



FOUNDRY EQUIPMENT AND TECHNOLOGIES



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History of BELNIILIT starts from January 1957 when Minsk branch of “NIIT autoprom” was created. In 1978 it became an independent science-research, engineering & design institute (NIILIT autoprom) – lead foundry institute of Ministry of Automobile Industry of the USSR. In 1993 the institute became subordinate to the Republic, got the status of head Science-Research Institute for foundry in the Ministry of Industry of the Republic of Belarus and was renamed into Byelorussian science-research & design-engineering institute for foundry (Unitary Enterprise “INSTITUTE BELNIILIT”). In 2009 the enterprise was transformed in Open Joint Stock Company “BELNIILIT”.

JSC “BELNIILIT” has many years of experience in creating and enhancing technologies and equipment for production of castings used in automotive, tractor industries, agricultural mechanical engineering and other sectors of industry.

JSC “BELNIILIT” has in its disposal laboratory and production facilities, highly skilled scientists, process engineers and designers, workers and specialists. All activities in creating of casting technologies and materials, equipment, rigging, and the following implementation of them into production – it all can be made on ‘turnkey’ basis, as well as training of production personnel.

A lot of developments made by JSC “BELNIILIT” is innovative and represents an invention. Within the history of the Institute more than 200 author’s certificates, domestic and foreign patents were obtained.

Our products are used by many enterprises in the Republic of Belarus, Russia, Kazakstan, Uzbekistan, Ukraine, as well as overseas countries.

EQUIPMENT FOR PRODUCTION OF IRON-CARBON ALLOY CASTINGS

MACHINES FOR MAKING OF SHELL MOLDS

The machines are designed to make shell molds which are used to manufacture steel and other alloys castings.



Characteristics / Model	46152M	46185A
Type of machine	two-position	one-position
Productivity, cycles/hour (<i>min</i>)	20	10
Size of pattern plate, mm	600×400	650×340
Thickness of shell being formed, mm	10÷12	
Shell formation time, sec.	45÷60	
Working temperature in the furnace, °K (°C)	673 (400)	
Number of furnaces, pcs.	2	1
Installed power, kW	36,0	
Overall dimensions, mm	6690×1185×3000	4230×1315×3000
Weight, kg	4660	2550

MACHINES FOR CASTING IN COATED CHILL MOLD

The machines are designed to produce castings from steel and cast iron by casting into a chill mold with a coating on its working surface.



Characteristics / Model	49107	49108
Type of machine	shuttle	carousel
Productivity, pourings/hour	10÷15	35
Operating mode	semi-automatic	
Number of positions / sections, pcs.	3/2	6/6
Size of chill mold in parting plane, mm (<i>max</i>)	1000×(450–500)×250	800×450×240
Portion of poured alloy, kg (<i>max</i>)	50	50
Type of heating	electrical	
Installed power, kW	105	100
Overall dimensions, mm	8195×4180×5280	10 900×6800×4740
Weight (without rigging), kg	11200	41000

EQUIPMENT FOR PRODUCTION OF IRON-CARBON ALLOY CASTINGS

MACHINES FOR CASTING OF SHOTS

The machines are designed to produce cast shots from steel and cast iron and can be operated continuously and periodically.



Characteristics / Model	46145 (complex)	46159	П1347А	46182
Productivity, t/hour	to 6 (6)	0,4	1	0,4-1,0
Cooling agent	water			
Installed power, kW	13,5 (21)	9,2	9,2	10
Overall dimensions, mm	4960×4800×4330 (8450×6280×5500)	2310×1500×3820	4500×2130×3825	3690×1795×3040
Weight, kg	8500 (18 600)	1580	3820	2600

Features of produced shots	
Shot size, mm	0,6-6,0
Form factor	0,85-1,0
Hardness, HRC (depends on chemical composition and thermal treatment)	26-60

EQUIPMENT FOR CENTRIFUGAL CASTING

The equipment is designed to produce castings from iron-based alloys (liners for engine cylinder blocks, pipe billets, grinding balls, etc.), as well as from non-ferrous metals and alloys.



ONE- AND TWO-POSITION CENTRIFUGAL CASTING MACHINES

The machines are used for small-series and series casting production.

