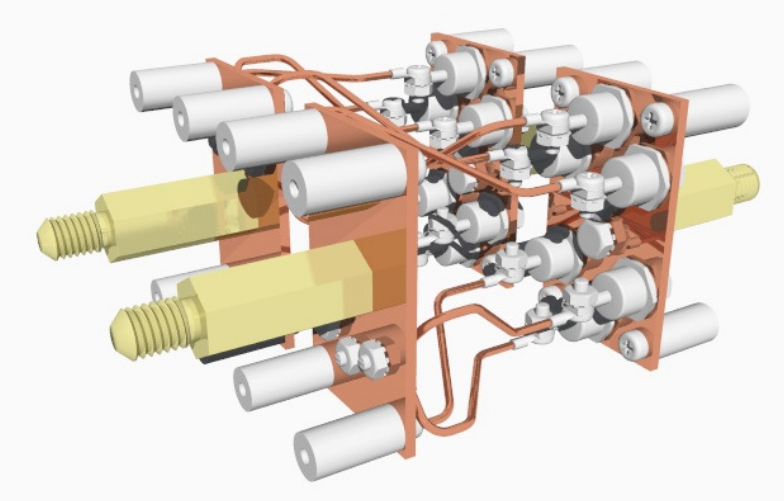
ASSEMBLY INSTRUCTIONS
for the
DC CHEATER™
Full Wave Welding Rectifier
Model DCC-FW-195



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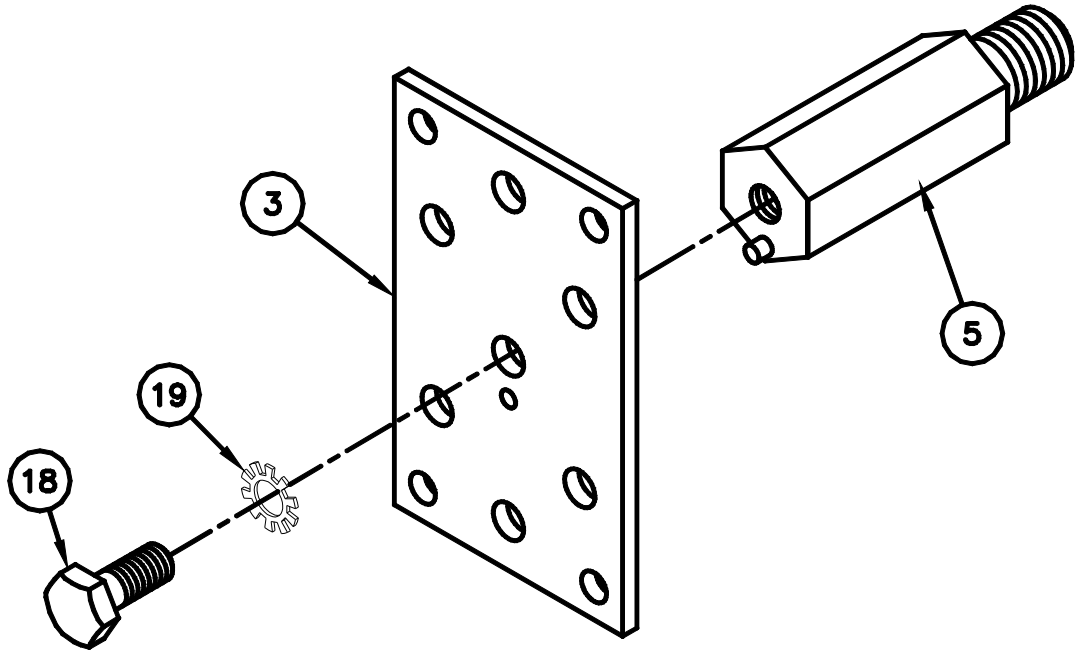

FIGURE 1

STEP 1 – Terminal to Input Bus

a) **Item 3** (Input Bus) must be clean before assembly. It's a good idea to brighten the flat surfaces with sandpaper before assembling.

b) Secure **Item 5** (Terminal) to **Item 3** (Input Bus) using one **Item 18** (1/4-20 x 3/4" hex head bolt) and one **Item 19** (1/4" external-tooth lock washer).

c) Tighten securely using a 7/16" wrench on the bolt, while holding back on the terminal with a ¾" wrench or adjustable wrench.

d) Two (2) of these assemblies are required.

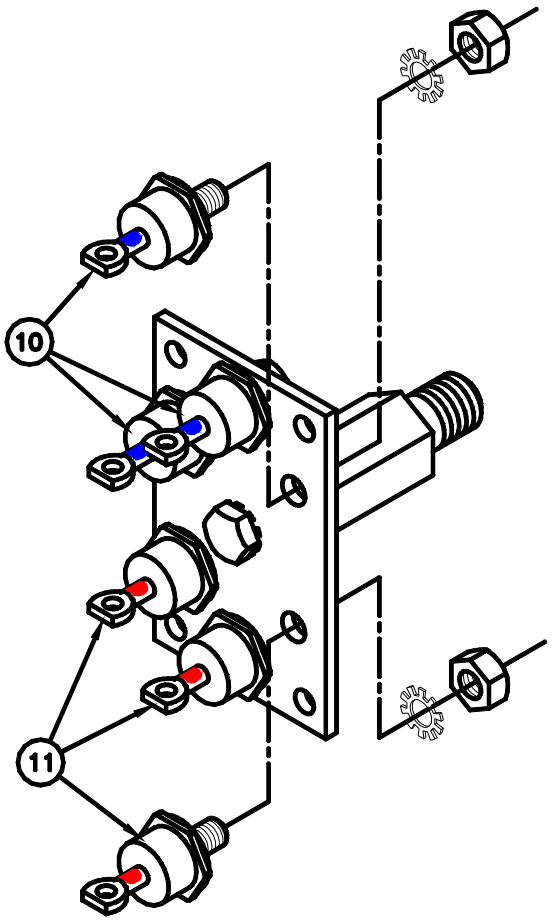

FIGURE 2

STEP 2 – Rectifiers to Input Bus

a) Assemble **Item 11** (rectifier with red dot) to the three larger holes on the bottom half of the Input Bus.

