



# Operation Manual

Hand tool for AMP DUOPLUG 2.5™

549033-1

Customer Manual Nr.: 411-18031-1 \_Rev. C

Customer Manual PN: 4-744015-6

Language: en (Translation of the original German version)

- The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging
- © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of **TE Connectivity Ltd.**  
It may not be reproduced or given to third parties without its consent.
- The cover page shows a sample configuration. The delivered product may thus differ from the figure.
- The original operation manual is written in German.

---

1	General information .....	3
1.1	Copyrights, industrial property rights.....	3
2	Using the operation manual.....	4
2.1	Abbreviations used.....	4
3	General safety instructions .....	5
3.1	Intended use.....	5
3.2	Improper use .....	5
3.3	Reasonably foreseeable misuse .....	5
3.4	Qualification of personnel.....	6
3.5	Safety instructions in this document.....	6
3.6	Adhere to the following instructions .....	7
3.6.1	General instructions .....	7
3.6.2	During operation .....	7
3.6.3	During disposal .....	7
3.7	Obligations of the operator.....	7
4	Scope of delivery .....	8
5	Product description.....	9
5.1	Identification of product .....	9
5.2	Handled connectors .....	9
6	Making a connection.....	10
6.1	Insertion of wires .....	10
6.2	Fitting the lid .....	13
7	Maintenance and Repair .....	15
7.1	Daily Maintenance.....	15
7.2	Periodically Maintenance .....	15
7.3	Wear and tear parts .....	15
8	Disposal.....	16
9	Appendix .....	17
9.1	Contact information .....	17

# 1 General information

## 1.1 Copyrights, industrial property rights

- © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of **TE Connectivity Ltd.**  
It may not be reproduced or given to third parties without its consent.
- This manual is exclusively meant for the carrier of the „Hand tool for AMP DUOPLUG 2.5™“ (in further course called “Hand tool”) and its personnel for internal use only.
- The additional device-specific manual includes descriptions, engineering drawings, instructions and references, that you may not copy, reproduce or distribute without written consent neither completely nor in parts.
- If the competition try for discover and inspect this manual, we do expect the same fairness, that you may expect from your customers in that case.

**All rights, including rights created by patent grant or registration of a utility model or design, are reserved.**

**Subject to change without notice. Errors and omissions excepted.**

## 2 Using the operation manual

- These instructions contain important information on the safe and appropriate operation and simple troubleshooting of the hand tool.
- Read these instructions completely, especially section 3 „General safety instructions”, before working with the Hand tool.
- TE Connectivity Ltd. decline to accept any liability for damages that are incurred due to the fact that the instructions in the operation manual have been disregarded.
- The user is responsible for supplementing the operation manual with any instructions resulting from current national regulations for accident prevention and protection of the environment.
- Also observe the generally applicable, legal or otherwise binding regulations of the European or national legislation and the rules for the prevention of accidents and for environmental protection applicable in your country.

### 2.1 Abbreviations used

Abbreviation	Meaning
PN	Part-No.
RoHS	Restriction of (the use of certain) hazardous substances

## 3 General safety instructions

The DUOPLUG Hand tool has been manufactured according to the accepted rules of current technology. There is, however, still a risk of personal injury or damage to equipment if the following general safety instructions and the warnings before the steps contained in these instructions are not complied with.

- ▶ Read these instructions completely and thoroughly before working with the hand tool.
- ▶ Keep these instructions in a location where they are accessible to all users at all times.
- ▶ Always include the operating instructions when you pass the hand tool to third parties.

### RoHS Information

Information on the presence and location of any substances subject to RoHS (Restriction on Hazardous Substances) can be found at the following website:

- <http://www.tycoelectronics.com/customersupport/rohssupportcenter/>
- Click on “Find Compliance Status” and enter equipment part number.

### 3.1 Intended use

The „Hand tool for AMP DUOPLUG 2.5™“ has been designed to apply connectors according to the AMP specification 114-18049 (section 5.2 „Handled connectors“) with wires following the grid connection plug technology using Insulation Displacement Technique.

It is only permitted to use the 114-18049 exclusively for repair proposes or preparation of samples. Do not use it for serial production.

- ▶ The hand tool is not a product in terms of the EU-Machinery Directive 2006/42/EG.
- ▶ Intended use includes having read and understood these instructions, especially section 3 “General safety instructions”.

### Application Notes:

- ▶ Cumulative Trauma Disorders can result from a prolonged use of manually powered hand tools. **TE Connectivity Ltd.** hand tools are intended for occasional use and low volume applications. For extended use or production operations **TE Connectivity Ltd.** offers a wide selection of powered application equipment.

### 3.2 Improper use

Any use of the Hand tool other than described in section 3.1 “Intended use” is considered as improper.

