



Heavy Duty Hand Crimping Tool 59131

PROPER USE GUIDELINES

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

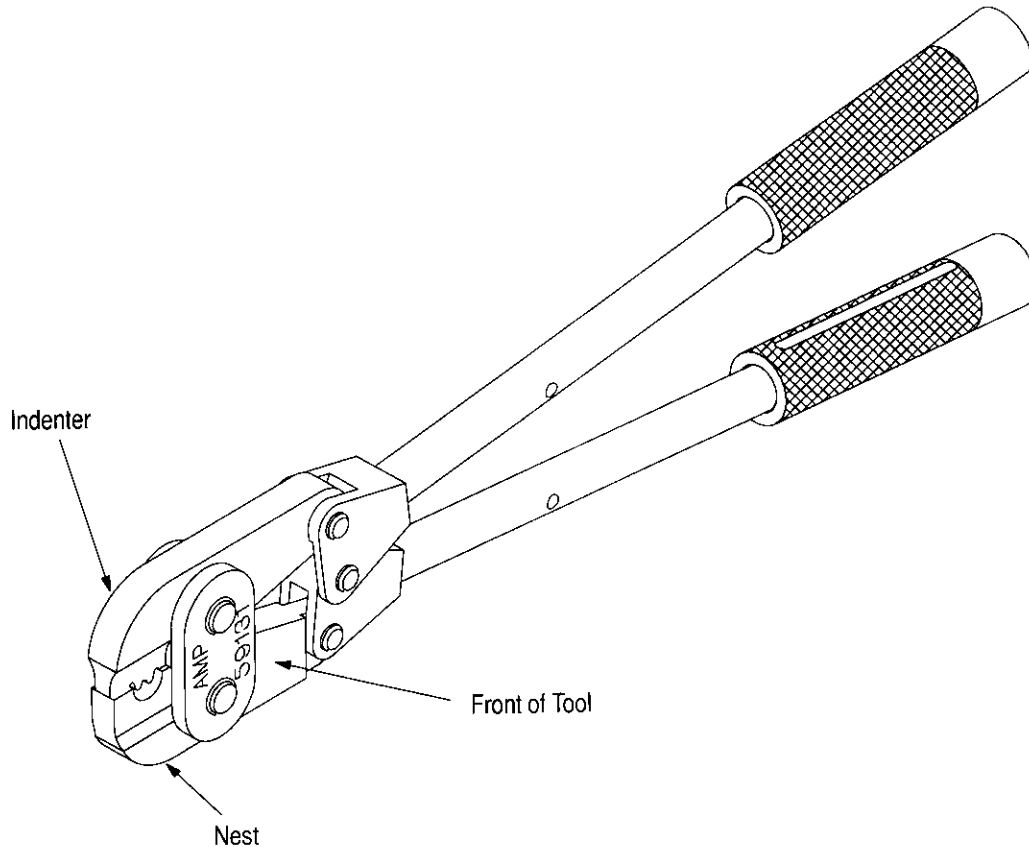


Figure 1

1. INTRODUCTION

This instruction sheet provides application and maintenance procedures for AMP* Heavy Duty Hand Crimping Tool 59131. The tool is used to crimp SOLISTRAND* terminals, butt and parallel splices on solid or stranded copper wire, size 4 AWG. A typical product number is terminal 35670 and butt splice 34323.

Tools are coated with preservative to prevent rust and corrosion. Wipe this preservative from tool, particularly from crimping area. Each tool is thoroughly inspected before packaging. Since there is the possibility of damage during shipment, the tool should be inspected immediately upon arrival at your facility.

Read these instructions thoroughly before crimping any terminals or splices.

NOTE

All dimensions are in millimeters [with inches in brackets].

