Flexible connectors • Solderless terminals • Contact-systems

# druseidt Elektrotechnik

Catalogue 1

**Professional installation- and electrical connection technique for craft, industry and high current application**

Paul Druseidt
Elektrotechnische Spezialfabrik GmbH & Co. KG
Neuenkamper Str. 105
42855 Remscheid, Germany

Telephone: +49 (21 91) 93 52-0
Telefax: +49 (21 91) 93 52-150
http: www.druseidt.de
E-Mail: info@druseidt.de

**General advice**
The measurements, pictures and technical information in this catalogue have been determined with the greatest possible care and are updated continuously. So we reserve us the right to make technical as well as changes in colours, measurements and formats after printing.

Our information especially the values for possible current loads are not binding, they are only approximate values under optimized conditions. The relation between conductor, cross-section and current-load fixed in national or international regulations are not cancelled through our information. Only the values in our written acknowledgements are binding for us. Please take notice that it is not allowed to use our photos, drawings or catalogue pages for your own application or marketing actions without having our explicit written acceptance.

© Paul Druseidt Elektrotechnische Spezialfabrik GmbH & Co. KG, Remscheid, 2013

druseidt Elektrotechnik

# Professional installation- and electrical connection technique for craft, industry and high current application

## About us – a brief company profile

The company druseidt is one of the old-established Remscheid companies and was founded before 1890. Caused by the various kinds of developments and patents in the field of switch-board and installation engineering the company was already well known before the beginning of the 2nd world war. Well known products in the past were the different druseidt control panel clamps and fuse elements.

Today the Paul Druseidt GmbH & Co. KG is an internationally operating middle class company. A wide range of some thousands standardized articles as well as a multiplicity number of customized products, mainly in the field of high current application, offers an interesting program of modern components for energy distribution as well as installation application.

**Decades of experience and technical know how combined with modern manufacturing technology are the basis for worldwide and successful activities.**

More than 100 years of experience guarantee our quality and technical know how

Advertisement in the year of 1901

Factory view Karl-Kahlhöfer-Straße

Today key aspects and fields of our activities are particularly:

- Solderless cable connection material, installation material including the necessary processing technology (crimping-, cutting- and stripping tools)
- Manufacturing, developing and designing of air- and water cooled high current cables as well as flexible connectors consisting out of ropes, braids and strips
- Contact systems and current supplies for anodizing and electroplating plants
- Designing and manufacturing of plant components, current supplies and energy distribution components mainly in the field of high current transmission

Major building Neuenkamper Straße

Main entrance

## Electrical connection technique

High quality cable lugs and connectors handled with professional and ergonomic designed druseidt tools guarantee professional electrical connections conforming to the norms and regulations.

A wide assortment from stock-run cable lugs and connectors are the basis for fast and reliable deliveries.

The product range cable lugs is complemented by an extensive range of electrical installation material, so that it is possible to buy a great number of products by only one supplier.

## Best quality and best customizing services

**We are working in the field of high current transmission. Therefore application also for some thousands amps are no problem for us.**

**Especially we take a look at top-quality and offer correspondent testing facilities.**

**We are certified acc. to ISO 9001:2008 and have an extensive QM-system.**

**We design our products with 3-D-systems and offer extensive manufacturing processes for customized solutions.**

**We are flexible and offer more than just the simply delivery of electrical installation material e.g.**

- **realization of a high quality standard**
- **quick delivery of products**
- **extensive support and consultation in matters of system installation of cable lugs, tools and manufacturing devices**
- **realization of logistic conceptions in cooperation with our customers**
- **inspection and repairing of tools**

## Exact testing

**Comprehensive testing capabilities are the basis and the condition for delivering a high quality-standard.**

Accurateness, quality and flexibility combined with high advisory skills are essential principles of our company policy. So we think that it is the right way to realize a long-term business relationship and customer satisfaction. Please test our ability. We would be glad to discuss with your company too.

Testing of the conductivity

Material testing

Generating grinding surface pattern

Analysis of grinding surface pattern

## We deliver suitable cable lugs and connectors nearly for all possible kinds of application

**Why are different cable lugs series needed?**

In consequence of the various kinds of leadings and cables with different conductor constructions, different strandings and diameters also different sizes of cable lugs and connectors are required too. Unprofessional done crimping operations or wrong selected cable lugs are often the reason for generating fires, damaging of plants, unnecessary system down times and unnecessary repairing works.

To guarantee crimping operations according to the norms and regulations it is absolutely necessary that cable lug, crimping tool and the outside-Ø of the stripped cable are aligned to each other. Therefore it is very important to select the right cable lugs.

**Important**
Leading, cable lug, tool and compression die must be aligned to each other!

**Which is the correct cable lug for the various applications?**

An important question for the user is now what is the correct cable lug for his application and what is the right tool for crimping it? At first we have to take a view to the application.

There must be questions like dimension of the mounting situation, temperature and environmental influences clarified. Is it necessary to work with another material like copper etc.? After the operation conditions are clear you have generally to pay attention to the fact that the cross-section of the cable and the cable lug must be the same. It is not allowed to work with a cable lug with a smaller cross-section than the cable (only a crimping of cable lugs with a bigger cross-section than the cable is allowed).

To get a sufficient filling volume the inside-Ø of the cable lug sleeve and the outside-Ø of the stripped cable should be nearly the same. Because the outside-Ø of the stripped cables are not normed and the conductor cross-section will be calculated according to the conductor resistance and not according to the geometrical values (cf. DIN VDE 0295/IEC 60228) the suitable cable lug must be selected acc. to the actual diameter of the stripped cable.

**Important**
It is absolutely necessary that cable and cable lug have minimum the same cross-section and the outside diameter of the stripped cable and the inside diameter of the cable lug sleeve must be nearly the same!

## What kind of cable lugs are standard in the druseidt company?

In Germany some engineering standards for cable lugs are defined, but caused by the various kinds of different cable-constructions no further norms were identified. Therefore the cable lug manufacturers offer additionally to the normed ones different series manufactured in trade design.

So our company offers an extensive range of cable lugs both standardized an commercially.

| Description | Material | Design | Cross-section | Catalogue page |
|---|---|---|---|---|
| **Normed designs** | | | | |
| Insulated cable lugs DIN 46237 | Copper | Punched out of sheet, connection sleeve soldered | up to 6 mm² | 14 |
| Insulated cable lugs DIN 46231 | Copper | Punched out of sheet, connection sleeve soldered | up to 6 mm² | 15 |
| Uninsulated cable lugs DIN 46234 | Copper | Punched out of sheet, connection sleeve soldered | up to 240 mm² | 24/25 |
| Uninsulated cable lugs DIN 46230 | Copper | Punched out of sheet, connection sleeve soldered | up to 16 mm² | 28 |
| Uninsulated cable lugs DIN 46211 | Brass | Punched out of sheet, connection sleeve open | up to 95 mm² | 27 |
| Uninsulated cable lugs DIN 46225 design A | Brass | Punched out of sheet, connection sleeve open | up to 6 mm² | 82 |
| Uninsulated cable lugs DIN 46235 | Copper | Punched out of tube | up to 1000 mm² | 49 ff |
| Uninsulated cable lugs DIN 46239 | Aluminium | Punched out of solid material | up to 500 mm² | 55 ff |
| | | | | |
| **Usual in trade designs** | | | | |
| Insulated cable lugs inside-Ø of the sleeves similar to DIN 46237 | Copper | Punched out of sheet, connection sleeve soldered | up to 150 mm² | 14 ff |
| Uninsulated cable lugs inside-Ø of the sleeves similar to DIN 46211 | Copper | Punched out of sheet, connection sleeve soldered | up to 300 mm² | 26 |
| Uninsulated pin connectors | Copper | Punched out of sheet, connection sleeve soldered | up to 95 mm² | 28 |
| Uninsulated tubular cable lugs druseidt standard design | Copper | Punched out of tube | up to 630 mm² | 29 ff |
| Uninsulated tubular cable lugs druseidt Euro-design | Copper | Punched out of tube | up to 630 mm² | 41 ff |
| Uninsulated tubular cable lugs for fine stranded cables | Copper | Punched out of tube | up to 240 mm² | 35 ff |
| Uninsulated flag-type cable lugs | Copper | Punched out of tube | up to 150 mm² | 28 |
| Uninsulated hook-type cable lugs | Copper | Punched out of solid material | up to 150 mm² | 51 |
| Bimetallic cable lugs | Aluminium/Copper | Punched out of solid material and welded | up to 300 mm² | 58 |
| Nickel cable lugs | Nickel | Punched out of tube | up to 16 mm² | 62 |
| Stainless steel cable lugs | Stainless Steel A4 | Punched out of tube | up to 95 mm² | 63 |
| Punched screwable cable lugs | Copper | Punched out of sheet | up to 240 mm² | 64 |

## Content


| | Catalogue page |
|---|---|
| **1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNOLOGY** | |
| **1.1 Insulated cable lugs and connectors** | |
| Insulated cable lugs ring-type up to 6 mm² | 14 |
| Insulated cable lugs fork- and pin-type | 15 |
| Insulated cable lugs > 6 mm² and insulated end-connectors | 16 |
| Insulated butt- and parallel connectors | 17 |
| Insulated receptacles | 18-19 |
| Insulated male/female bullets | 20 |
| Insulated shrinkable cable lugs and connectors | 20-21 |
| Insulated solder splices and assortment-boxes | 22 |
| **1.2 Uninsulated cable lugs and connectors** | |
| Uninsulated cable lugs ring- and fork-type DIN 46234 and special designs | 24-25 |
| Uninsulated cable lugs usual in trade designs and connectors acc. to DIN 46341 part 1 design A | 26 |
| Uninsulated connectors acc. to DIN 46341 part 1 design B and cable lugs acc. to DIN 46211 design A | 27 |
| Uninsulated pin- and flag-type cable lugs | 28 |
| **1.3 Uninsulated tubular cable lugs and connectors druseidt standard design** | |
| Ring-type design | 30-31 |
| Angle-type design | 32-33 |
| Fork-type design and butt connectors | 34 |
| **1.4 Uninsulated tubular cable lugs and connectors for fine stranded cables** | |
| Ring-type design | 36 |
| Angle-type design | 37 |
| Ring-type design with smaller flange and butt connectors | 38 |
| Angle-type design with smaller flange and crimping examples | 39 |
| Silicone insulated leadings | 40 |
| **1.5 Uninsulated tubular cable lugs and connectors druseidt Euro-design** | |
| Ring-type design | 42-43 |
| Ring-type design with smaller flange | 44 |
| Angle-type design | 45-47 |
| Butt- and T-shaped connectors | 48 |
| **1.6. Uninsulated tubular cable lugs DIN-types as well as reduction sleeves and H-shaped connectors out of copper** | |
| Ring-type acc. to DIN 46235 and special designs | 50-51 |
| Angle-types | 52 |
| Connectors acc. to DIN 46267 part 1 and H-shaped connectors | 53 |
| Reduction sleeves and cable lugs in special design | 54 |
| **1.7. Uninsulated cable lugs and connectors made out of aluminium resp. bimetallic designs** | |
| AL-Ring-type acc. to DIN 46329 | 56 |
| AL-connectors acc. to DIN 46267 part 2 as well as connectors with oil stop | 57 |
| Bimetallic cable lugs | 58 |
| Bimetallic connectors | 59 |
| Bimetallic sheets, washers and seal contact-modules | 60 |
| **1.8 Special cable lugs and connectors** | |
| Cable lugs and connectors made out of nickel | 62 |
| Cable lugs made out of stainless steel A4 | 63 |
| Punched, screwable cable lugs made out of copper | 64 |
| **1.9 Cable end sleeves** | |
| Uninsulated acc. to DIN 46228 part 1 and special design | 66-67 |
| Insulated acc. to DIN 46228 part 4 and special design | 68-69 |
| Insulated twin cable end sleeves and insulated cable end sleeves with big insulation sleeve | 70 |
| Assortment boxes | 71-74 |
| **1.10 Uninsulated crimping contacts as well as insulating sleeves and flat terminals** | |
| Uninsulated crimping contacts 2,8 mm | 76 |
| Uninsulated crimping contacts 4,8 mm | 77 |
| Uninsulated crimping contacts 6,3 mm | 78-82 |
| Uninsulated cable lugs acc. to DIN 46225 design A | 82 |
| Insulating sleeves for tabs and receptacles | 83 |
| Plug in- and flat terminals | 84-86 |
| **1.11 Conductor connecting terminals, earth and neutral bars and insulators** | |
| Screwable connectors | 88 |
| Universal and brace terminals | 89 |
| Earth and neutral bars | 90-91 |
| Insulators | 92-94 |

| | Catalogue page |
|---|---|
| **1.12 High current plugs and sockets** | |
| Plugs and sockets with thread connection | 96 |
| Plugs and sockets with crimp connection | 97 |
| Ready assembled cables with plug connectors and sockets | 98 |
| **1.13 Battery clamps or clips and earthing tapes** | |
| Battery clips and jump loads | 100-101 |
| Battery clamps and clips | 102-103 |
| Earthing tapes | 104 |
| **1.14 Connectors and accessories for test bay and switch board application** | |
| Highly flexible connecting leads with plugs 4 mm Ø | 106 |
| Multilam-, clip-on and connecting plugs 4 mm Ø | 107-108 |
| Insulated and uninsulated sockets 4 mm Ø | 109-110 |
| Adapters 4 mm Ø | 110 |
| Insulated and uninsulated crocodile clips with connection sleeve 4 mm Ø | 111 |
| Flat test clips and test probes with connection sleeve 4 mm Ø | 112 |
| Test plugs, adapters and couplings | 113 |
| Binding posts 16-400 A | 114-117 |
| Lead through bolts 16-400 A | 118-119 |
| Cable ties and accessories | 120 |
| **1.15 Neoprene sleeves, insulation- and shrinkable tubing as well as copper paste and cleaning sprays** | |
| Neoprene sleeves and accessories | 122 |
| Heat shrinkable tubing material (thin wall design) | 123-125 |
| Heat shrinkable tubing material (middle wall design) | 125 |
| Heat shrinkable tubing material (double wall design) | 126 |
| PVC-insulating tubing | 126-127 |
| Silicone insulating tubing | 127 |
| Protection-, maintenance and cleaning sprays | 128 |
| Copper paste | 128 |
| **2. CUTTING-, STRIPPING- AND CRIMPING TOOLS** | |
| **2.1. Cutting tools** | |
| Cutting tools for copper and aluminium cables | 132 |
| Cutting tools with ratchet and jointed arm | 133 |
| Cutting tools with ratchet | 134-136 |
| Pneumatically actuated cutting device | 137 |
| Battery operated cutting tools | 138-139 |
| Hydraulic operated cutting heads | 140/195 |
| **2.2 Stripping tools** | |
| Stripping tools for PVC-leadings | 142 |
| Stripping tools with exchangeable stripping cassettes | 142-143 |
| Cable stripping knife | 144 |
| Stripping tools for solar cables | 144 |
| Stripping device with exchangeable blades | 145 |
| Pneumatically operated stripping machine | 146 |
| **2.3 Crimping tools for cable end sleeves** | |
| Hand operated tools | 148-150 |
| Quadro-tool | 150 |
| **2.4 Hand operated, multifunction-tools as well as machines for crimping insulated and uninsulated cable lugs and connectors** | |
| Crimping tools for insulated connectors | 152 |
| Multifunction crimping tools | 153-154 |
| Crimping tools for Coax-connectors | 154 |
| Crimping tools for uninsulated tabs and receptacles | 154-156 |
| Electrical operated crimping machine | 156 |
| Pneumatically operated crimping machine | 157 |
| Crimping tools for uninsulated cable lugs and connectors | 158-160 |
| **2.5 Power-supported crimping tools** | |
| Crimping tools with ratchet | 162-168 |
| Hydraulic operated crimping tools | 169-171 |
| Battery operated crimping and cutting tools | 172-186 |
| Electro hydraulic pumps with exchangeable compression- and cutting heads | 187-195 |
| druseidt system crimping dies size I-III | 196-201 |
| **3. TECHNICAL APPENDIX/NUMERICAL INDEX** | 202-211 |

## Listing of the DIN-articles

| Norm | Description | | Catalogue page |
|---|---|---|---|
| **DIN 46211** | design A | Ring-type solder tags | 27 |
| **DIN 46225** | design A | Ring-type crimp terminals | 82 |
| **DIN 46228** | page 1 | Uninsulated cable end sleeves | 66-67 |
| **DIN 46228** | page 4 | Insulated cable end sleeves | 69 |
| **DIN 46230** | | Uninsulated pin connectors | 28 |
| **DIN 46231** | | Insulated pin connectors | 15 |
| **DIN 46234** | | Uninsulated cable lugs | 24-25 |
| **DIN 46235** | | Uninsulated tubular cable lugs | 50 |
| **DIN 46237** | | Insulated cable lugs | 14 |
| **DIN 46244** | part 1 | Different connectors with dimensions in the tab sector acc. to DIN 46244 part 1 | 79-80 |
| **DIN 46245** | part 1 | Uninsulated receptacles 2,8 mm | 18 |
| **DIN 46245** | part 2 | Uninsulated receptacles 4,8 mm | 18 |
| **DIN 46245** | part 3 | Uninsulated receptacles 6,3 mm | 18 |
| **DIN 46247** | part 1 | Uninsulated receptacles 2,8 mmt | 76 |
| **DIN 46247** | part 2 | Uninsulated receptacles 4,8 mm | 77 |
| **DIN 46248** | part 3/A | Uninsulated receptacles 6,3 mm | 80 |
| **DIN 46267** | part 1 | Copper compression lugs | 53 |
| **DIN 46267** | part 2 | Aluminium compression lugs | 57 |
| **DIN 46329** | | Aluminium-cable lugs, longitudinally sealed | 56 |
| **DIN 46330** | part 2/A | Uninsulated receptacles 2,8 mm | 76 |
| **DIN 46340** | part 1/A + B | Uninsulated receptacles 2,8 mm | 76 |
| **DIN 46340** | part 3/A + B | Uninsulated receptacles 6,3 mm | 78 |
| **DIN 46341** | design A | Uninsulated parallel connectors | 27 |
| **DIN 46341** | design B | Uninsulated butt connectors | 28 |
| **DIN 46342** | part 1/design A + B | Uninsulated flat connectors | 81 |
| **DIN 46345** | part 1 | Uninsulated tabs 6,3 mm | 79 |
| **DIN 46346** | design A + B | Uninsulated multiple tabs 6,3 mm | 78 |
| **DIN 72331** | | Screwable battery clamps | 102 |
| **DIN 72332** | | Soldering battery clamps | 102 |
| **DIN 72333** | part 3/design A + B | Earthing tapes | 104 |

DIN

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.1 Insulated cable lugs and connectors

The druseidt company delivers various kinds of insulated cable lugs and connectors acc. to DIN 46237, 46231, 46245 part 1-3 as well as usual in trade designs up to a cross-section range of 150 mm². The used insulating materials are PA heat resistant up to + 105° C, PC heat resistant up to + 100° C, PVC heat resistant up to + 70° C.

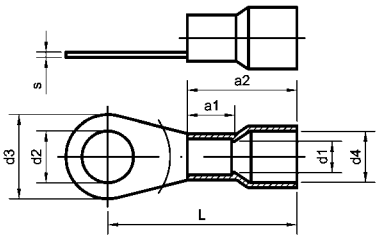
All cable lugs are manufactured out of copper with a high conductivity and will be hard soldered in the range of the connecting sleeve. The inner parts of the connecting sleeves are chamfered and raise the cohesion of the crimping. The easy entry insulation sleeves are free of halogen and enable an easy insertion of conductors. To protect cable connections against moisture, shrinkable designs with adhesive are offered too. The recommend crimping design is a so called oval crimping acc. to the adjoining examples.

Please notice, that the crimping operations will be done only with the right and suitable tools and die-sets.

Recommend crimping:
Oval-crimping

## Insulated cable lugs 0,5-6 mm²

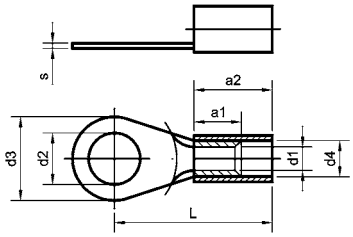
Ringtype in acc. with DIN 46237
with flared insulation sleeve
Material: Cu-HTP, tinned and soldered
Insulation sleeve: PA, free of halogen




| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | $a_1$ | $a_2$ | s | weight kg/ ‰ pcs. | crimping-tools/page no. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **01006.01.02** | 0,5-1 | 2,5 | 1,6 | 2,7 | 6 | 4,1 | 16,5 | 5,5 | 11 | 0,80 | 0,60 | | 12430, 12408 page no.156; 12425 page no. 157 | 12858, 05160/61/62 page no. 153 | 12600/N, 12601, 05180 page no. 152 |
| **01007.01.02** | | 3 | | 3,2 | 6 | | 17 | | | | 0,60 | | | | |
| **01008.01.02** | | 3,5 | | 3,7 | 6 | | 17 | | | | 0,55 | | | | |
| **01010.01.02** | | 4 | | 4,3 | 8 | | 18 | | | | 0,70 | | | | |
| **01012.01.02** | | 5 | | 5,3 | 10 | | 19 | | | | 0,90 | | | | |
| **01013.01.02** | | 6 | | 6,4 | 11 | | 21 | | | | 0,80 | | | | |
| **01015.01.02** | | 8 | | 8,4 | 11,6 | | 21,6 | | | | 1,30 | | | | |
| **01016.01.02** | 1,5-2,5 | 3 | 2,3 | 3,2 | 6 | 4,5 | 17 | 5,5 | 11 | 0,80 | 0,65 | | | | |
| **01017.01.02** | | 3,5 | | 3,7 | 6 | | 17 | | | | 0,65 | | | | |
| **01020.01.02** | | 4 | | 4,3 | 8 | | 18 | | | | 0,80 | | | | |
| **01022.01.02** | | 5 | | 5,3 | 10 | | 20 | | | | 0,90 | | | | |
| **01024.01.02** | | 6 | | 6,4 | 11 | | 22 | | | | 1,10 | | | | |
| **01025.01.02** | | 8 | | 8,4 | 14 | | 23 | | | | 1,30 | | | | |
| **01026.01.02** | | 10 | | 10,5 | 14 | | 25 | | | | 1,60 | | | | |
| **01028.01.02** | 4-6 | 4 | 3,6 | 4,3 | 8 | 6,5 | 21 | 6,0 | 13 | 1,00 | 1,40 | | | | |
| **01029.01.02** | | 5 | | 5,3 | 10 | | 22 | | | | 1,60 | | | | |
| **01030.01.02** | | 6 | | 6,4 | 11 | | 23 | | | | 1,70 | | | | |
| **01031.01.02** | | 8 | | 8,4 | 14 | | 26 | | | | 2,20 | | | | |
| **01032.01.02** | | 10 | | 10,5 | 18 | | 28 | | | | 2,90 | | | | |

## Insulated cable lugs, 0,1-6 mm²

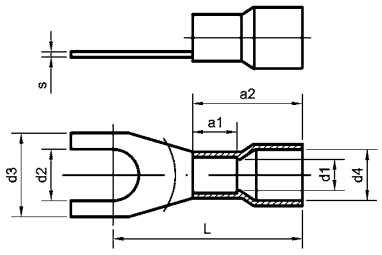
Ringtype, in special design
not in acc. with DIN Material: Cu-HTP,
tinned and soldered
Insulation sleeve: PVC or PA




| Part-No. PVC | Part-No. PA | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | $a_1$ | $a_2$ | s | weight kg / ‰ pcs. | crimping-tools/page no. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| - | **01000.01** | 0,1-0,5 | 2 | 1 | 2,2 | 5 | 2 | 14 | 4 | 8 | 0,5 | 0,23 | 05103 page no. 152 05160/05162 page no. 153 | | |
| - | **01001.01** | | 3 | | 3,2 | 5 | | 14 | | | | 0,20 | | | |
| - | **01002.01** | | 4 | | 4,3 | 7 | | 16 | | | | 0,26 | | | |
| - | **01003.01** | | 5 | | 5,3 | 8 | | 15 | | | | 0,28 | | | |
| **01005** | **01005.01** | 0,5-1 | 2 | 1,6 | 2,2 | 6 | 3,2 | 16 | 5 | 10 | 0,8 | 0,55 | | 12430, 12408 page no. 156 12425 page no. 157 | 12858, 05160/61/62 page no. 153 | 12600/N, 12601, 05180 page no. 152 |
| **01009** | **01009.01** | | 4 | | 4,3 | 7 | | 16 | | | | 0,70 | | | | |
| **01011** | **01011.01** | | 5 | | 5,3 | 8 | | 17 | | | | 0,90 | | | | |
| **01014** | **01014.01** | | 6 | | 6,5 | 12 | | 22 | | | | 1,30 | | | | |
| **01018** | **01018.01** | 1,5-2,5 | 3,5 | 2,3 | 3,7 | 6,8 | 4,3 | 17 | 5 | 11 | 0,8 | 0,65 | | | | |
| **01019** | **01019.01** | | 4 | | 4,3 | 6,8 | | 17 | | | | 0,80 | | | | |
| **01021** | **01021.01** | | 5 | | 5,3 | 8 | | 18 | | | | 0,90 | | | | |
| **01023** | **01023.01** | | 6 | | 6,5 | 10 | | 20 | | | | 1,10 | | | | |
| **01027** | **01027.01** | | 12 | | 13,0 | 18 | | 26 | | | | 1,50 | | | | |
| **01033** | **01033.01** | 4-6 | 12 | 3,6 | 13,0 | 18 | 6,4 | 27 | 6 | 12 | 1 | 3,10 | | | |

## Insulated cable lugs 0,1-16 mm²

Forktype with flared insulation sleeve
Material: Cu-HCP, tinned and soldered
Insulation sleeve: PA, free of halogen

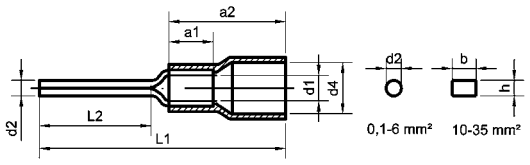



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | $a_1$ | $a_2$ | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **01040.01*** | 0,1-0,5 | 3 | 1 | 3,2 | 5 | 2 | 14 | 4 | 8 | 0,5 | 0,20 | 05103, 05160 |
| **01041.01.02** | 0,5-1 | 3 | 1,6 | 3,2 | 6 | 4,1 | 17 | 5 | 10,5 | 0,8 | 0,60 | 12425 page no. 157 / 12430, 12408 page no. 156 / 12858, 05160/61/62 page no. 153 / 12600/N, 12601, 05180 page no. 152 |
| **01042.01.02** | | 3,5 | | 3,7 | 6,4 | | 17 | | | | 0,60 | |
| **01044.01.02** | | 4 | | 4,3 | 6,4 | | 17 | | | | 0,70 | |
| **01045.01.02** | | 5 | | 5,3 | 10 | | 19 | | | | 0,90 | |
| **01046.01.02** | | 6 | | 6,4 | 11 | | 21 | | | | 0,80 | |
| **01048.01.02** | 1,5-2,5 | 3 | 2,3 | 3,2 | 6 | 4,5 | 17 | 5 | 11,5 | 0,8 | 0,60 | |
| **01050.01.02** | | 3,5 | | 3,7 | 6 | | 17 | | | | 0,65 | |
| **01051.01.02** | | 4 | | 4,3 | 6,4 | | 17,3 | | | | 0,80 | |
| **01053.01.02** | | 5 | | 5,3 | 10 | | 20 | | | | 0,90 | |
| **01054.01.02** | | 6 | | 6,4 | 11 | | 22 | | | | 1,10 | |
| **01055.01.02** | 4-6 | 4 | 3,6 | 4,3 | 8 | 6,5 | 21 | 6 | 12,5 | 1 | 1,40 | |
| **01056.01.02** | | 5 | | 5,3 | 10 | | 22 | | | | 1,60 | |
| **01057.01.02** | | 6 | | 6,4 | 11 | | 23 | | | | 1,70 | |
| **01058.01.02** | | 8 | | 8,4 | 14 | | 26 | | | | 2,20 | |
| **01059.01.02** | | 10 | | 10,5 | 18 | | 28 | | | | 2,80 | |
| **10021.01.02** | 10 | 5 | 4,5 | 5,3 | 10,5 | 8 | 23,8 | 8 | 16 | 1 | 2,30 | 12602 page no. 152 / 12655 page no. 163 / 30460 page no. 165 / 31460 page no. 167 / 12930/33 page no. 169 |
| **01060.01.02** | | 6 | | 6,5 | 11 | | 24,4 | | | | 2,40 | |
| **01062.01.02** | 16 | 6 | 5,8 | 6,5 | 11 | 10,9 | 32,1 | 10 | 20 | 1 | 3,80 | |
| **01063.01.02** | | 8 | | 8,4 | 14 | | 34,1 | | | | 5,00 | |

* Design without flared insulation sleeve

## Insulated Pin connectors 0,1-35 mm²

DIN 46231 and special design
with and without flared insulation sleeve
Material: Cu-HCP, tinned and soldered
Insulation sleeve: PVC or PA free of halogen

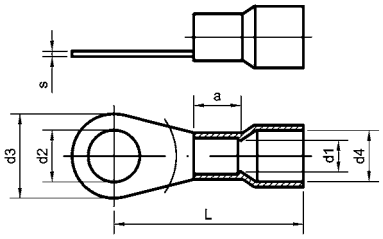



| Part-No. PVC | Part-No. PA | cross-section mm² | DIN-type | dimensions mm $d_1$ | $d_2$ | b | h | $d_4$ | $a_1$ | $a_2$ | $L_1$ | $L_2$ | weight kg/‰ Stck | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| - | **01070.01** | 0,1 - 0,5 | - | 1 | 1,4 | - | - | 2 | 4 | 8 | 18 | 8 | 0,30 | 05103, 05160 |
| - | **01071.01.02*** | 0,5-1 | 1 | 1,6 | 1,9 | - | - | 4,1 | 5 | 11 | 22,5 | 10 | 0,70 | 12600/N, 12601, 05180 page no. 152 |
| **01072** | **01072.01** | | - | | | - | - | 3,2 | | 10,5 | 20 | 8 | 0,65 | |
| **01073** | **01073.01** | | - | | | - | - | 3,2 | | | 17 | 5 | 0,60 | 12858, 05160/61/62 page no. 153 |
| - | **01074.01.02*** | 1,5-2,5 | 2,5 | 2,3 | 1,9 | - | - | 4,5 | 5,5 | 11 | 23,5 | 10 | 0,75 | |
| **01076** | **01076.01** | | - | | | - | - | 5,1 | 5 | 11,5 | 28 | 15 | 0,90 | 12430, 12408 page no. 156 |
| - | **01077.01.02*** | 4-6 | 6 | 3,6 | 2,7 | - | - | 6,5 | 6 | 12,5 | 26,5 | 11 | 1,70 | 12425 page no. 157 |
| - | **01078.01.02*** | 10 | - | 4,5 | - | 4,3 | 2,4 | 7,7 | 8 | 20 | 34 | 12 | 2,55 | 12602 page no. 152 / 12655 page no. 163 / 30460 page no. 165 / 31460 page no. 167 / 12930/33 page no. 169 |
| - | **01079.01.02*** | 16 | - | 5,8 | - | 5,6 | 2,5 | 9 | 10 | 24,2 | 40,7 | 13,5 | 4,30 | |
| - | **01092.01.02*** | 25 | - | 7 | - | 6,9 | 2,5 | 12,4 | 13,5 | 24,8 | 44 | 16 | 6,85 | |
| - | **01094.01.02*** | 35 | - | 8,4 | - | 8,1 | 3,2 | 14 | 16 | 27,8 | 52,5 | 20 | 12,20 | |

* Design with flared insulation sleeve

## Insulated cable lugs 10-150 mm²

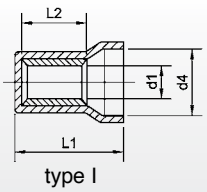
Ringtype, with flared insulation sleeve
Material: Cu-ETP, tinned and soldered
Insulation sleeve: PA, free of halogen



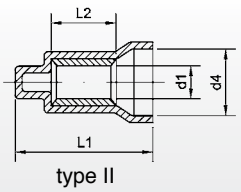

| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **01461.01.02** | 10 | 5 | 4,5 | 5,3 | 10 | 8 | 24,5 | 8 | 1,1 | 2,30 | 12602 page no. 152; 12655 page no. 163; 30460 page no. 165;12930/33 page no.169; 31460 page no. 167 |
| **01462.01.02** | | 6 | | 6,5 | 11 | | 25,5 | | | 2,45 | |
| **01463.01.02** | | 8 | | 8,4 | 14 | | 28,5 | | | 2,95 | |
| **01464.01.02** | | 10 | | 10,5 | 18 | | 29,5 | | | 3,50 | |
| **01466.01.02** | 16 | 5 | 5,8 | 5,3 | 11 | 10,5 | 31,5 | 10 | 1,2 | 4,00 | |
| **01467.01.02** | | 6 | | 6,5 | 11 | | 31,5 | | | 3,80 | |
| **01468.01.02** | | 8 | | 8,4 | 14 | | 33,5 | | | 4,25 | |
| **01469.01.02** | | 10 | | 10,5 | 18 | | 35,5 | | | 5,00 | |
| **01471.01.02** | 25 | 5 | 7,5 | 5,3 | 12 | 13 | 38 | 11 | 1,5 | 7,00 | |
| **01472.01.02** | | 6 | | 6,5 | 12 | | 38 | | | 7,00 | |
| **01473.01.02** | | 8 | | 8,4 | 16 | | 38 | | | 7,60 | |
| **01474.01.02** | | 10 | | 10,5 | 18 | | 39 | | | 7,80 | |
| **01475.01.02** | | 12 | | 13 | 22 | | 44 | | | 9,70 | |
| **01476.01.02** | 35 | 6 | 9 | 6,5 | 15 | 14,5 | 41 | 12 | 1,6 | 9,70 | |
| **01477.01.02** | | 8 | | 8,4 | 16 | | 41 | | | 9,70 | |
| **01478.01.02** | | 10 | | 10,5 | 18 | | 42 | | | 10,00 | |
| **01479.01.02** | | 12 | | 13 | 22 | | 46 | | | 11,70 | |
| **01494.01.02** | 50 | 6 | 11 | 6,5 | 18 | 16,5 | 47,5 | 16 | 1,8 | 17,55 | |
| **01480.01.02** | | 8 | | 8,4 | 18 | | 47,5 | | | 17,10 | |
| **01481.01.02** | | 10 | | 10,5 | 18 | | 47,5 | | | 16,50 | |
| **01482.01.02** | | 12 | | 13 | 22 | | 49,5 | | | 18,00 | |
| **01483.01.02** | 70 | 6 | 13 | 6,5 | 22 | 18,7 | 51 | 18 | 2 | 26,30 | |
| **01484.01.02** | | 8 | | 8,4 | 22 | | 51 | | | 26,30 | |
| **01485.01.02** | | 10 | | 10,5 | 22 | | 51 | | | 25,50 | |
| **01486.01.02** | | 12 | | 13 | 22 | | 51 | | | 24,70 | |
| **01487.01.02** | | 16 | | 17 | 28 | | 55 | | | 27,70 | |
| **01495.01.02** | 95 | 8 | 15 | 8,4 | 24 | 21,7 | 57,5 | 20 | 2,5 | 41,10 | |
| **01488.01.02** | | 10 | | 10,5 | 24 | | 57,5 | | | 41,70 | |
| **01489.01.02** | | 12 | | 13 | 24 | | 57,5 | | | 39,40 | |
| **01490.01.02** | | 16 | | 17 | 28 | | 59,5 | | | 39,40 | |
| **01496.01.02** | 120 | 8 | 16,5 | 8,4 | 24 | 24,2 | 62 | 22 | 3 | 57,70 | |
| **01491.01.02** | | 10 | | 10,5 | 24 | | 62 | | | 56,70 | |
| **01492.01.02** | | 12 | | 13 | 24 | | 62 | | | 53,30 | |
| **01493.01.02** | | 16 | | 17 | 28 | | 66 | | | 64,10 | |
| **01497.01.02** | 150 | 10 | 19 | 10,5 | 30 | 27,2 | 70 | 24 | 3,2 | 82,90 | |
| **01498.01.02** | | 12 | | 13 | 30 | | 70 | | | 78,30 | |
| **01499.01.02** | | 16 | | 17 | 30 | | 70 | | | 80,10 | |

## Insulated closed end terminals 1,5-6 mm²

Material: Cu-ETP, tinned
Insulation sleeve: PA, free of halogen



type I

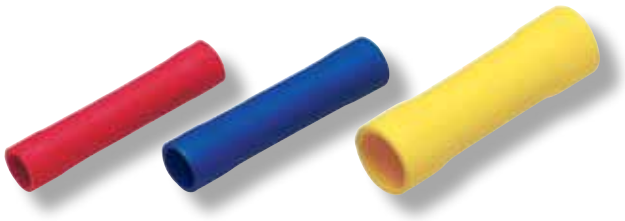


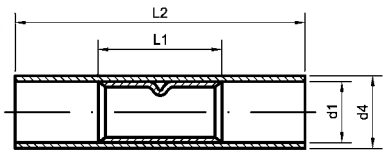
type II

| Best-Nr. | cross-section mm² | type | dimensions mm $d_1$ | $d_4$ | $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **01088.01** | 1,5-2,5 | I | 3,0 | 8,0 | 21 | 7 | 0,60 | 12600/N, 12601, 05180 page no. 152; 12858/05160/61/62 page no. 153; 12430, 12408, 12425 page no. 156/57 |
| **01090.01** | 1,5-2,5 | | 2,3 | 5,2 | 16 | 7 | 0,50 | |
| **01091.01** | 4-6 | | 3,6 | 9,0 | 18 | 7 | 1,42 | |
| **01089.01** | 4-6 | II | 3,8 | 9,5 | 27 | 7 | 0,90 | |

## Insulated butt connectors 0,1-6 mm²

Material: Cu-ETP tinned
Insulation sleeve: PVC or PA, free of halogen

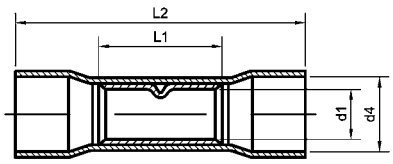





| Part-No. PVC | Part-No. PA | cross-section mm² | dimensions mm $d_1$ | $d_4$ | $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| - | **10022.01** | 0,1-0,5 | 1,2 | 2 | 12 | 20 | 0,30 | 05103, 05160 S. 152/153 |
| **01080** | **01080.01** | 0,5-1,0 | 1,6 | 3,2 | 15 | 25 | 0,90 | 12600/N, 12601, 05180 page no. 152 |
| **01081** | **01081.01** | 1,5-2,5 | 2,3 | 4 | 15 | 25 | 1,15 | 12858/05160/61/62 page no. 153 |
| **01082** | **01082.01** | 4-6 | 3,6 | 5,8 | 15 | 27 | 2,50 | 12430, 12408, 12425 page no. 156/57 |

## Insulated butt connectors 0,5-6 mm²

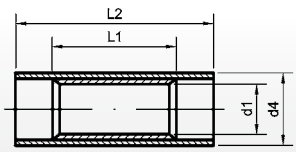
with flared insulation sleeve
Material: Cu-ETP tinned
Insulation sleeve: PC, free of halogen




| Part-No. | cross-section mm² | dimensions mm $d_1$ | $d_4$ | $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **01080.02** | 0,5-1,0 | 1,6 | 4,1 | 15 | 25 | 1,10 | 12600/N, 12601, 05180 page no. 152 |
| **01081.02** | 1,5-2,5 | 2,3 | 4,5 | 15 | 26 | 1,20 | 12858/05160/61/62 page no. 153 |
| **01082.02** | 4-6 | 3,6 | 6,4 | 15 | 27 | 2,60 | 12430, 12408, 12425 page no. 156/57 |

## Insulated parallel-connectors 0,1-6 mm²

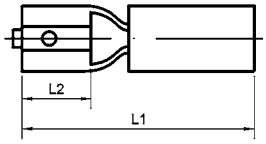
Material: Cu-ETP, tinned
Insulation sleeve: PVC or PA, free of halogen




| Part-No. PVC | Part-No. PA | cross-section mm² | dimensions mm $d_1$ | $d_4$ | $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| - | **10024.01** | 0,1-0,5 | 1,2 | 2,0 | 5 | 13 | 0,15 | 05103, 05160 S. 152/153 |
| **01083** | **01083.01** | 0,5-1,0 | 1,6 | 3,2 | 7 | 17 | 0,40 | 12600/N, 12601, 05180 page no. 152 |
| **01084** | **01084.01** | 1,5-2,5 | 2,3 | 4,6 | 7 | 17 | 0,50 | 12858/05160/61/62 page no. 153 |
| **01085** | **01085.01** | 4-6 | 3,6 | 6,4 | 7 | 21 | 0,90 | 12430, 12408, 12425 page no. 156/57 |

## Insulated receptacles 0,5-6 mm²

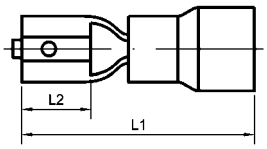
in acc. with DIN 46245 part 1-3 and special design
with add. metallic insulation enclosure
Material: brass, tinned
Insulation sleeve: PVC




| Part-No. | cross-section mm² | tab-width mm | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **01100** | 0,5-1,0 | 2,8 | 0,5 | A 2,8 - 1 | 17,5 | 8 | 0,33 | 12600/N, 12601, 05180 page no. 152<br>12858, 05160/61/62 page no. 153<br>12430, 12408 page no. 156<br>12425 page no. 157 |
| **01101** | | | 0,8 | B 2,8 - 1 | | | 0,33 | |
| **01102** | 0,5-1,0 | 4,8 | 0,5 | - | 18 | 6 | 0,50 | |
| **01103** | 1,5-2,5 | | | - | | | 0,48 | |
| **01104** | 0,5-1,0 | 4,8 | 0,8 | 4,8 - 1 | | | 0,50 | |
| **01105** | 1,5-2,5 | | | 4,8 - 2,5 | | | 0,48 | |
| **01106** | 0,5-1,0 | 6,3 | 0,8 | 6,3 - 1 | 22 | 7,4 | 0,82 | |
| **01107** | 1,5-2,5 | | | 6,3 - 2,5 | | | 0,92 | |
| **01108** | 4-6 | | | 6,3 - 6 | | | 0,98 | |
| **01109** | 0,5-1,0 | 7,7 | 0,8 | - | 25 | 9,5 | 1,07 | |
| **01110** | 1,5-2,5 | | | - | | | 1,16 | |
| **01111** | 4-6 | 9,5 | 1,2 | - | 27 | 12 | 1,50 | |

## Insulated receptacles 0,5-6 mm²

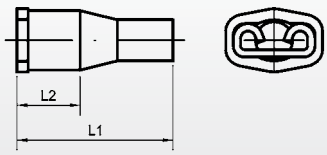
in acc. with DIN 46245 part 1-3
with flared insulation sleeve without metallic insulation enclosure
Material: brass, tinned
Insulation sleeve: PC, free of halogen




| Part-No. | cross-section mm² | tab-width mm | DIN-size | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **30024** | 0,5-1,0 | 2,8 | A 2,8 - 1 | 0,5 | 18,6 | 8 | 0,60 | 12600/N, 12601, 05180 page no. 152<br>12858, 05160/61/62 page no. 153<br>12430, 12408 page no. 156<br>12425 page no. 157 |
| **30025** | | | B 2,8 - 1 | 0,8 | | | 0,60 | |
| **30026** | 0,5-1,0 | 6,3 | 6,3 - 1 | 0,8 | 20 | 7,4 | 0,96 | |
| **30028** | 1,5-2,5 | | 6,3 - 2,5 | | | | 1,06 | |
| **30029** | 4-6 | | 6,3 - 6 | | 24 | | 1,83 | |

## Fully insulated receptacles 0,5-2,5 mm²

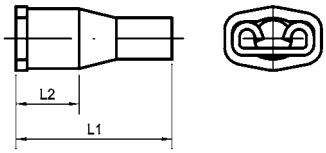
with add. metallic insulation enclosure
Material: brass, tinned
Insulation sleeve: PVC




| Part-No. | cross-section mm² | tab-width mm | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **30001** | 0,5-1,0 | 6,3 | 0,8 | 21 | 7,4 | 0,82 | pages no. 152, 153, 156, 157 |
| **30002** | 1,5-2,5 | | | | | 0,91 | |

## Fully insulated receptacles 0,5-6 mm²

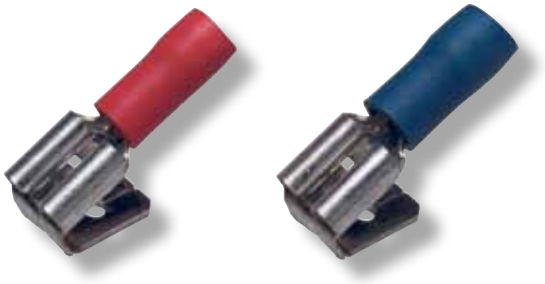
without metallic insulation enclosure
Material: brass, tinned
Insulation sleeve: PA or PC, free of halogen

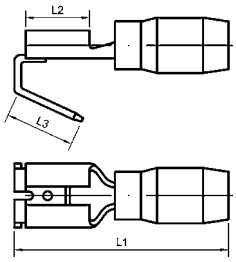



| Part-No. | cross-section mm² | tab-width mm | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **30003** | 0,5 - 1,0 | 2,8 | 0,5 | 19,3 | 8 | 1,10 | 12600/N, 12601, 05180 page no. 152<br>12858, 05160/61/62 page no. 153<br>12430, 12408 page no. 156<br>12425 page no. 157 |
| **30010** | | | 0,8 | | | 1,10 | |
| **30011** | 0,5 - 1,0 | 4,8 | 0,5 | 20,2 | 6 | 1,15 | |
| **30013** | 1,5 - 2,5 | | | | | 1,20 | |
| **30012** | 0,5 - 1,0 | | 0,8 | | | 1,15 | |
| **30014** | 1,5 - 2,5 | | | | | 1,20 | |
| **30018** | 0,5 - 1,0 | 6,3 | 0,8 | 21 | 7,4 | 1,23 | |
| **30020** | 1,5 - 2,5 | | | | | 1,32 | |
| **30022** | 4 - 6 | | | 26 | | 2,15 | |

## Insulated multiple tabs 0,5-2,5 mm²

with add. metallic insulation enclosure
Material: brass, tinned
Insulation sleeve: PVC

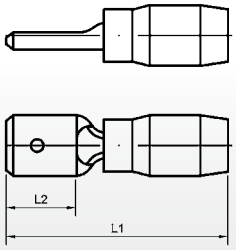





| Part-No. | cross-section mm² | tab-width mm | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | $L_3$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **01117** | 0,5 - 1,0 | 6,3 | 0,8 | 22 | 7,5 | 8 | 1,12 | pages no. 152, 153, 156, 157 |
| **01118** | 1,5 - 2,5 | | | | | | 1,12 | |

## Insulated tabs 0,5-6 mm²

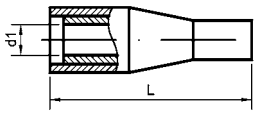
with add. metallic insulation enclosure
Material: brass, tinned
Insulation sleeve: PVC




| Part-No. | cross-section mm² | tab-width mm | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **01120** | 0,5 - 1,0 | 2,8 | 0,8 | 14,6 | 5,5 | 0,24 | pages no. 152, 153, 156, 157 |
| **01122** | 0,5 - 1,0 | 6,3 | 0,8 | 22 | 8 | 0,58 | |
| **01123** | 1,5 - 2,5 | | | | | 0,66 | |
| **01124** | 4 - 6 | | | | | 0,77 | |

## Insulated female bullets 0,5-6 mm²

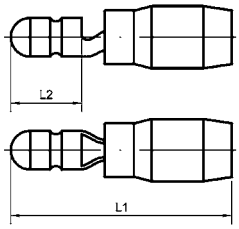
Material: bronze, tinned
Insulation sleeve: PVC




| Part-No. | cross-section mm² | dimensions mm d₁ | dimensions mm L | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|
| **01130** | 0,5 -1,0 | 4 | 22 | 0,56 | 12600/N, 12601, 05180 page no. 152 12858/05160/61/62 page no. 153 12430, 12408, 12425 page no. 156/57 |
| **10005** | 1,5 - 2,5 | | | 1,20 | |
| **01131** | 1,5 - 2,5 | 5 | 22 | 1,20 | |
| **01133** | 4 - 6 | | | 1,24 | |

## Insulated male bullets 0,5-6 mm²

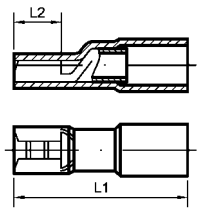
Material: brass, tinned
Insulation sleeve: PVC



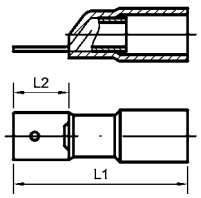

| Part-No. | cross-section mm² | pin - Ø mm | dimensions mm L₁ | dimensions mm L₂ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|
| **01140** | 0,5 - 1,0 | 4 | 22 | 9 | 0,60 | 12600/N, 12601, 05180 page no. 152 12858/05160/61/62 page no. 153 12430, 12408, 12425 page no. 156/57 |
| **10015** | 1,5 - 2,5 | | | | 1,50 | |
| **01141** | 1,5 - 2,5 | 5 | 22 | 9 | 0,75 | |
| **01142** | 4 - 6 | | | | 0,89 | |

## Insulated receptacles and tabs 0,5-6 mm²

shrinkable, with adhesive
Material: brass, tinned
Insulation sleeve: Polyolefin, free of halogen



type I / receptacle



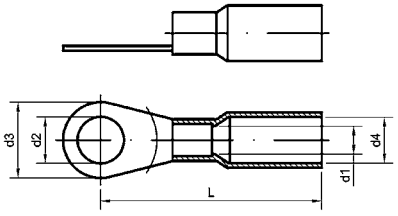
type II / tab

| Part-No. | cross-section mm² | type | tab-width mm | tab-thickness mm | dimensions mm L₁ | dimensions mm L₂ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **11020** | 0,5 - 1,0 | I | 6,3 | 0,8 | 27 | 8 | 1,2 | 12601 page no. 152 |
| **11021** | 1,5 - 2,5 | | | | | | 1,3 | |
| **11022** | 4 - 6 | | | | | | 2,0 | |
| **11040** | 0,5 - 1,0 | II | 6,3 | 0,8 | 27 | 8,3 | 1,0 | |
| **11041** | 1,5 - 2,5 | | | | | | 1,2 | |
| **11042** | 4 - 6 | | | | | | 2,0 | |

Suitable to ensure waterproof connections. Shrink-ratio: 3:1, Shrinktemperature: > + 90° C, operating temperature: -55° C up to + 95° C.

## Insulated cable lugs 0,5-6 mm² Ringtype,

shrinkable with adhesive
Material: Cu-ETP, tinned

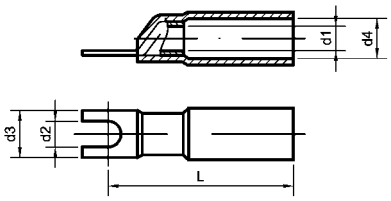



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|
| **01172** | 0,5 - 1,0 | 4 | 1,6 | 4,3 | 9 | 4,8 | 23,8 | 0,9 | 12601 page no. 152 |
| **01173** | | 5 | | 5,3 | 9 | | 23,8 | 0,8 | |
| **01174** | | 6 | | 6,4 | 11,4 | | 29 | 1,2 | |
| **01175** | | 8 | | 8,4 | 11,4 | | 29 | 1,0 | |
| **01176** | | 10 | | 10,5 | 13,8 | | 31,6 | 1,1 | |
| **01179** | 1,5 - 2,5 | 4 | 2,3 | 4,3 | 9,4 | 5,5 | 25,6 | 1,1 | |
| **01180** | | 5 | | 5,3 | 9,4 | | 25,6 | 1,1 | |
| **01181** | | 6 | | 6,4 | 11,8 | | 29,2 | 1,2 | |
| **01182** | | 8 | | 8,4 | 11,8 | | 29,2 | 1,2 | |
| **01183** | | 10 | | 10,5 | 13,7 | | 31,6 | 1,3 | |
| **01186** | 4 - 6 | 4 | 3,6 | 4,3 | 9,4 | 7 | 29,1 | 2,0 | |
| **01187** | | 5 | | 5,3 | 9,4 | | 29,1 | 1,9 | |
| **01188** | | 6 | | 6,4 | 11,2 | | 34,8 | 2,5 | |
| **01189** | | 8 | | 8,4 | 14,9 | | 34,8 | 2,5 | |
| **01190** | | 10 | | 10,5 | 14,9 | | 34,8 | 2,4 | |

Suitable to ensure waterproof connections. Shrink-ratio: 3:1, Shrinktemperature: > + 90° C, operating temperature: - 55° C up to + 95° C.
Insulation sleeve: Polyolefin, free of halogen

## Insulated cable lugs 0,5-6 mm² Forktype,

shrinkable with adhesive
Material: Cu-ETP, tinned

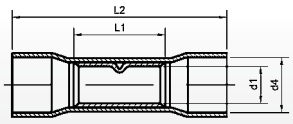



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|
| **11000** | 0,5 - 1,0 | 4 | 1,6 | 4,3 | 6,4 | 4,8 | 23 | 0,8 | 12601 page no. 152 |
| **11001** | | 5 | | 5,3 | 9,5 | | 24,2 | 0,9 | |
| **11004** | 1,5 - 2,5 | 4 | 2,3 | 4,3 | 6,4 | 5,5 | 23,5 | 0,9 | |
| **11005** | | 5 | | 5,3 | 9,4 | | 25,6 | 1,1 | |
| **11008** | 4 - 6 | 4 | 3,6 | 4,3 | 9,5 | 7 | 27,5 | 2,0 | |
| **11009** | | 5 | | 5,3 | 9,5 | | 27,5 | 2,1 | |

Suitable to ensure waterproof connections. Shrink-ratio: 3:1, Shrinktemperature:> + 90° C, operating temperature: - 55° C up to + 95° C.
Insulation sleeve: Polyolefin, free of halogen

## Insulated butt-connectors 0,1-6 mm²

shrinkable with adhesive
Material: Cu-ETP, tinned

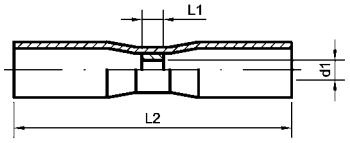



| Part-No. | cross-section mm² | dimensions mm $d_1$ | $d_4$ | $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **01094** | 0,1 - 0,3 | 1 | 3,2 | 11 | 25 | 0,5 | 12601 page no. 152 |
| **01095** | 0,5 - 1,0 | 1,6 | 4,8 | 15 | 37 | 1,2 | |
| **01096** | 1,5 - 2,5 | 2,3 | 5,5 | 15 | 37 | 1,5 | |
| **01097** | 4 - 6 | 3,6 | 7 | 15 | 41 | 2,9 | |

Suitable to ensure waterproof connections. Shrink-ratio: 3:1, Shrinktemperature:> + 90° C, operating temperature: -55° C up to + 95° C.
Insulation sleeve: Polyolefin, free of halogen

## Solder splices 0,3-6 mm²

shrinkable with adhesive
to ensure airtight and waterproof cable connections




| Part-No. | cross-section mm² | dimensions mm $d_1$ | $L_1$ | $L_2$ | operating temperature | weight kg/ ‰ Stck |
|---|---|---|---|---|---|---|
| **01194** | 0,3 - 0,8 | 1,7 | 2,0 | 26 | - 55° C bis + 95° C | 0,22 |
| **01195** | 0,8 - 2,0 | 2,7 | 3,4 | 42 | | 0,66 |
| **01196** | 2 - 4 | 4,5 | 4,0 | 42 | | 0,76 |
| **01197** | 4 - 6 | 6 | 4,5 | 42 | | 1,36 |

Solder splices with heat shrinkable tubing and adhesive. Suitable to ensure airtight and waterproof cable connections. The articles offer a combination out of solder and shrinkable connector and are outstandingly suitable to repair faulty cables in the field of the electro- and electronic industrie .The reliable protection against moisture and environmentals prevent a corrosion and guarantee connections with an optimal electrical resistance. By using components under vibration a break of the cable caused through corrosion are excluded. So the solder splices offer tremendous advantages compared with usual repairing of damaged cables by using electrical tapes etc.
By heating the solder splices you get the cable connection and the shrinking of the insulation tube with the adhesive in one handling operation. Caused by this one step process it is possible to reduce the repair costs. The pull out strength of the connection is 2,5 times higher compared with a pressed design.

**Technical Data**

| | | | |
|---|---|---|---|
| Shrink ratio: | 3:1 | Melting temp. solder alloy: | + 126° C up to + 145° C |
| Shrink temperature: | > + 120° C | Dielectric strength of the insulation: | 15 kV/mm |

## Solder splice mounting-set

| Part-No. | content |
|---|---|
| **01198** | 50 pcs. solder splices 0,3-0,8 mm²/01194<br>25 pcs. ” 0,8-2,0 mm²/01195<br>20 pcs. ” 1,5-2,5 mm²/01196<br>10 pcs. ” 2,0-4,0 mm²/01197<br>1 pcs. soldering-iron (butane-gas) with reflector |
| **01199** | Butane-fuel, 250 ml canister |

## Assortment boxes out of varnished steel sheet

| Part-No. | dimensions mm | description |
|---|---|---|
| **01316** | 245 x 160 x 45 | Box without content without carry-grip with 6 little and 1 tool-partition |
| **01317** | 350 x 160 x 35 | Box without content with carry-grip, 7 little and 1 tool partition |
| **01318** | 350 x 160 x 35 | Box without content with carry-grip, 12 little and 1 tool-partition |
| **01319** | 375 x 235 x 55 | Box without content with carry-grip, 19 little and 1 tool-partition |

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.2 Uninsulated cable lugs and connectors

druseidt cable lugs and connectors acc. to the described chapter 1.2 are manufactured acc. to DIN 46234, DIN 46230 and DIN 46341 design A + B as well as usual in trade designs. They are applicable for stranded, fine stranded and also extremely fine stranded conductors. The cable lugs can be delivered in ring-type, fork-type, pin-type, as well as flag type design.

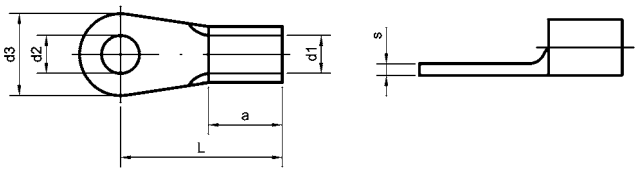
The connectors as parallel – but also as butt connectors. All terminals are manufactured out of copper with the highest conductivity. They are punched and the connecting sleeves are hard soldered. The tin plated surface offers a protection against oxidation and environmental influences . The crimping procedure should be done by a so called indent-crimping process acc. to the adjoining examples. Please pay attention to the fact that the indentor crimps the connectors only on the soldered seamed side of the crimping sleeves. In the cross-section range of 10 mm² or bigger it is necessary that the used tool left a visible cross-section stamping on the crimping sleeve. Also when working with multi-range tools the stamping has to mark the right range of the conductor cross-section on the crimping sleeve too.

Please notice that the crimpings will be done only with the right and suitable tools and die-sets.

Crimping design:
Indent-crimping

## Cable lugs 0,1-35 mm²

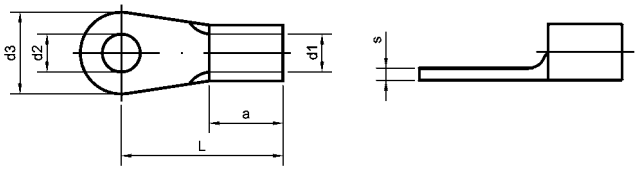
DIN 46234 and special design
Material: Cu-HCP, tinned




| Part-No. | cross-section mm² | drilling M | DIN size | dimensions mm $d_1$ | $d_2$ | $d_3$ | L | a | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01340 | 0,1 - 0,5 | 2 | 2 - 0,5 | 1 | 2,2 | 5 | 10 | 4 | 0,5 | 0,21 | |
| 01341 | | 3 | 3 - 0,5 | | 3,2 | 5 | 10 | | | 0,19 | |
| 01342 | | 4 | 4 - 0,5 | | 4,3 | 6,5 | 12 | | | 0,24 | |
| 01343 | | 5 | 5 - 0,5 | | 5,3 | 8 | 11 | | | 0,24 | |
| 01345 | 0,5 - 1 | 2 | - | 1,6 | 2,2 | 6 | 11 | 5 | 0,8 | 0,59 | |
| 01346 | | 2,5 | 2,5 - 1 | | 2,7 | 6 | 11 | 5 | | 0,58 | |
| 01347 | | 3 | 3 - 1 | | 3,2 | 6 | 11 | 5 | | 0,56 | |
| 01349 | | 3,5 | 3,5 - 1 | | 3,7 | 6 | 11 | 5 | | 0,55 | |
| 01351 | | 4 | - | | 4,3 | 6,5 | 8 | 4 | | 0,42 | |
| 01352 | | 4 | - | | 4,3 | 7 | 11 | 5 | | 0,58 | |
| 01353 | | 4 | 4 - 1 | | 4,3 | 8 | 12 | 5 | | 0,70 | |
| 01354 | | 5 | - | | 5,3 | 8 | 12 | 5 | | 0,65 | |
| 01355 | | 5 | 5 - 1 | | 5,3 | 10 | 13 | 5 | | 0,90 | |
| 01356 | | 6 | - | | 6,5 | 10 | 13 | 5 | | 0,85 | |
| 01357 | | 6 | - | | 6,5 | 12 | 17 | 5 | | 1,10 | |
| 01358 | | 8 | - | | 8,4 | 12 | 17 | 5 | | 1,00 | |
| 01359 | 1,5 - 2,5 | 3 | 3 - 2,5 | 2,3 | 3,2 | 6 | 11 | 5 | 0,8 | 0,63 | |
| 01360 | | 3,5 | 3,5 - 2,5 | | 3,7 | 6 | 11 | | | 0,62 | |
| 01362 | | 4 | - | | 4,3 | 6,8 | 11 | | | 0,63 | |
| 01363 | | 4 | 4 - 2,5 | | 4,3 | 8 | 12 | | | 0,78 | |
| 01364 | | 5 | - | | 5,3 | 8 | 12 | | | 0,70 | |
| 01365 | | 5 | 5 - 2,5 | | 5,3 | 10 | 14 | | | 0,90 | |
| 01366 | | 6 | - | | 6,5 | 10 | 14 | | | 0,85 | |
| 01367 | | 6 | 6 - 2,5 | | 6,5 | 11 | 16 | | | 1,06 | |
| 01368 | | 8 | 8 - 2,5 | | 8,4 | 14 | 17 | | | 1,30 | |
| 01369 | | 10 | - | | 10,5 | 18 | 20 | | | 2,00 | |
| 01370 | | 12 | - | | 13 | 18 | 20 | | | 1,70 | |
| 01371 | 4 - 6 | 4 | 4 - 6 | 3,6 | 4,3 | 8 | 14 | 6 | 1,0 | 1,40 | |
| 01372 | | 5 | 5 - 6 | | 5,3 | 10 | 15 | | | 1,60 | |
| 01373 | | 6 | 6 - 6 | | 6,5 | 11 | 16 | | | 1,70 | |
| 01374 | | 8 | 8 - 6 | | 8,4 | 14 | 19 | | | 2,20 | |
| 01375 | | 10 | 10 - 6 | | 10,5 | 18 | 21 | | | 2,80 | |
| 01376 | | 12 | - | | 13 | 18 | 21 | | | 2,50 | |
| 01377 | 10 | 4 | - | 4,5 | 4,3 | 10 | 16 | 8 | 1,1 | 2,30 | |
| 01378 | | 5 | 5 - 10 | | 5,3 | 10 | 16 | | | 2,25 | |
| 01379 | | 6 | 6 - 10 | | 6,5 | 11 | 17 | | | 2,40 | |
| 01380 | | 8 | 8 - 10 | | 8,4 | 14 | 20 | | | 2,90 | |
| 01381 | | 10 | 10 - 10 | | 10,5 | 18 | 21 | | | 3,40 | |
| 01382 | | 12 | 12 - 10 | | 13 | 22 | 23 | | | 4,20 | |
| 01383 | 16 | 5 | 5 - 16 | 5,8 | 5,3 | 11 | 20 | 10 | 1,2 | 3,90 | |
| 01384 | | 6 | 6 - 16 | | 6,5 | 11 | 20 | | | 3,80 | |
| 01385 | | 8 | 8 - 16 | | 8,4 | 14 | 22 | | | 4,30 | |
| 01386 | | 10 | 10 - 16 | | 10,5 | 18 | 24 | | | 5,00 | |
| 01387 | | 12 | 12 - 16 | | 13 | 22 | 26 | | | 6,00 | |
| 01388 | 25 | 5 | 5 - 25 | 7,5 | 5,3 | 12 | 25 | 11 | 1,5 | 7,00 | |
| 01389 | | 6 | 6 - 25 | | 6,5 | 12 | 25 | | | 6,90 | |
| 01390 | | 8 | 8 - 25 | | 8,4 | 16 | 25 | | | 7,50 | |
| 01391 | | 10 | 10 - 25 | | 10,5 | 18 | 26 | | | 8,00 | |
| 01392 | | 12 | 12 - 25 | | 13 | 22 | 31 | | | 9,20 | |
| 10080 | | 16 | 16 - 25 | | 17 | 28 | 35 | | | 12,50 | |
| 01393 | 35 | 6 | 6 - 35 | 9 | 6,5 | 15 | 26 | 12 | 1,6 | 10,10 | |
| 01394 | | 8 | 8 - 35 | | 8,4 | 16 | 26 | | | 9,80 | |
| 01395 | | 10 | 10 - 35 | | 10,5 | 18 | 27 | | | 10,00 | |
| 01396 | | 12 | 12 - 35 | | 13 | 22 | 31 | | | 12,60 | |
| 10085 | | 16 | 16 - 35 | | 17 | 28 | 36 | | | 14,70 | |

Werkzeuge mit auswechselbaren Einsätzen page no. 165 - 193
05126 page no. 153
12650 page no. 162; 12655 page no. 163
30445 page no. 158
12645/N page no. 158; 12858, 05160 page no. 153
05103 S. 158
05182 page no. 158; 12430, 12408, 12425 pages no. 156/157; 30446 ab 1,5 mm² page no. 158

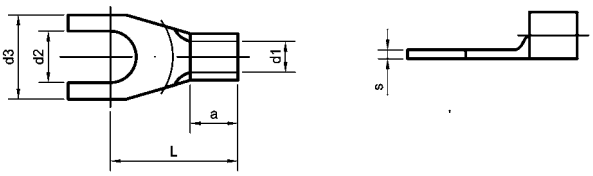
## Cable lugs DIN 46234 50-240 mm²




| Part-No. | cross-section mm² | drilling M | DIN size | dimensions mm d1 | d2 | d3 | L | a | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **10090** | 50 | 6 | 6 - 50 | 11 | 6,5 | 18 | 34 | 16 | 1,8 | 17,00 | 12965/S, 12968 page no. 171; 13551/25, 13551/42,13537 page no. 181; 12485, 12486, 12487 page no. 192; 12837 page no. 193; 31460 page no. 167; 14240/41 page no. 175; 13552 page no. 179; 12836 page no. 192; 12748 page no. 177; 14242 page no. 175; 12930, 12933 page no. 169; 30460 page no. 165; |
| **01397** | | 8 | 8 - 50 | | 8,4 | 18 | 34 | | | 16,50 | |
| **01398** | | 10 | 10 - 50 | | 10,5 | 18 | 34 | | | 16,00 | |
| **01399** | | 12 | 12 - 50 | | 13 | 22 | 36 | | | 18,00 | |
| **01400** | | 16 | 16 - 50 | | 17 | 28 | 40 | | | 21,00 | |
| **10091** | 70 | 6 | - | 13 | 6,5 | 22 | 38 | 18 | 2 | 26,00 | |
| **01401** | | 8 | 8 - 70 | | 8,4 | 22 | 38 | | | 26,00 | |
| **01402** | | 10 | 10 - 70 | | 10,5 | 22 | 38 | | | 25,00 | |
| **01403** | | 12 | 12 - 70 | | 13 | 22 | 38 | | | 24,00 | |
| **01404** | | 16 | 16 - 70 | | 17 | 28 | 42 | | | 27,00 | |
| **10092** | 95 | 8 | 8 - 95 | 15 | 8,4 | 24 | 42 | 20 | 2,5 | 41,00 | |
| **01405** | | 10 | 10 - 95 | | 10,5 | 24 | 42 | | | 41,00 | |
| **01406** | | 12 | 12 - 95 | | 13 | 24 | 42 | | | 39,00 | |
| **01407** | | 16 | 16 - 95 | | 17 | 28 | 44 | | | 41,00 | |
| **10093** | 120 | 8 | 8 - 120 | 17 | 8,4 | 24 | 44 | 22 | 3 | 56,00 | |
| **01408** | | 10 | 10 - 120 | | 10,5 | 24 | 44 | | | 56,00 | |
| **01409** | | 12 | 12 - 120 | | 13 | 24 | 44 | | | 54,00 | |
| **01410** | | 16 | 16 - 120 | | 17 | 28 | 48 | | | 58,00 | |
| **10095** | 150 | 10 | 10 - 150 | 19 | 10,5 | 30 | 50 | 24 | 3,2 | 77,00 | |
| **01411** | | 12 | 12 - 150 | | 13 | 30 | 50 | | | 76,00 | |
| **01412** | | 16 | 16 - 150 | | 17 | 30 | 50 | | | 75,00 | |
| **10097** | 185 | 10 | - | 21 | 10,5 | 36 | 50 | 28 | 3,5 | 147,00 | |
| **01413** | | 12 | 12 - 185 | | 13 | 36 | 50 | | | 147,00 | |
| **01414** | | 16 | 16 - 185 | | 17 | 36 | 50 | | | 143,00 | |
| **01416** | 240 | 12 | 12 - 240 | 23,5 | 13 | 38 | 56 | 32 | 4 | 235,00 | |
| **01417** | | 16 | 16 - 240 | | 17 | 38 | 56 | | | 234,00 | |

## Cable lugs 0,1-16 mm²

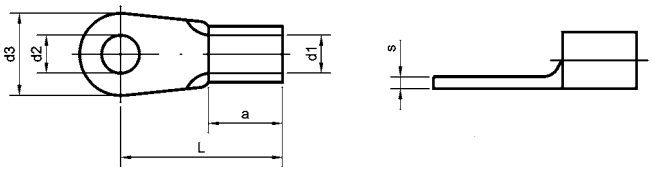
Fork-Type,
Material: Cu-HCP tinned




| Part-No. | cross-section mm² | drilling M | dimensions mm d1 | d2 | d3 | L | a | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **01430** | 0,1 - 0,5 | 3 | 1 | 3,2 | 5 | 10 | 4 | 0,5 | 0,21 | 05103 page no. 158 |
| **01431** | 0,5 - 1,0 | 3 | 1,6 | 3,2 | 6 | 11 | 5 | 0,8 | 0,56 | 30445 page no. 158; 12645/N page no. 158; 12858, 05160 page no. 153; 05182 page no. 158; 12430, 12408, 12425 pages no. 156/157; 30446 ab 1,5 mm² page no. 158 |
| **01432** | | 3 | | 3,2 | 6,5 | 8 | 4 | | 0,56 | |
| **01433** | | 3,5 | | 3,7 | 6 | 11 | 5 | | 0,56 | |
| **01434** | | 3,5 | | 3,7 | 6,5 | 8 | 4 | | 0,70 | |
| **01435** | | 4 | | 4,3 | 6,8 | 11 | 5 | | 0,70 | |
| **01436** | | 4 | | 4,3 | 8 | 12 | 5 | | 0,70 | |
| **01437** | | 5 | | 5,3 | 10 | 13 | 5 | | 0,90 | |
| **01438** | | 6 | | 6,5 | 12 | 17 | 5 | | 0,76 | |
| **01439** | 1,5 - 2,5 | 3 | 2,3 | 3,2 | 6 | 11 | 5 | 0,8 | 0,63 | |
| **01440** | | 3,5 | | 3,7 | 6,8 | 11 | | | 0,63 | |
| **01441** | | 4 | | 4,3 | 6,8 | 11 | | | 0,78 | |
| **01442** | | 4 | | 4,3 | 8 | 12 | | | 0,78 | |
| **01443** | | 5 | | 5,3 | 10 | 14 | | | 0,90 | |
| **01444** | | 6 | | 6,5 | 11 | 16 | | | 1,06 | |
| **01445** | 4 - 6 | 4 | 3,6 | 4,3 | 8 | 14 | 6 | 1,0 | 1,40 | Werkzeuge mit auswechselbaren Einsätzen ab page no. 162; 05126 page no. 158 |
| **01446** | | 5 | | 5,3 | 10 | 15 | | | 1,60 | |
| **01447** | | 6 | | 6,5 | 11 | 16 | | | 1,70 | |
| **01448** | | 8 | | 8,4 | 14 | 19 | | | 2,20 | |
| **01449** | 10 | 5 | 4,5 | 5,3 | 10 | 16 | 8 | 1,1 | 3,90 | |
| **01450** | | 6 | | 6,5 | 11 | 17 | | | 3,80 | |
| **01452** | 16 | 6 | 5,8 | 6,5 | 11 | 20 | 10 | 1,2 | 3,80 | |
| **01453** | | 8 | | 8,4 | 14 | 22 | | | 5,00 | |

## Cable lugs 10-300 mm²

Material: Cu-HCP, tinned

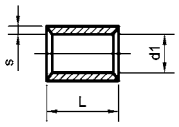



| Part-No. | cross-section mm² | size | dimensions mm $d_1$ | $d_2$ | $d_3$ | a | L | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **01501** | 10 | 6 x 4,3 | 4,3 | 6,4 | 11 | 10 | 21 | 1 | 2,52 | on request |
| **01502** | | 8 x 4,3 | | 8,4 | 15 | | 24 | | 3,18 | |
| **01503** | | 10 x 4,3 | | 10,5 | 19 | | 26 | | 4,10 | |
| **01504** | | 12 x 4,3 | | 13 | 22 | | 28 | | 4,50 | |
| **01506** | 16 | 6 x 5,4 | 5,4 | 6,4 | 11 | 11,5 | 24 | 1 | 3,46 | |
| **01507** | | 8 x 5,4 | | 8,4 | 15 | | 27 | | 4,20 | |
| **01508** | | 10 x 5,4 | | 10,5 | 19 | | 29 | | 4,90 | |
| **01509** | | 12 x 5,4 | | 13 | 22 | | 31 | | 5,50 | |
| **01510** | 25 | 6 x 6,8 | 6,8 | 6,4 | 13 | 13,5 | 27 | 1,2 | 5,91 | |
| **01511** | | 8 x 6,8 | | 8,4 | 15 | | 30 | | 6,50 | |
| **01512** | | 10 x 6,8 | | 10,5 | 19 | | 32 | | 7,50 | |
| **01513** | | 12 x 6,8 | | 13 | 22 | | 35 | | 8,40 | |
| **01516** | 35 | 8 x 8,2 | 8,2 | 8,4 | 15 | 16 | 33 | 1,5 | 10,64 | |
| **01517** | | 10 x 8,2 | | 10,5 | 19 | | 35 | | 11,70 | |
| **01518** | | 12 x 8,2 | | 13 | 22 | | 38 | | 13,50 | |
| **01521** | 50 | 8 x 9,5 | 9,5 | 8,4 | 17 | 19 | 36 | 1,8 | 16,89 | |
| **01522** | | 10 x 9,5 | | 10,5 | 19 | | 38 | | 17,50 | |
| **01523** | | 12 x 9,5 | | 13 | 22 | | 41 | | 18,90 | |
| **01525** | 70 | 8 x 11,2 | 11,2 | 8,4 | 21 | 24 | 44 | 2 | 27,70 | |
| **01526** | | 10 x 11,2 | | 10,5 | 21 | | 44 | | 27,50 | |
| **01527** | | 12 x 11,2 | | 13 | 22 | | 47 | | 29,60 | |
| **01528** | | 16 x 11,2 | | 17 | 28 | | 50 | | 33,10 | |
| **01530** | 95 | 10 x 13,5 | 13,5 | 10,5 | 21 | 24 | 44 | 2,5 | 39,20 | |
| **01531** | | 12 x 13,5 | | 13 | 22 | | 47 | | 40,70 | |
| **01533** | 120 | 12 x 15 | 15 | 13 | 24 | 29 | 53 | 3 | 63,10 | |
| **01534** | | 16 x 15 | | 17 | 28 | | 55 | | 65,30 | |
| **01536** | 150 | 12 x 16,5 | 16,5 | 13 | 28 | 29 | 55 | 3,5 | 84,50 | |
| **01537** | | 16 x 16,5 | | 17 | 28 | | 55 | | 83,20 | |
| **01538** | 185 | 12 x 18,5 | 18,5 | 13 | 28 | 34 | 61 | 4 | 116,80 | |
| **01539** | | 16 x 18,5 | | 17 | 28 | | 61 | | 114,40 | |
| **01540** | 240 | 12 x 21 | 21 | 13 | 30 | 40 | 68 | 5 | 189,00 | |
| **01541** | | 16 x 21 | | 17 | 30 | | 68 | | 186,00 | |
| **01542** | 300 | 12 x 23,5 | 23,5 | 13 | 30 | 40 | 68 | 5 | 200,40 | |
| **01543** | | 16 x 23,5 | | 17 | 30 | | 68 | | 200,40 | |

## Parallel connectors 0,5-150 mm²

DIN 46341 part 1, design A

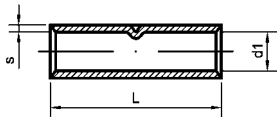
Material: Cu-HCP, tinned




| Part-No. | cross-section mm² | DIN size | dimensions mm $d_1$ | L | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **01760** | 0,5 - 1,0 | A - 1 | 1,6 | 7 | 0,8 | 0,40 | crimping-tools page no. 153, 156, 157, 158, 162, 163, 165, 167, 169, 171, 175, 179, 181, 192, 193 |
| **01761** | 1,5 - 2,5 | A - 2,5 | 2,3 | 7 | 0,8 | 0,50 | |
| **01762** | 4 - 6 | A - 6 | 3,6 | 7 | 1 | 0,90 | |
| **01763** | 10 | A - 10 | 4,6 | 9 | 1,1 | 1,64 | |
| **01764** | 16 | A - 16 | 5,9 | 10 | 1,2 | 2,52 | |
| **01765** | 25 | A - 25 | 7,7 | 12,5 | 1,5 | 5,17 | |
| **01766** | 35 | A - 35 | 9,2 | 14 | 1,6 | 7,22 | |
| **01767** | 50 | A - 50 | 11,2 | 17,5 | 1,8 | 12,56 | |
| **01768** | 70 | A - 70 | 13,5 | 18 | 2 | 16,56 | |
| **01769** | 95 | A - 95 | 15 | 19 | 2,5 | 24,43 | |
| **01770** | 120 | A - 120 | 16,7 | 21 | 3 | 37,70 | |
| **01771** | 150 | A - 150 | 19 | 25 | 3,2 | 50,24 | |

## Butt connectors 0,5-150 mm²

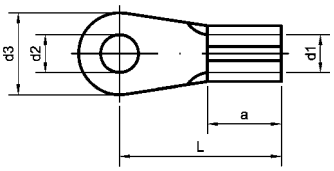
DIN 46341 part 1, design B
Material: Cu-HCP, tinned




| Part-No. | cross-section mm² | DIN size | dimensions mm d1 | L | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| 01740 | 0,5-1,0 | B - 1 | 1,6 | 15 | 0,8 | 0,90 | crimping-tools page no. 153, 156, 157, 158, 162, 163, 165, 167, 169, 171, 175, 179, 181, 192, 193 |
| 01741 | 1,5-2,5 | B - 2,5 | 2,3 | 15 | 0,8 | 1,10 | |
| 01742 | 4-6 | B - 6 | 3,6 | 15 | 1 | 2,60 | |
| 01743 | 10 | B - 10 | 4,6 | 20 | 1,1 | 3,64 | |
| 01744 | 16 | B - 16 | 5,9 | 26 | 1,2 | 6,14 | |
| 01745 | 25 | B - 25 | 7,7 | 29 | 1,5 | 11,33 | |
| 01746 | 35 | B - 35 | 9,2 | 32 | 1,6 | 15,34 | |
| 01747 | 50 | B - 50 | 11,2 | 38 | 1,8 | 24,44 | |
| 01748 | 70 | B - 70 | 13,5 | 42 | 2 | 37,36 | |
| 01749 | 95 | B - 95 | 15 | 48 | 2,5 | 60,80 | |
| 01750 | 120 | B - 120 | 16,7 | 52 | 3 | 86,68 | |
| 01751 | 150 | B - 150 | 19 | 56 | 3,2 | 112,50 | |

## Solder tags 0,5-95 mm²

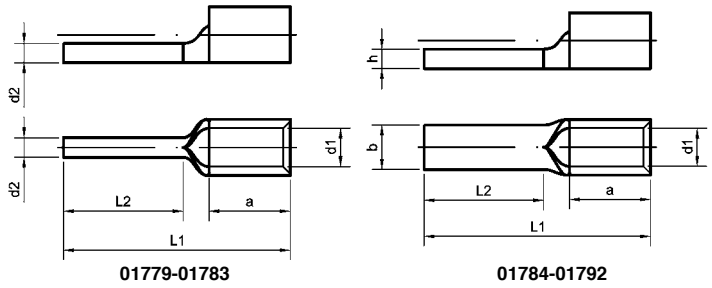
DIN 46211 design A and special design
Material: brass, tinned




| Part-No. | cross-section mm² | drilling M | DIN size | dimensions mm d1 | d2 | d3 | a | L | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|
| 03331 | 0,5-1,0 | 3 | 3 x 1,4 | 1,4 | 3,2 | 6 | 3,5 | 10 | 0,25 |
| 03332 | | 4 | 4 x 1,4 | | 4,3 | 8 | | 11,5 | 0,32 |
| 03333 | | 5 | 5 x 1,4 | | 5,3 | 10 | | 13 | 0,42 |
| 03336 | 1,5-2,5 | 4 | 4 x 2,3 | 2,3 | 4,3 | 8 | 6 | 14,5 | 0,90 |
| 03337 | | 5 | 5 x 2,3 | | 5,3 | 10 | | 16 | 1,10 |
| 03338 | | 6 | 6 x 2,3 | | 6,5 | 11 | | 17 | 1,14 |
| 03339 | | 8 | 8 x 2,3 | | 8,4 | 15 | | 20 | 1,65 |
| 03341 | 4-6 | 5 | 5 x 3,4 | 3,4 | 5,3 | 10 | 8 | 18 | 1,80 |
| 03342 | | 6 | 6 x 3,4 | | 6,5 | 11 | | 19 | 1,90 |
| 03343 | | 8 | 8 x 3,4 | | 8,4 | 15 | | 23 | 2,70 |
| 03344 | | 10 | 10 x 3,4 | | 10,5 | 19 | | 24 | 3,30 |
| 03346 | 10 | 5 | 5 x 4,3 | 4,3 | 5,3 | 10 | 10 | 19 | 3,00 |
| 03347 | | 6 | 6 x 4,3 | | 6,5 | 11 | | 21 | 3,10 |
| 03348 | | 8 | 8 x 4,3 | | 8,4 | 15 | | 24 | 4,00 |
| 03349 | | 10 | 10 x 4,3 | | 10,5 | 19 | | 26 | 4,90 |
| 03351 | 16 | 6 | 6 x 5,4 | 5,4 | 6,5 | 11 | 11,5 | 24 | 5,10 |
| 03352 | | 8 | 8 x 5,4 | | 8,4 | 15 | | 27 | 6,10 |
| 03353 | | 10 | 10 x 5,4 | | 10,5 | 19 | | 29 | 7,30 |
| 03354 | | 12 | 12 x 5,4 | | 13 | 22 | | 31 | 8,50 |
| 03355 | 25 | 6 | 6 x 6,8 | 6,8 | 6,5 | 13 | 13,5 | 27 | 9,00 |
| 03356 | | 8 | 8 x 6,8 | | 8,4 | 15 | | 30 | 10,00 |
| 03357 | | 10 | 10 x 6,8 | | 10,5 | 19 | | 32 | 11,10 |
| 03358 | | 12 | 12 x 6,8 | | 13 | 22 | | 35 | 12,50 |
| 03360 | 35 | 8 | 8 x 8,2 | 8,2 | 8,4 | 15 | 16 | 33 | 14,50 |
| 03361 | | 10 | 10 x 8,2 | | 10,5 | 19 | | 35 | 15,70 |
| 03362 | | 12 | 12 x 8,2 | | 13 | 22 | | 38 | 17,40 |
| 03365 | 50 | 8 | 8 x 9,5 | 9,5 | 8,4 | 17 | 19 | 36 | 23,60 |
| 03366 | | 10 | 10 x 9,5 | | 10,5 | 19 | | 38 | 24,50 |
| 03367 | | 12 | 12 x 9,5 | | 13 | 22 | | 41 | 26,70 |
| 03369 | 70 | 10 | 10 x 11,2 | 11,2 | 10,5 | 21 | 24 | 44 | 42,50 |
| 03370 | | 12 | 12 x 11,2 | | 13 | 22 | | 47 | 43,50 |
| 03372 | 95 | 10 | 10 x 13,5 | 13,5 | 10,5 | 21 | 24 | 44 | 54,40 |
| 03373 | | 12 | 12 x 13,5 | | 13 | 22 | | 47 | 55,40 |

## Pin connectors 0,5-95 mm²

DIN 46230 and special design
Material: Cu-ETP, tinned

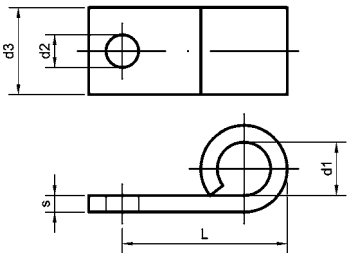



01779-01783 01784-01792

| Part-No. | cross-section mm² | DIN size | dimensions $d_1$ | $d_2$ | b | h | a | $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **01779** | 0,1-0,5 | A 0,5 | 1 | 1,4 | - | - | 4 | 14 | 8 | 0,20 | crimping-tools page no. 153, 156, 157, 158, 162, 163, 165, 167, 169, 171, 175, 179, 181, 192, 193 |
| **01780** | 0,5-1,0 | A 1 | 1,6 | 1,9 | - | - | 5 | 17 | 10 | 0,60 | |
| **01781** | 1,5-2,5 | - | 2,3 | 1,9 | - | - | 5 | 13,5 | 5 | 0,54 | |
| **01782** | 1,5-2,5 | A 2,5 | 2,3 | 1,9 | - | - | 5 | 17 | 10 | 0,65 | |
| **01783** | 4-6 | A 6 | 3,6 | 2,7 | - | - | 6 | 20 | 11 | 1,61 | |
| **01784** | 10 | - | 4,5 | - | 4,3 | 2,4 | 10 | 24,5 | 11 | 2,63 | |
| **01785** | 10 | B 10 | 4,5 | - | 4,5 | 2 | 8 | 22 | 12 | 2,60 | |
| **01786** | 16 | - | 5,4 | - | 5,5 | 2 | 11,5 | 29,5 | 15 | 3,89 | |
| **01787** | 16 | B 16 | 5,8 | - | 5,5 | 2,6 | 10 | 26 | 13 | 4,40 | |
| **01788** | 25 | - | 6,7 | - | 6,8 | 2,4 | 13,5 | 33,5 | 15 | 6,30 | |
| **01789** | 35 | - | 8,4 | - | 8 | 3,2 | 16 | 40,5 | 20 | 11,70 | |
| **01790** | 50 | - | 9,5 | - | 9,5 | 3,6 | 19 | 45 | 20 | 17,87 | |
| **01791** | 70 | - | 11,2 | - | 11 | 4 | 24 | 55 | 23 | 29,20 | |
| **01792** | 95 | - | 13,5 | - | 12,5 | 5 | 24 | 55 | 23 | 42,90 | |

## Flag type cable lugs 10-150 mm²

Material : Cu-ETP, tinned and soldered




| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | L | s | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|
| **10118** | 10 | 5 | 5 | 5,3 | 10,5 | 20 | 1,2 | 0,45 | on request |
| **01553** | | 6 | | 6,5 | 10,5 | 17 | | 0,41 | |
| **01554** | | 8 | | 8,4 | 17 | 17 | | 0,34 | |
| **01555** | 16 | 6 | 5,5 | 6,5 | 16 | 19 | 1,2 | 0,75 | |
| **01556** | | 8 | | 8,4 | 16 | 19 | | 0,72 | |
| **01557** | | 10 | | 10,5 | 21 | 20 | | 1,00 | |
| **01558** | | 12 | | 13 | 21 | 20 | | 0,95 | |
| **01559** | 25 | 6 | 7 | 6,5 | 18 | 21 | 1,5 | 1,15 | |
| **01560** | | 8 | | 8,4 | 18 | 23 | | 1,20 | |
| **10120** | | 10 | | 10,5 | 24 | 23 | | 1,94 | |
| **01561** | 35 | 8 | 8,5 | 8,4 | 20 | 23 | 1,7 | 1,56 | |
| **01562** | | 10 | | 10,5 | 20 | 26 | | 1,70 | |
| **01563** | | 12 | | 13 | 20 | 26 | | 1,62 | |
| **01564** | 50 | 8 | 10 | 8,4 | 23 | 30 | 2 | 2,82 | |
| **01565** | | 10 | | 10,5 | 23 | 30 | | 2,64 | |
| **10125** | | 12 | | 13 | 23 | 28 | | 2,40 | |
| **01566** | 70 | 8 | 12 | 8,4 | 26 | 32 | 2,5 | 4,00 | |
| **01567** | | 10 | | 10,5 | 26 | 32 | | 3,60 | |
| **01568** | | 12 | | 13 | 26 | 33 | | 3,40 | |
| **01569** | 95 | 12 | 13,5 | 13 | 27 | 36 | 2,5 | 5,25 | |
| **01570** | 120 | 12 | 15 | 13 | 27 | 40 | 3 | 7,20 | |
| **01571** | 150 | 12 | 17 | 13 | 30 | 40 | 3,2 | 8,40 | |
| **01572** | | 16 | | 17 | 30 | 40 | | 8,35 | |

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.3 Uninsulated tubular cable lugs and connectors, druseidt standard design

druseidt delivers tubular cable lugs and connectors made out of copper in different tube dimensions. So the following described standard design, made out of copper tube HCP resp. ETP acc. to DIN 13600, are delivered since decades. The surface of all terminals are tin plated and protect them against environmental influences and corrosion.

Material with exact dimension (diameter/thickness) and the manufacturing of correct fitted connectors guarantee an optimal and safety processability of all druseidt cable lugs. The crimping procedure should be done by a so called WM-crimping. This crimping design enables an intensive compressing to the center of the conductor, also when working with fine stranded cables.

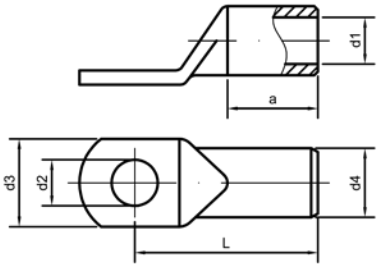
The number of the crimping procedures depends on the crimping width resp. the cross-section and the length of the connector sleeve. More detailed information are given on the catalogue page 202. druseidt tubular cable lugs and connectors are suitable for application up to a temperature of + 120° C (cf DIN 46234 too).

Please notice that the crimping procedures will be done only with the right tools suitable for druseidt tubular cable lugs and connectors in standard design.

