INSTALLATION INSTRUCTIONS

Load Bus Bar Kits PA-222970 and PA-222970-SD For 180-300 kW Standby Generator Sets

The load bus bar kit used in conjunction with bus lug kit allows the generator to be connected to the external load. Use one of the following terminal lug kits; selection will depend on cable size and number of cables to be connected to the bus bars.

Lug Kit	Cable Size	Cables per Lug
PA-274696 & PA-274696-SD	350MCM-06	2
PA-274698 & PA-274698-SD	600MCM-02	2
PA-274699 & PA-274699-SD	750MCM-3/0	3
PA-274700 & PA-274700-SD	600MCM-02	4

Figure 1. Terminal Lug Kits

WARNING

Accidental starting.
Can cause severe injury or death.
Disconnect battery cables before working on generator set (negative lead first and reconnect it last).

Accidental starting can cause severe injury or death. Turn generator master switch to OFF position, disconnect power to battery charger, and remove battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.

WARNING

Hazardous voltage.

Moving rotor.

Can cause severe injury or death.

Do not operate generator set without all guards and electrical enclosures in place.

Hazardous voltage can cause severe injury or death. Perform electrical service only as prescribed in equipment manual. Be sure that generator is properly grounded. Never touch electrical leads or appliances with wet hands, when standing in water, or on wet ground as the chance of electrocution is especially prevalent under such conditions. Wiring should be inspected at the interval recommended in the service schedule—replace leads that are frayed or in poor condition. The function of a generator set is to produce electricity and wherever electricity is present, there is the hazard of electrocution.

NOTE

All electrical connections should be made by a certified electrician or competent electrical technician.

INSTALLATION

NOTE

Before beginning installation, decide whether terminal lugs are to be mounted in upper or lower positions (based on junction box entry point for output cables as specified in plans).

1. Move generator master switch to OFF position. Allow generator set to cool.
2. Remove generator set battery cables, negative lead first.

3. Install lower support bracket (274661) to junction box base with five 1/4-14 x 0.750-in. drill screws (X-794-2) as shown in Figure 2.

4. Install two main bus supports (274659) to insulating channels (336009) with four 5/16-18 x 1.750-in. hex screws (X-125-25), 0.344 x 0.687 x 0.065-in. plain washers (X-25-85), and 5/16-18 whiz nuts (6210-7).

5. Install four load bus assemblies (A-336007) on main bus supports using 16, 5/16-18 x 1.750-in. hex screws (X-125-25), 5/16-18 whiz nuts (6210-7), and 32, 0.344 x 0.687 x 0.065-in. plain washers (X-25-85).

6. With surface clean and dry, apply identification tabs (201620-83—L1, 201620-84—L2, 201620-94—L0, and 201620-95—L3) to insulating channels (336009) at the locations shown in Figure 2.

7. Assemble upper support bracket (274660) to load bus bars with eight 5/16-18 x 1.250-in. hex screws (X-125-24), 5/16-18 whiz nuts (X-6210-7), and 16, 0.344 x 0.687 x 0.065-in. plain washers (X-25-85).

8. Install two support brackets (336008) to junction box with two 10-16 x 0.375-in. self-threading screws (X-67-107).

9. Install load bus/bracket assembly into junction box. Secure upper support bracket (274660) to support brackets (336008) with two 1/4-20 x 0.750-in. hex screws (X-465-16), 0.281 x 0.625 x 0.065-in. plain washers (X-25-40), and 1/4-20 whiz nuts (X-6210-2).

10. Using existing hardware, attach cable (336011) to terminal L0 (neutral) on stator shell. Attach other cable end to bus bar (L0); secure with one 3/8-16 x 1.250-in. hex screw (X-6238-5), 3/8-16 hex nut (X-83-7), and two 0.391 x 0.875 x 0.062-in. plain washers (X-25-18).

