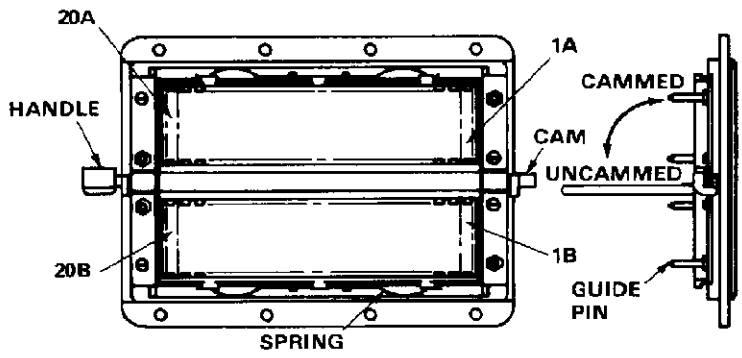
AMP INCORPORATED
Harrisburg, Pa. 17105

AMP* CAMMED RECTANGULAR (CR) 520 AND 1040 ZERO-ENTRY-FORCE CONNECTORS

Instruction Sheet
IS 6687
RELEASED 7 - 20 - 87

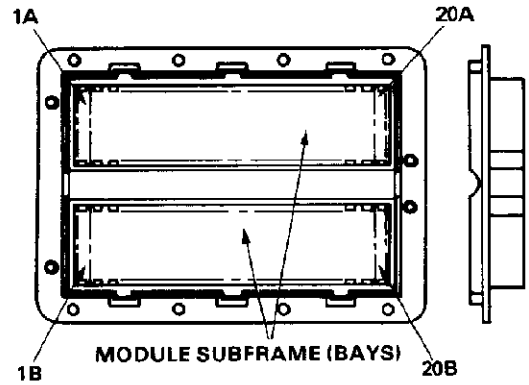
CUSTOMER HOTLINE 1 800 722-1111

RECEPTACLE FRAMES



1040

PLUG FRAMES



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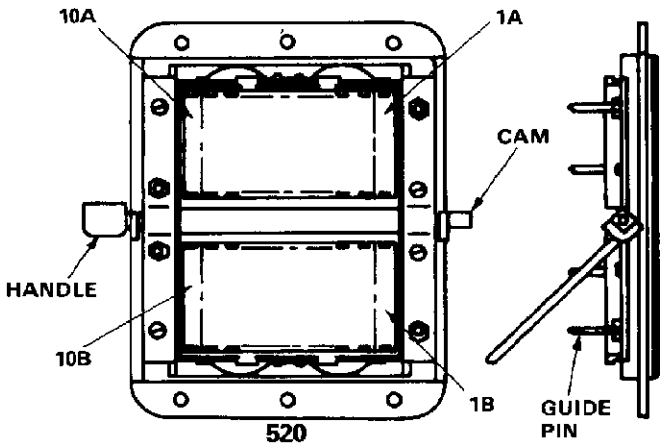
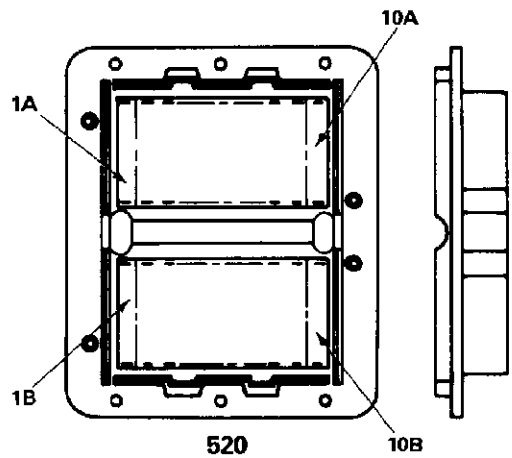


520



520

NOTE: HANDLE ATTACHES TO EITHER END OF CAM.

