AKRON HOLDING
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PACKAGE PROPOSAL

For Oil and Gas Companies

ALMAZ OILFIELD SERVICE | INKATEH | SKT group | ELECTROSHIELD SAMARA Powering your future

ALMAZ OILFIELD SERVICE

INKATEH

SKT group

ELECTROSHIELD SAMARA
Powering your future


AKRON
HOLDING

AKRON HOLDING TODAY

AKRON HOLDING is one of the largest Russian vertically-integrated full-cycle industrial holdings, maintaining a leadership position in the volume of procurement and processing of ferrous and non-ferrous scrap in the territory of the Russian Federation and other CIS countries.

Industrial enterprises of the Holding are engaged in the non-ferrous metals manufacturing, manufacturing of cable and wire products, as well as processing and recycling of secondary resources and all types of electronic waste.

The Holding is actively investing in the development of its own production facilities, it is expanding and upgrading its plant and equipment assets. Having its own scrap collecting infrastructure makes the Holding more flexible in terms of pricing and delivery times, which is our competitive advantage.

Lean production, continuous quality control, and focus on the environmental friendliness of technological processes, and respect for partners and employees are the formula of the Holding's success, which enabled it to gain and maintain the leading position and business reputation.

Over
1 450 000 MT
annual volume of ferrous scrap collected

Over
300 000 MT
annual volume of non-ferrous scrap collected

24
manufacturing enterprises

108
industrial warehouses

Over
18 000
total headcount

AKRON HOLDING

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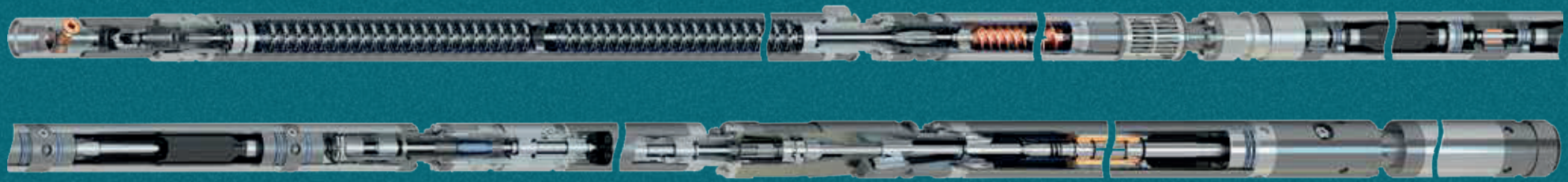
ALMAZ

OILFIELD SERVICE



About the Company

ALMAZ-NEFTESERVIS is a producer of complete electric centrifugal pump units for oil extraction, as well as of oil-submersible cables. The enterprise renders services for the rental and maintenance of oil-production submersible and surface equipment.

Over
30
years

Total technological expertise of the company

Over
1100
Employees

Headcount

Over
100
'000 m^2

Area of the company's production facilities

ALMAZ OILFIELD SERVICE

THE CONTENT OF LOCAL MANUFACTURING OF COMPONENTS FOR ELECTRIC CENTRIFUGAL PUMP UNITS AND OIL-SUBMERSIBLE CABLES WITHIN THE ENTERPRISE IS AT THE LEVEL OF 90%

The test benches available ensure multistage quality control of equipment and cables being produced.

Average service life of electric centrifugal pump units manufactured is over 740 days.

Our production facilities enable us to manufacture:

- over 450 sets of electric centrifugal pump units per month
- over 450 kilometers of cables and wire products

and we render the following services:

- maintenance of more than 10,000 wells
- rental of equipment for more than 5,000 wells

Almaz-Nefteservis Trading House (Moscow) sells both the products of the enterprise and the products manufactured by partner plants:

- Components and complete electric centrifugal pumpunits
- All types of oil-submersible cables, geophysical, mining,and power cables.

Products of the enterprise are delivered to vertically-integrated oil production companies of Russia and Kazakhstan, to purchasers from the countries of Latin and North America and the Middle East.

The enterprise carries out its activities in partnership with a large Russian multi-industry holding having total annual turnover exceeding RUB 120 billion, which ensures additional financial strength.

ALMAZ-NEFTESERVIS entered into contracts with customers including Rosneft, Russneft, NNK, etc. in the amount of:

over 50 rolling shop projects

over 70 service projects

STANDARDS

The following standards are maintained for rolling shop projects:

- Operation time; increase of at least 100 days per year;
- Attendance: 2-4 weeks;
- Well stock serviced simultaneously – up to 10,000 wells;
- New ESP units commissioned – at least 100;
- Simultaneous operation of 5 maintenance facilities andthe main site.

INDICATORS

The following indicators have been achieved:

- 2500 repairs of underground section per month;
- On average the Company services around 5-8 service projects simultaneously;
- ALMAZ-NEFTESERVIS repairs equipment by allvendors sold in the Russian Federation, includingpermanent magnet motors;
- The Company is equipped with test benches of allESP units, cables lines, and ground facilities.

The Company renders a full range of services for maintenance of a number of wells equipped with electric centrifugal pump units, from selection of units for wells, to minor and major repairs of all assemblies of electric centrifugal pump units, and it also organizes rental and leasing of equipment of ALMAZ-NEFTESERVIS. In the course of such service operations a complex approach to customers is applied, which makes it possible for oil companies to operate their wells with maximum efficiency while reducing their production cost.

We Offer:

- **Rental of ALMAZ-NEFTESERVIS units**
- **Equipment servicing**
- **Comprehensive solution of Customer issuesof any level of complexity**

ESP Unit Maintenance:

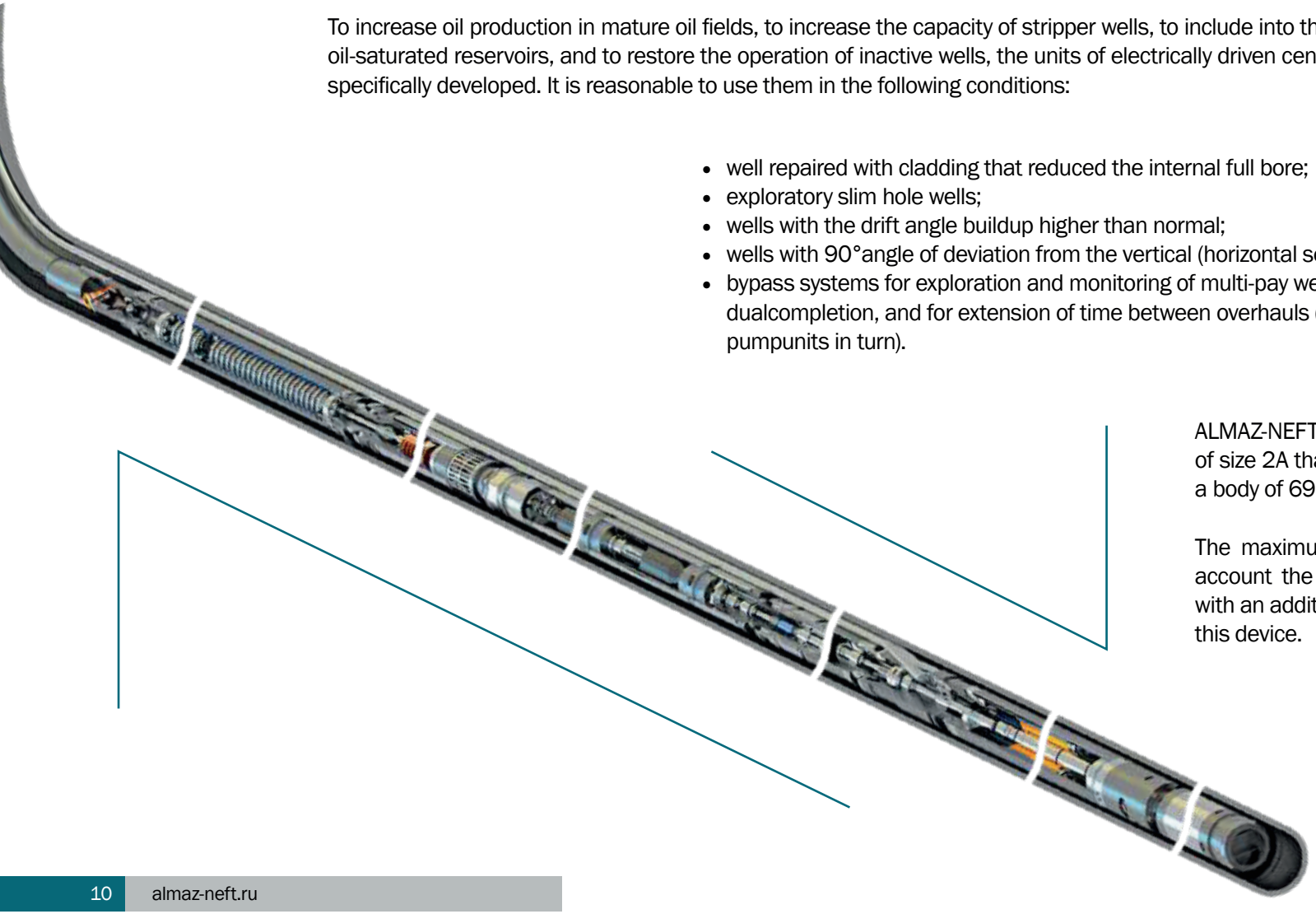
- selection and supply of equipment in accordance with the well production conditions;
- acceptance testing of new equipment;
- wells starting up, bringing wells on to stable production, and operation monitoring;
- installation and dismantling of components of submersible equipment of electriccentrifugal pump units and surface components;
- analysis of work of the operating well stock;
- preventive and predictive maintenance of surface equipment;
- organization of controlled operation of innovative equipment;
- prompt servicing of electric centrifugal pump units and surface electric equipment in thecourse of operation, testing of the assemblies of electric centrifugal pump units andsurface electric equipment;
- investigation of the causes of failures of electric centrifugal pumps and surface electricequipment;
- minor and major repairs of submersible and surface electric equipment;
- equipment delivery and moving out;
- offering electric centrifugal pump units for rental/leasing;
- staff training

Services for repair and maintenance of electric centrifugal pump units are rendered directly on production site of the enterprise in the city of Raduzhny, as well as on the internal repair and maintenance base in the urban type settlement Poykovsky. Complex works and qualified personnel ensure high quality and rapidness of the service. Servicing provided by ALMAZ-NEFTESERVIS is certified as compliant with the requirements of international standards concerning occupational quality, health and safety, and environment.

ELECTRIC CENTRIFUGAL PUMP UNITS, SIZE 2A FOR SLIM HOLE WELLS AND SIDE TRACKS

To increase oil production in mature oil fields, to increase the capacity of stripper wells, to include into the development over- and underlying oil-saturated reservoirs, and to restore the operation of inactive wells, the units of electrically driven centrifugal pumps of size 2A have been specifically developed. It is reasonable to use them in the following conditions:

- well repaired with cladding that reduced the internal full bore;
- exploratory slim hole wells;
- wells with the drift angle buildup higher than normal;
- wells with 90°angle of deviation from the vertical (horizontal sections);
- bypass systems for exploration and monitoring of multi-pay wells and dual systems, both for dualcompletion, and for extension of time between overhauls (operation of electric centrifugal pumpunits in turn).



ALMAZ-NEFTESERVIS produces in lots the units of size 2A that are equipped with a pump having a body of 69 mm in diameter.

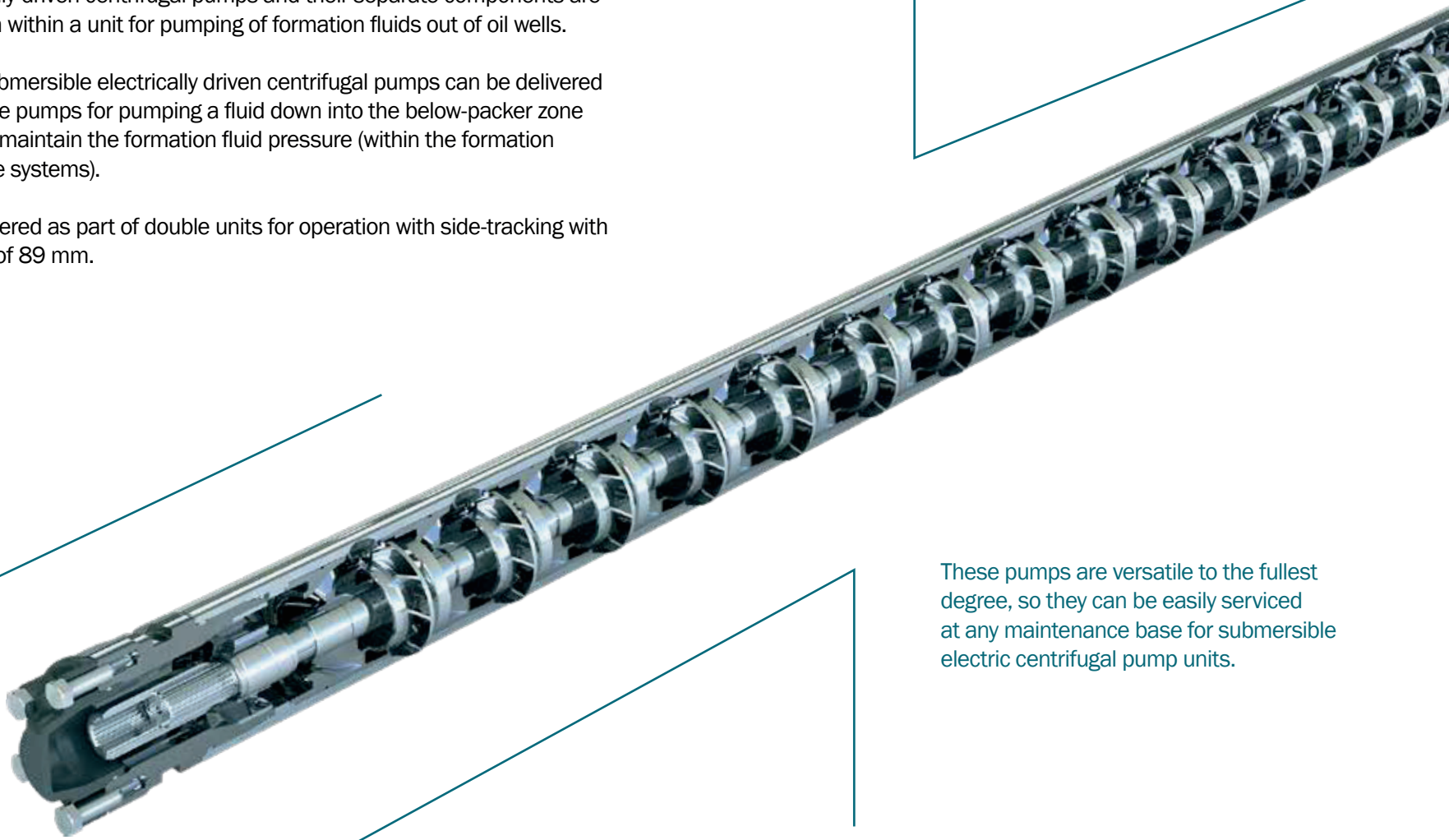
The maximum cross-sectional size, taking into account the cable, equals 81 mm when fitted with an additional module, and 86.9 mm without this device.

Electrically Driven Centrifugal Pumps

Submersible electrically driven centrifugal pumps and their separate components are intended for operation within a unit for pumping of formation fluids out of oil wells.

Certain versions of submersible electrically driven centrifugal pumps can be delivered as jockey pumps or the pumps for pumping a fluid down into the below-packer zone in order to build up or maintain the formation fluid pressure (within the formation pressure maintenance systems).

They can also be delivered as part of double units for operation with side-tracking with the internal diameter of 89 mm.

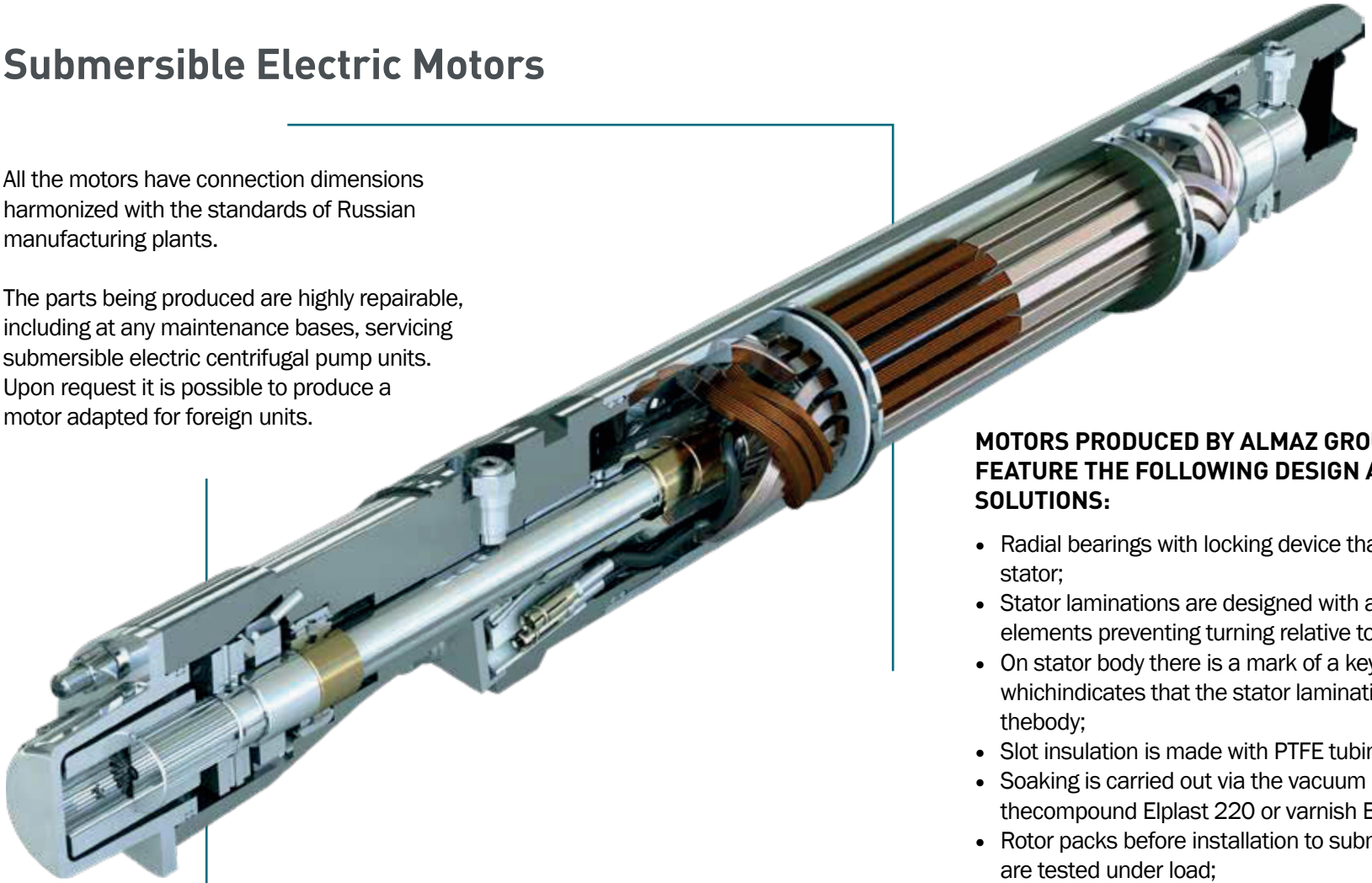


These pumps are versatile to the fullest degree, so they can be easily serviced at any maintenance base for submersible electric centrifugal pump units.

Submersible Electric Motors

All the motors have connection dimensions harmonized with the standards of Russian manufacturing plants.

The parts being produced are highly repairable, including at any maintenance bases, servicing submersible electric centrifugal pump units. Upon request it is possible to produce a motor adapted for foreign units.



MOTORS PRODUCED BY ALMAZ GROUP OF COMPANIES FEATURE THE FOLLOWING DESIGN AND TECHNOLOGICAL SOLUTIONS:

- Radial bearings with locking device that prevent turning in the stator;
- Stator laminations are designed with a closed slot andguiding elements preventing turning relative to each other;
- On stator body there is a mark of a key slot position, whichindicates that the stator laminations are not turning in thebody;
- Slot insulation is made with PTFE tubing;
- Soaking is carried out via the vacuum method and using thecompound Elplast 220 or varnish BC-346/A;
- Rotor packs before installation to submersible electric motors are tested under load;

-Output connections are thermally resistant.

ALMAZ-NEFTESERVIS manufactures several types of submersible electric motors:

Series ПЭД Я and (Н)ПЭД-Я (high-voltage)	Oil-filled submersible asynchronous three-phase motors
Series РПЭД Я	Oil-filled submersible parametric three-phase motors
Series ВЭД-Я	Oil-filled permanent magnet motors

Application:

- as a drive for oil production units;
- pumping of fluid (industrial iodine-bromine water mixture) down into the below-packer zone in order to build up (maintain) the formation fluid pressure (the formation pressure maintenance systems);
- as part of double-sided units.

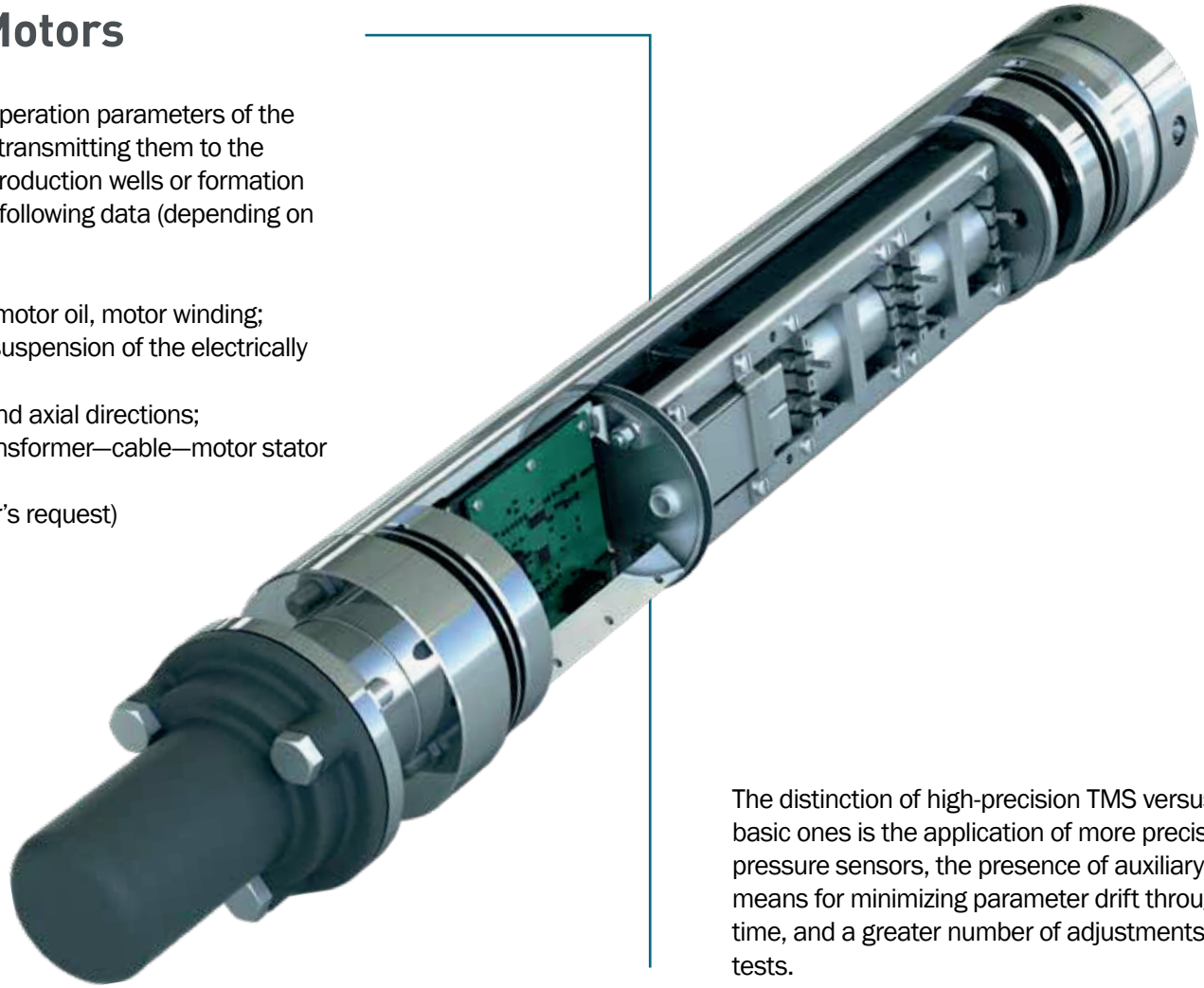
Motors are delivered in the following sizes:

Dimensions	81,100, 103, 117, 130.
Rated power depending on design: ПЭД-Я, (Н)ПЭД-Я, РП-ПЭД-Я, ВЭД-Я	· Size 81 to 180 kW; · Size 100 to 210 kW; · Size 103 to 210 kW; · Size 117 to 360 kW; · Size 130 to 500 kW
Thermal resistance	Basic, thermally resistant (T), or thermally extra-resistant (TT) version;
Corrosion resistance	Basic or corrosion-resistant (K) version. The corrosion-resistant version can be manufactured of stainless steel completely or have a coating, such as Monel;
Direction of shaft rotation	Right (clockwise) or left (counterclockwise)
Shaft spline type	Straight-spline joint and involute spline joint;
Connection to protector type	Six, eight, and ten-point version of pins (thread pitch can vary depending on the customer's request)

Submersible Electric Motors

TMS are intended for measuring of current operation parameters of the electrically driven centrifugal pump unit and transmitting them to the controller of the management station in oil production wells or formation pressure maintenance systems, namely the following data (depending on the outfit):

- temperature of ambient (formation) fluid, motor oil, motor winding;
- pressure of formation fluid in the area of suspension of the electrically drivencentrifugal pump unit;
- level of vibrational acceleration in radial and axial directions;
- resistance of insulation of the system: transformer—cable—motor stator winding;
- other options (depending on the customer's request)



The distinction of high-precision TMS versus basic ones is the application of more precise pressure sensors, the presence of auxiliary means for minimizing parameter drift through time, and a greater number of adjustments and tests.

