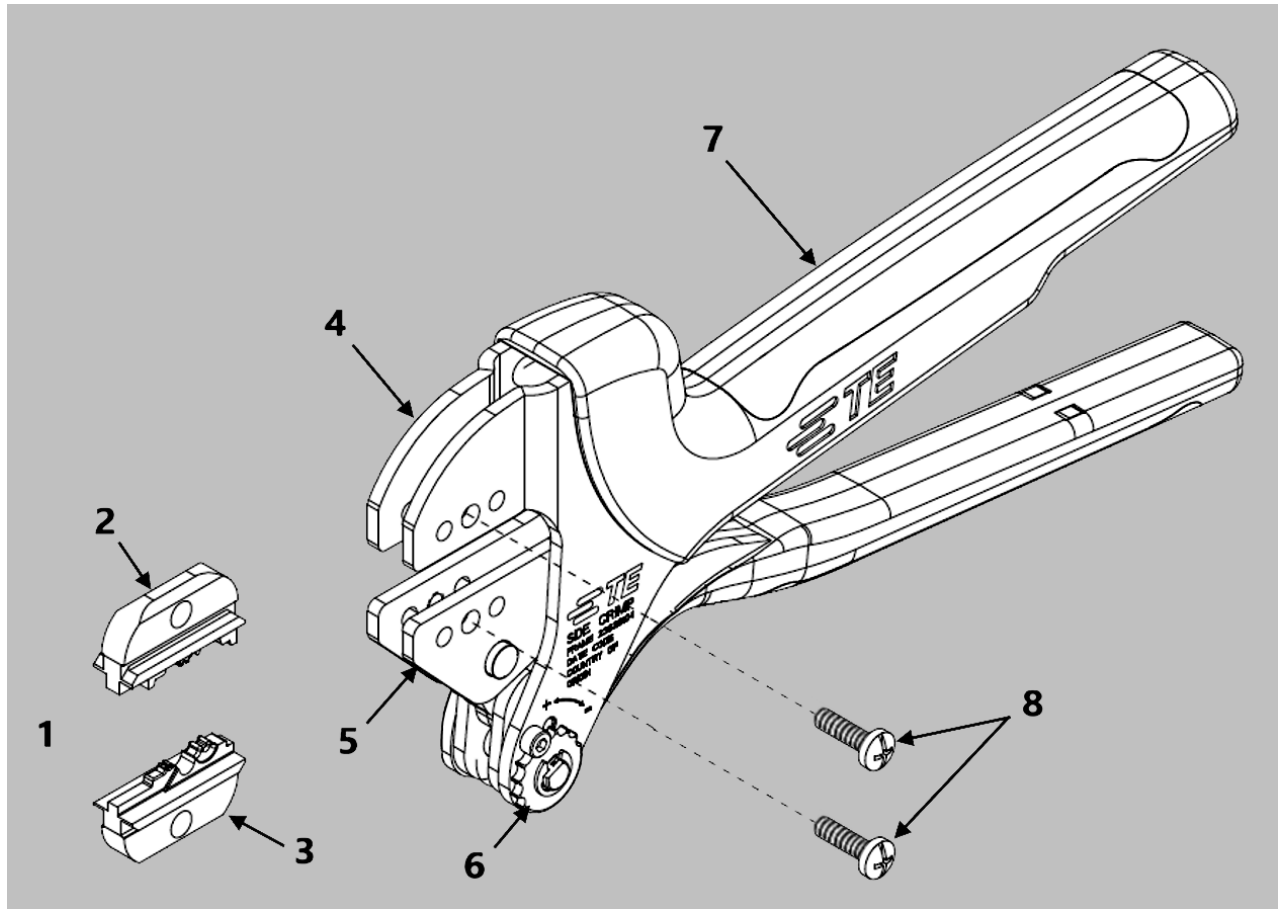


PROPER USE GUIDELINES

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. The SDE-SA hand tool is a commercial-grade tool. Product crimped with this tool meets the wire barrel crimp height requirement for hand tools in the appropriate 114 application specification but might not comply with other feature parameters of the specification.

Figure 1: SDE-SA Commercial Hand Tool Assembly 2373648-1 with Die Assembly 2373648-2



- | | |
|------------------------------------|-----------------------------------|
| 1 Die set 2373648-2 | 5 Moving jaw |
| 2 Wire crimper (upper die) | 6 Ratchet adjustment wheel |
| 3 Wire indenter (lower die) | 7 Handle |
| 4 Stationary jaw | 8 Die-retaining screws (2) |

1. INTRODUCTION

SDE Crimp Commercial Hand Tool Assembly 2373648-1 for SOLISTRAND™ contacts is the tool and die set shown in Figure 1. The tool consists of the SDE Crimp Frame Assembly 2362810-1 (instruction sheet [408-35143](#)) and the die assembly listed in Figure 1. This tool is used to crimp the terminal part numbers listed in Table 1.

