

KNIPEX Quality – Made in Germany



We will start shortly



**KNIPEX**

# Crimping Masterclass



The logo for the KNIPEX Crimping Masterclass. It features a red diamond shape with the word "KNIPEX" in white, followed by the words "Crimping Masterclass" in a large, white, sans-serif font. The entire logo is enclosed in a white rectangular border.

# KNIPEX Crimping Masterclass

Presented by

**DISTRELEC**

## Agenda

1. Attendee participation
  - Questions for Marc: Q&A function
  - In case of technical issues: chat function
2. Introduction of Marc, crimp specialist
3. Presentation of KNIPEX
4. Basic Know-How of Crimping
5. Tips & Tricks for Application
6. FAQ
7. Promotional Offer
  - There will be an exclusive promotional offer to all attendees!



KNIPEX – Quality made in Germany

**1.380** employees  
Wuppertal Cronenberg  
2.090 employees in the group



customers in  
**105** countries



**12.7 Mio. pliers  
produced**

**2020**

**600** tons of  
steel per month

**50,000 m<sup>2</sup>** Production area

**Production site**  
Wuppertal Cronenberg (Germany)



**Industry**

Craftsmanship

Automotive

Construction

Electrical

Agriculture

Aviation

Sanitary

**900** different  
varieties of pliers

Quelle: <https://www.knipex.de/no/de/home/>



# The KNIPEX-World of crimping tools



© KNIPEX® 2021

Quelle: <https://www.knipex.de/nc/de/home/>

## All Knipex crimping pliers with integral lock

integral lock = Ensure the completion of the crimping process.

→ Requirements in DIN 41641 > Hand crimping tools

→ Requirements in DIN EN 60352-2 > Solderless electrical connections



© KNIPEX® 2021



Quelle: <https://www.knipex.de/nc/de/home/>

## The KNIPEX-World of crimping tools



**PreciForce®**  
(one-hand operation)  
8 different pliers

*crimp dies are not interchangeable*



**Crimp plier**  
(Two-hand operation possible)  
10 different pliers

*crimp dies are not interchangeable*



**MultiCrimp®**  
5 profiles in the quick change magazine

*includes 5 crimp dies*



**Crimp System Plier (without crimp dies)**

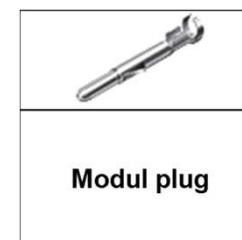
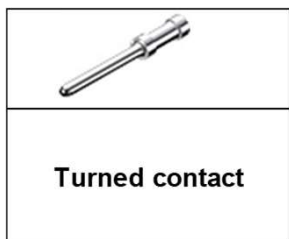
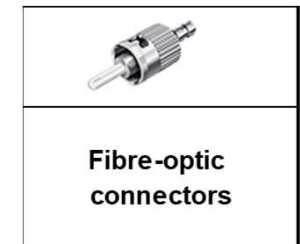
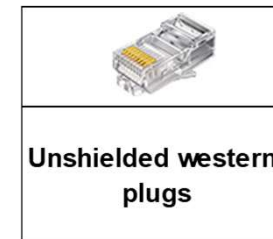
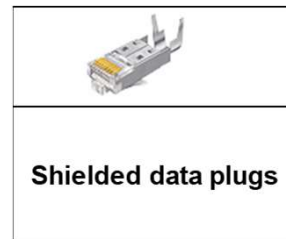
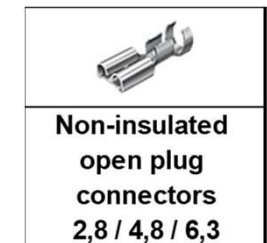
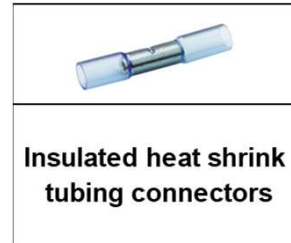
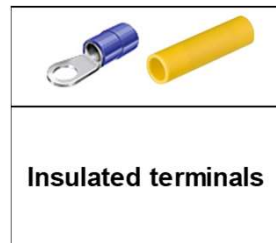
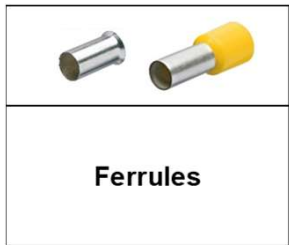
- 50 interchangeable profiles
- 10 Locator
- approx. 1,400 special profiles available

*Interchangeable crimp dies*



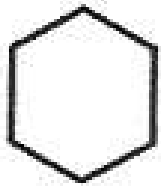


## A selection of connectors and terminals

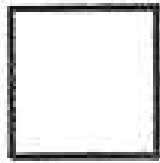




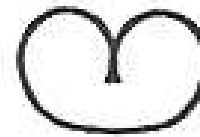
## Crimp forms (presented in a simplified way)



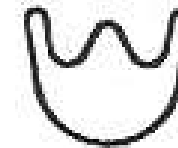
**Hexagon-Crimp**



**Square-Crimp**



**B-Crimp**



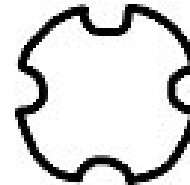
**W-Crimp**



**Trapezoid-Crimp**



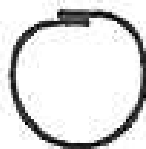
**Oval-Crimp**



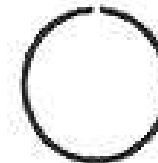
**Four Indent-Crimp**



**Indent-Crimp**



**OVL-Crimp**



**O-Crimp**

# Which crimp form fits which standard-connector ?



6- Hexagon



4- Square



Trapezoid



Oval



W-Crimp



Indent  
-Crimp



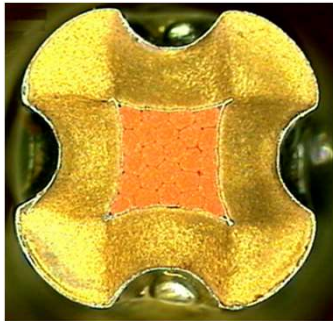
6-Hexagon  
Watch out! Possible  
overpressing



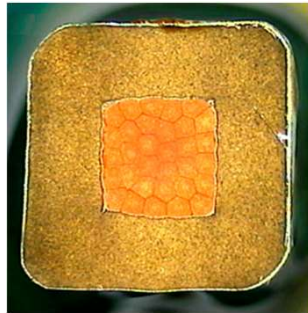
B-Crimp



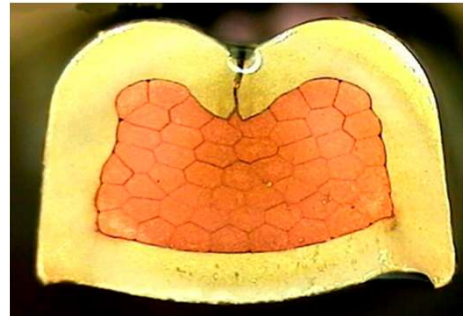
## Optimum combination of crimp dimensions - connector – cable (gas tight)



Four Indent-Crimp



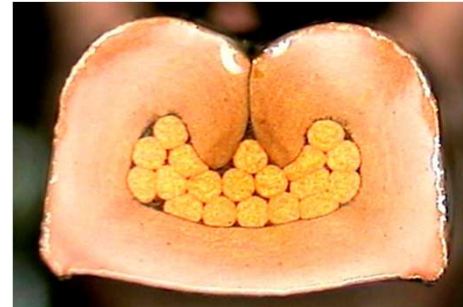
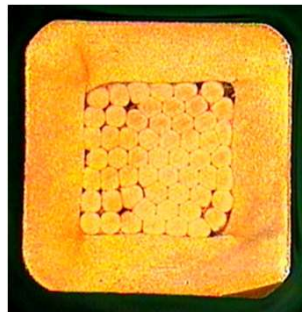
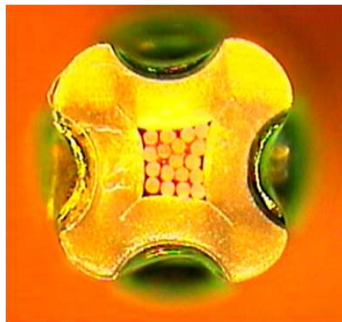
Square-Crimp



F-crimp



## Crimp dimensions do not match the combination of connector - cable



## Consequences... with non-standard crimp

1. Moisture or oxygen (gas) penetrates the system
2. Risk of contact heating due to oxidation between individual wires  
→ Increase in insulation resistance
3. Bigger resistance = heating of the crimping point

- Energy Loss
- Lower power transfer
- Risk of fire
- Customer complaints





Insulated connectors (former DIN 46 237)



