

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.

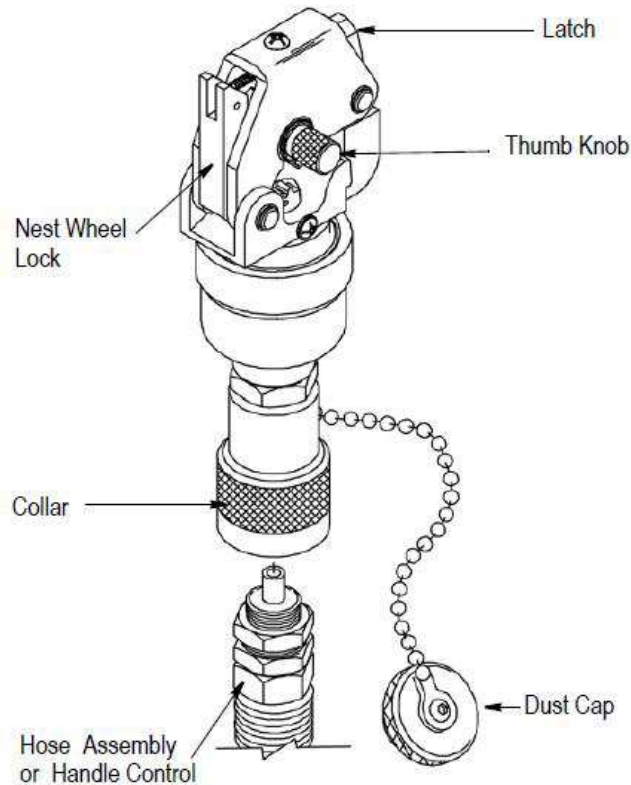


Figure 1

1. INTRODUCTION

This instruction sheet covers application, inspection and maintenance procedures for Crimping Head PN 1673672-1 shown in Figure 1. The crimping head is used to crimp SOLISTRAND* terminals and splices onto solid or stranded copper wire sizes 8 thru 2 AWG.

This crimping head is designed for use with Foot Hydraulic Pump PN 1583659-1, Hand Hydraulic Pump PN 1583661-1, or Electric Hydraulic Pumps; PN 1804700-1 (115 VAC) and PN 1804700-2 (220 VAC).

Read these instructions, and all applicable references, before inserting the nest or indenter and crimping any terminals or splices.

Warning: To avoid personal injury and potential damage to the crimp head, TE Connectivity (TE) requires the crimp head to operate at 9,800 to 10,200 PSI [676 to 703 bar]. TE recommends using 10,000 PSI [689 bar] TE Hydraulic Pumps as other manufacturers' pumps may apply insufficient pressure (resulting in an inadequate crimp) or excessive pressure (resulting in failure of the head). Additionally, the TE pump must be used to maintain CE certification; if using other manufacturers' pumps, the user is responsible for self-certification.



NOTE

Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Illustrations and figures are for reference only and are not drawn to scale.

Reasons for reissue of this Instruction Sheet are provided in Section 9; REVISION SUMMARY

2. DESCRIPTION

Main components of the crimping head are: a yoke which houses the indenter and retains the terminal assembly for crimping, a latch which allows pivoting of the yoke on the pivot pin (typically required for splice terminations), a cylinder which contains the head's hydraulic chamber, a piston (ram) which holds and controls the indenter, and a quick connect/disconnect coupler (cylinder half) which mates with the coupler on hose or handle control to release or supply pressure.



DANGER

To avoid injury when using hydraulic equipment, observe the following precautions:

- ◆ DO NOT modify the crimping equipment in any way.
- ◆ USE ONLY the nest and indenter, terminals, and wire specified for the head.
- ◆ DO NOT perform repairs other than those specified in instructional material supplied with equipment.

3. CRIMPING HEAD INSTALLATION

Each crimping head is shipped with a coating of lubricating oil to prevent rust and corrosion. Wipe the oil off before installing the crimping head on the power unit. Note that the crimping head is shipped without oil inside the cylinder. To install crimping head, proceed as follows:



DANGER

Verify that the hydraulic pressure to hose or handle control is released and that power supply is disconnected from electric power unit, if applicable.

