



# eSure™ Power Extend Converter Mounting Bracket and Door Kit

## Installation Manual

Kit Specification Number: 60017372

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### **Technical Support Site**

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit <https://www.vertiv.com/en-us/support/> for additional assistance.

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## Admonishments Used in this Document



**DANGER!** Warns of a hazard the reader *will* be exposed to that will *likely* result in death or serious injury if not avoided. (ANSI, OSHA)



**WARNING!** Warns of a potential hazard the reader *may* be exposed to that *could* result in death or serious injury if not avoided. This admonition is not used for situations that pose a risk only to equipment, software, data, or service. (ANSI)



**CAUTION!** Warns of a potential hazard the reader *may* be exposed to that *could* result in minor or moderate injury if not avoided. (ANSI, OSHA) This admonition is not used for situations that pose a risk only to equipment, data, or service, even if such use appears to be permitted in some of the applicable standards. (OSHA)



**ALERT!** Alerts the reader to an action that *must be avoided* in order to protect equipment, software, data, or service. (ISO)



**ALERT!** Alerts the reader to an action that *must be performed* in order to prevent equipment damage, software corruption, data loss, or service interruption. (ISO)



**FIRE SAFETY!** Informs the reader of fire safety information, reminders, precautions, or policies, or of the locations of fire-fighting and fire-safety equipment. (ISO)



**SAFETY!** Informs the reader of general safety information, reminders, precautions, or policies not related to a particular source of hazard or to fire safety. (ISO, ANSI, OSHA)

# **Important Safety Instructions**

## **Safety Admonishments Definitions**

Definitions of the safety admonishments used in this document are listed under “Admonishments Used in this Document” on page iv.

## **Safety and Regulatory Statements**

Refer to Section 4154 (provided with your customer documentation) for Safety and Regulatory Statements.

## **Déclarations de Sécurité et de Réglementation**

Reportez-vous à la Section 4154 (fourni avec les documents de votre client) pour les déclarations de sécurité et de réglementation.

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# 1 Vertiv™ eSure™ Power Extend Converter Mounting Bracket and Door Kit Installation Instructions

## 1.1 Kit Description

Mounting bracket kits have been designed to easily install a Vertiv™ eSure™ Power Extend Converter (Model C48/58-1000B, Spec. No. 1C48581000B) into a distribution position of a Vertiv™ NetSure™ Power System (see UM565050 for kit part numbers and descriptions). A mounting bracket kit must be used for grounding and mechanical support. See **Table 1** for the kits covered by these instructions.

These instructions provide a step-by-step procedure to field install a Vertiv™ eSure™ Power Extend Converter using one of the kits listed in **Table 1**. Installation of this kit in other systems not listed in **Table 1** should not be attempted.

**Table 1: Power System Mounting Bracket and Door Kit Covered by these Instructions**

Mounting Bracket Kit P/N	Description
60017372	For use with a P/N 545277 and P/N 520276 stand-alone distribution panel. Includes mounting brackets and door.

## 1.2 Tools and Material Required

**Table 2** lists the items required to install this kit.

**Table 2: Tools and Material Required**

Description
#1 Flat Blade Screw Driver, insulated
#2 Phillips Blade Screw Driver, insulated
Torque Wrench, insulated (capable of being set from 9.6 in-lbs to 72 in-lbs)
3/8" Drive Ratchet and Socket Set, insulated
Power Extend Converter Kit (P/N 565050) (Model C48/58-1000B, Spec. No. 1C48581000B), quantity as needed

## 1.3 Mounting Bracket and Door Kit Contents

**Table 3** list the items furnished as a part of the mounting bracket and door kit covered by these instructions. Before installing a mounting bracket and door kit, check the items furnished against those listed to ensure that there are no shortages.

**Table 3: Mounting Bracket and Door Kit P/N 60017372 Contents**

P/N	Description	Qty.
60016960	Left Side Mounting Bracket	1
60016961	Right Side Mounting Bracket	1
60008405	Captive Nut (factory assembled to side brackets)	4
60019268	Washer (factory assembled to side brackets)	4
233362700	6-32 x 3/8" Screw (4 are factory assembled to side brackets)	8
60016951	Front Mounting Bracket	1
152175	Hot Surface Label (factory assembled to front bracket)	2
60016962	Front Door	1
S-0650	Nut (factory assembled to door)	2
560958P2	Product Label (factory assembled to door)	1
514097	Caution Label (factory assembled to door)	1
421121900	Ground Jumper, Door	1
233394000	6-32 x 1/4" Screw	1
223772500	6-32 Nut with Washer	2
214109100	#12 Flat Washer, 0.438" OD, 0.040" thick	1
214109200	#12 Flat Washer, 0.625" OD, 0.063" thick	1
60010906	Panel Position Label, 30-Pos	1
151950	Storage Pouch	1
552423	Hook-and-Loop Fastener (factory attached to storage pouch)	1
566026	Toggle Breaker Guard Kit, includes... (Qty. 27) L-Shaped Guard Brackets (Qty. 27) #6-32 x 3/16" Screws (Qty. 27) M3-0.5 x 5 mm Screws	1



## 1.4 Mounting Bracket and Door Kit Installation Procedure

### THESE INSTRUCTIONS SHOULD BE READ THROUGH COMPLETELY BEFORE INSTALLING THE KIT.

The following is a step-by-step procedure to install the kit. The procedure has been written for ease of use and to minimize the possibility of contact with potentially hazardous energy. This procedure should be performed in the sequence given, and each step should be completely read and fully understood before performing that step. Observe all “Important Safety Instructions” starting on page v and also those presented in the following procedure. As each step of the procedure is completed, the box adjacent to the respective step should be checked. This will minimize the possibility of inadvertently skipping any steps. If the step is not required to be performed for your site, also check the box to indicate that it was read.

### 1.4.1 Important Safety Instructions



**DANGER!** Adhere to the “Important Safety Instructions” starting on page v and those listed in the power system manual.



**CAUTION!** When performing any step in procedures that requires removal or installation of hardware, use caution to ensure no hardware is dropped and left inside the unit; otherwise service interruption or equipment damage may occur.