b) Assemble **Item 10** (rectifier with blue dot) to the three larger holes on the top half of the Input Bus.

c) The hex nuts (1/4-28) and the external-tooth lock washers are supplied with the rectifiers.

d) The external-tooth lock washer must be against the hex nut, not the rectifier.

e) Position the rectifiers as shown, with the flat terminals horizontal.

f) Tighten securely using a 7/16" wrench on the hex nut while holding back on the rectifier hex with an 11/16" wrench. Don't over tighten or the studs will break.

g) Two of these assemblies are required.

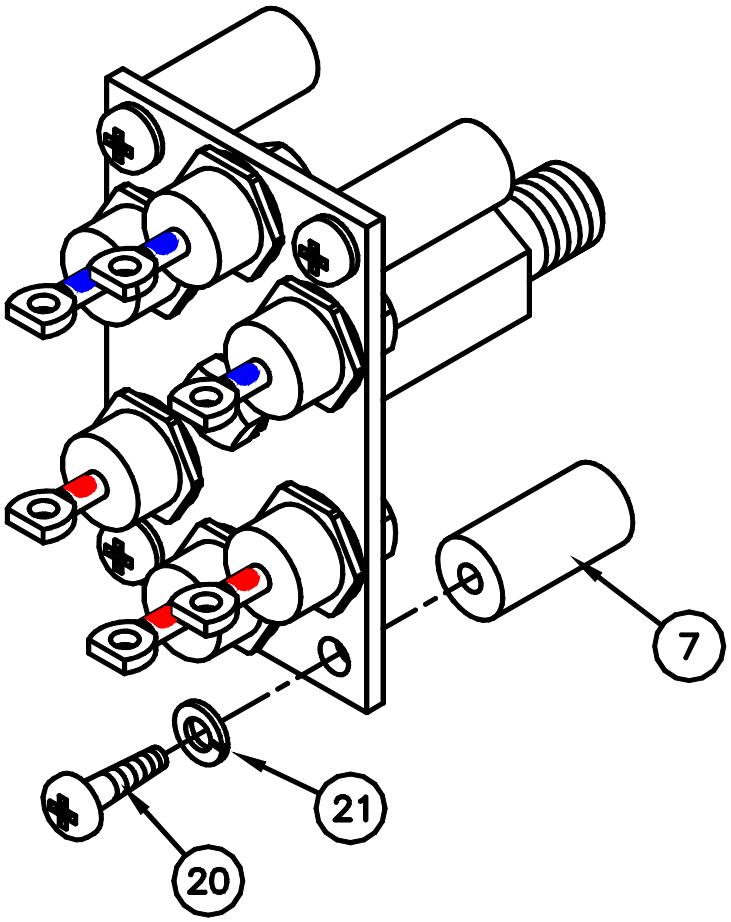

FIGURE 3

STEP 3 – Standoffs to Input Bus

a) Assemble four **Item 7** (Standoff) to the Input Bus using four **Item 20** (#10 x 5/8" self-tapping screw) and four **Item 21** (#10 split lock washer).

b) Use a screwdriver on the screw while holding back on the Standoff with fingers.

c) Two of these assemblies are required.

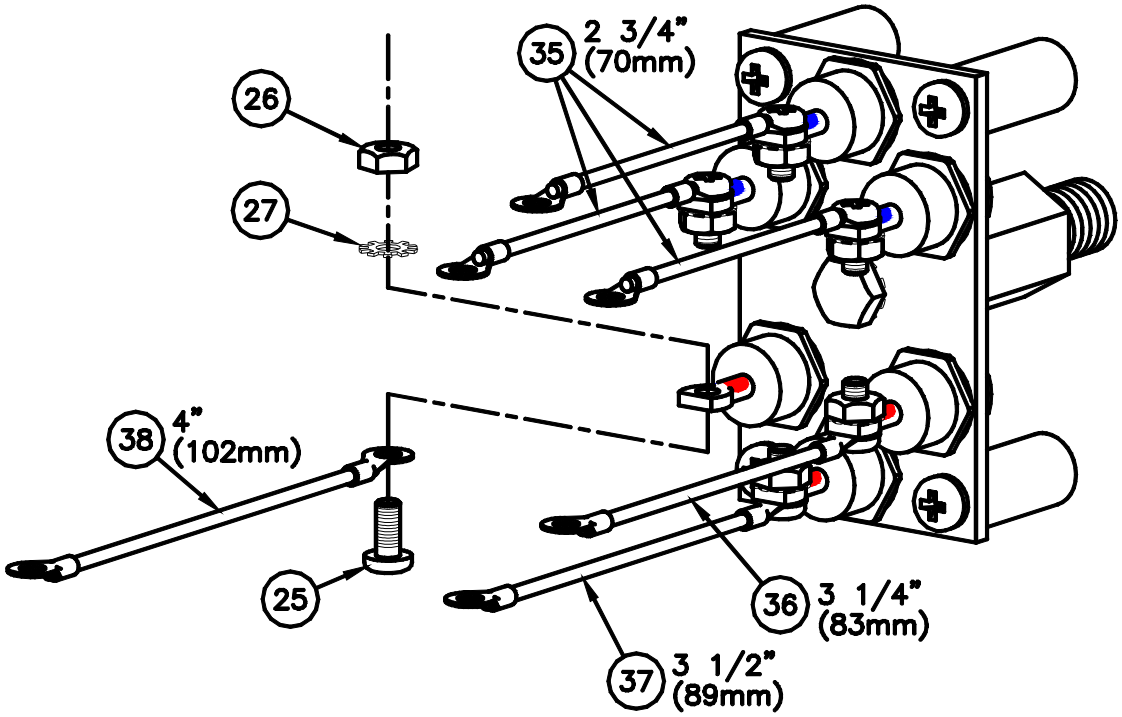

FIGURE 4

STEP 4 – Pigtails to Rectifiers (Left)

a) Assemble three **Items 35** (2 ¾" pigtail) to the top three rectifiers (blue dots); and one each **Item 36** (3 ¼" pigtail), **Item 37** (3 ½" pigtail) and **Item 38** (4" pigtail) to the bottom three rectifiers (red dot) exactly as shown.

