

Tooling Assembly: 189721-1 or 189722-1
Product: STRATO-THERM* Terminals and Splices
Solid or Stranded Copper Wire Size Range: 22-10 AWG

Figure 1

1. INTRODUCTION

Pneumatic Crimping Head 217206-1 is designed to be used with the tool holder assembly shown in Figure 1 and the 626 pneumatic tooling assemblies listed in Figure 1 to crimp the terminals and splices onto the wire type and size also indicated.

This instruction sheet provides recommended procedures for wire preparation, crimping head installation, crimping, and maintenance and inspection. For information concerning tool setup and operation, refer to customer manual 409-5862.

NOTE



All numerical values in this instruction sheet are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Figures are not drawn to scale.

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

2. DESCRIPTION

The pneumatic crimping head has integral jaws which close in an arc-like motion. The jaws are covered by a guard. After the operator locates the terminal or splice between the jaws and inserts the stripped wire, the tool is activated to crimp the product to the wire.

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3. INSTALLATION AND REMOVAL

NOTE



The crimping head is coated with a preservative to prevent rust and corrosion. Wipe excess preservative from the head, particularly from the crimping surfaces.

DANGER



To avoid personal injury, ALWAYS disconnect the tool from air supply before installing the crimping head.

DANGER



DO NOT operate pneumatic tool without the proper crimping head installed; make sure that the quick pins are FULLY tightened to avoid personal injury and damage to the tool.

1. Remove the quick pins from the tool holder.
2. Insert the crimping head into the tool holder as shown in Figure 1.
3. After the crimping head is properly aligned, insert and tighten the quick pins provided with the tool holder assembly.

NOTE



Use Loctite 242 removable threadlocker, or equivalent, to prevent the quick pins from loosening.

WIRE SIZE RANGE (AWG)	WIRE STRIP LENGTH mm [in.]			
	TERMINAL	SPLICE		
		PARALLEL	BUTT (Strap Type)	BUTT (Standard)
22-16	4.37-5.16 [.172-.203]	7.92-8.71 [.312-.343]	6.35-7.14 [.250-.281]	6.35-7.14 [.250-.281]
16-14			5.54-6.35 [.218-.250]	
12-10	6.35-7.14 [.250-.281]		7.92-8.71 [.312-.343]	

Figure 2

4. Connect the pneumatic tooling assembly to an adequate air supply (between 620 and 690 kPa [90 and 100 psi]). For specific information on air line requirements and air hose installation, refer to 409-5862.

DANGER

ALWAYS disconnect the tool from the air supply before removing the crimping head.

5. To remove the crimping head from the tool holder, remove the quick pins, then remove the crimping head.

4. CRIMPING PROCEDURE

DANGER

To avoid personal injury, ALWAYS keep fingers clear of jaws when operating the tool.

4.1. Terminal or Parallel Splice (See Figures 3 and 4)

1. Strip the wire to the dimensions given in Figure 2. DO NOT nick the wire strand or use wires with nicked or missing conductor strands.
2. Open the jaws by squeezing rollers together simultaneously; then position the terminal or splice between the jaws as shown in Figures 3 and 4. The terminal or splice is properly positioned when the wire barrel is centered in the jaws.
3. After the terminal or splice is properly positioned in the jaws, release the rollers to allow the jaws to spring shut, holding the terminal or splice in place.
4. Insert the stripped wire into the terminal or splice until the end of the wire is flush with or extends beyond end of wire barrel.
5. Activate the tool to complete the crimp. Open the jaws by squeezing the rollers together simultaneously; then remove the crimped terminal or splice.
6. Refer to Section 5 for crimp inspection.

