INSTALLATION INSTRUCTIONS

Subbase Fuel Tanks
Subbase Day Tanks
20-180ROZJ Standby Generator Sets

Kits covered by this TT include:

PA-273372	PA-273993
PA–273986	PA-273994
PA-273987	PA-273995
PA-273988	PA-273997
PA-273990	PA-273998
PA-273991	PA-273999

Subbase fuel tanks provide fuel storage immediately beneath the generator set. This allows the engine fuel transfer pump to easily draw fuel for starting and running. The subbase fuel tank also provides a convenient location to connect fuel injector return lines. Flexible fuel lines are not included in kits and must be ordered separately. See authorized distributor/dealer for flexible fuel line kit part numbers. Subbase fuel tank placement must comply with local and state codes.

Fuel lines should be constructed of Schedule 40 black iron pipe or copper tubing. Galvanized pipe, fittings, or tanks should never be used with diesel fuel systems. The fuel will react chemically with the galvanized coating, causing it to peel and clog fuel filters and damage fuel injection components.

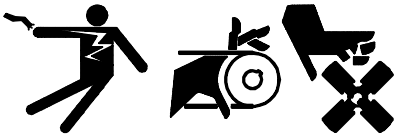
Capacity (Gallons)	Fuel Tank Kit Number	Tank Height Inches (mm)	Tank Weight Lbs. (kg)	Tank Part Number (Included in Kit)	Fuel Gauge/Kit (Optional)	Low Fuel Level Switch Kit (Optional)
20-60ROZJ						
30	PA-273986	8 (203)	230 (104)	273946	PA-292265	PA-292269
60	PA-273987	10 (254)	280 (127)	273947	PA-292266	PA-292270
100	PA-273988	15.5 (394)	365 (166)	273948	PA-292267	PA-292271
80-100ROZJ						
60	PA-273990	10 (254)	295 (134)	273950	PA-292266	PA-292270
100	PA-273991	15.5 (394)	380 (172)	273951	PA-292267	PA-292271
25-150ROZJ						
100	PA-273993	10 (254)	365 (166)	273953	PA-292266	PA-292270
150	PA-273994	15.5 (394)	440 (200)	273954	PA-292267	PA-292271
250	PA-273995	24 (610)	590 (268)	273955	PA-292268	PA-292272
180ROZJ						
100	PA-273997	10 (254)	N/A	273957	PA-292266	PA-292270
150	PA-273998	10 (254)	N/A	273958	PA-292267	PA-292271
200	PA-273372	15.5 (394)	N/A	273865	PA-292268	PA-292272
250	PA-273889	15.5 (394)	N/A	273959	PA-292268	PA-292272

N/A = Not available at this time.

NOTE

For subbase day tank use, add float switch and transfer pump. Transfer pump, 1/3 HP, 120-volt AC single-phase, motor-driven, 2 gpm, capable of lifting fuel a maximum of 17 ft. (5.2 m). See chart.

⚠ 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

Explosive fuel vapors.
Can cause severe injury or death.

Use extreme care when handling, storing, and using fuels.

Explosive fuel vapors can cause severe injury or death. Storing gasoline and other volatile fuels in day or subbase fuel tanks can cause an explosion. Store only diesel fuel in day or subbase fuel tanks.

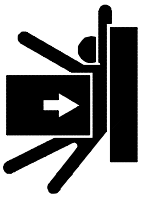
⚠ WARNING

Hot engine and exhaust system.
Can cause severe injury or death.

Do not work on generator set until unit is allowed to cool.

Hot parts can cause severe injury or death. Do not touch hot engine parts. An engine gets hot while running and exhaust system components get extremely hot.

⚠ WARNING



Unbalanced weight.
Improper lift can cause severe injury, death, or equipment damage.
Do not use lifting eyes.
Use lifting bars thru holes in skid to lift set.

INSTALLATION

1. The weight of the generator set and accessories (including subbase fuel tank and fuel) must be calculated in order to determine the necessary strength of the mounting pad construction. Use current generator set specification sheet for data.

