



Agilent Power Distribution Unit (PDU)

Installation Guide

For use with Agilent PDU kits and PDU installation kits for Agilent instrument racks



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General Information

The Agilent E7685A PDU Installation Kit enables you to mount an Agilent Power Distribution Unit (PDU) in an Agilent instrument rack. This kit is required if the rack is not already equipped with a PDU, or if you want to install a switched PDU in a rack containing an unswitched PDU. Each PDU installation kit allows the installation of up to two PDU kits. Instrument racks are designed to house two PDU kits only. The voltage of a second PDU must match that of the installed PDU for correct operation of the illuminated switch.

To support worldwide power requirements, four Agilent PDU kits are available. The Agilent E7685A PDU Installation Kit allows the installation of any of the following PDU kits:

Kit Number	Description
E4451A	PDU - 1.3m, North America (100-120V) (NEMA receptacles)
E4453A	PDU - 1.3m, International (200-240V) (IEC receptacles)
E4455A	PDU - 1.6m/2.0m, North America (100-120V) (NEMA receptacles)
E4457B	PDU - 1.6m/2.0m, International (200-240V) (IEC receptacles)

The above-listed PDU kits are intended to be used in the following Agilent rack enclosures: E3661B, E3662B, and E7590A.

E7685A PDU Installation Kit Contents

The Agilent E7685A PDU Installation Kit contains the following:

Item	Quantity	Description	Part Number
1	1	Forehead Assembly - with switch cutout	C2786-60004
2	2	PDU Support Bracket	C2786-00021
3	4	Sheet Metal Nuts (10-32)	0590-0804
4	4	Machine Screw, Torx® T25—10-32x0.5inch	2680-0278

NOTE The installation of a first PDU requires the purchase of the Agilent E7685A PDU Installation Kit. This kit provides hardware and rack components required to complete the installation. The installation of a second PDU does not require an additional kit.

The voltage of a second PDU must match that of the installed PDU for correct operation of the illuminated switch.

Tools Required

To install the PDU kit, you will need the following tools:

- T25 Torx® driver.
- Wrench or nut driver to fit 3/8 inch hex nut.

PDU Kit Contents

The six Agilent PDU kits contain the following:

PDU Kit Number	Item Number	Quantity	Description
1.3m Kit: E4451A E4453A	1	1 PDU	1.3m PDU: 100-120V North American (NEMA receptacles) 200-240V International (IEC receptacles)
1.6m Kit: E4455A E4457B			1.6m PDU: 100-120V North American (NEMA receptacles) 200-240V International (IEC receptacles)
All	2	3	Machine Screw, Torx® T25, 10-32x0.5 inch (p/n 2680-0278)
All	3	2	Washer-external tooth, #10 (p/n 2190-0565)
All	4	1	Nut-Hex w/Ext. tooth lock washer, 10-32 (p/n 2740-0003)
All	5	1	Cable assembly, ground (p/n C2786-60065)

General Installation Information

Use the following table to select the type of installation you are doing.

Type of PDU Installation	
A	First PDU-Switched *
B	First PDU-Unswitched *
C	Second PDU-Switched (first one was also switched)
D	Second PDU-Unswitched (first one was switched)
E	Second PDU-Switched (first one was unswitched) *
F	Second PDU-Unswitched (first one was also unswitched)

* Needs PDU Installation Kit

In the following tables, use the legend shown below to determine if the steps are required for items A-F above:



A shaded cell means that the step applies.



A non-shaded cell means that the step does not apply.

Installation Procedure

Step		A	B	C	D	E	F
1	Turn off power to the rack and disconnect AC power.						

Warning!

Failure to disconnect AC power could result in a severe electric shock causing injury or death!

Step		A	B	C	D	E	F
2	Remove the two screws securing the top cap to the frame at the rear of the rack. Slide the top cap towards the rear, and lift off the top cap completely. See Figure 1.						

Step		A	B	C	D	E	F
3	If your rack is configured with a rear door, open the door and remove the four screws securing the side cover to the rear door hinges.						