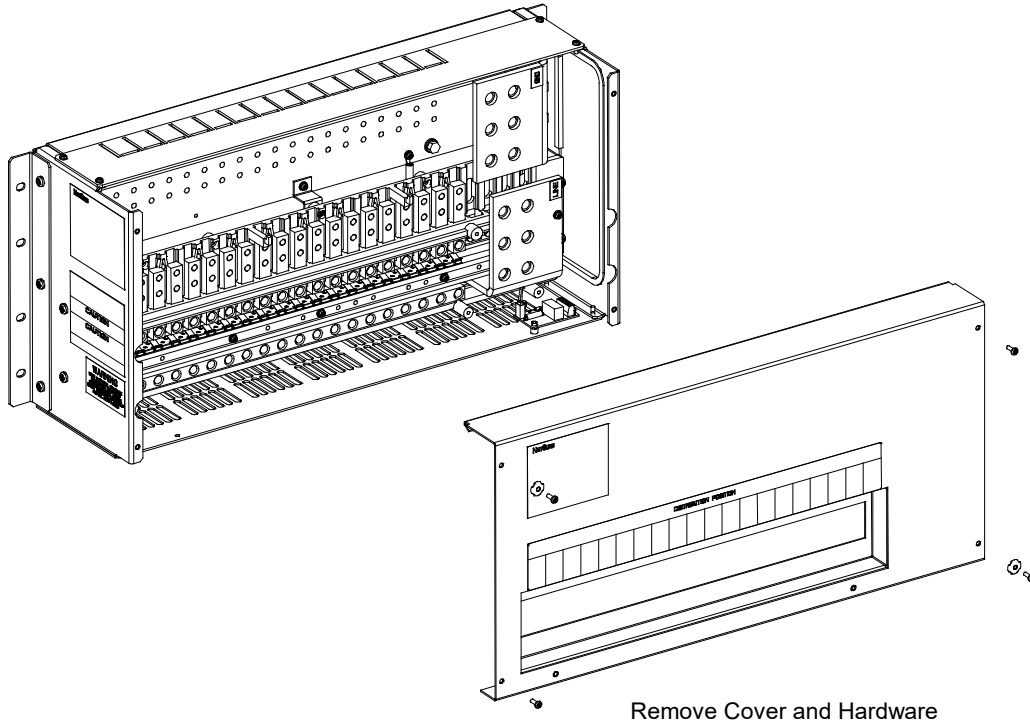
**NOTE!** When performing any step in this procedure which requires removal of existing hardware, retain all hardware for use in subsequent steps, unless otherwise stated.

### 1.4.2 Installing Mounting Bracket and Door Kit P/N 60017372

#### Procedure

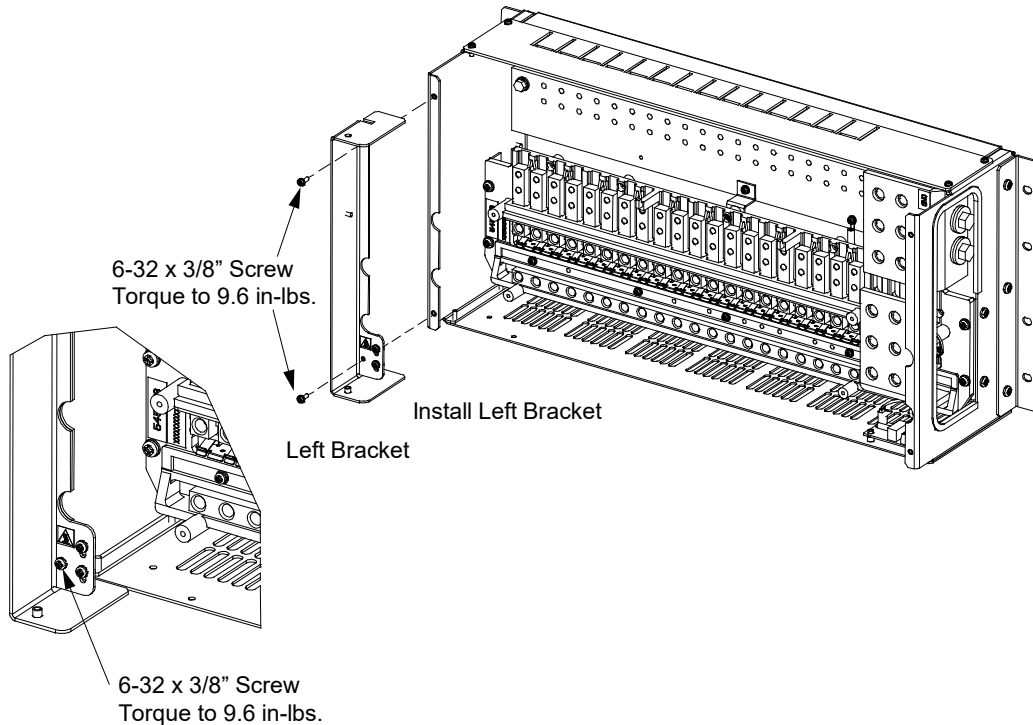
- [ ] 1. Performing this procedure may activate external alarms. Do one of the following. If possible, disable these alarms. If these alarms cannot be easily disabled, notify the appropriate personnel to disregard any future alarms associated with this system while the procedure is being performed.
- [ ] 2. Gain access to the distribution panel into which the power extend converter is to be installed.
- [ ] 3. Remove the front cover from the P/N 545277 distribution panel. See **Figure 1**. The front cover and mounting hardware will not be re-used.

**Figure 1: Removing P/N 545277 Distribution Panel Front Cover**



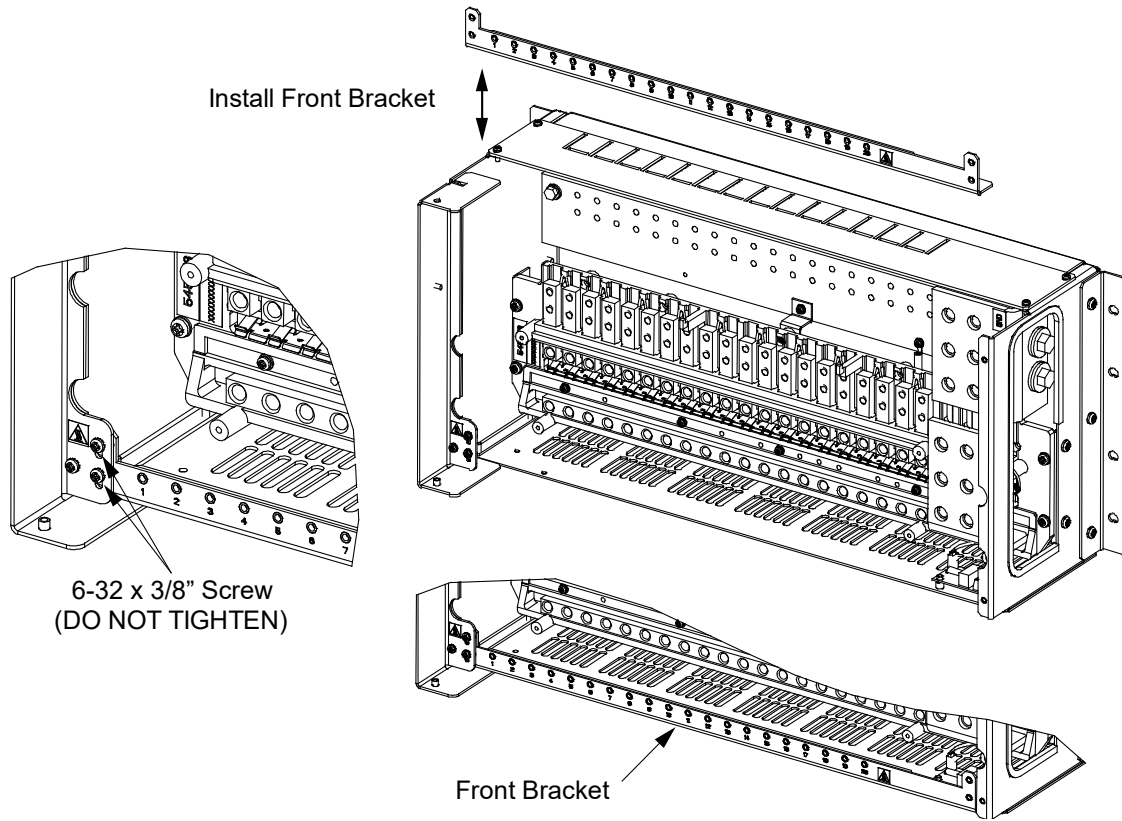
- [ ] 4. Orient the kit supplied left side mounting bracket as shown in **Figure 2**. Secure to distribution panel with kit supplied hardware as shown in **Figure 2**. Torque hardware as indicated in **Figure 2**.

