DC Generator Input Circuit Breaker Kit

Installation Manual

Kit Specification Number: 60141027
For Use with Spec. Nos. 582127000600, 582127000601, 582127000900, 582127000901, 582127000930, and 582127000931 Power Systems

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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/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™ DC Generator Input Circuit Breaker Kit Installation Instructions

1.1 Kit Description

These instructions provide a step-by-step procedure to field install this kit into power system Spec. No. 582127000600, 582127000601, 582127000900, 582127000901, 582127000930, or 582127000931. Installation of this kit in other equipment should not be attempted.

This kit provides the components to accept a 400 A circuit breaker to feed the rectifier output bus of the power system through a shunt. A customer connects an external DC generator output to this circuit breaker which then supplies generator input power to the system. The procedure includes the instructions to program the shunt associated with the use of this kit.

1.2 Kit Contents

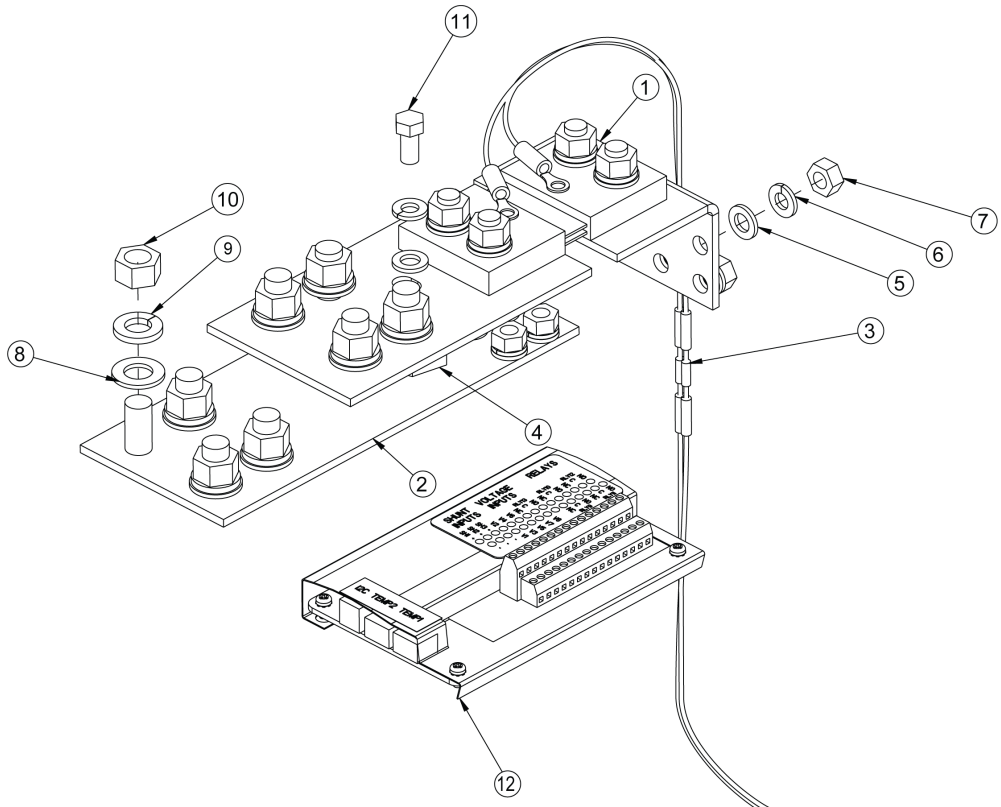
Table 1.1 lists the items furnished as a part of this kit. Before installing the kit, check the items furnished against those listed to ensure that there are no shortages. See also Figure 1.1 and Figure 1.2.