11. Connect generator leads to load bar assemblies according to application (see Figure 3) with eight 3/8-16 x 1.250-in. hex screws (X-6238-5), 3/8-16 hex nuts (X-83-7), and 16, 0.391 x 0.875 x 0.062-in. plain washers (X-25-18).

12. Bundle generator leads and secure with cable ties as required.

13. Install lug kit according to instructions provided with kit.

14. Install lug insulator (336010) to left side cover (as viewed from generator end) with four pop rivets (X-781-11) and 0.191 x 0.500 x 0.034-in. plain washers (X-25-92).

    NOTE

    Position rivet so that head is outside the junction box as shown in Figure 2, Detail B.

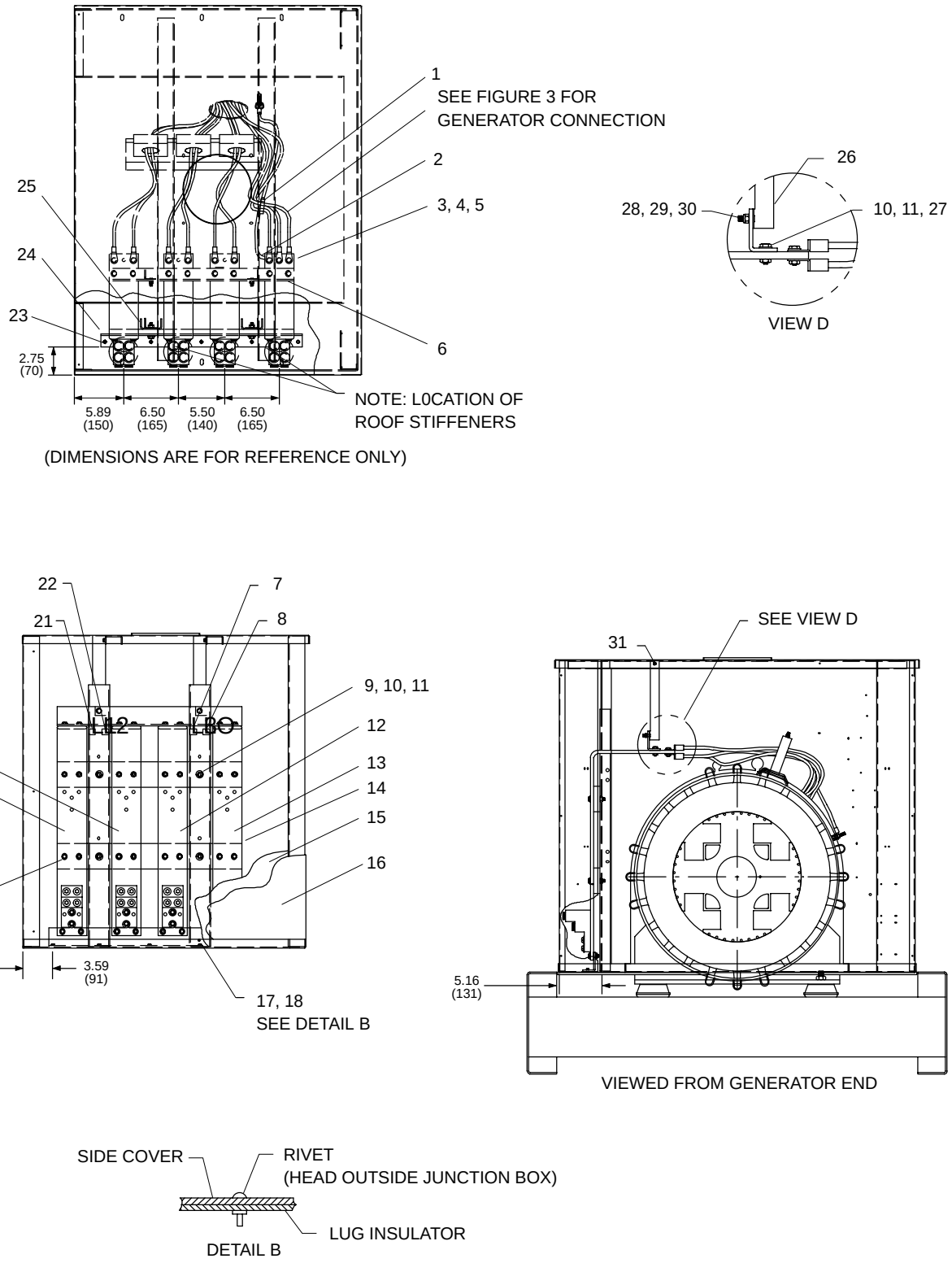
15. Replace junction box access panels.

