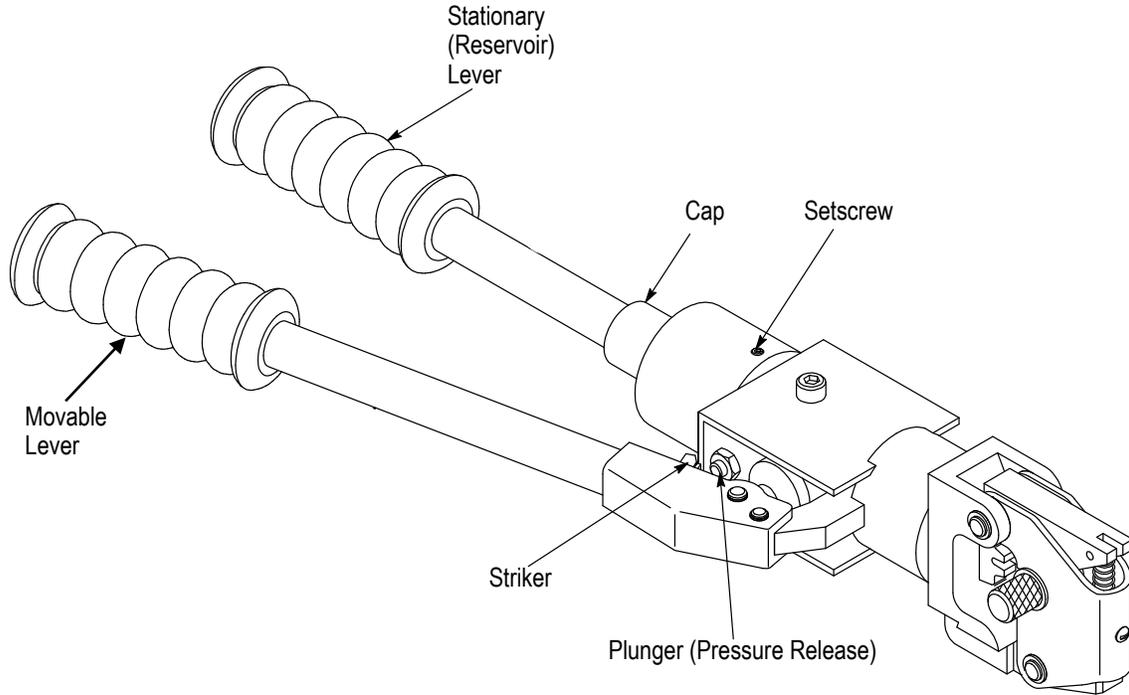


**PROPER USE GUIDELINES**

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.



WIRE SIZE (AWG)	WIRE STRIP LENGTH mm [in.]			
	TERMINALS		BUTT SPLICES AND PARALLEL SPLICES	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
8	8.33 [.328]	9.14 [.360]	10.31 [.406]	11.13 [.438]
6	9.91 [.390]	10.72 [.422]	11.91 [.469]	12.70 [.500]
4	11.51 [.453]	12.29 [.484]	13.49 [.531]	14.30 [.563]
2	13.11 [.516]	13.89 [.547]	15.09 [.594]	15.88 [.625]

Figure 1

**1. INTRODUCTION**

Hydraulic Hand Tool PN 59975-1 is designed for crimping SOLISTRAND\* terminals and splices on AWG 8 through AWG 2 wire.

**i NOTE**  
Read these instructions thoroughly before using the hand tool.

**i NOTE**  
All 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 7, REVISION SUMMARY.

## 2. DESCRIPTION (Figure 1)

The hand tool has a stationary (reservoir) lever and a movable lever. These levers are compressed to pump hydraulic fluid behind the ram, moving it forward and thereby closing the dies. After the crimping is complete, the movable lever is turned to depress the plunger. The moving die retracts to its original position, completing the crimping cycle.

## 3. DIE SELECTION (Figure 2)

1. Press head latch and open crimping head as shown.
2. Pull back the die latch and turn thumb knob until desired die size appears (embossed wire size appears on side of each die position).