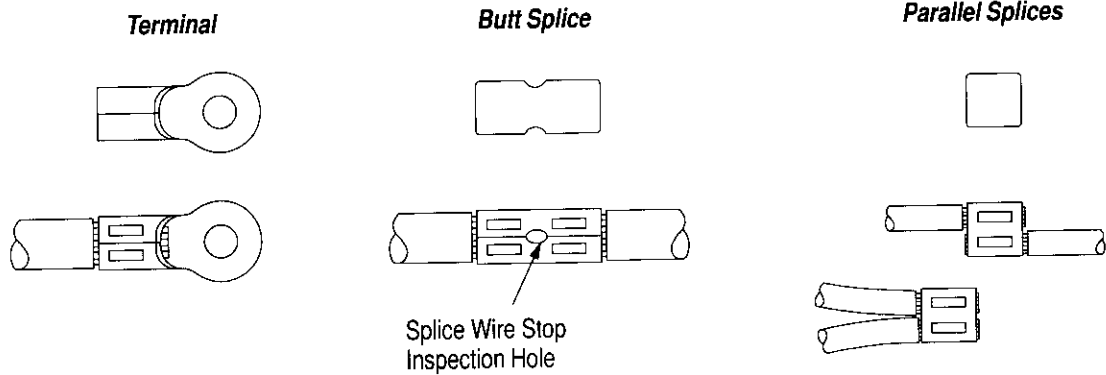
DANGER

This tool is NOT designed for use on aircraft applications or on aluminum wire terminations.

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

2. DESCRIPTION

The tool features the W crimp for crimping closed barrel uninsulated terminals and splices. The terminals and splices can be applied to solid wire, stranded wire, or a combination of solid and stranded wire. The crimping jaws include a "nest" and an "indenter;" see Figure 1. The front of the tool has the wire size designation and the part number of the tool.



TERMINAL OR SPLICE WIRE SIZE RANGE, (CMA)	WIRE SIZE (AWG)	WIRE STRIP LENGTH					
		TERMINAL		BUTT SPLICE		PARALLEL SPLICE	
		MIN	MAX	MIN	MAX	MIN	MAX
4, 4 HD [33,100 to 52,600]	4 4 HD	11.11 [.438]	11.91 [.469]	13.49 [.531]	14.29 [.563]	13.49 [.531]	14.29 [.563]

Figure 2

3. WIRE STRIPPING

Using the chart in Figure 2, determine correct terminal or splice wire loading, by referring to the CMA range. Strip the wire to the length indicated, taking care not to nick or cut the wire strands.

NOTE Do NOT use wire with nicked or missing strands.

NOTE Be sure wire size displayed on tool head link matches wire size stamped on terminal or splice.

4. CRIMPING PROCEDURE

4.1. Terminals

1. Center wire barrel of terminal in nest of stationary die as shown in Figure 3.
2. Close handles until terminal is held firmly in place. Do not deform terminal wire barrel.
3. Insert stripped wire into terminal until end of wire is at least flush with or extended slightly beyond end of wire barrel.
4. To complete crimp, close handles until dies meet. Handles can now be opened and crimped terminal may be removed.
5. Refer to Section 5, CRIMP INSPECTION and Figure 4 for terminal inspection procedure.