CONNECTOR		FRAME		MODULE OPTIONS		
TYPE	SIZE	520	1040	CONTACT* TYPE	DESCRIPTION	PART NO.
Plug	520 or 1040	211889-3 Holds 20 26-Posn Plug Modules	208788-3 Holds 40 26-Posn Plug Modules	Crimp, Snap-in	Discrete Wire	206743-1**
				Insul Displacement	Discrete Wire	206745-1
				Insul Displacement	Ribbon Cable	211914-1
				.026-in. Formed Post	.270 Post Length	207385-1
				.026-in. Formed Post	.340 Post Length	211812-1
				.025[2] Solid Post	.550 Post Length	207385-2
Rcpt	520 or 1040	211890-1 Holds 20 26-Posn Rcpt Modules	208789-1 Holds 40 26-Posn Rcpt Modules	Insul Displacement	Ribbon Cable	208766-1
				.025[2] Post	.230 Post Length With Guides	206746-1
					.230 Post Length Without Guides	206746-2
					.550 Post Length Without Guides	207256-1

* SEE FIGURE 2 FOR CONTACT INFORMATION FOR PLUG MODULES.
** CONTACTS NOT SUPPLIED IN MODULES; MUST BE ORDERED SEPARATELY.

Fig. 1

1. INTRODUCTION

This instruction sheet (IS) covers the assembly of the AMP 520- and 1040-position CR ZIF connector components listed in Figure 1. Read these instructions thoroughly before using the connectors.

NOTE *All dimensions on this sheet are in inches.*

2. DESCRIPTION (Figure 1)

The receptacle and plug frames each accept 26-position CR modules. The CR 520 frames hold 20 modules; CR 1040 frames hold 40 modules each.

The plug frame consists of a single aluminum frame assembly. The receptacle frame consists of a center cam, two retainer plates, two springs, and four guidepins assembled in an aluminum frame assembly. In addition, the receptacle frame includes a cam handle, which may be attached to either end of the cam. The handle and its screw are provided but are not assembled to the frame.

Each frame contains two subframes (bays), marked A and B, that accept modules. Modules are held in place by two latches that snap over catches in the frame. Frames can also be partially loaded with modules, starting at the center and working outward. Note that receptacle frames are normally panel mounted. Figure 1 shows plug and receptacle frames with bay and module locations and module contact options.

Except for crimp type, modules are supplied preloaded with contacts. Plug contact options include: crimp contacts assembled by the customer; insulation displacement contacts (IDC) for discrete wire or ribbon cable; and posted contacts with .025² solid or .026-in. formed posts. Figure 2 provides information concerning removal and replacement of plug contacts, except in ribbon cable modules. IDC contacts for ribbon cable *cannot* be replaced.

Receptacle contacts are designed either for ribbon cable (IDC) or with .025² solid posts. Receptacle contacts *cannot* be replaced.

3. CONTACT APPLICATIONS

A. Posted Contacts

Posted contacts can be terminated by standard wrap-type methods, by soldering, or by mating with an appropriate .100- by .100-in. receptacle connector, such as AMP-LATCH★ Novo or AMPMODU★ connectors. The post length of the CR contacts must be compatible with application requirements. Optional guides on receptacle modules aid in aligning mating connectors with .025² contact posts.

NOTE

Posted contacts are replaceable in plug connectors only.

B. IDC Contacts for Discrete Wire

Insulation displacement contacts for discrete wire are preloaded, and accept unstripped No. 26 to 30 AWG solid or No. 28 AWG 7-strand single wire. The maximum insulation diameter is .049 in. Protective covers must be ordered separately (two required). Figure 2 lists replacement contacts: right-hand (RH) contacts are used in even numbered cavities, and left-hand (LH) go into odd-numbered cavities. Note that crimp-type contacts can also be used for replacements in IDC discrete-wire modules.

C. IDC Contacts for Ribbon Cable

CR ribbon cable contacts are also preloaded and accept unstripped No. 26 to 30 AWG solid or No. 28 AWG 7-strand cable. Note 1) that these contacts cannot be replaced; 2) that acceptable cable thickness is .037 ± .005; and 3) that plug and receptacle covers are provided and latched during the termination process. Refer to Instruction Sheet IS 6699 for setup and mass termination procedures using AMP Tooling Assembly 128000-1.

D. Crimp-Type Contacts

CR crimp-type contacts are designed for two wire ranges: No. 28 to 24 AWG and No. 24 to 20 AWG. Both sizes are available in loose-piece form for hand crimping or in strip form for semi-automatic and automatic machine terminations. Crimp contacts can be replaced; refer to the chart in Figure 2.

