

INSTALLATION INSTRUCTIONS

Load Bus Bar Kit PA-222968 For 125-150 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.

NOTE

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

Lug Kit	Cable Size	Cables per Lug
274694	350MCM-06	1
274696	350MCM-06	2
274696-SD	350MCM-06	2
274697	600MCM-04	1
274778	600MCM-02	2
274779	750MCM-3/0	3

Figure 1. Terminal Lug Kits



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.

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 upper right (274741) and left (274432) support brackets to junction box with four 5/16-18 x 0.750-in. hex screws (X-125-3), 0.344 x 0.687 x 0.065-in. plain washers (X-25-85), and 5/16-18 whiz nuts (X-6210-7), as shown in Figure 2.

4. Install lower support brackets (274433) to right and left support brackets with eight 5/16-18 x 0.750-in. hex screws (X-125-3), 0.344 x 0.687 x 0.065-in. plain washers (X-25-85), and 5/16-18 whiz nuts (X-6210-7).

5. Install 16 panel insulators (233269) to support brackets with 16, 1/4-20 x 0.500-in. hex screws (X-465-6) and 0.281 x 0.625 x 1.125-in. plain washers (X-25-68).

NOTE

If load lugs are to be mounted in the upper position, proceed to Step 9.

6. Install two support brackets (222965) to junction box with four 5/16-18 x 0.750-in. hex screws (X-125-3), 0.344 x 0.687 x 0.065-in. plain washers (X-25-85), and 5/16-18 whiz nuts (X-6210-7).
7. Install support bracket (222963) with four 5/16-18 x 0.750-in. hex screws (X-125-3), 0.344 x 0.687 x 0.065-in. plain washers (X-25-85), and 5/16-18 whiz nuts (X-6210-7).
8. Install eight panel insulators (233269) on support bracket with eight 1/4-20 x 0.500-in. hex screws (X-465-6) and 0.281 x 0.625 x 1.125-in. plain washers (X-25-68).
9. Install insulator channels (274434) to load bus bars with nylon rivets (X-6264-1)
10. Install load bus bars (275453) on panel insulators with 16 (four each load bus bar) 1/4-20 x 0.625-in. hex screws (X-465-2), 0.281 x 0.625 x 1.125-in. plain washers (X-25-68), and eight 0.281 x 0.625 x 0.065-in. plain washers (X-25-40).

NOTE

Use eight 0.281 x 0.625 x 0.065-in. plain washers (X-25-40) only when mounting lug restrainer.

11. With surface clean and dry, apply identification tabs (201620-83—L1, 201620-84—L2, 201620-94—L0, and 201620-95—L3) to upper support bracket (274433) at the locations shown in Figure 2.
12. Using existing hardware, attach lead (LN-9024-3535) to terminal L0 (neutral) on stator shell. Attach other lead end to bus bar L0; secure with one 5/16-18 x 1.00-in. hex screw (X-125-5), 5/16-18 whiz nut (X-6210-7), and two 0.344 x 0.687 x 0.065-in. plain washers (X-25-85).
13. Connect generator leads to load bus bars according to application (see Figure 3) with eight 5/16-18 x 1.00-in. hex screws (X-125-5), 5/16-18 whiz nuts (X-6210-7), and 16, 0.344 x 0.687 x

0.065-in. plain washers (X-25-85). See Figure 2, Detail A.

14. Bundle generator leads to load bus bar L0 and secure with cable tie (X-468-1). Repeat procedure for load bus bar leads L1, L2, and L3.
15. Install lug kit according to instructions provided with kit.
16. Bundle generator leads to load bus bar L1 together with cable ties (X-468-2). Repeat for leads to load bus bars L2 and L3.
17. Attach lug insulator (275598) to right side cover (as viewed from engine end) with four pop rivets (X-781-11) and 0.191 x 0.500 x 0.034-in. plain washers (X-25-92).

