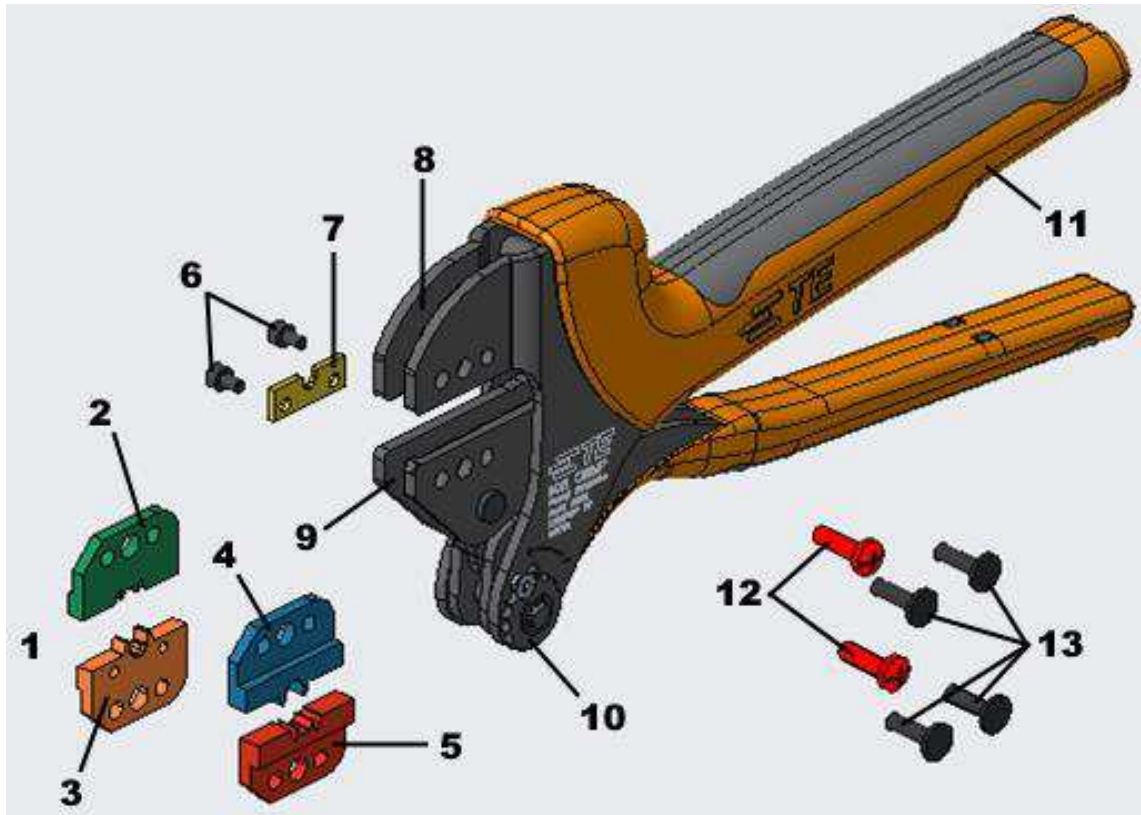


PROPER USE GUIDELINES

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 2389146-1 with Die Assembly 2389146-2



- | | | |
|----------------------------|------------------------------------|------------------------------------|
| 1 Die set 2389146-2 | 6 M3x5.0 socket head screws | 11 Handle |
| 2 Wire hex anvil | 7 Ferrule stop | 12 Die-retaining screws (2) |
| 3 Wire hex crimper | 8 Stationary jaw | 13 Die-retaining pins (4) |
| 4 Braid hex crimper | 9 Moving jaw | |
| 5 Braid hex anvil | 10 Ratchet adjustment wheel | |

1. INTRODUCTION

SDE-SA Commercial Hand Tool Assembly 2389146-1 for the Contact Kit, Ferrule, RTK031 Low Loss HF FAKRA 90, is the tool and die set shown in Figure 1. The tool consists of the SDE Crimp Hand Tool Frame 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

Crimp tooling		Contact kit	Wire type	Strip length mm [in.]	
SDE-SA tool	Die assembly only			Inner conductor	Dielectric
2389146-1	2389146-2	1718080 1719252	Low loss RTK031	Inner conductor	2.8 +0.2/-0.3
				Dielectric	5.3 +0.2/-0.3
				Braid	9.8 +0.2/-0.3



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, 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 one crimping chamber (see Figure 1). Die-retaining pins and 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 rotated 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. **Do not** re-adjust the ratchet unless you have verified that the crimp height is incorrect (see section 7, ADJUSTING THE RATCHET).

