AMP

AMPLIMITE* .050 Series Insulation Displacement and Printed Circuit Board Connectors

NOTE *All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ±0.13 [.005] and angles have a tolerance of ±2°.*

1. INTRODUCTION

This specification covers the requirements for application of AMP* AMPLIMITE .050 Series Cable End Insulation Displacement Connectors (IDC) and Printed Circuit (PC) Board Connectors. The connectors offers high-density "D" mating interfaces (keystone configuration) with 1.27 x 2.54 [.050 x .100] contact centerlines and 20 through 120 positions. They are compatible with SCSI-2, EIA RS-232, IPI, and HIPPI standards. Connectors are available with metal shells over plastic housings for EMI/ESD-shielded applications, and with all-plastic housings for unshielded applications.

IDC Cable End Connectors are available with pre-assembled or unassembled termination covers, and are designed to terminate solid or 7-strand, 30 to 28 AWG wire with an insulation diameter range of 0.74 to 0.91 [.029 to .036]. There are connectors designed for free-hanging applications and others for panel mount applications. Free-hanging connectors will require the use of a backshell while panel mounted connectors do not. See Figure 1.

NOTE *IDC Feed-Through Connectors are also available. See Application Specification 114-40049.*

PC Board Connectors are available with solder-type or ACTION PIN* (solderless) contacts tails. Those with solder-type contacts are available as straight and right-angle single configurations, or as right-angle stacked configurations. Those with ACTION PIN (solderless) contacts are available in straight configurations only. The connectors are available with cast or formed metal shells for shielded applications, and with all plastic housings for unshielded applications. All of these connectors can be mounted through a panel. Cast metal shell connectors are designed to be used with spring latches. Connectors with formed metal shells are designed for screwlock and jackscrew applications. See Figure 2.

Accessories such as keying inserts, attaching hardware, and backshells are covered later in this specification.

When corresponding with AMP Personnel, use the terminology provided in this specification to facilitate your inquiry for information. Basic terms and features of the connectors are provided in Figures 1 and 2.

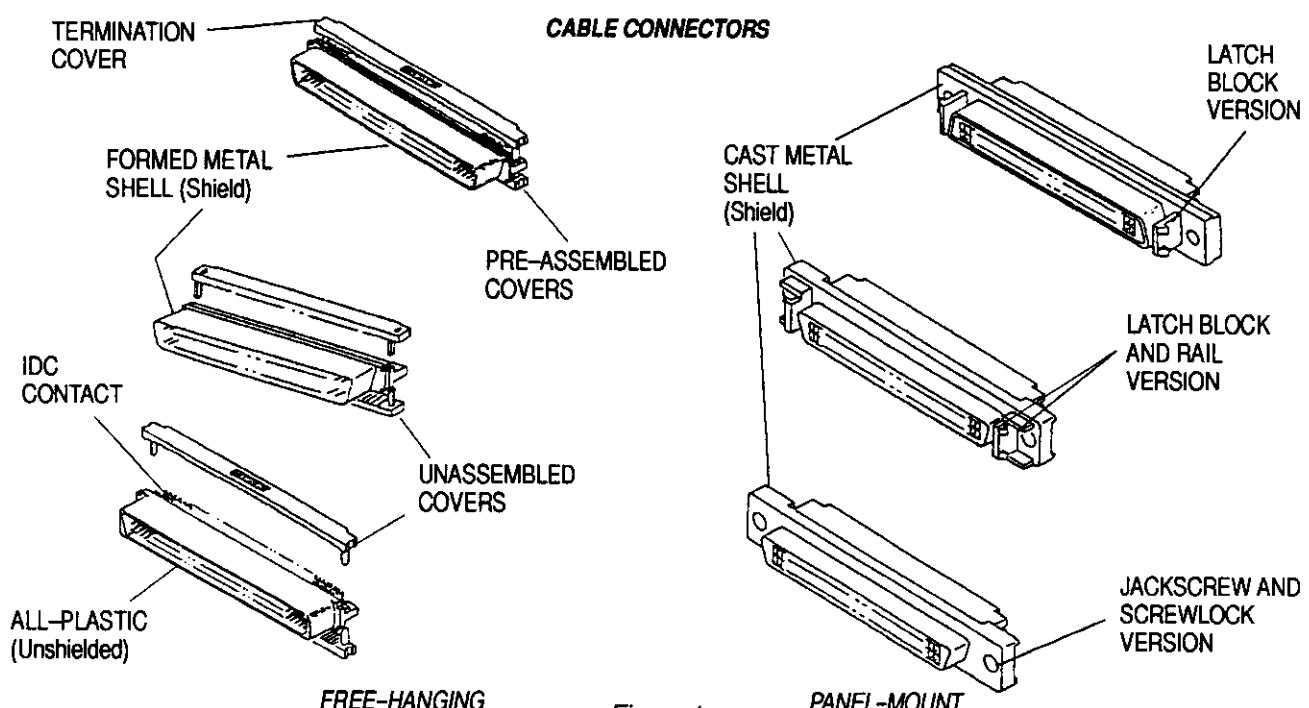


Figure 1

94-38

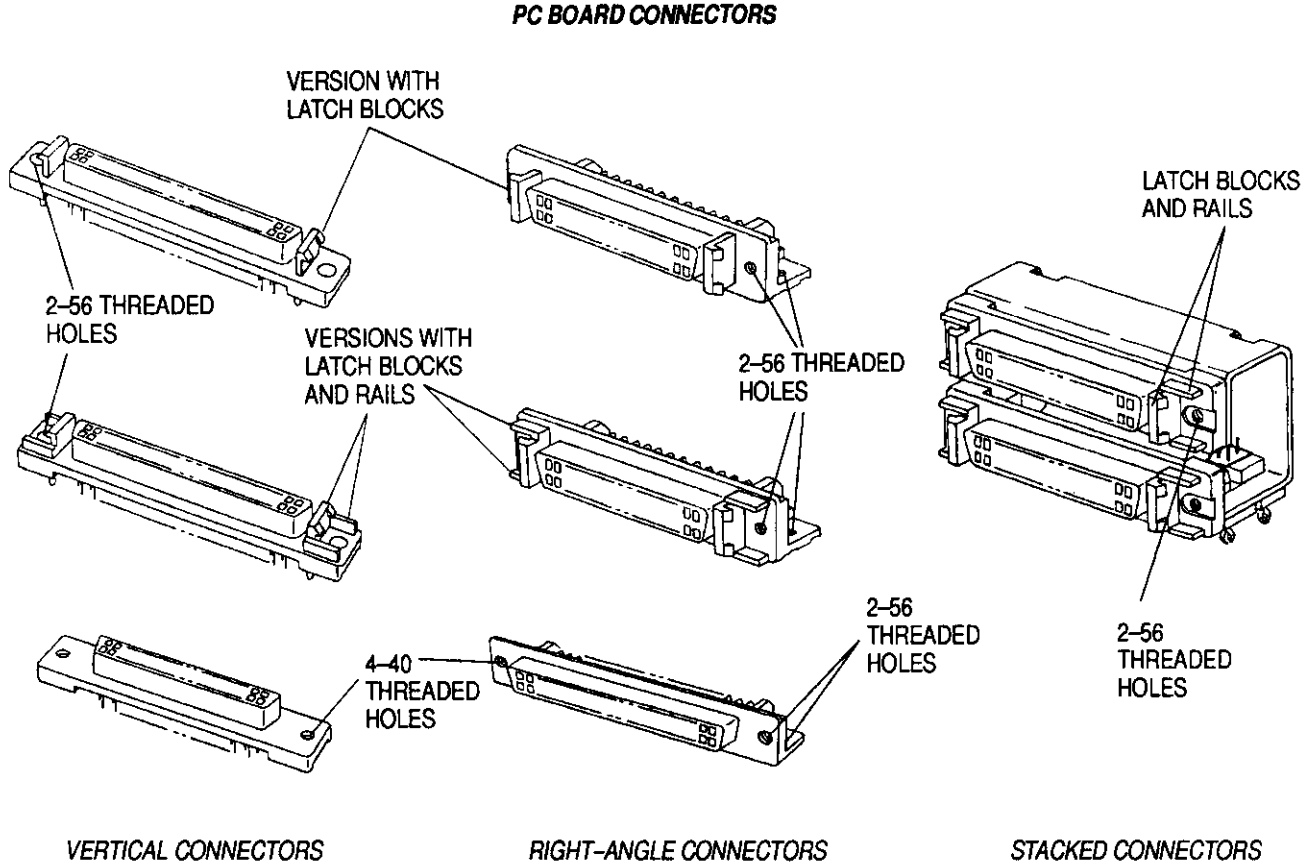


Figure 2

94-39, 94-40

2. REFERENCE MATERIAL

2.1. Revision Summary

This paragraph is reserved for a revision summary of changes and additions made to this specification. The following changes were made for this revision (Rev C).

Per EC 0990-7823-92:

- Updated format
- Added this paragraph (2.1. Revision Summary) and renumbered paragraphs accordingly

Per EC 0020-0421-93 and EC 0020-1407-93:

- Added stackable connectors
- Clarified connectors types covered on this specification (IDC, and PC Board single & stackable)
- Removed reference to inner shield throughout text (it was no longer an option)
- Removed references to ribbon cable applications
- Additional support technical publications were added to Paragraph 2.5, B
- Revised chart in Figure 4
- Added information for angled cable exit
- Changed backshell and staple installation procedures in Paragraph 3.5, A and B
- Added new tooling references in Paragraph 5 and Figure 20

2.2. Customer Assistance

Reference Part Number 749621 and Product Code 4620 are representative numbers of AMP AMPLIMITE .050 Series Connectors. Use of these numbers will identify the product line and expedite your inquiries through an AMP service network established to help you obtain product and tooling information. Such information can be obtained through a local AMP Representative (Field Sales Engineer, Field Applications Engineer, etc) or, after purchase, by calling the TECHNICAL ASSISTANCE CENTER or AMP FAX/PRODUCT INFORMATION number at the bottom of Page 1.

2.3. Engineering Drawings

AMP Customer Drawings for specific products are available from the service network. The information contained in Customer Drawings takes priority if there is a conflict with this specification.

2.4. Bulletins

AMP Corporate Bulletin 52 is available from the service network. This bulletin provides information on various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is attached to the bulletin as required for information on soldering problems.

2.5. Specifications

AMP Product Specifications (108-series) that cover test and performance requirements for the connectors and Application Specifications (114-series) that cover product design and application requirements are available. See following list.

108-1228 for single cable and pc board connectors
108-1341 for stacked pc board connectors
114-40049 for feed-through cable connector

2.6. Instructional Material

The following AMP Instruction Sheets (408-series) and Customer Manuals (409-series) are available to assist you in connector assembly.