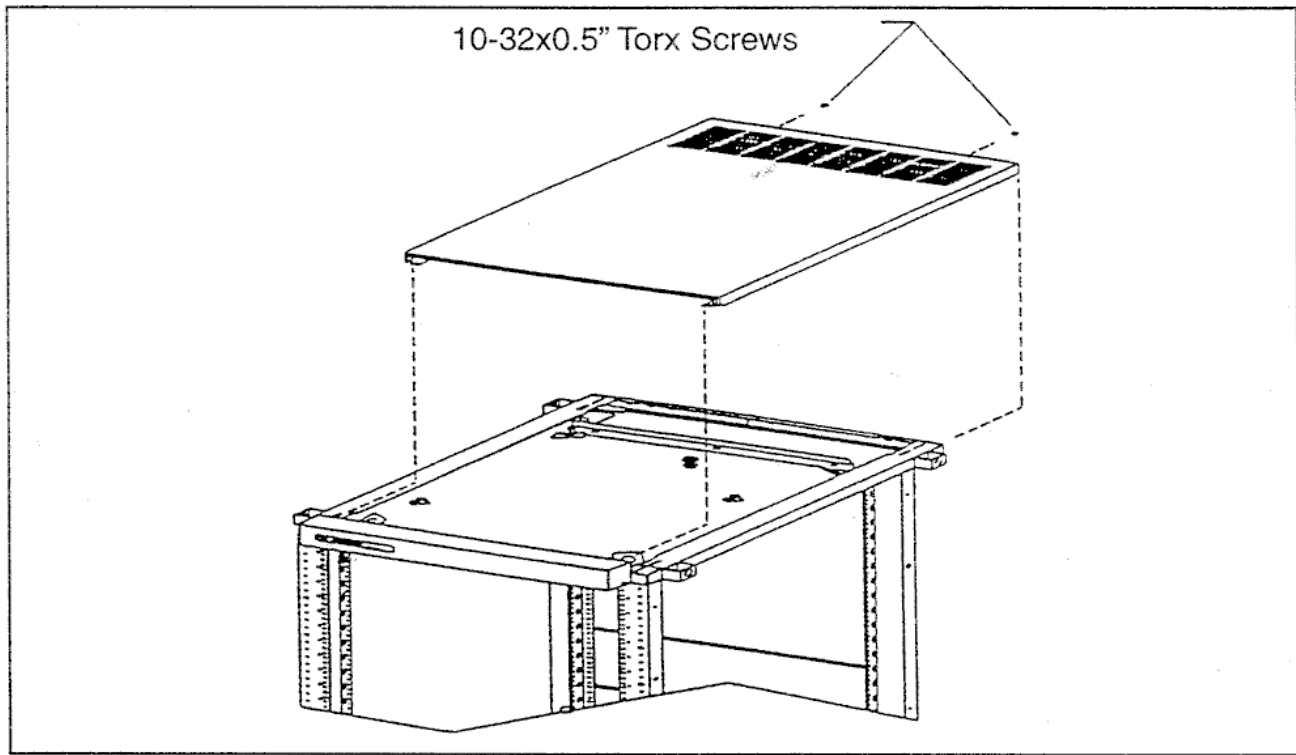


Figure 1. Removing the Top Cap

Step		A	B	C	D	E	F
4	Remove the two screws securing the side cover to the base of the rack enclosure. Lift the side cover slightly up and remove completely. See Figure 2.						

Step		A	B	C	D	E	F
5	Remove the three screws used to secure the non-switchable forehead assembly at the frame top and remove the forehead assembly completely. Retain the three screws as they will be re-used in step 12. See Figure 3.						

