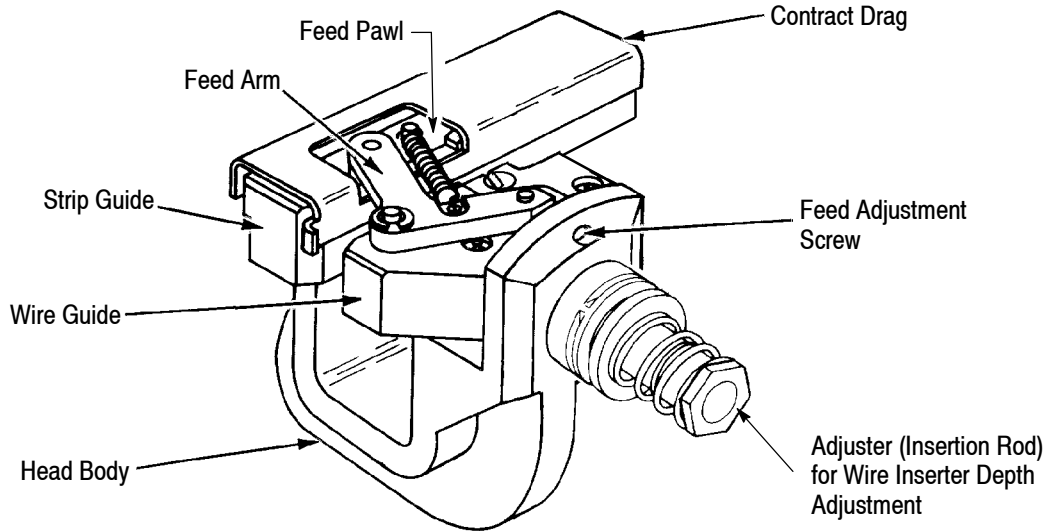


## PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. Hand tools are intended for occasional use and low volume applications. A wide selection of powered application equipment for extended-use, production operations is available.



## AMPMODU MTE CONTACT HOUSING ASSEMBLIES

| WIRE<br>SIZE,<br>AWG | HOUSING<br>ASSEMBLY<br>TYPE | PIN HOUSINGS                        |        | RECEPTACLE HOUSINGS    |        |        |
|----------------------|-----------------------------|-------------------------------------|--------|------------------------|--------|--------|
|                      |                             | SHROUDED,<br>POLARIZED/<br>LATCHING | RIBBED | LATCHING/<br>POLARIZED | RIBBED | PLAIN  |
| 30-26                | Strip Form                  | 103947                              | 103953 | 103959                 | 103971 | 103977 |
|                      |                             | 103948                              | 103954 | 103960                 | 103972 | 103978 |
|                      |                             | 103949                              | 103955 | 103961                 | 103973 | 103979 |
|                      | Individual●                 | 103658                              | 103656 | 103640                 | 103649 | 103684 |
|                      |                             | 103659                              | 103657 | 103641                 | 103650 | 103685 |
|                      |                             | 103894                              | 103896 | 103897                 | 103901 | 103903 |
| 26-22                | Strip Form                  | 103944                              | 103950 | 103956                 | 103968 | 103974 |
|                      |                             | 103945                              | 103951 | 103957                 | 103969 | 103975 |
|                      |                             | 103946                              | 103952 | 103958                 | 103970 | 103976 |
|                      | Individual●                 | 103661                              | 103654 | 103645                 | 103652 | 103687 |
|                      |                             | 103660                              | 103655 | 103644                 | 103651 | 103686 |
|                      |                             | 103893                              | 103895 | 103734                 | 103900 | 103902 |

●The head will not terminate individual housing assemblies of less than six positions.

Figure 1

## 1. INTRODUCTION

This instruction sheet covers operation and maintenance of Terminating Head 58336-1, which is used to terminate contacts in AMPMODU MTE contact housing assemblies. Read these instructions thoroughly before using the head.

### NOTE

Dimensions on this sheet are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for reference only and are not drawn to scale.

Reasons for reissue of this sheet are provided in Section 8, REVISION SUMMARY.

## 2. DESCRIPTION

The terminating head is designed for use in Manual Handle Assembly 58074-1 (408-6790), Pneumatic Handle Assembly 58075-1 (408-6789), Pneumatic Power Bench Assembly 58338-1 (408-9393), and the Electric Bench Machine 931800-1 (409-5746). Note that the pneumatic handle assembly is designed to operate at air pressure between 276-483 kPa [40-70 psi].

