

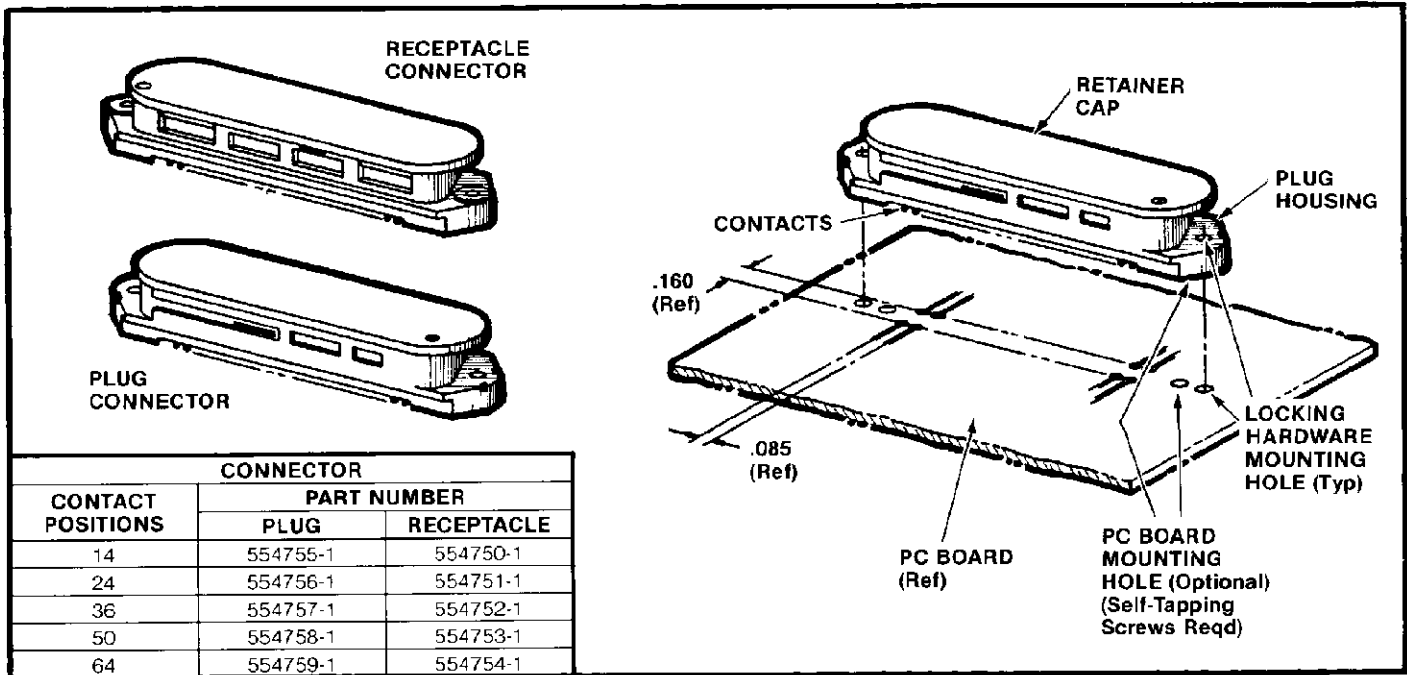
AMPAMP INCORPORATED
Harrisburg, Pa. 17105**AMP* CHAMP* SELF-RETAINED
ACTION PIN* CONNECTORS
(Preloaded)**

Instruction Sheet

IS 3182

RELEASED

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**Fig. 1****1. INTRODUCTION**

CHAMP self-retained ACTION PIN connectors are assembled onto printed circuit (pc) boards and will mate with CHAMP plug and receptacle cable connectors.

The terminals are retained in the housing with a minimum force of 1-lb per contact. This eliminates the need for board captivation hardware where there is additional strain relief such as a panel. Applications involving mating cable connectors should be examined to assure that adequate strain relief is provided. It is recommended that screws be used to secure the connector to the pc board where there is no additional strain relief.

This instruction sheet provides descriptive information, pc board layout dimensions, application tooling recommendations and attaching hardware for the CHAMP ACTION PIN connectors listed in Figure 1. Read this material, and those referenced, before assembling any connectors.