   NOTE

   To determine total weight of the tank and fuel:

   Tank capacity (gallons) x 7.3 = FUEL WEIGHT

   Fuel weight + tank weight (see chart on first page) = TOTAL WEIGHT

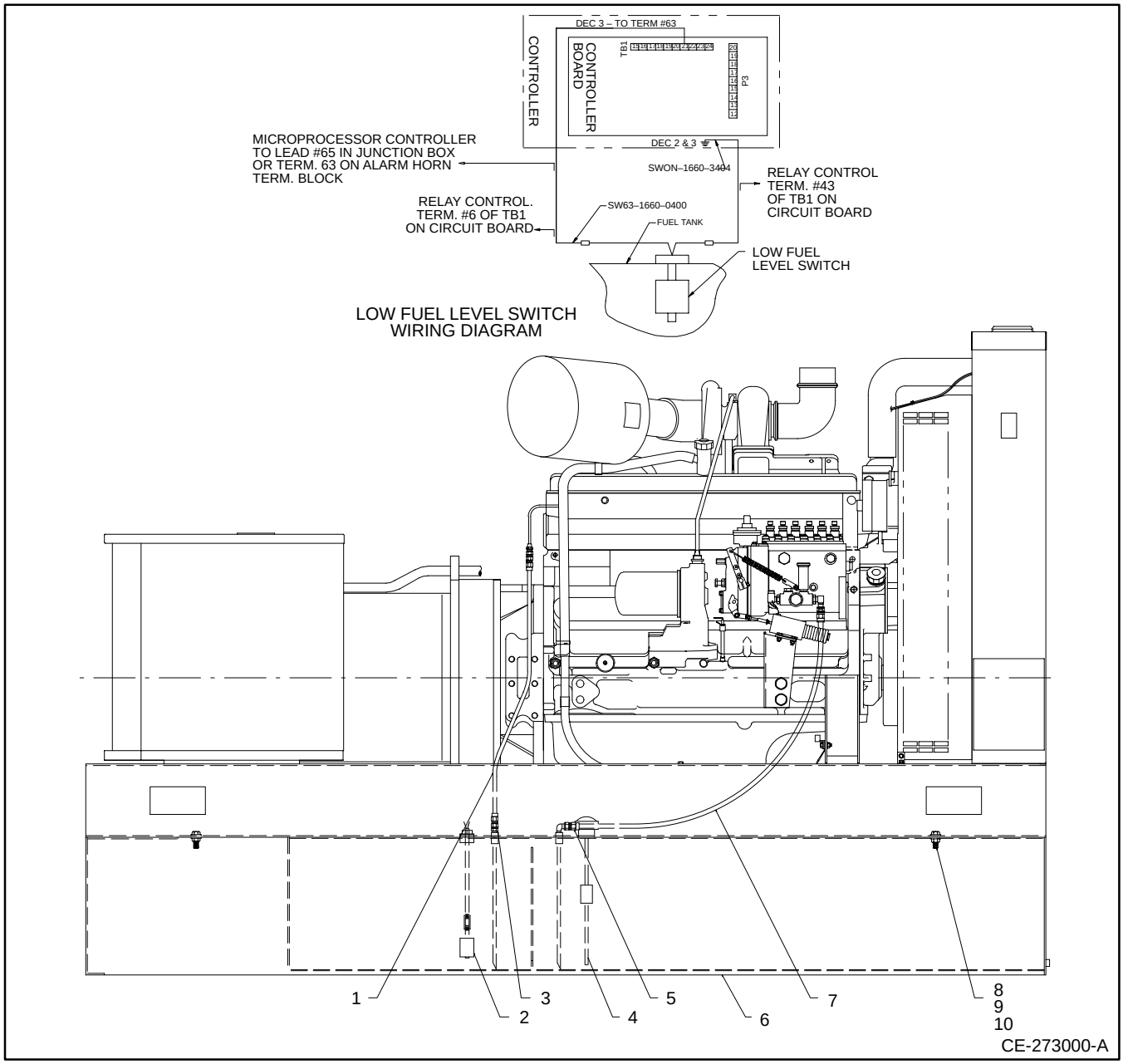
2. Use current generator set specification sheet and dimensional drawings for sizing of mounting pad.

3. The subbase fuel tank should be attached to the concrete using anchor bolts placed in the cement before it has set. Otherwise, anchors can be installed later by drilling holes in the concrete.

4. The generator set is hoisted into place and bolted to the subbase fuel tank. All hoist equipment must be sized accordingly.

5. Install the optional fuel gauge (if required). The fuel gauge/fill cap replaces the standard fill/vent cap. See Figure 1.

6. Install optional low fuel level switch (if required). Remove 1 1/4-in. NPT pipe plug from tank. Pipe plug will not be reused. Apply pipe sealant to threads of switch and install.



1. Fuel Return Line
2. Low Fuel Switch (see chart)
3. Reducer Bushing (X-202-29)
4. Fuel Gauge Kit (see chart)
5. Reducer Bushing (see chart)
6. Tank (see chart)
7. Fuel Supply Line
8. Screw (X-129-19) qty. 4
9. Plain Washer (X-25-26) qty. 8
10. Whiz Nut (X-6210-12) qty. 8

Figure 1. Installation Drawing (20-180ROZJ)

7. Connection of low fuel level switch leads 63 and N will vary depending upon which controller is used. See Low Level Switch Wiring Diagram in Figure 1 for proper connection. Use cable ties as necessary to secure leads.
8. Apply thread sealant to 1/2-in. to 1/8-in. NPT brass reducer bushings (X-202-29) and install in subbase tank at fuel supply and return positions.
9. Install flexible fuel line kit. Refer to installation instructions provided with kit.

