

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 [± 0.005] and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of the AMP-LATCH 2 mm Receptacle Connectors which are designed for ribbon cable-to-printed circuit (pc) board applications. The connectors have in-row and row-to-row mating contact cavities on 2 x 2 mm [.079 x .079 in.] centerline spacing. They accept 0.5 mm [.0197 in.] square or round pins with a nominal length of 4.0 mm [.158 in.]. The wiring ends of the contacts have split beam insulation displacement contacts (IDC) for flat, ribbon-type cable with conductors on 1 mm [.039 in.] centers. Connectors are available in a range of 8 through 50 positions with or without polarization.

When corresponding with TE Connectivity Personnel, use the terminology provided on this specification to help facilitate your inquiry for information. Basic terms and features of the connectors are provided in Figure 1 and are used throughout this specification.

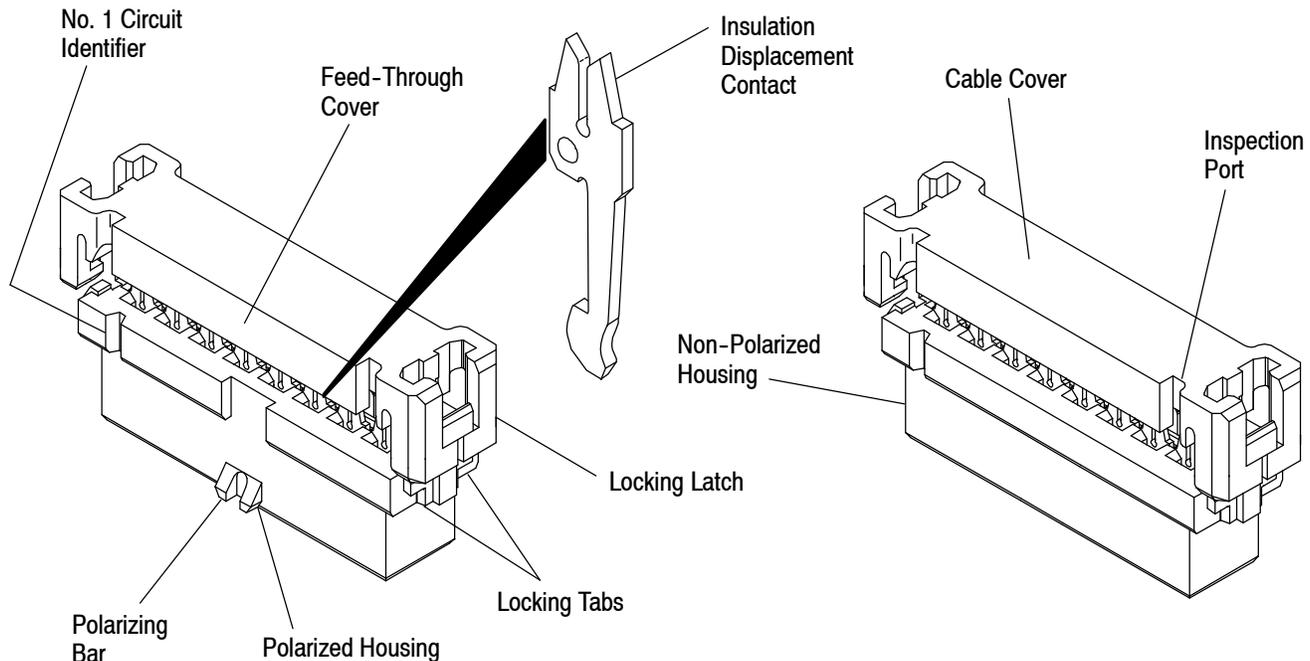


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

This paragraph is reserved for a revision summary covering the most recent additions and changes made to this specification which include the following:

- Updated document to corporate requirements
- New logo

2.2. Customer Assistance

Reference Part Number 111623 and Product Code 0769 are representative numbers which identify the AMP-LATCH 2 mm Receptacle Connectors. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local TE Representative or, after purchase, by calling the Tooling Assistance Center or Product Information number at the bottom of Page 1.

2.3. Drawings

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 or with any technical documentation supplied by TE.

2.4. Specifications

Product Specification 108-1372 covers test and performance requirements.

