

Strata VI

MPSA-200 INSTALLATION

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01 GENERAL

01.01 The MPSA-200 is equipped with a reversible, built-in bracket (Figure 1); it is configured at the factory

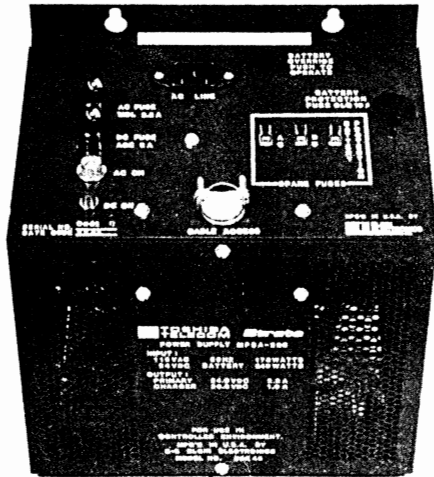


FIGURE 1

for mounting on a wall or other vertical surface. In order to mount on a table or horizontal surface securely, the bracket must be reversed to the position shown in Figure 2. This orientation is necessary to assure proper cooling.

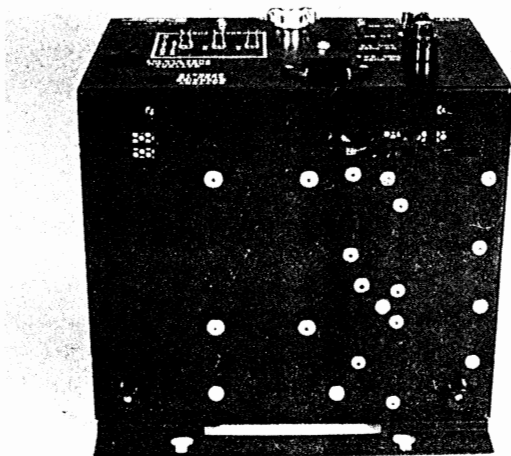


FIGURE 2

01.02 Unpack and inspect the power supply and the enclosed hardware. Ex-

amine the package and make careful note of any visible damage. If any damage is found, bring it to the attention of the delivery carrier and make the proper claims.

01.03 Check the hardware list; if it is determined that any equipment within the carton is missing, contact your Toshiba supplier immediately.

01.04 The following hardware, which is required to mount and connect the MPSA to the system, is supplied with each unit.

ENCLOSED HARDWARE

Quantity	Item
2	T.C. Toggler Wall Fasteners (Figure 3)
2	#14 Hex Head Sheet Metal Screws
1	Toggler Key
1	Template
1	Spare AC Fuse (F1, 2.5 amp, SLO-BLO 125-VAC)
1	Spare DC Fuse (F2, 5 amp, Fast-BLO, 32-VDC)
1	16 AWG, 3-wire Jacketed Cable (54 inches)

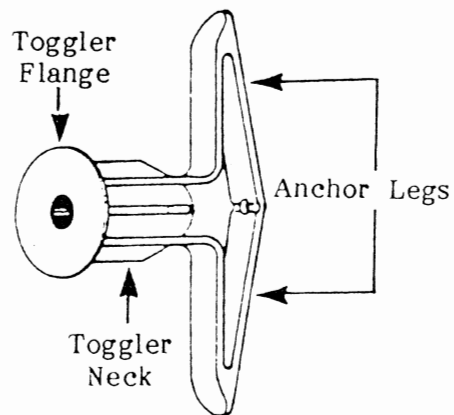


FIGURE 3

01.10 Surface Preparation

01.11 Choose a suitable location (either vertical or horizontal) for the

MPSA and locate the template on that location. If on a wall, use a spirit level to verify that the drilling points are level.

01.12 Place punch marks on the mounting surface through the two "+" marks on the template.

01.13 Drill through the mounting surface with a 5/16-inch bit to prepare the anchoring holes.

01.20 Mounting the MPSA

01.21 Press the anchor legs of the togglers together, and insert them into the anchoring holes (Figure 4) until their neck flanges are flush with the mounting surface. If insertion is difficult, tap them lightly with a hammer.