1. Thoroughly clean coupling area of handle control or hose assembly and crimping head (see Figure 1).
2. Remove protective dust caps from both quick connect/disconnect couplers.
3. Hold hose or handle control in vertical position to prevent oil spillage. Attach hose or handle control to coupling section on head. **THREAD PROPERLY AND TIGHTEN SECURELY.**



CAUTION

Oil flow must be unobstructed between power unit and crimping head. Verify that all couplers are fully mated and tightened.



NOTE

If crimping head must be removed after being in production, pressure must be released in the hydraulic system before head is removed. If using Electric Hydraulic Power Unit 1804700-1 or 2, disconnect power unit from power supply.

4. NEST SELECTION (FIGURE 2)



DANGER

To avoid personal injury, release hydraulic pressure to the hose or handle control. Disconnect electric power unit from power supply.

1. Depress the latch and open the crimping head as shown in Figure 2.

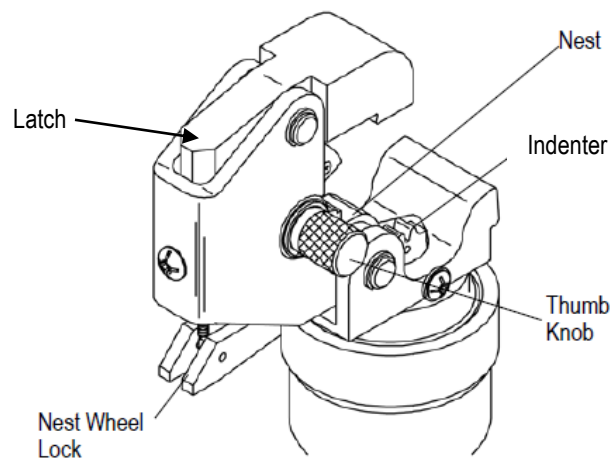


Figure 2

- While the head is open, pull back the nest wheel lock and turn the thumb knob until the desired nest appears.
Wire size numbers appear at each nest.
- Rotate the thumb knob left or right until the nest wheel locks into place. **If the nest wheel is not properly locked, the head cannot be closed.**

5. WIRE STRIPPING

Strip wires to the dimensions listed in Figure 3.



CAUTION
DO NOT use wires with nicked or missing conductor strands.

Wire Size	Wire Strip Length			
	Terminals		Butt and Parallel Splices	
	Min.	Max.	Min.	Max.
8	8.38 [.330]	9.14 [.360]	10.41 [.410]	11.18 [.440]
6	9.91 [.390]	10.67 [.420]	11.94 [.470]	12.70 [.500]
4	11.43 [.450]	12.19 [.480]	13.46 [.530]	14.22 [.560]
2	13.21 [.520]	14.0 [.550]	14.99 [.590]	15.75 [.620]

Figure 3

6. CRIMPING PROCEDURE



DANGER
To avoid personal injury, release the hydraulic pressure to the hose or handle control. Disconnect electric power unit from power supply.

- Center the terminal or splice wire barrel in the nest as shown in Figure 4. For best results, position the brazed seam on the terminal or splice toward the indenter.



NOTE
Wire size stamped on the terminal or splice must correspond to the wire size stamped in the nest.

