



EQUIPMENT FOR WELDING SMALL AND LARGE DIAMETER PIPES

EQUIPMENT FOR FLASH BUTT WELDING OF BOILER HOUSE PIPES, RODS, RINGS,
CLOSED AND COMPOUND SECTIONS



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PIPE WELDING EQUIPMENT

EQUIPMENT COMPLEXES FOR FBW OF LAND PIPELINES KCC-01, KCC-04



Land equipment complexes KCC-01, KCC-04 are designed for FBW of pipes of large diameters. The machines are used for construction of oil and gas pipelines from steels of different hardness groups up to K65 (X80).

The equipment complex KCC provides preparation of pipes for welding, ensures conformance of welded joints according to the requirements of the regulatory technical documentation, removes internal and external weld flash and ensures quality control of this process and provides heat treatment of the welded joint.

The complex includes:

- surface brushing unit for contact shoes;
- internal self-propelled hydraulic pipe clamp with welding transformer and internal weld flash remover;
- external weld flash remover;
- portable electric station for welding transformer power supply;
- station for induction heating of pipes for heat treatment of welded joint with portable electric station;
- station of automatic ultrasonic non-destructive control of welded joint quality.



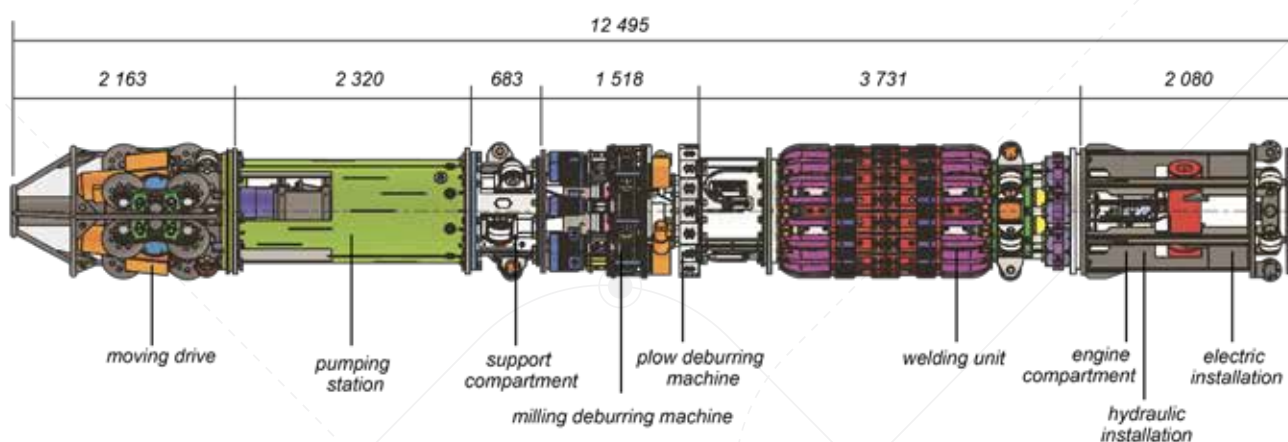
The complex welds thick-walled pipes of large diameter by means of combined flash butt – arc welding.

The total time of one joint welding is 10-13 min.

TECHNICAL PARAMETERS

VALUE	KCC-01	KCC-04
Pipe diameter, mm	1 220	1 420
Pipe wall thickness, mm	up to 16	up to 27

MODERNIZED COMPLEX OF EQUIPMENT FOR FBW OF PIPES WITH OUTER ANTICORROSION 3-LAYER POLYETHYLENE COVER WITH DIAMETER 1420 MM WITH PIPE WALL THICKNESS UP TO 22 MM KCO YCO-400M



The complex YCO-400M (“Sever-1M”) is designed to work at field conditions during pipeline construction at different climatic conditions, even at ambient temperature starting from -40°C up to $+40^{\circ}\text{C}$ in the conditions of high level of dust concentration and air humidity up to 80%.

Equipment provides pipe welding with outer anticorrosion three-layer polyethylene cover consists of steel with strength index K56, K60, with the following diameter and pipe wall thickness:

Outer pipe diameter, mm	1420
Pipe wall thickness, mm	15,7...22,0

Complex KCO provides pipes preparation for welding, weld joint in accordance with the requirements of normative-technical documentations, deburr removal after welding both inside and outside the pipe, quality control of deburr cut-off and chip scrap removal from the pipe, removal of melt-off metal drops, thermal treatment of weld joints.

The complex consists of the following elements:

- unit for pipe surface conditioning for contact shoe;
- internal self-powered hydraulic centrator with welding transformer and internal deburring machine;
- external deburring machine;
- mobile electric power station for power supply of welding transformer.

Technical performance – up to 6 joints per hour.

SUSPENDED WELDER MCO-50.01 FOR FBW

Equipment is designed to work at field conditions during pipeline construction at different climatic conditions, even at ambient temperature starting from - 40° C up to + 40° C in the conditions of high level of dust concentration and air humidity up to 80%.

Equipment provides pipe welding with outer anticorrosion three-layer polyethylene cover consists of carbon and alloy steel with strength index up to K65, with the length from 1 to 12.5 m in diameters and pipe thickness ranges:



Outer pipe diameter, mm	Pipe wall thickness, mm
114	4,0...28,0
159	5,0...36,0
168	5,0...30,0
219	6,0...20,0
273	7,0...20,0
325	7,0...20,0

Welding machine provides:

- automatic control of necessary physical parameters during welding process;
- automatic control which provides stable welding frequency and quality;
- data collection and analysis of welding process, providing, on their basement, creation of final report in the form of passport about welding quality;
- operator providing with information about current working condition of a welding machine, parametric control of welding process.