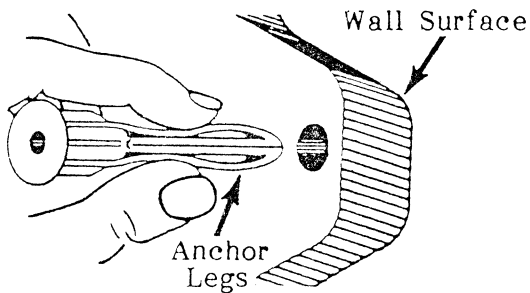


FIGURE 4

01.22 Insert a toggler key into the small hole in the neck of each fastener, as shown in Figure 5. This should cause the anchor legs to "pop" open. Remove the toggler key.

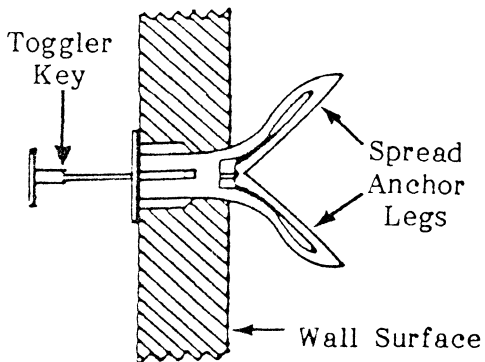


FIGURE 5

01.23 Thread the screws into the small holes in the center of the togglers. Leave some clearance between the bottom of each screw head and the mounting surface (Figure 6).

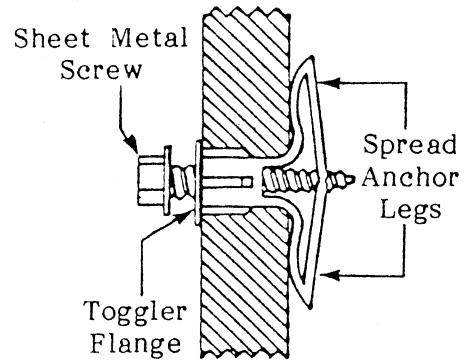


FIGURE 6

01.24 Place the MPSA against the mounting surface with the screws protruding through the holes (Figure 7).

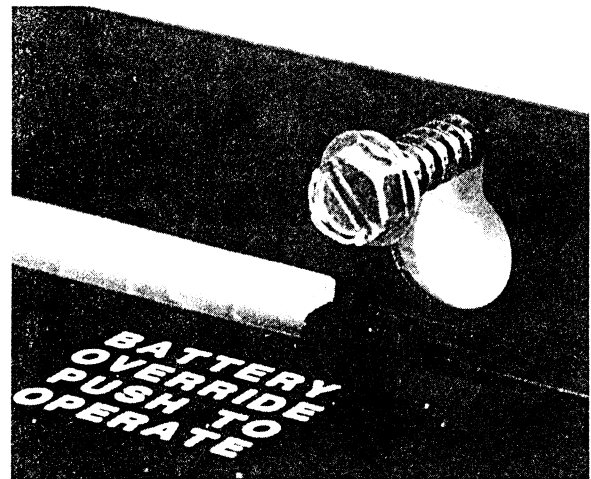


FIGURE 7

01.25 Position the power supply so that the narrower portions of the holes slip over the screws, and (if the unit is wall-mounted) the weight of the power supply is supported. Tighten the screws.

01.26 If the power supply is table-mounted, make certain the unit rests on its four rubber "feet" and is secured with the mounting bracket. This is essential for proper cooling.

01.30 Fuses

01.31 Remove the spare fuses from the hardware carton, and place them in their individually marked holders.

01.32 Remove and inspect the fuses that were shipped inside the MPSA. If either fuse is defective, replace it and order another spare fuse from your Toshiba supplier.

01.33 Prior to installing the PBBU, connect the MPSA to the MKSU per Paragraph **06.10**, Section 100-006-200, Installation.