97 52 36 / 180-50-359



DISTRELEC



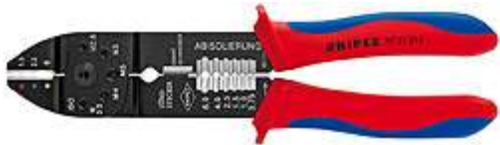
97 52 06 / 180-50-339



97 33 02 / 180-48-079

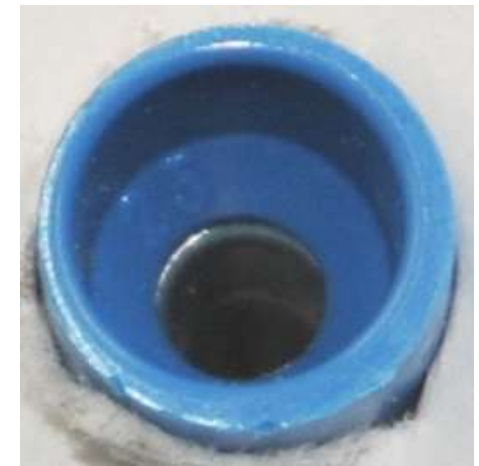


97 43 200 + 97 49 06  
180-54-611 + 180-54-615



97 21 215 / 180-48-071

## Insulated connectors (former DIN 46 237)



former DIN 46 237

**PIDG = Pre Insulated Diamond Grip**

**Materials Insulation:** PVC / Nylon / Vinyl

**Materials Terminal:** Copper / Brass

**Max. working temperature:** 75° C / 105° C / 125° C

**Max. electric rating:** 300 V / 600 V

# Technical details – Connector

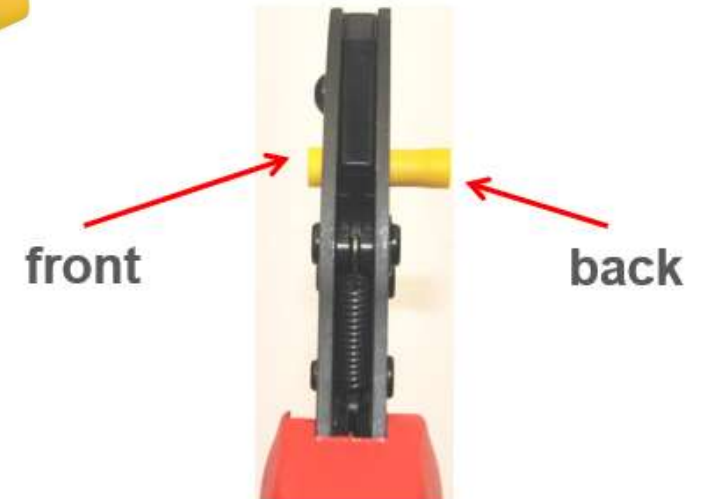
|                                                                                     | Designation<br>+ technical information                                                                                                                                                   | Article No. | EAN<br>4003773- | DIN color series | Capacity<br>mm² | AWG     | Dimensions |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|------------------|-----------------|---------|------------|
| Insulated terminals                                                                 |                                                                                                                                                                                          |             |                 |                  |                 |         |            |
|    | Blade terminal sockets, insulated<br><br>Material: brass, tin plated; Insulation: Nylon;<br>Max. temperature: 105°C; Max. electrical load: 600 V                                         | 97 99 001   | 075882          | ●                | 0,5 – 1,0       | 22 – 16 | 2,8        |
|                                                                                     |                                                                                                                                                                                          | 97 99 010   | 075899          | ●                | 0,5 – 1,0       | 22 – 16 | 4,8        |
|                                                                                     |                                                                                                                                                                                          | 97 99 011   | 075905          | ●                | 1,5 – 2,5       | 16 – 14 | 4,8        |
|                                                                                     |                                                                                                                                                                                          | 97 99 020   | 075912          | ●                | 0,5 – 1,0       | 22 – 16 | 6,3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 021   | 075929          | ●                | 1,5 – 2,5       | 16 – 14 | 6,3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 022   | 075936          | ●                | 4,0 – 6,0       | 12 – 10 | 6,3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 030   | 075943          | ●                | 1,5 – 2,5       | 16 – 14 | 8,0        |
|    | Flat Pin Accessory Distributors, insulated<br><br>Material: brass, tin plated; Insulation: Nylon;<br>Max. temperature: 105°C; Max. electrical load: 600 V                                | 97 99 090   | 075998          | ●                | 0,5 – 1,0       | 22 – 16 | 6,3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 091   | 076001          | ●                | 1,5 – 2,5       | 16 – 14 | 6,3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 092   | 076018          | ●                | 4,0 – 6,0       | 12 – 10 | 6,3        |
|    | Blade terminal plugs, insulated<br><br>Material: brass, tin plated; Insulation: Nylon;<br>Max. temperature: 105°C; Max. electrical load: 600 V                                           | 97 99 110   | 076025          | ●                | 0,5 – 1,0       | 22 – 16 | 6,3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 111   | 076032          | ●                | 1,5 – 2,5       | 16 – 14 | 6,3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 112   | 076049          | ●                | 4,0 – 6,0       | 12 – 10 | 6,3        |
|    | Round sockets, insulated<br><br>Material: brass, tin plated; Insulation: Nylon<br>Max. temperature: 105°C; Max. electrical load: 600 V                                                   | 97 99 130   | 076056          | ●                | 0,5 – 1,0       | 22 – 16 | Ø 4        |
|                                                                                     |                                                                                                                                                                                          | 97 99 131   | 076063          | ●                | 1,5 – 2,5       | 16 – 14 | Ø 5        |
|    | Round pin plugs, insulated<br><br>Material: brass, tin plated; Insulation: Nylon;<br>Max. temperature: 105°C; Max. electrical load: 600 V                                                | 97 99 150   | 076070          | ●                | 0,5 – 1,0       | 22 – 16 | Ø 4        |
|                                                                                     |                                                                                                                                                                                          | 97 99 151   | 076087          | ●                | 1,5 – 2,5       | 16 – 14 | Ø 5        |
|  | Cable connectors, eye type, insulated<br>DIN 46237<br><br>Material: copper, tin plated; Insulation: Nylon;<br>Max. temperature: 105°C; Max. electrical load: 600 V                       | 97 99 170   | 076094          | ●                | 0,5 – 1,0       | 22 – 16 | Ø 3        |
|                                                                                     |                                                                                                                                                                                          | 97 99 171   | 076100          | ●                | 0,5 – 1,0       | 22 – 16 | Ø 4        |
|                                                                                     |                                                                                                                                                                                          | 97 99 172   | 076117          | ●                | 0,5 – 1,0       | 22 – 16 | Ø 5        |
|                                                                                     |                                                                                                                                                                                          | 97 99 173   | 076124          | ●                | 1,5 – 2,5       | 16 – 14 | Ø 4        |
|                                                                                     |                                                                                                                                                                                          | 97 99 174   | 076131          | ●                | 1,5 – 2,5       | 16 – 14 | Ø 5        |
|                                                                                     |                                                                                                                                                                                          | 97 99 175   | 076148          | ●                | 1,5 – 2,5       | 16 – 14 | Ø 6        |
|                                                                                     |                                                                                                                                                                                          | 97 99 176   | 076155          | ●                | 1,5 – 2,5       | 16 – 14 | Ø 8        |
|                                                                                     |                                                                                                                                                                                          | 97 99 177   | 076162          | ●                | 4,0 – 6,0       | 12 – 10 | Ø 5        |
|                                                                                     |                                                                                                                                                                                          | 97 99 178   | 076179          | ●                | 4,0 – 6,0       | 12 – 10 | Ø 6        |
|                                                                                     |                                                                                                                                                                                          | 97 99 179   | 076186          | ●                | 4,0 – 6,0       | 12 – 10 | Ø 8        |
|                                                                                     |                                                                                                                                                                                          | 97 99 180   | 076193          | ●                | 4,0 – 6,0       | 12 – 10 | Ø 10       |
|  | Butt connectors, insulated<br><br>Material: copper, tin plated; Insulation: Nylon;<br>Max. temperature: 105°C; Max. electrical load: 600 V                                               | 97 99 270   | 076346          | ●                | 0,5 – 1,0       | 22 – 16 |            |
|                                                                                     |                                                                                                                                                                                          | 97 99 271   | 076353          | ●                | 1,5 – 2,5       | 16 – 14 |            |
|                                                                                     |                                                                                                                                                                                          | 97 99 272   | 076360          | ●                | 4,0 – 6,0       | 12 – 10 |            |
| Heat shrinkable butt connectors                                                     |                                                                                                                                                                                          |             |                 |                  |                 |         |            |
|  | Heat shrinkable butt connectors<br><br>Material: copper, tin plated; Insulation: Nylon; Operating temperature: -55°C – +105°C;<br>Shrink temperature: 180°C; Max. electrical load: 600 V | 97 99 250   | 076315          | ●                | 0,5 – 1,0       | 22 – 16 |            |
|                                                                                     |                                                                                                                                                                                          | 97 99 251   | 076322          | ●                | 1,5 – 2,5       | 16 – 14 |            |
|                                                                                     |                                                                                                                                                                                          | 97 99 252   | 076339          | ●                | 4,0 – 6,0       | 12 – 10 |            |



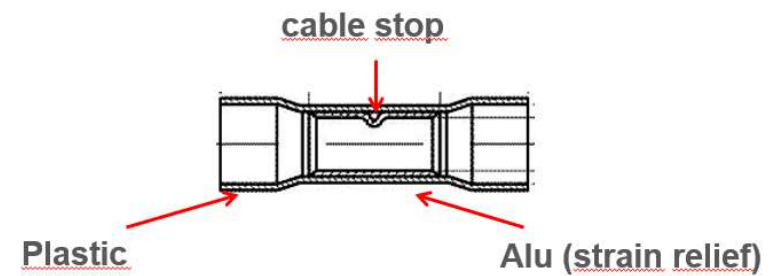
## How to crimp insulated terminals



Plug opening slightly sticks out



**Front side:**  
Plug opening protrudes slightly



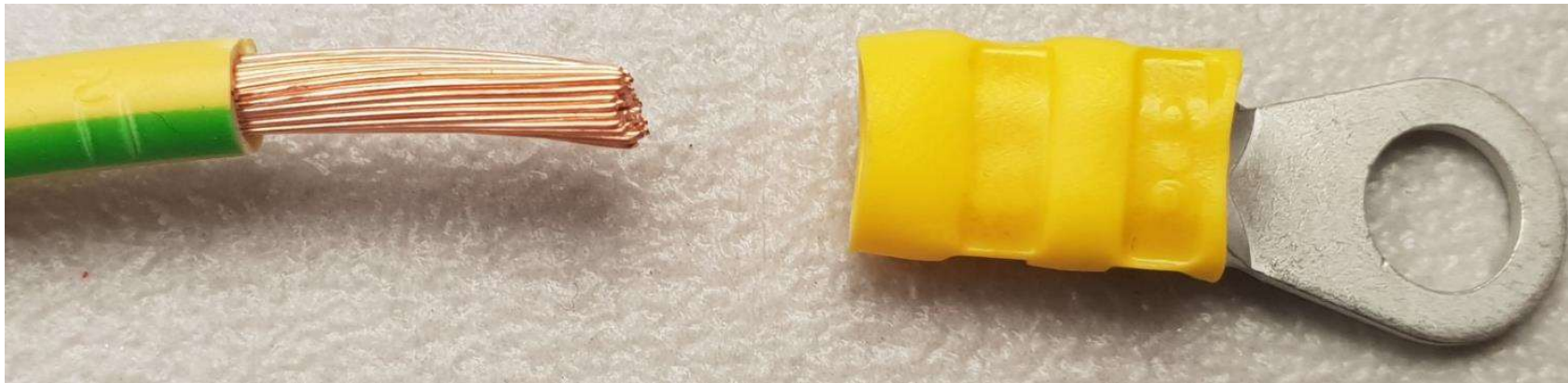
### **"Connector loosens from cable after crimping"**

Reasons can be:

Wrong pliers / Wrong crimp nest ; Underfilled cables ; Cheap Asian plugs.