### 3.3 Reasonably foreseeable misuse

Any attempt to use this hand tool with other than the specified connectors, described in section 5.2 “Handled connectors” is considered as a reasonable foreseeable misuse.

Moreover, the hand tool may used exclusively within the limits of its intended use (section 3.1 “Intended use”).

### 3.4 Qualification of personnel

In order to ensure operating safety, these activities may therefore only be carried out by qualified technical personnel or an instructed person under the direction and supervision of qualified personnel. Qualified personnel are those who can recognize possible hazards and institute the appropriate safety measures due to their professional training, knowledge, and experience, as well as their understanding of the relevant conditions pertaining to the work to be done. Qualified personnel must observe the rules relevant to the subject area.

### 3.5 Safety instructions in this document



#### Type of risk!

Consequences  
Precautions

**Safety sign (warning triangle):** Draws attention to the hazard

**Signal word:** Identifies the degree of hazard

**Type of danger:** Identifies the type or source of the hazard

**Consequences:** Describes the consequences of non-compliance

**Precautions:** States how the hazard can be prevented

The signal words have the following meaning:

Signal word	Application
<p>DANGER!</p>	Indicates an <b>imminently</b> hazardous situation which, if not avoided, will certainly result in serious injury or even death.
<p>WARNING!</p>	Indicates a <b>potentially</b> hazardous situation, which, if not avoided, could result in serious injury or even death.
<p>CAUTION!</p>	Indicates a <b>potentially hazardous</b> situation which, if not avoided, could result in minor or moderate injury or damage to equipment.
	If this information is disregarded, it may result in machine malfunction or breakdown.

## 3.6 Adhere to the following instructions

### 3.6.1 General instructions

- ▶ Observe the regulations for accident prevention and environmental protection for the country where the product is used and at the workplace.
- ▶ Exclusively use the hand tool in good technical order and condition.
- ▶ Check the hand tool for visible defects.
- ▶ You must generally not modify or retrofit the product.
- ▶ Only use the product appropriate to the intended use described in this manual.
- ▶ Person who assemble, operate, disassemble or maintain the machine must not consume any alcohol, drugs or pharmaceuticals that may affect their ability to respond.
- ▶ Before putting the hand tool into operation, it is always important to check whether all devices are at hand and functioning correctly.
- ▶ The warranty only applies to the delivered configuration. The warranty will not apply if the product is incorrectly assembled, not used as intended and/or handled improperly.
- ▶ If the hand tool is apparently damaged or do not work proper, you must send it in for repairs (section 9.1 „Contact information“).

### 3.6.2 During operation

- ▶ Only persons who have been authorized by the operator may be granted access to the direct operating range.

### 3.6.3 During disposal

- ▶ For environmentally friendly disposal please observe the notes in section 8 "Disposal".

## 3.7 Obligations of the operator

The operator of the **TE Connectivity Ltd.** products is bound to provide for personnel training on a regular basis regarding the following subjects:

- ▶ Observation and use of the operating instructions and the legal regulations
- ▶ Intended use and operation of the hand tool.



## 4 Scope of delivery

The scope of delivery includes following parts:

- 1 Hand tool for AMP DUOPLUG 2.5™
- 1 operating manual

## 5 Product description

The hand tool has been designed to apply connectors according to the TE specification 114-18049 with wires using Insulation Displacement Technique. It is only permitted to use the „ Hand tool for AMP DUOPLUG 2.5™ “ only for repair proposes or preparation of samples. Do not use it for serial production.

### 5.1 Identification of product

For clearly identification of product the hand tool is marked with the Part number (arrow).

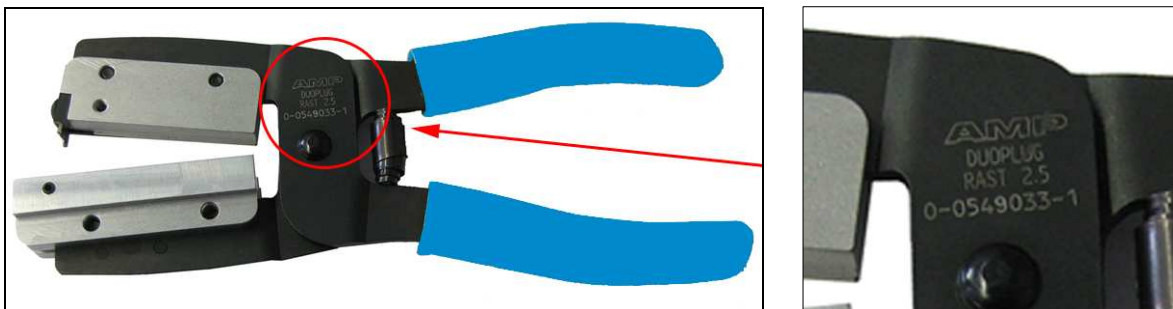


Fig. 1: Identification of product

### 5.2 Handled connectors

Following connectors according to the TE specification 114-18049 are used:

Connector	Wire specification
PN X-829868-X PN X-829869-X	DGB I solid wire $\varnothing 0.4$ mm and $\varnothing 0.5$ mm bonded wire $7 \times \varnothing 0.15 = 0.12$ mm <sup>2</sup> bonded wire $7 \times \varnothing 0.16 = 0.14$ mm <sup>2</sup> stranded wire $7 \times \varnothing 0.20 = 0.22$ mm <sup>2</sup> stranded wire $12 \times \varnothing 0.21$ mm = $0.35$ mm <sup>2</sup>
PN X-966194-X PN X-966195-X	DGB II stranded wire $7 \times \varnothing 0.25$ mm = $0.35$ mm <sup>2</sup>

## 6 Making a connection

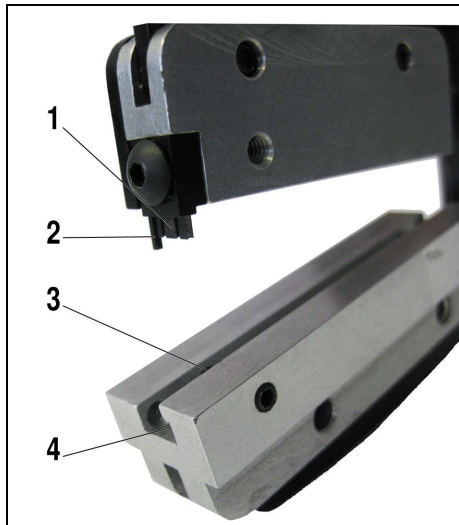


Fig. 2: Construction

- |           |                                |
|-----------|--------------------------------|
| 1 Stop    | 3 Spring stuffers (both-sided) |
| 2 Stuffer | 4 Guide groove                 |

### 6.1 Insertion of wires

- ▶ Push the connector housing into the guide groove (4) until the stuffer (2) is positioned above the first chamber (Fig. 3 item 5) which is to be terminated. The housing will arrest in each position.

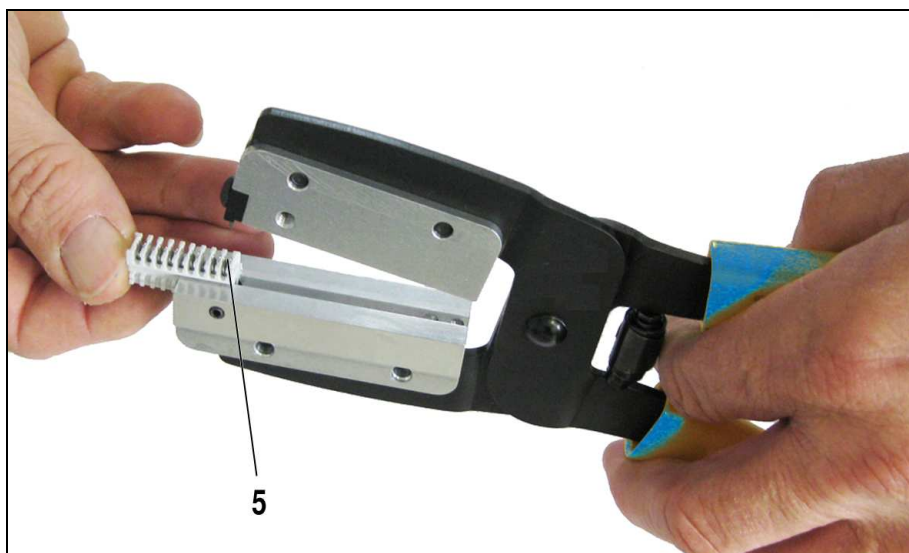


Fig. 3: Insertion of connector housing

- ▶ Push the individual wire completely against the stop (Fig. 4).



With “DAISY CHAIN” terminations the stop will move back on contact.



Fig. 4: Insertion of wire

- ▶ Close the gripper completely.

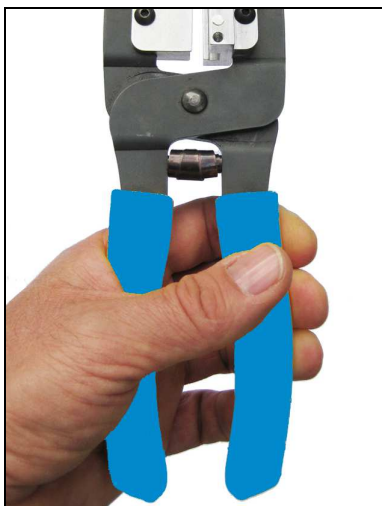


Fig. 5: Closing the gripper

- ▶ Then open the gripper.