02 BATTERY BACK-UP INSTALLATION

02.01 The power battery back-up unit (PBBU) in Figure 8 is an optional PCB which may be installed in the MPSA-200 to interface with two auxiliary 12-VDC batteries. In the event of an electrical power failure, the PBBU provides an automatic battery power source, permitting a typical STRATA VI system to continue normal operations for some time (in direct ratio with the type and size of the batteries chosen).

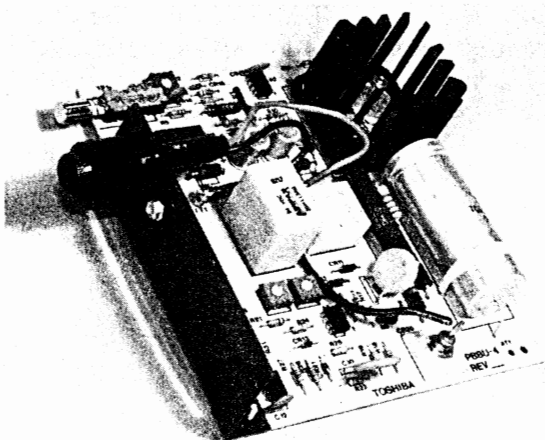


FIGURE 8

02.02 The PBBU contains a voltage sensing circuit which causes an electro-mechanical relay to connect the back-up battery power to the system

before the MPSA output voltage drops below 21-VDC (at which point system functions would be disrupted and existing calls would be disconnected).

02.03 When the normal source of electrical power is restored, the voltage sensing circuit relay will disconnect the standby battery power source.

02.04 If the standby battery power source output falls below 21-VDC while it is connected to the system, the voltage sensing circuit will cause the relay to disconnect the standby batteries from the system.

02.05 The standby batteries will not be reconnected unless:

- The "Battery Override" switch (Figures 8 and 9) is placed in the **ON** position, or...
- The depleted batteries are replaced by a freshly charged pair and the "Battery Override" switch is turned on and then released.

02.06 The PBBU also contains circuitry to provide the charge current necessary to maintain the batteries at a satisfactory level of charge while the STRATA VI system is in normal operation. An external fast charger may also be connected across the battery output terminal connections.

02.07 The PBBU kit contains the following items:

- PBBU—power battery backup PCB.
- Fuse—spare battery protection fuse.
- "PBBU-4 REV"—decal to be placed on the front of the MPSA.
- "WARNING"—warning tag for attachment to the 115-VAC power cord.