Table 1: Crimping specifications

SDE-SA tool	Die assembly only	Product family (SOLISTRAND)	Wire	
			Size AWG	Strip length mm [in.]
2373648-1	2373648-2	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) and butt splice	22-14	
		Terminal parallel splice		7.94-8.73 [.312-.344]



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.

2. DESCRIPTION

The tool frame features two jaws, a handle, and a ratchet adjustment wheel. The die set consists of a crimper (upper die) and an indenter (lower die). The tool frame holds a die assembly with three crimping chambers (see Figure 1). 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. 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. **Do not** re-adjust the ratchet unless you have verified that the crimp height is incorrect (see section 8, ADJUSTING THE RATCHET.).

3. INSTALLING THE DIE SET AND LOCATOR ASSEMBLY

1. Open the tool handles.
2. Remove the two die-retaining screws from the tool jaws (see Figure 1).
3. Insert the wire anvil in the moving jaw of the tool frame with their chamfered sides and the marked surfaces facing outward.
4. Insert the die-retaining screw through the jaw and through the anvil dies. Tighten the screw just enough to hold the dies in place. Do *not* tighten the screw completely.
5. Insert the wire crimper in the stationary jaw of the tool frame with their chamfered sides and the marked surfaces facing outward.
6. Insert the die-retaining screw through the jaw and through the crimper dies. Tighten the screw just enough to hold the dies in place. Do *not* tighten the screw completely.
7. 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 has engaged sufficiently to hold the dies in place.
8. Tighten both die-retaining screws.

4. REMOVING THE DIE SET AND LOCATOR ASSEMBLY

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

**NOTE**

The ratchet release has detents with audible clicks as the handles are closed. The ratchet releases on the sixth click.

5. CRIMPING



NOTE

The tool is provided with a crimp adjustment feature. Initially, the crimp height should be verified as specified in Figure 3. Refer to section 7, *INSPECTING THE CRIMP HEIGHT*, and section 8, *ADJUSTING THE RATCHET*, to verify crimp height before using the tool.

1. Select a wire of the correct size and insulation diameter for the terminal (see Table 1).
2. Strip the wire to the length listed in Table 1. **Do not nick or cut wire strands.**
3. Select an applicable contact and identify the appropriate crimp section according to the wire size markings on the tool.
4. Hold the tool so that the back (wire side) is facing you. (See Figure 2.) Squeeze the tool handles together and allow them to open fully.
5. While holding the contact by the mating end, insert the contact through the front of the tool and into the appropriate crimp section.
6. Orient the brazed seam towards the indenter.
7. Insert the contact so that the wire barrel is centered on the anvil.

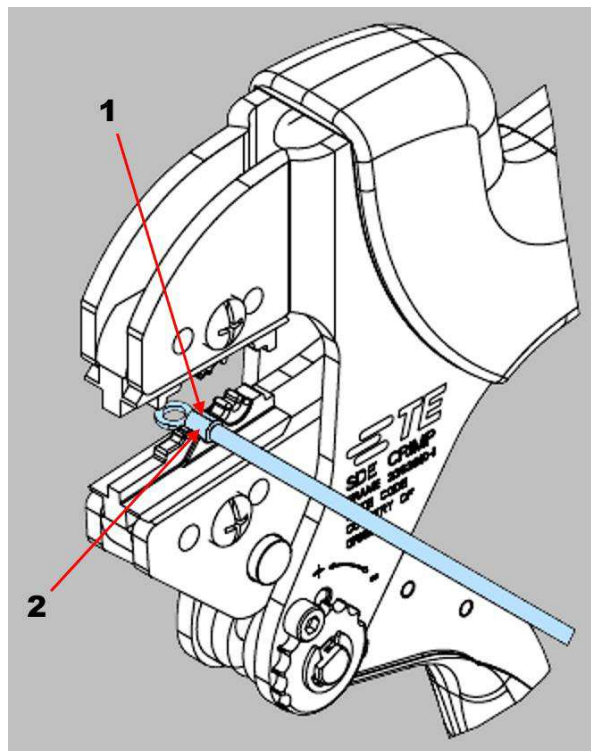


CAUTION

Make sure that both sides of the wire barrel are started evenly into the crimping section. **Do not** attempt to crimp an improperly positioned contact.

8. Close the handles of the tool until the contact is lightly held by the die set, but is not deformed to the point where the wire cannot enter freely.
9. Insert the wire into the crimp barrel of the contact.
10. While holding the wire in place, fully cycle the tool until the ratchet releases and allows the handle to open.