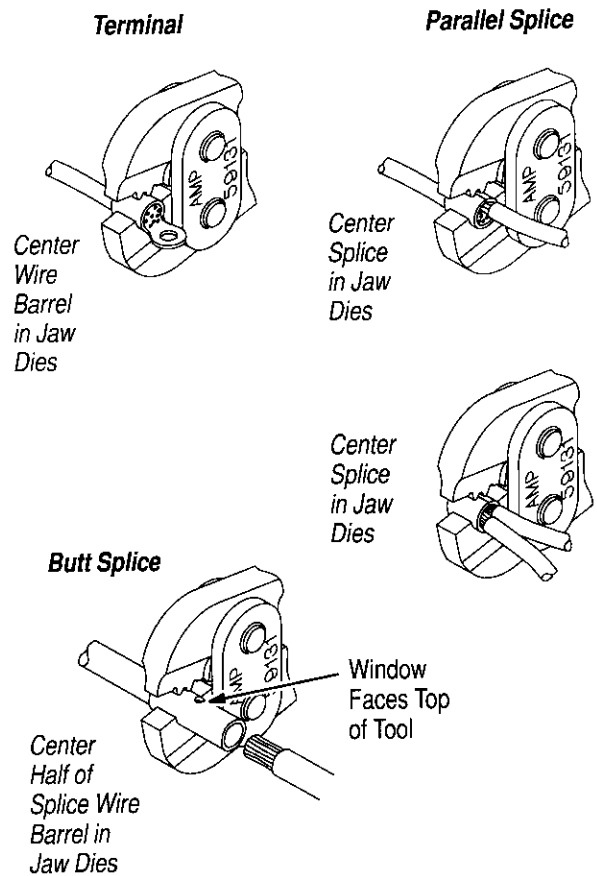
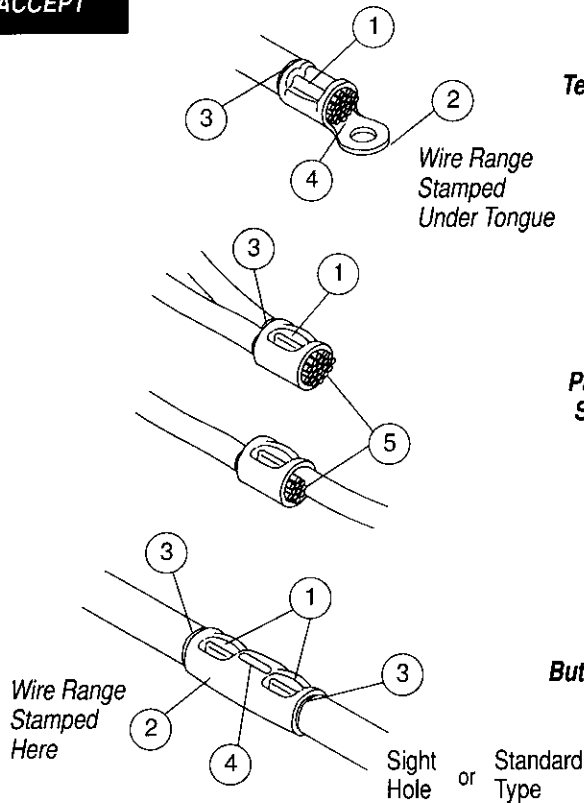
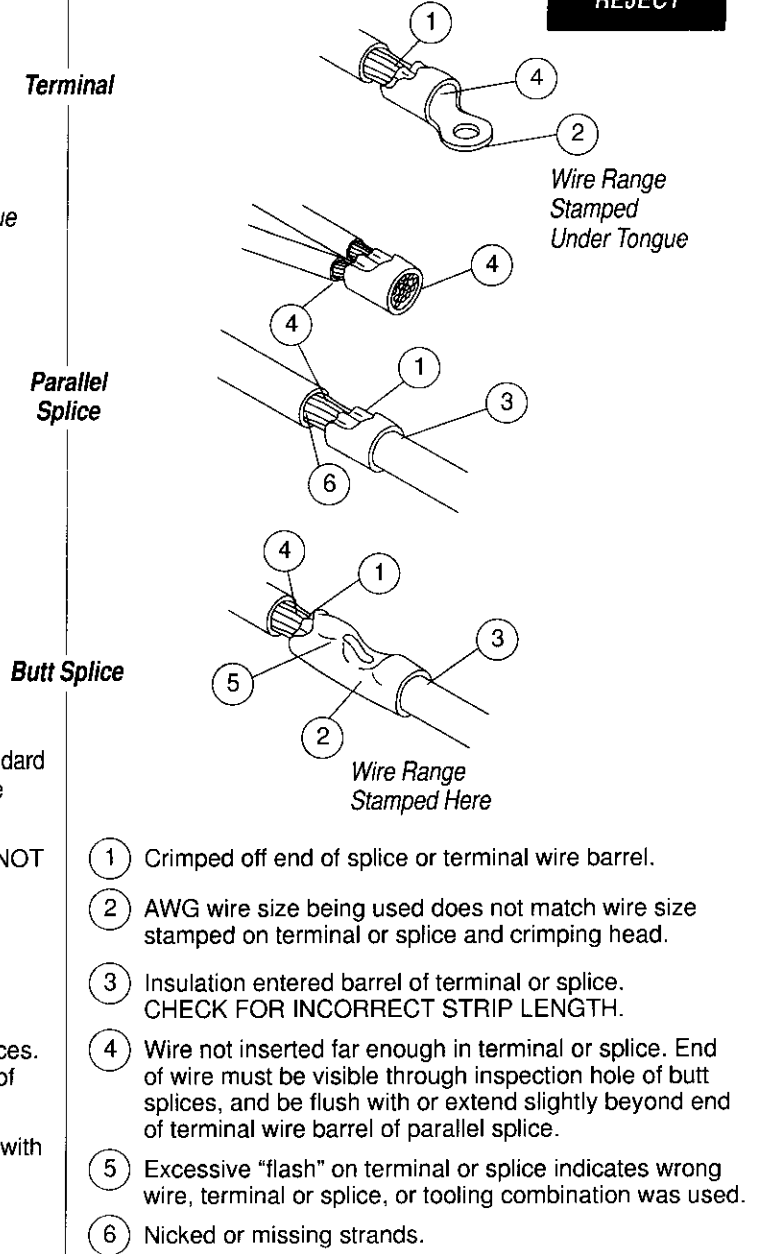


