ERKO®

2020

HISTORY

In 1938, Piotr Pętlak, the grandfather of ERKO present owners, and a father of ERKO founder, opened a forge. Several dozen years later in 1981, one of his sons, Roman, started his own business in Jonkowo near Olsztyn. He opened a workshop related to manufacturing of agricultural tools.

From left: Roman, Józef, Jan Pętlak

In 1986 along start of production of cable lugs for shipbuilding industry, the company is reorganized. As a result of dynamic growth of the company, brothers: Roman, Jan and Józef decide to open second branch in a hometown Czeluśnica near Jasło.

Further intensive activities, improvement of technology, innovation of products and a high standard of production were confirmed by receipt of the first in Poland Certificate according to ISO-9001.

CABLE CONNECTORS AND TOOLS

ERKO ELECTRO

Our largest product division contains a wide range of electrotechnical equipment as well as a number of innovative solutions, tools and devices. ERKO ELECTRO are products dedicated for electrical installers, power plants and industrial companies. We are a leading brand in Poland in the range of offered electrotechnical equipment, our products are available in the majority of electrotechnical wholesalers networks on the domestic market. We are also successfully competing on foreign markets, our products are appreciated by customers in Europe, Asia, Africa, South America and Australia.

PARTS FOR AVIATION INDUSTRY

ERKO AERO

ERKO AERO are technologically advanced, personalized products. In our factory in Czeluśnica branch we manufacture, used in aviation industry, parts for engine tubular assemblies, other plastic forming, machining and CNC processed parts and tooling.

PRODUCTION AUTOMATION SOLUTIONS

ERKO ROBOTICS

We implement demanding and engineering and technological wise complex solutions and projects. We analyze our customers needs. We design, manufacture, run and service our customers automated production lines, maximizing process efficiency and increasing safety and work ergonomics. We implemented our solutions for customers from the electrotechnical, automotive, aviation, production of tin elements, and for the natural gas distribution industries

TODAY

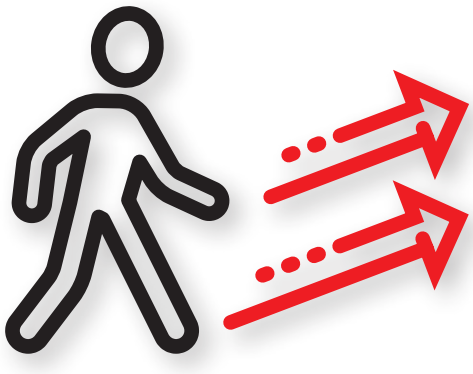
We are one of the electrotechnical industry key suppliers. We stand out with care for the highest quality of products and customer service. Thanks to the development of competences and a modern machinery park, there are thousands of products in continuous production. Our own, innovative, engineering and technological solutions allow us to ensure the competitiveness of our products as well as quick reaction to market needs. Due to the dynamics of development and market segmentation, we created product divisions: ELECTRO, AERO, ROBOTICS.

THE OWNER FAMILY DECLARATION

We have been and will be a family company. We actively participate in its management and strategic development.

Thinking about the future, we are preparing successive generations to work with respect for values which are important to our family and business.

From left: Piotr, Maciej, Michał, Marcin Pętlak



Mission

We provide customers with high quality dedicated products and solutions that increase efficiency and safety in the industry.

Vision

Be among the strategic suppliers of technologically advanced products and solutions for the industry.

Values

INVOLVEMENT
COOPERATION
CREATIVITY
PROFESSIONALISM
RESPONSIBILITY
HONESTY

We are one of the companies that care about the environment. We aim to build mutual trust and transparency in both relations with the external environment and the internal environment of the organization.

We have been conducting CSR (corporate social responsibility) activities since the beginning of the company's existence, above all in the form of social engagement projects. We support initiatives and projects related with education, culture and sport.

For couple of years we have been cooperating with the science club "ROTOR", operating at the State Higher Vocational School of Stanisław Pigoń in Krosno. We support students in the construction of the bolide, taking part in international Shell Eco-marathon competitions.

All activities that build family relations are important to us. Thinking about our employees, we organize picnics, educational trips for the youngest ones, as well as trips for families.

One of our strategic programs is an educational activity. We participate in the Laboratory Program, enabling young people to get to know the natural working environment through visits in our company, and thus getting the knowledge about various proffessions. We share our experience and we promote technical knowledge.

We promote an active and healthy lifestyle among youth and employees. We provide support among others young sportsmen from the Nauticus Yacht Club Olsztyn, for whom sailing is a passion and a great adventure.

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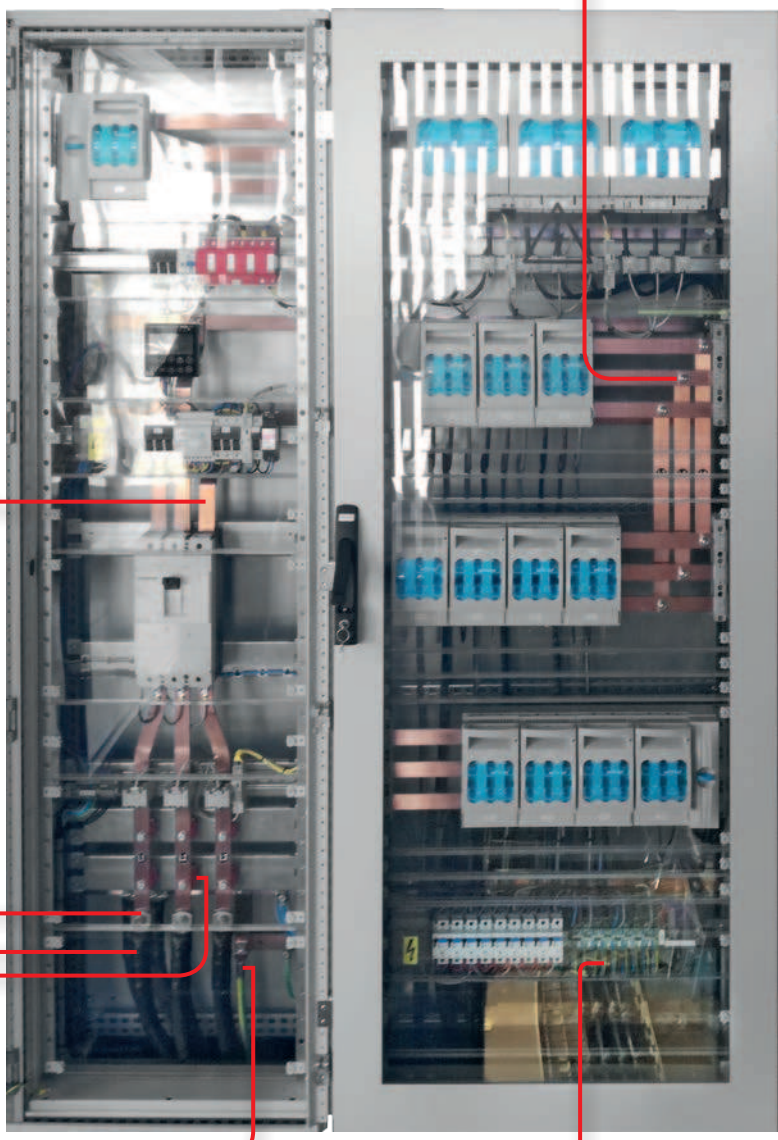

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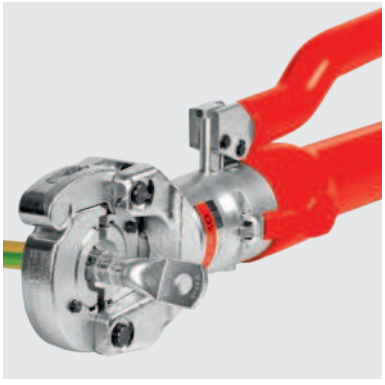

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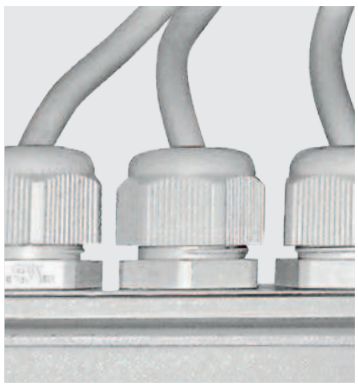

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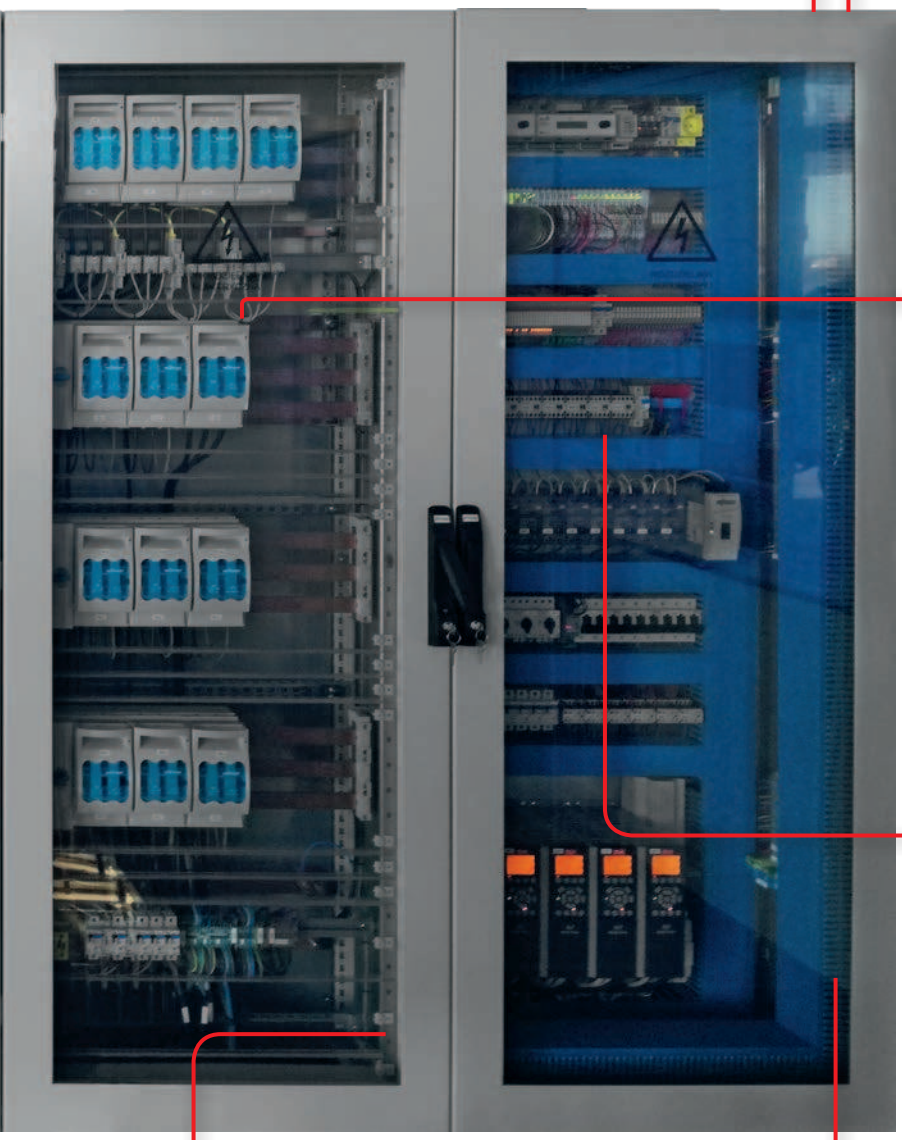

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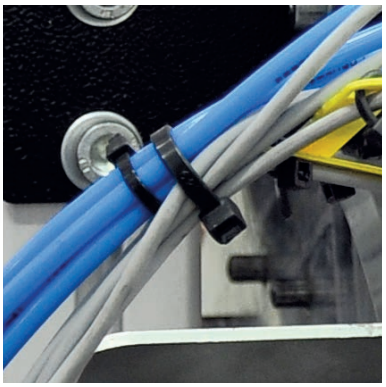

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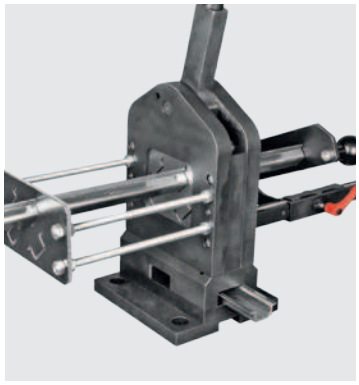

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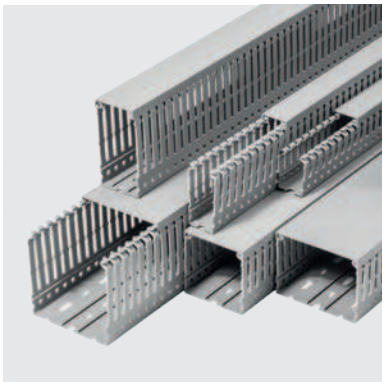
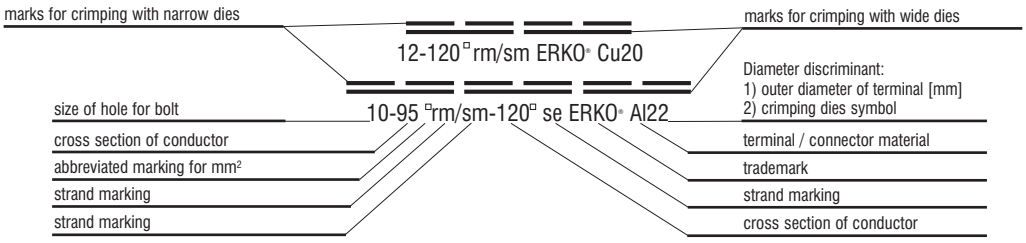


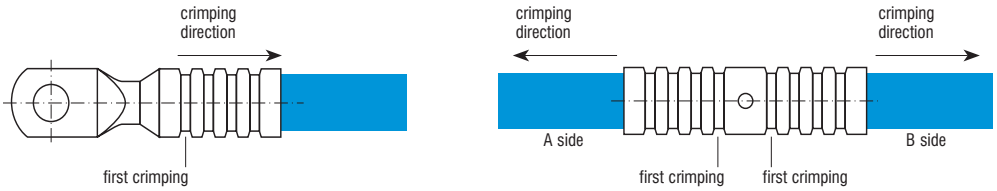
	Single indent for copper terminals without insulation made according to DIN 46234 and pin terminals made according to DIN 46230 for wire of cross section of 0,5 ÷ 120 mm², and for copper tubular terminals for wire of cross section of 0,5 ÷ 6mm² (e.g. KOA, KWA, KLA).
	Oval for copper ring terminals with polyamide insulation made according to DIN 46237 and DIN 46234, for copper pin terminals with polyamide insulation made according to DIN 46230 and DIN 46231 for wire of cross section of 0,5 ÷ 120 mm² (e.g. KOE, KWE) and for insulated receptacles and tabs (MSE, TSE).
	Trapezoidal for copper cable end-sleeves made according to DIN 46228 Part 1 and Part 4 and double copper cable end-sleeves for wire of cross section of 0,5 ÷ 185 mm² (e.g. TA, TE, TV).
	Square for copper cable end-sleeves made according to DIN 46228 Part 1 and Part 4 and double copper cable end-sleeves for wire of cross section of 0,5 ÷ 10 mm² (e.g. TA, TE, TV).
	Wrapped over wire conductor and insulation, for brass terminals made according to DIN 46247, DIN 46248 and DIN 46225 for wire of cross section of 0,5 ÷ 6 mm² (e.g. MS, TS, KOP, KNP).
	Round forming of aluminum sector conductors of cross section of 25 ÷ 300 re, 16 ÷ 240 rm for aluminum terminals. re – singlestrand wire cross section in mm², rm – multistrand wire cross section in mm²
	Hexagonal for copper and aluminum terminals and connectors for wire of cross section of 6 ÷ 625 mm² (profile according to DIN 48083).

Crimping of terminals and connectors:

1. Select terminal or connector appropriate for the wire (cross section, material, type of wire).
2. Determine proper form of crimping.
3. Strip the cable to the same lenght as tubular part of terminal.
4. Before crimping the wire must be cleaned of oxides and corrosive deposits.
5. Insert the wire to the end of tubular part of terminal or to connector narrowing.
6. Choose appropriate tool and dies (check last column of terminals sizes charts).
7. Keep crimping until dies clamp or overflow valve of hydraulic drive responds.
8. Crimping may be single (e.g. KOE, KOA) or multiple (e.g. KCR, KLA).Copper and aluminum tubular terminals made according to DIN have marks for crimping as shown below (fig.):



9. It is essential to keep the direction of crimping terminals and connectors as shown below (fig.):



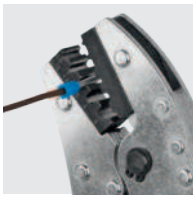
CRIMPING TOOLS

PR 33 Universal hand press

Universal hand press for terminals:
- with and without insulation of 0,5 ÷ 6 mm²
- cable end-sleeves of 0,5 ÷ 35 mm²

Features:
- easily exchangeable dies (see chart below)
- high repetitiveness and precision of crimping
- two-component grips prevents hand slipping
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force
- selection of dies for individual needs
- available with sets of dies in functional case

Dies need to be ordered separately.
Length: 220 mm; Weight (without dies): 500 g

PR 33-Z5 set

PR 33-Z5 set (includes 5 sets of dies):
PR 33-A6, PR 33-E6, PR 33-T6, PR 33-T16, PR 33-S6

Dies for PR 33 universal hand press

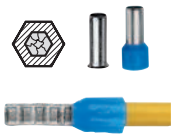
Type of die		Terminal type	Description	Cross section [mm²]	Form of crimping
	PR_33-A6		For all types of terminals and connectors without insulation (except cable end-sleeves, receptacles and tabs)	0,5÷6	
	PR_33-E6		For all types of insulated terminals and connectors (except cable end-sleeves)	0,5÷6	
	PR_33-T6		For cable end-sleeves with and without insulation	0,5÷6	
	PR_33-T16		For cable end-sleeves with and without insulation	6÷16	
	PR_33-T35		For cable end-sleeves with and without insulation	25÷35	
	PR_33-S6		For receptacles and tabs without insulation	0,5÷6	

T 16S Hand press

Press for:
- cable end-sleeves without insulation (TA)
- cable end-sleeves with insulation (TE, TV)

Wire cross section of 0,08 ÷ 16 mm².
Features:
- hexagonal form of crimping
- movable centering insert for a precise location of small cross sections
- two-component grips prevents hand slipping
- ratcheting mechanism enables easy crimping using minimum force

Length: 215 mm; Weight: 550 g



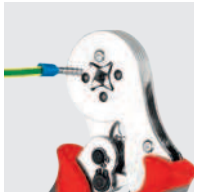
Form of crimping on wire.

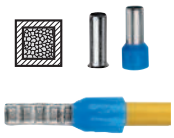
T10 Hand press

Press for:
- cable end-sleeves without insulation (TA)
- cable end-sleeves with insulation (TE, TV)

Features:
- two-component grips prevents hand slipping
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

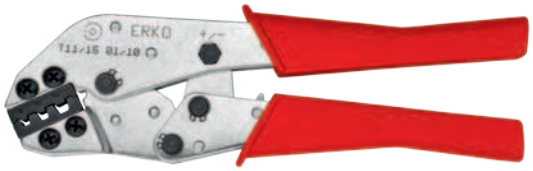
Wire cross section of 0,5 ÷ 10 mm².
Length: 180 mm; Weight: 420 g





Form of crimping on wire.

T 11-16 Hand press



Press for:
- cable end-sleeves without insulation (TA)
- cable end-sleeves with insulation (TE, TV)

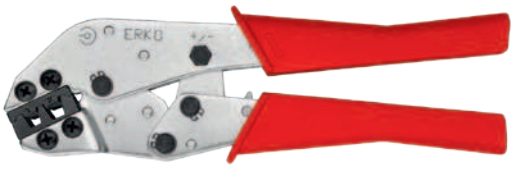
Wire cross section of 6 ÷ 16 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

Crimping dies included.
Length: 210 mm; Weight: 550 g

Socet no.	Cross section [mm²]	Form of crimping
1	6	
2	10	
3	16	

Form of crimping on wire.

T 10-16V Hand press

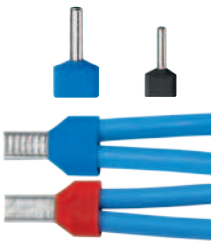


Press for:
- double cable end-sleeves with insulation (TV)

Wire cross section of 2x10 mm² and 2x16 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

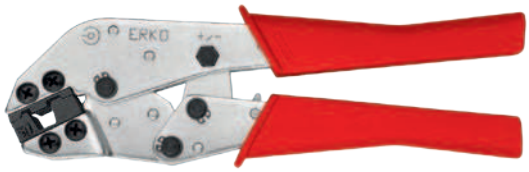
Crimping dies included.
Length: 210 mm; Weight: 550 g

Socet no.	Cross section [mm²]	Form of crimping
1	2x10	
2	2x16	



Form of crimping on wire.

T 50 Hand press



Press for:
- cable end-sleeves without insulation (TA)
- cable end-sleeves with insulation (TE)

Wire cross section of 50 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

Crimping dies included.
Length: 210 mm; Weight: 550 g

Socet no.	Cross section [mm²]	Form of crimping
1	50	

Form of crimping on wire.

T 3 Crimping pliers

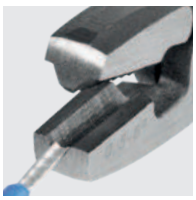
Pliers for:
- cable end-sleeves without insulation (TA)
- cable end-sleeves with insulation (TE, TV)

Wire cross section of 0,25 ÷ 2,5 mm².
- single-component PCV insulation on grips
- drop forged

Length: 150 mm; Weight: 140 g

Form of crimping on wire.

TC 6 Front pliers



Pliers for:
- cable end-sleeves without insulation (TA)
- cable end-sleeves with insulation (TE, TV)

Wire cross section of 0,5 ÷ 6 mm².
- single-component PCV insulation on grips
- drop forged

Length: 180 mm; Weight: 235 g

Form of crimping on wire.

T 16 Crimping pliers

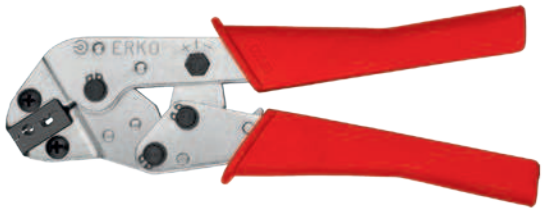
Pliers for:
- cable end-sleeves without insulation (TA)
- cable end-sleeves with insulation (TE, TV)

Wire cross section of 0,25 ÷ 16 mm².
- single-component PCV insulation on grips
- drop forged

Length: 180 mm; Weight: 250 g

Form of crimping on wire.

AE 22-05 Hand press



Press for:
- ring terminals with and without insulation (KOA, KOE)
- spade terminals with and without insulation (KNA)

Wire cross section of 0,1 ÷ 0,5 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

Crimping dies included.
Length: 200 mm; Weight: 450 g

Socet no.	Cross section [mm²]	Form of crimping
1	KOA, KNA 0,1 ÷ 0,5	
2	KOE, KNE 0,1 ÷ 0,5	

Form of crimping on wire.

ETA 66 Crimping pliers

Pliers for:
- ring terminals without insulation (KOA)
- spade terminals without insulation (KNA)
- pin terminals without insulation (KWA)
  Wire cross section of 0,14 ÷ 6 mm².
- cable end-sleeves with and without insulation (TA, TE, TV, TP).
  Wire cross section of 0,75 ÷ 16 mm².

NOTE: do not use for tubular terminals.
This is not a professional tool, not recommended for intensive work.
Length: 190 mm; Weight: 290 g

Form of crimping on wire.

RA 16 Hand press

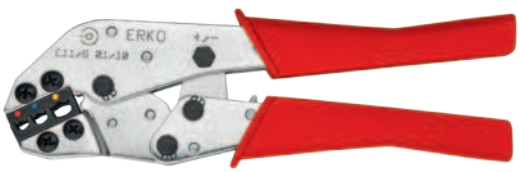
Press for:
- ring terminals (KOA), spade terminals (KNA), pin terminals (KWA) without insulation
- tubular connectors (KLA), tubular terminals (KCS of 2,5÷6 mm²)

Wire cross section of 0,5 ÷ 16 mm².
Length: 280 mm; Weight: 530 g

Socet no.	Cross section [mm²]	Form of crimping
1	0,5 ÷ 1	
2	1,5 ÷ 2,5	
3	4 ÷ 6	
4	10	
5	16	

Form of crimping on wire.

E 11-6 Hand press



Press for:
- ring terminals (KOE, KOV), spade terminals (KNE, KNV), pin terminals (KWE, KWV) witht insulation
- tubular connectors with insulation (KLE, KLK)

Wire cross section of 0,5 ÷ 6 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

Crimping dies included.
Length: 210 mm; Weight: 550 g

Socet no.	Cross section [mm²]	Form of crimping
1	0,5 ÷ 1	
2	1,5 ÷ 2,5	
3	4 ÷ 6	

Form of crimping on wire.

RE 6 Hand press

Press for:
- ring terminals (KOE, KOV), spade terminals (KNE, KNV), pin terminals (KWE, KWV) with insulation
- tubular connectors with insulation (KLE, KLK)
- receptacles and tabs with insulation (MSE, TSE)

Wire cross section of 0,5 ÷ 6 mm².
NOTE: do not use for cable end-sleeves (TE, TV and TP)
Length: 280 mm; Weight: 530 g

Socet no.	Cross section [mm²]	Form of crimping
1	0,5 ÷ 1	
2	1,5÷2,5	
3	4 ÷ 6	

Form of crimping on wire.

RE 16 Hand press

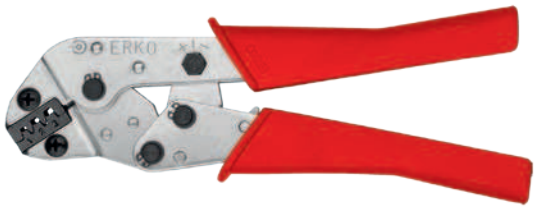
Press for:
- ring terminals (KOE, KOV), spade terminals (KNE, KNV), pin terminals (KWE, KWV) with insulation
- tubular connectors with insulation (KLE)

Wire cross section of 10 ÷ 16 mm².
Length: 280 mm; Weight: 530 g

Socet no.	Cross section [mm²]	Form of crimping
1	10	
2	16	

Form of crimping on wire.

S 33-1 Hand press



Press for:
- receptacles and tabs without insulation (MS, TS)

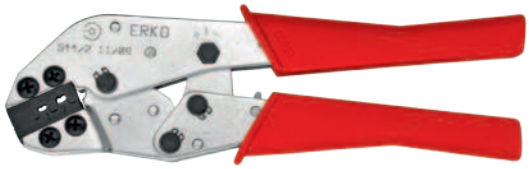
Wire cross section of 0,14 ÷ 1,0 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

NOTE: use only for terminals made according to DIN 46247 and DIN 46248
Crimping dies included.
Length: 200 mm; Weight: 450 g

Socet no.	Cross section [mm²]	Form of crimping
1	0,14 ÷ 0,25	
2	0,25 ÷ 0,5	
Socet no.	Use for terminals	
3	MS 2,8-1	

Form of crimping on wire.

S 44-2 Hand press



Press for:
- claw terminals (KOP, KNP)

Wire cross section of 0,5 ÷ 2,5 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

NOTE: use only for terminals made according to DIN 46225
Crimping dies included.
Length: 210 mm; Weight: 550 g

Socet no.	Cross section [mm²]	Form of crimping
1	0,5 ÷ 1,0	
2	1,5÷2,5	

Form of crimping on wire.

S 55 Crimping pliers

Pliers for:
- receptacles and tabs without insulation (MS, TS)

Wire cross section of 0,5 ÷ 6 mm².
Material thickness up to 0,45 mm.
NOTE: do not use for claw terminals (KOP, KNP – require separate crimping on wire and on insulation).
This is not a professional tool, not recommended for intensive work.
Length: 220 mm; Weight: 260 g

Socket No	Cross section [mm²] crimping on		Form of crimping
	wire	insulation	
1	0,5 ÷ 1,0		
2	1,5÷2,5	0,5 ÷ 1,0	
3	2,5÷6	1,5 ÷ 2,5	
4		2,5 ÷ 6	

Form of crimping on wire.

SK 1, SK 2N Hand press

Press for:
- angle terminals (MK)

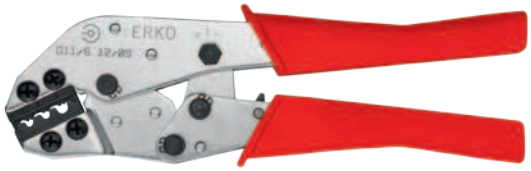
Wire cross section of 0,5 ÷ 2,5 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

Crimping dies included.
NOTE: use only for terminals made according to DIN 46346-B
Length: 200 mm; Weight: 450 g

Hand press	Wire cross section [mm²]	Form of crimping
SK 1	0,5 ÷ 1,0	
SK 2N	1,5÷2,5	

Form of crimping on wire.

D 11-6 Hand press



Press for:
- tubular connectors without insulation (KLD)

Wire cross section of 1,5 ÷ 6 mm².
Features:
- ratcheting mechanism enables easy crimping using minimum force
- an eccentric for adjusting clamping force

Crimping dies included.
Length: 210 mm; Weight: 550 g

Socet no.	Cross section [mm²]	Form of crimping
1	1,5 ÷ 2,5	
2	4	
3	6	

Form of crimping on wire.

PRJ 468 Hand press

Press for:
- RJ45 (8P8C), RJ12 (6P6C), RJ11 (4P4C)

Features:
- use with modular plug RJ45, RJ12 and RJ11
- for cutting and crimping flat and round cables
- built-in locking mechanism ensures pressure control
- two-component grips prevents hand slipping

Length: 185 mm; Weight: 750 g

PR 50, PR 50D Hand press

Press for terminals and connectors:
- Cu tubular made outside DIN standard (KCS, KLA, KLR, KLS, KLB)
- Cu tubular made according to DIN standard (KLN, KCL, KCR, KC)

Wire cross section of 6 ÷ 50 mm².
- equipped with rotatable dies US1 or US1-D

Crimping dies included.
Length: 390 mm; Weight: 1,7 kg

Type of die	Terminals and connectors	Description	Form of crimping
US1		For Cu terminals and connectors made outside DIN standard (e.g. KCS) of 6÷50 mm². Mark on die indicates Cu wire cross-section.	
US1-D		For Cu terminals and connectors made according to DIN standard (e.g. KCR) of 6÷50 mm². Discriminant on die indicates approximate outer diameter of terminal in mm.	

PR 120, PR 120D, PR 150, PR 150D Hand press

Press for terminals and connectors:
- Cu tubular made outside DIN standard (KCS, KLA, KLR, KLS, KLB)
- Cu tubular made according to DIN standard (KLN, KCL, KCR, KC)

Wire cross section of 10 ÷ 150 mm².
- equipped with rotatable dies US2, US2-D, US3 or US3-D

Crimping dies included.
Length: 650 mm; Weight: 4,3 kg

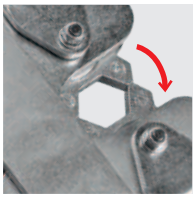
Type of die	Terminals and connectors	Description	Form of crimping
US2		For Cu terminals and connectors made outside DIN standard (e.g. KCS) of 25 ÷ 150 mm². Marks on dies indicate Cu wire cross-section.	
US2-D		For Cu terminals and connectors made according to DIN standard (e.g. KCR) of 25 ÷ 150 mm². Discriminants on dies indicate approximate outer diameter of terminal in mm.	
US3		For Cu terminals and connectors made outside DIN standard (e.g. KCS) of 10 ÷ 120 mm². Marks on dies indicate Cu wire cross-section.	
US3-D		For Cu terminals and connectors made according to DIN standard (e.g. KCR) of 10 ÷ 120 mm². Discriminants on dies indicate approximate outer diameter of terminal in mm.	

PR 95A Hand press

Press for terminals and connectors:
- Al tubular made outside DIN standard (ARC, ALC)
- Al tubular made according to DIN standard (AR)

Wire cross section of 16 ÷ 95 mm².
- equipped with rotatable dies US4

Crimping dies included.
Length: 650 mm; Weight: 4,3 kg



Type of die	Terminals and connectors	Description	Form of crimping
US4		For Al terminals and connectors of 16 ÷ 95 mm². Discriminants on dies indicate approximate outer diameter of terminal in mm.	

Discriminant	Terminals - cross-section [mm²]		
	DIN Al tubular	ARC, ALC Thin-walled Al tubular	ARG, ALG Thick-walled Al tubular
10	–	25	–
12	16; 25	35	16
14	35	50	25
16	50	70	35
18	70	95	50
22	95	–	–

PK 95 Crimper

Crimper for AL and AFL overhead line connectors (SK dies).
Cross section of 16 ÷ 95 mm².
- crimping dies (need to be ordered separately)

Length: 650 mm; Weight: 3,9 kg

Form of crimping.

Type of die		AL connectors cross section	AFL connectors cross section
	SK 16	16	–
	SK 25	25	16
	SK 35	35	25
	SK 50	50	35
	SK 70	70	50
	SK 95	95	70

R 50 Hand press

Press for terminals and connectors:
- without insulation (except cable end-sleeves) (SA dies) of 10 ÷ 50 mm²
- with insulation (except cable end-sleeves) (SE dies) of 10 ÷ 50 mm²
- cable end-sleeves with and without insulation (ST dies) of 25 ÷ 120 mm²
- Cu tubular on cable conductors (SD dies) of 6 ÷ 50 mm²
- Al tubular on cable conductors (SD dies) of 16 ÷ 50 mm²

Crimping dies need to be ordered separately.
Length: 575 mm; Weight: 2,7 kg

Type of die	Terminals and connectors	Description	Form of crimping
SA		For Cu ring terminals without insulation of 10 ÷ 50 mm².	
SE		For Cu terminals and connectors with insulation (except cable end-sleeves) of 10 ÷ 50 mm².	
ST		For Cu cable end-sleeves with and without insulation of 25 ÷ 120 mm².	

Type of die	Terminals and connectors	Description	Form of crimping
SD		For Cu tubular terminals and connectors of 6÷50 mm². For Al tubular terminals and connectors of 16÷50 mm².	

Type of die	Discriminant	Terminals – cross section [mm²] DIN Cu tubular	Others Cu tubular	DIN Al tubular	ARC, ALC Thin-walled Al tubular	ARG, ALG, AFG Thick-walled Al tubular
SD	6	10	6			
	7		10			
	8	16	16			
	9				16	
	10	25	25		25	
	12	35	35	16;25	35	16
	14	50	50	35	50	25

PR 240 Hand press

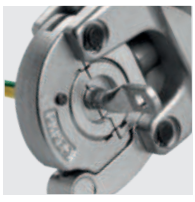
Press for:
- ring terminals without insulation (OA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (OE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (OT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (OS dies) of 6 ÷ 185 mm²
- Al tubular terminals and connectors on cable conductors (OS dies) of 16 ÷ 240 mm²

Designed for electrical works of low and average intensity.
Crimping dies (need to be ordered separately) – see chart on page 24.
Length: 750 mm; Weight: 5,2 kg

PRZ 240 Hand press

Press for:
- ring terminals without insulation (ZA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (ZE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (ZT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (ZS dies) of 6 ÷ 185 mm²
- Al tubular terminals and connectors on cable conductors (ZS dies) of 16 ÷ 240 mm²

Designed for electrical works of low and average intensity.
Crimping dies (need to be ordered separately) – see chart on page 24.
Length: 751 mm; Weight (without dies): 5,2 kg



HR 100-U Hydraulic hand press

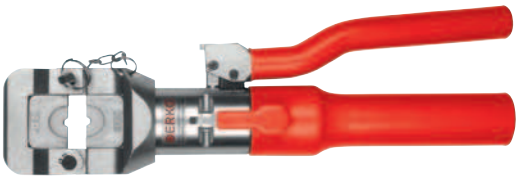
Hydraulic hand press for:
- ring terminals without insulation (UA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (UE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (UT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (USM dies) of 6 ÷ 120 mm²
- Al tubular terminals and connectors on cable conductors (USM dies) of 16 ÷ 120 mm²
- round forming Al sector conductors (UF dies) of 16 ÷ 120 mm²

Designed for electrical works of average intensity.
Crimping dies (need to be ordered separately) – see chart on page 25.
Length: 375 mm; Weight: 3,4 kg; Force: 47 kN

HR 300 Hydraulic hand press

Hydraulic hand press for:
- ring terminals without insulation (OA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (OE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (OT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (OS dies) of 6 ÷ 300 mm²
- Al tubular terminals and connectors on cable conductors (OS dies) of 16 ÷ 300 mm²
- round forming Al sector conductors (OF dies) of 16 ÷ 240 mm²
- flat forming Al sector conductors (OR dies) of 25 ÷ 120 mm²
- hole punching in Al sector conductors previously flat formed (OK dies)

Designed for electrical works of average intensity.
Equipped with rotatable head. Efficient work – 2 hydraulic circuits.
Fast access (low pressure); working (high pressure).
Crimping dies (need to be ordered separately) – see chart on page 24.
Length: 415 mm; Weight: 4,2 kg; Force: 98 kN



HRZ 300 Hydraulic hand press

Hydraulic hand press for:
- ring terminals without insulation (ZA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (ZE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (ZT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (ZS dies) of 6 ÷ 300 mm²
- Al tubular terminals and connectors on cable conductors (ZS dies) of 16 ÷ 240 mm²
- round forming Al sector conductors (ZF dies) of 16 ÷ 240 mm²
- flip top, rotatable by 180° head

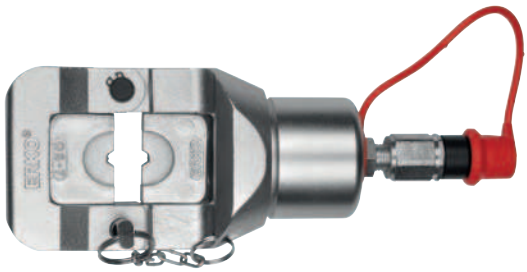
Designed for electrical works of average intensity.
Crimping dies (need to be ordered separately) – see chart on page 24.
Weight (without dies): 4,5 kg; Force: 66,6 kN

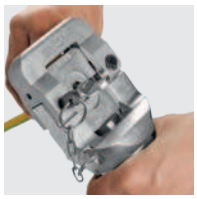
GU 120 Hydraulic head

Hydraulic head for:
- ring terminals without insulation (UA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (UE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (UT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (USM dies) of 6÷120 mm²
- Al tubular terminals and connectors on cable conductors (USM dies) of 16 ÷ 120 mm²
- round forming Al sector conductors (UF dies) of 16 ÷ 120 mm²

Designed for electrical works of high intensity.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Crimping dies (need to be ordered separately) – see chart on page 25.
Length: 205 mm; Weight (without dies): 1,85 kg; Force: 80 kN
Working pressure: 630 bar

GO 300 Hydraulic head

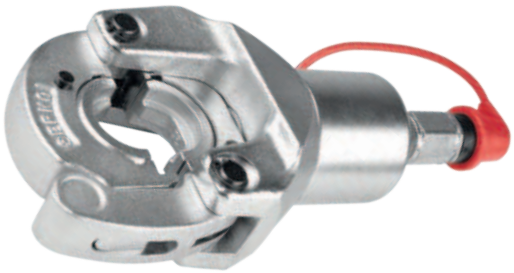




Hydraulic head for:
- ring terminals without insulation (OA dies) of 10÷120 mm²
- ring terminals with insulation (OE dies) of 10÷120 mm²
- cable end-sleeves with and without insulation (OT dies) of 25÷185 mm²
- Cu tubular terminals and connectors on cable conductors (OS dies) of 6÷300 mm²
- Al tubular terminals and connectors on cable conductors (OS dies) of 16 ÷ 300 mm²
- round forming Al sector conductors (OF dies) of 16÷240 mm²
- flat forming Al sector conductors (OR dies) of 25 ÷120 mm²
- hole punching in banding steel (OK dies)

Designed for electrical works of average intensity.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Crimping dies (need to be ordered separately) – see chart on page 24.
Length: 250 mm; Weight (without dies): 2,5 kg; Force: 98 kN
Working pressure: 630 bar
Head mounting handle on request.

GZ 300 Hydraulic head



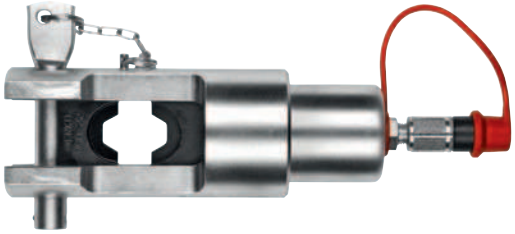
Hydraulic head for:
- ring terminals without insulation (ZA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (ZE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (ZT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (ZS dies) of 6 ÷ 300 mm²
- Al tubular terminals and connectors on cable conductors (ZS dies) of 16 ÷ 240 mm²
- round forming Al sector conductors (ZF dies) of 16 ÷ 240 mm²

Designed for electrical works of high intensity.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Crimping dies (need to be ordered separately) – see chart on page 24.
Weight (without dies): 2,6 kg; Force: 79,2 kN;
Pressure: 630 bar

GU 300 Hydraulic head

Hydraulic head for:
- Cu tubular terminals and connectors on cable conductors (USD dies) of 6÷300 mm²
- Al tubular terminals and connectors on cable conductors (USD dies) of 16÷300 mm²
- round forming Al sector conductors (UDF dies) of 16 ÷ 240 mm²
- flat forming Al sector conductors (UR dies) of 25 ÷ 120 mm²
- hole punching in banding steel (UK dies)

Designed for electrical works of high intensity.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Crimping dies (need to be ordered separately) – see chart on page 25.
Length: 280 mm; Weight (without dies): 3,9 kg; Force: 112 kN
Working pressure: 630 bar



GU 625 Hydraulic head

Hydraulic head for:
- Cu and Al tubular terminals and connectors on cable conductors (UX dies) of 300 ÷ 625 mm²

Designed for electrical works of high intensity.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Maximum outer diameter of terminal (connector): Ø 52 mm.
Crimping dies (need to be ordered separately) – see chart on page 25.
Length: 340 mm; Weight (without dies): 9,5 kg; Force: 190 kN
Working pressure: 630 bar

EPZ 120 Battery powered hydraulic press

Battery powered hydraulic press for:
- Cu tubular terminals and connectors on cable conductors (ZSM dies) of 6 ÷ 120 mm²
- Al tubular terminals and connectors acc. to DIN standard, on cable conductors (ZSM dies) of 16 ÷ 70 mm²
- Al tubular terminals and connectors outside DIN standard, on cable conductors (ZSM dies) of 16 ÷ 120 mm²

Special features:
- automatic off switch ending operation cycle after a proper crimping is complete
- shape ideally designed to work with one hand
- improper crimping signalling
- efficient lithium-ion battery
- automatic pressure control
- flip top, rotatable by 330° head
- 2 batteries provided with set

Crimping dies (need to be ordered separately) – see chart on page 25
Weight: 2,9 kg; Force: 32 kN



EPZC 300 Battery powered hydraulic press

Battery powered hydraulic press with flip top head for:
- ring terminals without insulation (ZA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (ZE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (ZT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (ZSC dies) of 6 ÷ 300 mm²
- Al tubular terminals and connectors on cable conductors (ZSC dies) of 16 ÷ 240 mm²
- round forming Al sector conductors (ZF dies) of 16 ÷ 240 mm²

Special features:
- automatic off switch ending operation cycle after crimping
- improper crimping signalling
- efficient lithium-ion battery
- automatic pressure control
- flip top, rotatable by 330° head
- casing providing insulation against electric shock is made entirely of glass-fiber reinforced polyamide
- piston rod return is controlled by a control valve
- the device is controlled by microcontroller
- 2 batteries provided with set

Crimping dies (need to be ordered separately) - see chart on page 24
NOTE: for copper terminals over 120 mm² use ZSC crimping dies
Weight: 3,8 kg (with battery); Force: 50 kN

EPZ 300N Battery powered hydraulic press


Battery powered hydraulic press for:
- ring terminals without insulation (ZA dies) of 10 ÷ 120 mm²
- ring terminals with insulation (ZE dies) of 10 ÷ 120 mm²
- cable end-sleeves with and without insulation (ZT dies) of 25 ÷ 185 mm²
- Cu tubular terminals and connectors on cable conductors (ZS dies) of 6 ÷ 300 mm²
- Al tubular terminals and connectors on cable conductors (ZS dies) of 16 ÷ 240 mm²
- round forming Al sector conductors (ZF dies) of 16 ÷ 240 mm²

Special features:
- efficient lithium-ion battery
- crimping cycle of 3-6 seconds
- automatic retraction after crimping is complete
- flip top, rotatable by 360° head
- battery level indicator
- 2 batteries provided with set

Crimping dies (need to be ordered separately) – see chart on page 24
Weight: 4,2 kg (with battery); Force: 67kN

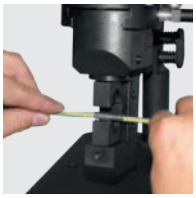
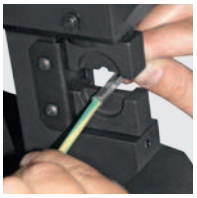
PP 8 Pneumatic press

Pneumatic press for:
- ring, spade, pin tubular terminals, receptacles and tabs without insulation
- ring, spade, pin tubular terminals, receptacles and tabs with insulation
- cable end-sleeves without insulation
- cable end-sleeves with insulation

Wire cross section of 0,5 ÷ 25 mm², cable end sleeves up to 50 mm²
- works with PPH 11, PPH 12 and PPH 13 heads
- cutting Cu multistrand wires with PVC insulation up to 25 mm² (PPH 13 head)
- optionally equipped with SP1 crimps control system
- speed of 50 cycles/min (efficiency due to operator)

Crimping dies (need to be ordered separately) – see chart on page 26
Power: compressed air 0,6 ÷ 0,8 MPa



PP 19 Pneumatic press

Pneumatic press for:
- ring, spade, pin tubular terminals, receptacles and tabs without insulation
- ring, spade, pin tubular terminals, receptacles and tabs with insulation

Wire cross section of 0,5 ÷ 25 mm², (cable end sleeves up to 50 mm²).
- works with PPH 11, PPH 12 and PPH 13 heads
- cutting Cu multistrand wires with PVC insulation up to 25 mm² (PPH 13 head)
- optionally equipped with SP1 crimps control system
- speed of 25 cycles/min (efficiency due to operator)

Crimping dies (need to be ordered separately) – see chart on page 26
Power: compressed air 0,6 ÷ 0,8 MPa

SP 1 Steering system

Steering system for PP 8 and PP 19 pneumatic presses for control of crimping cycle accuracy.
Electrical power: 230V AC
Power: compressed air 0,5 ÷ 1,0 MPa
Steering: 24V DC (electric pedal)

Crimping dies for PR 240, HR 300 presses and GO 300 head

Type of die	Terminals and Connectors	Description	Form of crimping
OA		For Cu ring terminals without insulation of 10 ÷ 120 mm².	
OE		For Cu terminals and connectors with insulation of 10 ÷ 120 mm².	
OT		For Cu cable end-sleeves with and without insulation of 25 ÷ 185 mm².	
OF		Round forming Al sector conductors of 16 ÷ 120 mm².	

Type of die	Description
OR	For end forming Al sector conductors without use of terminals. Flat forms conductors of 25 ÷ 120 mm². After flat forming, a hole should be punched using OK dies.
OK	For end forming Al sector conductors without use of terminals. Punches holes in previously flat formed, with OR dies, conductors, also punches holes in banding steel. • cross section of reformed Al conductors: 25 ÷ 120 mm² • max. dimensions of banding steel: 5x30 mm • standard dies: OK 8,5 – Ø 8,5 mm OK 10,5 – Ø 10,5 mm OK 12,5 – Ø 12,5 mm Dies of different diameters from Ø 8,5 mm to Ø 12,5 mm on request.

Type of die	Terminals and Connectors	Description	Form of crimping
OS		For Cu tubular terminals and connectors of 6 ÷ 300 mm². For Al tubular terminals and connectors of 16 ÷ 300 mm².	

Type of die	Discriminant	Terminals – cross section [mm²] DIN Cu tubular	Others Cu tubular	DIN Al tubular	ARC, ALC Thin-walled Al tubular	ARG, ALG, AFG Thick-walled Al tubular
OS	6	10	6			
	7		10			
	8	16	16			
	9				16	
	10	25	25		25	
	12	35	35	16;25	35	16
	14	50	50	35	50	25
	16	70	70	50	70	35
	18	95	95	70	95	50
	19		120			
	20	120			120	70
	22	150	150	95; 120	150	95
	23		185		185	
	25	185	240	150		120
	28	240		185	240	150
	30		300			185
	32	300		240		
	34			300		240

OS_K8 basic set for the terminals according to DIN - 13 sizes
OS_K-K7 expanded set - 18 sizes

Crimping dies for PRZ 240, HRZ 300, EPZ 300N , EPZC 300 presses and GZ 300 head

Type of die	Terminals and Conectors	Description	Form of crimping
ZA		For Cu ring terminals without insulation of 10 ÷ 120 mm².	
ZE		For Cu terminals and connectors with insulation of 10 ÷ 120 mm².	
ZT		For Cu cable end-sleeves with and without insulation of 25 ÷ 185 mm².	
ZF		Round forming Al sector conductors of 16 ÷ 240 mm².	
ZS		For Cu tubular terminals and connectors of 6 ÷ 300 mm². For Al tubular terminals and connectors of 16 ÷ 240 mm².	