Fig. 6: Opening the gripper

- ▶ Push the connector housing further until the stuffer is positioned above the next chamber to be terminated.
- ▶ Repeat the described procedure until the connector is terminated completely.



Do not tension the wires due to damaging the contacting!

- ▶

## 6.2 Fitting the lid

- ▶ Push the connector housing into the last possible arrest position (towards the pivot point of the gripper).
- ▶ Place the lid on the housing (Fig. 7). Make sure that the lid is correctly aligned.

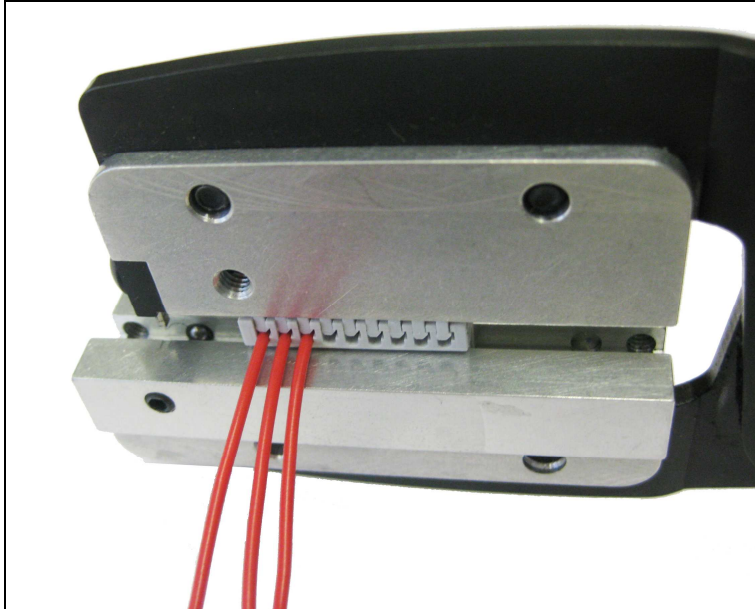


Fig. 7: Fitting the lid

- ▶ Close the gripper completely.

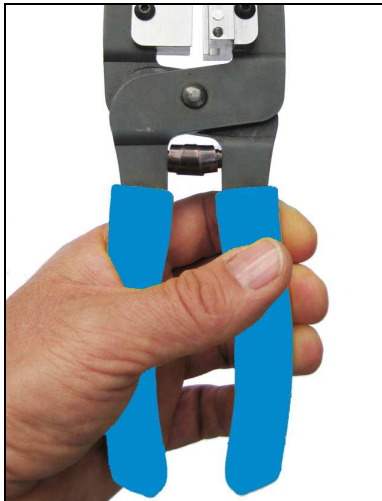
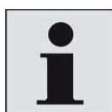


Fig. 8: Closing the gripper



The lid must visibly engage into the housing!

- ▶ The open the gripper.



Fig. 9: Opening the gripper

- ▶ Pull the connector forwards out of the guide.



Do not tension the wires due to damaging the contacting!

## 7 Maintenance and Repair

### 7.1 Daily Maintenance

For the daily maintenance following steps has to be taken by the responsible operator:

- Clean up the tool from dust, humidity and other residues by means of a clean, soft scrubber or a lint-free cloth.  
Never use rigorous or abrasive mediums to avoid damaging the tool.
- All pins, pivot points and bearing surfaces must be provided with a high-quality SAE20 motor oil.  
Avoid excessive lubrication.
- If the hand tool is no longer required, pinching the gripper and store the hand tool dry and clean.

### 7.2 Periodically Maintenance

- Depending on the degree of utilization an inspection of the Hand tool for AMP DUOPLUG 2.5™ should be done by an appropriate qualified personnel.
- Pinching the gripper until the mechanism of the lever brace released resp. opened and let the gripper opened.  
Do not loose the gripper too fast and completely to avoid damaging the tool head's springs.
- Check the hand tool on abrasions and damaging, in particularly in the field of the crimper and all pivot points.

### 7.3 Wear and tear parts

- All wear and tear parts can be replaced easily
  - Stuffer PN 0-0578699-1
  - Stop PN 0-0578702-1
  - Spring (Stop) PN 0-0578705-1



## 8 Disposal

Careless disposal of the applicator lead to pollution of the environment.  
In case of disposal, please send the hand tool back to the address specified in section 9.1 "Contact information".

## 9 Appendix

### 9.1 Contact information

**TE Connectivity**  
**c/o Schenck Technologie- und Industriepark GmbH**  
Landwehrstr. 55 / Gebäude 83  
64293 Darmstadt  
Field Service EMEA@te.com  
GATD Kundendienst-Hotline: +49-6151-607-1518