



eSure™ Power Extend Converter & +27 VDC Vertiv™ eSure™ Bullet Converter Mounting Bracket Kit

Installation Manual

Kit Specification Number: 565939, 565997, 60011928, 60011929, 60011930

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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 & +27 VDC Vertiv™ eSure™ Bullet Converter Mounting Bracket Kit Installation Instructions

1.1 Kit Description

Mounting bracket kits have been designed to easily install the Vertiv™ eSure™ Power Extend Converter (Model C48/58-1000B, Spec. No. 1C48581000B) or the +27 VDC Vertiv™ eSure™ Bullet Converter (Model C48/27-375B, Spec. No. 1C4827375B) into a distribution position of a Vertiv™ NetSure™ Power System (see UM565050 or UM60147273 for kit part numbers and descriptions). A mounting bracket kit must be used for grounding and mechanical support. See Table 1.1 for the kits covered by these instructions.

These instructions provide a step-by-step procedure to field install the Vertiv™ eSure™ Power Extend Converter or the +27 VDC Vertiv™ eSure™ Bullet Converter using one of the kits listed in Table 1.1. Installation of this kit in other systems not listed in Table 1.1 should not be attempted.

Table 1.1 Power System Mounting Bracket Kits Covered by these Instructions

Mounting Bracket Kit P/N	Description
565939	For use with a Spec. No. 582137100 List 20 power system.
60011929	For use with a Spec. No. 582137100 List 21 power system.
565997	For use with a Spec. No. 582137100 List 25 power system.
60011928	For use with a Spec. No. 582137100 List 26 power system.
60011930	For use with a Spec. No. 582137100 List 27 power system.  NOTE! Early List 27 power systems do not have the ability to have this kit installed. Contact Vertiv for more information.

A converter may not be installed in any of these distribution device mounting positions.

- 582137100 List 20 (1-Row, 19"): Positions 1, 18, 19. Caution for 16; rotate wire lug to right. Caution for tool access to IB2 and EIB board terminal blocks.
- 582137100 List 21 (2-Row, 19"): Row 2 Positions (Top Row) 1, 20, 21. Caution for 17.
- 582137100 List 25 (1-Row, 23"): Positions 1, 23, 24. Caution for 21; rotate wire lug to right. Caution for tool access to IB2 and EIB board terminal blocks.
- 582137100 List 26 (2-Row, 23"): Row 2 Positions (Top Row) 1, 25, 26. Caution for 22.
- 582137100 List 27 (1-Row, 23"): Positions 1, 24, 25, 26. Caution for 22; rotate wire lug to right. Caution for tool access to IB2 and EIB board terminal blocks.

1.2 Tools and Material Required

Table 1.2 lists the items required to install this kit.

Table 1.2 Tools and Material Required

Description
#1 Flat Blade Screw Driver, insulated
#2 Phillips Blade Screw Driver, insulated, 14" long shaft minimum
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) or +27 VDC Vertiv™ eSure™ Bullet Converter Kit (P/N 60147273) (Model C48/27-375B, Spec. No. 1C4827375B), quantity as needed

1.3 Mounting Bracket Kit Contents

Table 1.3 through Table 1.7 lists the items furnished as a part of the various mounting bracket kits covered by these instructions. Before installing a mounting bracket kit, check the items furnished against those listed to ensure that there are no shortages.

Table 1.3 Mounting Bracket Kit P/N 565939 Contents

P/N	Description	Qty.
60020757	Left Side Mounting Bracket, 582137100 1-Row	1
60020799	Right Side Mounting Bracket, 582137100 1-Row	1
60020798	Bottom Mounting Bracket, 582137100 List 20	1
60008405	#6 Captive Nut (factory attached to left/right brackets)	4
233362700	#6-32 x 3/8" Screw (factory attached to left/right brackets)	4
214106100	#6 Flat Washer (factory attached to left/right brackets)	4
152176	#10-32 x 5/16" Screw	2
152175	Hot Surfaces Caution Label (factory attached to mounting bracket)	2
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
SVH23001/1	+24 VDC Designation Label	3

Table 1.4 Mounting Bracket Kit P/N 60011929 Contents

P/N	Description	Qty.
60015688	Left Side Mounting Bracket, 582137100 2-Row	1
60015692	Right Side Mounting Bracket, 582137100 2-Row	1
60012758	Front Mounting Bracket, 582137100 List 21	1
132101	#10 Captive Nut (factory attached to left/right brackets)	2
218706400	#10-32 x 5/8" Screw (factory attached to left/right brackets)	2
214108100	#10 Flat Washer (factory attached to left/right brackets)	6
120412	#6-19 x 5/16" Screw (factory attached to left/right brackets)	2
152223	Retaining Washer (factory attached to left/right brackets)	2
152175	Hot Surfaces Caution Label (factory attached to side brackets)	2
60010906	Panel Position Label, 30-Pos	2
151950	Storage Pouch	2
552423	Hook-and-Loop Fastener (factory attached to storage pouch)	2
GB9074_4-88_M3X8	M3 x 8 mm Screw	18
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	2
SVH23001/1	+24 VDC Designation Label	3

Table 1.5 Mounting Bracket Kit P/N 565997 Contents

P/N	Description	Qty.
60020757	Left Side Mounting Bracket, 582137100 1-Row	1
60020799	Right Side Mounting Bracket, 582137100 1-Row	1
60020836	Bottom Mounting Bracket, 582137100 List 25	1
60008405	#6 Captive Nut (factory attached to left/right brackets)	4
233362700	#6-32 x 3/8" Screw (factory attached to left/right brackets)	4
214106100	#6 Flat Washer (factory attached to left/right brackets)	4
152176	#10-32 x 5/16" Screw	2
152175	Hot Surfaces Caution Label (factory attached to mounting bracket)	2
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
SVH23001/1	+24 VDC Designation Label	3

Table 1.6 Mounting Bracket Kit P/N 60011928 Contents

P/N	Description	Qty.
60015688	Left Side Mounting Bracket, 582137100 2-Row	1
60015692	Right Side Mounting Bracket, 582137100 2-Row	1
60012750	Front Mounting Bracket, 582137100 List 26	1
132101	#10 Captive Nut (factory attached to left/right brackets)	2
218706400	#10-32 x 5/8" Screw (factory attached to left/right brackets)	2
214108100	#10 Flat Washer (factory attached to left/right brackets)	2
120412	#6-19 x 5/16" Screw (factory attached to left/right brackets)	2
152223	Retaining Washer (factory attached to left/right brackets)	2
152175	Hot Surfaces Caution Label (factory attached to side brackets)	2
60010906	Panel Position Label, 30-Pos	2
151950	Storage Pouch	2
552423	Hook-and-Loop Fastener (factory attached to storage pouch)	2
GB9074_4-88_M3X8	M3 x 8 mm Screw	24
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	2
SVH23001/1	+24 VDC Designation Label	3

Table 1.7 Mounting Bracket Kit P/N 60011930 Contents

P/N	Description	Qty.
60018817	Bottom Mounting Bracket, 582137100 List 27	1
127695	M3 x 0.5 x 6 mm SEMS (factory attached to bottom mounting bracket)	2
101000	M3 Flat Washer (factory attached to bottom mounting bracket)	2
S-0650	Push On Clip Nut (factory attached to bottom mounting bracket)	2
60018530	Slide Mounting Bracket, 582137100 List 27	1
152175	Hot Surfaces Caution Label (factory attached to slide mounting bracket)	2
237650200	Cable Tie	6
548188	IB2 Board Label	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
SVH23001/1	+24 VDC Designation Label	3

1.4 Optional IB4 Vertical Mounting Kit P/N 566034 Description

For Kits P/N 565939, 565997, and 60011930 Only: To allow more space for the converter installation, the IB4 board may be installed vertically using kit P/N 566034.



NOTE! Mounting the IB4 horizontally blocks four (4) positions for converter installation and blocks no positions for circuit breaker installation. Mounting the IB4 vertically blocks two (2) positions for converter installation and blocks two (2) positions for circuit breaker installation.

1.5 Optional IB4 Vertical Mounting Kit P/N 566034 Contents

Table 1.8 lists the items furnished with kit P/N 566034. Before installing the kit, check the items furnished against those listed to ensure that there are no shortages.

Table 1.8 Optional IB4 Vertical Mounting Kit P/N 566034 Contents

P/N	Description	Qty.
565995	IB4 Vertical Mounting Bracket	1
60008405	#6 Captive Nut (factory attached to mounting bracket)	2
233362700	#6-32 x 3/8" Screw (factory attached to mounting bracket)	2

1.6 Mounting Bracket 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.



NOTE! For use with systems with rear feed return bar wiring only (not for use with systems with top feed return bar wiring).

1.6.1 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 the 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 the procedures which requires removal of existing hardware, retain all hardware for use in subsequent steps, unless otherwise stated.

1.6.2 Installing Bracket Kit P/N 565939 (582137100 List 20) and 565997 (582137100 List 25)



NOTE! Power system 582137100 List 20 is used in the following procedure, unless otherwise noted. Power system 582137100 List 25 similar.

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 converter is to be installed.
- [] 3. Verify that the return busbar in the power system is the style that has a flange facing up or no flange (see Figure 1.1). If the power system has a return busbar with the flange facing down, the return busbar must be replaced as detailed in Figure 1.2. A busbar with the flange facing down will interfere with converter installation. For List 20, replace busbar P/N SNV2300093/1 with 565788. For List 25, replace busbar P/N SNV2300067/1 with 565789.

Figure 1.1 Return Busbar Comparison

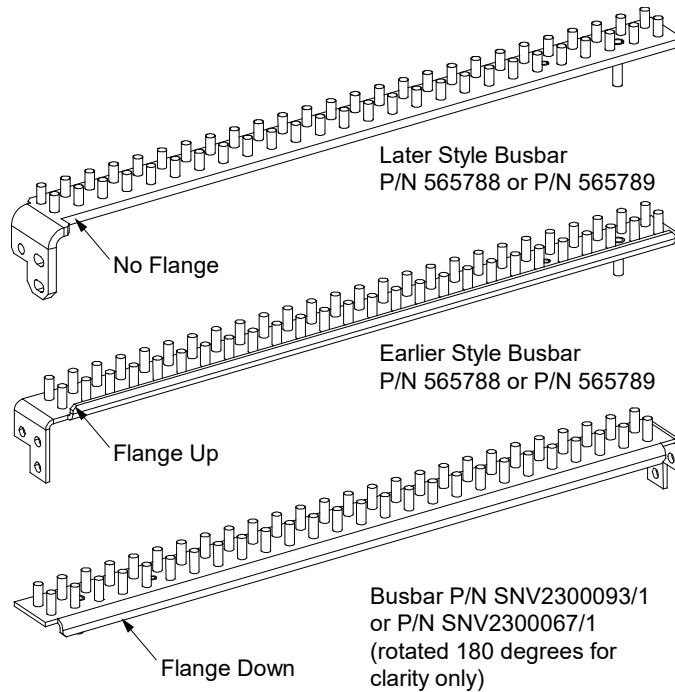
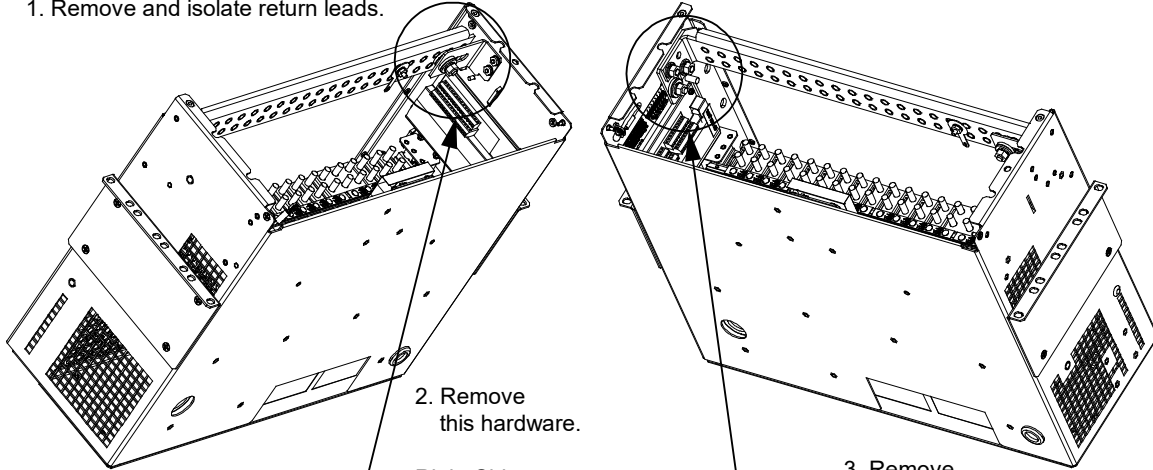


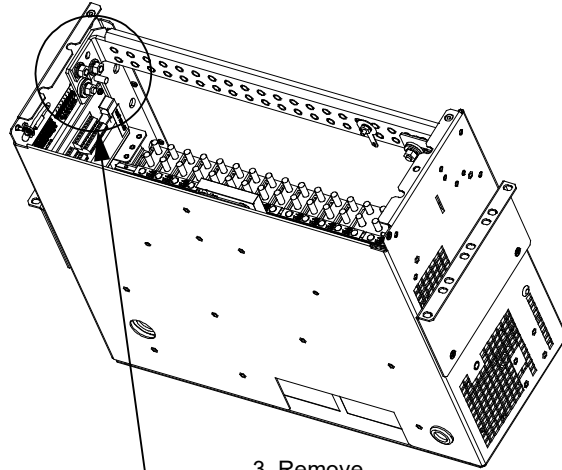
Figure 1.2 Return Busbar Replacement

1. Remove and isolate return leads.



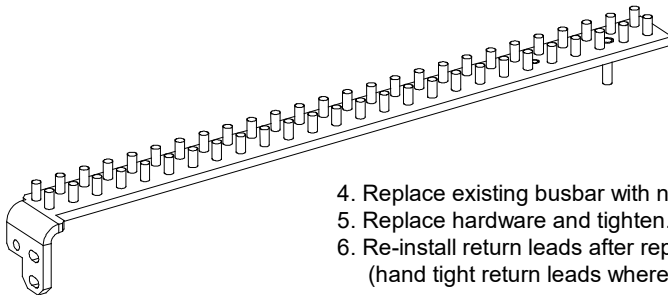
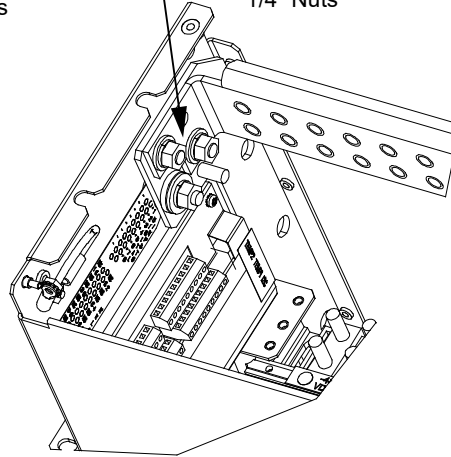
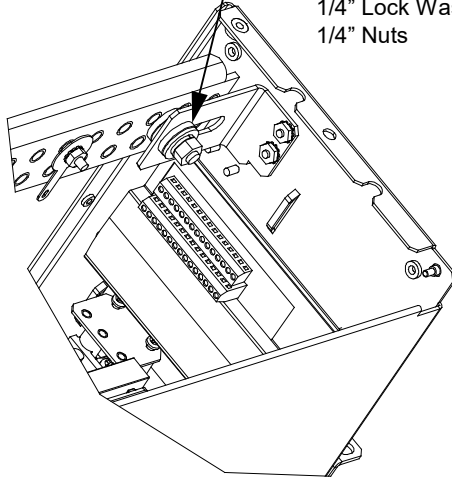
2. Remove this hardware.

- Right Side
- Busbar Assembly
- Insulator
- Insulator
- Mounting Bracket
- Insulator
- 1/4" Flat Washers
- 1/4" Lock Washers
- 1/4" Nuts



3. Remove this hardware.

- Left Side
- Busbar Assembly
- 1/4" Flat Washers
- 1/4" Lock Washers
- 1/4" Nuts



4. Replace existing busbar with new busbar.
5. Replace hardware and tighten. (Torque to 75 in-lbs).
6. Re-install return leads after replacement busbar is installed (hand tight return leads where you will be installing converters).

- [] 4. Remove the plastic shield from the distribution panel by loosening the screws securing it. Slide the shield up and out to remove it. The shield will not be reused. See Figure 1.3 or Figure 1.4.
- [] 5. Tighten or remove the screws that secured the shield to the distribution panel.

Figure 1.3 Remove Shield (565939 Kit)

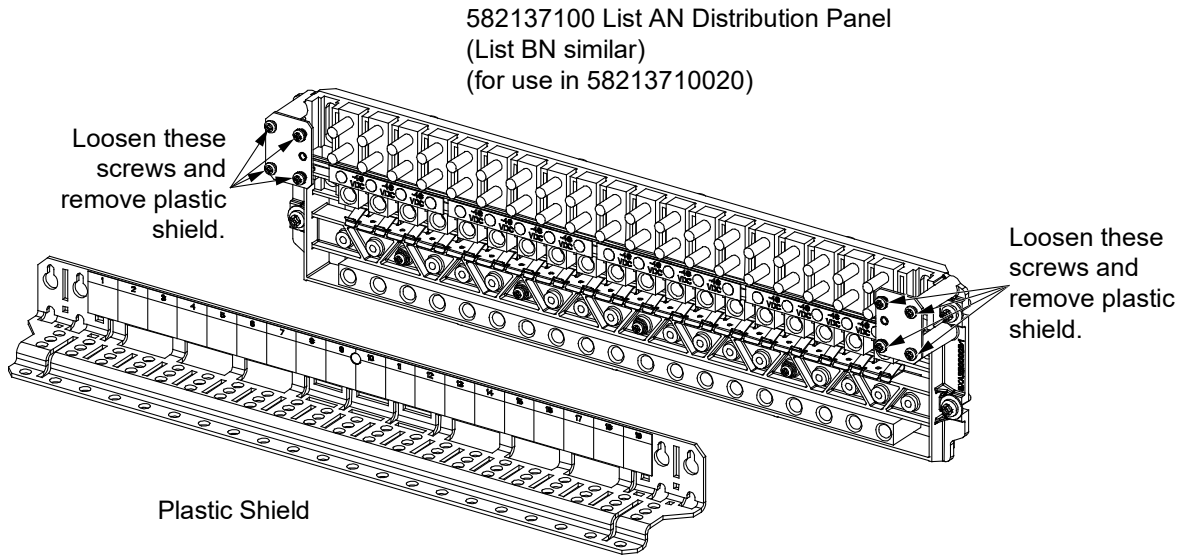
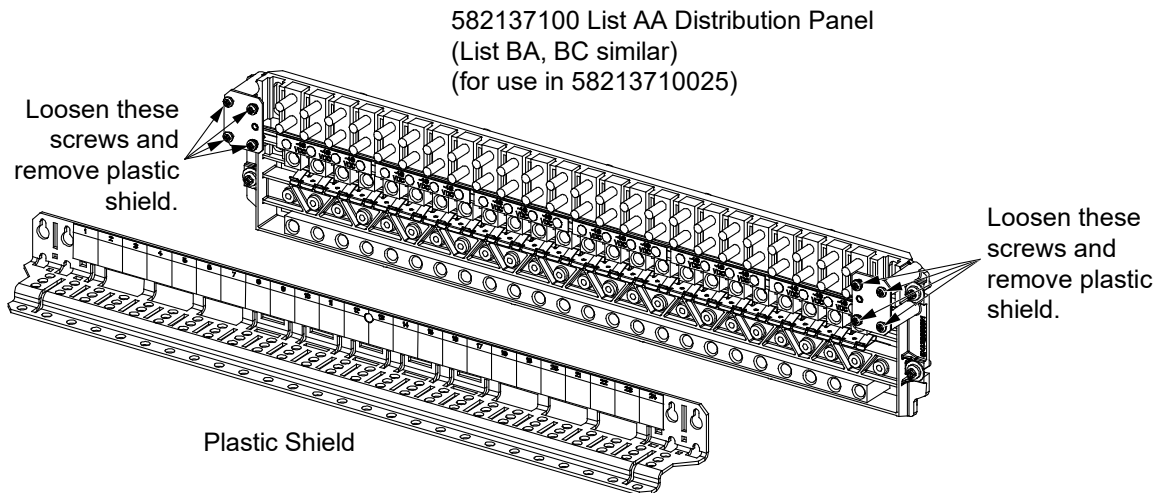


Figure 1.4 Remove Shield (565997 Kit)

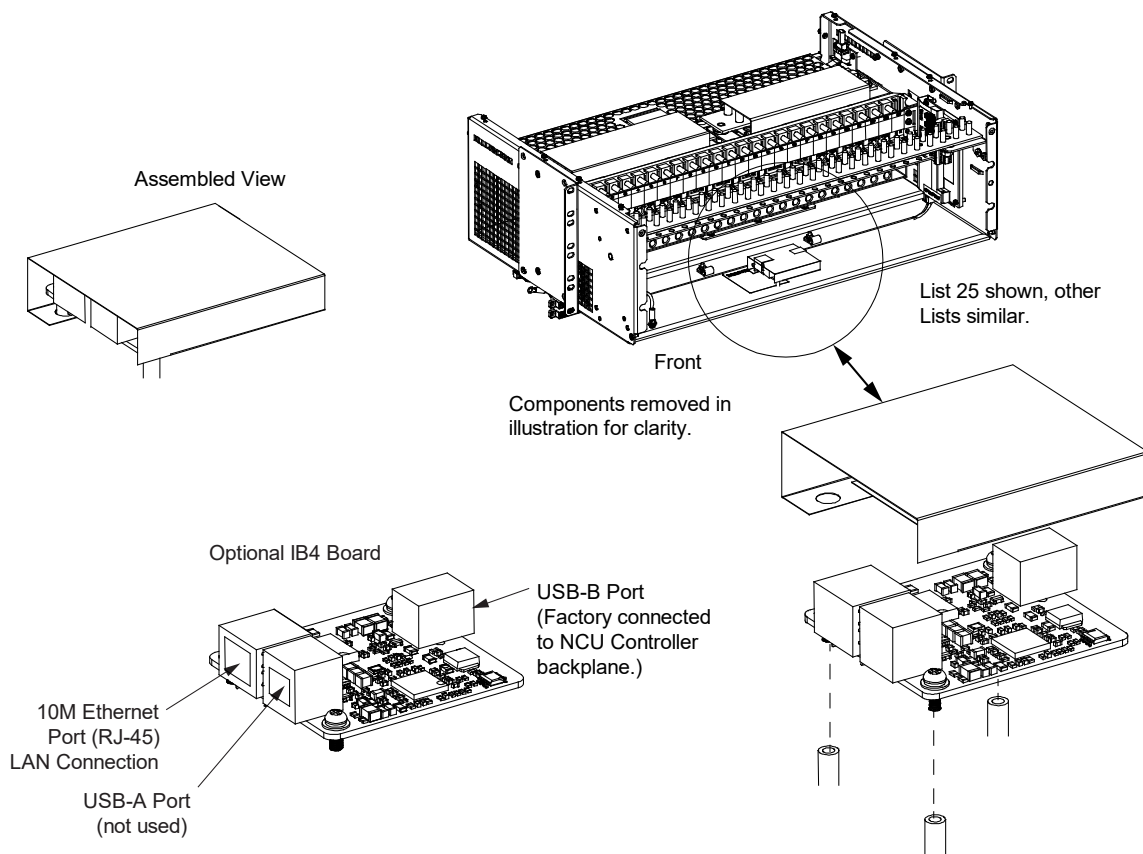




WARNING! Damage to the circuit card may result if the next step is not followed.