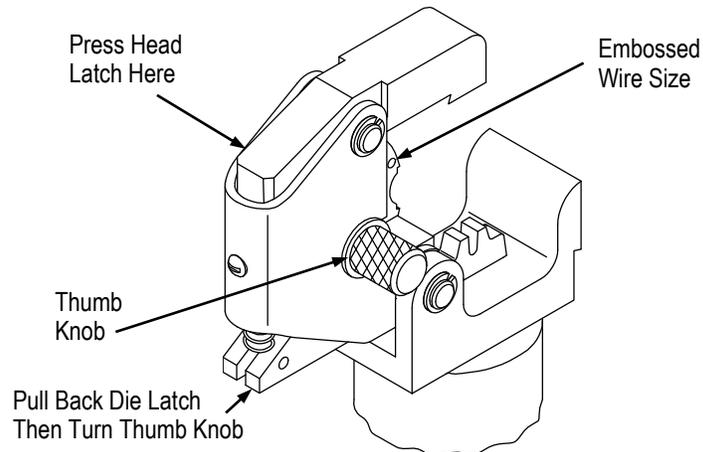


Figure 2

3. Rotate thumb knob left or right until die latch locks die wheel in desired position.
4. Close head.



### NOTE

*In order to close head, die latch must 'snap' into locked position.*

## 4. CRIMPING PROCEDURE

1. Strip wires to dimensions listed in Figure 1.
2. Insert terminal or splice in upper die as shown in Figure 3.
3. Pump movable lever until moving (lower) die grips terminal or splice.



### CAUTION

*Do not deform wire barrel of terminal or splice.*

4. Insert stripped wire into wire barrel of terminal or splice.
5. Continue pumping moveable lever. A slight 'click' may be heard, indicating the pump has shifted into the high-pressure stage. Continue pumping moveable lever. When dies have bottomed, an audible 'pop' will be heard. This indicates that the crimp is complete.



### CAUTION

*Potential damage to the tool may occur if the following Step 6 is not taken.*

6. Retract movable die by opening the movable handle to the full open position. Turn the movable handle (to actuate striker), **DO NOT TURN THE MOVABLE HANDLE WHILE IN THE CLOSED POSITION AS YOU WILL DAMAGE THE PLUNGER (PRESSURE RELEASE)**, and compress handles to depress plunger (pressure release).

7. Movable die will now retract.
8. Remove crimped terminal or splice.



**NOTE**

*If terminal or splice sticks in die after crimping, apply a rocking action to remove it from die.*

9. Inspect crimp for the following criteria:
  - ◆ Centering of crimp (crimp may be off center but not off end of wire barrel)
  - ◆ Wire size being used matches wire range stamped on die position and terminal
  - ◆ End of wire is flush with or extends slightly beyond end of wire barrel
  - ◆ There are no nicked or missing strands
10. Inspect crimped terminal or splice in accordance with inspection procedure on instruction sheet packaged with the dies.

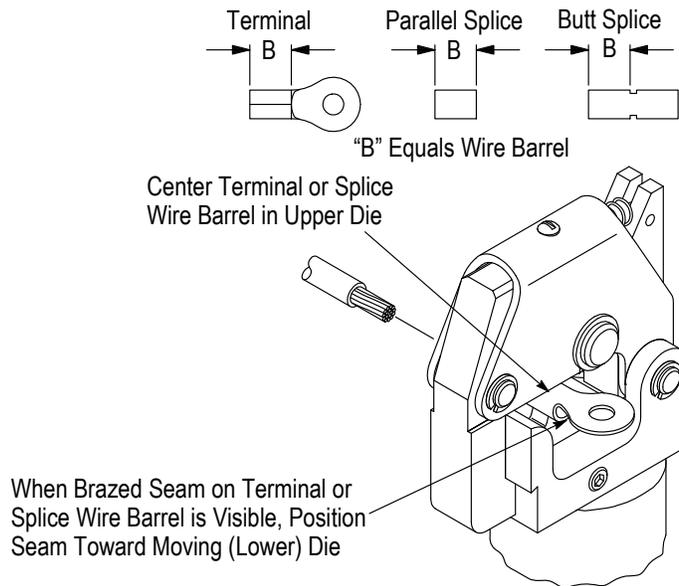


Figure 3

## 5. INSPECTION AND MAINTENANCE



**DANGER**

*Make sure hydraulic pressure is released before following maintenance and inspection procedures, unless otherwise specified in the procedure.*

It is recommended that an inspection and maintenance program be performed periodically to ensure dependable and uniform terminations. Though recommendations call for at least one inspection per month, frequency of inspection depends on:

- ◆ The care, amount of use, and handling of the hand tool,
- ◆ The presence of abnormal amounts of dust and dirt,
- ◆ The degree of operator skill, and
- ◆ Your own established standards.

