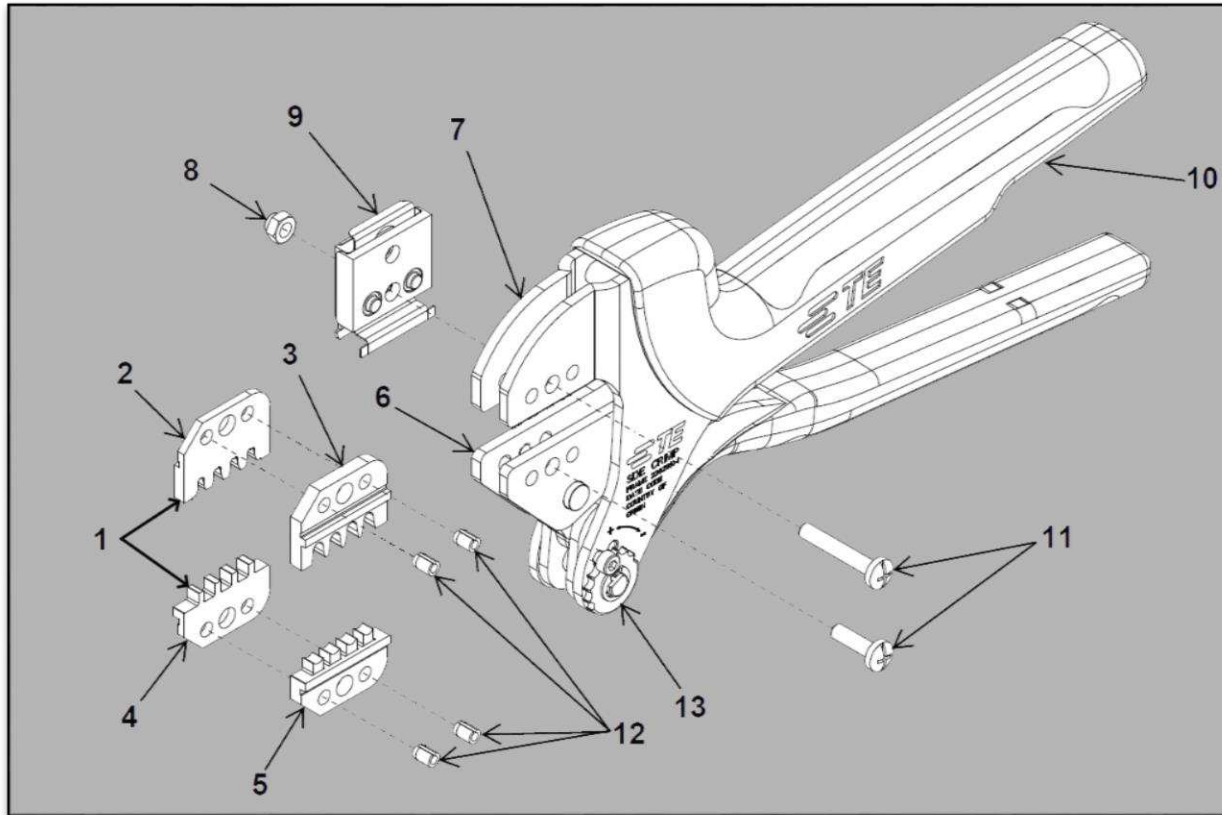


PROPER USE GUIDELINES

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 Crimp 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 Crimp Commercial Hand Tool Assembly 2031991-1 with Die Assembly 2031991-2



- | | | |
|---|---------------------------|------------------------------------|
| 1 Die set 2031991-2 | 6 Stationary jaw | 11 Die-retaining screws (2) |
| 2 Wire crimper (upper die) | 7 Moving jaw | 12 spring pins (4) |
| 3 Insulation crimper (upper die) | 8 Nut | 13 Ratchet adjustment wheel |
| 4 Wire anvil (lower die) | 9 Locator assembly | |
| 5 Insulation anvil (lower die) | 10 Handle | |