NOTE

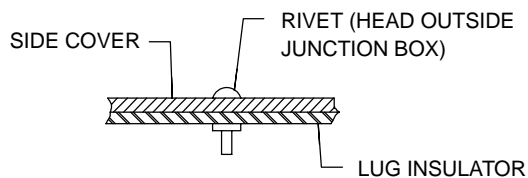
Position rivet so that head is outside the junction box. See Figure 1, View B-B.

18. Replace junction box access covers.
19. Reconnect generator set battery cables, negative lead last.
20. Move generator set master switch to normal operating position.

LEGEND—Figure 2

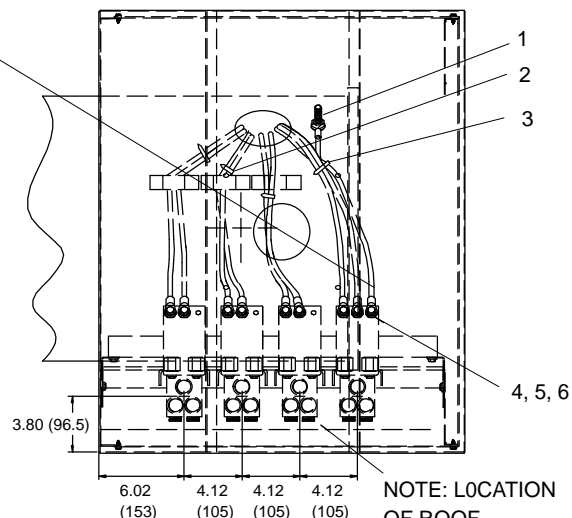
1. Lead (LN-9024-3535) qty. 2
2. Cable Tie (X-468-2) qty. 3
3. Cable Tie (X-468-1)
4. Hex Screw (X-125-5) qty. 9
5. Plain Washer (X-25-85) qty. 38
6. Whiz Nut (X-6210-7) qty. 29
7. Identification Tab—L3 (201620-95)
8. Identification Tab—L0 (201620-94)
9. Upper Right Support Bracket (274741)
10. Hex Screw (X-125-3) qty. 20
11. Load Bus Bar—L0 (275453)
12. Load Bus Bar—L3 (275453)
13. Lug Insulator (275598)
14. Side Cover
15. Pop Rivet (X-781-11) qty. 4
16. Plain Washer (X-25-92) qty. 4
17. Plain Washer (X-25-40) qty. 16
18. Support Bracket (222965) qty. 2
19. Support Bracket (222963)
20. Load Bus Bar—L1 (275453)
21. Load Bus Bar—L2 (275453)
22. Nylon Rivet (X-6264-1) qty. 4
23. Plain Washer (X-25-68) qty. 40
24. Hex Screw (X-465-2) qty. 24
25. Upper Left Support Bracket (274432)
26. Lower Support Bracket (274433) qty. 2
27. Identification Tab—L1 (201620-83)
28. Identification Tab—L2 (201620-84)
29. Insulating Channel (274434) qty. 4
30. Hex Screw (X-465-6) qty. 24
31. Panel Insulator (233269) qty. 24