b) Fasten securely using six **Item 25** (#8-32 x 3/8" pan head machine screw), six **Item 26** (#8-32 hex nut) and six **Item 27** (#8 external-tooth lock washer).

c) One of this assembly is required.

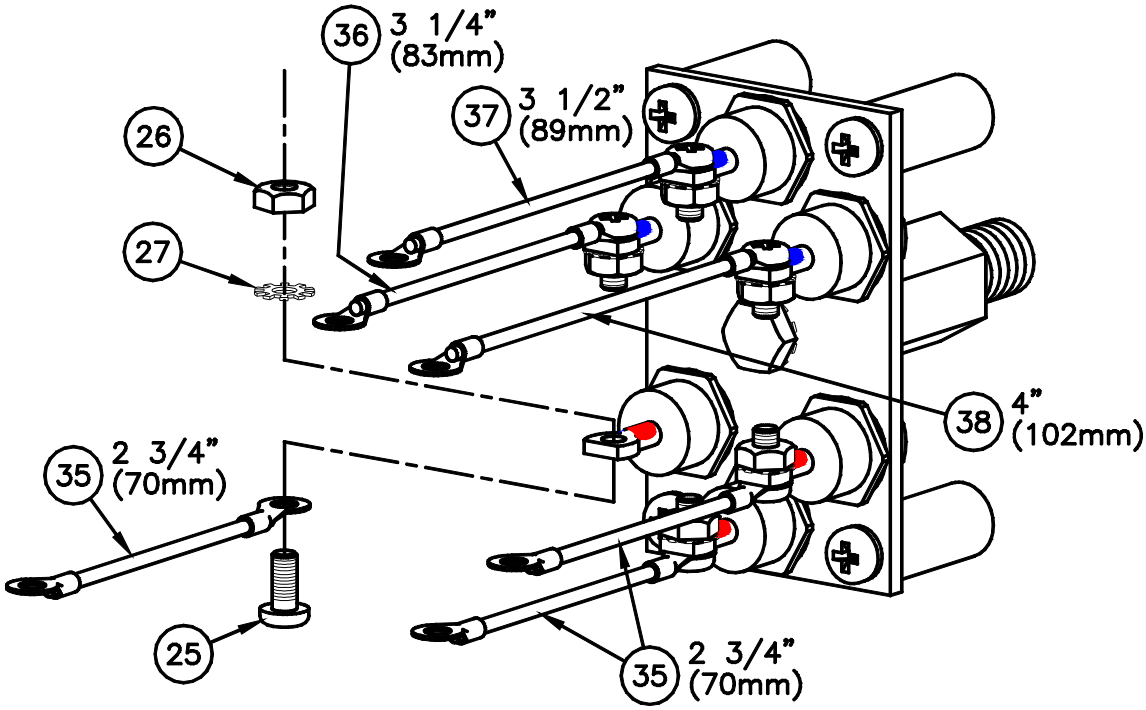

FIGURE 5

STEP 5 – Pigtails to Rectifiers (Right)

a) Assemble three **Items 35** (2 ¾" pigtail) to the bottom three rectifiers (red dots); and one each **Item 36** (3 ¼" pigtail), **Item 37** (3 ½" pigtail) and **Item 38** (4" pigtail) to the top three rectifiers (blue dots) exactly as shown.

b) Fasten securely using six **Item 25** (#8-32 x 3/8" pan head machine screw), six **Item 26** (#8-32 hex nut) and six **Item 27** (#8 external-tooth lock washer).

c) One of this assembly is required.