The head, when installed in either handle assembly, terminates wires in the single-row AMPMODU MTE contact housing assemblies listed in Figure 1. Refer to Instruction Sheet 408-6919 for a complete description of the AMPMODU MTE Connectors. Note that even though the head terminates both strip-form and individual housing assemblies, it does not terminate individual housing assemblies of less than six positions.

Wires are terminated using the Insulation Displacement Technique, which inserts unstripped wire into a slotted contact beam to form a reliable electrical connection between the wire and the contact.

After the head is inserted into the tool handle assembly, the head serves as a guide for the housing assemblies during termination. Features of the head and their functions are as follows:

**Wire Inserter** - forces wire into two slotted beams of the contact and provides support for the contact beams when insertion force is applied to the wire.

**Adjuster (Insertion Rod)** - is a piston for, and regulates travel of, the wire inserter.

**Feed Pawl** - advances contact carrier strip to the terminating position.

**Feed Arm** - driven by the retraction of the inserter, the feed arm drives the feed pawl.

**Contact Drag** - keeps the contact carrier strip in the strip guide and prevents the connector from moving out of position after the feed pawl advances it.

**Guide Strip** - aligns and supports the contact carrier strip.

**Feed Adjustment Screw** - regulates position of contact relative to the wire inserter.

the terminating position. The feed adjustment screw regulates the travel of the feed pawl which advances the contact to the terminating position. Make this adjustment as follows:

1. Obtain a housing assembly. Refer to the chart in Figure 1.
2. Squeeze the tool trigger (pneumatic handle assembly or cam handle (manual handle) and push the housing assembly against the wire inserter.
3. Release the trigger or cam handle; the housing assembly will be indexed to the first contact position.
4. Squeeze the trigger or cam handle until the feed pawl clicks; then release the trigger or handle. The housing assembly should have advanced to the next contact position.
5. Squeeze cam handle until the wire inserter is partially extended but does not touch the insulation barrel supports. If using a pneumatic handle assembly, reduce air pressure to 0 kPa [0 psi], squeeze the trigger, and increase air pressure until the wire inserter is partially extended. Refer to Figure 2.

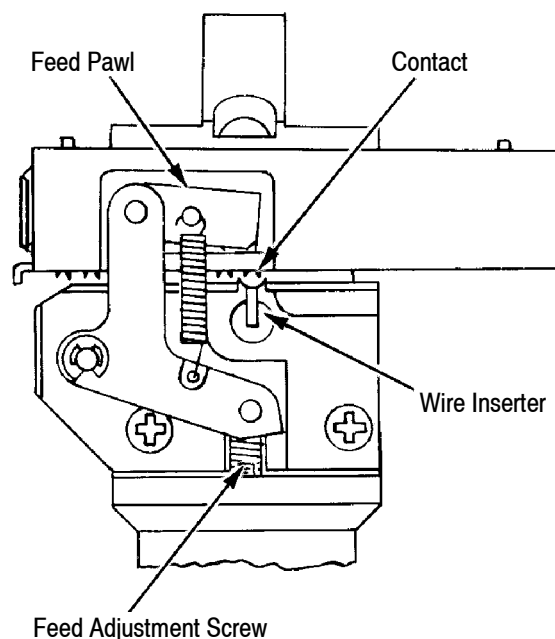


Figure 2

## 3. ADJUSTMENTS

### 3.1. Feed Adjustment

The insulation barrel supports on the contact must be centered on the wire inserter when the contact is in

6. To advance the contact, turn the feed adjustment screw COUNTERCLOCKWISE. To back up the contact, turn feed adjustment screw CLOCKWISE while pulling back on the carrier strip.

7. Repeat Steps 4 through 6 as necessary.

## 3.2. Wire Insertion Depth

### A. Wire Too Deep in Contact Slot

1. Remove the head and turn the adjuster 1/6-turn CLOCKWISE (See Figure 3). This will reduce the wire insertion depth by approximately 0.20 mm [.008 in.].
2. Make a test termination according to the procedure given in Section 4, TERMINATION PROCEDURE, and inspect the termination in accordance with Section 5, INSPECTION. Readjust if required.