Crimping design:
WM-crimping

# Tubular cable lugs 0,75-50 mm²

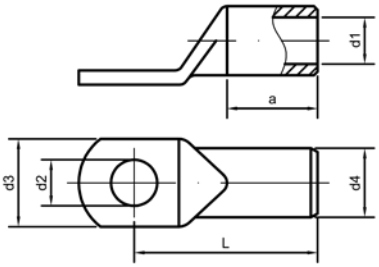
**druseidt standard design,**
Material: Cu-HCP DIN EN 13600
Surface: tinned




| Part-No. without inspection hole | Part-No. with inspection hole | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **01580** | - | 0,75 | 3 | 1,4 | 3,2 | 6,5 | 3 | 12,5 | 6 | 0,71 | 30445 0,75-10 mm², 30446 1,5-16 mm² page no. 158; 12375, 12376 page no. 159; 12655 page no. 163; 12377 page no. 159; 30460 page no. 165; 31460 page no. 167; 12930, 12933 page no. 169; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12725 page no. 184; 12728 page no. 186; 12836, 12485-87 page no. 192; 12837 page no. 193 |
| **01581** | - | | 4 | | 4,3 | 8,5 | | 14 | | 0,80 | |
| **01582** | - | | 5 | | 5,3 | 10 | | 15 | | 1,00 | |
| **01583** | - | 1,5 | 3 | 1,9 | 3,2 | 6,5 | 3,9 | 14 | 6 | 1,18 | |
| **01584** | - | | 4 | | 4,3 | 8,5 | | 15 | | 1,34 | |
| **01585** | - | | 5 | | 5,3 | 10 | | 16 | | 1,45 | |
| **01586** | - | | 6 | | 6,4 | 11 | | 18 | | 1,69 | |
| **01588** | - | 2,5 | 4 | 2,4 | 4,3 | 8,5 | 4,4 | 15 | 6,5 | 1,57 | |
| **01589** | - | | 5 | | 5,3 | 10 | | 16 | | 1,72 | |
| **01590** | - | | 6 | | 6,4 | 11 | | 18 | | 1,92 | |
| **01591** | - | | 8 | | 8,4 | 13 | | 20 | | 2,20 | |
| **01592** | - | 4 | 4 | 3 | 4,3 | 8,5 | 5 | 17 | 8 | 2,20 | |
| **01593** | - | | 5 | | 5,3 | 10 | | 18 | | 2,40 | |
| **01594** | - | | 6 | | 6,4 | 11 | | 20 | | 2,60 | |
| **01595** | - | | 8 | | 8,4 | 14 | | 22 | | 3,00 | |
| **01596** | - | 6 | 4 | 3,7 | 4,3 | 8,5 | 5,5 | 17,5 | 8 | 2,40 | |
| **01597** | - | | 5 | | 5,3 | 10 | | 19 | | 2,60 | |
| **01598** | - | | 6 | | 6,4 | 11 | | 21 | | 2,80 | |
| **01599** | - | | 8 | | 8,4 | 14 | | 23 | | 3,00 | |
| **10129** | **10156** | 10 | 4 | 4,3 | 4,3 | 10 | 6,7 | 19,5 | 10 | 4,10 | |
| **01600** | **01680** | | 5 | | 5,3 | 10 | | 20,5 | | 4,30 | |
| **01601** | **01681** | | 6 | | 6,4 | 11 | | 22,5 | | 4,80 | |
| **01602** | **01682** | | 8 | | 8,4 | 15 | | 25 | | 5,30 | |
| **01603** | **01683** | | 10 | | 10,5 | 18 | | 27,5 | | 5,70 | |
| **01604** | **01684** | | 12 | | 13 | 19 | | 28,5 | | 5,80 | |
| **01605** | **01685** | 16 | 5 | 5,4 | 5,3 | 12 | 7,8 | 22,5 | 11 | 5,70 | |
| **01606** | **01686** | | 6 | | 6,4 | 12 | | 24,5 | | 6,40 | |
| **01607** | **01687** | | 8 | | 8,4 | 15 | | 26,5 | | 6,70 | |
| **01608** | **01688** | | 10 | | 10,5 | 18 | | 29 | | 7,20 | |
| **01609** | **01689** | | 12 | | 13 | 20 | | 30 | | 7,20 | |
| **10130** | - | 25 | 5 | 6,9 | 5,3 | 14 | 9,4 | 25 | 13 | 8,70 | |
| **01610** | **01690** | | 6 | | 6,4 | 14 | | 27 | | 9,50 | |
| **01611** | **01691** | | 8 | | 8,4 | 15 | | 29 | | 10,10 | |
| **01612** | **01692** | | 10 | | 10,5 | 18 | | 31,5 | | 10,90 | |
| **01613** | **01693** | | 12 | | 13 | 20 | | 32,5 | | 10,80 | |
| **10132** | **10158** | | 14 | | 15 | 22 | | 34,5 | | 11,60 | |
| **10133** | **10159** | 35 | 5 | 8,3 | 5,3 | 16,5 | 11,3 | 32,5 | 16 | 16,00 | |
| **01614** | **01694** | | 6 | | 6,4 | 16,5 | | 32,5 | | 16,00 | |
| **01615** | **01695** | | 8 | | 8,4 | 16,5 | | 33 | | 16,20 | |
| **01616** | **01696** | | 10 | | 10,5 | 18 | | 35,5 | | 18,00 | |
| **01617** | **01697** | | 12 | | 13 | 20 | | 36,5 | | 17,00 | |
| **10134** | **10160** | | 14 | | 15 | 22 | | 39 | | 18,70 | |
| **10135** | **10162** | | 16 | | 17 | 26 | | 41,5 | | 19,70 | |
| **10140** | **10163** | 50 | 6 | 9,6 | 6,4 | 19 | 13,1 | 36 | 18 | 23,50 | |
| **01618** | **01698** | | 8 | | 8,4 | 19 | | 37 | | 24,10 | |
| **01619** | **01699** | | 10 | | 10,5 | 20 | | 39 | | 25,30 | |
| **01620** | **01700** | | 12 | | 13 | 23 | | 40,5 | | 26,10 | |
| **10136** | **10164** | | 14 | | 15 | 25 | | 42,5 | | 27,90 | |
| **01621** | **01701** | | 16 | | 17 | 27 | | 45,5 | | 29,40 | |
| **10137** | **10165** | | 20 | | 21 | 28 | | 50 | | 35,70 | |

# Tubular cable lugs 70-630 mm²

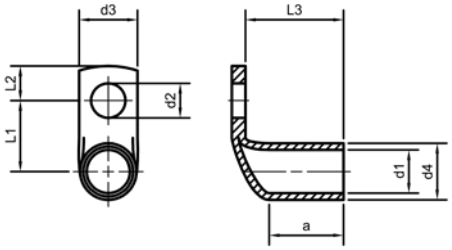
**druseidt standard design,**
Material: Cu-HCP DIN EN 13600
Surface: tinned




| Part-No. without inspection hole | Part-No. with inspection hole | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **10138** | **10166** | 70 | 6 | 11,5 | 6,4 | 22,5 | 15,3 | 41 | 21 | 34,60 | 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12836, 12485-87 page no. 192; 12837 page no. 193; 31460 page no. 167; 12930, 12933 page no. 169; 12728 page no. 186; 12377 page no. 159; 30460 page no. 165; 12725 page no. 184 |
| **01622** | **01702** | | 8 | | 8,4 | 22,5 | | 41 | | 34,60 | |
| **01623** | **01703** | | 10 | | 10,5 | 22,5 | | 42,5 | | 36,30 | |
| **01624** | **01704** | | 12 | | 13 | 23 | | 43,5 | | 36,40 | |
| **10139** | **10167** | | 14 | | 15 | 26 | | 46 | | 39,30 | |
| **01625** | **01705** | | 16 | | 17 | 28 | | 48,5 | | 40,20 | |
| **10141** | **10168** | | 20 | | 21 | 29 | | 53 | | 42,10 | |
| **10143** | **10169** | 95 | 6 | 13,5 | 6,4 | 25 | 17,5 | 46 | 23 | 47,10 | |
| **01626** | **01706** | | 8 | | 8,4 | 25 | | 45,5 | | 47,60 | |
| **01627** | **01707** | | 10 | | 10,5 | 25 | | 47 | | 48,20 | |
| **01628** | **01708** | | 12 | | 13 | 26 | | 47 | | 48,20 | |
| **10144** | **10170** | | 14 | | 15 | 26 | | 49 | | 51,60 | |
| **01629** | **01709** | | 16 | | 17 | 28 | | 50 | | 51,50 | |
| **10146** | **10171** | | 20 | | 21 | 31 | | 54,5 | | 56,60 | |
| **10147** | **10172** | 120 | 8 | 15,5 | 8,4 | 29 | 20 | 50,5 | 26 | 66,00 | |
| **01630** | **01710** | | 10 | | 10,5 | 29 | | 53 | | 71,30 | |
| **01631** | **01711** | | 12 | | 13 | 29 | | 52,5 | | 71,40 | |
| **10148** | **10173** | | 14 | | 15 | 29 | | 53,5 | | 72,40 | |
| **01632** | **01712** | | 16 | | 17 | 29 | | 55 | | 73,10 | |
| **01633** | **01713** | | 20 | | 21 | 35 | | 60 | | 78,10 | |
| **01634** | **01714** | 150 | 10 | 16,8 | 10,5 | 31 | 21,3 | 56,5 | 29 | 83,40 | |
| **01635** | **01715** | | 12 | | 13 | 31 | | 56 | | 81,80 | |
| **10149** | **10174** | | 14 | | 15 | 31 | | 57 | | 83,30 | |
| **01636** | **01716** | | 16 | | 17 | 31 | | 58 | | 85,00 | |
| **01637** | **01717** | | 20 | | 21 | 35 | | 63 | | 88,40 | |
| **10145** | **10175** | 185 | 10 | 19 | 10,5 | 35 | 24 | 59 | 30 | 106,10 | |
| **01638** | **01718** | | 12 | | 13 | 35 | | 58,5 | | 106,10 | |
| **10151** | **10176** | | 14 | | 15 | 35 | | 61 | | 107,20 | |
| **01639** | **01719** | | 16 | | 17 | 35 | | 63 | | 108,60 | |
| **01640** | **01720** | | 20 | | 21 | 35 | | 66 | | 113,30 | |
| **10152** | **10177** | 240 | 10 | 21 | 10,5 | 38 | 26 | 67 | 35 | 129,70 | |
| **01641** | **01721** | | 12 | | 13 | 38 | | 67 | | 130,20 | |
| **10153** | **10178** | | 14 | | 15 | 38 | | 69 | | 133,60 | |
| **01642** | **01722** | | 16 | | 17 | 38 | | 69,5 | | 138,40 | |
| **01643** | **01723** | | 20 | | 21 | 38 | | 71 | | 139,50 | |
| **01644** | **01724** | 300 | 12 | 24 | 13 | 44 | 30 | 82 | 42 | 217,20 | |
| **10154** | **10190** | | 14 | | 15 | 44 | | 84 | | 221,90 | |
| **01645** | **01725** | | 16 | | 17 | 44 | | 85 | | 219,40 | |
| **01646** | **01726** | | 20 | | 21 | 44 | | 85 | | 229,20 | |
| **10155** | - | 400 | 10 | 27,5 | 10,5 | 49 | 33,5 | 92 | 47 | 279,00 | on request |
| **10150** | - | | 12 | | 13 | 49 | | 92 | | 279,00 | |
| **01647** | - | | 16 | | 17 | 49 | | 92 | | 279,00 | |
| **01648** | - | | 20 | | 21 | 49 | | 92 | | 281,90 | |
| **01649** | - | 500 | 16 | 31 | 17 | 55,5 | 38 | 113 | 70 | 493,80 | |
| **01650** | - | | 20 | | 21 | 55,5 | | 113 | | 485,60 | |
| **01651** | - | 630 | 16 | 34 | 17 | 60 | 41 | 115 | 70 | 513,50 | |
| **01652** | - | | 20 | | 21 | 60 | | 115 | | 506,00 | |

## Tubular cable lugs 0,75-150 mm² druseidt standard design Angle type 90°

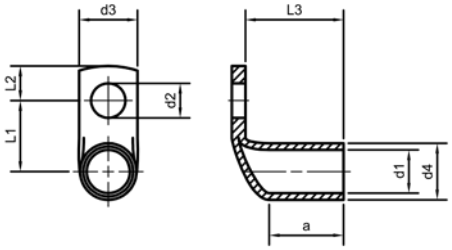
Material: Cu-HCP DIN EN 13600 Surface: tinned




| Part-No. without inspection hole | Part-No. with inspection hole | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10400** | - | 0,5-0,75 | 3 | 1,4 | 3,2 | 6,5 | 3 | 7,5 | 4 | 9,5 | 5 | 0,90 | 30445 0,75-10 mm², 30446 1,5-16 mm² page no. 158 |
| **10402** | - | | 4 | | 4,3 | 8,5 | | 8,5 | 5 | | | 1,00 | |
| **10404** | - | | 5 | | 5,3 | 10 | | 9,5 | 5,5 | | | 1,00 | |
| **10406** | - | 1-1,5 | 3 | 1,9 | 3,2 | 6,5 | 3,9 | 8 | 4 | 9,5 | 5 | 1,60 | |
| **10408** | - | | 4 | | 4,3 | 8,5 | | 9 | 5 | | | 1,60 | |
| **10410** | - | | 5 | | 5,3 | 10 | | 10 | 5,5 | | | 1,60 | |
| **10412** | - | | 6 | | 6,4 | 11 | | 12 | 7,5 | | | 1,60 | |
| **10414** | - | 2,5 | 4 | 2,4 | 4,3 | 8,5 | 4,4 | 9,2 | 5 | 9,5 | 5,5 | 1,83 | |
| **10416** | - | | 5 | | 5,3 | 10 | | 10,2 | 5,5 | | | 1,84 | |
| **10418** | - | | 6 | | 6,4 | 11 | | 12,2 | 7,5 | | | 2,20 | |
| **10420** | - | | 8 | | 8,4 | 14 | | 14,2 | 10 | | | 2,30 | |
| **10422** | - | 4 | 4 | 3 | 4,3 | 8,5 | 5 | 9,5 | 5 | 10,5 | 7 | 2,50 | |
| **10424** | - | | 5 | | 5,3 | 10 | | 10,5 | 5,5 | | | 2,41 | |
| **10426** | - | | 6 | | 6,4 | 11 | | 12,5 | 7,5 | | | 2,90 | |
| **10428** | - | | 8 | | 8,4 | 14 | | 14,5 | 10 | 11,5 | | 3,00 | |
| **10430** | - | 6 | 4 | 3,7 | 4,3 | 8,5 | 5,5 | 9,8 | 5 | 10,5 | 7 | 2,70 | 12376 page no. 159 |
| **10432** | - | | 5 | | 5,3 | 10 | | 10,8 | 5,5 | | | 2,52 | |
| **10434** | - | | 6 | | 6,4 | 11 | | 12,8 | 7,5 | | | 2,82 | |
| **10436** | - | | 8 | | 8,4 | 14 | | 14,8 | 10 | | | 3,40 | |
| **10438** | **10838** | 10 | 5 | 4,3 | 5,3 | 10 | 6,7 | 11,4 | 5,5 | 15 | 9 | 4,90 | 12375 page no. 159; 12655 page no. 163 |
| **01800** | **01850** | | 6 | | 6,4 | 11 | | 13,4 | 7,5 | | | 5,30 | |
| **01801** | **01851** | | 8 | | 8,4 | 15 | | 15,4 | 10 | | | 5,40 | |
| **01802** | **01852** | | 10 | | 10,5 | 18 | | 17,4 | 12 | | | 6,30 | |
| **01803** | **01853** | | 12 | | 13 | 20 | | 18,4 | 13 | | | 5,61 | |
| **10440** | **10840** | 16 | 5 | 5,4 | 5,3 | 11 | 7,8 | 11,9 | 5,5 | 16,5 | 10 | 6,55 | |
| **01804** | **01854** | | 6 | | 6,4 | 11,5 | | 13,9 | 7,5 | | | 6,96 | |
| **01805** | **01855** | | 8 | | 8,4 | 15 | | 15,9 | 10 | | | 8,20 | |
| **01806** | **01856** | | 10 | | 10,5 | 18 | | 17,9 | 12 | | | 8,20 | |
| **01807** | **01857** | | 12 | | 13 | 20 | | 18,9 | 13 | | | 7,78 | |
| **01808** | **01858** | 25 | 6 | 6,9 | 6,4 | 14 | 9,4 | 14,7 | 7,5 | 21 | 12 | 11,27 | 12377 page no. 159; 30460 page no. 165; 12725 page no. 184 |
| **01809** | **01859** | | 8 | | 8,4 | 15 | | 16,7 | 10 | | | 12,15 | |
| **01810** | **01860** | | 10 | | 10,5 | 18 | | 18,7 | 12 | | | 11,84 | |
| **01811** | **01861** | | 12 | | 13 | 20 | | 19,7 | 13 | | | 12,40 | |
| **01812** | **01862** | 35 | 6 | 8,3 | 6,4 | 16,5 | 11,3 | 16,2 | 7,5 | 21 | 15 | 17,64 | |
| **01813** | **01863** | | 8 | | 8,4 | 16,5 | | 18,2 | 10 | | | 17,26 | |
| **01814** | **01864** | | 10 | | 10,5 | 18 | | 20,2 | 12 | | | 18,00 | |
| **01815** | **01865** | | 12 | | 13 | 20 | | 21,2 | 13 | | | 18,00 | |
| **10441** | **10841** | 50 | 6 | 9,6 | 6,4 | 19 | 13,1 | 17,1 | 7,5 | 26 | 17 | 26,28 | 31460 page no. 167; 12930, 12933 page no. 169; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12728 page no. 186; 12836, 12485-87 page no. 192; 12837 page no. 193 |
| **01816** | **01866** | | 8 | | 8,4 | 19 | | 19,1 | 10 | | | 26,70 | |
| **01817** | **01867** | | 10 | | 10,5 | 20 | | 21,1 | 12 | | | 29,90 | |
| **01818** | **01868** | | 12 | | 13 | 23 | | 23,5 | 13 | | | 30,00 | |
| **10442** | **10842** | | 16 | | 17 | 27 | | 25,1 | 16 | | | 30,00 | |
| **01819** | **01869** | 70 | 8 | 11,5 | 8,4 | 22 | 15,3 | 20,2 | 10 | 23,9 | 20 | 36,56 | |
| **01820** | **01870** | | 10 | | 10,5 | 22 | | 22,2 | 12 | | | 38,38 | |
| **01821** | **01871** | | 12 | | 13 | 23 | | 23,2 | 13 | | | 38,30 | |
| **10443** | **10843** | | 16 | | 17 | 27 | | 26,2 | 16 | | | 39,46 | |
| **01822** | **01872** | 95 | 8 | 13,5 | 8,4 | 25 | 17,5 | 21,3 | 10 | 28 | 22 | 48,69 | |
| **01823** | **01873** | | 10 | | 10,5 | 25 | | 23,3 | 12 | | | 52,70 | |
| **01824** | **01874** | | 12 | | 13 | 25 | | 24,3 | 13 | | | 50,63 | |
| **10444** | **10844** | | 16 | | 17 | 28 | | 27,3 | 16 | | | 52,51 | |
| **01825** | **01875** | 120 | 10 | 15,5 | 10,5 | 29 | 20 | 25 | 12 | 32 | 25 | 74,00 | |
| **01826** | **01876** | | 12 | | 13 | 29 | | 26 | 13 | | | 73,25 | |
| **01827** | **01877** | | 16 | | 17 | 29 | | 28,5 | 16 | | | 72,95 | |
| **01828** | **01878** | 150 | 10 | 16,8 | 10,5 | 31 | 21,3 | 25,7 | 12 | 34 | 28 | 80,70 | |
| **01829** | **01879** | | 12 | | 13 | 31 | | 26,7 | 13 | | | 82,90 | |
| **01830** | **01880** | | 16 | | 17 | 31 | | 29,7 | 16 | | | 85,00 | |
| **10445** | **10845** | | 20 | | 21 | 35 | | 33,7 | 19 | | | 88,90 | |

## Tubular cable lugs 185-300 mm² druseidt standard design Angle type 90°

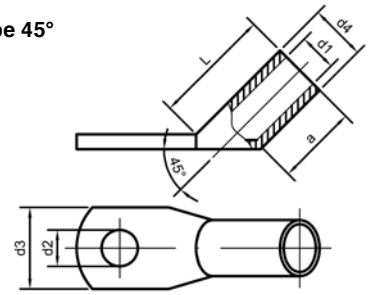
Material: Cu-HCP DIN EN 13600 Surface: tinned




| Part-No. without inspection hole | Part-No. with inspection hole | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10446** | **10846** | 185 | 10 | 19 | 10,5 | 35 | 24 | 27 | 12 | 34,8 | 29 | 99,00 | 31460 page no. 167; 12930, 12933 page no. 169; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12728 page no. 186; 12836, 12485-87 page no. 192; 12837 page no. 193 |
| **01831** | **01881** | | 12 | | 13 | 35 | | 28 | 13 | | | 101,40 | |
| **01832** | **01882** | | 16 | | 17 | 35 | | 31 | 16 | | | 111,50 | |
| **01833** | **01883** | | 20 | | 21 | 35 | | 35 | 19 | | | 115,80 | |
| **01834** | **01884** | 240 | 12 | 21 | 13 | 38 | 26 | 29 | 13 | 43 | 34 | 126,85 | |
| **01835** | **01885** | | 16 | | 17 | 38 | | 32 | 16 | | | 134,55 | |
| **01836** | **01886** | | 20 | | 21 | 38 | | 36 | 19 | | | 140,25 | |
| **01838** | **01888** | 300 | 12 | 24 | 13 | 43 | 30 | 31 | 13 | 51 | 41 | 198,20 | |
| **01840** | **01890** | | 16 | | 17 | 43 | | 34 | 16 | | | 209,00 | |
| **01842** | **01892** | | 20 | | 21 | 43 | | 38 | 19 | | | 218,10 | |

## Tubular cable lugs 10-240 mm² druseidt standard design Angle type 45°

Material: Cu-HCP DIN EN 13600 Surface: tinned

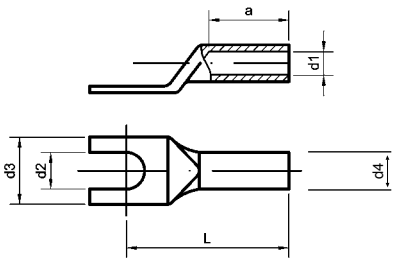



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **10438/S-45** | 10 | 5 | 4,3 | 5,3 | 10 | 6,7 | 15 | 9 | 4,90 | 31460 page no. 167; 12930, 12933 page no. 169; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12728 page no. 186; 12836, 12485-87 page no. 192; 12837 page no. 193; 12377 page no. 159; 30460 page no. 165; 12725 page no. 184; 12376 page no. 159; 12375 page no. 159; 12655 page no. 163; 30446 page no. 158 |
| **01800/S-45** | | 6 | | 6,4 | 11 | | | | 5,40 | |
| **01801/S-45** | | 8 | | 8,4 | 15 | | | | 5,90 | |
| **01804/S-45** | 16 | 6 | 5,4 | 6,4 | 11,5 | 7,8 | 16,5 | 10 | 6,90 | |
| **01805/S-45** | | 8 | | 8,4 | 15 | | | | 7,08 | |
| **01806/S-45** | | 10 | | 10,5 | 18 | | | | 8,20 | |
| **01808/S-45** | 25 | 6 | 6,9 | 6,4 | 14 | 9,4 | 20 | 12 | 10,44 | |
| **01809/S-45** | | 8 | | 8,4 | 15 | | | | 11,30 | |
| **01810/S-45** | | 10 | | 10,5 | 18 | | | | 11,97 | |
| **01811/S-45** | | 12 | | 13 | 20 | | | | 12,17 | |
| **01812/S-45** | 35 | 6 | 8,3 | 6,4 | 16,5 | 11,3 | 24,5 | 15 | 18,09 | |
| **01813/S-45** | | 8 | | 8,4 | 16,5 | | | | 18,75 | |
| **01814/S-45** | | 10 | | 10,5 | 18 | | | | 19,51 | |
| **01815/S-45** | | 12 | | 13 | 20 | | | | 19,73 | |
| **01816/S-45** | 50 | 8 | 9,6 | 8,4 | 19 | 13,1 | 28,5 | 17 | 28,50 | |
| **01817/S-45** | | 10 | | 10,5 | 20 | | | | 32,70 | |
| **01818/S-45** | | 12 | | 13 | 23 | | | | 34,14 | |
| **01819/S-45** | 70 | 8 | 11,5 | 8,4 | 22 | 15,3 | 33 | 20 | 40,24 | |
| **01820/S-45** | | 10 | | 10,5 | 22 | | | | 42,96 | |
| **01821/S-45** | | 12 | | 13 | 23 | | | | 42,48 | |
| **01822/S-45** | 95 | 8 | 13,5 | 8,4 | 25 | 17,5 | 38 | 22 | 53,80 | |
| **01823/S-45** | | 10 | | 10,5 | 25 | | | | 56,80 | |
| **01824/S-45** | | 12 | | 13 | 25 | | | | 57,40 | |
| **01825/S-45** | 120 | 10 | 15,5 | 10,5 | 29 | 20 | 43,5 | 25 | 83,25 | |
| **01826/S-45** | | 12 | | 13 | 29 | | | | 81,50 | |
| **01827/S-45** | | 16 | | 17 | 29 | | | | 85,92 | |
| **01828/S-45** | 150 | 10 | 16,8 | 10,5 | 31 | 21,3 | 47,5 | 28 | 98,70 | |
| **01829/S-45** | | 12 | | 13 | 31 | | | | 96,80 | |
| **01830/S-45** | | 16 | | 17 | 31 | | | | 101,20 | |
| **01831/S-45** | 185 | 12 | 19 | 13 | 35 | 24 | 51 | 29 | 122,90 | |
| **01832/S-45** | | 16 | | 17 | 35 | | | | 119,60 | |
| **01833/S-45** | | 20 | | 21 | 35 | | | | 139,90 | |
| **01834/S-45** | 240 | 12 | 21 | 13 | 38 | 26 | 61 | 34 | 155,80 | |
| **01835/S-45** | | 16 | | 17 | 38 | | | | 165,10 | |
| **01836/S-45** | | 20 | | 21 | 38 | | | | 170,40 | |

## Tubular cable lugs 0,5-16 mm²

**druseidt standard design, Forktype**

Material: Cu-ETP resp. HCP DIN EN 13600 Surface: tinned



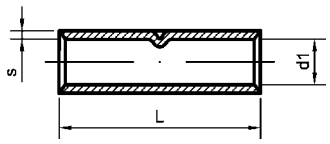

| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **02100** | 0,5-0,75 | 3 | 1,4 | 3,2 | 6,5 | 3 | 12,5 | 6 | 0,70 | 30445 page no. 158 |
| **02101** | | 4 | | 4,3 | 8,5 | | 14 | | 0,70 | |
| **02102** | | 5 | | 5,3 | 10 | | 15 | | 0,75 | |
| **02105** | 1,0-1,5 | 4 | 1,9 | 4,3 | 8,5 | 3,9 | 15 | 6 | 1,17 | 30446 page no. 158 |
| **02106** | | 5 | | 5,3 | 10 | | 16 | | 1,30 | |
| **02107** | | 6 | | 6,4 | 11 | | 18 | | 1,39 | |
| **02110** | 2,5 | 4 | 2,4 | 4,3 | 8,5 | 4,4 | 15 | 6,5 | 1,48 | |
| **02111** | | 5 | | 5,3 | 10 | | 16 | | 1,55 | |
| **02112** | | 6 | | 6,4 | 11 | | 18 | | 1,63 | |
| **02113** | | 8 | | 8,4 | 13 | | 20 | | 1,91 | |
| **02115** | 4 | 4 | 3 | 4,3 | 8,5 | 5 | 17 | 8 | 1,81 | |
| **02116** | | 5 | | 5,3 | 10 | | 18 | | 2,06 | |
| **02117** | | 6 | | 6,4 | 11 | | 20 | | 2,16 | |
| **02118** | | 8 | | 8,4 | 14 | | 22 | | 2,31 | |
| **02121** | 6 | 4 | 3,7 | 4,3 | 8,5 | 5,5 | 17,5 | 8 | 2,07 | 12655 page no. 163 |
| **02122** | | 5 | | 5,3 | 10 | | 19 | | 2,25 | |
| **02123** | | 6 | | 6,4 | 11 | | 21 | | 2,49 | |
| **02124** | | 8 | | 8,4 | 14 | | 23 | | 2,58 | |
| **02127** | 10 | 5 | 4,3 | 5,3 | 10 | 6,7 | 20,5 | 10 | 3,96 | 30460 page no. 165; 31460 page no. 167; 12930, 12933 page no. 169; 12725 page no. 184 12728 page no. 186 |
| **02128** | | 6 | | 6,4 | 11 | | 22,5 | | 4,17 | |
| **02129** | | 8 | | 8,4 | 15 | | 25 | | 4,57 | |
| **02132** | 16 | 5 | 5,4 | 5,3 | 12 | 7,8 | 22,5 | 11 | 5,25 | |
| **02133** | | 6 | | 6,4 | 12 | | 24,5 | | 5,56 | |
| **02134** | | 8 | | 8,4 | 15 | | 26,5 | | 6,00 | |
| **02137** | 16f | 5 | 6 | 5,3 | 14 | 9 | 25,5 | 13 | 8,24 | |
| **02138** | | 6 | | 6,4 | 14 | | 27 | | 8,60 | |
| **02139** | | 8 | | 8,4 | 15 | | 29,5 | | 9,37 | |

## Butt connectors 0,5-630 mm²

**druseidt standard design**

Material: Cu-ETP resp. HCP DIN EN 13600

Surface: tinned




| Part-No. | cross-section mm² | dimensions mm $d_1$ | L | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|
| **13686** | 0,5-0,75 | 1,4 | 15 | 0,8 | 0,80 | page no. 158-160 163-193 |
| **13687** | 1,0-1,5 | 1,9 | 15 | 1 | 1,20 | |
| **13688** | 2,5 | 2,4 | 16 | 1 | 1,50 | |
| **13689** | 4 | 3 | 19 | 1 | 2,10 | |
| **13690** | 6 | 3,7 | 19 | 0,9 | 2,20 | |
| **13691** | 10 | 4,3 | 30 | 1,2 | 5,52 | |
| **13692** | 16 | 5,4 | 35 | 1,2 | 8,00 | |
| **13693** | 25 | 6,9 | 40 | 1,25 | 11,74 | |
| **13694** | 35 | 8,3 | 45 | 1,5 | 19,12 | |
| **13695** | 50 | 9,6 | 50 | 1,75 | 27,00 | |
| **13696** | 70 | 11,5 | 55 | 1,9 | 39,00 | |
| **13697** | 95 | 13,5 | 60 | 2 | 50,00 | |
| **13698** | 120 | 15,5 | 65 | 2,25 | 71,90 | |
| **13699** | 150 | 16,8 | 70 | 2,25 | 86,50 | |
| **01752** | 185 | 19 | 75 | 2,5 | 116,25 | |
| **01753** | 240 | 21 | 85 | 2,5 | 142,20 | |
| **01754** | 300 | 24 | 100 | 3 | 224,00 | |
| **01755** | 400 | 27,5 | 100 | 3 | 261,70 | |
| **01756** | 500 | 31 | 140 | 3,5 | 473,00 | |
| **01757** | 630 | 34 | 160 | 3,5 | 617,50 | |

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

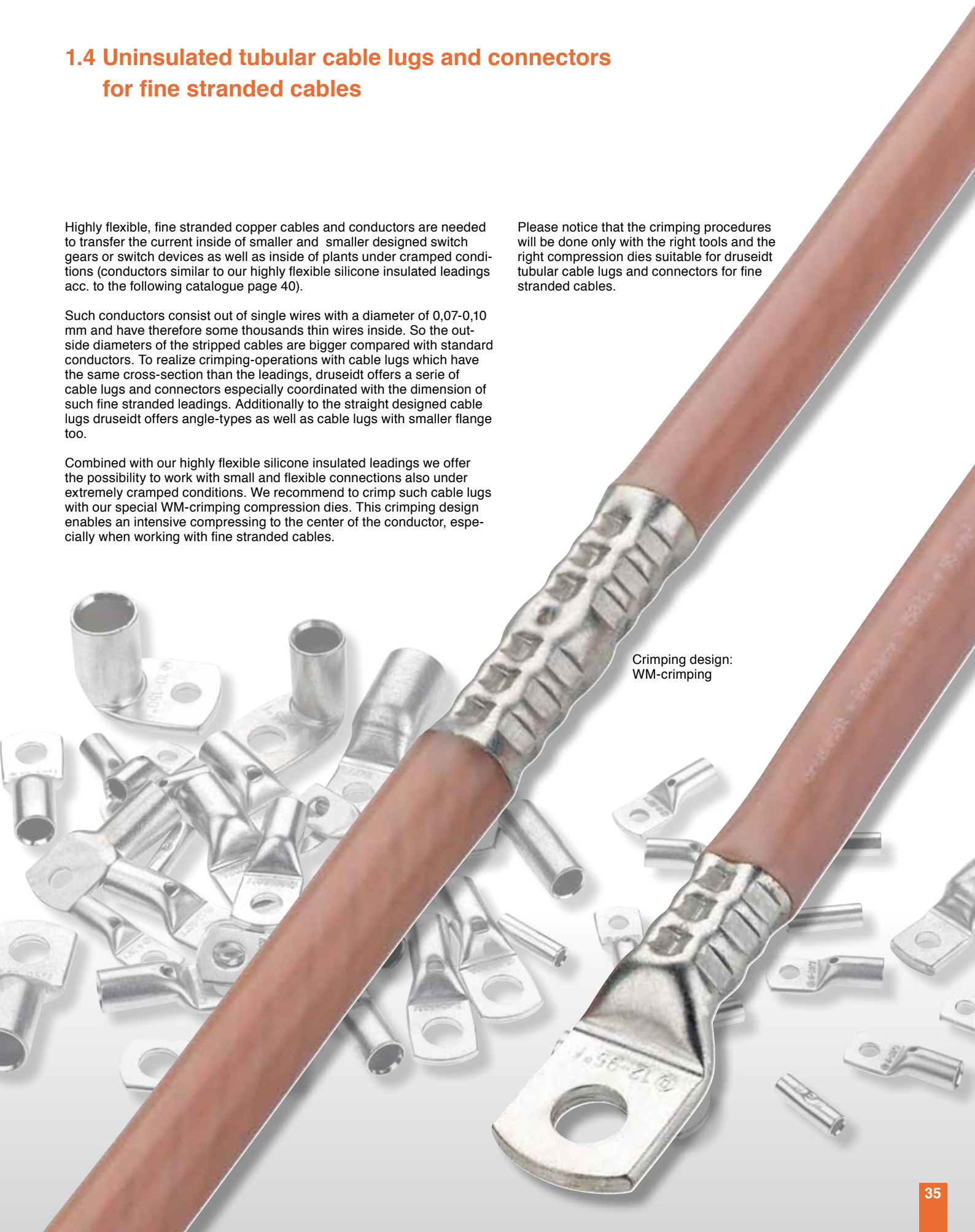
## 1.4 Uninsulated tubular cable lugs and connectors for fine stranded cables

Highly flexible, fine stranded copper cables and conductors are needed to transfer the current inside of smaller and smaller designed switch gears or switch devices as well as inside of plants under cramped conditions (conductors similar to our highly flexible silicone insulated leadings acc. to the following catalogue page 40).

Such conductors consist out of single wires with a diameter of 0,07-0,10 mm and have therefore some thousands thin wires inside. So the outside diameters of the stripped cables are bigger compared with standard conductors. To realize crimping-operations with cable lugs which have the same cross-section than the leadings, druseidt offers a serie of cable lugs and connectors especially coordinated with the dimension of such fine stranded leadings. Additionally to the straight designed cable lugs druseidt offers angle-types as well as cable lugs with smaller flange too.

Combined with our highly flexible silicone insulated leadings we offer the possibility to work with small and flexible connections also under extremely cramped conditions. We recommend to crimp such cable lugs with our special WM-crimping compression dies. This crimping design enables an intensive compressing to the center of the conductor, especially when working with fine stranded cables.

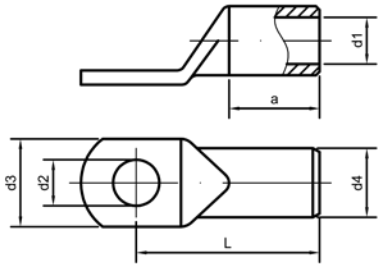
Please notice that the crimping procedures will be done only with the right tools and the right compression dies suitable for druseidt tubular cable lugs and connectors for fine stranded cables.



Crimping design:
WM-crimping

## Tubular cable lugs 10f-240f mm²
## for fine stranded cables

Material: Cu-HCP DIN EN 13600
Surface: tinned




| Part-No. without inspection hole | Part-No. with inspection hole | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **13650** | **13650/S** | 10f | 5 | 5 | 5,3 | 12 | 8 | 23 | 12 | 7,00 | 12930, 12933, page no. 169; 12728 page no. 186 |
| **13651** | **13651/S** | | 6 | | 6,4 | 12 | | 25 | | 7,60 | 12766 page no. 170; 12965S/, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no.181; 12836, 12485-87 page no. 192; 12837 page no. 193 |
| **13652** | **13652/S** | | 8 | | 8,4 | 15 | | 28 | | 8,90 | |
| **13653** | **13653/S** | | 10 | | 10,5 | 18 | | 31 | | 9,70 | |
| **13654** | **13654/S** | | 12 | | 13 | 20 | | 32 | | 10,00 | |
| **10700** | **10700/S** | 16f | 5 | 6 | 5,3 | 14 | 9 | 25,5 | 13 | 9,40 | |
| **13655** | **13655/S** | | 6 | | 6,4 | 14 | | 27 | | 10,10 | |
| **13656** | **13656/S** | | 8 | | 8,4 | 15 | | 29,5 | | 11,20 | |
| **13657** | **13657/S** | | 10 | | 10,5 | 18 | | 32 | | 11,20 | |
| **13658** | **13658/S** | | 12 | | 13 | 20 | | 33 | | 11,80 | |
| **13659** | **13659/S** | 25f | 6 | 7,7 | 6,4 | 16 | 10,7 | 32 | 16 | 14,70 | |
| **13660** | **13660/S** | | 8 | | 8,4 | 16 | | 34 | | 14,30 | |
| **13661** | **13661/S** | | 10 | | 10,5 | 18 | | 35 | | 15,30 | |
| **13662** | **13662/S** | | 12 | | 13 | 20 | | 36 | | 16,10 | |
| **10702** | **10702/S** | 35f | 6 | 9,2 | 6,4 | 18 | 12,4 | 36 | 18 | 20,70 | |
| **13663** | **13663/S** | | 8 | | 8,4 | 18 | | 36 | | 20,70 | |
| **13664** | **13664/S** | | 10 | | 10,5 | 18 | | 38 | | 21,40 | |
| **13665** | **13665/S** | | 12 | | 13 | 23 | | 40 | | 22,20 | |
| **13666** | **13666/S** | | 16 | | 17 | 28 | | 45 | | 22,10 | |
| **10704** | **10704/S** | 50f | 6 | 11,2 | 6,4 | 22 | 14,8 | 42 | 21 | 32,00 | |
| **13667** | **13667/S** | | 8 | | 8,4 | 22 | | 42 | | 32,20 | |
| **13668** | **13668/S** | | 10 | | 10,5 | 22 | | 43 | | 33,10 | |
| **13669** | **13669/S** | | 12 | | 13 | 23 | | 44 | | 33,60 | |
| **13670** | **13670/S** | | 16 | | 17 | 28 | | 48,5 | | 36,50 | |
| **13671** | **13671/S** | 70f | 8 | 13,5 | 8,4 | 25 | 17,5 | 45,5 | 23 | 48,00 | |
| **13672** | **13672/S** | | 10 | | 10,5 | 25 | | 47 | | 48,40 | |
| **13673** | **13673/S** | | 12 | | 13 | 26 | | 47 | | 48,40 | |
| **13674** | **13674/S** | | 16 | | 17 | 28 | | 50 | | 50,50 | |
| **10706** | **10706/S** | | 20 | | 21 | 31 | | 54,5 | | 55,20 | |
| **10707** | **10707/S** | 95f | 8 | 15,5 | 8,4 | 29 | 20 | 50,5 | 26 | 65,60 | |
| **13675** | **13675/S** | | 10 | | 10,5 | 29 | | 53 | | 71,50 | |
| **13676** | **13676/S** | | 12 | | 13 | 29 | | 52,5 | | 69,80 | |
| **13677** | **13677/S** | | 16 | | 17 | 29 | | 55 | | 71,90 | |
| **13678** | **13678/S** | | 20 | | 21 | 35 | | 60 | | 76,10 | |
| **13679** | **13679/S** | 120f | 10 | 16,8 | 10,5 | 31 | 21,3 | 56,5 | 29 | 80,70 | |
| **13680** | **13680/S** | | 12 | | 13 | 31 | | 56 | | 80,70 | |
| **13681** | **13681/S** | | 16 | | 17 | 31 | | 58 | | 83,60 | |
| **13682** | **13682/S** | | 20 | | 21 | 35 | | 63 | | 87,50 | |
| **10708** | **10708/S** | 150f | 10 | 19 | 10,5 | 35 | 24 | 59 | 30 | 104,00 | |
| **13683** | **13683/S** | | 12 | | 13 | 35 | | 58,5 | | 107,00 | |
| **13684** | **13684/S** | | 16 | | 17 | 35 | | 63 | | 111,10 | |
| **13685** | **13685/S** | | 20 | | 21 | 35 | | 66 | | 119,60 | |
| **10710** | **10710/S** | 185f | 10 | 21 | 10,5 | 38 | 26 | 67 | 29 | 135,90 | |
| **10711** | **10711/S** | | 12 | | 13 | 38 | | 67 | | 121,50 | |
| **10712** | **10712/S** | | 16 | | 17 | 38 | | 69,5 | | 129,80 | |
| **10713** | **10713/S** | | 20 | | 21 | 38 | | 71 | | 134,50 | |
| **10714** | **10714/S** | 240f | 12 | 24 | 13 | 44 | 30 | 82 | 42 | 212,60 | |
| **10715** | **10715/S** | | 16 | | 17 | 44 | | 82 | | 219,40 | |
| **10716** | **10716/S** | | 20 | | 21 | 44 | | 82 | | 222,00 | |

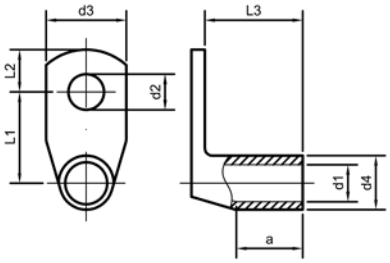
30460 page no. 165; 12725 page no. 184

31460 page no. 167

12374 page no. 160

# Tubular cable lugs 10f-240f mm²
## Angle type 90° for fine stranded cables

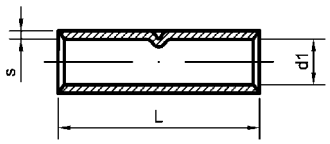
Material: Cu-HCP DIN EN 13600
Surface: tinned




| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03410** | 10f | 5 | 5 | 5,3 | 12 | 8 | 12 | 5,5 | 17 | 11 | 8,60 | 12930, 12933, page no. 169; 12728 page no. 186 / 12766 page no. 170; 12965S/, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no.181; 12836, 12485-87 page no. 192; 12837 page no. 193 / 31460 page no. 167 / 30460 page no. 165; 12725 page no. 184 / 12374 page no. 160 |
| **03412** | | 6 | | 6,4 | 13 | | 14 | 7,5 | | | 8,70 | |
| **03414** | | 8 | | 8,4 | 15 | | 16 | 10 | | | 9,40 | |
| **03416** | | 10 | | 10,5 | 18 | | 18 | 12 | | | 9,70 | |
| **03418** | | 12 | | 13 | 20 | | 19 | 13 | | | 9,80 | |
| **03420** | 16f | 5 | 6 | 5,3 | 15 | 9 | 12,5 | 5,5 | 17 | 12 | 9,40 | |
| **03422** | | 6 | | 6,4 | 15 | | 14,5 | 7,5 | | | 10,50 | |
| **03424** | | 8 | | 8,4 | 15 | | 16,5 | 10 | | | 11,80 | |
| **03426** | | 10 | | 10,5 | 18 | | 18,5 | 12 | | | 12,50 | |
| **03428** | | 12 | | 13 | 20 | | 19,5 | 13 | | | 14,30 | |
| **03430** | 25f | 6 | 7,7 | 6,4 | 16 | 10,7 | 15,9 | 7,5 | 20,8 | 15 | 15,50 | |
| **03432** | | 8 | | 8,4 | 16 | | 17,9 | 10 | | | 18,00 | |
| **03434** | | 10 | | 10,5 | 18 | | 19,9 | 12 | | | 18,80 | |
| **03436** | | 12 | | 13 | 20 | | 20,9 | 13 | | | 16,90 | |
| **03440** | 35f | 6 | 9,2 | 6,4 | 18 | 12,4 | 16,7 | 7,5 | 21,5 | 17 | 19,70 | |
| **03442** | | 8 | | 8,4 | 18 | | 18,7 | 10 | | | 22,00 | |
| **03444** | | 10 | | 10,5 | 18,5 | | 20,7 | 12 | | | 23,40 | |
| **03446** | | 12 | | 13 | 23 | | 21,7 | 13 | | | 22,30 | |
| **03448** | | 16 | | 17 | 28 | | 24,7 | 16 | | | 22,50 | |
| **03450** | 50f | 6 | 11,2 | 6,4 | 22 | 14,8 | 17,9 | 7,5 | 24,5 | 20 | 29,00 | |
| **03452** | | 8 | | 8,4 | 22 | | 19,9 | 10 | | | 31,50 | |
| **03454** | | 10 | | 10,5 | 22 | | 21,9 | 12 | | | 33,00 | |
| **03456** | | 12 | | 13 | 23 | | 22,9 | 13 | | | 33,80 | |
| **03458** | | 16 | | 17 | 28 | | 25,9 | 16 | | | 35,70 | |
| **03460** | 70f | 8 | 13,5 | 8,4 | 25 | 17,5 | 21,3 | 10 | 28 | 22 | 45,30 | |
| **03462** | | 10 | | 10,5 | 25 | | 23,3 | 12 | | | 48,20 | |
| **03464** | | 12 | | 13 | 25 | | 24,3 | 13 | | | 50,63 | |
| **03466** | | 16 | | 17 | 28 | | 27,3 | 16 | | | 51,00 | |
| **03468** | | 20 | | 21 | 31 | | 31,3 | 19 | | | 54,00 | |
| **03470** | 95f | 10 | 15,5 | 10,5 | 29 | 20 | 25 | 12 | 32 | 25 | 75,00 | |
| **03472** | | 12 | | 13 | 29 | | 26 | 13 | | | 72,20 | |
| **03474** | | 16 | | 17 | 29 | | 28,5 | 16 | | | 75,00 | |
| **03476** | | 20 | | 21 | 35 | | 32,5 | 19 | | | 77,00 | |
| **03480** | 120f | 10 | 16,8 | 10,5 | 31 | 21,3 | 25,7 | 12 | 34 | 28 | 78,60 | |
| **03482** | | 12 | | 13 | 31 | | 26,7 | 13 | | | 80,20 | |
| **03484** | | 16 | | 17 | 31 | | 29,7 | 16 | | | 83,30 | |
| **03486** | | 20 | | 21 | 35 | | 33,7 | 19 | | | 86,10 | |
| **03490** | 150f | 10 | 19 | 10,5 | 35 | 24 | 27 | 12 | 34,8 | 29 | 100,60 | |
| **03492** | | 12 | | 13 | 35 | | 28 | 13 | | | 107,00 | |
| **03494** | | 16 | | 17 | 35 | | 31 | 16 | | | 110,40 | |
| **03496** | | 20 | | 21 | 35 | | 35 | 19 | | | 119,60 | |
| **03497** | 185f | 12 | 21 | 13 | 38 | 26 | 29 | 13 | 43 | 34 | 126,90 | |
| **03498** | | 16 | | 17 | 38 | | 32 | 16 | | | 134,60 | |
| **03499** | | 20 | | 21 | 38 | | 36 | 19 | | | 140,20 | |
| **03500** | 240f | 12 | 24 | 13 | 43 | 30 | 31 | 13 | 51 | 41 | 199,20 | |
| **03501** | | 16 | | 17 | 43 | | 34 | 16 | | | 209,00 | |
| **03502** | | 20 | | 21 | 43 | | 38 | 19 | | | 218,10 | |

## Butt connectors 10f-240f mm²
## for fine stranded cables

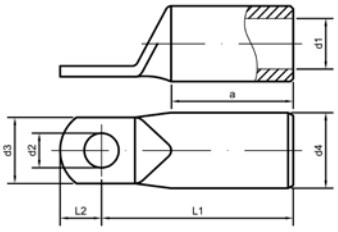
Material: Cu-HCP DIN EN 13600
Surface: tinned




| Part-No. | cross-section mm² | dimensions mm d1 | L | s | weight kg/‰/pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|
| 03800 | 10 f | 5 | 30 | 1,5 | 8,30 | crimping-tools pages no. 160-193 |
| 03801 | 16 f | 6 | 35 | 1,5 | 11,00 | |
| 03802 | 25 f | 7,7 | 40 | 1,5 | 15,00 | |
| 03803 | 35 f | 9,2 | 45 | 1,6 | 21,80 | |
| 03804 | 50 f | 11,2 | 50 | 1,8 | 32,40 | |
| 03805 | 70 f | 13,5 | 60 | 2 | 51,00 | |
| 03806 | 95 f | 15,5 | 65 | 2,25 | 74,90 | |
| 03807 | 120 f | 16,8 | 65 | 2,25 | 84,40 | |
| 03808 | 150 f | 19 | 70 | 2,5 | 105,60 | |
| 03809 | 185 f | 21 | 85 | 2,5 | 140,10 | |
| 03810 | 240 f | 24 | 100 | 3 | 227,30 | |

## Tubular cable lugs 35f-240f mm²
## with narrow flange for fine stranded cables

Material: Cu-HCP DIN EN 13600
Surface: tinned

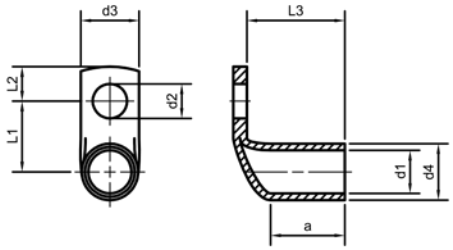



| Part-No. | cross-section mm² | drilling M | dimensions mm d1 | d2 | d3 | d4 | L1 | L2 | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10850 | 35f | 6 | 9,2 | 6,4 | 15 | 12,4 | 35 | 7,5 | 18 | 17,70 | 12930, 12933 page no. 169; 12728 page no. 186; 12766 page no. 170; 12965S/, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no.181; 12836, 12485-87 page no. 192; 12837 page no. 193; 31460 page no. 167; 30460 page no. 165; 12725 page no. 184; 12374 page no. 160 |
| 10852 | 50f | 6 | 11,0 | 6,4 | 15 | 14,8 | 38,5 | 7,5 | 21 | 26,90 | |
| 10853 | | 8 | | 8,4 | 17 | | 41 | 10 | | 30,00 | |
| 10854 | | 10 | | 10,5 | 19 | | 45,5 | 12 | | 33,10 | |
| 10855 | | 12 | | 13 | 19 | | 46,5 | 13 | | 33,10 | |
| 10856 | 70f | 6 | 13,4 | 6,4 | 18 | 17,5 | 47,5 | 7,5 | 23 | 45,10 | |
| 10857 | | 8 | | 8,4 | 18 | | 48 | 10 | | 47,00 | |
| 10858 | | 10 | | 10,5 | 19 | | 50 | 12 | | 47,40 | |
| 10859 | | 12 | | 13 | 22 | | 51 | 13 | | 46,30 | |
| 10861 | 95f | 6 | 14,9 | 6,4 | 19 | 20 | 50 | 7,5 | 26 | 59,50 | |
| 10862 | | 8 | | 8,4 | 19 | | 51 | 10 | | 62,90 | |
| 10863 | | 10 | | 10,5 | 19 | | 53,5 | 12 | | 65,40 | |
| 10864 | | 12 | | 13 | 22 | | 55 | 13 | | 65,50 | |
| 10866 | 120f | 6 | 16,3 | 6,4 | 19 | 21,3 | 53 | 7,5 | 29 | 68,40 | |
| 10867 | | 8 | | 8,4 | 19 | | 55 | 10 | | 71,10 | |
| 10868 | | 10 | | 10,5 | 19 | | 57 | 12 | | 73,40 | |
| 10869 | | 12 | | 13 | 22 | | 58 | 13 | | 76,30 | |
| 10871 | 150f | 6 | 18,7 | 6,4 | 26 | 24 | 56 | 7,5 | 30 | 85,70 | |
| 10872 | | 8 | | 8,4 | 26 | | 58 | 10 | | 91,80 | |
| 10873 | | 10 | | 10,5 | 26 | | 60 | 12 | | 97,30 | |
| 10874 | | 12 | | 13 | 26 | | 59,5 | 13 | | 93,90 | |
| 10875 | | 16 | | 17 | 26 | | 62,5 | 16 | | 105,00 | |
| 10876 | 185f | 10 | 21 | 10,5 | 30 | 26 | 65 | 12 | 35 | 117,20 | |
| 10877 | | 12 | | 13 | 30 | | 65 | 13 | | 112,70 | |
| 10878 | | 16 | | 17 | 30 | | 68 | 16 | | 117,60 | |
| 10880 | 240f | 10 | 23,5 | 10,5 | 30 | 30 | 76 | 12 | 42 | 185,90 | |
| 10881 | | 12 | | 13 | 30 | | 79 | 13 | | 200,80 | |
| 10882 | | 16 | | 17 | 30 | | 81 | 16 | | 202,30 | |

The dimensions of the cable lugs are coordinated with the dimensions of our fine stranded ropes and silicone insulated leadings. In conjunction with such leadings it is possible to realize connetions also under cramped conditions. Cable lugs with narrow flange for normal stranded cables are described on page 44.

## Tubular cable lugs 35f-240f mm²
## with narrow flange for fine stranded cables

Angle type 90°
Material: Cu-HCP DIN EN 13600
Surface: tinned




| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | a | weight kg/‰/pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03960** | 35f | 6 | 9,2 | 6,4 | 15 | 12,4 | 16,7 | 7,5 | 21,5 | 17 | 18,00 | |
| **03961** | 50f | 6 | 11 | 6,4 | 15 | 14,8 | 17,9 | 7,5 | 24,5 | 20 | 26,00 | |
| **03962** | | 8 | | 8,4 | 17 | | 19,9 | 10 | | | 29,00 | |
| **03963** | | 10 | | 10,5 | 19 | | 21,9 | 12 | | | 30,00 | |
| **03964** | 70f | 6 | 13,4 | 6,4 | 18 | 17,5 | 20 | 7,5 | 31 | 22 | 43,00 | |
| **03965** | | 8 | | 8,4 | 18 | | 22 | 10 | | | 45,00 | |
| **03966** | | 10 | | 10,5 | 19 | | 24 | 12 | | | 48,00 | |
| **03967** | | 12 | | 13 | 22 | | 27 | 13 | | | 48,00 | |
| **03968** | 95f | 6 | 14,9 | 6,4 | 19 | 20 | 21 | 7,5 | 34 | 25 | 64,00 | |
| **03969** | | 8 | | 8,4 | 19 | | 23 | 10 | | | 67,00 | |
| **03970** | | 10 | | 10,5 | 19 | | 25 | 12 | | | 70,00 | |
| **03971** | | 12 | | 13 | 22 | | 26 | 13 | | | 69,00 | |
| **03972** | 120f | 6 | 16,3 | 6,4 | 19 | 21,3 | 21,7 | 7,5 | 37 | 28 | 73,00 | |
| **03973** | | 8 | | 8,4 | 19 | | 23,7 | 10 | | | 77,00 | |
| **03974** | | 10 | | 10,5 | 19 | | 25,7 | 12 | | | 79,00 | |
| **03975** | | 12 | | 13 | 22 | | 26,7 | 13 | | | 78,00 | |
| **03976** | 150f | 6 | 18,7 | 6,4 | 26 | 24 | 23 | 7,5 | 37,5 | 29 | 92,00 | |
| **03977** | | 8 | | 8,4 | 26 | | 25 | 10 | | | 98,00 | |
| **03978** | | 10 | | 10,5 | 26 | | 27 | 12 | | | 99,60 | |
| **03979** | | 12 | | 13 | 26 | | 28 | 13 | | | 102,00 | |
| **03980** | | 16 | | 17 | 26 | | 31 | 16 | | | 105,00 | |
| **03981** | 185f | 10 | 21 | 10,5 | 30 | 26 | 28 | 12 | 43 | 34 | 119,00 | |
| **03982** | | 12 | | 13 | 30 | | 29 | 13 | | | 119,00 | |
| **03983** | | 16 | | 17 | 30 | | 32 | 16 | | | 123,00 | |
| **03984** | 240f | 10 | 23,5 | 10,5 | 30 | 30 | 30 | 12 | 50 | 41 | 186,00 | |
| **03985** | | 12 | | 13 | 30 | | 31 | 13 | | | 187,00 | |
| **03986** | | 16 | | 17 | 30 | | 34 | 16 | | | 192,00 | |

crimping-tools pages no. 160-193

The dimensions of the cable lugs are coordinated with the dimensions of our fine stranded ropes and silicone insulated leadings. In conjunction with such leadings it is possible to realize connetions also under cramped conditions.

## In comparison cable lugs with narrow flange with cable lugs in standard- or Euro-type design

The use of cable lugs with a narrow flange realize connections and an installation also into smaller places. In combination with our highly flexible silicone insulated leadings according to the following page 40 they offer excellent solutions for high current connections inside of small switch gears or similar application.

## Single insulated silicone copper cables 1,8/3 kV

highly flexible, free of halogen, self-extinguishing and UL-approved

- **Highest flexibility for high current transfer**
- **Crimped with our cable lugs with smaller flange acc. to the catalogue pages 38 + 39 well suited for installation works under cramped conditions**
- **Caused by the reinforced thickness of the insulating material rugged und suitable for a voltage of 1,8/3 kV**
- **Free of halogen and self-extinguishing**
- **UL-approved**
- **Temperature resistant continuously – 50 °C up to + 180 °C shortly up to + 250 °C up to + 300 °C**
- **Testing voltage 10 kV**
- **Dielectric strength 20 kV/mm**
- **Short circuit resistance SIR + 350 °C**
- **Good UV- and ozone stability**
- **Delivery in rings, on plastic spools or wooden drums**

| Part-No. | cross-section mm² | diameter and number of wires | outer-Ø ca. | wall thickness ca. | current-load in dependence of the conductor heat in °Celsius 45° | 80° | 90° | 100° | 130° |
|---|---|---|---|---|---|---|---|---|---|
| **15014** | 4,0 | 1036x0,07 | 4,80 | 1,1 | 30A | 50A | 55A | 60A | 70A |
| **15016** | 6,0 | 1568x0,07 | 5,60 | 1,1 | 40A | 65A | 70A | 78A | 90A |
| **15020** | 10,0 | 2562x0,07 | 8,50 | 2,0 | 50A | 90A | 98A | 107A | 120A |
| **15022** | 16,0 | 4116x0,07 | 10,00 | 2,0 | 70A | 125A | 132A | 143A | 160A |
| **15024** | 25,0 | 3234x0,07 | 12,00 | 2,3 | 95A | 160A | 176A | 187A | 215A |
| **15026** | 35,0 | 4508x0,10 | 13,80 | 2,5 | 115A | 200A | 218A | 230A | 260A |
| **15028** | 50,0 | 6468x0,10 | 15,50 | 2,5 | 145A | 245A | 276A | 287A | 325A |
| **15030** | 70,0 | 8967x0,10 | 18,00 | 2,5 | 175A | 305A | 347A | 352A | 400A |
| **15032** | 95,0 | 12201x0,10 | 20,00 | 2,5 | 215A | 370A | 416A | 425A | 485A |
| **15034** | 120,0 | 15435x0,10 | 21,50 | 2,5 | 245A | 425A | 488A | 495A | 560A |
| **15036** | 150,0 | 19404x0,10 | 23,50 | 2,5 | 285A | 490A | 566A | 575A | 640A |
| **15038** | 185,0 | 23580x0,10 | 26,00 | 2,5 | 320A | 555A | 644A | 655A | 730A |
| **15040** | 240,0 | 30600x0,10 | 28,50 | 2,5 | 380A | 650A | 775A | 790A | 855A |

**Remark:** All information about current load are approximate values in consideration of the cables heat (for single laying of air cooled cables and ambient temperature + 30° C). The values by a conductor heat of + 90° C are in accordance with VDE 0298 part 4 table 15. By changing the ambient temperature or the kind of laying reducing factors are to be considered. Nature colours is standard but on request it is also possible to manufacture cables with colours like black, red, blue, yellow/green etc. or with reduced insulation thickness and other operating voltages. Minimum quantity on request. The outside diameter of our highly flexible copper conductors are manufactured in coordination with cable lugs acc. to DIN 46234, DIN 46341 and druseidt tubular cable lugs for fine stranded cables.

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.5 Uninsulated tubular cable lugs and connectors, druseidt EURO-design

Caused by the fact that the German DIN-standardization for cable lugs and connectors cannot cover the whole range of electrical leadings and cables on the market, with their various kinds of conductor constructions and strandings, it is not possible to create an official standard for all designs.

Therefore different designs acc. to the specifications of the cable lug manufacturers have been established on the market. To activate as much as possible customers, druseidt offers, additionally to his approved cable lugs in standard design, a new so called Euro-design with changed tube dimension in the cross-section range of 6-120 mm². So it is possible to cover an additional section of cable lugs circulating in the market. Now customers, owning only tools for connectors acc. to the Euro-design, can buy the cable lugs by our company without making any changes in their tool assortment.

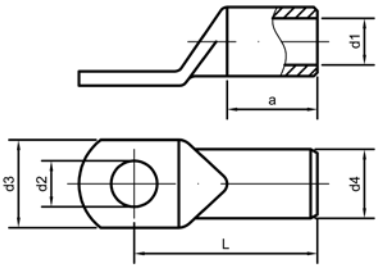
Cable lugs and connectors in Euro-design are deliverable in straight as well as different angled - or designs with narrow flange. We recommend to compress cable lugs in Euro-design with a WM-crimping. Suitable tools and compression die-sets especially for connectors acc. to the Euro-design, are described on the catalogue pages 159 ff.

Please notice, that the crimping procedures will be done only with the right tools in combination with the right compression dies suitable for cable lugs and connectors in Euro-design.

Crimping design:
WM-crimping

## Tubular cable lugs 0,5-50 mm²
## druseidt Euro-Series

Material: Cu-HCP DIN EN 13600
Surface: tinned

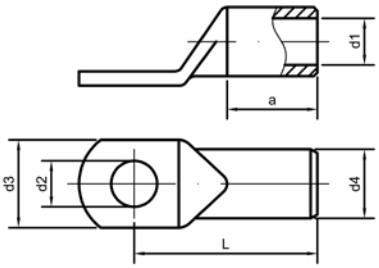



| Part-No. without inspection hole | Part-No. with inspection hole | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **01580** | - | 0,5 - 0,75 | 3 | 1,4 | 3,2 | 6,5 | 3 | 12,5 | 6 | 0,71 | 30446 0,75-10 mm², 30446 1,5-16 mm² |
| **01581** | - | | 4 | | 4,3 | 8,5 | | 14 | | 0,80 | |
| **01582** | - | | 5 | | 5,3 | 10 | | 15 | | 1,00 | |
| **01583** | - | 1 - 1,5 | 3 | 1,9 | 3,2 | 6,5 | 3,9 | 14 | 6 | 1,20 | |
| **01584** | - | | 4 | | 4,3 | 8,5 | | 15 | | 1,40 | |
| **01585** | - | | 5 | | 5,3 | 10 | | 16 | | 1,50 | |
| **01586** | - | | 6 | | 6,4 | 11 | | 18 | | 1,70 | |
| **01588** | - | 2,5 | 4 | 2,4 | 4,3 | 8,5 | 4,4 | 15 | 6,5 | 1,57 | |
| **01589** | - | | 5 | | 5,3 | 10 | | 16 | | 1,72 | |
| **01590** | - | | 6 | | 6,4 | 11 | | 18 | | 1,92 | |
| **01591** | - | | 8 | | 8,4 | 13 | | 20 | | 2,20 | |
| **01592** | - | 4 | 4 | 3 | 4,3 | 8,5 | 5 | 17 | 8 | 2,20 | |
| **01593** | - | | 5 | | 5,3 | 10 | | 18 | | 2,40 | |
| **01594** | - | | 6 | | 6,4 | 11 | | 20 | | 2,60 | |
| **01595** | - | | 8 | | 8,4 | 14 | | 22 | | 3,00 | |
| **03196** | **03196/S** | 6 | 4 | 3,5 | 4,3 | 10 | 6,5 | 19 | 9 | 4,60 | 12372/50, 12372 page no. 159; 12655 page no. 163 |
| **03197** | **03197/S** | | 5 | | 5,3 | 10 | | 20 | | 4,70 | |
| **03198** | **03198/S** | | 6 | | 6,4 | 11 | | 21,5 | | 5,40 | |
| **03199** | **03199/S** | | 8 | | 8,4 | 15 | | 24 | | 5,90 | |
| **03200** | **03200/S** | | 10 | | 10,5 | 18 | | 26 | | 6,40 | |
| **03201** | **03201/S** | | 12 | | 13 | 19 | | 27,5 | | 6,40 | |
| **03202** | **03202/S** | 10 | 4 | 4,5 | 4,3 | 12 | 7 | 20 | 10 | 4,30 | 12373 page no. 159; 30460 page no. 165; 31460 page no. 167; 12930, 12933 page no. 169; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no.179; 13551/25, 13551/42, 13537 page no. 181; 12725 page no. 184; 12728 page no. 186; 12836, 12485-87 page no. 192; 12837 page no. 193 |
| **03203** | **03203/S** | | 5 | | 5,3 | 12 | | 21 | | 4,90 | |
| **03204** | **03204/S** | | 6 | | 6,4 | 12 | | 22,5 | | 5,10 | |
| **03205** | **03205/S** | | 8 | | 8,4 | 15 | | 25 | | 5,80 | |
| **03206** | **03206/S** | | 10 | | 10,5 | 18 | | 27 | | 6,30 | |
| **03207** | **03207/S** | | 12 | | 13 | 20 | | 28,5 | | 6,30 | |
| **03208** | **03208/S** | 16 | 4 | 5,5 | 4,3 | 12 | 8,5 | 24 | 13 | 8,20 | |
| **03209** | **03209/S** | | 5 | | 5,3 | 12 | | 25 | | 8,80 | |
| **03210** | **03210/S** | | 6 | | 6,4 | 12 | | 26,5 | | 9,60 | |
| **03211** | **03211/S** | | 8 | | 8,4 | 15 | | 29 | | 10,30 | |
| **03212** | **03212/S** | | 10 | | 10,5 | 18 | | 31 | | 11,00 | |
| **03213** | **03213/S** | | 12 | | 13 | 19 | | 32 | | 10,80 | |
| **03214** | **03214/S** | 25 | 5 | 7 | 5,3 | 15 | 10 | 33,5 | 15 | 13,50 | |
| **03215** | **03215/S** | | 6 | | 6,4 | 15 | | 31,5 | | 13,10 | |
| **03216** | **03216/S** | | 8 | | 8,4 | 16 | | 33 | | 12,90 | |
| **03217** | **03217/S** | | 10 | | 10,5 | 18 | | 34,5 | | 14,60 | |
| **03218** | **03218/S** | | 12 | | 13 | 20 | | 36 | | 15,50 | |
| **03219** | **03219/S** | | 14 | | 15 | 22 | | 39 | | 16,60 | |
| **03220** | **03220/S** | | 16 | | 17 | 24 | | 42 | | 16,00 | |
| **03221** | **03221/S** | 35 | 6 | 8,5 | 6,4 | 17 | 12 | 33 | 17 | 20,70 | |
| **03222** | **03222/S** | | 8 | | 8,4 | 17 | | 34 | | 21,80 | |
| **03223** | **03223/S** | | 10 | | 10,5 | 20 | | 36,5 | | 21,90 | |
| **03224** | **03224/S** | | 12 | | 13 | 22 | | 37,5 | | 23,30 | |
| **03225** | **03225/S** | | 14 | | 15 | 23 | | 40 | | 24,40 | |
| **03226** | **03226/S** | | 16 | | 17 | 28 | | 44 | | 26,00 | |
| **03227** | **03227/S** | 50 | 6 | 10 | 6,4 | 20 | 14 | 37 | 19 | 30,10 | |
| **03228** | **03228/S** | | 8 | | 8,4 | 20 | | 39 | | 30,40 | |
| **03229** | **03229/S** | | 10 | | 10,5 | 20 | | 40,5 | | 31,30 | |
| **03230** | **03230/S** | | 12 | | 13 | 23 | | 42 | | 31,30 | |
| **03231** | **03231/S** | | 14 | | 15 | 23 | | 44 | | 35,10 | |
| **03232** | **03232/S** | | 16 | | 17 | 27 | | 46 | | 35,50 | |
| **03233** | **03233/S** | | 20 | | 21 | 30,5 | | 52,5 | | 38,90 | |

The dimensions of the Euro-series and the druseidt standard design according to catalogue page 30 are in the cross section range of 0,5-4 mm² identically constructed.

# Tubular cable lugs 70-630 mm²
## druseidt Euro-Series

Material: Cu-HCP DIN EN 13600
Surface: tinned

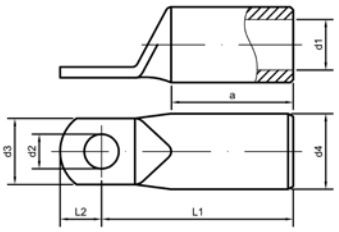



| Part-No. without inspection hole | Part-No. with inspection hole | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03234** | **03234/S** | 70 | 6 | 12 | 6,4 | 24 | 16,5 | 40,5 | 21 | 41,10 | 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12836, 12485-87 page no. 192; 12837 page no. 193; 31460 page no. 167; 12930, 12933 page no. 169; 12728 page no. 186; 12373 page no. 159; 30460 page no. 165; 12725 page no. 184 |
| **03235** | **03235/S** | | 8 | | 8,4 | 24 | | 42,5 | | 44,60 | |
| **03236** | **03236/S** | | 10 | | 10,5 | 24 | | 43,5 | | 46,40 | |
| **03237** | **03237/S** | | 12 | | 13 | 24 | | 45 | | 46,40 | |
| **03238** | **03238/S** | | 14 | | 15 | 25 | | 46 | | 49,10 | |
| **03239** | **03239/S** | | 16 | | 17 | 28 | | 48,5 | | 49,60 | |
| **03240** | **03240/S** | | 20 | | 21 | 29 | | 52 | | 51,80 | |
| **03241** | **03241/S** | 95 | 6 | 13,5 | 6,4 | 26 | 18 | 43 | 23 | 49,50 | |
| **03242** | **03242/S** | | 8 | | 8,4 | 26 | | 46 | | 53,60 | |
| **03243** | **03243/S** | | 10 | | 10,5 | 26 | | 47 | | 55,10 | |
| **03244** | **03244/S** | | 12 | | 13 | 26 | | 48 | | 53,50 | |
| **03245** | **03245/S** | | 14 | | 15 | 26 | | 51,5 | | 58,90 | |
| **03246** | **03246/S** | | 16 | | 17 | 28 | | 51 | | 59,70 | |
| **03247** | **03247/S** | | 20 | | 21 | 30 | | 55 | | 61,30 | |
| **03248** | **03248/S** | 120 | 8 | 15 | 8,4 | 29 | 20 | 49,5 | 26 | 68,80 | |
| **03249** | **03249/S** | | 10 | | 10,5 | 29 | | 52 | | 74,20 | |
| **03250** | **03250/S** | | 12 | | 13 | 29 | | 51,5 | | 78,40 | |
| **03251** | **03251/S** | | 14 | | 15 | 30 | | 53 | | 79,90 | |
| **03252** | **03252/S** | | 16 | | 17 | 30 | | 55 | | 80,70 | |
| **03253** | **03253/S** | | 20 | | 21 | 35 | | 60 | | 89,00 | |
| **03254** | **03254/S** | 150 | 8 | 16,8 | 8,4 | 31 | 21,3 | 55,5 | 29 | 78,90 | |
| **01634** | **01714** | | 10 | | 10,5 | 31 | | 56,5 | | 81,90 | |
| **01635** | **01715** | | 12 | | 13 | 31 | | 56 | | 80,70 | |
| **10149** | **10174** | | 14 | | 15 | 31 | | 57 | | 80,00 | |
| **01636** | **01716** | | 16 | | 17 | 31 | | 58 | | 83,60 | |
| **01637** | **01717** | | 20 | | 21 | 35 | | 63 | | 87,50 | |
| **10145** | **10175** | 185 | 10 | 19 | 10,5 | 35 | 24 | 59 | 30 | 106,10 | |
| **01638** | **01718** | | 12 | | 13 | 35 | | 58,5 | | 106,00 | |
| **10151** | **10176** | | 14 | | 15 | 35 | | 61 | | 107,20 | |
| **01639** | **01719** | | 16 | | 17 | 35 | | 63 | | 108,60 | |
| **01640** | **01720** | | 20 | | 21 | 35 | | 66 | | 113,30 | |
| **10152** | **10177** | 240 | 10 | 21 | 10,5 | 38 | 26 | 67 | 35 | 129,70 | |
| **01641** | **01721** | | 12 | | 13 | 38 | | 67 | | 130,20 | |
| **10153** | **10178** | | 14 | | 15 | 38 | | 69 | | 133,60 | |
| **01642** | **01722** | | 16 | | 17 | 38 | | 69,5 | | 138,40 | |
| **01643** | **01723** | | 20 | | 21 | 38 | | 71 | | 138,00 | |
| **01644** | **01724** | 300 | 12 | 24 | 13 | 44 | 30 | 82 | 42 | 217,20 | |
| **10154** | **10190** | | 14 | | 15 | 44 | | 84 | | 221,90 | |
| **01645** | **01725** | | 16 | | 17 | 44 | | 85 | | 219,40 | |
| **01646** | **01726** | | 20 | | 21 | 44 | | 85 | | 229,20 | |
| **10155** | - | 400 | 10 | 27,5 | 10,5 | 49 | 33,5 | 92 | 47 | 279,00 | on request |
| **10150** | - | | 12 | | 13 | 49 | | 92 | | 279,00 | |
| **01647** | - | | 16 | | 17 | 49 | | 92 | | 279,00 | |
| **01648** | - | | 20 | | 21 | 49 | | 92 | | 281,90 | |
| **01649** | - | 500 | 16 | 31 | 17 | 55,5 | 38 | 113 | 70 | 493,80 | |
| **01650** | - | | 20 | | 21 | 55,5 | | 113 | | 485,60 | |
| **01651** | - | 630 | 16 | 34 | 17 | 60 | 41 | 115 | 70 | 513,50 | |
| **01652** | - | | 20 | | 21 | 60 | | 115 | | 506,00 | |

The dimensions of the Euro-Series and the druseidt standard design according to catalogue page 31 are in the cross section range of 150-630 mm² identically constructed.

## Tubular cable lugs 35-300 mm² with narrow flange druseidt Euro-Series

Material: Cu-HCP DIN EN 13600
Surface: tinned

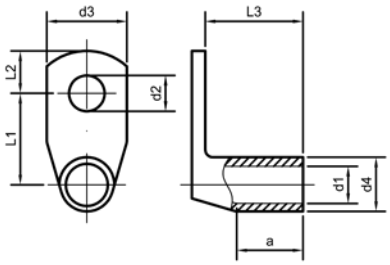



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03900** | 35 | 6 | 8,5 | 6,4 | 15 | 12 | 33 | 7,5 | 17 | 18,00 | 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12836, 12485-87 page no. 192; 12837 page no. 193; 31460 page no. 167; 12930, 12933 page no. 169; 12728 page no. 186; 12373 page no. 159; 30460 page no.165; 12725 page no. 184; 12372 page no. 159; 12372/50 S. 159; 12655 S. 163 |
| **03901** | | 8 | | 8,4 | 15 | | 35 | 10 | | 21,60 | |
| **03902** | 50 | 6 | 10 | 6,4 | 15 | 14 | 37 | 7,5 | 19 | 27,30 | |
| **03903** | | 8 | | 8,4 | 17 | | 39 | 10 | | 28,30 | |
| **03904** | | 10 | | 10,5 | 17 | | 41 | 12 | | 29,90 | |
| **03905** | 70 | 6 | 11,8 | 6,4 | 17 | 16,5 | 41 | 7,5 | 21 | 40,60 | |
| **03906** | | 8 | | 8,4 | 17 | | 43 | 10 | | 43,00 | |
| **03907** | | 10 | | 10,5 | 17 | | 45 | 12 | | 44,00 | |
| **03908** | | 12 | | 13 | 19 | | 46 | 13 | | 44,80 | |
| **03909** | 95 | 6 | 13,5 | 6,4 | 19 | 18 | 43 | 7,5 | 23 | 46,70 | |
| **03910** | | 8 | | 8,4 | 19 | | 45 | 10 | | 49,00 | |
| **03911** | | 10 | | 10,5 | 19 | | 47 | 12 | | 51,00 | |
| **03912** | | 12 | | 13 | 19 | | 48 | 13 | | 52,00 | |
| **03913** | 120 | 6 | 14,7 | 6,4 | 20 | 20 | 49 | 7,5 | 26 | 64,30 | |
| **03914** | | 8 | | 8,4 | 20 | | 51 | 10 | | 67,30 | |
| **03915** | | 10 | | 10,5 | 20 | | 53 | 12 | | 67,00 | |
| **03916** | | 12 | | 13 | 20 | | 54 | 13 | | 73,40 | |
| **03917** | 150 | 6 | 16,3 | 6,4 | 19 | 21,3 | 53 | 7,5 | 29 | 70,10 | |
| **03918** | | 8 | | 8,4 | 19 | | 55 | 10 | | 73,10 | |
| **03919** | | 10 | | 10,5 | 19 | | 56 | 12 | | 76,30 | |
| **03920** | | 12 | | 13 | 22 | | 59 | 13 | | 76,30 | |
| **03921** | 185 | 10 | 18,7 | 10,5 | 26 | 24 | 60 | 12 | 30 | 104,70 | |
| **03922** | | 12 | | 13 | 26 | | 59,5 | 13 | | 103,60 | |
| **03923** | | 16 | | 17 | 26 | | 64 | 16 | | 111,40 | |
| **03924** | 240 | 10 | 21 | 10,5 | 30 | 26 | 65 | 12 | 35 | 119,50 | |
| **03925** | | 12 | | 13 | 30 | | 65 | 13 | | 121,90 | |
| **03926** | | 16 | | 17 | 30 | | 68 | 16 | | 122,60 | |
| **03927** | 300 | 10 | 23,5 | 10,5 | 30 | 30 | 76 | 12 | 42 | 196,60 | |
| **03928** | | 12 | | 13 | 30 | | 79 | 13 | | 200,80 | |
| **03929** | | 16 | | 17 | 30 | | 81 | 16 | | 206,00 | |

Designs with inspection hole or 90° angled on request.

# Tubular cable lugs 0,5-35 mm²
## Angle type 90°
## druseidt Euro-Series

Material: Cu-HCP DIN EN 13600
Surface: tinned

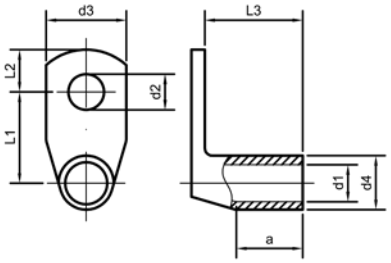



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10400** | 0,5-0,75 | 3 | 1,4 | 3,2 | 6,5 | 3 | 7,5 | 4 | 9,5 | 5 | 0,90 | 30445 0,75-10 mm², 30446 1,5-16 mm² page no. 158 |
| **10402** | | 4 | | 4,3 | 8,5 | | 8,5 | 5 | | | 1,00 | |
| **10404** | | 5 | | 5,3 | 10 | | 9,5 | 5,5 | | | 1,00 | |
| **10406** | 1-1,5 | 3 | 1,9 | 3,2 | 6,5 | 3,9 | 8 | 4 | 9,5 | 5 | 1,60 | |
| **10408** | | 4 | | 4,3 | 8,5 | | 9 | 5 | | | 1,60 | |
| **10410** | | 5 | | 5,3 | 10 | | 10 | 5,5 | | | 1,60 | |
| **10412** | | 6 | | 6,4 | 11 | | 12 | 7,5 | | | 1,60 | |
| **10414** | 2,5 | 4 | 2,4 | 4,3 | 8,5 | 4,4 | 9,2 | 5 | 9,5 | 5,5 | 1,83 | |
| **10416** | | 5 | | 5,3 | 10 | | 10,2 | 5,5 | | | 1,84 | |
| **10418** | | 6 | | 6,4 | 11 | | 12,2 | 7,5 | | | 2,20 | |
| **10420** | | 8 | | 8,4 | 14 | | 14,2 | 10 | | | 2,30 | |
| **10422** | 4 | 4 | 3 | 4,3 | 8,5 | 5 | 9,5 | 5 | 10,5 | 7 | 2,50 | |
| **10424** | | 5 | | 5,3 | 10 | | 10,5 | 5,5 | | | 2,41 | |
| **10426** | | 6 | | 6,4 | 11 | | 12,5 | 7,5 | | | 2,90 | |
| **10428** | | 8 | | 8,4 | 14 | | 14,5 | 10 | | | 3,00 | |
| **03815** | 6 | 4 | 3,5 | 4,3 | 10 | 6,5 | 10,3 | 5 | 13,5 | 8 | 6,00 | 12372/50, 12372 page no. 159; 12655 page no. 163 |
| **03816** | | 5 | | 5,3 | 11 | | 11,2 | 5,5 | | | 5,60 | |
| **03817** | | 6 | | 6,4 | 11 | | 13,3 | 7,5 | | | 6,20 | |
| **03818** | | 8 | | 8,4 | 15 | | 15,3 | 10 | | | 6,40 | |
| **03819** | | 10 | | 10,5 | 18 | | 17,2 | 12 | | | 6,80 | |
| **03820** | | 12 | | 13 | 20 | | 18,2 | 13 | | | 6,60 | |
| **03821** | 10 | 5 | 4,5 | 5,3 | 12 | 7 | 11,5 | 5,5 | 15 | 9 | 5,40 | 12373 page no. 159; 30460 page no. 165; 31460 page no. 167; 12930, 12933 page no. 169; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 12537 page no. 181; 12725 page no. 184; 12728 page no. 186; 12836, 12485-87 page no. 192; 12837 page no. 193 |
| **03822** | | 6 | | 6,4 | 12 | | 12,5 | 7,5 | | | 5,90 | |
| **03823** | | 8 | | 8,4 | 15 | | 15,5 | 10 | | | 6,70 | |
| **03824** | | 10 | | 10,5 | 18 | | 17,5 | 12 | | | 7,00 | |
| **03825** | | 12 | | 13 | 20 | | 18,5 | 13 | | | 7,00 | |
| **03826** | 16 | 5 | 5,5 | 5,3 | 12 | 8,5 | 13 | 5,5 | 21 | 12 | 10,70 | |
| **03827** | | 6 | | 6,4 | 12 | | 14,3 | 7,5 | | | 11,50 | |
| **03828** | | 8 | | 8,4 | 15 | | 16,3 | 10 | | | 12,00 | |
| **03829** | | 10 | | 10,5 | 18 | | 18,3 | 12 | | | 12,30 | |
| **03830** | | 12 | | 13 | 20 | | 19,3 | 13 | | | 12,30 | |
| **03831** | 25 | 6 | 7 | 6,4 | 15 | 10 | 15,5 | 7,5 | 18 | 14 | 13,50 | |
| **03832** | | 8 | | 8,4 | 16 | | 17,5 | 10 | | | 14,30 | |
| **03833** | | 10 | | 10,5 | 18 | | 19,5 | 12 | | | 16,80 | |
| **03834** | | 12 | | 13 | 20 | | 20,5 | 13 | | | 15,10 | |
| **03835** | | 14 | | 15 | 22 | | 22,5 | 15 | | | 16,90 | |
| **03836** | 35 | 6 | 8,5 | 6,4 | 17 | 12 | 16,5 | 7,5 | 19,5 | 16 | 21,00 | |
| **03837** | | 8 | | 8,4 | 17 | | 18,5 | 10 | | | 23,10 | |
| **03838** | | 10 | | 10,5 | 20 | | 20,5 | 12 | | | 23,60 | |
| **03839** | | 12 | | 13 | 22 | | 21,5 | 13 | | | 23,70 | |
| **03840** | | 14 | | 15 | 23 | | 23,5 | 15 | | | 24,80 | |
| **03841** | | 16 | | 17 | 28 | | 24,5 | 16 | | | 24,80 | |

The dimensions of the Euro-Series and the druseidt standard design according to catalogue page 32 are in the cross section range of 0,5-4 mm² identically constructed.

# Tubular cable lugs 50-300 mm²
## Angle type 90°
## druseidt Euro-Series

Material: Cu-HCP DIN EN 13600
Surface: tinned

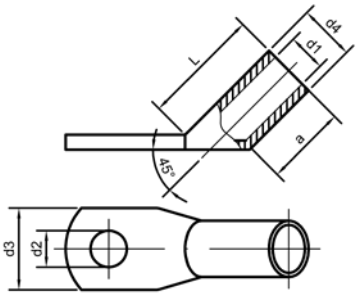



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03842** | 50 | 6 | 10 | 6,4 | 20 | 14 | 17,5 | 7,5 | 21,5 | 18 | 30,00 | 12372/50 page no. 159; 12655 page no. 163 |
| **03843** | | 8 | | 8,4 | 20 | | 19,5 | 10 | | | 32,20 | |
| **03844** | | 10 | | 10,5 | 20 | | 21,5 | 12 | | | 33,20 | |
| **03845** | | 12 | | 13 | 23 | | 22,5 | 13 | | | 32,80 | |
| **03846** | | 14 | | 15 | 23 | | 24,5 | 15 | | | 33,70 | |
| **03847** | | 16 | | 17 | 27 | | 28,5 | 16 | | | 36,30 | |
| **03848** | | 20 | | 21 | 30 | | 32,5 | 19 | | | 38,90 | |
| **03849** | 70 | 6 | 12 | 6,4 | 24 | 16,5 | 18,8 | 7,5 | 26 | 20 | 44,10 | 12372 page no. 159 |
| **03850** | | 8 | | 8,4 | 24 | | 20,8 | 10 | | | 49,20 | |
| **03851** | | 10 | | 10,5 | 24 | | 22,8 | 12 | | | 50,60 | |
| **03852** | | 12 | | 13 | 24 | | 23,8 | 13 | | | 48,70 | |
| **03853** | | 14 | | 15 | 25 | | 25,8 | 15 | | | 48,40 | |
| **03854** | | 16 | | 17 | 28 | | 26,8 | 16 | | | 51,10 | |
| **03855** | | 20 | | 21 | 29 | | 30,8 | 19 | | | 52,60 | |
| **03856** | 95 | 8 | 13,5 | 8,4 | 26 | 18 | 21,5 | 10 | 26,4 | 22 | 53,30 | 12373 page no. 159; 30460 page no. 165; 12725 page no. 184 |
| **03857** | | 10 | | 10,5 | 26 | | 23,5 | 12 | | | 55,90 | |
| **03858** | | 12 | | 13 | 26 | | 24,5 | 13 | | | 55,30 | |
| **03859** | | 14 | | 15 | 26 | | 26,5 | 15 | | | 58,90 | |
| **03860** | | 16 | | 17 | 28 | | 27,5 | 16 | | | 60,00 | |
| **03861** | 120 | 8 | 15 | 8,4 | 29 | 20 | 22,5 | 10 | 32 | 25 | 76,30 | 31460 page no. 167; 12930, 12933 page no. 169; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12728 page no. 186; 12836, 12485-87 page no. 192; 12837 page no. 193 |
| **03862** | | 10 | | 10,5 | 29 | | 24,5 | 12 | | | 80,70 | |
| **03863** | | 12 | | 13 | 29 | | 25,5 | 13 | | | 80,10 | |
| **03864** | | 16 | | 17 | 30 | | 28,5 | 16 | | | 84,60 | |
| **03865** | 150 | 8 | 16,8 | 8,4 | 31 | 21,3 | 25,7 | 10 | 34 | 28 | 80,30 | |
| **03866** | | 10 | | 10,5 | 31 | | 25,7 | 12 | | | 80,70 | |
| **03867** | | 12 | | 13 | 31 | | 26,7 | 13 | | | 82,90 | |
| **03868** | | 16 | | 17 | 31 | | 29,7 | 16 | | | 85,00 | |
| **03869** | | 20 | | 21 | 35 | | 33,7 | 19 | | | 88,90 | |
| **03870** | 185 | 10 | 19 | 10,5 | 35 | 24 | 27 | 12 | 42 | 29 | 114,10 | |
| **03871** | | 12 | | 13 | 35 | | 28 | 13 | | | 120,40 | |
| **03872** | | 16 | | 17 | 35 | | 31 | 16 | | | 124,80 | |
| **03873** | | 20 | | 21 | 35 | | 35 | 19 | | | 127,00 | |
| **03874** | 240 | 10 | 21 | 10,5 | 38 | 26 | 28 | 12 | 44 | 34 | 133,20 | |
| **03875** | | 12 | | 13 | 38 | | 29 | 13 | | | 132,80 | |
| **03876** | | 16 | | 17 | 38 | | 32 | 16 | | | 137,80 | |
| **03877** | | 20 | | 21 | 38 | | 36 | 19 | | | 141,50 | |
| **01838** | 300 | 12 | 24 | 13 | 43 | 30 | 31 | 13 | 51 | 41 | 199,20 | |
| **01840** | | 16 | | 17 | 43 | | 34 | 16 | | | 209,00 | |
| **01842** | | 20 | | 21 | 43 | | 38 | 19 | | | 218,10 | |

The dimensions of the Euro-Series and the druseidt standard design according to catalogue page 33 are in the cross section range of 300 mm² identically constructed.

# Tubular cable lugs 10-300 mm²
## Angle type 45°
## druseidt Euro-Series

Material: Cu-HCP DIN EN 13600
Surface: tinned

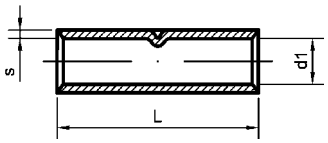



| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **03821/S-45** | 10 | 5 | 4,5 | 5,3 | 12 | 7 | 13,5 | 9 | 5,50 | 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12836, 12485-87 page no. 192; 12837 page no. 193 / 31460 page no. 167; 12930, 12933 page no. 169; 12728 page no. 186 / 12373 page no. 159; 30460 page no. 165; 12725 page no. 184 / 12372 page no. 159 / 12372/50 page no. 159; 12655 page no. 163 / 30446 page no. 158 / 30445 S. 158 |
| **03822/S-45** | | 6 | | 6,4 | 12 | | 13,5 | | 5,80 | |
| **03823/S-45** | | 8 | | 8,4 | 15 | | 13,8 | | 6,50 | |
| **03824/S-45** | | 10 | | 10,5 | 18 | | 13,8 | | 6,60 | |
| **03826/S-45** | 16 | 5 | 5,5 | 5,3 | 12 | 8,5 | 17,5 | 12 | 9,50 | |
| **03827/S-45** | | 6 | | 6,4 | 12 | | 17,5 | | 10,20 | |
| **03828/S-45** | | 8 | | 8,4 | 15 | | 17,7 | | 11,70 | |
| **03829/S-45** | | 10 | | 10,5 | 18 | | 18 | | 11,70 | |
| **03831/S-45** | 25 | 6 | 7 | 6,4 | 15 | 10 | 20,7 | 14 | 13,90 | |
| **03832/S-45** | | 8 | | 8,4 | 16 | | 20,9 | | 15,10 | |
| **03833/S-45** | | 10 | | 10,5 | 18 | | 21,1 | | 16,60 | |
| **03834/S-45** | | 12 | | 13 | 20 | | 21,2 | | 17,00 | |
| **03836/S-45** | 35 | 6 | 8,5 | 6,4 | 17 | 12 | 24,2 | 16 | 21,70 | |
| **03837/S-45** | | 8 | | 8,4 | 17 | | 24,2 | | 22,30 | |
| **03838/S-45** | | 10 | | 10,5 | 20 | | 24,5 | | 23,40 | |
| **03839/S-45** | | 12 | | 13 | 22 | | 24,7 | | 24,00 | |
| **03842/S-45** | 50 | 6 | 10 | 6,4 | 20 | 14 | 27,7 | 18 | 29,40 | |
| **03843/S-45** | | 8 | | 8,4 | 20 | | 27,7 | | 33,40 | |
| **03844/S-45** | | 10 | | 10,5 | 20 | | 27,7 | | 36,50 | |
| **03845/S-45** | | 12 | | 13 | 23 | | 28,1 | | 36,50 | |
| **03850/S-45** | 70 | 8 | 12 | 8,4 | 24 | 16,5 | 31,9 | 20 | 49,00 | |
| **03851/S-45** | | 10 | | 10,5 | 24 | | 33 | | 52,30 | |
| **03852/S-45** | | 12 | | 13 | 24 | | 31,9 | | 51,70 | |
| **03856/S-45** | 95 | 8 | 13,5 | 8,4 | 26 | 18 | 35,5 | 22 | 63,20 | |
| **03857/S-45** | | 10 | | 10,5 | 26 | | 35 | | 62,00 | |
| **03858/S-45** | | 12 | | 13 | 26 | | 35,5 | | 62,00 | |
| **03859/S-45** | | 16 | | 17 | 28 | | 35,5 | | 68,00 | |
| **03861/S-45** | 120 | 8 | 15 | 8,4 | 29 | 20 | 40,1 | 25 | 78,00 | |
| **03862/S-45** | | 10 | | 10,5 | 29 | | 40,1 | | 89,00 | |
| **03863/S-45** | | 12 | | 13 | 29 | | 40,1 | | 89,10 | |
| **03864/S-45** | | 16 | | 17 | 30 | | 40,2 | | 93,10 | |
| **03865/S-45** | 150 | 8 | 16,8 | 8,4 | 31 | 21,3 | 47,5 | 28 | 102,00 | |
| **03866/S-45** | | 10 | | 10,5 | 31 | | 47,5 | | 98,00 | |
| **03867/S-45** | | 12 | | 13 | 31 | | 47,5 | | 96,80 | |
| **03868/S-45** | | 16 | | 17 | 31 | | 47,5 | | 101,20 | |
| **03869/S-45** | | 20 | | 21 | 35 | | 48,2 | | 101,20 | |
| **01831/S-45** | 185 | 12 | 19 | 13 | 35 | 24 | 51 | 29 | 122,90 | |
| **01832/S-45** | | 16 | | 17 | 35 | | 51 | | 119,60 | |
| **01833/S-45** | | 20 | | 21 | 35 | | 51 | | 139,90 | |
| **01834/S-45** | 240 | 12 | 21 | 13 | 38 | 26 | 61 | 34 | 154,60 | |
| **01835/S-45** | | 16 | | 17 | 38 | | 61 | | 165,10 | |
| **01836/S-45** | | 20 | | 21 | 38 | | 61 | | 170,40 | |
| **03880/S-45** | 300 | 16 | 24 | 17 | 43 | 30 | 69 | 41 | 256,80 | |
| **03881/S-45** | | 20 | | 21 | 43 | | | | 273,00 | |

The dimensions of the Euro-Series and the druseidt standard design according to catalogue page 33 are in the cross section range of 185 and 240 mm² identically constructed.

## Butt connectors
## druseidt Euro-Series

Material: Cu-HCP or ETP DIN EN 13600
Surface: tinned

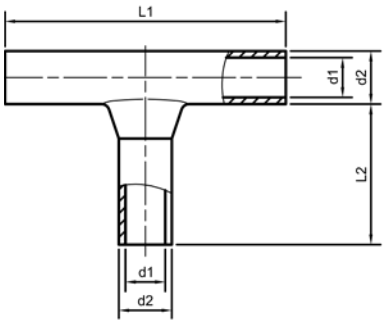



| Part-No. | cross-section mm² | dimensions mm $d_1$ | L | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|
| **13686** | 0,5-0,75 | 1,4 | 15 | 0,8 | 0,80 | pages no. 158-160 163-193 |
| **13687** | 1-1,5 | 1,9 | 15 | 1 | 1,20 | |
| **13688** | 2,5 | 2,4 | 16 | 1 | 1,50 | |
| **13689** | 4 | 3 | 19 | 1 | 2,10 | |
| **03165** | 6 | 3,5 | 25 | 1,5 | 5,10 | |
| **03166** | 10 | 4,5 | 30 | 1,25 | 6,00 | |
| **03167** | 16 | 5,5 | 35 | 1,5 | 10,00 | |
| **03168** | 25 | 7 | 40 | 1,5 | 14,10 | |
| **03169** | 35 | 8,5 | 45 | 1,75 | 21,60 | |
| **03170** | 50 | 10 | 50 | 2 | 33,20 | |
| **03171** | 70 | 12 | 55 | 2,25 | 49,10 | |
| **03172** | 95 | 13,5 | 60 | 2,25 | 60,90 | |
| **03173** | 120 | 15 | 65 | 2,5 | 78,80 | |
| **13699** | 150 | 16,8 | 70 | 2,25 | 86,50 | |
| **01752** | 185 | 19 | 75 | 2,5 | 116,25 | |
| **01753** | 240 | 21 | 85 | 2,5 | 142,20 | |
| **01754** | 300 | 24 | 100 | 3 | 224,00 | |
| **01755** | 400 | 27,5 | 100 | 3 | 261,70 | |
| **01756** | 500 | 31 | 140 | 3,5 | 473,00 | |
| **01757** | 630 | 34 | 160 | 3,5 | 617,50 | |

The dimensions of the Euro-Series and the druseidt standard design according to catalogue page 34 are in the cross section range of 0,5 -4 mm² and 150-630 mm² identically constructed.

## Tubular T-connectors 1-300 mm²
## druseidt Euro-Series

Material: Cu-HCP or ETP DIN EN 13600
Surface: tinned




| Part-No. | cross-section mm² | dimensions mm $d_1$ | $d_2$ | $L_1$ | $L_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **03941** | 1-1,5 | 1,9 | 3,9 | 30 | 6 | 3,60 | 30445 bis 10 mm² 30446 bis 16 mm page no. 158 |
| **03942** | 2,5 | 2,4 | 4,4 | 30 | 16 | 4,50 | |
| **03943** | 4 | 3 | 5 | 35 | 16,5 | 5,70 | |
| **03944** | 6 | 3,5 | 6,5 | 35 | 17 | 10,80 | 12372 page no. 159 |
| **03945** | 10 | 4,5 | 7 | 45 | 25 | 14,00 | 12373/50 page no. 159; 12655 page no. 163 |
| **03946** | 16 | 5,5 | 8,5 | 50 | 26 | 23,00 | 12373 S. 159; 30460 S. 167; 12725 S. 184 |
| **03947** | 25 | 7 | 10 | 50 | 27 | 24,00 | |
| **03948** | 35 | 8,5 | 12 | 60 | 31 | 45,00 | 12930, 12933 page no. 169; 12728 page no. 186 |
| **03949** | 50 | 10 | 14 | 72 | 35 | 72,00 | |
| **03950** | 70 | 12 | 16,5 | 77 | 37 | 103,50 | |
| **03951** | 95 | 13,5 | 18 | 88 | 45 | 127,00 | |
| **03952** | 120 | 15 | 20 | 106 | 53 | 178,00 | 14240/42 page no. 175; 12748 page no. 177 |
| **03953** | 150 | 16,8 | 21,3 | 120 | 58 | 234,20 | |
| **03954** | 185 | 19 | 24 | 110 | 42 | 256,20 | |
| **03955** | 240 | 21 | 26 | 135 | 55 | 339,40 | |
| **03956** | 300 | 24 | 30 | 140 | 55 | 477,00 | |

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.6 Tubular compression lugs and connectors as well as reduction sleeves an H-shaped connectors

Such tubular cable lugs and connectors out of copper are manufactured acc. to DIN 46235 and DIN 46267 part 1. We deliver a tin-plated as well as an uncoated design. Basically all terminals are applicable for crimping stranded or fine stranded conductors. Caused by the relative long designed connecting sleeve they are often used for crimping stranded copper conductors acc. to DIN 48201 part 1 or similar.

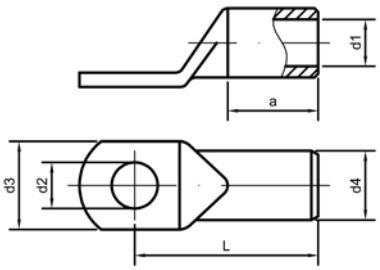
All cable lugs and connectors are equipped with a graven code number and lines, which shows the necessary numbers of crimping procedures. The right crimping design is a hexagonal crimping executed with suitable tools which dies have the same code-number like the cable connectors. To realize a crimping of conductors with a different cross-section range we deliver reduction sleeves, which can be used for non tension connections. To realize a branch off conductors with the same cross-section range of 70-120 mm² we deliver H-shaped connecting clamps and on request C-shaped branch off clamps too.

Please notice, that the crimping procedure will be done only with the right tools in combination with the right compression dies suitable for the described tubular compression connectors.

Crimping design:
Hexagonal-crimping

## Tubular cable lugs 6-240 mm²
## DIN 46235 and special design

Material: Cu-HCP DIN EN 13600
Surface: tinned or uncoated

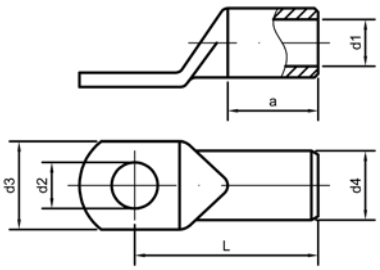



| Part-No. tinned | Part-No. uncoated | cross-section mm² | drilling M | index-no. | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **01917** | **01917 bl** | 6 | 5 | 5 | 3,7 | 5,3 | 8,5 | 5,5 | 24 | 10 | 3,10 | 12766 page no. 170; 12740/41 page no. 175; 13552 page no. 179; 12836 page no. 192; 31460 page no. 167; 12930, 12933 page no. 169; 12965/S, 12968 page no. 171; 12748 page no. 177; 13551/25, 13551/42, 13537 page no. 181; 12728 page no. 186 (bis 185 mm²);12485-87, 12837 page no. 193; 05256 page no. 193; 12371 page no. 160; 30460 page no. 166; 12725 page no. 184; 12370 page no. 160; 05256 page no. 193; 12370/50 page no. 160; 12655 page no. 163 |
| **01918** | **01918 bl** | | 6 | | | 6,4 | 9 | | 24 | | 3,40 | |
| **10300** | **10300 bl** | | 8 | | | 8,4 | 13 | | 26 | | 3,50 | |
| **01919** | **01919 bl** | 10 | 5 | 6 | 4,4 | 5,3 | 10 | 6 | 27 | 10 | 3,50 | |
| **01920** | **01920 bl** | | 6 | | | 6,4 | 10 | | 27 | | 3,70 | |
| **01921** | **01921 bl** | | 8 | | | 8,4 | 13 | | 28 | | 3,80 | |
| **10302** | **10302 bl** | | 10 | | | 10,5 | 15 | | 29 | | 3,80 | |
| **10304** | **10304 bl** | 16 | 5 | 8 | 5,5 | 5,3 | 13 | 8,5 | 36 | 20 | 12,20 | |
| **01922** | **01922 bl** | | 6 | | | 6,4 | 13 | | 36 | | 12,70 | |
| **01923** | **01923 bl** | | 8 | | | 8,4 | 13 | | 37 | | 13,00 | |
| **01924** | **01924 bl** | | 10 | | | 10,5 | 16,5 | | 38 | | 13,40 | |
| **01925** | **01925 bl** | | 12 | | | 13 | 19 | | 40 | | 13,60 | |
| **01926** | **01926 bl** | 25 | 6 | 10 | 7 | 6,4 | 14 | 10 | 39 | 20 | 16,20 | |
| **01927** | **01927 bl** | | 8 | | | 8,4 | 17 | | 39 | | 17,30 | |
| **01928** | **01928 bl** | | 10 | | | 10,5 | 17 | | 40,5 | | 17,70 | |
| **01929** | **01929 bl** | | 12 | | | 13 | 18 | | 40,5 | | 17,30 | |
| **10306** | **10306 bl** | 35 | 6 | 12 | 8,2 | 6,4 | 17,5 | 12,5 | 42,5 | 20 | 31,60 | |
| **01930** | **01930 bl** | | 8 | | | 8,4 | 18 | | 42 | | 31,90 | |
| **01931** | **01931 bl** | | 10 | | | 10,5 | 20 | | 42,5 | | 31,20 | |
| **01932** | **01932 bl** | | 12 | | | 13 | 21 | | 44 | | 31,70 | |
| **10308** | **10308 bl** | | 16 | | | 17 | 28 | | 47 | | 31,40 | |
| **10310** | **10310 bl** | 50 | 6 | 14 | 9,8 | 6,4 | 20 | 14,5 | 52 | 28 | 45,90 | |
| **01933** | **01933 bl** | | 8 | | | 8,4 | 20 | | 52 | | 49,50 | |
| **01934** | **01934 bl** | | 10 | | | 10,5 | 22 | | 52 | | 48,10 | |
| **01935** | **01935 bl** | | 12 | | | 13 | 24 | | 52 | | 47,20 | |
| **01936** | **01936 bl** | | 16 | | | 17 | 28 | | 55,5 | | 50,00 | |
| **13285** | **13285 bl** | 70 | 8 | 16 | 11,3 | 8,4 | 24 | 16,5 | 56 | 28 | 65,40 | |
| **01937** | **01937 bl** | | 10 | | | 10,5 | 24 | | 56 | | 65,90 | |
| **01938** | **01938 bl** | | 12 | | | 13 | 24 | | 56,5 | | 60,10 | |
| **01939** | **01939 bl** | | 16 | | | 17 | 29 | | 57 | | 64,10 | |
| **10312** | **10312 bl** | 95 | 8 | 18 | 13,5 | 8,4 | 28 | 19 | 65 | 35 | 93,60 | |
| **01940** | **01940 bl** | | 10 | | | 10,5 | 28 | | 65,5 | | 95,50 | |
| **01941** | **01941 bl** | | 12 | | | 13 | 28 | | 65,5 | | 94,50 | |
| **01942** | **01942 bl** | | 16 | | | 17 | 30 | | 65,5 | | 94,40 | |
| **10314** | **10314 bl** | | 20 | | | 21 | 33 | | 71 | | 98,60 | |
| **10316** | **10316 bl** | 120 | 8 | 20 | 15,5 | 8,4 | 31 | 21 | 70 | 35 | 113,50 | |
| **13286** | **13286 bl** | | 10 | | | 10,5 | 31 | | 70 | | 114,00 | |
| **01943** | **01943 bl** | | 12 | | | 13 | 31 | | 70,5 | | 114,70 | |
| **01944** | **01944 bl** | | 16 | | | 17 | 31,5 | | 70 | | 111,50 | |
| **01945** | **01945 bl** | | 20 | | | 21 | 36 | | 72 | | 115,10 | |
| **13287** | **13287 bl** | 150 | 10 | 22 | 17 | 10,5 | 34 | 23,5 | 79 | 35 | 164,10 | |
| **01946** | **01946 bl** | | 12 | | | 13 | 34 | | 78,5 | | 165,30 | |
| **01947** | **01947 bl** | | 16 | | | 17 | 34 | | 78 | | 163,50 | |
| **01948** | **01948 bl** | | 20 | | | 21 | 38 | | 78 | | 159,80 | |
| **13288** | **13288 bl** | 185 | 10 | 25 | 19 | 10,5 | 37 | 25,5 | 83 | 40 | 185,00 | |
| **01949** | **01949 bl** | | 12 | | | 13 | 37 | | 82,5 | | 189,60 | |
| **01950** | **01950 bl** | | 16 | | | 17 | 37 | | 82 | | 187,80 | |
| **01951** | **01951 bl** | | 20 | | | 21 | 40 | | 83 | | 189,00 | |
| **10318** | **10318 bl** | 240 | 10 | 28 | 21,5 | 10,5 | 42 | 29 | 92 | 40 | 271,00 | |
| **01952** | **01952 bl** | | 12 | | | 13 | 42,5 | | 92 | | 266,50 | |
| **01953** | **01953 bl** | | 16 | | | 17 | 42,5 | | 92 | | 274,50 | |
| **01954** | **01954 bl** | | 20 | | | 21 | 45 | | 92 | | 268,00 | |

The tin plated design is standard in our stock.

## Tubular cable lugs 300-1000 mm²
## DIN 46235 and special design

Material: Cu-HCP DIN EN 13600
Surface: tinned or uncoated



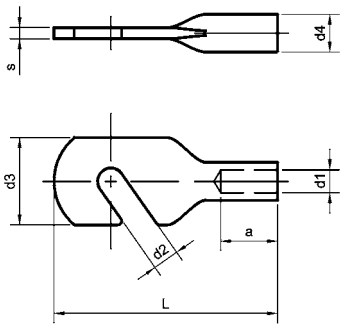

| Part-No. tinned | Part-No. uncoated | cross-section mm² | drilling M | index-no. | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10320** | **10320 bl** | 300 | 12 | 32 | 24,5 | 13 | 48,5 | 32 | 104 | 50 | 336,50 | pages no. 170-193 |
| **01955** | **01955 bl** | | 16 | | | 17 | 48,5 | | 100 | | 337,20 | |
| **01956** | **01956 bl** | | 20 | | | 21 | 48,5 | | 100 | | 344,60 | |
| **01957** | **01957 bl** | 400 | 12 | 38 | 27,5 | 13 | 55 | 38,5 | 117 | 70 | 717,00 | |
| **01958** | **01958 bl** | | 16 | | | 17 | 55 | | 117 | | 702,80 | |
| **01959** | **01959 bl** | | 20 | | | 21 | 55 | | 117 | | 706,00 | |
| **01960** | **01960 bl** | 500 | 12 | 42 | 31 | 13 | 60 | 42 | 130 | 70 | 869,20 | |
| **01961** | **01961 bl** | | 16 | | | 17 | 60 | | 130 | | 892,70 | |
| **01962** | **01962 bl** | | 20 | | | 21 | 60 | | 130 | | 881,40 | |
| **01963** | **01963 bl** | 625 | 20 | 44 | 34,5 | 21 | 63 | 44 | 135 | 80 | 820,50 | |
| **02002** | **02002 bl** | 800 | 16 | 52 | 40 | 17 | 75 | 52 | 165 | 100 | 1430,00 | |
| **02004** | **02004 bl** | | 20 | | | 21 | 75 | | 165 | | 1455,50 | |
| **02006** | **02006 bl** | 1000 | 20 | 58 | 44 | 21 | 83 | 58 | 167 | 100 | 1890,00 | |

The tin plated design is standard in our stock.

05256, 12491 page no. 193

## Cable lugs 10-150 mm²
## hooked design, longitudinally sealed

Material: Cu-ETP DIN EN 13601
Surface: tinned or uncoated

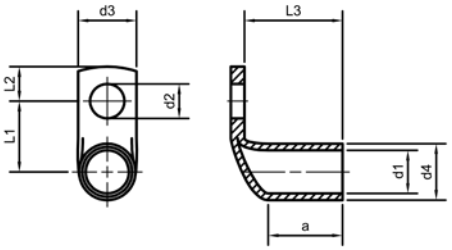



| Part-No. uncoated | Part-No. tinned | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | s | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10210** | **10210 vz** | 10 | 6 | 5 | 7 | 22 | 10 | 55 | 15 | 3 | 3,90 | on request |
| **10211** | **10211 vz** | 16 | 8 | 6 | 9 | 22,5 | 10 | 60 | 15 | 3 | 4,20 | |
| **10212** | **10212 vz** | 25 | 8 | 8 | 9 | 25 | 12 | 60 | 15 | 3 | 6,10 | |
| **10213** | **10213 vz** | | 10 | | 11 | | | 65 | | | 6,60 | |
| **10212/35** | **10212/35 vz** | 35 | 8 | 9 | 9 | 25 | 12 | 60 | 15 | 3 | 6,10 | |
| **10213/35** | **10213/35 vz** | | 10 | | 11 | | | 65 | | | 6,60 | |
| **10214** | **10214 vz** | 50 | 10 | 11 | 11 | 30 | 15 | 70 | 20 | 3 | 11,00 | |
| **10215** | **10215 vz** | | 12 | | 13 | | | 75 | | | 11,80 | |
| **10216** | **10216 vz** | 70 | 10 | 13 | 11 | 35 | 18 | 80 | 22 | 4 | 18,10 | |
| **10217** | **10217 vz** | | 12 | | 13 | | | 85 | | | 19,20 | |
| **10218** | **10218 vz** | 95 | 12 | 15 | 13 | 40 | 20 | 90 | 25 | 5 | 25,20 | |
| **10219** | **10219 vz** | | 16 | | 17 | | | 95 | | | 26,60 | |
| **10220** | **10220 vz** | 120 | 12 | 17 | 13 | 40 | 25 | 100 | 25 | 7 | 43,70 | |
| **10221** | **10221 vz** | | 16 | | 17 | | | 110 | | | 48,10 | |
| **10222** | **10222 vz** | 150 | 12 | 19 | 13 | 40 | 25 | 100 | 25 | 7 | 43,70 | |
| **10223** | **10223 vz** | | 16 | | 17 | | | 110 | | | 48,10 | |

This cable lugs in hooked design offer a quick and safe connecting of our binding posts acc. to catalogue pages 116 and 117, 10210 for 63 A, 10211/10212/10213/35 for 100 A, 10217/10218 for 200 A and 10221/10223 for 400 A.