The hand tool is inspected before being shipped; however, TE recommends that the tool be inspected immediately upon arrival at your facility to ensure that the tool has not been damaged during shipment.

## 5.1. Visual Inspection

1. Verify that all retaining pins are in place and secured with retaining rings. If replacements are necessary, refer to parts listed in Figure 6.
2. Inspect head assembly for worn, cracked, or broken areas. If damage is evident, return the tool for evaluation and repair. See Section 6, 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.*

## 5.2. Daily Maintenance

1. Hand tool should be immersed (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease, and foreign matter. When degreasing compound is not available, tool may be wiped clean with a soft, lint-free cloth. DO NOT use hard or abrasive objects that could damage the tool.
2. Make certain that the retaining pins are in place and that they are secured with retaining rings.



### CAUTION

*Do not remove the retaining pins as permanent damage to the tool could result.*

3. All pins, pivot points, and bearing surfaces should be protected with a THIN coat of any good SAE 20 motor oil. DO NOT oil excessively.
4. When the tool is not in use, keep handles closed to prevent objects from becoming lodged in the dies. Store the tool in a clean, dry area.

## 5.3. Crimping Pressure Inspection

Check the crimping pressure to ensure that dies are fully bottomed before pressure is reduced by the internal bypass valve.

1. Select the largest wire and terminal size that will be crimped in the tool.
2. Select dies in accordance with Section 3, DIE SELECTION.
3. Place terminal or splice in dies in accordance with the instructions in Section 4, CRIMPING PROCEDURE.
4. Perform crimping procedure as described in Steps 3 thru 5 of Section 4, CRIMPING PROCEDURE. DO NOT release hydraulic pressure at this time.
5. When ram is fully extended and Steps 1 thru 4 are completed, a scribe line should appear on the ram at the base of the cylinder head. This indicates that the pressure requirement has been met.



### CAUTION

*If the scribe is NOT visible, the tool is not performing properly and should be repaired as described in Section 6, REPLACEMENT AND REPAIR.*

If the tool conforms to these inspection procedures, lubricate it with a THIN coat of any good SAE 20 motor oil and return it to service.

## 5.4. Lubrication

Keep all pins, pivot points, and bearing surfaces lubricated with SAE 20 motor oil as follows:

- ◆ Tool used in daily production: lubricate daily
- ◆ Tool used daily (occasionally): lubricate weekly
- ◆ Tool used weekly: lubricate monthly

Wipe excess oil from tool, particularly from crimping area.



### CAUTION

*Oil transferred from the crimping area onto certain terminations may affect the electrical characteristics of an application.*

### 5.5. Hydraulic Fluid Level Inspection/Fill (Figure 4)

1. Turn the tool upside down and clamp it in a vise so the tool levers are in an upright position.
2. Release all pressure in tool in accordance with instructions in Section 4, CRIMPING PROCEDURE, Step 6.

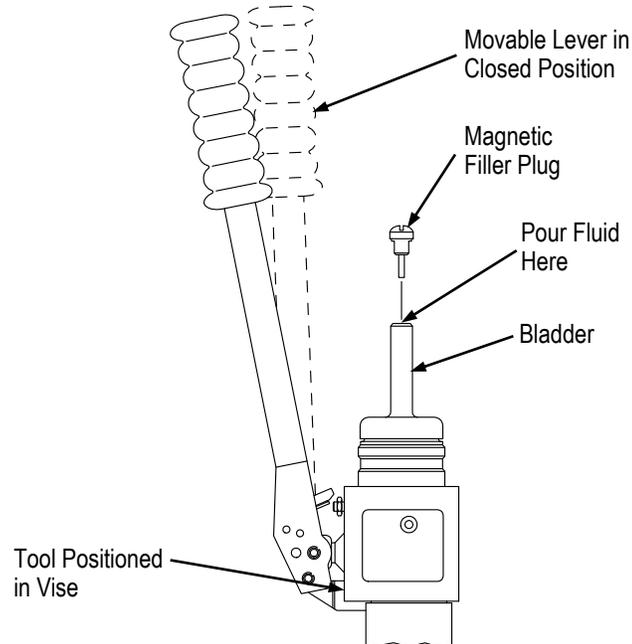


Figure 4

3. Turn the movable lever and allow the lever to close until it stops. DO NOT depress the plunger when closing the lever.



