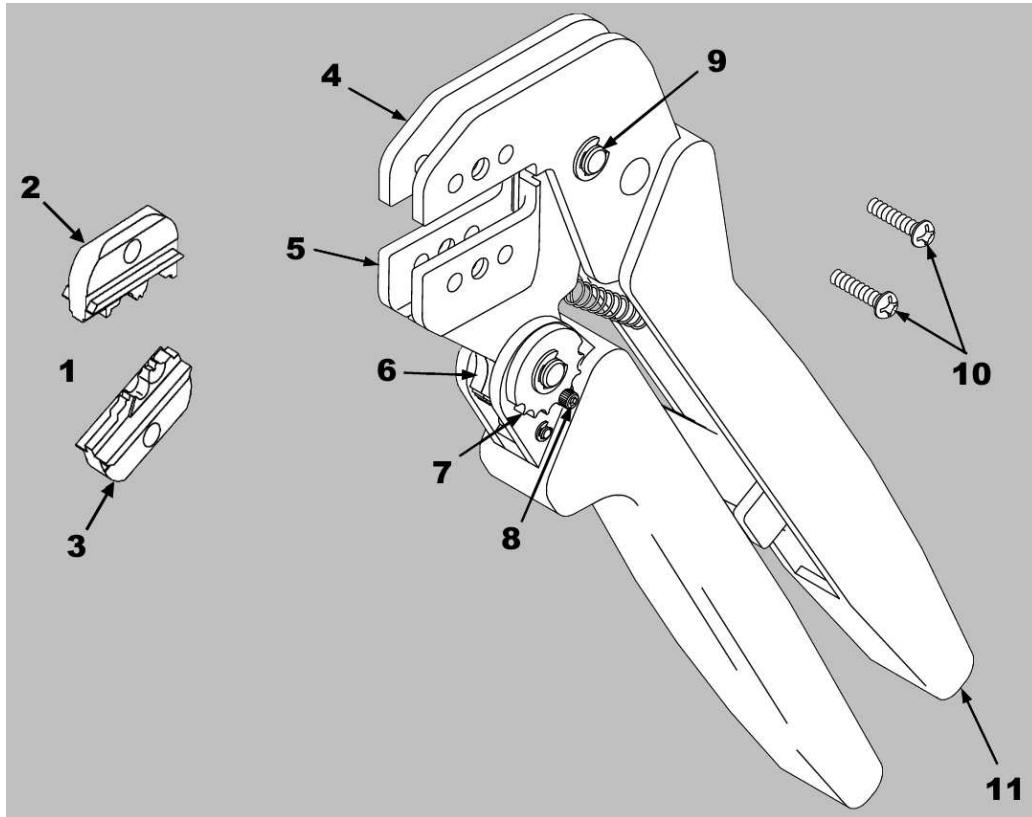


PROPER USE GUIDELINES

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 is available for extended-use production operations.

Figure 1: PRO-CRIMPER III Hand Crimping Tool Assembly 58546-1 with Die Assembly 58545-1



1	Die set 58545-1	7	Ratchet adjustment wheel
2	Crimper (upper die)	8	Ratchet adjustment screw
3	Anvil (lower die)	9	Pivot pin
4	Stationary jaw	10	Die-retaining screws (2)
5	Moving jaw	11	Handle
6	Emergency ratchet release		

The PRO-CRIMPER III Hand Crimping Tool is a commercial-grade tool and is designed primarily for field installation, repair, maintenance work, or prototyping in industrial, commercial, or institutional applications. Product crimped with this tool meets the crimp height requirement for hand tools in the appropriate application specification (114-series), but might not comply with other feature parameters of the specification. TE Connectivity offers a variety of tools to satisfy your performance requirements. For additional information, contact the Tooling Assistance Center (800-722-1111).

1. INTRODUCTION

PRO-CRIMPER III Hand Crimping Tool Assembly 58546-1 for SOLISTRAND™ terminals and splices is the tool and die set shown in Figure 1. The tool consists of the PRO-CRIMPER III Hand Crimping Tool Frame 354940-1 (instruction sheet 408-9930) and the die assemblies listed in Table 1. This tool is used to crimp the terminals listed in Table 1.

