



«KBT» CABLE ACCESSORIES

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«KBT» factory production



Extrusion lines
of heat-shrinkable tube



Injection machines
for production of cast products



Production of heat-shrinkable breakouts



Production of mechanical connectors and lugs
with shear-off-head bolts



Production of electrical tools

- Electro technical factory «KBT» occupies a special place in the newest history of modern Russia. Founded in the late 90's, the plant was designed to revive destroyed domestic production of cable lugs and the best traditions of the Soviet engineering school.
- The products of «KBT» factory occupy a leading position in the Russian market of cable lugs and contact connections. The range of manufactured products is represented by more than 70 types and a line of more than 600 sizes of lugs, connectors and ferrules. The products are manufactured according to GOST (Russian standard), DIN standard and factory technical specifications. The line of contact products includes copper, aluminum and aluminum-copper lugs, connectors and shear-off-head bolt lugs, for crimping and soldering.
- Since 2004, «KBT» factory has been providing a full cycle of manufacturing of heat-shrinkable cable kits with a voltage of up to 35 kV. The modern fleet of machines and equipment is represented by new automatic extrusion lines, injection molding machines with 140, 200, 288 and 460 tonnage, as well as expanding devices for heat-shrinkable tubes and components. «KBT» engineers regularly monitor the latest developments in polymer processing technologies and equipment in order to continuously improve the efficiency of production processes.
- Presence of own «KBT» tools workshop is a necessary platform for the dynamic development of the main production. The workshop is equipped with a wide range of universal and special machines for various mechanical handling: milling, lathe work, drilling, grinding, CNC cutting, electric cutting. High qualification of engineers and tool-specialists allow to design and manufacture all the necessary equipment of any complexity in the shortest possible time: molds, dies, extrusion moulds, die heads and complexes of non-standard equipment.
- Automatization of the main technological process in production makes a significant assistance for maintaining consistently high quality and allows restraining of growth of product price.
- Special attention is paid to professional training, education and motivation of working staff. «KBT» Technical Department staff is a team of adherent – minded professionals with many years of experience in the field of energy and electrical engineering.
- Being the most famous manufacturer of cable fittings in the country, «KBT» factory strives to implement complex solutions on the platform of professional electrical tools of «KBT» brand. Products such as: «crimping tools/high-precision dies/cable lugs», «hole punching tools/punch moulds/sealed inlets», «heat-shrinkable kits/shear-off-head bolted connectors/mounting tools for heat shrinkable cable kits» – are examples of system manufacturing integration.

Electrical laboratory «KBT»

- «KBT» test laboratory as part of a stationary and mobile laboratory is allowed to operate and is registered by the Federal Service Rostekhnadzor for environmental, technological and nuclear control. The certificate of registration confirms the technical competence of personnel and compliance of the laboratory equipment with the declared list of tests and measurements
- The laboratory has all the necessary facilities for comprehensive testing of electrical products: cable lugs and connectors, heat-shrinkable materials and HS cable kits, electrical tools and power line fittings. The laboratory is equipped with modern test benches and control-measuring equipment of the latest generation.
- All instrumentation and laboratory installations are regularly checked and calibrated in accordance with the established requirements.
- The laboratory performs a large volume of electrical tests:
 - high-voltage tests of HS cable kits with DC and AC current;
 - measurement of the electrical strength of materials;
 - measuring the resistivity of materials;
 - tests of contact connections in the cyclic heating mode, etc.
- Taking into account the wide geography of supplies and the contrast of climatic zones in Russia, special attention is paid to conducting climate tests of manufactured products. The available equipment allows to simulate all possible operating conditions of products, including extreme temperature ranges, humidity, exposure to ultraviolet radiation and salt mist.
- A significant part of the laboratory's tests is devoted to the development of polymer materials and compositions with the required physical and chemical properties.
- The laboratory staff is highly qualified and has extensive research experience. Dozens of proven methods that meet the requirements of Russian and European standards and our own methodological developments guarantee high quality of testing. Specialists of the laboratory participate in training seminars and demonstrations on the rules of installation of HS cable kits and fittings for power lines.
- The laboratory is integrated into the multi-stage quality control system operating at the factory. With the participation of the laboratory, the following activities are carried out: input control of raw materials, semi-finished products and components, quality control of finished products, design and development of new types of products and materials.
- The tests allow objectively assess the compliance of the parameters of the products produced at the factory with the requirements of standards and technical documentation.



High-voltage testing of HS cable kits



Testing in climatic chamber



Testing of cable lugs for breaking force



Testing of contact pastes



Determination of the electrical strength of materials

«KBT» Logistics center



Shipment of goods



«KBT» logistic center



Warehouse complex



Multi-level storage system



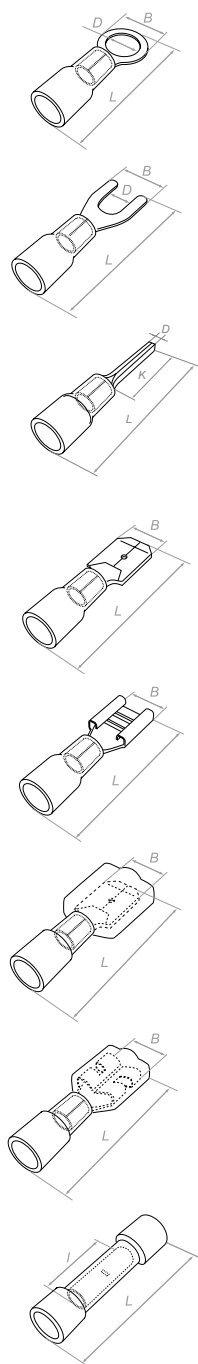
Warehouse of materials and finished products

- After passing the technical control, the finished factory products are delivered to the logistics distribution warehouse complex «KBT». The complex is designed to meet all modern requirements of warehouse logistics and is focused on the efficient management of cargo flows.
- Distribution-storage complex corresponds to the category of premises B+. Loading and unloading windows equipped with automatic sectional doors, electric docklevellers and dockshelters work for the reception and delivery of goods. The main function of the complex is the timely and prompt provision of products to the plant's sales offices and customers.
- Distribution-storage complex is located in the close proximity of the factory, which allows to replenish inventory and product range daily to ensure uninterrupted and prompt shipments. Customers have the opportunity to receive orders directly on the territory of the complex, Kaluga city.
- On the territory of the complex there are three warehouse buildings and a modern office center. The total storage area is more than 4.000 m² and accommodates about 3.800 pallet places. In addition to storing the products of «KBT», the complex also provides responsible storage services for third-party companies and manufacturers of Kaluga city.
- The main technological equipment includes reach trucks, loaders, order pickers, self-propelled trolleys and other modern logistics equipment. The warehouse uses the classic wide-pass storage technology with the use of front racks. This scheme allows to simultaneously complete and ship a large number of orders.
- The logistics center provides effective management of cargo flows. In the work of the warehouse complex, elements of automated management and warehouse accounting are used, which significantly reduce the time of acceptance and shipment of goods, as well as minimize the number of errors.
- The logistics service employs qualified personnel with many years of experience. Specialists regularly increase the level of their knowledge, as well as transfer experience to young employees. The principle of teamwork and mutual assistance makes the work as effective as possible.
- In addition to its own transport department, such transport companies as "Autotrading", "Zheldorexpeditiya", "Delovye Linii", "PEK", "Glavdostavka", "KIT", "ST-Group", "Trialcom", "Energiya" are involved in the delivery of products to customers.

Insulated terminals, disconnectors and sleeves «KBT»



Insulated terminals and disconnectors for crimping



In the early 50s, the American company «AMP Incorporated» introduced a new revolutionary development to the world – a series of insulated terminals, disconnectors and connectors for crimping. This marked the decisive advance of the crimping technique on the last outpost of soldering connections – the area of wires of small cross sections.

The crimping connection is not inferior to traditional soldering in terms of mechanical strength and contact resistance, and in terms of manufacturability, convenience and safety of installation it has undoubted advantages.

Distinctive feature of the new line of terminals, disconnectors and connectors is the insulating cuffs integrated into the design which makes the wiring inside the electrical panels professional and safe for subsequent service.

The key to obtaining a reliable contact connection by crimping is the three-R rule:

- Right terminal – properly sized wire terminal made of high-quality materials.
- Right tool – professional crimping tool with a ratchet mechanism that guarantees completing a full cycle of crimping.
- Right dies- sculptural dies with double- contour crimping on the core and insulation, corresponding to the geometry of the crimping part of the terminal.

The optimal combination of «terminal-tool-die» has given birth to such brands as: «Pre-insulated Diamond grip (diamond crimping for insulation) from AMP or «Avi-Crimp» (aviation crimping) from Waldom Molex.

The result of the correct combination of wire, terminal and die is a connection, in which the stripped multi-wire core after crimping forms a monolithic, water- and air-tight construction «Gas Tight Quality».

Depending on the material from which the insulating cuffs on the terminals and disconnectors are made, the products are intended for different temperature ranges of operation.

Each size of terminal or disconnector corresponds to a different color of the cuff. The color marking system of the insulated series has become international and accepted as universal. Standard cuff colors: red, blue, yellow. This allows accurate identifying the size of the terminals and connectors both during installation and during post-installation inspections.

In contradistinction to non-insulated crimping terminals, the crimping of insulated connectors usually has two independent contours:

- crimping of the contact part of the terminal or connector on the wire core;
- crimping of the insulating cuff on the wire insulation.

During vibration-resistant terminals and connectors crimping, the copper sleeve forms an additional reliable crimping on the insulation. Fixing the wire in two points ensures high quality and vibration resistance of the connections.

Classification of insulated terminals and connectors «KBT»

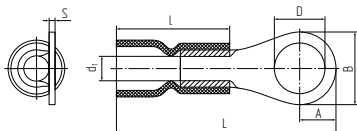
Description	Type	Insulation material			Design features			
		PVC	nylon	heat shrink	«Easy Entry»	transverse notches	welded seam	copper sleeve
Insulated ring terminals	HKИ	•			•	•		
	BHKИ	•			•	•		•
	HKИ(Н)		•		•	•	•	
	HKИ-Т			•		•	•	
Insulated fork and hook terminals	HBI	•			•	•		
	HВК	•			•	•		
	HBI(Н)		•		•	•	•	
	HBI-Т			•		•	•	
Insulated blade and flat pin terminals	HШКИ	•			•	•		
	HШПИ	•			•	•		
	HШПИ(Н)		•		•	•	•	
Insulated butt connectors	ГСИ	•					•	
	ГСИ-П	•					•	
	ГСИ(Н)		•				•	
	ГСИ-Т			•			•	
	ПК-Т			•				
Insulated flat terminals and disconnectors	РПИ-М	•				•		
	РПИ-П	•				•		
	РППИ-М	•				•		
	РПИ-О	•				•		
	ВРПИ-М	•			•	•		•
	ВРПИ-П	•			•	•		•
	РПИ-М(Н)		•		•	•		
	РПИ-П(Н)		•		•	•		
	РФИ-М(Н)		•		•	•		
	РПИ-П-Т			•	•	•		•
	РППИ-М-Т			•	•	•		•
	РП-М/РП-П					•		
Insulated bullet type connectors	РШИ-М	•				•		
	РШИ-П	•				•		
	ВРШИ-М(Н)		•		•	•		•
	ВРШИ-П(Н)		•		•	•		•
Insulated branch connectors	ОВ	•						
	ОВТ		•					

Insulated ring terminals with PVC cuff

Type: HKИ



- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Insulation material: self-extinguishing PVC. Class V-0 according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - «Easy Entry» implementation: vinyl cuff formed in the shape of a funnel to facilitate the installation of stranded copper wires
 - not welded butt connection on pipe contact part of the terminals requires attention to the correct positioning of the terminals during crimping
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuffs



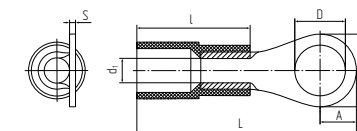
Name	PVC cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	I (mm)	d ₁ (mm)	A (mm)	S (mm)	Packing (pcs.)	Tool
HKИ 1.5-3	●	0.25-1.5	19	M 3	3.2	5.5	17.5	10	1.7	2.8	0.8	100/500	CTA-01 CTB-01 CTK-01
HKИ 1.5-4	●	0.25-1.5	19	M 4	4.3	6.6	19.4	10	1.7	3.3	0.8	100/500	
HKИ 1.5-5	●	0.25-1.5	19	M 5	5.3	8.0	20.8	10	1.7	4.0	0.8	100/500	
HKИ 1.5-6	●	0.25-1.5	19	M 6	6.4	11.6	26.8	10	1.7	5.9	0.8	100/500	CTA-12 CTB-12 CTK-12
HKИ 2.5-4	●	1.0-2.5	27	M 4	4.3	6.6	19.4	10	2.3	3.3	0.8	100/500	
HKИ 2.5-5	●	1.0-2.5	27	M 5	5.3	9.5	21.8	10	2.3	4.8	0.8	100/500	
HKИ 2.5-6	●	1.0-2.5	27	M 6	6.4	12.0	26.8	10	2.3	6.0	0.8	100/500	Tool sets: CTD, CTE, CTF, CTB, CTM, CTN
HKИ 2.5-8	●	1.0-2.5	27	M 8	8.4	12.0	26.8	10	2.3	5.9	0.8	100/500	
HKИ 6.0-4	●	2.5-6.0	46	M 4	4.3	7.2	22.7	13	3.4	3.6	1.0	100/500	
HKИ 6.0-5	●	2.5-6.0	46	M 5	5.3	9.5	26.6	13	3.4	4.8	1.0	100/500	EC-65
HKИ 6.0-6	●	2.5-6.0	46	M 6	6.4	12.0	29.5	13	3.4	6.0	1.0	100/500	
HKИ 6.0-8	●	2.5-6.0	46	M 8	8.4	15.0	34.0	13	3.4	7.5	1.0	100/500	
HKИ 6.0-10	●	2.5-6.0	46	M 10	10.5	15.0	34.0	13	3.4	7.5	1.0	100/500	

Insulated ring terminals with nylon cuff

Type: HKИ(Н)



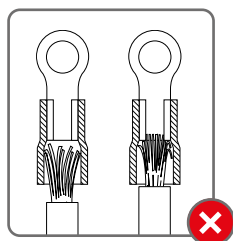
- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - «Easy Entry» implementation: molded nylon cuff formed in the shape of a funnel to facilitate the installation of stranded copper wires
 - due to the welded butt joint on the pipe contact part, the orientation of the terminal in the tool dies does not matter
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuff



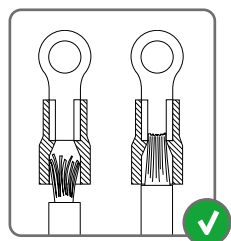
Name	Nylon cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	I (mm)	d ₁ (mm)	A (mm)	S (mm)	Packing (pcs.)	Tool
HKИ(Н) 1.5-4	●	0.25-1.5	19	M 4	4.3	6.6	19.4	10	1.7	3.3	0.8	100/500	CTB-01
HKИ(Н) 1.5-6	●	0.25-1.5	19	M 6	6.4	11.6	26.8	10	1.7	5.9	0.8	100/500	CTK-01
HKИ(Н) 2.5-4	●	1.0-2.5	27	M 4	4.3	6.6	19.4	10	2.3	3.3	0.8	100/500	CTB-12
HKИ(Н) 2.5-6	●	1.0-2.5	27	M 6	6.4	12.0	26.8	10	2.3	6.0	0.8	100/500	CTK-12
HKИ(Н) 6.0-6	●	2.5-6.0	46	M 6	6.4	12.0	29.5	13	3.4	6.0	1.0	100/500	CTF, CTB
HKИ(Н) 6.0-8	●	2.5-6.0	46	M 8	8.4	15.0	34.0	13	3.4	7.5	1.0	100/500	EC-65
HKИ(Н) 10-6	●	10	70	M 6	6.4	12.0	31.0	16.0	4.6	6.0	1.2	100	CTB-07
HKИ(Н) 10-8	●	10	70	M 8	8.4	15.0	38.0	16.0	4.6	7.5	1.2	100	
HKИ(Н) 16-6	●	16	85	M 6	6.4	12.0	41.0	21.0	5.7	6.0	1.5	100	
HKИ(Н) 16-8	●	16	85	M 8	8.4	16.0	43.0	21.0	5.7	8.0	1.5	100	
HKИ(Н) 25-8	●	25	115	M 8	8.4	16.5	45.0	23.5	8.0	8.3	1.8	100	-
HKИ(Н) 25-10	●	25	115	M 10	10.5	16.5	45.0	23.5	8.0	8.3	1.8	100	

«Easy Entry» implementation in insulated terminals and connectors

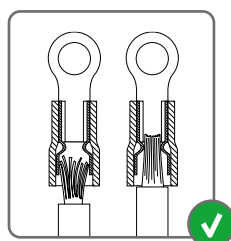
«Easy entry» design makes it easier to insert a multi-wire core into the terminal, reduces the number of installation errors, as well as installation time. Smooth, without ledges, funnel-shaped cuff eliminates jamming of wires and guarantees the reliability of the electrical connection.



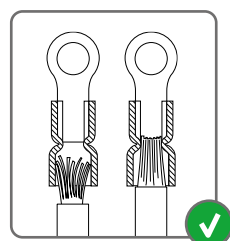
Installation of wires into low-cost terminals without «Easy Entry» design



«Easy Entry» implementation of «KBT» terminals with nylon cuff



«Easy Entry» implementation of «KBT» vibration proof terminals and connectors with additional copper sleeve

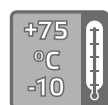


«Easy Entry» implementation of «KBT» terminals with PVC cuff

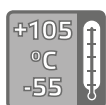
Technical characteristic of insulated terminals and disconnectors

Name	Cuff color	Cross section (mm²)	Contact part material	Max. current (A)	Voltage (В)	Insulation removal length (mm)
Ring, fork, hook, blade pin, round pin insulated terminals	●	0.25-1.5	cooper	19	690	5-6
	●	1.0-2.5	cooper	27	690	5-6
	●	2.5-6.0	cooper	46	690	6-7
	●	10	cooper	70	690	8-9
	●	16	cooper	85	690	11-12
	●	25	cooper	115	690	12-13
Butt and parallel insulated connectors	●	0.25-1.5	cooper	19	690	6-7
	●	1.0-2.5	cooper	27	690	6-7
	●	2.5-6.0	cooper	46	690	6-7
	●	10	cooper	70	690	10-11
	●	16	cooper	85	690	13-14
	●	25	cooper	115	690	14-15
Flat and pin type male/female disconnectors	●	0.5-1.5	brass	10	400	5-6
	●	1.5-2.5	brass	15	400	5-6
	●	4.0-6.0	brass	24	400	6-7

Nylon and heat shrinkable insulated terminals advantages

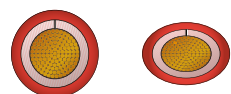


PVC insulation



Nylon and heat shrinkable insulation

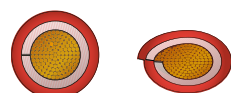
Central position of the seam in the dies



Before crimping

After crimping

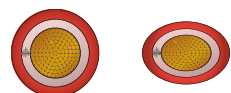
Offset position of the seam in the dies



Before crimping

After crimping

Offset position of the welded seam in the dies



Before crimping

After crimping



- Unlike terminals and connectors with a PVC cuff, terminals with nylon and heat shrinkable insulation can be used in a wider temperature range.

Nylon and heat-shrinkable cuffs do not deform or melt at temperatures above +75°C, and do not lose their elasticity at temperatures below -10°C.

The operating temperature range of terminals with nylon and heat-shrinkable cuffs: from -55°C to +105°C. At high current loads and long cycles of up to 500 hours, materials retain their properties even at a temperature +125°C.

- The contact part of the «KBT» terminals with nylon and heat-shrinkable cuffs also has a significant difference from the terminals with PVC insulation.

During terminals and connectors stamping, in the place of contact rounding for cable core, a butt technological seam is formed. Terminals with an incomplete technological seam can only be used on flexible multi-wires. At the time of crimping such terminals and connectors, their correct orientation in the tool dies became fundamentally important. If the connecting seam is not located in the center and terminal is rotated relative to the part of dies closure, the structure may be detached along the seam and the connection to the core will lose its strength.

- The joint seam on the ring, fork and pin terminals with a nylon and heat-shrinkable cuff is welded along the entire length. Terminals with a welded technological seam form a solid pipe structure at the point of contact rounding and can be used for installation on both multi-wire and monofilament wires. The terminal can be rotated at any angle in the tool die during crimping. This option reduces the risk of possible consequences if the terminal is positioned incorrectly in the tool die or if installation workers are not qualified enough.

- For terminals, connectors and disconnectors mounting with a heat-shrinkable cuff, special high-precision МПК-10 dies are used, as part of CTK-10, CTB-10 and CTA-10 (KBT) crimping pliers. For crimping terminals and connectors with nylon and PVC cuffs, МПК-01 and МПК-11 dies are used as part of CTK, CTB, CTA (KBT) crimping pliers.

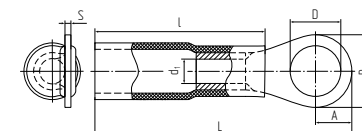
- In comparison with PVC insulation (polyvinyl chloride), an additional advantage of nylon and heat-shrinkable insulation is that the materials do not contain Halogens («halogen free») and do not emit highly toxic and dangerous gases when burning.

Unlike PVC, nylon and modified polyethylene are also characterized by reduced smoke emission («LS» index – low smoke).

Insulated ring terminals with heat-shrinkable cuff

Type: НКИ-Т

- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Insulation material: cross linked polyethylene. Halogen free.
- Temperature resistance of insulation: +105°C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - due to the welded butt joint on the pipe contact part, the orientation of the terminal in the tool dies does not matter
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
 - heat shrinkable tube with an adhesive layer provides complete tightness and anti-corrosion protection of the contact joint after shrinkage
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuff

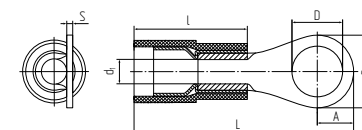


Name	Cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	l (mm)	d1 (mm)	A (mm)	S (mm)	Packing (pcs.)	Tool
НКИ-Т 1.5-4	●	0.5-1.5	19	M4	4.3	6.6	26.9	19	1.7	3.3	0.8	100/500	CTA-10 CTB-10 CTK-10 Butane gas torch «KBT», fan TT-1800
НКИ-Т 1.5-5	●	0.5-1.5	19	M5	5.3	8.0	26.9	19	1.7	4.0	0.8	100/500	
НКИ-Т 1.5-6	●	0.5-1.5	19	M6	6.4	11.6	34.6	19	1.7	5.9	0.8	100/500	
НКИ-Т 2.5-4	●	1.5-2.5	27	M4	4.3	6.6	29.8	19	2.3	3.3	0.8	100/500	
НКИ-Т 2.5-5	●	1.5-2.5	27	M5	5.3	9.5	29.8	19	2.3	4.8	0.8	100/500	
НКИ-Т 2.5-6	●	1.5-2.5	27	M6	6.4	12.0	34.6	19	2.3	6.0	0.8	100/500	
НКИ-Т 6.0-6	●	4.0-6.0	46	M6	6.4	12.0	37.5	24	3.4	6.0	1.0	100/500	
НКИ-Т 6.0-8	●	4.0-6.0	46	M8	8.4	15.0	42.0	24	3.4	7.5	1.0	100/500	

Vibration proof insulated ring terminals with nylon cuff

Type: ВНКИ

- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105°C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - additional copper sleeve increases the mechanical strength of the connection with the wire by 25-30% and makes the connection vibration-resistant
 - «Easy Entry» implementation: copper sleeve forms a cone-shaped entrance for the fast establishment of the copper wires into terminals
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
 - translucent cuff allows controlling the depth of entry of the cores
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuff

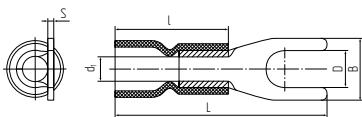


Name	Nylon cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	l (mm)	d1 (mm)	A (mm)	S (mm)	Packing (pcs.)	Tool
ВНКИ 1.5-4	●	0.25-1.5	19	M4	4.3	6.6	19.4	10	1.7	3.3	0.8	100/500	CTB-01 CTK-01
ВНКИ 1.5-5	●	0.25-1.5	19	M5	5.3	8.0	20.8	10	1.7	4.0	0.8	100/500	
ВНКИ 1.5-6	●	0.25-1.5	19	M6	6.4	11.6	26.8	10	1.7	5.9	0.8	100/500	
ВНКИ 2.5-4	●	1.0-2.5	27	M4	4.3	6.6	19.4	10	2.3	3.3	0.8	100/500	CTB-12 CTK-12
ВНКИ 2.5-5	●	1.0-2.5	27	M5	5.3	9.5	21.8	10	2.3	4.8	0.8	100/500	
ВНКИ 2.5-6	●	1.0-2.5	27	M6	6.4	12.0	26.8	10	2.3	6.0	0.8	100/500	Tool-sets: CTF, CTB EC-65
ВНКИ 6.0-6	●	2.5-6.0	46	M6	6.4	12.0	29.5	13	3.4	6.0	1.0	100/500	
ВНКИ 6.0-8	●	2.5-6.0	46	M8	8.4	15.0	34.0	13	3.4	7.5	1.0	100/500	

Insulated fork terminals with PVC cuff

Type: HBI

- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Does not require complete removal of the connection. For fast displacement of the cross-connection — just loosen screw fixation
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - «Easy Entry» implementation: vinyl cuff formed in the shape of a funnel to facilitate the installation of stranded copper wires
 - not welded butt connection on pipe contact part of the terminals requires attention to the correct positioning of the terminals during crimping
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuff

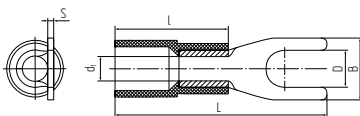


Name	PVC cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	l (mm)	d1 (mm)	S (mm)	Packing (pcs.)	Tool
HBI 1.5-3	●	0.25-1.5	19	M 3.5	3.7	6.4	23.0	12	1.7	0.8	100/500	CTA-01
HBI 1.5-4	●	0.25-1.5	19	M 4	4.3	7.2	23.0	12	1.7	0.8	100/500	CTB-01
HBI 1.5-5	●	0.25-1.5	19	M 5	5.3	8.0	23.0	12	1.7	0.8	100/500	CTK-01
HBI 2.5-4	●	1.0-2.5	27	M 4	4.3	7.2	23.0	12	2.3	0.8	100/500	CTA-12
HBI 2.5-5	●	1.0-2.5	27	M 5	5.3	8.2	23.0	12	2.3	0.8	100/500	CTB-12
HBI 2.5-6	●	1.0-2.5	27	M 6	6.4	9.3	23.0	12	2.3	0.8	100/500	CTK-12
HBI 6.0-4	●	2.5-6.0	46	M 4	4.3	8.2	27.5	15	3.4	1.0	100/500	Tool-sets: CTF, CTB EC-65
HBI 6.0-5	●	2.5-6.0	46	M 5	5.3	9.0	27.5	15	3.4	1.0	100/500	
HBI 6.0-6	●	2.5-6.0	46	M 6	6.4	9.0	27.5	15	3.4	1.0	100/500	

Insulated fork terminals with nylon cuff

Type: HBI(H)

- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Does not require complete removal of the connection. For fast displacement of the cross-connection — just loosen screw fixation
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - «Easy Entry» implementation: molded nylon cuff formed in the shape of a funnel to facilitate the installation of stranded copper wires
 - due to the welded butt joint on the pipe contact part, the orientation of the terminal in the tool dies does not matter
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Crimping of conductor on top of the insulating cuff

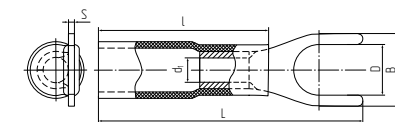


Name	Nylon cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	l (mm)	d1 (mm)	S (mm)	Packing (pcs.)	Tool
HBI(H) 10-5	●	10	70	M 5	5.3	10.6	28.3	16	4.6	1.2	100	CTB-07
HBI(H) 10-6	●	10	70	M 6	6.4	10.9	29.9	16	4.6	1.2	100	
HBI(H) 16-6	●	16	85	M 6	6.4	11.0	36.6	21	5.6	1.5	100	
HBI(H) 16-8	●	16	85	M 8	8.4	13.9	39.4	21	5.6	1.5	100	

Insulated fork terminals with heat shrinkable cuff

Type: HBI-T

- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Does not require complete removal of the connection. For fast displacement of the cross-connection — just loosen screw fixation
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - due to the welded butt joint on the pipe contact part, the orientation of the terminal in the tool dies does not matter
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
 - heat shrinkable tube with adhesive layer and with a 3:1 shrinkage ratio provides complete sealing and corrosion protection of the contact connection after shrinkage
- Advanced multi-dimensional ranges of crimping



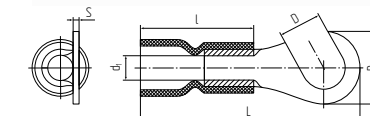
Name	HS cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	l (mm)	d1 (mm)	S (mm)	Packing (pcs.)	Tool
HBI-T 1.5-4	●	0.5-1.5	19	M 4	4.4	7.2	29	19	1.7	0.8	100/500	CTA-10 CTB-10 CTK-10 Butane gas torch «KBT», fan TT-1800
HBI-T 1.5-5	●	0.5-1.5	19	M 5	5.4	8.1	29	19	1.7	0.8	100/500	
HBI-T 2.5-4	●	1.5-2.5	27	M 4	4.4	7.2	29	19	2.3	0.8	100/500	
HBI-T 2.5-5	●	1.5-2.5	27	M 5	5.4	8.1	29	19	2.3	0.8	100/500	
HBI-T 6.0-4	●	4.0-6.0	46	M 4	4.4	8.3	33.5	24	3.4	1.0	100/500	
HBI-T 6.0-5	●	4.0-6.0	46	M 5	5.4	12	33.5	24	3.4	1.0	100/500	

- In case of the absence of access to electricity, in the process of installing of the terminals and connectors with heat shrinkable cuffs, it is recommended to use portable «KBT» gas torches: X-190, X-220, X-350

Insulated hook terminals with PVC cuff

Type: НИК

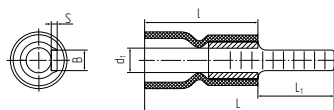
- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Does not require complete removal of the connection. For fast displacement of the cross-connection — just loosen screw fixation
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - «Easy Entry» implementation: vinyl cuff formed in the shape of a funnel to facilitate the installation of stranded copper wire
 - not welded butt connection on pipe contact part of the terminals
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuff



Name	PVC cuff color	Cross section (mm²)	Current (A)	Screw	D (mm)	B (mm)	L (mm)	l (mm)	d1 (mm)	S (mm)	Packing (pcs.)	Tool
НИК 1.5-4	●	0.25-1.5	19	M 4	4.3	8.0	20.8	10	1.7	0.8	100/500	CTA-01/12 CTB-01/12 CTK-01/12 Tool-sets: CTF, CTB
НИК 1.5-5	●	0.25-1.5	19	M 5	5.3	8.0	20.8	10	1.7	0.8	100/500	
НИК 2.5-4	●	1.0-2.5	27	M 4	4.3	8.5	21.8	10	2.3	0.8	100/500	
НИК 2.5-5	●	1.0-2.5	27	M 5	5.3	8.5	21.8	10	2.3	0.8	100/500	

Insulated flat pin terminals with PVC cuff

Type: НШПИ

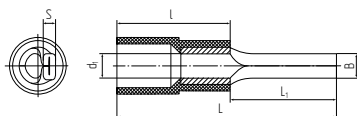


- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment
- Multi-sized alternative to the end sleeves
- 3 sizes of flat pin terminals substitute 9 sizes of end sleeves
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - «Easy Entry» implementation: vinyl cuff formed in the shape of a funnel to facilitate the installation of stranded copper wire
 - not welded butt connection on pipe contact part of the terminals requires attention to the correct positioning of the terminals during crimping
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuff

Name	PVC cuff color	Cross section (mm²)	Current (A)	L (mm)	L ₁ (mm)	I (mm)	d ₁ (mm)	B (mm)	S (mm)	Packing (pcs.)	Tool
НШПИ 1.5–10	●	0.25–1.5	19	20	10	10	1.7	2.4	0.8	100/500	CTA/CTB/CTK-01
НШПИ 2.5–10	●	1.0–2.5	27	20	10	10	2.3	2.4	0.8	100/500	CTA/CTB/CTK-12
НШПИ 6.0–14	●	2.5–6.0	46	28	14	14	3.4	4.0	1.0	100/500	Tool-sets: CTF, CTB

Insulated flat pin terminals with nylon cuff

Type: НШПИ(Н)

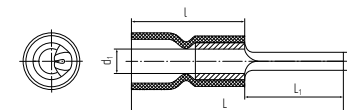


- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment
- Narrow flat shape of the contact part of the terminal provides the ability of connection to modern electrical devices with restricted settings of the input clamps
- Contact part of terminal is made according to DIN 46230
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistant of insulation: +105 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Color marking of НШПИ(Н) terminals insulating cuffs corresponds to an internationally accepted classification: red-blue-yellow
- Design features:
 - «Easy Entry» implementation: molded nylon cuff formed in the shape of a funnel to facilitate the installation of stranded copper wires
 - due to the welded butt joint on the pipe contact part, the orientation of the terminal in the tool dies does not matter
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Crimping of conductor on top of the insulating cuff

Name	Nylon cuff color	Cross section (mm²)	Current (A)	L (mm)	L ₁ (mm)	I (mm)	d ₁ (mm)	B (mm)	S (mm)	Packing (pcs.)	Tool
НШПИ(Н) 10–12	●	10	70	30.5	12	16.4	4.6	4.2	2.0	100	CTB-07
НШПИ(Н) 16–13	●	16	85	37.5	13	21.2	6.0	5.5	2.5	100	
НШПИ(Н) 25–15	●	25	115	45.5	15	25.4	6.5	7.0	2.5	100	
НШПИ(Н) 35–20	●	35	160	55.2	20	30.4	8.4	8.0	3.2	100	

Insulated round pin terminals with PVC cuff

Type: НШКИ

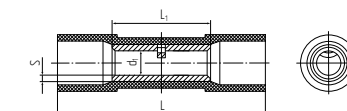


- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment
- Multi-sized alternative to the end sleeves
- 3 sizes of flat pin terminals substitute 9 sizes of end sleeves
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Max voltage: 690 V
- Design features:
 - «Easy Entry» implementation: vinyl cuff formed in the shape of a funnel to facilitate the installation of stranded copper wire
 - not welded butt connection on pipe contact part of the terminals requires attention to the correct positioning of the terminals during crimping
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Advanced multi-dimensional ranges of crimping
- Crimping of conductor on top of the insulating cuff

Name	PVC cuff color	Cross section (mm²)	Current (A)	L (mm)	L ₁ (mm)	I (mm)	d ₁ (mm)	B (mm)	Packing (pcs.)	Tool
НШКИ 1.5–12	●	0.25–1.5	19	24	12	12	1.7	2.0	100/500	CTA/CTB/CTK-01
НШКИ 2.5–12	●	1.0–2.5	27	24	12	12	2.3	1.8	100/500	CTA/CTB/CTK-12
НШКИ 6.0–13	●	2.5–6.0	46	28	13	15	3.4	2.9	100/500	Tool-sets: CTF, CTB

Nylon insulated butt connectors

Type: ГСИ(Н)

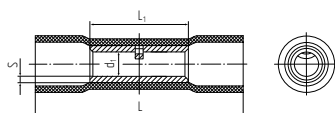


- Designed for splicing of copper wires by crimping method
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Material of the connector: copper, grade M1
- Connector plating: electrolytic tinning
- Maximum voltage: 690 V
- Design features:
 - the connector is made of seamless copper tube
 - stopping notch, which is located in the center of the sleeve, determines the depth of entry of the wires into the connector
 - chamfering at the edges of the connector facilitates the insertion of a wire
 - body material does not support combustion and can be used for «Hr» and «Hr-LS» wires
- Translucent body allows you to control the depth of entry of wires
- Within the specified range it is possible to make connection of wires in a line with different cross-sections or to make the installation of a branch
- Crimping on top of the insulating case

Name	Color	Cross section (mm²)	Current (A)	L (mm)	L ₁ (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
ГСИ(Н) 1.5	●	0.25–1.5	19	26.2	15	1.7	0.8	100/500	CTB/CTK-01 CTB/CTK-12 Tool-sets: CTF, CTB
ГСИ(Н) 2.5	●	1.0–2.5	27	26.4	15	2.3	0.8	100/500	
ГСИ(Н) 6.0	●	2.5–6.0	46	27.0	15	3.4	1.0	100/500	

PVC insulated butt connectors

Type: ГСИ

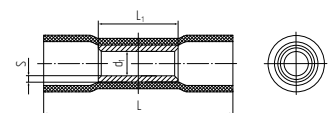


- Designed for splicing of copper wires by crimping method
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Material of the connector: copper, grade M1
- Connector plating: electrolytic tinning
- Maximum voltage: 690 V
- Design features:
 - the connector is made of seamless copper tube
 - stopping notch, which is located in the center of the sleeve, determines the depth of entry of the wires into the connector
 - chamfering at the edges of the connector facilitates the insertion of a wire
 - body material does not support combustion and can be used for «Hr» and «Hr-LS» wires
- Advanced multi dimensional ranges for crimping, cross-section up to 10 mm²
- Within the specified range it is possible to make connection of wires in a line with different cross-sections or to make the installation of a branch
- Crimping on top of the insulating case

Name	Color	Cross section (mm ²)	Current (A)	L (mm)	L1 (mm)	d1 (mm)	S (mm)	Packing (pcs.)	Tool
ГСИ 1.5	●	0.25–1.5	19	24.2	15	1.7	0.8	100/500	CTA/CTB/CTK-01 CTA/CTB/CTK-12 Tool-sets: CTF, CTB
ГСИ 2.5	●	1.0–2.5	27	24.2	15	2.3	0.8	100/500	
ГСИ 6.0	●	2.5–6.0	46	26.0	15	3.4	1.0	100/500	
ГСИ 10	●	10	70	35.5	21	4.6	1.2	100	CTB-07 –
ГСИ 16	●	16	85	45.0	26	5.8	1.5	100	
ГСИ 25	●	25	115	52.5	29	7.7	1.8	100	

PVC insulated parallel connectors

Type: ГСИ-П

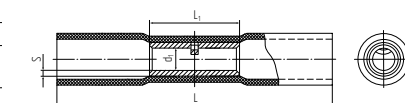


- Designed for parallel splicing of copper wires by crimping method
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Material of the connector: copper, grade M1
- Connector plating: electrolytic tinning
- Maximum voltage: 690 V
- Design features:
 - the connector is made of seamless copper tube
 - no locking cutting
 - chamfering at the edges of the connector facilitates the insertion of a wire
 - body material does not support combustion and can be used for «Hr» and «Hr-LS» wires
- Reduced size of connectors allow installation in conditions with limited space
- Advanced multi dimensional ranges for crimping
- Within the specified range it is possible to make connection of wires in a line with different cross-sections or to make the installation of a branch
- Crimping on top of the insulating case

Name	Color	Cross section (mm ²)	Current (A)	L (mm)	L1 (mm)	d1 (mm)	S (mm)	Packing (pcs.)	Tool
ГСИ-П 1.5	●	0.25–1.5	19	17	8	1.7	0.8	100/500	CTA/CTB/CTK-01 CTA/CTB/CTK-12 Tool-sets: CTF, CTB
ГСИ-П 2.5	●	1.0–2.5	27	17	8	2.3	0.8	100/500	
ГСИ-П 6.0	●	2.5–6.0	46	20	9	3.4	1.0	100/500	

Insulated butt connectors in heat shrinkable cuff

Type: ГСИ-Т



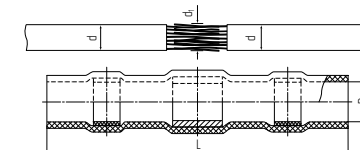
- Designed for splicing of copper wires by crimping method
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Material of the connector: copper, grade M1
- Connector plating: electrolytic tinning
- Maximum voltage: 690 V
- Design features:
 - the connector is made of seamless copper tube
 - stopping notch, which is located in the center of the sleeve, determines the depth of entry of the wires into the connector
 - chamfering at the edges of the connector facilitates the insertion of a wire
 - heat shrinkable tube with adhesive layer and shrinkage ratio 3:1 provides complete sealing and corrosion protection of the contact connection after shrinkage
- Translucent body allows you to control the depth of entry of wires
- Within the specified range it is possible to make connection of wires in a line with different cross-sections or to make the installation of a branch
- Crimping on top of the insulating cuff

Name	Color	Cross section (mm ²)	Current (A)	L (mm)	L1 (mm)	d1 (mm)	S (mm)	Packing (pcs.)	Tool
ГСИ-Т 1.5	●	0.5–1.5	19	36	15	1.7	0.8	100/500	CTA/CTK/CTB-10 Butane gas torch «KBT»
ГСИ-Т 2.5	●	1.5–2.5	27	36	15	2.3	0.8	100/500	
ГСИ-Т 6.0	●	4.0–6.0	46	41	15	3.4	1.0	100/500	

Heat shrinkable tube with adhesive layer and shrinkage ratio 3:1 provides complete sealing and corrosion protection of the contact connection

Soldering heat shrinkable connectors

Type: ПК-Т



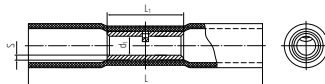
- Designed for butt soldering connection of copper multi-wires. Do not require the use of rosin for installation
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +125 °C
- Maximum voltage: 690 V
- Design features:
 - in the center of the connector there is a low temperature solder ring
 - by the edges of the connector, on the inner surface of the heat shrinkable tube integrated colored belts of hot melt adhesive, which provides complete tightness of the joint after shrinkage
- Transparent insulation provides visual control during installation
- Color belts of hot melt glue helps to identify sizes
- Installation method:
 - place the connector on one of the wires, moving it away from the pre-stripped ends of the cores
 - separate the individual conductors and connect the ends of the cores joint to joint so that the ends of the conductors fit into each other
 - squeeze the protruding conductors with your hands, forming a joint
 - slide the connector to the point of contact so that the solder band is located in the center of the connected stripped cores
 - using a butane gas torch or a high-temperature heating fan, heat the solder evenly on all sides until it melts
 - let the product cool down

Name	Color	Cross section (mm ²)	Current (A)	L (mm)	D (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tool
ПК-Т 0.34	○	0.25–0.34	7	25	1.9	1.1	0.8	20/500	Butane gas torch «KBT», High temperature heating fan TT-1800
ПК-Т 1.0	●	0.5–1.0	19	40	2.7	1.4	1.2	20/500	
ПК-Т 2.5	●	1.5–2.5	27	40	4.5	2.3	2.0	20/500	
ПК-Т 6.0	●	4.0–6.0	46	40	6.0	3.7	3.4	20/500	

Sets of insulated butt connectors in heat shrinkable cuff

Set ГСИ-T-100

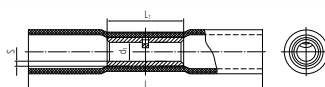
- Designed for splicing of copper wires by crimping method
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Material of the connector: copper, grade M1
- Connector plating: electrolytic tinning
- Maximum voltage: 690 V
- Design features:
 - the connector is made of seamless copper tube
 - stopping notch, which is located in the center of the sleeve, determines the depth of entry of the wires into the connector
 - chamfering at the edges of the connector facilitates the insertion of a wire
 - heat shrinkable tube with adhesive layer and shrinkage ratio 3:1 provides complete sealing and corrosion protection of the contact connection after shrinkage
- Translucent body allows you to control the depth of entry of wires
- The color of the heat shrinkable tubes allows you to accurately identify the size
- Within the specified range it is possible to make connection of wires in a line with different cross-sections or to make the installation of a branch
- Crimping on top of the insulating cuff



Set content	Sleeve color	Cross section (mm²)	Current (A)	L (mm)	L ₁ (mm)	d ₁ (mm)	S (mm)	Quantity (pcs.)
ГСИ-T 1.5	●	0.5–1.5	19	36	15	1.7	0.8	60
ГСИ-T 2.5	●	1.5–2.5	27	36	15	2.3	0.8	35
ГСИ-T 6.0	●	4.0–6.0	46	41	15	3.4	1.0	5
Plastic box		–	–	–	–	–	–	1
Total number of connectors		–	–	–	–	–	–	100

Set ГСИ-T-200

- Designed for splicing of copper wires by crimping method
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Material of the connector: copper, grade M1
- Connector plating: electrolytic tinning
- Maximum voltage: 690 V
- Design features:
 - the connector is made of seamless copper tube
 - stopping notch, which is located in the center of the sleeve, determines the depth of entry of the wires into the connector
 - chamfering at the edges of the connector facilitates the insertion of a wire
 - heat shrinkable tube with adhesive layer and shrinkage ratio 3:1 provides complete sealing and corrosion protection of the contact connection after shrinkage
- Translucent body allows you to control the depth of entry of wires
- The color of the heat shrinkable tubes allows you to accurately identify the size
- Within the specified range it is possible to make connection of wires in a line with different cross-sections or to make the installation of a branch
- Crimping on top of the insulating cuff

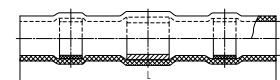


Set content	Sleeve color	Cross section (mm²)	Current (A)	L (mm)	L ₁ (mm)	d ₁ (mm)	S (mm)	Quantity (pcs.)
ГСИ-T 1.5	●	0.5–1.5	19	36	15	1.7	0.8	120
ГСИ-T 2.5	●	1.5–2.5	27	36	15	2.3	0.8	60
ГСИ-T 6.0	●	4.0–6.0	46	41	15	3.4	1.0	20
Plastic box		–	–	–	–	–	–	1
Total number of connectors		–	–	–	–	–	–	200

Sets of soldering heat shrinkable connectors

Set ПК-T-50

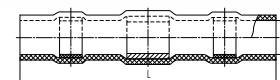
- Designed for butt soldering connection of copper multi-wires. Do not require the use of rosin for installation
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +125 °C
- Maximum voltage: 690 V
- Design features:
 - in the center of the connector there is a low temperature solder ring
 - by the edges of the connector, on the inner surface of the heat shrinkable tube integrated colored belts of hot melt adhesive, which provides complete tightness of the joint after shrinkage
- Installation method:
 - place the connector on one of the wires, moving it away from the pre-stripped ends of the cores
 - separate the individual conductors and connect the ends of the cores joint to joint so that the ends of the conductors fit into each other
 - squeeze the protruding conductors with your hands, forming a joint
 - slide the connector to the point of contact so that the solder band is located in the center of the connected stripped cores
 - using a butane gas torch or a high-temperature heating fan, heat the solder evenly on all sides until it melts
 - let the product cool down



Set content	Sleeve color	Cross section (mm²)	Current (A)	L (mm)	D (mm)	d (mm)	d ₁ (mm)	Quantity (pcs.)
ПК-T 0.34	○	0.25–0.34	7	25	1.9	1.1	0.8	10
ПК-T 1.0	●	0.5–1.0	19	40	2.7	1.4	1.2	23
ПК-T 2.5	●	1.5–2.5	27	40	4.5	2.3	2.0	12
ПК-T 6.0	●	4.0–6.0	46	40	6.0	3.7	3.4	5
Plastic box		–	–	–	–	–	–	1
Total number of connectors		–	–	–	–	–	–	50

Set ПК-T-100

- Designed for butt soldering connection of copper multi-wires. Do not require the use of rosin for installation
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +125 °C
- Maximum voltage: 690 V
- Design features:
 - in the center of the connector there is a low temperature solder ring
 - by the edges of the connector, on the inner surface of the heat shrinkable tube integrated colored belts of hot melt adhesive, which provides complete tightness of the joint after shrinkage
- Installation method:
 - place the connector on one of the wires, moving it away from the pre-stripped ends of the cores
 - separate the individual conductors and connect the ends of the cores joint to joint so that the ends of the conductors fit into each other
 - squeeze the protruding conductors with your hands, forming a joint
 - slide the connector to the point of contact so that the solder band is located in the center of the connected stripped cores
 - using a butane gas torch or a high-temperature heating fan, heat the solder evenly on all sides until it melts
 - let the product cool down



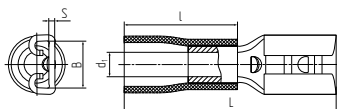
Set content	Sleeve color	Cross section (mm²)	Current (A)	L (mm)	D (mm)	d (mm)	d ₁ (mm)	Quantity (pcs.)
ПК-T 0.34	○	0.25–0.34	7	25	1.9	1.1	0.8	25
ПК-T 1.0	●	0.5–1.0	19	40	2.7	1.4	1.2	35
ПК-T 2.5	●	1.5–2.5	27	40	4.5	2.3	2.0	30
ПК-T 6.0	●	4.0–6.0	46	40	6.0	3.7	3.4	10
Plastic box		–	–	–	–	–	–	1
Total number of connectors		–	–	–	–	–	–	100

PVC insulated female disconnectors

Type: РПИ-М



- Designed for installation of quick-release connections of flexible stranded copper wires by crimping method
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: brass, grade L63
- Terminal plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has locking type fixator, which provides durable mechanical connection with the male connectors
- The size of the contact is determined by the «B» clamp width of the terminals РПИ-П
- Complementary to connectors РПИ-П and outputs of male type on the terminals of electrical devices
- Crimping of conductor on top of the insulating cuff



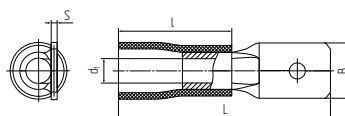
Name	Color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	I (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РПИ-М 1.5–(2.8)	●	0.5–1.5	10	2.8x0.8 mm	3.1	19.0	10	1.7	0.4	100/500	СТА-11 СТВ-11 СТК-11 Set «UNI» EC-65
РПИ-М 1.5–(4.8)	●	0.5–1.5	10	4.8x0.8 mm	5.1	19.0	10	1.7	0.4	100/500	
РПИ-М 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.6	21.0	10	1.7	0.4	100/500	
РПИ-М 2.5–(4.8)	●	1.5–2.5	15	4.8x0.8 mm	5.1	19.0	10	2.3	0.4	100/500	
РПИ-М 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.6	21.0	10	2.3	0.4	100/500	
РПИ-М 6.0–(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.6	23.3	13	3.4	0.4	100/500	

PVC insulated male disconnectors

Type: РПИ-П



- Designed for installation of quick-release connections of flexible stranded copper wires by crimping method
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: brass, grade L63
- Terminal plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has a hole for the locking type fixator, which provides durable mechanical connection with the female connectors
- The size of the contact is determined by the «B» clamp width of the terminals РПИ-П
- Complementary to connectors РПИ-М
- Crimping of conductor on top of the insulating cuff

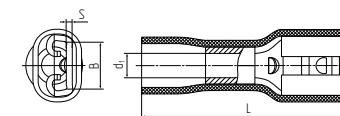


Name	Color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	I (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РПИ-П 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.3	20.2	10	1.7	0.8	100/500	СТА-11, СТВ-11 СТК-11 Set «UNI»
РПИ-П 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.3	20.4	10	2.3	0.8	100/500	
РПИ-П 6.0–(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.3	24.4	13	3.4	0.8	100/500	

PVC fully insulated flat female disconnectors

Type: РППИ-М

- Designed for the formation of quick-release connections of insulated stranded copper wires with terminal outputs of electrical equipment of male type or male type terminals
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: brass, grade L63
- Terminal plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - connectors integrated into a fully insulated casing, which provides mechanical protection and insulation of the plug connection
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has locking type fixator, which provides durable mechanical connection with the male connectors
- Crimping of conductor on top of the insulating cuff

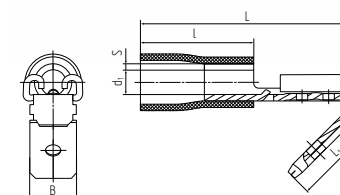


Name	Color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РППИ-М 1.5–(2.8)	●	0.5–1.5	10	2.8x0.8 mm	3.1	19.0	1.7	0.4	100/500	СТА-11 СТВ-11 СТК-11 Set «UNI» EC-65
РППИ-М 1.5–(4.8)	●	0.5–1.5	10	4.8x0.8 mm	5.1	20.5	1.7	0.4	100/500	
РППИ-М 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.6	21.8	1.7	0.4	100/500	
РППИ-М 2.5–(4.8)	●	1.5–2.5	15	4.8x0.8 mm	5.1	20.2	2.3	0.4	100/500	
РППИ-М 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.6	22.2	2.3	0.4	100/500	
РППИ-М 6.0–(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.6	24.2	3.4	0.4	100/500	

PVC insulated branch disconnectors

Type: РПИ-О

- Designed for generating quick connections of stranded copper wires with an additional branch
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - two in one: «female» socket and «male» plug in one terminal
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - terminals have a constructive locking type fixators for high strength mechanical connection of the connectors «male-female»
- The size of the contact is determined by the «B» clamp width of the terminals РПИ-П
- Complementary to connectors РПИ-П and РПИ-М and outputs of male type on the terminals of electrical devices
- Crimping of conductor on top of the insulating cuff



Name	Color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	L ₁ (mm)	I (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РПИ-О 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.3	21.5	7.7	10	1.7	0.4	100/500	СТА/ СТВ/СТК-11 Set «UNI»
РПИ-О 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.3	21.5	7.7	10	2.3	0.4	100/500	

Design of vibration-resistant connectors and terminals

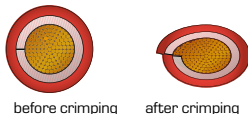


- The basic design of an insulated terminal or connector consists of two main components: a metal connector made of electrical copper or brass and a plastic cuff. However, just a few years after the invention of insulated terminals, a third important element was added to the design – an additional copper sleeve located between the terminal shank and the plastic cuff. The length of the copper sleeve that follows the insulation contour is only slightly shorter than the plastic cuff.
- During crimping with two-contour dies, the terminal shank is pressed on the conductor core, and the copper sleeve and plastic cuff are crimped along the wire insulation. Thus, no matter how long and how firmly the plastic cuff will hold its shape after crimping, the crimped copper sleeve will securely fix the wire insulation, giving the connector vibration resistance.
- The copper sleeve is molded with the «Easy Entry» design and has a bell-shaped extension to facilitate the insertion of a multi-wire copper core.