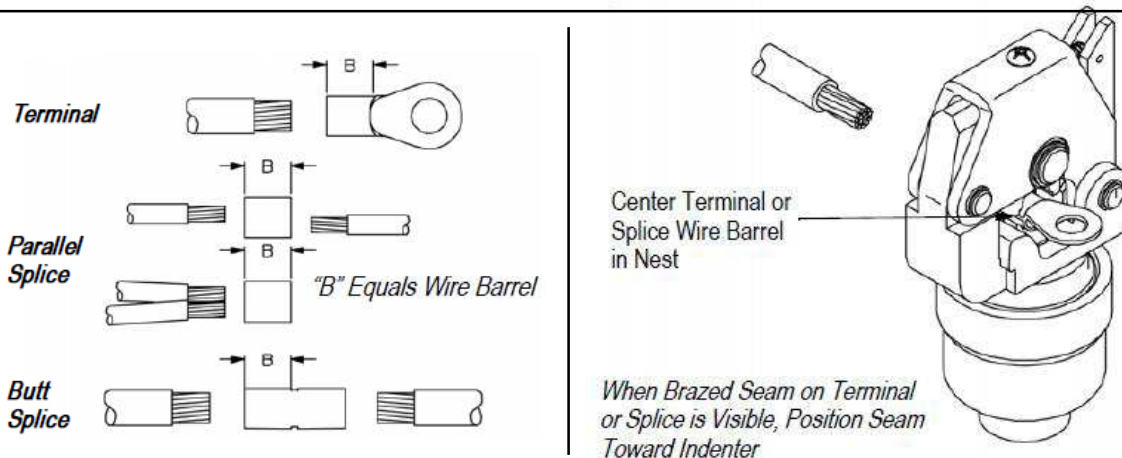
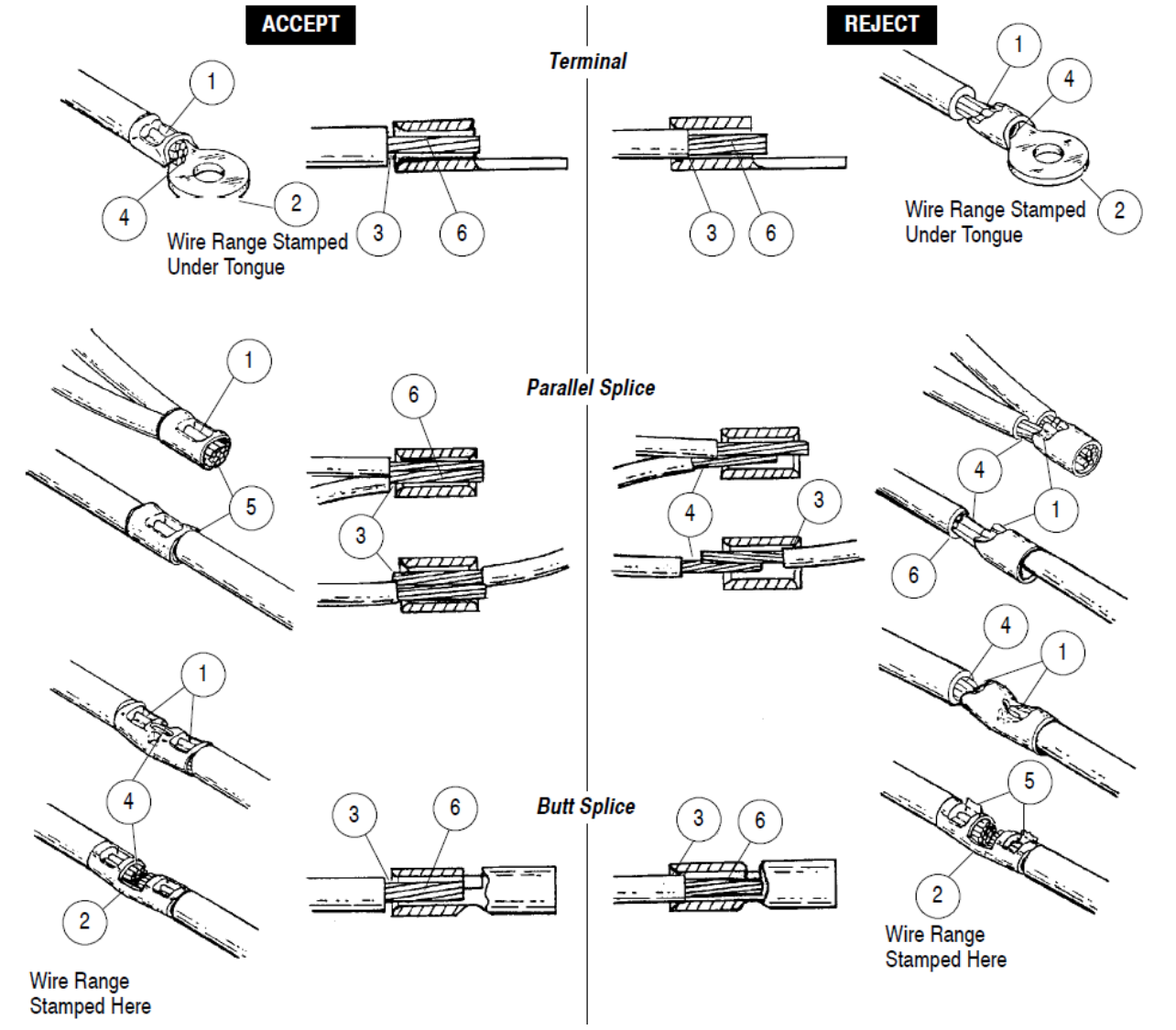


