



завод труд

«Mashzavod Trud» OJSC is the leading Russian enterprise in sphere of producing of gravitational equipment. During more than 112 years of its history, the factory has developed production of a wide range of the metal mining machinery.

Today the Factory is performing the following activities:

- Development of design and operating documentation under customers' technical assignments;
- Design and manufacturing of preparation and customized equipment, modular and concentration plants, and (metal and nonmetallic) technological mineral processing lines;
- Adjustment of the equipment to customers' needs and demands;
- Selection and the packaged supply of the equipment;
- Installation supervision and designer supervision;
- Pre-commissioning activities, and putting into operation;
- Training of the Customer's personnel;
- After-sales service of the equipment, and audit.

The wide range of the manufactured equipment and well defined demands from customers make it possible to select the equipment that will fully comply with set tasks, and the optimal price range will provide the possibility to make a reasonable selection based on your preferences. Large amount of products on stock makes it possible to perform equipment delivery to customers within the maximally short time period.

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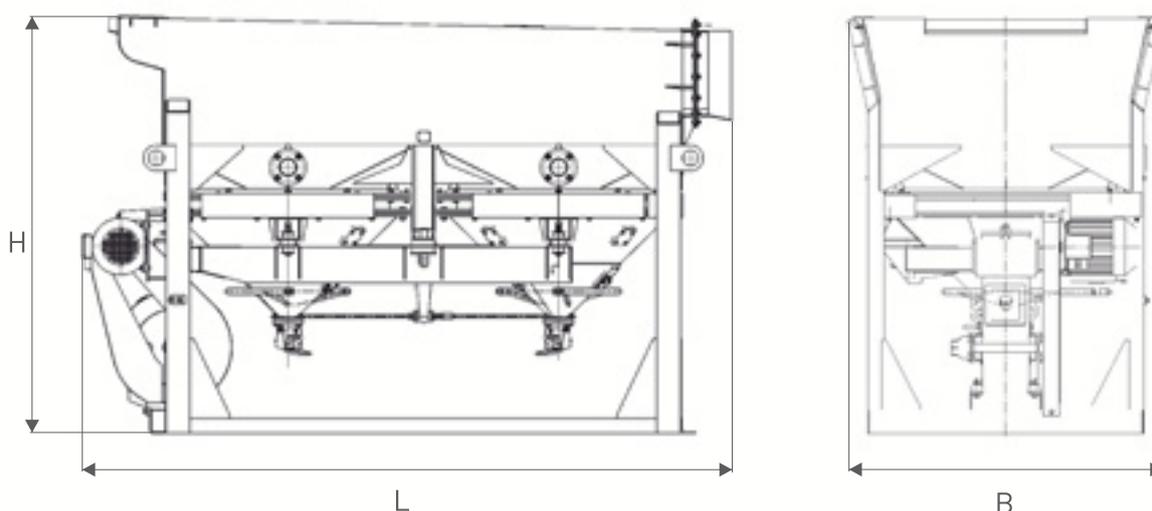
GRAVITY CONCENTRATION EQUIPMENT



DIAPHRAGM JIG WITH A FIXED-TYPE SCREEN

The diaphragm jig with a fixed-type screen (MOD) is designed for gravity concentration of alluvial and rock chip milled ores of nonferrous metals, diamonds, and other mineral deposits in water.

This equipment is used at mining and refining factories, and movable refining complexes.

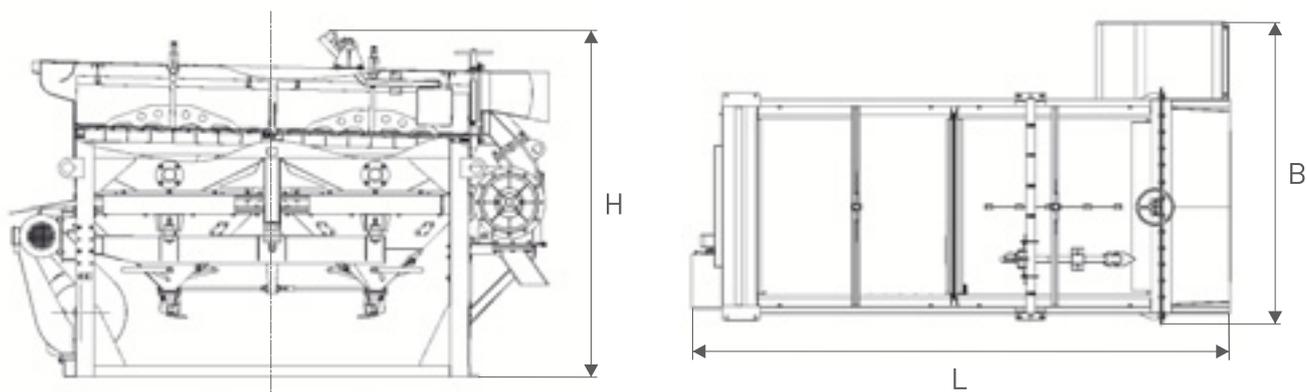


Parameters	MOD-1M1	MOD -2M1	MOD-3T	MOD-3M1	MOD-4M2
Qty of chambers, pcs.	2	2	2	3	4
Raw product throughput, tons/h	10	25	45	30	36
Feed size, mm, not more than	15	15	25	15	30
Screen working area, m	1	2	3	3	4
Cones stroke rate, min, limits	130-350	130-350	130-350	130-350	126-302
Rated power, kW	1.1	2.2	4	2.2x2	2.2x2
Overall dimensions, mm, not more than					
Length (L)	2160	2920	3295	4250	3492
Width (B)	956	1260	1580	1260	2546
Height (H)	2040	2300	2110	2300	2238
Weight, kg, not more than	905	1700	2210	2850	3850



DIAPHRAGM JIG WITH A FIXED-TYPE SCREEN MOD-3TR

The diaphragm jig with a fixed-type screen MOD-3TR with the working area of 3 m² is designed for gravity concentration of alluvial ores of nonferrous metals, diamond-bearing deposits, and other types of ore products in water. This equipment is used at mining and refining factories, and movable refining complexes.



Parameters	MOD 3TR
Qty of chambers, pcs.	2
Raw product throughput, tons/h	45
Feed size, mm, not more than	25
Screen working area, m ²	3
Cones stroke rate, min, limits	130-350
Rated power, kW	7
Overall dimensions, mm, not more than	
Length (L)	3565
Width (B)	2020
Height (H)	2310
Weight, kg, not more than	3140

MOVABLE-SIEVE DIAPHRAGM JIG

Movable-sieve diaphragm jig ("Trud") is designated for gravitational processing of placers and milled ledge base metal ores, diamonds and other minerals in water. Movable sieve allows increase of processing effectiveness due to decrease of small mineral particles carry-over and backwater flow rate.

It is used at ore mining and processing enterprises, mobile processing complexes and dredges.