SEE FIGURE 3 FOR
GENERATOR CONNECTIONS



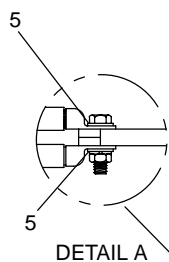
VIEW B-B

NOTE: FOR USE IN JUNCTION BOX 222825

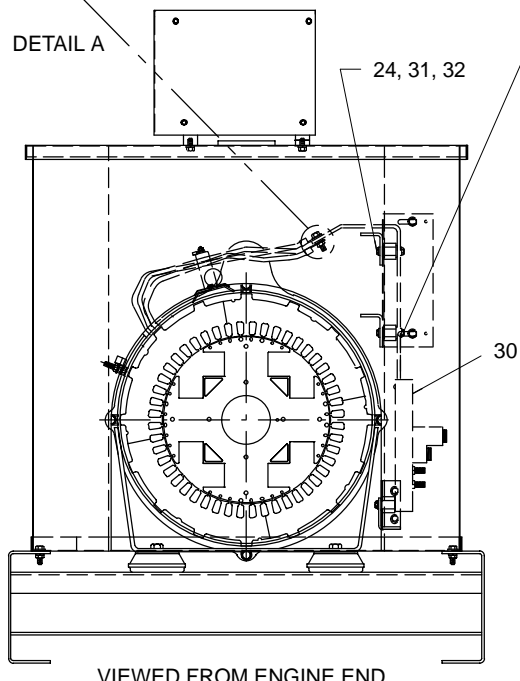


NOTE: LOCATION
OF ROOF
STIFFENERS

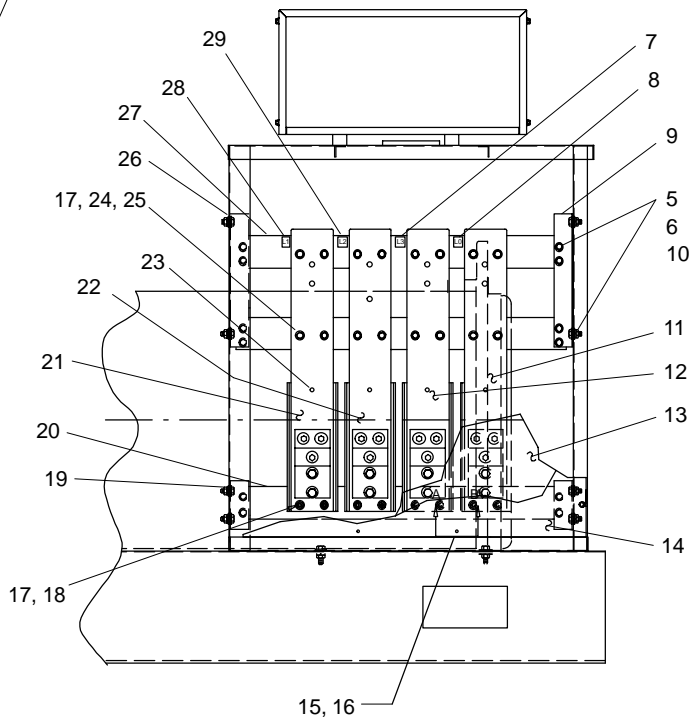
(DIMENSIONS ARE FOR REFERENCE ONLY)



NOTE: USE X-25-40 WASHERS
ONLY WHEN MOUNTING LUG
RESTRAINER



VIEWED FROM ENGINE END

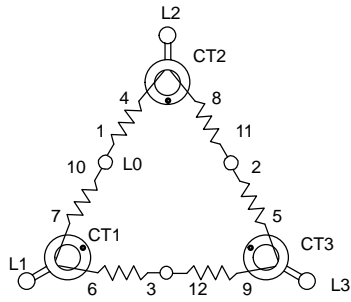


Dimensions in () are millimeter equivalents.

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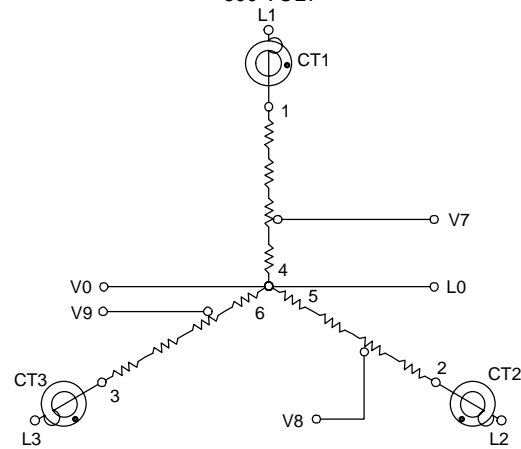
Figure 2. Load Bus Kit Installation