# Tubular cable lugs 10-300 mm²
## Angle type 90°

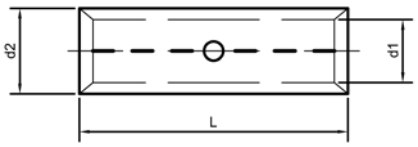
Dimensions of the tube in acc. with DIN 46235
Material: Cu-HCP DIN EN 13600
Suface: tinned or uncoated




| Part-No. tinned | Part-No. uncoated | cross-section mm² | drilling M | index-no. | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13124** | **13124 bl** | 10 | 6 | 6 | 4,4 | 6,4 | 10 | 6 | 13 | 7,7 | 14 | 10 | 3,50 | 12766 page no. 170; 12965/S, 12968; page no. 171; 14240/41 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12836, 12458-87 page no. 192; 12837, 05256 page no. 193 / 31460 page no. 167; 12930, 12933 page no. 169; 12728 page no. 186 (bis 185 mm²) / 12371 page no. 160; 30460 page no. 166; 12725 page no. 184 / 12370 page no. 160 / 12370/50 page no. 160; 12655 page no. 163 |
| **13126** | **13126 bl** | | 8 | | | 8,4 | 13 | | 15 | 10 | | | 3,70 | |
| **13128** | **13128 bl** | 16 | 6 | 8 | 5,5 | 6,4 | 13 | 8,5 | 14,3 | 9 | 23 | 20 | 12,70 | |
| **13130** | **13130 bl** | | 8 | | | 8,4 | 13 | | 16,3 | 11,5 | 23 | | 13,00 | |
| **13132** | **13132 bl** | | 10 | | | 10,5 | 16,5 | | 18,3 | 13,5 | 24 | | 14,10 | |
| **13134** | **13134 bl** | | 12 | | | 13 | 19 | | 19,3 | 14,5 | 24 | | 13,80 | |
| **13136** | **13136 bl** | 25 | 6 | 10 | 7 | 6,4 | 15 | 10 | 15,5 | 9 | 23,8 | 20 | 16,80 | |
| **13138** | **13138 bl** | | 8 | | | 8,4 | 16 | | 17,5 | 11,5 | | | 17,60 | |
| **13140** | **13140 bl** | | 10 | | | 10,5 | 16 | | 19,5 | 13,5 | | | 18,40 | |
| **13142** | **13142 bl** | | 12 | | | 13 | 19 | | 20,5 | 14,5 | | | 17,20 | |
| **13143** | **13143 bl** | 35 | 6 | 12 | 8,2 | 6,4 | 17 | 12,5 | 16,8 | 9 | 23,8 | 20 | 27,40 | |
| **13144** | **13144 bl** | | 8 | | | 8,4 | 17 | | 18,8 | 11,5 | | | 30,40 | |
| **13146** | **13146 bl** | | 10 | | | 10,5 | 19 | | 20,8 | 13,5 | | | 31,20 | |
| **13148** | **13148 bl** | | 12 | | | 13 | 21 | | 21,8 | 14,5 | | | 32,60 | |
| **13150** | **13150 bl** | 50 | 8 | 14 | 9,8 | 8,4 | 20 | 14,5 | 19,8 | 11,5 | 33 | 28 | 46,20 | |
| **13152** | **13152 bl** | | 10 | | | 10,5 | 22 | | 21,8 | 13,5 | 32 | | 48,20 | |
| **13154** | **13154 bl** | | 12 | | | 13 | 24 | | 22,8 | 14,5 | 32 | | 48,30 | |
| **13156** | **13156 bl** | | 16 | | | 17 | 27 | | 25,8 | 17,5 | 32 | | 50,60 | |
| **13157** | **13157 bl** | 70 | 8 | 16 | 11,3 | 8,4 | 24 | 16,5 | 20,8 | 11,5 | 34 | 28 | 59,30 | |
| **13158** | **13158 bl** | | 10 | | | 10,5 | 24 | | 22,8 | 13,5 | | | 65,10 | |
| **13160** | **13160 bl** | | 12 | | | 13 | 24 | | 23,8 | 14,5 | | | 65,60 | |
| **13162** | **13162 bl** | | 16 | | | 17 | 29 | | 26,8 | 17,5 | | | 63,10 | |
| **13163** | **13163 bl** | 95 | 8 | 18 | 13,5 | 8,4 | 28 | 19 | 22 | 10 | 42 | 35 | 85,00 | |
| **13164** | **13164 bl** | | 10 | | | 10,5 | 28 | | 24 | 13,5 | | | 93,70 | |
| **13166** | **13166 bl** | | 12 | | | 13 | 28 | | 25 | 14,5 | | | 94,90 | |
| **13168** | **13168 bl** | | 16 | | | 17 | 32 | | 28 | 17,5 | | | 96,70 | |
| **13170** | **13170 bl** | 120 | 10 | 20 | 15,5 | 10,5 | 32 | 21 | 25,5 | 13,5 | 42 | 35 | 108,40 | |
| **13172** | **13172 bl** | | 12 | | | 13 | 32 | | 32 | 14,5 | | | 110,00 | |
| **13174** | **13174 bl** | | 16 | | | 17 | 32 | | 29,5 | 17,5 | | | 111,60 | |
| **13176** | **13176 bl** | | 20 | | | 21 | 38 | | 33,5 | 20,5 | | | 123,90 | |
| **13177** | **13177 bl** | 150 | 10 | 22 | 17 | 10,5 | 34 | 23,5 | 26,8 | 13,5 | 42 | 35 | 141,60 | |
| **13178** | **13178 bl** | | 12 | | | 13 | 34 | | 27,8 | 14,5 | | | 144,10 | |
| **13180** | **13180 bl** | | 16 | | | 17 | 34 | | 30,8 | 17,5 | | | 148,30 | |
| **13182** | **13182 bl** | | 20 | | | 21 | 34 | | 34,8 | 20,5 | | | 155,10 | |
| **13184** | **13184 bl** | 185 | 10 | 25 | 19 | 10,5 | 37 | 25,5 | 27,8 | 13,5 | 48 | 40 | 168,10 | |
| **13186** | **13186 bl** | | 12 | | | 13 | 37 | | 28,8 | 14,5 | | | 172,90 | |
| **13188** | **13188 bl** | | 16 | | | 17 | 37 | | 31,8 | 17,5 | | | 171,80 | |
| **13190** | **13190 bl** | | 20 | | | 21 | 40 | | 35,8 | 20,5 | | | 202,00 | |
| **13192** | **13192 bl** | 240 | 12 | 28 | 21,5 | 13 | 42 | 29 | 30,5 | 14,5 | 52 | 40 | 226,10 | |
| **13194** | **13194 bl** | | 16 | | | 17 | 42 | | 33,5 | 17,5 | | | 244,60 | |
| **13195** | **13195 bl** | | 20 | | | 21 | 42 | | 37,5 | 20,5 | | | 255,90 | |
| **13196** | **13196 bl** | 300 | 12 | 32 | 24,5 | 13 | 48,5 | 32 | 32 | 14,5 | 60 | 50 | 290,80 | |
| **13197** | **13197 bl** | | 16 | | | 17 | 48,5 | | 35 | 17,5 | | | 305,10 | |
| **13198** | **13198 bl** | | 20 | | | 21 | 48,5 | | 39 | 20,5 | | | 386,00 | |

## Compression lugs 6-1000 mm²
## DIN 46267 part 1

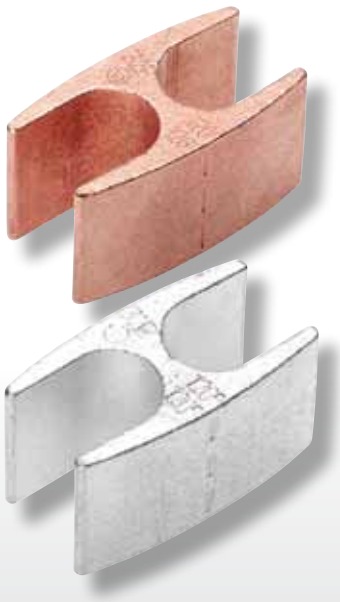
for non tension connections
Material: Cu-HCP DIN EN 13600
Surface: tinned

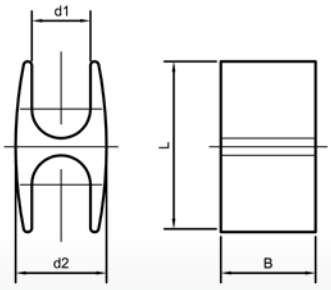



| Part-No. | cross-section mm² | index-no. | dimensions mm $d_1$ | $d_2$ | L | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **01964** | 6 | 5 | 3,7 | 5,5 | 30 | 3,50 | pages no. 160-193 |
| **01965** | 10 | 6 | 4,4 | 6 | 30 | 3,50 | |
| **01966** | 16 | 8 | 5,5 | 8,5 | 50 | 15,30 | |
| **01967** | 25 | 10 | 7 | 10 | 50 | 18,60 | |
| **01968** | 35 | 12 | 8,2 | 12,5 | 50 | 32,30 | |
| **01969** | 50 | 14 | 9,8 | 14,5 | 56 | 44,90 | |
| **01970** | 70 | 16 | 11,3 | 16,5 | 56 | 56,40 | |
| **01971** | 95 | 18 | 13,5 | 19 | 70 | 89,80 | |
| **01972** | 120 | 20 | 15,5 | 21 | 70 | 102,70 | |
| **01973** | 150 | 22 | 17 | 23,5 | 80 | 150,30 | |
| **01974** | 185 | 25 | 19 | 25,5 | 85 | 167,80 | |
| **01975** | 240 | 28 | 21,5 | 29 | 90 | 232,00 | |
| **01976** | 300 | 32 | 24,5 | 32 | 100 | 295,00 | |
| **01977** | 400 | 38 | 27,5 | 38,5 | 150 | 767,00 | |
| **01978** | 500 | 42 | 31 | 42 | 160 | 920,80 | |
| **01979** | 625 | 44 | 34,5 | 44 | 160 | 868,20 | |
| **01988** | 800 | 52 | 40 | 52 | 200 | 1525,00 | |
| **01999** | 1000 | 58 | 44 | 58 | 200 | 1970,00 | |

## Compression connectors in H-shaped design

for copper conductors acc. to DIN 48201
Material: Cu-ETP DIN EN 13601
Surface: tinned or uncoated

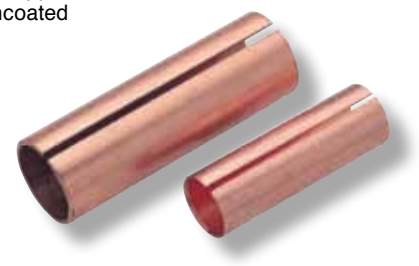


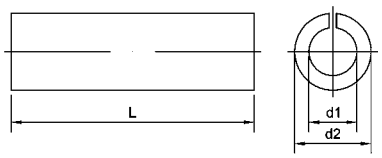



| Part-No. uncoated | Part-No. tinned | cross-section mm² prime conductor | cross-section mm² branch conductor | dimensions mm $d_1$ | $d_2$ | L | B | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|
| **03990** | **03990/vz** | 70 | 70 | 10,8 | 17 | 34 | 28 | 62,20 | pages no. 171, 181, 192, 193 |
| **03991** | **03991/vz** | 95 | 95 | 13 | 22 | 40 | 30 | 97,60 | |
| **03992** | **03992/vz** | 120 | 120 | 15,5 | 24 | 45 | 25 | 102,40 | |

## Reduction sleeves

for non tension connectors
acc. to DIN 46267 part 1 and similar
Material: E-copper
Surface: uncoated



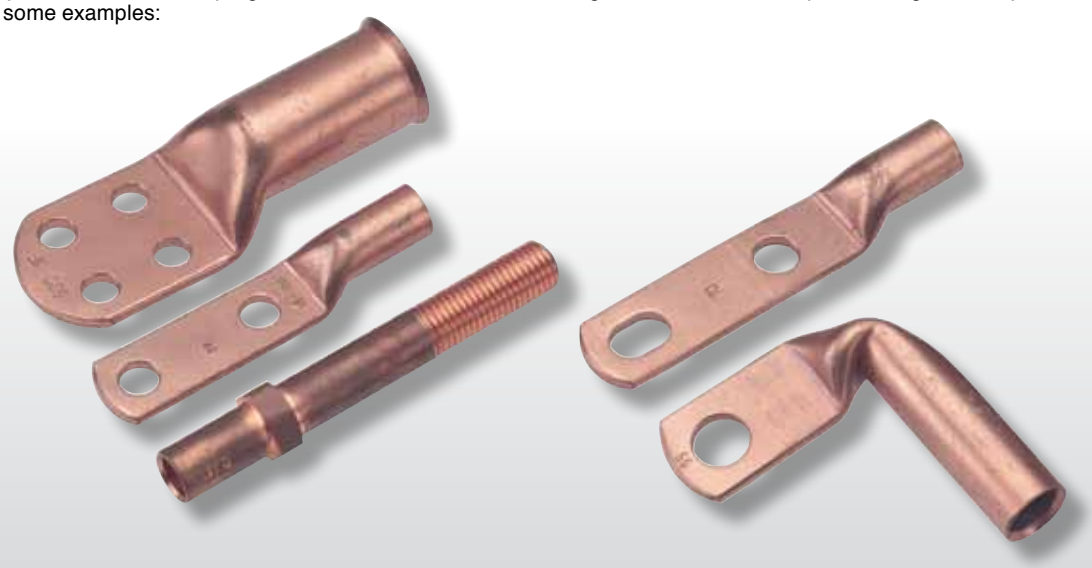



| Part-No. | reduction from cross-section mm² | reduction to cross-section mm² | dimensions mm $d_1$ | dimensions mm $d_2$ | dimensions mm L | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **02150** | 25 | 10 | 4,6 | 6,6 | 25 | 0,50 | pages no. 160-193 |
| **02151** | | 16 | 5,5 | | | 0,35 | |
| **02152** | 35 | 10 | 4,5 | 8 | 25 | 0,85 | |
| **02153** | | 16 | 5,5 | | | 0,70 | |
| **02154** | | 25 | 7 | | | 0,50 | |
| **02155** | 50 | 16 | 5,5 | 9,5 | 33 | 1,40 | |
| **02156** | | 25 | 7 | | | 1,15 | |
| **02157** | | 35 | 8,5 | | | 0,60 | |
| **02158** | 70 | 25 | 7 | 11 | 33 | 1,90 | |
| **02159** | | 35 | 8,5 | | | 1,40 | |
| **02160** | | 50 | 10 | | | 0,80 | |
| **02161** | 95 | 35 | 8,5 | 13 | 45 | 3,40 | |
| **02162** | | 50 | 10 | | | 2,60 | |
| **02163** | | 70 | 11,5 | | | 1,60 | |
| **02164** | 120 | 50 | 10 | 15 | 45 | 4,30 | |
| **02165** | | 70 | 11,5 | | | 3,30 | |
| **02166** | | 95 | 13,5 | | | 1,80 | |
| **02167** | 150 | 70 | 11,5 | 16,5 | 53 | 5,70 | |
| **02168** | | 95 | 13,5 | | | 3,90 | |
| **02169** | | 120 | 15,5 | | | 1,80 | |
| **02170** | 185 | 95 | 13,5 | 18,5 | 53 | 6,50 | |
| **02171** | | 120 | 15,5 | | | 4,40 | |
| **02172** | | 150 | 17 | | | 2,70 | |
| **02173** | 240 | 120 | 15,5 | 21 | 55 | 8,40 | |
| **02174** | | 150 | 17 | | | 6,60 | |
| **02175** | | 185 | 19 | | | 4,00 | |
| **02176** | 300 | 150 | 17 | 24 | 58 | 12,30 | |
| **02177** | | 185 | 19 | | | 9,60 | |
| **02178** | | 240 | 21,5 | | | 5,60 | |
| **02179** | 400 | 185 | 19 | 27 | 80 | 21,80 | |
| **02180** | | 240 | 21,5 | | | 15,50 | |
| **02181** | | 300 | 24,5 | | | 8,80 | |

By reduction of more than two cross-section-ranges we recommend to work with hydraulic tools with wide die sets acc. to our catalogue pages 200 or 201.

## Cable connectors in special design

Additionally to our standardized program we are able to deliver cable lugs and connectors in special design acc. to your drawings or wishes.
Following some examples:



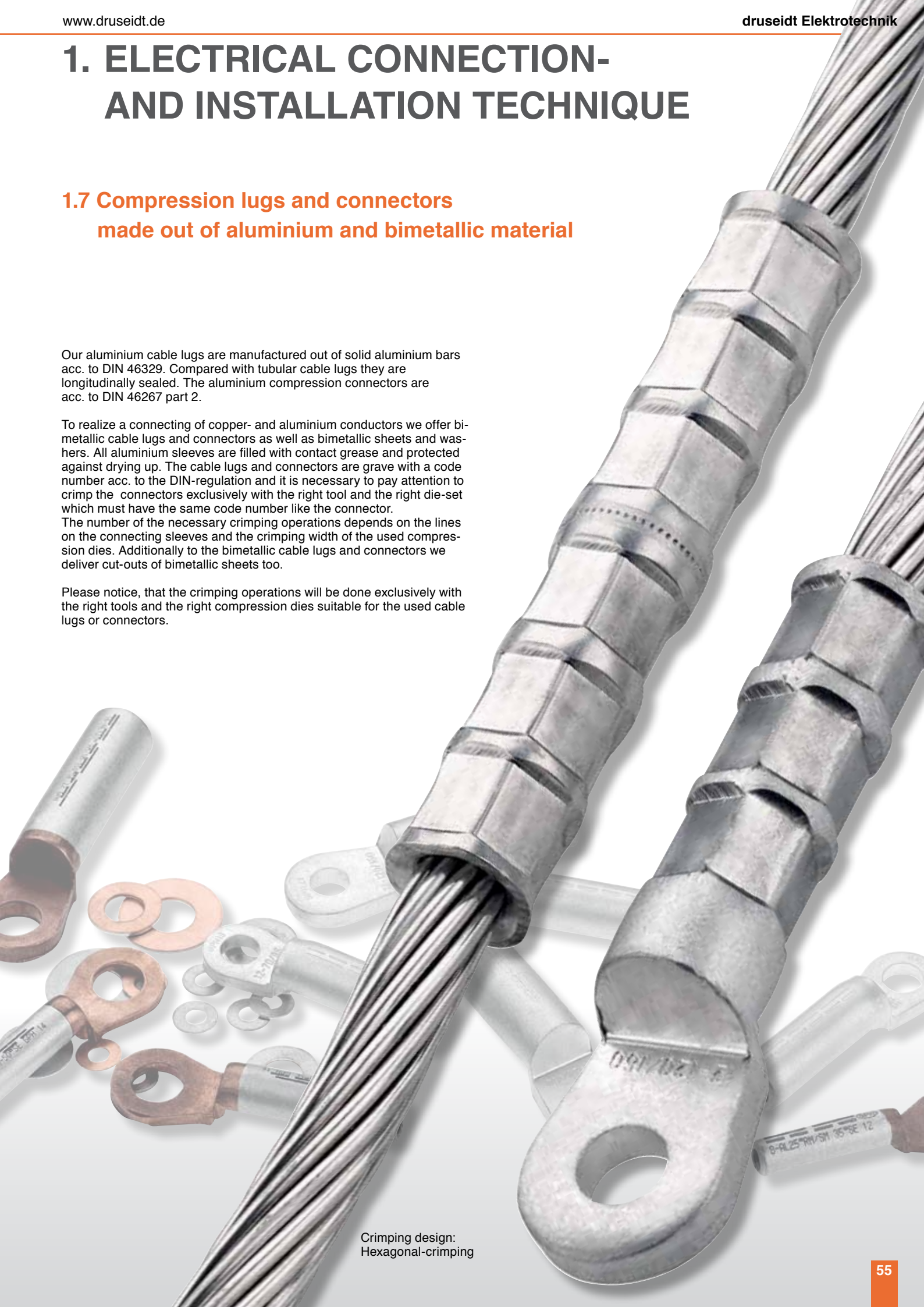
# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.7 Compression lugs and connectors made out of aluminium and bimetallic material

Our aluminium cable lugs are manufactured out of solid aluminium bars acc. to DIN 46329. Compared with tubular cable lugs they are longitudinally sealed. The aluminium compression connectors are acc. to DIN 46267 part 2.

To realize a connecting of copper- and aluminium conductors we offer bimetallic cable lugs and connectors as well as bimetallic sheets and washers. All aluminium sleeves are filled with contact grease and protected against drying up. The cable lugs and connectors are grave with a code number acc. to the DIN-regulation and it is necessary to pay attention to crimp the connectors exclusively with the right tool and the right die-set which must have the same code number like the connector.
The number of the necessary crimping operations depends on the lines on the connecting sleeves and the crimping width of the used compression dies. Additionally to the bimetallic cable lugs and connectors we deliver cut-outs of bimetallic sheets too.

Please notice, that the crimping operations will be done exclusively with the right tools and the right compression dies suitable for the used cable lugs or connectors.



Crimping design:
Hexagonal-crimping

# Al-cable lugs 16-500 mm²

**longitudinally sealed acc. to DIN 46329**

Material: Al 99,5

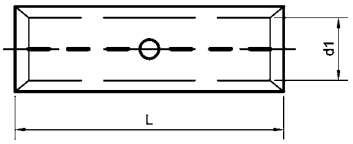
Surface: uncoated

| Part-No. | cross-section mm² rm/sm | cross-section mm² se | drilling M | index-no. | dimensions mm $d_1$ | $d_2$ | $d_3$ | L | a | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **40010** | 16 | 25 | 8 | 12 | 5,4 | 8,5 | 20 | 50 | 30 | 1,4 | 05256 page no. 193; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240-42 page no. 175; 12748 page no.177; 13552 page no. 179; 13551/25, 13552/42, 13573 page no. 181; 12485-87, 12836 page no. 192; 12837 page no. 193; 31460 page no. 167; 12728 page no. 186; 12930, 12933 page no. 169; 30460 page no. 165; 12725 page no. 184; 12655 page no. 163; 12491 page no. 193 |
| **40011** | | | 10 | | | 10,5 | | | | 1,3 | |
| **40014** | 25 | 35 | 8 | 12 | 6,8 | 8,5 | 20 | 50 | 30 | 1,5 | |
| **40015** | | | 10 | | | 10,5 | 25 | | | 1,4 | |
| **40016** | | | 12 | | | 13 | 25 | | | 1,4 | |
| **40019** | 35 | 50 | 8 | 14 | 8 | 8,5 | 25 | 62 | 42 | 2,6 | |
| **40020** | | | 10 | | | 10,5 | | | | 2,4 | |
| **40021** | | | 12 | | | 13 | | | | 2,3 | |
| **40024** | 50 | 70 | 8 | 16 | 9,8 | 8,5 | 25 | 62 | 42 | 2,5 | |
| **40025** | | | 10 | | | 10,5 | | | | 2,4 | |
| **40026** | | | 12 | | | 13 | | | | 2,3 | |
| **40029** | 70 | 95 | 8 | 18 | 11,2 | 8,5 | 25 | 72 | 52 | 3,6 | |
| **40030** | | | 10 | | | 10,5 | | | | 3,5 | |
| **40031** | | | 12 | | | 13 | | | | 3,3 | |
| **40034** | 95 | 120 | 10 | 22 | 13,2 | 10,5 | 25 | 75 | 56 | 7,4 | |
| **40035** | | | 12 | | | 13 | | | | 7,0 | |
| **40036** | | | 16 | | | 17 | 30 | 80 | | 6,7 | |
| **40039** | 120 | 150 | 10 | 22 | 14,7 | 10,5 | 30 | 80 | 56 | 7,0 | |
| **40040** | | | 12 | | | 13 | | | | 6,8 | |
| **40041** | | | 16 | | | 17 | | | | 6,5 | |
| **40044** | 150 | 185 | 10 | 25 | 16,3 | 10,5 | 30 | 90 | 60 | 8,8 | |
| **40045** | | | 12 | | | 13 | | | | 8,4 | |
| **40046** | | | 16 | | | 17 | | | | 9,3 | |
| **40049** | 185 | 240 | 10 | 28 | 18,3 | 10,5 | 30 | 91 | 60 | 11,1 | |
| **40050** | | | 12 | | | 13 | | | | 11,0 | |
| **40051** | | | 16 | | | 17 | | | | 11,0 | |
| **40054** | 240 | 300 | 12 | 32 | 21 | 13 | 38 | 103 | 70 | 15,9 | |
| **40055** | | | 16 | | | 17 | | | | 15,5 | |
| **40056** | | | 20 | | | 21 | | | | 15,2 | |
| **40059** | 300 | – | 12 | 34 | 23,3 | 13 | 38 | 103 | 70 | 17,6 | |
| **40060** | | | 16 | | | 17 | | | | 17,4 | |
| **40061** | | | 20 | | | 21 | | | | 17,4 | |
| **40064** | 400 | – | 12 | 38 | 26 | 13 | 38 | 116 | 73 | 36,0 | |
| **40065** | | | 16 | | | 17 | | | | 34,0 | |
| **40066** | | | 20 | | | 21 | | | | 35,5 | |
| **40069** | 500 | – | 12 | 44 | 29 | 13 | 44 | 122 | 79 | 40,5 | |
| **40070** | | | 16 | | | 17 | | | | 40,3 | |

Suitable for aluminium conductors acc. to DIN 48201 and aluminium cable conductors acc. to DIN VDE 0295. Sector shaped conductors must be rounded with special dies. All cable lugs are filled with contact grease and sealed in plastic. On request it is possible to deliver all dimensions in a tin plated design.

## Al-compression lugs 16-1000 mm²
## DIN 46267 part 2

for non tension connections 1-10 kV
Material: Al 99,5
Surface: uncoated

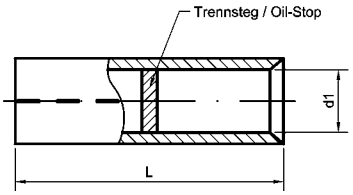



| Part-No. | cross-section mm² rm/sm | se | index-no. | dimensions mm $d_1$ | L | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **02070** | 16 | 25 | 10 | 5,4 | 55 | 1,3 | pages no. 163-193 |
| **02071** | 25 | 35 | 12 | 6,8 | 70 | 1,6 | |
| **02072** | 35 | 50 | 14 | 8 | 85 | 2,6 | |
| **02073** | 50 | 70 | 16 | 9,8 | 85 | 3,2 | |
| **02074** | 70 | 95 | 18 | 11,2 | 105 | 5,3 | |
| **02075** | 95 | 120 | 22 | 13,2 | 105 | 7,6 | |
| **02076** | 120 | 150 | 22 | 14,7 | 105 | 7,8 | |
| **02077** | 150 | 185 | 25 | 16,3 | 125 | 10,7 | |
| **02078** | 185 | 240 | 28 | 18,3 | 125 | 14,3 | |
| **02079** | 240 | 300 | 32 | 21 | 145 | 20,3 | |
| **02080** | 300 | - | 34 | 23,3 | 145 | 22,2 | |
| **10240** | 400 | - | 38 | 26 | 210 | 48,2 | |
| **10241** | 500 | - | 44 | 29 | 210 | 56,0 | |
| **10242** | 625 | - | 52 | 35 | 330 | 122,7 | |
| **10243** | 800 | - | 58 | 40 | 350 | 129,0 | |
| **10244** | 1000 | - | 60 | 44 | 350 | 142,0 | |

Suitable for aluminium and Al-alloy conductors acc. to DIN 48201 and aluminium cable conductors acc. to DIN VDE 0295. Sector shaped conductors must be rounded with special dies. All connectors are filled with contact grease and sealed in plastic.

## Al-compression lugs 16-300 mm²
**with oil-stop**

for non tension connections 1-10 kV
Material: Al 99,5
Surface: uncoated

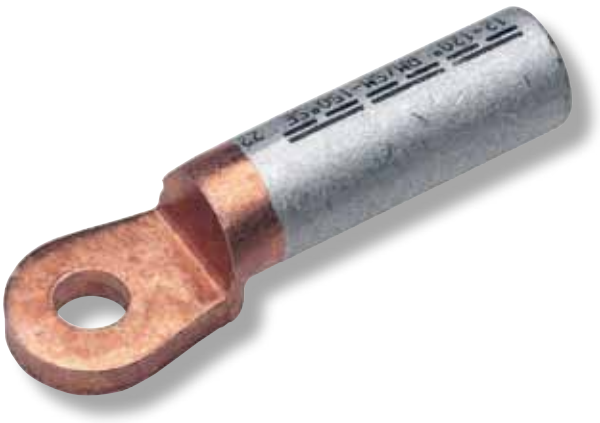


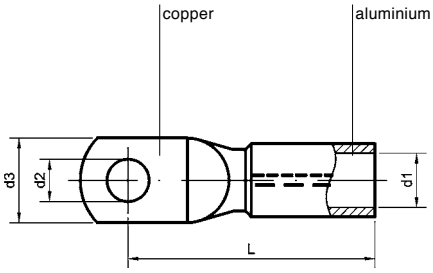

| Part-No. | cross-section mm² rm/sm | se | index-no. | dimensions mm $d_1$ | L | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **10250** | 16 | 25 | 12 | 5,4 | 75 | 1,5 | pages no. 163-193 |
| **10251** | 25 | 35 | 12 | 6,8 | 75 | 1,8 | |
| **10252** | 35 | 50 | 14 | 8 | 90 | 3,0 | |
| **10253** | 50 | 70 | 16 | 9,8 | 90 | 3,8 | |
| **10254** | 70 | 95 | 18 | 11,2 | 110 | 5,7 | |
| **10255** | 95 | 120 | 22 | 13,2 | 110 | 8,9 | |
| **10256** | 120 | 150 | 22 | 14,7 | 110 | 8,6 | |
| **10257** | 150 | 185 | 25 | 16,3 | 130 | 11,2 | |
| **10258** | 185 | 240 | 28 | 18,3 | 130 | 16,4 | |
| **10259** | 240 | 300 | 32 | 21 | 150 | 20,8 | |
| **10260** | 300 | - | 34 | 23,3 | 155 | 27,5 | |

Suitable for aluminium cables acc. to DIN VDE 0295. Sector shaped conductors must be rounded with special dies. All conductors are filled with contact grease and sealed in plastic. On request it is possible to deliver cross-sections up to 1000 mm².

## Bimetallic cable lugs 16-300 mm²

longitudinally sealed with solid copper palm
Material: barrel Al 99,5, palm Cu-HCP
Surface: uncoated



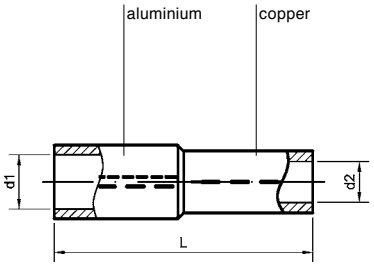



| Part-No. | cross-section mm² rm/sm | cross-section mm² se | drilling M | index-no. | dimensions mm $d_1$ | dimensions mm $d_2$ | dimensions mm $d_3$ | dimensions mm L | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **40100** | 16 | 25 | 8 | 12 | 5,4 | 8,5 | 25 | 63,5 | 2,8 | 12766 page no. 170; 12965/S, 12968 page no. 171; 14240-42 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12485-87, 12836 page no. 192; 05256, 12837 page no. 193; 31460 page no. 167; 12728 page no. 186; 12930, 12933 page no. 169; 30460 page no. 165; 12725 page no. 184; 12655 page no. 163; 12491 page no. 193 |
| **40101** | | | 10 | | | 10,5 | | | 2,6 | |
| **40102** | | | 12 | | | 13 | | | 2,5 | |
| **40106** | 25 | 35 | 8 | 12 | 6,8 | 8,5 | 25 | 63,5 | 3,0 | |
| **40107** | | | 10 | | | 10,5 | | | 2,8 | |
| **40108** | | | 12 | | | 13 | | | 2,8 | |
| **40112** | 35 | 50 | 8 | 14 | 8 | 8,5 | 25 | 74,5 | 5,2 | |
| **40113** | | | 10 | | | 10,5 | | | 4,8 | |
| **40114** | | | 12 | | | 13 | | | 4,6 | |
| **40115** | | | 16 | | | 17 | 30 | 79 | 5,0 | |
| **40119** | 50 | 70 | 8 | 16 | 9,8 | 8,5 | 25 | 75,5 | 5,0 | |
| **40120** | | | 10 | | | 10,5 | | | 4,8 | |
| **40121** | | | 12 | | | 13 | | | 4,8 | |
| **40122** | | | 16 | | | 17 | 30 | 80 | 5,5 | |
| **40126** | 70 | 95 | 8 | 18 | 11,2 | 8,5 | 25 | 83,5 | 7,0 | |
| **40127** | | | 10 | | | 10,5 | | | 7,0 | |
| **40128** | | | 12 | | | 13 | | | 6,5 | |
| **40129** | | | 16 | | | 17 | 30 | 88 | 6,5 | |
| **40134** | 95 | 120 | 10 | 22 | 13,2 | 10,5 | | | 14,8 | |
| **40135** | | | 12 | | | 13 | | | 14,0 | |
| **40136** | | | 16 | | | 17 | 30 | 91 | 14,4 | |
| **40142** | 120 | 150 | 12 | 22 | 14,7 | 13 | | | 13,6 | |
| **40143** | | | 16 | | | 17 | | | 13,4 | |
| **40149** | 150 | 185 | 12 | 25 | 16,3 | 13 | | | 17,6 | |
| **40150** | | | 16 | | | 17 | | | 16,8 | |
| **40151** | | | 20 | | | 21 | 38 | 109 | 18,6 | |
| **40155** | 185 | 240 | 10 | 28 | 18,3 | 10,5 | 30 | 107 | 22,2 | |
| **40156** | | | 12 | | | 13 | | | 22,0 | |
| **40157** | | | 16 | | | 17 | | | 20,2 | |
| **40158** | | | 20 | | | 21 | 38 | 111 | 22,4 | |
| **40162** | 240 | 300 | 10 | 32 | 21 | 10,5 | 38 | 120 | 32,0 | |
| **40163** | | | 12 | | | 13 | | | 31,8 | |
| **40164** | | | 16 | | | 17 | | | 31,0 | |
| **40165** | | | 20 | | | 21 | | | 32,4 | |
| **40169** | 300 | – | 12 | 34 | 23,3 | 13 | | | 33,7 | |
| **40170** | | | 16 | | | 17 | | | 32,9 | |
| **40171** | | | 20 | | | 21 | | | 32,0 | |

Suitable for aluminium conductors acc. to DIN 48201 and aluminium cable conductors acc. to DIN VDE 0295. Sector shaped conductors must be rounded. All cable lugs are filled with contact grease and sealed in plastic.

## Bimetallic compression lugs 25-300 mm²

for non tension connections 1-10 kV
Material: Al 99,5 Cu-HCP
Surface: uncoated




| Part-No. | cross-section mm² Al rm/sm | Al se | Cu rm/sm | index-no. Al | Cu | dimensions mm $d_1$ | $d_2$ | L | weight kg/% pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **40201** | 25 | 35 | 10 | 12 | 6 | 6,8 | 4,5 | 72 | 1,4 | 12766 page no. 170; 12965/S, 12968 page no. 171; 14240-40 page no. 175; 12748 page no. 177; 13552 page no. 179; 13551/25, 13551/42, 13537 page no. 181; 12485-87, 12936 page no. 192; 05256, 12837 page no. 193; 31460 page no. 167; 12728 page no.186; 12930, 12933 page no. 169; 30460 page no. 165; 12725 page no. 184; 12655 page no. 163; 12491 page no. 193 |
| **40202** | | | 16 | | 8 | | 5,5 | | 1,7 | |
| **40203** | | | 25 | | 10 | | 7 | | 1,9 | |
| **40204** | | | 35 | | 12 | | 8,2 | | 3,5 | |
| **40208** | 35 | 50 | 16 | 14 | 8 | 8 | 5,5 | 80 | 2,5 | |
| **40209** | | | 25 | | 10 | | 7 | | 2,7 | |
| **40210** | | | 35 | | 12 | | 8,2 | | 3,3 | |
| **40211** | | | 50 | | 14 | | 10 | | 3,5 | |
| **40215** | 50 | 70 | 16 | 16 | 8 | 9,8 | 5,5 | 82 | 2,9 | |
| **40216** | | | 25 | | 10 | | 7 | | 3,2 | |
| **40217** | | | 35 | | 12 | | 8,2 | | 3,8 | |
| **40218** | | | 50 | | 14 | | 10 | | 4,6 | |
| **40222** | 70 | 95 | 50 | 18 | 14 | 11,2 | 10 | 94 | 5,7 | |
| **40223** | | | 70 | | 16 | | 11,5 | | 7,3 | |
| **40224** | | | 95 | | 18 | | 13,5 | 101 | 9,4 | |
| **40228** | 95 | 120 | 50 | 22 | 14 | 13,2 | 10 | 99 | 8,1 | |
| **40229** | | | 70 | | 16 | | 11,5 | | 8,2 | |
| **40230** | | | 95 | | 18 | | 13,5 | 105 | 10,4 | |
| **40231** | | | 120 | | 20 | | 15,5 | 105 | 11,6 | |
| **40235** | 120 | 150 | 70 | 22 | 16 | 14,7 | 11,5 | 98 | 8,5 | |
| **40236** | | | 95 | | 18 | | 13,5 | 106 | 11,0 | |
| **40237** | | | 120 | | 20 | | 15,5 | 106 | 11,9 | |
| **40241** | 150 | 185 | 70 | 25 | 16 | 16,3 | 11,5 | 113 | 10,4 | |
| **40242** | | | 95 | | 18 | | 13,5 | 117 | 12,7 | |
| **40243** | | | 120 | | 20 | | 15,5 | 117 | 13,9 | |
| **40244** | | | 150 | | 22 | | 17 | 123 | 16,7 | |
| **40248** | 185 | 240 | 95 | 28 | 18 | 18,3 | 13,5 | 119 | 14,5 | |
| **40249** | | | 120 | | 20 | | 15,5 | 119 | 15,9 | |
| **40250** | | | 150 | | 22 | | 17 | 125 | 19,6 | |
| **40251** | | | 185 | | 25 | | 19 | 127 | 21,0 | |
| **40255** | 240 | 300 | 95 | 32 | 18 | 21 | 13,5 | 126 | 19,0 | |
| **40256** | | | 120 | | 20 | | 15,5 | 126 | 20,5 | |
| **40257** | | | 150 | | 22 | | 17 | 132 | 23,3 | |
| **40258** | | | 185 | | 25 | | 19 | 134 | 25,5 | |
| **40259** | | | 240 | | 28 | | 21,5 | 140 | 30,1 | |
| **40261** | 300 | – | 120 | 34 | 20 | 23,3 | 15,5 | 136 | 27,8 | |
| **40262** | | | 150 | | 22 | | 17 | 136 | 31,1 | |
| **40263** | | | 185 | | 25 | | 19 | 138 | 32,7 | |
| **40264** | | | 240 | | 28 | | 21,5 | 144 | 37,5 | |
| **40265** | | | 300 | | 32 | | 24,5 | 150 | 41,7 | |

Suitable for aluminium and copper conductors acc. to DIN 48201 or Al- and copper-cable conductors acc. to DIN VDE 0295. Sector shaped conductors must be rounded. The Al-part is filled with contact grease and the connectors are sealed in plastic.

## Bimetallic sheets and washers

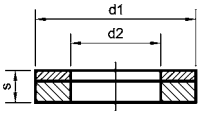
Bimetallic elements consist of copper plated aluminium sheets. Since the connection area of both metals is in the middle, it is kept away from air and humidity. This material enables a secure contact and a corrosion protected connection between copper and aluminium.

Besides bimetallic sheets and spacers we can also supply cut-outs with and without holes especially for your specific application.

### Bimetallic sheets

| Part-No. | length mm | width mm | thickness mm | weight kg/Platte |
|---|---|---|---|---|
| **02670** | 2000 | 500 | 1 | 4,70 |
| **02671** | | | 1,5 | 7,00 |
| **02672** | | | 2 | 9,35 |

### Bimetallic washers



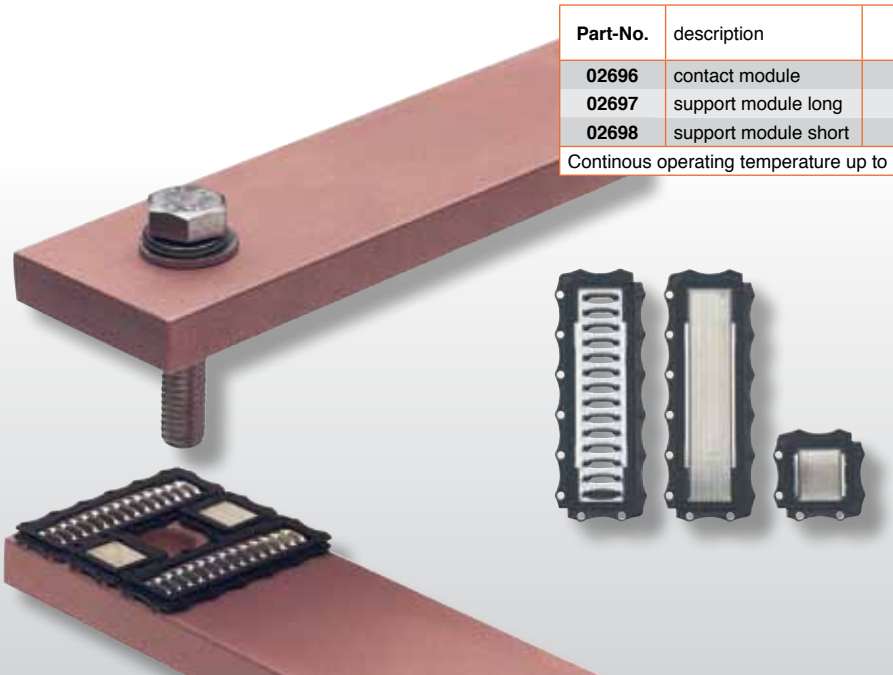

| Part-No. | drilling M | dimensions mm $d_1$ | $d_2$ | s | weight kg/% pcs. |
|---|---|---|---|---|---|
| **13295** | 3 | 8 | 3,5 | 1 | 0,02 |
| **13296** | 4 | 10 | 4,5 | 1 | 0,03 |
| **13297** | 5 | 12 | 5,5 | 1 | 0,05 |
| **02675** | 6 | 15 | 6,5 | 1 | 0,07 |
| **02676** | 8 | 18 | 8,5 | 1 | 0,09 |
| **02677** | 10 | 22 | 10,5 | 1,5 | 0,18 |
| **02678** | 12 | 25 | 13 | 2 | 0,68 |
| **02679** | 12 | 28 | 13 | 2 | 0,44 |
| **02680** | 16 | 35 | 17 | 2 | 0,66 |

## Seal-contact-modules for high current transmission

Seal-contacts are constructed for high-current transmission with bus-bars and sheets (copper/copper, Alu/copper or Alu/Alu) in indoor as well as outdoor-installations. It is possible to connect uncoated, unmachined and uncleanded bus-bars or sheets also in corrosive atmospheres (e.g. sulphur dioxide, salt laden air, chlorine etc.). The modules are suitable for bolted joints in bus-bars according to DIN. By using these elements the high current transmission is made in hermetically sealed chambers, so that no oxidation or corrosion is possible.

So you get low loss over a long time of use. The torsion springlouver of the multilam permits the contact force as well as the electrical performance of the bus bar joint to remain constant even when the compression force drops to 50 % of its initial value. The torsion springlouver of the multilam get through the oxydlayer of the bus bar, so that a cleaning or coating of the contact areas is not necessary. So screw connections with low loss and without any servicing over a long time of use is guaranteed.

| Part-No. | description | rated current | length mm | width mm | thickness mm |
|---|---|---|---|---|---|
| **02696** | contact module | 800 A | 40 | 13,33 | 1,4 |
| **02697** | support module long | - | 40 | 13,33 | 1,4 |
| **02698** | support module short | - | 13,33 | 13,33 | 1,4 |
| Continous operating temperature up to + 100° C, short circuit current 1 s = 20 kA. | | | | | |



# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.8 Cable lugs and connectors in special design

To offer also cable lugs and connectors for ambitious application in matters of chemical and heat resistiveness too, druseidt delivers serial produced cable lugs consisting out of stainless steel or nickel material. Main application are in the range of electrical furnaces, steel-melting-plants, foundries, heating elements, anywhere where high temperatures are existent or due to the existence of chemical stress a working with copper- or aluminium connectors is not possible. Especially our cable lugs consisting out of stainless steel A4 offer a good resistance against oxidation, seawater, acids or cleaning materials. They are well suited also for application under highest hygiene requirements inside of the food- and medical production ranges. Even for chemical application where neither connectors consisting out of stainless-steel or consisting out of nickel are not resistant enough we manufacture in special design cable lugs consisting out of titan.

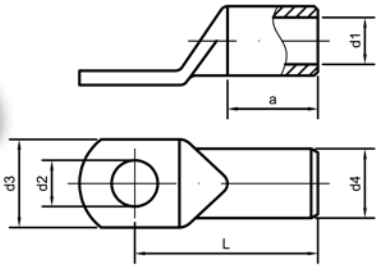
We recommend to crimp nickel- as well as stainless-steel connectors with an indent-crimping design. So we offer for the crimping of stainless steel lugs special compression dies. To make cable connections without crimping the conductors, we offer screwable cable lugs acc. to catalogue page 64.

Please notice, that the crimping operations will be done only with the right tools and suitable compression dies.

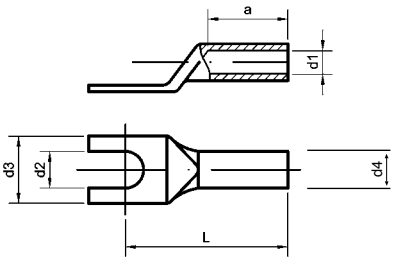
Crimping design:
Indent-crimping

## Nickel cable lugs 0,5-16 mm²

Ring- and fork type
Material: Nickel tube, temperature stability up to ca. + 500° C




type I

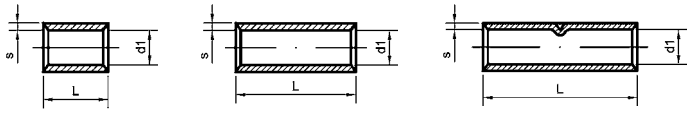



type II

| Best-Nr. type I | Best-Nr. type II | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/ ‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **13254** | - | 0,5-1,0 | 3 | 1,6 | 3,2 | 6,5 | 3,2 | 12,5 | 6 | 0,73 | 30446 page no. 158 / 30445 page no. 158 / 12655 page no. 163 |
| **13255** | **13265** | | 4 | | 4,3 | 7 | | 13,5 | | 0,84 | |
| **13256** | **13266** | | 5 | | 5,3 | 7,5 | | 14,5 | | 0,90 | |
| **13257** | **13267** | 1,5-2,5 | 4 | 2,3 | 4,3 | 7 | 3,9 | 14 | 6 | 1,14 | |
| **13258** | **13268** | | 5 | | 5,3 | 8,5 | | 15,5 | | 1,23 | |
| **13259** | **13269** | | 6 | | 6,4 | 9,5 | | 17 | | 1,33 | |
| **13260** | **13270** | 4-6 | 4 | 3,6 | 4,3 | 9,4 | 5,6 | 18 | 8 | 2,57 | |
| **13261** | **13271** | | 5 | | 5,3 | 10 | | 18,5 | | 2,66 | |
| **13262** | **13272** | | 6 | | 6,4 | 10,5 | | 19,5 | | 2,90 | |
| **13262/8** | - | | 8 | | 8,4 | 12,5 | | 22 | | 3,19 | |
| **13263** | **13273** | 10 | 5 | 4,5 | 5,3 | 10,8 | 6,5 | 20,5 | 10 | 3,40 | |
| **13264** | **13274** | | 6 | | 6,4 | 11,5 | | 22,5 | | 3,70 | |
| **13264/8** | **13274/8** | | 8 | | 8,4 | 13,3 | | 25 | | 4,20 | |
| **13414** | **13417** | 16 | 5 | 5,5 | 5,3 | 12,8 | 7,5 | 22,5 | 11 | 4,40 | |
| **13415** | **13418** | | 6 | | 6,4 | 13,6 | | 24,5 | | 4,80 | |
| **13416** | **13419** | | 8 | | 8,4 | 15,7 | | 26,5 | | 5,40 | |

## Nickel connectors 0,5-16 mm²

Material: Nickel tube, temperature stability up to ca. + 500° C




type I




type II

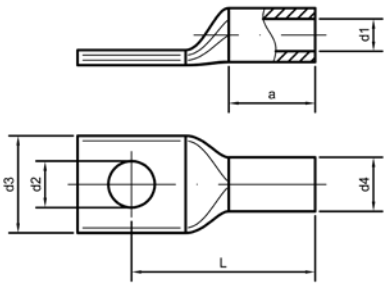



type III

| Part-No. | cross-section mm² | type | dimensions mm $d_1$ | L | s | weight kg/ ‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|
| **Parallel connectors** | | | | | | | 30445 page no. 158 / 30446 page no. 158 |
| **01980** | 0,5-1,0 | I | 1,6 | 7 | 0,8 | 0,40 | |
| **01981** | 1,5-2,5 | | 2,3 | | 0,8 | 0,50 | |
| **01982** | 4-6 | | 3,6 | | 1,0 | 0,90 | |
| **Butt connectors without wire stop** | | | | | | | |
| **01985** | 0,5-1,0 | II | 1,6 | 15 | 0,8 | 0,85 | |
| **01986** | 1,5-2,5 | | 2,3 | | 0,8 | 1,10 | |
| **01987** | 4-6 | | 3,6 | | 1,0 | 1,90 | |
| **Butt connectors with wire stop** | | | | | | | |
| **13275/15** | 0,5-1,0 | III | 1,6 | 15 | 0,8 | 0,82 | |
| **13275** | | | | 25 | 0,8 | 1,35 | |
| **13276/15** | 1,5-2,5 | III | 2,3 | 15 | 0,8 | 1,04 | |
| **13276** | | | | 25 | 0,8 | 1,70 | |
| **13277/15** | 4-6 | III | 3,6 | 15 | 1,0 | 1,92 | |
| **13277** | | | | 25 | 1,0 | 3,25 | 12650, 12655 pages no. 162/163 |
| **13278** | 10 | III | 4,5 | 25 | 1,0 | 3,80 | |
| **13279** | 16 | | 5,5 | 30 | 1,0 | 5,40 | |

## Tubular cable lugs 1,5-95 mm² out of stainless steel

Material: stainless steel 1.4571 (V4A)
Temperature stability up to ca. + 400° C







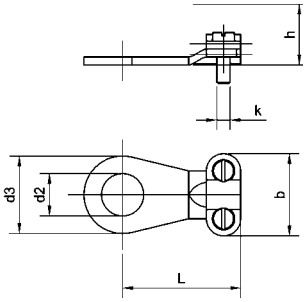
| Part-No. | cross-section mm² | drilling M | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | L | a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **10905** | 1,5 - 2,5 | 4 | 3 | 4,3 | 9 | 5 | 22,5 | 8 | 2,70 | 12930, 12933 page no. 169; 14240/42 page no. 175; 12748 page no. 177; 12728 page no. 186 |
| **10906** | | 5 | | 5,3 | 9 | | 21,5 | | 2,60 | |
| **10907** | | 6 | | 6,4 | 10 | | 20 | | 2,50 | |
| **10910** | 4 - 6 | 4 | 4 | 4,3 | 9 | 6 | 23,5 | 9 | 3,30 | |
| **10911** | | 5 | | 5,3 | 9 | | 22,5 | | 3,40 | |
| **10912** | | 6 | | 6,4 | 10 | | 21 | | 3,30 | |
| **10915** | 10 | 5 | 5 | 5,3 | 12 | 8 | 29 | 10 | 8,10 | 12965/S, 12968 page no. 171; 13551/25, 13551/42, 13537 page no. 181; 12485-87 page no. 192; 12837 page no. 193 |
| **10916** | | 6 | | 6,4 | 12 | | 27,5 | | 8,00 | |
| **10917** | | 8 | | 8,4 | 13 | | 25 | | 7,60 | |
| **10920** | 16 | 5 | 6 | 5,3 | 12 | 8 | 36 | 16 | 7,30 | |
| **10921** | | 6 | | 6,4 | 12 | | 34,5 | | 7,20 | |
| **10922** | | 8 | | 8,4 | 13 | | 32 | | 7,00 | |
| **10925** | 25 | 6 | 7 | 6,4 | 14 | 10 | 33,5 | 15 | 12,60 | |
| **10926** | | 8 | | 8,4 | 16 | | 31 | | 12,50 | |
| **10930** | 35 | 6 | 9 | 6,4 | 18 | 12 | 39,5 | 17 | 18,60 | |
| **10931** | | 8 | | 8,4 | 18 | | 37 | | 18,10 | |
| **10932** | | 10 | | 10,5 | 20 | | 36 | | 17,90 | |
| **10936** | 50 | 8 | 10 | 8,4 | 21 | 14 | 43 | 19 | 31,00 | |
| **10937** | | 10 | | 10,5 | 21 | | 42 | | 30,70 | |
| **10938** | | 12 | | 13 | 23 | | 40 | | 29,50 | |
| **10940** | 70 | 8 | 12 | 8,4 | 24 | 16 | 53 | 21 | 44,60 | |
| **10941** | | 10 | | 10,5 | 24 | | 52 | | 43,70 | |
| **10942** | | 12 | | 13 | 24 | | 50 | | 42,40 | |
| **10943** | | 16 | | 17 | 28 | | 47 | | 41,70 | |
| **10945** | 95 | 8 | 14 | 8,4 | 26 | 18 | 58 | 25 | 56,00 | |
| **10946** | | 10 | | 10,5 | 26 | | 57 | | 55,00 | |
| **10947** | | 12 | | 13 | 26 | | 55 | | 53,60 | |
| **10948** | | 16 | | 17 | 28 | | 52 | | 51,90 | |

## Cable lugs out of titanium

In cases where the chemical stability of our stainless steel or nickel connectors are insufficient we manufacture on request also cable lugs out of titanium material.

## Punched cable lugs 6-35 mm²

Material: Cu-ETP
Surface: uncoated

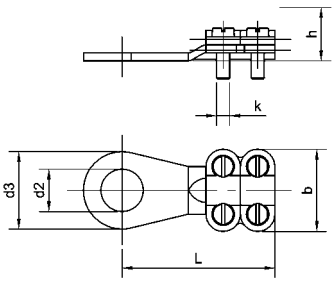



| Part-No. with steel screws | Part-No. with bronze screws | cross-section mm² | drilling M | dimensions mm $d_2$ | $d_3$ | b | h | L | k | weight kg/%pcs. |
|---|---|---|---|---|---|---|---|---|---|---|
| **02250** | **02270** | 6-10 | 6 | 6,5 | 15 | 18 | 10 | 23 | M4 | 1,20 |
| **02251** | **02271** | 16 | 6 | 6,5 | 15 | 20,5 | 14 | 27 | M5 | 1,90 |
| **02252** | **02272** | 16 | 8 | 8,5 | 15 | 20,5 | 14 | 27 | M5 | 1,90 |
| **02253** | **02273** | 25 | 8 | 8,5 | 15 | 25 | 16 | 30 | M5 | 2,90 |
| **02254** | **02274** | 35 | 8 | 8,5 | 18,5 | 24 | 19 | 25,5 | M5 | 3,51 |

Tin plated designs on request.

## Punched cable lugs 25-240 mm²

Material: Cu-ETP
Surface: uncoated




| Part-No. with steel screws | Part-No. with bronze screws | cross-section mm² | drilling M | dimensions mm d2 | d3 | b | h | L | k | weight kg/%pcs. |
|---|---|---|---|---|---|---|---|---|---|---|
| **02255** | **02275** | 25 | 8 | 8,5 | 18,5 | 22,5 | 16 | 36 | M5 | 4,10 |
| **02256** | **02276** | | 10 | 10,5 | 19,5 | 22,5 | 16 | 37 | M5 | 4,10 |
| **02257** | **02277** | 35 | 8 | 8,5 | 18,5 | 24 | 16 | 38,5 | M5 | 4,40 |
| **02258** | **02278** | | 10 | 10,5 | 21,5 | 24 | 16 | 42 | M5 | 4,40 |
| **02259** | **02279** | | 12 | 13 | 21,5 | 24 | 16 | 42 | M5 | 4,40 |
| **02260** | **02280** | 50 | 10 | 10,5 | 19 | 28 | 19 | 46 | M6 | 7,00 |
| **02261** | **02281** | | 12 | 13 | 21 | 28 | 19 | 47 | M6 | 7,00 |
| **02262** | **02282** | 70 | 10 | 10,5 | 23,5 | 31 | 19 | 51 | M6 | 10,00 |
| **02263** | **02283** | | 12 | 13 | 23,5 | 31 | 19 | 51 | M6 | 10,00 |
| **02264** | **02284** | 95 | 10 | 10,5 | 24 | 34 | 25 | 57 | M6 | 12,00 |
| **02265** | **02285** | | 12 | 13 | 24 | 34 | 25 | 57 | M6 | 12,00 |
| **02266** | | 120 | 12 | 13 | 29 | 39 | 27 | 60 | M7 | 17,40 |
| **10452** | **10453** | 150 | 16 | 17 | 30 | 42 | 29 | 61,5 | M8 | 20,00 |
| **02267** | **02287** | 185 - 240 | 16 | 17 | 34 | 48,5 | 32 | 68,5 | M8 | 27,00 |

Tin plated designs on request.

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.9 Cable end sleeves

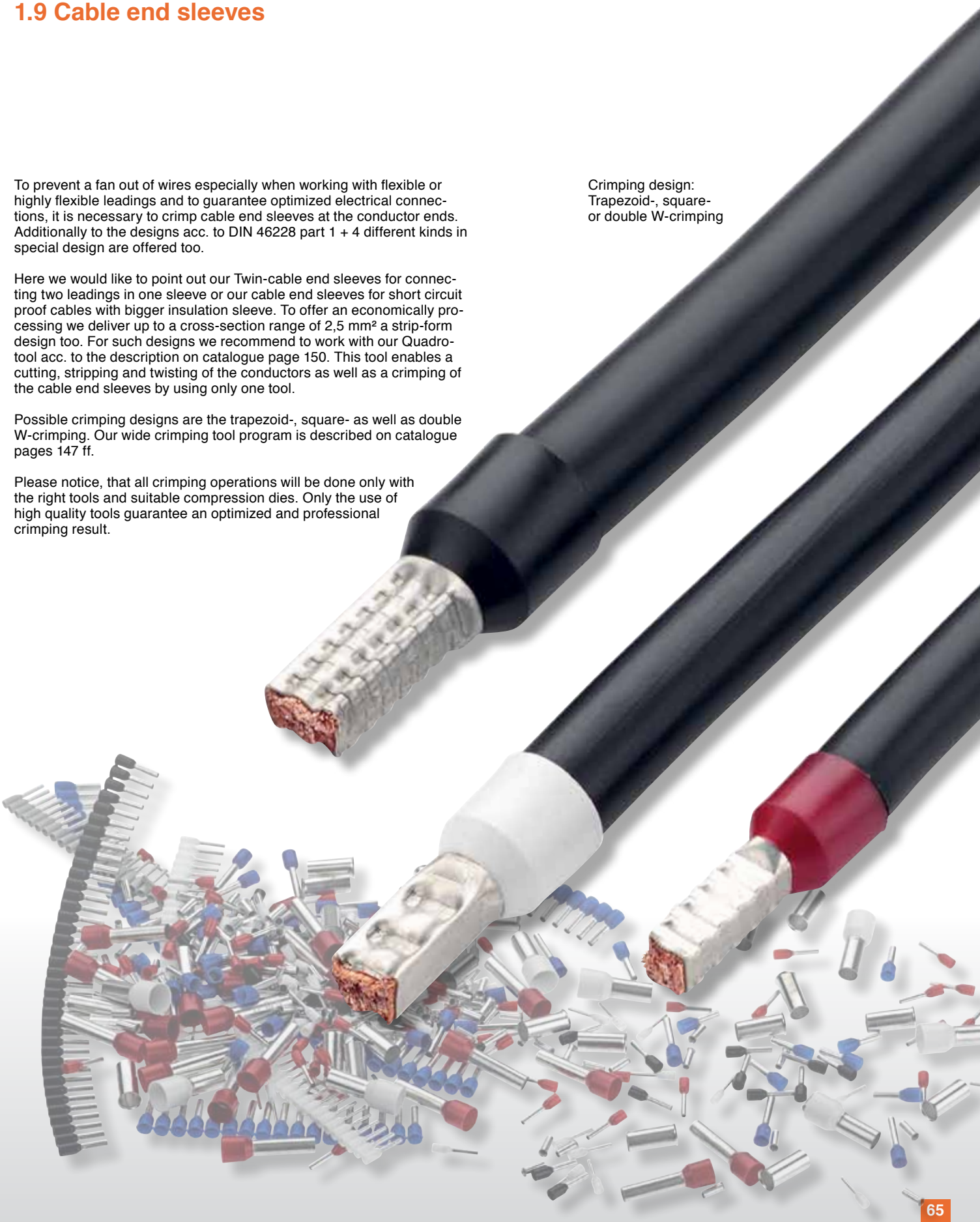
To prevent a fan out of wires especially when working with flexible or highly flexible leadings and to guarantee optimized electrical connections, it is necessary to crimp cable end sleeves at the conductor ends. Additionally to the designs acc. to DIN 46228 part 1 + 4 different kinds in special design are offered too.

Here we would like to point out our Twin-cable end sleeves for connecting two leadings in one sleeve or our cable end sleeves for short circuit proof cables with bigger insulation sleeve. To offer an economically processing we deliver up to a cross-section range of 2,5 mm² a strip-form design too. For such designs we recommend to work with our Quadro-tool acc. to the description on catalogue page 150. This tool enables a cutting, stripping and twisting of the conductors as well as a crimping of the cable end sleeves by using only one tool.

Possible crimping designs are the trapezoid-, square- as well as double W-crimping. Our wide crimping tool program is described on catalogue pages 147 ff.

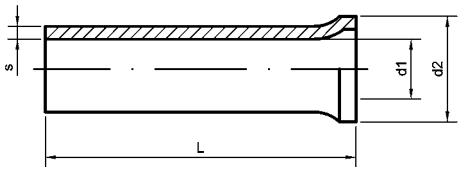
Please notice, that all crimping operations will be done only with the right tools and suitable compression dies. Only the use of high quality tools guarantee an optimized and professional crimping result.

Crimping design:
Trapezoid-, square- or double W-crimping



# Cable end sleeves 0,25-25 mm²

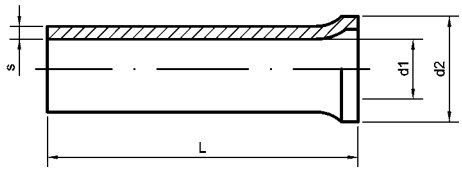
**in acc. with DIN 46228 page 1**
**and special design**
Material: copper acc. to DIN 13600
Surface: tinned




| Part-No. | cross-section mm² | size | dimensions mm $d_1$ | $d_2$ | L | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **01206** | 0,25 | 5 - 0,25 | 0,75 | 1,7 | 5 | 0,15 | 0,02 | Weitere Werkzeugsysteme mit Wechseleinsätzen finden Sie auf den pages no. 165 ff<br>12637 page no. 148<br>12430, 12408, 12425, pages no. 156/157; 05160 page no. 153; 12655 ab 6 mm² page no. 164; 05184 ab 10 mm² page no. 150<br>05144 ab 0,08 mm², 12641 ab 2,5 mm² page no. 149; 05125, 12858 ab 0,5 mm² pages no. 148/153; 05122 ab 0,75 mm² page no. 148<br>12640 ab 0,08 mm² page no. 149<br>12646 ab 0,14 mm², 05140 ab 0,25 mm² page no. 149; 05124 ab 0,5 mm² page no. 148<br>12648 page no. 150 |
| **01207** | | 7 - 0,25 | | | 7 | | 0,03 | |
| **01208** | 0,34 | 5 - 0,34 | 0,85 | 1,8 | 5 | 0,15 | 0,02 | |
| **01209** | | 7 - 0,34 | | | 7 | | 0,03 | |
| **01210** | 0,5 | 6 - 0,5 | 1 | 2,1 | 6 | 0,15 | 0,03 | |
| **13199** | | 8 - 0,5 | | | 8 | | 0,04 | |
| **13200** | | 10 - 0,5 | | | 10 | | 0,05 | |
| **01211** | 0,75 | 6 - 0,75 | 1,2 | 2,3 | 6 | 0,15 | 0,04 | |
| **01212** | | 8 - 0,75 | | | 8 | | 0,05 | |
| **13201** | | 10 - 0,75 | | | 10 | | 0,06 | |
| **13600** | | 15 - 0,75 | | | 15 | | 0,09 | |
| **01213** | 1 | 6 - 1 | 1,4 | 2,5 | 6 | 0,15 | 0,05 | |
| **13601** | | 8 - 1 | | | 8 | | 0,06 | |
| **01214** | | 10 - 1 | | | 10 | | 0,07 | |
| **13602** | | 12 - 1 | | | 12 | | 0,08 | |
| **13603** | | 15 - 1 | | | 15 | | 0,11 | |
| **01215** | 1,5 | 7 - 1,5 | 1,7 | 2,8 | 7 | 0,15 | 0,06 | |
| **01216** | | 10 - 1,5 | | | 10 | | 0,09 | |
| **01217** | | 12 - 1,5 | | | 12 | | 0,10 | |
| **13604** | | 15 - 1,5 | | | 15 | | 0,13 | |
| **13202** | | 18 - 1,5 | | | 18 | | 0,15 | |
| **13605** | | 20 - 1,5 | | | 20 | | 0,17 | |
| **01218** | 2,5 | 7 - 2,5 | 2,2 | 3,4 | 7 | 0,15 | 0,08 | |
| **13203** | | 10 - 2,5 | | | 10 | | 0,11 | |
| **01219** | | 12 - 2,5 | | | 12 | | 0,13 | |
| **13607** | | 15 - 2,5 | | | 15 | | 0,17 | |
| **13204** | | 18 - 2,5 | | | 18 | | 0,20 | |
| **13608** | | 20 - 2,5 | | | 20 | | 0,22 | |
| **01220** | 4 | 9 - 4 | 2,8 | 4 | 9 | 0,2 | 0,16 | |
| **01221** | | 12 - 4 | | | 12 | | 0,21 | |
| **13205** | | 15 - 4 | | | 15 | | 0,27 | |
| **13206** | | 18 - 4 | | | 18 | | 0,32 | |
| **13609** | | 20 - 4 | | | 20 | | 0,35 | |
| **01222** | 6 | 10 - 6 | 3,5 | 4,7 | 10 | 0,2 | 0,23 | |
| **01223** | | 12 - 6 | | | 12 | | 0,27 | |
| **01224** | | 15 - 6 | | | 15 | | 0,34 | |
| **13207** | | 18 - 6 | | | 18 | | 0,41 | |
| **13610** | | 20 - 6 | | | 20 | | 0,45 | |
| **13611** | | 25 - 6 | | | 25 | | 0,58 | |
| **01225** | 10 | 12 - 10 | 4,5 | 5,8 | 12 | 0,2 | 0,33 | |
| **01226** | | 15 - 10 | | | 15 | | 0,41 | |
| **01227** | | 18 - 10 | | | 18 | | 0,48 | |
| **13612** | | 20 - 10 | | | 20 | | 0,55 | |
| **13613** | | 25 - 10 | | | 25 | | 0,68 | |
| **01228** | 16 | 12 - 16 | 5,8 | 7,5 | 12 | 0,2 | 0,43 | |
| **01229** | | 15 - 16 | | | 15 | | 0,53 | |
| **01230** | | 18 - 16 | | | 18 | | 0,63 | |
| **13208** | | 25 - 16 | | | 25 | | 0,87 | |
| **13209** | | 32 - 16 | | | 32 | | 1,11 | |
| **01231** | 25 | 15 - 25 | 7,3 | 9,5 | 15 | 0,2 | 0,79 | |
| **01232** | | 18 - 25 | | | 18 | | 0,94 | |
| **13614** | | 20 - 25 | | | 20 | | 1,04 | |
| **13615** | | 25 - 25 | | | 25 | | 1,30 | |
| **13616** | | 28 - 25 | | | 28 | | 1,45 | |

## Cable end sleeves 35-185 mm²

**in acc. with DIN 46228 page 1**
**and special design**
Material: copper acc. to DIN 13600
Surface: tinned




| Part-No. | cross-section mm² | size | dimensions mm $d_1$ | $d_2$ | L | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **01233** | 35 | 15 - 35 | 8,3 | 11 | 15 | 0,2 | 0,76 | 12649, 05184 page no. 150; 05160 page no. 153; 12430, 12408, 12425 pages no. 156/157; 12655 pages no. 163/164; 30460 pages no. 165/166; 12930, 12933 page no. 169; 12748 pages no. 176/177; 12740/42 pages no. 174/175; 31460 pages no. 167/168; 12766 page no. 170; 12965/S, 12968 page no. 171; 14240/41 pages no. 174/175; 13552 pages no. 178/179; 13551/25, 13551/42, 13537 pages no. 180/181; 12836, 12485, 12486, 12487 page no. 192; 12837 page no. 193 |
| **01234** | | 18 - 35 | | | 18 | | 0,90 | |
| **01235** | | 22 - 35 | | | 22 | | 1,10 | |
| **01236** | | 25 - 35 | | | 25 | | 1,24 | |
| **01237** | | 30 - 35 | | | 30 | | 1,49 | |
| **01238** | | 32 - 35 | | | 32 | | 1,58 | |
| **13617** | 50 | 18 - 50 | 10,5 | 13 | 18 | 0,3 | 1,69 | |
| **13618** | | 22 - 50 | | | 22 | | 2,05 | |
| **13619** | | 25 - 50 | | | 25 | | 2,32 | |
| **13620** | | 30 - 50 | | | 30 | | 2,77 | |
| **13621** | | 32 - 50 | | | 32 | | 2,95 | |
| **13622** | 70 | 22 - 70 | 12,7 | 15 | 22 | 0,4 | 3,31 | |
| **13623** | | 25 - 70 | | | 25 | | 3,75 | |
| **13624** | | 30 - 70 | | | 30 | | 4,18 | |
| **13625** | | 32 - 70 | | | 32 | | 4,78 | |
| **13626** | 95 | 25 - 95 | 14,7 | 17 | 25 | 0,4 | 4,32 | |
| **13627** | | 30 - 95 | | | 30 | | 5,17 | |
| **13628** | | 32 - 95 | | | 32 | | 5,51 | |
| **13629** | | 34 - 95 | | | 34 | | 5,84 | |
| **13630** | 120 | 30 - 120 | 16,7 | 19 | 30 | 0,5 | 7,35 | |
| **13631** | | 32 - 120 | | | 32 | | 7,83 | |
| **13632** | | 34 - 120 | | | 34 | | 8,31 | |
| **13633** | | 38 - 120 | | | 38 | | 9,28 | |
| **13634** | | 40 - 120 | | | 40 | | 9,76 | |
| **13635** | 150 | 32 - 150 | 18,7 | 21 | 32 | 0,5 | 8,75 | |
| **13636** | | 34 - 150 | | | 34 | | 9,28 | |
| **13637** | | 38 - 150 | | | 38 | | 10,36 | |
| **13638** | | 40 - 150 | | | 40 | | 10,89 | |
| **13639** | 185 | 32 - 185 | 20,2 | 23,5 | 32 | 0,6 | 11,38 | |
| **13640** | | 40 - 185 | | | 40 | | 14,17 | |

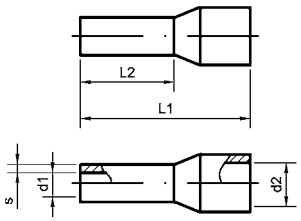
## Assortment boxes

filled with uninsulated cable end sleeves
in acc. with DIN 46228 page 1

| Part-No. | content | | | Part-No. | content | | | Part-No. | content | Part-No. | content |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **01300** | 500 St. | 6 - 0,5 | # 01210 | **01301** | 100 pcs. | 9 - 4 | # 01220 | **01302** | unfilled with 5 partition | **01303** | unfilled with 4 partition |
| | 500 St. | 6 - 0,75 | # 01211 | | 100 pcs. | 10 - 6 | # 01222 | | | | |
| | 500 St. | 6 - 1 | # 01213 | | 50 pcs. | 18 - 10 | # 01227 | | | | |
| | 300 St. | 7 - 1,5 | # 01215 | | 25 pcs. | 18 - 16 | # 01230 | | | | |
| | 200 St. | 7 - 2,5 | # 01218 | | | | | | | | |

## Insulated cable end sleeves 0,14-150 mm²

**Colour: usual in trade design**
Material: copper acc. to DIN EN 13600
Surface: tinned
Insulation sleeve: PP



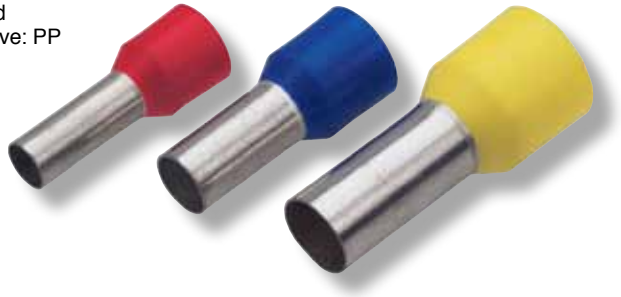

| Part-No. | colour | Part-No. | colour | cross-section mm² | size | dimensions mm $L_1$ | $L_2$ | $d_1$ | $d_2$ | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **55993** | brown | **56038** | grey | 0,14 | 6 - 0,14 | 10 | 6 | 0,7 | 1,6 | 0,15 | 0,047 | 12646 ab 0,14 mm², 05140 ab 0,25 mm² page no. 149; 05124 ab 0,5 mm² page no. 148 |
| **55994** | | **56039** | | | 8 - 0,14 | 12 | 8 | | | | 0,055 | |
| **55995** | violet | **56040** | light blue | 0,25 | 6 - 0,25 | 10 | 6 | 0,75 | 1,8 | 0,15 | 0,047 | |
| **55996** | | **56041** | | | 8 - 0,25 | 12 | 8 | | | | 0,057 | |
| **55997** | pink | **56042** | turquise | 0,34 | 6 - 0,34 | 10 | 6 | 0,8 | 2 | 0,15 | 0,047 | |
| **55998** | | **56043** | | | 8 - 0,34 | 12 | 8 | | | | 0,055 | |
| **55999** | white | **56044** | orange | 0,5 | 6 - 0,5 | 12 | 6 | 1 | 2,6 | 0,15 | 0,063 | |
| **56000** | | **56045** | | | 8 - 0,5 | 14 | 8 | | | | 0,075 | |
| **56000/1** | | **56046** | | | 10 - 0,5 | 16 | 10 | | | | 0,085 | |
| **56001/1** | blue | **56047** | white | 0,75 | 6 - 0,75 | 12 | 6 | 1,2 | 2,8 | 0,15 | 0,077 | |
| **56001** | | **56048** | | | 8 - 0,75 | 14 | 8 | | | | 0,089 | |
| **56001/2** | | **56049** | | | 10 - 0,75 | 16 | 10 | | | | 0,100 | |
| **56001/3** | | **56050** | | | 12 - 0,75 | 18 | 12 | | | | 0,110 | |
| **56002/1** | red | **56051** | yellow | 1 | 6 - 1 | 12 | 6 | 1,4 | 3 | 0,15 | 0,084 | 05144 ab 0,08 mm², 12641 ab 2,5 mm² page no. 149; 05125, 12858 ab 0,5 mm² pages no. 148/153; 05122 ab 0,75 mm² page no. 148 |
| **56002** | | **56052** | | | 8 - 1 | 14 | 8 | | | | 0,100 | |
| **56002/2** | | **56053** | | | 10 - 1 | 16 | 10 | | | | 0,110 | |
| **56002/3** | | **56054** | | | 12 - 1 | 18 | 12 | | | | 0,125 | |
| **56003** | black | **56055** | red | 1,5 | 8 - 1,5 | 14 | 8 | 1,7 | 3,5 | 0,15 | 0,115 | |
| **56003/1** | | **56056** | | | 10 - 1,5 | 16 | 10 | | | | 0,130 | |
| **56003/2** | | **56056/1** | | | 12 - 1,5 | 18 | 12 | | | | 0,150 | |
| **56004** | | **56057** | | | 18 - 1,5 | 24 | 18 | | | | 0,200 | |
| **56006** | grey | **56058** | blue | 2,5 | 8 - 2,5 | 14 | 8 | 2,2 | 4,2 | 0,15 | 0,160 | 12640 ab 0,08 mm² page no. 149 |
| **56006/1** | | **56059** | | | 12 - 2,5 | 18 | 12 | | | | 0,200 | |
| **56007** | | **56060** | | | 18 - 2,5 | 24 | 18 | | | | 0,265 | |
| **56008** | orange | **56061** | grey | 4 | 10 - 4 | 17 | 10 | 2,8 | 4,8 | 0,2 | 0,270 | |
| **56008/1** | | **56062** | | | 12 - 4 | 20 | 12 | | | | 0,300 | |
| **56009** | | **56063** | | | 18 - 4 | 26 | 18 | | | | 0,440 | |
| **56010** | green | **56064** | black | 6 | 12 - 6 | 20 | 12 | 3,5 | 6,3 | 0,2 | 0,430 | |
| **56011** | | **56065** | | | 18 - 6 | 26 | 18 | | | | 0,550 | |
| **56012** | brown | **56066** | white | 10 | 12 - 10 | 22 | 12 | 4,5 | 7,6 | 0,2 | 0,560 | 12430, 12408, 12425 pages no. 156/157; 05160 page no. 153; 12655 ab 6 mm² pages no. 163/164; 05184 ab 10 mm² page no. 150 |
| **56013** | | **56067** | | | 18 - 10 | 28 | 18 | | | | 0,730 | |
| **56014** | white | **56068** | green | 16 | 12 - 16 | 24 | 12 | 5,8 | 8,8 | 0,2 | 0,820 | |
| **56015** | | **56069** | | | 18 - 16 | 28 | 18 | | | | 1,000 | |
| **56016** | black | **56070** | brown | 25 | 16 - 25 | 30 | 16 | 7,3 | 11,2 | 0,2 | 1,400 | |
| **56016/1** | | **56070/1** | | | 18 - 25 | 30 | 18 | | | | 1,420 | |
| **56017** | | **56071** | | | 22 - 25 | 36 | 22 | | | | 1,650 | |
| **56018** | red | **56072** | beige | 35 | 16 - 35 | 30 | 16 | 8,3 | 12,7 | 0,2 | 1,620 | 12648 page no. 150 |
| **56018/1** | | **56072/1** | | | 18 - 35 | 30 | 18 | | | | 1,700 | |
| **56019** | | **56073** | | | 25 - 35 | 39 | 25 | | | | 2,140 | |
| **56020** | blue | **56074** | olive | 50 | 20 - 50 | 36 | 20 | 10,3 | 15 | 0,3 | 2,990 | 30460, 12930, 12933, 12740/41, 12748 pages no. 165 ff |
| **56021** | | **56075** | | | 25 - 50 | 40 | 25 | | | | 3,520 | |
| **-** | - | **56076** | yellow | 70 | 20 - 70 | 37 | 20 | 13,5 | 16 | 0,4 | 5,800 | |
| **-** | - | **56077** | red | 95 | 25 - 95 | 44 | 25 | 14,5 | 18 | 0,4 | 6,880 | |
| **-** | - | **56078** | blue | 120 | 27 -120 | 48 | 27 | 16,5 | 20 | 0,45 | 9,360 | |
| **-** | - | **56079** | yellow | 150 | 32 -150 | 58 | 32 | 19,5 | 28 | 0,5 | 13,450 | 12649 page no. 150 |

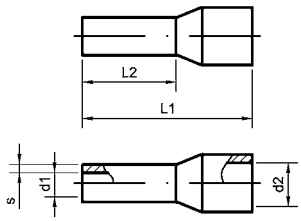
Werkzeuge mit Wechseleinsätzen ab page no. 167 ff

## Insulated cable end sleeves 0,5-50 mm²

**in acc. with DIN 46228 page 4**

Material: copper acc. to DIN EN 13600
Surface: tinned
Insulation sleeve: PP

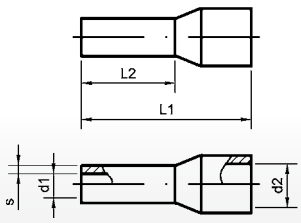





| Part-No. | colour | cross-section mm² | size | dimensions mm L1 | L2 | d1 | d2 | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **55999** | white | 0,5 | 6 - 0,5 | 12 | 6 | 1 | 2,6 | 0,15 | 0,063 | 12646 ab 0,14 mm², 05140 ab 0,25 mm² page no. 149; 05124 ab 0,5 mm² page no. 148; 05144 ab 0,08 mm², 12641 ab 2,5 mm² page no. 149; 05125, 12858 ab 0,5 mm² pages no. 148/153; 05122 ab 0,75 mm² page no. 148; 12430, 12408, 12425 pages no. 156/157; 05160 page no. 153; 12655 ab 6 mm² pages no. 163/164; 05184 ab 10 mm² page no. 150; 12648 page no. 150; 12649 page no. 150; Werkzeuge mit Wechseleinsätzen ab page no. 165 ff |
| **56000** | | | 8 - 0,5 | 14 | 8 | | | | 0,075 | |
| **56000/1** | | | 10 - 0,5 | 16 | 10 | | | | 0,085 | |
| **56080** | grey | 0,75 | 6 - 0,75 | 12 | 6 | 1,2 | 2,8 | 0,15 | 0,077 | |
| **56081** | | | 8 - 0,75 | 14 | 8 | | | | 0,085 | |
| **56082** | | | 10 - 0,75 | 16 | 10 | | | | 0,100 | |
| **56083** | | | 12 - 0,75 | 18 | 12 | | | | 0,110 | |
| **56002/1** | red | 1 | 6 - 1 | 12 | 6 | 1,4 | 3 | 0,15 | 0,084 | |
| **56002** | | | 8 - 1 | 14 | 8 | | | | 0,100 | |
| **56002/2** | | | 10 - 1 | 16 | 10 | | | | 0,110 | |
| **56002/3** | | | 12 - 1 | 18 | 12 | | | | 0,125 | |
| **56003** | black | 1,5 | 8 - 1,5 | 14 | 8 | 1,7 | 3,5 | 0,15 | 0,115 | |
| **56003/1** | | | 10 - 1,5 | 16 | 10 | | | | 0,130 | |
| **56003/2** | | | 12 - 1,5 | 18 | 12 | | | | 0,150 | |
| **56004** | | | 18 - 1,5 | 24 | 18 | | | | 0,200 | |
| **56058** | blue | 2,5 | 8 - 2,5 | 14 | 8 | 2,2 | 4,2 | 0,15 | 0,160 | |
| **56059** | | | 12 - 2,5 | 18 | 12 | | | | 0,200 | |
| **56060** | | | 18 - 2,5 | 24 | 18 | | | | 0,265 | |
| **56061** | grey | 4 | 10 - 4 | 17 | 10 | 2,8 | 4,8 | 0,2 | 0,270 | |
| **56062** | | | 12 - 4 | 20 | 12 | | | | 0,300 | |
| **56063** | | | 18 - 4 | 26 | 18 | | | | 0,440 | |
| **56084** | yellow | 6 | 12 - 6 | 20 | 12 | 3,5 | 6,3 | 0,2 | 0,430 | |
| **56085** | | | 18 - 6 | 26 | 18 | | | | 0,550 | |
| **56086** | red | 10 | 12 - 10 | 22 | 12 | 4,5 | 7,6 | 0,2 | 0,560 | |
| **56087** | | | 18 - 10 | 28 | 18 | | | | 0,730 | |
| **56088** | blue | 16 | 12 - 16 | 24 | 12 | 5,8 | 8,8 | 0,2 | 0,820 | |
| **56089** | | | 18 - 16 | 28 | 18 | | | | 1,000 | |
| **56090** | yellow | 25 | 16 - 25 | 30 | 16 | 7,3 | 11,2 | 0,2 | 1,400 | |
| **56090/1** | | | 18 - 25 | 30 | 18 | | | | 1,420 | |
| **56091** | | | 22 - 25 | 36 | 22 | | | | 1,650 | |
| **56018** | red | 35 | 16 - 35 | 30 | 16 | 8,3 | 12,7 | 0,2 | 1,620 | |
| **56018/1** | | | 18 - 35 | 30 | 18 | | | | 1,700 | |
| **56019** | | | 25 - 35 | 39 | 25 | | | | 2,140 | |
| **56020** | blue | 50 | 20 - 50 | 36 | 20 | 10,3 | 15 | 0,3 | 2,990 | |
| **56021** | | | 25 - 50 | 40 | 25 | | | | 3,520 | |

## Insulated cable end sleeves 0,5-2,5 mm²

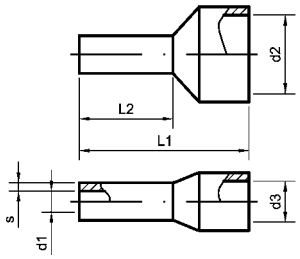
**in strip form**




| usual in trade design Part-No. | colour | Part-No. | colour | design DIN 46228 Best-Nr. | colour | cross-section mm² | dimensions mm $L_1$ | $L_2$ | $d_1$ | $d_2$ | s | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **56000 str** | weiß | **56045 str** | orange | **56000 str** | weiß | 0,5 | 14 | 8 | 1 | 2,6 | 0,15 | 12510/12512 page no. 150 |
| **56001 str** | blue | **56048 str** | white | **56081 str** | grau | 0,75 | 14 | 8 | 1,2 | 2,8 | 0,15 | |
| **56002 str** | red | **56052 str** | yellow | **56002 str** | red | 1 | 14 | 8 | 1,4 | 3 | 0,15 | |
| **56003 str** | black | **56055 str** | red | **56003 str** | black | 1,5 | 14 | 8 | 1,7 | 3,5 | 0,15 | |
| **56006 str** | grau | **56058 str** | blue | **56058 str** | blue | 2,5 | 14 | 8 | 2,3 | 4,2 | 0,15 | |

## Insulated twin cable end sleeves with rectangular insulation sleeve for two cables 0,5-16 mm²

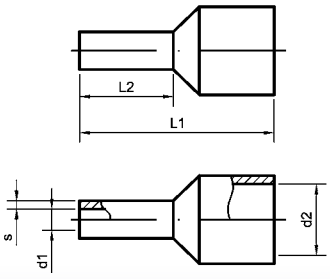
Material: copper acc. to DIN EN 13600
Surface: tinned
Insulation sleeve: PP




| Part-No. | colour | cross-section mm² | dimensions mm $L_1$ | $L_2$ | $d_1$ | $d_2$ | $d_3$ | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **57000** | white | 2 x 0,5 | 15 | 8 | 1,5 | 4,9 | 2,5 | 0,15 | 0,12 | 12640, 12646, 05140 page no. 149; 05144 page no. 149 |
| **57001** | grey | 2 x 0,75 | 15 | 8 | 1,8 | 5,2 | 2,6 | 0,15 | 0,14 | |
| **57002** | | | 19 | 10 | | | | | 0,15 | |
| **57003** | red | 2 x 1 | 16 | 8 | 2 | 5,8 | 3,2 | 0,15 | 0,16 | |
| **57004** | | | 17 | 10 | | | | | 0,18 | |
| **57005** | black | 2 x 1,5 | 16 | 8 | 2,3 | 6,5 | 3,6 | 0,15 | 0,19 | |
| **57006** | | | 20 | 12 | | | | | 0,23 | |
| **57007** | blue | 2 x 2,5 | 18 | 10 | 2,9 | 7,5 | 4,3 | 0,15 | 0,33 | |
| **57008** | | | 21 | 13 | | | | | 0,38 | |
| **57009** | grey | 2 x 4 | 23 | 12 | 3,8 | 9 | 5,2 | 0,2 | 0,52 | 12766 p. 170; 13552 p. 178; 14240/41 p.174/175 |
| **57010** | yellow | 2 x 6 | 26 | 14 | 4,9 | 10 | 7,2 | 0,2 | 0,72 | |
| **57011** | red | 2 x 10 | 26 | 14 | 6,5 | 13 | 7,2 | 0,2 | 0,92 | 12641, 12647 page no. 149 |
| **57012** | blue | 2 x 16 | 30 | 14 | 8,3 | 18 | 9,5 | 0,2 | 1,34 | 12649 p. 150 |

## Insulated cable end sleeves 1,5-16 mm² for short circuit proof cables with thick insulation

Material: copper acc. to DIN EN 13600
Surface: tinned
Insulation sleeve: PP with flaring insulation part




| Part-No. | colour | cross-section mm² | size | dimensions mm $L_1$ | $L_2$ | $d_1$ | $d_2$ | s | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **58000** | black | 1,5 | 8 - 1,5 | 17,5 | 8 | 1,8 | 5,9 | 0,15 | 0,25 | pages no. 148, 149, 150, 153 |
| **58002** | | | 10 - 1,5 | 19,5 | 10 | | | | 0,27 | |
| **58004** | blue | 2,5 | 8 - 2,5 | 17,5 | 8 | 2,3 | 7,8 | 0,15 | 0,28 | |
| **58006** | | | 12 - 2,5 | 21,5 | 12 | | | | 0,31 | |
| **58008** | green | 4 | 10 - 4 | 19,5 | 10 | 2,9 | 7,8 | 0,2 | 0,4 | |
| **58010** | yellow | 6 | 12 - 6 | 23 | 12 | 3,6 | 8,3 | 0,2 | 0,55 | |
| **58012** | red | 10 | 12 - 10 | 24 | 12 | 4,6 | 9,8 | 0,2 | 0,69 | |
| **58014** | blue | 16 | 12 - 16 | 25,5 | 12 | 6 | 12,0 | 0,2 | 0,96 | |

## Assortment-boxes 0,5-2,5 mm²

filled with insulated cable end sleeves
in acc. with DIN 46228 page 4 and special design

| Part-No. | content | | | | Part-No. | content | | | | Part-No. | content | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **01305** | 50 pcs. | 8 - 0,5 | white | # 56000 | **01307** | 50 pcs. | 8 - 0,5 | orange | # 56045 | **01309** | 50 pcs. | 8 - 0,5 | white | # 56000 |
| | 100 pcs. | 8 - 0,75 | blue | # 56001 | | 100 pcs. | 8 - 0,75 | white | # 56048 | | 100 pcs. | 8 - 0,75 | grey | # 56081 |
| | 100 pcs. | 8 - 1 | red | # 56002 | | 100 pcs. | 8 - 1 | yellow | # 56052 | | 100 pcs. | 8 - 1 | red | # 56002 |
| | 100 pcs. | 8 - 1,5 | black | # 56003 | | 100 Stck | 8 - 1,5 | red | # 56055 | | 100 pcs. | 8 - 1,5 | black | # 56003 |
| | 50 pcs. | 8 - 2,5 | grey | # 56006 | | 50 pcs. | 8 - 2,5 | blue | # 56058 | | 50 pcs. | 8 - 2,5 | blue | # 56058 |

## Assortment-boxes 4-16 mm²

filled with insulated cable end sleeves
in acc. with DIN 46228 page 4 and special design

| Part-No. | content | | | | Part-No. | content | | | | Part-No. | content | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **01306** | 50 pcs. | 10 - 4 | orange | # 56008 | **01308** | 50 pcs. | 10 - 4 | grey | # 56061 | **01310** | 50 pcs. | 10 - 4 | grey | # 56061 |
| | 20 pcs. | 12 - 6 | green | # 56010 | | 20 pcs. | 12 - 6 | black | # 56064 | | 20 pcs. | 12 - 6 | yellow | # 56084 |
| | 20 pcs. | 12 - 10 | brown | # 56012 | | 20 pcs. | 12 - 10 | white | # 56066 | | 20 pcs. | 12 - 10 | red | # 56086 |
| | 10 pcs. | 12 - 16 | white | # 56014 | | 10 pcs. | 12 - 16 | green | # 56068 | | 10 pcs. | 12 - 16 | blue | # 56088 |

## Assortment-boxes 0,5-6 mm²

filled with twin cable end sleeves for double cable connection

| Part-No. | content | | | | Part-No. | content | | | | Part-No. | content | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **01311** | 50 pcs. | 2 - 0,5 | white | # 57000 | **01312** | 50 pcs. | 2 - 0,75 | grey | # 57001 | **01313** | 30 pcs. | 2 - 1,5 | black | # 57005 |
| | 50 pcs. | 2 - 0,75 | grey | # 57001 | | 50 pcs. | 2 - 1 | red | # 57003 | | 30 pcs. | 2 - 2,5 | blue | # 57007 |
| | 50 pcs. | 2 - 1 | red | # 57003 | | 50 pcs. | 2 - 1,5 | black | # 57005 | | 20 pcs. | 2 - 4 | grey | # 57009 |
| | 50 pcs. | 2 - 1,5 | black | # 57005 | | 50 pcs. | 2 - 2,5 | blue | # 57007 | | 10 pcs. | 2 - 6 | yellow | # 57010 |

## Assortment-boxes

filled with uninsulated cable end sleeves DIN 46228 page 1
with and without crimping tools

10480 10483

10485 10488

| Part-No. | dimensions mm | description | content | |
|---|---|---|---|---|
| **10480** | 245 x 160 x 45 | steel sheet varnished assortment box with 6 little, | 1000 x 0,75 - 6 | 01211 |
| | | 1 tool partition and following content: | 1000 x 1,00 - 6 | 01213 |
| | | | 1000 x 1,50 - 7 | 01215 |
| | | | 500 x 2,50 - 7 | 01218 |
| | | | 500 x 4,00 - 9 | 01220 |
| | | | 500 x 6,00 - 12 | 01223 |
| | | | 1 x crimping tool | 05122 |
| **10481** | 245 x 160 x 45 | ditto, but with square crimping tool 05124 | 1 x square crimping tool | 05124 |
| **10482** | 245 x 160 x 45 | ditto, but without tool | without tool | |
| **10483** | 245 x 160 x 45 | steel sheet varnished assortment box with 6 little, | 1000 x 0,50 - 6 | 01210 |
| | | 1 tool partition and following content: | 1000 x 0,75 - 6 | 01211 |
| | | | 1000 x 1,00 - 6 | 01213 |
| | | | 500 x 1,50 - 7 | 01215 |
| | | | 500 x 2,50 - 7 | 01218 |
| | | | 500 x 2,50 - 12 | 01219 |
| | | | 1 x crimping tool | 12637 |
| **10484** | 245 x 160 x 45 | ditto, but without tool | without tool | |

| Part-No. | dimensions mm | description | content | |
|---|---|---|---|---|
| **10485** | 350 x 160 x 35 | steel sheet varnished assortment box with 7 little, | 1000 x 0,75 - 6 | 01211 |
| | | 1 tool partition and following content: | 1000 x 1,00 - 6 | 01213 |
| | | | 1000 x 1,50 - 7 | 01215 |
| | | | 500 x 2,50 - 7 | 01218 |
| | | | 500 x 4,00 - 9 | 01220 |
| | | | 500 x 6,00 - 12 | 01223 |
| | | | 500 x 10,00 - 12 | 01225 |
| | | | 1 x crimping tool | 05122 |
| **10486** | 350 x 160 x 35 | ditto, but with square crimping tool 12640 | 1 x square crimping tool | 12640 |
| **10487** | 350 x 160 x 35 | ditto, but without tool | without tool | |
| **10488** | 350 x 160 x 35 | steel sheet varnished assortment box with 12 little, | 1000 x 0,75 - 6 | 01211 |
| | | 1 tool partition and following content: | 1000 x 1,00 - 6 | 01213 |
| | | | 1000 x 1,50 - 7 | 01215 |
| | | | 500 x 1,50 - 10 | 01216 |
| | | | 500 x 2,50 - 7 | 01218 |
| | | | 500 x 2,50 - 12 | 01219 |
| | | | 500 x 4,00 - 9 | 01220 |
| | | | 250 x 6,00 - 12 | 01223 |
| | | | 100 x 10,00 - 12 | 01225 |
| | | | 100 x 10,00 - 18 | 01227 |
| | | | 100 x 16,00 - 12 | 01228 |
| | | | 100 x 16,00 - 18 | 01230 |
| | | | 1 x crimping tool | 05122 |
| **10490** | 350 x 160 x 35 | ditto, but without tool | without tool | |

## Assortment-boxes

filled with insulated cable end sleeves DIN 46228 page 4
and Twin design
with and without crimping tool

10491 10494

10496 10499

| Part-No. | dimensions mm | description | content | |
|---|---|---|---|---|
| **10491** | 245 x 160 x 45 | steel sheet varnished assortment box with 6 little, | 300 x 0,75 - 8 | 56081 |
| | | 1 tool partition and following content: | 300 x 1,00 - 8 | 56002 |
| | | | 300 x 1,50 - 8 | 56003 |
| | | | 200 x 2,50 - 8 | 56058 |
| | | | 200 x 4,00 - 10 | 56061 |
| | | | 100 x 6,00 - 12 | 56084 |
| | | | 1 x crimping tool | 05122 |
| **10492** | 245 x 160 x 45 | ditto, but with square crimping tool 05124 | 1 x square crimping tool | 05124 |
| **10493** | 245 x 160 x 45 | ditto, but without tool | without tool | |
| **10494** | 245 x 160 x 45 | steel sheet varnished assortment box with 6 little, | 200 x 2 x 0,50 - 8 | 57000 |
| | | 1 tool partition and following content: | 200 x 2 x 0,75 - 8 | 57001 |
| | | | 200 x 2 x 1,00 - 8 | 57003 |
| | | | 200 x 2 x 1,50 - 8 | 57005 |
| | | | 200 x 2 x 2,50 - 10 | 57007 |
| | | | 200 x 2 x 4,00 - 12 | 57009 |
| | | | 1 x crimping tool | 12646 |
| **10495** | 245 x 160 x 45 | ditto, but without tool | without tool | |

| Part-No. | dimensions mm | description | content | |
|---|---|---|---|---|
| **10496** | 350 x 160 x 35 | steel sheet varnished assortment box with 7 little, | 300 x 0,75 - 8 | 56081 |
| | | 1 tool partition and following content: | 300 x 1,00 - 8 | 56002 |
| | | | 300 x 1,50 - 8 | 56003 |
| | | | 200 x 2,50 - 8 | 56058 |
| | | | 200 x 4,00 - 10 | 56061 |
| | | | 100 x 6,00 - 12 | 56084 |
| | | | 50 x 10,00 - 12 | 56086 |
| | | | 1 x crimping tool | 05122 |
| **10497** | 350 x 160 x 35 | ditto, but with square crimping tool 12640 | 1 x square crimping tool | 12640 |
| **10498** | 350 x 160 x 35 | ditto, but without tool | without tool | |
| **10499** | 350 x 160 x 35 | steel sheet varnished assortment box with 12 little, | 100 x 0,75 - 8 | 56081 |
| | | 1 tool partition and following content: | 100 x 1,00 - 8 | 56002 |
| | | | 100 x 1,50 - 8 | 56003 |
| | | | 100 x 1,50 - 10 | 56003/1 |
| | | | 100 x 2,50 - 8 | 56058 |
| | | | 100 x 2,50 - 12 | 56059 |
| | | | 100 x 4,00 - 10 | 56061 |
| | | | 50 x 6,00 - 12 | 56084 |
| | | | 50 x 10,00 - 12 | 56086 |
| | | | 50 x 10,00 - 18 | 56087 |
| | | | 50 x 16,00 - 12 | 56088 |
| | | | 50 x 16,00 - 18 | 56089 |
| | | | 1 x crimping tool | 05122 |
| **10500** | 350 x 160 x 35 | ditto, but without tool | without tool | |

## Assortment-boxes with crimping tool and insulated cable end sleeves

| Part-No. | dimensions mm | description | content | | |
|---|---|---|---|---|---|
| **05145** | 235 x 185 x 47 | Insulated cable end sleeves in usual trade design | 100 x | 8 - 0,5 | white | 56000 |
| | | in a plastic suitcase with 5 little and 1 tool partition | 100 x | 8 - 0,75 | blue | 56001 |
| | | and a handy crimping tool in a cross section range 0,25-6 mm² | 100 x | 8 - 1 | red | 56002 |
| | | with square crimping | 100 x | 8 - 1,5 | black | 56003 |
| | | | 100 x | 8 - 2,5 | grey | 56006 |
| | | | 1 x | crimping tool | | 05141 |
| **05146** | 235 x 185 x 47 | Insulated cable end sleeves in usual trade design | 100 x | 8 - 0,5 | orange | 56045 |
| | | in a plastic suitcase with 5 little and 1 tool partition | 100 x | 8 - 0,75 | white | 56048 |
| | | and a handy crimping tool in a cross section range 0,25-6 mm² | 100 x | 8 - 1 | yellow | 56052 |
| | | with square crimping | 100 x | 8 - 1,5 | red | 56055 |
| | | | 100 x | 8 - 2,5 | black | 56058 |
| | | | 1 x | crimping tool | | 05141 |
| **05147** | 235 x 185 x 47 | Insulated cable end sleeves in usual trade design | 100 x | 8 - 0,5 | white | 56000 |
| | | in a plastic suitcase with 5 little and 1 tool partition | 100 x | 8 - 0,75 | grey | 56081 |
| | | and a handy crimping tool in a cross section range 0,25-6 mm² | 100 x | 8 - 1 | red | 56002 |
| | | with square crimping | 100 x | 8 - 1,5 | black | 56003 |
| | | | 100 x | 8 - 2,5 | blue | 56058 |
| | | | 1 x | crimping tool | | 05141 |
| **05148** | 235 x 185 x 47 | Insulated cable end sleeves in usual trade design | 100 x | 8 - 0,5 | white | 56000 |
| | | in a plastic suitcase with 5 little and 1 tool partition | 100 x | 8 - 1,5 | black | 56003 |
| | | and a handy crimping tool in a cross section range 0,25-6 mm² | 100 x | 8 - 2,5 | grey | 56006 |
| | | with square crimping | 50 x | 10 - 4 | orange | 56008 |
| | | | 40 x | 12 - 6 | green | 56010 |
| | | | 1 x | crimping tool | | 05141 |
| **05149** | 235 x 185 x 47 | Insulated cable end sleeves in usual trade design | 100 x | 8 - 0,5 | orange | 56045 |
| | | in a plastic suitcase with 5 little and 1 tool partition | 100 x | 8 - 1,5 | red | 56055 |
| | | and a handy crimping tool in a cross section range 0,25-6 mm² | 100 x | 8 - 2,5 | blue | 56058 |
| | | with square crimping | 50 x | 10 - 4 | grau | 56061 |
| | | | 40 x | 12 - 6 | black | 56064 |
| | | | 1 x | crimping tool | | 05141 |
| **05150** | 235 x 185 x 47 | Insulated cable end sleeves in usual trade design | 100 x | 8 - 0,5 | white | 56000 |
| | | in a plastic suitcase with 5 little and 1 tool partition | 100 x | 8 - 1,5 | black | 56003 |
| | | and a handy crimping tool in a cross section range 0,25-6 mm² | 100 x | 8 - 2,5 | blue | 56058 |
| | | with square crimping | 50 x | 10 - 4 | grey | 56051 |
| | | | 40 x | 12 - 6 | yellow | 56084 |
| | | | 1 x | crimping tool | | 05141 |
| **05151** | 235 x 185 x 47 | Insulated cable end sleeves in usual trade design | 100 x | 2 x 0,5 | white | 57000 |
| | | in a plastic suitcase with 5 little and 1 tool partition | 100 x | 2 x 0,75 | grey | 57001 |
| | | and a handy crimping tool in a cross section range 0,25-6 mm² | 100 x | 2 x 1 | red | 57003 |
| | | with square crimping | 75 x | 2 x 1,5 | black | 57005 |
| | | | 50 x | 2 x 2,5 | blue | 57007 |
| | | | 1 x | crimping tool | | 05141 |

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.10 Crimp- and plug connectors as well as insulating sleeves and terminal blocks

Function of crimp- and plug connectors is to realize an electrical connection which can be separated and reconstituted again. Also in this product field druseidt offers a wide range of DIN-certified as well as products in special design. Such products are complemented by the delivering of different terminal blocks, insulating sleeves and housings.