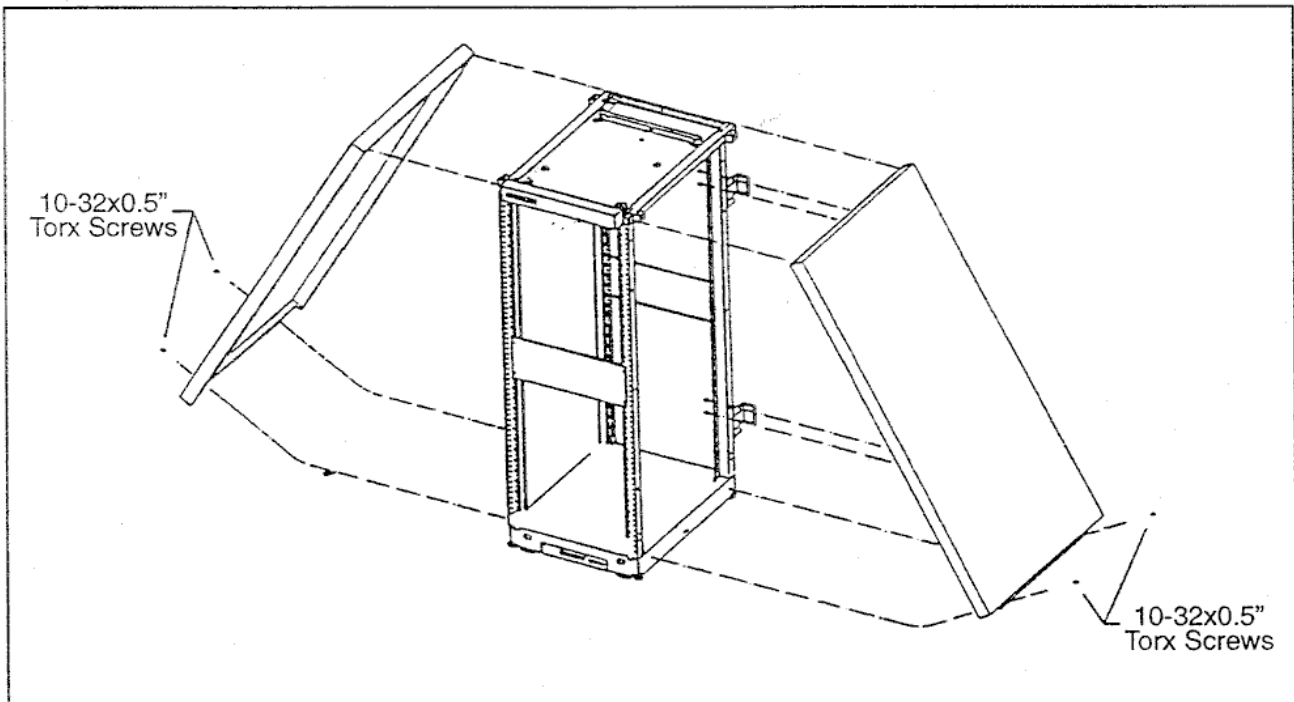


Figure 2. Removing the Side Covers

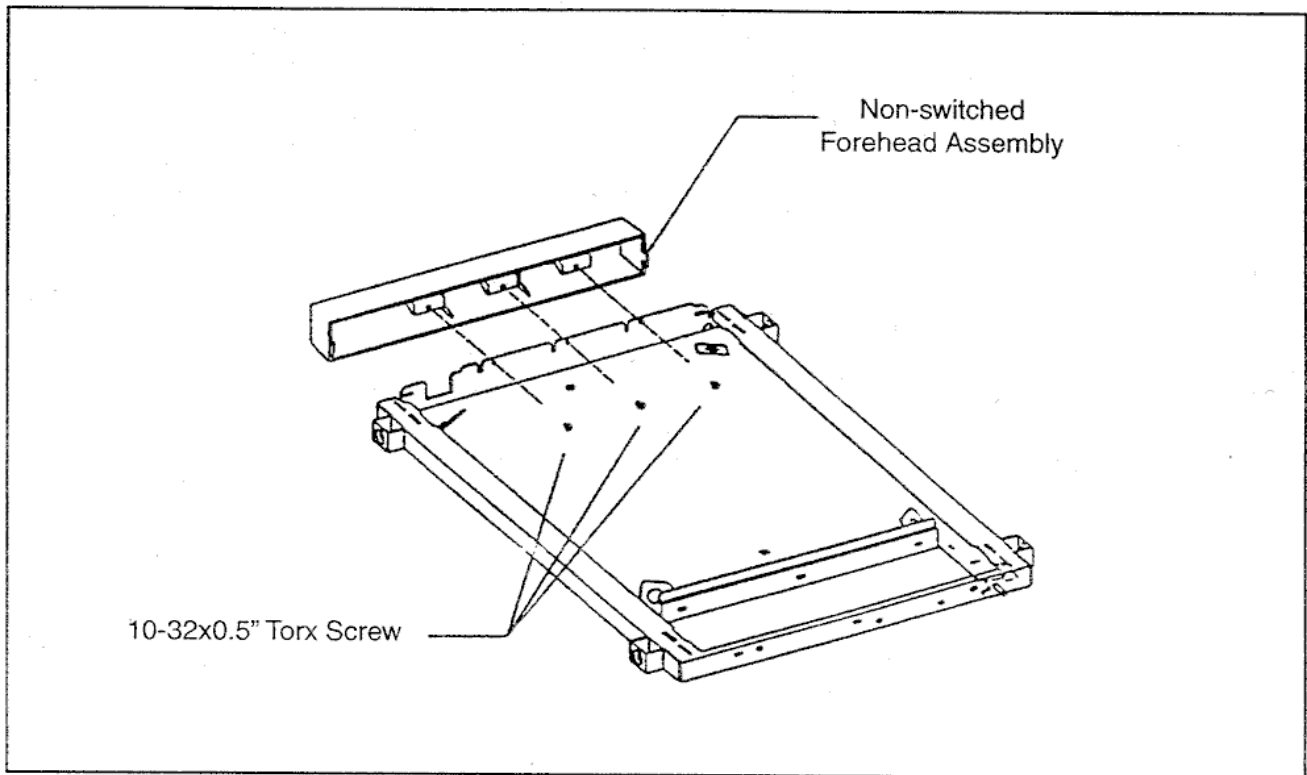


Figure 3. Removing the Forehead Assembly

Step		A	B	C	D	E	F
6	Snap four sheet metal nuts onto the column in the appropriate locations for the PDU brackets (see the table below). Attach the two PDU brackets using four 10-32 x 0.5 inch machine screws. See Figures 4 and 5.						