2.5. Instructional Material

The following list includes available instruction sheets (408-series) that provide assembly procedures for product, operation, maintenance and repair of tooling; and customer manuals (409-series) that provide setup, operation, and maintenance of machines.

<u>Document Number</u>	<u>Document Title</u>
408-6732	Pneumatic Auto-Cycle Unit 91112-3
408-7777	Manual Arbor Frame Assembly 91085-2
408-9845	Shuttle Tooling Assembly 768338-3
408-9828	AMP-LATCH Hand Tool Kit 768340-1
408-9844	AMP-LATCH 2 mm Connector Specific Kit 768963-1
409-5794	R-CAM Automatic Ribbon Cable Machine 761900-1

3. REQUIREMENTS

3.1. Cable Selection and Preparation

The IDC contacts in AMP-LATCH 2 mm Receptacles are designed to accept PVC-insulated cable wires with 28 AWG conductors. There are other types of insulation which may be suitable for these connectors. We recommend that you submit samples of any other types of insulated cable to TE Engineering for evaluation before use.

The leading edge of the cable must be cut squarely to the edge of the cable as shown in Figure 2, which can best be done with a guillotine-type cutting tool. The dimensional requirements for the cable are provided in Customer Drawing 57051.

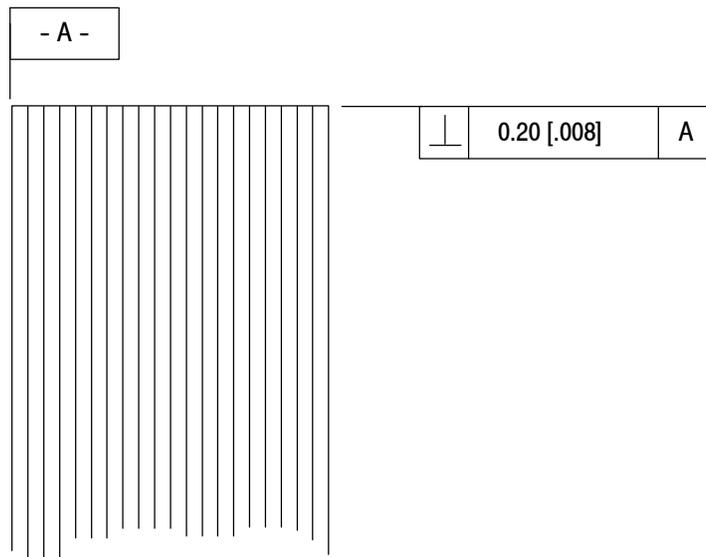


Figure 2

3.2. Connector Selection

Connectors are available with positions of 8, 10, 12, 14, 16, 20, 22, 24, 26, 30, 34, 40, 44, and 50. They all will mate with unshrouded AMPMODU* Headers with round or square pins with a cross-section of 0.50 ± 0.10 mm [$0.020 \pm .004$ in.]. Polarized connectors are designed to mate with shrouded headers with the same grid pattern, pin lengths, and pin cross-sections. See Figure 3 for dimensional details.