10. If subbase day tank is required, install transfer pump kit and float switch. See Figure 2. If subbase day tank is not required, proceed to step 11.

NOTE

Transfer pump and controller box assembly are shown at suggested mounting locations only.

NOTE

The following steps require drilling mounting holes. 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.

a. Remove cover plate from controller box assembly. Use controller box assembly (A-274818) as a template and drill two 7/16-in. (6 mm) diameter holes approximately 10 in. (254 mm) from the end of the skid rail. Mount controller box assembly to skid using two screws, split lock washers, and nuts supplied with the controller box assembly. Do not install cover plate at this time.

b. Mount transfer pump assembly (A-290024) to skid using four 5/16-18 x 1.00-in. hex screws (X-125-5), 0.344 x 0.687 x 0.065-in. plain washers (X-25-85), and 5/16-18 whiz nuts (X-6210-7).

c. Remove pipe plug for fuel inlet connection at subbase fuel tank. Pipe plug will not be reused. Apply pipe sealant to male ends of 1/2-in. to 1/4-in. reducer bushing (X-202-12) and elbow hose connector (X-391-20). Install reducer bushing into subbase fuel tank and install elbow hose connector into reducer bushing. Elbow hose connector should face transfer pump assembly when tight.

d. Apply pipe sealant to elbow hose connector (X-391-20) and install into transfer pump assembly outlet. Elbow hose connector should face subbase fuel tank when tight.

e. Slide hose clamps (X-426-10) over each end of flexible fuel line (X-386-81) approximately 1 in. (25.4 mm). Install fuel line to transfer pump assembly outlet and subbase tank inlet. Locate hose clamps approximately 0.250 in. (6 mm) from fuel line end and tighten.

f. Remove pipe plug for float switch installation from subbase fuel tank. Pipe plug will not be reused. Apply pipe sealant to threads of float switch and install in subbase fuel tank.

g. Connect float switch leads to controller as follows:
Yellow to Yellow
Red to Red
Black or Brown to Brown

h. Install conduit connector (156327) to transfer pump assembly.

i. Connect green, white, and black leads of controller box to transfer pump assembly. Remove electric motor access plate. Green lead connects to ground screw on frame. Use schematic on electric motor and 110-120 volt, single-phase motor wiring schematic shown in Figure 2 to make connections. Replace electric motor access plate.