**NOTE:** 1/6 Turn  
Equals 0.20 mm  
[.008 in.] Adjustment

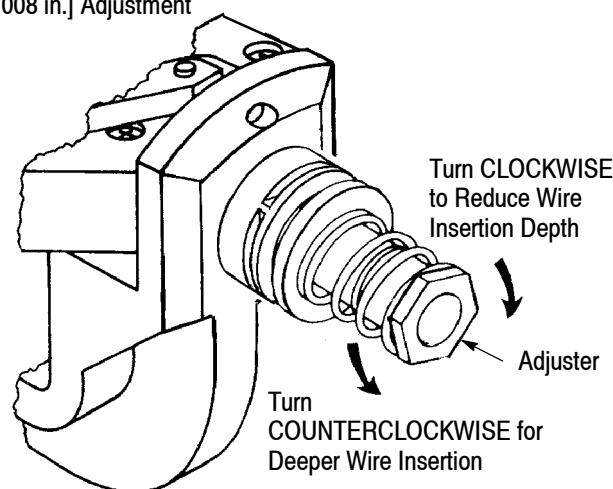


Figure 3

### B. Wire Not Deep Enough in Contact Slot

#### Manual Handle Assembly

1. Remove the head and turn the adjuster 1/6-turn COUNTERCLOCKWISE (See Figure 3). This will increase wire insertion depth by approximately 0.20 mm [.008 in.].
2. Make a test termination according to the procedure given in Section 4, TERMINATION PROCEDURE, and inspect the termination in accordance with Section 5, INSPECTION. Readjust if required.

#### Pneumatic Handle Assembly

1. Increase the air pressure by 69 kPa [10 psi], and make a test termination according to the procedure given in Section 4, TERMINATION PROCEDURE.
2. Check the termination in accordance with Section 5, INSPECTION.

3. If the wire is still not inserted deeply enough, repeat Steps 1 and 2, until proper insertion depth is obtained or the air pressure is set to 483 kPa [70 psi]. If proper insertion depth is not obtained at 483 kPa [70 psi], reduce the air pressure to 276 kPa [40 psi] and follow the preceding procedure for the manual handle assembly.

## 4. TERMINATION PROCEDURE

Discrete wire, jacketed cable with individual insulated conductors, and ribbon cable can be terminated in the head. See Figure 5 for required preparation for the various types.

Keep these things in mind when terminating wire in contact housing assemblies;

**A.** Individual housing assemblies of less than six positions cannot be terminated in the head. If you need to terminate one housing assembly which has less than six positions, (e.g., when making repairs), you can use a strip-form housing assembly, terminate the first housing assembly on the strip, push the carrier strip through the head, and break the housing assembly off the carrier strip. The remaining housing assemblies on the strip can be terminated in the same way as needed.

**B.** When terminating 6- through 9-position individual housing assemblies, you must use another housing assembly to push the housing assembly against the wire inserter. Remove the "pusher" housing assembly before terminating any wires.

**C.** The following insulation diameters must be observed:

- Manual Handle Assembly 58074-1  
0.76-1.37 mm [.030-.054 in.]
- Pneumatic Handle Assembly 58075-1  
0.76-1.14 mm [.030-.045 in.]
- Pneumatic Power Bench Assembly 58338-1  
0.76-1.37 mm [.030-.054 in.]
- Electric Bench Machine 931800-1  
0.76-1.37 mm [.030-.054 in.]

**D.** When terminating wire with an insulation diameter of less than 1.02 mm [.040 in.], make sure that the wire is straight and that it is aligned with the wire slot.

**E.** When terminating wire with an insulation diameter of less than 1.02 mm [.040 in.], lower yields will be experienced.

The termination procedure follows, (see Figure 4):

1. Refer to the table in Figure 1 and select a housing assembly for the wire size to be terminated. Make sure the contacts are properly seated in the housing assembly with each contact locking lance in a preload window, each preload forward stop at the back of the housing assembly, and the carrier strip properly interlocked.