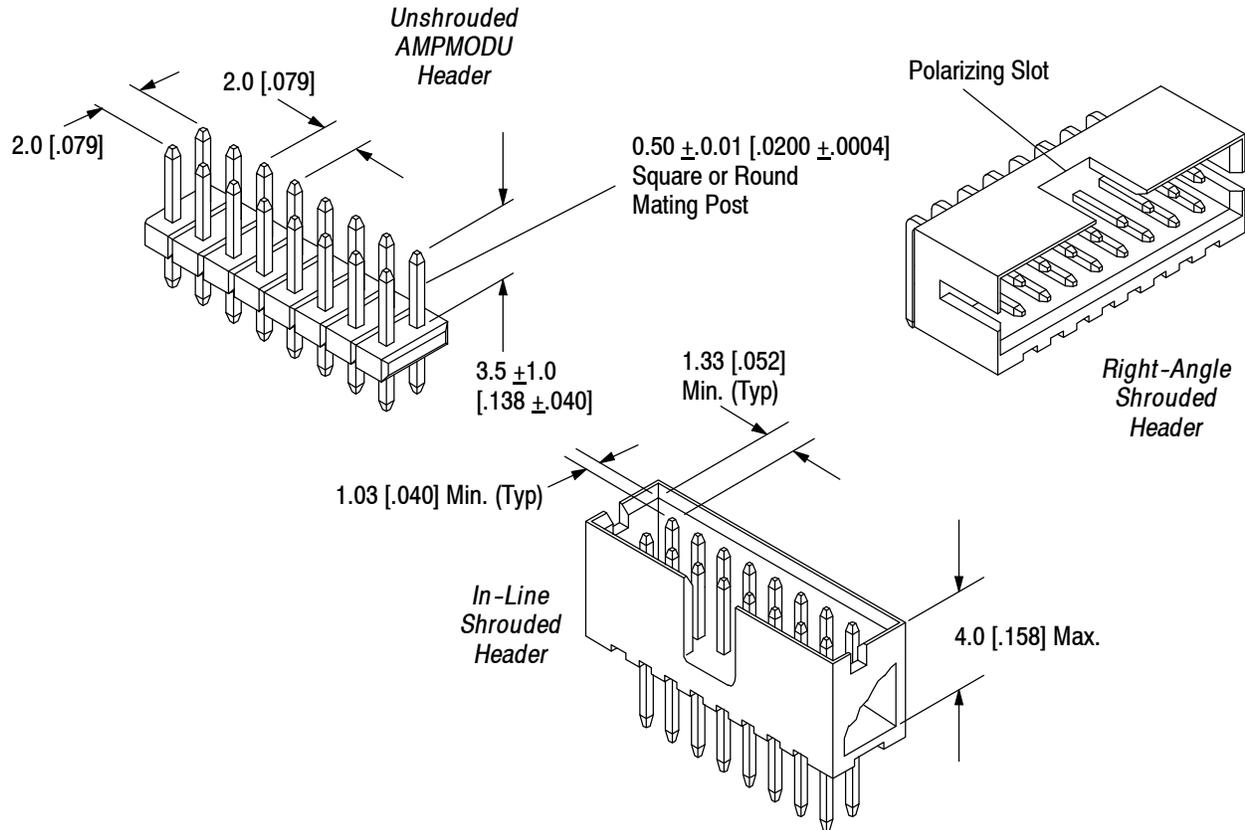


Figure 3

3.3. Inspecting Terminated Connector

External and internal inspection can be made on terminated connectors. External inspections can be made on all terminated connectors. Internal inspections will require disassembly of a connector; therefore, a sample connector must be discarded after internal inspection.

Prepared cable shall be located and terminated using the tooling provided in Paragraph 5. Reasonable care should be taken by tooling operators to provide undamaged terminations. An improper termination in any of the IDC contacts will be reason to discard the entire receptacle. Contacts are designed for one-time termination, and cannot be replaced, repaired, or re-used.

The end-of-line covers have an inspection port at one end of the cable stop which can be used to check conductor placement and for electrical continuity. Criteria that will ensure a good termination are provided in Figures 4, 5, and 6.

A. External Inspection

1. Edge Alignment

Connectors must be perpendicular to edge of cable within the degree of tolerance given in Figure 4.

2. End Alignment

When making an end-of-line termination with a feed-through cover, the cable end must be within the tolerance given in Figure 4.

3. *Terminated Cover*

Terminated covers must be seated within specified width and height requirements. The height is to be measured at the ends of the terminated connector. The width is to be measured over the locking latches. See Figure 4.