A. IDC Termination Tooling

409-5839 - CHAMPOMATOR* 2.5 Bench Terminating Machine
409-5791 - Control Unit for CHAMPOMATOR 2.5
408-6923 - Manual Arbor Frame Assembly for interchangeable tooling
408-9200 - Single Wire Insertion Tool
408-9663 - Discrete Wire Insertion Tool
408-9750 - Cover Lacing Fixture
408-9817 - Manual Miniature Applicator Frame Assembly for interchangeable tooling
408-9820 - Cover Closing and Staple Inserter Kit
408-9822 - Tooling Kit for CHAMPOMATOR 2.5

B. IDC Connector Assembly

408-9427 - Round-to-Flat Cable Installation Procedure

C. ACTION PIN Connectors

408-9757 - Seating Tool
408-9027 - Adapter Kit for Greenerd■ Frame Assemblies 3A and 3B
408-6927 - PC Board Support design recommendations

■ Manufactured by Greenerd Press and Machine Co., Inc.

3. REQUIREMENTS

3.1. Contact Position Assignment

All AMPLIMITE .050 Series Connectors are marked to indicate contact position no. 1 only. Pins are numbered in plug connectors from left to right, top row first. Sockets are numbered in receptacle connectors as a mirror image of the plugs: right to left, top row first. Figure 3 shows typical assignments.

NOTE *Connectors viewed from front at mating interface.*

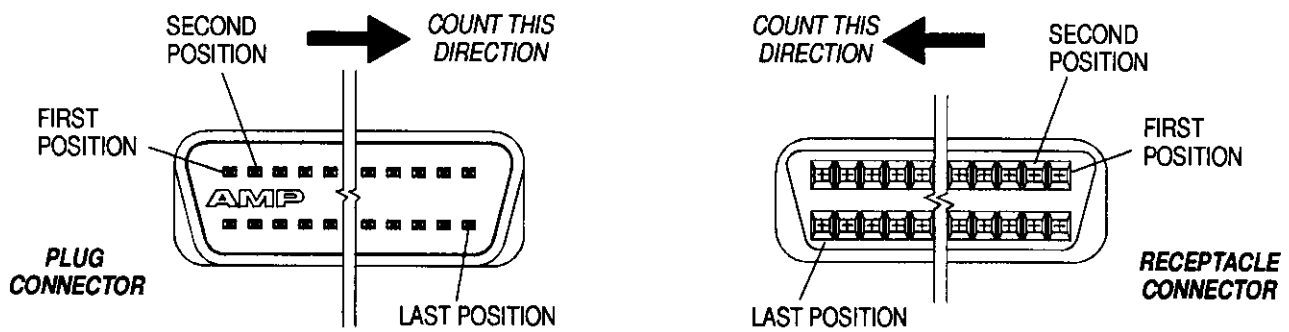


Figure 3

3.2. IDC Connector Cable Selections

Wires used with these connectors should be 30 or 28 AWG with solid or 7-strand conductors and an insulation range of 0.74 to 0.91 [.029 to .036). Connector size, maximum cable diameter, backshell type, and staple sizes are provided in Figure 4. Under certain circumstances, other wire and cable sizes may be used with some restrictions. Consult with AMP Engineering by calling the number at the bottom of page 1.

NOTE *All wire and cable (including ribbon and round-to-flat processed cable) to be used with the AMPLIMITE .050 Series Connectors must be approved by AMP Engineering.*

CONNECTOR SIZE	CABLE DIAMETER (MAX)	BACKSHELL DESCRIPTION	
		MATERIAL	STAPLE SIZE
20	6.86 [.270]	METAL	SMALL
26	6.86 [.270]	METAL	SMALL
28	7.49 [.295]	METAL	SMALL
40	8.64 [.340]	METAL	SMALL
50	9.02 [.355]	METAL	MEDIUM
50	10.16 [.400]	METAL and PLASTIC	MEDIUM
50	12.19 [.480]	METAL and PLASTIC	MEDIUM
60	9.65 [.380]	METAL	MEDIUM
68	10.16 [.400]	METAL	MEDIUM
68	11.18 [.440]	METAL	MEDIUM
68	13.21 [.520]	PLASTIC	LARGE
80	10.67 [.420]	METAL	LARGE
80	12.70 [.500]	METAL	LARGE
100	12.70 [.500]	METAL	LARGE
100	13.97 [.550]	METAL	LARGE
120	13.97 [.550]	METAL	LARGE

Figure 4

A. Cable Preparation

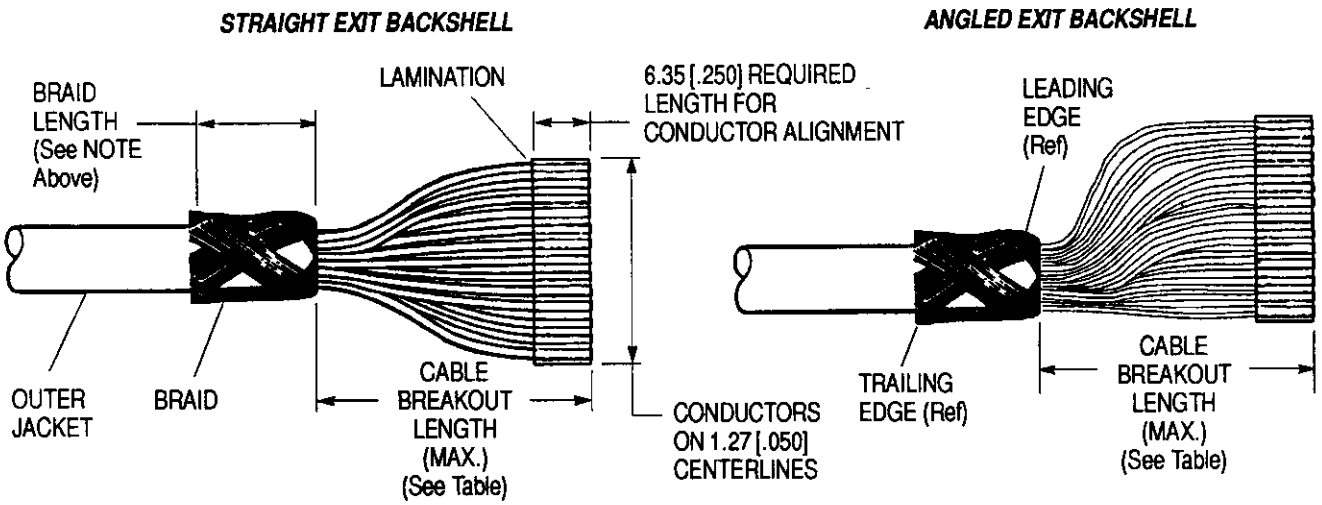
The strip length of jacketed cable will depend on the type of tooling used to terminate the wire. Refer to the instructions packaged with the applicable tool for the proper cable jacket strip length. The only preparation for ribbon cable is to cut it squarely.

NOTE *The braid length will vary depending on the backshell style, cable bundle size, and slack needed to assure strain relief for all wires. Essential requirements are that the leading edge of the braid fold extends slightly beyond the beginning of the shield taper and the trailing ends of the braid be trimmed so they do not extend beyond the backshell cable exit. See Figure 5.*

B. Lamination of Discrete Wires

Discrete wire cable may be laminated for mass termination by flattening the round bundle of wires and applying a thin lamination over the ends of the wire as shown in Figure 5.

CAUTION *Do NOT cut individual wire insulation during stripping cable insulation, or when trimming braid shield and foil from wrapping.*



CONNECTOR SIZE	CABLE BREAKOUT LENGTH (MAX.)	
	STRAIGHT EXIT BACKSHELL	ANGLED EXIT BACKSHELL
20 26 28	22.86 [.900]	22.86 [.900]
40	22.86 [.900]	27.94 [1.100]
50 60 68 80	27.94 [1.100]	27.94 [1.100]
100 120	27.94 [1.100]	38.10 [1.500]

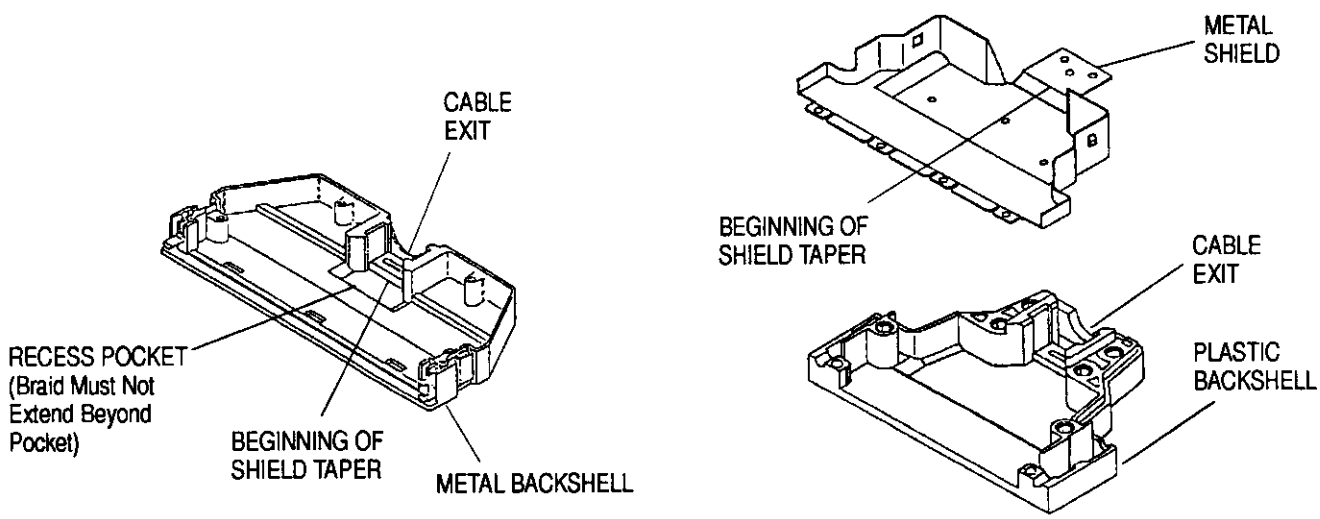


Figure 5

88-263B, 94-41

3.3. Terminated Connector Requirements

Prepared wires shall be located and terminated according to the procedures given in the applicable tooling instructions. See Paragraph 5 for details on tooling options and instructions for using them.