Figure 3

ACCEPT



REJECT



- ① Crimps centered. Crimps may be off center BUT NOT OFF END OF WIRE BARREL.
- ② AWG wire size being used matches wire size stamped on terminal or splice and crimping head.
- ③ Insulation does not enter wire barrel.
- ④ Wire is visible through inspection hole of butt splices. Wire is flush with or extends slightly beyond end of terminal wire barrel.
- ⑤ On parallel splices, bare wire ends must be flush with or extend slightly beyond end of barrel.

- ① Crimped off end of splice or terminal wire barrel.
- ② AWG wire size being used does not match wire size stamped on terminal or splice and crimping head.
- ③ Insulation entered barrel of terminal or splice. CHECK FOR INCORRECT STRIP LENGTH.
- ④ Wire not inserted far enough in terminal or splice. End of wire must be visible through inspection hole of butt splices, and be flush with or extend slightly beyond end of terminal wire barrel of parallel splice.
- ⑤ Excessive "flash" on terminal or splice indicates wrong wire, terminal or splice, or tooling combination was used.
- ⑥ Nicked or missing strands.

Figure 4

4.2. Splices

1. Center one half of butt splice in nest as shown in Figure 3. For best results, when brazed seam on splice is visible, position seam toward indenter.
2. Center parallel splice in nest; be sure brazed seam faces indenter.
3. Close handles until splice is held firmly in place. Do not deform splice wire barrel.
4. Insert stripped wire into parallel splices until end of wire is flush with or extended slightly beyond

end of wire barrel. Insert stripped wire into butt splice until wire end is against splice wire stop.

5. To complete crimp, close handles until dies meet. Handles can now be opened and crimped splice may be removed.
6. To crimp other half of butt splice, remove it and reposition uncrimped half in nest. Follow same procedure used to crimp first half of splice.
7. Refer to Section 5, CRIMP INSPECTION, and Figure 4 for splice crimp inspection procedure.

5. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figure 4. Use only the terminals and splices that meet the conditions shown in the "ACCEPT" column. "REJECT" terminals and splices can be avoided through careful use of instructions in Section 4, and by performing regular crimping head maintenance as instructed in Section 6, MAINTENANCE/INSPECTION.

6. MAINTENANCE/INSPECTION

6.1. Daily Maintenance

1. Remove dust, moisture, and other contaminants from the tool with a clean brush or a soft, lint-free cloth. Do NOT use objects that could damage the tool.
2. Make certain that all pins, pivot points, and bearing surfaces are protected with a THIN coat of any good SAE 20 motor oil. Do NOT oil excessively.
3. When the tool is not in use, keep the handles closed to prevent objects from becoming lodged in the crimping areas and store the tool 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 tools and/or be supplied to supervisory personnel responsible for the tool. Though recommendations call for at least one inspection per month, the inspection frequency should be based on the amount of use, working conditions, operator training and skill, and established company standards. These inspections should be performed in the following sequence:

A. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the tool (handles partially closed) in a suitable commercial degreaser that will not affect paint or plastic material.
2. Make certain that all parts are securely in place. If replacements are necessary, refer to the parts list in Figure 8.
3. Inspect crimping areas for pitted or chipped surfaces. See Figure 5.

