



Operation Manual

Nano-MQS Hand Tool 0,13-0,35 mm²

Customer Manual Nr.: 411-18538-1 Rev. A
Customer Manual PN: 5-744015-0
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

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- 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.....	6
3.3	Reasonably foreseeable misuse	6
3.4	Safety instructions in this document.....	6
3.4.1	General instructions	6
3.4.2	During operation	7
3.4.3	During disposal	7
3.5	Obligations of the operator.....	7
4	Scope of delivery	8
5	Description of processed contacts.....	9
6	Hand tool description.....	10
7	Crimping procedure	11
8	Maintenance and Repair.....	14
8.1	Daily Maintenance.....	14
8.2	Periodically Maintenance.....	14
9	Disposal.....	15
10	Appendix	16
10.1	Contact information	16

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.**
This manual is exclusively meant for the carrier of the „Nano-MQS Hand Tool 0,13-0,35 mm²“
TE PN 4-1579014-0 (in further course called “hand tool”)
- 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 tries to 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.** declines 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
MQS	Micro Quadlock System
PN	Part Number
RoHS	Restriction of (the use of certain) hazardous substances; Beschränkung (der Verwendung bestimmter) gefährlicher Stoffe

3 General safety instructions

The 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 has been designed to apply Nano-MQS contacts according to TE application specification 114-18858, section 5.

It is permitted to use the hand tool exclusively for repair purposes 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”.

Note related to the use:

- ▶ 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 the hand tool with other than the specified contacts, described in section 3.1 “Intended use”, is considered as a reasonable foreseeable misuse.

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

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.

3.4 Safety instructions in this document

3.4.1 General instructions

- ▶ Observe the regulations for accident prevention and environmental protection for the country where the hand tool is used and at the workplace.
- ▶ Use the hand tool exclusively in good technical order and condition.
- ▶ Check the hand tool for visible defects, for example missing parts in set case or broken parts.
- ▶ You must generally not modify or retrofit the hand tool.
- ▶ Only use the hand tool appropriate to the intended use described in this manual.
- ▶ Individuals who assemble, operate, disassemble or maintain the hand tool 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.
- ▶ If the hand tool is apparently damaged or do not work proper, you must send it in for repair.
- ▶ The warranty only applies to the delivered configuration. The warranty will not apply if the hand tool is incorrectly assembled, not used as intended and/or handled improperly.

3.4.2 During operation

- ▶ Only persons who have been authorized by the operator may be granted access to the direct use of the hand tool.

3.4.3 During disposal

- ▶ For environmentally friendly disposal please observe the notes in section 9.

3.5 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 the following:

- 1 hand tool TE PN 4-1579014-0 with
- 1 operation manual nr. 411-18538-1 (english)

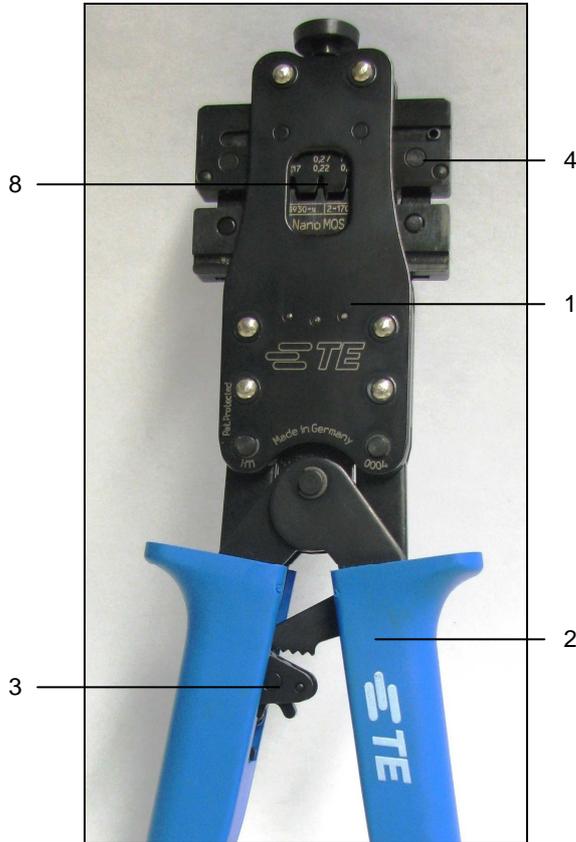
5 Description of processed contacts

Following Nano-MQS contacts can be applied with the hand tool:

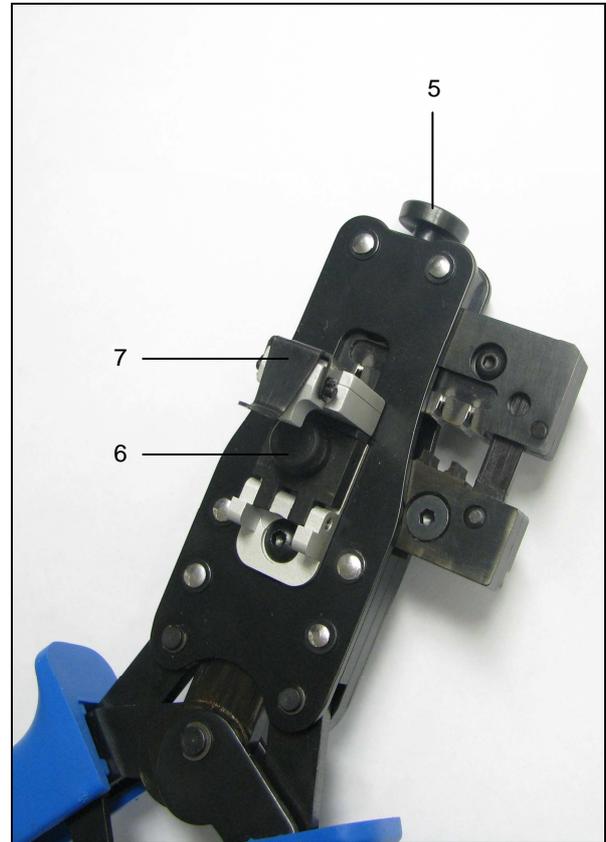
	Contact	Contact PN	TE - Application Specification
0.13 – 0.22 mm ²	Nano-MQS	1-1703930-1	114-18858
	Nano-MQS	1-1703930-2	114-18858
0.35 mm ²	Nano-MQS	2-1703930-1	114-18858
	Nano-MQS	2-1703930-2	114-18858

6 Hand tool description

The hand tool consists basically of a crimping head, two movable handles, an emergency ratchet-release mechanism, a slidable crimping die set, a lock bolt, a pivoted contact locator and a pivoted wire stop. The slidable crimping die set includes five respectively marked crimping nests, which cover the entire wire range of the applied contacts.



Picture 1: Hand tool components



Picture 2: Hand tool components

- | | |
|---------------------------------------|---------------------------|
| 1 Crimping head | 5 Lock bolt |
| 2 Handles | 6 Pivoted contact locator |
| 3 Emergency ratchet-release mechanism | 7 Pivoted wire stop |
| 4 Slidable crimping die set | 8 Crimping nest |

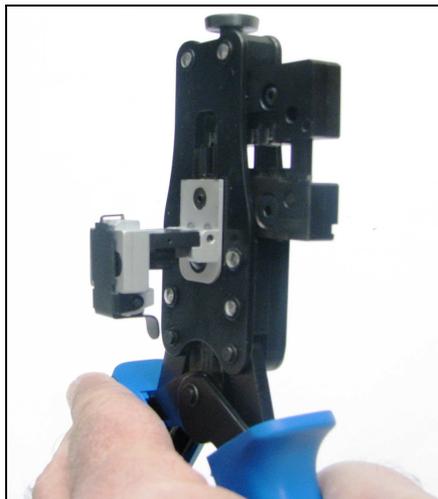
7 Crimping procedure

Decide in consideration of the wire cross section and corresponding application specification the appropriate crimping nest for the contact which will be processed. In order to crimp the contact proceed as follows:

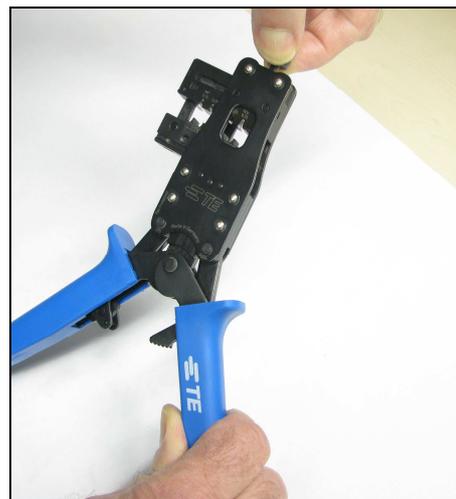
- ▶ Squeeze the handles together until the emergency ratchet-release mechanism releases and allow them to open fully.

Note: The emergency ratchet-release mechanism of the hand tool has detents that are audible as “clicks” as the handles will be closed. The emergency ratchet-release mechanism releases on the last click.

- ▶ Swing out the contact locator.
- ▶ Pull the lock bolt, move the slidable crimping die set and position the relevant crimping nest on the middle of the window of the crimping head. Loosen the lock bolt and retain so the crimping die set.

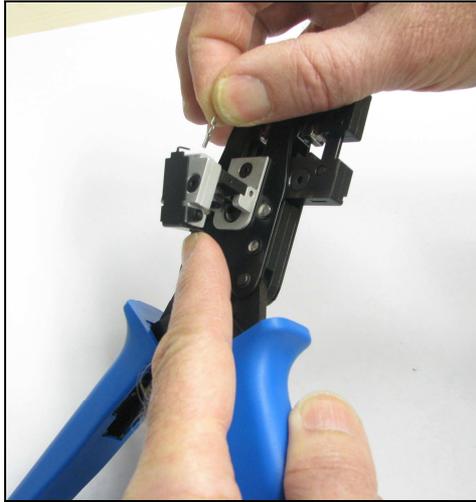


Picture 3: Swinging out the contact locator

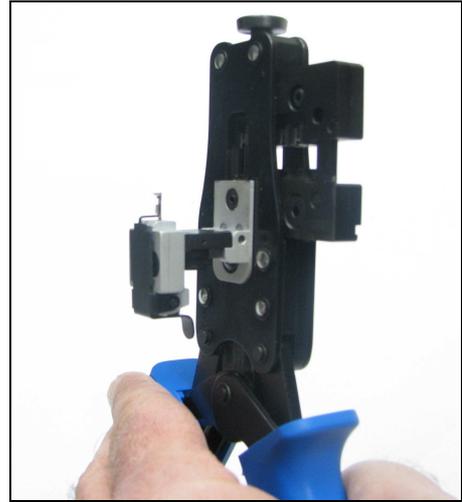


Picture 4: Moving and retaining the crimping die set

- ▶ Push the wire stop and insert the contact into the contact locator taking care to slide the contact up to stop.
- ▶ Loose the wire stop retaining the contact in position.