Crimping Terminal

When Brazed Seam on Terminal is Visible, Position Seam Toward W-Shaped Jaw

End of Conductor Flush With or Extended Slightly Beyond End of Wire Barrel

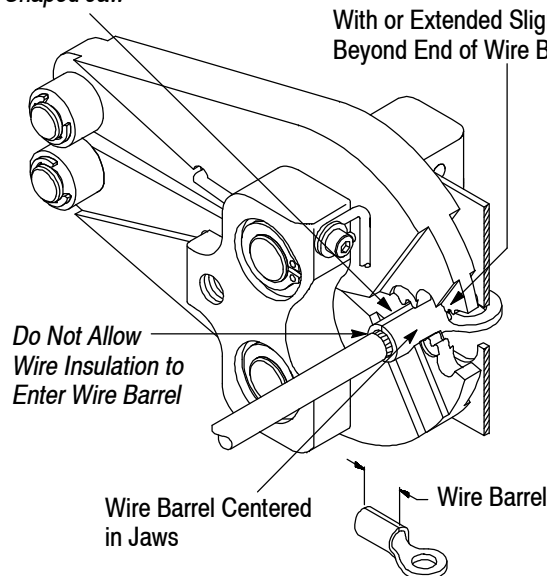


Figure 3

4.2. Butt Splice (See Figure 5)

1. Strip the wire to the dimensions shown in Figure 2. DO NOT nick the wire strand or use wires with nicked or missing conductor strands.
2. Open the jaws by squeezing the rollers together simultaneously. Position the splice between the jaws so that the splice window faces the upper jaw and the wire barrel is centered in the jaw.
3. After the splice is properly positioned in the jaws, release the rollers to allow the jaws to spring shut, holding the splice in place.
4. Insert the stripped wire into the wire barrel of the splice until the end of the conductor is against the splice wire stop.
5. Activate the tool to complete the crimp. Open the jaws by squeezing the rollers together simultaneously; then remove the crimped splice.

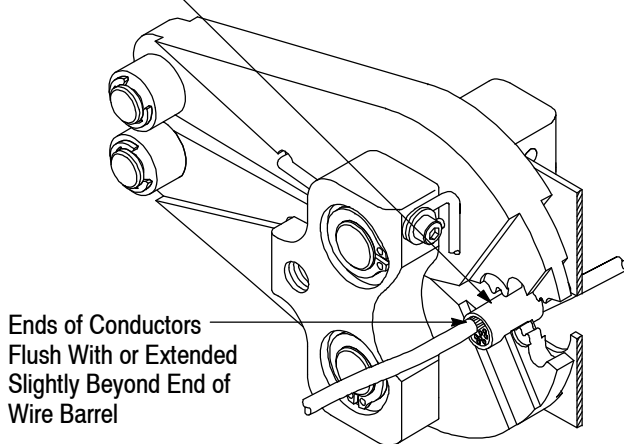
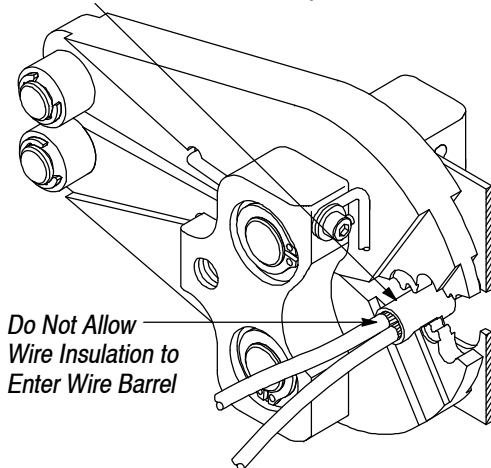
Crimping Parallel Splice*Center Parallel Splice in Jaws**When Brazed Seam on Splice is Visible, Position Seam Toward W-Shaped Jaw*

Figure 4

6. To crimp the other half of the butt splice, re-position it in the the jaws, and repeat Steps 1 through 5. If the splice cannot be turned, rotate the crimping head.

7. Refer to Section 5 for crimp inspection.

5. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figure 6. Use only terminals or splices that meet the conditions shown in the "ACCEPT" column. "REJECT" terminations can be avoided through careful use of instructions in Section 4 and by performing regular maintenance and inspection as described in Section 6.