Table 1: Crimping specifications

Die assembly*	Product family (SOLISTRAND)†	Wire	
		Size AWG	Strip length mm [in.]
58545-1 58545-3 58545-4	Terminal (standard)	22-14	4.37-5.16 [.172-.203]
	Terminal (standard) and butt splice	12-10	6.35-7.14 [.250-.281]
	Terminal (long barrel) or butt splice	22-14	7.94-8.73 [.312-.344]
	Terminal parallel splice		

* For specific terminal and splice part numbers, contact the Tooling Assistance Center (800-722-1111) or Product Information (at the number listed at the bottom of page 1).

† For die assembly cross reference, see Figure 12 on page 11.



NOTE

Specific part numbers for die set 58545-[] are used with other optional crimp tooling. Refer to Figure 12 for specific relationships.



NOTE

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

Read these instructions thoroughly before crimping connectors.

This document supersedes instruction sheet 408-4047.

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

2. DESCRIPTION

The tool frame (Figure 1) features two jaws, a handle, a ratchet adjustment wheel, and an emergency ratchet release. Each die set consists of a crimper (upper die) and an anvil (lower die). The tool frame holds a die assembly with three crimping chambers. Die-retaining screws are used to secure the dies in the tool frame.

The tool features a ratchet and an adjustment wheel with a range of settings. The ratchet ensures that the tool has completed the cycle and does not release until the handles have been **fully** closed, unless the emergency ratchet release is pressed to manually release the ratchet. The adjustment wheel controls the amount of handle pressure exerted on the dies during the crimping procedure.

CAUTION

The dies bottom before the ratchet releases. This feature ensures maximum tensile performance of the crimp.



3. INSTALLING THE DIE ASSEMBLY

1. Open the tool handles and remove the two die-retaining screws from the tool jaws (see Figure 1).
2. Place the upper die in the stationary jaw of the tool frame so that the largest indenter is facing inward.
3. Insert a die-retaining screw through the stationary jaw and through the die. Tighten the screw just enough to hold the die in place. Do *not* tighten the screw completely.
4. Place the lower die in the moving jaw of the tool frame so that the largest anvil is facing inward.
5. Insert a die-retaining screw through the moving jaw and through the die. Tighten the screw just enough to hold the die in place. Do *not* tighten the screw completely.
6. Carefully close the tool handles, making sure the anvil and crimper align properly. Continue closing the tool handles until the ratchet in the tool frame engages sufficiently to hold the dies in place.
7. Tighten both die-retaining screws.

4. REMOVING THE DIE ASSEMBLY

1. Open the tool handles until the ratchet releases.
2. Remove the two die-retaining screws.
3. Slide the dies out of the tool jaws.

5. CRIMPING

**NOTE**

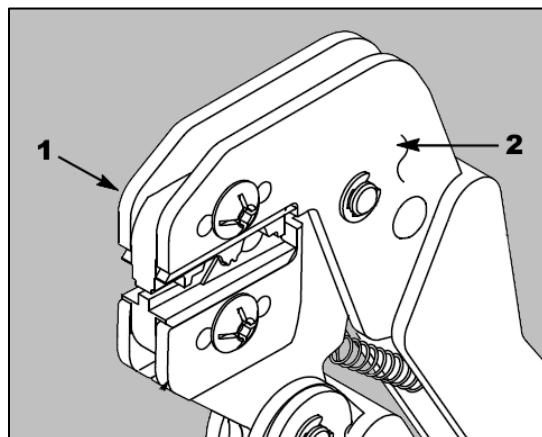
The tool is provided with a crimp adjustment feature. Refer to section 7, INSPECTING THE CRIMP HEIGHT, and section 8, ADJUSTING THE RATCHET, to verify crimp height before using the tool.

**NOTE**

The crimping chamber marked 12-10 cannot be used to crimp spade-type terminals.

1. Refer to Table 1 and select wire of the specified size and insulation diameter.
2. Strip the wire to the length indicated. **Do not nick or cut wire strands.**
3. Select an applicable terminal or splice and identify the appropriate crimp section according to the wire size markings on the dies.
4. Hold the tool so that the back (wire side) is facing you. (See Figure 2.) Squeeze the tool handles together until the ratchet releases and allow them to open fully.

Figure 2: Front and back of tool



1 Front of tool
2 Back of tool (wire side)

5. Center the terminal or splice wire barrel on the anvil of the upper die as shown in Figure 3, Figure 4, and Figure 5. If the brazed seam on the terminal or splice is visible, orient it toward the indenter.