Type of die	Discriminant	Terminals – cross section [mm²] DIN Cu tubular	Others Cu tubular	DIN Al tubular	ARC, ALC Thin-walled Al tubular	ARG, ALG, AFG Thick-walled Al tubular
ZS	6	10	6			
	7		10			
	8	16	16			
	9				16	
	10	25	25		25	
	12	35	35	16;25	35	16
	14	50	50	35	50	25
	16	70	70	50	70	35
	18	95	95	70	95	50
	19		120			
	20	120			120	70
	22	150	150	95;120	150	95
	23		185		185	
	25	185	240	150		120
	28	240		185	240	150
	30		300			185
	32	300		240		

Crimping width of the ZS die for copper and aluminum 7 mm.
Basic set ZS_K8 for the terminals according to DIN - 12 sizes
Full set ZS_K-K7 - 17 sizes

ZSC only for EPZC		For Cu tubular terminals and connectors of 6 ÷ 300 mm². For Al tubular terminals and connectors of 16 ÷ 240 mm².

ZSC dies only for battery powered hydraulic press EPZC, for copper tubular terminals and connectors ≥ 120mm².

	Discriminant from 6 to 19 as in the chart above, from discriminant 20 the chart below					
ZSC only for EPZC	20	120			120	70
	22	150	150	95;120	150	95
	23		185		185	
	25	185	240	150		120
	28	240		185	240	150
	30		300			185
	32	300		240		

Crimping width of the ZSC die for copper 5 mm
Basic set ZSC_K7 for the terminals according to DIN - 17 sizes
Full set ZSC_K-K14 - 24 sizes

Crimping dies for HR 100-U press and GU 120 hydraulic head

Type of die	Terminals and Connectors	Description	Form of crimping
UA		For Cu ring terminals without insulation of 10 ÷ 120 mm².	
UE		For Cu terminals and connectors with insulation of 10 ÷ 120 mm².	
UT		For Cu cable end-sleeves with and without insulation of 25 ÷ 185 mm².	
UF		Round forming Al sector conductors of 16 ÷ 120 mm².	

Type of die	Terminals and Connectors	Description	Form of crimping
USM		For Cu tubular terminals and connectors of 6 ÷ 120 mm². For Al tubular terminals and connectors of 16 ÷ 120 mm².	

Type of die	Discriminant	Terminals – cross section [mm²]				
		DIN Cu tubular	Others Cu tubular	DIN Al tubular	ARC, ALC Thin-walled Al tubular	ARG, ALG, AFG Thick-walled Al tubular
USM	6	10	6			
	7		10			
	8	16	16			
	9				16	
	10	25	25		25	
	12	35	35	16;25	35	16
	14	50	50	35	50	25
	16	70	70	50	70	35
	18	95	95	70	95	50
	19		120			
	20	120			120	70

USM_K8 basic set for the terminals according to DIN - 8 sizes
USM_K-K8 expanded set - 11 sizes

Crimping dies for GU 300 head

Type of die	Terminals and Connectors	Description	Form of crimping
UDF		For round forming Al sector conductors of 16 ÷ 240 mm².	
UR		For end forming Al sector conductors without use of terminals. Flat forms conductors of 25÷120 mm². After flat forming, a hole should be punched using UK dies.	
UK		For end forming Al sector conductors without use of terminals. Punches holes in previously flat formed, with UR dies, conductors, also punches holes in banding steel. • cross section of reformed Al conductors: 25 ÷ 120 mm² • max. dimensions of banding steel: 5x30 mm • standard dies: UK 8,5 – Ø 8,5 mm UK 10,5 – Ø 10,5 mm UK 12,5 – Ø 12,5 mm Dies of different diameters up to Ø 12,5 mm on request.	

Type of die	Terminals and Connectors	Description	Form of crimping
USD		For Cu tubular terminals and connectors of 6 ÷ 300 mm². For Al tubular terminals and connectors of 16 ÷ 300 mm².	

Type of die	Discriminant	Terminals – cross section [mm²]				
		DIN Cu tubular	Others Cu tubular	DIN Al tubular	ARC, ALC Thin-walled Al tubular	ARG, ALG, AFG Thick-walled Al tubular
USD	6	10	6			
	7		10			
	8	16	16			
	9				16	
	10	25	25		25	
	12	35	35	16;25	35	16
	14	50	50	35	50	25
	16	70	70	50	70	35
	18	95	95	70	95	50
	19		120			
	20	120			120	70
	22	150	150	95; 120	150	95
	23		185		185	
	25	185	240	150		120
	28	240		185	240	150
	30		300			185
	32	300		240		
	34			300		240

USD_K7 basic set for the terminals according to DIN - 13 sizes
USD_K-K17 expanded set - 18 sizes

Crimping dies for GU 625 head

Type of die	Terminals and Connectors	Description	Form of crimping
UX		For tubular terminals and connectors of outer diameters up to 52 mm. Due to different wall thickness of terminals for given cable cross section (e.g. made according to DIN or PN norm) dies are marked with a discriminant. Its value reflects outer diameter of terminal in mm.	

Dies discriminant - outer terminal diameter [mm]	Examples of terminals
32	KCR 300
34	KCS 400
38	KCR 400
42	KCR 500
44	KCR 625
52	AR 625

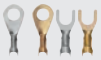
Crimping dies for EPZ 120 battery powered press

Type of die	Type of terminal	Description	Form of crimping
ZSM		For Cu tubular terminals and connectors of 6 ÷ 120 mm². For Al tubular terminals and connectors of 16 ÷ 120 mm².	

Type of die	Discriminant	Terminals – cross section [mm²] DIN Cu tubular	Others Cu tubular	DIN Al tubular	ARC, ALC Thin-walled Al tubular	ARG, ALG, AFG Thick-walled Al tubular
ZSM	6	10	6			
	7		10			
	8	16	16			
	9				16	
	10	25	25		25	
	12	35	35	16;25	35	16
	14	50	50	35	50	25
	16	70	70	50	70	35
	18	95	95	70	95	50
	19		120			
	20	120			120	70
	22			95; 120		95

Basic set ZSM_K8 for the terminals according to DIN - 9 sizes
Full set ZSM_K-K8 - 12 sizes

Heads for pneumatic presses PP 8, PP 19

Head type	Type of die	Terminals and connectors	Cross section [mm²]	Form of crimping
 PPH 11 equipped with dies according to customer's order (not recomended for PP 19)	E 11-6-MZ		1 ÷ 6	
	A 11-6-MZ		1 ÷ 6	
	S 11-6-PP-8		0,75 ÷ 6	
	T 22-6-R11-MZ		0,5 ÷ 6	
	T 11-16 MZ		6, 10, 16	
	T 25-35-MZ		25 i 35	
	T 50-MZ		50	
	S 44-2-MZ		0,5 ÷ 2,5	

Head type	Type of die	Terminals and connectors	Cross section [mm²]	Form of crimping
 PPH 12 equipped with dies according to customer's order	SA		10 ÷ 25	
	SE		10 ÷ 25	
	ST		25 ÷ 50	
	SD		10 ÷ 25	

Head type	Description
 PPH 13	Cutting range up to 25 mm² of Cu multistrand wires.

CUTTING TOOLS

RC 5 Cable shears

≙1000 V

Shears for cutting:
- Al and Cu single- and multistrand cables, outer diameter up to 5 mm
- steel cable, diameter up to 5 mm

Features:
- shaped blades for easy cutting
- lever optimizes the force required to cut

NOTE: ability to work under voltage up to 1000V
Length: 200 mm; Weight: 290 g

RC 13 Cable shears

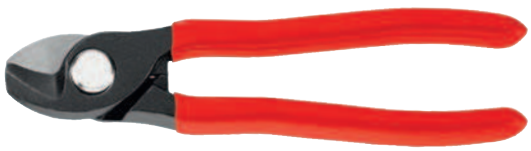
≙1000 V

Shears for cutting:
- Al and Cu single- and multistrand cables
- outer diameter up to 13 mm
- cross section up to 60 mm^2

Features:
- blades made of special hardened steel that ensures long tool life
- easy cutting with minimal force

NOTE: ability to work under voltage up to 1000V
Length: 240 mm; Weight: 500 g

RC 15 Cable shears



Shears for cutting and stripping:
- Al and Cu single- and multistrand cables
- outer diameter up to 15 mm
- cross section up to 50 mm^2

Special features:
- blades made of quality forged tool steel
- cutting without cable crushing or deformation

NOTE: do not use for steel reinforced, iron sheath reinforced or hard drawn copper wires.
Length: 170 mm; Weight: 210 g

RC 15 S Cable shears with spring

Shears for cutting and stripping:
- Al and Cu single- and multistrand cables
- outer diameter up to 15 mm
- cross section up to 50 mm^2

Special features:
- blades made of quality forged tool steel
- special blades profile enables one-handed cutting
- cutting without cable crushing or deformation

NOTE: do not use for steel reinforced, iron sheath reinforced or hard drawn copper wires
Length: 170 mm; Weight: 210 g

RC 20 Cable shears

Shears for cutting and stripping:
- Al and Cu single- and multistrand cables
- outer diameter up to 20 mm
- cross section up to 70 mm²

Special features:
- blades made of quality forged tool steel
- twin blades for easier cutting of thick cables
- initial cut in outer cutting area, final cut in inner cutting area

NOTE: do not use for steel reinforced, iron sheath reinforced or hard drawn copper wires
Length: 200 mm; Weight: 340 g

RC 27 Cable shears

Shears for cutting and stripping:
- Al and Cu single- and multistrand cables
- outer diameter up to 27 mm
- cross section up to 150 mm²

Special features:
- low handforce required due to optimised blades geometry
- handles made of special aluminum tube

NOTE: do not use for steel reinforced or iron sheath reinforced wires.
Length: 500 mm; Weight: 1,1 kg

RCO 32 Cable shears

Shears for cutting:
- Al and Cu single- and multistrand cables
- outer diameter up to 32 mm
- cross section up to 300 mm²

Features:
- ratcheting mechanism enables cutting wires with different diameter, minimizes force needed to cut the cable

NOTE: do not use for steel cable
Length: 260 mm; Weight: 600 g

RC 38 Cable shears

Shears for cutting:
- Al and Cu single- and multistrand cables
- outer diameter of 28 ÷ 38 mm
- cross section up to 280 mm²

Features:
- adjustable angle of the arm enables optimal width handle adjustment, especially perfect to work in tight spaces
- optimised blades geometry ensures high quality cutting
- telescopic aluminum handles of lenght 550 ÷ 700 mm
- ratcheting mechanism

NOTE: do not use for steel wires
Weight: 1,98 kg

RC 54 Cable shears

Shears for cutting:
- Al and Cu single- and multistrand cables
- outer diameters up to 54 mm
- cross section of 480 mm^2

Features:
- ratcheting mechanism enables cutting wires with different diameter, minimizes force needed to cut the cable

NOTE: do not use for cutting steel cables
Length: 310 mm; Weight: 800 g

RC 54S Cable shears

Shears for cutting:
- AL reinforced steel cables, outer diameter up to 25 mm
- Al and Cu single- and multistrand cables, outer diameters up to 32 mm
- cross section of 477 mm^2

Features:
- ratcheting mechanism enables cutting wires with different diameters, minimizes force needed to cut the cable
- replaceable blades made of special hardened tool steel with high strength

NOTE: can be used for cutting steel cables of diameter up to 9,5 mm
Length: 350 mm; Weight: 1,2 kg

RC 100T Cable shears

Shears for cutting:
- Al and Cu single- and multistrand cables
- outer diameter up to 100 mm
- cross section of 2x400 mm^2

Features:
- telescopic aluminum handles of lenght 685 ÷ 875 mm
- ratcheting mechanism enables cutting wires with different diameters, minimizes force needed to cut the cable
- blades made of special hardened tool steel with high strength

NOTE: do not use for cutting steel cables
Weight: 6,2 kg

EGC 45 Battery powered shears

Battery powered hydraulic shears for cutting wires:
- AL and CU cables
- outer diameter up to 45 mm
- reinforced wires (included AFL) or steel tape, max diameter up to 30 mm

Special features:
- automatic off switch ending operation cycle after proper cutting
- improper cutting signalling
- efficient lithium-ion battery
- automatic pressure control
- rotatable by 330° head

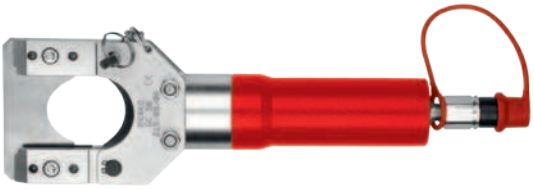
Weight: 5 kg; Force: 50 kN

GC 50 Hydraulic head

Hydraulic cutting head for:
- Al and Cu cables
- outer diameter up to 50 mm
- in case of steel reinforced wires (including AFL) or steel tape, maximum diameter is 30 mm

Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Length: 355 mm; Weight: 3,4 kg; Force: 80 kN

Example of a cut.



GC 100 Hydraulic head

Hydraulic cutting head for:
- Al and Cu cables
- outer diameter up to 96 mm

NOTE: do not use for steel reinforced wires.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Length: 455 mm; Weight: 7,0 kg; Force: 80 kN

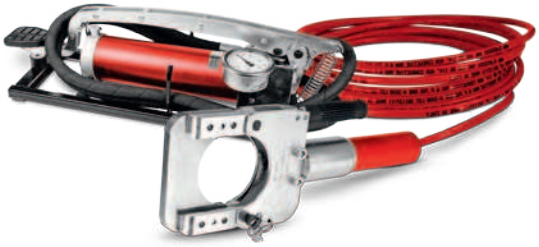
Example of a cut.

GCO 100 open hydraulic head

Hydraulic cutting head for:
- Al and Cu cables
- outer diameter up to 100 mm

NOTE: do not use for steel reinforced wires (including AFL) or steel tape and other materials not intended for use.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Length: 603 mm; Weight: 10 kg

GC 50-H800-E, GC 100-H800-E Safety cable cutting set



Safety hydraulic cable cutting set for Al and Cu cables, when the voltage is impossible to determine. Equipped with hydraulic head, pump with manometer and automatic retraction, earthing wire, hydraulic hose (10 m). Maximum nominal tension – 60 kV.

Technical data:
GC 50-H800-E
Maximum cable diameter - 50 mm, cables with or without iron sheath reinforcement. In case of steel reinforced wires, maximum diameter is 30 mm.
Pump weight: 8,4 kg; Head weight: 3,6 kg; Force: 80 kN

GC 100-H 800-E
Maximum cable diameter - 96 mm, cables with or without iron sheath reinforcement.
NOTE: do not use for steel reinforced wires.
Pump weight: 8,4 kg; Head weight: 7 kg; Force: 80 kN

The sets are attested, which is obligatory for them to be used by electricity distribution companies, power stations and factories as well as other companies producing, transmitting or using electricity.

ELECTRICIANS TOOLS

SUN 160 Universal pliers

≙1000 V

Pliers for fitting works and cutting hard and very hard wire:
- medium hard wire diameter – 2,5 mm
- hard wire diameter – 1,8 mm
- Al and Cu cable diameter – 10,0 mm
- Al and Cu cable cross section – 16,0 mm^2

Special features:
- blade hardness ca. 60 HRc
- material: chromium-vanadium steel
- long term use even for intensive work
- non-sparking, anti-slip, two-component insulated grips with elastomer insert

NOTE: ability to work under voltage up to 1000V.
Length: 160 mm; Weight: 210 g

SUN 180 Universal pliers

≙1000 V

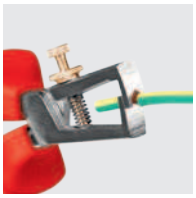
Pliers for fitting works and cutting hard and very hard wire:
- medium hard wire diameter – 2,8 mm
- hard wire diameter – 2,5 mm

Special features:
- blade hardness ca. 60 HRc
- material: chromium-vanadium steel
- long term use even for intensive work
- non-sparking, anti-slip, two-component insulated grips with elastomer insert

NOTE: ability to work under voltage up to 1000V.
Length: 180 mm; Weight: 265 g

SI 10S Pliers

≙1000 V



Pliers for stripping and cutting live wires.
- stripping wires up to 10 mm^2

Special features:
- easy adjustment
- non-sparking, anti-slip, two-component insulated grips with elastomer insert
- drop forged

NOTE: ability to work under voltage up to 1000V.
Length: 160 mm; Weight: 165 g

STS 160 Pliers

≙1000 V

Pliers for soft, medium hard and hard wires.
- soft wire diameter up to 4 mm
- medium hard wire diameter up to 2,8 mm
- hard wire diameter up to 2 mm

Special features:
- blade hardness ca. 60 HRc
- material: chromium-vanadium steel
- long term use even for intensive work
- non-sparking, anti-slip, two-component insulated grips with elastomer insert

NOTE: ability to work under voltage up to 1000V.
Length: 160 mm; Weight: 200 g

STSI 160 Pliers

Pliers for soft wire cutting and stripping:
- soft wire diameter – 2 mm
- stripping diameters – 1,5 mm and 2,5 mm

Special features:
- blade hardness ca. 60 HRc
- material: chromium-vanadium steel
- long term use even for intensive work
- non-sparking, anti-slip, two-component insulated grips with elastomer insert.

NOTE: ability to work under voltage up to 1000V.
Length: 160 mm; Weight: 220 g

1000 V

STL 200 Pliers

Pliers for fitting works and cutting soft and medium hard wire:
- soft wire diameter – 2,8 mm
- medium hard wire diameter – 1,8 mm

Special features:
- blade hardness ca. 60 HRc
- semicircular long jaws
- across serrated contact surfaces
- material: chromium-vanadium steel
- long term use even for intensive work
- non-sparking, anti-slip, two-component insulated grips with elastomer insert

NOTE: ability to work under voltage up to 1000V.
Length: 200 mm; Weight: 190 g

1000 V

STW 160 Angled pliers

Multifunctional long pliers for electric works.
- soft wire diameter – 2,5 mm
- medium hard wire diameter – 1,6 mm

Special features:
- semicircular jaws
- wire cutting
- material: chromium-vanadium steel
- long term use even for intensive work
- non-sparking, anti-slip, two-component insulated grips with elastomer insert

NOTE: ability to work under voltage up to 1000V.
Length: 160 mm; Weight: 145 g

1000 V

SI 6 Insulation stripper

Stripper for stripping and cutting:
- single-, multi-, and thinstrand wires
- with plastic or rubber insulation
- wires cross section of 0,2 ÷ 6 mm^2
- stripping lenght adjusted between 5 ÷ 12 mm
- automatic blade force adjustment
- Cu and Al cable cutter up to 2 mm^2
- stripping blades automatically adjust to cable thickness
- body made of fibreglass reinforced plastic

NOTE: do not use for steel wire.
Length: 200 mm; Weight: 125 g

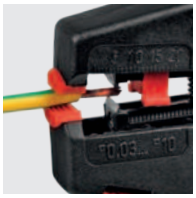
SI 10 Insulation stripper

Stripper for stripping and cutting:
- single-, multi-, and thinstrand wires
- with plastic or rubber insulation
- wires cross section of 0,08 ÷ 10 mm^2
- for flat, one-layer wires with diameter up to 10 mm
- stripping lenght adjusted between 3 ÷ 18 mm
- Cu and Al cable cutter up to 10 mm^2 (singlestrand wires – up to 6 mm^2)

Special features:
- automatic blade force adjustment
- stripping blades automatically adjust to cable thickness
- exchangeable jaws and blades
- body made of fibreglass reinforced plastic

NOTE: do not use for steel wire.
Length: 195 mm; Weight: 210 g





SI 10W Insulation stripper

Insulation stripper selfsetting for cutting and stripping:
- single-, multi-, and thinstrand wires
- with plastic or rubber insulation
- cross section of 0,02 mm ÷ 16 mm^2
  (standard with insert for cable of cross section 0,02 ÷ 10 mm^2, insert for cable of cross section 4 ÷ 16 mm^2 can be ordered separately)
- precision of inserts allows for stripping all kinds of insulation from PVC to PTFE
- ergonomic two-component handles

Length: 191 mm; Weight: 136 g




SI 11 Insulation stripper

Stripper for stripping telephone, audiovisual and fibre-optic cables
- outer diameter 11 mm

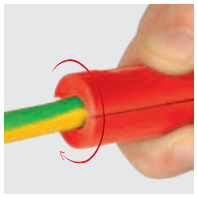
Special features:
- has 9 positions of blade settings, which allows for precision stripping without damage
- easy to use, lightweight and durable

Length: 90,5 mm; Weight: 28 g

SIO 13 Insulation stripper

Stripper for stripping outer insulation:
- cross section of 8 ÷ 13 mm^2

Special features:
- two-piece body made of fibreglass reinforced plastic
- opening spring and lock



SI 28 Multi Insulation stripper

Stripper for stripping all common round wires:
- cross section of 4 ÷ 28 mm^2

Special features:
- removable, adjustable inner blades
- body made of impact-resistant plastic

Length: 145 mm; Weight: 50 g

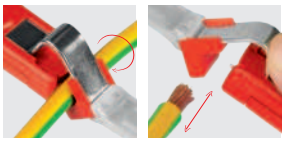
SI 40 Insulation stripper

Stripper for stripping cables with different types of insulation:
- standard with a removable arms for stripping wires (diameter of 4,5 mm ÷ 25 mm and of 25 mm ÷ 40 mm)

Special features:
- equiped with a knife set in three positions
- allows for circular, spiral and longitudinal stripping

Length: 167 mm; Weight: 116 g

NI 28 Cable stripping knife



Knife for stripping all common round wires:
- cross section of 4 ÷ 28 mm²

Special features:
- body made of impact-resistant plastic
- spare blade inside handle

Length: 170 mm; Weight: 80 g

NM 30 Wire stripper knife

1000 V

Fitter knife for stripping insulation with insulated handle

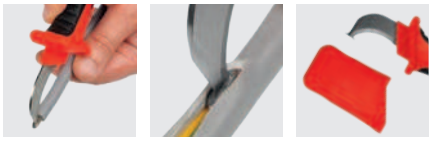
Special features:
- ergonomic two-component handles
- fully insulated blade
- protective cap on blade
- high quality blade made of stainless steel
- length of the blade: 30 mm
- length of the knife: 180 mm

NOTE: ability to work under voltage up to 1000V.

Weight: 100 g

NMZS 50 Wire stripper knife

1000 V

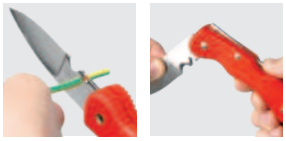


Fitter knife with sickle style blade for wire stripping with ergonomic and two-component handle
- ergonomic two-component handles
- unprotected sickle style blade made of stainless steel facilitates stripping wire
- additional blade on the front part of the knife allows cutting wires in two directions
- protective cap on blade
- length of the blade: 50 mm
- length of the knife: 200 mm

NOTE: ability to work under voltage up to 1000V.

Weight: 100 g

NSE Electrician pocket knife



Knife for stripping and cutting wires

Special features:
- blade made of hardened stainless steel
- It includes two seats for cutting and stripping in the form of a triangle, semicircles
- lock-blade prevents accidental knife folding
- one-component handle fastened by rivets

Length: 195 mm; Weight: 50 g

NSD wooden knife

Folding knife for cutting and stripping wires.

Special features:
- three-component knife (main blade, stripping blade, drilling pin)
- blades made of stainless steel
- wooden handle

Length: 172 mm; Weight: 92 g

WIP Insulated slotted screwdriver

≙1000 V

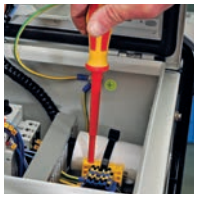
Screwdriver for slotted screws. Shank: black, insulated. Blade: DIN 5264-A, blackened.
Handle: two-component. Standard: DIN EN 60900
NOTE: ability to work under voltage up to 1000V

Symbol	Blade tip Thicknes [mm]	Blade tip Width [mm]	Shank lenght [mm]	Handle lenght [mm]
WIP 2,5-80	0,4	2,5	80	84
WIP 3,5-100	0,6	3,5	100	84
WIP 4,0-100	0,8	4,0	100	84
WIP 5,5-125	1,0	5,5	125	98
WIP 6,5-150	1,2	6,5	150	98
WIP 8,0-175	1,2	8,0	175	108

WIK Insulated cross tip screwdriver

≙1000 V
PH Phillips PZ Pozidriv

Screwdriver for Philips/Pozidriv cross head screws. Shank: black, insulated.
Blade: DIN 5264-PH/PZ, ISO 8764-PH/PZ, blackened.
Handle: two-component. Standard: DIN EN 60900
NOTE: ability to work under voltage up to 1000V

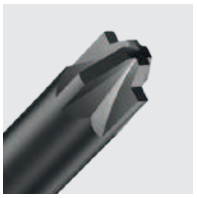


Symbol	Blade tip [mm]	Shank lenght [mm]	Handle lenght [mm]
WIK PH1-80	PH1	80	84
WIK PH2-100	PH2	100	98
WIK PZ1-80	PZ1	80	84
WIK PZ2-100	PZ2	100	98

WIPK Insulated slotted-cross tip screwdriver

≙1000 V

Insulated slotted-cross tip screwdriver for slotted-cross head screws.
Shank: black, insulated, handle: two-component.
NOTE: ability to work under voltage up to 1000V



Symbol	Blade tip [mm]	Shank lenght [mm]	Handle lenght [mm]
WIPK 80	PZ / FL	80	110
WIPK 100	PZ / FL	100	114

Screwdrivers sets

≙1000 V

WIPPH_K

The set contains of 6 screwdrivers:
4 WIP slotted screwdrivers and 2 PH Phillips cross tip screwdrivers
WIP 2,5-80 Insulated slotted screwdriver
WIP 3,5-100 Insulated slotted screwdriver
WIP 4,0-100 Insulated slotted screwdriver
WIP 5.5-125 Insulated slotted screwdriver
WIK PH1-80 Cross tip insulated screwdriver PH
WIK PH2-100 Cross tip insulated screwdriver PH

WIPPZ_K

This set contains 6 screwdrivers:
4 WIP slotted screwdrivers and 2 PZ Pozidriv cross tip screwdrivers
WIP 2,5-80 Insulated slotted screwdriver
WIP 3,5-100 Insulated slotted screwdriver
WIP 4,0-100 Insulated slotted screwdriver
WIP 5.5-125 Insulated slotted screwdriver
WIK PZ1-80 Cross tip insulated screwdriver PZ
WIK PZ2-100 Cross tip insulated screwdriver PZ

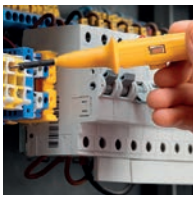
LT 75, LT 100W Transformer soldering iron

Transformer soldering iron to connect metal parts with durable tip.
- doesn't cause hand fatigue due to the appropriate location of the center of gravity
- rated voltage: 230V ~ 50Hz
- power: 75W, 100W
- tip temperature: 400°
- copper wire tip Ø 1,5 mm
- tip lighting: lamp 12V / 2W
- Weight: 700 g

type of iron soldering	rated voltage	power	tip temperature	coper wire tip Ø	light	weight [kg]
LT 75	230V ~ 50Hz	75 W	400°C	1,5	12V / 2W	0,7
LT 100	230V ~ 50Hz	100W	400°C	1,8	12V / 2W	0,72

EF 767, EF 777 Unipolar multi-function electrical tester

EF 767 EF 777



EF767 Unipolar multi-function electrical testers intended for perfoming basic test of 230V/380V electric installations, car installations and checking operations of electrical devices.

EF 767
- detection of phase/zero of alternating voltage max 500V
- testing the continuity of conduction approx 1M
- detection of direct voltage max 60V

Application:
- 230V/380V installation:
- detection of direct voltage max 60V
- breaks/ shortings detection, testing of fuses and light bulbs
- verification of earthing
- detection of wires in a group of conductors
- allows to repair christmas lights without removing light bulbs

DC installation:
- detection of DC voltage, breaks and shortings
- pole identification +/-
- testing of plug supply
- telephone tests

Electronics:
- detection of 0/1 in electronic systems
- basic test of electronic elements: diode, transistors, resistors, condensers (apart from electrolyte)

Cars:
- detection of +12V/ground
- testing of fuses, light bulbs
- battery ignition setting
- detection of high voltage

EF 777
- detection of live conductors (touchless) from 0,3 cm to 50 cm
- detection of wires inside walls at a deepth of up to 10 cm
- detection of phase/ alternate zero max 500V
- testing of conduction continuity 1MΩ
- detection of direct voltage max 60V
- adjustment of detection sensitivity

EKM L09, EKM L20 Test lead

EKM L20 test lead
- length 1000 mm
- temperature: from -15°C to +40°C

EKM L20 Test lead:
- length 900 mm
- probe and body length 101 mm
- PVC material

Digital Meters

Type / Characteristics	UT12A	UT15C	UT33A	UT33B	UT33C	UT33D	UT50A	UT50C
DC voltage		0~690 V	0~500 V	0~500 V	0~500 V	0~500 V	0~1000 V	0~1000 V
AC voltage		0~690 V	0~500 V	0~500 V	0~500 V	0~500 V	0~750 V	0~750 V
DC current			0~10 A	0~10 A	0~10 A	0~10 A	0~20 A	0~20 A
AC current			0~10 A				0~20 A	0~20 A
Temperature					-40°C ~1000°C		-40°C ~1000°C	
Resistance			0~40 MΩ	0~20 MΩ	0~20 MΩ	0~200 MΩ	0~200 MΩ	0~200 MΩ
Capacitance							0~100 μF	0~100 μF
Frequency		50~60 Hz						0~20 kHz
Live conductors detection	90~1000 V AC							
Frequency detection	50/60 Hz							
Features								
Auto/manual range		Auto	Auto					
Diode test			●	●	●	●	●	●
Transistors testing			●					
Continuity buzzer		●	●		●	●	●	●
Square wave output						●		
Polarity detection		+ / -						
Phase rotation test		●						
Data hold				●	●	●	●	●
Normal mode	●							
Silent mode	●							
Battery test (1,5V; 9V; 12V)				●				
Sleep mode							●	●
Low battery indication		●	●	●	●	●	●	●
General characteristics								
Power	2 x 1.5V (AAA)	2 x 1.5V (AAA)	1.5V (2x AAA)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)
LCD size		23x12 mm	48x16mm	48x16 mm	48x16 mm	48x16 mm	59x25 mm	59x25 mm
Weight	49 g	210 g	156 g	156 g	156 g	156 g	275 g	275 g
Product size	150x109 mm	275x51x30 mm	130x73,5x35 mm	130x73,5x35 mm	130x73,5x35 mm	130x73,5x35 mm	165x80x38.3 mm	165x80x38,3 mm
Standard accessories	batteries, manual	batteries, manual	test lead, battery, manual, holster	test lead, battery, manual, holster	test lead, battery, manual, point contact temperature probe, holster	test lead, battery, manual, holster	test lead, battery, manual, point contact temperature probe, clip	test lead, battery, manual, clip

Digital Meters

Type / Characteristics	UT50D	UT51	UT52	UT53	UT55	UT58C	UT60A	UT61E
DC voltage	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V
AC voltage	0~750 V	0~750 V	0~750 V	0~750 V	0~750 V	0~750 V	0~750 V	0~750 V
DC current	0~20 A	0~10 A	0~20 A	0~20 A	0~20 A	0~20 A	0~10 A	0~10 A
AC current	0~20 A	0~10 A	0~20 A	0~20 A	0~20 A	0~20 A	0~10 A	0~10 A
Temperature	-40°C ~1000°C			-20°C ~1000°C	-20°C ~1000°C			
Resistance	0~20 MΩ	0~200 MΩ	0~200 MΩ	0~200 MΩ	0~200 MΩ	0~20 MΩ	0~40 MΩ	0~220 MΩ
Capacitance	0~100 μF		0~20 μF	0~20 μF	0~20 μF	0~100 μF	0~100 μF	0~220 mF
Frequency					0~20 kHz		0~10 MHz	0~220 MHz
Inductance	0~20 H					0~20 H		
Duty cycle							0.1~99.9%	0.1~99.9%
Features								
Fused 10 A		●					●	
Auto/manual range							Auto	Auto / manual
Diode test	●	●	●	●	●	●	●	●
Transistors testing		●	●	●	●	●		
Continuity buzzer	●	●	●	●	●	●	●	●
Relative mode							●	
Data hold	●					●	●	●
RS232C							●	●
Sleep mode	●	●		●	●	●		●
Low battery indication	●	●	●	●	●	●	●	●
General characteristics								
Power	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)
LCD size	59x25 mm	33x65 mm	33x65 mm	33x65 mm	33x65 mm	60x54 mm	63x31 mm	65x43 mm
Weight	275 g	560 g	560 g	560 g	560 g	350 g	340 g	370 g
Product size	165x80x38,3 mm	190x88x34 mm	190x88x34 mm	190x88x34 mm	190x88x34 mm	179x88x39 mm	177x85x40 mm	180x87x47 mm
Standard accessories	test lead, battery, manual, point contact temperature probe, clip	test lead, battery, manual, holster	test lead, battery, manual, holster	test lead, battery, manual, point contact temperature probe, holster	test lead, battery, manual, point contact temperature probe, holster	test lead, battery, manual, multi-purpose socket, holster, clip	test lead, battery, manual, RS232C cable, clip, software	test lead, battery, manual, multi-purpose socket RS232C cable, software

Digital Meters

Type / Characteristics	UT70A	UT71A	UT71D	UT71E	M830B	M830BUZ	M890C	M890F
DC voltage	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~1000 V
AC voltage	0~750 V	0~1000 V	0~1000 V	0~1000 V	0~750 V	0~750 V	0~750 V	0~750 V
Bandwidth AC		100 kHz	100 kHz	100 kHz				
DC current	0~10 A	0~10 A	0~10 A	0~10 A	0~10 A	0~10 A	0~20 A	0~20 A
AC current	0~10 A	0~10 A	0~10 A	0~10 A			0~20 A	0~20 A
Temperature	-40°C ~1000°C		-40°C ~1000°C	-40°C ~1000°C			-40°C ~1000°C	
Resistance	0~2000 MΩ	0~20 MΩ	0~40 MΩ	0~40 MΩ	0~2 MΩ	0~2 MΩ	0~200 MΩ	0~200 MΩ
Capacitance	0~100 μF	0~20 mF	0~40 mF	0~40 mF			0~20 μF	0~20 μF
Frequency	0~10 MHz	0~200 MHz	0~400 MHz	0~400 MHz				
Inductance	0~20 H							
TTL	TTL (High > 2.0 V, Low < 0.8 V)							
Duty cycle		10~90%	10~90%	10~90%				
4~20 mA LOOP		0~100%	0~100%	0~100%				
Features								
Fused 10 A	●	●	●	●				
Auto/manual range		Auto	Auto	Auto				
Diode test	●	●	●	●	●	●	●	●
Transistors testing	●				●	●	●	●
Continuity buzzer	●	●	●	●		●	●	●
True RMS		●	●	●				
Data hold	●	●	●	●				
Data storage			●	●				
Data read			●	●				
Peak Hold		●	●	●				
Max/Min mode		●	●	●				
Relative value		●	●	●				
Analogue Bar-Graph		●	●	●				
USB		●	●	●				
Sleep mode	●	●	●	●				
Low battery indication	●	●	●	●				
General characteristics								
Power	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)
LCD size	62x53 mm	73x50 mm	73x50 mm	73x50 mm	15x46 mm	15x46 mm	26x61 mm	26x61 mm
Weight	620 g	384 g	384 g	384 g	150 g	150 g	330 g	330 g
Product size	195x90x40 mm	200x93x40 mm	200x93x40 mm	200x93x40 mm	162x86x33 mm	162x86x33 mm	175x88x40 mm	175x88x40 mm
Standard accessories	test lead, battery, point contact temperature probe, multi-purpose socket, holster, clip	test lead, battery, alligator clip, USB cable, case, clip, software	test lead, battery, point contact temperature probe, alligator clip, USB cable, case, clip, software	test lead, battery, point contact temperature probe, alligator clip, USB cable, case, clip, power adaptor, software				

Digital Meters







Type / Characteristics	M890G	UT105	UT106	UT107	UT132C	UT139A	UT139B
DC voltage	0~1000 V	0~1000 V	0~1000 V	0~1000 V	0~250 V	0~600 V	0~600 V
AC voltage	0~750 V	0~750 V	0~750 V	0~750 V	0~250 V	0~600 V	0~600 V
Bandwidth AC						0~400 Hz	0~400 Hz
DC current	0~20 A	0~10 A	0~10 A	0~10 A	0~10 A	0~10 A	0~10 A
AC current	0~20 A					0~10 A	0~10 A
Temperature	-40°C ~1000°C		-40°C ~1000°C	-40°C ~1000°C	-40°C ~1000°C		
Resistance	0~20 MΩ	0~20 MΩ	0~20 MΩ	0~20 MΩ	0~20 MΩ	0~20 MΩ	0~40 MΩ
Capacitance							9,999 nF ~99,99 mF
Frequency			0~2 kHz	0~2 kHz			0~10 MHz
Duty cycle				1~90%			0,1~99,9%
Features							
Fused 10 A		●	●	●			
Dwell (4Cyl/6Cyl/8Cyl)		●	●	●			
Tach (4Cyl/6Cyl/8Cyl)		●	●	●			
Auto/manual range					Manual	Auto	Auto
Diode test	●	●	●	●	●	●	●
Transistors testing	●				●		
Continuity buzzer	●	●	●	●	●	●	●
Square wave output							
True RMS						●	●
Data hold		●	●	●	●	●	●
Max/Min mode						●	●
Relative value						●	●
Battery test (1,5V; 9V; 12V)				12V			
Sleep mode							
Low battery indication		●	●	●	●	●	●
Auto power off						●	●
General characteristics							
Power	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22)	1.5V (2x AA)	1.5V (2x AA)
LCD size	26x61 mm	60x54 mm	60x54 mm	60x54 mm	49x18 mm	58x36 mm	58x36 mm
Weight	330 g	352 g	352 g	352 g	200 g	370 g	370 g
Product size	175x88x40 mm	179x88x39 mm	179x88x39 mm	179x88x39 mm	72x137x35 mm	175x81x48,5 mm	175x81x48,5 mm
Standard accessories		test lead, battery, manual, holster	test lead, battery, manual, point contact temperature probe, holster	test lead, battery, manual, point contact temperature probe, holster	test lead, battery, manual, point contact temperature probe, multi-purpose socket	test lead, battery, manual	test lead, battery, manual

Digital Meters







Type / Characteristics	UT201	UT202	UT202A	UT203	UT204	UT205	UT601
DC voltage	0~600 V	0~600 V	0~600 V	0~600 V	0~600 V	0~600 V	
AC voltage	0~600 V	0~600 V	0~600 V	0~600 V	0~600 V	0~600 V	
DC current				0~400 A	0~400 A	0~1000 A	
AC current	0~400 A	0~400 A	0~600 A	0~400 A	0~400 A		
Temperature		-40°C ~1000°C					
Resistance	0~20 MΩ	0~20 MΩ	0~20 MΩ	0~40 MΩ	0~40 MΩ	0~40 MΩ	0~2000 MΩ
Capacitance						0~200 μF	0~20 mF
Frequency				0~1 MHz	0~1 MHz	0~10 MHz	
Duty cycle				0.1~99.9%	0.1~99.9%	0.1~99.9%	
Features							
Auto/manual range	Auto	Auto		Auto	Auto	Auto	
Diode test	●	●	●	●	●	●	●
Transistors testing							●
Continuity buzzer	●	●	●	●	●	●	●
True RMS					●		
Max measurement	●	●					
Data hold	●	●	●	●	●	●	
Max/Min mode			●				
Relative value				●	●	●	
Sleep mode	●	●		●	●	●	
Low battery indication	●	●	●	●	●	●	●
General characteristics							
Power	3V (2x AAA)	3V (2x AAA)	9V (6F22)	9V (6F22)	9V (6F22)	9V (6F22) 3V (2x AAA)	9V (6F22)
LCD size	35,6x18 mm	35,6x18 mm	36x18 mm	36x18 mm	36x18 mm	52x27 mm	61x32 mm
Weight	220 g	220 g	200 g	200 g	200 g	540 g	310 g
Product size	210x75,6x30 mm	210x75,6x30 mm	210x76x30 mm	210x76x30 mm	210x76x30 mm	260x90x45 mm	172x83x38 mm
Standard accessories	test lead, batteries, manual, case	test lead, battery, manual, point contact temperature probe, case	test lead, battery, manual, case	test lead, bat-tery, manual, case	test lead, battery, manual, case	test lead, batteries, manual, case	test lead, battery, manual, holster

Digital Meters

Type / Characteristics	UT502	UT595
Insulation resistance	500 V: 3 MΩ~2000 MΩ 500 V: 5 MΩ~4000 MΩ 2500 V: 30 MΩ~20 GΩ	250 V: 0.05 MΩ~250 MΩ 500 V: 0.05 MΩ~500 MΩ 1000 V: 0.05 MΩ~1000 MΩ
Load current	250/500 V; 1 mA 500/1000 V; 1 mA 1000/2500 V; 1 mA	
Test voltages	500~2500 V	
Short circuit current	<2 mA	<2 mA
Low resistance continuity		range: 0 Ω ~199 Ω testing current: 0~2 Ω: >200 mA
Line impedance		range: 0.01 Ω~2000 Ω operational voltage: 195 V~440 V (45~65 Hz) testing current: 20 A PFC range: 0 kA~26 kA
Loop impedance		range: 0.01 Ω ~2000 Ω operational voltage: 195 V~253 V (45~65 Hz) testing current: 20 A PFC range: 0 kA~26 kA
Loop impedance without tripping		range: 1 Ω ~2000 Ω operational voltage: 195 V~253 V (45~65 Hz) testing current: 15 mA PFC range: 0 kA~26 kA
RCD		operational voltage: 195 V~253 V (45~65 Hz) testing current: 10 mA, 30mA, 100 mA, 300 mA, 500 mA trip time: x ½ *IΔn range 0~2000 ms x 1 *IΔn range 0~300 ms x 1 *IΔn range 0~500 ms (selective mode) x 2 *IΔn range 0~300 ms x 2 *IΔn range 0~500 ms (selective mode) x 5 *IΔn range 0~40 ms
Phase sequence test		operational voltage: 100 V~440 V (45~65 Hz) indication: L1→L2→L3 – positive change, L1→L3→L2 – to reverse
RCD measurement ramp slope		testing current: 10 mA, 30 mA, 100 mA, 300 mA, 500 mA
DC voltage	0~1000 V	range: 0 V~440 V frequency: 45~65 Hz resolution: 1 V
AC voltage	0~750 V	range: 0 V~440 V frequency: 45~65 Hz resolution: 1 V
Features		
Auto/manual range	Auto	
Alarm	●	
Low battery indication	●	
General characteristics		
Power	1.5V (6x LR6)	1.5V (8x LR6)
LCD size	71x34 mm	125x37 mm
Weight	500 g	1000 g
Product size	150x100x71 mm	210x175x90 mm
Standard accessories	test lead, batteries, manual, alligator clip, case	test lead, batteries, manual, alligator clip

TPWK Perlon fish tape

Perlon fish tape for pulling following cables:
- supply
- antenna
- speaker

Special features:
- high strength, resistance, flexibility
- placing the fish tape in a pipe of a diameter of 20-25 mm
- completed with removable carrying and towing stalk

Symbol	Colour	Ø	Length	Material
TPWK 4-10-B	white	4mm	10m	perlon,brass
TPWK 4-10-C	black	4mm	10m	perlon,brass
TPWK 4-15-B	white	4mm	15m	perlon,brass
TPWK 4-15-C	black	4mm	15m	perlon,brass
TPWK 4-20-B	white	4mm	20m	perlon,brass
TPWK 4-20-C	black	4mm	20m	perlon,brass
TPWK 4-30-B	white	4mm	30m	perlon,brass
TPWK 4-30-C	black	4mm	30m	perlon,brass
TPWK 4-5-B	white	4mm	5m	perlon,brass
TPWK 4-5-C	black	4mm	5m	perlon,brass

Pulling element	Colour	Ø	Material
SC TPWK-B	white	4mm	brass
SC TPWK-C	black	4mm	brass

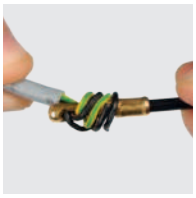
Pulling element	Colour	Ø	Material
SP TPWK-B	white	4mm	brass
SP TPWK-C	black	4mm	brass

TSWK Steel fish tape

Steel fish tape for pulling following cables:
- supply
- antenna
- speaker

Special features:
- high strength, resistance, flexibility
- placing the fish tape in a pipe of a diameter of 20-25 mm
- completed with removable carrying and towing stalk

Symbol	Ø	Length	Material
TSWK 3-10	3mm	10m	steel,brass
TSWK 3-15	3mm	15m	steel,brass
TSWK 3-20	3mm	20m	steel,brass
TSWK 3-30	3mm	30m	steel,brass
TSWK 3-5	3mm	5m	steel,brass



TSPPWK Steel and polypropylene fish tape

Steel and polypropylene fish tape for pulling following cables:
- supply
- antenna
- speaker

Special features:
- high strength, resistance, flexibility
- placing the fish tape in a pipe of a diameter of 20-25 mm
- completed with removable carrying and towing stalk

Symbol	Colour	Ø	Length	Material
TSPPWK 6-20	yellow	6mm	20m	steel, polypropylene
TSPPWK 6-40	yellow	6mm	40m	steel, polypropylene
TSPPWK 6-60	yellow	6mm	60m	steel, polypropylene

Pulling element	Colour	Ø	Material
SC TSPPWK	yellow	6	brass

Pulling element	Colour	Ø	Material
SP TSPPWK	yellow	6	brass

Pulling element	Colour	Ø	Material
SP TSPPWK	yellow	6	brass

TWSWK Fiberglass fish tape

Fiberglass fish tape for:
- pulling cable
- cleaning and clearing pipes, culverts and drains

Delivered on a rotary drum for convenient transport, storage and use.

Symbol	Colour	Ø	Length	Material
TWSWK_ 9-60	black	9 mm	60 m	fiberglass
TWSWK_ 9-80	black	9 mm	80 m	fiberglass
TWSWK_ 9-100	black	9 mm	100 m	fiberglass
TWSWK_ 9-120	black	9 mm	120 m	fiberglass
TWSWK_ 9-150	black	9 mm	150 m	fiberglass

Pulling element	For tape colour	Ø	Material
SC_TWSWK-9	black	9 mm	zinc plated steel

Leading element	For tape colour	Ø	Material
SP_TWSWK-9	black	9 mm	zinc plated steel
SPA_TWSWK-9	black	9 mm	zinc plated steel

Roller	For tape colour	Ø	Material
SR_TWSWK-9	black	9 mm	zinc plated steel

Connector	For tape colour	Ø	Material
Z_TWSWK-9	black	9 mm	brass

Connector spigot	For tape colour	Ø	Material
KZ_TWSWK-9	black	9 mm	brass

SP_TWSWK

SPA_TWSWK

SC_TWSWK

SR_TWSWK

Z_TWSWK

KZ_TWSWK

Symbol	Colour	Ø	Length	Material
TWSWK_ 11-100	black	11 mm	100 m	fiberglass
TWSWK_ 11-120	black	11 mm	120 m	fiberglass
TWSWK_ 11-150	black	11 mm	150 m	fiberglass
TWSWK_ 11-200	black	11 mm	200 m	fiberglass
TWSWK_ 11-250	black	11 mm	250 m	fiberglass
TWSWK_ 11-300	black	11 mm	300 m	fiberglass

Pulling element	For tape colour	Ø	Material
SC_TWSWK-11	black	11 mm	zinc plated steel

Leading element	For tape colour	Ø	Material
SP_TWSWK-11	black	11 mm	zinc plated steel
SPA_TWSWK-11	black	11 mm	zinc plated steel

Roller	For tape colour	Ø	Material
SR_TWSWK-11	black	11 mm	zinc plated steel

Connector	For tape colour	Ø	Material
Z_TWSWK-11	black	11 mm	brass

Connector spigot	For tape colour	Ø	Material
KZ_TWSWK-11	black	11 mm	brass

TWSWK glue for connecting damaged parts of fiberglass fish tape using connector spigot.

