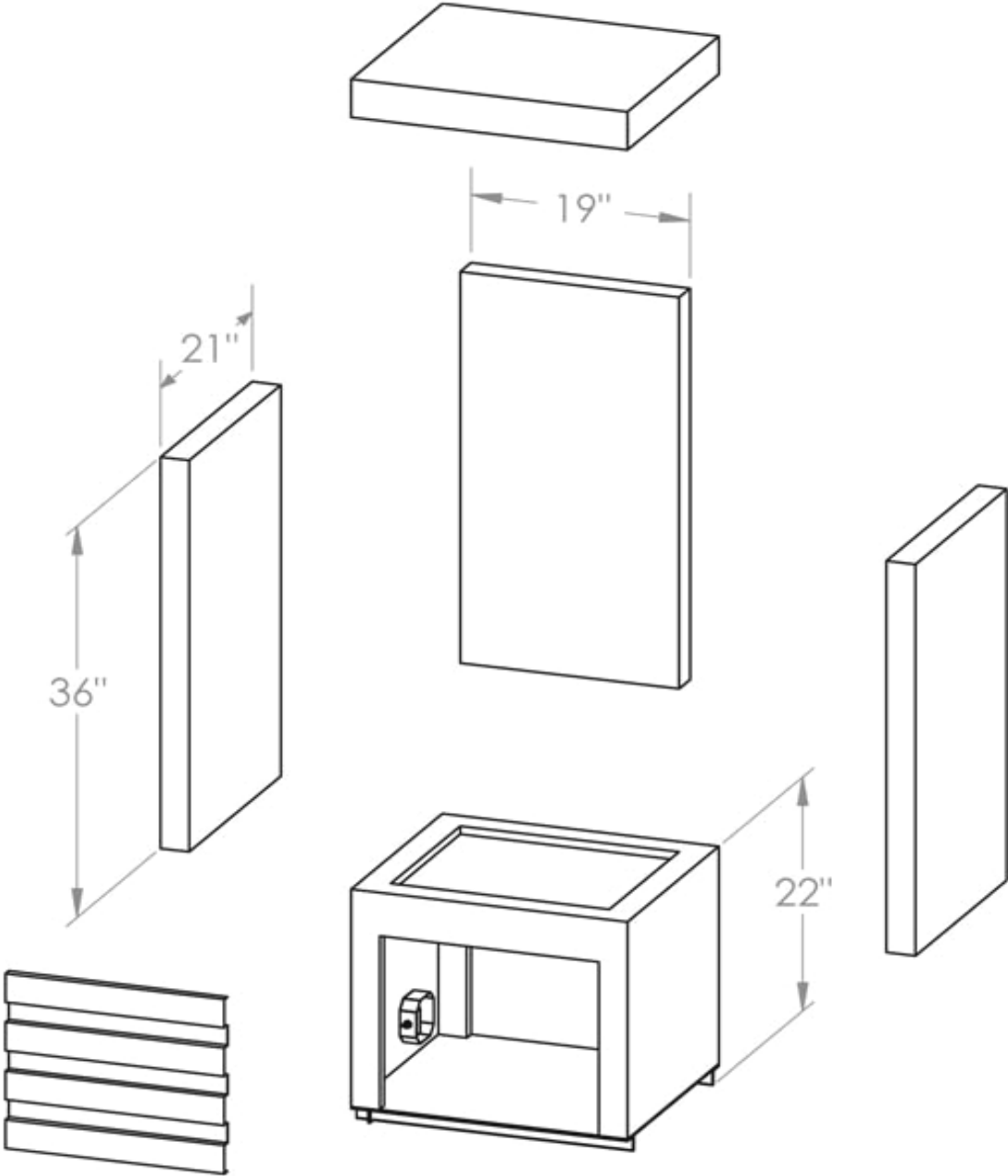


Figure 1B – NAV-5-HT-B Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-5-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>7.5</b>
WIDTH	<b>24"</b>
HEIGHT	<b>61"</b>
DEPTH	<b>21"</b>
BODY DEPTH W/DOORS	<b>23"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>375</b>
CRATED WEIGHT (LBS)	<b>410</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>2600</b>
VOLTAGE	<b>115</b>
AMPERE	<b>4</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 1, NAV-5-HT-B Specifications

## Model NAV-10-HT-B REFRIGERATION UNIT

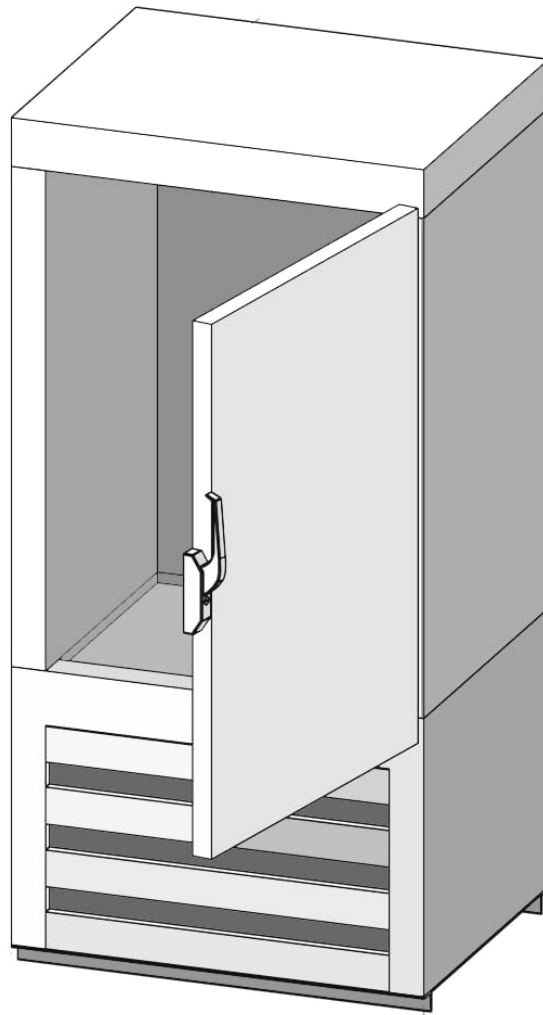


Figure 2 – NAV-10-HT-B Refrigeration Unit



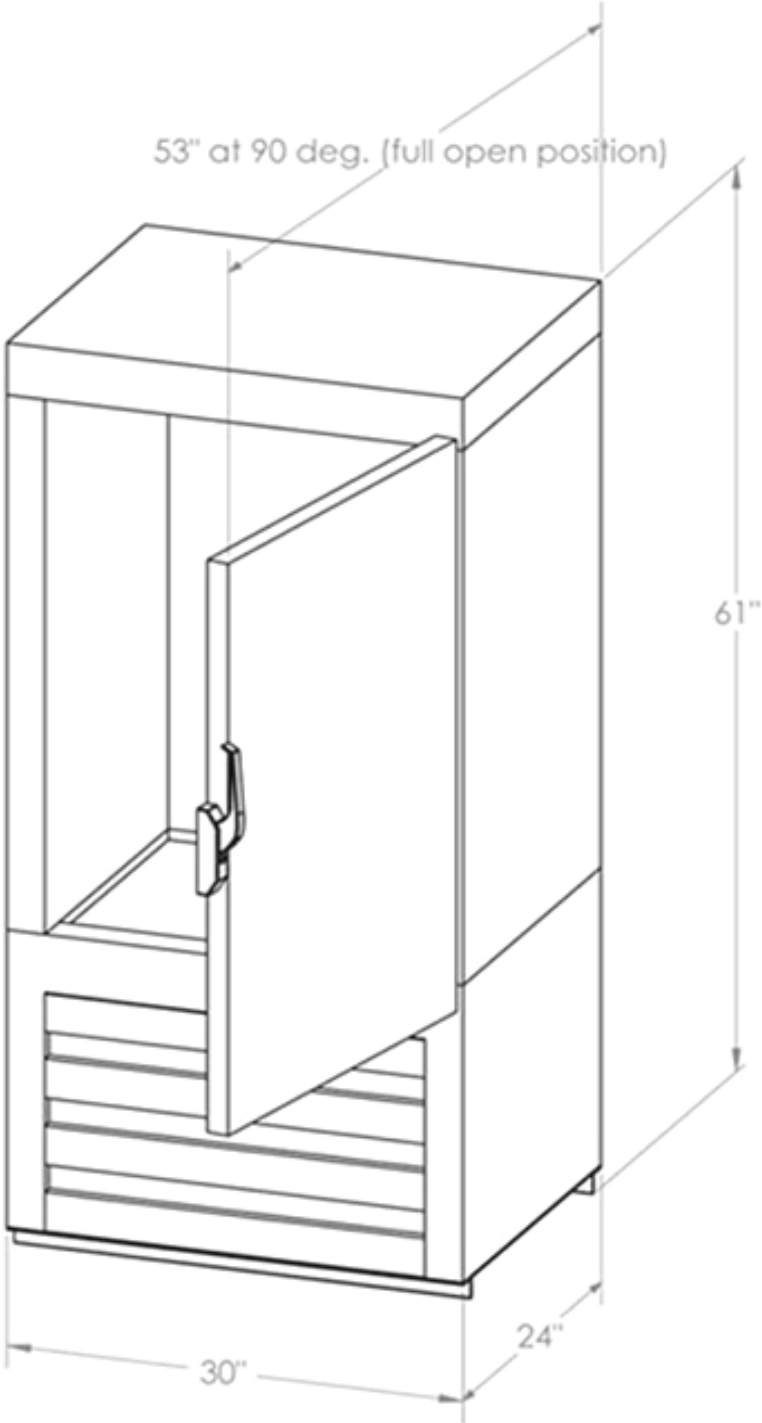


Figure 2A – NAV-10-HT-B Modular Assembly

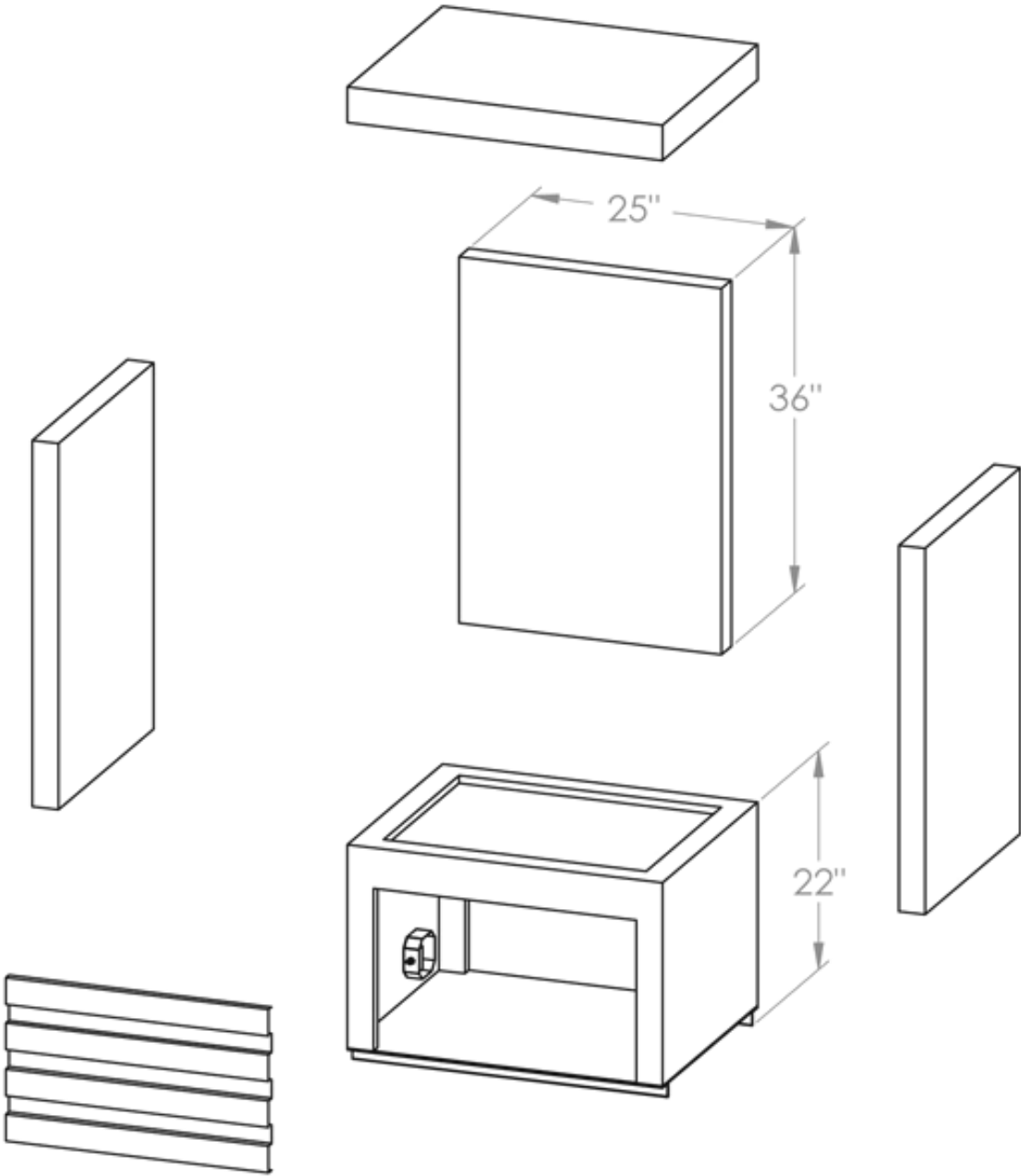


Figure 2B – NAV-5-HT-B Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-10-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>10</b>
WIDTH	<b>30"</b>
HEIGHT	<b>61"</b>
DEPTH	<b>24"</b>
BODY DEPTH W/DOORS	<b>26"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>390</b>
CRATED WEIGHT (LBS)	<b>435</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>2800</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 2, NAV-10-HT-B Specifications

## Model NAV-15-HT-B REFRIGERATION UNIT

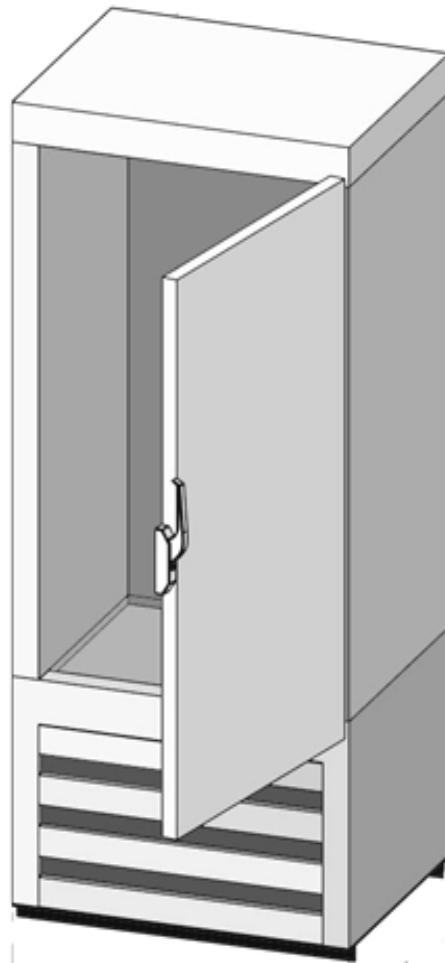


Figure 3 – NAV-15-HT-B Refrigeration Unit

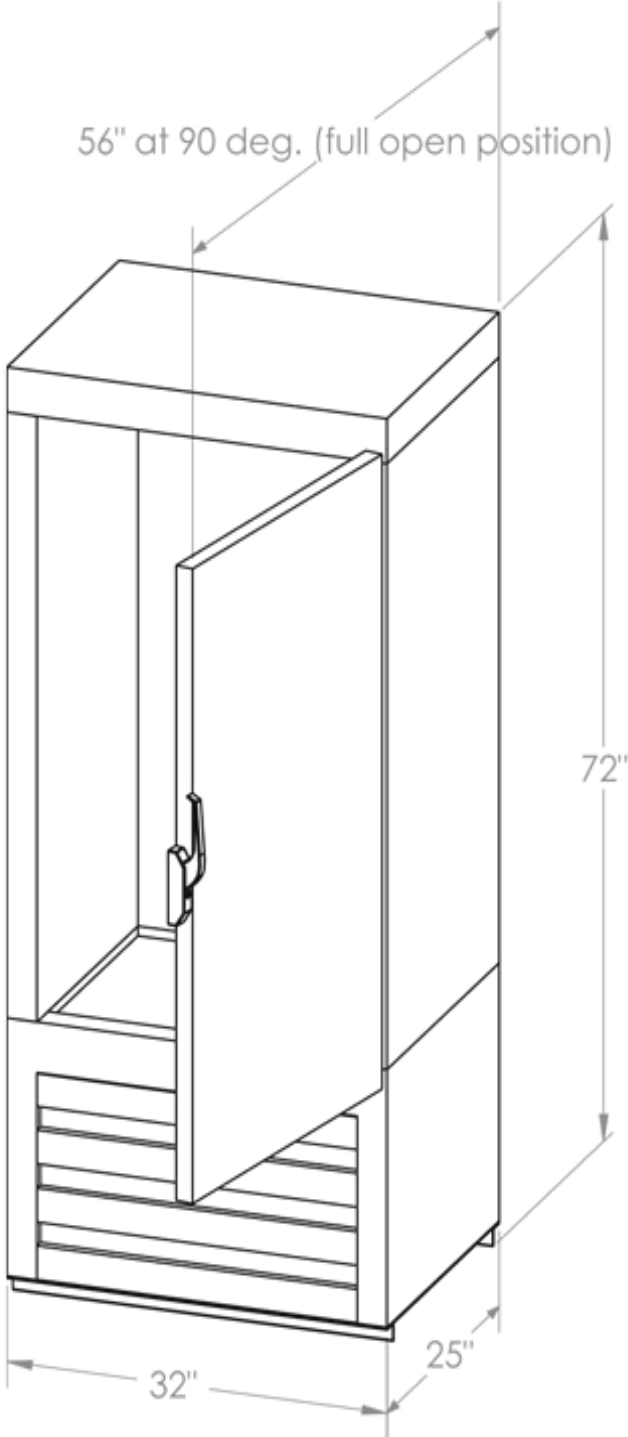


Figure 3A – NAV-15-HT-B Modular Assembly

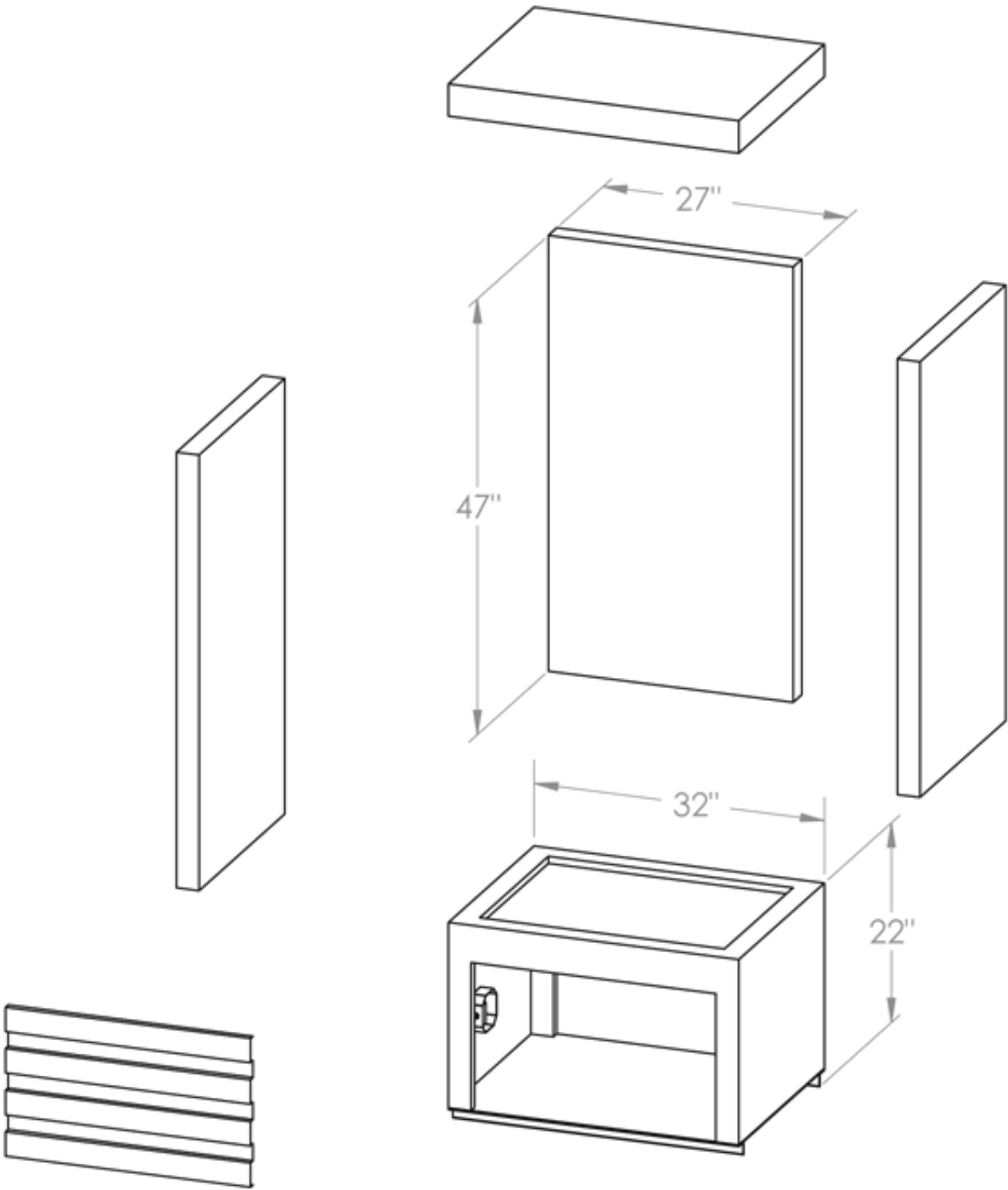


Figure 3B – NAV-15-HT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-15-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>15</b>
WIDTH	<b>32"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>4</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>475</b>
CRATED WEIGHT (LBS)	<b>510</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>3000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 3, NAV-15-HT-B Specifications



## Model NAV-20-HT-B REFRIGERATION UNIT

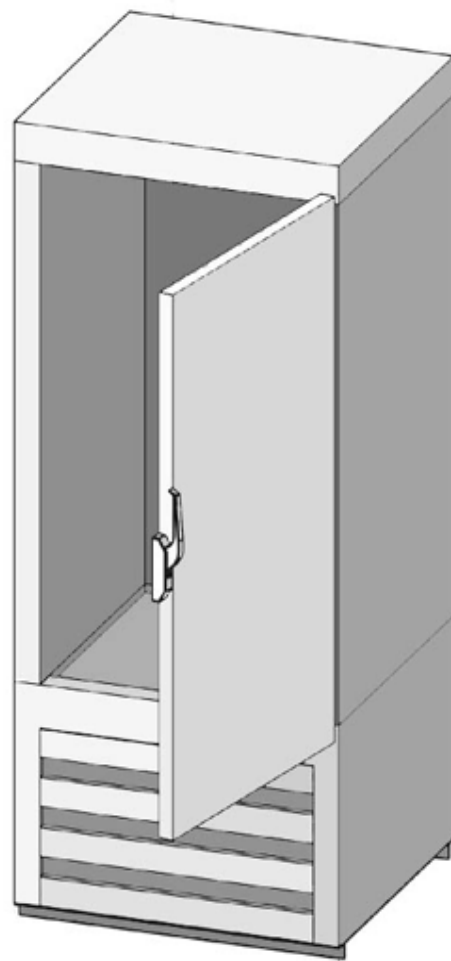


Figure 4 – NAV-20-HT-B Refrigeration Unit

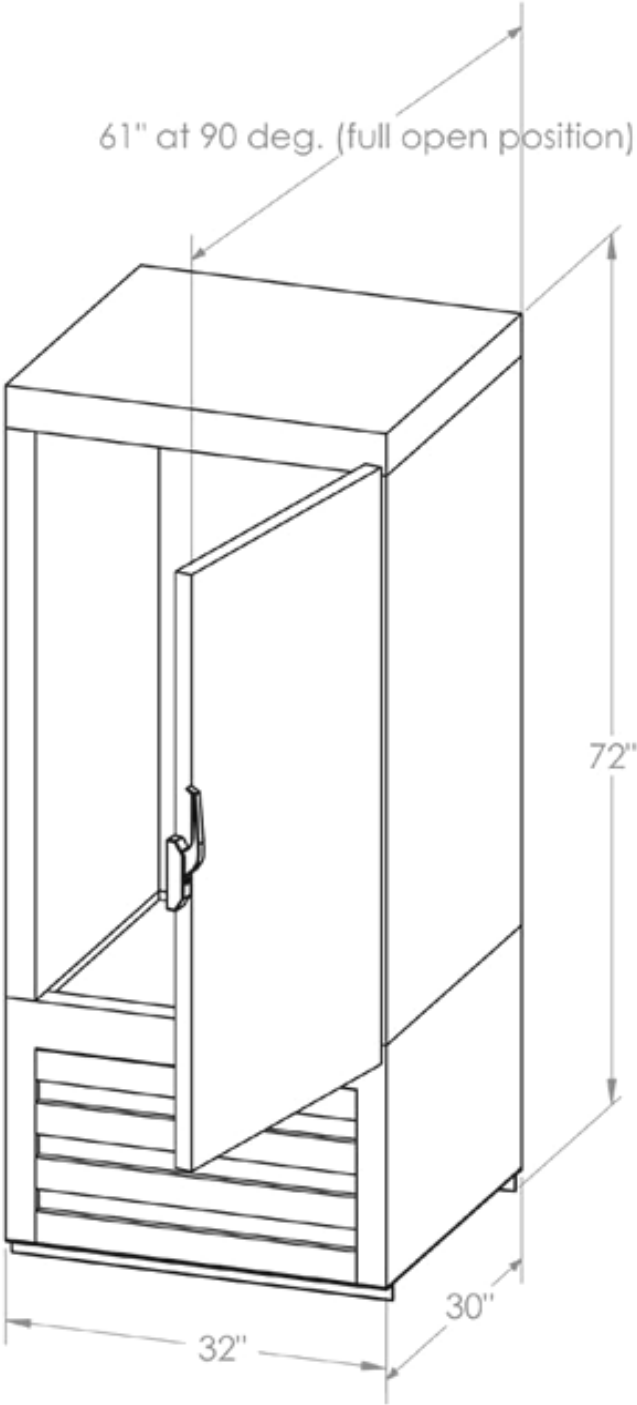


Figure 4A – NAV-20-HT-B Modular Assembly

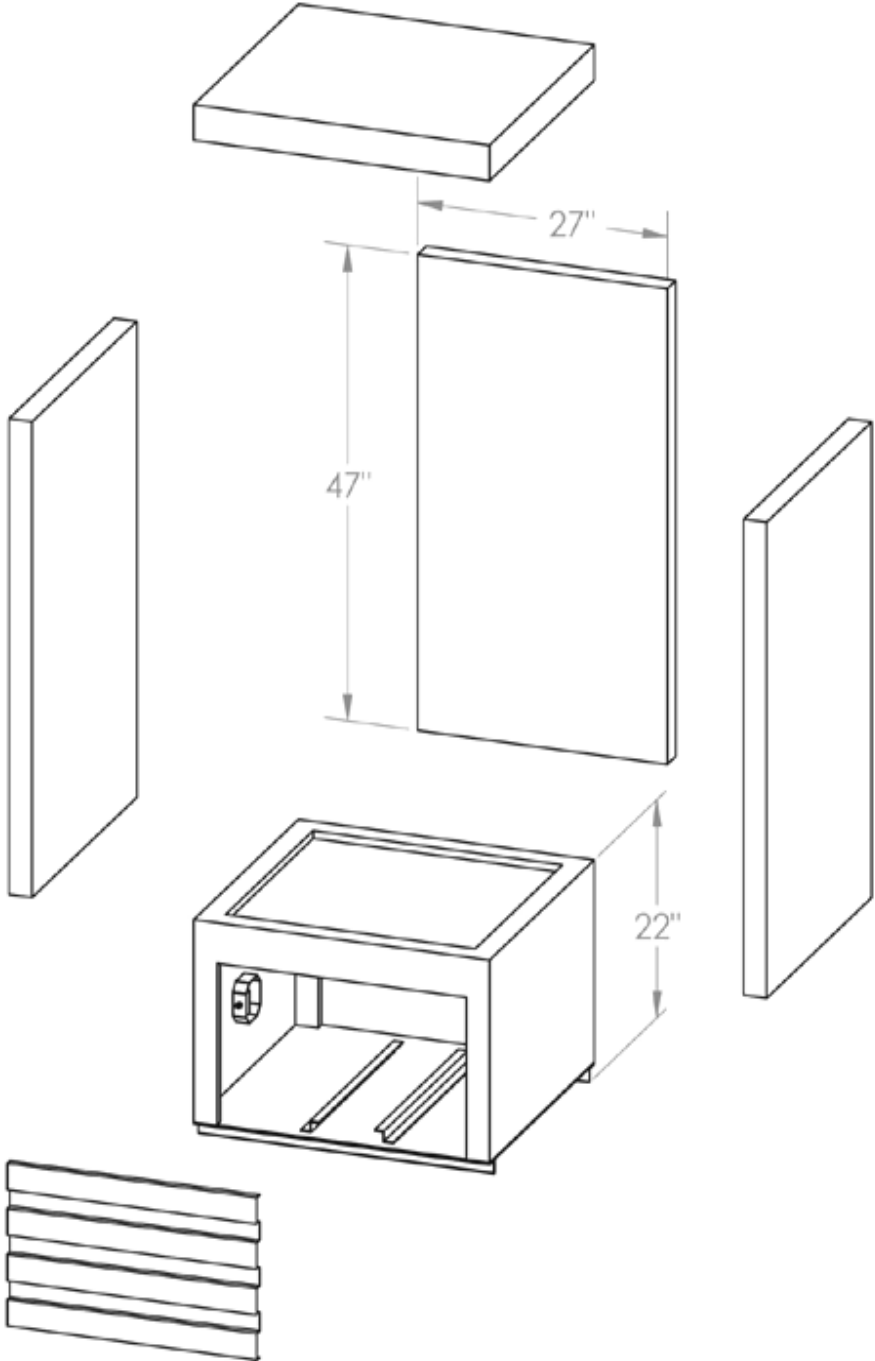


Figure 4B – NAV-20-HT-B Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-20-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>20</b>
WIDTH	<b>32"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>30"</b>
BODY DEPTH W/DOORS	<b>32"</b>
NUMBER OF SHELVES	<b>4</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>580</b>
CRATED WEIGHT (LBS)	<b>620</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>3800</b>
VOLTAGE	<b>115</b>
AMPERE	<b>6</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 4, NAV-20-HT-B Specifications

## Model NAV-30-HT-B REFRIGERATION UNIT

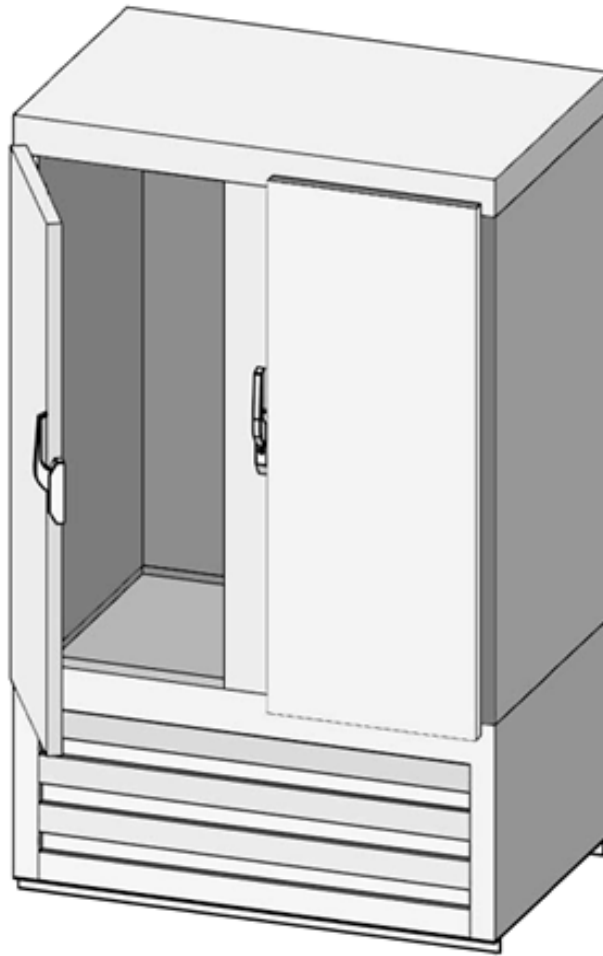


Figure 5 – NAV-30-HT-B Refrigeration Unit

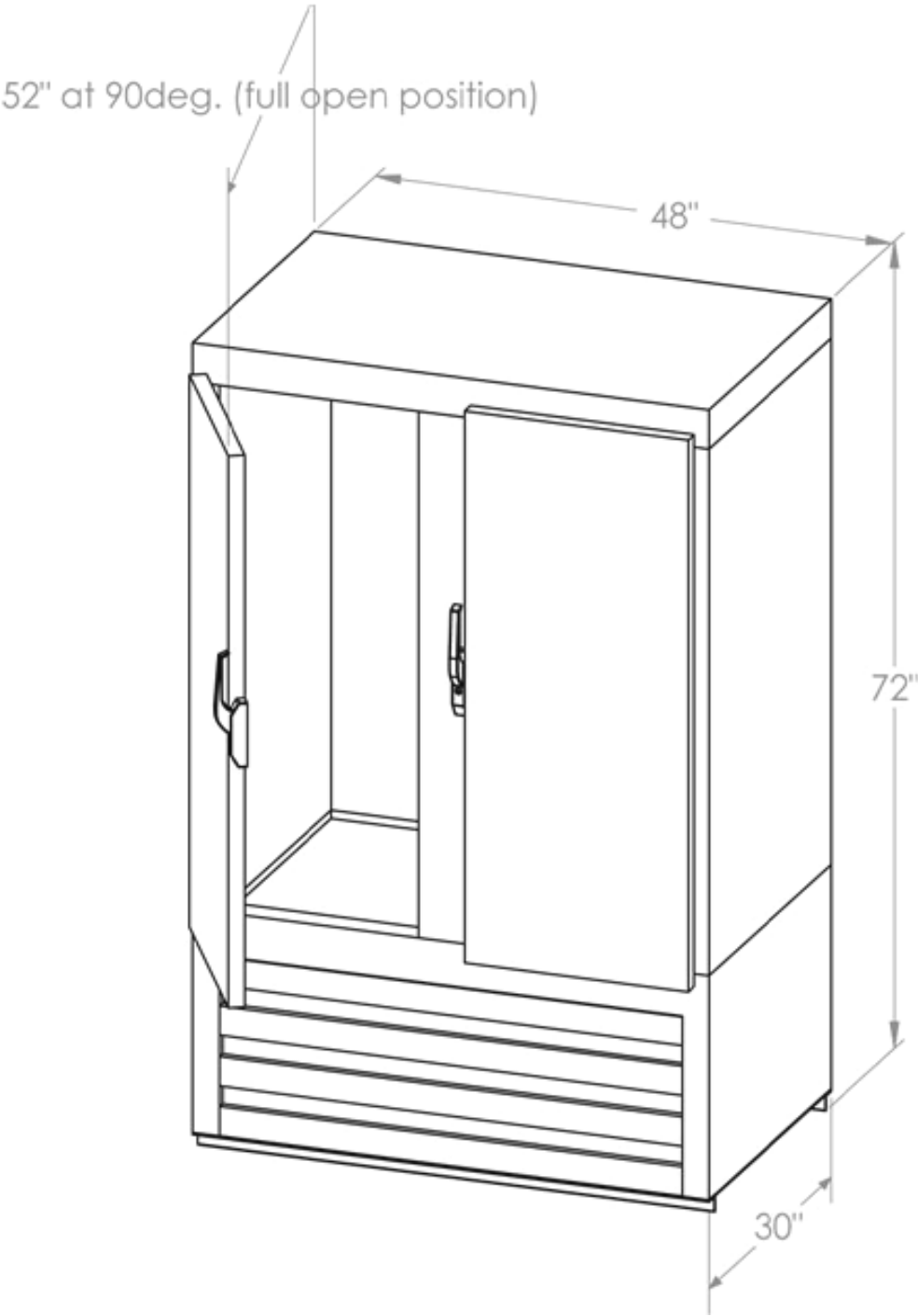


Figure 5A – NAV-30-HT-B Modular Assembly

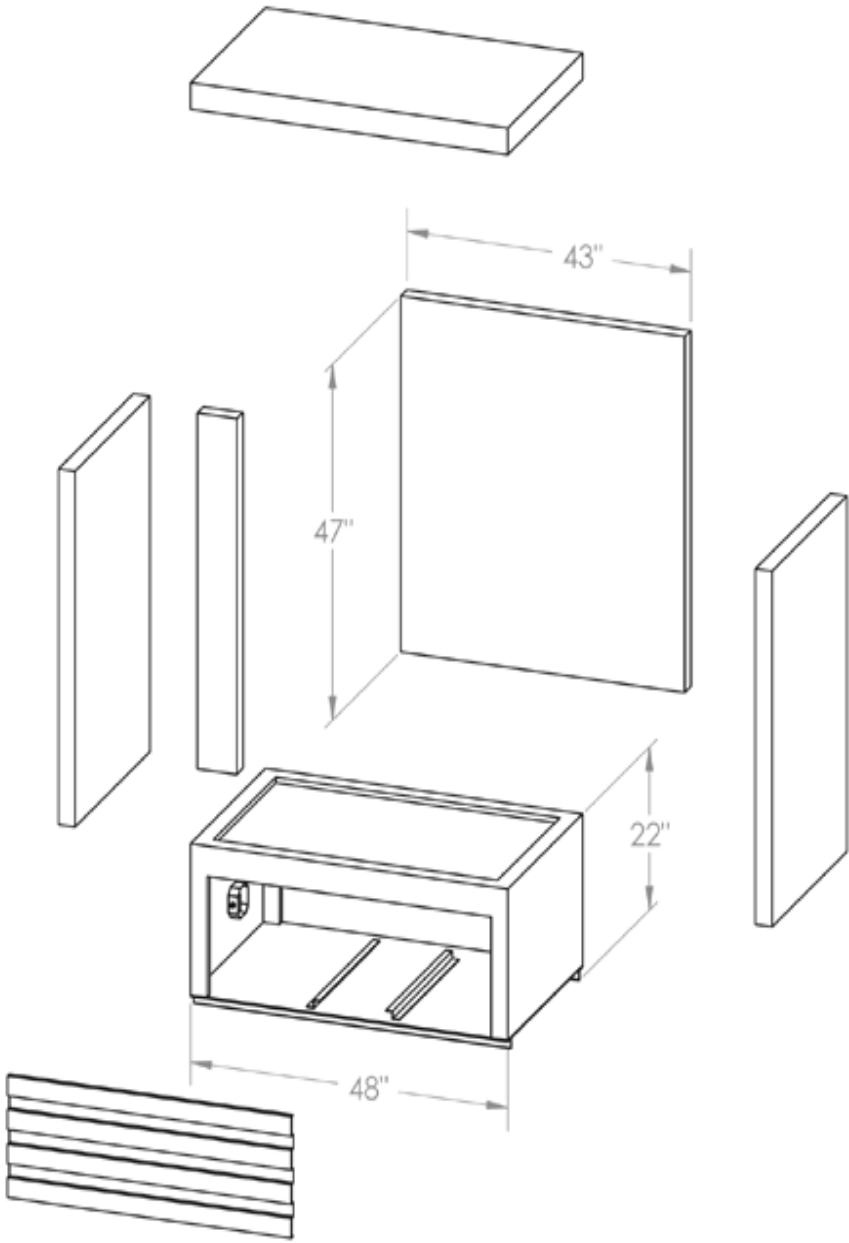


Figure 5B – NAV-30-HT-B Exploded View Shown Without Doors or Compressor



## MODEL SPECIFICATIONS

<b>NAV-30-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>30</b>
WIDTH	<b>48"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>30"</b>
BODY DEPTH W/DOORS	<b>32"</b>
NUMBER OF SHELVES	<b>6</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>610</b>
CRATED WEIGHT (LBS)	<b>720</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>4500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>9</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 5, NAV-30-HT-B Specifications

## Model NAV-40-HT-B REFRIGERATION UNIT

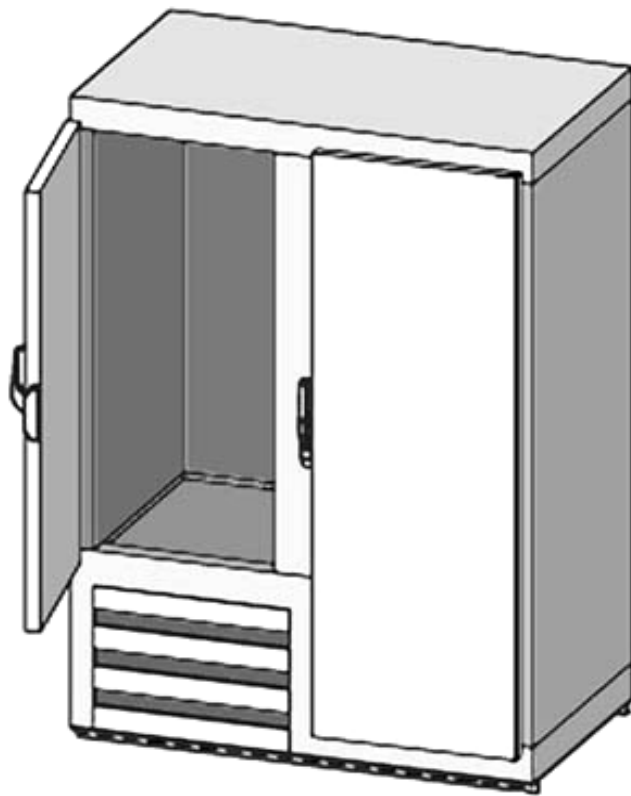


Figure 6 – NAV-40-HT-B Refrigeration Unit

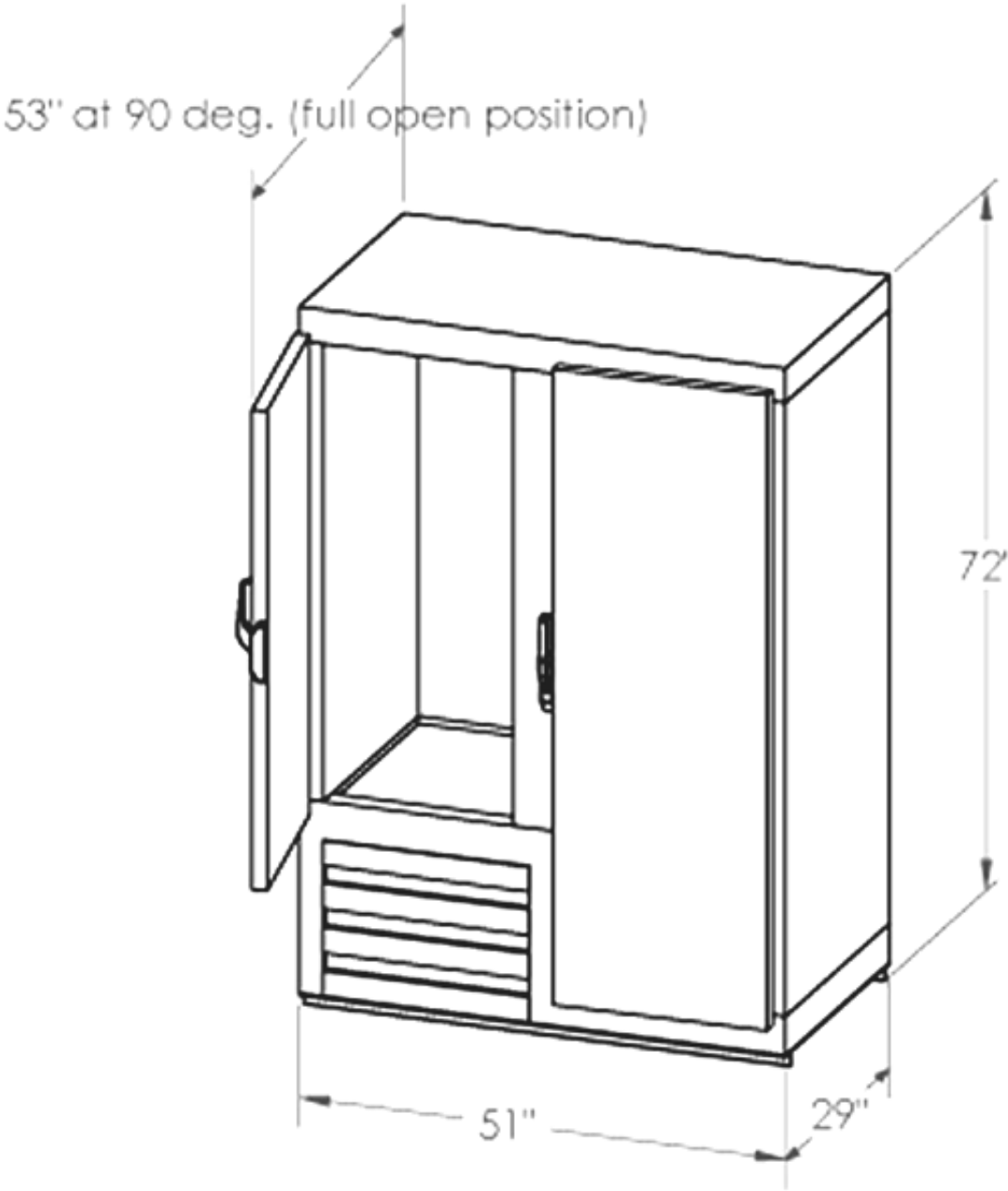


Figure 6A – NAV-40-HT-B Modular Assembly

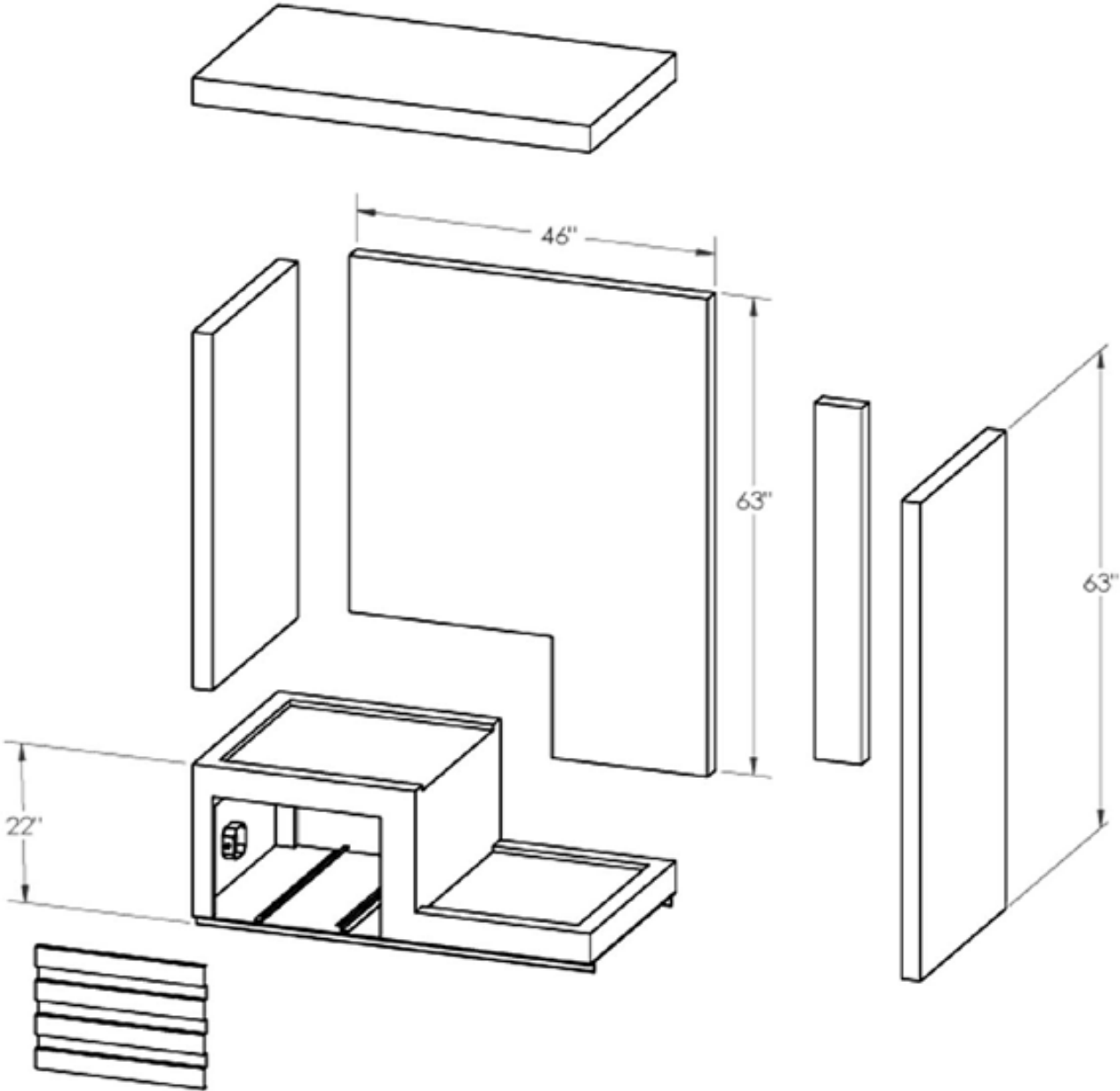


Figure 6B – NAV-40-HT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-40-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>40</b>
WIDTH	<b>51"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>7</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>625</b>
CRATED WEIGHT (LBS)	<b>740</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>6000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>9</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 6, NAV-40-HT-B Specifications

## Model NAV-50-HT-B REFRIGERATION UNIT

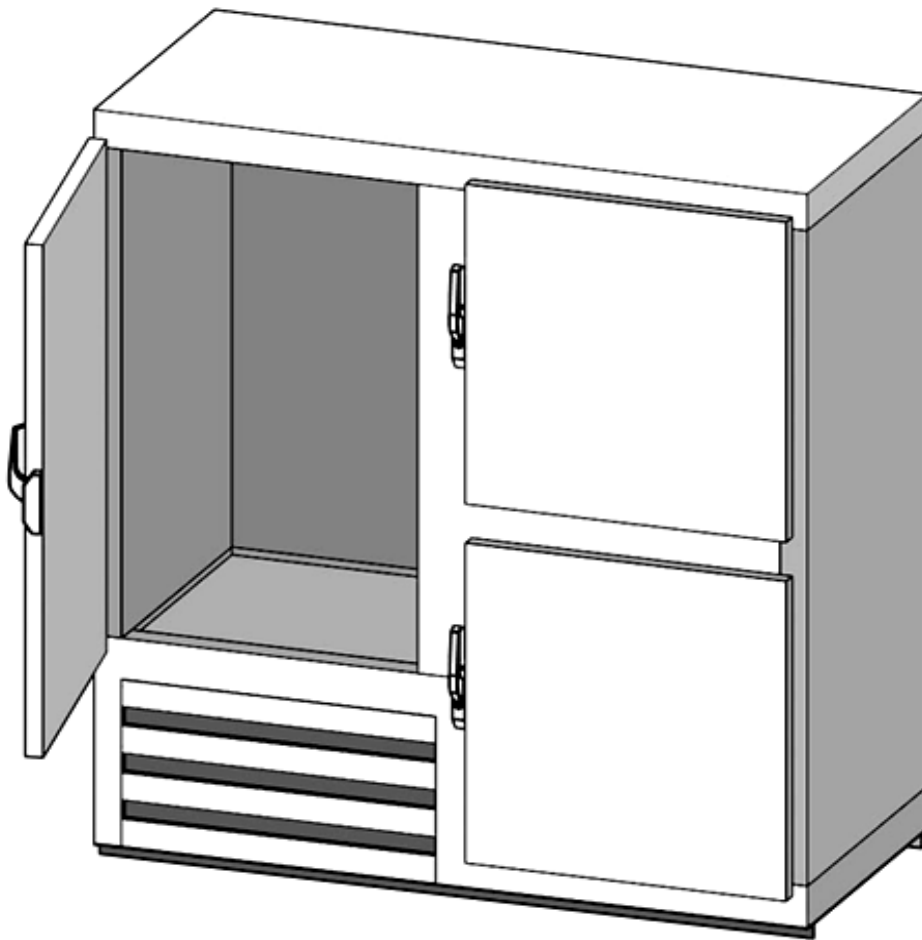


Figure 7 – NAV-50-HT-B Refrigeration Unit

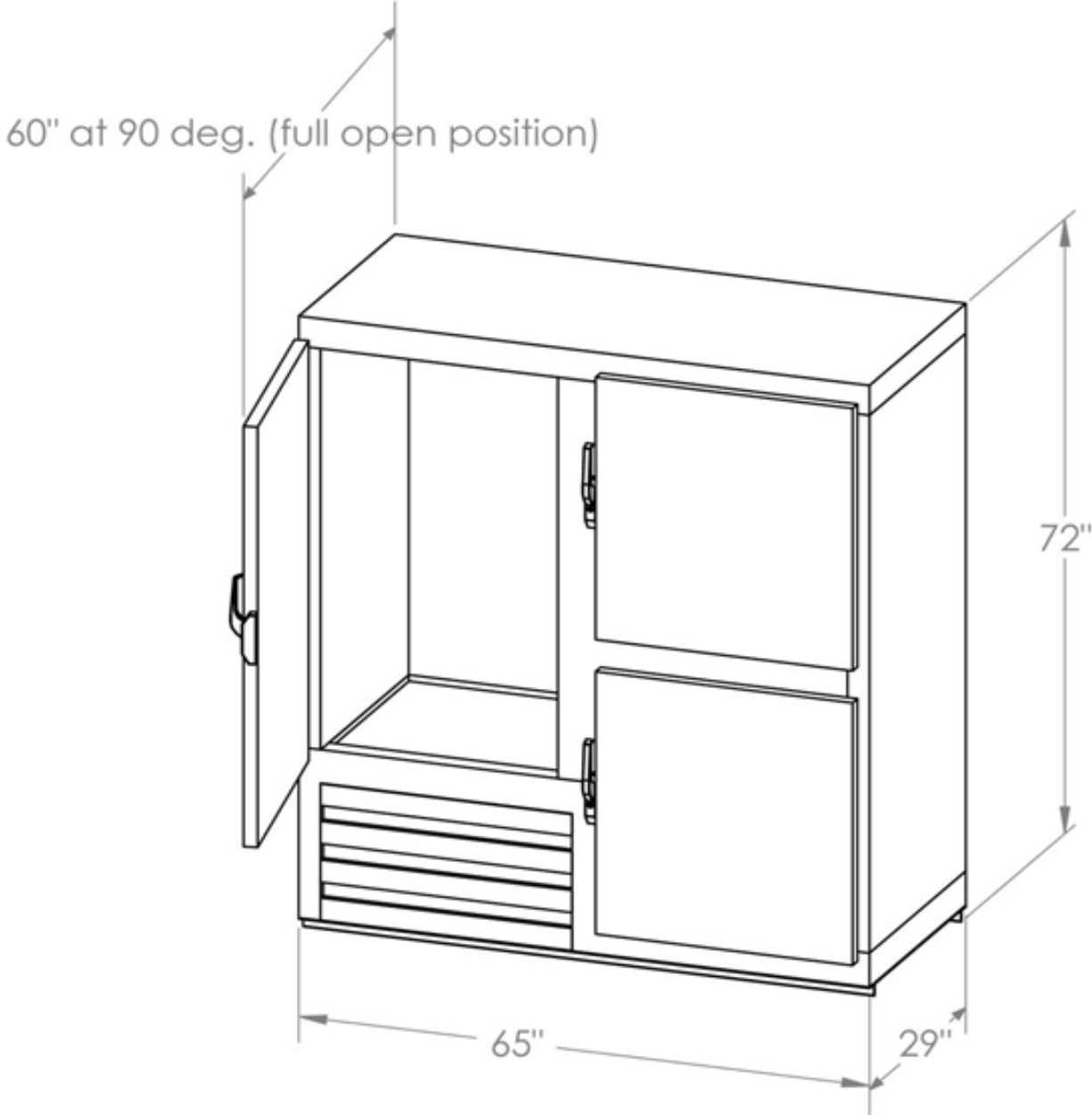


Figure 7A – NAV-50-HT-B Modular Assembly

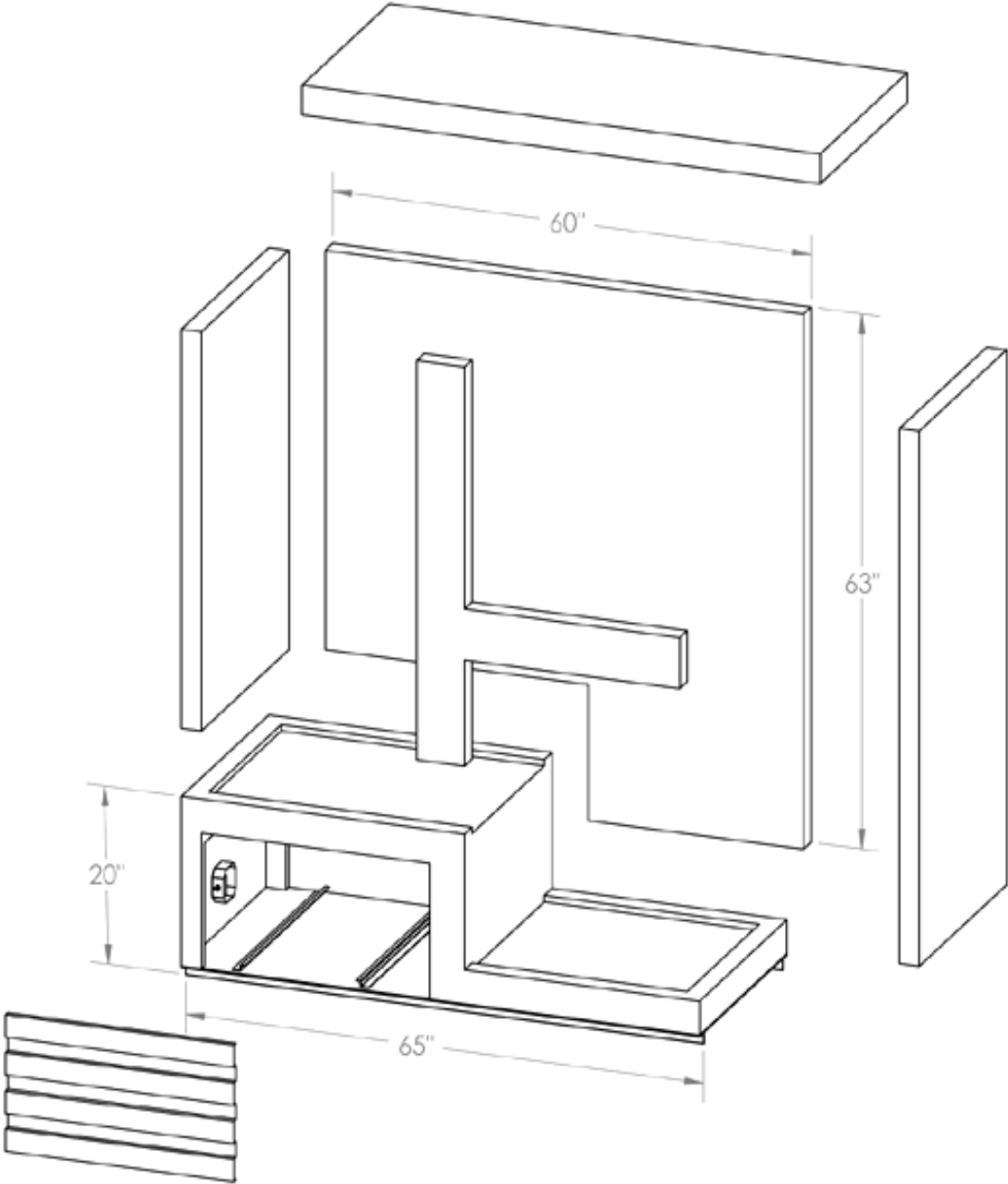


Figure 7B – NAV-50-HT-B Exploded View Shown Without Doors or Compressor



### MODEL SPECIFICATIONS

<b>NAV-50-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>50</b>
WIDTH	<b>65"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>7</b>
NUMBER OF DOORS	<b>3</b>
ASSEMBLED WEIGHT (LBS)	<b>700</b>
CRATED WEIGHT (LBS)	<b>840</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>6000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>9</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 7, NAV-50-HT-B Specifications

