

PPI Base

User Manual

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PPI Base User Manual

When used with the PPI Adapters, the PPI (programming) Base provides a package and pinout interface (PPI). The PPI Base, along with the appropriate PPI adapter, can program any device package type currently on the market.

This new interface system provides an easy exchange of programming sockets while maintaining the electrical integrity of the programming signals. The PPI system also allows support of devices with nonstandard pinouts or pincounts beyond the pin driver capability of the programmer.

The PPI Base is available for UniSite (with PinSite), the 2900, and the 3900 Programming Systems.

About the PPI Base

The PPI Base has 108 pins configured in four rows of 27 pins each. These pins support up to 88 pin drivers with VCC and ground capability.

The PPI Base supports the following applications:

- QFP (Quad Flat Pack)
- Device Carriers
- SDIP (Shrink Dip)
- SOIC (Small Outline Integrated Circuit)
- TSOP (Thin Small Outline Package)
- PGA (Pin Grid Array)
- Memory Card
- Non-JEDEC pinout — For devices not supported in standard bases

- Pin Driver Expansion — For devices that do not require a pin driver on every pin to perform a programming operation.

Specific to the 2900

The 2900 PPI Base provides pull-up/pull-down resistors that satisfy the device manufacturer's requirement for pins that are unused during programming. This feature allows you to program devices with more than 44 pins.

About the PPI Adapter

A variety of PPI adapters are available from Data I/O to accommodate the device pinouts of many package types. For example, a different PPI adapter is available for each lead pitch (the space between adjacent pins).

The PPI Base provides a durable electrical interconnect that allows adapters to be exchanged easily. A wide variety of sockets are available to support the large number of device package types.

For example, an 80-pin Quad Flat Pack (QFP) is available in many different package configurations. It is available in a square 20 x 20 pinout or in a rectangular 16 x 24 pin package. The QFP may also have different lead pitches and package dimensions.

Each adapter board routes universal pin drivers, VCC, and ground to the appropriate device pins.

Before You Start

A PPI Base is available for the 2900 and 3900 Programming Systems and for the PinSite Programming Module. Before you insert an adapter into the PPI Base, we recommend that you insert the PPI Base into the programmer. Refer to the *PinSite User Manual*, *2900 User Manual*, or *3900 User Manual* for instructions on installing the PPI Base into the Base receptacle opening.

Installing a PPI Adapter into the PPI Base

Use the following procedure to install an adapter into the PPI Base.

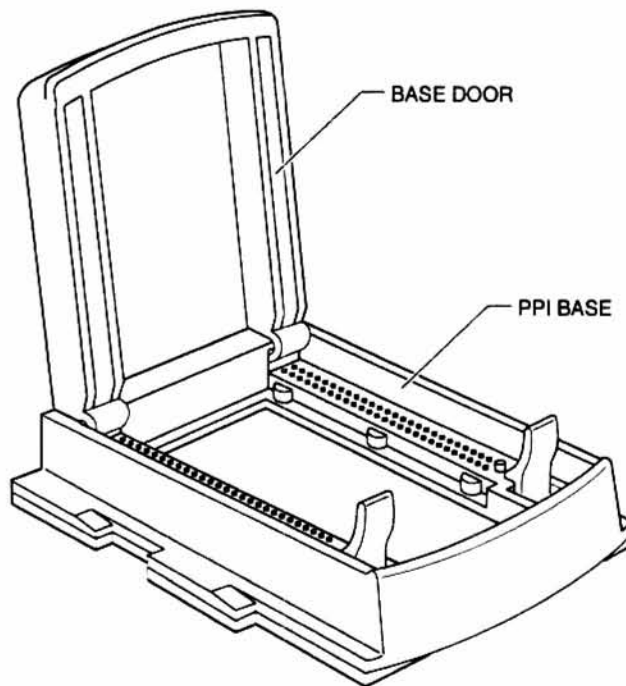
CAUTION: *Do not touch the exposed pins or components on the base. Contamination could lessen the programming reliability of the adapter. Also, do not disassemble the base; doing so could cause the pins to drop out.*

Installing a device into the adapter before the adapter has been securely placed in the base may damage the device.