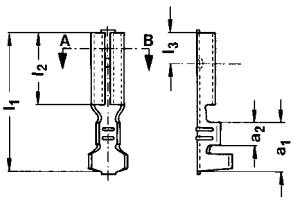
The uninsulated tabs and receptacles consisting out of brass are suitable for the following temperature range: uncoated up to + 90° C, tin-plated up to + 100° C, silver-plated up to + 110° C, connectors consisting out of nickel-plated steel up to + 250° C. The crimping operations are carried out with special dies for uninsulated open barrel terminals which realize the contact and insulation crimping in one step. To guarantee a perfect and corrosion resistant crimp-connection it is important to pay attention of the right tool selecting. Recommended crimping tools as well as detailed technical information are contained on catalogue pages 154-157 resp. inside of the technical appendix.

Please notice, that all crimping operations will be done only with the right tools resp. suitable compression dies.

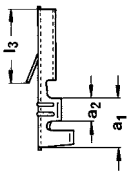
Crimping design:
Double crimp
for open barrel terminals

## Receptacles 2,8 mm

Material: brass
Surface: uncoated or tinned




A - B

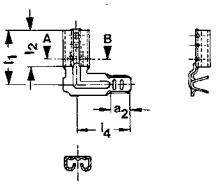



**04347 vz with tabs**

| Part-No. uncoated | Part-No. tinned | cross-section mm² | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | $L_3$ | $a_1$ | $a_2$ | locking point | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **design DIN 46247 part 1** | | | | | | | | | | | | pages no. 153, 155-157 |
| - | **04351 vz** | 0,1 - 0,25 | 0,8 | - | 14 | 6,3 | 3,3 | 5 | 2 | x | 0,20 | |
| **04360** | **04360 vz** | 0,5 - 1 | 0,5 | A 2,8-1 | | | | 5,5 | 2,5 | x | 0,23 | |
| **04361** | **04361 vz** | 0,5 - 1 | 0,8 | B 2,8-1 | | | | 5,5 | 2,5 | x | 0,23 | |
| **design DIN 46330 part 2 design A** | | | | | | | | | | | | |
| - | **04356 vz** | 0,5 - 1 | 0,5 | - | 12,5 | 5 | 3,3 | 5 | 2,8 | x | 0,25 | |
| - | **04358 vz** | 0,5 - 1 | 0,8 | A 2,8-1 | | | | 5,5 | 2,5 | x | 0,25 | |
| **design DIN 46340 part 1 with tabs** | | | | | | | | | | | | |
| - | **04347 vz** | 0,5 - 1 | 0,5 | A 2,8-1 | 14 | 6,3 | 5,6 | 5,5 | 2,5 | - | 0,24 | |

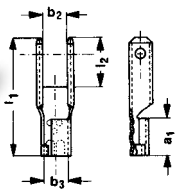
## Tab connectors 2,8 mm

Material: brass
Surface: tinned

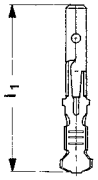


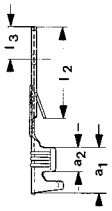

A - B

**04245 vz**




**04300 vz**



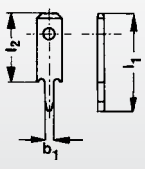




**04305 vz**

| Part-No. tinned | cross-section mm² | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | $L_3$ | $L_4$ | $a_1$ | $a_2$ | $b_2$ | $b_3$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Flat tab receptacles in flag type design** | | | | | | | | | | | | pages no. 153, 155-157 |
| **04245 vz** | 0,5 - 1 | 0,5 | 9,35 | 5 | - | 7,2 | - | 2,5 | - | - | 0,27 | |
| **Multiple tabs** | | | | | | | | | | | | |
| **04300 vz** | - | 0,8 | 16 | 6,7 | - | - | 5 | - | 3,2 | 3,1 | 0,56 | |
| **Flat tab connector with additional tab to engage in housings** | | | | | | | | | | | | |
| **04305 vz** | 0,5 - 1 | 0,8 | 22,5 | 12,7 | 2,2 | - | 6 | 3,2 | - | - | 0,42 | |

## Tabs 2,8 mm

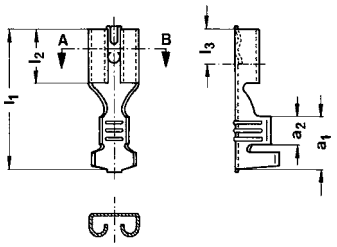
for soldering into PC-boards
Material: brass
Surface: tinned



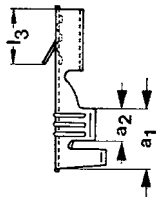

| Part-No. tinned | tab-thickness mm | dimensions mm $b_1$ | $L_1$ | $L_2$ | weight kg/‰ pcs. |
|---|---|---|---|---|---|
| **04428 vz** | 0,8 | 0,9 | 10,5 | 6,5 | 0,14 |

## Receptacles 4,8 mm

Material: brass
Surface: uncoated or tinned




A - B

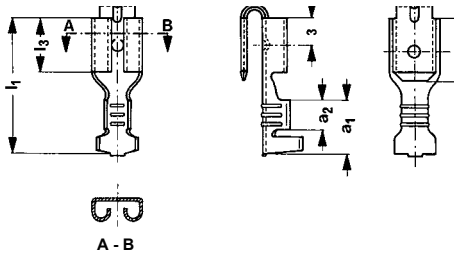



**04296 vz with add. tab to engage in housings**

| Part-No. uncoated | Part-No. tinned | cross-section mm² | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | $L_3$ | $a_1$ | $a_2$ | locking point | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **design DIN 46247 part 2** | | | | | | | | | | | | pages no. 153, 155-157 |
| **04285** | **04285 vz** | 0,5 - 1 | 0,5 | - | 15,6 | 6 | 3,8 | 6 | 3,4 | x | 0,50 | |
| **04287** | **04287 vz** | | 0,8 | 4,8 - 1 | | | | | | x | 0,50 | |
| **-** | **04292 vz** | 1,5 - 2,5 | 0,8 | 4,8 - 2,5 | | | | | | x | 0,54 | |
| **design with tabs to engage in housings** | | | | | | | | | | | | |
| **-** | **04296 vz** | 0,5 - 1 | 0,8 | - | 15,8 | 6 | 5,5 | 6 | 3,4 | - | 0,50 | |

## Multiple receptacles 4,8 mm

Material: brass
Surface: tinned



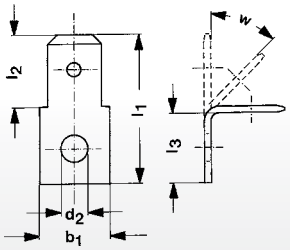

A - B

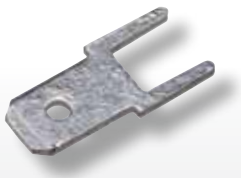
| Part-No. tinned | cross-section mm² | tab-thickness mm | dimensions mm L1 | L2 | L3 | a1 | a2 | locking point | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **11720 vz** | 0,5 - 1 | 0,8 | 15,6 | 7 | 6 | 6 | 3,4 | x | 0,68 | pages no. 153, 155-157 |
| **11725 vz** | 1,5 - 2,5 | 0,8 | 15,6 | 7 | 6 | 6 | 3,4 | x | 0,70 | |

## Tabs 4,8 mm

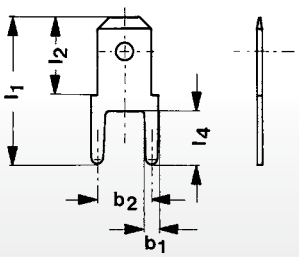
Material: brass
Surface: tinned

**04332 vz**



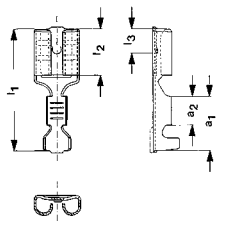
**04340 vz**




| Part-No. tinned | tab-thickness mm | dimensions mm $b_1$ | $b_2$ | $d_2$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | w | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|---|
| **for screwing** | | | | | | | | | | |
| **04332 vz** | 0,8 | 6,5 | - | 4,3 | 17,5 | 7 | 7,5 | - | 45° | 0,60 |
| **for soldering into PC-boards** | | | | | | | | | | |
| **04340 vz** | 0,8 | 1,2 | 5 | - | 13,5 | 7 | - | 5 | - | 0,38 |

## Receptacles 6,3 mm

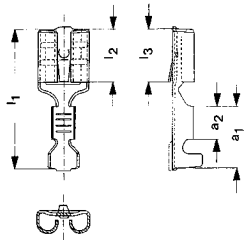
DIN 46247 part 3 with locking point
Material: brass or steel
Surface: uncoated ,tinned or nickel plated




| Part-No. brass uncoated | Part-No. brass tinned | Part-No. steel nickel plated | cross-section mm² | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | $L_3$ | $a_1$ | $a_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **04870** | **04870 vz** | **04872** | 0,5 - 1 | 0,8 | 6,3 - 1 | 19,2 | 7,4 | 4 | 8,5 | 4,5 | 0,75 | pages no. 153, 155-157 |
| **04875** | **04875 vz** | **04877** | 0,75 - 1,5 | | - | | | | | | 0,89 | |
| **04878** | **04878 vz** | **04880** | 1,5 - 2,5 | | 6,3 - 2,5 | | | | | | 0,92 | |
| **04883** | **04883 vz** | **04885** | 4 - 6 | | 6,3 - 6 | | | | | | 0,98 | |

## Receptacles 6,3 mm

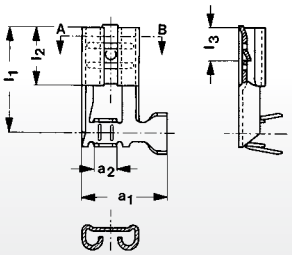
DIN 46340 part 3 with tabs to engage into housings
Material: brass
Surface: uncoated or tinned



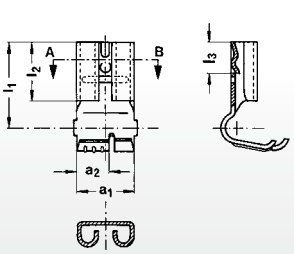

| Part-No. uncoated | Part-No. tinned | cross-section mm² | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | $L_3$ | $a_1$ | $a_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **04886** | **04886 vz** | 0,5 - 1 | 0,8 | A 6,3 - 1 | 19,2 | 7,4 | 7 | 8,5 | 4,5 | 0,70 | pages no. 153, 155-157 |
| **04888** | **04888 vz** | 1,5 - 2,5 | | A 6,3 - 2,5 | | | | | | 0,78 | |
| **04890** | **04890 vz** | 4 - 6 | | A 6,3 - 6 | | | | | | 0,88 | |
| **04892** | **04892 vz** | 0,5 - 1 | 0,8 | B 6,3 - 1 | 19,2 | 7,4 | 7 | 8,5 | 4,5 | 0,70 | |
| **04894** | **04894 vz** | 1,5 - 2,5 | | B 6,3 - 2,5 | | | | | | 0,78 | |
| **04896** | **04896 vz** | 4 - 6 | | B 6,3 - 6 | | | | | | 0,88 | |
| DIN type B Part-No. 04892-96 with additional locking point | | | | | | | | | | | |

## Receptacles 6,3 mm

DIN 46346 part 3 design A + B
Flag type
Material: brass
Surface: uncoated or tinned




**A - B**
**04945/47**

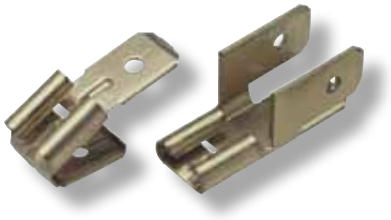


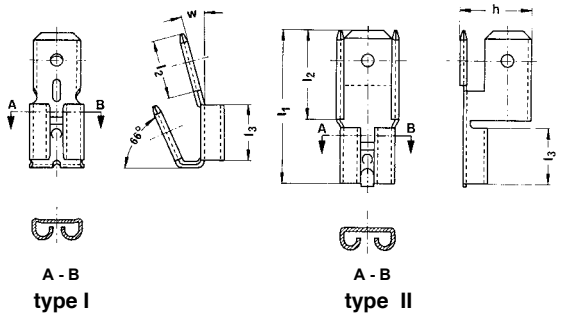

**A - B**
**04940**

| Part-No. uncoated | Part-No. tinned | cross-section mm² | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | $L_3$ | $a_1$ | $a_2$ | locking point | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **04945** | **04945 vz** | 0,5 - 1 | 0,8 | A 6,3 - 1 | 12,5 | 7,4 | 4 | 11 | 3,5 | x | 0,81 | 30480 page no. 155 |
| **04947** | **04947 vz** | 1,5 - 2,5 | | A 6,3 - 2,5 | 13,85 | | | | | x | 0,84 | on request |
| **04940** | **04940 vz** | 0,5 - 1,5 | 0,8 | B 6,3 - 1,5 | 11 | 7,4 | 4 | 7,5 | 4 | x | 0,84 | 30481 page no. 155 |

## Multiple tabs 6,3 mm

Dimensions in the tab sector DIN 46244 part 1
Material: brass
Surface: uncoated or tinned



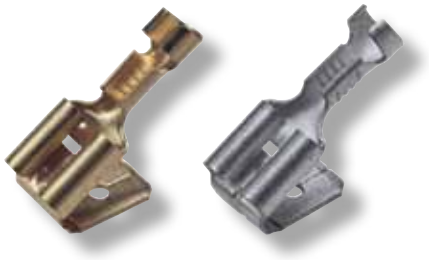


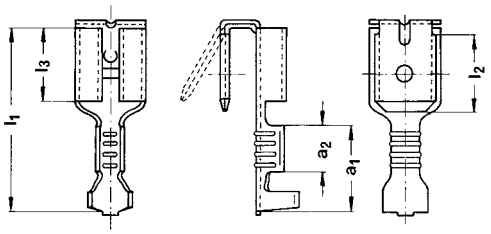

| Part-No. uncoated | Part-No. tinned | type | tab-thickness mm | dimensions mm L1 | L2 | L3 | h | w | locking point | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|---|
| **04585*** | **04585 vz*** | I | 0,8 | - | 8 | 7,5 | - | 15° | - | 1,14 |
| **04588** | **-** | II | | 20,5 | 12 | 7,4 | 9,6 | - | x | 1,85 |

Part.-No. 04585/04585 vz = design in accordance with DIN 46347

## Multiple tabs 6,3 mm

DIN 46345 part 1
Material: brass
Surface: uncoated or tinned

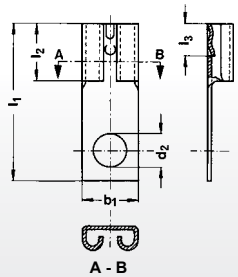





| Part-No. uncoated | Part-No. tinned | cross-section mm² | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | $L_3$ | $a_1$ | $a_2$ | w | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **04605** | **04605 vz** | 0,5 - 1 | 0,8 | 6,3 - 1 | 20 | 8 | 7,4 | 8,8 | 4,7 | 30° | 1,12 | pages no. 153, 155-157 |
| **04607** | **04607 vz** | 1,5 - 2,5 | | 6,3 - 2,5 | | | | | | | 1,14 | |

## Receptacles 6,3 mm

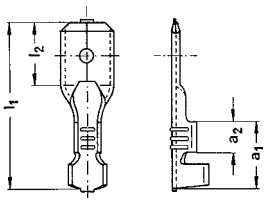
Material: brass
Surface: tinned




| Part-No. | tab-thickness mm | dimensions mm $d_2$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $b_1$ | locking point | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|
| **04980 vz** | 0,8 | 3,1 | 20,5 | 7,5 | 4 | - | 7,5 | x | 0,84 |
| **04982 vz** | | 4,3 | | | | | | x | 0,83 |

## Tabs 6,3 mm

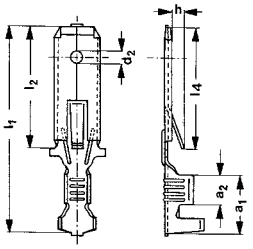
DIN 46248 part 3, design A
Material: brass
Surface: tinned




| Part-No. | cross-section mm² | tab-thickness mm | DIN-size | dimensions mm $L_1$ | $L_2$ | $a_1$ | $a_2$ | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|
| **04790 vz** | 0,5 - 1 | 0,8 | A 6,3 - 1 | 20 | 8,8 | 8,5 | 4,6 | 0,58 | pages no. 153, 155-157 |
| **04792 vz** | 1,5 - 2,5 | | A 6,3 - 2,5 | | | | | 0,66 | |

## Tabs 6,3 mm

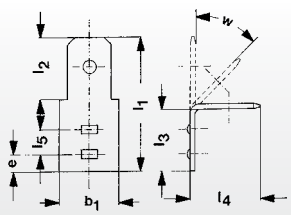
with tabs to engage into housings
Material: brass
Surface: tinned




| Part-No. | cross-section mm² | tab-thickness mm | dimensions mm $d_2$ | $L_1$ | $L_2$ | $L_4$ | $a_1$ | $a_2$ | h | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **04801 vz** | 0,5 - 1 | 0,8 | - | 28 | 16 | 15,5 | 8,2 | 4 | 2,6 | 0,83 | pages no. 153, 155-157 |
| **04802 vz** | 1,5 - 2,5 | | 1,65 | | | | | | | 0,92 | |
| **04804 vz** | 4 - 6 | | 1,65 | | | | | | | 1,01 | |

## Tabs 6,3 mm

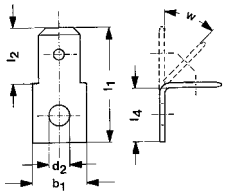
for welding connection
Dimensions in the tab sector DIN 46244 part 1
Material: steel
Surface: nickel plated




| Part-No. | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | $L_3$ | $L_4$ | $L_5$ | $b_1$ | $b_2$ | e | h | w | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **04538** | 0,8 | 19 | 8 | 9,5 | 9,5 | 3,5 | 8 | 6 | 2,5 | - | 45° | 0,89 |
| **04540** | | | | 7,7 | 10,3 | | | | | - | 90° | 0,89 |

## Tabs 6,3 mm

Dimensions in the tab sector DIN 46244 part 1
Material: brass
Surface: uncoated or tinned

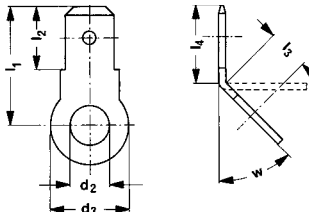



| Part-No. uncoated | Part-No. tinned | type | tab-thickness mm | dimensions mm $d_2$ | $L_1$ | $L_2$ | $L_4$ | $b_1$ | w | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|---|
| - | **04686*** | I | 0,8 | - | 19 | 8 | - | 8 | - | 0,91 |
| - | **04630 vz**** | | | 4,3 | | | - | | - | 0,86 |
| - | **04632 vz** | | | 5,3 | | | - | | - | 0,80 |
| - | **04637 vz** | II | 0,8 | 3,2 | 19 | 8 | 8 | 8 | 45° | 0,85 |
| - | **04645 vz** | | | 4,1 | | | 8 | | | 0,85 |
| - | **04651 vz**** | | | 4,3 | | | 8,5 | | | 0,85 |
| **04660** | **04660 vz** | | | 5,3 | | | 8 | | | 0,80 |

* Part-No. 04686 = material steel nickel plated
** Part-No. 04630 vz und 04651 vz = design nach DIN 46342 Teil 1 design A+B

## Tabs 6,3 mm

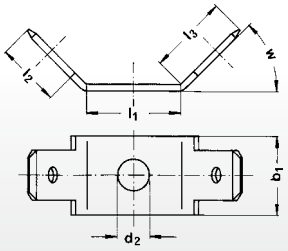
Dimensions in the tab sector DIN 46244 part 1
Material: brass
Surface: tinned




| Part-No. | tab-thickness mm | dimensions mm $d_2$ | $d_3$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | w | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|
| **04707 vz** | 0,8 | 6,3 | 17 | 18,5 | 8 | 8,5 | 10 | 45° | 1,70 |
| **04710 vz** | | 8,4 | | | | | | | 1,58 |
| **04711 vz** | | 10,5 | | | | | | | 1,33 |

## Tabs 6,3 mm

Dimensions in the tab sector DIN 46244 part 1
Material: brass or steel
Surface: tinned or nickel plated

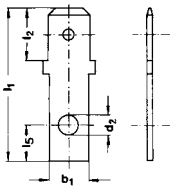



| Part-No. | tab-thickness mm | dimensions mm $d_2$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $b_1$ | w | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|
| **04515 vz** | 0,8 | 4,3 | 12 | 8 | 9,95 | - | 10 | 45° | 1,60 |
| **04518 vz** | | 5,2 | | | | - | | | 1,53 |
| **11915*** | 0,8 | 4,2 | 12 | 8 | 9,95 | 8 | 10 | 45° | 1,49 |

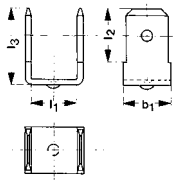
* Part-No. 11915 = material steel nickel plated

## Tabs 6,3 mm

Dimensions in the tab sector DIN 46244 part 1
Material: brass or steel
Surface: tinned or nickel plated



type I

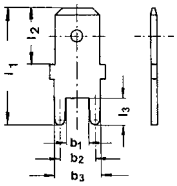


type II

| Part-No. tinned | type | tab-thickness mm | dimensions mm $d_2$ | $L_1$ | $L_2$ | $L_3$ | $L_5$ | $b_1$ | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|---|
| **04850 vz** | I | 0,8 | 3,1 | 23,2 | 8 | 5,5 | 5,5 | 6 | 0,92 |
| **04527*** | II | | - | 7,2 | 8 | 11,5 | - | 7 | 1,30 |
| * Part-No. 04527 material steel nickel plated, with weld point instead of drilling (contrary to photo) | | | | | | | | | |

## Tabs 6,3 mm

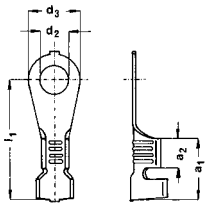
for soldering into PC boards
Dimensions in the tab sector DIN 46244 part 1
Material: brass S
urface: tinned



| Part-No. tinned | tab-thickness mm | dimensions mm $L_1$ | $L_2$ | $L_3$ | $b_1$ | $b_2$ | $b_3$ | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|---|---|
| **04721 vz** | 0,8 | 16,5 | 8 | 4 | 3,5 | 5 | 6,4 | 0,65 |

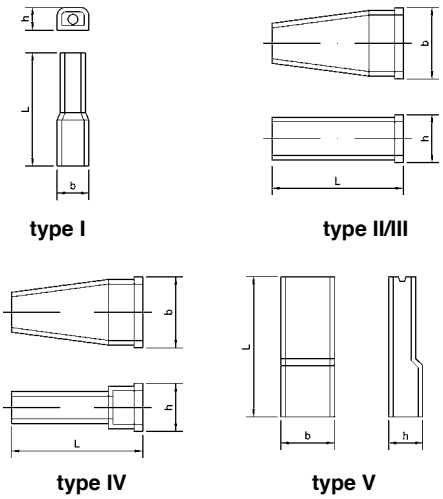
## Ring terminals 0,5-6 mm²

in acc. with DIN 46225 design A
Material: brass
Surface: uncoated or tinned



| Part-No. uncoated | Part-No. tinned | cross-section mm² | DIN Größe | dimensions mm $a_1$ | $a_2$ | $d_2$ | $d_3$ | $L_1$ | weight kg/ ‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|---|---|
| **04058** | **04058 vz** | 0,5 - 1 | A4 - 1 | 9 | 4,5 | 4,3 | 8 | 17 | 0,73 | on request |
| **04060** | **04060 vz** | | A5 - 1 | | | 5,3 | 9,5 | 17,5 | 0,73 | |
| **04063** | **04063 vz** | | A6 - 1 | | | 6,5 | 12 | 22 | 1,00 | |
| **04070** | **04070 vz** | 1,5 - 2,5 | A4 - 2,5 | 9 | 4,5 | 4,3 | 8 | 18,3 | 0,85 | |
| **04072** | **04072 vz** | | A5 - 2,5 | | | 5,3 | 9,5 | 17,5 | 0,87 | |
| **04074** | **04074 vz** | | A6 - 2,5 | | | 6,5 | 12 | 22 | 1,10 | |
| **-** | **04076 vz** | | A8 - 2,5 | | | 8,4 | 14 | 21 | 1,15 | |
| **-** | **04080 vz** | 4 - 6 | A4 - 6 | 11 | 4,5 | 4,3 | 8 | 21,3 | 1,70 | |
| **-** | **04083 vz** | | A5 - 6 | | | 5,3 | 9,5 | 20,5 | 2,15 | |
| **-** | **04085 vz** | | A6 - 6 | | | 6,5 | 12 | 25 | 2,10 | |

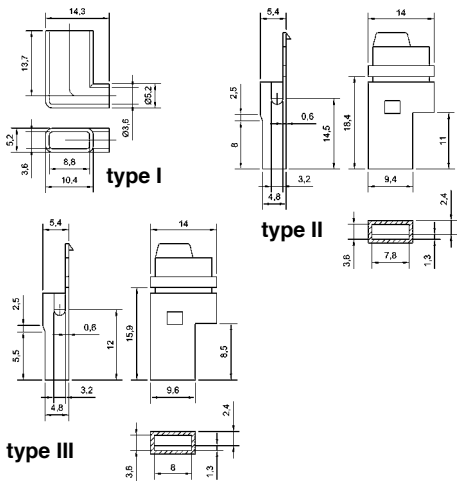
## Insulating sleeves 2,8/4,8/6,3 mm
for tabs and receptacles



| Part-No. | type | application | cable-Ø max. mm | dimensions mm L | b | h | material |
|---|---|---|---|---|---|---|---|
| **03696** | I | receptacles 2,8 mm | 2,5 | 19,5 | 5,5 | 3,5 | PE |
| **03697** | | | 2,8 | | | | soft PVC |
| **03699** | II | receptacles 4,8 mm | 3,2 | 21 | 8 | 4,5 | PE |
| **03703** | III | receptacles 6,3 mm | 3,2 | 25 | 9,5 | 5 | PE |
| **03707** | IV | tabs 6,3 mm | 3,2 | 23 | 12,5 | 8,5 | PE |
| **03708** | V | receptacles 6,3 mm | 3,6 | 24 | 9,3 | 8 | PA |

Nature colour is standard. Other colours on request. By using a combination of type III and IV you get a fully insulated connection consisting of receptacle and tab. Part-No. 03708 suitable for application after crimping.

## Insulation sleeves 6,3 mm
for flag type receptacles



| Part-No. | type | application | cable-Ø max. mm | material | colour |
|---|---|---|---|---|---|
| **03709** | I | receptacles flag type 6,3 mm | 3,6 | soft PVC | black |
| **03710** | II | | 3,2 | PE | nature |
| **03711** | III | | 3,2 | PE | nature |

By using part-no. 03710/03711 it´s possible to mount them after crimping.

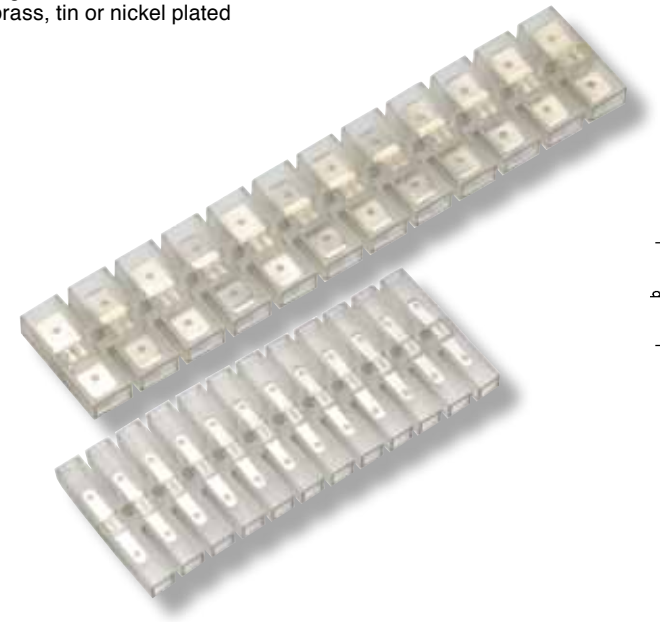
## Housings/Couplings
for tabs and receptacles 6,3 mm
Material: PA nature, self-extinguishing to UL 94, V-2

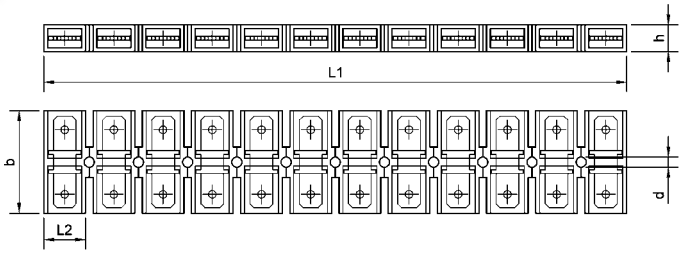
| Part-No. | pole-no. | application | rated voltage | length mm | width mm | height mm | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|
| **03715** | 2 | tab part | 400 V | 13 | 15,2 | 32 | 0,25 |
| **03716** | 2 | receptacle part | | 19 | 13 | 19 | 0,17 |
| **03717** | 4 | tab part | 400 V | 28 | 17 | 32 | 0,38 |
| **03718** | 4 | receptacle part | | 35,8 | 15,5 | 24 | 0,40 |
| **03719** | 6 | tab part | 400 V | 48 | 19 | 32 | 0,65 |
| **03720** | 6 | receptacle part | | 48 | 17,5 | 24 | 0,56 |
| **03721** | 8 | tab part | 400 V | 49 | 25 | 32 | 0,74 |
| **03722** | 8 | receptacle part | | 37,5 | 16,2 | 24 | 0,57 |

Rated voltage in accordance with DIN VDE 0110 pollution degree 2. Tabs and receptacles are arrested by their index lobes. The form of the case makes it impossible to plug the two halves together incorrectly. The pole identifiers are located on the plug openings for the metal parts.

## Tab-connectors

Moulding: PVC/PA
Tabs: brass, tin or nickel plated



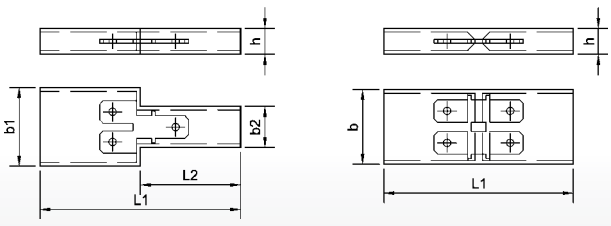



| Part-No. | tab connection mm | pole-no. | material | dimensions mm b | h | $L_1$ | $L_2$ | d | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|
| **03750** | 2,8 x 0,8 | 1 | PVC | 35 | 5,5 | 7,5 | - | 2,8 | 0,20 |
| **03751** | | 12 | | | | 88 | 7,5 | | 1,60 |
| **03752** | 4,8 x 0,8 | 1 | PVC | 28 | 7 | 12 | - | 3,2 | 0,25 |
| **03753** | | 12 | | | | 142 | 12 | | 2,80 |
| **03754** | 6,3 x 0,8 | 1 | PVC | 28 | 7 | 12 | - | 3,2 | 0,30 |
| **03755** | | 12 | | | | 142 | 12 | | 3,20 |
| **03756** | 2 x 2,8 x 0,8/ | 1 | PA | 46 | 7,5 | 10 | - | 3,1 | 0,25 |
| **03757** | 1 x 6,3 x 0,8 | 12 | | | | 147,5 | 12,5 | | 2,85 |

By using connectors 03750/51 and 03756/57 the receptacles are fully insulated. Part-No. 03756/57 offer the possibility to use 4 receptacles 2,8 x 0,8 mm or 2 receptacles 6,3 x 0,8 mm on each pole. It´s possible to cut the 12-pole connectors. Rated current 2,8 mm = 6 A, 4,8 mm = 16 A, 6,3 mm = 25 A. Rated Voltage 03750/51 = 250 V with insulating base acc. to DIN EN 60664-1, pollution degree 2. 03752-57 = 400 V with insulating base acc. to DIN EN 60664-1, pollution degree 3.

## Tab-connectors

Moulding: PVC
Tabs: brass, nickel coated



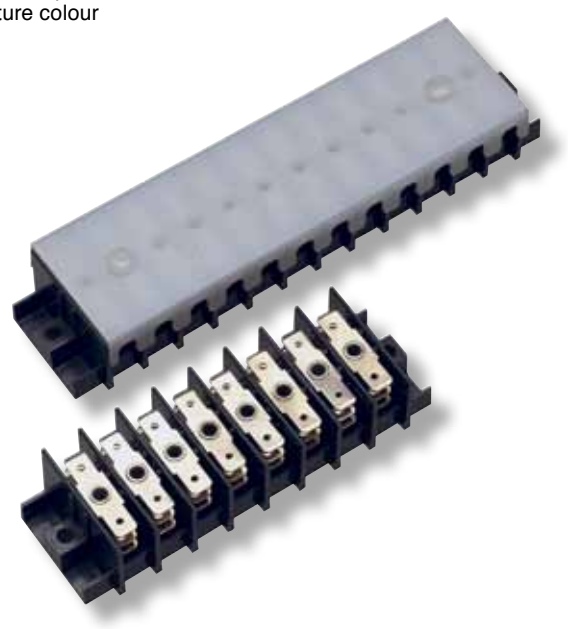

**03764** **03765**

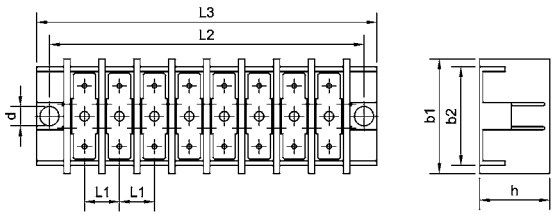
| Part-No. | tab connection mm | pole-no. | cable cross-section | dimensions mm $b_1$ | $b_2$ | h | $L_1$ | $L_2$ | weight kg/% Stck |
|---|---|---|---|---|---|---|---|---|---|
| **03764** | 1/2 x 6,3 x 0,8 | 1 | up to 6 mm² | 21 | 12 | 7,5 | 54 | 27 | 0,60 |
| **03765** | 2 x 6,3 x 0,8 | 1 | up to 6 mm² | 20 | - | 7 | 51 | - | 0,65 |

By using this parts the receptacles are fully insulated. Rated voltage 400 V acc. to DIN EN 60664-1, pollution degree 2.

## Multi-point tab-connectors

Moulding: PC, self extinguishing to UL 94, V-0
Tabs: brass, nickel plated
Cover: PA nature colour



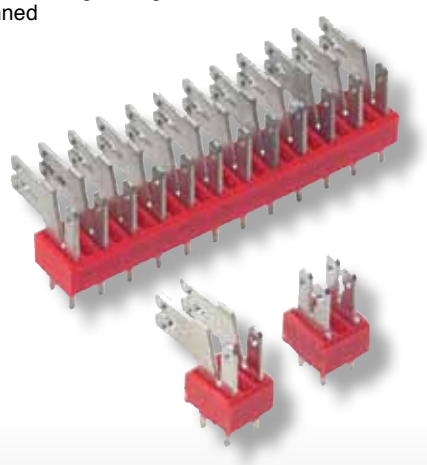


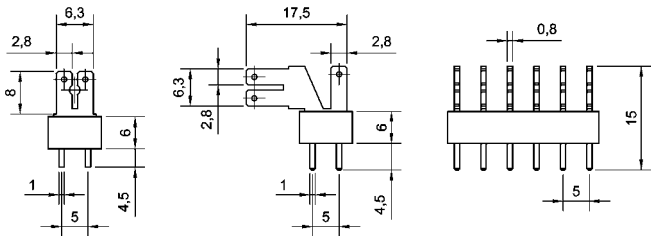

| Part-No. tab connector | Part-No. cover | tab connection | pole-no. | dimensions mm $b_1$ | $b_2$ | d | h | $L_1$ | $L_2$ | $L_3$ | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03785** | **03775** | 3 x 6,3 x 0,8 | 3 | 36 | 31 | 4,5 | 22 | 11 | 44 | 52 | 3,07 |
| **03786** | **03776** | | 4 | | | | | | 55 | 63 | 4,06 |
| **03787** | **03777** | | 5 | | | | | | 66 | 74 | 5,06 |
| **03788** | **03778** | | 6 | | | | | | 77 | 85 | 6,05 |
| **03789** | **03779** | | 8 | | | | | | 99 | 107 | 8,03 |
| **03790** | **03780** | | 10 | | | | | | 121 | 129 | 10,01 |
| **03791** | **03781** | | 12 | | | | | | 143 | 151 | 11,94 |
| **03783** | securing pins for covers | | | | | | | | | | |

Standard design 1 pole with 6 tabs 6,3 x 0,8 mm in parallel arrangement, other designs or pole numbers on request: Rated voltage by pollution degree 2 over voltage category III = 200 V Rated current max. 25 A

## Tab connectors 2,8 / 6,3 x 0,8 mm

for soldering into PC-boards
Moulding: PA, self extinguishing to UL 94, V-0
Tabs: brass, tinned





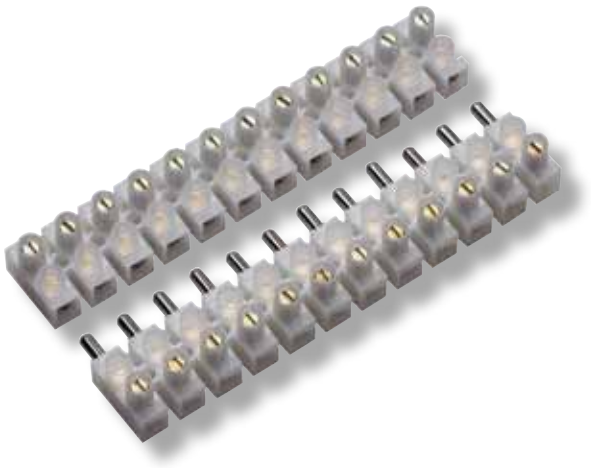

**type I** **type II**

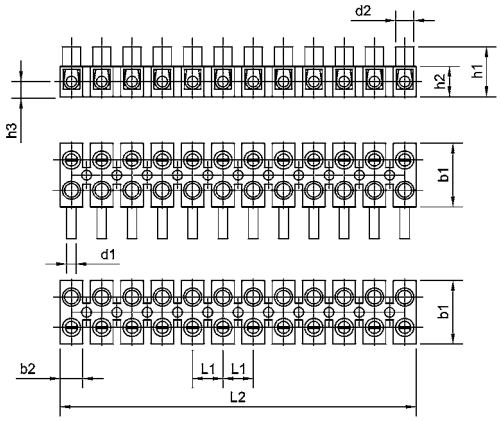
| Part-No. | type | pole-no. | rated voltage | length mm | width mm | weight kg/% pcs. |
|---|---|---|---|---|---|---|
| **13435** | I | 2 | 320/630 V | 8,5 | 9,5 | 0,15 |
| **13436** | | 6 | | 28,5 | | 0,50 |
| **13437** | | 12 | | 58,5 | | 0,95 |
| **13438** | II | 2 | 320/630 V | 8,5 | 9,5 | 0,22 |
| **13439** | | 6 | | 28,5 | | 0,65 |
| **13440** | | 12 | | 58,5 | | 1,30 |

Type I each pole suitable for 2 pcs. uninsulated tabs 2,8 x 0,8 mm or 1 pcs. 6 x 0,8 mm. Type II each pole 1 pcs. uninsulated tabs 2,8 x 0,8 mm and 2 pcs. 2,8 x 0,8 mm or 1 pcs. 6,3 x 0,8 mm. Rated voltage 320 V by pollution degree 2/3 and overvoltage category III, resp. 630 V by pollution degree 2 and overvoltage category II.
On request we deliver tab connectors with other pole-no. or with screen 7,5 or 10 mm.

## Plug-in terminal strips with wire protection

Moulding: PA, self-extinguishing to UL 94, V-2
Terminal body: brass, nickel coated
Wire protector: Sn-bronze-tinned
Screws: zinc plated steel, blue passivated



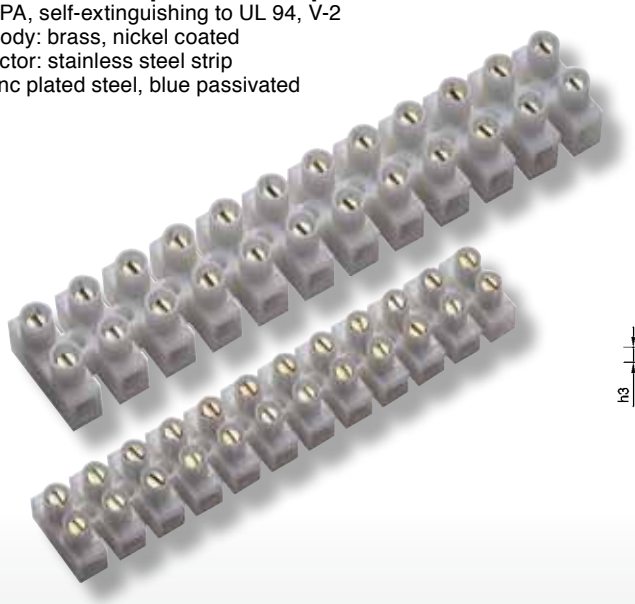


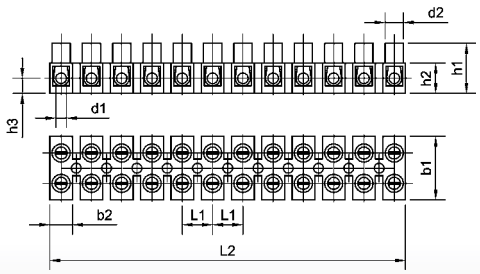

| Part-No. plug | Part-No. socket | cross-section range mm² | pole-no. | rated-current | dimensions mm $b_1$ | $b_2$ | $h_1$ | $h_2$ | $h_3$ | $d_1$ | $d_2$ | $L_1$ | $L_2$ | weight kg/% pcs. plug | socket |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **11990** | **11995** | bis 2,5 | 2 | 6 A | 16 | 7,25 | 12 | 7 | 3 | 2,8 | 5 | 8 | 15 | 0,50 | 0,40 |
| **11991** | **11996** | | 3 | | | | | | | | | | 23 | 0,70 | 0,50 |
| **11992** | **11997** | | 4 | | | | | | | | | | 31 | 0,90 | 0,70 |
| **11993** | **11998** | | 6 | | | | | | | | | | 47 | 1,40 | 1,10 |
| **11994** | **11999** | | 12 | | | | | | | | | | 94 | 2,70 | 2,10 |

Low profile design. Ideal for installations in which simple closing and opening of circuits is necessary (however without voltage applied). It´s possible to cut the connectors or to deliver different pole no. on request. Rated voltage 160 V by pollution degree 2/3 and overvoltage category III resp. 320 V by pollution degree 2 and overvoltage category II.

## Socket terminal strips with wire protection

Moulding: PA, self-extinguishing to UL 94, V-2
Terminal body: brass, nickel coated
Wire protector: stainless steel strip
Screws: zinc plated steel, blue passivated





| Part-No. | cross-section range mm² | pole-no. | rated-current | dimensions mm $b_1$ | $b_2$ | $h_1$ | $h_2$ | $h_3$ | $d_1$ | $d_2$ | $L_1$ | $L_2$ | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **12002** | bis 2,5 | 1 | 17,5 A | 16 | 6 | 12 | 7 | 3 | 2,8 | 5 | - | 7 | 0,20 |
| **12004** | | 12 | | | | | | | | | 8 | 94 | 2,10 |
| **12010** | bis 4 | 1 | 24 A | 21 | 6,5 | 16 | 9,7 | 4,9 | 3,4 | 6 | - | 8 | 0,30 |
| **12011** | | 12 | | | | | | | | | 10 | 117 | 3,60 |
| **12012** | bis 6 | 1 | 32 A | 22 | 8 | 18,5 | 11,2 | 5,4 | 4,1 | 6,8 | - | 9 | 0,40 |
| **12013** | | 12 | | | | | | | | | 11,5 | 135 | 5,20 |

It´s possible to cut the 12-pole connectors. On request it is possible to deliver connectors with different pole-no. or designs without wire protection. Rated voltage for the different designs on request.

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.11 Universal conductor terminals, earth- and neutral bars as well as insulators

In this chapter of the catalogue some universal conductor terminals and accessories for switch-box- and plant builders are described. Druseidt delivers clamps for screwless mounting of leadings, supple- and bus-bars as well as different kinds of earthing-bars resp. earthing material or insulators.

More electrical installation material such as machined bus- and supple-bars, bus-bar supports or flexible braided connectors, are listed in our further special catalogues or in the internet under www.druseidt.de

We offer a wide range of electrical accessories for switching cabinets and similar application. Please ask for our special catalogues.

## Joint clamps 2,5-35 mm²

Material: brass
Surface: uncoated

| Part-No. | cross-section mm² | size | connecting thread | weight kg/% pcs. |
|---|---|---|---|---|
| **02580** | 2,5 - 25 | M5-25 | M5 | 4,40 |
| **02581** | | M6-25 | M6 | 4,30 |
| **02578** | 4 - 35 | M8-35 | M8 | 7,15 |

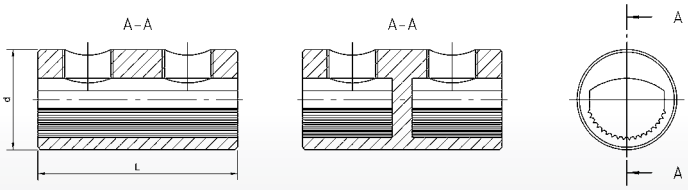
## Joint clamps 6-300 mm²

Material: brass
Surface: uncoated

| Part-No. | cross-section mm² | size | connecting thread | weight kg/% pcs. |
|---|---|---|---|---|
| **02583** | 6 - 70 | M10 | M10 | 18,90 |
| **02589** | 10 - 95 | M10-47 | M10 | 33,50 |
| **02584** | | M12 | M12 | 32,90 |
| **02587** | 16 - 150 | M12–52 | M12 | 43,10 |
| **02585** | | M16 | M16 | 42,20 |
| **02588** | 16 - 300 | M16-60 | M16 | 56,40 |
| **02586** | | M20 | M20 | 55,80 |

## Screwing connectors 0,6/1 kV

with tin plated brass shear off heads bolts
Material: high strength aluminium alloy, tinned




**03576** **03575**

| Part-No. | cross-sectional area mm² aluminium rm | sm | re | se | copper rm | sm | re | dimensions mm L | d | screws | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03575** | 25-120 | 50-120 | 25-120 | 25-150 | 25- 70 | 25- 95 | 16-35 | 70 | 26,5 | M16 x 1 | 11,70 |
| **03576** | 150-300 | 150-300 | 150-300 | 150-300 | 150-185 | 150-185 | - | 110 | 38 | M22 x 1,5 | 44,20 |

Part-No. 03575 with separator.

## Universal conductor terminals 1,5-120 mm²
with captive screws

| Part-No. | type | cross-section mm² | current load max. | compartment B x H mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **10545** | I | 1,5 - 16 | 180 A | 7,5 x 7,5 | 2,1 |
| **10546** | | 4 - 35 | 270 A | 10,5 x 11 | 4,6 |
| **10547** | | 16 - 70 | 400 A | 14 x 14 | 7,1 |
| **10548** | | 16 - 120 | 440 A | 17 x 15 | 10,8 |
| **10549** | II | 1,5 - 16 | 180 A | 7,5 x 7,5 | 2,3 |
| **10550** | | 4 - 35 | 270 A | 10,5 x 11 | 4,7 |
| **10551** | | 16 - 70 | 400 A | 14 x 14 | 7,4 |
| **10552** | | 16 - 120 | 440 A | 17 x 15 | 11,0 |

**Type I:** For bus bar-thickness 5 mm **Type II:** For bus bar-thickness 10 mm

This universal conductor terminals are suitable for connecting copper conductors to bus bars with thickness 5 or 10 mm without drilling.

## Brace Terminals

| Part-No. | type | for use with cross-section mm² | for use with supple-bars mm | for use with massive-bars mm | current load max. | compartment B x H | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|
| **10565** | I | 95 - 185 | - | - | 500 A | 30 x 25 mm | 23,7 |
| **10566** | | 150 - 300 | - | - | 600 A | 32 x 25 mm | 37,1 |
| **10568** | II | - | 5x24x1 bis 10x24x1 | 30 x 25 | 750 A | 30 x 25 mm | 25,0 |
| **10569** | | - | 5x24x1 bis 10x32x1 | 32 x 25 | 800 A | 32 x 25 mm | 37,1 |
| **10571** | III | 150 - 300 | - | - | 630 A | 30 x 25 mm | 33,6 |
| **10572** | | - | 5x24x1 bis 10x24x1 | 30 x 25 | 630 A | 30 x 25 mm | 39,6 |

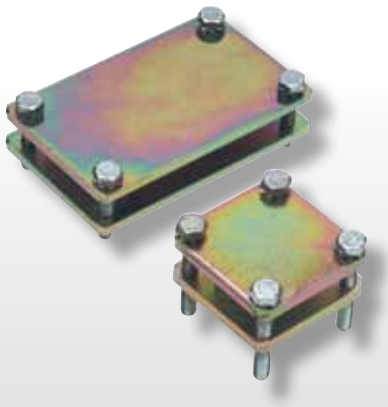
**Type I**: For connecting round conductors with bus bars 20 x 5 up to 30 x 10 mm without drilling.

**Type II:** For connecting insulated supple bars and solid bars with bus bars 20 x 5 up to 30 x 10 mm without drilling.

**Type III:** For switch gear connection with latch 30 mm width and drilling M12 and round- or flat connectors.

The jaw type terminals enable the bus bar to be gripped completely and conductors to be connected without drilling. By using aluminium connectors the connection is not maintenance free and must be inspected from time to time.

## Bus bar connectors
Material: St37K, zinc- and chrome plated



| Part-No. | dimensions mm compartment L x B | dimensions mm external dimensions $L_1$ x $B_1$ | screws | weight kg/% pcs. |
|---|---|---|---|---|
| **02220** | 18 x 18 | 35 x 39 | M 6 x 25 | 11,00 |
| **02221** | 33 x 33 | 50 x 50 | M 6 x 40 | 22,00 |
| **02222** | 35 x 53 | 57 x 75 | M 6 x 30 | 29,00 |
| **02223** | 41 x 41 | 60 x 60 | M 6 x 50 | 32,00 |
| **02224** | 42 x 64 | 60 x 85 | M 6 x 30 | 36,00 |
| **02225** | 53 x 53 | 75 x 75 | M 6 x 50 | 50,00 |
| **02226** | 42 x 82 | 63 x 103 | M 6 x 30 | 45,00 |
| **02227** | 64 x 64 | 80 x 80 | M 6 x 50 | 54,00 |
| **02228** | 82 x 82 | 120 x 120 | M 10 x 50 | 139,00 |
| **02229** | 102 x 102 | 140 x 140 | M 12 x 80 | 320,00 |

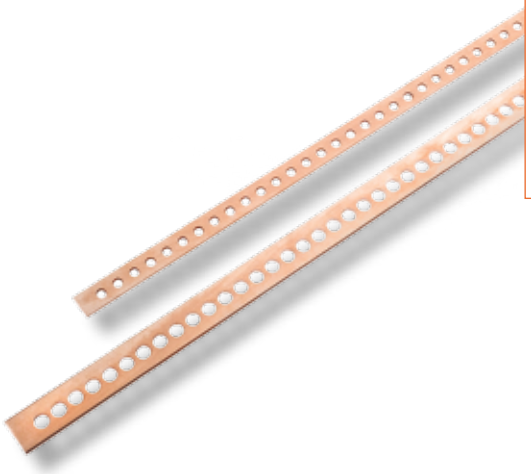
Bus bar connectors for connecting bus bars and supple bars.

## Earth and neutral bus bars

We manufacture and deliver earth and neutral bus bars consisting out of copper or brass with coated as well as uncoated surfaces.

Our standardized delivery program is completed by the manufacturing of designs according to clients wishes or drawings. We deliver up to a length of ca. 4 m with special hole pattern, threads or special coatings.

## Punched E-copper bars in customized design



We manufacture punched E-copper bars with and without screw threads beginning in a width from 15 mm and a thickness of 3 mm with coated or uncoated surface. We deliver bars coordinated with your application whether with round or slot holes, or with a hole combination of round and slot holes in different dimensions. Additionally to the delivery of mass produced articles we deliver individual items shortly and to a favourable price.

## Earth and neutral bus bars

with and without screws
Length: 1000 mm
Material: brass

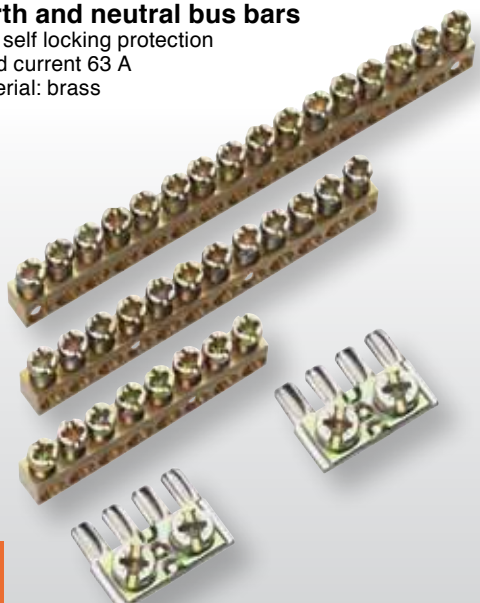
| Part-No. | | | | dimensions mm B x S | connections | distance hole to hole | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|
| type I | type II | type III | type IV | | | | |
| **02700** | **02715** | **02730** | **02745** | 10 x 2 | 62 x M 5 | 16 | 14,0 |
| **02701** | **02716** | **02731** | **02746** | | 90 x M 5 | 11 | 12,0 |
| **02702** | **02717** | **02732** | **02747** | 12 x 3 | 83 x M 4 | 12 | 26,0 |
| **02703** | **02718** | **02733** | **02748** | | 64 x M 5 | 15,5 | 29,0 |
| **02704** | **02719** | **02734** | **02749** | | 58 x M 6 | 17 | 27,0 |
| **02705** | **02720** | **02735** | **02750** | 15 x 3 | 105 x M 4 | 9,5 | 36,0 |
| **02706** | **02721** | **02736** | **02751** | | 86 x M 5 | 11,5 | 35,0 |
| **02707** | **02722** | **02737** | **02752** | | 50 x M 5 | 20 | 37,0 |
| **02708** | **02723** | **02738** | **02753** | | 50 x M 6 | 20 | 36,0 |
| **02709** | **02724** | **02739** | **02754** | 15 x 4 | 42 x M 8 | 24 | 45,0 |
| **02710** | **02725** | **02740** | **02755** | 25 x 5 | 31 x M10 | 34 | 98,0 |

Type I = bus bar brass uncoated, without screws
Type II = bus bar brass nickel uncoated, without screws
Type III = bus bar brass uncoated, with screws
Type IV = bus bar brass nickel coated, with screws

Steel-screws DIN 84 not mounted are standard. On request it is possible to deliver a mounted design or with screws made out of brass.

## Earth and neutral bus bars

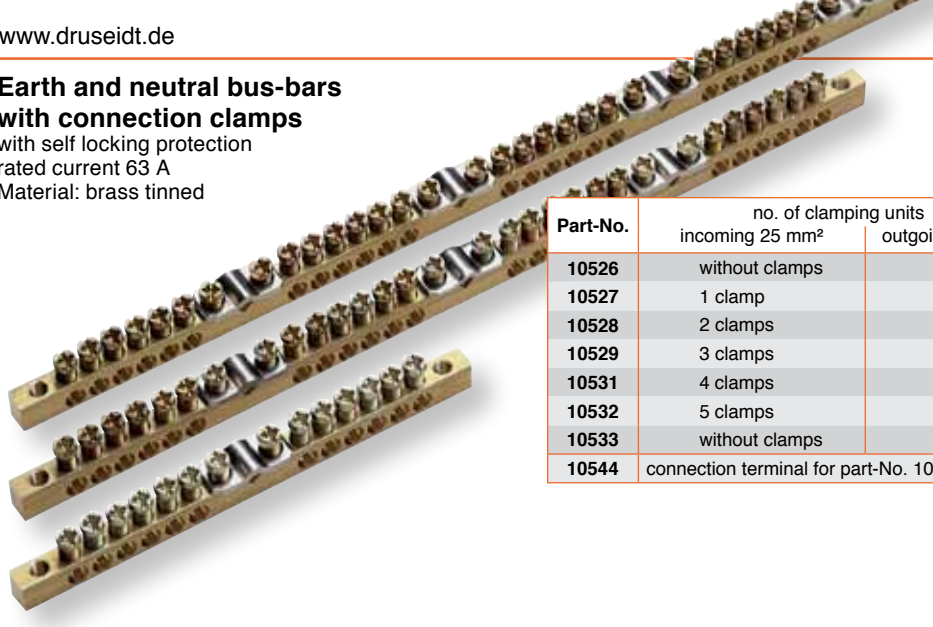
with self locking protection
rated current 63 A
Material: brass



| Part-No. | cross-section mm² | no. of clamping units | dimensions mm height | width | length | weight kg/% pcs. |
|---|---|---|---|---|---|---|
| **10535** | 10 | 8 | 9 | 6,5 | 51,5 | 2,5 |
| **10536** | | 12 | | | 77,5 | 3,7 |
| **10537** | | 16 | | | 103,5 | 5,8 |
| **10538** | | 24 | | | 155,0 | 8,1 |
| **10539** | | 151 | | | 1000,0 | 43,0 |
| **10541** | 35 | Connection terminal for Part-No. 10535-10539 | | | | 0,3 |

## Earth and neutral bus-bars with connection clamps

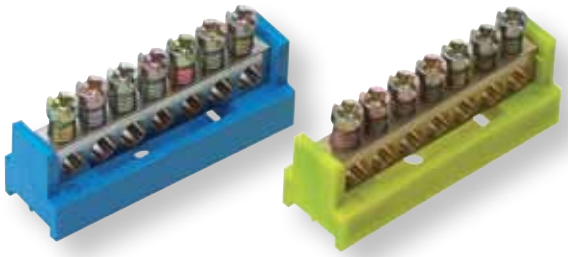
with self locking protection
rated current 63 A
Material: brass tinned



| Part-No. | no. of clamping units incoming 25 mm² | outgoing 10 mm² | dimensions mm height | width | length | weight kg/% pcs. |
|---|---|---|---|---|---|---|
| **10526** | without clamps | 6 | 9 | 6,5 | 61,5 | 2,8 |
| **10527** | 1 clamp | 12 | 9 | 6,5 | 124,0 | 6,1 |
| **10528** | 2 clamps | 18 | 9 | 6,5 | 186,5 | 9,4 |
| **10529** | 3 clamps | 24 | 9 | 6,5 | 249,0 | 12,9 |
| **10531** | 4 clamps | 30 | 9 | 6,5 | 311,5 | 16,4 |
| **10532** | 5 clamps | 36 | 9 | 6,5 | 374,0 | 19,4 |
| **10533** | without clamps | 96 | 9 | 6,5 | 1000,0 | 48,0 |
| **10544** | connection terminal for part-No. 10533 | | | | | 0,3 |

## Insulated earth and neutral terminals

rated current 63 A



| Part-No. | cross-section mm² | Klemmstellen | colour | weight kg/% pcs. |
|---|---|---|---|---|
| For flat bars 12 x 2 mm | | | | |
| **10555** | 10 | 7 | blue (neutral) | 2,8 |
| **10556** | | | yellow/green (earth wire) | |
| For click bars | | | | |
| **10557** | 10 | 7 | blue (neutral) | 2,8 |
| **10558** | | | yellow/green (earth wire) | |

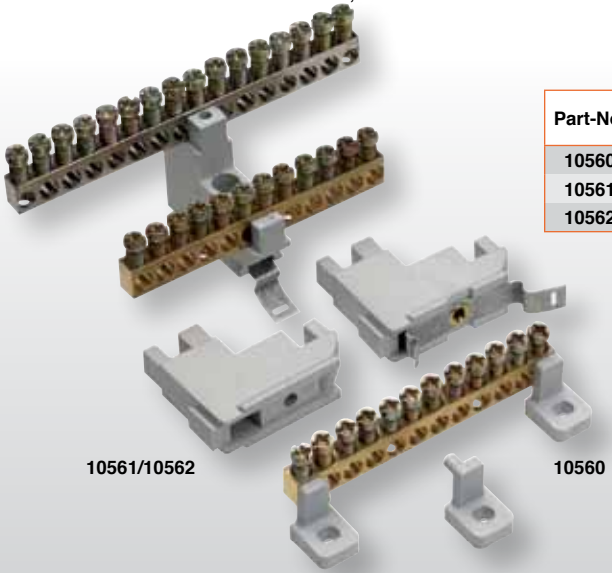
## Terminal supports

for earth and neutral bus-bars

| Part-No. | description | | weight kg/% pcs. |
|---|---|---|---|
| **02763** | Terminal support with movable socket top for bars from 6 x 6 up to 10 x 2 or 15 x 4 mm. | Measurement voltage: 500 V AC (VDE 0110 Gr. C). | 1,6 |

## Terminal supports

for earth and neutral bus-bars 9 x 6,5 mm



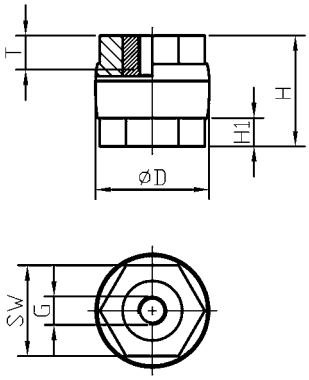
**10561/10562** **10560**

| Part-No. | mounting | weight kg/% pcs. |
|---|---|---|
| **10560** | screw connection | 0,1 |
| **10561** | screw connection | 0,7 |
| **10562** | snap connection | 0,8 |

## Standoff insulators
## made out of polyester resin material

in doubled hexagonal design
with threaded steel inserts
for indoor application

The supports described here are made of a glass fibre reinforced unsaturated polyester resin. The special characteristic is a doubled hexagonal design. So a hexagonal area is fixed at the top as well as at the bottom of the insulator. Therefore it is quick and easy to install or remove the insulators even under cramped conditions. This keeps installation costs down to a minimum.




| Part-No. | dimensions mm D | H | G | SW | T | $H_1$ | PS/kV | BWS/kV | F/kN | Z/kN | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03068 S** | 30 | 30 | M 6 | 24 | 8 | 9,5 | 5 | 0,75 | 3 | 6 | 5,70 |
| **03069 S** | | | M 8 | | | | | | | | 5,40 |
| **03070 S** | 30 | 40 | M 6 | | 10 | 10 | 5 | 1,00 | 4 | 8 | 7,30 |
| **03071 S** | 35 | 30 | M 6 | 30 | 8 | 10 | 5 | 0,75 | 4 | 7 | 6,50 |
| **03072 S** | | | M 8 | | | | | | 5 | 8 | 6,10 |
| **03073 S** | 40 | 40 | M 8 | 32 | 12 | 10,5 | 5 | 1,00 | 6 | 11 | 13,00 |
| **03074 S** | | | M 10 | | 11 | | | | | | 12,10 |
| **03075 S** | | | M 12 | | 10 | | | | | | 11,20 |
| **03080 S** | 40 | 50 | M 8 | 32 | 12 | 10,5 | 10 | 1,50 | 5 | | 16,50 |
| **13080 S** | | | M 10 | | 15 | | | | | 11 | 16,50 |
| **03081 S** | | | M 12 | | 13 | | | | 7 | | 13,80 |
| **13081 S** | 40 | 60 | M 8 | 32 | 12 | 11 | 10 | 1,50 | 4 | | 16,90 |
| **13082 S** | | | M 10 | | 15 | | | | | 11 | 17,60 |
| **03078 S** | 50 | 40 | M 10 | 41 | 11 | 13 | 5 | 1,00 | 8 | | 16,50 |
| **03079 S** | | | M 12 | | 10 | | | | 10 | 13 | 16,50 |
| **13083 S** | 50 | 50 | M 12 | 41 | 13 | 13,5 | 10 | 1,50 | 8 | | 20,00 |
| **03084 S** | 50 | 60 | M 10 | | 15 | | | | 6 | 13 | 24,10 |
| **03085 S** | | | M 12 | | 18 | | | | 7 | | 24,70 |
| **13084 S** | 60 | 60 | M 12 | 50 | 18 | 18,5 | 10 | 1,50 | 9 | 15 | 32,30 |
| **13085 S** | | | M 16 | | 17 | | | | 12 | 17 | 32,80 |

F = rated load on upper insulator edge
Z = tensile force
PS = testing voltage
BWS = operating voltage

## Technical data of the material

| | | |
|---|---|---|
| Density | DIN 53479 | 1,75 g/cm³ |
| Flexural Resistance | DIN 53452/ISO R 178 | 120 N/mm² |
| Impact Resistance | DIN 53455/ISO R 527 | 70 N/mm² |
| Impact Value | DIN 53453/ISO R 179 | 45 KJ/m² |
| Long Term/Operational Temperature | VDE 0304, Teil 21/IEC 216 | + 130° C |
| Rod Behaviour | VDE 0304, Teil 3 | Stufe BH 2 ≤ 10 |
| Behaviour in case of fire | UL 94 | V-0 |
| Surface Resistance | DIN 53482 | $10^{13}$ Ω |
| Throughout Resistance Dielectric | DIN 53482 | $10^{14}$ Ω . cm |
| Loss Factor | DIN 53483 | < 0,02 tan /50 Hz |
| Deposit Tracking | DIN IEC 112/VDE 0303 Teil 1 | CT 600 |
| Water Absorption | DIN 53495 | < 50 mg/1 d |
| Colour | - | brown |

The values in the table have been determined with our own standards based on DIN 53451 and combined with the standards for the respective materials for test purposes.

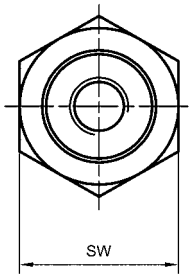
## Standoff insulators
## made out of polyester resin material

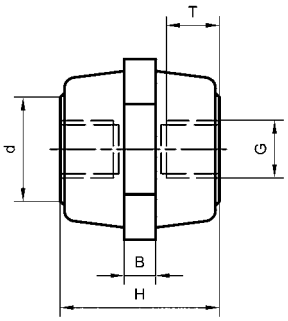
with spanner flat
for indoor application

Standoff insulators manufactures out of a glass fibre reinforced unsaturated polyester resin (UPE). The characteristic of the material is in accordance with DIN Typee 803. The compound is free of halogen with an excellent behaviour in case of fire (UL 94 V-0) and a very good strength of shape.

### Technical data of the material

| | | |
|---|---|---|
| Strength of shape | DIN 53462 | > 200° C |
| Behaviour in case of fire | UL 94 | Class V-0 |
| Density | DIN 53479 | 1,80 cm³ |
| Special throughout resistance | DIN 53482 | $10^{13}$ Ohm |
| Dielectric strength | DIN 53481 | 15 kV/mm |
| Deposit tracking | IEC 112 | CTI 600 |
| Inserts | steel zinc coated | |
| Colour | brown | |
| Temperature range | - 40° C up to +130° C | |




| Part-No. | dimensions mm H | SW | G | T | d | B | Md/Nm | F/kN | Z/kN | D/kN | BWS/kV | PWS/kV | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **06135** | 18 | 15 | M 4 | 6 | 11 | - | 3 | 1,0 | 2 | 12 | 1,0 | 5 | 0,70 |
| **06138** | 20 | 20 | M 5 | 7 | 14 | 5 | 5 | 1,3 | 3 | 20 | | | 1,20 |
| **06139** | 25 | 25 | M 5 | 7 | 16 | 6 | 15 | 1,5 | 3 | 20 | 1,0 | 10 | 2,40 |
| **06140** | | | M 6 | 8 | | | 15 | 1,5 | 5 | 35 | | | 2,40 |
| **06143** | 30 | 30 | M 6 | 8 | 20 | 6 | 20 | 2,5 | 6 | 45 | 1,0 | 15 | 3,80 |
| **06144** | | | M 8 | 9 | | | 40 | 3,0 | 12 | 60 | | | 5,40 |
| **06147** | 35 | 30 | M 6 | 8 | 20 | 6 | 20 | 2,0 | 6 | 45 | 1,0 | 15 | 4,50 |
| **06148** | | | M 8 | 9 | | | 40 | 3,5 | 12 | 60 | | | 6,00 |
| **06149** | | | M10 | 9 | | | 50 | 4,0 | 16 | 75 | | | 7,00 |
| **06150** | 35 | 40 | M 8 | 9 | 28 | 8 | 40 | 4,0 | 14 | 70 | 1,0 | 15 | 6,40 |
| **06151** | | | M10 | 14 | | | 50 | 4,5 | 16 | 80 | | | 7,00 |
| **06152** | 40 | 30 | M 6 | 8 | 20 | 6 | 20 | 1,5 | 6 | 45 | 2,0 | 20 | 5,00 |
| **06153** | | | M 8 | 9 | | | 40 | 3,0 | 12 | 60 | | | 6,60 |
| **06156** | 40 | 40 | M 8 | 9 | 28 | 8 | 50 | 5,0 | 14 | 90 | 2,0 | 20 | 10,00 |
| **06157** | | | M10 | 14 | | | 90 | 8,0 | 20 | 100 | | | 12,20 |
| **06158** | | | M12 | 14 | | | 100 | 10,0 | 22 | 120 | | | 13,50 |
| **06161** | 40 | 50 | M10 | 14 | 32 | 8 | 120 | 12,5 | 23 | 140 | 2,0 | 20 | 16,00 |
| **06162** | | | M12 | 14 | | | 200 | 12,5 | 28 | 180 | | | 17,00 |
| **06165** | 50 | 40 | M 8 | 9 | 28 | 8 | 50 | 5,0 | 14 | 90 | 3,0 | 25 | 12,00 |
| **06166** | | | M10 | 14 | | | 90 | 5,0 | 20 | 100 | | | 14,00 |
| **06167** | | | M12 | 18 | | | 100 | 6,0 | 22 | 120 | | | 16,00 |
| **06170** | 50 | 50 | M10 | 14 | 32 | 10 | 120 | 10,0 | 23 | 140 | 3,0 | 25 | 20,00 |
| **06171** | | | M12 | 18 | | | 200 | 10,0 | 28 | 180 | | | 21,50 |
| **06174** | 60 | 40 | M 8 | 9 | 28 | 8 | 50 | 4,0 | 14 | 90 | 3,0 | 25 | 14,00 |
| **06175** | | | M10 | 14 | | | 90 | 6,0 | 20 | 100 | | | 16,00 |
| **06176** | | | M12 | 18 | | | 120 | 6,0 | 20 | 100 | | | 18,00 |
| **06178** | 60 | 50 | M10 | 14 | 32 | 10 | 120 | 9,0 | 23 | 140 | 3,0 | 25 | 23,00 |
| **06179** | | | M12 | 18 | | | 200 | 11,0 | 28 | 180 | | | 25,00 |
| **06182** | 60 | 60 | M12 | 18 | 40 | 10 | 200 | 12,0 | 28 | 220 | 3,0 | 25 | 33,00 |
| **06183** | | | M16 | 20 | | | 300 | 15,0 | 32 | 240 | | | 35,00 |
| **06184** | | | M20 | 20 | | | 300 | 16,0 | 37 | 240 | | | 38,60 |
| **06185** | 80 | 60 | M10 | 14 | 40 | 12 | 200 | 11,0 | 32 | 220 | 3,0 | 25 | 41,00 |
| **06186** | | | M12 | 18 | | | 300 | 15,0 | 37 | 240 | | | 43,00 |
| **06187** | | | M16 | 20 | | | 300 | 15,0 | 37 | 240 | | | 45,00 |

Part No. 06135 Cylindrical design without spanner flat

SW = wrench size
Md = torque
F = rated load limit on upper insulator edge
Z = tensile force
D = compressive force
BWS = operating voltage (AC)
PWS = testing voltage (AC)

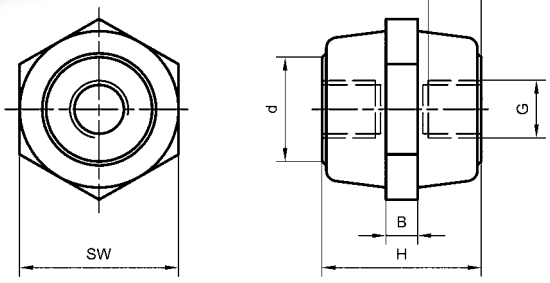
## Standoff insulators made out of Polyamide

with spanner flat for indoor applications

Standoff insulators manufactured out of reinforced, flame protected and heat stabilized Polyamide. The compound is free of halogen and Phosphor. The material can be converted efficiently and is characterized by his excellent values for tensile strength (Z) and the rated load limit on the upper insulator edge (F). The differences to the design made out of glass fibre reinforced unsaturated polyester resin are basically in the values for the behaviour in case of fire (class V2 to V-0) and the temperature range - 25° C up to + 120° C to - 40° C up to + 130° C.

### technical data

| | | |
|---|---|---|
| Behaviour in case of fire | UL 94 | Class V2 |
| Density | ISO 1183 | 1,45 cm³ |
| Special throughout resistance | IEC 60093 | $10^{10}$ Ohm |
| Dielectric strength | IEC 60243-1 | 25 kV/mm |
| Deposit tracking | IEC 60112 | CTI 550 |
| Colour | nature | |
| Inserts | steel zinc coated | |
| Temperature range | - 25° C bis +120° C | |




| Part-No. | dimensions mm | | | | | | Md/Nm | F/kN | Z/kN | D/kN | BWS/kV | PWS/kV | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | H | SW | G | T | d | B | | | | | | | |
| **06100** | 18 | 15 | M 4 | 6 | 11 | - | 3,3 | 1,0 | 2 | 12 | 1,0 | 5 | 0,60 |
| **06102** | 25 | 25 | M 5 | 7 | 16 | 6 | 15 | 2,0 | 3,0 | 20 | 1,0 | 10 | 2,00 |
| **06103** | | | M 6 | 8 | | | 15 | 2,0 | 5,0 | 35 | | | 2,00 |
| **06105** | 30 | 30 | M 6 | 8 | 20 | 6 | 20 | 3,0 | 6,0 | 45 | 1,0 | 15 | 3,00 |
| **06106** | | | M 8 | 9 | | | 40 | 4,0 | 12,0 | 60 | | | 5,00 |
| **06109** | 35 | 30 | M 6 | 8 | 20 | 6 | 20 | 5,0 | 6,0 | 45 | 1,0 | 15 | 5,00 |
| **06110** | | | M 8 | 9 | | | 40 | 5,0 | 12,0 | 60 | | | 6,00 |
| **06111** | | | M10 | 9 | | | 50 | 5,0 | 16,0 | 75 | | | 6,00 |
| **06112** | 35 | 40 | M 8 | 9 | 28 | 8 | 40 | 4,0 | 14,0 | 70 | 1,0 | 15 | 6,50 |
| **06113** | | | M10 | 14 | | | 50 | 4,5 | 16,0 | 80 | | | 6,70 |
| **06114** | 40 | 30 | M 6 | 8 | 20 | 6 | 20 | 1,5 | 6,0 | 45 | 2,0 | 20 | 7,40 |
| **06114/8** | | | M 8 | 9 | | | 40 | 5,0 | 12,0 | 60 | | | 7,80 |
| **06115** | 40 | 40 | M 8 | 9 | 28 | 8 | 50 | 7,0 | 14,0 | 90 | 2,0 | 20 | 8,00 |
| **06116** | | | M10 | 14 | | | 95 | 10,0 | 28,0 | 100 | | | 10,00 |
| **06117** | | | M12 | 18 | | | 105 | 12,0 | 30,0 | 120 | | | 10,00 |
| **06120** | 50 | 40 | M 8 | 9 | 28 | 8 | 50 | 5,0 | 14,0 | 90 | 3,0 | 25 | 10,00 |
| **06121** | | | M10 | 14 | | | 90 | 5,0 | 20,0 | 100 | | | 12,00 |
| **06122** | | | M12 | 16 | | | 100 | 6,0 | 22,0 | 120 | | | 14,00 |
| **06125** | 50 | 50 | M10 | 14 | 32 | 10 | 120 | 10,0 | 23,0 | 140 | 3,0 | 25 | 18,00 |
| **06126** | | | M12 | 18 | | | 200 | 10,0 | 28,0 | 180 | | | 19,50 |
| **06129** | 60 | 40 | M 8 | 9 | 28 | 8 | 50 | 4,0 | 14,0 | 90 | 3,0 | 25 | 12,00 |
| **06130** | | | M10 | 14 | | | 90 | 6,0 | 20,0 | 100 | | | 14,00 |
| **06131** | | | M12 | 18 | | | 120 | 6,0 | 20,0 | 100 | | | 14,80 |

Part-No. 06100 Cylindrical design without spanner flat

SW = wrench size
Md = torque
F = rated load limit on upper insulator edge
Z = tensile force
D = compressive force
BWS = operating voltage (AC)
PWS = testing voltage (AC)

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.12 High current plugs and sockets

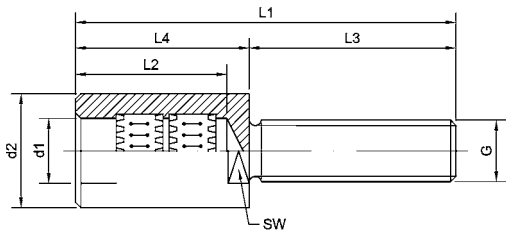
For ambitious application in the field of high current transfer druseidt offers different possibilities for pluggable solutions. Pluggable high current connectors are dividable electrical connecting elements. When using such elements it is not allowed to make the insertion/withdrawal operation under load or voltage. All insertion/withdrawal operations must be done in the no load state. The current transfer take place by a beryllium disc, which allows to transfer relative high current by working with smaller components.

Additionally to the described components in standard design we deliver and construct various kinds of customized solutions, coordinated with the individual application. Our engineering department would be glad to support your efforts in finding optimized solutions also for application in the range of some thousand amps.

Solderless crimped pluggable connections

## Sockets 35-1500 A

with thread connection
Material: brass silver plated

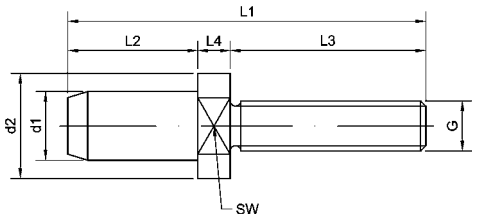



| Part-No. | rated-current | dimensions mm | | | | | | | | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | $d_1$ | $d_2$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | Sw | G | |
| **23810** | 35 A | 2 | 5,5 | 36 | 16,5 | 16 | 20 | 4 | M 3 | 0,40 |
| **23811** | 40 A | 3 | 6 | 40 | 16,5 | 20 | 20 | 5 | M 4 | 0,50 |
| **23812** | 65 A | 4 | 7 | 50 | 19,5 | 25 | 25 | 6 | M 5 | 0,90 |
| **23813** | 70 A | 5 | 8,5 | 50 | 19,5 | 25 | 25 | 7 | M 5 | 1,10 |
| **23814** | 100 A | 6 | 10 | 53 | 19,5 | 28 | 25 | 8 | M 6 | 1,50 |
| **23815** | 130 A | 8 | 14 | 78 | 34 | 36 | 42 | 11 | M 8 | 4,70 |
| **23816** | 200 A | 10 | 16 | 84 | 34 | 42 | 42 | 13 | M10 | 6,60 |
| **23817** | 230 A | 12 | 18 | 90 | 34 | 48 | 42 | 13 | M12 | 8,70 |
| **23818** | 300 A | 14 | 20 | 98 | 38 | 50 | 48 | 17 | M14 | 12,10 |
| **23819** | 350 A | 16 | 22 | 106 | 38 | 58 | 48 | 19 | M16 | 16,00 |
| **23820** | 400 A | 18 | 25 | 110 | 42 | 58 | 52 | 22 | M16 | 19,30 |
| **23821** | 500 A | 20 | 28 | 122 | 42 | 70 | 52 | 24 | M18 | 26,50 |
| **23822** | 700 A | 25 | 38 | 149 | 62 | 74 | 75 | 32 | M20 | 58,80 |
| **23823** | 900 A | 30 | 42 | 156 | 62 | 81 | 75 | 36 | M24 x 2 | 72,60 |
| **23824** | 1200 A | 35 | 48 | 165 | 62 | 90 | 75 | 41 | M30 x 2 | 105,70 |
| **23825** | 1500 A | 40 | 52 | 180 | 62 | 105 | 75 | 46 | M36 x 3 | 140,00 |

Sockets without snap-in lock. Suitable to screw into cable lugs, bus-bars, contact blocks or as socket to built into insulated housings for the slide-in rack technology. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

## Plugs 35-1500 A

with threat connection
Material: brass silver plated

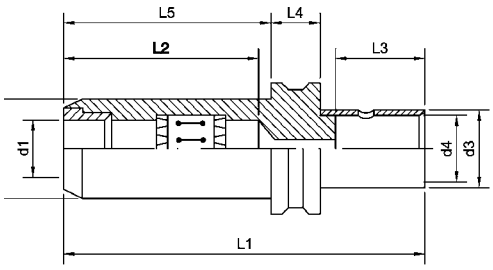



| Part-No. | rated-current | dimensions mm | | | | | | | | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | $d_1$ | $d_2$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | Sw | G | |
| **23830** | 35 A | 2 | - | 35,5 | 16,5 | 16 | 3 | 4 | M3 | 0,20 |
| **23831** | 40 A | 3 | - | 40 | 16,5 | 20 | 3,5 | 5 | M4 | 0,30 |
| **23832** | 65 A | 4 | - | 48,5 | 19,5 | 25 | 4 | 6 | M5 | 0,60 |
| **23833** | 70 A | 5 | - | 48,5 | 19,5 | 25 | 4 | 7 | M5 | 0,80 |
| **23834** | 100 A | 6 | - | 51,5 | 19,5 | 28 | 4 | 8 | M6 | 1,20 |
| **23835** | 130 A | 8 | - | 75 | 34 | 36 | 5 | 11 | M8 | 3,00 |
| **23836** | 200 A | 10 | - | 81 | 34 | 42 | 5 | 13 | M10 | 5,00 |
| **23837** | 230 A | 12 | 18 | 87 | 34 | 48 | 5 | 13 | M12 | 7,70 |
| **23838** | 300 A | 14 | 20 | 95 | 38 | 50 | 7 | 17 | M14 | 11,80 |
| **23839** | 350 A | 16 | 22 | 103 | 38 | 58 | 7 | 19 | M16 | 16,60 |
| **23840** | 400 A | 18 | 25 | 107 | 42 | 58 | 7 | 22 | M16 | 19,90 |
| **23841** | 500 A | 20 | 28 | 119 | 42 | 70 | 7 | 24 | M18 | 26,50 |
| **23842** | 700 A | 25 | 38 | 145 | 62 | 74 | 9 | 32 | M20 | 49,60 |
| **23843** | 900 A | 30 | 42 | 152 | 62 | 81 | 9 | 36 | M24 x 2 | 73,00 |
| **23844** | 1200 A | 35 | 48 | 162 | 62 | 90 | 10 | 41 | M30 x 2 | 112,60 |
| **23845** | 1500 A | 40 | 52 | 178 | 62 | 105 | 11 | 46 | M36 x 3 | 162,30 |

Plugs without snap-in lock. Suitable to screw into cable lugs, bus-bars, contact-blocks or as plug built into insulated housings for the slide-in rack technology. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

## Sockets 80-300 A

with snap-in lock and crimp connection
Material: brass, silver plated

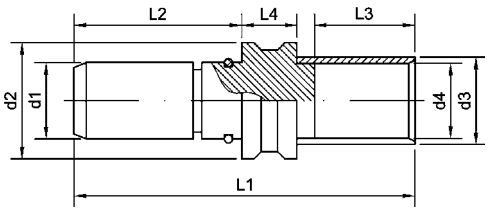



| Part-No. | cross-section mm² | rated-current | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $L_5$ | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **23850** | 10 | 80 A | 6 | 12 | 8 | 5 | 48,5 | 23 | 14 | - | 28 | 2,60 |
| **23851** | 16 | 100 A | 6 | 12 | 9 | 6 | 48,5 | 23 | 14 | - | 28 | 2,60 |
| **23852** | 25 | 130 A | 6 | 12 | 11 | 8 | 54,5 | 23 | 16 | - | 28 | 2,60 |
| **23853** | 25 | 130 A | 10 | 16 | 11 | 8 | 76 | 43 | 15 | 12 | 45 | 8,30 |
| **23854** | 35 | 150 A | 10 | 16 | 13 | 9 | 81 | 43 | 20 | 12 | 45 | 8,40 |
| **23855** | 50 | 180 A | 10 | 16 | 14,5 | 11 | 88 | 43 | 27 | 12 | 45 | 8,90 |
| **23856** | 50 | 190 A | 14 | 21 | 14,5 | 11 | 93 | 43 | 27 | 17 | 45 | 14,50 |
| **23857** | 70 | 240 A | 14 | 21 | 17 | 13 | 93 | 43 | 27 | 17 | 45 | 14,90 |
| **23858** | 95 | 280 A | 14 | 21 | 20 | 15 | 95 | 43 | 29 | 17 | 45 | 16,30 |
| **23859** | 120 | 300 A | 14 | 21 | 22 | 17 | 96 | 43 | 30 | 17 | 45 | 16,80 |

Sockets with snap-in lock which lock automatically when connected. Plugs are inserted only so far that the ring snap-in. To release the connection, lightly turn and push-in plug, then pull-out. Crimp connection for flexible/highly flexible copper cables. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

## Plugs 80-300 A

with snap-in lock and crimp connection
Material: brass, silver plated

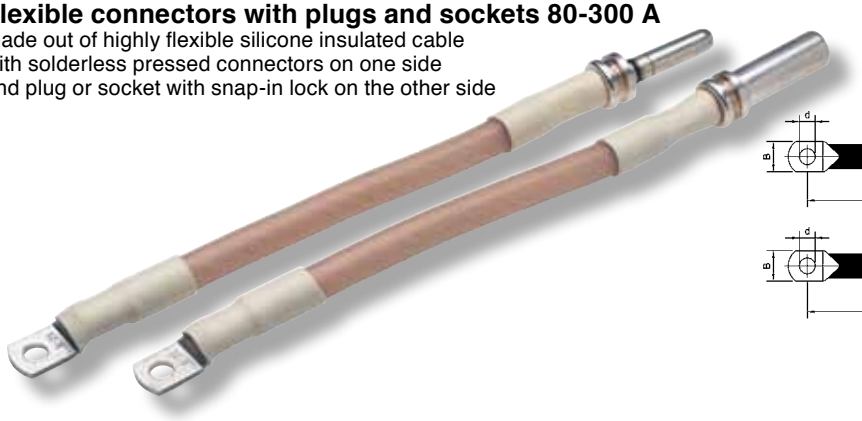


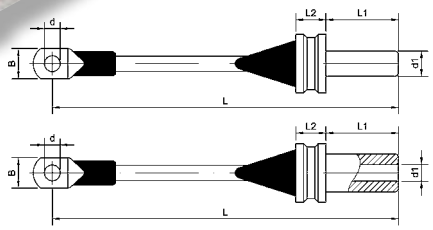

| Part-No. | cross-section mm² | rated-current | dimensions mm $d_1$ | $d_2$ | $d_3$ | $d_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **23870** | 10 | 80 A | 6 | 9 | 8 | 5 | 45 | 22 | 14 | 7 | 1,20 |
| **23871** | 16 | 100 A | 6 | 9 | 9 | 6 | 45 | 22 | 14 | 7 | 1,30 |
| **23872** | 25 | 130 A | 6 | 9 | 11 | 9 | 51 | 22 | 20 | 7 | 1,60 |
| **23873** | 25 | 130 A | 10 | 20,5 | 11 | 8 | 73,5 | 42,5 | 16 | 12 | 6,60 |
| **23874** | 35 | 150 A | 10 | 20,5 | 13 | 9 | 78,5 | 42,5 | 21 | 12 | 7,30 |
| **23875** | 50 | 180 A | 10 | 20,5 | 14,5 | 11 | 85,5 | 42,5 | 28 | 12 | 7,40 |
| **23876** | 50 | 190 A | 14 | 25 | 14,5 | 11 | 91 | 43 | 27 | 17 | 13,30 |
| **23877** | 70 | 240 A | 14 | 25 | 17 | 13 | 91 | 43 | 27 | 17 | 13,80 |
| **23878** | 95 | 280 A | 14 | 25 | 20 | 15 | 93 | 43 | 29 | 17 | 15,00 |
| **23879** | 120 | 300 A | 14 | 25 | 22 | 17 | 94 | 43 | 30 | 17 | 15,80 |

Plugs are suitable for all sockets with snap-in lock Part-No. 23850-59. Plugs are inserted only so far that the ring snaps-in. To release the connection, lightly turn and push-in plug, than pull out. Crimp connection for flexible/highly flexible copper cables. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

## Flexible connectors with plugs and sockets 80-300 A

made out of highly flexible silicone insulated cable
with solderless pressed connectors on one side
and plug or socket with snap-in lock on the other side



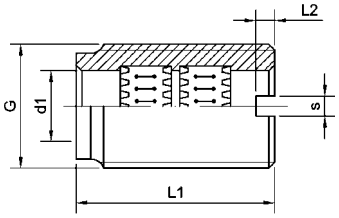



| Part-No. type A | Part-No. type B | cross-section mm² | rated-current | dimensions mm $d_1$ | d | B | L | $L_1$ | $L_2$ |
|---|---|---|---|---|---|---|---|---|---|
| **16320** | **16325** | 10 | 80 A | 6 | 6,5 | 11 | depending on customers requirements | 22 | 7 |
| **16330** | **16335** | 16 | 100 A | 6 | 8,5 | 15 | | 22 | 7 |
| **16331** | **16336** | 25 | 130 A | 6 | 8,5 | 16 | | 22 | 7 |
| **16340** | **16345** | 25 | 130 A | 10 | 8,5 | 16 | | 42,5 | 12 |
| **16350** | **16355** | 35 | 150 A | 10 | 8,5 | 17 | | 42,5 | 12 |
| **16351** | **16356** | 50 | 180 A | 10 | 10,5 | 22 | | 42,5 | 12 |
| **16360** | **16365** | 50 | 190 A | 14 | 10,5 | 22 | | 43 | 17 |
| **16370** | **16375** | 70 | 240 A | 14 | 10,5 | 25 | | 43 | 17 |
| **16380** | **16385** | 95 | 280 A | 14 | 13 | 29 | | 43 | 17 |
| **16390** | **16395** | 120 | 300 A | 14 | 13 | 31 | | 43 | 17 |

**Type A:** one side tubular cable lug and plug at the other side
**Type B:** one side tubular cable lug and socket at the other side
**Cable:** free of halogen, flame retardant with stabilized insulation (oper.temp. + 180° C). Technical datas on catalogue page 40.

## Sockets 65-5000 A

with external thread




| Part-No. | rated-current | dimensions mm $d_1$ | G | $L_1$ | $L_2$ | s | starting torque Nm max. | BE-lams pcs. | weight kg/% pcs. |
|---|---|---|---|---|---|---|---|---|---|
| **23890** | 65 A | 4 | M 8 x 0,75 | 19,5 | 1,5 | 1,5 | 2,5 | 1 | 0,50 |
| **23891** | 70 A | 5 | M 10 x 1 | 19,5 | 2 | 1,5 | 5 | 1 | 0,70 |
| **23892** | 100 A | 6 | M 12 x 1 | 19,5 | 2,5 | 2 | 10 | 1 | 1,10 |
| **23893** | 130 A | 8 | M 14 x 1 | 34 | 2,5 | 2,5 | 13 | 1 | 2,10 |
| **23894** | 200 A | 10 | M 18 x 1 | 34 | 2,5 | 3,5 | 22 | 1 | 3,90 |
| **23895** | 230 A | 12 | M 20 x 1 | 34 | 3,5 | 3,5 | 30 | 1 | 4,30 |
| **23896** | 300 A | 14 | M 22 x 1 | 38 | 4 | 4 | 35 | 1 | 5,70 |
| **23897** | 350 A | 16 | M 24 x 1 | 38 | 4 | 4 | 35 | 1 | 6,30 |
| **23898** | 400 A | 18 | M 28 x 1 | 42 | 4 | 4 | 55 | 1 | 10,50 |
| **23899** | 500 A | 20 | M 30 x 1 | 42 | 5 | 5 | 65 | 1 | 11,40 |
| **23900** | 700 A | 25 | M 42 x 1,5 | 62 | 5 | 5 | 150 | 2 | 39,40 |
| **23901** | 900 A | 30 | M 48 x 1,5 | 62 | 5 | 5 | 200 | 2 | 48,60 |
| **23902** | 1200 A | 35 | M 50 x 1,5 | 62 | 5 | 5 | 220 | 2 | 42,70 |
| **23903** | 1500 A | 40 | M 55 x 1,5 | 62 | 6 | 6 | 275 | 2 | 47,20 |
| **23904** | 1800 A | 45 | M 60 x 2 | 62 | 6 | 6 | 430 | 2 | 50,20 |
| **23905** | 2000 A | 50 | M 65 x 2 | 62 | 8 | 7 | 500 | 2 | 55,80 |
| **23906** | 3000 A | 60 | M 80 x 2 | 86 | 8 | 8 | 750 | 3 | 135,70 |
| **23907** | 3700 A | 70 | M 90 x 2 | 86 | 8 | 8 | 1000 | 3 | 154,60 |
| **23908** | 4200 A | 80 | M100 x 2 | 86 | 8 | 8 | 1500 | 3 | 170,20 |
| **23909** | 4500 A | 90 | M110 x 2 | 86 | 8 | 8 | 2000 | 3 | 187,30 |
| **23910** | 5000 A | 100 | M120 x 2 | 86 | 8 | 8 | 2500 | 3 | 209,40 |

The sockets are suitable to screw directly into bus-bars, contact blocks, housings etc. They are slotted at one end suitable for the appropriate mounting tool. The sockets must be screwed against a fix stop or screwed into bus-bars with 2 nuts and washers. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.13 Battery clips, battery clamps and earthing tapes

druseidt delivers an assortment of different battery clips and clamps acc. to the DIN-regulation as well as in special design. The delivery of components is added by the customized manufacturing of earthing tapes, jump-loads and cable sets. We deliver also braided copper tapes or round stranded copper cables on rolls or on spools directly from our stock in Remscheid.

If you have interest in such material please be so kind and order our special catalogue no. 2, which informs you about our product range flexible connectors, leadings and ready assembled flexible high current components.

Jump-loads deliverable in normal or startsafe design

## Battery clips 40 A
with insulated handles
Material: steel sheet, nickel coated

| Part-No. black | Part-No. red | current load | cable connection | length mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **13345** | **13346** | 40 A | solder-connection | 80 | 2,5 |
| **10345** | **10346** | | crimp-connection | | |
| **10347** | **10348** | | tab-connection | | |

Part-No. 13345/46 standardized design for solder-connection.
Part-No. 10345/46 design for crimping with tab-connection 6,3 x 0,8 mm.
Cable cross-section max 4 mm².

## Fully insulated battery clips 40 A
Material: steel sheet, yellow zinc coated

| Part-No. black | Part-No. red | current load | cable connection | length mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **10350** | **10351** | 40 A | solder-connection | 80 | 2,5 |
| **10352** | **10353** | | crimp-connection | | |
| **10354** | **10355** | | tab-connection | | |

Part-No. 10350/51 standardized design for solder-connection.
Part-No. 10352/53 design for crimping or with tab-connection 6,3 x 0,8 mm.
Cable cross-section max 4 mm².

## Battery clips 80-600 A
with insulated handles
Material: steel sheet, zinc coated

| Part-No. black | Part-No. red | current load | max. cable cross-section mm² | length mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **13347** | **13348** | 80 A | 10 | 125 | 6,0 |
| **03147** | **03148** | 100 A | 16 | 160 | 10,5 |
| **13349** | **13350** | 200 A | 25 | 160 | 16,0 |
| **13351** | **13352** | 600 A | 35 | 160 | 22,5 |

Cable connection crimpable or with cable lug M4 (80 A) or M6 (100-600 A).
600 A design design pole with braided copper tape.

## Fully insulated batter 80-600 A
Material: steel sheet, zinc coated

| Part-No. black | Part-No. red | current load | max. cable cross-section mm² | length mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **10356** | **10357** | 80 A | 10 | 125 | 6,0 |
| **13800** | **13801** | 100 A | 16 | 160 | 10,5 |
| **13802** | **13803** | 200 A | 25 | 160 | 16,0 |
| **13804** | **13805** | 600 A | 35 | 160 | 22,5 |

Cable connection crimpable or with cable lug M4 (80 A) or M6 (100-600 A).
600 A design design pole with braided copper tape.

## Battery clips 750-1000 A

with insulated handles
Material: brass casting, zinc coated 800/1000 A, uncoated 750/900 A

| Part-No. black | Part-No. red | current load | max. cable cross-section mm² | length mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **13332** | **13333** | 750 A | 50 | 180 | 36,00 |
| **13353** | **13354** | 800 A | | 150 | 31,00 |
| **13336** | **13337** | 900 A | | 165 | 31,00 |
| **13355** | **13356** | 1000 A | | 150 | 32,00 |

900/1000 A design pole connection with braides copper tape.
Cable connection with cable lug M6 or without cable lug (750 A design) with contact bolt.

## Fully insulated battery clips 750-1000 A

Material: brass casting
Surface: uncoated

| Part-No. black | Part-No. red | current load | max. cable cross-section mm² | length mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **13806** | **13807** | 750 A | 50 | 180 | 36,00 |
| **13812** | **13813** | 800 A | | 150 | 31,00 |
| **13816** | **13817** | 900 A | | 165 | 31,00 |
| **13808** | **13809** | 1000 A | | 150 | 32,00 |

900/1000 A design pole connection with braides copper tape.
Cable connection with cable lug M6 or without cable lug (750 A design) with contact bolt.

## Fully insulated battery clips 1000 A

with bended tip
Material: brass casting
Surface: uncoated

| Part-No. black | Part-No. red | current load | max. cable cross-section mm² | length mm | weight kg/% pcs. |
|---|---|---|---|---|---|
| **13810** | **13811** | 1000 A | 50 | 165 | 35,00 |

Pole connection with braided copper tape. Cable connection with cable lug M6.
Design with bended tip for working under cramped conditions.

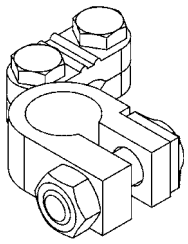
## Jump-Loads 16-50 mm²

Normal- and startsafe design
with fully insulated battery clips

| Part-No. | type | cross-section | length | battery clips design |
|---|---|---|---|---|
| **13780** | I | 16 mm² | 2 x 3,0 m | 100 A / 13800/01 |
| **13782** | | 25 mm² | 2 x 3,5 m | 300 A / 13802/03 |
| **13784** | | 35 mm² | 2 x 4,5 m | 500 A / 13805/05/S |
| **13786** | | 35 mm² | 2 x 5,0 m | 900 A / 13816/17 |
| **13788** | | 50 mm² | 2 x 5,0 m | 900 A / 13816/17 |
| **13790** | II | 16 mm² | 2 x 3,0 m | 100 A / 13800/01 |
| **13792** | | 25 mm² | 2 x 3,5 m | 300 A / 13802/03 |
| **13794** | | 35 mm² | 2 x 4,5 m | 500 A / 13804/05/S |

Jump-loads type I = Standard design.
Jump-loads type II = Startsafe-design equipped with an additionally circuit to protect electronical parts in the car.