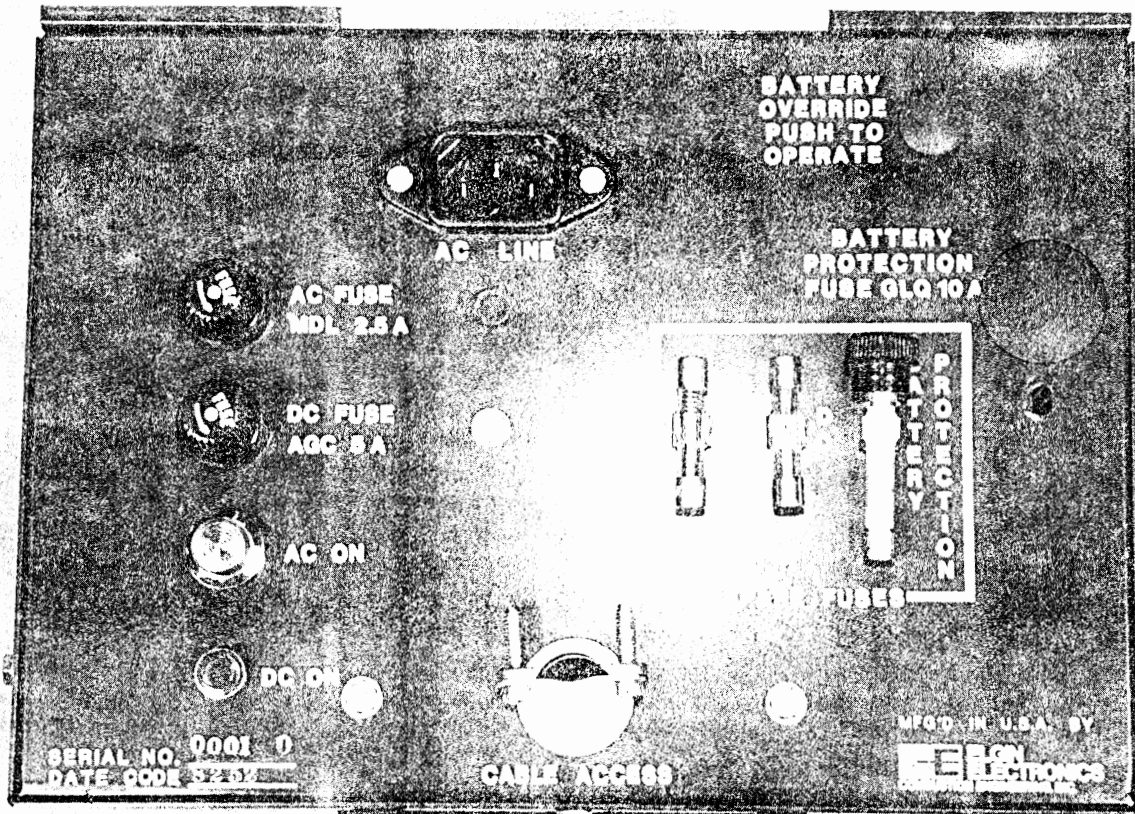


FIGURE 9

02.08 In addition to the PBBU kit, these items are needed to install a PBBU.

- Two Batteries—lead-acid, maintenance-free automobile batteries (80 amp/hr maximum) are recommended. The procedures in Paragraph **02.40** assume batteries with side-mounted terminals are used.
- Battery Rack & Separator—a battery rack and separator should be used to assure the batteries will not tip and spill battery acid or accidentally short the battery terminals.
- Two-Wire Connecting Cable—a 2-wire connecting cable, terminating

at one end with 3/8-in. ring terminals and at the other end with 1/8-in. spade terminals, is required to connect the batteries and the MPSA. The minimum wire gauge must be determined by the loop length of the connecting cable (as indicated in Table A).

TABLE A—MINIMUM WIRE GAUGE

LOOP LENGTH	RECOMMENDED SIZE
12 ft.	16 gauge
20 ft.	14 gauge
30 ft.	12 gauge
50 ft.	10 gauge

- Single-Wire Cable—a 16 AWG single-wire cable, approximately 18 inches in length and equipped with

ring terminals, is required to connect the two batteries in series.

- Cable Clamp—a cable clamp should be used to prevent cable movement from affecting the batteries.
- Battery Protection—a 10-amp, 32V fuse, or a 10-amp DC instantaneous-tripping circuit breaker, is required to protect the batteries from power surge or short circuit damage.
- Bolts—four 3/8x1/2-in. hex head bolts are required to connect the cable terminals to the batteries.
- Washers—eight 3/8-in. flat washers and four 3/8-in. internal-tooth lock washers are required for the above cable terminal connections.
- Battery Cabinet—if the batteries are not located in a well-ventilated closet or other secure area, protected from fire or sparks, a properly ventilated protective cabinet is required to safeguard them.

CAUTION:
The power supply, battery, battery rack, and the interconnecting wiring shall be installed only by qualified installers, in accordance with all applicable electrical codes and Article 480 of the National Electrical Code. Before installing see the "Installation Instructions" enclosed with each item.

WARNING:
Only trained personnel may service or install the PBBU and power supply.

02.10 MPSA Preparation

02.11 Verify that the power switch

on the MTOU is in the **OFF** position, and then disconnect the 115-VAC power cord.