Problem solution:

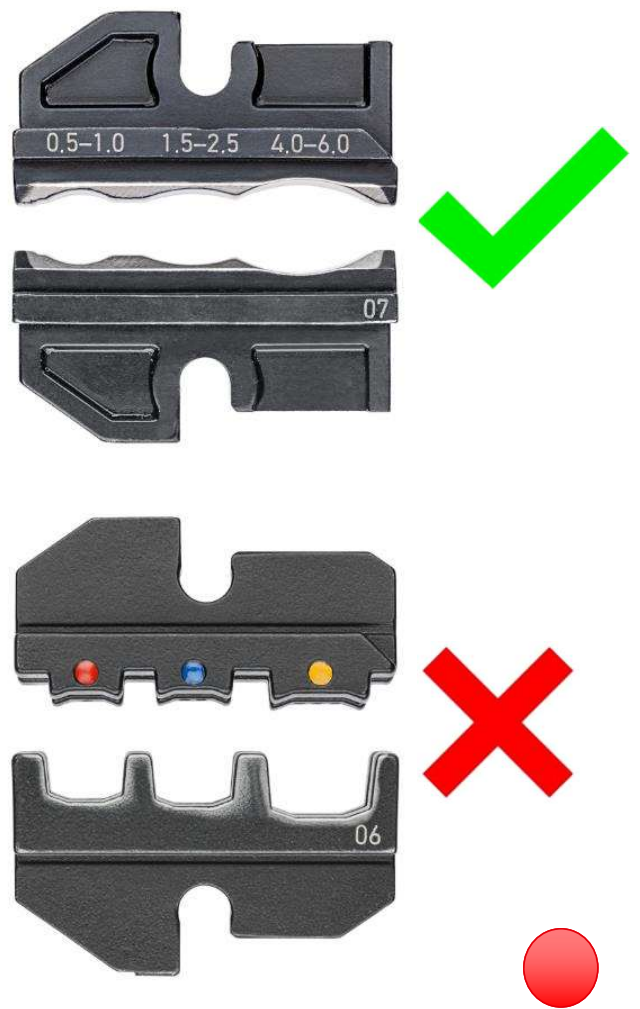
Use insulated connectors from Knipex. These have been adapted to our crimp form. (97 99 xx > see list)



Insulated shrink tubing connectors



|  |                                                               |
|--|---------------------------------------------------------------|
|  | <b>97 52 37</b><br><b>180-50-313</b>                          |
|  | <b>97 43 200 + 97 49 07</b><br><b>180-54-611 + 302-23-039</b> |
|  | <b>97 21 215</b><br><b>180-48-071</b>                         |





## More crimp dies for insulated connectors

**KNIPEX** Crimping  
Masterclass

Presented by  
**DISTRELEC**

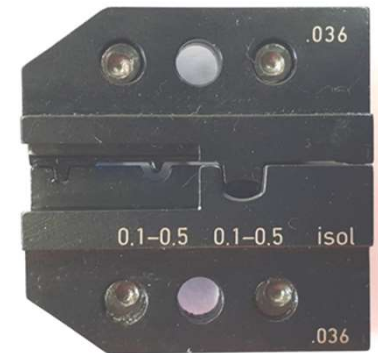
97 49 06 PI / xxx



**NEW**

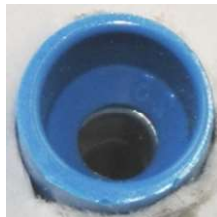


97 49 21 / xxx

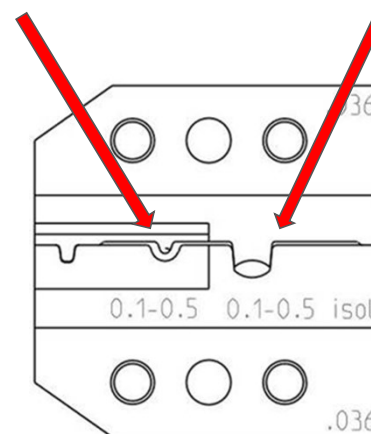


**NEW**

- For insulated terminals, plug connectors + butt connectors 0,5 - 6,0 mm<sup>2</sup>
- Also suitable for use with PIDG terminals



0,1 – 0,5 mm<sup>2</sup>



uninsulated connector, please! - But which????



Tubular cable ferrules?

Normal connector?



DIN 46235



DIN 46237



DIN 46234



Crimp terminals?



Press cable ferrules?

## Unisolated connectors 0,5 – 25mm<sup>2</sup>

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Masterclass

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**97 52 33 / 180-50-351**



**97 52 13 / xxx**



**97 33 02 / 180-48-079**



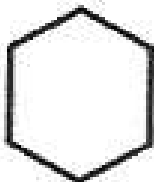
**97 43 200 + 97 49 14**  
**180-54-611 + 180-54-619**



**97 21 215 C / 180-50-157**  
(DIN 46234; DIN 46341) > thin sheet



Overpressing with hexagon crimp form



Only for  
DIN 46235  
DIN 46267  
Starts from 6mm<sup>2</sup>



Crimping of solid conductors?

| Pos.                       | allgemeine Angaben<br>General information |                                                                                    | Betätigungskraft<br>Actuating force [N]<br>DIN 41 641-1                            |                                                                     | Leitercrimp / Core crimp             |                                                                                      | Isolationscrimp / Insulation crimp     |               |                                       |               | Auszugskraft<br>Pull out force [N]<br>DIN EN 60352-2 |               |                                        |
|----------------------------|-------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------|---------------|---------------------------------------|---------------|------------------------------------------------------|---------------|----------------------------------------|
|                            |                                           |                                                                                    |                                                                                    |                                                                     | Crimptiefe<br>Crimp deth<br>CCH [mm] |                                                                                      | Crimpbreite<br>Crimp width<br>CCW [mm] |               | Crimphöhe<br>Crimp height<br>ICH [mm] |               |                                                      |               | Crimpbreite<br>Crimp width<br>ICW [mm] |
|                            |                                           |                                                                                    | Soll<br>Nominal                                                                    | Ist<br>Actual                                                       | Soll<br>Nominal                      | Ist<br>Actual                                                                        | Soll<br>Nominal                        | Ist<br>Actual | Soll<br>Nominal                       | Ist<br>Actual | Soll<br>Nominal                                      | Ist<br>Actual | Soll<br>Nominal                        |
| 4                          | Crimpstelle:<br>Crimpposition:            | 3                                                                                  | < 500                                                                              | 140                                                                 | --                                   | --                                                                                   | --                                     | --            | --                                    | --            | --                                                   | 360           | 1019<br>883<br>749                     |
|                            | Crimpbereich:<br>Crimprange:              | 4,0 – 6,0                                                                          |                                                                                    |                                                                     |                                      |                                                                                      |                                        |               |                                       |               |                                                      |               |                                        |
|                            | Kontakt:<br>Terminal:                     | unisolierte Stoßverbinder<br>4,0 – 6,0mm <sup>2</sup><br>97 99 292                 |                                                                                    |                                                                     |                                      |                                                                                      |                                        |               |                                       |               |                                                      |               |                                        |
|                            |                                           |                                                                                    | Crimpmusterbild<br>Samplepicture                                                   | Geradheit des Kon-<br>taktteils<br>Checked terminal<br>straightness | Schliffbild<br>Crimp cross section   |                                                                                      |                                        |               |                                       |               | Bemerkungen<br>Remarks                               |               |                                        |
|                            | Kabel:<br>Cable:                          | NYM Leitung massiv                                                                 |  | i.O.                                                                | n.i.O.                               |  |                                        |               |                                       |               |                                                      |               |                                        |
| Querschnitt:<br>Wire Size: | 6,0mm <sup>2</sup>                        |  | ☒                                                                                  | ☐                                                                   |                                      |                                                                                      |                                        |               |                                       |               |                                                      |               |                                        |