Connector without an additional copper sleeve
Central position of the seam in the dies



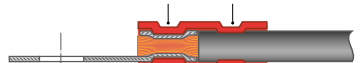
Connector without an additional copper sleeve
Offset position of the seam in the dies



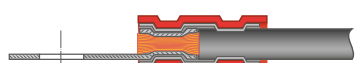
Connector with an additional copper sleeve
Offset position of the seam in the dies



crimping by core crimping by insulation



Double crimping of the standard connector



Double crimping of the vibration-resistant connector

- When crimping connectors that do not have an additional copper sleeve, the correct orientation of the connector in the tool dies has particular importance. If the connecting seam of the pipe part of the connector is not located in the center and is displaced relative to the flatness of the dies closing, the seam may separate during crimping. One-piece and seamless copper sleeve prevents divergence of the technical seam and increases the mechanical strength of the connection with wire almost by 30%, in comparison with similar connectors without an additional sleeve.
- The presence of an anti-vibration copper sleeve is especially important for disconnectors (split connectors) made of sheet brass. Since the thickness of brass connectors is two times less than ring, fork, and pin type terminals made of copper, the mechanical strength of crimped connectors is lower. Therefore, the reinforced three-component design of brass insulated connectors quickly gained popularity and became the standard for European manufacturers.
- All terminals and connectors with an additional copper sleeve are crimped with a two-contour die МПК-01 (KBT).

- Connectors with an additional copper sleeve most widely used for installing electrical contact connections on rolling stock: in shipbuilding, aircraft construction, car building, as well as any structures and mechanisms which had to withstand vibration loads.

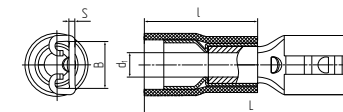
The use of an additional copper sleeve significantly increases the breaking force and improves the electrical contact.

Connectors with an additional copper sleeve correspond to NASA standard for use in the aircraft and space industries.

PVC flat vibration proof female disconnectors

Type: ВРПИ-М

- Designed for the formation of quick-release connections of stranded conductors on rolling stocks and in vibration areas
- Insulation material: self-extinguishing PVC. Class V-0 according to UL94
- Temperature resistance of insulation: +75 °C
- Additional copper sleeve material: copper, grade M1
- Connector material: brass, grade L63
- Sleeve and connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - additional copper sleeve increases the mechanical strength of the connection with the wire up to 25-30% and makes the connection vibration-resistant
 - «Easy Entry»: copper sleeve forms a cone-shaped entrance for the fast establishment of stranded copper wires into a terminal
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal have a constructive locking type fixators for high strength mechanical connection with male connectors
- While using two-contour dies МПК-01 «KBT», copper sleeve crimps along the wire insulation, forming an additional point of fixing of the wire and providing a vibration-resistant connection
- In accordance with European standards, the connectors used on rolling stock should be equipped with an additional copper sleeve, which provides vibration resistance connection

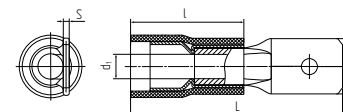


Name	PVC cuff color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	l (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
ВРПИ-М 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.6	21.0	10	1.7	0.4	100/500	CTA/ CTB/CTK-11 Set «UNI»
ВРПИ-М 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.6	21.0	10	2.3	0.4	100/500	
ВРПИ-М 6.0–(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.6	23.3	13	3.4	0.4	100/500	

PVC flat vibration proof male disconnectors

Type: ВРПИ-П

- Designed for the formation of quick-release connections of stranded conductors on rolling stocks and in vibration areas
- Insulation material: self-extinguishing PVC. Class V-0 according to UL94
- Temperature resistance of insulation: +75 °C
- Additional copper sleeve material: copper, grade M1
- Connector material: brass, grade L63
- Sleeve and connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - additional copper sleeve increases the mechanical strength of the connection with the wire up to 25-30% and makes the connection vibration-resistant
 - «Easy Entry»: copper sleeve forms a cone-shaped entrance for the fast establishment of stranded copper wires into a terminal
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal have a constructive locking type fixators for high strength mechanical connection with female connectors
- While using two-contour dies МПК-01 «KBT», copper sleeve crimps along the wire insulation, forming an additional point of fixing of the wire and providing a vibration-resistant connection
- In accordance with European standards, the connectors used on rolling stock should be equipped with an additional copper sleeve, which provides vibration resistance connection

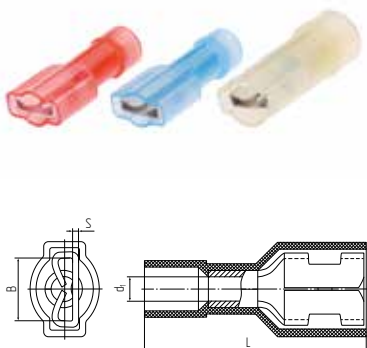


Name	PVC cuff color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	l (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
ВРПИ-П 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.3	20.2	10	1.7	0.8	100/500	CTA/ CTB/CTK-11 Set «UNI»
ВРПИ-П 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.3	20.4	10	2.3	0.8	100/500	
ВРПИ-П 6.0–(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.3	24.4	13	3.4	0.8	100/500	

Nylon fully insulated flat female disconnectors

Type: РПИ-М(н)

- Designed for generating fully insulated quick-disconnecting connections of stranded copper wires
- When pairing connectors «male-female» around the contact connection is formed double loop type insulation
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - Full insulation design
 - «Easy Entry» type: one-piece nylon casing has a conical narrowing, which provides easy entry of stranded copper conductors
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has a hole for the locking type fixator, which provides high strength mechanical connection with male connectors
- Complementary to connectors РПИ-П and outputs of male type on the terminals of electrical devices
- Crimping of conductor on top of the insulating cuff

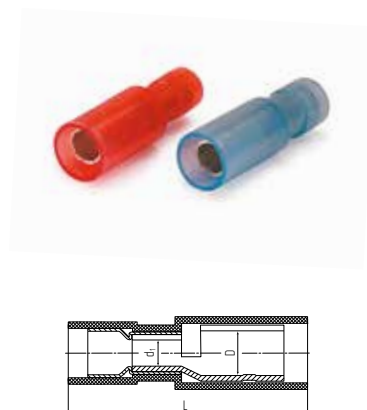


Name	Nylon cuff color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РПИ-М(н) 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.6	21.8	1.7	0.4	100/500	CTB-01 Tool set CTB
РПИ-М(н) 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.6	21.8	2.3	0.4	100/500	
РПИ-М(н) 6.0–(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.6	23.4	3.4	0.4	100/500	

Nylon vibration proof bullet type female disconnectors

Type: ВРПИ-М(н)

- Designed for the formation of insulated bullet type quick connections of stranded copper wires
- When pairing connectors «male-female» around the contact connection is formed a double loop type insulation
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - additional copper sleeve increases the mechanical strength of the connection with the wire for 25–30% and making the connection vibration-resistant
 - «Easy Entry» type: copper sleeve forms a cone-shaped entrance for the fast establishment into a terminal of stranded copper wires
 - special locking mechanism ensures good mechanical strength of the «female-male» connection
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
- Due to the bullet shaped male connector, installation with matching female connector does not require precise mutual positioning of the connectors and takes minimal time
- Complementary to matching connectors ВРПИ-П(н)
- Crimping of conductor on top of the insulating cuff

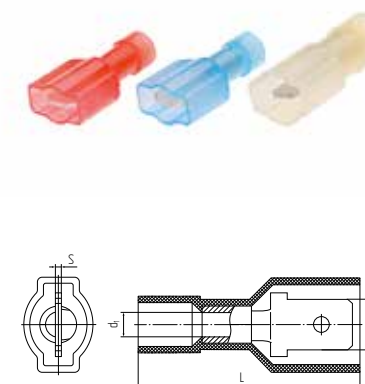


Name	Nylon cuff color	Cross section (mm²)	Current (A)	D (mm)	L (mm)	d ₁ (mm)	Packing (pcs.)	Tool
ВРПИ-М(н) 1.5–4	●	0.5–1.5	10	3.9	23	1.7	100/500	CTB-01, CTK-01 Tool sets: CTF, CTB
ВРПИ-М(н) 2.5–4	●	1.5–2.5	15	3.9	23	2.3	100/500	

Nylon fully insulated flat male disconnectors

Type: РПИ-П(н)

- Designed for generating fully insulated quick-disconnecting connections of stranded copper wires
- When pairing connectors «male-female» around the contact connection is formed double loop type insulation
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - Full insulation design
 - «Easy Entry» type: one-piece nylon casing has a conical narrowing, which provides easy entry of stranded copper conductors
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has a hole for the locking type fixator, which provides high strength mechanical connection with female connectors
- РПИ-П(н) disconnectors can be used to perform a branch using T-shape insulated branch connectors in nylon case DB-T
- Crimping of conductor on top of the insulating cuff

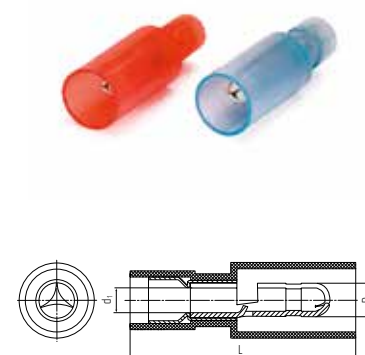


Name	Nylon cuff color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РПИ-П(н) 1.5–(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.3	23.2	1.7	0.8	100/500	CTB-01 Tool set CTB
РПИ-П(н) 2.5–(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.3	23.2	2.3	0.8	100/500	
РПИ-П(н) 6.0–(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.3	25.8	3.4	0.8	100/500	

Nylon vibration proof bullet type male disconnectors

Type: ВРПИ-П(н)

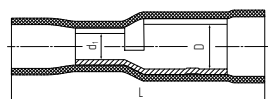
- Designed for the formation of insulated bullet type quick connections of stranded copper wires
- When pairing connectors «male-female» around the contact connection is formed a double loop type insulation
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - additional copper sleeve increases the mechanical strength of the connection with the wire for 25–30% and making the connection vibration-resistant
 - «Easy Entry» type: copper sleeve forms a cone-shaped entrance for the fast establishment into a terminal of stranded copper wires
 - special locking mechanism ensures good mechanical strength of the «female-male» connection
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
- Due to the bullet shaped male connector, installation with matching female connector does not require precise mutual positioning of the connectors and takes minimal time
- Complementary to matching connectors ВРПИ-М(н)
- Crimping of conductor on top of the insulating cuff



Name	Nylon cuff color	Cross section (mm²)	Current (A)	D (mm)	L (mm)	d ₁ (mm)	Packing (pcs.)	Tool
ВРПИ-П(н) 1.5–4	●	0.5–1.5	10	4.0	26	1.7	100/500	CTB-01, CTK-01 Tool sets: CTF, CTB
ВРПИ-П(н) 2.5–4	●	1.5–2.5	15	4.0	26	2.3	100/500	

PVC fully insulated bullet type female disconnectors

Type: РШИ-М

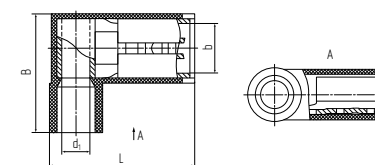


- Designed for the formation of insulated bullet type quick connections of stranded copper wires
- When pairing nylon connectors «male-female» around the contact connection is formed double loop type insulation
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - Connection of bullet type male connectors «female-male» forms a fully isolated circuit
 - special locking mechanism ensures good mechanical strength of the «female-male» connection
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
- Due to the bullet shaped male connector, installation with matching female connector does not require precise mutual positioning of the connectors and takes minimal time
- Complementary to matching connectors РШИ-П
- Crimping of conductor on top of the insulating cuff

Name	PVC cuff color	Cross section (mm²)	Current (A)	D (mm)	L (mm)	d ₁ (mm)	Packing (pcs.)	Tool
РШИ-М 1.5-4	●	0.5-1.5	10	3.9	24.6	1.7	100/500	CTA-11, CTB-11, CTK-11
РШИ-М 2.5-4	●	1.5-2.5	15	3.9	24.7	2.3	100/500	Set «UNI»

Nylon insulated female flag type disconnectors

Type: РФИ-М(н)

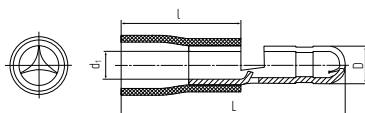


- Designed for the formation of quick release insulated stranded copper wires connections with terminal outputs of electrical equipment of male type
- Insulation material: self-extinguishing nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - Full insulation design
 - «Easy Entry» type: one-piece nylon housing has a conical narrowing, which provides easy entry of stranded copper conductors
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
- Nylon casing provides full insulation and mechanical protection of the plug connection
- Connectors are made with a turn of 90° relative to the line of wiring and can be used for mounting in confined spaces
- Complementary to outputs of male type, on the terminals of electrical devices
- Crimping of conductor on top of the insulating cuff

Name	Nylon cuff color	Cross section (mm²)	Current (A)	Contact size	b (mm)	L (mm)	d ₁ (mm)	B (mm)	Packing (pcs.)	Tool
РФИ-М(н) 1.5-(6.3)	●	0.5-1.5	10	6.3x0.8 mm	6.6	16.5	1.5	15	100/500	CTB-09
РФИ-М(н) 2.5-(6.3)	●	1.5-2.5	15	6.3x0.8 mm	6.6	17.3	2.3	15	100/500	CTK-09

PVC fully insulated bullet type male disconnectors

Type: РШИ-П

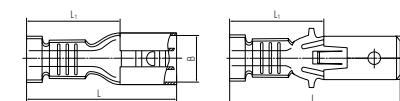


- Designed for the formation of insulated bullet type quick connections of stranded copper wires
- When pairing nylon connectors «male-female» around the contact connection is formed double loop type insulation
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - connection of bullet type male connectors «female-male» forms a fully isolated circuit
 - special locking mechanism ensures good mechanical strength of the «female-male» connection
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
- Due to the bullet shaped male connector, installation with matching female connector does not require precise mutual positioning of the connectors and takes minimal time
- Complementary to matching connectors РШИ-М
- Crimping of conductor on top of the insulating cuff

Name	PVC cuff color	Cross section (mm²)	Current (A)	D (mm)	L (mm)	l (mm)	d ₁ (mm)	Packing (pcs.)	Tool
РШИ-П 1.5-4	●	0.5-1.5	10	4.0	21.5	10.2	1.7	100/500	CTA-11, CTB-11, CTK-11
РШИ-П 2.5-4	●	1.5-2.5	15	4.0	21.0	10.6	2.3	100/500	Set «UNI»

Flat disconnectors for double crimping on the conductor and insulation

Type: РП-М / РП-П



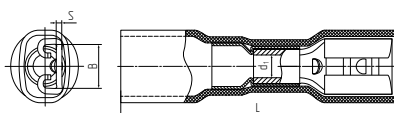
- Designed for forming vibration-resistant quick connections and termination of stranded flexible copper wires
- Recommended for use in vibration and high temperature areas
- Connector material: brass, grade L63
- Connector covering: no covering
- Temperature range: -55 °C to +135 °C
- Maximum voltage: 400 V
- Transverse notches in the place of contact rounding for the cable core – increase the mechanical strength of the connection
- Dual crimping by the conductor and the insulation provides a special mechanical strength and vibration resistance of connections
- The design of the terminals provides locking type fixators, which snaps-on while pairing of the female-male connectors
- The size of the contact is determined by «B» width of connector РП-П
- For crimping should be used dual dies – МПК-04 «КВТ» and МПК-14 «КВТ»
- Tools for crimping:
 - crimping pliers CTB-04; CTA-04; CTK-04
 - crimping pliers CTB-14; CTA-14; CTK-14
 - tool sets CTF; CTB

Name	Connector type	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	L ₁ (mm)	Packing (pcs.)	Tool
РП-М 2.5-(6.3)	«female»	0.75-2.5	15	6.3x0.8 mm	6.6	17.7	7.1	100/500	CTB/CTA/CTK-04
РП-П 2.5-(6.3)	«male»	0.75-2.5	15	6.3x0.8 mm	6.3	20.0	8.2	100/500	CTB/CTA/CTK-14

Female disconnectors with heat shrinkable sleeve

Type: РППИ-М-Т

- Designed for generating fully insulated quick-disconnecting connections of stranded copper wires
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - Full insulation design
 - additional copper sleeve increases the mechanical strength of the connection with the wire for 25–30% and making the connection vibration-resistant
 - «Easy Entry» type: copper sleeve forms a cone-shaped entrance for the fast establishment into a terminal of stranded copper wires
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has a hole for the locking type fixator, which provides high strength mechanical connection with male connectors
 - heat shrinkable tube with adhesive layer provides complete sealing and corrosion protection of the contact connection after shrinkage
- The size of the contact is determined by «B» width of connector РПИ-П-Т
- Crimping of conductor on top of the insulating cuff

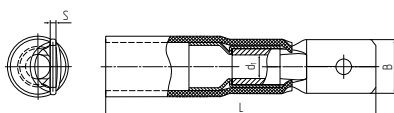


Name	HS cuff color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РППИ-М-Т 1.5-(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.6	28	1.7	0.4	100/500	CTB/CTA/CTK-10
РППИ-М-Т 2.5-(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.6	28	2.3	0.4	100/500	Butane gas torch
РППИ-М-Т 6.0-(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.6	28	3.4	0.4	100/500	«KBT»

Male disconnectors with heat shrinkable sleeve

Type: РПИ-П-Т

- Designed for generating fully insulated quick-disconnecting connections of stranded copper wires
- Insulation material: cross-linked polyethylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - additional copper sleeve increases the mechanical strength of the connection with the wire for 25–30% and making the connection vibration-resistant
 - «Easy Entry» type: copper sleeve forms a cone-shaped entrance for the fast establishment into a terminal of stranded copper wires
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has a hole for the locking type fixator, which provides high strength mechanical connection with female connectors
 - heat shrinkable tube with adhesive layer provides complete sealing and corrosion protection of the contact connection after shrinkage
- The size of the contact is determined by «B» width of connector РПИ-П-Т
- Crimping of conductor on top of the insulating cuff

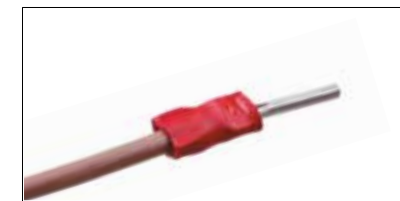


Name	HS cuff color	Cross section (mm²)	Current (A)	Contact size	B (mm)	L (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tool
РПИ-П-Т 1.5-(6.3)	●	0.5–1.5	10	6.3x0.8 mm	6.3	35	1.7	0.8	100/500	CTB/CTA/CTK-10
РПИ-П-Т 2.5-(6.3)	●	1.5–2.5	15	6.3x0.8 mm	6.3	35	2.3	0.8	100/500	Butane gas torch
РПИ-П-Т 6.0-(6.3)	●	4.0–6.0	24	6.3x0.8 mm	6.3	35	3.4	0.8	100/500	«KBT»

Features and advantages of «KBT» insulated terminals and connectors

- «KBT» factory offers not a separate product, but a complete system solution:
 - insulated terminals, connectors and disconnectors
 - professional crimping tools
 - high-precision crimping dies
- «KBT» terminals and connectors cover the extended ranges of wire cross sections:
 - red cuff (0.2–1.5 mm²) – 6 sections
 - blue cuff (1.0–2.5 mm²) – 3 sections
 - yellow cuff (2.5–6.0 mm²) – 3 sections
- Design of all «KBT» insulated terminals provides «Easy Entry» construction – a smooth cone-shaped narrowing for easy insertion of copper multi-wire core into the terminal
- Except PVC insulated terminals, «KBT» assortment includes halogen-free terminals made of nylon and cross-linked polyethylene. Among the innovative solutions are «KBT» vibration-resistant terminals and connectors with an additional copper sleeve and terminals with a welded technological seam.
- A variety of geometric shapes, types and sizes of «KBT» insulated connectors provides an optimal choice for professional installation of modern electrical equipment and devices.
- For the production of «KBT» insulated terminals is used refined electrical copper of the highest grade 99.95%
- The dimensions, including the thickness of all «KBT» terminals and connectors are standardized, which excludes reducing material volume of the product in order to save on cost.
- For reliable anti-corrosion protection, only high-quality tin-bismuth tinning with a thickness of 5 microns is used on «KBT» terminals and connectors. In contrast to the shiny surface of the budget tinned tin, the coating with bismuth alloying additives has distinctive matte surface.
- «KBT» ratchet crimping pliers guarantee complete crimping cycle and provide repeatable, operator-independent good quality connections. Electric and pneumatic operated crimping machines complement the professional tools for mass production.
- Most insulated terminals, connectors and disconnectors are crimped by two unified «KBT» dies МПК-01 and МПК-11 with three crimping profiles. Dies profiles have individual digital marking and leave digital code imprints on the plastic cuff after crimping:
 - «1» – on the red cuffs
 - «2» – on the blue cuffs
 - «6» – on the yellow cuffs

The presence of a digital code on the crimped terminals and connectors makes it easier to accept and verify the correctness of the installation work performed.



Insulated terminals and connectors mini pack



PVC insulated terminals – mini pack

- Designed for termination by crimping stranded flexible copper wires and subsequent mounting to the terminals of electric equipment on the basis of screw fixation
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: copper, grade M1
- Terminal plating: electrolytic tinning
- Design features:
 - «Easy Entry» implementation: vinyl cuff formed in the shape of a funnel to facilitate the installation of stranded copper wires
 - not welded butt connection on pipe contact part of the terminals requires attention to the correct positioning of the terminals during crimping
 - transverse notches provided on the inner surface of the tubular part of terminals to increase the mechanical strength of the connection with core
- Retail mini-packaging in blister

Name	Insulation cuff color	Insulation material	Cross section (mm²)	Voltage (V)	Current (A)	Packing (pcs.)	Tool
HKI 1.5-4 (30 шт.)	red	PVC	0.25-1.5	690	19	30	CTA-O1 CTB-O1 CTK-O1
HKI 1.5-5 (30 шт.)	red	PVC	0.25-1.5	690	19	30	
HKI 1.5-6 (30 шт.)	red	PVC	0.25-1.5	690	19	30	
HKI 2.5-4 (30 шт.)	blue	PVC	1.0-2.5	690	27	30	
HKI 2.5-5 (30 шт.)	blue	PVC	1.0-2.5	690	27	30	
HKI 2.5-6 (30 шт.)	blue	PVC	1.0-2.5	690	27	30	
HKI 6.0-6 (20 шт.)	yellow	PVC	2.5-6.0	690	46	20	
HKI 6.0-8 (15 шт.)	yellow	PVC	2.5-6.0	690	46	15	
HKI 6.0-10 (10 шт.)	yellow	PVC	2.5-6.0	690	46	10	
НВИ 1.5-4 (30 шт.)	red	PVC	0.25-1.5	690	19	30	CTA-12 CTB-12 CTK-12
НВИ 2.5-4 (30 шт.)	blue	PVC	1.0-2.5	690	27	30	
НВИ 6.0-4 (20 шт.)	yellow	PVC	2.5-6.0	690	46	20	
НШКИ 1.5-12 (30 шт.)	red	PVC	0.25-1.5	690	19	30	Sets: CTD, CTE, CTF, CTB, CTM, CTN EC-65
НШКИ 2.5-12 (30 шт.)	blue	PVC	1.0-2.5	690	27	30	
НШКИ 6.0-13 (20 шт.)	yellow	PVC	2.5-6.0	690	46	20	



PVC insulated butt connectors – mini pack

- Designed for splicing of copper wires by crimping method
- Insulation material:
 - Connectors ГСИ - self-extinguishing PVC. Class V-O according to UL94
 - Connectors ГСИ-T and ПК-T – heat shrinkable tube with a 3:1 ratio
- Temperature resistance of insulation:
 - Connectors ГСИ +75 °C
 - Connectors ГСИ-T and ПК-T +105 °C
- Material of the connector: copper, grade M1
- Connector plating: electrolytic tinning
- Maximum voltage: 690 V
- Design features:
 - The connector is made of seamless copper tube
 - The lock cutting, which is located in the center of the sleeve, determines the depth of entry of the wires into the connector

Name	Insulation cuff color	Insulation material	Cross section (mm²)	Voltage (V)	Current (A)	Packing (pcs.)	Tool
ГСИ 1.5 (30 шт.)	red	PVC	0.25-1.5	690	19	30	CTA/CTB/CTK-O1 Tool sets: CTF, CTB
ГСИ 2.5 (20 шт.)	blue		1.0-2.5	690	27	20	
ГСИ 6.0 (15 шт.)	yellow		2.5-6.0	690	46	15	
ГСИ-T 1.5 (20 шт.)	red	heat shrinkable tube	0.25-1.5	690	19	20	CTA/CTB/CTK-10 Butane gas torch «KBT»
ГСИ-T 2.5 (20 шт.)	blue		1.0-2.5	690	27	20	
ГСИ-T 6.0 (10 шт.)	yellow		2.5-6.0	690	46	10	
ПК-T 1.5 (10 шт.)	red	heat shrinkable tube	0.5-1.0	690	19	10	Butane gas torch «KBT» High temperature heating fan TT-1800
ПК-T 2.5 (10 шт.)	blue		1.5-2.5	690	27	10	
ПК-T 6.0 (10 шт.)	yellow		4.0-6.0	690	46	10	

Insulated disconnectors- mini set

PVC insulated male disconnectors – mini pack

- Designed for installation of quick-release connections of flexible stranded copper wires by crimping method
- Insulation material: self-extinguishing PVC. Class V-O according to UL94
- Temperature resistance of insulation: +75 °C
- Terminal material: brass, grade L63
- Terminal plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores
 - each terminal has a hole for the locking type fixator, which provides durable mechanical connection with the female connectors
- Retail mini-packaging in blister



Name	Insulation cuff color	Insulation material	Cross section (mm²)	Contact size (mm)	Current (A)	Packing (pcs.)	Tool
РПИ-П 1.5-(6.3) (30 шт.)	red	PVC	0.5-1.5	6.3x0.8	10	30	CTA/CTB/CTK-11 Set «UNI» EC-65
РПИ-П 2.5-(6.3) (30 шт.)	blue	PVC	1.5-2.5	6.3x0.8	15	30	
РПИ-П 6.0-(6.3) (20 шт.)	yellow	PVC	4.0-6.0	6.3x0.8	24	20	
РПИ-М 1.5-(6.3) (30 шт.)	red	PVC	0.5-1.5	6.3x0.8	10	30	
РПИ-М 2.5-(6.3) (30 шт.)	blue	PVC	1.5-2.5	6.3x0.8	15	30	
РПИ-М 6.0-(6.3) (20 шт.)	yellow	PVC	4.0-6.0	6.3x0.8	24	20	
РПИ-М 1.5-(6.3) (20 шт.)	red	PVC	0.5-1.5	6.3x0.8	10	20	
РПИ-М 2.5-(6.3) (20 шт.)	blue	PVC	1.5-2.5	6.3x0.8	15	20	
РПИ-М 6.0-(6.3) (10 шт.)	yellow	PVC	4.0-6.0	6.3x0.8	24	10	
РПИ-О 1.5-(6.3) (20 шт.)	red	PVC	0.5-1.5	6.3x0.8	10	20	
РПИ-О 2.5-(6.3) (20 шт.)	blue	PVC	1.5-2.5	6.3x0.8	15	20	
РШИ-П 1.5-4 (20 шт.)	red	PVC	0.5-1.5	4.0x0.4	10	20	
РШИ-П 2.5-4 (20 шт.)	blue	PVC	1.5-2.5	4.0x0.4	15	20	
РШИ-М 1.5-4 (20 шт.)	red	PVC	0.5-1.5	4.0x0.4	10	20	
РШИ-М 2.5-4 (20 шт.)	blue	PVC	1.5-2.5	4.0x0.4	15	20	

Nylon vibration proof bullet type male connectors-mini pack

- Designed for generating fully insulated quick-disconnecting connections of stranded copper wires
- When pairing connectors «male-female» around the contact connection is formed double loop type insulation
- Material of insulation case: self-extinguishing nylon. Halogen-free
- Material of heat shrinkable cuff: cross-linked polyethylene
- Temperature resistance of insulation: +105 °C
- Connector material: brass, grade L63
- Connector plating: electrolytic tinning
- Maximum voltage: 400 V
- Design features:
 - Full insulation design
 - «Easy Entry» type: one-piece nylon housing has a conical narrowing, which provides easy entry of stranded copper conductors
 - special locking mechanism ensures good mechanical strength of the «female-male» connection
 - transverse notches on the inner surface of the tubular part of the terminal enhance the mechanical strength of the connection with cores



Name	Insulation cuff color	Insulation material	Cross section (mm²)	Contact size (mm)	Current (A)	Packing (pcs.)	Tool
РПИ-П(н) 1.5-(6.3) (15 шт.)	red	nylon	0.5-1.5	6.3x0.8	10	15	CTA/CTB/CTK-O1 CTA/CTB/CTK-12
РПИ-П(н) 2.5-(6.3) (15 шт.)	blue	nylon	1.5-2.5	6.3x0.8	15	15	
РПИ-М(н) 1.5-(6.3) (20 шт.)	red	nylon	0.5-1.5	6.3x0.8	10	20	
РПИ-М(н) 2.5-(6.3) (20 шт.)	blue	nylon	1.5-2.5	6.3x0.8	15	20	Tools sets: CTD, CTE, CTF, CTB, CTM, CTN EC-65
ВРШИ-П(н) 1.5-4 (15 шт.)	red	nylon	0.5-1.5	4.0x0.4	10	15	
ВРШИ-П(н) 2.5-4 (15 шт.)	blue	nylon	1.5-2.5	4.0x0.4	15	15	
ВРШИ-М(н) 1.5-4 (20 шт.)	red	nylon	0.5-1.5	4.0x0.4	10	20	
ВРШИ-М(н) 2.5-4 (20 шт.)	blue	nylon	1.5-2.5	4.0x0.4	15	20	

Insulated terminals sets in plastic case

Insulated terminals, disconnectors and connectors sets in plastic case, П series



Set П-290

№	П-290 Set content	Cuff color	Cuff type	Quantity (pcs.)
1	Terminal НКИ 1.5-4	●	PVC	25
2	Terminal НКИ 1.5-5	●	PVC	25
3	Terminal НКИ 1.5-6	●	PVC	25
4	Terminal НКИ 2.5-4	●	PVC	25
5	Terminal НКИ 2.5-5	●	PVC	25
6	Terminal НКИ 2.5-6	●	PVC	25
7	Terminal НКИ 6.0-5	●	PVC	10
8	Terminal НКИ 6.0-6	●	PVC	10
9	Terminal НКИ 6.0-8	●	PVC	10
10	Terminal НШКИ 1.5-12	●	PVC	25
11	Terminal НШКИ 2.5-12	●	PVC	25
12	Terminal НШКИ 6.0-13	●	PVC	10
13	Butt connector ГСИ 1.5	●	PVC	20
14	Butt connector ГСИ 2.5	●	PVC	20
15	Butt connector ГСИ 6.0	●	PVC	10
16	Plastic case	—	—	1
Total (pieces in a set):				290

- Sets contain the most popular sizes of insulated terminals, disconnectors, and butt connectors
- Insulation material: self-extinguishing PVC
- Grade: V-0 according to UL94
- Insulation temperature resistance: +75°C
- Terminals and connectors material: copper grade M1
- Disconnectors material: brass L63
- Surface: electrolytic tinning
- Maximum voltage:
 - ring, pin terminals and butt connectors – 690 V
 - flat and pin disconnectors – 400 V
- Set is packed in a durable plastic case with 15 compartments
- Set is equipped with three locks
- Case dimensions: 230x120x37mm



Set П-280

№	П-280 Set content	Cuff color	Cuff type	Quantity (pcs.)
1	Disconnector РПИ-П 1.5-(6.3)	●	PVC	25
2	Disconnector РПИ-П 2.5-(6.3)	●	PVC	25
3	Disconnector РПИ-П 6.0-(6.3)	●	PVC	10
4	Disconnector РПИ-М 1.5-(6.3)	●	PVC	25
5	Disconnector РПИ-М 2.5-(6.3)	●	PVC	25
6	Disconnector РПИ-М 6.0-(6.3)	●	PVC	10
7	Disconnector РПИ-М 1.5-(6.3)	●	PVC	15
8	Disconnector РПИ-М 2.5-(6.3)	●	PVC	15
9	Connector РШИ-П 1.5-4	●	PVC	20
10	Connector РШИ-П 2.5-4	●	PVC	20
11	Connector РШИ-М 1.5-4	●	PVC	20
12	Connector РШИ-М 2.5-4	●	PVC	20
13	Butt connector ГСИ 1.5	●	PVC	20
14	Butt connector ГСИ 2.5	●	PVC	20
15	Butt connector ГСИ 6.0	●	PVC	10
16	Plastic case	—	—	1
Total (pieces in a set):				280

Insulated terminals sets in metal cases

Insulated terminals and connectors sets in metal case, M-950 Series

№	M-950-0 Set content	Cuff color	Cuff type	M-950-0 Set	Quantity (pcs.)
1	НКИ 1.5-4	●	PVC	●	100
2	НКИ 1.5-6	●	PVC	●	100
3	НКИ 2.5-4	●	PVC	●	100
4	НКИ 2.5-6	●	PVC	●	100
5	НКИ 6.0-6	●	PVC	●	50
6	НКИ 6.0-8	●	PVC	●	50
7	НШКИ 1.5-12	●	PVC	●	100
8	НШКИ 2.5-12	●	PVC	●	100
9	НШКИ 6.0-13	●	PVC	●	50
10	ГСИ 1.5	●	PVC	●	100
11	ГСИ 2.5	●	PVC	●	50
12	ГСИ 6.0	●	PVC	●	50
13	Crimping plier CTK-01	—	—	—	—
14	Stripper WS-07	—	—	—	—
15	Metal case	—	—	●	1
Total (pieces in a set):				950	—



Set M-950-0

- Sets contain the most popular sizes of insulated terminals НКИ, НШКИ and butt connectors ГСИ with the ability of completing by the crimping tool for terminals and stripper for removing insulation
- Insulation material: self-extinguishing PVC
- Grade: V-0 according to UL94
- Insulation temperature resistance: +75°C
- Terminals material: copper grade M1
- Surface: electrolytic tinning
- Maximum voltage: 690V
- Set is packed in a strong and durable metal case with 12 compartments for terminals and a large tool storage compartment
- Case is equipped with a lock and a handle for carrying
- Case dimensions: 328x220x42 mm

№	M-950-1/2 Set content	Cuff color	M-950-1 Set	M-950-2 Set	Quantity (pcs.)
1	НКИ 1.5-4	●	●	●	100
2	НКИ 1.5-6	●	●	●	100
3	НКИ 2.5-4	●	●	●	100
4	НКИ 2.5-6	●	●	●	100
5	НКИ 6.0-6	●	●	●	50
6	НКИ 6.0-8	●	●	●	50
7	НШКИ 1.5-12	●	●	●	100
8	НШКИ 2.5-12	●	●	●	100
9	НШКИ 6.0-13	●	●	●	50
10	ГСИ 1.5	●	●	●	100
11	ГСИ 2.5	●	●	●	50
12	ГСИ 6.0	●	●	●	50
13	Crimping plier CTK-01	—	●	●	1
14	Stripper WS-07	—	—	●	1
15	Metal case	—	●	●	1
Total (pieces in a set):				951	952



Set M-950-2

Crimping tools for terminals and end sleeves



CTA (KBT)

crimping
pliers



CTB (KBT)

crimping
pliers



CTK (KBT)

crimping
pliers



CTF set (KBT)

crimping pliers
with a set of dies



CTM set (KBT)

mini pliers with Teflon coating
and a set of dies



CTN set (KBT)

set of a crimper with dies
for work with terminals



CTB set (KBT)

crimping pliers
with a set of dies



CTK+4 set (KBT)

crimping pliers in a fabric bag
with a set of 4 dies



CTK+8 set (KBT)

crimping pliers in a fabric bag
with a set of 8 dies



CTB+4 set (KBT)

crimper in a fabric bag
with a set of 4 KBT dies



CTB+8 set (KBT)

crimper in a fabric bag
with a set of 8 KBT dies



HNY-O1/HNY-O2 (KBT)

multi-functional dielectric shears,
«Profi» series



MC-O2 (KBT)

cable cutting
shears



MC-O3 (KBT)

universal cable cutting
shears



MC-O4 (KBT)

shears for cutting
and stripping cables

Dies for crimping pliers «KBT»

KBT precision dies МПК
ideal for crimping pliers
CTA\CTB\CTK

Dies compatibility

Cross sections:
0.5–6 mm²

Crimping pliers:
CTA
CTB
CTK



МПК-01 (KBT)

dies for crimping of insulated terminals
and lugs, disconnectors

Cross sections:
0.25–6 mm²

Crimping pliers:
CTA
CTB
CTK



МПК-02 (KBT)

dies for crimping of insulated
and non-insulated pin terminals

Cross sections:
10–25 mm²

Crimping pliers:
CTB
CTK



МПК-03 (KBT)

dies for crimping of insulated
and non-insulated end sleeves

Cross sections:
0.25–2.5 mm²

Crimping pliers:
CTA
CTB
CTK



МПК-04 (KBT)

dies for double-crimping of
disconnectors

Cross sections:
0.25–10 mm²

Crimping pliers:
CTB
CTK



МПК-05 (KBT)

dies for crimping
of copper cable lugs

Cross sections:
0.5–6 mm²

Crimping pliers:
CTB
CTK



МПК-06 (KBT)

dies for crimping
of insulated twin end sleeves

Cross sections:
10–16 mm²

Crimping pliers:
CTB
CTK



МПК-07 (KBT)

dies for crimping
of terminals

Разъемы:
RG6/58/59/62

Crimping pliers:
CTB
CTK



МПК-08 (KBT)

dies for crimping of coaxial cables
RG 6, RG 58, RG 59, RG 62

Cross sections:
0.25–2.5 mm²

Crimping pliers:
CTB
CTK



МПК-09 (KBT)

dies for crimping
of nylon-insulated flag terminals

Cross sections:
0.5–6 mm²

Crimping pliers:
CTA
CTB
CTK



МПК-10 (KBT)

dies for crimping of close end
connectors, terminals, disconnectors
and ferrules in heat shrinkable jackets

Cross sections:
0.5–6 mm²

Crimping pliers:
CTA
CTB
CTK



МПК-11 (KBT)

dies for crimping
of disconnectors

Cross sections:
0.25–2.5 mm²

Crimping pliers:
CTA
CTB
CTK



МПК-12 (KBT)

dies for crimping
of insulated end sleeves

Cross sections:
0.5–6 mm²

Crimping pliers:
CTA
CTB
CTK



МПК-14 (KBT)

dies for crimping
of non-insulated disconnectors

Cross sections:
0.5–10 mm²

Crimping pliers:
CTB
CTK



МПК-15 (KBT)

dies for crimping
of non-insulated copper lugs

Wire and cable strippers



multifunctional
hand stripper



multifunctional
hand stripper



stainless steel, multifunctional
hand stripper



multifunctional hand stripper
with voltage tester



professional
automatic stripper



semi-automatic
stripper



semi-automatic
stripper



semi-automatic stripper,
modified model



modified semi-automatic stripper
with cutting function



automatic stripper
with «CutPro» module, lighter weight



automatic multifunctional stripper
with micro-setting screw



automatic multifunctional stripper
with micro-setting screw



automatic stripper
for wires



automatic multifunctional stripper
with a screw for micro-size adjustment



automatic multifunctional stripper
with a screw for micro-setting

Wire and cable strippers



automatic multi-functional crimper
with setting screw and NCV detector



automatic multi-functional stripper
with micro-setting screw
and NCV detector



tool
for cable uncoating



professional
pocket stripper



multi-fnctional stripper
with NCV detector



multi-fnctional
pocket stripper



stripping tool
for round cables



stripping tool
for round cables



stripping
tools



shears for cutting
and stripping cables



professional 3-position
fiberglass stripper



dielectric wire stripping pliers
«Standard» series



big electrician's knife
with a «heel»



electrician's dielectric knife with
a small «heel» and partly insulated blade



professional machine
for stripping wires

Parallel piercing type branch connectors

Type: OB

- Designed for performing parallel branch connections from the stranded copper wires
- Body material: polypropylene. Halogen-free
- Temperature range: +105 °C
- Contact parts material: brass, grade L63
- Contact parts plating: electrolytic tinning
- Does not require stripping of insulation from the main and branch wires
- Simultaneous insulation piercing on the mainline and the branch while locking of the case cover
- Plastic case provides insulation and mechanical protection of the designated branches
- Color marking system provided for easy identification of sizes in the process of installation
- During installation it is recommended to use pliers

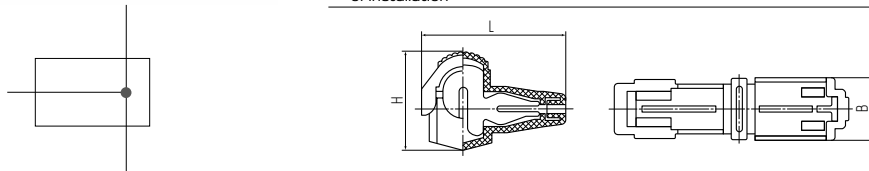


Name	Color	Cross section (mm²)	Current (A)	B (mm)	L (mm)	H (mm)	Voltage (V)	Packing (pcs.)	Tool
OB-1	●	0.5-1.5	10	16.6	19	9	400	100/500	Pliers
OB-2	●	1.5-2.5	15	16.6	19	11	400	100/500	
OB-3	●	4.0-6.0	24	17.5	20	13	400	100/500	

T-shape insulated branch connectors in nylon case

Type: OBT

- Designed to perform quick-release T-shaped branches from mono-core and stranded copper wires
- Body material: nylon
- Halogen-free
- Temperature resistance of insulation: +105 °C
- Contact parts material: brass, grade L63
- Contact parts plating: electrolytic tinning
- Does not require stripping of insulation. While snap-on of the body of connector – contact plate pierces insulation on the mainline
- Branching is performed by means of insulated flat connector РПИ-П(Н) with the corresponding case color
- Male connector in nylon case has to be ordered separately
- Nylon casing provides full insulation and mechanical protection of the designated branches
- Color marking makes identification of the sizes much easier in the process of installation



Name	Color	Cross section (mm²)	Current (A)	L (mm)	B (mm)	H (mm)	Voltage (V)	Packing (pcs.)	Tool
OBT-1	●	0.5-1.5	10	18	10	11	400	100/500	Pliers
OBT-2	●	1.5-2.5	15	18	10	11	400	100/500	
OBT-3	●	4.0-6.0	24	18	10	11	400	100/500	

End sleeves «KBT» и «GLW»



End sleeves. Historical information



- The need for end sleeves was identified simultaneously with the occurrence of flexible copper wires. Having undoubted advantages over solid mono-core wires, multi-wire cores required special solutions when connecting electrical devices to contact terminals.

- One of the traditional ways of banding and protecting the wires when connecting to the terminals of equipment was to solder the stripped ends of multi-wire cores. In search of more technological alternative, cable lugs manufacturers used short sleeves for crimping the ends of multi-wire cores. However, there was no unified standard, each manufacturer offered its own solution for the geometry and size range of end sleeves.