Figure 2: Crimping

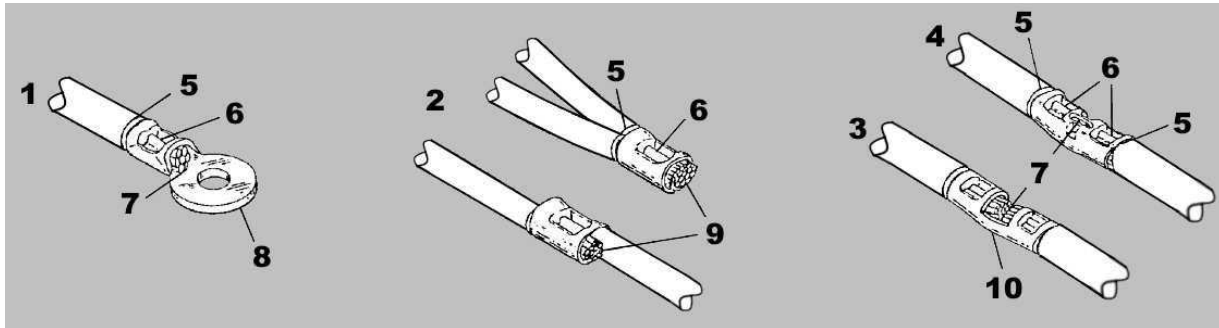


- 1 Brazed seam oriented toward indenter
- 2 Wire barrel centered on anvil of lower die

6. INSPECTING THE CRIMP

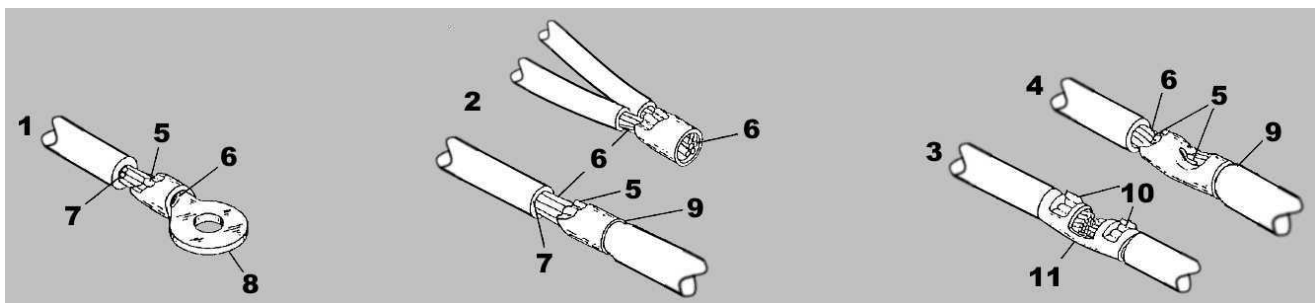
Inspect crimped terminals and splices by checking the features shown in Figure 3. Poor crimps (Figure 4) can be avoided by carefully following the procedures provided in section 5, and by following the tool maintenance procedures provided in section 9.

Figure 3: Features of a good crimp



- 1 Terminal
- 2 Parallel splice
- 3 Butt splice (strap style)
- 4 Butt splice (sight hole or standard 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 range or size stamped on splice.

Figure 4: Features of a poor crimp

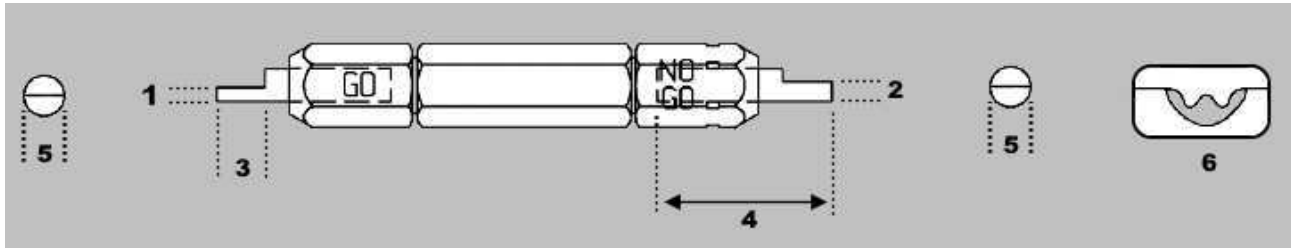


- 1 Terminal
- 2 Parallel splice
- 3 Butt splice (strap style)
- 4 Butt splice (sight hole or standard type)
- 5 Crimped off end of wire barrel
- 6 Wire not inserted far enough. End of wire must be visible through inspection hole, and be flush with (or extend slightly beyond) end of wire barrel.
- 7 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 5 and Table 2. TE Connectivity does not manufacture or market these gages.