Table 1.1 Kit Contents

P/N	Description	Qty.
227640200	1/4-20 X 1/2" Bolt	1
228567100	3/8-16 Nut	8
215111300	3/8" Lock Washer	8
214112100	3/8" Flat Washer	8
215111100	1/4-20 Nut	16
215111100	1/4" Lock Washer	17
214110100	1/4" Flat Washer	17
245856900	1/4-20 Standoff Insulator	1
60141018	Shunt Leads	1
60141021	Return Busbar (Generator Input)	1
60141019	Shunt Assembly Kit	1
SXK2300238/1	EIB Board Kit	1
60141019 Shunt Assembly Kit (included above)		
214111100	5/16" Flat Washer	4
215111200	5/16" Lock Washer	4
228562100	5/16-18 Nut	4
ZYA41383/501	Shunt	1
10067533	-48V Flat Busbar (Generator Input)	1
10067537	-48V L-Shape Busbar (Generator Input)	1
SXK2300238/1 EIB Board Kit (included above)		
SXA2095469/3	Cover	1
127695	M3-0.5 X 6 Screw	4
548186	Label	1
MA455U41	EIB, PC Board	1

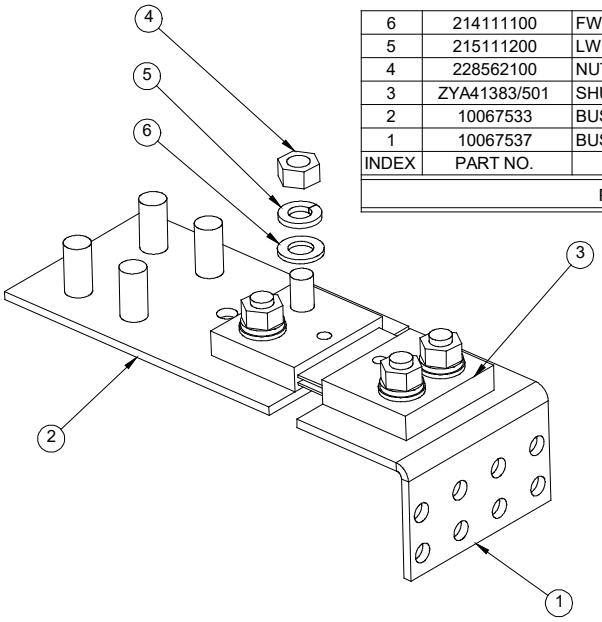
Accessory (not included in kit, ordered separately)		
150860	Circuit Breaker, 400 A	1

Figure 1.1 Kit P/N 60141027



12	SXK2300238/1	BACKPLANE ASSY, EIB BOARD KIT, ,	1
11	227640200	HHCS, 1/4-20 X 1/2,	1
10	228567100	NUT, - HEX -, 3/8-16	8
9	215111300	LW, 3/8, .682 OD, .094 THK,	8
8	214112100	FW, 3/8, .734 OD, .063 THK,	8
7	228557100	NUT, - HEX -, 1/4-20	16
6	215111100	LW, 1/4, .489 OD, .062 THK,	17
5	214110100	FW, 1/4, .500 OD, .063 THK,	17
4	245856900	INSULATOR, STANDOFF, 1.00, 1/4-20	1
3	60141018	HARNESS, DIST, ASSEMBLY	1
2	60141021	BUS BAR, FLAT, RETURN	1
1	60141019	KIT, SHUNT, ASSEMBLY	1
INDEX	PART NO.	DESCRIPTION	QTY
PARTS/MATERIAL LIST			

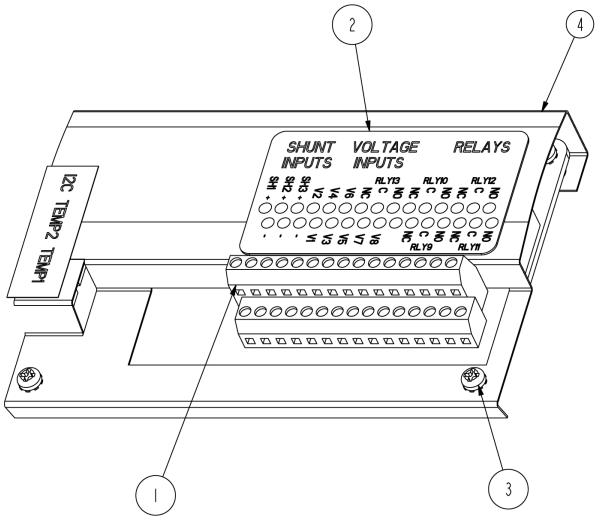
Figure 1.2 Kit P/N 60141019 (included in P/N 60141027)