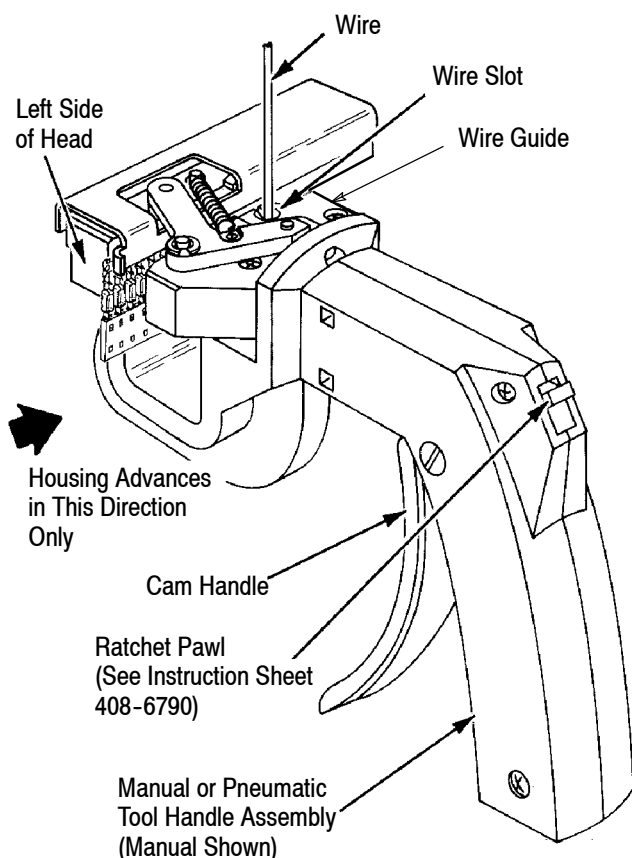


Figure 4

2. Prepare the wire, if required, as shown in Figure 5.

3. Squeeze and hold the trigger (pneumatic handle) or cam handle (manual handle). Align the tabs on the carrier strip with the slots in the strip guide in the terminating head, and push the carrier strip against the wire inserter.

4. Release the trigger; the product will be indexed to the first position.

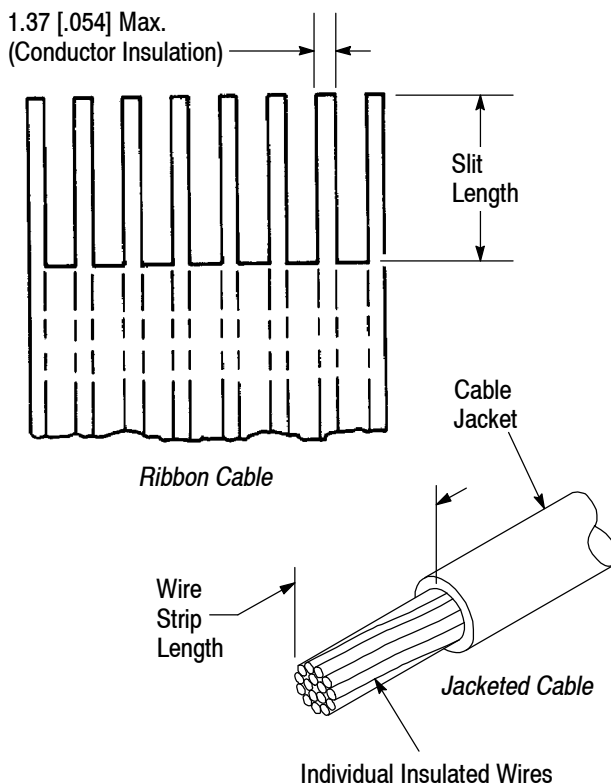
5. Insert an unstripped wire into the wire slot until it bottoms on the tool base.

6. Center the wire in the wire slot. Squeeze the trigger or cam handle until the ratchet releases.

7. Release the trigger or cam handle. The wire inserter will retract and the housing assembly will advance to the next position.

8. Repeat Steps 5, 6, and 7 until all contacts have been terminated.

9. Remove the housing assembly from the right side of the head by grasping the wires as close to the head as possible.



#### CABLE PREPARATION LENGTHS

| WIRE SIZE, AWG | DISCRETE WIRE           | JACKETED CABLE (Cable Jacket) | RIBBON CABLE (Slit Length) |
|----------------|-------------------------|-------------------------------|----------------------------|
| 22-30          | No Preparation Required | 50.8 [2.000]■                 | 50.8 [2.000]■              |

■Typical values only. Actual length depends on cable size, size of connector, and specific application.

Figure 5

#### CAUTION

The terminated housing assembly must be removed from the terminating head before the next housing assembly to be terminated is inserted into the head.