- The situation changed in 1973, when French company Telemecanique, later part of Schneider Electric, released a line of insulated end sleeves for crimping. In contrast to non-insulated end sleeves, these sleeves had integrated plastic cuffs, which implemented protection from breaking and gave contact connection vibration resistance characteristic.

- Which is not at all uncommon with an innovative product, the French company-developer failed with evaluation of importance and significance of its invention. A few years later, pragmatic Germans joined the production relay.



- The new product quickly gained fame in Europe and set a uniform standard for the geometry of end sleeves, worldwide. Differences between manufacturers were reduced to differences in the colors of the insulating cuffs.

- In 1990, German Institute for standardization Deutsches Institut für Normung issued standard for end sleeves with the number DIN 46228. In addition to standardizing the size of end sleeves, the document also regulated the color marking of insulating cuffs. This helped to restore order in the color scheme of insulating cuffs, but did not completely replace the previously existing color solutions from French and German manufacturers.

- Another important stage in the history of the product was the invention in 1991 by the German company GLW of end sleeves for two wires crimping. The modified geometry of the copper sleeve and the special shape of the plastic cuff adapted for the installation of two wires were secured by a patent in Europe and the United States of America.

- In 1993, GLW company produced sleeves made in the form of a roll tape and automatic devices for serial crimping.

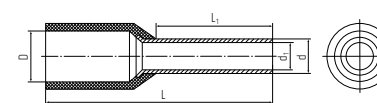
- A full-size line of single and double end sleeves in Russia was introduced by «Techelectro» company in 2001. At the same time, the well-known abbreviation «HШВН» (insulated pin end sleeves), which later became universally accepted throughout the country.



Insulated single end sleeves «KBT»

Type: HШВН

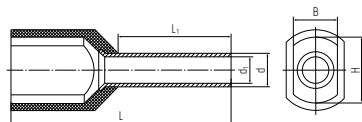
- Designed for installation of a single wire
- Designed for termination of flexible stranded copper conductors by crimping method. Transforms the ends of the stranded conductors into the monolithic pins
- Modern alternative to the compulsory service of all stranded conductors while connection to the terminals
- Maximum voltage: 690 V
- The sizes of insulated end sleeves HШВН designed for mounting single conductors of the appropriate section
- Sleeves material: copper, grade M1
- Sleeves plating: electrolytic tinning
- Insulation material: polypropylene. Halogen-free
- Temperature resistance of insulation: +105 °C
- Color of insulating cuffs is made in accordance with the color coding (DIN 46228, part 4)
- Single and double end sleeves «KBT» are available in the same colors, by the DIN standard, which facilitates their size identification
- In addition to end sleeves with a standard length of copper sleeve, «KBT» range includes ferrules with an extended sleeve for the most popular sizes
- The conical shape of the cuff («Easy Entry» type), facilitates insert of multi-stranded wire inside copper sleeve
- Ideal packaging for supermarkets and stores.
The package has a detachable line, zip-lock and fastening loop for placement on eurostand
- Due to the folding bottom, the packaging can be placed on shelves
- Transparent design packaging allows visual control of the contents



Name	Cuff color	Cross section (mm²)	L1 (mm)	L (mm)	d (mm)	d1 (mm)	D (mm)	F* (mm)	Packing (pcs.)	Crimping tool			
HШВН 0.25-8	light blue	0.25	8	12.5	1.05	0.75	1.7	10	100	AC-25/25T, MC-40-1	CTB/CTK-03	CTA/CTB/CTK-02, tool sets: CTM/CTB-4, CTK-4, PKB-6, PKB-10, PKB-16, PKB-25, PKB-35, PKB-50, PKB-70, PKB-95, PKB-120, PKB-150, PKB-180, PKB-240, PKB-300, PKB-350, PKB-400, PKB-450, PKB-500, PKB-550, PKB-600, PKB-650, PKB-700, PKB-750, PKB-800, PKB-850, PKB-900, PKB-950, PKB-1000, PKB-1050, PKB-1100, PKB-1150, PKB-1200, PKB-1250, PKB-1300, PKB-1350, PKB-1400, PKB-1450, PKB-1500, PKB-1550, PKB-1600, PKB-1650, PKB-1700, PKB-1750, PKB-1800, PKB-1850, PKB-1900, PKB-1950, PKB-2000, PKB-2050, PKB-2100, PKB-2150, PKB-2200, PKB-2250, PKB-2300, PKB-2350, PKB-2400, PKB-2450, PKB-2500, PKB-2550, PKB-2600, PKB-2650, PKB-2700, PKB-2750, PKB-2800, PKB-2850, PKB-2900, PKB-2950, PKB-3000, PKB-3050, PKB-3100, PKB-3150, PKB-3200, PKB-3250, PKB-3300, PKB-3350, PKB-3400, PKB-3450, PKB-3500, PKB-3550, PKB-3600, PKB-3650, PKB-3700, PKB-3750, PKB-3800, PKB-3850, PKB-3900, PKB-3950, PKB-4000, PKB-4050, PKB-4100, PKB-4150, 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PK	

Insulated «twin» end sleeves «KBT»

Type: HЛBBI(2)



- For the installation of the dual wires of the same size
- Designed for termination of stranded copper conductors by crimping method. Transforms the ends of the stranded conductors into the monolithic pins
- Modern alternative to the compulsory service of all stranded conductors while connection to the terminals
- The sizes of insulated end sleeves HЛBBI(2) designed for the simultaneous installation and connection of two conductors
- In high-density installation conditions, double end sleeves are the only possible contact connection between the two conductors
- Sleeves material: copper, grade M1
- Sleeves plating: electrolytic tinning
- Insulation temperature range: +105 °C
- Insulation material: polypropylene. Halogen-free
- Color of insulating cuffs is made in accordance with the color coding (DIN 46228, part 4)
- In addition to end sleeves with a standard length of copper sleeve, «KBT» range includes ferrules with an extended sleeve for the most popular sizes
- Single and double «KBT» end sleeves are presented in the same color scheme of the DIN standard, which eases their dimensional identification
- The conical shape of the cuff («Easy Entry» type), facilitates insert of multi-stranded wire inside copper sleeve
- Ideal packaging for supermarkets and stores. The package has a detachable line, zip-lock and fastening loop for placement on eurostand.
- Due to the folding bottom, the packaging can be placed on shelves
- Transparent design packaging allows visual control of the contents

Name	Cuff color	Cross section (mm²)	L1 (mm)	L (mm)	d (mm)	d1 (mm)	H (mm)	B (mm)	F* (mm)	Packing (pcs.)	Crimping tool
HЛBBI(2) 0.5-8	○ white	2x0.5	8	14.5	1.8	1.5	5.0	3.0	11	100	AC-25/25T CTB-06, CTB-08 ПКВш-10, ПКВш-16ш ПКВш-10/10у/16у/16ш
HЛBBI(2) 0.75-8	● grey	2x0.75	8	14.7	2.1	1.8	5.5	3.0	11	100	
HЛBBI(2) 0.75-10	● grey	2x0.75	10	16.7	2.1	1.8	5.5	3.0	11	100	
HЛBBI(2) 1.0-8	● red	2x1.0	8	15.1	2.3	2.0	5.5	3.0	11	100	
HЛBBI(2) 1.0-10	● red	2x1.0	10	17.1	2.3	2.0	5.5	3.0	11	100	
HЛBBI(2) 1.5-8	● black	2x1.5	8	15.5	2.6	2.3	6.4	3.7	11	100	
HЛBBI(2) 1.5-12	● black	2x1.5	12	19.5	2.6	2.3	6.4	3.7	11	100	
HЛBBI(2) 2.5-10	● blue	2x2.5	10	18.5	3.3	2.9	8.0	4.3	13	100	
HЛBBI(2) 2.5-13	● blue	2x2.5	13	21.5	3.3	2.9	8.0	4.3	13	100	
HЛBBI(2) 4.0-12	● grey	2x4.0	12	23.1	4.2	3.8	8.8	5.3	15	100	
HЛBBI(2) 6.0-14	● yellow	2x6.0	14	26.1	5.3	4.9	9.5	6.4	19	100	AC-100/100T ПКВ-50 ПКВ-16ш
HЛBBI(2) 10-14	● red	2x10	14	26.6	6.9	6.5	12.6	7.6	19	100	
HЛBBI(2) 16-14	● blue	2x16	14	31.3	8.7	8.3	19.0	11.3	19	100	

* Wire stripping length

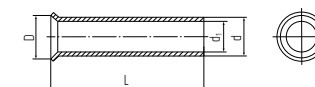
Installation of end sleeves

- Only 2 tools are required for installing of end sleeves: stripper for removing insulation from wires and crimping pliers
- Strip the end of the wire for a length that exceeds by several millimeters the length of the copper sleeve of the ferrule (see the value F* in the table)
- Make sure that none of the thin wires that make up the copper core are damaged
- Put the end sleeve on the stripped core until it gets all the way in
- Press the sleeve with special crimping pliers, equipped with dies МПК-02, МПК-03, МПК-06, МПК-12 for end sleeves or with universal crimping pliers ПКВ, ПКВш
- The wire is crimped on top of the copper sleeve
- If the end of the multi-wire core protrudes from the sleeve after crimping, the core can be cut on level with the edge of the sleeve

Non insulated end sleeves «KBT»

Type: HЛJB

- Designed for termination of stranded copper conductors by crimping method. Transforms the ends of the stranded conductors into the monolithic pins
- Dimensions of end sleeves HЛJB are designed for installation of one conductor of the corresponding size. However, since the plastic restrictive cuff is missing, the sleeve can also be used for connection of two or more conductors
- The facility of cores into the sleeve is made from the side of the socket
- Sleeve material: copper, grade M1
- Coating: electrolytic tinning
- Operating temperature range: -55 °C to +135 °C
- Due to extended temperature range, the end sleeves HЛJB are recommended in use with heat-resistant wires with insulation of silicon-organic rubber, grades ПРКА, ПРКС, ПККВ, ПКГМ
- Sleeves without cuffs indispensable for termination of the wires with thick insulation (e.g., cables with rubber insulation КГ and КОГ)
- Ideal packaging for supermarkets and stores. The package has a detachable line, zip-lock and fastening loop for placement on eurostand.
- Due to the folding bottom, the packaging can be placed on shelves



Name	Cross section (mm²)	L (mm)	d (mm)	d1 (mm)	D (mm)	F* (mm)	Packing (pcs.)	Crimping tool			
HЛJB 0.5-8	0.5	8	1.3	0.9	1.7	8	100	AC-100 CTB-03, CTB-06, ПКВш-6, EC-65 CTA-CTB/CTK-12 ПКВ-50 ПКВ-95	ПКВш-10, ПКВш-10у, ПКВш-16ш Набор: CTD, CTE, CTF ПКВш-16ш/16у/16ш, ПКВш-16ш	ПКВш-16	Набор CTD
HЛJB 0.75-8	0.75	8	1.5	1.2	1.9	8	100				
HЛJB 1.0-8	1.0	8	1.8	1.4	2.2	8	100				
HЛJB 1.5-8	1.5	8	2.0	1.6	2.5	8	100				
HЛJB 2.5-8	2.5	8	2.6	2.3	3.3	8	100				
HЛJB 4.0-9	4.0	9	3.2	2.8	3.9	9	100				
HЛJB 6.0-12	6.0	12	3.9	3.5	4.8	12	100				
HЛJB 10-12	10	12	4.9	4.5	5.8	12	100				
HЛJB 16-12	16	12	6.2	5.8	7.2	12	100				
HЛJB 25-16	25	16	7.9	7.5	9.1	16	100				
HЛJB 35-16	35	16	8.7	8.3	10.2	16	100				
HЛJB 50-20	50	20	10.9	10.4	12.4	20	50				
HЛJB 70-20	70	20	14.3	13.5	15.8	20	50				

Problems

- When directly connecting flexible copper wires to the terminals of electrical equipment, a number of problems arise:
 - Due to the lack of necessary rigidity, the stripped end of the multi-wire copper core can not be inserted into some types of terminals (for example, spring terminals). Individual wires of the core may «fall out» from the general bunch and contact zone, creating danger of heating of the contact connection
 - When multi-wire cores are clamped in screw terminals, there is a risk of damage or snapping of individual thin cores
 - When exposed to aggressive external atmospheric factors, the resistance of the contact joint may increase over time due to oxidation of the copper core
 - The use of soldering technology for servicing the ends of multi-wire cores is costly in terms of installation time, cost of expendable material, and is not always possible
 - When installing flexible wires to equipment terminals in conditions of rolling stock or vibration, the transition zone from the wire insulation cut to the stripped core is a weak point and is subject to workload

Decisions

- End sleeves offer a modern and effective solution to solve these problems:
 - End sleeve made of electrical copper when crimping securely tightens and binds the wiring into a single monolithic structure. In this case, the flexible copper core is transformed into a hard and strong pin
 - The copper sleeve performs the function of reinforcing and protecting the thin wire conductors from damage when clamped in the terminals
 - Electrolytic tinning of the sleeves provides long-term and reliable protection of terminal connections from corrosion
 - Crimping the bushing tips with a professional tool guarantees reliable connections and minimal expenses during serial installation
 - When the sleeves are inserted into the terminal, the insulating cuff is a limiter, and also additionally fixes the wire on the insulation, performing the function of anti-fracture

«KBT» End sleeves sets



- Round shape boxes are made of shockproof plastic
- Movable lid has bumpers and can be used in the process of installation as a work surface for temporary storage of end sleeves. While slight inclination, the end sleeves easily return to the needed compartment
- Transparent plastic allows visual control of the content
- Due to its compact size, the set fit into a pocket or worker bag easily
- Plastic box can perform the function of the organizer for any tiny details
- The special design allows putting the boxes on one another, compactly organizing your workspace
- Dimensions: diameter – 90 mm, height – 40 mm
- Weight: 85 g



Set content	Cuff color	Cross section (mm ²)	Quantity (pcs.)
НШВИ 0.5–8	○ white	0.5	50
НШВИ 0.75–8	● grey	0.75	100
НШВИ 1.0–8	● red	1.0	100
НШВИ 1.5–8	● black	1.5	100
НШВИ 2.5–8	● blue	2.5	50



Set content	Cuff color	Cross section (mm ²)	Quantity (pcs.)
НШВИ(2) 0.5–8	○ white	2x0.5	50
НШВИ(2) 0.75–8	● grey	2x0.75	50
НШВИ(2) 1.0–8	● red	2x1.0	50
НШВИ(2) 1.5–8	● black	2x1.5	50
НШВИ(2) 2.5–10	● blue	2x2.5	50



Set content	Cuff color	Cross section (mm ²)	Quantity (pcs.)
НШВИ 0.25–8	● light blue	0.25	100
НШВИ 0.34–8	● turquoise	0.34	100
НШВИ 0.5–8	○ white	0.5	100
НШВИ 0.75–8	● grey	0.75	100
НШВИ 1.0–8	● red	1.0	100



Set content	Cuff color	Cross section (mm ²)	Quantity (pcs.)
НШВИ 4.0–9	● grey	4.0	50
НШВИ 6.0–12	● yellow	6.0	20
НШВИ 10–12	● red	10	20
НШВИ 16–12	● blue	16	10

«KBT» End sleeves sets

- Sets НШВИ №5 and НШВИ №10 contain the most popular sizes of single and double end sleeves
- The box is made of durable plastic
- Transparent lid and walls of the box allow visual inspection of the content
- The color marking of the end sleeve cuffs is made according to DIN 46228, part 4
- Single and double «KBT» end sleeves are available in the same color range according to DIN standard, which facilitates their size identification
- 12 compartments with five fixed and one adjustable partitions – for optimal cell sizes
- Mounting loop for hanging the box on Euro stand or wall
- Dimension: 210x110x30 mm
- Weight: 190 g

Set content	Cuff color	Cross section (mm ²)	Quantity (pcs.)
НШВИ 0.5–8	○ white	0.5	100
НШВИ 0.75–8	● grey	0.75	100
НШВИ 1.0–8	● red	1.0	100
НШВИ 1.5–8	● black	1.5	100
НШВИ 2.5–8	● blue	2.5	100
НШВИ 4.0–9	● grey	4.0	50
НШВИ 6.0–12	● yellow	6.0	25
НШВИ(2) 0.5–8	○ white	2x0.5	50
НШВИ(2) 0.75–8	● grey	2x0.75	50
НШВИ(2) 1.0–8	● red	2x1.0	50
НШВИ(2) 1.5–8	● black	2x1.5	25
НШВИ(2) 2.5–10	● blue	2x2.5	25

Set content	Cuff color	Cross section (mm ²)	Quantity (pcs.)
НШВИ 0.5–8	○ white	0.5	200
НШВИ 0.75–8	● grey	0.75	200
НШВИ 1.0–8	● red	1.0	200
НШВИ 1.5–8	● black	1.5	250
НШВИ 2.5–8	● blue	2.5	250
НШВИ 4.0–9	● grey	4.0	50
НШВИ 6.0–12	● yellow	6.0	25
НШВИ 10–12	● red	10	25

- The box is made of transparent plastic which allow visual inspection of the content
- Single and double «KBT» end sleeves are available in the same color range according to DIN standard, which facilitates their size identification
- 15 compartments with adjustable partitions – for optimal cell sizes
- Most popular sizes of single and double end sleeves
- Dimension: 230x220x37 mm
- Weight: 300 g

Set content	Cuff color	Cross section (mm ²)	Quantity (pcs.)
НШВИ 0.5–8	○ white	0.5	100
НШВИ 0.75–8	● grey	0.75	100
НШВИ 1.0–8	● red	1.0	100
НШВИ 1.5–8	● black	1.5	100
НШВИ 2.5–8	● blue	2.5	50
НШВИ 4.0–9	● grey	4.0	50
НШВИ 6.0–12	● yellow	6.0	25
НШВИ 10–12	● red	10.0	20
НШВИ(2) 0.5–8	○ white	2x0.5	50
НШВИ(2) 0.75–8	● grey	2x0.75	50
НШВИ(2) 1.0–8	● red	2x1.0	50
НШВИ(2) 1.5–8	● black	2x1.5	25
НШВИ(2) 2.5–10	● blue	2x2.5	25
НШВИ(2) 4.0–12	● grey	2x4.0	20
НШВИ(2) 6.0–14	● yellow	2x6.0	10



Two sets with the most popular sizes
№ 5 – 775 pieces
of single and double end sleeves
№ 10 – 1200 pieces
of single end sleeves



Durable plastic case with three locking clips,
НШВИ terminals from 0.5 to 10 mm²
and НШВИ(2) terminals
from 2x0.5 to 2x6.0 mm²

The sets of HШВМ end sleeves sets in metal case with tool

The sets of end sleeves (HШВМ) M-2850 series

- Set contains the most popular sizes of single end sleeves with the possibility of completing with universal tool for end sleeves crimping
- Color of insulating cuffs of end sleeves is made in accordance with the color-coding (DIN 46228, part 4)
- The set is packed in a strong and durable metal case with 7 compartments for the end sleeves and a large compartment for tool storage
- The case has secure lock and a handle for carrying
- Size of steel case: 360x160x42 mm
- Weight of steel case (without tool): 1.7 kg
- Weight of steel case (with tool): 2.1 kg



M-2850-1 set

№	Set content	M 2850-0 set	M 2850-1 set	Quantity (pcs.)
1	HШВМ 0.5-8	•	•	500
2	HШВМ 0.75-8	•	•	500
3	HШВМ 1.0-8	•	•	500
4	HШВМ 1.5-8	•	•	500
5	HШВМ 2.5-8	•	•	500
6	HШВМ 4.0-9	•	•	250
7	HШВМ 6.0-12	•	•	100
8	Crimping tool ПКВк-10	—	•	1
9	Steel case	•	•	1
Total (pcs. in a set):		2850	2850	—

The sets of end sleeves (HШВМ) M-3450 series

- Set contains the most popular sizes of single end sleeves with the possibility of completing with universal tool for end sleeves crimping and stripping tool for removing insulation
- Color of insulating cuffs of single and double end sleeves is made in accordance with the color-coding (DIN 46228, part 4)
- The set is packed in a strong and durable metal case with 12 compartments for the end sleeves and a large compartment for tool storage
- The case has secure lock and a handle for carrying
- Size of steel case: 328x220x42 mm
- Weight of steel case (without tool): 2.2 kg
- Weight of steel case (with tool): 2.6 kg (M 3450-1)/ 2.94 kg (M 3450-2)



M-3450-1 set

№	Set content	M 3450-0 set	M 3450-1 set	M 3450-2 set	Quantity (pcs.)
1	HШВМ 0.5-8	•	•	•	500
2	HШВМ 0.75-8	•	•	•	500
3	HШВМ 1.0-8	•	•	•	500
4	HШВМ 1.5-8	•	•	•	350
5	HШВМ 2.5-8	•	•	•	250
6	HШВМ 4.0-9	•	•	•	200
7	HШВМ 6.0-12	•	•	•	100
8	HШВМ(2) 0.5-8	•	•	•	250
9	HШВМ(2) 0.75-8	•	•	•	250
10	HШВМ(2) 1.0-8	•	•	•	250
11	HШВМ(2) 1.5-8	•	•	•	200
12	HШВМ(2) 2.5-10	•	•	•	100
13	Crimping tool ПКВк-10	—	•	•	1
14	Stripper WS-07	—	—	•	1
15	Steel case	•	•	•	1
Total (pcs. in a set):		3450	3450	3450	—

The sets of HШВМ end sleeves sets in plastic case with tool

Set HШВМ K-1200-1

- Set contains the most popular sizes of single end sleeves with universal tool for crimping
- The box is made of durable plastic
- Transparent lid and walls of the box allow visual inspection of the content
- The color marking of the end sleeve cuffs is made according to DIN 46228, part 4
- 12 compartments with five fixed and one adjustable partitions — for optimal cell sizes
- Mounting loop for hanging the box on Euro stand or wall
- Dimension: 240x130x55 mm
- Weight: 720 g

№	Set content	Cuff color	Cross section (mm²)	Quantity (pcs.)
1	HШВМ 0.5-8	○ white	0.5	200
2	HШВМ 0.75-8	● grey	0.75	200
3	HШВМ 1.0-8	● red	1.0	200
4	HШВМ 1.5-8	● black	1.5	250
5	HШВМ 2.5-8	● blue	2.5	250
6	HШВМ 4.0-9	● grey	4.0	50
7	HШВМ 6.0-12	● yellow	6.0	25
8	HШВМ 10-12	● red	10	25
9	Crimping tool ПКВк-10	—	—	1
10	Plastic case	—	—	1
Total (pcs. in a set):		—	—	1200



Set HШВМ K-775-1

- Set contains the most popular sizes of single and double end sleeves with universal tool for crimping
- The box is made of durable plastic
- Transparent lid and walls of the box allow visual inspection of the content
- The color marking of the end sleeve cuffs is made according to DIN 46228, part 4
- «KBT» single and double end sleeves are presented in the same color range of DIN standard, which facilitates their dimensional identification
- 12 compartments with five fixed and one adjustable partitions — for optimal cell sizes
- Mounting loop for hanging the box on Euro stand or wall
- Dimension: 240x130x55 mm
- Weight: 680 g

№	Set content	Cuff color	Cross section (mm²)	Quantity (pcs.)
1	HШВМ 0.5-8	○ white	0.5	100
2	HШВМ 0.75-8	● grey	0.75	100
3	HШВМ 1.0-8	● red	1.0	100
4	HШВМ 1.5-8	● black	1.5	100
5	HШВМ 2.5-8	● blue	2.5	100
6	HШВМ 4.0-9	● grey	4.0	50
7	HШВМ 6.0-12	● yellow	6.0	25
8	HШВМ(2) 0.5-8	○ white	2x0.5	50
9	HШВМ(2) 0.75-8	● grey	2x0.75	50
10	HШВМ(2) 1.0-8	● red	2x1.0	50
11	HШВМ(2) 1.5-8	● black	2x1.5	25
12	HШВМ(2) 2.5-10	● blue	2x2.5	25
13	Crimping tool ПКВк-10	—	—	1
14	Plastic case	—	—	1
Total (pcs. in a set):		—	—	775

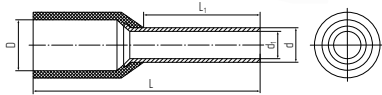


Insulated single end sleeves «GLW»



Type: HШВН (GLW) no DIN 46228

- For the installation of single wire
- Material of end sleeve: copper, grade MO, the copper content – 99.99%
- Coating: electrolytic tinning. Matte tin-bismuth coating of GLW sleeves – easy to distinguish from other manufacturers, even with a visual comparison
- Insulation material: polypropylene
- Insulation temperature resistance: +105 °C
- Insulating cuffs color of GLW sleeves strictly correspond DIN 46228 part 4
- Single and double GLW end sleeves are available in the same color range according to DIN standard, which facilitates their size identification
- Unique production technology of GLW sleeves. Splicing of the sleeve with plastic cuff is made in the injection molding machines and achieves the perfect Easy Entry connection
- Package – MULTIPACK: sleeves are packaged in bags by 100 pieces and connected in a tape type packing by 10 small poly bags
- Easy for storing, transportation and product presentation in the sales area



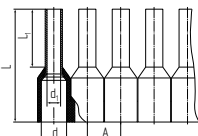
Name	Cuff color	Cross section (mm²)	L1 (mm)	L (mm)	d (mm)	d1 (mm)	D (mm)	F* (mm)	Packing (pcs.)	Crimping tool
HШВН 0.25–8 (GLW)	yellow	0.25	8	12.5	1.05	0.8	2.0	10	100x10	AC-25, AC-25T, MC-40-1 CTA-02, CTB-02, CTB-03, CTB-04, CTB-05, CTB-06, CTB-07, CTB-08, CTB-09, CTB-10, CTB-11, CTB-12, CTB-13, CTB-14, CTB-15, CTB-16, CTB-17, CTB-18, CTB-19, CTB-20, CTB-21, CTB-22, CTB-23, CTB-24, CTB-25, CTB-26, CTB-27, CTB-28, CTB-29, CTB-30, CTB-31, CTB-32, CTB-33, CTB-34, CTB-35, CTB-36, CTB-37, CTB-38, CTB-39, CTB-40, CTB-41, CTB-42, CTB-43, CTB-44, CTB-45, CTB-46, CTB-47, CTB-48, CTB-49, CTB-50, CTB-51, CTB-52, CTB-53, CTB-54, CTB-55, CTB-56, CTB-57, CTB-58, CTB-59, CTB-60, CTB-61, CTB-62, CTB-63, CTB-64, CTB-65, CTB-66, CTB-67, CTB-68, CTB-69, CTB-70, CTB-71, CTB-72, CTB-73, CTB-74, CTB-75, CTB-76, CTB-77, CTB-78, CTB-79, CTB-80, CTB-81, CTB-82, CTB-83, CTB-84, CTB-85, CTB-86, CTB-87, CTB-88, CTB-89, CTB-90, CTB-91, CTB-92, CTB-93, CTB-94, CTB-95, CTB-96, CTB-97, CTB-98, CTB-99, CTB-100
HШВН 0.34–8 (GLW)	turquoise	0.34	8	12.5	1.05	0.8	2.0	10	100x10	
HШВН 0.5–8 (GLW)	white	0.5	8	13.5	1.25	1.1	2.5	10	100x10	
HШВН 0.75–8 (GLW)	grey	0.75	8	14.0	1.45	1.3	2.8	10	100x10	
HШВН 1.0–8 (GLW)	red	1.0	8	14.5	1.65	1.5	3.0	10	100x10	
HШВН 1.5–8 (GLW)	black	1.5	8	14.5	1.95	1.8	3.4	10	100x10	
HШВН 2.5–8 (GLW)	blue	2.5	8	15.0	2.45	2.3	4.2	10	100x10	
HШВН 4.0–10 (GLW)	grey	4.0	10	18.0	3.10	2.9	4.8	12	100x10	
HШВН 6.0–12 (GLW)	yellow	6.0	12	20.0	3.80	3.6	6.2	14	100x10	
HШВН 10–12 (GLW)	red	10	12	21.0	4.80	4.6	7.5	15	100x10	
HШВН 16–12 (GLW)	blue	16	12	23.0	6.20	6.0	8.8	15	100x10	
HШВН 25–16 (GLW)	yellow	25	16	29.0	7.70	7.5	11	19	50x10	

Insulated single end sleeves in strips (GLW)



Type: Chain tape HШВН (GLW) no DIN 46228

- Insulated end sleeves in strips are designed for usage in GLW brand electric machines
- Automatic feeding tape with the simultaneous stripping of wires and crimping of sleeves
- End sleeves are packed into a compact square cardboard box with inspection window for visually determining the size of the sleeves by the color
- GLW end sleeves in strips have a standard length of contact part
- GLW sleeves insulating cuffs color strictly correspond DIN 46228 part 4
- Square shape packing provides convenience in use, moving and storage
- Package size: 150x150x18 mm
- 1000/500 end sleeves in strips, depending on size
- Compatibility: machine MC-25 GLW for simultaneous stripping and crimping of end sleeves in strips

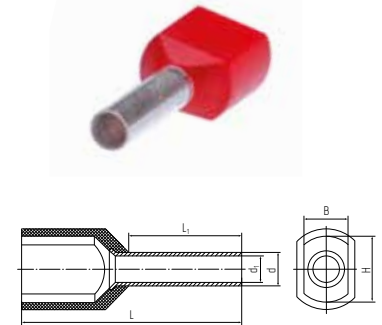


Name	Cuff color	Cross section (mm²)	L1 (mm)	L (mm)	d1 (mm)	d (mm)	A (mm)	Packing (pcs. in chain roll)	Crimping tool
Chain HШВН 0.5–8 (GLW)	white	0.5	8	14.5	1.1	2.6	3.5	1000	MC-25
Chain HШВН 0.75–8 (GLW)	grey	0.75	8	14.5	1.3	2.8	3.6	1000	
Chain HШВН 1.0–8 (GLW)	red	1.0	8	14.5	1.5	3.0	3.9	1000	
Chain HШВН 1.5–8 (GLW)	black	1.5	8	14.5	1.8	3.4	4.2	1000	
Chain HШВН 2.5–8 (GLW)	blue	2.5	8	14.5	2.3	4.2	5.0	500	

Insulated double end sleeves «GLW»

Type: HШВН(2) (GLW) no DIN 46228

- For the installation of the dual wires of the same size
- Material of end sleeve: copper, grade MO, the copper content – 99.99%
- Coating: electrolytic tinning
- Insulation material: polypropylene
- Insulation temperature resistance: +105 °C
- Insulating cuffs color of GLW sleeves strictly correspond DIN 46228 part 4
- Single and double GLW end sleeves are available in the same color range according to DIN standard, which facilitates their size identification
- Unique production technology of GLW sleeves. Splicing of the sleeve with plastic cuff is made in the injection molding machines and achieves the perfect Easy Entry connection
- Package- MULTIPACK: sleeves are packaged in bags by 100 pieces and connected in a tape type packing by 10 small poly bags
- Insulated end sleeves for two wires were developed and patented by the German company GLW in 1991
- Since 2012, «Techelectro» company has been the exclusive representative of GLW products in the Russian Federation and the former Soviet republics
- «KBT» service center is authorized for maintenance and repair of automatic and semi-automatic GLW machines for crimping terminals, removing insulation and cutting wires



Name	Cuff color	Cross section (mm²)	L1 (mm)	L (mm)	d (mm)	d1 (mm)	B (mm)	H (mm)	F* (mm)	Packing (pcs.)	Crimping tool
HШВН(2) 0.5–8 (GLW)	white	2x0.5	8	15	1.65	1.5	2.3	4.5	11	100x10	AC-25, AC-25T, MC-40-1 CTA-02, CTB-02, CTB-03, CTB-04, CTB-05, CTB-06, CTB-07, CTB-08, CTB-09, CTB-10, CTB-11, CTB-12, CTB-13, CTB-14, CTB-15, CTB-16, CTB-17, CTB-18, CTB-19, CTB-20, CTB-21, CTB-22, CTB-23, CTB-24, CTB-25, CTB-26, CTB-27, CTB-28, CTB-29, CTB-30, CTB-31, CTB-32, CTB-33, CTB-34, CTB-35, CTB-36, CTB-37, CTB-38, CTB-39, CTB-40, CTB-41, CTB-42, CTB-43, CTB-44, CTB-45, CTB-46, CTB-47, CTB-48, CTB-49, CTB-50, CTB-51, CTB-52, CTB-53, CTB-54, CTB-55, CTB-56, CTB-57, CTB-58, CTB-59, CTB-60, CTB-61, CTB-62, CTB-63, CTB-64, CTB-65, CTB-66, CTB-67, CTB-68, CTB-69, CTB-70, CTB-71, CTB-72, CTB-73, CTB-74, CTB-75, CTB-76, CTB-77, CTB-78, CTB-79, CTB-80, CTB-81, CTB-82, CTB-83, CTB-84, CTB-85, CTB-86, CTB-87, CTB-88, CTB-89, CTB-90, CTB-91, CTB-92, CTB-93, CTB-94, CTB-95, CTB-96, CTB-97, CTB-98, CTB-99, CTB-100
HШВН(2) 0.75–8 (GLW)	grey	2x0.75	8	15	1.95	1.8	2.6	5.1	11	100x10	
HШВН(2) 1.0–8 (GLW)	red	2x1.0	8	15	2.20	2.05	3.0	5.1	11	100x10	
HШВН(2) 1.5–8 (GLW)	black	2x1.5	8	16	2.45	2.30	3.5	6.4	11	100x10	
HШВН(2) 2.5–10 (GLW)	blue	2x2.5	10	18	3.10	2.90	4.0	7.5	13	100x10	
HШВН(2) 4.0–12 (GLW)	grey	2x4.0	12	23	4.00	3.80	4.9	8.6	15	100x10	
HШВН(2) 6.0–14 (GLW)	yellow	2x6.0	14	25	4.80	4.60	5.8	9.6	19	100x10	

«GLW» End sleeves sets

- The box is made of durable ABS plastic
- Special GLW slide boxes. Transparent lid of the box consists of 5 independent modules- sliding windows, which provides fast access to each partition and does not allow mixing of the end sleeves
- Each set contains a range of the most popular types and sizes of end sleeves
- Transparent plastic for visual control of the content
- Insulating cuffs color of GLW sleeves strictly correspond DIN 46228 part 4
- For easy identification, the sets have different colors:
 - Set with single end sleeves – red case
 - Set with double end sleeves – grey case
- The box design makes it possible to present the product in the sales hall, as well as provides convenient storage and transportation
- Package size: 165x58x38 mm

Set	Set content	Cuff color	Cross section (mm²)	Quantity (pcs.)
Set HШВН №6 (GLW) (400 pcs.)	HШВН 0.5–8 (GLW)	white	0.5	50
	HШВН 0.75–8 (GLW)	grey	0.75	100
	HШВН 1.0–8 (GLW)	red	1.0	100
	HШВН 1.5–8 (GLW)	black	1.5	100
	HШВН 2.5–8 (GLW)	blue	2.5	50
Set HШВН(2) №7 (GLW) (225 pcs.)	HШВН(2) 0.5–8 (GLW)	white	2x0.5	50
	HШВН(2) 0.75–8 (GLW)	grey	2x0.75	50
	HШВН(2) 1.0–8 (GLW)	red	2x1.0	50
	HШВН(2) 1.5–8 (GLW)	black	2x1.5	50
	HШВН(2) 2.5–8 (GLW)	blue	2x2.5	25



Crimping tools for end sleeves



multi-range crimping pliers
for end sleeves



multi-range crimping pliers
for end sleeves



multi-range model with universal
hexagonal die for pin terminals' crimping



developed multi-range crimping pliers
for end-sleeves



multi-range crimping pliers
for end sleeves



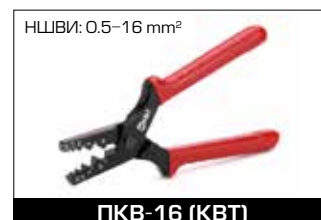
multi-range improved crimping pliers
for end sleeves



multi-range crimping pliers
for frontal crimping of end sleeves



pliers for crimping
pin terminals



crimping pliers
for pin terminals



crimping pliers
for pin terminals



hand-operated pneumatic tool
for crimping of end sleeves



pneumatic bench tool for crimping
of end sleeves



machine for simultaneous stripping
of cables and crimping
of insulated end sleeves in strips



machine for simultaneous stripping
of cables and crimping
of insulated end sleeves in strips



machine for simultaneous stripping
of cables and crimping
of insulated end sleeves

Crimping tools for end sleeves



pliers for crimping
of end sleeves



pliers for crimping
of end sleeves



pliers for crimping
of end sleeves



пресс-клещи
для опрессовки наконечников



pliers for crimping
of insulated twin end sleeves



pliers for crimping
of insulated terminals and ferrules



pliers for crimping of insulated
and non-insulated end sleeves



pliers for crimping
of end sleeves



pliers for crimping
of twin end sleeves



pliers for crimping
of insulated terminals and end sleeves



crimping pliers
with a set of dies



pliers for crimping of terminals
with a set of dies



set of a crimper with dies
for work with terminals



mini pliers with Teflon coating
and a set of dies



automatic multifunctional stripper
with micro-setting screw
and a die for crimping of end sleeves

«KBT» End sleeves



Mechanical resistance of connection after crimping

Wire / terminal cross-section (mm ²)	Breaking force (N). Present international standards						
	Insulated terminals and connectors					End sleeves	
	Europe	USA	USA	USA	Russia	Europe	Russia
	EN 60352	UL 486	MIL-T 7928	NASA 8739	KBT*	EN 60947	KBT*
0.5	60	58	84	93	104	20	69
0.75	85	89	169	142	122	30	118
1.0	108	—	—	—	191	35	73
1.5	150	133	222	182	279	40	140
2.5	230	222	311	289	516	50	185
4.0	310	311	489	458	752	60	195
6.0	360	355	666	706	1 200	80	240
10	—	—	—	—	—	90	265
16	—	—	—	—	—	100	280
25	—	—	—	—	—	135	296
35	—	—	—	—	—	190	349

* Results of «KBT» laboratory tests of «KBT» connectors using «KBT» tools obtained on ring terminals and end sleeves

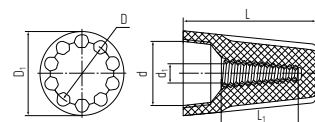
«KBT» Screw wire connectors and «WAGO» Terminal blocks



Insulated screw wire connectors

Type: CI3

- Designed for connecting and isolating two or more copper wires in a twist
- Each size has color-coded cases for easy identification
- Contact part material: galvanized steel spring
- Case material: polypropylene. Halogen free
- Temperature resistance of insulation: +105 °C
- Wire connector case is made of durable thermoplastic, resistant to aggressive environmental influences material
- Conical spring provides secure grip and fixation of the wire twist throughout the entire service life
- Body case completely isolates the wire twist
- Guaranteed quality and reliability of the electrical connections
- Does not require any special tools. The clamp screws onto pre-stripped and twisted together wire ends. Twisting of the wires and subsequent screwing is performed clockwise until it stops
- Reusable
- Quick, easy and safe installation



Name	Case color	Cross section (mm²)		L (mm)	L1 (mm)	D (mm)	D1 (mm)	d (mm)	d1 (mm)	Voltage (V)	Packing (pcs.)
		min	max								
CI3-1	grey	1.0	3.0	15.0	6.7	5.4	8.5	6.1	2.7	400	100
CI3-2	blue	1.0	4.5	18.0	8.3	6.7	9.9	6.9	3.0	400	100
CI3-3	orange	1.5	6.0	22.0	9.3	8.5	13.5	9.6	3.3	690	100
CI3-4	yellow	1.5	9.5	25.0	12.5	9.9	13.8	10.8	4.8	690	100
CI3-5	red	4.0	13	26.6	13.1	9.1	15.9	13.0	5.4	690	100

CI3 wire connectors sets

- The box is made of durable plastic
- Translucent box allows the visual control of content. Color coding facilitates selection of the desired size
- 6 compartments with five fixed partitions
- Mounting loop for hanging the box on the euro stand or wall
- Most popular sizes in balanced amounts
- Box dimension: 210x110x30 mm
- Weight of the set: 245g

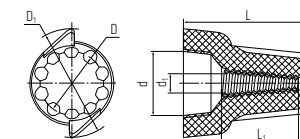
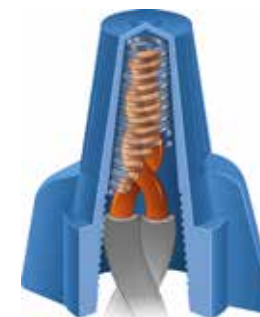


Name	Set content	Case color	Cross section (mm²)	Quantity (pcs.)
CI3 set (155 pcs.)	CI3-1	grey	1.0-3.0	40
	CI3-2	blue	1.0-4.5	40
	CI3-3	orange	1.5-6.0	50
	CI3-4	yellow	1.5-9.5	15
	CI3-5	red	4.0-13	10
CI3-K set (69 pcs.)	CI3-K-6	yellow	1.5-9.5	20
	CI3-K-7	beige	1.5-16	30
	CI3-K-8	red	4.0-16	10
	CI3-K-9	grey	8.0-24	6
	CI3-K-10	blue	8.0-32	3

Insulated screw wire connectors with «wings»

Type: CI3-K

- The case has «wings» for increasing leverage and torque force. Facilitates wiring of large cross sections
- Extended ranges of sizes
- Long and broad «skirt» of the case provides protection and complete insulation of the connection
- Due to the special square profile, the spring creates its own thread on the twist and securely holds the connected wires
- Contact spring has a greater length in compare with the standard CI3 connectors
- Contact part material: galvanized steel spring
- Case material: polypropylene. Halogen free
- Temperature resistance of insulation: +105 °C
- Color-coded cases are used for easier identification of the right size
- Guaranteed quality and reliability of the electrical connections
- Does not require any special tools. The clamp screws onto pre-stripped and twisted together wire ends. Twisting of the wires and subsequent screwing is performed clockwise until it stops
- Reusable
- Quick, easy and safe installation

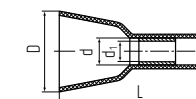


Name	Case color	Cross section (mm²)		L (mm)	L1 (mm)	D (mm)	D1 (mm)	d (mm)	d1 (mm)	Voltage (V)	Packing (pcs.)
		min	max								
CI3-K-6	yellow	1.5	9.5	24.6	11.3	8.1	18.1	10.5	4.8	690	100
CI3-K-7	beige	1.5	16	28.0	13.8	7.3	18.0	11.2	6.1	690	100
CI3-K-8	red	4.0	16	31.0	15.6	8.8	23.4	12.7	7.0	690	100
CI3-K-9	grey	8.0	24	33.0	17.5	11.2	25.5	14.1	7.4	690	50
CI3-K-10	blue	8.0	32	39.4	20.9	12.9	31.8	17.5	9.7	690	50

Insulated end caps for crimping

Type: KI3

- Designed for connection of copper wires, by the crimping method
- Contact parts material: seamless copper tube, grade M1
- Coating: electrolytic tinning
- Case material: nylon. Halogen-free
- Temperature resistance of insulation: +105 °C
- Translucent body allows to control the depth of insertion of wires and the process of crimping
- Guaranteed quality and reliability of the electrical connections
- Quick, easy and safe installation
- Crimping method provides vandal-proof connection of the wires
- Tools: crimping pliers CTK-10(KBT) and CTB-10(KBT)



Name	Current (A)	Cross section (mm²)		L (mm)	D (mm)	d (mm)	d1 (mm)	Voltage (V)	Packing (pcs.)
		min	max						
KI3-1 (KBT)	19	1.0	2.5	18	7.5	3	2.6	690	100/500
KI3-2 (KBT)	27	1.5	4.0	20	9.5	4	3.3	690	100/500
KI3-3 (KBT)	46	3.5	8.0	26	12.5	5	4.5	690	100/500

Terminals, series 2273

Type: Wago 2273



- Connectors with a special contact paste are designed for connecting single-core aluminum and copper conductors. Contact paste removes the oxide film from aluminum wires and protects them from re-oxidation
- Connectors without contact paste are designed for connecting single core copper conductors
- The new WAGO 2273 series of miniature terminals saves up to 50% of space compared to the standard 773 series
- Unique color marking for each connector size
- The connector design allows various cross sections wires installation, from 0.5 to 2.5 mm² in a single connector
- Maximum voltage: 450 V
- Transparent case allows core depth control
- Each connector has a marking of the conductor stripping length
- The connector case design provides test sockets, optimized for all test probe standards
- Guaranteed contact reliability, eliminating short circuit and heating at the connection point
- Safety and orderliness in the junction box
- Installation does not require the use of tools
- Insulation removal length: 11 mm

Name	Current (A)	Case color	Number of connections	Cross section range (mm ²)	Insulation removal length (mm)	Presence of the contact paste	Packing (pcs. in carton)
2273-242	24	○ white	2	0.5–2.5	11	with paste	100
2273-243	24	● orange	3	0.5–2.5	11	with paste	100
2273-244	24	● red	4	0.5–2.5	11	with paste	100
2273-245	24	● yellow	5	0.5–2.5	11	with paste	100
2273-248	24	● grey	8	0.5–2.5	11	with paste	50
2273-202	24	○ white	2	0.5–2.5	11	without paste	100
2273-203	24	● orange	3	0.5–2.5	11	without paste	100
2273-204	24	● red	4	0.5–2.5	11	without paste	100
2273-205	24	● yellow	5	0.5–2.5	11	without paste	100
2273-208	24	● grey	8	0.5–2.5	11	without paste	50

Blister mini-packs. Series 2273 terminals



Type: Wago 2273 without paste

- Terminals in a transparent case, without contact paste, are designed for connecting single-core copper conductors
- The new WAGO 2273 series of miniature terminals saves up to 50% of space compared to the standard 773 series
- Unique color marking for each connector size
- The connector design allows various cross sections wires installation, from 0.5 to 2.5 mm² in a single connector
- Maximum voltage: 450 V
- Transparent case allows core depth control
- Each connector has a marking of the conductor stripping length
- The connector case design provides test sockets, optimized for all test probe standards
- Installation does not require the use of tools

Name	Current (A)	Case color	Number of connections	Cross section range (mm ²)	Insulation removal length (mm)	Packing (pcs. in carton)
2273-202/996-040	24	○ white	2	0.5–2.5	11	40
2273-203/996-030	24	● orange	3	0.5–2.5	11	30
2273-204/996-020	24	● red	4	0.5–2.5	11	20
2273-205/996-020	24	● yellow	5	0.5–2.5	11	20
2273-208/996-010	24	● grey	8	0.5–2.5	11	10

Universal terminals with lever «WAGO». Series 221 and 222

Series: 221

- A new series of universal miniature terminals for connecting all types of copper conductors: mono-core and multi-wire
- Maximum voltage: 450 V
- 40% smaller and more compact than the 222 series terminals
- Transparent case allows to control the correct position of the conductor and the length of insulation removal
- New design of flat, easy-to-snap levers
- Two test holes make it possible to measure the electrical parameters of the circuit without disassembling and breaking the insulation of the connection



Series: 222

- Universal insulated terminals for connecting all types of copper conductors: mono-core and multi-wire
- Maximum voltage: 450 V
- Wires clipping in the terminal is done with the help of the orange levers
- The presence of special slots in the terminal case for placing levers prevents accidental disconnection of the conductor
- Possibility of measuring the electrical parameters of the circuit without disassembling and breaking the insulation of the connection



Name	Current (A)	Case color	Number of connections	Cross section range (mm ²)	Insulation removal length (mm)	Presence of the contact paste	Packing (pcs. in carton)
221-412	32	○ transparent	2	0.14–4.0	11	without paste	100
221-413	32	○ transparent	3	0.14–4.0	11	without paste	50
221-415	32	○ transparent	5	0.14–4.0	11	without paste	25
221-612	41	○ transparent	2	0.5–6.0	11	without paste	100
221-613	41	○ transparent	3	0.5–6.0	11	without paste	50
221-615	41	○ transparent	5	0.5–6.0	11	without paste	25
222-412	32	● grey	2	0.14–4.0	10	without paste	100
222-413	32	● grey	3	0.14–4.0	10	without paste	50
222-415	32	● grey	5	0.14–4.0	10	without paste	25

Blister mini-packs. Series 221 and 222 terminals

Series: 221 and 222

- A new series of universal miniature terminals for connecting all types of copper conductors: mono-core and multi-wire
- Maximum voltage: 450 V
- New mini terminals 221 series 40% smaller and more compact than the 222 series terminals
- Transparent case of 221 series terminals with levers allows to control the correct position of the conductor and the length of insulation removal
- New design of flat, easy-to-snap levers
- Possibility of measuring the electrical parameters of the circuit without disassembling and breaking the insulation of the connection
- The presence of special slots in the terminal case for placing levers prevents accidental disconnection of the conductor



Name	Current (A)	Case color	Number of connections	Cross section range (mm ²)	Insulation removal length (mm)	Presence of the contact paste	Packing (pcs. in carton)
221-412/996-016	32	○ transparent	2	0.14–4.0	11	without paste	16
221-413/996-012	32	○ transparent	3	0.14–4.0	11	without paste	12
221-415/996-008	32	○ transparent	5	0.14–4.0	11	without paste	8
222-412/996-010	32	● grey	2	0.14–4.0	10	without paste	10
222-413/996-005	32	● grey	3	0.14–4.0	10	without paste	5
222-415/996-005	32	● grey	5	0.14–4.0	10	without paste	5

«WAGO» terminals. Series 224

Series: 224



224-201

224-111

224-122

- Fast and reliable connection of lighting devices without the use of tools
- Maximum voltage: 400 V
- Reliable protection against touching the conductor leads from the ceiling/ wall
- Flat spring clip for single-core copper or aluminum conductors on the mounting side (ceiling or wall)
- Clip CAGE CLAMPR for connecting multi-wire, including tinned or crimped copper cores by end sleeves from the lighting device
- The quality of connection does not depend on the accuracy and skill of the installer
- Possibility of measuring the electrical parameters of the circuit without breaking the insulation of the connection
- Guaranteed contact reliability, eliminating short circuit

Name	Current (A)	Case color	Number of connections	Cross section range (mm ²)		Insulation removal length (mm)	Presence of the contact paste	Packing (pcs. in carton)
				Mounting side	Lighting device side			
224-201	24	● grey	2	1.0-2.5	0.5-2.5	9-11	without paste	50
224-111	24	● grey	2	1.0-2.5	0.5-2.5	9-11	with paste	100
224-122	24	○ white	3	1.0-2.5	0.5-2.5	9-11	with paste	100

Blister mini-packs. Series 224 «WAGO» terminals

Series: 224



- Fast and reliable connection of lighting devices without the use of tools
- Maximum voltage: 400 V
- Reliable protection against touching the conductor leads from the ceiling/ wall
- Flat spring clip for single-core copper or aluminum conductors on the mounting side (ceiling or wall)
- Clip CAGE CLAMPR for connecting multi-wire, including tinned or crimped copper cores by end sleeves from the lighting device
- The quality of connection does not depend on the accuracy and skill of the installer
- Possibility of measuring the electrical parameters of the circuit without breaking the insulation of the connection
- Guaranteed contact reliability, eliminating short circuit

Name	Current (A)	Case color	Number of connections	Cross section range (mm ²)		Insulation removal length (mm)	Presence of the contact paste	Packing (pcs. in carton)
				Mounting side	Lighting device side			
224-101/996-015	24	● grey	2	1.0-2.5	0.5-2.5	9-11	without paste	15
224-112/996-015	24	○ white	2	1.0-2.5	0.5-2.5	9-11	without paste	15

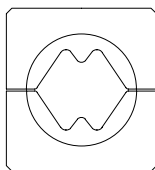
Features and advantages of the new miniature «WAGO» terminals

- | | |
|---|---|
| ■ Only branded products. Made in Germany | ■ Wire cross-section range: 0.14-4.0 mm ² |
| ■ Guarantee of high quality and reliability | ■ Availability of test sockets in each terminal |
| ■ Reduced size of terminals | ■ Terminals for mono-core and multi-wire conductor |
| ■ New transparent color-coded case | ■ Marking of insulation removal length on each terminal |
| ■ From 2 to 8 connections per terminal | ■ Installation does not require the use of tools |

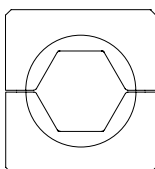


«KBT» Cable lugs and ferrules

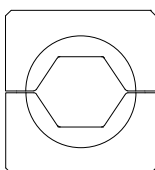
Recommendations for crimping power cable lugs



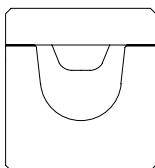
Dies with a W-shaped profile



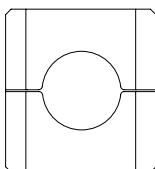
Dies with the profile of regular hexagon



Dies with the profile of a flattened hexagon



Dies with a wedge-shaped profile



Dies with round shape profile

Cable preparation

- Before starting installation work, make sure that the cable is de-energized.
- The cable cutoff must be flat and perpendicular to the cable axis.
- Remove the insulation from the core to a length equal to the depth of the conductor entering the lug shank with a margin of 5 mm for possible deformation of the lug after crimping.
- When working with a paper-insulated cable, remove dirt and degrease the stripped cable cores.
- When preparing the aluminum cable, clean the ends of the aluminum cores to a metallic shine with a cord brush and apply a quartz-vaseline paste.
- Sector cores must be pre rounded using rounding dies HM-300C(KBT) before crimping.