02.12 Remove the terminal strip cover (Figure 10).

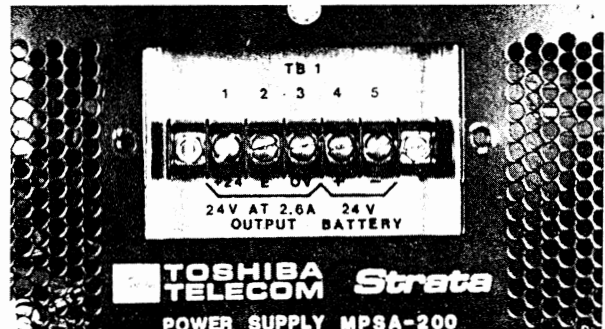


FIGURE 10

02.13 The MPSA cover is secured by ten screws. Viewing the MPSA as if it is wall-mounted, two screws will be located on the front and four on each side.

02.14 Remove all ten screws.

02.15 Remove and set cover aside.

02.16 Locate the multi-wire harness in MPSA (Figure 11), it terminates in a nylon connector.

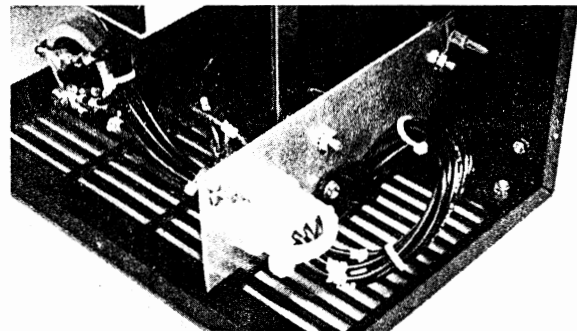


FIGURE 11

02.17 The harness is loosely secured to the chassis with a cable clamp (Figure 12); the clamp will allow slight harness movement.

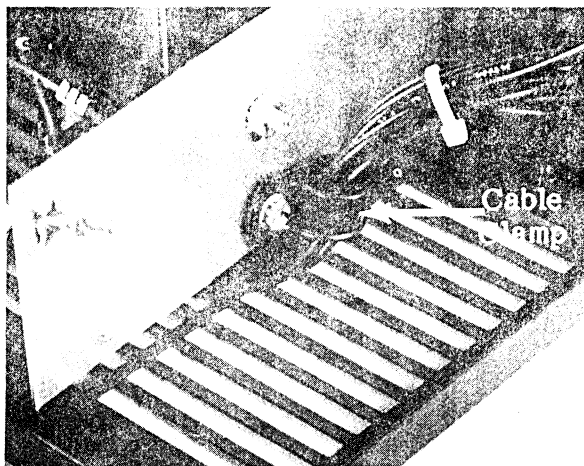


FIGURE 12

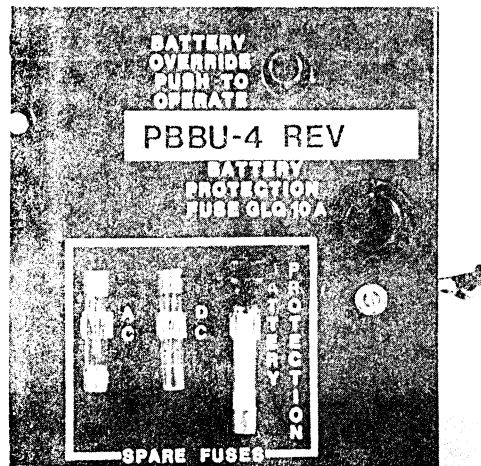


FIGURE 14

02.20 Installing the PBPU

02.21 Mounted in the MPSA control panel are two hole plugs, remove and discard them.

02.22 Unwrap the PBPU. Remove and save the screw located in the mounting bracket (Figure 13).

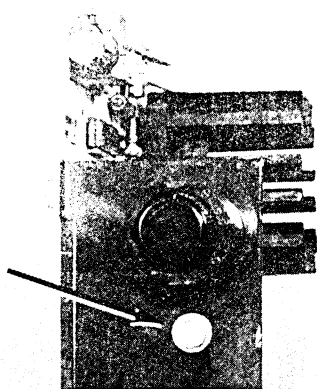


FIGURE 13

02.23 Slip the PBPU fuse holder and battery override button through their respective ports in the control panel (Figure 14). The PBPU mounting bracket should be flush against the rear of the control panel. The harness should flow around the PBPU PCB, with no wires beneath it.