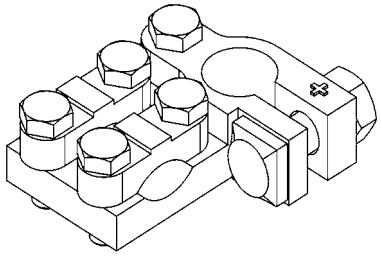
## Battery clamps according to DIN 72331



| Part-No. | DIN-size | cross-section mm² | design | material | fixing screw | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|
| **03088** | A | 12 - 70 | left + | brass tinned | M8 | 100,00 |
| **03089** | B | | right - | | | 100,00 |
| **03090** | C | 12 - 70 | right + | brass tinned | M8 | 100,00 |
| **03092** | D | | left - | | | 100,00 |
| **03095*** | E | 50 - 120 | links + | brass tinned | M8 | 150,00 |
| **03094** | F | | right - | | | 150,00 |
| **03091*** | G | 50 - 120 | right + | brass tinned | M8 | 150,00 |
| **03093** | H | | left - | | | 150,00 |

*Design with add. lighting cable connection.

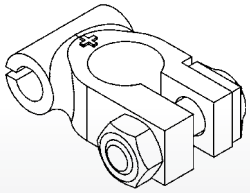
## Battery double clamps



| Part-No. | cross-section mm² | design | material | fixing screw | weight kg/‰ Stck |
|---|---|---|---|---|---|
| **03097** | 12 - 120 | left - | brass tinned | M8 | 180,00 |
| **03100*** | | right + | | | 180,00 |

*Design with add. lighting cable connection.

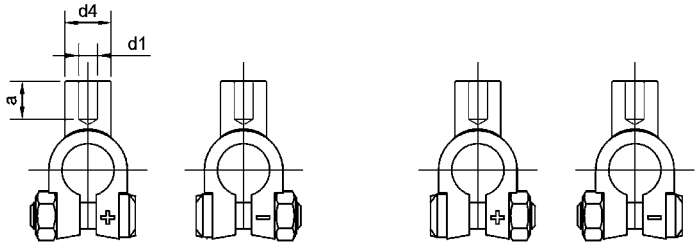
## Battery clamps according ton DIN 72332



| Part-No. + Pole | Part-No. - Pole | cross-section mm² | connecting-Ø mm | material | fixing screw | weight kg/‰ pcs. |
|---|---|---|---|---|---|---|
| **03108** | **03116** | 16 | 5,6 | brass tinned | M8 | 80,00 |
| **03109** | **03117** | 25 | 6,8 | | | 80,00 |
| **03110** | **03118** | 35 | 8,3 | | | 80,00 |
| **03111** | **03119** | 50 | 9,7 | | | 80,00 |
| **03112** | **03120** | 70 | 11,6 | | | 80,00 |
| **03113** | **03121** | 95 | 13,0 | | | 80,00 |
| **03114** | **03122** | 120 | 15,0 | | | 80,00 |

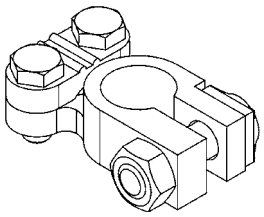
## Compression battery clamps

Material: brass, tin plated




| Part-No. type I | Part-No. type II | cross-section mm² | design | dimensions mm $d_1$ | dimensions mm $d_4$ | dimensions mm a | weight kg/‰ pcs. | crimping-tools/page no. |
|---|---|---|---|---|---|---|---|---|
| **10585/6** | **10685/6** | 16 | + Pole | 6,0 | 15 | 16 | 80,00 | on request |
| **10585/7.3** | **10685/7.3** | 25 | + Pole | 7,3 | 15 | 16 | 80,00 | |
| **10585** | **10685** | 35 | + Pole | 8,5 | 15 | 16 | 80,00 | |
| **10586** | **10686** | 50 | + Pole | 10,3 | 15 | 20 | 80,00 | |
| **10586/13** | **10686/13** | 70 | + Pole | 13,0 | 20 | 20 | 100,00 | |
| **10587/14** | **10687/14** | 95 | + Pole | 14,0 | 20 | 24 | 110,00 | |
| **10587** | **10687** | 120 | + Pole | 15,0 | 20 | 24 | 110,00 | |
| **10595/6** | **10695/6** | 16 | - Pole | 6,0 | 15 | 16 | 80,00 | |
| **10595/7.3** | **10695/7.3** | 25 | - Pole | 7,3 | 15 | 16 | 80,00 | |
| **10595** | **10695** | 35 | - Pole | 8,5 | 15 | 16 | 80,00 | |
| **10596** | **10696** | 50 | - Pole | 10,3 | 15 | 20 | 80,00 | |
| **10596/13** | **10696/13** | 70 | - Pole | 13,0 | 20 | 20 | 100,00 | |
| **10597/14** | **10697/14** | 95 | - Pole | 14,0 | 20 | 24 | 110,00 | |
| **10597** | **10697** | 120 | - Pole | 15,0 | 20 | 24 | 110,00 | |
| All types with fixing screw M8. | | | | | | | | |

## Battery clamps



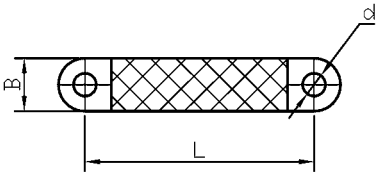
| Part-No. | cross-section mm² | design | material | fixing screw | weight kg/‰ pcs. |
|---|---|---|---|---|---|
| **10600** | 12 - 70 | + Pole | brass tinned | M8 | 68,00 |
| **10601** | 12 - 70 | - Pole | | M8 | 68,00 |

## Battery clips 25-50 A

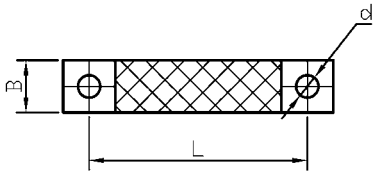
Material: steel sheet, zinc coated

| Part-No. + Pole | Part-No. - Pole | current load | length mm | weight kg/% pcs. |
|---|---|---|---|---|
| **03136 +** | **03136 -** | 25 A | 75 | 1,8 |
| **03137 +** | **03137 -** | 50 A | 105 | 3,8 |
| With screw M4 for cable connection with or without cable lug. | | | | |

## Earthing tapes
## similar to DIN 72333 Part 3 design A and B



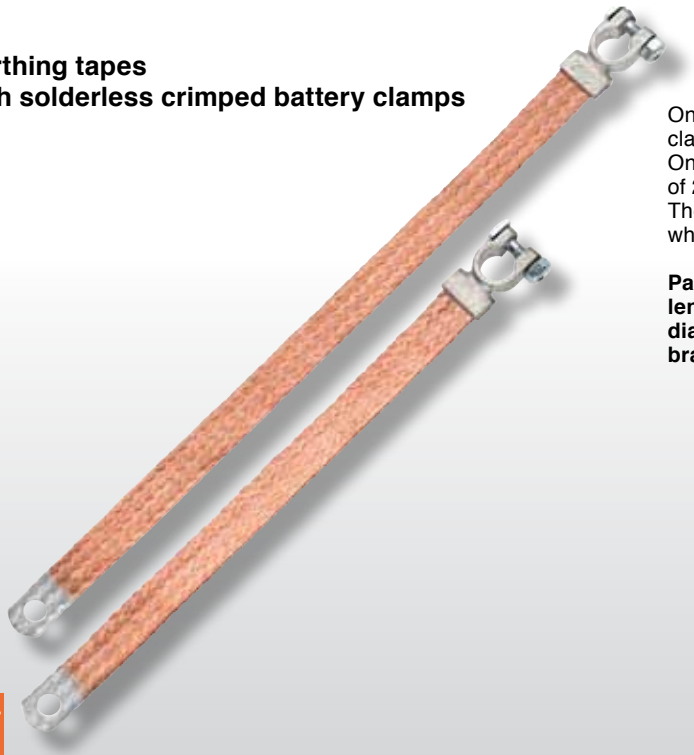

**design A1** contact areas tinned
**design A2** contact areas with brass-tapes and additionally tinned




**Form B1** contact areas tinned
**Form B2** contact areas with brass-tapes and additionally tinned

| Part-No. | | cross-section mm² | dimensions mm B | d | L |
|---|---|---|---|---|---|
| **15280/A1** | **15280/A2** | 4 | 8 | Individually according to custumers sppecification | Individually according to custumers sppecification |
| **15281/A1** | **15281/A2** | 6 | 10 | | |
| **15282/A1** | **15282/A2** | 8 | 12 | | |
| **15283/A1** | **15283/A2** | 10 | 14 | | |
| **15284/A1** | **15284/A2** | 14 | 18 | | |
| **15285/A1** | **15285/A2** | 16 | 20 | | |
| **15286/A1** | **15286/A2** | 21 | 22 | | |
| **15287/A1** | **15287/A2** | 25 | 22 | | |
| **15288/A1** | **15288/A2** | 35 | 25 | | |
| **15289/A1** | **15289/A2** | 50 | 33 | | |
| **15290/A1** | **15290/A2** | 70 | 35 | | |
| **15280/B1** | **15280/B2** | 4 | 8 | | |
| **15281/B1** | **15281/B2** | 6 | 10 | | |
| **15282/B1** | **15282/B2** | 8 | 12 | | |
| **15283/B1** | **15283/B2** | 10 | 14 | | |
| **15284/B1** | **15284/B2** | 14 | 18 | | |
| **15285/B1** | **15285/B2** | 16 | 20 | | |
| **15286/B1** | **15286/B2** | 21 | 22 | | |
| **15287/B1** | **15287/B2** | 25 | 22 | | |
| **15288/B1** | **15288/B2** | 35 | 25 | | |
| **15289/B1** | **15289/B2** | 50 | 33 | | |
| **15290/B1** | **15290/B2** | 70 | 35 | | |

## Earthing tapes
## with solderless crimped battery clamps



On request we deliver also earthing tapes wit solderless crimped battery clamp on one side. The end of the other side can be tinned and punched. One of the standard designs are earthing tapes in a cross section range of 21 mm² with a clamp on one side and a hole M10 at the other side. The length can be manufactured according to clients wishes. Therefore when placing an order please specify:

**Part-No.**
**length**
**diameter of the holes**
**braid uncoated or tinned**

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.14 Connectors and accessories for test bay and switch board application as well as cable ties

Additionally to our wide range of products in the field of electrical connection and installation technique, druseidt delivers a selection of accessories for test bay- and switch board application as well as cable ties. The user get so the chance to buy a lot of products by only one supplier.

To facilitate the assignment of test accessories to the appropriate application, standard IEC/EN 61010-031 has established a number of categories which define where they can be used in the power supply network and to lay down appropriate requirements for each category. In standard EN 61010-031 there are four different test categories, abbreviated “CAT”. As a general rule, the higher the CAT-rating, the higher the safety requirement that applies to the product. One exception is CAT I because this test category includes also measuring objects with higher voltage e. g. battery operated devices inside of cars.

**MEASUREMENT CATEGORIES ACCORDING TO IEC/EN 61010-031**

**CAT I**
Applies to test objects that are not connected to the mains. Here we have no complete specific overvoltages, which are not regulated through the rules of insulation coordination. To define requirements for such application it is necessary to know the value of the possible overvoltage. In CAT I you find all test objects that cannot be assigned to CAT II to CAT IV

**CAT II**
Applies to measurements on equipment that is connected to the mains or supplied from the mains without constituting a part of the mains installation (e. g. electrical equipment between consumer load and power outlet inside of electrical devices like household appliance etc.)

**CAT III**
Applies to measurements inside the house or building installation (e. g. fixed installations at houses, contactors, protection equipment, switches, power outlets etc.)

**CAT IV**
Applies to measurements at the supply source of the installation input side. (e. g. secondary side of MV-transformers, electricity meter, connections to overhead lines etc.)

## Highly flexible connecting leads 1 mm²

with gold plated brass multilam plugs 4 mm Ø
Material of the leading: PVC
Operating temperature: -10° C up to + 70° C

| Part-No. black | red | blue | yellow/green | type | flexible length | dimensions plug mm L | Ø sleeve | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|---|
| **24211** | **24220** | **24230** | **24240** | LK-410-L | 250 mm | 55 | 9 | 19 A | 30 V AC/60 V DC |
| **24212** | **24221** | **24231** | **24241** | | 500 mm | | | | |
| **24213** | **24222** | **24232** | **24242** | | 750 mm | | | | |
| **24214** | **24223** | **24233** | **24243** | | 1000 mm | | | | |
| **24215** | **24224** | **24234** | **24244** | | 1500 mm | | | | |
| **24216** | **24225** | **24235** | **24245** | | 2000 mm | | | | |

On request we deliver leadings with different colours or equipped with silicone insulation too.

## Highly flexible connecting leads 2,5 mm²

with stackable gold plated brass multilam plugs 4 mm Ø
Material of the leading: PVC
Operating temperature: -10° C up to + 70° C

**24250-24283**

**24000-24028**

| Part-No. black | red | blue | yellow/green | type | flexible length | dimensions plug mm L | B | H | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|---|---|
| **24000** | **24008** | **24016** | **24024** | LK-425-A | 250 mm | 47 | 8 | 15 | 32 A | 30 V AC/60 V DC |
| **24001** | **24009** | **24017** | **24025** | | 500 mm | | | | | |
| **24001/1** | **24009/1** | **24017/1** | **24025/1** | | 750 mm | | | | | |
| **24002** | **24010** | **24018** | **24026** | | 1000 mm | | | | | |
| **24003** | **24011** | **24019** | **24027** | | 1500 mm | | | | | |
| **24004** | **24012** | **24020** | **24028** | | 2000 mm | | | | | |
| **24250** | **24260** | **24270** | **24280** | XZG 425 | 500 mm | 59 | 14 | 15 | 32 A | 600 V, CAT II |
| **24251** | **24261** | **24271** | **24281** | | 1000 mm | | | | | |
| **24252** | **24262** | **24272** | **24282** | | 1500 mm | | | | | |
| **24253** | **24263** | **24273** | **24283** | | 2000 mm | | | | | |

**Type LK 425-A** with stackable standard multilam plug 4 mm Ø on both ends
**Type XZG 425** with stackable multilam plug on both ends with protective collar and retractable sleeve to prevent accidental touching. Suitable for connecting electrical apparatus not yet equipped with safety sockets. On request we deliver leadings with different colours or equipped with silicone insulation too.

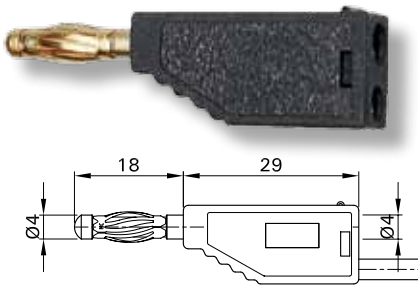
## Highly flexible connecting leads 2,5 mm²

with stackable gold plated multilam plugs 4 mm Ø
Material on the leading: PVC
Operating temperature: - 10° C up to + 70° C

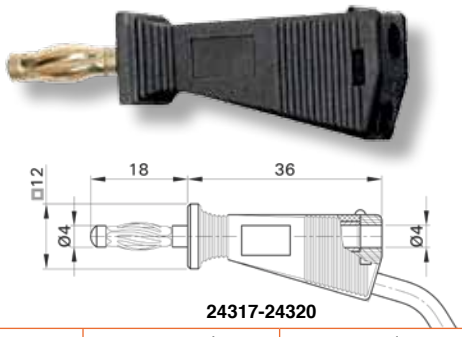
| Part-No. black | red | blue | yellow/green | type | flexible length | dimensions plug mm L | B | H | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|---|---|
| **24070** | **24078** | **24086** | **24094** | SLK 425-E | 250 mm | 56,3 | 9,5 | 17,7 | 32 A | 600 V CAT III / |
| **24071** | **24079** | **24087** | **24095** | | 500 mm | | | | | 1000 V CAT II |
| **24071/1** | **24079/1** | **24087/1** | **24095/1** | | 750 mm | | | | | |
| **24072** | **24080** | **24088** | **24096** | | 1000 mm | | | | | |
| **24073** | **24081** | **24089** | **24097** | | 1500 mm | | | | | |
| **24074** | **24082** | **24090** | **24098** | | 2000 mm | | | | | |

With stackable 4 mm Ø multilam plugs with rigid insulating sleeve on both ends. On request we deliver leadings with different colours or equipped with silicone insulation too.

## Stackable gold plated plugs 4 mm Ø
with spring-loaded multilam




24301-24316

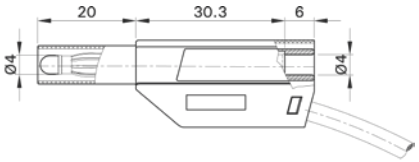



24317-24320

| Part-No. black | red | blue | yellow/green | type | connection method | cross-section mm² | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24301** | **24302** | **24303** | **24304** | SLS 410 | soldering | 1,0 | 19 A | 30 V AC/60 V DC |
| **24305** | **24306** | **24307** | **24308** | SLS 415 | soldering | 1,5 | 24 A | 30 V AC/60 V DC |
| **24309** | **24310** | **24311** | **24312** | SLS 425-A | soldering | 2,5 | 32 A | 30 V AC/60 V DC |
| **24313** | **24314** | **24315** | **24316** | SLS 425-AM | screwing | 2,5 | 32 A | 30 V AC/60 V DC |
| **24317** | **24318** | **24319** | **24320** | SLS 425 | soldering | 2,5 | 32 A | 30 V AC/60 V DC |

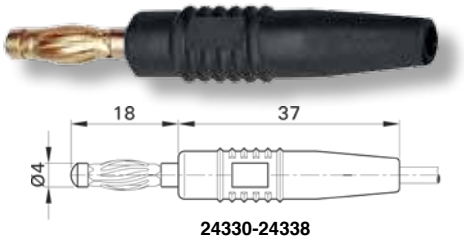
Plugs with other colours as in the table on request.

## Stackable gold plated plugs 4 mm Ø
with spring-loaded multilam and rigid insulating sleeve

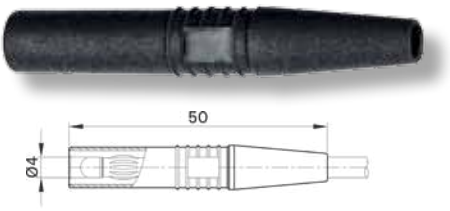



| Part-No. black | red | blue | yellow/green | type | connection method | cross-section mm² | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24321** | **24322** | **24323** | **24324** | SLS 425-SE/M | screwing | 2,5 | 32 A | 1000 V/CAT II |
| **24325** | **24326** | **24327** | **24328** | SLS 425-SE/Q | soldering | 2,5 | 32 A | 1000 V/CAT II |

## In-line gold plated plugs 4 mm Ø




24330-24338

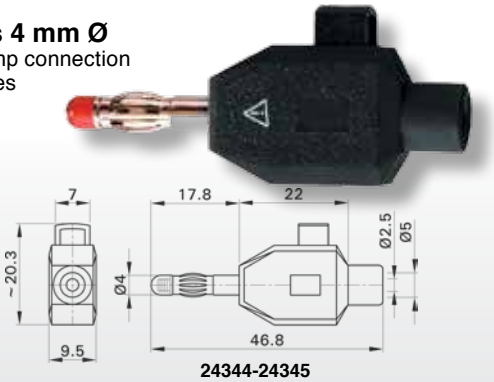



24340-24342

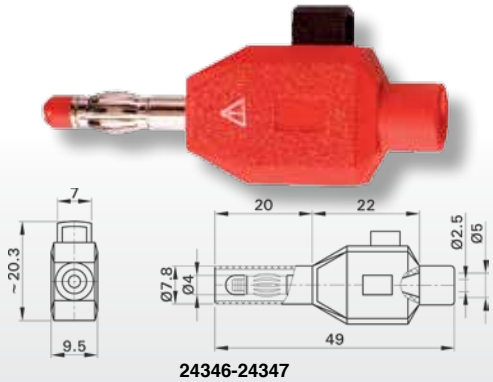
| Part-No. black | red | blue | type | connection method | cross-section mm² | rated current | rated voltage |
|---|---|---|---|---|---|---|---|
| **24330** | **24331** | **24332** | SLS 410-L | soldering | 1,0 | 19 A | 30 V AC/60 V DC |
| **24333** | **24334** | **24335** | SLS 415-L | soldering | 1,5 | 24 A | 30 V AC/60 V DC |
| **24336** | **24337** | **24338** | SLS 425-L | soldering | 2,5 | 32 A | 30 V AC/60 V DC |
| **24340** | **24341** | **24342** | SLS 425-SL | soldering | 2,5 | 32 A | 1000 V/CAT II |

Plugs with spring-loaded multilam Part-No. 24340-42 in-line plug with rigid insulating sleeve .

## Clip-on plugs 4 mm Ø
suitable for a clamp connection
with stranded wires




24344-24345



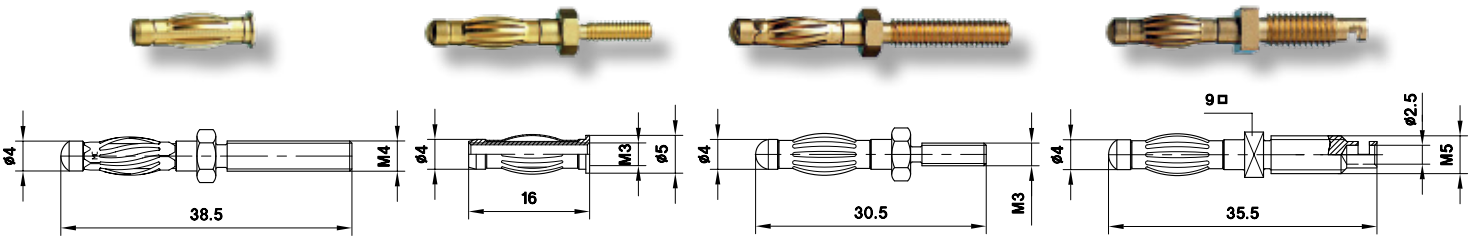

24346-24347

| Part-No. black | red | type | connection method | cross-section mm² | rated current | rated voltage |
|---|---|---|---|---|---|---|
| **24344** | **24345** | KL S4 | clamping | bis 2,5 | 10 A | 30 V AV/60 V DC |
| **24346** | **24347** | SKL S4 | clamping | Bis 2,5 | 10 A | 600 V/CAT II |

Please notice that during the installation of the clip-on plugs, the terminal must not be connected to the supply.

## Uninsulated multilam plugs 4 mm Ø

Material: brass

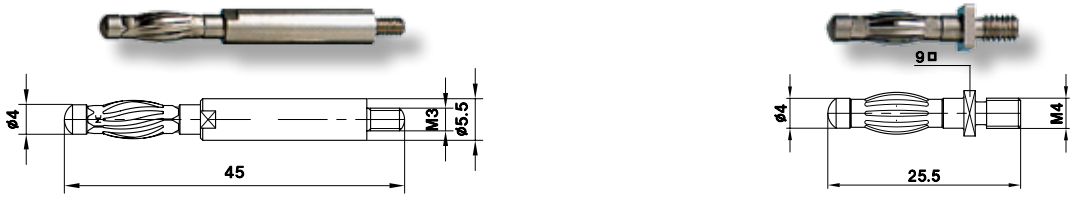



**24350** 24351 24352 24353

| Part-No. | type | surface | connecting | extraction force | highest temperature limit | rated current | resistance mΩ |
|---|---|---|---|---|---|---|---|
| **24350** | SA 404 | gold plated | M3 | ca. 8 N | + 150° C | 50 A | 0,3 |
| **24351** | SA 405 | gold plated | M3 | ca. 5 N | + 150° C | 50 A | 0,3 |
| **24352** | SA 400 | gold plated | M4 | ca. 10 N | + 150° C | 50 A | 0,2 |
| **24353** | SA 401 | gold plated | M5/solder | ca. 5 N | + 150° C | 50 A | 0,3 |

## Uninsulated multilam plugs 4 mm Ø

Material: brass

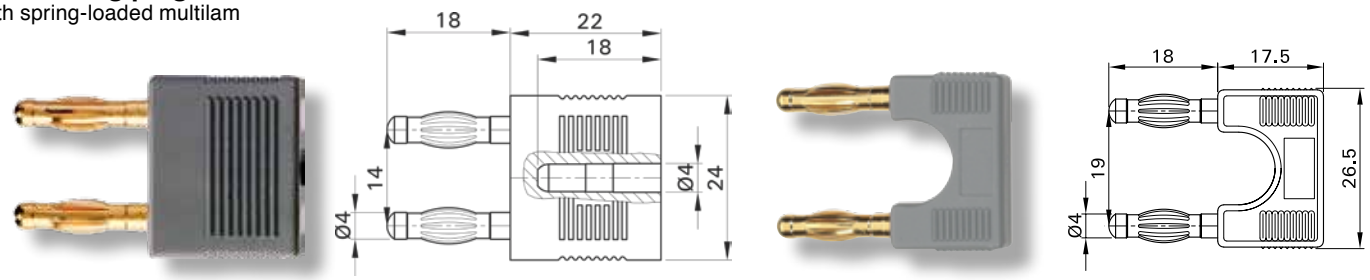



**24355** **24356**

| Part-No. | type | surface | connecting | extraction force | highest temperature limit | rated current | resistance mΩ |
|---|---|---|---|---|---|---|---|
| **24355** | SA 484 | nickel plated | M3 | ca. 10 N | + 150° C | 50 A | 0,4 |
| **24356** | SA 486 | nickel plated | M4 | ca. 5 N | + 150° C | 50 A | 0,8 |

## Connecting plugs 4 mm Ø

with spring-loaded multilam



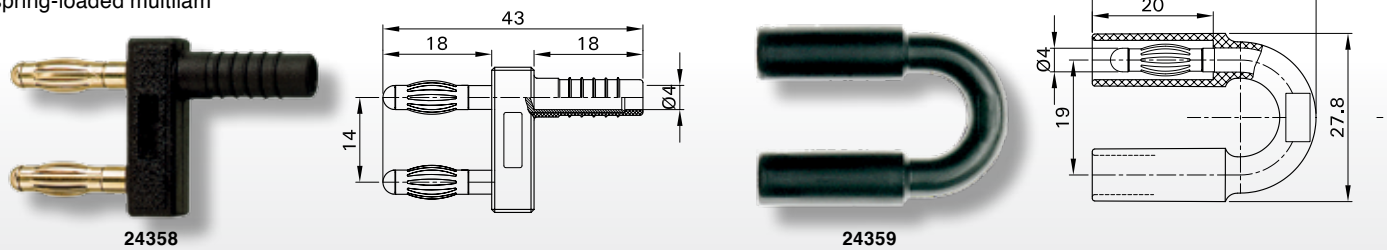

**24058/24059** **24060**

| Part-No. | type | colour | surface | inserting distance | rated current | rated voltage |
|---|---|---|---|---|---|---|
| **24058** | KS4-14 L/N | grey | nickel plated | 14 mm | 32 A | 30 V AC/60 V DC |
| **24059** | KS4-14 L/A | grey | gold plated | 14 mm | 32 A | 30 V AC/60 V DC |
| **24060** | KS4-19 L | grey | gold plated | 19 mm | 32 A | 30 V AC/60 V DC |

**Part-No. 24058-59** with rigid socket 4 mm Ø in insulator for tap connection at rear.
**Part-No. 24060** made of brass, one piece design.

## Connecting plugs 4 mm Ø

with spring-loaded multilam

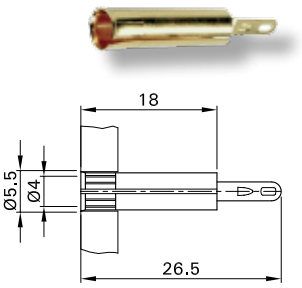



**24358** **24359**

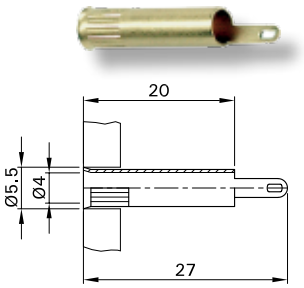
| Part-No. | type | colour | surface | inserting distance | rated current | rated voltage |
|---|---|---|---|---|---|---|
| **24358** | KS4-14 LA/A | black | gold plated | 14 mm | 32 A | 30 V AC/60 V DC |
| **24359** | SKS4-19 L | black | gold plated | 19 mm | 32 A | 1000 V/CAT II |

**Part-No. 24358** designed to ensure vibration-proof-contacts. Ideal for instance in the automative field for test drives and servicing Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve
**Part-No. 24359** plug with spring-loaded multilam and rigid insulating sleeve

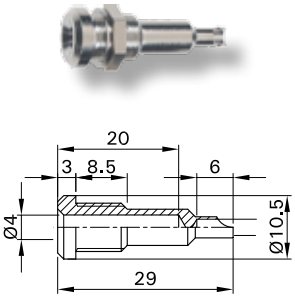
## Unisulated sockets 4 mm Ø




24053




24054



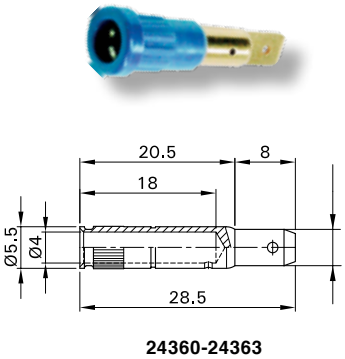

24055/24056

| Part-No. | type | surface | connection method | necessary drilling-Ø | rated current | rated voltage |
|---|---|---|---|---|---|---|
| **24053** | LB 4 | gold plated | soldering | 4,8 mm | 25 A | 30 V AC/60 V DC |
| **24054** | LB 4 A | gold plated | soldering | 4,8 mm | 25 A | 30 V AC/60 V DC |
| **24055** | LB 4 R | nickel plated | soldering | 8,3 mm | 40 A | 30 V AC/60 V DC |
| **24056** | LB 4 R/A | gold plated | soldering | 8,3 mm | 40 A | 30 V AC/60 V DC |

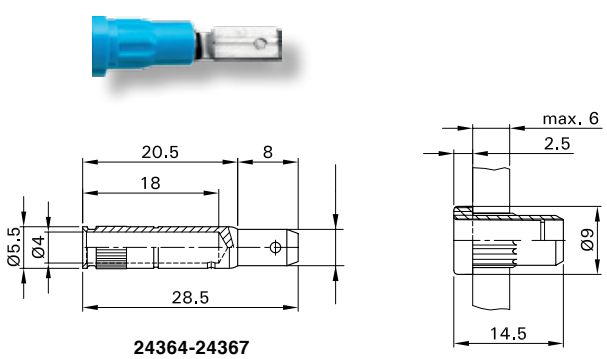
**Part-No. 24053** made out of rolled brass sheet.
**Part-No. 24054** made out of punched brass tubing.
**Part-No. 24055-56** machined brass. The sockets can be screw-mounted in predrilled panels.

## Insulated press-in sockets 4 mm Ø

with flat connecting tab 4,8 x 0,8 mm




24360-24363



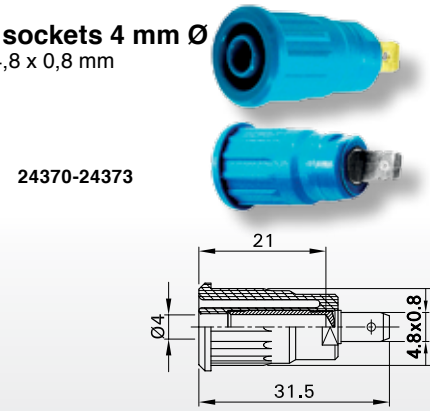

24364-24367

| Part-No. black | red | blue | yellow/green | type | surface | necessary drilling-Ø | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24360** | **24361** | **24362** | **24363** | EB 4 | gold plated | 6,8 mm | 25 A | 30 V AC/60 V DC |
| **24364** | **24365** | **24366** | **24367** | EB 4-B | nickel plated | 6,8 mm | 25 A | 30 V AC/60 V DC |

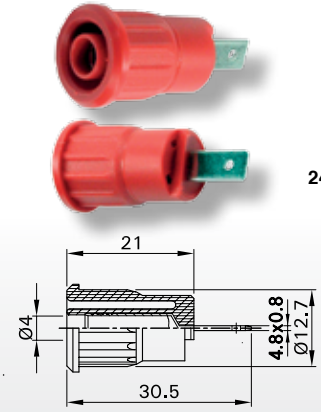
**Part-No. 24360-63** machined brass.
**Part-No. 24364-67** made out of brass sheet, punched and rolled. The socket is pressed into predrilled panels of plastic, metal etc. Flat connecting tab 4,8 x 0,8 mm can be bent to 90°, once only.

## Insulated press-in sockets 4 mm Ø

with flat connecting tab 4,8 x 0,8 mm




24370-24373

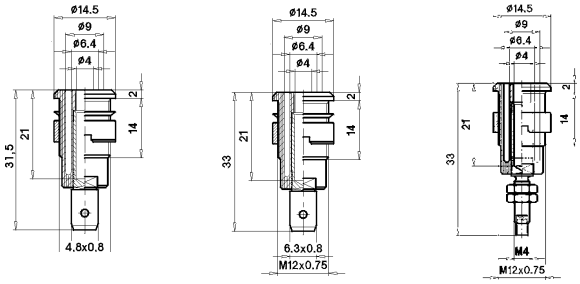



24374-24377

| Part-No. black | red | blue | yellow/green | type | surface | necessary drilling-Ø | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24370** | **24371** | **24372** | **24373** | SEB4-F | gold plated | 12,2 mm | 24 A | 1000 V/CAT III |
| **24374** | **24375** | **24376** | **24377** | SEB4-F/A | nickel plated | 12,2 mm | 24 A | 1000 V/CAT III |

**Part-No. 24370-73** machined brass.
**Part-No. 24374-77** made out of brass sheet punched. Socket accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve. The socket is pressed into predrilled panels of metal, plastic etc.

## Panel-mount sockets 4 mm Ø



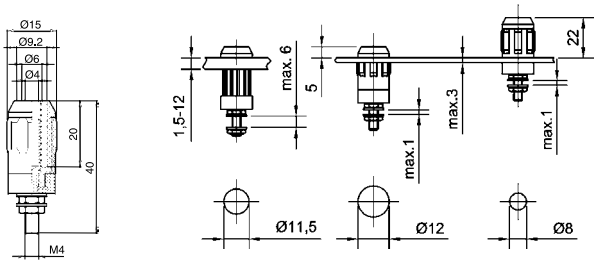

| Part-No. black | red | blue | yellow/green | type | surface | necessary drilling-Ø | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24400** | **24401** | **24402** | **24403** | SLB 4-F | gold plated | 12,2 mm | 24 A | 1000 V/CAT III |
| **12303** | **12304** | **12305** | **12306** | SLB4-F/N-X | nickel plated | 12,2 mm | 24 A | 1000 V/CAT III |
| **24404** | **24405** | **24406** | **24407** | SLB4 4-F6,3 | gold plated | 12,2 mm | 32 A | 1000 V/CAT III |
| **12307** | **12308** | **12309** | **12314** | SLB4 4-F6,3/N-X | nickel plated | 12,2 mm | 32 A | 1000 V/CAT III |
| **24408** | **24409** | **24410** | **24411** | SLB4-G | gold plated | 12,2 mm | 32 A | 1000 V/CAT III |
| **12315** | **12316** | **12317** | **12322** | SBL4-G/N-X | nickel plated | 12,2 mm | 32 A | 1000 V/CAT III |

**Special mounting tools**

| | | |
|---|---|---|
| **24110** | SS 2 | Twist stop spanner |
| **24111** | SS 425 | Spanner for ring nuts with M12 thread |

Delivery with ring nut M12 x 0,75 mm. Part-No. 24400-24411 additionally with washer.
**Part-No. 24400-03/12303-06** tab connection 4,8 x 0,8 mm.
**Part-No. 24404-07/12307-14** tab connection 6,3 x 0,8 mm.
**Part-No. 24408-11/12315-22** connection threaded bolt M4 and soldering hole.
**Part-No. 24110-11** devices for easy installation.
**Part-No. 24110** is used to counter when tightening the nut with spanner Part-No. 24111.
Sockets with other colours as in the table on request.

## Universal safety sockets 4 mm Ø



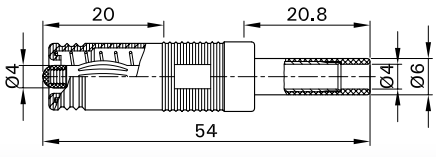

| Part-No. black | red | blue | yellow/green | type | surface | necessary drilling-Ø | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24105** | **24106** | **24107** | **24108** | XUB-G | nickel plated | see drawing | 20 A | see text |

**Accessory**

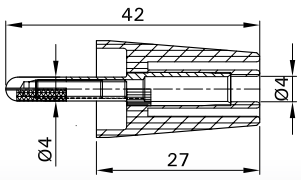
| | |
|---|---|
| **24415** | 24415 Protective cap to cover-up unplugged, unused sockets (Protection degree IP67) |

Insulated rigid sockets accepting spring-loaded plugs 4 mm Ø with rigid insulation sleeve. The sockets are surface-mounted, assembled flush or pressed into predrilled panels of plastic, metal etc. Rated voltage when surface mounted 600 V, CAT II, when assembled flush or pressed in 1000 V, CAT II. Sockets with other colours as in the table on request.

## Plug- and screw-clamping adapters 4 mm Ø




**24165**

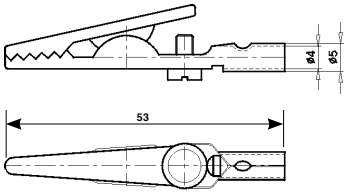



**24167-24170**

| Part-No. black | red | blue | yellow/green | type | surface | rated current | rated voltage |
|---|---|---|---|---|---|---|---|
| **Plug-adapter 4 mm Ø** | | | | | | | |
| **-** | **24165** | **-** | **-** | A4/4-Z | nickel plated | 25 A | 30 V AC/60 V DC |
| **Screw-clamping adapter 4 mm Ø** | | | | | | | |
| **24167** | **24168** | **24169** | **24170** | A-SLK-4 | gold plated | 32 A | 1000 V/CAT II |

**Part-No. 24165** Plug adapter with spring-loaded multilam and retractable sleeve to prevent accidental contact. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve.
**Part-No. 24167-70** Adapter can be screw-mounted into 4 mm Ø sockets. The expandable 4 mm Ø plug of this adapter can be locked into the socket by tightening the grub screw. Assembled, the adapter offers complete touch-proof protection. Rigid socket Ø 4 mm in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeves. Please notice that the terminals must not be connected to the supply during installation of the adapters.

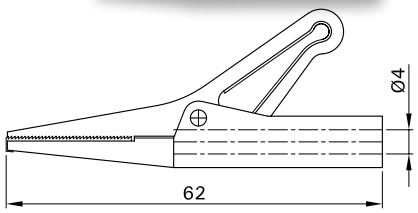
## Uninsulated crocodile-clips with socket 4 mm Ø



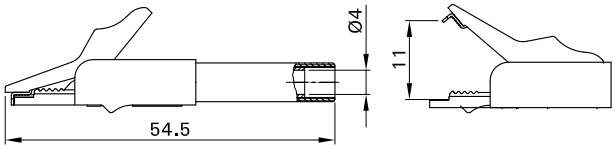

| Part-No. | type | material | surface | max. clamping width | rated current | rated voltage |
|---|---|---|---|---|---|---|
| **12105** | AGK 20 | steel | nickel plated | 5 mm | 10 A | 30 V AC/60 V DC |

Uninsulated test clip with 4 mm rigid socket. The connection is also possible with screw clamp or soldering.

## Insulated crocodile-clips with socket 4 mm Ø




**24065-24067**

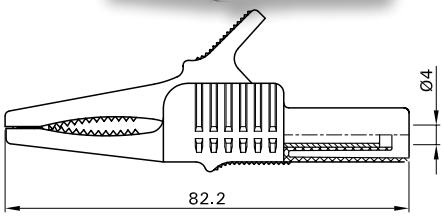



**24112-24114**

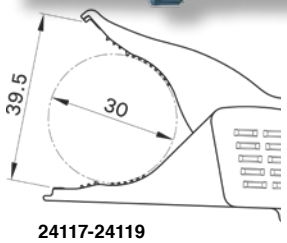
| Part-No. black | red | blue | type | surface | max. clamping width | rated current | rated voltage |
|---|---|---|---|---|---|---|---|
| **24065** | **24066** | **24067** | A-PK4 | nickel plated | 12 mm | 10 A | 30 V AC/60 V DC |
| **24112** | **24113** | **24114** | SAGK4-K | Vernickelt | 11 mm | 15 A | 300 V / CAT II |

**Part-No. 24065-67** Test clip with Ø 4 mm rigid socket and sharp toothed, pointed jaws. The upper jaw is insulated.
**Part-No. 24112-14** small, slim crocodile clip with all-round-insulation and toothed jaws for wide grip with surface for fine wire. Rigid socket 4 mm Ø in insulator accepting spring-loaded 4 mm Ø plugs with rigid insulation sleeve.

## Insulated crocodile-clips with socket 4 mm Ø




**24121-24123**




**24117-24119**

| Part-No. black | red | blue | yellow/green | type | surface | max. clamping width | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24121** | **24122** | **24123** | **24124** | XKK-1001 | nickel plated | 20 mm | 32 A | 1000 V/CAT II |
| **24117** | **24118** | **24119** | **24120** | XDK-1033 | nickel plated | 30 mm | 32 A | 1000 V/CAT III |

UL-listed crocodile-clips with all-round-insulation and toothed jaws for wide grip with surface for fine wire. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulation sleeve. Clips with other colours as in the table on request.

## Safety test clips with socket 4 mm Ø

**24125-24127**

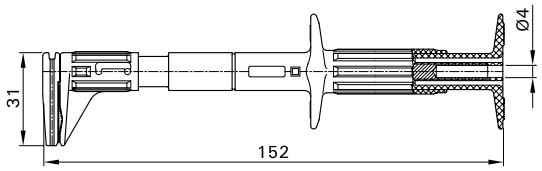
**24130-24132**

| Part-No. black | red | blue | type | total length | max. clamping width | rated current | rated voltage |
|---|---|---|---|---|---|---|---|
| **24125** | **24126** | **24127** | SKPS-4 | 155 mm | ca. 5 mm | 4 A | 1000 V/CATIII |
| | | | Minigrip-XCI | 130 mm | ca. 20 mm | 16 A | 1000 V/CATII |

**Part-No. 24125-27** with flexible shaft and spring wire grabber made out of stainless steel for a good contact to pins and wires in accessible places. Especially suitable for measuring voltages. The shaft is silicone insulated and guarantees good heat resistance and flexibility even at low temperatures.
**Part-No. 24130-32** test clip with steel jaws, especially for connections to ground rails and thick cables. For increased safety when making connections, the jaws are insulated on the outside. Rigid socket 4 mm Ø in handle accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve.

## Flat connection clamps with socket 4 mm Ø

and adjustable stop

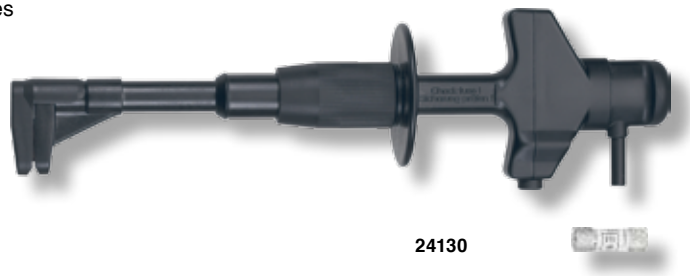



| Part-No. black | Part-No. red | Part-No. blue | type | surface | total length | max. clamping width | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24135** | **24136** | **24137** | Grip F | nickel plated | 152 mm | 30 mm | 5 A | 600 V//CAT III |

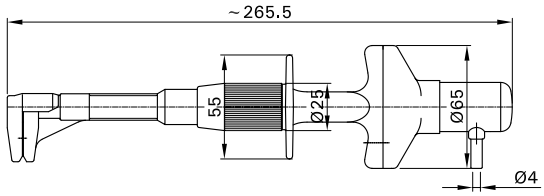
Flat test clip for making quick, sure contact in voltage measurements. With adjustable stop. Rigid socket 4 mm Ø in handle accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve.

## Flat connection clamps with socket 4 mm Ø

and HRC-fuses



**24130**




| Part-No. black | Part-No. red | Part-No. blue | type | surface | total length | max. clamping width | rated current | rated voltage |
|---|---|---|---|---|---|---|---|---|
| **24140** | **24141** | **24142** | FMA 12-PF/BM | gold plated | 266 mm | 12 mm | 2 A / 16 A / 20 A | 600 V//CAT III |
| **HRC-fuses** | | | | | | | | |
| **24145** | - | - | G2A-SV | fuserating 2 A | | separating power 100 kA/500 V AC | | |
| **24146** | - | - | G16A-SV | fuserating 16 A | | separating power 100 kA/500 V AC | | |
| **24147** | - | - | G20A-SV | fuserating 20 A | | separating power 100 kA/500 V AC | | |

Flat contact clamp with integrated HRC fuse 10 x 38 mm for a fast and safe contact of flat conductor bars e.g. in low voltage installations. The HRC type fuses can safely break extremely high short-circuit-currents. The very low internal resistance permits the measurement of resistance and current. With rigid socket 4 mm Ø in handle accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve. **The fuse is not supplied and you must order it separately.** Fuses with other current-ratings as in the table on request.

## Test probes with socket 4 mm Ø

**24150/51**

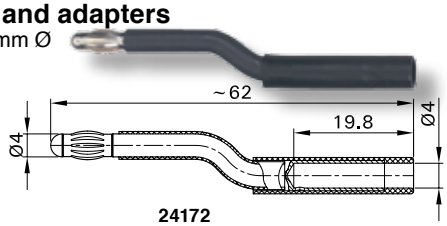
**24155/56**

**24160/61**

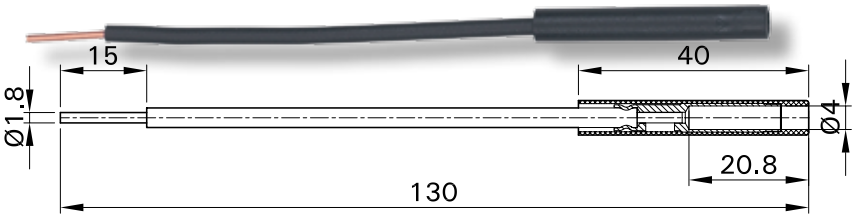
| Part-No. black | Part-No. red | type | total length | tip length | rated current | rated voltage |
|---|---|---|---|---|---|---|
| **24150** | **24151** | SPP4-S | 122 mm | 9 mm | ≤1 A | 1000 V/CAT II |
| **24155** | **24156** | SPP4-L | 140 mm | 18 mm | 32 A | 1000 V/CAT II |
| **24160** | **24161** | SPP4-AR | 108 mm | - | 32 A | 600 V/CAT II |

**Part-No. 24150/51** with tapered stainless steel rigid needle. Delivery with protection cover.
**Part-No. 24155/56** Ø 4 mm test probe with spring-loaded multilam. Handle guard chamfered on both sides. Delivery with protection-cover.
**Part-No. 24160/61** Ø 4 mm test probe with spring-loaded multilam. The insulating sleeve over the probe tip can be pushed back at the press of a bottom (Protection degree IP2X). All designs with rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeves.

## Test plugs and adapters
with socket 4 mm Ø




24172

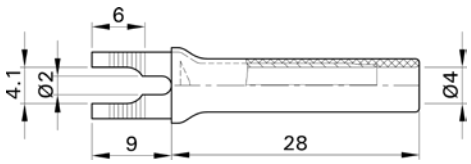



24173

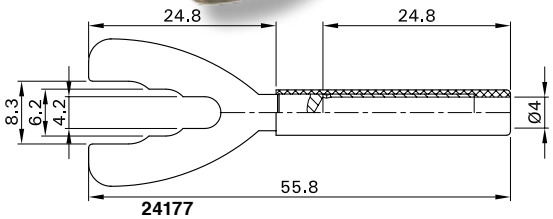
| Part-No. | colour | type | material | surface | rated current | rated voltage |
|---|---|---|---|---|---|---|
| **24172** | black | A-SLK4-RG | Ms | nickel plated | 25 A | 30 V AC/60 V DC |
| **24173** | black | A-SLK4-R | Cu | nickel plated | 32 A | 1000 V/CAT II |

**Part-No. 24172** test plug with spring loaded multilam for connecting into rail mounted terminals with sockets 4 mm Ø. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulation sleeve.
**Part-No. 24173** insulated flexible copper conductor, suitable for many types of screw clamp connections, e.g. rail mounted terminals. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeves. Please notice that during installation of this adapter the terminal must not be connected to the supply.

## Cable lug adapters
with socket 4 mm Ø




24176

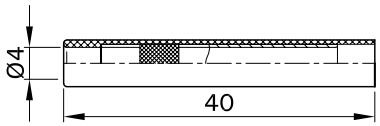



24177

| Part-No. black | Part-No. red | Part-No. blue | type | material | surface | rated current | rated voltage |
|---|---|---|---|---|---|---|---|
| **24175** | **24176** | **24176/1** | B4-I/KS | Ms | nickel plated | 20 A | 1000 V/CAT II |
| **24177** | **24178** | **24179** | B4-I/K | Ms | gold plated | 32 A | 1000 V/CAT II |

Cable lug adapters for permanent installation e. g. for connecting screw terminals. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeves. Adapters Part-No. 24175-24176/1 the fork lug can be bent once to 90°. Please notice that during the installation of tis adapters the terminal must not be connected to the supply.

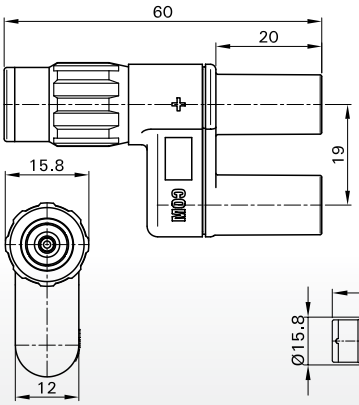
## Insulated lead couplers



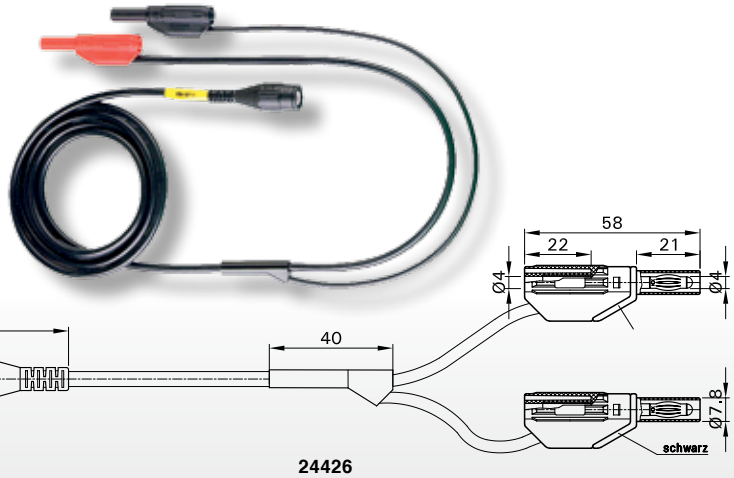

| Part-No. black | Part-No. red | Part-No. blue | type | material | surface | rated current | rated voltage |
|---|---|---|---|---|---|---|---|
| **24420** | **24421** | **24422** | KK4/4 | Ms | gold plated | 32 A | 1000 V/CAT II |

Insulated lead coupler. Both ends suitable for accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve.

## BNC-adapters resp. BNC adapter leads




24425




24426

| Part-No. | type | length | design | rated voltage |
|---|---|---|---|---|
| **24425** | XM-BB/4 | 60 mm | Adapter with BNC-plug and 2 sockets 4 mm Ø | 1000 V/CAT II/600 V/CAT III |
| **24426** | XLAM-446/SC | 1600 mm | Adapter lead with BNC-plug and 2 plugs 4 mm Ø | 600 V/CAT II/300 V/CAT III |

**Part-No. 24425** two pole touch-protected adapters with Ø 4 mm connectors linked to the BNC system. With BNC-plug and rigid sockets 4 mm Ø.
**Part-No. 24426** highly flexible, fully shielded adapter-leads. One end with coaxial cable with touch protected BNC male connector, other end with stackable multilam plugs 4 mm Ø with rigid insulating sleeve, two-pole version.

# Binding-posts 16-400 A

## Technical information

The AC-flowing through binding posts, sockets and feed-throughs, will locally lead to a radial warming up of the sheet steel enclosure caused by eddy-currents. The following graph No. 1 shows the sheet cut-out dependent on the current intensity. It shows the temperature increase around the binding post by use of a sheet steel enclosure.

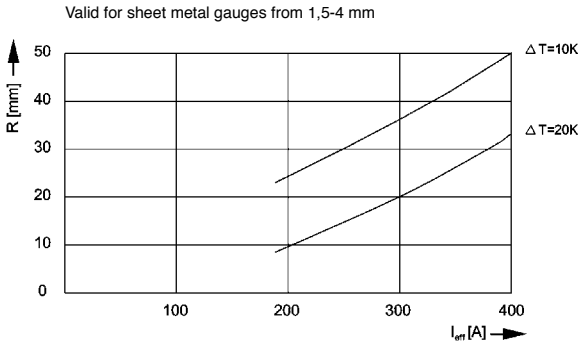
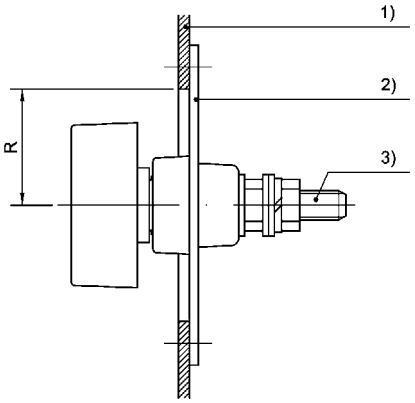



Diagram No. 1

## Example:

Current rating $I_{eff.}$ = 400 A
Around the binding posts Δ T = 10 K are permissible, therefore a radius of 50 mm around the binding posts has to be out of antimagnetic materials. Therefore a mounting has to be done according to the sketch 2.
In this figure 1) is the sheet steel enclosure, 2) a antimagnetic material and 3) the binding post.




Sketch 2

## Creepage

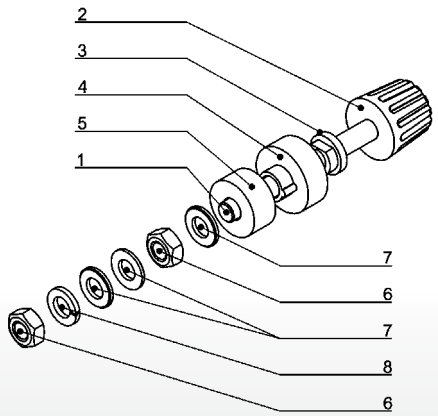
The permissible working voltage has to be determined acc. To VDE0110 part 1, IEC 1010 part 1, resp. IEC report 664, taking into consideration the insulating materials and the degree of pollution.

The creepage to be considered is

$S_K$ = $S_{k\ max.}$ - $S_G$
$S_K$ = creepage with conducting enclosure
$S_{K\ max}$ = creepage without enclosure
$S_G$ = wall thickness of enclosure in mm

## Delivery

All binding posts will be delivered partly assembled with unmounted insulating sockets/rings, nuts, washers and spring washers.




1-3 mounted (bolt with insulating- and flange nut)

4 Insulating socket with torsion protection

5 Insulating ring

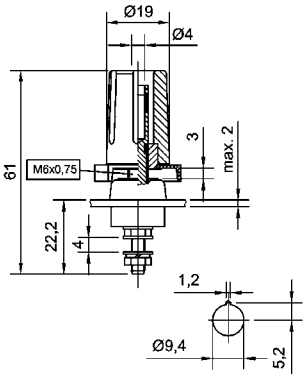
6 Nuts

7 Washers

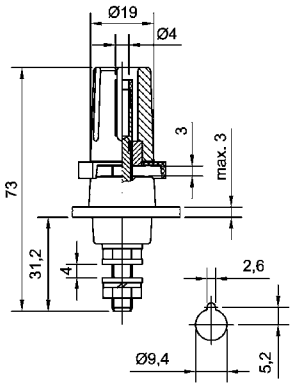
8 Spring washer

## Protected binding posts 16-63 A

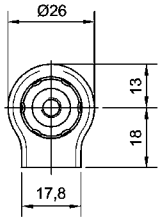
Material: brass/polycarbonate
Temperature stability: up to + 115° C




12270-12273




12274-12277




| Part-No. | colour | current load | operating voltage | testing voltage | conducting wall thickness ($S_G$) | creep-distance $S_K$ | tightening force |
|---|---|---|---|---|---|---|---|
| **12270** | black | 16/32 A | 1 kV | 2,2 kV | 2 mm | 5,3 mm | 1,2 Nm |
| **12271** | red | | | | | | |
| **12272** | blue | | | | | | |
| **12273** | yellow-green | | | | | | |
| **12274** | black | 32/63 A | 1 kV | 2,2 kV | 3 mm | 6,3 mm | 3,0 Nm |
| **12275** | red | | | | | | |
| **12276** | blue | | | | | | |
| **12277** | yellow-green | | | | | | |

Protection against electric-shock hazards according to VDE 0100 part 410 and 723, VDE 0104, VDE 0110, VDE 0411 and VDE 0470 as well as IEC 664 and IEC 1010 is guaranteed:
- with lug connection after connecting without voltage, if suitable insulation armoured lugs are used
- with connection via 4 mm safety plug with fixed collar

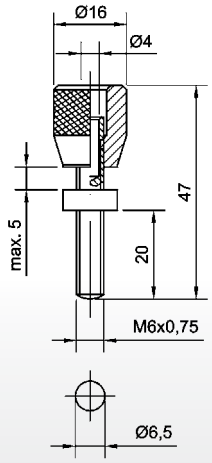
**Technical data:**

| | |
|---|---|
| Insulation co-ordination: | 4 kV/1 |
| Design impact potential: | 4 kV |
| Insulating material: | III a |
| Insulation resistance: | > $10^{10}$ Ω |
| Borehole for safety plug: | 4 mm Ø |

**Rated-current in case of plug connection:**
**Part-No. 12270 up to 12273 16 A**
**Part-No. 12274 up to 12277 32 A**

## Grounding post 63 A

Material: brass



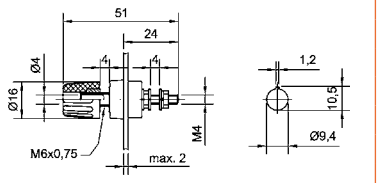
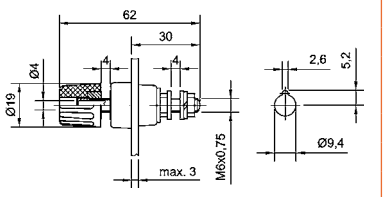
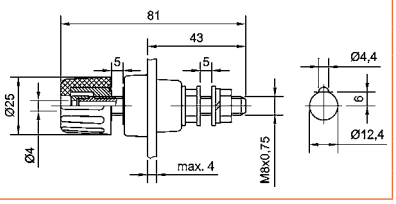

| Best-Nr. | current load | plug drilling |
|---|---|---|
| **05460** | 16/63 A | 4 mm Ø |
| Rated current by plug connection 16 A | | |

## Binding posts 32-100 A

Material: brass/polycarbonate

**Technical data**

| | |
|---|---|
| Working voltage: | 1 kV |
| Insulation co-ordination: | 4 kV/1 |
| Design impact potential: | 4 kV |
| Testing voltage: | 2,2 kV |
| Insulating material: | III a |
| Temperature stability max.: | + 115° C |
| Insulation resistance: | > $10^{10}$ Ω |
| Borehole for safety plug: | 4 mm Ø |
| Rated current by plug connection max. | 16 A |

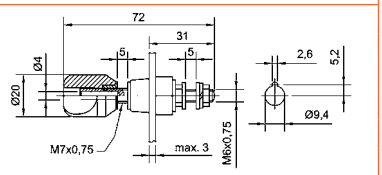
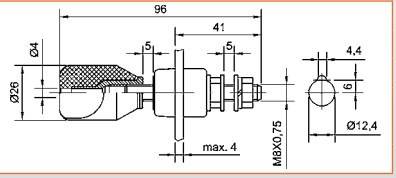
| Part-No. | colour | current load | conducting wall thickness ($S_G$) | creep-distance $S_{K\ max.}$ | tightening force | dimensions/boreholes mm |
|---|---|---|---|---|---|---|
| **12279** | black | 32 A | 2 mm | 5,3 mm | 1,2 Nm |  |
| **12280** | red | | | | | |
| **12281** | blue | | | | | |
| **12282** | yellow | | | | | |
| **12283** | green | | | | | |
| **12284** | violet | | | | | |
| **12286** | yellow/green | | | | | |
| **12287** | black | 63 A | 3 mm | 6,3 mm | 3 Nm |  |
| **12288** | red | | | | | |
| **12289** | blue | | | | | |
| **12290** | yellow | | | | | |
| **12291** | green | | | | | |
| **12292** | violet | | | | | |
| **12294** | yellow/green | | | | | |
| **12295** | black | 100 A | 4 mm | 7,5 mm | 6 Nm |  |
| **12296** | red | | | | | |
| **12297** | blue | | | | | |
| **12298** | yellow | | | | | |
| **12299** | green | | | | | |
| **12300** | violet | | | | | |
| **12302** | yellow/green | | | | | |

## Binding posts 63-100 A

Material: brass/polycarbonate

**Technical data**

| | |
|---|---|
| Working voltage: | 1 kV |
| Insulation co-ordination: | 4 kV/1 |
| Design impact potential: | 4 kV |
| Testing voltage: | 2,2 kV |
| Insulating material: | III a |
| Temperature stability max.: | + 115° C |
| Insulation resistance: | > $10^{10}$ Ω |
| Borehole for safety plug: | 4 mm Ø |
| Rated current by plug connection max. | 16 A |

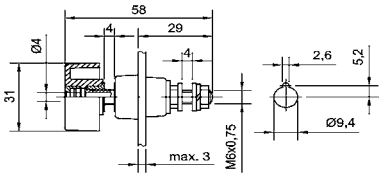
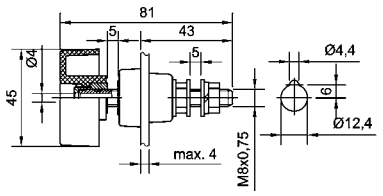
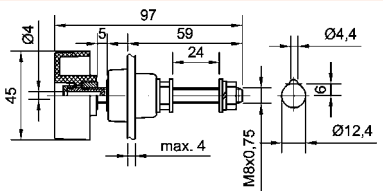
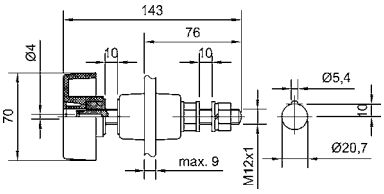
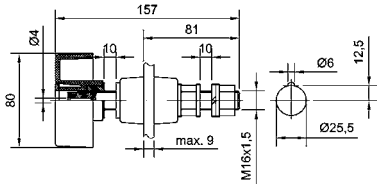
| Part-No. | colour | current load | conducting wall thickness ($S_G$) | creep-distance $S_{K\ max.}$ | tightening force | dimensions/boreholes mm |
|---|---|---|---|---|---|---|
| **05500** | black | 63 A | 3 mm | 6,3 mm | 3 Nm |  |
| **05501** | red | | | | | |
| **05502** | blue | | | | | |
| **05503** | yellow | | | | | |
| **05504** | green | | | | | |
| **05505** | yellow/green | | | | | |
| **05550** | black | 100 A | 4 mm | 7,8 mm | 6 Nm |  |
| **05551** | red | | | | | |
| **05552** | blue | | | | | |
| **05553** | yellow | | | | | |
| **05554** | green | | | | | |
| **05555** | yellow/green | | | | | |

## Binding posts with flat clamp 63-400 A

Material: brass or copper/polycarbonate

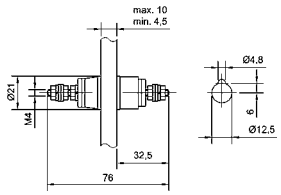
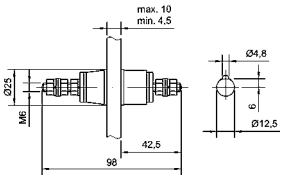
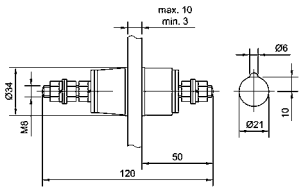
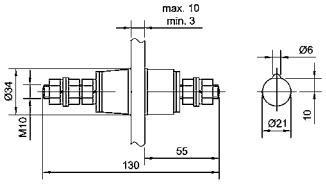
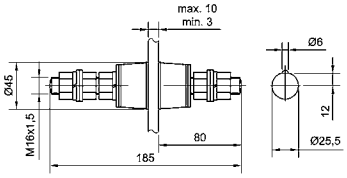
**Technical data**

| | |
|---|---|
| Working voltage: | 1 kV |
| Insulation co-ordination: | 4 kV/1 |
| Design impact potential: | 4 kV |
| Testing voltage: | 2,2 kV |
| Insulating material: | III a |
| Temperature stability max. | + 115° C |
| Insulation resistance: | > $10^{10}$ Ω |
| Borehole for safety plug: | 4 mm Ø |
| Rated current by plug connection max. | 16 A |

| Part-No. | colour | current load | conducting wall thickness ($S_G$) | creep-distance $S_{K\ max.}$ | tightening force | dimensions/boreholes mm |
|---|---|---|---|---|---|---|
| **05490** | black | 63 A | 3 mm | 6,3 mm | 3 Nm |  |
| **05491** | red | | | | | |
| **05492** | blue | | | | | |
| **05493** | yellow | | | | | |
| **05494** | green | | | | | |
| **05495** | yellow/green | | | | | |
| **05530** | black | 100 A | 4 mm | 7,8 mm | 6 Nm |  |
| **05531** | red | | | | | |
| **05532** | blue | | | | | |
| **05533** | yellow | | | | | |
| **05534** | green | | | | | |
| **05535** | yellow/green | | | | | |
| **05540** | black | 100 A | 4 mm | 7,8 mm | 6 Nm |  |
| **05541** | red | | | | | |
| **05542** | blue | | | | | |
| **05543** | yellow | | | | | |
| **05544** | green | | | | | |
| **05545** | yellow/green | | | | | |
| **05570** | black | 200 A | 9 mm | 18 mm | 15,5 Nm |  |
| **05571** | red | | | | | |
| **05572** | blue | | | | | |
| **05573** | yellow | | | | | |
| **05574** | green | | | | | |
| **05575** | yellow/green | | | | | |
| **05580** | black | 400 A | 9 mm | 18 mm | 30 Nm |  |
| **05581** | red | | | | | |
| **05582** | blue | | | | | |
| **05583** | yellow | | | | | |
| **05584** | green | | | | | |
| **05585** | yellow/green | | | | | |

## Oiltightness lead-through bolts 16-400 A

Material: brass or copper/molded bakelite

| Part-No. | colour | current load | conducting wall thickness ($S_G$) | creep-distance $S_{K\ max.}$ | tightening force | dimensions/boreholes mm |
|---|---|---|---|---|---|---|
| **05620** | black | 16 A | 10 mm | 16,5 mm | 1,2 Nm |  |
| **05621** | black | 63 A | 10 mm | 15,5 mm | 3 Nm |  |
| **05622** | black | 100 A | 10 mm | 17,5 mm | 6 Nm |  |
| **05623** | black | 200 A | 10 mm | 17 mm | 10 Nm |  |
| **05624** | black | 400 A | 10 mm | 18 mm | 30 Nm |  |

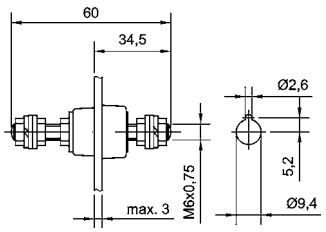
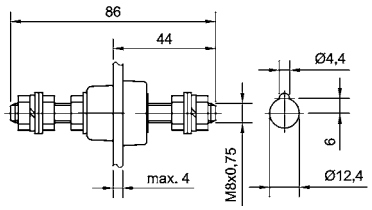
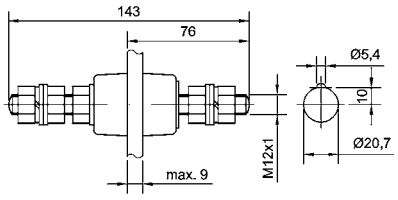
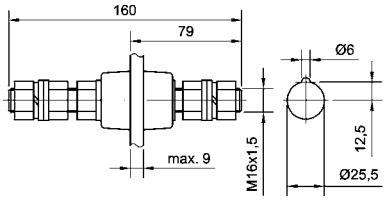
Our standard type of gasket rings made out of SIL C 4400 green are free of asbestos and suitable for smooth surfaces. For rough surfaces it is possible to deliver gasket rings made of nitrilbutadiene caoutchouc (Perbunan).
For proper installation, the flange washer fixed to the bolt has to be located inside the enclosure. In general, first lock the lead through bolt with the lower nut, leave a space and then make the electrical connection between the two remaining nuts.

**Technical data**

| | |
|---|---|
| Working voltage: | 1 kV |
| Insulation co-ordination: | 5 kV/1 |
| Design impact potential: | 5 kV |
| Testing voltage: | 3,2 kV |
| Insulating material: | II |
| Temperature stability: | bis + 100° C |
| Insulation resistance: | > $10^9$ Ω |

# Lead-through bolts 63-400 A

for switch-board application
Material: brass or copper/polycarbonate

| Part-No. | colour | current load | conducting wall thickness ($S_G$) | creep-distance $S_{K\ max.}$ | tightening force | dimensions/boreholes mm |
|---|---|---|---|---|---|---|
| **05626** | black | 63 A | 3 mm | 6,3 mm | 3 Nm |  |
| **05626/1** | red | | | | | |
| **05626/2** | blue | | | | | |
| **05627** | black | 100 A | 4 mm | 7,8 mm | 6 Nm |  |
| **05627/1** | red | | | | | |
| **05627/2** | blue | | | | | |
| **05628** | black | 200 A | 9 mm | 9 mm | 15,5 Nm |  |
| **05628/1** | red | | | | | |
| **05628/2** | blue | | | | | |
| **05629** | black | 400 A | 9 mm | 18 mm | 30 Nm |  |
| **05629/1** | red | | | | | |
| **05629/2** | blue | | | | | |



For proper installation, the flange washer fixed to the bolt has to be located inside the enclosure. In general, first lock the lead through bolt with the lower nut, leave a space and then make the electrical connection between the two remaining nuts.

**Technical data**

| | |
|---|---|
| Working voltage: | 1 kV |
| Insulation co-ordination: | 4 kV/1 |
| Design impact potential: | 4 kV |
| Testing voltage: | 2,2 kV |
| Insulating material: | III a |
| Temperature stability: | bis + 115° C |
| Insulation resistance: | > $10^9$ Ω |

## Cable ties

Material: PA 6.6 self extinguishing
Operating temperature: - 40° C up to + 85° C

| Part-No. natur | Part-No. black | bundle-Ø max. mm | length mm | width mm | tensile strength min. kg | packing pcs. |
|---|---|---|---|---|---|---|
| **30039** | **30039/s** | 21 | 98 | 2,5 | 8,2 | 1000 |
| **30042** | **30042/s** | 32 | 135 | 2,6 | 8,2 | |
| **13230** | **13230/s** | 35 | 140 | 3,6 | 13 | |
| **30043** | **30043/s** | 40 | 160 | 2,9 | 8,2 | |
| **30044** | **30044/s** | 45 | 178 | 4,8 | 22 | |
| **13232** | **13232/s** | 50 | 200 | 3,6 | 13 | |
| **13231** | **13231/s** | 50 | 200 | 4,8 | 22 | |
| **30045** | **30045/s** | 68 | 250 | 4,8 | 22 | 100 |
| **30049** | **30049/s** | 79 | 290 | 4,8 | 22 | |
| **30050** | **30050/s** | 100 | 360 | 4,8 | 22 | |
| **13233** | **13233/s** | 100 | 365 | 7,8 | 55 | |
| **30051** | **30051/s** | 130 | 450 | 7,8 | 55 | |
| **30052** | **30052/s** | 158 | 540 | 7,8 | 55 | |
| **30053** | **30053/s** | 200 | 750 | 7,8 | 55 | |
| **30054** | **30054/s** | 233 | 780 | 9,0 | 77 | |

black colour = weather-proof design

## Releasable cable ties

Material: PA 6.6 self extinguishing
Operating temperature: - 40° C up to + 85° C

| Part-No. | bundle-Ø max. mm | length mm | width mm | tensile strength min. kg | packing pcs. |
|---|---|---|---|---|---|
| **13228** | 50 | 200 | 4,8 | 22,2 | 1000 |
| **13229** | 76 | 300 | 4,8 | 22,2 | 1000 |

The same handling as normal cable ties, but easy to release. So a lowering of costs is possible.

## Cable tie mounts

adhesive or screw mounts
Material: PA 6.6, self-extinguishing
Operating temperature: - 40° C up to + 85° C

| Part-No. | length mm | width mm | height mm | cable tie width max. mm | mounting |
|---|---|---|---|---|---|
| **13240** | 19 | 19 | 4,3 | 3,6 | adhesive |
| **13241** | 27 | 27 | 4,3 | 4,8 | |
| **13242** | 22,5 | 15 | 11 | 9 | screwable |
| **13243** | 27 | 27 | 8 | 4,8 | |

## Adjustable cable tie tool

**Part-No. 30056**

Stabilized adjustable cable tie tool suitable for cable ties up to 4,8 mm width. Easy and safety handling. The tensile strength is adjustable and the value can be inspected through a little window in the tool grip. When cables are bundled at the required strength, the excess tie tail is automatically cropped. So it is possible to prevent injuries caused through a cable tie excess.

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.15 Neoprene sleeves, insulation and shrinking tubes as well as copper paste and cleaning sprays

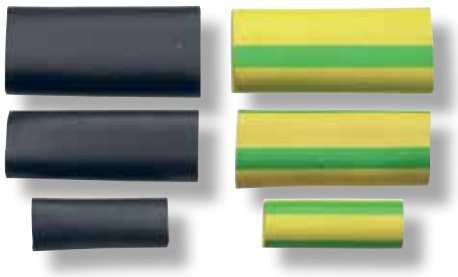
Often it is necessary to insulate electrical connections during or after the manufacturing process. Therefore druseidt offers additionally to the products of electrical connection technology, insulating material, too. Shrinking-, PVC- as well as silicone tubes delivered in rolls or on spools are standard.

Also neoprene insulation sleeves for an afterwards insulating of cable lugs acc. to catalogue page 122 are interesting products. For cleaning operations as well as optimizing of the current transfer we recommend to use our different sprays or our copper paste.

Mounting of neoprene sleeves by rubber sleeve expanders

## Neoprene sleeves

Temperature stability: -30° C up to + 130° C

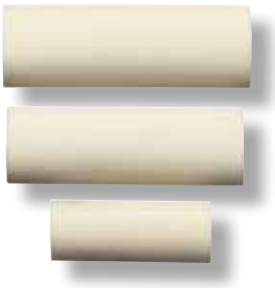


| Part-No. black | Part-No. yellow-green | dimensions mm for cable Ø | cut length | inside-Ø | wall thickness |
|---|---|---|---|---|---|
| **10025** | **11025** | 1,25 - 2 | 20 | 1,25 | 0,5 |
| **10026** | **11026** | 1,75 - 3,5 | 20 | 1,75 | 0,5 |
| **10027** | **11027** | 2,4 - 4,5 | 20 | 2,4 | 0,5 |
| **10028** | **11028** | 3 - 6 | 25 | 3 | 0,6 |
| **10029** | **11029** | 5 - 9 | 25 | 5 | 0,7 |
| **10030** | **11030** | 7,5 - 12 | 30 | 7,5 | 0,8 |
| **10031** | **11031** | 10 - 15 | 35 | 10 | 0,9 |
| **10032** | **11032** | 12 - 20 | 50 | 12 | 1,2 |
| **10033** | **11033** | 14 - 23 | 50 | 14 | 1,3 |
| **10034** | **11034** | 17 - 28 | 50 | 17 | 1,3 |

Additionally to the standardized colours in white, blue, green, yellow, orange, brown, red, violet, grey or pink colour deliverable.

## Silicone sleeves

Nature colour, free of halogen
Temperature stability: - 80° C up to + 200°C



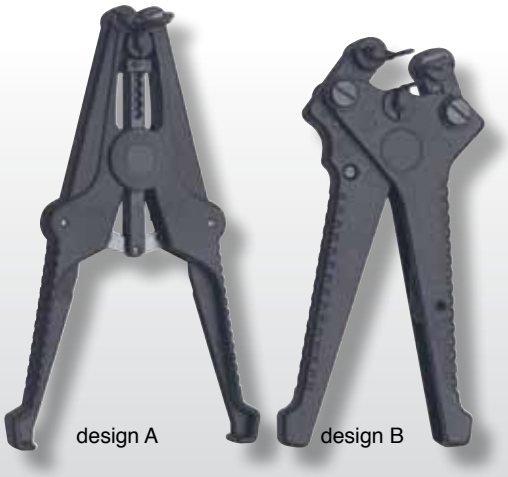
| Part-No. | dimensions mm for cable Ø | cut length | inside-Ø | wall thickness |
|---|---|---|---|---|
| **10045** | 1,25 - 1,8 | 20 | 1,25 | 0,5 |
| **10046** | 1,75 - 2,5 | 20 | 1,75 | 0,5 |
| **10047** | 2,5 - 3 | 20 | 2,5 | 0,6 |
| **10048** | 3 - 4 | 25 | 3 | 0,6 |
| **10049** | 5 - 7 | 25 | 5 | 0,7 |
| **10050** | 7,5 - 9 | 30 | 7,5 | 0,8 |
| **10051** | 10 - 13 | 35 | 10 | 1,0 |
| **10052** | 12 - 16 | 50 | 12 | 1,2 |
| **10053** | 14 - 19 | 50 | 14 | 1,3 |
| **10054** | 17 - 25 | 50 | 17 | 1,3 |

## Lubricant for neoprene and silicone sleeves

| Part-No. 10065 | 2,5 dl can with brush |
|---|---|
| For easier application of rubber sleeves. Special product which does not affect caoutchouc or elastomers and is kind to one´s skin. | |

## Rubber sleeve expanders

Ultra light weight in Plio-Carbox design




| Part-No. design A | Part-No. design B | for max. cable-Ø | dimensions mm design A length | design A width | design B length | design B width |
|---|---|---|---|---|---|---|
| **10061** | **10071** | 4,5 | 195 | 115 | 140 | 130 |
| **10062** | **10072** | 9 | 195 | 115 | 140 | 125 |
| **10063** | **10073** | 15 | 195 | 115 | 140 | 125 |
| **10064** | **10074** | 28 | 195 | 115 | 150 | 145 |

## Heat shrinkable tubing

Material: irradiated cross-linked polyolefin
Colour: black

## Construction and application

Extremely flexible thin walled heat shrinkable tubing. Flame retardant and self-extinguishing. Well suited as insulation material for cables, leadings or cable connectors. All tubing are marked with printed UL- and CSA-numbers and therefore well suited for export-orders which require a certificate about the UL/CSA-registration.

| Part-No. | Technical data | | | | | | |
|---|---|---|---|---|---|---|---|
| | before shrinking inside-Ø | | after complete shrinking | | cut length | specification | |
| | inch | mm | inside-Ø max. mm | thickness | | | |
| **30061** | 3/64 | 1,2 | 0,6 | 0,40 | 300 m | Shrink-ratio: | 2:1 |
| **30062** | 1/16 | 1,6 | 0,8 | 0,43 | 300 m | Temperature resistance: | -55° C up to +125° C |
| **30063** | 3/32 | 2,4 | 1,2 | 0,51 | 150 m | Shrink temperature: | +90° C |
| **30064** | 1/8 | 3,2 | 1,6 | 0,51 | 150 m | Self-extinguishing | |
| **30065** | 3/16 | 4,8 | 2,4 | 0,51 | 60 m | Dielectric strength: | 25 kV/mm |
| **30066** | 1/4 | 6,4 | 3,2 | 0,64 | 60 m | Tensile strength: | 10,3 MPa |
| **30067** | 3/8 | 9,5 | 4,8 | 0,64 | 60 m | Breaking elasticity: | 200 % |
| **30068** | 1/2 | 12,7 | 6,4 | 0,64 | 60 m | Specification: | UL und CSA |
| **30069** | 3/4 | 19,1 | 9,5 | 0,76 | 60 m | Standard colour: | black, other colours on request |
| **30070** | 1 | 25,4 | 12,7 | 0,89 | 60 m | | |
| **30071** | 1 1/2 | 38,1 | 19,1 | 1,02 | 60 m | | |
| **30072** | 2 | 50,8 | 25,4 | 1,14 | 60 m | | |

## Heat shrinkable tubing

Material: irradiated cross-linked polyolefin
Colour: transparent

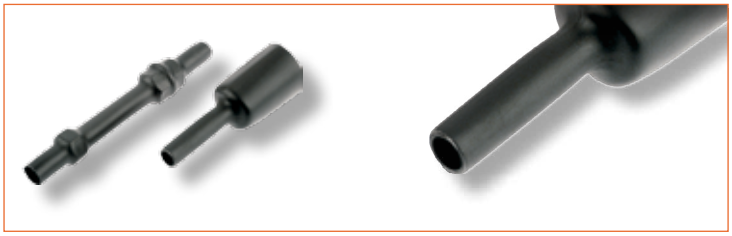
## Construction and application

Flexible thin walled heat shrinkable tubing with a good mechanical and chemical stability. Don't tear also when shrinking the material about objects with sharp edges. The material offer so multifarious possibilities for application in the industry as well as military field. Suitable for the insulation of busbars, cables, connectors or other power leading parts.

| Part-No. | Technical data | | | | | | |
|---|---|---|---|---|---|---|---|
| | before shrinking inside-Ø | | after complete shrinking | | cut length | specification | |
| | inch | mm | inside-Ø max. mm | thickness | | | |
| **30080** | 3/64 | 1,2 | 0,6 | 0,40 | 300 m | Shrink-ratio: | 2:1 |
| **30081** | 1/16 | 1,6 | 0,8 | 0,43 | 300 m | Temperature resistance: | -55° C up to +135° C |
| **30082** | 3/32 | 2,4 | 1,2 | 0,51 | 150 m | Shrink temperature: | +115° C |
| **30083** | 1/8 | 3,2 | 1,6 | 0,51 | 150 m | Not self-extinguishing | |
| **30084** | 3/16 | 4,8 | 2,4 | 0,51 | 60 m | Dielectric strength: | 20 kV/mm |
| **30085** | 1/4 | 6,4 | 3,2 | 0,64 | 60 m | Tensile strength: | 10,3 MPa |
| **30086** | 3/8 | 9,5 | 4,8 | 0,64 | 60 m | Breaking elasticity: | 200 % |
| **30087** | 1/2 | 12,7 | 6,4 | 0,64 | 60 m | Specification: | MIL und VG |
| **30088** | 3/4 | 19,1 | 9,5 | 0,76 | 60 m | Standard colour: | transparent |
| **30089** | 1 | 25,4 | 12,7 | 0,89 | 60 m | | |
| **30090** | 1 1/2 | 38,1 | 19,1 | 1,02 | 60 m | | |
| **30091** | 2 | 50,8 | 25,4 | 1,14 | 60 m | | |
| **30092** | 3 | 76,2 | 38,1 | 1,27 | 60 m | | |
| **30093** | 4 | 101,6 | 50,8 | 1,40 | 30 m | | |

## Heat shrinkable tubing

Material: irradiated cross-linked polyolefin
Colour: black



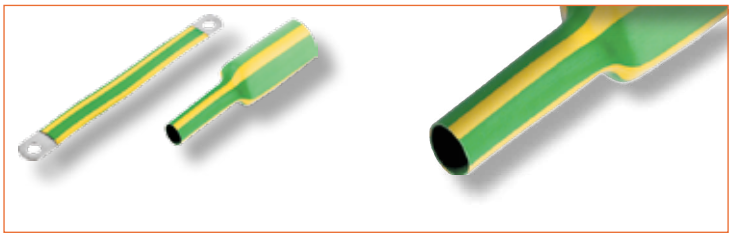
## Construction and application

Flexible thin walled heat shrinkable tubing with a good mechanical and chemical stability. Don't tear also when shrinking the material about objects with sharp edges. Easy to mark by printing the outside of the tubing. Therefore multifarious applications are given e.g. insulation of busbars, cables, connectors etc.

| Part-No. | Technical data | | | | | | |
|---|---|---|---|---|---|---|---|
| | before shrinking inside-Ø | | after complete shrinking | | | specification | |
| | inch | mm | inside-Ø max. mm | thickness | cut length | | |
| **30100** | 3/64 | 1,2 | 0,6 | 0,40 | 300 m | Shrink-ratio: | 2:1 |
| **30101** | 1/16 | 1,6 | 0,8 | 0,43 | 300 m | Temperature resistance: | -55° C bis +135° C |
| **30102** | 3/32 | 2,4 | 1,2 | 0,51 | 150 m | Shrink temperature: | +90° C |
| **30103** | 1/8 | 3,2 | 1,6 | 0,51 | 150 m | Self-extinguishing | |
| **30104** | 3/16 | 4,8 | 2,4 | 0,51 | 60 m | Dielectric strength: | 20 kV/mm |
| **30105** | 1/4 | 6,4 | 3,2 | 0,64 | 60 m | Tensile strength: | 10,3 MPa |
| **30106** | 3/8 | 9,5 | 4,8 | 0,64 | 60 m | Breaking elasticity: | 200 % |
| **30107** | 1/2 | 12,7 | 6,4 | 0,64 | 60 m | Specification: | MIL und UL |
| **30108** | 3/4 | 19,1 | 9,5 | 0,76 | 60 m | Standard colour: | black, andere colourn auf Anfrage |
| **30109** | 1 | 25,4 | 12,7 | 0,89 | 60 m | | |
| **30110** | 1 1/2 | 38,1 | 19,1 | 1,02 | 60 m | | |
| **30111** | 2 | 50,8 | 25,4 | 1,14 | 60 m | | |
| **30112** | 3 | 76,2 | 38,1 | 1,27 | 60 m | | |
| **30113** | 4 | 101,6 | 50,8 | 1,40 | 30 m | | |

## Heat shrinkable tubing for earthing applications

Material: irradiated cross-linked polyolefin
Colour: yellow/green



## Construction and application

Flexible thin walled heat shrinkable tubing, flame retardant and self-extinguishing. Well suited for a marking of earthing connections. Caused by the special production process (dual-colour-extrusion) it is guaranteed that the material either doesn't fade nor it is possible to rub off the colour.

| Part-No. | Technical data | | | | | | |
|---|---|---|---|---|---|---|---|
| | before shrinking inside-Ø | | after complete shrinking | | | specification | |
| | inch | mm | inside-Ø max. mm | thickness | cut length | | |
| **30182** | 3/64 | 1,2 | 0,6 | 0,41 | 300 m | Shrink-ratio: | 2:1 |
| **30183** | 1/16 | 1,6 | 0,8 | 0,43 | 300 m | Temperature resistance: | -55° C bis +135° C |
| **30184** | 3/32 | 2,4 | 1,2 | 0,51 | 150 m | Shrink temperature: | +90° C |
| **30185** | 1/8 | 3,2 | 1,6 | 0,69 | 150 m | Self-extinguishing | |
| **30186** | 3/16 | 4,8 | 2,4 | 0,84 | 60 m | Dielectric strength: | 20 kV/mm |
| **30187** | 1/4 | 6,4 | 3,2 | 0,90 | 60 m | Tensile strength: | 10,3 MPa |
| **30188** | 3/8 | 9,5 | 4,8 | 1,00 | 60 m | Breaking elasticity: | 100 % |
| **30189** | 1/2 | 12,7 | 6,4 | 1,20 | 60 m | Specification: | MIL und UL |
| **30190** | 3/4 | 19,1 | 9,5 | 1,40 | 60 m | Standard colour: | yellow/green |
| **30191** | 1 | 25,4 | 12,7 | 1,80 | 60 m | | |
| **30192** | 1 1/2 | 38,1 | 19,1 | 2,40 | 60 m | | |
| **30193** | 2 | 50,8 | 25,4 | 2,40 | 60 m | | |

## Heat shrinkable tubing

Material: irradiated cross-linked polyolefin
colour: black

## Construction and application

Flexible thin walled heat shrinkable tubing with high shrink-ratio (4:1) and less longitudinal change (max. 5 %).
Well suited for repair works, because only 5 dimensions are needed to cover a wide diameter range.
Delivery in cut length of 0,9/1,2 m.

| Part-No. | Technical data | | | | | | |
|---|---|---|---|---|---|---|---|
| | before shrinking inside-Ø | | after complete shrinking | | | specification | |
| | inch | mm | inside-Ø max. mm | thickness | cut length | | |
| **13060** | 1 | 25,4 | 6,6 | 1,52 | 1,2 m | Shrink-ratio: | 4:1 |
| **13061** | 1 1/2 | 38,1 | 9,5 | 1,52 | 1,2 m | Temperature resistance: | -55° C bis +135° C |
| **13062** | 2 | 50,8 | 12,7 | 1,52 | 1,2 m | Shrink temperature: | +90° C |
| **13063** | 3 | 76,2 | 19,1 | 1,52 | 0,9 m | Not self-extinguishing | |
| **13064** | 4 | 101,6 | 25,4 | 1,52 | 0,9 m | Dielectric strength: | 20 kV/mm |
| | | | | | | Tensile strength: | 10,3 MPa |
| | | | | | | Breaking elasticity: | 200 % |
| | | | | | | Specification: | UL und MIL |
| | | | | | | Standard colour: | black |

## Heat shrinkable tubing

Material: irradiated cross-linked polyolefin
with and without adhesive
colour: black

## Construction and application

Flexible medium walled heat shrinkable tubing as desired with or without adhesive. Well suited for protecting and insulating of components inside of low voltage or outdoor applications. The adhesive melts when shrinking the tube, so that the components are protected against moisture.
Delivery in cut length of 1,2 m.
**Type A:** without glue inside, **Type B:** with glue inside

| Part-No. | | Technical data | | | | | |
|---|---|---|---|---|---|---|---|
| | | before shrinking inside-Ø | after complete shrinking | | | specification | |
| type A | type B | mm | inside-Ø max. mm | thickness | cut length | | |
| **13066** | **13068** | 10,2 | 3,8 | 1,5 | 1,2 m | Shrink-ratio: | ca. 3:1 |
| **30122** | **15821** | 19,0 | 5,6 | 2,0 | 1,2 m | Temperature resistance: | -55° C bis +125° C |
| **15803** | **15823** | 28,0 | 9,5 | 2,0 | 1,2 m | Shrink temperature: | +120° C |
| **15804** | **13069** | 33,0 | 10,2 | 2,0 | 1,2 m | Not self-extinguishing | |
| **30128** | **15824** | 38,1 | 12,7 | 2,3 | 1,2 m | Dielectric strength: | 20 kV/mm |
| **30129** | **15825** | 44,0 | 14,0 | 2,3 | 1,2 m | Tensile strength: | 14 MPa |
| **15806** | **15826** | 52,1 | 18,2 | 2,3 | 1,2 m | Breaking elasticity: | 300 % |
| **15808** | **15828** | 70,0 | 25,5 | 2,3 | 1,2 m | Specification: | - |
| **15809** | **15829** | 90,0 | 30,0 | 2,5 | 1,2 m | Standard colour: | black |

## Dual wall heat shrinkable tubing with adhesive

Colour: black

## Construction and application

Flexible dual wall heat shrinkable tubing. Material of the outer wall polyolefin and polyamide for the inner wall. The adhesive melts when shrinking the tube, so that components are protected against moisture. Delivery in cut length of 1,2 m.

| Part-No. | Technical data | | | | | |
|---|---|---|---|---|---|---|
| | before shrinking inside-Ø mm | after complete shrinking | | cut length | specification | |
| | | inside-Ø max. mm | wall thickness mm | | | |
| **30195** | 3 | 1,0 | 1,00 | 1,2 m | Shrink-ratio: | 3:1 |
| **30196** | 4,5 | 1,5 | 1,00 | 1,2 m | Temperature resistance: | -55° C bis +110° C |
| **30197** | 6 | 2,0 | 1,00 | 1,2 m | Shrink temperature: | +120° C |
| **30198** | 9 | 3,0 | 1,40 | 1,2 m | Self-extinguishing | |
| **30199** | 12 | 4,0 | 1,75 | 1,2 m | Dielectric strength: | 20 kV/mm |
| **30200** | 19 | 6,0 | 2,25 | 1,2 m | Tensile strength: | 16 MPa |
| **30201** | 24 | 8,0 | 2,50 | 1,2 m | Breaking elasticity: | 450 % |
| | | | | | Specification: | UL und MIL |
| | | | | | Standard colour: | black |

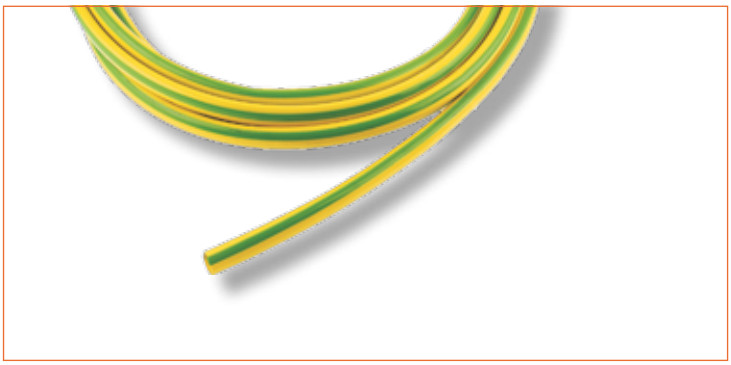
## PVC insulating tubing

Colour: grey
Temperature resistance: -20° C up to +90° C

| Part-No. | Technical data | | |
|---|---|---|---|
| | inside-Ø | wall thickness ca. mm | quantity per spool |
| **54140** | 5 | 0,6 | 200 m |
| **54142** | 6 | 0,6 | 200 m |
| **54144** | 7 | 0,7 | 200 m |
| **54146** | 8 | 0,7 | 200 m |
| **54148** | 9 | 0,7 | 200 m |
| **54150** | 10 | 0,7 | 100 m |
| **54154** | 12 | 0,8 | 100 m |
| **54158** | 14 | 1,0 | 100 m |
| **54162** | 16 | 1,0 | 100 m |
| **54164** | 18 | 1,0 | 100 m |
| **54166** | 22 | 1,2 | 50 m |
| **54172** | 24 | 1,2 | 50 m |
| **54176** | 26 | 1,2 | 50 m |
| **54178** | 28 | 1,2 | 50 m |
| **54182** | 30 | 1,0 | 25 m |
| **54190** | 35 | 1,0 | 25 m |
| **54192** | 40 | 1,0 | 25 m |
| **54194** | 45 | 1,0 | 25 m |
| **54195** | 50 | 1,0 | 25 m |
| **54196** | 55 | 1,0 | 25 m |
| **54198** | 60 | 1,0 | 25 m |
| **54199** | 65 | 1,0 | 25 m |
| **54200** | 70 | 1,0 | 25 m |
| **54202** | 75 | 1,0 | 25 m |
| **54204** | 80 | 1,0 | 25 m |
| **54206** | 85 | 1,0 | 25 m |
| **54208** | 90 | 1,0 | 25 m |
| **54210** | 95 | 1,0 | 25 m |
| **54211** | 100 | 1,0 | 25 m |

## PVC insulating tubing

Colour: yellow/green
Temperature resistance: -20° C up to -90° C



| Part-No. | Technical data | | |
|---|---|---|---|
| | inside-Ø | wall thickness ca. mm | quantity per spool |
| **13095** | 2 | 0,4 | 50 m |
| **13096** | 4 | 0,5 | 50 m |
| **13097** | 6 | 0,6 | 25 m |
| **13098** | 8 | 0,6 | 25 m |
| **13099** | 10 | 0,7 | 25 m |
| **13100** | 12 | 0,8 | 25 m |
| **13101** | 14 | 0,8 | 25 m |
| **13118** | 16 | 0,8 | 25 m |
| **13119** | 20 | 0,8 | 25 m |

## Silicone insulating tubing

Colour: nature
Temperature resistance: -50° C up to +180° C

| Part-No. | Technical data | | |
|---|---|---|---|
| | inside-Ø | wall thickness ca. mm | quantity per spool |
| **15890** | 2 | 0,4 | 100 m |
| **15891** | 3 | 0,4 | 100 m |
| **15892** | 4 | 0,5 | 100 m |
| **15893** | 5 | 0,6 | 100 m |
| **15894** | 6 | 0,6 | 100 m |
| **15895** | 7 | 0,7 | 100 m |
| **15896** | 8 | 0,7 | 50 m |
| **15897** | 10 | 0,7 | 50 m |
| **15898** | 12 | 0,8 | 50 m |
| **13102** | 14 | 0,8 | 25 m |
| **13103** | 18 | 1,0 | 25 m |
| **13104** | 20 | 1,0 | 25 m |
| **13105** | 22 | 1,0 | 25 m |
| **13106** | 24 | 1,0 | 25 m |
| **13107** | 26 | 1,0 | 25 m |
| **13108** | 28 | 1,0 | 25 m |
| **13109** | 30 | 1,0 | 25 m |
| **13110** | 35 | 1,0 | 25 m |
| **13111** | 40 | 1,0 | 25 m |
| **13112** | 45 | 1,0 | 25 m |
| **13113** | 50 | 1,0 | 25 m |
| **13114** | 55 | 1,0 | 25 m |
| **13115** | 60 | 1,0 | 25 m |
| **13116** | 65 | 1,0 | 25 m |
| **13117** | 70 | 1,0 | 25 m |

## High temperature copper mounting paste as well as protective, maintenance and cleaning sprays

| Part-No. | Product name | Content | Description |
|---|---|---|---|
| **Cleaners** | | | |
| **02776** | Spray Contaclean | 200 ml | Eliminates oxide and sulphide build up on metal contact surfaces of all types and builds a long lasting lubrication and corrosion protection. |
| **11260** | | 400 ml | |
| **02778** | Spray Wäsche | 200 ml | Removes contamination and grease as well as oxide layers produced by Contaclean. Good wash and flow properties allow contamination to be simply rinsed away. A quick and sure way of removing grease and oil, wax and other contamination. |
| **11262** | | 400 ml | |
| **02787** | Spray Entfetter | 200 ml | Guaranteed water and humidity displacement. Protective and lubricating sprays for ensuring the functionality of cable joins, adapters and is especially suitable for precious metals. |
| **11264** | | 400 ml | |
| **Protectors and Lubricants** | | | |
| **02788** | Spray Top-PIN | 200 ml<br>400 ml | It offers good lubrication and protection against corrosion because of its synthetic properties. The film that spray leaves has very good gliding qualities and withstands heat up to +300° C. |
| **02779** | Spray Silikon | 200 ml | High quality, thick insulating oil with a dielectric strength of 12 kV/mm. It will not dry out, is water repellent and is therefore suitable for use as a humidity buffer. It withstands temperatures from 50° C up to +200° C. The material is not poisonous and is a good allround lubricant. |
| **11266** | | 400 ml | |
| **11268** | Spray Sprühflon | 200 ml | Fat free lubricating and parting compound based PTFE. It offers a low friction coefficient, is anti-adhesive with adhesive materials and can be used on all materials. It is stable when used with chemicals and is electrically insulated. Can be in temperatures from -100° C up to + 260° C. |
| **11261** | Spray Antikorr | 400 ml | Penetrates dampness, displaces water and protects from corrosion even under the toughest environ-mental conditions. This material infiltrates the finest pores and cracks. The film left behind is practically invisible and normally must never be removed (painting is the exception). |
| **Coatings** | | | |
| **11265** | Spray Plastik | 400 ml | High quality acrylic resin transparent lacquer for insulating and sealing. This covers surfaces with a glossy surface which resists acid, lye, alcohol, humidity and environmentally harmful elements. This material bonds to metal, plastic, wood, paper, glass, etc. It can be used under temperatures between -70° C and +120° C. |
| **02774** | Spray Isotemp | 200 ml | Especially heat-, humidity and weather resistant silicone isolation lacquer. It is functional even in temperatures up to +500° C. This material is hard to burn (UL 94), has good bonding properties and is resilient. It links well at room temperature and is quick functioning. |
| **Copper mounting-paste** | | | |
| **02770** | copper paste | 1 kg | Smooth, semi-symethetic mounting-paste with fine powder of pure copper. Not dropping, temperature range -30° C up to +1100° C. Suitable for connections and connection bolts which are exposed to and high temperatures and corrosion. |

# 2. PRODUCTIVITY BY QUALITY – DRUSEIDT TOOL PRODUCT LINES

**We deliver high quality tools
for a professional working
with electrical connectors, leadings and cables.**

**Cutting tools**

**Stripping tools**

**Crimping tools**

# druseidt – your professional partner for cutting -, stripping- and crimping technology

### Reasons to offer a wide range of tools

In consequence of the various kinds of leadings with different strandings and diameters, combined with the multiplicity types of cable lugs and connectors, also different designs of tools, matched to the individual application, are needed.

To guarantee a professional working according to the regulations it is absolutely necessary that cable lug, leading and the tools are aligned to each other. To have in each case the right professional tool for the multiple working operations it is necessary to offer an extensive tool program. The quality of an electrical crimp-connection is also depending on the quality of the used tools.

### Your advantage – high quality tools

druseidt offers nearly for all usual application a suitable solution. High quality materials combined with an ergonomically design enable an easy handling of the tools. Especially power-assisted tools for cutting cables and leadings as well as crimping cable connectors allows a professional working.

### High class tools and devices for craft, industry and high current application

druseidt offers suitable and professional tools for cutting-, stripping- and crimping operations. All tools are applicable inside of craft, industry or high current application. To take notice of the various kinds of applications and the number of crimping operations we offer simply hand operated tools as well as power-assisted tools and devices up to electrical - or pneumatically driven machines.

### Expert advice, comprehensive testing procedures and total quality management

druseidt offers an expert advice also in the field of high current application. We deliver suitable economically tools or machine technology, matched to our cable lugs and connectors. We support the users by selecting the right components, personal training and creating professional technical instructions. Of course we execute maintenance repairs as well as inspections of all our tools or machines. So it is possible to guarantee a high and constant quality standard for all solderless crimped cable connections.

To check and to document the quality of solderless crimped connectors, we offer as testing procedure the execution of grinding surface pattern.