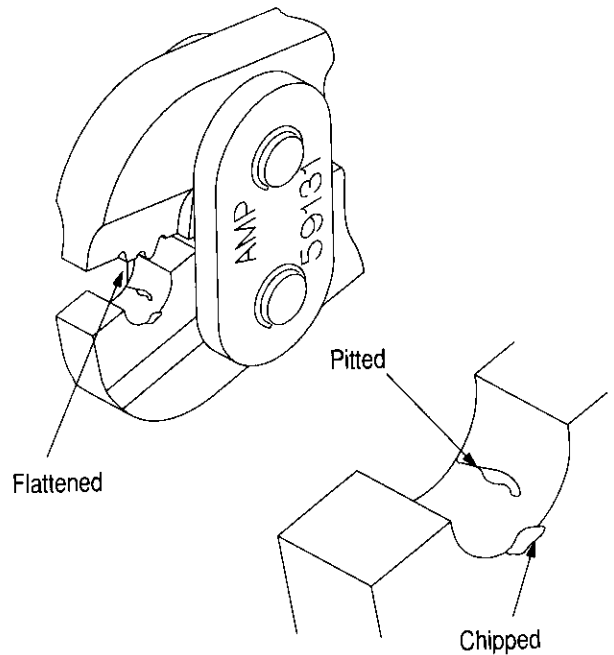
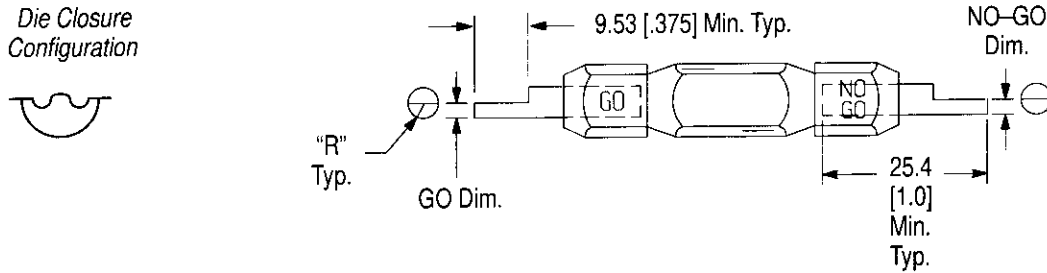


Figure 5

B. Die Closure Inspection

Every crimping head is inspected for proper die closure before packaging. Periodically inspect the die closure for excessive wear. The die closure inspection is accomplished using plug gages. A suggested plug gage design and the GO and NO-GO dimensions of the plug gage and elements are listed in Figure 6. The following procedure is recommended for inspecting the die closures:

1. Clean oil or dirt from die closure surfaces, bottoming surfaces, and plug gage elements.
2. Close the jaws until they are bottomed but not under pressure.
3. Select the correct plug gage. Hold gage in straight alignment with the die closure and carefully try to insert, without forcing, the GO element. Refer to Figure 7. The GO element must pass completely through the die closure.
4. Try to insert the NO-GO element. The NO-GO element may enter partially but must not pass completely through the die closure.
5. If the die closure meets the plug gage conditions, the die closure may be considered dimensionally correct.
6. If you find that the die closure does not conform with the plug gage conditions, contact your local AMP Field Representative.

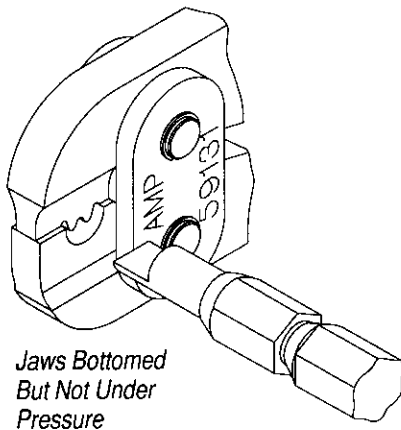


SUGGESTED PLUG GAGE DESIGN — WIRE BARREL CRIMP

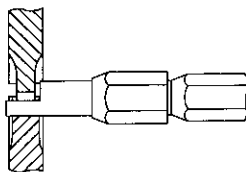
TOOL	GAGE ELEMENT DIM'S.		RADIUS "R"
	GO	NO-GO	
59131	4.724 – 4.732 [.1860 – .1863]	4.874 – 4.877 [.1919 – .1920]	5.87 [.231]

Figure 6

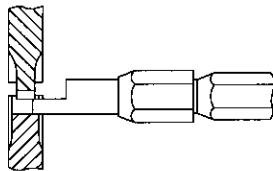
7. REPAIR



Jaws Bottomed
But Not Under
Pressure



GO element must pass completely
through the die closure.



NO-GO element may enter partially, but must
not pass completely through the die closure.

