

Charles Universal Broadband Enclosure Replacement Door Kits with Piano Hinges General Description and Installation

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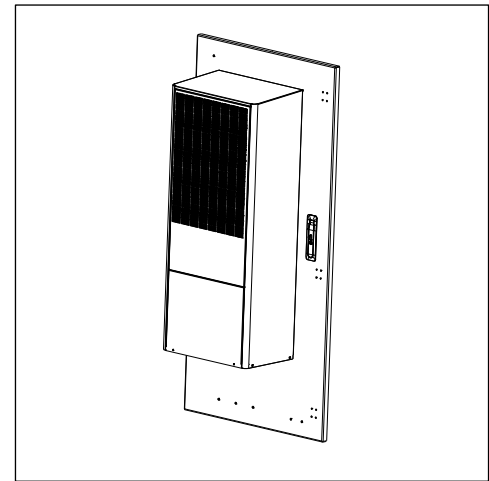


Figure 1 View of Kit

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for using the replacement door kits for the BB, RL, PM, and SS family of the Charles Industries' Universal Broadband Enclosure (CUBE) product line. Figure 1 shows a replacement door kit.

-NOTE-

Hereafter, the Charles Universal Broadband Enclosure CUBE-BB, CUBE-RL, CUBE-PM639xx, PM624xx, and CUBE-SSxx228 will be referred to as the "CUBE." The replacement door kits will be referred to by individual part numbers or collectively as the "kit."

1.2. Product Purpose

The kit includes a replacement door for a CUBE.

2. PRODUCT DESCRIPTION

Each kit includes a front or rear door, as well as appropriate hardware for mounting the kit to an existing in the field. The differences among the kits are summarized in Table 3.

Some kits have a thermal system (HVAC, heat exchanger, or direct air cooling system [DAC]) mounted on the door. For the PM series, rear doors are shorter than front doors, so the rear and front door kits are not interchangeable. Additionally, kits intended for a one CUBE family cannot be installed on other CUBEs.

3. INSTALLATION

3.1. Inspecting the Product

For those kits shipped lying down on a pallet, remove the bolts, unpack the unit, and dispose of the packaging material. If the purchased kit includes an HVAC unit, make sure the replacement door has been upright for 24 hours prior to powering up the HVAC.

For those kits shipped upright, follow the instructions in the next section to unpack the unit.

-INSPECTION NOTE-

Visually inspect the unit for damages prior to installation. If the equipment was damaged in transit, immediately report the extent of the damage to the transportation company.

3.2. Disassembling the Packaging

CAUTION: Keep the door kit upright at all times. If the HVAC system is left lying down, then the compressor oil can flow out of its reservoir, which will impair the HVAC operation when it is turned on.

Instructions:

1. Locate the cross braces on the back of the kit replacement door. Figure 2 shows three cross braces. Some kits may have more or fewer.
2. Support the kit so that it remains upright while removing the screws that hold the cross braces in place (two screws per cross brace).
3. When all cross braces have been removed, use proper lifting equipment to move the kit off the pallet. Do not move the kit into a horizontal position when transporting.