TMS units are highly repairable, including at any maintenance bases, servicing submersible electric centrifugal pump units

Thermomanometric system = submersible block + ground-level block

Thermomanometric systems are manufactured and delivered in the following designs:

As per submersible unit size:	81, 100, 103
	Installation to motors of size 117 and 130 via a connection joint
	117 — a submersible unit for double units (a peculiar feature of double TMSs is that they are equipped with a shaft for transmitting rotation from the motor to the lower protector)
Maximum measurable pressure of formation fluid:	Up to 250, 320, 400 or 600 bar
Precision of formation fluid pressure measurement:	Baseline (TMC-1)
	High precision (TMC-2)

Electric motors are delivered:

By measured temperature:	Measurement of motor oil temperature and formation fluid temperature, with minimum permissible error of 1.5%, with the digit capacity of 0.1°C
	Measurement of motor oil temperature, formation fluid temperature, and motor winding temperature (“T” in the code name)
	Operating temperature: for submersible unit no more than 125°C, 150°C, or 170°C.
Corrosion resistance:	Submersible unit of a basic or corrosion-resistant (“K” in the code name) version
Design:	Baseline – for double-sided units
	Standard double-sided units with the possibility of connecting surveying equipment and instrumentation

Upon customer request it possible to manufacture a TMS supporting new universal exchange protocol “TRANSFER”. The submersible unit has connection dimensions harmonized with the standards of Russian manufacturing plants.

Protectors (Seals)

Protectors of the ПА type are intended for transmitting torque from the electric motor to the pump, for protection of oil-filled submersible electric motors from penetration of formation fluid into their inner cavity, for compensation of oil leakage and thermal changes of its volume during the motor operation.

ПА type protectors are intended for equipping electric motors with the diameter of the body that equals 81 mm, 95 mm, 100 mm, 103 mm, 117 mm, and 130 mm, as well as other motors with corresponding overall and connection dimensions and technical parameters used as drives for centrifugal pumps without supports applied for oil production. It is possible to use them with the pumps having shaft axial bearings.

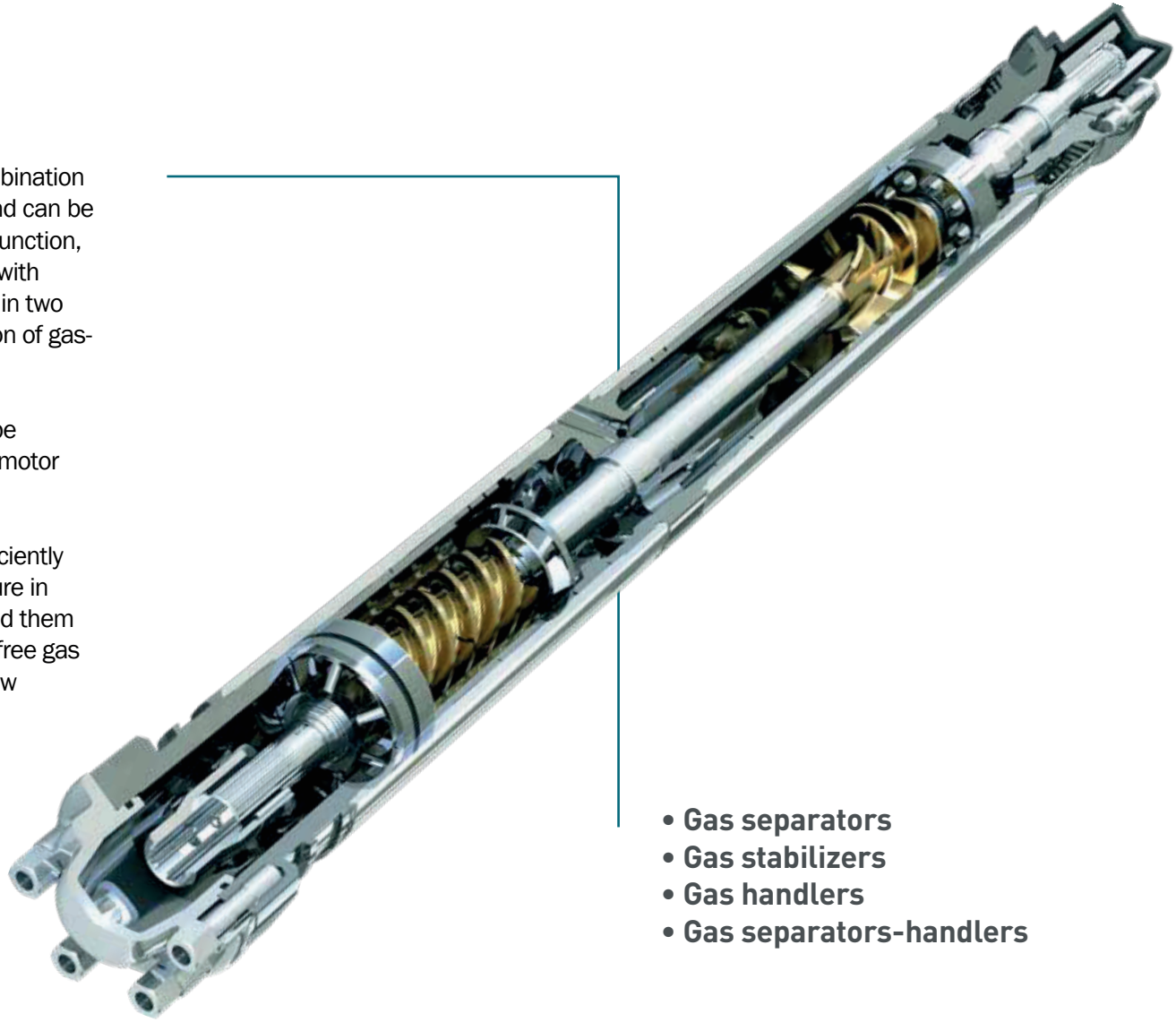
ПА type protectors can also be of a modular version (МПА), and of a version for equipping of duplex motors (2ПА, 2МПА), for equipping of the drive of the unit pumping a fluid down into the below-packer zone (5ПА), for equipping telemetering systems when the compensation of pressure difference is required (ТПА).

Pumping Modules

Pumping modules are intended for use in combination with pumps in wells with a high gas content and can be installed before the intake of the pump. They function, depending on their type, as an intake module with simultaneous separation of gas-liquid mixture in two fractions or with separation and/or dispergation of gas-liquid mixture.

Per customer request pumping modules can be modernized and used for fastening of electric motor enclosure.

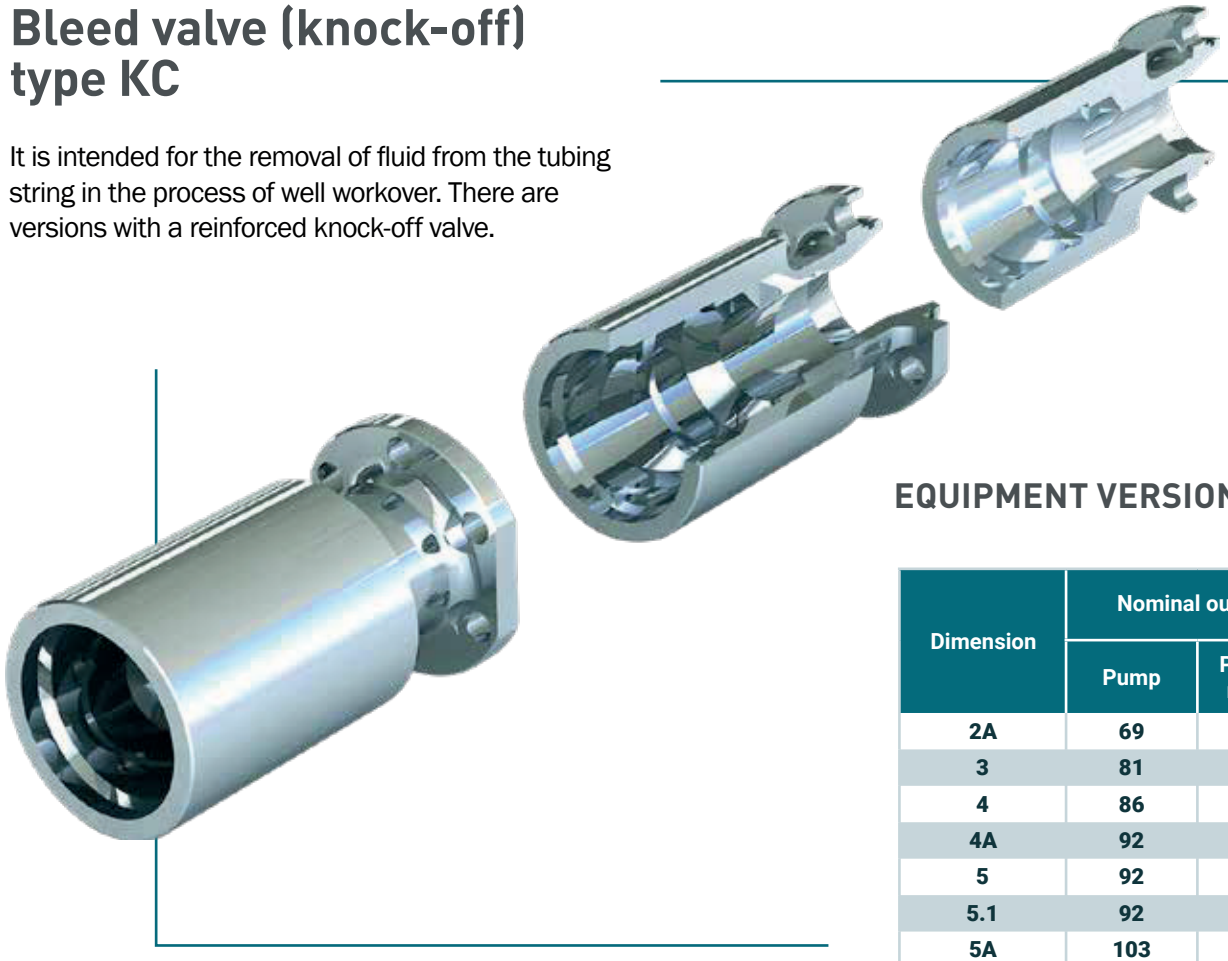
Gas separators of МНВГДРИ type are very efficiently separating gas from liquid in a gas-liquid mixture in different operating modes. We can recommend them for application in the wells with high values of free gas (up to75% in volume at the intake) and backflow of abrasive contaminants with the mass concentration of 1 g/l in the formation fluid.



- **Gas separators**
- **Gas stabilizers**
- **Gas handlers**
- **Gas separators-handlers**

Bleed valve (knock-off) type KC

It is intended for the removal of fluid from the tubing string in the process of well workover. There are versions with a reinforced knock-off valve.



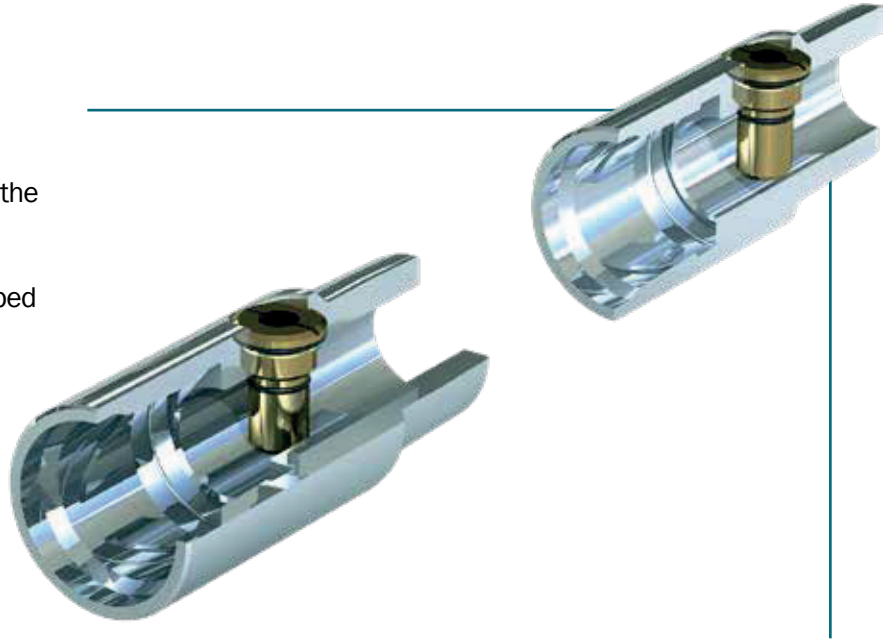
EQUIPMENT VERSIONS AND SIZES

Dimension	Nominal outer diameter, mm			Ball check valve type	Bleed (knock-off) valve type
	Pump	Pumping module	Intake module		
2А	69	69	69	КОШ-48	КС-48
3	81	81	81	К0Ш-60	КС-60
4	86	86	86	КОШ-73 (К0Ш-60)	КС-73 (КС-60)
4А	92	92	92	КОШ-73 (К0Ш-60)	КС-73 (КС-60)
5	92	92	92	КОШ-73	КС-73
5.1	92	92	92	КОШ-73	КС-73
5А	103	103	103	КОШ-73 (КОШ-89)	КС-73 (КС-89)
5А.1	103	103	103	КОШ-73 (КОШ-89)	КС-73 (КС-89)
6	114	114	114	КОШ-89	КС-89
6Б	130	130	130	КОШ-89	КС-89

Leak tight return ball check valve, КОШ-П-В type

It is used with a pump for pumping of a fluid down into the below-packer zone.

The valve shuts the channel off after the pump is stopped and prevents the fluid reverse flow.



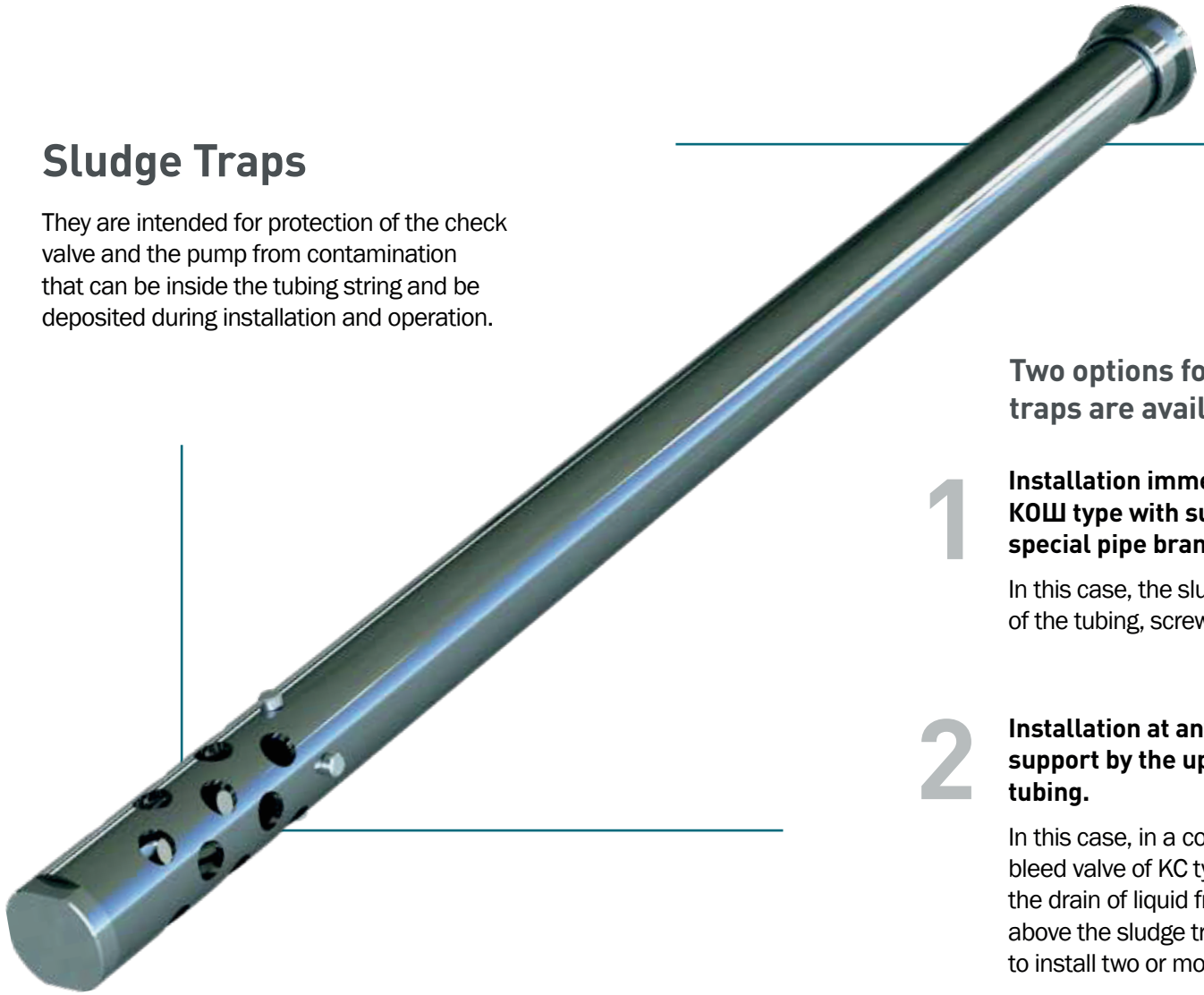
Leak tight ball check valve, КОШ(П) type

It is intended for passing of the operating fluid (drilling mud, water, formation fluid) in one direction. It ensures shutting the channel off in case of pressure drop from the side of operating fluid supply in the course of technological operations, automatically prevents the reverse flow of fluid and retains the fluid within the tubing string after the pump is stopped.

We can also supply other types of valves upon customer request.

Sludge Traps

They are intended for protection of the check valve and the pump from contamination that can be inside the tubing string and be deposited during installation and operation.



Two options for the application of sludge traps are available:

1 **Installation immediately above the check valve of КОШ type with support by the upper end face of a special pipe branch.**

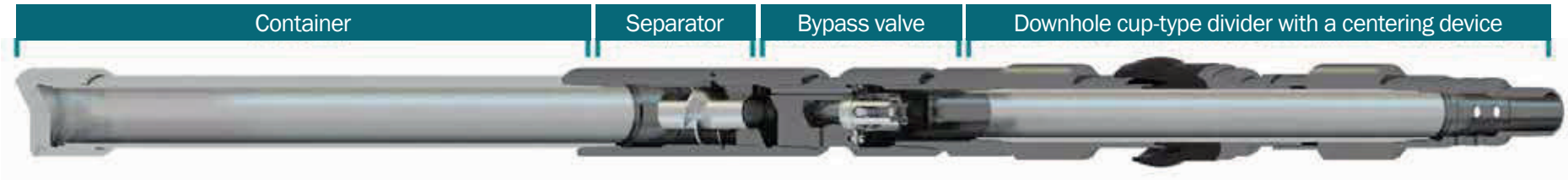
In this case, the sludge trap lift limiter is the lower end face of the tubing, screwed into the valve coupling.

2 **Installation at any point of the tubing string with support by the upper end face of the underlying tubing.**

In this case, in a coupling of the tubing located above, a bleed valve of КС type must be screwed, which will ensure the drain of liquid from the tubing string section, located above the sludge trap. Upon customer request it is possible to install two or more sludge traps.

Solids Separator

It is designed for the separation of solids (sand and/or sludge) from formation fluid at intake of the pump.



Downhole Mixer

It is intended for mixing of fluids from two formations separated by a packer, in the course of dual completion operation by a single lift with the application of the electrical submersible centrifugal pump unit for the lower formation and the sucker rod pump of RHM-T type for the upper formation, as well as for RHM-T type pump unit.

Weight: 27.5 kg
Max pressure: 20 MPa
Circumscribed circle diameter: 123.5 mm
Width: 119 mm
Length: 700 mm
Material: 95x18 stainless steel

Heat-resistant cables with fluoroplastic insulation for submersible electric pump units

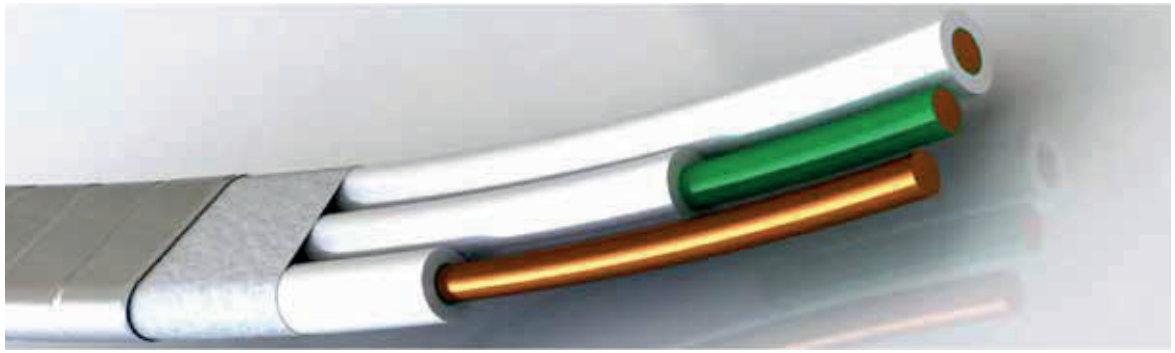
КИФБП-230 (250)
TU 27.32.13-017-27385465-2017

Heat resistance	230 (250)°C
Cross sections available	7, 8, 10, 13, 16, 21,13; 35 mm^2
Design features	Minimum weight and dimensions
Remains flexible at temperatures of	Minus 60°C
Permissible voltage	5000 V
Permissible AC frequency	30 Hz to 200 Hz

Cables, cable lines and cable extensions intended for powering of submersible electric motors and designed for certain well conditions and are manufactured for domestic and overseas markets. The climatic category is NF (moderately cold climate), the location category is 1 and 5 as per GOST 15150 and in formation fluid.