- [] 6. If your system contains an IB4 circuit card, perform the following steps. See Figure 1.5.
 - a) Connect an approved grounding strap to your wrist. Attach the other end to a suitable ground.
 - b) Carefully label the connectors plugged into the circuit card. These connectors must be plugged into the same connectors on the replacement circuit card. Unplug all connectors plugged into the IB4 circuit card.
 - c) Remove the IB4 circuit card (and shield) from the distribution cabinet by removing the screws securing it to the cabinet. See Figure 1.5.

Figure 1.5 Removing Optional IB4 Board

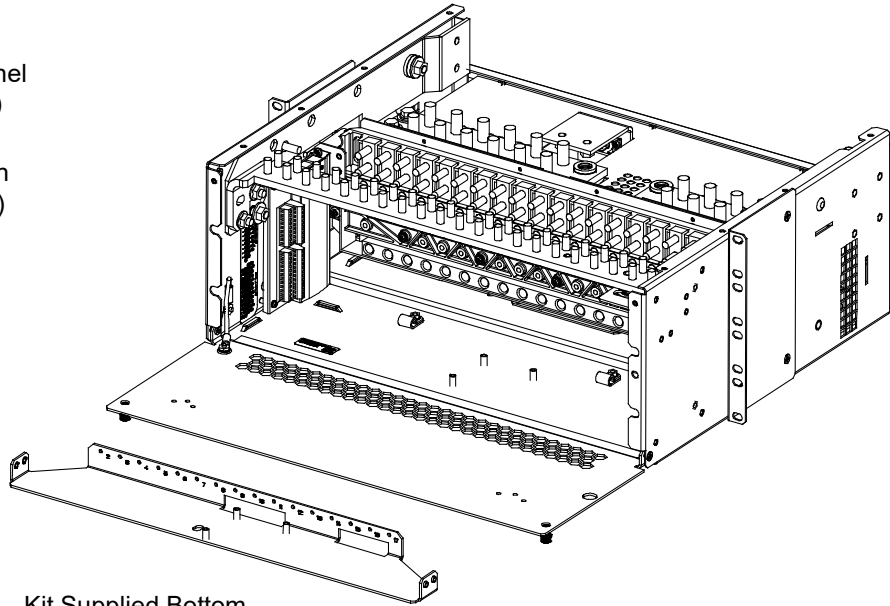


- [] 7. In the next steps, the door ground wire may need to be re-oriented to allow the converter mounting brackets to be installed. If the door ground wire needs to be re-oriented, use a 5/16" driver to loosen the 6-32 hardware. Torque to 9.6 in-lbs after bracket installation.
- [] 8. Orient the kit supplied bottom mounting bracket as shown in Figure 1.6. Slide the bottom mounting bracket into the cabinet and let it rest on the bottom of the cabinet. Note that the standoffs for the optional IB4 circuit card slide through openings in the mounting bracket.

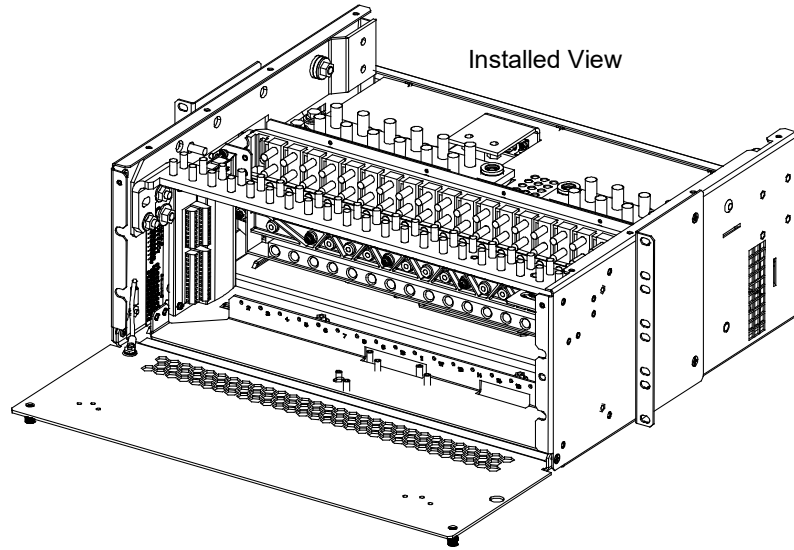
Figure 1.6 Bottom Mounting Bracket

582137100 List 20 with
List AN Distribution Panel
Shown (List BN similar)

(582137100 List 25 with
List AA, BA, BC similar)



Kit Supplied Bottom
Mounting Bracket



- [] 9. Orient the kit supplied left side mounting bracket as shown in Figure 1.7. Note that the bracket comes preassembled with bottom mounting hardware. Slide the left side mounting bracket into the cabinet so the tab on the top of the bracket is behind the front cabinet flange. Secure the left side mounting bracket to the bottom mounting bracket with the captive hardware. Torque as indicated in Figure 1.7.
- [] 10. Secure the left side mounting bracket to the left cabinet flange with the kit supplied 10-32 x 5/16" screw as shown in Figure 1.7. Torque as indicated in Figure 1.7.

Figure 1.7 Install Left Side Mounting Bracket

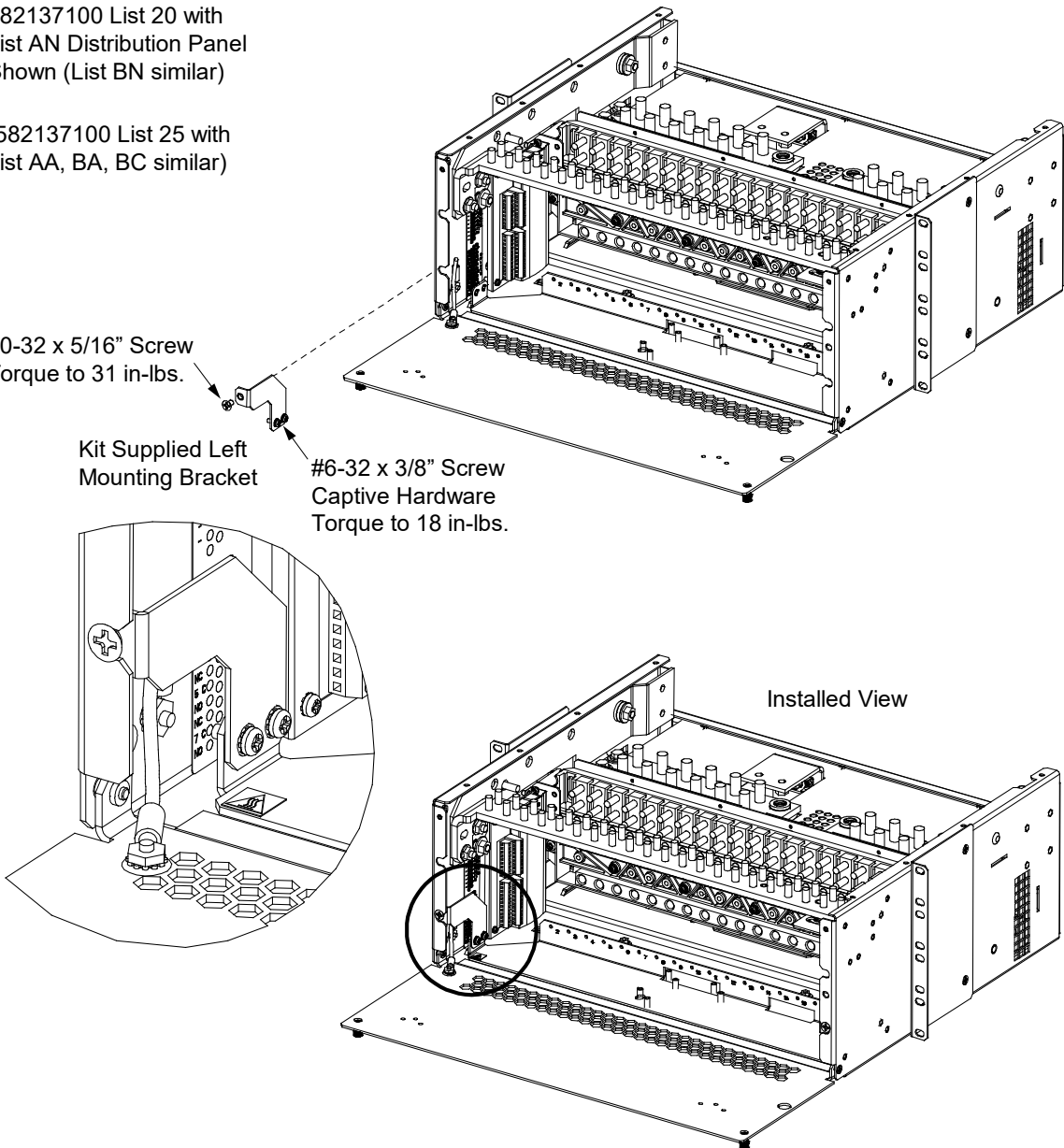
582137100 List 20 with
List AN Distribution Panel
Shown (List BN similar)

(582137100 List 25 with
List AA, BA, BC similar)

10-32 x 5/16" Screw
Torque to 31 in-lbs.

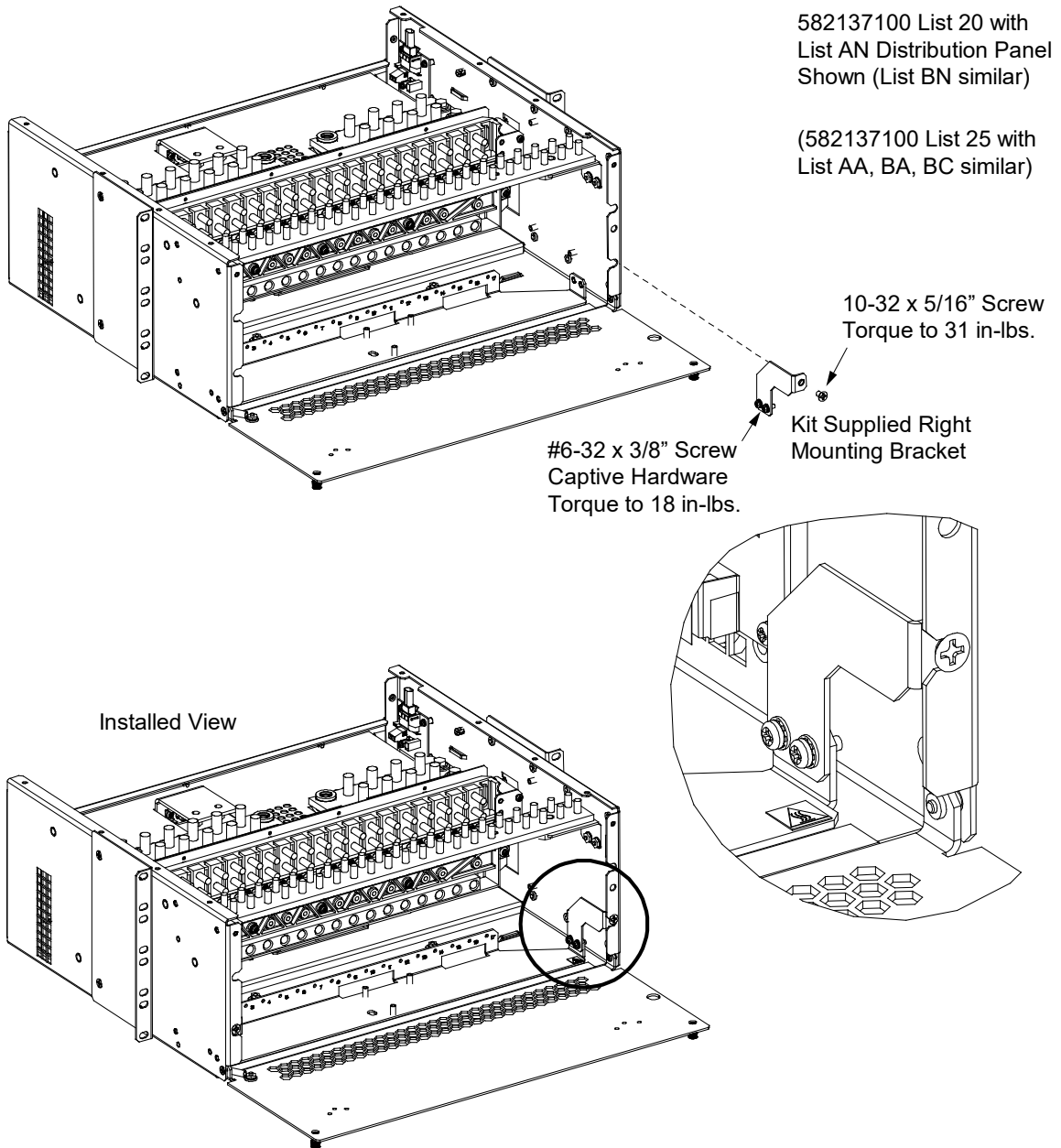
Kit Supplied Left
Mounting Bracket

#6-32 x 3/8" Screw
Captive Hardware
Torque to 18 in-lbs.



- [] 11. Orient the kit supplied right side mounting bracket as shown in Figure 1.8. Note that the bracket comes preassembled with bottom mounting hardware. Slide the right side mounting bracket into the cabinet so the tab on the top of the bracket is behind the front cabinet flange. Secure the right side mounting bracket to the bottom mounting bracket with the captive hardware. Torque as indicated in Figure 1.8.
- [] 12. Secure the right side mounting bracket to the left cabinet flange with the kit supplied 10-32 x 5/16" screw as shown in Figure 1.8. Torque as indicated in Figure 1.8.

Figure 1.8 Install Right Side Mounting Bracket



- [] 13. If your system contains an IB4 circuit card, perform the following steps to re-install it onto the bracket installed in the above step. See Figure 1.5. To allow more space for the converter installation, the IB4 board may be installed vertically using kit P/N 566034 as detailed in the next step.
- Align the IB4 circuit card (and shield) with the new standoffs provided on the kit supplied mounting bracket just installed.
 - Secure the IB4 circuit card (and shield) with the hardware previously removed.
 - Plug all connectors removed from the IB4 circuit card into the same position.



NOTE! Route USB cable through slot of bracket.

- Remove the grounding wrist strap.
- Reboot the NCU.

Local Menu Navigation:

At the Main Screen, press ENT and ESC at the same time to reboot the NCU controller.

Web Menu Navigation:

Advance Settings Menu / SW Maintenance Tab / Reboot Controller button.

- [] 14. Perform the next step to install the IB4 board vertically (if desired) using the optional kit P/N 566034. This allows more space for converter installation. See Figure 1.9.



NOTE! Mounting the IB4 horizontally blocks four (4) positions for converter installation and blocks no positions for circuit breaker installation. Mounting the IB4 vertically blocks two (2) positions for converter installation and blocks two (2) positions for circuit breaker installation.

- Install the IB4 board and shield onto kit bracket P/N 565995.
- Install kit bracket P/N 565995 with the IB4 board to the converter bracket. Use the two (2) kit supplied #6-32 x 3/8" long captive screws. Torque as indicated in Figure 1.9.
- Plug all connectors removed from the IB4 circuit card into the same position.
- Remove the grounding wrist strap.
- Reboot the NCU.

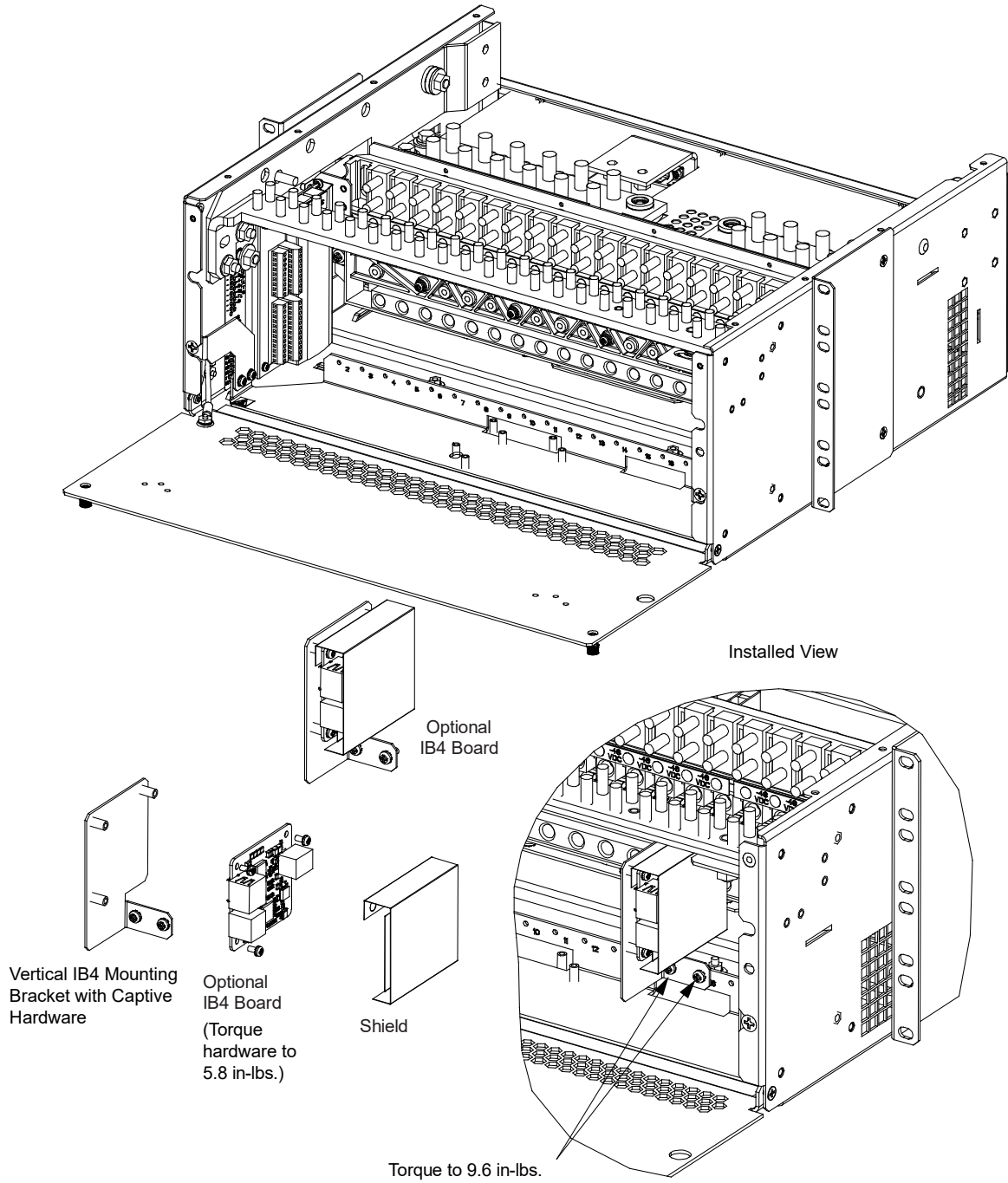
Local Menu Navigation:

At the Main Screen, press ENT and ESC at the same time to reboot the NCU controller.

Web Menu Navigation:

Advance Settings Menu / SW Maintenance Tab / Reboot Controller button.


Figure 1.9 Installing Optional IB4 Vertical Mounting Kit P/N 566034



- [] 15. Remove the kit supplied distribution position label (see Figure 1.10) from the kit supplied storage pouch and (using the plastic shield removed from the distribution panel as a guide) record the distribution positions onto the kit supplied label.
- [] 16. Place the kit supplied distribution position label (see Figure 1.10) 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.