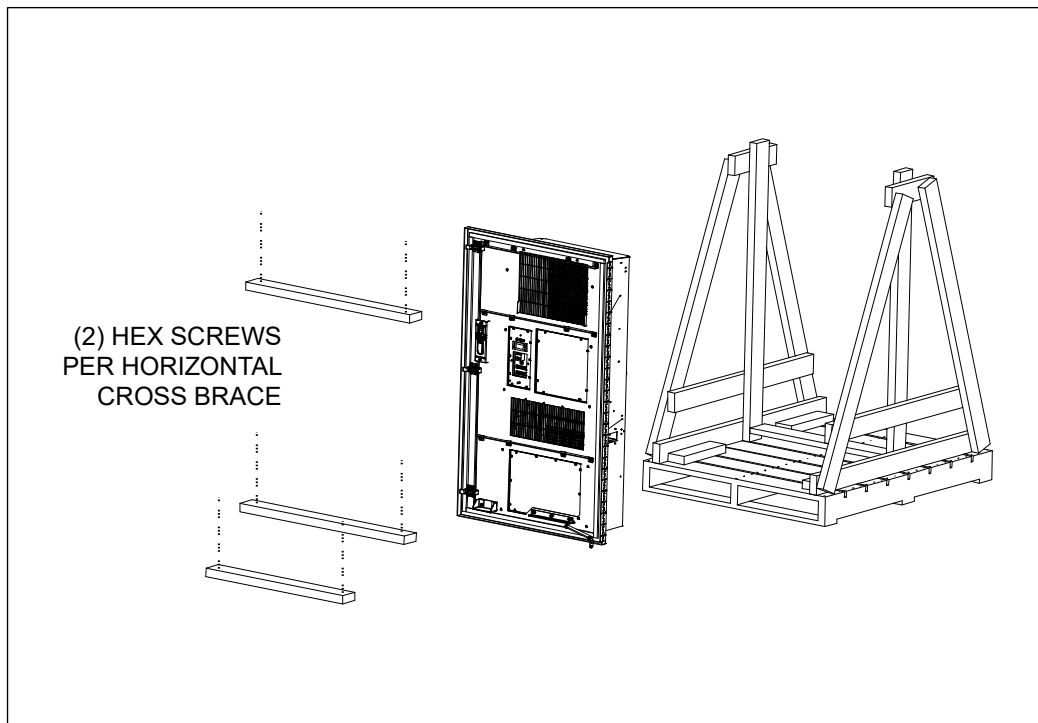


Figure 2 Location of Cross Brace Screws

3.3. Following and Using Safety Precautions

Read the following site and safety tips, cautions, and warnings, then proceed with the paragraphs that follow.


- For installation, follow all National Electrical Codes (NEC) ANSI/NFPA 70, local, environmental, workplace, and company codes, safety procedures, and practices.
- Minimum spacing between the accessories and components and the housing for ITE equipment shall be maintained for safe operation of the equipment when installed in accordance with NEC ANSI/NFPA 70.
- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- Do not place this product on weak or unstable surfaces which may allow the product to fall, resulting in potentially serious damage(s) to persons or product.
- Only authorized trained personnel shall install the kit.

3.4. Obtaining Tools and Equipment

Obtain the following recommended or needed items for installing the kit.

- Wire strippers
- Protective and/or insulated work gloves
- Safety glasses
- Slotted and Phillips screwdrivers
- Can wrench (216 tool)
- 7/16 and 11/32 socket and wrench
- Drill with 5/32 cobalt steel drill bit
- Torque wrench

3.5. Installing the Kit

	WARNING	<p>Improper hoisting equipment and unsafe lifting procedures can result in serious injury or death.</p> <p>Charles recommends at least two people to lift the kit. Follow local safety practices.</p> <p>Turn off all power connections to the CUBE before beginning this procedure.</p>
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3.5.1. Torque Requirements

Torque all hardware as shown below (unless otherwise noted). These values apply to SAE Grade 1 & 2 Low Carbon Steel, ASTM A307 Low Carbon Steel, and Stainless Steel Grade 18-8.

Thread Size	In-lbs	Ft-lbs
4-40	4±10%	
6-32	8±10%	
8-32	16±10%	
10-32	26±10%	
12-24	50±10%	
1/4-20/M6	60±5%	5±5%
5/16-18	125±5%	10.4±5%
3/8-16	180±5%	15.0±5%
1/2-13	500±2%	41.7±2%
5/8-11	1000±1%	83.3±1%

3.5.2. Available Cabinets

The kits are made for Charles BB, PM, RL, and SS CUBES. An example of each style CUBE is shown in Figure 2.

In the rest of this section, the images show a front door kit and a PM series CUBE. The interior of each series CUBE may look different than what is pictured. The hinges on all kits mount in the same manner as the one shown.

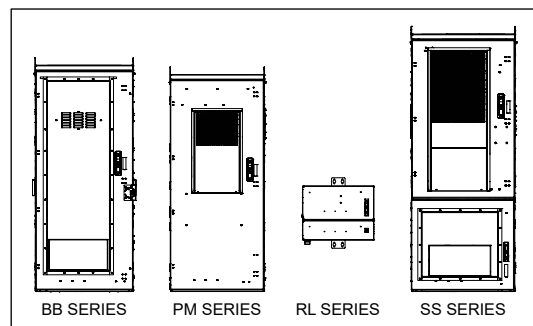


Figure 2 CUBE Examples

3.5.3. Removing the Existing Door

1. Remove power and alarm wiring from the thermal device on the existing door. Depending on the CUBE model, the alarm wires may need to be removed from the alarm terminal block.
2. Remove the two nuts that connect the wind latch to the CUBE. Save the nuts for later use.
3. Disconnect the grounding strap from the door. Save the nut for later use.
4. Remove the existing door by drilling out the rivets (5/32 cobalt steel drill bit is recommended).
5. Copy identifying information from the label on the existing door (e.g. part number, serial number, etc.) onto the blank label on the replacement door, if available, or directly onto the door surface using permanent marker. Discard or store the existing door according to local practice.