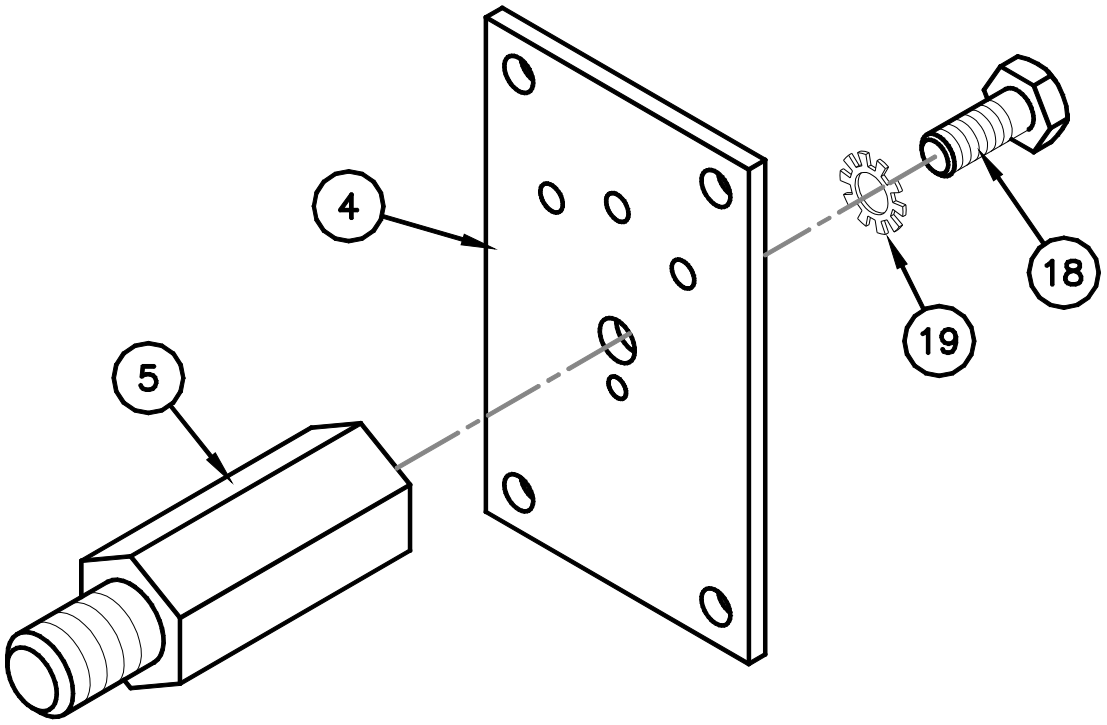

FIGURE 6

STEP 6 – Terminal to Output Bus

a) **Item 4** (Output Bus) must be clean before assembly. It's a good idea to brighten the flat surfaces with sandpaper before assembling.

b) Secure **Item 5** (Terminal) to **Item 4** (Output Bus) using one **Item 18** (1/4-20 x 3/4" hex head bolt) and one **Item 19** (1/4" external-tooth lock washer).

c) Tighten securely using a 7/16" wrench on the bolts, while holding back on the terminal with a ¾" wrench or adjustable wrench.

d) Two of these assemblies are required.

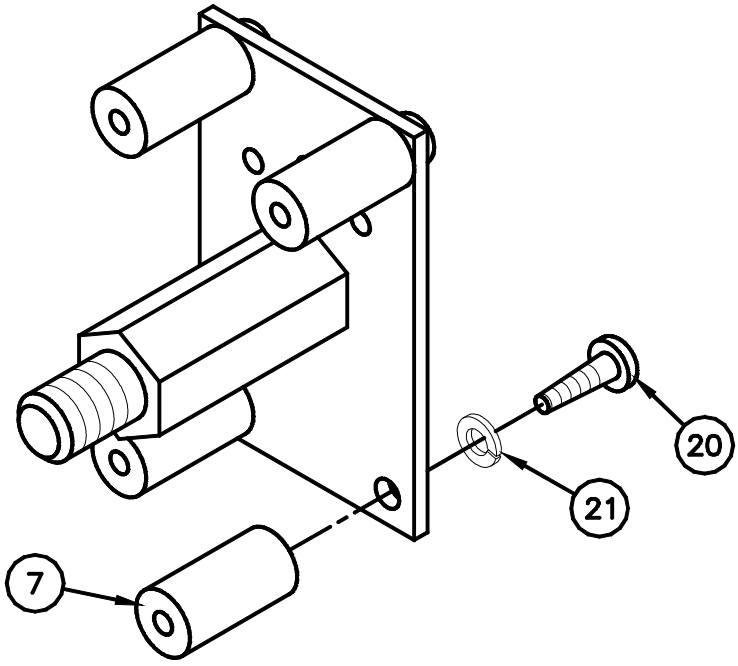

FIGURE 7

STEP 7 – Standoffs to Output Bus

a) Assemble four **Item 7** (Standoff) to the Output Bus using four **Item 20** (#10 x 5/8" self-tapping screw) and four **Item 21** (#10 split lock washer).

b) Use a screwdriver on the screw while holding back on the Standoff with fingers.

c) Two of these assemblies are required. These will be the Negative and the Positive Output Buses.