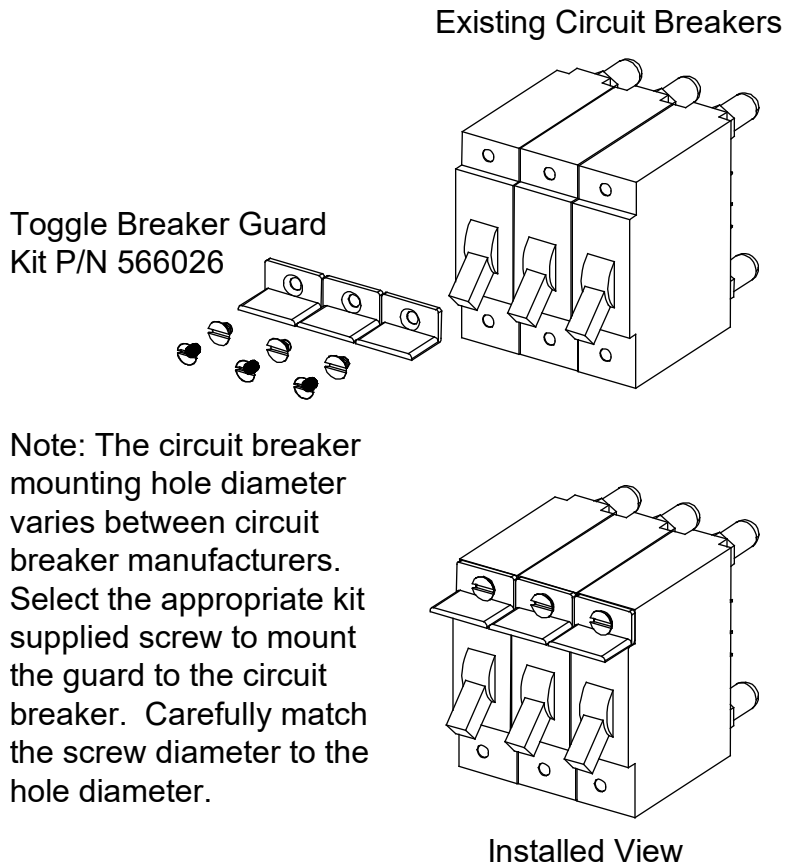
Figure 1.10 Distribution Position Label

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	

- [] 17. Install the toggle breaker guard kit (P/N 566026) as required per site requirements. See Figure 1.11.

Figure 1.11 Toggle Breaker Guard Kit (P/N 566026)



- [] 18. Continue with the “Installing the Converter into a Distribution Position” procedure starting on page 40.



NOTE! When installing a converter mounting bracket kit covered by these instructions onto a power system installed in an outside plant enclosure, remove the front door from the power system when complete with the installation. You do not need to remove the front door if you are only installing a +27 V Bullet Converter.

1.6.3 Installing Bracket Kit P/N 60011928 (582137100 List 26) and 60011929 (582137100 List 21)



NOTE! Power system 582137100 List 21 is used in the following procedure, unless otherwise noted. Power system 582137100 List 26 similar.

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 converter is to be installed.
- [] 3. Remove the plastic shield from the **BOTTOM** distribution panel by loosening the screws securing it. Slide the shield up and out to remove it. The shield will not be reused. Two of the screws will be reused as explained in a future step. See Figure 1.12 or Figure 1.13.
- [] 4. If a converter is to be installed in the top row, also remove the plastic shield from the **TOP** distribution panel by loosening the screws securing it. Slide the shield up and out to remove it. The shield will not be reused. Tighten or remove the screws that secured the shield to the distribution panel. See Figure 1.12 or Figure 1.13.

Figure 1.12 Remove Shield (60011928 Kit)

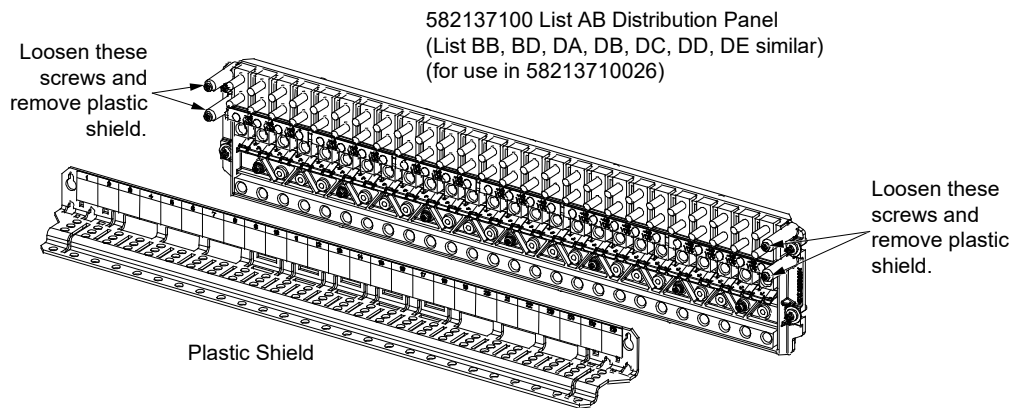
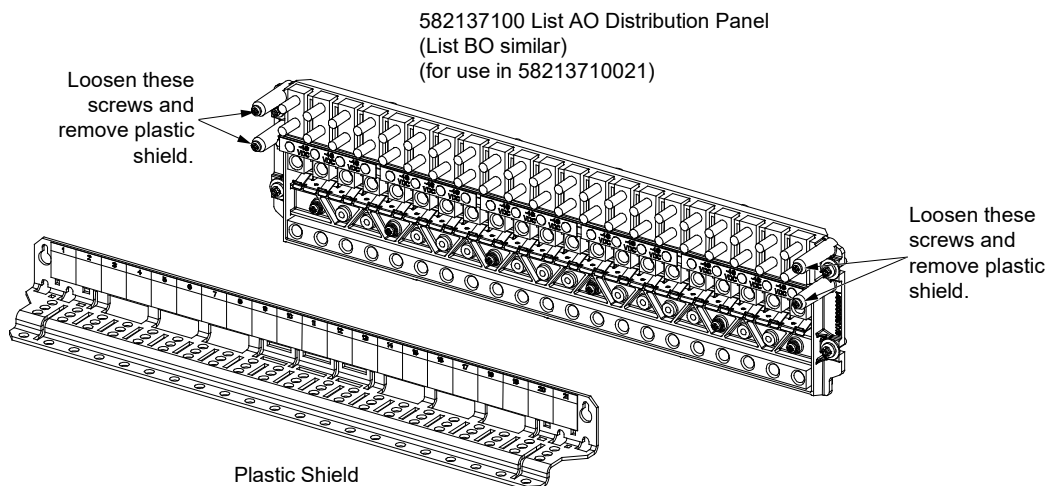
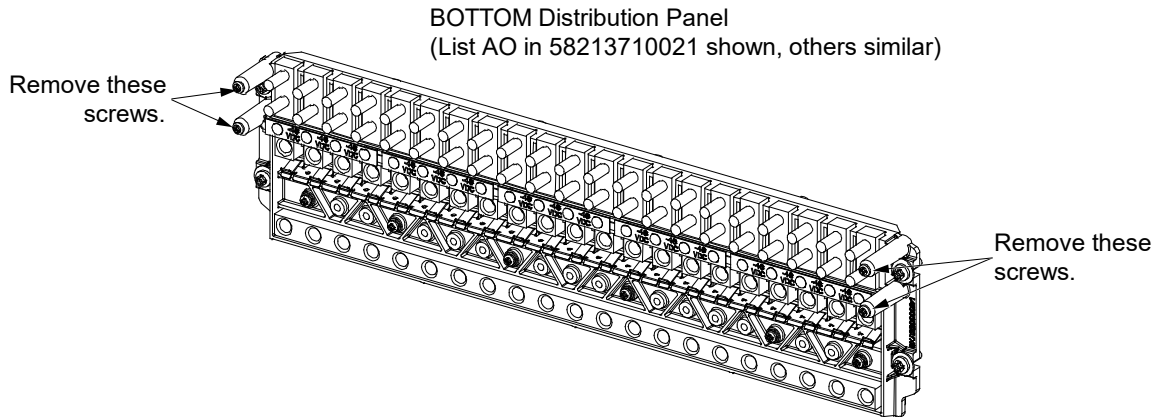


Figure 1.13 Remove Shield (60011929 Kit)



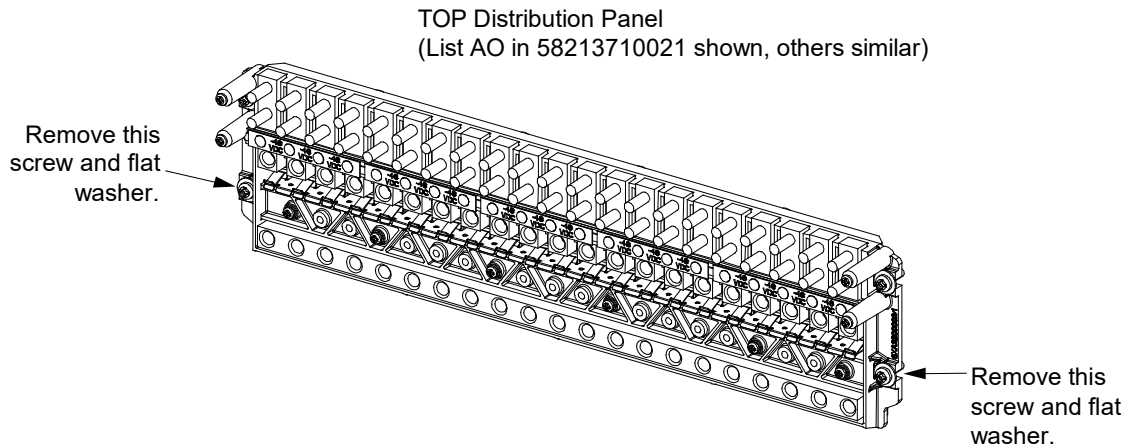
- [] 5. Completely remove the four (4) screws (two per side) that secured the shield to the **BOTTOM** distribution panel. Save two (2) screws for later re-assembly. See Figure 1.14.

Figure 1.14 Remove Screws from BOTTOM Distribution Panel



- [] 6. Remove the bottom two (2) screws and flat washers (one per side) that secures the **TOP** distribution panel to the cabinet. These will not be reused. See Figure 1.15.

Figure 1.15 Remove Screws from TOP Distribution Panel



- [] 7. Orient the kit supplied left side mounting bracket as shown in Figure 1.16 (top and bottom distribution panels). Note that the bracket comes preassembled with mounting hardware. Slide the mounting bracket into position and secure with the captive hardware. Secure the bottom of the bracket with the screw saved in [] 5. above. Torque all hardware as indicated in Figure 1.16.
- [] 8. Orient the kit supplied right side mounting bracket as shown in Figure 1.17 (top and bottom distribution panels). Note that the bracket comes preassembled with mounting hardware. Slide the mounting bracket into position and secure with the captive hardware. Secure the bottom of the bracket with the screw saved in [] 5. above. Torque all hardware as indicated in Figure 1.17.

Figure 1.16 Install Left Side Mounting Bracket

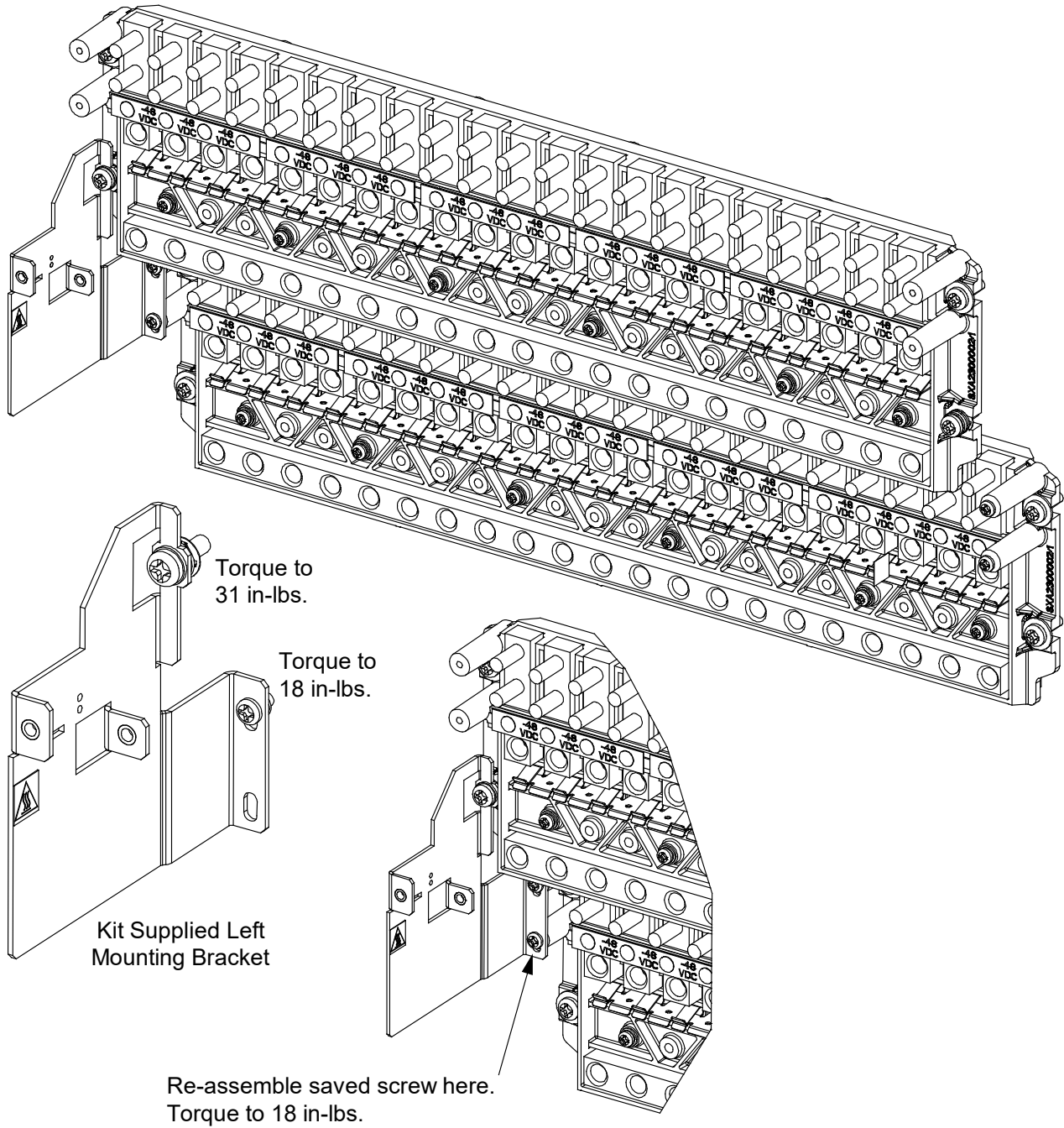
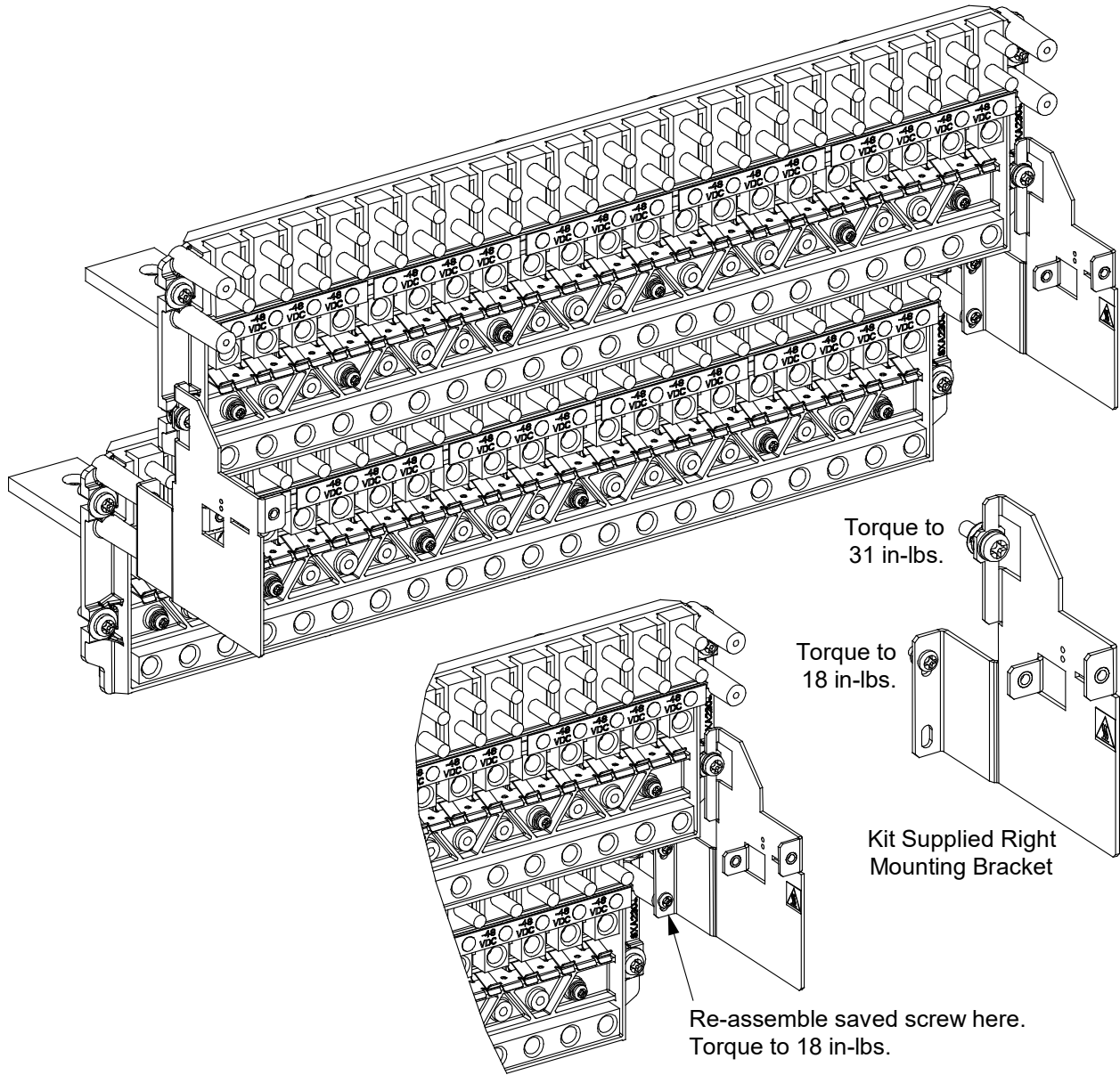
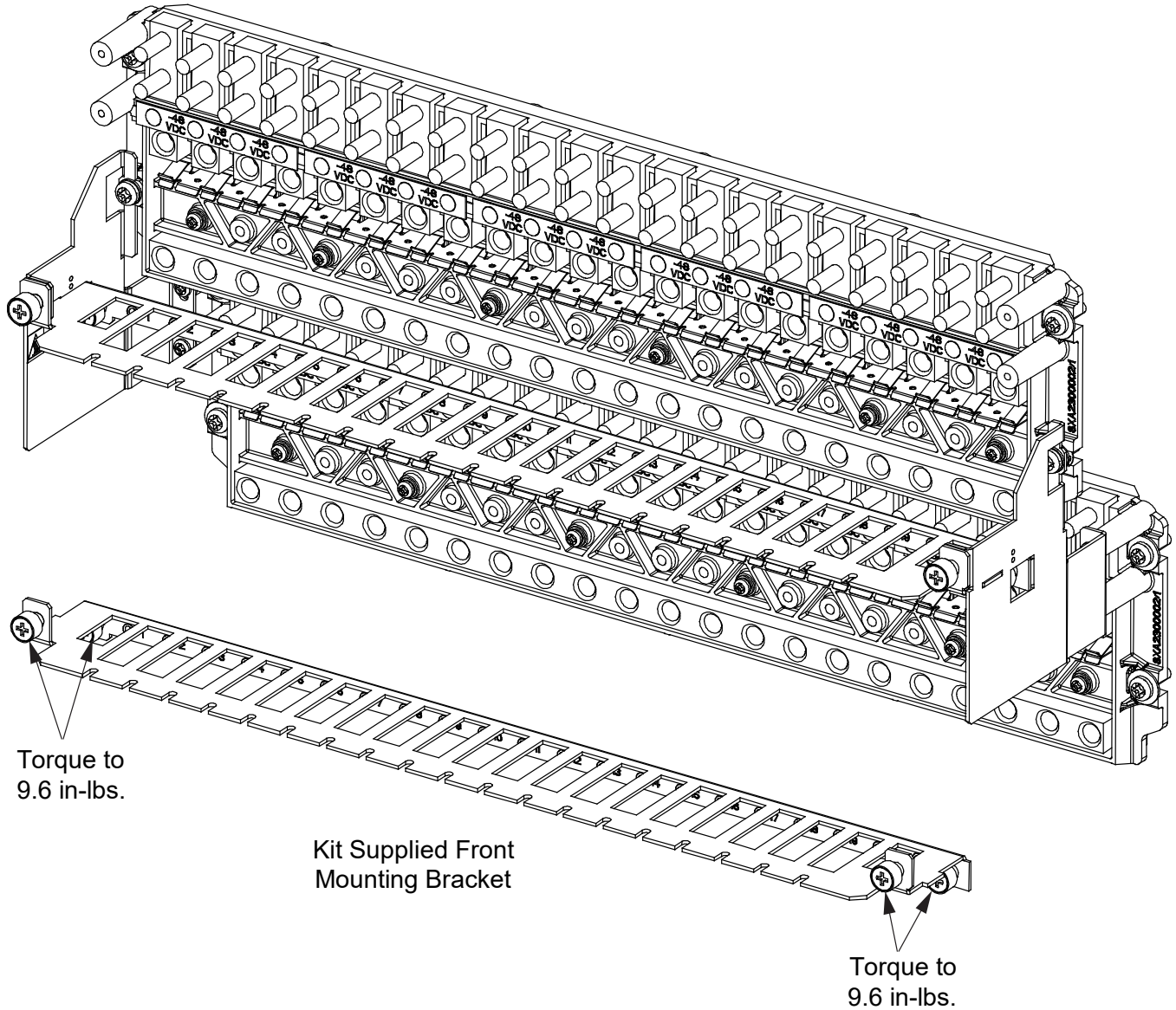


Figure 1.17 Install Right Side Mounting Bracket



9. Orient the kit supplied front mounting bracket as shown in Figure 1.18. Note that the bracket comes preassembled with mounting hardware. Secure the front bracket to the left and right brackets by tightening the captive fasteners. Torque hardware as indicated in Figure 1.18.