INDEX	PART NO.	DESCRIPTION	QTY
6	214111100	FW, 5/16, .625 OD, .063 THK,	4
5	215111200	LW, 5/16, .586 OD, .078 THK,	4
4	228562100	NUT, - HEX -, 5/16-18	4
3	ZYA41383/501	SHUNT, DC,500A, 25mV	1
2	10067533	BUS BAR, FLAT, 400A DC GENERATOR	1
1	10067537	BUS BAR, L SHAPE, 400A DC GENERATOR	1

PARTS/MATERIAL LIST

Figure 1.3 Kit P/N SXK2300238/1 (included in P/N 60141027)



INDEX	PART NO.	DESCRIPTION	QTY
4	SXA2095469/3	COVER, FORMEX, FOR EIB	1
3	127695	SEMS, M3-0.5 X 6	4
2	548186	LABEL, EIB BOARD	1
1	MA455U41	EIB, PC BOARD	1

PARTS/MATERIAL LIST

1.3 Tools and Material Required

Table 1.2 lists the items required to install this kit.

Table 1.2 Tools and Material Required

Description
Lineman's Strippers
Lineman's Cutters
Electrician's Insulated Screwdriver, Flat-Blade, Small
Standard Ratchet and Socket Set
Torque Wrench, 1/2" Drive, Recommended
Electrical Anti-Oxidation Compound

1.4 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, those presented in the following procedure, and those listed in the power system manual. 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! *When performing any step in this procedure which requires removal of existing hardware, retain all hardware for use in subsequent steps, unless otherwise stated.*

Procedure

DANGER! This procedure is performed on a LIVE system. Observe the "Important Safety Instructions" starting on page v and those listed in the power system manual.

NOTE! *Apply electrical anti-oxidizing compound to all busbar mating surfaces.*

[ ] 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. If this power system is installed inside an enclosure, open the enclosure's front door.

[ ] 3. Open the power system's distribution cabinet front door.

[ ] 4. Remove the shield from the top row distribution panel.

[ ] 5. Install the kit supplied return busbar (and lug hardware) in the far-right positions of the top row (as viewed from the front of the power system). Note to leave one (1) empty position as shown in Figure 1.4. See Figure 1.4 for assembly and torque values.

[ ] 6. Install the kit supplied insulator on top of the return busbar just installed. See Figure 1.5 for assembly and torque values.

[ ] 7. Install kit supplied -48V busbars. Note to leave one (1) empty position as shown in Figure 1.6. See Figure 1.6 for assembly and torque values.

[ ] 8. Install kit supplied shunt. See Figure 1.7 for assembly and torque values.

[ ] 9. Install kit supplied -48V busbar lug hardware. See Figure 1.7 for assembly and torque values.

[ ] 10. Install kit supplied shunt leads. See Figure 1.8 for assembly.

[ ] 11. Install separately ordered 400 A circuit breaker in positions kit -48V DC generator input busbar installed in. See Figure 1.9.

[ ] 12. Install kit-supplied EIB Board. See Figure 1.8 for assembly and torque value. See also IM582127000900 for more information on installing the EIB board.

[ ] 13. Connect Shunt "+" wire to SH1+ and Shunt "-" wire to SH1- on the EIB Board.

[ ] 14. Plug the I2C connector into the EIB Board.