Heat resistant cables for submersible pump units

КПпБП-120 (130)
ТУ 27.32.13-016-27385465-2017



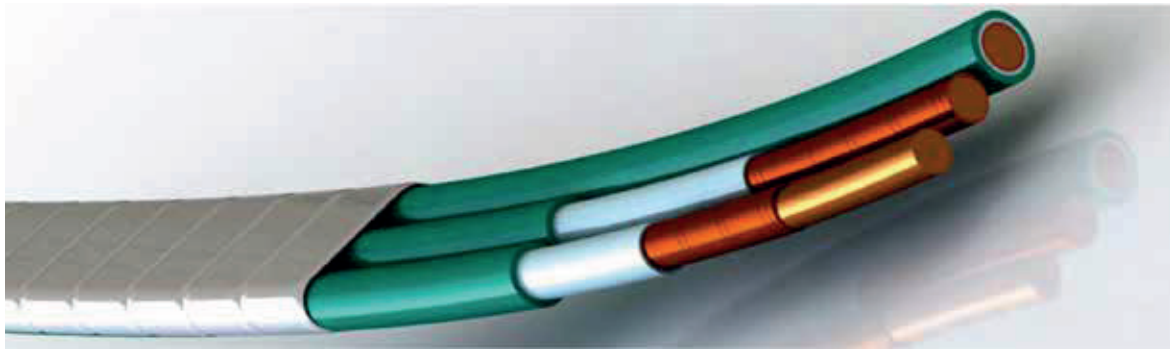
Heat resistance:	120°C
Cross sections available:	7, 8, 10, 13, 16, 21,13; 35 mm ^{2}

The following cable types are available:		
КПпБП-120	Flat cable with copper core, nonwoven-fabric bedding, armor of galvanized steel strips	Heat resistance: - 120°C
КПпБП-130	Flat cable with copper core, nonwoven-fabric bedding, armor of galvanized steel strip	Heat resistance: - 130°C

Cables are manufactured for domestic and overseas markets. The climatic category is УХЛ, the location category is 1 and 5 as per GOST 15150 and in formation fluid.

Heat resistant cables for submersible electric pump units

КИПпБП-140
ТУ 27.32.13-016-27385465-2017



Cables are manufactured for domestic and overseas markets. The climatic category is УХЛ, the location category is 1 and 5 as per GOST 15150 and in formation fluid.

Heat resistance:	230 (250)°C
Cross sections available:	7, 8, 10, 13, 16, 21, 13, 35 mm²

Design features:	
Core	Cable with copper core
First insulation layer	Polyimide–fluoroplastic film ПМФ-С-352 with a 50% overlap
Second insulation layer	Mixture of propylene block polymer and ethylene
Outer layer	Flat nonwoven fabric bedding, armored with steel galvanized strips
Temperature range	Short-term (up to 36 hours) overheating of up to 160°C is permitted
Permissible voltage	4500 V

Full range of repairs and modernization services for oil-submersible cables

There is an option to replace used cables for the new ones.

Production facilities of the plant carry out the following operations:

- detection of defects,
- cable transpooling and stripping
- electric conductor re-melting,
- production of copper wire rods, draft
- application of insulation,
- armoring, and testing.

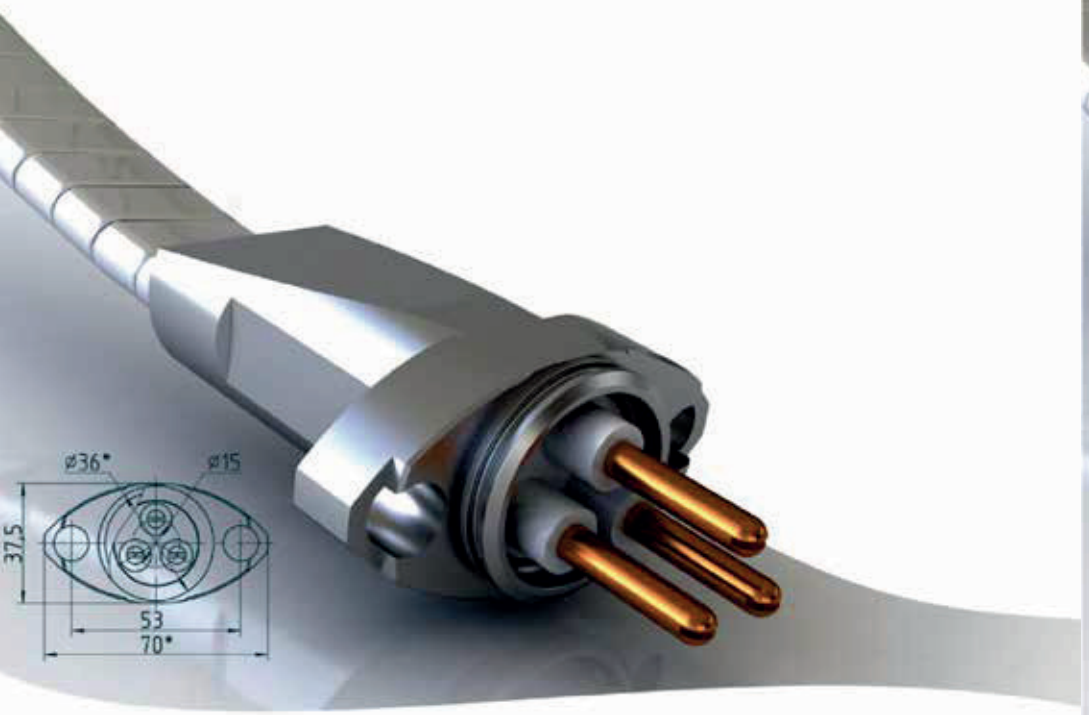
Production facilities of the plant allow for simultaneous manufacture and repair of up to 600 km of oil-submersible cables per month.

Our production facility is able to oil-submersible cables of various cross sections with the thermal resistance of 130°C to 250°C.

Cable Connector, Version 04

Small-size demountable cable connector with a radial face seal

It is used within a cable line for supply of three-phase current to submersible electric motors of home manufacture, ВЭД-Я-М3В (size 3).

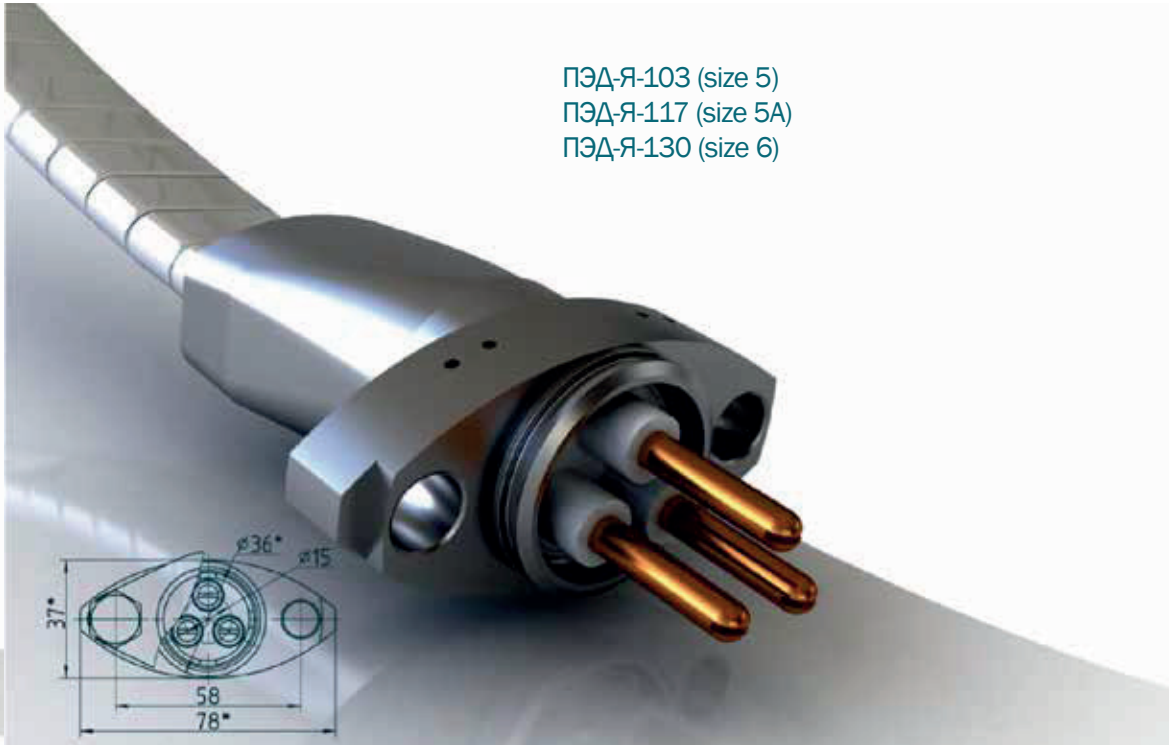


Cable Connector, Version 01

Demountable cable connector with a radial face seal

It is used within a cable line for supply of three-phase current to submersible electric motors of home manufacture:

ПЭД-Я-103 (size 5)
ПЭД-Я-117 (size 5А)
ПЭД-Я-130 (size 6)

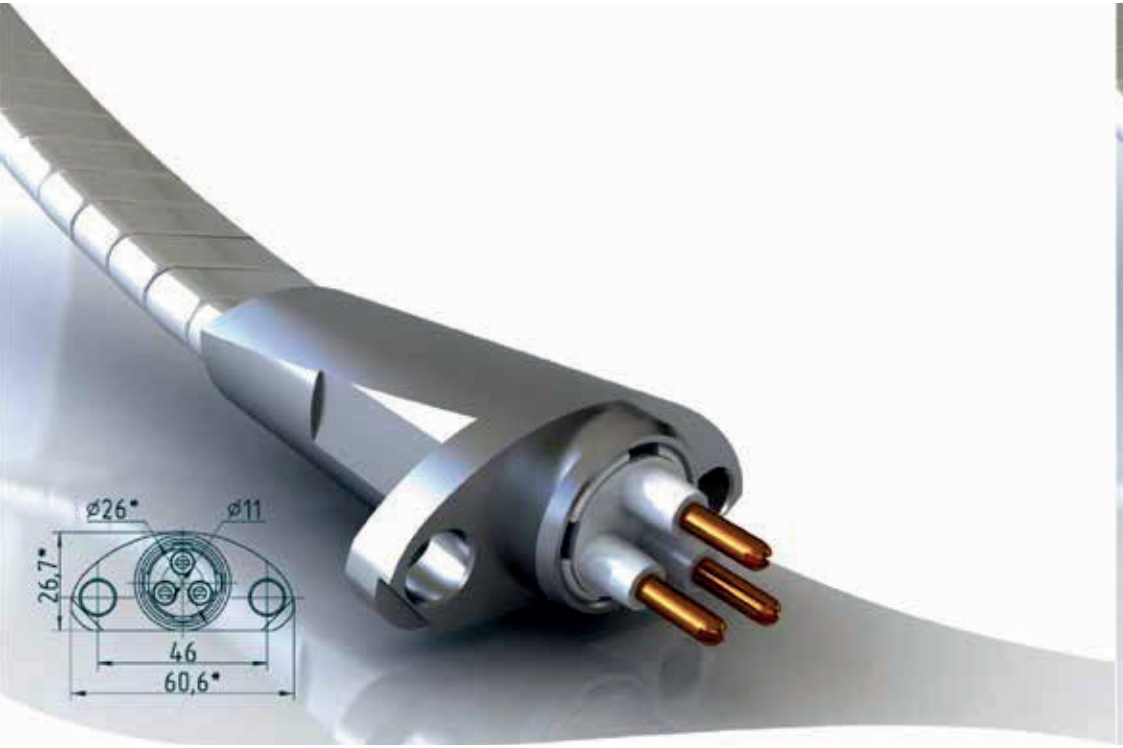


ALMAZ OILFIELD SERVICE

Cable Connector, Version 05

Demountable cable connector with a radial face seal

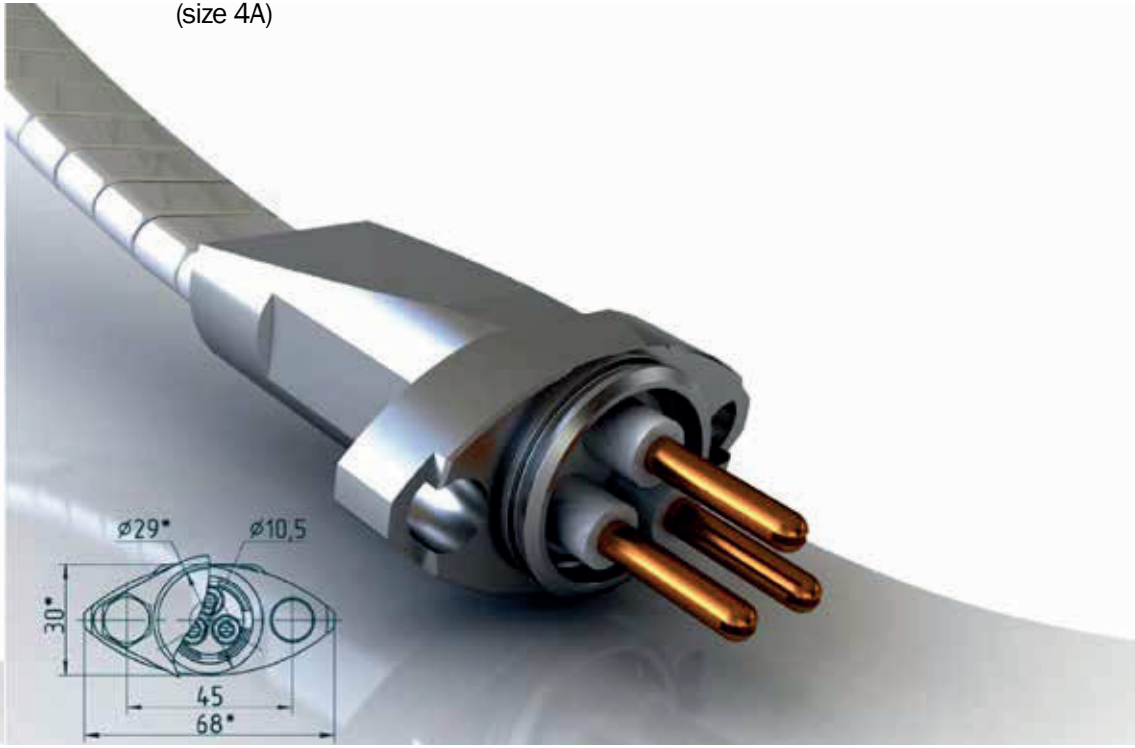
It is used within a cable line for supply of three-phase current to submersible electric motors of home manufacture, ВЭД-Я-81М2В5 (size 2А)



Cable Connector, Version 03

Small-sized demountable cable connector with a radial face seal

It is used within a cable line for supply of three-phase current to submersible electric motors of home manufacture, ПЭД-Я-100 (size 4А)



Heat Resistant Winding Wires with Polyamide-Fluoroplastic Film Insulation

ПВТФИ Wire
TU 27.32.13-019-27385465-2019

The wires are intended for manufacture of winding ends of submersible electric motors operating at the nominal voltage of up to 4.5 kV AC within the frequency range of 35 Hz – 200 Hz (while the nominal frequency is 50 Hz). The wires retain their performance properties at temperatures from minus 50°C and up to plus 230°C.

These wires may have other purposes (for instance, 'zero' wire may be used for the installation of TMS, etc.)

Nominal cross section of conductors and outer diameter

Conductor nominal cross section, mm2	Conductor nominal cross section, mm2	Number and nominal diameter of conductor wires, mm	Wire outer diameter, mm		DC resistance on 1 km of length, Ohm, maximum	Rated weight of 1 km of wire, kg
			min	max		
ПВТФИ	1,0	3x25x0,13	2,1	2,5	17,5	8,9
	1,5	1x19x0,32	2,8	3,2	11,9	17,8
	4,0	7x18x0,195	4,2	4,5	4,38	35,7
	6,0	7x19x0,24	5,1	5,4	3,35	82,5
	10,0	7x19x0,32	6,4	6,7	2,04	135,0
	16,0	7x12x0,49	7,7	8,0	1,24	188,0
ПВТФФ	6,0	7x19x0,24	5,1	5,4	3,35	86,6
	10,0	7x19x0,32	6,4	6,7	2,04	141,0
	16,0	7x12x0,49	7,7	8,0	1,24	198,0

Cable Products

ППИ-У Wire
TU 27.32.11-013-27385465-2019

The wires are intended for stator windings of oil-filled submersible electric motors.

Operating temperature: up to 230°C.
Minimum ambient temperature: up to minus 60°C

Estimated wire weight

Wire outer diameter, mm	Estimated weight of 1 km of wire, kg
1,05	9,0
1,18	12,83
1,25	14,95
1,38	15,0
1,50	17,0
1,60	18,98
1,80	24,24
2,00	30,31
2,12	34,06
2,24	38,06
2,36	41,78
2,50	46,73
2,65	52,32
2,80	58,28
3,00	66,52
3,12	72,04
3,20	73,89

Thin Wall PTFE Tubing

TU 27.90.12-020-27385465-2019

The tubing is intended for maintenance of formation pressure in:

- DC and AC machines (including electric motors, driving submersible units applied in oil production wells and formation pressure maintenance systems);
- electrical and radiotechnical products operating in aggressive environments and within the temperature range from minus 60°C up to plus 200°C.

Tubing is available in two types:	
ТП	Slot tubing with wall thickness of up to 0.27 mm
ТИ	Insulation tubing with wall thickness of 0.34 mm and above

Oil production equipment recycling

As part of ESG policy, the enterprise prepares and recycles oil production equipment unfit for further use. Here belongs sorting and separation according to the type of materials: industrial rubber goods, plastics, cast iron, Ni-resist cast iron, stainless steel, powdered alloys, non-ferrous metals, and hard alloys).

1. Oil-submersible cables:

- Armoring tape waste is delivered to the enterprises of the scrap collecting division of the Holding for further preparation for recycling;
- Polymer insulation waste is delivered to the enterprises of the scrap collecting division of the Holding (90%) or reworked directly on site into polymer products to be sold (10%);
- Lead-coated insulation waste is delivered to the enterprises of the scrap collecting division of the Holding for further preparation for recycling;
- Electric conductor is reworked into copper wire rods directly on site.

2. Electric centrifugal pump units, submersible electric motors, and surface equipment:

- Sorted ferrous scrap is delivered to the enterprises of the scrap collecting division of the Holding for further preparation for recycling;
- Sorted Ni-resist cast iron scrap is delivered to specialized casters;
- Sorted non-ferrous scrap (submersible electric motor rotor packs, winding wires, etc.) to the enterprises of the scrap collecting division of the Holding for further preparation for recycling at the Holding's enterprises
- Sorted Ni-resist cast iron are sold at specialized cast houses.


AKRON
HOLDING
akron-holding.ru
INKATEH

INKATEH

Our company proudly hangs on the quality traditions set by Rosskat AO and is one of the TOP leading companies on the market of cable and wire products. The plant supplies products all across Russia and other CIS countries.

INKATEX manufactures a wide range of cable and wire products:

- Mine and excavator cables,
- Power cables
- Winding wires
- Catenary contact wires for electric vehicles.

Our products are in high demand with Russia's leading industrial companies and electrical-product distributors and are certified and stringently monitored.

INKATEH

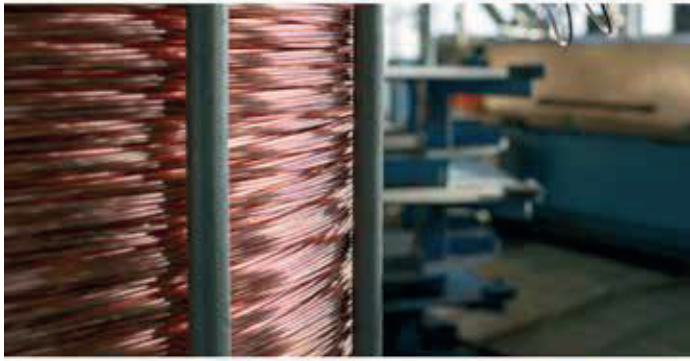
We Manufacture:

Non-ferrous Rolled Products

- copper wire rods
- contact wires
- copper wire
- commutator bars
- copper conductors

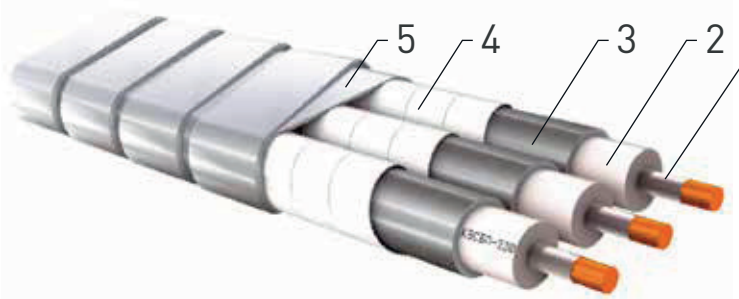
Power Cabling and Wiring

- PVC-insulated 0.66 kV to 6 kV cables for fixed installation with 6 mm^2 to 300 mm^2 nominalcore cross sections
- flexible cables
- mining cables for flexible applications
- mining cables for fixed applications
- cables for oil-submersible electric pump installations with a temperature index from 90°C to 230°C
- installation wires and cables
- rolling-stock wires
- grounding wires
- paper-insulated winding wires
- bare wires
- catenary wires for overhead contact lines



КЭСБП-230, КЭСБкП-230

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 4 kV and 5 kV. The cables are used in wells with high pumped-liquid temperatures and a high content of acids, alkalis, and other corrosive substances.

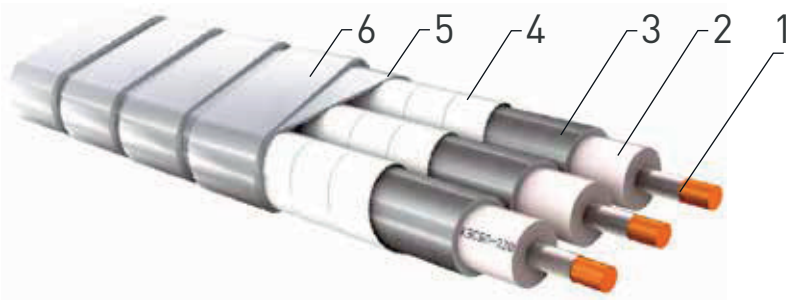


CONSTRUCTION:

1.Tinned solid copper conductor
2.Insulation based on ethylene–propylene rubber
3.Lead-alloy sheath on each core
4.Bedding (thread braid and/or tapewrap)
5.Galvanized steel / stainless steel tapearmor

КЛЭСБП-230, КЛЭСБкП-230

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 4 kV and 5 kV. The cables are used in wells with high pumped-liquid temperatures and a high content of acids, alkalis, and other corrosive substances.