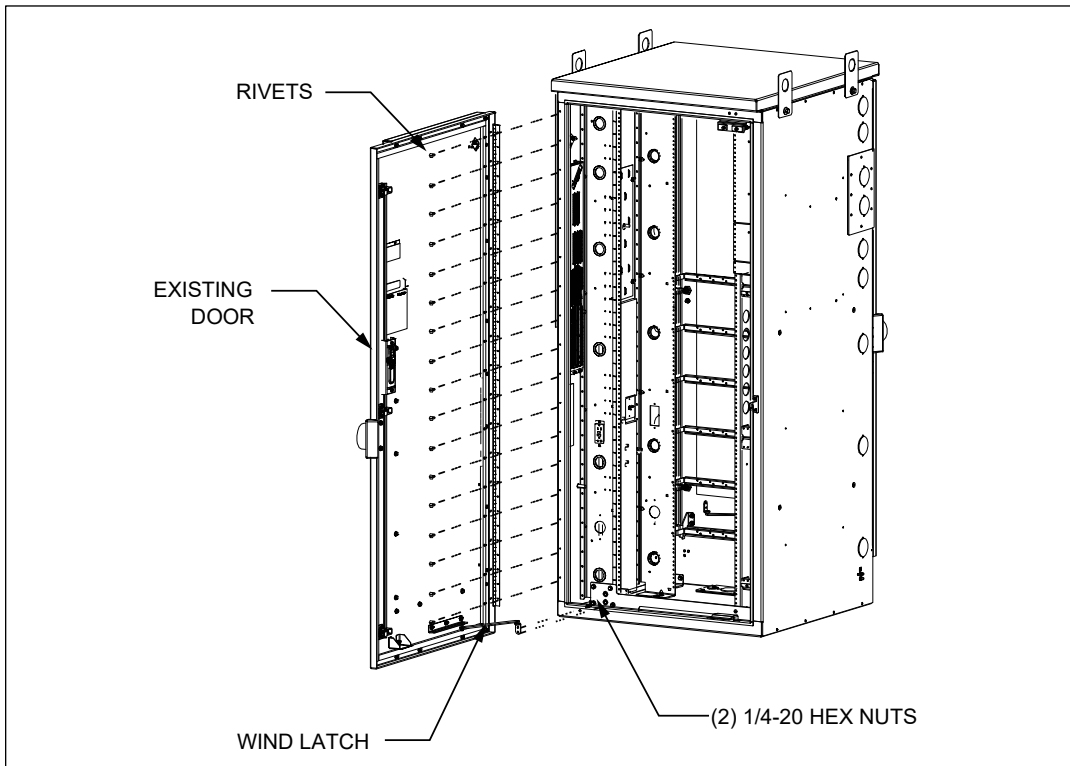


Figure 3 Remove Existing Door

3.5.4. Mounting the Kit onto the CUBE

1. Lift the kit into position as shown in Figure 3. Use local safety practice for lifting the door. Charles recommends using two people to support the weight and a third person to maneuver the hinge into position.
2. While supporting the door weight, attach the door onto the cabinet using the #8 hardware provided. The sealing washer and hex nut are mounted to the inside of the cabinet. Continue supporting the weight of the door until enough screws are fastened to hold the door in place.
3. Connect the wind latch on the replacement door to the CUBE door frame using hardware removed previously.
4. Connect the grounding strap to the replacement door using hardware removed previously.