NOTE *Reasonable care should be taken by tooling operators to provide undamaged wire terminations. An improper termination in any of the insulation displacement contacts will be reason to discard the entire connector. Contacts are designed for one-time termination, and cannot be replaced, repaired, or re-used. Figure 6 shows criteria for an acceptable termination.*

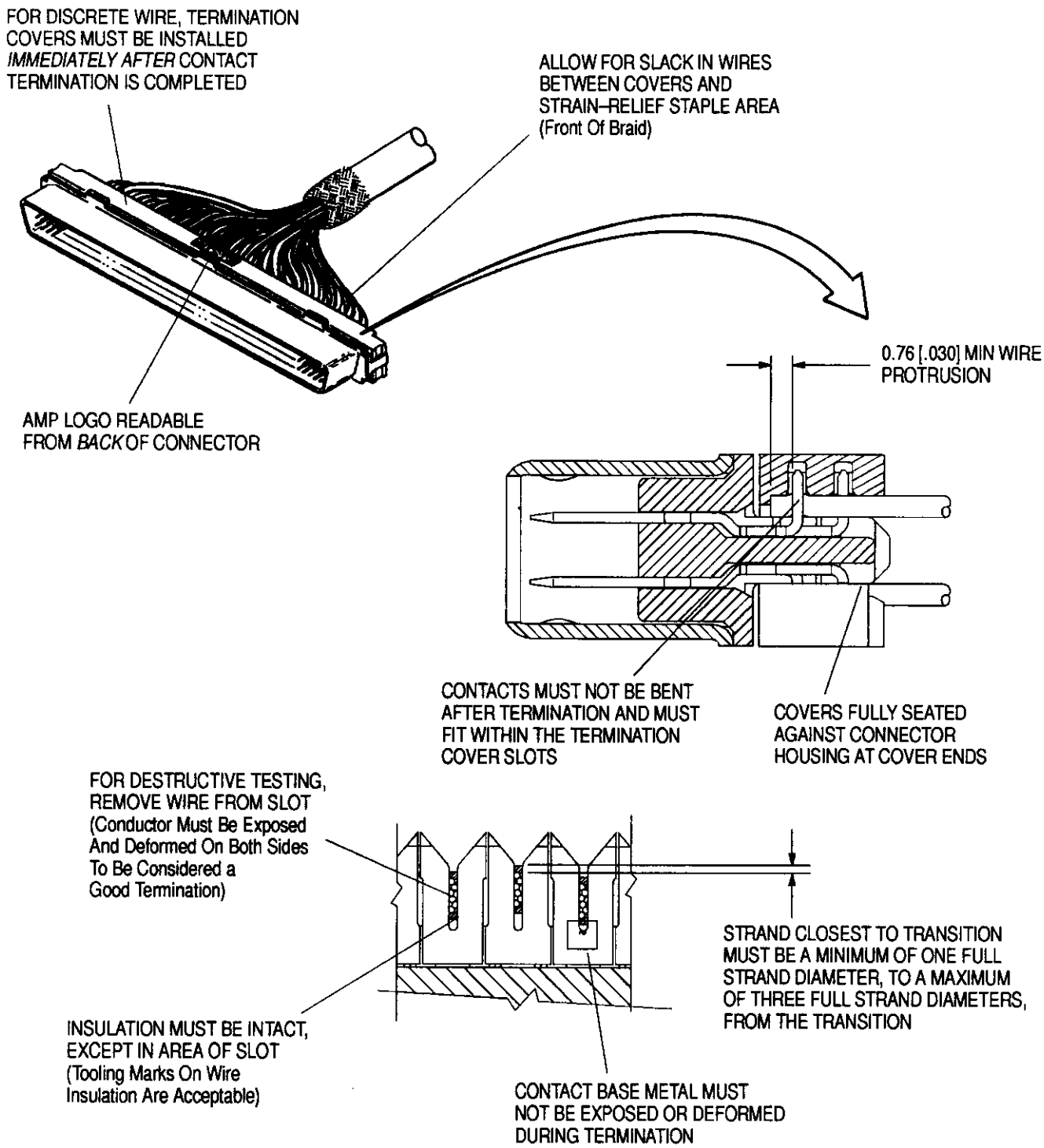
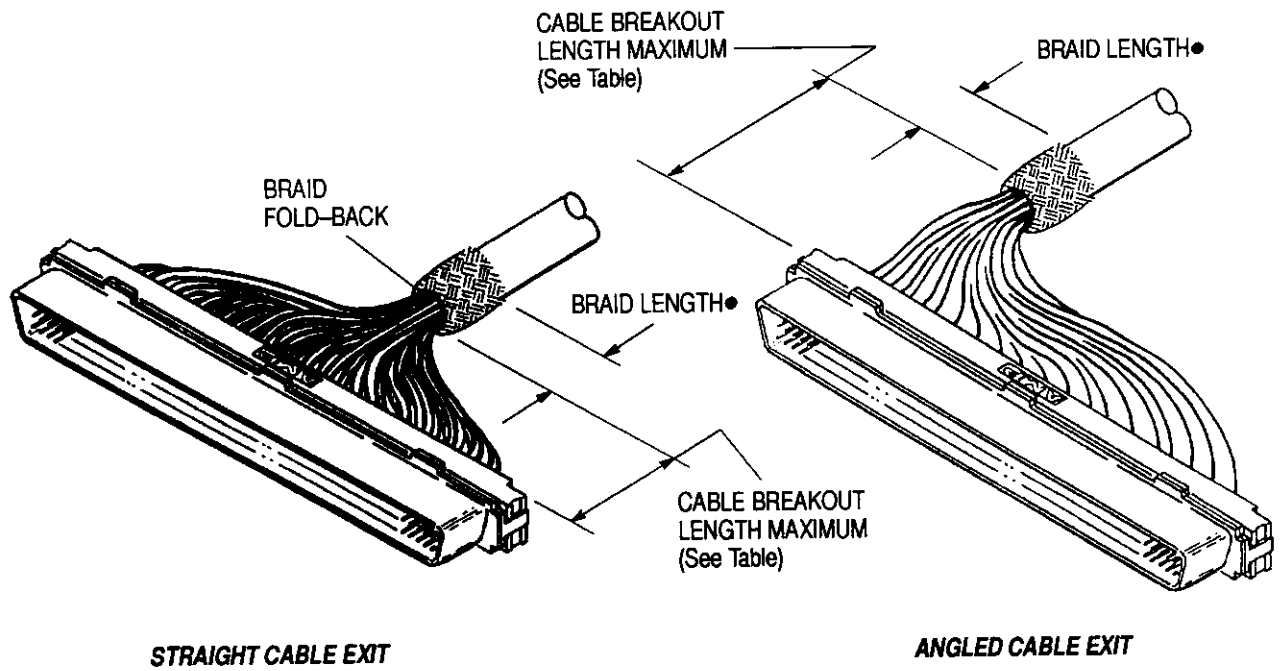


Figure 6

115–178

3.4. Cable Breakout Length

Correct breakout length is required for proper assembly of the terminated connector and cable into the backshells. Breakout dimensions are measured from the front edge of the termination cover to the braid fold-back. The points for measurement and the dimension for each connector size and backshell combination is provided in Figure 7.



• Braid length will vary depending on backshell style. See Figure 5.

115–179, 94–42

CONNECTOR SIZE	CABLE BREAKOUT LENGTH††	
	STRAIGHT EXIT BACKSHELL	ANGLED EXIT BACKSHELL
20	22.86 [.900]	22.86 [.900]
26	22.86 [.900]	22.86 [.900]
28	22.86 [.900]	22.86 [.900]
40	22.86 [.900]	27.94 [1.100]
50	27.94 [1.100]	27.94 [1.100]
60	27.94 [1.100]	27.94 [1.100]
68	27.94 [1.100]	27.94 [1.100]
80	27.94 [1.100]	27.94 [1.100]
100	27.94 [1.100]	38.10 [1.500]
120	27.94 [1.100]	38.10 [1.500]

†† Cable Breakout Length is based on standard application, and may be adjusted for your specific insulation diameter, wiring technique, and tooling.

Figure 7

3.5. Backshell

A. Types

Backshells must be installed on shielded connectors used for a free–hanging application to provide strain relief and to prevent movement of the terminated wires in the insulation displacement contact. There are all–metal backshells with a straight or angled cable exit, and there are plastic backshells with two intermating shield halves. A serrated staple is used to clamp the cable bundle to the lower backshell. There is a straight metal backshell design for latches and keys, and one for jackscrew applications. There is an angled metal backshell that can be used with latches and keys. Plastic backshell kits are available with jackscrews or latches. See Figure 8.

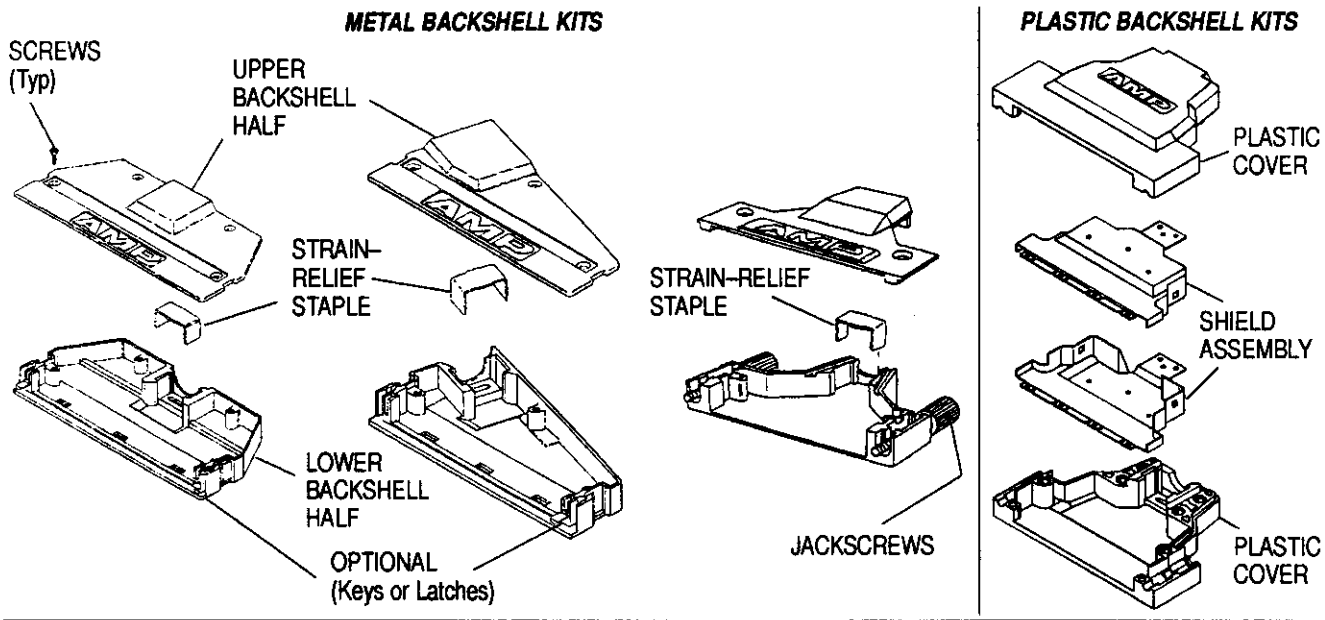


Figure 8

94–45, 94–44, 94–43, cad 9427

B. Staple Installation

The terminated connector must be placed in the lower backshell half and the strain relief staple installed to reduce stress on the terminated wires. The insertion depth of the staple will depend on the insulation diameter of the individual wires and the effect they have on the overall cable bundle. If staple insertion is too shallow there will not be adequate strain relief on the cable bundle. If staple insertion is too deep, the conductors could be stretched or broken. If in doubt about the proper insertion depth, install the staple in increments. Check each increment by holding the connector firmly and gently moving the cable bundle in a circular motion. If the wires between the termination point and strain relief staple move, the staple will need to be inserted deeper. Recommended staple insertion depth for most cable bundles is provided in Figure 9.