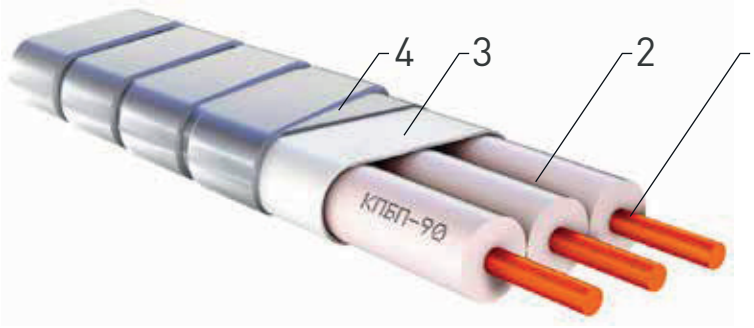


CONSTRUCTION:

1.Copper conductor
2.Enamel insulation
3.Insulation based on ethylene–propylene rubber
4.Lead-alloy sheath
5.Bedding (thread braid and/or tape wrap)
6.Galvanized steel/stainless steel tape armor

КПБП-90, КПБкП-90, КПБК-90, КПБкК-90

These cables are designed to supply electricity to electric motors of oil production plants at a nominal AC voltage of 3.3 kV and a frequency of up to 70 Hz. The cables are used in wells with medium pumped-liquid temperatures and a medium content

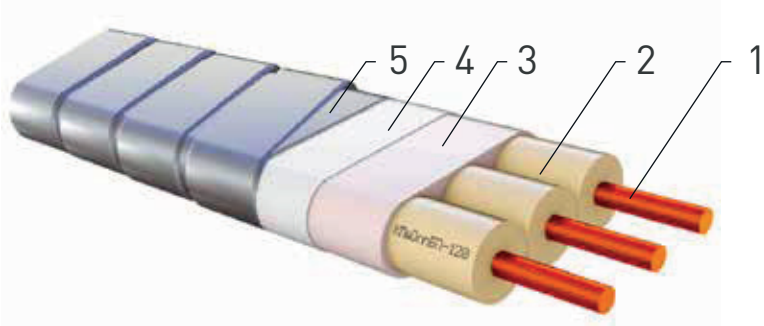


CONSTRUCTION:

1.Copper conductor
2.Dual insulation made of low-pressure polyethylene
3.Nonwoven-fabric tape bedding
4.Galvanized steel/stainless steel tape armor

КПвОппБП-130, КПвОппБкП-130, КПвОппБП-120, КПвОппБкП-120

These cables are designed to supply electricity to electric motors of oil production plants at nominal voltages of 3.3 kV and 4.0 kV and a frequency of up to 70 Hz. The cables are used in wells with medium pumped-liquid temperatures and a medium content of corrosive substances.



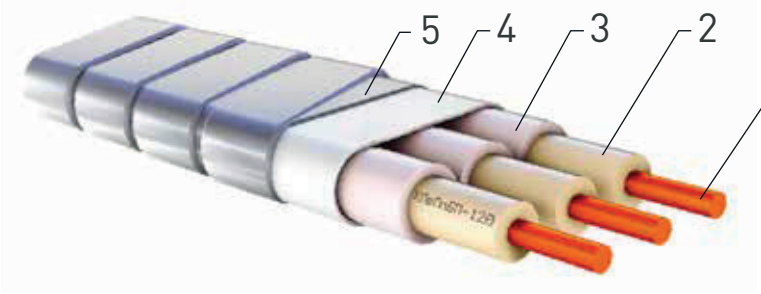
CONSTRUCTION:

1.Solid copper conductor
2.Dual insulation made of radiation-modified polyethylene
3.Common sheath made of propylene–ethylene block copolymer
4.Nonwoven-fabric tape bedding
5.Galvanized steel/stainless steel tape armor

КПвПпБП-120, КПвПпБкП-120, КПвПпБК-120, КПвПпБкК-120

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 3.3 kV, 4 kV, and 5 kV.

The cables are used in wells with medium pumped-liquid temperatures and a medium content of corrosive substances.



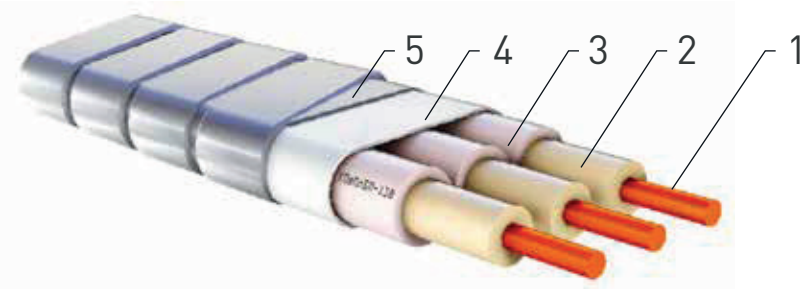
CONSTRUCTION:

1.Copper conductor
2.First insulation layer made of radiation-modified high-density polyethylene
3.Second insulation layer made of propylene–ethylene block copolymer
4.Nonwoven-fabric tape bedding
5.Galvanized steel/stainless steel tape armor

КПвПпБП-130, КПвПпБкП-130, КПвПпБК-130, КПвПпБкК-130

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 3.3 kV, 4 kV, and 5 kV.

The cables are used in wells with medium pumped-liquid temperatures and a medium content of corrosive substances.



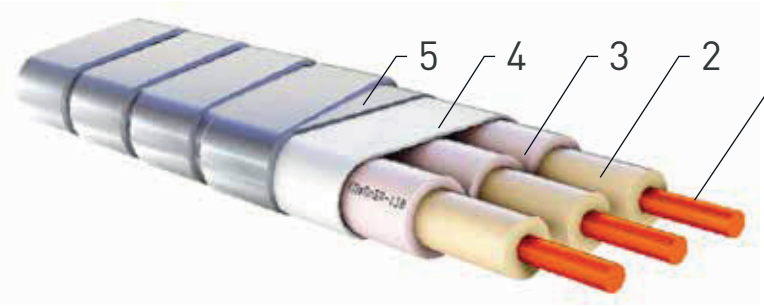
CONSTRUCTION:

1.Copper conductor
2.First insulation layer made of radiation-modified high-density polyethylene
3.Second insulation layer made of propylene–ethylene block copolymer
4.Nonwoven-fabric tape bedding
5.Galvanized steel/stainless steel tape armor

КПвППоБП-120, КПвППоБкП-120, КПвППоБК-120, КПвППоБкК-120

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 3.3 kV, 4 kV, and 5 kV.

The cables are used in wells with medium pumped-liquid temperatures and a medium content of corrosive substances.



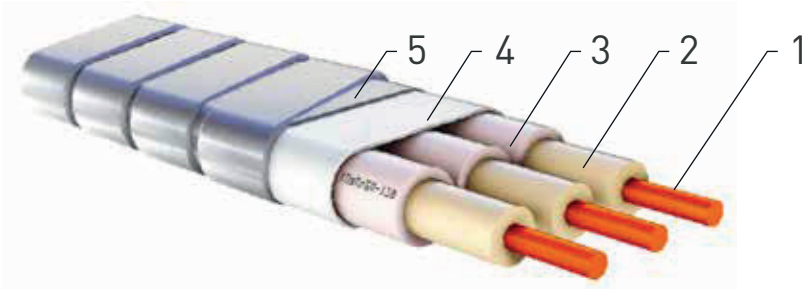
CONSTRUCTION:

1.Copper conductor
2.Dual insulation made of radiation-modified high-density polyethylene
3.Protective sheath made of propylene–ethylene block copolymer foreach core
4.Nonwoven-fabric tape bedding
5.Galvanized steel/stainless steel tape armor

КПвППоБП-130, КПвППоБкП-130, КПвППоБК-130, КПвППоБкК-130

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 3.3 kV, 4 kV, and 5 kV.

The cables are used in wells with medium pumped-liquid temperatures and a medium content of corrosive substances.

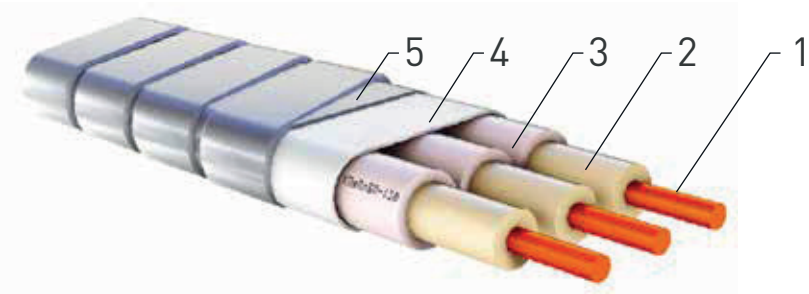


CONSTRUCTION:

1.Copper conductor
2.Dual insulation made of radiation-modified high-density polyethylene
3.Protective sheath made of propylene–ethylene block copolymer foreach core
4.Nonwoven-fabric tape bedding
5.Galvanized steel/stainless steel tape armor

КПпБП-120, КПпБкП-120, КПпБК-120, КПпБкК-120

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 3.3 kV, 4 kV, and 5 kV. The cables are used in wells with medium pumped-liquid temperatures and a medium content of corrosive substances.

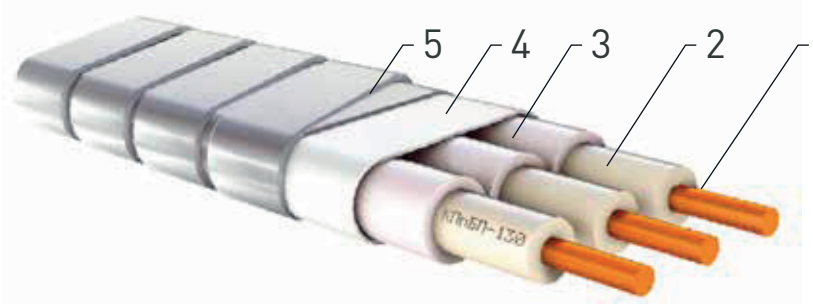


CONSTRUCTION:

1.Copper conductor
2.First insulation layer made of propylene copolymers resistant tocopper ions
3.Second insulation layer made of propylene copolymer
4.Nonwoven-fabric tape bedding
5.Galvanized steel/stainless steel tape armor

КПпБП-130, КПпБкП-130, КПпБК-130, КПпБкК-130

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 3.3 kV, 4 kV, and 5 kV. The cables are used in wells with medium pumped-liquid temperatures and a medium content of corrosive substances.

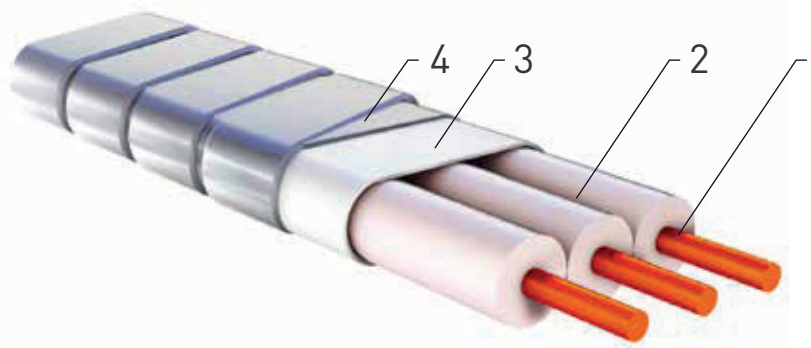


CONSTRUCTION:

1.Copper conductor
2.First insulation layer made of propylene copolymers resistant tocopper ions
3.Second insulation layer made of propylene copolymer
4.Nonwoven-fabric tape bedding
5.Galvanized steel/stainless steel tape armor

КЭвБП-150

These cables are designed to supply electricity to electric motors of oil production plants at nominal voltages of 4.0 kV and 5.0 kV and a frequency of up to 70 Hz.



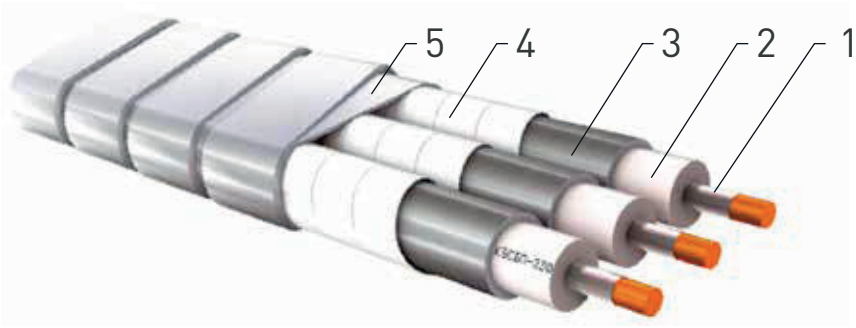
CONSTRUCTION:

1.Solid copper conductor
2.Insulation made of a radiation-modified compound based onethylene–propylene rubber
3.Bedding (thread braid and/or tape wrap)
4.Galvanized steel tape armor

КЭвСБкП-180, КЭвСБП-180

These cables are designed to supply electricity to electric motors of oil production plants at nominal AC voltages of 4 kV and 5 kV.

The cables are used in wells with high pumped-liquid temperatures and a high content of acids, alkalis, and other corrosive substances.



CONSTRUCTION:

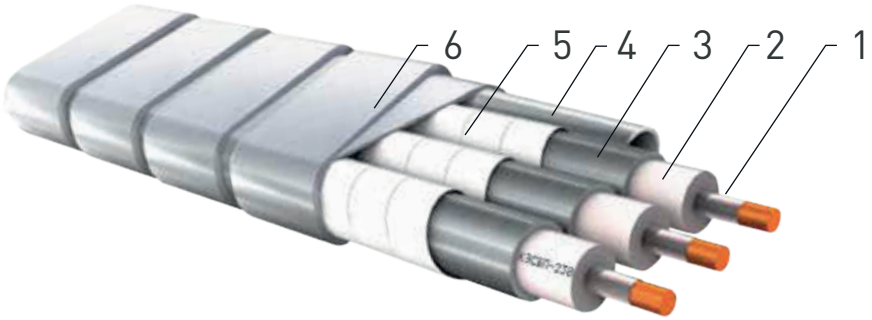
1.Tinned, solid copper conductor
2.Insulation based on ethylene–propylene rubber
3.Lead-alloy sheath
4.Bedding (thread braid and/or tape wrap)
5.Galvanized steel stainless steel tape armor

CABLES FOR OIL-SUBMERSIBLE PUMPS

КЭСБП-230 +1КТ
КЭСБкП-230 +1КТ

NEW

Oil-submersible cable with capillary pipe is designed for feeding electricity and chemical inhibitors in order to prevent deposition of salts and paraffins on pump working components and in oil wells, as well as in order to feed working fluids to hydraulic actuators – packers and pipe disconnectors.



CONSTRUCTION:

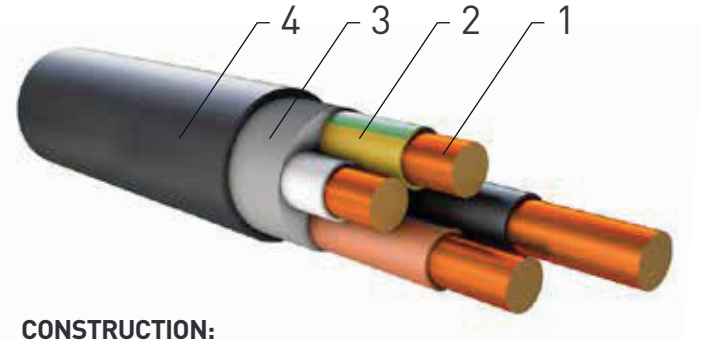
1.Solid copper conductor
2.Insulation made of a radiation-modified compound based on ethylene–propylenerubber;
3.Lead alloy coating;
4.Stainless steel capillary pipe.
5.Bedding (thread braid and/or tape wrap;
6.Galvanized steel tape armor.

ВВГ, 0.66 and 1 kV

Plastic-insulated 0.66 kV and 1 kV power cables

ВВГнг(А), 0.66 and 1 kV

Plastic-insulated flame-retardant 0.66 and 1 kV power cables



CONSTRUCTION:

1.Solid or stranded, circular or sector-shaped copper conductor,corresponding to class 1 or 2 as per GOST 22483

2.Insulation made of a low-fire-hazard PVC compound. The cable strandconsists of insulated conductors stranded together. The inner space of theinsulated-conductor core is filled with an extruded low-fire-hazard PVCcompound filler. All cores in multicore cables have the same cross section.A four-core cable with a cross section of 25 mm2 and more can have onecore of a smaller cross section (a grounding or neutral conductor)

3.Inner sheath made of a low-fire-hazard PVC compound applied over theinsulated cores so that the gaps between them are filled

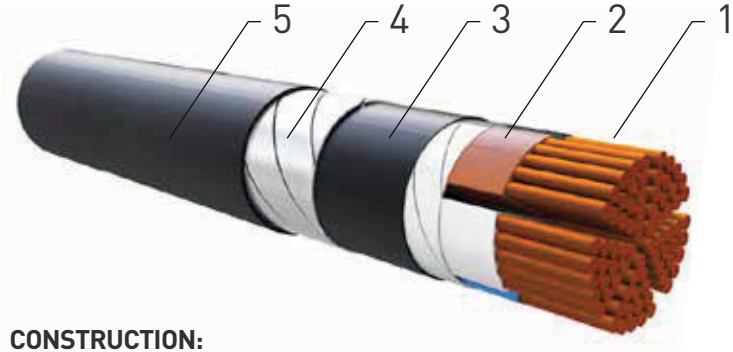
4.Outer sheath made of a low-fire-hazard PVC compound.

ВБШв, 0.66 и 1 кВ

Plastic-insulated 0.66 kV and 1 kV power cables

ВБШвнг(А), 0.66 и 1 кВ

Plastic-insulated flame-retardant 0.66 kV and 1 kV power



CONSTRUCTION:

1.Solid or stranded, circular or sector-shaped copper conductor, correspondingto class 1 or 2 as per GOST 22483

2.Insulation made of a low-fire-hazard PVC compound. The cable strandconsists of insulated conductors stranded together. The inner space of theinsulated-conductor core is filled with an extruded low-fire-hazard PVC compound filler. All cores in multicore cables have the same cross section. Afour-core cable with a cross section of 25 mm2 and more can have one coreof a smaller cross section (a grounding or neutral conductor)

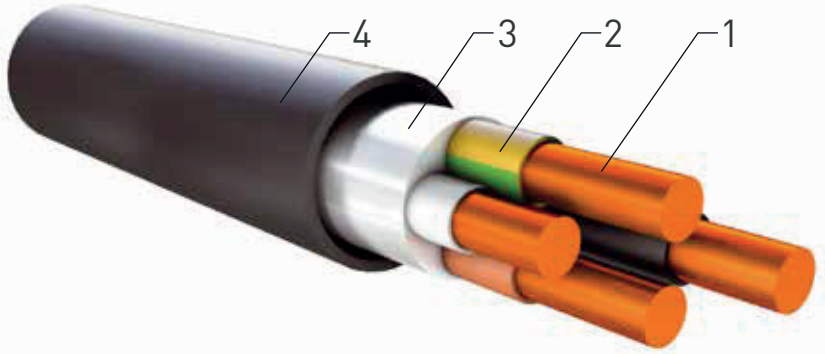
3.Inner sheath made of a low-fire-hazard PVC compound applied over theinsulated cores so that the gaps between them are filled

4.Armor (two galvanized steel strips)

5.Low-fire-hazard PVC-compound protective hose.

ВВГнг(А)-LS, 0.66 and 1 kV

Plastic-insulated low-smoke low-gas flame-retardant 0.66 kV and 1 kV power cables

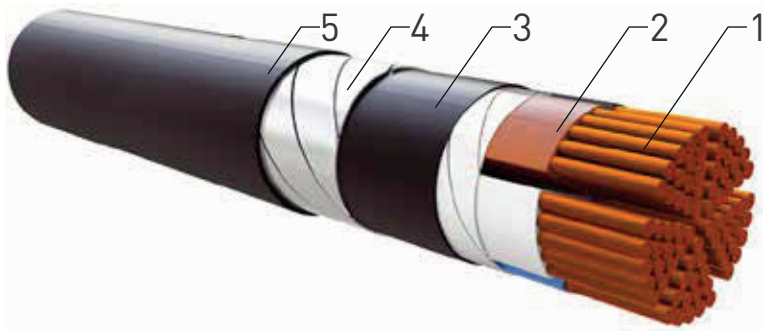


CONSTRUCTION:

1.Solid or stranded, circular or sector-shaped copper conductor, corresponding toclass 1 or 2 as per GOST 22483
2.Insulation made of a low-fire-hazard PVC compound. The cable strand consistsof insulated conductors stranded together. The inner space of the insulated-conductor core is filled with an extruded low-fire-hazard PVC compound filler.All cores in multicore cables have the same cross section. A four-core cablewith a cross section of 25 mm^2 and more can have one core of a smaller crosssection (a grounding or neutral conductor)
3.Inner sheath made of a low-fire-hazard PVC compound applied over theinsulated cores so that the gaps between them are filled
4.Outer sheath made of a low-fire-hazard PVC compound

ВБШвнг(А)-LS, 0.66 and 1 kV

Plastic-insulated low-smoke low-gas flame-retardant 0.66 kV and 1 kV power cables

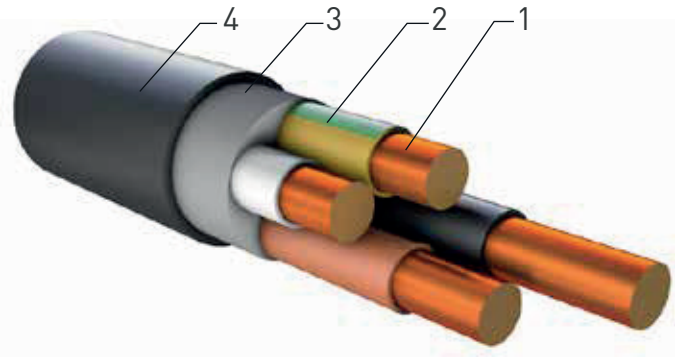


CONSTRUCTION:

1.Solid or stranded, circular or sector-shaped copper conductor, corresponding toclass 1 or 2 as per GOST 22483
2.Insulation made of a low-fire-hazard PVC compound. The cable strand consistsof insulated conductors stranded together. The inner space of the insulated-conductor core is filled with an extruded low-fire-hazard PVC compound filler.All cores in multicore cables have the same cross section. A four-core cablewith a cross section of 25 mm^2 and more can have one core of a smaller crosssection (a grounding or neutral conductor)
3.Inner sheath made of a low-fire-hazard PVC compound applied over theinsulated cores so that the gaps between them are filled
4.Armor (two galvanized steel strips)
5.Low-fire-hazard PVC-compound protective hose

ВВГнг(А)-LS-ХЛм(УФ), ВВГнг(А)-LS-ХЛ, ВВГнг(А)-LSм(УФ), 0.66 and 1 kV

Plastic-insulated, low-smoke, low-gas, flame-retardant 0.66 kV and 1 kV power cables

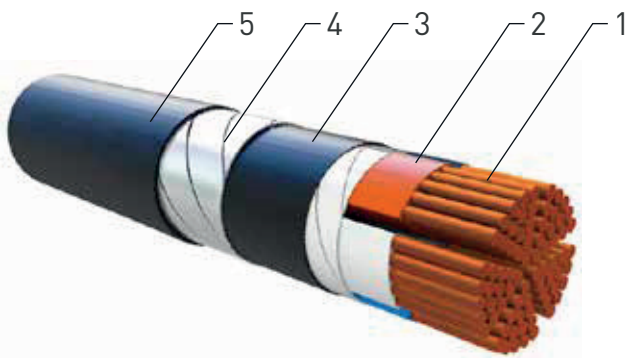


CONSTRUCTION:

1.Solid or stranded, circular or sector-shaped copper conductor, corresponding toclass 1 or 2 as per GOST 22483
2.Insulation made of a low-fire-hazard PVC compound or, for the ХЛ version, a low-fire-hazard PVC compound with a low glass transition temperature
3.Inner sheath made of a low-fire-hazard PVC compound or, for the ХЛ version, alow-fire-hazard PVC compound with a low glass transition temperature. The innersheath is applied over the insulated cores so that the gaps between them arefilled
4.Outer sheath made of a low-fire-hazard PVC compound or, for the ХЛ version, alow-fire-hazard PVC compound with a low glass transition temperature; in cablesindexed м, the outer sheath is resistant to lubricating oils and diesel fuel, and incables indexed УФ the outer sheath is UV resistant