1. INTRODUCTION

SDE Crimp Commercial Hand Tool Assembly 2031991-1 for the JUNIOR POWER TIMER 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

Crimp tooling		Terminal P/N	Cable		Wire insulation mm	
SDE Crimp tool	Die assembly only		Wire size mm ²	Number of conductors	Diameter	Strip length
2031991-1	2031991-2	929929 929938 927766 963979 929937	1.5-2.5	1	2.2-30	5.2±0.3
		929930 929940 927770 963978 929939	0.5-1.0		1.4-2.1	4.7±0.3
		929931 929942 927772 963977 929941	0.2-0.5		1.2-1.6	4.2±0.3
		927776 927774 963972			1.0-1.6	3.5±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, and a ratchet adjustment wheel. The die set consists of a crimper (upper die) and an anvil (lower die). The tool frame holds a die assembly with four crimping chambers (see Figure 1). Die-retaining spring pins and 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 and insulation anvils in the moving jaw of the tool frame with their chamfered sides and the marked surfaces facing outward.
4. Insert two die-retaining spring pins.
5. Insert the short 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.
6. Insert the wire and insulation crimpers in the stationary jaw of the tool frame with their chamfered sides and the marked surfaces facing outward.
7. Insert the other two die-retaining spring pins.
8. Insert the long 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.
9. 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.
10. Tighten both die-retaining screws.
11. Place the locator assembly over the end of the long screw and position the locator assembly against the side of the tool jaw.
12. Place the nut onto the end of the long screw and tighten the nut enough to hold the locator assembly in place.

4. REMOVING THE DIE SET AND LOCATOR ASSEMBLY

1. Close the tool handles until the ratchet releases.
2. Remove the nut, the locator assembly, the two die-retaining screws, and the four die-retaining spring pins.
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 4. 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. Position the contact so that the U of the wire barrel faces the top of the tool.
7. Insert the contact up into the nest so that the wire barrel is against the spring-loaded locator.