## Model NAV-65-HT-B REFRIGERATION UNIT

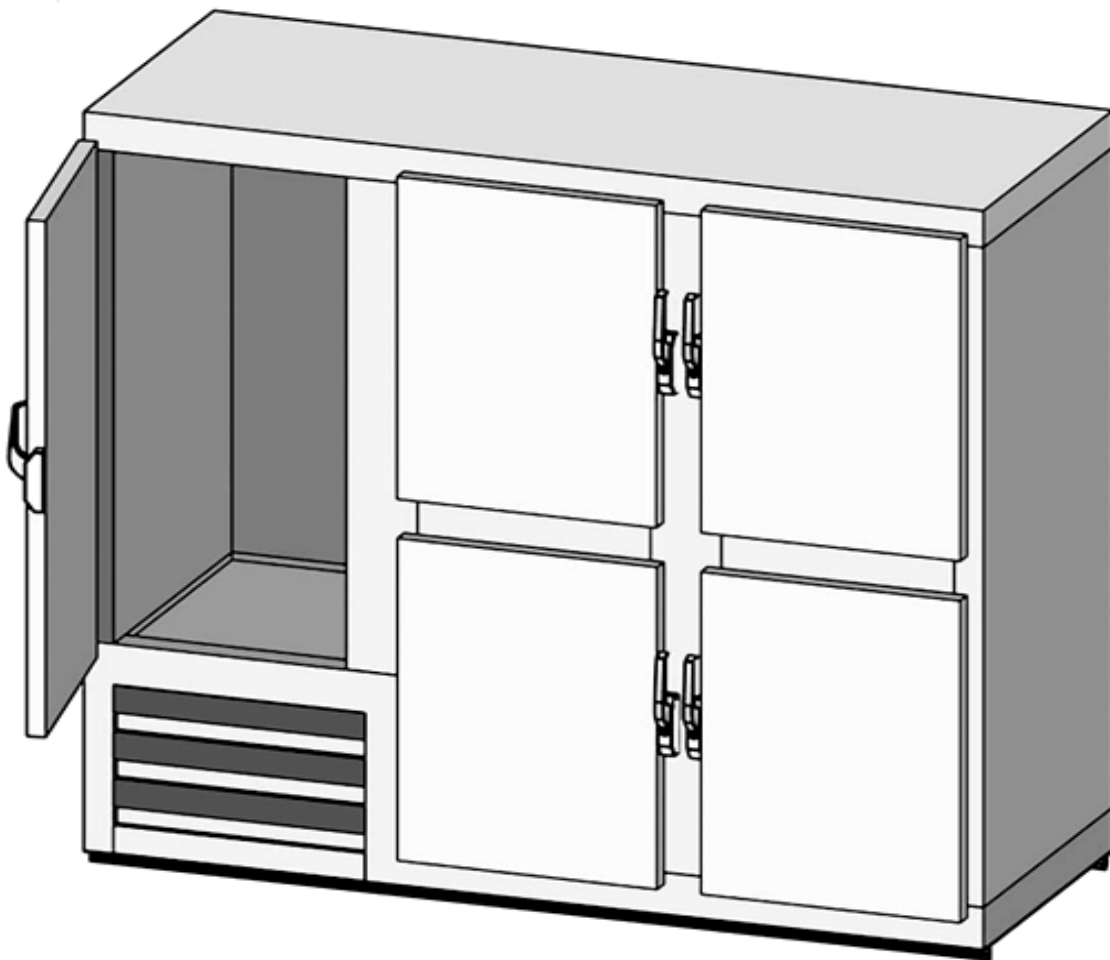


Figure 8 – NAV-65-HT-B Refrigeration Unit

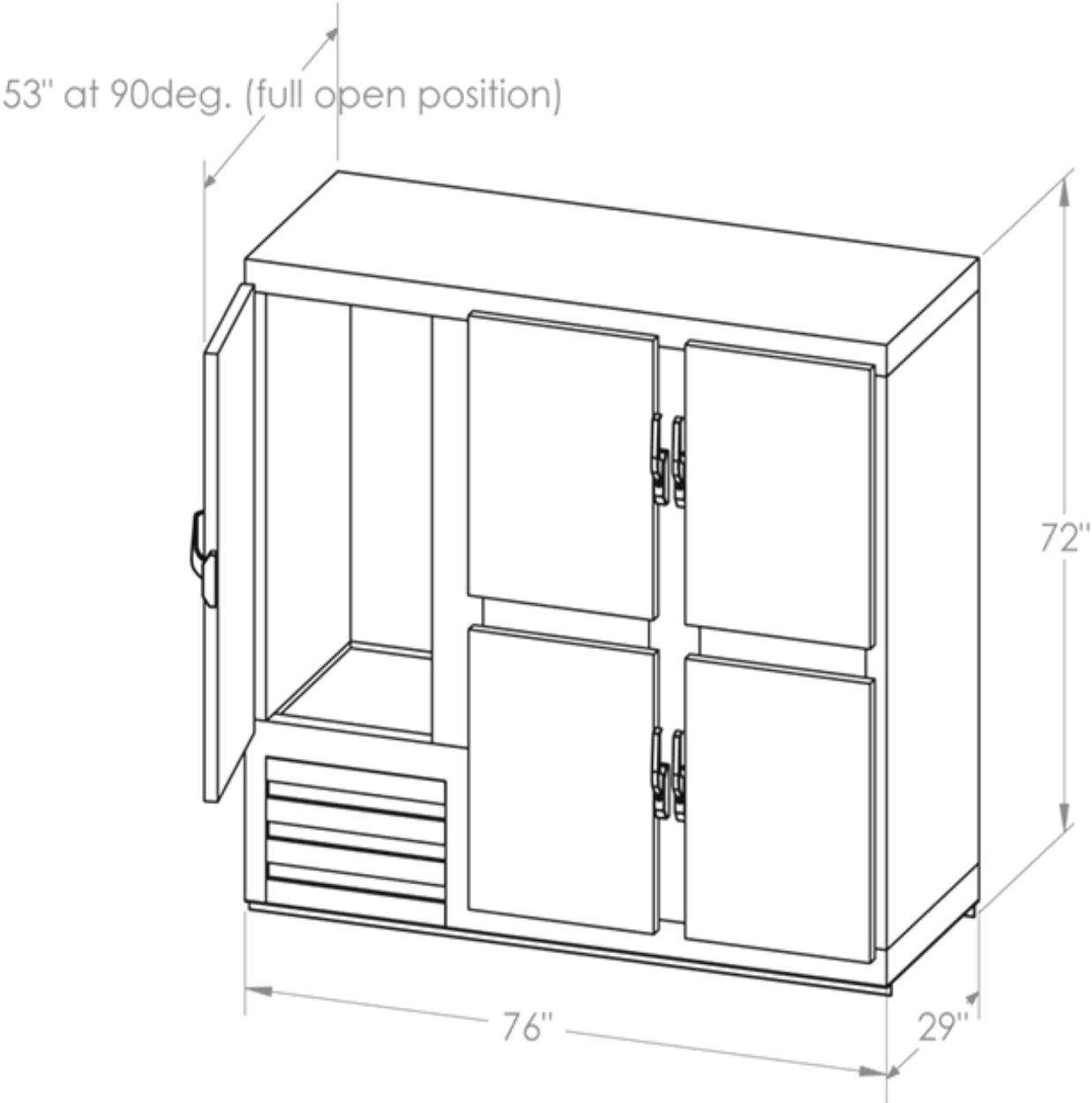


Figure 8A – NAV-65-HT-B Modular Assembly

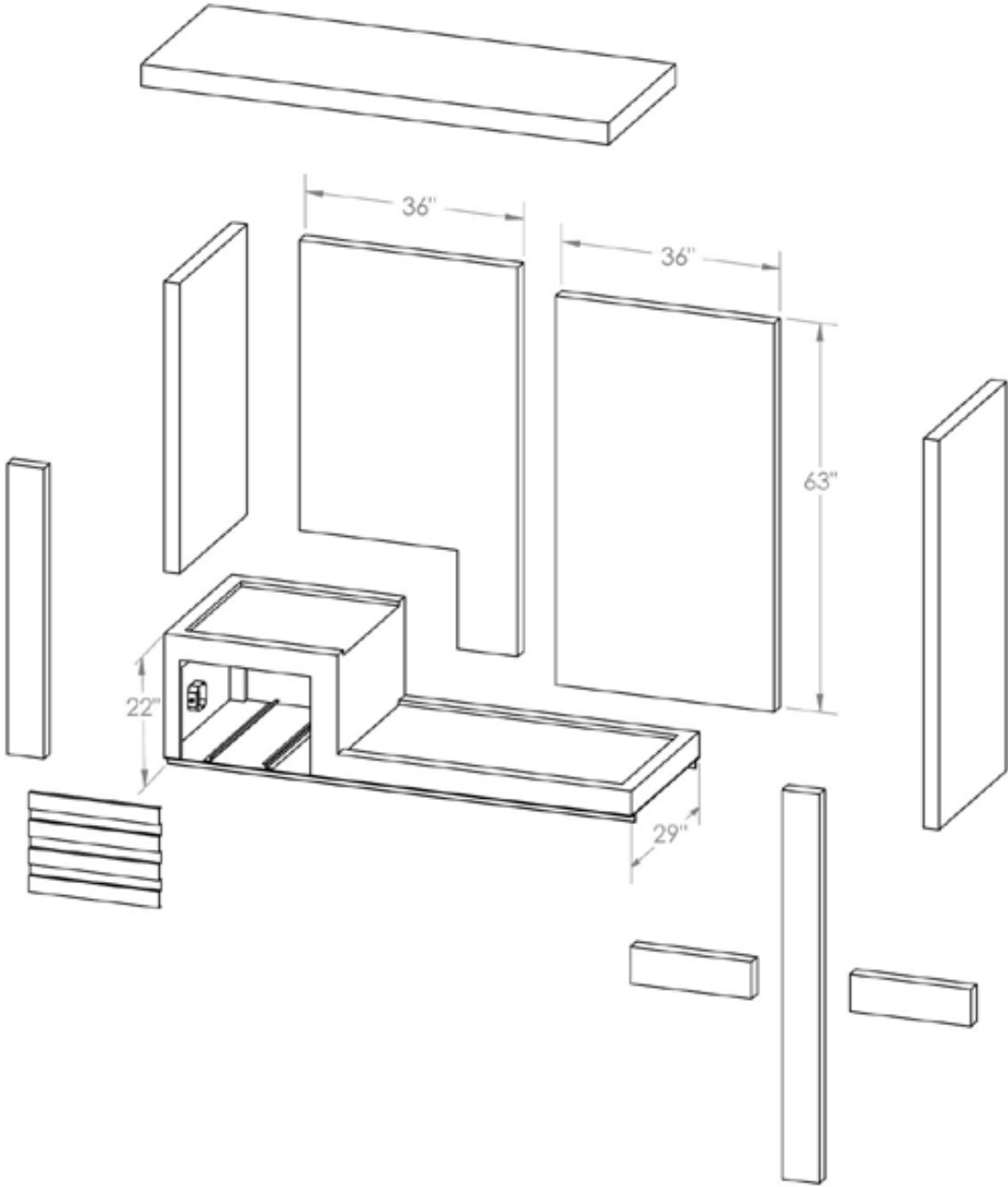


Figure 8B – NAV-65-HT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-65-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>65</b>
WIDTH	<b>76"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>11</b>
NUMBER OF DOORS	<b>5</b>
ASSEMBLED WEIGHT (LBS)	<b>780</b>
CRATED WEIGHT (LBS)	<b>920</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>7500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>10</b>
PHASE	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 8, NAV-65-HT-B Specifications

## Model NAV-75-HT-B REFRIGERATION UNIT

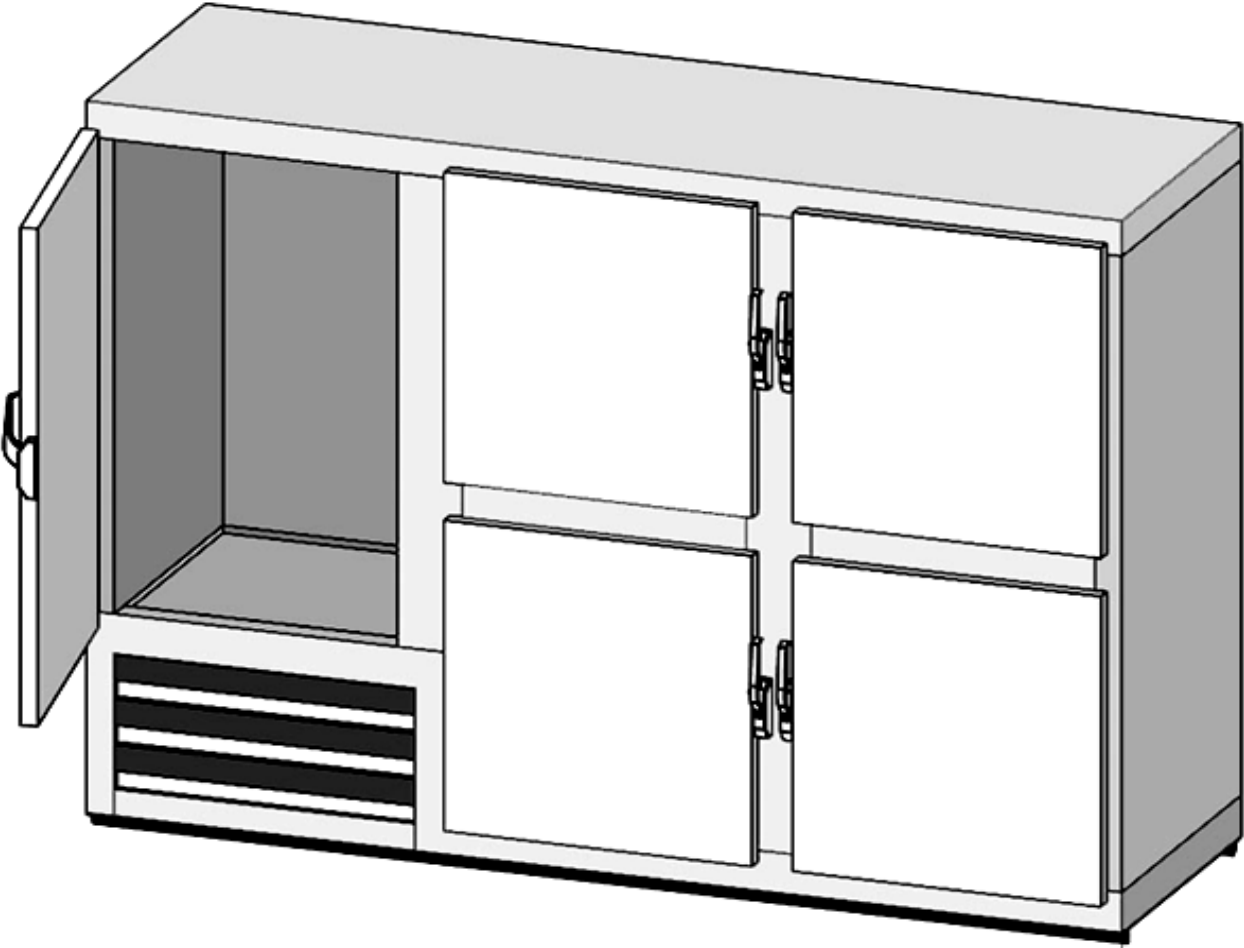


Figure 9 – NAV-75-HT-B Refrigeration Unit

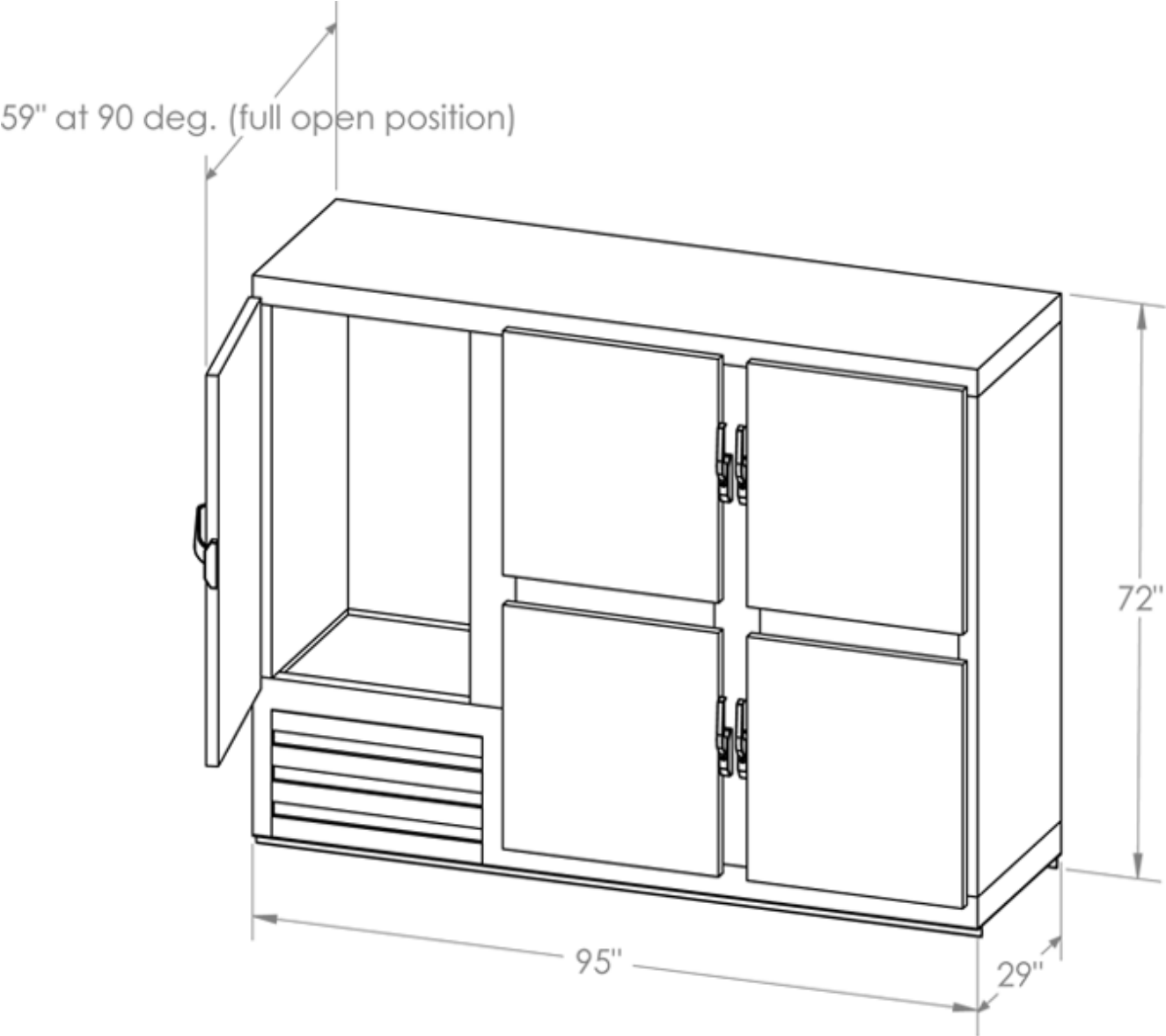


Figure 9A – NAV-75-HT-B Modular Assembly

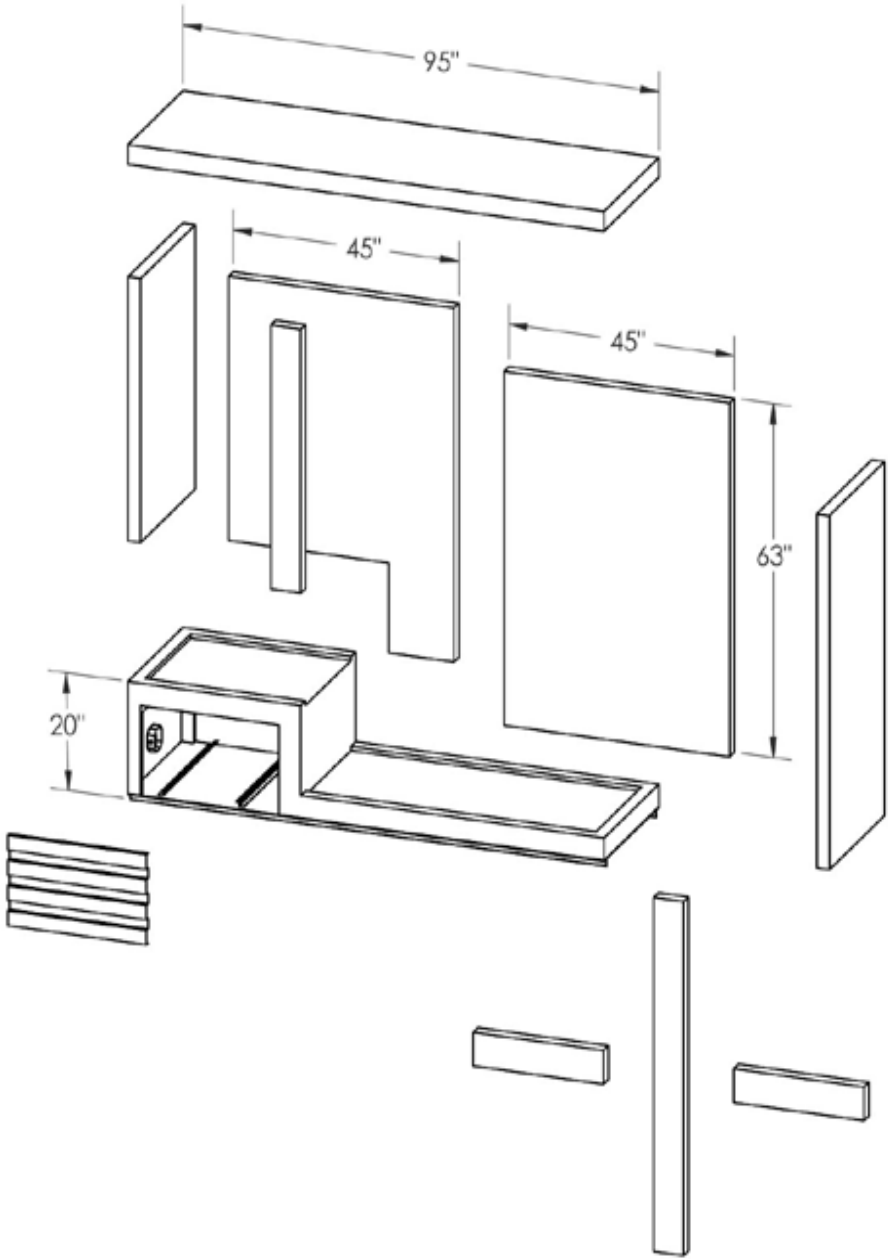


Figure 9B – NAV-75-HT-B Exploded View Shown Without Doors or Compressor



## MODEL SPECIFICATIONS

<b>NAV-75-HT-B Refrigeration Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>75</b>
WIDTH	<b>95"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>11</b>
NUMBER OF DOORS	<b>5</b>
ASSEMBLED WEIGHT (LBS)	<b>880</b>
CRATED WEIGHT (LBS)	<b>1020</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>9000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>11</b>
PHASE	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 9, NAV-75-HT-B Specifications

## CHAPTER 2

# MARINE FREEZERS



## **MARINE FREEZER FEATURES AND DESCRIPTION**

### **OPTIONAL EQUIPMENT**

- Modular Design
- Aluminum Construction
- Digital Thermometer
- Spring Assist Hinges

### **CONSTRUCTION**

- Heavy gauge stainless steel #304 interior and exterior
- Formed in place, CFC Free Urethane insulation, highest R-value
- Stainless steel spill proof shelves
- 2" exterior reading dial thermometer
- Extra heavy duty chrome plated hinges
- Positive keyed locking handle provides best seal
- Interior lighting activated by door switch
- Vinyl extruded replacement gaskets
- Heavy base frame

### **HEAVY DUTY REFRIGERATION SYSTEM**

- Ozone safe R-404A refrigerant
- Wrapped refrigeration system
- Sealed, condensing unit, air or water cooled with pull out design
- Preset temperature controls
- Thermostatic expansion valve

## Model NAV-5-LT-B FREEZER UNIT

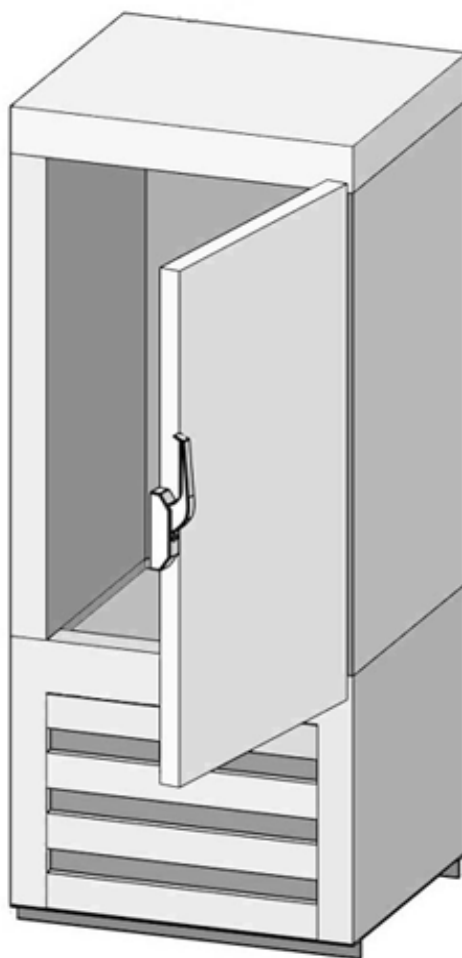


Figure 10 – NAV-5-LT-B Freezer Unit

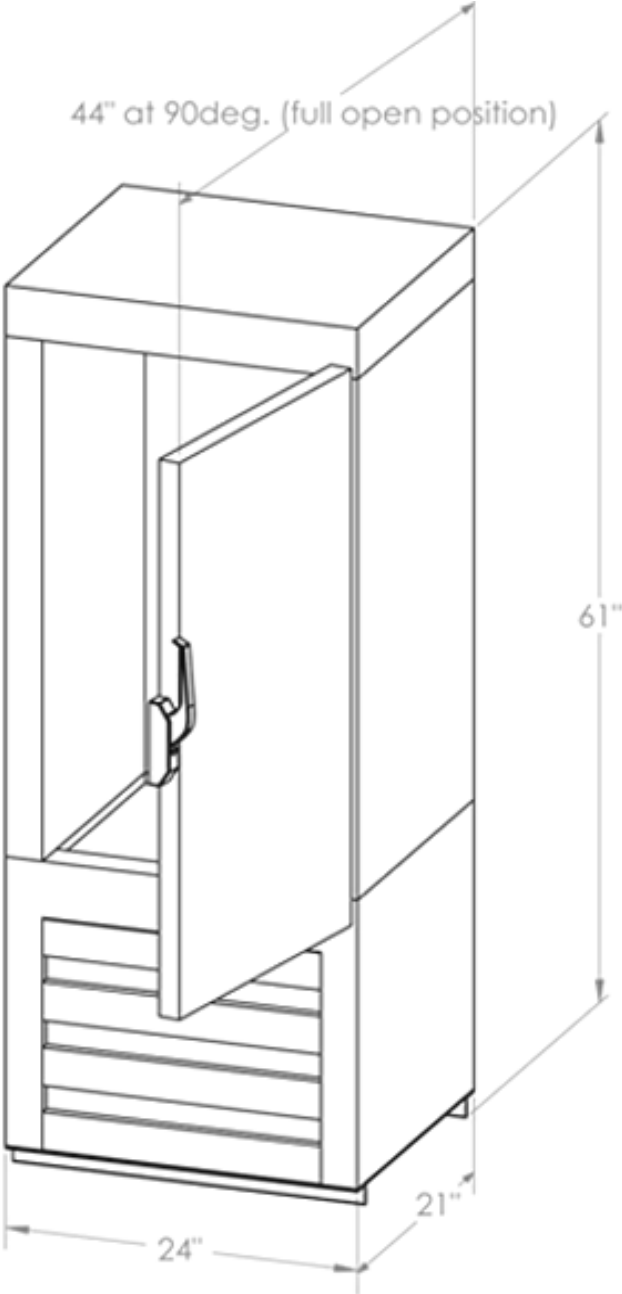


Figure 10A – NAV-5-LT-B Modular Assembly

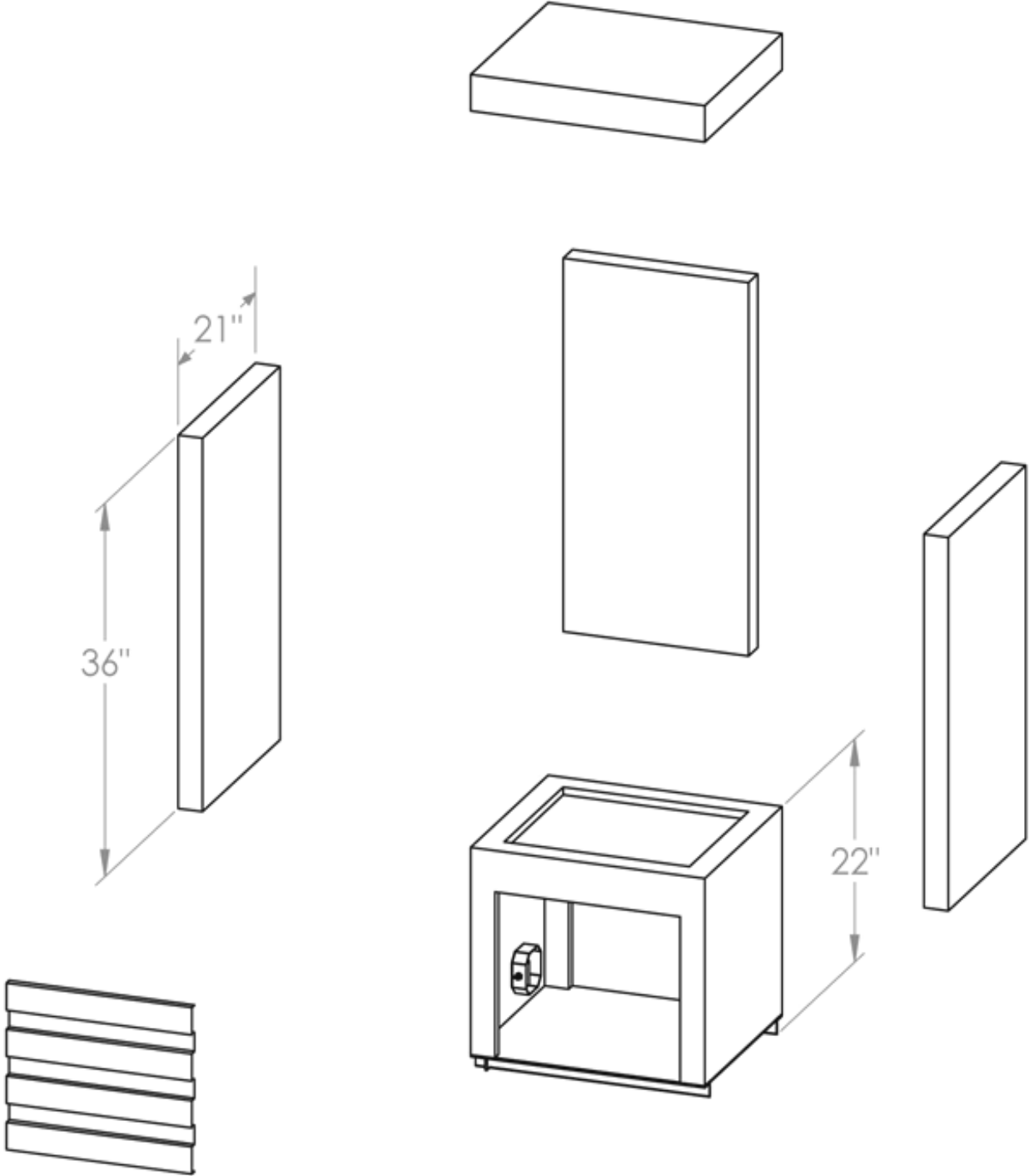


Figure 10B – NAV-5-LT-B Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-5-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>7.5</b>
WIDTH	<b>24"</b>
HEIGHT	<b>61"</b>
DEPTH	<b>21"</b>
BODY DEPTH W/DOORS	<b>23"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>380</b>
CRATED WEIGHT (LBS)	<b>415</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>2800</b>
VOLTAGE	<b>115</b>
AMPERE	<b>6</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 10, NAV-5-LT-B Specifications

## Model NAV-10-LT-B FREEZER UNIT

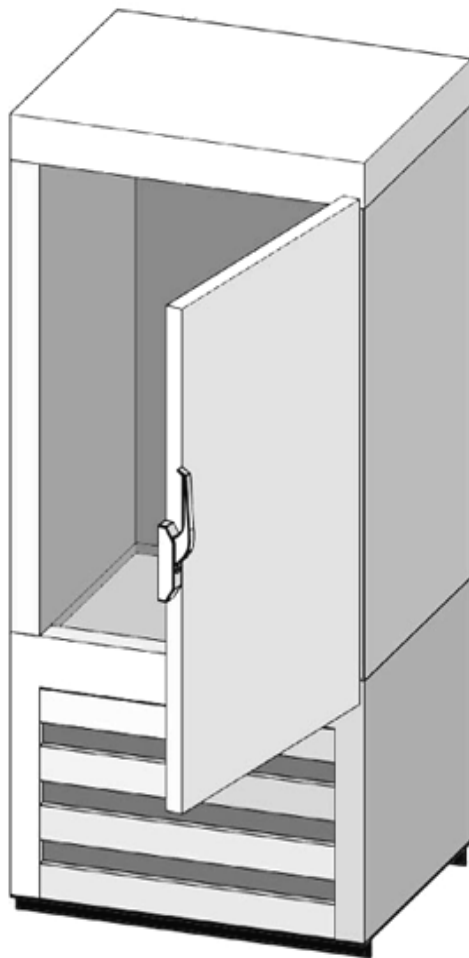


Figure 11 – NAV-10-LT-B Freezer Unit



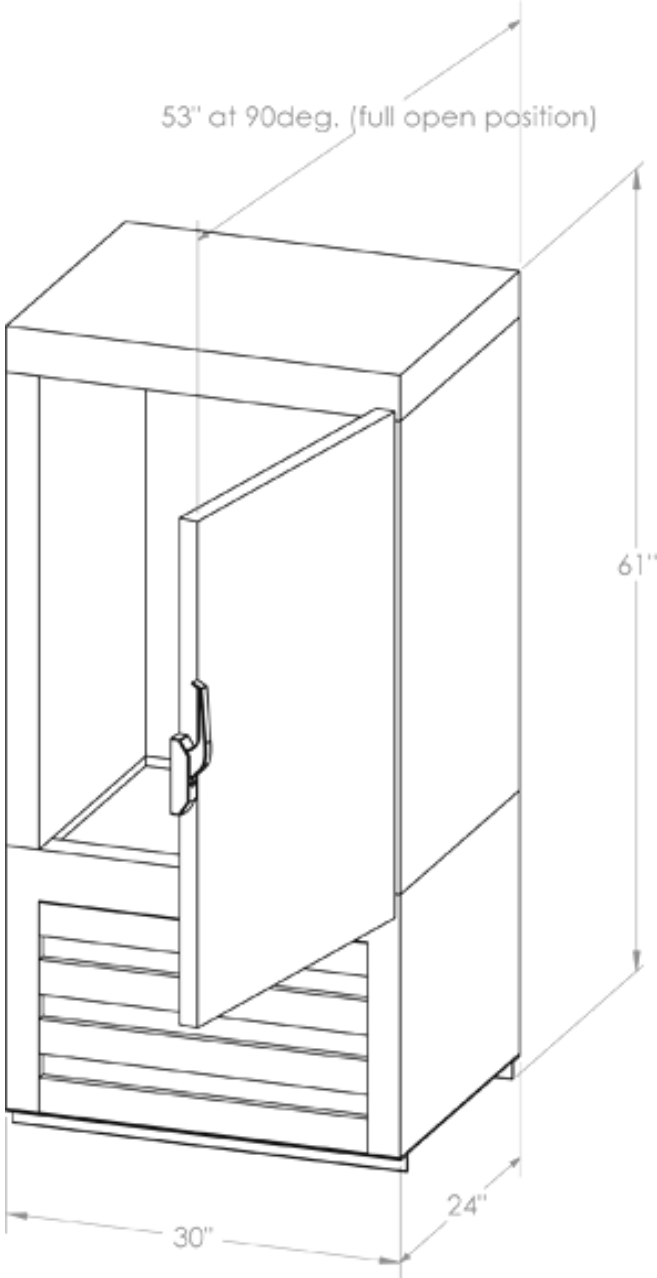


Figure 11A – NAV-10-LT-B Modular Assembly

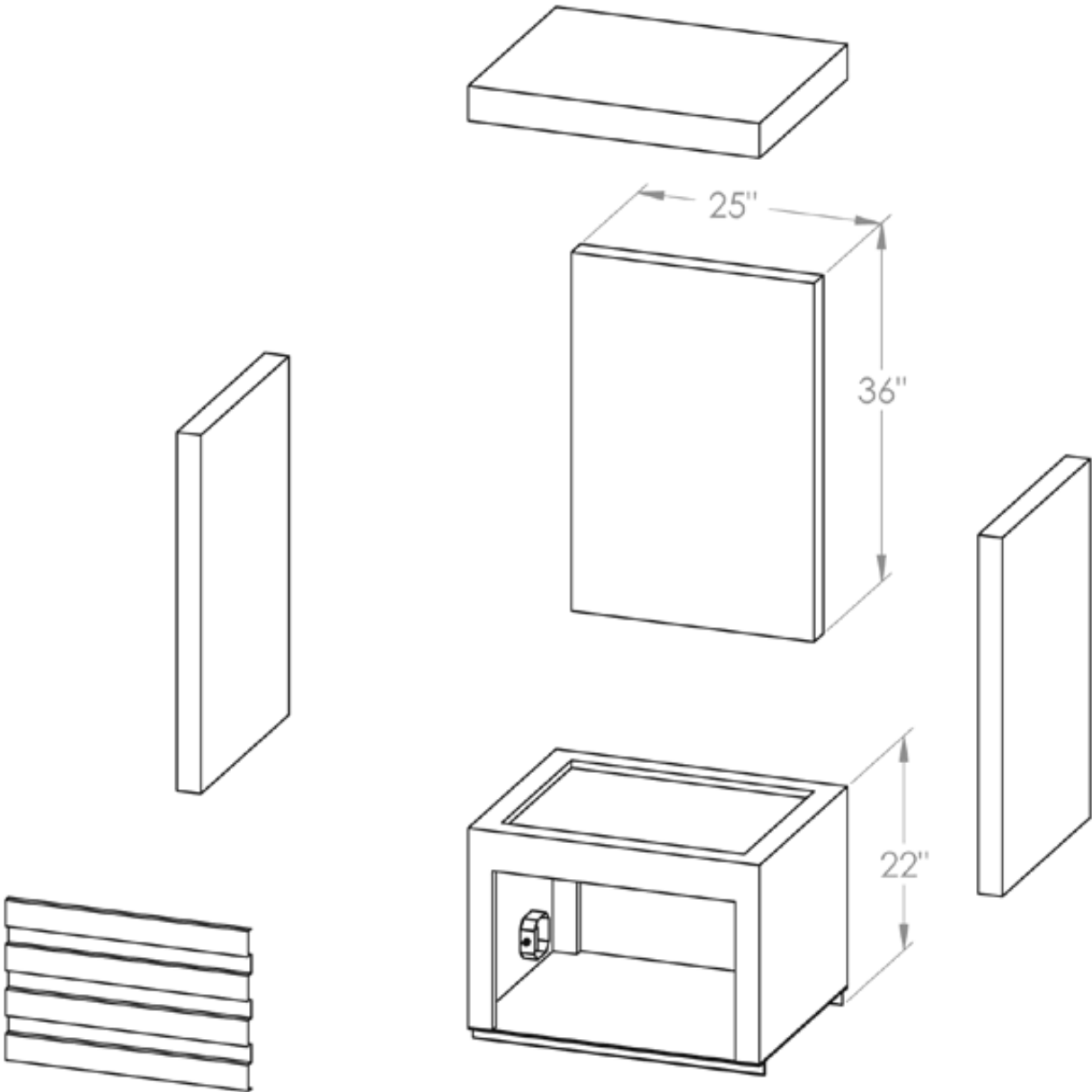


Figure 11B – NAV-10-LT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-10-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>10</b>
WIDTH	<b>30"</b>
HEIGHT	<b>61"</b>
DEPTH	<b>24"</b>
BODY DEPTH W/DOORS	<b>26"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>395</b>
CRATED WEIGHT (LBS)	<b>450</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>3200</b>
VOLTAGE	<b>115</b>
AMPERE	<b>8</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 11, NAV-10-LT-B Specifications

## Model NAV-15-LT-B FREEZER UNIT

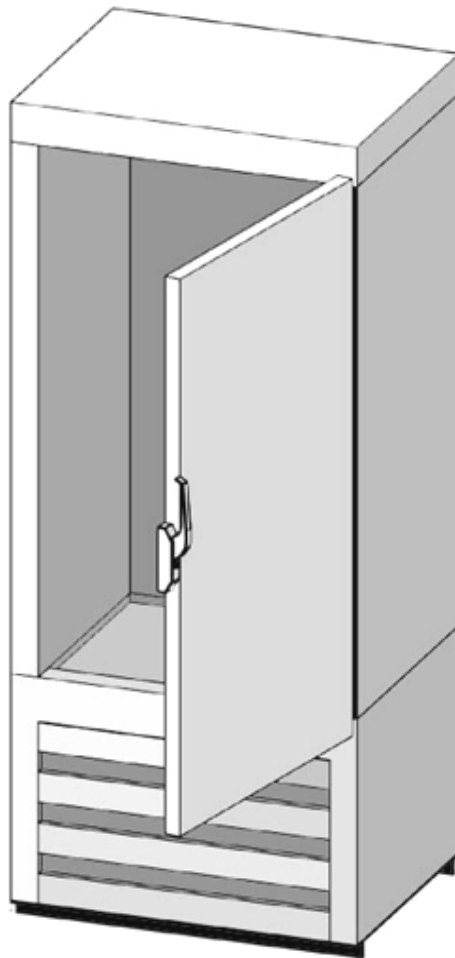


Figure 12 – NAV-15-LT-B Freezer Unit

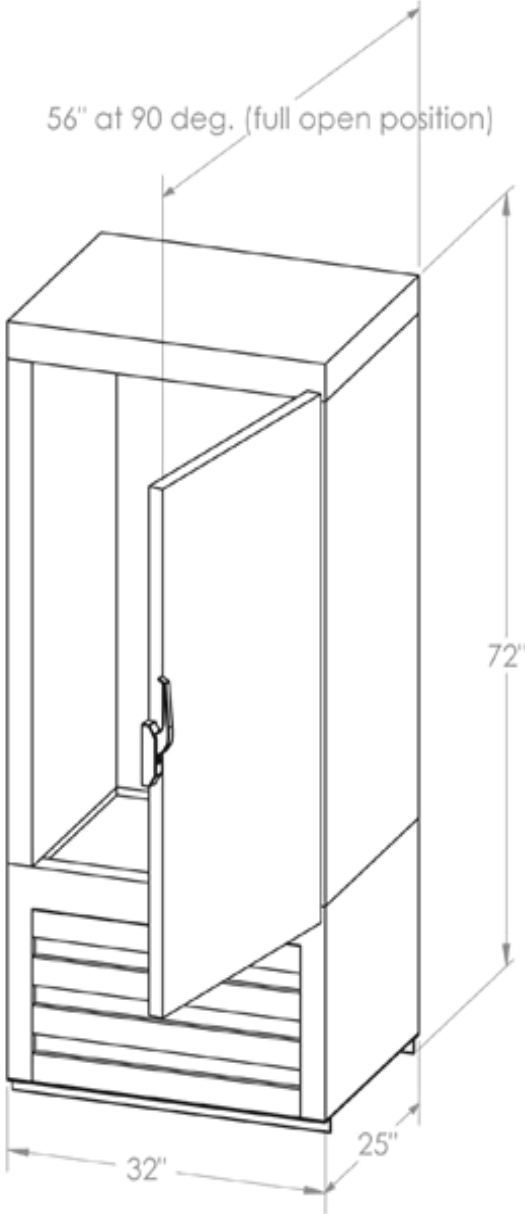


Figure 12A – NAV-15-LT-B Modular Assembly

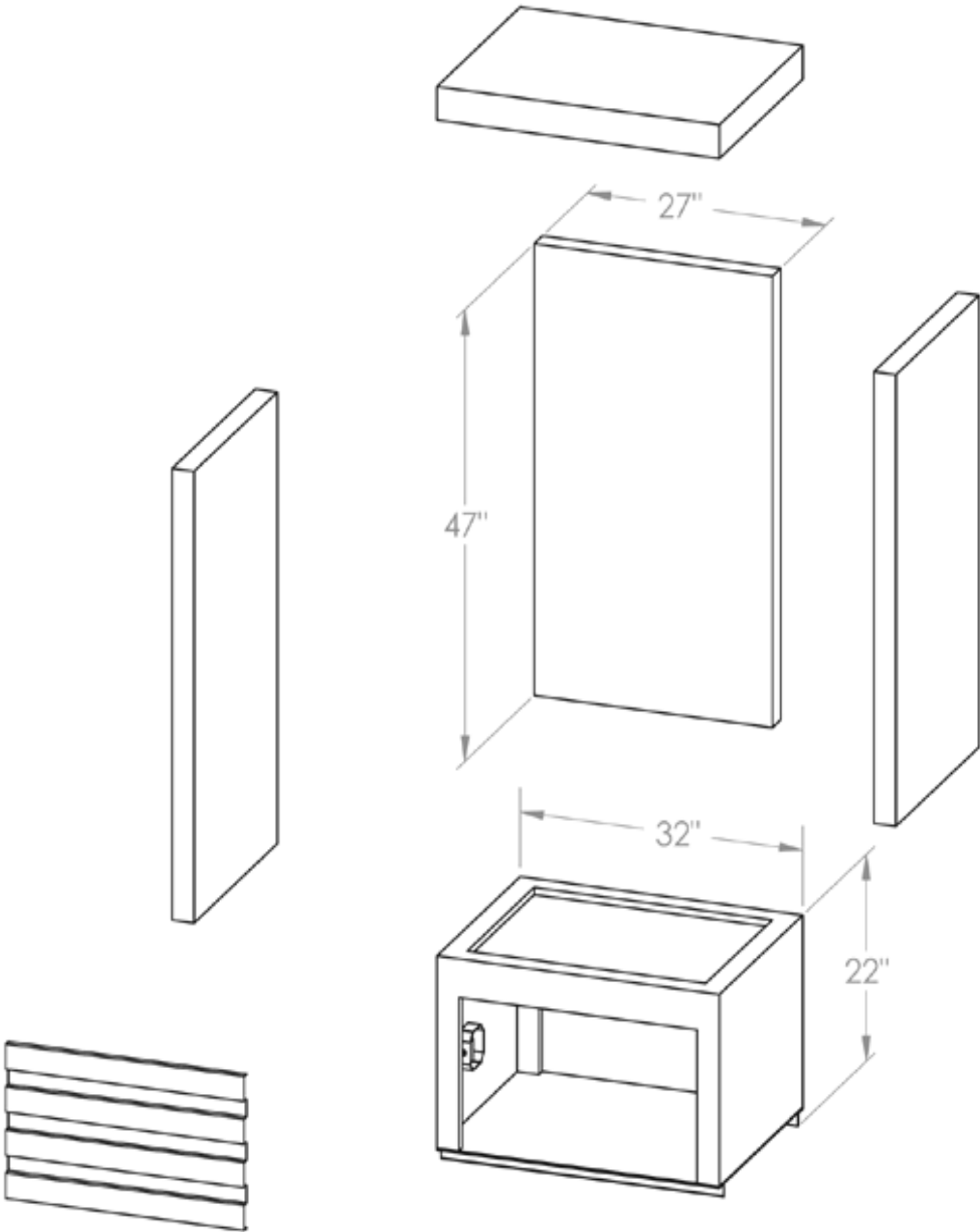


Figure 12B – NAV-15-LT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-15-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>15</b>
WIDTH	<b>32"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>4</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>485</b>
CRATED WEIGHT (LBS)	<b>515</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>3200</b>
VOLTAGE	<b>115</b>
AMPERE	<b>9</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 12, NAV-15-LT-B Specifications

## Model NAV-20-LT-B FREEZER UNIT

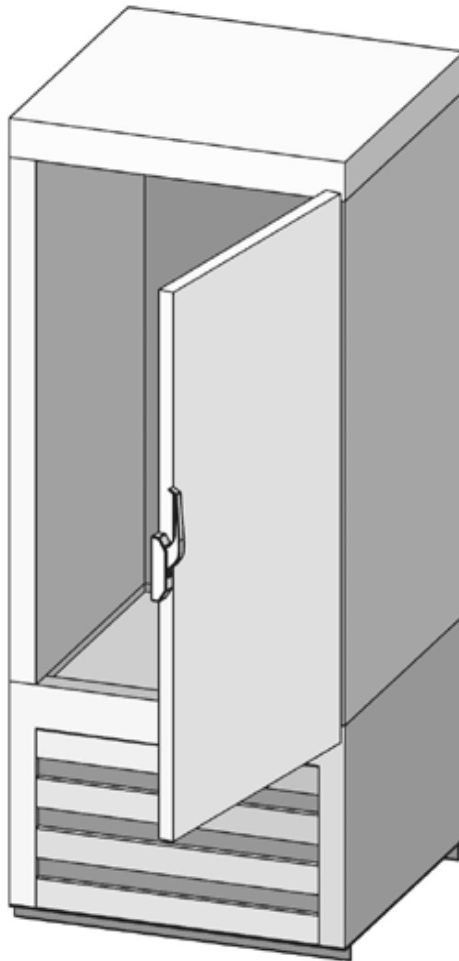


Figure 13 – NAV-20-LT-B Freezer Unit



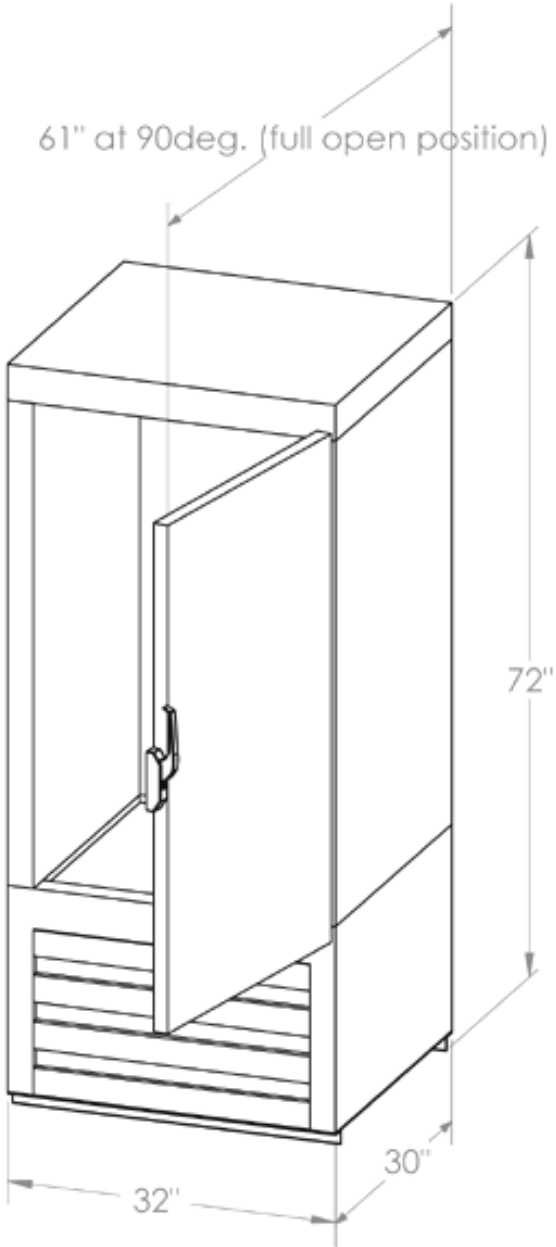


Figure 13A – NAV-20-LT-B Modular Assembly

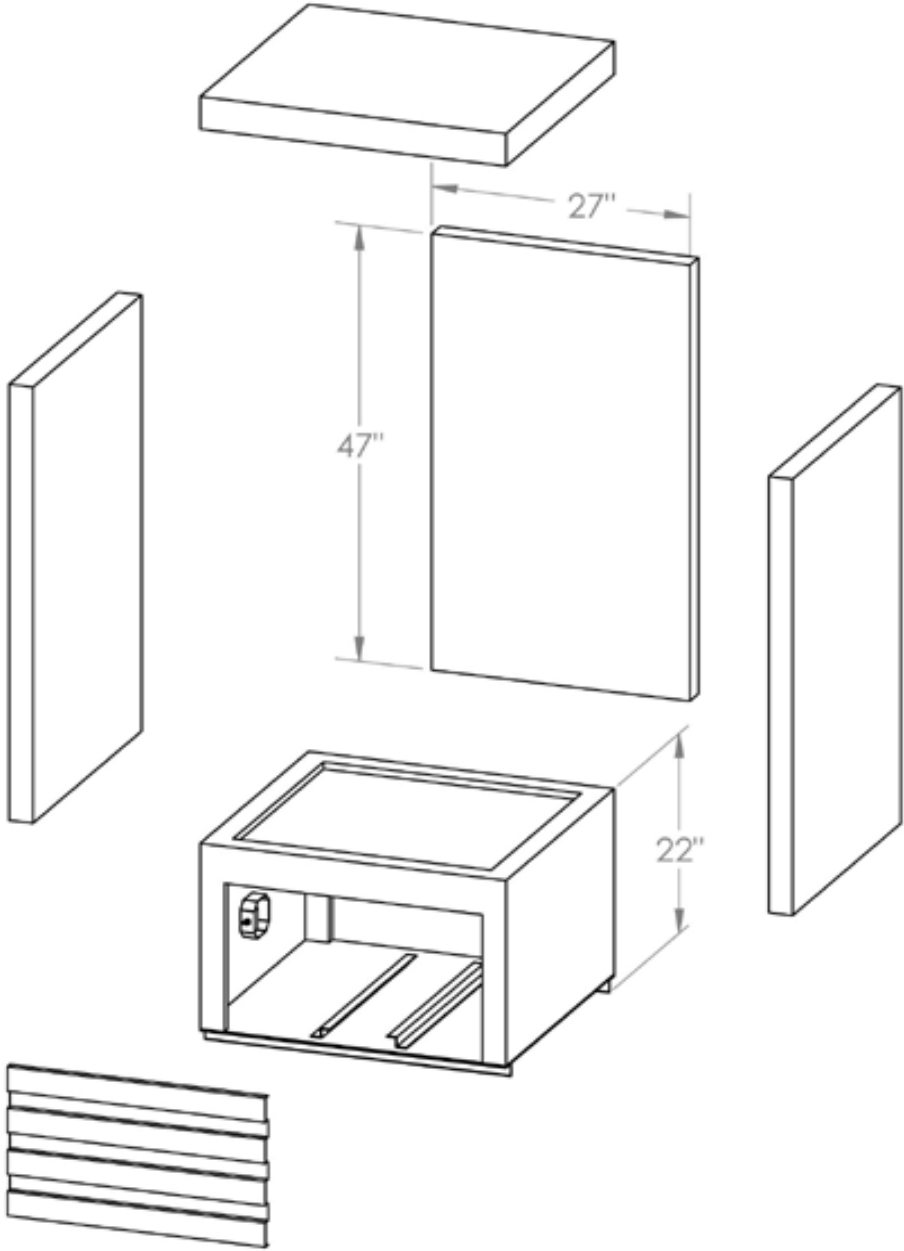


Figure 13B – NAV-20-LT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-20-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>20</b>
WIDTH	<b>32"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>30"</b>
BODY DEPTH W/DOORS	<b>32"</b>
NUMBER OF SHELVES	<b>4</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>510</b>
CRATED WEIGHT (LBS)	<b>640</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>5200</b>
VOLTAGE	<b>115</b>
AMPERE	<b>9</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 13, NAV-20-LT-B Specifications