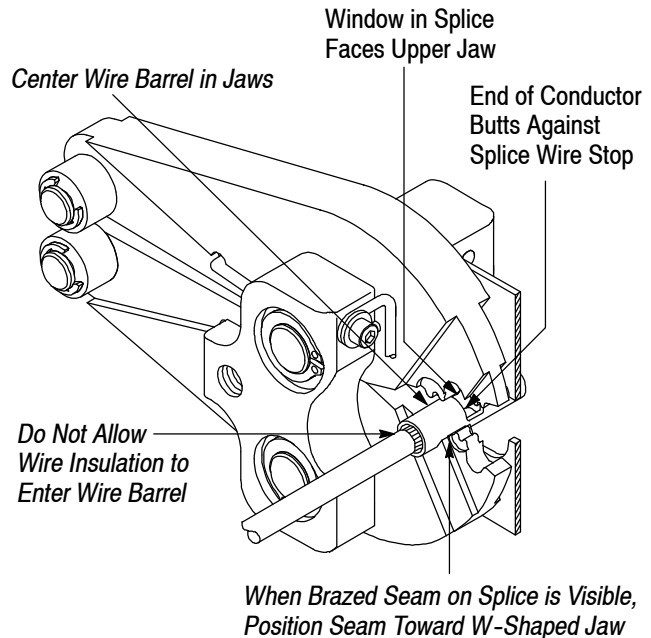
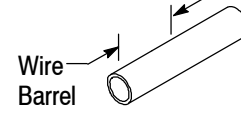
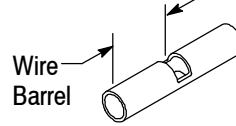
Crimping Butt Splice*Strap Type Butt Splice**Standard Butt Splice*

Figure 5

6. MAINTENANCE AND INSPECTION**DANGER**

To avoid personal injury, ALWAYS disconnect air supply from the pneumatic tool before performing maintenance or inspection.

A maintenance and inspection program should be performed periodically to ensure dependable and uniform terminations. Crimping heads should be inspected once a month. Frequency of inspection should be adjusted to suit your requirements through experience and depends on:

- the care, amount of use, and handling of the crimping head
- the type and size of the products crimped
- the degree of operator skill
- presence of abnormal amounts of dust and dirt
- your own established standards

The crimping head is thoroughly inspected before packaging. Since there is the possibility of damage in shipment, a new crimping head should be inspected immediately upon arrival at your facility.

