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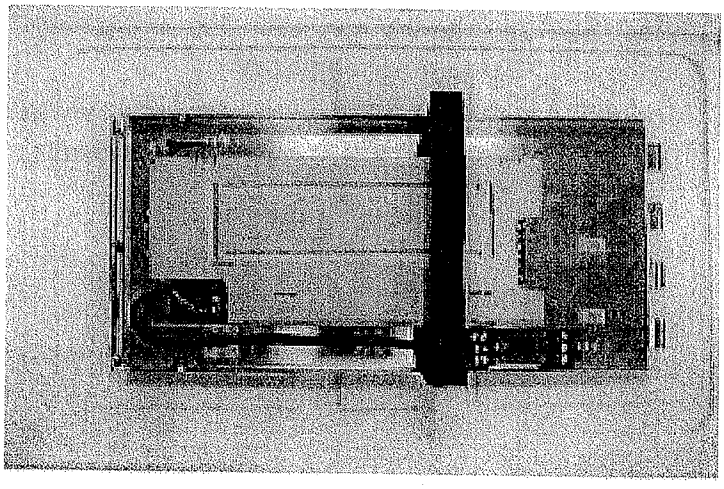
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Adept MV 5/10 Power Supply Retrofit Procedure



Adept Part Number:
00221-000 Rev. B
February 2004

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Introduction

In order to meet CE Surge test requirements, the MV-5 and MV-10 chassis must incorporate Power Factor Correction power supplies. This design modification, which goes into effect on January 1, 2001, provides additional filtering for the MV chassis. This is an immediate requirement for EU International Shipments and a phase-in for U.S. Domestic shipments.

> **NOTE:** Domestic shipments with final destinations being EU Customers must comply with the new Power Factor Correction requirements.

The power supply retrofit procedure involves the following five changes:

1. A rear chassis panel modification.
2. A modification of the MV-5 harness, which is now common to both the MV5A and MV10A.
3. The addition of an MOV PCA.
4. The addition of a baffle to control air flow.
5. A new power supply, common to both MV5A and MV10A that requires factory adjustment.

This document outlines the materials, tools, and techniques required to complete the retrofitting procedure for the MV-5 or MV-10 chassis power supply.

Required Materials

The MV 5/10 retrofit kit (part #00217-000) includes the following:

- New power supply
- MOV board
- Power harness (MOV to power supply)
- Baffle
- Supply of zip ties
- Adept MV 5/10 Power Supply Retrofit Procedure document (part # 00221-000)

Required Tools

- Phillips head screwdriver
- Nut driver 7mm
- Small cutters (for plastic zip ties)

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Step 1 - Preparing for Retrofit

This section describes the procedure used to prepare the MV controller for retrofitting of the power supply.

First, you must initiate shutdown procedures for the robot and MV controller and remove power source(s) from the MV controller. Next, remove all interfacing cables to and from the controller. Remove the MV chassis from its mounting hard points. Finally, move the MV chassis to a suitable workplace.

WARNING: There can be danger of electric shock. Before continuing with this procedure, ensure that all AC power is disconnected from the source to the chassis.

Using a Phillips screwdriver, remove the four flathead screws that secure the sheet metal back panel of the MV chassis. From the top edge, pull the panel down and away from the chassis. Be careful not to damage the wire connections inside. The figure below (Figure 1) shows the points where disconnections are to be made from the back panel/power supply assembly. After making the disconnections, set aside the old assembly.