Characteristics / Model	4986A	49113	4986	4986M1	49100
Type of machine	one-position		two-position		
Productivity, pourings/hour (<i>max</i>)*	10	10	25	20	10
Casting weight, kg (<i>max</i>)	600	150	150	300	300
Casting outer diameter, mm (<i>max</i>)	500	500	400	500	400
Casting length, mm (<i>max</i>)	500	400	400	500	700
Installed power, kW	11	11	15	30	30
Overall dimensions, mm	2975×2640× 1670	3585×3140× 1500	2565×1700× 1640	2730×3580× 1640	4250×3415× 1540
Weight, kg	2000	2050	3300	3500	4400

*depends on casting weight

EQUIPMENT FOR PRODUCTION OF IRON-CARBON ALLOY CASTINGS

CAROUSEL MACHINE FOR CENTRIFUGAL CASTING

The machine is designed for mass production of liner castings.

Operations: preliminary modification of metal flow, dosing, pouring, removal of casting, cleaning the rigging, placing a cover, water cooling of rigging and painting molds.



Characteristics / Model	49101
Type of machine	carousel ten-position
Productivity, castings/hour*	60
Size of casting: outer diameter / length, mm (<i>max</i>)	300/300
Rotor speed (adjusted), rpm	500–1500
Rotor cooling	water spraying
Operating mode	semi-automatic
Installed power, kW	75
Overall dimensions, mm	8255×7145×4090
Weight, kg	19 300

*depends on casting weight

MACHINE COMPLEX FOR PRODUCTION OF LINER CASTINGS

Created on the basis of carousel machine for centrifugal casting.

The equipment is designed for production of liner castings of cylinder block of internal combustion engines from cast iron and other rotation bodies from different alloys.

Operations: painting the rigging, modifying and dosing the melt, pouring, cooling of casting, removal of casting, cleaning the rigging, placing a cover.



Characteristics / Model	49105
Type of machine	carousel ten-position
Productivity, castings/hour *	60
Size of casting: outer diameter/length, mm (<i>max</i>)	200/315
Casting weight, kg (<i>max</i>)	20
Rotor speed (adjusted), rpm	920
Rotor cooling	water spraying
Operating mode	semi-automatic
Installed power, kW	67
Overall dimensions , mm	9760×6980×3780
Weight of complex (without rigging), kg	20 000

*depends on casting weight

EQUIPMENT FOR PRODUCTION OF NON-FERROUS ALLOY CASTINGS

CHILL MOLD CASTING MACHINES

The machines are designed for production of shaped castings by gravity casting and made on customer's requirements.

SINGLE-POSITION CHILL MOLD CASTING MACHINES

The machines are used for production of castings in small series and series production.



Characteristics / Model	49B503	4953	4979	4987	4991T	4992T
Size of work area, mm	500×400	1200×400	500×400	1500×600	1320×190	550×250
Distance between plates, mm (<i>min</i>)	500	1200	250	1000	860	300
Number of moving plates	5	5	4	3	4	6
Casting weight, kg (<i>max</i>)	12	100	15	30	50	25
Machine cycle time, sec.	45	52	30	36	74	30
Chill mold opening force, kN	120	300	122	370	201	120
Installed power, kW	18,5	18,5	18,5	30	16,22	7,5
Overall dimensions, mm	3000× 1800× 2630	4600× 3400× 4500	3480× 1370× 1900	4720× 2295× 2040	5155× 1840× 1885	3180× 2215× 1145
Weight, kg	7500	36 500	6900	16 350	12 200	4950

MULTIPOSITION (CAROUSEL) CHILL MOLD CASTING MACHINES

The machines are designed for production of shaped castings from aluminum alloys in large series and mass production.



Characteristics / Model	4932	4945	4979K	4980
Size of work area, mm	500×400	400×200	600×400	1015×430
Distance between plates, mm (<i>min</i>)	160	260	300	depends on chill mold
Number of chill mold sections	4	4	4	4
Number of moving plates	5	6	5	4
Casting weight, kg (<i>max</i>)	5	10	10	40
Machine cycle time, sec.	100...120	180	70...90	25
Chill mold opening force, kN	80	100	120	200
Installed power, kW	18,5	33,0	30	35,5
Overall dimensions (diameter×height), mm	4000×2125	4600×3300	5200×2280	7000×4500
Weight, kg	16 000	35 000	23 000	66 600

EQUIPMENT FOR PRODUCTION OF NON-FERROUS ALLOY CASTINGS

SINGLE-POSITION SPECIAL (INCLINED) CHILL MOLD CASTING MACHINES

Pouring method is self-pouring.