Figure 1.18 Install Front Mounting Bracket



- [] 10. Remove the kit supplied distribution position label (see Figure 1.19) from the kit supplied storage pouch and (using the plastic shield removed from the distribution panel as a guide) record the distribution positions onto the kit supplied label.
- [] 11. Place the kit supplied distribution position label (see Figure 1.19) 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.

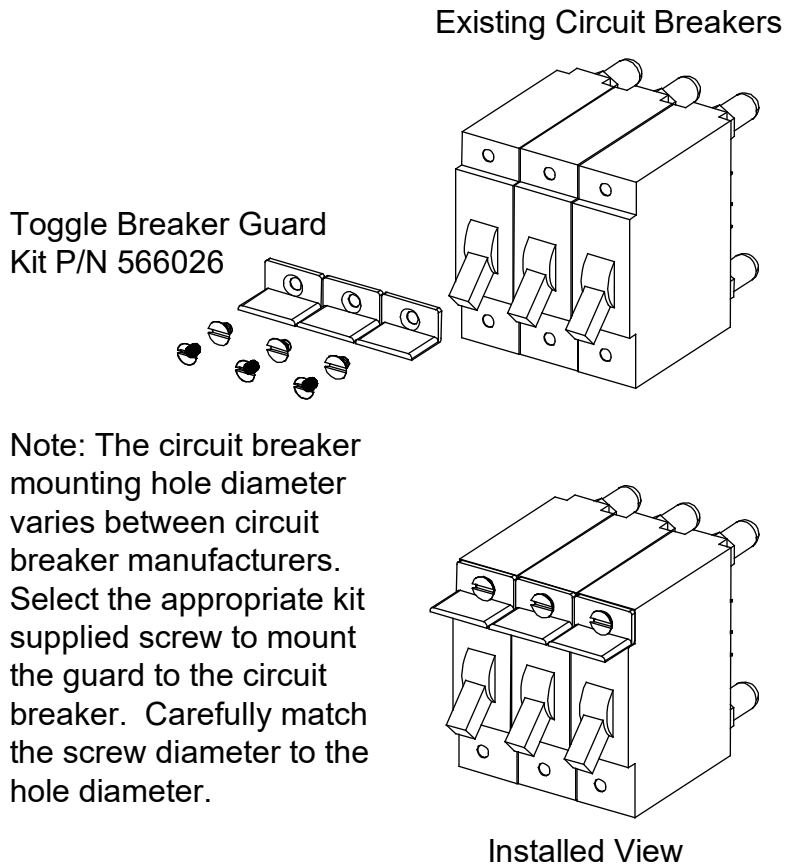
Figure 1.19 Distribution Position Label

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	

- [] 12. Install the toggle breaker guard kit (P/N 566026) as required per site requirements. See Figure 1.20.

Figure 1.20 Toggle Breaker Guard Kit (P/N 566026)



- [] 13. Continue with the “Installing the Converter into a Distribution Position” procedure starting on page 40.



NOTE! When installing a converter mounting bracket kit covered by these instructions onto a power system installed in an outside plant enclosure, remove the front door from the power system when complete with the installation. You do not need to remove the front door if you are only installing a +27 V Bullet Converter.

1.6.4 Installing Bracket Kit P/N 60011930 (582137100 List 27)

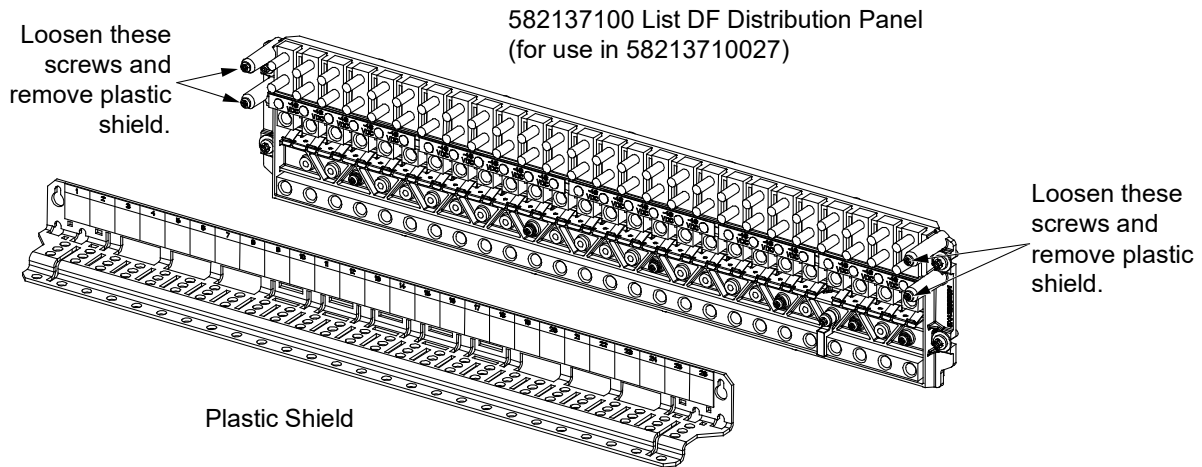


NOTE! Early List 27 power systems do not have the ability to have this kit installed. Contact Vertiv for more information.

Procedure

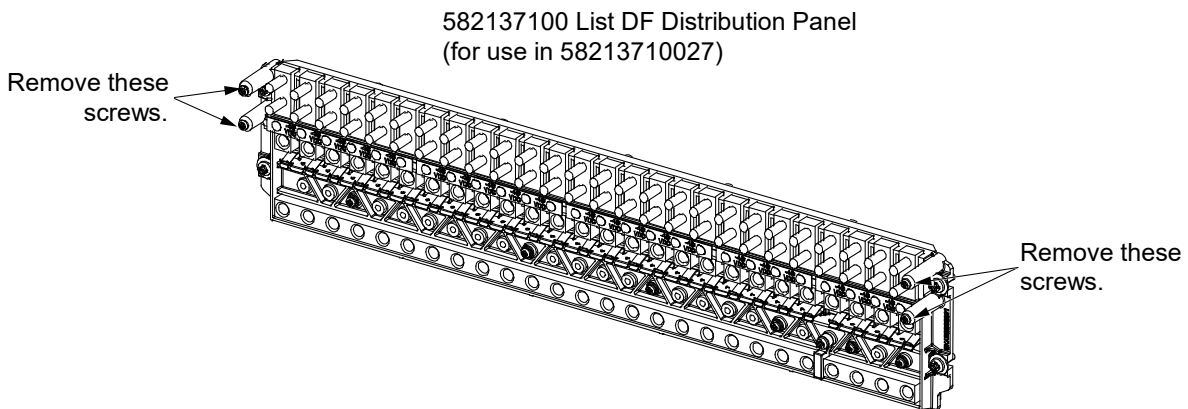
- [] 1. Performing this procedure may activate external alarms. Do one of the following. If possible, disable these alarms. If these alarms cannot be easily disabled, notify the appropriate personnel to disregard any future alarms associated with this system while the procedure is being performed.
- [] 2. Gain access to the distribution panel into which the converter is to be installed.
- [] 3. Remove the plastic shield from the distribution panel by loosening the screws securing it. Slide the shield up and out to remove it. The shield will not be reused. See Figure 1.21.

Figure 1.21 Remove Shield from Distribution Panel



- [] 4. Completely remove the four (4) screws (two per side) that secured the shield to the distribution panel. See Figure 1.22. The screws will not be reused.

Figure 1.22 Remove Screws from Distribution Panel



- [] 5. Remove the IB2 (controller interface board) and optional EIB (controller extended interface board) by performing the following steps.



NOTE! Refer to Figure 1.23 for circuit card locations. Refer to Figure 1.24 or Figure 1.25 as this procedure is performed.



DANGER! Performing the next steps exposes service personnel to battery potential. Exercise extreme caution not to inadvertently contact or have any tool inadvertently contact any energized electrical termination.



WARNING! Damage to the circuit card may result if the next step is not followed.

- a) Connect an approved grounding strap to your wrist. Attach the other end to a suitable ground.
- b) Carefully label the wires connected to the customer connection terminal blocks on the circuit card. These wires must be connected to the same terminals when the circuit card is re-installed. Refer to Figure 1.24 or Figure 1.25.
- c) Carefully label the connectors plugged into the circuit card. These connectors must be plugged into the same connectors when the circuit card is replaced. Refer to Figure 1.24 or Figure 1.25.



DANGER! In the next step, external alarm wiring may be energized from an external source. DO NOT allow bare wire ends to contact any grounded or energized object.

- d) Remove the external wiring from the customer connection terminal blocks. DO NOT allow the bare wire end to contact any grounded or energized object. Isolate the wire end with electrical tape or appropriate sleeving. Repeat for each wire to be removed.
- e) Unplug all connectors plugged into the circuit card.
- f) Remove the circuit card (and shield) from the distribution cabinet by removing the screws securing it to the cabinet. See Figure 1.24 or Figure 1.25. Set the circuit card aside for re-installation.

Figure 1.23 List 27 Circuit Card Locations (1-Row Distribution Cabinet)

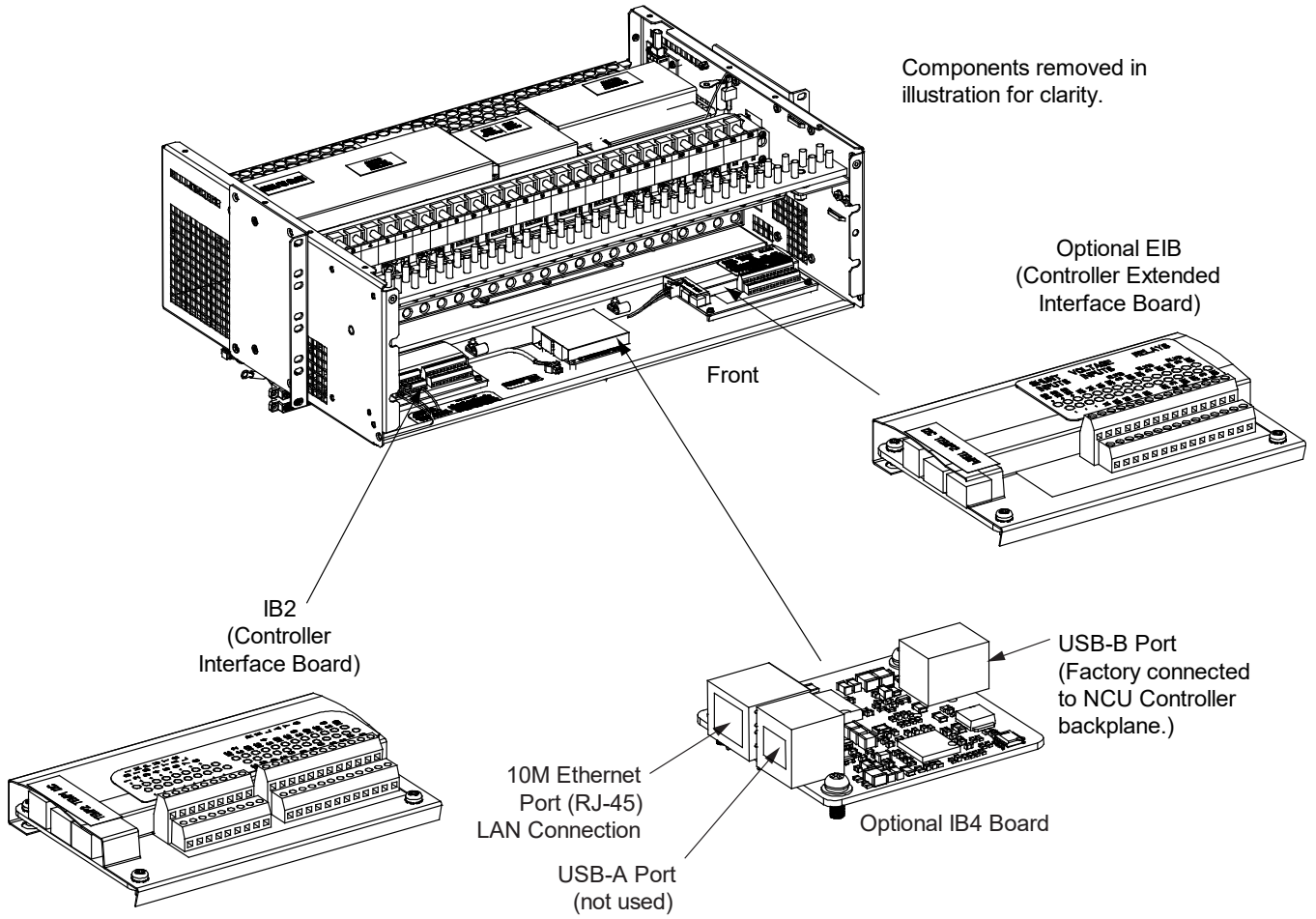
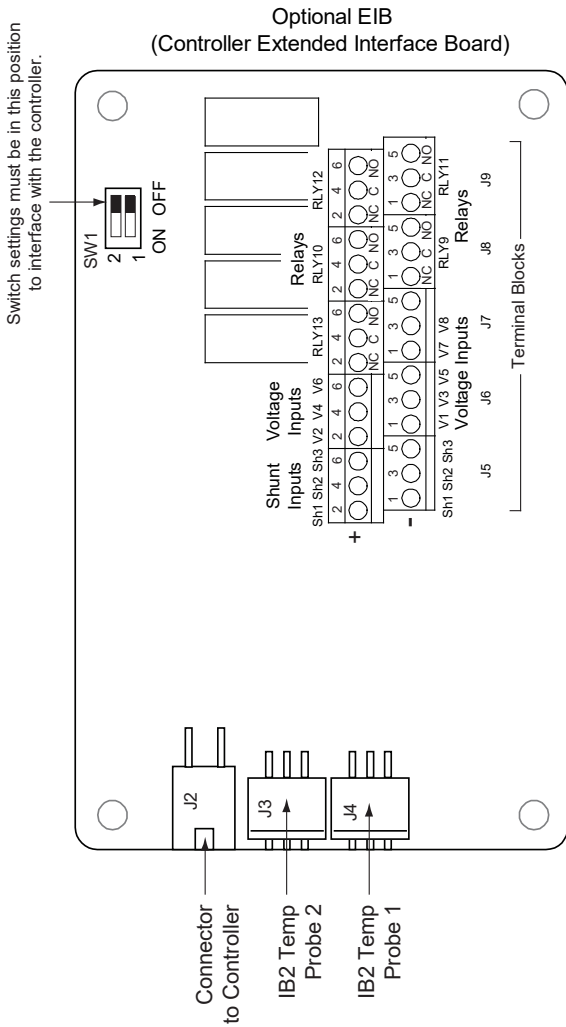
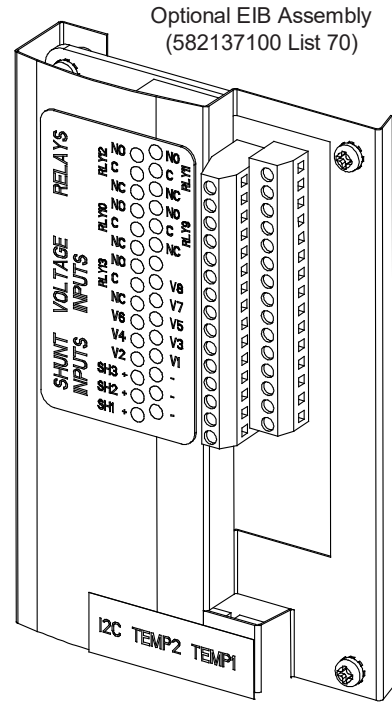


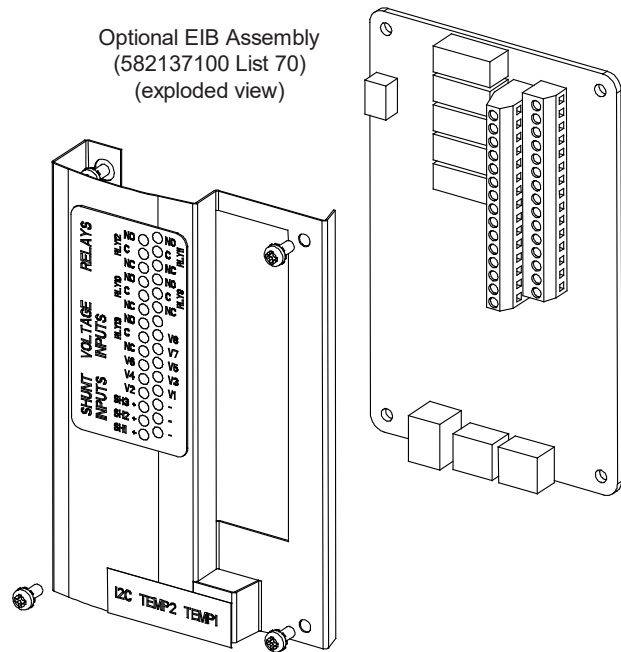
Figure 1.25 Removing an Optional EIB (Controller Extended Interface Board) Circuit Card



Switch settings must be in this position to interface with the controller.



Optional EIB Assembly (582137100 List 70) (exploded view)



J5-J9

Wire Size Capacity: 16 AWG to 26 AWG.
 Wire Strip Length: 0.20 inch.
 Recommended Torque: 2.2 in-lbs.

- [] 6. If your system contains an IB4 circuit card, perform the following steps to remove the circuit card.



NOTE! Refer to Figure 1.23 for circuit card locations. Refer to Figure 1.26 as this procedure is performed.



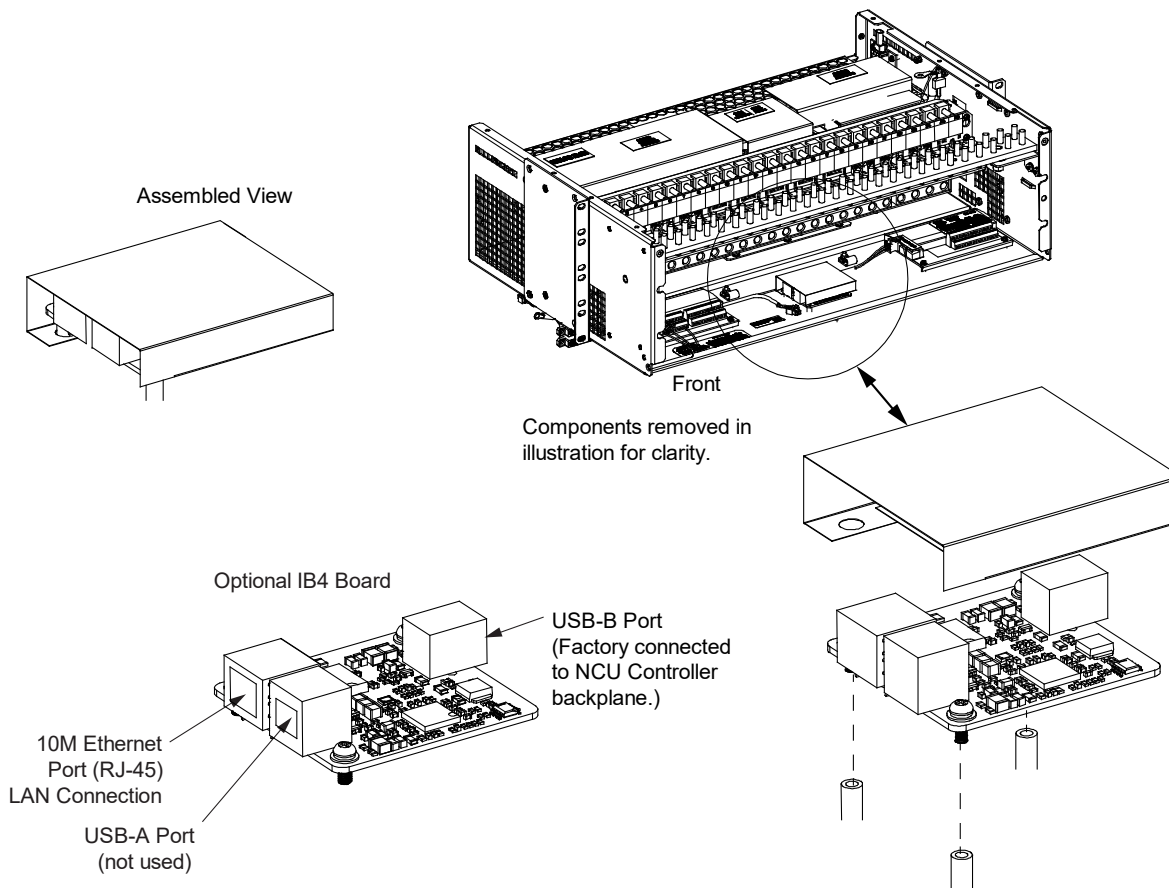
DANGER! Performing the next steps exposes service personnel to battery potential. Exercise extreme caution not to inadvertently contact or have any tool inadvertently contact any energized electrical termination.