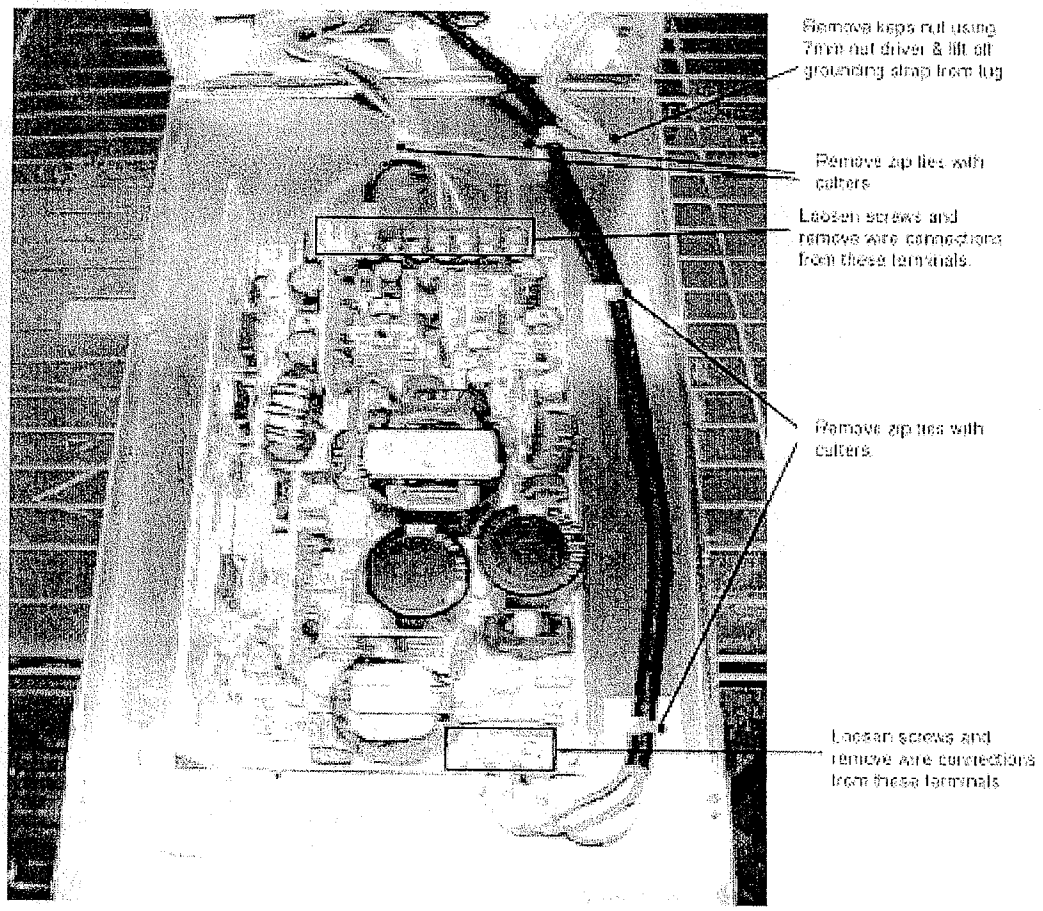


Figure 1 Back panel/power supply assembly

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Step 2 - Installing the Replacement Power Supply Assembly

This section describes the procedure used to retrofit the power supply assembly on an Adept MV-5 or MV-10 controller.

The figure on the right (Figure 2) shows the new kit replacement power supply assembly. Position the new sheet metal back panel close to the MV chassis and lay out the cable leads close to their corresponding terminals.

NOTE: The power supply cord must be looped one time in order to compensate for slack.

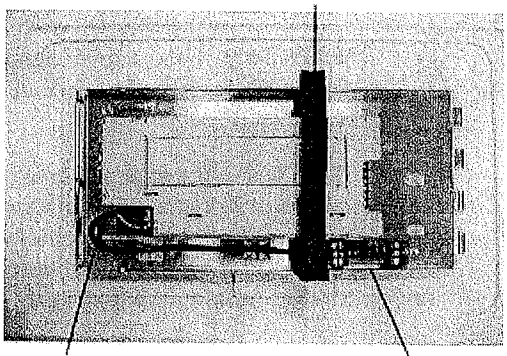


Figure 2 Kit replacement power supply assembly

Attach wire leads from the power source cable to the MOV board. Make sure you have a service loop in the cable to accommodate for the slack that occurs due to the retrofit (see Figure 4). The figure to the right (Figure 3) shows the wire color-coding and the connection locations on the MOV board terminals.