Figure 1.4 Installing Kit Supplied Return Busbar and Lug Hardware

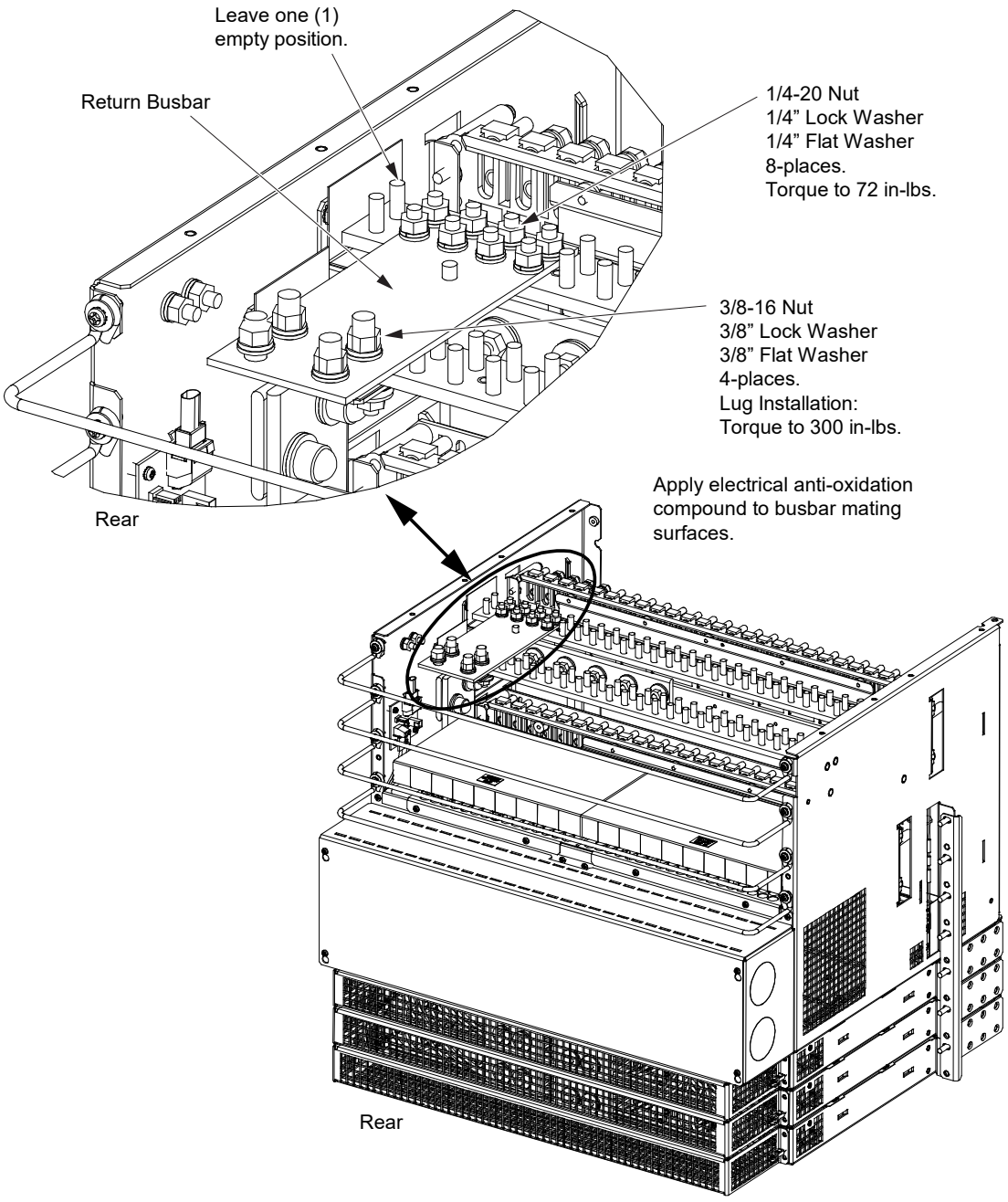


Figure 1.5 Installing Kit Supplied Insulator

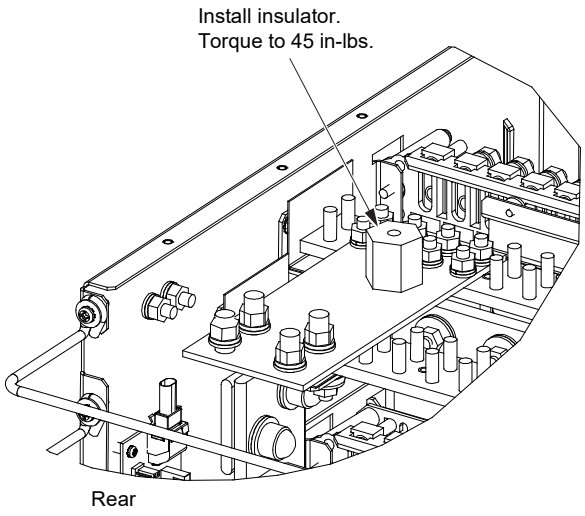