WIRING ACCESSORIES AND
ELECTRICIANS EQUIPMENT

OPK cable ties

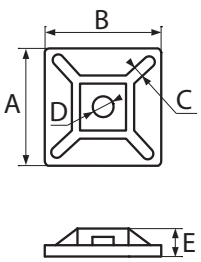
Cable ties for binding, fastening and organizing:
- binding, fastening and organizing electric cables
- secure fastening

Special features:
- material - polyamide PA66
- black colour with UVC mark in product code means strengthened resistance to UV radiation
- usage temperature from: - 40°C to +85°C
- minimal temperature for installation of the product: - 20°C

Characteristics		
Physical	Resistance to external factors	Yes
	Resistance to fire (use of classified materials UL94V2)	Yes
	Humidity absorption at 50% UR air exposure	2,7%
Thermal	Usage temperature	-40°C ÷ +85°C
	Fitting temperature	-10°C ÷ +60°C
	Max momentary working temperature	+110°C
	Melting point	+256°C
Chemical	Resistance to oils, fats, detergents, refinery products, chlorine solvents and alcohol	Yes
	Resistance to phenol	No

Index for natural colour	Index for black colour	Index for black colour with strenghtened UV-resistance	Dimensions (L x W) [mm]	Maximum bunch diameter	Tensile strength [kg]
OPK 2,5-80-N/100	OPK 2,5-80-C/100	OPK 2,5-80-UVC/100	80x2,5	14	8,0
OPK 2,5-100-N/100	OPK 2,5-100-C/100	OPK 2,5-100-UVC/100	100x2,5	20,5	8,0
OPK 2,5-150-N/100	OPK 2,5-150-C/100	OPK 2,5-150-UVC/100	150x2,5	36,5	8,0
OPK 2,5-160-N/100	OPK 2,5-160-C/100	OPK 2,5-160-UVC/100	160x2,5	39,8	8,0
OPK 2,5-200-N/100	OPK 2,5-200-C/100	OPK 2,5-200-UVC/100	200x2,5	52,5	8,0
OPK 3,6-140-N/100	OPK 3,6-140-C/100	OPK 3,6-140-UVC/100	140x3,6	33	18,0
OPK 3,6-200-N/100	OPK 3,6-200-C/100	OPK 3,6-200-UVC/100	200x3,6	46	18,0
OPK 3,6-250-N/100	OPK 3,6-250-C/100	OPK 3,6-250-UVC/100	250x3,6	65	18,0
OPK 3,6-300-N/100	OPK 3,6-300-C/100	OPK 3,6-300-UVC/100	300x3,6	84	18,0
OPK 3,6-370-N/100	OPK 3,6-370-C/100	OPK 3,6-370-UVC/100	370x3,6	106	18,0
OPK 4,8-160-N/100	OPK 4,8-160-C/100	OPK 4,8-160-UVC/100	160x4,8	36,6	23,0
OPK 4,8-200-N/100	OPK 4,8-200-C/100	OPK 4,8-200-UVC/100	200x4,8	49,5	23,0
OPK 4,8-250-N/100	OPK 4,8-250-C/100	OPK 4,8-250-UVC/100	250x4,8	65	23,0
OPK 4,8-300-N/100	OPK 4,8-300-C/100	OPK 4,8-300-UVC/100	300x4,8	81	23,0
OPK 4,8-360-N/100	OPK 4,8-360-C/100	OPK 4,8-360-UVC/100	360x4,8	100	23,0
OPK 4,8-400-N/100	OPK 4,8-400-C/100	OPK 4,8-400-UVC/100	400x4,8	108	22,0
OPK 4,8-430-N/100	OPK 4,8-430-C/100	OPK 4,8-430-UVC/100	430x4,8	122,5	23,0
OPK 4,8-500-N/100	OPK 4,8-500-C/100	OPK 4,8-500-UVC/100	500x4,8	150	22,0
OPK 4,8-550-N/100	OPK 4,8-550-C/100	OPK 4,8-550-UVC/100	550x4,8	145	23,0
OPK 7,6-200-N/100	OPK 7,6-200-C/100	OPK 7,6-200-UVC/100	200x7,6	50,9	54,0
OPK 7,6-250-N/100	OPK 7,6-250-C/100	OPK 7,6-250-UVC/100	250x7,6	66,8	54,0
OPK 7,6-300-N/100	OPK 7,6-300-C/100	OPK 7,6-300-UVC/100	300x7,6	82,8	54,0
OPK 7,6-360-N/100	OPK 7,6-360-C/100	OPK 7,6-360-UVC/100	360x7,6	103,5	54,0
OPK 7,6-400-N/100	OPK 7,6-400-C/100	OPK 7,6-400-UVC/100	400x7,6	105	55,0
OPK 7,6-450-N/100	OPK 7,6-450-C/100	OPK 7,6-450-UVC/100	450x7,6	130,5	54,0
OPK 7,6-500-N/100	OPK 7,6-500-C/100	OPK 7,6-500-UVC/100	500x7,6	145	55,0
OPK 7,6-540-N/100	OPK 7,6-540-C/100	OPK 7,6-540-UVC/100	540x7,6	159	54,0
OPK 9,0-550-N/100	OPK 9,0-550-C/100	OPK 9,0-550-UVC/100	550x9,5	163,5	80,0
OPK 9,0-780-N/100	OPK 9,0-780-C/100	OPK 9,0-780-UVC/100	780x9,0	235,5	80,0

Fixing element for cable ties OPK EM



Fixing element for cable ties, self-adhesive or tightened. It provides a simple, fast and stable mounting of the cable ties to various substrates. Adhesive tape used in the element mounting fastens installation.

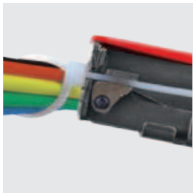
Special features:
- material: polyamide PA 66
- flammability class UL94V2
- operating temperature from -40 °C to + 85 °C
- natural colour - for internal use
- black colour - for external use

Symbol	Colour	Dimensions [mm]				
		A	B	C	E	ØD
OPK EM-19-S	natural	19	19	1,5	/	4,6
OPK EM-20-S	natural	20	20	1,6	2,9	6,1
OPK EM-25-S	natural	25	25	2,05	3,5	7,5
OPK EM-28-N	natural	28	28	1,5	5,5	6,4
OPK EM-28-C	black	28	28	1,5	5,5	6,4
OPK EM-30-S	natural	30	30	2,8	4,5	8,7
OPK EM-40-S	natural	40	40	2,15	/	6,4

NOPK 4,8 Tool

Automatic tool for tightening and cutting cable tie in one step:
- for cable ties of width 2,2 ÷ 4,8 mm
- made of varnished steel

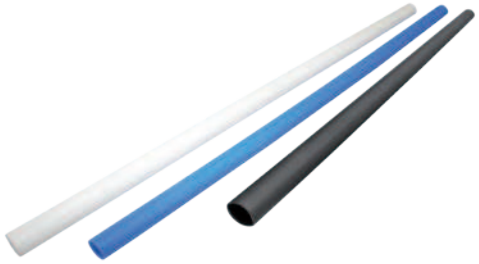
Length: 160 mm; Weight: 350 g



RTC Thin wall heat shrinkable tubing

Heat shrinkable tubing with glue for insulation, protection against mechanical damage and also cables and wires identification:
- diameter decreases while shrinking so tubing seals applied elements
- weather conditions resistant
- protection against moisture
- fungi, chemicals and corrosion resistant

Special features:
- self-extinguishing according to UL 94-HB standard
- products are compliant with REACH & RoHS directives
- free from halogen compounds
- shrinking ratio 2:1



Characteristics		
Physical	Tensile strenght	10 N/mm²
	Extension at rupture	200%
	Lenght change	≤+5%, ≤-10%
	Water soaking	<0,5%
	Density	1.20 g/cm³
Thermal	Constant working temperature	-30°C do +105°C
	Minimum shrinking temperature	>90°C
	Thermal shock (4 hours in 250°C)	doesn't drip, doesn't break, doesn't melt
	Thermal ageing (168 hours in 175°C)	extension 100%
	Flexibility at low temperatures (-55°C)	doesn't break
	Storing temperature	recommended ≤40°C
Electrical	Dielectric strength	20 kV/m

Symbol	Colour	Min. Ø before shrinking [mm]	Max. Ø after shrinking [mm]	Wall thickness after shrinking [mm]	Number of pieces per unit [1piece=1m]
RTC 1,6-0,8-C/1	black				100 pcs
RTC 1,6-0,8-B/1	white				100 pcs
RTC 1,6-0,8-ZZT/1	yellow-green	1,60	0,8	0,43	100 pcs
RTC 1,6-0,8-N/1	blue				100 pcs
RTC 1,6-0,8-M/1	mix				100 pcs
RTC 2,4-1,2-C/1	black				100 pcs
RTC 2,4-1,2-B/1	white				100 pcs
RTC 2,4-1,2-ZZT/1	yellow-green	2,40	0,8		100 pcs
RTC 2,4-1,2-N/1	blue				100 pcs
RTC 2,4-1,2-M/1	mix				100 pcs
RTC 3,2-1,6-C/1	black				100 pcs
RTC 3,2-1,6-B/1	white				100 pcs
RTC 3,2-1,6-ZZT/1	yellow-green	3,20	1,6	0,51	100 pcs
RTC 3,2-1,6-N/1	blue				100 pcs
RTC 3,2-1,6-M/1	mix				100 pcs
RTC 4,8-2,4-C/1	black				40 pcs
RTC 4,8-2,4-B/1	white				40 pcs
RTC 4,8-2,4-ZZT/1	yellow-green	4,80	2,4	0,51	40 pcs
RTC 4,8-2,4-N/1	blue				40 pcs
RTC 4,8-2,4-M/1	mix				40 pcs
RTC 6,4-3,2-C/1	black				40 pcs
RTC 6,4-3,2-B/1	white				40 pcs
RTC 6,4-3,2-ZZT/1	yellow-green	6,40	3,2	0,65	40 pcs
RTC 6,4-3,2-N/1	blue				40 pcs
RTC 6,4-3,2-M/1	mix				40 pcs
RTC 9,5-4,8-C/1	black				20 pcs
RTC 9,5-4,8-B/1	white				20 pcs
RTC 9,5-4,8-ZZT/1	yellow-green	9,50	4,8	0,65	20 pcs
RTC 9,5-4,8-N/1	blue				20 pcs
RTC 9,5-4,8-M/1	mix				20 pcs
RTC 12,7-6,4-C/1	black				20 pcs
RTC 12,7-6,4-B/1	white	12,70	6,4	0,65	20 pcs
RTC 12,7-6,4-ZZT/1	yellow-green				20 pcs

Symbol	Colour	Min. Ø before shrinking [mm]	Max. Ø after shrinking [mm]	Wall thickness after shrinking [mm]	Number of pieces per unit [1piece=1m]
RTC 12,7-6,4-N/1	blue	12,70	6,4	0,65	20 pcs
RTC 12,7-6,4-M/1	mix				20 pcs
RTC 15,9-8,0-C/1	black				20 pcs
RTC 15,9-8,0-B/1	white				20 pcs
RTC 15,9-8,0-ZZT/1	yellow-green	15,90	8		20 pcs
RTC 15,9-8,0-N/1	blue				20 pcs
RTC 15,9-8,0-M/1	mix				20 pcs
RTC 19,1-9,5-C/1	black				10 pcs
RTC 19,1-9,5-B/2	white				10 pcs
RTC 19,1-9,5-ZZT/1	yellow-green	19,10	9,5		10 pcs
RTC 19,1-9,5-N/1	blue				10 pcs
RTC 19,1-9,5-M/1	mix				10 pcs
RTC 25,4-12,7-C/1	black				10 pcs
RTC 25,4-12,7-B/1	white				10 pcs
RTC 25,4-12,7-ZZT/1	yellow-green	25,40	12,7	0,89	10 pcs
RTC 25,4-12,7-N/1	blue				10 pcs
RTC 25,4-12,7-M/1	mix				10 pcs
RTC 31,8-15,9-C/1	black				10 pcs
RTC 31,8-15,9-B/1	white				10 pcs
RTC 31,8-15,9-ZZT/1	yellow-green	31,80	15,9		10 pcs
RTC 31,8-15,9-N/1	blue				10 pcs
RTC 31,8-15,9-M/1	mix				10 pcs
RTC 38,1-19,1-C/1	black				10 pcs
RTC 38,1-19,1-B/1	white				10 pcs
RTC 38,1-19,1-ZZT/1	yellow-green	38,10	19,1		10 pcs
RTC 38,1-19,1-N/1	blue				25 pcs
RTC 38,1-19,1-M/1	mix				10 pcs
RTC 50,8-25,4-C/1	black				10 pcs
RTC 50,8-25,4-B/1	white				10 pcs
RTC 50,8-25,4-ZZT/1	yellow-green	50,80	25,4		10 pcs
RTC 50,8-25,4-N/1	blue				10 pcs
RTC 50,8-25,4-M/1	mix				10 pcs

* mix includes colours: red, blue, white, yellow.

RTCK Thin wall heat shrinkable tubing with glue

Heat shrinkable tubing with glue for insulation, protection against mechanical damage and also cables and wires identification:

- contains glue which melts in high temperature and seals applied elements
- excellent insulation and protection against moisture
- weather conditions resistant
- strong adhesion to steel, plastic and other materials
- shrinking temperature > 100°C
- working temperature of -55°C - +110°C
- shrinking ratio 3:1

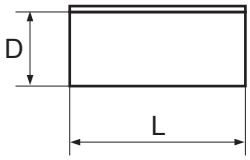
Characteristics		
Physical	Tensile strenght	11 N/mm²
	Extension at rupture	300%
	Lenght change	≤+1%, ≤-15%
	Water soaking	<0,5%
	Density	1.45 g/cm³
Thermal	Constant working temperature	-55°C do +110°C
	Minimum shrinking temperature	>90°C
	Thermal shock (4 hours in 250°C)	doesn't drip, doesn't break, doesn't melt
	Thermal ageing (168 hours in 175°C)	extension 250%
	Flexibility at low temperatures (-55°C)	doesn't break
	Flammability	meets
Electrical	Dielectric strength	15 kV/m

Symbol	Colour	Min. ø before shrinking [mm]	Max. ø after shrinking [mm]	Wall thickness after shrinking [mm]	Number of pieces per unit [1piece=1m]
RTCK 3-1-C/1	black	3	1	1	40 pcs
RTCK 3-1-T/1	transparent				40 pcs
RTCK 4-1-C/1	black				20 pcs
RTCK 4-1-T/1	transparent				20 pcs
RTCK 4.8-1.6-C/1	black	4,8	1,6	1	40 pcs
RTCK 4.8-1.6-T/1	transparent				40 pcs
RTCK 6-2-C/1	black	6	2	1,1	20 pcs
RTCK 6-2-T/1	transparent				20 pcs
RTCK 8-2-C/1	black				20 pcs
RTCK 8-2-T/1	transparent				20 pcs
RTCK 9-3-C/1	black	9	3	1,3	20 pcs
RTCK 9-3-T/1	transparent				20 pcs
RTCK 12-3-C/1	black				20 pcs
RTCK 12-3-T/1	transparent				20 pcs
RTCK 12-4-C/1	black	12	4	1,7	20 pcs
RTCK 12-4-T/1	transparent				20 pcs
RTCK 18-6-C/1	black	18	6	2	10 pcs
RTCK 18-6-T/1	transparent				10 pcs
RTCK 24-8-C/1	black	24	8	2,5	10 pcs
RTCK 24-8-T/1	transparent				10 pcs

RNT Heat shrinkable repair sleeves

Heat shrinkable repair sleeves for quick, durable and efficient repair of the damaged cable coating without the need to cut it and for the purpose to protect the mechanical, corrosion and water supply and gas pipelines.

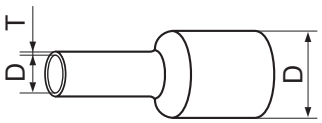
- covering the inner surface of the sleeve with a layer of hot melt glue, guarantees accurate and resistant to external conditions bonding with cable coat and compensation for any unevenness
- coating the outer layer of the sleeve with thermochromic paint which changes color after reaching the target temperature and prevents overheating of the material during its shrinking



Characteristics		
Physical	Tensile strength Elongation at break Moisture absorption Resistance to radiation ESCR 48 hours at 50°C	17,5 N/mm² (min) 300% (min) 0,1% (max) lack of dissection lack of cracks
Physical after aging at 120°C for 500 hours	Tensile strength Elongation at break	15 N/mm² (min) 200%
Electrical	Dielectric strength	12 kV/mm(min)
Chemical	Chemical resistance Tensile strength Elongation at break	good 15 N/mm² (min) 200%
Limiot temperature signalized by the paint colour change	150°C during 30 min 250°C	lack of colour change

Symbol	Colour	D max. Ø before shrinking [mm]	D min. Ø after shrinking [mm]	Wall thickness before shrinking together with the layer of glue T [mm] ± 20%	Lenght L [mm]
RNT 42-08-250/1	black	42	8	0,9	250
RNT 42-08-500/1	black				500
RNT 42-08-750/1	black				750
RNT 42-08-1000/1	black				1000
RNT 42-08-1500/1	black				1500
RNT 76-22-250/1	black	76	22	0,9	250
RNT 76-22-500/1	black				500
RNT 76-22-750/1	black				750
RNT 76-22-1000/1	black				1000
RNT 76-22-1500/1	black				1500
RNT 100-30-250/1	black	100	30	0,9	250
RNT 100-30-500/1	black				500
RNT 100-30-750/1	black				750
RNT 100-30-1000/1	black				1000
RNT 100-30-1500/1	black				1500
RNT 139-38-250/1	black	139	38	0,9	250
RNT 139-38-500/1	black				500
RNT 139-38-750/1	black				750
RNT 139-38-1000/1	black				1000
RNT 139-38-1500/1	black				1500
RNT 185-55-250/1	black	185	55	0,9	250
RNT 185-55-500/1	black				500
RNT 185-55-750/1	black				750
RNT 185-55-1000/1	black				1000
RNT 185-55-1500/1	black				1500
RNT 210-55-250/1	black	210	55	0,9	250
RNT 210-55-500/1	black				500
RNT 210-55-750/1	black				750
RNT 210-55-1000/1	black				1000
RNT 210-55-1500/1	black				1500

RTP Thickened heat shrinkable sleeves



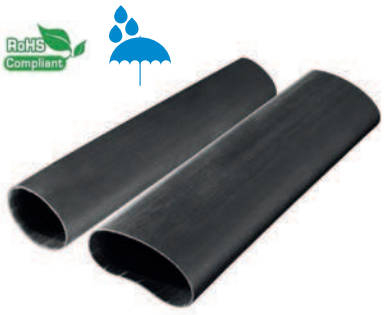
Thickened heat shrinkable repair sleeves for repairt of the direct insulation on cables up to 1kV and external cable coatings nN and Sn.

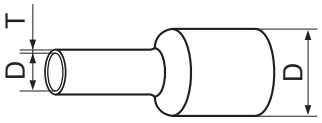
- made of thermally stabilized, cross-linked polymers
- resistant to changing weather conditions
- provide flexible seals, very high mechanical and chemical protection
- protects against UV rays
- shrinking ratio 3:1

Symbol	Colour	Min. ø before Shrinking D [mm]	Max. ø after Shrinking D [mm]	Wall thickness after shrinking T [mm]	Number of pieces per unit [1 piece = 1m]
RTP 9-3-C/1	black	9	3	1,7	10 pcs
RTP 12-4-C/1	black	12	4	2	10 pcs
RTP 22-6-C/1	black	22	6	2,5	10 pcs
RTP 30-8-C/1	black	30	8	2,5	10 pcs
RTP 34-7-C/1	black	34	7	3	10 pcs
RTP 40-12-C/1	black	40	12	2,8	10 pcs
RTP 55-16-C/1	black	55	16	3	10 pcs
RTP 65-19-C/1	black	65	19	3	10 pcs
RTP 80-22-C/1	black	80	22	3,2	10 pcs
RTP 100-30-C/1	black	100	30	3,2	5 pcs
RTP 140-40-C/1	black	140	40	3,2	5 pcs

Characteristics		
Physical	Relative density	1,25 ± 0,2 g/cm³
	Moisture absorption	0,2% (max)
	Tensile strength	10 N/mm² (min)
	Elongation at break	350% (min)
Physical after aging at 120°C for 500 hours	Tensile strength	8 N/mm² (min)
	Elongation at break	300% (min)
Electrical	Slope resistivity	10^{10}Ωm (min)
	Dielectric strength	8 kV/mm (min)
	Constant dielectric	3,5 (max)
Chemical	Resistance to fungus	<1
	Salt spray test	meets
	Chemical resistance	good

RTPK Thickened heat shrinkable sleeve with glue





Thickened heat shrinkable repair sleeves with glue for repairt of the direct insulation on cables up to 1kV and external cable coatings nN and Sn.

- made of thermally stabilized, cross-linked polymers
- inner side of the pipe covered with a layer of thermoplastic glue
- resistant to changing weather conditions
- provide flexible seals, very high mechanical and chemical protection
- protects against UV rays
- shrinking ratio 3:1

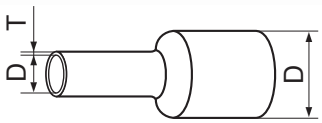
Symbol	Colour	Min. ø before Shrinking D [mm]	Max. ø after Shrinking D [mm]	Wall thickness after shrinking T [mm]	Number of pieces per unit [1 piece = 1m]
RTPK 9-3-C/1	black	9	3	1,7	10 pcs
RTPK 12-4-C/1	black	12	4	2	10 pcs
RTPK 22-6-C/1	black	22	6	2,5	10 pcs
RTPK 30-8-C/1	black	30	8	2,5	10 pcs
RTPK 34-7-C/1	black	34	7	3	10 pcs
RTPK 40-12-C/1	black	40	12	2,8	10 pcs
RTPK 55-16-C/1	black	55	16	3	10 pcs
RTPK 65-19-C/1	black	65	19	3	10 pcs
RTPK 80-22-C/1	black	80	22	3,2	10 pcs
RTPK 100-30-C/1	black	100	30	3,2	10 pcs
RTPK 140-40-C/1	black	140	40	3,2	10 pcs
RTPK 160-50-C/1	black	160	50	3	1 pcs
RTPK 180-60-C/1	black	180	60	3	1 pcs
RTPK 200-65-C/1	black	200	65	3,5	1 pcs
RTPK 235-65-C/1	black	235	65	3,5	1 pcs

Characteristics		
Physical	Relative density	1,25 ± 0,2 g/cm³
	Moisture absorption	0,2% (max)
	Tensile strength	10 N/mm² (min)
	Elongation at break	350% (min)
Physical after aging at 120°C for 500 hours	Tensile strength	8 N/mm² (min)
	Elongation at break	300% (min)
Electrical	Slope resistivity	10^{10}Ωm (min)
	Dielectric strength	8 kV/mm (min)
	Constant dielectric	3,5 (max)
Chemical	Resistance to fungus	good
	Salt spray test	meets
	Chemical resistance	good

RTG Thick-wall heat shrinkable sleeves

Thick-wall heat shrinkable sleeves for repair of the direct insulation on cables up to 1kV and external cable coatings nN and Sn.

- made of thermally stabilized, cross-linked polymers
- resistant to changing weather conditions
- provide flexible seals, very high mechanical and chemical protection
- protects against UV rays
- shrinking ratio 3:1



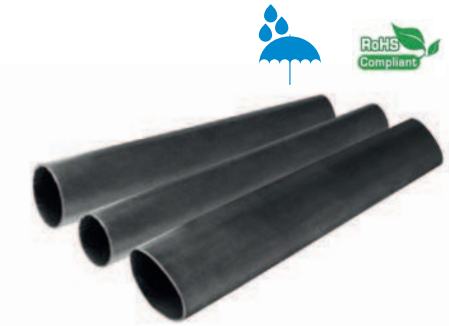
Characteristics		
Physical	Relative density	1,25 ± 0,2 g/cm³
	Moisture absorption	0,2% (max)
	Tensile strength	10 N/mm² (min)
	Elongation at break	350% (min)
Physical after aging at 120°C for 500 hours	Tensile strength	8 N/mm² (min)
	Elongation at break	300% (min)
Electrical	Slope resistivity	$10^{10}\Omega$m (min)
	Dielectric strength	8 kV/mm (min)
	Constant dielectric	3,5 (max)
Chemical	Resistance to fungus	good
	Salt spray test	meets
	Chemical resistance	good

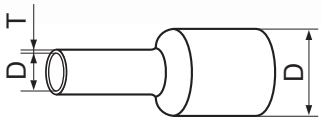
Symbol	Colour	Min. Ø before Shrinking D [mm]	Max. Ø after Shrinking D [mm]	Wall thickness after shrinking T [mm]	Number of pieces per unit [1 piece = 1m]
RTG 55-16-C/1	black	55	16	4	1 pce
RTG 92-26-C/1	black	92	26	4,2	1 pce
RTG 120-43-C/1	black	120	43	4,2	1 pce
RTG 140-37-C/1	black	140	37	4,3	1 pce

RTGK Thick-wall heat shrinkable sleeves with glue

Thick-wall heat shrinkable sleeves with glue for repair of the direct insulation on cables up to 1kV and external cable coatings nN and Sn.

- made of thermally stabilized, cross-linked polymers
- inner side of the pipe covered with a layer of thermoplastic glue
- resistant to changing weather conditions
- provide flexible seals
- very high mechanical and chemical protection
- designed for work in extreme conditions
- protects against UV rays
- shrinking ratio 3:1

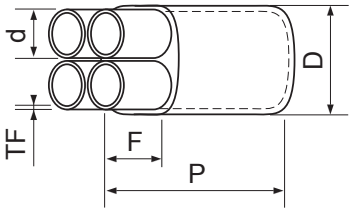




Characteristics		
Physical	Relative density	1,25 ± 0,2 g/cm³
	Moisture absorption	0,2% (max)
	Tensile strength	10 N/mm² (min)
	Elongation at break	350% (min)
Physical after aging at 120°C for 500 hours	Tensile strength	8 N/mm² (min)
	Elongation at break	300% (min)
Electrical	Slope resistivity	$10^{10}\Omega$m (min)
	Dielectric strength	8 kV/mm (min)
	Constant dielectric	3,5 (max)
Chemical	Resistance to fungus	good
	Salt spray test	meets
	Chemical resistance	good

Symbol	Colour	Min. Ø before Shrinking D [mm]	Max. Ø after Shrinking D [mm]	Wall thickness after shrinking T [mm]	Number of pieces per unit [1 piece = 1m]
RTGK 55-16-C/1	black	55	16	4	1 pce
RTGK 92-26-C/1	black	92	26	4,2	1 pce
RTGK 120-34-C/1	black	120	34	4,2	1 pce
RTGK 140-37-C/1	black	140	37	4,3	1 pce

PT heat shrinkable breakouts



Heat shrinkable breakouts for insulating of cable ends at separated cores, plastic, rubber or resaturated paper insulated.

- used for voltage up to 0,6 / 1kV as a direct electrical insulation
- used for voltage up to 18 / 30kV as a component of heads sets
- possibility to use cables of two, three, four and five cores
- abrasion resistant
- resistant to changing weather conditions
- resistant to most chemicals
- resistant to UV radiation
- made of thermally stabilized polymers
- covered on the inside with hot melt glue, providing the additional seal

Characteristics		
Physical	Density	1,05 ± 0,2 g/cm^3
	Tensile strength	13 N/mm^2 (min)
	Elongation at break	400% (min)
	Moisture absorption	0,15% (max)
	Longitudinal shrink	10%
Physical after aging at 120°C for 500 hours	Tensile strength	12 N/mm^2 (min)
	Elongation at break	300% (min)
Electrical	Slope resistivity	$10^{10}\Omega$m (min)
	Dielectric strength	10 kV/mm (min)
	Constant dielectric	5 (max)
Chemical	Corosion	absence
	Resistance to fungus	good

PAL2 two output shrinkable breakout

Symbol	ø main D		ø output d		Overall length P [mm]		The length of a finger F [mm]	The thickness of the TF [mm]
	Min. Ø before Shrinking [mm]	Max. Ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Dimension after total shrinking ± 20%
PAL2_1,5-25-C/1	30	10	12	4	65-68	87-90	15-17	1
PAL2_25-150-C/1	50	24	21	7	85-88	118-121	25-27	2,5
PAL2_50-185-C/1	90	45	43	15	165-170	185-195	60-65	2,2

PAL3 three output shrinkable breakout

Symbol	ø main D		ø output d		Overall length P [mm]		The length of a finger F [mm]	The thickness of the TF [mm]
	Min. Ø before Shrinking [mm]	Max. Ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Dimension after total shrinking ± 20%
PAL3_1,5-10-C/1	28	9	9	3	55-53	70-72	15-17	1,8
PAL3_6-35-C/1	35	15	13	4	85-88	100-102	20-23	1,8
PAL3_25-120-C/1	55	23	25	8	130-133	165-177	35-37	2,5
PAL3_50-185-C/1	75	28	35	13	170-173	211-215	43-47	3
PAL3_120-300-C/1	110	35	50	17	180-183	210-220	50-55	3,5
PAL3_240-1000-C/1	170	56	64	28	190-200	225-230	56-60	3,5

PAL4 four output shrinkable breakout

Symbol	ø main D		ø output d		Overall length P [mm]		The length of a finger F [mm]	The thickness of the TF [mm]
	Min. Ø before Shrinking [mm]	Max. Ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Dimension after total shrinking ± 20%
PAL4_1,5-10-C/1	28	9	8	2	55-58	77-80	15-17	1,7
PAL4_6-35-C/1	35	15	13	4	80-83	102-105	20-23	1,8
PAL4_25-120-C/1	55	23	20	8	130-133	167-170	35-38	3
PAL4_35-185-C/1	70	25	25	8	150-153	186-194	32-35	2,5
PAL4_120-400-C/1	95	36	35	14	170-173	220-222	49-53	3
PAL4_185-530-C/1	117	36	46	14	170-173	220-222	49-53	3

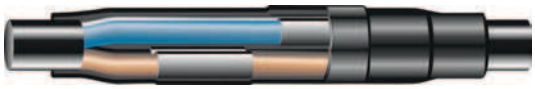
PAL5 five output shrikable breakout

Symbol	ø main D		ø output d		Overall length P [mm]		The length of a finger F [mm]	The thickness of the TF [mm]
	Min. Ø before Shrinking [mm]	Max. Ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Max. ø after Shrinking [mm]	Min. ø before Shrinking [mm]	Dimension after total shrinking ± 20%
PAL5_1,5-10-C/1	35	15	20	3	75-80	90-100	19-21	1,8
PAL5_6-35-C/1	50	15	15	4	78-83	95-105	23-25	2
PAL5_25-120-C/1	65	21	20	8	130-133	165-170	35-38	2,3
PAL5_35-185-C/1	70	15	20	13	78-83	95-105	23-25	2

MPT Joints

Joints are used to connect Y/A/KY and Y/A/KXS power cables with voltage 0,6/1 kV.
- insulation of wires repaired using thickened heat shrinkable tubing with an inner layer of hot melt glue
- mechanical protection and external sealing is made of a coating heat shrinkable pipe with glue

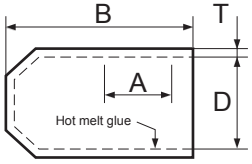
Symbol	Number of veins	Cross-section		The length L [m]
		min	max	
MPT_1-CX1-10-25/1	1	1x10	1x25	0,5
MPT_2-CX1-16-70/1	1	1x16	1x70	0,75
MPT_3-CX1-70-120/1	1	1x70	1x120	1
MPT_4-CX1-120-150/1	1	1x120	1x150	1
MPT_5-CX1-120-300/1	1	1x120	1x300	1
MPT_1-CX4-10-25/1	4	4x10	4x25	0,8
MPT_2-CX4-16-70/1	4	4x16	4x70	0,8
MPT_3-CX4-70-120/1	4	4x70	4x120	0,8
MPT_4-CX4-120-150/1	4	4x120	4x150	1
MPT_5-CX4-120-300/1	4	4x120	5x300	1
MPT_2-CX5-16-70/1	5	5x16	5x70	0,8
MPT_5-CX5-120-300/1	5	5x120	5x300	1



KU Heat shrinkable end cap with glue

Heat shrinkable end cap with glue for insulation and sealing:
- ends of all LV cables type with polymer insulation
- protection of metal and wooden elements (eg ends of columns)
- made of heatshrinkable material
- include a layer of hot melt glue inside

	Characteristics	
Physical	Density	1.1 ± 0.2 g/cm³
	Moisture absorption	1% (max)
	Tensile strength	10 N/mm² (min)
	Elongation at break	300% (min)
	Hardness	45 ± 3 Shore D
Physical after aging at 120°C for 500 hours	Tensile strength	8 N/mm² (min)
	Elongation at break	200% (min)
Electrical	Slope resistivity	1010 Ωm (min)
	Dielectric strength	10 kV/mm (min)
	Constant dielectric	5 (max)



Symbol	D ø inner without glue [mm]		Length [mm]		A [mm]	Longitudinal shrink LC [mm]	Wall thickness T [mm]
	E (min) ø before shrinking	S (max) ø after shrinking	E (min) ø before shrinking	S (max) ø after shrinking	E (min)	S	S ± 20%
KU 14-04-35/1	12	4,5	35	30	15	± 10%	1,2
KU 20-08-110/1	20	8	60	55	20	± 10%	3
KU 20-08-60/1	20	8	110	100	35	± 10%	3
KU 24-08-65/1	24	8	60	55	20	± 10%	3
KU 35-15-105/1	35	15	105	95	30	± 10%	3
KU 40-17-105/1	40	17	105	95	35	± 10%	3
KU 60-25-105/1	55	25	150	140	50	± 10%	4

OP 2000W Hot gun

Hot gun of universal application:
- shrinking heat shrink tubing
- molding and joint of plastic pipes
- soldering
- defrosting of metal pipes used in waterworks
- paint removal
- voltage 220-240V
- 50 / 60Hz frequency
- power 2000W

Hot gun has two settings:
- low heat level (position 1): used in places where high ambient heat is not allowed. Recommended for: plastics bending, shrinking heat shrink tubing.
- high heat level (position 2): used for rapid heating. Recommended for: plastic joint, paint removal, pipe defrosting, soldering.

Characteristics	Switch position	
	1	2
Temperature °C	400	550
Protection class	II / double insulation	

TPVC Electrical tapes

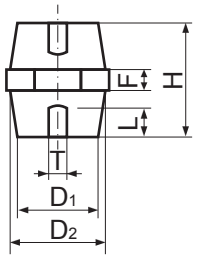
Universal electrical tapes used to insulate electrical and telecommunication wires and cables also for labelling wires up to 6kV. Ideal for use in places where high electrical insulating properties are required.
Special features:
- Thermal class 1050
- Self-extinguishing
- Flexible
- Easily extensible
- Chemical factors resistant
- It keeps its characteristics in low temperatures

Symbol	Colour	Width [mm]	Lenght [m]	Number of pieces per unit
TPVC 15-10	White	15	10	10 pcs
	Braun	15	10	10 pcs
	Black	15	10	10 pcs
	Red	15	10	10 pcs
	Violet	15	10	10 pcs
	Multi	15	10	10 pcs
	Blue	15	10	10 pcs
	Orange	15	10	10 pcs
	Gray	15	10	10 pcs
	Green	15	10	10 pcs
	Yellow	15	10	10 pcs
	Yellow-Green	15	10	10 pcs

Symbol	Colour	Width [mm]	Lenght [m]	Number of pieces per unit
TPVC 19-20	White	19	20	8 pcs
	Braun	19	20	8 pcs
	Black	19	20	8 pcs
	Red	19	20	8 pcs
	Violet	19	20	8 pcs
	Multi	19	20	8 pcs
	Blue	19	20	8 pcs
	Orange	19	20	8 pcs
	Gray	19	20	8 pcs
	Green	19	20	8 pcs
	Yellow	19	20	8 pcs
	Yellow-Green	19	20	8 pcs

*multi include colors: yellow, red, grey, brown, green&yellow, white, blue, green, black and violet

IZW Insulators



Insulators are used to fix mounting rails in cabinets and low voltage electrical devices. Can be used:
- at high ambient temperatures
- in corrosion exposed environments
- in vibration exposed places

Special features:
- material: thermoset polyester
- UL 94 VO flammability class
- threaded brass sleeve

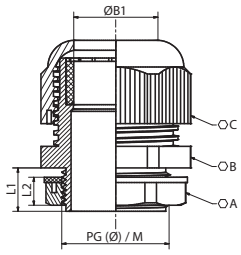
Symbol	D1	D2	H	F	T	L	Tightening torque [Nm]	Nominal voltage [V]	Number of pieces per unit
IZW_25-M6	18	21	25	7	M6	7	7	400	10 pcs
IZW_30-M6	22	28	30	9	M6	9	7	600	10 pcs
IZW_30-M8	22	28	30	9	M8	7	16	600	10 pcs
IZW_35-M6	25	30	35	9	M6	9	7	600	10 pcs
IZW_35-M8	34	38	35	9	M8	11	16	600	10 pcs
IZW_35-M10	34	38	35	9	M10	11	33	600	10 pcs
IZW_40-M6	20	30	40	8	M6	12	7	1000	10 pcs
IZW_40-M8	35	39	40	8	M8	12	16	1000	10 pcs
IZW_40-M10	35	39	40	8	M10	11	33	1000	10 pcs
IZW_50-M10	33	40	50	11	M10	15	33	1200	10 pcs
IZW_75-M10	52	62	75	13	M10	22	40	2000	10 pcs
IZW_75-M12	52	62	75	13	M12	22	60	2000	10 pcs

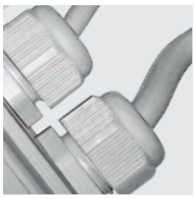
DK Cable glands

Cable glands designed to attach and secure the end of a cable to the equipment. Made of very resistant, self-extinguishing, free from halogen and phosphorus material. Easy to assemble.

Special features:

- Material: polyamid PA66
- Working temperature from -40°C up to 100°C
- Protection degree IP68
- Burning flammability class UL94V-2
- Available sizes: PG7-PG48 and M12-M40
- Available in gray (RAL 7035) and black (RAL 9005) colours
- Nut has an integrated anti vibration protection

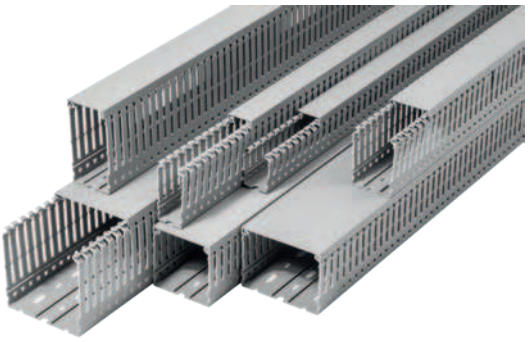




Symbol	Metric thread	Ø [mm]	Colour	L1 [mm]	L2 [mm]	⬡A [mm]	⬡B [mm]	⬡C [mm]	ØB1 [mm]	Wires range
DK_M-12-C/1 DK_M-12-S/1	M12×1.5	12	black gray	8	4,7	17	15	16	7,5	3-6,5
DK_M-16-C/1 DK_M-16-S/1	M16×1.5	16	black gray	8	5	22	18,5	19	9	4-8
DK_M-20-C/1 DK_M-20-S/1	M20x1.5	20	black gray	9	5	25	23	24	13	6,7-12
DK_M-25-C/1 DK_M-25-S/1	M25×1.5	25	black gray	10	6	30	29	29	17,7	13-16
DK_M-32-C/1 DK_M-32-S/1	M32×1.5	32	black gray	11	6,5	39	37	35	21,8	18,5-21
DK_M-40-C/1 DK_M-40-S/1	M40×1.5	40	black gray	18	7	50	45	45	30	23-32

Symbol	PG thread	Ø [mm]	Colour	L1 [mm]	L2 [mm]	⬡A [mm]	⬡B [mm]	⬡C [mm]	ØB1 [mm]	Wires range
DK_PG-7-C/1 DK_PG-7-S/1	7	12,2	black gray	7,5	4,7	18	15	16	7,5	3-6,5
DK_PG-9-C/1 DK_PG-9-S/1	9	15,3	black gray	8	5	22	18,5	19	9	4-8
DK_PG-11-C/1 DK_PG-11-S/1	11	18,3	black gray	8	5	23	21,5	21,5	11	5-10
DK_PG-13,5-C/1 DK_PG-13,5-S/1	13,5	20,3	black gray	9	5	25	23	24	13	6,7-12
DK_PG-16-C/1 DK_PG-16-S/1	16	22,3	black gray	10	5,5	28	26,5	26,5	15,5	10,2-14
DK_PG-21-C/1 DK_PG-21-S/1	21	28,3	black gray	10	6	35	32,5	32,5	19,5	13-18
DK_PG-29-C/1 DK_PG-29-S/1	29	37	black gray	11	6,5	45	41	41,5	26,8	18,5-25
DK_PG-36-C/1 DK_PG-36-S/1	36	47	black gray	14	7,2	58	51,6	51,3	34,3	23-32
DK_PG-42-C/1 DK_PG-42-S/1	42	53	black gray	14	8	63,7	58,5	58,5	40	32,7-38
DK_PG-48-C/1 DK_PG-48-S/1	48	58,5	black gray	14	8	69	64	64	45	37-44

KKG Cable Trays



The cable trays used to carry electrical installations in control and switchgear cabinets.
Special features:
- base made of PCV-based technopolymer
- self extinguishable (UL 94) flammability class V0
- a perforated bottom made in accordance with DIN 43659
- simple assemble on the rail bottom
- ribs flexibility in trays allows their repeated flexing during installation

Symbol	Dimensions WxH [mm]	Length [m]	Number of pieces per unit
KKG 2540-2	25x40	2	50x2m
KKG 2560-2	25x60	2	35x2m
KKG 4040-2	40x40	2	35x2m
KKG 4060-2	40x60	2	28x2m
KKG 4080-2	40x80	2	20x2m
KKG 6040-2	60x40	2	25x2m
KKG 6060-2	60x60	2	16x2m
KKG 6080-2	60x80	2	16x2m
KKG 8080-2	80x80	2	12x2m
KKG 10080-2	100x80	2	10x2m
KKG 10060-2	100x60	2	10x2m

NCK Shears for cable trays

Shears for cutting plastic panels and cable trays, along full length of blade.
Special features:
- ergonomic handle for even pressure on the blade
- cutting positioner for professional placement of cut material

Cutting length: 110 mm; Tool length: 280 mm; Weight: 520 g

M_TNO Tool bag

Tool bag:
- made of high quality polyester
- easy access to compartments
- front pocket for documents
- adjustable detachable cushioned strap
- handle for carrying
- metal latches for easy opening and closing, with key
- riverted construction
- aluminum edge reinforcement protects against damage and deformation

Dimensions: (LxWxH): 500 x 250 x 250 mm

M_TNBK Tool bag

Tool bag:
- metal handle with foam for better carrying comfort
- adjustable, removable strap
- many inner and outer pockets
- reinforced bottom protecting tools

Dimensions (LxWxH): 450 x 285 x 335mm

M_PBW Reinforced tool belt

Reinforced tool belt:
- personalized combination of tools
- includes black leather belt
- soft breathing material on inner side especially useful when the belt is under heavy load
- outer side made of polyester
- riveted construction

Lenght: 1380 mm

M_KW Driver holster

Driver holster:
- made of polyester
- small pockets for screwdriver bits
- leather strap holds securely in place
- power cable holder
- riveted construction

M_KE Tool pouch

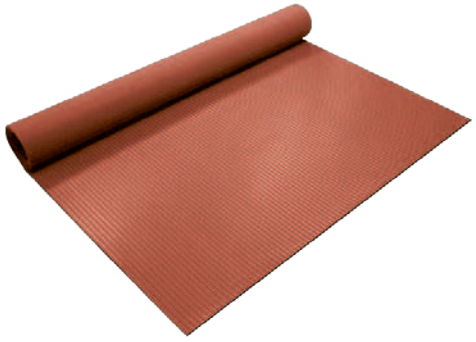
Tool pouch:
- made of polyester
- compact compartment inside (sealed)
- metal holder on chain for insulation tape
- screwdrivers and leather knife holder
- riveted construction

DE 750 Dielectric rug

Used as an additional electro insulating accessory increasing working safety when handling electrical equipment with voltage up to 20kV.

- minimum dielectric strength of 10kV / mm
- thickness 6 mm (of which 2 mm is RYFL slip)
- resistant to tearing and heat aging
- dimensions of 0.75 m x 0.75 m
- chamfered edges at an angle of 45 degrees allow stacking of any surface without the need for additional bonding or fixing
- has an individual production number and certificate of voltage test results

CE 1100 Dielectric rug



Made of high-percentage rubber used for the production of electrical insulation products. Increases working safety when handling electrical equipment with voltage up to 20kV.

- minimum dielectric strength of 10kV / mm
- thickness 6 mm (of which 2 mm is RYFL slip)
- width 1,10m
- lenght from 2m to 8m
- has an individual production number and certificate of voltage test results

KE Dielectric galoshes

Used in combination with the essential equipment increases safety work. Protect against stepping or touching striking voltages.

- accquire certificate of compatibility CSN EN 50321
- used as additional electro insulating accessory during work on the use of devices with voltage up to 1kV
- sampling withstand voltage up to 5 kV
- manufactured from high-percentage rubber, based on natural rubber
- hold voltage tests valid 12 months from the date of production
- from the inside lined with knit fabric that provides better tear strength
- available in two sizes: 45 and 46
- anti-slip sole, height of about 10 cm

PE Dielectric shoes

They protect the user against dangerous flow of electrical currency destruction coming through the feet to the body. Used as additional protective equipment, applied on the inner shoes (safe, protective or professional).

- designed for working with electrical equipment with voltage up to 20V
- labeled with a serial number and date of manufacture (month, year)
- marked with the double triangle (symbol of electrical insulation properties) with the designation of Class 2
- acquires everted cuff improving the protective properties (during the use should be everted on the upper)

ERE Dielectric gloves

Dielectric gloves designed to protect aginst potencial danger, which can cause serious and irreversible injuries (category III).

- meet the requirements of PN-EN 60903:2006 norms, also the extent of the increased resistance of acids, oil and ozone (category R), and far-low temperatures (category C)
- used as protective equipment when working with electricity with voltage up to 1kV
- manufactured from high quality latex
- five finger anatomic form
- flexible and ergonomic
- cooperates perfectly with antiseptic inserts and leather gloves
- available in three sizes: 9, 10, 11
- labeled with individual number and test certificate
- two year warranty
- has CE mark and authorization for use in underground

Type / Characteristics of the gloves		ELSEC 2,5	ELSEC 5	ELSEC 10	ELSEC 20	ELSEC 30
Class of the gloves		00	0	1	2	3
The test voltage, AC, effective value	kV	2,5	5	10	20	30
The minimum operating voltage, AC, rms value	kV	5	10	20	30	40
The maximum operating voltage, AC, rms value	kV	0,5	1,0	7,5	17	26,5
The maximum current leakage, rms value	mA	<12	<12	<14	<16	<18
Maximum thickness of the glove (+0,6mm)	mm	0,5	1,0	1,5	2,3	2,9
Minimum stretching strenght	MPa	16	16	16	16	16
Minimum elongation at rupture	(%)	600	600	600	600	600
Lenght	mm	360	360	360	360	360
Size		9, 10, 11	9, 10, 11	9, 10, 11	9, 10, 11	9, 10, 11
Cuff		Straight	Straight	Straight	Straight	Straight

HZP Protective helmet

The helmet has an integrated protective face shield that provides protection for the head against mechanical shock and splashes. It protects face, eyes and neck from electric threats occurring during work under voltage up to 1000V and protects against the effects of UV radiation.
Helmet parameters:

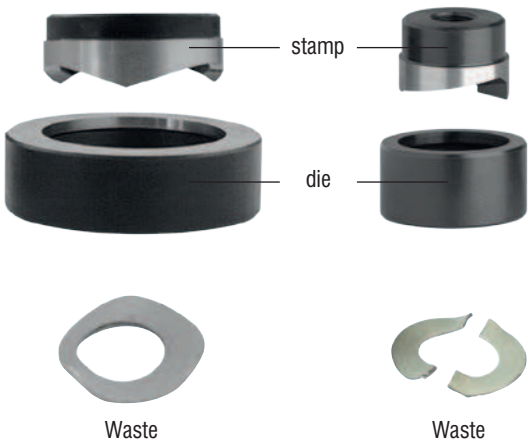
- made of polyamide
- property to protect against electric shock (Class 0) 1000VAC, 1500 VDC
- amortization ability after conditioning at temperatures (-30°C, + 50°C degrees)
- puncture resistance after conditioning at temperatures (-30°C, + 50°C degrees)
- resistance to lateral deformation
- resistance to splashes of molten metal

The parameters of the cover:

- made of polycarbonate with a thickness of 1.5 mm
- impact resistant of average energy - Impact velocity of 120 m/s ball having a mass of 0.86 g
- protection against drops and liquid splashes
- protection against molten metal and hot solids
- resistant to fogging
- protection against electric arc
- resistance to UV radiation filter code and the level of protection 2-1, 2
- luminance factor scattering of light (optical class 2)
- VLT factor of > 78% (Class 0)
- protection against thermal hazards caused by electric arc (Class 1)

HOLE PUNCHING TOOLS

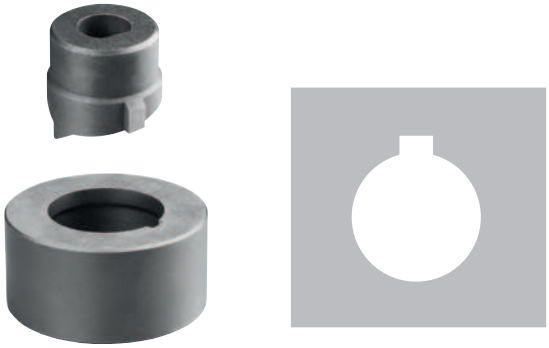
WO Round hole punches



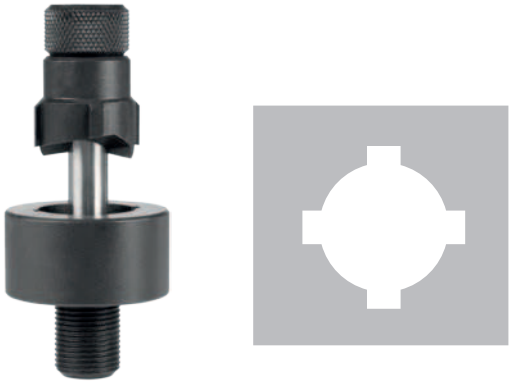
Punches for round hole punching:
- in sheet metal of switchgears, desktops
- for signal lamps, glands, buttons
- maximum sheet metal thickness up to 2 mm (at Rm<450MPa, e.g. type St3S) if using GW or GW_2 heads, maximum sheet metal thickness up to 3 mm
- made of high-strength steel
- increased durability of punching elements and bolt/pin
- up to ø 38,5 mm waste is cut into two parts for easier removal, at larger diameters waste is strongly deformed and therefore easy to remove

WO punches working with hand set, GW, GW 2 hydraulic and battery powered punch EWHE 80, hydraulic punches WHE 80, WH 100, WHP 1.
NOTE: bolt and pin to be ordered separately
For toothed punches use hydraulic drive.