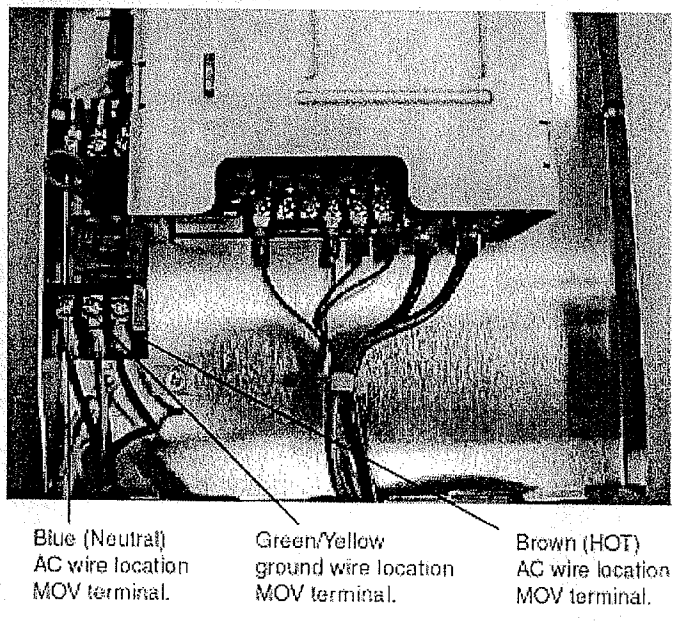


Figure 3 Wire Color-coding and MOV board terminal locations

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The figure on the right (Figure 4) shows a power cord that has been looped once and then zip- tied to hold the loop in place.

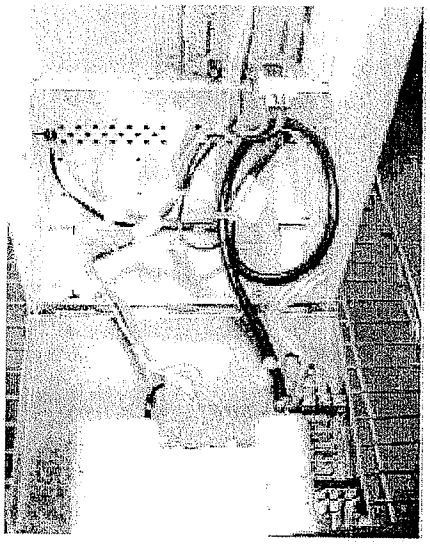


Figure 4 Power supply cord looped once to accommodate for slack

Attach the controller power harness leads to the power supply output terminals (see Figure 5 on the right).

The terminals used from left to right are #1, #4, #5, #6, and the two heavy gauge black and red wire leads.

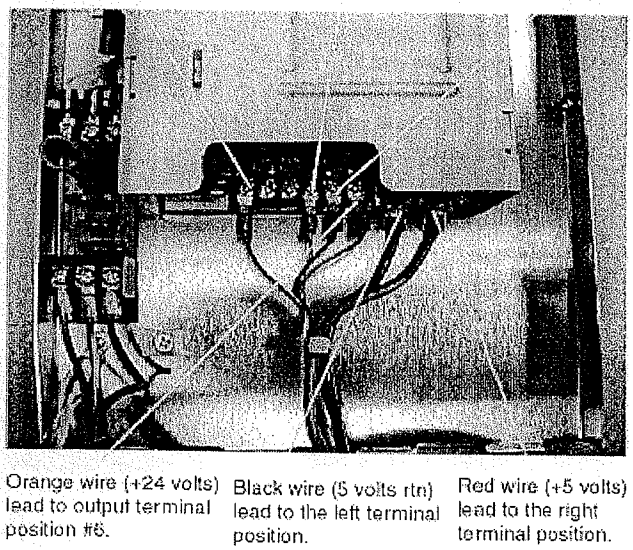


Figure 5 Attaching controller power harness leads

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The figure on the right (Figure 6) shows a wiring diagram for the power supply output terminals.

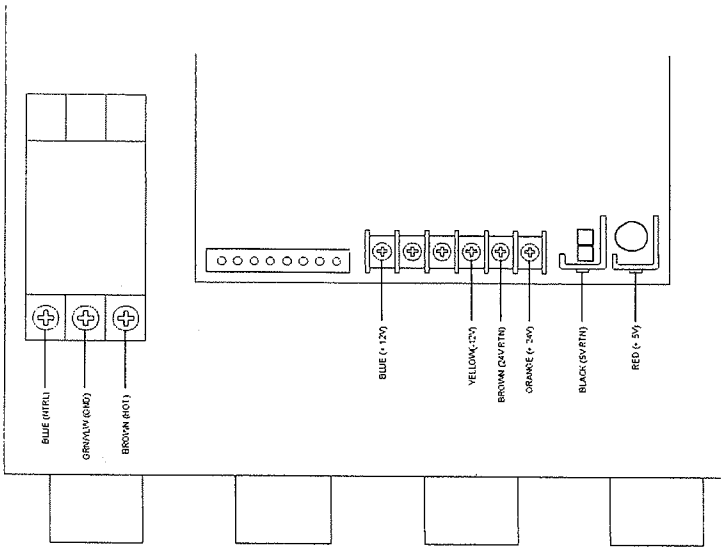


Figure 6 Power Supply Wiring Diagram

Attach the grounding strap to the 4mm fastening stud located on the sheet metal back panel, next to the MOV board. (see Figure 7 on the right)