Cable lug selection

- The lug size should be selected according to the cross-section and flexibility class of the cable core. To ensure high-quality crimping, it is important that the outer diameter of the stripped cable core corresponds to the inner diameter of the lug shank as much as possible.
- The lug material must match the core material. When working with aluminum and copper cables, use relevant aluminum or copper lugs. When connecting an aluminum cable to a copper busbar, use aluminum-copper ferrules, for connecting aluminum and copper cables, use aluminum-copper adapter sleeves.
- The geometry of the contact part of the lug (the diameter of the mounting hole for the screw and the width of the blade) is selected according to the geometry and type of terminals of the input device.
- The climatic version of the lugs is selected in accordance with the operating conditions. In humid marine environments, use tinned copper lugs for long-term corrosion protection.

Tool and dies selection

- For crimping, use a professional tool with hydraulic, mechanical or battery drive.
- The size and type of dies must match the size and type of the selected lug.

Cable lug crimping

- Before crimping, make sure that the lug is correctly oriented on the cable relative to the contact terminals of the input device. Turn the lug around the core so that the cable core does not bend or twist when connected to the contact terminal.
- The use of special anti-corrosion contact pastes applied to contact surfaces increases the area of electrical contact.
- When installing the lugs and connecting ferrules, observe the number and sequence of crimps.
- Crimping is performed until the dies are completely closed.

Distinction of cable cores by flexibility grade

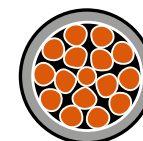
1 flexibility grade Wire grade ПБ-1



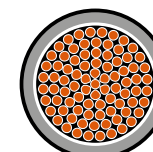
2 flexibility grade Wire grade ПБ-2



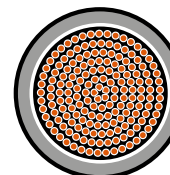
3 grade Wire grade ПБ-3



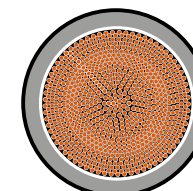
4 grade Cable grade КГ



5 grade Wire grade ПБС



6 grade Cable grade КОГ



Cable cross section (mm²)	1 grade		2 grade		3 grade		4 grade		5 grade		6 grade	
	Copper/aluminum core		Copper/aluminum core		Copper core		Copper core		Copper core		Copper core	
	Calculated diameter (mm)	Number of wires in the core	Calculated diameter (mm)	Number of wires in the core	Calculated diameter (mm)	Number of wires in the core	Calculated diameter (mm)	Number of wires in the core	Calculated diameter (mm)	Number of wires in the core	Calculated diameter (mm)	Number of wires in the core
2.5	1.78	1	2.01	7	2.08	7	2.12	20	2.10	50	2.39	140
4	2.25	1	2.55	7	2.62	7	2.65	20	2.97	56	3.11	228
6	2.76	1	3.12	7	3.20	19	3.21	30	3.74	84	3.69	189
10	3.57	1	4.05	7	4.00	19	4.50	49	5.28	80	5.10	324
16	4.50	1	5.10	7	5.20	19	5.76	49	6.03	224	6.15	513
25	5.65	1	6.42	6	6.75	19	7.20	49	7.78	196	7.88	783
35	6.60	1	7.56	6	7.65	19	8.89	98	9.04	189	9.84	1107
50	8.00	1	8.90	6	9.41	27	11.54	144	10.80	266	11.35	402
70	9.42	1	10.70	12	10.71	37	10.20	189	12.79	266	12.92	999
95	10.96	1	12.60	15	12.46	37	14.76	189	14.50	361	14.70	1332
120	12.28	1	14.21	18	14.40	61	16.98	266	16.75	608	17.12	1702
150	13.68	1	15.75	18	16.02	61	18.74	266	19.71	756	18.90	2109
185	15.20	1 (35)	17.64	30	17.60	91	22.61	330	21.53	925	20.37	2590
240	17.30	1 (35)	20.25	30	—	—	24.03	420	23.45	1221	23.72	3360

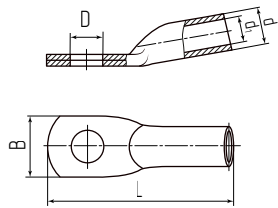
* In accordance with GOST 22483-2013 standard the actual cross section of the core may not correspond to the nominal

Copper cable lugs by GOST 7386 standard

Types: **ТМЛ** by GOST 7386-80 (tinned)
ТМ by GOST 7386-80 (without cover)



- Designed for crimping copper cables and wires
- Material: M2 grade electrical copper
- Coating:
 Type ТМЛ – electrolytic tinning (climatic version: «Т2»)
 Type ТМ – without cover (climatic version: VХЛ3)
- Operating voltage: up to 35 kV
- «КБТ» – the only enterprise in Russia, which produces a full line of sizes of cable lugs in accordance with standard – GOST 7386-80. 85 items in two types of climatic performance
- High quality tin with bismuth alloying additives ensures reliable protection against corrosion of contact connections. Matte tin-bismuth tinning distinguishes «КБТ» products from other South East Asia cable lugs manufacturers, which use cheap shiny surface
- Cable lugs shanks, in accordance with standard – GOST, are designed for cables and wires of the 5th and 6th grades of flexibility. For the installation of standard copper wires of the 2nd and 3rd grades of flexibility, it is recommended to select needed sizes of cable lugs by using special table
- Embossed marking of manufacturer's logo and size on each cable lug
- Mandatory chamfering and tumbling operations exclude the presence of burrs and facilitate the establishment of the cable core into the cable lug
- After stamping, cable lugs are annealed for achieving improvement of plasticity of the material
- Special series of high-precision dies for crimping cable lugs and ferrules, in accordance with standard – GOST have MW shape. These dies can be perfectly combined with established tools – «КБТ» hydraulic crimping tools
- Technological equipment and dies for the production of «КБТ» cable lugs are designed and manufactured in the tool workshop of our factory
- Comprehensive solution from the manufacturer:
 1. cable lugs and ferrules
 2. specially established tools for crimping
 3. high-precision dies for crimping operations
 4. recommendations for installing technology



Copper cable lugs by GOST 7386 standard

Name	Cross section (mm²)		Screw	D (mm)	B (mm)	L (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tools for crimping				
										Mechanical		Hydraulic		
ТМЛ 2.5-4-2.6	2.5	2.5	M 4	4.3	8	28	5	2.6	100	СТВ-05/15, СТК-05/15	ПК-16 м	ПК-6 м		
ТМЛ 2.5-5-2.6			M 5	5.3	10	28	5	2.6	100					
ТМЛ 2.5-6-2.6			M 6	6.4	12	30	5	2.6	100					
ТМЛ 4-5-3	4	4	M 5	5.3	10	32	5	3	100		ПК-35 м	ПКГ-50		
ТМЛ 4-6-3			M 6	6.4	12	32	5	3	100					
ТМЛ 6-5-4			M 5	5.3	10	32	6	4	100					
ТМЛ 6-6-4	6	6	M 6	6.4	12	32	6	4	100		ПКГ-120, ПМУ-120	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 10-5-5			M 5	5.3	11	40	8	5	100					
ТМЛ/ТМ 10-6-5			M 6	6.4	14	40	8	5	100					
ТМЛ/ТМ 10-8-5	10	10	M 8	8.4	16	40	8	5	100		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 16-6-6			M 6	6.4	14	40	9	6	100					
ТМЛ/ТМ 16-8-6			M 8	8.4	16	40	9	6	100					
ТМЛ/ТМ 25-6-7	25	25	M 6	6.4	15	45	10	7	100		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 25-8-7			M 8	8.4	16	45	10	7	100					
ТМЛ/ТМ 25-8-8			M 8	8.4	16	50	11	8	100					
ТМЛ/ТМ 25-10-8	35	25	M 10	10.5	20	50	11	8	100		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 35-8-9			M 8	8.4	18	60	12	9	100					
ТМЛ/ТМ 35-10-9			M 10	10.5	20	60	12	9	100					
ТМЛ/ТМ 35-12-9	35	35	M 12	13	22	60	12	9	100		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 35-8-10			M 8	8.4	20	63	13	10	100					
ТМЛ/ТМ 35-10-10			M 10	10.5	20	63	13	10	100					
ТМЛ/ТМ 35-12-10	50	35	M 12	13	22	63	13	10	100		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 50-8-11			M 8	8.4	20	63	14	11	100					
ТМЛ/ТМ 50-10-11			M 10	10.5	22	63	14	11	100					
ТМЛ/ТМ 50-12-11	70	50	M 12	13	24	63	14	11	100		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 70-10-13			M 10	10.5	24	65	16	13	50					
ТМЛ/ТМ 70-12-13			M 12	13	24	65	16	13	50					
ТМЛ/ТМ 95-10-15	120	95	M 10	10.5	28	75	19	15	25		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 95-12-15			M 12	13	28	75	19	15	25					
ТМЛ/ТМ 95-10-16			M 10	10.5	30	75	20	16	25					
ТМЛ/ТМ 95-12-16	120	95	M 12	13	30	75	20	16	25		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 120-12-17			M 12	13	34	81	22	17	25					
ТМЛ/ТМ 120-16-17			M 16	17	34	81	22	17	25					
ТМЛ/ТМ 120-12-18	150	120	M 12	13	35	85	24	18	25		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 120-16-18			M 16	17	35	85	24	18	25					
ТМЛ/ТМ 150-12-19			M 12	13	36	90	25	19	25					
ТМЛ/ТМ 150-16-19	185	150	M 16	17	36	90	25	19	25		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 150-12-20			M 12	13	38	90	26	20	25					
ТМЛ/ТМ 150-16-20			M 16	17	38	90	26	20	25					
ТМЛ/ТМ 185-12-21	240	185	M 12	13	40	95	27	21	25		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 185-16-21			M 16	17	40	95	27	21	25					
ТМЛ/ТМ 185-20-21			M 20	21	40	95	27	21	25					
ТМЛ/ТМ 185-16-23	240	185	M 16	17	45	105	30	23	10		ПКГ-120, ПМУ-240	ПКГ-120, ПМУ-240		
ТМЛ/ТМ 185-20-23			M 20	21	45	105	30	23	10					
ТМЛ/ТМ 240-16-24			M 16	17	48	105	32	24	10					
ТМЛ/ТМ 240-20-24	300	240	M 20	21	48	105	32	24	10					

● 2nd and 3d flexibility grade

● Thin flexible cables – 5th and 6th flexibility grade

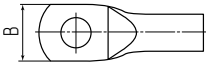
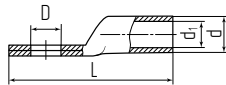
ТМЛ 70-12-13

Inner diameter of the shank (mm)	
Mounting screw size	
Nominal cross-section of the lug (mm ²)	
«Tinned» – cable lug plating	
«Copper» – cable lug material	
«Pipe» – semi-finished product for stamping	

Screw size	Tightening force (Nm)
M 4	2
M 5	6
M 6	10
M 8	20
M 10	30
M 12	40
M 16	60
M 20	80

«KBT» standard copper cable lugs

Type: **ТМЛс** by standard «KBT»



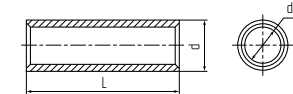
- Designed for termination of copper cables and wires by means of crimping.
- Material: refined copper grade M1
- Surface: tin-bismuth tinning (climatic version «T2»)
- The use of bismuth alloying additives ensures high quality and durability of the protective coating
- The geometry of the «KBT» standard lugs as close as possible to the size of the European manufacturers «standard» copper lugs
- The diameter of tubular part of lugs ТМЛс calculated for crimping cores of 1st, 2nd and 3d grades of flexibility, that makes up more than 99% of all the cables used in construction
- «KBT» standard lugs compensate disadvantages of the traditional GOST 7386-80 standard. Verified geometry guarantees optimal matching of the lug to the size of the cable core
- The size and length of the «KBT» standard lugs shank provides precise positioning for crimping
- Similarly with DIN 46235, «KBT» standard ТМЛс lugs use a simple and clear marking of two numbers: «nominal cross-section» – «diameter of the mounting hole»
- Special series of high-precision dies - hexagon shape for extremely simple, safe and efficient crimping. These dies can be perfectly combined with established tools – «KBT» hydraulic crimping tools
- Comprehensive solution from the manufacturer: cable lugs+ tools and dies for crimping+ installing technology

Name	Cross section (mm²)	Screw	D (mm)	B (mm)	L (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tools for crimping	
									Mechanical	Hydraulic
ТМЛс 1.5-4	0.34-1.5	M 4	4.3	7.0	18.0	3.5	1.7	100	ПК-16м	ПК-6м
ТМЛс 1.5-5		M 5	5.3	7.0	18.5	3.5	1.7	100		
ТМЛс 2.5-5	1.5-2.5	M 5	5.3	8.5	19.0	3.9	2.3	100	ПК-35м	ПКГ-50
ТМЛс 2.5-6		M 6	6.4	9.5	22.0	3.9	2.3	100		
ТМЛс 4-5	2.5-4.0	M 5	5.3	8.5	21.5	4.4	2.8	100	ПКГ-120, ПМУ-120	ПГР-70, ПГРс-70АМ
ТМЛс 4-6		M 6	6.4	9.5	24.0	4.4	2.8	100		
ТМЛс 6-5	4.0-6	M 5	5.3	8.5	25	5.1	3.5	100	ПМУ-240	ПГР-120, ПГРс-120, ПГРс-240А, ПГРс-240
ТМЛс 6-6		M 6	6.4	9.5	27	5.1	3.5	100		
ТМЛс 10-6	10	M 6	6.4	9.5	29	6.3	4.5	100	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 10-8		M 8	8.4	11.5	33	6.3	4.5	100		
ТМЛс 16-6	16	M 6	6.4	12	33	7.9	5.5	100	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 16-8		M 8	8.4	12	37	7.9	5.5	100		
ТМЛс 25-6	25	M 6	6.4	14	37	9.5	6.9	100	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 25-8		M 8	8.4	14	41	9.5	6.9	100		
ТМЛс 25-10	35	M 10	10.5	16	45	9.7	6.9	100	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 35-8		M 8	8.4	16	44	11.0	8.2	100		
ТМЛс 35-10	50	M 10	10.5	16	48	11.0	8.2	100	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 50-8		M 8	8.4	19	48	12.6	9.6	100		
ТМЛс 50-10	70	M 10	10.5	19	52	12.6	9.6	100	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 70-10		M 10	10.5	22	56	14.5	11.5	50		
ТМЛс 70-12	95	M 12	13	22	58	14.5	11.5	50	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 95-10		M 10	10.5	26	63	17.5	13.5	25		
ТМЛс 95-12	120	M 12	13	26	65	17.5	13.5	25	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 120-10		M 10	10.5	29	68	19.5	15.0	25		
ТМЛс 120-12	150	M 12	13	29	68	19.5	15.0	25	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 150-12		M 12	13	32	75	21.0	16.5	25		
ТМЛс 150-16	185	M 16	17	32	81	21.0	16.5	25	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 185-12		M 12	13	35	84	23.5	18.5	25		
ТМЛс 185-16	240	M 16	17	35	84	23.5	18.5	25	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 240-12		M 12	13	40	92	26.0	21.0	10		
ТМЛс 240-16	300	M 16	17	40	92	26.0	21.0	10	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ТМЛс 300-16		M 16	17	45	100	29.5	23.5	5		
ТМЛс 400-16	400	M 16	17	50	116	33.0	26.5	5	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300

2nd and 3rd flexibility grade cables

Tin plated copper cable ferrules by GOST 23469 standard

Type: **ГМЛ** by GOST 23469.3-79 standard



- Designed for termination of copper cables and wires by means of crimping
- Material: electrical copper, grade M2
- Surface: tin-bismuth tinning (climatic version «T2»)
- Operating voltage: up to 10 kV
- Ferrules have end-to-end design
- Matte tinning with bismuth additives provides improved corrosion resistance of the protective coating
- The inner and outer diameters of the ferrules – GOST 23469 correspond to the pipes sizes, of which the lugs are made, in accordance to standard GOST 7386
- Ferrules by GOST standard are manufactured for cables and wires of the 5th and 6th grades of flexibility. For mounting standard wires and cables of the 2nd and 3rd grades of flexibility, we recommend to choose correct sizes in special table
- Special series of high-precision dies for crimping cable lugs and ferrules have MW shape. These dies can be perfectly combined with established tools – «KBT» hydraulic crimping tools
- Comprehensive solution from the manufacturer: Cable ferrules+ tools and dies for crimping+ installing technology

Name	Cross section (mm²)		L (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tools for crimping	
	2nd and 3rd flexibility grades cables	Thin-wire flexible cables of the 5th and 6th flexibility grades					Mechanical	Hydraulic
ГМЛ 1.5*	1.5	1.5	15	3.3	1.8	100	СТВ/СТК-05	ПК-16м
ГМЛ 2.5	2.5	2.5	20	5	2.6	100		
ГМЛ 4	4	4	20	5	3	100	ПК-35м	ПКГ-50
ГМЛ 6	6	6	30	6	4	100		
ГМЛ 10	10	10	30	8	5	100	ПКГ-120, ПМУ-120	ПГР-70, ПГРс-70
ГМЛ 16	16	16	30	9	6	100		
ГМЛ 25	35	25	40	11	8	100	ПМУ-240	ПГР-70, ПГРс-70
ГМЛ 35	35	35	50	12	9	100		
ГМЛ 50	70	50	50	14	11	100	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ГМЛ 70	95	70	53	16	13	50		
ГМЛ 95	120	95	67	19	15	25	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ГМЛ 120	150	120	67	22	17	25		
ГМЛ 150	185	150	67	25	19	25	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300
ГМЛ 185	240	185	75	27	21	25		
ГМЛ 240	300	240	75	32	24	10	ПГР-300, ПГРс-300, ПГРс-400	ПГРс-300АМ, ПГРс-300

* not standard size



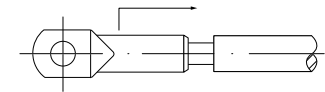
2nd and 3rd flexibility grades cables



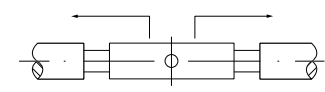
Thin-wire flexible cables of the 5th and 6th flexibility grades

Sequence of cable ferrules and lugs crimping

- The cable core should be stripped to the depth of the pipe part of the lug. The stripped end of the cable should be inserted into the lug until it stops.
- The first crimping on the pipe part of the lug should be performed near a flat blade with a hole for the mounting screw. Subsequent crimping, depending on the length of the tube part of the lug, lies in the direction of the lug shank.



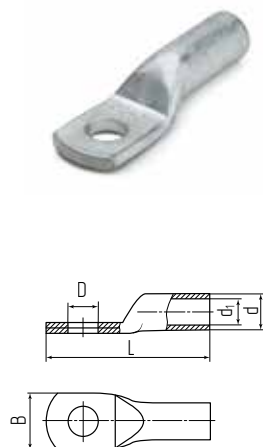
- The two ends of the cable are stripped to the half of ferrule length. One stripped end of the cable should be inserted into the ferrule up to its mid-length.
- The first crimping of the ferrule on the cable should be made closer to its center. Subsequent crimping, depending on the length of the ferrule, lies in the direction of the cable.
- After one end of the cable is fully crimped on the ferrule, the other end of the cable should be inserted on the opposite side of the ferrule and the crimping sequence should be repeated from the center to the end of the ferrule.



Tin-plated copper cable lugs DIN standard

Type: **ТМЛ (DIN)** by DIN 46235 standard

- Designed for termination of copper cables and wires by means of crimping.
- Material: refined copper, grade M1
- Surface: tin-bismuth electrolytic tinning
- Operating voltage: up to 35kV
- Standard – DIN 46235: the most famous and authoritative global standard for copper cable lugs
- The shank part of the lugs according to DIN 46235 is longer than according to GOST standard
- Increased length of the shank part of DIN lugs allows to make a greater number of crimping operations, which ensures reliable electrical contact and additional mechanical strength of the connection
- On the tubular part of the cable lug applied a two-track layout, which determines the location and amount of compressions, according to the width of the used dies
- For crimping increased internal diameter of the shank in GOST lugs, special wedge-shaped or MWV-shaped dies are required. DIN 46235 lugs should be crimped with a classic hexagonal shape dies
- The wall thickness of the DIN lugs is more precisely adjusted and balanced for each type size: it is thinner than GOST standard lugs on sizes 6 and 10 mm² and thicker on lugs from 35 to 185 mm² inclusive
- 32 most demanded sizes, starting from: 6 mm² up to 1000 mm²
- Inner diameter of the pipe part of the shank of DIN lugs is optimally designed for crimping cores of the 2nd and 3rd grade of flexibility (more than 90% of all construction cables)



Name	Cross section (mm ²)	Screw	D (mm)	B (mm)	L (mm)	d (mm)	d ₁ (mm)	Packing (pcs.)	Tools for crimping			
									Mechanical		Hydraulic	
ТМЛ (DIN) 6-5	6	M 5	5.3	8.5	30.5	5.5	3.8	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 6-6		M 6	6.4	8.5	31.5	5.5	3.8	100				
ТМЛ (DIN) 10-5	10	M 5	5.3	9	34	6.0	4.5	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 10-6		M 6	6.4	9	34.5	6.0	4.5	100				
ТМЛ (DIN) 16-6	16	M 6	6.4	13	43.5	8.5	5.5	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 16-8		M 8	8.4	13	46	8.5	5.5	100				
ТМЛ (DIN) 16-10	16	M 10	10.5	17	48	8.5	5.5	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 25-6		M 6	6.4	14	45.5	10.0	7.0	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 25-8	25	M 8	8.4	16	48	10.0	7.0	100		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 25-10		M 10	10.5	17	50	10.0	7.0	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 35-8	35	M 8	8.4	17	52	12.5	8.2	50		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 35-10		M 10	10.5	19	54	12.5	8.2	50	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 50-8	50	M 8	8.4	20	62	14.5	10.0	50		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 50-10		M 10	10.5	22	64	14.5	10.0	50	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 70-10	70	M 10	10.5	24	67	16.5	11.5	50		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 70-12		M 12	13	24	68	16.5	11.5	50	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 95-10	95	M 10	10.5	28	77	19.0	13.5	10		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 95-12		M 12	13	28	78	19.0	13.5	10	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 120-10	120	M 10	10.5	32	85	21.0	15.5	10		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 120-12		M 12	13	32	86	21.0	15.5	10	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 150-10	150	M 10	10.5	34	93	23.5	17.0	10		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 150-12		M 12	13	34	94	23.5	17.0	10	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 185-12	185	M 12	13	37	98	25.5	19.0	10		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 185-16		M 16	17	37	101	25.5	19.0	10	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 240-12	240	M 12	13	42	108	29.0	21.5	5		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 240-16		M 16	17	42	111	29.0	21.5	5	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 300-16	300	M 16	17	46	119	32.0	24.5	5		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 400-16	400	M 16	17	54	140	38.5	27.5	5	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 500-20	500	M 20	21	60	150	42.0	31.0	1		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 625-20	625	M 20	21	64	160	44.0	34.5	1	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 800-20	800	M 20	21	75	190	52.0	40.0	1		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛ (DIN) 1000-20	1000	M 20	21	85	190	58.0	44.0	1		ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120

2nd and 3rd flexibility grades cables

Multi-size sets for tight wire connection

Type: **COTK**

- Designed for tight connection of copper wires
- Each set consists of a single crimping ferrule and a transparent heat shrinkable sleeve with an adhesive layer
- The sets are multi-sized and designed for an extended range of cross sections of copper wires
- Tubes material: cross-linked polyolefin
- Connector material: M1 grade copper
- Ferrules: tin-bismuth plating
- In the center of the ferrules there is a locking partition that determines the length of insulation removal and the depth of copper core entry
- The heat shrinkable tube installs on top of the crimped connection
- Heat-shrinkable tubes with an adhesive sub layer and a shrinkage ratio 3:1 provide complete sealing and insulation of connections
- Transparent tubes guarantee correct centering of the heat shrinkable tube relative to the ferrule and complete visual inspection of the contact connections after shrinkage

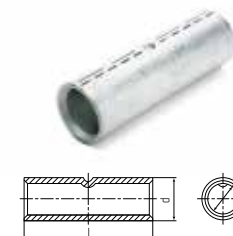


Name	Cross section (mm ²)	Ferrule length (mm)	Heat shrinkable tube length (mm)	Packing (pcs.)	Tools for crimping
COTK-0.25/1.5	0.25-1.5	15	30	25 sets	CTK-05, CTB-05, CTK-15, CTB-15 and «KBT» butane torches
COTK-1.0/2.5	1.0-2.5	15	30	25 sets	
COTK-2.5/6.0	2.5-6.0	15	30	25 sets	
COTK-6.0/10	6.0-10	20	40	25 sets	

Tin plated copper cable ferrules DIN standard

Type: **ГМЛ (DIN)** by DIN 46267 standard

- Designed for termination of copper cables and wires by means of crimping
- Material: refined copper, M1 grade
- Surface: tin-bismuth electrolytic tinning
- Operating voltage: up to 10 kV
- Ferrules have through construction and locking pressing in the middle, which determines the inserting depth of the cable cores
- On the ferrules is applied two-track marking, which determines the location and number of crimps depending on the width of the dies



Name	Cross section (mm ²)	L (mm)	d (mm)	d ₁ (mm)	Packing (pcs.)	Tools for crimping			
						Mechanical		Hydraulic	
ГМЛ (DIN) 6	6	30	5.5	3.8	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 10	10	30	6.0	4.5	100				
ГМЛ (DIN) 16	16	50	8.5	5.5	100	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 25	25	50	10.0	7.0	100				
ГМЛ (DIN) 35	35	50	12.5	8.2	50	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 50	50	56	14.5	10.0	50				
ГМЛ (DIN) 70	70	56	16.5	11.5	50	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 95	95	70	19.0	13.5	10				
ГМЛ (DIN) 120	120	70	21.0	15.5	10	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 150	150	80	23.5	17.0	10				
ГМЛ (DIN) 185	185	85	25.5	19.0	10	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 240	240	90	29.0	21.5	5				
ГМЛ (DIN) 300	300	100	32.0	24.5	5	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 400	400	150	38.5	27.5	5				
ГМЛ (DIN) 500	500	160	42.0	31.0	1	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 625	625	160	44.0	34.5	1				
ГМЛ (DIN) 800	800	200	52.0	40.0	1	ПК-16М	ПК-35М	ПКГ-50	ПКГ-120, ПМУ-120
ГМЛ (DIN) 1000	1000	200	58.0	44.0	1				

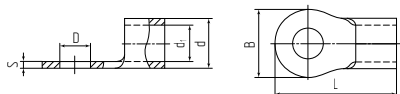
2nd and 3rd flexibility grades cables

Soldering type copper cable lugs

Type: ПМ



- Designed for terminating by soldering or crimping of the cables and wires with copper cores
- Material: M1 grade sheet electrical copper
- Surface: tin-bismuth electrolytic tinning
- The technological seam on the contact rounding section for the cable core is soldered, so the pipe part of the lug forms a solid monolithic structure
- Along with soldering the design features of ПМ «KBT» lugs suggest mounting by crimping as an alternative or the combined use of two methods of connection
- The inner surface of the tubular part of the lugs has circular cross notches that provide special mechanical strength and quality of electrical contact
- Due to the welded seam, the orientation of the lug in the tool dies does not matter and crimping can be performed even on top of the weld itself
- Special series of high-precision dies «KBT» for crimping by hydraulic crimping tools ПГР-300, ПГРс-300, ПГП-300 (KBT)



Name	Cross section (mm ²)		Screw	D (mm)	B (mm)	L (mm)	d (mm)	d ₁ (mm)	S (mm)	Packing (pcs.)	Tools for crimping			
											Mechanical		Hydraulic	
ПМ 1.5-4	1.5	1.5	M4	4.3	6.6	14.6	3.4	1.7	0.8	100	СТВ-15, СТК-15	ПК-16м	ПК-6м	
ПМ 1.5-5			M5	5.3	8.0	16.0	3.4	1.7	0.8	100				
ПМ 2.5-4	2.5	2.5	M4	4.3	6.5	14.4	4.0	2.3	0.8	100				
ПМ 2.5-5			M5	5.3	9.5	17.0	4.0	2.3	0.8	100				
ПМ 2.5-6	2.5	2.5	M6	6.4	12.0	21.8	4.0	2.3	0.8	100				
ПМ 4-4			M4	4.3	8.0	18.0	5.0	3.0	1.0	100				
ПМ 4-5	4	4	M5	5.3	8.0	18.0	5.0	3.0	1.0	100				
ПМ 4-6			M6	6.4	8.0	18.0	5.0	3.0	1.0	100				
ПМ 6-5	6	6	M5	5.3	9.5	19.5	5.5	3.4	1.0	100				
ПМ 6-6			M6	6.4	12.0	22.5	5.5	3.4	1.0	100				
ПМ 6-8	6	6	M8	8.4	15.0	27.0	5.5	3.4	1.0	100				
ПМ 10-6	10	10	M6	6.4	15.0	30.0	7.2	4.7	1.2	100	ПК-35м	ПК-120	ПМУ-240	ПГР-300, ПГРс-300, ПГП-300 with dies set HM-300 ПМ
ПМ 10-8			M8	8.4	15.0	29.5	7.2	4.7	1.2	100				
ПМ 16-6	16	16	M6	6.4	12.0	30.0	9.0	6.0	1.5	100				
ПМ 16-8			M8	8.4	16.0	32.5	9.0	6.0	1.5	100				
ПМ 16-10	16	16	M10	10.5	16.0	32.5	9.0	6.0	1.5	100				
ПМ 25-8			M8	8.4	16.5	34.0	11.5	8.0	1.7	100				
ПМ 25-10	35	25	M10	10.5	16.5	34.0	11.5	8.0	1.7	100				
ПМ 35-8			M8	8.4	22.0	42.5	13.4	9.5	2.0	100				
ПМ 35-10	50	35	M10	10.5	22.0	43.0	13.4	9.5	2.0	100				
ПМ 50-8			M8	8.4	22.0	50.0	15.5	11.5	2.0	50				
ПМ 50-10	70	50	M10	10.5	22.0	50.0	15.5	11.5	2.0	50				
ПМ 70-10			M10	10.5	24.0	50.5	17.5	13.5	2.0	50				
ПМ 95-10	120	95	M10	10.5	27.0	54.5	19.5	15.0	2.2	50				
ПМ 120-10	150	120	M10	10.5	29.0	56.0	22.0	17.0	2.5	20				
ПМ 150-12	185	150	M12	12.8	36.5	66.0	26.0	19.3	3.3	20				
ПМ 185-12	240	185	M12	12.8	39.0	68.5	28.0	21.0	3.5	10				

2nd and 3rd flexibility grades cables

Thin-wire flexible cables of the 5th and 6th flexibility grades



Narrow blade copper cable lugs

Type: ТМЛ-У



- Designed for crimping copper cables and wires with subsequent connection to low voltage circuit switches
- Material: M1 grade refined copper
- Surface: tin-bismuth electrolytic tinning
- The parameters of the mounting part of the lugs: the width of the blade and the diameter of the contact hole for the screw are intended for connection to block circuit switches (MCCB)
- Stamped marking of the size and manufacturer's logo on each cable lug
- Compatibility: block circuit switches with a nominal value from 100 to 630 A in a cast case (MCCB) of imported and domestic manufacturers with contact terminals based on screw fixation

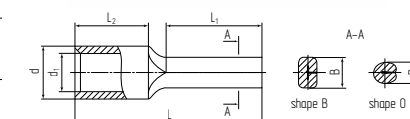


Name	Cross section (mm ²)	Screw	D (mm)	B (mm)	L (mm)	d (mm)	d ₁ (mm)	Packing (pcs.)	Tools for crimping			
									Mechanical		Hydraulic	
ТМЛ-У 35-6	35	M6	6.5	15	39.5	12.0	8.5	25	ПМУ-120	ПМУ-240	ПГР-70	ПГР-120, ПГРс-120
ТМЛ-У 50-6	50	M6	6.5	15	47.0	14.0	10.0	25				
ТМЛ-У 70-6	70	M6	6.5	17	53.0	16.5	12.0	25				
ТМЛ-У 70-8	70	M8	8.5	17	53.0	16.5	12.0	25				
ТМЛ-У 95-8	95	M8	8.5	19	59.5	18.0	13.5	10				
ТМЛ-У 120-8	120	M8	8.5	19	62.5	19.5	15.0	10				
ТМЛ-У 120-10	120	M10	10.5	19	62.5	19.5	15.0	10				
ТМЛ-У 150-8	150	M8	8.5	19	67.5	21.0	16.5	5				
ТМЛ-У 150-10	150	M10	10.5	19	67.5	21.0	16.5	5				
ТМЛ-У 185-10	185	M10	10.5	24.5	76.5	24.0	19.0	5				
ТМЛ-У 240-10	240	M10	10.5	31	83.5	26.0	21.0	5				

Pin type copper terminals by DIN 46230

Type: НШП by DIN 46230

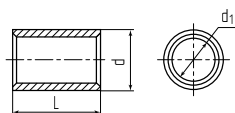
- Designed for crimping of copper cables
- Material: M1 grade sheet electrical copper
- Surface: tin-bismuth electrolytic tinning
- The technological seam on the contact rounding section for the cable core is soldered, so the pipe part of the lug forms a solid monolithic structure
- The inner surface of the tubular part of the lugs has circular cross notches that provide special mechanical strength and quality of electrical contact
- Used for connecting to the terminals of circuit switches and other electrical devices with a limited width of the contact terminal



Name	Cross section (mm ²)	Shape	B (mm)	L (mm)	L ₁ (mm)	L ₂ (mm)	d (mm)	d ₁ (mm)	Packing (pcs.)	Tools for crimping			
										Mechanical		Hydraulic	
НШП 1.5-12	0.5-1.5	«O»	1.8	17.0	11.0	5.0	3.4	1.6	100	СТК-15	СТВ-15	ПК-16м	ПК-6м
НШП 2.5-12	1.5-2.5	«O»	2.0	17.0	11.0	4.8	4.1	2.3	100				
НШП 6.0-12	4-6	«O»	3.0	20.0	11.2	5.7	5.5	3.3	100				
НШП 10-12	10	«B»	4.3	22.5	11.5	8.2	7.0	4.8	100				
НШП 16-13	16	«B»	5.5	26.2	12.0	10.1	8.4	6.0	100				
НШП 25-15	25	«B»	7.0	33.6	15.0	12.3	10.5	7.0	100				
НШП 35-20	35	«B»	8.1	40.5	19.6	16.0	11.6	8.6	100				
НШП 50-20	50	«B»	9.5	45.0	20.0	19.6	13.5	10.0	100				
НШП 70-25	70	«B»	11.0	55.5	25.0	24.0	16.0	12.0	50				
НШП 95-25	95	«B»	12.5	55.3	24.5	22.5	19.8	13.7	50				

Parallel connection tin plated copper cable ferrules

Type: ГМЛ-П



- Designed for parallel connection with overlapping copper wires by means of crimping
- Material: M1 grade electrical copper
- Surface: tin-bismuth tinning (climatic version «T2»)
- Maximum operating voltage: up to 1 kV
- Ferrules have through construction
- High quality matt tinning with bismuth alloying additives ensures reliable protection against corrosion
- Removed chamfers at the edges of the ferrule make it easier to install the wire
- The reduced dimensions of the ferrules allow installation in a limited space
- Extended multi-dimensional crimping ranges
- Within the specified range it is possible to connect wires of different cross sections in one line or install a branch
- Complete solution from the manufacturer:
 1. cable lugs and ferrules
 2. crimping tools
 3. crimping dies

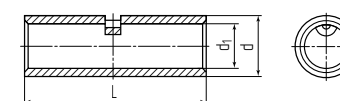
Name	Total cross section (mm ²)	L (mm)	d (mm)	d ₁ (mm)	Packing (pcs.)	Tools for crimping			
						Mechanical		Hydraulic	
ГМЛ-П 6	2.5-6.0	9.0	5.1	3.5	500	ПК-16М ПК-35М ПК-50		ПТР-70 ПТР-120 ПТР-120	
ГМЛ-П 10	6.0-10.5	10.0	6.5	4.5	500				
ГМЛ-П 16	12-18	11.0	8.1	5.5	500				
ГМЛ-П 25	20-25	13.0	9.7	6.5	500				

Summary application table of ГМЛ-П ferrules

Wire cross section	number of cores	1.0 mm ²			1.5 mm ²			2.5 mm ²			4.0 mm ²			6.0 mm ²		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1.0 mm ²	1			6	6		6	6	6/10	10						
	2		6	6	6	6	6/10	6	10	10						
	3	6	6		6	6	10	6	10							
1.5 mm ²	1	6	6	6		6	6/10	6	6/10	10	6					
	2		6	6	6	6/10	10	6/10	10	10/16	10	10				
	3	6	6/10	10	6/10	10	10	6/10	10	16	10	16	16			
2.5 mm ²	1	6	6	6	6	6/10	6/10	6	10	10/16	10	10	16	10		
	2	6/10	10	10	6/10	10	10	10	10	16	10	16		16		
	3	10	10		10	10/16	16	10/16	16	16		16		16		
4.0 mm ²	1				6	10	10	10	10		10		16			25
	2					10	16	10	16	16		16		16	25	
	3						16	16			16		25	16	25	
6.0 mm ²	1							10	16	16		16	16			25
	2										25	25		25		
	3										25			25		

Tin plated copper cable ferrules with inspection hole

Type: ГМЛ(о)



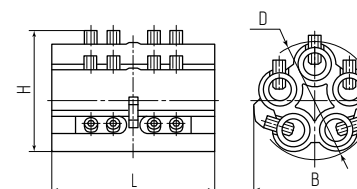
- Designed for butt-to-end connection of wires and cables with copper cores without axial load
- Material: M1 grade electrical copper
- Surface: special tin-bismuth, which provides protection against corrosion and guarantees high quality of the connection in all weather and climatic conditions
- Operating voltage: up to 1 kV
- Extended multi-dimensional crimping ranges for mounting using tools СТВ-05/15; СТВ-05/15; ПК-6М; ПК-16М; ПК-35М
- Ferrules have a technological window for visual control of the depth of the cable core entry
- The control window serves as a locking partition that determines the depth of the cable core entry
- Complete solution from the manufacturer:
 1. cable lugs and ferrules
 2. crimping tools
 3. crimping dies

Name	Cross section (mm ²)	L (mm)	d (mm)	d ₁ (mm)	Packing (pcs.)	Tools for crimping			
						Mechanical		Hydraulic	
ГМЛ(о)-0.34/1.5	0.34-1.5	15.0	3.3	1.8	100	СТВ-05/15 СТВ-05/15	ПК-16М ПК-35М	ПТР-70 ПТР-120	ПТР-120 ПТР-120
ГМЛ(о)-1.5/2.5	1.5-2.5	15.0	4.0	2.4	100				
ГМЛ(о)-2.5/6.0	2.5-6.0	15.0	5.5	3.5	100				
ГМЛ(о)-6.0/10.0	6.0-10.0	20.0	7.0	4.5	100				
ГМЛ(о)-16	16	20.0	7.4	5.4	100				
ГМЛ(о)-25	25	30.0	9.0	6.7	100				

Connector blocks in polymer case

Type: KCM

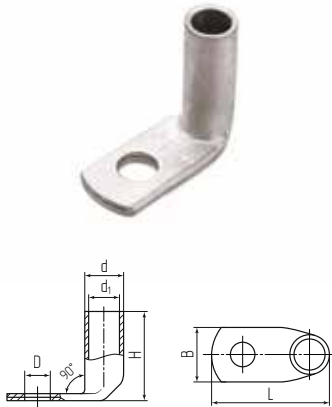
- Designed for connection multi-core cables and wires by screw fixing
- It can be used in cast resin or heat shrinkable joints, for cables with plastic and rubber insulation for voltage up to 1 kV
- Included in a set:
 - polymer case
 - 5 screw connectors
 - hex key wrench
- Connector blocks require installation of both copper and aluminum cables with solid or multi-wire cores
- Operating voltage: up to 1 kV
- Case material: PBT, does not support combustion
- Connector material: brass, grade LS58-2
- Connector surface: electrolytic tinning
- Screw material: stainless steel
- All screws have an internal hexagon profile
- The blocks are multi-dimensional and cover a wide range of cross sections
- Tool for installation: hex key (included)



Name	Cross section (mm ²)	L (mm)	H (mm)	D (mm)	B (mm)	Packing (pcs.)	Tool for installation
KCM-(1.5-6)	1.5-6.0	30	30	31.5	31.5	1	hex key (included)
KCM-(6-25)	6-25	50	42	43.5	45	1	

Tin-plated copper cable lugs with the angular position shank

Types: **ТМЛс (90) / ТМЛс (45)** by «KBT» standard



- Designed for crimping copper cables and wires
- Material: refined M1 grade copper
- Coating: tin-bismuth tinning (climate version «T2»)
- The new full-size range of angle lugs – «KBT» standard is represented by two series: with an angle 90 and 45° spade
- The diameter of the tubular part of ТМЛс lugs is designed for crimping cores of 1, 2 and 3 classes of flexibility
- Installation in hard-to-reach places and limited working space
- The narrowed spade of the lugs «KBT» standard, in comparison with GOST standard lugs according, expands the scope of its application and allows to mount these lugs on modern terminals of electrical devices
- The dimensions and length of «KBT» standard lugs shank ensure precise positioning for crimping
- Special series of high-precision dies of regular hexagon shape for crimping. The dies are compatible with «KBT» hydraulic tools
- Complete solution from the manufacturer: cable lugs and ferrules/crimping tools and dies/ recommendations for installation technology

Name	Cross section (mm²)	Screw	D (mm)	B (mm)	L (mm)	H (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tools for crimping	
										Mechanical	Hydraulic
ТМЛс(90) 6-5	6	M 5	5.3	9.0	20.1	14.0	5.1	3.5	100	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛс(90) 6-6		M 6	6.4	9.5	21.6	14.0	5.1	3.5	100		
ТМЛс(90) 10-6	10	M 6	6.4	10.0	22.8	16.0	6.3	4.5	100		ПМУ-240
ТМЛс(90) 10-8		M 8	8.4	12.0	27.3	16.0	6.3	4.5	100		
ТМЛс(90) 16-6	16	M 6	6.4	12.0	24.4	21.0	7.9	5.5	100		
ТМЛс(90) 16-8		M 8	8.4	12.0	28.9	21.0	7.9	5.5	100		
ТМЛс(90) 25-8	25	M 8	8.4	15.0	31.0	24.0	9.5	6.9	100		ПТР-70, ПТРс-70, ПТРс-120, ПТРс-240, ПТРс-300/300y, ППТ-300
ТМЛс(90) 25-10		M 10	10.5	15.0	36.0	24.0	9.5	6.9	100		
ТМЛс(90) 35-8	35	M 8	8.4	16.5	32.5	27.5	11.0	8.2	100		
ТМЛс(90) 35-10		M 10	10.5	16.5	37.5	27.5	11.0	8.2	100		
ТМЛс(90) 50-8	50	M 8	8.4	19.0	35.1	31.5	12.6	9.6	100		
ТМЛс(90) 50-10		M 10	10.5	19.0	39.1	31.5	12.6	9.6	100		
ТМЛс(90) 70-10	70	M 10	10.5	21.5	41.0	35.0	14.5	11.5	50		
ТМЛс(90) 70-12		M 12	13.0	21.5	43.0	35.0	14.5	11.5	50		
ТМЛс(90) 95-10	95	M 10	10.5	26.0	44.0	41.0	17.5	13.5	25		
ТМЛс(90) 95-12		M 12	13.0	26.0	46.0	41.0	17.5	13.5	25		
ТМЛс(90) 120-12	120	M 12	13.0	29.0	49.5	45.5	19.5	15.0	10		
ТМЛс(90) 150-12	150	M 12	13.0	30.5	51.0	50.5	21.0	16.5	10		