## Non-insulated Blade Terminal Sockets

**KNIPEX** Crimping  
Masterclass

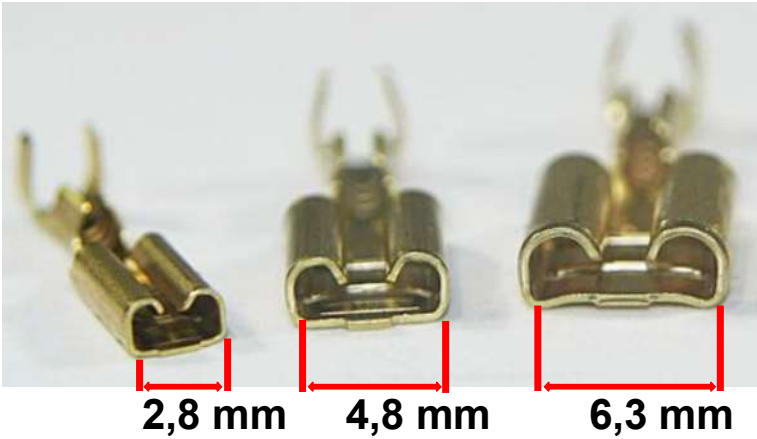
Presented by  
**DISTRELEC**



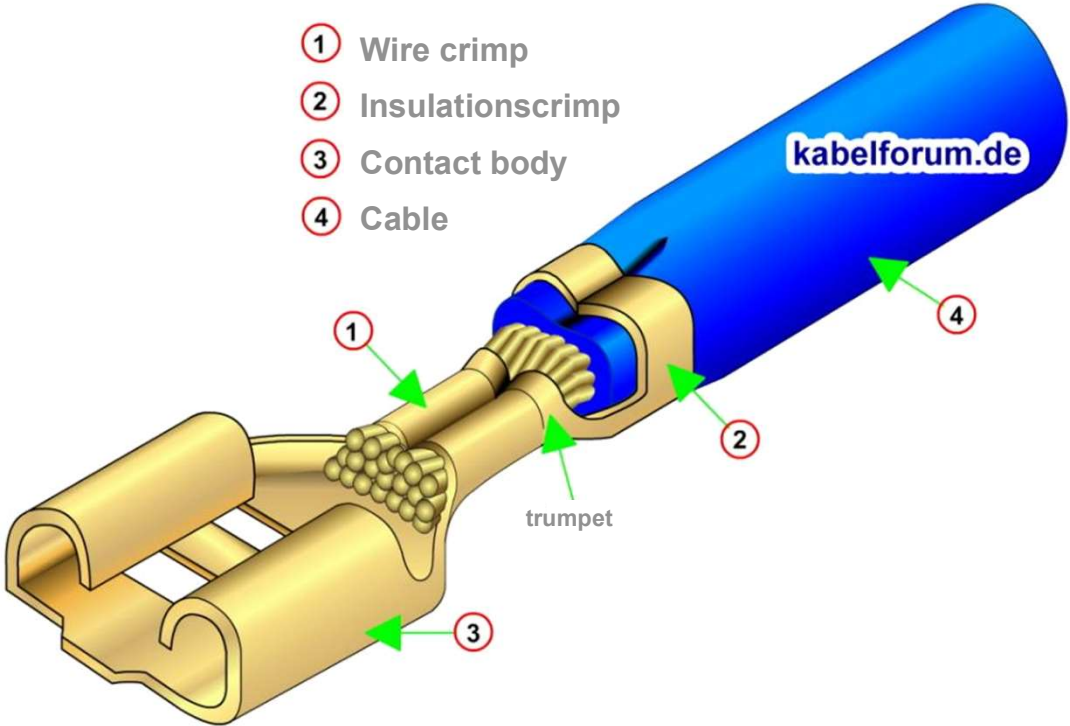


Un-insulated, open flat connectors

With this type of plug you can do the most wrong...



DIN 46 247  
DIN 46 346  
DIN 46 346



## Un-insulated, open flat connectors

**KNIPEX** Crimping  
Masterclass

Presented by  
**DISTRELEC**



DIN 46 247  
DIN 46 346  
DIN 46 346

connector width : 2,8 mm 4,8 mm 6,3 mm



**97 52 34 / 180-50-352**  
**97 52 35 / 180-50-358**



**97 52 04 / xxx**  
**97 52 05 / 180-50-204**



**97 33 02 / 180-48-079**



**97 43 200 + 97 49 04 / 05**  
**180-54-611 + 180-50-345**  
**180-50-613**



**97 21 215 B / 110-83-903**

Producer of connectors and terminals

**KNIPEX** Crimping  
Masterclass

Presented by  
**DISTRELEC**





## Open flat connectors not according to DIN

### Not standardized!

Each manufacturer uses different dimensions. Therefore, for each series you need a crimp insert that is customised to the geometry of the connector.

→ 1,5 Mio different connectors worldwide



Crimp System Pliers for exchangeable crimping dies

**KNIPEX** Crimping  
Masterclass

Presented by  
**DISTRELEC**

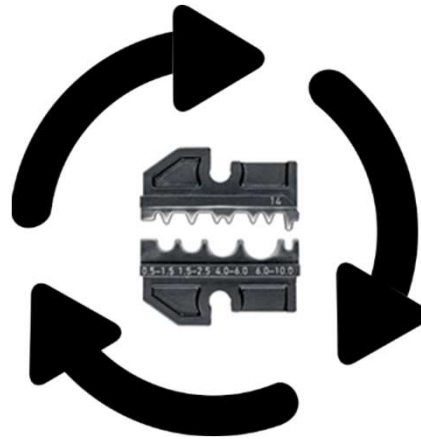
1,400 solutions in one system



1,400 solutions in one system

**KNIPEX** Crimping  
Masterclass

Presented by  
**DISTRELEC**



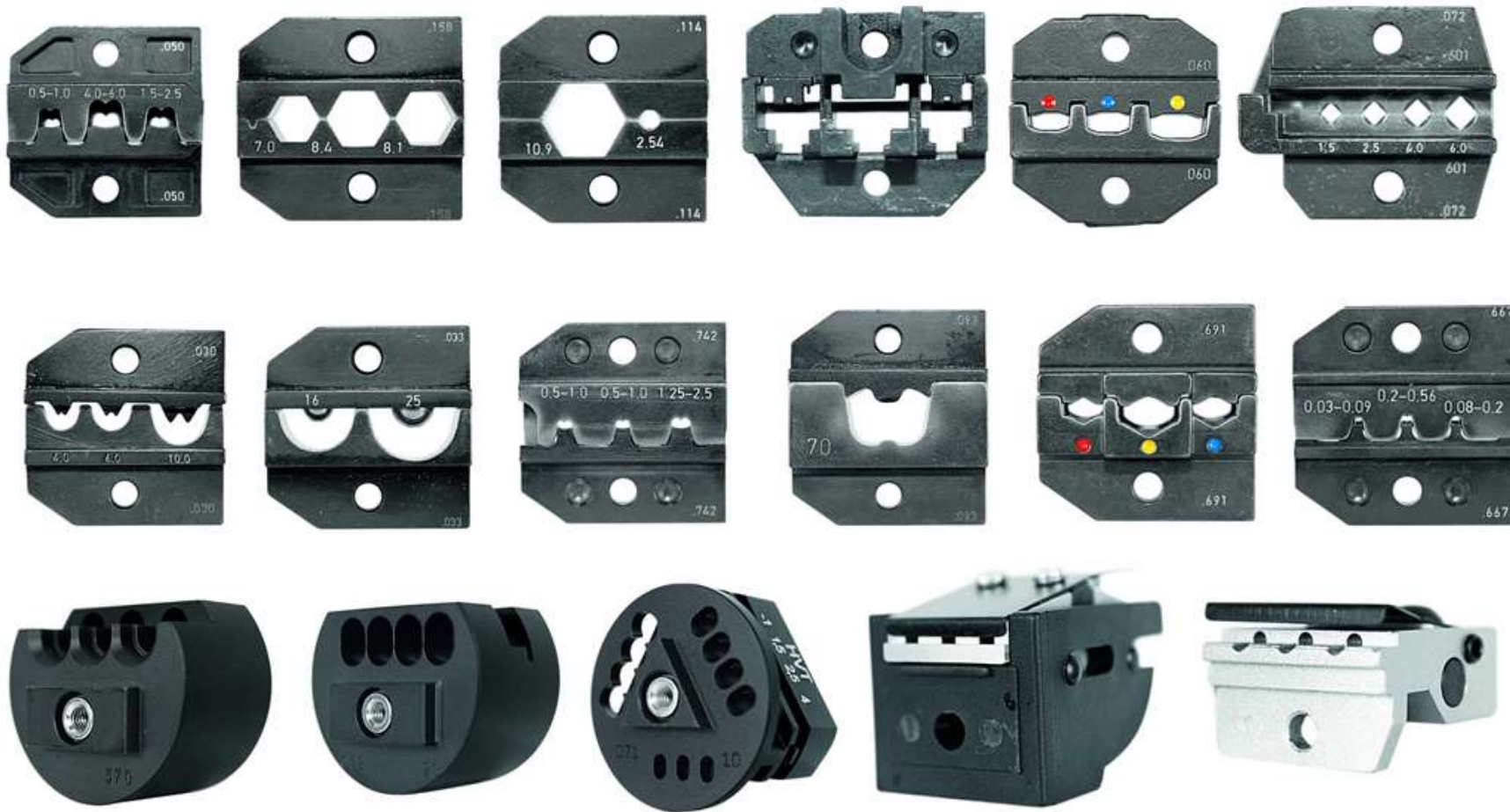
 **RENNSTEIG**



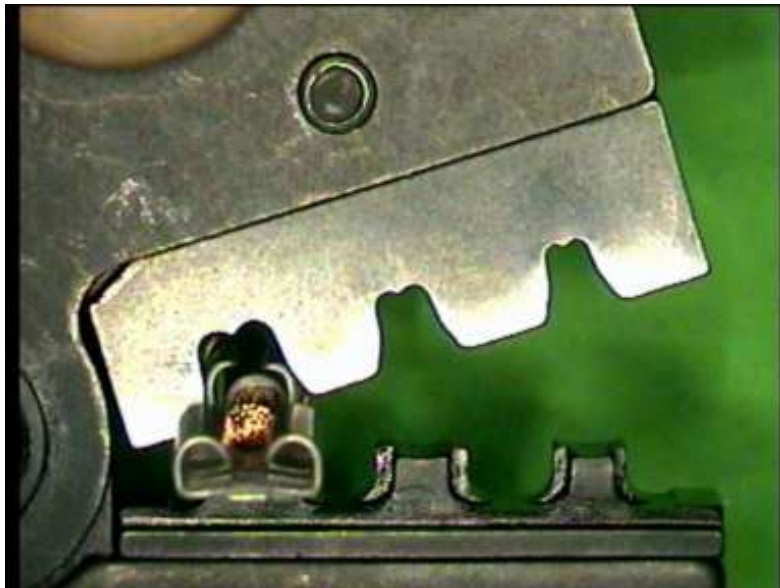
Crimp System Pliers for exchangeable crimping dies

|                                                                                   |                                                                                       |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 97 43 200                                                                         | 97 43 200 A                                                                           |
|  |    |
| 180 - 54 - 611                                                                    |                                                                                       |
| 50 Standard dies at KNIPEX                                                        |   |
| 10 Positioning devices at KNIPEX                                                  |  |
| More than 1,400 crimping dies at Rennsteig                                        |  |
| Parallel crimp movement                                                           |                                                                                       |