CAUTION *It is extremely important to ensure that all conductors extending from the strain relief area to the connector assembly are positioned within the sides of the lower backshell. Any conductors extending over the sides of the lower backshell will be pinched and consequently shorted when the upper backshell is secured to the lower backshell.*

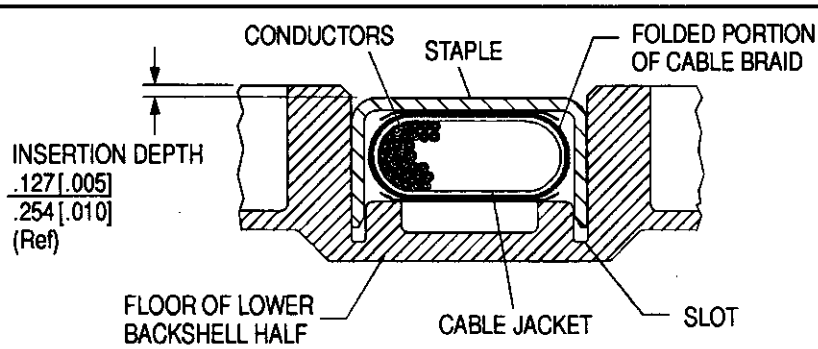
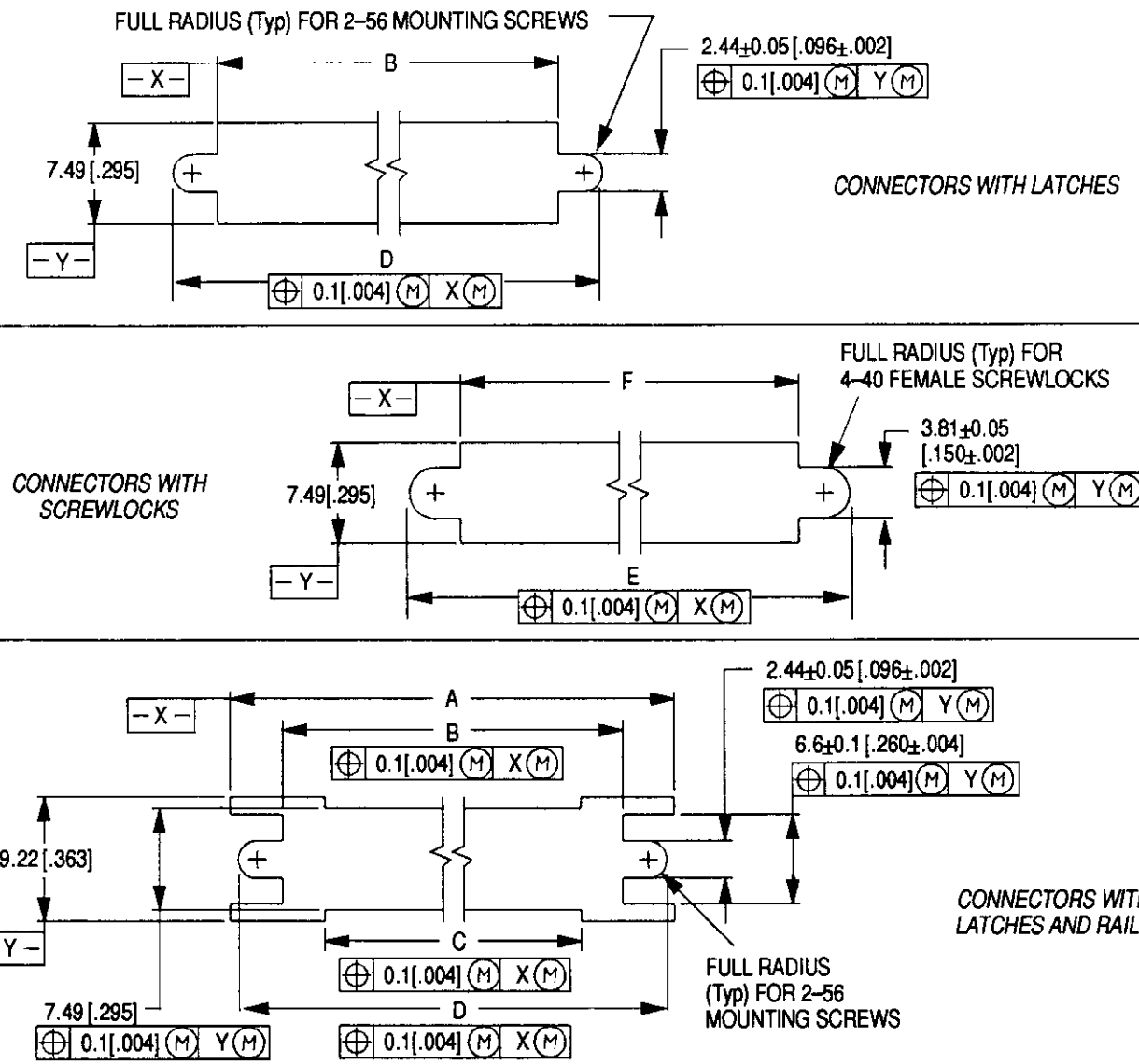


Figure 9

3.6. Panel Cutout

Panel cutout patterns and dimensions are provided in Figure 10.

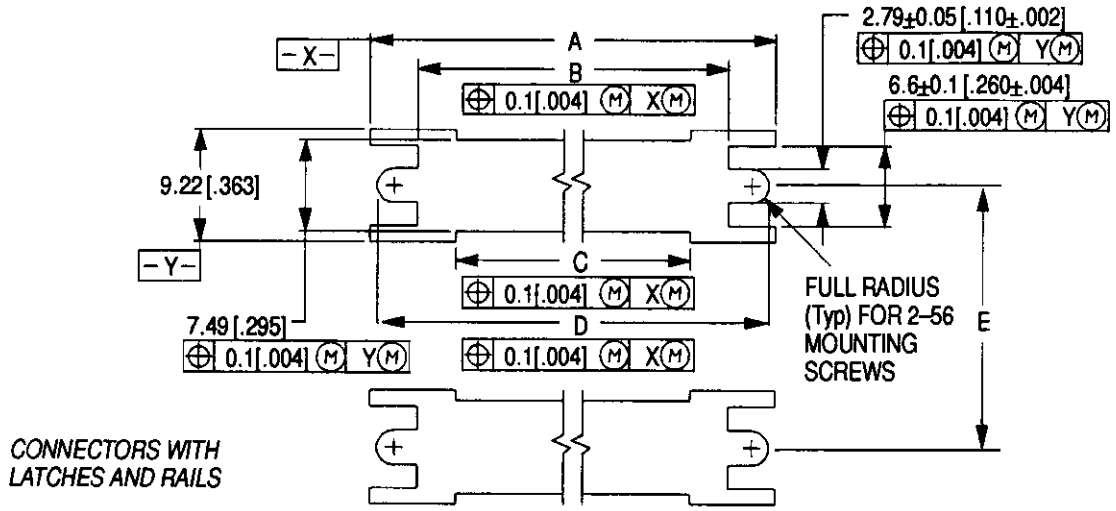
PANEL CUTOUTS FOR SINGLE CONNECTORS



DIMENSIONS	CONNECTOR SIZE									
	20	26	28	40	50	60	68	80	100	120
A	31.50 [1.240]	35.31 [1.390]	36.58 [1.440]	44.2 [1.740]	50.55 [1.990]	56.9 [2.240]	61.98 [2.440]	69.6 [2.740]	82.3 [3.240]	95 [3.740]
B	23.75 [.935]	27.56 [1.085]	28.83 [1.135]	36.45 [1.435]	42.8 [1.685]	49.15 [1.935]	54.23 [2.135]	61.85 [2.435]	74.55 [2.935]	87.25 [3.435]
C	17.37 [.684]	21.18 [.834]	22.45 [.884]	30.07 [1.184]	36.42 [1.434]	42.77 [1.684]	47.85 [1.884]	55.47 [2.184]	68.17 [2.684]	80.87 [3.184]
D	29.87 [1.176]	33.68 [1.326]	34.95 [1.376]	42.57 [1.676]	48.92 [1.926]	55.27 [2.176]	60.35 [2.376]	67.97 [2.676]	80.67 [3.176]	93.37 [3.676]
E	31.24 [1.230]	35.05 [1.380]	36.32 [1.430]	43.94 [1.730]	50.29 [1.980]	56.64 [2.230]	61.72 [2.430]	69.34 [2.730]	82.04 [3.230]	94.74 [3.730]
F	18.64 [.734]	22.45 [.884]	23.72 [.934]	31.34 [1.234]	37.69 [1.484]	44.04 [1.734]	49.12 [1.934]	56.74 [2.234]	69.44 [2.734]	82.14 [3.234]

Figure 10 (continued)

PANEL CUTOUTS FOR STACKABLE CONNECTORS



DIMENSION	CONNECTOR SIZE			
	26	50■	50■	68
A	35.31 [1.390]	50.55 [1.990]	50.55 [1.990]	61.98 [2.440]
B	27.56 [1.085]	42.80 [1.685]	42.80 [1.685]	54.23 [2.135]
C	21.18 [.834]	36.42 [1.434]	36.42 [1.434]	47.85 [1.884]
D	34.04 [1.340]	49.28 [1.940]	49.28 [1.940]	60.71 [2.390]
E	10.54 [.415]	14.00 [.551]	12.70 [.500]	19.05 [.750]

■ THE DIFFERENCE BETWEEN THE TWO 50 POSITION STACKING CONNECTORS IS STACKING DIMENSION "E".

Figure 10 (end)

3.7. Accessories

A. Keying Inserts

Keying Inserts (keys) are designed to provide unique mating combinations for similar types of connector assemblies used in the same location. They can be installed in the metal backshells that have post holes and latch slots. Each key can be placed in one of six different positions. When keys are used, the locking latches may not be used. See Figure 11.

NOTE *The keys in mating connector assemblies must be at 180° to each other for mating.*

B. Latches and Latching Blocks

These components are used to lock mating connectors together. They are designed to be installed in metal backshells that have latch slots and post holes. The latches must be installed in the latch slots of one of the connector assemblies with the locking tips turned inward. The latch blocks must be installed in the post holes of the mating connector assembly with the gripper turned outward. When latches are used, keys can not be used. See Figure 11.