1. Make sure the PPI Base is installed in your programmer.

2. Raise the base door until it rests in the upright position against the back of the PPI Base as shown in Figure 1.

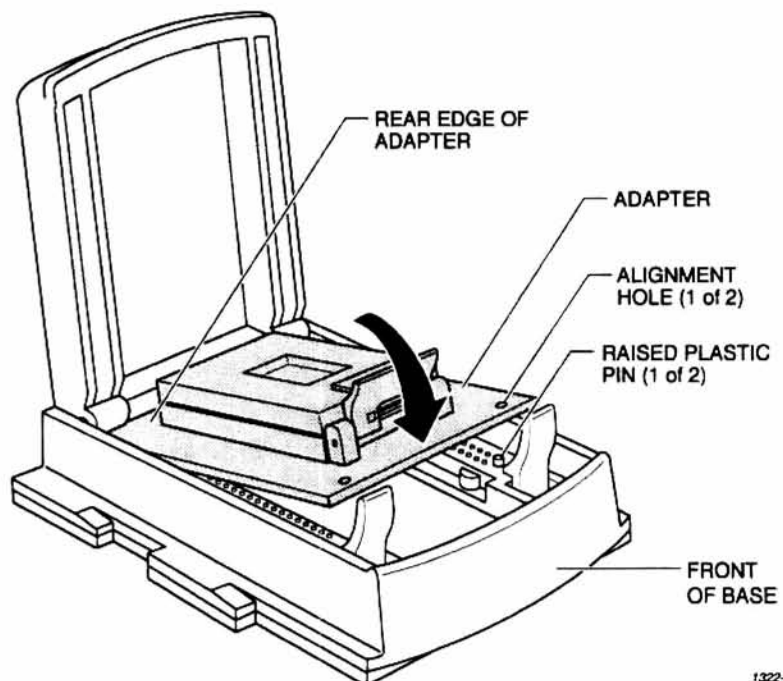
Figure 1
PPI Base



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3. Pick up the adapter with the retaining latch end facing toward you, and slide the rear of the adapter into the back of the base as shown in Figure 2. The alignment holes in the front corners of the adapter slide onto the raised plastic pins.

Figure 2
Inserting an Adapter into the Base



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4. Lower the removable base door over the PPI adapter.

Note: If the adapter socket has a high profile, you may need to remove the door and tilt the adapter upward to be able to lower the door.

5. While pulling back on the two latches, press down on the door until the latches snap into place over the door. See Figures 3 and 4. Make sure that both latches are securely in place.

Figure 3
Lowering the Base Door Over the Adapter

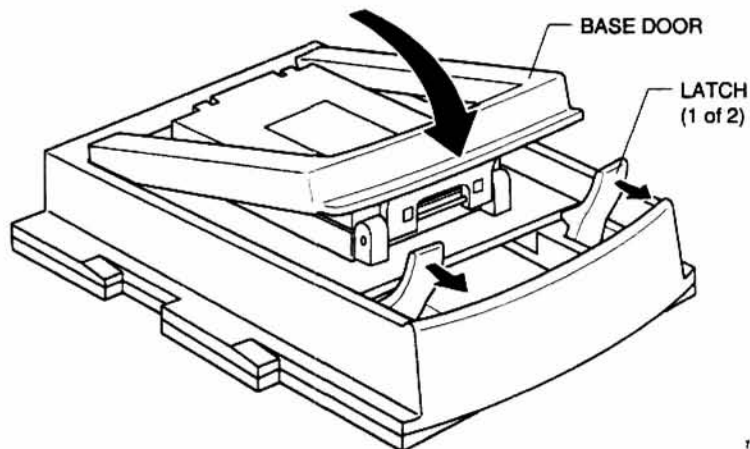
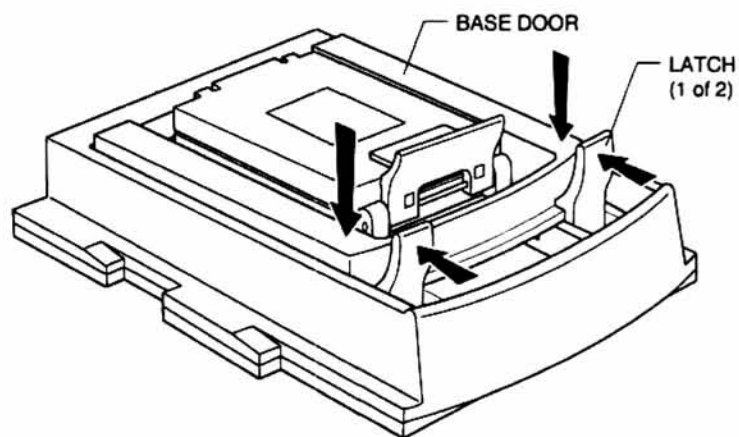