Figure 7

Figure 8 lists all customer-replaceable parts. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your AMP 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)
AMP INCORPORATED
P. O. BOX 3608
HARRISBURG, PA 17105-3608

Tools may also be returned to AMP for evaluation and repair. For repairs, send tool, with a written description of the problem to:

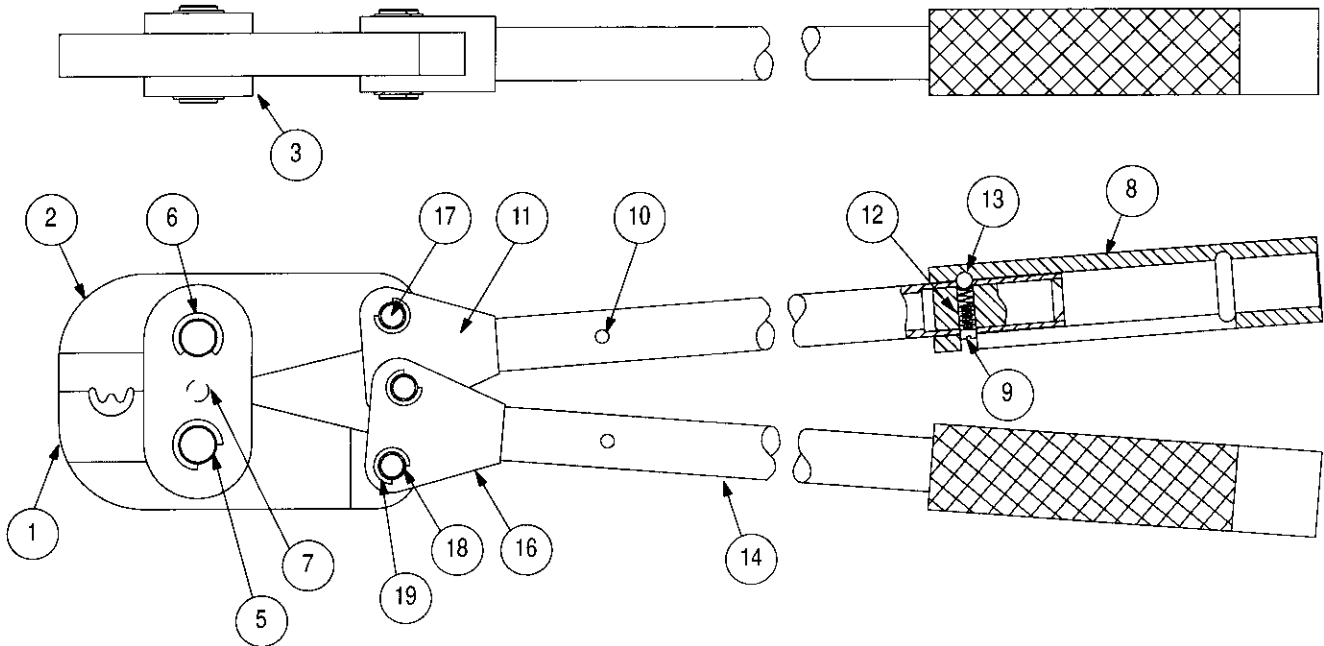
CUSTOMER REPAIR (01-12)
AMP INCORPORATED
1523 NORTH 4TH STREET
HARRISBURG, PA 17102-1604

8. REVISION SUMMARY

Since the previous release, the following changes were made to this document:

Per EC 0990-0192-96:

- Changed GO and NO-GO dimensions in Figure 6.
- Changed part numbers of items 1 and 2 in Figure 8.



PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY PER ASSY
1	48177	Jaw, Crimping (Nest)	1
2	59687-5	Jaw, Crimping (Indenter)	1
3	300416	Link, Finished	2
5	300042	Pin	2
6	1-21045-1	Ring, Retaining	4
7	300115	Pin, Pivot	1
8	301445	Handle, Extension	2
9	4-21012-1	Stop, Screw	2
10	4-59570-4	Rivet	2
11	300411	Toggle, Female	1
12	300685	Spring	2
13	23241-1	Ball	2
14	301446	Handle, Sub Assembly	2
16	300410	Toggle, Male	1
17	300041	Pin	2
18	300043	Pin	1
19	21045-8	Ring, Retaining	6

Figure 8

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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[63800-0140](#) [63800-8355](#) [63811-3275](#) [63811-3376](#) [63811-6375](#) [63811-6475](#) [63811-7875](#) [63811-8175](#) [63811-8875](#) [63819-0475](#) [63819-1875](#)
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[853721-6](#) [91362-1](#) [995-0001-187](#) [1-1633932-5](#) [999-50-020083](#)