**Figure 2: Install Kit Left Side Mounting Bracket**



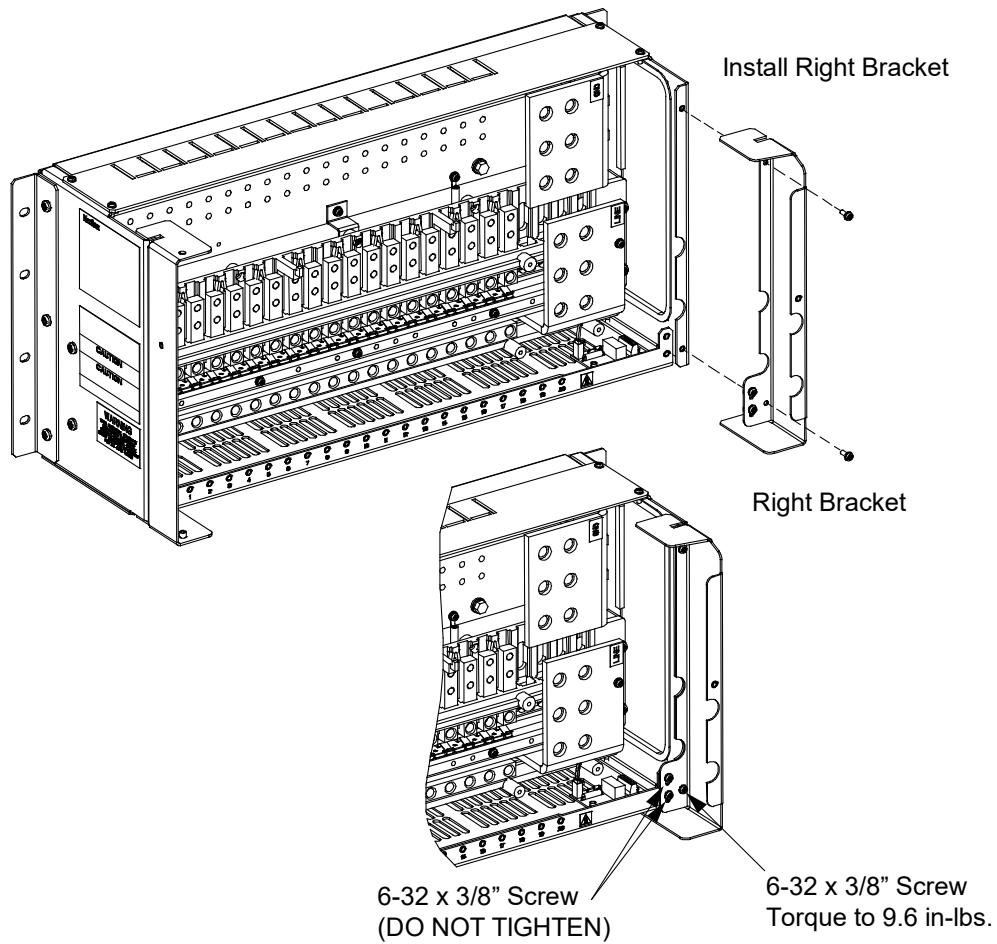
- [ ] 5. Orient the kit supplied front mounting bracket as shown in **Figure 3**. Secure the front mounting bracket to the left side mounting bracket as shown in **Figure 3**. DO NOT TIGHTEN HARDWARE (hardware will be tightened during power extend converter installation).

**Figure 3: Install Kit Front Mounting Bracket**



- [ ] 6. Orient the kit supplied right side mounting bracket as shown in **Figure 4**. Secure the right side mounting bracket to the distribution panel with kit supplied hardware as shown in **Figure 4**. Torque hardware as indicated in **Figure 4**. Secure the front mounting bracket to the right side mounting bracket as shown in **Figure 4**. **DO NOT TIGHTEN HARDWARE** (hardware will be tightened during power extend converter installation).