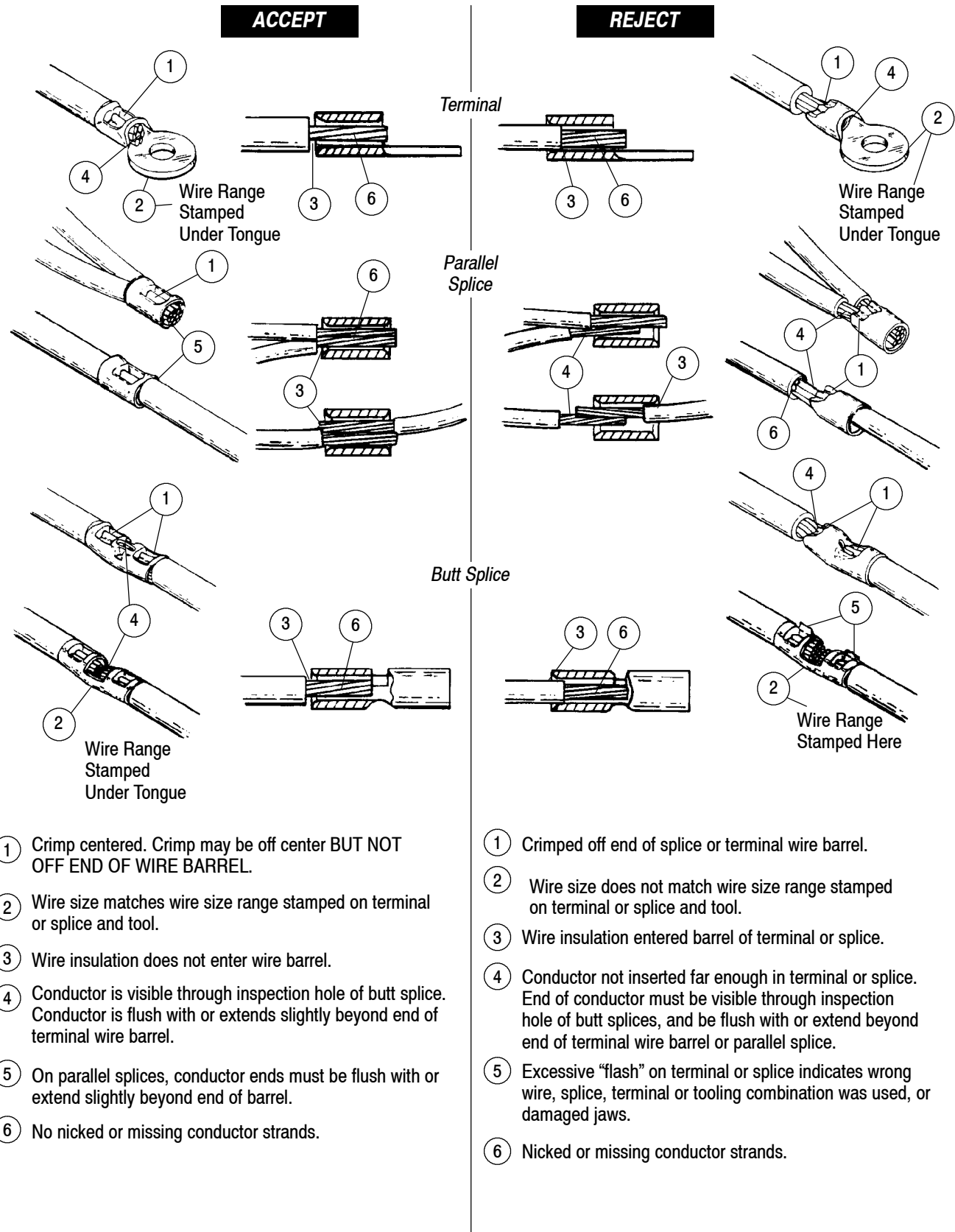
Crimp Inspection

Figure 6

6.1. Daily Maintenance

Each operator should be responsible for the following steps of daily maintenance:

1. Remove dust, moisture, and other contaminants with a clean, soft brush, or a lint-free cloth. **DO NOT** use objects that could damage the crimping head.
2. Make sure pins, rings, and other components are in place and secure.



Make sure the quick pins are in place and FULLY tightened to avoid personal injury and damage to the tool.

3. Make certain all surfaces are protected with a thin coat of any good SAE 20 motor oil. **DO NOT** oil excessively.
4. When the crimping head is not in use, store it in a clean, dry area.

6.2. Periodic Inspection

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the crimping heads or be supplied to personnel responsible for the crimping heads. Though recommendations call for at least one inspection a month, the frequency should be based on amount of use, working conditions, operator training and skill, and your established company policies. These inspections should include a visual inspection (Paragraph 6.3) and a crimping chamber inspection (Paragraph 6.5).

6.3. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the crimping head in a suitable commercial degreaser that will not affect paint or plastic.
2. Make certain all components are in place. If replacements are necessary, refer to Section 7.
3. Check all bearing surfaces for wear. Make sure the rollers turn freely with minimal resistance. Replace any worn parts.
4. Inspect the crimp area for flattened, chipped, or broken areas. See Figure 7. Although the crimping chambers may gage within permissible limits, worn or damaged jaw closure surfaces are objectionable and will affect the quality of the crimp.

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6.4. Lubrication

Lubricate all pins, pivot pins, and bearing surfaces with a high quality grease, such as Dow Corning Molykote lubricant paste, which is a commercially available lubricant. Lubricate according to the following schedule:

Head used in daily production — lubricate daily

Head used daily (occasional) — lubricate weekly

Head used weekly — lubricate monthly

Wipe excess grease from the crimping head, particularly from jaw closure areas. Grease transferred from the jaw closure area onto certain terminations may affect the electrical characteristics of an application.