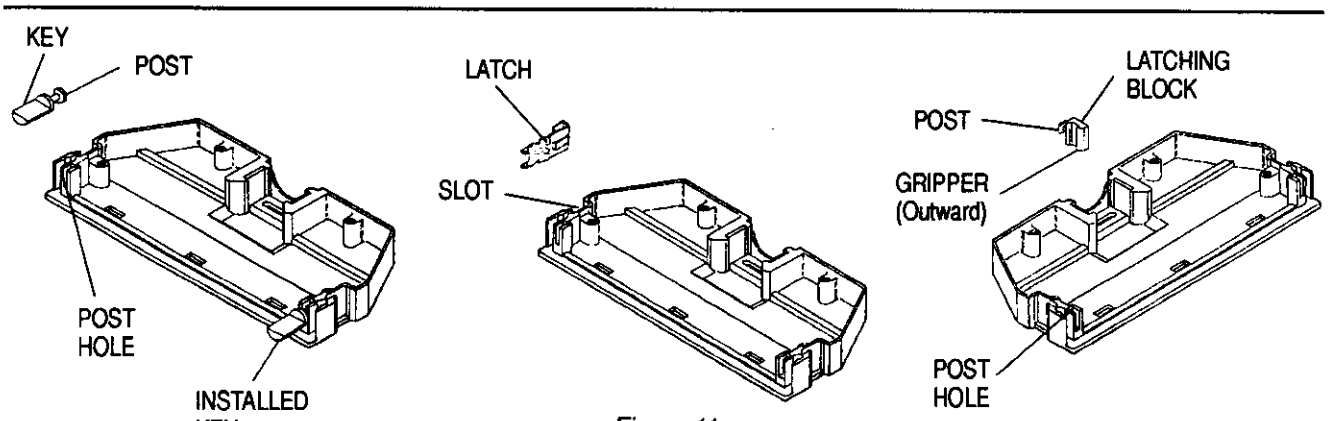


Figure 11

94-53, 94-46, 94-47

C. Jackscrews and Screwlocks

There are 2-56 threaded male and female jackscrews available for metal and plastic shield kits that have jackscrew slots. Jackscrews with opposite threads (male/female) can be used with each other or with mating 2-56 threaded screwlocks.

Screwlocks are available for pc board mounted connectors. There are screwlocks with double-ended male threads (2-56 on one end and 4-40 on the other), female (2-56) and male (4-40) screwlocks, and female (2-56) and male (4-40) screwlock for connectors with rails and latches which allows the mating connector to have spring latches or jackscrews. See Figure 12.

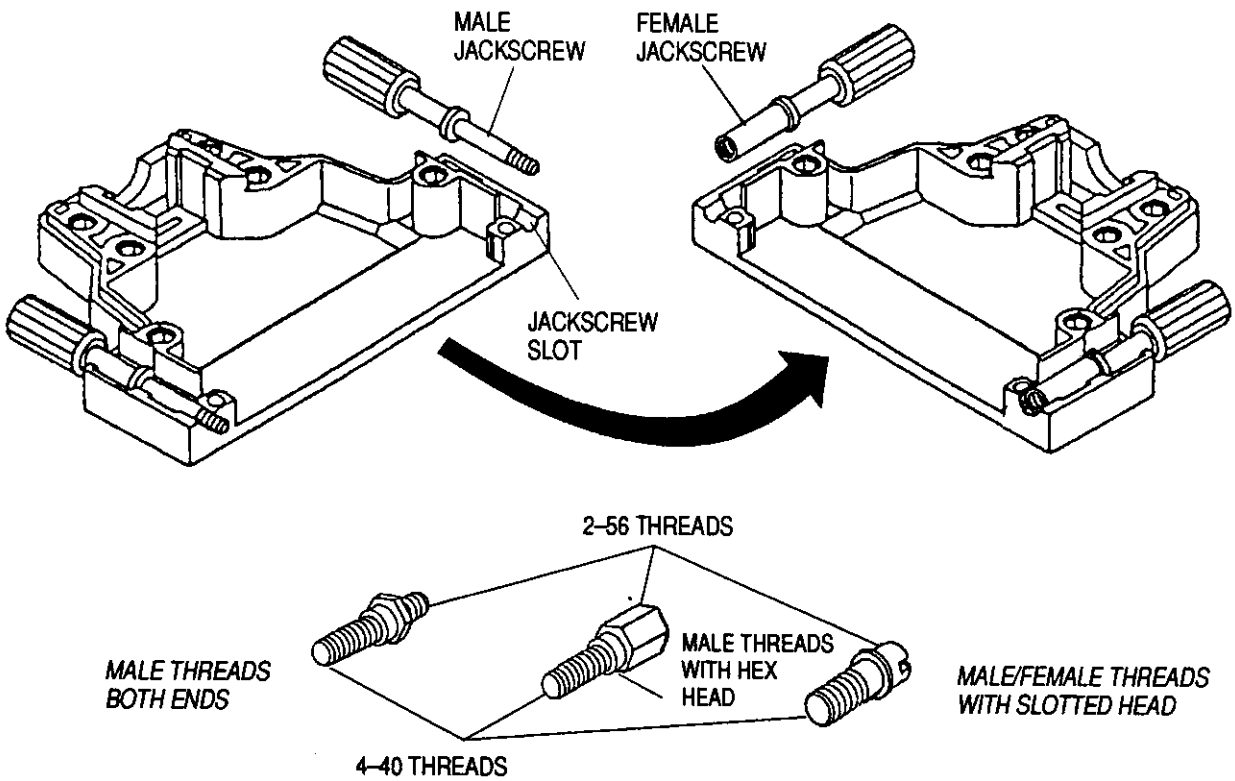


Figure 12 94-48A

D. Hardware

Connectors are available with threaded holes or boardlocks. Those with threaded holes in right angle mounting flanges can be secured to the pc board with commercially available hardware (screw thread size will depend on thread size: 2-56 or 4-40). See Figure 13.

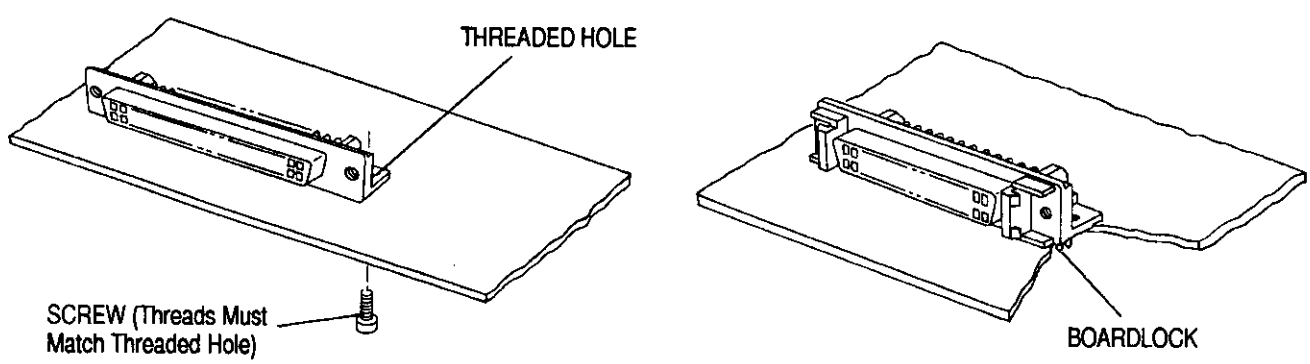
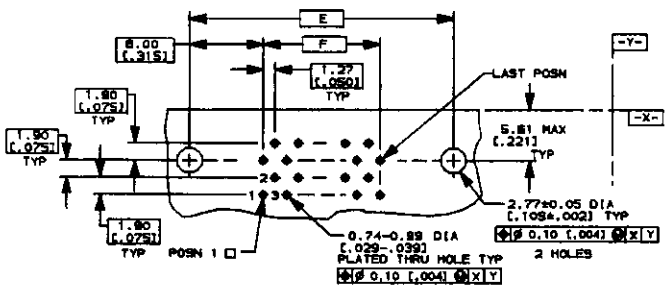


Figure 13 94-49, 94-50

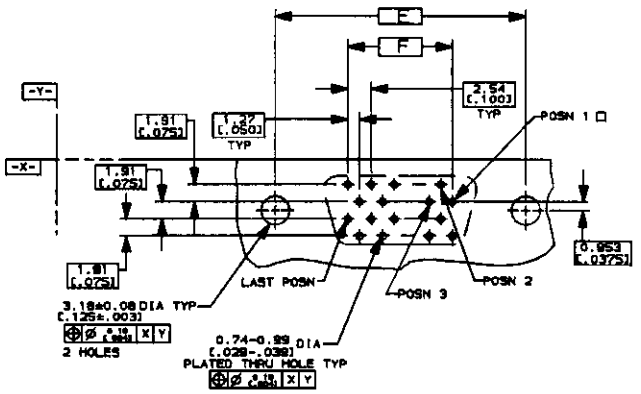
3.8. PC Board Layouts

The contact and mounting holes must be precisely located to assure proper contact tail placement and optimum performance of the connector. The "X" and "Y" symbols on the pc board layout represent customer–established datums for locating hole centers. They are the points of reference from which all positions must be located. The dimensions from these datums to the first mounting and contact holes represent the basic dimensions from which permissible tolerances and variations are established. The layout for both the solder–type and ACTION PIN Connectors is from the (component) side of the pc board as provided in Figures 14 and 15.