Conditions of casting crystallization and feeding are created during chill mold rotation.



Characteristics / Model	4994	4995	49102	49110
Size of work area, mm	560×250	550×250	820×920	600×900
Distance between plates, mm (<i>min</i>)	250	340	390	200
Number of moving plates	4	2	2	1
Casting weight, kg (<i>max</i>)	25	25	25	25
Machine cycle time, sec.	54	45	60	60
Chill mold opening force, kN	78	157	157	39
Installed power, kW	11	15	15	3,7
Overall dimensions, mm	2810×1750× 2685	4110×1200× 3900	3510×2710× 3045	3165×2305× 2245
Weight, kg	8850	4100	6900	6700

CENTRIFUGAL CASTING MACHINES

The machines are designed to produce castings from non-ferrous metals and alloys, as well as from iron-based alloys (pipe billets, etc.)



Characteristics / Model	4986A	49113	4986	4986M1	49100	49101	49105 (KT)
Type of machine	single-position		two-position			carousel (10-pos.)	
Productivity, pourings/hour (<i>max</i>)*	10	10	25	20	10	60	60
Casting weight, kg (<i>max</i>)	600	150	150	300	300	20	20
Casting outer diameter, mm (<i>max</i>)	500	500	400	500	400	300	200
Casting length, mm (<i>max</i>)	500	400	400	500	700	300	315
Installed power, kW	11	11	15	30	30	75	67
Overall dimensions, mm	2975× 2640× 1670	3585× 3140× 1500	2565× 1700× 1640	2730× 3582× 1640	4250× 3415× 1540	8255× 7145× 4090	9760× 6980× 3780
Weight (without rigging), t	2	2,05	3,3	3,5	4,4	19,3	20

*depends on casting weight

EQUIPMENT FOR PRODUCTION OF NON-FERROUS ALLOY CASTINGS

CHILL MOLD COMPLEXES

The equipment can operate in semi-automatic and setting modes. They are composed of two chill mold single-position special machines with independent control systems and one hydraulic station.

COMPLEXES FOR CASTING OF PISTONS

The equipment is designed for production of castings for gasoline and diesel engine pistons with Ni-resist insertion or without it.



Characteristics / Model	4950	4951	4973
Piston type	single metal core	multi metal core (up to 5 cores)	multi metal core (up to 5 cores)
Casting weight, kg (<i>max</i>)	10	10	7
Productivity, castings/hour	25	25	25
Diameter of piston casting, mm (<i>max</i>)	160	160	110
Installed power, kW	7,5	7,5	7,5
Machine overall dimensions, mm	2500×2100×2500	2500×2100×2500	2300×1645×2730
Weight of machine, kg	2200	2300	2600

COMPLEX TO CAST SHAPED CASTINGS

The complex is designed to produce middle weight castings from cast iron by means of chill mold casting with vertical parting flat.



Characteristics / Model	4997K
Casting weight, kg (<i>max</i>)	100
Machine cycle time, sec. (<i>max</i>)	20
Size of work area, mm	880×1000
Distance between plates, mm, (<i>min</i>)	400
Stroke of fastening plate of chill mold vertical part, mm (<i>min</i>)	710
Opening force of chill mold vertical part, kN	188
Consumption of cooling water, m ³ /hour (<i>max</i>)	1,2
Installed power, kW	15
Overall dimensions (without hydraulic station), mm	3160×3985×1310
Weight, kg	11000

EQUIPMENT FOR PRODUCTION OF NON-FERROUS ALLOY CASTINGS

CONVEYORS FOR CASTING OF NON-FERROUS ALLOYS IN INGOTS

The equipment is designed to cast non-ferrous alloys into casting forms and produce castings of 'Ingot' and 'Cone' types.



Characteristics / Model	46186	46190
Poured metal	copper alloys	aluminum alloys
Productivity, kg/hour	1500–3000	to 650
Conveyor moving speed (adjusted), m/min (<i>max</i>)	7	7
Linear size of ingot, mm (<i>max</i>)	680×125×90	60
Consumption of compressed air/water, m ³ /hour	3,1 / 0,12	3,1 / 0,12
Installed power, kW	0,55	0,7
Overall dimensions, mm	5410×1500×2200	5610×1650×2860
Weight, kg	4500	2740

ALUMINUM ALLOYS REFINING PLANTS



The equipment is designed to treat the melt by inert gases for removing of dissolved hydrogen, oxides, nonmetallic inclusions, slags, etc.