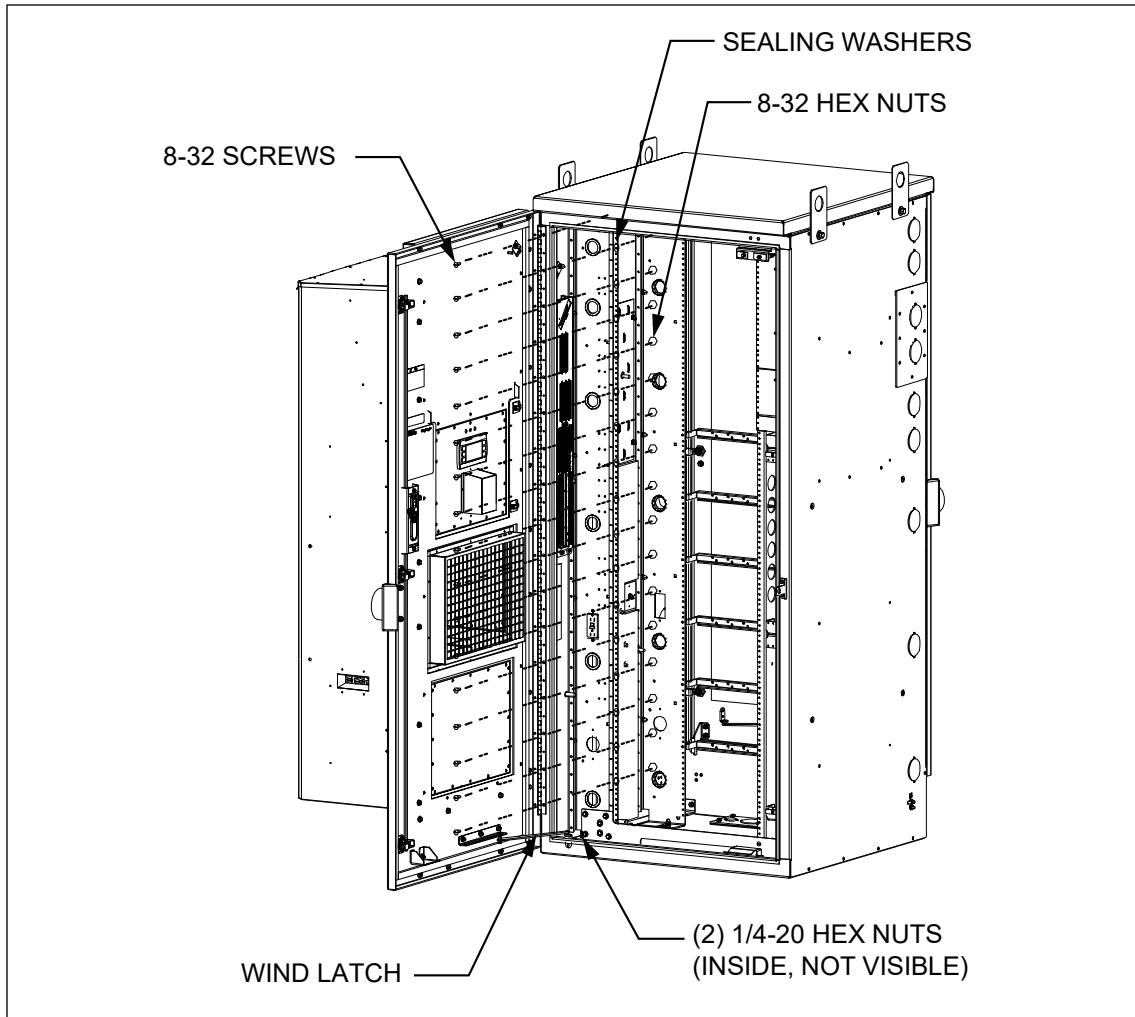


Figure 4 Attach Door Kit to CUBE

3.6. Connecting the Thermal Unit

Once the replacement door is mounted on the CUBE, connect the new thermal unit. See the list below for connection information for the thermal units included in the kit family.