WO toothed round hole punches



e.g.: WO 22,5-Z



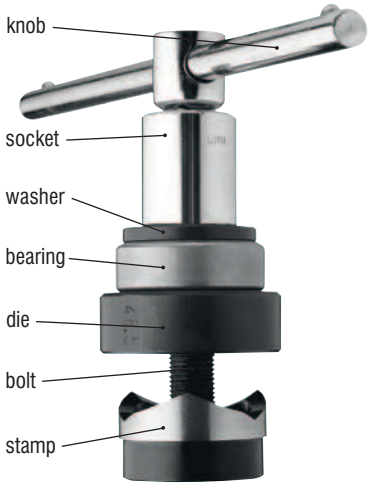
e.g.: WO 22,5-Z4

Type	Initial hole Ø [mm]	Bolt/ Pin	Washer	Socket	PG	Metric thread	PE	NPT
WO 16,2		M8				M16		
WO 18,6					11			
WO 20,4	10,5	M10	P10	S17	13	M20		
WO 22,5					16			
WO 25,4						M25		
WO 28,5					21		25	
WO 32,5						M32		
WO 37,0					29		34	
WO 40,5						M40		
WO 42,2	16,5	M16	P16	S24				NPT 1 1/4
WO 47,0					36			
WO 50,5						M50		
WO 54,0					42			
WO 60,0					48			

WO K Complete hand punch

Set consists of:
- knob
- socket (S17 or S24 depending on the diameter of the punch)
- washer (P10 or P16 depending on the diameter of the punch)
- bearing
- bolt (M10 or M16 depending on the diameter of the punch)
- graphite grease
- WO punch – chart above (page 66)
- metal case

NOTE: bolt requires greasing. Greasing and cleaning tools significantly prolongs its durability.



WO R Hand set

Set consists of:
- knob
- sockets (S17 and S24)
- washers (P10 or P160
- bearing
- bolt (M10 and M16)
- graphite grease
- 7 WO punches (16,5; 22,5; 30,5; 38,5; 48,5; 55,5; 60,5)
- K5 metal case

NOTE: There is possibility of ordering chosen elements of set, and other punches (see chart above, page 66).
Different diameters up to Ø 60 mm on request.

WO H Hydraulic set

Hydraulic set consists of:
- 7 WO punches (16,5; 22,5; 30,5; 38,5; 48,5; 55,5; 60,5)
- K5 metal case

NOTE: There is possibility of ordering chosen elements of set, and other punches (see chart on page 66).
Different diameters up to Ø 120 mm on request.
Works with hydraulic heads GW and GW 2 and with battery powered punches: EWHE 80, WHE 80, WH 100 and WHP 1
Pins are purchased separately.

WON punch for punching holes in stainless steel sheet metal

Punch for round hole punching:
- in stainless steel sheet metal up to 1,5 mm
- of maximum diameter 28,5 mm
  (battery powered punches: EWHE 80, WHE 80, WH 100 and WHP 1)
- of maximum diameter 32,5 mm
  (battery powered punches: EWHE 80, WHE 80, WH 100)
- up to Ø 60 mm – GW, GW 2 heads (work with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L electric hydraulic drives)

NOTE: WON punches can work only with hydraulic tools.
WON punches have different pins than WO punches (different thread in the stamp), ordered separately.


M8 pin


M10 pin


M16 pin

Type	Hole Ø [mm]	Pin size	PG	Metric thread	PE	NPT
WON 12,7	12,7	8	7	M12		
WON 15,2	15,2	8	9			
WON 16,2	16,2	8		M16		
WON 18,6	18,6	10	11			
WON 20,4	20,4	10	13	M20		
WON 22,5	22,5	10	16			
WON 25,4	25,4	10		M25		
WON 28,5	28,5	16	21		25	
WON 32,5	32,5	16		M32		
WON 37,0	37,0	16	29		34	
WON 40,5	40,5	16		M40		
WON 42,2	42,2	16				NPT 1 1/4
WON 47,0	47,0	16	36			
WON 50,5	50,5	16		M50		
WON 54,0	54,0	16	42			
WON 60,0	60,0	16	48			

WK Square hole punch

Punch for square hole punching:
- in sheet metal of switchgears, desktops (for mounting measuring devices)
- maximum sheet metal thickness up to 2 mm (at Rm<450MPa, e.g. type St3S) if using GW or GW_2 heads, maximum sheet metal thickness up to 3 mm
- initial hole diameter 23 mm

Works with GW and GW 2 hydraulic heads and with battery powered punches: EWHE 80, WHE 80, WH 100 and WHP 1.
NOTE: Different dimensions up to 140 x 140 mm on request. Punch with pin.

Type	Hole dimensions [mm]	Weight [kg]
WK 26,5	26,5 x 26,5	1,4
WK 45,6	45,6 x 45,6	3,7
WK 68,6	68,6 x 68,6	4,3
WK 92,7	92,7 x 92,7	4,8

WP Universal punch

Punch for square and rectangular holes punching of any dimensions, by multiple punching:
- minimum hole dimensions 36x26 mm
- maximum sheet metal thickness up to 2 mm (at Rm<450MPa, e.g. type St3S)

NOTE: for initial hole use WK 26,5.
Works with GW and GW 2 hydraulic heads and with battery powered punches: EWHE 80, WHE 80, WH 100 and WHP 1.

WHP 1 Hydraulic punching tool

Hydraulic punching tool for round, square and rectangular holes:
- maximum steel sheet metal thickness up to 2 mm (at Rm<450MPa, e.g. type St3S)
- maximum stainless steel sheet metal thickness 1,5 mm

Works with punches:
- WO 12,7 ÷ 60,5 mm
- WON 12,7 ÷ 28,5 mm
- WK up to 68,5 x 68,5 mm
- WP

Delivered with M10 and M16 pins (not applicable for WON punches).
Weight: 1,8 kg; Force:30 kN at 400 bar; Working stroke: 15 mm


pin M10


pin M16

WHE 80 Hydraulic punching tool

Hydraulic punching tool for punching round, square and rectangular holes.
Thanks to rotatable head it is possible to cut in places of difficult access.
- maximum steel sheet metal thickness up to 2 mm (at Rm<450MPa, e.g. type St3S)
- maximum stainless steel sheet metal thickness 1,5 mm
- Works with punches:
- WO from 12.7 ÷ 80 mm
- WON from 12.7 ÷ 32.5 mm
- WK up to 68.5 x 68.5 mm
- WP

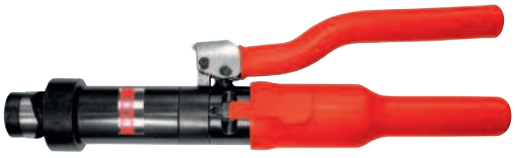
Special features:
- bi-articulated swivel head for cutting holes

Delivered with M10 and M16 pins (not applicable for WON punches).
Length: 400 mm; Weight: 3 kg; Stroke: 16 mm; Force: 36,5 kN


pin M10


pin M16

WH 100 Hydraulic punching tool



Hydraulic punching tool for round, square and rectangular holes:
- maximum steel sheet metal thickness up to 2 mm (at Rm<450MPa, e.g. type St3S)
- maximum stainless steel sheet metal thickness 1,5 mm

Works with punches:
- WO 12,7 ÷ 80 mm
- WON 12,7 ÷ 32,5 mm
- WK up to 68,5 x 68,5 mm
- WP

Delivered with M10 and M16 pins (not applicable for WON punches).
Length: 342 mm; Weight: 3,9 kg; Force: 35 kN at 470 bar; Working stroke: 14 mm


pin M10


pin M16

GW, GW 2 Hydraulic heads

Hydraulic heads for round, square and rectangular holes:
- maximum steel sheet metal thickness up to 3 mm (at Rm<450MPa, e.g. type St3S)
- maximum stainless steel sheet metal thickness 1,5 mm

Works with punches – see chart below.
Delivered with M10 and M16 pins (not applicable for WON punches).
GW hydraulic head i delivered with M10 and M16 pins
(not applicable for WON punches).
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Force: 83 kN at a pressure of 630 bars


pin M10


pin M16

Type	WO diameters range [mm]	WON diameters range [mm]	WK range [mm]	Weight [kg]	Lenght [mm]	Piston rod thread	Working stroke [mm]
GW	15 ÷ 80	12,7 ÷ 60	do 92,7	1,7	165	M16x1,25	15
GW 2	15 ÷ 120	12,7 ÷ 60	do 140	2,9	230	M22x1,5	22

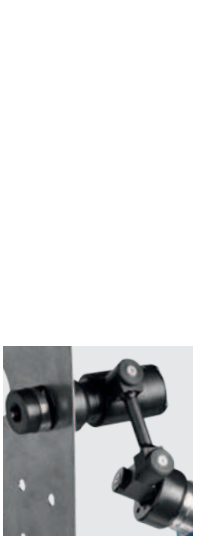
EWHE 80 Battery powered punching tool

Battery powered punching tool for punching round, square and rectangular holes.
Thanks to rotatable head it is possible to cut holes in places with difficult access.
- maximum steel sheet metal thickness up to 2 mm (at Rm<450MPa, e.g. type St3S)
- maximum stainless steel sheet metal thickness 1,5 mm

Works with punches:
- WO from 12.7 ÷ 80 mm
- WON from 12.7 ÷ 32.5 mm
- WK up to 68.5 x 68.5 mm
- WP

Special features:
- bi-articulated swivel head for cutting holes
- efficient lithium-ion battery
- automatic pressure control

Delivered with M10 and M16 pins (not applicable for WON punches).
The kit includes two batteries.
Length: 420 mm Weight: 3 kg. with battery, Working stroke: 16 mm, Force: 50 kN

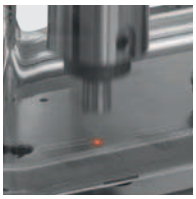
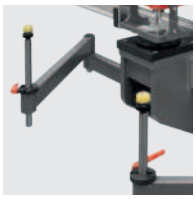


SW 500 Hole punching station

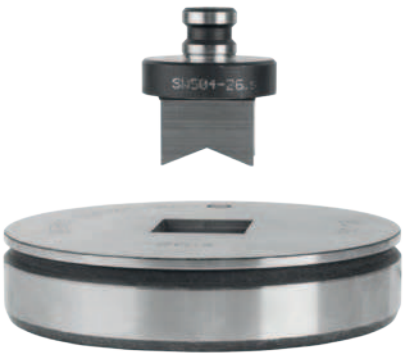
Station for hole punching in steel sheet, stainless steel sheet, aluminum sheet and some plastics, without necessity of initial hole making:
- steel sheet thickness 1.5 ÷ 3 mm (max Rm 370 MPa)
- max stainless steel sheet thickness of 2 mm (max Rm 540 MPa)
- sheet aluminum and plastics 1.5 ÷ 4 mm
- working range (from the edge of the sheet to the axis of the hole) max. 500 mm

Works with punches:
- SW 503 (round) 12.7 ÷ 63.5 mm
- SW 504 (square) 26.5 x 26.5 ÷ 46 x 46

Works with AH 100, AH 500, AH 550 and AH 500L hydraulic units, and for less intensive work with H 800 hydraulic pump.
Dimensions (LxWxH): 1010 x 930 x 1600 mm;
Weight of the station without the equipment: 300 kg;
Pressure: 630 bar; Force: 55 kN.
As standard equipped with hydraulic cylinder as well as matrix socket and the matrix adapter for punches SW 503 and SW 504, and also a laser pointer, a position indicator and length ruler.
As standard station is mounted on a workbench.
NOTE: Support and measuring ruler need be ordered separately.


SW 503

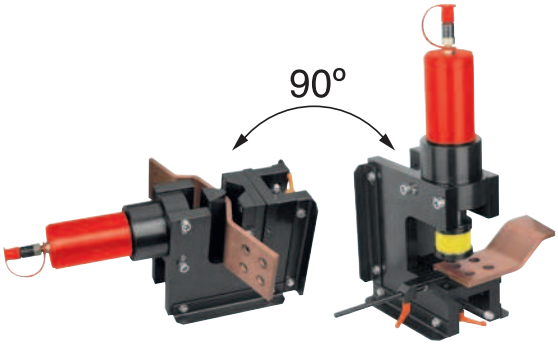


SW 504

Type	ø hole	PG	Metric	PE
SW 503-12,7	12,7	7		
SW 503-15,2	15,2	9		
SW 503-16,2	16,2			
SW 503-18,6	18,6	11		
SW 503-20,4	20,4	13		
SW 503-22,5	22,5	16		
SW 503-25,4	25,4			
SW 503-28,5	28,5	21	25	
SW 503-32,5	32,5			
SW 503-37,0	37,0	29	34	
SW 503-40,5	40,5			
SW 503-42,2	42,2			NPT 1 1/4
SW 503-47	47,0	36		
SW 503-50,5	50,5			
SW 503-54	54,0	42		
SW 503-60,0	60,0	48		
SW 503-63,5	63,5			

BUSBAR AND MOUNTING **RAIL PROCESSING**

HGD 125 Bender – puncher

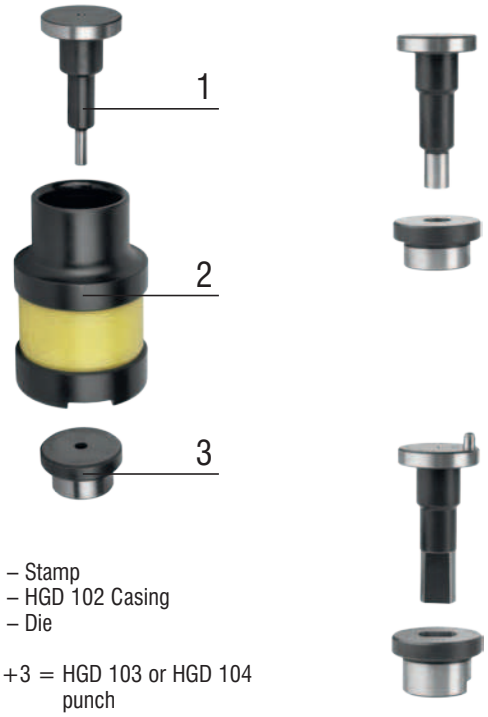


bending hole punching

Bender-puncher for bending Al and Cu busbars as well as hole punching:
- busbar width from 30 ÷ 125 mm
- busbar thickness 5 ÷ 10 mm
- bending angle range up to 90°
- round holes punching of 6,6 ÷ 21 mm
- oval holes punching of 8,5 ÷ 21 mm
- equipped with rulers for positioning when punching holes
- electric sensor (HGD 105- limit switch) enables reapetable bending

Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Dimensions: (LxWxH): 370x260x585 mm; Weight: 42 kg; Force: 190 kN
Pressure: 630 bar

Punch and casing



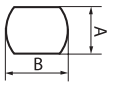
1 – Stamp
2 – HGD 102 Casing
3 – Die

1+3 = HGD 103 or HGD 104 punch

Standard dimensions of round hole punches:

Symbol	Hole diameter [mm]	For M screw
HGD 103 – 6,6	6,6	6
HGD 103 – 8,5	8,5	8
HGD 103 – 11	11	10
HGD 103 – 13	13	12
HGD 103 – 17	17	16
HGD 103 – 21	21	20

NOTE: punches with other sizes made on request.

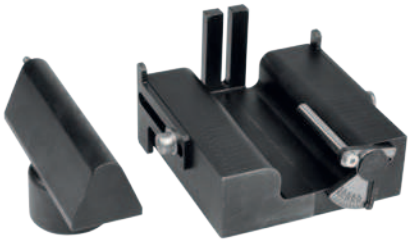


Standard dimensions of oval hole punches:

Symbol	Dimension A [mm]	Dimension B [mm]	For M screw
HGD 104 8,5-12	8,5	12	8
HGD 104 11-16	11	16	10
HGD 104 13-18	13	18	12
HGD 104 17-21	17	21	16

HGD 121, 121S bending die

HGD121



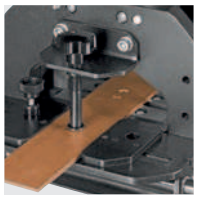
HGD121S

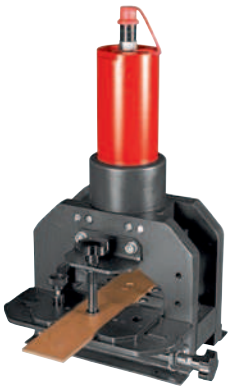
Designed for busbar bending. Bending angle range up to 90°.
Set includes stamp and insert die.

HC 125 Busbar cutter

Cutter for cutting Al and Cu busbars:
- busbar width from 30 ÷ 125 mm
- busbar thickness 5 ÷ 12 mm
- cutting without deformation or burr

Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Dimensions: (LxWxH): 310x240x475 mm; Weight: 32 kg; Force: 190 kN
Pressure: 630 bar





HGP 5010 Lateral bender

Bender for lateral bending Al and Cu busbars:
- width range 20 ÷ 50 mm
- thickness range 5 ÷ 10 mm
- bending angle range up to 90°

Special features:
- equipped with bending insert
- equipped with set of rollers (two supporting rollers, stamp with punch clamp) for busbars of thickness 5 and 10 mm
- on request rollers for Al busbars
- electric sensor (HGD 105 - limit switch) enables repeatable bending only working with hydraulic unit - need to be ordered separately

Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Dimensions: (LxWxH): 700x250x230 mm; Weight: 49 kg; Force: 190 kN
Pressure: 630 bar

HSK 5010 Axial bender

Bender for axial bending (propeller like) Al and Cu busbars:
- width range 20 ÷ 50 mm
- thickness range 3 ÷ 10 mm
- bending angle range up to 90°

Special features:
- equipped with electric sensor (limit switch) enabling reapetable bending
- equipped with spacer insert for rotatable handle, for busbars of thickness up to 5 mm
- equipped with adjustable busbar width bracket

Works with AH 100, AH 500, AH 550, AH 500L hydraulic units.
Dimensions: (LxWxH): 720x300x190 mm; Weight: 42 kg; Pressure: 380 bar

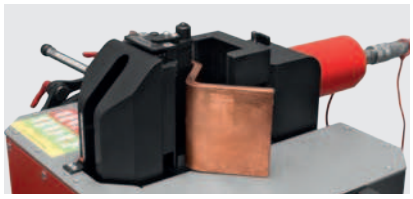
SH 300 Busbar Processing Station

Station for cutting, hole punching, bending and offsetting Al and Cu busbars as well as inserting nuts:
- width range: 30 ÷ 125 mm
- thickness range 5 ÷ 12 mm
- bending angle range 15° ÷ 90°

Special features:
- equipped with an adjustable bending angle indicator (graduation rate of the resolution is 5°, measurement does not include the elasticity of the busbar)
- equipped with a bumper with scale (adjustment ruler range is 200 mm, accuracy of 1 mm)
- body height adjustment (accuracy of 1 mm)
- burr-free round and oval holes punching
- burr-free busbars cutting
- standard set for inserting nuts SH 307, SH 303

Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units (need to be ordered separately).
Overall dimensions (LxWxH): 550x540x430 mm;
Weight with standard equipment 57 kg;
Force: 150 kN;Pressure: 630 bar

Hole punching
SH 303, SH 304, SH 309



Bending SH 301

Cutting SH 305

Equipment for SH 300 station

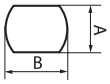
Equipment	Type	SH 300
Insert for bending (angle indicator)	SH 301	O
Insert for bending with limit switch	SH 301-K	O
Insert for cutting	SH 305	O
Insert die for busbars offsetting. Standard dimensions 12; 10; 8; 6; 5	SH 306	O
Round hole punch (standard dimensions according to the catalog)	SH 303	O
Adapter for punches SH 303 and SH 304	SH 303-03	O
Oval hole punch (standard dimensions according to the catalog)	SH 304	O
Rectangular hole punch (dimensions according to order: maximum up to 21 mm diagonal, side not shorter than 6,6 mm)	SH 309	O
Insert die for inserting nuts (applies to ERKO nuts, others on request)	SH 307	O

O additional equipment on request

Punches for SH 300 station

Standard dimensions of round hole punches

Symbol	Hole diameter [mm]	For M screw
SH 303-6,6	6,6	6
SH 303-8,5	8,5	8
SH 303-11	11	10
SH 303-13	13	12
SH 303-17	17	16
SH 303-21	21	20



Standard dimensions of oval hole punches

Symbol	Dimension A [mm]	Dimension B [mm]	For M screw
SH 304 8,5-12	8,5	12	8
SH 304 11-16	11	16	10
SH 304 13-18	18	18	12
SH 304 17-21	21	21	16

SH 400 Busbar processing station

Station for cutting, bending, hole punching, offsetting Al and Cu busbars as well as inserting nuts:

- busbar width from 30 ÷ 125 mm
- busbar thickness 5 ÷ 12 mm
- bending angle range up to 90°

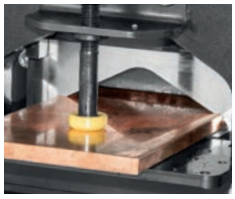
Special features:

- equipped with smoothly adjusted bending angle sensor
- equipped with measuring rulers (line ruler)
- height adjustment of hole punching head (1mm precision)
- burr-free round and oval holes punching
- burr-free busbars cutting
- built-in reliable hydraulic drive
- equipped with port for ERKO hydraulic heads (hydraulic hose with quick coupler PM 630 bar)
- standard set for inserting nuts include SH 407 insert and round hole punch SH 403 (need to be ordered separately), chart below

Total dimensions: (LxWxH): 1280x850x1420 mm;
Weight incl. standard equipment: 280 kg; Pressure: 630 bar;
Power: 3 x 400V/230V; 1,1 kW

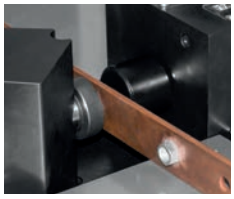
Bending SH 401PLC-K.

Hole punching
SH 403, SH 404, SH 409.



Cutting SH 405.

Offsetting SH 406PLC.



Inserting nuts SH 407.

Equipment for SH 400 station

Equipment	Type	SH 400
Insert for repeatable bending (built-in limit switch)	SH 401PLC-K	●
Busbar cutter	SH 405	●
Insert die for busbars offsetting	SH 406PLC	○
Additional worktop	SH 408PLC	○
Round hole punch (standard dimensions according to catalog)	SH 403	○
Oval hole punch (standard dimensions according to catalog)	SH 404	○
Rectangular hole punch (dimensions according to order: max diagonal 21 mm, side not shorter than 6,6 mm)	SH 409	○
Insert die for inserting nuts	SH 407	○
Additional busbar support	SH 408	○
Bending without correction (not complying busbar flexibility) precision of repeatable bending ±2°		●
Repeatable offsetting		○

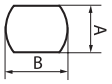
● standard equipment ○ additional equipment on request

Punches for SH 400 station

Standard dimensions of round hole punches

Symbol	Hole diameter [mm]	For M screw
SH 403 – 6,6	6,6	6
SH 403 – 8,5	8,5	8
SH 403 – 11	11	10
SH 403 – 13	13	12
SH 403 – 17	17	16
SH 403 – 21	21	20

NOTE: Punches of other dimensions on request



Standard dimensions of oval hole punches

Symbol	Dimension A [mm]	Dimension B [mm]	For M screw
SH 404 8,5-12	8,5	12	8
SH 404 11-16	11	16	10
SH 404 13-18	13	18	12
SH 404 17-21	17	21	16

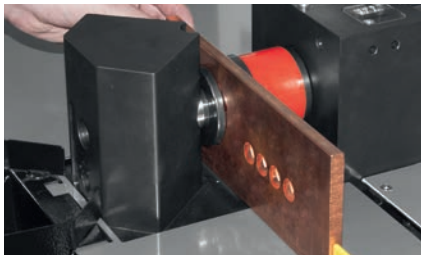
SH900PLC busbar processing station

Station for Al and Cu busbars precise cutting, bending, hole punching, inserting nuts, offsetting:
- busbar width from 30 ÷ 125 mm
- busbar thickness 5 ÷ 12 mm
- bending angle range up to 90°

Special features:
- equipped with LED touch screen programmed in: Polish, Russian, English, German and Czech (other languages on request)
- equipped with electronic, programmable bending angle sensor (setting precision 0,5°)
- equipped with measuring rulers enabling precise positioning of 0,1mm
- precise height adjustment of hole punching head (0,2mm precision)
- burr-free round and oval holes punching
- burr-free busbars cutting
- built-in reliable hydraulic drive
- automatic identification of inserted dies
- bending angle correction complying busbar flexibility
- electronic length measurement of cut busbar (up to 6m)
- electronic length measurement of bent and punched busbar (up to 0,5 or 1,2m)
- busbar offsetting repeatability
- additional worktop
- tilt, rotatable touch screen
- equipped with control socket
- equipped with port for ERKO hydraulic heads (hydraulic hose with quick coupler PM 630 bar)
- standard set for inserting nuts include SH 407 insert and round hole punch SH 403 (need to be ordered separately), chart on page 79

Total dimensions: (LxWxH): 1400 x 930 x 1420 mm;
Weight incl. standard equipment: 355 kg; Pressure: 630 bar;
Power: 3 x 400V/230V; 1,4 kW or 1 x 230V

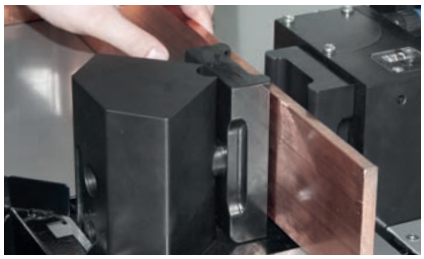
Holdfast for the busbars during cutting.



Hole punching SH 403, SH 404, SH 409.

Control key for cutting busbars.

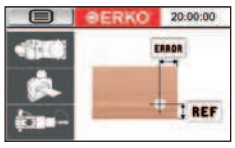
Additional busbar bumper, providing performance of perpendicular cut.



Offsetting SH 406PLC.

7 inch, rotatable LED touch screen.

Screen panel includes manual.



Equipment for SH 900PLC station

Equipment	Type	SH 900 PLC
Insert for precise bending (built-in encoder)	SH 801PLC-E	●
Busbar cutter	SH 405	●
Length sensor for cut busbar	SH 415PLC	●
Insert die for busbars offsetting	SH 406PLC	●
Additional worktop	SH 408PLC	●
Extended measurement of length L (range from 0 to 1020 mm)	SH 418PLC	●
Round hole punch (standard dimensions according to catalog)	SH 403	○
Oval hole punch (standard dimensions according to catalog)	SH 404	○
Rectangular hole punch (dimensions according to order: max diagonal 21 mm, side not shorter than 6,6 mm)	SH 409	○
Insert die for inserting nuts	SH 407	○
Additional busbar support	SH 408	○
Bending with correction (complying busbar flexibility) precision of bending ±0,5°		●
Measurement of height H, precision 0,2 mm		●
Measurement of lenght L, range 0-500 mm, precision 0,1 mm		

● standard equipment ○ additional equipment on request

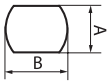
Punches for SH 900PLC station

Standard dimensions of round hole punches

Symbol	Hole diameter [mm]	For M screw
SH 403 – 6,6	6,6	6
SH 403 – 8,5	8,5	8
SH 403 – 11	11	10
SH 403 – 13	13	12
SH 403 – 17	17	16
SH 403 – 21	21	20

NOTE: Punches of other dimensions on request

Standard dimensions of oval hole punches



Symbol	Dimension A [mm]	Dimension B [mm]	For M screw
SH 404 8,5-12	8,5	12	8
SH 404 11-16	11	16	10
SH 404 13-18	13	18	12
SH 404 17-21	17	21	16

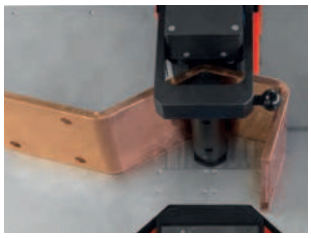
HG 200 Busbar bending station

Station for precise Al and Cu busbar bending:
- width range of cut busbar 50 ÷ 180 mm
- width range of bent busbar 50 ÷ 200 mm
- thickness range of bent and cut busbar 5 ÷ 15 mm
- bending angle range up to 90°

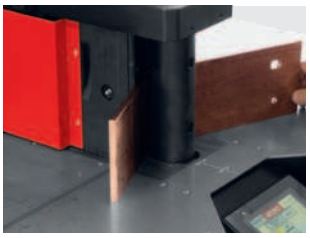
Special features:
- equipped with angle compensation system, consequent to flexibility of bent material
  - standard radius of bending inserts: R5; R8; R10; R12; R15; R20 (other sizes on request after technical consultation)
  - 4 bending inserts can be used with station (3 standard of which 1 included in the price, others paid extra, and 1 non standard custom maid)
- easy in operation panel, minimizing time for programming
- ergonomic worktop shape assuring precise bending of long busbars
- stable construction and low weight same time
- efficient, compact electric hydraulic unit, with low electricity consumption makes the device very economical
- possibility of adjusting the station for individual customers needs

Total dimensions (LxWxH): 1200 x 1230 x 1274 mm;
Weight with standard equipment: 450 kg;
Force 30 kN at a pressure of 400 bar;
Power supply: 3 x 400V / 230V; 1,68 kW

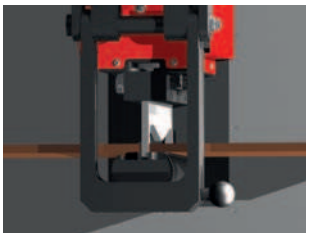
Bending HG 201.



Bending HG 201.



Bending HG 201.



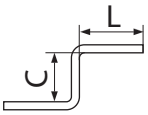
Cutting HG 205.

Equipment for HG 200 station

For the station below inserts are available:
- cutting insert HG 205
- 3 standard bending inserts HG 201:

HG 201-G20 insert allows bending busbars of range:
Thickness: 15 ÷ 20 mm
Busbar width: 50 ÷ 150 mm

HG 201-G15 insert allows bending busbars of range:
Thickness: 8 ÷ 15 mm
Busbar width: 50 ÷ 200 mm

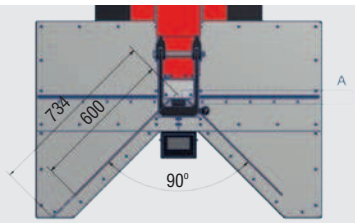


HG 201-G8 insert allows bending busbars of range:
Thickness: 5 ÷ 8 mm
Busbar width: 50 ÷ 200 mm

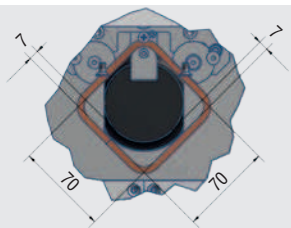
NOTE: use bending stamp with radius equal to busbar thickness.

Insert	A	B	C	L for C=95 mm	L for C=105 mm
HG 201-G20	65	65	80	95	500
HG 201-G15	45	45	75	95	500
HG 201-G8	40	40	75	95	500

Other inserts on request after technical consultation.



Special worktop shape enables stable bending of long busbars.



Minimum inner dimension of bending in C profile is 70 mm.

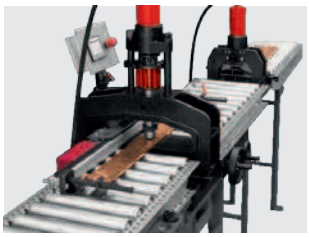
HD 160 Busbar processing station

Station for busbar hole punching with cutting option (busbar cutter HC 160) or bending option (bender HG160):
- maximum busbar width 40 ÷ 160 mm
- busbar thickness 5 ÷ 13 mm
- maximum busbar length 3 m

Special features:
- equipped with measuring rulers enabling precise positioning of 0,1 mm
- hole punching in incomplete material
- oval holes punched parallel or along processed busbar
- burr-free round and oval holes punching
- burr-free busbar cutting, without deformation (applies to HC160)
- touch screen programmed in: Polish, Russian, German and English
- roller guide on both sides of the body

Dimensions: (LxWxH): 4500(6500) x 750 x 1650 mm; Weight: 270 (300) kg
Force: 190 kN; Pressure: 630 bar;
Power: 3 x 400V/230V; 1,2 kW

Station type	Type
Hole punching station (2m guide)	HD 160-2
Hole punching station (3m guide)	HD 160-3
Busbar cutter	HC 160
Bender	HG 160



Hole punching in incomplete material.

Hole punching HD 163, HD 164.

Cutting HC 160.

Bending HG 160.

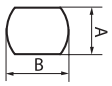
Hole punches for HD 160 Busbar processing station

Standard dimensions of round hole punches:

Symbol	Hole diameter [mm]	For M screw
HD 163 – 8,5	8,5	8
HD 163 – 11	11	10
HD 163 – 13	13	12
HD 163 – 17	17	16
HD 163 – 21	21	20

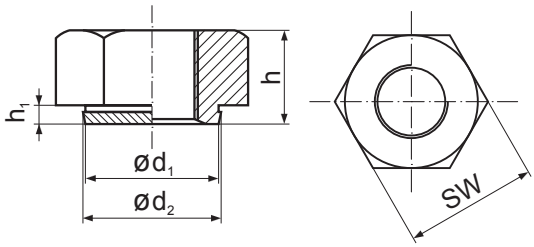
NOTE: Punches of other dimensions on request

Standard dimensions of oval hole punches:



Symbol	Dimension A [mm]	Dimension B [mm]	For M screw
HD 164 8,5-12	8,5	12	8
HD 164 11-16	11	16	10
HD 164 13-18	13	18	12
HD 164 17-21	17	21	16

NW Inserting nuts



Inserting nuts:
- made of machining steel 11SMnPb30
- surface hardened
- galvanized
- high standard
- special geometry ensures optimum connection of the inserting nut with construction element

Thread	Sheet thickness [mm]	Hexagon dimension [mm]	d_1 Ø [mm]	d_2 Ø [mm]	Collar height h_1 [mm]	Nut height h [mm]
M8	2	13	10	10,3	1,8	6,5
M10	2	15	12,5	12,85	1,8	8
M12	3	17	14,5	14,85	2,9	10

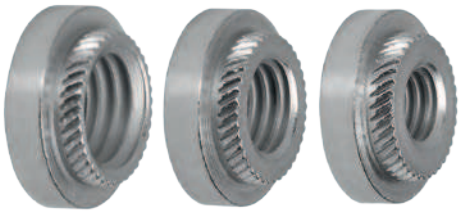
Attempt to unscrew the nut afther the press in the steel sheet

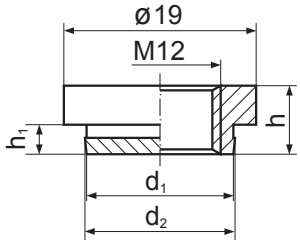
Nut size	M8	M10	M12
The minimum value [Nm.]	24	41	41

Set for inserting nuts (inserting nut + inserting die + hole punch):

Insert type	Punch type	Nut type
SH 307	SH 303-10,1; SH 403-10,1	NW M8
SH 307	SH 303-12,6; SH 403-12,6	NW M10
SH 307	SH 303-14,5; SH 403-14,5	NW M12

NWO Inserting nuts





Inserting nuts:
- made of machining steel 11SMnPb30
- surface hardened
- galvanized
- high standard
- special geometry ensures optimum connection of the inserting nut with construction element

Thread	Sheet thickness [mm]	Ø [mm]	d_1 Ø [mm]	d_2 Ø [mm]	Collar height h_1 [mm]	Nut height h [mm]
M8	3	19	14,5	14,85	2,9	6,8
M10	3	19	14,5	14,85	2,9	6,8
M12	3	19	14,5	14,85	2,9	6,8

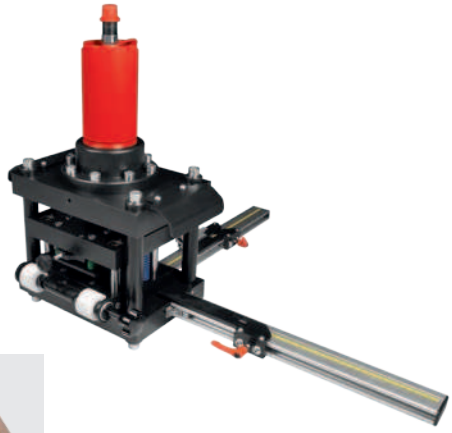
Set for inserting nuts (inserting nut + inserting die + hole punch):

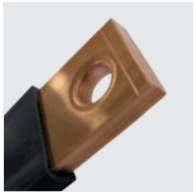
Insert type	Punch type	Nut type
SH 307	SH 303-14,5; SH 403-14,5	NWO M8
SH 307	SH 303-14,5; SH 403-14,5	NWO M10
SH 307	SH 303-14,5; SH 403-14,5	NWO M12

HSE 100 Flexible busbar processing station

Station for hole punching, cutting and initial stripping of flexible busbars:
- busbar width range 30 ÷ 100 mm
- busbar thickness range 4 ÷ 10 mm
- round holes punching of diameter 6,6 ÷ 21 mm
- easy system of exchanging stamps and dies
- easy process of exchanging insert for stripping
- cutting accuracy due to installed rulers and centering module

NOTE: HSE 105 module for cutting and initial stripping to be ordered separately.
Works with H 800 hydraulic pump and AH 100, AH 500, AH 550, AH 500L hydraulic units.
Dimensions (LxWxH): 490 x 390 x 490 mm; Weight: 32,5 kg; Force: 190 kN
Pressure: 630 bar





Punches for HSE 100 station

Standard dimensions:

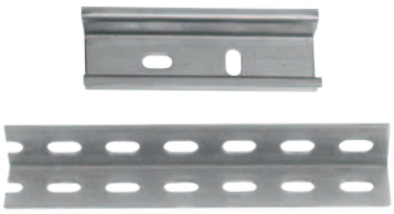
Symbol	Hole diameter [mm]	For M screw
HSE 103 – 6,6	6,6	6
HSE 103 – 8,5	8,5	8
HSE 103 – 11	11	10
HSE 103 – 13	13	12
HSE 103 – 17	17	16
HSE 103 – 21	21	20

NOTE: Punches of other dimensions on request

GLS Mounting rail cutters

Hand cutters for cutting mounting rails:
- profiles according to order – see chart on page 84
- cutting without waste or burr

Weight: 9,2 kg; Height: 300 mm; Force: 45 kN



GLS 1 type
One profile

GLS 2 type
Two profiles

GLP Hydraulic heads

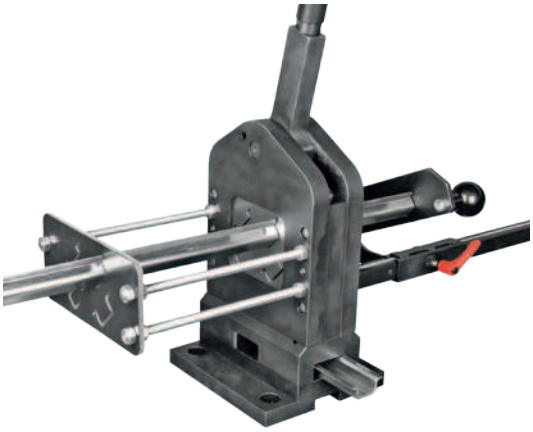
Hydraulic heads for cutting mounting rails:
- profiles according to order – see chart on page 84
- cutting without waste or burr

Works with AH 100, AH 500, AH 550, AH 500L hydraulic units and H 800 hydraulic pump.
Weight: 3,4 kg; Height: 310 mm; Force: 80 kN

GLP 1 type One profile

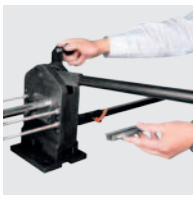
GLP 2 type Two profiles

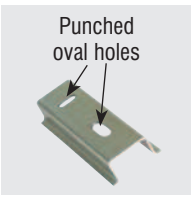
GLR 6 Mounting rail cutter



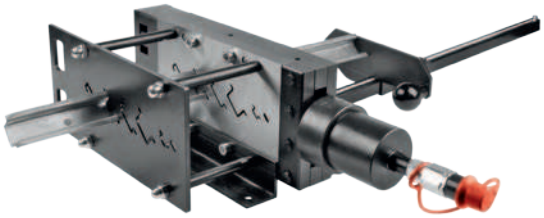
Hand cutter for mounting rails. Optional module for longitudinal and transverse oval holes punching:
- fast cutting without deformation or burr
- from 2 to 6 profiles depanding on dimensions – see chart below
- hole punching (6,4 x 12,4 mm) for M6 screws in TS35 rails

Dimensions including hole punching modul: (LxWxH): 240 x 160 x 1167 mm;
Weight: 17,5 kg
NOTE: Standard version with included two profiles, additional profiles ordered separately.
Measuring ruler to be ordered separately



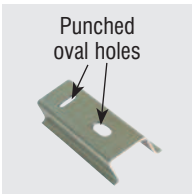


GL 6 Hydraulic mounting rail cutter

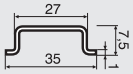
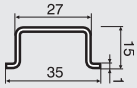
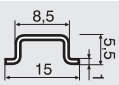
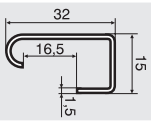
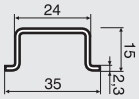


Hydraulic cutter for mounting rails and for longitudinal and transverse oval holes punching:
- easy cutting without deformation or burr
- profiles according to order – see chart below
- hole punching (6,4 x 12,4 mm) for M6 screws in TS35 rails

Works with AH 100, AH 500, AH 550, AH 500L hydraulic units and H 800 hydraulic pump.
Weight: 17,3 kg; Force: 112 kN



MOUNTING RAILS PROFILES

Profile	Shape	Rail type	Made according to standard
P1		TS 35	PN-EN 60715:2007
P2		TS 35C	PN-EN 60715:2007
P3		TS 15	PN-EN 60715:2007
P4		TS 32	PN-EN 60715:2007
P5		TS 35C1	PN-EN 60715:2007
		Other thin-walled profiles: steel, Al, Cu – as agreed	

HYDRAULIC DRIVES

H 800, H 800M, H 800A, H 800AM Hydraulic pump

Hydraulic pump for repairs and fitting works in places of difficult access, away from power sources:
- works with all ERKO hydraulic heads and devices (equipped with PT quick coupler)
- efficient work – 2 circuits:
  - fast access (low pressure)
  - work (high pressure)
- equipped with hydraulic hose (lenght 2m) and PM quick coupler as standard
- can be equipped with manometer (H 800M), automatic retraction (H 800A), automatic retraction and manometer (H 800AM)

Length: 450 mm; Weight: 8,4 kg; Pressure: 630 bar

AH 100 Hydraulic units

Electric hydraulic power unit:
- equipped with 2,5 m hydraulic hose with PM quick coupler
- works with all ERKO hydraulic heads and devices (equipped with PT quick coupler)
- power supply voltage 24V. The capacity of built-in battery 9 Ah
- efficiency: 0,31 L/min at 630 bar
- IP41 degree of protection
- useful amount of oil: 0,65 l

Dimensions: 415 x 315 x 220 mm; Weight: 20 kg
Includes battery charger.
NOTE: as option AC adapter 230V AC/24V DC with Index AH_100-AC/DC allowing work independently from the battery.

AH 500, AH 550 Hydraulic units

Electric hydraulic power units:
- equipped with hydraulic hose with PM quick coupler
- standard equipped with hydraulic hose (2,5 m) with PM quick coupler, enabling work with all ERKO hydraulic heads and devices with PT quick coupler

Dimensions: 520 x 370 x 690 mm; Weight: 43kg
On request possibility of manufacturing with many pressure ports and other lenght of hydraulic hose. Working at 380 bar pressure reduces load on the head during operation in which 380 bar is sufficient and ensures correct cycle performance.