E. Contact Replacement (Figure 3)

AMP Extraction Tool 91111-1 is used to remove replaceable CR contacts from modules: crimp type, posted plug, and IDC contacts for discrete wire. Refer to IS 7679 for contact removal procedures.

Replaceable plug contacts can be inserted into the modules by hand. Align and insert the contact from the rear face of the module until the locking lance is

PLUG MODULE CONTACTS					
CONTACT TYPE	LOOSE PIECE PART NO.	WIRE RANGE (AWG)	INSUL DIA (MAX)	AMP HAND TOOLS	
				TERMINATION	EXTRACTION
Crimp	66555-3*	No. 28-24	.049	90309-1 (IS 7674)	91111-1 (IS 7679)
	66750-3*	No. 24-20	.049	90416-1 (IS 9137)	
IDC for Single Wire	66559-5(RH) 66559-6(LH)	30-26 Solid/ 28 7-Strd	.049	91113-1 (IS 7770)or 91119-1 (IS 7784)	
Posted# .026 Formed	66631-1 (.270 Lg) 66631-6 (.340 Lg)	— — — —	— — — —	— — — —	
Posted# .025² Solid	211583-1 (.550 Lg)	— — — —	— — — —	— — — —	

* —2 CONTACTS REELED FOR AMP MINI-APPLICATOR OR STRIPPER-CRIMPER MACHINE

\# AVAILABLE FOR PLUG MODULES ONLY

Fig. 2

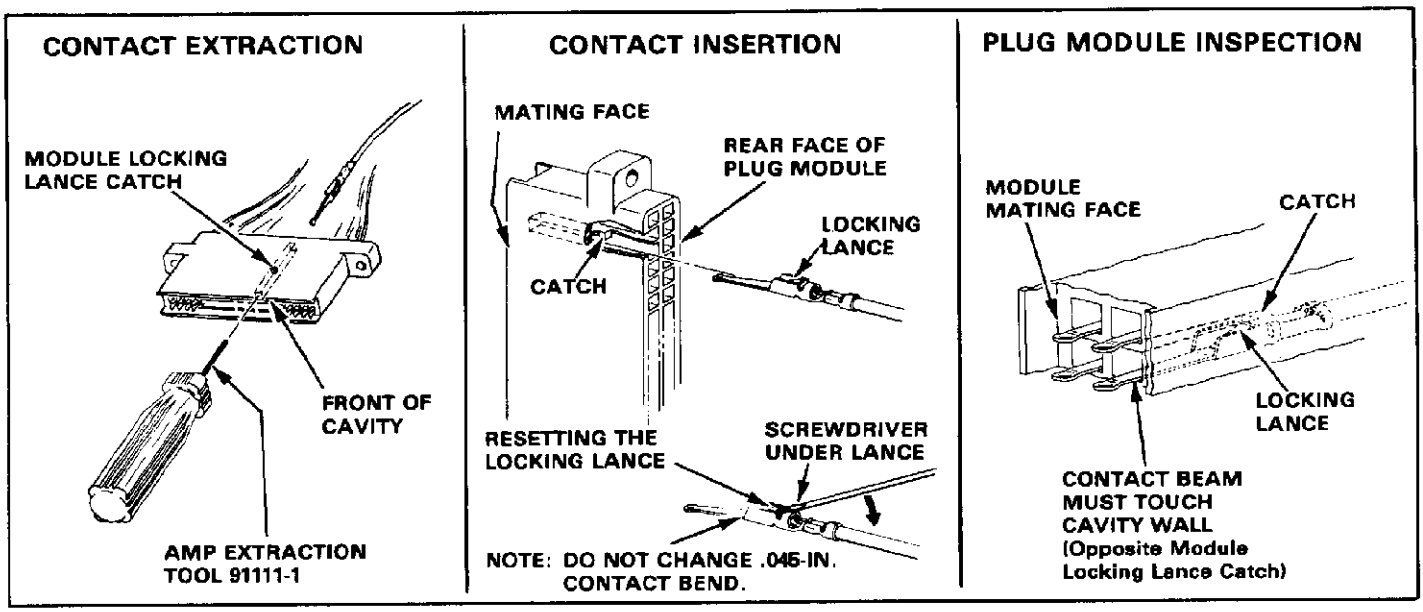


Fig. 3

latched on the catch in the cavity. For fragile wires or large bundles that hamper insertion by hand, use AMP Insertion Tool 91002. Refer to IS 7347 for proper procedure.