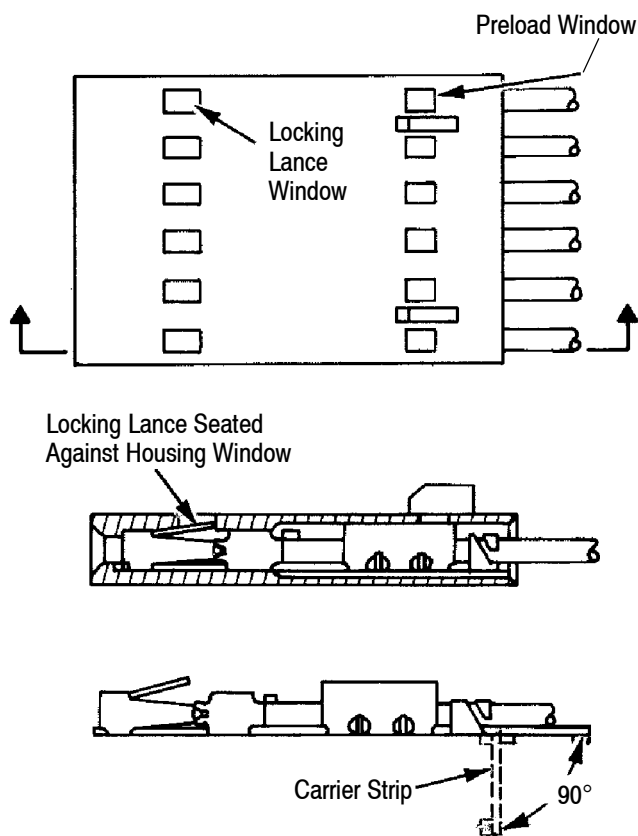
#### NOTE

The connector may be fed manually through the terminating head without squeezing the trigger or cam handle of the handle assembly.

10. Grasp the carrier strip which connects the terminated contacts and bend it downward to a 90° angle, and then upward until it snaps off. See Figure 6.

#### CAUTION

Be careful not to bend contacts during carrier strip removal. Contacts may be mass-inserted (with 8-position and smaller housings) before the carrier strip is removed. The carrier strip may be removed as described in Step 10. Do not exceed the 90° maximum bend dimension. With either contact insertion method, it is very important to make sure that each contact is locked into position as described in Step 12.



**WARNING:** Use care, carrier strip may have sharp edges.

Figure 6

11. Inspect each termination according to the procedures given in Section 5, TERMINATION.

12. If all terminations are acceptable, grasp each wire and gently push forward to insert the contacts completely into the housing assembly. Refer to Figure 6. Pull back lightly on the wire to ensure that the locking lance is engaged.

## 5. INSPECTION

Figure 7 illustrates properly and improperly terminated contacts. Each view gives a brief description of the termination.

Inspect each termination as follows:

1. Make sure that the wire is located in the contact slot as shown in Figure 7.
2. Make sure that the wire extends beyond the front contact slot (minimum dimension is given in Figure 7).
3. Make sure that the contact wire channel is not deformed. If damage is apparent, replace the

contact(s) per Instruction Sheet 408-6919, packaged with the connector.

4. Make sure the insulation barrel is closed to secure the insulation of the wire, and that the preload forward stop is formed over to allow contact insertion.

### NOTE

*The insulation barrel does not have to be wrapped tightly around the insulation. The purpose of the insulation barrel is to prevent the wire from being lifted from the wire channel.*

## 6. TOOL CERTIFICATION

The procedures that follow have been established to ensure the quality and reliability of the terminating tools. A brief check should be made daily, and a more detailed inspection should be scheduled by your Quality Control Group.

### 6.1. User Maintenance

Each user should be made aware of, and responsible for the following:

1. Remove dust, moisture, and other contaminants using a clean brush or a soft, lint-free cloth. Do not use objects that could damage the tool.
2. Make sure all components are in place and are properly secured. If not, return the tool to your supervisor.
3. Squeeze and release the trigger or cam handle to be sure the mechanism inside the body moves freely and does not bind.

### 6.2. Quality Control Maintenance

Regular inspections should be performed by your Quality Control personnel, and a record of quality control inspections should remain with the personnel responsible for the tool. We recommend one inspection a month; however, operator training and skill, amount of use, ambient working conditions, and your company's standards are all factors to consider when establishing inspection frequency.

