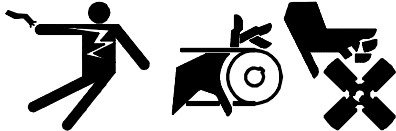

INSTALLATION INSTRUCTIONS

Load Bus Bar Kits PA-293960, PA-293960-SD, PA-293961, PA-293961-SD, and PA-293962 For 350-900 kW Standby Generator Sets

The load bus bar kits allow the generator to be connected to the external load. The terminal lug must be customer-supplied.

**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

1. Move generator master switch to OFF position. Allow generator set to cool.
2. Remove generator set battery cables, negative lead first.
3. Remove junction box access covers.
4. If holes are not present, drill two 0.50-in. (12.7-mm) diameter holes at the rear junction box panel as shown in Figure 1.

NOTE

Observe all appropriate safety procedures for use of power tools when drilling holes. Remove all burrs and metal chips from the work area before continuing installation procedure.

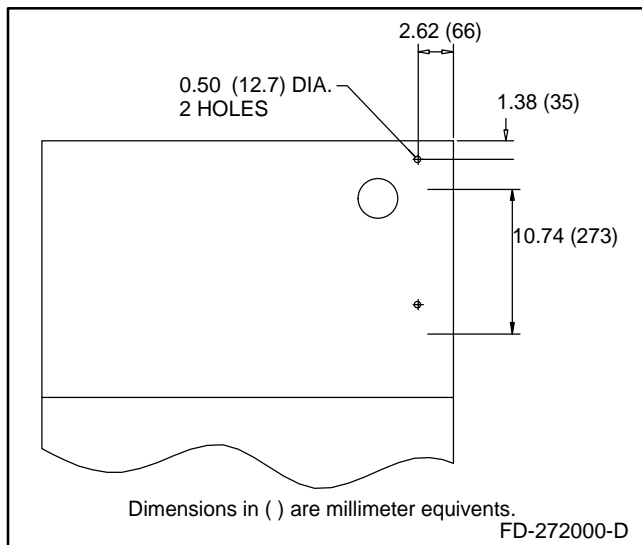
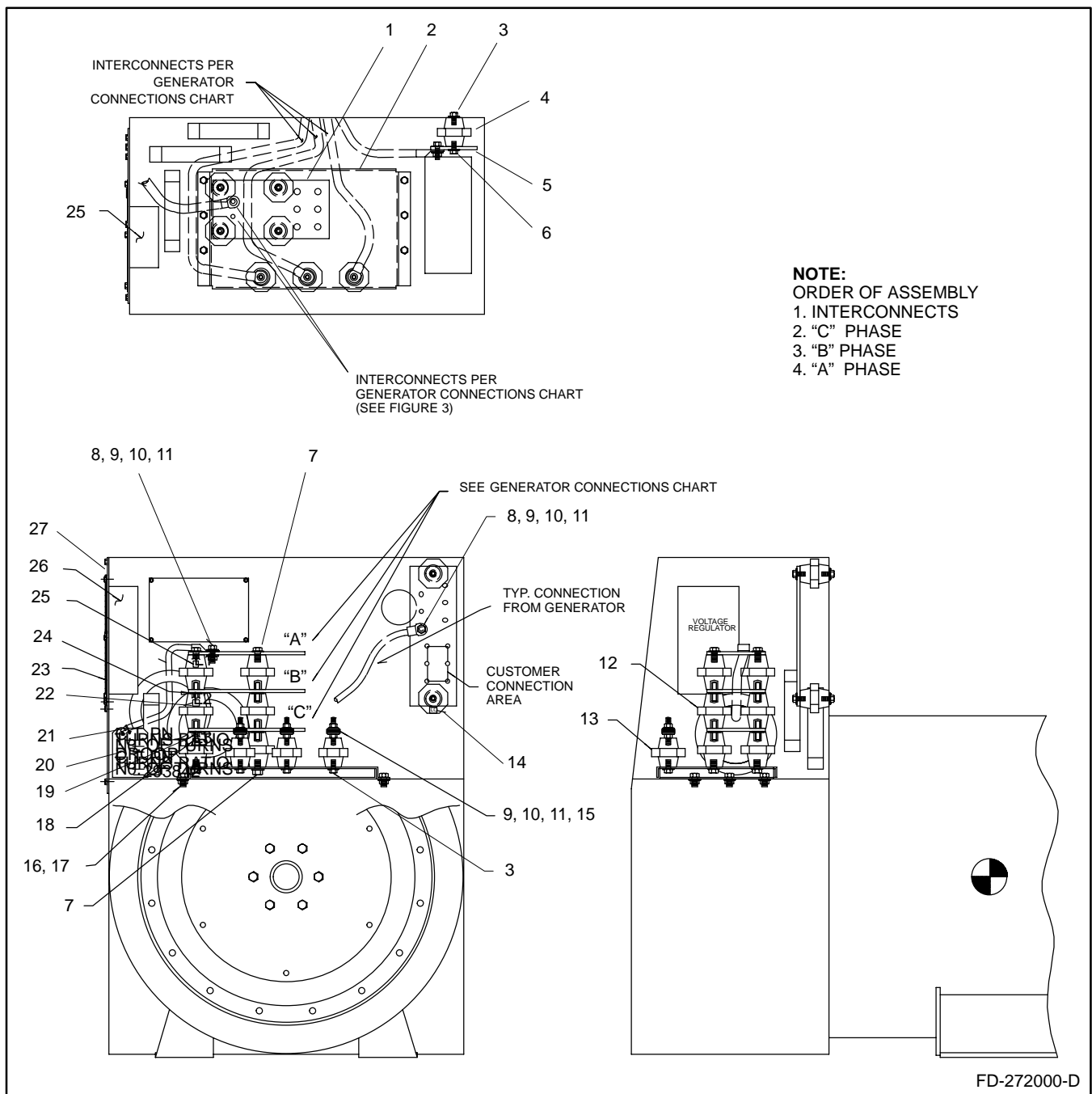