## Model NAV-30-LT-B FREEZER UNIT

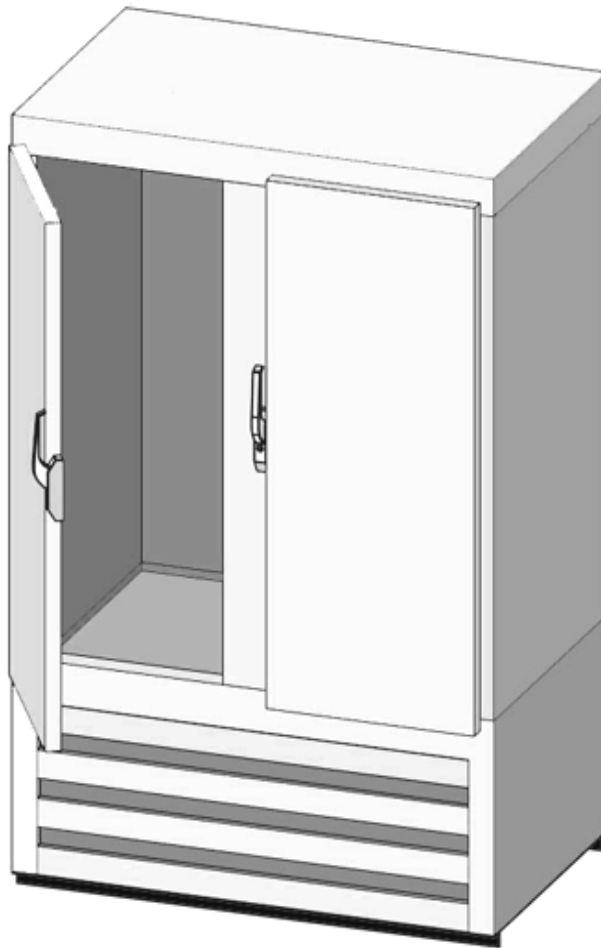


Figure 14 – NAV-30-LT-B Freezer Unit

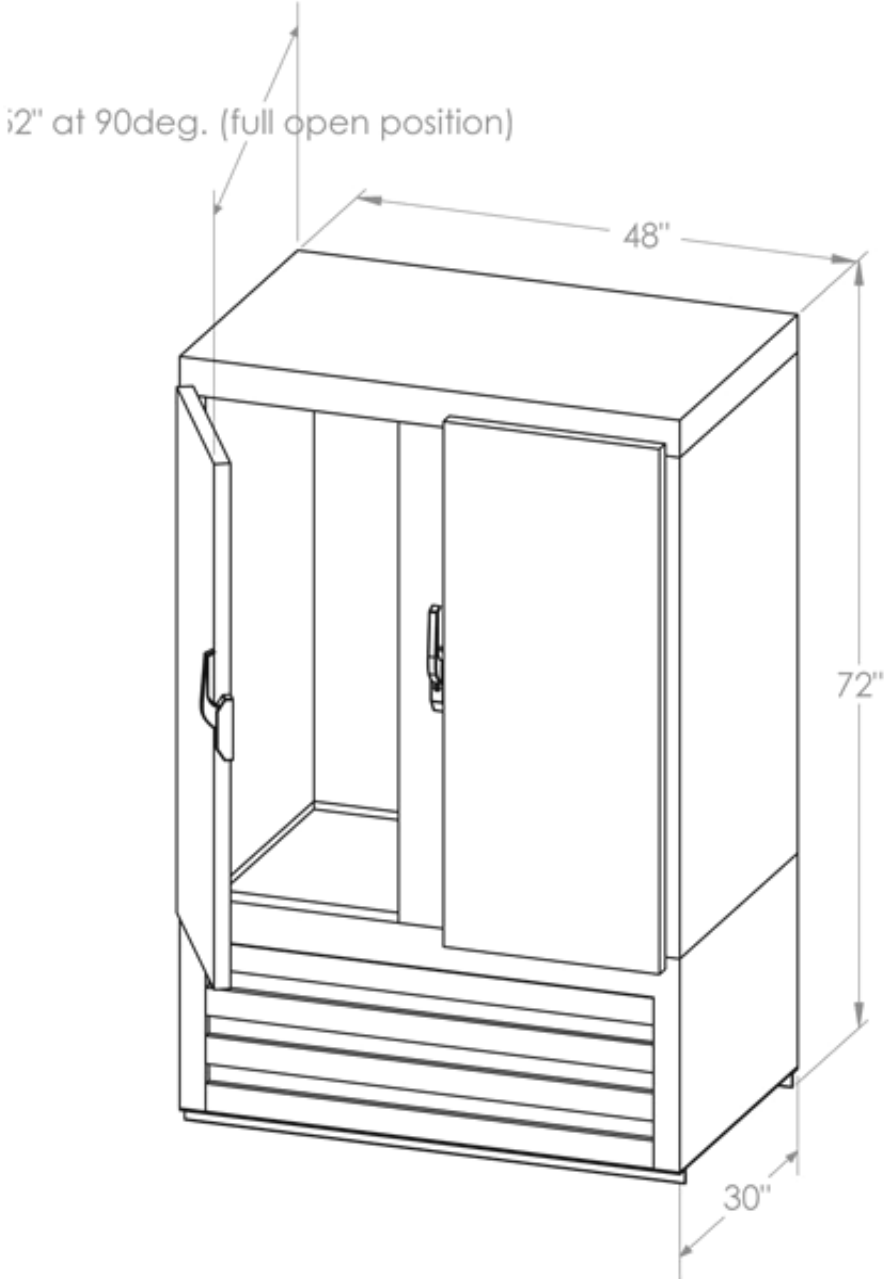


Figure 14A – NAV-30-LT-B Modular Assembly

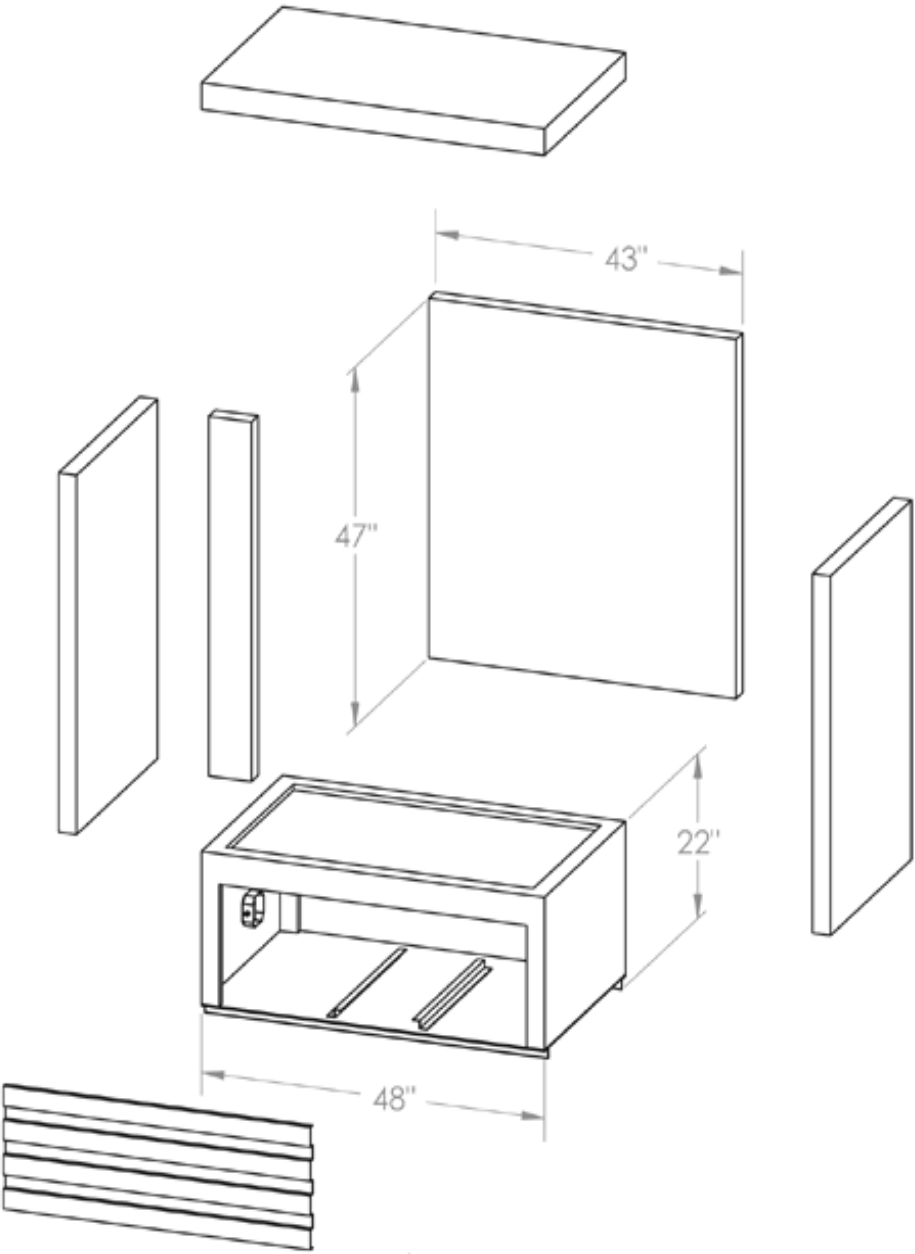


Figure 14B – NAV-30-LT-B Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-30-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>30</b>
WIDTH	<b>48"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>30"</b>
BODY DEPTH W/DOORS	<b>32"</b>
NUMBER OF SHELVES	<b>6</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>525</b>
CRATED WEIGHT (LBS)	<b>650</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>5800</b>
VOLTAGE	<b>115</b>
AMPERE	<b>11</b>
PHASE	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 14, NAV-30-LT-B Specifications

## Model NAV-40-LT-B FREEZER UNIT

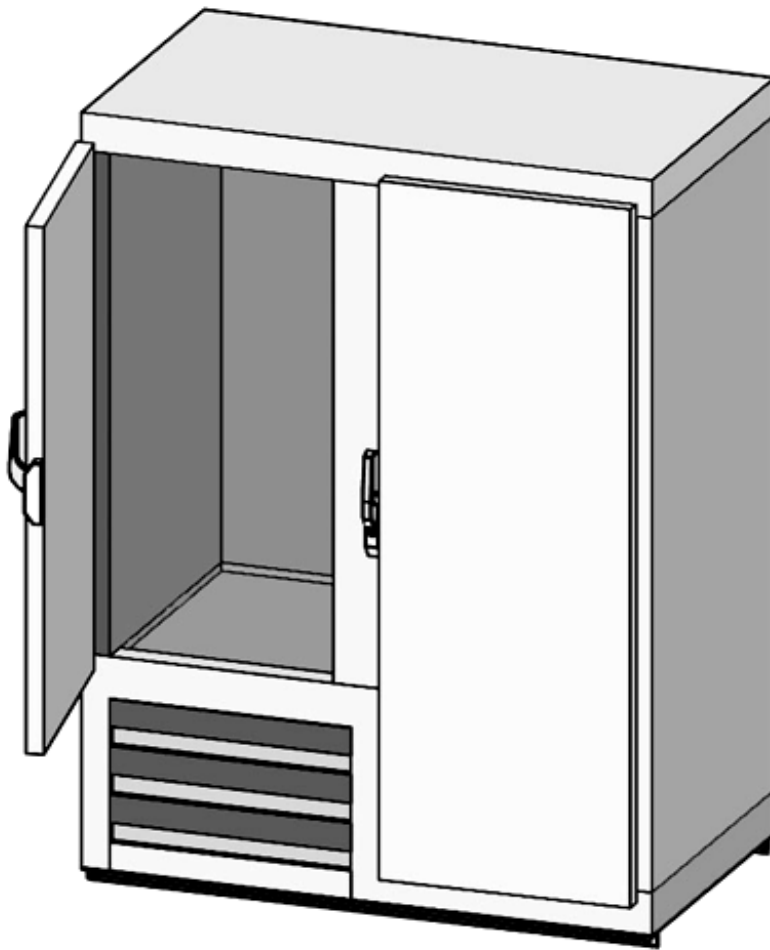


Figure 15 – NAV-40-LT-B Freezer Unit



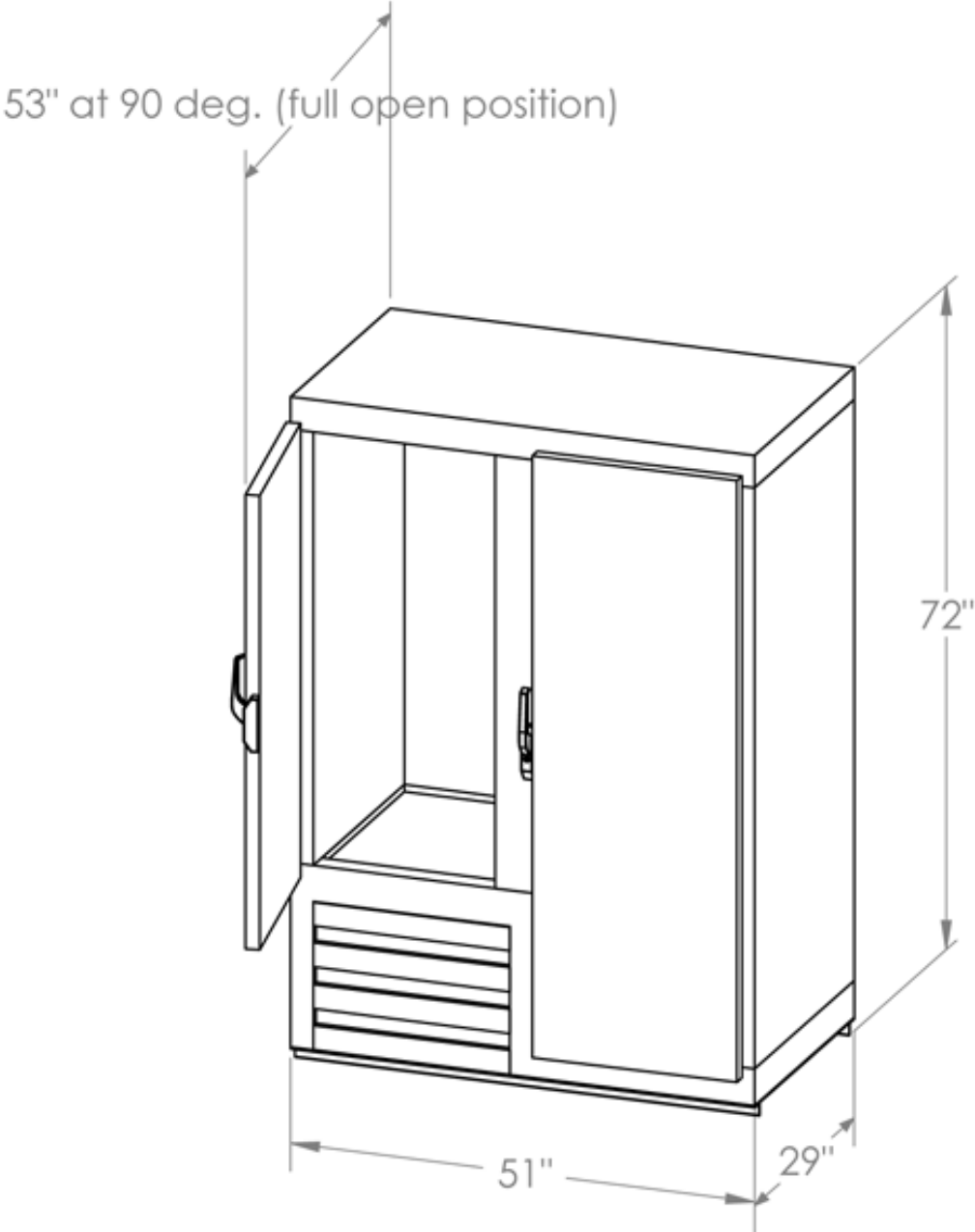


Figure 15A – NAV-40-LT-B Modular Assembly

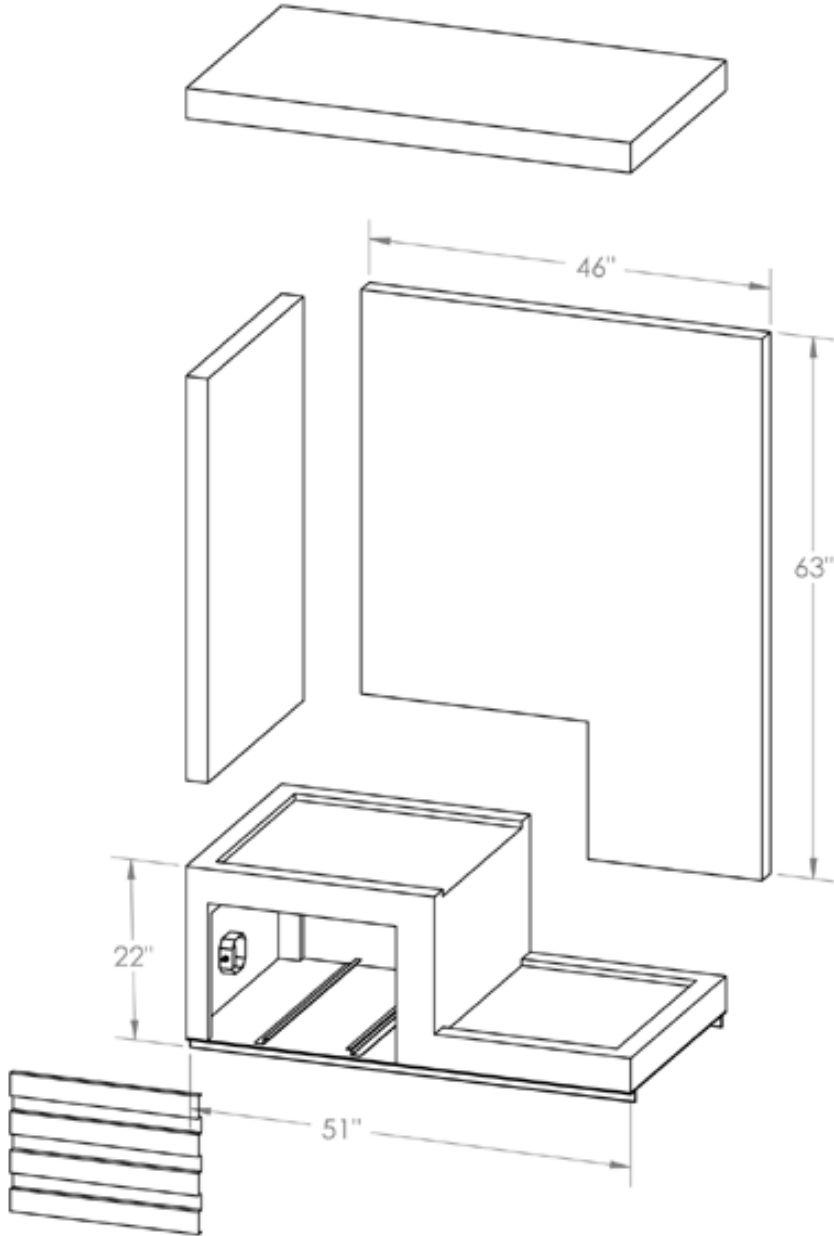


Figure 15B – NAV-40-LT-B Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-40-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>40</b>
WIDTH	<b>51"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>7</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>580</b>
CRATED WEIGHT (LBS)	<b>700</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>7500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>10</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 15, NAV-40-LT-B Specifications

## Model NAV-50-LT-B FREEZER UNIT

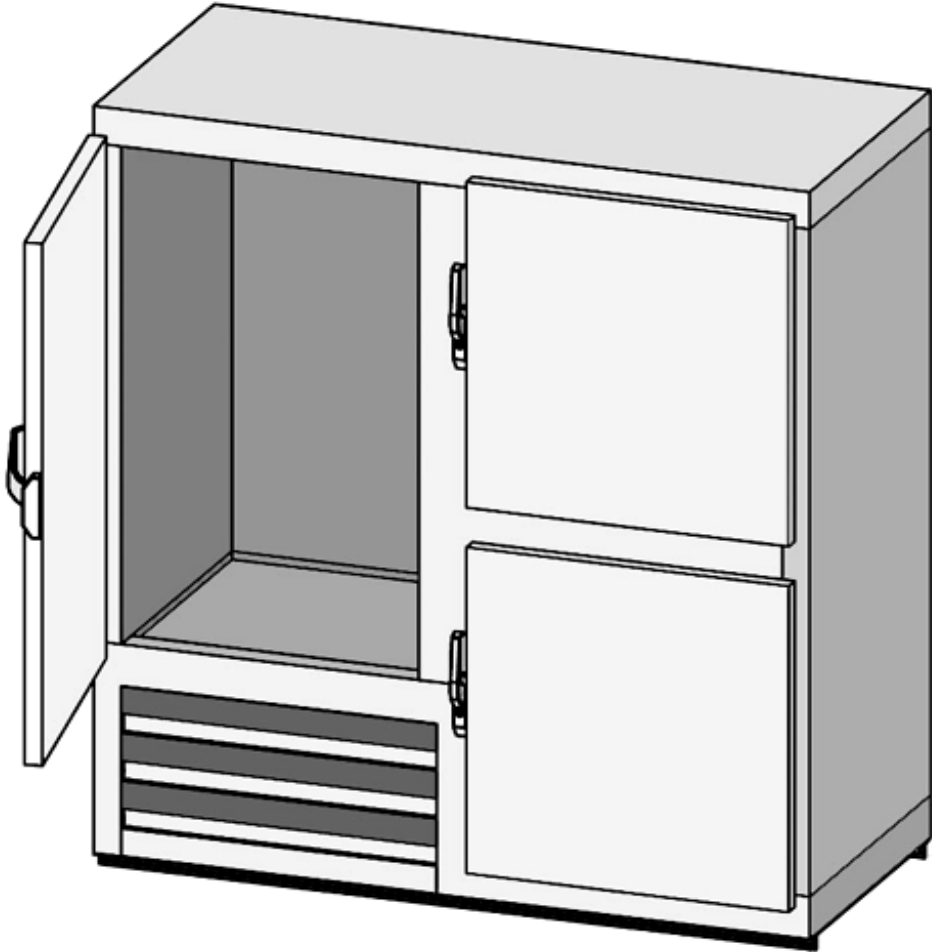


Figure 16 – NAV-50-LT-B Freezer Unit

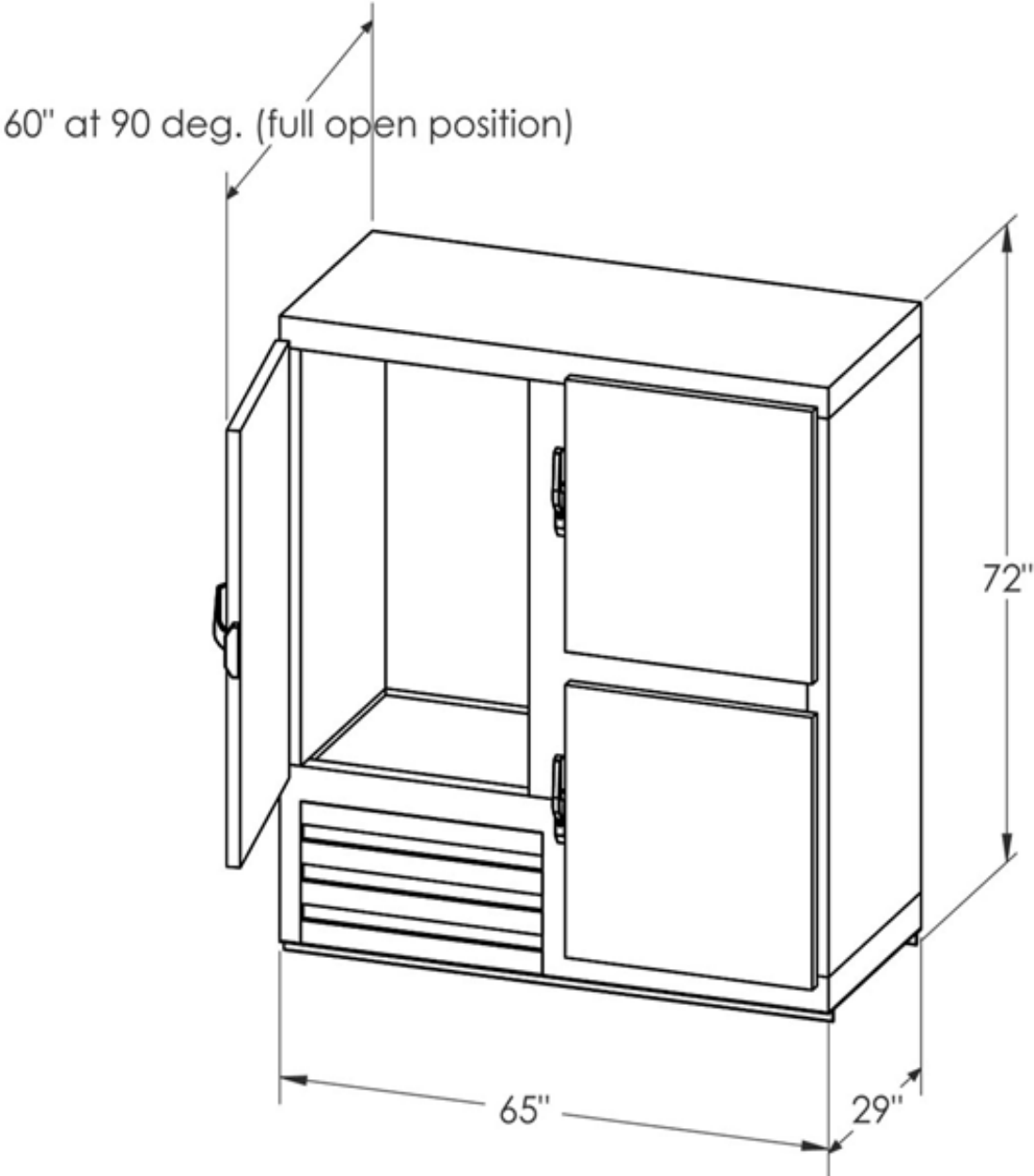


Figure 16A – NAV-50-LT-B Modular Assembly

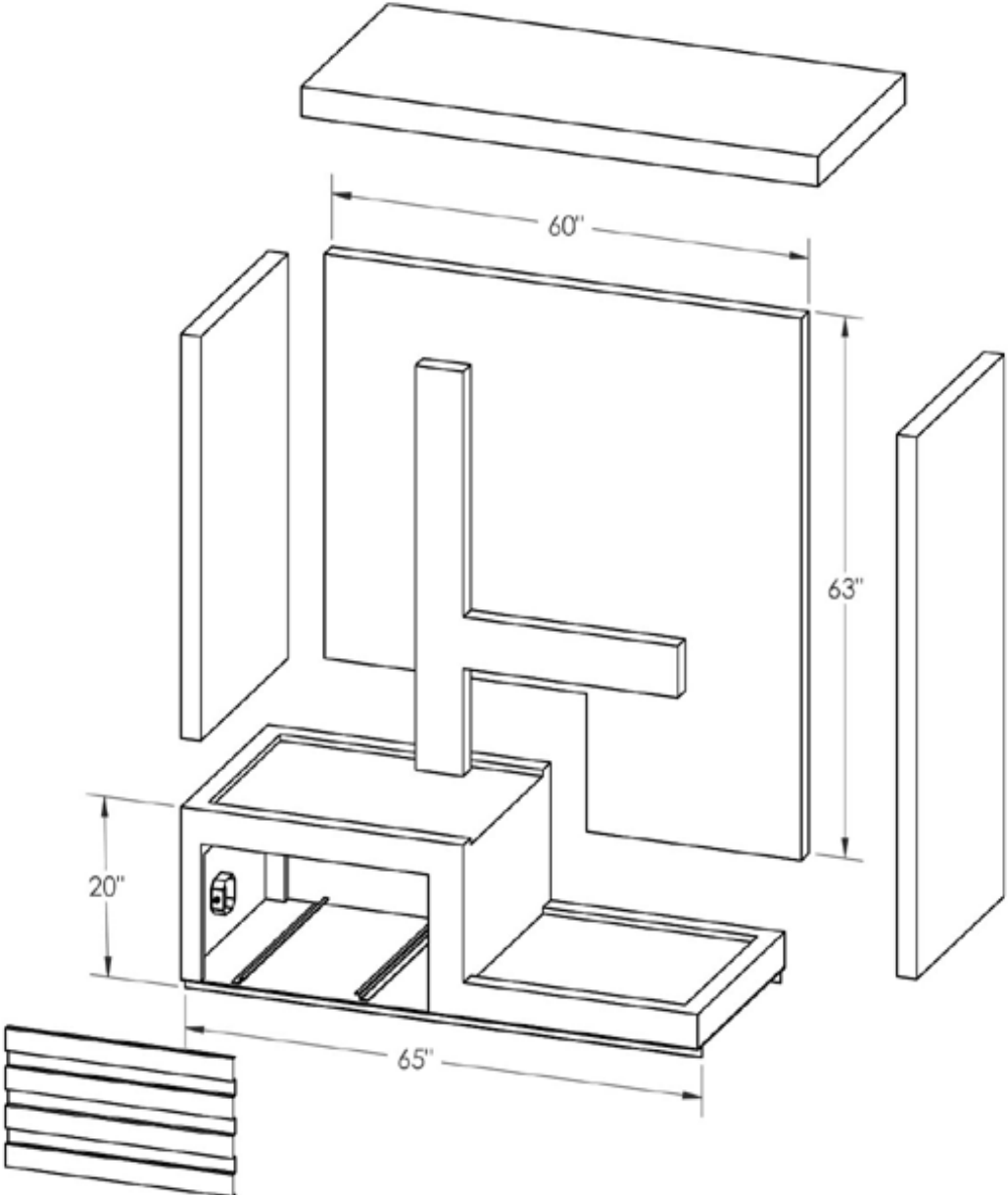


Figure 16B – NAV-50-LT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-50-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>50</b>
WIDTH	<b>65"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>7</b>
NUMBER OF DOORS	<b>3</b>
ASSEMBLED WEIGHT (LBS)	<b>640</b>
CRATED WEIGHT (LBS)	<b>750</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>6500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>11</b>
PHASE	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 16, NAV-50-LT-B Specifications

## Model NAV-65-LT-B FREEZER UNIT

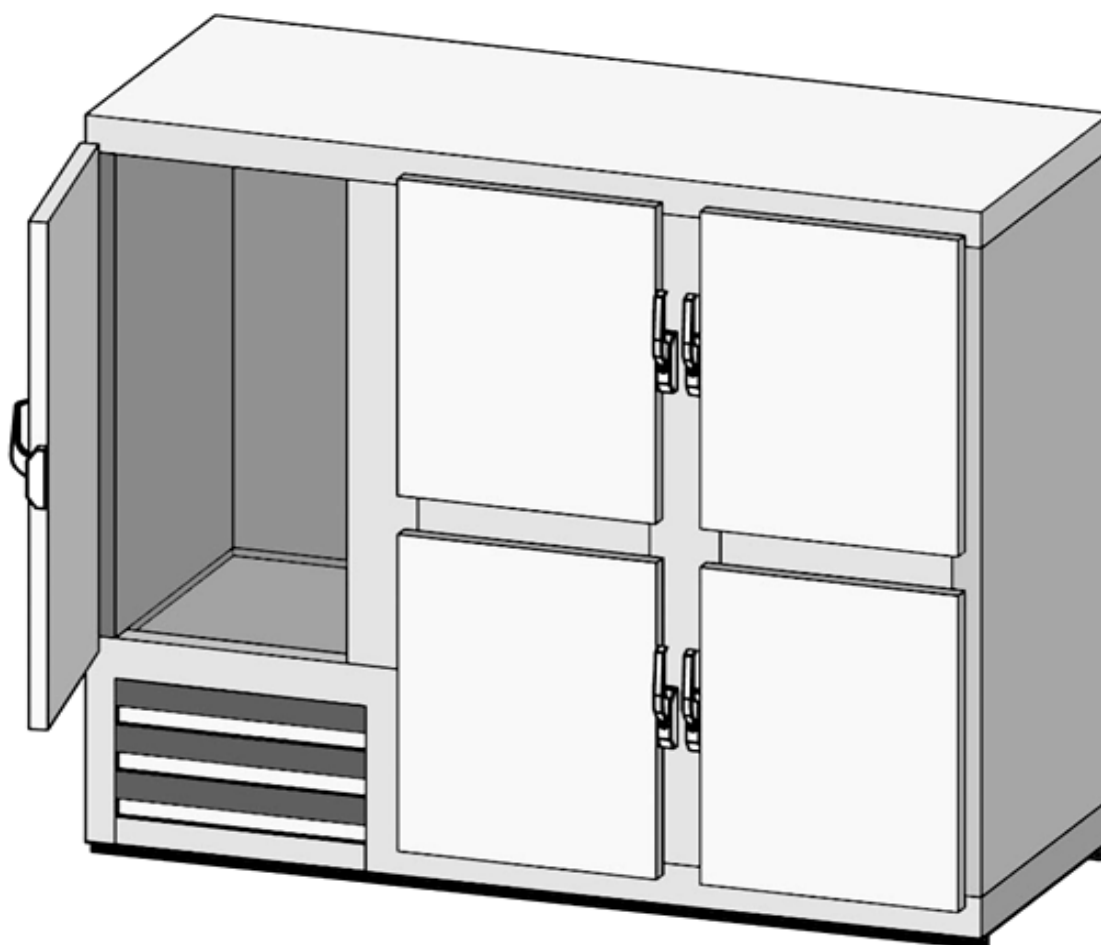


Figure 17 – NAV-65-LT-B Freezer Unit



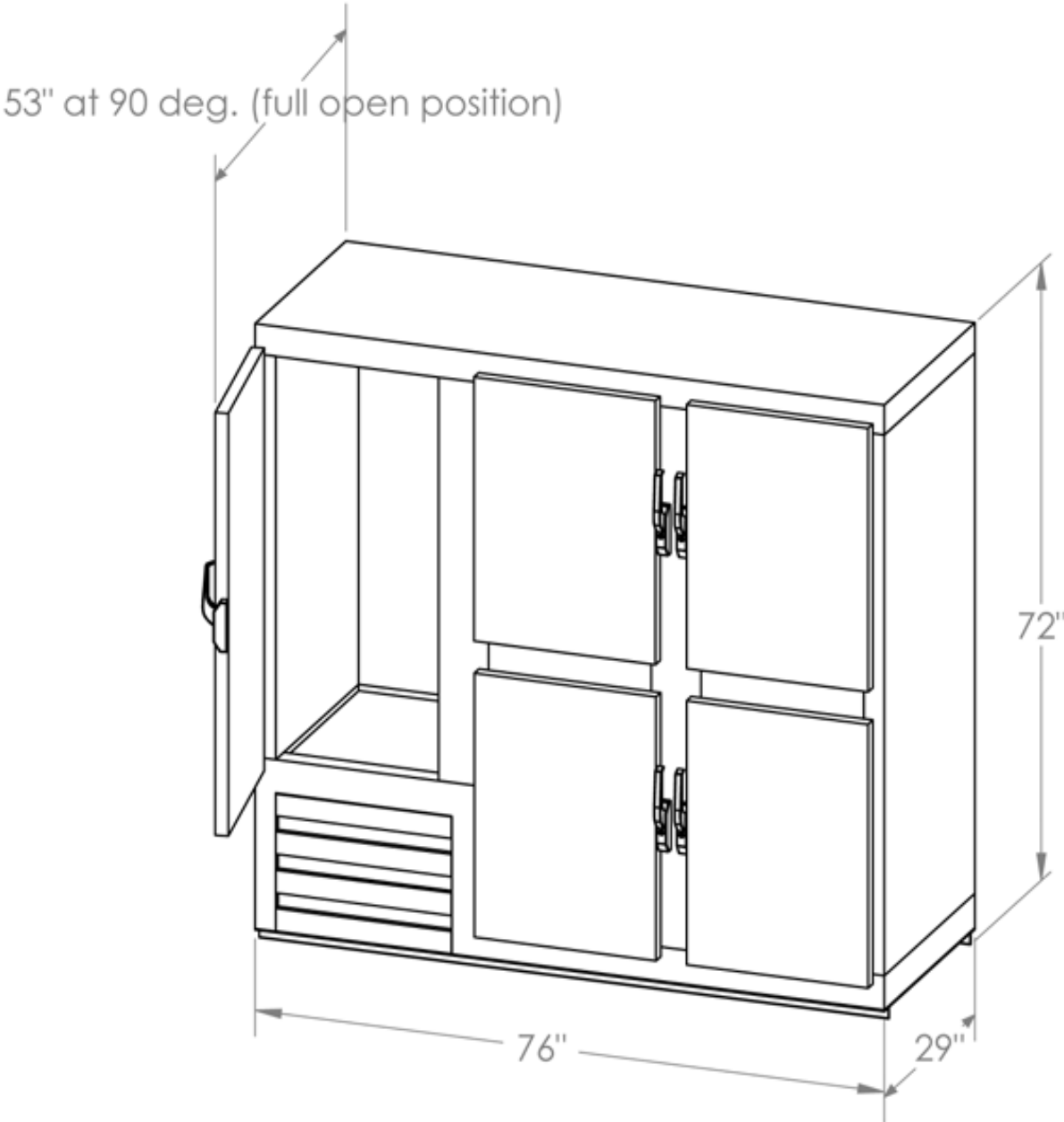


Figure 17A – NAV-65-LT-B Modular Assembly

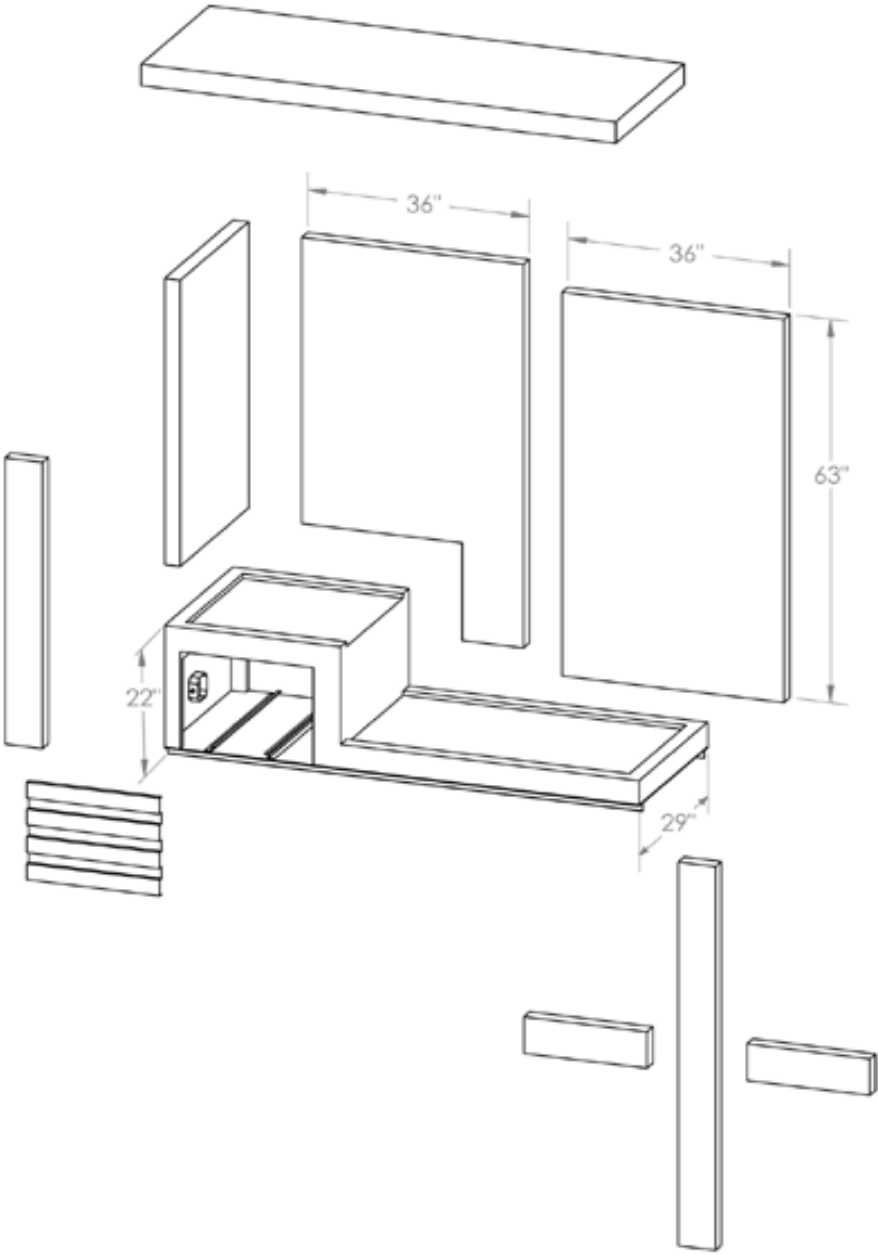


Figure 17B – NAV-65-LT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-65-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>65</b>
WIDTH	<b>76"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>11</b>
NUMBER OF DOORS	<b>5</b>
ASSEMBLED WEIGHT (LBS)	<b>685</b>
CRATED WEIGHT (LBS)	<b>805</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>7500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>11</b>
PHASE	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 17, NAV-65-LT-B Specifications

# Model NAV-75-LT-B FREEZER UNIT

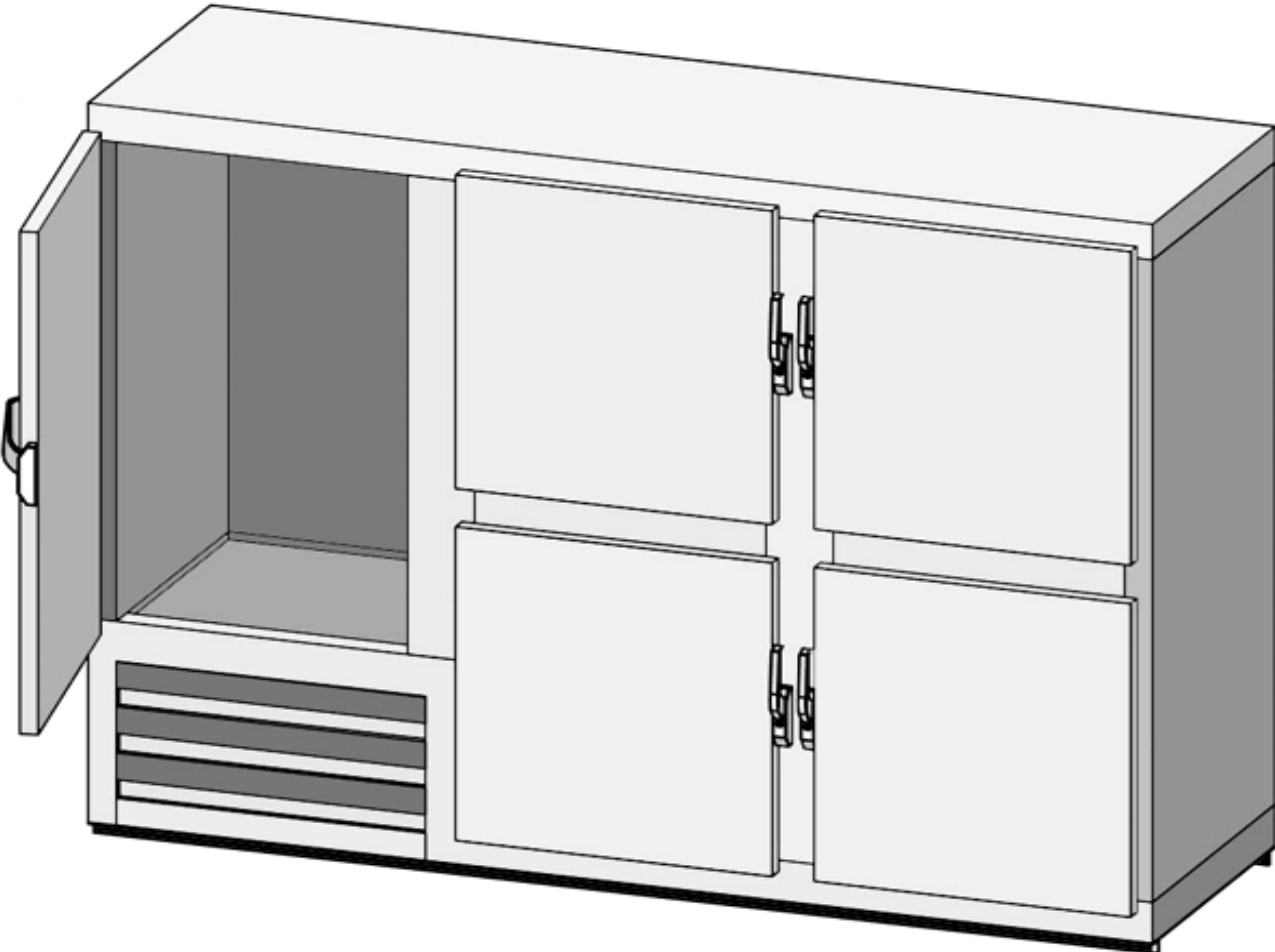


Figure 18 – NAV-75-LT-B Freezer Unit

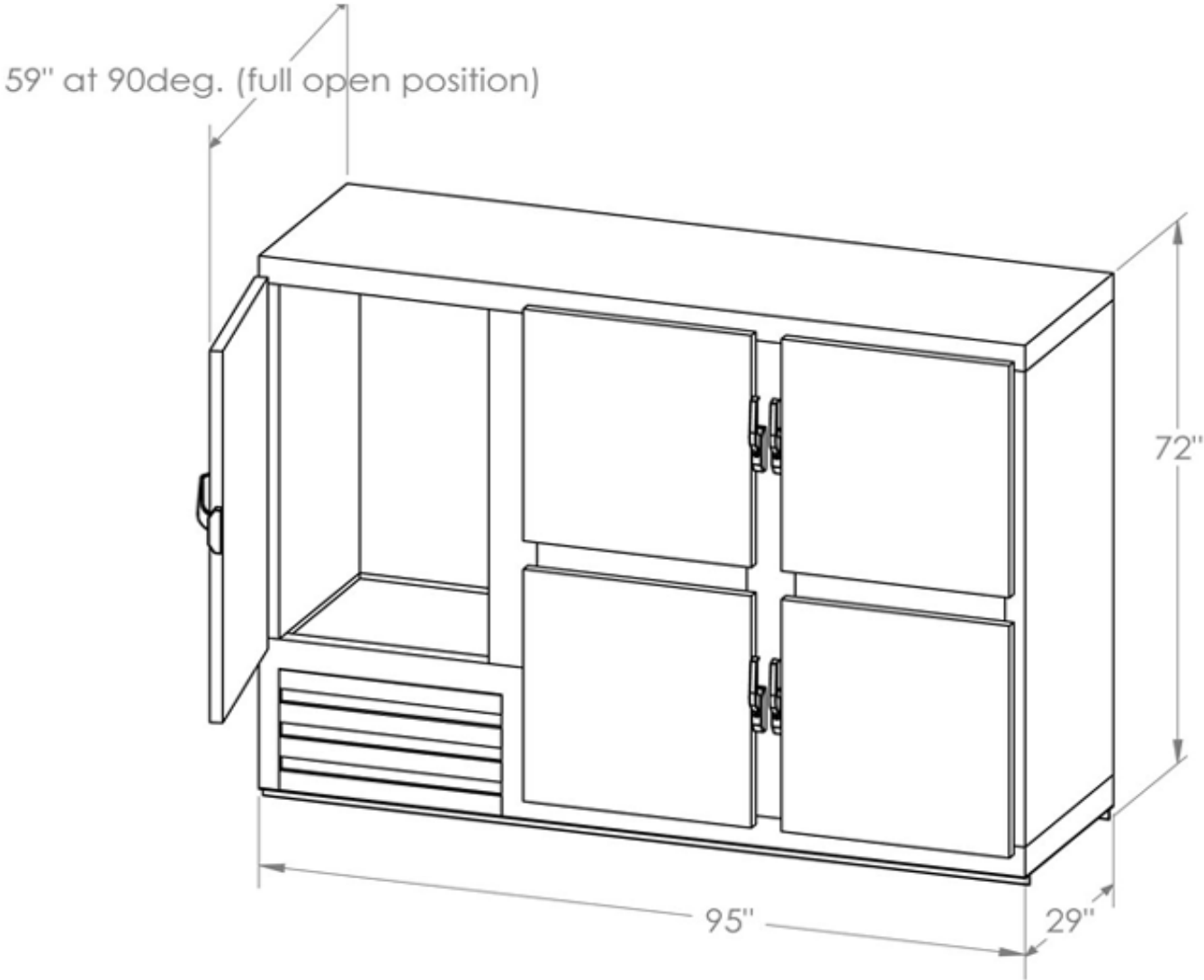


Figure 18A – NAV-75-LT-B Modular Assembly

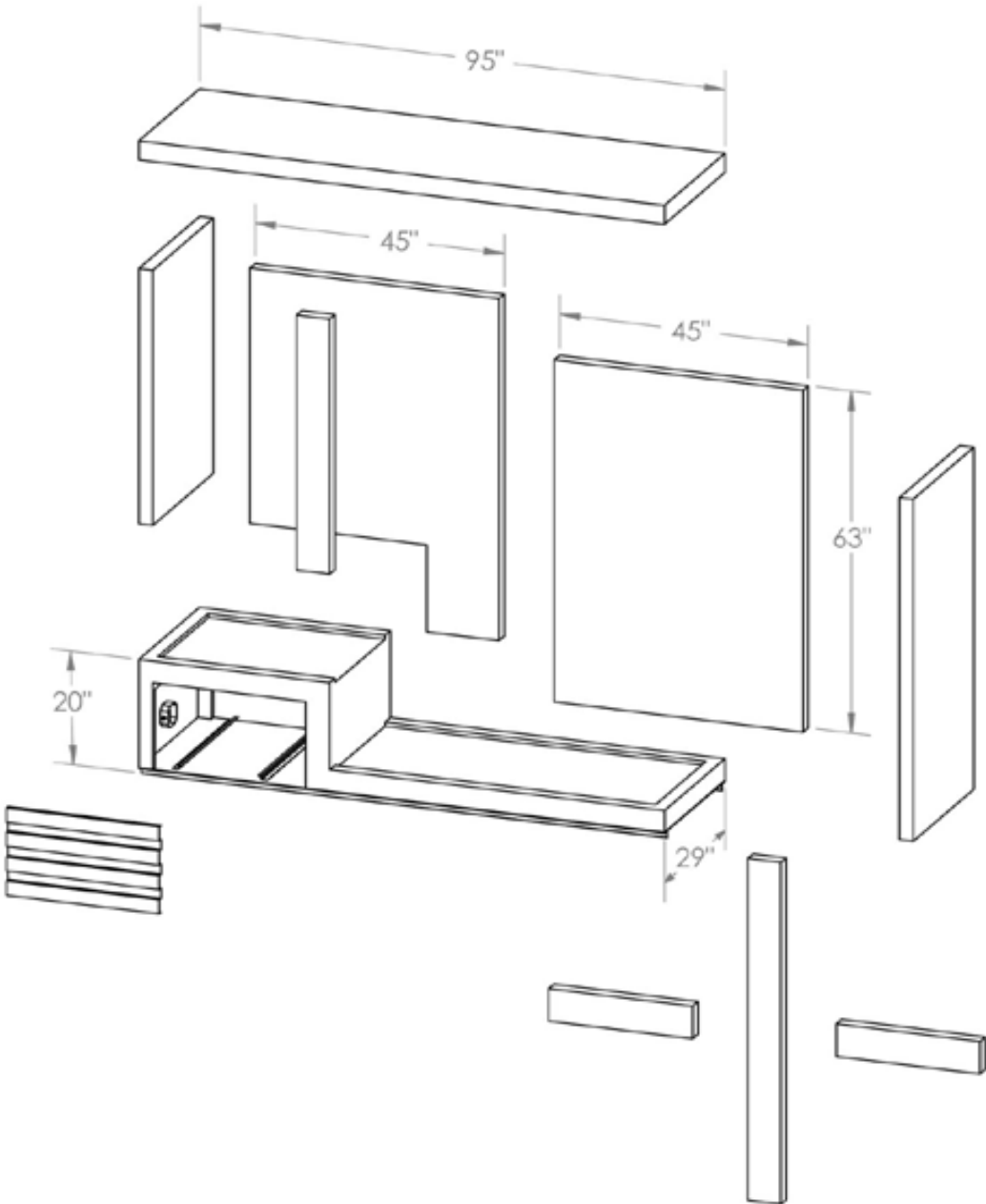


Figure 18B – NAV-75-LT-B Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-75-LT-B Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>75</b>
WIDTH	<b>95"</b>
HEIGHT	<b>72"</b>
DEPTH	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>
NUMBER OF SHELVES	<b>11</b>
NUMBER OF DOORS	<b>5</b>
ASSEMBLED WEIGHT (LBS)	<b>780</b>
CRATED WEIGHT (LBS)	<b>920</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>11000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>13</b>
PHASE	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 18, NAV-75-LT-B Specifications