3. INSTALLING THE DIE SET

1. Open the tool handles and remove the two die-retaining screws from the tool jaws (Figure 1).
2. Place the wire anvil and insulation anvil so that their chamfered sides and the marked surfaces face outward when mounted in the moving jaw of the tool frame.
3. Insert the two die-retaining pins.
4. Insert one of the short die-retaining screws through the jaw and the anvil dies. Tighten the screw just enough to hold the die in place. Do not tighten the screw completely.
5. Place the wire crimper and insulation crimper so that the chamfered sides and the marked surface face outward when mounted in the stationary jaw of the tool frame.
6. Insert the two die-retaining pins.
7. Insert the other short die-retaining screw through the jaw and the crimper dies. Tighten the screw just enough to hold the die in place. Do not tighten the screw completely.
8. While making sure the anvil and crimper align properly, close the tool handles until the ratchet in the tool frame engages sufficiently to hold the anvil and crimper in place.
9. Tighten both die-retaining screws.
10. Attach the ferrule stop to the wire hex crimper with two M3x5.0 socket head screws.

4. REMOVING THE DIE SET

1. Close the tool handles until the ratchet releases.
2. Remove the two M3x5.0 screws, the two die-retaining screws, and the four die-retaining pins.
3. Slide the anvils and crimpers 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 6, *INSPECTING THE CRIMP HEIGHT*, and section 7, *ADJUSTING THE RATCHET*, to verify crimp height before using the tool to crimp contacts and wire sizes.

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 ferrule and identify the appropriate crimp section according to the wire size markings on the tool.
4. Position the strands of the wire braid.
5. Slip the ferrule over the wire braid until it stubs with the shoulder of the rear shell subassembly or of the front shell subassembly. This is the ferrule's end position (Figure 2).

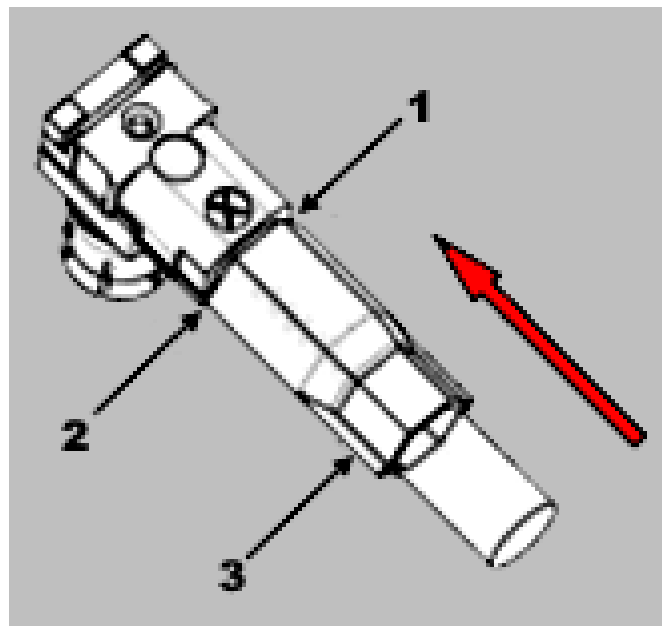


NOTE

Ensure that the strands of the wire braid do not protrude over the knurling. The strands must **not** be visible after positioning the ferrule. This prevents the strands from becoming stuck between the ferrule and the shoulder of the rear or front shell subassemblies.