WARNING! Damage to the circuit card may result if the next step is not followed.

- a) Connect an approved grounding strap to your wrist. Attach the other end to a suitable ground.
- b) Carefully label the connectors plugged into the circuit card. These connectors must be plugged into the same connector when the circuit card is re-installed. Unplug all connectors plugged into the IB4 circuit card.
- c) Remove the IB4 circuit card (and shield) from the distribution cabinet by removing the screws securing it to the cabinet. See Figure 1.26. Set the circuit card aside for re-installation.

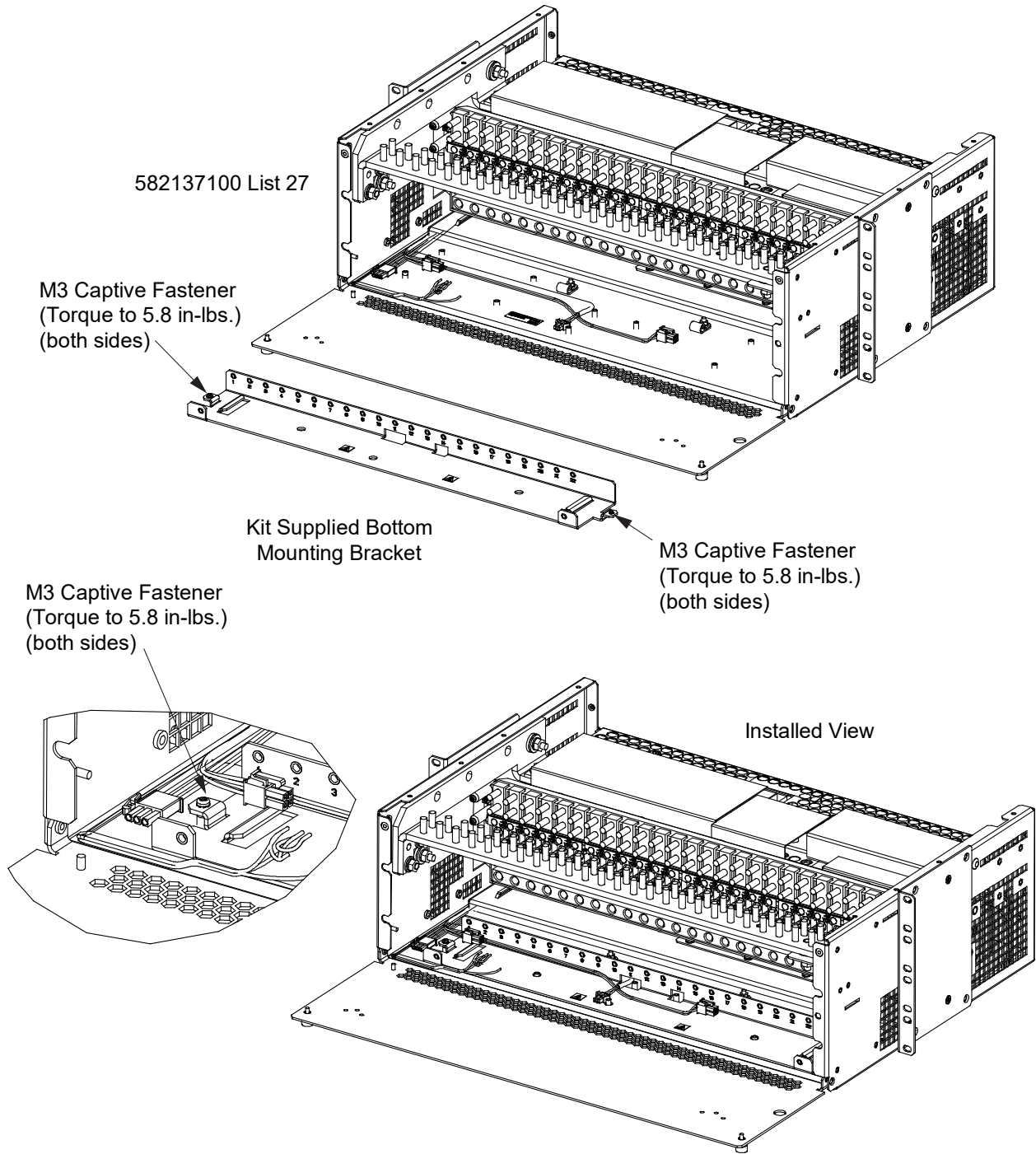
Figure 1.26 Removing Optional IB4 Board



- [] 7. Orient the kit supplied bottom mounting bracket as shown in Figure 1.27. Slide the bottom mounting bracket into the cabinet and let it rest on the standoffs that will be used to secure it to the cabinet. Note that the remaining standoffs for the IB2, optional EIB, and optional IB4 circuit cards slide through openings in the mounting bracket. Ensure no wires are pinched and that wire harness connectors are slid through appropriate openings in the bottom mounting bracket.

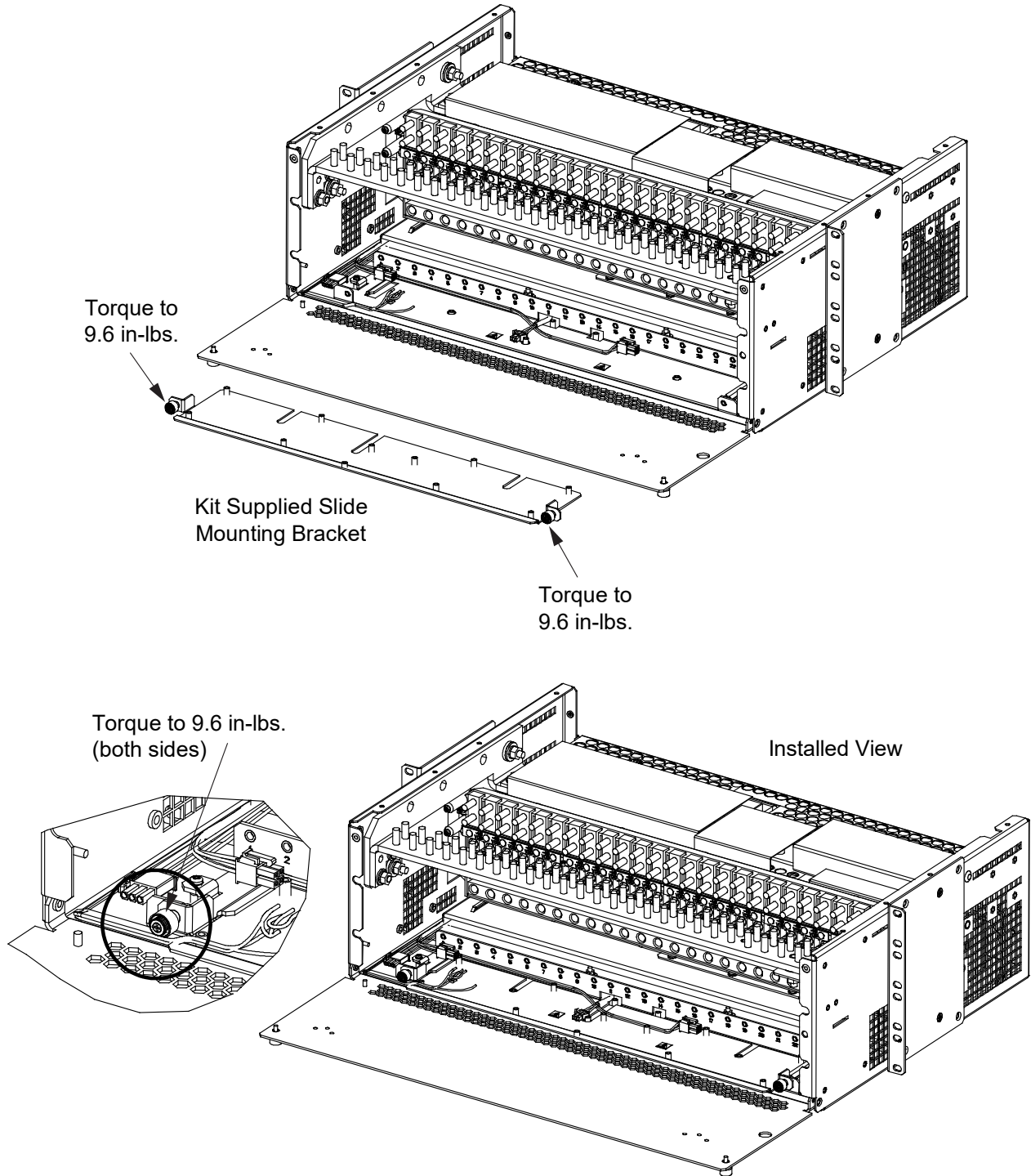
- [] 8. Secure the bottom mounting bracket to the cabinet standoffs by tightening the two captive fasteners (one each side). Torque as indicated in Figure 1.27.

Figure 1.27 Install Bottom Mounting Bracket



- [] 9. Orient the kit supplied slide mounting bracket as shown in Figure 1.28. Note that the bracket comes preassembled with mounting hardware. Slide the mounting bracket into position and secure with the captive hardware. Ensure no wires are pinched and that wire harness connectors are slid through appropriate openings in the slide mounting bracket. Torque all hardware as indicated in Figure 1.28.

Figure 1.28 Install Slide Mounting Bracket



- [] 10. Perform the following steps to re-install the IB2 (controller interface board) and optional EIB (controller extended interface board) onto the slide bracket installed in the above step.
 - a) Secure the circuit card (and shield) to the standoffs located on the slide bracket in a similar fashion as it was originally installed. See Figure 1.24 or Figure 1.25 and Figure 1.29.
 - b) Plug all connectors removed from the circuit card into the same positions.



DANGER! In the next step, external alarm wiring may be energized from an external source. DO NOT allow bare wire ends to contact any grounded or energized object.

- c) Reconnect the external wiring to the correct terminals on the customer connection terminal block. First remove the electrical tape or sleeving that was applied to the bare wire end in a previous step. DO NOT allow the bare wire end to contact any grounded or energized object. After securing the wire, gently tug on the wire to ensure that it cannot be pulled out of the terminal block. Repeat for each wire to be reconnected.
 - d) Remove the grounding wrist strap.
- [] 11. If your system contains an IB4 circuit card, perform the following steps to re-install it onto the slide bracket installed in an above step. To allow more space for the converter installation, the IB4 board may be installed vertically using kit P/N 566034 as detailed in the next step.
 - a) Secure the circuit card (and shield) to the standoffs located on the slide bracket. Note that the circuit card is installed 180 degree orientation from its original orientation. See Figure 1.29.
 - b) Plug all connectors removed from the IB4 circuit card into the same connector (note that the circuit card is now rotated 180 degrees from its original orientation).



NOTE! Route USB cable through slot of bracket.

- c) Reboot the NCU.

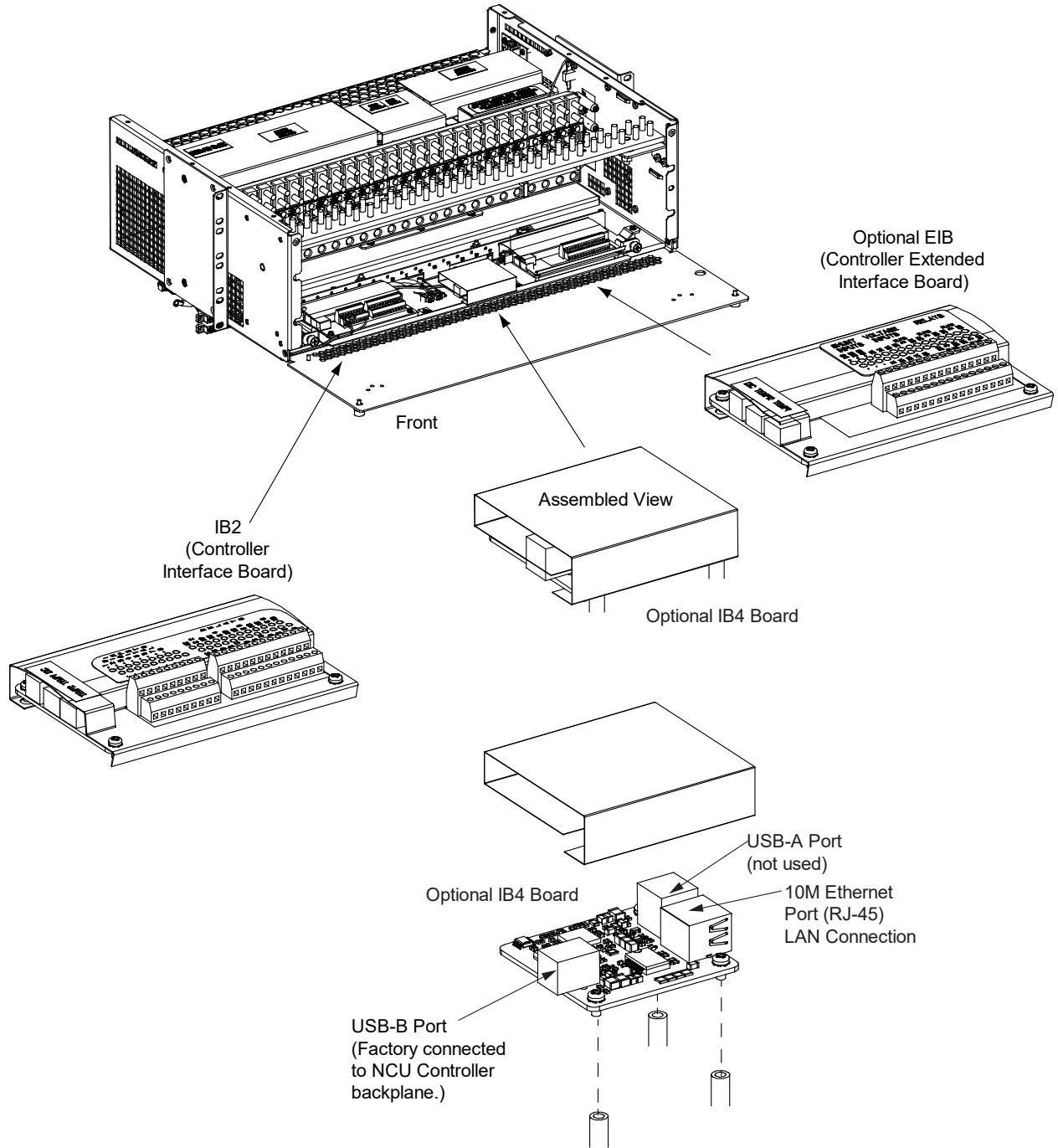
Local Menu Navigation:

At the Main Screen, press ENT and ESC at the same time to reboot the NCU controller.

Web Menu Navigation:

Advance Settings Menu / SW Maintenance Tab / Reboot Controller button.

Figure 1.29 Re-Install Circuit Cards onto Slide Bracket



- [] 12. Perform the next step to install the IB4 board vertically (if desired) using the optional kit P/N 566034. This allows more space for converter installation. See Figure 1.30.



NOTE! Mounting the IB4 horizontally blocks four (4) positions for converter installation and blocks no positions for circuit breaker installation. Mounting the IB4 vertically blocks two (2) positions for converter installation and blocks two (2) positions for circuit breaker installation.

- a) Install the IB4 board and shield onto kit bracket P/N 565995.
- b) Install kit bracket P/N 565995 with the IB4 board to the converter bracket. Use the two (2) kit supplied #6-32 x 3/8" long captive screws. Torque as indicated in Figure 1.30.
- c) Plug all connectors removed from the IB4 circuit card into the same position.
- d) Remove the grounding wrist strap.
- e) Reboot the NCU.

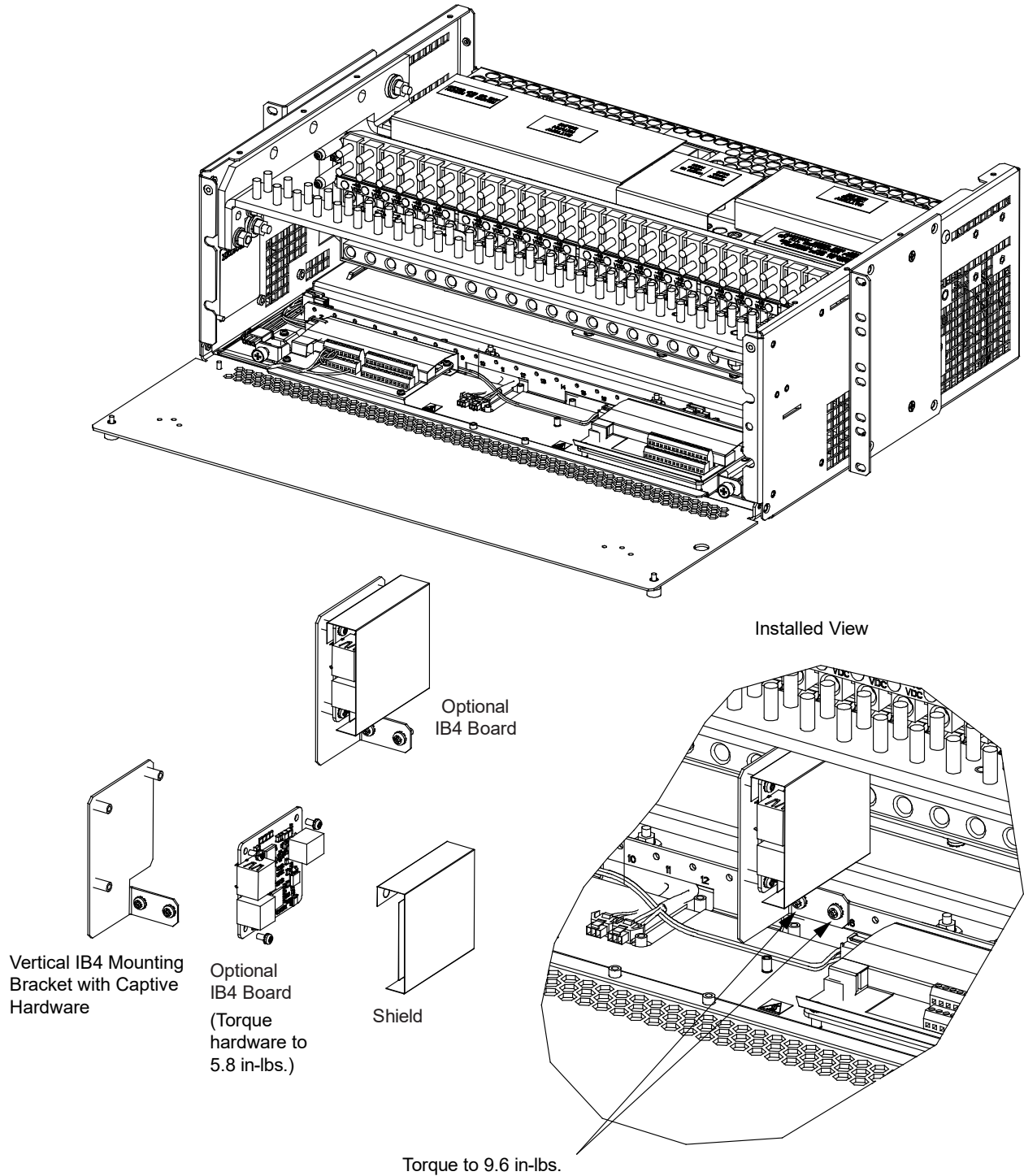
Local Menu Navigation:

At the Main Screen, press ENT and ESC at the same time to reboot the NCU controller.

Web Menu Navigation:

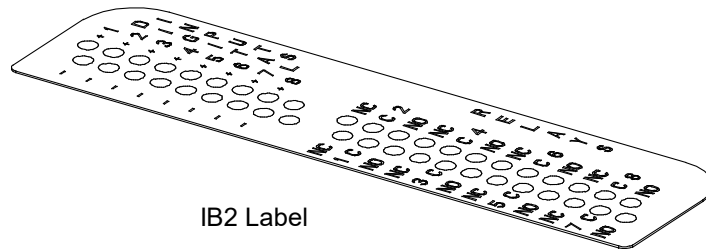
Advance Settings Menu / SW Maintenance Tab / Reboot Controller button.

Figure 1.30 Installing Optional IB4 Vertical Mounting Kit P/N 566034



- [] 13. Remove the kit supplied IB2 label (see Figure 1.31) from the kit supplied storage pouch and adhere it to either the top surface of the IB2 board insulator or to the inside surface of the front door.
- [] 14. Remove the kit supplied distribution position label (see Figure 1.32) from the kit supplied storage pouch and (using the plastic shield removed from the distribution panel as a guide) record the distribution positions onto the kit supplied label.
- [] 15. Place the kit supplied distribution position label (see Figure 1.32) 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 1.31 IB2 Label



IB2 Label

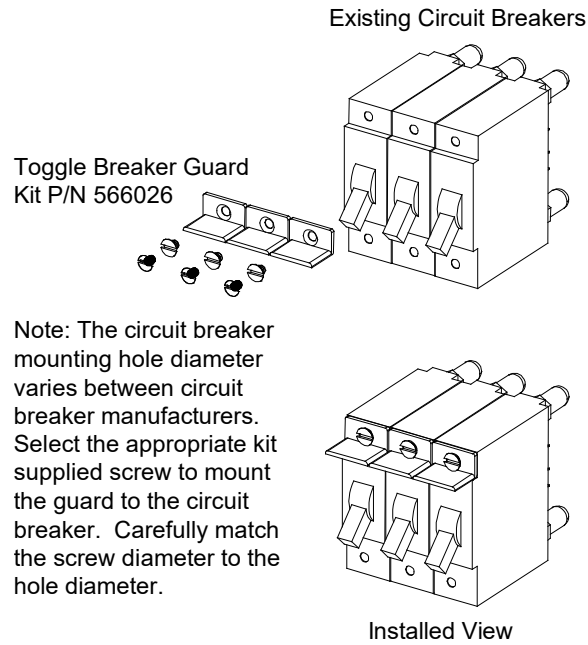
Figure 1.32 Distribution Position Label

Distribution Position Label

 VERTIV™		ROW 2 <input type="checkbox"/>	ROW 4 <input type="checkbox"/>
		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	

- [] 16. Install the toggle breaker guard kit (P/N 566026) as required per site requirements. See Figure 1.33.