Characteristics / Model	46161	46181	П1873	П1901	П1920
Type	stationary	portable			
Treatment duration (<i>min</i>)	to 20				
Working gas	argon, nitrogen				
Treatment by flux powder	–	–	+	+	–
Installed power, kW	1,5	1,4	1,5	1,5	1,5
Overall dimensions, mm	1020×995×1850	1730×860×2305	1615×860×1850	1615×860×1850	1910×1285×2200
Weight, kg	680	282	300	300	655

EQUIPMENT FOR PRODUCTION OF NON-FERROUS ALLOY CASTINGS

PNEUMATIC DOSING UNITS FOR ALUMINUM ALLOYS

The equipment is designed to store aluminum alloys melt and metered supply of melt portion in a casting mold.



Characteristics / Model	46141	4699	46153	46165	46175
Mass of aluminum alloy in dosing unit, kg	330	850	1500	1250	1250
Mass of a dose, kg	4...20	5...70	5...70	10...100	10...250
A dose supply time, sec.	5...16	5...30	5...30	4...20	4...60
Installed power, kW	20	40	60	105	105
Overall dimensions, mm	2680× 1700× 2480	3560× 2350× 2580	4100× 2350× 2580	3115× 3070× 2580	3265× 4115× 2680
Weight, kg (<i>max</i>):					
without refractory lining	1545	2350	2900	2650	2460
with refractory lining	3325	3950	4900	5250	5070

COMPLEX OF EQUIPMENT TO ELIMINATE NON-TIGHTNESS IN CASTINGS

The equipment is designed to eliminate non-tightness (porosity) in castings from non-ferrous and ferrous alloys by saturation (sealing) with special solutions based on both liquid glass and organic components.



Characteristics / Model	46187
Productivity, containers/hour (<i>min</i>)	4
Revolution frequency of centrifuge basic support, sec ⁻¹	3,1
Autoclave volume, m ³	3,2
Volume of working tanks, m ³ (<i>max</i>)	4,5
Temperature of reagents, °C	60...90
Excessive pressure in autoclave, MPa	0,5...0,63
Technological vacuum, mercury mm	725...730
Consumption of water/compressed air, m ³ /hour (<i>max</i>)	0,2...0,3 / 1,5...2,0
Installed power, kW	505
Overall dimensions (basic option), mm	15 570×7240×3750

CORE-MAKING MACHINES

The machines are designed to produce sand cores from sand-resin mixtures by sand-blowing method.

CORE-MAKING MACHINES (COLD-BOX technology)



The machines are designed to produce casting sand cores from sand-resin mixtures, solidified by gaseous catalyzers blowing in cold boxes.



Characteristics / Model	474951K2	475151K2	475351K1	475252K1	4747Y2(3)52K1	4760Y52K1	476852K1	478552K1*
Weight of a core, kg (max)	6	10	32	25	90	150	130	80
Productivity, cycles/hour	60-80	55-60	25-40	40-50	30-35	20-30	20-30	20-30
Core box parting	vertical				horizontal			
Size of core box, mm	400× 320× 200	540× 300× 320	900× 450× 320	580× 580× 170	960×850×440 (1120×850×385)	1600× 1180× 570	1120× 930× 580	1120× 850× 395
Installed power, kW	5	5-9	17	11	19	19	18,4	19
Overall dimensions, mm	1850× 1590× 2660	2260× 2685× 3045	4495× 3520× 3700	5800× 4500× 3200	5720× 5900× 4240	8180× 7500× 5230	7700× 7500× 5900	5500× 6000× 3500
Weight, kg	3200	5000	12 000	9000	17 500	22 000	15 150	16 000

*with pull-out core box

CORE-MAKING MACHINES (HOT-BOX technology)

The machines are designed to produce cores with solidification in heated rigging with vertical or horizontal parting of core box.