CAUTION *Do not distort contact beams during crimping and installation. Make sure that plug contact beams are preloaded against the module cavity wall opposite from the locking lance catch. See Figure 3. If contact beam does not touch cavity wall, replace the contact in order to ensure adequate contact pressure (normal force) when connector cam is actuated.*

Plug module contacts are designed for multiple insertions and extractions. If a contact does not lock on insertion, reset the lance with a screwdriver-type tool. The locking lance should be set level with the sides of the contact as shown in Figure 3. After insertion, inspect the mating face and make sure that contact beams touch the cavity wall opposite the locking catch.

4. ASSEMBLING CONNECTORS (Figures 4 and 5)

1. Orient module housings correctly before insertion into frames. Make sure that the wider module shoulder or Positions 1 and 2 are closest to the camming mechanism, and that the narrower shoulder or Positions 25 and 26 face the outer edge of the frame. Refer to 4.

NOTE *If modules are not properly oriented, locking mechanisms will not latch.*

2. Insert modules into the back of the frame until latches are properly locked at both ends of the frame.

CAUTION *Incorrectly latched or oriented modules may back out of the frame when the connectors are mated or terminated cables have a strain applied to them.*

3. Mount the loaded receptacle frame in the panel (from front or back) and secure with appropriate hardware. Refer to Figure 5 for panel-cutout dimensions required for mounting the receptacle connector flange inside the panel.

4. Secure the cam handle on either end of the cam shaft (as required) with the screw provided.

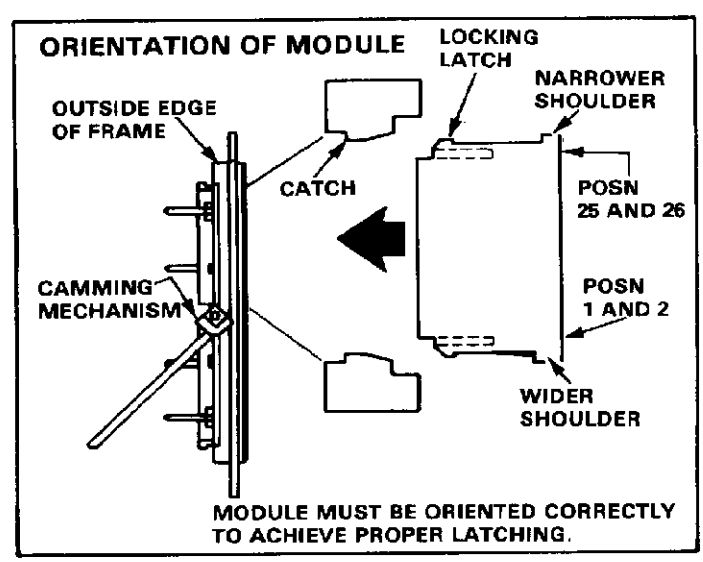


Fig. 4

5. Mate the plug and receptacle connectors as follows:

a. Rotate the cam handle away from the frame to open (uncam) the connector.

b. Align the plug connector guide holes with the receptacle connector guide pins and press the connectors together.

c. Rotate the cam handle inward toward the frame to close the connector. The plug and receptacle will remain firmly engaged until the cam handle is rotated to open the connector.