ВБШвнг(А)-LS-ХЛ, ВБШвнг(А)-LS-ХЛм(УФ), ВБШвнг(А)-LSм(УФ), 0.66 and kV

Plastic-insulated, low-smoke, low-gas, flame-retardant 0.66 kV and 1 kV power cables



CONSTRUCTION:

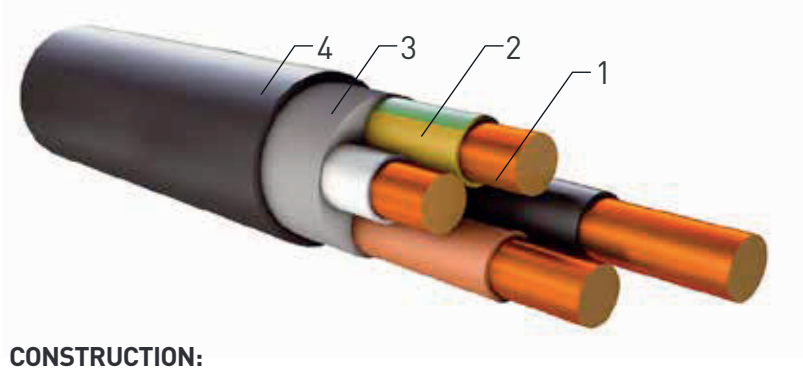
1.Solid or stranded, circular or sector-shaped copper conductor, corresponding toclass 1 or 2 as per GOST 22483
2.Insulation made of a low-fire-hazard PVC compound or, for the ХЛ version, a low-fire-hazard PVC compound with a low glass transition temperature
3.Inner sheath made of a low-fire-hazard PVC compound or, for the ХЛ version, a low-fire-hazard PVC compound with a low glass transition temperature. The innersheath is applied over the insulated cores so that the gaps between them are filled
4.Armor (two galvanized steel strips)
5.Protective hose made of a low-fire-hazard PVC compound or, for the ХЛ version, ofa low-fire-hazard PVC compound with a low glass transition temperature (in cablesindexed м, the protective hose is resistant to lubricating oils and diesel fuel; and incables indexed УФ, to ultraviolet radiation)

ВВГ-ХЛ, 0.66 and 1 kV

Plastic-insulated cold-resistant 0.66 and 1 kV power cables

ВВГнг(А)-ХЛ, 0.66 and 1 kV

Plastic-insulated flame-resistant cold-resistant 0.66 kV and 1 kV power



CONSTRUCTION:

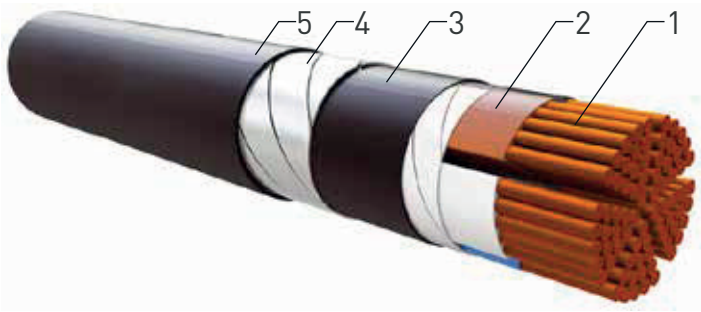
1.Solid or stranded, circular or sector-shaped copper conductor, corresponding toclass 1 or 2 as per GOST 22483
2.Insulation made of a PVC compound with a low glass transition temperature. The cable strand consists of insulated conductors stranded together and heldtogether with a polypropylene thread (for sector-shaped conductors). Insulatedconductors of multicore cables are color coded. The insulation of the neutralconductor is blue. The insulation of the grounding conductor is in two colors(green and yellow). The inner space of the insulated-conductor core is filled withan extruded PVC compound filler
3.Inner sheath made of PVC compound with a low glass transition temperature
4.Outer sheath made of PVC compound with a low glass transition temperature

ВБШв-ХЛ, 0.66 and 1 kV

Plastic-insulated cold-resistant 0.66 and 1 kV power cables

ВБШвнг(А)-ХЛ, 0.66 and 1 kV

Plastic-insulated flame-resistant cold-resistant 0.66 kV and 1 kV

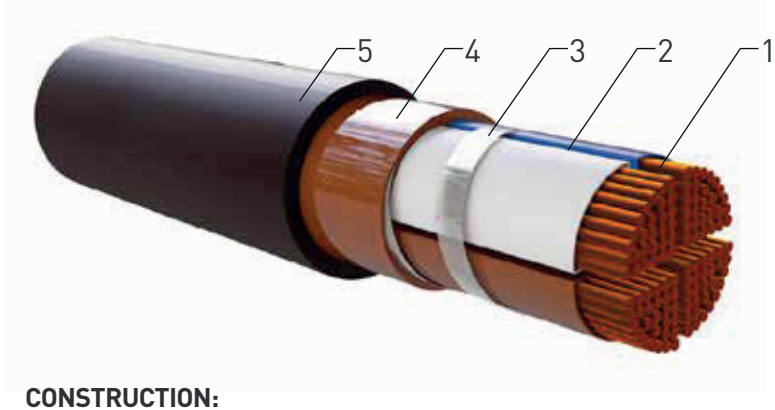


CONSTRUCTION:

1.Solid or stranded, circular or sector-shaped copper conductor, corresponding toclass 1 or 2 as per GOST 22483
2.Insulation made of a PVC compound with a low glass transition temperature. Thecable strand consists of insulated conductors stranded together and heldtogether with a polypropylene thread (for sector-shaped conductors). Insulatedconductors of multicore cables are color coded. The insulation of the neutralconductor is blue. The insulation of the grounding conductor is in two colors(green and yellow). The inner space of the insulated-conductor core is filled withan extruded PVC compound filler
3.Inner sheath made of PVC compound with a low glass transition temperature
4.Armor (two galvanized steel strips)
5.Protective hose (PVC compound with a low glass transition temperature)

ППГнг(А)-HF, ППГЭнг(А)-HF, ПБПнг(А)-HF, 0.66 and 1 kV

Flame-retardant 0.66 kV and 1 kV power cables with insulation and sheaths made from halogen-free polymer compositions

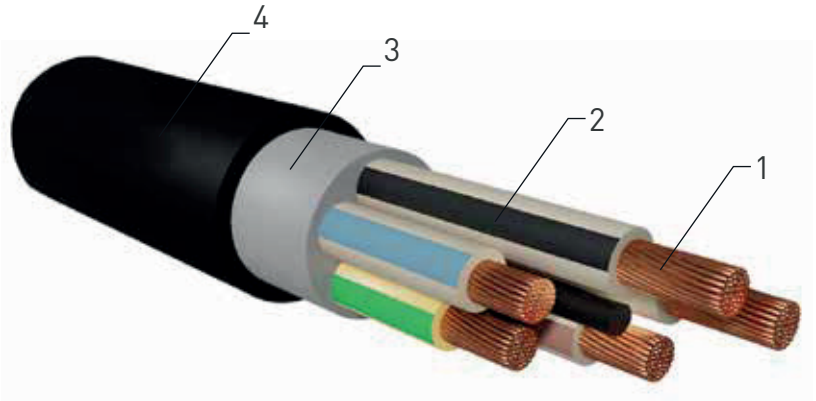


CONSTRUCTION:

1.Solid or stranded, circular or sector-shaped copper conductor, corresponding toclass 1 or 2 as per GOST 22483
2.Insulation (a halogen-free polymer composition)
3.Cable strand consisting of insulated conductors stranded together and held together with a polypropylene thread (for sector-shaped conductors). Insulated conductors ofmulticore cables are color coded. The insulation of the neutral conductor is blue.The insulation of the grounding conductor is in two colors (green and yellow). Theinner space of the insulated-conductor core is filled with an extruded polymer-composition filler. All cores in multicore cables must have the same cross section. Afour-core cable with a nominal cross section of 25 mm^2 and more can have one core of a smaller cross section (a grounding or neutral conductor)
4.Inner sheath made of a halogen-free polymer composition applied over theinsulated cores so that the gaps between them are filled
5.Outer sheath made of a halogen-free polymer composition

КГВВ, КГВВнг(А), КГВВнг(А)-L, 0.66 and 1 kV

Plastic-insulated flexible 0.66 kV and 1 kV cable

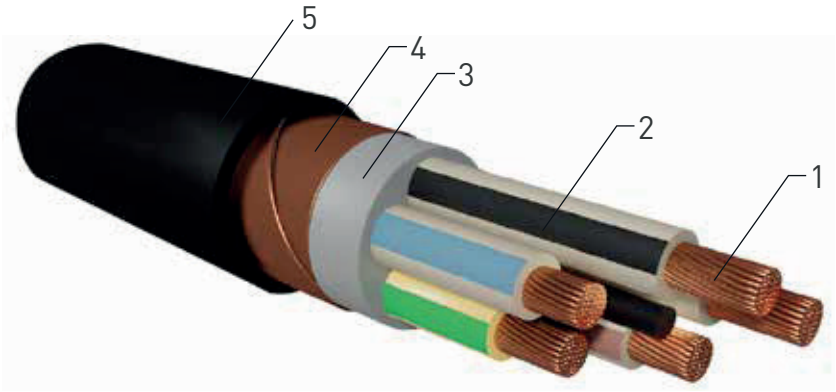


CONSTRUCTION:

1.Stranded, circular copper conductor corresponding to flexibility class 5 as perGOST 22483
2.Insulation made of a PVC compound. The cable strand consists of insulatedconductors stranded together. The inner space of the insulated-conductor core isfilled with an extruded PVC compound filler. All cores in multicore cables have thesame cross section. A four-core cable with a cross section of 25 mm^2 and more can have one core of a smaller cross section (a grounding or neutral conductor)
3.Inner sheath made of PVC compound applied over the insulated cores so that thegaps between them are filled
4.Outer sheath made of PVC compound

КГВЭВ, КГВЭВнг(А), КГВЭВнг(А)-LS, 0.66 and 1 kV

Plastic-insulated flexible 0.66 kV and 1 kV cables



CONSTRUCTION:

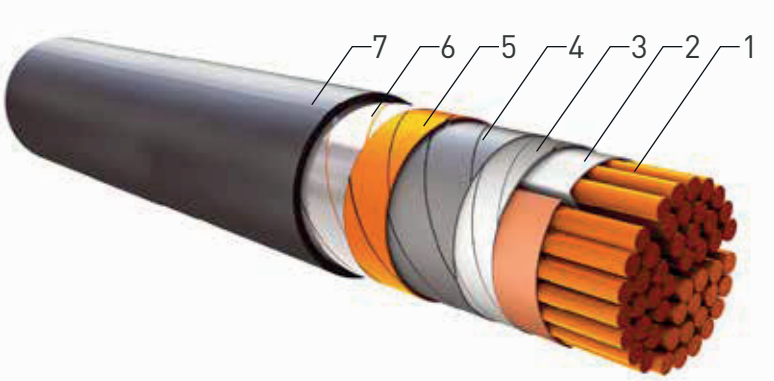
1.Stranded circular copper conductor corresponding to flexibility class 5 as perGOST 22483
2.Insulation made of a PVC compound. The cable strand consists of insulatedconductors of two-, three-, four-, or five-core cables stranded together. The innerspace of the insulated-conductor core is filled with an extruded PVC compoundfiller. All cores in multicore cables have the same cross section. A four-corecable with a cross section of 25 mm^2 and more can have one core of a smallercross section (a grounding or neutral conductor)
3.Inner sheath (PVC compound)
4.Shield (a copper tape wrapped over the inner sheath)
5.Outer sheath (PVC compound)

ВВГ, 6 kV

Plastic-insulated 6 kV power cables

ВВГнг(А), 6 kV

Plastic-insulated flame-retardant 6 kV power cables

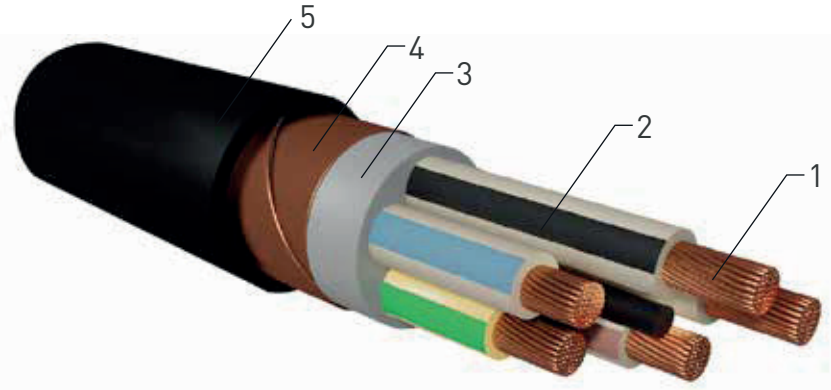


CONSTRUCTION:

1.Stranded circular/sector-shaped copper conductor corresponding to class 2 asper GOST 22483
2.Insulation made of a PVC compound. The cable strand consists of threeinsulated conductors of the same cross section stranded together. The innerspace of the insulated-conductor core is filled with an extruded PVC compoundfiller
3.Inner sheath (for circular-core cables) made of PVC compound applied over theinsulated cores so that the gaps between them are filled
4.Conductive shield (a conductive nonwoven-fabric tape wrap)
5.Metal shield made of two copper tapes. The nominal cross section of the metal shield is 16 mm^2 for cables with a core cross section of 16–120 mm^2; 25 mm^2 for cables with a core cross section of 150–240 mm^2
6.Separator (polyethylene terephthalate film wrapped around the cores)
7.Outer sheath (PVC compound)

КГВЭВ, КГВЭВнг(А), КГВЭВнг(А)-LS, 0.66 and 1 kV

Plastic-insulated flexible 0.66 kV and 1 kV cables



CONSTRUCTION:

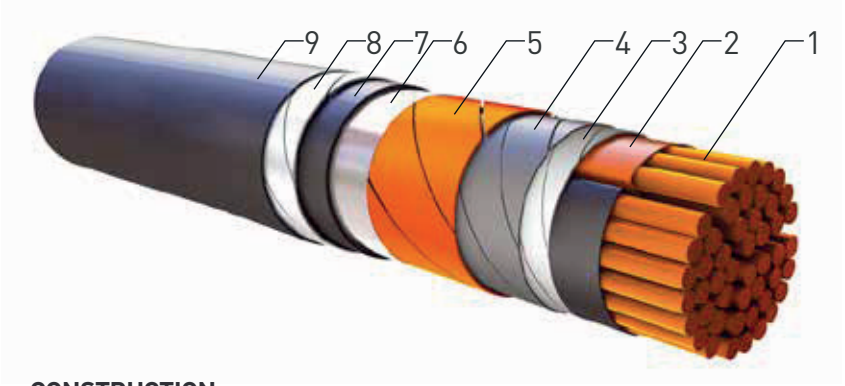
1.Stranded circular copper conductor corresponding to flexibility class 5 as per GOST 22483
2.Insulation made of a PVC compound. The cable strand consists of insulatedconductors of two-, three-, four-, or five-core cables stranded together. The innerspace of the insulated-conductor core is filled with an extruded PVC compoundfiller. All cores in multicore cables have the same cross section. A four-corecable with a cross section of 25 mm^2 and more can have one core of a smallercross section (a grounding or neutral conductor)
3.Inner sheath (PVC compound)
4.Shield (a copper tape wrapped over the inner sheath)
5.Outer sheath (PVC compound)

ВБВ, 6 kV

Plastic-insulated 6 kV power cables

ВБВнг(А), 6 kV

Plastic-insulated flame-retardant 6 kV power cables



CONSTRUCTION:

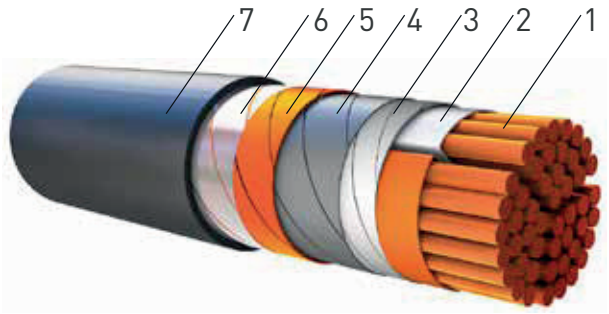
1.Stranded, circular/sector-shaped copper conductor corresponding to class 2 as per GOST 22483
2.Insulation made of a PVC compound. The cable strand consists of three insulatedconductors of the same cross section stranded together. The inner space of theinsulated-conductor core is filled with an extruded PVC compound filler
3.Inner sheath (for circular-core cables) made of PVC compound applied over theinsulated cores so that the gaps between them are filled
4.Conductive shield (a conductive nonwoven-fabric tape wrap)
5.Metal shield made of two copper tapes. The nominal cross section of the metalshield is 16 mm^2 for cables with a core cross section of 16–120 mm^2; 25 mm^2 forcables with a core cross section of 150–240 mm^2
6.Separator (polyethylene terephthalate film wrapped around the cores)
7.Armor bedding made of PVC compound

ВВГ-ХЛ, 6 kV

Plastic-insulated cold-resistant 6 kV power cables

ВВГнг(А)-ХЛ, 6 kV

Plastic-insulated flame-resistant cold-resistant 6 kV power cables



CONSTRUCTION:

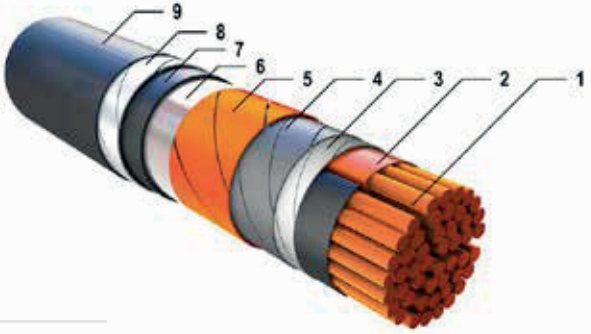
1.Stranded circular/sector-shaped copper conductor corresponding to class 2 as per GOST 22483
2.Insulation made of a PVC compound with a low glass transition temperature. Thecable strand consists of three insulated conductors of the same cross sectionstranded together. The inner space of the insulated-conductor core is filled with anextruded PVC compound filler
3.Inner sheath (for circular-core cables) made of PVC compound with a low glasstransition temperature, applied over the insulated cores so that the gaps betweenthem are filled
4.Conductive shield (a conductive nonwoven-fabric tape wrap)
5.Metal shield made of two copper tapes. The nominal cross section of the metalshield is 16 mm^2 for cables with a core cross section of 16–120 mm^2; 25 mm^2 forcables with a core cross section of 150–240 mm^2
6.Separator (polyethylene terephthalate film wrapped around the cores)
7.Outer sheath (PVC compound with a low glass transition temperature)

ВБВ-ХЛ, 6 kV

Plastic-insulated cold-resistant 6 kV power cables

ВБВнг(А)-ХЛ, 6 kV

Plastic-insulated flame-resistant cold-resistant 6 kV power cables

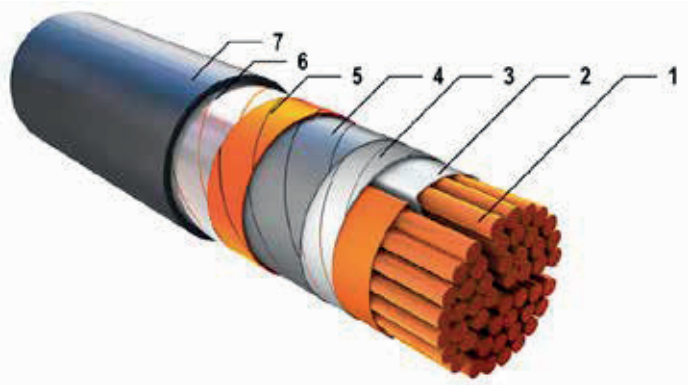


CONSTRUCTION:

1.Stranded circular/sector-shaped copper conductor corresponding to class 2 as per GOST 22483
2.Insulation made of a PVC compound with a low glass transition temperature. Thecable strand consists of three insulated conductors of the same cross sectionstranded together. The inner space of the insulated-conductor core is filled with anextruded PVC compound filler
3.Inner sheath (for circular-core cables) made of PVC compound with a low glasstransition temperature, applied over the insulated cores so that the gaps betweenthem are filled
4.Conductive shield (a conductive nonwoven-fabric tape wrap)
5.Metal shield made of two copper tapes. The nominal cross section of the metalshield is 16 mm^2 for cables with a core cross section of 16–120 mm^2; 25 mm^2 forcables with a core cross section of 150–240 mm^2
6.Separator (polyethylene terephthalate film wrapped around the cores)
7.Armor bedding made of PVC compound with a low glass transition temperature
8.Armor consisting of two galvanized steel strips
9.Outer sheath made of PVC compound with a low glass transition temperature

ВВГнг(А)-LS, 6 kV

Plastic-insulated low-smoke low-gas flame-retardant 6 kV power cables

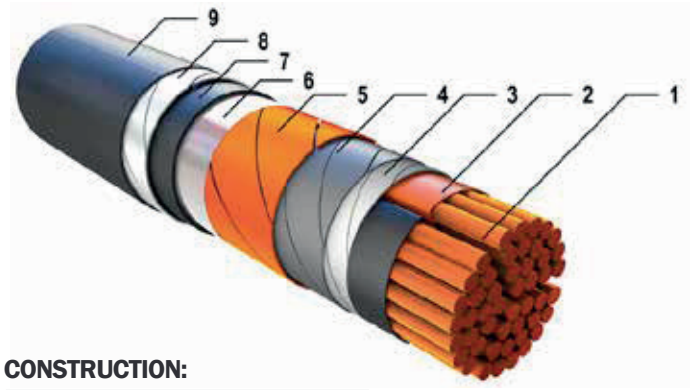


CONSTRUCTION:

1.Stranded circular/sector-shaped copper conductor corresponding to class 2 asper GOST 22483
2.Insulation made of a low-fire-hazard PVC compound. The cable strand consistsof three insulated conductors of the same cross section stranded together. Theinner space of the insulated-conductor core is filled with an extruded low-fire-hazard PVC compound filler
3.Inner sheath (for circular-core cables) made of a low-fire-hazard PVC compound, applied over the insulated cores so that the gaps between them are filled
4.Conductive shield (a conductive nonwoven-fabric tape wrap)
5.Metal shield made of two copper tapes. The nominal cross section of the metalshield is 16 mm^2 for cables with a core cross section of 16–120 mm^2; 25 mm^2 for cables with a core cross section of 150–240 mm^2
6.Separator (glass tape wrap)
7.Outer sheath made of a low-fire-hazard PVC compound

ВБВнг(А)-LS, 6 kV

Plastic-insulated low-smoke low-gas flame-retardant 6 kV power cables



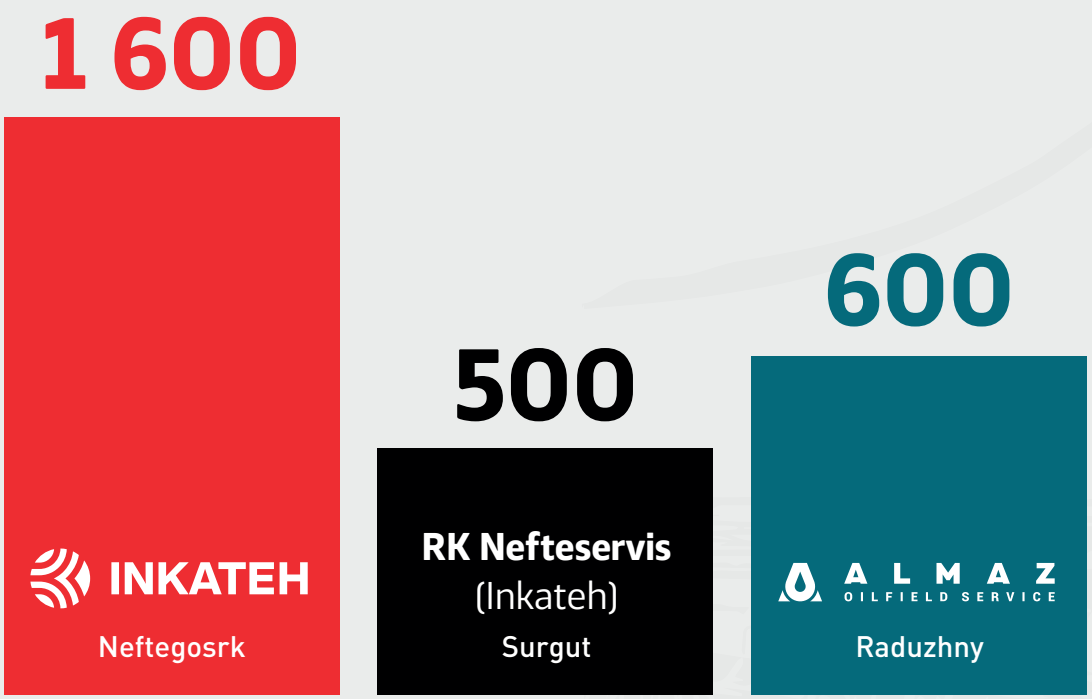
CONSTRUCTION:

1.Stranded circular/sector-shaped copper conductor corresponding to class 2 asper GOST 22483
2.Insulation made of a low-fire-hazard PVC compound. The cable strand consistsof three insulated conductors of the same cross section stranded together. Theinner space of the insulated-conductor core is filled with an extruded low-fire-hazard PVC compound filler
3.Inner sheath (for circular-core cables) made of a low-fire-hazard PVC compound, applied over the insulated cores so that the gaps between them are filled
4.Conductive shield (a conductive nonwoven-fabric tape wrap)
5.Metal shield made of two copper tapes. The nominal cross section of the metalshield is 16 mm^2 for cables with a core cross section of 16–120 mm^2; 25 mm^2 for cables with a core cross section of 150–240 mm^2
6.Separator (glass tape wrap)
7.Armor bedding made of a low-fire-hazard PVC compound
8.Armor consisting of two galvanized steel strips
9.Outer sheath made of a low-fire-hazard PVC compound

Production of oil-submersible Cables

2 700 km/mo.