Tinnerman Placement			
Rack Size	Top PDU Bracket	Bottom PDU Bracket	Door Catch
1100 mm	4th Increment Mark	16th Increment Mark	1st Increment Mark
1300 mm	7th Increment Mark	26th Increment Mark	4th Increment Mark
1600 mm	7th Increment Mark	25th Increment Mark	13th Increment Mark
2000 mm	16th Increment Mark	34th Increment Mark	22nd Increment Mark

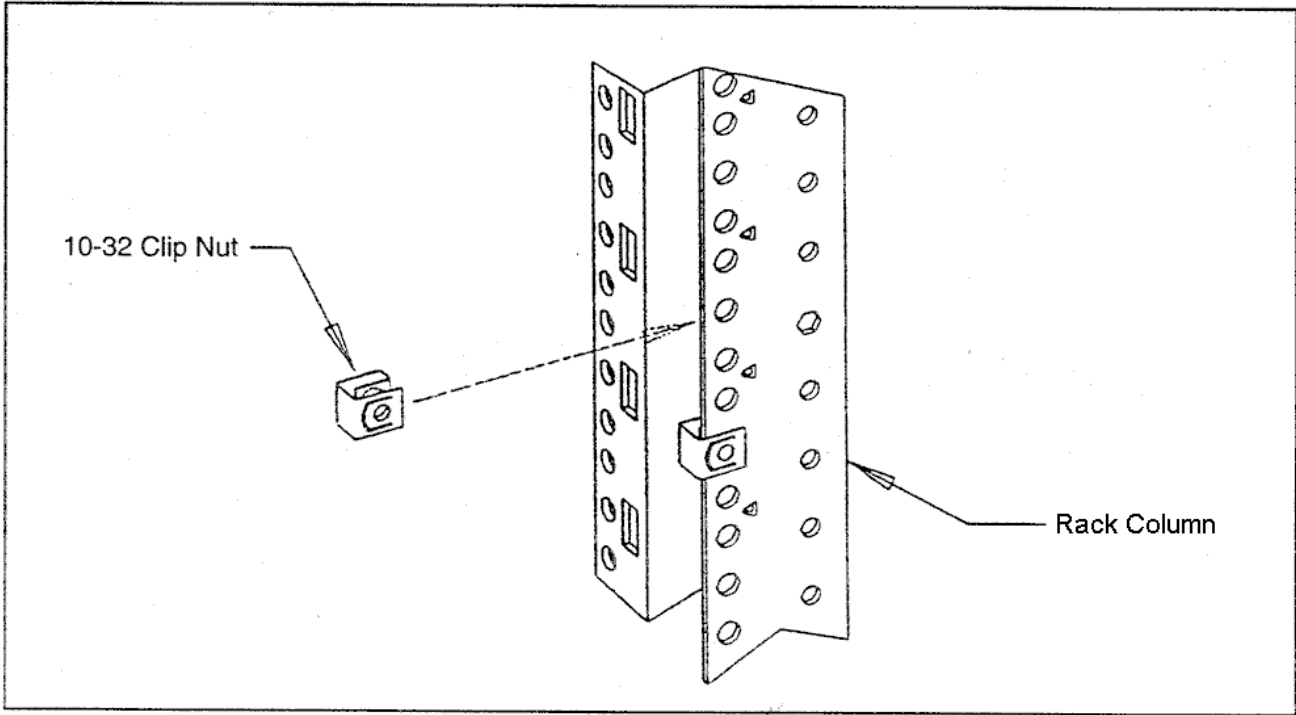


Figure 4. Attaching Sheet Metal Nuts to the Column

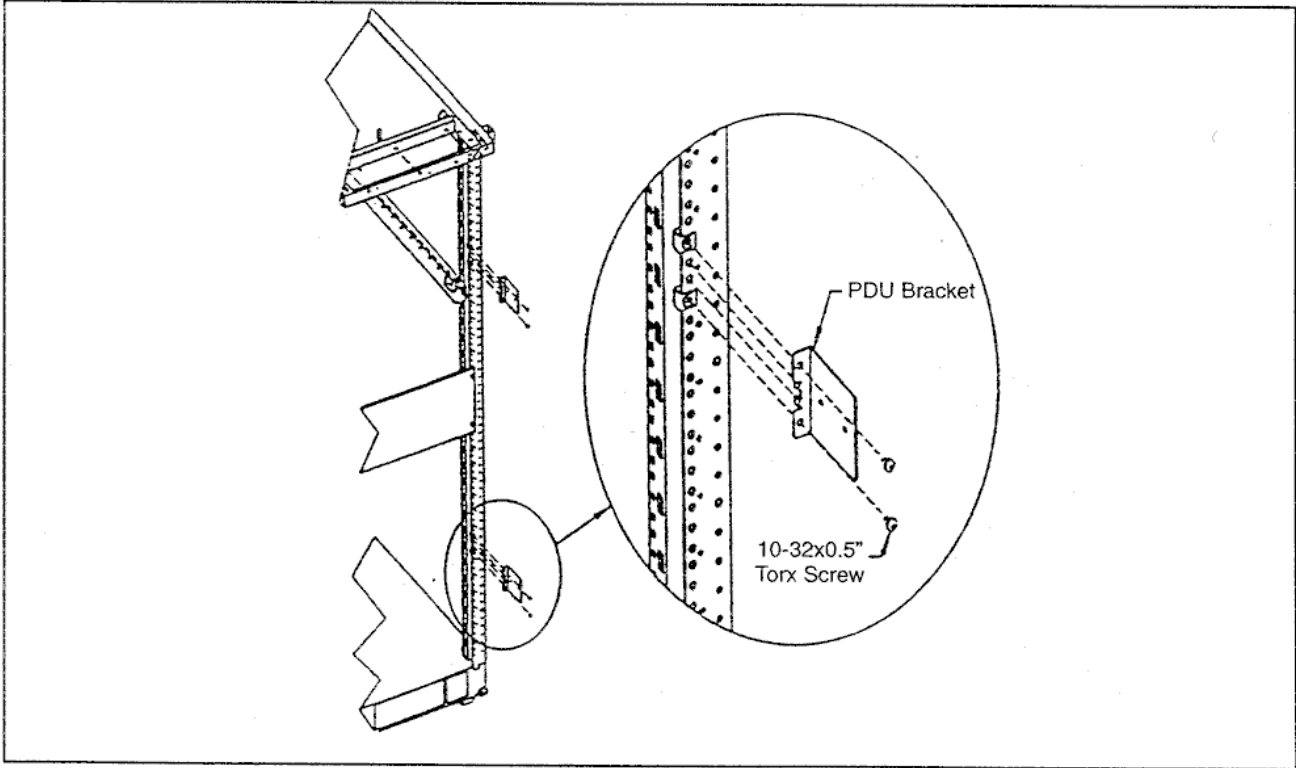


Figure 5. Attaching the PDU Brackets

Step		A	B	C	D	E	F
7	<p>Position the first PDU by placing it against the PDU brackets and align the inner holes that are closest to the column on the brackets to the mounting holes in the PDU. Secure the PDU using two 10-32 x 0.5" machine screws from your PDU kit.</p> <p>If you are installing a second PDU, place the second PDU against the PDU brackets and align the outer holes on the brackets with the mounting holes of the PDU. Secure using two 10-32 x 0.5" screws from your PDU kit. (See Figure 6.)</p>						