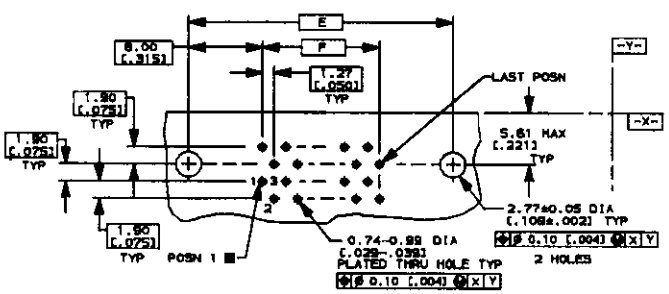
RIGHT–ANGLE CONNECTORS

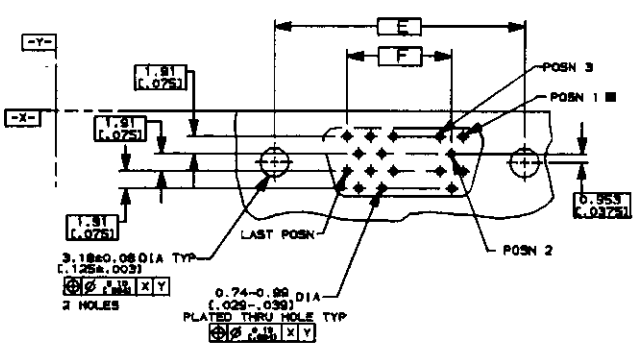


VERTICAL CONNECTORS



□ *CIRCUIT PATTERNS FOR 26 AND 50 POSITION CONNECTORS*





■ *CIRCUIT PATTERNS FOR 20, 28, 40, 60, 68, 80, AND 120 POSITION CONNECTORS*

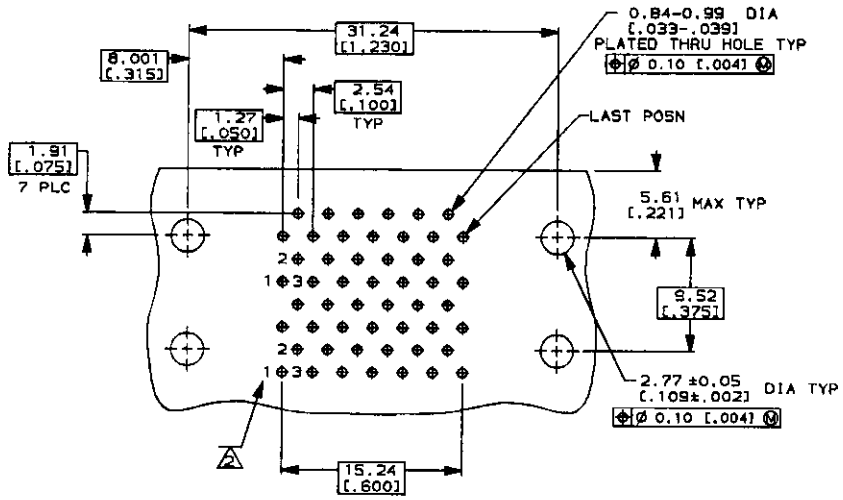
F	E	NO. OF POSN
74.93 [2.950]	80.93 [3.580]	120
62.23 [2.450]	78.23 [3.080]	100
49.53 [1.950]	65.53 [2.580]	80
41.91 [1.650]	57.91 [2.280]	68
36.83 [1.450]	52.83 [2.080]	60
30.48 [1.200]	46.48 [1.830]	50
24.13 [.950]	40.13 [1.580]	40
16.51 [.650]	32.51 [1.280]	28
15.24 [.600]	31.24 [1.230]	26
11.43 [.450]	27.43 [1.080]	20

NOTE: A range has been provided for the contact hole diameter. The actual diameter will depend on trace routing requirements between holes and the technique for placing the connector on the pc board.

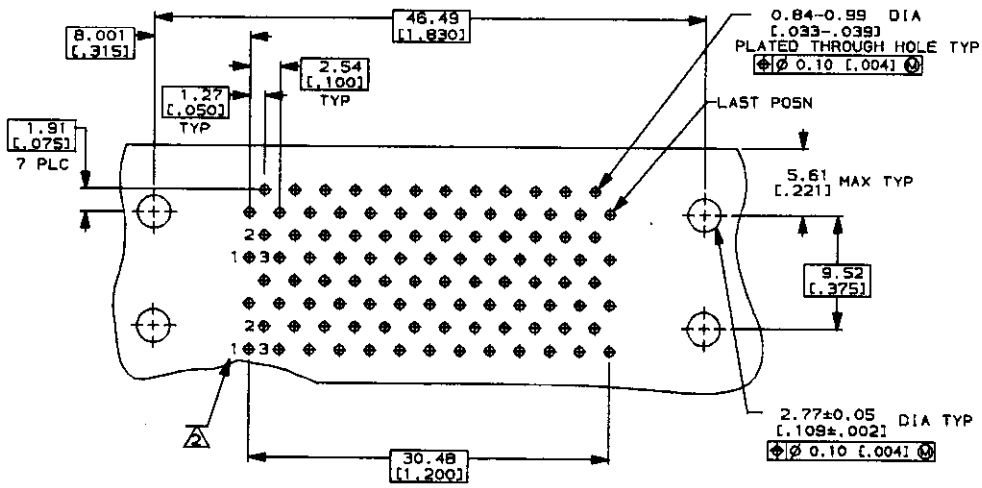
NOTE: See Figure 16 for ACTION PIN contact hole requirements.

SINGLE CONNECTOR LAYOUTS

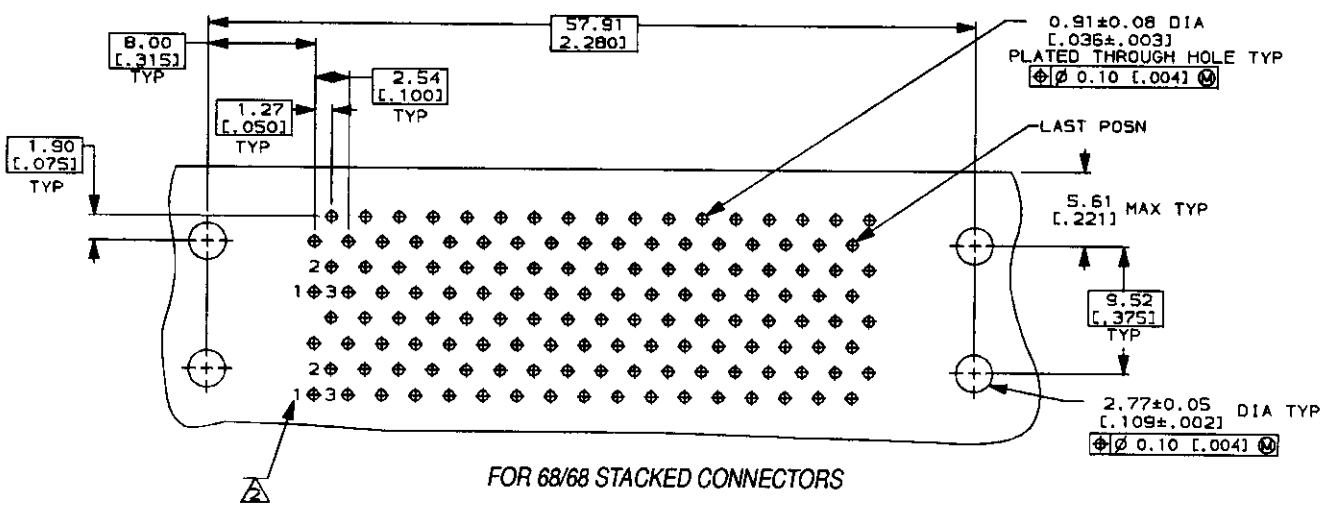
Figure 14



FOR 26/26 STACKED CONNECTORS



FOR 50/50 STACKED CONNECTORS



FOR 68/68 STACKED CONNECTORS

STACKED CONNECTOR LAYOUTS

RECOMMENDED PC BOARD MOUNTING DIMENSIONS

CONNECTOR SIDE

PC BOARD THICKNESS 1.57 ± .18 [.062 ± .007]

Figure 15

A. ACTION PIN Contact Connectors

Connectors with contact tail lengths of 4.39 [.173] are designed for boards with a nominal thickness of 1.57 [.062] and 2.36 [.093]. Connectors with contact tail lengths of 7.11 [.280] are designed for boards with a nominal thickness of 3.18 [.125] and 5.08 [.200]. Holes for connectors with ACTION PIN Contacts must be drilled and plated–through to specific dimensions. See Figure 16.

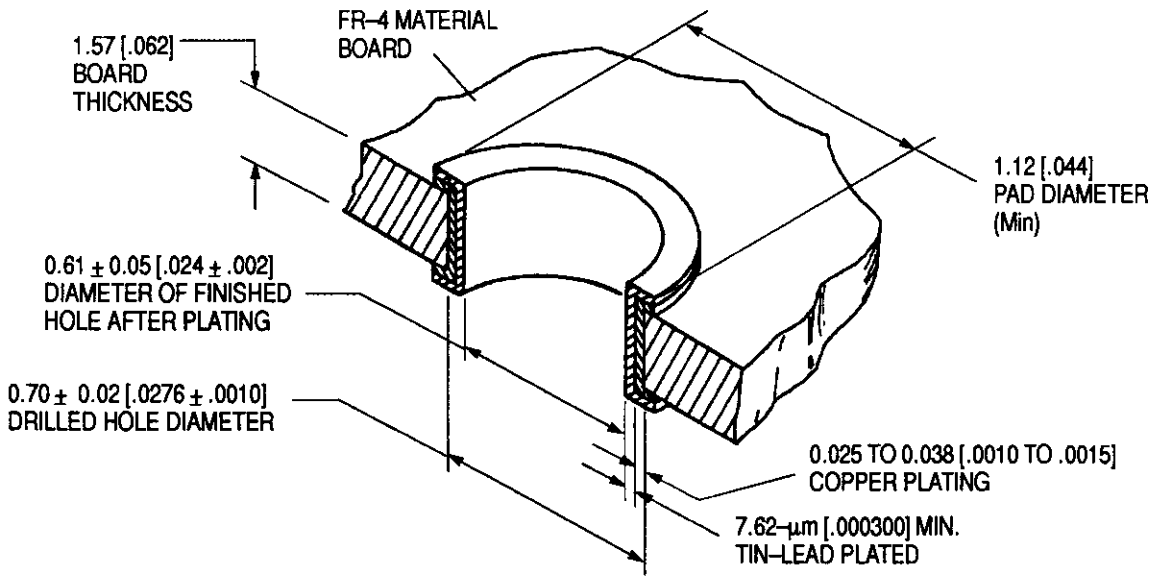


Figure 16 115–211

B. Solder–Type Contact Connectors

Vertical pc board connectors with post tail lengths of 3.18 [.125], and all right–angle connectors are designed for boards with a nominal thickness of 1.57 [.062]. Vertical connectors with post tail lengths of 4.78 [.188] are designed for boards with a nominal thickness of 3.18 [.125]. If other pc board thicknesses are desired, contact AMP Engineering through the TECHNICAL ASSISTANCE CENTER or AMP FAX/PRODUCT INFORMATION number at the bottom of Page 1.

C. Connector Placement

All pc board connectors shall be fully seated and securely attached. This may be accomplished with pre–installed boardlocks, screwlocks, or commercially available 2–56 screws. After final assembly, the connector must be seated to within the dimension shown in Figure 17.

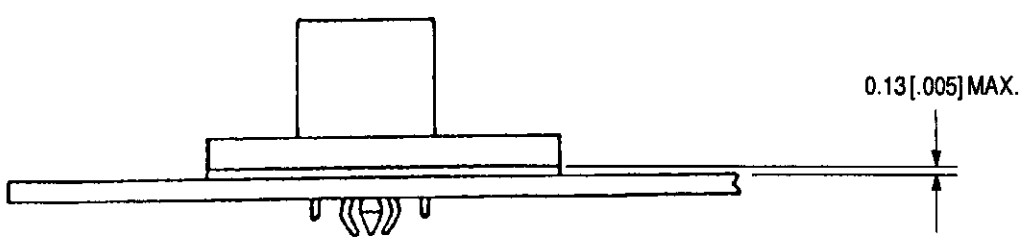


Figure 17 94–51A

3.9. Soldering Solder-Type Connectors

Soldering, cleaning, and drying of pc board assemblies shall be according to the following guidelines.

A. Soldering Guidelines

Refer to Paragraph 2.4 for instructional material that is available for establishing soldering guidelines.