Figure 4

- Activate the power unit to advance the indenter and hold the terminal or splice in place. DO NOT deform the wire barrel of the terminal or splice.
- Insert the stripped wire into the wire barrel of terminal or splice. When crimping terminals and parallel splices, the end of the wire must be flush with or extend slightly beyond the end of the wire barrel. When crimping butt splices, wire must be visible through the inspection hole.
- Activate the power unit to complete the crimp.

5. To complete the other half of the butt splice, remove and reposition the uncrimped half of the splice in the nest. Insert the wire and then activate the power unit to crimp the splice. The completed terminal or splice should be as shown in Figure 5.



- ① Crimps centered. Crimps may be off center BUT NOT OFF END OF WIRE BARREL.
- ② AWG wire size being used matches wire range stamped on terminal or splice and tool.
- ③ Wire insulation does not enter wire barrel.
- ④ Conductor is visible through inspection hole of butt splice. Conductor is flush with or extends slightly beyond end of terminal wire barrel.
- ⑤ On parallel splices, conductor ends must be flush with or extend slightly beyond end of barrel.
- ⑥ No nicked or missing conductor strands.

- ① Crimped off end of splice or terminal wire barrel.
- ② AWG wire size being used does not match wire range stamped on terminal or splice and tool.
- ③ Wire insulation entered barrel of terminal or splice.
- ④ Conductor not inserted far enough in terminal or splice. End of conductor must be visible through inspection hole of butt splices, and be flush with or extend beyond end of terminal wire barrel or parallel splice.
- ⑤ Excessive "flash" on terminal or splice indicates wrong wire, splice, terminal or tooling combination was used, or damaged dies.
- ⑥ Nicked or missing conductor strands.

Figure 5

7. INSPECTION AND MAINTENANCE



DANGER

Verify hydraulic pressure is released and power supply is disconnected before following inspection and maintenance procedures, unless otherwise specified in the procedure.

Each crimping head is assembled and inspected before shipment. TE Connectivity recommends that the crimping head be inspected immediately upon its arrival at the facility of use, and at regularly scheduled intervals to ensure the head has not been damaged during handling and use. Frequency of inspection depends upon the following: care, amount of use, and handling of the head; type and size of products crimped; degree of operator skill; and environmental conditions.

7.1. Cleaning

Remove accumulations of dirt and grease on the crimping head; especially in areas where dies are installed and terminals are crimped. Clean the entire head frequently with a clean, lint-free cloth.

7.2. Visual Inspection

Refer to Figure 6 and proceed as follows:

1. Visually inspect die closure surfaces for chipped, pitted, or flattened areas.
2. With hydraulic pressure released, inspect the assembled head for nicks, scratches, and cracks. Inspect for cracks especially at the corners of the yoke and around the top of the cylinder.
3. Inspect pivot pin holes and latch pin holes for wear. Replace parts, as needed.