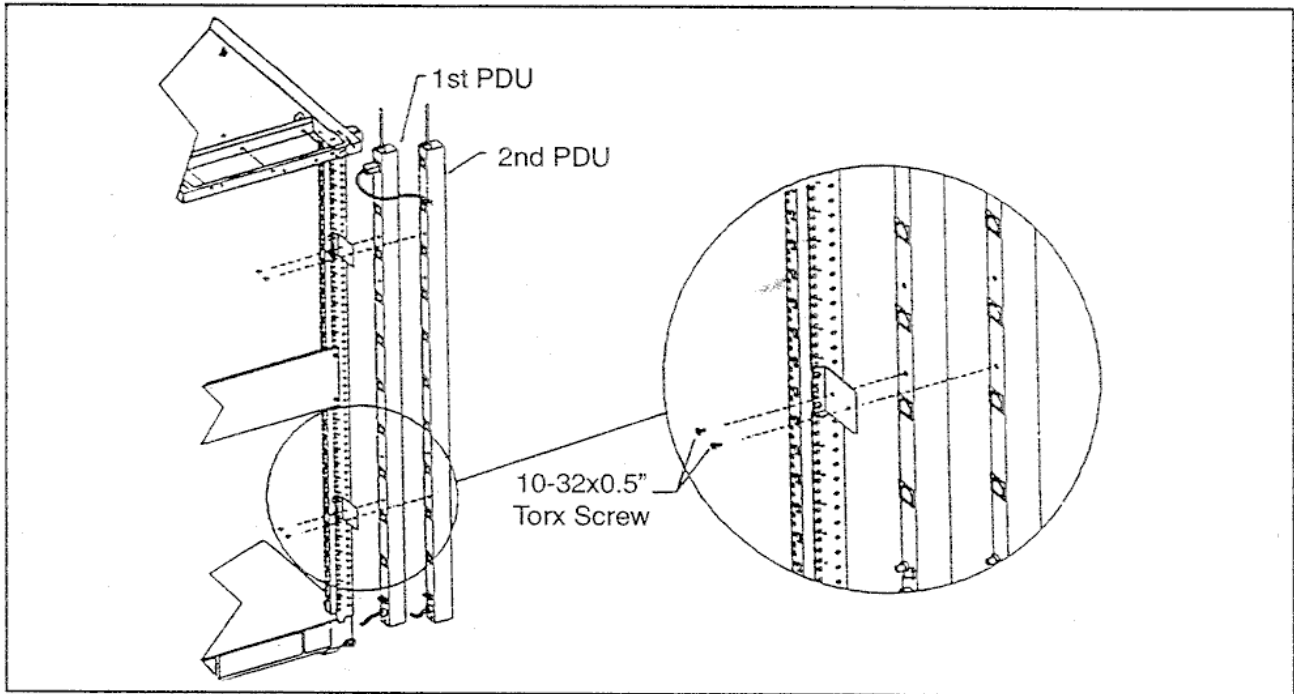


Figure 6. Attaching the PDUs

Step		A	B	C	D	E	F
8	<p>Attach one end of the PDU ground cable assembly to the PDU at the bottom of the PDU using one #10 ext. tooth star washer and one 10-32 x 0.5" machine screw. Make sure the washer is between the PDU and the connector of the cable assembly. Make sure that the cable does not block the PDU receptacles and the cable is not pinched. See Figure 7.</p>						

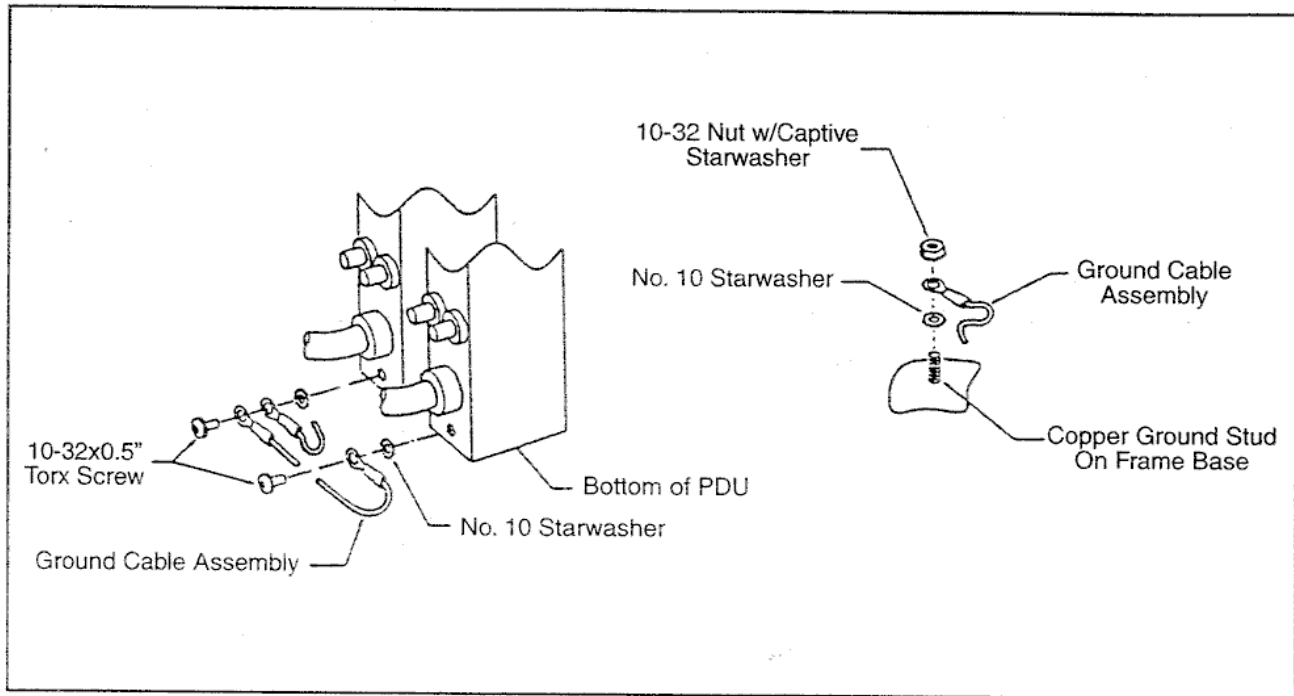


Figure 7. Attaching the Ground Cable Assembly

Warning

The PDU/rack combination is a safety Class 1 product and has a protective earthing (grounding terminal).