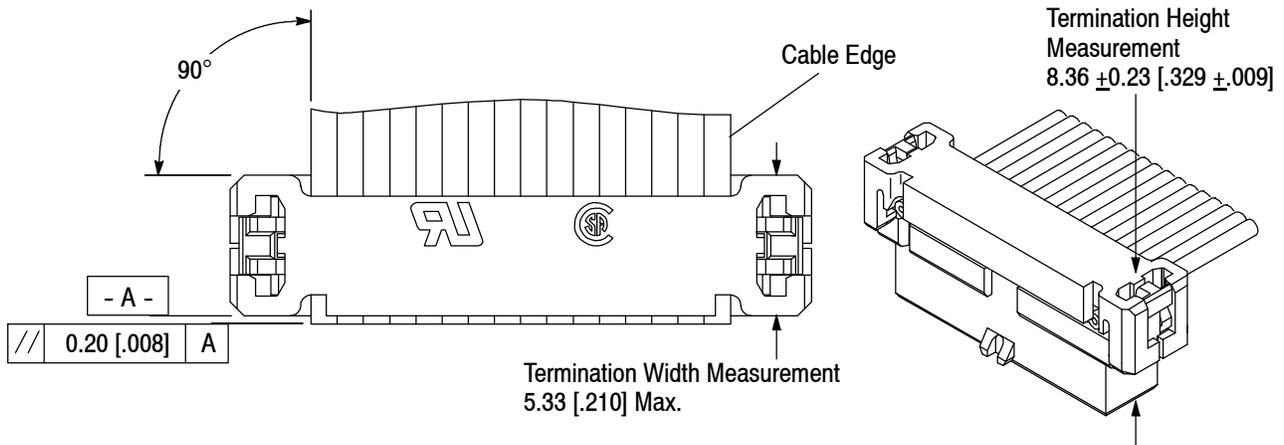


Figure 4

B. Internal Inspection

NOTE Sample terminations may NOT be used after internal inspection.

1. *Cover Removal*

Terminate the cover in accordance with the dimensions provided in Figure 4.; then, using a small screwdriver, carefully disengage the locking features at both ends of the connector and remove the cover. See Figure 5.

2. *Contact-to-Conductor Alignment*

Each conductor must be aligned with and terminated to its respective contact. Contact beams must penetrate the cable insulation. If the connector passes all aspects of this inspection, the tooling can be considered properly set up and the method of terminating is correct. See Figure 5.

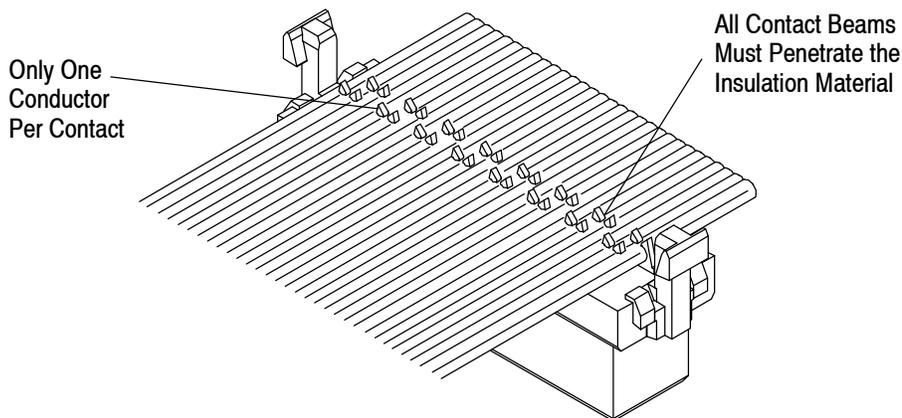


Figure 5

3. *Conductor Location*

The proper location of the conductor in relation to the contact insulation displacement beams is shown in Figure 6.

NOTE


A sample that would provide the following view must be made under closely controlled conditions. Contact TE Engineering for specific details. Call the Tooling Assistance Center number at the bottom of Page 1.