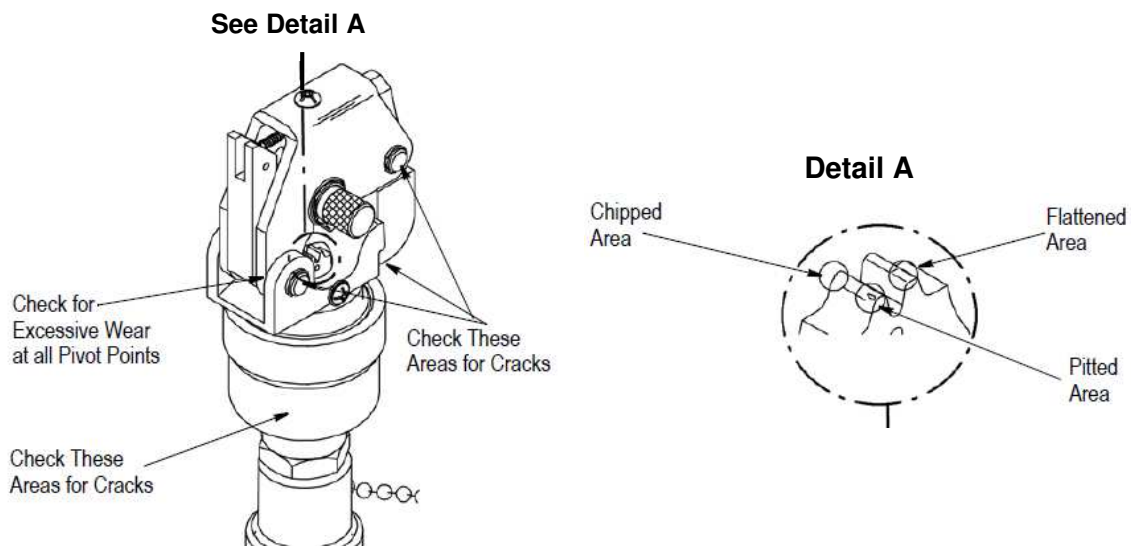


Figure 6

4. Activate power unit. Raise ram to “UP” position. Inspect flat and round surfaces of ram for galling (fretting or wear by friction), cracks, or oil leakage. Release pressure and make sure that ram retracts smoothly.
5. If head shows evidence of galling, cracks, oil leakage, or rough cycling, return the crimping head to TE for repairs. Refer to Section 8, REPLACEMENT AND REPAIR.



NOTE

Once per year, or every 7,500 cycles (whichever comes first), the hydraulic head should be returned to TE for magnetic particle inspection. Additionally, inspect and service the head every month or 1,000 cycles. Refer to Instruction Sheet 408-8909.

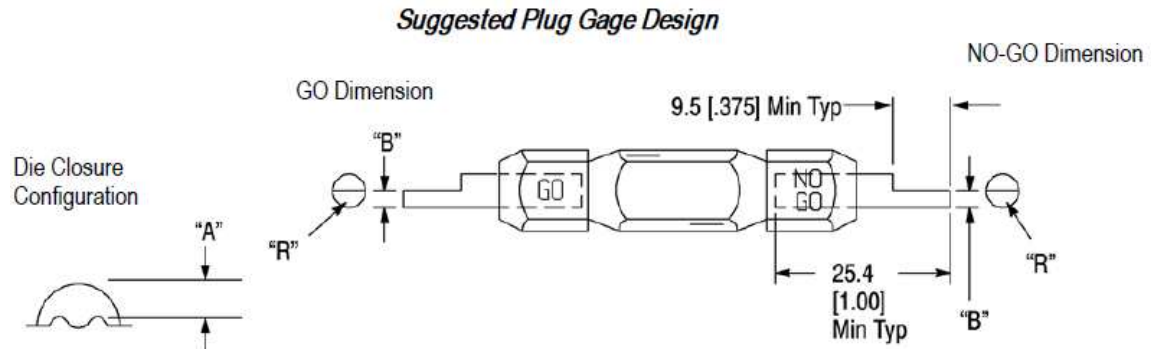
7.3. Die Closure Inspection

Every crimping head die set is inspected for proper die closure before shipment. However, the dies should be inspected for excessive wear periodically. Die closure is accomplished using GO/NO-GO plug gages. Suggested plug gage design and GO/NO-GO dimensions are shown in Figure 7.



NOTE

TE Connectivity does not manufacture or sell plug gages. Refer to Instruction Sheet [408-7424](#) for gaging information.



Die Size	Barrel Crimp Dimensions "A"		Gage Member Dimensions "B"		Radius "R"
	GO	NO-GO	GO	NO-GO	
8	2.11 [.083]	2.54 [.100]	2.11 – 2.12 [.0830 - .0833]	2.51 – 2.54 [.0999 - .1000]	3.58 [.141]
6	3.12 [.123]	3.48 [.137]	3.12 – 3.13 [.1230 - .1233]	3.477 –s 3.479 [.1369 - .1370]	3.96 [.156]
4	4.04 [.159]	4.39 [.173]	4.04 – 4.05 [.1590 - .1593]	4.391 – 4.394 [.1729 - .1730]	5.56 [.219]
2	4.83 [.190]	5.18 [.204]	4.83 – 4.84 [.1900 - .1903]	5.17 – 5.18 [.2039 - .2040]	6.35 [.250]

Figure 7

1. Clean the oil and dirt from the closure surfaces and plug gage members.
2. Lock the desired nest in the crimp position and raise the indenter to the full "UP" position, as shown in Figure 8.