Figure 1. Mounting Hole Locations

5. Install two standoff insulators (X-6128-18) with two 3/8-16 x 0.750-in. hex flange screws (X-6217-5). Apply identification tab (201620-94) to lower insulator as shown in Figure 2.

6. Attach load bus (293835) to insulators with two 3/8-16 x 1.00-in. hex flange screws (X-6217-6).
7. Install four standoff insulators (X-6128-8) to base plate (293833—kit PA-293962, 293834—kits PA-923961, PA-293961-SD, PA-293960, and PA-293960-SD) with four 1/2-13 x 0.750-in. hex flange screws (X-6217-8). Install three standoff insulators (X-6128-18) on base plate with three 3/8-16 x 0.750-in. hex flange screws (X-6217-5).
8. Install the base plate assembly to the junction box with six 1/2-13 x 0.750-in. hex screws (X-129-15) and 1/2-13 whiz nuts (X-6210-12).
9. Install three 3/8-16 UNC-2A x 2.50-in. brass studs (X-352-59), and 3/8-16 hex nuts (X-83-7) in standoff insulators (X-6128-18).
10. Install three 0.406 x 1.00 x 0.078-in. plain washers (X-25-118) and spring washers (X-6086-6) over studs. Install generator interconnection leads on studs and secure with three 0.406 x 1.00 x 0.078-in. plain washers (X-25-118) and 3/8-16 hex nuts (X-83-7).
11. Install four 1/2-13 UNC-2A x 1.63-in. steel studs (X-352-62) in standoff insulators (X-6128-18).
12. Place load bus (293836—kits PA-293960 and PA-293960-SD, 293837—kits PA-293961 and PA-293961-SD, or 293838—kit PA-293962) over studs.
13. Install four 1/2-13 UNC-2A x 1.63-in. steel studs (X-352-62) in standoff insulators (X-6128-18). Place two 0.562 x 1.250 x 0.156-in. plain washer (X-25-30) on each stud. (Washers are not used with kits PA-293960 and PA-293960-SD.)



- | | |
|---|------------------------------------|
| 1. Plain Washer | 15. Stud (X-352-59) qty. 3 |
| 2. Load Bus (293836, 293837, or 293838) | 16. Whiz Nut (X-6210-12) qty. 6 |
| 3. Hex Screw (X-6217-5) qty. 5 | 17. Hex Screw (X-129-15) qty. 6 |
| 4. Standoff Insulator (X-6128-18) qty. 5 | 18. Identification Tab (201620-95) |
| 5. Load Bus (293835) | 19. Stud (X-352-62) qty. 8 |
| 6. Hex Flange Screw (X-6217-6) qty. 2 | 20. CT Description Tag (293842) |
| 7. Hex Flange Screw (X-6217-8) qty. 8 | 21. Cable Tie (X-468-2) |
| 8. Hex Screw (X-6238-4) qty. 9 | 22. Identification Tab (201620-84) |
| 9. Hex Nut (X-83-7) qty. 15 | 23. Regulator Door (293966) |
| 10. Spring Washer (X-6086-6) qty. 2 | 24. Plain Washer (X-25-30) qty. 8 |
| 11. Plain Washer (X-25-118) qty. 25 | 25. Identification Tab (201620-83) |
| 12. Standoff Insulator (X-6128-8) qty. 12 | 26. Voltage Regulator |
| 13. Standoff Insulator (X-6128-18) qty. 3 | 27. Panel (293968 or 203969) |
| 14. Identification Tab (201620-94) | |