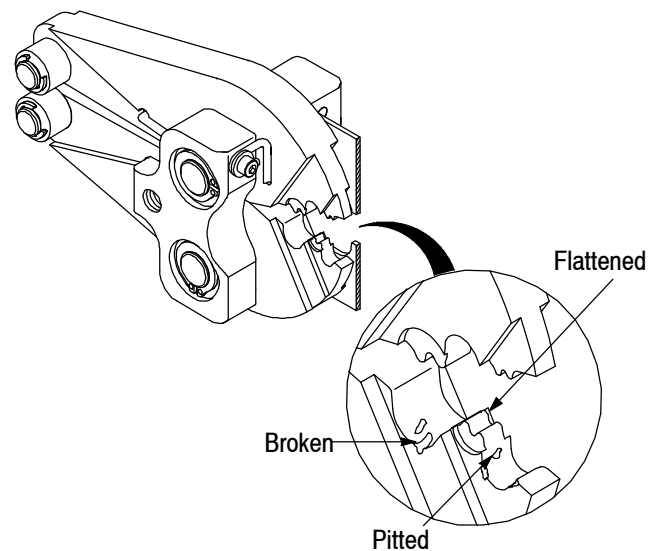


Figure 7

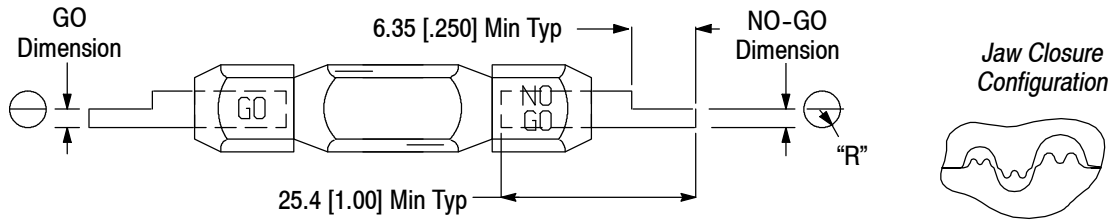
6.5. Gaging the Crimping Chamber

This inspection requires the use of a plug gage conforming to the dimensions shown in Figure 8.



To avoid personal injury, disconnect air supply and remove crimping head from tool before inspecting the crimping chambers.

1. Remove oil and dirt from the jaw surfaces and plug gage element surfaces.
2. Close the jaws until they are bottomed, but not under pressure.
3. Align the GO element with the crimping chamber. Push the GO element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber. See Figure 9.

Suggested Plug Gage Design

WIRE SIZE RANGE (AWG)	GAGE ELEMENT DIMENSION		"R" (RADIUS)
	GO	NO-GO	
22-16	1.295-1.303 [.0510-.0513]	1.445-1.448 [.0569-.0570]	1.57 [.062]
16-14	1.499-1.506 [.0590-.0593]	1.648-1.651 [.0649-.0650]	1.57 [.062]
12-10	2.108-2.116 [.0830-.0833]	2.258-2.261 [.0889-.0890]	2.36 [.093]

Figure 8

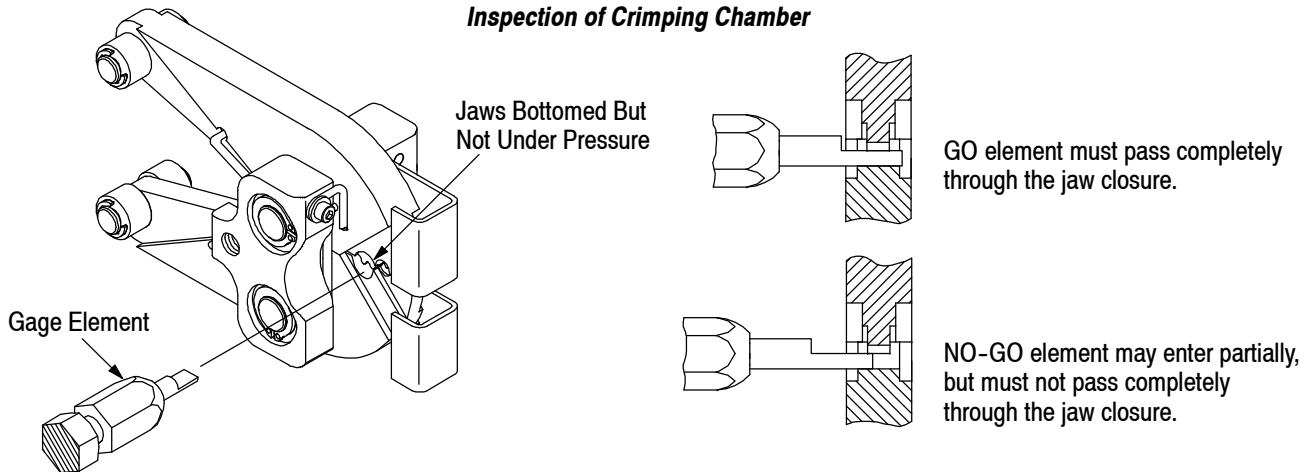
Inspection of Crimping Chamber

Figure 9

4. Align the NO-GO element with the crimping chamber, and try to insert it straight into the crimping chamber. The NO-GO element may start entry but must not pass completely through the chamber.

If the crimping head passes the gage inspection, it is considered dimensionally correct and should be lubricated with a THIN coat of any good SAE 20 motor oil. If the crimping head does not conform to the plug gage conditions, refer to Section 7, REPLACEMENT AND REPAIR.

For additional information about the use of a plug gage, see instruction sheet 408-7424.