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



TB2 METER SCALE
LAMP JUMPER

6 LEAD STATOR
600 VOLT

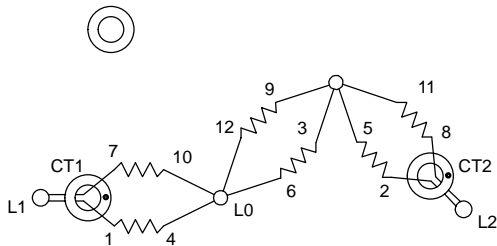


TB2 METER SCALE
LAMP JUMPER

NOTE: TWO TURNS
THROUGH CURRENT
TRANSFORMER

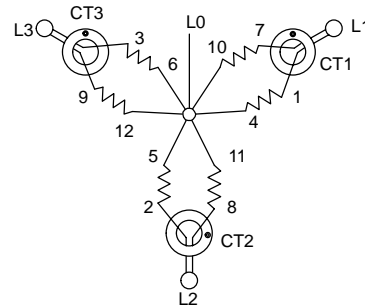
60 HZ—120/240 V—1 PHASE 3 WIRE
50 HZ—110/220 V—1 PHASE 3 WIRE
USED ON 20 KW–100 KW GENERATORS ONLY

CT3 — NOT USED



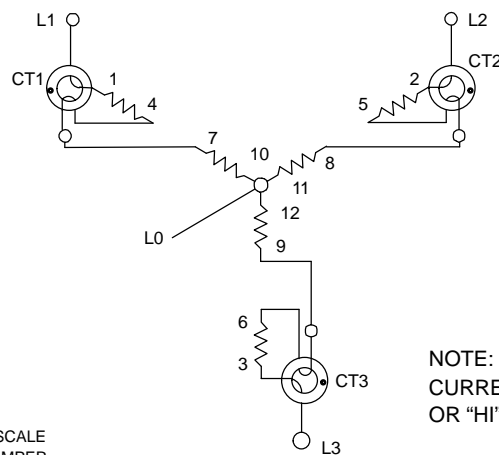
TB2 METER SCALE
LAMP JUMPER

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



TB2 METER SCALE
LAMP JUMPER

60 HZ—277/480 V—3 PHASE 4 WIRE HIGH WYE
50 HZ—220/308 V—3 PHASE 4 WIRE HIGH WYE



TB2 METER SCALE
LAMP JUMPER

NOTE:
CURRENT TRANSFORMER DOT
OR "HI" TOWARD GENERATOR

EY-273000-

Figure 3. Generator Connections

Parts List		
Kit: PA-222968		
Description	Qty.	Part No.
Lead	1	LN-9024-3535
Screw, 5/16-18 x 0.750 in. hex	20	X-125-3
Screw, 5/16-18 x 1.00 in.	9	X-125-5
Washer, 0.281 x 0.625 x 0.065 in. plain	16	X-25-40
Washer, 0.281 x 0.625 x 0.125 in. plain	40	X-25-68
Washer, 0.344 x 0.687 x 0.065 in. plain	38	X-25-85
Washer, 0.191 x 0.500 x 0.034 in. plain	4	X-25-92
Screw, 1/4-20 x 0.625 in. hex	24	X-465-2
Screw, 1/4-20 x 0.500 in. hex	24	X-465-6
Tie, cable	1	X-468-1
Tie, cable	3	X-468-2
Nut, 5/16-18 whiz	29	X-6210-7
Rivet, nylon	4	X-6264-1
Rivet, pop	4	X-781-11
Tab, identification	1	201620-83
Tab, identification	1	201620-84
Tab, identification	1	201620-94
Tab, identification	1	201620-95
Bracket, support	1	222963
Bracket, support	2	222965
Insulator, panel	24	233269
Bracket, upper left support	1	274432
Bracket, lower support	2	274433
Channel, insulating	4	274434
Bracket, upper right support	1	274741
Bar, load bus	4	275453
Insulator, lug	1	275598