

**303A-011A**  
**CMOS/BIPOLAR P/T ADAPTER**

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***Firmware Update Kit***

985-0045-020

*April 1992*

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# 1. INTRODUCTION

## CAUTION

*The instructions contained in this document are for qualified electronic service personnel only. Do not attempt to perform them unless you are qualified to do so. EPROMs are static sensitive. Practice standard static-sensitive device handling precautions; otherwise, damage to the component(s) may result.*

This update kit contains the firmware and instructions necessary for installing Version 18.0 firmware in your 303A-011A P/T Adapter. Table 1-1 lists the parts included in this update kit.

If you are updating from any version prior to V5.0 you will need to install the resistor, R18, and remove R14 (see Section 2 of this document). If you are updating from V1.0 firmware, you will also need the 303A-011A Hardware Update Kit (part number 951-0043-001), which contains the new Daughter board (part number 701-2138-001). See the Hardware Update Kit manual (part number 985-0145-001) for instructions on installing the new Daughter board. Once both kits have been successfully installed, the adapter is updated to V18.0. It should be noted that V1.0 firmware will not work with the 701-2138-001 Daughter board. See Table 1-2 for more information.

**Table 1-1. Update Kit Contents**

Description	Quantity	Designator	Part No.
Firmware, EPROM	1	U10	324-1725-081
Firmware, EPROM	1	U9	324-1725-082
Firmware, EPROM	1	U8	324-1725-083
Firmware, EPROM	1	U7	324-1725-084
Firmware, PAL	1	U2	324-1745-017
Resistor	1	R18	101-0000-0001
Installation Manual	1		985-0045
User Note	1		984-0045
Label, MODEL/VERSION	1		-

**Firmware Version Number: V18.0**

**Table 1-2. Updating To V18.0 Firmware**

<b>Updating From:</b>	<b>Required Action:</b>
V01	Install Hardware Update Kit (951-0043-001) Remove R14/Install R18 Install V18.0 Firmware
V02 through V04	Remove R14/Install R18 Install V18.0 Firmware
V05 and up	Install V18.0 Firmware

To install this update kit, you will need the following tools:

- IC extractor tool, or small slot-head screwdriver
- Soldering iron
- Long nose pliers
- 5/16 Nut driver
- Wire cutters

Installation procedures are covered in Section 2, which follows.

**NOTE**

*When updating from V5.0 and up to the current version disassembly is not required. Complete only the steps in sections 2.0, 2.2, 2.4 and 2.6.*

## 2. UPDATE KIT INSTALLATION

Before you can install the new firmware in your 303A-011A, you must first remove the P/T adapter from the programmer. To disassemble the 303A-011A P/T Adapter, refer to Figure 2-1.

### 2.0 Adapter Removal

1. Remove the adapter from the programmer.
2. Set the adapter face down on a static-free workstation.

### 2.1 Adapter Disassembly

#### NOTE

*The procedure in this section is pertinent only if you are performing a hardware update. Proceed to the next section if you are performing a firmware update only.*

1. Remove the two guide pins by twisting counter-clockwise with your fingers, or use a pair of long nose pliers. Remove the two flat washers (see Figure 2-1). Set the removed hardware aside.