NOTE

All dimensions presented on this instruction sheet are in inches, unless otherwise stated.

2. DESCRIPTION (Figure 1)

The plug and receptacle connectors are available in 14, 24, 36, 50, and 64 contact positions. The

contacts are preloaded into the housings by the manufacturer, and retained by interference fit.

NOTE

The retainer cap is assembled to serve as a dust cover until the connector is mated to any other connector.

CHAMP ACTION PIN contacts feature a rounded pin design, two spring members, and a flat leaf spring. The pin design prevents hole damage and allows a smooth, even entry into the pc board. The spring members compress in opposite directions and exert sufficient force against the pc board to produce a solderless pc board connection. The leaf spring (mating surface) supplies the necessary tension for positive mating.

The housings protect the contacts, align the contacts for mating, and provide electrical separation by use of ribs between the contact cavities. Mounting holes are provided for attachment hardware to secure the connector to the pc board and to mount locking hardware. Numbered contact cavity identification is provided at the beginning and the end of each row on the housing mating face. The housings are 94V-0 rated glass-filled polyester material. The receptacle housing has a slot in the center of the mating face, and the plug housing has a bar in the center of the mating face.

3. PRINTED CIRCUIT BOARD LAYOUT

A pc board of .062 to .125-in. thickness is recommended. The pc board may have plated-thru or unplated holes. For plated-thru holes, termination may be accomplished either by press fitting the contacts in the holes, or by both press fitting and then soldering. For unplated holes, the contacts must be soldered after being press fitted.

Refer to Figure 2 for the suggested pc board layout dimensions.

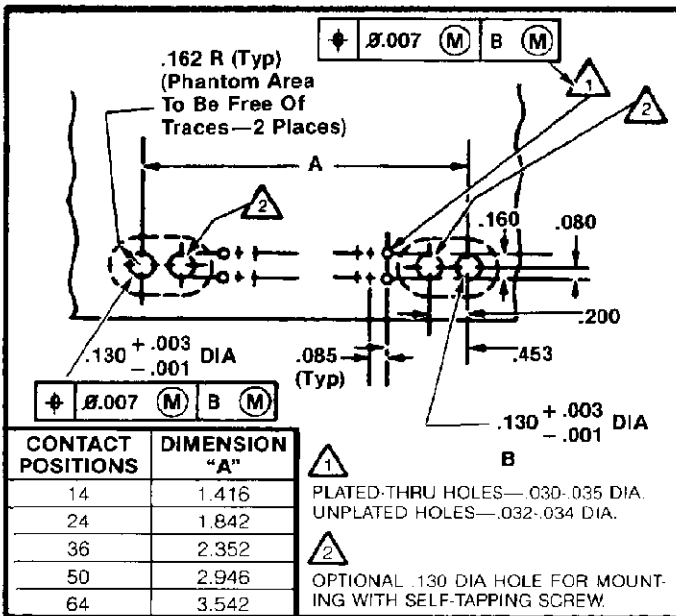


Fig. 2

4. SUPPORT FIXTURE LAYOUT

The support fixture provides a foundation for the pc board and protects the contact posts during insertion. The design of the support fixture involves two slots to be cut through the fixture. AMP does NOT manufacture or market support fixtures; however, refer to Figure 3 for the suggested support fixture layout dimensions.

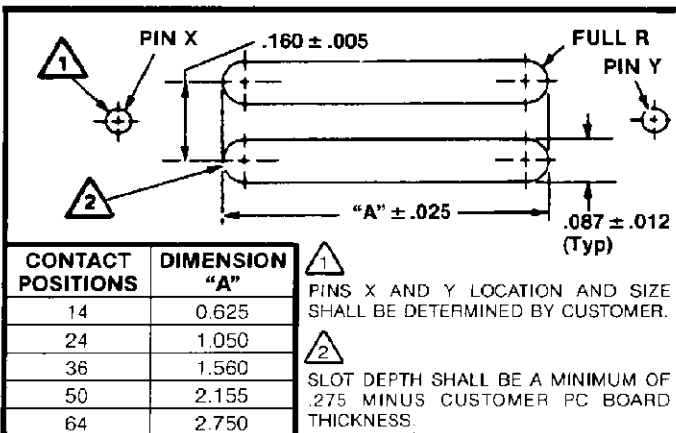


Fig. 3

5. PANEL MOUNTING LAYOUT

The plug and receptacle connectors may be rear-panel mounted after being assembled onto the pc board. A panel of .062-in. thickness is recommended for standard 4-40 hardware applications, or .062 to .093-in. thickness for metric applications.