Characteristics / Model	4749A132	4753A131	4748A131	4758A231	4752A231	4753A231	4754A231	4747A231	4757A231
Weight of a core, kg (max)	6	25	25	6	12	25	50	50	100
Size of core box, mm	400× 320× 200	900× 350× 320	700× 680× 360	400× 320× 200	580× 480× 240	900× 450× 290	1080× 780× 290	920× 850× 365	1280× 780× 290
Core box parting	vertical				horizontal				
Duration of cycle, sec.	18	30	30	22	28	30	35	35	35
Consumption of air per cycle, m ³	0,25	0,3	0,45	0,25	0,25	0,3	0,5	0,5	0,8
Overall dimensions, mm	1850× 1590× 2660	4495× 3520× 3705	4120× 3520× 2920	1850× 1590× 2690	3875× 3195× 3730	4865× 3040× 4125	5270× 3310× 4055	5520× 5265× 3925	6235× 3400× 4730
Weight, kg	2700	7000	6900	2500	5150	11 200	10 500	14 200	14 000

EQUIPMENT FOR PRODUCTION OF SAND CORES

CORE-MAKING TECHNOLOGICAL COMPLEXES

Automatic technological complexes were created on basis of core-making machines. They include a core-making machine, mixer for mixture preparation, etc.



Characteristics / Model	KT 4747	KT 4751	KT 4752	KT 4768	KT 4785*
Productivity, removals/hour	30–35	55–60	45–50	20–30	20–30
Weight of a core, kg (max)	80	10	25	130	80
Size of core box, mm (max)	1120×850×385	540×300×320	580×580×170	1120×930×580	1120×850×395
Installed power, kW	27,5	20,5	20,5	34	34
Overall dimensions, mm	7800×6185×7780	6030×5550×6000	7200×5200×7000	7700×7500×8900	8130×6640×6650
Weight, kg	23 000	11 700	12 500	15 150	19 000

*Full access to the rigging is available while using the complex. It is possible to make combined cores with inserts (detachable parts, chromite, etc.).

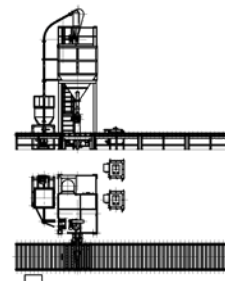
TECHNOLOGICAL LINES FOR PRODUCTION OF MOLDS AND CORES FROM CORE SAND ('NO-BAKE' technology)

Layout, composition and technical characteristics of the lines are subject to change by customer's requirements.

COMPLEX OF EQUIPMENT (model 4847C)

It is designed to produce molds and cores up to 1000 kg in weight from cold-hardening mixes.

Contents: dry sand supply unit, single-screw mixer with dosing pumps, vibrating table, thermo-static tanks, roller conveyor, low-pressure pneumatic transport, dry additives dosing unit (if necessary).

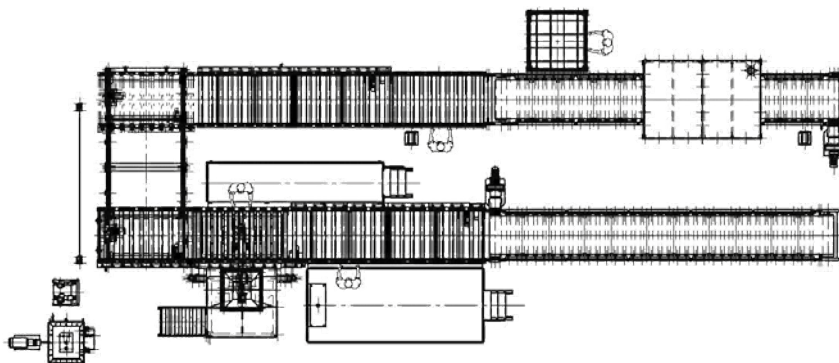


Characteristics / Model	4847C
Productivity of mixer, t/hour	4...10
Capacity of vibrating table, kg	2000
Overall dimensions of working surface of vibrating table, mm	1200×1200
Volume of bunker, m ³	6
Volume of thermal tank, l	250
Installed power, kW	20
Overall dimensions, mm	16 420×7470×7375
Weight of the line, kg	9870

BIG MOLDS AND CORES PRODUCTION LINE

The line is designed to produce cores and molds up to 1000 kg in weight from cold-hardening mixes ('no-bake' technology).