02.24 Align the two tan-colored PBPU pins with the two holes in the mounting bracket (Figure 15). Press the pins into the holes until they catch.

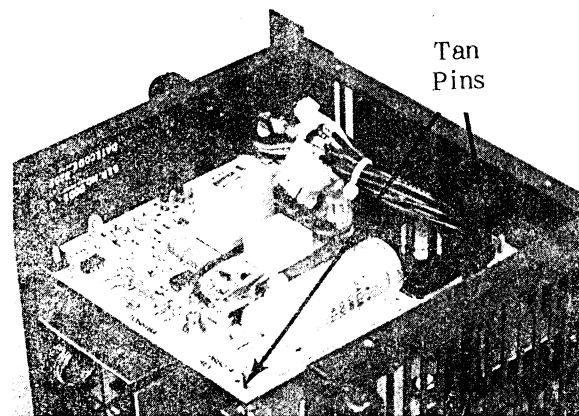


FIGURE 15

02.25 Use the previously removed screw and secure the mounting bracket to the control panel (Figure 14).

02.26 Plug the connector into the nine-hole jack in the center of the PBPU. **Do not** force the prongs into the jack, they are keyed so that they can be mated in only one position.

02.27 Make certain that no wires from the harness are caught between the cover and the PBPU heat sink

(Figure 16), and replace the MPSA cover. Secure it with the ten screws originally removed.

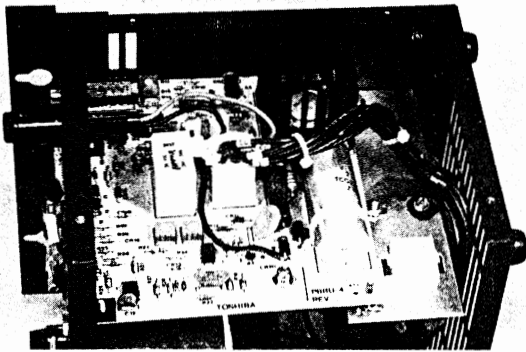


FIGURE 16

02.28 Depress the battery override button (Figure 14). If it catches and stays in, press it again to cause it to release and protrude out of the control panel. The button must be out for the MPSA to operate normally.

02.29 Remove the spare fuse from the PBBU kit, and put it in the holder located on the top of the MPSA.

02.30 Required Labels and Warning Tags

02.31 Remove the warning tag from the kit and tie it to the power cord where it connects to the MPSA.

02.32 A "PBBU-4 REV" decal must be placed on the control panel of the MPSA. Remove the decal from the kit, peel the backing off, and place it on the control panel (Figure 14).

02.40 Battery Connection

CAUTION:

Do not attempt to connect the batteries to the power supply while the AC power cord is plugged in, or without the power supply being connected to the MKSU. Do not connect

the two-wire cable to the batteries before connecting it to the power supply. Once the batteries are connected to the power supply, the 24V output terminals are live.

02.41 Select a location for the batteries near the power supply. The loop length of the cable connecting them to the power supply will determine the minimum gauge wire which can be used in the cable. See Table A.

NOTE:

The area in which the batteries are to be located must be well ventilated to prevent a dangerous accumulation of battery gases. The batteries must also be protected from moisture and extreme temperatures.

02.42 Secure the batteries in the battery rack and separator, which should be located in a minimum access area, such as a closet or a well ventilated cabinet.