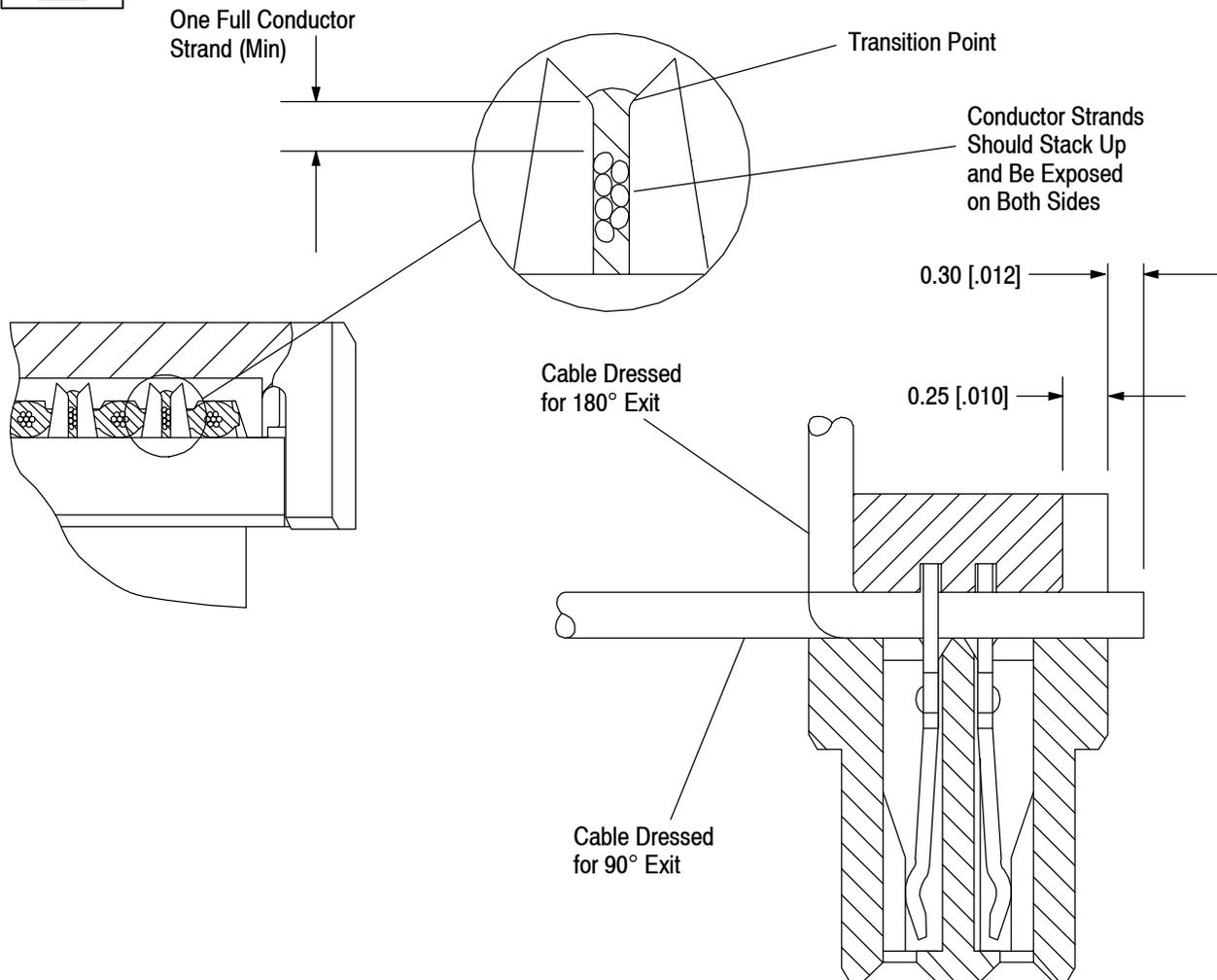


Figure 6

3.4. Accessories

A. Strain Relief

A strain relief can be added to any connector after the cover is seated and the termination is complete. When doing so, the cable must be folded back over the cover with a slight open loop that will assure no stress on the termination, then the strain relief is pressed onto the cable until the locks engage inside the cover. See Figure 7.

B. Keying Plugs

Keying plugs are available on a carrier strip. The unattached end is designed to be hand inserted directly into the receptacle contact at the mating face of the connector. Corresponding pins must be removed from the mating connector. See Figure 7.

C. Flexible Pull Tabs

Flexible pull tabs consisting of a loop of strong, thin plastic tape or similar material may be permanently assembled to these connectors in conjunction with a strain relief. The pull tab should be placed between the strain relief and the cover. See Figure 7.