Check our website for more details: [www.knipex.com](http://www.knipex.com) > Search: **97 49\***

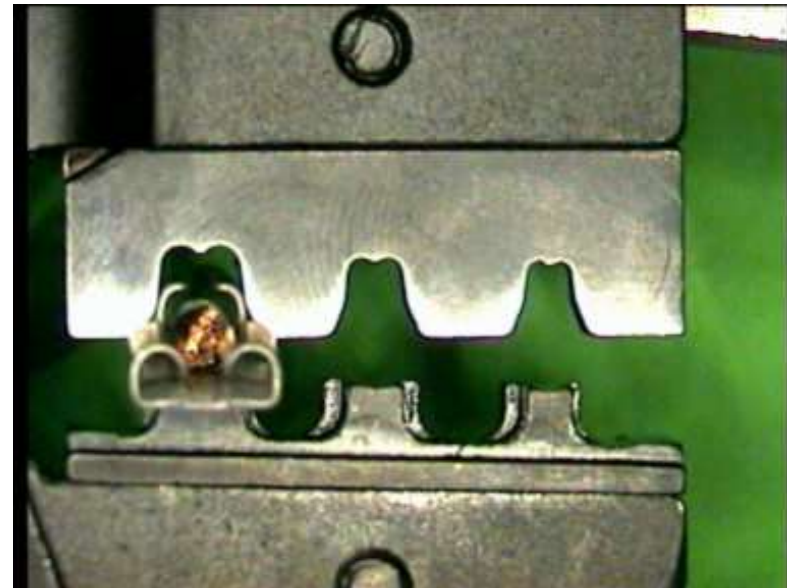


## Movement image PreciForce vs. Crimp System Pliers



>

PreciForce®



Crimp System Plier





# Crimp Matrix for download



|    |           |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              |           |          |
|----|-----------|------------------------------------|----------------------------------|------------|------|-----------|--------------------------------------------|--------------------------------------------|--------------------------------------|--------------------------------------------------------------|-----------|----------|
|    | A         | B                                  | C                                | D          | E    | F         | G                                          | H                                          | I                                    | J                                                            |           |          |
| 1  |           | Description                        | DIN EN ISO                       | Colour     | Size | Cable mm² |                                            |                                            |                                      |                                                              |           |          |
| 2  |           |                                    |                                  |            |      |           | Preci Force                                | Crimping pliers (two hand)                 | Multi-Crimp                          | 97 43 200                                                    |           |          |
| 3  |           |                                    |                                  |            |      |           | 97 52 36                                   | 97 52 06                                   | 97 33 01<br>97 33 02<br>( 97 39 06 ) | 97 43 06<br>97 49 06<br>97 49 06 PI                          |           |          |
| 4  |           |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              | 0,1 - 0,5 | 97 49 21 |
| 5  |           |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              | 0,5 - 1   |          |
| 6  | 1,5 - 2,5 |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              |           |          |
| 7  |           | Insulated terminals                | DIN 46237<br>or similar;<br>PIDG |            |      |           | 97 52 36                                   | 97 52 06                                   | ( 97 39 06 )                         | 97 49 16                                                     |           |          |
| 8  |           |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              | 4 - 6     |          |
| 9  |           |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              | 10        |          |
| 10 |           |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              | 16        |          |
| 11 |           |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              |           |          |
| 12 |           | Non-insulated terminals            |                                  |            |      | 0,1 - 0,5 |                                            |                                            |                                      | 97 49 21                                                     |           |          |
| 13 |           |                                    |                                  |            |      | 0,5 - 1   | 97 52 33                                   | 97 52 13                                   | 97 33 02<br>( 97 39 13 )             | 97 49 10 (0,5-2,5)<br>97 49 11 (4/6/10)<br>97 49 14 (0,5-10) |           |          |
| 14 |           |                                    |                                  |            |      | 1,5 - 2,5 |                                            |                                            |                                      |                                                              |           |          |
| 15 |           |                                    |                                  |            |      | 4 - 6     |                                            |                                            |                                      |                                                              |           |          |
| 16 |           |                                    |                                  |            |      | 10        |                                            |                                            |                                      |                                                              |           |          |
| 17 |           |                                    |                                  |            |      | 16        | 97 52 23                                   |                                            | 97 49 23                             |                                                              |           |          |
| 18 | 25        |                                    |                                  |            |      |           |                                            |                                            |                                      |                                                              |           |          |
| 19 |           | Heat shrinkable terminals          | No norm                          |            |      | 0,5 - 1   | 97 52 37                                   |                                            |                                      | 97 49 07                                                     |           |          |
| 20 |           |                                    |                                  |            |      | 1,5 - 2,5 |                                            |                                            |                                      |                                                              |           |          |
| 21 |           |                                    |                                  |            |      | 4 - 6     |                                            |                                            |                                      |                                                              |           |          |
| 22 |           | Non-insulated open plug connectors | DIN 46247<br>DIN 46345           | plug width | 2,8  | 0,1 - 1   | 97 52 34 (0,1 - 2,5)<br>97 52 35 (0,5 - 6) | 97 52 34 (0,1 - 2,5)<br>97 52 35 (0,5 - 6) | 97 33 01<br>97 33 02<br>( 97 39 05 ) | 97 49 04 (0,1 - 2,5)<br>97 49 05 (0,5 - 6)                   |           |          |
| 23 |           |                                    |                                  |            | 4,8  | 0,5 - 2,5 |                                            |                                            |                                      |                                                              |           |          |
| 24 |           |                                    |                                  |            | 6,3  | 0,5 - 6   |                                            |                                            |                                      |                                                              |           |          |



Crimp Matrix for download

**Crimping Masterclass**

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| A                                                                                | B                                                                                   | C                                        | D                     | E           | F         | G                                                                                 | H                                                                                  | I                                                                                   | J                                                                                   | K                                                                                   | L                                                                                   | M                                                                                   | N                                                                                   | O                                                                                   |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------|-----------------------|-------------|-----------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  | Description                                                                         | Colour according to DIN 46228-4: 2020-03 | Length (Normal; Long) | Length      | Cable mm² |  |  |  |  |  |  |  |  |  |
| Knipex Art.No.                                                                   |                                                                                     | may vary depending on the standard       |                       |             |           |  |   |  |  |  |  |  |  |  |
| 97 99 333                                                                        |    | Insulated ferrule                        | N                     | 14mm / 8mm  | 1,5       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 97 33 02                                                                            |                                                                                     |                                                                                     |
| 97 99 334                                                                        |                                                                                     |                                          | N                     | 14mm / 8mm  | 2,5       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | ( 97 39 08 )                                                                        |                                                                                     |                                                                                     |
| 97 99 335                                                                        |                                                                                     |                                          | N                     | 17mm / 10mm | 4         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 336                                                                        |                                                                                     |                                          | N                     | 20mm / 12mm | 6         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 337                                                                        |                                                                                     |                                          | N                     | 22mm / 12mm | 10        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 338                                                                        |                                                                                     |                                          | N                     | 24mm / 12mm | 16        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 97 52 09                                                                            | 97 33 02                                                                            | 97 49 09                                                                            |                                                                                     |
| 97 99 339                                                                        |                                                                                     |                                          | N                     | 30mm / 16mm | 25        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | ( 97 39 09 )                                                                        |                                                                                     |                                                                                     |
| xxx                                                                              |                                                                                     |                                          | N                     | 30mm / 16mm | 35        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 97 52 19                                                                            |                                                                                     | 97 49 19                                                                            |                                                                                     |
| xxx                                                                              |                                                                                     |                                          | N                     | 36mm / 20mm | 50        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| xxx                                                                              |                                                                                     |                                          | N                     | 37mm / 21mm | 70        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| xxx                                                                              |                                                                                     |                                          | N                     | 44mm / 25mm | 95        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 350                                                                        |  | Insulated ferrules (long version)        | L                     | 16mm / 10mm | 0,5       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 351                                                                        |                                                                                     |                                          | L                     | 16mm / 10mm | 0,75      |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 352                                                                        |                                                                                     |                                          | L                     | 16mm / 10mm | 1         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 353                                                                        |                                                                                     |                                          | L                     | 16mm / 10mm | 1,5       |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 97 52 38                                                                            | 97 52 08                                                                            | 97 33 01                                                                            | 97 49 08                                                                            |                                                                                     |
| 97 99 354                                                                        |                                                                                     |                                          | L                     | 16mm / 10mm | 2,5       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 97 33 02                                                                            |                                                                                     |                                                                                     |
| 97 99 355                                                                        |                                                                                     |                                          | L                     | 20mm / 12mm | 4         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | ( 97 39 08 )                                                                        |                                                                                     |                                                                                     |
| 97 99 356                                                                        |                                                                                     |                                          | L                     | 26mm / 18mm | 6         |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 357                                                                        |                                                                                     |                                          | L                     | 28mm / 18mm | 10        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 97 99 358                                                                        |                                                                                     |                                          | L                     | 28mm / 18mm | 16        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 97 52 09                                                                            | 97 33 02                                                                            | 97 49 09                                                                            |                                                                                     |
| 97 99 359                                                                        |                                                                                     |                                          | L                     | 32mm / 18mm | 25        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | ( 97 39 09 )                                                                        |                                                                                     |                                                                                     |
| xxx                                                                              |                                                                                     |                                          | L                     | 39mm / 25mm | 35        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 97 52 19                                                                            |                                                                                     | 97 49 19                                                                            |                                                                                     |