Oil-submersible Cable Production Capacity (km/month):



Oil-submersible Equipment Reconstruction Capacity

We disassemble obsolete equipment and equipment not subject to repairs and restoration:

- Submersible Electric Motors
- Transformers
- Pumps
- Control Stations

Reconstruction of Oil-submersible Cables

5 000 MT/Mo.

2 Sites	Togliatti	Surgut

RECONSTRUCTION OF OIL-SUBMERSIBLE EQUIPMENT

1 Site	Samara

RECONSTRUCTION OF OIL-SUBMERSIBLE CABLES

Reconstruction of oil-submersible cables

RK-Nefteservis renders services for covering the demands of enterprises for oil-submersible cables concluding agreements for reconstruction/ modernization/recycling.

RK-Nefteservis and INKATEH together carry out a full cycle of operations for rendering such services.

Reconstruction services are applied to the complete range of oil-submersible cables offered on the market, with all temperatures (90 to 230°C).

Taking into account the geographical proximity of our enterprises to main oil-producing regions of our country, we offer a unique opportunity and perspective of developing long-term mutually beneficial cooperation implying the process of reconstruction of oil-submersible cables.

Advantages of reconstruction of oil-submersible cables:

- **Independence from world prices for copper**
- **Savings of working capital**
- **Optimization of management processes,absence of the need for dual control oversales of used oil-submersible cables and overpurchase of the new ones**
- **Full technological cycle, quality assurance ofthe reconstructed cable**

Full Cycle Waste Disposal

AKRON HOLDING is a full-service waste disposal company in the oil and gas field:

- **Purchase of oil-submersible pumps from production fields and wells**
- **Circulation of oil-submersible cables. Reconstruction, exchange, anddisposal of cables**
- **•Purchase of ferrous and non-ferrous scrap**

Cable reconstruction/modernization/recycling implies decomposing them into the following utility components: Copper, plastic insulation, steel armor.

Copper is used for downstream production of new cables and the remaining components are sold on secondary raw materials markets.

These cables are not classified as hazardous wastes, so there are no special requirements to their disposal.

МИНИСТЕРСТВО ПРОМЫШЛЕННОСТИ И ТОРГОВЛИ САМАРСКОЙ ОБЛАСТИ

443068, г. Самара, ул. Скляренко, 20
Тел. (846) 265-41-35, факс: (846) 265-41-40
E- mail: minprom@samregion.ru
www.minprom.samregion.ru

22.03.2021 № 32-05-01/123
на №_____от _____

Выписка

из реестра лицензий по состоянию на 15:30 «22» марта 2021 года

1. Статус лицензии: **Действующая**

(действующая/приостановлена/приостановлено частично/прекращена)

2. Регистрационный номер лицензии: **834**

3. Дата предоставления лицензии: **22.03.2021**

4. Полное и (в случае, если имеется) сокращенное наименование, в том числе фирменное наименование, и организационно-правовая форма юридического лица, адрес его места нахождения, государственный регистрационный номер записи о создании юридического лица:

Общество с ограниченной ответственностью «ИННОВАЦИОННЫЕ КАБЕЛЬНЫЕ ТЕХНОЛОГИИ» (ООО «ИНКАТЕХ»), 445007, Самарская обл., г. Тольятти, ул. Новозаводская, д. 2А, здание РМЦ (лит.А44А51), этаж 3, офис 314. ОГРН 1206300062319

(заполняется в случае, если лицензиатом является юридическое лицо)

5. Полное и (в случае, если имеется) сокращенное наименование иностранного юридического лица, полное и (в случае, если имеется) сокращенное наименование филиала иностранного юридического лица, аккредитованного в соответствии с Федеральным законом «Об иностранных инвестициях в Российской Федерации», адрес (место нахождения) филиала иностранного юридического лица на территории


AKRON
HOLDING
akron-holding.ru
SKF
group

SKT group

SKT GROUP features:

2 Production sites

140 Process lines

1 000+ Employees

1 000+ Additional jobs in the near future

450+ Partners in Russia, Belarus, Kazakhstan, Kyrgyz Republic, Romania, Czech Republic, and the Baltic States

Research and development laboratory and close collaboration with R&D institutes

Close cooperation with operating oil companies:

ROSNEFT

GAZPROM

LUKOIL

TRANSNEFT

SURGUTNEFTEGAZ

SKT GROUP manages integrates and manages assets and production capacities of three major enterprises of the region:

ПСКОВКАБЕЛЬ

ТЭСО
ПСКОВЭЛЕКТРОСВАР
ЗАКРЫТОЕ АКЦИОНЕРНОЕ ОБЩЕСТВО

Псков
ГЕОКАБЕЛЬ

WE PRODUCE:

- **Geophysical load carrying cables**
- **High pressure flexible piping**
- **Capillary pipelines**
- **Products and equipment for the oil and gas service companies**
- **Welding machines and welding complexes**
- **Transformers**
- **Power and instrumentation cables**
- **Winding wires**

FLEXIBLE REINFORCED POLYMER PIPES

ТУ 22.21.21-127-32990926-2022

Flexible reinforced polymer pipes are intended for high-pressure transport of oil products, gas, water, and other fluids.

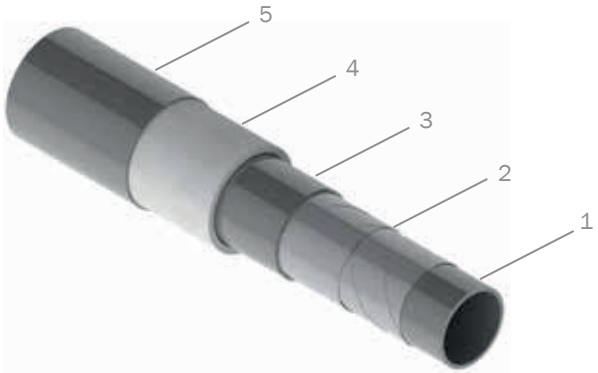
CONSTRUCTION:

1 – polymer pipe (flow channel)
2 – reinforcing elements
3 – outer polymer casing

FLEXIBLE REINFORCED POLYMER PIPES WITH A THERMAL INSULATION LAYER

ТУ 22.21.21-127-32990926-2022

Flexible reinforced polymer pipes with a thermal insulation layer are intended for high-pressure transport of oil products, gas, water, and other fluids in cold weather conditions.



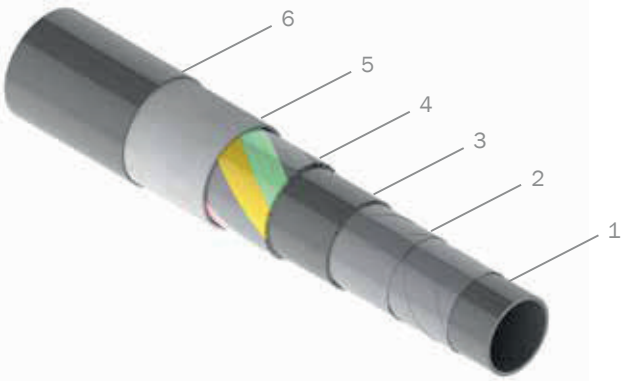
CONSTRUCTION:

1 – polymer pipe (flow channel)
2 – reinforcing elements
3 – intermediate polymer casing
4 – thermal insulation layer
5 – outer polymer casing

ELECTRIC-HEATED FLEXIBLE REINFORCED POLYMER PIPES

ТУ 22.21.21-127-32990926-2022

Electric-heated flexible reinforced polymer pipes are intended for high-pressure transport of oil products, gas, water, and other fluids in cold weather conditions.

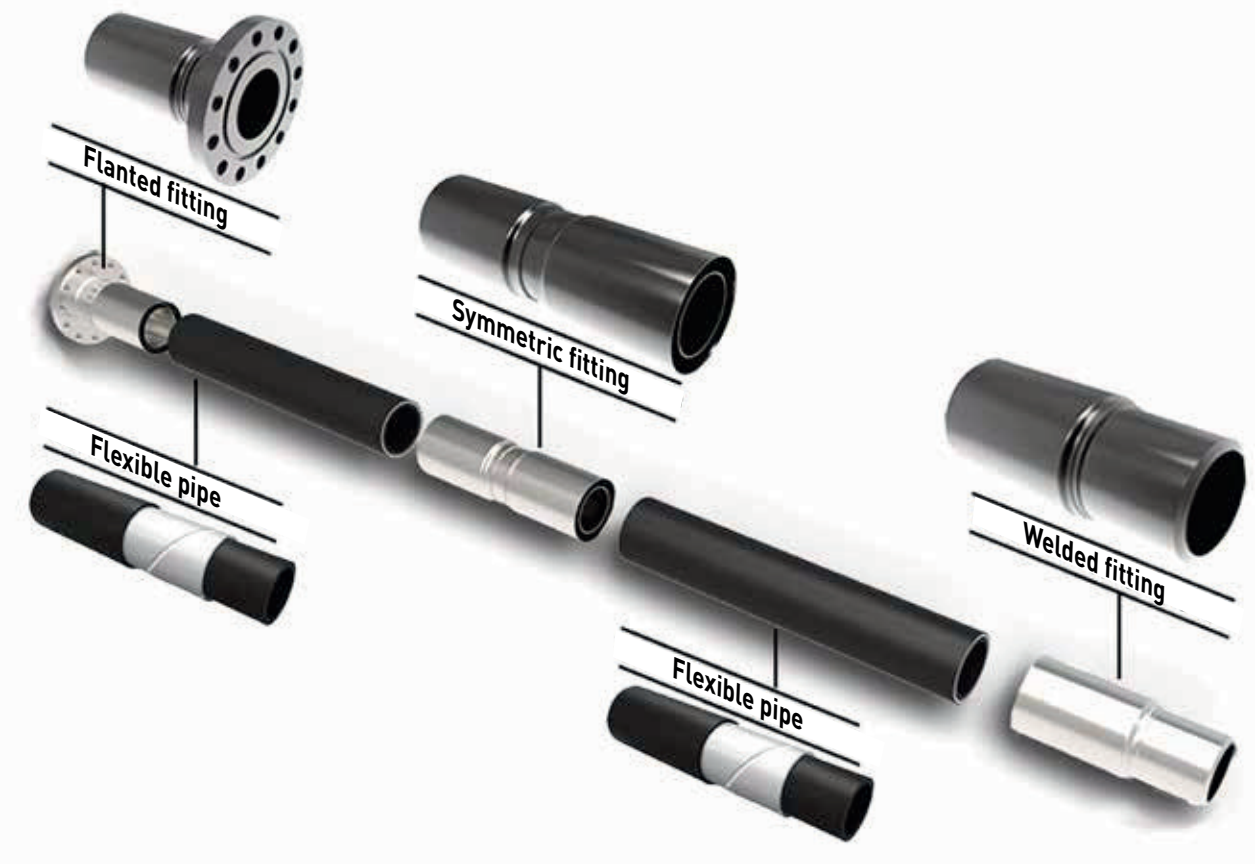


CONSTRUCTION:

1 - polymer pipe (flow channel)
2 – reinforcing elements
3 – intermediate polymer casing
4 – heating elements
5 – thermal insulation layer
6 – outer polymer casing

FITTINGS AND INSTALLATION EQUIPMENT FOR FLEXIBLE REINFORCED POLYMER PIPES

Fittings are intended for connection of flexible reinforced polymer pipe sections to each other and to production equipment.



Hydraulic Press

Hydraulic Press

Installation of fittings

Cable and Piping System

TAKE-UP AND PAY-OFF DEVICE

Приемно-отдающее устройство предназначено для работы с кабельно-трубными системами в режиме намотки и размотки.

Parameter	Value
Maximum spool diameter, mm	3 900
Maximum spool weight, kg	15 000
Maximum diameter of flexible reinforced polymer pipe being used, mm	220
Maximum pulling capacity, MT	2,5
Winding speed, m/min	7,5/15

*Take-up and pay-off device is powered by a diesel generator.

PAY-OFF DEVICE

Pay-off device is intended for unwinding of cable and pipes systems.

Parameter	Value
Maximum spool diameter, mm	3 900
Maximum spool weight, kg	15 000

*Pay-off device is equipped with a band brake for smooth unreeling of flexible reinforced polymer pipe.

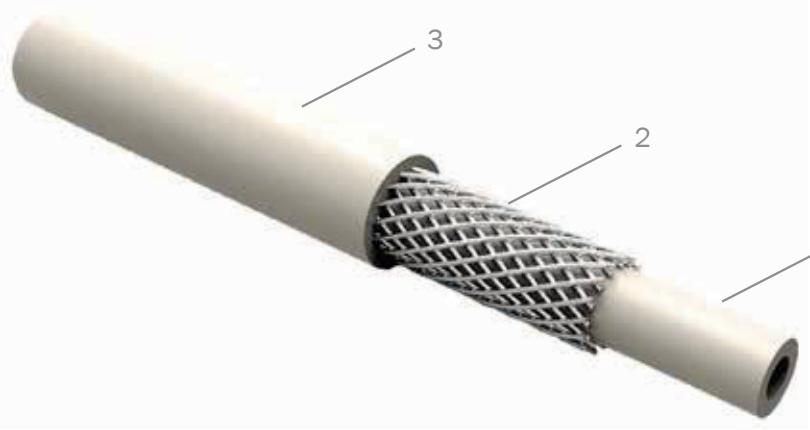
PIPE HEATING STATION

Pipe heating station is intended for control of heating sy

ТРУБОПРОВОДЫ КАПИЛЛЯРНЫЕ ПОЛИМЕРНЫЕ

ТУ 22.21.21-128-32990926-2021

Polymer capillary high-pressure pipelines are intended for supply of chemical agents to oil wells.



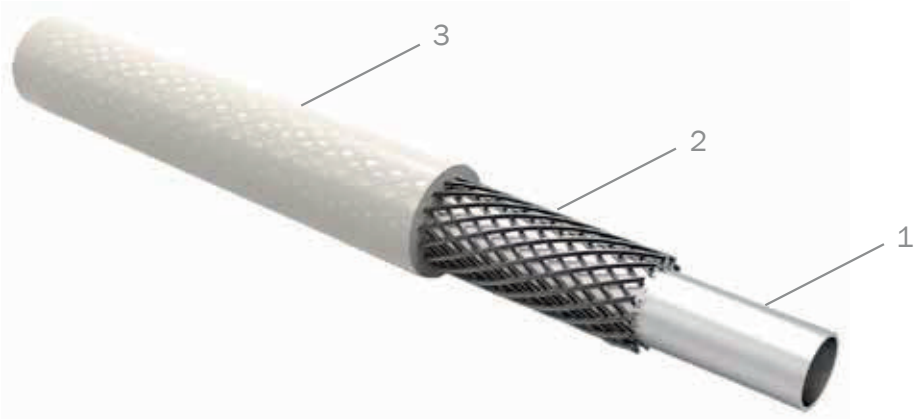
CONSTRUCTION:

1 – polymer pipe
2 – reinforcing layers of armor
3 – outer polymer casing

POLYMER AND METAL CAPILLARY PIPELINES

ТУ 22.21.21-128-32990926-2021

Polymer and metal capillary high-pressure pipelines are intended for supply of chemical agents to oil wells.



CONSTRUCTION:

1 – stainless steel pipe
2 – reinforcing layers of armor
3 – outer polymer casing

END CONNECTION ELEMENT

End connection elements are intended for joining capillary pipelines and spray valves, dosing stations, injection devices, etc.

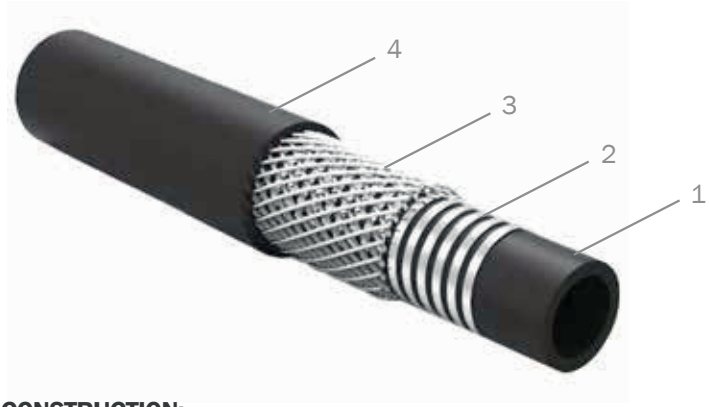
MAINTENANCE CONNECTION ELEMENT

Maintenance connection elements are intended for joining two capillary pipelines.

FLEXIBLE POLYMER AND STEEL PIPES

ТУ 22.21.21-128-32990926-2021

Flexible polymer and steel high-pressure pipes are intended for well operation, survey, development, and workover.



CONSTRUCTION:

1 – polymer pipe
2 – reinforcing element
3 – reinforcing layer of armor
4 – outer polymer casing

ШЛАНГОКАБЕЛИ

ТУ 22.21.21-128-32990926-2021

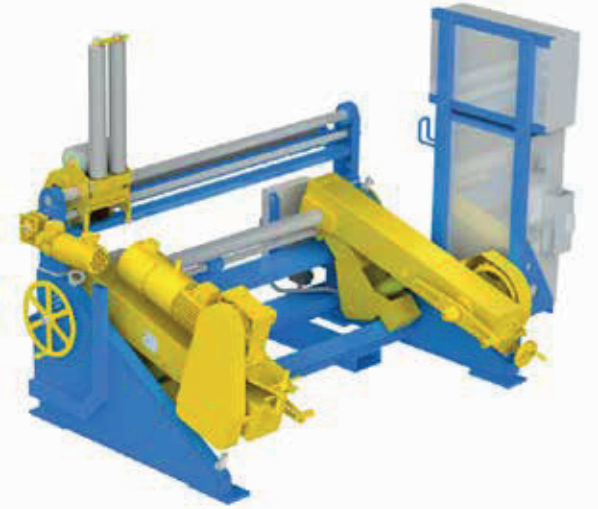
Umbilical cables are intended for well servicing and surveying, well operation with submersible electric centrifugal pump systems.

CONSTRUCTION:

1 – polymer pipe
2 – reinforcing elements
3 – reinforcing layers of armor
4 – conductors
5 – outer polymer casing

CONNECTION ELEMENTS AND OPERATION EQUIPMENT FOR POLYMER AND STEEL PIPES AND UMBILICAL CABLES

TAKE-UP AND PAY-OFF DEVICE



Take-up and pay-off device is intended for taking up and organized placement of flexible polymer and steel pipes on a spool and for uniform paying off of flexible polymer and steel pipes from the spool.

END CONNECTION ELEMENT

End connection elements are intended for joining flexible polymer and steel pipes or umbilical cables to down-hole tools, submersible electric centrifugal pumps, auxiliary tools.

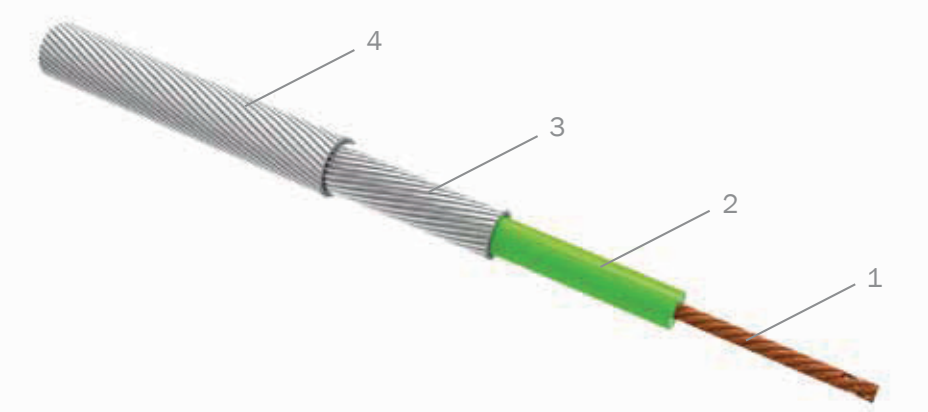
INJECTOR

Injector is intended for running flexible polymer and steel pipes into oil and gas wells and retrieving these pipes out of the wells.

GENERAL-PURPOSE SINGLE CORE ARMORED LOAD BEARING GEOPHYSICAL CABLES

ТУ 27.32.13.195-119-32990926-2019

These cables are intended for lowering and rising geophysical tools and equipment, their powering, and data communication between surface equipment and downhole devices.



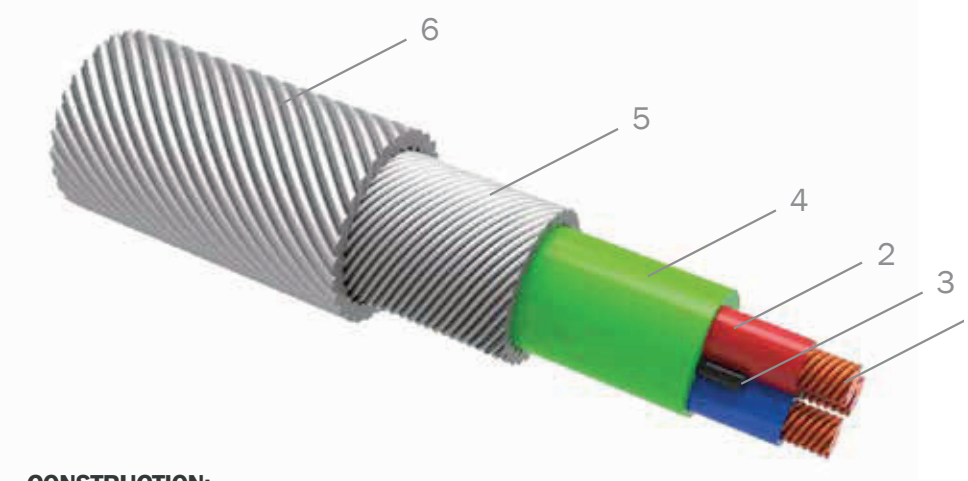
CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – first layer of armor
4 – second armored layer

GENERAL-PURPOSE THREE CORE ARMORED LOAD BEARING GEOPHYSICAL CABLES

ТУ 27.32.13.195-119-32990926-2019

These cables are intended for lowering and rising geophysical tools and equipment, their powering, and data communication between surface equipment and downhole devices.