## CHAPTER 3

# MARINE REFRIGERATORS/FREEZERS





## **MARINE REFRIGERATORS/FREEZERS**

### **OPTIONAL EQUIPMENT**

- Modular Design
- Aluminum Construction
- Digital Thermometer
- Spring Assist Hinges

### **CONSTRUCTION**

- Heavy gauge stainless steel #304 interior and exterior
- Formed in place, CFC free urethane insulation, highest R-value
- Stainless steel spill proof shelves
- 2" exterior reading dial thermometer
- Extra heavy duty chrome plated hinges
- Positive keyed locking handle provides best seal.
- Interior lighting in refrigerator compartment only
- Vinyl extruded replacement gaskets
- Heavy base frame

### **HEAVY DUTY REFRIGERATION SYSTEM**

- Ozone safe R-134A and R-404A refrigerator
- Wrapped refrigeration system
- Sealed, condensing unit, air or water cooled with pull out design
- Preset temperature controls thermostatic expansion valve

## **Model NAV-3-6-HLT-B REFRIGERATOR/FREEZER UNIT**

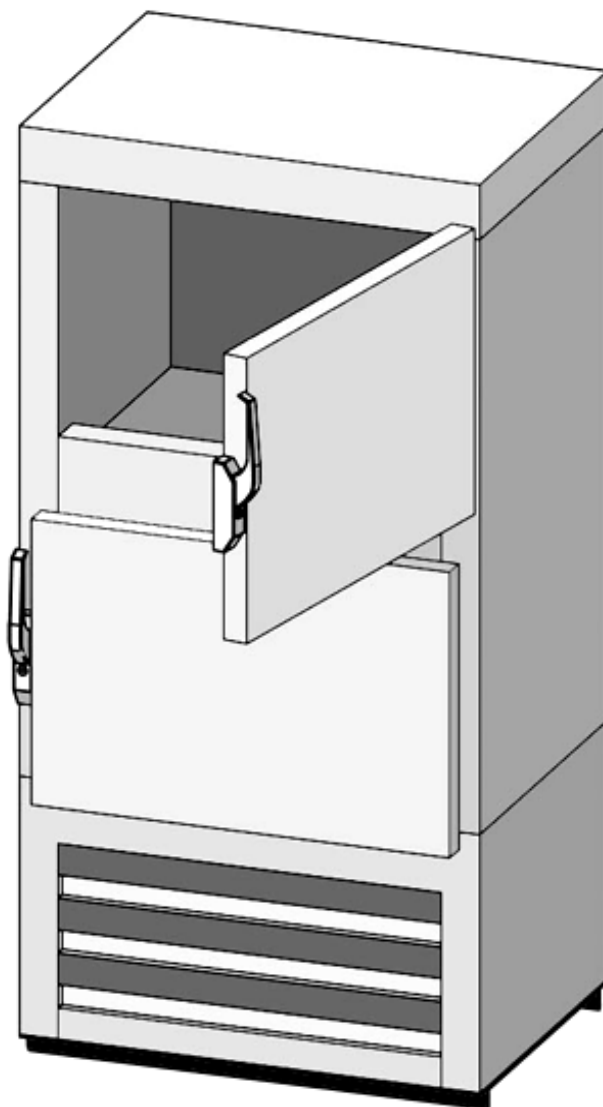


Figure 19 – NAV-3-HLT-B Refrigerator/Freezer Unit

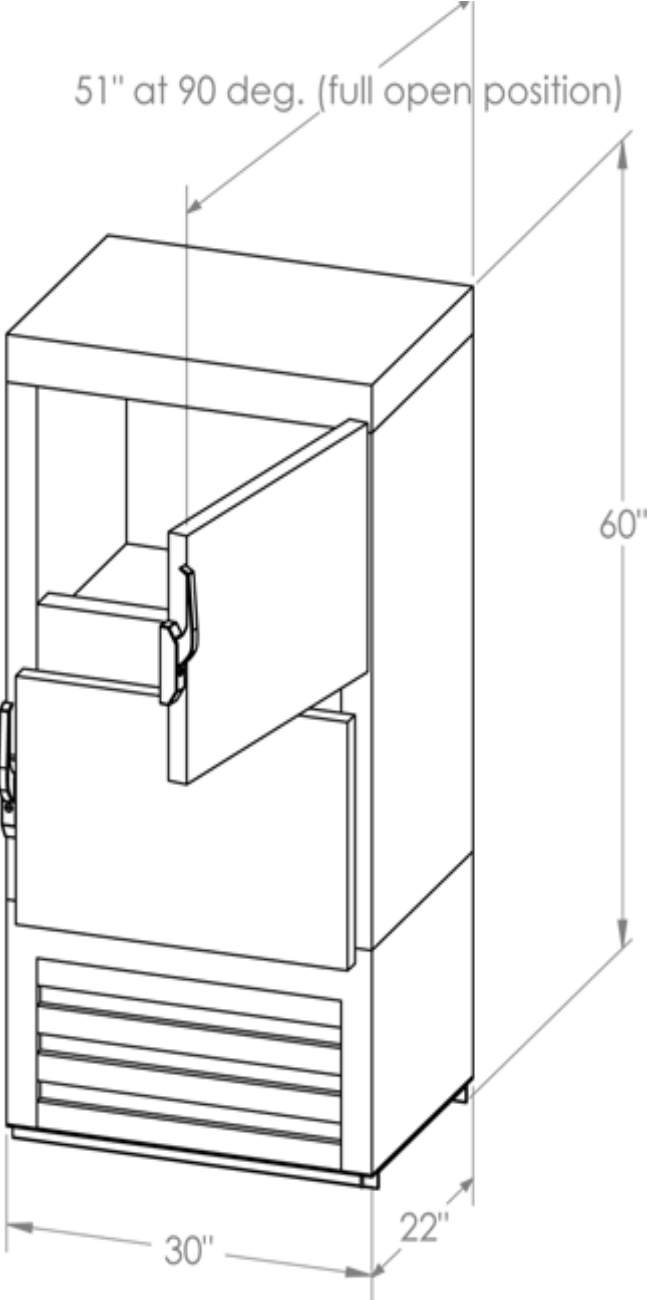


Figure 19A – NAV-3-6-HLT-B Modular Assembly

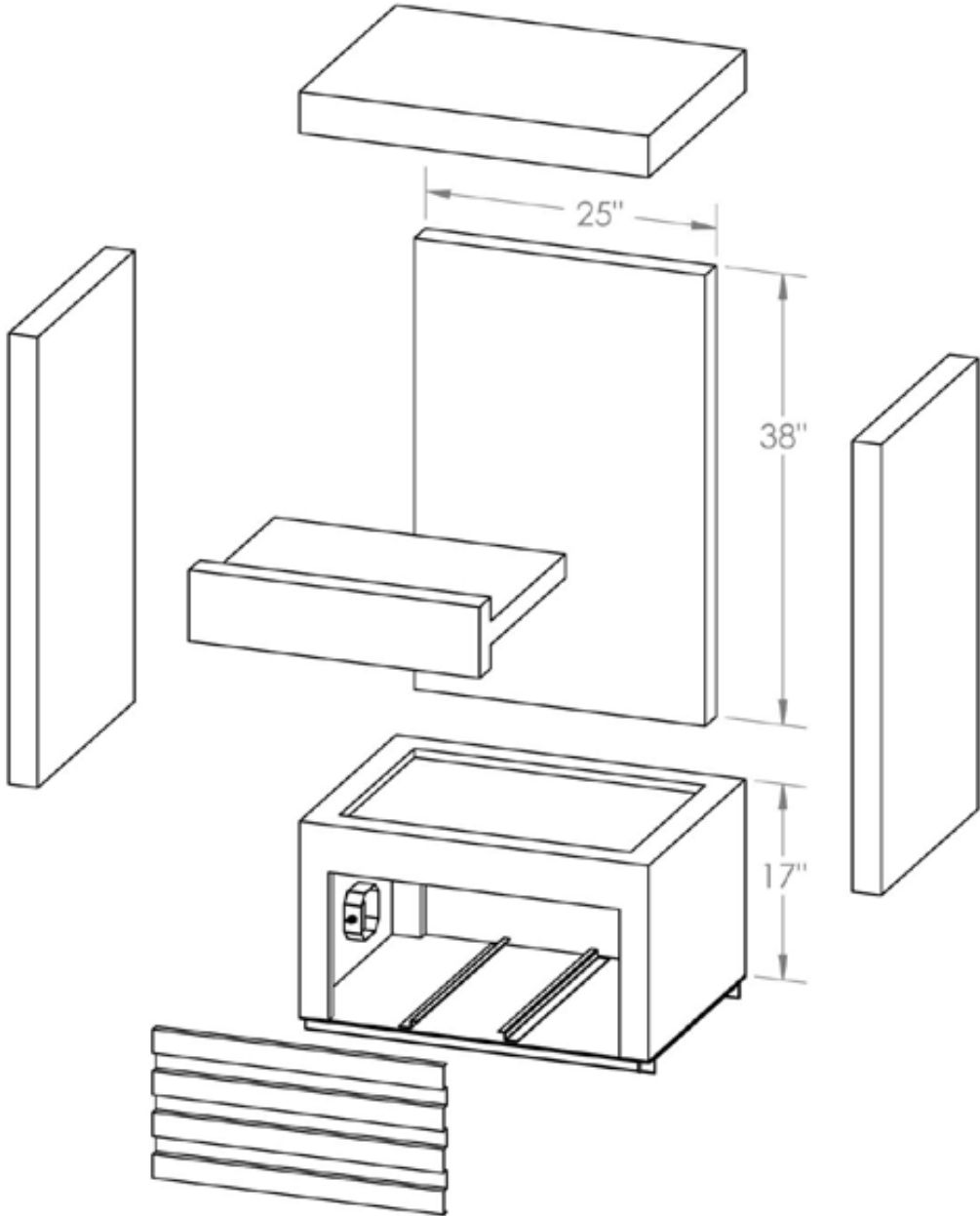


Figure 19B – NAV-3-6-HLT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-3-6-HLT-B Refrigerator/Freezer Unit</b>	<b>REF</b>	<b>FRE</b>
INTERIOR VOLUME (CU.FT)	<b>6</b>	<b>3</b>
WIDTH	<b>30"</b>	<b>-</b>
HEIGHT	<b>60"</b>	<b>-</b>
DEPTH	<b>22"</b>	<b>-</b>
BODY DEPTH W/DOORS	<b>24"</b>	<b>24"</b>
NUMBER OF SHELVES	<b>2</b>	<b>1</b>
NUMBER OF DOORS	<b>1</b>	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>450</b>	<b>-</b>
CRATED WEIGHT (LBS)	<b>570</b>	<b>-</b>
REFRIGERANT	<b>R134A</b>	<b>R404A</b>
BTU / HOUR	<b>3000</b>	<b>4200</b>
VOLTAGE	<b>115</b>	<b>115</b>
AMPERE	<b>6</b>	<b>7</b>
PHASE	<b>1</b>	<b>1</b>
COMPRESSOR	<b>1/4 HP</b>	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>	<b>YES</b>

Table 19, NAV-3-6-HLT-B Specifications

## **Model NAV-6-14-HLT-B REFRIGERATOR/FREEZER UNIT**

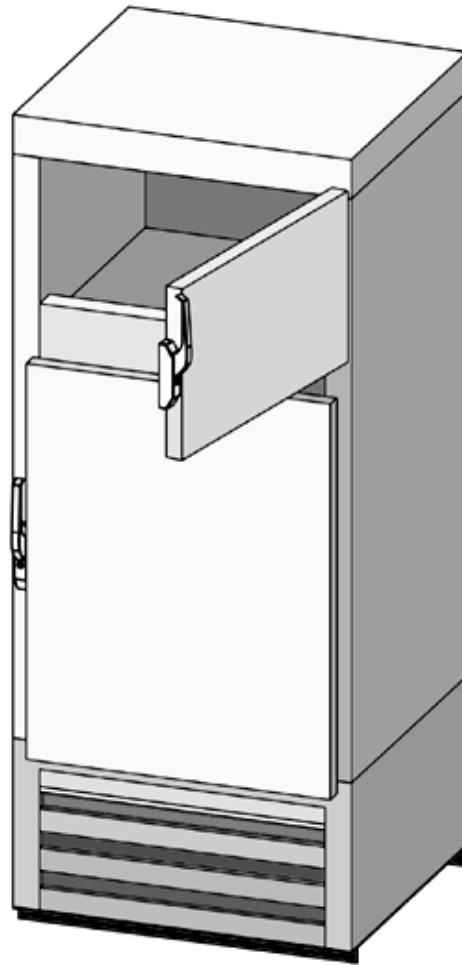


Figure 20 – NAV-6-14-HLT-B Refrigerator/Freezer Unit

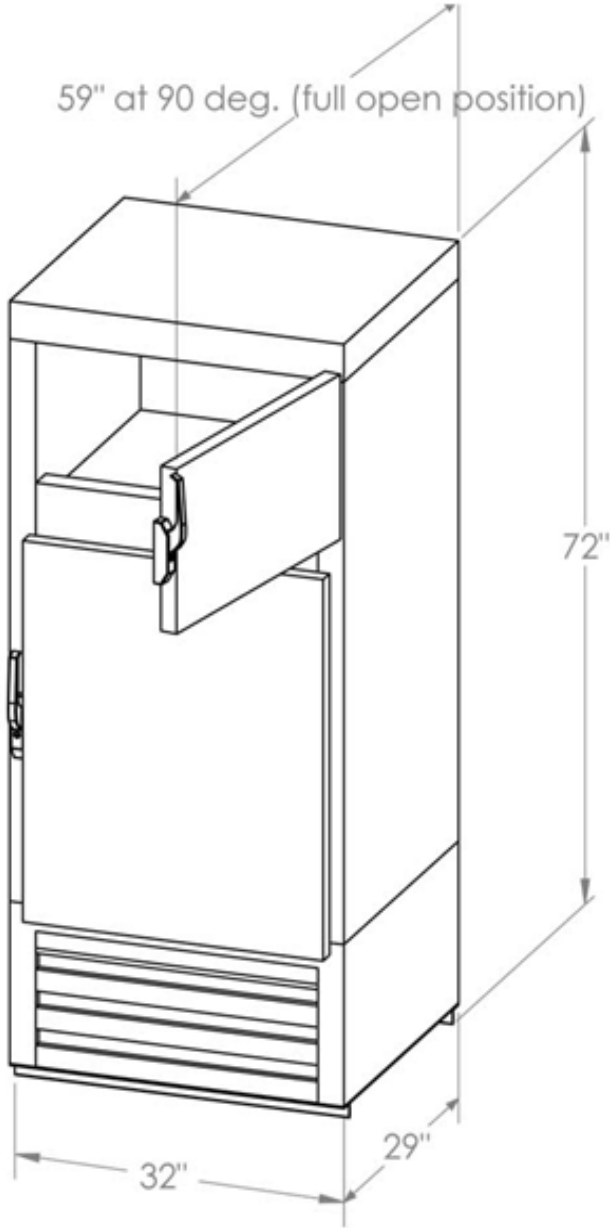


Figure 20A – NAV-6-14-HLT-B Modular Assembly

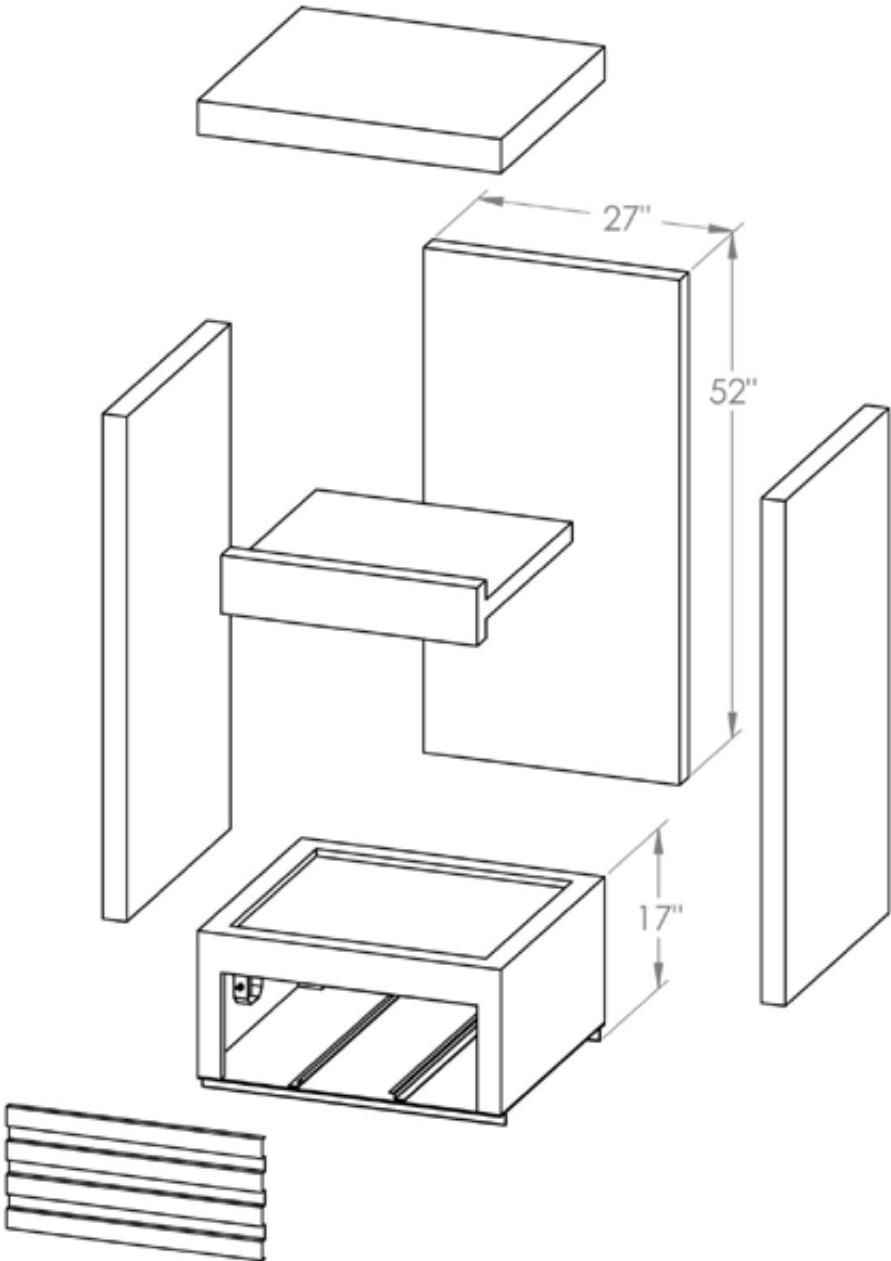


Figure 20B – NAV-6-14-HLT-B Exploded View Shown Without Doors or Compressor



### MODEL SPECIFICATIONS

<b>NAV-6-14-HLT-B Refrigerator/Freezer Unit</b>	<b>REF</b>	<b>FRE</b>
INTERIOR VOLUME (CU.FT)	<b>14</b>	<b>6</b>
WIDTH	<b>32"</b>	<b>-</b>
HEIGHT	<b>72"</b>	<b>-</b>
DEPTH	<b>29"</b>	<b>-</b>
BODY DEPTH W/DOORS	<b>31"</b>	<b>-</b>
NUMBER OF SHELVES	<b>4</b>	<b>4</b>
NUMBER OF DOORS	<b>1</b>	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>575</b>	<b>-</b>
CRATED WEIGHT (LBS)	<b>695</b>	<b>-</b>
REFRIGERANT	<b>R134A</b>	<b>R404A</b>
BTU / HOUR	<b>2500</b>	<b>3000</b>
VOLTAGE	<b>115</b>	<b>115</b>
AMPERE	<b>6</b>	<b>8</b>
PHASE	<b>1</b>	<b>1</b>
COMPRESSOR	<b>1/4 HP</b>	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>	<b>YES</b>

Table 20, NAV-6-14-HLT-B Specifications

## **Model NAV-10-10-HLT-B REFRIGERATOR/FREEZER UNIT**

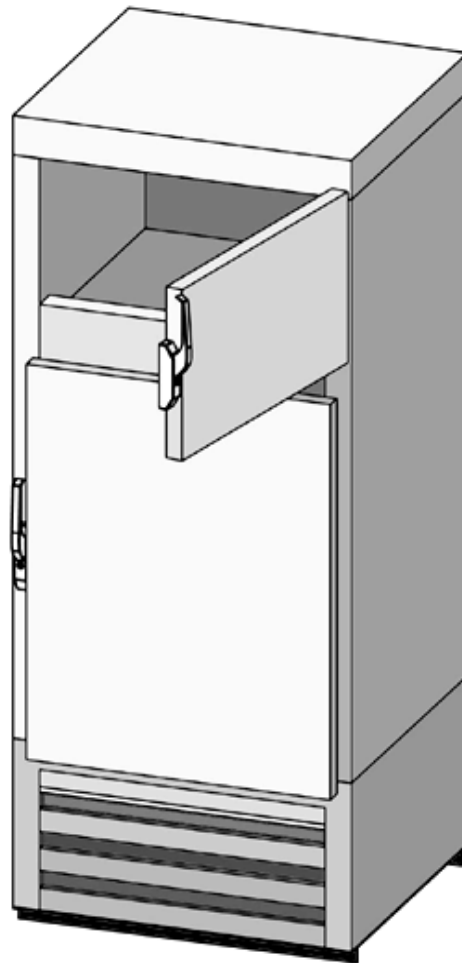


Figure 21 – NAV-10-10-HLT-B Refrigerator/Freezer Unit

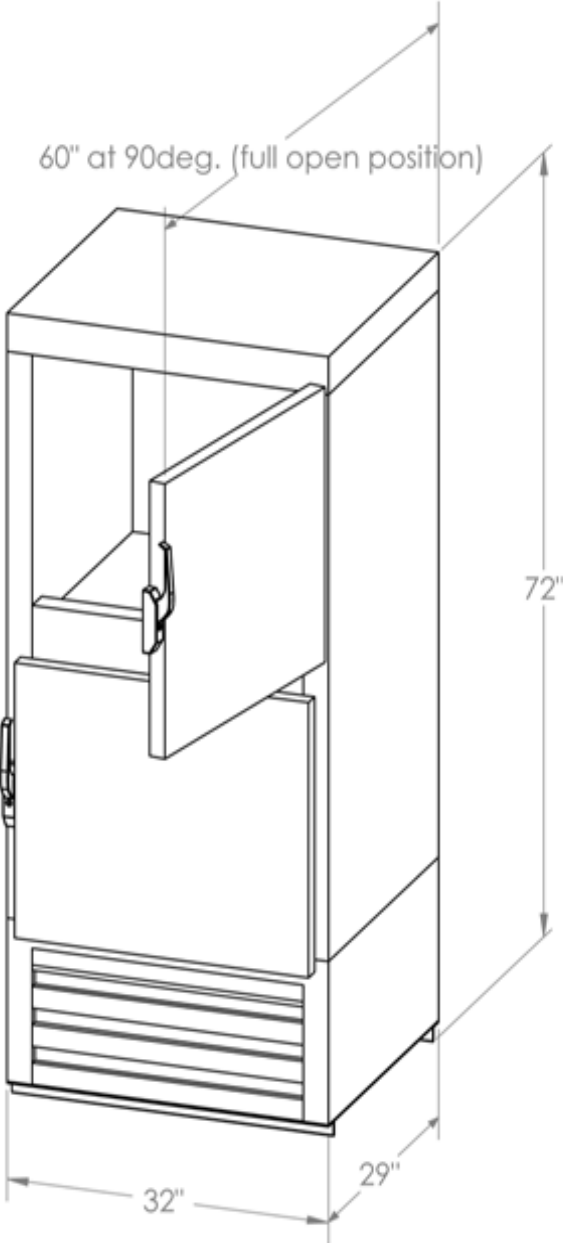


Figure 21A – NAV-10-10-HLT-B Modular Assembly

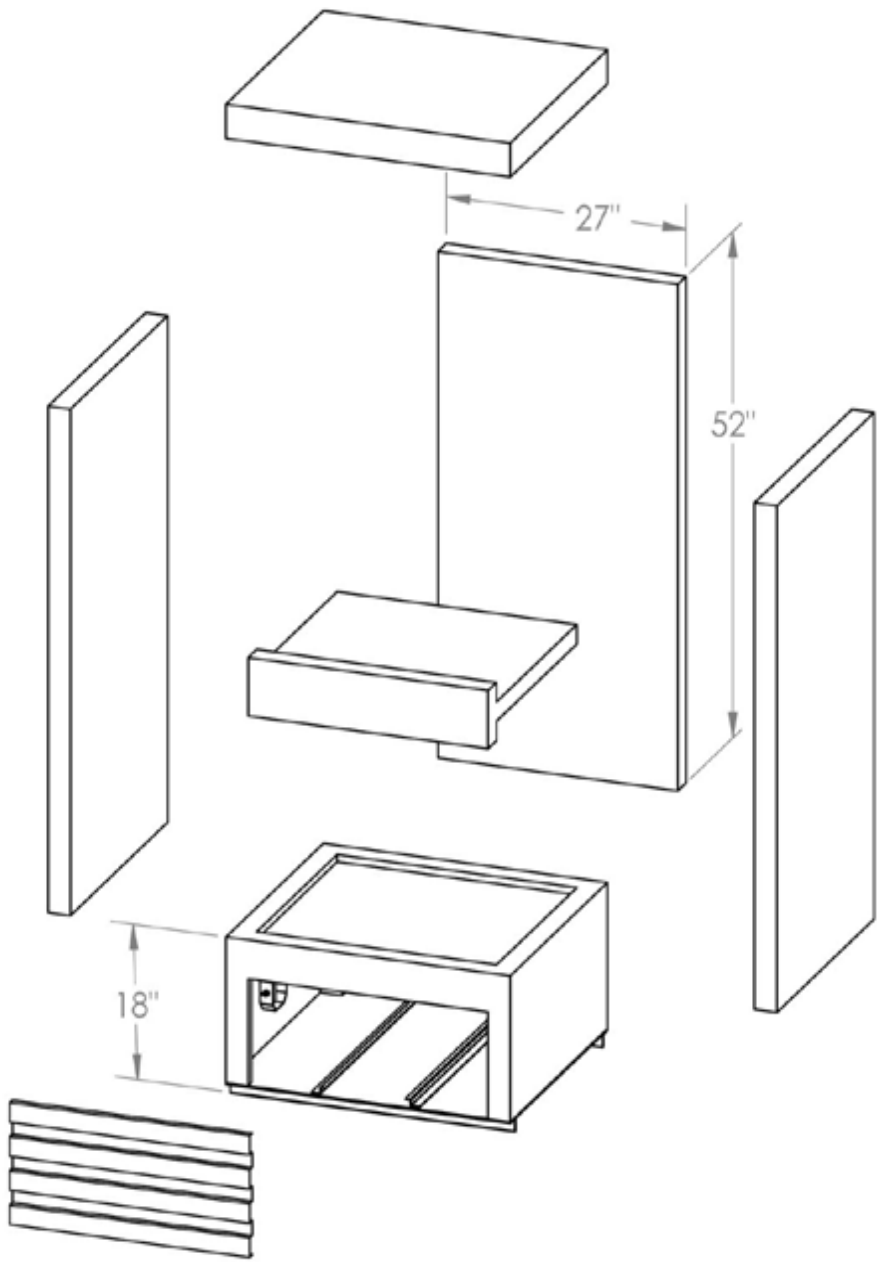


Figure 21B – NAV-10-10-HLT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-10-10-HLT-B Refrigerator/Freezer Unit</b>	<b>REF</b>	<b>FRE</b>
INTERIOR VOLUME (CU.FT)	<b>10</b>	<b>10</b>
WIDTH	<b>32"</b>	<b>32"</b>
HEIGHT	<b>72"</b>	<b>72"</b>
DEPTH	<b>29"</b>	<b>29"</b>
BODY DEPTH W/DOORS	<b>31"</b>	<b>31"</b>
NUMBER OF SHELVES	<b>2</b>	<b>1</b>
NUMBER OF DOORS	<b>1</b>	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>610</b>	<b>-</b>
CRATED WEIGHT (LBS)	<b>740</b>	<b>-</b>
REFRIGERANT	<b>R134A</b>	<b>R404A</b>
BTU / HOUR	<b>2800</b>	<b>3500</b>
VOLTAGE	<b>115</b>	<b>115</b>
AMPERE	<b>7</b>	<b>8</b>
PHASE	<b>1</b>	<b>1</b>
COMPRESSOR	<b>1/4 HP</b>	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>	<b>YES</b>

Table 21, NAV-10-10-HLT-B Specifications

## Model NAV-13-17-HLT-B REFRIGERATOR/FREEZER UNIT

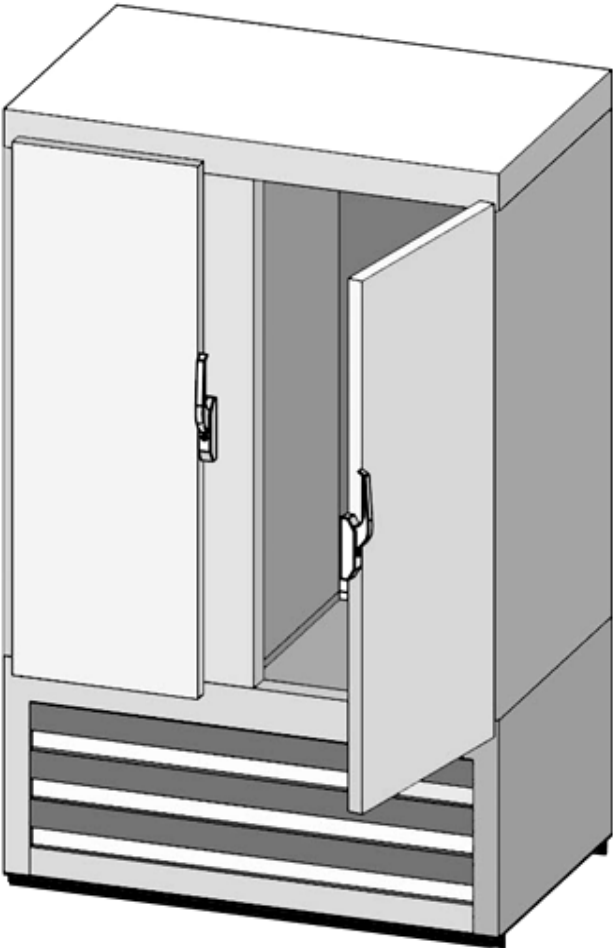


Figure 22 – NAV-13-17-HLT-B Refrigerator/Freezer Unit

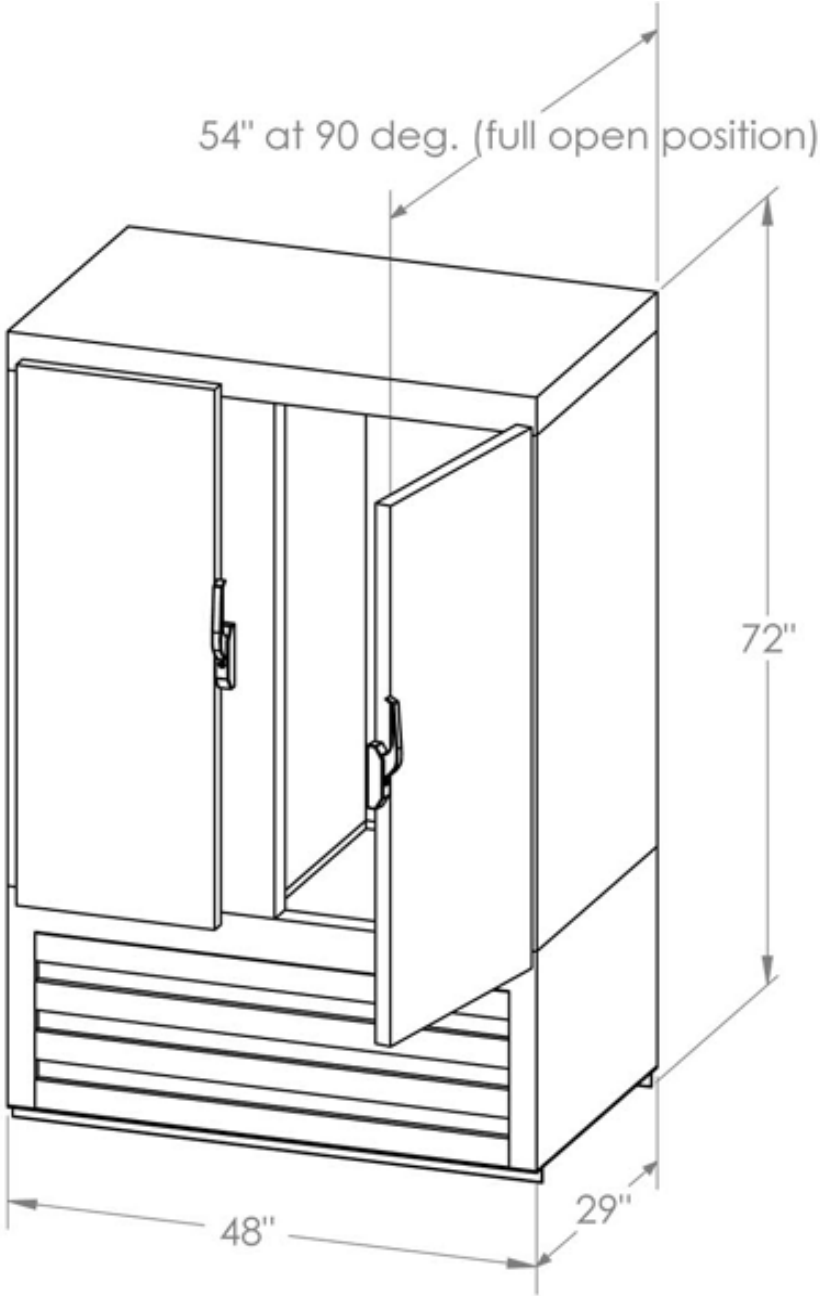


Figure 22A – NAV-13-17-HLT-B Modular Assembly

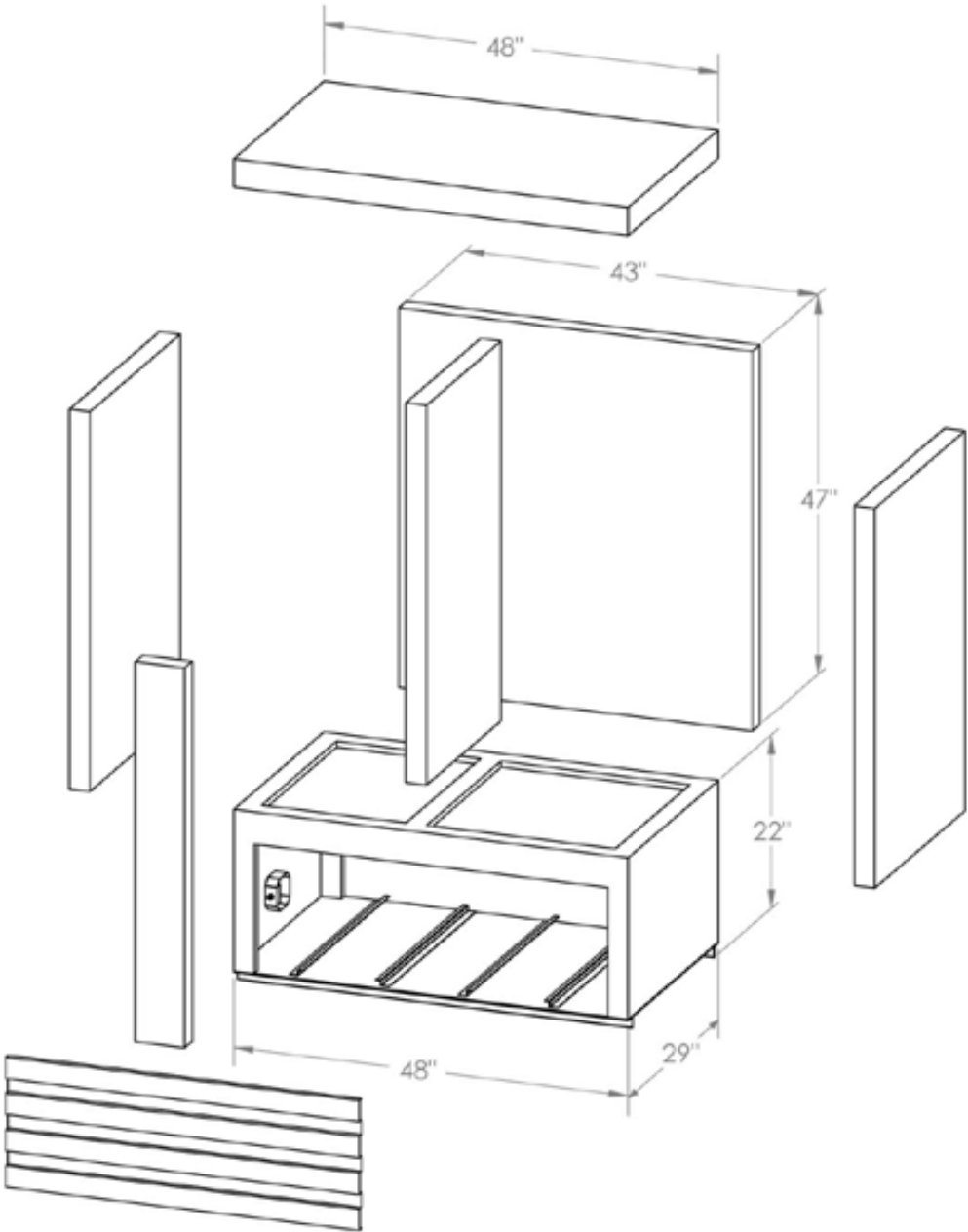


Figure 22B – NAV-13-17-HLT-B Exploded View Shown Without Doors or Compressor



### MODEL SPECIFICATIONS

<b>NAV-13-17-HLT-B Refrigerator/Freezer Unit</b>	<b>REF</b>	<b>FRE</b>
INTERIOR VOLUME (CU.FT)	<b>17</b>	<b>13</b>
WIDTH	-	<b>48"</b>
HEIGHT	-	<b>72"</b>
DEPTH	-	<b>29"</b>
BODY DEPTH W/DOORS	-	<b>31"</b>
NUMBER OF SHELVES	<b>3</b>	<b>3</b>
NUMBER OF DOORS	<b>1</b>	<b>1</b>
ASSEMBLED WEIGHT (LBS)	-	<b>675</b>
CRATED WEIGHT (LBS)	-	<b>795</b>
REFRIGERANT	<b>R134A</b>	<b>R404A</b>
BTU / HOUR	<b>6000</b>	<b>4500</b>
VOLTAGE	<b>115</b>	<b>115</b>
AMPERE	<b>8</b>	<b>7</b>
PHASE	<b>1</b>	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>	<b>YES</b>

Table 22, NAV-13-17-HLT-B Specifications

## **Model NAV-17-20-HLT-B REFRIGERATOR/FREEZER UNIT**

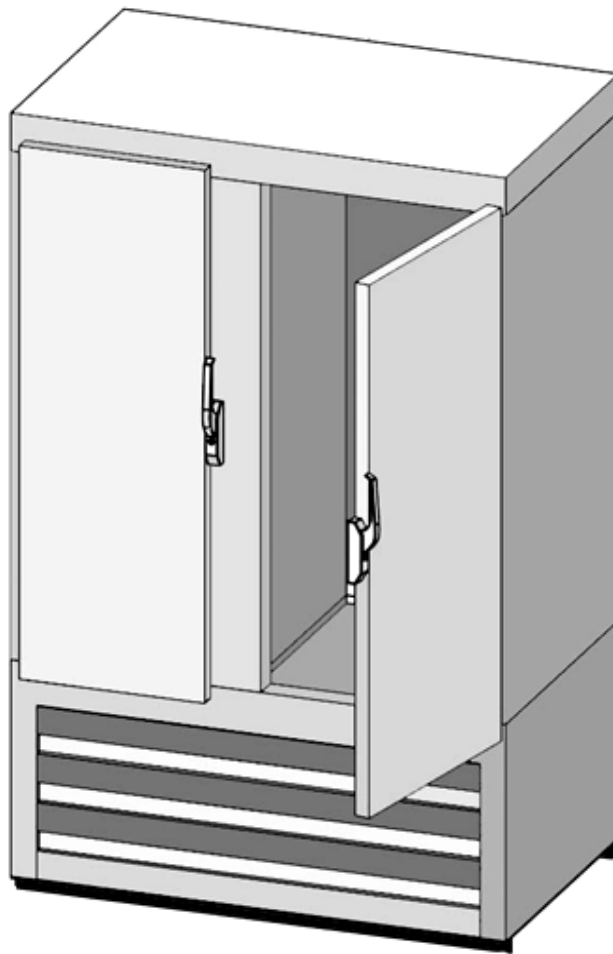


Figure 23 – NAV-17-20-HLT-B Refrigerator/Freezer Unit

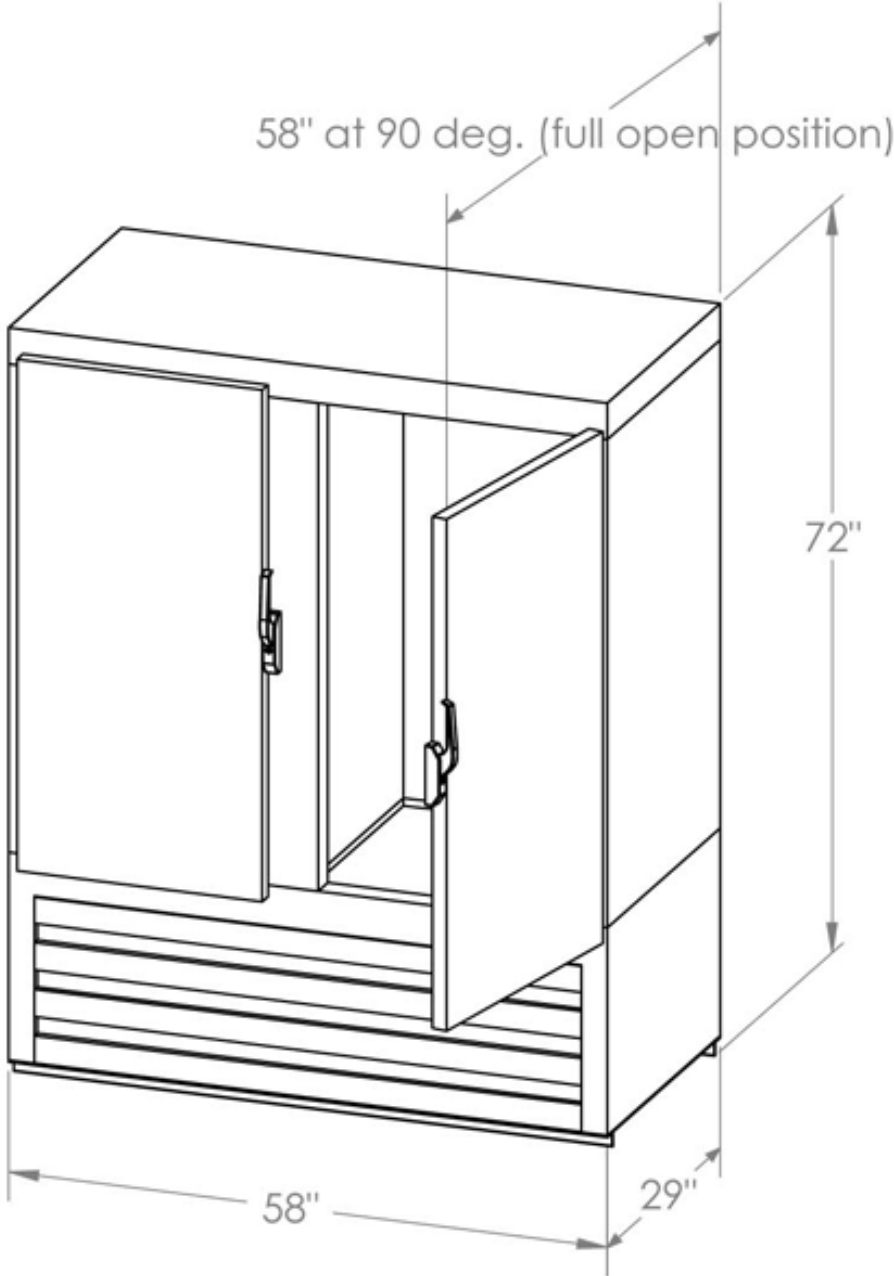


Figure 23A – NAV-17-20-HLT-B Modular Assembly

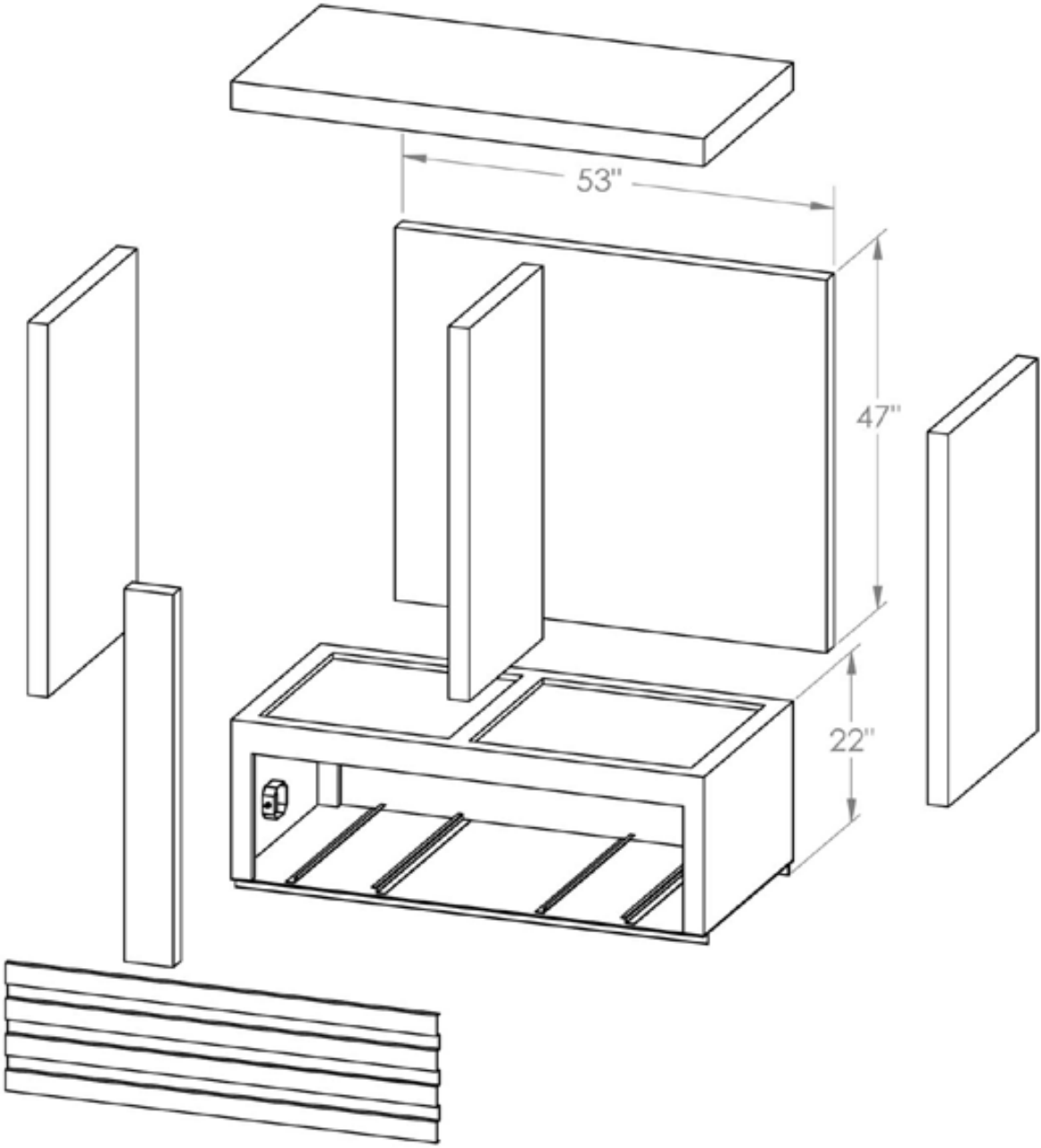


Figure 23B – NAV-17-20-HLT-B Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-17-20-HLT-B Refrigerator/Freezer Unit</b>	<b>REF</b>	<b>FRE</b>
INTERIOR VOLUME (CU.FT)	<b>20</b>	<b>17</b>
WIDTH	<b>58"</b>	<b>-</b>
HEIGHT	<b>72"</b>	<b>-</b>
DEPTH	<b>29"</b>	<b>-</b>
BODY DEPTH W/DOORS	<b>31"</b>	<b>-</b>
NUMBER OF SHELVES	<b>4</b>	<b>4</b>
NUMBER OF DOORS	<b>1</b>	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>750</b>	<b>-</b>
CRATED WEIGHT (LBS)	<b>725</b>	<b>-</b>
REFRIGERANT	<b>R134A</b>	<b>R404A</b>
BTU / HOUR	<b>7500</b>	<b>5000</b>
VOLTAGE	<b>115</b>	<b>115</b>
AMPERE	<b>8.5</b>	<b>6</b>
PHASE	<b>1</b>	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>	<b>YES</b>

Table 23, NAV-17-20-HLT-B Specifications

## CHAPTER 4

# MARINE COLD FOOD COUNTERS



## **MARINE COLD FOOD COUNTERS**

### **OPTIONAL EQUIPMENT**

- Modular Design
- Upper Display Unit
- Aluminum Construction
- Digital Thermometer
- Spring Assist Hinges

### **CONSTRUCTION**

- Heavy gauge stainless steel #304 interior and exterior
- Formed in place, CFC Free Urethane insulation, highest R-value
- Stainless steel spill proof shelves
- Stainless steel removable louver panel
- 2" exterior reading dial thermometer
- Extra heavy duty chrome plated hinges
- Positive keyed locking handle provides best seal
- Interior lighting activated by door opening
- Vinyl extruded replacement gaskets
- Stainless steel footed leg

### **HEAVY DUTY REFRIGERATION SYSTEM**

- Ozone safe R-134A refrigerant
- Wrapped refrigeration system
- Sealed, condensing unit, air or water cooled with pull out design
- Preset temperature controls
- Thermostatic expansion valve

## Model NAV-3-HT-BC-2 MARINE COLD FOOD COUNTERS

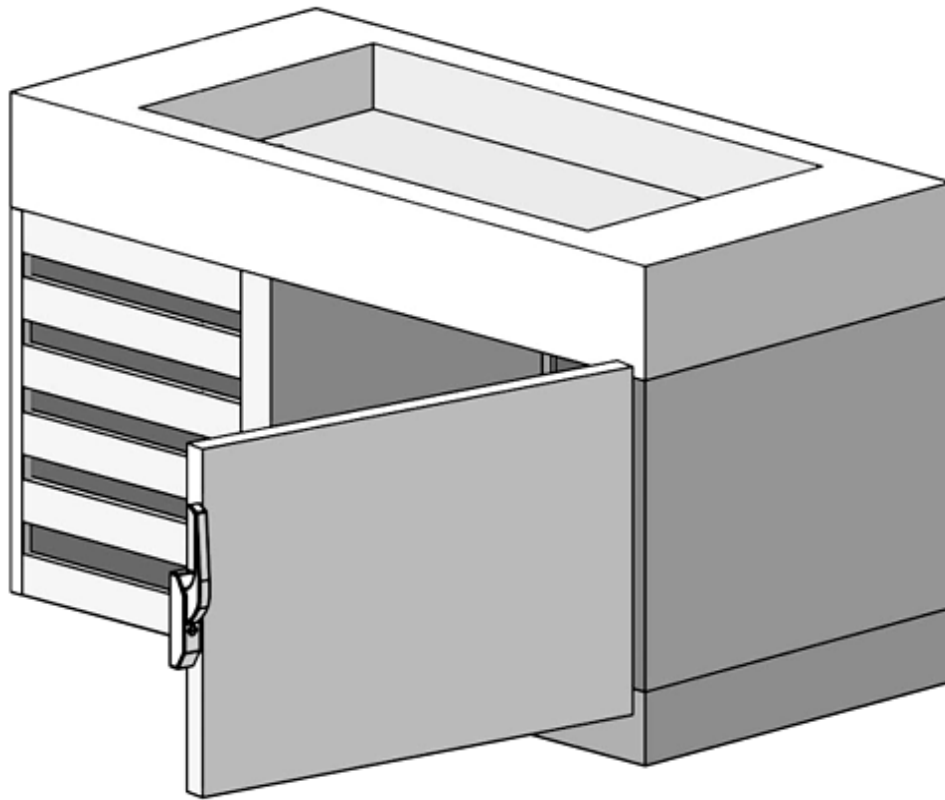


Figure 24 – NAV-3-HT-BC-2 Marine Cold Food Counter Unit



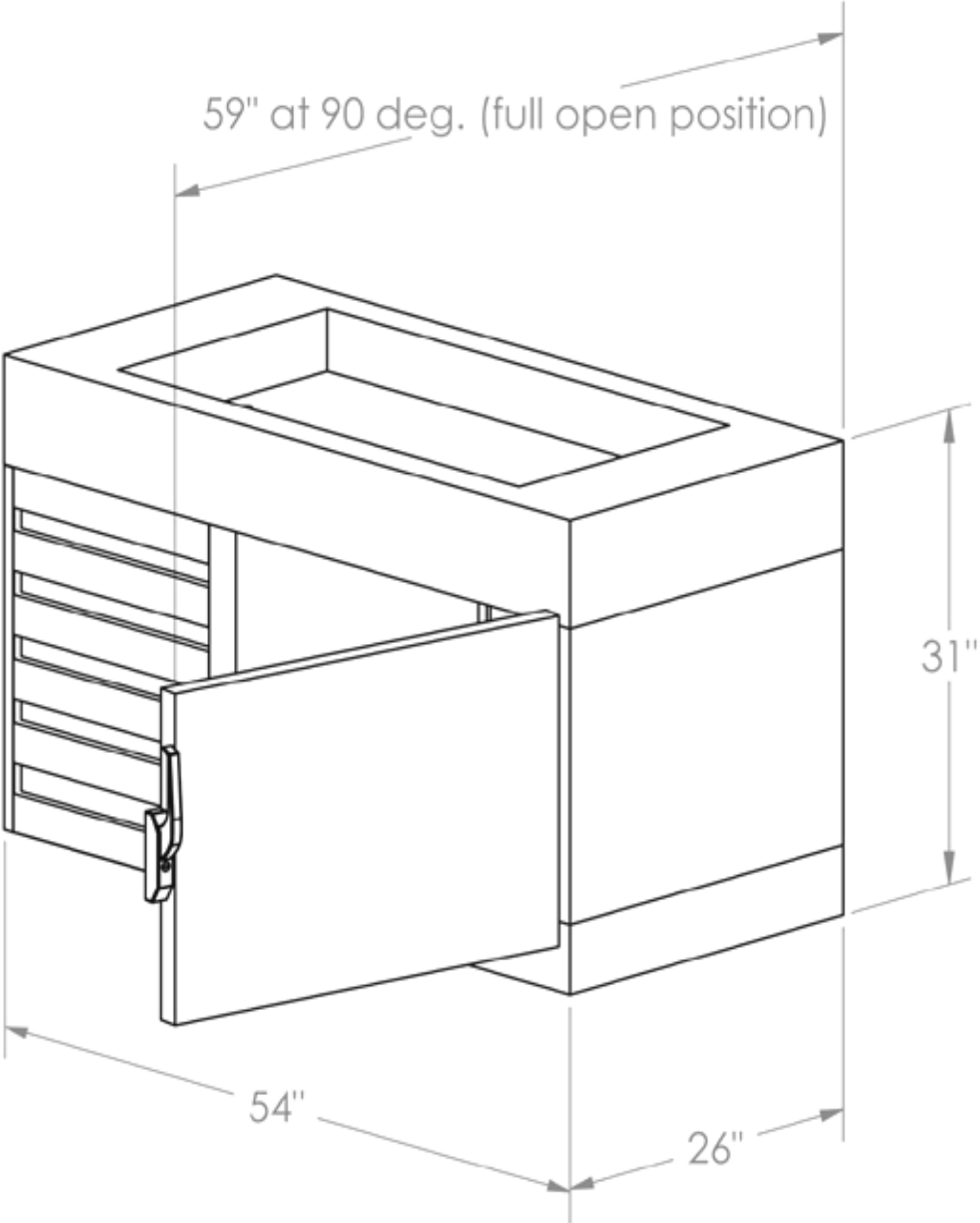


Figure 24A – NAV-3-HT-BC-2 Modular Assembly

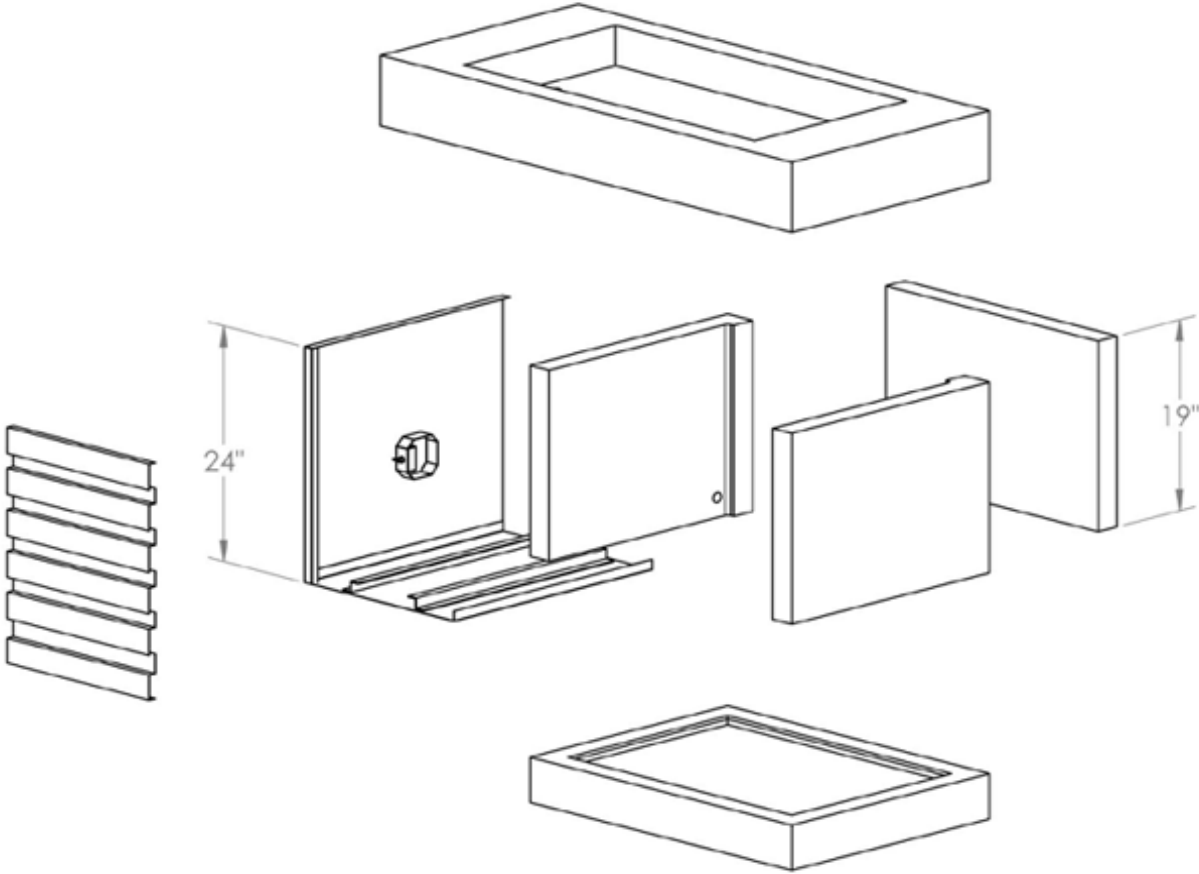


Figure 24B – NAV-3-HT-BC-2 Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-3-HT-BC-2 Cold Food Counter Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>7</b>
WIDTH	<b>54"</b>
HEIGHT	<b>31"</b>
DEPTH	<b>26"</b>
BODY DEPTH W/DOORS	<b>28"</b>
NUMBER OF SHELVES	<b>1</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>350</b>
CRATED WEIGHT (LBS)	<b>475</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>3000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 24, NAV-3-HT-BC-2 Specifications