# Crimp Matrix for download



| A | B                                                                                                                  | C         | D           | E                                        | F               |
|---|--------------------------------------------------------------------------------------------------------------------|-----------|-------------|------------------------------------------|-----------------|
|   |                                                                                                                    |           |             |                                          |                 |
|   | Description                                                                                                        | Cable AWG | Cable mm²   | <br>97 43 200                            |                 |
|   | D-Sub-; HD 20-; HDE-Connector                                                                                      | 32 - 20   | 0,03 - 0,56 | <b>97 49 24</b><br>> optional 97 49 93   | <b>97 54 24</b> |
|   | Micro-Fit (Molex)                                                                                                  | 30 - 20   | xxxxxxx     | <b>97 49 25</b><br>> optional 97 49 25 1 | <b>97 54 25</b> |
|   | Mini-Fit (Molex)                                                                                                   | 24 - 16   | xxxxxxx     | <b>97 49 26</b><br>> optional 97 49 26 1 | <b>97 54 26</b> |
|   | MQS (AMP, TE)                                                                                                      | 24 - 20   | 0,25 - 0,5  | <b>97 49 27</b><br>> optional 97 49 27 1 | <b>97 54 27</b> |
|   | AMP Superseal-Connector 1.5 (TE)<br>0-0183024-1 Pin<br>0-0183025-1 Socket<br>0-0183035-1 Socket<br>0-0183036-1 Pin |           | 0,35 - 1,5  | <b>97 49 28</b><br>> optional 97 49 28 1 |                 |
|   | Junior Power Timer (JPT, TE)<br>927777 Socket<br>927779 Socket<br>927781 Socket<br>927783 Socket<br>963885 Socket  | 20 - 13   | 0,5 - 2,5   | <b>97 49 54</b>                          |                 |

## Help with the pliers selection



- Use the "crimp matrix"
- Look at the packaging or measure the connector width > With 2.8 / 4.8 / 6.3, you can be sure that it is a standard contact. > e.g.: 97 52 35



It is not a standard connector:

- In this case, we need the contact manufacturer, the article number (PIN no.) of the contact and the cable cross-section used.
- > *A link to the manufacturer's data sheet is usually enough.*



- Unfortunately, one photo is usually not enough
- If you don't have any information on this, you can send us at least 10 sample connectors plus cable. We will try it out.

**KNIPEX** Quality – Made in Germany



**KNIPEX MultiCrimp®**





5 in 1

One tool for 80% of all crimp applications

97 33 02  
 180-48-079

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| 0,5 - 10mm²                                                                       | 0,5 - 6mm²                                                                         | 0,5 - 6mm²                                                                          | 0,5 - 25mm²                                                                         |
|  |  |  |  |



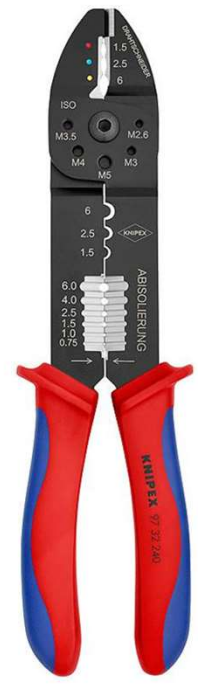
Not compatible with crimping dies 97 49 xx of the crimping system pliers



# Multifunctional crimping pliers

**KNIPEX** Crimping  
Masterclass

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|                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|   |   |    |   |   |
| <b>97 21 215</b><br>180-48-071                                                      | <b>97 21 215 B</b><br>110-83-903                                                    | <b>97 21 215 C</b><br>180-50157                                                       | <b>97 22 240</b><br>110-83-904                                                        | <b>97 32 240</b><br>300-90-864                                                        |
|  |  |   |  |  |
|  |  |  |  |  |
| 0,5 - 6mm <sup>2</sup>                                                              | 0,5 - 6mm <sup>2</sup>                                                              | 0,5 - 6mm <sup>2</sup>                                                                | 0,5 - 6mm <sup>2</sup>                                                                | 0,5 - 6mm <sup>2</sup>                                                                |



## End ferrules

**KNIPEX** Crimping  
Masterclass

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**DISTRELEC**





## Insulated single wire end ferrules – Colour code 1, 2 and DIN 46228/4



| Querschnitt | Französischer Farbcode | Deutscher Farbcode | DIN-Norm 46228 |
|-------------|------------------------|--------------------|----------------|
| 0,14 mm²    | braun                  | grau               | grau           |
| 0,25 mm²    | violett                | hellblau           | gelb           |
| 0,34 mm²    | rosa                   | türkis             | türkis         |
| 0,50 mm²    | weiß                   | orange             | weiß           |
| 0,75 mm²    | blau                   | weiß               | grau           |
| 1,00 mm²    | rot                    | gelb               | rot            |
| 1,50 mm²    | schwarz                | rot                | schwarz        |
| 2,50 mm²    | grau                   | blau               | blau           |
| 4,00 mm²    | orange                 | grau               | grau           |
| 6,00 mm²    | grün                   | schwarz            | gelb           |
| 10,00 mm²   | braun                  | elfenbein          | rot            |
| 16,00 mm²   | elfenbein              | grün               | blau           |
| 25,00 mm²   | schwarz                | braun              | gelb           |
| 35,00 mm²   | rot                    | beige              | rot            |
| 50,00 mm²   | blau                   | oliv               | blau           |
| 70,00 mm²   |                        |                    | gelb           |
| 95,00 mm²   |                        |                    | rot            |
| 120,00 mm²  |                        |                    | blau           |

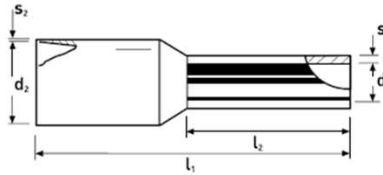
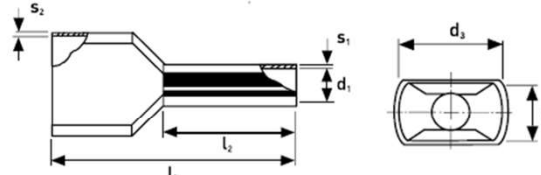
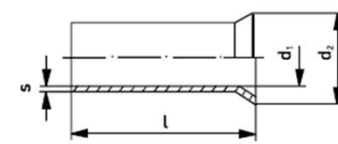