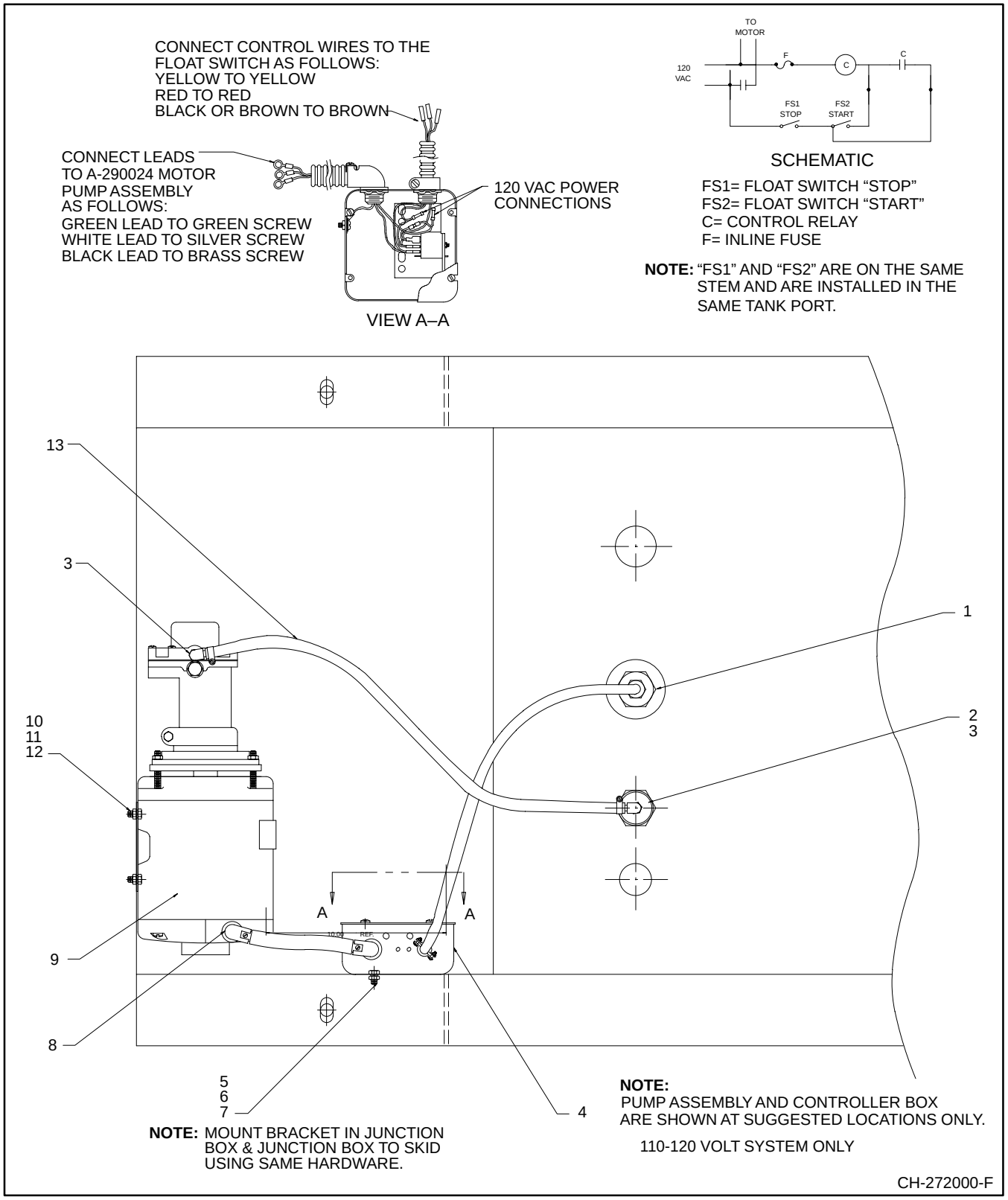
NOTE

Electric motor rotation must be clockwise for proper transfer pump operation. Check motor schematic for proper rotation. If rotation is counterclockwise, motor will operate, but transfer pump will not pump fuel.

j. Make AC voltage connections to controller box assembly. Remove knockout and add conduit as necessary. Replace controller box cover.

k. Circuit breaker connected to transfer pump assembly power line should be left open until external fuel tank is filled and all piping completed.

11. Complete the remaining installation and start-up procedures as required by contractor/ distributor.



1. Float Switch
2. Reducer Bushing (X-202-12)
3. Elbow Hose Connector (X-391-20)
4. Controller Box Assembly (A-274818) qty. 2
5. Hex Screw (X-50-3) qty. 2
6. Plain Washer (X-25-36) qty. 2
7. Whiz Nut (X-6210-5) qty. 2
8. Conduit Connector (156327)
9. Transfer Pump Assembly (A-290024)
10. Whiz Nut (X-6210-7) qty. 4
11. Plain Washer (X-25-85) qty. 4
12. Hex Screw (X-125-5) qty. 4
13. Flexible Fuel Line (X-386-81)

Figure 2. Transfer Pump Assembly, Installation, and Wiring Diagram

Parts List

SUBBASE FUEL TANK KITS

Kits: PA-273372, PA-273986, PA-273987, PA-273988, PA-273990, PA-273991, PA-273993, PA-273994, PA-273995, PA-273997, PA-273998, and PA-273999

Description	Qty.	Part Number
Screw, 1/2-13 x 1.500 in. hex	4	X-129-19
Bushing, 1/2 to 1/8 in. NPT brass reducer	2	X-202-29
Bushing, reducer	1	see chart
Washer, 0.531 x 1.062 x 0.095 in. plain	8	X-25-26
Nut, 1/2-13 whiz	4	X-6210-12
Tank, subbase fuel	1	see chart

TRANSFER PUMP KITS
Kits: PA-274781 and PA-274781-SD

Description	Qty.	Part Number
Box Assembly, controller	1	A-274818
Pump Assembly, transfer	1	A-290024
Washer, 0.219 x 0.500 x 0.049 in. plain	2	X-25-36
Screw, 10-24 x 0.750 in. hex	2	X-50-3
Screw, 5/16-18 x 1.00 in. hex	4	X-125-5
Bushing, 1/2 in. to 1/4 in. reducer	1	X-202-12
Washer, 0.344 x 0.687 x 0.065 in. plain	4	X-25-85
Line, flexible fuel	1	X-386-81
Connector, elbow hose	2	X-391-20
Clamp, 0.50-1.00 in. x 0.31 in. hose	2	X-426-10
Nut, 10-24 whiz	2	X-6210-5
Nut, 5/16-18 whiz	4	X-6210-7
Connector, conduit	1	156327