Figure 2. Load Bus Kit—Installation

14. Place load bus (293836—kits PA-293960 and PA-293960-SD, 293837—kits PA-293961 and PA-293961-SD, or 293838—kit PA-293962) over studs.
15. Install four standoff insulators (X-6128-8) on studs.
16. Install load bus (293836—kits PA-293960 and PA-293960-SD, 293837—kits PA-293961 and PA-293961-SD, or 293838—kit PA-293962), on standoff insulators with four 1/2-13 x 0.750-in. hex flange screws (X-6217-8).
17. Apply identification tabs (201620-95, 201620-84, and 201620-83) to insulators as shown in Figure 2.
18. Connect each generator interconnect lead to load bus with one 3/8-16 x 1.250-in. hex screw (X-6238-4), two 0.406 x 1.00 x 0.078-in. plain washers (X-25-118) (one each side of generator lead), and one spring washer (X-6086-6) (place spring washer between generator lead and plain washer). Secure lead to load bus with 3/8-16 hex nuts (X-83-7).
19. Attach CT (current transformer) description tag (293842) to generator interconnect lead with cable tie (X-468-2).

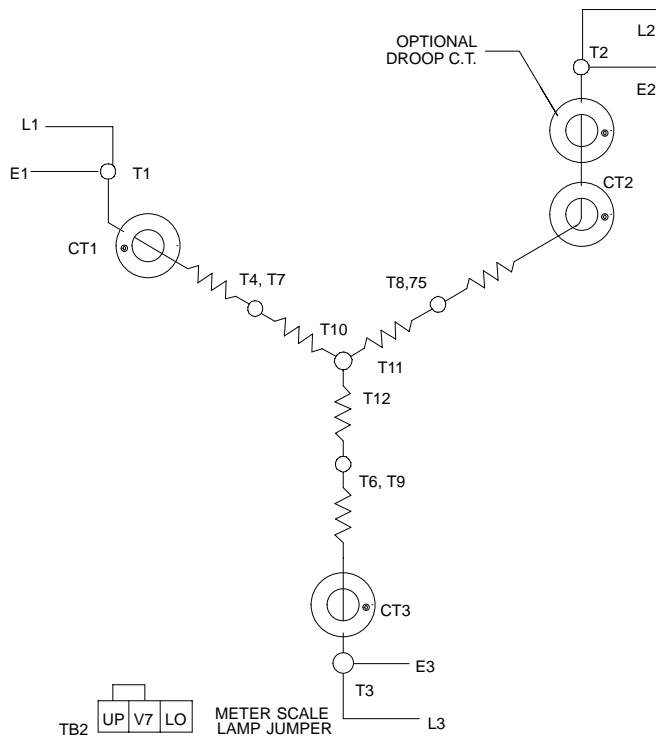
NOTE

CT description tag (293842) should be positioned so that it is clearly visible when access panel is removed.

20. Remove voltage regulator from regulator door. (Set voltage regulator aside; save hardware for reuse.) Remove regulator door from side panel and remove side panel from junction box (save hardware for reuse).
21. Install new side panel (293968—kits PA-293960, PA-293960-SD, PA-293961, and PA-293961-SD, 293969—kit PA-293962).
22. Install new regulator door (293966) on side panel. Install voltage regulator to door.
23. Connect generator phase connections in the following order (see Figure 3):
 - “C” Phase
 - “B” Phase
 - “A” Phase
24. Replace junction box access covers.
25. Reconnect generator set battery cables, negative lead last.