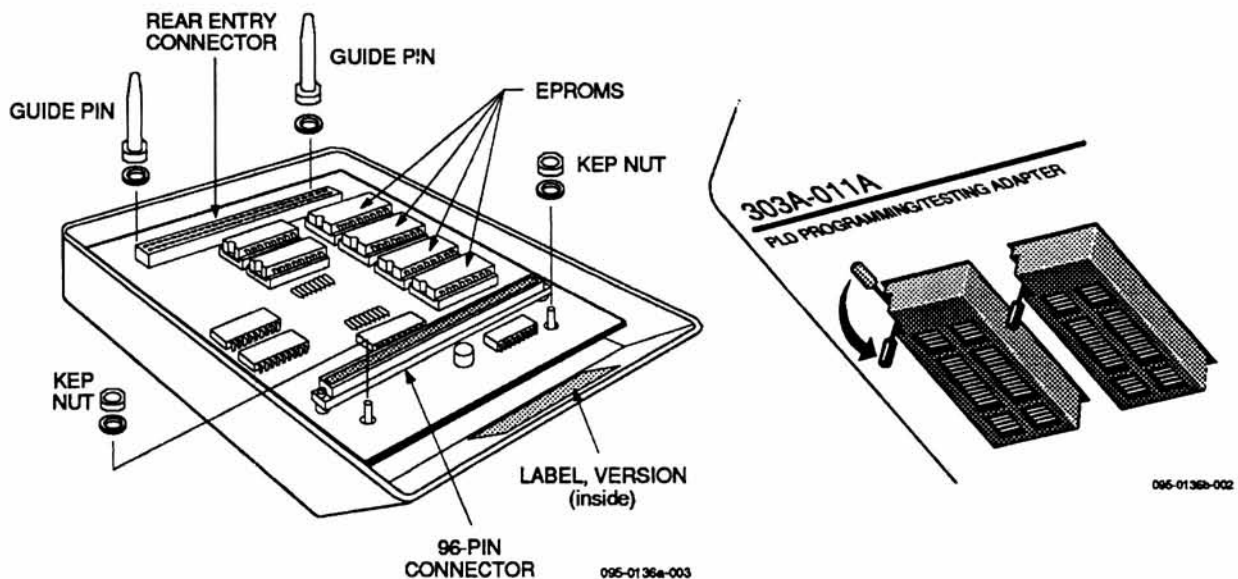


Figure 2-1. 303A-011A P/T Adapter Removal/Disassembly

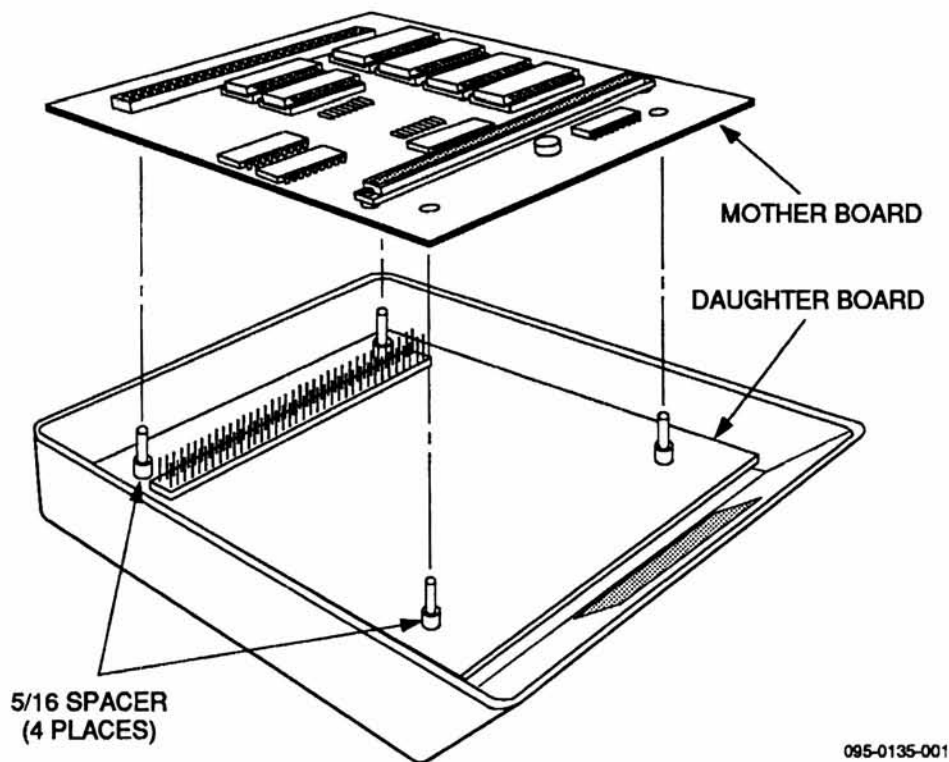
2. With the 5/16 inch nut driver, remove the two KEP nuts and the two flat washers and set them aside.
3. Lift the P/T adapter so that you can see the top of the adapter and put the socket levers in the open position, as shown in Figure 2.1.