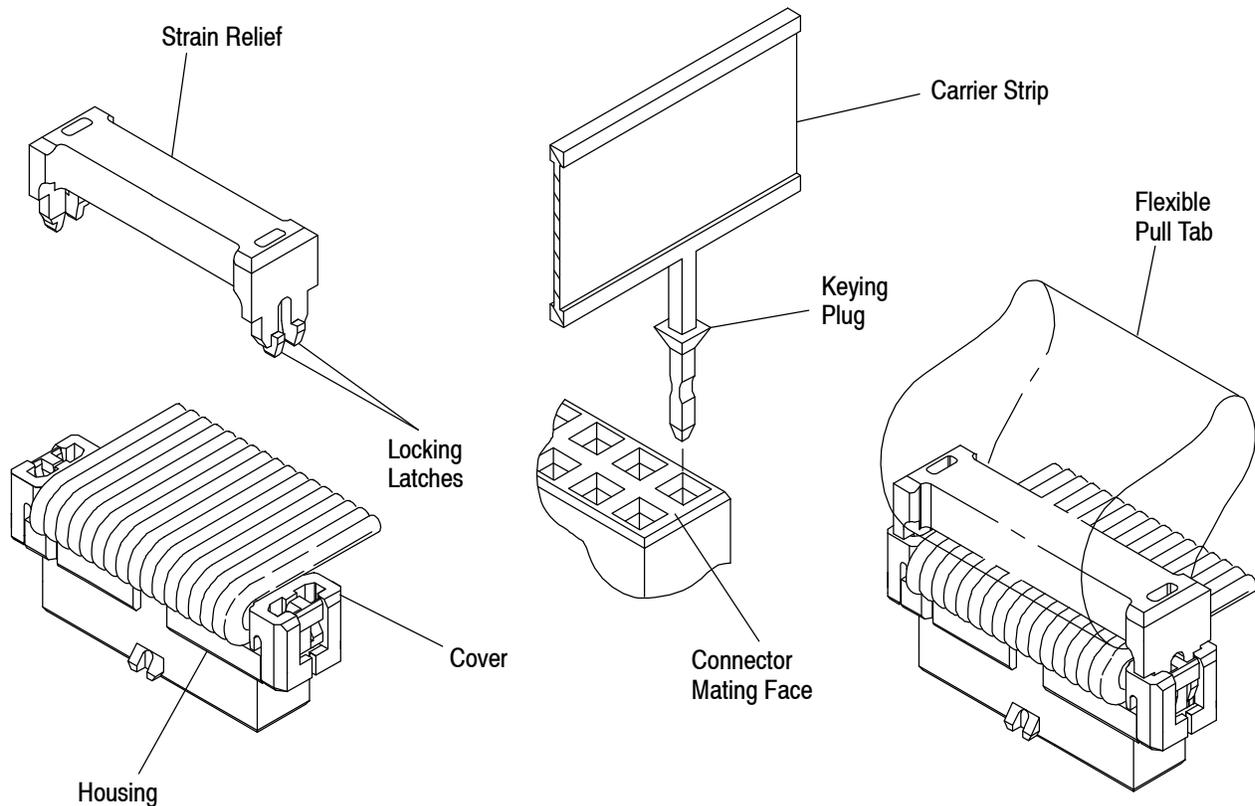


Figure 7

3.5. Testing

Completed cable assemblies should be tested for continuity, shorts, and dielectric isolation using a Cirrus Tester or similar equipment. The automatic cable assembly machines described in Paragraph 5.3 contain their own test equipment which is described in the documentation supplied with the machine.

4. QUALIFICATIONS

AMP-LATCH 2 mm Receptacle Connectors are Component Recognized by Underwriters Laboratories Inc. (UL) in File No. E28476, and Certified by CSA International in File No. LR7189.

5. TOOLING

The AMP-LATCH 2 mm Receptacle Connectors can be attached to ribbon cable with connector specific tooling and manual or pneumatic powered arbor frame assemblies for small volume prototype, and repair applications, or cable making machines for higher volume production requirements.

5.1. Connector-Specific Tooling

The Connector-Specific Kit (768963-1) has been designed for AMP-LATCH 2 mm Receptacle Connectors. The kit consists of an upper tool, a lower insert, and two locators. It can be used in with manual or pneumatic arbor frame assembly tooling. See Figure 8.

5.2. Arbor Frame Assemblies

There are manually operated and pneumatically operated (auto-cycle and foot pedal actuated) arbor frame assemblies. They accept the Base Assembly Universal Tool 768338-3 that has been designed for AMP-LATCH 2 mm Connector-Specific Kits 768963-1. Instruction sheets covering tool setup and operation are packaged with the tooling. See Figure 8.