Figure 3: Crimping a splice

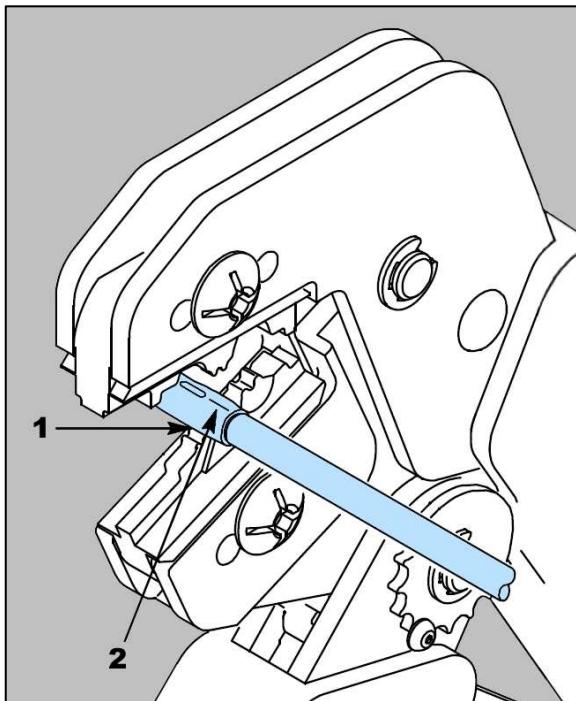
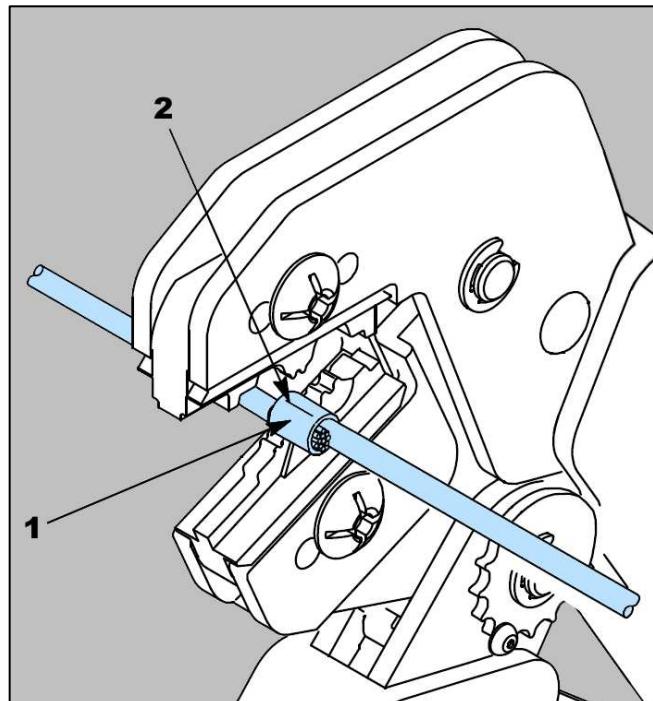
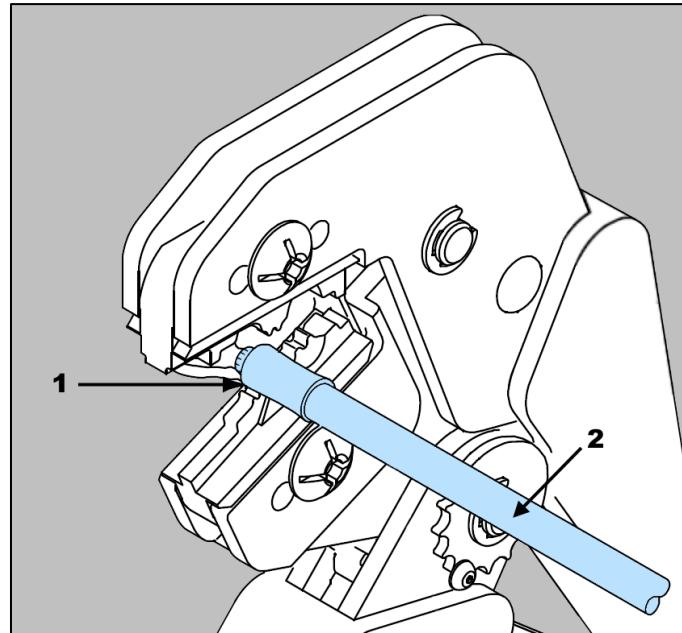