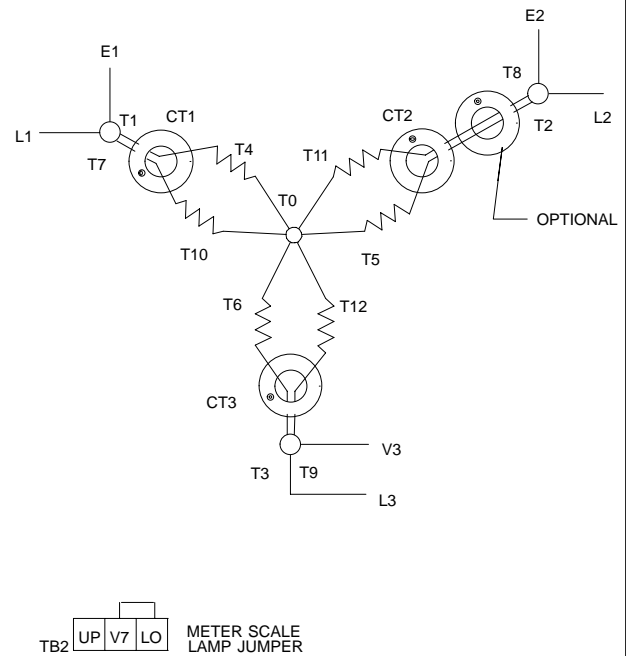
10 OR 12 LEAD STATOR

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



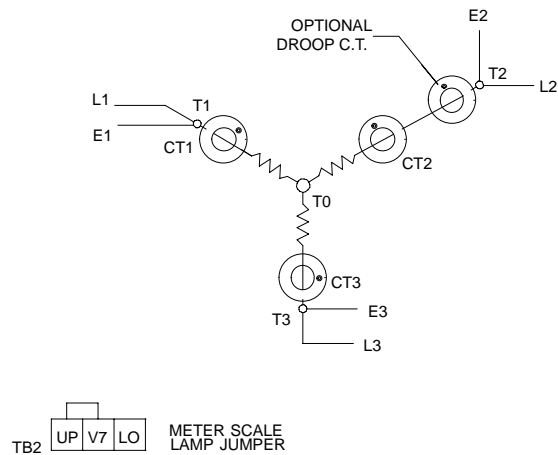
10 OR 12 LEAD STATOR

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



4 LEAD GENERATOR

60 HZ—277/480 V
50 HZ—220/380 V OR 240/416 V



NOTE:

1. ON 10 LEAD GENERATORS, LEADST10, T11, AND T12 ARE ALL BROUGHT OUT TOGETHER AND LABELED T0.
2. CURRENT TRANSFORMER DOT OR "HI" TOWARDS GENERATOR.
3. E = SENSING
L = POWER
(UNLESS NOTED)

FD-272000-D

Figure 3. Generator Connections

Parts List		
Kits: PA-293960 and PA-293960-SD		
Description	Qty.	Part No.
Screw, 1/2-13 x 0.750 in. hex	6	X-129-15
Washer, 0.406 x 1.00 x 0.078 in. plain	25	X-25-118
Stud, 3/8-16 UNC-2A x 2.50 in. brass	3	X-352-59
Stud, 1/2-13 UNC-2A x 1.63 in. steel	8	X-352-62
Tie, cable	1	X-468-2
Washer, spring	12	X-6086-6
Insulator, standoff	5	X-6128-18
Insulator, standoff	12	X-6128-8
Nut, 1/2-13 whiz	6	X-6210-12
Screw, 3/8-16 x 0.750 in. hex flange	5	X-6217-5
Screw, 3/8-16 x 1.00 in. hex flange	2	X-6217-6
Screw, 1/2-13 x 0.750 in. hex flange	8	X-6217-8
Screw, 3/8-16 x 1.250 in. hex	9	X-6238-4
Nut, 3/8-16 hex	15	X-83-7
Tab, identification	1	201620-83
Tab, identification	1	201620-84
Tab, identification	1	201620-94
Tab, identification	1	201620-95
Plate, base	1	293834
Bus, load	1	293835
Bus, load	3	293836
Tag, CT description	1	293842
Door, regulator	1	293966
Panel, side	1	293968

Parts List		
Kits: PA-293961, PA-293961-SD, and PA-293962		
Description	Qty.	Part No.
Screw, 1/2-13 x 0.750 in. hex	6	X-129-15
Washer, 0.406 x 1.00 x 0.078 in. plain	25	X-25-118
Washer, 0.562 x 1.250 x 0.156 in. plain	8	X-25-30
Stud, 3/8-16 UNC-2A x 2.50 in. brass	3	X-352-59
Stud, 1/2-13 UNC-2A x 1.63 in. steel	8	X-352-62
Tie, cable	1	X-468-2
Washer, spring	12	X-6086-6
Insulator, standoff	5	X-6128-18
Insulator, standoff	12	X-6128-8
Nut, 1/2-13 whiz	6	X-6210-12
Screw, 3/8-16 x 0.750 in. hex flange	5	X-6217-5
Screw, 3/8-16 x 1.00 in. hex flange	2	X-6217-6
Screw, 1/2-13 x 0.750 in. hex flange	8	X-6217-8
Screw, 3/8-16 x 1.250 in. hex	9	X-6238-4
Nut, 3/8-16 hex	15	X-83-7
Tab, identification	1	201620-83
Tab, identification	1	201620-84
Tab, identification	1	201620-94
Tab, identification	1	201620-95
Plate, base (Kit PA-293962)	1	293833
Plate, base (Kits PA-293961 and PA-293961-SD)	1	293834
Bus, load	1	293835
Bus, load (Kits PA-293961 and PA-293961-SD)	3	293837
Bus, load (Kit PA-293962)	3	293838
Tag, CT description	1	293842
Door, regulator	1	293966
Panel, side (Kits PA-293961 and PA-293961-SD)	1	293968
Panel, side (Kit PA-293962)	1	293969