6. While holding the wire in place, fully cycle the tool until the ratchet releases and allows the handle to open.

Figure 2: Positioning the ferrule



- 1 End position
- 2 No wire strands visible
- 3 Crimped ferrule

6. INSPECTING THE CRIMP HEIGHT

Crimp height inspection is performed using a micrometer with a modified anvil, commonly referred to as a crimp-height comparator. TE Connectivity does not manufacture or market crimp height comparators. Detailed information on obtaining and using crimp-height comparators can be found in instruction sheet [408-7424](#).

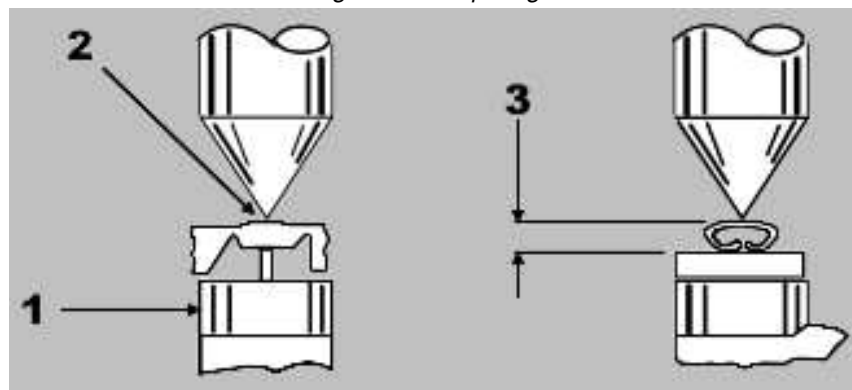
1. Refer to Table 1 and select a wire (maximum size) for each crimp section listed.
2. Refer to section 5, CRIMPING, and crimp the contacts accordingly.
3. Using a crimp height comparator, measure the wire barrel crimp height listed in Table 2.
 - If the crimp height conforms to that shown in the table, the tool is considered dimensionally correct.
 - If not, adjust the tool. Refer to section 7, ADJUSTING THE RATCHET.



CAUTION

Do not use damaged product. If a damaged contact is evident, replace it. Do not re-terminate contacts.

Figure 3: Crimp height



- 1 Modified anvil
- 2 Position point on center of wire barrel opposite seam
- 3 Crimp height (see Table 2)

Table 2: Crimp height specifications

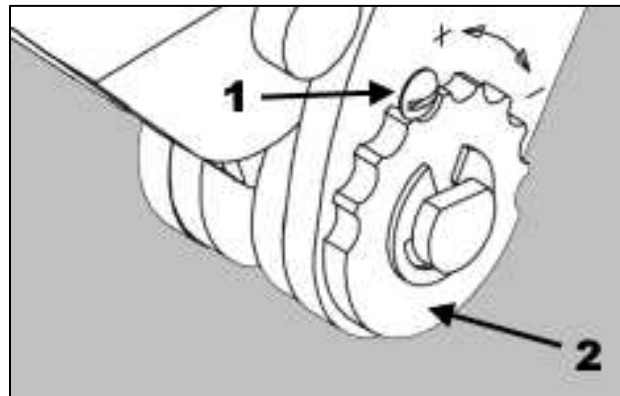
Die assembly	Wire type	Crimp height mm [in.]	
		2389146-2	Low loss RTK031
		Braid	4.52±0.05 [.178±.002]

7. 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. Refer to Figure 4 and adjust as follows:

- If the crimp height is larger than recommended, remove the ratchet wheel adjustment screw and rotate the adjustment wheel counterclockwise (+) to a higher setting. Reinstall the screw. Repeat as required.
- If the crimp height is smaller than recommended, remove the ratchet wheel adjustment screw and rotate the adjustment wheel clockwise (-) to a lower setting. Reinstall the screw. 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 9, REPLACEMENT AND REPAIR.

Figure 4: Ratchet adjustment



- 1 Adjustment screw
- 2 Ratchet adjustment wheel

8. MAINTENANCE AND INSPECTION

8.1. 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. Store the tool in a clean, dry area.
- Remove all lubrication and accumulated film by immersing the dies in a suitable commercial degreaser.

8.2. 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 dies. Refer to section 9, REPLACEMENT AND REPAIR.

9. 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.

10. REVISION SUMMARY

Revisions to this instruction sheet include:

Initial release