Fig. 1

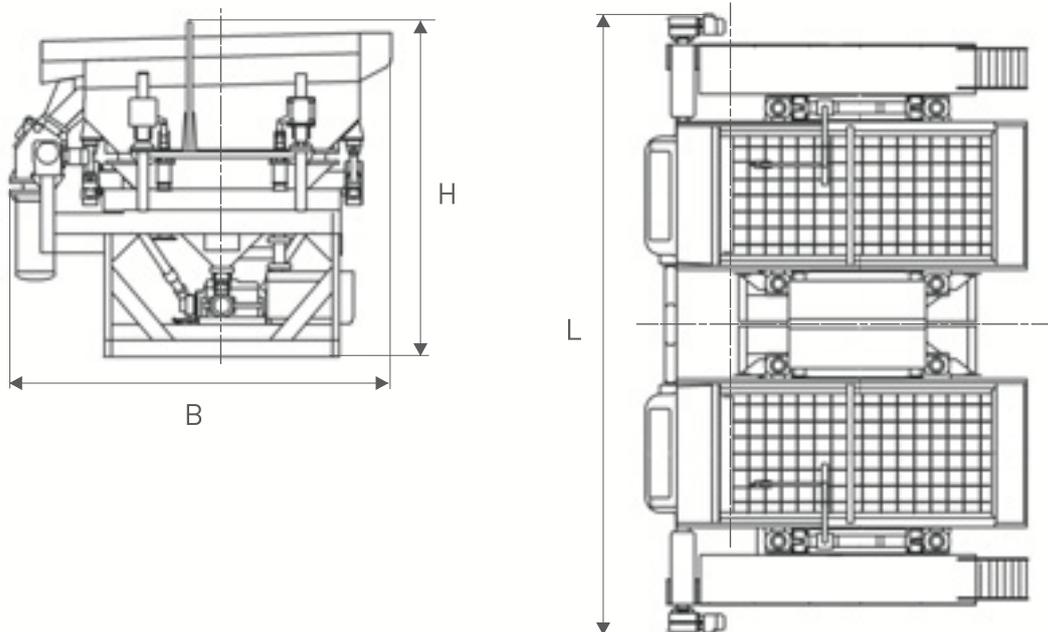
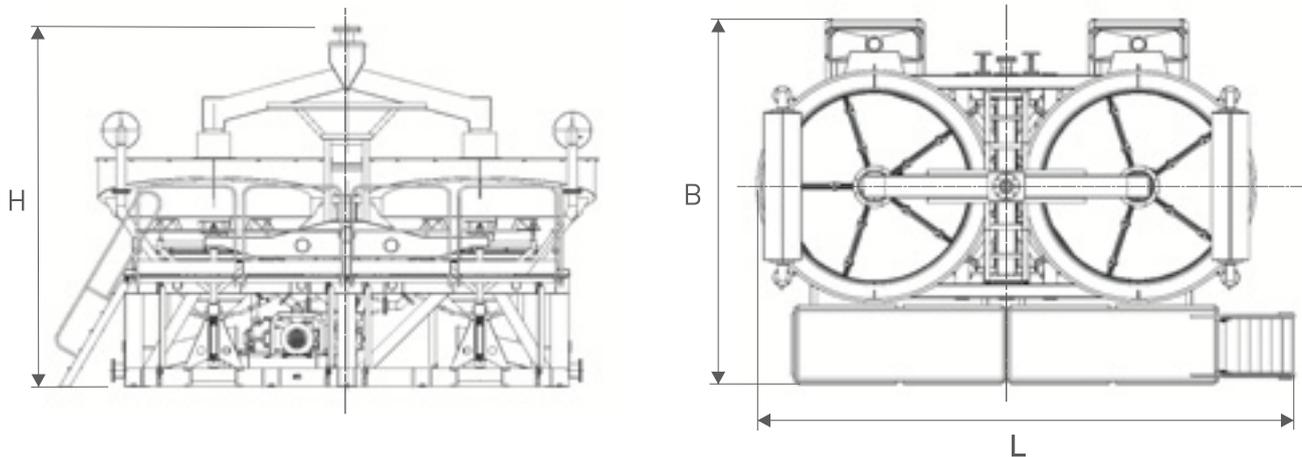




Fig. 2



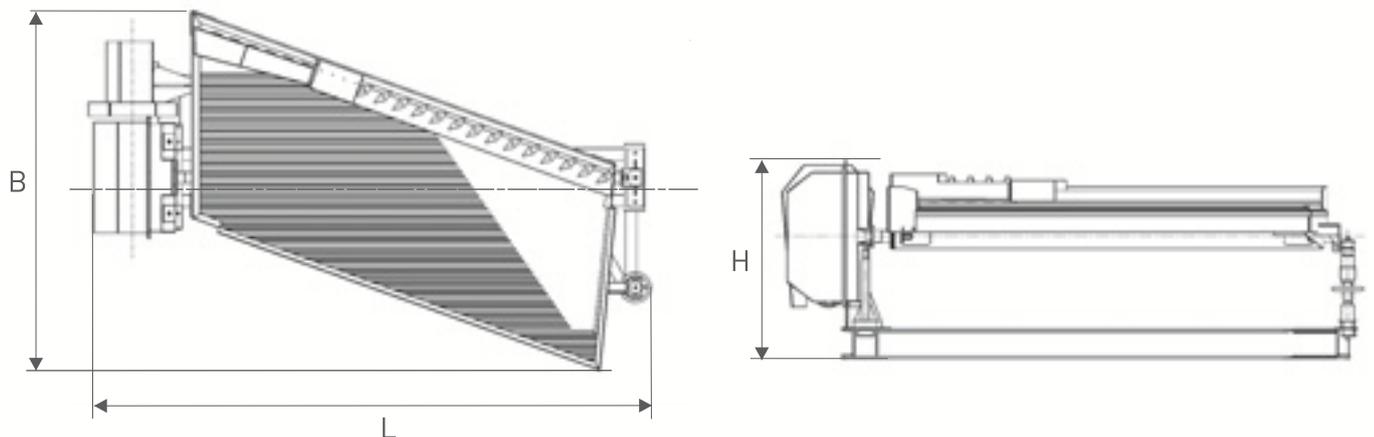
Parameters	Trud-6PRMK4D*	Trud-3,5PR	Trud-7,5PR	Trud-12M2
Chamber form	Rectangular	Rectangular	Circular	Circular
Raw product throughput, tons/h, limits	100-150	40	80-100	150-200
Feed size, mm, not more than	40	20	25	20
Sieve working area, m ²	6	3,5	7,5	12
Qty of chambers, pcs.	2	2	2	2
Stroke rate of a chamber with screen, min, limits	70-150	100-300	120-180	120-150
Rated power, kW	11.3x2	4	15	15
Overall dimensions, mm, not more than				
Length (L)	6614	4765	6120	7470
Width (B)	4045	3065	4190	3370
Height (H)	3270	2550	4110	3550
Weight, kg, not more than	13775	4600	9400	13700
	Fig. 1	Fig. 2	Fig. 2	Fig. 2

*with automated discharge of oversized product.

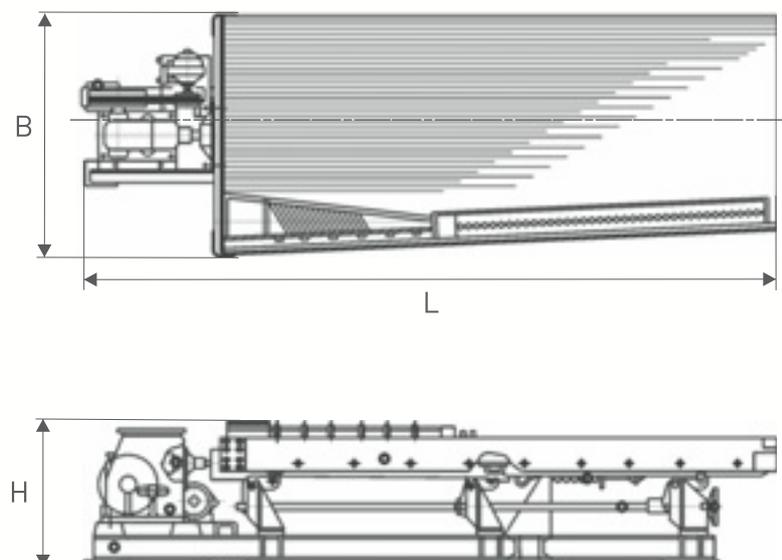
CONCENTRATING TABLE

Concentrating table (SKO) is designated for gravity separation of minerals in water during processing of nonferrous ores, black copper, precious and rare metal ores. It is used in metal mining and metal industry.