Figure 4
Securing the Base Door

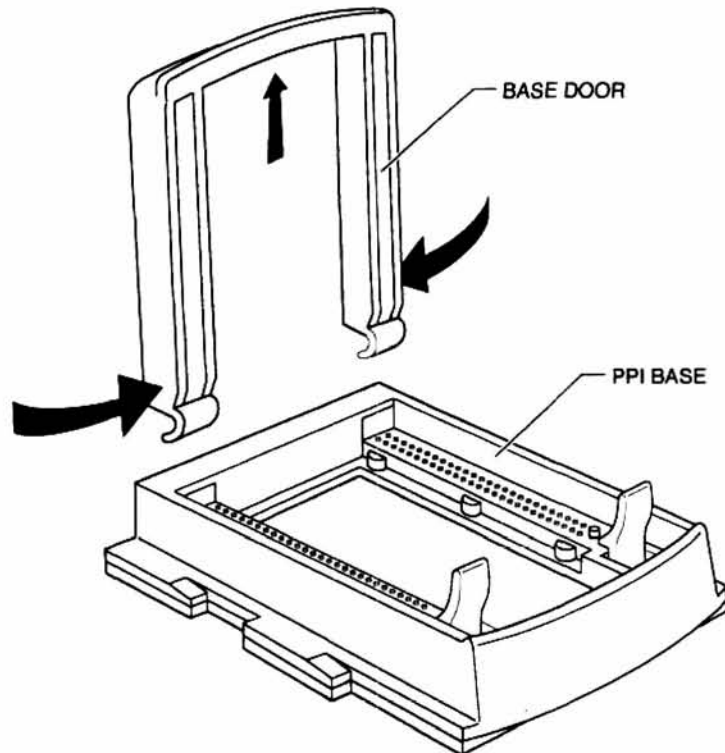


High Profile PPI Adapters

Some PPI adapters have sockets that sit particularly high on the circuit board. To lower the door over the adapter, align the adapter and the door as a unit. Use the following procedure and refer to Figures 5 and 6.

1. To remove the door from the PPI Base, lift the front of the door up and press in slightly on the sides of the door near the hinges. Remove the door as shown in Figure 5.

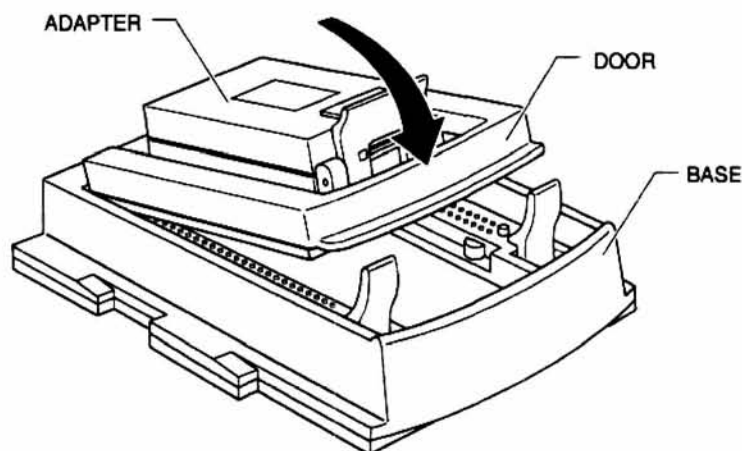
Figure 5
Removing Door from PPI Base



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2. Place the door over the adapter as shown in Figure 6.
3. As a unit, guide the door hooks into the PPI Base and lower the adapter and door together onto the base.
4. Move the adapter from side to side until it rests on the base.
5. Make sure the holes on the adapter line up with the the raised plastic pins on the base.
6. Close the door.

Figure 6
Aligning a High Profile Adapter



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Installing Devices into a PPI Adapter

The PPI system consists of one base for each programmer, and exchangeable adapters. These PPI adapters accept a variety of device package types and pin configurations. The following figures show three common device packages and the proper device orientation in the adapter. Each adapter has an ICON showing the proper device orientation.