# 2. CUTTING-, STRIPPING- AND CRIMPING TOOLS

## 2.1 Cutting tools

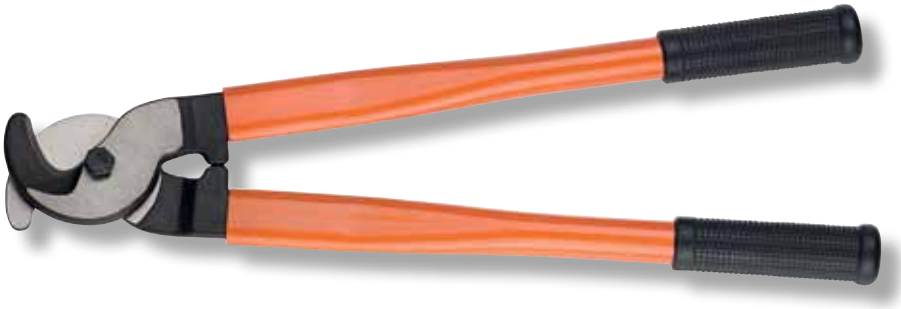
When working with cables the manufacturing process of making crimping connections starts with the cutting operation. Here you have to pay attention that the different kinds of cables will be cutted by a plain and straight cut without appreciable conductor deformation.

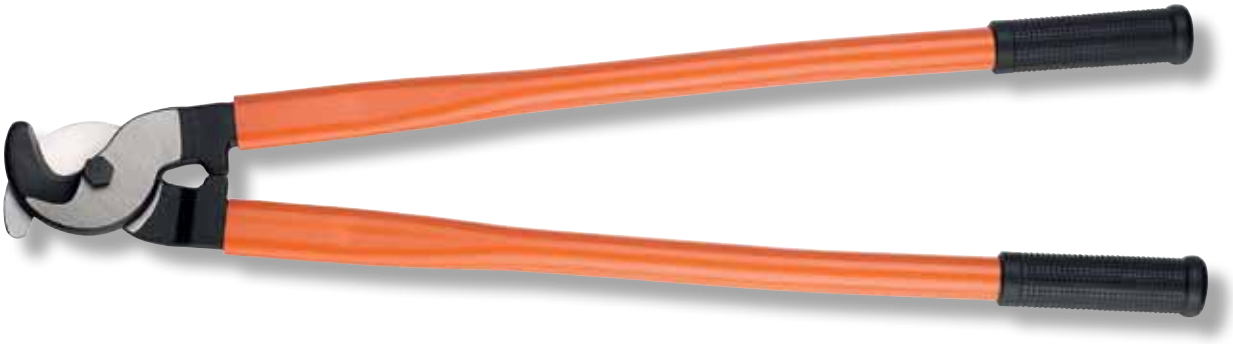
For cutting electrical conductors consisting out of copper or aluminium, druseidt offers different designs of cutting tools or devices. So it is possible to select the right cutting tool in dependence of the application, the cross-sections and number of cutting operations. To get an optimized cutting result the design and the material of the blades and cutting knives as well as the stability of the tools are important things. The technical design, lever and force transmission, e. g. by a ratchet etc., determines the necessary cutting force.

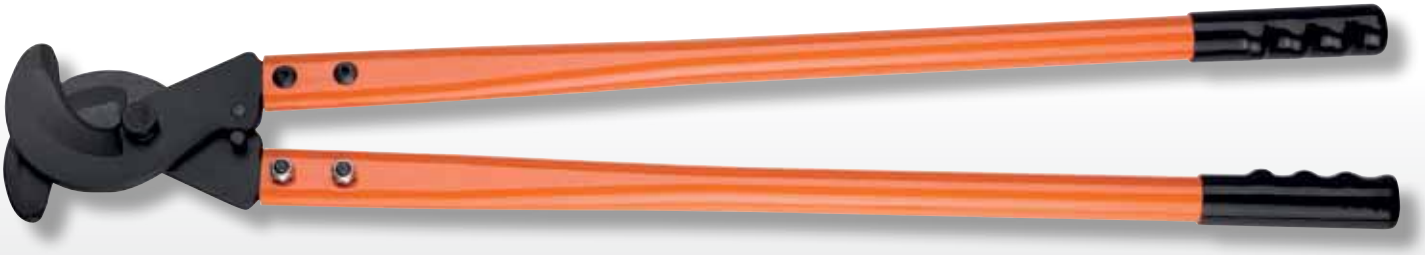
Power-assisted cutting tools with ratchet or hydraulic drive enables through their compact structural forms a working also in cramped conditions.

## Cutting tools
for copper- and aluminium cables

| Part-No. | max. cutting-Ø | max. cutting capacity solid | stranded | flexible | length | weight kg/pcs. |
|---|---|---|---|---|---|---|
| **12610** | 20 mm | 16 mm² | 35 mm² | 70 mm² | 200 mm | 0,35 |
| Not applicable for cutting steel wires, cables with steel insertion and hard drawn solid conductors | | | | | | |







| Part-No. | max. cutting-Ø | max. cutting capacity stranded | finestranded | sector shaped conductors | length | weight kg/pcs. |
|---|---|---|---|---|---|---|
| **05400** | 27 mm | 120 mm² | 185 mm² | 4 x 25 mm² | 500 mm | 1,01 |
| **05408** | 30 mm | 120 mm² | 240 mm² | 4 x 25 mm² | 440 mm | 1,25 |
| **05412** | 32 mm | 150 mm² | 300 mm² | 4 x 50 mm² | 600 mm | 1,50 |
| **05419** | 42 mm | 300 mm² | 500 mm² | 4 x 70 mm² | 800 mm | 3,30 |
| Not applicable for cutting steel wires, cables with steel insertion and hard drawn solid conductors | | | | | | |

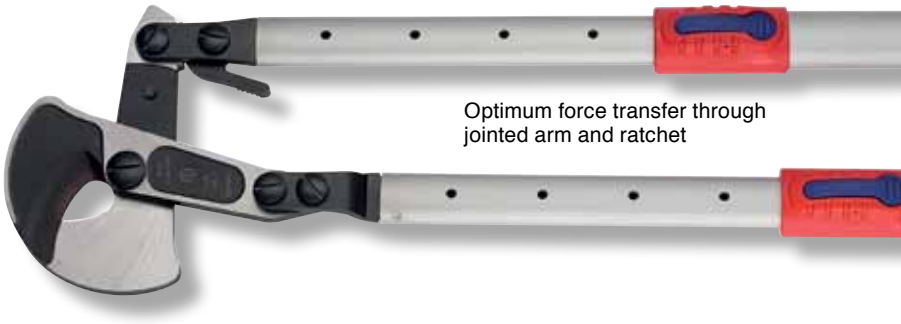
## Cutting tool for copper- and aluminium cables

with jointed arm, ratchet and telescope arms

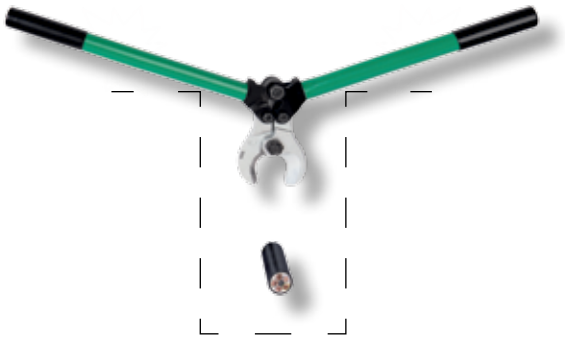
High quality cutting tools for cutting stranded and flexible copper- and aluminium cables. Not applicable for cutting steel-wires and cables with steel-insertion. Ideal for cramped working spaces. With jointed telescope arms adjust for the ideal grip width. Optimized blade geometry with precision grind and adjustable joint consisting out of hardened special steel reduce, in combination with the ratchet, the necessary cutting force. Light rigid aluminium handles with 2-component grips and pinch protection. The design and the light weight of only 2 kg offer a comfortable working in cramped conditions.

Telescope arms adjust
to the available working space

570 mm
620 mm
670 mm
720 mm
770 mm



Optimum force transfer through
jointed arm and ratchet



Comfortable working in cramped
conditions

| Part-No. | max. cutting-Ø | cutting capacities stranded | flexible | sector shaped conductors | length | weight kg/pcs. |
|---|---|---|---|---|---|---|
| **05402** | 38 mm | 300 mm² | 300 mm² | 4 x 70 mm² | 570 -770 mm | 2,00 |
| **05403** | spare blade for 05402 | | | | | |
| Not applicable for cutting steel wires, cables with steel insertion and hard drawn copper conductors | | | | | | |

## Cutting tools with ratchet

for copper- and aluminium cables

Mechanical hand operated cable cutters with ratchet and high cutting capacities. The efficient power transmission with the swinging hand lever and the optimal blade geometry offer a cutting of copper- and aluminium cables with low manual forces. The collapsible cutting head the handy design and the light weight enable a comfortable working also in cramped conditions. The cable cutter Part-No. 12607 enables a one-hand operation. All cable cutters are not applicable for cutting steel-wires, cables with steel insertion or solid conductors. Only the cable cutter Part-No. 12626 offer additionally a cutting of soft steel thin sheet covered cables.

**12607**

**12603**

**12626**

**12609**

| Part-No. | max. cutting-Ø | max. cutting capacity stranded | flexible | sector shaped conductors | length | weight kg/pcs. |
|---|---|---|---|---|---|---|
| **12607** | 35 mm | 240 mm² | 240 mm² | 4 x 70 mm² | 250 mm | 0,93 |
| **12608** | Compensation swinging blade for 12602 | | | | | |
| **12603** | 52 mm | 400 mm² | 500 mm² | 4 x 120 mm² | 325 mm | 1,20 |
| **12604** | Compensation swinging blade for 12603 | | | | | |
| **12609** | 62 mm | 750 mm² | 750 mm² | 4 x 185 mm² | 410 mm | 2,00 |
| **12614** | Compensation swinging blade for 12609 | | | | | |
| **12626** | 80 mm | 1000 mm² | 1000 mm² | 4 x 240 mm² | 610 mm | 3,00 |
| **12627** | Compensation swinging blade for 12626 | | | | | |

## Front cutting tools with ratchet
for copper- and aluminium cables

Mechanical hand operated front cable cutters with ratchet and high cutting capacities. Also suitable for working in cramped conditions such as in tunnels or inside of connecting sleeves. Part-No. 11100 and 11102 with needle bearing. Part-No. 11104 and 11106 with special eccentric drive and optimized cutting knife geometry to enable low force cutting procedures. The cutting procedure starts when swinging the moveable hand lever. The cable cutter Part-No. 11100 offer a one hand operation. All cable cutters are not applicable for cutting steel-wires, cables with steel insertion or solid conductors.

**11100**

**11102**

**11104**

**11106**

| Part-No. | max. cutting-Ø | max. cutting capacity stranded | flexible | sector shaped conductors | length | weight kg/pcs. |
|---|---|---|---|---|---|---|
| **11100** | 25 mm | 120 mm² | 120 mm² | 4 x 25 mm² | 245 mm | 0,9 |
| **11101** | Compensation swinging blade for 11100 | | | | | |
| **11102** | 34 mm | 185 mm² | 240 mm² | 4 x 50 mm² | 330 mm | 1,3 |
| **11103** | Compensation swinging blade for 11102 | | | | | |
| **11104** | 35 mm | 240 mm² | 300 mm² | 4 x 70 mm² | 330 mm | 1,4 |
| **11105** | Compensation swinging blade for 11104 | | | | | |
| **11106** | 55 mm | 500 mm² | 500 mm² | 4 x 120 mm² | 485 mm | 3,0 |
| **11107** | Compensation swinging blade for 11106 | | | | | |

## Tool bags
for cutting tools with ratchet

| Part-No. | suitable for cable cutter | design |
|---|---|---|
| **11110** | 12607/11100 | Made out of woven textile with padding, slip in pocket and zip fastener. Ideally suitable to transport and keep safe our cable cutters with ratchet or similar tools. |
| **11111** | 12603/11102/11104 | |
| **11112** | 12609/11106 | |

## Cutting tools with ratchet for copper- and aluminium cables

with adjustable telescope arms

Mechanical hand operated cutters with ratchet. Suitable for cutting of stranded and flexible copper- and aluminium as well as soft steel thin sheet covered cables. Not applicable for cutting steel-wires, cables with steel insertion or solid conductors. The telescope arms are adjustable to a range of length. Combined with the ratchet drive it is possible to realize a cutting procedure with low forces. When activating the emergency release the cutter can be opened in any cutting position. The telescope arms are made out of light rigid aluminium with 2-component grips.

Easy, time-saving use
with quick pre-adjustment

Telescope arms adjust
to the available working
space

610/660 mm

660/710 mm

710/750 mm

750/810 mm

810/860 mm

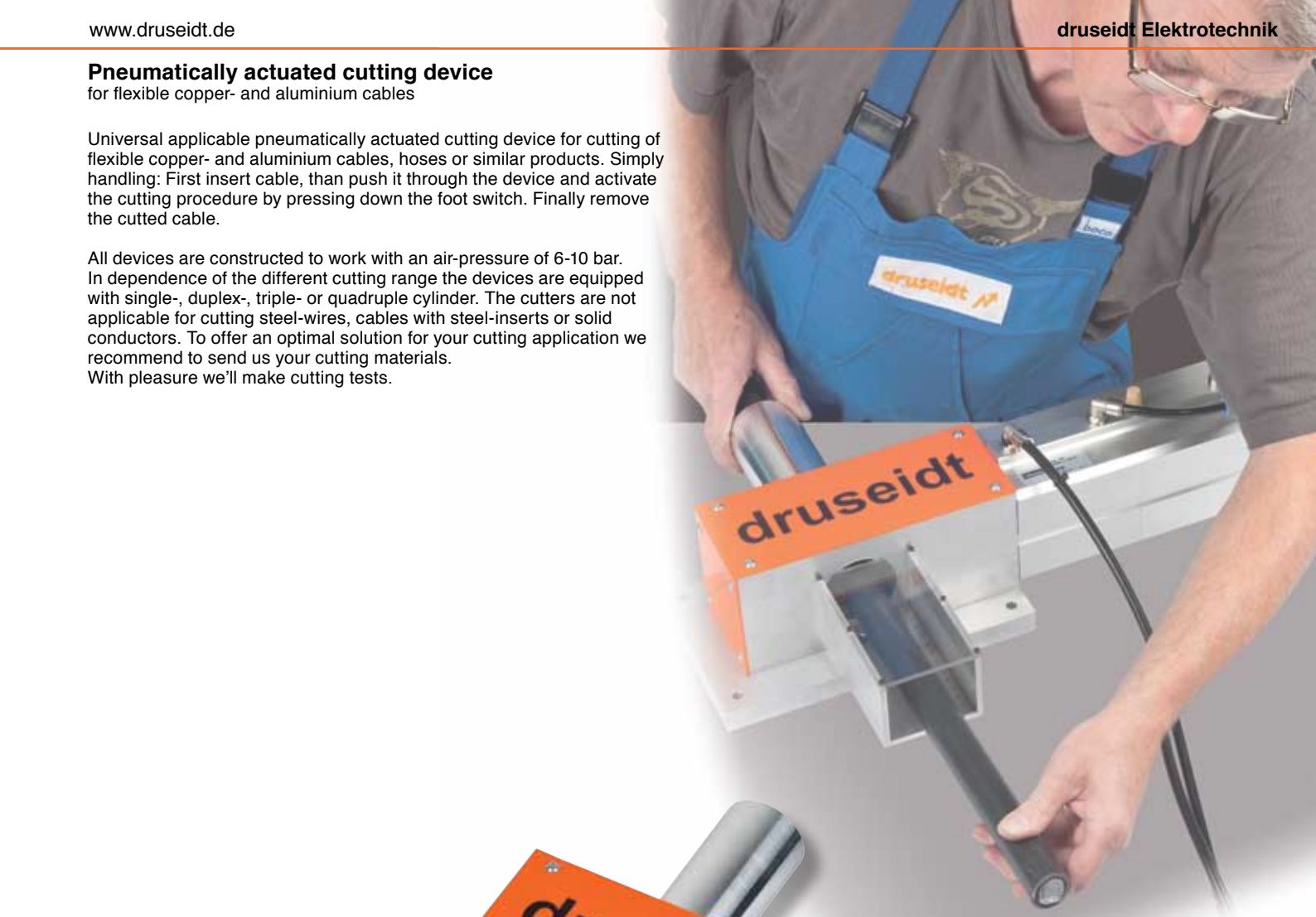
| Part-No. | max. cutting-Ø | cutting capacities stranded | flexible | sector shaped conductors | length mm | weight kg/pcs. |
|---|---|---|---|---|---|---|
| **05404** | 60 mm | 630 mm² | 800 mm² | 4 x 185 mm² | 610-810 | 3,85 |
| **05405** | Spare blade for 05404 | | | | | |
| **05406** | 100 mm | 800 mm² | 1000 mm² | 4 x 240 mm² | 660-860 | 4,98 |
| **05407** | Spare blade for 05406 | | | | | |

## Pneumatically actuated cutting device

for flexible copper- and aluminium cables

Universal applicable pneumatically actuated cutting device for cutting of flexible copper- and aluminium cables, hoses or similar products. Simply handling: First insert cable, than push it through the device and activate the cutting procedure by pressing down the foot switch. Finally remove the cutted cable.

All devices are constructed to work with an air-pressure of 6-10 bar. In dependence of the different cutting range the devices are equipped with single-, duplex-, triple- or quadruple cylinder. The cutters are not applicable for cutting steel-wires, cables with steel-inserts or solid conductors. To offer an optimal solution for your cutting application we recommend to send us your cutting materials.
With pleasure we'll make cutting tests.



Foot switch

Tabletop unit

| Part-No. | max. cutting-Ø | no. of cylinder | cutting capacities flexible | cutting capacities NYM-leading | dimensions mm L | dimensions mm B | dimensions mm H | weight kg/pcs. |
|---|---|---|---|---|---|---|---|---|
| **05222** | 12 mm | 1 | ca. 10 mm² | 5 x 1,5 mm² | 221 | 80 | 80 | 3,00 |
| **05224** | 20 mm | 1 | ca. 50 mm² | 4 x 10 mm² | 255 | 250 | 100 | 5,00 |
| **05226** | 30 mm | 2 | ca. 120 mm² | 4 x 25 mm² | 315 | 250 | 100 | 5,00 |
| **05228** | 45 mm | 3 | ca. 240 mm² | 4 x 35 mm² | 581 | 350 | 150 | 11,00 |
| **05229** | 45 mm | 4 | ca. 500 mm² | 4 x 35 mm² | 688 | 350 | 150 | 12,00 |

**Remark:** The specified cutting capacities in the table are only circa values. They are in dependence of the hardness and thickness of the insulating material as well as of the cable stranding. All values in the table are identified by an air pressure of 8 bar.

## Battery operated hydraulic cutting tools, druseidt-system with exchangeable tool heads

for cutting copper-, aluminium- and ACSR cables

druseidt's battery operated cutting tools with electro-hydraulic drive offer an excellent solution for mobile applications as well as working in cramped places. The listed cutting heads are exchangeable and can be also substituted through crimping heads quick and easily. The full system description with all deliverable tool heads and accessories are specified on catalogue pages 174-177.

This new tool generation is characterized by a modern process and control technology combined and equipped with Li-Ion batteries and an USB-interface to connect them with all popular PC-systems. So a maximum of performance, safety and controlling is guaranteed.

| Part-No. | scope of supply | technical data | |
|---|---|---|---|
| **14240** | 1 standard set consisting out of:<br>1 piece battery operated basic unit 60 kN without cutting heads<br>1 piece Li-Ion battery<br>1 piece battery charger<br>1 piece analysis software<br>1 piece USB connecting lead | Cutting force<br>Operating pressure<br>Cutting head turnable<br>Li-Ion battery<br>Time of loading<br>Battery charger<br>Weight in dependence of the used cutting head | 60 kN<br>700 bar<br>360°<br>14,4 V/2,6 Ah<br>ca. 45 minutes<br>230 V/50 Hz with 2 m connecting lead<br>5,2-7,5 kg |
| **14243** | 1 piece cutting head for copper- and aluminium cables up to 65 mm Ø | | |
| **14244** | 1 piece cutting head for ACSR-cables up to 45 mm Ø | | |
| **14245** | 1 piece steel carrying case | | |
| **12748** | 1 standard set consisting out of:<br>1 piece battery operated basic unit 100 kN without cutting heads<br>1 piece Li-Ion battery<br>1 piece battery charger<br>1 piece analysis software<br>1 piece USB connecting lead | Cutting force<br>Operating pressure<br>Cutting head turnable<br>Li-Ion battery<br>Time of loading<br>Battery charger<br>Weight with cutting head | 100 kN<br>700 bar<br>360°<br>14,4 V/2,6 Ah<br>ca. 45 minutes<br>230 V/50 Hz with 2 m connecting lead<br>6,1 kg |
| **12751** | 1 piece cutting head for copper- and aluminium cables up to 54 mm Ø | | |
| **12749** | 1 piece steel carrying case | | |
| **Accessories** | | | |
| **13553** | 1 piece spare rechargeable Li-Ion battery | | |
| **13554** | 1 piece additional battery charger | | |
| **13555** | 1 piece 230 V mains adapter | | |
| **13538** | 1 piece harness | | |

## Battery operated hydraulic cutting tools

for copper- and aluminium cables

Similar to the description on page 138, but with fixed instead of exchangeable cutting heads. Electronic control and inspection of the cutting cycle. Suitable for cutting copper- and aluminium cables up to a diameter of 50 mm resp. 85 mm. Not applicable for cutting of steel-wires, cables with steel-inserts or solid conductors.

| Part-No. | scope of supply | technical data | |
|---|---|---|---|
| **13534** | 1 standard set with cutting-Ø up to 50 mm consisting out of:<br>1 piece cutting tool<br>1 piece Li-Ion battery<br>1 piece battery charger<br>1 piece analysis software<br>1 piece USB connecting lead<br>1 piece steel carrying case | Cutting force<br>Cutting-Ø<br>Operating pressure<br>Weight<br>Li-Ion battery<br>Time of loading<br>Battery charger<br>With collapsible 360° rotating cutting head | 60 kN<br>50 mm max.<br>700 bar<br>5,6 kg<br>14,4 V/2,6 Ah<br>ca. 45 minutes<br>230 V/50 Hz with 2 m connecting lead |
| **13535** | 1 standard set with cutting-Ø up to 85 mm consisting out of:<br>1 piece cutting tool<br>1 piece Li-Ion battery<br>1 piece battery charger<br>1 piece analysis software<br>1 piece USB connecting lead<br>1 piece steel carrying case | Cutting force<br>Cutting-Ø<br>Operating pressure<br>Weight<br>Li-Ion battery<br>Time of loading<br>Battery charger<br>With collapsible 360° rotating cutting head | 70 kN<br>85 mm max.<br>700 bar<br>7,6 kg<br>14,4 V/2,6 Ah<br>ca. 45 minutes<br>230 V/50 Hz with 2 m connecting lead |
| **Accessories** | | | |
| **13553** | 1 piece spare rechargeable Li-Ion battery | | |
| **13554** | 1 piece additional battery charger | | |
| **13555** | 1 piece 230 V mains adapter | | |
| **13538** | 1 piece harness | | |

## Hydraulic operated cutting heads

for copper-, aluminium- and ACSR cables

The following described hydraulic operated cutting heads are working with a operating pressure of 700 bar and can be used in combination with our high pressure hydraulic pumps according to the catalogue pages 188-191. Cutting head Part-No. 12832 is applicable for ACSR-cables up to a diameter of 45 mm.
All the other cutting heads are applicable for cutting copper- and aluminium cables in the described diameter range. They are not applicable for cutting steel-wires, cables with steel inserts or solid conductors. They are also not applicable for all kind of live line working.

**12832**

**12833**

**12834**

**12835**

| Part-No. | max. cutting-Ø | cutting force | suitable for | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12832** | 45 mm | 60 kN | ACSR-Kabel | 320 mm | 3,5 |
| **12833** | 50 mm | 60 kN | Cu-/Al-Kabel | 320 mm | 2,7 |
| **12834** | 85 mm | 70 kN | Cu-/Al-Kabel | 420 mm | 5,2 |
| **12835** | 95 mm | 130 kN | Cu-/Al-Kabel | 420 mm | 9,8 |
| All cutting heads are equipped with a coupling nipple. | | | | | |

# 2. CUTTING-, STRIPPING AND CRIMPING TOOLS

## 2.2 Stripping tools

After the cables are cutted they must be stripped. That means that the conductor insulation must be removed in a defined length, without damaging the wires. To guarantee this, it is necessary to work with a high quality and professional stripping tool, which is aligned to the insulation material and the conductor cross-section. druseidt offers also in the field of stripping procedures high quality tools and devices. In dependence of the material and the number of strippings the user can select the right tools.

Easy hand tools as well as stripping machines are shortly deliverable. Also for problematically insulation materials, like Teflon, Silicone or extra hard materials, solutions are offered too. With pleasure we advise your employees or make stripping tests with your materials.

To realize professional stripping operations it is necessary to avoid mistakes. Some references of mistakes are given in the DIN IEC 60352 part 2 e. g.:

Accurate stripped leading

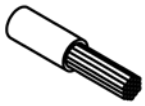
Deposits of the insulation material are on the stripped conductor

Damaged conductor insulation caused by the used stripping tool

Damaged or cutted wires caused by the used stripping tool

To much twisting of the wires

No twisting of the wires



Incorrect insulation cutting

## Stripping tools
for PVC-insolated cables

Self-adjusting stripping tools with and without cable cutter. Suitable for stripping standard cables and leadings with PVC-insulation.

Part-No. 12622 N is a high quality tool with exchangeable stripping blades and excellent stripping capacity.

12642 N

12622 N

12633

| Part-No. | stripping capacity mm² | AWG | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12642 N** | 0,2 - 6 | 24 - 10 | Self-adjusting with cable cutter for flexible cables 2,5 mm² | 100 mm | 0,10 |
| **12622 N** | 0,08 - 6 | 28 - 10 | Self-adjusting with cable cutter for flexible cables 6 mm² and solid conductors 4 mm² | 200 mm | 0,15 |
| **12623 N** | 0,08 - 6 | 28 - 10 | Blade set for 12622 N | | |
| **12633** | 6 - 16 | 10 - 6 | Self-adjusting without cable cutter | 160 mm | 0,13 |

## Stripping tool
## with exchangeable blade sets
for different insulating materials

Ergonomic designed, handy and light weight stripping tool. Nearly 90% of wires or leadings can be stripped without adjusting the tool. The exchangeable multiple stripping cassettes enable precision stripping of a wide range of insulations from PVC to PTFE with just one tool. Fine adjustability ensures that fine insulations can be stripped without damage the conductors. Easy exchangeable stripping cassettes for PVC-leadings up to 16 mm² as well as V-shaped stripping blades for problematically insulation materials up to 4 mm² offer a wide range of application. Tested to over 150000 cycles. Caused by the high-strength synthetic material (double strength compared with the standard Nylon 6.6. material) a high product reliability and durability is guaranteed.

Easy exchangeable stripping cassettes

V-shaped stripping blades for problematically insulation materials

| Part-No. | stripping capacity mm² | AWG | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **05190** | 0,02 - 10 | 34 - 8 | Self-adjusting for PVC-leadings up to 10 mm². With cable cutter for flexible cables 10 mm² and solid conductors 1,5 mm² | 191 mm | 0,14 |
| **Available stripping cassettes** | | | | | |
| **05191** | 4 - 16 | 12 - 5 | Stripping cassette for PVC-leadings | | |
| **05192** | 0,1 - 4 | 28 - 12 | Stripping cassette with V-shaped blade for problematically insulation materials | | |
| **05193** | 0,02 - 10 | 34 - 8 | Replacement stripping cassette for PVC-leadings | | |

## Stripping tools with exchangeable profile blades

for different insulation materials in a cross-section range up to 16 mm²

Extremely stabilized stripping tool with length stop for special application offers a high quality stripping and dismantling of leadings and multi-conductor cables in a cross-section range of 0,03 mm² up to 16 mm². Applicabale for a great variety of insulations of different hardness. No pinching or deforming of cable ends thanks to a special cutting mode.

For PVC-leadings up to 6 mm² and druseidt silicone-leadings 1,8/3 kV up to 16 mm² in standard design with mounted stripping blades or alternatively as tool frame without blade sets. A great number of blade sets offer a wide range of stripping application. So it is possible to arrange a stripping set coordinated with the individually requirements.

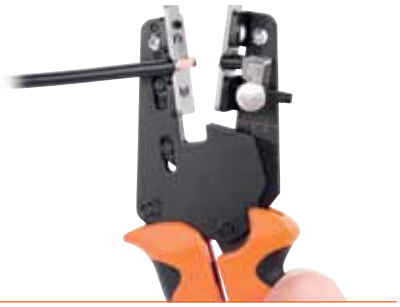
Stripping tool with mounted profile blade
**05200/05202/05205**

Tool frame without profile blade
**05210**

Position cable at length stop

Stripping with profile blades

Exchangeable profile blades



Automatic removal of insulation

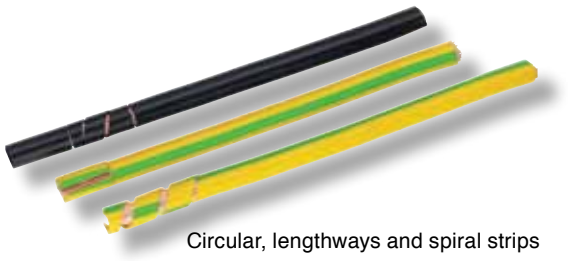
| Part-No. | stripping capacity mm² | stripping capacity AWG | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **Tools with mounted profile blades** | | | | | |
| **05200** | 0,14 - 6 | 26 - 10 | for PVC-leadings | 200 mm | 0,45 |
| **05202** | 4 - 10 | 11 - 7 | for druseidt silicone-leadings 1,8/3 kV and similar | 200 mm | 0,45 |
| **05205** | 10 - 16 | 7 - 5 | for druseidt silicone-leadings 1,8/3 kV and similar | 200 mm | 0,45 |
| **Tool frame with additional profile blades** | | | | | |
| **05210** | - | - | Tool frame without profile blades | 200 mm | 0,41 |
| **05201** | 0,14 - 6 | 26 - 10 | Profile blade for PVC-leadings | | |
| **05203** | 6 - 16 | 10 - 5 | Profile blade for PVC-leadings | | |
| **05204** | 4 - 10 | 11 - 7 | Profile blade for druseidt silicone-leadings 1,8/3 kV acc. to catalogue page 40 | | |
| **05206** | 10 - 16 | 7 - 5 | Profile blade for druseidt silicone-leadings 1,8/3 kV acc. to catalogue page 40 | | |
| **05207** | 2 x 0,35 | | Profile blade for Profi-Bus-cables with cladding | | |
| **05208** | 0,05 - 0,5 | 30 - 20 | Profile blade for Teflon insulated cables | | |
| **05209** | 0,14 - 1 | 26 - 16 | Profile blade for Teflon insulated cables | | |
| **05211** | 0,03 - 2,08 | 32 - 14 | Profile blade for Teflon insulated cables with cable guiding | | |
| **05212** | 2,5 - 10 | 13 - 7 | Profile blade for Teflon insulated cables | | |
| **05213** | | | Profile blade for 1,2 and 4-core POF-cables | | |
| **05214** | 2,5 - 6 | 13 - 9 | Profile blade for solar cable Radox 125 | | |
| **05215** | 0,5 - 6 | 20 - 10 | Profile blade for special cables with insulation out of teflon, glass fibre tube and kapton tape | | |
| **05216** | | | Profile blade for ASI-Bus cable outer sheath 2 x 1,5 mm²/10,2 x 4 mm | | |
| **05217** | 1,5 - 6 | 15 - 9 | Profile blade for solar cables | | |
| **05218** | 4 - 10 | 11 - 7 | Profile blade for solar cables | | |
| **05219** | 3/4 x 0,34 | - | Profile blade for Lumflex-cables | | |
| | 3/5 x 0,5 | | | | |

## Stripping tool
for round shaped cables 4,5 mm up to 40 mm Ø

Professional stripping tool for cables of all insulation types up to a insulation thickness of 4,5 mm. By rotating the body of the tool the blade can be fixed in any one of three positions providing circular cuts around the cable and lengthways or spiral cuts along the cable. Two interchangeable cable retention hooks are standard and offer so an incomparable cable stripping capacity up to 40 mm Ø in one tool. After the stripping operation is finished the blade returns back into the starting position automatically and reduce so the risk of a blade break.

The elevating adjustment can be done very sensitive and no special tools are required to change hooks. One replaces the other by extraction and insertion of the hooks. The well balanced design enables a stripping of ambitious cables also under hard and difficult conditions. Without having sharp edges the tool can be carried in the pocket too. Tested with more than 100000 cycles and made out of high strength synthetic material (double strength compared with the standard Nylon 6.6. material) are additional arguments for the high quality level.

Set with 2 cable retention hooks



Circular, lengthways and spiral strips

Ergonomic design with feature rests for thumb, first and little fingers to ease raising of the cable retention hook

| Part-No. | stripping capacity | insulation thickness max. | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12843** | 4,5-40 mm | 4,5 mm | Stripping tool with 2 cable retention hooks | 150/167 mm | 0,12 |
| **12844** | Replacement blade for 12843 | | | | |
| **12845** | Little replacement cable retention hook 4,5-25 mm Ø | | | | |
| **12846** | Big replacement cable retention hook 20-40 mm Ø | | | | |

## Solar cable stripping tool
adjusted for 7 mm and 8,5 mm stripping length

Small, light and easy to handle cable stripping tool, prepare most standard solar cables without adjustment from 2,5-6 mm². Fixed stripping length 7 mm and 8,5 mm that needs no adjustment. Easy handling-clip on cable, rotate, remove tool and insulation slugs. The blades are exchangeable and protected against accidental contact in case of non-working.

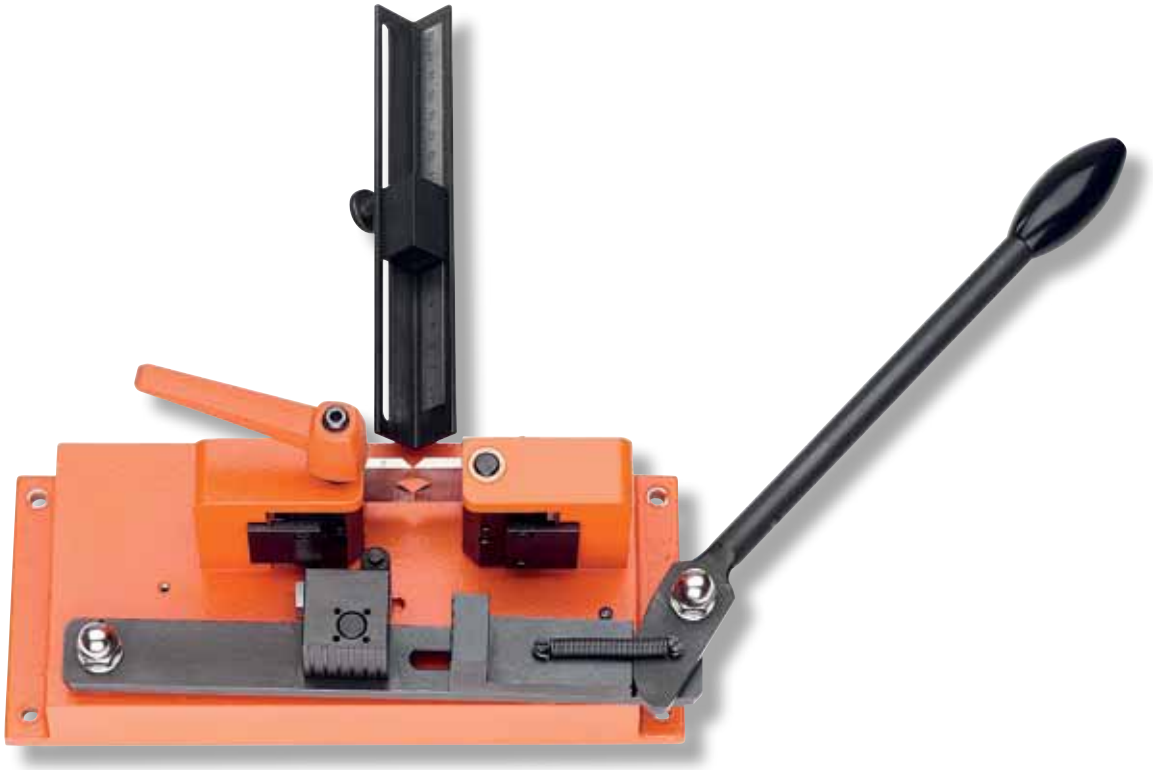
| Part-No. | stripping capacity | stripping length | description | dimensions mm L | B | H | weight kg/pcs. |
|---|---|---|---|---|---|---|---|
| **05177** | 2,5-6 mm² | 7,0/8,5 mm | Stripping tool with stripping cassette | 83 | 22 | 43 | 0,02 |
| **05179** | Replacement blade cassette for 05177 | | | | | | |

## Manually operated stripping device

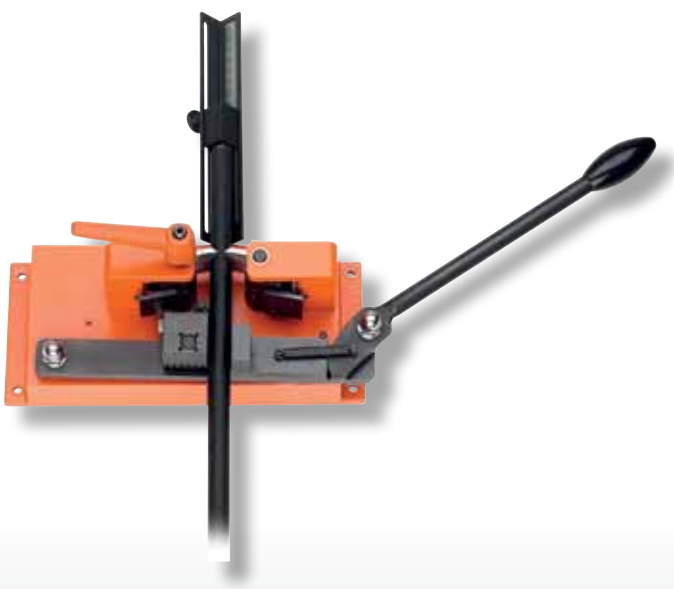
for stripping and dismantling of leadings and cables up to a diameter of 30 mm

Easy to handle, manually operated stripping device for stripping and dismantling of single wires or leadings as well as multicore conductors with different insulation materials. The stripping blades are manufactured in 1 mm steps in dependence of the cable-Ø. Additionally to the standard blades we manufacture various kinds of blades in special design for problematically insulation materials.
All offered standard stripping blades are also applicable for our druseidt silicone insulated leadings 1,8/3 kV according to catalogue page 40.

The stripping blades can be adjusted very easily without any tools to suit your cable-Ø and insulation removal length. Once adjusted a simply pull on the hand lever and the part of the outer insulation is cut and removed. To offer an optimal solution for your stripping application we recommend to send us samples. With pleasure we'll make stripping tests with your material.



Stripping machine



Pull the clamp lever in order to open the stripping blades

Insert cable and push it at the length stop. Than let the clamp lever loose and pull on the hand lever

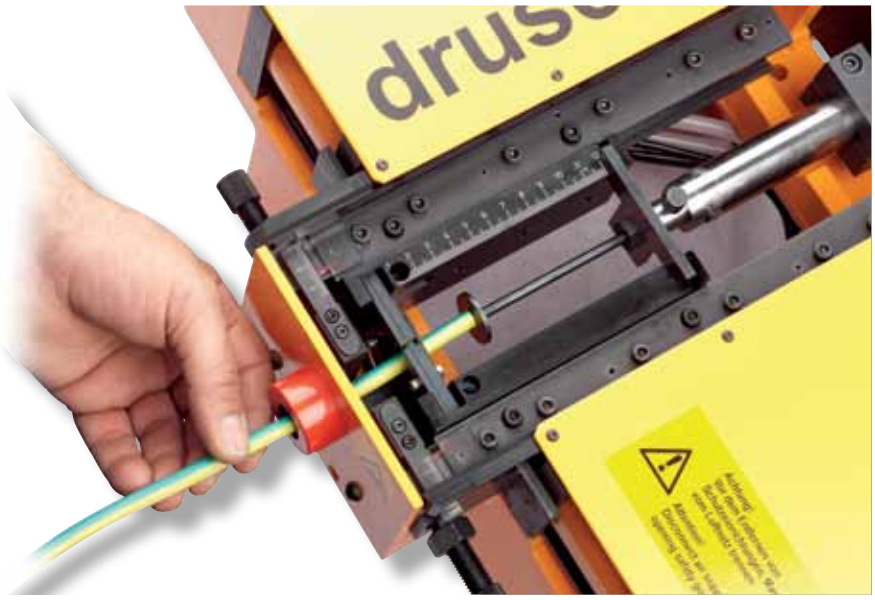
| Part-No. | stripping capacity | stripping length | description | dimensions mm B | L | H | weight kg/pcs. |
|---|---|---|---|---|---|---|---|
| **05300** | up to 30 mm Ø | up to 150 mm | Stripping device without stripping blade | 290 | 125 | 170 | 5,00 |
| **05301** | Standard stripping blade | | | | | | |

## Pneumatically operated stripping machine

for stripping and dismantling of leadings and cables up to a diameter of 25 mm

Universal stripping machine for the economical production of small and medium series. The use of special stripping blades coordinated with the different cables allows an easy handling of nearly all standard cables. When working with extremely soft insulation materials like our silicone insulated leadings 1,8/3 kV according to catalogue page 40 it is necessary to center it by an additional plate (stripping blades Part-No. 05322).

All machine retooling can be done in some seconds without using tools. A delivery with foot-switch is standard. To offer an optimal solution for your stripping application we recommend to send us samples. With pleasure we'll make stripping tests with your material.



Food switch

Tabletop unit

| Part-No. | stripping capacity | max. stripping length by total stripping | description | operating pressure | dimensions mm B | L | H | weight kg/pcs. |
|---|---|---|---|---|---|---|---|---|
| **05320** | 1-25 mm Ø | 120 mm | Stripping machine without stripping blades | 3-6 bar | 430 | 650 | 245 | 27,50 |
| **05321** | Standard stripping blade for 05320 | | | | | | | |
| **05322** | Stripping blade with additional plate for 05320 | | | | | | | |
| **Stripping machines for bigger cables > 25 mm Ø on request.** | | | | | | | | |

# 2. CUTTING-, STRIPPING AND CRIMPING TOOLS

## 2.3 Crimping tools for cable end sleeves

After the leadings are cutted and stripped the next step is to crimp cable connectors to the conductor ends. This will be normally done by a solderless crimping operation. To prevent a fan out of the conductor ends of stranded or fine stranded copper leadings and to relieve the inserting into clamps, cable end sleeves acc. to DIN 46228 part 1 + 4 in uninsulated as well as insulated design are used. Because the crimping designs are not regulated, different crimping designs acc. to the adjoining table has been established on the market.

To offer to the users their individual preferred or for the application best suited crimping design, druseidt offers various kinds of tools with different forms of die-sets. So tools with self-regulating die-sets with front- or sidewise insertion as well as with separated crimping profiles or as multi functionally tools (cutting-, stripping-, twisting- and crimping inside of one tool) are offered. The tightening forces for the crimped leadings are regulated inside of the EN 60947-1, VDE 0660/part 100 as well as EN 60999 part 1 + 2. Further information are described in the technical appendix on page 205. To realize the described values it is necessary that the outer-Ø of the stripped leading and the inside-Ø of the cable end sleeve have nearly the same value. The sleeve must be filled on completely and the conductor should be overlap a little bit (in dependence of the cross-section ca. 0,5 mm).

**Crimping designs for cable end sleeves:**

**Trapezoid crimping**

**Square crimping**

**Double-W-crimping**

**It is necessary to control the crimped cable end sleeve acc. to crimping mistakes e. g.:**

- **Crack formation or bursting of the sleeve**
- **Compliance with the crimp geometry (unsymmetrical crimp designs can be identified by a burr formation on the sleeve)**
- **Squeezing of conductor wires**

## Crimping tools for cable end sleeves

acc. to DIN 46228 part 1 and 4

12637

05122

| Part-No. | cross-section range | description | length | weight kg/pcs. |
|---|---|---|---|---|
| **12637** | 0,25 - 2,5 mm² | Simply tool. Trapezoid crimping with cable cutter and spring | 140 mm | 0,32 |
| **05122** | 0,75 - 16 mm² | Universal crimping tool with cable cutter | 220 mm | 0,31 |
| **Remark:** Simply, low cost tools. Only applicable for occasional repairing works. | | | | |

**05124**
**Square crimping**

**05125**
**Trapezoid crimping**

| Part-No. | cross-section range | description | length | weight kg/pcs. |
|---|---|---|---|---|
| **05124** | 0,5 - 6 mm² | Crimping tool with ratchet and square crimping.<br>Only one die for the whole cross-section range with front insertion. | 200 mm | 0,43 |
| **05125** | 0,5 - 16 mm² | Crimping tool with ratchet and trapezoid crimping. Ferrule insertion from the side.<br>Seven crimping profiles for the rated conductor cross-sections. | 230 mm | 0,55 |
| **Remark:** Handy tools with a good ratio in price and performance. With ratchet which guarantee a constant contact pressure. | | | | |

## Crimping tools for cable end sleeves
acc. to DIN 46228 page 1 and 4

**12640/12641**
**Square crimping**

**12646/12647**
**Trapezoid crimping**

| Part-No. | cross-section range | | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12640** | Single | 0,08 - 10 mm² | Crimping tool with ratchet and square crimping. Only one die for the whole cross-section range with ferrule insertion from the side. | 200 mm | 0,33 |
| | Twin | 0,5 - 4 mm² | | | |
| **12641** | Single | 2,5 - 16 mm² | | 200 mm | 0,33 |
| | Twin | 6 - 10 mm² | | | |
| **12646** | Single | 0,14 - 6 mm² | Crimping tool with ratchet and trapezoid crimping. Only one die for the whole cross-section range with front insertion. | 230 mm | 0,50 |
| | Twin | 0,5 - 4 mm² | | | |
| **12647** | Single | 10 - 16 mm² | | 230 mm | 0,55 |
| | Twin | 6 - 10 mm² | | | |
| **Remark:** Tools with high precession crimping and an excellent power gear ration. | | | | | |

**05140**
**Square crimping**

**05141**
**Tool with case**

**05144**
**Square crimping**

| Part-No. | cross-section range | | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **05140** | Single | 0,25 - 6 mm² | Crimping tool without tool case | 130 mm | 0,42 |
| | Twin | 0,5 - 4 mm² | | | |
| **05141** | Single | 0,25 - 6 mm² | Part-No. 05144 , but with tool case | 130 mm | 0,42 |
| | Twin | 0,5 - 4 mm² | | | |
| **05144** | Single | 0,08 - 16 mm² | Crimping tool with ratchet and square crimping. One switchable die with front insertion. | 190 mm | 0,48 |
| | Twin | 0,5 - 10 mm² | | | |
| **Remark:** Part-No. 05140/41. Perfect in ergonomics and design. The design with the optimized power gear ratio realize a fatigue-proof work. Max. ferrule length in one crimping operation 12 mm and 18 mm in two crimping operations. | | | | | |
| **Part-No. 05144** High quality crimping tool. Only with one crimping die for cable end sleeves in a cross-section range of 0,08-16 mm² and a length up to 15 mm. With switchable crimping range (working range 1 = 0,08-10 mm², working range 2 = 16 mm²). | | | | | |

## Crimping tools for cable end sleeves
acc. to DIN 46228 page 1 and 4

05184

12648/12649

| Part-No. | cross-section range | | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12648** | Single | 10 - 25 mm² | Crimping tool with ratchet and double W-crimping | 260 mm | 0,63 |
| **12649** | Single | 35 - 50 mm² | Crimping tool with ratchet and double W-crimping | 260 mm | 0,63 |
| | Twin | 16 mm² | | | |
| **05184** | Single | 10 - 50 mm² | Crimping tool with ratchet and double W-crimping | 300 mm | 0,60 |

**Remark: Part-No. 12648/12649** high quality crimping tools with optimized power gear ratio enable fatigue proof work also when working with bigger cross-sections.

**Part-No. 05184** universal tool with a wide cross-section range and a good ratio in price and performance. Five crimping profiles with ferrule insertion from the side.

## Multifunction crimping tool Quadro
for insulated cable end sleeves in stripform design

12510

12512

| Part-No. | cross-section range | description |
|---|---|---|
| **12510** | 0,5 - 2,5 mm² | Quadro-Set consisting out of Quadro-tool, 3 magazine, 1 case for cable end sleeves, 1 tool-case |
| **12512** | 0,5 -2,5 mm² | Quadro without magazine and without tool-case |
| **12514** | Replacement magazine for Quadro | |

**Remark:** Only one tool for cutting and stripping of leadings, twisting of the wire strands and crimping of insulated cable end sleeves in stripform design according catalogue page 69. Quick change sleeve magazine enables an easy and ergonomic work in a very short time.

# 2. CUTTING-, STRIPPING AND CRIMPING TOOLS

## 2.4 Hand operated tools, multifunction tools as well as machines suitable for crimping insulated and uninsulated cable lugs and connectors

Electrical connections or wiring operations are normally done by using prefabricated leadings with crimped cable lugs or connectors.

The requirements of such connections are in dependence of the used cable lugs or connectors regulated in different norms. Some information are specified in the technical appendix of this catalogue on page 205. The technical regulation give us information about the necessary mechanical as well as electrical characteristics of crimp connections. Generally crimp connections must be done in a way that no unacceptable heating resp. unacceptable increasing of the resistance take place. So a solderless crimp connection is defined as a non detachably electrical and mechanical connection between a conductor and a cable lug or connector. The process includes a malleable permanent material deforming.

To fulfill the requirements in dependence of the frequency of use, druseidt offers tools or machines in different levels of price and performance.

The different druseidt multifunction tools with exchangeable die-sets offer the possibility to crimp various kinds of connectors by using only one tool. Especially they are well suited for mobile application or repair works or in all other cases where no serial-production is required.

**We deliver shortly from our stock:**

- **Hand operated tools for crimping different cable lugs and connectors**
- **Multifunction tools with exchangeable die-sets**
- **Pneumatically or electrically operated crimp machines with exchangeable die-sets**
- **Thus we are in a position to offer solutions for nearly every use case**

## Crimping tools for insulated cable lugs and connectors

05103

12600/N

12601

| Part-No. | cross-section range | description | length | weight kg/pcs. |
|---|---|---|---|---|
| **05103** | 0,1 - 0,5 mm² | Crimping tool with ratchet | 170 mm | 0,32 |
| **12600/N** | 0,5 - 6 mm² | Crimping tool with ratchet and double crimping | 230 mm | 0,53 |
| **12601** | 0,5 - 6 mm² | Crimping tool with ratchet and double crimping | 260 mm | 0,62 |

**Remark: Part-No. 05103** simply tool for insulated and uninsulated “Mini” cable lugs 0,1-0,5 mm².
**Part-No. 12600/N** Handy tool with a good ratio in price and performance. Well suited for installation works.
**Part-No. 12601** High quality crimping tool with an excellent power gear ratio. Applicable also for continuous works in small series.

05180

05186

12602

| Part-No. | cross-section range | description | length | weight kg/pcs. |
|---|---|---|---|---|
| **05180** | 0,5 - 6 mm² | Crimping tool with ratchet and double crimping | 220 mm | 0,48 |
| **05186** | Stripping and cutting unit 0,5-6 mm² for 05180 | | | |
| **12602** | 10 - 16 mm² | Crimping tool with ratchet | 245 mm | 0,48 |

**information: Part-No. 05180** Universal tool with a good ratio in price and performance. As an accessory the stripping and cutting clip Part-No. 05186 can be mounted in the handles. **Part-No. 12602** simply tool for cross-section range 10 + 16 mm².

## Profi Crimp Set

with 5 pcs. exchangeable die sets
in a handy plastic suitcase

| Part-No. | content / scope of supply | |
|---|---|---|
| 12858 | - Basic tool<br>- Die set for cable end sleeves 0,5-16 mm²<br>- Die set for insulated cable lugs 0,5-6 mm²<br>- Die set for uninsulated cable lugs 0,5-10 mm²<br>- Die set for crimping connectors 0,5-6 mm² | - Die set for BNC/TNC connectors<br>- RG 55, 58, 59, 62 174, 8279 and others LWL (hexagonal 6,48 - 5,4 - 4,76 - 1,72)<br>- Screw-driver with screws<br>- Plastic suitcase |
| **Remark:** Well suited for service works in industry and industrial art. Tool in handy design with 5 die sets for the most usual applications in a handy tool-case. | | |

## Mobile crimping tool

with exchangeable die-sets

| Part-No. | description | length | weight kg/pcs. |
|---|---|---|---|
| 05160 | Basic tool with ratchet | 460 mm | 0,46 |
| **Deliverable die sets** | | | |
| 05161 | Die set for insulated cable lugs 0,5-2,5 mm² | | |
| 05162 | Die set for insulated cable lugs 0,1-0,5 and 6 mm² | | |
| 05163 | Die set for cable lugs DIN 46234 0,5-6 mm² | | |
| 05164 | Die set for cable lugs DIN 46234 4-10 mm² | | |
| 05165 | Die set for cable end sleeves 0,25-10 mm² | | |
| 05166 | Die set for cable end sleeves 16-25 mm² | | |
| 05167 | Die set for cable end sleeves 35-50 mm² | | |
| 05168 | Die set for coax cable RG 58/59/62/71 | | |
| 05169 | Die set for machined pin and socket contacts 0,14-4 mm² | | |
| 05170 | Die set for machined pin and socket contacts 6-10 mm² | | |
| 05171 | Die set for uninsulated tabs and receptacles 2,8 mm | | |
| 05172 | Die set for uninsulated tabs and receptacles 4,8 mm | | |
| 05173 | Die set for uninsulated tabs and receptacles 6,3 mm | | |
| 05174 | Die set for solar connectors MC3 | | |
| 05175 | Die set for solar connectors MC4 | | |
| 05176 | Die set for solar connectors Tyco Solarlok | | |

**Remark:** Universal crimping tool with a multiplicity selection of die sets. The parallel stroke mechanism guaranteed high quality crimping connections. The different die sets have been connected by a pin and are easy and quick exchangeable. To protect them while storaged we'll deliver the dies in little plastic boxes. The user-friendly design combined with the extensive number of die sets realize a flexible working by using only one basic tool.

## Solar-Kit

| Part-No. | content/scope of supply |
|---|---|
| **05178** | 1 Piece Crimping tool with ratchet 05160 without die sets<br>1 Piece Die set for solar connector MC 3<br>1 Piece Die set for solar connector MC 4<br>1 Piece Die set for solar connector Tyco Solarlock<br>1 Piece Stripping tool for solar cables 2,5-6 mm², adjusted for 7 mm and 8,5 mm stripping length |
| **Remark:** Special tool kit applicable for the crimping of the most established solar connectors and stripping of solar cables. | |

## Universal tools

for crimping coax-connectors and uninsulated tabs and receptacles

**12855/N**

**05116/N**

| Part-No. | range of application | description | length | weight kg/pcs. |
|---|---|---|---|---|
| **12855/N** | RG 55/58/59/62/71/174/8279 u.a. | Crimping tool with ratchet | 230 mm | 0,53 |
| **05116/N** | 0,5- 6 mm² | Crimping tool with ratchet and double crimpings | 230 mm | 0,53 |
| **Remark: Part-No. 12855/N** Universal crimping tool for BNC- and TNC-connectors, outside-Ø 6,48/5,41/4,76/1,72. Applicable for crimping the inner contact as well as the outer sleeve. **Part-No. 05116/N** Universal crimping tool applicable for the crimping of uninsulated tabs and receptacles. | | | | |

## Precision crimping tools with linear crimping
for uninsulated tabs and receptacles

### Advantages of the linear crimping process
No twisting of the contacts and symmetric curling of the crimping claws. The linear crimping process offers a machine-like crimping performance and perfect precisioned crimpings for highest demands. The following described tools are equipped with double crimping precision dies and offer a crimping of wire and insulation in one step.

The universal crimping head Part-No. 12620 enables a crimping of a great part of contacts (flat and round terminals etc.) which are on the market. Additionally to the standardized crimping heads it is possible to order special heads for D-Sub-contacts or telephone plugs etc. on request.

| Best-Nr. | cross-section range | description |
|---|---|---|
| **12615** | - | basic tool without crimping heads |
| **12616** | - | plastic suitcase for basis tool and 5 die sets |
| **12617** | 0,5 - 1,0 mm² | crimping head for uninsulated tabs and receptacles 2,8 mm |
| **12618** | 0,5 - 1,5 mm² | crimping head for uninsulated tabs and receptacles 4,8 mm |
| **12619** | 0,5 - 2,5 mm² | crimping head for uninsulated tabs and receptacles 6,3 mm |
| **12620** | 0,5 - 2,5 mm² | universal crimping head |

**30475**

**30477**

| Part-No. | cross-section range | description | length | weight |
|---|---|---|---|---|
| **30475** | 0,5 - 1,0 mm² | for uninsulated tabs and receptacles 2,8 mm | 210 mm | 0,50 kg |
| **30477** | 1,0 - 2,5 mm² | for uninsulated tabs and receptacles 6,3 mm | 350 mm | 0,50 kg |
| **30480** | 0,5 - 1,0 mm² | for flag type receptacles Part-No. 04945 | 210 mm | 0,50 kg |
| **30481** | 0,5 - 1,5 mm² | for flag type receptacles Part-No. 04940 | 210 mm | 0,50 kg |

## Multifunctional crimping devices

deliverable as hand operated tool and electrically or pneumatically operated machines

The offered tool 12430 as well as the machines 12408 and 12425 works with the same die sets. The high and constant quality of the crimping performance is the result of the dies combined by the linear crimping process. The machines were created with a newly developed safety mechanism. Consequently there is no need to specify any safety covers to protect the operator. Two sizes of stabilized tool-cases for the hand operated tool offer the possibility to work with and to store a different number of die sets.

When working with the hand tool in combination with a machine the system enables a stationary as well as working inside of switch gears or switch boxes. The electrically operated machine part-no. 12408 is characterized by an easy and quick exchange of the tool head and die sets in a short machine cycle time. It is possible to crimp the connectors in one as well as in two steps.

The machine is equipped with an adjustable double step mechanism. That means that the crimping contact will be fixed in the first and the crimping procedure and the reverse of the dies will be done in the second step. Activation with safety foot pedal. Assembling of all offered die sets in the fast-change-clamp of the tool head part-no. 12409.

So the system offers a cost-effective as well as a working in a wide range of application.

table top unit

foot pedal

| Part-No. | description | dimensions mm B | L | H | weight kg/pcs. |
|---|---|---|---|---|---|
| **Hand operated tool** | | | | | |
| **12430** | basic tool without die set | 75 | 220 | 40 | 0,58 |
| **12431** | plastic tool-case for basic tool and 5 die sets | | | | |
| **12432** | plastic tool-case for basic tool and 13 die sets | | | | |
| **Electrically operated machine** | | | | | |
| **12408** | crimping machine 230 V AC with safety foot pedal without tool head and crimping dies | 390 | 260 | 200 | 13,00 |
| **12409** | basic crimping head without crimping dies | | | | |

Description of the die sets on page 157

## Pneumatically operated safety crimping machine

These pneumatically operated crimping machine needs, just as the electrically one, no safety covers to protect the operator. The machine was created with the newly developed and patent protected safety mechanism. By means of a fitted safety valve, crimping is not released where the size of the opening between the impact surfaces of the dies exceeds 5,9 mm. Consequently there is no need to specify any safety covers. Activation with safety double foot pedal is standard.

So the productivity is additionally increased and the hands of the operator remain free to insert the contacts and conductors. Crimp force starting at 9 kN and exponentially increasing to max. 120 kN at die closure at 6 bar. Electronic piece counter, safety double foot pedal, a colour coded quadruple connecting hose and a tool-mounting-set are standard and scope of delivery. The multiplicity fields of applications offer a wide range of crimping activities.

foot pedal

table top unit

| Part-No. | cross-section range mm² | description | dimensions mm B | L | H | weight kg/pcs. |
|---|---|---|---|---|---|---|
| **12425** | | pneumatically operated crimping machine with tool-adapter and safety double foot pedal | 280 | 160 | 280 | 26,00 |
| **Deliverable die sets for hand operated tool 12430 electrically operated machine 12408 and pneumatically operated machine 12425** | | | | | | |
| **12433** | 0,5 - 6,0 | die set for insulated lugs/connectors | | | | |
| **12434** | 0,1 - 10,0 | die set for cable lugs DIN 46234 | | | | |
| **12445** | 10,0 | die set for cable lugs DIN 46234 | | | | |
| **12447** | 16,0 | die set for cable lugs DIN 46234 | | | | |
| **12436** | 0,14 - 10,0 | die set for cable end sleeves DIN 46228 page 1 + 4 | | | | |
| **12426** | 10,0 - 25,0 | die set for cable end sleeves DIN 46228 page 1 + 4 | | | | |
| **12427** | 35,0 - 50,0 | die set for cable end sleeves DIN 46228 page 1 + 4 | | | | |
| **12437** | 0,5 - 1,0 | die set for uninsulated receptacles 2,8 mm | | | | |
| **12438** | 0,5 - 2,5 | die set for uninsulated receptacles 4,8 mm | | | | |
| **12439** | 0,5 - 6,0 | die set for uninsulated receptacles 6,3 mm | | | | |
| Additional die sets e.g. for solar connectors, machined pin and socket connectors etc. on request. | | | | | | |

## Crimping tools for uninsulated cable lugs and connectors

**05103**

**12645/N**

**30445**

| Part-No. | cross-section range mm² | description | length | weight kg/pcs. |
|---|---|---|---|---|
| **05103** | 0,10 - 0,5 | crimping tool with ratchet | 170 mm | 0,32 |
| **12645/N** | 0,50 - 10,0 | crimping tool with ratchet | 230 mm | 0,53 |
| **30445** | 0,75 - 10,0 | crimping tool with ratchet | 270 mm | 0,50 |

**Remark: Part-No. 05103** simply tool for insulated and uninsulated “Mini” cable lugs 0,1-0,5 mm². **Part-No. 12645 N/30445** universal tools, well suited for installation works.

**05182**

**05186**

**30446**

**05126**

| Part-No. | cross-section range mm² | description | length | weight kg/pcs. |
|---|---|---|---|---|
| **05182** | 0,1 - 16 | crimping tool with ratchet | 220 mm | 0,47 |
| **05186** | | stripping and cutting unit 0,5-6 mm² for 05182 | | |
| **30446** | 1,5 - 16 | crimping tool with ratchet | 315 mm | 0,61 |
| **05126** | 10,0 - 25 | crimping tool with ratchet | 260 mm | 0,62 |

**Remark:** All tools for crimping cable lugs according to DIN 46234, 46230 resp. connectors DIN 46341 Part 1 design A + B or connectors with similar dimensions.
**Part-No. 05182** as an accessory the stripping and cutting clip Part-No. 05186 can be mounted in the handles.

## Crimping tools for tubular cable lugs and connectors in druseidt standard design

crimping width 5 mm

12375

12376

12377

| Part-No. | cross-section range mm² | crimping design | length | weight kg/pcs. |
|---|---|---|---|---|
| **12375** | 6 - 50 | WM-crimping | 380 mm | 1,30 |
| **12376** | 6 - 70 | WM-crimping | 515 mm | 2,00 |
| **12377** | 10 - 120 | WM-crimping | 660 mm | 4,10 |

**Remark:** Suitable for crimping of druseidt standardized tubular cable lugs and connectors according to the catalogue pages 30-34. The cross-section can be adjusted by turning the in-built-revolving dies. So there is no need of changing dies.

## Crimping tools for tubular cable lugs and connectors in druseidt Euro-type design

crimping width 5 mm

12372/50

12372

12373

| Part-No. | cross-section range mm² | crimping design | length | weight kg/pcs. |
|---|---|---|---|---|
| **12372/50** | 6 - 50 | WM-crimping | 380 mm | 1,30 |
| **12372** | 6 - 70 | WM-crimping | 515 mm | 2,00 |
| **12373** | 10 - 120 | WM-crimping | 660 mm | 4,10 |

**Remark:** Suitable for crimping of tubular cable lugs and connectors in druseidt Euro-type design according to the catalogue pages 42-48. The cross-section can be adjusted by turning the in-built-revolving dies. So there is no need of changing dies.

## Crimping tool for tubular cable lugs in druseidt design for fine stranded cables

crimping width 5 mm

12374

| Part-No. | cross-section range | crimping design | length | weight kg/pcs. |
|---|---|---|---|---|
| **12374** | 10 - 70 mm² | WM-crimping | 515 mm | 2,18 |

**Remark:** Suitable for crimping of tubular cable lugs and connectors in druseidt design for fine stranded cables according to the catalogue pages 36-39. The cross-section can be adjusted by turning the in-built-revolving dies. So there is no need of changing dies.

## Crimping tools for tubular cable lugs and connectors

**out of copper according to DIN 46235/DIN 46267 part 1**
**as well as aluminium according to DIN 46329/46267 part 2**

crimping width 5 mm

12370/50

12370

12371

| Part-No. | cross-section range Cu | cross-section range Alu | crimping design | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12370/50** | 6 - 50 mm² | 10 - 35 mm² | hexagonal crimping | 380 mm | 1,30 |
| **12370** | 6 - 70 mm² | 10 - 50 mm² | hexagonal crimping | 515 mm | 2,00 |
| **12371** | 10 - 120 mm² | 10 - 70 mm² | hexagonal crimping | 660 mm | 4,10 |

**Remark:** Suitable for crimping of cable lugs and connectors out of copper as well as aluminium according to DIN 46235/46267 part 1 and 46329/46267 part 2 catalogues pages 50-53 and 56-59. The cross-section can be adjusted by turning the in-built-revolving dies. So there is no need of changing dies.

# 2. CUTTING-, STRIPPING AND CRIMPING TOOLS

## 2.5 Power-assisted compression tools with exchangeable die-sets

Additionally to the delivering of simply hand operated tools with a power gear ration generated by leverage forces, druseidt offers various kinds of power-assisted compression tools too. Such tools offer significant advantages, mainly when working under cramped conditions or serial production. In dependence of the frequency of use, the operating conditions and the design of the cable lugs, the user can select out of the following tools:

- **Hand operated compression tools with ratchet**
  The press capacity and crimping depth of such tools are generated by a smooth-running and precise rotating eccentric construction. Where necessary the free movement is guaranteed through a construction with roller- and needle bearings. So the terminals can be crimped very easily by swinging the movable hand lever of the tools.
- **Hand operated hydraulic compression tools**
  The crimping process can be activated by swinging the movable hand lever of the tools. The power gear ration will be realized by a single- or double piston pump.
- **Battery operated electro-hydraulic compression tools**
  When working with such tools the power gear ratio will be realized by an electro-hydraulic aggregate. So a fatigue proof working is guaranteed. While working with batteries the tools are well suited for mobile application.
- **Hydraulic working systems with exchangeable compression heads**
  Such systems consist out of a basic pump or electrohydraulic unit which can be equipped with exchangeable compression- or cutting heads.Caused by the deliverable different cutting- and compression heads the systems are suited for universal as well as mobile application.

In the range of hydraulic operated tools druseidt works as far as possible with exchangeable compression die-systems, that means that you can use the same dies inside of the hand- as well as battery- or electro-hydraulic operated tools.

**druseidt-system dies**
applicable inside of hand- as well as battery- or electrohydraulic operated tools

**System dies size I**
druseidt flat dies

**System dies size II**
druseidt half shell dies in small design

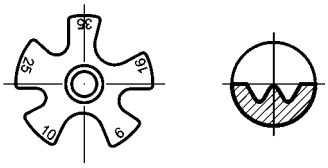
**System dies Size III**
druseidt half shell dies in large design

## Mechanical crimping tool

with ratchet and revolving dies 6-35 mm²
for cable lugs acc. to DIN 46234

**die set and crimping form**

indent crimping for cable lugs acc. to DIN 46234




exchangeable die set

exchangeable indentor

| Part-No. | cross-section range | crimping force | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12650** | 6 - 35 mm² | ca. 28 kN | crimping tool with revolving dies | 310 mm | 1,30 |
| **12651** | steel carrying case | | | | |

**Remark:** Mechanical crimping tool with ratchet suitable for one hand operation. Cable lugs can be crimped very easily by swinging the moveable hand lever. Only one die set is required by crimping cable lugs in a cross-section range 6-35 mm². The construction with the built-in-force-blocking device guaranteed a constant and exact crimping-depth and therefore an excellent electrical and mechanical quality of the crimping connection. The handy design and the collapsible tool head offers also a working in cramped conditions.

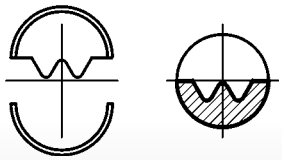
## Mechanical crimping tool
with ratchet and exchangeable die sets 6-50 mm²

| Part-No. | cross-section range | crimping force | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12655** | 6 - 50 mm² | ca. 28 kN | crimping tool without die sets | 280 mm | 1,20 |
| **12656** | steel carrying case | | | | |

**Remark:** Mechanical crimping tool with ratchet for one hand operation Terminals can be crimped very easily by swinging the moveable handlever. The construction with the built-in-force-blocking device guaranteed a constant and exact crimping-depth and therefore an excellent electrical and mechanical quality of the crimping connection. The handy design and the collapsible tool head offer also a working in cramped conditions. Exchangeable die sets with different crimping profiles offer an effective working inside of different kinds of applications. The handy design combined with the solid steel carrying case make the tool particulary well suited for working on installations out of your factory.

## Deliverable die sets

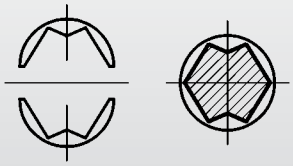
### Indent crimping 6-35 mm²
for cable lugs acc. to DIN 46234



| Part-No. | cross-section mm² | Part-No. | cross-section mm² |
|---|---|---|---|
| **12657** | 6 | **12660** | 25 |
| **12658** | 10 | **12661** | 35 |
| **12659** | 16 | **12662** | indentor 6 - 35 mm² |

**Remark:** When placing an order about dies 12657-61 it is necessary to order the indentor 12662

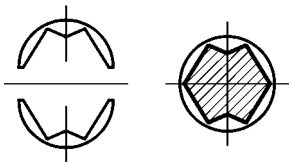
### WM-crimping 6-50 mm²
for tubular cable lugs
in druseidt standard design



| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| **12665** | 6 | 6 |
| **12666** | 10 | 6 |
| **12667** | 16 | 6 |
| **12668** | 25 | 6 |
| **12669** | 35 | 6 |
| **12670** | 50 | 6 |

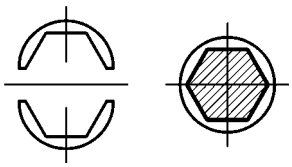
# Exchangeable die sets for crimping tool Part-No. 12655

## WM-crimping 6-50 mm²
for tubular cable lugs
druseidt Euro-type design



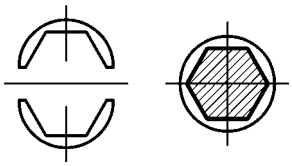
| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| **12468** | 6 | 5 |
| **12469** | 10 | 5 |
| **12470** | 16 | 5 |
| **12471** | 25 | 5 |
| **12472** | 35 | 5 |
| **12473** | 50 | 5 |

## Hexagonal-crimping 6-50 mm²
for copper cable lugs and connectors
acc. to DIN 46235/46267 part 1



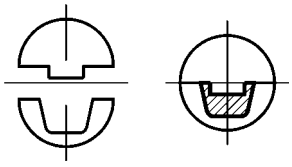
| Part-No. | cross-section mm² | code-no. | crimping width mm |
|---|---|---|---|
| **12671** | 6 | 5 | 5 |
| **12672** | 10 | 6 | 5 |
| **12673** | 16 | 8 | 5 |
| **12674** | 25 | 10 | 5 |
| **12675** | 35 | 12 | 5 |
| **12676** | 50 | 14 | 5 |

## Hexagonal-crimping 6-50 mm²
for aluminium cable lugs and connectors
acc. to DIN 46329/46267 part 2



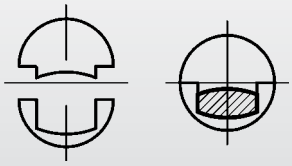
| Part-No. | cross-section mm² | code-no. | crimping width mm |
|---|---|---|---|
| **12456** | 16/25 | 12 Al | 7 |
| **12457** | 35 | 14 Al | 7 |
| **12458** | 50 | 16 Al | 7 |

## Trapezoid-crimping 6-50 mm²
for cable end sleeves acc. to DIN 46228 page 1 + 4



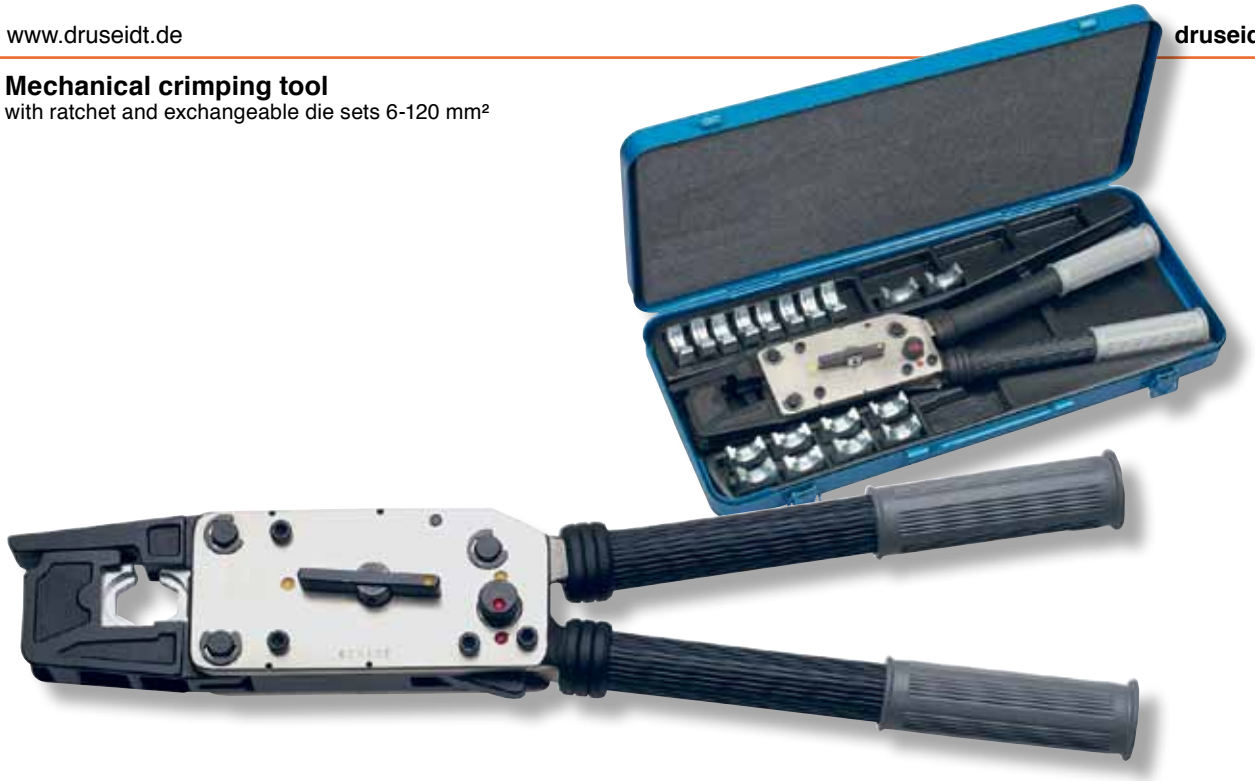
| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| **12652** | 6 | 18 |
| **12653** | 10 | 18 |
| **12654** | 16 | 18 |
| **12677** | 25 | 18 |
| **12678** | 35 | 18 |
| **12679** | 50 | 18 |

## Oval-crimping 10-25 mm²
for insulated cable lugs



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12460** | 10 | suitable for cable lugs acc.to catalogue pages 15 + 16 |
| **12461** | 16 | |
| **12462** | 25 | |

## Mechanical crimping tool
with ratchet and exchangeable die sets 6-120 mm²

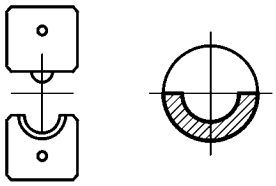


| Part-No. | cross-section range | crimping force | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **30460** | 6 - 120 mm² | ca. 55 kN | crimping tool without die sets | 430 mm | 2,00 |
| **30470** | steel carrying case | | | | |

**Remark:** Handy mechanical crimping tool with ratchet. Terminals can be crimped very easily by swinging the movable handlever. The construction with the built-in-force-blocking device guaranteed a constant and exact crimping-depth and therefore an excellent electrical and mechanical quality of the crimping connection. The collapsible tool head enables a quick changing of the die sets. The handy design and the little weight offer also a working in cramped conditions.

## Deliverable die sets

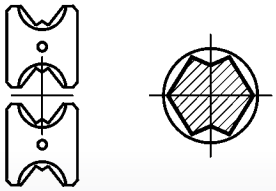
### Indent crimping dies 6-70 mm²
for cable lugs acc. to DIN 46234



| Part-No. | cross-section mm² | Part-No. | cross-section mm² |
|---|---|---|---|
| **12680** | 10 + 16 + 25 + 35 | **12683** | Indentor 6 - 70 |
| **12681** | 6 + 50 | | |
| **12682** | 70 | | |

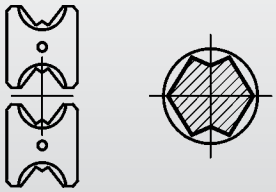
**Information:** When placing an order about dies 12680-82 it is nessessary to order the intendor 12683 too.

### WM-crimping 10-120 mm²
for tubular cable lugs
druseidt standard design



| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| **12685** | 10 + 70 | 7 |
| **12686** | 16 + 35 | 7 |
| **12687** | 25 + 50 | 7 |
| **12688** | 95 | 5,5 |
| **12689** | 120 | 5,5 |

### WM-crimping 10-120 mm²
for tubular cable lugs
druseidt Euro-type design

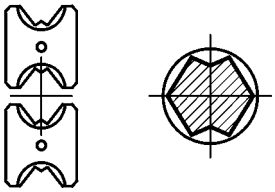


| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| **12475** | 10 + 70 | 7 |
| **12476** | 16 + 35 | 7 |
| **12477** | 25 + 50 | 7 |
| **12478** | 95 | 5,5 |
| **12479** | 120 | 5,5 |

# Exchangeable die sets for crimping tool Part-No. 30460

## WM-crimping 10f-95f mm²

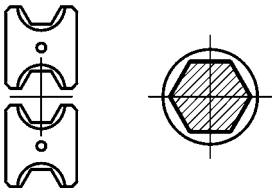
for tubular cable lugs
druseidt design for fine stranded cables



| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| **12515** | 10 f + 25 f | 5 |
| **12516** | 16 f + 35 f | 5 |
| **12517** | 50 f | 5 |
| **12518** | 70 f | 5 |
| **12519** | 95 f | 5 |

## Hexagonal-crimping 10-120 mm²

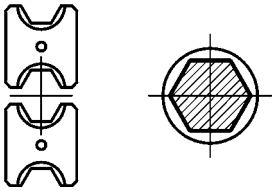
for copper cable lugs and connectors
acc. to DIN 46235/46267 part 1



| Part-No. | cross-section mm² | code-no. | crimping width mm |
|---|---|---|---|
| **12690** | 10 + 70 | 6 + 16 | 5,5 |
| **12691** | 16 + 35 | 8 + 12 | 5,5 |
| **12692** | 25 + 50 | 10 + 14 | 5,5 |
| **12693** | 95 | 18 | 5,5 |
| **12694** | 120 | 20 | 5,5 |

## Hexagonal-crimping 16-95 mm²

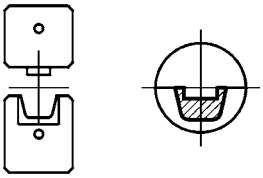
for aluminium cable lugs and connectors
acc. to DIN 46329/46267 part 2



| Part-No. | cross-section mm² | code-no. | crimping width mm |
|---|---|---|---|
| **12762** | 16/25 + 35 | 12 Al + 14 Al | 7 |
| **12763** | 16/25 + 50 | 12 Al + 16 Al | 7 |
| **12764** | 70 | 18 Al | 7 |
| **12765** | 95 | 20 Al | 7 |

## Trapezoid-crimping 25-95 mm²

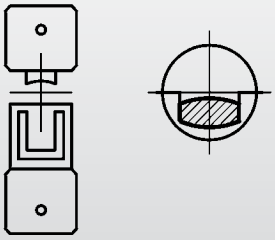
for cable end sleeves
acc. to DIN 46228 page 1 + 4



| Part-No. | cross-section mm² | pressing width mm | information |
|---|---|---|---|
| **12390** | 25 | 26 | When placing an order about dies 12390-94 it is necessary to order the suitable indentor. |
| **12391** | 35 | 26 | |
| **12392** | 50 | 26 | |
| **12393** | 70 | 26 | |
| **12394** | 95 | 26 | |
| **Indentor** | | | |
| **12395** | 25 + 35 | 26 | |
| **12396** | 50 + 70 | 26 | |
| **12397** | 95 | 26 | |

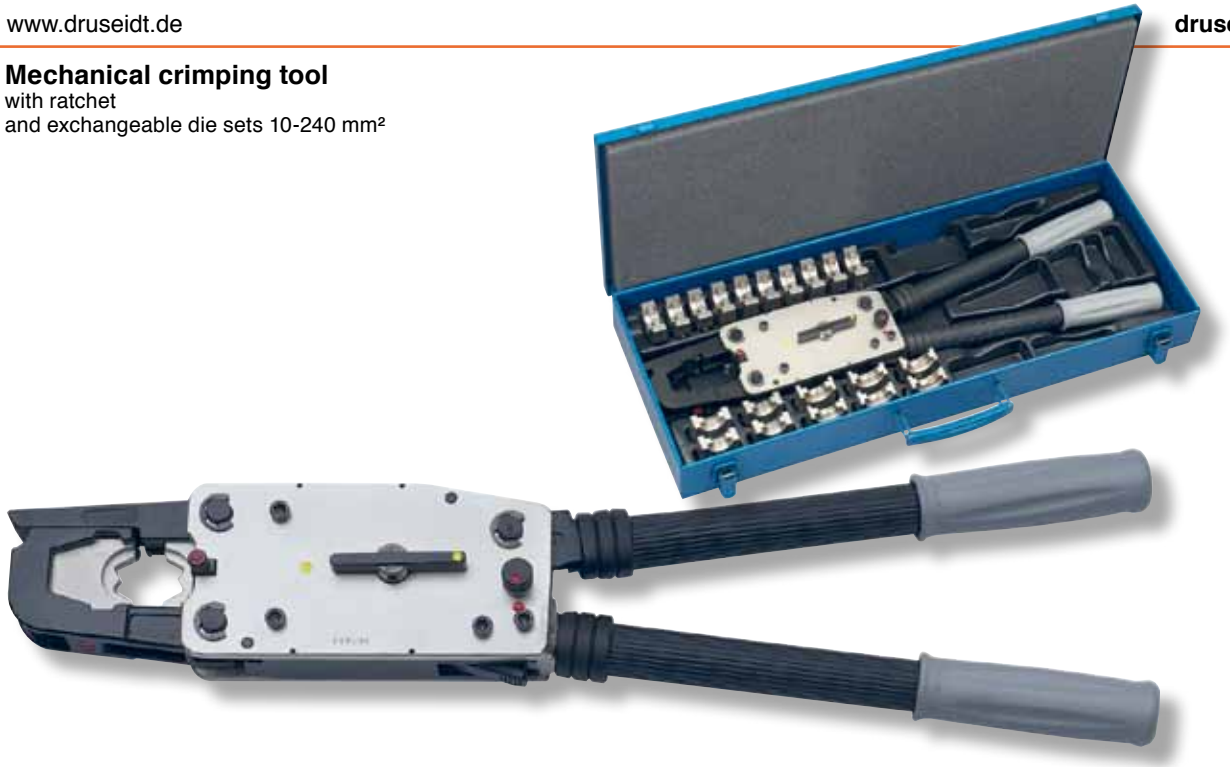
## Oval-crimping 10-35 mm²

for insulated cable lugs



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12695** | 10 | For use with cable lugs acc. catalogue pages 15 + 16. |
| **12696** | 16 | |
| **12697** | 25 | |
| **12698** | 35 | |

## Mechanical crimping tool
with ratchet
and exchangeable die sets 10-240 mm²

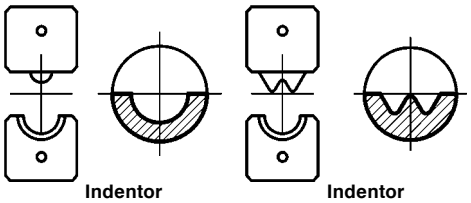


| Part-No. | cross-section range | crimping force | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **31460** | 10 - 240 mm² | ca. 100 kN | crimping tool without die sets | 565 mm | 4,00 |
| **31465** | Steel carrying case | | | | |

**Remark:** Robust mechanical crimping tool with ratchet. Terminals can be crimped very easily by swinging the movable handlever. The construction with the built-in-force-blocking device guaranteed a constant and exact crimping depth and therefore an excellent electrical and mechanical quality of the crimping connection. The collapsible tool head enables a quick changing of the die sets. Caused by the crimping force of 100 kN the construction offers an alternative to hydraulic operated tools.

## Deliverable die sets

### Indent-crimping dies 10-150 mm²
for cable lugs acc. to DIN 46234

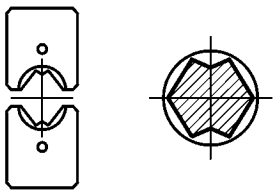


**Indentor 10 - 70 mm²** **Indentor 95 - 150 mm²**

| Part-No. | cross-section mm² | Part-No. | cross-section mm² |
|---|---|---|---|
| **12800** | 10 + 70 | **12804** | 95 |
| **12801** | 16 + 35 | **12805** | 120 |
| **12802** | 25 + 50 | **12806** | 150 |
| **12803** | Indentor 10 - 70 | **12807** | Indentor 95 - 150 |

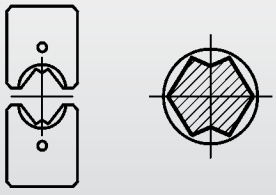
**Remark:** When placing an order about indent crimping dies Part-No. 12800-02 and 12804-06 it is necessary to order the suitable indentor too.

### WM-crimping 10-240 mm²
for tubular cable lugs
druseidt standard design



| Part-No. | cross-section mm² | crimping width mm | Part-No. | cross-section mm² | crimping width mm |
|---|---|---|---|---|---|
| **12341** | 10 | 7 | **12347** | 95 | 7 |
| **12342** | 16 | 7 | **12348** | 120 | 7 |
| **12343** | 25 | 7 | **12349** | 150 | 7 |
| **12344** | 35 | 7 | **12350** | 185 | 7 |
| **12345** | 50 | 7 | **12351** | 240 | 7 |
| **12346** | 70 | 7 | | | |

### WM-crimping 10-240 mm²
for tubular cable lugs
druseidt Euro-type design

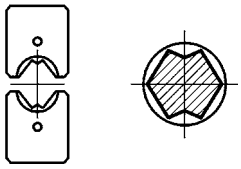


| Part-No. | cross-section mm² | crimping width mm | Part-No. | cross-section mm² | crimping width mm |
|---|---|---|---|---|---|
| **12562** | 10 | 7 | **12568** | 95 | 7 |
| **12563** | 16 | 7 | **12569** | 120 | 7 |
| **12564** | 25 | 7 | **12570** | 150 | 7 |
| **12565** | 35 | 7 | **12571** | 185 | 7 |
| **12566** | 50 | 7 | **12572** | 240 | 7 |
| **12567** | 70 | 7 | | | |

# Exchangeable die sets for crimping tool Part-No. 31460

## WM-crimping 10f-150f mm²

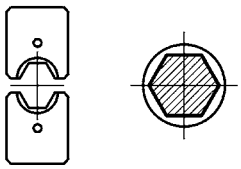
for tubular cable lugs
druseidt design for fine stranded cables



| Part-No. | cross-section mm² | crimping width mm | Part-No. | cross-section mm² | crimping width mm |
|---|---|---|---|---|---|
| **12192** | 10 f | 5 | **12197** | 70 f | 5 |
| **12193** | 16 f | 5 | **12198** | 95 f | 5 |
| **12194** | 25 f | 5 | **12199** | 120 f | 5 |
| **12195** | 35 f | 5 | **12200** | 150 f | 5 |
| **12196** | 50 f | 5 | | | |

## Hexagonal-crimping 10-240 mm²

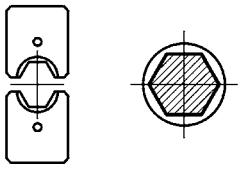
for copper-cable lugs and connectors
acc. to DIN 46235/46267 part 1



| Part-No. | cross-section mm² | code-no. | crimping width mm | Part-No. | Quer-schnitt mm² | code-no. | crimping width mm |
|---|---|---|---|---|---|---|---|
| **12809** | 10 | 6 | 7 | **12357** | 95 | 18 | 7 |
| **12352** | 16 | 8 | 7 | **12358** | 120 | 20 | 7 |
| **12353** | 25 | 10 | 7 | **12359** | 150 | 22 | 7 |
| **12354** | 35 | 12 | 7 | **12360** | 185 | 25 | 7 |
| **12355** | 50 | 14 | 7 | **12361** | 240 | 28 | 7 |
| **12356** | 70 | 16 | 7 | | | | |

## Hexagonal-crimping 10-240 mm²

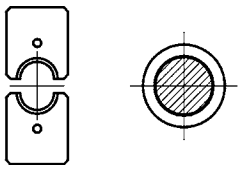
for aluminium-cable lugs and connectors
acc. to DIN 46329/46267 part 2



| Part-No. | cross-section mm² | code-no. | crimping width mm | Part-No. | Quer-schnitt mm² | code-no. | crimping width mm |
|---|---|---|---|---|---|---|---|
| **12362** | 16/25 | 12 Al | 7 | **12366** | 95/120 | 22 Al | 7 |
| **12363** | 35 | 14 Al | 7 | **12367** | 150 | 25 Al | 7 |
| **12364** | 50 | 16 Al | 7 | **12368** | 185 | 28 Al | 7 |
| **12365** | 70 | 18 Al | 7 | **12369** | 240 | 32 Al | 7 |

## Round-crimping dies 25/35-240/300 mm²

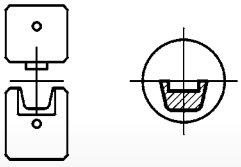
for sector shaped Cu-and Al-conductors



| Part-No. | cross-section mm² | | crimping width mm | Part-No. | cross-section mm² | | crimping width mm |
|---|---|---|---|---|---|---|---|
| | sm | se | | | sm | se | |
| **12378** | 25 | 35 | 25 | **12383** | 120 | 150 | 25 |
| **12379** | 35 | 50 | 25 | **12384** | 150 | 185 | 25 |
| **12380** | 50 | 70 | 25 | **12385** | 185 | 240 | 25 |
| **12381** | 70 | 95 | 25 | **12386** | 240 | 300 | 16 |
| **12382** | 95 | 120 | 25 | | | | |

## Trapezoid-crimping 25-185 mm²

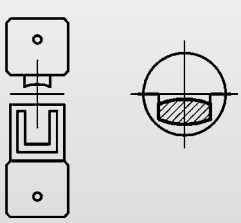
for cable end sleeves acc. to DIN 46228 part 1 + 4



| Part-No. | cross-section mm² | crimping width mm | Part-No. | cross-section mm² | crimping width mm |
|---|---|---|---|---|---|
| **12888** | 25 | 24 | **12892** | 95 | 24 |
| **12889** | 35 | 24 | **12893** | 120 | 24 |
| **12890** | 50 | 24 | | | |
| **12891** | 70 | 24 | | | |

## Oval-crimping 10-150 mm²

for insulated cable lugs



| Part-No. | cross-section mm² | Part-No. | cross-section mm² |
|---|---|---|---|
| **12810** | 10 | **12815** | 70 |
| **12811** | 16 | **12816** | 95 |
| **12812** | 25 | **12817** | 120 |
| **12813** | 35 | **12818** | 150 |
| **12814** | 50 | | |

Remark: Suitable for insulated cable lugs according to catalogue pages 15 + 16.

## Hydraulic operated crimping tools
with exchangeable die sets 10-240 mm²

**druseidt system dies size I**

Flat design partially with 2 cross-section ranges in one die

| Part-No. | cross-section range | crimping force | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12930** | 1,5 - 240 mm² | ca. 55 kN | crimping tool with single acting piston pump without die sets | 365 mm | 2,50 |
| **12931** | steel carrying case for 12930 | | | | |
| **12933** | 1,5 - 240 mm² | ca. 55 kN | crimping tool with double acting piston pump without die sets | 415 mm | 3,30 |
| **12934** | steel carrying case for 12933 | | | | |

**Remark:** Small, handy hydraulic operated crimping tools with limit compression valve. Part-No. 12930 with single and Part-No. 12933 with double acting piston pump for rapid motion of the die set to the connector. The collapsible rotating tool head enables a quick changing of the die sets and a working also in cramped conditions. The tools are equipped with druseidt system die sets (flat design acc. to system I), which can be also used in druseidt battery operated tools Part-No. 14240/42, 12748 resp. 12728.

## Range of applications/deliverable die sets

- Indent-crimping 6-70 mm² for cable lugs acc. to DIN 46234 and 46230
- Indent-crimping 1,5-35 mm² for druseidt stainless steel cable lugs
- WM-crimping 10-240 mm² for tubular cable lugs
  - druseidt standard design
  - druseidt Euro-type design
  - druseidt design for fine stranded cables
- Hexagonal-crimping 10/16-185 mm² for cable lugs and connectors
  - copper DIN 46235/46267 part 1
  - aluminium DIN 46329/46267 part 2
- Trapezoid-crimping 25-95 mm² for cable end sleeves acc. to DIN 46228 part 1 + 4
- Round-crimping dies 25/35-185/240 mm²
- Oval crimping dies 10-35 mm² for insulated cable lugs and connectors

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 196 and 197.

## Hydraulic operated crimping tool
with exchangeable die sets 6-300 mm²

**druseidt system dies size II**
half shell dies
small design

| Part-No. | cross-section range | crimping force | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12766** | 6 - 300 mm² | ca. 62 kN | crimping tool with double acting piston pump without die sets | 395 mm | 2,80 |
| **12767** | steel carrying case for 12766 | | | | |

**Remark:** Handy hydraulic operated crimping tool with a large operating capacity up to cross-section of 300 mm². Equipped with limit compression valve and double acting piston pump for rapid motion of the die set to the connector. The collapsible rotating tool head with quick fastener enables a quick changing of the die sets. The light and handy design with a length of only 395 mm enables also a working in cramped conditions. The tool is equipped with druseidt system die sets (half shell dies, small design acc. to size II) which can be also used in druseidt battery operated tools Part-No. 13552 and 14240/41 as well as in druseidt hydraulic crimping-heads Part-No. 12836.

## Range of application/deliverable die sets

- Indent-crimping 10-120 mm² for cable lugs acc. to DIN 46234 and 46230
- Indent-crimping 1,5-35 mm² for druseidt stainless steel cable lugs
- WM-crimping 10-300 mm² for tubular cable lugs and connectors
  - druseidt standard design
  - druseidt Euro-type design
- WM-crimping 10-240 mm² for druseidt tubular cable lugs and connectors for fine stranded cables
- Hexagonal-crimping 6-300 mm² for cable lugs and connectors
  copper DIN 46235/46267 part 1
  aluminium DIN 46329/46267 part 2
- Round-crimping dies 25/35-185/240 mm²
- Trapezoid-crimping 10-185 mm² for cable end sleeves acc. to DIN 46228 page 1 + 4
- Trapezoid-crimping 4-16 mm² for Twin cable end sleeves 2 x 4 mm² up to 2 x 16 mm²
- Crimping dies for C- and H-shaped connectors on request

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 198 and 199.

## Hydraulic operated crimping tools
with exchangeable die sets 10-300 mm²

12968

12965/S

**druseidt system dies size III**
half shell dies
large design

| Part-No. | cross-section range | crimping force | description | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12965/S** | 10 - 300 mm² | ca. 130 kN | crimping tool with single acting piston pump without die sets | 570 mm | 6,10 |
| **12966** | steel carrying case for 12965/S | | | | |
| **12968** | 10 - 300 mm² | ca. 130 kN | crimping tool with double acting piston pump without die sets | 510 mm | 6,10 |
| **12969** | steel carrying case for 12968 | | | | |

**Remark:** Hand operated hydraulic crimping tools with high crimping force and rotating C-shaped crimping heads. Part-No. 12965/S with single acting piston pump and adjustable reverse running position. So it is possible to crimp connectors with the same cross-section very quick and economically by realizing the crimping process only with a few strokes. To protect the tool against damaging and pollution it is equipped with completely rubber insulated handles. The C-shaped crimping head enables a side placing of cables and connectors up to 22 mm outside-Ø. Tool Part-No. 12968 is constructed in a shorter design but with a double acting piston pump for rapid motion of the die sets to the connector. The opening of the crimping head enables a side placing of cables and connectors up to an outside-Ø of 25 mm. The high crimping force of both tools realizes a working with crimping dies in a large design. So it is possible to reduce the number of crimpings, when working with bigger cross-sections. The tools are designed for using druseidt system dies size III (half shell dies in large design), which can be also used in druseidt battery operated tools Part-No. 13551/25, 13551/42 and 13537 as well as in druseidt hydraulic crimping heads Part-No. 12485, 12486, 12487 or table top unit 12837.

## Range of application/deliverable die sets

- Indent-crimping 10-240 mm² for cable lugs acc. to DIN 46234 and 46230
- Indent-crimping 10-95 mm² for druseidt stainless steel cable lugs
- WM-crimping 10-300 mm² for tubular cable lugs and connectors
  - druseidt standard design
  - druseidt Euro-type design
- WM-crimping 10-240 mm² for tubular cable lugs and connectors druseidt design for fine stranded cables
- Hexagonal-crimping 10-300 mm² for cable lugs and connectors
  copper DIN 46235/DIN 46267 part 1
  aluminium DIN 46349/DIN 46267 part 2
- Round-crimping dies 25/35-240/300 mm²
- Trapezoid-crimping 25-185 mm² for cable end sleeves DIN 46228 part 1 + 4
- Crimping-dies for H-shaped connectors 70-120 mm²

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 200 and 201.

**druseidt battery operated tool program:**
**Electro-hydraulic operated crimping- and cutting tools for industrial as well as applications in craft**

**Economically Productive Universal applicable**

- **Battery operated tools with fixed tool heads**
  - crimping system 60 kN with collapsible tool head
  - crimping system 130 kN with C-shaped tool head
  - crimping system 130 kN with H-shaped tool head
  - cutting system up to 50 mm Ø
  - cutting system up to 85 mm Ø
- **Battery operated tools with exchangeable tool-heads**
  - crimping/cutting system 60 kN
  - crimping/cutting system 100 kN
- **Battery operated tools in cylindrical shaped design**
  - druseidt system “Standard”
  - druseidt system “Mini”

Battery operated crimping tool 130 kN with shoulder strap

## Highest quality „made in Germany“

druseidt’s battery operated electro-hydraulic crimping and cutting tools offer an excellent solution for mobile applications as well as working in cramped conditions. The new tool generation is characterized by a modern process- and control technology combined and equipped with Li-Ion- batteries and a USB-interface to connect them with all popular PC-systems. The included analysis software allows an interpretation of the crimping process and offers services- and monitoring functions too. Additionally all tools are equipped with an optical failure- and stand-by indication system. So a maximum of performance, safety and controlling is guaranteed.

Especially for switch gear builders who work only in a cross-section range up to 120 mm² and do not need so much electronic performances, we offer an extremely handy battery operated crimping tool in cylindrical shape design called “druseidt Mini”. This tool offers an economically work in a very good price performance. For applications up to a cross-section range of 240 mm² we offer a bigger one called “druseidt Standard”. This tool is equipped with the same extensive electronic performances like the tools in pistol-design.

Battery operated crimping/cutting tool 100 kN
with exchangeable tool heads

Additionally to our product range of crimping and cutting tools in pistol- as well as cylindrical shaped design with fixed tool heads, we deliver systems (crimping/cutting) with exchangeable tool heads too. Especially the tools with the exchangeable tool heads offer an excellent performance in matters of cost effectiveness and mobility.