Tables with inertia drive



Tables with crank drive



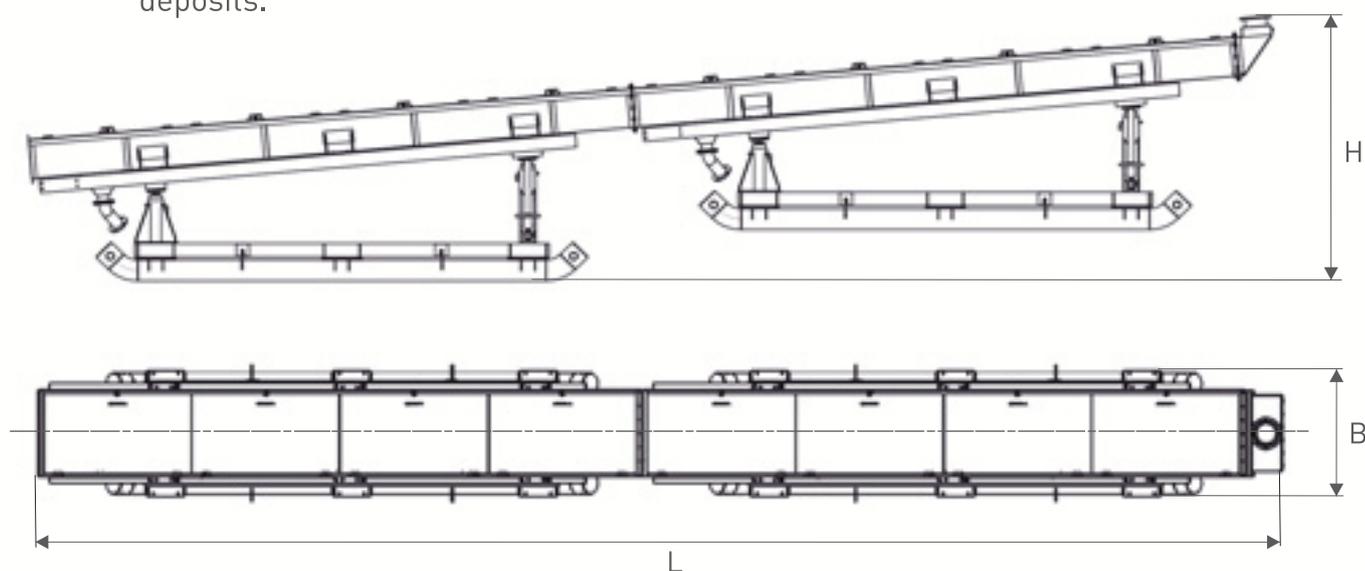


Parameters	SKO-2L	SKO-4L	SKO-15	SKO-22	SKO-30	SKO-1-7.5
Deck shape	Parallelogram					Trapezoid
Drive type	Inertia					Crank
Power supply	Left/Right					
Material processing	Slime/Sand	Sand	Slime/Sand			Sand
Deck cover	Rubber		Fiber glass/Rubber			
Deck quantity	1	2	2	3	4	1
Total deck area, m ² , not less than	2	4	15	22.5	30	7.5
Deck stroke frequency, r/min ⁻¹ , in the range	272...24	270...400	280...350	280...350	280...350	225...357
Feed size, mm, not more than	0.2-3.0 0.04-0.2	0.2-3.0	0.2-3.0 0.04-0.2	1.0-3.0 0.04-0.2	0.2-3.0 0.04-0.2	0.4-4
Stroke length, mm (before turning off ± 2 mm)	10...18	10...26	10...20	10...20	10...20	12...20
Capacity, t/h, in the range						
Sand	0.3...1.0	0.6...2.0	2...7	3...10	4...14	0.5...3.0
Slime	0.08...0.3		0.7...2.0	1.0...3.03	1.4...4.0	
Installed power, kW, not more than	0.75	1.5	2.2	2.2	2.2	2.2
Overall dimensions, mm, not more than						
Length (L)	3000	3150	5500	5400	5400	5830
Width (B)	1250	2340	2300	2300	2300	1800
Height (H)	1000	2330	1700	2300	3100	1070
Weight, kg	450	1410	2400	3000	4000	1335

SLUICES

Modular deep-filled sluice (ShGM) and the modular low-filled sluice (ShMM) are designed for dressing of ore and alluvial deposits in water in case of a significant density difference of the useful and mineral deposits.

This equipment is used for the field development of alluvial precious metals deposits.



Parameters	ShGM-750	ShMM-750
Sluice width, mm	760	760
Sluice height, mm	400	250
Sluice section length, mm	6100	6100
Qty of sections in a sluice, mm, max	2	5
Sluice inclination angle, grad., limits	5...12	5...12
Riffles height, mm	50	30
Distance between plates, mm	60	40
Raw product size, mm	16...50	below 16
Pulp volume capacity, m ³ /h, max	450*	150*
Sluice section dimensions, mm, max		
Length (L)	12700	12700
Width (B)	2015	2015
Height (H)	2700	2700
Weight, kg, not more than	3900	3920

*Sluice pulp efficiency depends on the sluice width.
Flow height, bottom inclination, and riffle type.



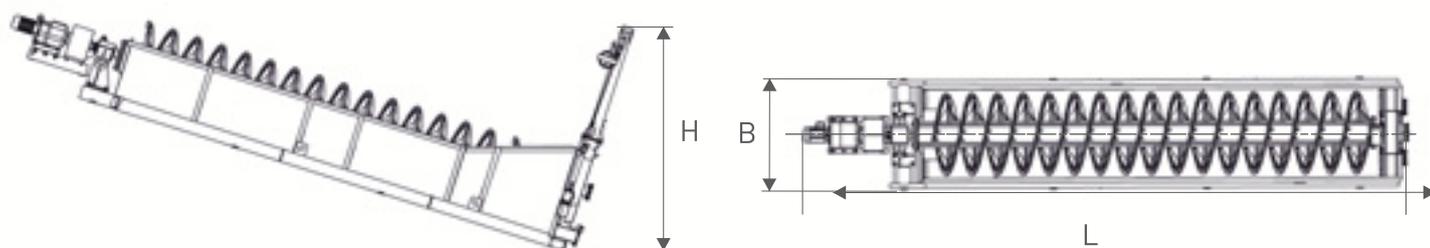
CLASSIFICATION EQUIPMENT



NON-SUBMERGED-SPIRAL TYPE CLASSIFIER

Non-submerged-spiral type classifier is designed for meal segregation during ore dressing of ferrous and nonferrous metals, and other mineral deposits in water, with the size classification of 0.15 mm and more.

This equipment is used for the ore mining, metallurgical and construction industries.