Contents: rigging delivery conveyor, vibrating table, screw mixer, the unit supplying dry sand to a mixer, thermal tank for heat up of liquid binders of cold-hardening mixes, dosing pumps, delivery mechanism, drive roller-ways, the position for taking cores and molds from the rigging, the position for painting cores and molds, drying chamber, cores and molds discharge conveyor.

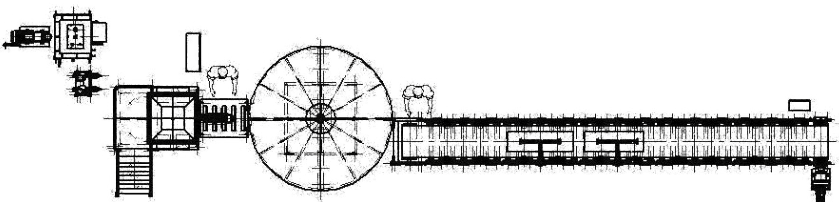


Characteristics / Model	7259
Volume of bunker, m ³ (<i>min</i>)	1,7
Capacity of vibrating table, kg	2000
Rigging dimensions, mm (<i>max</i>)	2120×1600×1040
Installed power, kW	27,6
Volume of liquid binders in one thermal tank, l (<i>max</i>)	500
Overall dimensions, mm	23 000×8575×4990
Weight of the line, kg	15 000

SMALL MOLDS AND CORES PRODUCTION LINE

It is designed to produce cores and molds up to 40 kg in weight from cold-hardening mixes ('no-bake' technology).

Contents: dry sand supply unit, screw mixer, vibrating table, thermal tank, dosing pumps, control cabinet and control desks, rotary table, belt conveyor for cores delivery, electrical infrared sources for drying.



Characteristics / Model	П1903
Volume of bunker, m ³ (<i>min</i>)	1,7
Capacity of vibrating table, kg	710
Size of core box/sand core, mm (<i>max</i>):	diameter height
	153/140 300/250
Productivity of mixer, t/hour	2,5...4
Volume of liquid binders in thermal tank, l (<i>max</i>)	250
Installed power, kW	15
Overall dimensions, mm	14 940×4800×3800
Weight of the line, kg	5400

CORE SAND AND GREEN SAND PREPARATION EQUIPMENT

CORE SAND MIXERS

Designed to prepare core sand used to produce cores and molds in foundry shops, including cold hardening mixes ('no-bake' technology).



CONTINUOUS MIXERS

Characteristics / Model	C1Ш-3	C1Ш-6	C1Ш-6-02	C1Ш-12
Angle of rotation, degrees	180			
Action radius (center of unload window), mm	720	1030	1030	1600
Productivity, t/hour	1...3	3...6	3...10	8...12
Number of screw revolutions, min ⁻¹	690	500	700	559
Number of electric pumps, pcs.	2			
Air pressure, MPa	0,5...0,63			
Installed power, kW	4,0	5,1	6,0	5,9
Overall dimensions, mm	1375×420× 1790	2125×600× 2025	2125×600× 2025	3130×700× 2305
Weight, kg	450	580	610	950



BATCH -TYPE MIXERS

Characteristics / Model	C1C-050-01	C1CM-050-02	C1C-150-02	C1C-300	П1881.01
Weight of batch, kg (<i>max</i>)	50	80	150	300	600; 1200
Diameter of pot, mm	525	630	800	992	2010
Pot height, mm	435	425	500	465	1500
Speed of revolution, min ⁻¹	67,1	67,1	58	58,2	30
Installed power, kW	4	4	11	15	55
Overall dimensions, mm	895×700× 1020	710×1015× 1270	970×1055× 1415	990×1000× 1900	2850×2960× 2500
Weight, kg	300	330	570	1170	7900

VIBRATING TABLES

Designed to compact cores and molds from core sand.



Characteristics / Model	4767	4767M	4769	4781	4782	4782M	7259.03 driven
Capacity, kg*	700	700	3000	2000	7000	5000	2000
Working space of vibrating table, mm*	800×1010	800×1410	500×1820	1200×1200	1170×3680	1500×2000	1200×2040
Distance to rollers, mm	650	650	810	810	810	810	810
Installed power, kW	1,1	1,1	3	3	4,5	3	3
Weight, kg	560	560	1350	1300	2700	2700	1600

*can be changed by customer's technical requirements.