Battery operated crimping tool 60 kN
with fixed tool head

## Battery operated hydraulic crimping and cutting tool 60 kN druseidt-system with exchangeable tool heads

14241

14242

**Crimping**

14243

14244

**Cutting**

### Deliverable exchangeable tool heads

- universal battery operated hydraulic crimping and cutting tool with exchangeable tool heads
- deliverable tool heads
  **Part-No. 14241** collapsible crimping head for half shell dies
  **Part-No. 14242** collapsible crimping head for flat dies
  **Part-No. 14243** cutting head for copper and aluminium cables max. Ø 65 mm
  **Part-No. 14244** cutting head for ACSR-cables max. Ø 45 mm
- two stage hydraulic system with quick feed and power stroke
- collapsible, 360° rotating tool heads
- automatic pressure limit and monitoring by a pressure sensor
- electronic control and inspection of the crimping cycle
- quick motor stop and manual retraction
- automatic motor stop and automatic retraction once crimp is completed (the automatic retraction function can be switched off in case of need)
- USB-interface for remote diagnosis analysis software with interpretation-, service- and monitoring function
- optical failure- and stand-by indication system
- high performance Lithium-Ion-battery
- 230 V mains adapter as accessory part

# Battery operated hydraulic crimping and cutting tool 60 kN druseidt-system with exchangeable tool heads

die-sets for crimping head Part-No. 14241
**druseidt system dies size II**
half shell dies in small design

die-sets for crimping head Part-No. 14242
**druseidt system dies size I**
flat design

| Part-No. | cross-section range | description/scope of supply | |
|---|---|---|---|
| **14240** | 1,5 - 300 mm² | 1 standard set consisting out of: | 1 piece battery charger 230 V |
| | | 1 piece battery operated basic unit 60 kN without tool heads | 1 piece analysis software |
| | | 1 piece Li-Ion-battery 14,4 V, 2,6 Ah | 1 piece USB-connecting lead |
| **14241** | | crimping head for half shell dies | |
| **14242** | | crimping head for flat dies | |
| **14243** | | cutting head for copper- and aluminium-cables up to 65 mm Ø | |
| **14244** | | cutting head for ACSR-cables up to 45 mm Ø | |
| **14245** | | steel carrying case | |
| **Accessories** | | | |
| **13553** | Replacement Li-Ion-battery 14,4 V, 2,6 Ah | | |
| **13554** | Replacement battery charger 230 V | | |
| **13555** | 230 V mains adapter with 5 m connecting lead | | |
| **13538** | Shoulder strap | | |

**Technical data**

- crimping force: 60 kN
- max. stroke: 55 mm
- operating pressure: 700 bar
- Li-Ion-battery 14,4 V/2,6 Ah
- crimping time: 3-6 sec. (in dependence of the cross-section)
- time of loading: ca. 45 min.
- battery charger: 230 V/50 Hz with 2 m connecting lead
- weight in dependence of the tool head 6,0-7,5 kg

## Range of application/deliverable die-sets

| **Application for crimping heads** | Exchangeable tool heads | |
|---|---|---|
| | **Part-No. 14241** | **Part-No. 14242** |
| **Indent-crimping** for cable lugs acc. to DIN 46234 + DIN 46230 | 10 - 120 mm² | 10 - 70 mm² |
| **Indent-crimping** for druseidt stainless steel cable lugs | 1,5 - 35 mm² | 1,5 - 35 mm² |
| **WM-crimping** for tubular cable lugs and connectors | | |
| • druseidt Standard design | 10 - 300 mm² | 10 - 300 mm² |
| • druseidt Euro-design | 10 - 300 mm² | 10 - 300 mm² |
| **WM-crimping** for tubular cable lugs and connectors<br>• druseidt design for fine stranded cables | 10 - 240 mm² | 10 - 240 mm² |
| **Hexagonal crimping** for tubular cable lugs and connectors | | |
| • copper acc. to DIN 46235/DIN 46267 part 1 | 6 - 300 mm² | 10 - 300 mm² |
| • aluminium acc. to DIN 46329/46267 part 2 | 10 - 300 mm² | 16 - 300 mm² |
| **Trapezoid crimping** for cable end sleeves acc. to DIN 46228 part 1 + 4 | 10 - 185 mm² | 25 - 95 mm² |
| **Trapezoid crimping** for twin cable end sleeves | 2 x 4 up to 2 x 16 mm² | - |
| **Oval crimping** for insulated cable lugs and connectors | - | 10 - 35 mm² |
| **Crimping dies for C- and H-shaped connectors** | on request | - |
| **Application for cutting heads** | **Part-No. 14243** | **Part-No. 14244** |
| • Copper/Aluminium-cables | up to 65 mm Ø | - |
| • ACSR-cables | - | up to 45 mm Ø |

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 196-199.

# Battery operated hydraulic crimping and cutting tool 100 kN druseidt-system with exchangeable tool heads

## Exchangeable tool heads

**Crimping head**

**Cutting head**

## Deliverable tool heads

- Battery operated tools with exchangeable tool heads offer an economically and mobile crimping of cable lugs and connectors as well as cutting of copper- and aluminium-cables
- Deliverable tool heads
  **Part-No. 12753** collapsible crimping head for flat dies
  **Part-No. 12751** cutting head for copper and aluminium cables up to 54 mm Ø
- two stage hydraulic system with quick feed and power stroke
- collapsible, 360° rotating tool head
- automatic pressure limit and monitoring by a pressure sensor
- electronic control and inspection of the crimping cycle
- quick motor stop and manual retraction
- automatic motor stop and automatic retraction once crimp is completed (the automatic retraction function can be switched off in case of need)
- USB-interface for remote diagnosis
- analysis software with interpretation-, service- and monitoring function
- optical failure- and stand-by indication system
- high performance Lithium-Ion battery
- 230 V mains adapter as accessory part

## Battery operated hydraulic crimping and cutting tool 100 kN druseidt-system with exchangeable tool heads

Crimping dies
**druseidt system dies size I**
**flat design**

| Part-No. | cross-section range | description/scope of supply | |
|---|---|---|---|
| **12748** | 10 - 300 mm² | 1 standard set consisting out of: | 1 piece battery charger 230 V |
| | | 1 piece battery operated basic unit 100 kN without tool heads | 1 piece analysis software |
| | | 1 piece Li-Ion-battery 14,4 V, 2,6 Ah | 1 piece USB connecting lead |
| **12749** | | steel carrying case | |
| **12753** | | crimping head for flat dies | |
| **12751** | | cutting head for copper- and aluminium cables up to 54 mm Ø | |
| **Accessories** | | | |
| **13553** | Replacement Li-Ion-battery 14,4 V, 2,6 Ah | | |
| **13554** | Replacement battery charger 230 V | | |
| **13555** | 230 V mains adapter with 5 m connecting lead | | |
| **13538** | Shoulder strap | | |

**Technical data**

- crimping force: 100 kN
- max. stroke: 17 mm
- operating pressure: 700 bar
- crimping time: 3-6 sec. (in dependence of the cross-section)
- Li-Ion-battery 14,4 V/2,6 Ah
- time of loading: ca. 45 min.
- battery charger: 230 V/50 Hz with 2 m connecting lead
- weight: with crimping head 5,3 kg
  with cutting head 6,1 kg

## Application range for crimping head Part-No. 12753

- **Indent-crimping 10-70 mm²**
  for cable lugs acc. to DIN 46234 + DIN 46230
- **Indent-crimping 1,5-35 mm²**
  for druseidt stainless steel cable lugs
- **WM-crimping 10-300 mm²**
  for tubular cable lugs and connectors
  - druseidt Standard design
  - druseidt Euro-type design
- **WM-crimping 10-240 mm²**
  for tubular cable lugs and connectors
  - druseidt design for fine stranded cables
- **Hexagonal-crimping 10/16-300 mm²**
  for cable lugs and connectors
  - copper DIN 46235/DIN 46267 part 1
  - aluminium DIN 46329/DIN 46267 part 2
- **Round-crimping dies 25/35-185/240 mm²**
- **Trapezoid-crimping 25-95 mm²**
  for cable end sleeves acc. to DIN 46228 part 1 + 4

**Application range of cutting head Part-No. 12751**
For cutting of copper- and aluminium cables up to a outer-Ø of 54 mm

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 196-197.

## Battery operated hydraulic crimping tool 60 kN with fixed crimping head

13555
230 V mains adapter

- Handy crimping tool for economically and mobile crimping operations
- suitable for working with druseidt system dies size II (half shell dies in small design)
- two stage hydraulic system with quick feed and power stroke
- collapsible, 360° rotating tool heads
- automatic pressure limit and monitoring by a pressure sensor
- electronic control and inspection of the crimping cycle
- quick motor stop and manual retraction
- automatic motor stop and automatic retraction once crimp is completed (the automatic retraction function can be switched off in case of need)
- USB-interface for remote diagnosis
- analysis software with interpretation-, service- and monitoring function
- optical failure- and stand-by indication system
- high performance Lithium-Ion-battery
- 230 V mains adapter as accessory part

# Battery operated hydraulic crimping tools 60 kN with fixed crimping heads

Crimping dies
**druseidt system dies size II**
(half shell dies in small design)

| Part-No. | cross-section range | description/scope of supply | |
|---|---|---|---|
| **13552** | 1,5 - 300 mm² | 1 standard set consisting out of: | |
| | | 1 piece battery operated basic unit 60 kN without die sets | 1 piece analysis software |
| | | 1 piece Li-Ion-battery 14,4 V, 2,6 Ah | 1 piece USB connecting lead |
| | | 1 piece battery charger 230 V | 1 piece steel carrying case |
| **Accessories** | | | |
| **13553** | Replacement Li-Ion-battery 14,4 V, 2,6 Ah | | |
| **13554** | Replacement battery charger 230 V | | |
| **13555** | 230 V mains adapter with 5 m connecting lead | | |
| **13538** | Shoulder strap | | |

**Technical data**

- crimping force: 60 kN
- max. stroke: 17 mm
- operating pressure: 700 bar
- crimping time: 3-6 sec. (in dependence of the cross-section)
- Li-Ion-battery 14,4 V/2,6 Ah
- time of loading: ca. 45 min.
- battery charger: 230 V/50 Hz with 2 m connecting lead
- weight: ca. 4,15 kg

## Application range/deliverable die sets

- **Indent-crimping 10-120 mm²**
  for cable lugs acc. to DIN 46234 + DIN 46230
- **Indent-crimping 1,3-35 mm²**
  for druseidt stainless steel cable lugs
- **WM-crimping 10-300 mm²**
  for tubular cable lugs and connectors
  - druseidt Standard design
  - druseidt Euro-type design
- **WM-crimping 10-240 mm²**
  for tubular cable lugs and connectors
  - druseidt design for fine stranded cables
- **Hexagonal crimping 6-300 mm²**
  for cable lugs and connectors
  - copper DIN 46235/DIN 46267 part 1
  - aluminium DIN 46329/46267 part 2
- **Round-crimping dies 25/35-185/240 mm²**
- **Trapezoid crimping 10-185 mm²**
  for cable end sleeves acc. to DIN 46228 part 1 + 4
- **Trapezoid crimping 2 x 4 mm² - 2 x 16 mm²**
  for twin cable end sleeves
- **Crimping dies for C- and H-shaped connectors on request**

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 198-199.

## Battery operated hydraulic crimping tools 130 kN with fixed crimping heads

- universal crimping tools for economically and mobile crimping operations
- suitable for working with druseidt system dies size III (half shell dies in large design)
- the large crimping width enables an efficient working with a lower number of crimpings compared with tools with small designed half shell dies
- the C-shaped crimping heads enables a side placing of cables and connectors up to 25 mm or 42 mm outside-Ø. Cables/connectors with a bigger diameter can be crimped and removed with the H-shaped crimping head without problem
- two stage hydraulic system with quick feed and power stroke
- collapsible, 360° rotating tool heads
- automatic pressure limit and monitoring by a pressure sensor
- electronic control and inspection of the crimping cycle
- quick motor stop and manual retraction
- automatic motor stop and automatic retraction once crimp is completed (the automatic retraction function can be switched off in case of need)
- USB-interface for remote diagnosis
- analysis software with interpretation-, service- and monitoring function
- optical failure- and stand-by indication system
- high performance Lithium-Ion-battery
- 230 V mains adapter as accessory part

# Battery operated hydraulic crimping tools 130 kN with fixed crimping heads

Crimping dies
**druseidt system dies size III**
(half shell dies in large design)

| Part-No. | cross-section range | description/scope of supply |
|---|---|---|
| **13551/25** | 10 - 300 mm² | 1 Standard set consisting out of: |
| | | 1 piece battery operated C-shaped basic unit 130 kN opening width 25 mm without die sets |
| | | 1 piece LI-Ion-battery 14,4 V/2,6 Ah |
| | | 1 piece battery charger 230 V |
| | | 1 piece analysis software |
| | | 1 piece USB connecting lead |
| | | 1 piece steel carrying case |
| **13551/42** | 10 - 300 mm² | 1 Standard set consisting out of: |
| | | 1 piece battery operated C-shaped basic unit 130 kN opening width 42 mm without die sets |
| | | 1 piece Li-Ion-battery 14,4 V/2,6 Ah |
| | | 1 piece battery charger 230 V |
| | | 1 piece analysis software |
| | | 1 piece USB connecting lead |
| | | 1 piece steel carrying case |
| **13537** | 10 – 300 mm² | 1 Standard set consisting out of: |
| | | 1 piece battery operated H-shaped basic unit 130 kN without die sets |
| | | 1 piece LI-Ion-battery 14,4 V/2,6 Ah |
| | | 1 piece battery charger 230 V |
| | | 1 piece analysis software |
| | | 1 piece USB connecting lead |
| | | 1 piece steel carrying case |

| **Accessories** | |
|---|---|
| **13553** | Replacement Li-Ion-battery 14,4 V, 2,6 Ah |
| **13554** | Replacement battery charger 230 V |
| **13555** | 230 V mains adapter with 5 m connecting lead |
| **13538** | Shoulder strap |

**Technical data**

- crimping force: 130 kN
- operating pressure: 700 bar
- crimping time: 7,8-13,5 sec. (in dependence of the cross-section)
- Li-Ion-battery 14,4 V/2,6 Ah
- time of loading: ca. 45 min.
- battery charger: 230 V/50 Hz with 2 m connecting lead
- weight with C-shaped crimping head: ca. 6,9 kg
- weight with H-shaped crimping head: ca. 6,3 kg

## Application range/deliverable die-sets

- **Indent-crimping 10-240 mm²**
  for cable lugs acc. to DIN 46234 + 46230
- **Indent-crimping 10-95 mm²**
  for druseidt stainless steel cable lugs
- **WM-crimping 10-300 mm²**
  for tubular cable lugs and connectors
  - druseidt Standard design
  - druseidt Euro-type design
- **WM-crimping 10-240 mm²**
  for tubular cable lugs and connectors
  - druseidt design for fine stranded cables
- **Hexagonal crimping 10-300 mm²**
  for cable lugs and connectors
  - copper DIN 46235/DIN 46267 part 1
  - aluminium DIN 46329/46267 part 2
- **Round-crimping dies 25/35 - 240/300 mm²**
- **Trapezoid crimping 25-185 mm²**
  for cable end sleeves acc. to DIN 46228 part 1 + 4
- **Crimping dies for H-shaped connectors 70-120 mm²**

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 200-201.

## Battery operated hydraulic cutting tools 60 kN for copper- and aluminium-cables up to 50 mm Ø

- universal cutting tool
- suitable for cutting copper- and aluminium-cables without core wire
- two stage hydraulic system with quick feed and power stroke
- collapsible, 360° rotating cutting head
- automatic pressure limit and monitoring by a pressure sensor-electronic control and inspection of the cutting cycle
- quick motor stop and manual retraction
- automatic motor stop and automatic retraction
- USB-interface for remote diagnosis
- analysis software with interpretation-, service- and monitoring function
- optical failure- and stand-by indication system
- high performance Lithium-Ion-battery
- 230 mains adapter as accessory part

| Part-No. | cutting force | max. cutting-Ø | description/scope of supply | |
|---|---|---|---|---|
| **13534** | 60 kN | 50 mm | 1 Standard set consisting out of: | |
| | | | 1 piece cutting tool 60 kN | 1 piece analysis software |
| | | | 1 piece Li-Ion-battery 14,4 V, 2,6 Ah | 1 piece USB connecting lead |
| | | | 1 piece battery charger 230 V | 1 piece steel carrying case |

| **Accessories** | |
|---|---|
| **13553** | Replacement Li-Ion-battery 14,4 V, 2,6 Ah |
| **13554** | Replacement battery charger 230 V |
| **13555** | 230 V mains adapter with 5 m connecting lead |
| **13538** | Shoulder strap |

**Technical data**

- crimping force 60 kN
- operating pressure 700 bar
- weight 5,6 kg
- Li-Ion-battery 14,4 V/2,6 Ah
- time of loading ca. 45 min.
- battery charger 230 V/50 Hz with 2 m connecting lead

The cutting tools are not applicable for cutting steel-wires, cables with steel inserts or solid conductors. They are also not applicable for all kind of live line working.

# Battery operated hydraulic cutting tool 70 kN for copper- and aluminium-cables up to 85 mm Ø

- universal cutting tool
- suitable for cutting copper- and aluminium-cables without core wire
- two stage hydraulic system with quick feed and power stroke
- collapsible, 360° rotating cutting head
- automatic pressure limit and monitoring by a pressure sensor
- electronic control and inspection of the cutting cycle
- quick motor stop and manual retraction
- automatic motor stop and automatic retraction
- USB-interface for remote diagnosis
- analysis software with interpretation-, service- and monitoring function
- optical failure- and stand-by indication system
- high performance Lithium-Ion-battery
- 230 mains adapter as accessory part

| Part-No. | cutting force | max. cutting-Ø | description/scope of supply | |
|---|---|---|---|---|
| **13535** | 70 kN | 85 mm | 1 Standard set consisting out of: | |
| | | | 1 piece cutting tool 70 kN | 1 piece analysis software |
| | | | 1 piece Li-Ion-battery 14,4 V, 2,6 Ah | 1 piece USB-connecting lead |
| | | | 1 piece battery charger 230 V | 1 piece steel carrying case |

| **Accessories** | |
|---|---|
| **13553** | Replacement Li-Ion-battery 14,4 V, 2,6 Ah |
| **13554** | Replacement battery charger 230 V |
| **13555** | 230 V mains adapter with 5 m connecting lead |
| **13538** | Shoulder strap |

**Technical data**

- crimping force 70 kN
- operating pressure 700 bar
- weight 7,3 kg
- Li-Ion-battery 14,4 V/2,6 Ah
- time of loading ca. 45 min.
- battery charger 230 V/50 Hz with 2 m connecting lead

The cutting tools are not applicable for cutting steel-wires, cables with steel inserts or solid conductors. They are also not applicable for all kind of live line working.

## Battery operated hydraulic crimping tool 35 kN “druseidt Mini”

Crimping dies
for “druseidt Mini”

- extremely handy crimping tool with small, collapsible crimping head
- the light weight and the cylindrical shaped design offer a working in cramped conditions too
- two stage hydraulic system with quick feed and power stroke
- well suited for working in a cross-section range up to 120 mm² and users who do not need so much electronic performances
- simply and uncomplicated handling
- with 360° rotating crimping head
- quick motor stop and manual retraction
- for application > 120 mm² we recommend our bigger cylindrical battery operated hydraulic crimping tool “druseidt-standard” deliverable with the whole electronic performances and analysis software according to the catalogue page 186

| Part-No. | cross-section range | description/scope of supply |
|---|---|---|
| **12725** | 10 - 120 mm² | 1 Standard set consisting out of: |
| | | 1 piece crimping tool 35 kN without die sets |
| | | 1 piece Li-Ion-battery 18 V, 1,5 Ah |
| | | 1 piece battery charger 230 V |
| | | 1 piece steel carrying case |
| **Accessories** | | |
| **12726** | Replacement Li-Ion-battery 18 V, 1,5 Ah | |
| **12727** | Replacement battery charger 230 V | |

**Technical data**

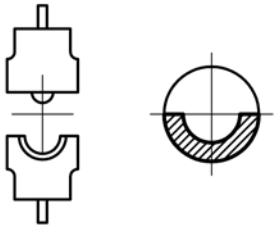
- crimping force: 35 kN
- operating pressure: 700 bar
- Li-Ion-battery 18 V/1,5 Ah
- battery charger: 230 V, 50 Hz with 2 m connecting lead l
- crimping time: 3-6 sec. (in dependence of the cross-section)
- weight: 2,1 kg
- length: 360 mm

## Application range/deliverable die sets

- **Indent-crimping 10-35 mm²**
  for cable lugs acc. to DIN 46234 + 46230
- **WM-crimping 10-120 mm²**
  for tubular cable lugs and connectors
  - druseidt Standard design
  - druseidt Euro-type design
- **WM-crimping 10-95 mm²**
  for tubular cable lugs and connectors
  - druseidt design for fine stranded cables
- **Hexagonal crimping 10/16-95 mm²**
  for cable lugs and connectors
  - copper DIN 46235/DIN 46267 part 1
  - aluminium DIN 46329/46267 part 2

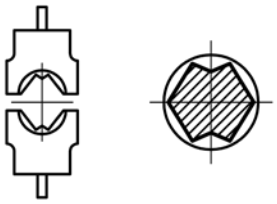
# Exchangeable die sets for crimping tool “druseidt-Mini”

## Indent-crimping 10-35 mm²
for cable lugs acc. to DIN 46234 + DIN 46230



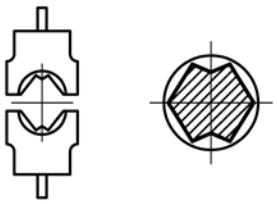
| Part-No. | cross-section mm² |
|---|---|
| 12548 | 10 |
| 12549 | 16 |
| 12550 | 25 |
| 12551 | 35 |

## WM-crimping 10-120 mm²
for tubular cable lugs and connectors
druseidt Standard design



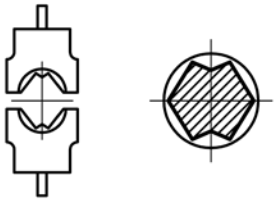
| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| 12792 | 10 | 5 |
| 12793 | 16 | 5 |
| 12794 | 25 | 5 |
| 12795 | 35 | 5 |
| 12796 | 50 | 5 |
| 12797 | 70 | 5 |
| 12798 | 95 | 5 |
| 12799 | 120 | 5 |

## WM-crimping 10-120 mm²
for tubular cable lugs and connectors
druseidt Euro-type design



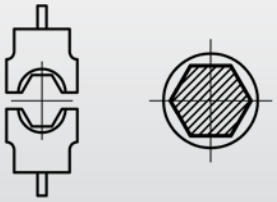
| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| 12554 | 10 | 5 |
| 12555 | 16 | 5 |
| 12556 | 25 | 5 |
| 12557 | 35 | 5 |
| 12558 | 50 | 5 |
| 12559 | 70 | 5 |
| 12560 | 95 | 5 |
| 12561 | 120 | 5 |

## WM-crimping 10-95 mm²
for tubular cable lugs and connectors
druseidt design for fine stranded cables



| Part-No. | cross-section mm² | crimping width mm |
|---|---|---|
| 12740 | 10 | 5 |
| 12741 | 16 | 5 |
| 12742 | 25 | 5 |
| 12743 | 35 | 5 |
| 12744 | 50 | 5 |
| 12745 | 70 | 5 |
| 12746 | 95 | 5 |

## Hexagonal crimping 10-120 mm²
for cable lugs and connectors
copper DIN 46235/DIN 46267 part 1
aluminium DIN 46329/DIN 46267 part 2



| Part-No. | code-no. | cross-section mm² Cu | Al | crimping width mm |
|---|---|---|---|---|
| 12784 | 6 | 10 | - | 5 |
| 12785 | 8 | 16 | - | 5 |
| 12786 | 10 | 25 | - | 5 |
| 12787 | 12 | 35 | 16/25 | 5 |
| 12788 | 14 | 50 | 35 | 5 |
| 12789 | 16 | 70 | 50 | 5 |
| 12790 | 18 | 95 | 70 | 5 |

## Battery operated hydraulic crimping tool 50 kN “druseidt-Standard”

- handy crimping tool in cylindrical shaped design offers a wide range of crimping performances
- equipped with the same electronic functions like the battery operated tools in pistol design
- well suited for a fatigue proof working also when crimping bigger cross-sections
- two stage hydraulic system with quick feed and power stroke
- collapsible, 360° rotating crimping head
- automatic pressure limit and monitoring by a pressure sensor
- electronic control and inspection of the crimping cycle
- quick motor stop and manual retraction
- automatic motor stop and automatic retraction once crimp is completed (the automatic retraction function can be switched off in case of need)
- USB-interface for remote diagnosis
- analysis software with interpretation-, service- and monitoring function
- optical failure- and stand-by indication system

crimping dies
**druseidt system dies I**
(flat dies)

| Part-No. | cross-section range | description/scope of supply |
|---|---|---|
| **12728** | 1,5 - 240 mm² | 1 standard set consisting out of: |
| | | 1 piece crimping tool 50 kN without die sets |
| | | 1 piece Li-Ion-battery 18 V, 1,5 Ah |
| | | 1 piece battery charger 230 V |
| | | 1 piece analysis software |
| | | 1 piece USB connecting lead |
| | | 1 piece steel carrying case |
| **Accessories** | | |
| **12726** | Replacement Li-Ion-battery 18 V, 1,5 Ah | |
| **12727** | Replacement battery charger 230 V | |

**Technical data**

- crimping force: 50 kN
- operating pressure: 700 bar
- Li-Ion-battery 18 V/1,5 Ah
- time of loading: ca. 45 min.
- battery charger: 230 V, 50 Hz with 2 m connecting lead
- crimping time: 3-6 sec. (in dependence of the cross-section)
- weight: 2,3 kg
- length: 400 mm

## Application range / deliverable die sets

- **Indent-crimping 10-35 mm²**
  for cable lugs acc. to DIN 46234 + DIN 46230
- **Indent-crimping 1,5-16 mm²**
  for druseidt stainless steel cable lugs
- **WM-crimping 10-240 mm²**
  for tubular cable lugs and connectors
  - druseidt Standard design
  - druseidt Euro-type design
- **WM-crimping 10-185 mm²**
  for tubular cable lugs and connectors
  - druseidt design for fine stranded cables
- **Hexagonal-crimping 10/16-185 mm²**
  for cable lugs and connectors
  - copper DIN 46235/DIN 46267 part 1
  - aluminium DIN 46329/DIN 46267 part 2
- **Round-crimping dies 25/35-185 mm²**
- **Trapezoid-crimping 25-95 mm²**
  for cable end sleeves acc. to DIN 46228 part 1 + 4

Selection charts for crimping dies with Part-No. and description are listed in this catalogue on pages 196-197.

# Hydraulic working systems with exchangeable compression- and cutting heads

When working continuously with bigger cross-sections or equipping fixed workplaces druseidt offers an extensive program of hydraulic working systems consisting out of hydraulic pumps and different crimping and cutting units. To offer a mobile working too also new designed light and handy battery operated hydraulic pumps are besides the traditional pumps part of the delivery program. So all users get the opportunity to order for his crimping and cutting procedures an individual hardware configuration, exactly coordinated with his application. To complement the workplaces with the right stripping technology (described on catalogue pages 141 ff) corresponding different stripping devices are offered too. So all users get the possibility to order mobile as well as stationary systems and are able to equip their workplaces with the right and best practical devices. A detailed consultation about stripping, cutting and crimping solutions as well as a support in the range of quality management are the basis for realizing reproducible electrical cable connections. So our employees will be glad to provide consultation to support your plans.

**druseidt**
**hydraulic working systems**
- foot operated pumps
- different sizes of electrohydraulic pumps
- battery operated electrohydraulic pumps

**druseidt**
**exchangeable crimping units**
- system 60 kN
- system 130 kN
- system 250 kN
- system 450 kN

for a cross-section range up to 1000 mm²

**druseidt**
**exchangeable cutting units**
- system 60 kN
- system 70 kN
- system 130 kN

for copper- and aluminium-cables up to a outer-Ø of 95 mm resp. ACSR-cables up to outer-Ø of 45 mm

## Hydraulic pumps and accessories

suitable for working with our crimping- and cutting heads
with an operating pressure of 700 bar

| Part-No. | operating pressure | description/scope of supply |
|---|---|---|
| 12480 | 700 bar | Hydraulic foot pump with 2 m high pressure hose and quick coupling without tool heads |

**Technical data**

- operating pressure: 700 bar
- oil filling: 1 liter
- operating temperature: -20° C up to +40° C
- dimensions: 170 mm x 190 mm x 660 mm
- weight: 9 kg

**Remark:** Two stage hydraulic foot pump with safety valve, automatic changeover switching and as needed manuell return travel also when working in the high pressure range.

| Part-No. | operating pressure | description/scope of supply |
|---|---|---|
| 05254 | 700 bar | Electro-hydraulic pump with 1,8 m high pressure hose, hand switch and quick coupling without tool heads |
| 05253 | | Double foot pedal for elcetro-hydraulic pump 05254 |

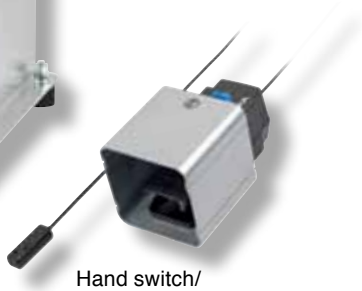
Technical data

- operating pressure: 700 bar
- operating voltage: 230 V/50 Hz
- nominal capacity: 0,4 kW
- delivery rate: 0-20 bar 2 l/min
- delivery rate: 20-700 bar 1,2 l/min
- useable oil volume: 0,8 liter, oil filling 1,2 liter
- dimensions: 300 mm x 150 mm x 285 mm
- weight: 8 kg

**Remark:** handy two stage electro-hydraulic pump with pressure limiting valve and automatic changeover switching. Caused by the light weight and the small dimensions also well suited for mobile working.

## Electro-hydraulic pumps with accessories

suitable for working with our crimping- and cutting heads
with an operating pressure of 700 bar



Hand switch/
remote control

| Part-No. | operating pressure | tank volume | description |
|---|---|---|---|
| **05270** | 700 bar | 2 Liter | Electro-hydraulic pump without tool heads and high pressure hose |
| **05272** | 700 bar | 5 Liter | Electro-hydraulic pump without tool heads and high pressure hose |
| **05274** | | | Hand switch |
| **05275** | | | Foot switch |

**technical data**

- operating pressure: 700 bar
- operating voltage: 230 V/50 Hz
- 4-cylinder pump with quick feed
- high pressure delivery rate: 0,34 l/min
- low pressure delivery rate: 0,80 l/min
- Aluminuim-box with steel tank
- Motor rating: 370 W (4-phase motor)

**Part-No. 05270**
- Tank volume: 2 liter
- useable oil volume: 1,8 liter
- dimensions: 380/430 mm x 210 mm x 395 mm
- weight 15 kg

**Part-No. 05272**
- Tank volume: 5 liter
- useable oil volume: 4 liter
- dimensions: 385/435 mm x 245 mm x 420 mm
- weight: 20 kg

**Remark:** Two stage electro-hydraulic pumps with pressure limiting valve and automatic changeover switching. All pumps can be actuated by a hand switch/remote control or alternatively by a food pedal with automatic safety device. Therefore when ordering a pump please be so kind and order the needed switch separately. The pumps will be actuated by pressing the switch and than the pumps open automatically when the operating pressure is achieved. At any time, in the high pressure as well as in the low pressure range, it is possible to break the operation and to open the pump immediately.

## High pressure hoses with quick coupling

suitable for connecting our crimping- and
cutting heads with an operating pressure of 700 bar

| Part-No. | description |
|---|---|
| **05258** | with steel mesh inlay, non-insulating, 2 m length |
| **05259** | with steel mesh inlay, non-insulating, 3 m length |
| **05260** | with steel mesh inlay, non-insulating, 4 m length |
| **05262** | with steel mesh inlay, non-insulating, 5 m length |

## Battery operated electro-hydraulic pump

suitable for working with our crimping- and cutting heads
with an operating pressure of 700 bar

Standard set including accessories

- Light, compact and robust construction with fiber-glass reinforced, non conducting and shock proof, body out of Polyamide. Therefore well suited for mobile application.
- The system has extremely rapid advancement thanks to a special double piston-technology, characterized by a low-pressure- and a slow high-pressure advancement.
- Quick tool return by high return conveyor volumetric guarantees quick working cycles.
- Equipped with a capacity recognition system that permits precise work with or without the hydraulic hose (the machine may be connected directly to the pump).
- The motor is adjusted with PWM (soft start to save the transmission, motor and battery).
- The return stroke of the tool head is controlled by a software.
- Control of the equipment is realized through a micro-controller.
- Pressure control is performed by an electronic pressure sensor.
- The charge of the power pack is kept constantly under control.
- The traceability of work cycles is ensured through automatic registration and saving in the machine memory. Management of technical assistance is performed with an electronic system and the included analysis software.
- The data saved can be read and the software can be updated through a mini USB interface.
- Actuation through the hand switch/remote control.
- Additionally LED indicators provide rapid information on the status of the machine.
- Retraction optionally automatically or manually with retraction stop function.

| Part-No. | operating pressure | description/scope of supply | |
|---|---|---|---|
| **05265** | 700 bar | 1 Standard set consisting out of: | |
| | | - 1 piece battery operated pump without tool heads | - 1 piece high pressure hose 1,5 m |
| | | - 1 piece Li-Ion-battery 18 V, 3,0 Ah | - 1 piece shoulder strap |
| | | - 1 piece battery charger 230 V, 50 Hz | - 1 piece carry bag with additional pockets |
| | | - 1 piece analysis software | |
| | | - 1 piece USB connecting lead | |
| **Accessories** | | | |
| **12726/3,0** | | Replacement Li-Ion-battery 18 V, 3,0 Ah | |
| **12727** | | Replacement battery charger 230 V for Li-Ion-battery 18 V | |
| **12729** | | 230 V mains adapter 18 V with 5 m connecting lead | |
| **05267** | | high pressure hose with quick coupling 1,5 m length | |
| **05268** | | high pressure hose with quick coupling 1,5 m length | |
| **05269** | | high pressure hose with quick coupling 10 m length | |

**Technical data**

- operating pressure: 700 bar (70 MPa)
- delivery rate: 1,15 l/min (low-pressure range)
  0,15 l/min (high pressure range)
- automatic conversation from low to high pressure takes place at approximately 90 bar
- with DC-motor
- Li-Ion-battery 18 V DC, 3,0 Ah
- battery charger: 230 V, 50 Hz with 2 m connecting lead
- time of loading: ca. 45-50 min.
- operating temperature: -20° C up to +55° C
- protection class: IP 43
- dimensions: 300 mm x 195 mm x 210 mm
- weight: ca. 4,7 kg

## Battery operated electro-hydraulic pump

with additional integrated display and additional functions
suitable for working with our crimping- and cutting heads
with an operating pressure of 700 bar

Standard set including accessories

**Design according to the description of battery operated pump Part-No. 05265 page 190 but with additional integrated display and following additional functions:**

- The progress of compression can be shown on the display (pressure and operating time)
- Pressure control indication
- Error message (crimping error, temperature, battery self-diagnosis)
- Indication of service and machine data
- In drive (knob) input and output element
- Possibility for working with preinstalled standard programs for crimping or cutting with:
  Automatic or manual return flow
  - Hold time setting
  - Instep function by means of an automatic adjustment
  - Return stop function
  - Immediate cutting opening after cut and letting go the button (automatic cutting detection)
- Storable operator program

| Part-No. | operating pressure | description/scope of supply | |
|---|---|---|---|
| **05266** | 700 bar | 1 Standard set consisting out of: | |
| | | - 1 piece battery operated pump without tool heads | - 1 piece high pressure hose 1,5 m length |
| | | - 1 piece Li-Ion-battery 18 V, 3,0 Ah | - 1 piece shoulder strap |
| | | - 1 piece battery charger 230 V, 50 Hz | - 1 piece carry bag with additional pockets |
| | | - 1 piece analysis software | |
| | | - 1 piece USB connecting lead | |
| **Accessories** | | | |
| **12726/3,0** | | Replacement Li-Ion-battery 18 V, 3,0 Ah | |
| **12727** | | Replacement battery charger 230 V for Li-Ion-battery 18 V | |
| **12729** | | 230 V mains adapter 18 V with 5 m connecting lead | |
| **05267** | | high pressure hose with quick coupling 1,5 m length | |
| **05268** | | high pressure hose with quick coupling 5 m length | |
| **05269** | | high pressure hose with quick coupling 10 m length | |

**Technical data**

- operating pressure: 700 bar (70 MPa)
- delivery rate: 1,15 l/min (low-pressure range)
  0,15 l/min (high pressure range)
- automatic conversation from low to high pressure takes place at approximately 90 bar
- with DC-motor
- Li-Ion-battery 18 V DC, 3,0 Ah
- battery charger: 230 V, 50 Hz with 2 m connecting lead
- time of loading: ca. 45-50 min.
- operating temperature: -20° C up to +55° C
- protection class: IP 43
- dimensions: 300 mm x 195 mm x 210 mm
- weight: ca. 4,7 kg

## Hydraulic-compression heads 60/130 kN

suitable for connection to our 700 bar basic-pumps

**12836**

**12485**

**12486**

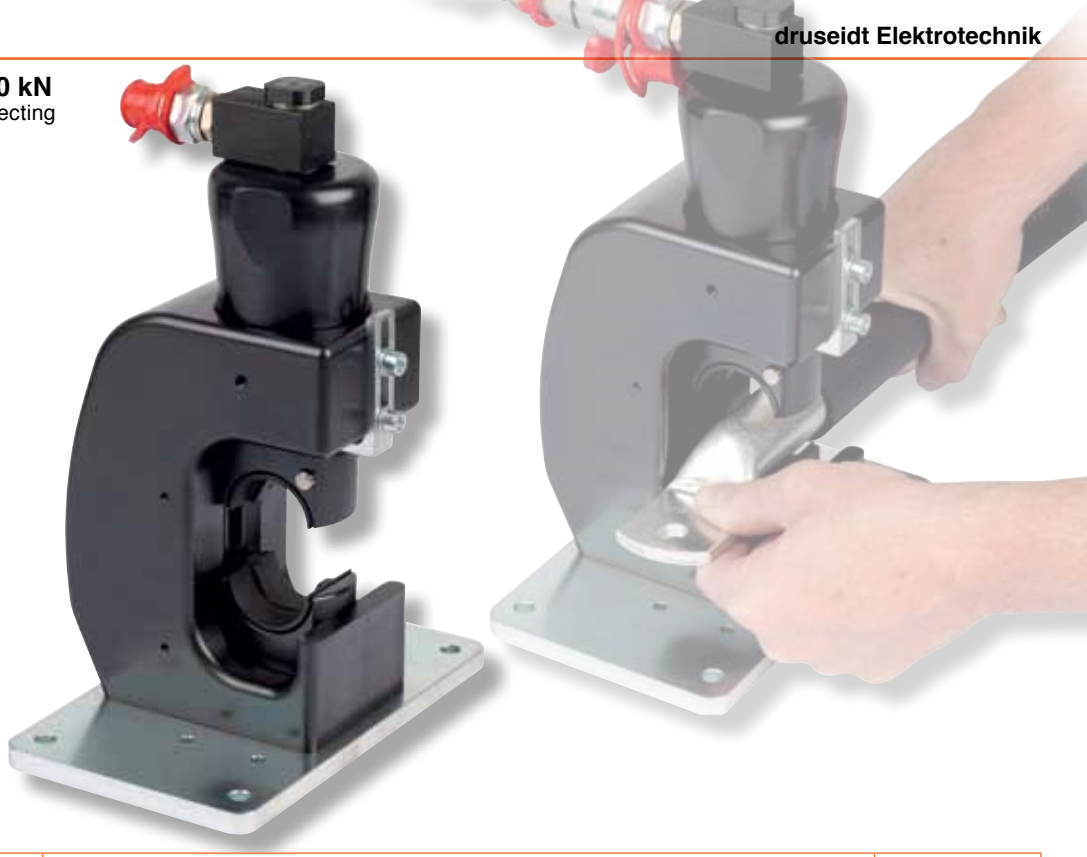
**12487**

| Part-No. | cross-section-range | crimping force | description | weight kg/pcs. |
|---|---|---|---|---|
| **12836** | 6 - 300 mm² | 60 kN | collapsible compression head | 1,85 |
| **12485** | 10 - 300 mm² | 130 kN | C-shaped compression head suitable for a side placing of cables and connectors up to an outer-Ø of 25 mm | 3,90 |
| **12486** | 10 - 300 mm² | 130 kN | C-shaped compression head suitable for a side placing of cables and connectors up to an outer- Ø of 38 mm | 4,60 |
| **12487** | 10 - 300 mm² | 130 kN | H-shaped compression head | 3,40 |

**Remark:** Compression head 12836 is suitable for working with small designed half shell dies (druseidt-system dies size II) according to the catalogue pages 198-199. Compression heads Part-No. 12485-87 are suitable for working with large designed half shell dies (druseidt-system dies size III) according to the catalogue pages 200-201. All compression heads will be delivered with a quick coupling.

## Hydraulic compression unit 130 kN

suitable for mounting on tables and connecting with our 700 bar basic pumps



| Part-No. | cross-section-range | crimping force | description | weight kg/pcs. |
|---|---|---|---|---|
| **12837** | 10-300 mm² | 130 kN | Small tabletop unit in C-shaped design | 12,00 |

**Remark:** Suitable for working with large designed half shell dies (druseidt-system dies size III) according to the catalogue pages 200-201 and a side placing of cables and connectors up to an outer-Ø of 25 mm. Delivery with a quick coupling is standard.

## Hydraulic compression heads 250/450 kN

suitable for connection to our 700 bar basic-pumps

**05256**

**12491**

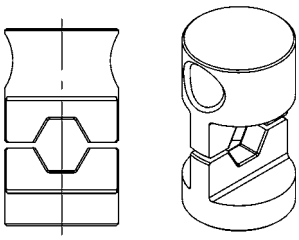
| Part-No. | cross-section-range | crimping force | description | weight kg/pcs. |
|---|---|---|---|---|
| **05256** | 10 - 630 mm² | 250 kN | H-shaped compression head | 5,40 |
| **12491** | 95 - 1000 mm² | 450 kN | H-shaped compression head | 9,80 |

**Remark:** Suitable for working with compression dies according to DIN 48083-30 H resp. 45 H described on the following catalogue page 194. Delivery with a quick coupling is standard.

## Exchangeable crimping dies for compression head 05256

### Hexagonal-crimping 10-630 mm²

for copper- and aluminium cable lugs and connectors
according to DIN 46235/46267 part 1 + 2, DIN 46329 and similar

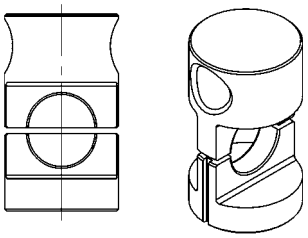


Hexagonal-crimping

| Part-No. | cross-section mm² Cu | Al | code-no. | crimping width mm |
|---|---|---|---|---|
| **12533** | 10 | - | 6 | 5 |
| **12908** | 16 | - | 8 | 14 |
| **12909** | 25 | - | 10 | 14 |
| **12910** | 35 | 16/25 | 12 | 12 |
| **12911** | 50 | 35 | 14 | 12 |
| **12912** | 70 | 50 | 16 | 12 |
| **12913** | 95 | 70 | 18 | 12 |
| **12914** | 120 | - | 20 | 12 |
| **12915** | 150 | 95/120 | 22 | 14 |
| **12916** | 185 | 150 | 25 | 14 |
| **12917** | 240 | 185 | 28 | 14 |
| **12918** | 300 | 240 | 32 | 12 |
| **12918/Al** | - | 300 | 34 | 17 |
| **12919** | 400 | 400 | 38 | 17 |
| **12920** | 500 | - | 42 | 17 |
| **12921** | 630 | 500 | 44 | 17 |

### Round-crimping dies 25/35-300/400 mm²

for sector-shaped copper- and aluminium conductors



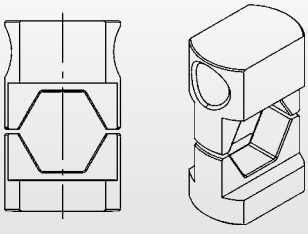
Round-crimping

| Part-No. | cross-section mm² sm | se | crimping width mm |
|---|---|---|---|
| **12520** | 25 | 35 | 40 |
| **12521** | 35 | 50 | 40 |
| **12522** | 50 | 70 | 40 |
| **12523** | 70 | 95 | 40 |
| **12524** | 95 | 120 | 40 |
| **12525** | 120 | 150 | 40 |
| **12526** | 150 | 185 | 40 |
| **12527** | 185 | 240 | 40 |
| **12528** | 240 | 300 | 40 |
| **12529** | 300 | 400 | 40 |

## Exchangeable crimping dies for compression head 12491

### Hexagonal-crimping 95-1000 mm²

for copper- and aluminium cables and connectors
according to DIN 46235/46267 part 1 + 2, DIN 46329 and similar



Hexagonal-crimping

| Part-No. | cross-section mm² Cu | Al | code-no. | crimping width mm |
|---|---|---|---|---|
| **12534** | 95 | 70 | 18 | 12 |
| **12535** | 120 | - | 20 | 14 |
| **12536** | 150 | 95/120 | 22 | 14 |
| **12538** | 185 | 150 | 25 | 14 |
| **12539** | 240 | 185 | 28 | 14 |
| **12540** | 300 | 240 | 32 | 17 |
| **12540/Al** | - | 300 | 34 | 17 |
| **12541** | 400 | 400 | 38 | 17 |
| **12542** | 500 | - | 42 | 17 |
| **12543** | 630 | 500 | 44 | 17 |
| **12544** | 800 | 630 | 52 | 25 |
| **12545** | 1000 | 800 | 58 | 25 |
| **12546** | - | 1000 | 60 | 25 |

## Hydraulic cable cutting heads

for copper- and aluminium- resp. ACSR cables
suitable for connection to our 700 bar basic-pumps

12832

12833

12834

12835

| Part-No. | max. cutting-Ø | cutting force | suitable for | length | weight kg/pcs. |
|---|---|---|---|---|---|
| **12832** | 45 mm | 60 kN | ACSR-Kabel | 320 mm | 3,5 |
| **12833** | 50 mm | 60 kN | Cu-/Al-Kabel | 320 mm | 2,7 |
| **12834** | 85 mm | 70 kN | Cu-/Al-Kabel | 420 mm | 5,2 |
| **12835** | 95 mm | 130 kN | Cu-/Al-Kabel | 420 mm | 9,8 |

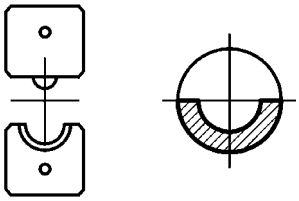
**Remark:** All cutting heads will be delivered with quick couplings. Part-No. 12832 is suitable for cutting ACSR-cables up to an outer-Ø of 45 mm. All other cutting heads are designed for cutting copper- and aluminium cables in the described diameter range. They are not applicable for cutting steel wires, cables with steel-inserts or solid conductors. They are also not applicable for all kinds of live line working.

## System dies size I (flat design)

suitable for hand operated hydraulic compression tools Part-No. 12930/12933 acc. to catalogue page 169 as well as battery operated hydraulic compression tools Part-No. 14240/42 acc. to page 174, 12748 acc. to page 176 and Part-No. 12728 acc. to page 186.

### Indent-crimping 6-70 mm²

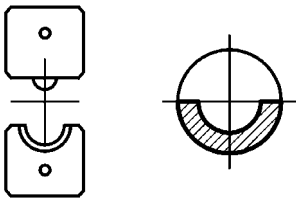
for cable lugs acc. to DIN 46234 + 46230



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12680** | 10 + 16 + 25 + 35 | When ordering the dies 12680-82 it is necessary to order the suitable indentor 12683 too. All crimping dies can be installed in our tools 12930/12933, 14240/42, 12748 and 12728. |
| **12681** | 6 + 50 | |
| **12682** | 70 | |
| **12683** | Indentor 6 - 70 | |

### Indent-crimping 1,5-35 mm²

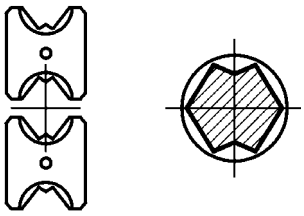
for druseidt stainless steel cable lugs



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12503** | 1,5 - 2,5 | All crimping dies can be installed in our tools 12930/12933, 14240/42, 12748 and 12728. Up to a cross-section range of 35 mm² it is necessary to work for copper and stainless steel cables with different crimping dies. |
| **12504** | 4-6 | |
| **12505** | 10 | |
| **12506** | 16 | |
| **12507** | 25 | |
| **12508/VA** | 35 | |
| **12508/CU** | 35 | |

### WM-crimping 10-300 mm²

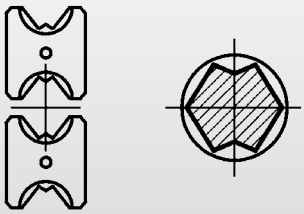
for tubular cable lugs and connectors druseidt standard design, crimping width 5 mm



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12923** | 10 + 120 | Suitable tools for cross-section up to 240 mm² 12930/12933 and 12728 and for cross-section up to 300 mm² 14240/42 and 12748. |
| **12924** | 16 + 70 | |
| **12925** | 25 + 95 | |
| **12926** | 35 + 50 | |
| **12927** | 150 | |
| **12928** | 185 | |
| **12929** | 240 | |
| **12929/300** | 300 | |

### WM-crimping 10-300 mm²

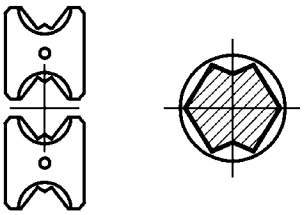
for tubular cable lugs and connectors druseidt Euro-type design, crimping width 5 mm



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12400** | 10 + 120 | Suitable tools for cross-section up to 240 mm² 12930/12933 and 12728 and for cross-section up to 300 mm² 14240/42 and 12748 |
| **12401** | 16 + 70 | |
| **12402** | 25 + 95 | |
| **12403** | 35 + 50 | |
| **12927** | 150 | |
| **12928** | 185 | |
| **12929** | 240 | |
| **12929/300** | 300 | |

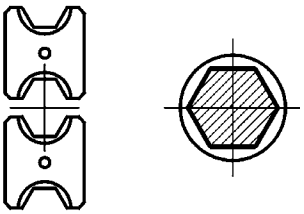
## System dies size I (flat design)

### WM-crimping 10f-240f mm²
for tubular cable lugs and connectors
druseidt design for fine stranded cables, crimiping width 5 mm



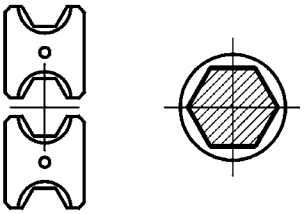
| Part-No. | cross-section mm² | information |
|---|---|---|
| 12492 | 10f + 25f | Suitable tools for cross-section up to 185f mm² 12930/12933 and 12728 and for cross-section up to 240f mm² 14240/42 and 12748 |
| 12493 | 16f + 35f | |
| 12494 | 50f | |
| 12495 | 70f | |
| 12496 | 95f | |
| 12497 | 120f | |
| 12498 | 150f | |
| 12499 | 185f | |
| 12499/240f | 240f | |

### Hexagonal-crimping 10-300 mm²
for copper cable lugs and connectors
acc. to DIN 46235/46267 part 1, crimping width 5 mm



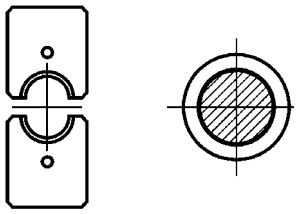
| Part-No. | cross-section mm² | code-no. | information |
|---|---|---|---|
| 12945 | 10 + 120 | 6 + 20 | Suitable tools for cross-section up to 185 mm² 12930/12933 and 12728 and for cross-section up to 300 mm² 14240/42 and 12748 |
| 12946 | 16 + 70 | 8 + 16 | |
| 12947 | 25 + 95 | 10 + 18 | |
| 12948 | 35 + 50 | 12 + 14 | |
| 12949 | 150 | 22 | |
| 12950 | 185 | 25 | |
| 12951 | 240 | 28 | |
| 12952 | 300 | 32 | |

### Hexagonal-crimping 16-300 mm²
for aluminium-cable lugs and connectors
acc. to DIN 46329/46267 part 2, crimping width 7 mm



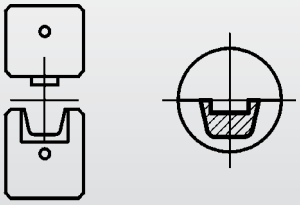
| Part-No. | cross-section mm² | code-no. | information |
|---|---|---|---|
| 12324 | 16/25 + 35 | 12 Al + 14 Al | Suitable tools for cross-section up to 185 mm² 12930/12933 and 12728 and for cross-section up to 300 mm² 14240/42 and 12748 |
| 12325 | 16/25 + 50 | 12 Al + 16 Al | |
| 12326 | 70 | 18 Al | |
| 12327 | 95/120 | 22 Al | |
| 12328 | 150 | 25 Al | |
| 12329 | 185 | 28 Al | |
| 12330 | 240 | 32 Al | |
| 12331 | 300 | 34 Al | |

### Round-crimping dies 25/35-185/240 mm²
for sector shaped copper and aluminium conductors,
crimping width 12 mm



| Part-No. | cross-section mm² | | information |
|---|---|---|---|
| | sm | se | |
| 12955 | 25 | 35 | Suitable tools for all cross-section ranges 12930, 12933, 14240/42, 12748 and 12728 |
| 12956 | 35 | 50 | |
| 12957 | 50 | 70 | |
| 12958 | 70 | 95 | |
| 12959 | 95 | 120 | |
| 12960 | 120 | 150 | |
| 12961 | 150 | 185 | |
| 12962 | 185 | 240 | |

### Trapezoid crimping 25-95 mm²
for cable end sleeves acc. to DIN 46228 part 1 + 4,
crimping width 26 mm



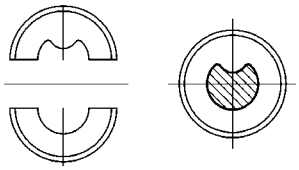
| Part-No. | cross-section mm² | information |
|---|---|---|
| 12390 | 25 | When ordering the dies 12390-94 it is necessary to order the suitable indentor too. Suitable tools for all cross-section ranges 12930, 12933, 14240/42, 12748 and 12728 |
| 12391 | 35 | |
| 12392 | 50 | |
| 12393 | 70 | |
| 12394 | 95 | |
| Indentor | | |
| 12395 | 25 + 35 | |
| 12396 | 50 + 70 | |
| 12397 | 95 | |

## System dies size II (half shell dies, small design)

suitable for hand operated hydraulic compression tool Part-No. 12766 acc. to catalogue page 170, battery operated hydraulic tools 14240/41 acc. to catalogue page 174 resp. 13552 acc. to catalogue page 178 and hydraulic compression head Part-No. 12836 acc. to catalogue page 192

### Indent-crimping 10-120 mm²

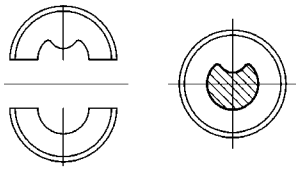
for cable lugs acc. to DIN 46234 + 46230



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12577** | 10 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836 |
| **12578** | 16 | |
| **12579** | 25 | |
| **12580** | 35 | |
| **12581** | 50 | |
| **12582** | 70 | |
| **12583** | 95 | |
| **12584** | 120 | |

### Indent-crimping 1,5-35 mm²

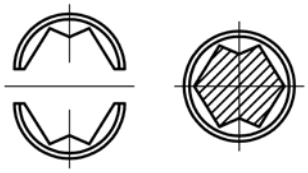
for druseidt stainless steel cable lugs



| Part-No. | cross-section mm² | information |
|---|---|---|
| **12585** | 1,5 - 2,5 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836. Up a cross-section range of 35 mm² it is necessary to work for copper and stainless steel cables with different crimping dies. |
| **12586** | 4 - 6 | |
| **12587** | 10 | |
| **12588** | 16 | |
| **12590** | 25 | |
| **12591/VA** | 35 | |
| **12591/CU** | 35 | |

### WM-crimping 10-300 mm²

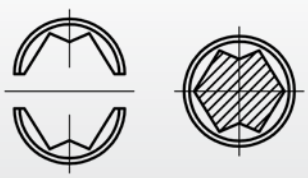
for tubular cable lugs and connectors
druseidt standard design, crimping width 5 mm



| Part-No. | cross-section mm² | information |
|---|---|---|
| **13963** | 10 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836 |
| **13964** | 16 | |
| **13965** | 25 | |
| **13966** | 35 | |
| **13967** | 50 | |
| **13968** | 70 | |
| **13969** | 95 | |
| **13970** | 120 | |
| **13971** | 150 | |
| **13972** | 185 | |
| **13973** | 240 | |
| **13974** | 300 | |

### WM-crimping 10-300 mm²

for tubular cable lugs and connectors
druseidt Euro-type design

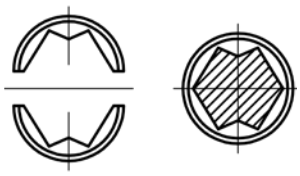


| Part-No. | cross-section mm² | information |
|---|---|---|
| **13975** | 10 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836 |
| **13976** | 16 | |
| **13977** | 25 | |
| **13978** | 35 | |
| **13979** | 50 | |
| **13980** | 70 | |
| **13981** | 95 | |
| **13982** | 120 | |
| **13971** | 150 | |
| **13972** | 185 | |
| **13973** | 240 | |
| **13974** | 300 | |

## System dies size II (half shell dies, small design)

### WM-crimping 10f-240f mm²

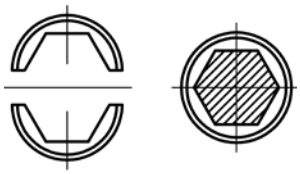
for tubular cable lugs and connectors
druseidt design for fine stranded cables,
crimping width 5 mm



| Part-No. | cross-section mm² | information |
|---|---|---|
| 13485 | 10f | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836. |
| 13486 | 16f | |
| 13487 | 25f | |
| 13488 | 35f | |
| 13489 | 50f | |
| 13490 | 70f | |
| 13491 | 95f | |
| 13492 | 120f | |
| 13493 | 150f | |
| 13494 | 185f | |
| 13495 | 240f | |

### Hexagonal-crimping 6-240/300 mm²

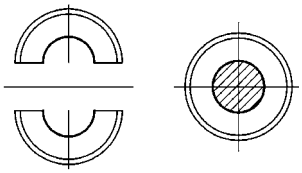
for copper cable lugs and connectors acc. to DIN 46235/46267 part 1
and out of aluminium acc. to DIN 46329/46267, part 2,
crimping width 5 mm



| Part-No. | cross-section mm² Cu | Al | code-no. | information |
|---|---|---|---|---|
| 13987 | 6 | - | 5 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836 |
| 13988 | 10 | - | 6 | |
| 13989 | 16 | - | 8 | |
| 13990 | 25 | - | 10 | |
| 13991 | 35 | 16 + 25 | 12 | |
| 13992 | 50 | 35 | 14 | |
| 13993 | 70 | 50 | 16 | |
| 13994 | 95 | 70 | 18 | |
| 13995 | 120 | - | 20 | |
| 13996 | 150 | 95 + 120 | 22 | |
| 13997 | 185 | 150 | 25 | |
| 13998 | 240 | 185 | 28 | |
| 13999 | 300 | 240 | 32 | |

### Round-crimping dies 25/35-185/240 mm²

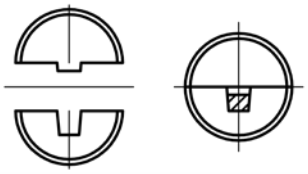
for sector-shaped copper- and aluminium conductors,
crimping width 12 mm



| Part-No. | cross-section mm² sm | se | information |
|---|---|---|---|
| 14140 | 25 | 35 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836 |
| 14141 | 35 | 50 | |
| 14142 | 50 | 70 | |
| 14143 | 70 | 95 | |
| 14144 | 95 | 120 | |
| 14145 | 120 | 150 | |
| 14146 | 150 | 185 | |
| 14147 | 185 | 240 | |

### Trapezoid-crimping 10-185 mm²

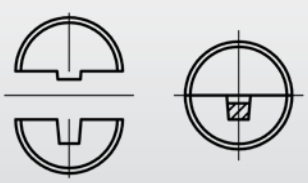
for cable end sleeves acc. to DIN 46228 part 1 + 4,
crimping width 20 mm



| Part-No. | cross-section mm² | information |
|---|---|---|
| 13909 | 10 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836 |
| 13910 | 16 | |
| 13911 | 25 | |
| 13912 | 35 | |
| 13913 | 50 | |
| 13914 | 70 | |
| 13915 | 95 | |
| 13916 | 120 | |
| 13917 | 150 | |
| 13918 | 185 | |

### Trapezoid-crimping 2 x 4 up to 2 x 16 mm²

for Twin cable end sleeves,
crimping width 20 mm



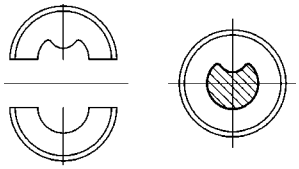
| Part-No. | cross-section mm² | information |
|---|---|---|
| 14148 | 2 x 4 | Suitable tools for all cross-section ranges 12766, 14240/41, 13552 and 12836 |
| 14149 | 2 x 6 | |
| 14150 | 2 x 10 | |
| 14151 | 2 x 16 | |

## System dies size III (half shell dies, large design)

suitable for hand operated hydraulic compression tools Part-No. 12965/S and 12968 acc. to catalogue page 170, battery operated hydraulic compression tools 13551/25, 13551/42 and 13537 acc. to catalogue page 181 and hydraulic compression heads 12485 acc. to catalogue page 192 resp. tabletop unit 12837 acc. to catalogue page 193

### Indent-crimping 10-240 mm²

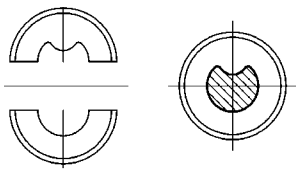
for cable lugs acc. to DIN 46234 + 46230



| Part-No. | cross-section mm² | information |
|---|---|---|
| **14120** | 10 | When ordering the dies 14120-30 it is necessary to order the suitable indentor too. Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837 |
| **14121** | 16 | |
| **14122** | 25 | |
| **14123** | 35 | |
| **14124** | 50 | |
| **14125** | 70 | |
| **14126** | 95 | |
| **14127** | 120 | |
| **14128** | 150 | |
| **14129** | 185 | |
| **14130** | 240 | |
| **Indentor** | | |
| **14131** | 10 - 35 | |
| **14132** | 50 - 95 | |
| **14133** | 120 - 240 | |

### Indent-crimping 10-95 mm²

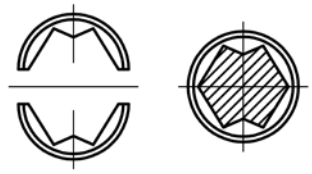
for druseidt stainless steel cable lugs



| Part-No. | cross-section mm² | information |
|---|---|---|
| **14163** | 10 | Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837 The crimping dies 14166/VA-14169/VA are suitable for crimping stainless steel cables and the dies 14166/Cu-14169/Cu for crimping copper cables with stainless steel lugs. When crimping cross-sections up to 25 mm² copper- and stainless steel cables can be crimped with the same die-set. |
| **14164** | 16 | |
| **14165** | 25 | |
| **14166/VA** | 35 | |
| **14166/CU** | 35 | |
| **14167/VA** | 50 | |
| **14167/CU** | 50 | |
| **14168/VA** | 70 | |
| **14168/CU** | 70 | |
| **14169/VA** | 95 | |
| **14169/CU** | 95 | |

### WM-crimping 10-300 mm²

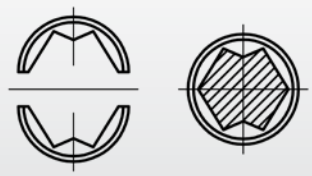
for tubular cable lugs and connectors druseidt standard design



| Part-No. | cross-section mm² | crimping width | information |
|---|---|---|---|
| **13048** | 10 | 7 | Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837 |
| **13049** | 16 | 7 | |
| **13050** | 25 | 10 | |
| **13051** | 35 | 12 | |
| **13052** | 50 | 14 | |
| **13053** | 70 | 14 | |
| **13054** | 95 | 14 | |
| **13055** | 120 | 14 | |
| **13056** | 150 | 14 | |
| **13057** | 185 | 14 | |
| **13058** | 240 | 14 | |
| **13059** | 300 | 7 | |

### WM-crimping 10-300 mm²

for tubular cable lugs and connectors druseidt Euro-design

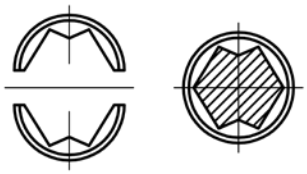


| Part-No. | cross-section mm² | crimping width | information |
|---|---|---|---|
| **14170** | 10 | 7 | Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837 |
| **14171** | 16 | 7 | |
| **14172** | 25 | 12 | |
| **14173** | 35 | 12 | |
| **14174** | 50 | 14 | |
| **14175** | 70 | 14 | |
| **14176** | 95 | 14 | |
| **14177** | 120 | 14 | |
| **13056** | 150 | 14 | |
| **13057** | 185 | 14 | |
| **13058** | 240 | 14 | |
| **13059** | 300 | 7 | |

# System dies size III (half shell dies, large design)

## WM-crimping 10f-240f mm²

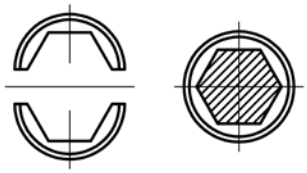
for tubular cable lugs and connectors
druseidt design for fine stranded cables



| Part-No. | cross-section mm² | crimping width | information |
|---|---|---|---|
| **13540** | 10f | 7 | Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837 |
| **13541** | 16f | 10 | |
| **13542** | 25f | 12 | |
| **13543** | 35f | 14 | |
| **13544** | 50f | 14 | |
| **13545** | 70f | 14 | |
| **13546** | 95f | 14 | |
| **13547** | 120f | 14 | |
| **13548** | 150f | 14 | |
| **13549** | 185f | 14 | |
| **13550** | 240f | 7 | |

## Hexagonal-crimping 10-300 mm²

for copper cable lugs and connectors acc. to DIN 46235/46267 part 1
and aluminium acc. to DIN 46329/46267 part 2

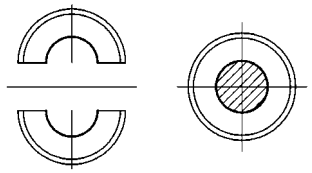


| Part-No. | cross-section mm² Cu | Al | code-no. | crimping width |
|---|---|---|---|---|
| **12980** | 10 | - | 6 | 7 |
| **12981** | 16 | - | 8 | 14 |
| **12982** | 25 | - | 10 | 14 |
| **12983** | 35 | 16/25 | 12 | 12 |
| **12984** | 50 | 35 | 14 | 12 |
| **12985** | 70 | 50 | 16 | 12 |
| **12986** | 95 | 70 | 18 | 12 |
| **12987** | 120 | - | 20 | 12 |
| **12988** | 150 | 95/120 | 22 | 14 |
| **12989** | 185 | 150 | 25 | 14 |
| **12990** | 240 | 185 | 28 | 14 |
| **12991** | 300 | 240 | 32 | 7 |
| **12992/300** | - | 300 | 34 | 7 |

**Information:** Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837

## Round-crimping dies 25/35-240/300 mm²

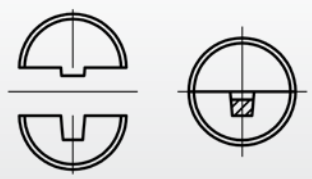
for sector shaped copper- and aluminium conductors,
crimping width 35 mm



| Part-No. | cross-section mm² sm | se | information |
|---|---|---|---|
| **12992** | 25 | 35 | Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837 |
| **12993** | 35 | 50 | |
| **12994** | 50 | 70 | |
| **12995** | 70 | 95 | |
| **12996** | 95 | 120 | |
| **12997** | 120 | 150 | |
| **12998** | 150 | 185 | |
| **12999** | 185 | 240 | |
| **12907** | 240 | 300 | |

## Trapezoid-crimping 25-185 mm²

for cable end sleeves DIN 46228 part 1 + 4



| Part-No. | cross-section mm² | crimping width | information |
|---|---|---|---|
| **14152** | 25 | 20 | Suitable tools for all cross-section ranges 12965/S, 12968, 13551/25, 13551/42, 13537, 12485, 12837 |
| **14153** | 35 | 20 | |
| **14154** | 50 | 26 | |
| **14155** | 70 | 26 | |
| **14156** | 95 | 26 | |
| **14157** | 120 | 26 | |
| **14158** | 150 | 26 | |
| **14159** | 185 | 26 | |

# 3. TECHNICAL APPENDIX

## Instructions for crimping our cable lugs and connectors

Following we give some information about suitable tools and the realization of the crimping process when working with our cable lugs and connectors. **Please notice, that it is absolutely necessary to pay attention to the fact that cable connector, tool and die set are well suited to each other. Only under this condition it is possible to guarantee optimal solderless crimped connections. Therefore we recommend to work only with the suitable druseidt tools.**
To take notice of the various kinds of applications and the number of crimping operations we offer tools in a different price- and performance level. Generally we recommend only to work with ratchet assisted tools, especially when working in the industrial field. So it is possible to guarantee a constant crimping force and optimal crimping performance all over the time. Also we recommend to inspect the tools every year (by permanent working shorter periods after agreement).

With pleasure we'll check and repair your tools in our company. Please notice that it's not allowed to make any changes on our tools. It is not possible to give any form of guarantee by improper handling, incorrect repairing or changed tools. All cable lugs, connectors and tools are constructed for the crimping of stranded copper- and aluminium-conductors. By working with massive single wire conductors or cables made out of other materials it is necessary to consult our company. Our company offers a wide range of cable connectors. Based on this fact it is not possible to write down crimping instructions for all of the different kinds of conductors described in this catalogue. Therefore please be so kind and contact us in case of doubt. With pleasure our employees assist your company to find an optimal crimping solution for your application.

## Direction for crimping cable lugs and connectors

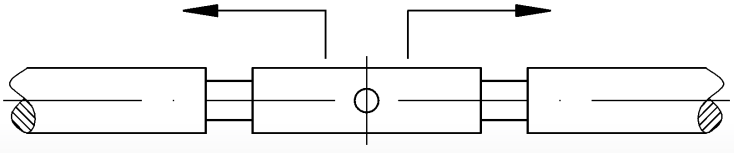
A general instruction is that cable lugs or connectors and the used cable must have the same cross-section. By working with fine stranded cables with a bigger outer-Ø it is necessary to work with cable lugs for fine stranded cables (described in this catalogue on pages 35-39) or cable lugs with a bigger cross-section as the cable. To work with cable lugs with a smaller cross-section as the cable is not allowed.

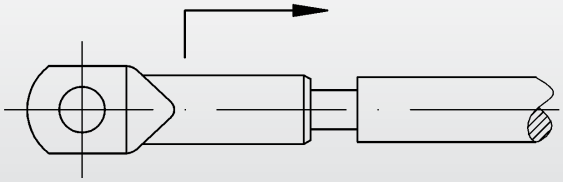
To guarantee an optimal filling of the crimp sleeve it is necessary that the difference of the inner-Ø of the sleeve and the outer-Ø of the stripped cable is not to much. You get an optimal crimping performance when the inner-Ø of the sleeve and the outer-Ø of the cable is nearly the same. The dimension of the cable lugs and connectors are described in our catalogue. Please compare these dimensions with the outer-Ø of your stripped cable.

**Crimping procedure by working with tubular cable lugs and connectors:**

- cutting of the cable (right angled to the conductor).
- stripping of the cable. Stripping length = length of the crimp sleeve + ca. 10 %, caused of the sleeve stretching when crimping.
- before starting the crimping process it is necessary to clean the stripped cable ends and make it free of dirt and oxides. Sector shaped cables must be rounded with special dies.
- insertion of the cable. By working with cable lugs up to the end of the crimping sleeve, by working with connectors up to the centre of the connector.
- checking up that cable lug or connector, tool and die set are the right ones.
- take also notice of the instructions for use of the crimping tool.
- realizing of the crimping process. Beginning from the flange of the cable lug in the direction to the conductor or by working with connectors from the connector-centre in the direction to the conductor (acc. to the following drawing). Number of crimpings in dependence of the crimping width and length of the crimping sleeves (please take also notice of the instructions on page 203).

**Crimping direction by realizing the crimping process:**





## Number of crimpings

When working with tubular cable lugs and connectors the number of crimpings are in dependence of the used tool and the crimping width of the die sets. Such information are given in our tables and the description in this catalogue.

The recommend min. number of crimpings are contained in the following tables. When working with butt connectors it is necessary to double it. When crimping cable lugs please pay attention to our instructions on page 202 too.

| | number x crimping width | | | | |
|---|---|---|---|---|---|
| cross-section mm² | druseidt standard design | druseidt Euro-design | druseidt design for fine stranded cables | copper DIN-design 46235 / 46267/1 | aluminium DIN-design 46239 / 46267/2 |
| 10 | 1 x 5 mm | 1 x 5 mm | 1 x 5 mm | 1 x 5 mm | - |
| | 1 x 7 mm | 1 x 7 mm | 1 x 7 mm | 1 x 7 mm | - |
| 16 | 1 x 5 mm | 2 x 5 mm | 2 x 5 mm | 2 x 5 mm | 3 x 5 mm |
| | 1 x 7 mm | 1 x 7 mm | 1 x 10 mm | 1 x 14 mm | 2 x 7 mm |
| | | | | | 1 x 12 mm |
| 25 | 2 x 5 mm | 2 x 5 mm | 2 x 5 mm | 2 x 5 mm | 4 x 5 mm |
| | 1 x 10 mm | 1 x 12 mm | 1 x 12 mm | 2 x 7 mm | 3 x 7 mm |
| | | | | 1 x 14 mm | 2 x 12 mm |
| 35 | 2 x 5 mm | 2 x 5 mm | 2 x 5 mm | 2 x 5 mm | 5 x 5 mm |
| | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 4 x 7 mm |
| | 1 x 12 mm | 1 x 12 mm | 1 x 14 mm | 1 x 12 mm | 2 x 12 mm |
| 50 | 2 x 5 mm | 2 x 5 mm | 2 x 5 mm | 3 x 5 mm | 5 x 5 mm |
| | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 4 x 7 mm |
| | 1 x 12 mm | 1 x 12 mm | 1 x 14 mm | 1 x 12 mm | 2 x 12 mm |
| 70 | 2 x 5 mm | 2 x 5 mm | 3 x 5 mm | 3 x 5 mm | 7 x 5 mm |
| | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 5 x 7 mm |
| | 1 x 14 mm | 1 x 14 mm | 1 x 14 mm | 1 x 12 mm | 3 x 12 mm |
| 95 | 3 x 5 mm | 3 x 5 mm | 3 x 5 mm | 4 x 5 mm | 7 x 5 mm |
| | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 3 x 7 mm | 5 x 7 mm |
| | 1 x 14 mm | 1 x 14 mm | 1 x 14 mm | 2 x 12 mm | 3 x 12 mm |
| 120 | 3 x 5 mm | 3 x 5 mm | 3 x 5 mm | 4 x 5 mm | 7 x 5 mm |
| | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 5 x 7 mm |
| | 1 x 14 mm | 1 x 14 mm | 1 x 14 mm | 2 x 12 mm | 3 x 12 mm |
| 150 | 3 x 5 mm | 3 x 5 mm | 3 x 5 mm | 4 x 5 mm | 7 x 5 mm |
| | 2 x 7 mm | 2 x 7 mm | 2 x 7 mm | 3 x 7 mm | 5 x 7 mm |
| | 1 x 14 mm | 1 x 14 mm | 1 x 14 mm | 2 x 14 mm | 3 x 12 mm |
| 185 | 3 x 5 mm | 3 x 5 mm | 4 x 5 mm | 4 x 5 mm | 7 x 5 mm |
| | 2 x 7 mm | 2 x 7 mm | 3 x 7 mm | 3 x 7 mm | 5 x 7 mm |
| | 1 x 14 mm | 1 x 14 mm | 2 x 14 mm | 2 x 14 mm | 3 x 12 mm |
| 240 | 4 x 5 mm | 4 x 5 mm | 5 x 5 mm | 5 x 5 mm | 8 x 5 mm |
| | 3 x 7 mm | 3 x 7 mm | 4 x 7 mm | 4 x 7 mm | 6 x 7 mm |
| | 2 x 14 mm | 2 x 14 mm | 2 x 14 mm | 2 x 14 mm | 3 x 12 mm |
| 300 | 4 x 5 mm | 4 x 5 mm | - | 5 x 5 mm | 8 x 5 mm |
| | 3 x 7 mm | 3 x 7 mm | - | 4 x 7 mm | 6 x 7 mm |
| | 2 x 14 mm | 2 x 14 mm | - | 2 x 14 mm | 3 x 12 mm |
| 400 | 2 x 14 mm | 2 x 14 mm | - | 3 x 17 mm | 3 x 17 mm |
| 500 | 3 x 14 mm | 3 x 14 mm | - | 3 x 17 mm | 4 x 17 mm |
| 630 | 3 x 14 mm | 3 x 14 mm | - | 3 x 17 mm | 4 x 17 mm |
| 800 | - | - | - | 3 x 25 mm | 4 x 25 mm |
| 1000 | - | - | - | 3 x 25 mm | 4 x 25 mm |

## Maximum allowable current load of cable lugs and connectors in conjunction with insulated leadings and conductors

The current load of cable lugs and connectors depends on the regulations of the VDE 0298 part 4 where the allowable current load of leadings and cables are regulated. Following a summary of some most used situations.

The information about current load apply by an ambient temperature of +30° C in dependence of the laying system of the cables.

**Group 1:** Leadings up to a nominal voltage 1 kV and heat resistant leadings acc. to VDE 0298 part 4 table 11 column 2. Air-cooled single wire leadings, rubber-insulated, PVC-insulated, heat resistant.

**Group 2:** Leadings up to a nominal voltage of 1 kV and heat resistant leadings acc. to VDE 0298 part 4 column 5. Multi-conductor leadings (but not for household appliance and hand-hold units) layed on or of free areas, rubber insulated, PVC-insulated, heat resistant.

**Group 3:** Leadings with a nominal voltage of 0,6/1 kV acc. to VDE 0298 part 4, column 7. Rubber insulated leadings 0,6/1 kV and 1,8/3 kV in special design (air cooled laying).

**Group 4:** Leadings with a nominal voltage of 0,6/1 kV acc. to VDE 0298, part 4 column 4. Multi conductor leadings rubber tube insulated and trailing cables up to 6/10 kV layed on or of free areas.

| nominal cross-section mm² | current load for copper cables in ampere | | | |
|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 |
| 0,75 | 15 | 12 | - | - |
| 1 | 19 | 15 | - | - |
| 1,5 | 24 | 18 | 30 | - |
| 2,5 | 32 | 26 | 41 | 30 |
| 4 | 42 | 34 | 55 | 41 |
| 6 | 54 | 44 | 70 | 53 |
| 10 | 73 | 61 | 98 | 74 |
| 16 | 98 | 82 | 132 | 99 |
| 25 | 129 | 108 | 176 | 131 |
| 35 | 158 | 135 | 218 | 162 |
| 50 | 198 | 168 | 276 | 202 |
| 70 | 245 | 207 | 347 | 250 |
| 95 | 292 | 250 | 416 | 301 |
| 120 | 344 | 292 | 488 | 352 |
| 150 | 391 | 335 | 566 | 404 |
| 185 | 448 | 382 | 644 | 461 |
| 240 | 528 | 453 | 775 | - |
| 300 | 608 | 523 | 898 | - |
| 400 | 726 | - | - | - |
| 500 | 830 | - | - | - |

**Remark:** Design of the leadings resp. all values deviates from VDE 0298 part 4 dated August 2003 and are only valid under the conditions of the VDE-regulations.

## Tightening torques for screws

acc. to DIN EN 61238/DIN VDE 0220 part 2 for screws 8.8

| thread M | tightening torque Nm |
|---|---|
| 5 | 5 |
| 6 | 9 |
| 8 | 22 |
| 10 | 44 |

| thread M | tightening torque Nm |
|---|---|
| 12 | 75 |
| 14 | 120 |
| 16 | 190 |
| 20 | 380 |

## Tightening force for leadings and cables

The tightening force is the identified value to pull out a leading or cable out of the crimped connector. The values deliver information about the mechanical stress of crimping connections. In dependence of the different cable lugs and connectors we have different regulations about the minimum tightening forces for crimping connections.

To pass the test acc. to the different norms and regulations it is necessary that the electrical conductor cannot pulled out inside of 60 seconds when testing with 100 % of the tightening force. Following a summary of such values under consideration of the different norms.

| | Values for crimping copper connectors up to 10 mm² DIN EN 61238-1, 3/2004 (VDE 0220 part 100) exept cable end sleeves | | | Values for crimping aluminium connectors up to 16 mm² DIN EN 61238-1, 03/2004 (VDE 0220 part 100) | | |
|---|---|---|---|---|---|---|
| | 100% | 130% | 150% | 100% | 130% | 150% |
| 10 mm² | 600 N | 780 N | 900 N | - | - | - |
| 16 mm² | 960 N | 1248 N | 1440 N | 640 N | 832 N | 960 N |
| 25 mm² | 1500 N | 1950 N | 2250 N | 1000 N | 1300 N | 1500 N |
| 35 mm² | 2100 N | 2730 N | 3150 N | 1400 N | 1820 N | 2100 N |
| 50 mm² | 3000 N | 3900 N | 4500 N | 2000 N | 2600 N | 3000 N |
| 70 mm² | 4200 N | 5460 N | 6300 N | 2800 N | 3640 N | 4200 N |
| 95 mm² | 5700 N | 7410 N | 8550 N | 3800 N | 4940 N | 5700 N |
| 120 mm² | 7200 N | 9360 N | 10800 N | 4800 N | 6240 N | 7200 N |
| 150 mm² | 9000 N | 11700 N | 13500 N | 6000 N | 7800 N | 9000 N |
| 185 mm² | 11100 N | 14430 N | 16550 N | 7400 N | 9620 N | 11100 N |
| 240 mm² | 14400 N | 18720 N | 21600 N | 9600 N | 12480 N | 14400 N |
| 300 mm² | 18000 N | 23400 N | 27000 N | 12000 N | 15600 N | 18000 N |
| 400 mm² | 24000 N* | | | 16000 N | 20800 N | 24000 N |
| 500 mm² | 30000 N* | | | 20000 N | 26000 N | 30000 N |
| 625 mm² | 37500 N* | | | 25000 N* | | |
| 800 mm² | 48000 N* | | | 32000 N* | | |
| 1000 mm² | 60000 N* | | | 40000 N* | | |

* VDE 0220 part 100: maximum value is limited up to 20000 N

| | Values for crimp connections up to 10 mm² EN 60352 part 2, 10/2002 exept cable end sleeves | | | Values for connections with tabs and receptacles in combination with copper conductors DIN EN 61210 (VDE 0613 part 6), 06/2011 | | |
|---|---|---|---|---|---|---|
| cross-section | 100% | 130% | 150% | 100% | | |
| 0,2 mm² | - | - | - | 28 N | | |
| 0,34 mm² | - | - | - | 40 N | | |
| 0,5 mm² | 60 N | 78 N | 90 N | 56 N | | |
| 0,75 mm² | 85 N | 111 N | 128 N | 84 N | | |
| 1 mm² | 108 N | 140 N | 162 N | 108 N | | |
| 1,5 mm² | 150 N | 195 N | 225 N | 150 N | | |
| 2,5 mm² | 230 N | 299 N | 345 N | 230 N | | |
| 4 mm² | 310 M | 403 N | 465 N | 310 N | | |
| 6 mm² | 360 N | 468 N | 540 N | 360 N | | |
| 10 mm² | 380 N | 494 N | 570 N | - | | |

| Values for cable end sleeves | | | Values for cable end sleeves | | |
|---|---|---|---|---|---|
| cross-section | EN 60947-1 (VDE 0660 part 100) release 04/2008 | EN 60999-1 release 12/2000 | cross-section | EN 60947-1 (VDE 0660 part 100) release 04/2008 | EN 60999-2 release 4/2004 |
| 0,2 mm² | 10 N | 10 N | 50 mm² | 236 N | 236 N |
| 0,34 mm² | 15 N | 15 N | 70 mm² | 285 N | 285 N |
| 0,5 mm² | 20 N | 20 N | 95 mm² | 351 N | 351 N |
| 0,75 mm² | 30 N | 30 N | 120 mm² | 427 N | 427 N |
| 1 mm² | 35 N | 35 N | 150 mm² | 427 N | 427 N |
| 1,5 mm² | 40 N | 40 N | 185 mm² | 503 N | 503 N |
| 2,5 mm² | 50 N | 50 N | 240 mm² | 578 N | 578 N |
| 4 mm² | 60 N | 60 N | | | |
| 6 mm² | 80 N | 80 N | | | |
| 10 mm² | 90 N | 90 N | | | |
| 16 mm² | 100 N | 100 N | | | |
| 25 mm² | 135 N | 135 N | | | |
| 35 mm² | 190 N | 190 N | | | |

## Temperature resistance of cable lugs and connectors

| | |
|---|---|
| copper cable lugs without insulation | up to + 120° C |
| uninsulated cable end sleeves | up to + 120° C |
| cable lugs and connectors with PA-insulation | up to + 105° C |
| cable lugs and connectors with PC-insulation | up to + 100° C |
| cable lugs and connectors with PVC-insulation | up to + 70° C |
| cable lugs and connectors with shrinking insulation | up to + 95° C |
| insulated cable end sleeves | up to + 105° C |

| | |
|---|---|
| cable lugs and connectors out of nickel | up to + 500° C |
| cable lugs and connectors out of stainless steel | up to + 400° C |
| uninsulated tabs and receptacles, brass, uncoated | up to + 90° C |
| uninsulated tabs and receptacles, brass, tin plated | up to + 100° C |
| uninsulated tabs and receptacles, brass, silver plated | up to + 110° C |
| uninsulated tabs and receptacles, brass, nickel plated | up to + 250° C |

## Conductor cross-section comparison

| AWG | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cross-section mm² | 0,0503 | 0,0646 | 0,0804 | 0,102 | 0,128 | 0,163 | 0,205 | 0,259 | 0,325 | 0,412 | 0,519 | 0,653 |
| comparable metrical cross-section | 0,05 | - | - | 0,1 | 0,14 | - | 0,2 | 0,25 | - | - | 0,5 | - |

| AWG | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cross-section mm² | 0,823 | 1,04 | 1,31 | 1,65 | 2,08 | 2,63 | 3,31 | 4,15 | 5,27 | 6,62 | 8,35 | 10,6 |
| comparable metrical cross-section | 0,75 | 1 | - | 1,5 | - | 2,5 | - | - | - | 6 | - | 10 |

| AWG | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 2/0 | 3/0 | 4/0 | 5/0 | 6/0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cross-section mm² | 13,3 | 16,8 | 21,2 | 26,7 | 33,6 | 42,4 | 53,4 | 67,5 | 85,0 | 107,2 | 135,1 | 170,3 |
| comparable metrical cross-section | - | 16 | - | 25 | 35 | - | 50 | 70 | 95 | 120 | 150 | 185 |

## Inspection and repair of crimping tools

In dependence of the frequency of use and the environmental influences crimping tools are subject of abrasion. Therefore we recommend to inspect the tools every year (by permanent working shorter periods after agreement). With pleasure we'll check and repair your tools in our company. Please notice that tools delivered by druseidt may not be changed in any way.

In particular it is not allowed to make diameter holes etc. Please use our tools only in accordance with our description and the regulations. Repairs of tools may only be executed by our service-department. With pleasure our employees assist your company in repairing and inspecting tools as well as in finding optimal crimping solutions.

# Numerical Index


| Part-No. | page |
|---|---|
| 01000.01 | 14 |
| 01001.01 | 14 |
| 01002.01 | 14 |
| 01003.01 | 14 |
| 01005 | 14 |
| 01005.01 | 14 |
| 01006.01.02 | 14 |
| 01007.01.02 | 14 |
| 01008.01.02 | 14 |
| 01009 | 14 |
| 01009.01 | 14 |
| 01010.01.02 | 14 |
| 01011 | 14 |
| 01011.01 | 14 |
| 01012.01.02 | 14 |
| 01013.01.02 | 14 |
| 01014 | 14 |
| 01014.01 | 14 |
| 01015.01.02 | 14 |
| 01016.01.02 | 14 |
| 01017.01.02 | 14 |
| 01018 | 14 |
| 01018.01 | 14 |
| 01019 | 14 |
| 01019.01 | 14 |
| 01020.01.02 | 14 |
| 01021 | 14 |
| 01021.01 | 14 |
| 01022.01.02 | 14 |
| 01023 | 14 |
| 01023.01 | 14 |
| 01024.01.02 | 14 |
| 01025.01.02 | 14 |
| 01026.01.02 | 14 |
| 01027 | 14 |
| 01027.01 | 14 |
| 01028.01.02 | 14 |
| 01029.01.02 | 14 |
| 01030.01.02 | 14 |
| 01031.01.02 | 14 |
| 01032.01.02 | 14 |
| 01033 | 14 |
| 01033.01 | 14 |
| 01040.01 | 15 |
| 01041.01.02 | 15 |
| 01042.01.02 | 15 |
| 01044.01.02 | 15 |
| 01045.01.02 | 15 |
| 01046.01.02 | 15 |
| 01048.01.02 | 15 |
| 01050.01.02 | 15 |
| 01051.01.02 | 15 |
| 01053.01.02 | 15 |
| 01054.01.02 | 15 |
| 01055.01.02 | 15 |
| 01056.01.02 | 15 |
| 01057.01.02 | 15 |
| 01058.01.02 | 15 |
| 01059.01.02 | 15 |
| 01060.01.02 | 15 |
| 01062.01.02 | 15 |
| 01063.01.02 | 15 |
| 01070.01 | 15 |
| 01071.01.02 | 15 |
| 01072 | 15 |
| 01072.01 | 15 |
| 01073 | 15 |
| 01073.01 | 15 |
| 01074.01.02 | 15 |
| 01076 | 15 |
| 01076.01 | 15 |
| 01077.01.02 | 15 |
| 01078.01.02 | 15 |
| 01079.01.02 | 15 |
| 01080 | 17 |
| 01080.01 | 17 |
| 01080.02 | 17 |
| 01081 | 17 |
| 01081.01 | 17 |
| 01081.02 | 17 |
| 01082 | 17 |
| 01082.01 | 17 |
| 01082.02 | 17 |
| 01083 | 17 |
| 01083.01 | 17 |
| 01084 | 17 |
| 01084.01 | 17 |
| 01085 | 17 |
| 01085.01 | 17 |
| 01088.01 | 16 |
| 01089.01 | 16 |
| 01090.01 | 16 |
| 01091.01 | 16 |
| 01092.01.02 | 15 |
| 01094 | 21 |
| 01094.01.02 | 15 |
| 01095 | 21 |
| 01096 | 21 |
| 01097 | 21 |
| 01100 | 18 |
| 01101 | 18 |
| 01102 | 18 |
| 01103 | 18 |
| 01104 | 18 |
| 01105 | 18 |
| 01106 | 18 |
| 01107 | 18 |
| 01108 | 18 |
| 01109 | 18 |
| 01110 | 18 |
| 01111 | 18 |
| 01117 | 19 |
| 01118 | 19 |
| 01120 | 19 |
| 01122 | 19 |
| 01123 | 19 |
| 01124 | 19 |
| 01130 | 20 |
| 01131 | 20 |
| 01133 | 20 |
| 01140 | 20 |
| 01141 | 20 |
| 01142 | 20 |
| 01172 | 21 |
| 01173 | 21 |
| 01174 | 21 |
| 01175 | 21 |
| 01176 | 21 |
| 01179 | 21 |
| 01180 | 21 |
| 01181 | 21 |
| 01182 | 21 |
| 01183 | 21 |
| 01186 | 21 |
| 01187 | 21 |
| 01188 | 21 |
| 01189 | 21 |
| 01190 | 21 |
| 01194 | 22 |
| 01195 | 22 |
| 01196 | 22 |
| 01197 | 22 |
| 01198 | 22 |
| 01199 | 22 |
| 01206 | 66 |
| 01207 | 66 |
| 01208 | 66 |
| 01209 | 66 |
| 01210 | 66 |
| 01211 | 66 |
| 01212 | 66 |
| 01213 | 66 |
| 01214 | 66 |
| 01215 | 66 |
| 01216 | 66 |
| 01217 | 66 |
| 01218 | 66 |
| 01219 | 66 |
| 01220 | 66 |
| 01221 | 66 |
| 01222 | 66 |
| 01223 | 66 |
| 01224 | 66 |
| 01225 | 66 |
| 01226 | 66 |
| 01227 | 66 |
| 01228 | 66 |
| 01229 | 66 |
| 01230 | 66 |
| 01231 | 66 |
| 01232 | 66 |
| 01233 | 67 |
| 01234 | 67 |
| 01235 | 67 |
| 01236 | 67 |
| 01237 | 67 |
| 01238 | 67 |
| 01300 | 67 |
| 01301 | 67 |
| 01302 | 67 |
| 01303 | 67 |
| 01305 | 71 |
| 01306 | 71 |
| 01307 | 71 |
| 01308 | 71 |
| 01309 | 71 |
| 01310 | 71 |
| 01311 | 71 |
| 01312 | 71 |
| 01313 | 71 |
| 01316 | 22 |
| 01317 | 22 |
| 01318 | 22 |
| 01319 | 22 |
| 01340 | 24 |
| 01341 | 24 |
| 01342 | 24 |
| 01343 | 24 |
| 01345 | 24 |
| 01346 | 24 |
| 01347 | 24 |
| 01349 | 24 |
| 01351 | 24 |
| 01352 | 24 |
| 01353 | 24 |
| 01354 | 24 |
| 01355 | 24 |
| 01356 | 24 |
| 01357 | 24 |
| 01358 | 24 |
| 01359 | 24 |
| 01360 | 24 |
| 01362 | 24 |
| 01363 | 24 |
| 01364 | 24 |
| 01365 | 24 |
| 01366 | 24 |
| 01367 | 24 |
| 01368 | 24 |
| 01369 | 24 |
| 01370 | 24 |
| 01371 | 24 |
| 01372 | 24 |
| 01373 | 24 |
| 01374 | 24 |
| 01375 | 24 |
| 01376 | 24 |
| 01377 | 24 |
| 01378 | 24 |
| 01379 | 24 |
| 01380 | 24 |
| 01381 | 24 |
| 01382 | 24 |
| 01383 | 24 |
| 01384 | 24 |
| 01385 | 24 |
| 01386 | 24 |
| 01387 | 24 |
| 01388 | 24 |
| 01389 | 24 |
| 01390 | 24 |
| 01391 | 24 |
| 01392 | 24 |
| 01393 | 24 |
| 01394 | 24 |
| 01395 | 24 |
| 01396 | 24 |
| 01397 | 25 |
| 01398 | 25 |
| 01399 | 25 |
| 01400 | 25 |
| 01401 | 25 |
| 01402 | 25 |
| 01403 | 25 |
| 01404 | 25 |
| 01405 | 25 |
| 01406 | 25 |
| 01407 | 25 |
| 01408 | 25 |
| 01409 | 25 |
| 01410 | 25 |
| 01411 | 25 |
| 01412 | 25 |
| 01413 | 25 |
| 01414 | 25 |
| 01416 | 25 |
| 01417 | 25 |
| 01430 | 25 |
| 01431 | 25 |
| 01432 | 25 |
| 01433 | 25 |
| 01434 | 25 |
| 01435 | 25 |
| 01436 | 25 |
| 01437 | 25 |
| 01438 | 25 |
| 01439 | 25 |
| 01440 | 25 |
| 01441 | 25 |
| 01442 | 25 |
| 01443 | 25 |
| 01444 | 25 |
| 01445 | 25 |
| 01446 | 25 |
| 01447 | 25 |
| 01448 | 25 |
| 01449 | 25 |
| 01450 | 25 |
| 01452 | 25 |
| 01453 | 25 |
| 01461.01.02 | 16 |
| 01462.01.02 | 16 |
| 01463.01.02 | 16 |
| 01464.01.02 | 16 |
| 01466.01.02 | 16 |
| 01467.01.02 | 16 |
| 01468.01.02 | 16 |
| 01469.01.02 | 16 |
| 01471.01.02 | 16 |
| 01472.01.02 | 16 |
| 01473.01.02 | 16 |
| 01474.01.02 | 16 |
| 01475.01.02 | 16 |
| 01476.01.02 | 16 |
| 01477.01.02 | 16 |
| 01478.01.02 | 16 |
| 01479.01.02 | 16 |
| 01480.01.02 | 16 |
| 01481.01.02 | 16 |
| 01482.01.02 | 16 |
| 01483.01.02 | 16 |
| 01484.01.02 | 16 |
| 01485.01.02 | 16 |
| 01486.01.02 | 16 |
| 01487.01.02 | 16 |
| 01488.01.02 | 16 |
| 01489.01.02 | 16 |
| 01490.01.02 | 16 |
| 01491.01.02 | 16 |
| 01492.01.02 | 16 |
| 01493.01.02 | 16 |
| 01494.01.02 | 16 |
| 01495.01.02 | 16 |
| 01496.01.02 | 16 |
| 01497.01.02 | 16 |
| 01498.01.02 | 16 |
| 01499.01.02 | 16 |
| 01501 | 26 |
| 01502 | 26 |
| 01503 | 26 |
| 01504 | 26 |
| 01506 | 26 |
| 01507 | 26 |
| 01508 | 26 |
| 01509 | 26 |
| 01510 | 26 |
| 01511 | 26 |
| 01512 | 26 |
| 01513 | 26 |
| 01516 | 26 |
| 01517 | 26 |
| 01518 | 26 |
| 01521 | 26 |
| 01522 | 26 |
| 01523 | 26 |
| 01525 | 26 |
| 01526 | 26 |
| 01527 | 26 |
| 01528 | 26 |
| 01530 | 26 |
| 01531 | 26 |
| 01533 | 26 |
| 01534 | 26 |
| 01536 | 26 |
| 01537 | 26 |
| 01538 | 26 |
| 01539 | 26 |
| 01540 | 26 |
| 01541 | 26 |
| 01542 | 26 |
| 01543 | 26 |
| 01553 | 28 |
| 01554 | 28 |
| 01555 | 28 |
| 01556 | 28 |
| 01557 | 28 |
| 01558 | 28 |
| 01559 | 28 |
| 01560 | 28 |
| 01561 | 28 |
| 01562 | 28 |
| 01563 | 28 |
| 01564 | 28 |
| 01565 | 28 |
| 01566 | 28 |
| 01567 | 28 |
| 01568 | 28 |
| 01569 | 28 |
| 01570 | 28 |
| 01571 | 28 |
| 01572 | 28 |
| 01580 | 30 |
| 01580 | 42 |
| 01581 | 30 |
| 01581 | 42 |
| 01582 | 30 |
| 01582 | 42 |
| 01583 | 30 |
| 01583 | 42 |
| 01584 | 30 |
| 01584 | 42 |
| 01585 | 30 |
| 01585 | 42 |
| 01586 | 30 |
| 01586 | 42 |
| 01588 | 30 |
| 01588 | 42 |
| 01589 | 30 |
| 01589 | 42 |
| 01590 | 30 |
| 01590 | 42 |
| 01591 | 30 |
| 01591 | 42 |
| 01592 | 30 |
| 01592 | 42 |
| 01593 | 30 |
| 01593 | 42 |
| 01594 | 30 |
| 01594 | 42 |
| 01595 | 30 |
| 01595 | 42 |
| 01596 | 30 |
| 01597 | 30 |
| 01598 | 30 |
| 01599 | 30 |
| 01600 | 30 |
| 01601 | 30 |
| 01602 | 30 |
| 01603 | 30 |
| 01604 | 30 |
| 01605 | 30 |
| 01606 | 30 |
| 01607 | 30 |
| 01608 | 30 |
| 01609 | 30 |
| 01610 | 30 |
| 01611 | 30 |
| 01612 | 30 |
| 01613 | 30 |
| 01614 | 30 |
| 01615 | 30 |
| 01616 | 30 |
| 01617 | 30 |
| 01618 | 30 |
| 01619 | 30 |
| 01620 | 30 |
| 01621 | 30 |
| 01622 | 31 |
| 01623 | 31 |
| 01624 | 31 |
| 01625 | 31 |
| 01626 | 31 |
| 01627 | 31 |
| 01628 | 31 |
| 01629 | 31 |
| 01630 | 31 |
| 01631 | 31 |
| 01632 | 31 |
| 01633 | 31 |
| 01634 | 31 |
| 01634 | 43 |
| 01635 | 31 |
| 01635 | 43 |
| 01636 | 31 |
| 01636 | 43 |
| 01637 | 31 |
| 01637 | 43 |
| 01638 | 31 |
| 01638 | 43 |
| 01639 | 31 |
| 01639 | 43 |
| 01640 | 31 |
| 01640 | 43 |
| 01641 | 31 |
| 01641 | 43 |
| 01642 | 31 |
| 01642 | 43 |
| 01643 | 31 |
| 01643 | 43 |
| 01644 | 31 |
| 01644 | 43 |
| 01645 | 31 |
| 01645 | 43 |
| 01646 | 31 |
| 01646 | 43 |
| 01647 | 31 |
| 01647 | 43 |
| 01648 | 31 |
| 01648 | 43 |
| 01649 | 31 |
| 01649 | 43 |
| 01650 | 31 |
| 01650 | 43 |
| 01651 | 31 |
| 01651 | 43 |
| 01652 | 31 |
| 01652 | 43 |
| 01680 | 30 |
| 01681 | 30 |
| 01682 | 30 |
| 01683 | 30 |
| 01684 | 30 |
| 01685 | 30 |
| 01686 | 30 |
| 01687 | 30 |
| 01688 | 30 |
| 01689 | 30 |
| 01690 | 30 |
| 01691 | 30 |
| 01692 | 30 |
| 01693 | 30 |
| 01694 | 30 |
| 01695 | 30 |
| 01696 | 30 |
| 01697 | 30 |
| 01698 | 30 |
| 01699 | 30 |
| 01700 | 30 |
| 01701 | 30 |
| 01702 | 31 |
| 01703 | 31 |
| 01704 | 31 |
| 01705 | 31 |
| 01706 | 31 |
| 01707 | 31 |
| 01708 | 31 |
| 01709 | 31 |
| 01710 | 31 |
| 01711 | 31 |
| 01712 | 31 |
| 01713 | 31 |
| 01714 | 31 |
| 01714 | 43 |
| 01715 | 31 |
| 01715 | 43 |
| 01716 | 31 |
| 01716 | 43 |
| 01717 | 31 |
| 01717 | 43 |
| 01718 | 31 |
| 01718 | 43 |
| 01719 | 31 |
| 01719 | 43 |
| 01720 | 31 |
| 01720 | 43 |
| 01721 | 31 |
| 01721 | 43 |
| 01722 | 31 |
| 01722 | 43 |
| 01723 | 31 |
| 01723 | 43 |
| 01724 | 31 |
| 01724 | 43 |
| 01725 | 31 |
| 01725 | 43 |
| 01726 | 31 |
| 01726 | 43 |
| 01740 | 27 |
| 01741 | 27 |
| 01742 | 27 |
| 01743 | 27 |
| 01744 | 27 |
| 01745 | 27 |
| 01746 | 27 |
| 01747 | 27 |
| 01748 | 27 |
| 01749 | 27 |
| 01750 | 27 |
| 01751 | 27 |
| 01752 | 34 |
| 01752 | 48 |
| 01753 | 34 |
| 01753 | 48 |
| 01754 | 34 |
| 01754 | 48 |
| 01755 | 34 |
| 01755 | 48 |
| 01756 | 34 |
| 01756 | 48 |
| 01757 | 34 |
| 01757 | 48 |
| 01760 | 26 |
| 01761 | 26 |
| 01762 | 26 |
| 01763 | 26 |
| 01764 | 26 |
| 01765 | 26 |
| 01766 | 26 |
| 01767 | 26 |
| 01768 | 26 |
| 01769 | 26 |
| 01770 | 26 |
| 01771 | 26 |
| 01779 | 28 |
| 01780 | 28 |
| 01781 | 28 |
| 01782 | 28 |
| 01783 | 28 |
| 01784 | 28 |
| 01785 | 28 |
| 01786 | 28 |
| 01787 | 28 |
| 01788 | 28 |
| 01789 | 28 |
| 01790 | 28 |
| 01791 | 28 |
| 01792 | 28 |
| 01800 | 32 |
| 01800/S-45 | 33 |
| 01801 | 32 |
| 01801/S-45 | 33 |
| 01802 | 32 |
| 01803 | 32 |
| 01804 | 32 |
| 01804/S-45 | 33 |
| 01805 | 32 |
| 01805/S-45 | 33 |
| 01806 | 32 |
| 01806/S-45 | 33 |
| 01807 | 32 |
| 01808 | 32 |
| 01808/S-45 | 33 |
| 01809 | 32 |
| 01809/S-45 | 33 |
| 01810 | 32 |
| 01810/S-45 | 33 |
| 01811 | 32 |
| 01811/S-45 | 33 |
| 01812 | 32 |
| 01812/S-45 | 33 |
| 01813 | 32 |
| 01813/S-45 | 33 |
| 01814 | 32 |
| 01814/S-45 | 33 |
| 01815 | 32 |
| 01815/S-45 | 33 |
| 01816 | 32 |
| 01816/S-45 | 33 |
| 01817 | 32 |
| 01817/S-45 | 33 |
| 01818 | 32 |
| 01818/S-45 | 33 |
| 01819 | 32 |
| 01819/S-45 | 33 |
| 01820 | 32 |
| 01820/S-45 | 33 |
| 01821 | 32 |
| 01821/S-45 | 33 |
| 01822 | 32 |
| 01822/S-45 | 33 |
| 01823 | 32 |
| 01823/S-45 | 33 |
| 01824 | 32 |
| 01824/S-45 | 33 |
| 01825 | 32 |
| 01825/S-45 | 33 |
| 01826 | 32 |
| 01826/S-45 | 33 |
| 01827 | 32 |
| 01827/S-45 | 33 |
| 01828 | 32 |
| 01828/S-45 | 33 |
| 01829 | 32 |
| 01829/S-45 | 33 |
| 01830 | 32 |
| 01830/S-45 | 33 |
| 01831 | 33 |
| 01831/S-45 | 33 |
| 01831/S-45 | 47 |
| 01832 | 33 |
| 01832/S-45 | 33 |
| 01832/S-45 | 47 |
| 01833 | 33 |
| 01833/S-45 | 33 |
| 01833/S-45 | 47 |
| 01834 | 33 |
| 01834/S-45 | 33 |
| 01834/S-45 | 47 |
| 01835 | 33 |
| 01835/S-45 | 33 |
| 01835/S-45 | 47 |
| 01836 | 33 |
| 01836/S-45 | 33 |
| 01836/S-45 | 47 |
| 01838 | 33 |
| 01838 | 46 |
| 01840 | 33 |
| 01840 | 46 |
| 01842 | 33 |
| 01842 | 46 |
| 01850 | 32 |
| 01851 | 32 |
| 01852 | 32 |
| 01853 | 32 |
| 01854 | 32 |
| 01855 | 32 |
| 01856 | 32 |
| 01857 | 32 |
| 01858 | 32 |
| 01859 | 32 |
| 01860 | 32 |
| 01861 | 32 |
| 01862 | 32 |
| 01863 | 32 |
| 01864 | 32 |
| 01865 | 32 |
| 01866 | 32 |
| 01867 | 32 |
| 01868 | 32 |
| 01869 | 32 |
| 01870 | 32 |
| 01871 | 32 |
| 01872 | 32 |
| 01873 | 32 |
| 01874 | 32 |
| 01875 | 32 |
| 01876 | 32 |
| 01877 | 32 |
| 01878 | 32 |
| 01879 | 32 |
| 01880 | 32 |
| 01881 | 33 |
| 01882 | 33 |
| 01883 | 33 |
| 01884 | 33 |
| 01885 | 33 |
| 01886 | 33 |
| 01888 | 33 |
| 01890 | 33 |
| 01892 | 33 |
| 01917 | 50 |
| 01917 bl | 50 |
| 01918 | 50 |
| 01918 bl | 50 |
| 01919 | 50 |
| 01919 bl | 50 |
| 01920 | 50 |
| 01920 bl | 50 |
| 01921 | 50 |
| 01921 bl | 50 |
| 01922 | 50 |
| 01922 bl | 50 |
| 01923 | 50 |
| 01923 bl | 50 |
| 01924 | 50 |
| 01924 bl | 50 |
| 01925 | 50 |
| 01925 bl | 50 |
| 01926 | 50 |
| 01926 bl | 50 |
| 01927 | 50 |
| 01927 bl | 50 |
| 01928 | 50 |
| 01928 bl | 50 |
| 01929 | 50 |
| 01929 bl | 50 |
| 01930 | 50 |
| 01930 bl | 50 |
| 01931 | 50 |
| 01931 bl | 50 |
| 01932 | 50 |
| 01932 bl | 50 |
| 01933 | 50 |
| 01933 bl | 50 |
| 01934 | 50 |
| 01934 bl | 50 |
| 01935 | 50 |
| 01935 bl | 50 |
| 01936 | 50 |
| 01936 bl | 50 |
| 01937 | 50 |
| 01937 bl | 50 |
| 01938 | 50 |
| 01938 bl | 50 |
| 01939 | 50 |
| 01939 bl | 50 |
| 01940 | 50 |
| 01940 bl | 50 |
| 01941 | 50 |
| 01941 bl | 50 |
| 01942 | 50 |
| 01942 bl | 50 |
| 01943 | 50 |
| 01943 bl | 50 |
| 01944 | 50 |
| 01944 bl | 50 |
| 01945 | 50 |
| 01945 bl | 50 |
| 01946 | 50 |
| 01946 bl | 50 |
| 01947 | 50 |
| 01947 bl | 50 |
| 01948 | 50 |
| 01948 bl | 50 |
| 01949 | 50 |
| 01949 bl | 50 |
| 01950 | 50 |
| 01950 bl | 50 |
| 01951 | 50 |
| 01951 bl | 50 |
| 01952 | 50 |
| 01952 bl | 50 |
| 01953 | 50 |
| 01953 bl | 50 |
| 01954 | 50 |
| 01954 bl | 50 |
| 01955 | 51 |
| 01955 bl | 51 |
| 01956 | 51 |
| 01956 bl | 51 |
| 01957 | 51 |
| 01957 bl | 51 |
| 01958 | 51 |
| 01958 bl | 51 |
| 01959 | 51 |
| 01959 bl | 51 |
| 01960 | 51 |
| 01960 bl | 51 |
| 01961 | 51 |
| 01961 bl | 51 |
| 01962 | 51 |
| 01962 bl | 51 |
| 01963 | 51 |
| 01963 bl | 51 |
| 01964 | 53 |
| 01965 | 53 |
| 01966 | 53 |
| 01967 | 53 |
| 01968 | 53 |
| 01969 | 53 |
| 01970 | 53 |
| 01971 | 53 |
| 01972 | 53 |
| 01973 | 53 |
| 01974 | 53 |
| 01975 | 53 |
| 01976 | 53 |
| 01977 | 53 |
| 01978 | 53 |
| 01979 | 53 |
| 01980 | 62 |
| 01981 | 62 |
| 01982 | 62 |
| 01985 | 62 |
| 01986 | 62 |
| 01987 | 62 |
| 01988 | 53 |
| 01999 | 53 |
| 02002 | 51 |
| 02002 bl | 51 |