Figure 5: 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 |

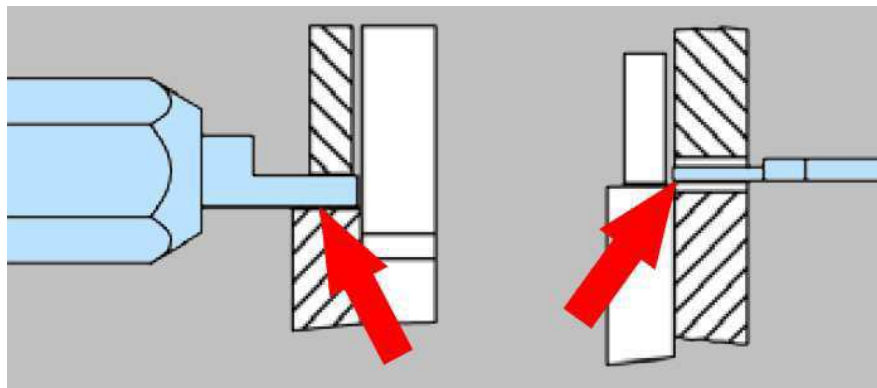
Table 2: Gage element dimensions

Crimping chamber (die marking)	GO element mm [in.]	NO GO element mm [in.]	Radius mm [in.]
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]	2.106-2.108 [.0829-.0830]	2.77 [.109]

To gage the crimping chamber, complete the following steps:

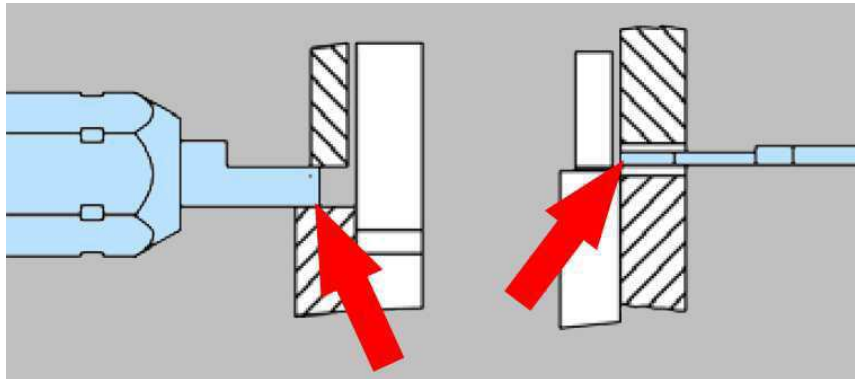
1. Remove traces of oil or dirt from the crimping chamber and plug gages.
2. Close the tool handles until the crimping dies have bottomed. Do **not** force dies beyond initial contact.
3. Align the GO element with the crimping chamber. Gently push the element straight into the crimping chamber. The GO element must pass completely through the crimping chamber (Figure 6).

Figure 6: 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 7).

Figure 7: 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

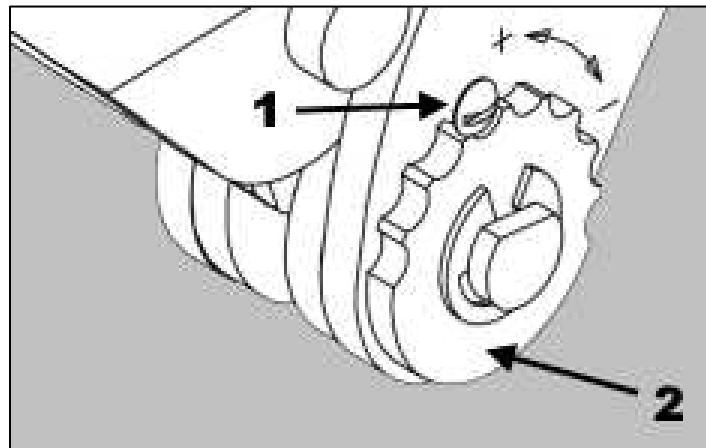
The ratchet is preset prior to shipment, but it is important to verify the crimp height using a micrometer or caliper. Use and wear can cause the tool to go out of adjustment. Inspect the crimp height and adjust the ratchet, if necessary, on a regular basis.

To adjust the ratchet, complete the following steps.

1. Remove the ratchet wheel lock screw (Figure 8).
2. Rotate the adjustment wheel.
 - 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 8: Ratchet adjustment



- 1** Lock screw
2 Ratchet adjustment wheel

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.
- Make sure that the die retaining screws are properly secured.
- 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

If the dies are damaged or worn excessively, they must be replaced. Order replacement dies 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:

Initial release