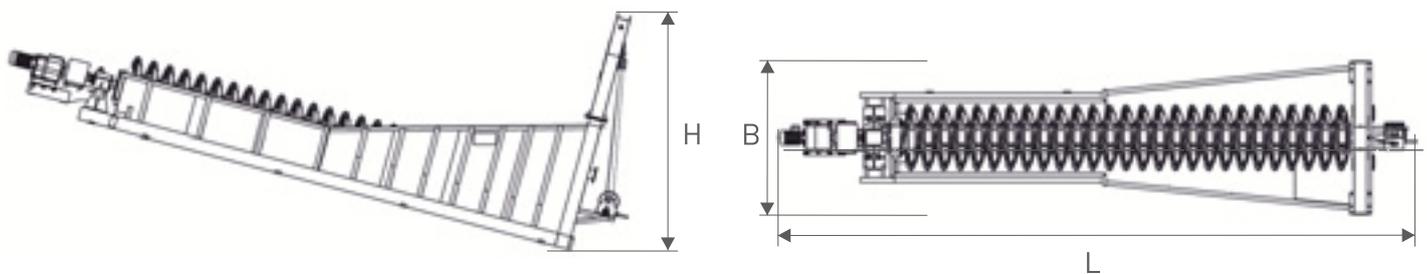
Parameters	1KSN-5MRB	1KSN-7,5MRB	1KSN-10MRB	1KSN-12MRB	1KSN-15MRB	1KSN-20MRB	1KSN-24MRB	1KSN-30MRN	2KSN-20MRB
Capacity, tons/h									
Sands	6.5	22	39.5	80	130	220	300	440	437.5
Discharge	1.3	2.7	9.5	14	23	37	50	75	70.8
Qty of spirals	1	1	1	1	1	1	1	1	2
Spiral rotation rate, min ⁻¹	9.7	9.7	8	8	7.2	5.8	4	3	6.2
Spiral diameter, mm	500	750	1000	1200	1500	2000	2400	3000	2000
Spiral elevation height, mm	500	700	600	1100	1100	1200	1700	1700	1200
Power of electric drive motor, KW	2.2	2.2	5.5	5.5	9.5	11	18.5	30	11x2
Spiral lifting mechanism	Manual hoist	Manual hoist	Manual hoist	TRCh-5	TRCh-5	TRCh-5	TRCh-5	TRCh-5	TRCh-5
Overall dimensions, mm									
Length (L)	6945	7940	9020	9680	10500	10850	12620	17425	11115
Width (B)	826	1310	1900	2390	2600	2330	2920	4305	5204
Height (H)	1760	1885	2355	3810	4430	4965	6245	6685	5278
Weight, kg, not more than	1750	2900	4100	7250	10010	12650	24200	43465	27281



SUBMERGED-SPIRAL TYPE CLASSIFIER

Submerged-spiral type classifier is designed for meal segregation during refining ores of ferrous and nonferrous metals, and other mineral deposits in water, with the size classification of 0.15 mm and less.

This equipment is used for the ore mining, metallurgical, and construction industries.

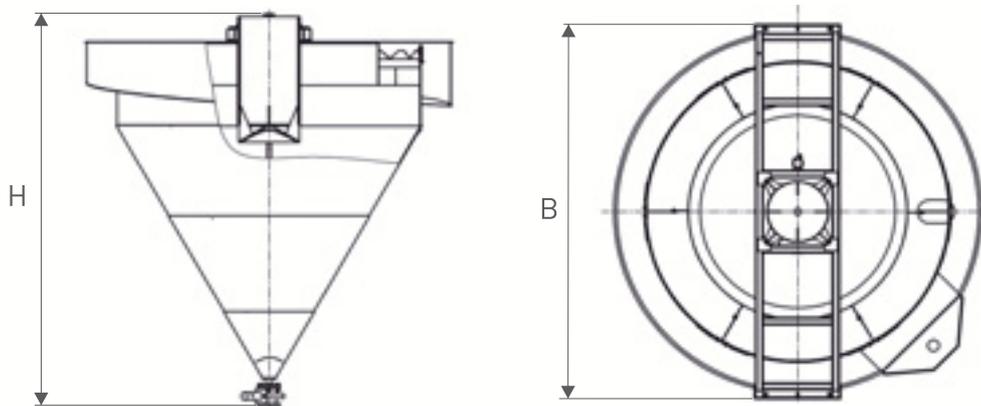


Parameters	1KSP-10MRB	1KSP-12MRB1	1KSP-15MRB	1KSP-20	2KSP-12MRB	2KSP-15MRB
Capacity, tons/h						
Sands	39.5	85	130	240	170	258.5
Discharge	8.5	13	24	38	26	48
Qty of spirals	1	1	1	1	2	2
Spiral rotation rate, min ⁻¹	8	7.2	6.3	6	7.2	6.3
Spiral diameter, mm	1000	1200	1500	2000	1200	1500
Power of electric drive motor, kW	5.5	7.5	11	18.5	7.2x2	11x2
Spiral lifting mechanism	Manual hoist	Manual hoist ON-379	Manual hoist TRCh-5	TEL-3	Manual hoist TRCh-5	Manual hoist TRCh-5
Overall dimensions, mm						
Length (L)	12385	11575	12860	17460	11610	12785
Width (B)	2260	2800	2820	2430	3940	4020
Height (H)	5590	4440	6715	6425	4440	6735
Weight, kg, not more than	8480	8360	15000	22850	15330	26600

CONE CLASSIFIER

Sand cone classifier (KKP), and the Slime cone classifier (KKSh) are designed to classify meals in two classes based on the principle of the particles free drop in water.

This equipment is used at the ore dressing, ore mining, metallurgical, and construction enterprises.



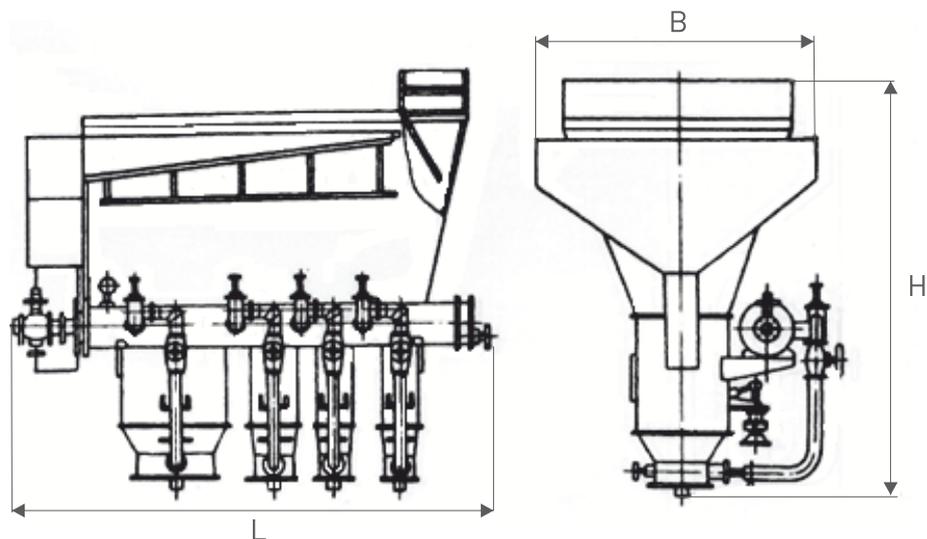
Parameters	KKP-1	KKP-1.5	KKP-1.8	KKP-2.4	KKP-2.5	KKSh-2.4
	S a n d					Slime
Solid capacity, tons/h, limits	1.6-4	3.6-9	5-12	9-22	9-22	4.45-11.1
Face area, m ²	0.6	1.45	1.8	3.22	4.9	4.24
Working volume, m ³	0.25	0.92	1.62	4.15	6.3	4.15
Overflow lip diameter, mm ⁻¹	1000	1500	1800	2400	2500	2400
Max feed size, mm	1.65	1.65	1.65	1.65	1.65	0.3
Discharge opening diameter, mm, limits	9.5-16	16-25.4	25-45	25-45	25-50	25-45
Overall dimensions, mm, not more than						
Width (B)	1500	2035	2740	3400	3130	3260
Height (H)	1600	2120	2970	3790	3250	3400
Weight, kg, not more than	162	240	680	1270	1300	930



HYDRAULIC MULTI-COMPARTMENT CLASSIFIER

Hydraulic classifier (KG) is designed to classify the milled ore into products or narrow classes according to sizes by using rising currents.