CORE SAND PREPARATION COMPLEXES

Core sand preparation complexes are created on mixer base and include: mixer, vibrating table, bunker trestle, dosing units for basic components and additives, thermal tanks, etc.

CORE SAND PREPARATION UNIT

Created on the basis of continuous and batch-type mixers.



Characteristics / Model	П1739	П1887
Type of mixer	batch type (C1C-300)	continuous type (C1Ш3-12)
Productivity, t/hour	1,5	3-12
Weight of batch, kg (<i>max</i>)	80	-
Volume of bunker, m ³ (<i>min</i>)	0,5	0,7
Method to dose sand, loose and liquid components	volume, time, weight	
Installed power, kW	16	16
Overall dimensions, mm	3400×1800×3650	1180×2285×3805
Weight (without a mixer), kg	1100	750

CORE SAND AND GREEN SAND PREPARATION EQUIPMENT

AUTOMATIC CORE SAND PREPARATION UNIT

It is created on the basis of batch-type mixer C1C-300. It is designed to prepare multi-component core sand.



Characteristics / Model	4786
Type of mixer	batch type
Productivity, t/hour	to 6,0
Weight of batch, kg (<i>max</i>)	300
Volume of sand bunker, m ³ (<i>min</i>)	1,5
Volume of bunkers for loose components, m ³ (<i>min</i>)	0,24
Number of dosing units for loose components, pcs.	3
Method to dose sand, loose and liquid components	volume, time, weight
Installed power, kW	31
Overall dimensions, mm	9545×5210×5455
Weight of the unit (with a mixer), kg	7500

AUTOMATIC CORE SAND PREPARATION COMPLEXE

It is created on the basis of blade mixer.

It is designed to prepare core sand, including cold-hardening ones.



Characteristics / Model	П1881
Type of mixer	blade type
Productivity, t/hour	12; 24
Weight of batch, kg (<i>max</i>)	600; 1200
Volume of bunker, m ³ (<i>min</i>)	0,6
Method to dose loose and liquid components	volume, time, weight
Mixer drive revolution frequency, rev/min	30
Operating mode	automatic, setting
Installed power, kW	64
Overall dimensions, mm	6115×4095×4295
Weight of the complex (with a mixer), kg	9700

GREEN SAND PREPARATION EQUIPMENT

VORTEX MIXERS

The equipment is designed to prepare green sand in the shops for single-piece production, and as a part of automatic sand preparation complexes – with series and mass production of castings.



Characteristics / Model	4842	4843
Productivity, t/hour	15–20	30–40
Weight of batch, t	0,5	1,0
Operating mode	setting, automatic	
Installed power, kW	42	85
Overall dimensions, mm	2450×1650×2200	2850×2960×2500
Weight, kg	4500	7500

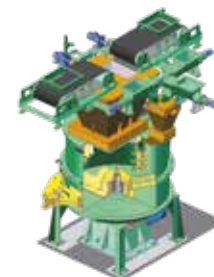
AUTOMATIC GREEN SAND PREPARATION COMPLEXES

The equipment is created on base of vortex mixers.

The equipment is designed to prepare sand in series and mass production foundry shops.



It is equipped with a set of sand components batching units, operator's touch screen, a set of devices of automatic control of a sand properties, software kit ensuring operation of the complex in an automatic and setting mode, collecting and recording process parameters of the sand during a mix preparation.



Characteristics / Model	4848	4847
Basic model of vortex mixer	4842	4843
Productivity, t/hour	15–20	30–40
Installed power, kW	60	95
Operating mode	setting, automatic	
Set of dosing devices	dry and liquid components of the mix being prepared	
Properties under control	control of temperature, mix humidity, weight of each component	
Overall dimensions, mm*	4300×5740×8585	6000×6000×12 000
Weight, kg*	19 000	25 000

*overall dimensions and weight of the complex can differ when changing contents of equipment as per customer's technical specifications.

EQUIPMENT FOR MAKING STACK MOLDS

It is designed to produce disposable molds from green sand in flasks with a model print on the lower part of a mold and the following assembly of them in vertical stack.