## Numerical Index


| Part-No. | page |
|---|---|
| 02004 | 51 |
| 02004 bl | 51 |
| 02006 | 51 |
| 02006 bl | 51 |
| 02070 | 57 |
| 02071 | 57 |
| 02072 | 57 |
| 02073 | 57 |
| 02074 | 57 |
| 02075 | 57 |
| 02076 | 57 |
| 02077 | 57 |
| 02078 | 57 |
| 02079 | 57 |
| 02080 | 57 |
| 02100 | 34 |
| 02101 | 34 |
| 02102 | 34 |
| 02105 | 34 |
| 02106 | 34 |
| 02107 | 34 |
| 02110 | 34 |
| 02111 | 34 |
| 02112 | 34 |
| 02113 | 34 |
| 02115 | 34 |
| 02116 | 34 |
| 02117 | 34 |
| 02118 | 34 |
| 02121 | 34 |
| 02122 | 34 |
| 02123 | 34 |
| 02124 | 34 |
| 02127 | 34 |
| 02128 | 34 |
| 02129 | 34 |
| 02132 | 34 |
| 02133 | 34 |
| 02134 | 34 |
| 02137 | 34 |
| 02138 | 34 |
| 02139 | 34 |
| 02150 | 54 |
| 02151 | 54 |
| 02152 | 54 |
| 02153 | 54 |
| 02154 | 54 |
| 02155 | 54 |
| 02156 | 54 |
| 02157 | 54 |
| 02158 | 54 |
| 02159 | 54 |
| 02160 | 54 |
| 02161 | 54 |
| 02162 | 54 |
| 02163 | 54 |
| 02164 | 54 |
| 02165 | 54 |
| 02166 | 54 |
| 02167 | 54 |
| 02168 | 54 |
| 02169 | 54 |
| 02170 | 54 |
| 02171 | 54 |
| 02172 | 54 |
| 02173 | 54 |
| 02174 | 54 |
| 02175 | 54 |
| 02176 | 54 |
| 02177 | 54 |
| 02178 | 54 |
| 02179 | 54 |
| 02180 | 54 |
| 02181 | 54 |
| 02220 | 89 |
| 02221 | 89 |
| 02222 | 89 |
| 02223 | 89 |
| 02224 | 89 |
| 02225 | 89 |
| 02226 | 89 |
| 02227 | 89 |
| 02228 | 89 |
| 02229 | 89 |
| 02250 | 64 |
| 02251 | 64 |
| 02252 | 64 |
| 02253 | 64 |
| 02254 | 64 |
| 02255 | 64 |
| 02256 | 64 |
| 02257 | 64 |
| 02258 | 64 |
| 02259 | 64 |
| 02260 | 64 |
| 02261 | 64 |
| 02262 | 64 |
| 02263 | 64 |
| 02264 | 64 |
| 02265 | 64 |
| 02266 | 64 |
| 02267 | 64 |
| 02270 | 64 |
| 02271 | 64 |
| 02272 | 64 |

| Part-No. | page |
|---|---|
| 02273 | 64 |
| 02274 | 64 |
| 02275 | 64 |
| 02276 | 64 |
| 02277 | 64 |
| 02278 | 64 |
| 02279 | 64 |
| 02280 | 64 |
| 02281 | 64 |
| 02282 | 64 |
| 02283 | 64 |
| 02284 | 64 |
| 02285 | 64 |
| 02286 | 64 |
| 02287 | 64 |
| 02578 | 88 |
| 02580 | 88 |
| 02581 | 88 |
| 02583 | 88 |
| 02584 | 88 |
| 02585 | 88 |
| 02586 | 88 |
| 02587 | 88 |
| 02588 | 88 |
| 02589 | 88 |
| 02670 | 60 |
| 02671 | 60 |
| 02672 | 60 |
| 02675 | 60 |
| 02676 | 60 |
| 02677 | 60 |
| 02678 | 60 |
| 02679 | 60 |
| 02680 | 60 |
| 02696 | 60 |
| 02697 | 60 |
| 02698 | 60 |
| 02700 | 90 |
| 02701 | 90 |
| 02702 | 90 |
| 02703 | 90 |
| 02704 | 90 |
| 02705 | 90 |
| 02706 | 90 |
| 02707 | 90 |
| 02708 | 90 |
| 02709 | 90 |
| 02710 | 90 |
| 02715 | 90 |
| 02716 | 90 |
| 02717 | 90 |
| 02718 | 90 |
| 02719 | 90 |
| 02720 | 90 |
| 02721 | 90 |
| 02722 | 90 |
| 02723 | 90 |
| 02724 | 90 |
| 02725 | 90 |
| 02730 | 90 |
| 02731 | 90 |
| 02732 | 90 |
| 02733 | 90 |
| 02734 | 90 |
| 02735 | 90 |
| 02736 | 90 |
| 02737 | 90 |
| 02738 | 90 |
| 02739 | 90 |
| 02740 | 90 |
| 02745 | 90 |
| 02746 | 90 |
| 02747 | 90 |
| 02748 | 90 |
| 02749 | 90 |
| 02750 | 90 |
| 02751 | 90 |
| 02752 | 90 |
| 02753 | 90 |
| 02754 | 90 |
| 02755 | 90 |
| 02763 | 91 |
| 02770 | 128 |
| 02774 | 128 |
| 02776 | 128 |
| 02778 | 128 |
| 02779 | 128 |
| 02787 | 128 |
| 02788 | 128 |
| 03068 S | 92 |
| 03069 S | 92 |
| 03070 S | 92 |
| 03071 S | 92 |
| 03072 S | 92 |
| 03073 S | 92 |
| 03074 S | 92 |
| 03075 S | 92 |
| 03078 S | 92 |
| 03079 S | 92 |
| 03080 S | 92 |
| 03081 S | 92 |
| 03084 S | 92 |
| 03085 S | 92 |
| 03088 | 102 |
| 03089 | 102 |

| Part-No. | page |
|---|---|
| 03090 | 102 |
| 03091 | 102 |
| 03092 | 102 |
| 03093 | 102 |
| 03094 | 102 |
| 03095 | 102 |
| 03097 | 102 |
| 03100 | 102 |
| 03108 | 102 |
| 03109 | 102 |
| 03110 | 102 |
| 03111 | 102 |
| 03112 | 102 |
| 03113 | 102 |
| 03114 | 102 |
| 03116 | 102 |
| 03117 | 102 |
| 03118 | 102 |
| 03119 | 102 |
| 03120 | 102 |
| 03121 | 102 |
| 03122 | 102 |
| 03136- | 103 |
| 03136+ | 103 |
| 03137- | 103 |
| 03137+ | 103 |
| 03147 | 100 |
| 03148 | 100 |
| 03165 | 48 |
| 03166 | 48 |
| 03167 | 48 |
| 03168 | 48 |
| 03169 | 48 |
| 03170 | 48 |
| 03171 | 48 |
| 03172 | 48 |
| 03173 | 48 |
| 03196 | 42 |
| 03196/S | 42 |
| 03197 | 42 |
| 03197/S | 42 |
| 03198 | 42 |
| 03198/S | 42 |
| 03199 | 42 |
| 03199/S | 42 |
| 03200 | 42 |
| 03200/S | 42 |
| 03201 | 42 |
| 03201/S | 42 |
| 03202 | 42 |
| 03202/S | 42 |
| 03203 | 42 |
| 03203/S | 42 |
| 03204 | 42 |
| 03204/S | 42 |
| 03205 | 42 |
| 03205/S | 42 |
| 03206 | 42 |
| 03206/S | 42 |
| 03207 | 42 |
| 03207/S | 42 |
| 03208 | 42 |
| 03208/S | 42 |
| 03209 | 42 |
| 03209/S | 42 |
| 03210 | 42 |
| 03210/S | 42 |
| 03211 | 42 |
| 03211/S | 42 |
| 03212 | 42 |
| 03212/S | 42 |
| 03213 | 42 |
| 03213/S | 42 |
| 03214 | 42 |
| 03214/S | 42 |
| 03215 | 42 |
| 03215/S | 42 |
| 03216 | 42 |
| 03216/S | 42 |
| 03217 | 42 |
| 03217/S | 42 |
| 03218 | 42 |
| 03218/S | 42 |
| 03219 | 42 |
| 03219/S | 42 |
| 03220 | 42 |
| 03220/S | 42 |
| 03221 | 42 |
| 03221/S | 42 |
| 03222 | 42 |
| 03222/S | 42 |
| 03223 | 42 |
| 03223/S | 42 |
| 03224 | 42 |
| 03224/S | 42 |
| 03225 | 42 |
| 03225/S | 42 |
| 03226 | 42 |
| 03226/S | 42 |
| 03227 | 42 |
| 03227/S | 42 |
| 03228 | 42 |
| 03228/S | 42 |
| 03229 | 42 |
| 03229/S | 42 |

| Part-No. | page |
|---|---|
| 03230 | 42 |
| 03230/S | 42 |
| 03231 | 42 |
| 03231/S | 42 |
| 03232 | 42 |
| 03232/S | 42 |
| 03233 | 42 |
| 03233/S | 42 |
| 03234 | 43 |
| 03234/S | 43 |
| 03235 | 43 |
| 03235/S | 43 |
| 03236 | 43 |
| 03236/S | 43 |
| 03237 | 43 |
| 03237/S | 43 |
| 03238 | 43 |
| 03238/S | 43 |
| 03239 | 43 |
| 03239/S | 43 |
| 03240 | 43 |
| 03240/S | 43 |
| 03241 | 43 |
| 03241/S | 43 |
| 03242 | 43 |
| 03242/S | 43 |
| 03243 | 43 |
| 03243/S | 43 |
| 03244 | 43 |
| 03244/S | 43 |
| 03245 | 43 |
| 03245/S | 43 |
| 03246 | 43 |
| 03246/S | 43 |
| 03247 | 43 |
| 03247/S | 43 |
| 03248 | 43 |
| 03248/S | 43 |
| 03249 | 43 |
| 03249/S | 43 |
| 03250 | 43 |
| 03250/S | 43 |
| 03251 | 43 |
| 03251/S | 43 |
| 03252 | 43 |
| 03252/S | 43 |
| 03253 | 43 |
| 03253/S | 43 |
| 03254 | 43 |
| 03254/S | 43 |
| 03331 | 27 |
| 03332 | 27 |
| 03333 | 27 |
| 03336 | 27 |
| 03337 | 27 |
| 03338 | 27 |
| 03339 | 27 |
| 03341 | 27 |
| 03342 | 27 |
| 03343 | 27 |
| 03344 | 27 |
| 03346 | 27 |
| 03347 | 27 |
| 03348 | 27 |
| 03349 | 27 |
| 03351 | 27 |
| 03352 | 27 |
| 03353 | 27 |
| 03354 | 27 |
| 03355 | 27 |
| 03356 | 27 |
| 03357 | 27 |
| 03358 | 27 |
| 03360 | 27 |
| 03361 | 27 |
| 03362 | 27 |
| 03365 | 27 |
| 03366 | 27 |
| 03367 | 27 |
| 03369 | 27 |
| 03370 | 27 |
| 03372 | 27 |
| 03373 | 27 |
| 03410 | 37 |
| 03412 | 37 |
| 03414 | 37 |
| 03416 | 37 |
| 03418 | 37 |
| 03420 | 37 |
| 03422 | 37 |
| 03424 | 37 |
| 03426 | 37 |
| 03428 | 37 |
| 03430 | 37 |
| 03432 | 37 |
| 03434 | 37 |
| 03436 | 37 |
| 03440 | 37 |
| 03442 | 37 |
| 03444 | 37 |
| 03446 | 37 |
| 03448 | 37 |
| 03450 | 37 |
| 03452 | 37 |
| 03454 | 37 |

| Part-No. | page |
|---|---|
| 03456 | 37 |
| 03458 | 37 |
| 03460 | 37 |
| 03462 | 37 |
| 03464 | 37 |
| 03466 | 37 |
| 03468 | 37 |
| 03470 | 37 |
| 03472 | 37 |
| 03474 | 37 |
| 03476 | 37 |
| 03480 | 37 |
| 03482 | 37 |
| 03484 | 37 |
| 03486 | 37 |
| 03490 | 37 |
| 03492 | 37 |
| 03494 | 37 |
| 03496 | 37 |
| 03497 | 37 |
| 03498 | 37 |
| 03499 | 37 |
| 03500 | 37 |
| 03501 | 37 |
| 03502 | 37 |
| 03575 | 88 |
| 03576 | 88 |
| 03696 | 83 |
| 03697 | 83 |
| 03699 | 83 |
| 03703 | 83 |
| 03707 | 83 |
| 03708 | 83 |
| 03709 | 83 |
| 03710 | 83 |
| 03711 | 83 |
| 03715 | 83 |
| 03716 | 83 |
| 03717 | 83 |
| 03718 | 83 |
| 03719 | 83 |
| 03720 | 83 |
| 03721 | 83 |
| 03722 | 83 |
| 03750 | 84 |
| 03751 | 84 |
| 03752 | 84 |
| 03753 | 84 |
| 03754 | 84 |
| 03755 | 84 |
| 03756 | 84 |
| 03757 | 84 |
| 03764 | 84 |
| 03765 | 84 |
| 03775 | 85 |
| 03776 | 85 |
| 03777 | 85 |
| 03778 | 85 |
| 03779 | 85 |
| 03780 | 85 |
| 03781 | 85 |
| 03783 | 85 |
| 03785 | 85 |
| 03786 | 85 |
| 03787 | 85 |
| 03788 | 85 |
| 03789 | 85 |
| 03790 | 85 |
| 03791 | 85 |
| 03800 | 38 |
| 03801 | 38 |
| 03802 | 38 |
| 03803 | 38 |
| 03804 | 38 |
| 03805 | 38 |
| 03806 | 38 |
| 03807 | 38 |
| 03808 | 38 |
| 03809 | 38 |
| 03810 | 38 |
| 03815 | 45 |
| 03816 | 45 |
| 03817 | 45 |
| 03818 | 45 |
| 03819 | 45 |
| 03820 | 45 |
| 03821 | 45 |
| 03821/S-45 | 47 |
| 03822 | 45 |
| 03822/S-45 | 47 |
| 03823 | 45 |
| 03823/S-45 | 47 |
| 03824 | 45 |
| 03824/S-45 | 47 |
| 03825 | 45 |
| 03826 | 45 |
| 03826/S-45 | 47 |
| 03827 | 45 |
| 03827/S-45 | 47 |
| 03828 | 45 |
| 03828/S-45 | 47 |
| 03829 | 45 |
| 03829/S-45 | 47 |
| 03830 | 45 |
| 03831 | 45 |

| Part-No. | page |
|---|---|
| 03831/S-45 | 47 |
| 03832 | 45 |
| 03832/S-45 | 47 |
| 03833 | 45 |
| 03833/S-45 | 47 |
| 03834 | 45 |
| 03834/S-45 | 47 |
| 03835 | 45 |
| 03836 | 45 |
| 03836/S-45 | 47 |
| 03837 | 45 |
| 03837/S-45 | 47 |
| 03838 | 45 |
| 03838/S-45 | 47 |
| 03839 | 45 |
| 03839/S-45 | 47 |
| 03840 | 45 |
| 03841 | 45 |
| 03842 | 46 |
| 03842/S-45 | 47 |
| 03843 | 46 |
| 03843/S-45 | 47 |
| 03844 | 46 |
| 03844/S-45 | 47 |
| 03845 | 46 |
| 03845/S-45 | 47 |
| 03846 | 46 |
| 03847 | 46 |
| 03848 | 46 |
| 03849 | 46 |
| 03850 | 46 |
| 03850/S-45 | 47 |
| 03851 | 46 |
| 03851/S-45 | 47 |
| 03852 | 46 |
| 03852/S-45 | 47 |
| 03853 | 46 |
| 03854 | 46 |
| 03855 | 46 |
| 03856 | 46 |
| 03856/S-45 | 47 |
| 03857 | 46 |
| 03857/S-45 | 47 |
| 03858 | 46 |
| 03858/S-45 | 47 |
| 03859 | 46 |
| 03859/S-45 | 47 |
| 03860 | 46 |
| 03861 | 46 |
| 03861/S-45 | 47 |
| 03862 | 46 |
| 03862/S-45 | 47 |
| 03863 | 46 |
| 03863/S-45 | 47 |
| 03864 | 46 |
| 03864/S-45 | 47 |
| 03865 | 46 |
| 03865/S-45 | 47 |
| 03866 | 46 |
| 03866/S-45 | 47 |
| 03867 | 46 |
| 03867/S-45 | 47 |
| 03868 | 46 |
| 03868/S-45 | 47 |
| 03869 | 46 |
| 03869/S-45 | 47 |
| 03870 | 46 |
| 03871 | 46 |
| 03872 | 46 |
| 03873 | 46 |
| 03874 | 46 |
| 03875 | 46 |
| 03876 | 46 |
| 03877 | 46 |
| 03880/S-45 | 47 |
| 03881/S-45 | 47 |
| 03900 | 44 |
| 03901 | 44 |
| 03902 | 44 |
| 03903 | 44 |
| 03904 | 44 |
| 03905 | 44 |
| 03906 | 44 |
| 03907 | 44 |
| 03908 | 44 |
| 03909 | 44 |
| 03910 | 44 |
| 03911 | 44 |
| 03912 | 44 |
| 03913 | 44 |
| 03914 | 44 |
| 03915 | 44 |
| 03916 | 44 |
| 03917 | 44 |
| 03918 | 44 |
| 03919 | 44 |
| 03920 | 44 |
| 03921 | 44 |
| 03922 | 44 |
| 03923 | 44 |
| 03924 | 44 |
| 03925 | 44 |
| 03926 | 44 |
| 03927 | 44 |
| 03928 | 44 |

| Part-No. | page |
|---|---|
| 03929 | 44 |
| 03941 | 48 |
| 03942 | 48 |
| 03943 | 48 |
| 03944 | 48 |
| 03945 | 48 |
| 03946 | 48 |
| 03947 | 48 |
| 03948 | 48 |
| 03949 | 48 |
| 03950 | 48 |
| 03951 | 48 |
| 03952 | 48 |
| 03953 | 48 |
| 03954 | 48 |
| 03955 | 48 |
| 03956 | 48 |
| 03960 | 39 |
| 03961 | 39 |
| 03962 | 39 |
| 03963 | 39 |
| 03964 | 39 |
| 03965 | 39 |
| 03966 | 39 |
| 03967 | 39 |
| 03968 | 39 |
| 03969 | 39 |
| 03970 | 39 |
| 03971 | 39 |
| 03972 | 39 |
| 03973 | 39 |
| 03974 | 39 |
| 03975 | 39 |
| 03976 | 39 |
| 03977 | 39 |
| 03978 | 39 |
| 03979 | 39 |
| 03980 | 39 |
| 03981 | 39 |
| 03982 | 39 |
| 03983 | 39 |
| 03984 | 39 |
| 03985 | 39 |
| 03986 | 39 |
| 03990 | 53 |
| 03990/vz | 53 |
| 03991 | 53 |
| 03991/vz | 53 |
| 03992 | 53 |
| 03992/vz | 53 |
| 04058 | 82 |
| 04058 vz | 82 |
| 04060 | 82 |
| 04060 vz | 82 |
| 04063 | 82 |
| 04063 vz | 82 |
| 04070 | 82 |
| 04070 vz | 82 |
| 04072 | 82 |
| 04072 vz | 82 |
| 04074 | 82 |
| 04074 vz | 82 |
| 04076 vz | 82 |
| 04080 vz | 82 |
| 04083 vz | 82 |
| 04085 vz | 82 |
| 04245 vz | 76 |
| 04285 | 77 |
| 04285 vz | 77 |
| 04287 | 77 |
| 04287 vz | 77 |
| 04292 vz | 77 |
| 04296 vz | 77 |
| 04300 vz | 76 |
| 04305 vz | 76 |
| 04332 vz | 77 |
| 04340 vz | 77 |
| 04347 vz | 76 |
| 04351 vz | 76 |
| 04356 vz | 76 |
| 04358 vz | 76 |
| 04360 | 76 |
| 04360 vz | 76 |
| 04361 | 76 |
| 04361 vz | 76 |
| 04428 vz | 76 |
| 04515 vz | 81 |
| 04518 vz | 81 |
| 04527 | 82 |
| 04538 | 80 |
| 04540 | 80 |
| 04585 | 79 |
| 04585 vz | 79 |
| 04588 | 79 |
| 04588 vz | 79 |
| 04605 | 79 |
| 04605 vz | 79 |
| 04607 | 79 |
| 04607 vz | 79 |
| 04630 vz | 81 |
| 04632 vz | 81 |
| 04637 vz | 81 |
| 04645 vz | 81 |
| 04651 vz | 81 |
| 04660 | 81 |

| Part-No. | page |
|---|---|
| 04660 vz | 81 |
| 04686 | 81 |
| 04707 vz | 81 |
| 04710 vz | 81 |
| 04711 vz | 81 |
| 04721 vz | 82 |
| 04722 | 82 |
| 04790 vz | 80 |
| 04792 vz | 80 |
| 04794 vz | 80 |
| 04801 vz | 80 |
| 04802 vz | 80 |
| 04804 vz | 80 |
| 04850 vz | 82 |
| 04870 | 78 |
| 04870 vz | 78 |
| 04872 | 78 |
| 04875 | 78 |
| 04875 vz | 78 |
| 04877 | 78 |
| 04878 | 78 |
| 04878 vz | 78 |
| 04880 | 78 |
| 04883 | 78 |
| 04883 vz | 78 |
| 04885 | 78 |
| 04886 | 78 |
| 04886 vz | 78 |
| 04888 | 78 |
| 04888 vz | 78 |
| 04890 | 78 |
| 04890 vz | 78 |
| 04892 | 78 |
| 04892 vz | 78 |
| 04894 | 78 |
| 04894 vz | 78 |
| 04896 | 78 |
| 04896 vz | 78 |
| 04940 | 78 |
| 04940 vz | 78 |
| 04945 | 78 |
| 04945 vz | 78 |
| 04947 | 78 |
| 04947 vz | 78 |
| 04980 vz | 79 |
| 04982 vz | 79 |
| 05103 | 152 |
| 05103 | 158 |
| 05116/N | 154 |
| 05122 | 148 |
| 05124 | 148 |
| 05125 | 148 |
| 05126 | 158 |
| 05140 | 149 |
| 05141 | 149 |
| 05144 | 149 |
| 05145 | 74 |
| 05146 | 74 |
| 05147 | 74 |
| 05148 | 74 |
| 05149 | 74 |
| 05150 | 74 |
| 05151 | 74 |
| 05160 | 153 |
| 05161 | 153 |
| 05162 | 153 |
| 05163 | 153 |
| 05164 | 153 |
| 05165 | 153 |
| 05166 | 153 |
| 05167 | 153 |
| 05168 | 153 |
| 05169 | 153 |
| 05170 | 153 |
| 05171 | 153 |
| 05172 | 153 |
| 05173 | 153 |
| 05174 | 153 |
| 05175 | 153 |
| 05176 | 153 |
| 05177 | 144 |
| 05178 | 154 |
| 05179 | 144 |
| 05180 | 152 |
| 05182 | 158 |
| 05184 | 150 |
| 05186 | 150 |
| 05186 | 152 |
| 05186 | 158 |
| 05190 | 142 |
| 05191 | 142 |
| 05192 | 142 |
| 05193 | 142 |
| 05200 | 143 |
| 05201 | 143 |
| 05202 | 143 |
| 05203 | 143 |
| 05204 | 143 |
| 05205 | 143 |
| 05206 | 143 |
| 05207 | 143 |
| 05208 | 143 |
| 05209 | 143 |
| 05210 | 143 |
| 05211 | 143 |

# Numerical Index


| Part-No. | page |
|---|---|
| 05212 | 143 |
| 05213 | 143 |
| 05214 | 143 |
| 05215 | 143 |
| 05216 | 143 |
| 05217 | 143 |
| 05218 | 143 |
| 05219 | 143 |
| 05222 | 137 |
| 05224 | 137 |
| 05226 | 137 |
| 05228 | 137 |
| 05229 | 137 |
| 05253 | 188 |
| 05254 | 188 |
| 05256 | 193 |
| 05258 | 189 |
| 05259 | 189 |
| 05260 | 189 |
| 05262 | 189 |
| 05265 | 190 |
| 05266 | 191 |
| 05267 | 190 |
| 05267 | 191 |
| 05268 | 190 |
| 05268 | 191 |
| 05269 | 190 |
| 05269 | 191 |
| 05270 | 189 |
| 05272 | 189 |
| 05274 | 189 |
| 05275 | 189 |
| 05300 | 145 |
| 05301 | 145 |
| 05320 | 146 |
| 05321 | 146 |
| 05322 | 146 |
| 05400 | 132 |
| 05402 | 133 |
| 05403 | 133 |
| 05404 | 136 |
| 05405 | 136 |
| 05406 | 136 |
| 05407 | 136 |
| 05408 | 132 |
| 05412 | 132 |
| 05419 | 132 |
| 05460 | 115 |
| 05490 | 117 |
| 05491 | 117 |
| 05492 | 117 |
| 05493 | 117 |
| 05494 | 117 |
| 05495 | 117 |
| 05500 | 116 |
| 05501 | 116 |
| 05502 | 116 |
| 05503 | 116 |
| 05504 | 116 |
| 05505 | 116 |
| 05530 | 117 |
| 05531 | 117 |
| 05532 | 117 |
| 05533 | 117 |
| 05534 | 117 |
| 05535 | 117 |
| 05540 | 117 |
| 05541 | 117 |
| 05542 | 117 |
| 05543 | 117 |
| 05544 | 117 |
| 05545 | 117 |
| 05550 | 116 |
| 05551 | 116 |
| 05552 | 116 |
| 05553 | 116 |
| 05554 | 116 |
| 05555 | 116 |
| 05570 | 117 |
| 05571 | 117 |
| 05572 | 117 |
| 05573 | 117 |
| 05574 | 117 |
| 05575 | 117 |
| 05580 | 117 |
| 05581 | 117 |
| 05582 | 117 |
| 05583 | 117 |
| 05584 | 117 |
| 05585 | 117 |
| 05620 | 118 |
| 05621 | 118 |
| 05622 | 118 |
| 05623 | 118 |
| 05624 | 118 |
| 05626 | 119 |
| 05626/1 | 119 |
| 05626/2 | 119 |
| 05627 | 119 |
| 05627/1 | 119 |
| 05627/2 | 119 |
| 05628 | 119 |
| 05628/1 | 119 |
| 05628/2 | 119 |
| 05629 | 119 |
| 05629/1 | 119 |
| 05629/2 | 119 |
| 06100 | 94 |
| 06102 | 94 |
| 06103 | 94 |
| 06105 | 94 |
| 06106 | 94 |
| 06109 | 94 |
| 06110 | 94 |
| 06111 | 94 |
| 06112 | 94 |
| 06113 | 94 |
| 06114 | 94 |
| 06114/8 | 94 |
| 06115 | 94 |
| 06116 | 94 |
| 06117 | 94 |
| 06120 | 94 |
| 06121 | 94 |
| 06122 | 94 |
| 06125 | 94 |
| 06126 | 94 |
| 06129 | 94 |
| 06130 | 94 |
| 06131 | 94 |
| 06135 | 93 |
| 06138 | 93 |
| 06139 | 93 |
| 06140 | 93 |
| 06143 | 93 |
| 06144 | 93 |
| 06147 | 93 |
| 06148 | 93 |
| 06149 | 93 |
| 06150 | 93 |
| 06151 | 93 |
| 06152 | 93 |
| 06153 | 93 |
| 06156 | 93 |
| 06157 | 93 |
| 06158 | 93 |
| 06161 | 93 |
| 06162 | 93 |
| 06165 | 93 |
| 06166 | 93 |
| 06167 | 93 |
| 06170 | 93 |
| 06171 | 93 |
| 06174 | 93 |
| 06175 | 93 |
| 06176 | 93 |
| 06178 | 93 |
| 06179 | 93 |
| 06182 | 93 |
| 06183 | 93 |
| 06184 | 93 |
| 06185 | 93 |
| 06186 | 93 |
| 06187 | 93 |
| 10005 | 20 |
| 10015 | 20 |
| 10021.01.02 | 15 |
| 10022.01 | 17 |
| 10024.01 | 17 |
| 10025 | 122 |
| 10026 | 122 |
| 10027 | 122 |
| 10028 | 122 |
| 10029 | 122 |
| 10030 | 122 |
| 10031 | 122 |
| 10032 | 122 |
| 10033 | 122 |
| 10034 | 122 |
| 10045 | 122 |
| 10046 | 122 |
| 10047 | 122 |
| 10048 | 122 |
| 10049 | 122 |
| 10050 | 122 |
| 10051 | 122 |
| 10052 | 122 |
| 10053 | 122 |
| 10054 | 122 |
| 10061 | 122 |
| 10062 | 122 |
| 10063 | 122 |
| 10064 | 122 |
| 10065 | 122 |
| 10071 | 122 |
| 10072 | 122 |
| 10073 | 122 |
| 10074 | 122 |
| 10080 | 24 |
| 10085 | 24 |
| 10090 | 25 |
| 10091 | 25 |
| 10092 | 25 |
| 10093 | 25 |
| 10095 | 25 |
| 10097 | 25 |
| 10118 | 28 |
| 10120 | 28 |
| 10125 | 28 |
| 10129 | 30 |
| 10130 | 30 |
| 10132 | 30 |
| 10133 | 30 |
| 10134 | 30 |
| 10135 | 30 |
| 10136 | 30 |
| 10137 | 30 |
| 10138 | 31 |
| 10139 | 31 |
| 10140 | 30 |
| 10141 | 31 |
| 10143 | 31 |
| 10144 | 31 |
| 10145 | 31 |
| 10145 | 43 |
| 10146 | 31 |
| 10147 | 31 |
| 10148 | 31 |
| 10149 | 31 |
| 10149 | 43 |
| 10150 | 31 |
| 10150 | 43 |
| 10151 | 31 |
| 10151 | 43 |
| 10152 | 31 |
| 10152 | 43 |
| 10153 | 31 |
| 10153 | 43 |
| 10154 | 31 |
| 10154 | 43 |
| 10155 | 31 |
| 10155 | 43 |
| 10156 | 30 |
| 10158 | 30 |
| 10159 | 30 |
| 10160 | 30 |
| 10162 | 30 |
| 10163 | 30 |
| 10164 | 30 |
| 10165 | 30 |
| 10166 | 31 |
| 10167 | 31 |
| 10168 | 31 |
| 10169 | 31 |
| 10170 | 31 |
| 10171 | 31 |
| 10172 | 31 |
| 10173 | 31 |
| 10174 | 31 |
| 10174 | 43 |
| 10175 | 31 |
| 10175 | 43 |
| 10176 | 31 |
| 10176 | 43 |
| 10177 | 31 |
| 10177 | 43 |
| 10178 | 31 |
| 10178 | 43 |
| 10190 | 31 |
| 10190 | 43 |
| 10210 | 51 |
| 10210 vz | 51 |
| 10211 | 51 |
| 10211 vz | 51 |
| 10212 | 51 |
| 10212 vz | 51 |
| 10212/35 | 51 |
| 10212/35 vz | 51 |
| 10213 | 51 |
| 10213 vz | 51 |
| 10213/35 | 51 |
| 10213/35 vz | 51 |
| 10214 | 51 |
| 10214 vz | 51 |
| 10215 | 51 |
| 10215 vz | 51 |
| 10216 | 51 |
| 10216 vz | 51 |
| 10217 | 51 |
| 10217 vz | 51 |
| 10218 | 51 |
| 10218 vz | 51 |
| 10219 | 51 |
| 10219 vz | 51 |
| 10220 | 51 |
| 10220 vz | 51 |
| 10221 | 51 |
| 10221 vz | 51 |
| 10222 | 51 |
| 10222 vz | 51 |
| 10223 | 51 |
| 10223 vz | 51 |
| 10240 | 57 |
| 10241 | 57 |
| 10242 | 57 |
| 10243 | 57 |
| 10244 | 57 |
| 10250 | 57 |
| 10251 | 57 |
| 10252 | 57 |
| 10253 | 57 |
| 10254 | 57 |
| 10255 | 57 |
| 10256 | 57 |
| 10257 | 57 |
| 10258 | 57 |
| 10259 | 57 |
| 10260 | 57 |
| 10300 | 50 |
| 10300 bl | 50 |
| 10302 | 50 |
| 10302 bl | 50 |
| 10304 | 50 |
| 10304 bl | 50 |
| 10306 | 50 |
| 10306 bl | 50 |
| 10308 | 50 |
| 10308 bl | 50 |
| 10310 | 50 |
| 10310 bl | 50 |
| 10312 | 50 |
| 10312 bl | 50 |
| 10314 | 50 |
| 10314 bl | 50 |
| 10316 | 50 |
| 10316 bl | 50 |
| 10318 | 50 |
| 10318 bl | 50 |
| 10320 | 51 |
| 10320 bl | 51 |
| 10345 | 100 |
| 10346 | 100 |
| 10347 | 100 |
| 10348 | 100 |
| 10350 | 100 |
| 10351 | 100 |
| 10352 | 100 |
| 10353 | 100 |
| 10356 | 100 |
| 10357 | 100 |
| 10400 | 32 |
| 10400 | 45 |
| 10402 | 32 |
| 10402 | 45 |
| 10404 | 32 |
| 10404 | 45 |
| 10406 | 32 |
| 10406 | 45 |
| 10408 | 32 |
| 10408 | 45 |
| 10410 | 32 |
| 10410 | 45 |
| 10412 | 32 |
| 10412 | 45 |
| 10414 | 32 |
| 10414 | 45 |
| 10416 | 32 |
| 10416 | 45 |
| 10418 | 32 |
| 10418 | 45 |
| 10420 | 32 |
| 10420 | 45 |
| 10422 | 32 |
| 10422 | 45 |
| 10424 | 32 |
| 10424 | 45 |
| 10426 | 32 |
| 10426 | 45 |
| 10428 | 32 |
| 10428 | 45 |
| 10430 | 32 |
| 10432 | 32 |
| 10434 | 32 |
| 10436 | 32 |
| 10438 | 32 |
| 10438/S-45 | 33 |
| 10440 | 32 |
| 10441 | 32 |
| 10442 | 32 |
| 10443 | 32 |
| 10444 | 32 |
| 10445 | 32 |
| 10446 | 33 |
| 10452 | 64 |
| 10453 | 64 |
| 10480 | 72 |
| 10481 | 72 |
| 10482 | 72 |
| 10483 | 72 |
| 10484 | 72 |
| 10485 | 72 |
| 10486 | 72 |
| 10487 | 72 |
| 10488 | 72 |
| 10490 | 72 |
| 10491 | 73 |
| 10492 | 73 |
| 10493 | 73 |
| 10494 | 73 |
| 10495 | 73 |
| 10496 | 73 |
| 10497 | 73 |
| 10498 | 73 |
| 10499 | 73 |
| 10500 | 73 |
| 10526 | 91 |
| 10527 | 91 |
| 10528 | 91 |
| 10529 | 91 |
| 10531 | 91 |
| 10532 | 91 |
| 10533 | 91 |
| 10535 | 90 |
| 10536 | 90 |
| 10537 | 90 |
| 10538 | 90 |
| 10539 | 90 |
| 10541 | 90 |
| 10544 | 91 |
| 10545 | 89 |
| 10546 | 89 |
| 10547 | 89 |
| 10548 | 89 |
| 10549 | 89 |
| 10550 | 89 |
| 10551 | 89 |
| 10552 | 89 |
| 10555 | 91 |
| 10556 | 91 |
| 10557 | 91 |
| 10558 | 91 |
| 10560 | 91 |
| 10561 | 91 |
| 10562 | 91 |
| 10565 | 89 |
| 10566 | 89 |
| 10568 | 89 |
| 10569 | 89 |
| 10571 | 89 |
| 10572 | 89 |
| 10585 | 103 |
| 10585/6 | 103 |
| 10585/7.3 | 103 |
| 10586 | 103 |
| 10586/13 | 103 |
| 10587 | 103 |
| 10587/14 | 103 |
| 10595 | 103 |
| 10595/6 | 103 |
| 10595/7.3 | 103 |
| 10596 | 103 |
| 10596/13 | 103 |
| 10597 | 103 |
| 10597/14 | 103 |
| 10600 | 103 |
| 10601 | 103 |
| 10685 | 103 |
| 10685/6 | 103 |
| 10685/7.3 | 103 |
| 10686 | 103 |
| 10686/13 | 103 |
| 10687 | 103 |
| 10687/14 | 103 |
| 10695 | 103 |
| 10695/6 | 103 |
| 10695/7.3 | 103 |
| 10696 | 103 |
| 10696/13 | 103 |
| 10697 | 103 |
| 10697/14 | 103 |
| 10700 | 36 |
| 10700/S | 36 |
| 10702 | 36 |
| 10702/S | 36 |
| 10704 | 36 |
| 10704/S | 36 |
| 10706 | 36 |
| 10706/S | 36 |
| 10707 | 36 |
| 10707/S | 36 |
| 10708 | 36 |
| 10708/S | 36 |
| 10710 | 36 |
| 10710/S | 36 |
| 10711 | 36 |
| 10711/S | 36 |
| 10712 | 36 |
| 10712/S | 36 |
| 10713 | 36 |
| 10713/S | 36 |
| 10714 | 36 |
| 10714/S | 36 |
| 10715 | 36 |
| 10715/S | 36 |
| 10716 | 36 |
| 10838 | 32 |
| 10840 | 32 |
| 10841 | 32 |
| 10842 | 32 |
| 10843 | 32 |
| 10844 | 32 |
| 10845 | 32 |
| 10846 | 33 |
| 10850 | 38 |
| 10852 | 38 |
| 10853 | 38 |
| 10854 | 38 |
| 10855 | 38 |
| 10856 | 38 |
| 10857 | 38 |
| 10858 | 38 |
| 10859 | 38 |
| 10861 | 38 |
| 10862 | 38 |
| 10863 | 38 |
| 10864 | 38 |
| 10866 | 38 |
| 10867 | 38 |
| 10868 | 38 |
| 10869 | 38 |
| 10871 | 38 |
| 10872 | 38 |
| 10873 | 38 |
| 10874 | 38 |
| 10875 | 38 |
| 10876 | 38 |
| 10877 | 38 |
| 10878 | 38 |
| 10880 | 38 |
| 10881 | 38 |
| 10882 | 38 |
| 10905 | 63 |
| 10906 | 63 |
| 10907 | 63 |
| 10910 | 63 |
| 10911 | 63 |
| 10912 | 63 |
| 10915 | 63 |
| 10916 | 63 |
| 10917 | 63 |
| 10920 | 63 |
| 10921 | 63 |
| 10922 | 63 |
| 10925 | 63 |
| 10926 | 63 |
| 10930 | 63 |
| 10931 | 63 |
| 10932 | 63 |
| 10936 | 63 |
| 10937 | 63 |
| 10938 | 63 |
| 10940 | 63 |
| 10941 | 63 |
| 10942 | 63 |
| 10943 | 63 |
| 10945 | 63 |
| 10946 | 63 |
| 10947 | 63 |
| 10948 | 63 |
| 11000 | 21 |
| 11001 | 21 |
| 11004 | 21 |
| 11005 | 21 |
| 11008 | 21 |
| 11009 | 21 |
| 11020 | 20 |
| 11021 | 20 |
| 11022 | 20 |
| 11025 | 122 |
| 11026 | 122 |
| 11027 | 122 |
| 11028 | 122 |
| 11029 | 122 |
| 11030 | 122 |
| 11031 | 122 |
| 11032 | 122 |
| 11033 | 122 |
| 11034 | 122 |
| 11040 | 20 |
| 11041 | 20 |
| 11042 | 20 |
| 11100 | 135 |
| 11101 | 135 |
| 11102 | 135 |
| 11103 | 135 |
| 11104 | 135 |
| 11105 | 135 |
| 11106 | 135 |
| 11107 | 135 |
| 11110 | 135 |
| 11111 | 135 |
| 11112 | 135 |
| 11260 | 128 |
| 11261 | 128 |
| 11262 | 128 |
| 11264 | 128 |
| 11265 | 128 |
| 11266 | 128 |
| 11268 | 128 |
| 11720 vz | 77 |
| 11725 vz | 77 |
| 11915 | 81 |
| 11990 | 86 |
| 11991 | 86 |
| 11992 | 86 |
| 11993 | 86 |
| 11994 | 86 |
| 11995 | 86 |
| 11996 | 86 |
| 11997 | 86 |
| 11998 | 86 |
| 11999 | 86 |
| 12002 | 86 |
| 12004 | 86 |
| 12010 | 86 |
| 12011 | 86 |
| 12012 | 86 |
| 12013 | 86 |
| 12105 | 111 |
| 12192 | 168 |
| 12193 | 168 |
| 12194 | 168 |
| 12195 | 168 |
| 12196 | 168 |
| 12197 | 168 |
| 12198 | 168 |
| 12199 | 168 |
| 12200 | 168 |
| 12270 | 115 |
| 12271 | 115 |
| 12272 | 115 |
| 12273 | 115 |
| 12274 | 115 |
| 12275 | 115 |
| 12276 | 115 |
| 12277 | 115 |
| 12279 | 116 |
| 12280 | 116 |
| 12281 | 116 |
| 12282 | 116 |
| 12283 | 116 |
| 12284 | 116 |
| 12286 | 116 |
| 12287 | 116 |
| 12288 | 116 |
| 12289 | 116 |
| 12290 | 116 |
| 12291 | 116 |
| 12292 | 116 |
| 12294 | 116 |
| 12295 | 116 |
| 12296 | 116 |
| 12297 | 116 |
| 12298 | 116 |
| 12299 | 116 |
| 12300 | 116 |
| 12302 | 116 |
| 12303 | 110 |
| 12304 | 110 |
| 12305 | 110 |
| 12306 | 110 |
| 12307 | 110 |
| 12308 | 110 |
| 12309 | 110 |
| 12314 | 110 |
| 12315 | 110 |
| 12316 | 110 |
| 12317 | 110 |
| 12322 | 110 |
| 12324 | 197 |
| 12325 | 197 |
| 12326 | 197 |
| 12327 | 197 |
| 12328 | 197 |
| 12329 | 197 |
| 12330 | 197 |
| 12331 | 197 |
| 12341 | 167 |
| 12342 | 167 |
| 12343 | 167 |
| 12344 | 167 |
| 12345 | 167 |
| 12346 | 167 |
| 12347 | 167 |
| 12348 | 167 |
| 12349 | 167 |
| 12350 | 167 |
| 12351 | 167 |
| 12352 | 168 |
| 12353 | 168 |
| 12354 | 168 |
| 12355 | 168 |
| 12356 | 168 |
| 12357 | 168 |
| 12358 | 168 |
| 12359 | 168 |
| 12360 | 168 |
| 12361 | 168 |
| 12362 | 168 |
| 12363 | 168 |
| 12364 | 168 |
| 12365 | 168 |
| 12366 | 168 |
| 12367 | 168 |
| 12368 | 168 |
| 12369 | 168 |
| 12370 | 160 |
| 12370/50 | 160 |
| 12371 | 160 |
| 12372 | 159 |
| 12372/50 | 159 |
| 12373 | 159 |
| 12374 | 160 |
| 12375 | 159 |
| 12376 | 159 |
| 12377 | 159 |
| 12378 | 168 |
| 12379 | 168 |
| 12380 | 168 |
| 12381 | 168 |
| 12382 | 168 |
| 12383 | 168 |
| 12384 | 168 |
| 12385 | 168 |
| 12386 | 168 |
| 12390 | 166 |
| 12390 | 197 |
| 12391 | 166 |
| 12391 | 197 |
| 12392 | 166 |
| 12392 | 197 |
| 12393 | 166 |
| 12393 | 197 |
| 12394 | 166 |
| 12394 | 197 |
| 12395 | 166 |
| 12395 | 197 |
| 12396 | 166 |
| 12396 | 197 |
| 12397 | 166 |
| 12397 | 197 |
| 12400 | 196 |
| 12401 | 196 |
| 12402 | 196 |
| 12403 | 196 |
| 12408 | 156 |
| 12409 | 156 |
| 12425 | 157 |
| 12426 | 157 |
| 12427 | 157 |
| 12430 | 156 |
| 12431 | 156 |
| 12432 | 156 |
| 12433 | 157 |
| 12434 | 157 |
| 12436 | 157 |
| 12437 | 157 |
| 12438 | 157 |
| 12439 | 157 |
| 12445 | 157 |
| 12447 | 157 |
| 12456 | 164 |
| 12457 | 164 |
| 12458 | 164 |
| 12460 | 164 |
| 12461 | 164 |
| 12462 | 164 |
| 12468 | 164 |
| 12469 | 164 |
| 12470 | 164 |
| 12471 | 164 |
| 12472 | 164 |
| 12473 | 164 |
| 12475 | 165 |
| 12476 | 165 |
| 12477 | 165 |
| 12478 | 165 |
| 12479 | 165 |
| 12480 | 188 |
| 12485 | 192 |
| 12486 | 192 |
| 12487 | 192 |
| 12491 | 193 |
| 12492 | 197 |
| 12493 | 197 |
| 12494 | 197 |
| 12495 | 197 |
| 12496 | 197 |
| 12497 | 197 |
| 12498 | 197 |
| 12499 | 197 |
| 12499/240f | 197 |
| 12503 | 196 |
| 12504 | 196 |
| 12505 | 196 |
| 12506 | 196 |
| 12507 | 196 |
| 12508/Cu | 196 |
| 12508/Va | 196 |
| 12510 | 150 |
| 12512 | 150 |
| 12514 | 150 |
| 12515 | 166 |
| 12516 | 166 |
| 12517 | 166 |
| 12518 | 166 |
| 12519 | 166 |
| 12520 | 194 |
| 12521 | 194 |
| 12522 | 194 |
| 12523 | 194 |
| 12524 | 194 |
| 12525 | 194 |
| 12526 | 194 |
| 12527 | 194 |
| 12528 | 194 |
| 12529 | 194 |
| 12533 | 194 |
| 12534 | 194 |
| 12535 | 194 |
| 12536 | 194 |
| 12538 | 194 |
| 12539 | 194 |
| 12540 | 194 |
| 12540/Al | 194 |
| 12541 | 194 |
| 12542 | 194 |
| 12543 | 194 |
| 12544 | 194 |
| 12545 | 194 |

## Numerical Index


| Part-No. | page |
|---|---|
| 12546 | 194 |
| 12548 | 185 |
| 12549 | 185 |
| 12550 | 185 |
| 12551 | 185 |
| 12554 | 185 |
| 12555 | 185 |
| 12556 | 185 |
| 12557 | 185 |
| 12558 | 185 |
| 12559 | 185 |
| 12560 | 185 |
| 12561 | 185 |
| 12562 | 167 |
| 12563 | 167 |
| 12564 | 167 |
| 12565 | 167 |
| 12566 | 167 |
| 12567 | 167 |
| 12568 | 167 |
| 12569 | 167 |
| 12570 | 167 |
| 12571 | 167 |
| 12572 | 167 |
| 12577 | 198 |
| 12578 | 198 |
| 12579 | 198 |
| 12580 | 198 |
| 12581 | 198 |
| 12582 | 198 |
| 12583 | 198 |
| 12584 | 198 |
| 12585 | 198 |
| 12586 | 198 |
| 12587 | 198 |
| 12588 | 198 |
| 12590 | 198 |
| 12591/Cu | 198 |
| 12591/Va | 198 |
| 12600/N | 152 |
| 12601 | 152 |
| 12602 | 152 |
| 12603 | 134 |
| 12604 | 134 |
| 12607 | 134 |
| 12608 | 134 |
| 12609 | 134 |
| 12610 | 132 |
| 12614 | 134 |
| 12615 | 155 |
| 12616 | 155 |
| 12617 | 155 |
| 12618 | 155 |
| 12619 | 155 |
| 12620 | 155 |
| 12622 N | 142 |
| 12623 N | 142 |
| 12626 | 134 |
| 12627 | 134 |
| 12633 | 142 |
| 12637 | 148 |
| 12640 | 149 |
| 12641 | 149 |
| 12642 N | 142 |
| 12645/N | 158 |
| 12646 | 149 |
| 12647 | 149 |
| 12648 | 150 |
| 12649 | 150 |
| 12650 | 162 |
| 12651 | 162 |
| 12652 | 164 |
| 12653 | 164 |
| 12654 | 164 |
| 12655 | 163 |
| 12656 | 163 |
| 12657 | 163 |
| 12658 | 163 |
| 12659 | 163 |
| 12660 | 163 |
| 12661 | 163 |
| 12662 | 163 |
| 12665 | 163 |
| 12666 | 163 |
| 12667 | 163 |
| 12668 | 163 |
| 12669 | 163 |
| 12670 | 163 |
| 12671 | 164 |
| 12672 | 164 |
| 12673 | 164 |
| 12674 | 164 |
| 12675 | 164 |
| 12676 | 164 |
| 12677 | 164 |
| 12678 | 164 |
| 12679 | 164 |
| 12680 | 165 |
| 12680 | 196 |
| 12681 | 165 |
| 12681 | 196 |
| 12682 | 165 |
| 12682 | 196 |
| 12683 | 165 |
| 12683 | 196 |

| Part-No. | page |
|---|---|
| 12685 | 165 |
| 12686 | 165 |
| 12687 | 165 |
| 12688 | 165 |
| 12689 | 165 |
| 12690 | 166 |
| 12691 | 166 |
| 12692 | 166 |
| 12693 | 166 |
| 12694 | 166 |
| 12695 | 166 |
| 12696 | 166 |
| 12697 | 166 |
| 12698 | 166 |
| 12725 | 184 |
| 12726 | 184 |
| 12726 | 186 |
| 12726/3,0 | 190 |
| 12726/3,0 | 191 |
| 12727 | 184 |
| 12727 | 186 |
| 12727 | 190 |
| 12727 | 191 |
| 12728 | 186 |
| 12729 | 190 |
| 12729 | 191 |
| 12740 | 185 |
| 12741 | 185 |
| 12742 | 185 |
| 12743 | 185 |
| 12744 | 185 |
| 12745 | 185 |
| 12746 | 185 |
| 12748 | 138 |
| 12748 | 177 |
| 12749 | 138 |
| 12749 | 177 |
| 12751 | 138 |
| 12751 | 177 |
| 12753 | 177 |
| 12762 | 166 |
| 12763 | 166 |
| 12764 | 166 |
| 12765 | 166 |
| 12766 | 170 |
| 12767 | 170 |
| 12784 | 185 |
| 12785 | 185 |
| 12786 | 185 |
| 12787 | 185 |
| 12788 | 185 |
| 12789 | 185 |
| 12790 | 185 |
| 12792 | 185 |
| 12793 | 185 |
| 12794 | 185 |
| 12795 | 185 |
| 12796 | 185 |
| 12797 | 185 |
| 12798 | 185 |
| 12799 | 185 |
| 12800 | 167 |
| 12801 | 167 |
| 12802 | 167 |
| 12803 | 167 |
| 12804 | 167 |
| 12805 | 167 |
| 12806 | 167 |
| 12807 | 167 |
| 12809 | 168 |
| 12810 | 168 |
| 12811 | 168 |
| 12812 | 168 |
| 12813 | 168 |
| 12814 | 168 |
| 12815 | 168 |
| 12816 | 168 |
| 12817 | 168 |
| 12818 | 168 |
| 12832 | 140 |
| 12832 | 195 |
| 12833 | 140 |
| 12833 | 195 |
| 12834 | 140 |
| 12834 | 195 |
| 12835 | 140 |
| 12835 | 195 |
| 12836 | 192 |
| 12837 | 193 |
| 12843 | 144 |
| 12844 | 144 |
| 12845 | 144 |
| 12846 | 144 |
| 12855/N | 154 |
| 12858 | 153 |
| 12888 | 168 |
| 12889 | 168 |
| 12890 | 168 |
| 12891 | 168 |
| 12892 | 168 |
| 12893 | 168 |
| 12907 | 201 |
| 12908 | 194 |
| 12909 | 194 |
| 12910 | 194 |

| Part-No. | page |
|---|---|
| 12911 | 194 |
| 12912 | 194 |
| 12913 | 194 |
| 12914 | 194 |
| 12915 | 194 |
| 12916 | 194 |
| 12917 | 194 |
| 12918 | 194 |
| 12918/Al | 194 |
| 12919 | 194 |
| 12920 | 194 |
| 12921 | 194 |
| 12923 | 196 |
| 12924 | 196 |
| 12925 | 196 |
| 12926 | 196 |
| 12927 | 196 |
| 12928 | 196 |
| 12929 | 196 |
| 12929/300 | 196 |
| 12930 | 169 |
| 12931 | 169 |
| 12933 | 169 |
| 12934 | 169 |
| 12945 | 197 |
| 12946 | 197 |
| 12947 | 197 |
| 12948 | 197 |
| 12949 | 197 |
| 12950 | 197 |
| 12951 | 197 |
| 12952 | 197 |
| 12955 | 197 |
| 12956 | 197 |
| 12957 | 197 |
| 12958 | 197 |
| 12959 | 197 |
| 12960 | 197 |
| 12961 | 197 |
| 12962 | 197 |
| 12965/S | 171 |
| 12966 | 171 |
| 12968 | 171 |
| 12969 | 171 |
| 12972 | 196 |
| 12975 | 198 |
| 12976 | 198 |
| 12977 | 198 |
| 12978 | 198 |
| 12979 | 198 |
| 12980 | 201 |
| 12981 | 201 |
| 12982 | 201 |
| 12983 | 201 |
| 12984 | 201 |
| 12985 | 201 |
| 12986 | 201 |
| 12987 | 201 |
| 12988 | 201 |
| 12989 | 201 |
| 12990 | 201 |
| 12991 | 201 |
| 12992 | 201 |
| 12992/300 | 201 |
| 12993 | 201 |
| 12994 | 201 |
| 12995 | 201 |
| 12996 | 201 |
| 12997 | 201 |
| 12998 | 201 |
| 12999 | 201 |
| 13048 | 200 |
| 13049 | 200 |
| 13050 | 200 |
| 13051 | 200 |
| 13052 | 200 |
| 13053 | 200 |
| 13054 | 200 |
| 13055 | 200 |
| 13056 | 200 |
| 13057 | 200 |
| 13058 | 200 |
| 13059 | 200 |
| 13060 | 125 |
| 13061 | 125 |
| 13062 | 125 |
| 13063 | 125 |
| 13064 | 125 |
| 13066 | 125 |
| 13068 | 125 |
| 13069 | 125 |
| 13080 S | 92 |
| 13081 S | 92 |
| 13082 S | 92 |
| 13083 S | 92 |
| 13084 S | 92 |
| 13085 S | 92 |
| 13095 | 127 |
| 13096 | 127 |
| 13097 | 127 |
| 13098 | 127 |
| 13099 | 127 |
| 13100 | 127 |
| 13101 | 127 |
| 13102 | 127 |

| Part-No. | page |
|---|---|
| 13103 | 127 |
| 13104 | 127 |
| 13105 | 127 |
| 13106 | 127 |
| 13107 | 127 |
| 13108 | 127 |
| 13109 | 127 |
| 13110 | 127 |
| 13111 | 127 |
| 13112 | 127 |
| 13113 | 127 |
| 13114 | 127 |
| 13115 | 127 |
| 13116 | 127 |
| 13117 | 127 |
| 13118 | 127 |
| 13119 | 127 |
| 13124 | 52 |
| 13124 bl | 52 |
| 13126 | 52 |
| 13126 bl | 52 |
| 13128 | 52 |
| 13128 bl | 52 |
| 13130 | 52 |
| 13130 bl | 52 |
| 13132 | 52 |
| 13132 bl | 52 |
| 13134 | 52 |
| 13134 bl | 52 |
| 13136 | 52 |
| 13136 bl | 52 |
| 13138 | 52 |
| 13138 bl | 52 |
| 13140 | 52 |
| 13140 bl | 52 |
| 13142 | 52 |
| 13142 bl | 52 |
| 13143 | 52 |
| 13143 bl | 52 |
| 13144 | 52 |
| 13144 bl | 52 |
| 13146 | 52 |
| 13146 bl | 52 |
| 13148 | 52 |
| 13148 bl | 52 |
| 13150 | 52 |
| 13150 bl | 52 |
| 13152 | 52 |
| 13152 bl | 52 |
| 13154 | 52 |
| 13154 bl | 52 |
| 13156 | 52 |
| 13156 bl | 52 |
| 13157 | 52 |
| 13157 bl | 52 |
| 13158 | 52 |
| 13158 bl | 52 |
| 13160 | 52 |
| 13160 bl | 52 |
| 13162 | 52 |
| 13162 bl | 52 |
| 13163 | 52 |
| 13163 bl | 52 |
| 13164 | 52 |
| 13164 bl | 52 |
| 13166 | 52 |
| 13166 bl | 52 |
| 13168 | 52 |
| 13168 bl | 52 |
| 13170 | 52 |
| 13170 bl | 52 |
| 13172 | 52 |
| 13172 bl | 52 |
| 13174 | 52 |
| 13174 bl | 52 |
| 13176 | 52 |
| 13176 bl | 52 |
| 13177 | 52 |
| 13177 bl | 52 |
| 13178 | 52 |
| 13178 bl | 52 |
| 13180 | 52 |
| 13180 bl | 52 |
| 13182 | 52 |
| 13182 bl | 52 |
| 13184 | 52 |
| 13184 bl | 52 |
| 13186 | 52 |
| 13186 bl | 52 |
| 13188 | 52 |
| 13188 bl | 52 |
| 13190 | 52 |
| 13190 bl | 52 |
| 13192 | 52 |
| 13192 bl | 52 |
| 13194 | 52 |
| 13194 bl | 52 |
| 13195 | 52 |
| 13195 bl | 52 |
| 13196 | 52 |
| 13196 bl | 52 |
| 13197 | 52 |
| 13197 bl | 52 |
| 13198 | 52 |
| 13198 bl | 52 |

| Part-No. | page |
|---|---|
| 13199 | 66 |
| 13200 | 66 |
| 13201 | 66 |
| 13202 | 66 |
| 13203 | 66 |
| 13204 | 66 |
| 13205 | 66 |
| 13206 | 66 |
| 13207 | 66 |
| 13208 | 66 |
| 13209 | 66 |
| 13228 | 120 |
| 13229 | 120 |
| 13230 | 120 |
| 13230/s | 120 |
| 13231 | 120 |
| 13231/s | 120 |
| 13232 | 120 |
| 13232/s | 120 |
| 13233 | 120 |
| 13233/s | 120 |
| 13240 | 120 |
| 13241 | 120 |
| 13242 | 120 |
| 13243 | 120 |
| 13254 | 62 |
| 13255 | 62 |
| 13256 | 62 |
| 13257 | 62 |
| 13258 | 62 |
| 13259 | 62 |
| 13260 | 62 |
| 13261 | 62 |
| 13262 | 62 |
| 13262/8 | 62 |
| 13263 | 62 |
| 13264 | 62 |
| 13264/8 | 62 |
| 13265 | 62 |
| 13266 | 62 |
| 13267 | 62 |
| 13268 | 62 |
| 13269 | 62 |
| 13270 | 62 |
| 13271 | 62 |
| 13272 | 62 |
| 13273 | 62 |
| 13274 | 62 |
| 13274/8 | 62 |
| 13275 | 62 |
| 13275/15 | 62 |
| 13276 | 62 |
| 13276/15 | 62 |
| 13277 | 62 |
| 13277/15 | 62 |
| 13278 | 62 |
| 13279 | 62 |
| 13285 | 50 |
| 13285 bl | 50 |
| 13286 | 50 |
| 13286 bl | 50 |
| 13287 | 50 |
| 13287 bl | 50 |
| 13288 | 50 |
| 13288 bl | 50 |
| 13295 | 60 |
| 13296 | 60 |
| 13297 | 60 |
| 13332 | 101 |
| 13333 | 101 |
| 13336 | 101 |
| 13337 | 101 |
| 13345 | 100 |
| 13346 | 100 |
| 13347 | 100 |
| 13348 | 100 |
| 13349 | 100 |
| 13350 | 100 |
| 13351 | 100 |
| 13352 | 100 |
| 13353 | 101 |
| 13354 | 101 |
| 13355 | 101 |
| 13356 | 101 |
| 13414 | 62 |
| 13415 | 62 |
| 13416 | 62 |
| 13417 | 62 |
| 13418 | 62 |
| 13419 | 62 |
| 13435 | 85 |
| 13436 | 85 |
| 13437 | 85 |
| 13438 | 85 |
| 13439 | 85 |
| 13440 | 85 |
| 13485 | 199 |
| 13486 | 199 |
| 13487 | 199 |
| 13488 | 199 |
| 13489 | 199 |
| 13490 | 199 |
| 13491 | 199 |
| 13492 | 199 |
| 13493 | 199 |

| Part-No. | page |
|---|---|
| 13494 | 199 |
| 13495 | 199 |
| 13534 | 139 |
| 13534 | 182 |
| 13535 | 139 |
| 13535 | 183 |
| 13537 | 181 |
| 13538 | 138 |
| 13538 | 139 |
| 13538 | 175 |
| 13538 | 177 |
| 13538 | 179 |
| 13538 | 181 |
| 13538 | 182 |
| 13538 | 183 |
| 13540 | 201 |
| 13541 | 201 |
| 13542 | 201 |
| 13543 | 201 |
| 13544 | 201 |
| 13545 | 201 |
| 13546 | 201 |
| 13547 | 201 |
| 13548 | 201 |
| 13549 | 201 |
| 13550 | 201 |
| 13551/25 | 181 |
| 13551/42 | 181 |
| 13552 | 179 |
| 13553 | 138 |
| 13553 | 139 |
| 13553 | 175 |
| 13553 | 177 |
| 13553 | 179 |
| 13553 | 181 |
| 13553 | 182 |
| 13553 | 183 |
| 13554 | 138 |
| 13554 | 139 |
| 13554 | 175 |
| 13554 | 177 |
| 13554 | 179 |
| 13554 | 181 |
| 13554 | 182 |
| 13554 | 183 |
| 13555 | 138 |
| 13555 | 139 |
| 13555 | 175 |
| 13555 | 177 |
| 13555 | 179 |
| 13555 | 181 |
| 13555 | 182 |
| 13555 | 183 |
| 13600 | 66 |
| 13601 | 66 |
| 13602 | 66 |
| 13603 | 66 |
| 13604 | 66 |
| 13605 | 66 |
| 13607 | 66 |
| 13608 | 66 |
| 13609 | 66 |
| 13610 | 66 |
| 13611 | 66 |
| 13612 | 66 |
| 13613 | 66 |
| 13614 | 66 |
| 13615 | 66 |
| 13616 | 66 |
| 13617 | 67 |
| 13618 | 67 |
| 13619 | 67 |
| 13620 | 67 |
| 13621 | 67 |
| 13622 | 67 |
| 13623 | 67 |
| 13624 | 67 |
| 13625 | 67 |
| 13626 | 67 |
| 13627 | 67 |
| 13628 | 67 |
| 13629 | 67 |
| 13630 | 67 |
| 13631 | 67 |
| 13632 | 67 |
| 13633 | 67 |
| 13634 | 67 |
| 13635 | 67 |
| 13636 | 67 |
| 13637 | 67 |
| 13638 | 67 |
| 13639 | 67 |
| 13640 | 67 |
| 13650 | 36 |
| 13650/S | 36 |
| 13651 | 36 |
| 13651/S | 36 |
| 13652 | 36 |
| 13652/S | 36 |
| 13653 | 36 |
| 13653/S | 36 |
| 13654 | 36 |
| 13654/S | 36 |
| 13655 | 36 |
| 13655/S | 36 |

| Part-No. | page |
|---|---|
| 13656 | 36 |
| 13656/S | 36 |
| 13657 | 36 |
| 13657/S | 36 |
| 13658 | 36 |
| 13658/S | 36 |
| 13659 | 36 |
| 13659/S | 36 |
| 13660 | 36 |
| 13660/S | 36 |
| 13661 | 36 |
| 13661/S | 36 |
| 13662 | 36 |
| 13662/S | 36 |
| 13663 | 36 |
| 13663/S | 36 |
| 13664 | 36 |
| 13664/S | 36 |
| 13665 | 36 |
| 13665/S | 36 |
| 13666 | 36 |
| 13666/S | 36 |
| 13667 | 36 |
| 13667/S | 36 |
| 13668 | 36 |
| 13668/S | 36 |
| 13669 | 36 |
| 13669/S | 36 |
| 13670 | 36 |
| 13670/S | 36 |
| 13671 | 36 |
| 13671/S | 36 |
| 13672 | 36 |
| 13672/S | 36 |
| 13673 | 36 |
| 13673/S | 36 |
| 13674 | 36 |
| 13674/S | 36 |
| 13675 | 36 |
| 13675/S | 36 |
| 13676 | 36 |
| 13676/S | 36 |
| 13677 | 36 |
| 13677/S | 36 |
| 13678 | 36 |
| 13678/S | 36 |
| 13679 | 36 |
| 13679/S | 36 |
| 13680 | 36 |
| 13680/S | 36 |
| 13681 | 36 |
| 13681/S | 36 |
| 13682 | 36 |
| 13682/S | 36 |
| 13683 | 36 |
| 13683/S | 36 |
| 13684 | 36 |
| 13684/S | 36 |
| 13685 | 36 |
| 13685/S | 36 |
| 13686 | 34 |
| 13686 | 48 |
| 13687 | 34 |
| 13687 | 48 |
| 13688 | 34 |
| 13688 | 48 |
| 13689 | 34 |
| 13689 | 48 |
| 13690 | 34 |
| 13691 | 34 |
| 13692 | 34 |
| 13693 | 34 |
| 13694 | 34 |
| 13695 | 34 |
| 13696 | 34 |
| 13697 | 34 |
| 13698 | 34 |
| 13699 | 34 |
| 13699 | 48 |
| 13716/S | 36 |
| 13780 | 101 |
| 13782 | 101 |
| 13784 | 101 |
| 13786 | 101 |
| 13788 | 101 |
| 13790 | 101 |
| 13792 | 101 |
| 13794 | 101 |
| 13800 | 100 |
| 13801 | 100 |
| 13802 | 100 |
| 13803 | 100 |
| 13804 | 100 |
| 13805 | 100 |
| 13806 | 101 |
| 13807 | 101 |
| 13808 | 101 |
| 13809 | 101 |
| 13810 | 101 |
| 13811 | 101 |
| 13812 | 101 |
| 13813 | 101 |
| 13816 | 101 |
| 13817 | 101 |
| 13909 | 199 |

| Part-No. | page |
|---|---|
| 13910 | 199 |
| 13911 | 199 |
| 13912 | 199 |
| 13913 | 199 |
| 13914 | 199 |
| 13915 | 199 |
| 13916 | 199 |
| 13917 | 199 |
| 13918 | 199 |
| 13963 | 198 |
| 13964 | 198 |
| 13965 | 198 |
| 13966 | 198 |
| 13967 | 198 |
| 13968 | 198 |
| 13969 | 198 |
| 13970 | 198 |
| 13971 | 198 |
| 13972 | 198 |
| 13973 | 198 |
| 13974 | 198 |
| 13987 | 199 |
| 13988 | 199 |
| 13989 | 199 |
| 13990 | 199 |
| 13991 | 199 |
| 13992 | 199 |
| 13993 | 199 |
| 13994 | 199 |
| 13995 | 199 |
| 13996 | 199 |
| 13997 | 199 |
| 13998 | 199 |
| 13999 | 199 |
| 14120 | 200 |
| 14121 | 200 |
| 14122 | 200 |
| 14123 | 200 |
| 14124 | 200 |
| 14125 | 200 |
| 14126 | 200 |
| 14127 | 200 |
| 14128 | 200 |
| 14129 | 200 |
| 14130 | 200 |
| 14131 | 200 |
| 14132 | 200 |
| 14133 | 200 |
| 14140 | 199 |
| 14141 | 199 |
| 14142 | 199 |
| 14143 | 199 |
| 14144 | 199 |
| 14145 | 199 |
| 14146 | 199 |
| 14147 | 199 |
| 14148 | 199 |
| 14149 | 199 |
| 14150 | 199 |
| 14151 | 199 |
| 14152 | 201 |
| 14153 | 201 |
| 14154 | 201 |
| 14155 | 201 |
| 14156 | 201 |
| 14157 | 201 |
| 14158 | 201 |
| 14159 | 201 |
| 14163 | 200 |
| 14164 | 200 |
| 14165 | 200 |
| 14166/Cu | 200 |
| 14166/Va | 200 |
| 14167/Cu | 200 |
| 14167/Va | 200 |
| 14168/Cu | 200 |
| 14168/Va | 200 |
| 14169/Cu | 200 |
| 14169/Va | 200 |
| 14170 | 200 |
| 14171 | 200 |
| 14172 | 200 |
| 14173 | 200 |
| 14174 | 200 |
| 14175 | 200 |
| 14176 | 200 |
| 14177 | 200 |
| 14240 | 138 |
| 14240 | 175 |
| 14241 | 175 |
| 14242 | 175 |
| 14243 | 138 |
| 14243 | 175 |
| 14244 | 138 |
| 14244 | 175 |
| 14245 | 138 |
| 14245 | 175 |
| 15014 | 40 |
| 15016 | 40 |
| 15020 | 40 |
| 15022 | 40 |
| 15024 | 40 |
| 15026 | 40 |
| 15028 | 40 |
| 15030 | 40 |

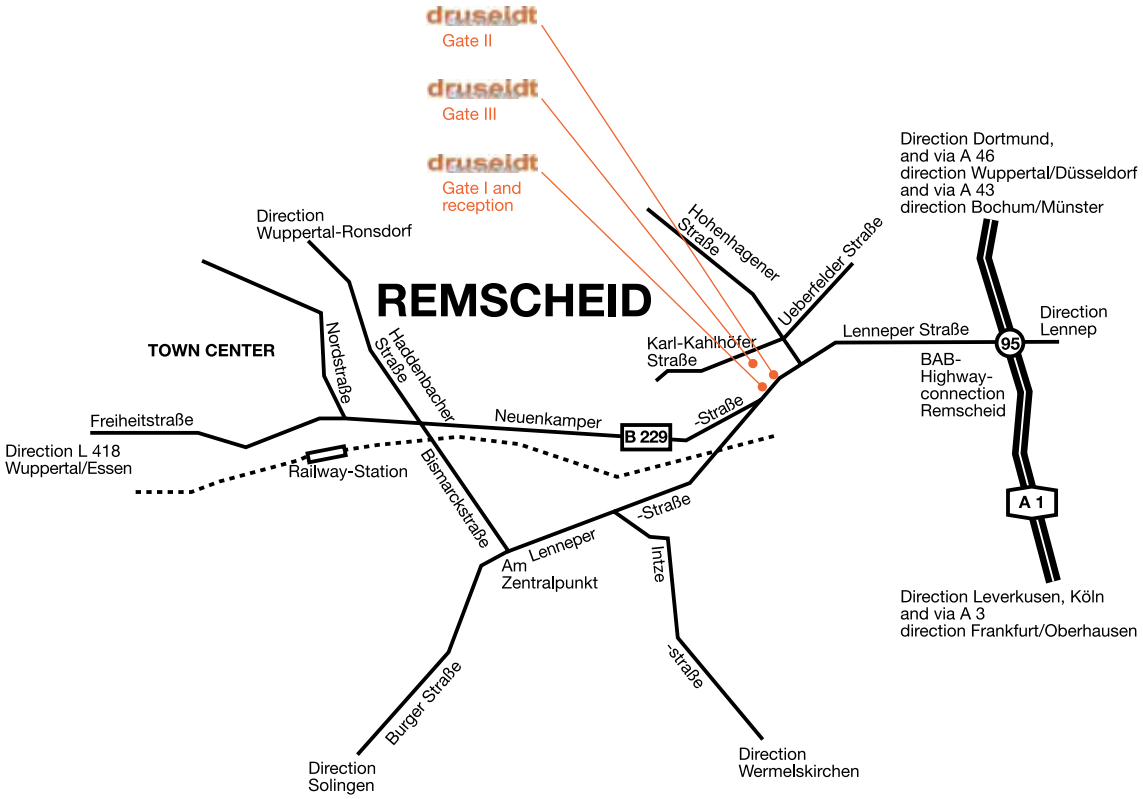
# Numerical Index


| Part-No. | page |
|---|---|
| 15032 | 40 |
| 15034 | 40 |
| 15036 | 40 |
| 15038 | 40 |
| 15040 | 40 |
| 15280/A1 | 104 |
| 15280/A2 | 104 |
| 15280/B1 | 104 |
| 15280/B2 | 104 |
| 15281/A1 | 104 |
| 15281/A2 | 104 |
| 15281/B1 | 104 |
| 15281/B2 | 104 |
| 15282/A1 | 104 |
| 15282/A2 | 104 |
| 15282/B1 | 104 |
| 15282/B2 | 104 |
| 15283/A1 | 104 |
| 15283/A2 | 104 |
| 15283/B1 | 104 |
| 15283/B2 | 104 |
| 15284/A1 | 104 |
| 15284/A2 | 104 |
| 15284/B1 | 104 |
| 15284/B2 | 104 |
| 15285/A1 | 104 |
| 15285/A2 | 104 |
| 15285/B1 | 104 |
| 15285/B2 | 104 |
| 15286/A1 | 104 |
| 15286/A2 | 104 |
| 15286/B1 | 104 |
| 15286/B2 | 104 |
| 15287/A1 | 104 |
| 15287/A2 | 104 |
| 15287/B1 | 104 |
| 15287/B2 | 104 |
| 15288/A1 | 104 |
| 15288/A2 | 104 |
| 15288/B1 | 104 |
| 15288/B2 | 104 |
| 15289/A1 | 104 |
| 15289/A2 | 104 |
| 15289/B1 | 104 |
| 15289/B2 | 104 |
| 15290/A1 | 104 |
| 15290/A2 | 104 |
| 15290/B1 | 104 |
| 15290/B2 | 104 |
| 15803 | 125 |
| 15804 | 125 |
| 15806 | 125 |
| 15808 | 125 |
| 15809 | 125 |
| 15821 | 125 |
| 15823 | 125 |
| 15824 | 125 |
| 15825 | 125 |
| 15826 | 125 |
| 15828 | 125 |
| 15829 | 125 |
| 15890 | 127 |
| 15891 | 127 |
| 15892 | 127 |
| 15893 | 127 |
| 15894 | 127 |
| 15895 | 127 |
| 15896 | 127 |
| 15897 | 127 |
| 15898 | 127 |
| 16320 | 98 |
| 16325 | 98 |
| 16330 | 98 |
| 16331 | 98 |
| 16335 | 98 |
| 16336 | 98 |
| 16340 | 98 |
| 16345 | 98 |
| 16350 | 98 |
| 16351 | 98 |
| 16355 | 98 |
| 16356 | 98 |
| 16360 | 98 |
| 16365 | 98 |
| 16370 | 98 |
| 16375 | 98 |
| 16380 | 98 |
| 16385 | 98 |
| 16390 | 98 |
| 16395 | 98 |
| 23810 | 96 |
| 23811 | 96 |
| 23812 | 96 |
| 23813 | 96 |
| 23814 | 96 |
| 23815 | 96 |
| 23816 | 96 |
| 23817 | 96 |
| 23818 | 96 |
| 23819 | 96 |
| 23820 | 96 |
| 23821 | 96 |
| 23822 | 96 |
| 23823 | 96 |
| 23824 | 96 |
| 23825 | 96 |
| 23830 | 96 |
| 23831 | 96 |
| 23832 | 96 |
| 23833 | 96 |
| 23834 | 96 |
| 23835 | 96 |
| 23836 | 96 |
| 23837 | 96 |
| 23838 | 96 |
| 23839 | 96 |
| 23840 | 96 |
| 23841 | 96 |
| 23842 | 96 |
| 23843 | 96 |
| 23844 | 96 |
| 23845 | 96 |
| 23850 | 97 |
| 23851 | 97 |
| 23852 | 97 |
| 23853 | 97 |
| 23854 | 97 |
| 23855 | 97 |
| 23856 | 97 |
| 23857 | 97 |
| 23858 | 97 |
| 23859 | 97 |
| 23870 | 97 |
| 23871 | 97 |
| 23872 | 97 |
| 23873 | 97 |
| 23874 | 97 |
| 23875 | 97 |
| 23876 | 97 |
| 23877 | 97 |
| 23878 | 97 |
| 23879 | 97 |
| 23890 | 98 |
| 23891 | 98 |
| 23892 | 98 |
| 23893 | 98 |
| 23894 | 98 |
| 23895 | 98 |
| 23896 | 98 |
| 23897 | 98 |
| 23898 | 98 |
| 23899 | 98 |
| 23900 | 98 |
| 23901 | 98 |
| 23902 | 98 |
| 23903 | 98 |
| 23904 | 98 |
| 23905 | 98 |
| 23906 | 98 |
| 23907 | 98 |
| 23908 | 98 |
| 23909 | 98 |
| 23910 | 98 |
| 24000 | 106 |
| 24001 | 106 |
| 24001/1 | 106 |
| 24002 | 106 |
| 24003 | 106 |
| 24004 | 106 |
| 24008 | 106 |
| 24009 | 106 |
| 24009/1 | 106 |
| 24010 | 106 |
| 24011 | 106 |
| 24012 | 106 |
| 24016 | 106 |
| 24017 | 106 |
| 24017/1 | 106 |
| 24018 | 106 |
| 24019 | 106 |
| 24020 | 106 |
| 24024 | 106 |
| 24025 | 106 |
| 24025/1 | 106 |
| 24026 | 106 |
| 24027 | 106 |
| 24028 | 106 |
| 24053 | 109 |
| 24054 | 109 |
| 24055 | 109 |
| 24056 | 109 |
| 24058 | 108 |
| 24059 | 108 |
| 24060 | 108 |
| 24065 | 111 |
| 24066 | 111 |
| 24067 | 111 |
| 24070 | 106 |
| 24071 | 106 |
| 24071/1 | 106 |
| 24072 | 106 |
| 24073 | 106 |
| 24074 | 106 |
| 24078 | 106 |
| 24079 | 106 |
| 24079/1 | 106 |
| 24080 | 106 |
| 24081 | 106 |
| 24082 | 106 |
| 24086 | 106 |
| 24087 | 106 |
| 24087/1 | 106 |
| 24088 | 106 |
| 24089 | 106 |
| 24090 | 106 |
| 24094 | 106 |
| 24095 | 106 |
| 24095/1 | 106 |
| 24096 | 106 |
| 24097 | 106 |
| 24098 | 106 |
| 24105 | 110 |
| 24106 | 110 |
| 24107 | 110 |
| 24108 | 110 |
| 24110 | 110 |
| 24111 | 110 |
| 24112 | 111 |
| 24113 | 111 |
| 24114 | 111 |
| 24117 | 111 |
| 24118 | 111 |
| 24119 | 111 |
| 24120 | 111 |
| 24121 | 111 |
| 24122 | 111 |
| 24123 | 111 |
| 24124 | 111 |
| 24125 | 111 |
| 24126 | 111 |
| 24127 | 111 |
| 24130 | 111 |
| 24131 | 111 |
| 24132 | 111 |
| 24135 | 112 |
| 24136 | 112 |
| 24137 | 112 |
| 24140 | 112 |
| 24141 | 112 |
| 24142 | 112 |
| 24145 | 112 |
| 24146 | 112 |
| 24147 | 112 |
| 24150 | 112 |
| 24151 | 112 |
| 24155 | 112 |
| 24156 | 112 |
| 24160 | 112 |
| 24161 | 112 |
| 24165 | 110 |
| 24167 | 110 |
| 24168 | 110 |
| 24169 | 110 |
| 24170 | 110 |
| 24172 | 113 |
| 24173 | 113 |
| 24175 | 113 |
| 24176 | 113 |
| 24176/1 | 113 |
| 24177 | 113 |
| 24178 | 113 |
| 24179 | 113 |
| 24211 | 106 |
| 24212 | 106 |
| 24213 | 106 |
| 24214 | 106 |
| 24215 | 106 |
| 24216 | 106 |
| 24220 | 106 |
| 24221 | 106 |
| 24222 | 106 |
| 24223 | 106 |
| 24224 | 106 |
| 24225 | 106 |
| 24230 | 106 |
| 24231 | 106 |
| 24232 | 106 |
| 24233 | 106 |
| 24234 | 106 |
| 24235 | 106 |
| 24240 | 106 |
| 24241 | 106 |
| 24242 | 106 |
| 24243 | 106 |
| 24244 | 106 |
| 24245 | 106 |
| 24250 | 106 |
| 24251 | 106 |
| 24252 | 106 |
| 24253 | 106 |
| 24260 | 106 |
| 24261 | 106 |
| 24262 | 106 |
| 24263 | 106 |
| 24270 | 106 |
| 24271 | 106 |
| 24272 | 106 |
| 24273 | 106 |
| 24280 | 106 |
| 24281 | 106 |
| 24282 | 106 |
| 24283 | 106 |
| 24301 | 107 |
| 24302 | 107 |
| 24303 | 107 |
| 24304 | 107 |
| 24305 | 107 |
| 24306 | 107 |
| 24307 | 107 |
| 24308 | 107 |
| 24309 | 107 |
| 24310 | 107 |
| 24311 | 107 |
| 24312 | 107 |
| 24313 | 107 |
| 24314 | 107 |
| 24315 | 107 |
| 24316 | 107 |
| 24317 | 107 |
| 24318 | 107 |
| 24319 | 107 |
| 24320 | 107 |
| 24321 | 107 |
| 24322 | 107 |
| 24323 | 107 |
| 24324 | 107 |
| 24325 | 107 |
| 24326 | 107 |
| 24327 | 107 |
| 24328 | 107 |
| 24330 | 107 |
| 24331 | 107 |
| 24332 | 107 |
| 24333 | 107 |
| 24334 | 107 |
| 24335 | 107 |
| 24336 | 107 |
| 24337 | 107 |
| 24338 | 107 |
| 24340 | 107 |
| 24341 | 107 |
| 24342 | 107 |
| 24344 | 107 |
| 24345 | 107 |
| 24346 | 107 |
| 24347 | 107 |
| 24350 | 108 |
| 24351 | 108 |
| 24352 | 108 |
| 24353 | 108 |
| 24355 | 108 |
| 24356 | 108 |
| 24358 | 108 |
| 24359 | 108 |
| 24360 | 109 |
| 24361 | 109 |
| 24362 | 109 |
| 24363 | 109 |
| 24364 | 109 |
| 24365 | 109 |
| 24366 | 109 |
| 24367 | 109 |
| 24370 | 109 |
| 24371 | 109 |
| 24372 | 109 |
| 24373 | 109 |
| 24374 | 109 |
| 24375 | 109 |
| 24376 | 109 |
| 24377 | 109 |
| 24400 | 110 |
| 24401 | 110 |
| 24402 | 110 |
| 24403 | 110 |
| 24404 | 110 |
| 24405 | 110 |
| 24406 | 110 |
| 24407 | 110 |
| 24408 | 110 |
| 24409 | 110 |
| 24410 | 110 |
| 24411 | 110 |
| 24415 | 110 |
| 24420 | 113 |
| 24421 | 113 |
| 24422 | 113 |
| 24425 | 113 |
| 24426 | 113 |
| 30001 | 18 |
| 30002 | 18 |
| 30003 | 19 |
| 30010 | 19 |
| 30011 | 19 |
| 30012 | 19 |
| 30013 | 19 |
| 30014 | 19 |
| 30018 | 19 |
| 30020 | 19 |
| 30022 | 19 |
| 30024 | 18 |
| 30025 | 18 |
| 30026 | 18 |
| 30028 | 18 |
| 30029 | 18 |
| 30039 | 120 |
| 30039/s | 120 |
| 30042 | 120 |
| 30042/s | 120 |
| 30043 | 120 |
| 30043/s | 120 |
| 30044 | 120 |
| 30044/s | 120 |
| 30045 | 120 |
| 30045/s | 120 |
| 30049 | 120 |
| 30049/s | 120 |
| 30050 | 120 |
| 30050/s | 120 |
| 30051 | 120 |
| 30051/s | 120 |
| 30052 | 120 |
| 30052/s | 120 |
| 30053 | 120 |
| 30053/s | 120 |
| 30054 | 120 |
| 30054/s | 120 |
| 30056 | 120 |
| 30061 | 123 |
| 30062 | 123 |
| 30063 | 123 |
| 30064 | 123 |
| 30065 | 123 |
| 30066 | 123 |
| 30067 | 123 |
| 30068 | 123 |
| 30069 | 123 |
| 30070 | 123 |
| 30071 | 123 |
| 30072 | 123 |
| 30080 | 123 |
| 30081 | 123 |
| 30082 | 123 |
| 30083 | 123 |
| 30084 | 123 |
| 30085 | 123 |
| 30086 | 123 |
| 30087 | 123 |
| 30088 | 123 |
| 30089 | 123 |
| 30090 | 123 |
| 30091 | 123 |
| 30092 | 123 |
| 30093 | 123 |
| 30100 | 124 |
| 30101 | 124 |
| 30102 | 124 |
| 30103 | 124 |
| 30104 | 124 |
| 30105 | 124 |
| 30106 | 124 |
| 30107 | 124 |
| 30108 | 124 |
| 30109 | 124 |
| 30110 | 124 |
| 30111 | 124 |
| 30112 | 124 |
| 30113 | 124 |
| 30122 | 125 |
| 30128 | 125 |
| 30129 | 125 |
| 30182 | 124 |
| 30183 | 124 |
| 30184 | 124 |
| 30185 | 124 |
| 30186 | 124 |
| 30187 | 124 |
| 30188 | 124 |
| 30189 | 124 |
| 30190 | 124 |
| 30191 | 124 |
| 30192 | 124 |
| 30193 | 124 |
| 30195 | 126 |
| 30196 | 126 |
| 30197 | 126 |
| 30198 | 126 |
| 30199 | 126 |
| 30200 | 126 |
| 30201 | 126 |
| 30445 | 158 |
| 30446 | 158 |
| 30460 | 165 |
| 30470 | 165 |
| 30475 | 155 |
| 30477 | 155 |
| 30480 | 155 |
| 30481 | 155 |
| 31460 | 167 |
| 31465 | 167 |
| 40010 | 56 |
| 40011 | 56 |
| 40014 | 56 |
| 40015 | 56 |
| 40016 | 56 |
| 40019 | 56 |
| 40020 | 56 |
| 40021 | 56 |
| 40024 | 56 |
| 40025 | 56 |
| 40026 | 56 |
| 40029 | 56 |
| 40030 | 56 |
| 40031 | 56 |
| 40034 | 56 |
| 40035 | 56 |
| 40036 | 56 |
| 40039 | 56 |
| 40040 | 56 |
| 40041 | 56 |
| 40044 | 56 |
| 40045 | 56 |
| 40046 | 56 |
| 40049 | 56 |
| 40050 | 56 |
| 40051 | 56 |
| 40054 | 56 |
| 40055 | 56 |
| 40056 | 56 |
| 40059 | 56 |
| 40060 | 56 |
| 40061 | 56 |
| 40064 | 56 |
| 40065 | 56 |
| 40066 | 56 |
| 40069 | 56 |
| 40070 | 56 |
| 40100 | 58 |
| 40101 | 58 |
| 40102 | 58 |
| 40106 | 58 |
| 40107 | 58 |
| 40108 | 58 |
| 40112 | 58 |
| 40113 | 58 |
| 40114 | 58 |
| 40115 | 58 |
| 40119 | 58 |
| 40120 | 58 |
| 40121 | 58 |
| 40122 | 58 |
| 40126 | 58 |
| 40127 | 58 |
| 40128 | 58 |
| 40129 | 58 |
| 40134 | 58 |
| 40135 | 58 |
| 40136 | 58 |
| 40142 | 58 |
| 40143 | 58 |
| 40149 | 58 |
| 40150 | 58 |
| 40151 | 58 |
| 40155 | 58 |
| 40156 | 58 |
| 40157 | 58 |
| 40158 | 58 |
| 40162 | 58 |
| 40163 | 58 |
| 40164 | 58 |
| 40165 | 58 |
| 40169 | 58 |
| 40170 | 58 |
| 40171 | 58 |
| 40201 | 59 |
| 40202 | 59 |
| 40203 | 59 |
| 40204 | 59 |
| 40208 | 59 |
| 40209 | 59 |
| 40210 | 59 |
| 40211 | 59 |
| 40215 | 59 |
| 40216 | 59 |
| 40217 | 59 |
| 40218 | 59 |
| 40222 | 59 |
| 40223 | 59 |
| 40224 | 59 |
| 40228 | 59 |
| 40229 | 59 |
| 40230 | 59 |
| 40231 | 59 |
| 40235 | 59 |
| 40236 | 59 |
| 40237 | 59 |
| 40241 | 59 |
| 40242 | 59 |
| 40243 | 59 |
| 40244 | 59 |
| 40248 | 59 |
| 40249 | 59 |
| 40250 | 59 |
| 40251 | 59 |
| 40255 | 59 |
| 40256 | 59 |
| 40257 | 59 |
| 40258 | 59 |
| 40259 | 59 |
| 40261 | 59 |
| 40262 | 59 |
| 40263 | 59 |
| 40264 | 59 |
| 40265 | 59 |
| 54140 | 126 |
| 54142 | 126 |
| 54144 | 126 |
| 54146 | 126 |
| 54148 | 126 |
| 54150 | 126 |
| 54154 | 126 |
| 54158 | 126 |
| 54162 | 126 |
| 54164 | 126 |
| 54166 | 126 |
| 54172 | 126 |
| 54176 | 126 |
| 54178 | 126 |
| 54182 | 126 |
| 54190 | 126 |
| 54192 | 126 |
| 54194 | 126 |
| 54195 | 126 |
| 54196 | 126 |
| 54198 | 126 |
| 54199 | 126 |
| 54200 | 126 |
| 54202 | 126 |
| 54204 | 126 |
| 54206 | 126 |
| 54208 | 126 |
| 54210 | 126 |
| 54211 | 126 |
| 55993 | 68 |
| 55994 | 68 |
| 55995 | 68 |
| 55996 | 68 |
| 55997 | 68 |
| 55998 | 68 |
| 55999 | 68 |
| 55999 | 69 |
| 56000 | 68 |
| 56000 | 69 |
| 56000 str | 69 |
| 56000/1 | 68 |
| 56000/1 | 69 |
| 56001 | 68 |
| 56001 str | 69 |
| 56001/1 | 68 |
| 56001/2 | 68 |
| 56001/3 | 68 |
| 56002 | 68 |
| 56002 | 69 |
| 56002 str | 69 |
| 56002/1 | 68 |
| 56002/1 | 69 |
| 56002/2 | 68 |
| 56002/2 | 69 |
| 56002/3 | 68 |
| 56002/3 | 69 |
| 56003 | 68 |
| 56003 | 69 |
| 56003 str | 69 |
| 56003/1 | 68 |
| 56003/1 | 69 |
| 56003/2 | 68 |
| 56003/2 | 69 |
| 56004 | 68 |
| 56004 | 69 |
| 56006 | 68 |
| 56006 str | 69 |
| 56006/1 | 68 |
| 56007 | 68 |
| 56008 | 68 |
| 56008/1 | 68 |
| 56009 | 68 |
| 56010 | 68 |
| 56011 | 68 |
| 56012 | 68 |
| 56013 | 68 |
| 56014 | 68 |
| 56015 | 68 |
| 56016 | 68 |
| 56016/1 | 68 |
| 56017 | 68 |
| 56018 | 68 |
| 56018 | 69 |
| 56018/1 | 68 |
| 56018/1 | 69 |
| 56019 | 68 |
| 56019 | 69 |
| 56020 | 68 |
| 56020 | 69 |
| 56021 | 68 |
| 56021 | 69 |
| 56038 | 68 |
| 56039 | 68 |
| 56040 | 68 |
| 56041 | 68 |
| 56042 | 68 |
| 56043 | 68 |
| 56044 | 68 |
| 56045 | 68 |
| 56045 str | 69 |
| 56046 | 68 |
| 56047 | 68 |
| 56048 | 68 |
| 56048 str | 69 |
| 56049 | 68 |
| 56050 | 68 |
| 56051 | 68 |
| 56052 | 68 |
| 56052 str | 69 |
| 56053 | 68 |
| 56054 | 68 |
| 56055 | 68 |
| 56055 str | 69 |
| 56056 | 68 |
| 56056/1 | 68 |
| 56057 | 68 |
| 56058 | 68 |
| 56058 | 69 |
| 56058 str | 69 |
| 56059 | 68 |
| 56059 | 69 |
| 56060 | 68 |
| 56060 | 69 |
| 56061 | 68 |
| 56061 | 69 |
| 56062 | 68 |
| 56062 | 69 |
| 56063 | 68 |
| 56063 | 69 |
| 56064 | 68 |
| 56065 | 68 |
| 56066 | 68 |
| 56067 | 68 |
| 56068 | 68 |
| 56069 | 68 |
| 56070 | 68 |
| 56070/1 | 68 |
| 56071 | 68 |
| 56072 | 68 |
| 56072/1 | 68 |
| 56073 | 68 |
| 56074 | 68 |
| 56075 | 68 |
| 56076 | 68 |
| 56077 | 68 |
| 56078 | 68 |
| 56079 | 68 |
| 56080 | 69 |
| 56081 | 69 |
| 56081 str | 69 |
| 56082 | 69 |
| 56083 | 69 |
| 56084 | 69 |
| 56085 | 69 |
| 56086 | 69 |
| 56087 | 69 |
| 56088 | 69 |
| 56089 | 69 |
| 56090 | 69 |
| 56090/1 | 69 |
| 56091 | 69 |
| 57000 | 70 |
| 57001 | 70 |
| 57002 | 70 |
| 57003 | 70 |
| 57004 | 70 |
| 57005 | 70 |
| 57006 | 70 |
| 57007 | 70 |
| 57008 | 70 |
| 57009 | 70 |
| 57010 | 70 |
| 57011 | 70 |
| 57012 | 70 |
| 58000 | 70 |
| 58002 | 70 |
| 58004 | 70 |
| 58006 | 70 |
| 58008 | 70 |
| 58010 | 70 |
| 58012 | 70 |
| 58014 | 70 |

**Space for notes**

## Space for notes

**Space for notes**




Paul Druseidt
Elektrotechnische Spezialfabrik GmbH & Co. KG

P.O. Box: 10 02 25
42802 Remscheid
Germany

Gate I: Neuenkamper Straße 105
Gate II: Lenneper Straße 131
Gate III: Karl-Kahlhöfer-Straße 9
42855 Remscheid
Germany

Phone: +49 (21 91) 93 52-0
Fax: +49 (21 91) 93 52-150
http: www.druseidt.de
E-Mail: info@druseidt.de

**Please order also our detailed catalogues to the following subjects:**

Flexible air and watercooled connectors and cables for Hi-Tech-applications
Main catalogue for contact systems and accessories for electroplating and anodizing equipments