This equipment is used for ore preparation to ore dressing in concentrating tables and concentrators at the ore dressing enterprises, and well as for sorting rocks and aggregates (sands) in construction industry.



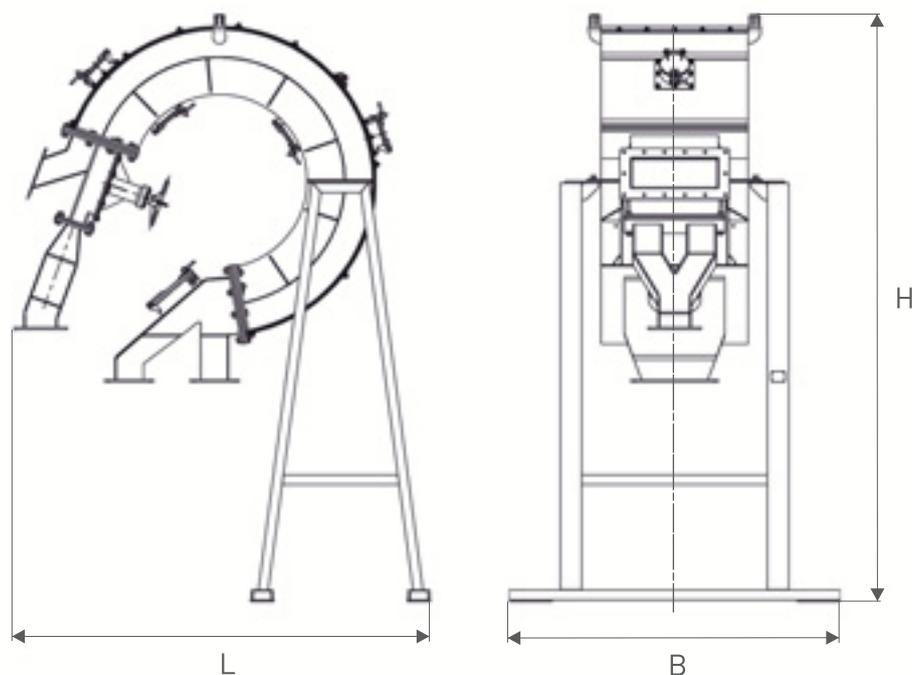
Parameters	KG- 4RM	KG-6R
Solid capacity, tons/h, limits	30	40
Raw material size, mm, not more than	2.5	2.5
Qty of chambers, pcs.	4	6
Water pressure in rising currents, KPa, limits	70-90	70-90
Water consumption for classification, m ³ /tons, limits	2.5-4.0	2.5-4.0
Qty of classification products (classes), pcs.	5	7
Overall dimensions, mm, not more than		
Length (L)	3450	5400
Width (B)	2200	2300
Height (H)	2795	2795
Weight, kg, not more than	2570	4170

ARC-TYPE CLASSIFIER

Hydraulic arc-type classifier (SMC) is designated for separation of raw cement-raw slime coming out of the mill, clay mill or other pulverizer in two factions: fine faction (finished product) and coarse fraction returned for regrinding.

It may operate in closed circuit with raw material mill or in open circuit with clay mill or other coarse-crushing plant, as well as with cement-raw slimes with various physical and mechanical properties.

It is used in construction industry.



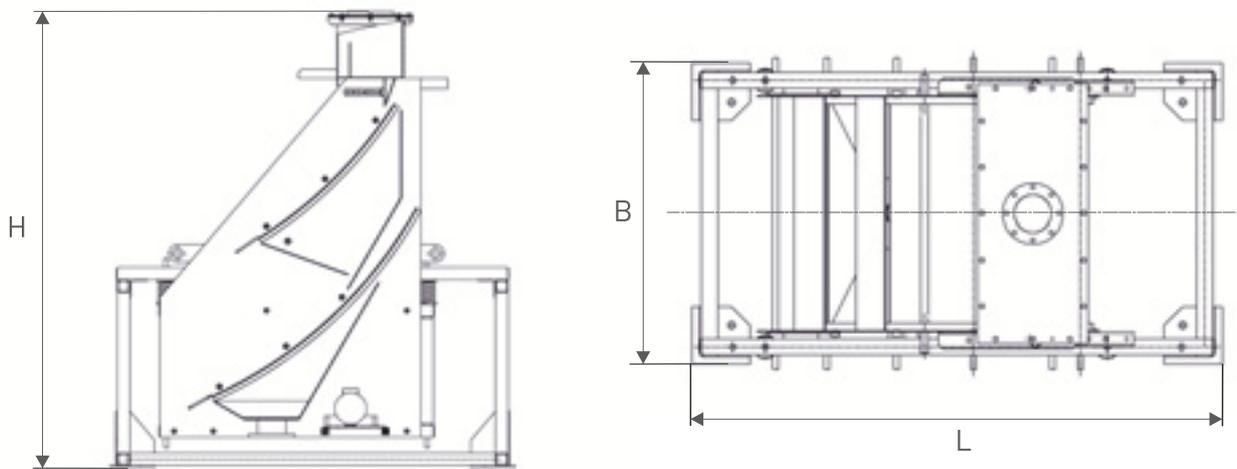
Parameters	SMC-047
Finished product output, m ³ /h, not less than	75
Effective area of classifying grid, m ² , not more than	1.4
Inlet slime operating pressure, kg/cm ² , not more than	3
Overall dimensions, mm, not more than	
Length (L)	1950
Bidth (B)	1550
Height (H)	2775
Weight, kg, not more than	680



SIEVE BEND SCREEN

Sieve bend screen (GD) is designed to dewater and separate rocks and aggregates into various sized products using deck plates.

This equipment is used for wet screening and classification of quickly pulping materials at the coal preparation plants, coking plants, as well as an the ore dressing lines.

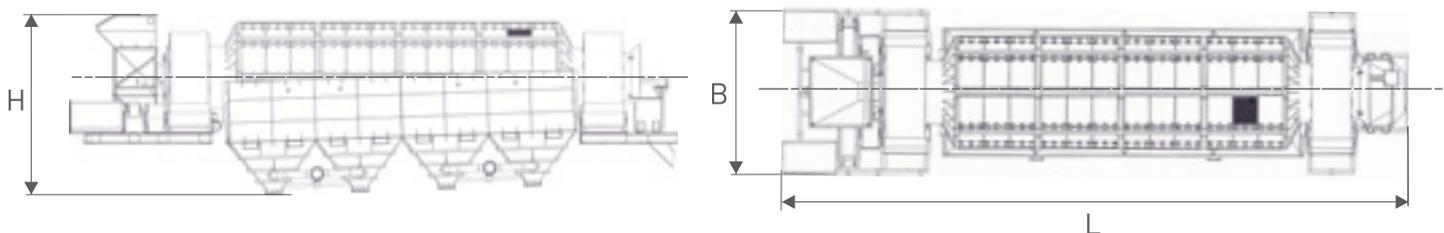


Parameters	GD-1-2	GD-1A	GD-3
Qty of screens, pcs.	2	1	1
Overall screen working area, m ²	2	1	3
Screen width, m	1	1	1.5
Screen mesh size, mm, limits		0.5-12.0*	
Upper screen	3.0-12.0		
Lower screen	0.1-3.0		
Feeding	Free flow		
Volumetric flow capacity, m ³ /h, limits	150	100	300
Auxiliary equipment	IV-107N vibrator		
Overall dimensions, mm, not more than			
Length (L)	2280	1985	2930
Width (B)	1340	1340	1900
Height (H)	2560	2010	3000
Weight, kg, below	1450	1025	1700

*to be determined by the customer

DRUM SCREEN

Drum screen (GB) and enlarged drum screen (BGU) are designed to classify the material and wash the large ore solids from clay and pulp. This equipment is used in ore dressing and road construction industries.