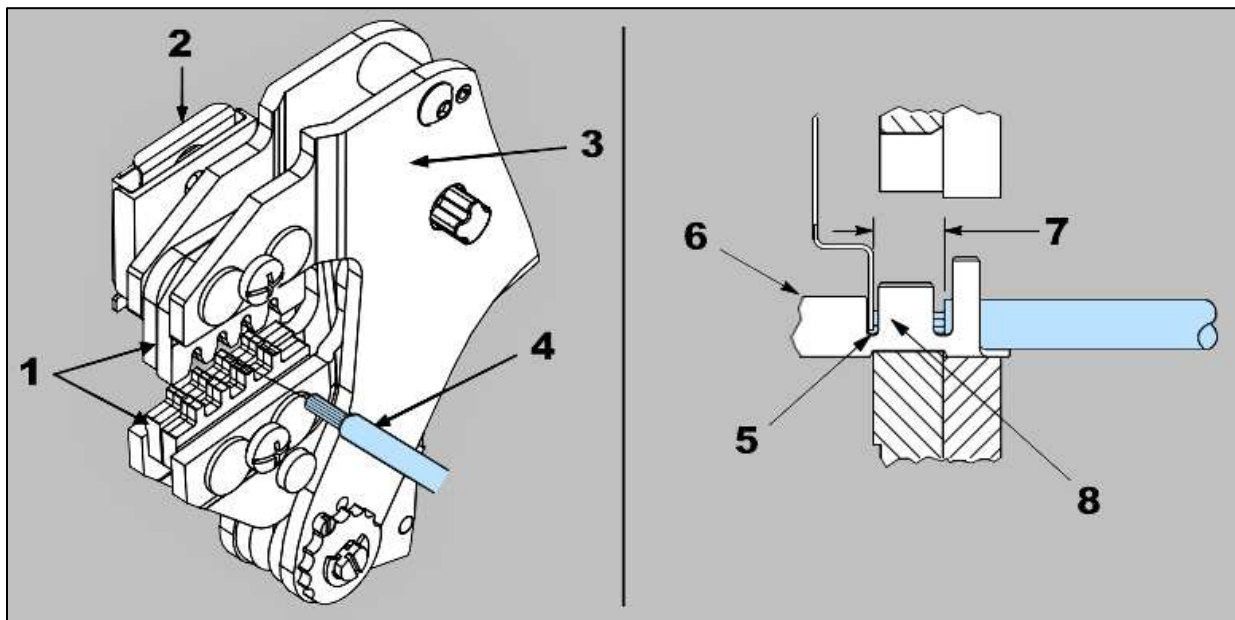


CAUTION

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 until it butts against the spring-loaded locator.
10. While holding the wire in place, fully cycle the tool until the ratchet releases and allows the handle to open.

Figure 2: Crimping



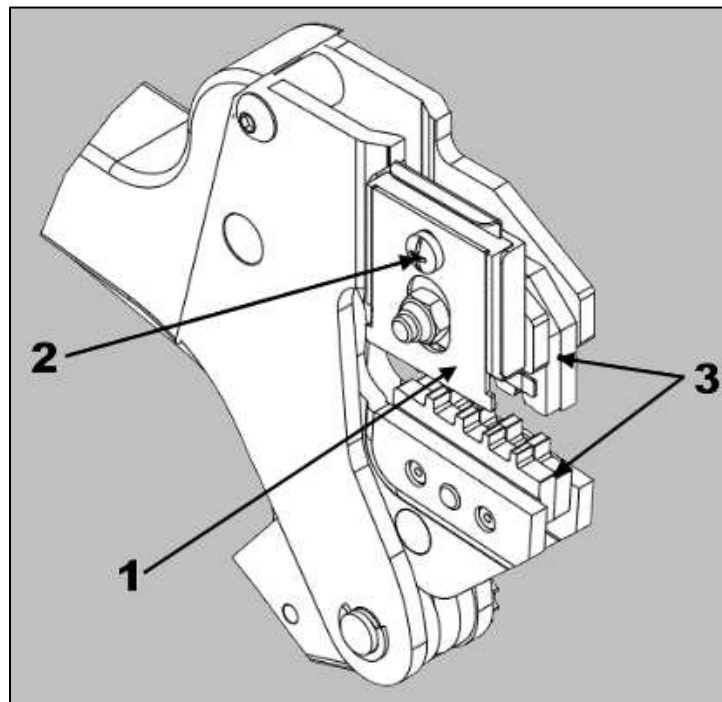
- | | |
|-------------------------------------|-----------------------------|
| 1 Die assembly (for reference only) | 5 Locator in wire stop slot |
| 2 Locator | 6 Contact (typical) |
| 3 Back of tool (wire side) | 7 Strip length |
| 4 Wire | 8 Wire inserted to stop |

6. ADJUSTING THE CONTACT SUPPORT

The contact support is preset prior to shipment, but minor adjustments might be necessary. Refer to Figure 3 and proceed as follows:

1. Make a sample crimp and determine whether the contact is straight, bending upward, or bending downward.
2. If adjustment is required, loosen the screw that holds the contact support onto the locator assembly.
3. Insert a contact with wire into the proper nest and close the handles until the ratchet reaches the sixth click, or until the contact support touches the contact.
4. Move the contact support as required to eliminate the bending of the contact.
5. Tighten the screw and close the handles until the ratchet releases.
6. Remove and inspect the contact.
7. Make another sample crimp. If the contact is still bent during crimping, repeat the adjustment procedure.

Figure 3: Contact support adjustment



- 1** Contact support
- 2** Contact support screw
- 3** Die assembly (for reference only)

7. 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](#).