## Model NAV-4-HT-BC-2 MARINE COLD FOOD COUNTERS

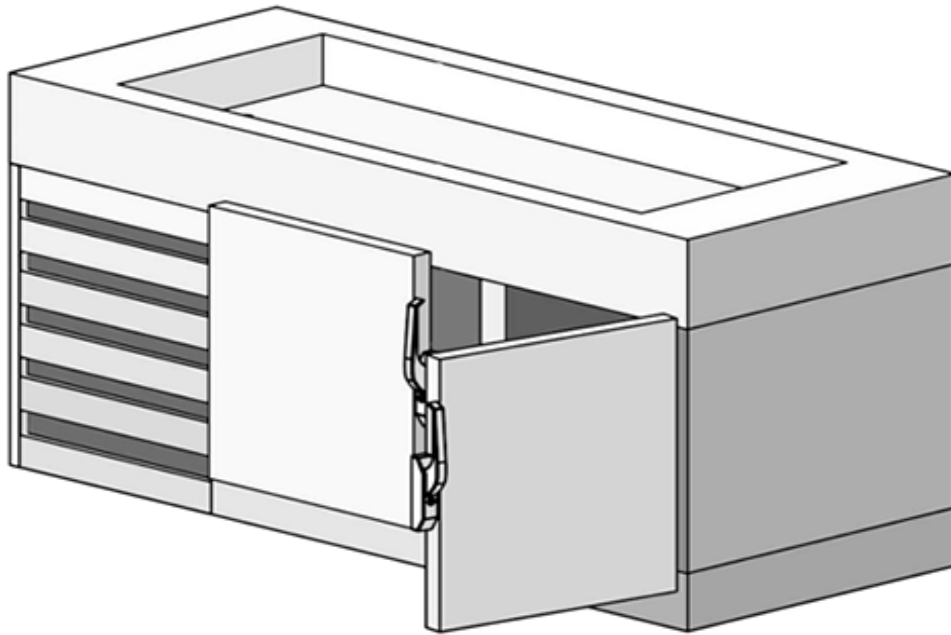


Figure 25 – NAV-4-HT-BC-2 Marine Cold Food Counter Unit

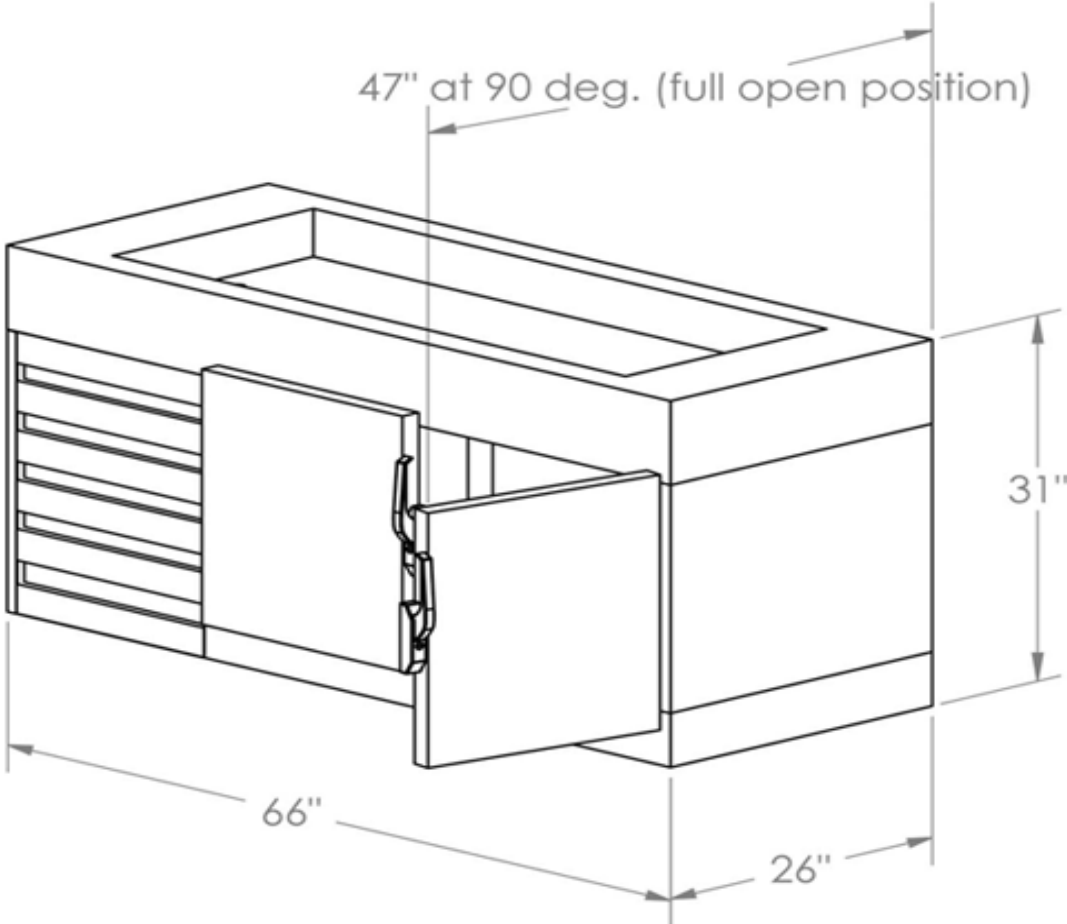


Figure 25A – NAV-4-HT-BC-2 Modular Assembly

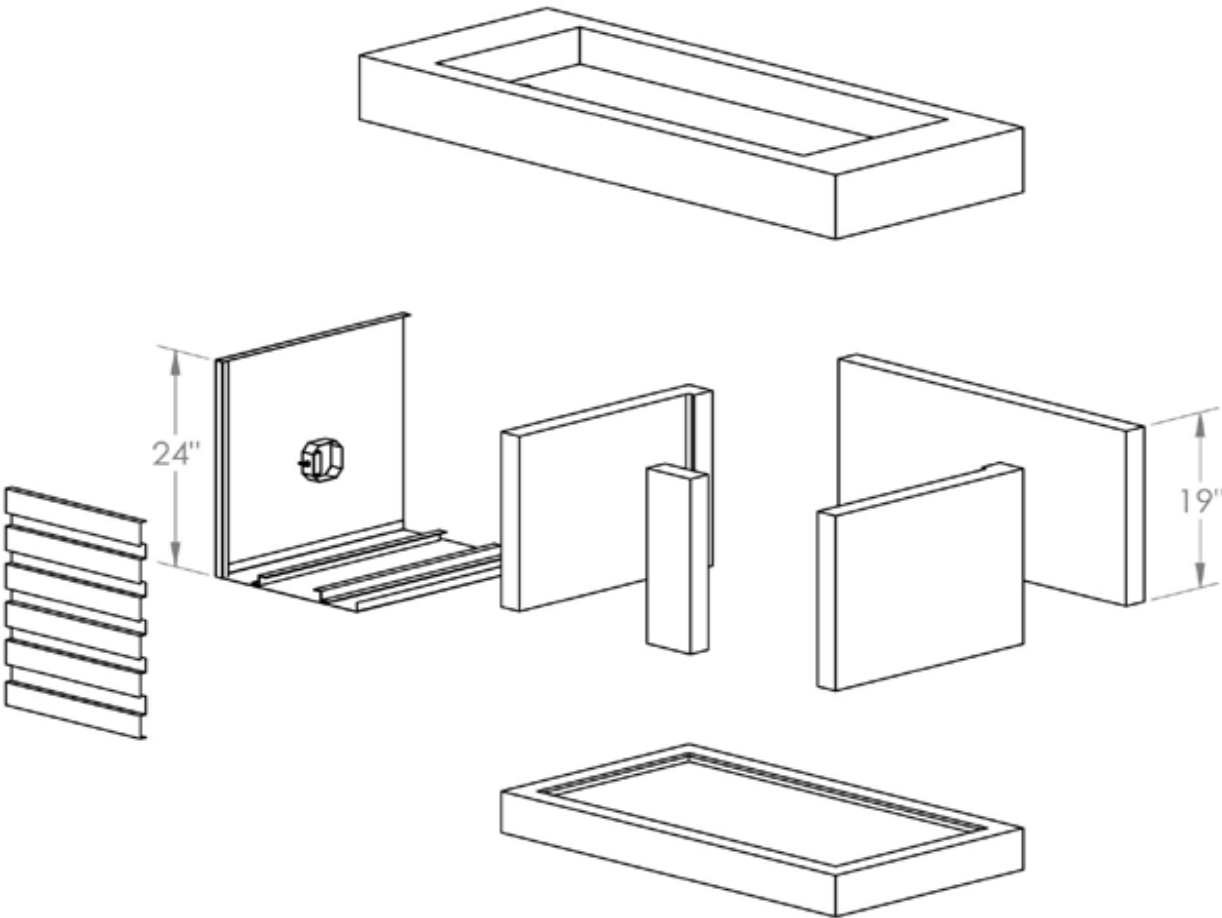


Figure 25B – NAV-4-HT-BC-2 Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-4-HT-BC-2 Cold Food Counter Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>10</b>
WIDTH	<b>66"</b>
HEIGHT	<b>31"</b>
DEPTH	<b>26"</b>
BODY DEPTH W/DOORS	<b>28"</b>
NUMBER OF SHELVES	<b>1</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>375</b>
CRATED WEIGHT (LBS)	<b>480</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>4000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 25, NAV-4-HT-BC-2 Specifications

## **Model NAV-5-HT-BC-2 MARINE COLD FOOD COUNTERS**

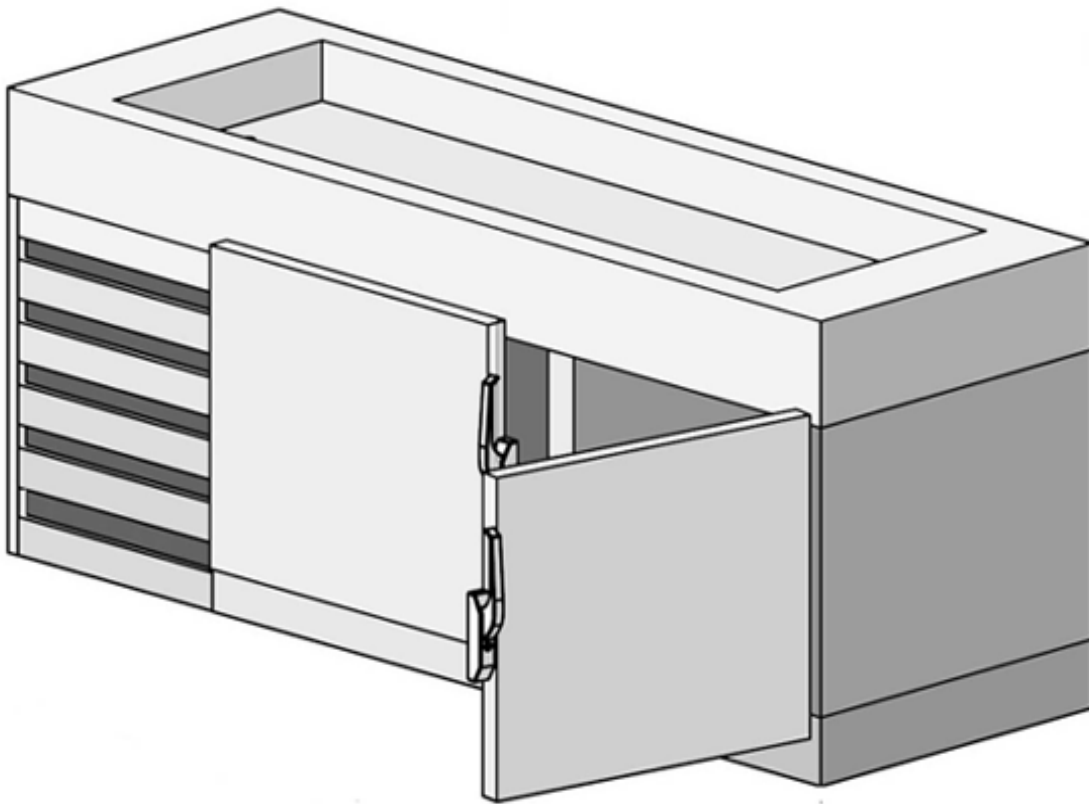


Figure 26 – NAV-5-HT-BC-2 Marine Cold Food Counter Unit



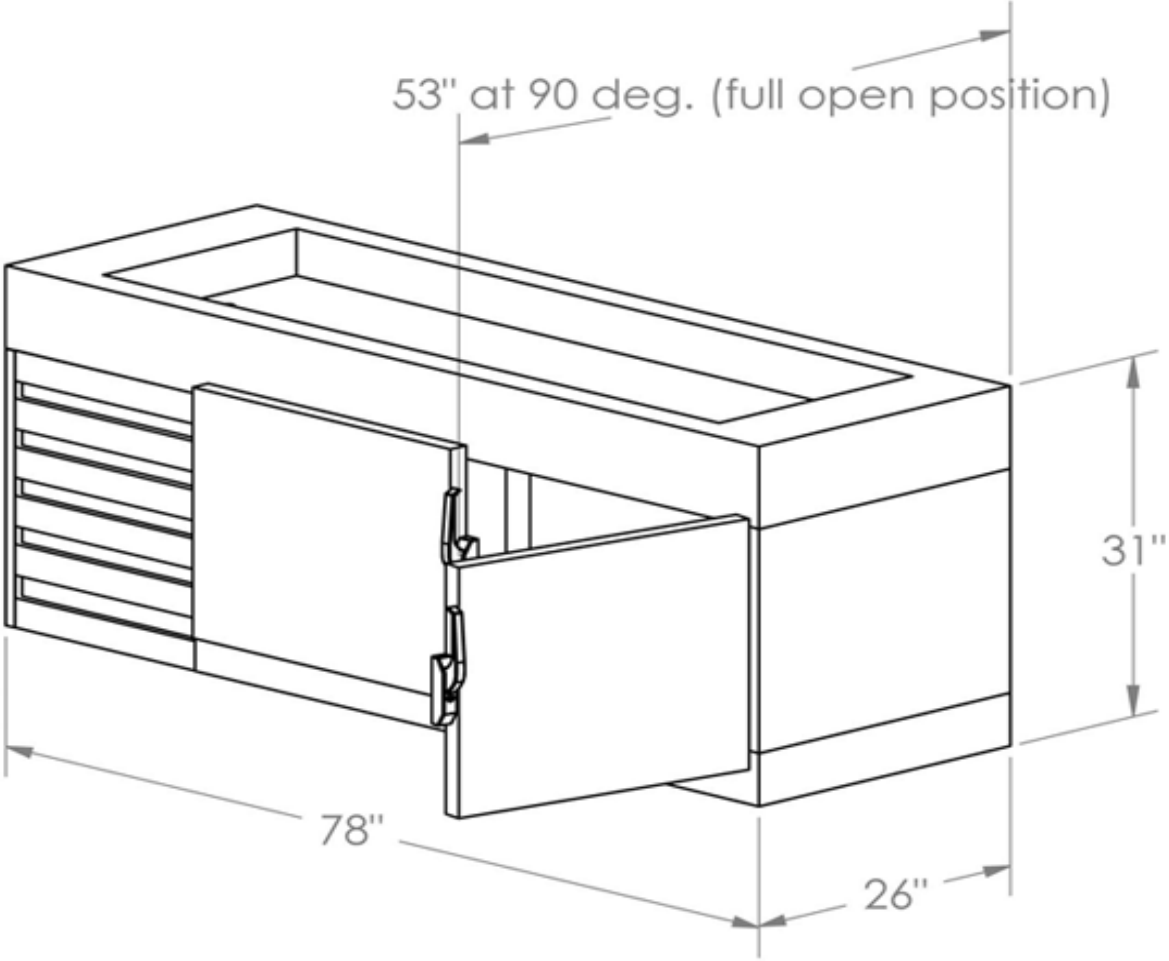


Figure 26A – NAV-5-HT-BC-2 Modular Assembly

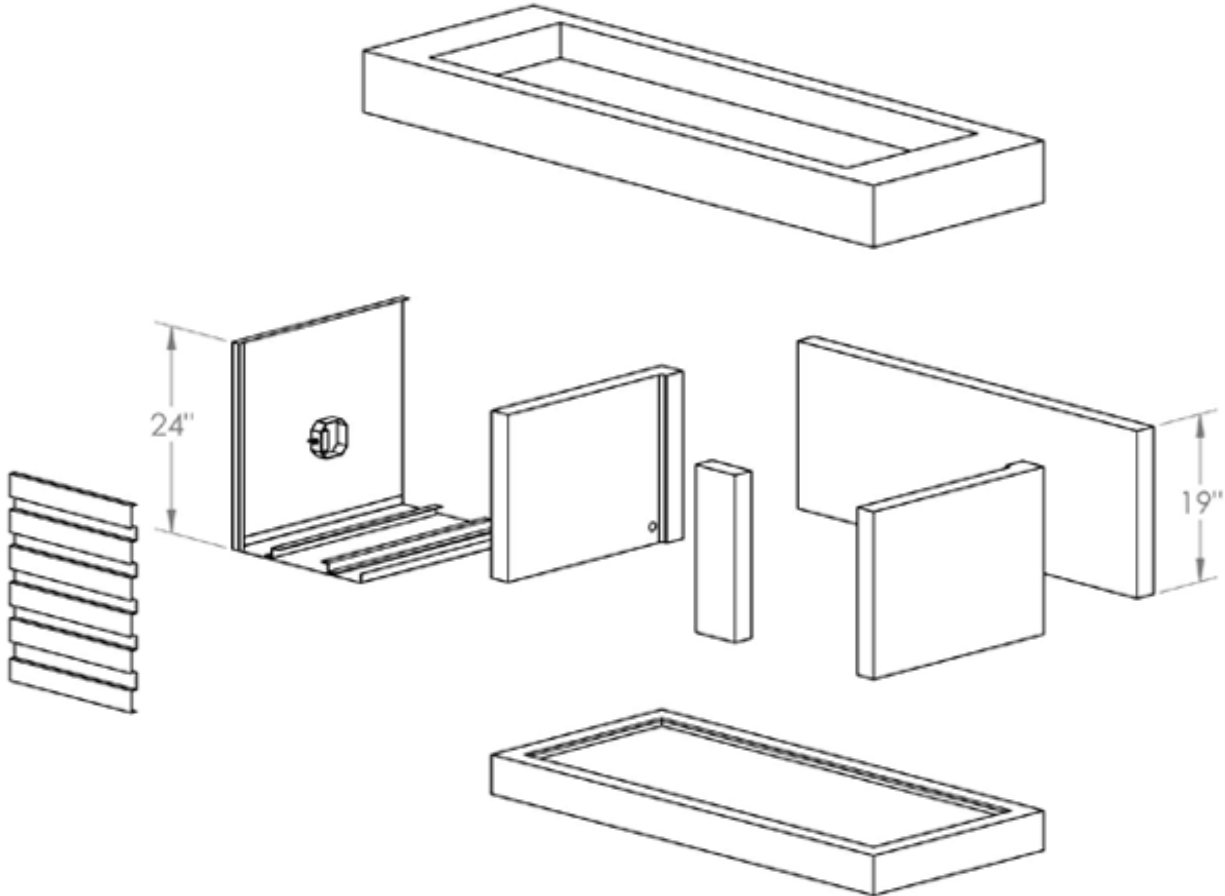


Figure 26B – NAV-5-HT-BC-2 Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-5-HT-BC-2 Cold Food Counter Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>15</b>
WIDTH	<b>78"</b>
HEIGHT	<b>31"</b>
DEPTH	<b>26"</b>
BODY DEPTH W/DOORS	<b>28"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>475</b>
CRATED WEIGHT (LBS)	<b>610</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>4000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>8</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 26, NAV-5-HT-BC-2 Specifications

## **Model NAV-6-HT-BC-2 MARINE COLD FOOD COUNTERS**

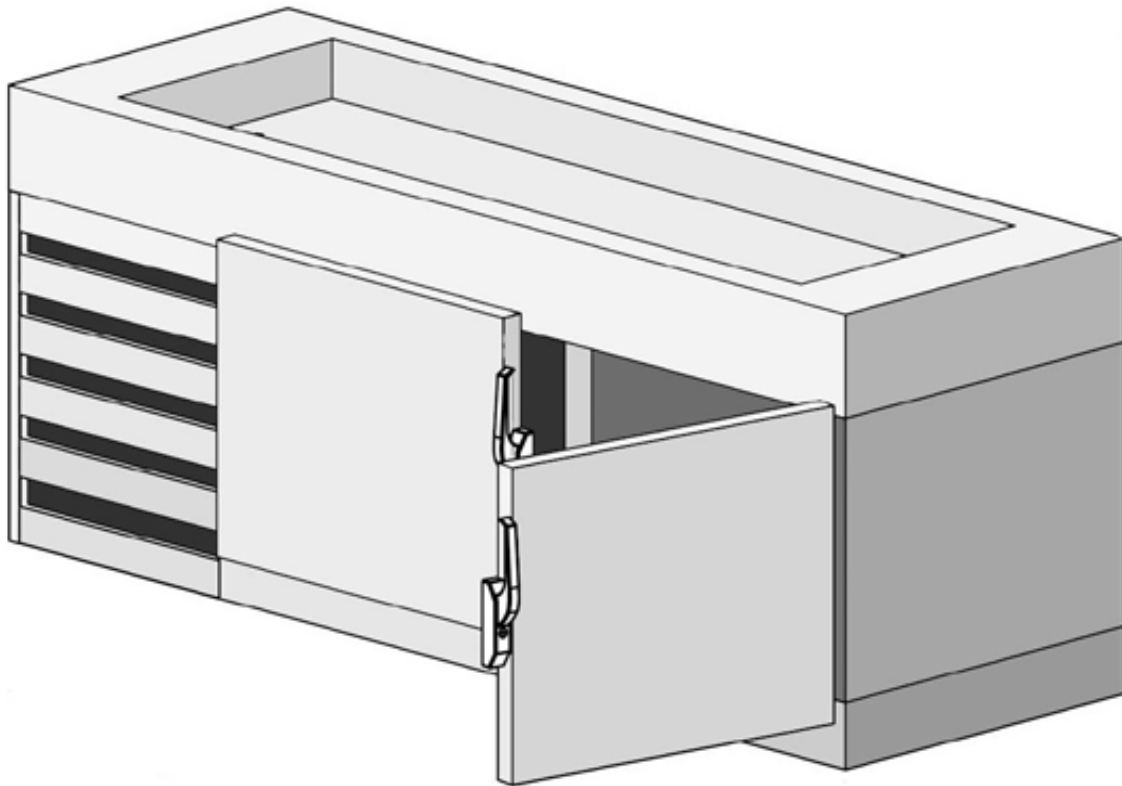


Figure 27 – NAV-6-HT-BC-2 Marine Cold Food Counter Unit

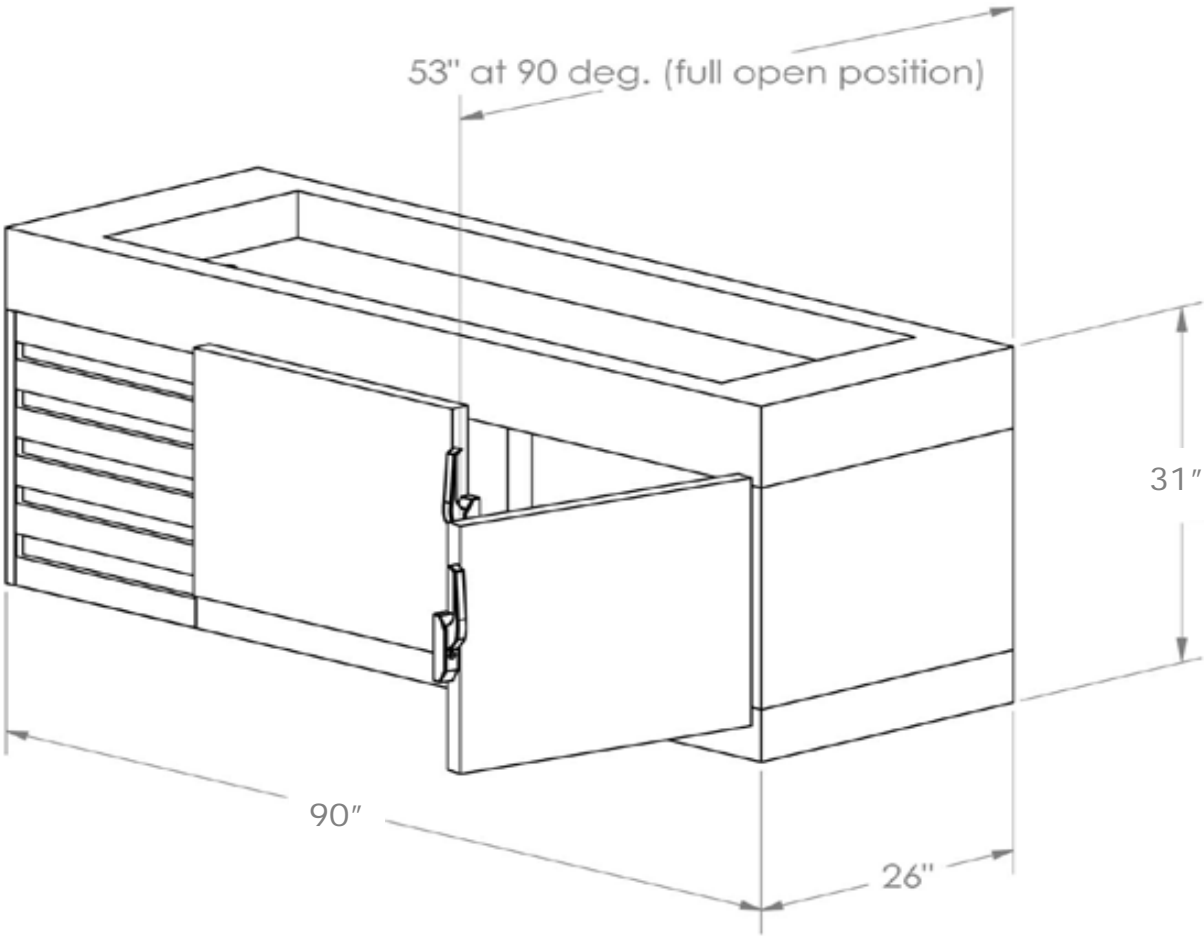


Figure 27A – NAV-6-HT-BC-2 Modular Assembly

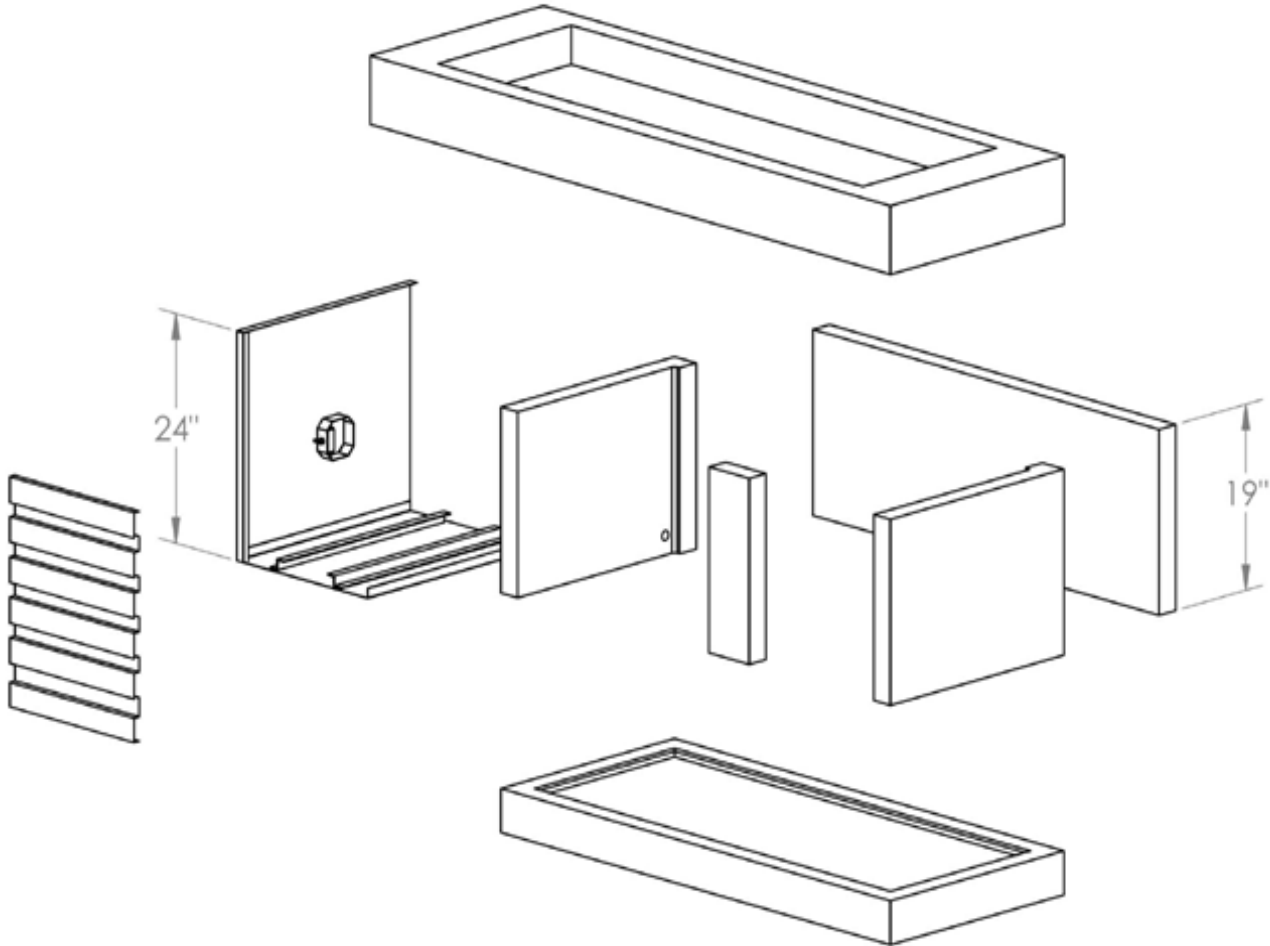


Figure 27B – NAV-6-HT-BC-2 Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-6-HT-BC-2 Cold Food Counter Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>16</b>
WIDTH	<b>90"</b>
HEIGHT	<b>31"</b>
DEPTH	<b>26"</b>
BODY DEPTH W/DOORS	<b>28"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>610</b>
CRATED WEIGHT (LBS)	<b>740</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>5500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 27, NAV-6-HT-BC-2 Specifications

## **Model NAV-8-HT-BC-2 MARINE COLD FOOD COUNTERS**

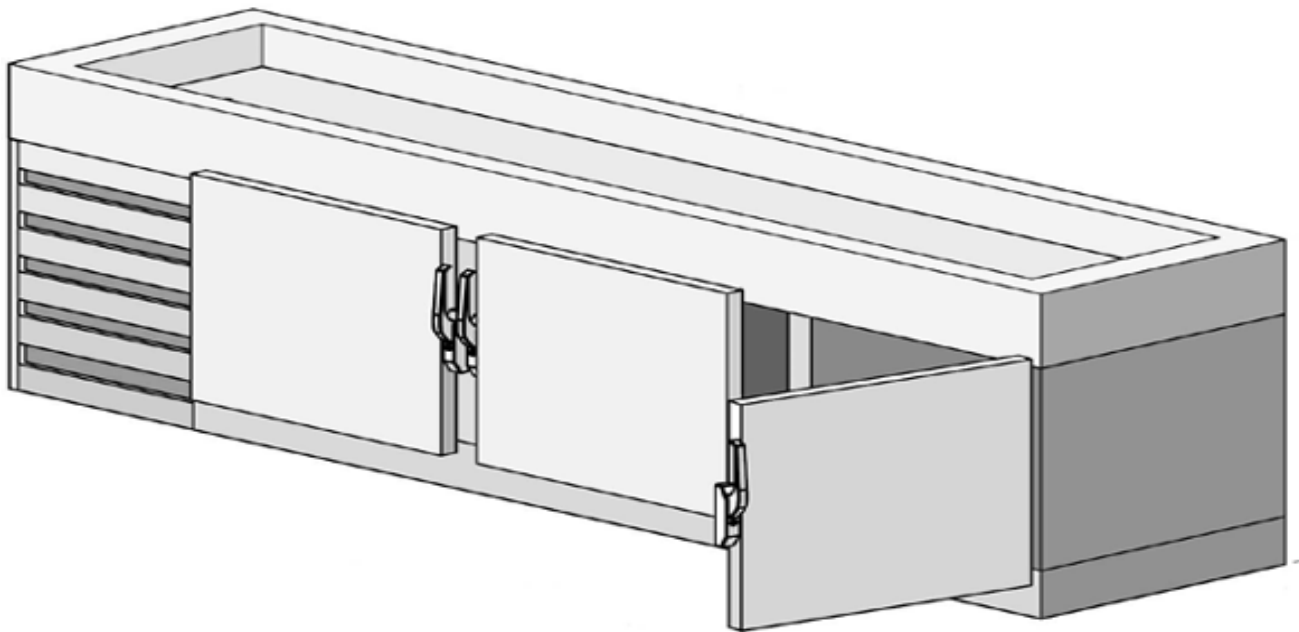


Figure 28 – NAV-8-HT-BC-2 Marine Cold Food Counter Unit



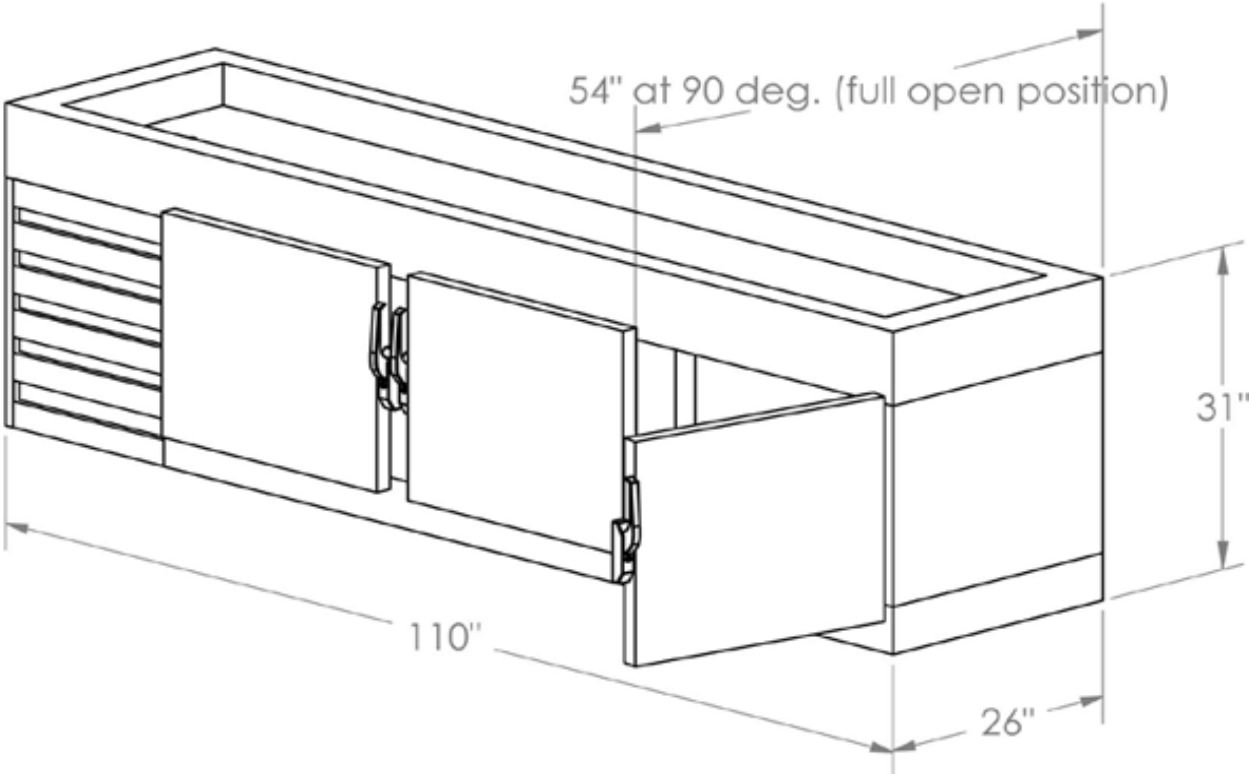


Figure 28A – NAV-8-HT-BC-2 Modular Assembly

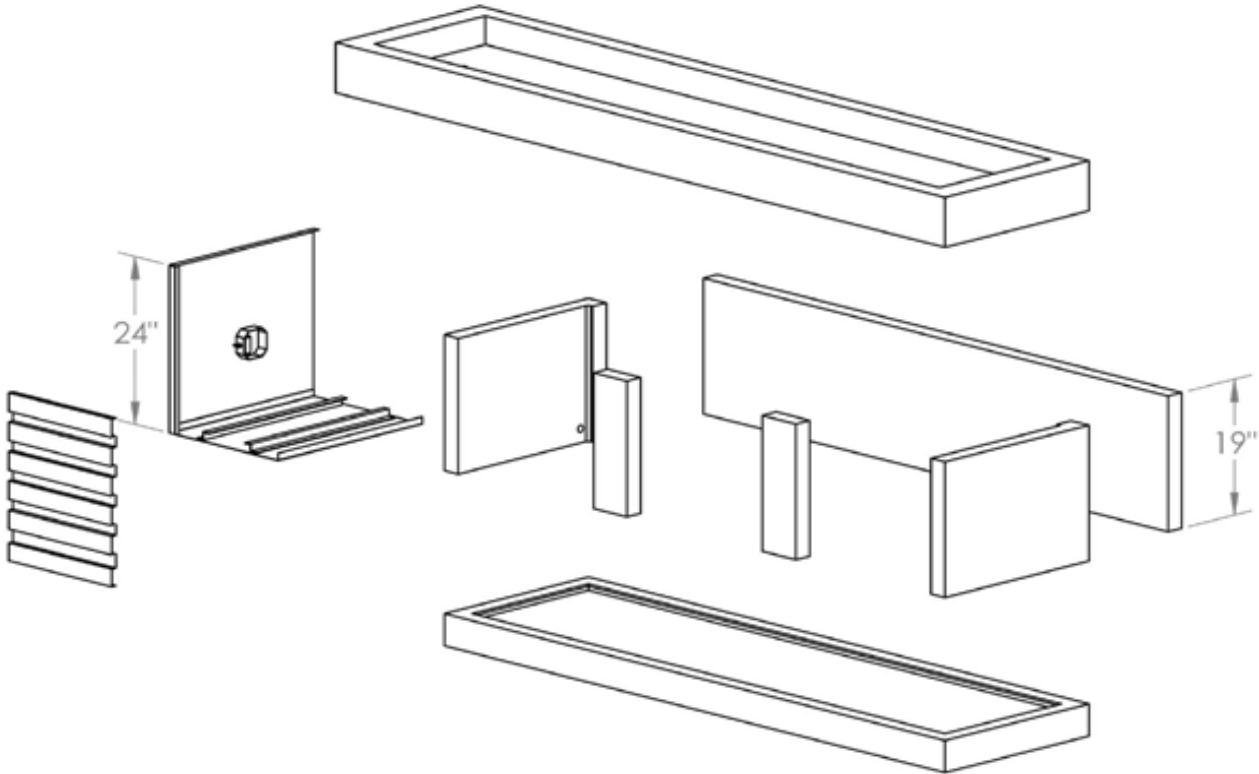


Figure 28B – NAV-8-HT-BC-2 Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-8-HT-BC-2 Cold Food Counter Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>17</b>
WIDTH	<b>110"</b>
HEIGHT	<b>31"</b>
DEPTH	<b>26"</b>
BODY DEPTH W/DOORS	<b>28"</b>
NUMBER OF SHELVES	<b>3</b>
NUMBER OF DOORS	<b>3</b>
ASSEMBLED WEIGHT (LBS)	<b>750</b>
CRATED WEIGHT (LBS)	<b>930</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>6500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>9</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 28, NAV-6-HT-BC-2 Specifications

## CHAPTER 5

# MARINE UNDER COUNTER FREEZERS



## **MARINE UNDER COUNTER FREEZERS**

### **OPTIONAL EQUIPMENT:**

- Modular Design
- Aluminum Construction
- Digital Thermometer
- Spring Assist Hinges

### **CONSTRUCTION:**

- Reinforced #304 stainless steel top, 11 gauge sub-top
- Formed in place, CFC free urethane insulation, highest R-value
- Stainless steel spill proof shelves adjustable on ½" centers
- Stainless steel louver panel (allows intake & discharge of air from front of cabinet)
- 2" exterior dial thermometer
- Extra heavy duty chrome plated hinges
- Positive keyed locking handle provides best seal.
- Vinyl extruded replacement gaskets
- Stainless steel footed leg

### **HEAVY DUTY REFRIGERATION SYSTEM**

- Ozone safe R-404A refrigerator
- Wrapped refrigeration system
- Sealed, condensing unit, air or water cooled with pull out design
- Preset temperature controls thermostatic expansion valve
- Thermostatic expansion valve

## **Model NAV-5-LT-CT MARINE UNDER COUNTER FREEZER**

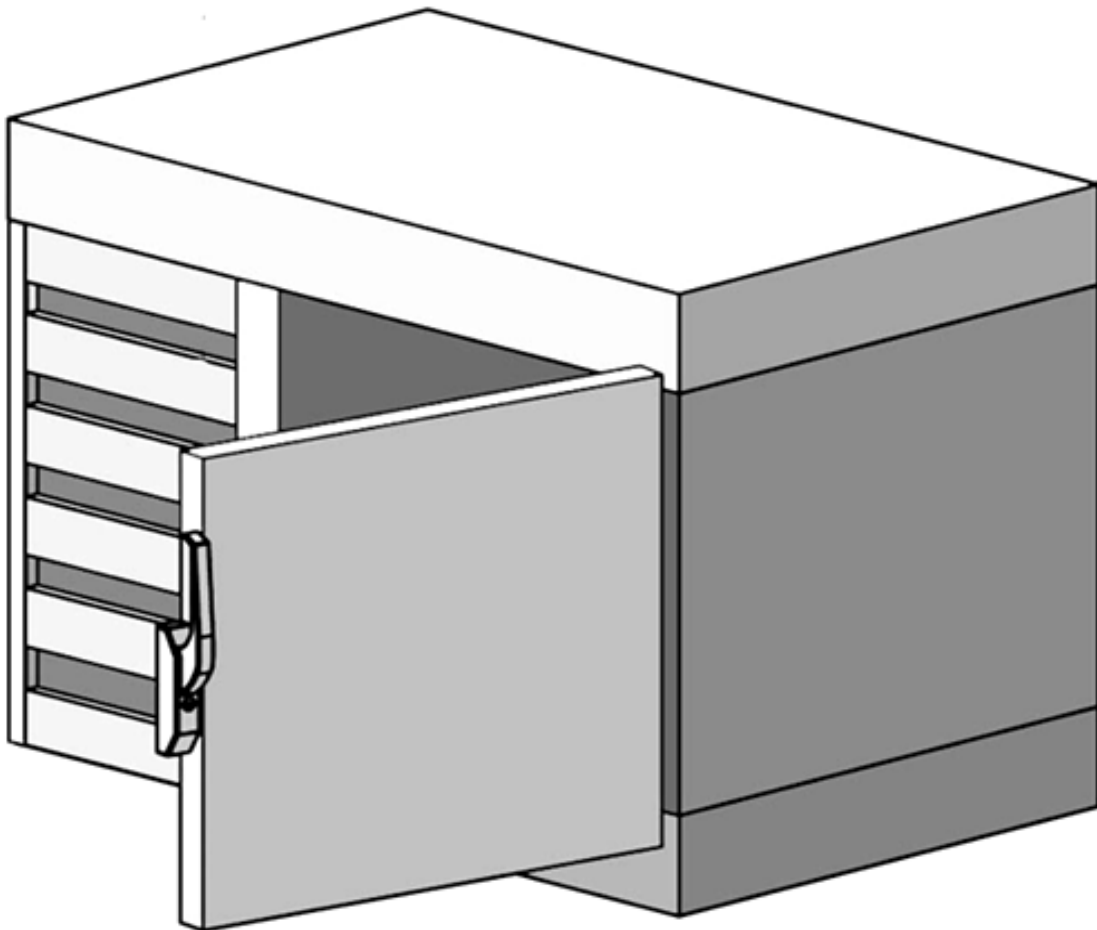


Figure 29 – NAV-5-LT-CT Marine Under Counter Freezer Unit

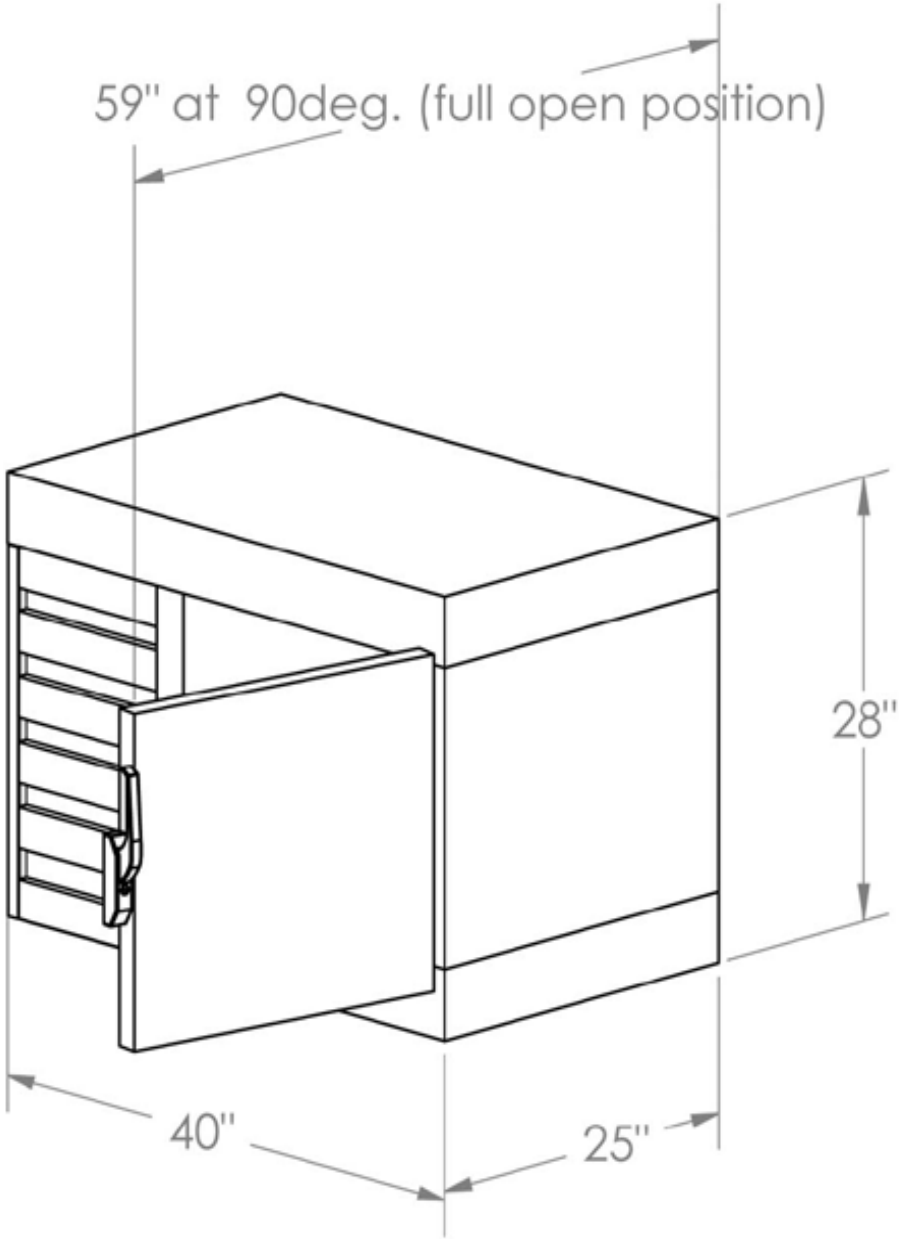


Figure 29A – NAV-5-LT-CT Modular Assembly

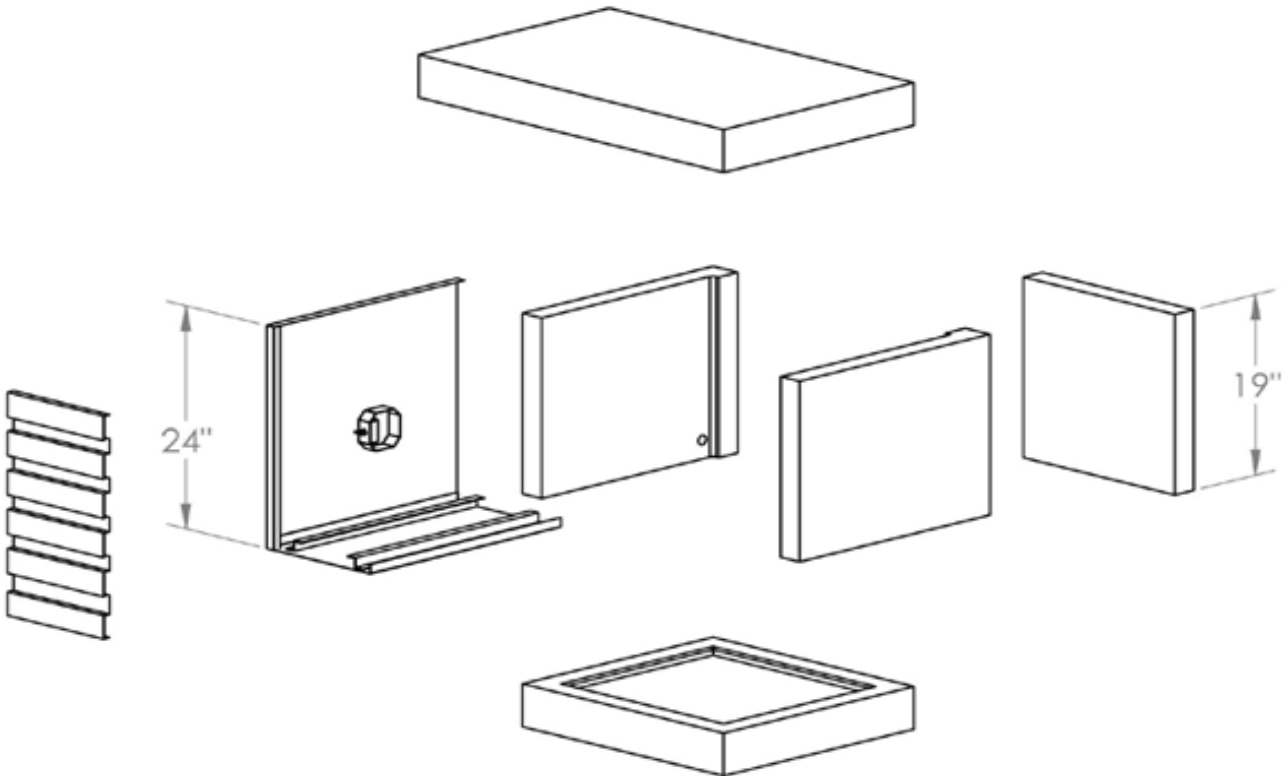


Figure 29B – NAV-5-LT-CT Exploded View Shown Without Doors or Compressor



### MODEL SPECIFICATIONS

<b>NAV-5-LT-CT Under Counter Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>5</b>
WIDTH	<b>40"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>1</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>275</b>
CRATED WEIGHT (LBS)	<b>390</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>2000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 29, NAV-5-LT-CT Specifications