Parameters	GB-1,5	BGU-28
Capacity, tons/h	90	300
Raw material size, mm, not more than	70	400
Inner drum diameter, mm	1500	2800
Drum working length, mm	4740	10000
Drum rotation rate, rpm, not more than		
during milling and screening	-	21.5
during scrubbing and screening	12.5	14.5
Screen mesh size, (metal, polyurethane)	*	*
Drive		
Electric motor capacity, kW	5.5x2	250x2
Frequency rate, rpm	1500	1485
Longitude inclination angle, grad.	4	2
Overall dimensions, mm		
Length (L)	8000	18800
Width (B)	2550	5030
Height (H)	2900	5500
Weight, kg	12000	85000

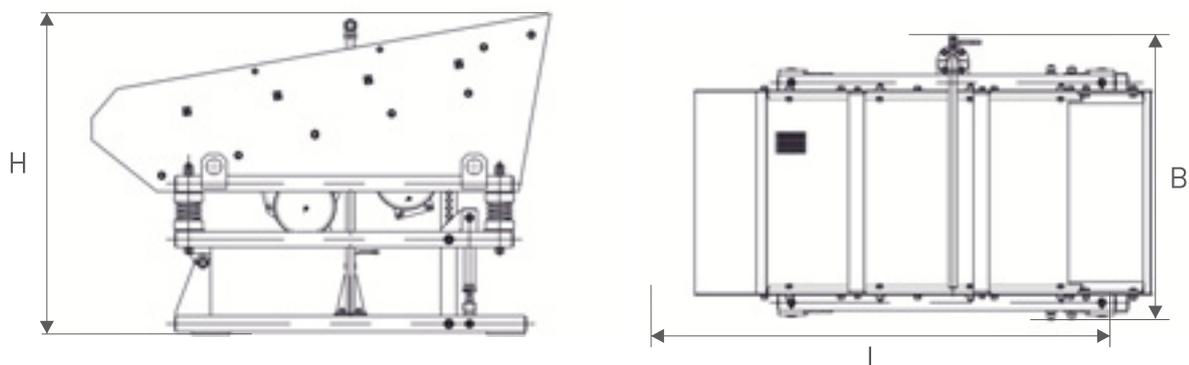
*to be determined by customer



VIBRATING SCREEN

Vibrating screen (GV) is designated for continuous screening of bulk materials by set grain-size grades.

It is used for wet screening and classification of ores.



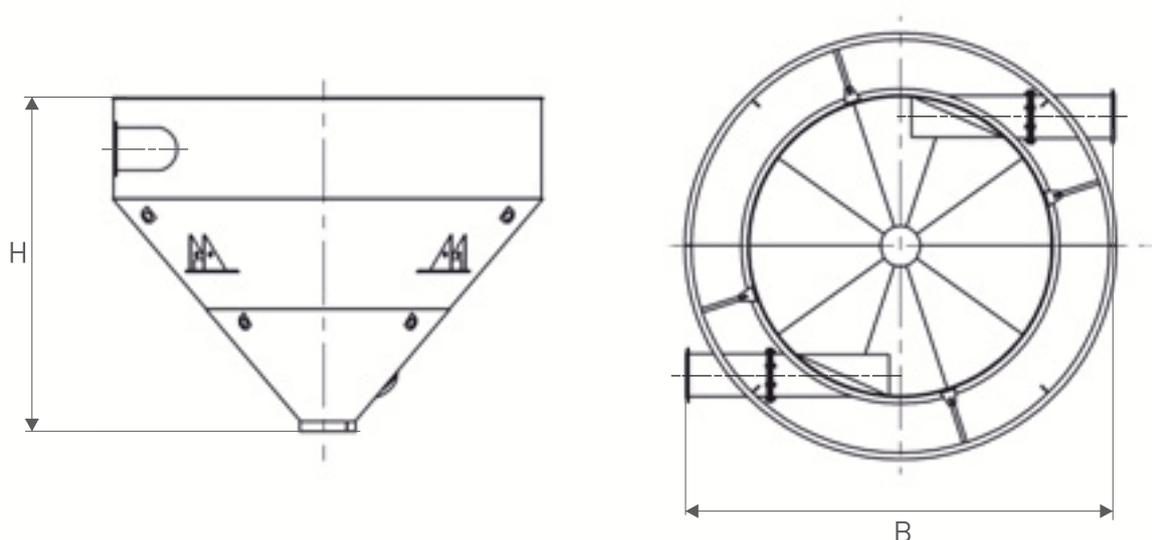
Parameters	GV-0.6M1
Nominal power of electromechanical vibrator, kW	0.37
Number of electromechanical vibrators, pcs	2
Number of deck plates	1
Screening surface, m ²	0.6
Pan (screen body) vibration frequency, sec ⁻¹	25
Pan (body) vibration amplitude, mm, not more than	3
Angle of deck plate slope, deg.	5...10
Coarseness of top size material, mm, in the range	0.5-16
Coarseness of undersize material, mm, not more than	8
Mesh size, mm, not more than	0.8-8
Overall dimensions, mm, not more than	
Length (L)	1440
Width (B)	905
Height (H)	1005
Screen weight, kg, not more than	255

CONICAL HYDRAULIC SCREEN

Conical hydraulic screen (KGG) is designated for separation of sand and gravel mix into two fractions: sand and gravel.

Hydraulic screen is a cone-cylindrical apparatus without any driving mechanisms and rotating parts.

It is used in building materials production.



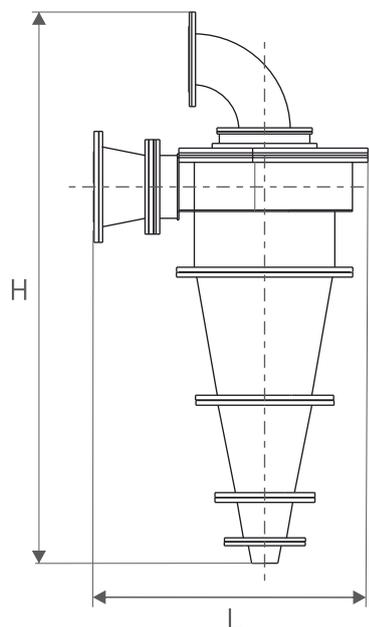
Parameters	KGG-2500	KGG-3000
Diameter, mm, not less than		
outside cone	3500	4200
inside cone	2500	3000
Feed size, mm, not more than	40	40
Output, not more than		
pulp, m ³ /h	103	265
solid, t/h	90	225
Overall dimensions, mm, not more than		
Width (B)	3800	4240
Height (H)	3310	3350
Weight, kg, not more than	2920	3290



HYDROCYCLONE

Hydrocyclone (GC) is designated for classification of fine-grained materials by coarseness in centrifugal field created in the result of pulp rotation. Besides classification hydrocyclones are used at processing plants for discharge of excess transport water from pulps.