**Figure 4: Install Kit Right Side Bracket**

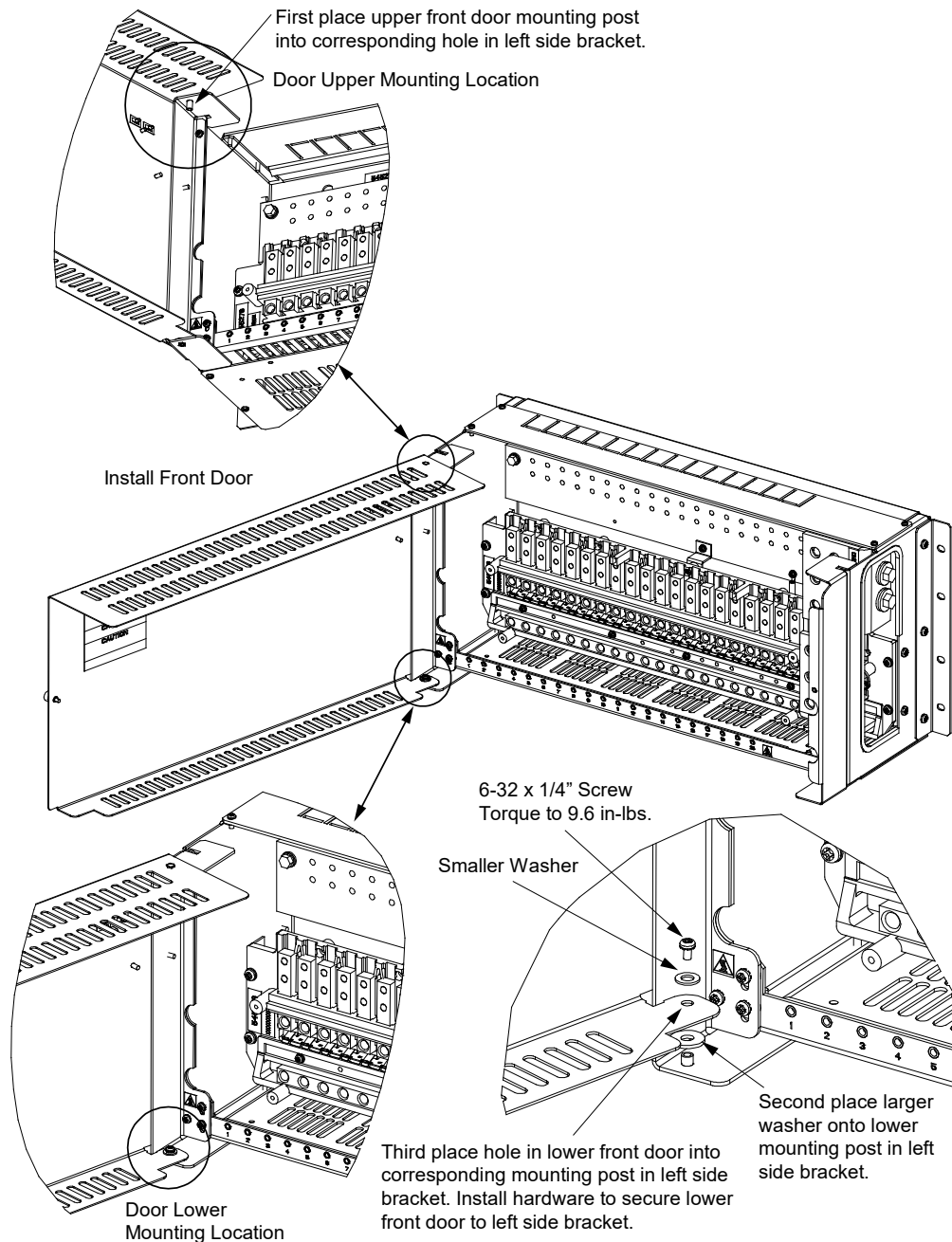


- [ ] 7. Orient the kit supplied front door as shown in **Figure 5**. Place upper front door mounting post into corresponding hole in left side bracket. Place larger washer on lower post of left side bracket. Place hole in lower front door into corresponding mounting post in left side bracket (over washer just installed). Install hardware to secure lower front door to left side bracket as shown in **Figure 5**. Torque hardware as indicated in **Figure 5**.



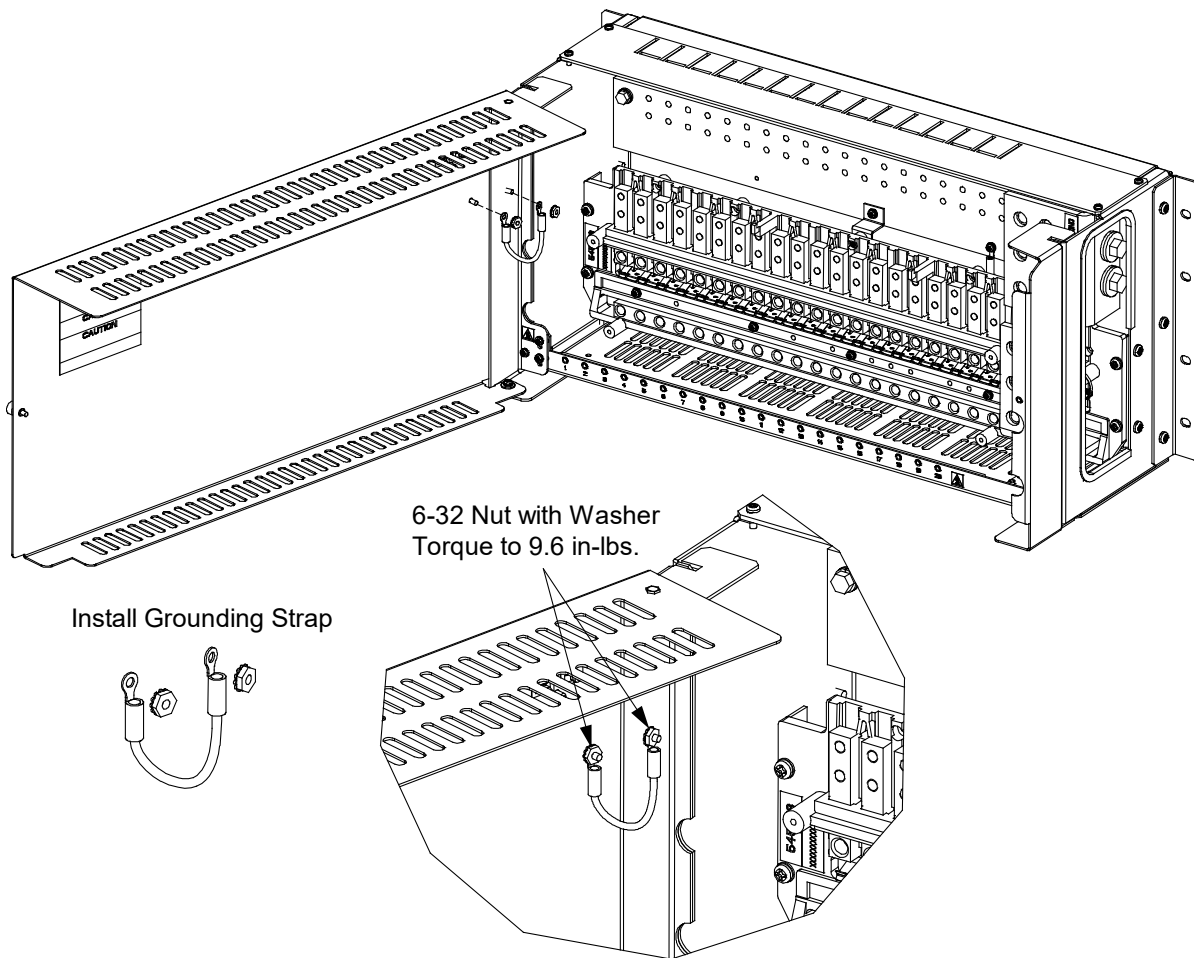
**NOTE!** When installing a power extend converter mounting bracket kit covered by these instructions onto a stand-alone distribution cabinet installed in an outside plant enclosure, leave the front door off the stand-alone distribution cabinet when complete with the installation.

**Figure 5: Install Kit Front Door**



- [ ] 8. Install the door grounding strap as shown in **Figure 6**. Torque hardware as indicated in **Figure 6**.

**Figure 6: Install Door Grounding Strap**



- [ ] 9. Remove the kit supplied distribution position label (see **Figure 7**) from the kit supplied storage pouch and (using the label on the front cover removed from the distribution panel as a guide) record the distribution positions onto the kit supplied label.
- [ ] 10. Place the kit supplied distribution position label (see **Figure 7**) back into the kit supplied storage pouch or remove the backing from the label and adhere it to a suitable surface near the power system. If the kit supplied distribution position label is placed back into the storage pouch, remove the backing from the hook-and-loop fastener factory attached to the storage pouch and adhere the storage pouch to a suitable surface near the power system.