**CAUTION**

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*Before you lift the Mother board out, be aware that there are four 5/16 inch spacers separating the Mother board from the Daughter board. Once you pull the Mother board out, these spacers will be loose. Ensure that you set the spacers aside for use in reassembly (see Figure 2-2).*

4. Lift up on the 96-pin connector and carefully pull the Mother board out (see Figure 2-2).
5. Lay the Mother board on a flat, static-free surface.

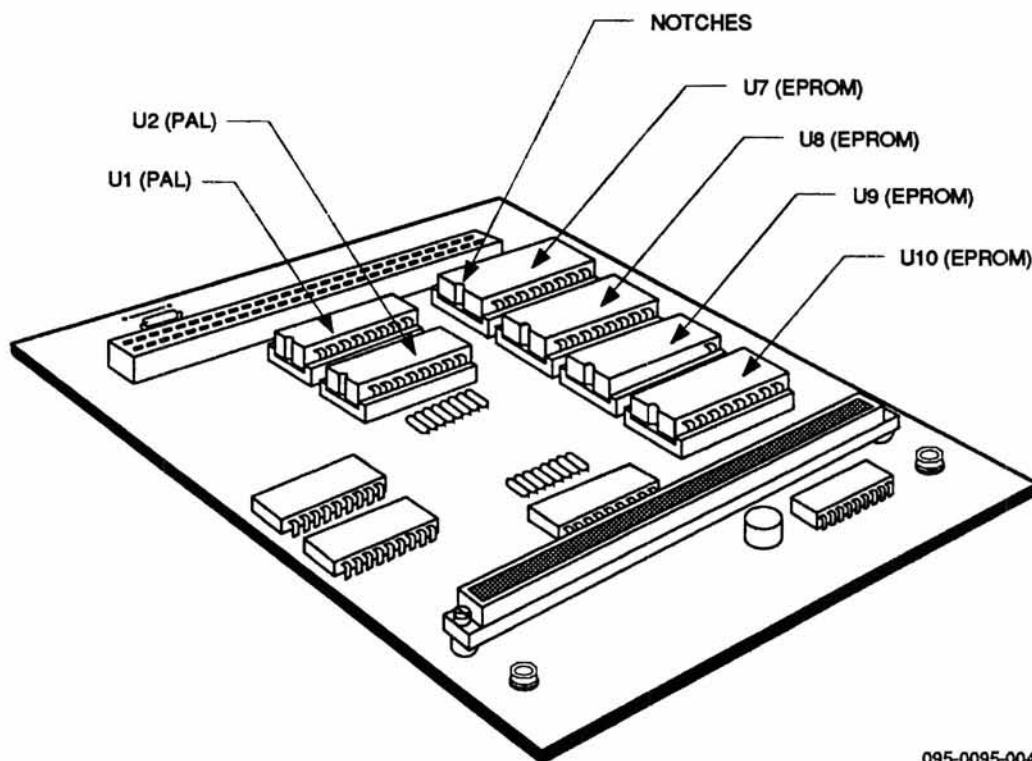


095-0135-001

*Figure 2-2. Removal of the Mother Board*

## 2.2 Firmware Removal

1. Remove all existing EPROMs and the PAL U2 using the IC extractor tool or the small slot-head screwdriver (see Figure 2-3). Leave PAL U1 installed.