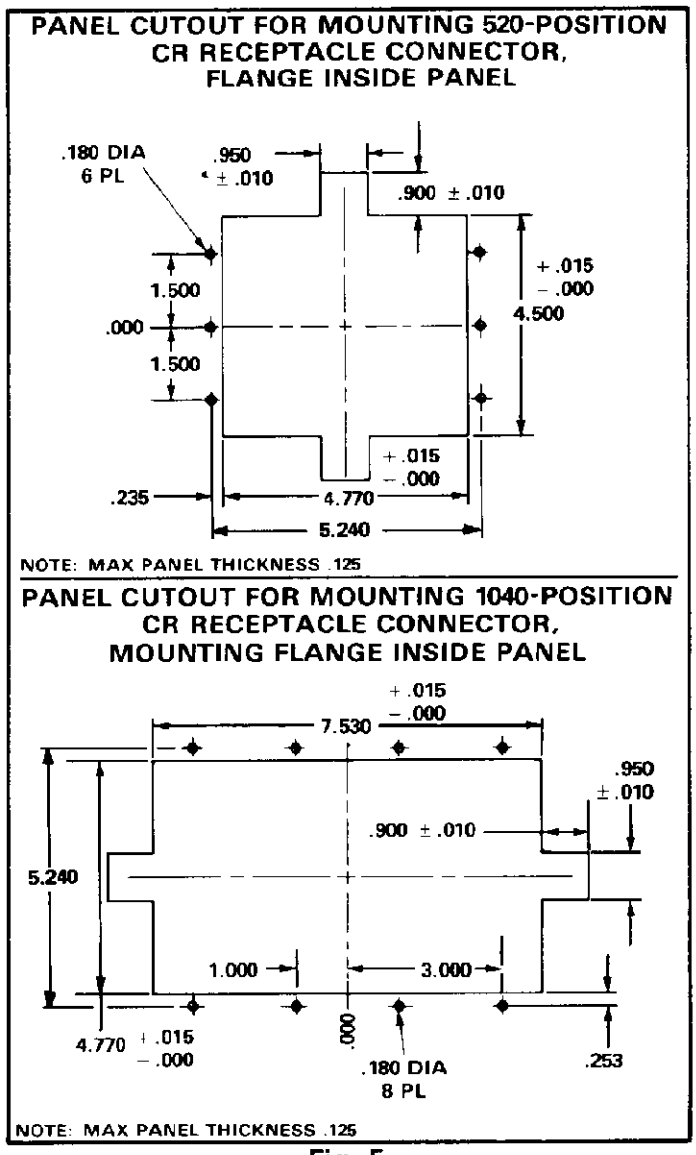


Fig. 5

5. MODULE EXTRACTION (Figure 6)

To remove a module from the frame, insert AMP Extraction Tool 91173-1 into the front of the frame so that tool tips rest over the locking latches of the appropriate module. Squeeze tool tips together to depress the locking latches and push the module out of the BACK of the connector frame. Refer to IS 9005.

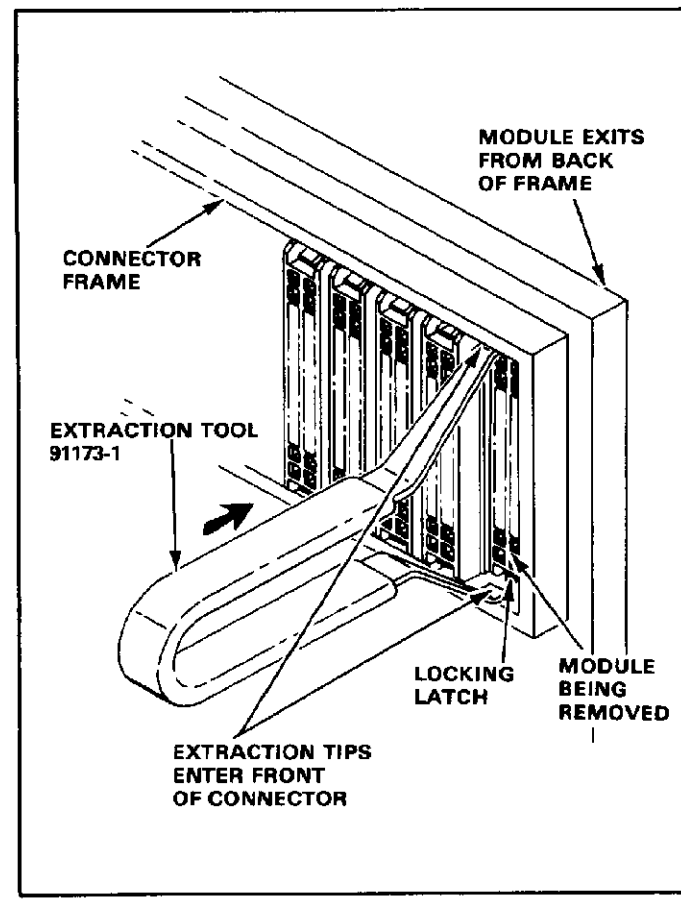


Fig. 6