Use the supplied zip ties to fasten the power supply cord and controller power harness to their respective zip tie anchors, located on the sheet metal back panel.

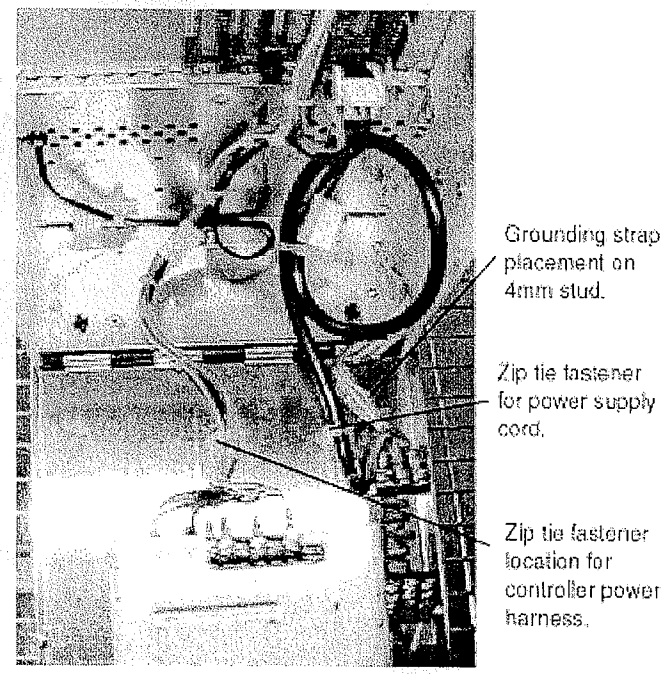


Figure 7 Attaching the grounding strap and zip tie anchors

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Move the black baffle into position by slipping it over the power supply and down as far as possible. It should fit snuggly. No fastening is required.

The figure to the right (Figure 8) shows the preferred location for the baffle.

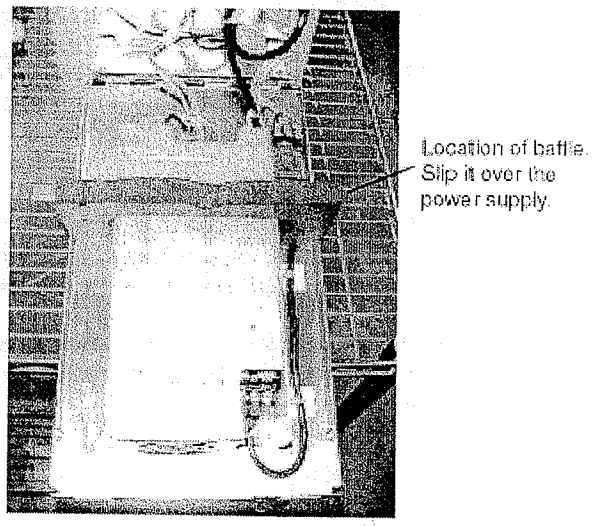


Figure 8 Positioning the baffle

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Step 3 - Completing the Retrofit Procedure

The power supply retrofit procedure is nearly finished. Before positioning the new back panel assembly back into place on the MV 5/10 chassis, verify that all new power supply and MOV board connections are correct and securely fastened. Using a permanent marker, copy the serial number from the old back panel onto the label attached to the new panel. Select the appropriate box for your controller model. Fasten the back panel to the chassis.

> **NOTE:** Before proceeding, it is recommended that you connect AC power from the source to the chassis and energize the unit. Make sure the fan is working and the lights on the controller are functioning properly.

As a final step, re-install the chassis to its original position and make all interfacing hookups. Power up the controller and verify normal operation. The procedure is now completed.

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