Kit	Thermal Unit	Connection Information
97-002222-A	10k BTU HVAC, 230VAC powered	Connect to a 2-pole 15A breaker on the AC power source and plug the HVAC into an L6 receptacle (remove the HVAC plug if CUBE is not equipped with an L6 receptacle).
97-002314-A	12k BTU HVAC, 48VDC powered	Connect to a 50A breaker on the main power system.
97-002316-A	12k BTU HVAC, 48VDC powered	Connect to a 50A breaker on the main power system.
97-002444-A	12k BTU HVAC, 48VDC powered	Connect to a 50A breaker on the main power system.
97-002446-A	12k BTU HVAC, 48VDC powered	Connect to a 50A breaker on the main power system.
97-002450-A	1.7k BTU HVAC, 48VDC powered	Connect to a 20A breaker on the main power system.
97-002451-A	1.7k BTU HVAC, 48VDC powered	Connect to a 20A breaker on the main power system.
97-SS4B223DRKT	4k BTU HVAC, 48VDC powered	Connect to a 15A breaker on the main power system.
97-SS4C2154KDKT	4k BTU HVAC, 48VDC powered	Connect to a 15A breaker on the main power system.
97-SSRDRKIT10KD	12k BTU HVAC, 48VDC powered	Connect to a 50A breaker on the main power system.
97-PM624RDRKTHX	1880W HX, 48VDC powered	Connect to a 7.5A breaker on the main power system.
97-PM624RDKT4K	4k BTU HVAC, 48VDC powered	Connect to a 15A breaker on the main power system.
97-RL200DRTHTX	Heat Exchanger, 48VDC powered	Connect the black wire on the heat exchanger cable to the (-) output of the power supply. Connect the (+) output of the power supply to the thermostat by inserting the wire (14awg max) into the open slot and tighten down with a straight screwdriver. Use a 3A fuse.
97-6391212KRDKT	12k BTU HVAC, 48VDC powered	Connect to a 50A breaker on the main power system.
97-4000SS4BPHDK	12k BTU HVAC, 48VDC powered	Connect to a 50A breaker on the main power system.
97-4000WDKLO639	14k BTU HVAC, 48VDC powered	Connect the blue wire to the (-) terminal block and connect the 2-hole lug to a 48VDC, 50A DC breaker. Connect the gray wire to the (+) terminal block and connect the 2-hole lug to the 48V return bus.
97-4000WDKPH639	14k BTU HVAC, 48VDC powered	Connect the blue wire to the (-) terminal block and connect the 2-hole lug to a 48VDC, 50A DC breaker. Connect the gray wire to the (+) terminal block and connect the 2-hole lug to the 48V return bus.
97-4000WEKPH639	14k BTU HVAC, 48VDC powered	Connect the blue wire to the (-) terminal block and connect the 2-hole lug to a 48VDC, 50A DC breaker. Connect the gray wire to the (+) terminal block and connect the 2-hole lug to the 48V return bus.
97-4000WPKPH639	14k BTU HVAC, 48VDC powered	Connect the blue wire to the (-) terminal block and connect the 2-hole lug to a 48VDC, 50A DC breaker. Connect the gray wire to the (+) terminal block and connect the 2-hole lug to the 48V return bus.
97-SS4B600WPDRK	1.7k BTU HVAC, 48VDC powered	Connect to a 20A breaker on the main power system.
97-PM4274KDOORK	4k BTU HVAC, 48VDC powered	Connect to a 15A breaker on the main power system.
97-SS231BATTDK	2k BTU HVAC, 115VAC powered	Connect to a 2-pole 10A breaker on the AC power source and plug the HVAC into an L5 receptacle (remove the HVAC plug if CUBE is not equipped with an L5 receptacle).

Table 1 Electrical Information

For both Dantherm and Vikinor HVAC rear door units (see Table 3), it is advisable to raise the cooling set point to 5 degrees above the default setting. This ensures that the second HVAC will not run if the front door HVAC has successfully lowered the temperature inside the CUBE. See the HVAC documentation that ships with the kit for instructions.

3.7. Completing the Installation

Connect the new alarm wires to the alarm block using the same terminals used by the previous thermal device. If the kit provides a second thermal unit for the CUBE, then use the next set of terminals on the alarm block (HVAC2) for alarm connections if available. If the HVAC2 terminal are not available, then connect the HVAC in series with the existing thermal device. When alarm wiring is complete, apply power to the CUBE.

4. PERIODIC MAINTENANCE

In the event that the enclosure needs to be opened in freezing conditions, a narrow, pointed metallic object such as a screwdriver or chisel, along with a non-metallic device such as a rubber mallet, may be used to remove excessive ice buildup around the door and locking mechanism. Use a commercial aerosol de-icer spray to free up locks and latches if needed.

Refer to the thermal unit manual supplied with the unit (if equipped) for periodic maintenance requirements.