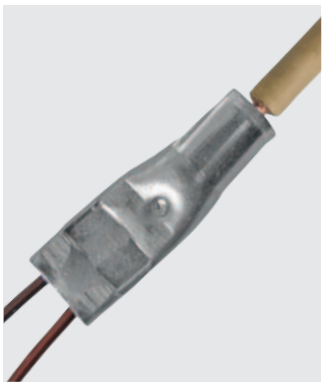
Special features	AH 500	AH550
power supply voltage	3 x 400V/230V 1 x 230V (for non intensive works)	3 x 400V/230V
power	0,85 kW	1,4 kW
efficiency	0,66 l/min	1,33 l/min

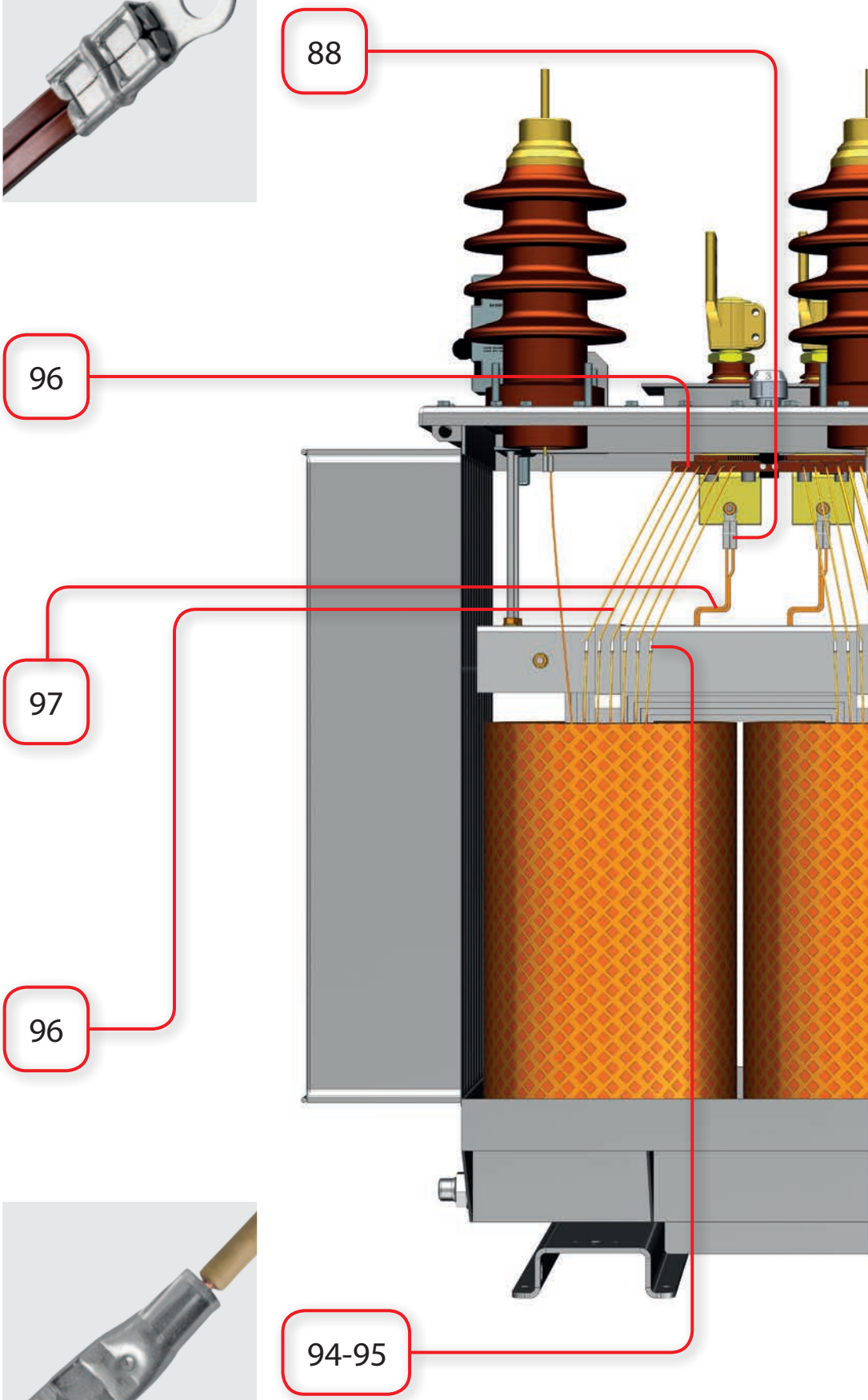
AH 500L Hydraulic units

Electric hydraulic power units:
- equipped with hydraulic hose (2,5 m long) with PM quick coupler
- works with all ERKO hydraulic heads and devices (equipped with PT quick coupler)
- 230V AC 50 Hz power supply voltage
- power 0,75 kW
- efficiency 0,66 dm^3/min
- working temperature -25°C - +40°C

Dimensions: 336 x 235 x 406 mm; Weight: 25 kg

SHARK® TECHNOLOGY

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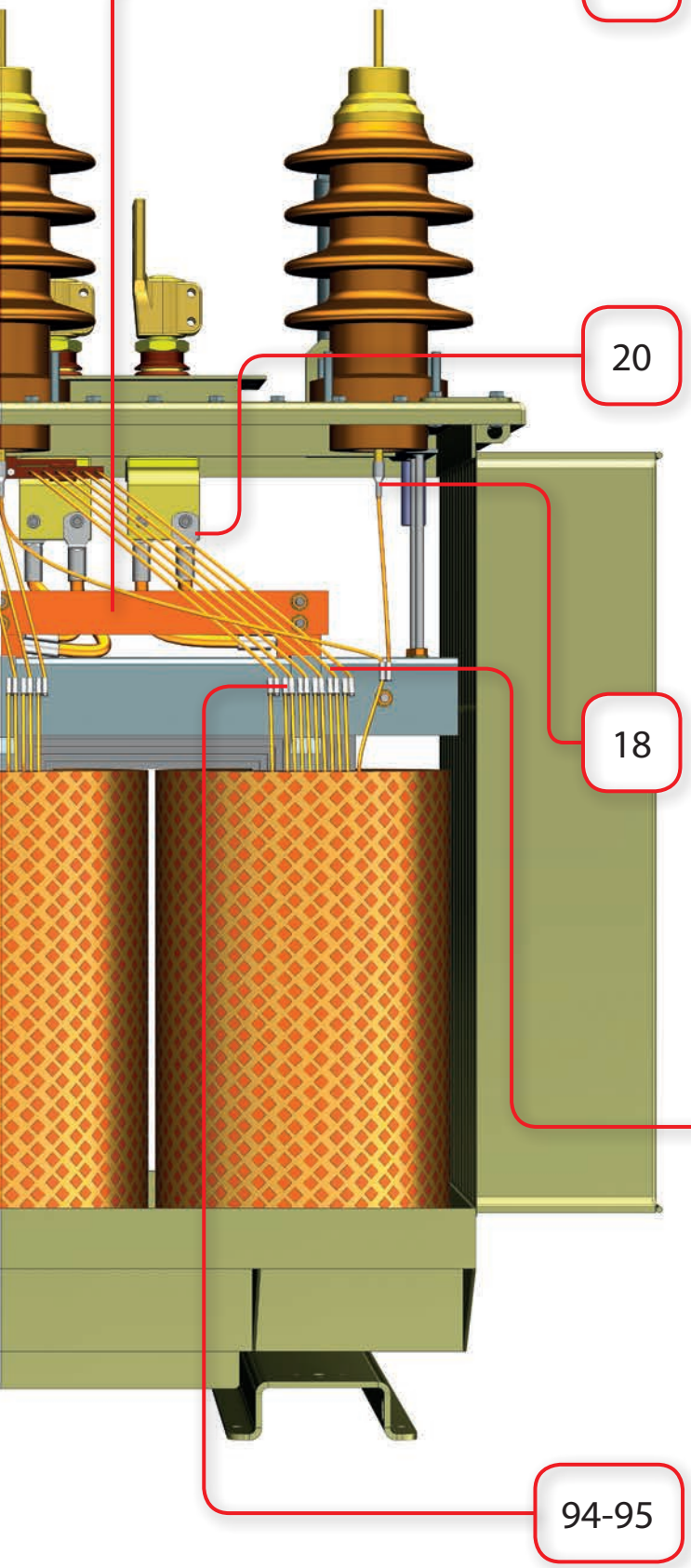
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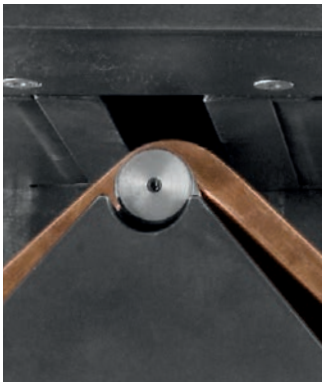
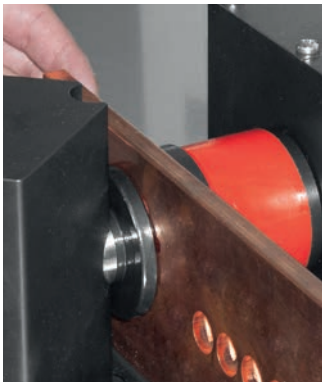




SHARK connectors

for winding enameled and non-enameled Cu and Al wires

SHARK technology is dedicated to connect winding enameled wires in motors and oil transformers, copper and aluminum wires, round and rectangular wires. We provide technical advice by recommending Shark connections and other configurations according to arrangements with customer.

Quality of connection
Connections made with Shark connectors conform with the requirements of PN-EN 61238 -1 standard, and have been awarded a certificate issued by Electrotechnical Institute from Warsaw.

Durable connection:
Connections made with Shark connectors have been in use in transformers for over 10 years. In the process of cable isolation, the bale narrows (notch is formed), which leads to a local reduction in cross-section and mechanical weakening of the cable. Using SHARK technology products eliminates this problem, which leads to longer indefectible use of cables and devices, in which connectors and terminals are installed.

Clean technology:
Thank to use of Shark technology, process of removing enamel insulation from the wires has been eliminated. When connecting wires there is no need to secure the transformer against generated impurities. The ecological and environmental aspects are extremly important. Using Shark terminals and connectors eliminates dangerous waste. Process of connecting wires with insulation or enamels requires using mechanical or chemical methods. Mechanical methods include insulation scrapping which can cause dust and pollution of the working environment. Another method is heathing or soldering insulation using hard solder with addition of silver. It causes pollution of environment by toxic results of this process and also requires service staff to have special permissions. Chemical method consists in dissolving insulation in corrosive substances. Both methods have many technological and environmental disadvantages. Shark technology eliminates all those problems. Thanks to this, there is no dusting of the working environment, permeation into the environment dangerous waste such as enamel and native material. There is also no pollution that is dangerous for the process and further operation of the transformer from the cleaning process. The risk of short circuits during the further operation of the transformer is reduced, which turns info increased indefectible work of the entire network.

Environment friendly technology
Shark connector fast and reliably replaces harmful to the environment soldering and enamel insulation burning processes.

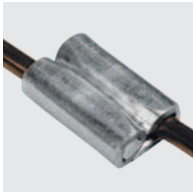
Easy operation
Dedicated and efficient tools and ERKO team help in preparing technology, enable trouble free implementation of Shark technology at customer's plant.

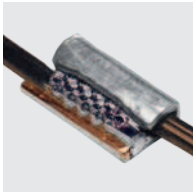
Increased efficiency
All our customers who implemented Shark technology gained a significant increase in performance comparing to previously used technology.

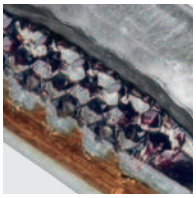
Economical technology
Elimination of preparatory processes, energy consuming soldering process, reduction of stored connectors range, high efficiency of he process makes Shark technology more beneficial than traditional methods. Traditional method of connecting wires requires from operators precise, complicated technology and using tools dedicated to the given wire cross-section (e.g. in case of crimping filled wires).
Making connectios using Shark connectors and terminals guarantee repeatability and effectiveness of the connection. ERKO also offers dedicated and efficient tools enablingsmooth implementation of Shark technology in enterprises.

Universal technology
With one Shark connector can make connection using wires of different cross-section, shape and material. Having over a dozen of connectors, any wire within scope of Shark connectors can be connected. We are able to recommend alternative cnnection solution of any presently used by customer. Enamelled insulated copper or aluminum wires can be connected. Connectors can be used for connecting profile and round wires. Shark connectors can be also used (with observance of the erelvant rules) for connectins single-strand wires without insulation and multi-strand wires withoud insulation. After making connection with terminals and connectors, connector's teeth bithe through the insulation and stick into the core of the connected wire. This way we receive electrical and mechanical permanent connection.

Possibility to adapt connectors to customer needs.







In connection made with Shark technology, teeth of the connector bite through the enamel and into the core of connected wires. Therefore made connection is electrically and mechanically reliable.

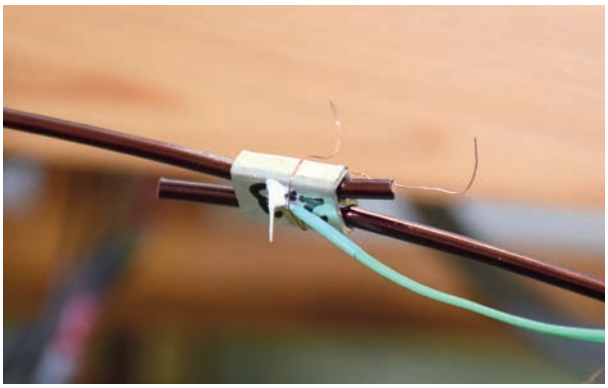
Tests

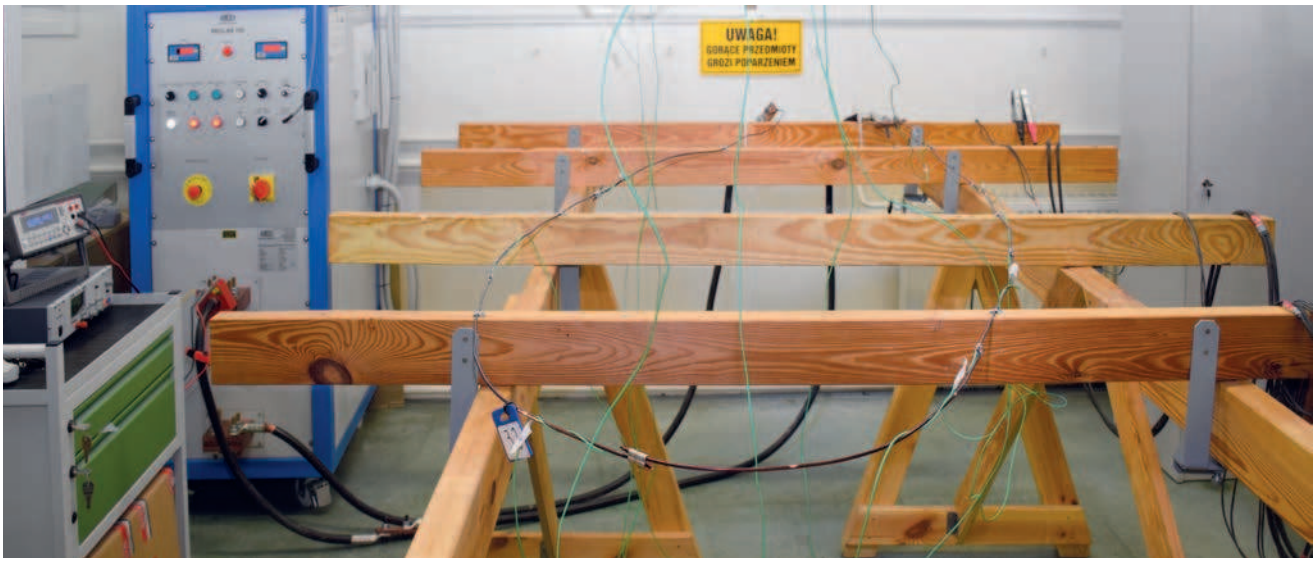
On request, we make tests to assess SHARK effectiveness of connectors and tools used to make a connection. The tests are based on PN-EN 61238-1: 2004 standard.

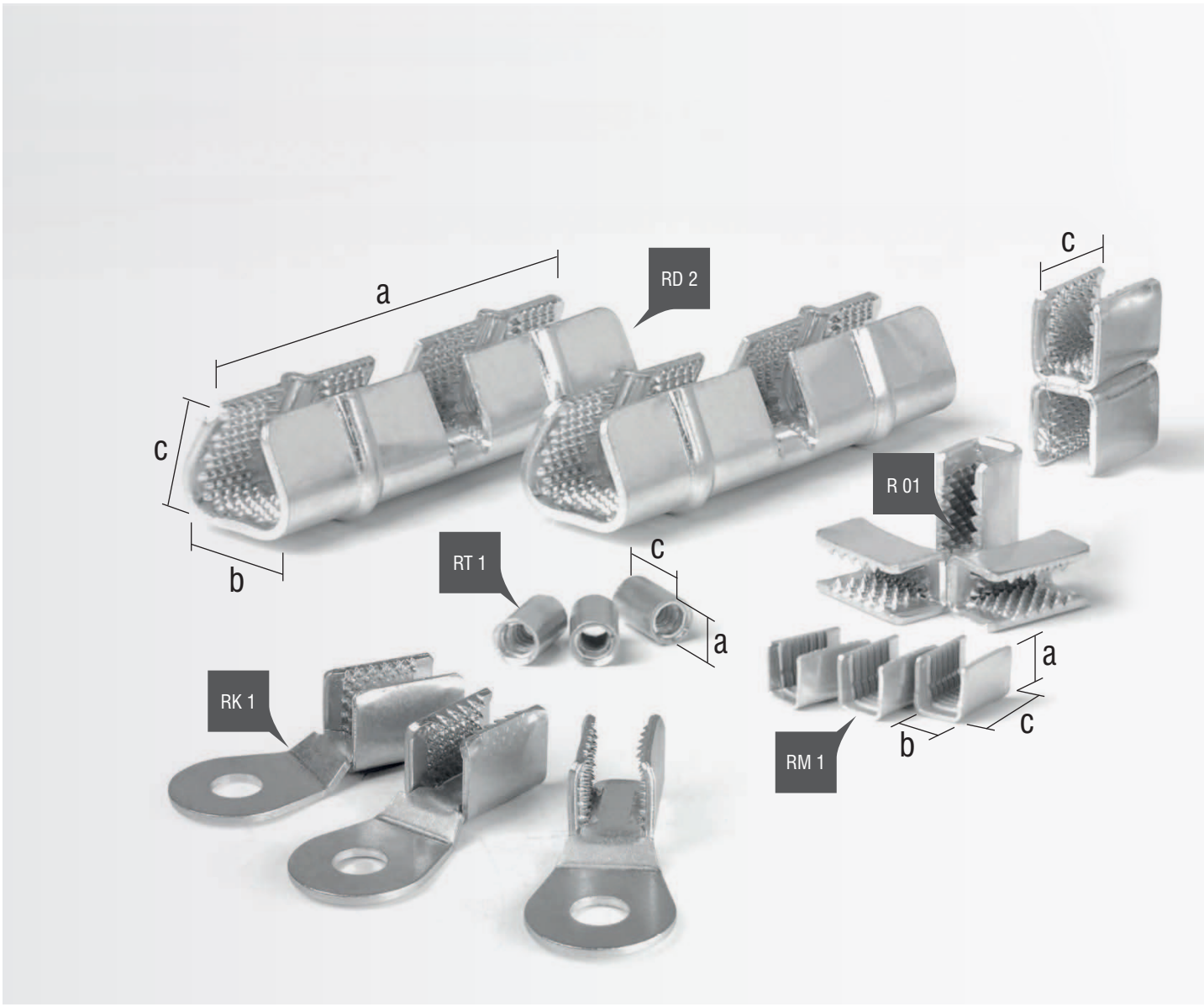
During the tests, are the following assumptions:

- the connector can not introduce additional resistance to the circuit research
- in the process of heating cyclic joints, the temperature does not exceed a temperature of conductor where they are installed.

In order to carry out the tests, we perform the so-called test chain.
It is created by a series connection of identical sections guide with the tested SHARK connectors. The lengths of wires linking the individual connectors are strictly defined in the PN-EN 61238-1: 2004standard.





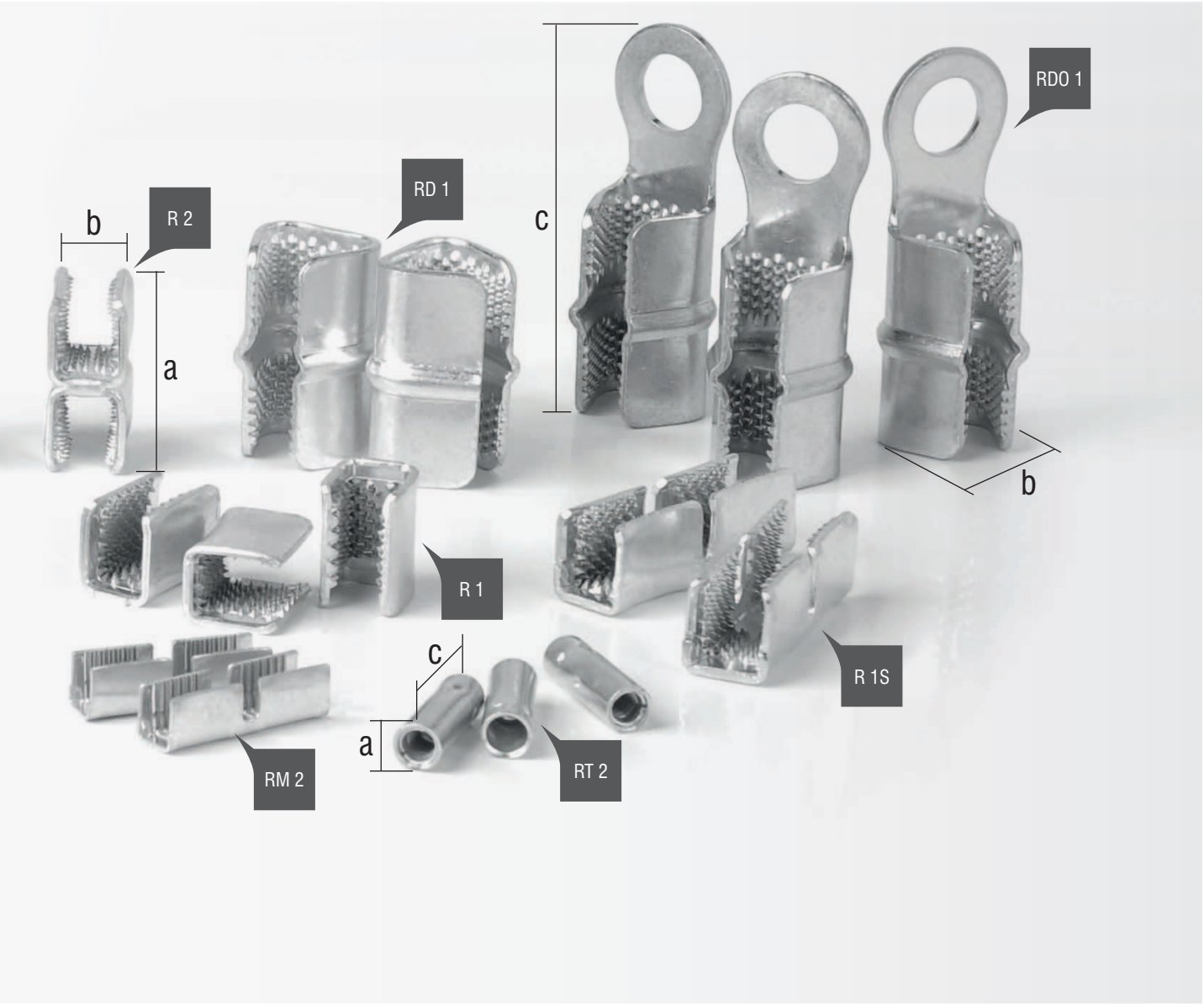


Recommended for Cu wires

Connector type	Round wires Diameters range [mm]		Rectangular wires range [mm]				Total cross section [mm²]	Connector's dimensions [mm]			Crimping tool
			Thicknes		Width						
	Ømin	Ømax	min	max	min	max		a	b	c	
RT 1	0,5	1,5					1,77	Ø7	-	11	GRT 1, EGRT 1
RT 2	0,5	1,5					3,54	Ø7	-	22	
RM 1	0,55	1,5	-	-	-	-	3,5	8	8	12,5	GRM 1, EGRM 1
RM 2	0,55	1,5	-	-	-	-	3,5x2	8	8	28	
R 01	1,5	3	2	4,5	2	2,3	10,5	10,5	10	19,5	GR 1
R 1	1,5	5	2	4,1	2	7,1	26,6	14,5	13	19,5	
RK 1**	1,5	4	2	4,1	2	7,1	26,6	14,5	13	49	
R 1S	1,5	5	2	4,1	2	7,1	26,6x2	14,5	13	42	
R 2	1,5	5	2	4,1	2	7,1	26,6x2	29	13	19,5	
RDO 1			2,15*	4	5*	14,5	25-65	19	23,5	65,5	GRD 1
RD 1			2,15*	4	5*	14,5	25-65	19	23,5	36,5	
RD 2			2,15*	6,5	5*	14,5	25-65x2	19	23,5	81,5	

* recommended ranges

** hole for M8, M10, M12 screw



Recommended for Al wires

Connector type	Round wires Diameters range [mm]		Rectangular wires range [mm]				Total cross section [mm²]	Connector's dimensions [mm]			Crimping tool
			Thicknes		Width						
	ømin	ømax	min	max	min	max		a	b	c	
RT 1	0,8	1,9					1,77	Ø7	-	11	GRT 1, EGRT 1
RT 2	0,8	1,9					3,54	Ø7	-	22	
RM 1	0,8	2,2	-	-	-	-	3,5	8	8	12,5	GRM 1, EGRM 1
RM 2	0,8	2,2	-	-	-	-	3,5x2	8	8	28	
R 01	1,5	3	2	4,5	2	2,3	10,5	10,5	10	19,5	GR 1
R 1	1,5	5	2	4,1	2	7,1	26,6	14,5	13	19,5	
R 1S	1,5	5	2	4,1	2	7,1	26,6x2	14,5	13	42	
R 2	1,5	5	2	4,1	2	7,1	26,6x2	29	13	19,5	
RK 1**	1,5	4	2	4,1	2	7,1	26,6	14,5	13	49	
RDO 1			3,15	4	5	14,5	25-65	19	23,5	65,5	GRD 1
RD 1			3,15	4	5	14,5	25-65	19	23,5	36,5	
RD 2			3,15	6,5	5	14,5	25-65x2	19	23,5	81,5	

** hole for M8, M10, M12 screw

GRT 1 Hydraulic head

Crimping dies SRT

Used for RT 1, RT 2 connectors

Head for SHARK connectors:
- RT 1, RT 2
- on winding enameled and non-enameled wires
- equipped with SRT dies
- PRT quick coupler

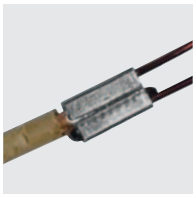
Length: 330 mm; Weight: 2,7 kg

Form of crimping on wire.

GRM 1 Hydraulic head

Head for SHARK connectors:
- RM 1, RM 2
- on winding enameled and non-enameled wires
- equipped with SRM dies
- ZT quick coupler

Length : 220 mm; Weight : 1,5 kg



Form of crimping on wire.

GR 1 Hydraulic head

SR 01 Crimping dies

Used for R 01 connectors.

SR 1 Crimping dies

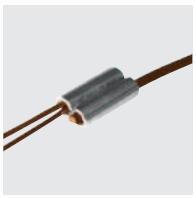
Used for R 1, R 1S connectors.

SR 2 Crimping dies

Used for R 2 connectors

Head for SHARK connectors:
- R 1, R 1S, R 2, R 01
- on winding enameled and non-enameled wires
- works with SR dies
- PT quick coupler

Length: 330 mm; Weight (without dies): 5,6 kg

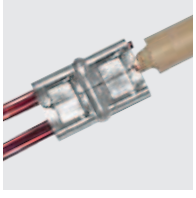


Form of crimping on wire.

GRD 1 Hydraulic head

Head for SHARK connectors:
- RD 1, RD 2, RDO 1
- on winding enameled and non-enameled wires
- equipped with SRD dies
- PT quick coupler

Length: 420 mm; Weight: 18,5 kg



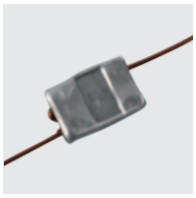
Form of crimping on wire.

EGRT Battery powered hydraulic press

Battery powered press for SHARK connectors:
- RT 1, RT 2
- on winding enameled and non-enameled wires
- equipped with SRT dies

Special features:
- efficient Li-Ion battery
- automatic retraction when maximum pressure is achieved
- automatic off switch ending operation cycle after a proper crimping is complete – indicated by green LED, not accurate crimping cycle - indicated by red LED
- electronic record of operation cycle – data transfer via USB

2 batteries and charger provided with set.
Length: 436 mm; Weight: 3 kg



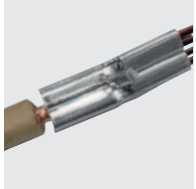
Form of crimping on wire.

EGRM Battery powered hydraulic press

Battery powered press for SHARK connectors:
- RM 1, RM 2
- on winding enameled and non-enameled wires
- equipped with SRM dies

Special features:
- efficient Li-Ion battery
- automatic retraction when maximum pressure is achieved
- automatic off switch ending operation cycle after a proper crimping is complete - proper crimping indicated by green LED, not accurate crimping cycle - indicated by red LED
- electronic record of operation cycle – data transfer via USB

2 batteries and charger provided with set
Length: 401 mm; Weight: 2,9 kg



Form of crimping on wire.

SIPD, SIPR paper insulation shears

≙1000 V

Shears for paper insulation stripping from wires SIPD and SIPL:
- diameter of soft wire up to 2 mm
- stripping diameter: 1,5 mm and 2,5 mm

Special features:
- blades hardness around 60 HRC
- long term use also during intensive work
- material: chrome vanished steel
- non-sparking, anti-slip, two-component insulated grips with elastomer insert

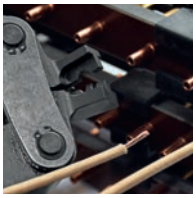
NOTE: ability to work under voltage up to 1000V
Length: 160 mm; Weight: 220 g

PRPL, PRPD tap changer hand presses

Hand presses for tap changers
PRPL 2,5
- diameter of the copper tube: inner 3 mm, outer 5 mm
- copper multi wire of 7 strands, each of a diameter of 0.65 mm

PRPD 3
- diameter of the copper tube: inner 3 mm, outer 5 mm
- diameter of solid copper wire 3 mm

PRPD 5
- diameter of the copper tube: inner 5 mm, outer 7 mm
- diameter of solid copper wire 5 mm



EPPL 2,5, EPPD3, EPPD 5 battery powered tap changer presses

Battery powered hydraulic presses for tap changers.
EPPL 2,5
- diameter of the copper tube: inner 3 mm, outer 5 mm
- copper multi wire of 7 strands, each of a diameter of 0.65 mm

EPPD 3
- diameter of the copper tube: inner 3 mm, outer 5 mm
- diameter of solid copper wire 3 mm

EPPD 5
- diameter of the copper tube: inner 5 mm, outer 7 mm
- diameter of solid copper wire 5 mm

Special features:
- efficient Li-ion battery
- automatic retraction when pressure is achieved
- automatic off switch ending cycle after proper crimping is complete

Length: 436 mm; Weight: 3,6 kg

EGPP Battery powered bender

Battery powered bender for aluminium and cooper rectangular wires.
- (Thickness) x (width) in the range (2 ÷ 5.5 mm) x (3 ÷ 12 mm)
- max. cross section 63 mm^2

Special features:
- efficient Li-Ion battery
- automatic retraction when maximum pressure is achieved
- automatic off switch ending operation cycle after a proper crimping is complete
- electronic record of operation cycle – data transfer via USB

2 batteries and charger provided with set.
Length: 402 mm; Weight: 2,6 kg



EWPB battery powered punching tool

Battery powered punching tool for aluminium and cooper bundle of sheet metal
- width of the bundle of sheet metal 30 ÷ 55 mm
- punching holes with a diameter of 6.5 ÷ 13 mm

Size range of bundle of aluminium sheet
- thickness of a single sheet metal 0,3 ÷ 0,5 mm
- number of sheets bundled 3 ÷ 8 pieces

Size range of bundle of copper sheet
- thickness of a single sheet metal 0,3 ÷ 0,4 mm
- number of sheets bundled 3 ÷ 8 pieces

Special features:
- efficient Li-Ion battery
- automatic retraction when maximum pressure is achieved
- automatic off switch ending operation cycle after a proper crimping is complete
- electronic record of operation cycle – data transfer via USB

2 batteries and charger provided with set.
Length: 420 mm; Weight: 4,4 kg



AH 300R, AH 300RM, AH 400RD, AH 200RT Electric hydraulic units

AH 300R
AH 300RM
AH 400RD
AH 200RT

Electric hydraulic power unit:
- pressure: 200 ÷650 bar
- power supply voltage: 3 x 400 V/230 V (sequence of phases unimportant)
- power: 1,1 kW
- efficiency: 0,66 ÷ 1,33 l/m
- works with hydraulic heads GR 1, GRM 1, GRT 1, GRD 1
- equipped with hydraulic hose
- quick coupler: PM for GR 1 and GRD 1, ZM for GRM 1, PRM for GRT 1
- 2,5m long hydraulic hose

Trolley with WB extension arm

Trolley with extension arm with heads GR 1, GRT 1, GRM 1, GRD 1 and appropriate hydraulic unit form integrated work site as in picture.

WB 6

WB 7

WB 1

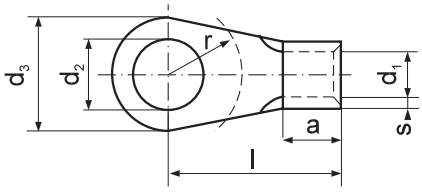
AH 300R3 + WB6 – Special design

Electric hydraulic power unit (for GR 1, GRM 1 and GRT 1 hydraulic heads) with trolley and WB 6 extension arm form integrated work site enabling work with three different heads.

CABLE **TERMINALS AND CONNECTORS**

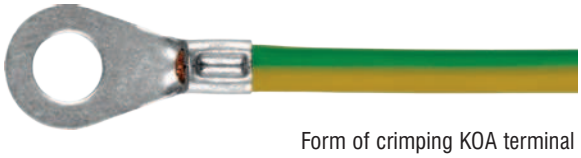
KOA Ring terminal

for multi-wire Cu cables



Without insulation
Material: galvanically tinned copper
According to DIN 46234

Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,1 ÷ 0,5 **	2	2,2	KOA 2-0,5	0,5	1	5	10	4	4	0,20	100	
	2,5	2,7	KOA 2,5-0,5			5	10		4	0,20		
	3	3,2	KOA 3-0,5			5	10		4,5	0,20		AE22-05,
	4	4,3	KOA 4-0,5			6,5	12		6	0,40		ETA66
	5	5,3	KOA 5-0,5			8	12		6,5	0,30		
	6	6,5	KOA 6-0,5 *			10	13		7	0,41		
0,5 ÷ 1	3	3,2	KOA 3-1	0,8	1,6	6	11	5	4,5	0,53	100	
	4	4,3	KOA 4-1			8	12		5,5	0,66		
	5	5,5	KOA 5-1-A *			8	12		6	0,80		
	5	5,5	KOA 5-1			10	12		6	0,80		
	6	6,5	KOA 6-1 *			12	17		10	1,05		
	8	8,5	KOA 8-1 *			12	17		10	0,85		PR33,
1,5 ÷ 2,5	3	3,2	KOA 3-2,5	0,8	2,3	6	11	5	4,5	0,60	100	RA16,
	4	4,3	KOA 4-2,5			8	12		6	0,70		ETA66,
	5	5,5	KOA 5-2,5			10	14		6,5	0,90		PP8,
	6	6,5	KOA 6-2,5			11	16		6,5	1,00		PP19
	8	8,5	KOA 8-2,5			14	17		10	1,24		
	10	11	KOA 10-2,5 *			18	20		12	1,77		
	12	13	KOA 12-2,5 *			18	20		13	1,40		
	16	17	KOA 16-2,5 *			22	21		17	1,90		
4 ÷ 6	4	4,3	KOA 4-6	1	3,6	8	14	6	6	1,30	100	
	5	5,5	KOA 5-6			10	15		6,5	1,60		PR33,
	6	6,5	KOA 6-6			11	16		7,5	1,70		RA16,
	8	8,5	KOA 8-6			14	19		10	2,10		ETA66,
	10	11	KOA 10-6			18	21		12	2,78		PP8,
	12	13	KOA 12-6 *			18	21		12	3,20		PP19
10	4	4,3	KOA 4-10 *	1,1	4,5	11	16	8	6,5	2,35	100	EPZC300, EPZ300,
	5	5,5	KOA 5-10 *			11	16		6,5	2,35		GZ300, HRZ300,
	6	6,5	KOA 6-10			11	17		7,5	2,41		PRZ240, GO300,
	8	8,5	KOA 8-10			14	20		10	2,97		HR300, GU120,
	10	11	KOA 10-10			18	21		12	3,35		HR100-U,
	12	13	KOA 12-10			22	23		13	4,30		PR240, R50, RA16, PP19
16	5	5,5	KOA 5-16	1,2	5,8	11	20	10	7,5	3,85	100	
	6	6,5	KOA 6-16			11	20		7,5	3,70		RA16
	8	8,5	KOA 8-16			14	22		10	4,10		PP19
	10	11	KOA 10-16			18	24		12	5,00		+ as below
	12	13	KOA 12-16			22	26		13	5,85		



Form of crimping KOA terminal

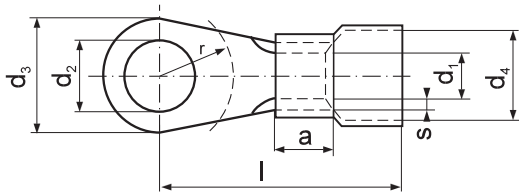
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
25	6	6,5	KOA 6-25	1,5	7,5	12	25	11	7,5	6,80	50	
	8	8,5	KOA 8-25			16	25		10	7,60		PP19
	10	11	KOA 10-25			18	26		12	7,60		+ as above
	12	13	KOA 12-25			22	31		13	9,70		
35	6	6,5	KOA 6-35	1,6	9	15	26	12	10	9,60	50	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU120, HR100-U, PR240, R50
	8	8,5	KOA 8-35			16	26		10	9,44		
	10	11	KOA 10-35			18	27		12	9,34		
	12	13	KOA 12-35			22	31		12	11,80		
50	6	6,5	KOA 6-50	1,8	11	18	34	16	10	17,10	50	
	8	8,5	KOA 8-50			18	34		12	16,80		
	10	11	KOA 10-50			18	34		12	16,30		
	12	13	KOA 12-50			22	36		13	17,90		
	16	17	KOA 16-50			28	40		16	21,10		
70	6	6,5	KOA 6-70	2	13	22	38	18	12	25,90	20	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU120, HR100-U, PR240,
	8	8,5	KOA 8-70			22	38		13	24,00		
	10	11	KOA 10-70			22	38		13	24,60		
	12	13	KOA 12-70			22	38		13	23,80		
	16	17	KOA 16-70			28	42		16	40,50		
95	8	8,5	KOA 8-95	2,5	15	24	42	20	14	38,10	20	
	10	11	KOA 10-95			24	42		14	41,00		
	12	13	KOA 12-95			24	42		14	39,60		
	16	17	KOA 16-95			27	41		14	41,45		
120	8	8,5	KOA 8-120	3	16,5	24	44	22	12	53,80	20	
	10	11	KOA 10-120			24	44		12	54,00		
	12	13	KOA 12-120			24	44		13	53,50		
	16	17	KOA 16-120			29	44		16	56,80		

*– outside DIN standard

**– tubular part not soldered

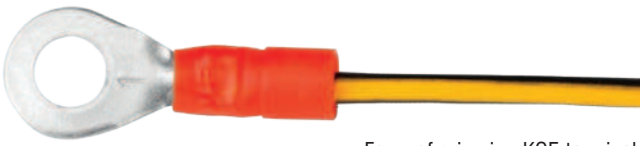
KOE Ring terminal

for multi-wire Cu cables



With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
Tubular part according to DIN 46234

Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	d_4 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,1 ÷ 0,5	2	2,2	KOE 2-0,5	0,5	1	5	2,8	14	4	4	0,35	100	
	2,5	2,7	KOE 2,5-0,5			5		14		4	0,35		
	3	3,2	KOE 3-0,5			5		14		4,5	0,30		AE 22-05
	4	4,3	KOE 4-0,5			6,5		16		6	0,30		
	5	5,3	KOE 5-0,5			8		16		6,5	0,40		
	6	6,5	KOE 6-0,5 *			10		17		7	0,51		
0,5 ÷ 1,0	3	3,2	KOE 3-1	0,8	1,6	6	4	16	5	4,5	0,60	100	
	4	4,3	KOE 4-1			8		17		5,5	0,76		
	5	5,5	KOE 5-1-A *			8		17		6	0,87		
	5	5,5	KOE 5-1			10		17		6	0,87		
	6	6,5	KOE 6-1 *			12		22		10	1,21		
	8	8,5	KOE 8-1 *			12		22		10	1,03		PR33, E11-6, RE6, PP8, PP19
1,5 ÷ 2,5	3	3,2	KOE 3-2,5	0,8	2,3	6	5	16	5	4,5	0,78	100	
	4	4,3	KOE 4-2,5			8		17		6	0,89		
	5	5,5	KOE 5-2,5			10		19		6,5	1,08		
	6	6,5	KOE 6-2,5			11		21		6,5	1,20		
	8	8,5	KOE 8-2,5			14		22		10	1,40		
	10	11	KOE 10-2,5 *			18		25		12	1,96		
	12	13	KOE 12-2,5 *			18		25		13	1,70		
	16	17	KOE 16-2,5 *			22		26		16	1,95		
4 ÷ 6	4	4,3	KOE 4-6	1	3,6	8	7	20	6	6	1,73	100	
	5	5,5	KOE 5-6			10		21		6,5	1,95		
	6	6,5	KOE 6-6			11		22		7,5	2,02		
	8	8,5	KOE 8-6			14		25		10	2,50		
	10	11	KOE 10-6			18		26		12	3,10		
	12	12	KOE 12-6 *			18		26		12	1,39		PR33, E11-6, RE6, PP8, PP19
10	4	4,3	KOE 4-10 *	1,1	4,5	11	8,4	24	8	6,5	2,50	100	
	5	5,5	KOE 5-10 *			11		24		6,5	2,80		
	6	6,5	KOE 6-10			11		25		7,5	2,90		
	8	8,5	KOE 8-10			14		28		10	3,40		
	10	11	KOE 10-10			18		29		12	4,10		
	12	13	KOE 12-10			22		31		13	4,90		
16	5	5,5	KOE 5-16	1,2	5,8	11	9,7	30	10	7,5	4,60	100	
	6	6,5	KOE 6-16			11		30		7,5	4,60		
	8	8,5	KOE 8-16			14		32		10	4,90		
	10	11	KOE 10-16			18		34		12	5,32		
	12	13	KOE 12-16			22		36		13	6,65		EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU120, HR100-U, PR240, R50, RE16, PP19
25	6	6,5	KOE 6-25	1,5	7,5	12	12	36	11	7,5	8,20	50	
	8	8,5	KOE 8-25			16		36		10	8,70		
	10	11	KOE 10-25			18		37		12	8,30		PP19 + as below
	12	13	KOE 12-25			22		42		13	11,14		



Form of crimping KOE terminal

Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	d_4 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
35	6	6,5	KOE 6-35	1,6	9	15	12,8	38	12	10	10,94	50	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU120, HR100-U, PR240, R50
	8	8,5	KOE 8-35			16		38		10	10,40		
	10	11	KOE 10-35			18		39		12	10,80		
	12	13	KOE 12-35			22		43		13	13,00		
50	6	6,5	KOE 6-50	1,8	11	18	15,5	50	16	10	20,00	50	
	8	8,5	KOE 8-50			18		50		12	19,90		
	10	11	KOE 10-50			18		50		12	19,20		
	12	13	KOE 12-50			22		52		13	20,90		
	16	17	KOE 16-50			28		56		16	23,90		
70	6	6,5	KOE 6-70	2	13	22	18	54	18	12	29,70	20	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU120, HR100-U, PR240
	8	8,5	KOE 8-70			22		54		13	25,30		
	10	11	KOE 10-70			22		54		13	28,30		
	12	13	KOE 12-70			22		54		13	29,00		
	16	17	KOE 16-70			28		58		16	30,10		
95	8	8,5	KOE 8-95	2,5	15	24	21	57	20	14	47,30	20	
	10	11	KOE 10-95			24		57		14	46,70		
	12	13	KOE 12-95			24		57		14	45,50		
	16	16	KOE 16-95			27		57		14	45,00		
120	8	8,5	KOE 8-120	3	16,5	24	24,5	60	22	12	29,80	20	
	10	11	KOE 10-120			24		60		12	58,70		
	12	13	KOE 12-120			24		60		13	61,20		
	16	17	KOE 16-120			29		60		16	63,50		

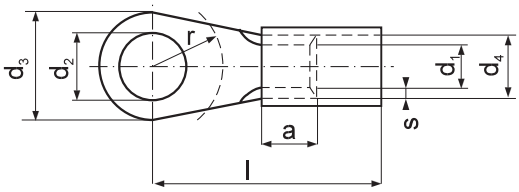
Insulation colours * – outside DIN standard.

Standard production: the edges of folded tubular part are soldered.

VO class insulation on request – symbol e.g. KOE 5-1-VO.

KOV Ring terminal

for multi-wire Cu cables



With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
According to DIN 46237

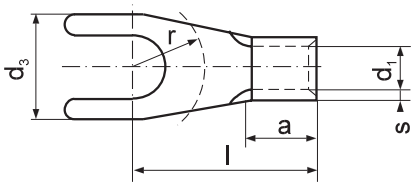
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	d_4 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	3	3,2	KOV 3-1	0,8	1,6	6	3,2	16	5	4,5	0,66	100	
	4	4,3	KOV 4-1			8		16		5,5	0,77		
	5	5,5	KOV 5-1			10		17		6	1,00		
	6	6,5	KOV 6-1 *			12		22		10	1,20		
	8	8,5	KOV 8-1 *			12		22		10	1,23		PR33
1,5 ÷ 2,5	3	3,2	KOV 3-2,5	0,8	2,3	6	3,9	17	5	4,5	1,00	100	E11-6
	4	4,3	KOV 4-2,5			8		18		6	0,91		RE6
	5	5,5	KOV 5-2,5			10		20		6,5	1,07		PP8
	6	6,5	KOV 6-2,5			11		20		6,5	1,18		PP19
	8	8,5	KOV 8-2,5			14		23		10	1,45		
	10	11	KOV 10-2,5			18		26		12	1,70		
	12	13	KOV 12-2,5			18		26		13	1,50		
	16	17	KOV 16-2,5			21		26		16	1,80		
4 ÷ 6	4	4,3	KOV 4-6	1	3,6	8	5,6	20	6	6	1,69	100	
	5	5,5	KOV 5-6			10		21		6,5	1,89		PR33
	6	6,5	KOV 6-6			11		22		7,5	2,02		E11-6
	8	8,5	KOV 8-6			14		25		10	2,50		RE6
	10	11	KOV 10-6			18		26		12	3,08		PP8
	12	13	KOV 12-6 *			18		27		12	4,02		PP19

Insulation colours, * - outside DIN standard

Standard production: the edges of folded tubular part are soldered.
VO class insulation on request – symbol e.g. KOV 5-1-VO.

KNA Spade terminal

for multi-wire Cu cables



Without insulation
Material: galvanically tinned copper
Tubular part according to DIN 46234

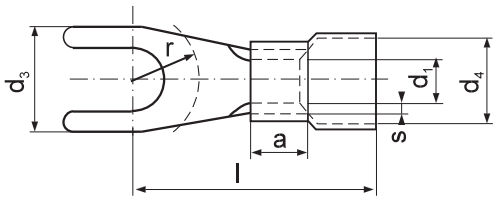
Cross section [mm²]	For screw M	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	3	KNA 3-1	0,8	1,6	6	11	5	4,5	0,50	100	
	4	KNA 4-1			8	12		4,5	0,60		
	5	KNA 5-1			10	14		6,5	0,75		
	6	KNA 6-1 *			11	17		7,6	0,95		PR33
1,5 ÷ 2,5	3	KNA 3-2,5	0,8	2,3	6	11	5	4,5	0,55	100	RA16
	3,5	KNA 3,5-2,5			6	11		4,5	0,50		ETA66
	4	KNA 4-2,5-A *			6,8	12		4,5	0,69		PP8
	4	KNA 4-2,5			8	12		4,5	0,65		PP19
	5	KNA 5-2,5			10	14		6,5	0,90		
	6	KNA 6-2,5			11	16		7	1,00		
	8	KNA 8-2,5			14	17		10	1,20		
4 ÷ 6	4	KNA 4-6	1	3,6	8	14	6	4,5	1,40	100	PR33,
	5	KNA 5-6			10	15		6,5	1,60		RA16
	6	KNA 6-6			11	16		7	1,70		ETA66
	8	KNA 8-6			14	19		10	2,20		PP8, PP19
10	5	KNA 5-10	1,1	4,5	10	17	8	6,5	2,35	100	EPZC300, EPZ300, GZ300,
	6	KNA 6-10			11	17		7,5	2,30		HR300, PRZ240, GO300,
	8	KNA 8-10			14	19		10	2,80		HRZ300, GU120, HR100-U, PR240, R50, PP19, RA16

* – outside DIN standard

for multi-wire Cu cables

KNE Spade terminal

With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
Tubular part according to DIN 46234



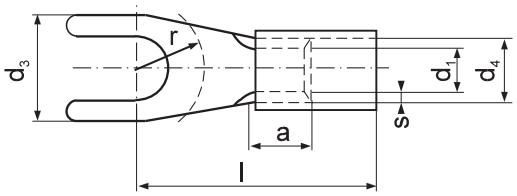
Cross section [mm²]	For screw M	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	d_4 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	3	KNE 3-1	0,8	1,6	6	4	16	5	4,5	0,64	100	
	4	KNE 4-1-A *			6,8		17		4,5	0,75		
	4	KNE 4-1			8		17		4,5	0,73		
	5	KNE 5-1			10		19		6,5	0,887		
	6	KNE 6-1 *			11		22		7	1,10		PR33
1,5 ÷ 2,5	3	KNE 3-2,5	0,8	2,3	6	5	11	5	4,5	0,77	100	E11-6
	3,5	KNE 3,5-2,5			6		11		4,5	0,72		RE6
	4	KNE 4-2,5-A *			6,8		17		4,5	0,86		PP8
	4	KNE 4-2,5			8		17		4,5	0,88		PP19
	5	KNE 5-2,5			10		19		6,5	1,07		
	6	KNE 6-2,5			11		21		7	1,21		
	8	KNE 8-2,5			14		22		10	1,45		
4 ÷ 6	4	KNE 4-6	1	3,6	8	7	20	6	4,5	1,68	100	PR33, E11-6
	5	KNE 5-6			10		21		6,5	1,87		RE6
	6	KNE 6-6			11		22		7	2,03		PP8
	8	KNE 8-6			14		25		10	2,49		PP19
10	5	KNE 5-10	1,1	4,5	10	8,4	25	8	6,5	3,00	100	EPZC300, EPZ300, GZ300,
	6	KNE 6-10			11		25		7,5	3,30		HR300, PRZ240, GO300,
	8	KNE 8-10			14		27		10	3,04		HRZ300, GU120, HR100-U, PR240, R50, PP19, RA16

Insulation colours, * – outside DIN standard
Standard production: the edges of folded tubular part are soldered.
VO class insulation on request – symbol e.g. KNE 5-1-VO.

for multi-wire Cu cables

KNV Spade terminal

With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
Tubular part according to DIN 46237

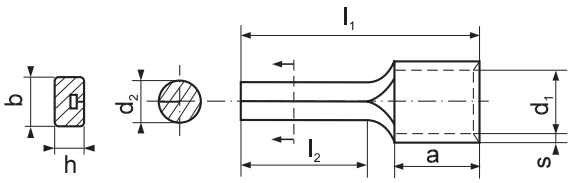


Cross section [mm²]	For screw M	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	d_4 [mm]	l [mm]	a [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	3	KNV 3-1	0,8	1,6	6	3,2	16	5	4,5	0,60	100	
	4	KNV 4-1-A *			6,8		17		4,5	0,70		
	4	KNV 4-1			8		17		4,5	0,70		
	5	KNV 5-1			10		19		6,5	0,75		
	6	KNV 6-1 *			11		22		7	1,05		PR33
1,5 ÷ 2,5	3	KNV 3-2,5	0,8	2,3	6	3,9	11	5	4,5	0,76	100	E11-6
	3,5	KNV 3,5-2,5			6		11		4,5	0,75		RE6
	4	KNV 4-2,5-A *			6,8		17		4,5	0,89		PP8
	4	KNV 4-2,5			8		17		4,5	0,88		PP19
	5	KNV 5-2,5			10		19		6,5	1,08		
	6	KNV 6-2,5			11		21		7	1,08		
	8	KNV 8-2,5			14		22		10	1,45		
4 ÷ 6	4	KNV 4-6	1	3,6	8	5,6	20	6	6,5	1,76	100	PR33, E11-6
	5	KNV 5-6			10		21		7,5	1,77		RE6
	6	KNV 6-6			11		22		10	1,80		PP8
	8	KNV 8-6			14		25		10	2,45		PP19

Insulation colours, * – outside DIN standard
Standard production: the edges of folded tubular part are soldered.
VO class insulation on request – symbol e.g. KNV 5-1-VO.