Name	Cross section (mm²)	Screw	D (mm)	B (mm)	L (mm)	H (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tools for crimping	
										Mechanical	Hydraulic
ТМЛс(45) 6-5	6	M 5	5.3	9.0	26.0	10.0	5.1	3.5	100	ПКГ-50	ПКГ-120, ПМУ-120
ТМЛс(45) 6-6		M 6	6.4	9.5	26.5	10.0	5.1	3.5	100		
ТМЛс(45) 10-6	10	M 6	6.4	10.0	29.0	11.5	6.3	4.5	100		ПМУ-240
ТМЛс(45) 10-8		M 8	8.4	12.0	33.0	11.5	6.3	4.5	100		
ТМЛс(45) 16-6	16	M 6	6.4	12.0	32.5	15.0	7.9	5.5	100		
ТМЛс(45) 16-8		M 8	8.4	12.0	36.5	15.0	7.9	5.5	100		
ТМЛс(45) 25-8	25	M 8	8.4	14.5	40.5	17.5	9.5	6.9	100		ПТР-70, ПТРс-70, ПТРс-120, ПТРс-240, ПТРс-300/300y, ППТ-300
ТМЛс(45) 25-10		M 10	10.5	14.5	45.5	17.5	9.5	6.9	100		
ТМЛс(45) 35-8	35	M 8	8.4	16.5	44.0	20.0	11.0	8.2	100		
ТМЛс(45) 35-10		M 10	10.5	16.5	49.0	20.0	11.0	8.2	100		
ТМЛс(45) 50-8	50	M 8	8.4	19.0	48.5	22.5	12.6	9.6	100		
ТМЛс(45) 50-10		M 10	10.5	19.0	52.5	22.5	12.6	9.6	100		
ТМЛс(45) 70-10	70	M 10	10.5	22.0	57.0	25.0	14.5	11.5	50		
ТМЛс(45) 70-12		M 12	13.0	22.0	59.0	25.0	14.5	11.5	50		
ТМЛс(45) 95-10	95	M 10	10.5	26.0	63.0	30.0	17.5	13.5	25		
ТМЛс(45) 95-12		M 12	13.0	26.0	65.0	30.0	17.5	13.5	25		
ТМЛс(45) 120-12	120	M 12	13.0	29.0	70.5	32.0	19.5	15.0	10		
ТМЛс(45) 150-12	150	M 12	13.0	32.0	76.0	36.0	21.0	16.5	10		

Copper cable lugs in mini pack

Type: **ТМЛс** by «KBT» standard

- Designed for crimping copper cables and wires
- Material: refined M1 grade copper
- Coating: tin-bismuth tinning (climate version «T2»)
- «KBT» standard lugs geometry is as close as possible to the size of «standard» copper lugs from European manufacturers
- The diameter of the tubular part of ТМЛс lugs is designed for crimping cores of 1, 2 and 3 classes of flexibility, making up more than 90% of all used construction cables
- The dimensions and length of «KBT» standard lugs shank ensure precise positioning for crimping
- Marking of the size and manufacturer's logo on each lug
- Special series of high-precision dies of regular hexagon shape for crimping. The dies are compatible with «KBT» hydraulic tools
- Complete solution from the manufacturer: cable lugs and ferrules/crimping tools and dies/ recommendations for installation technology
- Retail mini-packaging in blisters



Name	Cross section (mm²)	Screw	Quantity (pcs.)	Tools
ТМЛс 1.5-4 (20 pcs.)	0.34-1.5	M 4	20	СТВ-05, СТВ-15 СТК-05, СТК-15 Sets: СТВ/ СТД/ СТФ ПК-6м ПК-16м ПК-35м
ТМЛс 2.5-6 (20 pcs.)	1.5-2.5	M 6	20	
ТМЛс 4-6 (20 pcs.)	2.5-4	M 6	20	
ТМЛс 6-6 (20 pcs.)	4-6	M 6	20	
ТМЛс 10-6 (10 pcs.)	10	M 6	10	
ТМЛс 16-6 (10 pcs.)	16	M 6	10	
ТМЛс 25-8 (5 pcs.)	25	M 8	5	

Copper cable ferrules in mini pack

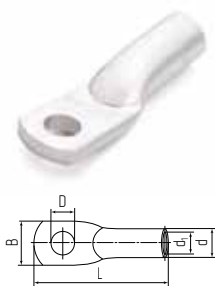
Type: **ГМЛ(о)**

- Designed for butt-to-end connection of wires and cables with copper cores without axial load
- Material: M1 grade electrical copper
- Surface: special tin-bismuth, which provides protection against corrosion and guarantees high quality of the connection in all weather and climatic conditions
- Operating voltage: up to 1 kV
- Extended multi-dimensional crimping ranges for mounting using tools: СТК-15, СТВ-15, СТК-05, СТВ-05, ПК-6м, ПК-16м, ПК-35м
- Ferrules have a technological window for visual control of the depth of the cable core entry
- The control window serves as a locking partition that determines the depth of the cable core entry
- Complete solution from the manufacturer:
 1. cable lugs and ferrules
 2. crimping tools
 3. crimping dies
- Mini packaging in blisters is ideal for supermarkets and retail outlets



Name	Cross section (mm²)	Quantity (pcs.)	Tools
ГМЛ(о) 0.34/1.5 (20 pcs.)	0.34-1.5	20	СТВ-05, СТВ-15 СТК-05, СТК-15 Sets: СТВ/ СТД/ СТФ ПК-6м ПК-16м ПК-35м
ГМЛ(о) 1.5/2.5 (20 pcs.)	1.5-2.5	20	
ГМЛ(о) 2.5/6 (20 pcs.)	2.5-6	20	
ГМЛ(о) 6/10 (20 pcs.)	6-10	20	
ГМЛ(о) 16 (10 pcs.)	16	10	
ГМЛ(о) 25 (5 pcs.)	25	5	

Aluminum cable lugs by GOST 9581

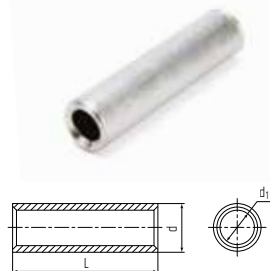


Type: TA by GOST 9581-80 standard

- Designed for crimping aluminum cables and wires
- Material: АД1 grade aluminum
- Operating voltage: up to 35 kV
- When connecting to copper bus bar, it is recommended to use aluminum-copper LAM washers (KBT)
- It is recommended to round off sector cores with a set of dies HM-300C (KBT)
- After stripping the ends of aluminum cores with a wire brush, «KBT» conductive contact paste is applied to the cores. The inner surface of the lug should also be cleaned and lubricated with a paste, then wind up the core until it stops and make crimping

Name	Cross section (mm ²)	Screw	D (mm)	B (mm)	L (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tools for crimping							
									Mechanical		Hydraulic					
TA 10-8-4.5	10	M 8	8.4	16.5	54	8.5	4.5	100	ПМВ-120	ПМВ-240	ПМВ-240	ПТР-70, ПТР-70	ПТР-120, ПТР-120	ПТР-300, ПТР-300, ПТР-300	ПТ-240 БМ	ПТР-400y, ПТРА-400
TA 16-8-5.4	16	M 8	8.4	16.5	59	10	5.4	100								
TA 25-8-7	25	M 8	8.4	18	62	12	7	100								
TA 35-10-8	35	M 10	10.5	20	68	14	8	100								
TA 50-10-9	50	M 10	10.5	23	75	16	9	100								
TA 70-10-12	70	M 10	10.5	25	86	18	12	50								
TA 95-12-13	95	M 12	13	28	89	20	13	50								
TA 120-12-14	120	M 12	13	33	96	22	14	25								
TA 150-12-17	150	M 12	13	34	107	24	17	25								
TA 185-16-19	185	M 16	17	36	116	26	19	25								
TA 240-20-20	240	M 20	21	40	126	28	20	10								
TA 300-20-24	300	M 20	21	48	145	32	24	10								

Aluminum cable ferrules by GOST 23469



Type: FA by GOST 23469.2-79 standard

- Designed for crimping aluminum cables and wires without axial load
- Ferrules have an end-to-end design
- Material: АД1 grade aluminum
- Operating voltage: up to 10kV
- It is recommended to round off sector cores with a set of dies HM-300C (KBT)
- After stripping the ends of aluminum cores with a wire brush, «KBT» conductive contact paste is applied to the cores. The inner surface of the ferrule should also be cleaned and lubricated with a paste, then wind up the cores in it with a half length of the ferrule and make crimping

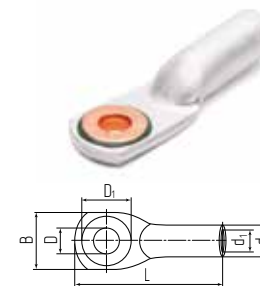
Name	Cross section (mm²)	L (mm)	d (mm)	d1 (mm)	Packing (pcs.)	Tools for crimping							
						Mechanical			Hydraulic				
ГА-10	10	53	8.5	4.5	100	ПМВ-120	ПМВ-240	ПМВ-240	ПТР-70, ПТР-70	ПТР-120, ПТР-120	ПТР-300, ПТР-300, ПТР-300	ПТР-240 БМ	ПТР-400y, ПТР-400
ГА-16	16	60	10	5.4	100								
ГА-25	25	63	12	7	100								
ГА-35	35	71	14	8	100								
ГА-50	50	71	16	9	100								
ГА-70	70	80	18	12	50								
ГА-95	95	85	20	13	50								
ГА-120	120	100	22	14	25								
ГА-150	150	100	24	17	25								
ГА-185	185	100	26	19	25								
ГА-240	240	110	28	20	10								
ГА-300	300	140	32	24	10								

⚙ Cables of the 2nd and 3rd grade of flexibility

Bimetallic cable lugs

Type: TAM

- Designed for terminating of aluminum cables and wires by means of crimping and subsequent connection to the copper bus bars and terminals of electrical devices
- Material: Electrical aluminum, grade AD1 and copper, grade M1
- Butt weld between copper ring and aluminum body sealed by high-temperature epoxy resin
- New construction of Al-Cu lugs complies with European standards
- The length of the lugs and the size of the tubular part correspond to GOST 9581 for aluminum and Cu-AL cable lugs
- Sector shaped cores, before crimping should be pre-rounded with a help of rounding dies HM-300-C (KBT)

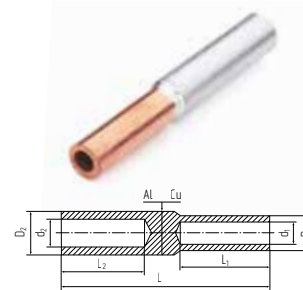


Name	Cross section (mm ²)	Screw	D (mm)	B (mm)	D ₁ (mm)	L (mm)	d (mm)	d ₁ (mm)	Packing (pcs.)	Tools for crimping						
										Mechanical		Hydraulic				
TAM 10-8-4.5	10	M 8	9	21	16	54	8.5	4.5	100	ПМВ-120	ПМВ-240	ПМВ-240	ПТР-70, ПТР-70	ПТР-120, ПТР-120	ПТР-300, ПТР-300, ПТР-300	ПГ-240 БМ
TAM 16-8-5.4	16	M 8	9	24	17	59	10	5.4	100							
TAM 25-8-7	25	M 8	9	25	17	62	12	7	100							
TAM 35-10-8	35	M 10	11	29	21	68	14	8	100							
TAM 50-10-9	50	M 10	11	30	23	75	16	9	100							
TAM 70-12-12	70	M 12	13	33	25	86	18	12	50							
TAM 95-12-13	95	M 12	13	37	28	89	20	13	50							
TAM 120-12-14	120	M 12	13	37	28	96	22	14	25							
TAM 150-12-17	150	M 12	13	37	28	107	24	17	25							
TAM 185-16-19	185	M 16	17	43	34	116	26	19	25							
TAM 240-16-20	240	M 16	17	46	37	126	28	20	10							
TAM 300-16-24	300	M 16	17	47	37	145	32	24	10							

Bimetallic cable ferrules

Type: FAM

- Designed for termination of aluminum and copper wires by means of crimping
- Material: electrical aluminum, АД 1 grade and M1 grade copper
- Operating voltage: up to 10 kV
- Copper and aluminum parts of the ferrules are interconnected by friction welding and provide a firm metals contact at the molecular level
- The ferrules have an internal partition, which defines the depth of entry of the cable cores and performs the function of the oil stopper
- The design of FAM «KBT» ferrules provides reduction transition to the smaller section from aluminum to copper cable, while maintaining the current load

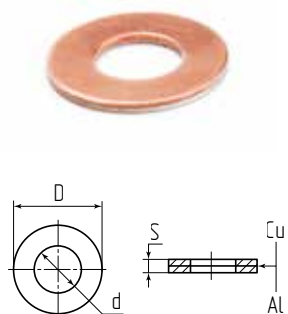


Name	Cross section (mm²)		L (mm)	L1 (mm)	L2 (mm)	D1 (mm)	d1 (mm)	D2 (mm)	d2 (mm)	Packing (pcs.)	Tools for crimping			
	Al	Cu									Mechanical	Hydraulic		
FAM-16/10	16	10	70	25	30	9	5.2	11	6.1	20	ПМВ-120, ПМВ-240	ПМВ-240	ПТР-70, ПТР-120, ПТР-300, ПТР-400	ПТР-240, ПТР-300, ПТР-400
FAM-25/16	25	16	75	27	33	10	6.1	12	7.1	20				
FAM-35/25	35	25	85	30	40	11	7.1	14	8.5	20				
FAM-50/35	50	35	95	32	42	13	8.5	16	9.8	10				
FAM-70/50	70	50	105	38	46	15	9.8	18	11.5	10				
FAM-95/70	95	70	110	40	50	17	11.5	21	13.5	10				
FAM-120/95	120	95	112	42	55	19	13.5	23	15.0	10				
FAM-150/120	150	120	118	44	55	21	15.0	25	17.0	10				
FAM-185/150	185	150	125	46	58	23	17.0	27	18.6	10				
FAM-240/185	240	185	130	54	60	26	18.6	30	21.5	10				

⚙ Cables of the 2nd and 3rd grade of flexibility

Bimetallic cable washer

Type: ЛАМ

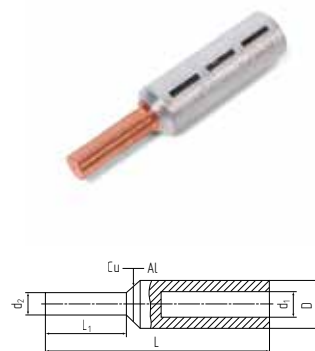


- Designed for connecting aluminum lugs to copper bus bars and the terminals of electrical devices
- Material: АД 1 grade electrical aluminum and M1 grade copper
- Layers of copper and aluminum are connected at the molecular level, which eliminates the occurrence of a galvanic pair «copper-aluminum», which leads to increasing of the contact resistance and emergency situations
- It is used as a bimetallic gasket between the copper bus bar and the contact spade part of the aluminum lug
- When installing the washer, its copper side should be installed to the copper bus bar, and the aluminum side - to the aluminum lug
- Aluminum-copper washers are universal and suitable for several sizes of aluminum lugs with the same hole for the contact screw
- Universal bimetallic ЛАМ washers in combination with aluminum TA lugs are an economical alternative to aluminum copper ТАМ lugs

Name	Screw	D (mm)	d (mm)	S (mm)	Packing (pcs.)	Compatibility
ЛАМ 17/8.5	M 8	17	8.5	1	100	ТА 10-8/ТА 16-8/ТА 25-8
ЛАМ 20/11	M 10	20	11	2	100	ТА 35-10/ТА 50-10/ТА 70-10
ЛАМ 25/13	M 12	25	13	2	50	ТА 95-12/ТА 120-12/ТА 150-12
ЛАМ 30/17	M 16	30	17	2	50	ТА 185-16

Bimetallic pin type cable lugs

Type: НЛАМ



- Designed for crimping aluminum cables and ABC cables with subsequent connection to the outputs of automatic switches
- Materials:
 - АД1 grade electrical aluminum
 - M1 grade copper
- Ideal solution for direct connection of ABC wires to the circuit switcher of the electrical panel at the entrance to the house
- Operating voltage: up to 10 kV
- Copper and aluminum parts of the sleeve are connected by friction welding and provide contact of metals at the molecular level
- One-piece, non-welded design of bimetallic pin type cable lug prevents the formation of a galvanic pair between copper and aluminum
- Copper lug pin does not transform or leak when clamped in steel and brass terminals, ensuring a reliable and long-lasting connection contact
- Aluminum cylindrical part of the lugs has marking for crimping
- Convenient consumer packing by 5 pcs. in a polyethylene bag
- Bimetallic cable lugs НЛАМ (KBT) win in reliability in comparison with aluminum pin lugs

Name	Cross section (mm ²)	L (mm)	L ₁ (mm)	D (mm)	d ₁ (mm)	d ₂ (mm)	Packing (pcs.)	Tools for crimping					
								Hydraulic					
НЛАМ 16	16	58	18	12	6.3	6	5	ПГР-70	ПГР-120	ПГР-120	ПГР-240	ПГР-300	ПГР-300
НЛАМ 25	25	58	18	12	7.4	6	5						
НЛАМ 35	35	71	21	14	8.5	7	5						
НЛАМ 50	50	74	24	16	10.0	8	5						

Cables of the 2nd and 3rd grade of flexibility

Crimping of cable lugs with «KBT» mechanical crimping tools

Model	Crimping range (mm ²)		Crimping profile	Dies quantity (pcs.)	Slots in dies (pcs.)	Ratchet	Length (mm)	Weight (kg.)
	Cu	Al						
CTB-05	0.25-10	-		1	4	•	260	0.62
CTB-15	0.5-10	-		1	4	•	260	0.62
CTK-05	0.25-10	-		1	4	•	220	0.54
CTK-15	0.5-10	-		1	4	•	220	0.54
Set CTB	0.5-10	-		1	4	•	260	1.38
Set CTB+4	0.5-10	-		1	4	•	260	1.05
Set CTB+8	0.5-10	-		1	4	•	260	1.20
Set CTK+4	0.5-10	-		1	4	•	220	0.98
Set CTK+8	0.5-10	-		1	4	•	220	1.10
Set CTF	0.5-10	-		1	4	•	215	1.10
ПКГ-50	6-50	-		1	6	-	390	1.50
ПКГ-120	10-120	16-120		1	8	-	640	3.60
ПМУ-120	10-120	10-120		1	-	-	615	3.50
ПМУ-240	10-240	10-240		1	-	-	690-980	4.70
ПК-6M	1.5-6	-		1	4	•	175	0.25
ПК-16M	2.5-16	-		1	4	•	275	0.45
ПК-35M	10-35	-		1	3	•	330	0.66

Crimping of cable lugs with «KBT» hydraulic crimping tools

Model	Crimping range (mm ²)		Crimping profile	Dies quantity (pcs.)	Force (t.)	Automatic pressure relief valve	Length (mm)	Weight (kg.)
	Cu	Al						
ПГР-70	4-70	10-70		8	5	-	295	1.70
ПГР-70	4-70	10-70		8	5	•	315	1.80
ПГР-70АМ	4-70	10-70		8	5	•	270	1.35
ПГР-120	10-120	10-120		8	8	-	410	2.70
ПГР-120	10-120	10-120		8	8	•	410	2.90
ПГР-120y	10-120	10-120		8	8	•	420	3.00
ПГР-240	10-185	10-240		1	12	•	500	4.50
ПГР-240y	4-185	10-240		12	6	•	380	2.90
ПГР-240А	4-185	10-240		12	7	•	475	2.70
ПГ-240БМ	16-240	16-240		1	7	-	-	3.70
ПГР-240	4-185	10-240		12	5	•	375	2.60
ПГР-300*	16-300	25-240		11	12	•	360	5.50
ПГР-300*	10-300	10-300		12	12	-	470	3.60
ПГР-300*	10-300	10-300		12	12	•	470	4.00
ПГР-300y	16-300	16-300		11	12	•	490	4.80
ПГР-300АМ*	10-300	10-300		12	12	•	510	3.55
ПГР-300*	10-300	10-300		12	12	-	-	6.10
ПГР-400y	50-400	35-400		9	13	•	630	5.90
ПГР-400	50-400	35-300		9	13	•	520	8.80
ПГР-630А	150-630	150-630		7	25	•	540	9.50
ПГ-630	150-630	150-630		7	25	-	-	5.30
ПГ-1000	400-1000	400-1000		5	45	-	-	12.40

* Hydraulic crimping tools ПГР and ПГР (KBT) 300 series can be completed with additional sets of precision dies НМ (KBT)

Crimping tools for non-insulated cable lugs

Cross sections:
0.5–10 mm²



CTB-05/ CTB-15 (KBT)

pliers for crimping
of non-insulated copper cable lugs

Cross sections:
1.5–6 mm²



ПК-6М (KBT)

pliers for crimping
of non-insulated lugs

Cross sections:
2.5–16 mm²



ПК-16М (KBT)

pliers for crimping
of non-insulated lugs

Cross sections:
10–35 mm²



ПК-35М (KBT)

pliers for crimping
of non-insulated lugs

Cross sections:
10–120 mm²



ПМУ-120 (KBT)

mechanical tool
for indent crimping

Cross sections:
10–240 mm²



ПМУ-240 (KBT)

mechanical tool
for indent crimping

Cross sections:
6–50 mm²



ПКГ-50 (KBT)

mechanical crimping tool
with hexagonal dies

Cross sections:
10–120 mm²



ПКГ-120 (KBT)

crimping tool
with integrated hexagonal dies

Cross sections:
4–70 mm²



ПГР-70 (KBT)

hand-operated hydraulic
crimping tool

Cross sections:
10–120 mm²



ПГР-120 (KBT)

hand-operated hydraulic
crimping tool

Cross sections:
10–300 mm²



ПГР-300 (KBT)

hand-operated hydraulic
crimping tool

Cross sections:
4–70 mm²



ПГРс-70 (KBT)

hand-operated hydraulic crimping tool
with automatic pressure relief

Cross sections:
10–120 mm²



ПГРс-120 (KBT)

hydraulic crimping tool
with auto pressure relief

Cross sections:
10–300 mm²



ПГРс-300 (KBT)

hydraulic crimping tool
with auto pressure relief

Cross sections:
10–240 mm²



ПГРс-240 (KBT)

hydraulic crimping tool for indent
crimping with auto pressure relief

Crimping tools for non-insulated cable lugs

Cross sections:
10–120 mm²



ПГРс-120у (KBT)

hydraulic crimping tool
with auto pressure relief

Cross sections:
16–300 mm²



ПГРс-300у (KBT)

hydraulic crimping tool
with auto pressure relief

Cross sections:
35–400 mm²



ПГРс-400у (KBT)

hydraulic crimping tool
with auto pressure relief

Cross sections:
10–300 mm²



ПГП-300 (KBT)

hydraulic system
with remote crimper

Cross sections:
4–70 mm²



ПГРс-70АМ (KBT)

hand-operated hydraulic crimping tool
made of strong Alum alloy

Cross sections:
10–300 mm²



ПГРс-300АМ (KBT)

hand-operated hydraulic crimping tool
made of strong Alum alloy

Cross sections:
4–240 mm²



ПГРс-240у (KBT)

compact hydraulic crimping tool
with auto pressure relief

Cross sections:
4–240 mm²



ПГРс-240А (KBT)

hydraulic crimping tool
with auto pressure relief

Cross sections:
16–240 mm²



ПГ-240БМ (KBT)

hydraulic system
without dies

Cross sections:
150–630 mm²



ПГ-600 (KBT)

hydraulic tool for crimping cable lugs
and ferrules

Cross sections:
400–1000 mm²



ПГ-1000 (KBT)

hydraulic tool for crimping cable lugs
and ferrules

Cross sections:
4–240 mm²



ПГРА-240 (KBT)

battery-powered hydraulic
crimping tool with a set of dies

Cross sections:
16–300 mm²



ПГРА-300 (KBT)

battery-powered hydraulic
crimping tool with a set of dies

Cross sections:
50–400 mm²



ПГРА-400 (KBT)

battery-powered
hydraulic crimping tool

Cross sections:
150–630 mm²



ПГРА-630А (KBT)

battery-powered hydraulic
crimping tool with a set of dies

Cutting tools



dielectric shears
«Standard» series



dielectric shears
«Standard» series



dielectric shears
«Expert» series



dielectric shears
for cutting cables



shears for cutting cables
with extra strong blades



shears with telescopic handles
for cutting steel-tape armored cables



ratchet cutter
for steel-tape armored cables



modified ratchet cutter
for steel-tape armored cables



ratchet cutter
for steel-tape armored cables



ratchet cutter
for steel-tape armored cables



ratchet cutter
for steel-tape armored cables



ratchet cutter
for armored cables



ratchet cutter
for steel-tape armored cables



ratchet cutter
for steel-tape armored cables



ratchet cutter
with replaceable blades

Cutting and stripping tools



hand-operated
hydraulic rope cutter



hand-operated hydraulic cutter
for cables and steel wire ropes



hand-operated hydraulic cutter
for cables and steel wire ropes



hydraulic head for cutting
of armored cables



hydraulic head for cutting
of armored cables



battery-powered hydraulic tool
for cutting of armored cables



battery-powered hydraulic tool
for cutting of armored cables



battery-powered hydraulic tool
for cutting of armored cables



hydraulic kit for cutting wires
under voltage



tool for stripping out stranded insulation
layer from cables made of XLPE



tool for stripping semi-conduct sheath
from cables made of XLPE



for stripping semi-conduct sheath
from the cables with insulation
made of XLPE



for stripping semi-conduct sheath
from the cables with insulation
made of XLPE



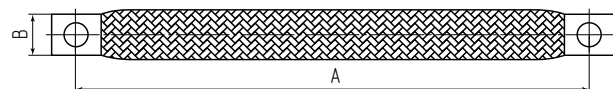
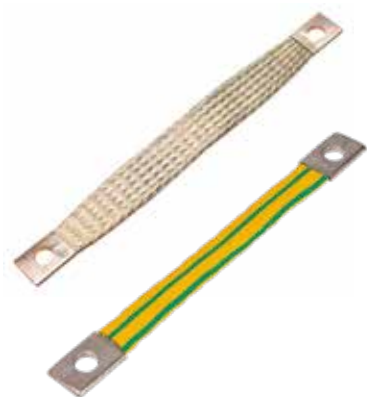
for stripping semi-conduct sheath
from the cables with insulation
made of XLPE



for stripping semi-conduct sheath
from the cables with insulation
made of XLPE

Flat grounding braids

Types: ПЗ/ПЗИ



- Designed for grounding of different electro technical devices and connecting electrical equipment to parts inside rolling stock (cars, tractors, trains, etc.)
- Wire material: M1 grade electrical copper
- Wire grade: AMF-T
- Lugs material: M1 grade electrical copper
- Coating: tin-bismuth electrolytic tinning
- Wire insulation:
 - ПЗ – without insulation
 - ПЗИ – polyolefin, does not support combustion
- Tin-bismuth electrolytic tinning provides long-term protection against corrosion and guarantees high quality of the connection in all weather and climatic conditions
- The multi-stranded design and flat shape of the grounding braid provides exceptional product flexibility
- Flat and short lugs make it easy to attach to any screw terminals
- Operating temperature: -55°C to +125 °C
- On request it is possible to perform grounding braids of non standard length

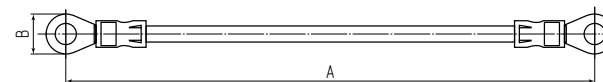
Name	Color	Name	Color	Cross section (mm ²)	Screw	Sizes (mm)		Packing (pcs.)
						A	B	
ПЗ 10-150 (Fortisflex)	●	ПЗИ 10-150 (Fortisflex)	●	10	M 6	150	10.8	10
ПЗ 10-200 (Fortisflex)	●	ПЗИ 10-200 (Fortisflex)	●	10	M 6	200	10.8	10
ПЗ 10-300 (Fortisflex)	●	ПЗИ 10-300 (Fortisflex)	●	10	M 6	300	10.8	10
ПЗ 10-400 (Fortisflex)	●	ПЗИ 10-400 (Fortisflex)	●	10	M 6	400	10.8	10
ПЗ 10-500 (Fortisflex)	●	ПЗИ 10-500 (Fortisflex)	●	10	M 6	500	10.8	10
ПЗ 10-600 (Fortisflex)	●	ПЗИ 10-600 (Fortisflex)	●	10	M 6	600	10.8	10
ПЗ 10-800 (Fortisflex)	●	ПЗИ 10-800 (Fortisflex)	●	10	M 6	800	10.8	10
ПЗ 16-150 (Fortisflex)	●	ПЗИ 16-150 (Fortisflex)	●	16	M 8	150	16.0	10
ПЗ 16-200 (Fortisflex)	●	ПЗИ 16-200 (Fortisflex)	●	16	M 8	200	16.0	10
ПЗ 16-300 (Fortisflex)	●	ПЗИ 16-300 (Fortisflex)	●	16	M 8	300	16.0	10
ПЗ 16-400 (Fortisflex)	●	ПЗИ 16-400 (Fortisflex)	●	16	M 8	400	16.0	10
ПЗ 16-500 (Fortisflex)	●	ПЗИ 16-500 (Fortisflex)	●	16	M 8	500	16.0	10
ПЗ 16-600 (Fortisflex)	●	ПЗИ 16-600 (Fortisflex)	●	16	M 8	600	16.0	10
ПЗ 16-800 (Fortisflex)	●	ПЗИ 16-800 (Fortisflex)	●	16	M 8	800	16.0	10
ПЗ 25-150 (Fortisflex)	●	ПЗИ 25-150 (Fortisflex)	●	25	M 8	150	19.5	10
ПЗ 25-200 (Fortisflex)	●	ПЗИ 25-200 (Fortisflex)	●	25	M 8	200	19.5	10
ПЗ 25-300 (Fortisflex)	●	ПЗИ 25-300 (Fortisflex)	●	25	M 8	300	19.5	10
ПЗ 25-400 (Fortisflex)	●	ПЗИ 25-400 (Fortisflex)	●	25	M 8	400	19.5	10
ПЗ 25-500 (Fortisflex)	●	ПЗИ 25-500 (Fortisflex)	●	25	M 8	500	19.5	10
ПЗ 25-600 (Fortisflex)	●	ПЗИ 25-600 (Fortisflex)	●	25	M 8	600	19.5	10
ПЗ 25-800 (Fortisflex)	●	ПЗИ 25-800 (Fortisflex)	●	25	M 8	800	19.5	10
ПЗ 35-200 (Fortisflex)	●	ПЗИ 35-200 (Fortisflex)	●	35	M 8	200	18.9	10
ПЗ 35-300 (Fortisflex)	●	ПЗИ 35-300 (Fortisflex)	●	35	M 8	300	18.9	10
ПЗ 35-400 (Fortisflex)	●	ПЗИ 35-400 (Fortisflex)	●	35	M 8	400	18.9	10
ПЗ 35-500 (Fortisflex)	●	ПЗИ 35-500 (Fortisflex)	●	35	M 8	500	18.9	10
ПЗ 35-600 (Fortisflex)	●	ПЗИ 35-600 (Fortisflex)	●	35	M 8	600	18.9	10
ПЗ 35-800 (Fortisflex)	●	ПЗИ 35-800 (Fortisflex)	●	35	M 8	800	18.9	10

In comparison with crimping by classic tubular lugs, shortened flat copper lugs provide maximum flexibility of the grounding braid along its entire length

Multipurpose grounding wires

Type: ПЗУ

- Designed for grounding of steel constructions, car bodies, equipment, screens
- For using in grounding or potential equalization systems
- Lugs material: M1 grade electrical copper
- Lugs coating: electrolytic tinning
- Wire grade: ПУГВ (ПВ-3)
- Lugs type:
 - for 6 mm² size ПЗУ are used insulated ring type lugs НКИ (КБТ) with yellow PVC cuff
 - for 10/16/25 mm² size ПЗУ are used «КБТ» standard ТМЛс lugs
- Yellow-green end heat-shrinkable cuffs seal, insulate and protect the contact connection of the lug and wire from corrosion
- On request it is possible to perform grounding wires of non standard length and other holes for the contact rod in the lugs

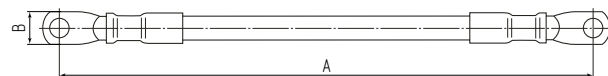


Name	Color	Cross section (mm ²)	Lugs type	Screw	Sizes (mm)		Packing (pcs.)
					A	B	
ПЗУ 6-308 (Fortisflex)	●	6	НКИ 6.0-6	M6	308	12	5
ПЗУ 6-150 (Fortisflex)	●	6	НКИ 6.0-6	M6	150	12	5
ПЗУ 6-200 (Fortisflex)	●	6	НКИ 6.0-6	M6	200	12	5
ПЗУ 6-250 (Fortisflex)	●	6	НКИ 6.0-6	M6	250	12	5
ПЗУ 6-300 (Fortisflex)	●	6	НКИ 6.0-6	M6	300	12	5
ПЗУ 6-400 (Fortisflex)	●	6	НКИ 6.0-6	M6	400	12	5
ПЗУ 6-500 (Fortisflex)	●	6	НКИ 6.0-6	M6	500	12	5
ПЗУ 6-600 (Fortisflex)	●	6	НКИ 6.0-6	M6	600	12	5
ПЗУ 6-800 (Fortisflex)	●	6	НКИ 6.0-6	M6	800	12	5
ПЗУ 6-1000 (Fortisflex)	●	6	НКИ 6.0-6	M6	1000	12	5
ПЗУ 10-150 (Fortisflex)	●	10	ТМЛс 10-8	M8	150	11.5	5
ПЗУ 10-200 (Fortisflex)	●	10	ТМЛс 10-8	M8	200	11.5	5
ПЗУ 10-300 (Fortisflex)	●	10	ТМЛс 10-8	M8	300	11.5	5
ПЗУ 10-400 (Fortisflex)	●	10	ТМЛс 10-8	M8	400	11.5	5
ПЗУ 10-500 (Fortisflex)	●	10	ТМЛс 10-8	M8	500	11.5	5
ПЗУ 10-600 (Fortisflex)	●	10	ТМЛс 10-8	M8	600	11.5	5
ПЗУ 10-800 (Fortisflex)	●	10	ТМЛс 10-8	M8	800	11.5	5
ПЗУ 16-200 (Fortisflex)	●	16	ТМЛс 16-8	M8	200	12	5
ПЗУ 16-300 (Fortisflex)	●	16	ТМЛс 16-8	M8	300	12	5
ПЗУ 16-400 (Fortisflex)	●	16	ТМЛс 16-8	M8	400	12	5
ПЗУ 16-500 (Fortisflex)	●	16	ТМЛс 16-8	M8	500	12	5
ПЗУ 16-600 (Fortisflex)	●	16	ТМЛс 16-8	M8	600	12	5
ПЗУ 16-800 (Fortisflex)	●	16	ТМЛс 16-8	M8	800	12	5
ПЗУ 25-200 (Fortisflex)	●	25	ТМЛс 25-8	M8	200	14	5
ПЗУ 25-300 (Fortisflex)	●	25	ТМЛс 25-8	M8	300	14	5
ПЗУ 25-400 (Fortisflex)	●	25	ТМЛс 25-8	M8	400	14	5
ПЗУ 25-500 (Fortisflex)	●	25	ТМЛс 25-8	M8	500	14	5
ПЗУ 25-600 (Fortisflex)	●	25	ТМЛс 25-8	M8	600	14	5
ПЗУ 25-800 (Fortisflex)	●	25	ТМЛс 25-8	M8	800	14	5

Insulated round profile bonding jumpers

Type: ПЗКИ

- Designed for grounding electro technical constructions, screen bodies and equipment
- Can be used to organize a lightning protection system and protect equipment from static electricity
- Wire material: M1 grade electrical copper
- Wire grade: ПБ6-3
- Wire insulation color: transparent
- The wire is terminated with power tinned copper lugs
- Lugs coating: electrolytic tinning
- The connection of the wire to the lug is sealed with a heat-shrinkable transparent cuff with an adhesive layer
- On request it is possible to perform grounding bonding jumpers of non standard length and other holes for the contact rod in the lugs



Name	Color	Cross section (mm²)	Lugs type	Screw	Sizes (mm)		Packing (pcs.)
					A	B	
ПЗКИ 16-200 (Fortisflex)	∅	16	ТМЛ 16-8	M8	200	16	5
ПЗКИ 16-300 (Fortisflex)	∅	16	ТМЛ 16-8	M8	300	16	5
ПЗКИ 16-400 (Fortisflex)	∅	16	ТМЛ 16-8	M8	400	16	5
ПЗКИ 16-500 (Fortisflex)	∅	16	ТМЛ 16-8	M8	500	16	5
ПЗКИ 16-600 (Fortisflex)	∅	16	ТМЛ 16-8	M8	600	16	5
ПЗКИ 16-800 (Fortisflex)	∅	16	ТМЛ 16-8	M8	800	16	5
ПЗКИ 25-200 (Fortisflex)	∅	25	ТМЛ 25-8	M8	200	16	5
ПЗКИ 25-300 (Fortisflex)	∅	25	ТМЛ 25-8	M8	300	16	5
ПЗКИ 25-400 (Fortisflex)	∅	25	ТМЛ 25-8	M8	400	16	5
ПЗКИ 25-500 (Fortisflex)	∅	25	ТМЛ 25-8	M8	500	16	5
ПЗКИ 25-600 (Fortisflex)	∅	25	ТМЛ 25-8	M8	600	16	5
ПЗКИ 25-800 (Fortisflex)	∅	25	ТМЛ 25-8	M8	800	16	5

Conductive paste

Type: КПП

- It is an effective protection of the contact connection from the impact of negative environmental factors
- Reduces the electrical resistance of the contact
- Increases the contact surface area
- Stabilizes contact connection temperature mode
- Increases the service life of contact connections
- It is recommended to apply contact paste to the stripped cable cores before crimping the cable lugs and ferrules. While installing the cable lugs to the contact terminals, the paste can also be applied to the flat spade part of the lug
- Convenient packaging in small tubes allows using of paste to the end and makes it indispensable in the working kit of a professional electrician
- Volume: 85 ml.
- Weight: 89 g

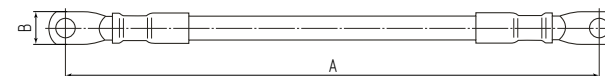


Flexible copper wires for connecting power supply ИБП and АКБ batteries

Types: П-АКБ «++»

П-АКБ «--»

- Designed for serial, parallel or combined connection of batteries in groups, as well as for connecting batteries with uninterruptible power supplies, inverters, charge controllers and other devices
- Wire and lugs material: M1 grade electrical copper
- Lugs coating: electrolytic tinning
- Wire grade: ПУГВ (ПБ-3)
- Wire color: black
- End heat-shrinkable cuffs seal and protect from corrosion wire to lug contact connection
- Crimping is performed on hydraulic presses, which exclude «not full crimping» or «over crimping» of the contact part
- On request it is possible to perform copper wires of non standard length and other holes for the contact rod in the lugs



Name	Cuff color		Cross section (mm²)	Screw	Sizes (mm)		Packing (pcs.)
	«+ +»	«- -»			A	B	
П-АКБ 16-250 (Fortisflex)	●	●	16	M8	250	12	5
П-АКБ 16-500 (Fortisflex)	●	●	16	M8	500	12	5
П-АКБ 16-750 (Fortisflex)	●	●	16	M8	750	12	5
П-АКБ 16-1000 (Fortisflex)	●	●	16	M8	1000	12	5
П-АКБ 16-1500 (Fortisflex)	●	●	16	M8	1500	12	5
П-АКБ 16-2000 (Fortisflex)	●	●	16	M8	2000	12	5
П-АКБ 25-250 (Fortisflex)	●	●	25	M8	250	14	5
П-АКБ 25-500 (Fortisflex)	●	●	25	M8	500	14	5
П-АКБ 25-750 (Fortisflex)	●	●	25	M8	750	14	5
П-АКБ 25-1000 (Fortisflex)	●	●	25	M8	1000	14	5
П-АКБ 25-1500 (Fortisflex)	●	●	25	M8	1500	14	5
П-АКБ 25-2000 (Fortisflex)	●	●	25	M8	2000	14	5
П-АКБ 35-250 (Fortisflex)	●	●	35	M10	250	16	5
П-АКБ 35-500 (Fortisflex)	●	●	35	M10	500	16	5
П-АКБ 35-750 (Fortisflex)	●	●	35	M10	750	16	5
П-АКБ 35-1000 (Fortisflex)	●	●	35	M10	1000	16	5
П-АКБ 35-1500 (Fortisflex)	●	●	35	M10	1500	16	5
П-АКБ 35-2000 (Fortisflex)	●	●	35	M10	2000	16	5
П-АКБ 50-250 (Fortisflex)	●	●	50	M10	250	19	5
П-АКБ 50-500 (Fortisflex)	●	●	50	M10	500	19	5
П-АКБ 50-750 (Fortisflex)	●	●	50	M10	750	19	5
П-АКБ 50-1000 (Fortisflex)	●	●	50	M10	1000	19	5
П-АКБ 50-1500 (Fortisflex)	●	●	50	M10	1500	19	5
П-АКБ 50-2000 (Fortisflex)	●	●	50	M10	2000	19	5
П-АКБ 70-250 (Fortisflex)	●	●	70	M10	250	22	5
П-АКБ 70-500 (Fortisflex)	●	●	70	M10	500	22	5
П-АКБ 70-750 (Fortisflex)	●	●	70	M10	750	22	5
П-АКБ 70-1000 (Fortisflex)	●	●	70	M10	1000	22	5
П-АКБ 70-1500 (Fortisflex)	●	●	70	M10	1500	22	5
П-АКБ 70-2000 (Fortisflex)	●	●	70	M10	2000	22	5

Branch cable clamps

Types: Y 731–872

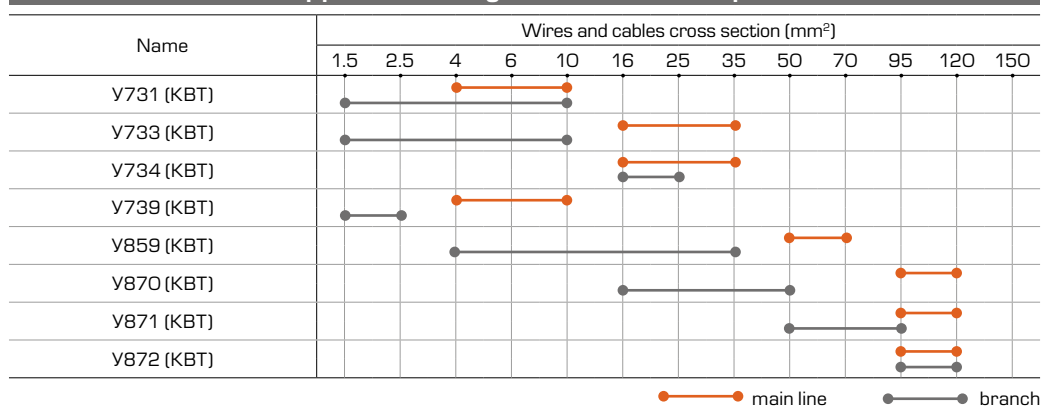
- Designed for performing branches from main cables and wires lines with a voltage up to 660 V with preliminary removal of insulation at the installation site without cutting the conductor
- Body material: polycarbonate, does not support flammability
- Contact part material: anodized steel
- The core is a profiled die for the cable size, which is tightened with bolts
- The main line and branch can be performed by aluminum or copper wires, or a combination of them
- The manufacturer's logo and the «main line-branch» cable cross - section range are printed on the body of each clamp

Name	Wires and cables cross section (mm²)		Overall dimensions (mm)	Packing (pcs.)
	Main line	Branch		
Y731M	4–10	1.5–10	42 x 41 x 31	250
Y733M	16–35	1.5–10	42 x 41 x 31	250
Y734M	16–35	16–25	42 x 41 x 31	250
Y739M	4–10	1.5–2.5	42 x 36 x 23	250
Y859M	50–70	4–35	62 x 61 x 43	60
Y870M	95–150	16–50	84 x 85 x 60	22
Y871M	95–150	50–95	84 x 85 x 60	22
Y872M	95–150	95–120	84 x 85 x 60	22

Advantages of the new «KBT» cable clamps

- No drop-out or missing parts. Installation of the classic design of cable clamps Y 731, 733, 734, 739 supposed connection of two halves of the protective case by a pair of steel rings. The new design of «KBT» clamps on snap-on clips minimizes the number of installing operations
- Precisely selected locking force of the lock clips for opening and closing of the clamp body ensures quick disassembly and installation
- Minimum amount of assembly parts and reliable design of the lock determine the minimum number and time of installation operations
- The snap-on double-leaf design and the reduced size of clamp body allow installation in hard-to-reach places and in limited space conditions
- The smooth, streamlined shapes of the new cases not only improve the design of the product, but also form additional stiffeners that make the case strong and shock-resistant

Application ranges of branch clamps



Advantages of «KBT» shear-off-head bolts lugs and connectors



■ The bodies of «KBT» lugs and connectors are made of a special aluminum alloy with high electrical conductivity and corrosion resistance. Carefully selected heat treatment modes provide the necessary strength of the structure and threaded connections.

■ The inner surface of the cylindrical part of «KBT» lugs and connectors has a special toothed relief. The grooved knurling increases the contact area with the cable core and provides high mechanical strength of the contact connection. When installing aluminum cables, the toothed surface cuts into the aluminum core, destroying the oxide layer.

■ «KBT» bolts have a multi-level design. The presence of not one, but several «break necks» with pre-set moments ensures that the bolt breaks at the level or below the surface of the body, regardless of the cross-section of the cable. Thus, the installer is spared the need to perform a labor-intensive operation of grinding protruding broken bolts after installation.

■ The number and diameter of breaking bolts on «KBT» lugs and connectors are calculated based on the optimal strength and electrical characteristics of the contact connections.

■ All parts of the lugs are made on high-precision and high-tech equipment with numerical control. This equipment allows to get products with very stable technical characteristics. This allows reducing the probability of failure in operation and significantly increase the service life of contact connections.

■ «KBT» plant produces two lines of shear-off-head bolts lugs and connectors with an in-line angular bolt arrangement. In comparison with the row arrangement of bolts, pressing the cable core with bolts from different sides at an angle of 50 degrees to each other provides a more reliable fixation of the conductor and increases the field of electrical contact.

■ The spade part of «KBT» bolts lugs is displaced relative to the central axis and is located below the cylindrical body. The special design of the spade part provides easy mounting to the bus bars and terminals of the equipment. «Sole» of the spade part has special raised protrusions that increase the area of contact with the bus bar and guarantee high-quality contact.

■ The solid closed «KBT» lugs design allows installation on cables with oil-fed paper insulation. The lugs have a compact design with smooth streamlined shapes, which allows them to be used in places with increased requirements for the product's dimensions - for example, in gas cells.

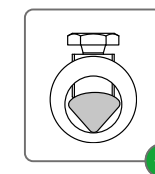
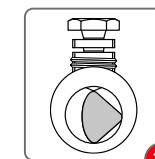
■ The design of shear-off-head bolted connectors and lugs provided for the connection of all types of cable cores within the nominal ranges: round and sector, single-wire and multi-wire.

■ The company's ISO-9001 quality management system, automation of production processes and the presence of a testing laboratory ensure consistently high quality of «KBT» lugs and connectors.

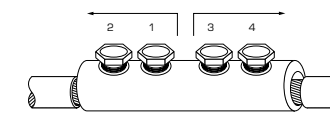
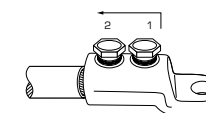


Recommendations for installation of «KBT» shear-off-head bolts connectors and lugs

- Select the lug / connector according to the voltage grade, insulation type, and cable cross-section
- Remove the insulation from the cable for a length equal to the depth of the core entry into the lug or connector body
- While installing aluminum cables, you should clean the bare end of the core to a metallic shine. The aluminum cable should be installed within 5 minutes to prevent repeated oxidation of the stripped aluminum core
- Insert the cable core into the lug or connector and manually install the bolts, twisting them until the cable core is fixed
- During installation, you should hold the lugs/ connectors body using a clamp from the HMB-6 (KBT) set, protecting the cable cores from turning and deforming
- Using the hex head caps and ratchet wrench from the HMB-6 (KBT) set, make the final tightening of the bolts until the heads break in the sequence shown in the figure
- In the presence of sharp edges, protrusions and burrs formed after the breakdown of the bolt heads, it is necessary to sand them with a file
- To seal and protect the connection from corrosion, use heat shrinkable tube. Recommended use of tubes with an adhesive layer



Installation sequence
For shear-off head bolted
cable lugs and connectors



Application ranges of shear-off-head bolts connectors and lugs

Name	Cross section (mm ²)															
	10	16	25	35	50	70	95	120	150	185	240	300	400	500	630	800
HБ/СБ-10/25	●	●	●	●												
HБ/СБ-25/50	●	●	●	●	●	●										
HБ/СБ-70/120					●	●	●	●	●	●	●					
HБ/СБ-150/240							●	●	●	●	●	●	●			
HБ/СБ-300/400												●	●			
HБ/СБ-500/630														●	●	
HБ/СБ-800																●

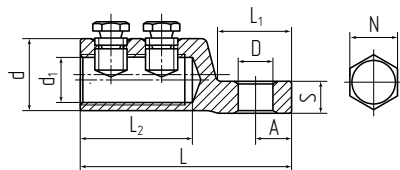
It is recommended to round sector multi wire cores when mounting on three core cables.