Refer to Figure 4 for the suggested panel mounting layout dimensions.

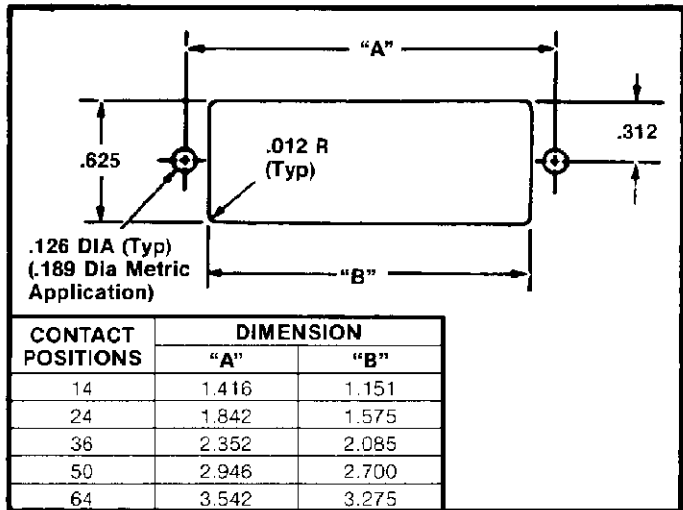


Fig. 4

6. APPLICATION TOOLING

The connectors do not require precision applicators to assemble them to pc boards. The contacts of the selected connector are aligned with the holes of a pc board backed by a nesting fixture. Then, the connector is pressed into place using any device that will apply sufficient force evenly distributed over the length of the connector.

Certain parameters must be considered however, in the selection of an assembly applicator. The force required to insert the connectors varies slightly with the number of contact positions. Refer to Figure 5 for the maximum force needed to insert the connectors.

CONTACT POSITIONS	MAXIMUM FORCE (lbs)
14	420
24	720
36	1080
50	1500
64	1920

Fig. 5

The clearance required to position the connector and the pc board is also a factor. Refer to Figure 6 for applicator dimensional guidelines.

NOTE The AMP Arbor Frame Assemblies 58019-1 and 91085-1 provide the forces and clearances recommended. See your AMP Field Engineer for assistance in selecting an applicator.

7. ATTACHMENT HARDWARE (Figure 7)

CHAMP ACTION PIN locking hardware assemblies are designed to secure mated connectors (CHAMP cable connector to ACTION PIN connector pc board connector). Secure ACTION PIN connector to pc board using mounting screws indicated in Figure 7. The available locking hardware assemblies and applications are as follows:

A. Locking Latch 552723

The locking latch is a metal spring device used to lock mated connectors together (14-, 24-, 36-, and 50-position CHAMP-LOK* connector styles only). The pc board connector may be mounted to the board by self-tapping screws or by 4-40 x 5/16 screws.

1. Slide locking latch onto plug.
2. Mate the cable connector with the pc board connector. Latch will open and close to lock plug to receptacle.

B. Screw-Lock Kit 229911-1

This kit includes two captive screws.

1. Thread screws into cable connector.
2. Mate connectors and secure by threading screws through cable connector and into pc board connector.

C. Rear-Panel-Mount Screw-Lock Kit 552631-1

This kit includes two threaded standoffs and two captive screws, and is used for rear-panel-mount applications.

1. Mount pc board connector to rear of panel using the two threaded standoffs.
2. Mate connectors and secure by threading screws through cable connector and into standoffs.