5.3. Cable Making Machine

An R-CAM 3A Machine can be adapted for the manufacturing of complete cable assemblies. Variations of the machine can be made available to meeting various cable assembly requirements: terminations of one connector on the leading end and three on the other end, one on the leading end and one on the trailing end, etc. Instructions covering machine setup and operation are packaged with each machine. Call the TE Tooling Assistance Center Number at the bottom of page 1 for specific information. See Figure 8.

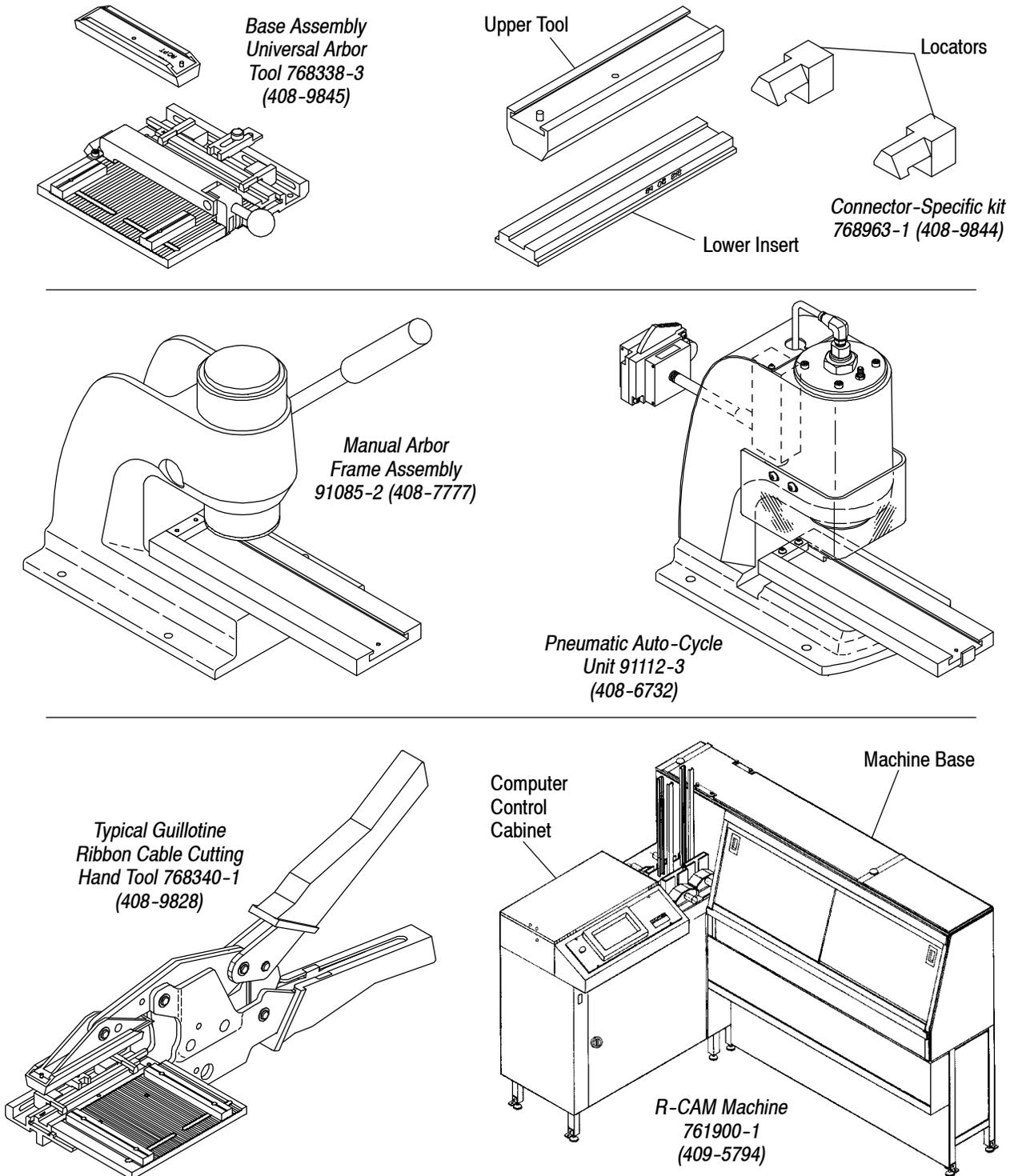


Figure 8

6. VISUAL AID

Figure 9 shows typical applications of AMP-LATCH 2 mm Receptacle Connectors. These illustrations should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