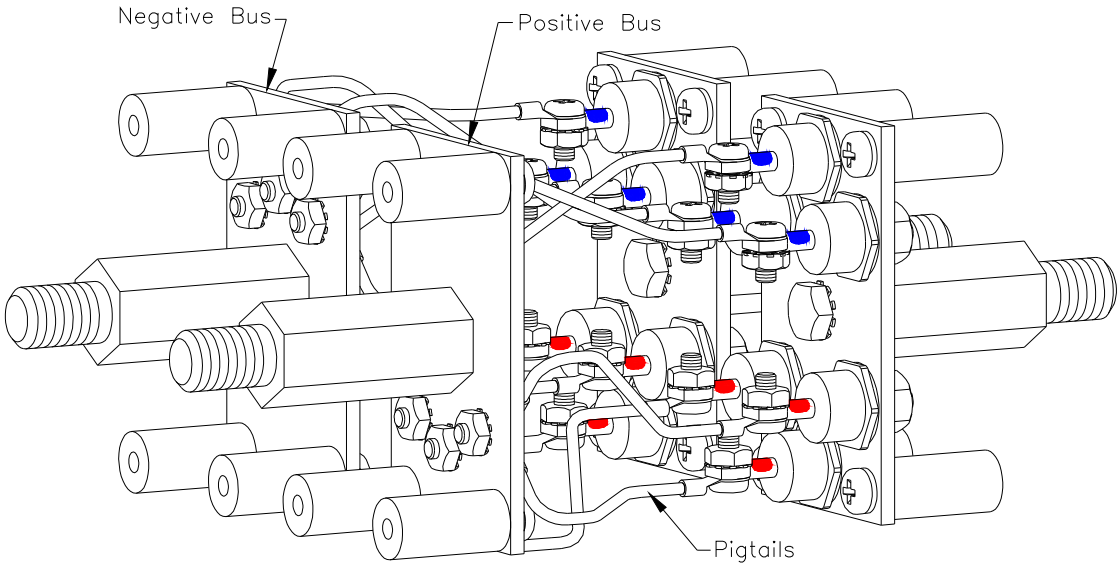

FIGURE 8.1

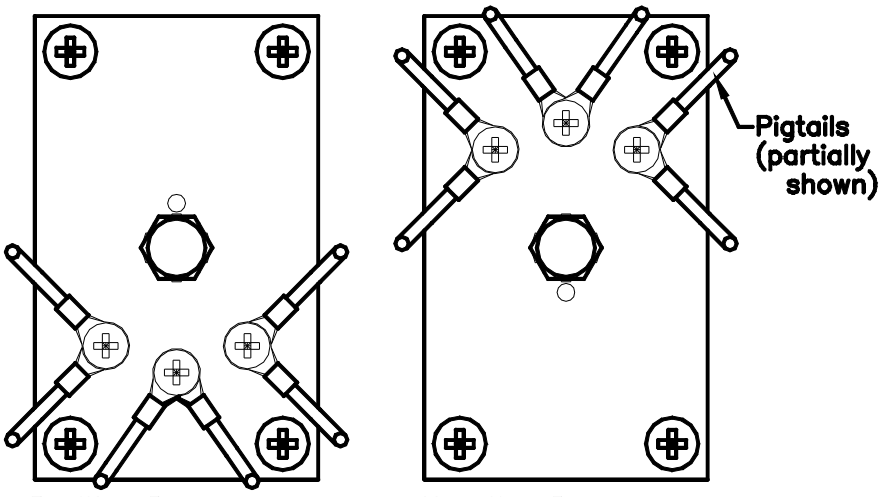

FIGURE 8.2

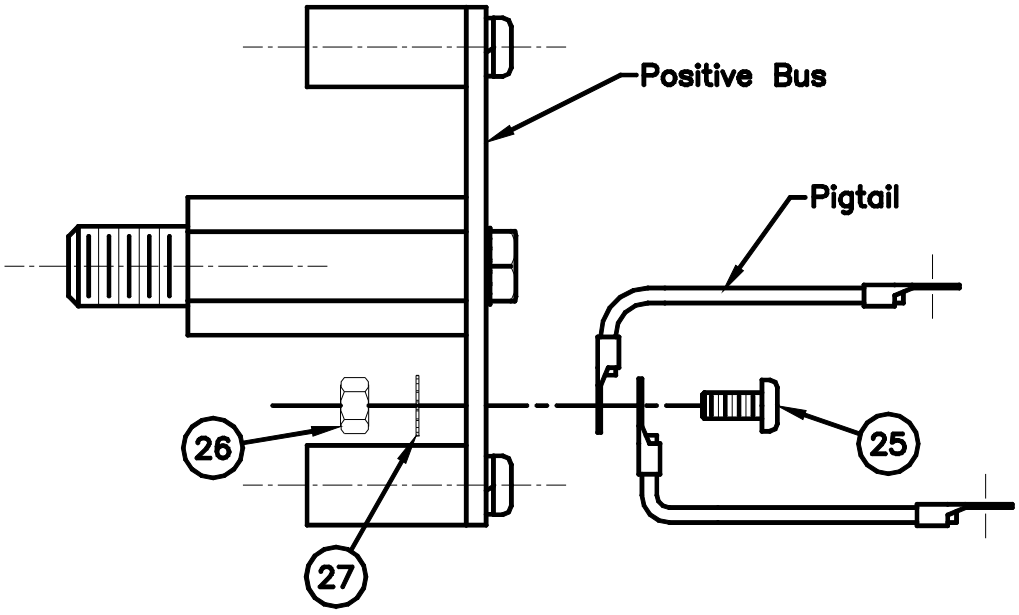

FIGURE 8.3

STEP 8 – Pigtails to Output Bus

a) Refer to Figures 8.1, 8.2 and 8.3 for this step. When completed, the assembly will look like Figure 8.1.

b) Connect the other end of the Pigtails to the appropriate Output Bus (negative or positive) using six **Item 25** (#8-32 x 3/8" pan head machine screw), six **Item 26** (#8-32 hex nut) and six **Item 27** (#8 external tooth lock washer) as shown in Figure 8.3.

c) Position the buses as shown in Figure 8.1. All six Pigtails from the lower rectifiers (with red dots) connect to the three holes in the Positive Output Bus.

d) All six Pigtails from the upper rectifiers (with blue dots) connect to the three holes in the Negative Output Bus.

e) Two Pigtails attach to each screw, as shown in Figure 8.3. Arrange the connections as shown in Figure 8.2.

f) The Pigtails are bare copper wire because bare wire can transfer heat to the surrounding air better than insulated wire. It is permissible for Pigtails attached to the Negative Bus to touch other Pigtails attached to the same bus. It is not permissible for Pigtails connected to the Negative Bus to touch Pigtails connected to the Positive Bus. Gently bend the Pigtails as needed to make the connections, being careful not to bend or break the rectifiers.

g) Don't be too concerned with positioning the Pigtails at this point, as they will be adjusted again after this subassembly is put into the case in Step 9.