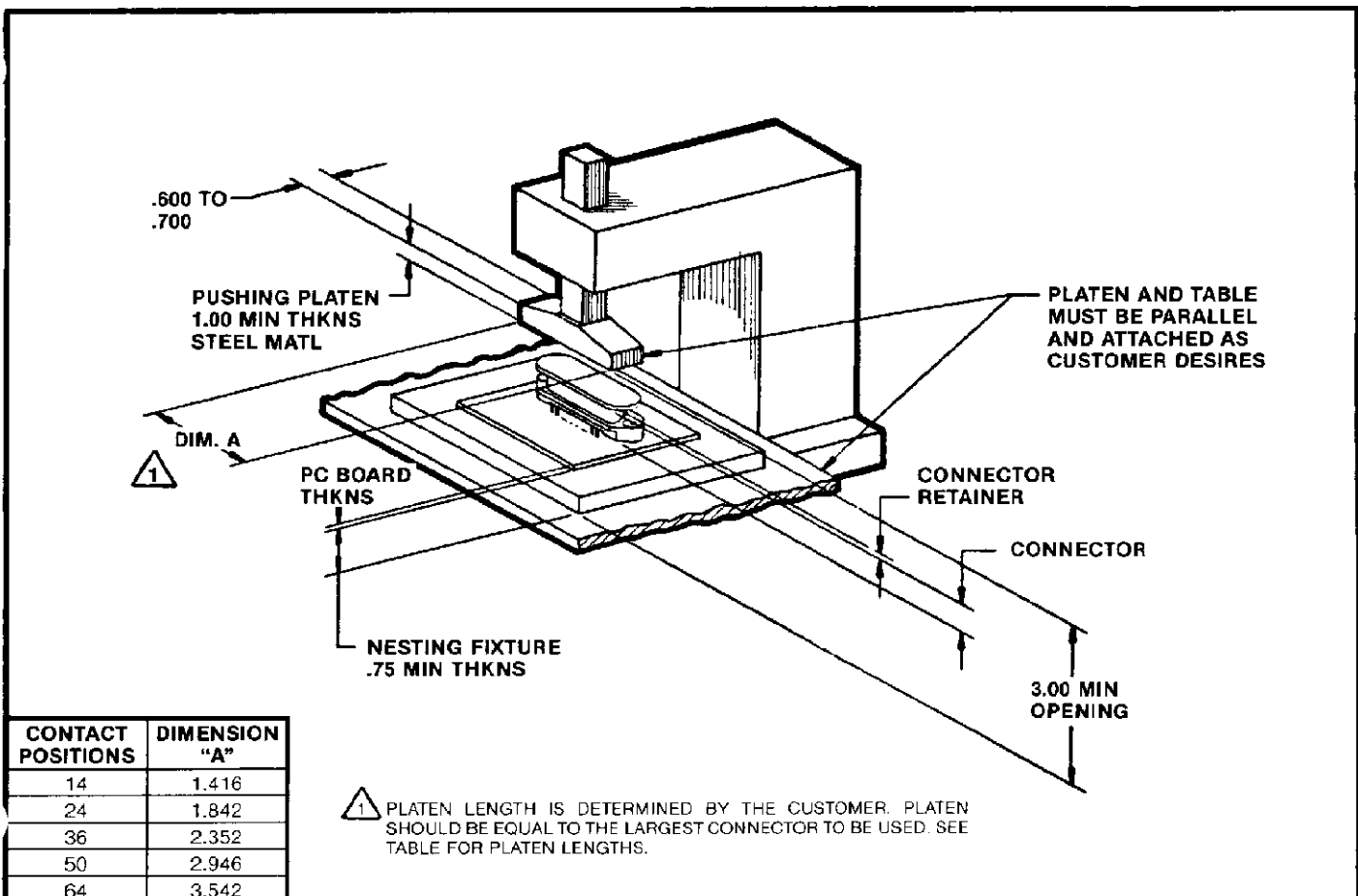


Fig. 6

D. Bail-Lock Kit 552561-3

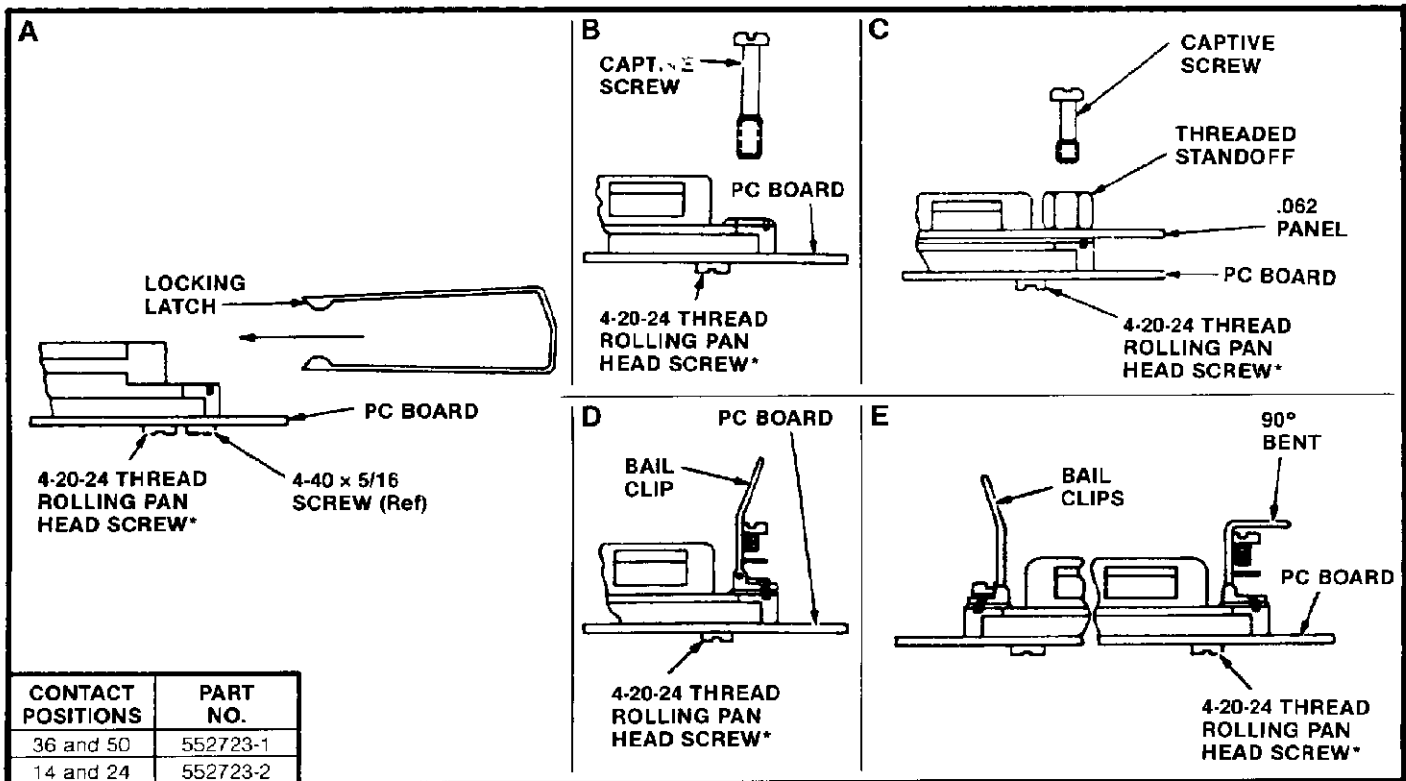
This kit includes two screws, two lockwashers, and two bail clips. The kit is used when a plug cable connector (with open end slotted flanges) is to mate with a receptacle pc board connector.

1. Make sure bail clips are turned outboard on mounting flanges of receptacle connector. Assemble with screws and lockwashers.
2. Mate connectors and press bail into open ends of the flanges until they are secured.

E. Bent-Bail-Lock Kit 552561-4

This kit includes two screws, two lockwashers, and two bail clips (one 90° bent). This kit is used when a plug cable connector (with open end flanges and a 90° strain-relief cover) is to mate with a receptacle pc board connector.

1. Make sure bail clips are turned outboard on mounting flanges of receptacle connector. Assemble with screws and lockwashers.
2. Mate connectors and press bail into open ends of the flanges until they are secured.



* SCREW PART NO. 552820-1 FOR .062-.093 PC BOARD THICKNESS AND 552820-2 FOR .125 PC BOARD THICKNESS. THIS SCREW IS OPTIONAL, IT IS REQUIRED ONLY WHEN FORCES EXERTED BY MATING CONNECTOR EXCEEDS ONE POUND PER TERMINAL (ex: 50 lbs for 50 position connector).

Fig. 7