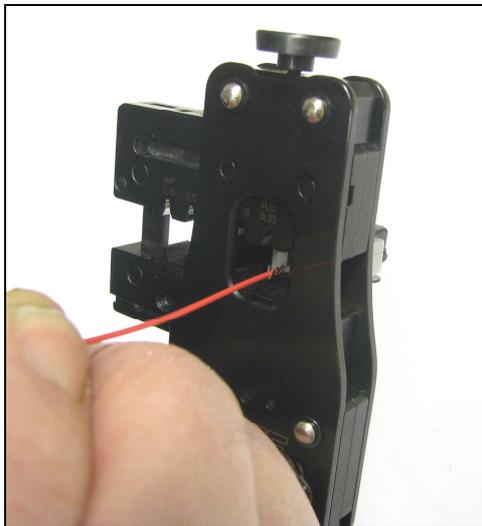


Picture 5: Inserting the contact up to stop into the contact locator

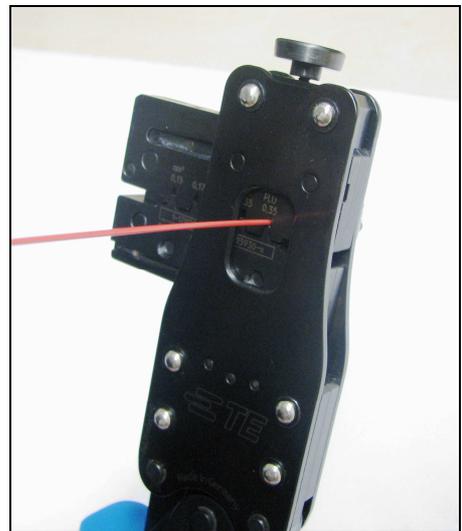


Picture 6: Retaining the contact in position

- ▶ Swing back the contact locator.
- ▶ Insert the stripped wire according application specification into the contact crimp sleeve up to wire stop.

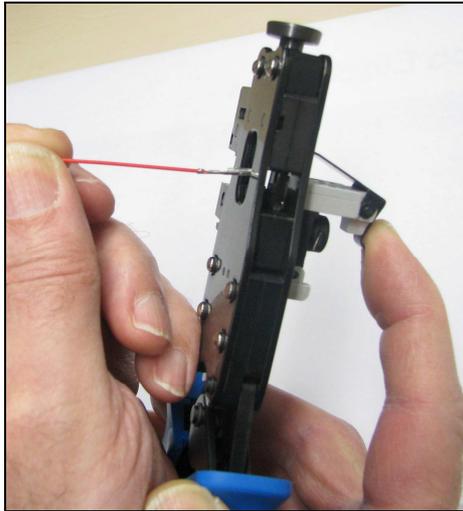


Picture 7: Inserting stripped wire in to the crimp sleeve of contact up to wire stop

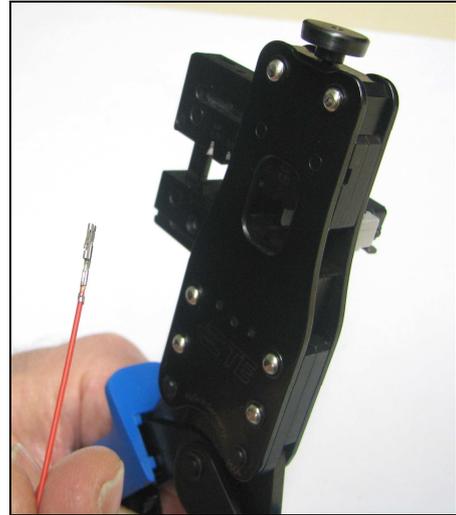


Picture 8: Squeeze handles and crimp

- ▶ Hold the wire against wire stop and squeeze the handles until the emergency ratchet-release mechanism releases. Allow the handles to open fully.
- ▶ Push the wire stop and remove the crimped contact from the crimping die set.
- ▶ Check the crimp height of the crimped contact. For this exclusively refer to the data in the application specification 114-18858 from TE Connectivity.



Picture 9: Removing contact from crimping die set



Picture 10: Checking the crimped contact

8 8 Maintenance and Repair

8.1 8.1 Daily Maintenance

For the daily maintenance following steps have 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 substances to avoid damaging the tool.
- Make sure the mounting pins of the tool are inserted and fixed.
- 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, pinch the handles and store the hand tool dry and clean.

8.2 8.2 Periodically Maintenance

- Depending on the degree of utilisation an inspection of the hand tool should be done by an appropriate qualified personnel.
- Make sure the mounting pins of the tool pinch are inserted and fixed.
- Squeeze the handles and check the emergency ratchet-release mechanism releases.
- Check the hand tool on abrasion and damaging, in particularly in the field of the crimping nests and all pivot points.

9 Disposal

In case of disposal, please send the hand tool and its components back to the address specified in section 10.1 Contact Information.

10 Appendix

10.1 Contact information

TE Connectivity

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