5. TECHNICAL ASSISTANCE AND REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500

techserv@charlesindustries.com (email)

<http://www.charlesindustries.com/techserv.htm>

6. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the door kit product. The Charles warranty is limited to the operation of the kit hardware as described in this documentation and does not cover equipment which may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

847-806-6300

mktserv@charlesindustries.com (email)

http://www.charlesindustries.com/main/telecom_sales_support.htm

7. SPECIFICATIONS

Physical	
Materials	0.125 aluminum
Color	Off-White
Kits and Replacement Parts	
Touch-up Paint	02-000290-0
Lift-Up Handle	39-000335-0
Lift-Up Rod Latch	39-000336-0

Table 2 Product Specifications

Part Number	Description	Thermal Unit Manuf. Part Number	Weight (lbs) As Shipped
97-002222-A	PM639 Front Door Assembly with 10k BTU HVAC, 230VAC powered	Dantherm 708347	219
97-002314-A	PM639 Front Door Assembly with 12k BTU HVAC, 48VDC powered	Vikiner VAK-3000	219
97-002316-A	PM639 Rear Door Assembly with 12k BTU HVAC, 48VDC powered	Vikiner VAK-3000	200
97-002444-A	SSxx231 Front Door Assembly with 12K BTU HVAC, 48VDC powered, 50A breaker and wiring included	Vikiner VAK-3000	153
97-002446-A	PM639 Front Door Assembly with 12k BTU HVAC, 48VDC powered	Vikiner VAK-3000	155
97-002448-A	PM639 Front Door Assembly with mounting holes for a 12k BTU HVAC, opens to left side	none	33
97-002450-A	SSxx215 Front Door Assembly with 1.7k BTU HVAC, 48VDC powered	Vikiner VAK-500	126
97-002451-A	BB48E2xxx Front Door Assembly with 1.7k BTU HVAC, 48VDC powered (5 battery strings)	Vikiner VAK-500	136
97-002999-A	PM639 Front Door Assembly with mounting holes for a 320W/K thermosiphon, opens to left side	none	34
97-003000-A	PM639 Front Door Assembly with mounting holes for a 320W/K thermosiphon, opens to right side	none	34
97-003003-A	SSxx228 Front Door Assembly with mounting holes for a 320W/K thermosiphon, opens to left side	none	25
97-003004-A	SSxx228 Front Door Assembly with mounting holes for a 320W/K thermosiphon, opens to right side	none	25
97-PM624RDRKTHX	PM624 Rear Door Assembly with 1880W Heat Exchanger, 48VDC powered	Dantherm 705882	96
97-PM624RDKT4K	PM624 Rear Door Assembly with 4k BTU HVAC, 48VDC powered	Dantherm 708345	190
97-RL200DRHTX	RL2000 Front Door Assembly with 17W/F Heat Exchanger, 48VDC powered	Dantherm 706841	35
97-6391212KRDKT	PM639 Rear Door Assembly with 12k BTU HVAC, 48VDC powered (3500W)	Vikiner VAK-3000	211
97-4000SS4BPHDK	SSxx228 Front Door Assembly with 12K BTU HVAC, 48VDC powered, 50A breaker and wiring included	Vikiner VAK-3000	150
97-4000WDKLO639	PM639 Front Door Assembly with 14k BTU HVAC, 48VDC powered	Vikiner VAF-4000	257
97-4000WDKPH639	PM639 Front Door Assembly with 14k BTU HVAC, 48VDC powered	Vikiner VAF-4000	257
97-4000WEKPH639	PM639 Front Door Assembly with 14k BTU HVAC, 48VDC powered	Vikiner VAF-4000	257
97-4000WPKPH639	PM639 Front Door Assembly with 14k BTU HVAC, 48VDC powered	Vikiner VAF-4000	257
97-SS4B223DRKT	SSxx223 Front Door Assembly with 4k BTU HVAC, 48VDC powered	Dantherm 708345	120
97-SS4B600WPDRK	SS4B228PX1 Battery Door Assembly with 1.7K BTU HVAC, 48VDC powered	Vikiner VAK-500	129
97-SS4C2154KDKT	SS4C2156 Front Door Assembly with 4k BTU HVAC, 48VDC powered	Dantherm 708345	115
97-SSRDRKIT10KD	SSxx228 Rear Door Assembly with 12k BTU HVAC, 48VDC powered	Vikiner VAK-3000	275
97-PM4274KDOORK	PM427 Front Door Assembly with 4k BTU HVAC, 48VDC powered	Dantherm 708345	130
97-SS231BATTDK	SS231 Battery Compartment Door Assembly with 2k BTU HVAC, 115VAC powered	Vikiner VAK-600-AC	75

Table 3 Kit Descriptions