It is used at mining and processing works, metallurgic, oil and coal enterprises.

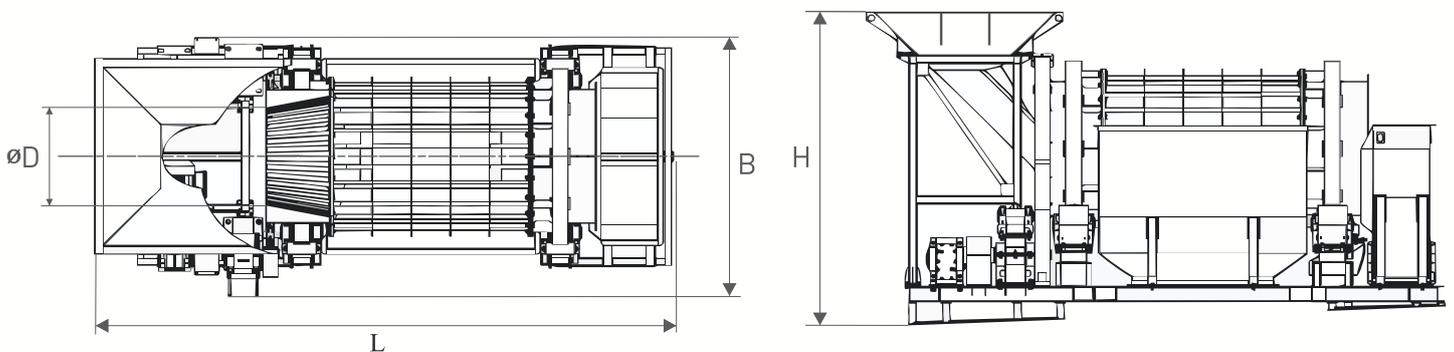


Parameters	GC-150AP	GC-250AP	GC-360AP	GC-500AP	GC-710A
Cylindrical part diameter	150	250	360	500	710
Cone angle, deg.	20	20	20	20	20
Inlet connection diameter, mm	60	125	150	200	300
Drain connection diameter, mm	45	80	115	150	200
Sand opening diameters, mm	12;17;24;34	18;24;36	34;48;76	48;76;96	48;76;96;150
Output at head of 0.1 MPa, m ³ /h, not more than	20	50	100	180	360
Overall dimensions, mm, not more than					
Length (L)	460	580	820	900	1200
Width (B)	420	580	630	915	1180
Height (H)	770	1240	1640	2275	3220
Weight, kg	70	75	131	331	651

The recommended starting material particle size up to 0,5 mm.

GRIZZLY ROCK CLASSIFIER

Grizzly rock classifier (KV) is designed to separate large solids in raw material. This equipment is used in development of alluvial deposits of precious metals and stannum, as well as at the gravel and break-stone production lines.



Parameters	KV-1500
Capacity, tons/h	200
Max raw material size, mm, not more than	500
Size of finished product, mm, not more than	200
Inner drum diameter, mm	1750
Drum working length, mm	2520
Input diameter of loading opening, mm (D)	1185
Drum rotation rate, min ⁻¹	14
Rated capacity, kW	55
Longitude inclination angle of the classifier, grad.	1;2
Overall dimensions, mm, not more than	
Length (L)	7100
Width (B)	3300
Height (H)	3950
Weight, kg, not more than	11700



WASHING EQUIPMENT

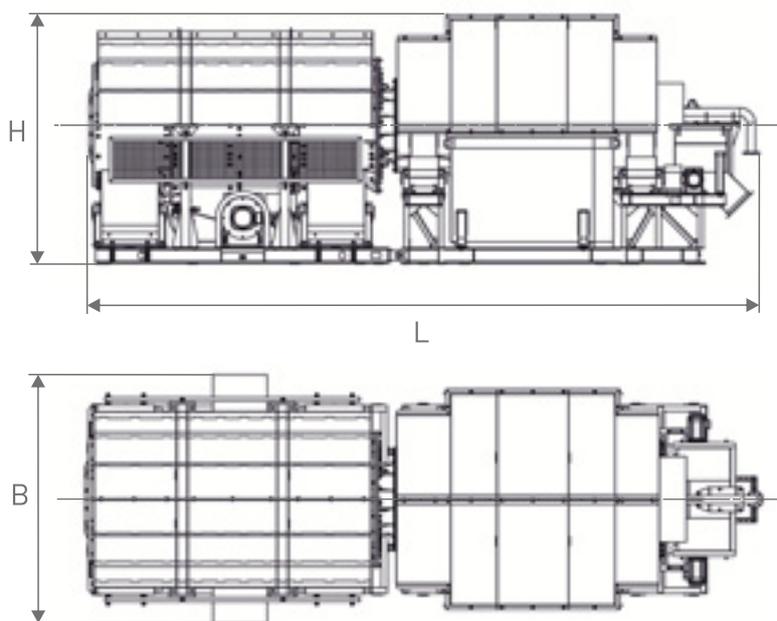




WASHING AND SORTING COMPLEX

Washing and sorting complex (PSK) is designed for scrubbing and further classification of natural soils, sands, ore, and alluvial materials into three classes, as well as for washing of various types of ore in disposal lines for human-made recycled materials.

This equipment is used at the open-air sites of washing plants, modular ore dressing plants and dredgers.

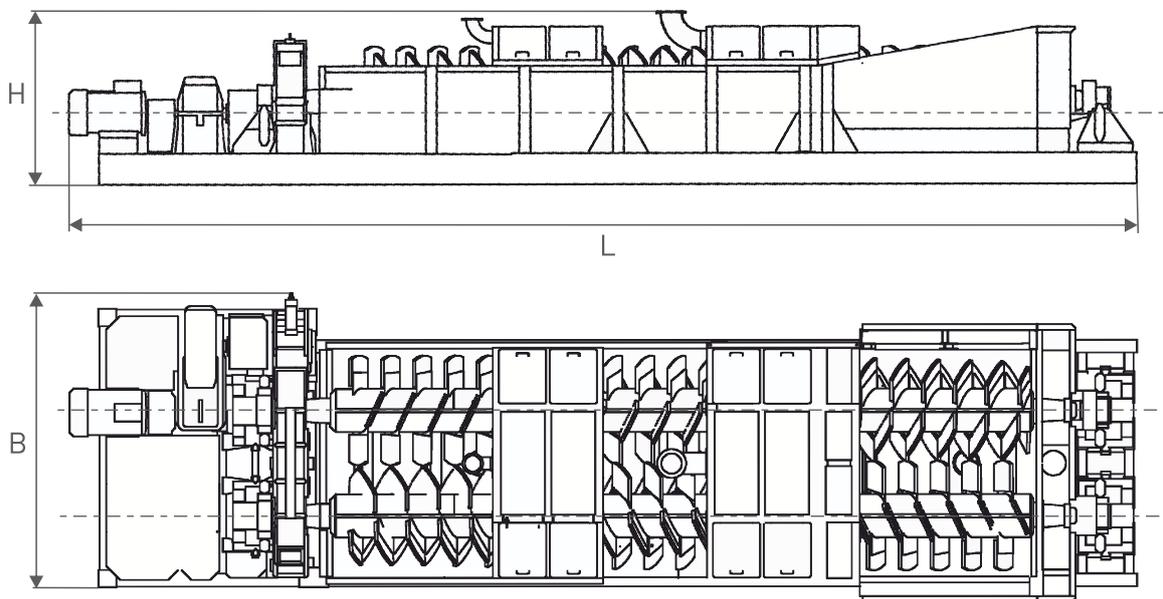


Parameters	PSK-80
Capacity, tons/h (m ³ /h), not more than	
for light washable material	160 (80)
for medium washable material	120 (60)
for hard washable material	80 (40)
Summary rated capacity of electric motors, kW	48
Overall dimensions, mm, not more than	
Length (L)	8840
Width (B)	3260
Height (H)	3285
Weight, kg, not more than	19900



LOG WASHER

Log washer (2MK) is designed to wash medium washable ore materials, rocks and aggregates (gravel, break stone, etc.), manganese, iron, and other ores, and non-metallic flux materials (limestone, dolomite) to clean them from clay and other residuals. This equipment is used in ore mining and construction industries.