B. Fluxing

Solder-type contact tails and, if applicable, attaching hardware must be fluxed prior to soldering with a mildly active, rosin base flux. Selection of the flux will depend on the type of pc board and other components mounted on the board. Additionally, the flux must be compatible with the wave solder line, manufacturing, health, and safety requirements. Call one of the AMP phone numbers at the bottom of page 1 for consideration of other types of flux. Some fluxes that are compatible with these connectors are provided in Figure 18.

FLUX TYPE	ACTIVITY	RESIDUE	COMMERCIAL DESIGNATION	
			KESTER ▲	ALPHA ⊞
Type RMA (Mildly Activated)	Mild	Noncorrosive	186	611

▲ Product of Kester Solder Co.
⊞ Product of Alpha Metals Inc.

Figure 18

C. Cleaning Connectors

After soldering, removal of fluxes and activators is necessary. Cleaners must be free of dissolved flux and other contaminants. If using an organic solvent, we recommend vapor phase cleaning with the pc board on its edge. If using an aqueous cleaner, we recommend standard equipment such as a soak-tank or an automatic in-line machine. Consult the supplier of the solder and flux for recommended cleaners.

Common organic and aqueous cleaners that these connector can be exposed to for a period of 5 minutes at 40.5°C [105°F] with no harmful affect are provided in Figure 19.

DANGER *Consideration must be given to toxicity and other safety and health requirements as recommended in the Material Safety Data Sheet supplied by the solvent manufacturer.*

ORGANIC CLEANING SOLVENTS	AQUEOUS CLEANERS	
IDENTIFIERS	IDENTIFIERS	PERCENTAGE OF CLEANER
Isopropyl Alcohol; Flourinert (FC-70); Trichloromethane; Acetone	KENCO ⊠	5% to 7% of volume
	ALCONOX ◆	10% by weight
FREON (R-12, R-22)†; FREON TMC†; FREON 113†	ALPHA 2100	5% by volume

† Product of E.I. DuPont de Nemours & Co., Inc.
⊠ Product of Kenco Corp.
◆ Product of Alconox Inc.

Figure 19

D. Drying

When drying cleaned assemblies DO NOT exceed operating temperature limits stated in AMP Product Specification 108-1228. Excessive temperatures may cause degradation of the connector housing.

4. QUALIFYING SUPPORT

4.1. Underwriters' Laboratories, Inc.

AMPLIMITE .050 Series Connectors are Recognized under the UL Component Recognition Program — Electrical File Number E–28476.

4.2. Canadian Standards Association

AMPLIMITE .050 Series Connectors are Certified under CSA File Number LR–7189A–207.

5. TOOLING TYPES

5.1. Wire Insertion Tooling

A. CHAMPOMATOR 2.5 Machine

For producing cable assemblies, the CHAMPOMATOR 2.5 Bench Terminating Machine equipped with Control Module terminates AMPLIMITE .050 Series Connectors. Based on connector size, the appropriate Tie Bar referenced in the following table will be needed. For machine number and instructional material, see Figure 20.

TIE BAR	
CONNECTOR SIZE	PART NUMBER
20	762637–1
26	1–762637–1
28	1–762637–2
40	762637–3
50	762637–4
60	762637–5
68	762637–6
80	762637–7
100	762637–9
120	1–762637–0

B. Termination Cover Closing Tooling

AMP Manual Miniature Applicator Frame Assembly equipped with Cover Closing Kit terminates ribbon cable, round–to–flat laminated cable, and wire lacing covers. This tool can also be used to close connector termination covers after using the CHAMPOMATOR 2.5 Machine. See Figure 20.

C. Lacing Termination Cover Tooling

AMP Manual Arbor Frame Assembly can be equipped with Cover Lacing Tooling 91293–1 (408–9750) for lacing, inserting, and trimming discrete wire into wire lacing covers. See Figure 20.

D. Mass Termination Tooling for Discrete Wires

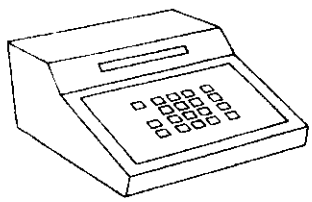
AMP Manual Arbor Frame can be equipped with Mass Termination Tooling for terminating loose–strand discrete wires. See Figure 20.

E. Repair Tool

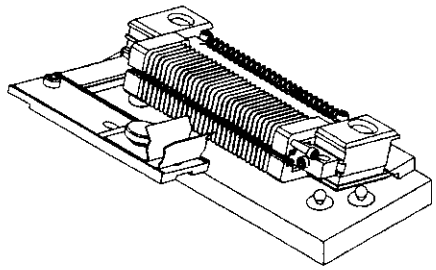
AMP Single Wire Insertion Tool terminates individual wires to contacts left unterminated in a previous termination process. See Figure 20.

5.2. Strain-Relief Staple Tooling

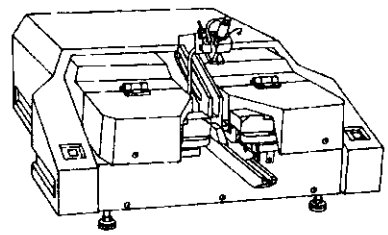
Use AMP Manual Miniature Applicator Frame Assembly equipped with Strain Relief Staple Insertion Kit to install cable strain relief staples into lower backshells. See Figure 20.



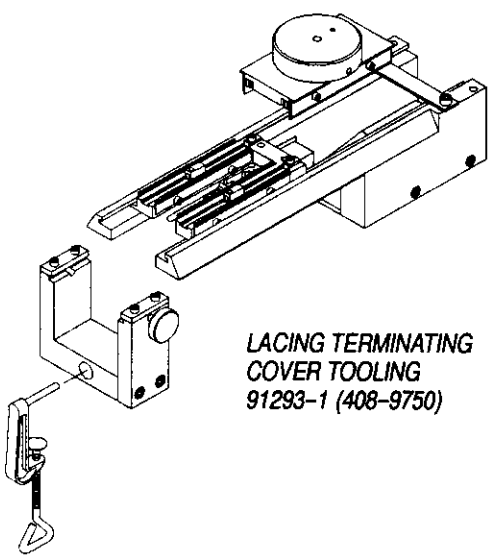
CHAMPOMATOR 2.5
CONTROL MODULE
852423-1 (409-5791)



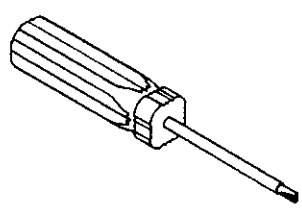
DISCRETE WIRE TOOLING
91291-1 OR -2 (408-9663)



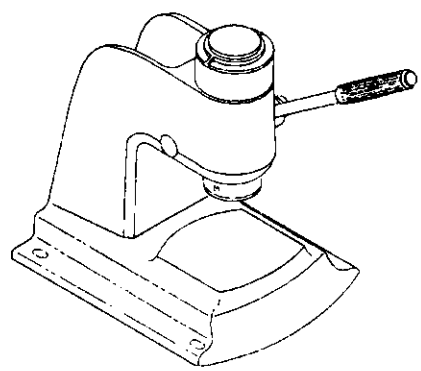
TOOL KIT 354786-1
INCLUDING CHAMPOMATOR 2.5
762734-3 (409-5839)



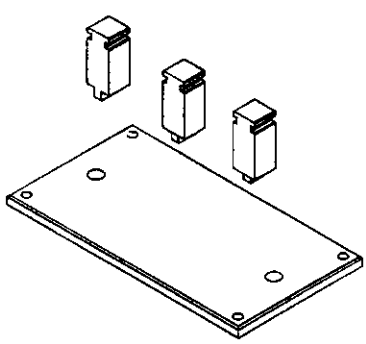
LACING TERMINATING
COVER TOOLING
91293-1 (408-9750)



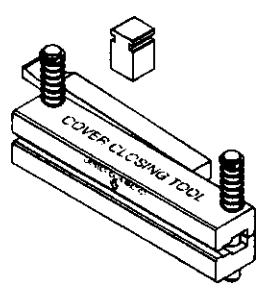
SINGLE WIRE
INSERTION TOOL
58430-1 (408-9200)



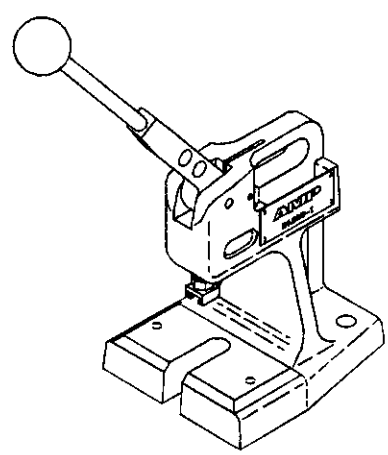
AMP MANUAL ARBOR
FRAME ASSEMBLY
58024-1 (408-6923)



STRAIN RELIEF STAPLE
INSERTION TOOLING
543515-1 (408-9820)



TERMINATION COVER
CLOSING TOOLING
543508-1 (408-9820)



AMP MANUAL MINIATURE
APPLICATOR FRAME ASSEMBLY
91295-1 (408-9817)

Figure 20

cad 9663, 40036, 9750, 9820, 9817

5.3. ACTION PIN Connector Tooling

A. Seating Tools

AMP Seating Tool, and a PC Board Support made to accommodate the contact posts and other components of the system are recommended for installing ACTION PIN Connectors. For low volume applications, we recommend the AMP Adapter Kit with Greenerd Frame Assemblies 3A and 3B. For higher volume applications, we recommend the AMP SM-3 Machine or H-Frame Machine. See Figure 21

B. Housing Support Tool

AMP Housing Support Tool is designed for removing damaged connectors from a pc board. It supports the pc board while pressure is applied evenly to all contact tails using a piece of flat bar and a press capable of producing 222 N [50 lb-force] per contact tail. See Figure 21.