Figure 1.33 Toggle Breaker Guard Kit (P/N 566026)



- [] 17. Continue with the “Installing the Converter into a Distribution Position” procedure starting on page 40.



NOTE! When installing a 565050 power extend converter covered by these instructions onto a power system installed in an outside plant enclosure, remove the front door from the power system when complete with the installation. You do not need to remove the front door if you are only installing a +27 V Bullet Converter.

2 Installing the 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 converter into a -48 VDC or -58 VDC distribution position. Non-repairable damage will occur if the converter is plugged into a +24 VDC distribution position.



NOTE! The converter can be inserted or removed with power applied (hot swappable) as long as the converter is inserted/removed with the enable/disable switch in the disabled position (see Figure 2.5 on page 48).



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



NOTE! It is recommended that the +27 VDC Vertiv™ eSure™ Bullet Converters be installed in the side of the panel opposite from where the larger breakers are recommended to be installed to minimize heat concentration.

2.2 Restrictions

For use with systems with rear feed return bar wiring only (not for use with systems with top feed return bar wiring).

Refer to the converter instruction manual (UM565050 or UM60147273) for wire sizing restrictions.

For the Power Extend Converter, refer to Table 2.1 and Table 2.2 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 and in specific distribution row positions. 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 565050 power extend converter covered by these instructions onto a power system installed in an outside plant enclosure, remove the front door from the power system when complete with the installation. You do not need to remove the front door if you are only installing a +27 VDC Vertiv™ eSure™ Bullet Converter.

Table 2.1 eSure™ Power Extend Converter Spacing and Power Restrictions: Spec. No. 582137100 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
Single Row or Row 1 of a Two Row Cabinet	300 W	900 W	650 W	450 W	425 W
Row 2 Only	325 W	925 W	675 W	475 W	450 W
Rows 1 and 2	200 W	675 W	425 W	400 W	300 W

Note: Row 1 is the Bottom Row

Table 2.2 eSure™ Power Extend Converter Spacing and Power Restrictions: Spec. No. 582137100 List AB Operating in a Vertiv™ OSP Cabinet Spec. No. F2017006, F2018007, F2017031, F2017011

Distribution Row	Watts Per Power Extend Converter				
	No Spaces	1 Pole / Space	2 Pole / Space	3 Pole / Space	4 Pole / Space
Single Row or Row 1 of a Two Row Cabinet	400 W	900 W	775 W	625 W	500 W
Row 2 Only	400 W	900 W	775 W	625 W	500 W
Rows 1 and 2	400 W	900 W	775 W	625 W	500 W

Note: Row 1 is the Bottom Row

For the +27 VDC Vertiv™ eSure™ Bullet Converter, no spacing is required between units. A total of three (3) units can be paralleled together for a total output power of 750 W at 40 °C and 600 W at 65°C. It is recommended that the +27 VDC Vertiv™ eSure™ Bullet Converters be installed in the side of the panel opposite from where the larger breakers are recommended to be installed to minimize heat concentration. As an example, for the Spec. No. 582137100 single-row distribution panel power system, the larger breakers are recommended to be installed on the left-hand side of the panel. Therefore, the +27 VDC Vertiv™ eSure™ Bullet Converter is recommended to be installed on the right-hand side of the panel.

2.3 Preparing the Distribution Cabinet

Procedure

- [] 1. If the converter is to be installed for a newly connected load, connect the load and load return cables to the distribution position to be occupied by the converter. The connection for the load cable can be one of the busbar lug landing points directly behind the converter or to the positive side of the terminal block on the +27 VDC Bullet Nose 6-Position GMT Fuse Board (only used with the +27 VDC Vertiv™ eSure™ Bullet Converter). The connection for the return lead can be on the Return bar of the plant or the negative side of the terminal block on the +27 VDC Bullet Nose 6-Position GMT Fuse Board. At the same time, connect the converter return wire faston tab provided with the converter to the cabinet's return busbar (if present, use the same location as the return lead to the load). At the same time (if required), connect the separately ordered converter paralleling busbar to the distribution panel load busbars using the same location as the load lead to the load. If two or three converters are to be connected in parallel or if a +27 VDC Bullet Nose 6-Position GMT Fuse Board Kit (10062803) is used along with the converters, a two-position (60016097), three-position (545346), four-position (10078650), or five-position (10078651) lug adapter busbar plate should be installed first, as shown in the installation instructions in UM10062803. See Figure 2.1 (1-row cabinets) or Figure 2.2 (2-row cabinets), as well as Figure 2.13. Torque as indicated in Figure 2.1 or Figure 2.2.
- [] 2. If the 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 converter return wire faston tab provided with the 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 converter paralleling busbar to the distribution panel load busbars (using the same location as the load lead to the load). If two or three converters are to be connected in parallel, a two-position (60016097), or three-position (545346), or four-position (10078650), or five-position (10078651) lug adapter busbar plate should be installed first. See Figure 2.1 (1-row cabinets) or Figure 2.2 (2-row cabinets), as well as Figure 2.13. Torque as shown in Figure 2.1 or Figure 2.2.



NOTE! The return wire faston tab may be connected to either the top or bottom return bar in a 2-row cabinet.

NOTE! The following images show two- and three-position lug adapter busbar plates. Four- and five-position adapter plates are also available and are installed similarly.

NOTE! In the following figures, the Power Extend Converter is described. The installation procedure for the +27 VDC Vertiv™ eSure™ Bullet Converter is the same.

Figure 2.1 Connecting Converter Load Return Cables to the Return Bar with the Converter Return Wire Faston Tab and Connecting Converter Load Cables to the Distribution Panel with Converter Paralleling Busbar (P/N 60016097, 545346, 10078650 or 10078651) (if required) (1-Row Cabinet) (cont'd on next page)

NOTE! Power system 582137100 List 20 is used in the following illustration. Power system 582137100 List 25 and List 27 similar. Converter Return Wire faston Tab P/N 565990 is shown in the figure. P/N 10086492 is also available.

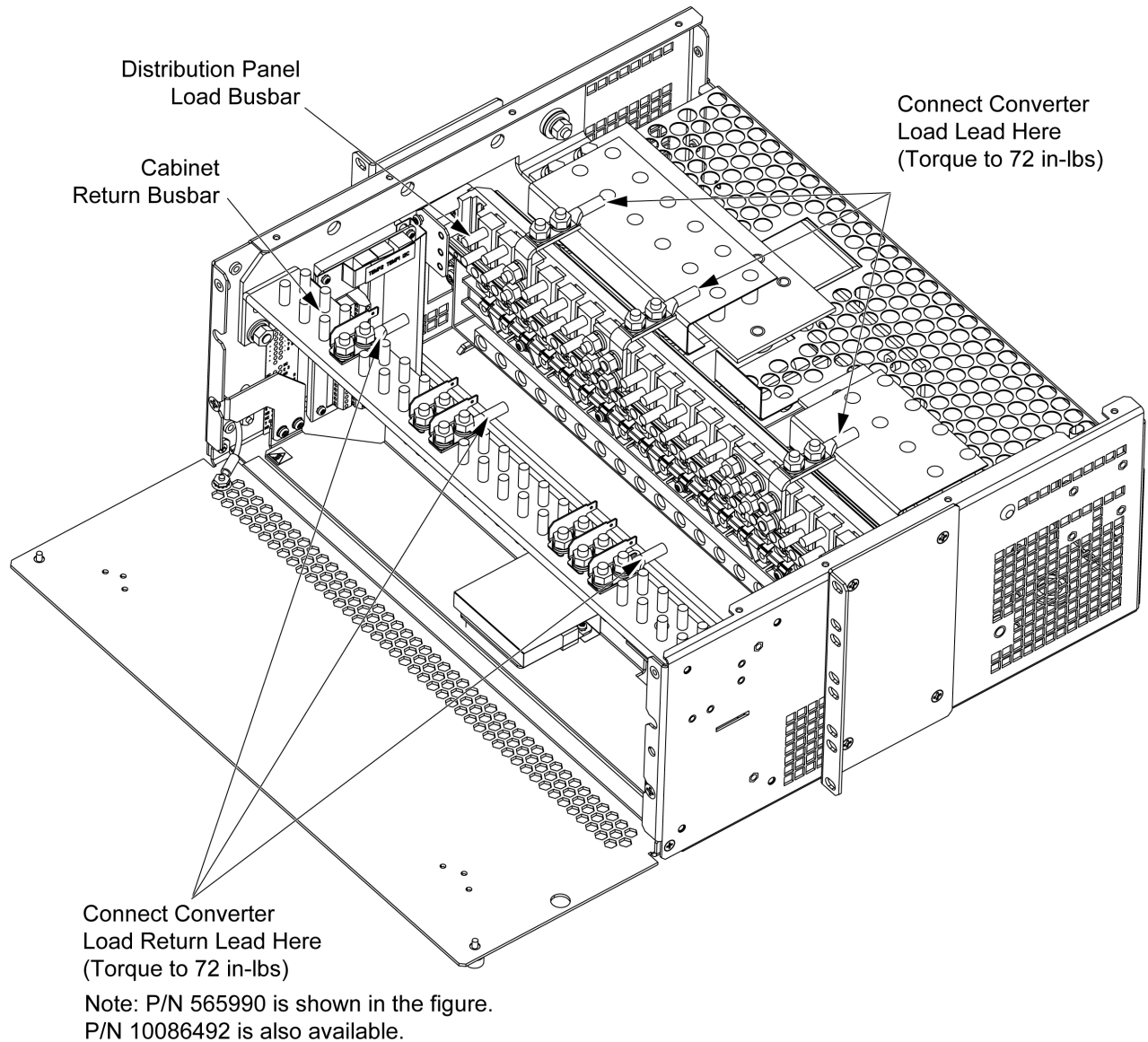
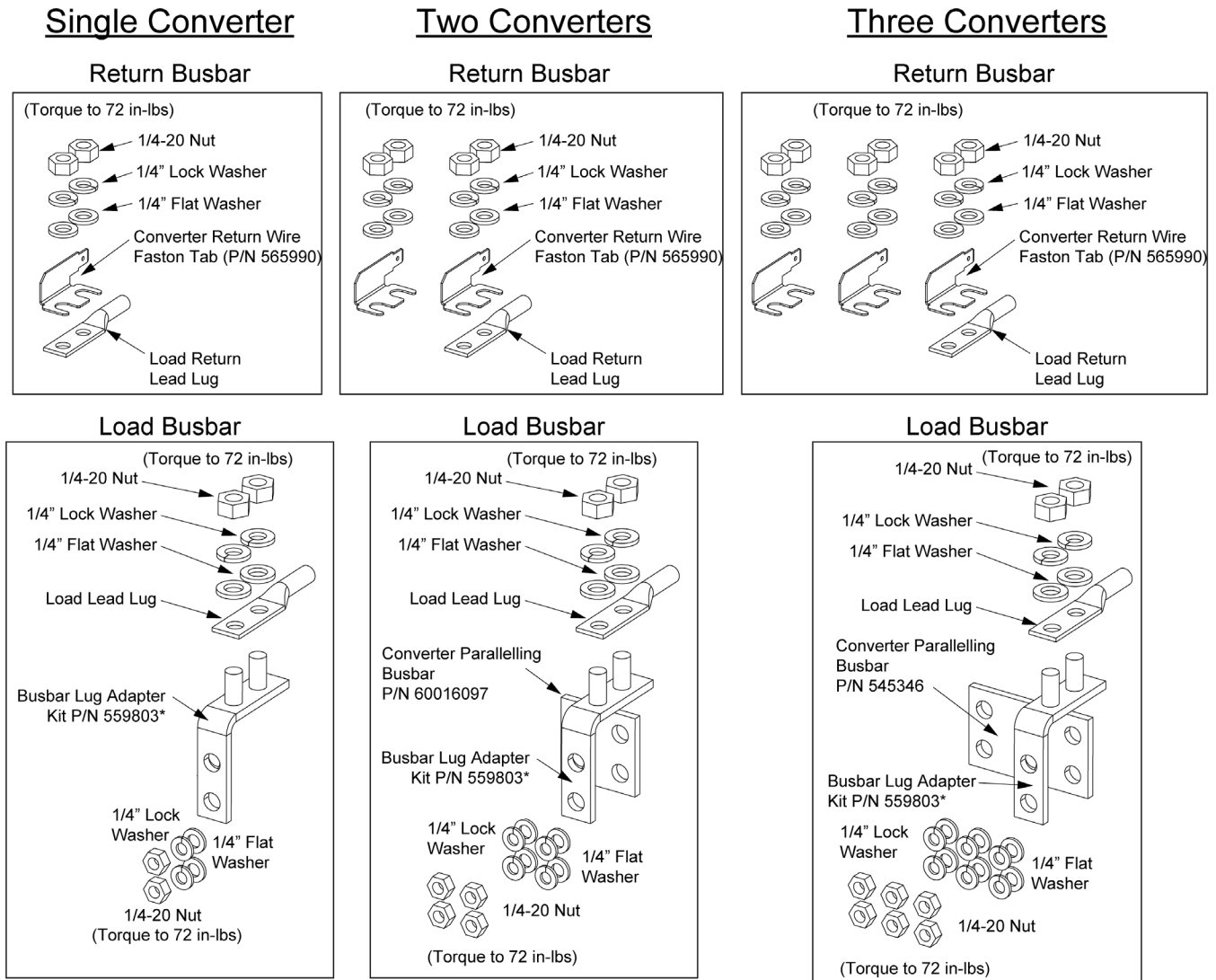


Figure 2.1 Connecting Converter Load Return Cables to the Return Bar with the Converter Return Wire Faston Tab and Connecting Converter Load Cables to the Distribution Panel with Converter Paralleling Busbar (P/N 60016097, 545346, 10078650 or 10078651) (if required) (1-Row Cabinet) (cont'd from previous page)

NOTE! In the images below, the Power Extend Converter Return Wire Faston Tab (P/N 565990) is shown. A different faston tab that allows for front connection (P/N 10086492) is also available.



* Optional - lugs may be oriented straight or at 90-degrees.

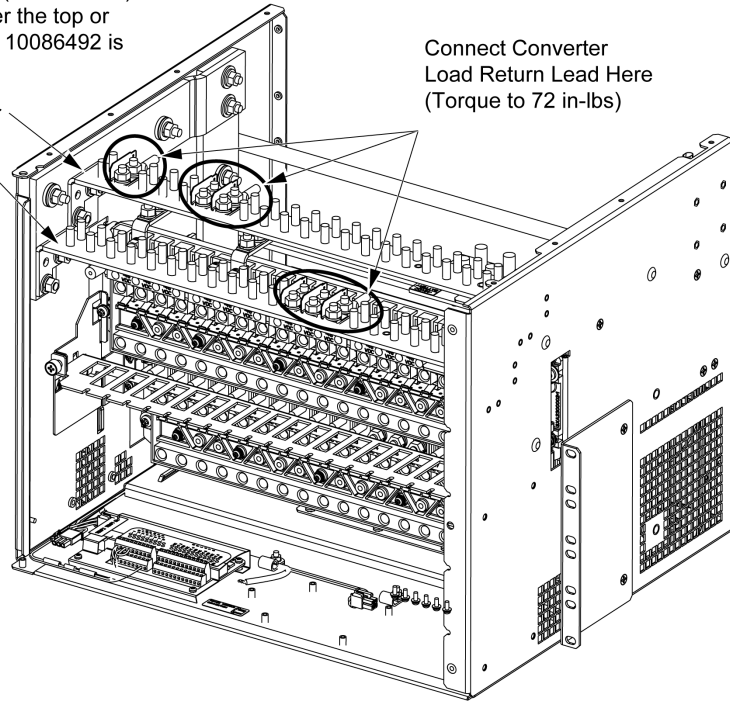
Figure 2.2 Connecting Converter Load Return Cables to the Return Bar with the Converter Return Wire Faston Tab and Connecting Converter Load Cables to the Distribution Panel with Converter Paralleling Busbar (P/N 60016097, 545346, 10078650 or 10078651) (if required) (2-Row Cabinet) (cont'd on next page)

NOTE! Power system 582137100 List 21 is used in the following illustration. Power system 582137100 List 26 similar.

The return wire faston tab (P/N 565990) may be connected to either the top or bottom return busbar. P/N 10086492 is also available.

Top Return Busbar
Bottom Return Busbar

Connect Converter Load Return Lead Here
(Torque to 72 in-lbs)



Components removed in illustration for clarity only.

Connect Converter Load Lead Here
(Torque to 72 in-lbs)

Distribution Panel Load Busbar
Distribution Panel Load Busbar

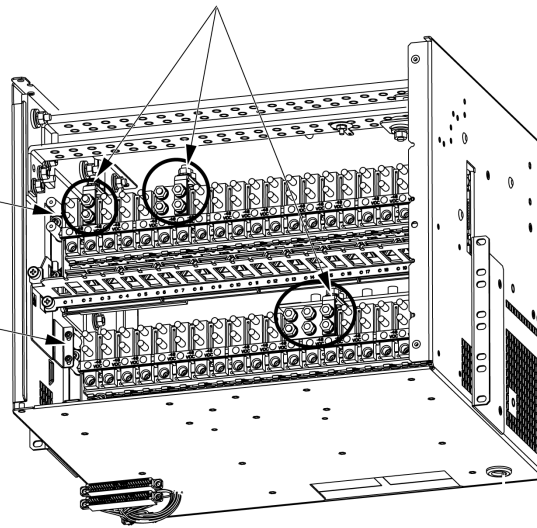


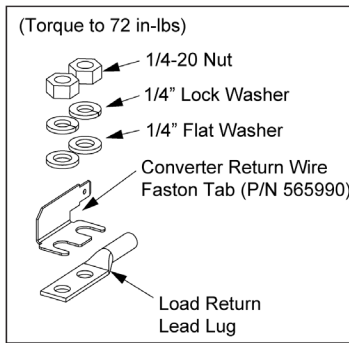
Figure 2.2 Connecting Converter Load Return Cables to the Return Bar with the Converter Return Wire Faston Tab and Connecting Converter Load Cables to the Distribution Panel with Converter Paralleling Busbar (P/N 60016097, 545346, 10078650 or 10078651) (if required) (2-Row Cabinet, BOTTOM ROW ONLY) (cont'd from previous page)

NOTE! Power system 582137100 List 21 is used in the following procedure, unless otherwise noted. Power system 582137100 List 26 similar.

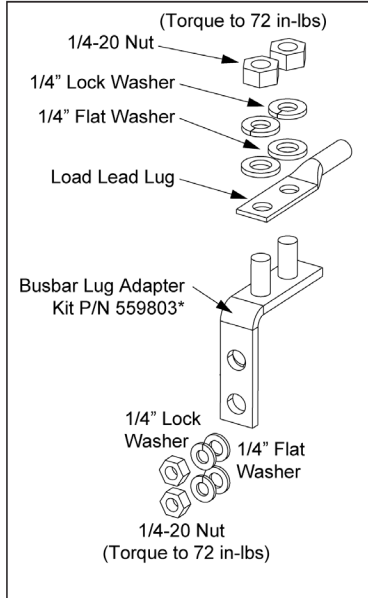
NOTE! In the images below, the Power Extend Converter Return Wire Faston Tab (P/N 565990) is shown. A different faston tab that allows for front connection (P/N 10086492) is also available.

Single Converter

Return Busbar

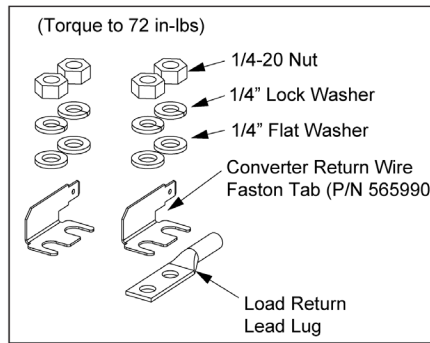


Load Busbar

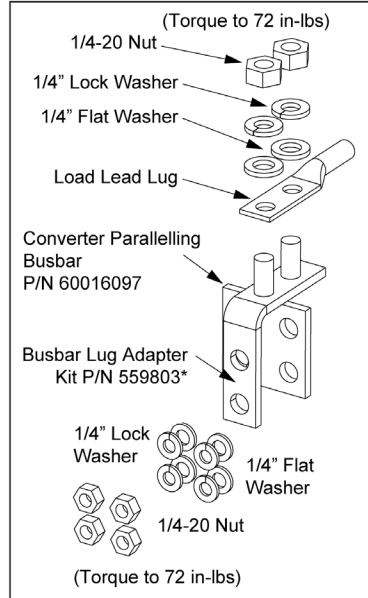


Two Converters

Return Busbar

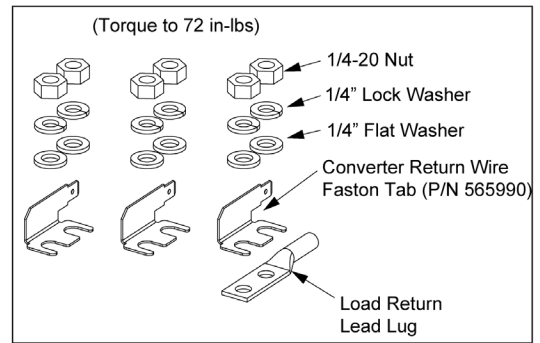


Load Busbar

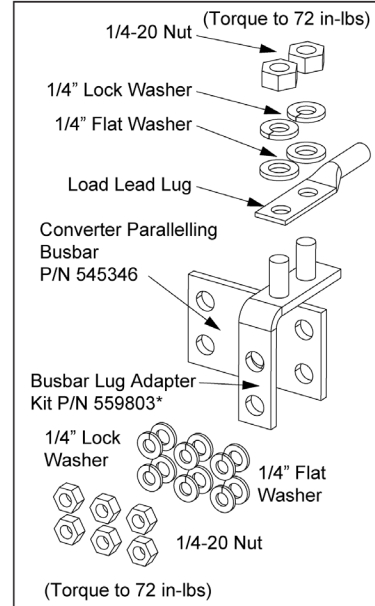


Three Converters

Return Busbar



Load Busbar



* Optional - lugs may be oriented straight or at 90-degrees.