02.43 Verify that the battery override button is in the **OFF** position (out).

02.44 Loosen the two screws on the terminal strip identified as 24V/BATTERY.

02.45 Connect the battery fuse (or circuit breaker) lead to the negative terminal on battery #1 (Figure 17).

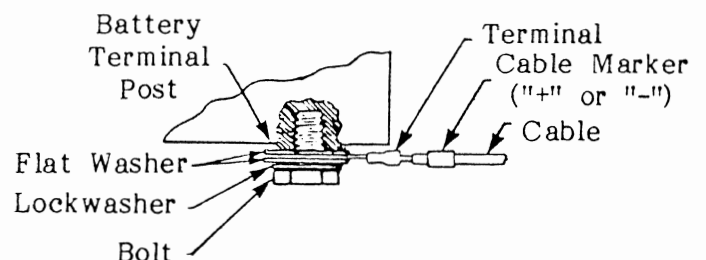


FIGURE 17

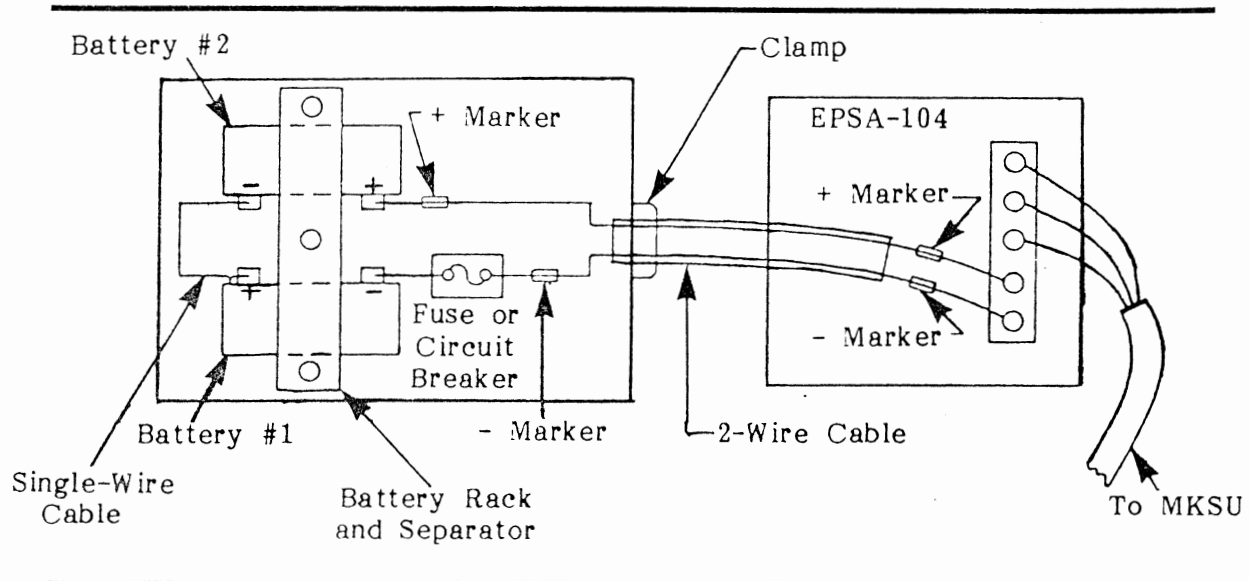


FIGURE 18

02.46 Attach the negative wire of the 2-wire cable to the battery fuse (or circuit breaker).

02.47 Connect the positive wire to the positive terminal of battery #2 (see Figure 17).

02.48 Connect the two batteries with the single-wire cable—one end to the positive terminal on battery #1 and the other end to the negative terminal on battery #2 (Figure 18).

NOTE:

Place the cable clamp over the two-wire cable and secure it to either the battery rack or the protective cabinet. Adjust the clamp to relieve strain on the cable.

02.50 Installation Finalization

02.51 Plug the AC power cord in, and verify that the **AC ON** indicator is lit.

02.52 Unplug the AC power cord, and verify that the **DC ON** indicator is lit to indicate the batteries are supplying electrical power.

02.53 Replace the terminal strip cover and test the STRATA VI system functions under both AC and battery back-up power.

CAUTION:

When testing is complete, make certain that the battery override button is in the OFF position and that the AC ON indicator is lit.