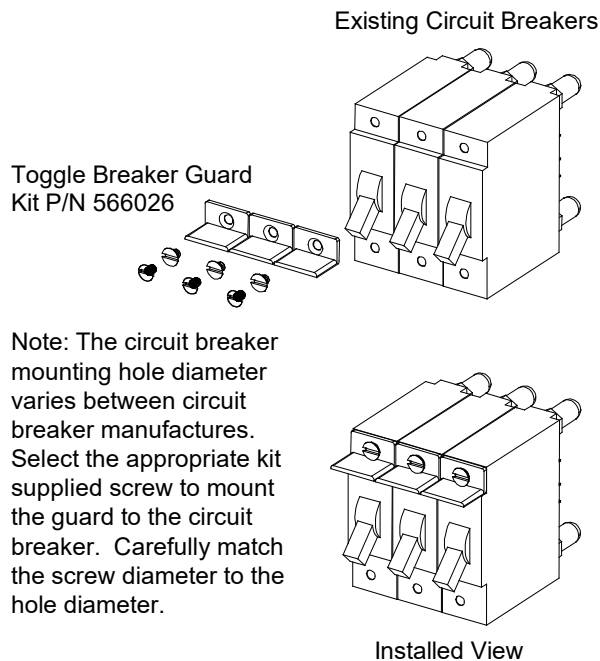
**Figure 7: Distribution Position Label**

Distribution Position Label

		ROW 2 <input type="checkbox"/>	ROW 4 <input type="checkbox"/>
VERTIV™		ROW 1 <input type="checkbox"/>	ROW 3 <input type="checkbox"/>
POS.	DETAIL	POS.	DETAIL
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	

- [ ] 11. Install the toggle breaker guard kit (P/N 566026) as required per site requirements. See **Figure 8**.

**Figure 8: Toggle Breaker Guard Kit (P/N 566026)**



- [ ] 12. Continue with the “Installing the Power Extend Converter into a Distribution Position” procedure starting on page 10.

## 2 Installing the Power Extend Converter into a Distribution Position

### 2.1 Important Safety Instructions



**DANGER!** Adhere to the “Important Safety Instructions” starting on page v and those listed in the power system manual.



**ALERT!** Only install the power extend converter into a -48 VDC distribution position. Non-repairable damage will occur if the power extend converter is plugged into a +24 VDC distribution position.



**NOTE!** The power extend converter can be inserted or removed with power applied (hot swappable) as long as the power extend converter is inserted/removed with the enable/disable switch in the disabled position (see **Figure 12** on page 15).



**WARNING!** The power extend converter and front mounting bracket becomes very hot during power extend converter operation at heavy load. Wear heat resistant gloves or allow the power extend converter to cool down before removing.

### 2.2 Restrictions

Refer to the power extend converter instruction manual (UM565050) for wire sizing restrictions.

Refer to **Table 4** for spacing and power restrictions. This table shows how many converters can be placed side by side before skipping a single space at certain average power levels. These power levels pertain to the average output power (busy hour average power) drawn by the load including any power loss in the cable. The peak power available from each unit remains at 1000 watts regardless of spacing or location. Use the calculator tool that can be obtained at <https://www.vertiv.com/en-us/products-catalog/critical-power/dc-power-systems/esure-power-extend-converter-c4858-1000/#/downloads> to determine the necessity, quantity and spacing requirement of the Power Extend Converter based on the RRU type (or peak load), use application (host power system), trunk and jumper cable size and length, minimum source voltage and minimum RRU operating voltage.



**NOTE!** When installing a power extend converter mounting bracket kit covered by these instructions onto a stand-alone distribution cabinet installed in an outside plant enclosure, leave the front door off the stand-alone distribution cabinet when complete with the installation.

**Table 4: Spacing and Power Restrictions: Spec. No. 545277 and 520276 Operating in a 40°C Ambient**

Distribution Row	Watts Per Power Extend Converter				
	No Spaces	1 Pole / Space	2 Pole / Space	3 Pole / Space	4 Pole / Space
Row 1 Only	375 W	900 W	750 W	600 W	500 W



**ALERT!** When circuit breaker(s) and Power Extend Converter(s) (Model C48/58-1000B, Spec. No. 1C48581000B) are deployed in the same enclosure, circuit breaker(s) can only be loaded to 70% of rated value.