**NOTE**

Keep lever in CLOSED position for remaining steps in this procedure.

4. Loosen the setscrew in cap of stationary (reservoir) lever (see Figure 1).
5. With a view from the lever grip end, turn the lever COUNTERCLOCKWISE and remove the entire reservoir lever to expose the bladder.
6. Remove the magnetic filler plug.
  - ◆ If the bladder is full, no further check is necessary and tool can be re-assembled.
  - ◆ If fluid level is low, proceed to the next step.
7. Fill the bladder with fluid.



**NOTE**

Use care to prevent air bubbles from forming while pouring the fluid.



**NOTE**

The recommended fluid is Dexron II; a transmission fluid available in automotive parts and department stores.

8. Refill the bladder to point of overflow, and replace the filler plug.
  9. Re-assemble the stationary lever and tighten the cap setscrew.
- The tool is now ready for use.

### 5.6. Gaging the Crimping Chamber

This inspection requires the use of a plug gage conforming to the dimensions in Figure 5.

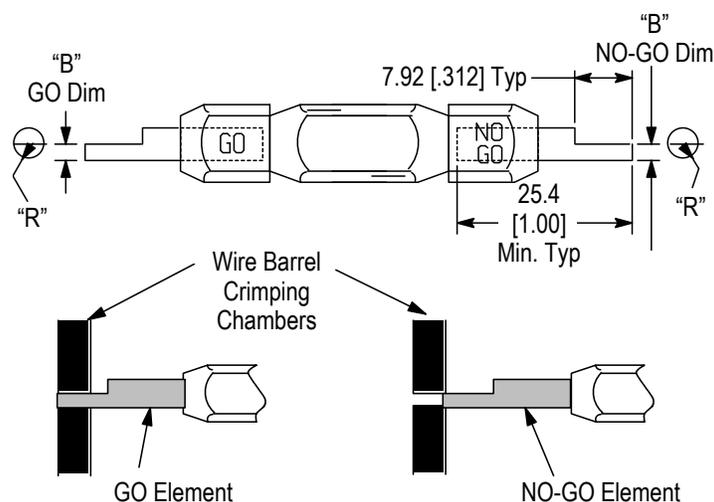


**NOTE**  
TE Connectivity does not manufacture or market these gages.

Proceed as follows:

1. Clean oil or dirt from die closure surfaces and plug gage elements.
2. Rotate knob on tool to select die closure to be inspected. (Refer to Section 3, DIE SELECTION.)
3. Actuate tool until dies are closed and an audible ‘pop’ is heard.
4. Align the GO element with the wire barrel crimping chamber. Push element straight into the crimping chamber without using force.

The GO element must pass completely through the crimping chamber as shown in Figure 5.



DIE SIZE	GAGE ELEMENT DIMENSIONS "B" (mm [in.])		RADIUS "R"
	GO	NO-GO	
8	2.184-2.192 [.0860-.0863]	2.537-2.540 [.0999-.1000]	3.58 [.141]
6	3.124-3.132 [.1230-.1233]	3.477-3.480 [.1369-.1370]	3.96 [.156]
4	4.039-4.046 [.1590-.1593]	4.392-4.394 [.1729-.1730]	5.56 [.219]
2	4.826-4.834 [.1900-.1903]	5.179-5.182 [.2039-.2040]	6.35 [.250]