Figure 4: Crimping a parallel splice



- 1** Wire barrel centered on anvil of lower die
- 2** Brazed seam oriented toward indenter

Figure 5: Crimping a terminal



- 1** Wire barrel centered on anvil of lower die
- 2** Stripped wire

6. While holding the wire barrel in place, squeeze the tool handles together until the ratchet engages sufficiently to hold the terminal or splice in position. Do **not** deform the insulation barrel or wire barrel.
7. Insert the stripped wire into the wire barrel, making sure that the insulation does not enter the wire barrel. See Figure 3.
8. While holding the wire in place, fully cycle the tool until the ratchet releases and allows the handle to open.
9. To crimp the other half of a splice, reposition the uncrimped wire barrel in the crimping chamber and repeat steps 1-8.

**NOTE**

If the splice cannot be turned for crimping the other half, turn the tool around.

10. Inspect the crimped terminal or splice as described in section 6.
11. Check the crimp height as described in section 7. If necessary, adjust the ratchet as described in section 8.

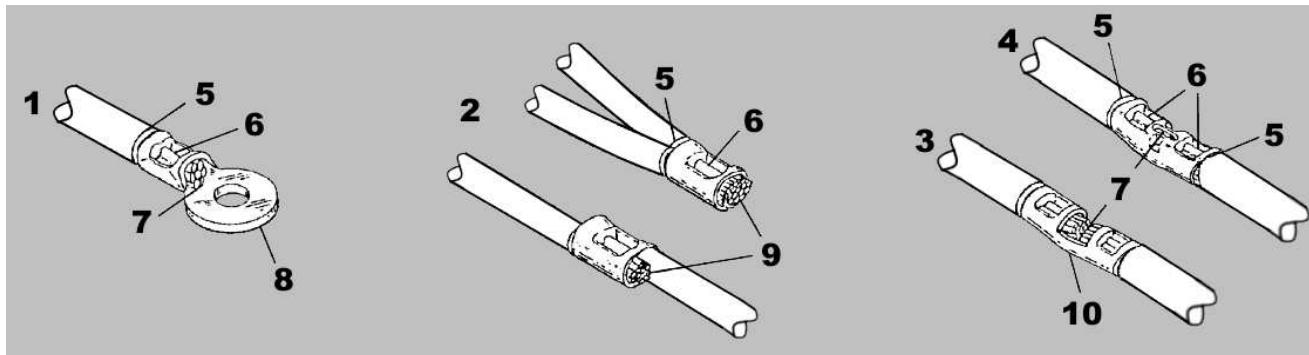
**CAUTION**

Do not use damaged terminals or splices. If a damaged terminal or splice is evident, replace it with a new one.

6. INSPECTING THE CRIMP

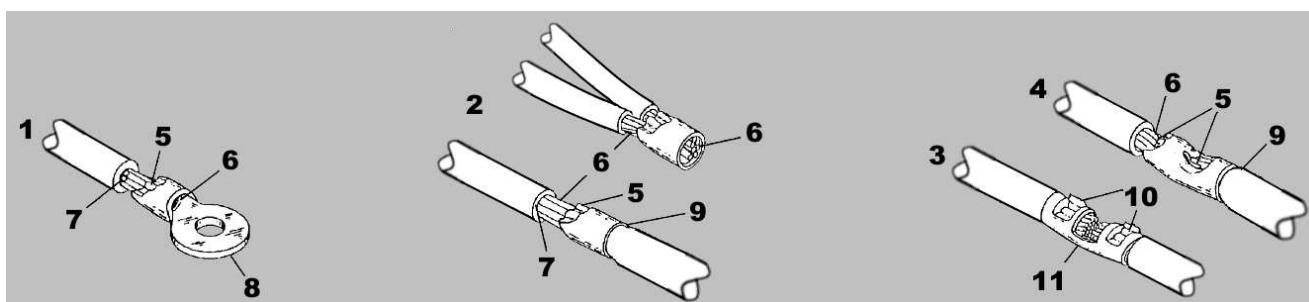
Inspect crimped terminals and splices by checking the features shown in Figure 6. Poor crimps (Figure 7) can be avoided by carefully following the procedures provided in section 5, and by following the tool maintenance procedures provided in section 9.