These inspections should be performed in the following sequence:

1. Remove any accumulated film with a suitable cleaning agent that will not affect paint or polycarbonate plastic.
2. Make sure all components are in place and are tightly secured.
3. Make a few test terminations and inspect the termination as instructed in Section 5, INSPECTION.

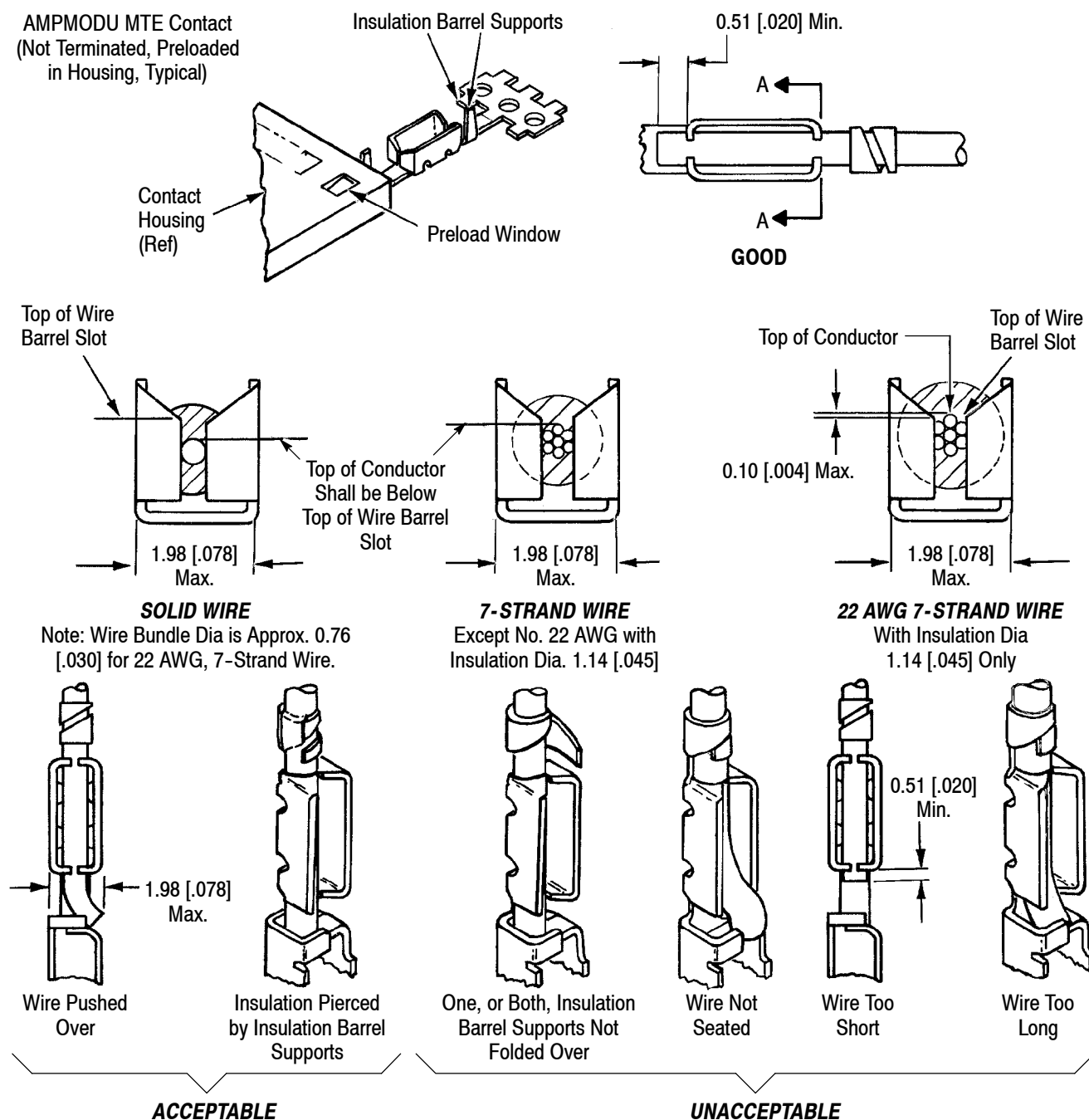


Figure 7

## 7. REPAIR

Customer-replaceable parts are provided in Figure 8. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your TE Representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605 or write to:

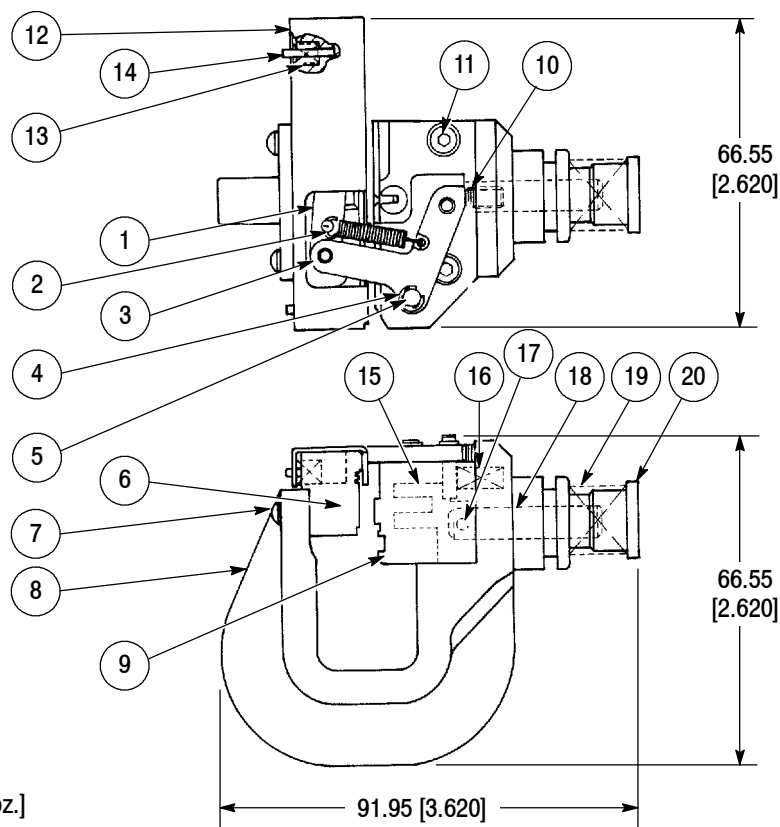
CUSTOMER SERVICE (038-035)  
TYCO ELECTRONICS CORPORATION  
PO BOX 3608  
HARRISBURG PA 17105-3608

For customer repair service, contact a TE Representative at 1-800-526-5136.

## 8. REVISION SUMMARY

Revisions to this document include:

- Updated document to corporate requirements
- Changed wire guide in all instances
- Changed part number from 1-21002-8 to 1-21002-7 and description in table in Figure 8



#### REPLACEMENT PARTS

| ITEM | PART NUMBER | DESCRIPTION                     | QTY PER ASSEMBLY |
|------|-------------|---------------------------------|------------------|
| 1    | 313811-1    | FINGER, Feed                    | 1                |
| 2    | 2-22285-6   | SPRING, Extension               | 1                |
| 3    | 313809-1    | ARM, Feed                       | 1                |
| 4    | 21986-6     | RING, Retaining                 | 1                |
| 5    | 313812-1    | PIN, Pivot                      | 1                |
| 6    | 313808-1    | GUIDE, Strip                    | 1                |
| 7    | 1-21002-7   | SCREW, Btn Hd Cap, 6-32 x .38 L | 2                |
| 8    | 313805-1    | HEAD, Finished                  | 1                |
| 9    | 313807-1    | GUIDE, Wire                     | 1                |
| 10   | 2-21008-1   | SETSCREW, Skt, 4-40 x .250 L    | 1                |
| 11   | 2-21000-3   | SCREW, Skt Hd Cap               | 2                |
| 12   | 313810-1    | DRAG, Contact                   | 1                |
| 13   | 1-22279-6   | SPRING, Compression             | 3                |
| 14   | 21028-6     | PIN, Slotted Spring             | 2                |
| 15   | 313806-1    | INSERTER, Wire                  | 1                |
| 16   | 2-25022-2   | SPRING, Compression             | 1                |
| 17   | 3-21028-2   | PIN, Slotted Spring             | 1                |
| 18   | 312148-5    | ROD, Inserter                   | 1                |
| 19   | 5-22488-6   | SPRING, Compression             | 1                |
| 20   | 312149-1    | ADJUSTER, Inserter Rod          | 1                |

Figure 8