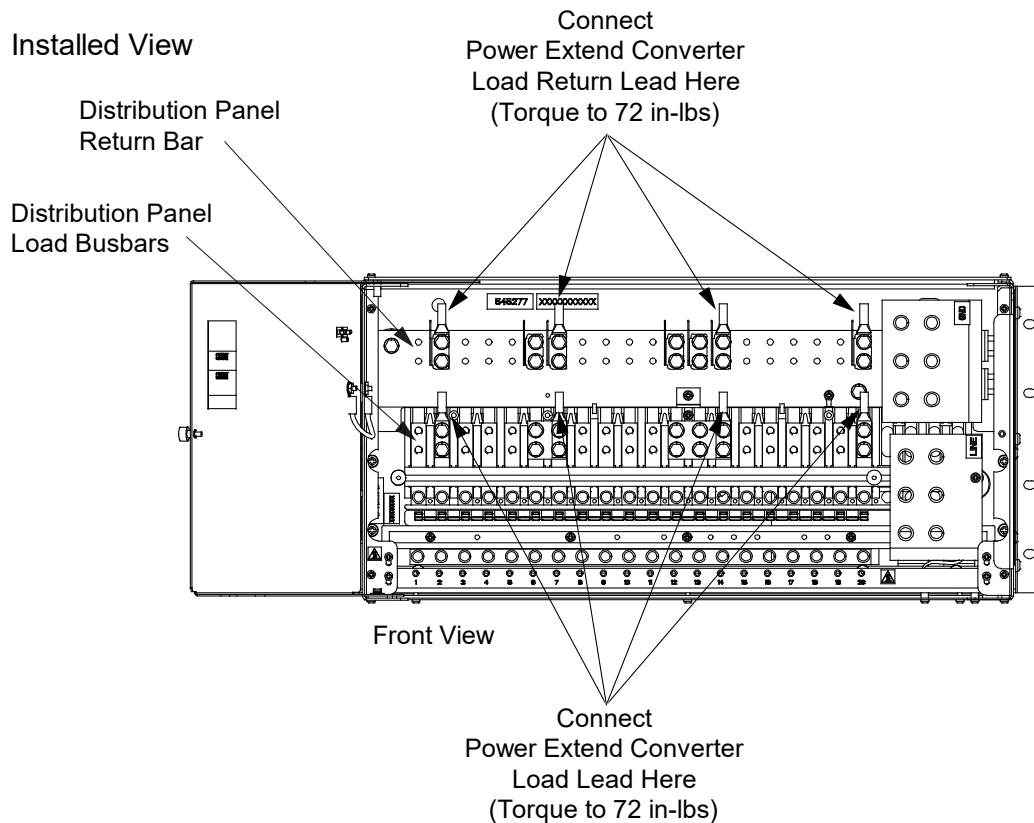


## 2.3 Preparing the Distribution Cabinet

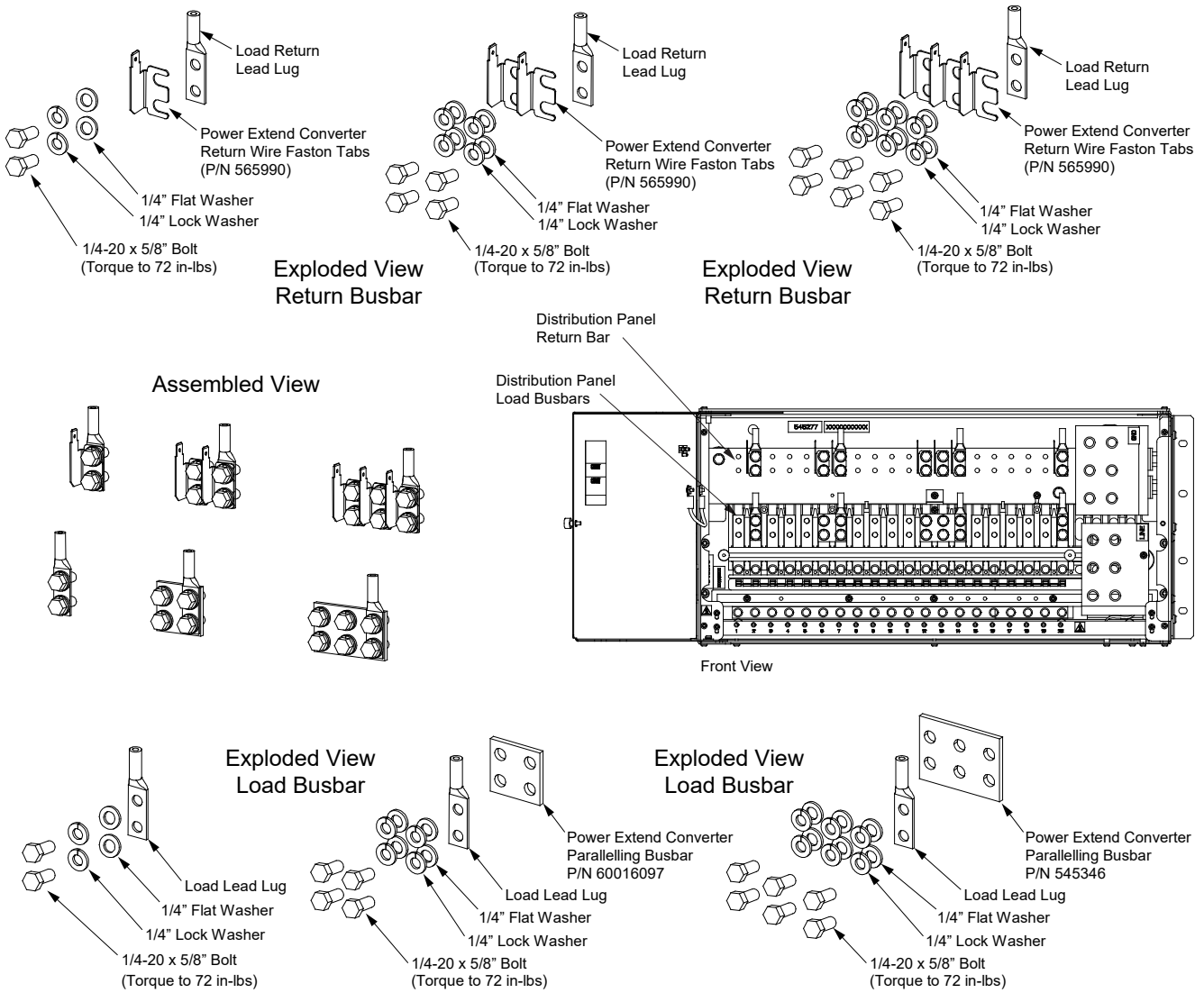
### Procedure

- [ ] 1. If the power extend converter is to be installed for a newly connected load, connect the load and load return cables for the distribution position to be occupied by the power extend converter. At the same time, connect the power extend converter return wire faston tab (P/N 565990) provided with the power extend converter to the cabinet's return busbar (use the same location as the return lead to the load). At the same time (if required), connect the separately ordered power extend converter paralleling busbar (P/N 60016097 for paralleling two converters, P/N 545346 for paralleling three converters) to the distribution panel load busbars (use the same location as the load lead to the load). See **Figure 9**. Torque as indicated in **Figure 9**.
- [ ] 2. If the power extend converter is to replace an existing circuit breaker, remove the circuit breaker and verify the load and return cables for the position are wired and labeled correctly. At the same time, connect the power extend converter return wire faston tab (P/N 565990) provided with the power extend converter to the cabinet's return busbar (use the same location as the return lead to the load). At the same time (if required), connect the separately ordered power extend converter paralleling busbar (P/N 60016097 for paralleling two converters, P/N 545346 for paralleling three converters) to the distribution panel load busbars (use the same location as the load lead to the load). See **Figure 9**. Torque as shown **Figure 9**.

**Figure 9:** Connecting Power Extend Converter Load Return Cables to the Return Bar with the **Power Extend Converter Return Wire Faston Tab (P/N 565990)** and Connecting Power Extend Converter Load Cables to the Distribution Panel with Power Extend Converter Paralleling Busbar (P/N 60016097 or 545346) (if required) (**cont'd on next page**)



**Figure 9:** Connecting Power Extend Converter Load Return Cables to the Return Bar with the **Power Extend Converter Return Wire Faston Tab (P/N 565990)** and Connecting Power Extend Converter Load Cables to the Distribution Panel with Power Extend Converter Paralleling Busbar (P/N 60016097 or 545346) (if required) (cont'd from previous page)



## 2.4 Installing the Power Extend Converter(s)

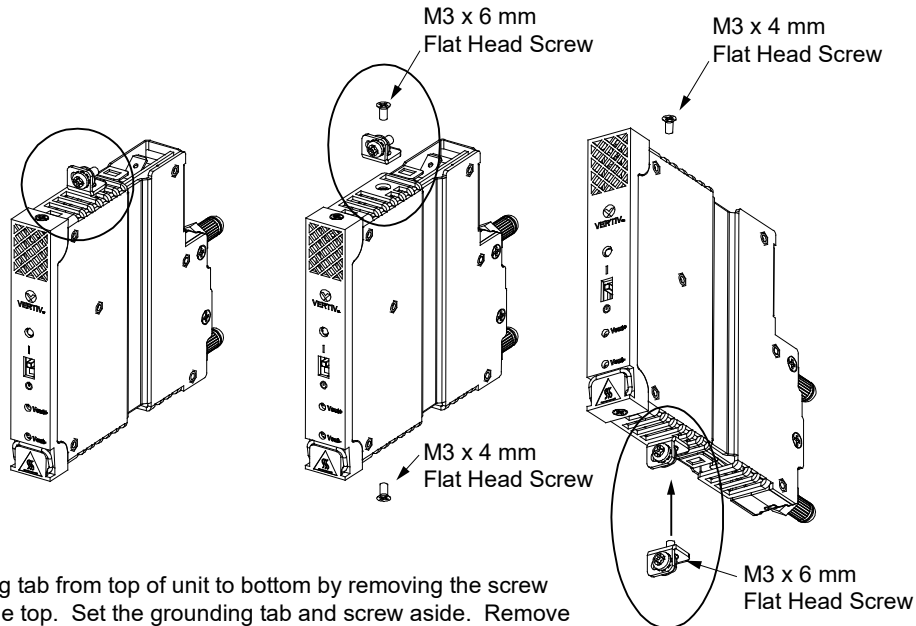


**NOTE!** See also “Restrictions” on page 10.

### Procedure

- [ ] 1. Move the grounding tab from the top of the power extend converter to the bottom per **Figure 10**. Repeat for each power extend converter to be installed.