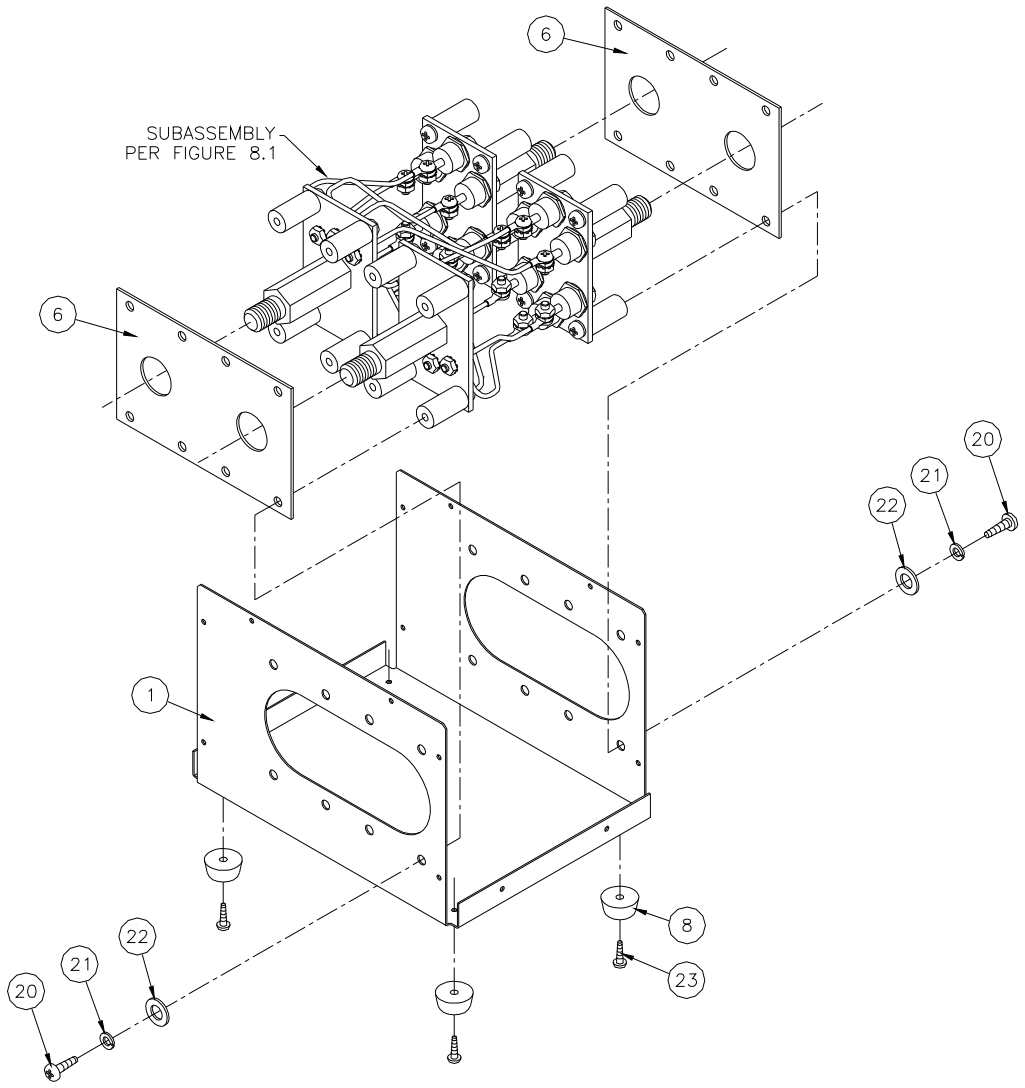

FIGURE 9

STEP 9 – Subassembly to Bottom Enclosure

a) Assemble four **Item 8** (Foot) to the bottom of **Item 1** using four **Item 23** (#6 x ½" pan head tapping screw).

b) Place one **Item 6** (Insulator) over the Terminal Studs of the Input Bus, and one over the Terminal Studs of the Output Bus.

c) NOTE: The Insulators (**Item 6**) go inside the Enclosure Bottom.

d) With the Insulators in place on the studs, and the subassembly oriented as shown in relation to **Item 1** (Enclosure Bottom), insert the Subassembly with Insulators into the Enclosure. It is a very tight fit. The Pigtails may have to be bent and the sides of the enclosure can be pulled open a little to make more room. Care must be taken not to break the rectifiers, or to permanently distort the Enclosure Bottom.

e) Fasten the Subassembly in place using sixteen **Item 20** (#10 x 5/8" pan head tapping screw), sixteen **Item 21** (#10 split lock washer) and sixteen **Item 22** (#10 flat washer).

f) Note that the screws (**Item 20**) referenced above in Step 9-e penetrate the lock washer (**Item 21**), the flat washer (**Item 22**), the Enclosure (**Item 1**), the Insulator (**Item 6**) and finally the nylon Standoffs of the bus, in that order.

g) At this point the wiring (Pigtails) must be carefully inspected:

1) The Pigtails attached to the Negative Output Bus may touch other Pigtails attached to the same Negative Output Bus.

2) The Pigtails attached to the Positive Output Bus may touch other Pigtails attached to the same Positive Output Bus.

3) Pigtails from one Output Bus may not come within ¾" (19mm) of Pigtails from the other Output Bus.

4) In addition, all the Pigtails must maintain the same ¾" (19mm) clearance to any other metal, such as the Enclosure Bottom and the Enclosure Top to be added later. Keep in mind that the fan, toggle switch and associated wiring will occupy the balance of open space in the enclosure, and clearance must be maintained there also.