2.4 Installing the Converter(s)

2.4.1 Using Kit P/N 565939 (in a 582137100 List 20) or P/N 565997 (in a 582137100 List 25) or P/N 6001930 (in a 582137100 List 27)



NOTE! See also “Restrictions” on page 40.



NOTE! Mounting bracket kit P/N 565939 with 582137100 List 20 with List AN distribution panel is used in the following procedure, unless otherwise noted. Other kits and distribution panels similar.

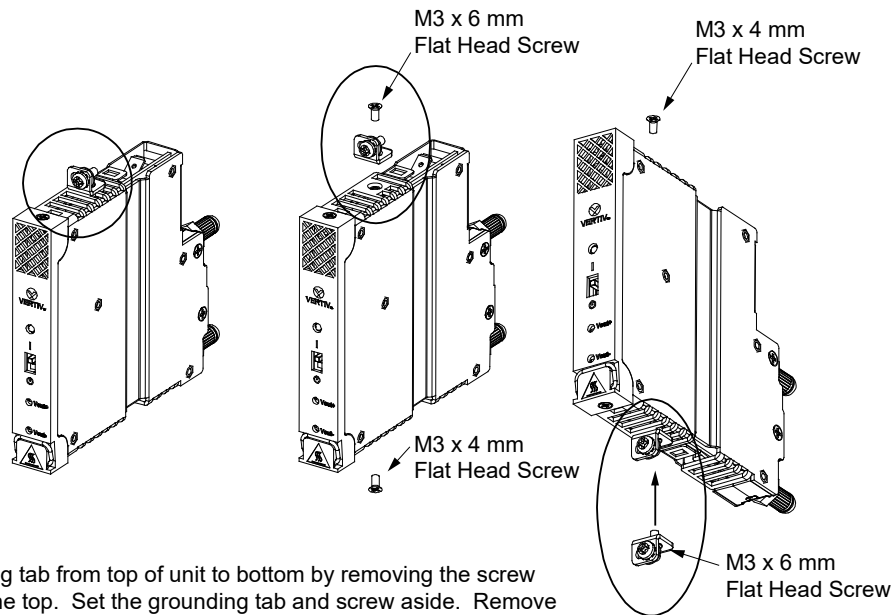


NOTE! Power Extend Converter 1C48581000B is represented in these figures. 1C4827375B is similar.

Procedure

- [] 1. Voltage designation label SVH23001/1 (included) can be placed behind the +27 VDC Vertiv™ eSure™ Bullet Converter prior to plugging the converter into the panel to designate that the converter provides a +24V nominal output instead of -48 VDC or -58 VDC output. Once you know the number of positions that the converter(s) and the optional +27 VDC Bullet Nose 6-Position GMT Fuse Board will occupy, you can cut the label to the necessary length prior to installing it. To install the label, you will need to remove the plastic pins from the front of the existing label, place the label on top of the existing label, and then press the pins back into place.
- [] 2. Move the grounding tab from the top of the converter to the bottom per Figure 2.3.

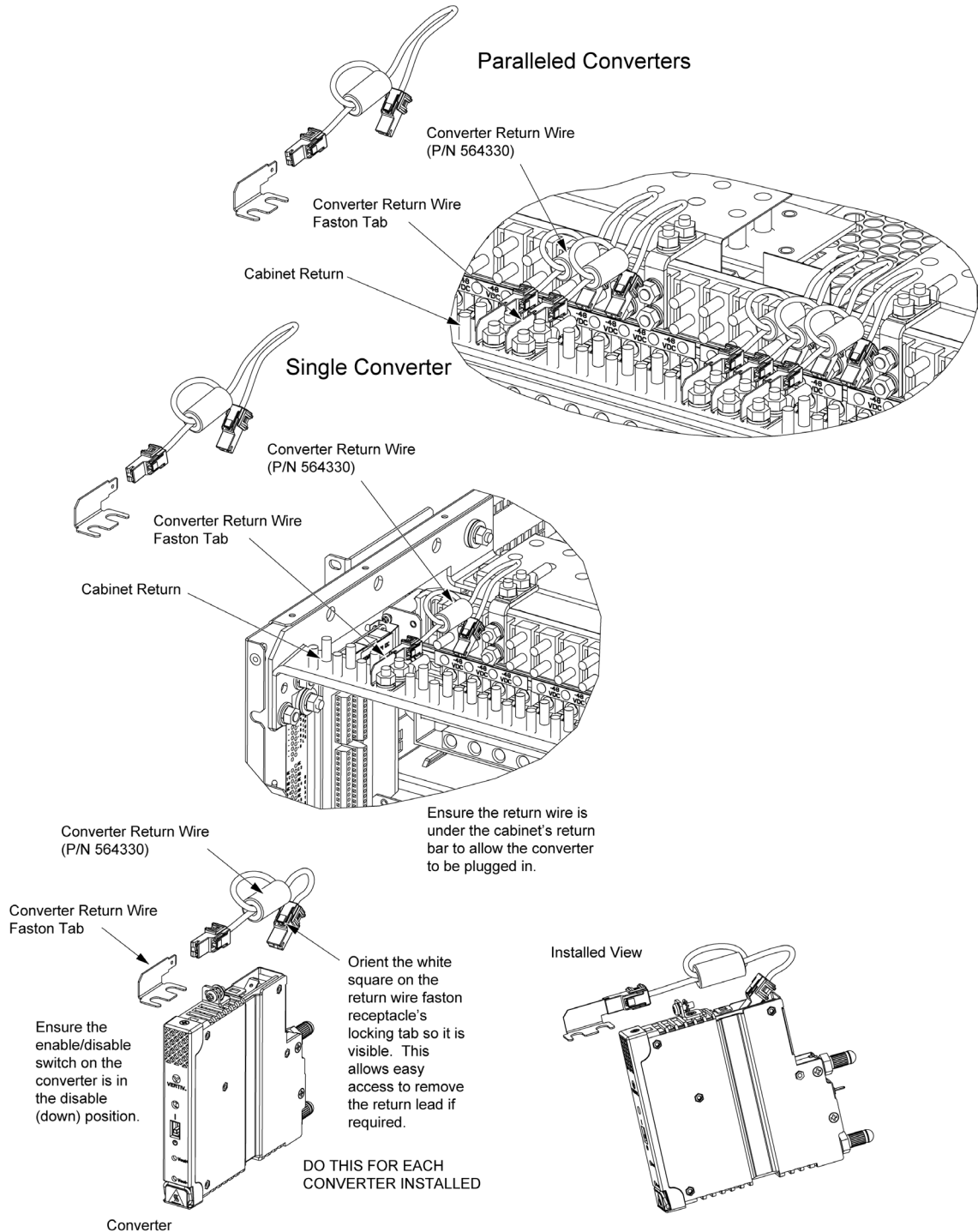
Figure 2.3 Moving Grounding Tab from Top of Unit to Bottom



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.

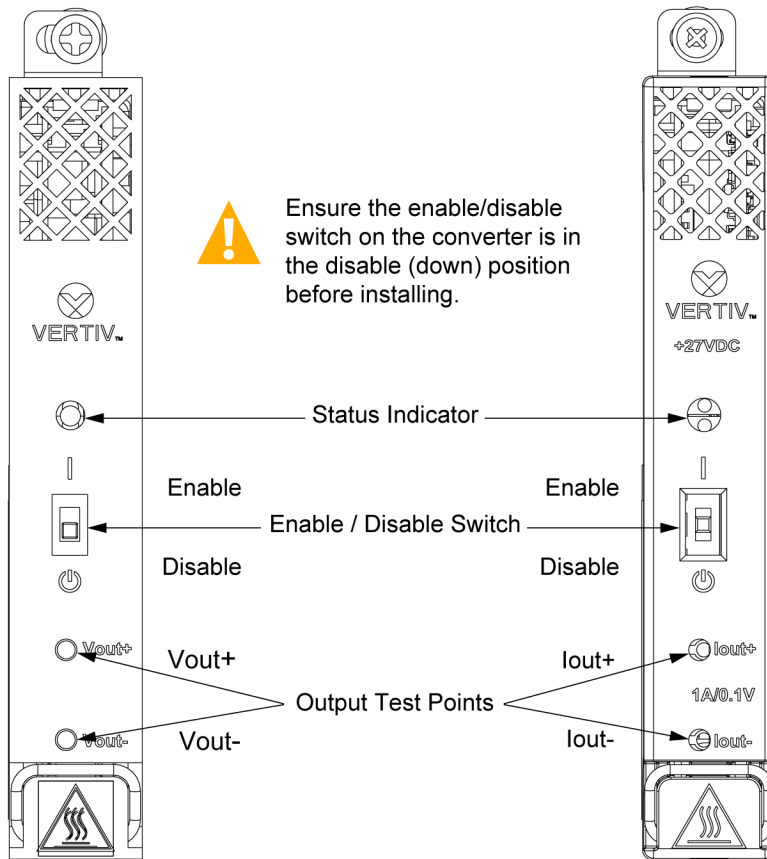
- [] 3. Connect the return wire (P/N 564330) provided with the converter to a converter return wire faston tab installed on the cabinet's return bar in a previous step. See Figure 2.4. Repeat for each converter to be installed.
- [] 4. Route the return wire (P/N 564330) connected above behind and under the cabinet's return bar. See Figure 2.4. Repeat for each converter to be installed.

Figure 2.4 Connecting Converter Return Wire(s) (P/N 564330) to a Converter Return Wire Faston Tab and to a Converter



- [] 5. Ensure the enable/disable switch on the converter is in the disable (down) position. See Figure 2.5. Repeat for each converter to be installed.

Figure 2.5 Enable/Disable Switch



Note: Output Voltage measurement on the +27 VDC Vertiv™ eSure™ Bullet Converter represents output current. 1A/0.1V

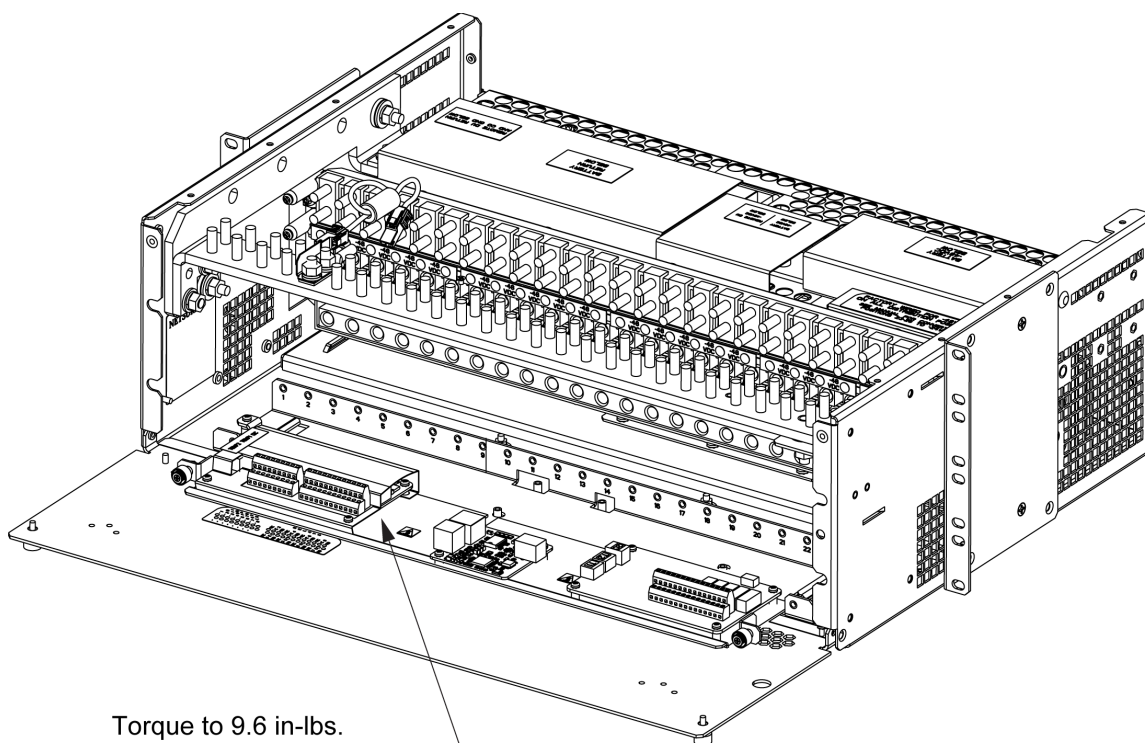


ALERT! Before performing the next step, cut cable ties as necessary to create a service loop in the wires leading to IB2 and EIB boards (to allow the tray to be slid out without pulling on the wires). The kit P/N 60011930 contains extra cable ties to be used to redress the wires after converter installation.

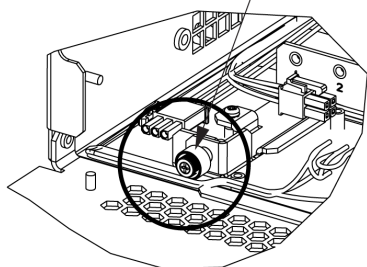
- [] 6. For kit P/N 60011930 (in a 582137100 List 27), loosen the two (2) captive fasteners on the slide out tray. Partially slide the tray out to allow access for converter installation. When finished, slide tray back in and secure with the captive fasteners. See Figure 2.6.
- [] 7. Connect the return wire (P/N 564330) to a converter. Note: Orient the white square on the return wire fasten receptacle's locking tab as shown in Figure 2.4. Plug the converter into the distribution panel. Secure the converter to the mounting bracket with the screw provided with the converter. See Figure 2.7 and Figure 2.8. Torque as indicated in Figure 2.7 and Figure 2.8. Repeat for each converter to be installed.

- [] 8. Place the enable/disable switch on the converter to the enable position. See Figure 2.5. If two or three converters are connected in parallel to a load that exceeds the peak load rating for a single converter, they should be switched on simultaneously.
- [] 9. Observe the status of the converter front panel local indicator. If operating normally, this indicator should be illuminated green. See Figure 2.5.
- [] 10. If not in an outside plant cabinet, close and secure the distribution panel front door.
- [] 11. Ensure that there are no local or remote alarms active on the power system.
- [] 12. Enable the external alarms or notify appropriate personnel that this procedure is finished.

Figure 2.6 Kit P/N 60011930 (in a 582137100 List 27) Slide Out Tray



Torque to 9.6 in-lbs.
(both sides)



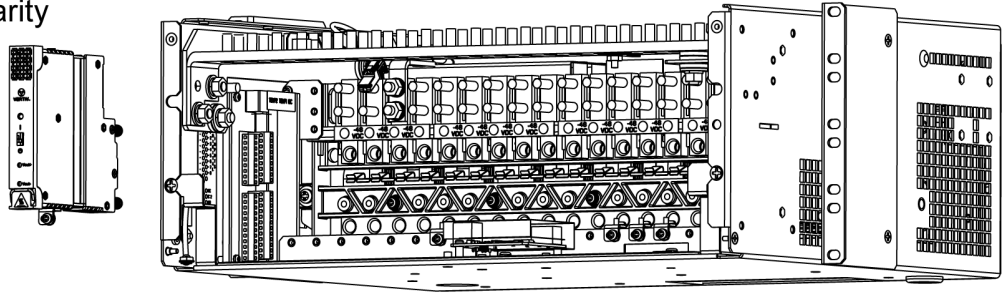
Loosen the two (2) captive fasteners on the slide out tray. Partially slide the tray out to allow access for converter installation. When finished, slide tray back in and secure with the captive fasteners.

ALERT! Cut cable ties as necessary to create a service loop in the wires leading to IB2 and EIB boards (to allow the tray to be slid out without pulling on the wires). The kit P/N 60011930 contains extra cable ties to be used to redress the wires after converter installation.

Figure 2.7 Installing a Converter

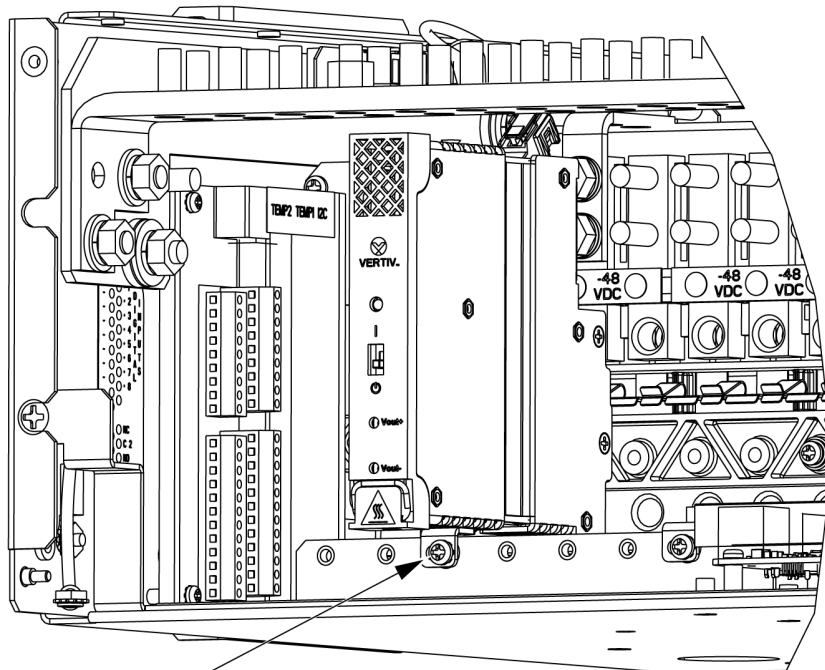
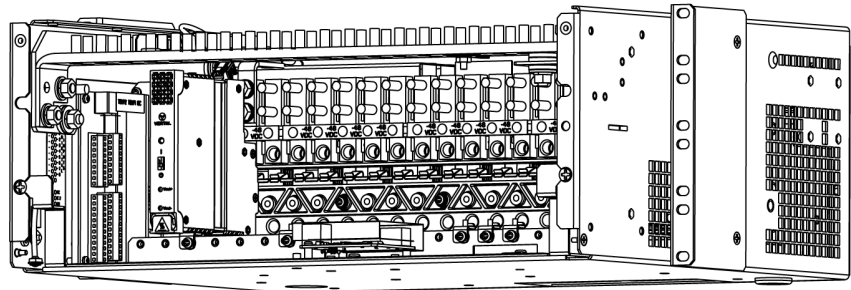
Converter Return Wire
Not Shown for Clarity
Only

Ensure the
enable/disable
switch on the
converter is in
the disable
(down) position.



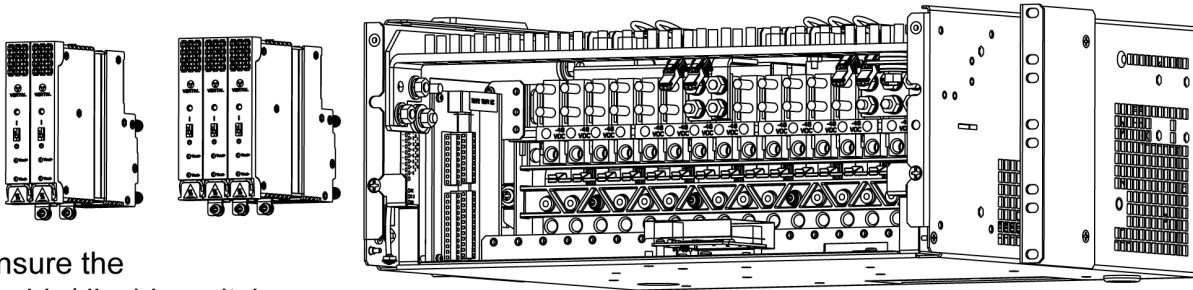
Converter Return Wire
needs to be connected
prior to plugging the
converter into a panel.

Plug the converter into
the distribution position.



Secure at the bottom
with the screw supplied
with the power extend
converter. Torque to
9.6 in-lbs.