## **Model NAV-10-LT-CT MARINE UNDER COUNTER FREEZER**

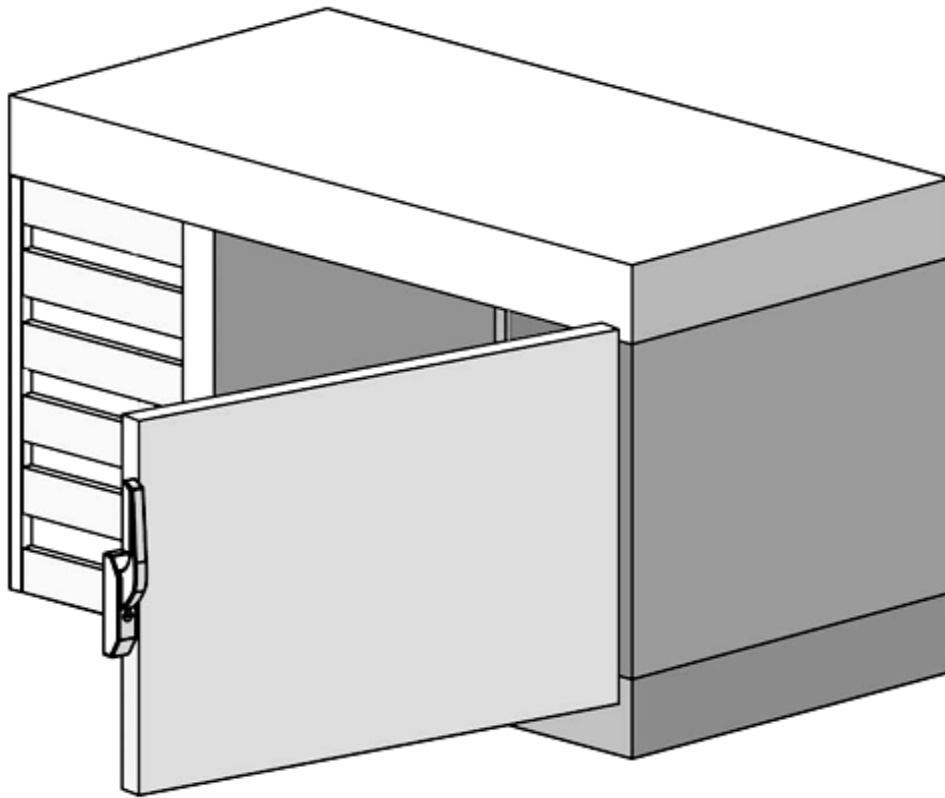


Figure 30 – NAV-10-LT-CT Marine Under Counter Freezer Unit

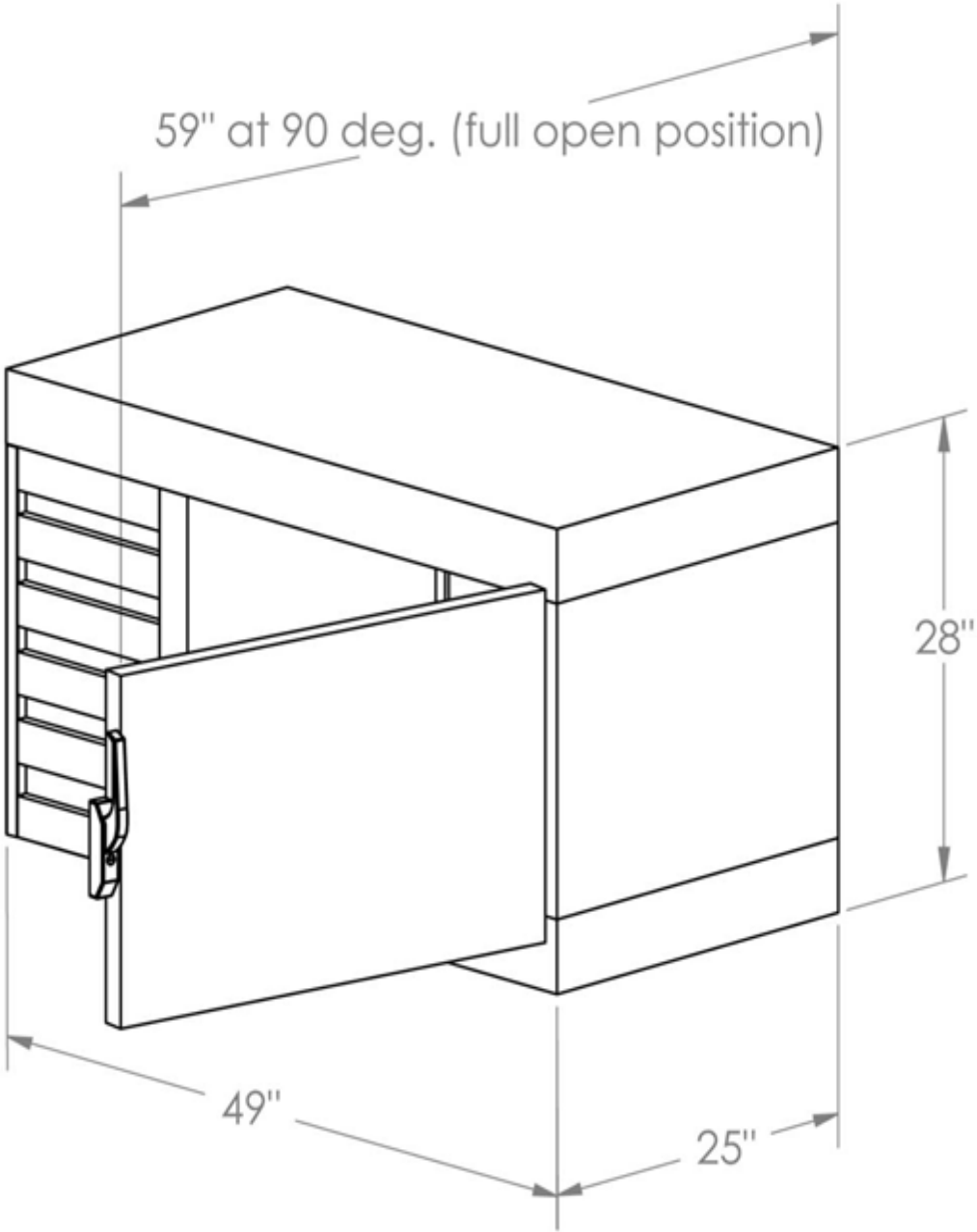


Figure 30A – NAV-10-LT-CT Modular Assembly

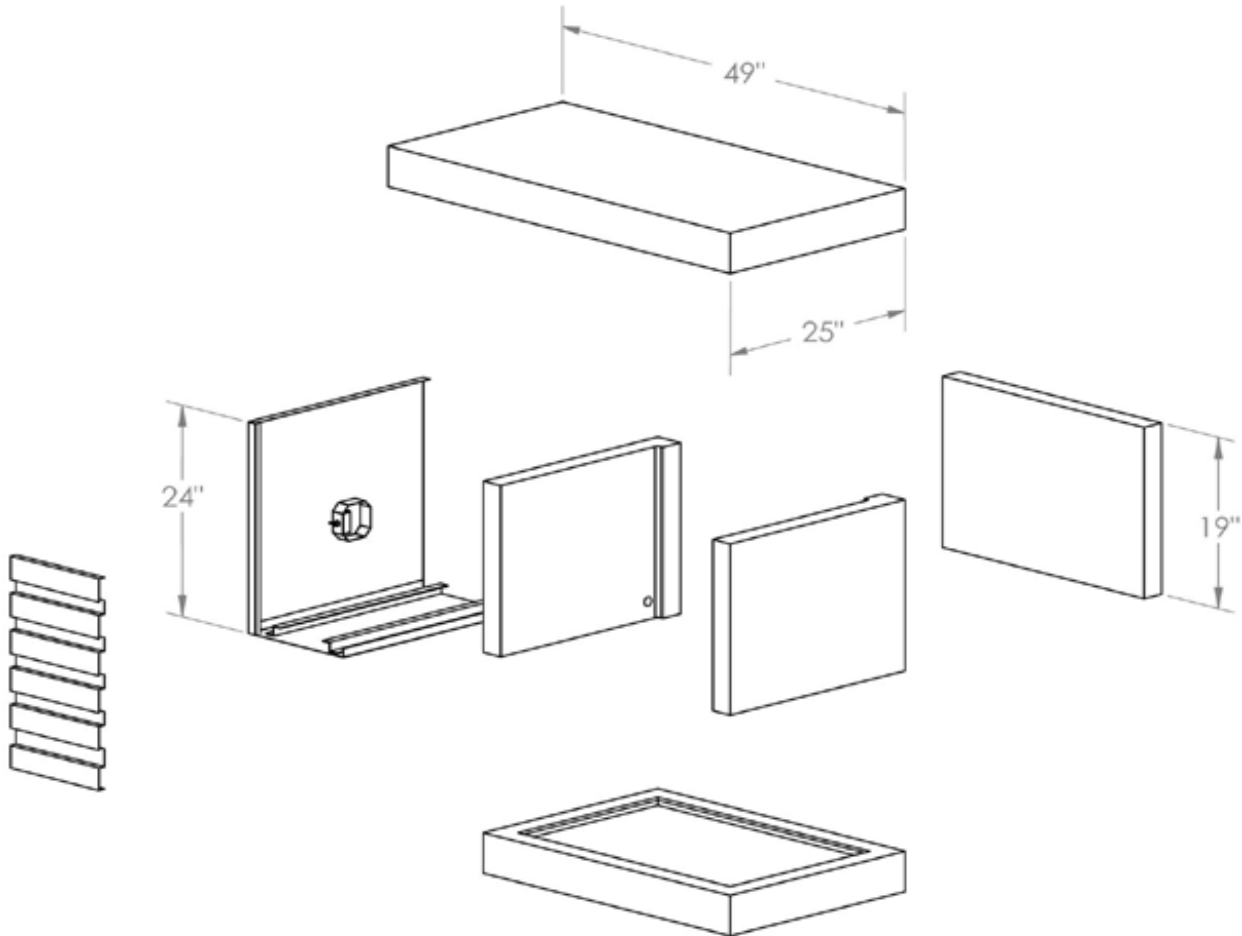


Figure 30B – NAV-10-LT-CT Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-10-LT-CT Under Counter Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>10</b>
WIDTH	<b>49"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>1</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>325</b>
CRATED WEIGHT (LBS)	<b>430</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>3000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7.5</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 30, NAV-10-LT-CT Specifications

## Model NAV-15-LT-CT MARINE UNDER COUNTER FREEZER

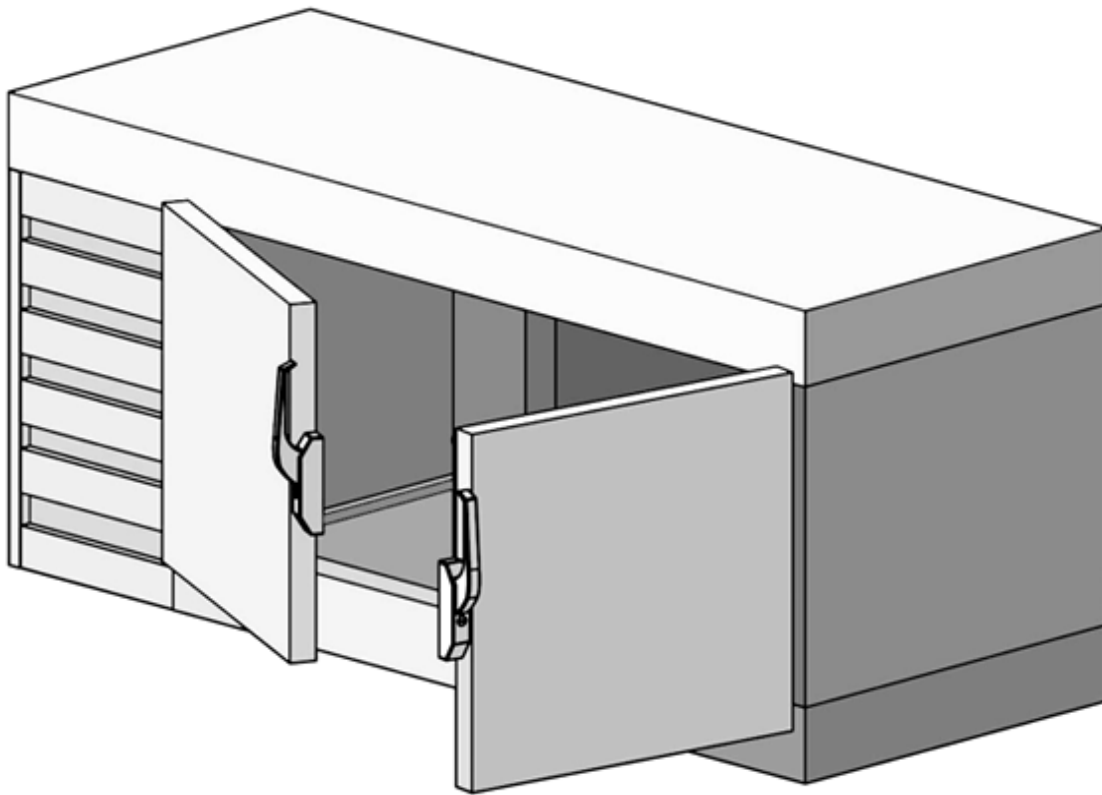


Figure 31 – NAV-15-LT-CT Marine Under Counter Freezer Unit

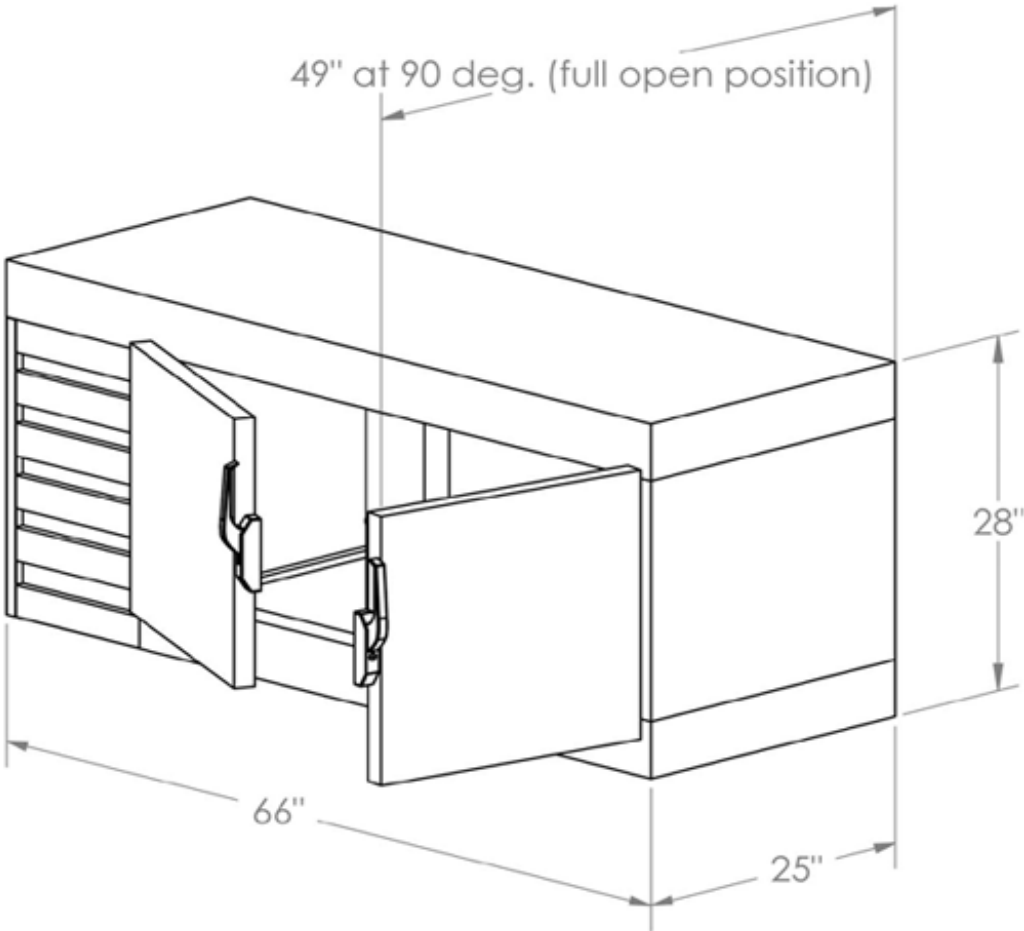


Figure 31A – NAV-15-LT-CT Modular Assembly

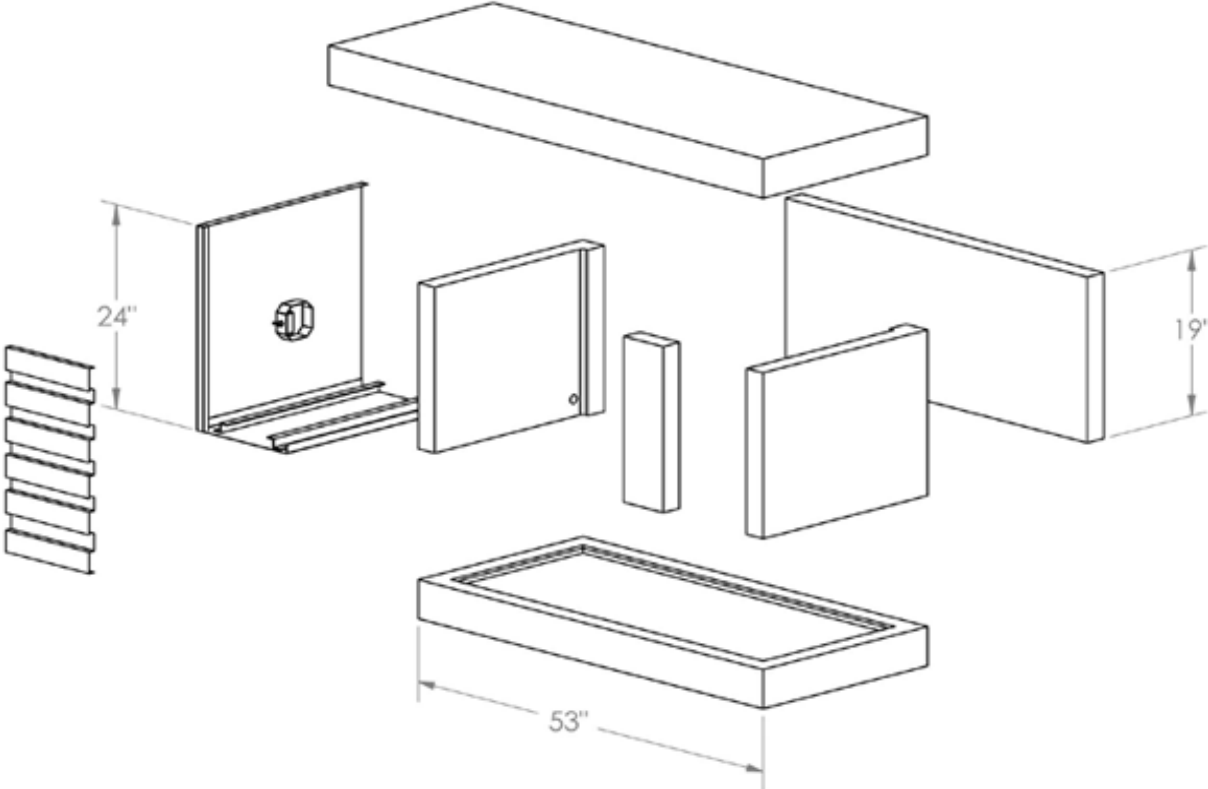


Figure 31B – NAV-15-LT-CT Exploded View Shown Without Doors or Compressor



### MODEL SPECIFICATIONS

<b>NAV-15-LT-CT Under Counter Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>15</b>
WIDTH	<b>66"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>340</b>
CRATED WEIGHT (LBS)	<b>440</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>3500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>8</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 31, NAV-15-LT-CT Specifications

## Model NAV-20-LT-CT MARINE UNDER COUNTER FREEZER

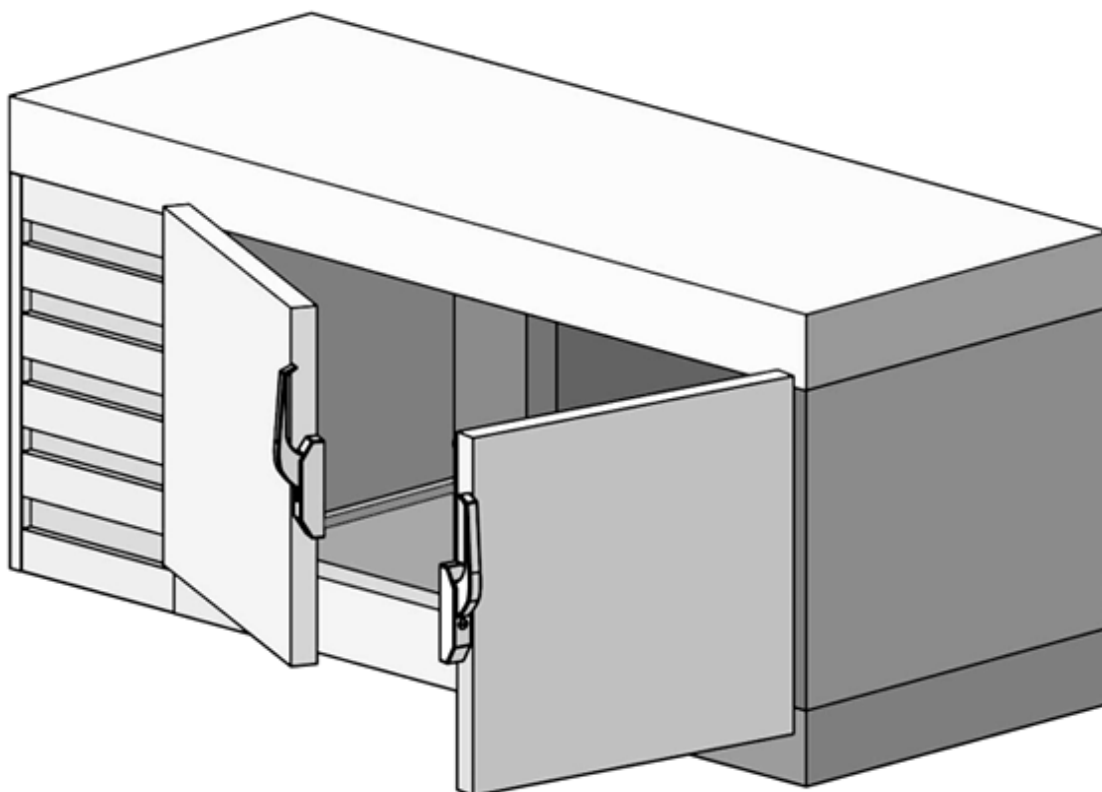


Figure 32 – NAV-20-LT-CT Marine Under Counter Freezer Unit

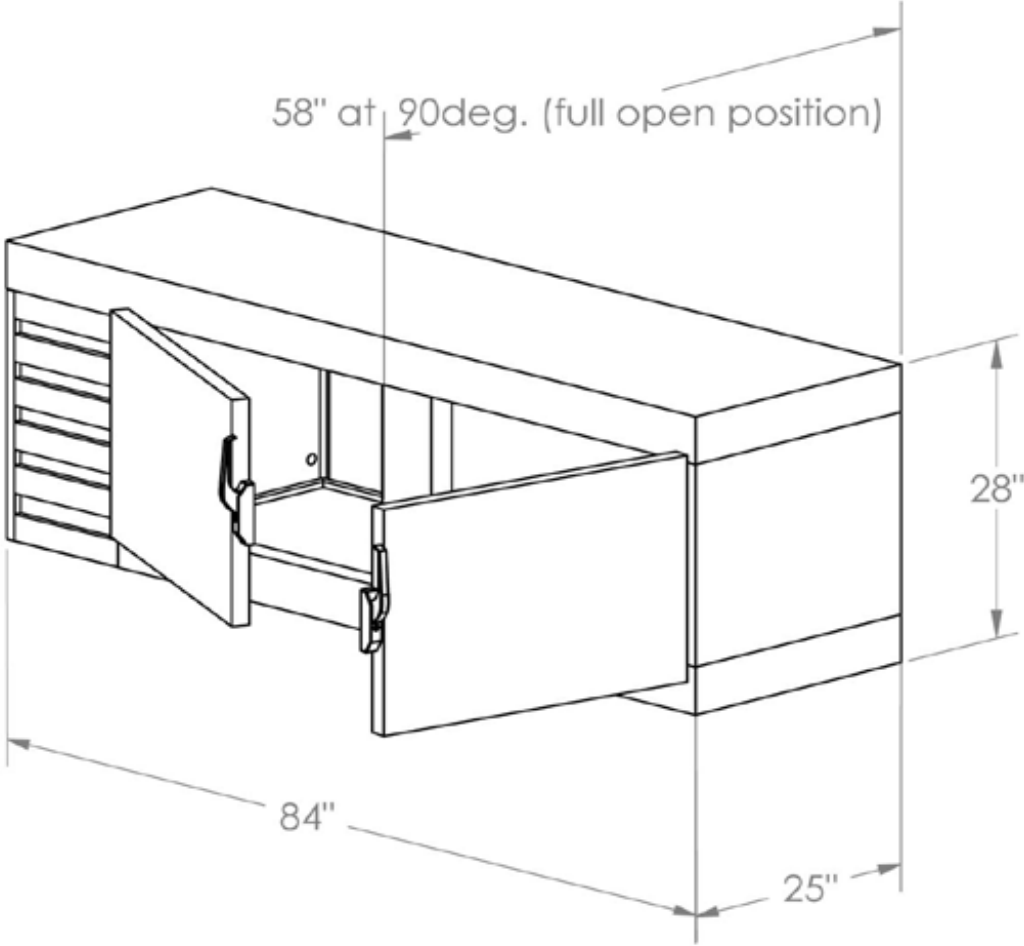


Figure 32A – NAV-20-LT-CT Modular Assembly

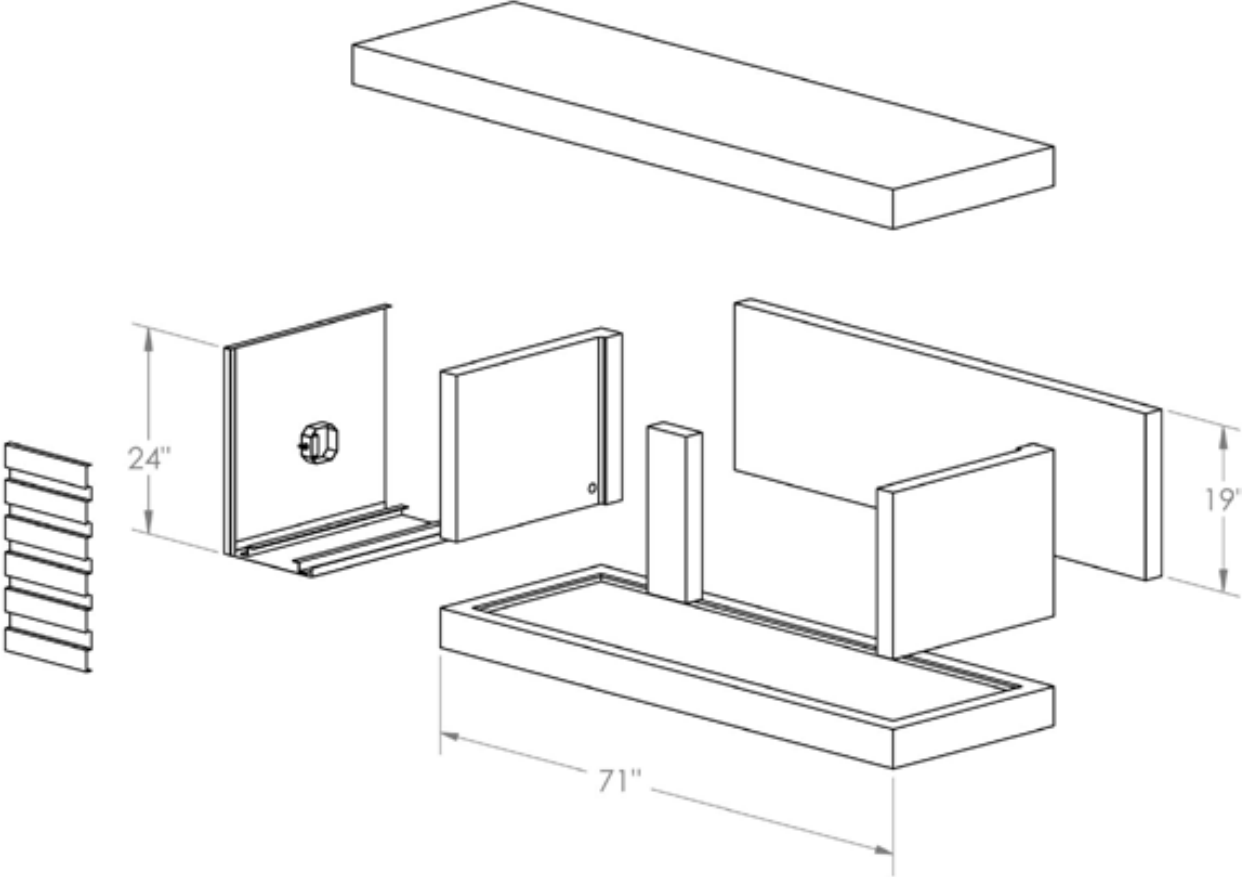


Figure 32B – NAV-20-LT-CT Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-20-LT-CT Under Counter Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>20</b>
WIDTH	<b>84"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>30"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>390</b>
CRATED WEIGHT (LBS)	<b>510</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>4000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>9</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 32, NAV-20-LT-CT Specifications

## **Model NAV-30-LT-CT MARINE UNDER COUNTER FREEZER**

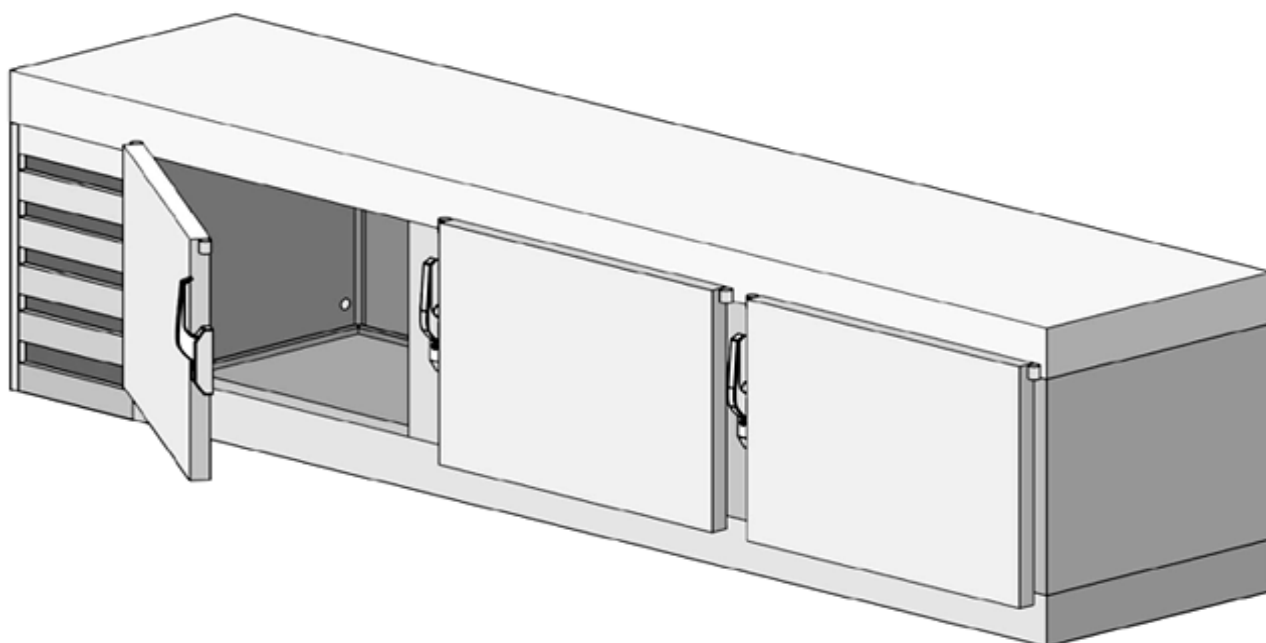


Figure 33 – NAV-30-LT-CT Marine Under Counter Freezer Unit

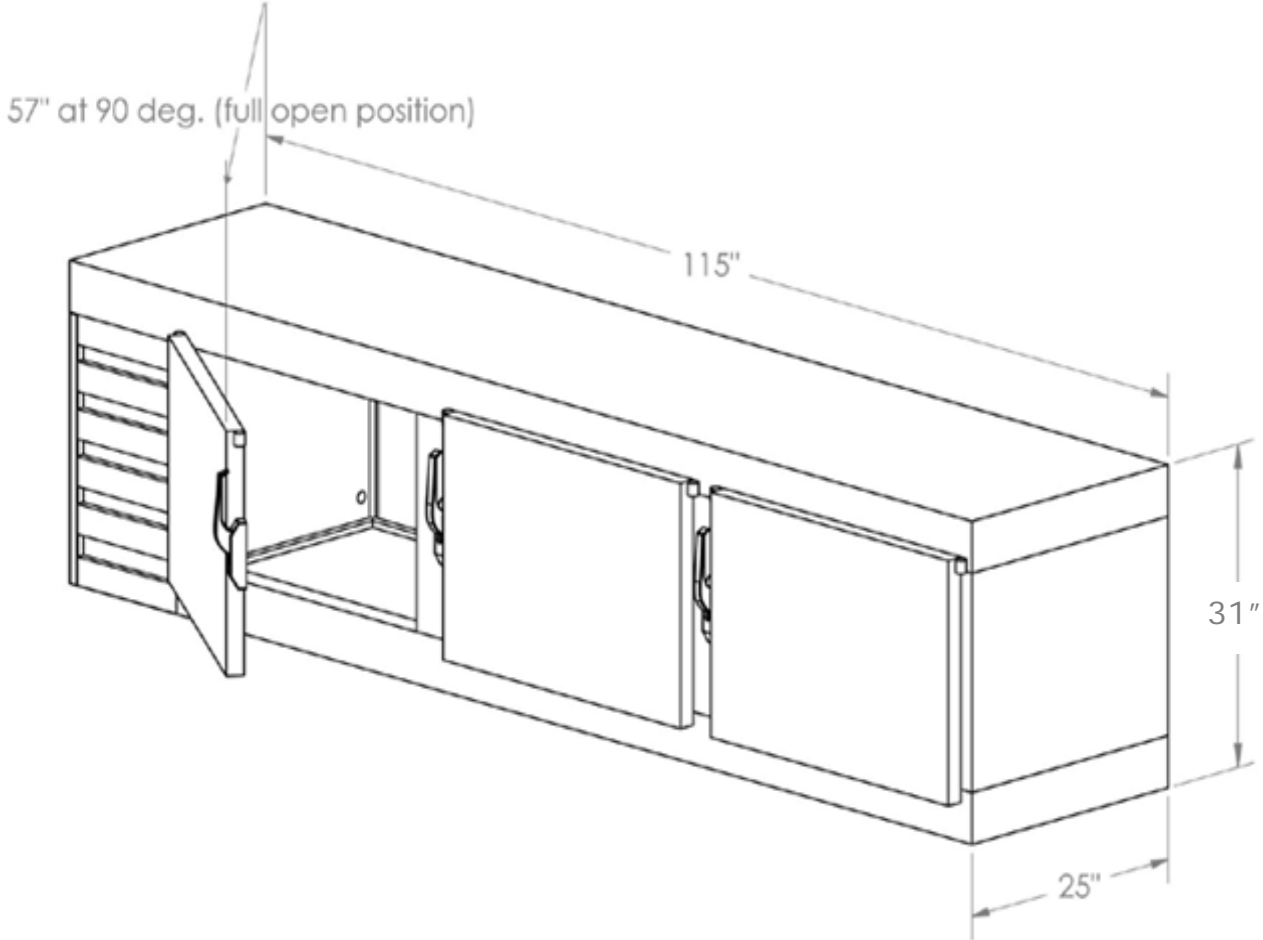


Figure 33A – NAV-30-LT-CT Modular Assembly

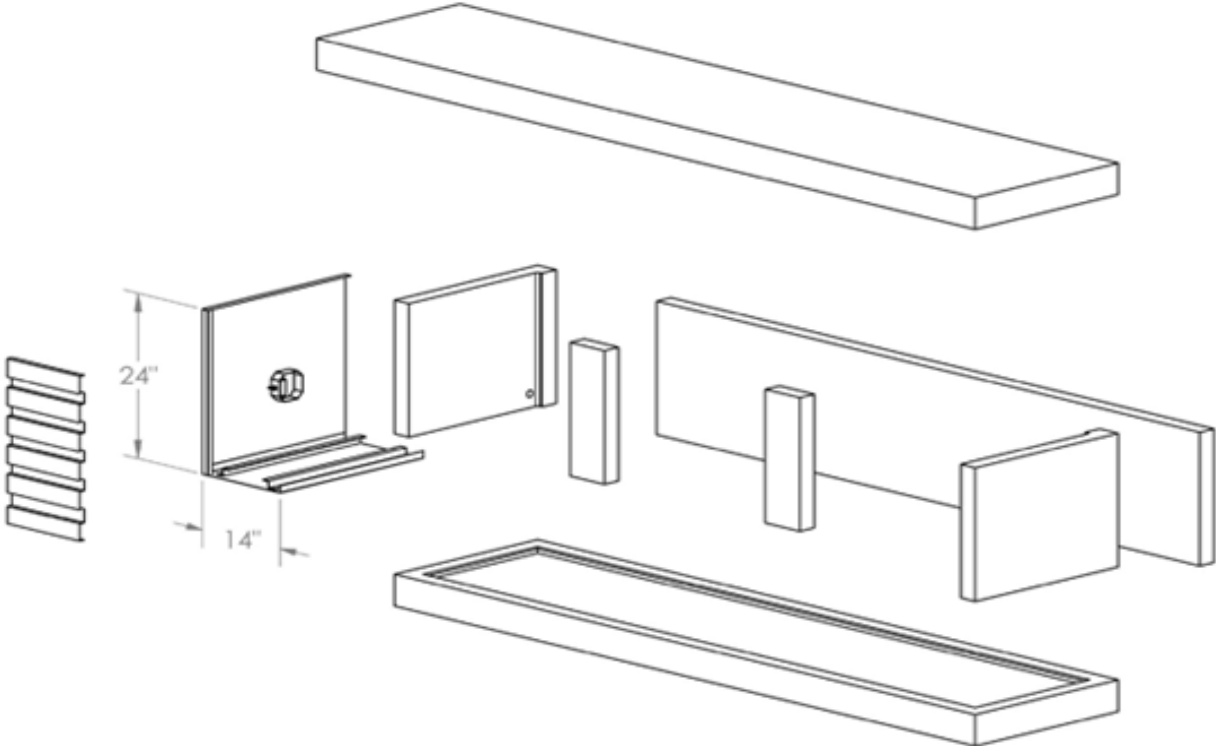


Figure 33B – NAV-30-LT-CT Exploded View Shown Without Doors or Compressor



### MODEL SPECIFICATIONS

<b>NAV-30-LT-CT Under Counter Freezer Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>30</b>
WIDTH	<b>115"</b>
HEIGHT	<b>31"</b>
DEPTH	<b>26"</b>
BODY DEPTH W/DOORS	<b>28"</b>
NUMBER OF SHELVES	<b>4</b>
NUMBER OF DOORS	<b>3</b>
ASSEMBLED WEIGHT (LBS)	<b>615</b>
CRATED WEIGHT (LBS)	<b>715</b>
REFRIGERANT	<b>R404A</b>
BTU / HOUR	<b>5500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>10</b>
PHASE	<b>1</b>
COMPRESSOR	<b>3/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 33, NAV-30-LT-CT Specifications

## CHAPTER 6

# MARINE UNDER COUNTER REFRIGERATORS



## MARINE UNDER COUNTER REFRIGERATORS

### OPTIONAL EQUIPMENT:

- Modular Design
- Aluminum Construction
- Digital Thermometer
- Spring Assist Hinges

### CONSTRUCTION:

- Reinforced #304 stainless steel top, 11 gauge sub-top
- Formed in place, CFC free urethane insulation, highest R-value
- Stainless steel spill proof shelves adjustable on ½" centers
- Stainless steel louver panel (allows intake & discharge of air from front of cabinet)
- 2" exterior dial thermometer
- Extra heavy duty chrome plated hinges
- Positive keyed locking handle provides best seal.
- Vinyl extruded replacement gaskets
- Stainless steel footed leg

### HEAVY DUTY REFRIGERATION SYSTEM

- Ozone safe R-134A refrigerator
- Wrapped refrigeration system
- Sealed, condensing unit, air or water cooled with pull out design
- Preset temperature controls thermostatic expansion valve
- Thermostatic expansion valve

## **Model NAV-5-HT-CT MARINE UNDER COUNTER REFRIGERATOR**

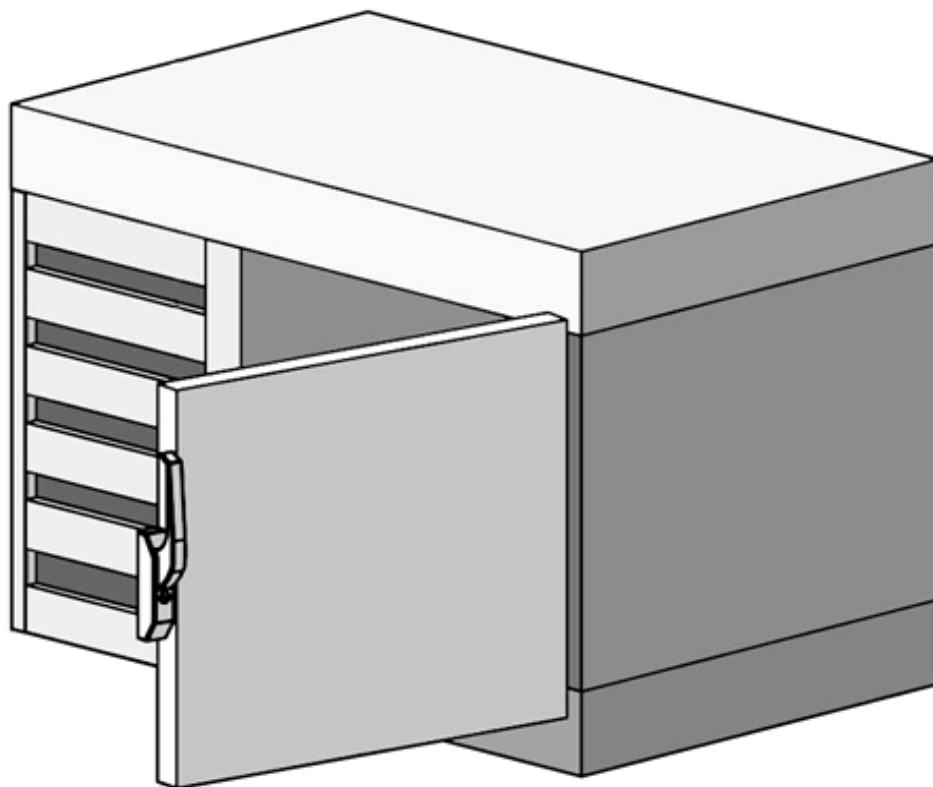


Figure 34 – NAV-5-HT-CT Marine Under Counter Refrigerator Unit

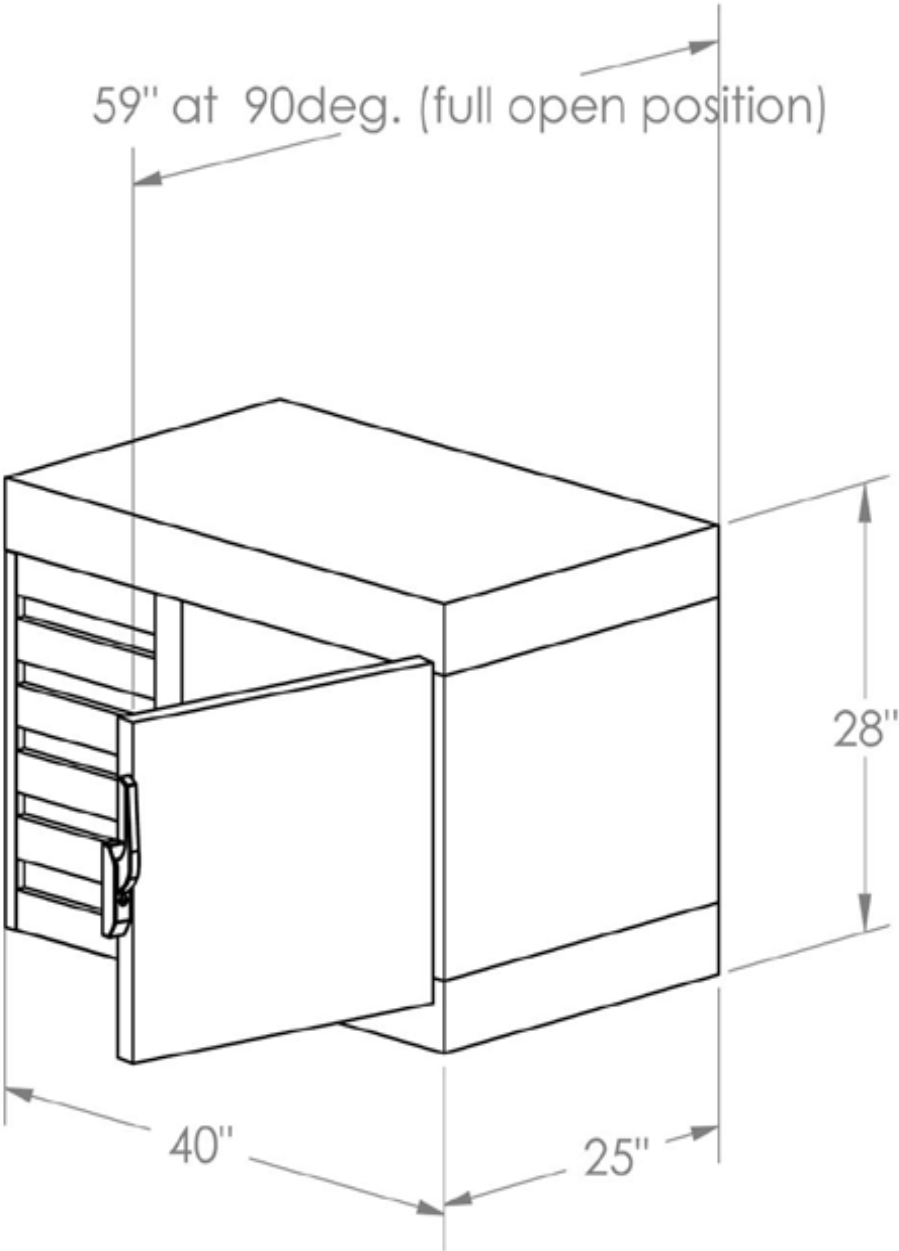


Figure 34A – NAV-5-HT-CT Modular Assembly

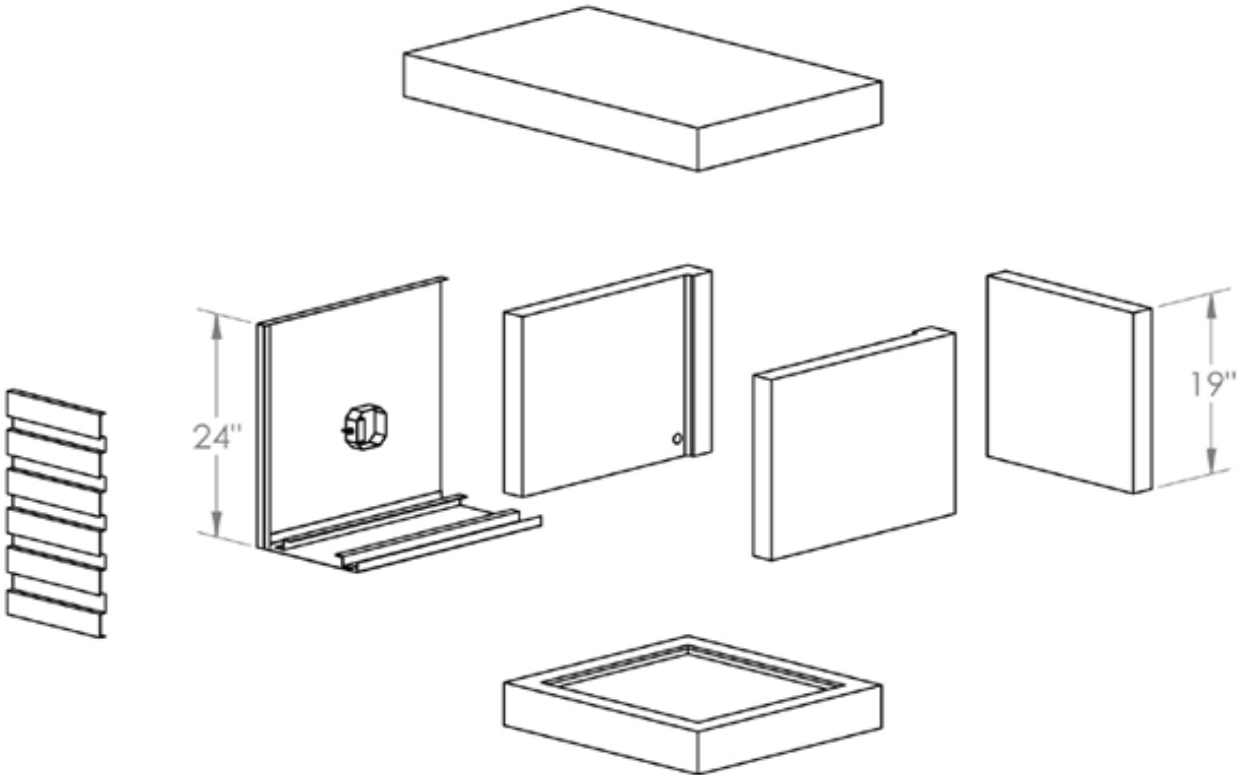


Figure 34B – NAV-5-HT-CT Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-5-HT-CT Under Counter Refrigerator Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>5</b>
WIDTH	<b>40"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>1</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>275</b>
CRATED WEIGHT (LBS)	<b>390</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>2500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>5</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/4 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 34, NAV-5-HT-CT Specifications

## Model NAV-10-HT-CT MARINE UNDER COUNTER REFRIGERATOR

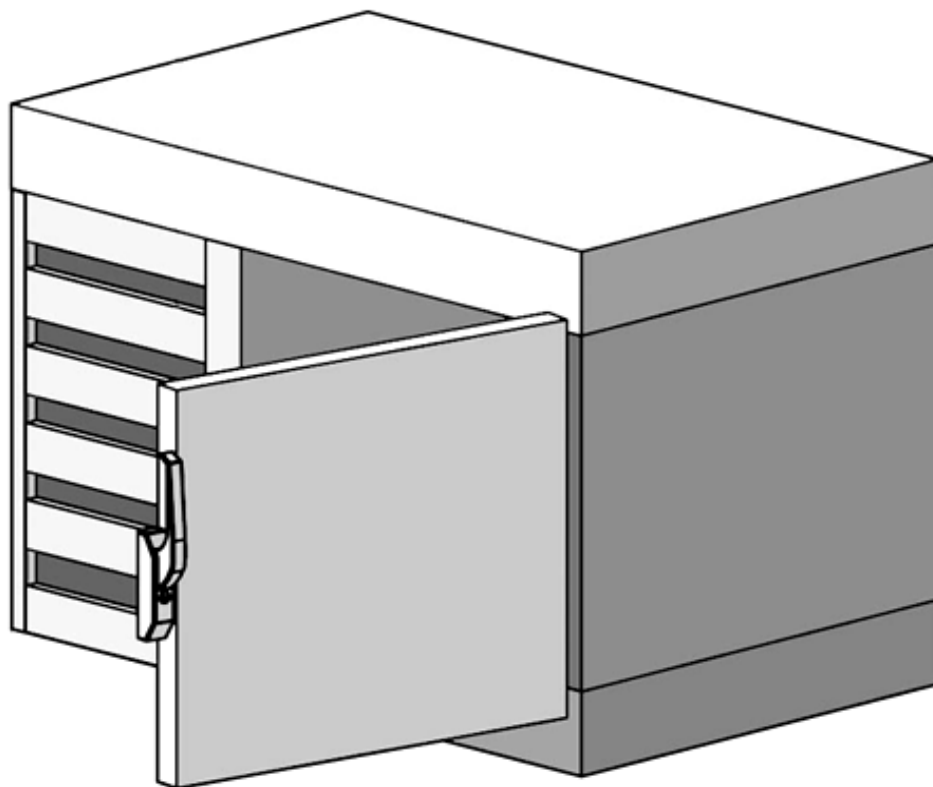


Figure 35 – NAV-10-HT-CT Marine Under Counter Refrigerator Unit



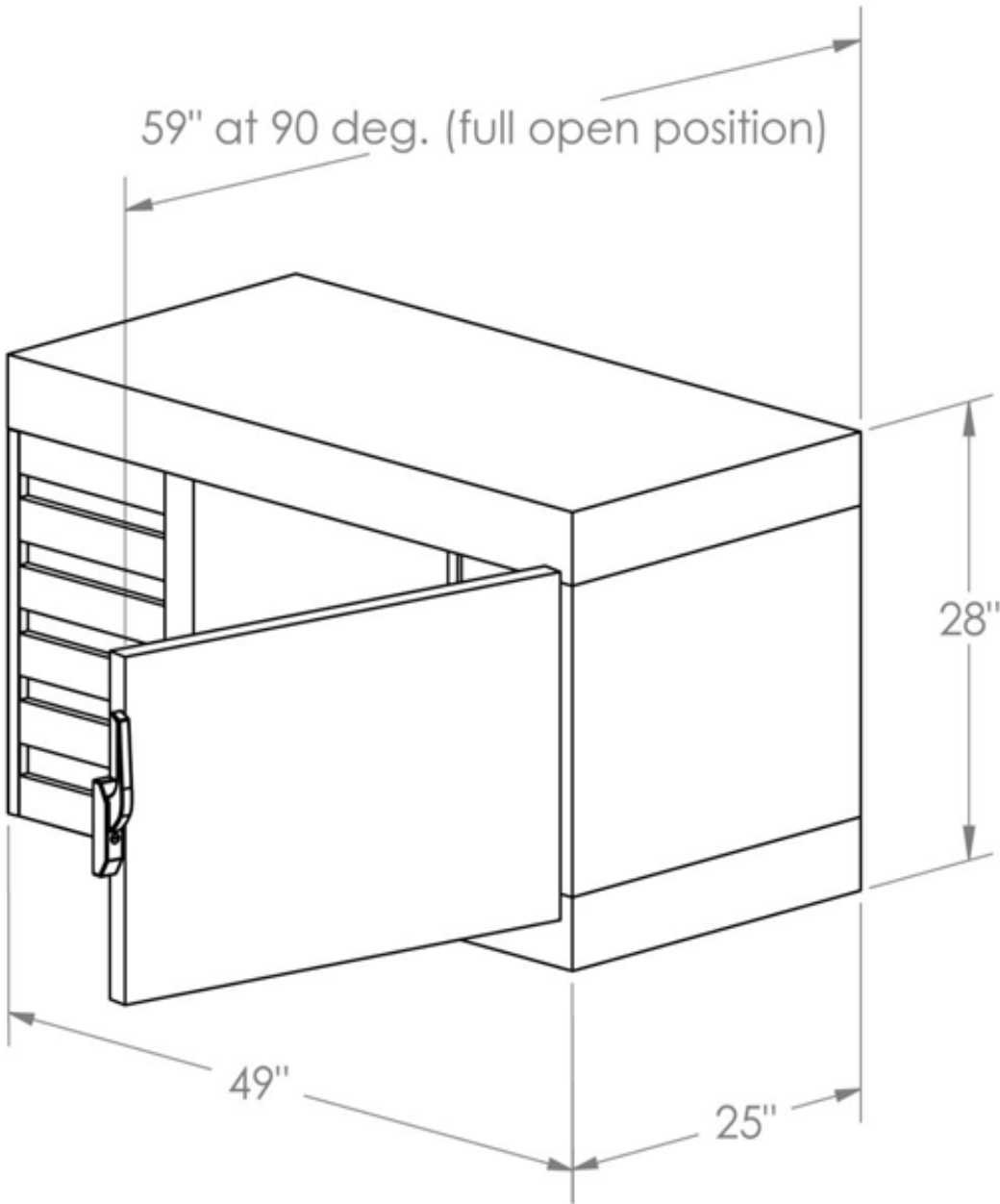


Figure 35A – NAV-10-HT-CT Modular Assembly

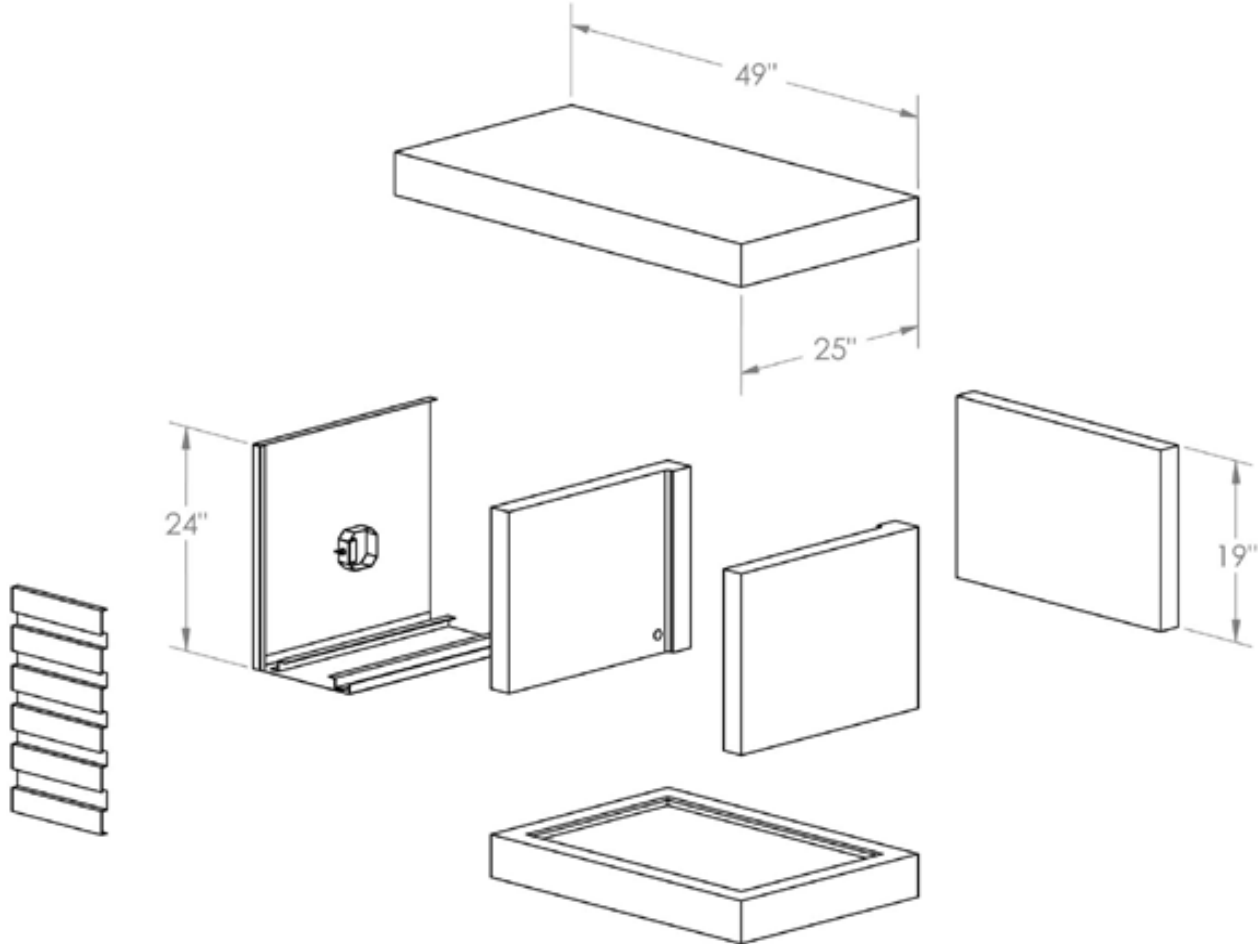


Figure 35B – NAV-10-HT-CT Exploded View Shown Without Doors or Compressor

## MODEL SPECIFICATIONS

<b>NAV-10-HT-CT Under Counter Refrigerator Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>10</b>
WIDTH	<b>49"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>1</b>
NUMBER OF DOORS	<b>1</b>
ASSEMBLED WEIGHT (LBS)	<b>325</b>
CRATED WEIGHT (LBS)	<b>430</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>3000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>4</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 35, NAV-10-HT-CT Specifications