KWA Pin terminal

for multi-wire Cu cables

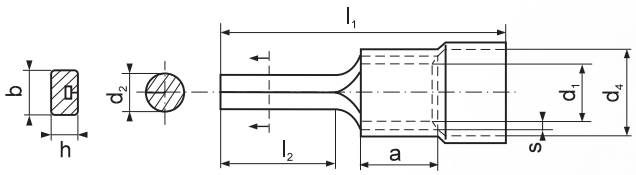


Without insulation
Material: galvanically tinned copper
According to DIN 46230

Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	d_2 [mm]	b [mm]	h [mm]	l_1 [mm]	l_2 [mm]	a [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	KWA 1	0,8	1,6	1,9	-	-	17	10	5	0,55	100	PR33, RA16, ETA66, PP8, PP19
	KWA 1-A	0,8	1,6	1,9	-	-	19	12	5	0,60	100	
	KWA 1-20	0,8	1,6	1,9	-	-	28	20	5	0,80	100	
1,5 ÷ 2,5	KWA 2,5	0,8	2,3	1,9	-	-	17	10	5	0,61	100	
	KWA 2,5-A	0,8	2,3	1,9	-	-	19	12	5	0,62	100	
	KWA 2,5-20	0,8	2,3	1,9	-	-	28	20	5	0,71	100	
4 ÷ 6	KWA 6	1	3,6	2,7	-	-	20	10	6	1,45	100	PR33, RA16, ETA66, PP19
10	KWA 10	1,1	4,5	-	4,3	2,4	22	12	8	2,54	100	EPZC300, EPZ300, GZ300, HR300, PRZ240, GO300, HRZ300, GU120, HR100-U, PR240, R50, PP19, RA16
16	KWA 16	1,2	5,8	-	5,5	2,6	26	13	10	4,25	100	

KWE Pin terminal

for multi-wire Cu cables



With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
According to DIN 46230 special edition

Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	d_2 [mm]	d_4 [mm]	b [mm]	h [mm]	l_1 [mm]	l_2 [mm]	a [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	KWE 1	0,8	1,6	1,9	4	-	-	22	10	5	0,65	100	PR33, RE6, E11-6, PP8, PP19
	KWE 1-A	0,8	1,6	1,9	4	-	-	24	12	5	0,70	100	
	KWE 1-20	0,8	1,6	1,9	4	-	-	33	20	5	0,90	100	
1,5 ÷ 2,5	KWE 2,5	0,8	2,3	1,9	5,1	-	-	22	10	5	0,78	100	
	KWE 2,5-A	0,8	2,3	1,9	5,1	-	-	24	12	5	0,72	100	
	KWE 2,5-20	0,8	2,3	1,9	5,1	-	-	33	20	5	1,05	100	
4 ÷ 6	KWE 6	1	3,6	2,7	7,2	-	-	26	10	6	1,77	100	PR33, E11-6, RE6, PP8, PP19
10	KWE 10	1,1	4,5	-	8,4	4,3	2,4	30	12	8	3,04	100	EPZC300, EPZ300, GZ300, HR300, PRZ240, GO300, HRZ300, GU120, HR100-U, PR240, R50, PP19, RE16
16	KWE 16	1,2	5,8	-	9,7	5,5	2,6	36	13	10	4,50	100	

Insulation colours

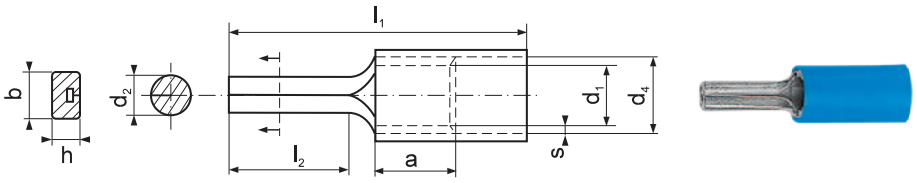
Standard production: the edges of folded tubular part are soldered.

VO class insulation on request – symbol e.g. KWE 6-VO.

for multi-wire Cu cables

KWV Pin terminal

With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
According to DIN 46231



Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	d_2 [mm]	d_4 [mm]	b [mm]	h [mm]	l_1 [mm]	l_2 [mm]	a [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	KWV 1	0,8	1,6	1,9	3,2	-	-	22	10	5	0,60	100	PR33
	KWV 1-A	0,8	1,6	1,9	3,2	-	-	24	12	5	0,75	100	RE6
	KWV 1-20	0,8	1,6	1,9	3,2	-	-	33	20	5	0,85	100	E11-6
1,5 ÷ 2,5	KWV 2,5	0,8	2,3	1,9	3,9	-	-	22	10	5	0,68	100	PP8
	KWV 2,5-A	0,8	2,3	1,9	3,9	-	-	24	12	5	0,68	100	PP19
	KWV 2,5-20	0,8	2,3	1,9	3,9	-	-	33	20	5	0,95	100	
4 ÷ 6	KWV 6	1	3,6	2,7	5,6	-	-	26	10	6	1,60	100	PR33, E11-6, RE6, PP8, PP19

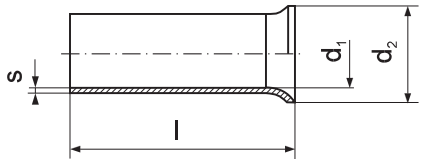
Insulation colours

Standard production: the edges of folded tubular part are soldered.

VO class insulation on request – symbol e.g. KWV 6-VO.

TA Cable end-sleeve

for multi-wire Cu cables



Without insulation
Material: galvanically tinned copper
According to DIN 46228 part 1

Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	d_2 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5	TA 0,5-6	0,15	1	2,1	6	0,03	100	PR33, T10, T3, TC6 T16, T16S
	TA 0,5-8				8 *	0,04		
	TA 0,5-10				10	0,06		
	TA 0,5-12				12 *	0,07		
0,75	TA 0,75-6	0,15	1,2	2,3	6	0,04	100	
	TA 0,75-8				8 *	0,05		
	TA 0,75-10				10	0,07		
	TA 0,75-12				12 *	0,06		
	TA 0,75-14				14 *	0,10		
1	TA 1-6	0,15	1,4	2,5	6	0,05	100	PR33, T10, T3, TC6, T16, T16S, ETA66, PP8, PP19
	TA 1-8				8 *	0,06		
	TA 1-10				10	0,10		
	TA 1-12				12 *	0,11		
	TA 1-14				14 *	0,10		
1,5	TA 1,5-7	0,15	1,7	2,8	7	0,06	100	
	TA 1,5-8				8 *	0,07		
	TA 1,5-10				10	0,09		
	TA 1,5-12				12	0,11		
	TA 1,5-14				14 *	0,13		
	TA 1,5-18				18	0,16		
	TA 1,5-20				20 *	0,17		
2,5	TA 2,5-7	0,15	2,2	3,4	7	0,08	100	
	TA 2,5-8				8 *	0,09		
	TA 2,5-10				10	0,12		
	TA 2,5-12				12	0,14		
	TA 2,5-14				14 *	0,16		
	TA 2,5-18				18	0,21		
	TA 2,5-20				20 *	0,20		
4	TA 4-6	0,2	2,8	4,0	6 *	0,11	100	PR33, T10, TC6, T16, T16S ETA66, PP8, PP19
	TA 4-9				9	0,17		
	TA 4-12				12	0,23		
	TA 4-14				14 *	0,27		
	TA 4-18				18	0,35		
	TA 4-20				20 *	0,36		
6	TA 6-10	0,2	3,5	4,7	10	0,24	100	PR33, T10, TC6, T16, T16S, T11-16, ETA66, PP8, PP19
	TA 6-12				12	0,26		
	TA 6-15				15	0,35		
	TA 6-18				18	0,40		
	TA 6-21				21 *	0,46		
10	TA 10-12	0,2	4,5	5,8	12	0,34	100	
	TA 10-15				15	0,46		
	TA 10-18				18	0,50		
	TA 10-21				21 *	0,61		
16	TA 16-12	0,2	5,8	7,5	12	0,47	100	PR33, T10, T16, T16S, T11-16, ETA66, PP8, PP19
	TA 16-15				15	0,56		
	TA 16-18				18	0,71		
	TA 16-21				21 *	0,80		
	TA 16-25				25	0,96		
	TA 16-32				32	1,22		

Form of crimping TA cable end-sleeve

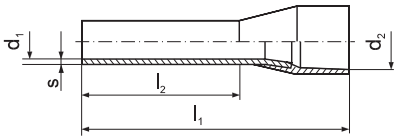
Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	d_2 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
25	TA 25-15	0,2	7,3	9,5	15	0,78	50	EPZC300, EPZ300, GZ300, HR300, PRZ240, GO300, HRZ300, PR33 GU120, HR100-U, PR240, R50, PP8, PP19
	TA 25-18				18	0,96		
	TA 25-21				21 *	1,14		
	TA 25-23				23 *	1,30		
	TA 25-27				27 *	1,44		
	TA 25-32				32	1,54		
35	TA 35-15	0,2	8,3	11	15 *	0,92	50	
	TA 35-18				18	0,94		
	TA 35-21				21 *	1,12		
	TA 35-23				23 *	1,22		
	TA 35-25				25	1,32		
	TA 35-32				32	1,76		
50	TA 50-18	0,3	10,3	13	18	1,71	20	T50, PP19, PP8 + as below
	TA 50-25				25	2,15		
	TA 50-30				30 *	2,86		
	TA 50-32				32	2,99		
70 *	TA 70-25	0,5	13	16	25	4,70	20	EPZC300, EPZ300, GZ300, HR300, PRZ240, GO300, HRZ300, GU120, HR100-U, PR240, R50
	TA 70-30				30	5,89		
95 *	TA 95-25	0,5	15	18	25	5,70	20	
	TA 95-30				30	6,80		
120 *	TA 120-32	0,5	17	20	32	8,34	20	
150 *	TA 150-32	0,5	18,5	21	32	9,70	20	
185 *	TA 185-32	0,6	20	23,5	32	11,50	20	EPZC300, EPZ300, GZ300, HR300, PRZ240, GO300, HRZ300, GU120, HR100-U, PR240
	TA 185-40				40	14,45		

* - lenght outside DIN standard

Cable end-sleeves of other dimensions on request.

TE Cable end sleeve

for multi-wire Cu cables



With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
According to DIN 46228 part 4

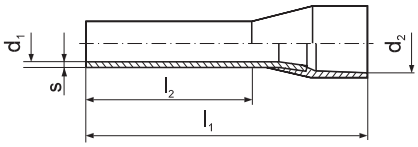
Cross section [mm²]	Symbol	Insulation colour	s [mm]	d_1 [mm]	d_2 [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,14 *	TE 0,14-6	grey	0,15	0,7	1,6	10	6	0,04	100	T16S
	TE 0,14-8					12	8	0,04		
0,25 *	TE 0,25-6	light blue	0,15	0,75	1,8	10	6	0,05	100	T3, T16, T16S
	TE 0,25-8					12	8	0,05		
0,34 *	TE 0,34-6	turquoise	0,15	0,8	2	10	6	0,04	100	
	TE 0,34-8					12	8	0,05		
0,5	TE 0,5-6 V	white	0,15	1	2,6	12	6	0,08	100	PR33, T10 T16, T16S, TC6, T3
	TE 0,5-8 V					14	8	0,08		
	TE 0,5-10 V					16	10	0,10		
0,5	TE 0,5-6	yellow *	0,15	1	2,6	12	6	0,08	100	
	TE 0,5-8					14	8	0,09		
	TE 0,5-10					16	10	0,10		
0,75	TE 0,75-6 V	grey	0,15	1,2	2,8	12	6	0,08	100	PR33, T10, T3, TC6, T16, T16S ETA66, PP8, PP19
	TE 0,75-8 V					14	8	0,08		
	TE 0,75-10 V					16	10	0,09		
	TE 0,75-12 V					18	12	0,13		
0,75	TE 0,75-6	blue *	0,15	1,2	2,8	12	6	0,08	100	
	TE 0,75-8					14	8	0,08		
	TE 0,75-10					16	10	0,09		
	TE 0,75-12					18	12	0,12		
1	TE 1-6	red	0,15	1,4	3	12	6	0,09	100	
	TE 1-8					14	8	0,09		
	TE 1-10					16	10	0,12		
	TE 1-12					18	12	0,12		
1,5	TE 1,5-8 V	black	0,15	1,7	3,5	14	8	0,12	100	
	TE 1,5-10 V					16	10	0,15		
	TE 1,5-12 V					18	12	0,16		
	TE 1,5-18 V					24	18	0,21		
1,5	TE 1,5-8	yellow *	0,15	1,7	3,5	14	8	0,12	100	
	TE 1,5-10					16	10	0,15		
	TE 1,5-12					18	12	0,15		
	TE 1,5-18					24	18	0,20		
2,5	TE 2,5-8	dark blue	0,15	2,2	4,2	14	8	0,14	100	
	TE 2,5-10					16	10 *	0,19		
	TE 2,5-12					18	12	0,18		
	TE 2,5-18					24	18	0,26		
4	TE 4-10 V	grey	0,2	2,8	4,8	17	10	0,26	100	PR33, T10, TC6, T16, T16S, ETA66, PP8, PP19
	TE 4-12 V					20	12	0,29		
	TE 4-18 V					26	18	0,40		
4	TE 4-10	red *	0,2	2,8	4,8	17	10	0,26	100	
	TE 4-12					20	12	0,29		
	TE 4-18					26	18	0,40		
6	TE 6-10	yellow	0,2	3,5	6,3	18	10 *	0,40	100	PR33, T10, TC6, T11-16, T16, T16S, ETA66, PP8, PP19
	TE 6-12					20	12	0,44	100	
	TE 6-15					23	15 *	0,55		
	TE 6-18					26	18	0,62		
10	TE 10-12	red	0,2	4,5	7,6	22	12	0,62	100	T10 + as below
	TE 10-15					24	15 *	0,80		
	TE 10-18					28	18	0,79		
16	TE 16-12	dark blue	0,2	5,8	8,8	24	12	0,78	100	PR33, T10, T16, T16S, T11-16, ETA66, PP8, PP19
	TE 16-15					27	15 *	0,95		
	TE 16-18					28	18	1,10		
25	TE 25-16	yellow	0,2	7,3	11,2	30	16	1,26	50	EPZC300, EPZ300, GZ300, HR300, PRZ240, PR33, GO300, HRZ300, GU120, HR100-U, PR240, R50, PP8, PP19
	TE 25-18					30	18	1,38		
	TE 25-22					36	22	1,94		
35	TE 35-16	red	0,2	8,3	12,7	30	16	1,44	50	
	TE 35-18					30	18	1,54		
	TE 35-25					39	25	2,43		
50	TE 50-20	dark blue	0,3	10,3	15	36	20	2,75	20	T50, PP19, PP8 + as below
	TE 50-25					40	25	3,10		
70 *	TE 70-20	yellow	0,5	13	16,2	37	20	5,90	20	EPZC300, EPZ300, GZ300, HR300, PRZ240, GO300, HRZ300, GU120, HR100-U, PR240, R50
95 *	TE 95-25	red	0,5	15	19,5	45	25	8,95	20	
120 *	TE 120-27	dark blue	0,5	17	21,2	51	27	10,05	20	
150 *	TE 150-32	yellow	0,5	18,5	24	58	32	14,85	20	

* – parameter outside standard
Insulating sleeves are available in other colours. Cable end-sleeves of other dimensions on request.
VO class insulation on request – symbol e.g. TE 1-8-VO.

for multi-wire Cu cables

TP Cable end sleeve strip

With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper
According to DIN 46228 part 4



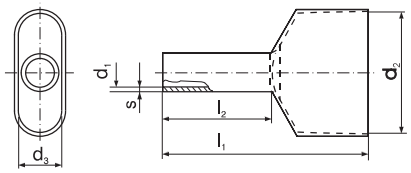
Cross section [mm²]	Symbol	Insulation colour	s [mm]	d_1 [mm]	d_2 [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5	TP 0,5-8	white	0,15	1	2,6	14	8	3,40	40	PR33, T10, T3,
0,75	TP 0,75-8	grey	0,15	1,2	2,8	14	8	3,87	40	TC6,
1	TP 1-8	red	0,15	1,4	3	14	8	4,43	40	T16, T16S
1,5	TP 1,5-8	black	0,15	1,7	3,5	14	8	5,16	40	ETA66
2,5	TP 2,5-8	blue	0,15	2,2	4,2	14	8	6,37	40	

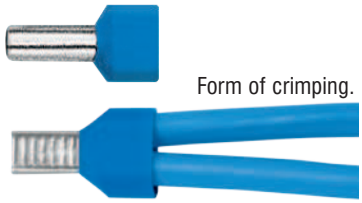
VO class insulation on request – symbol e.g. TP 1-8-VO.
Insulating sleeves are available in other colours.

for multi-wire Cu cables

TV Double cable end sleeve

With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper

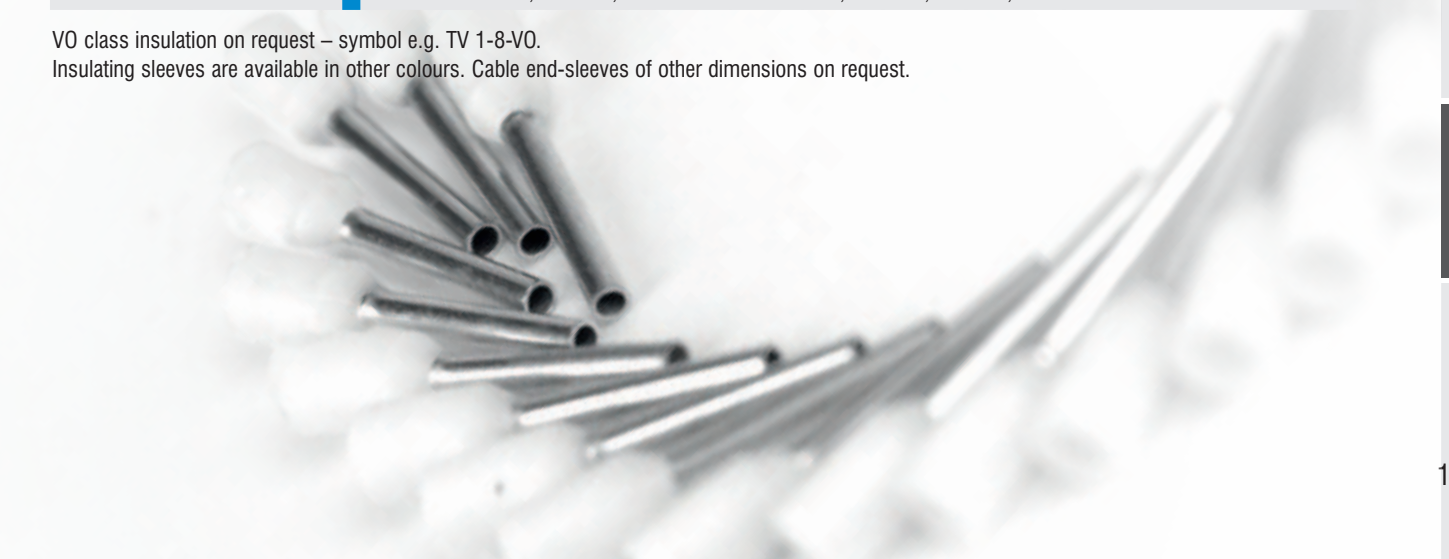




Form of crimping.

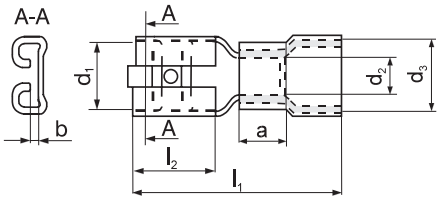
Cross section [mm²]	Symbol	Insulation colour	s [mm]	d_1 [mm]	l_1 [mm]	l_2 [mm]	d_3 [mm]	d_2 [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
2 x 0,5	TV 0,5-8	white	0,15	1,4	15	8	2,5	4,7	0,14	100	T10, T3, PR33, TC6, T16, T16S, PR33, ETA66
2 x 0,75	TV 0,75-8	grey	0,15	1,7	15	8	2,8	5,0	0,09	100	
	TV 0,75-10				17	10			0,14		
2 x 1	TV 1-8	red	0,15	2,0	15	8	3,4	5,4	0,17	100	
	TV 1-10				17	10			0,18		
2 x 1,5	TV 1,5-8	black	0,15	2,2	16	8	3,6	6,6	0,21	100	
	TV 1,5-10				18	10			0,21		
	TV 1,5-12				20	12			0,23		
2 x 2,5	TV 2,5-10	blue	0,2	2,8	18	10	4,2	7,8	0,35	100	
	TV 2,5-12				20	12			0,35		
2 x 4	TV 4-12	grey	0,2	3,7	23	12	4,9	8,8	0,53	100	T10, TC6, T16, T11-16, PP8, PP19
2 x 6	TV 6-14	yellow	0,2	4,8	26	14	6,9	10	0,78	100	
2 x 10	TV 10-14	red	0,2	6,4	26	14	8	14,6	1,00	100	T10-16V, PP8, PP19
2 x 16	TV 16-14	blue	0,2	8,3	30	14	9,6	18,4	1,65	100	

VO class insulation on request – symbol e.g. TV 1-8-VO.
Insulating sleeves are available in other colours. Cable end-sleeves of other dimensions on request.



MSE Receptacle

for multi-wire Cu cables



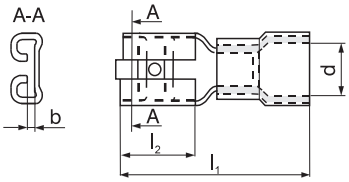
With copper tube and polyamid insulation
Thermal resistance: -40°C to +125°C
Material: brass
According to DIN 46245

Nominal wire cross section [mm²]	Cross section [mm²]	Symbol	b [mm]	l_1 [mm]	l_2 [mm]	d_1 [mm]	a_{min} [mm]	d_2 [mm]	d_3 [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
1	> 0,5 ÷ 1	MSE 6,3-1	0,8	21	7,5	6,7	4,5	1,6	3,2	0,92	100	PR33,E11-6,
2,5	> 1 ÷ 2,5	MSE 6,3-2	0,8	21	7,5	6,7	4,5	2,3	3,8	1,09	100	RE6, PP8,
6	> 2,5 ÷ 6	MSE 6,3-6	0,8	21	7,5	6,7	4,5	3,4	5,5	1,49	100	PP19

Standard production –tinned.
VO class insulation on request – symbol e.g. MSE 6,3-1-VO.

MSEPA wire sleeve in full insulation

for multi-wire Cu cables

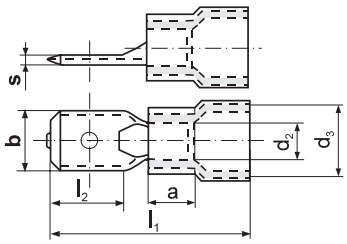


With polyamid insulation
Thermal resistance: -55°C to +125°C
Material: brass

Nominal wire cross section [mm²]	Symbol	b [mm]	d [mm]	l_1 [mm]	l_2 [mm]	Weight [g / pce]	Unit [pcs]	Crimping tools
0,5 - 1,5	MSEPA 2,8-1	0,8	2,7	18,6	8	0,22	100	
0,5 - 1,5	MSEPA 4,8-1	0,8	2,7	20	6	0,25	100	PR33,
0,5 - 1,5	MSEPA 6,3-1	0,8	2,7	21,5	6,8	0,28	100	E11-6,
1,5 - 2,5	MSEPA 2,8-2	0,8	3,2	20,5	8	0,29	100	RE6,
1,5 - 2,5	MSEPA 4,8-2	0,8	3,2	20,5	6	0,26	100	PP8,
1,5 - 2,5	MSEPA 6,3-2	0,8	3,2	21,8	6,8	0,32	100	PP19
4 - 6	MSEPA 6,3-6	0,8	5,8	25	6,8	0,35	100	

TSE Tab

for multi-wire Cu cables



With copper tube and polyamid insulation
Thermal resistance: -40°C to +125°C
Material: brass
Made according DIN 46248

Nominal wire cross section [mm²]	Cross section [mm²]	Symbol	s [mm]	l_1 [mm]	l_{2min} [mm]	b [mm]	a_{min} [mm]	d_2 [mm]	d_3 [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
1	> 0,5 ÷ 1	TSE 6,3-1	0,8	21	8	6,3	4,5	1,6	3,2	0,82	100	PR33, E11-6,
2,5	> 1 ÷ 2,5	TSE 6,3-2	0,8	21	8	6,3	4,5	2,3	3,8	1,01	100	RE6, PP8,
6	> 2,5 ÷ 6	TSE 6,3-6	0,8	21	8	6,3	4,5	3,4	5,2	1,39	100	PP19

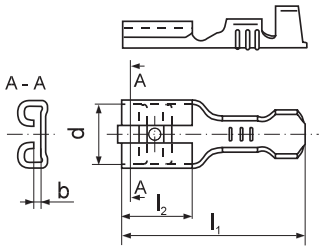
Standard production –tinned.
VO class insulation on request – symbol e.g. TSE 6,3-1-VO.

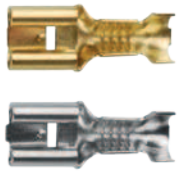
for multi-wire Cu cables

MS Receptacle

Material: brass

According to DIN 46247





Nominal wire cross section [mm²]	Cross section [mm²]	Symbol	b [mm]	l_1 [mm]	l_2 [mm]	d [mm]	Cable insulation diameter	Weight [g/pce]	Unit [pcs]	Crimping tools
1	> 0,5 ÷ 1	MS 2,8-1	0,4	14	6,3	3,1	2 ÷ 3,3	0,23	100	PR33, S33-1,
1	> 0,5 ÷ 1	MS 2,8-1A	0,8	14	6,3	3,1	2 ÷ 3,3	0,22	100	S55
1	> 0,5 ÷ 1	MS 6,3-1	0,8	19,2	7,5	6,7	2 ÷ 3,3	0,68	100	PR33,
2,5	> 1,0 ÷ 2,5	MS 4,8-2	0,8	15,6	6,3	5,1	2,7 ÷ 4,3	0,57	100	S55,
2,5	> 1,0 ÷ 2,5	MS 6,3-2	0,8	19,2	7,5	6,7	2,7 ÷ 4,3	0,72	100	PP8, PP19
6	> 2,5 ÷ 6	MS 6,3-6	0,8	19,2	7,5	6,7	3,8 ÷ 5,1	0,86	100	

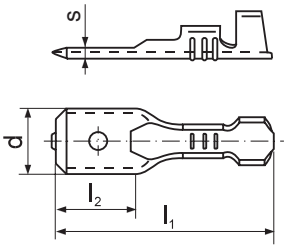
Standard production – non tinned. When ordering tinned add 'Sn' symbol e.g. MS 6,3-2 Sn.
When ordering nickel plated add 'Ni' symbol e.g. MS 6,3-6 Ni. Made on request.

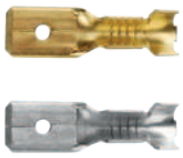
for multi-wire Cu cables

TS Tab

Material: brass

According to DIN 46248





Nominal wire cross section [mm²]	Cross section [mm²]	Symbol	s [mm]	l_1 [mm]	l_2 [mm]	d [mm]	Cable insulation diameter	Weight [g/pce]	Unit [pcs]	Crimping tools
1	> 0,5 ÷ 1	TS 6,3-1	0,8	20	8,5	6,3	2 ÷ 3,3	0,59	100	
2,5	> 1 ÷ 2,5	TS 4,8-2*	0,8	17	7,2	4,8	2,7 ÷ 4,3	0,50	100	PR33,
2,5	> 1 ÷ 2,5	TS 6,3-2	0,8	20	8,5	6,3	2,7 ÷ 4,3	0,67	100	S55,
6	> 2,5 ÷ 6	TS 6,3-6	0,8	20	8,5	6,3	3,8 ÷ 5,1	0,76	100	PP8, PP19

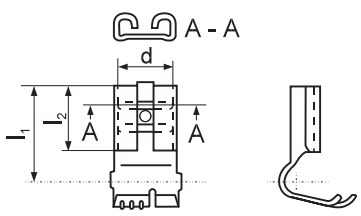
Standard production – non tinned. When ordering tinned add 'Sn' symbol e.g. TS 6,3-2 Sn.
When ordering nickel plated add 'Ni' symbol e.g. TS 6,3-6 Ni. Made on request.

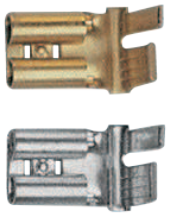
for multi-wire Cu cables

MK Angle terminal

Material: brass

According to DIN 46346 - part B





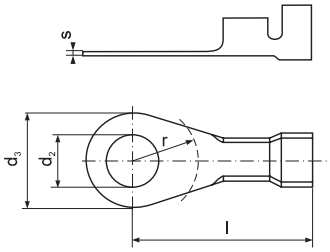
Cross section [mm²]	Symbol	l_1 [mm]	l_2 [mm]	d [mm]	Cable insulation diameter	Weight [g/pce]	Unit [pcs]	Crimping tools
0,75 ÷ 1	MK 6,3-2	11	7,5	6,7	2 ÷ 3,3	0,69	100	SK1, PP8, PP19
1,5 ÷ 2,5 *	MK 6,3-2	11	7,5	6,7	2,7 ÷ 4,3	0,72	100	SK2N, PP8, PP19

* – outside DIN standard.

Standard production – non tinned. When ordering tinned add 'Sn' symbol e.g. MK 6,3-2 Sn.

KOP Claw terminal

for multi-wire Cu cables



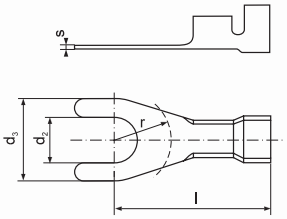
Material: brass
According to DIN 46225

Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_3 [mm]	l [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	3	3,2	KOP 3-1	0,6	8	18,3	4,5	0,71	100	
	4	4,3	KOP 4-1		8	18,3	6,5	0,68		
	5	5,3	KOP 5-1		9,5	17,5	6,5	0,71		
	6	6,5	KOP 6-1		12	22	7,5	0,98		S44-2,
1 ÷ 2,5	3	3,2	KOP 3-2,5	0,6	8	18,3	4,5	0,86	100	PP8,
	4	4,3	KOP 4-2,5		8	18,3	6,5	0,82		PP19
	5	5,3	KOP 5-2,5		9,5	17,5	6,5	0,83		
	6	6,5	KOP 6-2,5		12	22	7,5	1,12		

Standard production – non tinned. When ordering tinned add 'Sn' symbol e.g. KOP 3-1 Sn.

KNP Claw terminal

for multi-wire Cu cables



Material: brass
According to DIN 46225

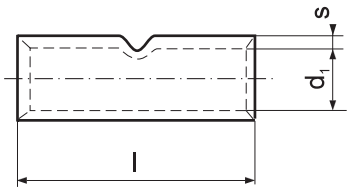
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_3 [mm]	l [mm]	r [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	3	3,2	KNP 3-1	0,6	8	18,3	4,5	0,70	100	
	4	4,3	KNP 4-1		8	18,3	6,5	0,67		S44-2,
	5	5,3	KNP 5-1		9,5	17,5	6,5	0,67		
1 ÷ 2,5	4	4,3	KNP 4-2,5	0,6	8	18,3	6,5	0,81	100	PP8,
	5	5,3	KNP 5-2,5		9,5	17,5	6,5	0,83		PP19
	6	6,5	KNP 6-2,5		12	22	7,5	1,11		

Standard production – non tinned. When ordering tinned add 'Sn' symbol e.g. KNP 3-1 Sn.

for multi-wire Cu cables

KLA Connector

Material: galvanically tinned copper
Non tinned on request



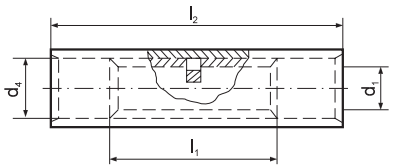
Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
0,5 ÷ 1	KLA 1-15	0,8	1,6	15	0,81	100		PR33, A11-6, A22-2, RA16, PP8, PP19
	KLA 1-20			20	1,06			
1,5 ÷ 2,5	KLA 2,5-15	0,95	2,3	15	1,25	100		
	KLA 2,5-20			20	1,76			
4	KLA 4-15	1	3	15	1,64	100		PR33, A11-6, RA16, PP8, PP19
	KLA 4-20			20	2,19			
6	KLA 6-15	1	4	15	2,06	100	6	PR33, PRZ240, A11-6, RA16, PR50, PR240, PP8, PP19
	KLA 6-20			20	2,76			
	KLA 6-30			30	4,21			
10	KLA 10-20	1,2	4,5	20	3,72	50	7	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300 GU120, HR100-U, PR240, PR120, PR50, R50, PP19, RA16
	KLA 10-30			30	5,76			
16	KLA 16-25	1,5	5,5	25	7,18	50	8	
	KLA 16-30			30	8,64			
	KLA 16-50			50	14,36			
25	KLA 25-29	1,5	7	29	10,20	50	10	PP19, + as below
	KLA 25-35			35	12,22			
	KLA 25-50			50	16,80			
35	KLA 35-32	1,75	8,5	32	15,70	50	12	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300
	KLA 35-50			50	25,00			
50	KLA 50-38	2	10	38	25,00	20	14	GU120, HR100-U, PR240, PR120, PR150, PR50, R50
	KLA 50-56			56	37,05			
70	KLA 70-42	2,25	12	42	37,30	20	16	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300 GU120, HR100-U, PR240, PR120, PR150
	KLA 70-56			56	49,65			
95	KLA 95-48	2,25	13,5	48	48,90	10	17	
	KLA 95-70			70	68,34			
120	KLA 120-52	2,25	15,5	52	58,10	10	19	
	KLA 120-70			70	78,50			
150	KLA 150-56	2,25	17	56	67,70	10	20	PR150, + as below
	KLA 150-80			80	95,70			
185	KLA 185-85	2,5	19	85	125,90	10	23	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, PR240
240	KLA 240-90	2,5	21,5	90	155,00	10	25	
300	KLA 300-100	3	24,5	100	220,00	10	30	EPZC300, EPZ300, GZ300, HRZ300, GO300, HR300, GU300
400	KLA 400-100	3,5	27	100	287,50	10	34	GU625

Production on request. Connectors of other dimensions.

for multi-wire Cu cables

KLE Connector

With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper



Cross section [mm²]	Symbol	d_1 [mm]	d_4 [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 1	KLE 1	1,6	3,2	15	25	1,18	100	PR33, E11-6, RE6, PP8, PP19
1,5 ÷ 2,5	KLE 2,5	2,3	4,2	15	25	1,70	100	
4	KLE 4	3	5	15	25	2,30	50	
6	KLE 6	3,8	5,5	15	25	2,32	50	PR33, E11-6, RE6, PP8, PP19
10	KLE 10	4,5	6,9	20	32	4,88	50	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120, PR50, R50, PP19, RE16

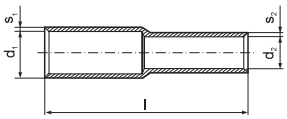
Insulation colours

VO class insulation on request – symbol e.g. KLE 1-VO.

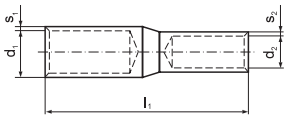
KLS and KLR Reducing Cu connector

for multi-wire Cu cables

KLR



KLS

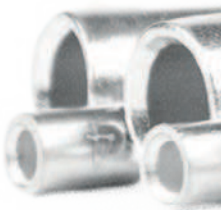


Material: galvanically tinned copper

Cross section [mm²] from	to	Symbol	s_1 [mm]	d_1 [mm]	s_2 [mm]	d_2 [mm]	l [mm]	l_1 [mm]	Dies discriminant	Crimping tools
16	10	KLR 16-10	1,5	5,5	1,2	4,5	28	30	8-7	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120, PR15, PR50, R50
25	10	KLR 25-10	1,5	7	1,2	4,5	30	32	10-7	
	16	KLR 25-16			1,5	5,5	34	36	10-8	
35	10	KLR 35-10	1,75	8,5	1,2	4,5	32	34	12-7	
	16	KLR 35-16			1,5	5,5	36	38	12-8	
	25	KLR 35-25			1,5	7	39	41	12-10	
50	10	KLR 50-10	2	10	1,2	4,5	34	36	14-7	
	16	KLR 50-16			1,5	5,5	38	40	14-8	
	25	KLR 50-25			1,5	7	41	45	14-10	
	35	KLR 50-35			1,75	8,5	45	47	14-12	
70	16	KLR 70-16	2,25	12	1,5	5,5	40	42	16-8	
	25	KLR 70-25			1,5	7	43	49	16-10	
	35	KLR 70-35			1,75	8,5	47	51	16-12	
	50	KLR 70-50			2	10	50	52	16-14	
95	25	KLR 95-25	2,25	13,5	1,5	7	47	54	17-10	
	35	KLR 95-35			1,75	8,5	51	56	17-12	
	50	KLR 95-50			2	10	54	50	17-14	
	70	KLR 95-70			2,25	12	58	60	17-16	
120	35	KLR 120-35	2,25	15,5	1,75	8,5	52	60	19-12	
	50	KLR 120-50			2	10	55	57	19-14	
	70	KLR 120-70			2,25	12	59	53	19-16	
	95	KLR 120-95			2,25	13,5	65	67	19-17	
150	50	KLR 150-50	2,25	17	2	10	59	61	20-14	
	70	KLR 150-70			2,25	12	63	65	20-16	
	95	KLR 150-95			2,25	13,5	69	71	20-17	
	120	KLR 150-120			2,25	15,5	71	73	20-19	
185	70	KLR 185-70	2,5	19	2,25	12	63	65	23-16	
	95	KLR 185-95			2,25	13,5	69	62	23-17	
	120	KLR 185-120			2,25	15,5	71	72	23-19	
	150	KLR 185-150			2,25	17	77	79	23-20	
240	95	KLR 240-95	2,5	21,5	2,25	13,5	74	76	25-17	
	120	KLR 240-120			2,25	15,5	76	79	25-19	
	150	KLR 240-150			2,25	17	82	84	25-20	
	185	KLR 240-185			2,5	19	84	86	25-23	
300	120	KLR 300-120	3	24,5	2,25	15,5	85	87	30-19	
	150	KLR 300-150			2,25	17	91	93	30-20	
	185	KLR 300-185			2,5	19	93	95	30-23	
	240	KLR 300-240			2,5	21,5	100	102	30-25	

Production on request. Connectors of dimensions other than in chart.

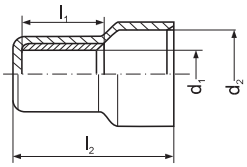
Tight connector: symbol KLS, e.g. KLS 16-10.



for multi-wire Cu cables

KLK End connector

With polyamide insulation
Thermal resistance: -40°C to +125°C
Material: galvanically tinned copper



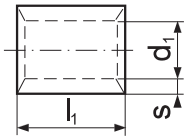
Cross section [mm²]	Symbol	d_1 [mm]	d_2 [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
0,5 ÷ 2,5	KLK 2,5	2,3	5	7	15	0,74	100	PR33, E11-6, RE6, PP8, PP19
2,5 ÷ 6	KLK 6	3,8	7,5	7	17,5	1,26	50	

Insulation colours
VO class insulation on request – symbol e.g. KLK 6-VO.

for multi-wire Cu cables

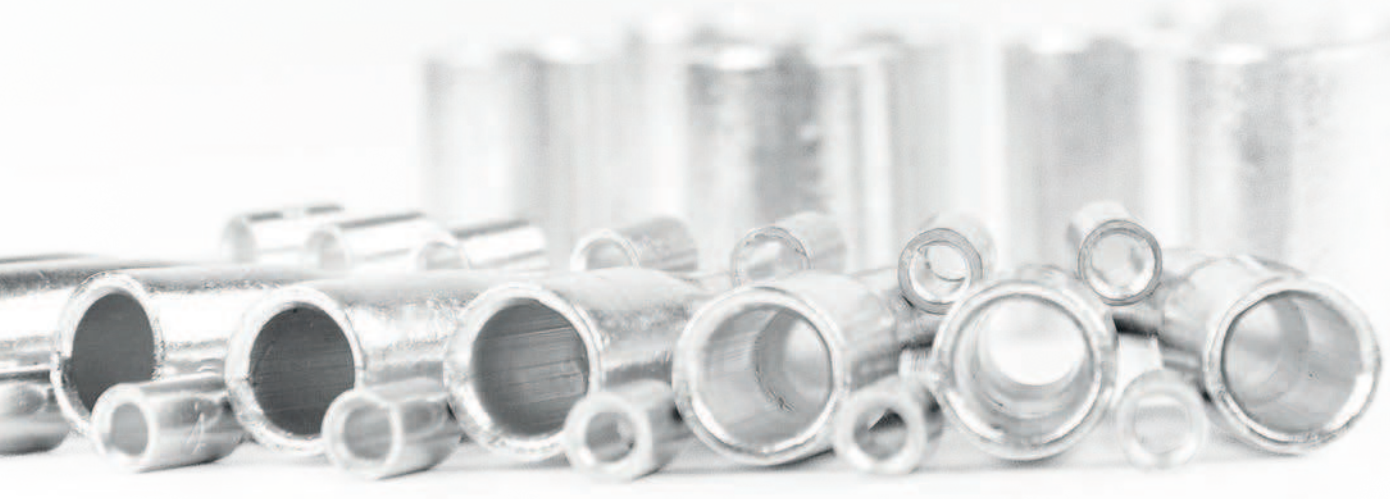
KLB Parallel connector

Without insulation
Material: galvanically tinned copper
Non tinned on request



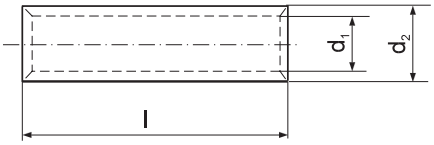
Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	l_1 [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
0,5 ÷ 1	KLB 1	0,8	1,6	7	0,36	100		PR33, A11-6, RA16, PP8, PP19
1 ÷ 2,5	KLB 2,5	0,95	2,3	7	0,65	100		
2,5 ÷ 4	KLB 4	1	3	7	0,72	50		
4 ÷ 6	KLB 6	1	4	7	0,90	50	6	PR33, A11-6, RA16, PR50, PP8, PP19,
6 ÷ 10	KLB 10	1,2	4,5	10	1,86	50	7	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300,GU120, HR100-U, PR240, PR120, PR50, PP19, R50, RA16
10 ÷ 16	KLB 16	1,5	5,5	11	3,24	50	8	
16 ÷ 25	KLB 25	1,5	7	14	6,00	50	10	R50, PR50 + as below
25 ÷ 35	KLB 35	1,75	8,5	16	7,91	20	12	
35 ÷ 50	KLB 50	2	10	19	12,48	10	14	
50 ÷ 70	KLB 70	2,25	12	19	17,19	10	16	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300,GU120, HR100-U, PR240, PR120, PR150
70 ÷ 95	KLB 95	2,75	13,5	20	24,91	10	18	
95 ÷ 120	KLB 120	2,75	15,5	22	32,00	10	20	

For parallel connecting e.g. wires of different cross sections.
Production on request. Connectors of dimensions other than in chart.



KLD Connector

for multi-wire Cu cables



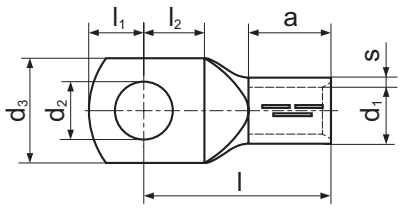
Material: galvanically tinned copper
Non tinned on request.

Cross section [mm²]	Symbol	Wire diameter Ø [mm]	d_1 [mm]	d_2 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Crimping tools
1,5 ÷ 2,5	KLD 2,5	1,38÷1,78	1,9	3,9	25	2,08	50	D11-6, PP8, PP19
4	KLD 4	2,25	2,3	4,2	25	2,30	50	
6	KLD 6	2,75	3	5	25	2,68	50	PP19 (Z PPH12 + SD) + as below
10	KLD 10	3,55	4	6	25	3,40	20	
16	KLD 16	4,50	5,5	8,5	35	10,14	20	
25	KLD 25	5,65	6	10	40	17,60	20	
35	KLD 35	6,70	7	10	40	13,90	10	EPZC300, EPZ300, GZ300, HRZ300,PRZ240, GO300, HR300, GU300,GU120, HR100-U, PR240, PR120, PR150, R50, PR50
50	KLD 50	8,00	8,5	12	70	35,60	10	

Production on request. Connectors of dimensions other than in chart.

KCS Tubular terminal

for multi-wire Cu cables



Material: galvanically tinned copper
Non tinned on request.

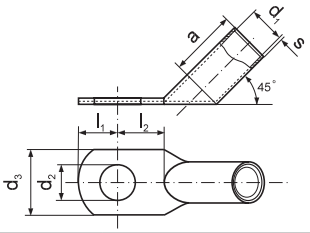
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	l_1 [mm]	l_2 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
2,5	4	4,3	KCS 4-2,5	0,95	2,3	7,5	7	5	6	17	1,66	100		
	5	5,3	KCS 5-2,5			8,5		5,5	6,2	17	1,70			
	6	6,4	KCS 6-2,5			9,5		6,7	7,3	18	1,82			
	8	8,4	KCS 8-2,5			13		7,3	10	22	2,05			PR33,
4	4	4,3	KCS 4-4	1	3	8,5	8	5	6	19	2,30	50		PP19
	5	5,3	KCS 5-4			9		5,5	6,2	19	2,30			
	6	6,4	KCS 6-4			10		6,5	7,3	20	2,44			
	8	8,4	KCS 8-4			13		9,5	10	23	2,90			
6	4	4,3	KCS 4-6	1	4	9,5	9	5	6	20	3,26	50	6	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, PR33, GO300, HR300, GU300, GU120, HR100-U, PR240, PR50, PP19, A11/6
	5	5,3	KCS 5-6			9,5		6	6,2	20	3,32			
	6	6,4	KCS 6-6*			11	9	6	7,5	21,5	3,48			
	8	8,4	KCS 8-6			13		9,5	10	24	4,10			
10	5	5,3	KCS 5-10	1,2	4,5	12	10	7,5	8	23	5,32	50	7	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR50, R50, PP19
	6	6,4	KCS 6-10*			12	9	6	7,5	22,5	5,54			
	8	8,4	KCS 8-10*			14	9	8	9	24,5	5,96			
	10	10,5	KCS 10-10*			16	9	10	11	27	6,36			
16	5	5,3	KCS 5-16	1,5	5,5	13	13	8,2	8,2	28	9,96	50	8	
	6	6,4	KCS 6-16*			12,5	10	6	7,5	24	9,12			
	8	8,4	KCS 8-16*			14,5	10	8	9	26	10,06			
	10	10,5	KCS 10-16*			17	10	10	11	28	10,56			

Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	l_1 [mm]	l_2 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
25	6	6,4	KCS 6-25*	1,5	7	14	11	6	7,5	27	11,74	50	10	
	8	8,4	KCS 8-25*			16	11	8	9	28	13,06			PP19
	10	10,5	KCS 10-25*			18	11	10	11	31	15,56			+ as below
	12	13	KCS 12-25			19		13	14	35	15,32			
35	6	6,4	KCS 6-35*	1,75	8,5	17	15	6	7,5	31,5	18,90	20	12	
	8	8,4	KCS 8-35*			17	15	8	9	33	20,35			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120, PR150, PR50, PP19, A11/6
	10	10,5	KCS 10-35*			19	15	10	11	35	21,80			
	12	13	KCS 12-35			21		13	14	38	23,15			
	14	15	KCS 14-35			21		15,5	15,5	40	23,80			
50	8	8,4	KCS 8-50*	2	10	20	17	8	10	38,5	32,30	20	14	
	10	10,5	KCS 10-50*			20	17	10	11	39	31,25			
	12	13	KCS 12-50*			21	17	12	13	40,5	31,4			
	14	15	KCS 14-50			23		15,5	15,5	43	32,70			
	16	17	KCS 16-50			28		16	17	45	35,80			
70	8	8,4	KCS 8-70*	2,25	12	23,5	17	8	10	40	47,55	20	16	
	10	10,5	KCS 10-70*			23,5	17	10	11	42	41,00			
	12	13	KCS 12-70			23,5		13	14	46	47,20			
	14	15	KCS 14-70			23,5		15,5	15,5	48	49,65			
	16	17	KCS 16-70			28		16	17	50	49,70			
95	8	8,4	KCS 8-95	2,25	13,5	26	23	10	11	49	55,80	10	18	
	10	10,5	KCS 10-95*			26	20	10	11	44	48,50			
	12	13	KCS 12-95*			26	20	12	13	47	59,70			
	14	15	KCS 14-95			26		15,5	15,5	53	59,20			
	16	17	KCS 16-95			28		16	17	55	59,80			
	20	21	KCS 20-95			34		19	20	57	69,80			
120	8	8,4	KCS 8-120	2,25	15,5	29	26	10	11	51	64,70	10	19	
	10	10,5	KCS 10-120*			29	23	10	11	51	68,40			
	12	13	KCS 12-120			29	23	12	13	53	72,80			
	14	15	KCS 14-120			29		15,5	15,5	56	72,80			
	16	17	KCS 16-120			29		16	17	56	72,30			
	20	21	KCS 20-120			35		19	20	61	78,40			
150	10	10,5	KCS 10-150	2,25	17	31	28	12	13	57	83,00	10	20	
	12	13	KCS 12-150			31	28	13	14	58	81,60			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, PR240, PR150
	14	15	KCS 14-150			31		15,5	15,5	62	76,40			
	16	17	KCS 16-150			31		16	17	62	93,50			
	20	21	KCS 20-150			36		19	20	66	96,70			
185	10	10,5	KCS 10-185	2,5	19	35	30	12	13	62	105,00	10	23	
	12	13	KCS 12-185			35		13	14	63	112,00			
	14	15	KCS 14-185			35		15,5	15,5	65	110,80			PR240, PRZ240 + as below
	16	17	KCS 16-185			35		16	17	67	112,00			
	20	21	KCS 20-185			39		19	20	69	118,20			
240	10	10,5	KCS 10-240	2,5	21,5	39	35	12	13	66	125,00	10	25	
	12	13	KCS 12-240			39	30	12	13	61	120,00			
	14	15	KCS 14-240			39		15,5	15,5	68	123,20			
	16	17	KCS 16-240			39		16	17	70	135,00			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300
	20	21	KCS 20-240			39		19	20	73	140,60			
300	12	13	KCS 12-300	3	24,5	45	45	13	14	80	195,00	10	30	
	14	15	KCS 14-300			45		15,5	15,5	81	211,05			
	16	17	KCS 16-300			45		16	17	83	205,00			
	20	21	KCS 20-300			45		19	20	86	217,80			
400	12	13	KCS 12-400	3,5	27	49	44	24	24	92	335,00	5	34	
	14	15	KCS 14-400			49		24	24	92	285,00			
	16	17	KCS 16-400			49		24	24	92	345,83			GU625
	20	21	KCS 20-400			49		24	24	92	281,00			

Production on request. Terminal with control hole - symbol KCS-K.