Figure 5

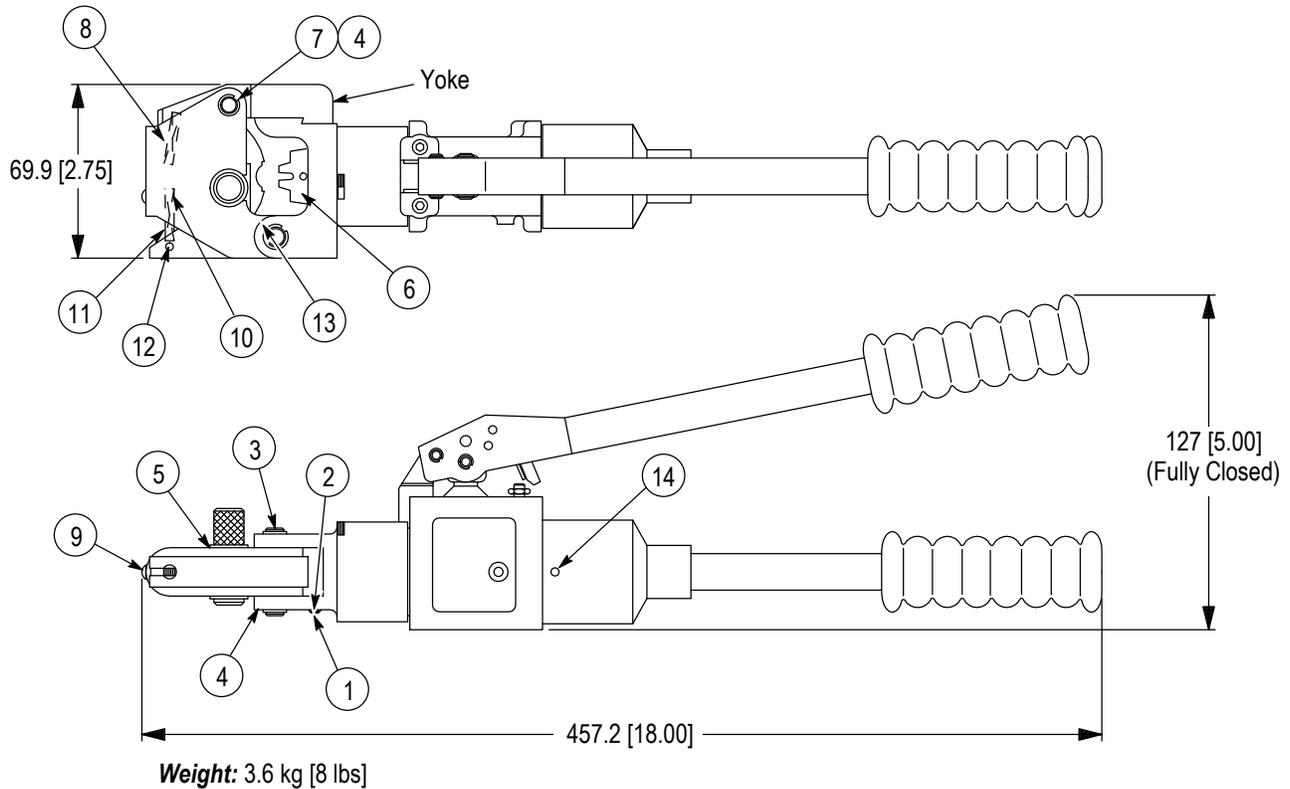
5. Now align the NO-GO element and try to insert it straight into the same crimping chamber.  
The NO-GO element may start entry, but **MUST NOT PASS** completely through as shown in Figure 5.
6. Repeat Steps 2 through 5 for each die size listed in the chart.
  - ♦ If the crimping chamber conforms to the gage inspection, the tool is considered dimensionally correct and should be lubricated with a THIN coat of any good SAE 20 motor oil.
  - ♦ If the crimping chamber does not conform to the gage inspection, the tool **MUST BE** repaired before returning it to service. See Section 6, REPLACEMENT AND REPAIR.

## 6. REPLACEMENT AND REPAIR

The parts listed in Figure 6 are customer-replaceable. A complete inventory can 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 the purchase order to 1-717-986-7605, or write to:

CUSTOMER SERVICE (038-035)  
 TE CONNECTIVITY CORPORATION  
 PO BOX 3608  
 HARRISBURG PA 17105-3608

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



REPLACEMENT PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY PER ASSY
1	4-305927-0	Screw	1
2	21025-4	Washer, Lock, Internal Tooth No. 8	1
3	301710	Pin, Retaining	1
4	21045-8	Ring, Retaining	4
5	1-21045-3	Ring, Retaining	2
6	47322	Indenter	1
7	301707	Pin, Retaining	1
8	301712	Spring	1
9	2-305927-5	Screw	1
10	304028	Stop, Spring	1
11	304029	Spring	1
12	3-21028-5	Pin, Roll, .094 Dia X .438 Length	1
13	2-21028-4	Pin, Roll, .078 Dia X .812 Length	1
14	4-21006-9	Screw, Set	1

Figure 6

## 7. REVISION SUMMARY

- ◆ Reformatted (including some paragraph numbering) and most current logo
- ◆ Added NOTE after paragraph 5.1.2.
- ◆ Added DANGER after paragraph 5.