MOLDING MACHINE (STACK MOLDS)

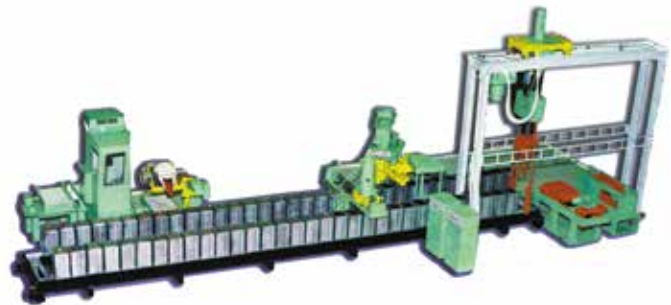
It is used in foundry shops for series and mass production so to obtain piston rings castings, including also double billets for piston rings, as well as other similar parts.



Characteristics / Model	4812
Type of machine	carousel three-position
Flask size, mm	395×345×(30-35)
Cycle duration, sec.	6
Productivity, molds/hour	600
Molding method	bottom-pressing
Pressing specific pressure, MPa	0,73...0,9
Operating mode	automatic, setting
Installed power, kW	14,5
Overall dimensions, mm	2500×1340×2800
Weight, t	3,2

AUTOMATIC MOLDING LINES

Can be equipped with mix preparation equipment on the basis of vortex mixers and power-driven cars to pour liquid metal into molds.



Characteristics / Model	7239	7257
Mold size, mm	395×345×35	500×400×100
Number of molds in a stack, pcs.	17	7
Productivity, stacks/hour	27	20
Height of a stack from the floor, mm (<i>min</i>)	1100	1355
Installed power, kW	41	40
Overall dimensions, mm	29 500×5430×7500	23 000×5790×3200
Weight, t	44	29

EQUIPMENT FOR MAKING FLASK MOLDS

Designed to produce disposable foundry flask molds from green sand in small series and series production.



MOLDING MACHINE (FLASK MOLDS)

Characteristics / Model	4836
Flask size, mm (<i>max</i>)	900×600×250
Capacity, kg (<i>min</i>)	900
Pressing force, kN (<i>min</i>)	90
Molding method	jolting + pressing
Cycle productivity, half mold/hour (<i>min</i>)	40
Extraction stroke, mm	220
Compressed air pressure in network, MPa	0,5–0,63
Installed power, kW	10
Overall dimensions, mm	2210×1265×1980
Weight, t	2,95

POURING EQUIPMENT

It is designed to fill in molds with liquid metal in foundry conveyors.



Characteristics / Model	Pouring car			Unit for filling in molds with liquid metal		
	4688	4688A	4688A-02	46119	4612	4615
Liquid metal capacity, kg	200	300	500	1000	1500	3000
Type of drive	electric-hydraulic					
Speed, m/min	20	20	20	30	42	42
Installed power, kW	15	15	15	28	30	30
Overall dimensions, mm	3420×1530× 2430	3630×1770× 3400	3630×1770× 3400	4500×7100× 3700	4500×7100× 3700	4500×7100× 3700
Weight, t	5,6	5,8	5,9	10	14	15,5

FOUNDRY TECHNOLOGICAL RIGGING

COMPLEX-PROFILE TECHNOLOGICAL RIGGING

Full cycle in creating of rigging (core, chill mold, model) – from designing and manufacture to development of technology and production of prototypes of molds, cores and castings.

3D optical digitalization of riggings, molds, castings and geometry control.

EQUIPMENT FOR PRODUCTION OF MODEL RIGGING

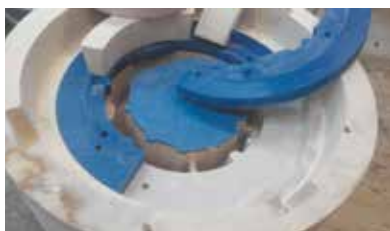
It is designed to produce complex-profile model rigging from wood, plywood, plastic, MDF and such materials.



Characteristics / Model	П1915
Type	horizontal - milling machine with numerical control
Size of working table, mm	1850x1260
Operation zone X, Y, mm	1600x1040
Spindle traveling along the axis Z	560
Spindle revolution frequency, rev/min	1000–18 000
Automatic change of tools	available
Command language	G-code or PLT
Speed of traveling, mm/min (max)	20 000
Operating system	controller
Installed power, kW	13,0
Overall dimensions, mm	2460x1630x2200
Weight, kg	3500

SAMPLES OF RIGGING

MODEL RIGGING



CHILL MOLDS



CORE BOXES



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