16. Reconnect generator set battery cables, negative lead last.

17. Move generator set master switch to normal operating position.

LEGEND—Figure 2

1. Cable Tie
2. Cable (336011)
3. Hex Screw (X-6238-5) qty. 9
4. Plain Washer (X-25-18) qty. 18
5. Hex Nut (X-83-7) qty. 9
6. Upper Support Bracket (274660)
7. Identification Tab (L3) (201620-95)
8. Identification Tab (L0) (201620-94)
9. Hex Screw (X-125-25) qty. 28
10. Whiz Nut (X-6210-7) qty. 36
11. Plain Washer (X-25-85) qty. 68
12. Bus Assembly—L3 (A-336007)
13. Bus Assembly—L0 (A-336007)
14. Main Bus Support (274659) qty. 2
15. Lug Insulator (336010)
16. Side Cover
17. Pop Rivet (X-781-11) qty. 4
18. Plain Washer (X-25-92) qty. 4
19. Bus Assembly (L1) (A-336007)
20. Bus Assembly (L2) (A-336007)
21. Identification Tab—L1 (201620-83)
22. Identification Tab—L2 (201620-84)
23. Drill Screw (X-794-2) qty. 5
24. Lower Support Bracket (274661)
25. Insulating Channel (336009) qty. 2
26. Support Bracket (336008) qty. 2
27. Hex Screw (X-125-24) qty. 8
28. Hex Screw (X-465-16) qty. 8
29. Plain Washer (X-25-40) qty. 2
30. Whiz Nut (X-6210-2) qty. 2
31. Self-Threading Screw (X-67-107) qty. 2



Dimensions in ( ) are millimeter equivalents.

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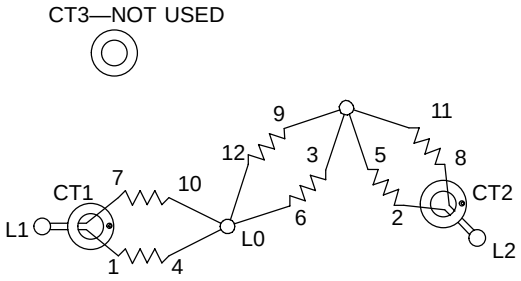
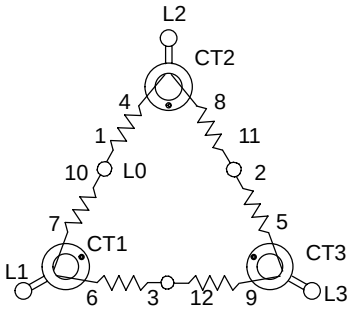
Figure 2. Load Bus Kit Installation