Figure 6: Features of a good crimp



- 1** Terminal
- 2** Parallel splice
- 3** Butt splice (strap type)
- 4** Butt splice (sight hole or stranded type)
- 5** Wire insulation does not enter wire barrel
- 6** Crimp is centered. Crimp can be off center, but not off end of wire barrel.
- 7** Wire is visible through inspection hole. Wire is flush with or extends slightly beyond end of wire barrel.
- 8** Wire size matches wire range or size stamped under tongue.
- 9** Bare wire ends are flush with or extend slightly beyond end of wire barrel.
- 10** Wire size matches wire range or size stamped on splice.

Figure 7: Features of a poor crimp

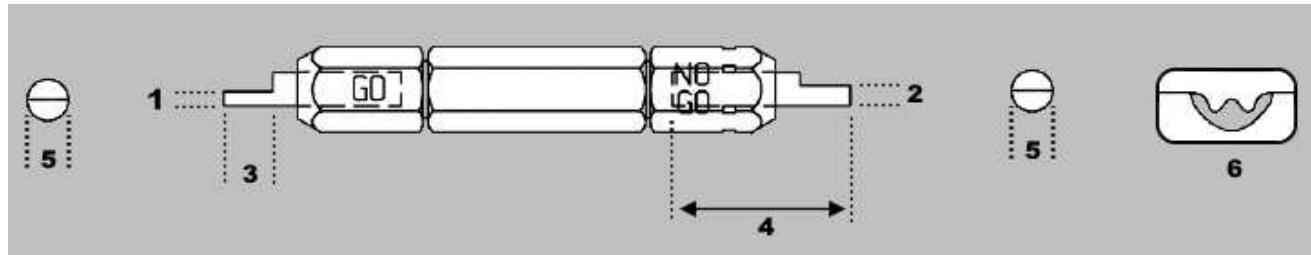


- 1** Terminal
- 2** Parallel splice
- 3** Butt splice (strap type)
- 4** Butt splice (sight hole or stranded type)
- 5** Crimped off end of wire barrel
- 6** Wire not inserted far enough. End of wire must be visible through inspection hole, and be flush with (or extend slightly beyond) end of wire barrel.
- 7** Nicked or missing strands
- 8** Wire size does not match wire range or size stamped under tongue.
- 9** Wire insulation enters wire barrel. Check for incorrect strip length.
- 10** Excess "flash" on terminal or splice indicates damaged jaws or use of wrong wire, splice, or tooling combination.
- 11** Wire size does not match wire range or size stamped on splice.

7. INSPECTING THE CRIMP HEIGHT

This inspection requires the use of plug gages conforming to the dimensions provided in Figure 8 and Table 2. TE Connectivity does not manufacture or market these gages.

Figure 8: Recommended plug gage design



1	GO dimension	4	50.8 [2.00] minimum (typical)
2	NO-GO dimension	5	Radius (see Table 2)
3	12.7 [.50] minimum (typical)	6	Die closure configuration

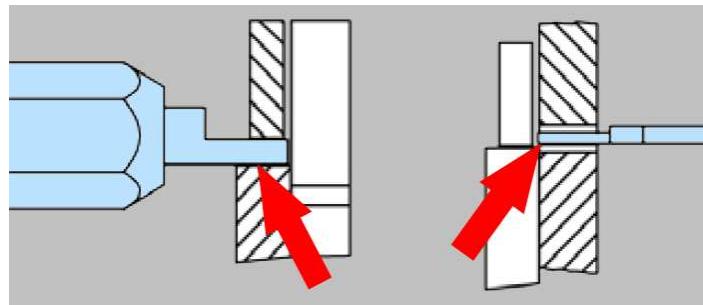
Table 2: Gage element dimensions

Crimping chamber (die marking)	GO element	NO-GO element	Radius
22-16	1.143-1.151 [.0450-.0453]	1.344-1.346 [.0529-.0530]	1.57 [.062]
16-14	1.346-1.354 [.0530-.0533]	1.547-1.549 [.0609-.0610]	1.98 [.078]
12-10	1.905-1.913 [.0750-.0753]	2.106-1.108 [.0829-.0830]	2.77 [.109]