Knipex sells wire end ferrules according to DIN 46228



# Wire end ferrules at Knipex are UL certified



| Art.No KNIPEX |                                                                                     | Description                              | UL approval<br> | Size<br>mm² | Size<br>AWG | Colour code<br>DIN 46228/4 | L1   | L2 | d1   | d2   | S1   | S2   |      |                                                                                       |                                                                                                                                                             |  |
|---------------|-------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|-------------|-------------|----------------------------|------|----|------|------|------|------|------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 97 99 330     |    | Insulated single ferrules                | Yes                                                                                              | 0,5         | 20          | White                      | 14   | 8  | 1,0  | 2,6  | 0,15 | 0,25 |      | Tolerances according to DIN 46228 Teil 4                                              | Technische Informationen                                                                                                                                    |  |
| 97 99 331     |                                                                                     |                                          | Yes                                                                                              | 0,75        | 18          | Grey                       | 14   | 8  | 1,2  | 2,8  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 332     |                                                                                     |                                          | Yes                                                                                              | 1           | 18          | Red                        | 14   | 8  | 1,4  | 3,0  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 333     |                                                                                     |                                          | Yes                                                                                              | 1,5         | 16          | Black                      | 14   | 8  | 1,7  | 3,5  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 334     |                                                                                     |                                          | Yes                                                                                              | 2,5         | 14          | Blue                       | 14   | 8  | 2,2  | 4,2  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 335     |                                                                                     |                                          | Yes                                                                                              | 4           | 12          | Grey                       | 17   | 10 | 2,8  | 4,8  | 0,2  | 0,3  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 336     |                                                                                     |                                          | Yes                                                                                              | 6           | 10          | Yellow                     | 20   | 12 | 3,5  | 6,3  | 0,2  | 0,3  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 337     |                                                                                     |                                          | Yes                                                                                              | 10          | 8           | Red                        | 22   | 12 | 4,5  | 7,6  | 0,2  | 0,4  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 338     |                                                                                     |                                          | Yes                                                                                              | 16          | 6           | Blue                       | 24   | 12 | 5,8  | 8,8  | 0,2  | 0,4  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 339     |                                                                                     |                                          | Yes                                                                                              | 25          | 4           | Yellow                     | 30   | 16 | 7,3  | 11,2 | 0,2  | 0,4  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 350     |    | Insulated single ferrules (long version) | Yes                                                                                              | 0,5         | 20          | White                      | 16   | 10 | 1    | 2,6  | 0,15 | 0,25 |      |    | Insertion Funnel is made of Polypropylene and is heatresistant up to 105 Deg. C. Material: E-Copper, Surface electro tinned. Minimum Coating Thickness 3µm. |  |
| 97 99 351     |                                                                                     |                                          | Yes                                                                                              | 0,75        | 18          | Grey                       | 16   | 10 | 1,2  | 2,8  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 352     |                                                                                     |                                          | Yes                                                                                              | 1           | 18          | Red                        | 16   | 10 | 1,4  | 3,0  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 353     |                                                                                     |                                          | Yes                                                                                              | 1,5         | 16          | Black                      | 16   | 10 | 1,4  | 3,5  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 354     |                                                                                     |                                          | Yes                                                                                              | 2,5         | 14          | Blue                       | 18   | 12 | 2,2  | 4,2  | 0,15 | 0,25 |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 355     |                                                                                     |                                          | Yes                                                                                              | 4           | 12          | Grey                       | 20   | 12 | 2,8  | 4,8  | 0,2  | 0,3  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 356     |                                                                                     |                                          | Yes                                                                                              | 6           | 10          | Yellow                     | 26   | 18 | 3,5  | 6,3  | 0,2  | 0,3  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 357     |                                                                                     |                                          | Yes                                                                                              | 10          | 8           | Red                        | 28   | 18 | 4,5  | 7,6  | 0,2  | 0,4  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 358     |                                                                                     |                                          | Yes                                                                                              | 16          | 6           | Blue                       | 28   | 18 | 5,8  | 8,8  | 0,2  | 0,4  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 359     |                                                                                     |                                          | Yes                                                                                              | 25          | 4           | Yellow                     | 32   | 18 | 7,3  | 11,2 | 0,2  | 0,4  |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 370     |   | Insulated twin ferrules                  | Yes                                                                                              | 2 x 0,5     | 2 x 20      | White                      | L1   | L2 | d1   | d2   | S1   | S2   | d3   |   | Tolerances according to DIN 46228 Teil 1                                                                                                                    |  |
| 97 99 371     |                                                                                     |                                          | Yes                                                                                              | 2 x 0,75    | 2 x 18      | Grey                       | 15   | 8  | 1,7  | 2,8  | 0,15 | 0,25 | 5    |                                                                                       |                                                                                                                                                             |  |
| 97 99 372     |                                                                                     |                                          | Yes                                                                                              | 2 x 1       | 2 x 18      | Red                        | 15   | 8  | 1,95 | 3,4  | 0,15 | 0,3  | 5,4  |                                                                                       |                                                                                                                                                             |  |
| 97 99 373     |                                                                                     |                                          | Yes                                                                                              | 2 x 1,5     | 2 x 16      | Black                      | 16   | 8  | 2,2  | 3,6  | 0,15 | 0,3  | 6,6  |                                                                                       |                                                                                                                                                             |  |
| 97 99 374     |                                                                                     |                                          | Yes                                                                                              | 2 x 2,5     | 2 x 14      | Blue                       | 18,5 | 10 | 2,8  | 4,2  | 0,2  | 0,3  | 7,8  |                                                                                       |                                                                                                                                                             |  |
| 97 99 375     |                                                                                     |                                          | Yes                                                                                              | 2 x 4       | 2 x 12      | Grey                       | 23   | 12 | 3,7  | 4,9  | 0,2  | 0,4  | 8,8  |                                                                                       |                                                                                                                                                             |  |
| 97 99 376     |                                                                                     |                                          | Yes                                                                                              | 2 x 6       | 2 x 10      | Yellow                     | 26   | 14 | 4,8  | 6,9  | 0,2  | 0,4  | 10   |                                                                                       |                                                                                                                                                             |  |
| 97 99 377     |                                                                                     |                                          | Yes                                                                                              | 2 x 10      | 2 x 8       | Red                        | 26   | 14 | 6,4  | 7,2  | 0,2  | 0,4  | 13   |                                                                                       |                                                                                                                                                             |  |
| 97 99 378     |                                                                                     |                                          | Yes                                                                                              | 2 x 16      | 2 x 6       | Blue                       | 30   | 14 | 8,2  | 9,6  | 0,2  | 0,4  | 18,4 |                                                                                       |                                                                                                                                                             |  |
| 97 99 390     |  | Uninsulated ferrules                     | Yes                                                                                              | 0,5         | 20          |                            | L    |    | d1   | d2   | S    |      |      |  | Material: E-Copper, Surface electro tinned. Minimum Coating Thickness 3µm.                                                                                  |  |
| 97 99 391     |                                                                                     |                                          | Yes                                                                                              | 0,75        | 18          |                            | 6    |    | 1,2  | 2,3  | 0,15 |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 392     |                                                                                     |                                          | Yes                                                                                              | 1           | 18          |                            | 6    |    | 1,4  | 2,5  | 0,15 |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 393     |                                                                                     |                                          | Yes                                                                                              | 1,5         | 16          |                            | 7    |    | 1,7  | 2,8  | 0,15 |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 394     |                                                                                     |                                          | Yes                                                                                              | 2,5         | 14          |                            | 7    |    | 2,2  | 3,4  | 0,15 |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 395     |                                                                                     |                                          | Yes                                                                                              | 4           | 12          |                            | 9    |    | 2,8  | 4    | 0,2  |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 396     |                                                                                     |                                          | Yes                                                                                              | 6           | 10          |                            | 12   |    | 3,5  | 4,7  | 0,2  |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 397     |                                                                                     |                                          | Yes                                                                                              | 10          | 8           |                            | 12   |    | 4,5  | 5,8  | 0,2  |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 398     |                                                                                     |                                          | Yes                                                                                              | 16          | 6           |                            | 12   |    | 5,8  | 7,5  | 0,2  |      |      |                                                                                       |                                                                                                                                                             |  |
| 97 99 399     |                                                                                     |                                          | Yes                                                                                              | 25          | 4           |                            | 12   |    | 7,3  | 9,5  | 0,2  |      |      |                                                                                       |                                                                                                                                                             |  |

Automatic crimping pliers Wire end ferrules



| 0,08 - 10 mm <sup>2</sup> | 0,08 - 16 mm <sup>2</sup> | 0,08 - 16 mm <sup>2</sup> | 0,14 - 16 mm <sup>2</sup> |
|---------------------------|---------------------------|---------------------------|---------------------------|
|                           |                           |                           |                           |
|                           |                           |                           |                           |
| 97 53 14                  | 97 53 04                  | 97 53 09                  | 97 53 18                  |
| 180 - 54 - 635            | 180 - 54 - 634            | 180 - 50 - 349            | 301 - 16 - 795            |



Why is the crimp form so important ?

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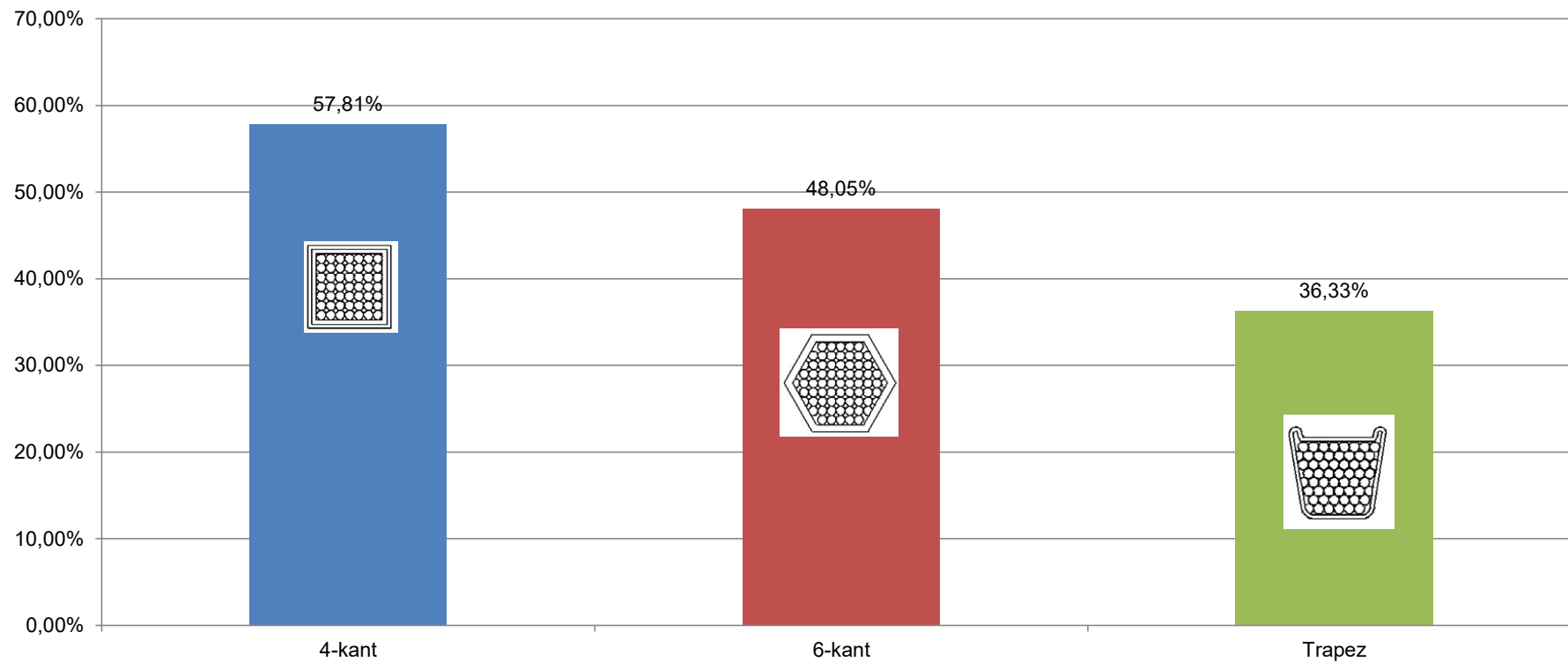
*Screw terminals*