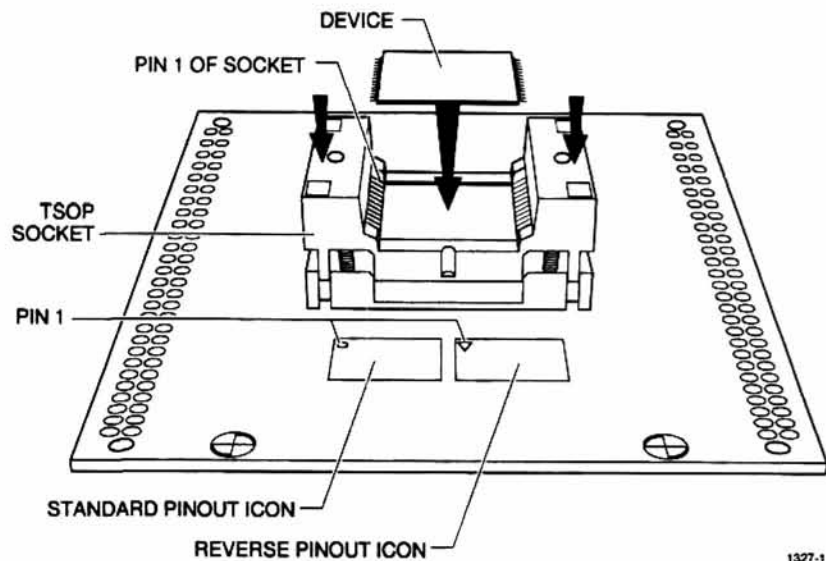
TSOP Device Orientation

There are two different pinouts for the TSOP device as shown in Figure 7. The standard pinout, shown by the standard pinout ICON on the left in Figure 7, shows Pin 1 indicated by a circle in the upper-left corner of the device. The reverse pinout, shown by the reverse pinout ICON on the right in Figure 7, shows Pin 1 indicated by a triangle in the upper-left corner of the device.

1. Press down on the outer edges of the socket.
2. Drop the TSOP device into the socket while still holding the socket edges down.
3. Release the socket edges. The device should be secured.

To remove the device, press down on the socket edges and lift the device out.

Figure 7
TSOP Device Orientation

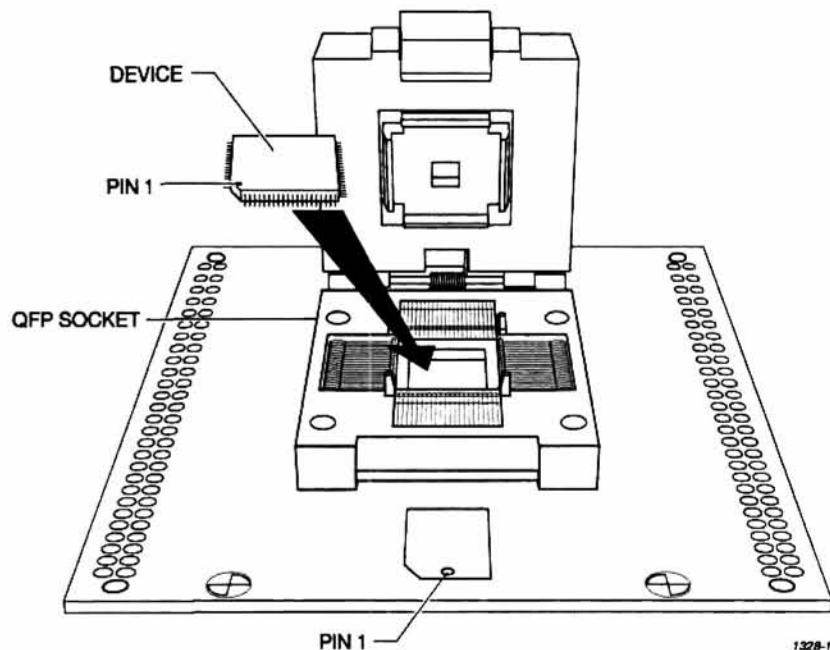


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Quad Flat Pack Device Orientation

Pin 1 on the QFP device is usually at the front left of the device. Orient the QFP device according to the icon or indicator on the adapter.

Figure 8
QFP Device Orientation



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Shrink Dip Device

Orient the SDIP device in the socket with pin 1 at the top left and bottom justified as shown in Figure 9.

Figure 9
Shrink Dip Device Orientation