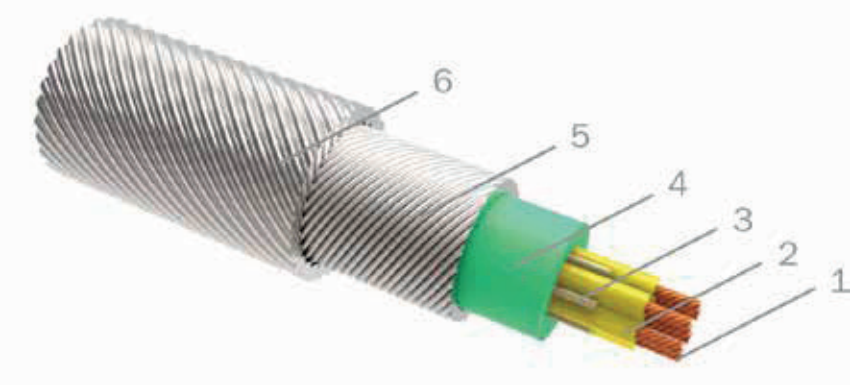
CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – interphase filler
4 – inner polymer sheath
5 – first layer of armor
6 – second armored layer

GENERAL-PURPOSE SEVEN CORE ARMORED LOAD BEARING GEOPHYSICAL CABLES

ТУ 27.32.13.195-119-32990926-2019

These cables are intended for lowering and rising geophysical tools and equipment, their powering, and data communication between surface equipment and downhole devices.



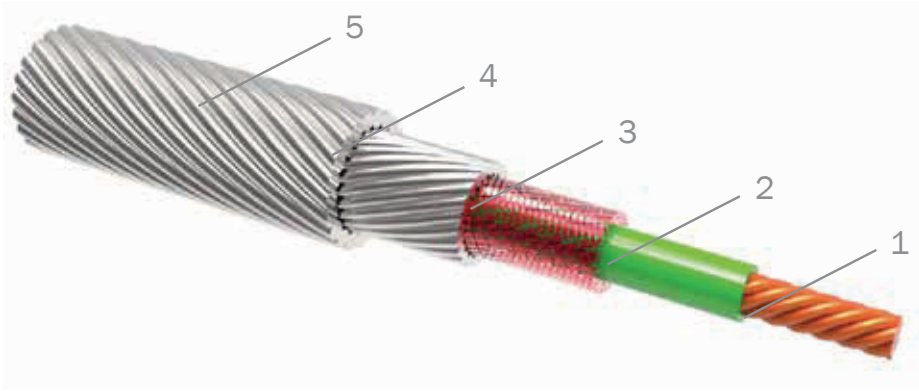
CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – interphase filler
4 – inner polymer sheath
5 – first layer of armor
6 – second armored layer

COAXIAL ARMORED LOAD BEARING GEOPHYSICAL CABLES

ТУ 27.32.13.195-119-32990926-2019

These cables are intended for lowering and rising geophysical tools and equipment, their powering, and data communication between surface equipment and downhole devices.

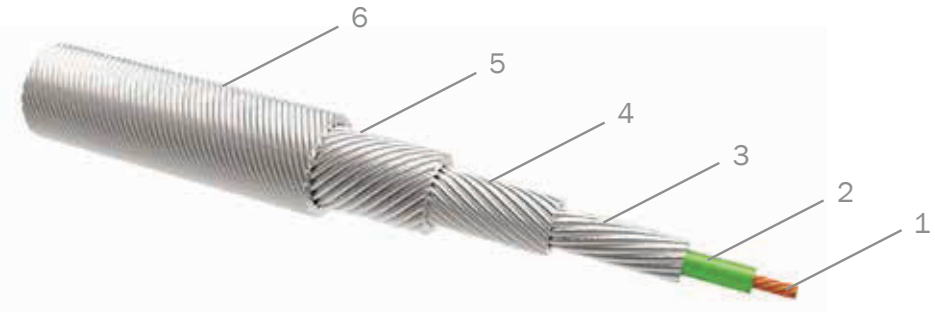


CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – shield with holding film wrapping
4 – first layer of armor
5 – second armored layer

ARMORED LOAD BEARING GEOPHYSICAL CABLES FOR SWABBING

ТУ 27.32.13.195-119-32990926-2019



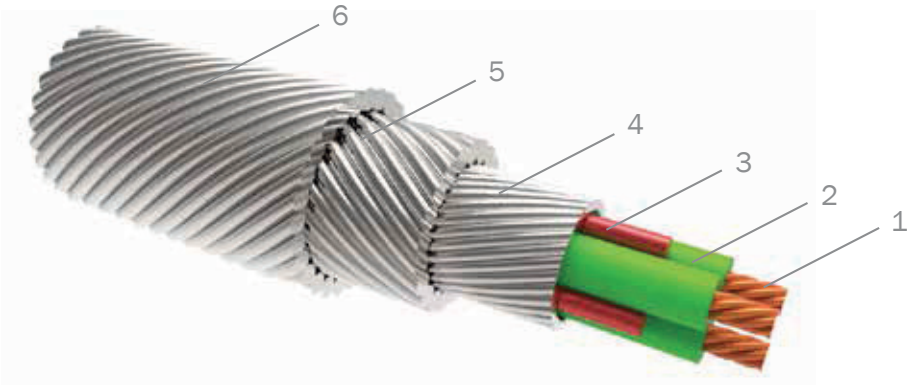
CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – first armored layer
4 – second armored layer
5 – third armored layer
6 – fourth armored layer

GENERAL-PURPOSE REINFORCED ARMORED LOAD BEARING GEOPHYSICAL CABLES

ТУ 27.32.13.195-119-32990926-2019

These cables are intended for lowering and rising geophysical tools and equipment, their powering, and data communication between surface equipment and downhole devices.



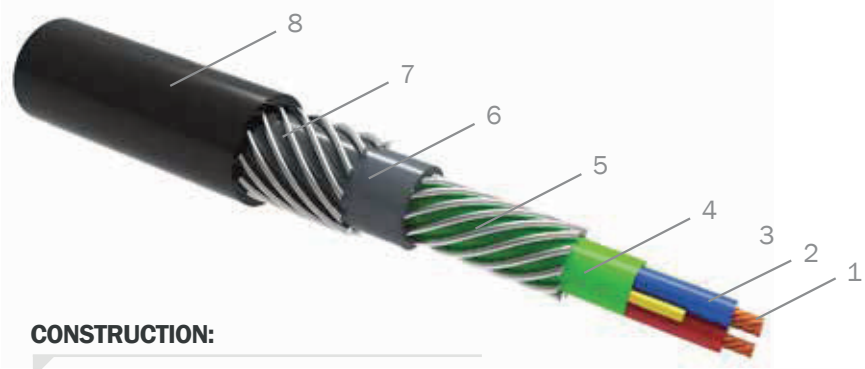
CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – interphase filler
4 – first armored layer
5 – second armored layer

GENERAL-PURPOSE LOAD BEARING GEOPHYSICAL CABLES WITH ARMORED SHEATH

ТУ 27.32.13.195-119-32990926-2019

These cables are intended for lowering and rising geophysical tools and equipment, their powering, and data communication between surface equipment and downhole devices in corrosive wells.



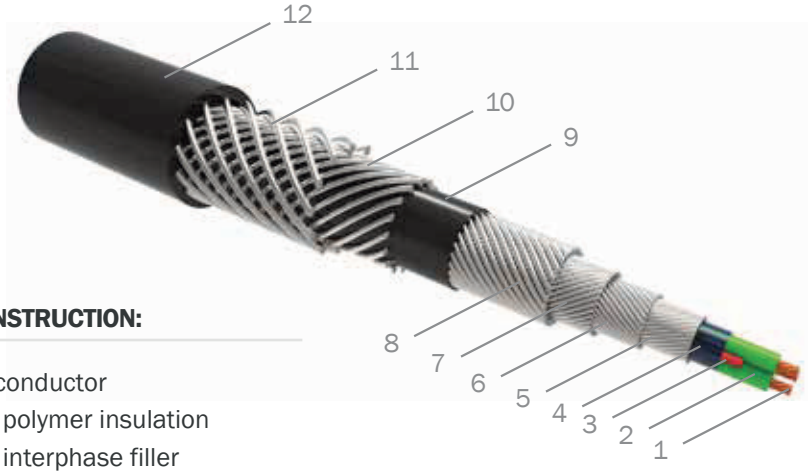
CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – interphase filler
4 – first intermediate polymer sheath
5 – first armored layer
6 – second intermediate polymer sheath
7 – second armored layer
8 – outer polymer sheath

GENERAL-PURPOSE LOAD BEARING GEOPHYSICAL CABLES WITH ARMORED SHEATH

ТУ 27.32.13.195-119-32990926-2019

These cables are intended for lowering and rising geophysical tools and equipment, their powering, and data communication between surface equipment and downhole devices for surveying deviated and horizontal wells.



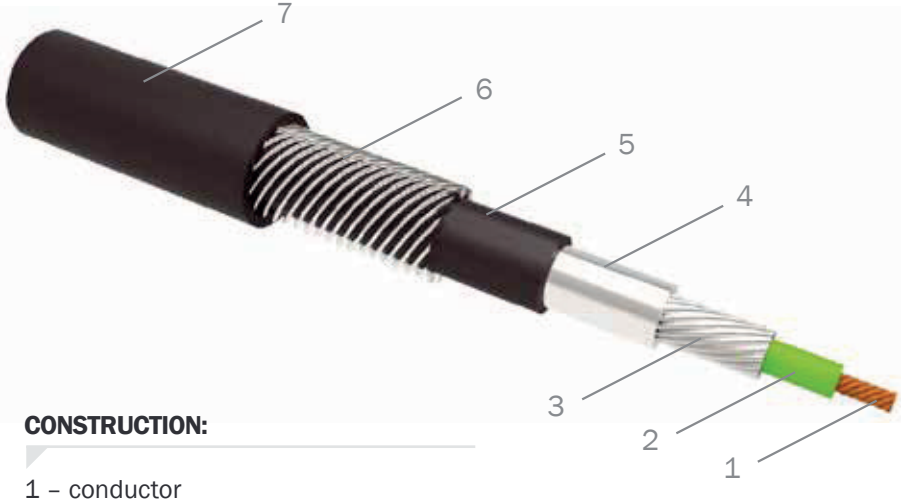
CONSTRUCTION:

1 - conductor
2 – polymer insulation
3 – interphase filler
4 – inner polymer sheath
5 – first armored layer
6 – second armored layer
7 – third armored layer
8 – fourth armored layer
9 – second inner polymer sheath
10 – fifth armored layer
11 – sixth armored layer
12 – outer polymer sheath

ELECTRIC CABLES FOR TELEMETRY

CUSTOMIZED PRODUCTION

These electric cables are intended for telemetering in the course of surveying oil and gas wells.



CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – first armored layer
4 – steel tube
5 – intermediate polymer sheath
6 – second armored layer
7 – outer polymer sheath

FIBER OPTICAL CABLES FOR TELEMETRY

CUSTOMIZED PRODUCTION

These fiber optical cables are intended for telemetering in the course of surveying oil and gas wells.

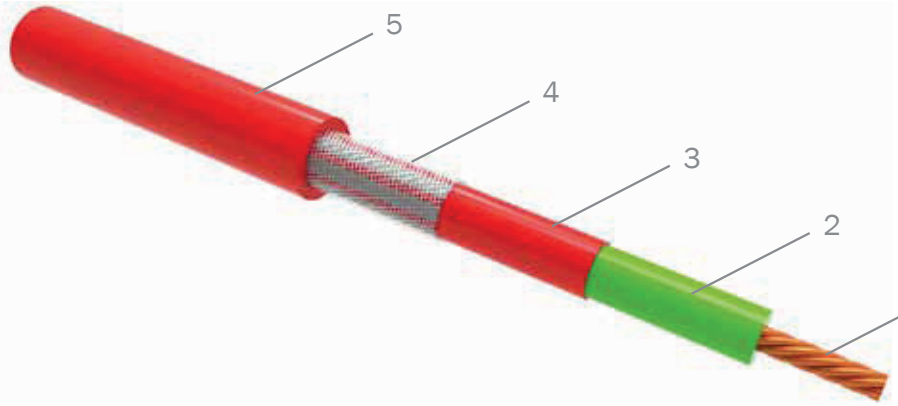
CONSTRUCTION:

1 – optic fiber
2 – steel tube
3 – first armored layer
4 – second armored layer

HEATING CABLES FOR ELECTRIC HEATING SYSTEMS FOR OIL AND GAS INDUSTRY FACILITIES

CUSTOMIZED PRODUCTION

Heating cables are intended for use in electric heating systems of oil and gas industry facilities.

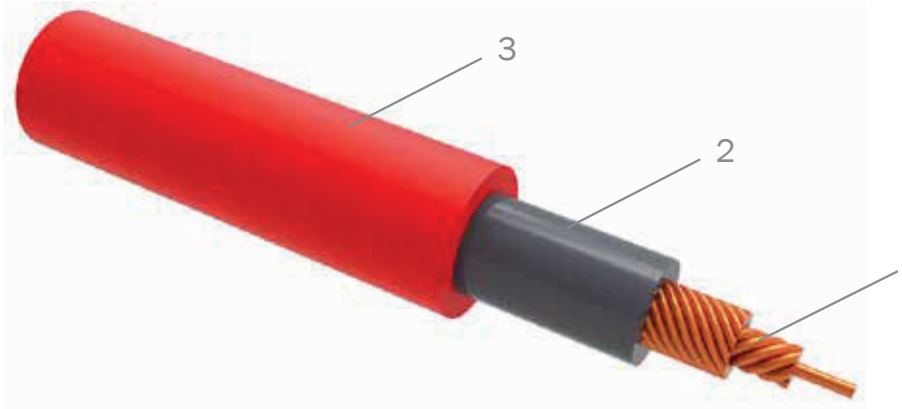


CONSTRUCTION:

1 – conductor
2 – polymer insulation
3 – barrier insulation
4 – shield
5 – outer polymer sheath

CUSTOMIZED PRODUCTION

Heating cables are intended for use in electric heating systems of oil and gas industry facilities.



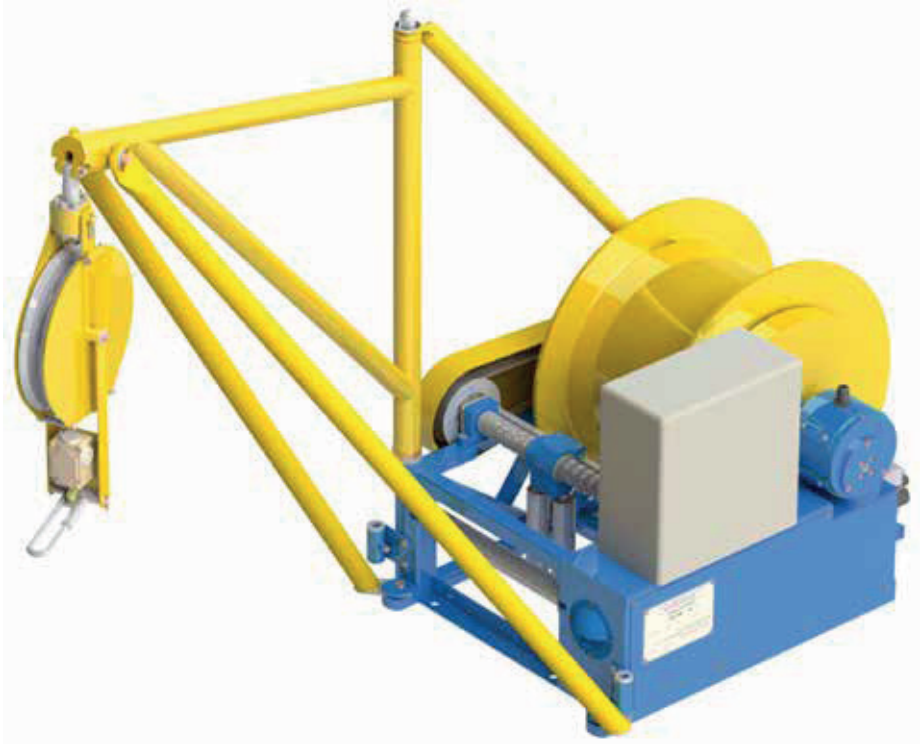
CONSTRUCTION:

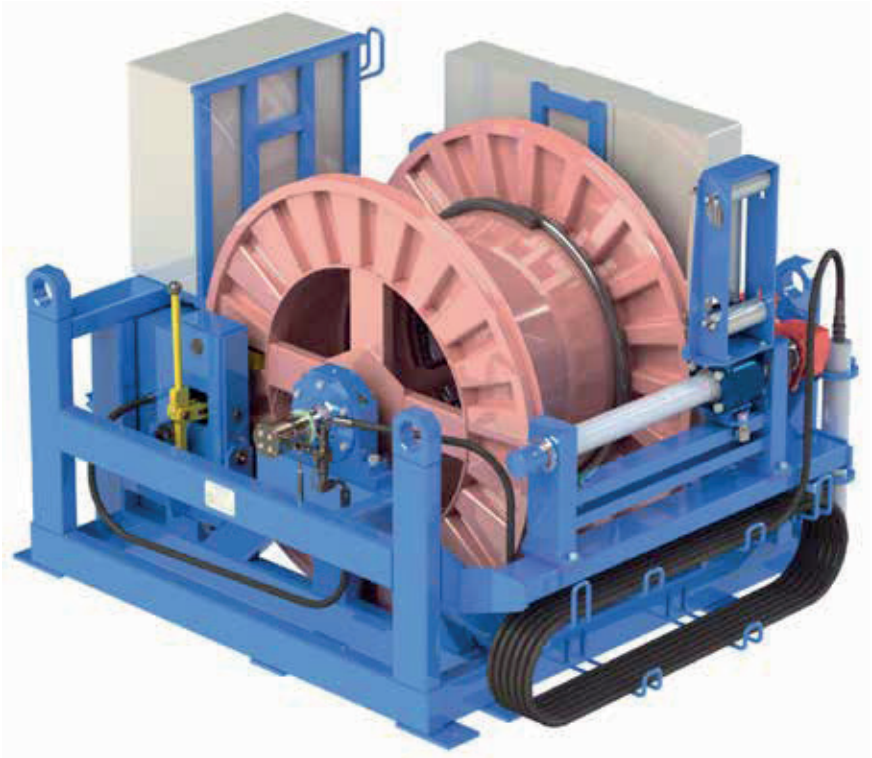
1 – conductor
2 – polymer insulation
3 – barrier insulation
4 – shield
5 – outer polymer sheath

WINCHES

Winches are used in different operations of lowering and rising cables and towed systems intended for application in oil and gas wells and in research practice implying cable-fixed technical devices.

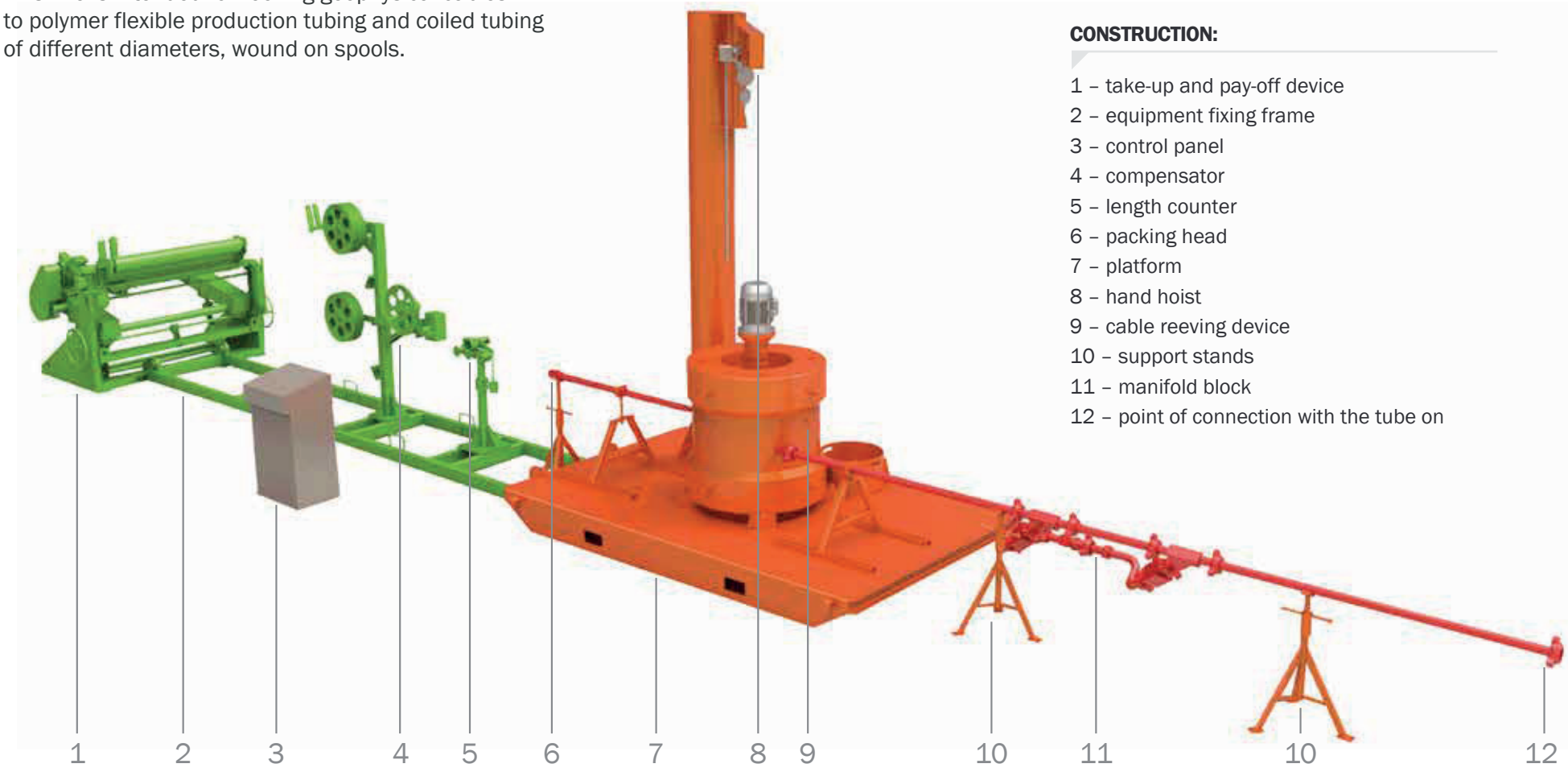
Winches are designed as open-type and enclosed winches.





CABLE REEVING LINE

This line is intended for reeving geophysical cables to polymer flexible production tubing and coiled tubing of different diameters, wound on spools.