Figure 1.6 Installing Kit Supplied -48V Busbars

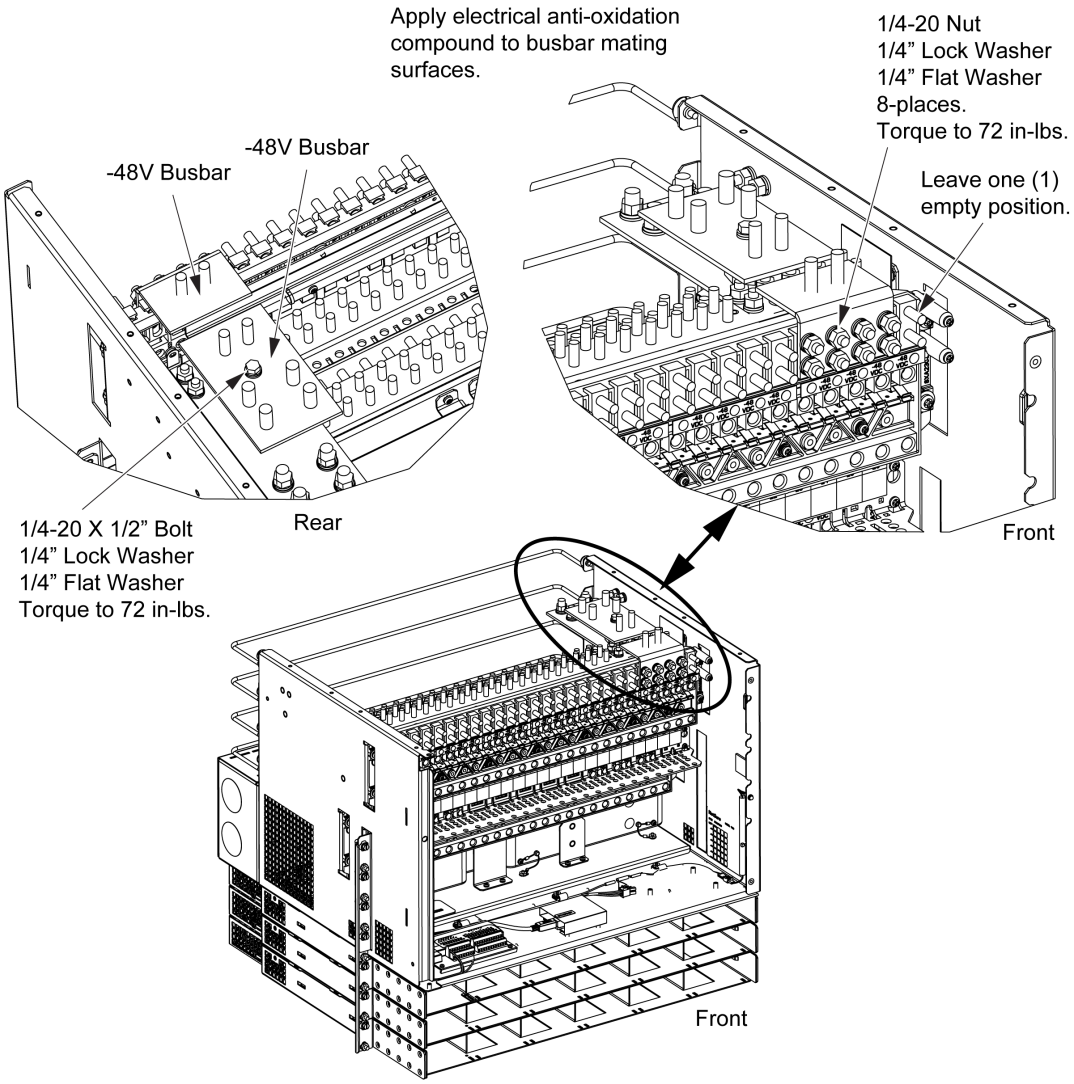


Figure 1.7 Installing Kit Supplied Shunt and Lug Hardware

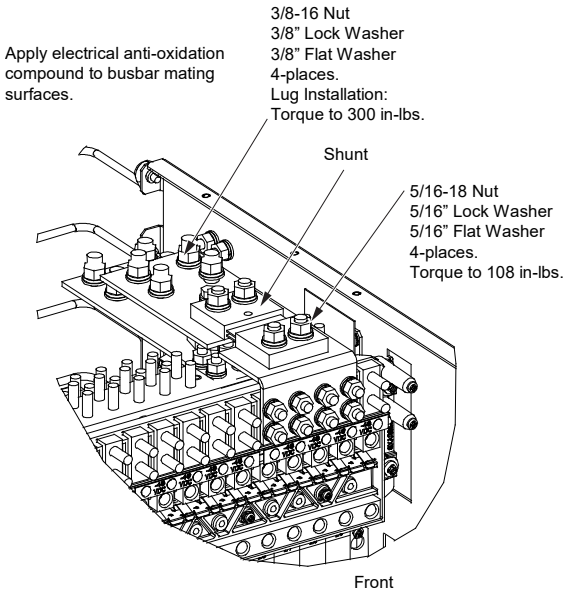


Figure 1.8 Installing Kit Supplied Shunt Leads and EIB Board