**Figure 10: Moving Grounding Tab from Top of Unit to Bottom**



Move grounding tab from top of unit to bottom by removing the screw securing it to the top. Set the grounding tab and screw aside. Remove the bottom screw. Secure the screw removed from the bottom location into the top location (note that it is a different length than the screw used to secure the grounding tab). Orient the grounding tab in the bottom location as shown in the illustration and secure with the screw removed from the top location (longer screw). Torque both screws to 5.8 in-lbs.

- [ ] 2. Connect the return wire (P/N 564330) provided with the power extend converter to a power extend converter return wire faston tab (P/N 565990) installed on the cabinet’s return bar in a previous step. See **Figure 11**. Repeat for each power extend converter to be installed.

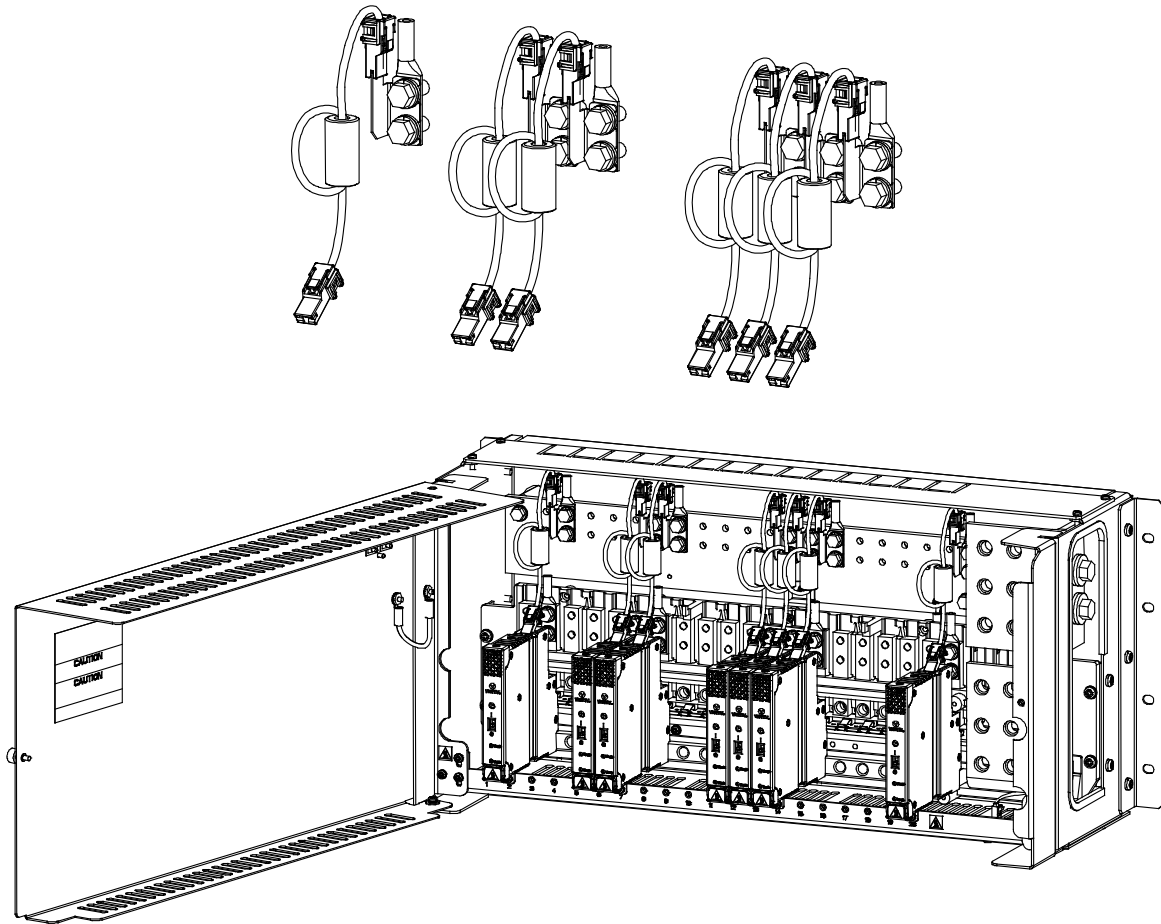


**NOTE!** The furnished 4-inch long return wire jumper (P/N 565752) may be installed with the P/N 564330 return wire if additional return wire length is preferred.

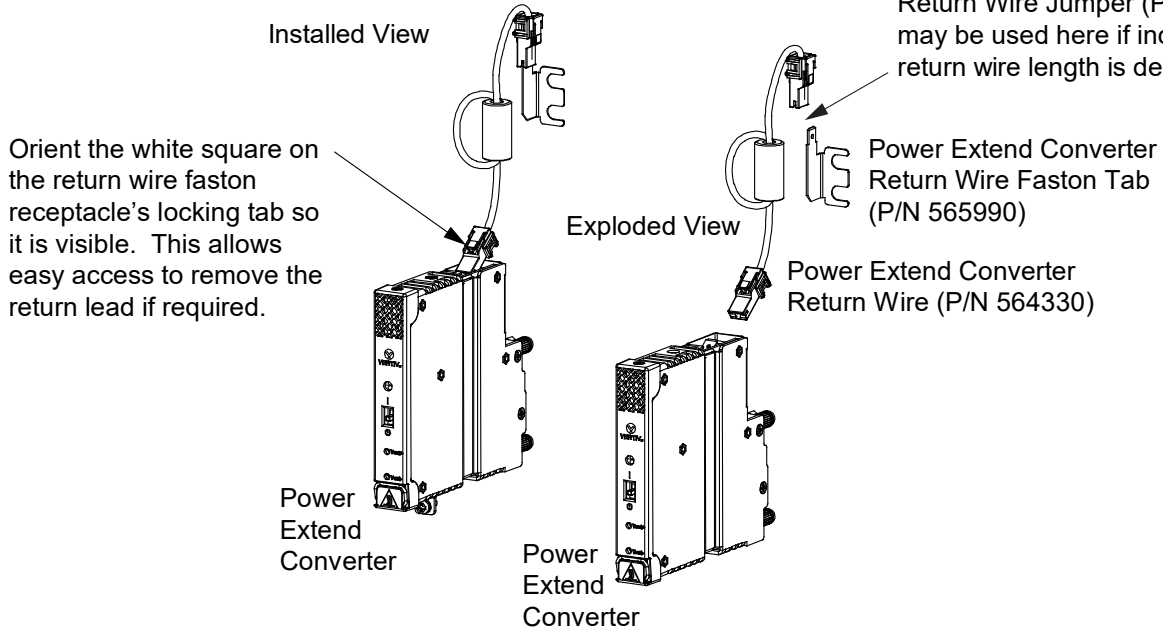


**NOTE!** The power extend converter is also furnished with an 8-inch long return wire jumper P/N 566207. The 8-inch long return wire jumper is not used with this mounting bracket kit. It is used in other kits.