● round mono core ● round multi-wire core ● sector mono core ● sector multi-wire core

Shear-off-head bolts lugs with arrangement in-line

Type: H5

- Designed for termination any type of cable cores: copper and aluminum, round or sector, mono-wire cables and stranded wires
- Each lug is multilateral and cater to a range of cable sizes
- Row location of the bolts on the body of a lug
- The eccentric hole for the cable core in the body of a lug
- Operating voltage:
 - 1 kV: for single-bolt lugs 1H5
 - 10 kV: for two-bolt lugs 2H5
- Body and bolts material: special aluminum alloy
- Coating: without coating
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove—stall «necks», so that the breaking of the head occurs on the level or below the surface area of the lug
- Spade part of the lugs «KBT» is shifted from the central axis and located a step below the cylindrical body
- Installation tool: HMB-6(KBT) set

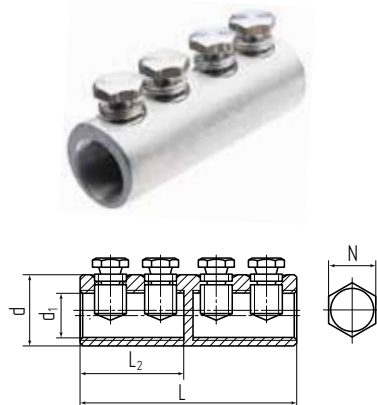


Name	Cross section (mm²)	Number of bolts	Sizes (mm)									Packing (pcs.)
			D	L	L ₁	L ₂	A	S	d	d ₁	N	
1H5-10/25	10-25	1	6.4	38	15.2	18	6.5	6	13	8	8	10
1H5-25/50	25-50	1	10.5	50	21.5	22	9.5	8	19	11	10	10
1H5-70/120	70-120	1	13.0	65	26.5	32	13.5	12	27	17	14	10
1H5-150/240	150-240	1	17.0	80	34.5	36	15.5	14	37	25	14	5
2H5-25/50	25-50	2	10.5	60	21.5	32	9.5	8	19	11	10	10
2H5-70/120	70-120	2	13.0	80	26.5	46	13.5	12	27	17	14	10
2H5-150/240	150-240	2	17.0	98	34.5	53	15.5	14	37	25	14	5

Shear-off-head bolts connectors with arrangement in line

Type: C5

- Designed for connection any type of cable cores: copper and aluminum, round or sector, mono-wire cables and stranded wires
- Each connector is multilateral and cater to a range of cable sizes
- Row location of the bolts on the body of the connector
- The eccentric hole for the cable core in the body of the connector
- Operating voltage:
 - 1 kV: for single-bolt connectors 1C5
 - 10 kV: for two-bolt connectors 2C5
- Body and bolts material: special aluminum alloy
- Coating: without coating
- Installing on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove—stall «necks», so that the breaking of the head occurs on the level or below the surface area of the connector
- Installation tool: HMB-6(KBT) set

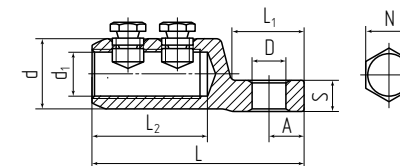


Name	Cross section (mm²)	Number of bolts	Sizes (mm)					Packing (pcs.)
			L	L2	d	d1	N	
2C5-10/25	10-25	2	40	18.0	13	8	8	10
2C5-25/50	25-50	2	46	21.5	19	11	10	10
2C5-70/120	70-120	2	66	31.5	27	17	14	10
2C5-150/240	150-240	2	76	36.5	37	25	14	5
4C5-25/50	25-50	4	61	29	19	11	10	10
4C5-70/120	70-120	4	89	43	27	17	14	10
4C5-150/240	150-240	4	110	53.5	37	25	14	5

Shear-off-head bolts lugs for cables with XLPE insulation

Type: H5П

- Designed for termination of XLPE insulated cables with voltage up to 10 kV
- Each lug is multilateral and cater to a range of cable sizes
- Row location of the bolts on the body of lugs with sizes 35-240 mm²
- Angular location of the bolts on the body of lugs with sizes 300-800 mm²
- Central-symmetrical hole for the cable core in the body of the lugs contributes to a uniform distribution of the electric field
- Body and bolts material: special aluminum alloy
- Coating: without coating
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove—stall «necks», so that the breaking of the head occurs on the level or below the surface area of the lug
- Shape A: spade part is shifted from the central axis and located a step below the lug body
- Shape B: spade part is located on central axis
- Installation tool: HMB-6(KBT) set

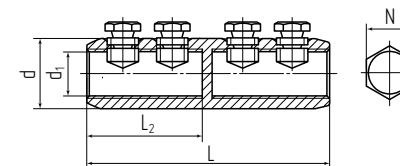


Name	Cross section (mm²)	Number of bolts	Sizes (mm)									Shape	Packing (pcs.)
			L	L ₁	L ₂	D	d	d ₁	A	S	N		
2НБП-35/50	35-50	2	64.5	22.5	35	10.5	21	11	10.5	8	10	A	10
2НБП-70/120	70-120	2	80	26.5	47	13	27	15	13.5	12	14	A	10
2НБП-150/240	150-240	2	98	34.5	54	17	37	21	15.5	14	14	A	5
3НБП-300/400	300-400	3	135	45.5	75	17	42	26	20	15	14	A	1
3НБП-500/630	500-630	3	150	49.5	88	17	52	34	24	16	17	B	1
3НБП-800	800	3	170	59.5	96	17	59	38	27	17	17	B	1

Shear-off-head bolts connectors for cables with XLPE insulation

Type: C5П

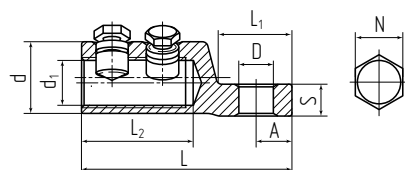
- Designed for connection of XLPE insulated cables with voltage up to 10 kV
- Each connector is multilateral and caters to a range of cable sizes
- Row location of the bolts on the body of connectors with sizes 35-240 mm²
- Angular location of the bolts on the body of connectors with sizes 300-800 mm²
- Central-symmetrical hole for the cable core in the body of the connectors contributes to a uniform distribution of the electric field
- Body and bolts material: special aluminum alloy
- Coating: without coating
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove—stall «necks», so that the breaking of the head occurs on the level or below the surface area of the connector
- The connectors have an internal structural partition, which defines the depth of the cable core
- Installation tool: HMB-6(KBT) set



Name	Cross section (mm²)	Number of bolts	Sizes (mm)					Packing (pcs.)
			L	L2	d	d1	N	
4C5П-35/50	35-50	4	72	33	21	11	10	10
4C5П-70/120	70-120	4	94	45.5	27	15	14	10
4C5П-150/240	150-240	4	107	52	37	21	14	5
6C5П-300/400	300-400	6	162	75	42	26	14	1
6C5П-500/630	500-630	6	190	88	52	34	17	1
6C5П-800	800	6	210	96	59	38	17	1

Shear-off-head bolts lugs with angular position. Euroseries

Type: H5E

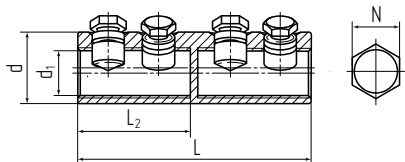


- Designed for termination of any type of cable cores: copper and aluminum, round or sector, mono - wire cables and stranded wires
- Each lug is multilateral and caters to a range of cable sizes
- X-shaped angular location of the bolts corresponds to the European standards and guarantees the mechanical strength of the connection
- The eccentric hole is provided for the cable core in the body of each lug
- Operating voltage: up to 10 kV
- Body and bolts material: special aluminum alloy
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove — stall «necks», so that the breaking of the head occurs on the level or below the surface area of the lug
- Shape A: spade part is shifted from the central axis and located a step below the lug body
- Shape B: spade part is located on central axis
- Installation tool: HMF-6(KBT) set

Name	Cross section (mm ²)	Number of bolts	Sizes (mm)									Shape	Packing (pcs.)
			D	L	L ₁	L ₂	A	S	d	d ₁	N		
2НБЕ-25/50	25-50	2	10.5	58	21.5	28	9.5	8	19	11	10	A	10
2НБЕ-70/120	70-120	2	13	78	26.5	41	13.5	12	27	17	14	A	10
2НБЕ-150/240	150-240	2	17	98	34.5	53	15.5	14	37	25	14	A	5
3НБЕ-300/400	300-400	3	17	120	38.5	70	15.5	14	37	26	14	A	1
3НБЕ-500/630	500-630	3	17	156.5	52.0	90	22.0	17	48	34	17	B	1
3НБЕ-800	800	3	17	172	65.0	90	28.0	17	56	40	17	B	1

Shear-off-head bolts connectors with angular position. Euroseries

Type: C5E

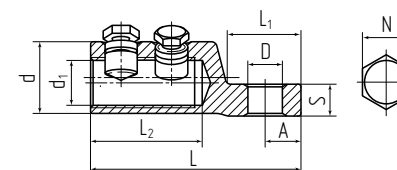


- Designed for connection of any type of cable cores: copper and aluminum, round or sector, mono - wire cables and stranded wires
- Each connector is multilateral and caters to a range of cable sizes
- X-shaped angular location of the bolts corresponds to the European standards and guarantees the mechanical strength of the connection
- The eccentric hole is provided for the cable core in the body of each connector
- Operating voltage: up to 10 kV
- Body and bolts material: special aluminum alloy
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove — stall «necks», so that the breaking of the head occurs on the level or below the surface area of the connector
- The connectors have an internal structural partition, which defines the depth of the cable core
- On each connector there is an embossed marking, which indicates the nominal cross-section cable range and the manufacturer's logo
- Installation tool: HMF-6(KBT) set

Name	Cross section (mm²)	Number of bolts	Sizes (mm)					Packing (pcs.)
			L	L ₂	d	d ₁	N	
4C5E-25/50	25-50	4	58	27.5	19	11	10	10
4C5E-70/120	70-120	4	88	42.5	27	17	14	10
4C5E-150/240	150-240	4	110	53.5	37	25	14	5
6C5E-300/400	300-400	6	140	68.5	37	26	14	1
6C5E-500/630	500-630	6	190	87.0	48	34	17	1
6C5E-800	800	6	200	90.0	56	40	17	1

Shear-off-head bolts lugs with angular position. Euroseries

Type: H5E-Π

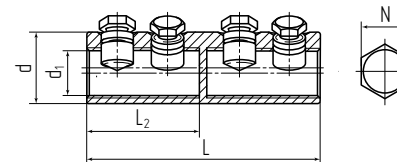


- Designed for termination of any type of cable cores: copper and aluminum, round or sector, mono - wire cables and stranded wires
- Each lug is multilateral and caters to a range of cable sizes
- X-shaped angular location of the bolts corresponds to the European standards and guarantees the mechanical strength of the connection
- The eccentric hole is provided for the cable core in the body of each lug
- Operating voltage: up to 10 kV
- Body and bolts material: special aluminum alloy
- Coating: electrolytic tinning
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove — stall «necks», so that the breaking of the head occurs on the level or below the surface area of the lug
- Shape A: spade part is shifted from the central axis and located a step below the lug body
- Shape B: spade part is located on central axis

Name	Cross section (mm²)	Number of bolts	Sizes (mm)									Shape	Packing (pcs.)
			D	L	L ₁	L ₂	A	S	d	d ₁	N		
2НБЕ-25/50(П)	25-50	2	10,5	58	21,5	28	9,5	8	19	11	10	A	10
2НБЕ-70/120(П)	70-120	2	13	78	26,5	41	13,5	12	27	17	14	A	10
2НБЕ-150/240(П)	150-240	2	17	98	34,5	53	15,5	14	37	25	14	A	5
3НБЕ-300/400(П)	300-400	3	17	120	38,5	70	15,5	14	37	26	14	A	1
3НБЕ-500/630(П)	500-630	3	17	156,5	52,0	90	22,0	17	48	34	17	B	1
3НБЕ-800(П)	800	3	17	172	65,0	90	28,0	17	56	40	17	B	1

Shear-off-head bolts connectors with angular position. Euroseries

Type: C5E-Π

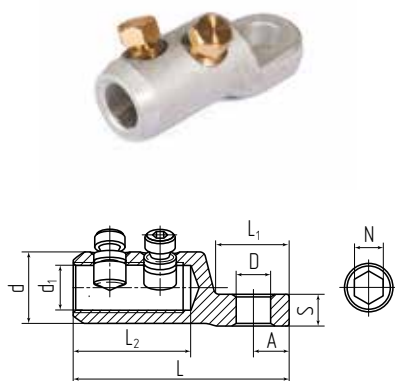


- Designed for connection of any type of cable cores: copper and aluminum, round or sector, mono - wire cables and stranded wires
- Each connector is multilateral and caters to a range of cable sizes
- X-shaped angular location of the bolts corresponds to the European standards and guarantees the mechanical strength of the connection
- The eccentric hole is provided for the cable core in the body of each connector
- Operating voltage: up to 10 kV
- Body and bolts material: special aluminum alloy
- Coating: electrolytic tinning
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove — stall «necks», so that the breaking of the head occurs on the level or below the surface area of the connector
- The connectors have an internal structural partition, which defines the depth of the cable core
- On each connector there is an embossed marking, which indicates the nominal cross-section cable range and the manufacturer's logo
- Installation tool: HMF-6(KBT) set

Name	Cross section (mm²)	Number of bolts	Sizes (mm)					Packing (pcs.)
			L	L ₂	d	d ₁	N	
4C5E-25/50(Π)	25-50	4	58	27.5	19	11	10	10
4C5E-70/120(Π)	70-120	4	88	42.5	27	17	14	10
4C5E-150/240(Π)	150-240	4	110	53.5	37	25	14	5
6C5E-300/400(Π)	300-400	6	140	68.5	37	26	14	1
6C5E-500/630(Π)	500-630	6	190	87.0	48	34	17	1
6C5E-800(Π)	800	6	200	90.0	56	40	17	1

Shear-off-head bolts lugs for voltage up to 35kV. Euroseries

Type: H5E-35

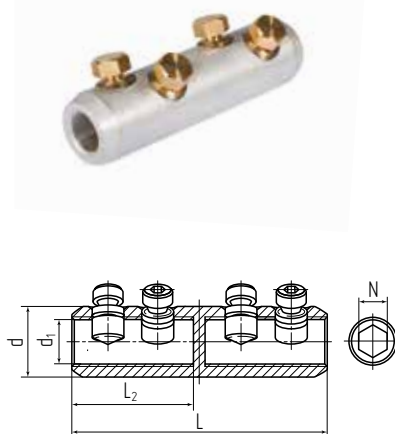


- Designed for connection of cable conductors with voltage up to 35 kV
- The centrally symmetrical hole for the cable core in the connector body contributes a uniform distribution of the electric field strength
- The end chamfers are provided for smoothing of the electric field
- The location of the axes of the bolts in different planes at an angle to each other ensures a large contact patch of the core with the body of the lug
- Each lug is multilateral and caters to a range of cable sizes
- Body material: special aluminum alloy
- Bolts material: copper alloy
- The mounting on core is made by tightening bolts with inner hexagon shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- Shape A: spade part is shifted from the central axis and located a step below the lug body
Shape B: spade part is located on central axis
- Installation tool: HMB-6(KBT) set

Name	Cross section (mm²)	Number of bolts	Sizes (mm)									Shape	Packing (pcs.)
			D	L	L ₁	L ₂	A	S	d	d ₁	N		
2H5E-35-35/50	35-50	2	10.5	64.5	22.5	35	10.5	8	21	11	10	A	10
2H5E-35-70/120	70-120	2	13	80	26.5	47	13.5	12	27	15	10	A	10
2H5E-35-150/240	150-240	2	17	98	34.5	54	15.5	14	37	21	14	A	5
3H5E-35-300/400	300-400	3	17	135	45.5	75	20	15	42	26	14	A	1
3H5E-35-500/630	500-630	3	17	150	49.5	88	24	16	52	34	17	B	1
3H5E-35-800	800	3	17	170	59.5	96	27	17	59	38	17	B	1

Shear-off-head bolts connectors for voltage up to 35kV. Euroseries

Type: C5E-35



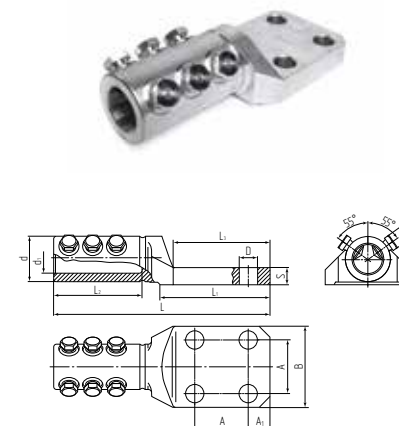
- Designed for connection of cable conductors with voltage up to 35 kV
- The centrally symmetrical hole for the cable core in the connector body contributes a uniform distribution of the electric field strength
- The end chamfers are provided for smoothing of the electric field
- The location of the axes of the bolts in different planes at an angle to each other ensures a large contact patch of the core with the body of the connector
- Each connector is multilateral and caters to a range of cable sizes
- Body material: special aluminum alloy
- Bolts material: copper alloy
- The mounting on core is made by tightening bolts with inner hexagon shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The «KBT» connectors have an internal structural partition, which defines the depth of the cable core
- Ranges of application of the mechanical connectors with shear-off-head bolts coincide with the ranges of heat-shrinkable cable kits, making them the perfect addition to complete heat-shrinkable sets
- Installation tool: HMB-6(KBT) set

Name	Cross section (mm²)	Number of bolts	Sizes (mm)					Packing (pcs.)
			L	L ₂	d	d ₁	N	
4C5E-35-35/50	35-50	4	72	33	21	11	10	10
4C5E-35-70/120	70-120	4	94	45.5	27	15	10	10
4C5E-35-150/240	150-240	4	107	52	37	21	14	5
6C5E-35-300/400	300-400	6	162	75	42	26	14	1
6C5E-35-500/630	500-630	6	190	88	52	34	17	1
6C5E-35-800	800	6	210	96	59	38	17	1

Shear-off-head bolts lugs for electric vehicles

Type: H5T

- Designed for terminating single core cables with paper oil fed and plastic insulation for constant and alternating voltage for stationary laying in electric transport traction networks
- Centrally symmetrical hole for the cable core in the shank body part contributes uniform distribution of the electric field strength
- The special design of the spade part with four mounting holes ensures high clamping force and minimal contact resistance when installed on the switch-gear
- X-shaped angular arrangement of the bolts meets European standards and guarantees the mechanical strength of the contact connection
- Operating voltage: up to 1 kV inclusively
- Body and bolts material: special aluminum alloy
- The mounting on core is made by tightening bolts with inner hexagon shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- Spade part of the lugs «KBT» is shifted from the central axis and located a step below the cylindrical body
- Installation tool: HMB-6(KBT) set

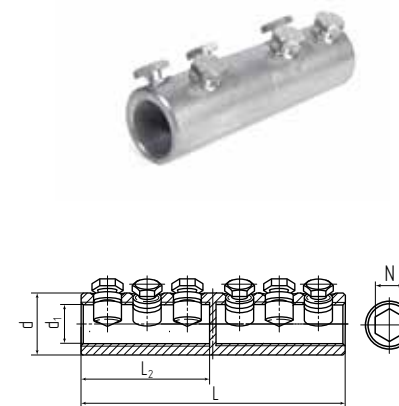


Name	Cross section (mm²)	Voltage (kV)	Number of bolts	Sizes (mm)												Packing (pcs.)
				L	L ₁	L ₂	L ₃	D	d	d ₁	A	S	N	B	C	
4H5T-300	300	1	4	179	102	60	50	17	38	23.5	20	16	14	75	90	1
4H5T-400	400	1	4	179	102	60	50	17	42	26.5	20	16	14	75	90	1
6H5T-500	500	1	6	201	102	80	50	17	48	29.5	20	20	17	80	90	1
6H5T-630	630	1	6	201	102	80	50	17	54	33.5	20	20	17	80	90	1
6H5T-800	800	1	6	201	102	80	50	17	59	37.5	20	22	17	80	90	1

Shear-off-head bolts connectors for electric vehicles

Type: C5T

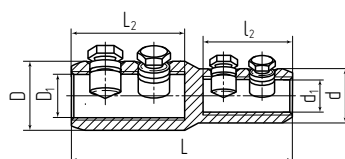
- Designed for terminating single core cables with paper oil fed and plastic insulation for constant and alternating voltage for stationary laying in electric transport traction networks
- Centrally symmetrical hole for the cable core in connector body contributes uniform distribution of the electric field strength
- Each shear-off-head bolted connector is multi-dimensional and designed for a range of cable cross-sections
- X-shaped angular arrangement of the bolts meets European standards and guarantees the mechanical strength of the contact connection
- Operating voltage: up to 1 kV inclusively
- Body and bolts material: special aluminum alloy
- The mounting on core is made by tightening bolts with inner hexagon shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- Corrugated knurling on the inner surface of the cylindrical part of connectors increases the surface area and mechanical strength of the contact connection
- The application ranges of shear-off-head bolts connectors coincide with the ranges of heat-shrinkable cable kits, which makes them an ideal complement for completing HS cable kits
- Installation tool: HMB-6(KBT) set



Name	Cross section (mm²)	Number of bolts	Sizes (mm)					Packing (pcs.)
			L	L ₂	d	d ₁	N	
6C5T-300/400	300-400	6	140	68.5	37	26	14	1
6C5T-500/630	500-630	6	190	87.0	48	34	17	1
6C5T-800	800	6	200	90.0	56	40	17	1

Transitional shear-off-head bolts connectors

Type: ПСБЕ

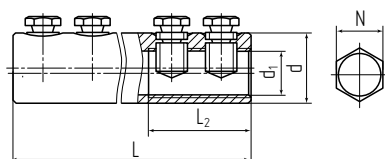


- Designed for connection of any type of cable cores: copper and aluminum, round or sector, mono - wire cables and stranded wires while transition to a smaller cross section range
- Each connector is multilateral and caters to a range of cable sizes
- X-shaped angular location of the bolts corresponds to the European standards and guarantees the mechanical strength of the connection
- The centrally symmetric holes are provided for the cable core in the body of the connector
- Operating voltage: up to 10 kV
- Body and bolts material: special aluminum alloy
- Coating: without coating
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- The construction of the bolts has several groove — stall «necks», so that the breaking of the head occurs on the level or below the surface area of the connector
- Connectors have an internal structural partition, which defines the depth of the cable core
- Corrugated knurling on the inner surface of the cylindrical part of the connectors increases the surface area and mechanical strength of the contact connection
- Installation tool: HMB-6(KBT) set
- Recommended for mounting heat-shrinkable kits and for equipping repair crews and emergency services

Name	Cross section (mm²)	Number of bolts	Sizes (mm)								Packing (pcs.)
			L	D	D ₁	L ₂	d	d ₁	l ₂		
4ПСБЕ-25-50/70-120	25-50/70-120	4	95	27	15	49	21	11	40	1	
4ПСБЕ-70-120/150-240	70-120/150-240	4	110	37	21	53	27	15	50	1	

Repair shear-off-head bolts connectors

Type: СБР



- Designed for repair connection of any type of cable cores: aluminum and copper, round and sector, mono and multi-wires while switching to a smaller cross-section range by increasing the cable core due to the elongated body part of the connector
- Each connector is multilateral and caters to a range of cable sizes
- Operating voltage: up to 10 kV
- Body and bolts material: special aluminum alloy
- Coating: without coating
- The mounting on core is made by tightening bolts with shear-off-heads. The bolt heads are breaking at a fixed point, providing optimal mechanical and electrical properties of the contact connection
- Corrugated knurling on the inner surface of the cylindrical part of the connectors increases the surface area and mechanical strength of the contact connection
- On the body of each connector there is an embossed marking, which indicates the nominal cross-section cable range and the manufacturer's logo
- Installation tool: HMB-6(KBT) set
- Recommended for mounting heat-shrinkable kits and for equipping repair crews and emergency services

Name	Cross section (mm²)	Number of bolts	Sizes (mm)					Packing (pcs.)
			L	L2	d	d1	N	
4СБР-25/50	25-50	4	280	32	19	11	10	1
4СБР-70/120	70-120	4	280	46	27	17	14	1
4СБР-150/240	150-240	4	280	56	37	26	14	1

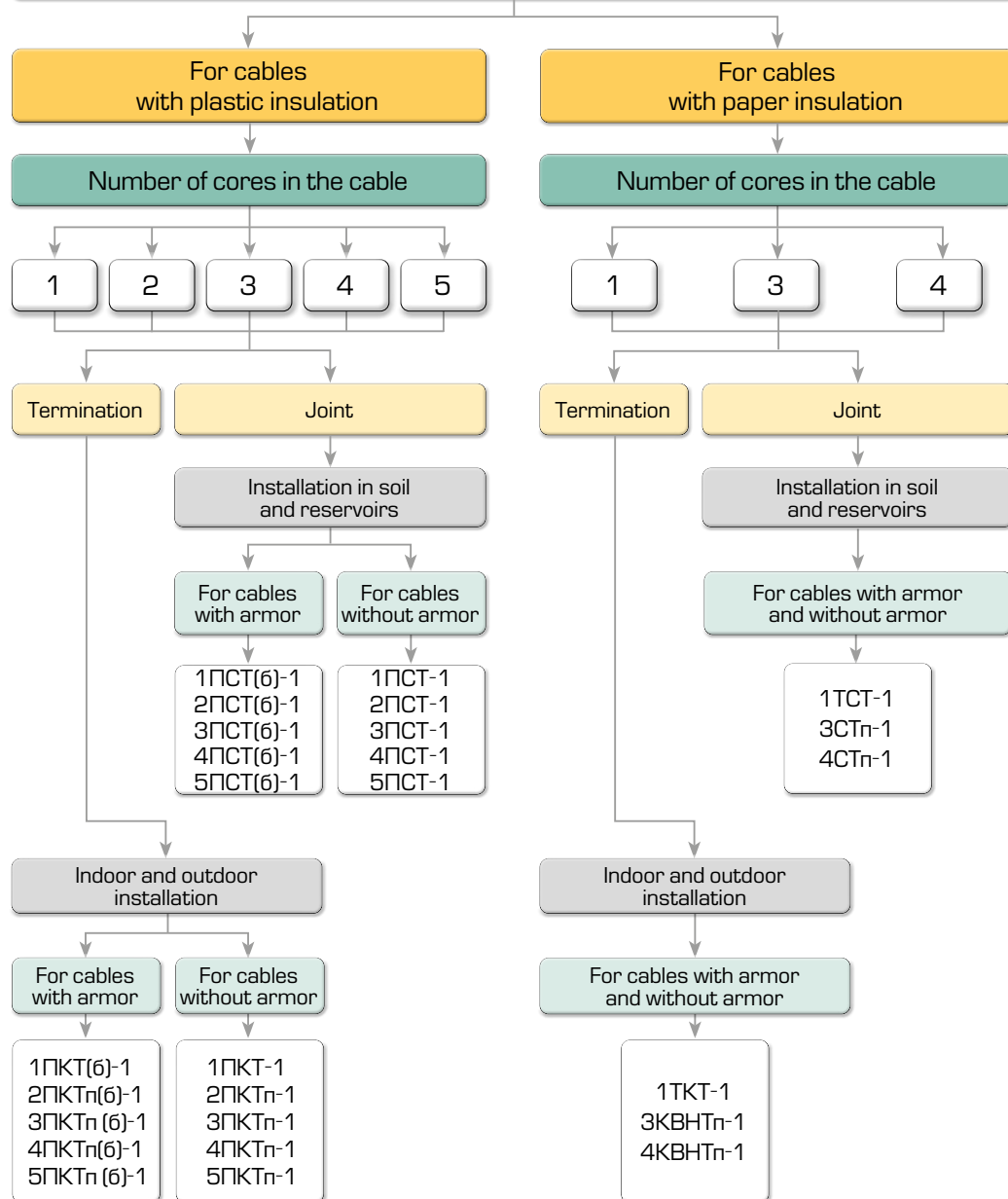
«KBT» brand heat-shrinkable terminations and joints



Selection of heat-shrinkable cable kits

5 parameters
for correct cable kits
selection

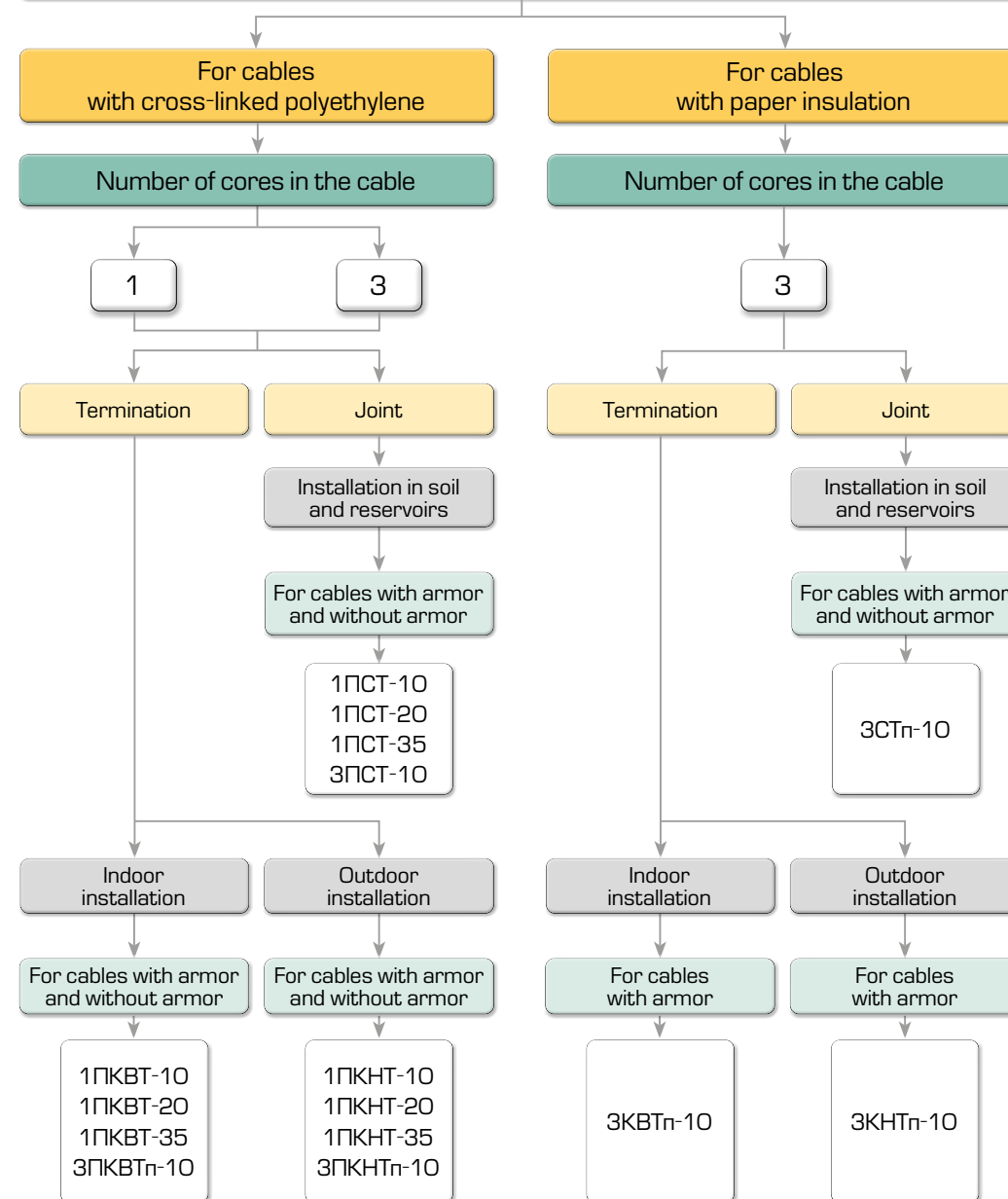
For voltage up to 1 kV



Selection of heat-shrinkable cable kits

- cable voltage
- cable insulation type
- number of cores in the cable
- presence of armor in the cable
- cable cross section

For voltage up to 35 kV



Advantages of «KBT» heat-shrinkable cable kits



- «KBT» is one of the few enterprises, operating in Russia that independently carries out a full cycle of production of heat-shrinkable kits components. This distinguishes the «KBT» plant from the so-called «assembly sites», which carry out only the completing of HS kits with components from third-party and often use substandard imported components. The production of all the main components of cable kits allows to have full control of final products quality
- The range of heat-shrinkable kits of «KBT» trademark covers almost the entire range of existing types of cables with a voltage from 1 to 35 kV. A wide range of products is designed for single-, three-, four-, and five-core cables with various types of insulation: oil-fed paper, plastic, rubber and cross-linked polyethylene insulation. The line of HS kits covers the range of cable cross sections from 1.5 to 800 mm².
- All «KBT» cable heat-shrinkable kits are presented in 4 basic configurations:
 1. made of standard polymer compositions, without cable lugs and connectors
 2. made of standard polymer compositions, with cable lugs and connectors
 3. made of self-extinguishing polymer compositions «HR-LS», without cable lugs and connectors
 4. made of self-extinguishing polymer compositions «HR-LS», with cable lugs and connectors
- Cable heat-shrinkable kits «HR-LS» designed to meet the strictest fire safety requirements and manufactured on the basis of polymer halogen-free compositions HF (Halogen Free). In addition to regular testing in the factory laboratory, «HR-LS» heat-shrinkable kits are certified by an independent testing laboratory.
- Development and production of «KBT» heat-shrinkable kits takes into account the latest trends in the field of materials science and polymer processing technology. The park of production equipment is represented by automatic extrusion lines, modern energy-saving injection molding machines and installations for tube, breakouts, cable caps and cable penetrations blowing.
- In addition to the range of heat-shrinkable kits for standard cables, «KBT» factory produces special-purpose kits:
 - for control cables
 - for submerged cables
 - for tram-trolleybus cables
 - for ABC lines wire connections with main cables
 - for gas cells with adapters ПИК and ЭКАТ
 - kits with self-hardening compound

Advantages of «KBT» heat-shrinkable cable kits

- «KBT» plant is the only enterprise in Russia that, along with heat-shrinkable kits, mass-produces cable lugs and connectors. More than 20 years of production history, innovative developments and a reputation as a market leader attest to the impeccable quality of «KBT» lugs and connectors. Cable lugs and ferrules for crimping, mechanical connectors and lugs with breakable shear-off-head bolts are essential accessories for installing termination and joint HS kits.
- In addition to heat-shrinkable kits, «KBT» plant produces and sells the following types of heat-shrinkable products:
 - thin-walled, medium-walled and thick-walled heat-shrinkable tubes for general use
 - special purpose heat shrinkable tubes
 - high-voltage, antitracking heat-shrinkable tubes and insulators
 - heat-shrinkable tubes sets
 - heat-shrinkable cable breakouts
 - heat-shrinkable cable penetrations
 - heat-shrinkable repair sleeves
 - heat-shrinkable cable caps
 - heat-shrinkable cable anode kits
- «KBT» electrotechnical plant also produces:
 - grounding wires for cable kits
 - constant pressure springs
 - kits for cables with steel wire armor
 - Y134–153 series cable tags and etc.
- The presence of our own certified laboratory equipped with modern equipment, including high-voltage installations, a climate chamber, a salt mist chamber, stands for conducting cyclic tests, breaking machines, etc., allows us to control the quality of products and implement new developments.
- In addition to its own tests in the plant's laboratory, «KBT» heat-shrinkable kits are voluntarily certified for compliance with the requirements of GOST 13781.0-86. Certificate of conformity № PCCC RU. AF 19. HO2355, issued by the Federal agency for technical regulation and metrology on the basis of laboratory protocols of the cable industry Research Institute, is a confirmation of the quality and reliability of «KBT» brand HS kits.
- The plant has implemented a quality management system according to GOST P ISO 9001, confirmed by the international certificate Euro Standard Register certification system №. PCCC RU. C. O4 XJK. CK. 0552.
- «KBT» quality control service, together with the laboratory, performs full input control of raw materials and materials used in the production of cable HS kits, quality control at all stages of the technological process.



4 basic configurations of «KBT» cable heat-shrinkable kits

Kit №1:		Without lugs and connectors For example, 1ПКBT-10-35/50
Kit №2:		With lugs and connectors Index (Б) is added to the HS kit name For example, 1ПКBT-10-35/50 (Б)
Kit №3:		Without lugs and connectors, made of composition «НГ-LS» Index «НГ-LS» is added to the HS kit name For example, 1ПКBT-10-35/50 НГ-LS
Kit №4:		With lugs and connectors, made of composition «НГ-LS» Indexes (Б) and «НГ-LS» are added to the HS kit name For example, 1ПКBT-10-35/50 (Б) НГ-LS

Termination and joint HS kits for voltage 10kV For 1 and 3 cores cables with cross-linked polyethylene insulation



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
1ПКBT-10-35/50	●	●	●	●	termination internal	1	10	35-50	cross-linked polyethylene, without armor
1ПКBT-10-70/120	●	●	●	●		1	10	70-120	
1ПКBT-10-150/240	●	●	●	●		1	10	150-240	
1ПКBT-10-300/400	●	●	●	●		1	10	300-400	
1ПКBT-10-500/630	●	●	●	●		1	10	500-630	
1ПКBT-10-800	●	●	●	●		1	10	800	
1ПКНТ-10-35/50	●	●	●	●	termination external	1	10	35-50	cross-linked polyethylene, without armor
1ПКНТ-10-70/120	●	●	●	●		1	10	70-120	
1ПКНТ-10-150/240	●	●	●	●		1	10	150-240	
1ПКНТ-10-300/400	●	●	●	●		1	10	300-400	
1ПКНТ-10-500/630	●	●	●	●		1	10	500-630	
1ПКНТ-10-800	●	●	●	●		1	10	800	
1ПСТ-10-35/50	●	●	●	●	joint	1	10	35-50	cross-linked polyethylene, without armor
1ПСТ-10-70/120	●	●	●	●		1	10	70-120	
1ПСТ-10-150/240	●	●	●	●		1	10	150-240	
1ПСТ-10-300/400	●	●	●	●		1	10	300-400	
1ПСТ-10-500/630	●	●	●	●		1	10	500-630	
1ПСТ-10-800	●	●	●	●		1	10	800	
3ПКВТн-10-35/50	●	●	●	●	termination internal	3	10	35-50	cross-linked polyethylene, with and without armor
3ПКВТн-10-70/120	●	●	●	●		3	10	70-120	
3ПКВТн-10-150/240	●	●	●	●		3	10	150-240	
3ПКНТн-10-35/50	●	●	●	●	termination external	3	10	35-50	
3ПКНТн-10-70/120	●	●	●	●		3	10	70-120	
3ПКНТн-10-150/240	●	●	●	●		3	10	150-240	
3ПСТ-10-35/50	●	●	●	●	joint	3	10	35-50	
3ПСТ-10-70/120	●	●	●	●		3	10	70-120	
3ПСТ-10-150/240	●	●	●	●		3	10	150-240	
(3П+3Б)СПТ-10-35/50	—	●	—	—	transition	3	10	35-50	with and without armor
(3П+3Б)СПТ-10-70/120	—	●	—	—		3	10	70-120	
(3П+3Б)СПТ-10-150/240	—	●	—	—		3	10	150-240	
(1П+3П)СПТ-10-35/50	—	●	—	—	transition	1*3+3	10	35-50	with and without armor
(1П+3П)СПТ-10-70/120	—	●	—	—		1*3+3	10	70-120	
(1П+3П)СПТ-10-150/240	—	●	—	—		1*3+3	10	150-240	
(1П+3Б)СПТ-10-70/120	—	●	—	—	transition	1*3+3	10	70-120	with and without armor
(1П+3Б)СПТ-10-150/240	—	●	—	—		1*3+3	10	150-240	

«KBT» heat-shrinkable kits content

Termination and joint HS kits for voltage 10kV for 3 cores cables with paper insulation



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
3КВТн-10-25/50	●	●	●	●	termination internal	3	10	25-50	paper insulation, with armor and without armor
3КВТн-10-70/120	●	●	●	●		3	10	70-120	
3КВТн-10-150/240	●	●	●	●		3	10	150-240	
3КНТн-10-25/50	●	●	●	●	termination external	3	10	25-50	
3КНТн-10-70/120	●	●	●	●		3	10	70-120	
3КНТн-10-150/240	●	●	●	●		3	10	150-240	
3СТн-10-25/50	●	●	●	●	joint	3	10	25-50	
3СТн-10-70/120	●	●	●	●		3	10	70-120	
3СТн-10-150/240	●	●	●	●		3	10	150-240	
3ССТн-10-25/50	●	●	—	—	joint	3	10	25-50	with armor and without armor
3ССТн-10-70/120	●	●	—	—		3	10	70-120	
3ССТн-10-150/240	●	●	—	—		3	10	150-240	
3СТнП-10-25/50	—	●	—	—	repair	3	10	25-50	with armor and without armor
3СТнП-10-70/120	—	●	—	—		3	10	70-120	
3СТнП-10-150/240	—	●	—	—		3	10	150-240	

Termination and joint HS kits for voltage 10kV for 3 cores cables with paper insulation, «МКС» kit



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
3КВТн-10-25/50 МКС	●	●	—	—	termination internal	3	10	25-50	paper insulation, with armor and without armor
3КВТн-10-70/120 МКС	●	●	—	—		3	10	70-120	
3КВТн-10-150/240 МКС	●	●	—	—		3	10	150-240	
3КНТн-10-25/50 МКС	●	●	—	—	termination	3	10	25-50	paper insulation, with armor and without armor
3КНТн-10-70/120 МКС	●	●	—	—		3	10	70-120	
3КНТн-10-150/240 МКС	●	●	—	—		3	10	150-240	
3СТн-10-25/50 МКС	●	●	—	—	joint	3	10	25-50	paper insulation, with armor and without armor
3СТн-10-70/120 МКС	●	●	—	—		3	10	70-120	
3СТн-10-150/240 МКС	●	●	—	—		3	10	150-240	

Termination and joint HS kits for voltage 1kV for 3 and 4 cores cables with paper insulation



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
3КВНТн-1-25/50	●	●	●	●	termination internal and external	3	1	25-50	paper insulation, with armor and without armor
3КВНТн-1-70/120	●	●	●	●		3	1	70-120	
3КВНТн-1-150/240	●	●	●	●		3	1	150-240	
3СТн-1-25/50	●	●	●	●	joint	3	1	25-50	
3СТн-1-70/120	●	●	●	●		3	1	70-120	
3СТн-1-150/240	●	●	●	●		3	1	150-240	
4КВНТн-1-25/50	●	●	●	●	termination internal and external	4	1	25-50	paper insulation, with armor and without armor
4КВНТн-1-70/120	●	●	●	●		4	1	70-120	
4КВНТн-1-150/240	●	●	●	●		4	1	150-240	
4СТн-1-25/50	●	●	●	●	joint	4	1	25-50	
4СТн-1-70/120	●	●	●	●		4	1	70-120	
4СТн-1-150/240	●	●	●	●		4	1	150-240	

«KBT» heat-shrinkable kits content

Termination and joint HS kits for voltage 1kV for single core cables with plastic insulation



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
1ПКТ-1-10/25 нг-LS	—	—	—	•	termination internal and external	1	1	10-25	plastic insulation, without armor
1ПКТ-1-25/50 нг-LS	—	—	—	•		1	1	25-50	
1ПКТ-1-70/120 нг-LS	—	—	—	•		1	1	70-120	
1ПКТ-1-150/240 нг-LS	—	—	—	•		1	1	150-240	
1ПКТ-1-300/400 нг-LS	—	—	—	•		1	1	300-400	
1ПКТ-1-500/630 нг-LS	—	—	—	•		1	1	500-630	
1ПКТ-1-800 нг-LS	—	—	—	•		1	1	800	
1ПСТ-1-10/25 нг-LS	—	—	—	•	joint	1	1	10-25	
1ПСТ-1-25/50 нг-LS	—	—	—	•		1	1	25-50	
1ПСТ-1-70/120 нг-LS	—	—	—	•		1	1	70-120	
1ПСТ-1-150/240 нг-LS	—	—	—	•		1	1	150-240	
1ПСТ-1-300/400 нг-LS	—	—	—	•		1	1	300-400	
1ПСТ-1-500/630 нг-LS	—	—	—	•		1	1	500-630	
1ПСТ-1-800 нг-LS	—	—	—	•		1	1	800	
1ПКТ(6)-1-10/25 нг-LS	—	—	—	•	termination internal and external	1	1	10-25	plastic insulation, with armor
1ПКТ(6)-1-25/50 нг-LS	—	—	—	•		1	1	25-50	
1ПКТ(6)-1-70/120 нг-LS	—	—	—	•		1	1	70-120	
1ПКТ(6)-1-150/240 нг-LS	—	—	—	•		1	1	150-240	
1ПКТ(6)-1-300/400 нг-LS	—	—	—	•	joint	1	1	300-400	
1ПСТ(6)-1-10/25 нг-LS	—	—	—	•		1	1	10-25	
1ПСТ(6)-1-25/50 нг-LS	—	—	—	•		1	1	25-50	
1ПСТ(6)-1-70/120 нг-LS	—	—	—	•		1	1	70-120	
1ПСТ(6)-1-150/240 нг-LS	—	—	—	•		1	1	150-240	
1ПСТ(6)-1-300/400 нг-LS	—	—	—	•		1	1	300-400	

Termination and joint mini- kits for voltage up to 0.4 kV for cables with plastic insulation, with and without armor



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
2ПКТп мини 2.5/10	•	—	—	—	termination internal	2	0.4	2.5-10	plastic insulation, without armor
3ПКТп мини 2.5/10	•	—	•	—		3	0.4	2.5-10	
4ПКТп мини 2.5/10	•	—	•	—		4	0.4	2.5-10	
5ПКТп мини 2.5/10	•	—	•	—		5	0.4	2.5-10	
2ПКТп(6) мини 2.5/10	•	—	—	—	termination internal	2	0.4	2.5-10	plastic insulation, with armor
3ПКТп(6) мини 2.5/10	•	—	•	—		3	0.4	2.5-10	
4ПКТп(6) мини 2.5/10	•	—	•	—		4	0.4	2.5-10	
5ПКТп(6) мини 2.5/10	•	—	•	—		5	0.4	2.5-10	
3ПСТ мини 1/2.5	•	—	•	—	joint	2/3	0.4	1.5-2.5	plastic insulation, without armor
3ПСТ мини 4/6	•	—	•	—		2/3	0.4	4-6	
3ПСТ мини 6/10	•	—	•	—		2/3	0.4	6-10	
5ПСТ мини 1/2.5	•	—	•	—		4/5	0.4	1.5-2.5	
5ПСТ мини 4/6	•	—	•	—		4/5	0.4	4-6	
5ПСТ мини 6/10	•	—	•	—		4/5	0.4	6-10	
3ПСТ(6) мини 1/2.5	•	—	•	—		2/3	0.4	1.5-2.5	plastic insulation, with armor
3ПСТ(6) мини 4/6	•	—	•	—		2/3	0.4	4-6	
3ПСТ(6) мини 6/10	•	—	•	—		2/3	0.4	6-10	
5ПСТ(6) мини 1/2.5	•	—	•	—		4/5	0.4	1.5-2.5	
5ПСТ(6) мини 4/6	•	—	•	—		4/5	0.4	4-6	
5ПСТ(6) мини 6/10	•	—	•	—		4/5	0.4	6-10	

«KBT» heat-shrinkable kits content

Termination and joint kits for voltage up to 1 kV For 4- and 5-cores cables with plastic insulation, with and without armor