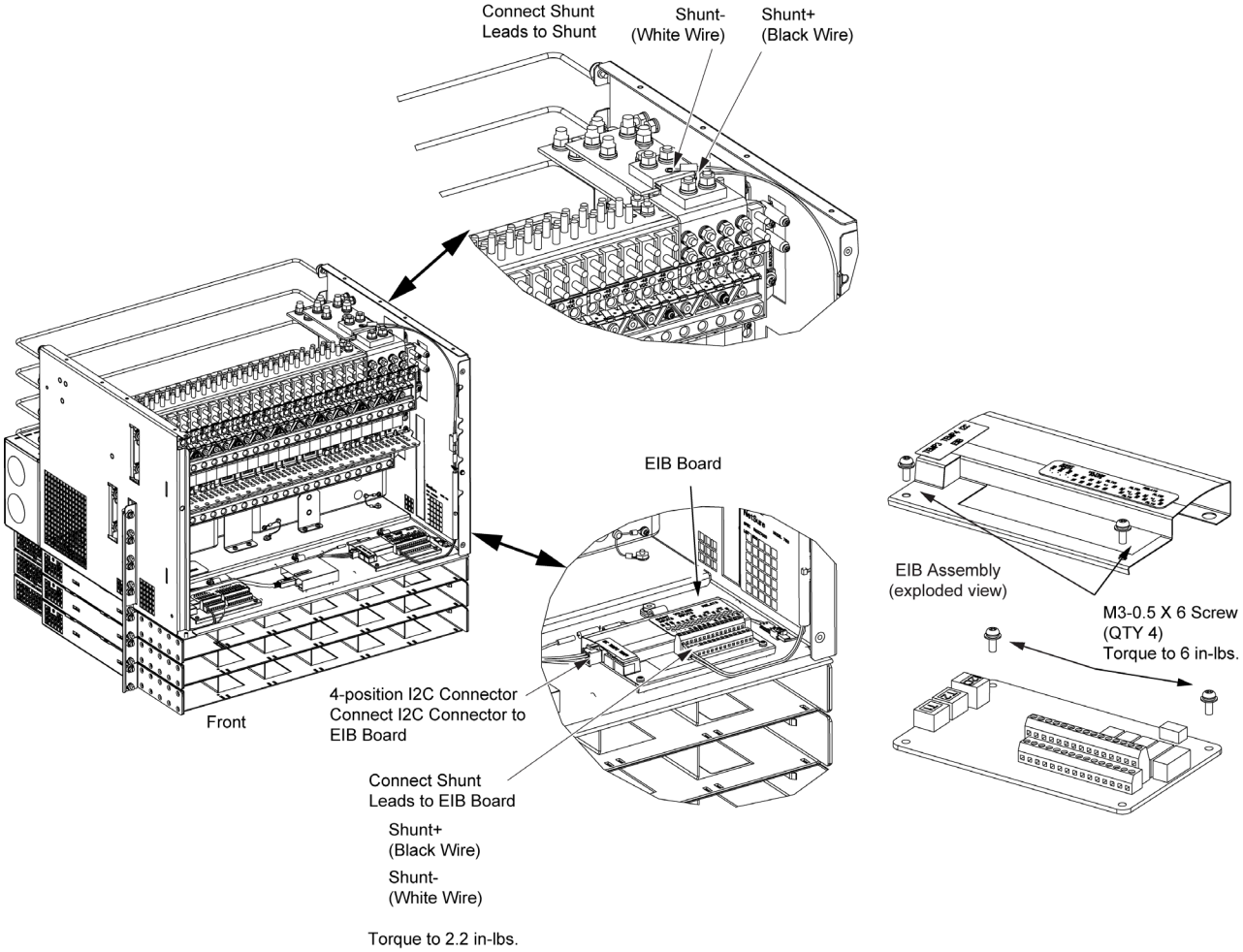
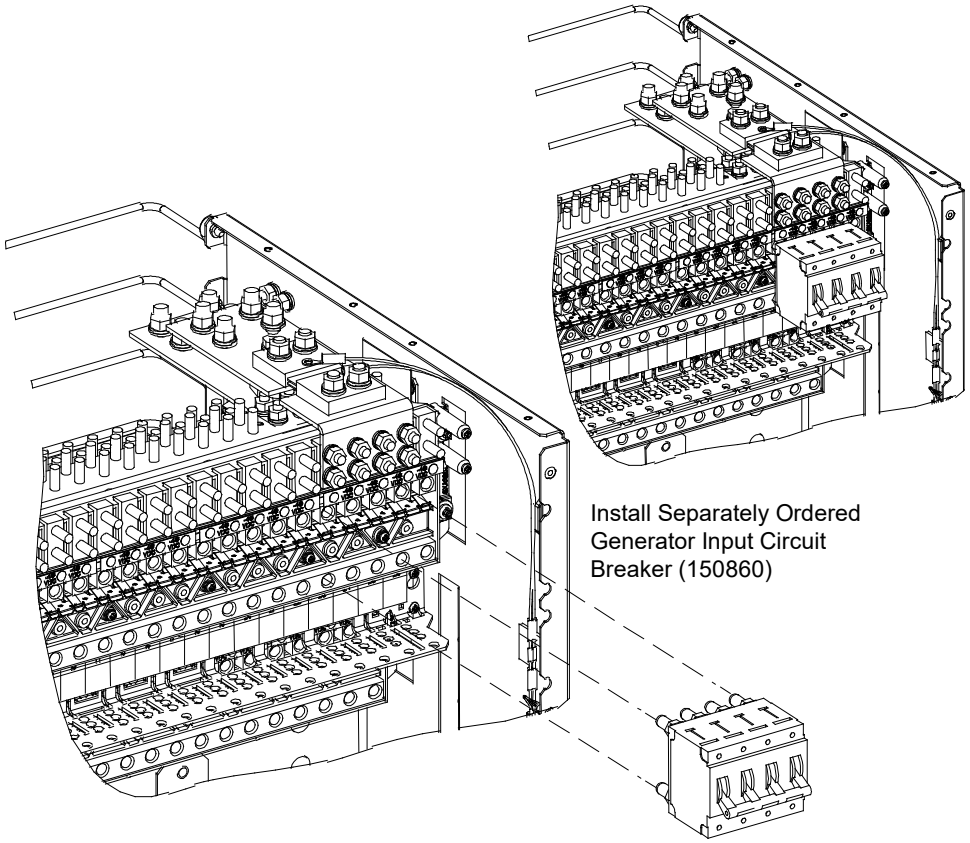


Figure 1.9 Installing 400 A DC Generator Input Circuit Breaker



[ ] 15. Wire input generator leads per Figure 1.10.
- Load should not exceed 75% of the 400 A breaker rating (300 A).
- Landing points for two 4/0 AWG cables (per polarity) terminated in two-hole lugs (3/8" bolt clearance hole, 1" centers).
- Maximum lug width is 1.25".