**Figure 11:** Connecting Power Extend Converter Return Wire(s) (P/N 564330) to a Power Extend Converter Return Wire Faston Tab (P/N 565990) and to a Power Extend Converter

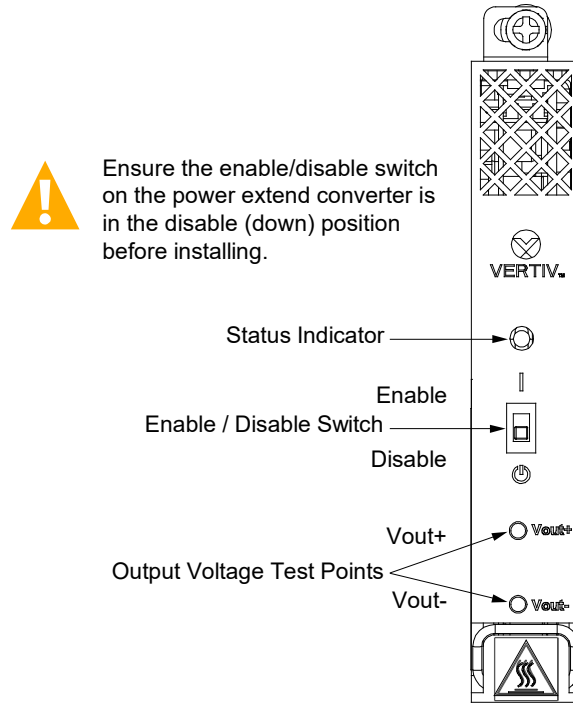


Note: Power Extend Converter Return Wire Jumper (P/N 565752) may be used here if increased return wire length is desired.



- [ ] 3. **Ensure the enable/disable switch on the power extend converter is in the disable (down) position. See Figure 12.**  
Repeat for each power extend converter to be installed.

**Figure 12:** Enable/Disable Switch



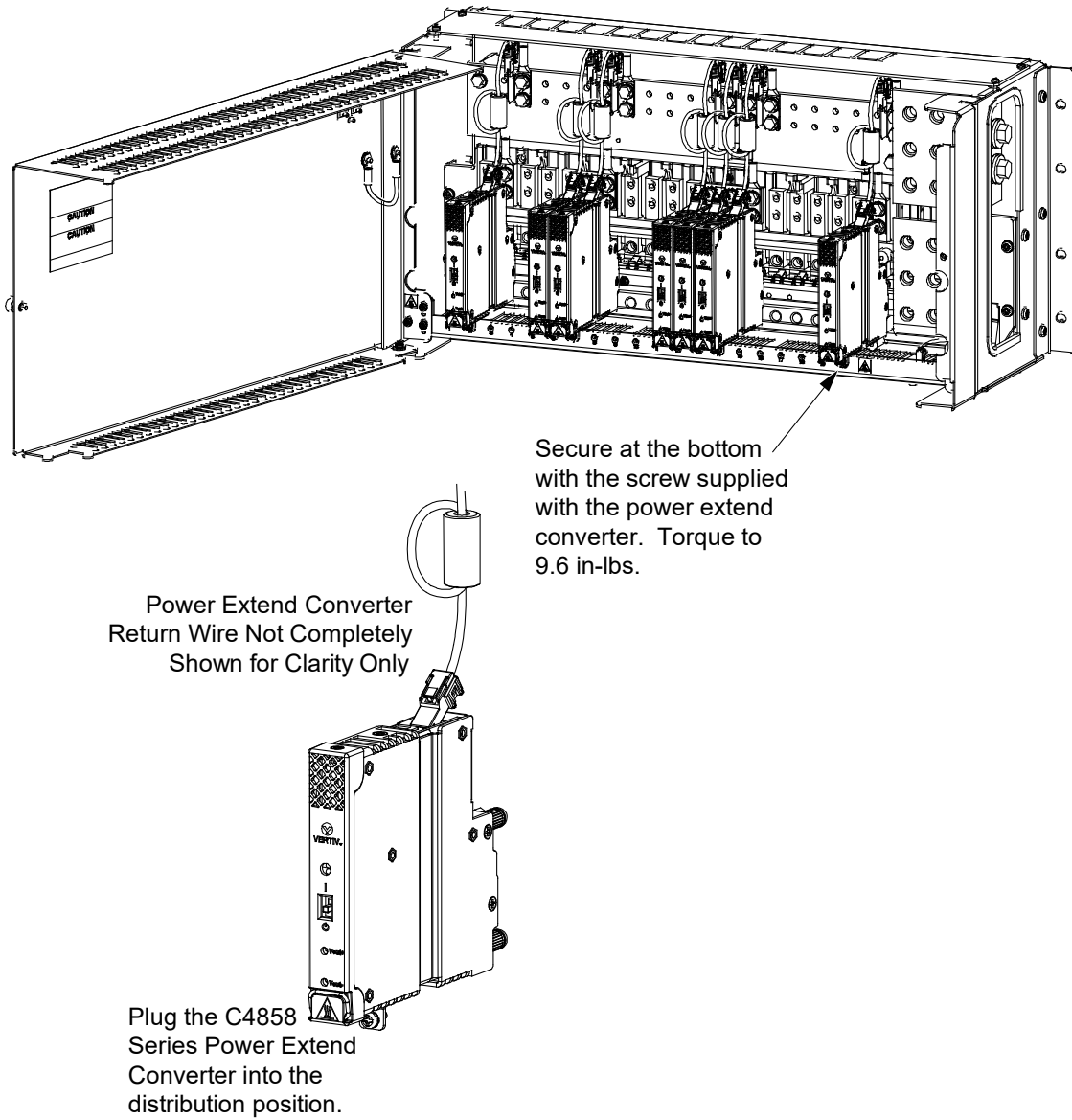
- [ ] 4. Connect the return wire (P/N 564330) to a power extend converter. See **Figure 11**. Orient the white square on the return wire faston receptacle's locking tab as shown in **Figure 11**. Plug the power extend converter into the distribution panel. See **Figure 13**. Repeat for each power extend converter to be installed.
- [ ] 5. Secure the power extend converter(s) to the mounting bracket with the screw provided with the power extend converter. Torque as shown in **Figure 13**. Repeat for each power extend converter to be installed.



**NOTE!** The front mounting bracket can be adjusted up and down as needed for power extend converter installation.

- [ ] 6. Once all power extend converters are installed, tighten the front mounting bracket to the left and right side mounting brackets. See **Figure 3** and **Figure 4**. Torque hardware to 9.6 in-lbs.

**Figure 13:** Installing Power Extend Converter(s)



- [ ] 7. Place the enable/disable switch on the power extend converter to the enable position. See **Figure 12** on page 15. If two or three power extend converters are connected in parallel to a load that exceeds 1000 watts peak, they should be switched on simultaneously.
- [ ] 8. Observe the status of the power extend converter front panel local indicator. If operating normally, this indicator should be illuminated green. See **Figure 12** on page 15.
- [ ] 9. Close and secure the door.
- [ ] 10. Ensure that there are no local or remote alarms active on the power system.
- [ ] 11. Enable the external alarms or notify appropriate personnel that this procedure is finished.

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