095-0095-004

Figure 2-3. Removal of EPROMs and PAL

## 2.3 0-Ohm Resistor Installation

### NOTE

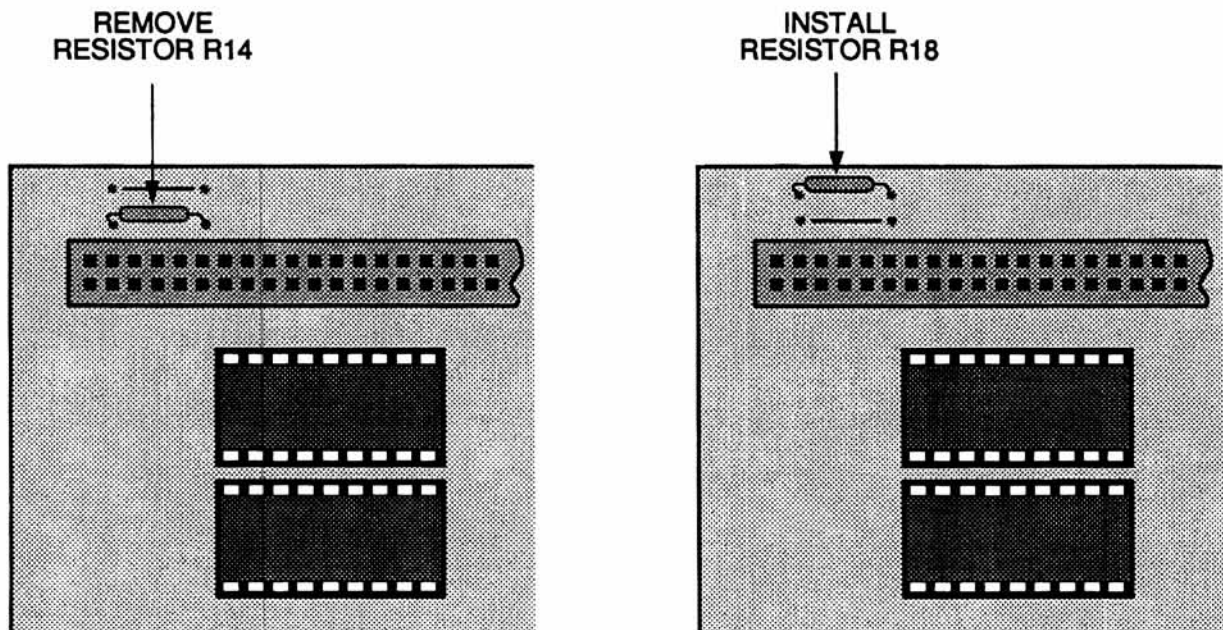
*The procedure in this section is pertinent only if you are performing a hardware update. Proceed to the next section if you are performing a firmware update only.*

1. Remove Resistor R14 (see Figure 2-4).
2. Install the 0-Ohm resistor you received in this update kit at R18 and solder it into place.
3. Clip any protruding leads from R18. Leads should not be longer than 0.10".

### NOTE

*If the new firmware has been installed but the 0-Ohm resistor (R18) has not been installed and R14 has not been removed, the following error occurs:*

*"No Socket Adapter"*



095-0094-003

Figure 2-4. Resistor Removal/Installation



## 2.4 Firmware Installation

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### CAUTION

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*Always wear a grounded wrist-strap when installing the update kit to avoid the possibility of damage from electrostatic discharge.*

1. Replace the EPROMs and the PAL you removed with the EPROMs and the PAL you received in the update kit. Take care to match the notch in the new firmware packages with the notches indicated by the component outline printed on the circuit board. Refer to Figure 2-1 for the correct orientation of the firmware packages.