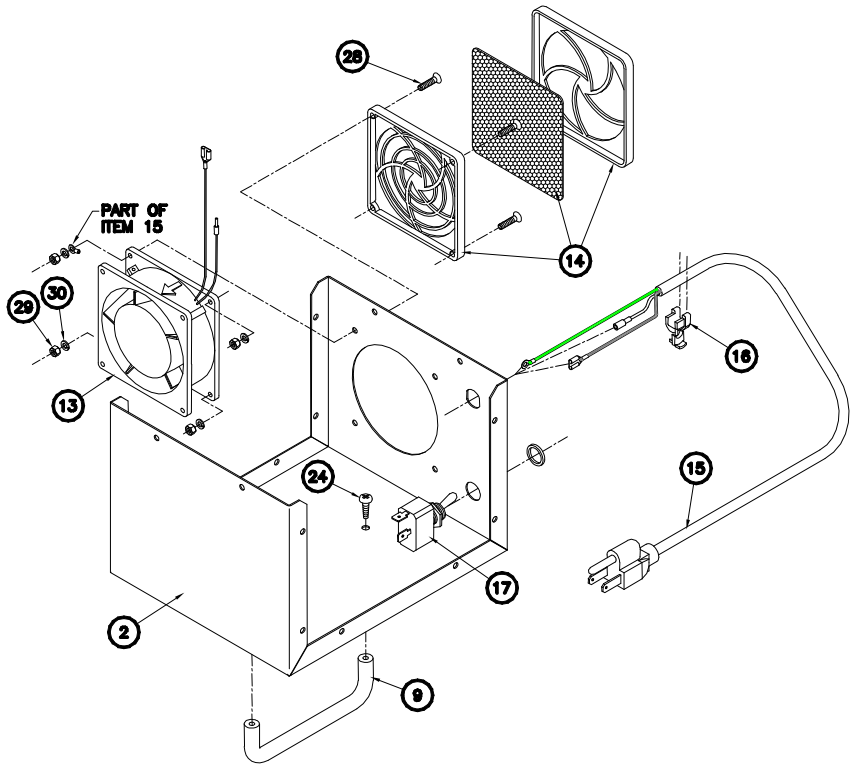

FIGURE 10

STEP 10 – Enclosure Top

a) Lay **Item 2** (Enclosure Top) inverted, as shown, on a newspaper, rag or other non-scratching surface.

b) Install **Item 17** (Toggle Switch) positioned as shown. With the hex nut on the switch first, insert switch through hole and add the round nut to fasten the switch. Leave the round nut near the end of the male threads, and tighten the hex nut with a 5/8" (16mm) wrench.

c) When installing **Item 13** (Fan) it must be positioned as shown in Figure 10, with the wire leads and flow arrow as shown. **Item 14** consists of three parts: filter media, inner guard and outer guard. Separate the three parts and put aside the filter media and the outer guard. Install the inner guard and **Item 13** (Fan) to **Item 2** (Enclosure Top) using three **Item 28** (#6-32 x 5/8" flat head screw), three **Item 30** (#6 split lock washer) and three **Item 29** (#6-32 hex nut) in the bottom (as shown in Figure 10) two holes, and the top right hole. Leave finger-tight for now.

d) The upper-left (as shown in Figure 10) screw, lock washer and nut will be installed later, with the ground wire.

e) Assemble **Item 16** (Strain Relief) to **Item 15** (Power Cord & Plug Assembly) leaving about ¼" (6mm) of outer covering of the cord extending past the strain relief. With the locking piece of the strain relief in place, squeeze the strain relief with pliers and insert into the hole in the Enclosure Top as shown.

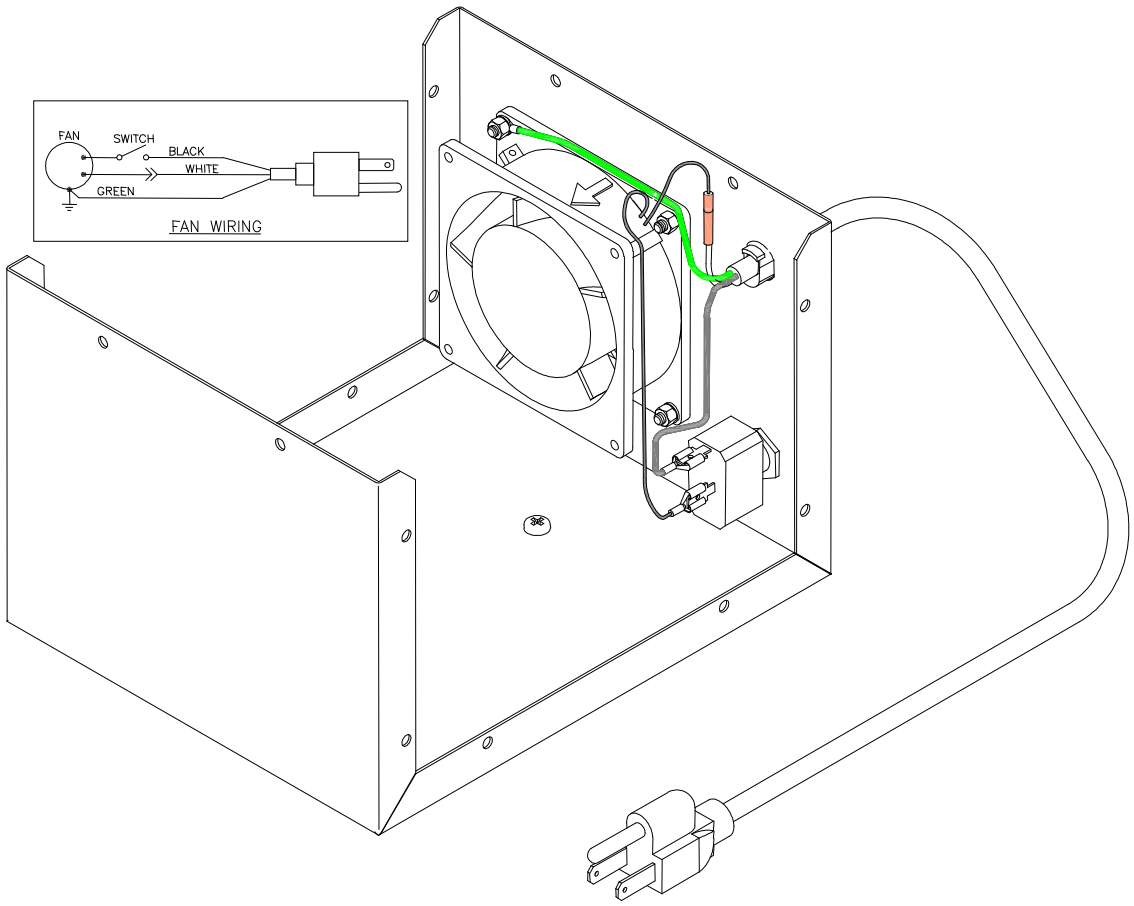

FIGURE 11

STEP 11 – Enclosure Top – Wiring

a) Secure the ring terminal with the green ground wire to the upper left hole of **Item 13** (Fan) using one **Item 28** (#6-32 UNC x 5/8" flat head screw), one **Item 30** (#6 split lock washer) and one **Item 29** (#6-32 UNC hex nut).

b) Tighten all four screws holding the Fan in place.

c) Connect the white wire to the Fan lead.

d) Connect the large spade terminal with the black wire to the top terminal on the Toggle Switch.

e) Connect the other Fan lead to the lower terminal of the Toggle Switch.

f) Turn the Enclosure Top on its side and install **Item 9** (Handle) using two **Item 24** (#8 x 5/8" pan head tapping screw).