## **Model NAV-15-HT-CT MARINE UNDER COUNTER REFRIGERATOR**

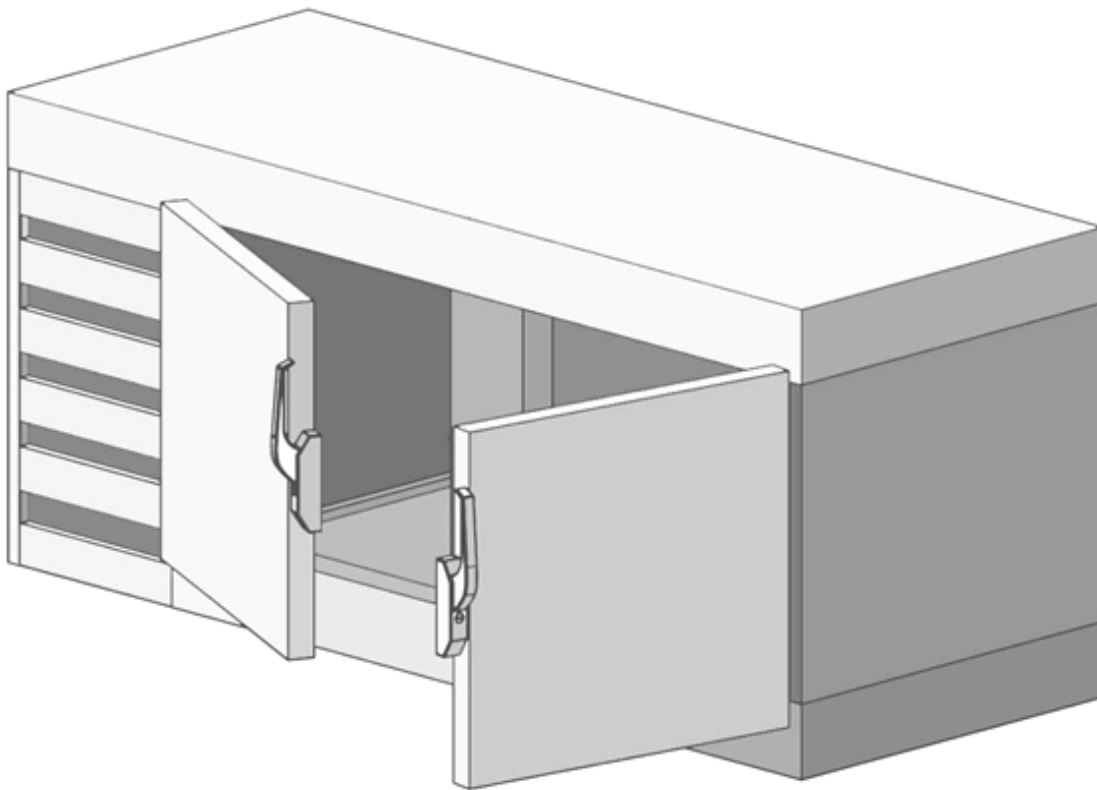


Figure 36 – NAV-15-HT-CT Marine Under Counter Refrigerator Unit

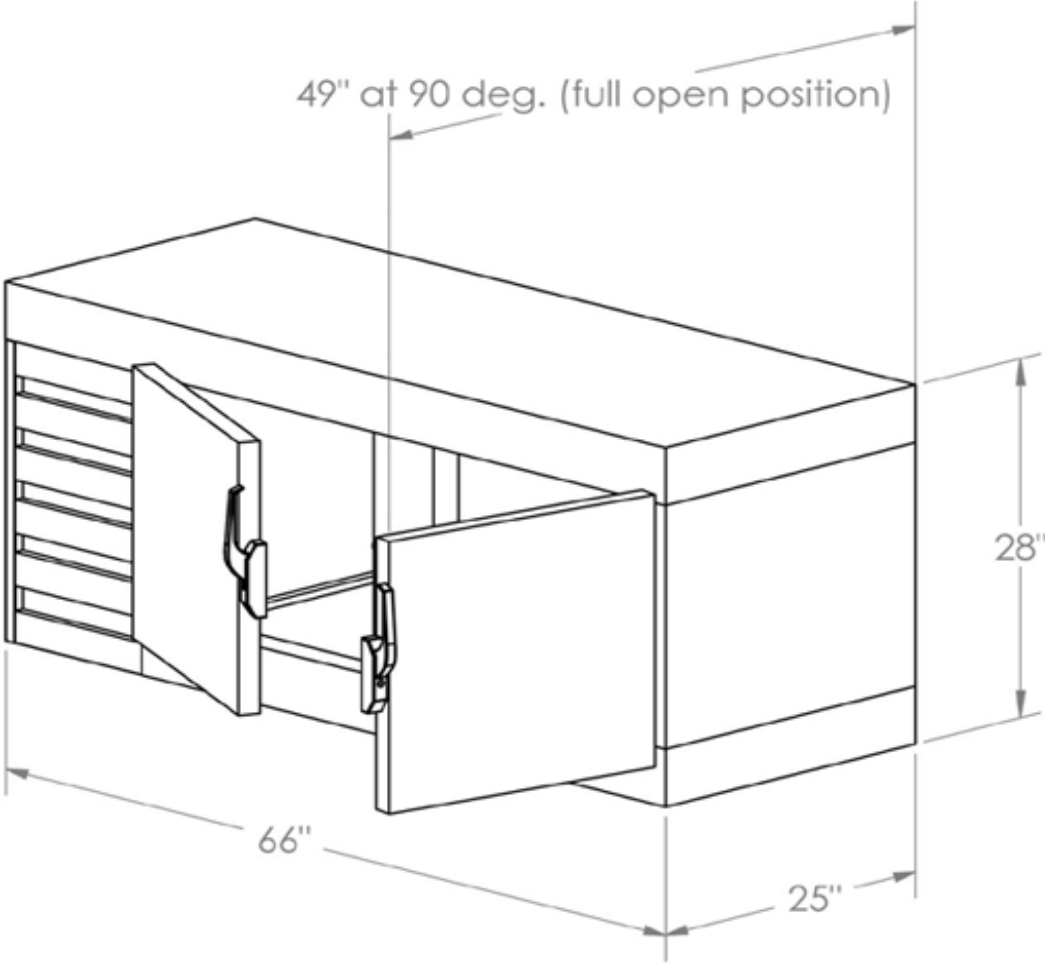


Figure 36A – NAV-15-HT-CT Modular Assembly

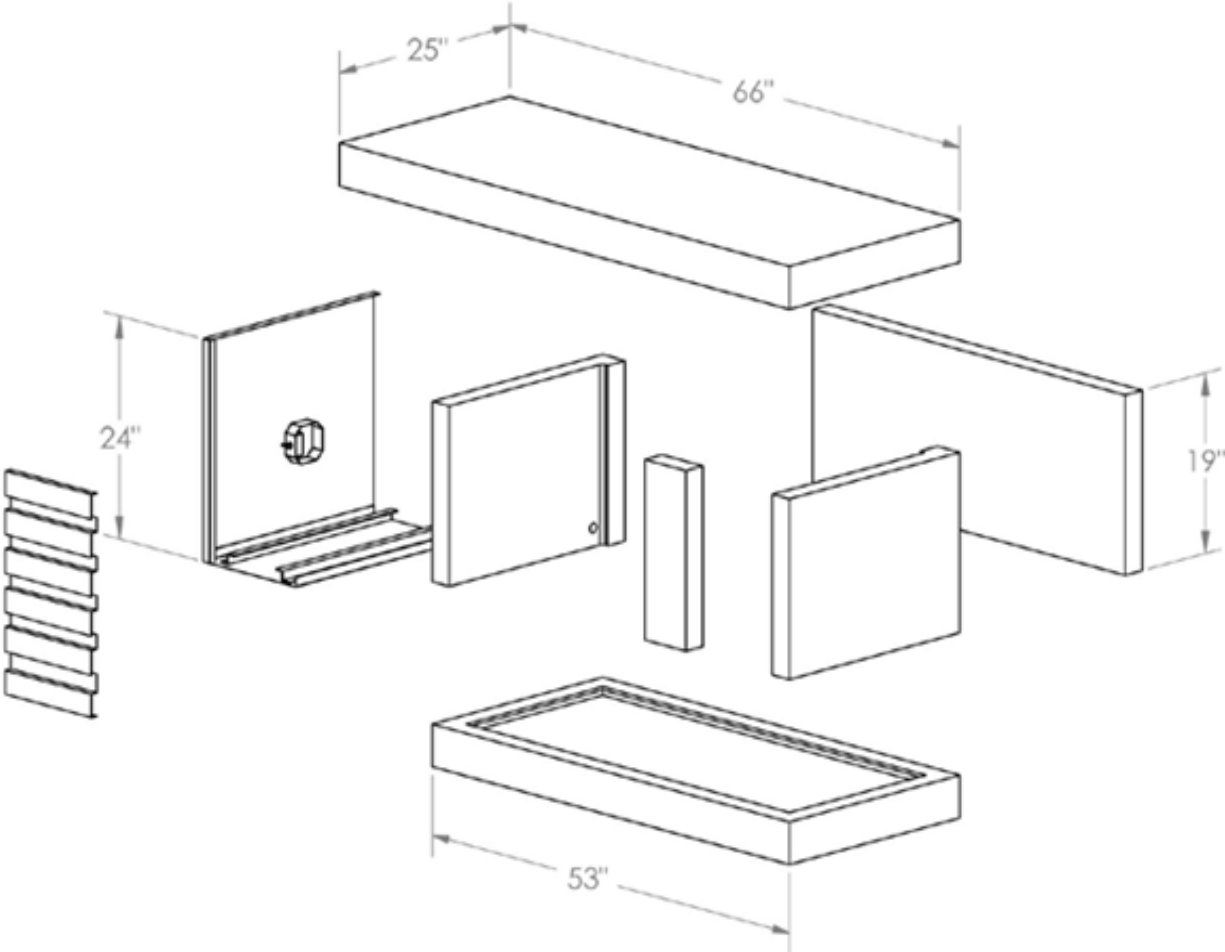


Figure 36B – NAV-15-HT-CT Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-15-HT-CT Under Counter Refrigerator Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>15</b>
WIDTH	<b>66"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>340</b>
CRATED WEIGHT (LBS)	<b>440</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>4500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>7</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 36, NAV-15-HT-CT Specifications

## Model NAV-20-HT-CT MARINE UNDER COUNTER REFRIGERATOR

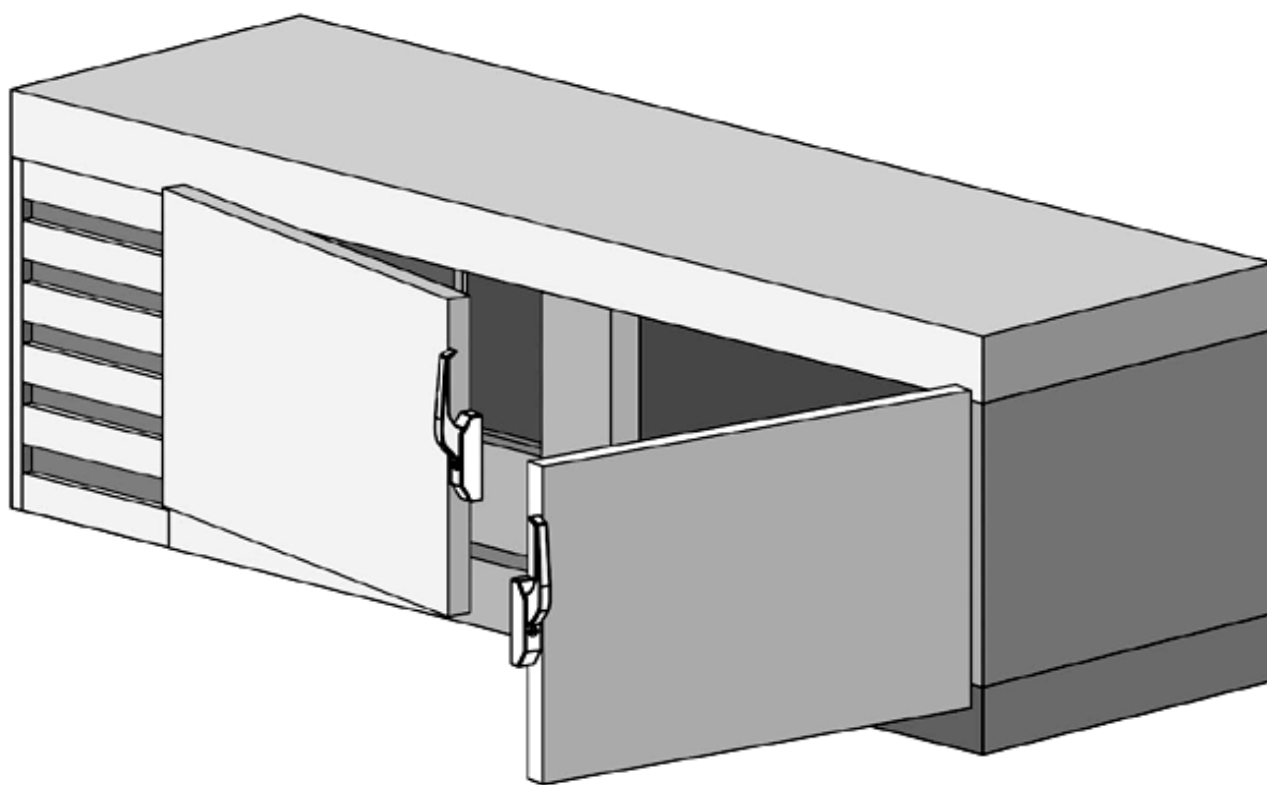


Figure 37 – NAV-20-HT-CT Marine Under Counter Refrigerator Unit



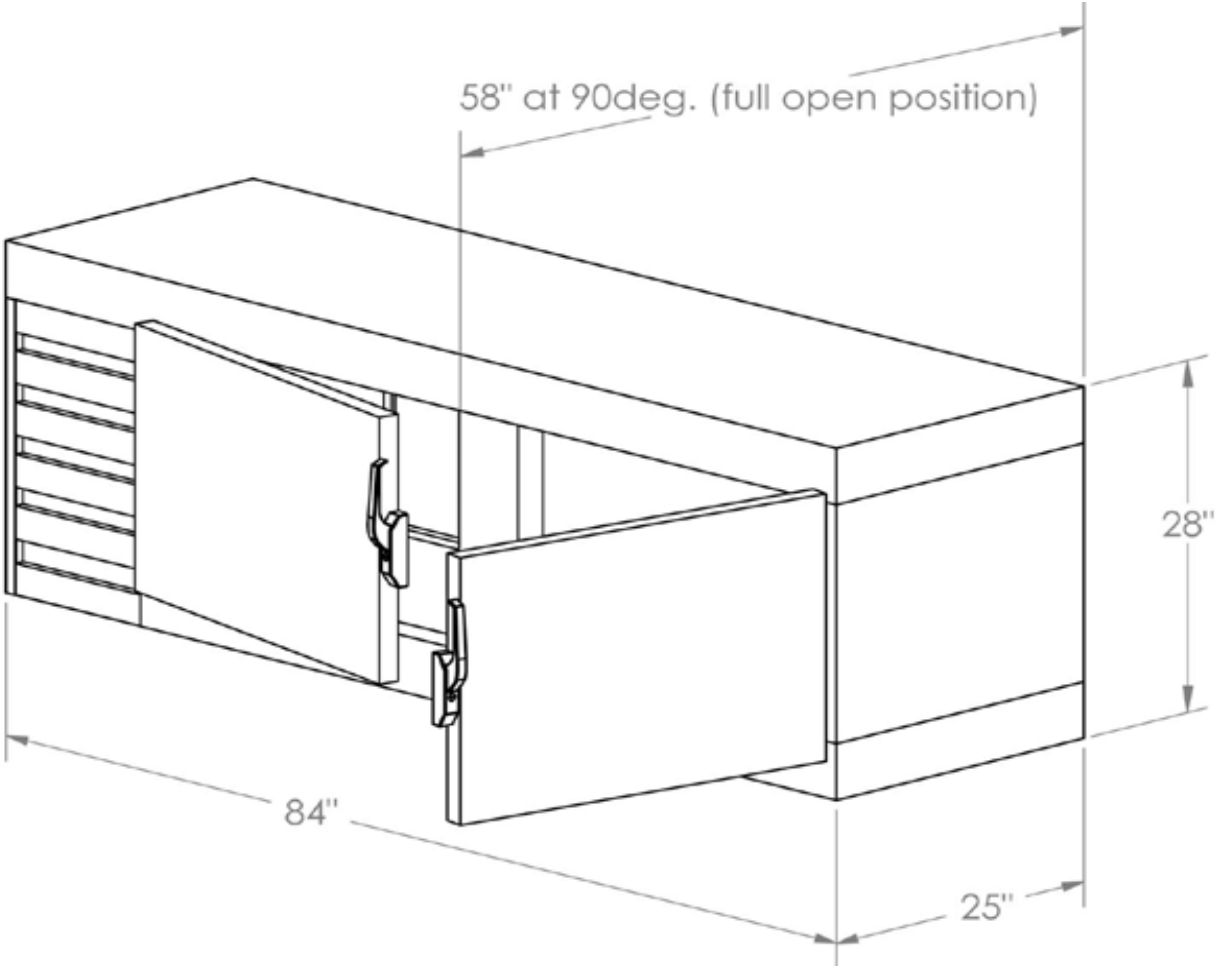


Figure 37A – NAV-20-HT-CT Modular Assembly

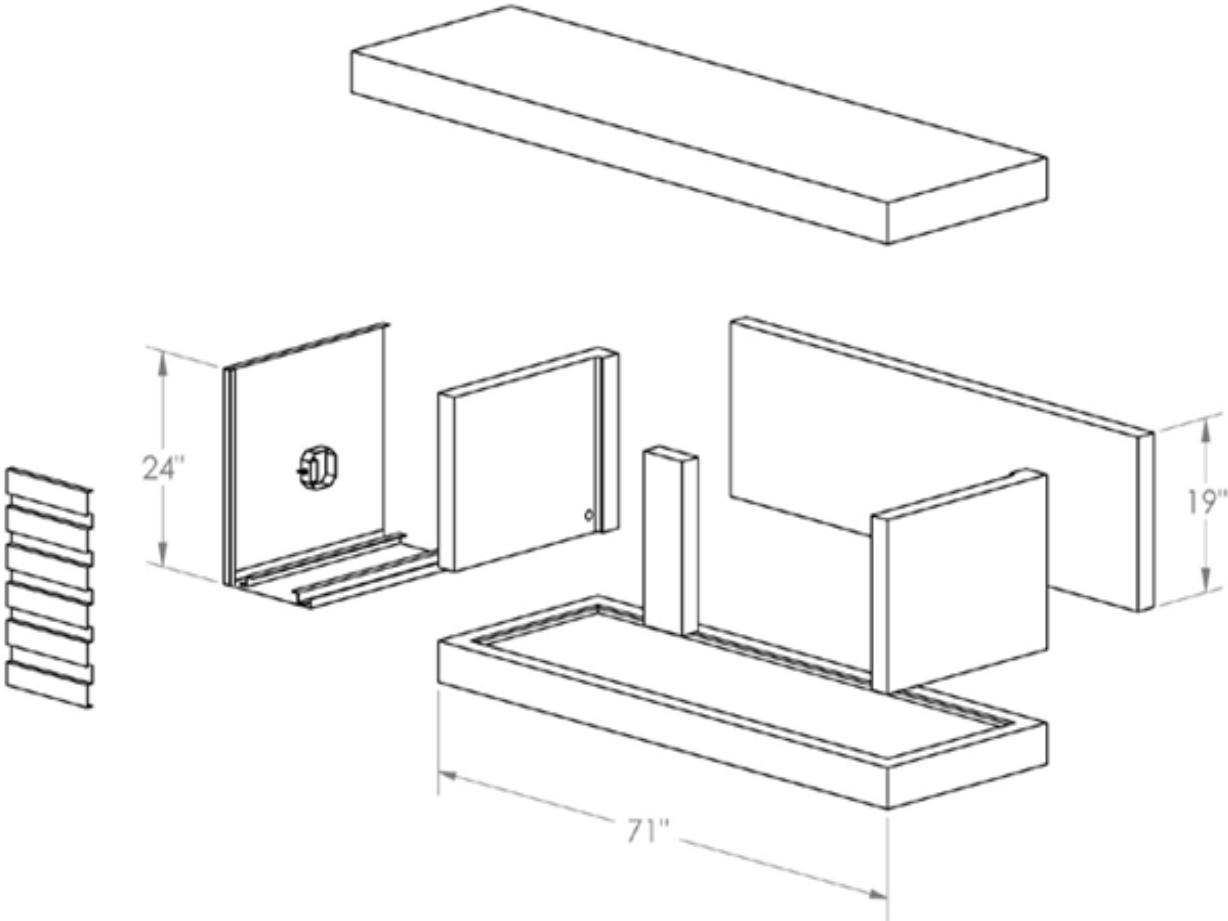


Figure 37B – NAV-20-HT-CT Exploded View Shown Without Doors or Compressor

### MODEL SPECIFICATIONS

<b>NAV-20-HT-CT Under Counter Refrigerator Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>20</b>
WIDTH	<b>84"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>30"</b>
NUMBER OF SHELVES	<b>2</b>
NUMBER OF DOORS	<b>2</b>
ASSEMBLED WEIGHT (LBS)	<b>390</b>
CRATED WEIGHT (LBS)	<b>510</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>4500</b>
VOLTAGE	<b>115</b>
AMPERE	<b>6</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/3 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 37, NAV-20-HT-CT Specifications

## Model NAV-30-HT-CT MARINE UNDER COUNTER REFRIGERATOR

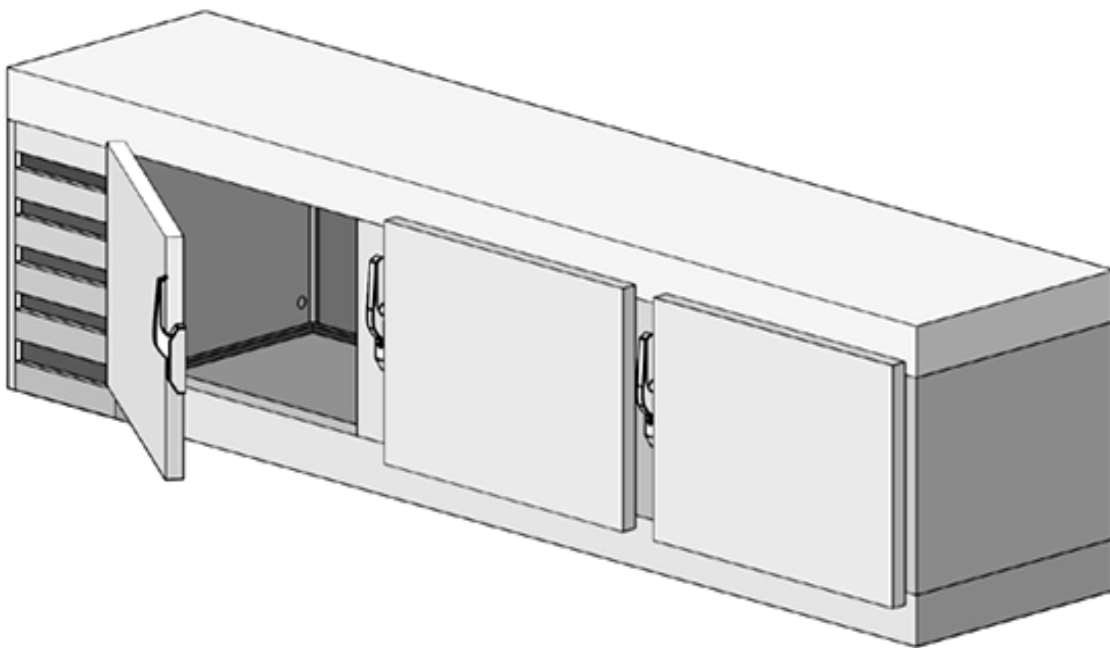


Figure 38 – NAV-30-HT-CT Marine Under Counter Refrigerator Unit

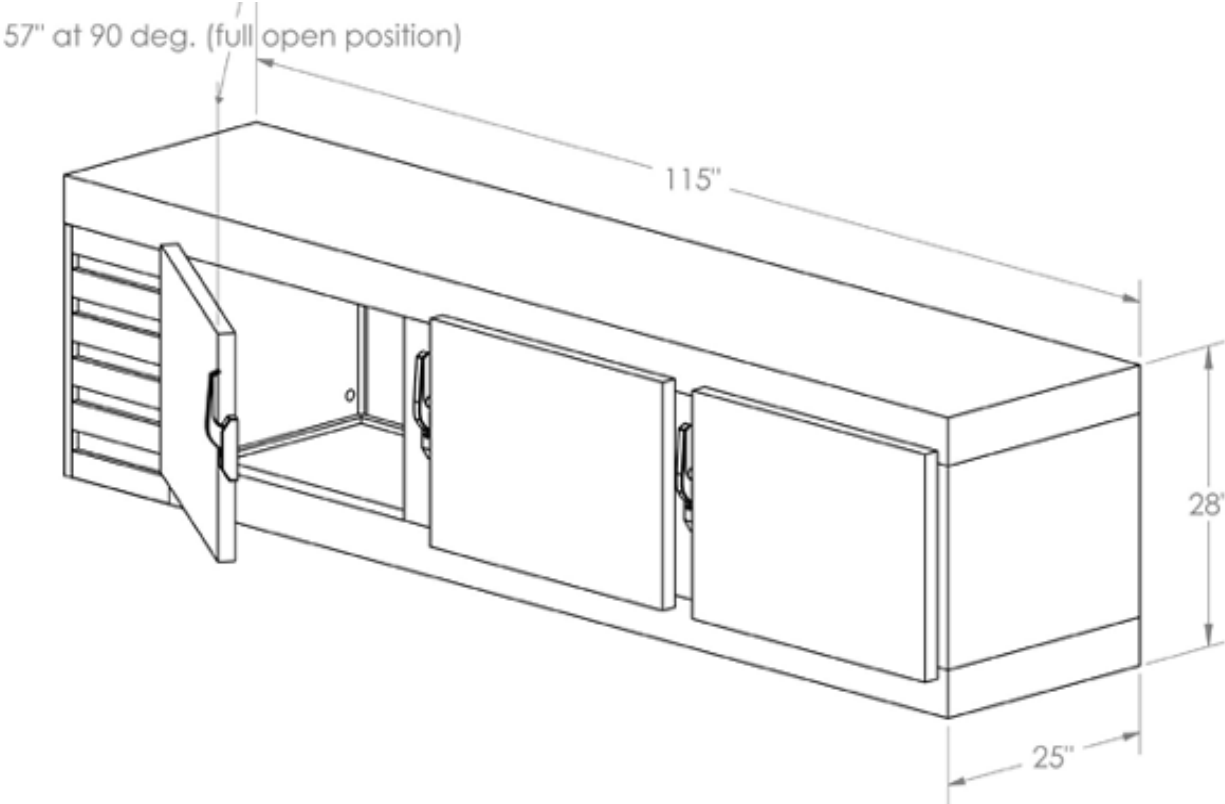


Figure 38A – NAV-30-HT-CT Modular Assembly

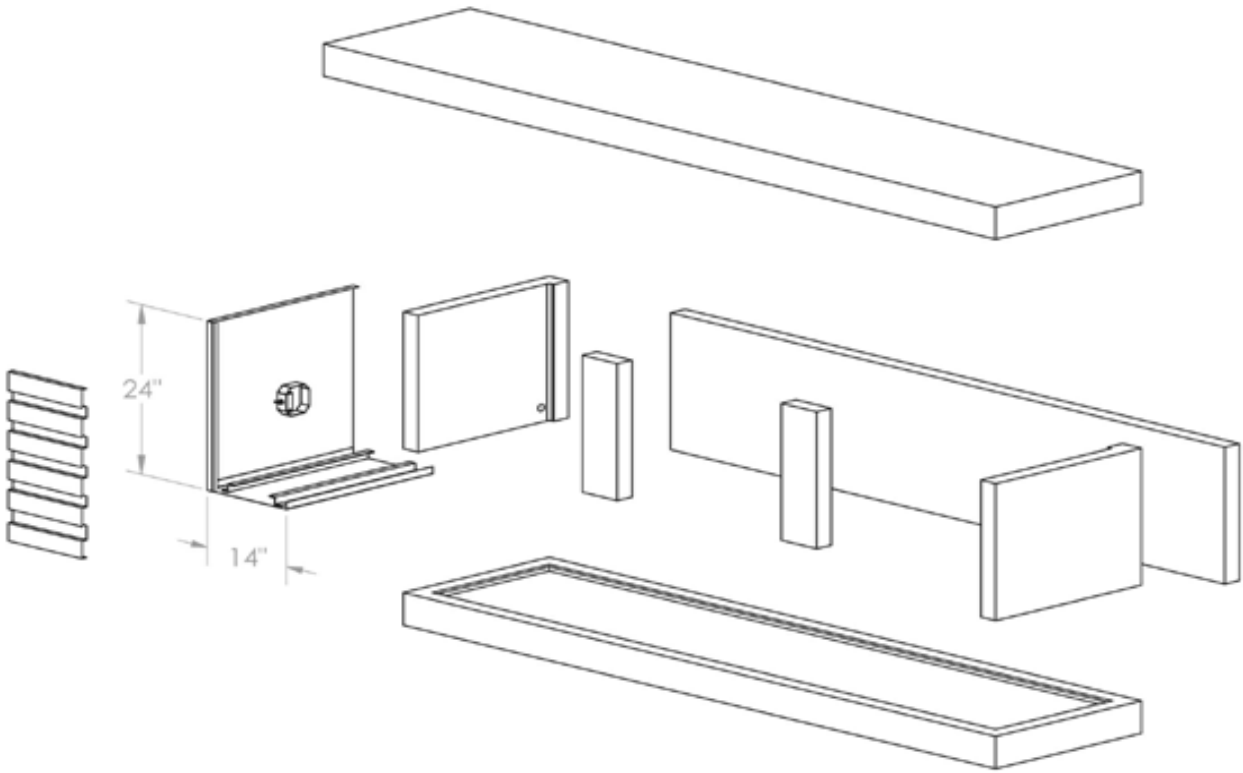


Figure 38B – NAV-30-HT-CT Exploded View Shown Without Doors or Compressor

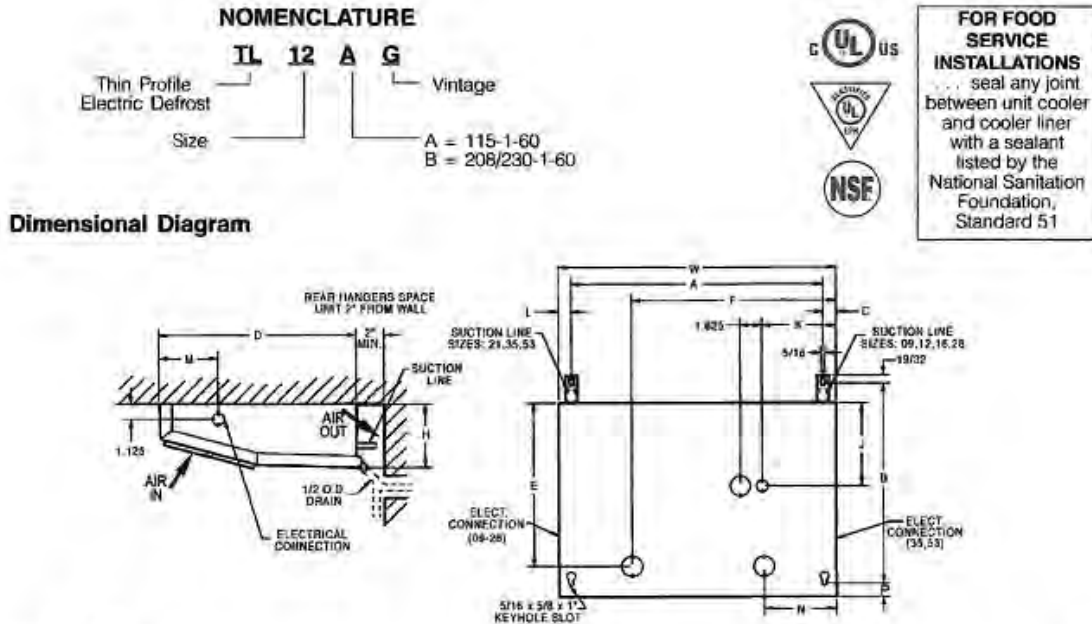
### MODEL SPECIFICATIONS

<b>NAV-30-HT-CT Under Counter Refrigerator Unit</b>	
INTERIOR VOLUME (CU.FT)	<b>30</b>
WIDTH	<b>115"</b>
HEIGHT	<b>28"</b>
DEPTH	<b>25"</b>
BODY DEPTH W/DOORS	<b>27"</b>
NUMBER OF SHELVES	<b>4</b>
NUMBER OF DOORS	<b>3</b>
ASSEMBLED WEIGHT (LBS)	<b>615</b>
CRATED WEIGHT (LBS)	<b>715</b>
REFRIGERANT	<b>R134A</b>
BTU / HOUR	<b>5000</b>
VOLTAGE	<b>115</b>
AMPERE	<b>6</b>
PHASE	<b>1</b>
COMPRESSOR	<b>1/2 HP</b>
SERVICE DISCONNECT	<b>YES</b>

Table 38, NAV-30-HT-CT Specifications

## TECHNICAL INFORMATION

### PARTS LISTS



### Dimensional Data

Size	Dimensions (In.)													Connections (In.)			Approx. Ship Wt. (Lbs.)
	A	B	C	D	E	F	H	J	K	L	M	N	W	Coil Inlet	Suction	Drain	
09	14 <sup>5/8</sup>	14	15 <sup>1/16</sup>	13 <sup>1/2</sup>	10 <sup>1/2</sup>	11 <sup>3/8</sup>	4 <sup>1/2</sup>	8 <sup>7/8</sup>	2 <sup>1/2</sup>	15 <sup>1/16</sup>	4 <sup>3/8</sup>	-	16 <sup>1/2</sup>	3/8 OD	3/8 ID	1/2 OD	14
12	18 <sup>7/8</sup>	14	15 <sup>1/16</sup>	13 <sup>1/2</sup>	10 <sup>3/8</sup>	10 <sup>1/4</sup>	4 <sup>1/2</sup>	8 <sup>3/8</sup>	9 <sup>1/2</sup>	15 <sup>1/16</sup>	4 <sup>3/8</sup>	-	20 <sup>1/2</sup>	3/8 OD	1/2 ID	1/2 OD	19
16	22 <sup>1/8</sup>	15	15 <sup>1/16</sup>	14 <sup>1/2</sup>	11 <sup>1/8</sup>	12	4 <sup>1/2</sup>	9 <sup>3/8</sup>	11 <sup>1/4</sup>	15 <sup>1/16</sup>	4 <sup>3/8</sup>	-	24	3/8 OD	1/2 ID	1/2 OD	23
21	22 <sup>1/8</sup>	16 <sup>1/2</sup>	15 <sup>1/16</sup>	16 <sup>1/2</sup>	14 <sup>1/2</sup>	18 <sup>7/8</sup>	6 <sup>3/4</sup>	11 <sup>1/8</sup>	17 <sup>1/4</sup>	15 <sup>1/16</sup>	4 <sup>3/8</sup>	-	24	3/8 OD	1/2 ID	1/2 OD	24
28	29 <sup>3/4</sup>	15	15 <sup>1/16</sup>	14 <sup>1/2</sup>	13	20 <sup>3/4</sup>	6 <sup>3/4</sup>	9 <sup>3/4</sup>	9 <sup>7/8</sup>	15 <sup>1/16</sup>	4 <sup>3/8</sup>	-	31 <sup>5/8</sup>	3/8 OD	1/2 ID	1/2 OD	27
35	35 <sup>3/4</sup>	16 <sup>1/2</sup>	1 <sup>5/16</sup>	16 <sup>1/2</sup>	14 <sup>1/2</sup>	33 <sup>3/4</sup>	6 <sup>3/4</sup>	11 <sup>5/8</sup>	18 <sup>3/8</sup>	1 <sup>5/16</sup>	6"	5 <sup>1/8</sup>	38 <sup>3/8</sup>	1/2 OD	5/8 ID	1/2 OD	38
53	46 <sup>1/2</sup>	16 <sup>1/2</sup>	1 <sup>1/8</sup>	16 <sup>1/2</sup>	14 <sup>1/2</sup>	44	6 <sup>3/4</sup>	11 <sup>5/8</sup>	30 <sup>3/8</sup>	1 <sup>1/2</sup>	6"	5 <sup>1/8</sup>	49 <sup>1/8</sup>	1/2 OD	1/2 ID	1/2 OD	53

### Mounting

This unit cooler is designed for mounting from the top of the cooler. Drill holes for screws in accordance with mounting dimensions given in Dimensional Diagram and Data.

After unpacking the unit, remove the fan panel and arrange the rear brackets as shown in the drawing. Insert the screws for mounting the rear brackets into the top of the cooler cabinet. Slip the rear brackets, attached to the unit, between the screw head and cabinet and secure in place. Install the front mounting screws. For proper drainage, the unit should be installed level.

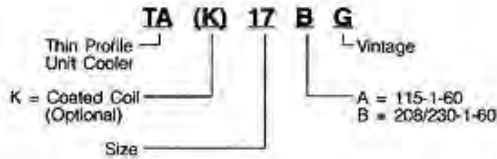
### Expansion Valve Recommendations

Model Size	-10°F. Suction 10° TD			-15°F. Suction 15° TD		
	BTUH	R-404		BTUH	R-404A	
		10° TD	Alco		Sporlan	15° TD
09	900	HFS <sup>1/8</sup> SZ	EFS <sup>1/8</sup> Z	1350	HFS <sup>1/8</sup> SZ	EFS <sup>1/8</sup> Z
12	1200			1800		
16	1600			2400		
21	2100	HFS <sup>1/8</sup> SZ	EFS <sup>1/8</sup> Z	3150	HFS <sup>1/8</sup> SZ	EFS <sup>1/8</sup> Z
28	2800			4200		
35*	3500	HFES <sup>1/8</sup> SZ	EFSE <sup>1/8</sup> Z	5250	HFES <sup>1/8</sup> SZ	EFSE <sup>1/8</sup> Z
53*	5300	HFES <sup>1/8</sup> SZ	EFSE <sup>1/8</sup> Z	7950	HFES1SZ	EFSE1Z

\*Sizes 35 and 53 use external equalized valves.

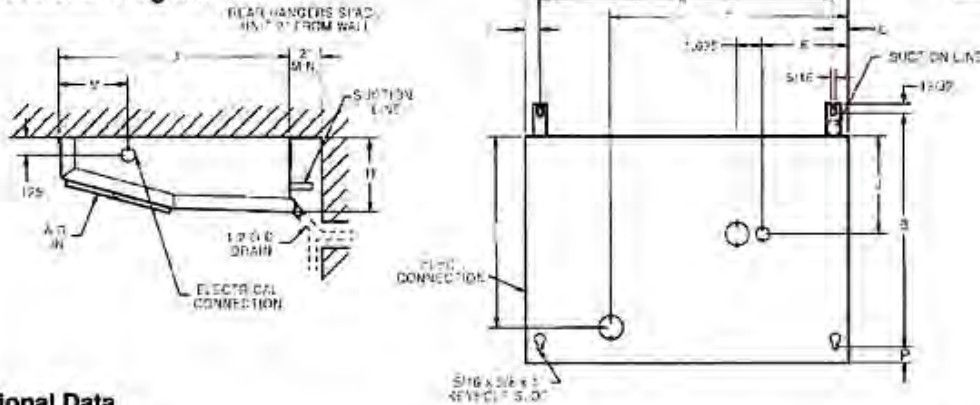


**NOMENCLATURE**



**FOR FOOD SERVICE INSTALLATIONS**  
... seal any joint between unit cooler and cooler liner with a sealant listed by the National Sanitation Foundation, Standard 51

**Dimensional Diagram**



**Dimensional Data**

Model No.	Dimensions (in.)											Connections (in.)			Approx. Shipping WL (lbs.)	
	A	B	C	D	E	F	H	J	K	L	M	W	Inlet	Suction		Drain
10	14 3/8	14	15 1/16	13 1/2	10 1/2	11 3/8	4 1/2	8 7/8	2 1/2	15 1/16	4 3/8	16 1/2	3/8 OD	3/8 ID	1/2 OD	14
13	18 3/8	14	15 1/16	13 1/2	10 1/2	10 1/4	4 1/2	8 3/8	9 1/2	15 1/16	4 3/8	20 1/2	3/8 OD	3/8 ID	1/2 OD	17
17	22 1/8	15	15 1/16	14 1/2	11 1/8	12	4 1/2	9 3/8	11 1/2	15 1/16	4 3/8	24	3/8 OD	1/2 ID	1/2 OD	21
23	29 3/4	15	15 1/16	14 1/2	13	20 7/8	4 1/2	10 3/4	10 1/4	15 1/16	4 3/8	31 3/8	3/8 OD	1/2 ID	1/2 OD	28
30	38 1/8	15	15 1/16	14 1/2	13	29 3/8	4 1/2	10 3/4	9 3/4	15 1/16	4 3/8	40	3/8 OD	1/2 ID	1/2 OD	33
43	51 1/2	15	15 1/16	14 1/2	13	48 3/4	4 1/2	10 3/4	13 1/4	15 1/16	4 3/8	53 3/8	1/2 OD	1/2 ID	1/2 OD	44
55	51 1/2	15	15 1/16	14 1/2	13	49	6 3/4	10 3/4	11	15 1/16	4 3/8	53 3/8	1/2 OD	3/8 ID	1/2 OD	53

**Expansion Valve Recommendations**

Model Size	25°F Sat. Suction Temp.				20°F Sat. Suction Temp.			
	BTUH @ 10°F TD	R-22		BTUH @ 15°F TD	R-22			
		Alco	Sporlan		Alco	Sporlan		
10	1000	HFS-1/4HC	EFV-1/5C	1500	HFS-1/4HC	EFV-1/5C		
13	1300			1950				
17	1700			2550				
23	2300			3450				
30	3000	HFES-1/2HC	EFVE-1/2C	4500	HFS-1/2HC	EFV-1/3C		
43*	4300			6450	HFES-1HC			
55*	5500			8250	HFES-1HC		EFVE-1C	

\* Size 43 and 55 use external equalized valves.

**Mounting**

The thin profile air defrost unit cooler is designed for mounting from the top of the cooler. Drill holes for screws in accordance with mounting dimensions A and B given in Dimensional Data.

After unpacking the unit, remove the fan panel and arrange the rear brackets as shown in the drawing. Insert the screws for mounting the rear brackets into the top of the cooler cabinet. Slip the rear brackets, attached to the unit, between the screw head and cabinet and secure in place. Install the front mounting screws. For proper drainage, the unit should be installed level.



Replacement Parts	
Description	All Sizes Part Number
115V Motor	25300701
208/230V Motor	25300801
Fan Blade	5101B
Fan Guard	5054D
Motor Mount	91179001

**REFRIGERATOR PARTS LIST**

### Sequence of Operation

#### Step "A" - Normal Refrigeration Cycle

1. Power is supplied to N and 4 terminals by the timer.
2. The fan delay and defrost termination thermostat is closed in the fan delay position and open in the defrost termination position.
3. The defrost heater is off.
4. The compressor operates in accordance with the demands of the refrigeration system temperature and/or pressure controls.
5. The unit cooler fan operates continually.
6. Frost builds up slowly on the evaporator.

#### Step "B" - Defrost Cycle

1. Defrosting of the evaporator is started automatically by the timer at predetermined times - typical settings of the timer would be 1 to 3 defrost periods per 24 hours.
2. The timer mechanically opens switch "A" which breaks the circuit to the compressor and evaporator fan motors, thereby shutting them off, and closes switch "B," thereby permitting current to flow to the heater.
3. The heater recessed in slots, gives up heat directly to the fins of the evaporator. This heat raises coil and refrigerant temperature to 32°F causing the frost to melt.
4. Frost on the evaporator is melted and defrost water drips into the heated drain pan and flows down the drain.
5. When frost has completely melted from the coil, the coil starts to warm up beyond 32°F.

#### Step "C" - Coil Re-Cooling Cycle

1. When the coil warms up to 55°F, the defrost termination thermostat closes which allows the current to flow to the solenoid in the timer, which then energizes and trips the timer switch back to its normal position (switch "A" closed, switch "B" open). The fan delay portion of this thermostat is now open.

2. The compressor now starts.
3. Then fan motors remain off because the fan delay thermostat is open. This prevents warm air from being blown into the refrigerated space.
4. The evaporator coil cools down approaching operating temperature. Superheated gas only passes to the compressor.

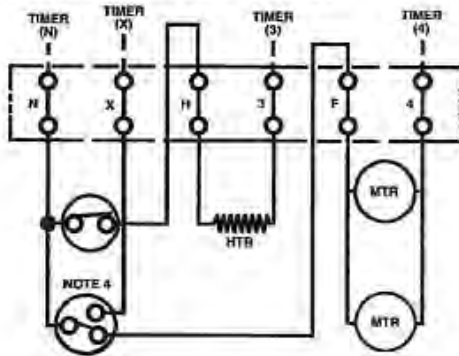
#### Step "D" - Return to Normal Refrigeration Operation

1. When the coil temperature reaches 35°F the fan control switch closes. This allows current to flow to the fan motor and the unit is now back in operation as in Step "A."

#### IMPORTANT

1. On initial "pull down" of a warm box, the fan will not start until coil temperature reaches approximately 35°F. If box is still comparatively warm (60°F) when the fan starts, then blowing this warm air over the coil may cause it to warm up to 55°F and thus stop the fan. Therefore, fan may recycle several times on initial "pull down."
2. The timer has an adjustable fail-safe feature which will return the system to the refrigeration cycle at the end of a predetermined time (factory set at 24 minutes) if automatic control devices fail.
3. Frequent defrost periods are not necessary! The determining factor for number of defrosts per day is the frost load. When frost "build-up" results in a loss of refrigeration capacity, then a defrost is required. One to three defrosts per day are recommended.
4. A low temperature thermostatic expansion valve with pressure limiting feature is desirable for use with these units. Such a valve prevents feeding of refrigerant to the coil during the defrost cycle.

### Typical Wiring Diagram for Thin Profile Electric Defrost Unit Cooler



Model Size	No. of Motors	Motor Amps.		Heater Amps.	
		A*	B*	A*	B*
09	1	0.8	0.4	4.13	2.07
12	2	1.6	0.8	5.22	2.61
16	2	1.6	0.8	6.09	3.04
21	1	1.0	0.5	9.57	4.78
28	3	-	1.2	-	5.7
35	2	-	1.0	-	7.0
53	3	-	1.5	-	8.5

1. Use copper conductors only.
2. Unit must be grounded.
3. Timer-Paragon Model 8145-20 may be factory supplied, field installed, or field supplied and installed.
4. Fan delay and defrost termination - Red to N, Brown to X, Black to F. Fans will not operate until thermostat resets.
5. Heater limit: Red to N, White to H omitted on model 28; heater is connected directly to N.
6. \*Indicates electrical code: A=115/60/1, B=208-230/60/1.