Figure 2.8 Installing Converters

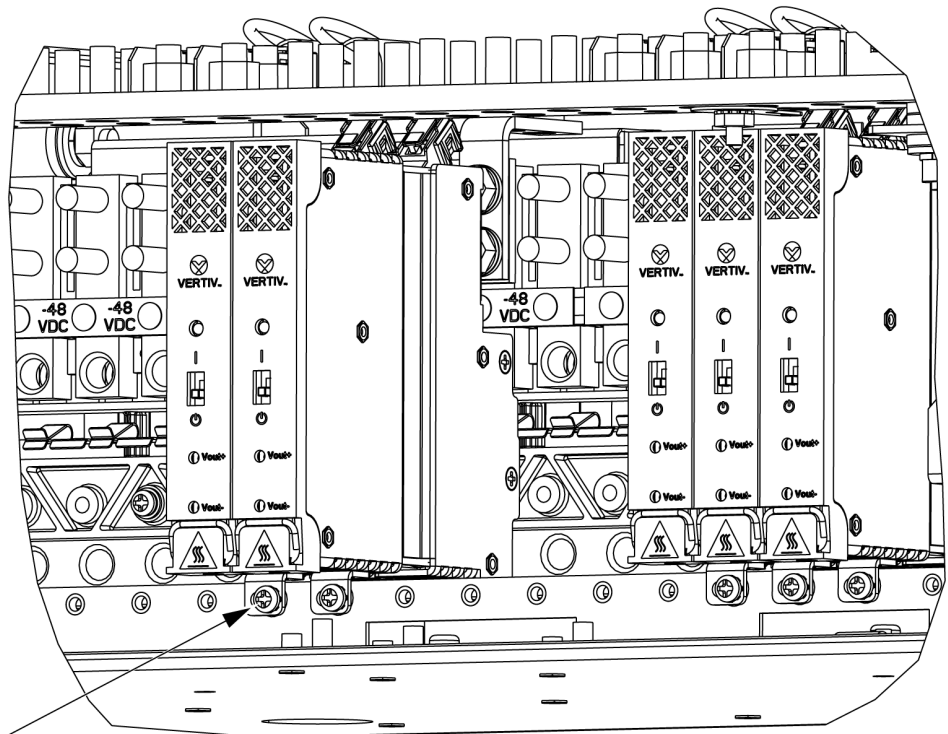
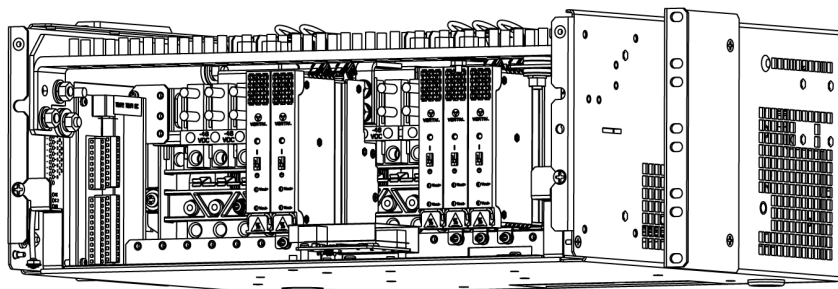


Ensure the enable/disable switch on the converter is in the disable (down) position.

Converter Return Wire needs to be connected prior to plugging the converter into a panel.

Plug the converter into the distribution position.

Converter Return Wire Not Shown for Clarity Only



Secure at the bottom with the screw supplied with the converter.
Torque to 9.6 in-lbs.

2.4.2 Using Kit P/N 60011929 (in a 582137100 List 21) or P/N 60011928 (in a 582137100 List 26)



NOTE! See also “Restrictions” on page 40.



NOTE! Mounting bracket kit P/N 60011929 with 582137100 List 21 with List AO distribution panel is used in the following procedure. Other kits and distribution panels similar.



NOTE! The return wire (P/N 564330) may be connected to either the top or bottom return bar.

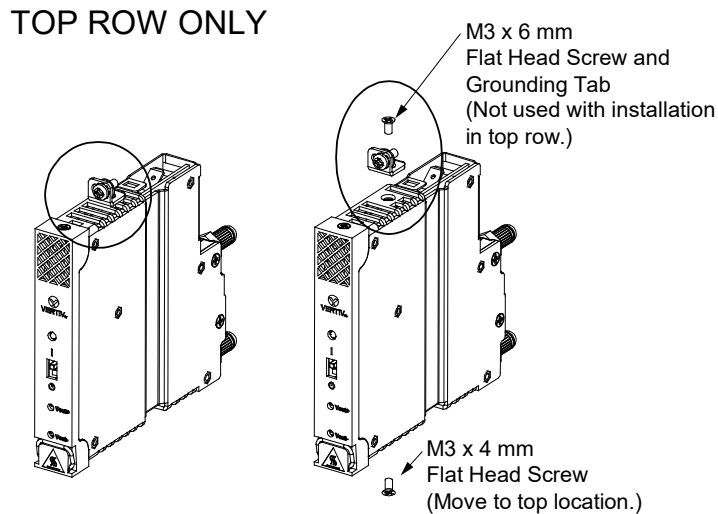


NOTE! Power Extend Converter 1C48581000B is represented in these figures. 1C4827375B is similar.

Procedure

- [] 1. Voltage designation label SVH23001/1 (included) can be placed behind the +27 VDC Vertiv™ eSure™ Bullet Converter prior to plugging the converter into the panel to designate that the converter provides a +24V nominal output instead of -48 VDC or -58 VDC output. Once you know the number of positions that the converter(s) and the optional +27 VDC Bullet Nose 6-Position GMT Fuse Board will occupy, you can cut the label to the necessary length prior to installing it. To install the label, you will need to remove the plastic pins from the front of the existing label, place the label on top of the existing label, and then press the pins back into place.
- [] 2. When Installed in the Top Row Only: Remove the grounding tab from the top of the converter. It will not be used along with the screw used to secure it. Move the screw from the bottom of the converter to the top (see Figure 2.9).

Figure 2.9 Removing Grounding Tab from Top of Unit



Remove grounding tab from top of unit by removing the screw securing it to the top. The grounding tab and screw will not be used. 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). Torque screw to 5.8 in-lbs.

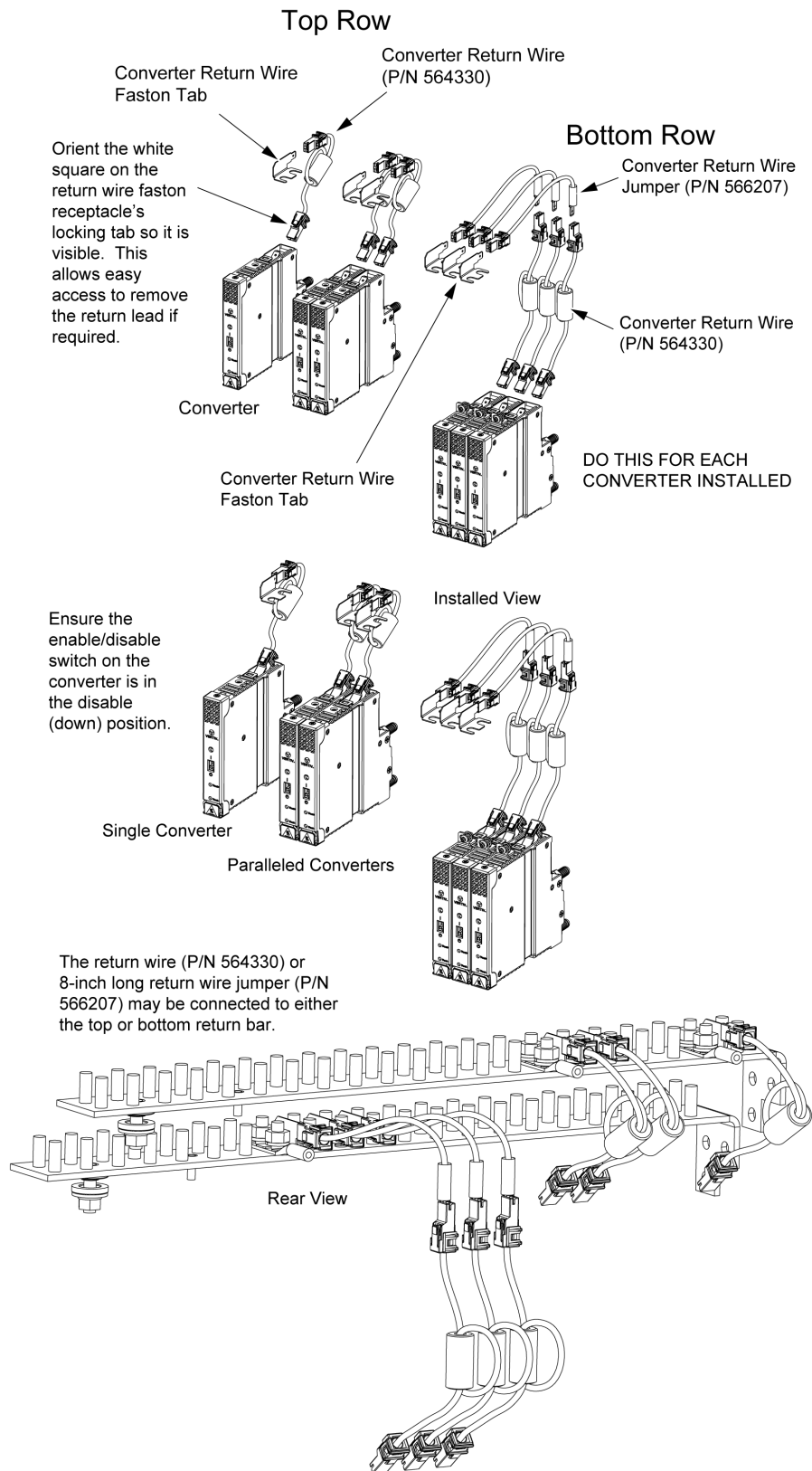
- [] 3. Connect the return wire (P/N 564330) (top and bottom row) and 8-inch long return wire jumper (P/N 566207) (bottom row only) provided with the converter to a converter return wire faston tab installed on the cabinet's return bar in a previous step. See Figure 2.10. Repeat for each converter to be installed.



NOTE! *The converter is also furnished with a 4-inch long return wire jumper P/N 565752. The 4-inch long return wire jumper is not used with this mounting bracket kit. It is used in other kits.*

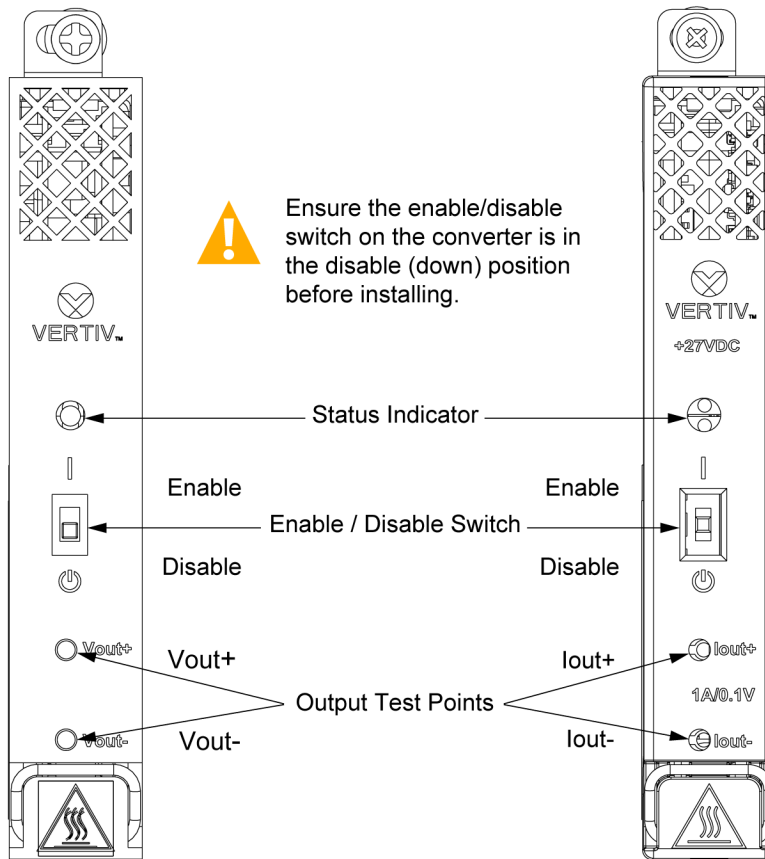
- [] 4. Route the return wire (P/N 564330) connected above behind and under the cabinet's return bar. For a bottom row installation, also route the return wire (P/N 564330) behind the top distribution panel. See Figure 2.10.

Figure 2.10 Connecting Converter Return Wire(s) (P/N 564330) and Return Wire Jumper(s) (P/N 566207) to a Converter Return Wire Faston Tab and to the Converter(s)



- [] 5. Ensure the enable/disable switch on the converter is in the disable (down) position. See Figure 2.11. Repeat for each converter to be installed.

Figure 2.11 Enable/Disable Switch



Note: Output Voltage measurement on the +27 VDC Vertiv™ eSure™ Bullet Converter represents output current. 1A/0.1V

- [] 6. Connect the return wire (P/N 564330) to a converter. Note: Orient the white square on the return wire faston receptacle's locking tab as shown in Figure 2.10. Plug the converter into the distribution panel. Secure the converter to the mounting bracket with the screw provided with the converter. See Figure 2.12. Torque as indicated in Figure 2.12. Repeat for each converter to be installed.
- [] 7. Place the enable/disable switch on the converter to the enable position. See Figure 2.11. If two or three converters are connected in parallel to a load that exceeds the peak load rating for a single converter, they should be switched on simultaneously.
- [] 8. Observe the status of the converter front panel local indicator. If operating normally, this indicator should be illuminated green. See Figure 2.11.
- [] 9. Close and secure the distribution panel front 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.

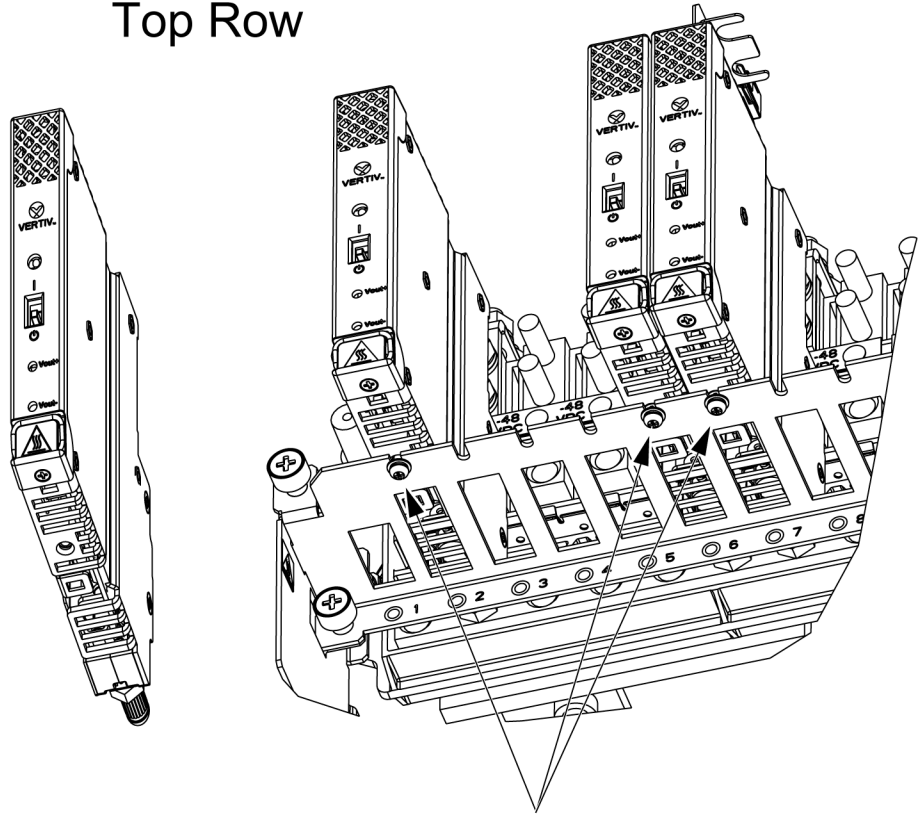
Figure 2.12 Installing Converter(s)

Top Row

Ensure the enable/disable switch on the converter is in the disable (down) position.

Converter Return Wire needs to be connected prior to plugging a converter into a panel.

Plug the converter into the distribution position.



Converter Return Wire
Not Shown for Clarity
Only

Secure at the bottom with the M3 x 8 mm screw supplied loose with the kit. Torque to 9.6 in-lbs.

Bottom Row

Ensure the enable/disable switch on the converter is in the disable (down) position.

Converter Return Wire needs to be connected prior to plugging a converter into a panel.

Plug the converter into the distribution position.

Secure at the top with the screw supplied with the converter. Torque to 9.6 in-lbs.

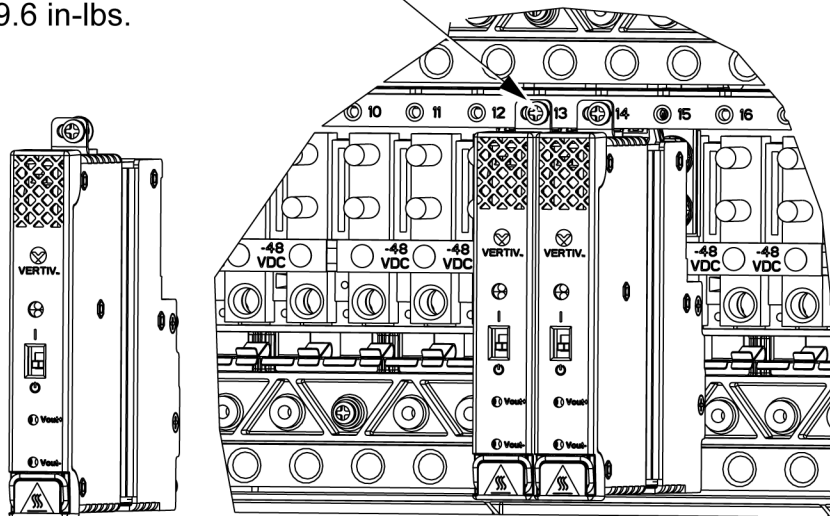
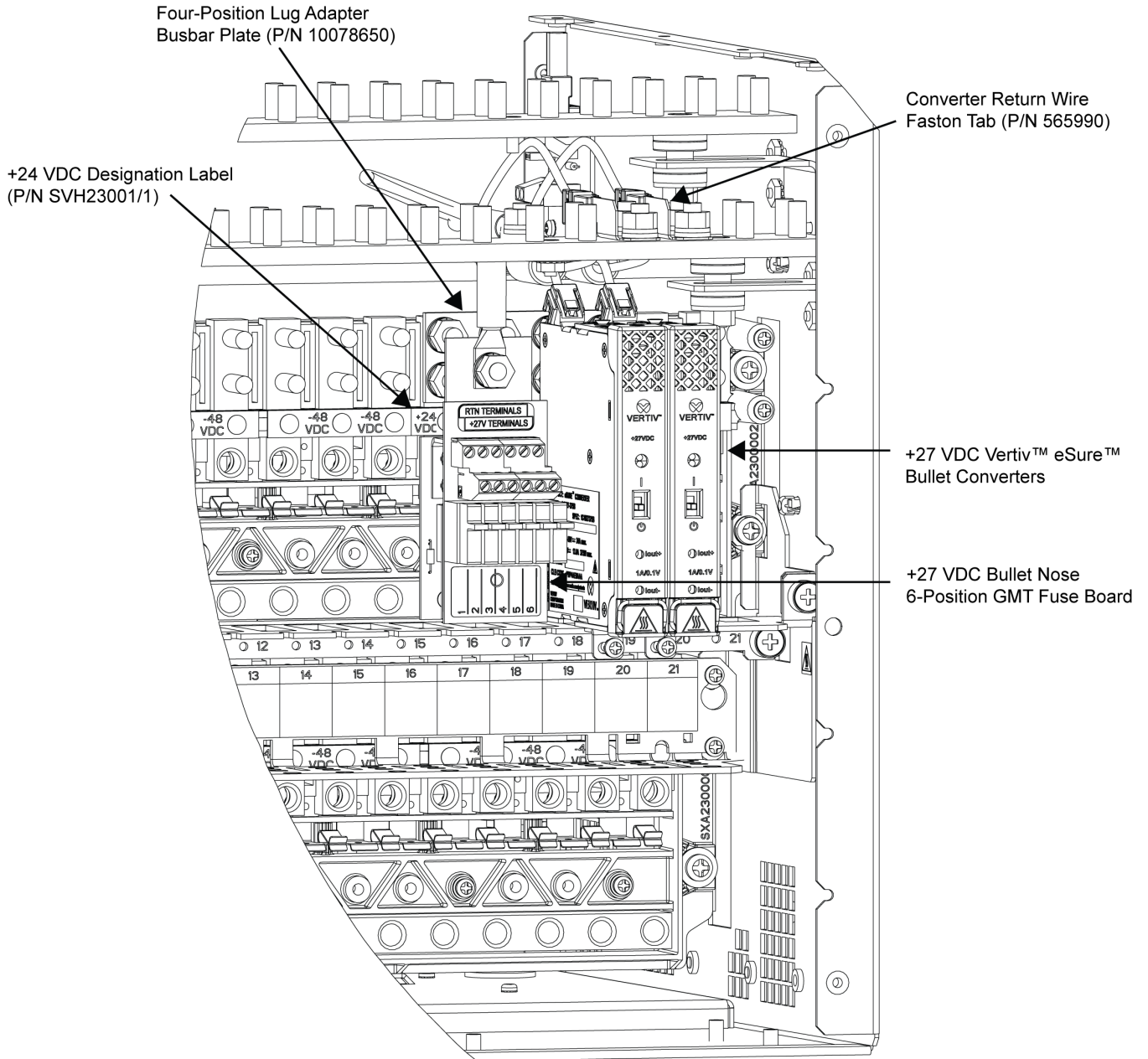


Figure 2.13 Installing +27 VDC Vertiv™ eSure™ Bullet Converters and +27 VDC Bullet Nose 6-Position GMT Fuse Board



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