To gage the crimping chamber, complete the following steps:

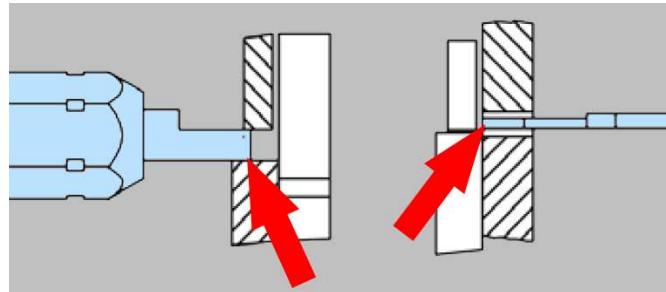
1. Remove traces of oil or dirt from the crimping chamber and plug gages.
2. Close the tool handles until the crimping dies have bottomed. Do **not** force dies beyond initial contact.
3. Align the GO element with the crimping chamber. Gently push the element straight into the crimping chamber. The GO element must pass completely through the crimping chamber (Figure 9).

Figure 9: GO element



4. Align the NO GO element and try to insert it straight into the same crimping chamber. The NO GO element can start entry, but it must not pass completely through the crimping chamber (Figure 10).

Figure 10: NO GO element



- If the crimping chamber conforms to the gage inspection, the tool is considered dimensionally correct. Lubricate it with a **thin** coat of any good SAE 20 motor oil.
- If not, return the tool to TE for further evaluation and repair. Refer to section 10, REPLACEMENT AND REPAIR.

For additional information regarding the use of a plug gage, refer to instruction sheet [408-7424](#).

8. ADJUSTING THE RATCHET

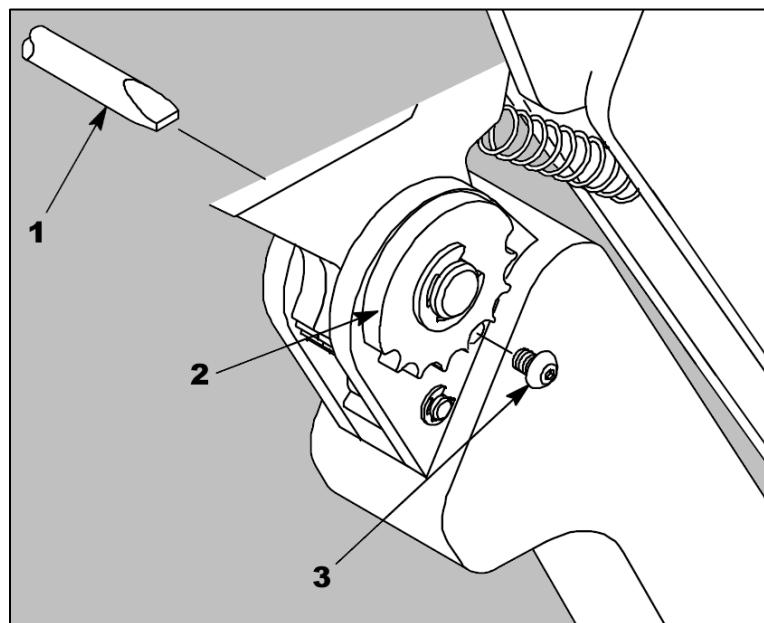
The ratchet is preset prior to shipment, but it is important to verify the crimp height using a micrometer or caliper. Use and wear can cause the tool to go out of adjustment. Inspect the crimp height and adjust the ratchet, if necessary, on a regular basis.

To adjust the ratchet, complete the following steps.

1. Remove the lock screw from the ratchet adjustment wheel (Figure 11).
2. With a screwdriver, adjust the ratchet wheel from the front side of the tool.
 - If the crimp height is larger than recommended, rotate the adjustment wheel counter-clockwise (+) to a higher setting.
 - If the crimp height is smaller than recommended, rotate the adjustment wheel clockwise (-) to a lower setting.
3. Reinstall the lock screw.
4. Make a sample crimp and measure the crimp height.
5. Repeat as required.

If the crimp height cannot be made to conform to the recommended crimp height, replace the tool or die set. See section 10, REPLACEMENT AND REPAIR.