[ ] 16. Replace the shield to the top row distribution panel.

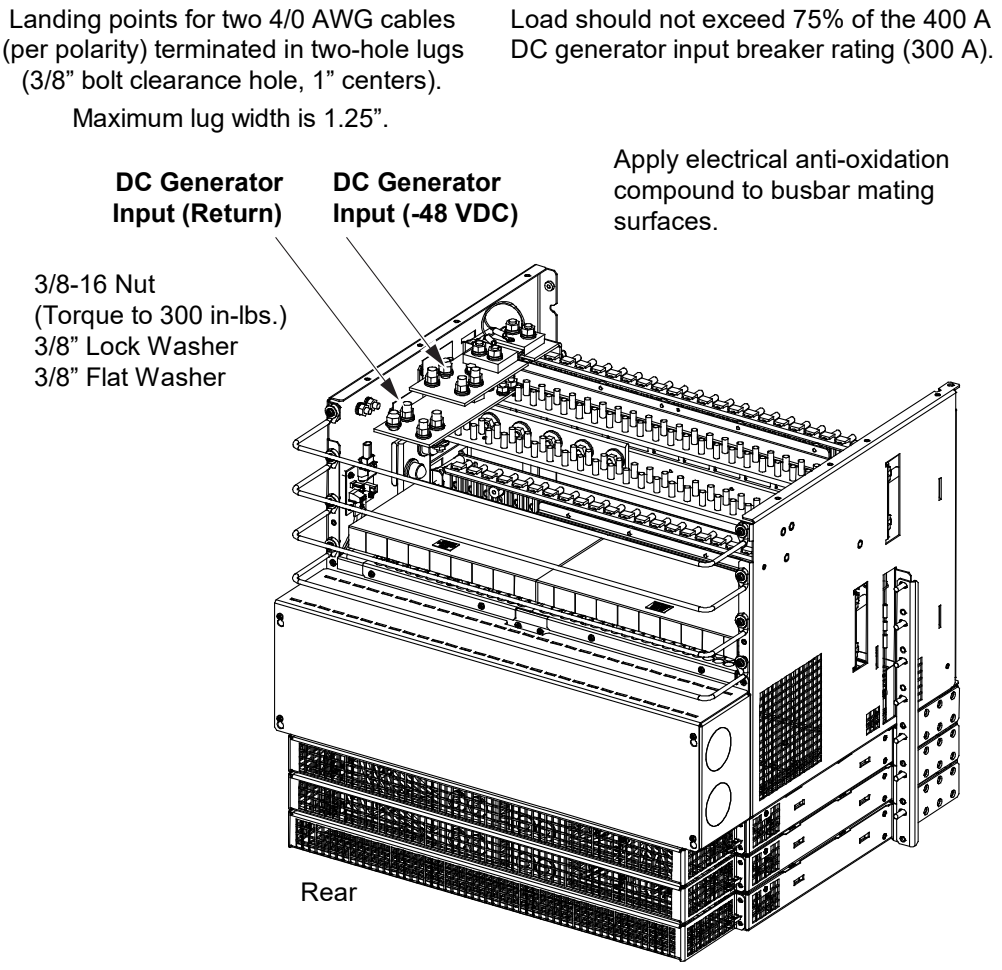
[ ] 17. Close the power system's distribution cabinet front door. (List 600, 601, 900, 901 Only)

[ ] 18. If this power system is installed inside an enclosure, close the enclosure's front door.

[ ] 19. Enable the external alarms or notify appropriate personnel that this procedure is finished.

[ ] 20. Ensure that there are no local or remote alarms active on the system.

Figure 1.10 Wiring DC Generator Input



[ ] 21. Using the NCU controller web interface, program the EIB shunt input for the DC generator input shunt as follows.
Set Shunt as “Source”.
Change names of shunt if desired.
Set the “Full Scale Current” to 500 A.
Set the “Full Scale Voltage” to 25 mV.
Set the "Break Value" to 400 A.
Set the "High 1 Curr Limit Alarm" to 75%.

[ ] 22. The configuration drawing supplied with the power system should be edited to show the above changes.

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