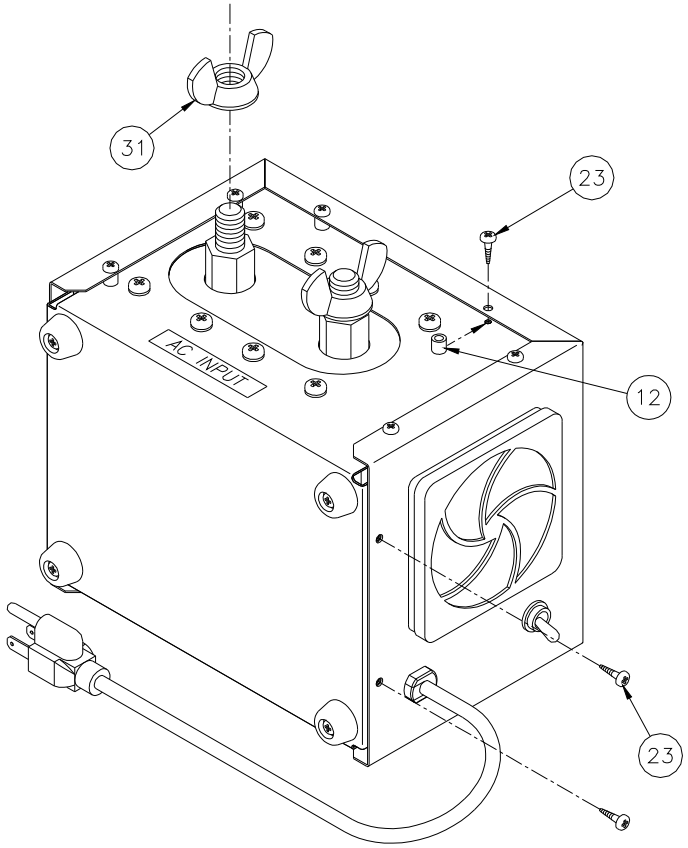

FIGURE 12

STEP 12 – Enclosure Top to Enclosure Bottom

a) With the Enclosure Bottom standing upright, slide the Enclosure Top down over the Bottom, making sure the ¾" (19mm) clearance is maintained between the Pigtails and other objects. Partially install four **Item 23** (#6 x ½" pan head tapping screw) in the bottom four holes on the sides. Don't tighten the screws yet.

b) Lay the DC Cheater on its side as shown in Figure 12. Carefully slide **Item 12** (Spacer) into place between the top and bottom covers. A screwdriver is helpful in positioning the spacer. Don't push the spacer too far or it will fall into the case. When the spacer is in place, loosely install **Item 23** (#6 x ½" pan head tapping screw). Repeat the procedure for the other five holes on this side, and the six holes on the other side. Tighten the twelve screws installed in this step and the four screws installed in Step 12-a.

c) Install four **Item 31** (Wingnut) on the Terminal Studs as shown.

d) Be sure to read the Owner's Manual for the DC Cheater before using.

BILL OF MATERIALS

ITEM	QTY.	DESCRIPTION
1	1	ENCLOSURE, BOTTOM
2	1	ENCLOSURE, TOP
3	2	BUS
4	2	BUS
5	4	TERMINAL
6	2	INSULATOR
7	16	STANDOFF
8	4	FOOT
9	1	HANDLE
10	6	RECTIFIER Cathode to Stud
11	6	RECTIFIER Anode to Stud
12	12	SPACER, ENCLOSURE
13	1	FAN
14	1	FILTER KIT (filter media, inner guard & outer guard)
15	1	CORD & PLUG ASSY (fan)
16	1	STRAIN RELIEF (fan cord)
17	1	TOGGLE SWITCH SPST
18	4	1/4-20 x 3/4" HEX-HD BOLT (terminal to bus)
19	4	1/4" EXT-TOOTH LOCK WASHER (terminal to bus)
20	32	#10 x 5/8" TYPE B CROSS-REC PAN-HD TAPPING SCREW (standoff)
21	32	#10 SPLIT LOCK WASHER (standoff)
22	16	#10 FLAT WASHER SAE (standoff at case)
23	20	#6 x 1/2" TYPE A CROSS-REC PAN-HD TAPPING SCREW (enclosure)
24	2	#8 x 5/8" TYPE A CROSS-REC PAN-HD TAPPING SCREW (handle)
25	18	#8-32 x 3/8" CROSS-REC PAN-HD MACH SCREW (pigtails)
26	18	#8-32 HEX NUT (pigtails)
27	18	#8 EXT-TOOTH LOCK WASHER (pigtails
28	4	#6-32 x 5/8" CROSS-REC FLAT-HD MACH SCREW (fan)
29	4	#6-32 HEX NUT (fan)
30	3	#6 SPLIT LOCK WASHER (fan)
31	4	WING NUT 1/2-13 (terminal)
32		*NOT USED*
33		*NOT USED*
34		*NOT USED*
35	6	PIGTAIL ASSY 2 3/4"
36	2	PIGTAIL ASSY 3 1/4"
37	2	PIGTAIL ASSY 3 1/2"
38	2	PIGTAIL ASSY 4"