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
5ПКТп-1-16/25	•	•	•	•	termination internal and external	5	1	16-25	plastic insulation, without armor
5ПКТп-1-25/50	•	•	•	•		5	1	25-50	
5ПКТп-1-70/120	•	•	•	•		5	1	70-120	
5ПКТп-1-150/240	•	•	•	•		5	1	150-240	
5ПСТ-1-16/25	•	•	•	•	joint	5	1	16-25	
5ПСТ-1-25/50	•	•	•	•		5	1	25-50	
5ПСТ-1-70/120	•	•	•	•		5	1	70-120	
5ПСТ-1-150/240	•	•	•	•		5	1	150-240	
5ПКТп(6)-1-16/25	•	•	•	•	termination internal and external	5	1	16-25	plastic insulation, with armor
5ПКТп(6)-1-25/50	•	•	•	•		5	1	25-50	
5ПКТп(6)-1-70/120	•	•	•	•		5	1	70-120	
5ПКТп(6)-1-150/240	•	•	•	•		5	1	150-240	
5ПСТ(6)-1-16/25	•	•	•	•	joint	5	1	16-25	
5ПСТ(6)-1-25/50	•	•	•	•		5	1	25-50	
5ПСТ(6)-1-70/120	•	•	•	•		5	1	70-120	
5ПСТ(6)-1-150/240	•	•	•	•		5	1	150-240	
4ПКТп-1-16/25	•	•	•	•	termination internal and external	4	1	16-25	plastic insulation, without armor
4ПКТп-1-25/50	•	•	•	•		4	1	25-50	
4ПКТп-1-70/120	•	•	•	•		4	1	70-120	
4ПКТп-1-150/240	•	•	•	•		4	1	150-240	
4ПКТп-1-300/400	•	•	•	•	joint	4	1	300-400	
4ПСТ-1-16/25	•	•	•	•		4	1	16-25	
4ПСТ-1-25/50	•	•	•	•		4	1	25-50	
4ПСТ-1-70/120	•	•	•	•		4	1	70-120	
4ПСТ-1-150/240	•	•	•	•		4	1	150-240	
4ПСТ-1-300/400	•	•	•	•	termination internal and external	4	1	300-400	plastic insulation, with armor
4ПКТп(6)-1-16/25	•	•	•	•		4	1	16-25	
4ПКТп(6)-1-25/50	•	•	•	•		4	1	25-50	
4ПКТп(6)-1-70/120	•	•	•	•		4	1	70-120	
4ПКТп(6)-1-150/240	•	•	•	•	joint	4	1	150-240	
4ПСТ(6)-1-16/25	•	•	•	•		4	1	16-25	
4ПСТ(6)-1-25/50	•	•	•	•		4	1	25-50	
4ПСТ(6)-1-70/120	•	•	•	•		4	1	70-120	
4ПСТ(6)-1-150/240	•	•	•	•		4	1	150-240	
4ПСТ(6)-1-300/400	•	•	•	•	termination internal and external	4	1	300-400	
(3+1)ПКТп-1-25/50	•	•	•	•		3+1	1	25-50	plastic insulation, without armor
(3+1)ПКТп-1-70/120	•	•	•	•		3+1	1	70-120	
(3+1)ПКТп-1-150/240	•	•	•	•		3+1	1	150-240	
(3+1)ПСТ-1-25/50	•	•	•	•		3+1	1	25-50	
(3+1)ПСТ-1-70/120	•	•	•	•		3+1	1	70-120	
(3+1)ПСТ-1-150/240	•	•	•	•		3+1	1	150-240	
(3+1)ПКТп(6)-1-25/50	•	•	•	•	joint	3+1	1	25-50	plastic insulation, with armor
(3+1)ПКТп(6)-1-70/120	•	•	•	•		3+1	1	70-120	
(3+1)ПКТп(6)-1-150/240	•	•	•	•		3+1	1	150-240	
(3+1)ПСТ(6)-1-25/50	•	•	•	•		3+1	1	25-50	
(3+1)ПСТ(6)-1-70/120	•	•	•	•		3+1	1	70-120	
(3+1)ПСТ(6)-1-150/240	•	•	•	•		3+1	1	150-240	

«KBT» heat-shrinkable kits content

Branch kits for voltage up to 1 kV

For 4- and 5-cores cables with plastic insulation, with and without armor



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cross sections (mm²)		Cable type
	1	2	3	4				main line	branch	
5ΠТО-1-16/50-1.5/6	●	–	–	–	branch	5	1	16–50	1.5–6	with armor and without armor
5ΠТО-1-50/95-4/35	●	–	–	–		5	1	50–95	4–35	
5ΠТО-1-95/150-35/95	●	–	–	–		5	1	95–150	35–95	
4ΠТО-1-16/50-1.5/6	●	–	–	–	branch	4	1	16–50	1.5–6	
4ΠТО-1-50/95-4/35	●	–	–	–		4	1	50–95	4–35	
4ΠТО-1-95/150-35/95	●	–	–	–		4	1	95–150	35–95	

Termination and joint kits for voltage up to 1 kV

For 2- and 3-cores cables with plastic insulation, with and without armor



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
3ΠΚΤη-1-16/25	●	●	●	●	termination internal and external	3	1	16–25	plastic insulation, without armor
3ΠΚΤη-1-35/50	●	●	●	●		3	1	35–50	
3ΠΚΤη-1-70/120	●	●	●	●		3	1	70–120	
3ΠΚΤη-1-150/240	●	●	●	●		3	1	150–240	
3ΠСТ-1-16/25	●	●	●	●	joint	3	1	16–25	
3ΠСТ-1-25/50	●	●	●	●		3	1	25–50	
3ΠСТ-1-70/120	●	●	●	●		3	1	70–120	
3ΠСТ-1-150/240	●	●	●	●		3	1	150–240	
3ΠΚΤη(6)-1-16/25	●	●	●	●	termination internal and external	3	1	16–25	plastic insulation, with armor
3ΠΚΤη(6)-1-35/50	●	●	●	●		3	1	35–50	
3ΠΚΤη(6)-1-70/120	●	●	●	●		3	1	70–120	
3ΠΚΤη(6)-1-150/240	●	●	●	●		3	1	150–240	
3ΠСТ(6)-1-16/25	●	●	●	●	joint	3	1	16–25	
3ΠСТ(6)-1-25/50	●	●	●	●		3	1	25–50	
3ΠСТ(6)-1-70/120	●	●	●	●		3	1	70–120	
3ΠСТ(6)-1-150/240	●	●	●	●		3	1	150–240	
2ΠΚΤη-1-16/25	●	●	–	–	termination internal and external	2	1	16–25	plastic insulation, without armor
2ΠΚΤη-1-35/50	●	●	–	–		2	1	35–50	
2ΠΚΤη-1-70/120	●	●	–	–		2	1	70–120	
2ΠСТ-1-16/25	●	●	–	–	joint	2	1	16–25	
2ΠСТ-1-25/50	●	●	–	–		2	1	25–50	
2ΠСТ-1-70/120	●	●	–	–		2	1	70–120	
2ΠΚΤη(6)-1-16/25	●	●	–	–	termination internal and external	2	1	16–25	plastic insulation, with armor
2ΠΚΤη(6)-1-35/50	●	●	–	–		2	1	35–50	
2ΠΚΤη(6)-1-70/120	●	●	–	–		2	1	70–120	
2ΠСТ(6)-1-16/25	●	●	–	–	joint	2	1	16–25	
2ΠСТ(6)-1-25/50	●	●	–	–		2	1	25–50	
2ΠСТ(6)-1-70/120	●	●	–	–		2	1	70–120	

Joint kits for voltage 1 kV

For cables with plastic insulation, with and without armor



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
МТС(6-1)-1.5/6	–	●	–	–	joint	2/3/4/5	1	1.5–6	with armor and without armor
МТС(6-1)-6/25	–	●	–	–		2/3/4/5	1	6–25	

«KBT» heat-shrinkable kits content

Termination and joint kits for voltage up to 1 kV

for cables with rubber insulation



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
1PKT-1-10/25(Б)	●	●	–	–	termination internal and external	1	1	10–25	without armor
1PKT-1-35/50(Б)	●	●	–	–		1	1	35–50	
1PKT-1-70/120(Б)	●	●	–	–		1	1	70–120	
1PKT-1-150/240(Б)	●	●	–	–		1	1	150–240	
1PCT-1-10/25	●	●	–	–	joint	1	1	10–25	
1PCT-1-35/50	●	●	–	–		1	1	35–50	
1PCT-1-70/120	●	●	–	–		1	1	70–120	
1PCT-1-150/240	●	●	–	–		1	1	150–240	
(3+1) PKTη-1-10/25	●	●	–	–	termination internal and external	3+1	1	10–25	
(3+1) PKTη-1-35/50	●	●	–	–		3+1	1	35–50	
(3+1) PKTη-1-70/120	●	●	–	–		3+1	1	70–120	
(3+1) PCT-1-10/25	●	●	–	–	joint	3+1	1	10–25	
(3+1) PCT-1-35/50	●	●	–	–		3+1	1	35–50	
(3+1) PCT-1-70/120	●	●	–	–		3+1	1	70–120	
4PKTη-1-10/25	●	●	–	–	termination internal and external	4	1	10–25	with armor and without armor
4PKTη-1-35/50	●	●	–	–		4	1	35–50	
4PKTη-1-70/120	●	●	–	–		4	1	70–120	
4PCT-1-10/25	●	●	–	–	joint	4	1	10–25	
4PCT-1-35/50	●	●	–	–		4	1	35–50	
4PCT-1-70/120	●	●	–	–		4	1	70–120	

Termination and joint kits for voltage up to 1 kV for control cables

with rubber insulation and number of cores from 4 to 37, with and without armor



HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
KKT-1 НР-LS (7–18 mm)	–	–	●	–	termination internal	4–37	1	0.75–10	control, PVC insulation with armor and without armor
KKT-2 НР-LS (15–25 mm)	–	–	●	–		4–37	1	0.75–10	
KKT-3 НР-LS (25–33 mm)	–	–	●	–		4–37	1	0.75–10	
ΠСТκ (4-7)х(0.75-1.5) НР-LS	–	–	–	●	joint	4–7	1	0.75–1.5	
ΠСТκ (10-37)х(0.75-1.5) НР-LS	–	–	–	●		10–37	1	0.75–1.5	
ΠСТκ (4-14)х(1.5-2.5) НР-LS	–	–	–	●		4–14	1	1.5–2.5	
ΠСТκ (19-37)х(1.5-2.5) НР-LS	–	–	–	●		19–37	1	1.5–2.5	
ΠСТκ (4-10)х(4-10) НР-LS	–	–	–	●		4–10	1	4–10	

Joint kits for voltage up to 400 V

for submerged cables with plastic insulation



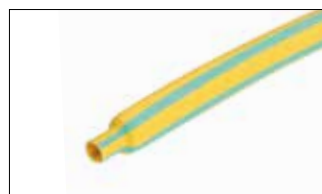
HS kit name	Kit №				HS kit type	Number of cable cores	Operating voltage (kV)	Cable cross section (mm²)	Cable type
	1	2	3	4					
МВΠТ-1.5/2.5	–	–	–	●	joint	3/4	400	1.5–2.5	submerged
МВΠТ-4/6	–	–	–	●		3/4	400	4–6	

«KBT» heat-shrinkable tubes



TYT Hr-LS (KBT)

black heat shrinkable tubes
with 2:1 shrink ratio



TYT Hr-LS (KBT)

yellow-green heat shrinkable tubes
with 2:1 shrink ratio



TYT (HF) (KBT)

color heat shrinkable tubes
in mini-rolls with 2:1 shrink ratio



TYT (HF) (KBT)

black heat shrinkable tubes 2:1
in mini-rolls



THT (KBT)

heat shrinkable tubes 2:1
cut in segments by 1 meter



T-BOX (KBT)

heat shrinkable tubes
in a compact package by 10 meters



TYT Hr-LS (KBT)

heat shrinkable tubes
with 3:1 shrink ratio



TTK (2:1) (KBT)

heat shrinkable tubes 2:1
with adhesive layer



TTK (3:1) (KBT)

heat shrinkable tubes 3:1
with adhesive layer



TTK 3:1 (KBT)

color heat shrinkable tubes 3:1
with adhesive layer



TTK (4:1) (KBT)

heat shrinkable tubes 4:1
with adhesive layer



TT-6X (KBT)

heat shrinkable tubes 6:1
with adhesive layer



CTTK (KBT)

medium-walled tubes 3:1 and 4:1
with adhesive layer



HTTK (KBT)

thick-walled tubes 3:1 and 4:1
with adhesive layer



TTB (4:1) (KBT)

thick-walled sleeves 4:1
with double-sided adhesive application

«KBT» heat-shrinkable tubes



TTШ-10/TTШ-35 (KBT)

high-voltage tubes for 10 kV
busbar insulation



ТЛК-10 (KBT)

24 kV heat shrinkable tape
with adhesive layer



TCT-A (KBT)

antitracking tubes
with 3:1 shrink ratio



TT-C Hr-LS (KBT)

2:1 and 3:1 high temperature
heat shrink tubes



TT-150 (KBT)

high-temperature
fluoroplastic tubes 2:1



TT-175 (KBT)

high-temperature
fluoroplastic tubes 2:1



TT-200 (KBT)

high-temperature
fluoroplastic tubes 2:1



TT-ГСМ (KBT)

oil-and-gas-resistant
heat-shrinkable tubes 2:1



TT-M (KBT)

heat shrinkable tubes for marking
with a 2:1 ratio



KST (KBT)

halogen-free transparent
heat shrinkable tubes 2:1



ПГ (KBT)

propane
gas torch



TT-1800 (KBT)

high temperature
fan



X-190 (KBT)

portable multi-function
gas torches



X-220 (KBT)

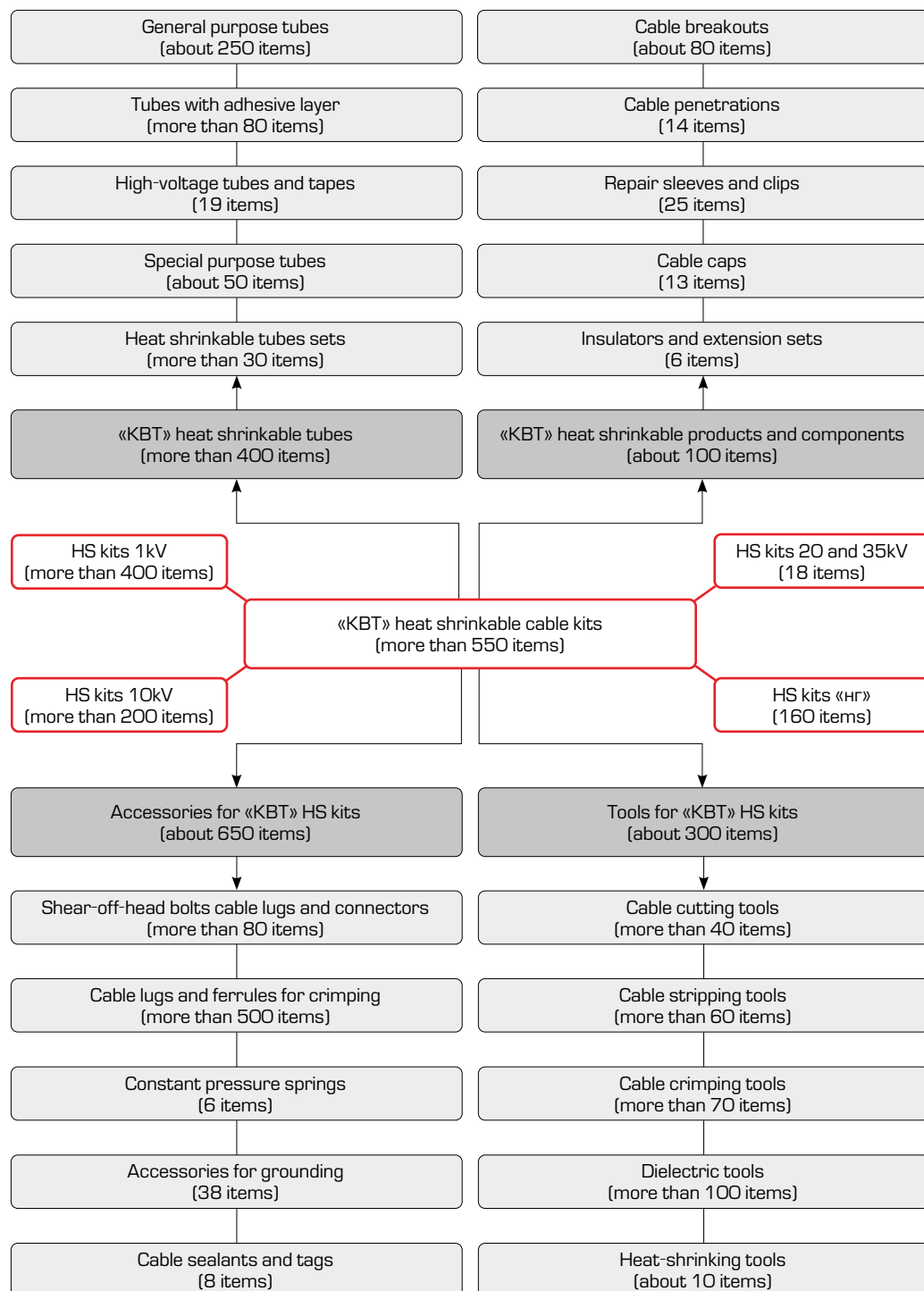
portable multi-function
gas torches



X-350 (KBT)

portable multi-function
gas torches

Complex solutions for cable HS kits and accessories



«KBT» Fittings and tools for ABC cables and power lines

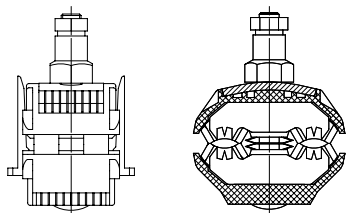


Fittings (ABC cables) for installing self-supporting insulated wires

Type: ЗПО

piercing branch clamps for connecting and branching ABC cables

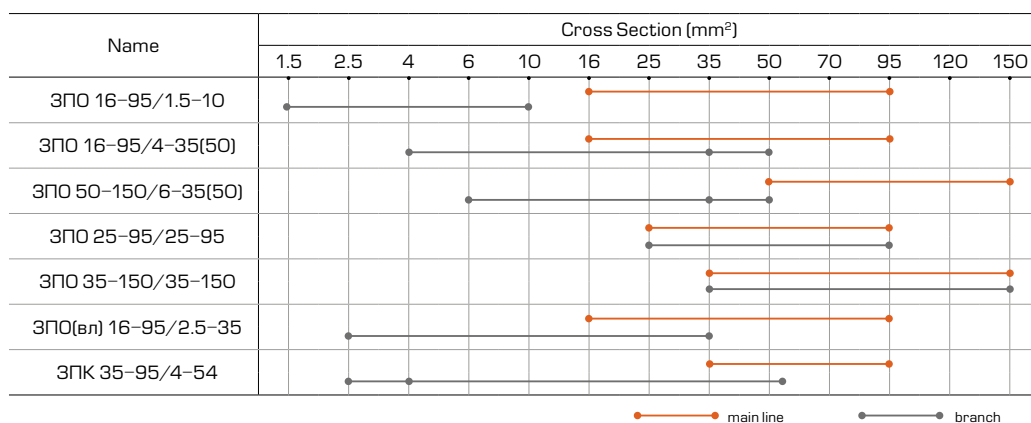
- Designed for connection without axial load and branching of ABC wires, as well as for connection of network wires and lighting
- While tightening the bolt, the teeth of the contact plates pierce the insulation and create a reliable electrical contact
- The reliability of the contact connection is ensured by the precisely selected tightening torque of the bolt with the breaking head
- Installation can be carried out on a living line without disconnecting the main line power
- The design of the clamp ensures hermetic connection and resistance to atmospheric precipitation
- Insulated body is made of glass fiber reinforced polymer which is resistant to UV rays and various weather conditions
- Designed for installing aluminum and copper cores
- The clamps are provided with a rubber cap to insulate the end of the branch wire
- Quick installation without removing insulation



Name	Analogues	Bolt head (mm)	Cross Section (mm²)		Tightening torque (Nm)	Packing (pcs.)
			main line	branch		
ЗПО 16-95/1.5-10	EP 95-13	10	16-95	1.5-10	7	60/300
ЗПО 16-95/4-35(50)	P2R95	13	16-95	4-35(50)*	11	24/120
ЗПО 50-150/6-35(50)	P2R-150	13	50-150	6-35(50)*	11	24/120
ЗПО 25-95/25-95	P3X95	13	25-95	25-95	18	20/100
ЗПО 50-150/50-150	P4X150D	13	(35)50-150	(35)50-150	18	20/100

*Can be used with conductors with a cross section of 50 mm² with a current not more than 138 A

Application ranges of piercing clamps



Fittings (ABC cables) for installing self-supporting insulated wires

Type: ЗПО(вн)

piercing branch clamp for connecting bare wire with ABC cables

- Designed for connecting ABC cables with A and AC grade bare wires
- Provides simultaneous contact between the insulated and bare cores, performs piercing of the ABC cables insulation and hermetic sealing of the branched wire
- The reliability of the contact connection is ensured by the precisely selected tightening torque of the shear-off-head bolt
- Design of the clamp ensures leak proof connection and resistance to various weather conditions
- Insulated body is made of glass fiber reinforced polymer which is UV resistant
- Quick mounting without removing the insulation from ABC cables



Name	Analogues	Bolt head (mm)	Cross Section (mm²)		Tightening torque (Nm)	Packing (pcs.)
			main line	branch		
ЗПО(вн) 16-95/2.5-35	NTD 151AF	13	16-95	2.5-35	11	12/180

Type: ЗПК

water-proof branch clamps with separate bolt tightening

- Designed to perform branches from ABC cables by piercing the insulation with stripping the branch wire. Can be used to provide a connection to the ground zero core descent
- Multiple use of clamps on the branch side is allowed
- The clamps are made of durable aluminum alloy
- Protective clamp body is made of rubber which is resistant to weather and UV factor
- To perform a branch with a cross section – 1.5-2.5 mm², the pre-cleaned wire should be folded in a half and twisted
- Weight: 0.12 kg



Name	Analogues	Current (A)	Bolt head (mm)	Cross Section (mm²)		Packing (pcs.)
				main line	branch	
ЗПК 35-95/4-54	P71	145	10	35-95	2.5/4-54	10/100

Type: ПЗА

parallel groove connecting clips

- Designed for connecting bare A and AC grade wires, as well as for re-grounding the zero core while mounting ABC cables line
- Made of high-durability corrosion-resistant aluminum alloy, resistant to mechanical stress
- Maximally extended cross-section range
- ПЗАk clamp is equipped with a water-proof case
- The two-bolt clips design ensures reliable fastening of the wires during mounting



Name	Analogues	Package bundle	Bolts number	Cross Section (mm²)	Dimensions (mm)			Weight (kg)	Packing (pcs.)
					length	width	height		
ПЗА 16-70	SI 37.1	without case	1	16-70	42	25	45	0.061	20/240
ПЗА 16-150	HEL-3592	without case	2	16-150	50	46	55	0.140	10/100
ПЗАk 16-150	SL39.2+SPIS	with case	2	16-150	110	56	75	0.193	1/80

Fittings (ABC cables) for installing self-supporting insulated wires

Type: КПП (analogue ES1500)

set of intermediate suspension

- Designed for suspend installing ABC lines with insulated neutral messengers
- The set consists of a polymer clamp made of an insulating material, resistant to various weather and climate conditions and a metal bracket
- The bracket is made of corrosion-resistant aluminum alloy
- Fixing of bracket to the pole is made by M16 mm bolt or by 20x0.7 mm stainless steel band
- The neutral messenger is fixed by an adjustable clamp. The movable joint allows the clamp to move longitudinally. The locking «fingers» on the mounting ring of the bracket limits the transverse displacement



Name	Analogues	Cross Section (mm²)	Breaking load (kN)	Weight (kg)
КПП-1500	ES 1500	25–95	12	0.34

Type: ППЗ (analogue PS 54)

intermediate suspension clamps

- Designed for installing ABC lines with insulated neutral messengers up to 1kV
- Clamps are used for suspension of ABC lines on intermediate and corner poles
- Angle of rotation of ABC line:
 - ППЗ-60: 60°
 - ППЗ-90: 90°
- In ППЗ-90 neutral messenger is fixed by an adjustable clamp using a bolt
- The clamp body is made of a weather and UV-resistant polymer reinforced with a fiberglass structure
- The suspension loop with a diameter 30mm is made of aluminum alloy
- Clamps are fixed to the poles on hooks or brackets



ППЗ-60

ППЗ-90

Name	Analogues	Cross Section (mm²)	Breaking load (kN)	Weight (kg)
ППЗ-60	PS 54	25–95	12	0.16
ППЗ-90	S069.95	16–95	22	0.31

Type: ППЗ-4 (analogue PS 495)

intermediate suspension clamp for ABC lines – СИП-4 by Russian standard

- Designed for installing ABC lines (СИП-4)
- Clamp body is made of corrosion-resistant aluminum alloy
- Insertion, made of weather-resistant polymer, prevents insulation damage
- No fall-out details
- The clamps are mounted on hooks, up to 21 mm in diameter
- If the line deflection angle exceeds 60°, two suspension clamps ППЗ-4 should be used



Name	Analogues	Cross Section (mm²)	Breaking load (kN)	Weight (kg)
ППЗ-4x95	PS 495	4x25–120	7.5	0.3

Fittings (ABC cables) for installing self-supporting insulated wires

Type: КП (analogue CS 1500)

bracket for mounting the intermediate clamps

- Designed for mounting intermediate support clamps on poles
- Can be used for hanging mounting rollers while rolling ABC lines
- Made of corrosion-resistant aluminum alloy with high mechanical durability
- Fixing of bracket to the pole is made by M16 mm bolt or by 20x0.7 mm stainless steel band
- The locking «fingers» on the mounting ring of the bracket limit the transverse displacement of the clamp while side loads
- Design of the bracket has a closed loop that guarantees protection from breakdowns



Name	Analogues	Breaking load (kN)	Operating load (kN)	Weight (kg)
КП-1500	CS 1500	15	5	0.18

Type: КА (analogue CA1500)

anchor clamps mounting bracket

- Designed for anchors mounting to the poles or buildings facades
- Bracket is a mono block made of corrosion-resistant aluminum alloy
- Fixing of bracket is made by two bolts M14 or M16 mm, or with two bands of stainless-steel band 20x0.7 mm
- Bracket configuration provides convenient movement on the poles, allows fixing of the mounting roller for rolling out ABC lines
- Provides mounting of one or two anchor clamps
- Designed for mechanical stress generated during lines rolling
- Bulge guides make it easier to mount the bracket with band



Name	Analogues	Breaking load (kN)	Operating load (kN)	Weight (kg)
КА-1500	CA 1500	15	5	0.19

Type: КАБ (analogue CAB 25)

Anchor bracket for service cables

- Designed for fixing anchor clamps for service cables
- Made of stainless steel
- Mounting by dowels, nails, screws, or ЛКС band
- Possibility of mounting by bolts
- Bracket configuration makes easy fixing to the building walls, reinforced concrete, metal or wooden poles and suspended fittings mounting
- Minimum package: 20 pcs.



Name	Analogues	Breaking load (kN)	Operating load (kN)	Weight (kg)
КАБ-25	CAB 25	2	0.8	0.02

Fittings (ABC cables) for installing self-supporting insulated wires

Type: 3AH (analogue PA 1500)

Anchor clamps for ABC lines with insulated neutral messenger



- Designed for mounting ABC lines with an insulated neutral messenger to the brackets and hooks of the pole lines
- Clamp has casted body, made of corrosion-resistant aluminum alloy, stainless steel rope and polymer wedges
- Self-regulating wedges made of a polymer are resistant to UV rays and various weather conditions, clamp neutral messenger without damaging insulation
- Flexible rope with insulated weatherproof seat allows to mount up to three clamps on the bracket
- No tools required for installation. No fall-out details
- Recommended for use in conjunction with KA-1500 bracket
- High breaking load allows the use of clamps on spans up to 200 m

Name	Analogues	Cross section of neutral messenger (mm ²)	Breaking load (kN)	Operating load (kN)	Weight (kg)
3AH-1500	PA 1500	50-70	15	5	0.32

Type: 3AH-4 (analogue GUKp-4)

Anchor clamps for ABC lines self-supporting system СИП-4



- Designed for anchoring or intermediate mounting of 2 or 4 insulated service lines
- Made of hot-dip galvanized steel and weather-/ UV-resistant polymer, reinforced with fiberglass structure
- Clamp body covers ensure an even distribution of the mechanical load on the wire insulation
- The clamp can be used as an intermediate one, with a 90-degree rotation of the fixing part

Name	Analogues	Cross section (mm ²)		Sizes (mm)			Breaking load (kN)	Weight (kg)
		min	max	length	width	height		
3AH-4x25	GUKp-4	2x10	4x35	175	40	85	10	0.19

Type: 3AB (analogue PA 25x100)

Anchor clamps for service lines



- Designed for anchoring of 2 or 4 insulated service lines
- Size: from 2x16 mm² to 4x25 mm²
- Body and self-regulating clamp wedge are made of a polymer which is resistant to UV rays and various weather conditions
- Easy-to-open shackle allows clamp attaching to brackets or hooks
- No fall-out details
- Design of the sliding wedge does not require special tools for mounting

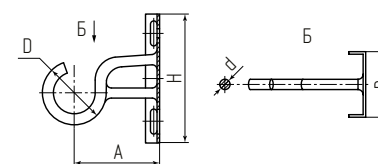
Name	Analogues	Cross section (mm ²)		Breaking load (kN)	Operating load (kN)	Weight (kg)
		min	max			
3AB-25	PA 25x100	2x16	4x25	3	0.8	0.19

Fittings (ABC cables) for installing self-supporting insulated wires

Type: KM (analogue SOT)

mounting hook

- Designed for mounting support clamp on the intermediate poles of ABC lines
- Fastening to the poles is carried out by two bolts with a diameter 14 or 16 mm, or by means of two stainless steel bands 20x0.7 mm
- Made of galvanized steel
- Weight: 0.37 kg



Name	Analogues	Sizes (mm)					Operating load (kN)	
		H	A	B	d	D	horizontal	vertical
KM-120	SOT 29.10	130	90	60	10	40	5.3	3.3

Type: СИП-20 (analogue SCT-20)

self-sintering insulating tape

- Intended for restoration and repair of insulation damages of ABC cables, as well as for cables and wires sheath on a voltage up to 1 kV
- While removing the piercing clamps from the ABC line, insulation of the wires at the puncture site should be restored using СИП tape
- The tape is made on the basis of ethylene-propylene rubber, which self-vulcanizes during winding and forms a single monolithic structure
- СИП-20 tape has high electrical strength
- Resistant to UV rays and various weather conditions



Name	Analogues	Sizes (mm)			Weight (kg)
		length	width	thickness	
СИП-20	SCT-20	3000	20	0.75	0.67

Type: KCV

All-weather reinforced cable ties with double lock

- Designed for fixing and banding cables and ABC lines
- Material: nylon 12, self-extinguishing, halogen-free
- KCV cable ties have exceptional strength, resistance to UV radiation, various weather conditions and aggressive environmental influences
- Operating temperature: -40 °C to +85 °C
- Reinforced one-way locking mechanism
- Double flat lock for cable ties with 9mm width
- Installation tool: TG-03



Name	Lock type	Sizes (mm)		Diameter of the girth (mm)	Operating load (kg)	Packing (pcs.)
		width	length			
KCV 6x180	single	6	180	45	35	100
KCV 9x180	single	9	180	45	40	100
KCV 9x260	double	9	260	66	60	100
KCV 9x350	double	9	350	90	60	100

Tools and accessories for installation ABC and overhead power lines



Type: ЛКC-2007

stainless steel
banding tape

- Designed for mounting brackets and hooks of cable fittings, as well as billboards and road signs on poles
- Material:
 - ЛКC(201)-2007: AISI 201 stainless steel
 - ЛКC(304)-2007: AISI 304 stainless steel
- Resistant to corrosion, extreme temperatures, humidity and radiation
- The product is certified according to the Russian Maritime register of shipping No. 17.03344.120 dated 12.07.2017
- Operating temperature: -80 °C to +538 °C
- Withstands significant mechanical loads
- The edges of the tape are smoothed and have no sharp edges or burrs
- Installation tool: ИH-20, ИHTy-20, ИH-20 mini, HM-20, hammer

Name	Material	Sizes (mm)		Packing
		width	thickness	
ЛКC (201)-2007	AISI 201	20	0.7	plastic cassette 50 m
ЛКC (201)-2007	AISI 201	20	0.7	carton 25 m
ЛКC (304)-2007	AISI 304	20	0.7	plastic cassette 25 m

Types: CM / БM

stainless steel
mounting brackets and buckles

- Designed for fixing bandages made of steel tape while installing ABC lines fittings on the poles
- Made of AISI 304 stainless steel, resistant to corrosion, extreme temperatures, humidity and radiation
- The product is certified according to the Russian Maritime register of shipping No. 17.03344.120 dated 12.07.2017
- In comparison with brackets, buckles have one-piece forged design and have increased strength characteristics
- After tightening steel tape bandage, the «ears» of the brackets and buckles are bent inwards with a hammer
- Installation tool: ИH-20, ИHTy-20, ИH-20 mini, HM-20, hammer

Name	Material	Sizes (mm)		Packing (pcs.)
		width	thickness	
CM-20	AISI 201	20	1.1	100
БM-20	AISI 304	20	1.6	100

Mounting brackets CM

Mounting buckles БM

Type: HM-20 (KBT)

shears for cutting bands
made of stainless steel

- Special design for cutting bands made of stainless steel
- Width of stainless steel band: 20 mm
- Thickness of stainless steel band: 1.5 mm
- Special sharpening of the blade
- Safety stopper for band position adjustment
- Antibacklash fixation of dies
- Highly effective and comfortable in work
- Easy work with one hand
- Simple and durable
- No-slip handles
- Weight: 820 g
- Length: 305 mm



Tools and accessories for installation ABC and overhead power lines

Type: ИHT-20 mini (KBT)

ratchet tool for tightening steel straps
on electricity poles

- Universal tool for tightening stainless steel ties with a ball-lock
- Used for tightening and cutting of stainless-steel straps on electricity poles
- Can be used for fixation of coated and uncoated stainless-steel ties (width of 9.7 and 12 mm)
- Width of stainless steel strap: up to 20 mm
- Thickness of stainless-steel strap: up to 1 mm
- 2 in 1 – tightening and cutting of the strap
- Recommended to use for steel AISI 201, 304, 316 with width of 12 mm, 15 mm and 20 mm
- Strong and reliable ratchet made of high grade steel
- Manual adjustment of the ratchet
- Special cutting blade
- Cuts with simple lever push
- Steady handle with various possible positions
- Easy work with one hand
- Light compact and comfortable
- Weight: 1.20 kg
- Length: 170\240 mm



Type: ИHTy-20 (KBT)

ratchet tool for tightening stainless-steel straps
on electricity poles

- Universal tool for tightening stainless steel ties with a ball-lock
- Used for tightening and cutting of stainless steel straps on electricity poles
- Can be used for fixation of coated and uncoated stainless-steel ties (width up to 12 mm)
- Width of stainless-steel strap: up to 20 mm
- Thickness of stainless-steel strap: up to 1 mm
- 2 in 1 – tightening and cutting of the strap
- Recommended to use for steel AISI 201, 304, 316 with width of 12 mm, 15 mm and 20 mm
- Strong and reliable ratchet made of high quality steel
- Manual adjustment of the ratchet
- Special cutting blade
- Cuts with simple lever push
- Simple and reliable
- Less effort in assembly
- Horizontal and vertical work with the band
- Weight: 1.15 kg / Length: 240 mm



Type: ИH-20 (KBT)

tool for tightening steel straps
on electricity poles

- Used for tightening and cutting of stainless steel straps on electricity poles
- Width of the strap: 20 mm
- Thickness of the stainless-steel strap: up to 1 mm
- 2 in 1: tightening and cutting
- Lever for grip and fixation of the strap
- Special blade for cutting
- Cutting is fulfilled with the single lever push
- Special heat treatment of the pressing part and cutting blade
- Detachable rotatable handle for easy storage in electrician's bag
- Weight: 1.70 kg
- Length: 290\330 mm



Tools and accessories for installation ABC and overhead power lines

Type: M3 (KBT)

Pulling equipment for ABC lines («frog» type clamps)

- Used when adjusting the vertical distance in the intermediate span on the ABC lines by gripping insulated neutral messenger
- Designed for self-supporting ABC lines (СИП-2А)
- Can be used for work with a fiber optic cables
- The lever device converts the pulling force into a gripping force
- Pulling equipment do not damage the wire insulation during operation

Model	Cable diameter (mm)	Operating load (kN)	Length (mm)	Weight (kg)
M3-10 (KBT)	1.0–10	5	125	0.4
M3-16 (KBT)	2.5–16	10	185	0.7
M3-22 (KBT)	4–22	20	245	1.2
M3-32 (KBT)	8–32	30	310	2.4

Type: M3-СИП4 (KBT)

Pulling equipment for ABC lines (СИП-4) («frog» type clamps)

- Used when adjusting the vertical distance in the intermediate span on the ABC lines by gripping four conductors
- Designed for self-supporting ABC lines (СИП-4)
- The lever device converts the pulling force into a gripping force
- Pulling equipment do not damage the wire insulation during operation

Model	Cable diameter (mm)	Operating load (kN)	Weight (kg)
M3-19/29 (СИП4)	4x(25–50)	6	2.1
M3-29/41 (СИП4)	4x(70–120)	8.5	4.4

Type: ЛР (KBT)

manual winches (cable pullers) for installation ABC lines

- Used for pulling ABC wires and fiber optic cables
- Provides shifting of ABC wires from the mounting roller puller to supporting and anchor clamps
- Friction-ratchet mechanism with a switch provides step-by-step tensioning and recoiling
- Cable pullers have 3 hooks
- Two modes of operation: with and without a block
- Cable length:
 - with block: 1.6 m
 - without block: 3.0 m
- High flexibility cable

Model	Cable diameter (mm)	Pulling force (ton)		Weight (kg)
		with block	without block	
ЛР-15 (KBT)	5.8	1.5	0.75	3.3
ЛР-20 (KBT)	6.2	2.0	1.0	4.4
ЛР-30 (KBT)	7.8	3.0	1.5	6.2

Tools and accessories for installation ABC and overhead power lines

Type: PM-1 (KBT)

mounting roller type cable puller

- Used for rolling out ABC and fiber optic cables on power transmission line poles
- Maximum cable size: 50 mm
- Roller material:
- Impact-resistant polymer
- Design features:
- Disk is made of thermo- impact -resistant polymer with steel flanging
- Mounting on poles is carried out by using adjustable steel suspensions
- Installation on lines with angles up to 30°
- Maximum load: 20 kH
- Weight: 1,6 kg
- Length: 245 mm

Type: PM-2 (KBT)

mounting roller type cable puller

- Used for rolling out ABC and fiber optic cables on power transmission line poles
- Maximum cable size: 50 mm
- Roller material: aluminum alloy
- Design features:
- Disk and hanger bracket are made of durable and lightweight aluminum alloy
- Mounting on poles is carried out by using hook with a latch
- Installation on lines with angles up to 30°
- Maximum load: 20 kH
- Weight: 2,2 kg
- Length: 345 mm

Type: BM (KBT)

cable mounting swivels (rotation compensators)

- Designed to prevent the formation of loops while pulling the cable, as well as to prevent untwisting of ABC and fiber-optic cables while rolling
- For installation between the cable pulling socks and the leader cable
- Smooth rotation due to the integrated bearing
- «KBT» swivels designed with triple safety margin
- The most compact overall dimensions and smooth cylindrical shape of swivels ensure easy pulling
- Chrome-plated surface provides corrosion protection

Model	Operating load (kN)	Sizes (mm)						Ø leader cable (mm)	Weight (kg.)
		L	A	D	I	d	b		
BM-5 (KBT)	5	95	72	24	28	8	12	до 11	0.2
BM-15 (KBT)	15	118	92	29	33	12	12	до 12	0.4
BM-20 (KBT)	20	150	113	39	42	16	16	до 15	0.9
BM-30 (KBT)	30	165	130	44	45	16	18	до 17	1.3
BM-50 (KBT)	50	213	156	57	62	22	24	до 22	2.8

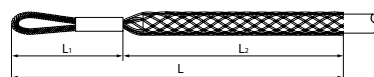
Tools and accessories for installation ABC and overhead power lines

Type: ЧМ (KBT)

cable pulling end socks



- Designed for gripping cables, as well as neutral messenger or for twisting ABC cables from the end while laying and pulling
- Used for connection to swivels and leader cable
- Material: galvanized steel
- Full sizes range for cables with diameter from 10 to 110 mm
- Withstand high loads
- Special design of the hand twisting provides the necessary elasticity
- Uniform load distribution over the entire cable sock gripping area prevents damage of cable insulation and sheath
- Flexible loop makes it easy to pass bends in the cable sewer



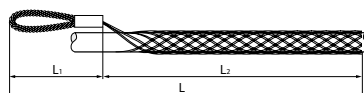
Model	Type	Cable diameter (mm)	Operation load (kN)	Breaking load (kN)	Sizes (mm)			Weight (kg)
					L	L1	L2	
ЧМ-10/20	End type	10-20	9.4	18.8	1085	125	960	0.3
ЧМ-20/30	End type	20-30	11.3	22.6	1300	125	1170	0.5
ЧМ-30/40	End type	30-40	18.5	37.0	1460	125	1340	0.6
ЧМ-40/50	End type	40-50	27.5	55.0	1510	125	1385	0.8
ЧМ-50/65	End type	50-65	27.5	55.0	1580	125	1460	1.0
ЧМ-65/80	End type	65-80	36.6	73.2	1610	170	1460	1.2
ЧМ-80/95	End type	80-95	36.6	73.2	1720	170	1550	1.4
ЧМ-95/110	End type	95-110	42.5	85.0	1850	220	1630	1.9

Type: ЧМn (KBT)

cable pulling pass-through socks



- Designed for gripping cables while lying in wells, trenches and cable sewers
- Fixing of cable sock is achieved by lacing with a steel rope
- Used for connection to swivels and leader cable
- Material: galvanized steel
- Special design of the hand twisting provides the necessary elasticity
- Uniform load distribution over the entire cable sock gripping area prevents damage of cable insulation and sheath
- Flexible loop makes it easy to pass bends in the cable sewer



Model	Type	Cable diameter (mm)	Operation load (kN)	Breaking load (kN)	Sizes (mm)			Weight (kg)
					L	L1	L2	
ЧМn-30/40	Pass-through type	30-40	18.5	37.0	1460	125	1340	0.6
ЧМn-40/50	Pass-through type	40-50	27.5	55.0	1510	125	1385	0.8
ЧМn-50/65	Pass-through type	50-65	27.5	55.0	1580	125	1460	1.0
ЧМn-65/80	Pass-through type	65-80	36.6	73.2	1610	170	1460	1.2
ЧМn-80/95	Pass-through type	80-95	36.6	73.2	1720	170	1550	1.4
ЧМn-95/110	Pass-through type	95-110	42.5	85.0	1850	220	1630	1.9

Installation tooling for ABC

Type: ЭД

digital dynamometer

- Used to measure static and dynamic tensile force on ABC cables
- Consists of a power block, digital terminal with LCD and a charger
- Remote control (50 m)
- Sound indication for lowest and highest measure
- Data hold function for max. tensile force

Name	Output (kN)	Devision value (N)	Weight (kg)
ЭД-20	0.1-20	0.02	1.7
ЭД-50	2.5-50	0.05	6.2



Type: НИС (KBT)

professional sets for work with ABC

- Designed for work with ABC
- Electrician's bag C-01: durable bag with rubber bottom, lots of compartments and a strap
- Weight of sets incl. bag: 13.30/15.30/17.80 kg
- Bag sizes: 430x320x230 mm

Set content	НИС-1	НИС-2	НИС-3
1) Tool for tightening bands ИН-20	•	•	•
2) Shears for cutting bands HM-20	•	•	•
3) Shears for cable cutting HC-32	•	•	•
4) Ratchet winch ЛР-15	•	•	•
5) Mounting clamp M3-22	•	•	•
6) Swivel BM-15	•	•	•
7) Cable grip ЧМ-10\20	•	•	•
8) Cable grip ЧМ-20\30	•	•	•
9) Cable grip ЧМ-30\40	•	•	•
10) Electrician's knife HM-02	•	•	•
11) Stripping tool KC-25	•	•	•
12) Tool for ties installation TG-03	•	•	•
13) Separating wedges KO	•	•	•
14) Hammer MM-300	•	•	•
15) Span wrenches 10, 13, 17, 19 mm	•	•	•
16) Dynamometer ЭД-20/2-2PM	-	•	-
17) Hydraulic crimping tool ПГРс-150 (СИП)	-	-	•
18) Bag with rubber bottom C-01	•	•	•



Installation tooling for ABC

Type: TG-03 (KBT)

tool for installation of reinforced nylon cable ties

- Installation of reinforced stainless steel cable ties with the width from 2.5–12 mm and with width 6–9 mm with a single and a double lock
- Exclusive tool for tightening all-weather ties on ABC cables
- Strong and reliable mechanical tool
- Cutting is fulfilled with a lever push
- No-slip handles
- Less time for installation and professional quality of tightening
- Weight: 280 g
- Length: 200 mm



Type: KC-25 (KBT)

stripping tool for round cables

- Stripping of round cables and wires $\varnothing$ 4.5 to 25 mm
- Adjustable length of cutting knife: for thickness up to 3.5 mm
- Spring staple for fixation on the cable
- The length of the cutting blade can be adjusted
- Cross-sectional, spiral and longitudinal cutting
- Compact sizes and light weight
- Weight: 135 g
- Length: 135 mm



Type: КСП-30 (KBT)

tool for stripping out stranded insulation layer from cables made of XLPE

- Stripping of high-voltage cables made of XLPE $\varnothing$ 15–30 mm
- Cross-sectional and longitudinal cutting
- Cutting depth controller
- 2 blades in the set
- blade for longitudinal stripping
- blade for radial stripping
- Cutting capacity up to 6 mm
- Weight: 650 g
- Length: 275 mm
- Durable plastic case
- Case sizes: 360x200x93 mm



Tools and accessories for installation ABC and overhead power lines

Type: MM-230Y (KBT)

tool for twisting COAC ferruels

- Designed for installation of ASCR cables with the help of COAC ferruels
- Connection of cables is fulfilled due to twisting of cables inside the ferrule
- 4–5 twistings for reliable connection
- Tensile strength 2000 kN
- Cross sections range: 10–185 mm²
- Sizes: 1060x150x200 mm



Type: АД3-25 (KBT)

short-circuiting and earthing adapters

- Intended for installation of grounding bends while performing repair and regulatory operations on ABC lines
- For installation on the phase and neutral cores of ABC lines for the entire service life
- Installation is carried out by means of 3ΠO type piercing clamps on the branch side
- The plug-in contact has special hole for voltage testing
- Connects to the grounding system using HΠ3-16 and YK3-6
- Easy identification of phases using breakable flags
- Hermetic insulation body is made of an elastomeric material, resistant to UV radiation and various weather and climatic conditions



Types: HΠ3-16 / YK3-6 (KBT)

short-circuiting and earthing equipment

- Used to ensure the safety of installers during routine maintenance and repair operations on ABC lines
- HΠ3-16 consists of: 10 m long grounding wire, connection module with a short-circuiting device, and a clamp for connecting to the grounding rod. YK3-6 consists of: grounding wire, 5 modules for connection to short-circuit adapters, module for connection to grounding wire
- Copper wire cross-section: 16 mm²
- Wire insulation: silicone
- Insulation thickness of «KBT» grounding wire silicone cover is 60% more than standard ПБ6-3 grade wire
- Silicone wire insulation retains its flexibility and elasticity even at negative temperatures
- To connect temporary protective earthing to overhead lines it is necessary to insert contact modules into the connectors of АД3 adapters and connect the earthing wires to the clamp of the grounding rod through the module
- HΠ3-16 weight: 2.5 kg
- YK3-6 weight: 1.3 kg

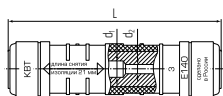


HΠ3-16



YK3-6

Tools and accessories for installation ABC and overhead power lines



Type: ГСИ-А (analogue MJPB)

hermetical insulated ferrules
for service cables

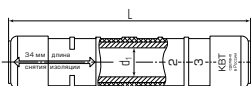
- Designed for connection by crimping of ABC service cable lines
- Aluminum sleeve, located inside the polymer body case is filled with an antioxidant paste
- Insulated body is made of a polymer which is resistant to UV radiation and various weather and climatic conditions
- Mechanical tensile strength of the crimped joint is not less than 60% of the wire strength
- Crimping tool: ПГРс-150 СИП

Name	Cross section (mm)	Sizes (mm)			Crimping die	Number of crimps	Packing (pcs.)
		d ₁	d ₂	L			
ГСИ-А-06-16	6-16	5.3	3.3	70	E140	4	10
ГСИ-А-10-16	10-16	5.3	4.3	70	E140	4	10
ГСИ-А-16	16	5.3	5.3	70	E140	4	10
ГСИ-А-16-25	16-25	6.5	5.3	70	E140	4	10
ГСИ-А-25	25	6.5	6.5	70	E140	4	10