<b>Part Number</b>	<b>Installation Location</b>
324-1745-017	U2
324-1725-084	U7
324-1725-083	U8
324-1725-082	U9
324-1725-081	U10

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### CAUTION

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*The EPROMs and PAL must be oriented correctly in the sockets. Ensure that the notch on the device is facing the same direction as the notch that is printed on the circuit board. If the firmware IC packages are installed incorrectly they will be damaged when power is applied.*

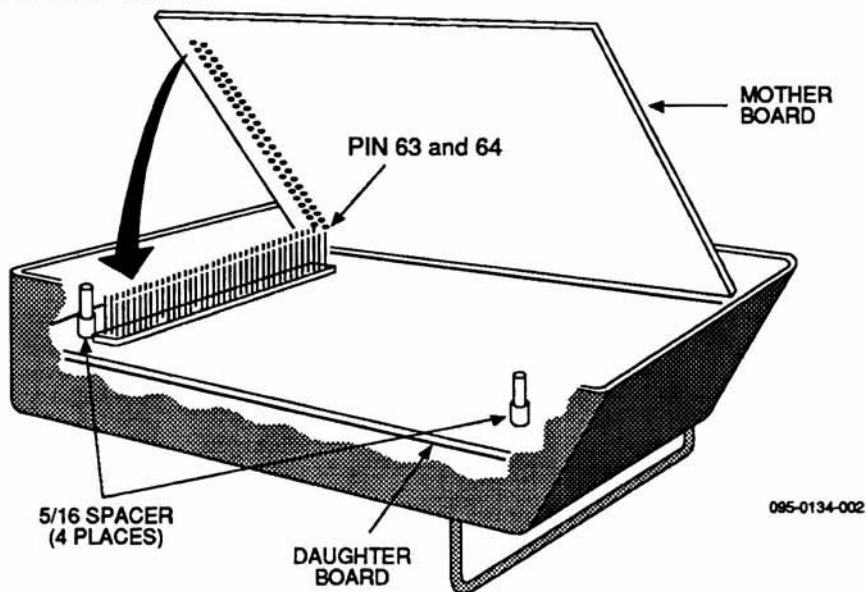
2. Affix the new Model/Version label over the old one. Refer to Figure 2-1 for the correct place to put the label.

## 2.5 Reassembly

### NOTE

*The procedure in this section is pertinent only if you are performing a hardware update. Proceed to the next section if you are performing a firmware update only.*

1. Ensure that the 5/16 inch spacers are positioned over the standoffs (see Figure 2-5).
2. Hold the Mother board (component side up) with the 96-pin connector to the right, as shown in Figure 2-4.
3. While holding the P/T adapter in one hand and the Mother board in the other, line up pins 63 and 64 on the Daughter board with the 63 and 64 pin positions on the Mother board, as shown in Figure 2-5.
4. Holding the assembly at eye level and positioning the boards as shown in Figure 2-5, carefully lower the Mother board over the Daughter board, lining the pins up with the pin holes in the Mother board.



*Figure 2-5. Reassembly of the P/T Adapter*

### CAUTION

*Lower the Mother board very carefully over the pins. Pins are easily bent.*

5. Rock the Mother board until all the pins are evenly protruding from the rear entry connector.
6. Place one of the four flat washers over each of the standoffs.
7. Replace the two guide pins. They will go toward the end of the adapter without the handle.
8. Using the 5/16 inch nut driver, tighten the two KEP nuts.

This completes the reassembly process.

## 2.6 Configuration Verification

To verify the new firmware is installed correctly and is the same version as listed in Table 1-1, perform the following procedure:

1. Install the P/T adapter on the programmer and apply power. The programmer automatically performs a self-test.
2. If the programmer fails to power-up correctly, or the self-test message is not displayed, then the update may have been installed incorrectly. Perform step 2(a) and repeat this procedure.
  - (a) Switch the power off. Closely inspect the EPROMs and PAL and verify that all of their pins are properly aligned and are making good contact with the socket.
3. Verify the firmware version number by entering `SELECT E F START` from the programmer's front panel. The correct version number should be displayed.
4. If the correct version number is displayed, then the update kit firmware installation is complete. If not, contact Data I/O Customer Support.