*Spring clamps*



## Which crimp form do you use for wire end ferrules?



# Crimping pliers single wire end ferrules with trapezoid crimp



97 52 38 / 180 – 50 – 356

0,25 – 6mm²



97 52 08

0,25 – 6mm²

97 52 09

10 / 16 / 25mm²



97 43 200 / 180 - 54 - 611



97 49 08  
180-54-617



97 49 09  
180-50-344



97 49 19



## Manual Crimping Pliers for end ferrules

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**97 62 145 A**

0,25 – 2,5mm<sup>2</sup>



**97 78 180**

**110-83-909**

0,25 – 16mm<sup>2</sup>



**97 81 180**

0,5 – 6mm<sup>2</sup>  
Front loading

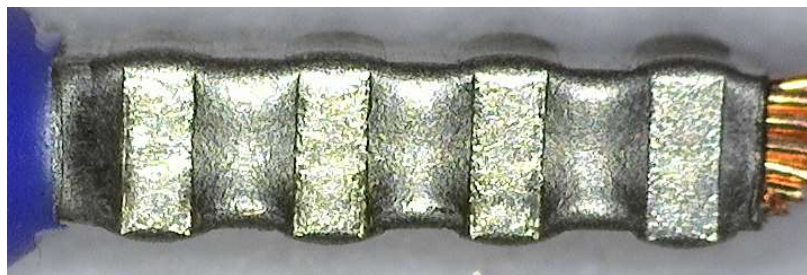


## Comparison Knipex with cheap tools from Ebay

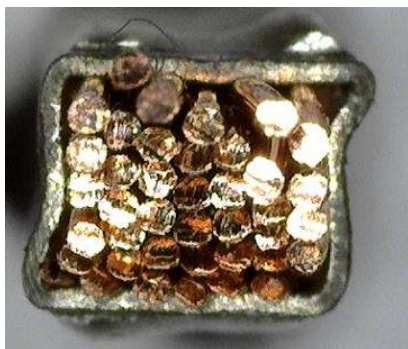
(2,5mm<sup>2</sup>)



**KNIPEX – 97 53 09**



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**Cheap copy**





**KNIPEX** Quality – Made in Germany



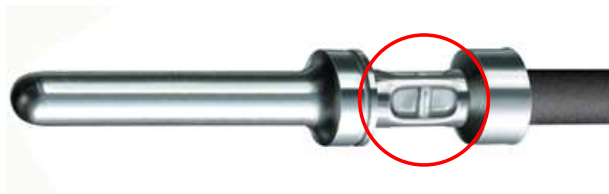
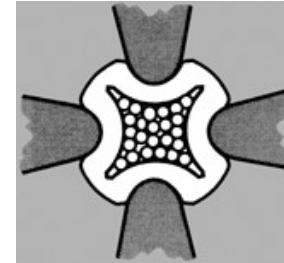
## Four-mandrel crimping pliers for turned contacts



## Turned contacts

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Turned contacts are used for extremely demanding plug-in connections

## 4 / 8 Indent crimping tools



| Article No.                                              | 97 52 63                  | 97 52 63 DG                                | 97 52 65                                                            | 97 52 65 A                | 97 52 65 DG                                                         | 97 52 65 DG A                            |
|----------------------------------------------------------|---------------------------|--------------------------------------------|---------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------|------------------------------------------|
|                                                          |                           |                                            |                                                                     |                           |                                                                     |                                          |
| Capacity                                                 | 0,08 - 2,5mm <sup>2</sup> | 0,08 - 2,5mm <sup>2</sup> 131              | 0,14 - 6mm <sup>2</sup>                                             | 0,14 - 6mm <sup>2</sup>   | 0,14 - 6mm <sup>2</sup>                                             | 0,14 - 6mm <sup>2</sup>                  |
| max. Contact Ø mm                                        | 5                         | 5                                          | 7,5                                                                 | 7,5                       | 7,5                                                                 | 7,5                                      |
| Contact locator                                          | <br>0101                  | <br>0101                                   | <br>0401                                                            | ✗                         | <br>0401                                                            | ✗                                        |
| Locator for contact manufacturers (contact no. required) | Coninvers                 | Coninvers                                  | Harting, Ilme, Phoenix, Amphenol, Walther, HTS, Contact, Weidmüller |                           | Harting, Ilme, Phoenix, Amphenol, Walther, HTS, Contact, Weidmüller |                                          |
| Universal locator                                        | ✗                         | ✗                                          | <br>97 59 65 2                                                      | <br>97 59 65 2            | <br>97 59 65 2                                                      | <br>97 59 65 2                           |
| Setting                                                  | <br>Analog via Scale      | <br>Digital                                | <br>Analog via Scale                                                | <br>Analog via Scale      | <br>Digital                                                         | <br>Digital                              |
| Type of contacts                                         | Industrie mm <sup>2</sup> | Industrie mm <sup>2</sup> / inch MIL / SAE | Industrie mm <sup>2</sup>                                           | Industrie mm <sup>2</sup> | Industrie mm <sup>2</sup> / inch MIL-SAE                            | Industrie mm <sup>2</sup> / inch MIL-SAE |
| Recalibration and wear prediction                        | ✗                         | ✓                                          | ✗                                                                   | ✗                         | ✓                                                                   | ✓                                        |
| 97 52 63 131                                             | 97 52 63 131              | 97 52 63 131                               | 97 52 65 131                                                        | 97 52 65 131              | 97 52 65 131                                                        | 97 52 65 131                             |
| 97 52 63 131                                             | 97 52 63 131              | 97 52 63 131                               | 97 52 65 131                                                        | 97 52 65 131              | 97 52 65 131                                                        | 97 52 65 131                             |

## 4 / 8 Indent crimping tool „SelectorCrimp HDT-48“



- special crimping pliers for crimping turned male and female contacts of the **DT series** from TE Connectivity (formerly: Deutsch Kontakte)



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| Art. Nr.     | EAN 4049002 | Ausführung                                  | Abbildung                                                                             | Kapazität                                | max. Ø Kontakt | ↔ mm | g   |
|--------------|-------------|---------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------|----------------|------|-----|
| 8782 0009 6  | 145704      | Zange inklusive Kontaktaufnahme , 2K-Griffe |  | 0,35 – 3,0 mm <sup>2</sup> / AWG 22 – 12 | 5,5 mm         | 230  | 650 |
| 8791 7801 01 | 121456      | Go-Nogo-Lehrenpaar                          |  | für Zange 8782 0009 6                    |                | 76,5 | 25  |



## 4 / 8 Indent crimping tool „SelectorCrimp HDT-48“



In der folgenden Tabelle werden alle gängigen Kontakte aufgelistet, die in der Vierdornzange SelectorCrimp HDT-48 verarbeitet werden können.

| für Kontakte  |       |                         |               |       |                           |                                |     |
|---------------|-------|-------------------------|---------------|-------|---------------------------|--------------------------------|-----|
| Kontaktnummer | AWG   | mm <sup>2</sup>         | Kontaktnummer | AWG   | mm <sup>2</sup>           | Kontaktnummer                  | AWG |
| 0460-204-12** | 12-14 | 2,0-3,0 mm <sup>2</sup> | 0462-221-16** | 20    | 0,50 mm <sup>2</sup>      | M39029/4-110 (TE 0641-1-2031L) | 20  |
| 0460-220-12** | 12-14 | 2,0-3,0 mm <sup>2</sup> | 0460-010-20** | 16-18 | 0,75-1,0 mm <sup>2</sup>  | M39029/4-111 (TE 0641-2-1631L) | 16  |
| 0462-203-12** | 12-14 | 2,0-3,0 mm <sup>2</sup> | 0462-005-20** | 16-18 | 0,75-1,0 mm <sup>2</sup>  | M39029/4-113 (TE 0641-3-1231L) | 12  |
| 0462-210-12** | 12-14 | 2,0-3,0 mm <sup>2</sup> | 0460-202-20** | 20-22 | 0,35-0,50 mm <sup>2</sup> | M39029/5-115 (TE 100503L)      | 20  |
| 0460-215-16** | 14*   | 2,0 mm <sup>2</sup>     | 0462-201-20** | 20-22 | 0,35-0,50 mm <sup>2</sup> | M39029/5-116 (TE 100504L)      | 16  |
| 0462-209-16** | 14*   | 2,0 mm <sup>2</sup>     | 4060-002-12** | 12-14 | 2,0-3,0 mm <sup>2</sup>   | M39029/5-118 (TE 100505L)      | 12  |
| 0460-002-16** | 16    | 1,0-1,5 mm <sup>2</sup> | 4062-002-12** | 12-14 | 2,0-3,0 mm <sup>2</sup>   |                                |     |
| 0460-202-16** | 16    | 1,0-1,5 mm <sup>2</sup> | 4060-001-16** | 16-18 | 0,75-1,5 mm <sup>2</sup>  |                                |     |
| 0462-201-16** | 18    | 0,75 mm <sup>2</sup>    | 4062-001-16** | 16-18 | 0,75-1,5 mm <sup>2</sup>  |                                |     |

\* Verwenden Sie für AWG 14 die Einstellung 1,5 mm<sup>2</sup>.

\*\* = 31, Gold-Beschichtung. / \*\* = 141, Nickel-Beschichtung.

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Einstellung der Crimptiefe über Selector mit 8 Positionen



empfohlene Selector-Positionen direkt auf der Zange ablesbar



integrierte Universal-Positionierhilfe

We are happy to answer further questions or requests!

# **KNIPEX** Crimping Masterclass



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Thank you for your attention!