60 HZ—120/240 V—1 PHASE 3 WIRE
50 HZ—110/220 V—1 PHASE 3 WIRE
USED 20 kW–100 kW GENERATORS ONLY



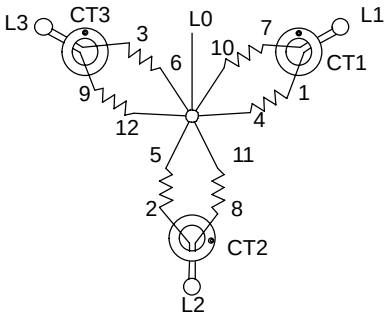
TB2 UP V7 LO METER SCALE LAMP JUMPER

60 HZ—120/240 V—3 PHASE 4 WIRE DELTA
50 HZ—110/220 V—3 PHASE 4 WIRE DELTA



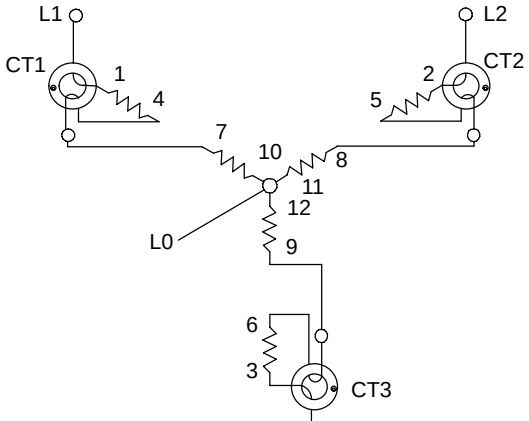
TB2 UP V7 LO METER SCALE LAMP JUMPER

60 HZ—120/208 V OR 139/240 V—3 PHASE 4 WIRE L0W WYE
50 HZ—120/208 V OR 110/190 V—3 PHASE 4 WIRE L0W WYE



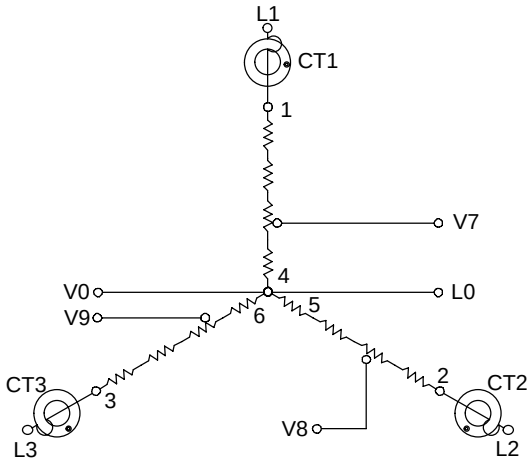
TB2 UP V7 LO METER SCALE LAMP JUMPER

60 HZ—277/480 V—3 PHASE 4 WIRE L0W WYE
50 HZ—220/380 V—3 PHASE 4 WIRE L0W WYE



TB2 UP V7 LO METER SCALE LAMP JUMPER

6 LEAD STATOR
600 VOLT



TB2 UP V7 LO METER SCALE LAMP JUMPER

NOTE: TWO TURNS THROUGH CURRENT TRANSFORMER

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Figure 3. Generator Connections

Parts List

Kits: PA-222970 and PA-222970-SD

Description	Qty.	Part No.
Bus Assembly	4	A-336007
Screw, 5/16-18 x 1.250 in. hex	8	X-125-24
Screw, 5/16-18 x 1.750 in. hex	28	X-125-25
Washer, 0.391 x 0.875 x 0.062 in. plain	18	X-25-18
Washer, 0.281 x 0.625 x 0.065 in. plain	2	X-25-40
Washer, 0.344 x 0.687 x 0.065 in. plain	68	X-25-85
Washer, 0.191 x 0.500 x 0.034 in. plain	4	X-25-92
Screw, 1/4-20 x 0.750 in. hex	2	X-465-16
Nut, 1/4-20 whiz	2	X-6210-2
Nut, 5/16-18 whiz	36	X-6210-7
Screw, 3/8-16 x 1.250 in. hex	9	X-6238-5
Screw, 10-16 x 0.375 in. self-threading	2	X-67-107
Rivet, pop	4	X-781-11
Screw, 1/4-14 x 0.750 in. drill	5	X-794-2
Nut, 3/8-16 hex	9	X-83-7
Tab, identification	1	201620-83
Tab, identification	1	201620-84
Tab, identification	1	201620-94
Tab, identification	1	201620-95
Support, main bus	2	274659
Bracket, upper support	1	274660
Bracket, lower support	1	274661
Bracket, support	2	336008
Channel, insulating	2	336009
Insulator, lug	1	336010
Cable	1	336011