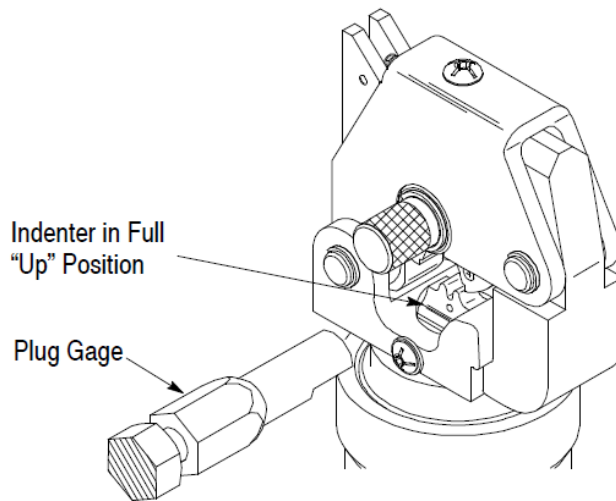


Figure 8

3. Using the appropriate plug gage, hold the gage in alignment with die closure and carefully insert (*without forcing*) the GO member. **The GO member must pass completely through the die closure as shown in Figure 9a.**

"GO" Gage Must Pass Completely Through the Die Closure.

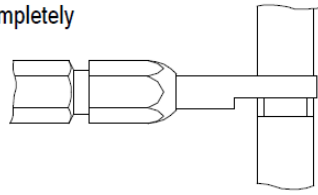


Figure 9a

"NO-GO" Gage May Enter Partially, but must not Pass Completely Through the Die Closure.

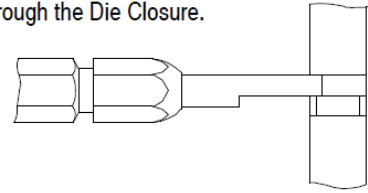


Figure 9b

4. Try to insert the NO-GO member. **The NO-GO member may enter partially, but must NOT pass completely through the die closure** (see Figure 9b).
 - ◆ If the die closure meets the GO/NO-GO gage conditions, the die closure is considered dimensionally correct.
 - ◆ If the die closure does not conform with the GO/NO-GO gage conditions, contact your local TE representative.

7.4. Crimping Head Check-Out Procedure

If the ram fails to return to the "DOWN" position after completion of a crimping cycle, the cause may be in the crimping head. To determine whether the trouble is in the crimping head or not, release pressure in the power unit.

If the ram retracts, the trouble is not in the crimping head.

If ram does NOT retract, return the head to TE for repair (see Section 8; REPLACEMENT AND REPAIR).