TECHNICAL PARAMETERS	
CHARACTERISTICS	VALUE
Rated supply main voltage of 3-phase AC, V	380
Supply main frequency, Hz	50
Max. secondary current, kA	67
Rated continuous secondary current, kA	22
Power consumption, kVA, not less	180
Rated welding force, kN	530
Equipment capacity, welds per hour, not less	10
Welding upset speed, mm/s (at first 5 mm)	30
Full equipment weight, kg	5350

SUSPENDED WELDER MCO-16.01 FOR FBW

Equipment is designed to work at field conditions during pipeline construction at different climatic conditions, even at ambient temperature starting from - 40° C up to + 40° C in the conditions of high level of dust concentration and air humidity up to 80%.

Equipment provides pipe welding with outer anticorrosion three-layer polyethylene cover consists of carbon and alloy steel with strength index up to K48-54, with the length from 1 to 12.5 m in diameters and pipe thickness ranges:



Outer pipe diameter, mm	Pipe wall thickness, mm
57	3,0...6,0
89	4,0...10,0
114	4,5...10,0

Welding machine provides:

- automatic control of necessary physical parameters during welding process;
- automatic control which provides stable welding frequency and quality;
- data collection and analysis of welding process, providing, on their basement, creation of final report in the form of passport about welding quality;
- operator providing with information about current working condition of a welding machine, parametric control of welding process.

TECHNICAL PARAMETERS	
CHARACTERISTICS	VALUE
Rated supply main voltage of 3-phase AC, V	380
Supply main frequency, Hz	50
Max. secondary current, kA	67
Rated continuous secondary current, kA	9
Power consumption, kVA, not less	110
Rated welding force, kN	160
Equipment capacity, welds per hour, not less	15
Welding upset speed, mm/s (at first 5 mm)	40
Full equipment weight, kg	3800

EQUIPMENT FOR FLASH BUTT WELDING OF BOILER HOUSE PIPES, RODS, RINGS, CLOSED AND COMPOUND SECTIONS

FBW MACHINE FOR BOILER HOUSE PIPES AND VARIOUS PROFILE AND COMPACT SECTIONS MCO-604

Machine MCO-604 is designed for welding pipes and other items by continuous flashing and flashing with preheating. It is used for perlite and austenite pipes and other items, of mainly round section, high and low carbon, various alloyed steels, with section up to 850 mm² and external diameter up to 42 mm.

The machine allows welding articles of profile section and items from aluminum and titan alloys with section up to 300 mm².

The design of the machine is of "through-pass" type providing welding both short and long articles.

The control system provides welding process correction in cases of its deviation from the norm.



TECHNICAL PAARAMETERS

CHARACTERISTICS		VALUE
Rated supply main voltage of 3-phase AC, V		380
Supply main frequency, Hz,		50
Welded pipes diameter, mm		25 - 42
Max. secondary current, kA, not less		40
Rated continuous secondary current, kA		9
Secondary voltage adjustment arrangement, V		4,05 - 8,1
Rated upsetting force, daN		6 300
Rated gripping force, daN		12 500
Max. upsetting speed, mm/s, not less		80
Flashing speed adjustment range, mm/s		0,3 - 10
Adjustment range of set distance between jaws, mm		40 - 70
Short-term performance of welding pipes with diameter 42 mm, welds/h		100
Dimensions, mm (length x width x height)	welding unit	2 500 × 1 595 × 1 180
	cabinet with equipment	1271 × 600 × 1 962
Weight, kg	welding unit	3 800
	cabinet with equipment	380

FBW MACHINE FOR BOILER HOUSE PIPES AND VARIOUS PROFILE AND COMPACT SECTIONS MCO-12.05

Machine MCO-12.05 is designed for welding pipes and other items by continuous flashing and flashing with preheating. It is used for perlite and austenite pipes and other items, of mainly round section, of various alloyed high and low carbon steels, with section up to 1500 mm² and external diameter up to 83 mm.

The machine can be used for welding various profiled steel sections, as well as parts made of aluminum and titanium alloys, with section up to 600 mm².

The design of the machine is of “through-pass” type providing welding both short and long articles.

The flashing and preheating drive is electromechanic; the gripping and upsetting drives are pneumatic.



TECHNICAL PAARAMETERS

CHARACTERISTICS		VALUE
Rated supply main voltage of 3-phase AC, V		380
Supply main frequency, Hz		50
Welded pipes diameter, mm		42 - 83
Max. secondary currents, kA, not less		40
Rated continuous secondary current, kA		6
Rated upsetting force, daN		12 500
Rated gripping force, daN		20 000
Max. upsetting force, mm/s, not less		80
Welding speed adjustment range, mm/s		0,3 - 10
Power consumption for welding pipes from perlite steels with max. section at nominal upsetting stage, kVA		250
Short-term performance at welding pipes with diameter 83 mm, welds/h, not less		50
Dimensions, mm (length x width x height)	welding unit	3 000 × 1 750 × 1 260
	cabinet with equipment	1100 × 650 × 2 050
	control station	830 × 480 × 1 910
Weight, kg	welding unit	5 500
	cabinet with equipment	320
	control station	150

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