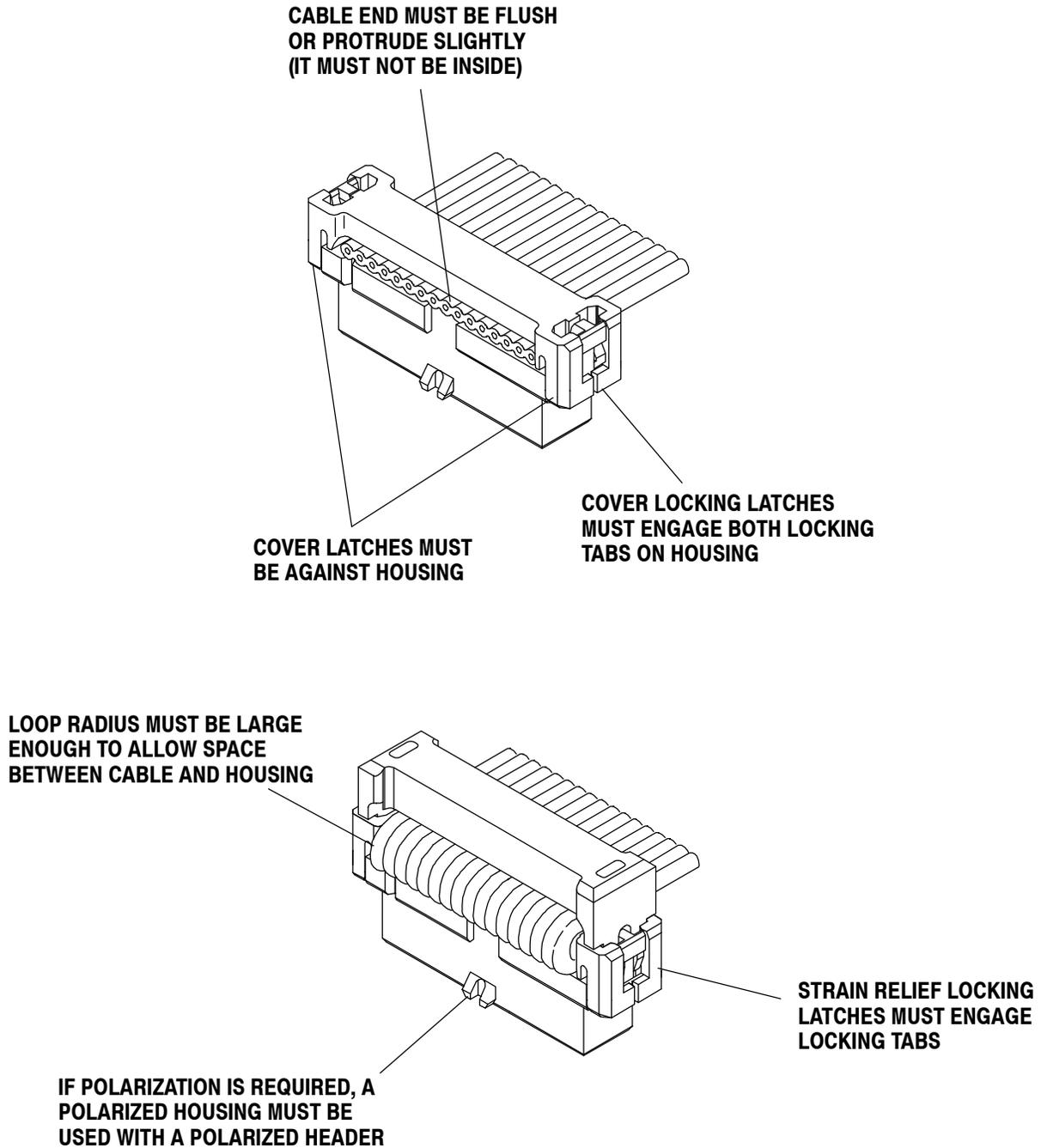


FIGURE 9. VISUAL AID