8. REPLACEMENT AND REPAIR

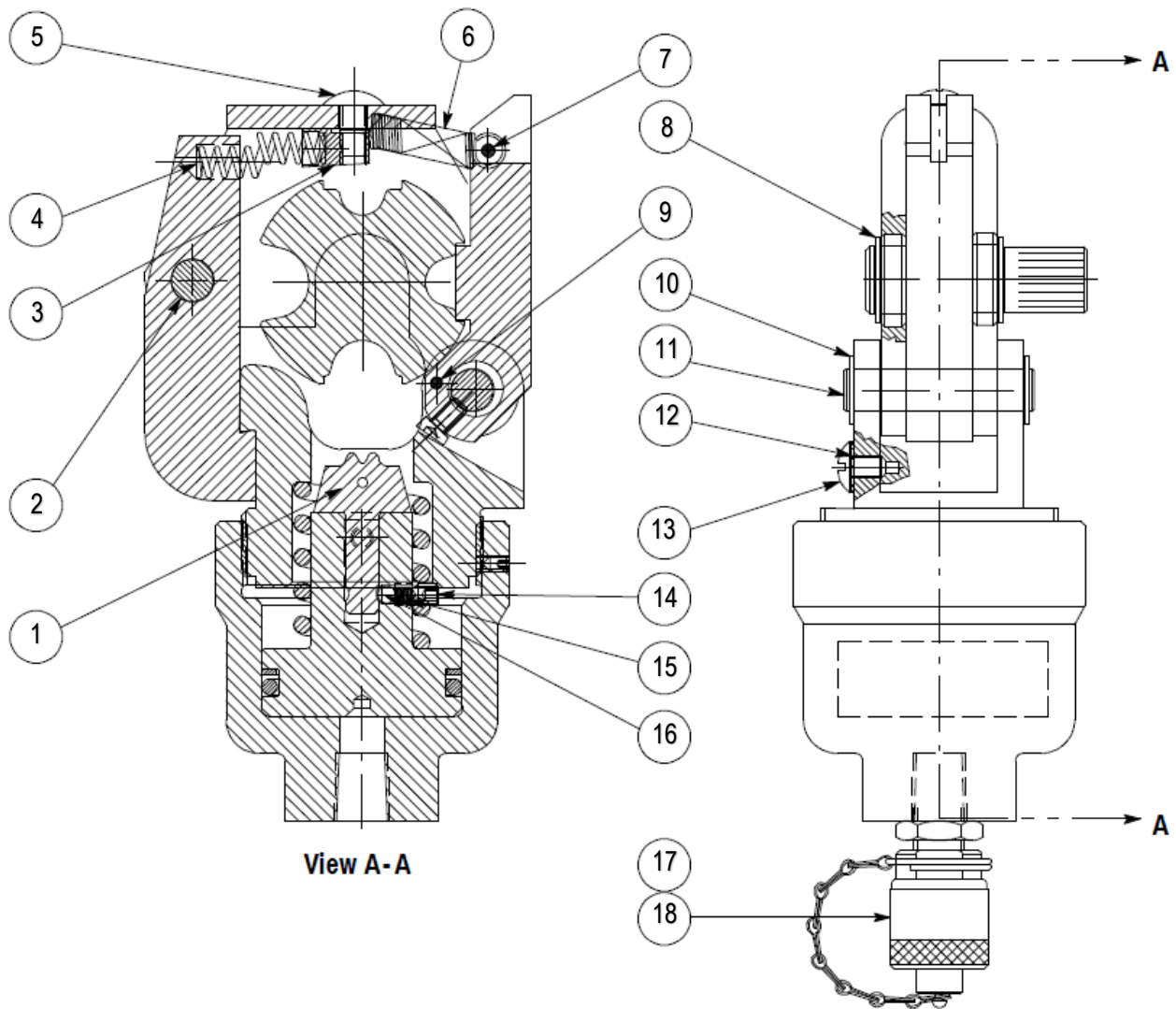
Customer-replaceable parts are listed in Figure 10. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary. Order parts through your TE representative or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write, or return the entire tool for evaluation and repair, with a written description of the problem to:

CUSTOMER SERVICE (38-35)
 TE CONNECTIVITY CORPORATION
 P.O. BOX 3608
 HARRISBURG, PA 17105-3608

Tools may also be returned for evaluation and repair. For tool repair service, contact a TE representative at 1-800-526-5136.

9. REVISION SUMMARY

- ◆ Added Warning (paragraph 1)
- ◆ Revised NOTE after paragraph 7.2.5.
- ◆ Adjusted order and presentation of Figures and created Figures 8, 9a, 9b from original Figure 8.
- ◆ Renumbered items in Figure 10



Item Number	Part Number	Description	Quantity Per Head
1	47322	Indenter	1
2	301707	Pin, Retaining	1
3	304028	Stop, Spring	1
4	301712	Spring	1
5	2-305927-5	Screw, Button Head, 10-32 UNF x .31 in. Long	1
6	304029	Spring	1
7	3-21028-5	Pin, Roll, .094 in. Dia. x .438 in. Long	1
8	1-21045-3	Ring, Retaining	2
9	2-21028-4	Pin, Roll, .078 in. Dia. x .812 in. Long	1
10	21045-8	Ring, Retaining	4
11	301710	Pin, Retaining	1
12	21025-4	Washer, Lock, Internal Tooth, No. 8	1
13	4-305927-0	Screw, Guide Set, 8-32 UNC x .350 in. Long	1
14	7-306105-5	Screw, Socket Set, 8-32 UNC x .900 in. Long	1
15	3-23147-2	Spring	1
16	23241-1	Ball	1
17	23150-3	Nipple, Hex	1
18	311470-1	Coupler, Quick-Disconnect, Cylinder Half	1

Figure 10