KCS45 Tubular angle terminal

for multi-wire Cu cables



Material: galvanically tinned copper
Non tinned on request.

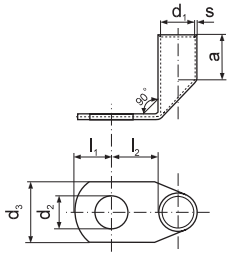
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
6	5	5,3	KCS45 5-6	1	4	9,5	9	8	8,5	3,90	10	6	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, PR33, GO300, HR300, GU300, GU120, HR100-U, PR240, PR50, PP19, A11/6
	6	6,4	KCS45 6-6			10		7,5	8,5	3,73			
10	5	5,3	KCS45 5-10	1,2	4,5	12	10	8	8,5	5,93	10	7	
	6	6,4	KCS45 6-10			12		7,5	8,5	6,14			EPZC300, EPZ300, GZ300,
	8	8,4	KCS45 8-10			13		10	11	6,60			HRZ300, PRZ240, GO300,
16	6	6,4	KCS45 6-16	1,5	5,5	13	13	7,5	8,5	10,00	10	8	HR300, GU300, GU120, HR100-U,
	8	8,4	KCS45 8-16			13		10	11	10,50			PR240, PR50, R50, PP19
	10	10,5	KCS45 10-16			17		12	13	11,80			
25	6	6,4	KCS45 6-25	1,5	7	14	15	7,5	8,5	14,00	10	10	
	8	8,4	KCS45 8-25			16		10	11	15,00			PP19
	10	10,5	KCS45 10-25			18		12	13	14,90			+ as below
	12	13	KCS45 12-25			18		13	14	18,10			
35	6	6,4	KCS45 6-35	1,75	8,5	17	17	7,5	8,5	22,30	10	12	
	8	8,4	KCS45 8-35			17		10	11	24,20			
	10	10,5	KCS45 10-35			19		12	13	25,20			
	12	13	KCS45 12-35			21		13	14	26,30			EPZC300, EPZ300, GZ300,
	14	15	KCS45 14-35			21		15,5	15,5	27,70			HRZ300, PRZ240, GO300,
50	8	8,4	KCS45 8-50	2	10	20	19	10	11	33,20	10	14	HR300, GU300, GU120,
	10	10,5	KCS45 10-50			20		12	13	34,60			HR100-U, PR240, PR120,
	12	13	KCS45 12-50			23		13	14	33,30			PR150, PR50, PP19, A11/6
	14	15	KCS45 14-50			23		15,5	15,5	39,10			
	16	17	KCS45 16-50			28		16	17	43,20			
70	8	8,4	KCS45 8-70	2,25	12	23,5	21	10	11	51,20	10	16	
	10	10,5	KCS45 10-70			23,5		12	13	50,90			
	12	13	KCS45 12-70			23,5		13	14	55,10			
	14	15	KCS45 14-70			23,5		15,5	15,5	55,10			
	16	17	KCS45 16-70			28		16	17	61,40			EPZC300, EPZ300,
95	10	10,5	KCS45 10-95	2,25	13,5	26	25	12	13	58,612	10	18	GZ300, HRZ300,
	12	13	KCS45 12-95			26		13	14	59,11			PRZ240, GO300,
	14	15	KCS45 14-95			26		15,5	15,5	67,90			HR300, GU300,
	16	17	KCS45 16-95			28		16	17	69,00			GU120, HR100-U,
	20	21	KCS45 20-95			34		19	20	74,00			PR240, PR120,
120	10	10,5	KCS45 10-120	2,25	15,5	29	26	12	13	75,17	10	19	PR150
	12	13	KCS45 12-120			29		13	14	76,40			
	14	15	KCS45 14-120			29		15,5	15,5	87,60			
	16	17	KCS45 16-120			30		16	17	88,90			
	20	21	KCS45 20-120			36		19	20	89,56			
150	10	10,5	KCS45 10-150	2,25	17	31	30	12	13	89,46	10	20	
	12	13	KCS45 12-150			31		13	14	90,23			EPZC300, EPZ300, GZ300,
	14	15	KCS45 14-150			31		15,5	15,5	93,50			HRZ300, PRZ240, GO300,
	16	17	KCS45 16-150			31		16	17	95,60			HR300, GU300, PR240, PR150
	20	21	KCS45 20-150			36		19	20	97,70			
185	10	10,5	KCS45 10-185	2,5	19	35	30	12	13	115,00	10	23	
	12	13	KCS45 12-185			35		13	14	120,00			
	14	15	KCS45 14-185			35		15,5	15,5	120,30			PR240, PRZ240,
	16	17	KCS45 16-185			35		16	17	117,95			+ as below
	20	21	KCS45 20-185			39		19	20	123,23			
240	12	13	KCS45 12-240	2,5	21,5	39	35	13	14	140,00	10	25	
	14	15	KCS45 14-240			39		15,5	15,5	145,10			
	16	17	KCS45 16-240			39		16	17	146,30			EPZC300, EPZ300, GZ300,
	20	21	KCS45 20-240			39		19	20	148,60			HRZ300, PRZ240, GO300,
300	12	13	KCS45 12-300	3	24,5	45	44	13	14	234,30	10	30	HR300, GU300
	16	17	KCS45 16-300			45		16	17	238,90			
400	12	13	KCS45 12-400	3,5	27	49	44	24	24	338,70	10	34	
	20	21	KCS45 20-400			49		24	24	334,10			GU625

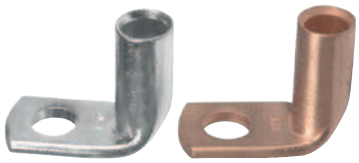
Production on request. Terminals of dimensions other than in chart.

for multi-wire Cu cables

KCS90 Tubular angle terminal

Material: galvanically tinned copper
Non tinned on request.



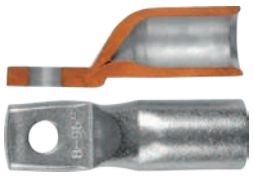


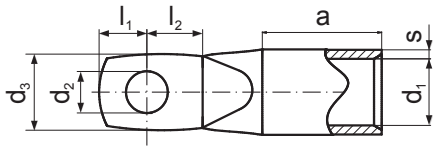
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
6	5	5,3	KCS90 5-6	1	4	9,5	9	8	8,5	4,00	10	6	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, PR33, GO300, HR300, GU300, GU120, HR100-U, PR240, PR50, PP19, A11/6
	6	6,4	KCS90 6-6			10		7,5	11	4,30			
10	5	5,3	KCS90 5-10	1,2	4,5	12	10	8	8,5	6,10	10	7	
	6	6,4	KCS90 6-10			12		7,5	11	6,40			EPZC300, EPZ300, GZ300,
	8	8,4	KCS90 8-10			13		10	13	5,90			HRZ300, PRZ240, GO300,
16	6	6,4	KCS90 6-16	1,5	5,5	13	13	7,5	11	10,10	10	8	HR300, GU300, GU120, HR100-U,
	8	8,4	KCS90 8-16			13		10	13	10,50			PR240, PR50, R50, PP19
	10	10,5	KCS90 10-16			17		12	15	13,50			
25	6	6,4	KCS90 6-25	1,5	7	14	15	7,5	11	13,80	10	10	
	8	8,4	KCS90 8-25			16		10	13	14,60			PP19
	10	10,5	KCS90 10-25			18		12	15	16,20			+ as below
	12	13	KCS90 12-25			18		13	18	18,20			
35	6	6,4	KCS90 6-35	1,75	8,5	17	17	7,5	11	21,00	10	12	
	8	8,4	KCS90 8-35			17		10	13	23,10			
	10	10,5	KCS90 10-35			19		12	15	23,60			EPZC300, EPZ300, GZ300,
	12	13	KCS90 12-35			21		13	18	25,70			HRZ300, PRZ240, GO300,
	14	15	KCS90 14-35			21		15,5	20	26,70			HR300, GU300, GU120,
50	8	8,4	KCS90 8-50	2	10	20	19	10	13	32,60	10	14	HR100-U, PR240, PR120,
	10	10,5	KCS90 10-50			20		12	15	34,20			PR150, PR50, PP19, A11/6
	12	13	KCS90 12-50			23		13	18	40,20			
	14	15	KCS90 14-50			23		15,5	20	40,20			
	16	17	KCS90 16-50			28		16	22	46,80			
70	8	8,4	KCS90 8-70	2,25	12	23,5	21	10	13	48,30	10	16	
	10	10,5	KCS90 10-70			23,5		12	15	50,80			
	12	13	KCS90 12-70			23,5		13	18	53,10			
	14	15	KCS90 14-70			23,5		15,5	20	60,90			
	16	17	KCS90 16-70			28		16	22	61,00			EPZC300, EPZ300,
95	10	10,5	KCS90 10-95	2,25	13,5	26	25	12	18	66,63	10	18	GZ300, HRZ300,
	12	13	KCS90 12-95			26		13	18	63,53			PRZ240, GO300,
	14	15	KCS90 14-95			26		15,5	20	68,40			HR300, GU300,
	16	17	KCS90 16-95			30		16	22	73,59			GU120, HR100-U,
	20	21	KCS90 20-95			35		19,5	24	71,61			PR240, PR120,
120	10	10,5	KCS90 10-120	2,25	15,5	29	26	12	15	72,61	10	19	PR150
	12	13	KCS90 12-120			29		13	18	80,00			
	14	15	KCS90 14-120			29		15,5	20	87,90			
	16	17	KCS90 16-120			30		16	22	83,65			
	20	21	KCS90 20-120			35		19	24	86,52			
150	10	10,5	KCS90 10-150	2,25	17	31	30	12	15	90,00	10	20	
	12	13	KCS90 12-150			31		13	18	88,96			EPZC300, EPZ300, GZ300,
	14	15	KCS90 14-150			31		15,5	20	93,90			HRZ300, PRZ240, GO300,
	16	17	KCS90 16-150			31		16	22	96,70			HR300, GU300, PR240, PR150
	20	21	KCS90 20-150			36		19	24	99,80			
185	10	10,5	KCS90 10-185	2,5	19	35	30	12	22	119,50	10	23	
	12	13	KCS90 12-185			35		13	22	122,70			
	14	15	KCS90 14-185			35		15,5	22	124,20			PR240, PRZ240,
	16	17	KCS90 16-185			35		16	22	120,00			+ as below
	20	21	KCS90 20-185			39		19	24	129,90			
240	12	13	KCS90 12-240	2,5	21,5	39	35	13	22	150,00	10	25	
	14	15	KCS90 14-240			39		15,5	22	146,70			
	16	17	KCS90 16-240			39		16	22	148,20			EPZC300, EPZ300, GZ300,
	20	21	KCS90 20-240			39		19	24	150,30			HRZ300, PRZ240, GO300,
300	12	13	KCS90 12-300	3	24,5	45	44	13	22	238,00	10	30	HR300, GU300
	16	17	KCS90 16-300			45		16	22	241,10			
	20	21	KCS90 20-300			45		19	24	244,80			
400	12	13	KCS90 12-400	3,5	27	49	44	24	24	343,40	10	34	
	14	15	KCS90 14-400			49		24	24	342,90			
	16	17	KCS90 16-400			49		24	24	342,40			GU625
	20	21	KCS90 20-400			49		24	24	341,10			

Production on request. Terminals of dimensions other than in chart.

KCZ Circuit breaker tubular terminal

for multi-wire Cu cables





Material: galvanically tinned copper
Non tinned on request.

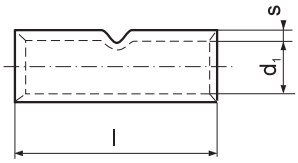
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	l_1 [mm]	l_2 [mm]	Dies discriminant	Crimping tools
35	6	6,4	KCZ 6-35	1,75	8,5	15	17	7,5	8,5	12	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300,GU300, GU120, HR100-U, PR240, PR120, PR150, PR50PP19, A11/6
	8	8,4	KCZ 8-35	1,75	8,5	15	17	10	11		
50	6	6,4	KCZ 6-50	2	10	15	19	7,5	10	14	
	8	8,4	KCZ 8-50	2	10	17	19	10	11		
	10	10,5	KCZ 10-50	2	10	19	19	12	13		
70	6	6,4	KCZ 6-70	2,25	12	17	20	7,5	10	16	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120, PR150
	8	8,4	KCZ 8-70	2,25	12	17	20	10	11		
	10	10,5	KCZ 10-70	2,25	12	19	20	12	13		
	12	13	KCZ 12-70	2,25	12	19	20	13	14		
95	6	6,4	KCZ 6-95	2,25	13,5	19	25	7,5	12	18	
	8	8,4	KCZ 8-95	2,25	13,5	19	25	10	12		
	10	10,5	KCZ 10-95	2,25	13,5	19	25	12	13		
	12	13	KCZ 12-95	2,25	13,5	19	25	13	14		
120	6	6,4	KCZ 6-120	2,25	15,5	19	26	7,5	14	19	
	8	8,4	KCZ 8-120	2,25	15,5	19	26	10	14		
	10	10,5	KCZ 10-120	2,25	15,5	19	26	12	14		
	12	13	KCZ 12-120	2,25	15,5	19	26	13	14		
150	6	6,4	KCZ 6-150	2,25	17	19	30	7,5	14	20	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, PR240, PR150
	8	8,4	KCZ 8-150	2,25	17	19	30	10	14		
	10	10,5	KCZ 10-150	2,25	17	19	30	12	14		
	12	13	KCZ 12-150	2,25	17	19	30	13	15		
185	10	10,5	KCZ 10-185	2,25	19	24,5	30	12	18	23	PR240, PRZ240 + as below
	12	13	KCZ 12-185	2,25	19	31	30	13	18		
	16	17	KCZ 16-185	2,25	19	31	30	16	18		
240	10	10,5	KCZ 10-240	2,5	21,5	31	35	12	19	25	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300,
	12	13	KCZ 12-240	2,5	21,5	31	35	13	19		
	16	17	KCZ 16-240	2,5	21,5	31	35	16	19		
300	10	10,5	KCZ 10-300	3	24,5	31	45	12	24	30	
	12	13	KCZ 12-300	3	24,5	31	45	24	24		
	16	17	KCZ 16-300	3	24,5	31	45	24	24		

Terminal type with narrow palm to facilitate assembly. The flat palm formed by a special forming processes.
Production on request. We can manufacture connectors with other dimensions than in the chart above, according to individual arrangements.

for multi-wire Cu cables

KLN Connector

Material: galvanically tinned copper
Non tinned on request.
According to DIN 46267 part 1

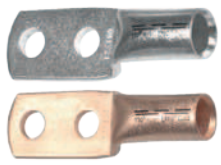


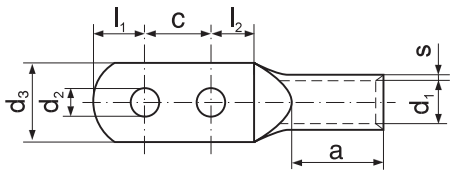
Cross section [mm²]	Symbol	s [mm]	d_1 [mm]	l [mm]	Weight KLN [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
6	KLN 6-30	0,85	3,8	30	3,18	50	–	PR33, RA16, PR50-D
10	KLN 10-30	0,75	4,5	30	3,24	50	6	PP19 + as below
16	KLN 16-50	1,5	5,5	50	14,44	50	8	
25	KLN 25-50	1,5	7	50	17,90	20	10	
35	KLN 35-50	2,15	8,2	50	30,90	20	12	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120-D, PR150-D, PR50-D, PP19, A11/6
50	KLN 50-56	2,25	10	56	42,60	20	14	
70	KLN 70-56	2,5	11,5	56	53,78	10	16	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120-D, PR150-D
95	KLN 95-70	2,75	13,5	70	87,08	10	18	
120	KLN 120-70	2,75	15,5	70	96,50	10	20	
150	KLN 150-80	3,25	17	80	147,00	1	22	PR240,PRZ240
185	KLN 185-85	3,25	19	85	173,00	1	25	+ as below
240	KLN 240-90	3,75	21,5	90	238,00	1	28	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300
300	KLN 300-100	3,75	24,5	100	294,00	1	32	
400	KLN 400-150	5,5	27,5	150	747,00	1	38	GU625
500	KLN 500-160	5,5	31	160	897,00	1	42	
625	KLN 625-160	4,75	34,5	160	798,00	1	44	

Production on request. Connectors of dimensions other than in chart.

KCL Tubular terminal

for multi-wire Cu cables





Material: galvanically tinned copper
Non tinned on request.
Tubular part dimensions according to DIN 46235

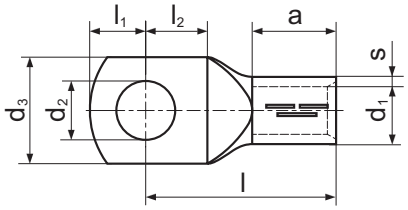
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	c [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Dies discriminant	Crimping tools
25	6	6,4	KCL 6-25	1,5	7	14	20	20	7,5	8,5	22,53	10	
	8	8,4	KCL 8-25			16			10	11	21,58		PR50-D, PP19
35	6	6,4	KCL 6-35	2,15	8,2	17	20	20	7,5	8,5	36,90	12	+ as below
	8	8,4	KCL 8-35			17			10	11	37,86		
50	6	6,4	KCL 6-50	2,25	10	20	28	20	7,5	8,5	53,40	14	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120-D, PR150-D, PR50-D
	8	8,4	KCL 8-50			20			10	11	55,07		
70	8	8,4	KCL 8-70	2,5	11,5	24	28	22	10	11	76,28	16	
	10	10,5	KCL 10-70			24			12	13	70,30		
95	8	8,4	KCL 8-95	2,75	13,5	28	35	22	10	11	108,83	18	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120-D, PR150-D
	10	10,5	KCL 10-95			28			12	13	113,30		
120	8	8,4	KCL 8-120	2,75	15,5	32	35	30	10	11	132,57	20	
	10	10,5	KCL 10-120			32			12	13	135,00		
	12	13	KCL 12-120			32			13	14	135,00		
150	10	10,5	KCL 10-150	3,25	17	34	35	30	12	13	177,47	22	PR150-D
	12	13	KCL 12-150			34			13	14	179,80		+ as below
185	10	10,5	KCL 10-185	3,25	19	37	40	30	12	13	211,55	25	PR240, PRZ240,
	12	13	KCL 12-185			37			13	14	212,13		+ as below
240	10	10,5	KCL 10-240	3,75	21,5	42	40	40	12	13	377,20	28	EPZC300, EPZ300, GZ300, HRZ300,
	12	13	KCL 12-240			42			13	14	314,50		PRZ240, GO300, HR300, GU300

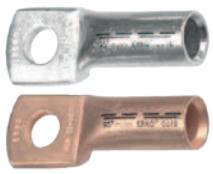
Production on request. Terminals of dimensions other than in chart.

for multi-wire Cu cables

KCR Tubular terminal

Material: galvanically tinned copper
Non tinned on request.
According to DIN 46235



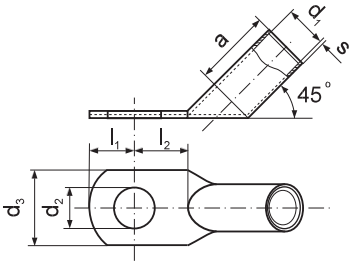


Cross section [mm²]	For screw M	d2 [mm]	Symbol	s [mm]	d1 [mm]	d3 [mm]	a [mm]	l1 [mm]	l2 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
10	5	5,3	KCR 5-10	0,75	4,5	9	10	7,5	8,5	27	3,56	50	6	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR50-D, PP19
	6	6,4	KCR 6-10			9		8,5	8,5		3,65			
	8	8,4	KCR 8-10*			12		10	10,5		3,60			
16	6	6,4	KCR 6-16	1,5	5,5	13	20	7,5	9	36	12,08	50	8	
	8	8,4	KCR 8-16			13,5		10	11		12,24			
	10	10,5	KCR 10-16			17		12,5	12,5		12,80			
25	6	6,4	KCR 6-25	1,5	7	14	20	9	9	38	15,92	50	10	
	8	8,4	KCR 8-25			16		10	11,5		15,80			PR150-D
	10	10,5	KCR 10-25			17		12,5	12,5	39	16,94			+ as above
	12	13	KCR 12-25			19		13	14		16,00			
35	6	6,4	KCR 6-35*	2,15	8,2	17	20	9	9	42	30,00	20	12	
	8	8,4	KCR 8-35			17,5		10	11		30,15			
	10	10,5	KCR 10-35			19		12	13		30,45			
	12	13	KCR 12-35			21		14,5	14,5		31,55			
	14	15	KCR 14-35*			21		15,5	15,5		30,70			PR50-D, R50,
50	8	8,4	KCR 8-50	2,25	10	20	28	10	11	52	45,35	20	14	+ as below
	10	10,5	KCR 10-50			22		12	13		44,95			
	12	13	KCR 12-50			24		14,5	14,5		46,80			
	14	15	KCR 14-50*			24		15,5	15,5		45,60			
	16	17	KCR 16-50			28		16	17		44,55			
70	8	8,4	KCR 8-70	2,5	11,5	24	28	11,5	11,5	55	62,80	20	16	
	10	10,5	KCR 10-70			24		12	13		62,50			
	12	13	KCR 12-70			24		14,5	14,5		61,30			
	14	15	KCR 14-70*			24		15,5	15,5		61,90			
	16	17	KCR 16-70			30		16	17		71,55			EPZC300, EPZ300,
95	8	8,4	KCR 8-95*	2,75	13,5	28	35	10	11	65	91,00	10	18	GZ300, HRZ300,
	10	10,5	KCR 10-95			28		13,5	13,5		93,20			PRZ240, GO300,
	12	13	KCR 12-95			28		14,5	14,5		95,10			HR300, GU300,
	14	15	KCR 14-95*			28		15,5	15,5		93,60			GU120, HR100-U,
	16	17	KCR 16-95			32		16	17		92,60			PR240, PR120-D,
120	10	10,5	KCR 10-120	2,75	15,5	32	35	13,5	13,5	70	110,90	10	20	PR150-D
	12	13	KCR 12-120			32		14,5	14,5		114,00			
	14	15	KCR 14-120*			32		15,5	15,5		111,90			
	16	17	KCR 16-120			32		16	17		113,60			
	20	21	KCR 20-120			38		19	20		120,00			
150	10	10,5	KCR 10-150	3,25	17	34	35	13,5	13,5	78	160,70	10	22	EPZC300, EPZ300,
	12	13	KCR 12-150			34		14,5	14,5		160,00			GZ300, HRZ300,
	14	15	KCR 14-150*			34		15,5	15,5		160,00			PRZ240, GO300,
	16	17	KCR 16-150			34		16	17		159,00			HR300, GU300,
	20	21	KCR 20-150			40		19	20		162,20			PR240, PR150-D
185	10	10,5	KCR 10-185	3,25	19	37	40	12	17	82	185,00	10	25	
	12	13	KCR 12-185			37		13	17		180,00			PR240, PRZ240
	14	15	KCR 14-185*			37		15,5	15,5		185,00			+ as below
	16	17	KCR 16-185			37		16	17		192,00			
	20	21	KCR 20-185			40		19	20		190,30			
240	12	13	KCR 12-240	3,75	21,5	42	40	13	17	92	265,00	10	28	
	14	15	KCR 14-240*			42		15,5	15,5		270,00			EPZC300, EPZ300,
	16	17	KCR 16-240			42		16	17		270,00			GZ300, HRZ300,
	20	21	KCR 20-240			45		19	20		277,70			PRZ240, GO300,
300	14	15	KCR 14-300*	3,75	24,5	48	50	15,5	15,5	100	334,00	1	32	HR300, GU300
	16	17	KCR 16-300			48		16	17		330,00			
	20	21	KCR 20-300			48		19	20		332,00			
400	14	15	KCR 14-400*	5,5	27,5	55	70	24	24	115	681,50	1	38	
	16	17	KCR 16-400			55		24	24		672,96			
	20	21	KCR 20-400			55		24	24		600,00			
500	16	17	KCR 16-500*	5,5	31	60	70	24	24	125	740,00	1	42	GU625
	20	21	KCR 20-500			60		24	24		830,00			
625	16	17	KCR 16-625*	4,75	34,5	63*	80	24	24	135	840,00	1	44	
	20	21	KCR 20-625			63*		24	24		820,00			

* – parameter outside standard.

KC45 Tubular angle terminal

for multi-wire Cu cables



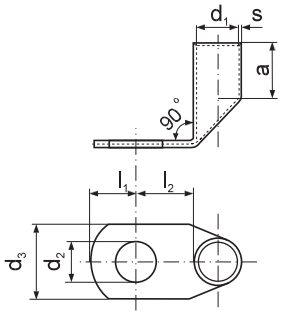
Material: galvanically tinned copper
Non tinned on request.
Tubular part dimensions according to DIN 46235

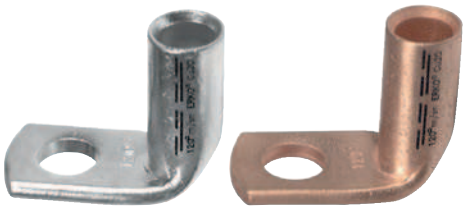
Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
6	5	5,3	KC45 5-6	0,85	3,8	8,5	10	8	8,5	2,70	10		PR33, RA16, PR50-D, PP19
	6	6,4	KC45 6-6			8,5		7,5	8,5	2,90			
10	5	5,3	KC45 5-10	0,75	4,5	10	10	8	8,5	4,40	10	6	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, PR33, GO300, HR300, GU300, GU120, HR100-U, PR240, PR50-D, PP19
	6	6,4	KC45 6-10			10		7,5	8,5	3,60			
	8	8,4	KC45 8-10			12		10	11	4,00			
16	6	6,4	KC45 6-16	1,5	5,5	13	20	7,5	8,5	11,90	10	8	
	8	8,4	KC45 8-16			13		10	11	12,70			
	10	10,5	KC45 10-16			17		12	13	13,40			
25	6	6,4	KC45 6-25	1,5	7	14	20	7,5	8,5	16,50	10	10	
	8	8,4	KC45 8-25			16		10	11	17,00			PR150-D + as above
	10	10,5	KC45 10-25			17		12	13	17,60			
	12	13	KC45 12-25			19		13	14	17,60			
35	6	6,4	KC45 6-35	2,15	8,2	17	20	7,5	8,5	29,40	10	12	
	8	8,4	KC45 8-35			17		10	11	32,00			
	10	10,5	KC45 10-35			19		12	13	31,60			
	12	13	KC45 12-35			21		13	14	32,10			
	14	15	KC45 14-35			21		15,5	15,5	35,60			R50, PR50-D, + as below
50	8	8,4	KC45 8-50	2,25	10	20	28	10	11	44,10	10	14	
	10	10,5	KC45 10-50			20		12	13	46,30			
	12	13	KC45 12-50			24		13	14	49,10			
	14	15	KC45 14-50			24		15,5	15,5	54,60			
	16	17	KC45 16-50			28		16	17	57,90			
70	8	8,4	KC45 8-70	2,5	11,5	24	28	10	11	59,60	10	16	
	10	10,5	KC45 10-70			24		12	13	61,90			
	12	13	KC45 12-70			24		13	14	60,00			
	14	15	KC45 14-70			24		15,5	15,5	68,10			
	16	17	KC45 16-70			30		16	17	71,90			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120-D, PR150-D
95	10	10,5	KC45 10-95	2,75	13,5	27	35	12	13	92,08	10	18	
	12	13	KC45 12-95			27		13	14	93,31			
	14	15	KC45 14-95			27		15,5	15,5	97,30			
	16	17	KC45 16-95			29		16	17	96,32			
120	10	10,5	KC45 10-120	2,75	15,5	30	35	12	13	106,96	10	20	
	12	13	KC45 12-120			30		13	14	109,30			
	14	15	KC45 14-120			30		15,5	15,5	113,10			
	16	17	KC45 16-120			30		16	17	110,04			
	20	21	KC45 20-120			38		19	20	117,80			
150	10	10,5	KC45 10-150	3,25	17	34	35	12	13	150,00	10	22	
	12	13	KC45 12-150			34		13	14	147,57			
	14	15	KC45 14-150			34		15,5	15,5	156,90			PR150-D + as below
	16	17	KC45 16-150			34		16	17	158,70			
	20	21	KC45 20-150			40		19	20	160,10			
185	10	10,5	KC45 10-185	3,25	19	36	40	12	13	170,00	10	25	
	12	13	KC45 12-185			36		13	14	168,00			
	14	15	KC45 14-185			36		15,5	15,5	185,80			PR240, PRZ240, + as below
	16	17	KC45 16-185			36		16	17	187,60			
	20	21	KC45 20-185			40		19	20	189,30			
240	12	13	KC45 12-240	3,75	21,5	42	40	13	14	230,00	10	28	
	14	15	KC45 14-240			42		15,5	15,5	242,20			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300
	16	17	KC45 16-240			42		16	17	245,10			
	20	21	KC45 20-240			43		19	20	248,70			

for multi-wire Cu cables

KC90 Tubular angle terminal

Material: galvanically tinned copper
Non tinned on request.
Tubular part dimensions according to DIN 46235

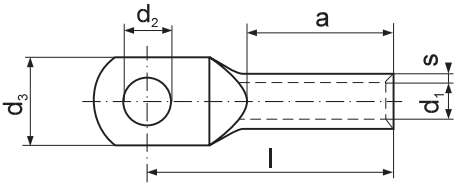




Cross section [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	a [mm]	l_1 [mm]	l_2 [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
6	5	5,3	KC90 5-6	0,85	3,8	8,5	10	8	8,5	2,80	50		PR33, PR50-D, RA16, PP19
	6	6,4	KC90 6-6			8,5		7,5	11	2,90			
10	5	5,3	KC90 5-10	0,75	4,5	10	10	8	8,5	3,70	50	6	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, PR33, GO300, HR300, GU300, GU120, HR100-U, PR240, PR50-D, PP19
	6	6,4	KC90 6-10			10		7,5	11	3,80			
	8	8,4	KC90 8-10			12		10	13	4,50			
16	6	6,4	KC90 6-16	1,5	5,5	13	20	7,5	11	13,10	50	8	
	8	8,4	KC90 8-16			13		10	13	13,50			
	10	10,5	KC90 10-16			17		12	15	13,60			
25	6	6,4	KC90 6-25	1,5	7	14	20	7,5	11	16,90	50	10	
	8	8,4	KC90 8-25			16		10	13	16,50			PR150-D + as above
	10	10,5	KC90 10-25			17		12	15	18,00			
	12	13	KC90 12-25			18		13	18	32,00			
35	6	6,4	KC90 6-35	2,15	8,2	17	20	7,5	11	40,80	20	12	
	8	8,4	KC90 8-35			17		10	13	32,40			
	10	10,5	KC90 10-35			19		12	15	32,00			
	12	13	KC90 12-35			21		13	18	32,90			
	14	15	KC90 14-35			21		15,5	20	44,90			R50, PR50-D, + as below
50	8	8,4	KC90 8-50	2,25	10	20	28	10	13	49,90	20	14	
	10	10,5	KC90 10-50			20		12	15	50,20			
	12	13	KC90 12-50			24		13	18	49,80			
	14	15	KC90 14-50			24		15,5	20	55,20			
	16	17	KC90 16-50			28		16	22	58,60			
70	8	8,4	KC90 8-70	2,5	11,5	24	28	10	13	58,50	20	16	
	10	10,5	KC90 10-70			24		12	15	61,70			
	12	13	KC90 12-70			24		13	18	63,20			
	14	15	KC90 14-70			24		15,5	20	67,20			
	16	17	KC90 16-70			28		16	22	82,40			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, HR300, GU300, GU120, HR100-U, PR240, PR120-D, PR150-D
95	10	10,5	KC90 10-95	2,75	13,5	27	35	12	15	96,95	10	18	
	12	13	KC90 12-95			27		13	18	92,70			
	14	15	KC90 14-95			27		15,5	20	98,20			
	16	17	KC90 16-95			29		16	22	104,04			
120	10	10,5	KC90 10-120	2,75	15,5	30	35	12	15	111,93	10	20	
	12	13	KC90 12-120			30		13	18	115,43			
	14	15	KC90 14-120			30		15,5	20	114,40			
	16	17	KC90 16-120			30		16	22	117,97			
	20	21	KC90 20-120			35		19	24	133,71			
150	10	10,5	KC90 10-150	3,25	17	34	35	12	15	150,17	10	22	
	12	13	KC90 12-150			34		13	18	157,90			
	14	15	KC90 14-150			34		15,5	20	159,70			PR150-D + as belowj
	16	17	KC90 16-150			34		16	22	161,10			
	20	21	KC90 20-150			40		19	24	170,10			
185	10	10,5	KC90 10-185	3,25	19	36	40	12	22	197,80	10	25	
	12	13	KC90 12-185			36		13	22	185,00			
	14	15	KC90 14-185			36		15,5	22	188,10			PR240, + as below
	16	17	KC90 16-185			36		16	22	189,80			
	20	21	KC90 20-185			40		19	24	195,90			
240	12	13	KC90 12-240	3,75	21,5	42	40	13	22	243,70	10	28	
	14	15	KC90 14-240			42		15,5	22	245,80			
	16	17	KC90 16-240			42		16	22	248,80			EPZC300, EPZ300, Z300, HRZ300, PRZ240, GO300, HR300, GU300
	20	21	KC90 20-240			43		19	24	257,30			

AR Tubular terminal

for single- and multi-wire Al cables



Material: aluminum

Tubular part dimensions according to DIN 46267 part 2

Cross section [mm²] se	rm/sm	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	l [mm]	a [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
25	16	8	8,4	AR 8-16 *	3,2	5,6	18	52	26	13,55	20	12	R50
		10	10,5	AR 10-16*						13,45			+ as below
35	25	8	8,4	AR 8-25	2,6	6,8	18	60	34	14,00	10	12	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR95A
		10	10,5	AR 10-25						13,40			
50	35	10	10,5	AR 10-35	3	8	21	67	40	20,63	10	14	
		12	13	AR 12-35						20,70			
70	50	10	10,5	AR 10-50	3,1	9,8	25	72	42	26,00	10	16	
		12	13	AR 12-50						26,50			
95	70	10	10,5	AR 10-70	3,65	11,2	28	86	50	41,70	10	18	
		12	13	AR 12-70						40,30			
120	95	10	10,5	AR 10-95	4,4	13,2	30	90	55	66,00	10	22	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, PR240
		12	13	AR 12-95						62,40			
		16	17	AR 16-95						63,20			
150	120	10	10,5	AR 10-120	4,15	14,7	32	91	60	66,00	10	22	
		12	13	AR 12-120						63,30			
		16	17	AR 16-120						68,60			
185	150	10	10,5	AR 10-150	4,35	16,3	34	103	64	88,00	10	25	
		12	13	AR 12-150						83,00			
		16	17	AR 16-150						86,20			
		20	21	AR 20-150						89,10			
240	185	12	13	AR 12-185	5,1	18,3	39	106	66	115,00	10	28	
		16	17	AR 16-185						122,00			
		20	21	AR 20-185						119,60			
300	240	12	13	AR 12-240	5,5	21	45	116	70	150,00	10	32	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
		16	17	AR 16-240						155,00			
		20	21	AR 20-240						180,70			
	300	16	17	AR 16-300	5,35	23,3	49	124	76	180,00	1	34	
		20	21	AR 20-300						185,00			
	400	16	17	AR 16-400	6,25	26	54	139	82	310,80	1	38	GU625
		20	21	AR 20-400						308,40			
	500	16	17	AR 16-500	7,5	29	59	148	88	448,60	1	44	
		20	21	AR 20-500						446,10			
	625	16	17	AR 16-625*	8,5	35	71	152	95	540,00	1	52	
		20	21	AR 20-625*						585,90			

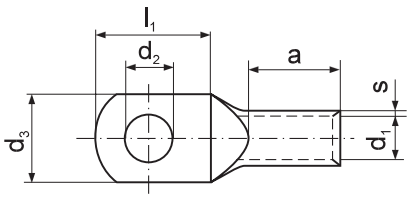
* – outside DIN standard.

se- single-strand sector wire
rm – multi-strand round wire
sm – multi-strand sector wire
Production on request. - Terminals of dimensions other than in chart.
Terminals with securing paste on request – symbol e.g. AR 8-16-P.

for single- and multi-wire Al cables

ARC Tubular terminal

Material: aluminum



Cross section rm/sm [mm²]	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	l_1 [mm]	a [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
16	6	6,4	ARC 16	2	5,2	16	18	23	5,27	20	9	R50, PR95A (Doesn't apply to 16 mm²), + as below
25	8	8,4	ARC 25	2	6,4	20	23	26	7,60	20	10	
35	8	8,4	ARC 35	2,2	7,6	20	23	28	10,14	10	12	
50	10	10,5	ARC 50	2,4	9,2	24	27	34	15,40	10	14	
70	10	10,5	ARC 70	2,5	10,6	26	27	40	19,70	10	16	
95	10	10,5	ARC 95	2,6	12,8	26	25,5	43	26,60	10	18	
120	12	13	ARC 120	2,7	14,3	28	30	52	35,40	10	20	EPZC300, EPZ300, GZ300, HRZ300, PRZ240,GO300, GU300, HR300, PR240
150	16	17	ARC 150	2,9	16,2	34	33	55	45,28	10	22	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
185	16	17	ARC 185	3,1	17,8	38	37	60	59,10	10	23	
240	16	17	ARC 240	4	20,2	40	40	64	95,00	10	28	

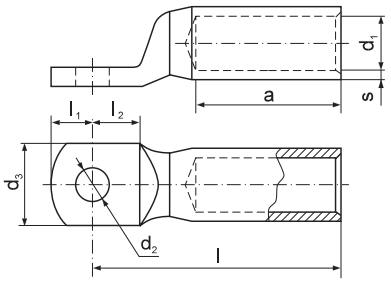
Production on request. Terminals of dimensions other than in chart.

for single- and multi-wire Al cables

AS Tight terminal

Material: aluminum

According to DIN 46329



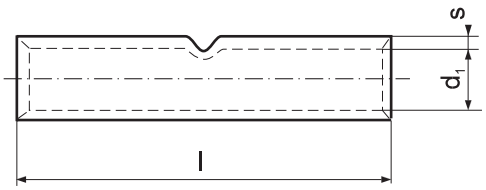
Cross section [mm²] se	Cross section [mm²] rm/sm	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	l_1 [mm]	l_2 [mm]	l [mm]	a [mm]	Dies discriminant	Crimping tools
25	16	8	8,4	AS 8-16*	3,2	5,6	25	10	15,5	50	30	12	R50 + as below
35	25	8	8,4	AS 8-25	2,6	6,8	25	10	15,5	50	30	12	
50	35	8	8,4	AS 8-35	3	8	25	10	15,5	62	42	14	
70	50	10	10,5	AS 10-50	3,1	9,8	25	12	15,5	62	42	16	
95	70	10	10,5	AS 10-70	3,65	11,2	25	12	15,5	72	52	18	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR95A
120	95	10	10,5	AS 10-95	4,4	13,2	25	12	15,5	80*	56	22	
150	120	12	13	AS 12-120	4,15	14,7	30	13	20	80	56	22	PR240 + as below
185	150	12	13	AS 12-150	4,35	16,3	30	13	20	90	60	25	
240	185	12	13	AS 12-185	5,1	18,3	30	13	20	91	60	28	
300	240	12	13	AS 12-240	5,5	21	38	13	24	103	70	32	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
	300	16	17	AS 16-300	5,35	23,3	38	16	24	103	70	34	
	400	16	17	AS 16-400	6,25	26	38	24	24	116	73	39	GU625
	500	20	21	AS 20-500	7,5	29	44	24	24	122	79	44	
	625	20	21	AS 20-625*	8,5	33	52	24	24	130	85	52	

* outside DIN standard

se- single-strand sector wire
rm – multi-strand round wire
sm – multi-strand sector wire
Terminals of dimensions other than in chart on request.
Connectors with contact paste on request - indicate such. AS 8-16-P.

ALD Tubular connector

for single- and multi-wire Al cables



Material: aluminum
According to DIN 46267 part 2

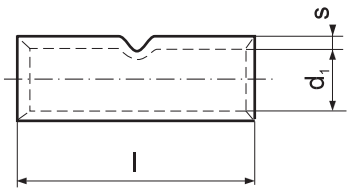
Cross section [mm²] se	rm/sm	Symbol	s [mm]	d_1 [mm]	l [mm]	Weight [g/szt]	Unit [pcs]	Dies discriminant	Crimping tools
25	16	ALD 16 *	3,2	5,6	55	13,50	10	12	R50 + as below
35	25	ALD 25	2,6	6,8	70	14,10	10	12	
50	35	ALD 35	3	8	85	23,60	10	14	
70	50	ALD 50	3,1	9,8	85	28,70	10	16	
95	70	ALD 70	3,65	11,2	105	50,70	10	18	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR95A
120	95	ALD 95	4,4	13,2	105	70,00	10	22	
150	120	ALD 120	4,15	14,7	105	66,50	10	22	PR240 + as below
185	150	ALD 150	4,35	16,3	125	95,00	10	25	
240	185	ALD 185	5,1	18,3	125	125,00	10	28	
300	240	ALD 240	5,5	21	145	182,82	10	32	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
	300	ALD 300	5,35	23,3	145	188,88	5	34	
	400	ALD 400	6,25	26	210	360,00	5	38	GU625
	500	ALD 500	7,5	29	210	490,00	5	44	
	625	ALD 625 *	8,5	35	210	660,00	5	52	

* outside DIN standard.

se- single-strand sector wire
rm – multi-strand round wire
sm – multi-strand sector wire
Terminals of dimensions other than in chart on request.
Connectors with contact paste on request - indicate such. ALD 16-P.

ALC Tubular connector

(thin-walled) for single- and multi-wire Al cables



Material: aluminum

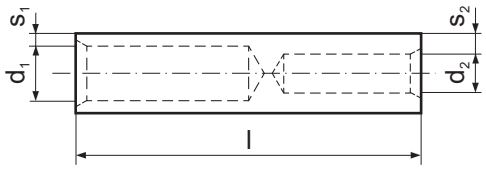
Cross section rm/sm [mm²]	Symbol	s [mm]	d_1 [mm]	l [mm]	Weight [g/pce]	Unit [pcs]	Dies discriminant	Crimping tools
16	ALC 16	2	5,2	50	5,95	20	9	R50 + as below
25	ALC 25	2	6,4	58	8,15	20	10	
35	ALC 35	2,2	7,6	63	11,50	10	12	
50	ALC 50	2,4	9,2	76	17,50	10	14	
70	ALC 70	2,5	10,6	84	22,50	10	16	
95	ALC 95	2,6	12,8	96	32,30	10	18	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR95A
120	ALC 120	2,7	14,3	105	40,60	10	20	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
150	ALC 150	2,9	16,2	120	55,53	10	22	PR240
185	ALC 185	3,1	17,8	125	68,20	10	24	+ as below
240	ALC 240	4	20,2	136	109,45	10	28	HR300, HRZ300, GU300, GO300, GZ300, EPZ300

Production on request. Connectors of dimensions other than in chart.

for multi-wire Al cables

ALS Tight reducing connector

Material: aluminum

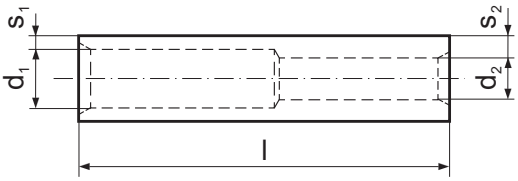


Cross section rm/sm [mm²] from	to	Symbol	s_1 [mm]	s_2 [mm]	d_1 [mm]	d_2 [mm]	l [mm]	Discriminant	Crimping tools
35	25	ALS 35-25	3	3,6	8	6,8	95	14	
	35	ALS 35-35		3		8			
50	25	ALS 50-25	3,1	4,6	9,8	6,8	95	16	R50 + as below
	35	ALS 50-35		4		8			
	50	ALS 50-50		3,1		9,8			
70	25	ALS 70-25	3,65	5,85	11,2	6,8	100	18	
	35	ALS 70-35		5,25		8			
	50	ALS 70-50		4,35		9,8			
	70	ALS 70-70		3,65		11,2			
95	25	ALS 95-25	4,4	7,6	13,2	6,8	105	22	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR95A
	35	ALS 95-35		7		8			
	50	ALS 95-50		6,1		9,8			
	70	ALS 95-70		5,4		11,2			
	95	ALS 95-95		4,4		13,2			
120	35	ALS 120-35	4,15	7,5	14,7	8	110	22	
	50	ALS 120-50		6,6		9,8			
	70	ALS 120-70		5,9		11,2			
	95	ALS 120-95		4,9		13,2			
	120	ALS 120-120		4,15		14,7			
150	50	ALS 150-50	4,35	7,6	16,3	9,8	110	25	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, PR240
	70	ALS 150-70		6,9		11,2			
	95	ALS 150-95		5,9		13,2			
	120	ALS 150-120		5,15		14,7			
	150	ALS 150-150		4,35		16,3			
185	70	ALS 185-70	5,1	8,65	18,3	11,2	130	28	
	95	ALS 185-95		7,65		13,2			
	120	ALS 185-120		6,9		14,7			
	150	ALS 185-150		6,1		16,3			
	185	ALS 185-185		5,1		18,3			
240	95	ALS 240-95	5,5	9,4	21	13,2	130	32	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
	120	ALS 240-120		8,65		14,7			
	150	ALS 240-150		7,85		16,3			
	185	ALS 240-185		6,85		18,3			
	240	ALS 240-240		5,5		21			
300	150	ALS 300-150	5,35	8,85	23,3	16,3	135	34	
	185	ALS 300-185		7,85		18,3			
	240	ALS 300-240		6,5		21			
	300	ALS 300-300		5,35		23,3			
400	185	ALS 400-185	6,25	10,1	26	18,3	165	38	
	240	ALS 400-240		8,75		21			
	300	ALS 400-300		7,6		23,3			
	400	ALS 400-400		6,25		26			
500	240	ALS 500-240	7,5	11,5	29	21	180	44	
	300	ALS 500-300		10,35		23,3			
	400	ALS 500-400		9		26			GU625
	500	ALS 500-500		7,5		29			
625	300	ALS 625-300	8,5	13,35	33	23,3	200	52	
	400	ALS 625-400		12		26			
	500	ALS 625-500		10,5		29			
	625	ALS 625-625		8,5		33			

Production on request. Connectors of dimensions other than in chart.