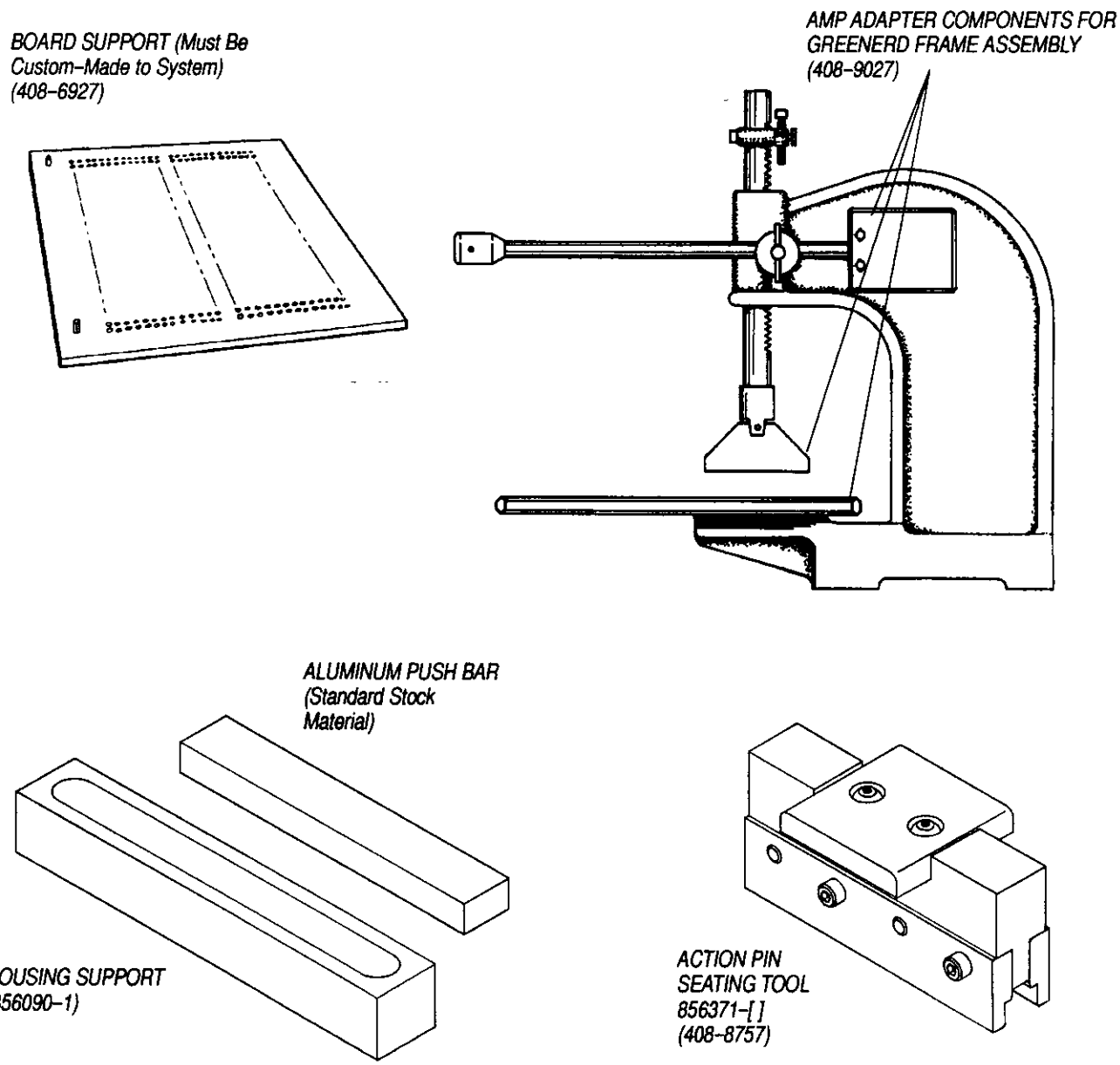


Figure 21

cad 9757, 64-1, 86-94

6. VISUAL AID

Figures 22 and 23 are to be used by production personnel to ensure a properly applied product. The views shown suggest requirements for all similar applications. Applications NOT visually correct should be inspected using the information in the main body of this document and in the instructional materials shipped with the product or tooling.

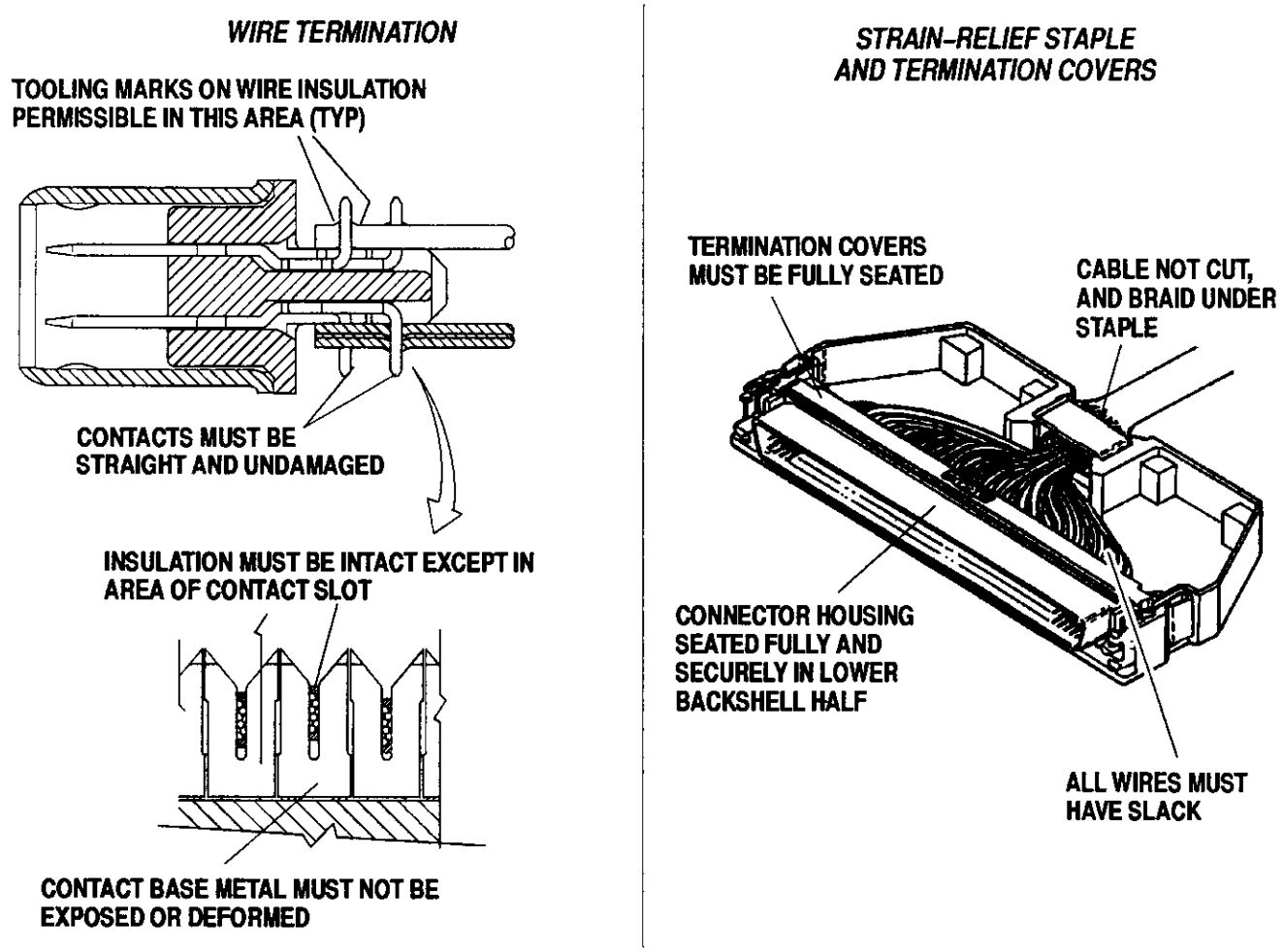


FIGURE 22. VISUAL AID

115–182, 115–183

PRINTED CIRCUIT BOARD APPLICATIONS

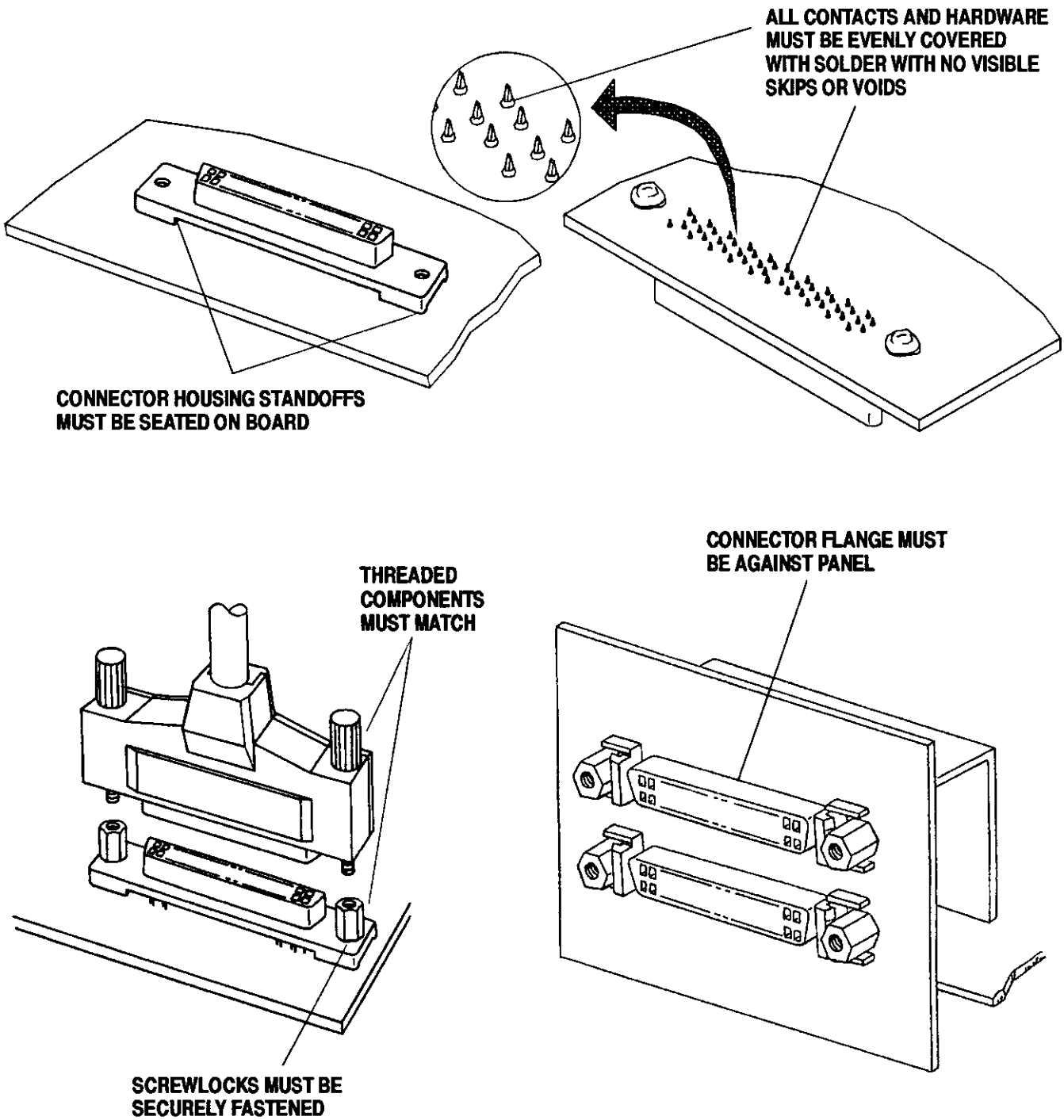


FIGURE 23. VISUAL AID

115–184, 115–181, 94–52