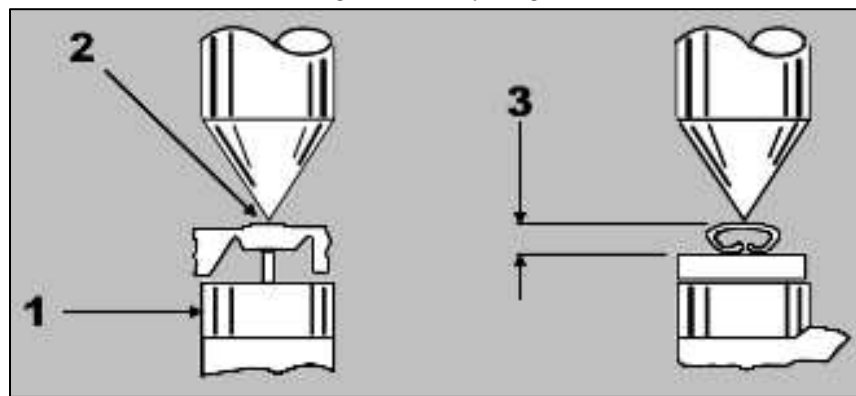
1. Refer to Table 1 and select a wire (maximum size) for each crimp section listed.
2. Refer to section 5, CRIMPING, and crimp the contacts accordingly.
3. Using a crimp height comparator, measure the wire barrel crimp height listed in Table 2.
 - If the crimp height conforms to that shown in the table, the tool is considered dimensionally correct.
 - If not, adjust the tool. Refer to section 8, ADJUSTING THE RATCHET.



CAUTION

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

Figure 4: 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 size max mm ²	Crimp section (wire size markings)	Crimp height mm
2031991-2	2.5	1.50-2.50	1.56±0.05
	1.0	0.50-1.00	1.23±0.05
	0.5	0.20-0.50	1.03±0.05
	0.5	0.20-0.50	1.03±0.05

8. ADJUSTING THE RATCHET

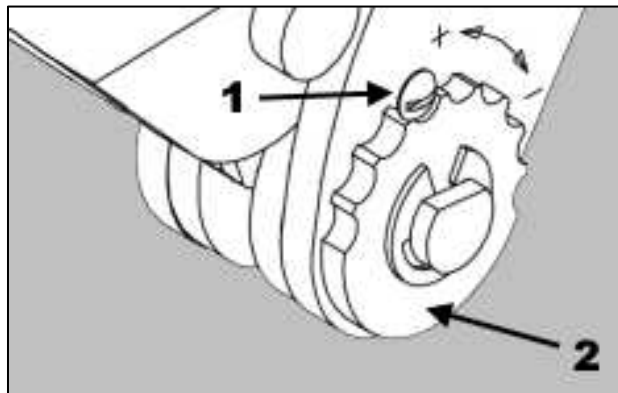
The ratchet is preset prior to shipment, but it is important to verify the crimp height using a micrometer or caliper. Use and wear can cause the tool to go out of adjustment. Inspect the crimp height and adjust the ratchet, if necessary, on a regular basis.

To adjust the ratchet, complete the following steps.

1. Remove the ratchet wheel lock screw (Figure 5).
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 5: 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

Customer-replaceable parts are listed in the product drawing. For part number Stock and control a complete inventory to prevent lost time when replacement of parts is necessary. Parts other than those listed should be replaced by TE Connectivity to ensure quality and reliability. Order replacement dies through your TE representative or go to TE.com and click the **Shop TE Store** link at the top of the page.

For field service, go to the [Service and Repair](#) page on the TE website, or send an e-mail to the address for your region in Table 3.

Figure 6: Service and repair.



Table 3: Field service e-mail addresses

Region	Address
Asia	Tefe1ap@te.com
EMEA (including India)	Tefe1@te.com
North America	Fieldservicesnorthamerica@te.com
South America	FSE@te.com

11. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated Tool name and Figure 1 part details.