Figure 11: Ratchet adjustment



- 1** Screwdriver
- 2** Ratchet adjustment wheel
- 3** Lock screw (typical)

9. MAINTENANCE AND INSPECTION

9.1. Maintenance

- Remove dust, moisture, and other contaminants with a clean, soft brush or soft, lint-free cloth. **Do not** use objects that could damage the dies or tool.
- When the tool is not in use, keep the handles closed to prevent objects from becoming lodged in the dies.
- Remove all lubrication and accumulated film by immersing the dies in a suitable commercial degreaser.
- Store the tool in a clean, dry area.

9.2. Visual inspection

- Inspect the tool and dies on a regular basis to ensure that they are not worn or damaged.
- Inspect the crimping chambers of the die assembly for flattened, chipped, worn, or broken areas.
- If damage or abnormal wear is evident, replace the tool or dies. Refer to section 10, REPLACEMENT AND REPAIR.

10. REPLACEMENT AND REPAIR

Customer-replaceable parts are shown in Figure 1.

The PRO-CRIMPER III Hand Crimping Tool Repair Kit 679221-1 (available separately) includes a replacement nut and a variety of pins, rings, screws, and springs.

Order the repair kit and replaceable parts through your TE representative. You can also order parts by any of the following methods:

- Go to TE.com and click the **Shop TE** link at the top of the page.
- Call 800-522-6752.
- Write to:

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

For customer repair services, call 800-522-6752.

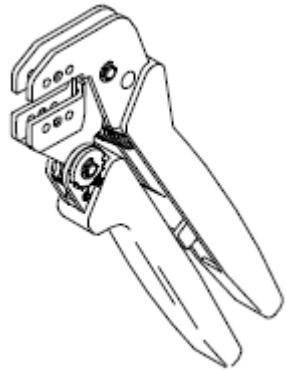
11. REVISION SUMMARY

Revisions to this instruction sheet include:

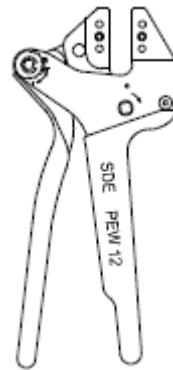
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Figure 12: Tools that can use Die Assembly 58545-[]

**Die Assembly 58545-1 for
PRO-CRIMPER III Hand Tool 354940-1
(instruction sheet [408-9930](#))**



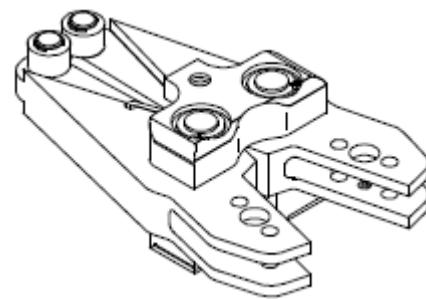
**Die Assembly 58545-1 for
SDE PEW-12 Hand Tool 9-1478240-0
(instruction sheet [408-8851](#))**



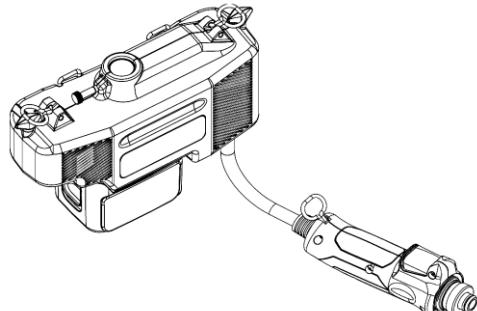
**Die Assembly 58545-3 for
SDE Bench Terminator 1490076-2
(customer manual [409-10052](#))**



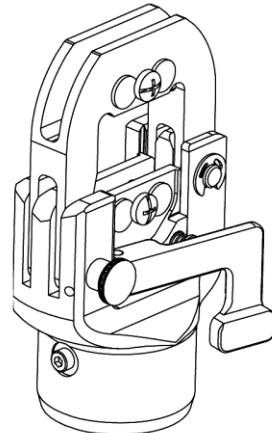
**Die Assembly 58545-4 for
626 Adapter 679304-1
(instruction sheet [408-4070](#))**



**Die Assembly 58545-3 for Battery Tool
(Shouldered Die) 1725837-1, -2
(customer manual [409-10053](#))**



**Closed Head Assembly
2031460-1
(instruction sheet [408-10312](#))**



**C-Head Assembly 2031450-1
(instruction sheet [408-10311](#))**