Type: ГСИ-Ф (analogue MJPT)

hermetical insulated ferrules for the phase conductors

- Designed for connection by crimping of main phase conductors (ABC lines)
- Aluminum sleeve, located inside the polymer body case is filled with an antioxidant paste
- Insulated body is made of a polymer which is resistant to UV radiation and various weather and climatic conditions
- The presence of elastic caps at the ends of the sleeve ensures hermetic electrical connection
- Body is marked for crimping, which determines the number and order of crimping, the cross-section of the crimped wires, the dies size and wire stripping length
- Mechanical tensile strength of the crimped joint is not less than 60% of the wire strength
- Crimping tool: ПГРс-150 СИП



Name	Cross section (mm)	Sizes (mm)		Crimping die	Number of crimps	Packing (pcs.)
		d ₁	L			
ГСИ-Ф-35	35	8.0	100	E173	6	10
ГСИ-Ф-50	50	9.0	100	E173	6	10
ГСИ-Ф-70	70	10.5	100	E173	6	10
ГСИ-Ф-95	95	12.2	100	E173	6	10

Type: ПГРс-150 СИП (KBT)

hydraulic hand-operated press for crimping
of terminals and ferrules

- Kit contains:
 - Crimping tool ПГРс-150 СИП
 - Set of dies: E140, E173, E215
 - Repair kit (sealing rings)
 - Durable plastic case
- Auto pressure relief
- Hand operated pressure relief valve
- Double-speed pump with quick ram motion
- Output: 12 T
- Light, compact and friendly-to-use
- Weight of kit\ tool: 5.30\3.90 kg
- Length: 470 mm
- Case sizes: 490x185x90 mm



Installation tooling for ABC lines

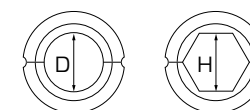
Type: ПГ-60 Tons (KBT)

hydraulic single-acting crimper
with output of 60 Tons

- For crimping accessories of Al and Steel-AL wires in HV lines of 110-500 kV
- Dies with round hexagonal profile are available upon request
- Output: 60 T
- Ram stroke: 30 mm
- The head opens with a single turn of the upper cover
- Antibacklash positioning of dies
- Two steel handles and a metal rope for hanging and carrying
- Tool weight: 22.00 kg
- Tool sizes: 335x165 mm
- Packaged in a steel case
- Case sizes: 420x370x200 mm
- Compatible with any Hydraulic pumps made by KBT with the oil tank volume no less than 0.8 l

Dies type	D size of round dies (mm)	H size of hex dies (mm)
for alum clamps	from A-15 to A-59	from MLI-15.0-A to MLI-50.2-A
for steel clamps	from C-15 to C-43	from MLI-16.5-C to MLI-36.4-C

«Available upon request:
more than 200 various sizes of round and hex dies
for 60 and 100 Tons- punchers.
View full range at www.kvt.tools»



Type: ПГ-100 Tons (KBT)

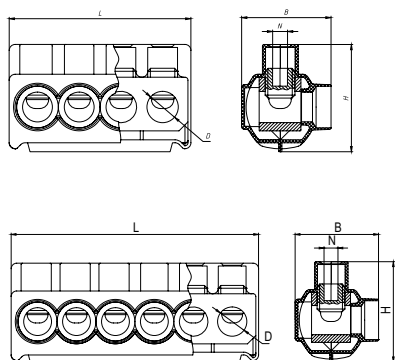
hydraulic double-acting crimper
with output of 100 Tons

- For crimping accessories of Al and Steel-AL wires in HV lines of 110-500 kV
- Dies with round hexagonal profile are available upon request
- Output: 100 T
- Ram stroke: 19 mm
- Double-acting
- The head opens with a single turn of the upper cover
- Steel handles for carrying
- Tool weight: 33.60 kg
- Tool sizes: 375x195 mm
- Packaging sizes: 413x302x224 mm
- Compatible with any Hydraulic pumps made by KBT with the oil tank volume no less than 1.0 l

Clamp types	Max. size	
	Round clamps (D)	Hex clamps (H)
Aluminum clamps	A-74	MLI-74-A
Steel clamps	C-48	MLI-50.2-C



Sets of terminal blocks for street lighting networks



Type: HK

- HK sets are designed for connecting and branching aluminum and copper conductors with a 4- or 5-cores cable, inside racks or panels in poles and masts of street lighting, as well as while installing self-supporting ABC system insulating wires

Content:

HK-15

- four-contact terminal block KE10.1 (AL10-35/Cu 1.5-25) – 3 pcs.
- six-contact terminal block KE10.3 (AL10-35/Cu 1.5-25) – 1 piece
- 350mm long grounding wire with a lug – 1 piece

HK-15.5

- four-contact terminal block KE10.1 (AL10-35/Cu 1.5-25) – 4 pcs.
- six-contact terminal block KE10.3 (AL10-35/Cu 1.5-25) – 1 piece
- 350mm long grounding wire with a lug – 1 piece

HK-50

- four-contact terminal block KE10.504 (AL10-50/Cu 2.5-35) – 3 pcs.
- six-contact terminal block KE10.506 (AL10-50/Cu 2.5-35) – 1 piece
- 350 mm long grounding wire with a lug – 1 piece

- Contact part material: aluminum alloy
- Pressure bolts material: anodized steel
- Insulation body material: polycarbonate
- Operating voltage: up to 1kV
- Transparent insulating body provides visual control both during installation and during the entire service life of the kits
- Terminal blocks body, included in the sets is non-removable, which guarantees the isolation of the contact connection
- Presence of a special anti-corrosion paste on the contact part of the terminal blocks ensures guaranteed contact on both aluminum and copper cable cores
- Cable core fasteners are made by clamping method, by means of screws with internal hexagon
- The tightening torque of the contact part is 10 Nm
- Terminal blocks included in the sets meet GOST 30011.7.1 (IEC 60947-7-1) standard requirements
- Operating temperature range: -60 °C +55 °C
- Installation tool: 5 mm imbus key

Set name	Number of cores in cable	Cable size (mm ²)		Set content		
		Al	Cu	Terminals		Grounding wire
HK-15	4	10-35	1.5-25	4-contact KE10.1 – 3 pcs.	6-contact KE10.3 – 1 pcs.	16 mm ² – 350 mm
HK-50	4	10-50	2.5-35	4-contact KE10.504 – 3 pcs.	6-contact KE10.506 – 1 pcs.	16 mm ² – 350 mm
HK-15.5	5	10-35	1.5-25	4-contact KE10.1 – 4 pcs.	6-contact KE10.3 – 1 pcs.	16 mm ² – 350 mm

Name	Number of ports	Sizes (mm)					Insulation removal length (mm)	
		L	B	H	D	N	min	max
4 wires terminal	4	61	30	36	10,5	5	14	18
6 wires terminal	6	90	30	36	10,5	5	14	18

Cover for terminal blocks sets for street lighting networks



Type: KHK

- Designed for additional protection of 4-contacts terminal blocks from HK sets
- Material: polycarbonate
- KHK cover is universal and can be used on terminal blocks:
 - four-contact terminal block KE10.1 (AL10-35/Cu 1.5-25)
 - four-contact terminal block KE10.504 (AL10-50/Cu 2.5-35)
- Transparent body provides visual control during the entire service life of terminal blocks
- Inner part of the cover has guide stiffeners that ensure correct positioning of the terminal block inside the product



Nylon and stainless-steel
cable ties

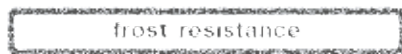
«KBT» nylon cable ties



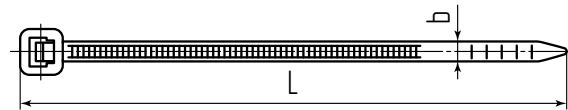
Type: KCC «NORD»

«NORD» series cable ties

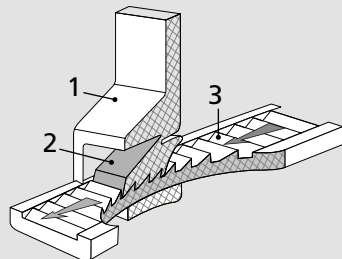
- Designed for fixing and connecting cables and wires
- Material: nylon 6.6 DuPont, self-extinguishing, halogen-free
- Color: white, black
- Operating temperature: from -60 °C to +85 °C
- Installation temperature range: from -40 °C to +60 °C
- Black color ties are UV resistant
- Quality assurance
- One-way locking mechanism, permanent
- Packing: 100 pcs.
- Tools: TG-01 (for cable ties with width 2.5–4.8 mm)
TG-03 (for cable ties with width 2.5–12.5 mm)



«NORD» KBT cable ties material contains special additives, that guarantee the elasticity and operation at low temperatures



Name	Color	Cable ties type	Sizes (mm)		Maximum girth diameter (mm)	Working load (N)	Packing (pcs. in poly bag)
			L	b			
KCC 3x100 «NORD» (KBT)	○ ●	miniature	100	2.5	22	80	100
KCC 3x150 «NORD» (KBT)	○ ●		150	2.5	35	80	100
KCC 3x200 «NORD» (KBT)	○ ●		200	2.5	50	80	100
KCC 4x150 «NORD» (KBT)	○ ●	standard	150	3.6	35	180	100
KCC 4x200 «NORD» (KBT)	○ ●		200	3.6	50	180	100
KCC 4x250 «NORD» (KBT)	○ ●		250	3.6	65	180	100
KCC 4x300 «NORD» (KBT)	○ ●		300	3.6	80	180	100
KCC 4x370 «NORD» (KBT)	○ ●		370	3.6	102	180	100
KCC 5x200 «NORD» (KBT)	○ ●		200	4.8	50	220	100
KCC 5x250 «NORD» (KBT)	○ ●		250	4.8	65	220	100
KCC 5x300 «NORD» (KBT)	○ ●		300	4.8	82	220	100
KCC 5x400 «NORD» (KBT)	○ ●		400	4.8	105	220	100
KCC 5x500 «NORD» (KBT)	○ ●		500	4.8	150	220	100
KCC 8x300 «NORD» (KBT)	○ ●	reinforced	300	7.6	82	530	100
KCC 8x350 «NORD» (KBT)	○ ●		350	7.6	90	530	100
KCC 8x400 «NORD» (KBT)	○ ●		400	7.6	105	530	100
KCC 8x500 «NORD» (KBT)	○ ●		500	7.6	150	530	100
KCC 9x760 «NORD» (KBT)	○ ●		760	7.6	225	530	100



Standard nylon cable ties lock structure

The design of the standard cable tie lock is a nylon head (1) with a lock (2). «Sawtooth» protrusions are located on the inner working surface of the retainer.

While installing cable tie, its free end is inserted into the gap between the head body and the retainer. While tightening cable tie, its internal surface with a toothed relief engages with the retainer, which provides a step-by-step tightening. The reverse movement is blocked by the ratchet mechanism of the lock.

Teeth (3) placed below the surface of the band do not damage the objects to be fixed and are safe for cable and wire insulation.

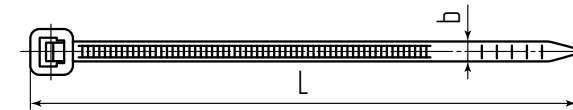
«KBT» nylon cable ties



Type: KCC «Grizzly»

«Grizzly» series cable ties

- Designed for fixing and connecting cables and wires
- Material: nylon 6.6 DuPont, self-extinguishing, halogen-free
- Color: white, black
- Operating temperature: from -40 °C to +85 °C
- Installation temperature range: from -10 °C to +60 °C
- Black color ties are UV resistant
- Quality assurance
- One-way locking mechanism, permanent
- Packing: 100 pcs.
- Tools: TG-01 (for cable ties with width 2.5–4.8 mm)
TG-03 (for cable ties with width 2.5–12.5 mm)



For «Grizzly» KBT cable ties only high-quality DuPont material is used, without adding «secondary material»

Name	Color	Cable ties type	Sizes (mm)		Maximum girth diameter (mm)	Working load (N)	Packing (pcs. in poly bag)
			L	b			
KCC 3x100 «Grizzly» (KBT)	○ ●	miniature	100	2.5	22	80	100
KCC 3x150 «Grizzly» (KBT)	○ ●		150	2.5	35	80	100
KCC 3x200 «Grizzly» (KBT)	○ ●		200	2.5	50	80	100
KCC 4x150 «Grizzly» (KBT)	○ ●	standard	150	3.6	35	180	100
KCC 4x200 «Grizzly» (KBT)	○ ●		200	3.6	50	180	100
KCC 4x250 «Grizzly» (KBT)	○ ●		250	3.6	65	180	100
KCC 4x300 «Grizzly» (KBT)	○ ●		300	3.6	80	180	100
KCC 4x370 «Grizzly» (KBT)	○ ●		370	3.6	102	180	100
KCC 5x200 «Grizzly» (KBT)	○ ●		200	4.8	50	220	100
KCC 5x250 «Grizzly» (KBT)	○ ●		250	4.8	65	220	100
KCC 5x300 «Grizzly» (KBT)	○ ●		300	4.8	82	220	100
KCC 5x350 «Grizzly» (KBT)	○ ●		350	4.8	90	220	100
KCC 5x400 «Grizzly» (KBT)	○ ●		400	4.8	105	220	100
KCC 5x450 «Grizzly» (KBT)	○ ●	reinforced	450	4.8	130	220	100
KCC 5x500 «Grizzly» (KBT)	○ ●		500	4.8	150	220	100
KCC 8x300 «Grizzly» (KBT)	○ ●		300	7.6	82	530	100
KCC 8x350 «Grizzly» (KBT)	○ ●		350	7.6	90	530	100
KCC 8x400 «Grizzly» (KBT)	○ ●	for extreme loads	400	7.6	105	530	100
KCC 8x450 «Grizzly» (KBT)	○ ●		450	7.6	118	530	100
KCC 8x500 «Grizzly» (KBT)	○ ●		500	7.6	150	530	100
KCC 9x760 «Grizzly» (KBT)	○ ●		760	9.0	225	800	100
KCC 9x1020 «Grizzly» (KBT)	○ ●		1020	9.0	295	800	100

Application area of nylon cable ties

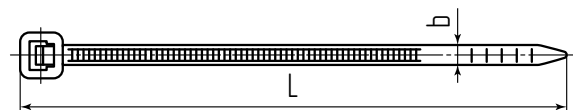
■ Electrical works	■ Telecommunications systems
■ Construction and repair	■ Auto industry
■ Oil refining complex	■ Medicine
■ Chemical industry	■ Installation of advertising boards
■ Agro industrial complex	■ Gardening

«Fortisflex» nylon cable ties

Type: KCC

«STANDARD» series cable ties

- Designed for fixing and connecting cables and wires
- Material: nylon 6.6, self-extinguishing, halogen-free
- Color: white, black, red, blue, yellow, green
- Operating temperature: from -40 °C to +85 °C
- Installation temperature range: from 0 °C to +60 °C
- One-way locking mechanism, permanent
- Composition of black nylon cable ties includes components that provide resistance to UV radiation. This extends its service life when used in direct sunlight
- Non-combustible by UL 94 V-2
- Tools: TG-01 (for cable ties with width 2.5–4.8 mm)
TG-03 (for cable ties with width 2.5–12.5 mm)



90 sizes
of «Fortisflex» standard cable ties
from 3x60 to 12x750



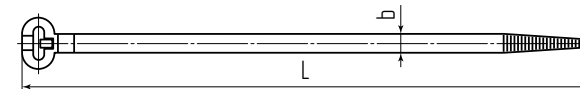
Name		Color	Sizes (mm)		Maximum girth diameter (mm)	Working load (N)	Packing (pcs. In poly bag)
			L	b			
KCC 3x60 (Fortisflex)	○	●	60	2.5	11	80	100
KCC 3x80 (Fortisflex)	○	●	80	2.5	16	80	100
KCC 3x100 (Fortisflex)	○	●	100	2.5	22	80	100
KCC 3x120 (Fortisflex)	○	●	120	2.5	30	80	100
KCC 3x150 (Fortisflex)	○	●	150	2.5	35	80	100
KCC 3x200 (Fortisflex)	○	●	200	2.5	50	80	100
KCC 4x150 (Fortisflex)	○	●	150	3.6	35	180	100
KCC 4x200 (Fortisflex)	○	●	200	3.6	50	180	100
KCC 4x250 (Fortisflex)	○	●	250	3.6	65	180	100
KCC 4x300 (Fortisflex)	○	●	300	3.6	80	180	100
KCC 4x370 (Fortisflex)	○	●	370	3.6	102	180	100
KCC 5x180 (Fortisflex)	○	●	180	4.5	42	220	100
KCC 5x200 (Fortisflex)	○	●	200	4.5	50	220	100
KCC 5x250 (Fortisflex)	○	●	250	4.5	65	220	100
KCC 5x300 (Fortisflex)	○	●	300	4.5	82	220	100
KCC 5x350 (Fortisflex)	○	●	350	4.8	90	220	100
KCC 5x400 (Fortisflex)	○	●	400	4.8	105	220	100
KCC 5x450 (Fortisflex)	○	●	450	4.8	130	220	100
KCC 5x500 (Fortisflex)	○	●	500	4.8	150	220	100
KCC 8x200 (Fortisflex)	○	●	200	6.8	50	530	100
KCC 8x250 (Fortisflex)	○	●	250	7.6	63	530	100
KCC 8x300 (Fortisflex)	○	●	300	7.6	82	530	100
KCC 8x350 (Fortisflex)	○	●	350	7.6	90	530	100
KCC 8x400 (Fortisflex)	○	●	400	7.6	105	530	100
KCC 8x450 (Fortisflex)	○	●	450	7.6	118	530	100
KCC 8x500 (Fortisflex)	○	●	500	7.6	150	530	100
KCC 9x550 (Fortisflex)	○	●	550	9.0	160	800	100
KCC 9x650 (Fortisflex)	○	●	650	9.0	190	800	100
KCC 9x760 (Fortisflex)	○	●	760	9.0	225	800	100
KCC 9x920 (Fortisflex)	○	●	920	9.0	265	800	100
KCC 9x1020 (Fortisflex)	○	●	1020	9.0	295	800	100
KCC 10x450 (Fortisflex)	○	●	450	10	125	910	100
KCC 10x500 (Fortisflex)	○	●	500	10	150	910	100
KCC 12x650 (Fortisflex)	○	●	650	12	190	1140	100
KCC 12x750 (Fortisflex)	○	●	750	12	220	1140	100

«Fortisflex» nylon cable ties

Type: KC3

cable ties with steel locking tooth

- Designed for fixing and connecting cables and wires
- Material: nylon 6.6, self-extinguishing, halogen-free
- Lock insert: stainless steel
- Color: white, black
- Operating temperature: from -40 °C to +85 °C
- Installation temperature range: from 0 °C to +60 °C
- Unique design of the lock with a smooth transition from the head to the strap strengthens particularly susceptible to breaking force area
- Absence of teeth on the ensures stepless tightening, increases the cross-sectional area and increases the permissible working load
- Tools: TG-01 (for cable ties with width 2.5–4.8 mm)
TG-03 (for cable ties with width 2.5–12.5 mm)



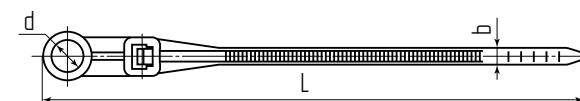
Built-in
stainless steel plate provides
a secure lock

Name	Color	Sizes (mm)		Working load (N)	Packing (pcs. In poly bag)
		L	b		
KC3 3x100 (Fortisflex)	○	100	3.0	80	100
KC3 4x150 (Fortisflex)	○	150	4.0	180	100
KC3 4x200 (Fortisflex)	○	200	4.0	180	100
KC3 5x300 (Fortisflex)	○	300	5.0	220	100
KC3 8x200 (Fortisflex)	○	200	8.0	530	100
KC3 8x300 (Fortisflex)	○	300	8.0	530	100
KC3 8x400 (Fortisflex)	○	400	8.0	530	100
KC3 10x600 (Fortisflex)	○	600	10.0	910	100

Type: KCO

cable ties with mounting hole

- Designed for fixing and connecting cables and wires
- Material: nylon 6.6, self-extinguishing, halogen-free
- Color: white, black
- Operating temperature: from -40 °C to +85 °C
- One-way locking mechanism, permanent
- Cable tie end has a structural hole for fixing it to the work surface using screws
- Composition of black nylon cable ties includes components that provide resistance to UV radiation. This extends its service life when used in direct sunlight
- Tools: TG-01 (for cable ties with width 2.5–4.8 mm)
TG-03 (for cable ties with width 2.5–12.5 mm)



with mounting hole

Name	Color	Sizes (mm)			Working load (N)	Packing (pcs. In poly bag)
		L	b	d		
KCO 4x110 (Fortisflex)	○	110	3.6	5.0	180	100
KCO 4x150 (Fortisflex)	○	150	3.6	5.0	180	100
KCO 5x220 (Fortisflex)	○	220	4.8	5.5	220	100
KCO 8x380 (Fortisflex)	○	380	7.6	6.8	550	100

«Fortisflex» nylon cable ties

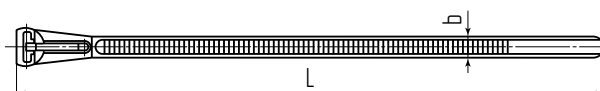
Type: KCP

detachable cable ties

- Designed for fixing and connecting cables and wires
- Material: nylon 6.6, self-extinguishing, halogen-free
- Color: white, black
- Operating temperature: from -40 °C to +85 °C
- Installation temperature range: from 0 °C to +60 °C
- Locking mechanism is reusable
- Cable tie opening is provided by pressing the lock lever
- Tool: TG-O3 (for cable ties with width 2.5–12.5 mm)



with detachable mechanism

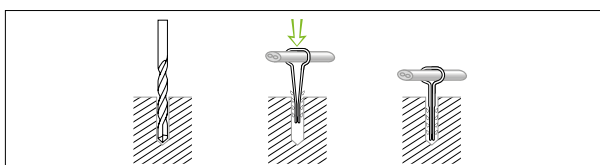
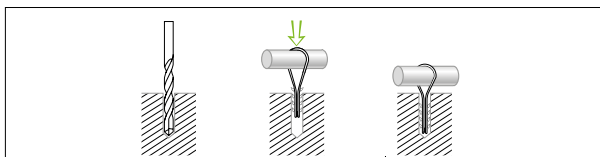
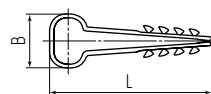
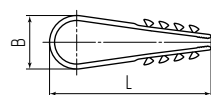


Name	Color	Sizes (mm)		Working load (N)	Packing (pcs. in poly bag)
		L	b		
KCP 7.5x200 (Fortisflex)	○ ●	200	7.5	220	100
KCP 7.5x250 (Fortisflex)	○ ●	250	7.5	220	100
KCP 7.5x300 (Fortisflex)	○ ●	300	7.5	220	100

Types: ДХ / ДХП

dowel cable ties for round and flat wires

- Designed for attaching round and flat wires to concrete and brick surfaces
- Material: polyamide
- Color: white, black
- Operating temperature: from -40 °C to +85 °C
- Installation temperature range: from 0 °C to +60 °C
- Allows excluding dowels and screws from the installation process
- Reliable and economical fastener

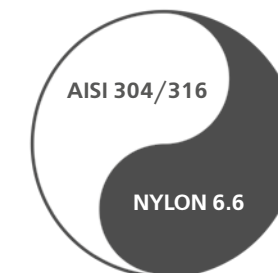


Name	Color	Sizes (mm)		Cable type	Cable diameter/width (mm)	Hole size for dowel	Packing (pcs. in poly bag)
		L	B				
ДХ 5-10 (Fortisflex)	○ ●	45	11	круглый	5-10	6.0	100
ДХ 11-18 (Fortisflex)	○ ●	54	15	круглый	11-18	6.0	100
ДХ 19-25 (Fortisflex)	○ ●	62	20	круглый	19-25	6.0	100
ДХП 8-5 (Fortisflex)	○ ●	45	10	плоский	8x5	6.0	100
ДХП 10-5 (Fortisflex)	○ ●	45	12	плоский	10x5	6.0	100
ДХП 12-6 (Fortisflex)	○ ●	45	14	плоский	12x6	6.0	100
ДХП 14-6 (Fortisflex)	○ ●	45	16	плоский	14x6	6.0	100

Nylon and stainless-steel cable ties

Ideal cable ties

- Cable ties are fasteners for the installation of cable lines, the cost of which is too small and insignificant in comparison with the cost of the entire line. However, under certain conditions, the role of these elements is critical for the functioning of cable lines
- Cable ties must securely bind and fasten cables to cable trays and structures without pinching or damaging the protective covers
- Cable ties must be strong enough to hold bundles of cables and wires not only under static load, but also under vibration and strong shocks (for example, an earthquake situation)
- Cable ties must be resistant to mechanical abrasion, extreme temperatures, UV rays, chemical corrosion and radiation
- Cable ties must be fire-resistant and halogen-free, as well as laid «HF» and «FR» types of cables. In the event of a fire, cable ties must hold the cable lines, preventing them from falling and blocking fire exits
- Plastic ties made of nylon have limited mechanical strength, weak resistance to weather and extreme factors, as well as a low melting point
- Stainless steel ties can guarantee the continuity and reliability of the fastening system in the most adverse and extreme situations



Comparison of materials used for the production of Fortisflex cable ties

Material properties	Nylon 6.6 color: white	Nylon 6.6 color: black	Stainless steel AISI 304	Stainless steel AISI 316L	Stainless steel AISI 304 with cover	Stainless steel AISI 316L with cover
Color	white	black	steel	steel	black	black/red
Warranty period (years)	1	1	10	10	10	10
Service life (years)	2	2	20	30	30	40
Maximum operating temperature (°C)	+85	+85	+538	+538	+150	+150
Minimum operating temperature (°C)	-40	-40	-80	-80	-50	-50
Melting point (°C)	+260	+260	+1450	+1450	+1450	+1450
Moisture absorption (%)	2.5	2.5	0	0	0	0
Density (g/sm³)	1.24	1.24	7.9	8.0	7.9	8.0
Modulus of elasticity (MPa)	1700	1700	515	515	515	515
Strength limit (MPa)	12.000	12.000	90.000	90.000	90.000	90.000
Radiation resistance (Rad)	1x10 ⁵	1x10 ⁵	2x10 ⁸	2x10 ⁸	2x10 ⁸	2x10 ⁸
Incombustibility	weak	weak	high	high	high	high
Oxygen index (%)	28	28	not defined	not defined	not defined	not defined
UV resistance	weak	medium	high	high	high	high
Chemical corrosion resistance	weak	weak	high	high	high	high
Resistance to hydrocarbons	medium	medium	high	high	high	high
Resistance to alkalis	medium	medium	high	high	high	high
Resistance to acids	weak	weak	high	high	high	high
Resistance to salts	weak	weak	high	high	high	high
Resistance to sea water	weak	weak	medium	high	high	high

«Fortisflex – KBT» stainless-steel cable ties



Types: CKC (316) / CKC-П (316) cable ties made of AISI 316L marine stainless steel

- Designed for binding and fixing in aggressive environments, high mechanical loads, vibration, radiation, humidity and extreme temperature differential
- Material: AISI 316L marine stainless steel
- Cover:
 - CKC (316): none
 - CKC-П (316): powder polymer coating
- Operating temperature:
 - CKC (316): from -80 °C to +538 °C
 - CKC-П (316): from -50 °C to +150 °C
- Installation temperature range: from -50 °C
- Ball type, one-way self-locking mechanism
- High corrosion resistance to chemicals and sea water.
Recommended for use on objects located in the marine climate zone
- Polymer coating provides additional protection against corrosion and an insulating layer that prevents the formation of a galvanic pair between heterogeneous materials
- Non-magnetic steel strap and lock body
- Outdoor and indoor installation
- «Fortisflex» cable ties are certified in Russian Federation Maritime register of shipping
- Tools for installing: TG-02, TG-05, ИИТ-20 mini, ИИТ-20



AISI 316L marine steel

with and without polymer coating



Name	Color	Cable tie type	Sizes (mm)			Maximum girth diameter (mm)	Working load (N)	Packing (pcs.)
			L	b	T*			
CKC (316)/CKC-П (316) 4.6x100 (Fortisflex)	○ ● ●	standard	100	4.6	0.38	27	445	100
CKC (316)/CKC-П (316) 4.6x125 (Fortisflex)	○ ● ●		125	4.6	0.38	27	445	100
CKC (316)/CKC-П (316) 4.6x150 (Fortisflex)	○ ● ●		150	4.6	0.38	35	445	100/10
CKC (316)/CKC-П (316) 4.6x200 (Fortisflex)	○ ● ●		200	4.6	0.38	50	445	100/10
CKC (316)/CKC-П (316) 4.6x250 (Fortisflex)	○ ● ●		250	4.6	0.38	66	445	100
CKC (316)/CKC-П (316) 4.6x300 (Fortisflex)	○ ● ●		300	4.6	0.38	82	445	100/10
CKC (316)/CKC-П (316) 4.6x350 (Fortisflex)	○ ● ●		350	4.6	0.38	98	445	100
CKC (316)/CKC-П (316) 4.6x400 (Fortisflex)	○ ● ●		400	4.6	0.38	114	445	100/10
CKC (316)/CKC-П (316) 4.6x500 (Fortisflex)	○ ● ●		500	4.6	0.38	146	445	100
CKC (316)/CKC-П (316) 4.6x600 (Fortisflex)	○ ● ●		600	4.6	0.38	178	445	100
CKC (316)/CKC-П (316) 4.6x800 (Fortisflex)	○ ● ●		800	4.6	0.38	241	445	100
CKC (316)/CKC-П (316) 4.6x1000 (Fortisflex)	○ ● ●		1000	4.6	0.38	305	445	100
CKC (316)/CKC-П (316) 7.9x150 (Fortisflex)	○ ● ●	reinforced	150	7.9	0.38	34	1112	100
CKC (316)/CKC-П (316) 7.9x200 (Fortisflex)	○ ● ●		200	7.9	0.38	49	1112	100/10
CKC (316)/CKC-П (316) 7.9x250 (Fortisflex)	○ ● ●		250	7.9	0.38	65	1112	100
CKC (316)/CKC-П (316) 7.9x300 (Fortisflex)	○ ● ●		300	7.9	0.38	81	1112	100/10
CKC (316)/CKC-П (316) 7.9x350 (Fortisflex)	○ ● ●		350	7.9	0.38	97	1112	100
CKC (316)/CKC-П (316) 7.9x400 (Fortisflex)	○ ● ●		400	7.9	0.38	113	1112	100/10
CKC (316)/CKC-П (316) 7.9x500 (Fortisflex)	○ ● ●		500	7.9	0.38	145	1112	100/10
CKC (316)/CKC-П (316) 7.9x600 (Fortisflex)	○ ● ●		600	7.9	0.38	177	1112	100
CKC (316)/CKC-П (316) 7.9x800 (Fortisflex)	○ ● ●	for extreme loads	800	7.9	0.38	240	1112	100
CKC (316)/CKC-П (316) 7.9x1000 (Fortisflex)	○ ● ●		1000	7.9	0.38	304	1112	100
CKC (316)/CKC-П (316) 12x200 (Fortisflex)	○ ● -		200	11.8	0.45	49	2000	50
CKC (316)/CKC-П (316) 12x300 (Fortisflex)	○ ● -		300	11.8	0.45	81	2000	50
CKC (316)/CKC-П (316) 12x400 (Fortisflex)	○ ● -		400	11.8	0.45	112	2000	50
CKC (316)/CKC-П (316) 12x500 (Fortisflex)	○ ● -		500	11.8	0.45	144	2000	50
CKC (316)/CKC-П (316) 12x600 (Fortisflex)	○ ● -		600	11.8	0.45	176	2000	50
CKC (316)/CKC-П (316) 12x800 (Fortisflex)	○ ● -		800	11.8	0.45	240	2000	50
CKC (316)/CKC-П (316) 12x1000 (Fortisflex)	○ ● -		1000	11.8	0.45	303	2000	50

* T – cable tie thickness with polymer coating

«Fortisflex- KBT» stainless-steel cable ties



Types: CKC (304) / CKC-П (304) cable ties made of AISI 304 stainless steel

- Designed for binding and fixing in aggressive environments, high mechanical loads, vibration, radiation, humidity and extreme temperature differential
- Material: AISI 304 stainless steel
- Cover:
 - CKC (304): none
 - CKC-П (304): powder polymer coating
- Operating temperature:
 - CKC (304): from -80 °C to +538 °C
 - CKC-П (304): from -50 °C to +150 °C
- Installation temperature range: from -50 °C
- Ball type, one-way self-locking mechanism
- Non-magnetic steel strap and lock body
- Outdoor and indoor installation
- Improved locking mechanism. Special treatment of the ball surface ensures reliable fixation and eliminates reverse slippage of the strap
- Minimum force while tightening
- Reliable fastening and fixation even in an oil environment
- «Fortisflex» cable ties are certified in Russian Federation Maritime register of shipping
- Tools for installing: TG-02, TG-05, ИИТ-20 mini, ИИТ-20



AISI 304 stainless steel

with and without polymer coating



Name	Color	Cable tie type	Sizes (mm)			Maximum girth diameter (mm)	Working load (N)	Packing (pcs.)
			L	b	T*			
CKC (304)/CKC-П (304) 4.6x100 (Fortisflex)	○ ●	standard	100	4.6	0.38	27	445	100
CKC (304)/CKC-П (304) 4.6x125 (Fortisflex)	○ ●		125	4.6	0.38	27	445	100
CKC (304)/CKC-П (304) 4.6x150 (Fortisflex)	○ ●		150	4.6	0.38	35	445	100/10
CKC (304)/CKC-П (304) 4.6x200 (Fortisflex)	○ ●		200	4.6	0.38	50	445	100/10
CKC (304)/CKC-П (304) 4.6x250 (Fortisflex)	○ ●		250	4.6	0.38	66	445	100
CKC (304)/CKC-П (304) 4.6x300 (Fortisflex)	○ ●		300	4.6	0.38	82	445	100/10
CKC (304)/CKC-П (304) 4.6x350 (Fortisflex)	○ ●		350	4.6	0.38	98	445	100
CKC (304)/CKC-П (304) 4.6x400 (Fortisflex)	○ ●		400	4.6	0.38	114	445	100/10
CKC (304)/CKC-П (304) 4.6x500 (Fortisflex)	○ ●		500	4.6	0.38	146	445	100
CKC (304)/CKC-П (304) 4.6x600 (Fortisflex)	○ ●		600	4.6	0.38	178	445	100
CKC (304)/CKC-П (304) 4.6x800 (Fortisflex)	○ ●		800	4.6	0.38	241	445	100
CKC (304)/CKC-П (304) 4.6x1000 (Fortisflex)	○ ●		1000	4.6	0.38	305	445	100
CKC (304)/CKC-П (304) 7.9x150 (Fortisflex)	○ ●	reinforced	150	7.9	0.38	34	1112	100
CKC (304)/CKC-П (304) 7.9x200 (Fortisflex)	○ ●		200	7.9	0.38	49	1112	100/10
CKC (304)/CKC-П (304) 7.9x250 (Fortisflex)	○ ●		250	7.9	0.38	65	1112	100
CKC (304)/CKC-П (304) 7.9x300 (Fortisflex)	○ ●		300	7.9	0.38	81	1112	100/10
CKC (304)/CKC-П (304) 7.9x350 (Fortisflex)	○ ●		350	7.9	0.38	97	1112	100
CKC (304)/CKC-П (304) 7.9x400 (Fortisflex)	○ ●		400	7.9	0.38	113	1112	100/10
CKC (304)/CKC-П (304) 7.9x500 (Fortisflex)	○ ●		500	7.9	0.38	145	1112	100/10
CKC (304)/CKC-П (304) 7.9x600 (Fortisflex)	○ ●		600	7.9	0.38	177	1112	100
CKC (304)/CKC-П (304) 7.9x800 (Fortisflex)	○ ●	for extreme loads	800	7.9	0.38	240	1112	100
CKC (304)/CKC-П (304) 7.9x1000 (Fortisflex)	○ ●		1000	7.9	0.38	304	1112	100
CKC (304)/CKC-П (304) 12x200 (Fortisflex)	○ ●		200	11.8	0.45	49	2000	50
CKC (304)/CKC-П (304) 12x300 (Fortisflex)	○ ●		300	11.8	0.45	81	2000	50
CKC (304)/CKC-П (304) 12x400 (Fortisflex)	○ ●		400	11.8	0.45	112	2000	50
CKC (304)/CKC-П (304) 12x500 (Fortisflex)	○ ●		500	11.8	0.45	144	2000	50
CKC (304)/CKC-П (304) 12x600 (Fortisflex)	○ ●		600	11.8	0.45	176	2000	50
CKC (304)/CKC-П (304) 12x800 (Fortisflex)	○ ●		800	11.8	0.45	240	2000	50
CKC (304)/CKC-П (304) 12x1000 (Fortisflex)	○ ●		1000	11.8	0.45	303	2000	50

* T – cable tie thickness with polymer coating

«Fortisflex – KBT» stainless-steel ladder type cable ties



Types: СКЛ / СКЛ-П

stainless-steel ladder type cable ties

- Designed for binding and fixing in aggressive environments, high mechanical loads, vibration, radiation, humidity and extreme temperature differential
- «Fortisflex» cable ties are certified in Russian Federation Maritime register of shipping
- Material: AISI 316L marine stainless steel
- Non-magnetic steel strap and lock mechanism
- Cover:
 - СКЛ (316): none
 - СКЛ-П (316): powder polymer coating
- Operating temperature:
 - without covering: from -80 °C to +538 °C
 - with covering: from -50 °C to +150 °C
- Installation temperature range: from -50 °C
- Unique design of the «Multilock» with several additional fixing mechanisms. Low profile (height) of the lock
- One-way locking mechanism, permanent
- Step-by-step tightening with perforation on the strap
- Tools for installing: TG-02, TG-05, ИИТ-20 mini, ИИТ-20 or tightening hook

Name	Color	Cable tie type	Sizes (mm)			Maximum girth diameter (mm)	Working load (N)	Packing (pcs.)
			L	b	T*			
СКЛ (316)/СКЛ-П (316) 7x150 (Fortisflex)	○ ●	reinforced	150	7.0	0.38	33	1120	100
СКЛ (316)/СКЛ-П (316) 7x200 (Fortisflex)	○ ●		200	7.0	0.38	49	1120	100
СКЛ (316)/СКЛ-П (316) 7x300 (Fortisflex)	○ ●		300	7.0	0.38	81	1120	100
СКЛ (316)/СКЛ-П (316) 7x450 (Fortisflex)	○ ●		450	7.0	0.38	129	1120	100
СКЛ (316)/СКЛ-П (316) 7x600 (Fortisflex)	○ ●		600	7.0	0.38	176	1120	100
СКЛ (316)/СКЛ-П (316) 12x200(Fortisflex)	○ ●	for extreme loads	200	12.0	0.38	49	1800	100
СКЛ (316)/СКЛ-П (316) 12x300(Fortisflex)	○ ●		300	12.0	0.38	81	1800	100
СКЛ (316)/СКЛ-П (316) 12x450(Fortisflex)	○ ●		450	12.0	0.38	129	1800	100
СКЛ (316)/СКЛ-П (316) 12x600(Fortisflex)	○ ●		600	12.0	0.38	176	1800	100

* T – cable tie thickness with polymer coating

Made in Russia. Production of stainless-steel cable ties and strap «Fortisflex»

■ Collaborative project with the organization of the Russian defense order	■ High mechanical strength of products
■ The first and only manufacture in Russia	■ Resistance to chemical corrosion
■ High quality steel grades AISI 316 and 304	■ With protective coating and without coating
■ Full and representative product range	■ Several types of locking mechanisms
■ Guarantee of high-quality products	■ Three types of cable ties depending on the load
■ Professional engineering team	■ Carefully elaborated design
■ High technological equipment of production	■ Straps, brackets and buckles in the range
■ Flexibility and speed of making decisions	■ Service life up to 40 years
■ Production of non-standard sizes on request	■ Warranty from the manufacturer
■ Production of items according to customer's drawings	■ Own testing laboratory
■ Significant savings in tender deliveries	■ Quality management system according to ISO 9001
■ Large stock of ready-done products	■ Certificate of the Maritime register
■ Guarantee of uninterrupted supply	■ Low prices from manufacturer

«Fortisflex – KBT» stainless-steel straps and brackets

Types: ЛКС / ЛКС-П

stainless steel banding straps

- Designed for mounting brackets and hooks of cable fittings, as well as billboards and road signs on poles
- Material:
 - ЛКС (316) / ЛКС-П (316): AISI 316L stainless steel
 - ЛКС (304) / ЛКС-П (304): AISI 304 stainless steel
 - ЛКС (201): AISI 201 stainless steel
- Covering:
 - ЛКС (316) / ЛКС (304)/ ЛКС (201): none
 - ЛКС-П (316)/ ЛКС-П (304): polymer coating
- Operating temperature:
 - ЛКС (316) / ЛКС (304)/ ЛКС (201): from -80 °C to +538 °C
 - ЛКС-П (316)/ ЛКС-П (304): from -50 °C to +150 °C
- The required band length is cut at the installation site
- Resistant to corrosion, humidity and radiation
- Strap sides are smoothed and have no sharp edges or burrs
- «Fortisflex» cable ties are certified in Russian Federation Maritime register of shipping
- Tools for installing: TG-02, ИИТ-20, ИИТ-20 mini, ИИТ-20, HM-20, hammer

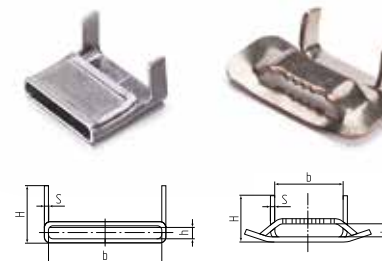


Name	Color	Material	Sizes (mm)		Working load (N)	Packing	
			width	thickness		in carton	in plastic cassette
ЛКС (316)-1204 (Fortisflex)	○	AISI 316L	12.0	0.34	2000	25 m	–
ЛКС-П (316)-1004 (Fortisflex)	●	AISI 316L	10.0	0.45	1700	50 m	–
ЛКС-П (316)-1204 (Fortisflex)	●	AISI 316L	12.0	0.45	2000	25 m	–
ЛКС-П (316)-1504 (Fortisflex)	●	AISI 316L	15.0	0.45	2500	25 m	–
ЛКС (304)-1204 (Fortisflex)	○	AISI 304	12.0	0.34	2000	25 m	–
ЛКС-П (304)-1204 (Fortisflex)	●	AISI 304	12.0	0.45	2000	25 m	–
ЛКС-П (304)-1504 (Fortisflex)	●	AISI 304	15.0	0.45	2500	25 m	–
ЛКС (304)-2007 (Fortisflex)	○	AISI 304	20.0	0.70	7000	–	25 m
ЛКС (201)-2007 (Fortisflex)	○	AISI 201	20.0	0.70	7000	–	50 m
ЛКС (201)-2007 (Fortisflex)	○	AISI 201	20.0	0.70	7000	25 m	–

Types: CM / БМ

stainless steel mounting brackets and buckles

- Designed for fixing bandage strap ЛКС on the poles
- Material: AISI 316L, 304 and 201 stainless steel
- Resistant to corrosion, extreme temperatures, humidity and radiation
- In comparison with brackets, buckles have one-piece forged design and have increased strength characteristics
- «Fortisflex» brackets and buckles are certified in Russian Federation Maritime register of shipping
- Installation tool: ИИТ-20, ИИТ-20, ИИТ-20 mini, ИИТ-20 mini, hammer



Name	Material	Sizes (mm)					Packing (pcs. in poly bag)
		b	L	H	h	S	
CM (316)-10 (Fortisflex)	AISI 316L	11.1	15	9	3.1	0.7	100
CM (316)-12 (Fortisflex)	AISI 316L	13.2	15	10	3.1	0.7	100
CM (316)-15 (Fortisflex)	AISI 316L	16.2	15	10	3.1	0.7	100
CM (304)-12 (Fortisflex)	AISI 304	13.2	15	10	3.1	0.7	100
CM (304)-15 (Fortisflex)	AISI 304	16.2	15	10	3.1	0.7	100
БМ (304)-20 (Fortisflex)	AISI 304	20.3	24	12	3.6	1.5	100
CM (201)-20 (Fortisflex)	AISI 201	20.2	22	12	3.5	0.7	100

«Fortisflex» metal hose and mounting clamps



25 sizes

МРПИнг «NORD»

metal hose in PVC insulation
with wire and without wire



22 sizes

МРПИнг (INOX)

metal hose in PVC insulation
made of stainless steel



25 sizes

РЗ-ЦПнг-LS

metal hose in PVC shell
with wire and without wire



5 sizes

МГ-ПУнг «TITAN»

reinforced metal hose
in PVC sleeve



22 sizes

МР (INOX)

metal hose made of stainless steel
with wire and without wire



25 sizes

РЗ-ЦХ

metal hose made of galvanized steel
with wire and without wire



16 sizes

РЗ-ЦПУнг-НГ

metal hose with thickened insulation
with wire and without wire



21 size

СМО/СМО-П

one foot clamp
made of galvanized steel



21 size

СМД/СМД-П

double foot clamp
made of galvanized steel



14 sizes

УХЗ/УХЗ (INOX)

multipurpose
grounding clamps



21 size

СМО/СМО-П (INOX)

one foot clamp
made of stainless steel



21 size

СМД/СМД-П (INOX)

double foot clamp
made of stainless steel



4 sizes

ЛМП/ЛМПВ

perforated galvanized
steel strap



26 sizes

CMP

clamps made of galvanized steel
with rubber gasket



14 sizes

CMP (INOX)

clamps made of stainless steel
with rubber gasket

«Fortisflex» fittings and accessories for metal hose



8 sizes

O3M

protective end covers
for metal hose



12 sizes

BM

bushing kits
for metal hose



5 sizes

BMV

bushing kits
for metal hose «TITAN»



6 sizes

BM (INOX)

bushing kits INOX
for metal hose



6 sizes

CTM-P (INOX)

connecting bushing kits INOX
«tube – metal hose»



6 sizes

BT(X)

bushing kits
with clamp for metal hose and tube



4 sizes

CTM(B)

connecting screw bushing kits
«tube – metal hose»



6 sizes

CMm

connecting bushing kits
«metal hose – metal hose»



6 sizes

CTM

connecting bushing kits
«tube – metal hose»



9 sizes

CTM-P

connecting threaded bushing kits
«tube – metal hose»



6 sizes

BM(90)

angle bushing kits
for metal hose



6 sizes

KPB

in-line
junction connector boxes



6 sizes

KPB-T

T-shape
junction connector boxes



10 sizes

MBП

plastic bushing kits
for metal hose



7 sizes

B

pass-through
bushings

Specialized catalogs in the following areas



Heat shrinkable items and cable kits line

- A special pride of «KBT» electro technical factory is the work shop for heat-shrinkable cable kits production, where modern technological solutions are implemented, many of which have no analogues in Russia yet.
- «KBT» factory provides a full cycle of heat-shrinkable kits production for voltage up to 35 kV.
- The modern fleet of machines and equipment is represented by new automatic extrusion lines, injection molding machines with a closing force 200 and 288 tons, as well as installations for extension (blowing) heat-shrinkable tubes and components. «KBT» engineers regularly monitor the latest developments in technologies and equipment for polymer processing in order to continuously improve the efficiency of production processes.



«KBT» professional tools

- In terms of completeness and structural integrity, the range of «KBT» tools is comparable to the range of the world's leading brands. About 1000 models with mechanical, hydraulic and battery drive tools and several dozen specialized groups for professional work.
- Improvement of traditional models and search for new solutions are essential attributes of «KBT» brand. Many models and groups of tools have become headliners of the Russian electrical market and have taken a strong place in the list of the most popular tools for electrical installation.
- All «KBT» tools range is guaranteed for up to 5 years, depending on the tools group. After the end of the warranty period, post-warranty service is provided.



Cable ties and cable laying systems «Fortis Flex»

- «Fortis Flex» trademark products have gained well-deserved popularity in various regions of Russia and neighboring countries. «Strong and flexible», «flexible strength».... The brand name itself speaks about the main properties of «Fortisflex» products.
- Dozens of types of cable ties made of nylon and metal, various mounting accessories for installation and laying of cable lines. A wide range, consistently high-quality products and competitive prices are essential attributes of the brand.
- Special attention is paid to the development of production projects based on «KBT» factory. Among the priorities are the production of stainless-steel cable ties, metal hose, devices for laying and pulling cables, marking tags and fixing brackets.