ALR Reducing connector

for single- and multi-wire Al cables



Material: aluminum

Cross section rm/sm [mm²] from	to	Symbol	s_1 [mm]	s_2 [mm]	d_1 [mm]	d_2 [mm]	l [mm]	Discriminant	Crimping tools
25	16	ALR 25-16	2,6	3,25	6,8	5,5	75	12	
35	16	ALR 35-16	3	4,25	8	5,5	90	14	
	25	ALR 35-25		3,6		6,8			R50 +as below
50	25	ALR 50-25	3,1	4,6	9,8	6,8	90	16	
	35	ALR 50-35		4		8			
70	25	ALR 70-25	3,65	5,85	11,2	6,8	110	18	
	35	ALR 70-35		5,25		8			
	50	ALR 70-50		4,35		9,8			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR95A
95	25	ALR 95-25	4,4	7,6	13,2	6,8	110	22	
	35	ALR 95-35		7		8			
	50	ALR 95-50		6,1		9,8			
	70	ALR 95-70		5,4		11,2			
120	35	ALR 120-35	4,15	7,5	14,7	8	110	22	
	50	ALR 120-50		6,6		9,8			
	70	ALR 120-70		5,9		11,2			EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, PR240
	95	ALR 120-95		4,9		13,2			
150	50	ALR 150-50	4,35	7,6	16,3	9,8	130	25	
	70	ALR 150-70		6,9		11,2			
	95	ALR 150-95		5,9		13,2			
	120	ALR 150-120		5,15		14,7			
185	70	ALR 185-70	5,1	8,65	18,3	11,2	130	28	
	95	ALR 185-95		7,65		13,2			
	120	ALR 185-120		6,9		14,7			
	150	ALR 185-150		6,1		16,3			
240	95	ALR 240-95	5,5	9,4	21	13,2	150	32	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
	120	ALR 240-120		8,65		14,7			
	150	ALR 240-150		7,85		16,3			
	185	ALR 240-185		6,85		18,3			
300	150	ALR 300-150	5,35	8,85	23,3	16,3	160	34	
	185	ALR 300-185		7,85		18,3			
	240	ALR 300-240		6,5		21			
400	185	ALR 400-185	6,25	10,1	26	18,3	170	38	
	240	ALR 400-240		8,75		21			
	300	ALR 400-300		7,6		23,3			
500	240	ALR 500-240	7,5	11,5	29	21	180	44	
	300	ALR 500-300		10,35		23,3			GU625
	400	ALR 500-400		9		26			
625	300	ALR 625-300	8,5	13,35	33	23,3	190	52	
	400	ALR 625-400		12		26			
	500	ALR 625-500		10,5		29			

Production on request. Connectors of dimensions other than in chart.

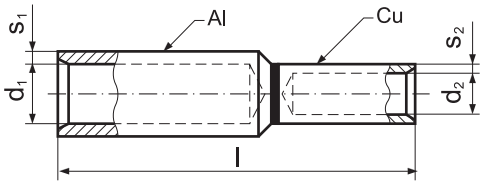
for single- and multi-wire Al and Cu cables

ACL Bi-metallic connector

Material: copper, aluminum

AL and Cu tubular part according to DIN 46267

Thermal resistance 300°C

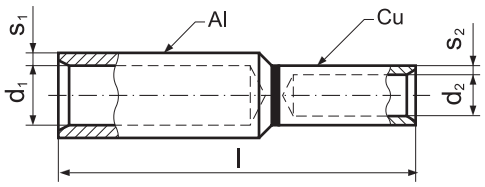


Cross section [mm²] se	Al rm/sm	Cu rm/sm	Symbol	s_1 [mm]	d_1 [mm]	s_2 [mm]	d_2 [mm]	l [mm]	Dies discriminant	Crimping tools
25	16	10	ACL 16-10	3,2	5,6	0,75	4,5	55	12/6	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR120-D, PR150-D, PR95A, PR50-D
		16	ACL 16-16			1,5	5,5	61	12/8	
		25	ACL 16-25			1,5	7	61	12/10	
35	25	10	ACL 25-10	2,6	6,8	0,75	4,5	55	12/6	
		16	ACL 25-16			1,5	5,5	61	12/8	
		25	ACL 25-25			1,5	7	61	12/10	
		35	ACL 25-35			2,15	8,2	61	12/12	
50	35	16	ACL 35-16	3	8	1,5	5,5	71	14/8	
		25	ACL 35-25			1,5	7	71	14/10	
		35	ACL 35-35			2,15	8,2	71	14/12	
		50	ACL 35-50			2,25	10	77	14/14	
70	50	16	ACL 50-16	3,1	9,8	1,5	5,5	71,5	16/8	
		25	ACL 50-25			1,5	7	71,5	16/10	
		35	ACL 50-35			2,15	8,2	71,5	16/12	
		50	ACL 50-50			2,25	10	77,5	16/14	
		70	ACL 50-70			2,5	11,5	82	16/16	
95	70	16	ACL 70-16	3,65	11,2	1,5	5,5	79	18/8	
		25	ACL 70-25			1,5	7	79	18/10	
		35	ACL 70-35			2,15	8,2	79	18/12	
		50	ACL 70-50			2,25	10	85	18/14	
		70	ACL 70-70			2,5	11,5	87	18/16	
		95	ACL 70-95			2,75	13,5	95	18/18	
120	95	16	ACL 95-16	4,4	13,2	1,5	5,5	79	22/8	
		25	ACL 95-25			1,5	7	79	22/10	
		35	ACL 95-35			2,15	8,2	79	22/12	
		50	ACL 95-50			2,25	10	87	22/14	
		70	ACL 95-70			2,5	11,5	89	22/16	
		95	ACL 95-95			2,75	13,5	97	22/18	
		120	ACL 95-120			2,75	15,5	97	22/20	
150	120	16	ACL 120-16	4,15	14,7	1,5	5,5	87	22/8	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR120-D, PR150-D, PR50-D
		25	ACL 120-25			1,5	7	87	22/10	
		35	ACL 120-35			2,15	8,2	87	22/12	
		50	ACL 120-50			2,25	10	95	22/14	
		70	ACL 120-70			2,5	11,5	95	22/16	
		95	ACL 120-95			2,75	13,5	101	22/18	
		120	ACL 120-120			2,75	15,5	101	22/20	
185	150	16	ACL 150-16	4,35	16,3	1,5	5,5	93	25/8	
		25	ACL 150-25			1,5	7	93	25/10	
		35	ACL 150-35			2,15	8,2	93	25/12	
		50	ACL 150-50			2,25	10	101	25/14	
		70	ACL 150-70			2,5	11,5	101	25/16	
		95	ACL 150-95			2,75	13,5	108	25/18	
		120	ACL 150-120			2,75	15,5	108	25/20	
		150	ACL 150-150			3,25	17	108	25/22	

se- single-strand sector wire
rm – multi-strand round wire
sm – multi-strand sector wire
Designed to connect aluminum to copper cables. Eliminates formation of cells at Al-Cu contact.
Production on request. - Connectors of dimensions other than in chart.
Connectors with securing paste in Al part on request – symbol e.g. ACL 16-10-P.

ACL Bi-metallic connector

for single- and multi-wire Al and Cu cables



Material: copper, aluminum

AL and Cu tubular part according to DIN 46267

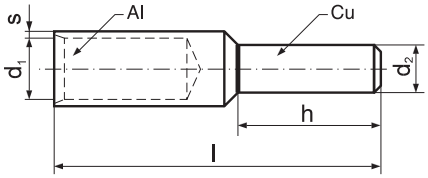
Thermal resistance 300°C

Cross section [mm²] se	Al rm/sm	Cu rm/sm	Symbol	s_1 [mm]	d_1 [mm]	s_2 [mm]	d_2 [mm]	l [mm]	Dies discriminant	Crimping tools
240	185	50	ACL 185-50	5,1	18,3	2,25	10	108	28/14	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, PR120-D, PR150-D, PR50-D
		70	ACL 185-70			2,5	11,5	108	28/16	
		95	ACL 185-95			2,75	13,5	111	28/18	
		120	ACL 185-120			2,75	15,5	111	28/20	
		150	ACL 185-150			3,25	17	113	28/22	
		185	ACL 185-185			3,25	19	116	28/25	
300	240	50	ACL 240-50	5,5	21	2,25	10	116	32/14	
		70	ACL 240-70			2,5	11,5	116	32/16	
		95	ACL 240-95			2,75	13,5	124	32/18	
		120	ACL 240-120			2,75	15,5	124	32/20	
		150	ACL 240-150			3,25	17	124	32/22	
		185	ACL 240-185			3,25	19	130	32/25	
		240	ACL 240-240			3,75	21,5	130	32/28	
	300	120	ACL 300-120	5,35	23,3	2,75	15,5	127	34/20	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, R120-D, PR150-D
		150	ACL 300-150			3,25	17	127	34/22	
		185	ACL 300-185			3,25	19	134	34/25	
		240	ACL 300-240			3,75	21,5	134	34/28	
		300	ACL 300-300			3,75	24,5	134	34/32	

se- single-strand sector wire
rm – multi-strand round wire
sm – multi-strand sector wire
Designed to connect aluminum to copper cables. Eliminates formation of cells at Al-Cu contact.
Production on request. - Connectors of dimensions other than in chart, up to 625mm².
Connectors with securing paste in Al part on request – symbol e.g. ACL 185-50-P.

ACB Bi-metallic terminal with pin

for single- and multi-wire Al cables



Material: copper, aluminum

Tubular AL part according to DIN 46267 part 2

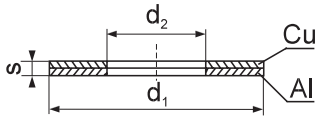
Thermal resistance 300°C

Cross section [mm²] se	rm/sm	Symbol	s [mm]	d_1 [mm]	d_2 [mm]	h [mm]	l [mm]	Dies discriminant	Crimping tools
25	16	ACB 16	3,2	5,6	5	18	58	12	EPZC300, EPZ300, GZ300, HRZ300, PRZ240, GO300, GU300, HR300, GU120, HR100-U, PR240, R50, PR95A
35	25	ACB 25	2,6	6,8	6	20	58	12	
50	35	ACB 35	3	8	7	22	71	14	
70	50	ACB 50	3,1	9,8	8	25	74	16	
95	70	ACB 70	3,65	11,2	10	30	87	18	PR95A, HR100-U, GU120, + as below
120	95	ACB 95	4,4	13,2	12	33	91	22	
150	120	ACB 120	4,15	14,7	12	38	97	22	PRZ240, PR240 + as below
185	150	ACB 150	4,35	16,3	12	38	108	25	
240	185	ACB 185	5,1	18,3	14	44	116	28	
300	240	ACB 240	5,5	21	16	44	128	32	EPZC300, EPZ300, GZ300, HRZ300, GO300, GU300, HR300
	300	ACB 300	5,35	23,3	18	46	131	34	

se- single-strand sector wire
rm – multi-strand round wire
sm – multi-strand sector wire
Designed to connect aluminum cables to copper elements. Eliminates formation of cells at Al-Cu contact.
Production on request. - Terminals of dimensions other than in chart, up to 625mm².
Terminals with securing paste in Al part on request – symbol e.g. ACB 16-P.

ACP Bi-metallic washer

Material: E-Cu copper, aluminum



For screw M	d_2 [mm]	Symbol	d_1 [mm]	s [mm]	Weight [g/pce]	Standard Unit [pcs]
3	3,2	ACP 3-1	7	1	0,18	50
5	5,2	ACP 5-1	11	1	0,44	50
		ACP 5-2		2	0,92	
6	6,5	ACP 6-1	13	1	1,00	50
		ACP 6-2		2	1,20	
8	8,5	ACP 8-1	17	1	1,00	50
		ACP 8-2		2	2,00	
10	11	ACP 10-1	21	1	1,44	50
		ACP 10-2		2	2,70	
12	13	ACP 12-1	28	1	2,76	50
		ACP 12-2		2	5,50	
14	15	ACP 14-1	32	1	3,10	50
		ACP 14-2		2	7,10	
16	17	ACP 16-1	35	1	4,00	50
		ACP 16-2		2	8,20	
20	21	ACP 20-1	40	1	5,14	50
		ACP 20-2		2	10,52	

Designed to connect elements made of copper and aluminum. Eliminates formation of cells at Al-Cu contact.
Other sizes and forms on request.

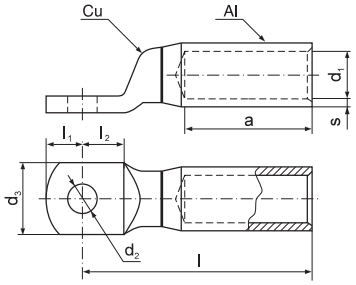
for single- and multi-wire Al cables

ACK Tight bi-metallic terminal

Material: copper, aluminum

AL tubular part according to DIN 46267

Thermal resistance 300°C



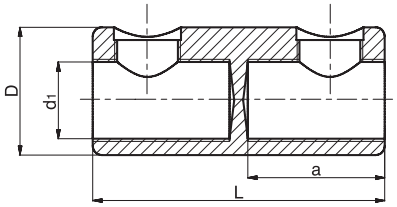
Cross section [mm²] se	Cross section [mm²] rm/sm	For screw M	d_2 [mm]	Symbol	s [mm]	d_1 [mm]	d_3 [mm]	l_1 [mm]	l_2 [mm]	l [mm]	a [mm]	Dies discriminant	Crimping tools
25	16	8	8,4	ACK 8-16	3,2	5,6	25	10	15,5	61	30	12	
35	25	10	10,5	ACK 10-25	2,6	6,8	25	12	15,5	61	30	12	
		12	13	ACK 12-25				13		61			
50	35	8	8,4	ACK 8-35	3	8	25	10	15,5	75	42	14	R50 + as below
		10	10,5	ACK 10-35				12		75			
70	50	8	8,4	ACK 8-50	3,1	9,8	25	10	15,5	75	42	16	
		10	10,5	ACK 10-50				12		75			
95	70	10	10,5	ACK 10-70	3,65	11,2	25	12	15,5	85	52	18	EPZC300, EPZ300, GZ300,
		12	13	ACK 12-70				13		85			HRZ300, PRZ240, GO300,
120	95	10	10,5	ACK 10-95	4,4	13,2	25	12	15,5	92	56	22	GU300, HR300, GU120,
													HR100-U, PR240, PR95A
150	120	12	13	ACK 12-120	4,15	14,7	30	13	15,5	94	56	22	
185	150	16	17	ACK 16-150	4,35	16,3	30	16	20	104	60	25	PR240 + as below
240	185	12	13	ACK 12-185	5,1	18,3	36	13	20	126	60	28	
300	240	12	13	ACK 12-240	5,5	21	36	13	20	126	70	32	
400	300	16	17	ACK 16-300	5,35	23,3	38	16	24	130	70	34	EPZC300, EPZ300, GZ300,
	400	16	17	ACK 16-400	6,25	26	47	24	24	157	73	38	HRZ300, GO300, GU300,
	500	16	17	ACK 16-500	7,5	29	47	24	24	160	79	44	HR300, GU625
	625	16	17	ACK 16-625	8,5	33	52	24	24	164	85	52	

Production on request.
se- single-strand sector wire
rm – multi-strand round wire
sm – multi-strand sector wire
Designed to connect aluminum cables with copper elements. Eliminates formation of cells at Al-Cu contact. Production of terminals of dimensions other than in chart on request. Terminals with securing paste on request – mark symbol e.g. ACK 8-16-P.

Shear off screw terminals and connectors are an alternative for crimping technology. The principle of technology are shear off head screws enabling universal and fast application. The special feature is possibility of applying one connector for wires of different structure and wide cross section range.

SZN Shear off screw connector

up to 1 kV



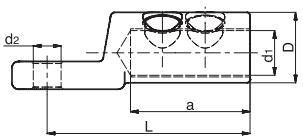
Material:
tinned aluminum body
standard tinned brass screws
or of special aluminum alloy

Symbol	Al conductor cross section [mm²]				Cu [mm²]			d_1 [mm]	D [mm]	L [mm]	a [mm]	Number of screws
	rm	re	sm	se	rm	sm	re					
SZN 1625	16-35	16-35	16-25	16-35	10-25	10-25	10-25	9	16	40	18	2
SZN 1650	16-50	16-50	16-50	16-50	16-50	16-50	16-50	11	21	55	25	2
SZN 2595	25-95	25-95	25-95	25-95	25-95	25-95	25-95	14	25	55	25	2
SZN 25150	25-150	25-150	25-120	25-150	25-150	25-120	25-150	17,5	28	70	32,5	2
SZN 25185	35-185	25-185	25-185	25-185	25-185	25-185	25-185	21	32	80	37,5	2
SZN 120240	120-240	120-240	120-185	120-240	120-240	120-240	–	23	38	128	60	4
SZNE 120240	120-240	120-185	120-240	120-185	120-185	120-185	–	24,5	36	80	37,5	2

Production of connectors of other parameters on request:
non tinned aluminum screws, symbol e.g. SZN 2595-A
tinned aluminum screws, symbol e.g. SZN 2595-AT
non tinned body, tinned aluminum screws, symbol e.g. SZN 2595-AT-N

SKN Shear off screw terminal

up to 6 kV



Material:
tinned aluminum body
standard tinned brass screws
or of special aluminum alloy

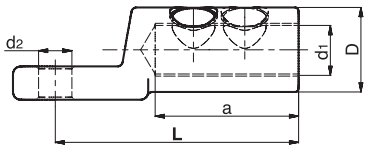
Symbol	Al conductor cross section [mm²]				Cu [mm²]			d_1 [mm]	D [mm]	L [mm]	a [mm]	Number of screws
	rm	re	sm	se	rm	sm	re					
SKN 8-1625												
SKN 10-1625	16-35	16-35	16-25	16-35	10-25	10-25	10-25	9	18	40	18	1
SKN 12-1625												
SKN 8-2595												
SKN 10-2595	25-95	25-95	25-95	25-95	25-95	25-95	25-95	14	25	60	32,5	1
SKN 12-2595												
SKN 8-25185												
SKN 10-25185	35-185	25-185	25-185	25-185	25-185	25-185	25-185	21	33	95	56	2
SKN 12-25185												
SKN 8-120240												
SKN 10-120240	120-240	120-240	120-185	120-240	120-240	120-240	–	23	38	100	63	2
SKN 12-120240												
SKN 16-120240												

Production of terminals of other parameters on request:
non tinned aluminum screws, symbol e.g. SKN 8-2595-A
tinned aluminum screws, symbol e.g. SKN 8-2595-AT

up to 36 kV

SKS Shear off screw terminal

Material:
tinned aluminum body
standard tinned brass screws
or of special aluminum alloy

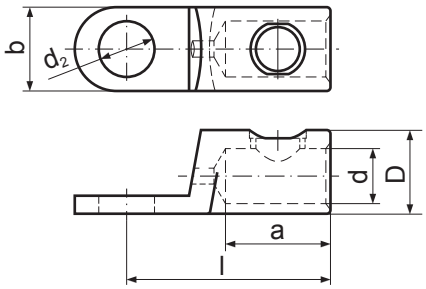


Symbol	Al conductor cross section [mm²] rmv	rm	re	sm	se	Cu [mm²] rmv	rm	sm	d_1 [mm]	D [mm]	L [mm]	a [mm]	Number of screws
SKS 12-1695	16-95	16-95	16-95	25-70	16-95	16-95	16-95	25-70	13	24	60	32	1
SKS 16-1695													
SKS 12-50150	50-150	50-120	50-150	50-120	50-150	50-150	50-120	50-120	15,5	30	79	35	1
SKS 16-50150													
SKS 12-95240	95-240	95-185	95-240	95-185	95-240	95-240	95-185	95-185	20	33	95	56	2
SKS 16-95240													
SKS 12-120300	120-300	120-300	120-300	120-240	120-300	120-300	120-300	120-240	25	38	100	67	2
SKS 16-120300													
SKS 12-185400	185-400	185-400	185-400	185-300	–	185-400	185-400	185-300	26	42	120	82	3
SKS 16-185400													
SKS 12-300500	300-500	300-500	300-500	300-400	–	300-500	300-500	300-400	34	52	130	94	3
SKS 16-300500													
SKS 20-300500													
SKS 12-400630	400-630	400-630	400-630	400-500	–	400-630	400-630	400-500	34	52	130	94	3
SKS 16-400630													
SKS 20-400630													

Production of terminals of other parameters on request:
non tinned aluminum screws, symbol e.g. SKS 12-1695-A
tinned aluminum screws, symbol e.g. SKS 12-1695-AT

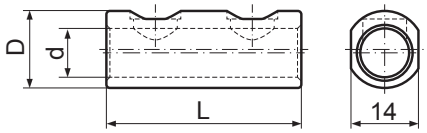
SKSW Shear off screw terminal

Material:
tinned copper body
standard tinned brass screws



Symbol	Cu [mm²]	Flat Al cable number	dimension	d_2 [mm]	b [mm]	D [mm]	d [mm]	a [mm]	L [mm]
SKSW 10-1070 Terminal for return conductor	10-50	3-13	1 mm x 5,2 mm	10,5	16	16	10,5	20	39
SKSW 12-1070 Terminal for return conductor	10-50	3-13	1 mm x 5,2 mm	13	19	16	10,5	20	41

SZSW Shear off screw connector

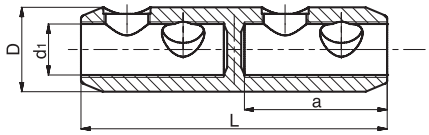


Material:
tinned copper body
standard tinned brass screws

Symbol	Cu [mm²]	Flat Al cable number	Flat Al cable dimension	d_2 [mm]	b [mm]	D [mm]	d [mm]	a [mm]	L [mm]
SZSW 1070 Connector for return conductor	10-50	3-13	1 mm x 5,2 mm			16	10,5		40

SZS Shear off screw connector

up to 36 kV



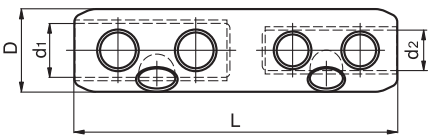
Material:
tinned aluminum body
standard tinned brass screws
or of special aluminum alloy

Symbol	Al conductor cross section [mm²] rmv	rm	re	sm	se	Cu [mm²] rmv	rm	sm	d_1 [mm]	D [mm]	L [mm]	a [mm]	Number of screws
SZS 1695	16-95	16-95	16-95	25-70	16-95	16-95	16-95	25-70	13	24	70	32	2
SZS 50150	35-150	50-120	50-150	50-120	50-150	35-150	50-120	50-120	15,5	30	85	35	2
SZS 95240	95-240	95-185	95-240	95-185	95-240	95-240	95-185	95-185	20	33	120	56	4
SZS 120300	120-300	120-300	120-300	120-240	120-300	120-300	120-300	120-240	25	38	142	67	4
SZS 185400	185-400	185-400	185-400	185-300	–	185-400	185-400	185-300	26	42	170	82	6
SZS 300500	300-500	300-500	300-500	300-400	–	300-500	300-500	300-400	34	52	200	94	6
SZS 400630	400-630	400-630	400-630	400-500	–	400-630	400-630	400-500	34	52	200	94	6

Production of connectors of other parameters on request:
non tinned aluminum screws, symbol e.g. SZS 1695-A
tinned aluminum screws, symbol e.g. SZS 1695-AT

SZSR Shear off screw reducing connector

up to 36 kV



Material:
tinned aluminum body
standard tinned brass screws
or of special aluminum alloy

Symbol	Al conductor cross section [mm²] rm (v)	re	sm	Cu [mm²] rm (v)	sm	D [mm]	d_1 [mm]	d_2 [mm]	L [mm]	Number of screws
SZSR 120300-1695	120-300/ 16-95	120-300/ 16-95	120-240/ 25-70	120-300/ 16-70	120-240/ 25-70	38	25	13	140	2/1
SZSR 185400-95240	185-400/ 95-240	185-400/ 95-240	185-300/ 95-185	185-400/ 95-240	185-300/ 95-185	42	26	20	170	3/2
SZSR 185400-300500	185-400/ 300-500	185-400/ 300-500	185-300/ 300-400	185-400/ 300-500	185-300/ 300-400	52	26	34	200	3/3
SZSR 185400-400630	185-400/ 400-630	185-400/ 400-630	185-300/ 400-500	185-400/ 400-630	185-300/ 400-500	52	26	34	200	3/3

Production of connectors of other parameters on request:
non tinned aluminum screws, symbol e.g. SZSR 120300-1695-A
tinned aluminum screws, symbol e.g. SZSR 120300-1695-AT

POK ZS Ratchet handle

Handle for tightening shear off screws in terminals and connectors.
Equipment:
- NAS J6 wrench socket 6
- NAS J8 wrench socket 8
- NAS S10 socket S10

Lenght: 260 mm; Weight: 0,65 kg


NAS J6


NAS J8

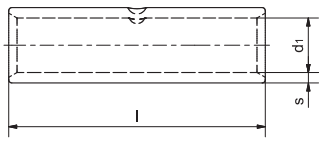

NAS S10

UZS 1 Holder for shear off screw terminals and connectors

Tool for holding terminals and connectors during mounting
(tightening the screws).
Lenght: 265 mm; Weight: 0,65 kg

KLN-S Tubular Cu connector

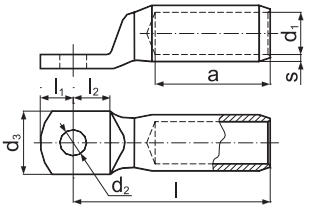
up to 10kV



Diameter of tubular part as for KLN
Range 16 ÷ 625 mm²

KCM-F Tight Cu terminal

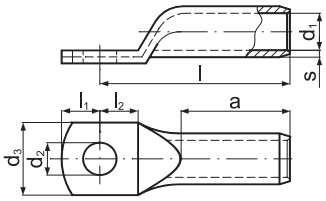
up to 36kV



Dimensions as for KCM
Range 25 ÷ 625 mm²

KCR-F Tubular Cu terminal

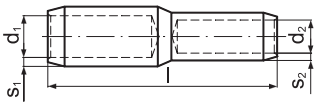
up to 36kV



Dimensions as for KCR
Range 25 ÷ 625 mm²

KLS-F Tubular Cu connectors

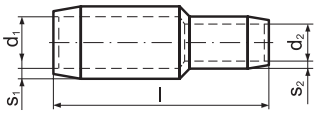
up to 36kV



Tubular part dimensions as for KLS
Range 25 ÷ 300 mm²

KLR-F Tubular Cu connectors

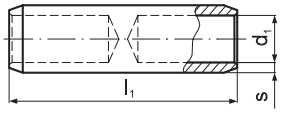
up to 36kV



Tubular part dimensions as for KLR
Range 25 ÷ 300 mm²

KLP-F Tight Cu connectors

up to 36kV

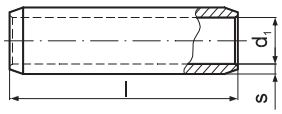


Tubular part dimensions as for KLP
Range 25 ÷ 625 mm²

up to 36kV

KLN-F Tubular Cu connectors

Tubular part dimensions as for KLN
Range 16 ÷ 625 mm²

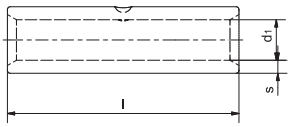


Symbol	l [mm]	s [mm]	d_1 [mm]
KLN-F_16	60	1,5	5,5
KLN-F_25	60	1,5	7
KLN-F_35	60	2,15	8,2
KLN-F_50	65	2,25	10
KLN-F_70	65	2,5	11,5
KLN-F_95	90	2,75	13,5
KLN-F_120	90	2,75	15,5
KLN-F_150	105	3,25	17
KLN-F_185	105	3,25	19
KLN-F_240	125	3,75	21,5
KLN-F_300	125	3,75	24,5
KLN-F_400	160	5,5	27,5
KLN-F_500	175	5,5	31
KLN-F_625	190	4,75	34,5

for single- and multi-wire Al cables up to 10kV

ALD-S Al connector

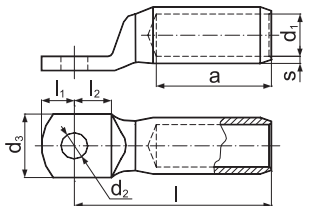
Material: aluminum
Range 16 ÷ 625 mm²



Symbol	l [mm]	s [mm]	d_1 [mm]
ALD-S_16	55	3,2	5,6
ALD-S_25	70	2,6	6,8
ALD-S_35	85	3	8
ALD-S_50	85	3,1	9,8
ALD-S_70	105	3,65	11,2
ALD-S_95	105	4,4	13,2
ALD-S_120	105	4,15	14,7
ALD-S_150	125	4,35	16,3
ALD-S_185	125	5,1	18,3
ALD_S_240	145	5,5	21
ALD-S_300	145	5,35	23,3
ALD-S_400	210	6,25	26
ALD-S_500	210	7,5	29
ALD-S_625	330	8,5	35

AS-F Tight Al terminal

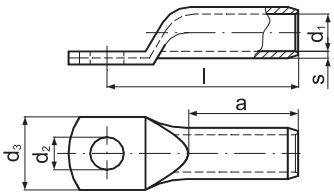
up to 36kV



According to DIN 46329 as for AS terminals
Range 25 ÷ 625 mm²

AR-F Tubular Al terminal

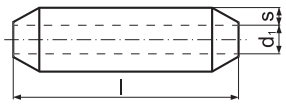
up to 36kV



According to DIN 46267 part 2 as for AR terminals
Range 25 ÷ 625 mm²

ALD-F Al connector

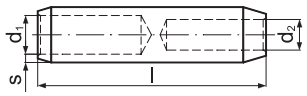
for single- and multi-wire Al cables up to 36kV



Material: Al aluminum
Range 25 ÷ 625 mm²

ALS-F Tubular Al connector

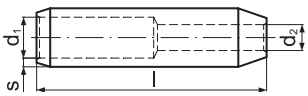
up to 36kV



Tubular part dimensions as for ALS
Range 25 ÷ 625 mm²

ALR-F Reducing Al connector

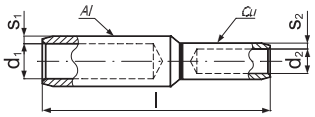
do 36kV



Tubular part dimensions as for ALR
Range 25 ÷ 625 mm²

ACL-F Al-Cu connector

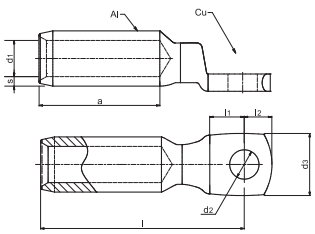
up to 36kV



Tubular part diameters according to DIN46267
(Cu-part 1, Al- part2) as for ACL
Range 25 ÷ 625 mm²

ACK-F Al-Cu terminal

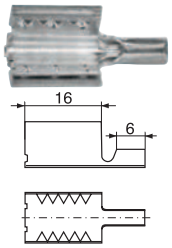
up to 36kV



Al tubular part diameters according
to DIN46329 as for ACK
Range 25 ÷ 625 mm²

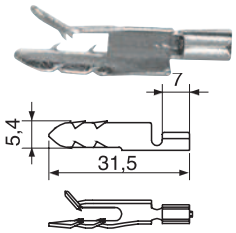
Telecommunication cable shielding terminals

TEL 2,5 Terminal
(for O shielding connectors)



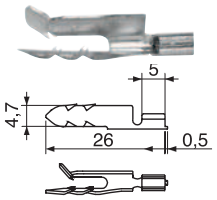
For multi-pair cables at 2,5 mm² cable section.

EL 2,5 Terminal
(for N shielding connectors)



For low-pair cables at 2,5 mm² cable section.

EL 1,5 Terminal
(for A shielding connectors)



For low-pair cables at 1,5 mm² cable section.

Shielding connectors

Shielding connectors for telecommunication cables connecting (e.g. for streight-through joints and branching boxes).
For cables of any cross section range. Made of material not reacting with shield material.

For multi-pair cables:

SC-O Connector

SC-O-O Connector

SC-O-H Connector

SC-O-N Connector

SC-O.. Connectors for multi-pair cables connecting.
Connecting wires cross section: 2,5 mm²
Usage requires armoring splitting during mounting.

For low-pair cables:

SC-N Connector

SC-N-N Connector

SC-N-N Connector

SC-A-A Connector

SC-N.. and SC-A.. Connectors for low-pair cables connecting.
Connecting wires cross section range:
- 1,5 mm² SC-A.. Connectors
- 2,5 mm² SC-N.. Connectors

Do not require armoring splitting during mounting.

LK Shielding connectors

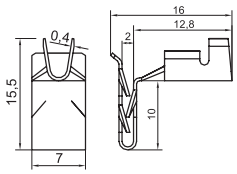
Shielding connector with KET-2 shield clip at one end of wire and any ERKO terminal at the other.

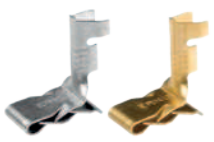
LK-LK.. Connector

LK-KOA.. Connector

KET-2 Shield Clip

Clip for connecting grounding conductor to unpainted edge of device case or component which must be grounded.





Special terminals and connectors

Our experience in the electrotechnical industry and extensive technological and construction facilities, allow to meet expectations of the most demanding customers. In addition to standard products, we offer design and production of special connectors and terminals:

- of copper and brass strip
- of copper and aluminum tube
- of copper and aluminum rod
- aluminum-copper
- made of stainless steel
- with and without insulation
- forged and die cast

ERKO®
ROBOTICS

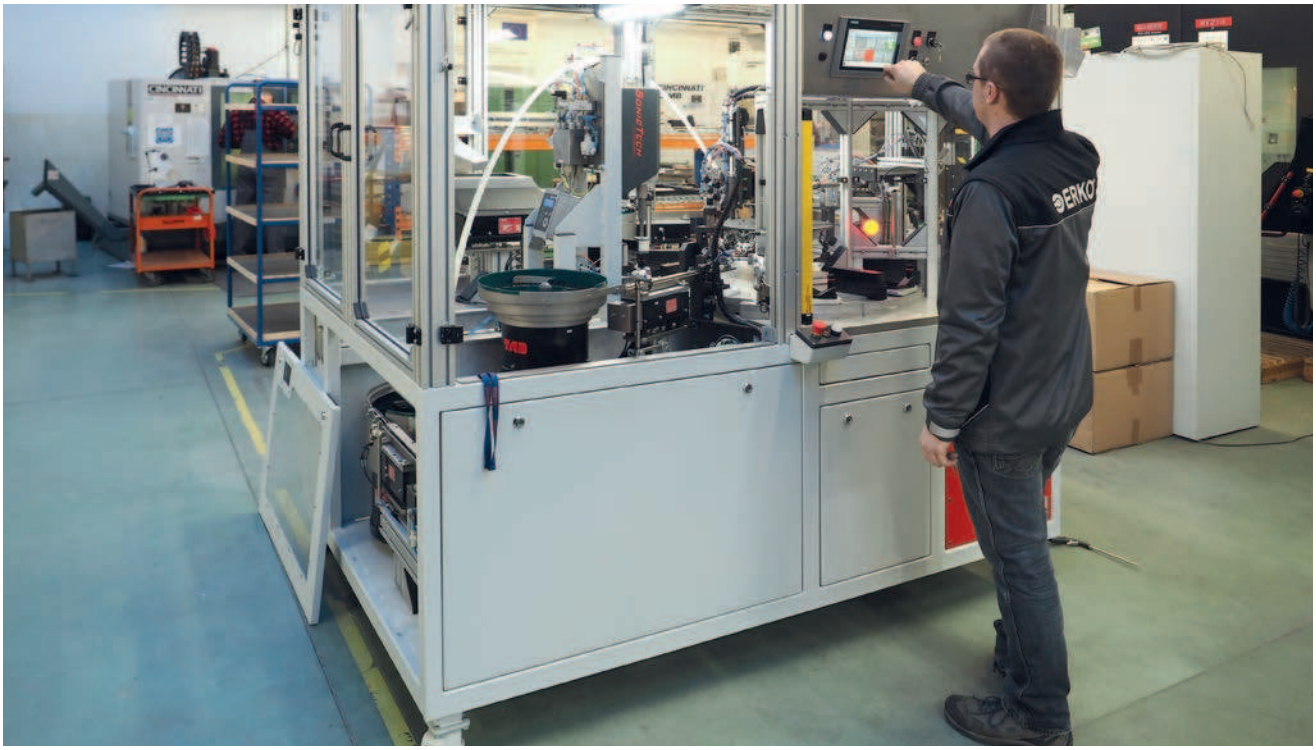
DESIGN AND MANUFACTURING
PRODUCTION AUTOMATION SOLUTIONS

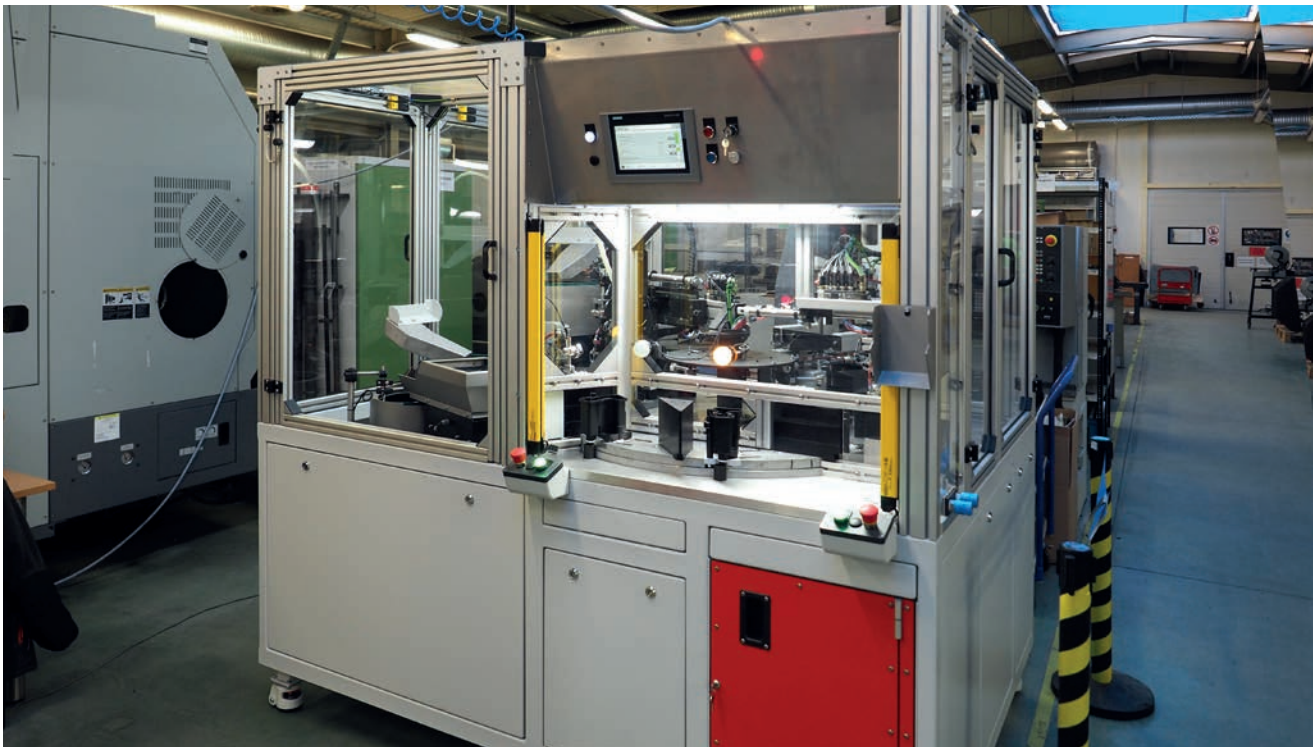
Design and manufacturing

Our long experience assures customers that we are able to implement, even the most demanding and complex, in terms of engineering and technological, projects. We've always put the good of our customers first. Modern work tools, our experienced team of engineers allow to meet the customers needs and ensure the safety of the investment implementation.

We offer a custom and flexible approach to the requirements and needs of our clients. We provide modern and innovative solutions, guaranteeing a quick return on investment.

Most of the projects we have implemented in the industry: electrical, automotive, aerospace, manufacturing and sheet metal parts for natural gas distribution.





Range of offered services

Design and other services

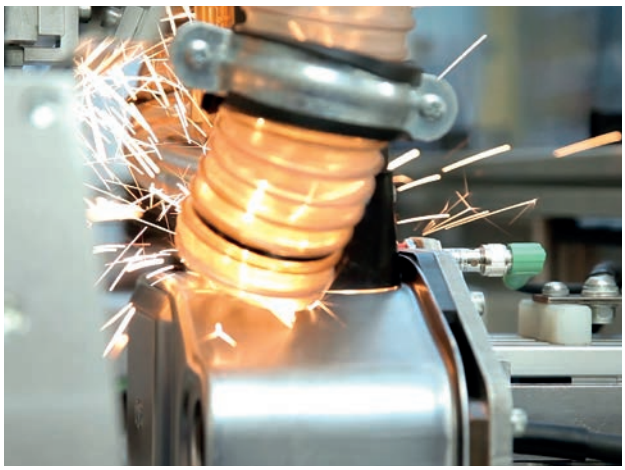
- design and manufacture of automated production cells and complete production lines
- modernizations, services, installation and maintenance of production lines

Production

- production of tooling and production lines is based on modern machinery and advanced methods of production process management
- manufactured items are subject to rigorous quality control on advanced measuring machines

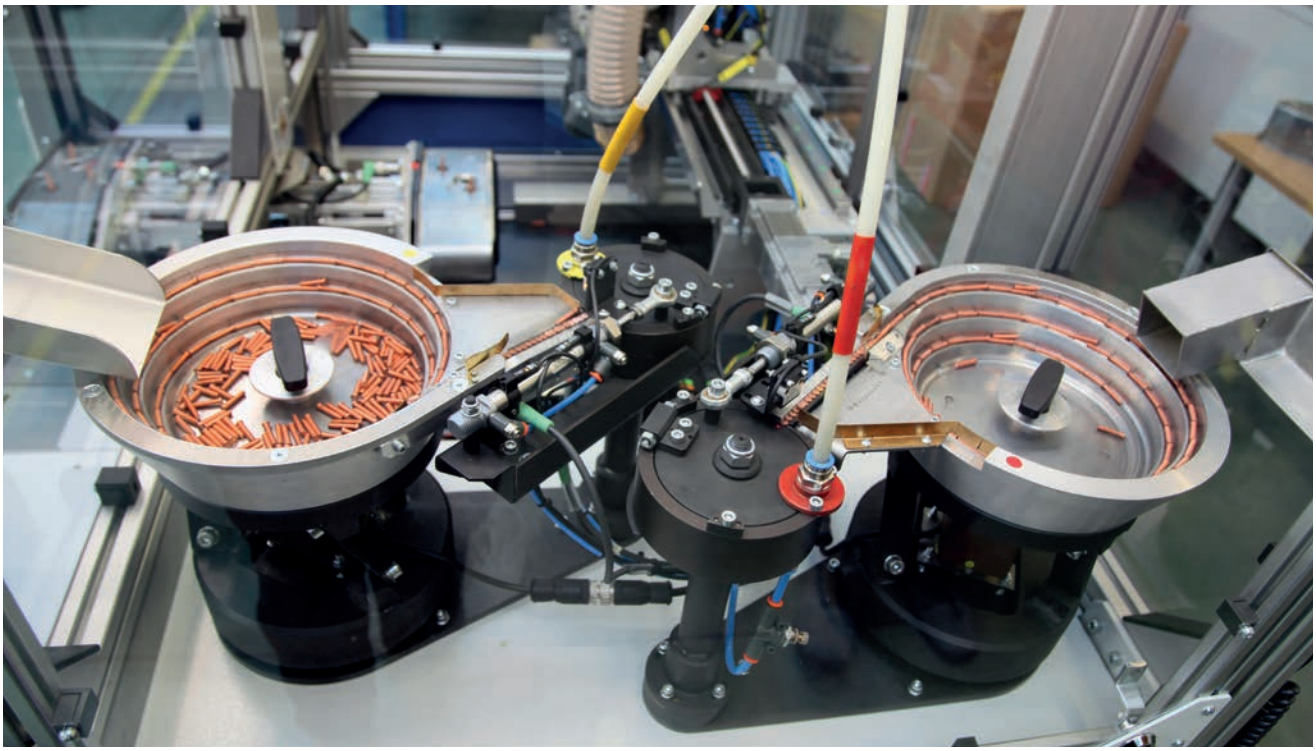
Documentation

- preparation of technological documentation and production of parts, devices and complete automated lines and production cells is based on the documentation provided by the customer



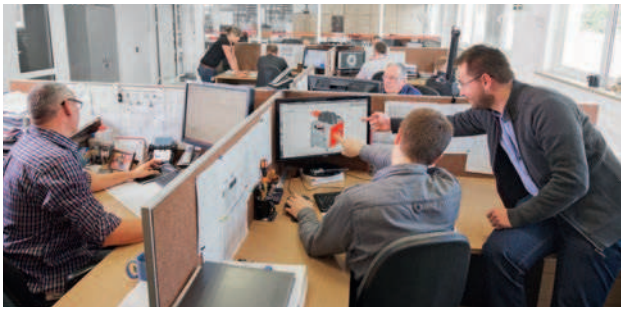
Software

- we design using CAD-CAM software (Inventor, Unigraphics, EdgeCam, NX), electrical documentation and machine control we design based on software such as i .a . E-Plan, Siemens, Omron



Project stages

With a large team of specialized and experienced engineers, we can offer comprehensive project support, starting with identifying needs, through design, production and implementation at the customer's plant.



Each project related to implementation is divided into three stages:

- design
- production
- implementation at the customers plant

Each phase is a set of specific actions performed by our engineers.

Design:

- identify customers needs
- specifying detailed requirements
- execution conceptual design
- verification of customer requirements
- drafting of the executive
- implementation documentation

Production:

- machines prefabrication
- manufacturing technological components
- providing technological assembly

Implementation at the customers plant:

- start-up
- tests
- conducting training
- service: warranty and post-warranty services, maintenance

We provide a custom and flexible approach to the requirements and needs of our customers.
We provide modern and innovative solutions that guarantee quick return on investment.

Service

Through maintenance and services we guarantee continuity of work and efficiency of any assembled machines and devices.

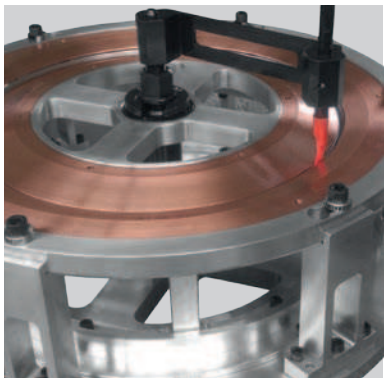
With us there is no downtime in the factories, which gives our Customers a sense of security and allows them to focus on running a business.

ERKO® AERO

AVIATION PARTS AND TOOLING

Aviation parts and tooling production

We are producer of products machined by cutting and cold plastic forming, used among others hydraulic cylinders for control systems used in aircraft turbofanengines. Our products can be used in airplanes and helicopters and technological equipment used to support production, assembly and measurements.



ERKO has modern and flexible machinery, special measuring chamber and qualified staff. We assure the best quality at all stages: design, technological supervision, production, quality control and sales, while maintaining aviation standards .

Processed materials

stainless steel,
nickel alloys,
titanium alloys,
copper,
aluminum,
brass,
sintered metals

Technological processes

turning, milling, grinding,
cold sheet forging,
abrasive blasting.
electrical discharge, welding,
injection molding

Software

EdgeCAM, NX CAM
Inventor, Unigraphics, AutoCAD
PC DMIS CAD +++
PC DMIS VISIO
Q-DAS q-stat

Since 2010 we are a member of 'Aviation Valley Association'.

AVIATION VALLEY

Certificates

Certificate covers design and development, production and sales of cable terminals and connectors, special tools and devices for electrical industry. Production and sales of metal parts, tools and devices for aviation industry.


BUREAU VERITAS Certification

Certificate of Approval

ERKO SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ SPÓŁKA KOMANDYTOWA

Quality and timely production

In recognition for exemplary implementation of the security strategy in the NGPF chain supply by providing 100% of the buffer we have received the award from UTC Poland. It confirms meeting the requirements in terms of timeliness, quality and competences required from suppliers for the aerospace industry.

Development, research and analysis

We cooperate with universities to implement new technologies and to raise the competences of our employees .

In our organization we support employees studying technical subjects. We develop their interests and we support these activities, e.g. through student science clubs.

We have technical projects and provide research and analysis with cooperation with the teaching staff.

AGH Akademia Górniczo-Hutnicza im. Stanisława Staszica w Krakowie

Państwowa Wyższa Szkoła Zawodowa im. Stanisława Pigonia w Krośnie

Main customers

Pratt & Whitney A United Technologies Company

UNISON

Collins Aerospace

GKN AEROSPACE

MB AEROSPACE

Advertising materials

Board
100 x 65 cm

Board
100 x 65 cm

Display stand
143 x 50 x 34 cm

Display stand
36 x 30 x 26 cm

Display glass-cabinet
202 x 90 x 46 cm

Display glass-cabinet
202 x 50 x 46 cm

Display stand
210 x 100 x 47 cm

Thinking about our customers

WE CREATED ERKO DEMO CAR

We are ready for the presentation of tools and devices of our offer in any place. With a properly equipped DEMO CAR we can present new products, make training at the time and place indicated by the Customer. Our mobile showroom has been equipped with a wide range of devices, and the possibility of professional demonstrations, where customers want it.

Direct checking of solutions by ours Customers enable a deeper understanding of how they work, as well as getting full information about offered products and services .

WE PRESENT innovative solutions. WE WILL SHOW what technical possibilities the tools and devices, we offer, have. WE ADVISE which assortment will be best for your work. WE WILL COME and make a professional presentation.

ERKO

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✉ eksport: export@erko.pl
✉ marketing: marketing@erko.pl
www.erko.pl

Fundusze Europejskie Program Regionalny
Rzeczpospolita Polska
Zdrowe życie, czysty zysk
Unia Europejska Europejski Fundusz Rozwoju Regionalnego