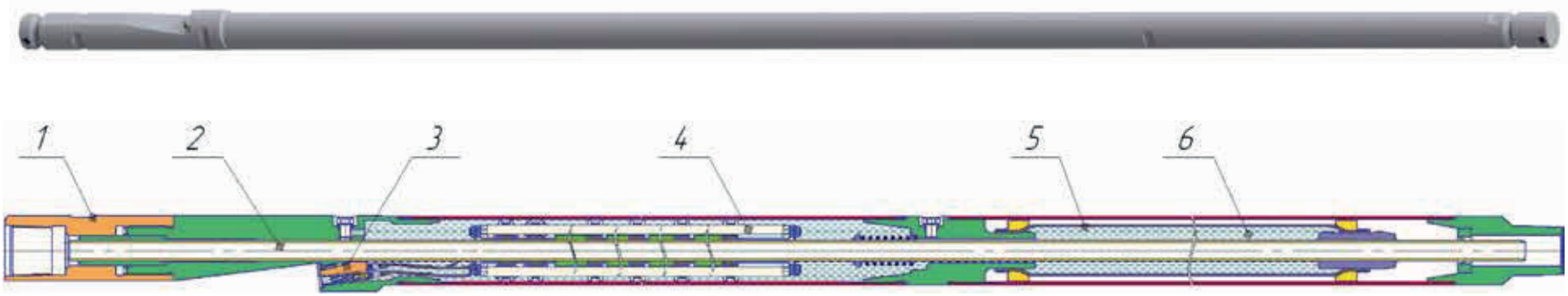


CONSTRUCTION:

1 – take-up and pay-off device
2 – equipment fixing frame
3 – control panel
4 – compensator
5 – length counter
6 – packing head
7 – platform
8 – hand hoist
9 – cable reeving device
10 – support stands
11 – manifold block
12 – point of connection with the tube on

PERMANENT ELECTRIC DOWNHOLE HEATERS

Intended for the compensation of heat losses in oil wells.

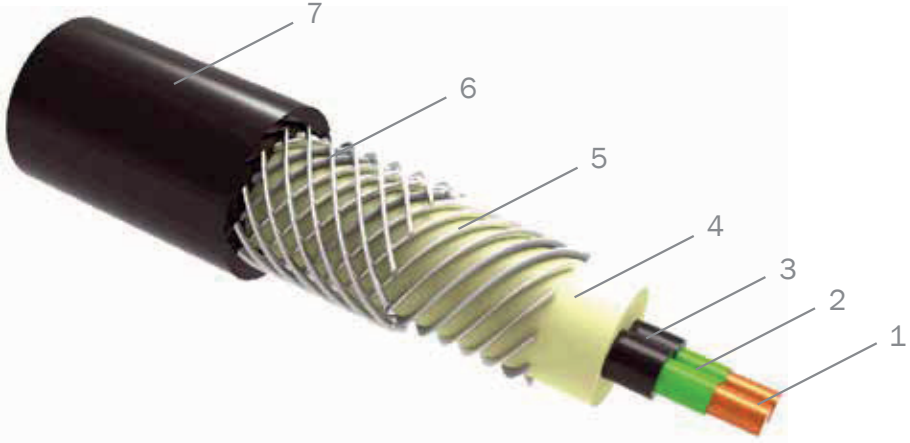


CONSTRUCTION:

1 – body
2 – inner flow channel
3 – cable gland
4 – heating elements
5 – hydraulic compensator
6 – heat carrier

CIRCULAR ARMORED LOAD BEARING GEOPHYSICAL (HEATING) CABLES FOR HEAT LOSS COMPENSATION DEVICES

These cables are intended for the devices of compensation of heat losses in oil wells.

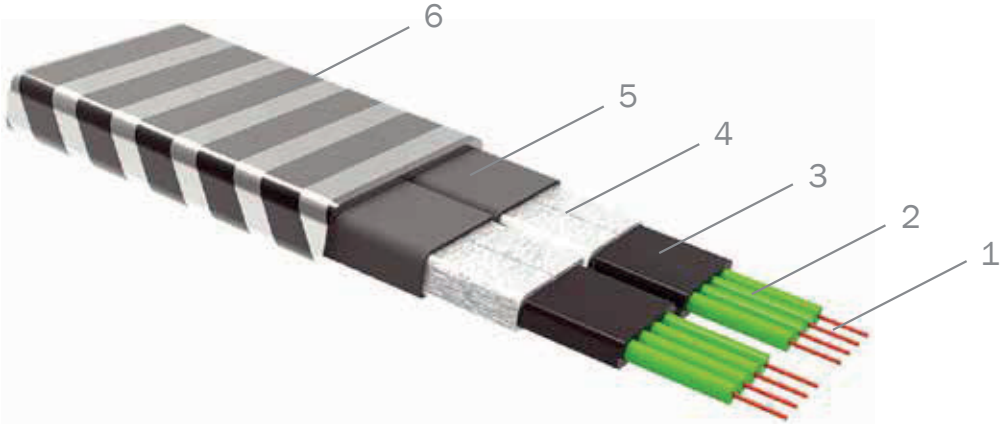


CONSTRUCTION:

1 – conductor
2 – first layer of polymer insulation
3 – second layer of polymer insulation
4 – inner polymer sheath
5 – first armored layer
6 – second armored layer
7 – outer polymer sheath

FLAT ARMORED LOAD BEARING GEOPHYSICAL (HEATING) CABLES FOR HEAT LOSS COMPENSATION DEVICES

These cables are designed for devices for the compensation of heat losses in oil wells.



CONSTRUCTION:

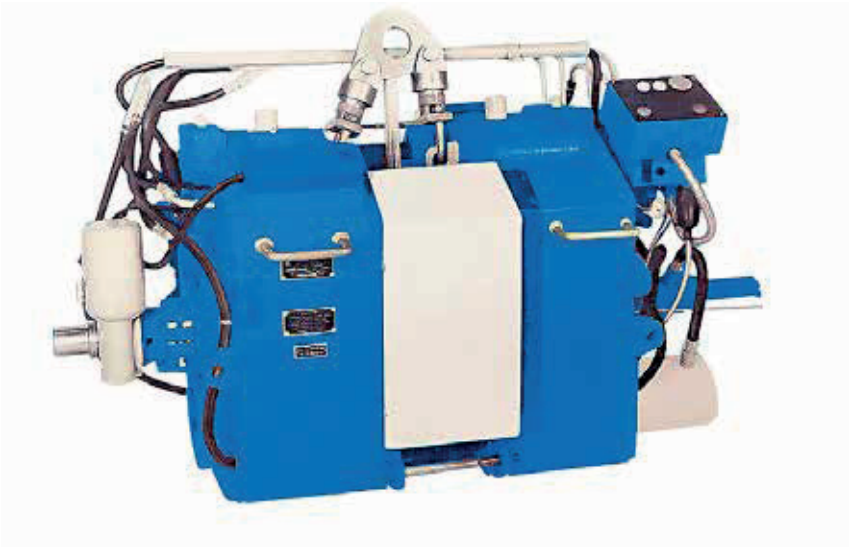
1 – conductor
2 – first layer of polymer insulation
3 – second layer of polymer insulation
4 – aluminum tape
5 – bedding
6 – armor

SUSPENSION-TYPE RESISTANCE BUTT WELDING MACHINES

MCO-50.01

MCO-50.01 unit is designed for resistance butt welding of with continuous arcing of carbon and alloyed steels with the strength class of up to K60.

- **Length of welded pipes:** 1 m to 12.5 m.
- **Outer diameter:** 114 mm to 325 mm.
- **Wall thickness:** 4,0 mm to 36,0 mm.

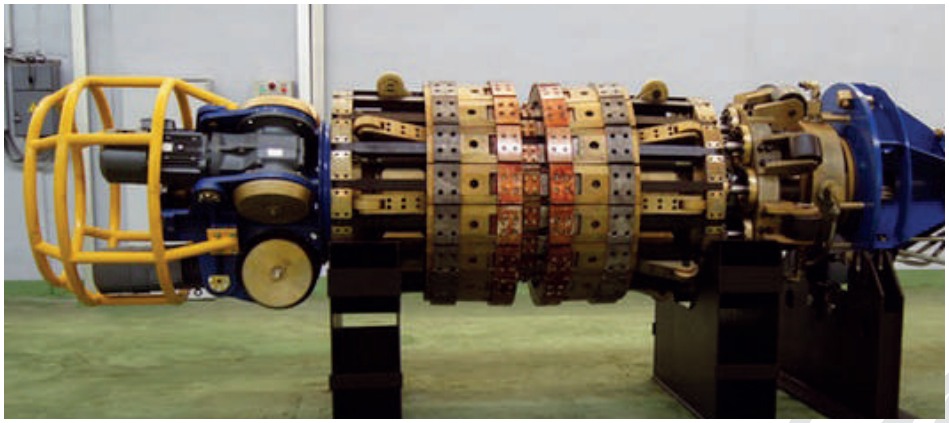


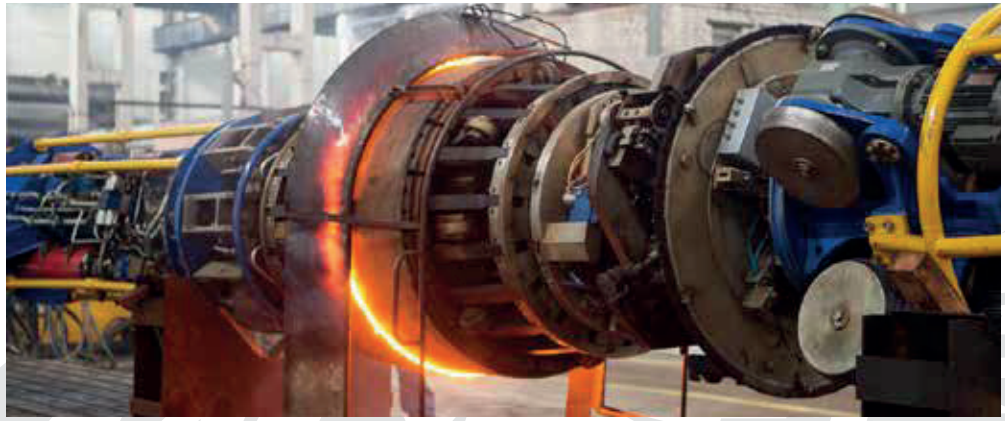
MCO-16.01

MCO-16.01 unit is designed for resistance butt welding of with continuous arcing of carbon and alloyed steels with the strength class of up to K60.

- **Length of welded pipes:** 1 m to 12.5 m.
- **Outer diameter:** 57 mm to 114 mm
- **Wall thickness:** 3,0 mm to 10,0 mm.

COMPLEXES OF EQUIPMENT FOR RESISTANCE BUTT WELDING OF KCC-01, KCC-02, KCC-04, KCC-05, KCC-08, KCC-09 ONSHORE PIPELINES





Onshore complexes KSS-01, KSS-02, KSS-04, KSS-05, KSS-08, KSS-09 are intended for butt welding of pipes having various diameters used in construction of main oil and gas pipelines made of steels with grades of up to K65 (X80).

KSS complex ensures:

- preparation of pipes for welding;
- welded connection meeting the requirements of normative technical documentation;
- removal of flash during welding on outer and inner pipe surfaces;
- flash trimming quality control;
- removal of sward and weld spatter from the pipe;
- thermal treatment of weld seam.

A welded connection is completed within 10–13 minutes.

The complex includes:

- Unit for cleaning of pipe surfaces for welding shoes;
- Internal self-propelled hydraulic line-up clamp with a welding transformer and an internal flash trimmer;
- Outer flash trimmer;
- Portable electric power station for welding transformer power supply;
- Unit for induction heating of pipes for thermal treatment of a welded connection with a portable electric power station;
- Unit for automatic ultrasonic non-destructive testing of welded connection quality.

The complex welds heavy-wall, large diameter pipes using the combined resistance arc welding technology.

1 BOTTOM-HOLE FORMATION ZONE TREATMENT, BOTTOM-HOLE CLEANING AND PRODUCTION STIMULATION. REMOVAL OF SAND, CLAY, AND PROPPANT BRIDGES

- Flushing with foam solutions or surfactant solution
- Acid treatment
- Flushing of wells after hydraulic fracture

2 BOREHOLE CLEANING FROM VARIOUS DEPOSITS. WARMING UP OF HYDRATE PLUGS, REMOVAL OF PARAFFIN DEPOSITS

3 GEOPHYSICAL SURVEYING

4 PERFORMANCE OF WORK IN FLOODED GAS WELLS

- Dry-up operations
- Concentric tubing lowering

5 FISHING OPERATIONS

6 TRIPPING OF THE UMBILICAL CABLE AND ELECTRIC CENTRIFUGAL PUMP ASSEMBLY IN THE HOLE

Used instead of the traditional assembly:
Tubing + Oil-submersible cable + Electric centrifugal pump

7 SMART WELL

Applied at gas fields for flooded wells with reduced formation pressure

All operations can be carried out in both conventional wells and horizontal wells.

COILED TUBING IS A PROMISING AND DEVELOPING AREA OF SPECIALIZED EQUIPMENT BASED ON THE USE OF FLEXIBLE REELED PIPES.

Flexible reinforced polymer pipes have a number of advantages as compared to other pipes:

- Simple installation
- Production of long-length sections
- Increased service life
- High corrosion resistance
- Low heat transfer coefficient
- Low hydraulic losses
- Resistance to the majority of aggressive media
- Increased flexibility
- Low operational costs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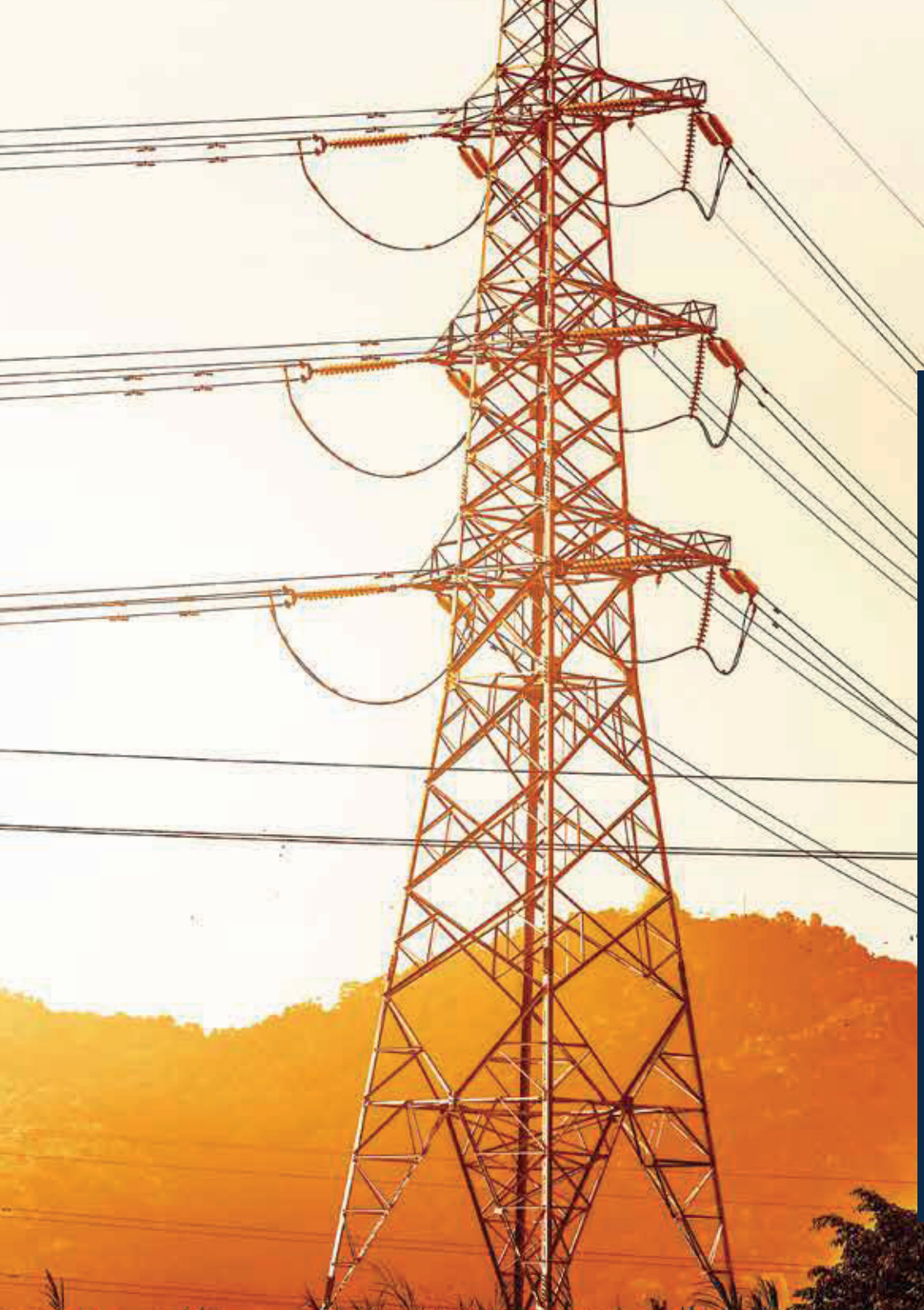
ELECTROSHIELD
SAMARA
Powering your future



ELECTROSHIELD
SAMARA
Powering your future

Over
40 %

Annual production of Electroshield Samara accounts for oil and gas industry

Over
150 K switchgear installations

Installed at oil and gas facilities

Over
40 %

Equipment stock accounts for Electroshield Samara

Currently Electroshield Samara is in close cooperation with major Russian oil and gas companies, the result of which is a number of completed projects.

NOVATEK

ROSNEFT

TRANSNEFT

LUKOIL

GAZPROM

SURGUTNEFTEGAZ

КТП-СЭЩ-Б(М) 35-220 kV modular integrated transformer substation

TECHNICAL SPECIFICATIONS

Rated voltage	35 kV, 110 kV, 220 kV
Main busbar current rating	1000 A, 2000 A
Supply transformer capacity	Up to 125 000 kVA

КТП-СЭЩ-П integrated transformer substations

TECHNICAL SPECIFICATIONS

Voltage class	10 kV
Supply transformer capacity	250 - 3150 kVA
Reference document	GOST 14695-80

ELECTROSHIELD SAMARA
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КТП-СЭЩ-К packaged transformer substations

TECHNICAL SPECIFICATIONS

Voltage class	10 kV
Supply transformer capacity	25 - 1000 kVA
Reference document	GOST 14695-80

НКУ-СЭЩ-М low voltage distribution switchboard

TECHNICAL SPECIFICATIONS

Rated working voltage	380 В, 690 V
Main busbar current rating	Up to 5000 A
Reference document	TR TS 004, TR TS 020

НКУ-СЭЩ-МВ low voltage distribution switchboard

TECHNICAL SPECIFICATIONS

Rating working voltage	380 V, 690 V
Main busbar current rating	6300 A
Reference document	TR TS 004, TR TS 020

СОПТ-СЭЩ operating DC voltage system

TECHNICAL SPECIFICATIONS

Rated input supply voltage	230/400 V
Direct current nominal input voltage	220 V
Reference document	TR TS 004, TR TS 020

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КРУ-СЭЩ-59 (КРУН) cubicle switchboard

TECHNICAL SPECIFICATIONS

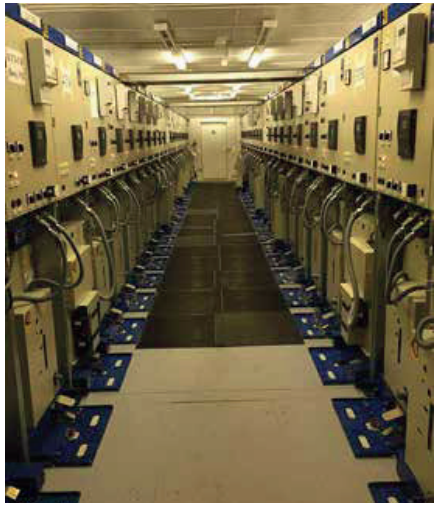
Voltage class	10 kV
Current rating	Up to 3150 A
Rated breaking current	Up to 31,5 kA
Reference document	GOST 14693-90

КРУ-СЭЩ-61М cubicle switchboard

TECHNICAL SPECIFICATIONS

Voltage class	10 kV
Current rating	2000 - 4000 A
Rated breaking current	20 - 50 кА
Reference document	GOST 14693-90

КРУ-СЭЩ-63 cubicle switchboard



TECHNICAL SPECIFICATIONS

Voltage class	10 kV
Current rating	630 - 1600 A
Rated breaking current	20 - 31,5 kV
Reference document	GOST 14693-90

КРУ-СЭЩ-70-10 cubicle switchboard

TECHNICAL SPECIFICATIONS

Voltage class	10 kV
Current rating	630 - 4000 A
Rated breaking current	20 - 40 кА
Reference document	GOST 14693-90

ELECTROSHIELD SAMARA
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КРУ-СЭЩ-70-20 cubicle switchboard

TECHNICAL SPECIFICATIONS

Voltage class	20 kV
Current rating	630 - 2500 A
Rated breaking current	20; 25 кА
Reference document	GOST 14693-90

КРУ-СЭЩ-70-35 cubicle switchboard

TECHNICAL SPECIFICATIONS

Voltage class	35 kV
Current rating	630 - 2500 A
Rated breaking current	25; 31,5 кА
Reference document	GOST 14693-90

ККРУ-СЭЩ-80 cubicle switchboard

TECHNICAL SPECIFICATIONS

Voltage class	10 kV
Current rating	630 - 4000 A
Rated breaking current	20 - 40 кА
Reference documents	GOST 14693-90 GOST R 55190-2012

КСО-298М pick cell

TECHNICAL SPECIFICATIONS

Voltage class	10 kV
Current rating	630 - 1600 A
Rated breaking current	20 кА
Reference documents	GOST 14693-90

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ВВУ-СЭЩ-10 vacuum breaker

TECHNICAL SPECIFICATIONS

Rated voltage	10 kV
Current rating	1000 - 4000 A
Rated breaking current	20 - 50 кА
Reference document	GOST R 52565-2006

ВВУ-СЭЩ-35 vacuum breaker

TECHNICAL SPECIFICATIONS

Rated voltage	27,5 kV
Current rating	400 - 2500 A
Rated breaking current	20; 25 кА
Reference document	GOST R 52565-2006

ВВМ-СЭЩ-10 vacuum breaker

TECHNICAL SPECIFICATIONS

Rated voltage	10 kV
Current rating	1000 - 1600 A
Rated breaking current	20 - 31,5 кА
Reference document	GOST R 52565-2006

ВВН-СЭЩ-35 vacuum breaker

TECHNICAL SPECIFICATIONS

Rated voltage	35 (27,5) kV
Current rating	1000 - 1600 A
Rated breaking current	25; 31,5 кА
Reference document	GOST R 52565-2006

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РГП-СЭЩ-35 disconnecting switch

TECHNICAL SPECIFICATIONS

Rated voltage	35 kV
Current rating	630 - 2000 A
Thermal stability current	12,5 - 31,5 кА
Reference document	GOST R 52726-2007

РН-СЭЩ-110 disconnecting switch

TECHNICAL SPECIFICATIONS

Rated voltage	110 kV
Current rating	1000 - 2000 A
Thermal stability current	31,5; 40 кА
Reference document	GOST R 52726-2007

ТМГ(Ф)-СЭЩ oil-immersed potential transformer

TECHNICAL SPECIFICATIONS

Capacity	25 - 3150 kVA
Supply transformer capacity	10 - 35 kV
Reference document	GOST R 52719-2007

ТМПНГ-СЭЩ oil-immersed transformer

TECHNICAL SPECIFICATIONS

Capacity	63 - 1200 kVA
High voltage class	3,6 kV
Low voltage class	0,4 kV
Reference document	GOST R 52719-2007

ELECTROSHIELD SAMARA
Powering your future

ТОЛ-СЭЩ current transformer

TECHNICAL SPECIFICATIONS

Voltage class	20; 35 kV
Measurement accuracy class	0,2; 0,2S; 0,5; 0,5S; 1; 3; 5; 10
Reference document	GOST 7746-2001

НОЛ-СЭЩ potential transformer

TECHNICAL SPECIFICATIONS

Voltage class	10; 20; 35 kV
Measurement accuracy class	0,2S; 0,5S; 1,0S; 3,0S
Reference document	GOST 1983-2015

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