7. REPLACEMENT AND REPAIR

The customer-replaceable parts are listed in Figure 10. A complete inventory can be stocked and

controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your Representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

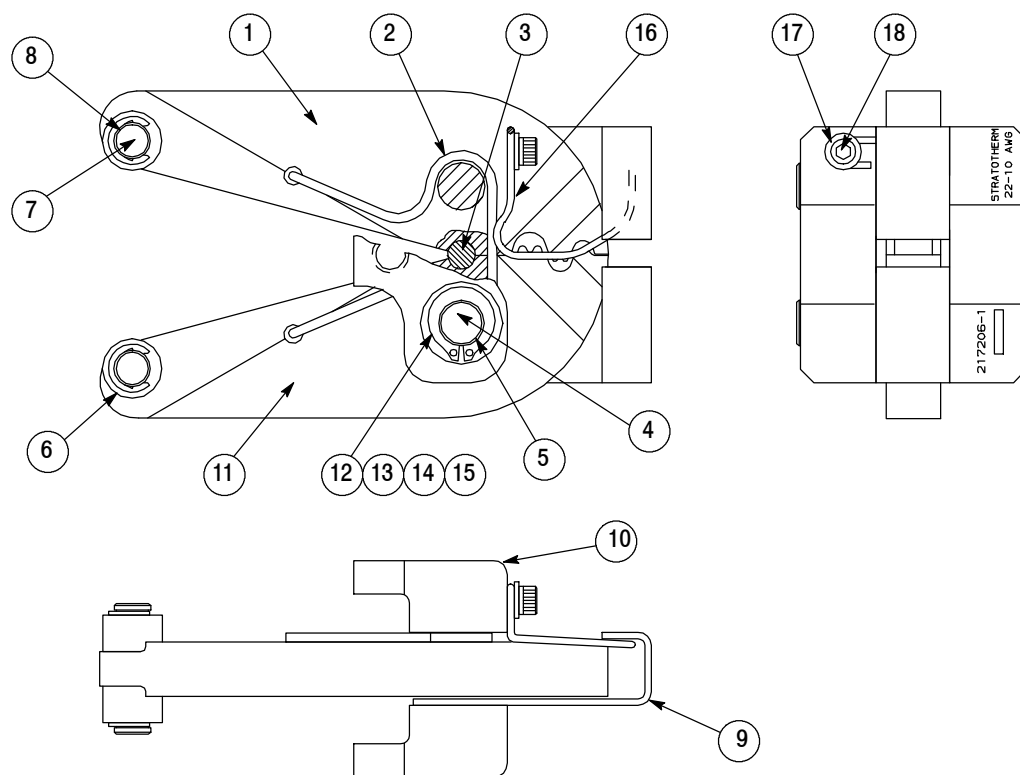
CUSTOMER SERVICE (38-35)
TYCO ELECTRONICS
PO BOX 3608
HARRISBURG PA 17105-3608

For customer repair service, call 1-800-526-5136.

8. REVISION SUMMARY

Revisions to this instruction sheet include:

- Added "Original Instructions" to page 1
- Changed "die" to "jaw"



ITEM	DESCRIPTION	PART NUMBER	QTY PER CRIMPING HEAD
1	JAW, 22-10 STRATO-THERM Terminals and Splices	217311-1	1
2**	SPRING	679942-1	1
3	BALL, Steel	23241-2	1
4	PIN, Straight, Groove, .3125 in. Dia \times 1.488 in.	6-23629-0	2
5	RING, Retaining	1-21048-0	4
6**	ROLLER	314479-2	4
7**	PIN, Straight, Groove, .2500 in. Dia	3-23620-3	2
8**	RING, RETAINING	21045-6	4
9	GUARD	217317-1	1
10	LINK	768521-2	1
11	JAW, 22-10 STRATO-THERM Terminals and Splices	217312-1	1
12	SHIM, 0.20 [.008] Thick	301185-6	<i>As Required</i>
13	SHIM, 0.25 [.010] Thick	301185-7	<i>As Required</i>
14	SHIM, 0.30 [.012] Thick	301185-8	<i>As Required</i>
15	SHIM, 0.38 [.015] Thick	301185-9	<i>As Required</i>
16	GUARD	217177-1	1
17	WASHER, Flat, $\frac{5}{16}$ in.	1-21899-4	1
18	SCREW, Socket Head Cap, 4-40 \times .25 in.	1-21000-3	1

** Recommended Spare Parts

Figure 10