The PDU ground strap must be attached to the PDU and rack column with supplied hardware. Failure to do so can result in a severe hazard and/or personal injury in the event of equipment failure or product misuse.

Additionally, there must be an uninterruptable safety earth ground from the main power source to the product's input wiring terminals, power cord, or supplied cord set. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

Step		A	B	C	D	E	F
9	<p>Attach the other end of the PDU ground cable assembly to the nearest copper ground stud on the frame base of the rack enclosure (there are four located on the base). Use a 10-32 nut with an external tooth captive washer and a #10 ext. tooth star washer to secure the cable assembly to the ground stud. Again, the #10 star washer must be placed between the frame base and the connector of the cable assembly.</p> <p>To ground the second PDU, attach the PDU ground cable assembly to the bottom of the PDU as described earlier. Attach the other end either in the same manner or to the first PDU as shown. (See Figure 7.)</p>						

Step		A	B	C	D	E	F
10	Route the PDU switch cable harness up through the provided channel at the top of the rack enclosure and secure the cable harness with the pre-mounted cable clips. See Figure 8.						

Step		A	B	C	D	E	F
11	Take the PDU power switch that was provided in your PDU kit and align the switch so that the green LED is toward the right side (if viewed from the front), and snap it into the forehead assembly provided in the PDU installation kit. See Figure 8.						

Step		A	B	C	D	E	F
12	Align the switched forehead assembly to the top of the rack enclosure, and attach it using the same three 10-32 x 0.5" screws used to hold the non-switchable forehead assembly. Tighten the screws to 20-inch pounds. See Figure 8.						