### Replacement Parts

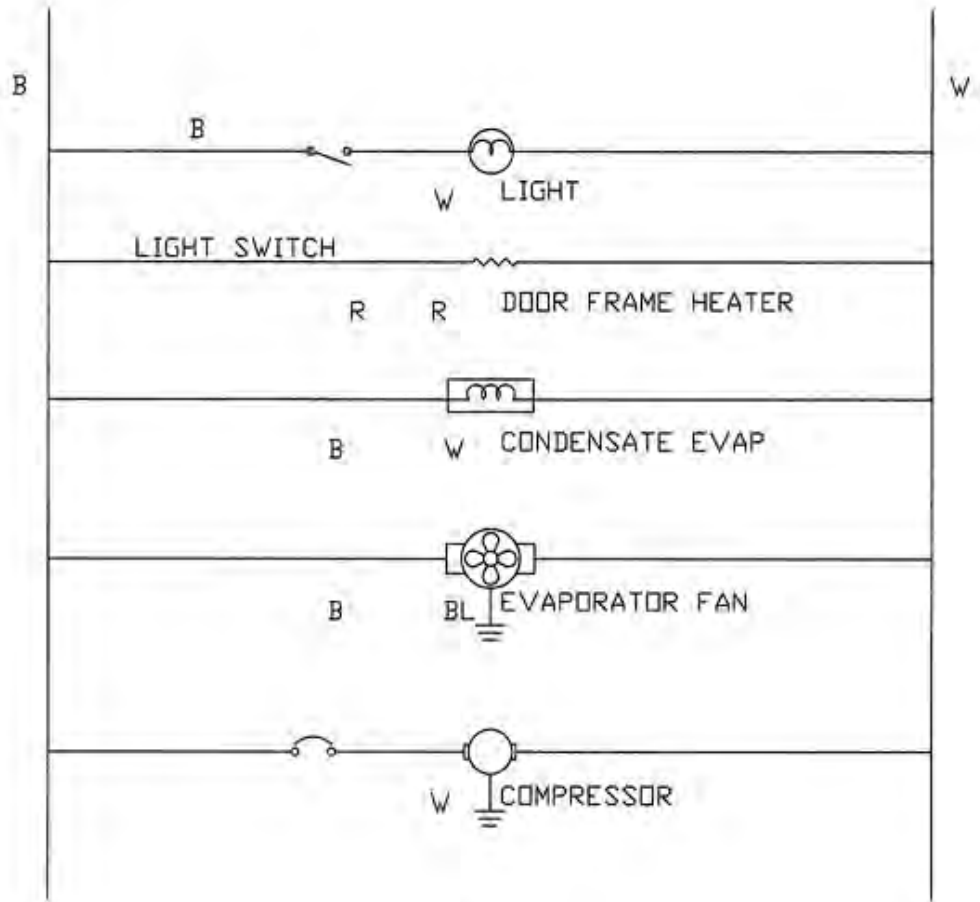
Part Description	115 Volt				208-230 Volt						
	09	12	16	21	09	12	16	21	28	35	53
Motor	25300701	25300701	25300701	25303201	25300801	25300801	25300801	25303301	25300801	25303301	25303301
Fan Blade	5101B	5101B	5101B	23100201	5101B	5101B	5101B	23100201	5101B	23100201	23100201
Fan Guard	5054D	5054D	5054D	H50328	5054D	5054D	5054D	H50328	5054D	H50328	H50328
Heater	4539N	4540N	4541N	4545N	4542N	4543N	4544N	4546N	H50097	24700701	24700702
Heater Clip	5543J	5543J	5543J	5543J	5543J	5543J	5543J	5543J	H50039	5543J	5543J
Defrost Control	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L
Mount	91179001	91179001	91179001	23101401	91179001	91179001	91179001	23101401	91179001	23101401	23101401

### GENERAL PARTS LIST

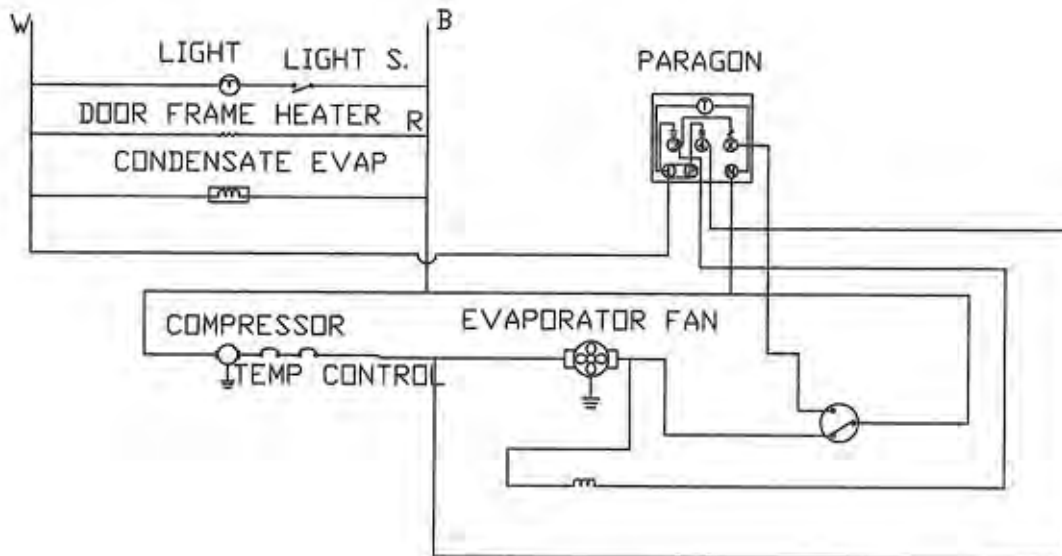
**REPLACEMENT PARTS FOR REFRIGERATORS AND FREEZERS**

Part Description	115 VOLT				208-230 VOLT						
	09	12	16	21	09	12	16	21	28	35	53
Motor	25300701	25300701	25300701	25303201	25300801	25300801	25303801	25303301	25300801	25303301	25303301
Fan Blade	5101B	5101B	5101B	23100201	5101B	5101B	5101B	23100201	5101B	23100201	23100201
Fan Guard	5054D	5054D	5054D	H50328	5054D	5054D	5054D	H50328	5054D	H50328	H50328
Heater	4539N	4540N	4541N	4545N	4542N	4543N	4544N	4546N	H50097	24700701	24700702
Heater Clip	5543J	5543J	5543J	5543J	5543J	5543J	5543J	5543J	H50039	5543J	5543J
Defrost Control	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L	5709L
Mount	91179001	91179001	91179001	23101401	91179001	91179001	23101401	23101401	91179001	23101401	23101401

**WIRING DIAGRAMS**

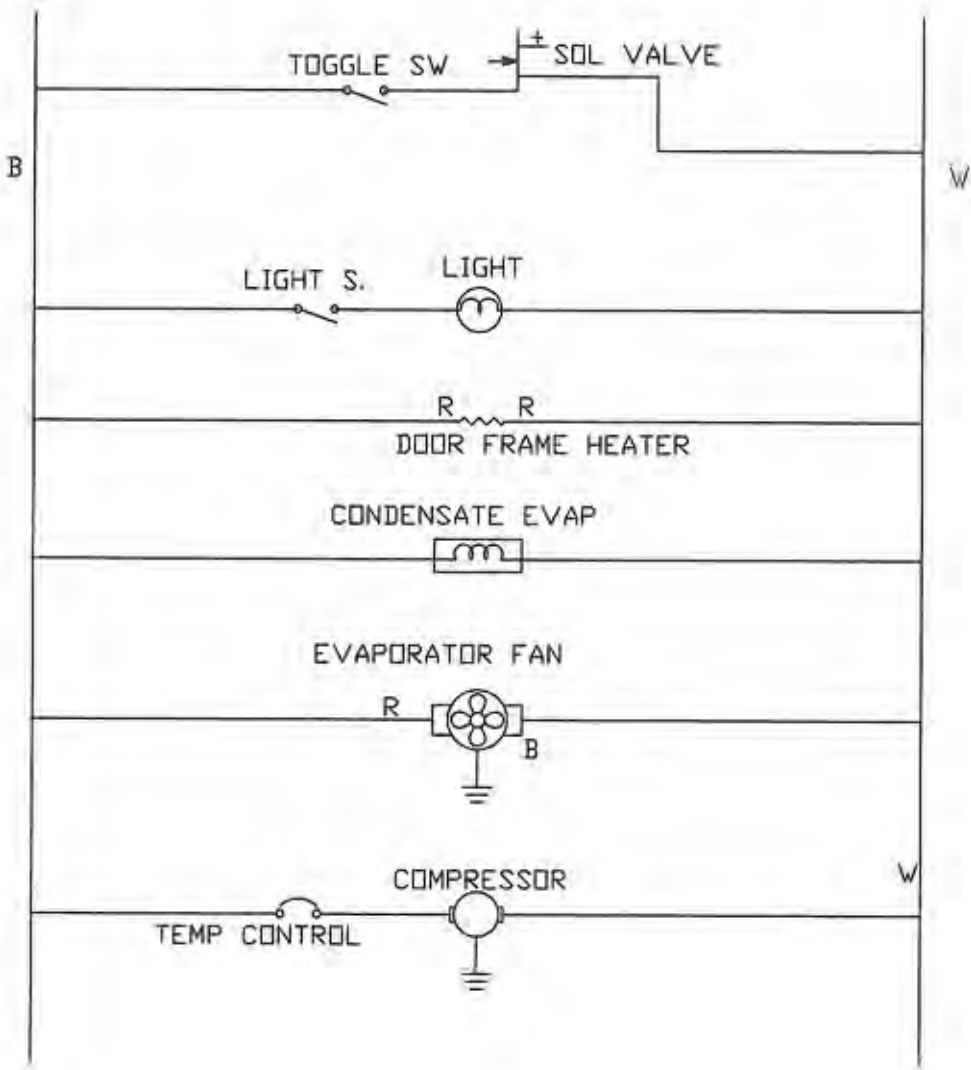


REFRIGERATOR WIRING DIAGRAM



FREEZER WIRING DIAGRAM





COLD FOOD COUNTER WIRING DIAGRAM

**REFRIGERATOR COMPRESSOR 1/2 hp**

MECHANICAL		ELECTRICAL	
Unit Height (in):	11.8	Max Fuse Size:	20
Unit Length (in):	16.2	Min Circuit Ampacity:	13.6
Unit Width (in):	12.7	Compressor:	ART62C1E-IAA-103
Ship Weight (lbs)	53.0	Compressor LRA – Low:	
Condenser Type	Air	Compressor LRA – High:	51.00
CopeVap Water Storage	NA	Compressor LRA - Half Winding:	
Receiver Capacity (lbs):		Compressor RLA:	10.20
Liquid Connection Size (in)/Type:	3/8 S	UL:	Recognized
Suction Connection Size (in)/Type:	1/2 S	UL File #:	SA633
Discharge Line Size (in);	0.250	UL Guide Card:	LZFE2
Water Inlet (in):			
Water Outlet (in):			
Oil Type:	POE	Amps Per Motor:	0.53
Oil Recharge Amount (oz):	24	Fan Motor quality:	1

**AIR-COOLED UNIT PERFORMANCE**

Release Date:	01-Feb-2001	Return Gas Temp. (*F):	65
Compressor:	ART62C1E-IAA-103 x 1	Sub cooling (*F):	5
Performance:	3280	Air Flow Rate (CFM)	300
90° F Ambient Air Temperature			
EVAP TEMP (°F)	UNIT CAPACITY (Btu/hr)	COND. TEMP (°F)	TEMP. DIFF. (°F)
5	2,480	105.0	15.0
10	2,950	107.8	17.8
15	3,350	110.6	20.6
20	3,780	113.5	23.5
25	4,230	116.6	26.6
30	4,710	119.9	29.9
35	5,210	123.4	33.4
40	5,740	127.1	37.1
45	6,290	131.1	41.1

**SERVICE PARTS**

REFERENCE	COMPONENT	QUANTITY	DESCRIPTION
5	074-0030-00	1	EXTERNAL CAPACITOR MTG
5	971-C100-24	1	EXTERNAL PROTECTOR KIT
6	045-0195-02	1	SHROUD-FAN
7	940-0163-05	1	RELAY-CURRENT RELAY
8	083-0130-00	1	BLADE-FAN
9	066-0337-01	1	CONDENSER-AIR
11	074-0794-01	1	BRACKET-FAN MOTOR MTG
12	577-0346-05	1	TANK-LIQUID REC ASSEMBLY
13	510-0017-02	1	VALVE-BASE ASSEMBLY
13	510-0072-01	1	VALVE-BASE ASSEMBLY
14	024-0252-01	1	GUARD-FAN 10PLASTIC
22	566-1198-01	1	CONDENSER GROUP
1	ART62C1E-IAA-901	1	WELD COMP T6215Z
25	050-0259-00	1	MOTOR-FAN
26	032-7001-00	2	CLIP-SHROUD
34	013-7000-23	1	FILTER-DRIER
35	570-7003-04	1	INDICATOR-MOISTURE

**REFRIGERATOR COMPRESSOR 1/3 hp**

MECHANICAL		ELECTRICAL	
Unit Height (in):	9.6	Max Fuse Size:	15
Unit Length (in):	13.9	Min Circuit Ampacity:	9.7
Unit Width (in):	11.4	Compressor:	ARE37C3E-IAA-103
Ship Weight (lbs)	35.0	Compressor LRA – Low:	
Condenser Type	Air	Compressor LRA – High:	29.00
CopeVap Water Storage	NA	Compressor LRA - Half Winding:	
Receiver Capacity (lbs):		Compressor RLA:	7.20
Liquid Connection Size (in)/Type:	1/4 S	UL:	Recognized
Suction Connection Size (in)/Type:	3/8 S	UL File #:	SA633
Discharge Line Size (in);	0.250	UL Guide Card:	LZFE2
Water Inlet (in):			
Water Outlet (in):			
Oil Type:	POE	Amps Per Motor:	0.36
Oil Recharge Amount (oz):	15	Fan Motor quality:	1

**AIR-COOLED UNIT PERFORMANCE**

Release Date:	16-Aug-2002	Return Gas Temp. (*F):	65
Compressor:	ARE37C3E-IAA-103 X 1	Subcooling (*F):	5
Performance:	4579	Air Flow Rate (CFM)	220
90° F Ambient Air Temperature			
EVAP TEMP (°F)	UNIT CAPACITY (Btu/hr)	COND. TEMP (°F)	TEMP. DIFF. (°F)
0	940	105.3	15.3
5	1,280	110.0	20.0
10	1,580	114.3	24.3
15	1,850	118.2	28.2
20	2,120	121.8	31.8
25	2,370	125.3	35.3
30	2,620	128.7	38.7
35	2,870	132.1	42.1
40	3,130	135.6	45.6
45	3,400	139.3	49.3

**SERVICE PARTS**

REFERENCE	COMPONENT	QUANTITY	DESCRIPTION
5	971-0560-00	1	PROTECTOR KIT
6	045-0194-00	1	SHROUD-FAN
7	940-C411-82	1	RELAY-CURRENT KIT
8	083-0122-00	1	BLADE-FAN
9	066-0333-00	1	CONDENSER-AIR
11	074-0794-00	1	BRACKET-FAN MOTOR MTG
12	577-0461-00	1	TANK-RECEIVER
13	510-7077-00	1	VALVE-BASE ASSEMBLY
14	024-0212-00	1	GUARD-FAN
22	566-1196-00	1	CONDENSER GROUP
24	914-0038-04	1	CAP START KIT
1	ARE37C3E-1AA-901	1	WELD COMP NE6187ZR-134A
25	050-0258-00	1	MOTOR-FAN
26	032-7001-00	2	CLIP-SHROUD

**REFRIGERATOR COMPRESSOR 1/4 hp**

MECHANICAL		ELECTRICAL	
Unit Height (in):	9.7	Max Fuse Size:	15
Unit Length (in):	13.8	Min Circuit Ampacity:	6.9
Unit Width (in):	11.8	Compressor:	ARE27C3E-IAA-103
Ship Weight (lbs)	37.0	Compressor LRA – Low:	
Condenser Type	Air	Compressor LRA – High:	25.00
CopeVap Water Storage	NA	Compressor LRA - Half Winding:	
Receiver Capacity (lbs):		Compressor RLA:	4.94
Liquid Connection Size (in)/Type:	1/4 S	UL:	Recognized
Suction Connection Size (in)/Type:	3/8 S	UL File #:	SA633
Discharge Line Size (in);	0.250	UL Guide Card:	LZFE2
Water Inlet (in):			
Water Outlet (in):		Amps Per Motor:	0.36
Oil Type:	POE	Fan Motor quality:	1
Oil Recharge Amount (oz):	15		

**AIR-COOLED UNIT PERFORMANCE**

Release Date:	01-Feb-2001	Return Gas Temp. (*F):	65
Compressor:	ARE27C3E-IAA-103 x 1	Sub cooling (*F):	5
Performance:	3276	Air Flow Rate (CFM)	235
90° F Ambient Air Temperature			
EVAP TEMP (°F)	UNIT CAPACITY (Btu/hr)	COND. TEMP (°F)	TEMP. DIFF. (°F)
5	1,270	106.2	16.2
10	1,530	107.5	17.5
15	1,700	110.0	20.0
20	1,890	112.7	22.7
25	2,080	115.7	25.7
30	2,280	118.9	28.9
35	2,490	122.5	32.5
40	2,710	126.4	36.4
45	2,940	130.6	40.6

**SERVICE PARTS**

REFERENCE	COMPONENT	QUANTITY	DESCRIPTION
5	971-0554-19	1	EXTERNAL PROTECTOR KIT
6	045-0194-00	1	SHROUD-FAN
7	940-C411-66	1	RELAY-CURRENT KIT
8	083-0122-00	1	BLADE –FAN
9	066-0332-00	1	CONDENSER-AIR
11	074-0794-00	1	BRACKET-FAN MOTOR MTG
12	577-0461-00	1	TANK-RECEIVER
13	510-0072-01	1	VALVE-BASE ASSEMBLY
13	510-7077-00	1	VALVE-BASE ASSEMBLY
17	074-0904-01	1	BRACKET-CAPACITOR
22	566-1195-00	1	CONDENSER GROUP
24	914-0038-00	1	CAP START KIT
1	ARE27C3E-IAA-901	1	WELD COMP NE6170Z R-134A
25	050-0258-00	1	MOTOR-FAN
26	032-7001-00	2	CLIP-SHROUD
34	013-7000-23	1	FILTER-DRIER
35	570-7003-04	1	INDICATOR-MOISTURE





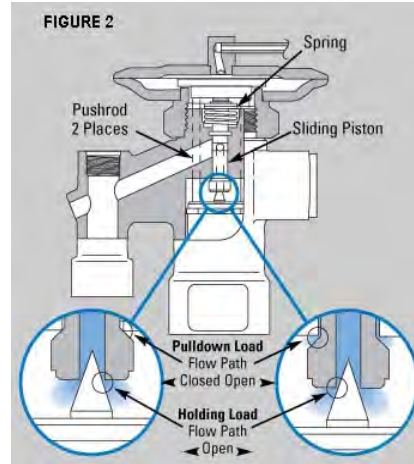
### REFRIGERATOR COMPRESSOR 3/4 hp

MECHANICAL		ELECTRICAL	
Unit Height (in):	13.6	Max Fuse Size:	20
Unit Length (in):	24.0	Min Circuit Ampacity:	15.8
Unit Width (in):	17.0	Compressor:	RRT73C1E-CAA-102
Ship Weight (lbs)	80.0	Compressor LRA – Low:	
Condenser Type		Compressor LRA – High:	54.5
CopeVap Water Storage		Compressor LRA - Half Winding:	
Receiver Capacity (lbs):		Compressor RLA:	11.0
Liquid Connection Size (in)/Type:	1/4 S	UL:	Recognized
Suction Connection Size (in)/Type:	3/8 S	UL File #:	SA633
Discharge Line Size (in);		UL Guide Card:	LZFE2
Water Inlet (in):			
Water Outlet (in):		Amps Per Motor:	1.7
Oil Type:	POE	Fan Motor quality:	1
Oil Recharge Amount (oz):	15		

### AIR-COOLED UNIT PERFORMANCE

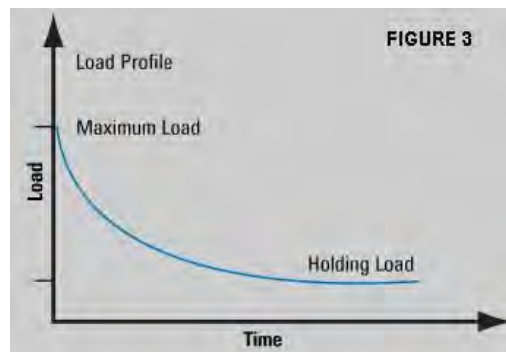
Release Date:	13-Apr-2009	Return Gas Temp. (*F):	65
Compressor:	RRT73C1E-CAA-102 x 1	Sub cooling (*F):	5
Performance:	7889	Air Flow Rate (CFM)	680
90° F Ambient Air Temperature			
EVAP TEMP (°F)	UNIT CAPACITY (Btu/hr)	COND. TEMP (°F)	TEMP. DIFF. (°F)
5	3,560	107.7	17.7
10	4,000	109.7	19.7
15	4,470	111.8	21.8
20	4,970	114.0	24.0
25	5,490	116.3	26.3
30	6,040	118.6	28.6
35	6,610	121.0	31.0
40	7,200	123.5	33.5
45	7,800	126.0	36.0
0	3,160	106.0	16.0

**REFRIGERATION VALVE EXPANSION VALVE**



THE REFRIGERATION VALVE EXPANSION VALVE (TEV) IS A PATENTED TWO PORT VALVE DESIGNED TO PERFORM EFFECTIVELY OVER THE RANGE OF LOAD CONDITIONS INHERENT WITH MOST REFRIGERATION SYSTEMS. ON ANY REFRIGERATED FIXTURE, E.G., DISPLAY CASE, FREEZER, WALK-IN COOLER, THE LOAD ON THE EVAPORATOR WILL BE GREATEST DURING A STARTUP, FOLLOWING A DEFROST, OR WHEN WARM PRODUCT IS BEING ADDED TO THE FIXTURE. THE REFRIGERATION SYSTEM MUST THEN OPERATE IN A 'PULL-DOWN' MODE UNTIL THE FIXTURE REACHES ITS DESIGN TEMPERATURE. ONCE DESIGN TEMPERATURE HAS BEEN REACHED, THE EVAPORATOR WILL BE AT ITS MINIMUM LOAD CONDITION, I.E., ITS 'HOLDING' LOAD. A TYPICAL LOAD PROFILE FOR A REFRIGERATED FIXTURE IS SHOWN IN FIGURE 1 BELOW. MAXIMUM PULL-DOWN LOAD CAN BE AS HIGH AS 2 TO 3 TIMES GREATER THAN THE HOLDING LOAD. AS A RESULT, CONSIDERATION MUST BE GIVEN TO THE PULL-DOWN LOAD WHEN SIZING A TEV. FOR MANY REFRIGERATED FIXTURES, THE DESIRED PULL-DOWN TIME IS TYPICALLY LESS THAN ONE HOUR. TO MINIMIZE THIS TIME, THE TEV MUST BE OVERSIZED SOMEWHAT WITH RESPECT TO THE HOLDING LOAD, OR THE VALVE WILL STARVE THE COIL DURING PULL-DOWN. BUT THE MORE OVERSIZED THE VALVE, THE LESS CAPABLE IT IS IN MAINTAINING STABLE SUPERHEAT AT LOW LOAD CONDITIONS, PARTICULARLY WHEN VARIATIONS IN CONDENSING PRESSURE FROM SUMMERTIME TO WINTERTIME OPERATION ARE CONSIDERED. THE TYPE EMC VALVE SOLVES THIS PROBLEM BY PROVIDING TWO INDEPENDENT CAPACITIES: A LARGE PORT FOR PULL-DOWN LOADS AND AS MALLER PORT TO CONTROL HOLDING LOADS (FIGURE 2). DURING HOLDING LOAD OPERATION, THE LARGE CAPACITY PORT REMAINS CLOSED AND THE VALVE REGULATES WITH THE SMALL CAPACITY PORT IN THE SAME MANNER AS A CONVENTIONAL TEV. DURING PULL-DOWN, THE

VALVE DIAPHRAGM MOVES FAR ENOUGH IN THE OPENING DIRECTION TO CONTACT THE TOP OF THE SLIDING PISTON, OPENING THE LARGE CAPACITY PORT. WITH THE LARGE CAPACITY PORT OPENED, VALVE CAPACITY IS EFFECTIVELY DOUBLED. THIS DESIGN ALLOWS THE TYPE EMC VALVE TO BE SIZED BASED ON THE **HOLDING LOAD** WITHOUT CONCERN FOR THE PULL-DOWN LOAD.



**SERIES TEMPERATURE CONTROLS-MEDIUM**



O10-1409  
 Series Temperature Controls-Medium

RECOGNIZING THE NEED FOR FLEXIBILITY IN DESIGN OF REFRIGERATION EQUIPMENT, THESE CONTROLS OFFER A WIDE SELECTION FOR SUCH PRODUCTS AS SELF-CONTAINED REFRIGERATORS, FREEZERS, COOLERS, WALK-IN UNITS, AND REFRIGERATION DISPLAY CASES.

- MAXIMUM ADJUSTMENT ACCURACY WITH 7 REVOLUTION RANGE ADJUSTMENT SCREWS
- NEMA 1 ENCLOSURE WITH NON-CONDUCTIVE COVER
- FRONT-LOCATED CAPTIVE COVER SCREW
- LARGE EASY-TO-READ SCALE PLATE
- UNIVERSAL MOUNTING AND COMPACT DESIGN
- LASER-WELDED BELLOWS FOR EXTENDED LIFE
- THE O60, WHICH USES THE INDUSTRY'S MOST ADVANCED SENSING ELEMENT TECHNOLOGY, HAS THESE ADDITIONAL FEATURES:
- VIRTUALLY UNAFFECTED BY AMBIENT TEMPERATURE
- 10 TIMES THE SETTING SENSITIVITY OF MOST OTHER WIDE RANGE CONTROLS
- GAS-FILLED, NON-POSITION SENSITIVE BULB
- ADJUSTABLE DIFFERENTIAL

ATTRIBUTE	VALUE
DESCRIPTION	O10 SERIES TEMPERATURE CONTROLS-MEDIUM
RESET	
APPLICATION	
RANGE (°F)	0 TO 55
DIFFERENTIAL (°F)	3 TO 20
SWITCH	SPST-OPENS LOW
CAPILLARY LENGTH	72" W/REMOTE BULB
COMMENTS	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25
REPLACES	

## FREEZER TECHNICAL INFORMATION



### FREEZER COMPRESSOR 1/2 hp

MECHANICAL		ELECTRICAL	
Unit Height (in):	12.5	Max Fuse Size:	15
Unit Length (in):	18.8	Min Circuit Ampacity:	8.9
Unit Width (in):	13.8	Compressor:	AFE13C3E-1AA-103
Ship Weight (lbs)	53.0	Compressor LRA – Low:	
Condenser Type	Air	Compressor LRA – High:	33.0
CopeVap Water Storage	NA	Compressor LRA - Half Winding:	
Receiver Capacity (lbs):		Compressor RLA:	6.4
Liquid Connection Size (in)/Type:	1/4 S	UL:	Recognized
Suction Connection Size (in)/Type:	5/16 S	UL File #:	SA633
Discharge Line Size (in);	0.250	UL Guide Card:	LZFE2
Water Inlet (in):			
Water Outlet (in):		Amps Per Motor:	0.53
Oil Type:	POE	Fan Motor quality:	1
Oil Recharge Amount (oz):	15		

### AIR-COOLED UNIT PERFORMANCE

Release Date:	26-Aug-2002	Return Gas Temp. (*F):	40
Compressor:	AFE13C3E-IAA-103 X 1	Subcooling (*F):	5
Performance:	5162	Air Flow Rate (CFM)	330
90° F Ambient Air Temperature			
EVAP TEMP (°F)	UNIT CAPACITY (Btu/hr)	COND. TEMP (°F)	TEMP. DIFF. (°F)
-20	1,550	102.9	12.9
-15	1,790	104.4	14.4
-10	2,040	105.8	15.8
-5	2,300	107.4	17.4
-0	2,560	109.4	19.4
-25	1,320	101.6	11.6

### SERVICE PARTS

REFERENCE	COMPONENT	QUANTITY	DESCRIPTION
5	971-0554-27	1	EXTERNAL PROTECTOR KIT
6	045-0195-03	1	SHROUD-FAN
7	940-C411-83	1	RELAY-CURRENT KIT
8	083-0130-00	1	BLADE-FAN
9	066-0336-01	1	CONDENSER-AIR
17	074-0904-02	1	BRACKET-CAPACITOR
22	566-1111--01	1	CONDENSER ASSEMBLY
24	914-0053-04	1	CAP START KIT
1	AFE13C3E-1AA-901	1	WELD COMP NE2134GK R404A
25	050-0300-00	1	MOTOR-FAN 9W115TALL
26	032-0230--00	2	CLIP



## FREEZER COMPRESSOR 1/3 hp

MECHANICAL		ELECTRICAL	
Unit Height (in):	11.2	Max Fuse Size:	15
Unit Length (in):	17.8	Min Circuit Ampacity:	8.9
Unit Width (in):	14.2	Compressor:	AFE13C3E-1AA-103
Ship Weight (lbs)	55.0	Compressor LRA – Low:	
Condenser Type		Compressor LRA – High:	33.0
CopeVap Water Storage		Compressor LRA - Half Winding:	
Receiver Capacity (lbs):		Compressor RLA:	6.4
Liquid Connection Size (in)/Type:	1/4 S	UL:	Listed
Suction Connection Size (in)/Type:	3/8 S	UL File #:	SA633
Discharge Line Size (in);	0.250	UL Guide Card:	LZFE
Water Inlet (in):			
Water Outlet (in):		Amps Per Motor:	0.53
Oil Type:	POE	Fan Motor quality:	1
Oil Recharge Amount (oz):	15		

### AIR-COOLED UNIT PERFORMANCE

Release Date:	16-Oct-2000	Return Gas Temp. (*F):	65
Compressor:	AFE13C3E-IAA-103 X 1	Subcooling (*F):	5
Performance:	2830	Air Flow Rate (CFM)	235
90° F Ambient Air Temperature			
EVAP TEMP (°F)	UNIT CAPACITY (Btu/hr)	COND. TEMP (°F)	TEMP. DIFF. (°F)
-25	1,290	103.3	13.3
-20	1,510	105.1	15.1
-15	1,730	107.0	17.1
-10	1,960	108.9	18.9
-5	2,210	110.9	20.9
0	2,440	113.6	23.6

### SERVICE PARTS

REFERENCE	COMPONENT	QUANTITY	DESCRIPTION
5	971-0554-27	1	EXTERNAL PROTECTOR KIT
6	045-0194-00	1	SHROUD-FAN
7	940-C411-83	1	RELAY-CURRENT KIT
8	083-0122-00	1	BLADE-FAN
9	066-0333-00	1	CONDENSER-AIR
11	074-0794-00	1	BRACKET-FAN MOTOR MTG
12	577-0461-00	1	TANK-RECEIVER
13	510-7077-00	1	VALVE-BASE ASSEMBLY
14	024-0212-00	1	GUARD-FAN
22	566-1196-00	1	CONDENSER GROUP
24	914-0038-04	1	CAP START KIT
1	AFE13C3E-1AA-901	1	WELD COMP NE2134GK R404A
25	050-0259-00	1	MOTOR-FAN
26	032-7001-00	2	CLIP-SHROUD



### **FREEZER COMPRESSOR 3/4 hp**

<b>MECHANICAL</b>		<b>ELECTRICAL</b>	
Unit Height (in):	11.7	Max Fuse Size:	20
Unit Length (in):	23.5	Min Circuit Ampacity:	12.3
Unit Width (in):	13.3	Compressor:	RST64C1E-CAV-108
Ship Weight (lbs)	0.0	Compressor LRA – Low:	
Condenser Type		Compressor LRA – High:	43.0
CopeVap Water Storage		Compressor LRA - Half Winding:	
Receiver Capacity (lbs):	3.1	Compressor RLA:	9.0
Liquid Connection Size (in)/Type:	1/4 S	UL:	None
Suction Connection Size (in)/Type:	5/8 S	UL File #:	None
Discharge Line Size (in);		UL Guide Card:	None
Water Inlet (in):			
Water Outlet (in):		Amps Per Motor:	
Oil Type:	POE	Fan Motor quality:	1
Oil Recharge Amount (oz):	15		

<b>AIR-COOLED UNIT PERFORMANCE</b>			
Release Date:	04-Nov-2010	Return Gas Temp. (*F):	40
Compressor:	RST64C1E-CAV-108 X 1	Subcooling (*F):	5
Performance:	8102	Air Flow Rate (CFM)	400
90° F Ambient Air Temperature			
EVAP TEMP (°F)	UNIT CAPACITY (Btu/hr)	COND. TEMP (°F)	TEMP. DIFF. (°F)
-25	2,520	106.6	16.6
-20	2,930	108.5	18.5
-15	3,360	110.5	20.5
-10	3,790	112.6	22.6
-5	4,230	114.7	24.7
0	4,650	117.2	27.2



## **MECHANICAL DEFROST TIMER**

Designed for commercial freezers and refrigerators, Paragon commercial defrost controls provide automatic defrost capability. They accommodate various types of defrost systems including electric defrost heaters, hot gas and compressor off cycle.

### **Time initiated, temperature or pressure terminated**

- High-amp switch contacts, 40 amps, 2 hp
- Positive slider bar switch design, assures positive electrical contact and wipes the contact surface of contaminates
- Designed for defrost termination using an external temperature or pressure device
- Safety back-up- mechanical time-driven defrost termination
- Heavy-duty synchronous design drive motor
- Choice of three contact arrangements
- Adjustable frequency of defrost initiation from 1 to 6 cycles per day with a minimum of 4 hours between successive operations
- Adjustable back-up defrost termination from 4 to 110 minutes in 2 minute increments
- Enclosure construction of heavy-duty steel with knockouts on the bottom, back and sides.
- Hasp and staple for padlock is part of the enclosure

### **Time initiated, time terminated**

- High-amp switch contacts, 40 amps, 2 hp
- Positive slider bar switch design, assures positive electrical contact and wipes the contact surface of contaminates
- Choice of three contact arrangements
- Heavy-duty synchronous design drive motor
- Adjustable frequency of defrost initiation from 1 to 6 cycles per day with a minimum of 4 hours between successive operations
- Adjustable defrost cycle from 4 to 110 minutes in 2 minute increments
- Accuracy of defrost duration is +/- 2 minutes
- Enclosure construction of heavy-duty steel with knockouts on the bottom, back and sides.

Hasp and staple for padlock is part of the enclosure

## FREEZER TEMPERATURE CONTROL



Ranco® Temperature Controls (O Series and Freezestat controls)

**O Series custom and wide range temperature controls** The controls offers wide selection for such products as self-contained refrigerators, freezers, coolers, walk-in units, and refrigeration display cases.

**Freezestat Controls Low Limit Controls Chiller Protection Controls** These controls are designed to shut down a piece of equipment if the operating conditions begin to approach freezing (as water freezes it expands and will rupture the chiller barrel tubes). The 016-264 has a manual reset feature, necessitating human intervention in the event of a shutdown.

Recognizing the need for flexibility in design of refrigeration equipment, these controls offer a wide selection for such products as self-contained refrigerators, freezers, coolers, walk-in units, and refrigeration display cases.

These controls are designed to shut down a piece of equipment if the operating conditions begin to approach freezing (as water freezes it expands and will rupture the chiller barrel tubes). The 016-264 has a manual reset feature, necessitating human intervention in the event of a shutdown.

Type P32 Low Pressure Limit Control

The Ranco P32 low pressure control provides freeze protection for low refrigerant protection on chillers and other refrigeration systems by sensing suction pressure. It is suitable for R12, R22 and R502 refrigerants. A time delay is provided to allow for startup in low ambient and momentary low pressure conditions during the run period. The timer is of the heated bimetal (warp) switch design with an ambient temperature compensator. Once the time delay period (standard is 120 seconds) has elapsed, the manual reset button must be depressed to restart the compressor. A five minute cool-down period is required before resetting.

## O SERIES VENTILATION, COOLING AND HEATING CONTROLS

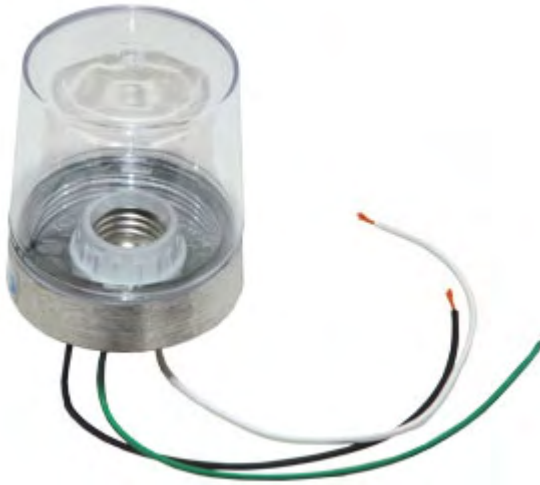
A standard range of 30° to 95°F and a fixed differential provide the necessary capabilities for ventilation and heating applications.



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## TECHNICAL INFORMATION

### Used on all Models



#### REFRIGERATOR LIGHT FIXTURE

Refrigerator light fixture. Specifically designed for reach-in refrigerators.

Aluminum housing and polycarbonate globe provides utmost in sanitation.

Accommodates 40 watt appliance bulb.

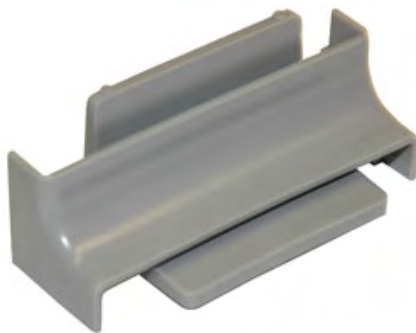
#### Attributes

Housing: Die Cast Aluminum with #4 Satin Finish

Globe: Impact Resistant Clear Polycarbonate

Socket: Porcelain with Wire Leads and Ground

Mounting surface requires 1-3/4" (44.5mm) holes for back of lamp holder



#### MOLDED PLASTIC CORNER

#### [BACK](#)

Model Number: T55-0598

#### T55-0598

Molded plastic corner. Provides finished appearance.

#### Attributes

For use with T55-20-011 breaker strip only.

2-5/16" (59mm) wide



#### ALUMINUM KEYHOLE PILASTER

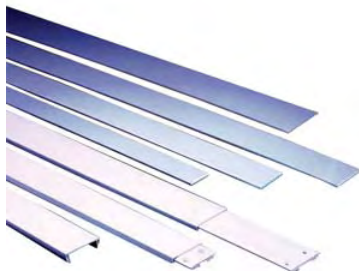
Model Number: T21-0048

#### T21-0048

Aluminum keyhole pilaster. Shelf slots are 1/2" (12.7mm) adjustment. Key hole slots equally spaced on 6" (150mm) centers. Designed for use with keyhole support model no. T34-1010.

#### Attributes

Length: 48" (1219mm)



#### FLAT BREAKER STRIP

Model Number: T54-3000

Flat breaker strip. Matte gray abs. Mar free. Paper masked one side. Will not absorb odors. USDA and FDA approved.

#### Attributes

Width: 3" (76mm)



### **EVAPMATIC CONDENSATE EVAPORATOR**

Model Number: T12-5000

UL-PTC Evapmatic condensate evaporator. Solid state, PTC controlled, self-regulating. Die cast aluminum construction. Removable cordsets with molded plugs. UL recognized File #SA7009.

#### **Attributes**

Wattage: 300, Voltage: 117, Capacity: 50 oz (1500ml)

Rate/Hr: 4-5 oz (120-150ml), O.A.

Size: 4-3/4" x 12-1/2" x 2-3/4"

(120mm x 317mm x 70mm),

Cord Size: 18" (450mm) long, Legs: Wire Spring Type



### **COMPRESSION GASKET FRAME**

Model Number: 5804

Compression gasket frame with welded corners-custom order-Die #5804. Durable gray PVC. Custom made sizes. No tooling charge. Economical. No waste.

#### **Attributes**

Utilizes T42-3330 gasket



### **C-030 SERIES FILTER-DRIERS**

Parker Hannifin offers more filter types, configurations and filter solutions than any other company. Parker filter engineers collaborate with customers at the earliest stages of design to develop optimum filter system solutions.

Parker filter systems are mission-critical to almost every industry, on every continent, including transportation/mobile equipment, industrial/plant equipment, food and beverage, life sciences, process industries, marine and power generation.

Parker filters, accessories and value-added services provide cost-saving solutions for the full breadth of filter applications.



### LOW PRESSURE CONTROLS

14097 ( Uni-Line Replacement #: O10-1402 )

These controls offer a variety of pressure ranges and switch action to provide maximum application flexibility.

- NEMA 1 enclosure with non-conductive cover
- Front-located captive cover screw
- Large, easy-to-read scale plate
- SUPER CAP® capillary protection system
- Universal mounting and compact design
- Screw terminals are raised and fully accessible for easy wiring
- Laser-welded bellows for extended life
- Heavy-duty plated steel frame

Attribute	Value
Description	Low Pressure Controls
Reset	Auto
Range PSI	12" to 50
Differential PSI	5 to 35
Switch	SPST-Opens Low
Pressure Connection	1/4" SAE flare nut
Cap. Length	36"
Replaces	Honeywell: P420B, Johnson: 970AB-29, P70AA-123, P70AC-9, P70AB-12, P70AB-40, P70AA-47, P70AB-44
Comments	

## **SAFETY SUMMARY**

The following are General Safety Precautions that are not related to any Specific Procedures and therefore do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

### **KEEP AWAY FROM LIVE CIRCUITS:**

Operating personnel must at all times observe all Safety Regulations. Do not replace components or make adjustments inside the equipment with high voltage supply turned **ON**. On certain conditions, dangerous potentials may exist when the power control is in the **OFF** position, due to charges retained in capacitors. To avoid casualties, always remove power and discharge and ground a circuit before touching it.

### **DO NOT SERVICE OR ADJUST ALONE:**

Under no circumstances, should any person reach into or enter the enclosure for the purpose of servicing or adjusting the equipment except in the presence of someone who is capable of rendering aid.

THE FOLOWING WARNING AND **CAUTIONS** APPEAR IN THE TEXT IN THIS VOLUME, AND ARE REPEATED HERE FOR EMPHASIS.

- 1. Do not remove hinges from doors.**
- 2. Check electrical requirements on the equipment data plate.**
- 3. Be sure power is being supplied to the equipment in a continuous circuit.**
- 4. The voltage supply should not vary more than plus or minus 10% of the required operating voltage.**
- 5. Do not turn or change any valves or control settings.**
- 6. Do not use sharp pointed scraping devices, wire brushes, or abrasive cleaners.**
- 7. Disconnect the condensing unit from the power line before working around the condenser.**

## GENERAL THEORY OF OPERATION

THE CONTROL OF A CONSTANT AND CORRECT TEMPERATURE IN A CABINET DEPENDS ON THE INTERMITTENT CIRCULATION AND EVAPORATION OF A FIXED SUPPLY OF REFRIGERANT IN THE EVAPORATOR.

WITH THE TEMPERATURE CONTROL'S SENSITIVE FEELER BULB ELEMENT LOCATED INSIDE THE CABINET, THE MOTOR COMPRESSOR PUMPS THE HEAT LADEN VAPOR OUT OF THE EVAPORATOR, DOWN THE SUCTION LINE AND INTO THE COMPRESSOR. THIS LOW PRESSURE VAPOR IS SUCKED INTO THE CYLINDERS, COMPRESSED AND FORCED OUT THROUGH THE DISCHARGE VALVES, AS HIGH PRESSURED VAPOR, INTO THE CONDENSER.

THE SYSTEM FROM THE EXPANSION VALVE OUTLET TO THE DISCHARGE VALVE IN THE COMPRESSOR IS CALLED THE LOW PRESSURE SIDE OF THE SYSTEM.

AS THE HIGH PRESSURE VAPOR ENTERS THE CONDENSER, THE HIGH TEMPERATURE VAPOR LOSES ITS HEAT TO THE AIR COOLED CONDENSER. THE RESULTS IN THE HIGH PRESSURED VAPOR BEING CONDENSED INTO A LIQUID REFRIDGERANT. THIS LIQUID THEN PASSES THROUGH THE LIQUID LINE INTO THE EVAPORATOR

THE PART OF THE SYSTEM FROM THE DISCHARGE VALVE, THROUGH THE CONDENSER AND LIQUID LINE, TO THE INLET OF THE EXPANSION VALVE, IS CALLED THE HIGH PRESSURE SIDE OF THE SYSTEM.

THE LIQUID REFRIGERANT IN THE EVAPORATOR IS SUBJECT TO A MUCH LOWER PRESSURE, DUE TO THE SUCTION OF THE COMPRESSOR, THEREFORE EVAPORATION OF THE LIQUID REFRIGERANT TAKES PLACE AT A REDUCED PRESSURE AND TEMPERATURE WITH THE RESULT THAT HEAT IS REMOVED FROM THE REFRIGERATED AREA. AS THE PRESSURE AND TEMPERATURE IN THE EVAPORATOR IS LOWERED BY THE COMPRESSOR SUCTION, A POINT IS REACHED WHERE SUFFICIENT HEAT HAS BEEN REMOVED FROM THE REFRIGERATED AREA TO LOWER THE TEMPERATRE TO A POINT WHERE THE TEMPERATURE CONTROL WILL BREAK THE ELECTRIC CIRCUIT AND STOP THE COMPRESSOR. THE LOWERED SUCTION PRESSURE WILL RISE AGAIN, WHEN THE TEMPERATURE IN THE CABINET RISES AND THE TEMPERATURE CONTROL SENSES THIS, IT TURNS THE COMPRESSOR BACK ON AND REPEATS THE ENTIRE PROCESS AGAIN.

## INSTALLATION

### **UNCRATING:**

All Refrigerators and Freezers are strongly crated to insure delivery in good condition under ordinary handling by commercial carriers. However, it is important that inspection for possible damage in transit be made **IMMEDIATELY** upon receipt of the unit.

**NOTE!** ANY VISIBLE DAMAGE TO THE CRATE OR TO THE UNIT ITSELF SHOULD BE NOTED ON THE CARRIER DELIVERY RECEIPT. THIS SIGNIFIES THAT A CLAIM FOR DAMAGES WILL BE MADE.

### **REMOVAL OF DOOR:**

If for any reason the door has been removed, remove the hinge covers and then remove the screws holding the hinge and door to the face of the refrigerator.

**CAUTION!** DO NOT REMOVE HINGES FROM THE DOORS

### **LOCATION:**

It is important that there is free circulation of dry, cool clean air around the Refrigerator or Freezer, obtain the best ventilation possible. Keep the unit at some distance from furnaces, ovens, etc. Avoid locations where the room temperature will drop below the temperature to be maintained in the Refrigerator. Keep at least 3" clearance at the back, and at each end to allow for best ventilation.

### **LEVELING:**

When the Refrigerator or Freezer is in proper position,  
MAKE SURE IT IS SITTING LEVEL FROM SIDE TO SIDE AND FRONT TO REAR.

### **DOOR SEAL:**

Close door(s) and check each door for proper gasket seal. The Gasket should seat on the front surface of the unit. This is to prevent leakage or air into the Refrigerator or Freezer. If adjustment is necessary, loosen the door strike located on the body of the Unit.

MOVE STRIKE OUTWARD TO DECREASE GASKET PRESSURE, MOVE STRIKE INWARD TO INCREASE PRESSURE. Move the strike in or out a bit at a time. When proper adjustment has been made, be sure the holding screws are tightened.

**NOTE!** PROPER ADJUSTMENT CAN BE DETERMINED BY INSERTING A PIECE OF PAPER BETWEEN THE DOOR GASKET AND THE FRONT DOOR GASKET HITTING SURFACE. PAPER SHOULD INDICATE DRAG COMPLETELY AROUND DOOR.

### **SHELVES:**

Shelves are supported on small brackets called pilaster clips, which are set into vertical pilaster strips fastened to the walls of the Refrigerator. Each shelf is supported by four(4) pilaster clips are loosened by raising the bottom part up and out and may be moved up or down to adjust the height of the shelf on ½" spacing's.

\*\* THE HOLES A THE SAME LEVEL HAVE A CORRESPONDING NUMBER TO PERMIT QUICK AND EASY SHELF ADJUSTMENT.

## POWER REQUIREMENTS

The unit is now ready to be connected to a suitable power outlet.

**CAUTION!** CHECK THE ELECTRICAL REQUIREMENTS ON THE IDENTIFICATION PLATE. MAKE SURE THE POWER BEING SUPPLIED IS THE SAME AS IS ON THE IDENTIFICATION PLATE.

**CAUTION!** BE SURE THAT THE POWER LINE TO WHICH THE REFRIGERATION OR FREEZER IS CONNECTED, IS A CONTINUOUS CIRCUIT, AND CANNOT BE ACCIDENTALLY CUT OFF OR CONTROLLED BY SOME TYPE OF TIME SWITCH CUT OFF. OBTAIN A SEPARATE CIRCUIT FOR PROPER OPERATION OF THE UNIT.

**CAUTION!** FOR SATISFACTORY OPERATION, THE VOLTAGE SUPPLY SHOULD NOT VARY MORE THAN PLUS OR MINUS 10% OF THE REQUIRED OPERATING VOLTAGE.

## STARTING THE COMPRESSOR

**CAUTION!** DO NOT TURN OR CHANGE ANY SERVICE VALVE OR CONTROL SETTINGS.

All service valves are left in the open position, on self contained, hermetically sealed systems, during the test run, before being shipped from the factory. Connect the electrical current to the junction box located in the unit compartment.

Next check the electrical supply to be sure that power is being received. The test light will light up. The unit is now ready to start. Move the switch to the “**ON**” position.

## CONTROLS AND ADJUSTMENTS

All Controls are Factory Set for proper operation. They should not be changed unless it is shown by use of an Accurate Thermometer that the Cabinet is Not Holding Correct Operating Temperature.

## OPERATION

### **LOADING:**

It is important that the Refrigerator or Freezer is not loaded with perishables until the inside temperature has been brought down to the proper operating level. After starting the Refrigeration unit, allow it to operate for about four hours before loading.

**NOTE: DO NOT OVERLOAD** – Leave Room For Circulating Cool Air.

## MAINTENANCE

### **CLEANING:**

EXTERIOR AND/ OR EXTERIOR (Stainless Steel)

Wash with mild soap solution, rinse with clean water, wipe dry with a clean soft cloth

**CAUTION!** DO NOT USE ABRASIVE CLEANERS

About once a month, clean door gasket with a mild soap and water solution.  
Be sure to wipe thoroughly dry.

### **DISCONNECTING:**

If the Refrigerator and or Freezer are not to be used for an extended period of time, disconnect the electric plug and open the doors. As soon as the Unit has a chance to warm up to room temperature, wipe all parts dry. Leave all doors open and later check to see that no moisture has collected on any of the parts.

### **CONDENSERS:**

**WARNING!** DISCONNECT THE CONDENSING UNIT FROM THE POWER LINE BEFORE WORKING AROUND THE CONDENSER.

IT IS IMPORTANT THAT THERE IS A FREE CIRCULATION OF AIR AROUND AND THROUGH THE CONDENSER. THE CONDENSER MUST BE KEPT CLEAN AT ALL TIMES. UNSATISFACTORY OPERATION WILL RESULT FROM FAILURE TO OBSERVE THESE POINTS. INSPECT THE CONDENSER FREQUENTLY, CLEAN DUST AND OTHER OBSTRUCTIONS FROM THE CONDENSER WITH A VACUUM CLEANER OR SOFT CLOTH. DO NOT USE A WIRE BRUSH.



## TROUBLE SHOOTING CHART

OBSERVATION	PROBABLE CAUSE	REMEDY
UNIT DOES NOT OPERATE	<ol style="list-style-type: none"> <li>1. POWER FAILURE AT THE SOURCE</li> <li>2. MAIN SWITCH IS OPEN</li> <li>3. BURNED OUT FUSE</li> <li>4. CONTROL OUT OF ADJUSTMENT</li> <li>5. CONTROL DEFECTIVE</li> <li>6. LOW VOLTAGE</li> <li>7. DEFECTIVE OVERLOAD PROTECTOR</li> <li>8. DEFECTIVE RELAY</li> <li>9. DEFECTIVE CAPACITOR</li> </ol>	<p><b><i>CORRECT</i></b></p> <p><b><i>CLOSE SWITCH</i></b></p> <p><b><i>REPLACE</i></b></p> <p><b><i>ADJUST</i></b></p> <p><b><i>REPLACE</i></b></p> <p><b><i>CORRECT LINE</i></b></p> <p><b><i>REPLACE</i></b></p> <p><b><i>REPLACE</i></b></p> <p><b><i>REPLACE</i></b></p>
UNIT DOES NOT SHUT OFF	<ol style="list-style-type: none"> <li>1. CONTROL OUT OF ADJUSTMENT</li> <li>2. CONTROL DEFECTIVE</li> <li>3. UNDERCHARGE OF REFRIGERANT</li> <li>4. DIRTY CONDENSER</li> <li>5. AIR TEMP TOO HIGH</li> <li>6. CONDENSER FAN INOPERATIVE</li> <li>7. AIR RESTRICTION DUE TO OVER CROWDED SHELVES</li> <li>8. COMPRESSOR INSUFFICIENT</li> <li>9. EXPANSION VALVE STUCK</li> <li>10. POOR CONTACT, TX VALVE BULB TO SUCTION LINE</li> </ol>	<p><b><i>CHECK TEMP AND ADJUST CONTROL</i></b></p> <p><b><i>REPLACE</i></b></p> <p><b><i>ADD REFRIGERANT</i></b></p> <p><b><i>CLEAN</i></b></p> <p><b><i>PROVIDE SUFFICIENT AIR FLOW OVER CONDENSER</i></b></p> <p><b><i>REPLACE</i></b></p> <p><b><i>REARRANGE</i></b></p> <p><b><i>REPLACE CONDENSER</i></b></p> <p><b><i>REPAIR OR REPLACE</i></b></p> <p><b><i>TIGHTEN CLAMP HOLDING BULB TO SUCTION LINE</i></b></p>
HIGH HEAD PRESSURE	<ol style="list-style-type: none"> <li>1. AIR IN SYSTEM</li> <li>2. OVERCHARGE OF REFRIGERANT</li> <li>3. DIRTY CONDENSER</li> <li>4. AIR TEMP TOO HIGH</li> </ol>	<p><b><i>PURGE</i></b></p> <p><b><i>PURGE</i></b></p> <p><b><i>CLEAN</i></b></p> <p><b><i>PROVIDE SUFFICIENT AIR FLOW</i></b></p>
LOW HEAD PRESSURE	<ol style="list-style-type: none"> <li>1. UNDERCHARGE OF REFRIGERANT</li> <li>2. BROKEN SUCTION VALVE LEAF</li> <li>3. OPERATING IN <u>TOO</u> LOW ROOM TEMPERATURE</li> </ol>	<p><b><i>ADD REFRIGERANT</i></b></p> <p><b><i>REPLACE COMPRESSOR</i></b></p> <p><b><i>RELOCATE UNIT OR RAISE ROOM TEMP</i></b></p>
SHORT CYCLING	<ol style="list-style-type: none"> <li>1. CONTROL OUT OF ADJUSTMENT</li> </ol>	<p><b><i>ADJUST CONTROL</i></b></p>

## REPLACEMENT INSTRUCTIONS

### **MOTOR COMPRESSOR:**

1. Disconnect motor compressor from power and circuit from control.
2. Purge entire refrigerant charge, reclaim refrigerant if possible.
3. Remove burned out motor compressor and mount replacement.  
(DO NOT CONNECT SUCTION AND DISCHARGE LINE)
4. Attach refrigerant drum to suction line, purge low side of system.
5. Install new filter drier, connect liquid and suction lines, pull deep vacuum on entire system.
6. Re-connect motor compressor to power circuit, and control.

### **CONTROLS:**

1. Disconnect Refrigerator or Freezer from power circuit.
2. Remove control cover, remove leads from terminals.

### **NOTE: POSITION OF WIRES FOR REPLACING ON PROPER TERMINALS.**

3. Disconnect feeler bulb, and remove capillary tube from inside unit.
4. Remove bolts holding control to base frame, remove control and install new control following the above procedure in reverse.

### **GASKETS:**

1. The door gasket is a compression style, snap in gasket. To replace, merely pull original gasket from door and snap in new gasket into the transition piece slot.

### **HANDLE:**

To remove the edgemount handle, remove (3) screws on side of cabinet.

### **HINGES:**

1. Open door, snap hinge cover loose from inside edge of hinge with a screwdriver.
2. Close door, remove screws holding hinge to door and cabinet, position new hinge and replace screws.

### **DEHYDRATOR:**

1. Close liquid service valve, run compressor and pump refrigerant into receiver tank until 0 lbs. Pressure reading is obtained on the back pressure gauge, close suction service valve.
2. Remove dehydrator from liquid line; install new dehydrator, charge system, check for leaks.

### **ANTI-SWEAT AND MULLION HEATERS:**

1. Turn off power.
2. Remove plastic retainer strip.
3. Disconnect heater wire and remove.

### **EXPANSION VALVES:**

1. Close liquid service valve, run compressor and pump refrigerant into receiver tank until 0 lbs pressure is obtained on back on back pressure gauge, close suction service valve.
2. Disconnect valve feeler bulb from clamp on suction line.
3. Disconnect Flare Fittings at inlet and outlet of valve, remove valve.
4. Install new valve, reconnect flare fittings, feeler bulb to suction line, recharge system, and check for leaks.

### **CHARGING REFRIGERATION SYSTEM:**

1. Attach gauge manifold lines to liquid and suction service valve ports, and open service valves.
2. Purge system; pull a vacuum on the system through the gauge manifold to a 30" vacuum.
3. Correct charge of refrigerant is noted on the data plate; add the correct amount and type of refrigerant.
4. Close service valves and remove gauge manifold.

### **PRESSURE GAUGE READINGS:**

NORMAL OPERATING PRESSURE RANGE AT (75 F) AMBIENT (ROOM TEMPERATURE)

## WARRANTY

*WE WARRANT TO THE ORIGINAL PURCHASER THAT THIS REFRIGERATOR OR FREEZER WILL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE AS DETERMINED BY US.*

*WE WILL WITHIN ONE YEAR FROM THE DATE OF ORIGINAL INSTALLATION OR EIGHTEEN MONTHS FROM THE ORIGINAL SHIPMENT FROM FACTORY, WHICHEVER IS SOONER, REPLACE WITHOUT CHARGE, ANY PART OR PORTION THEREOF, WHICH IS RETURNED TO US, TRANSPORTATION CHARGES PREPAID TO THE FACTORY, AND WHICH UPON EXAMINATION SHALL DISCLOSE TO OUR SATISFACTION TO BE DEFECTIVE.*

*THIS WARRANTY DOES NOT APPLY TO ANY REPLACEMENT NECESSITATED BY ANY OTHER CAUSES, INCLUDING BUT NOT LIMITED TO, ANY REFRIGERATOR OR FREEZER WHICH HAS BEEN SUBJECT TO ABUSE, MISUSE, NEGLIGENCE, OR ALTERATION UNAUTHORIZED BY US, ACCIDENT OR DAMAGE BY FIRE, ACT OF GOD, OR IN TRANSIT, AND IS IN LIEU OF ALL OTHER WARRANTIES EXCEPT SUCH AS MAY BE SET FORTH IN WRITING AND SIGNED BY US. THIS WARRANTY DOES NOT COVER ANY LABOR COST FOR REPLACING DEFECTIVE PARTS.*

*WE SHALL NOT BE LIABLE FOR DAMAGE OR LOSS DUE TO ANY DELAYS IN REPLACEMENT OR FOR ANY CONSEQUENTIAL DAMAGES.*

*BE ADVISED THAT REMOVAL OF ORIGINAL SERIAL NUMBERS OR DEVIATION FROM THE PUBLISHED INSTALLATION OR OPERATING INSTRUCTIONS, OR FROM THE RATED CAPACITY OF THE REFRIGERATOR OR FREEZER WHEN NOT AUTHORIZED IN WRITING BY US, INVALIDATES THIS WARRANTY.*

*THIS WARRANTY MAY NOT BE MODIFIED EXCEPT IN WRITING SIGNED BY US.*

RTF Manufacturing  
ATMOST REFRIGERATION

## LOST OR DAMAGED SHIPMENT

Always check your freight for shortages for signs of damage, every time you receive shipment. If there is a problem, immediately bring it to the attention of the driver and then take the following steps:

### **FOR VISIBLE DAMAGE:**

If the containers in your shipment show visible signs of damage, open them immediately to check contents, and ask the driver to inspect the contents with you. Then write a complete description of the damage on both copies of the delivery receipt. After delivery, contact your local terminal to help determine if an inspection and formal written report is required.

OCCASIONALLY, IT MAYBE NECESSARY TO HAVE AN INSPECTOR EXAMINE THE DAMAGED FREIGHT!

A carrier may also request that you do the inspection yourself and keep a written description IN CASE A CLAIM IS FILED. "AN INSPECTION REPORT IS NOT A CLAIM"

### **FOR CONCEALED LOSS OR DAMAGE:**

As soon as possible after delivery, unpack and inspect your shipment. If you discover concealed damage report it immediately to the carrier, and request an inspection within 15 days from the date it was delivered.

### **HOW TO FILE A CLAIM:**

A claim and its' supporting documentation are required to be filed within (9) months of delivery. Freight carriers will not pay a claim unless it is filed, in writing, within the 9 month period.

### **PROCEDURE FOR FILING A CLAIM:**

- A. Determine the dollar amount which represents your loss.
- B. Complete the carrier's claim form.
- C. Collect the following documents to support your claim-
  1. A Vendor Invoice for the goods, including the full price paid after any discounts or deductions.
  2. A copy of the Freight Bill.
  3. A copy of the Bill of Lading.
  4. Send or fax your claim and all related documents to the Carrier Claim Department.

### **CLAIM PROCESSING:**

Once you register your claim, the carrier will assign a Claim Number and a Claim Investigator to your claim.



# Marine Refrigeration

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Technical Manual

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## **RTF Manufacturing is Your Source for Refrigeration and Freezer Equipment for the Marine Industry. Built to Fit Your Plans.**

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