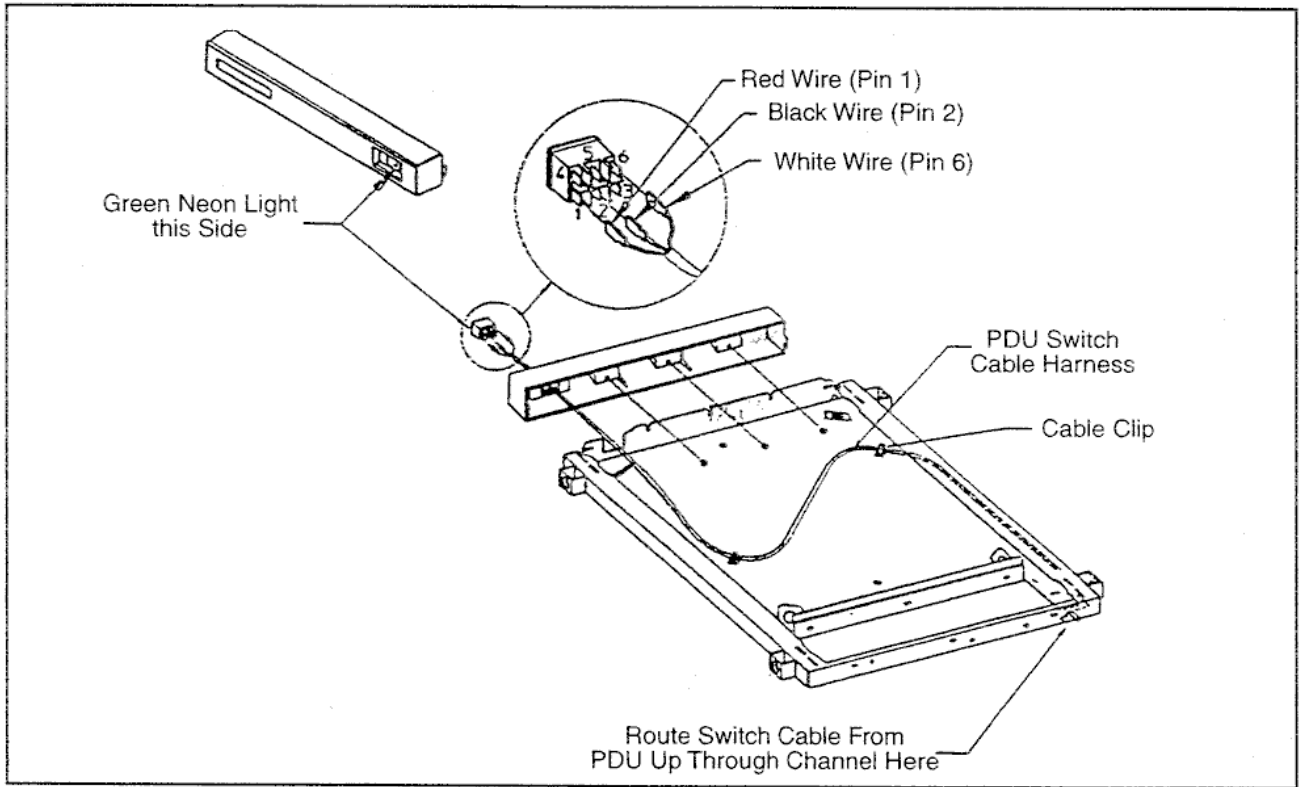


Figure 8. Configuring the Forehead Assembly

Step		A	B	C	D	E	F
13	Connect the PDU switch cable harness to the PDU power switch. Make sure the connectors slide completely onto the spade terminals on the back of the switch. See Figure 9.						

Caution

Connections from the PDU front panel switch harness and the switch in the forehead must be made correctly to ensure normal PDU operation. Failure to do so can result in PDU failure or inconsistent PDU operation.

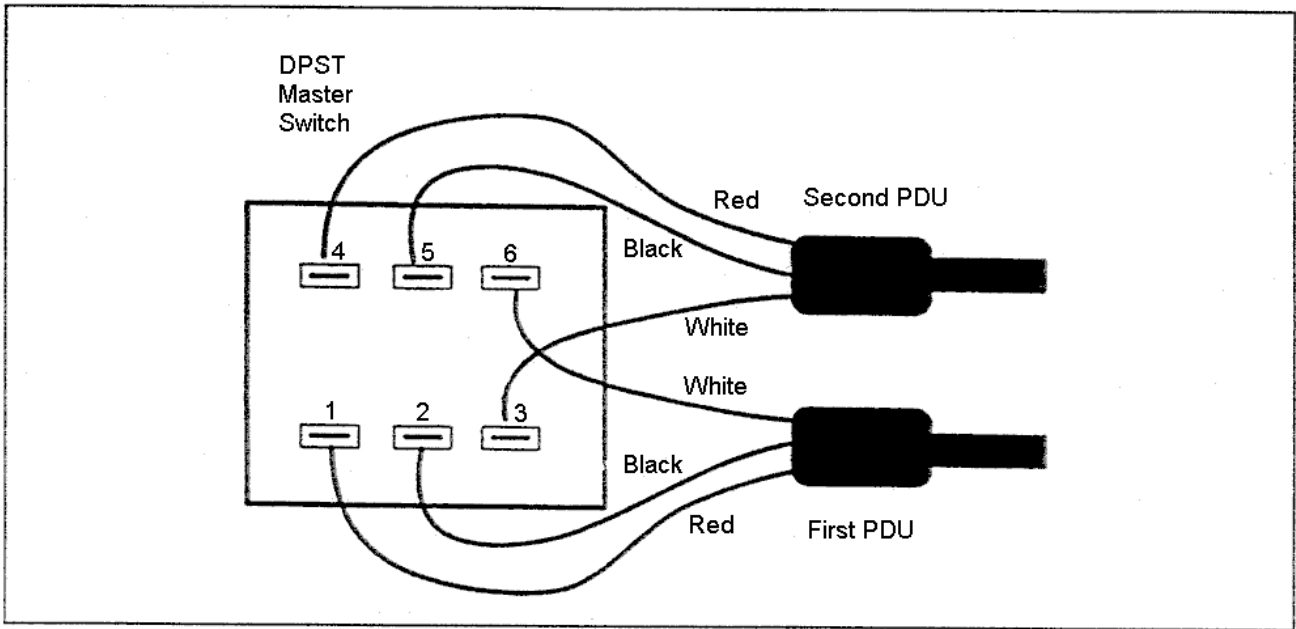


Figure 9. Main Power Switch Connections

Step		A	B	C	D	E	F
14	Reassemble the rack enclosure by following steps 1-4, but in reverse order. Make sure no wires or electrical cords are pinched.						

Step		A	B	C	D	E	F
15	Reconnect AC power to the rack enclosure.						

This completes installation of the Power Distribution Unit Kit.

Place this Guide with your rack documentation.