Parameters	2MK-10	2MK-12	2MK-14
Capacity*, tons/h	40-75	50-100	80-150
Max size of washed material, mm	80	100	100
Tray inclination angle, grad., limits	8-12	8-12	8-12
Motor capacity, kW, not more than	45	55	75
Water consumption per 1 ton of raw material, m ³ /tons, limits	1.5-3.0	2-4	2-4
Overall dimensions, mm, not more than			
Length (L)	11500	13380	13610
Width (B)	2800	3380	3773
Height (H)	2000	2130	2325
Weight, kg, not more than	2800	3314	37200

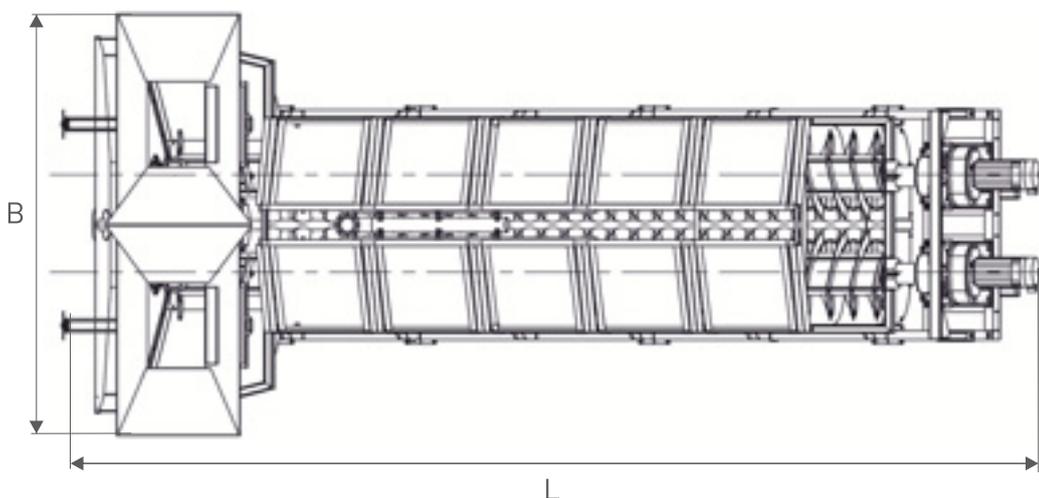
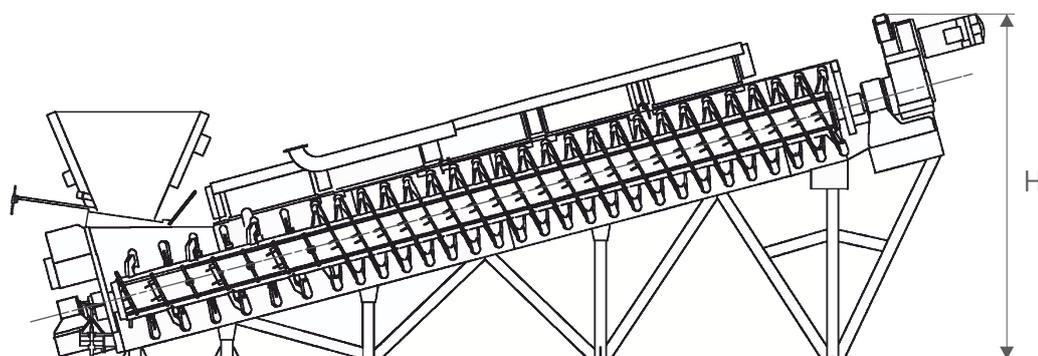
*Applicable to the spiral shaft rotation rate.



LOG WASHER FOR MINERAL HALITE

Log washer (MK) is used for washing of mineral halite (deposited or industrial salt) and easily washed materials (gravel, rock stone etc.) from clay and other impurities.

It is used in salt and construction industry.



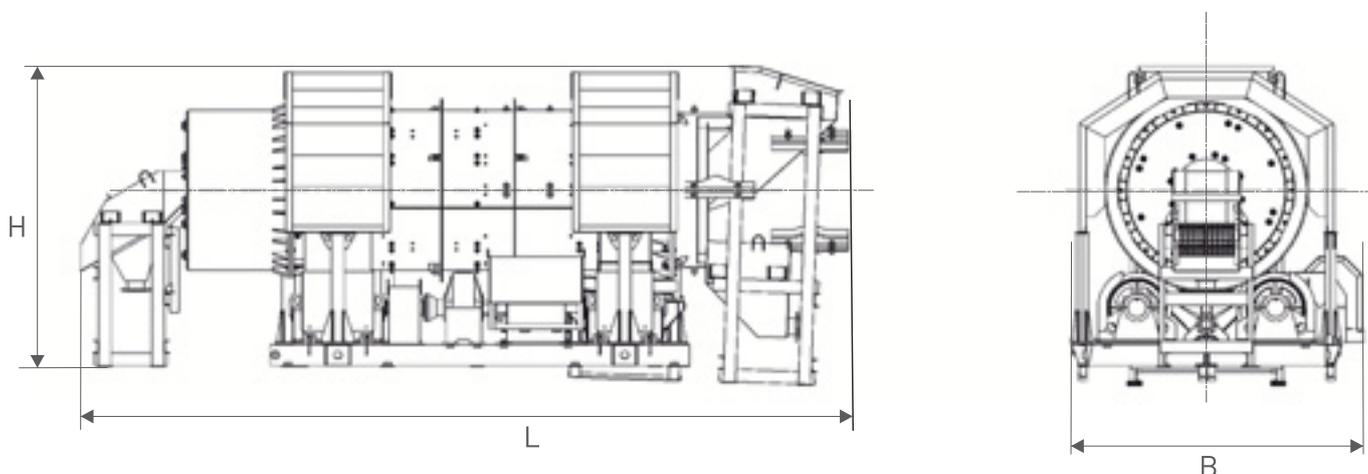


Parameters	2MK-10G
Capacity, t/h	100
Maximum feed size, mm	150
Internal pan dimensions, m, not more than:	
length	8
width	2.11
Pan inclination angle, deg.	15
Motor reducer power, kW	22x2
Spiral shafts:	
number, pcs.	2
tip diameter, mm, not more than	980
rotating velocity, min ⁻¹	6-10
Water flow rate, m ³ /t	2-4
Overall dimensions, mm, not more than	
Length (L)	9900
Width (B)	4170
Height (H)	3720
Weight, kg, not more than	16200



SCRUBBING COMPLEX

Scrubbing complex (KDS) is designed for scrubbing clay deposits from natural soils, sands, ore, rocks, and aggregates; to wash constructional materials and limestones. This equipment is used at the open-air sites of washing plants, modular ore dressing plants, and dredgers.



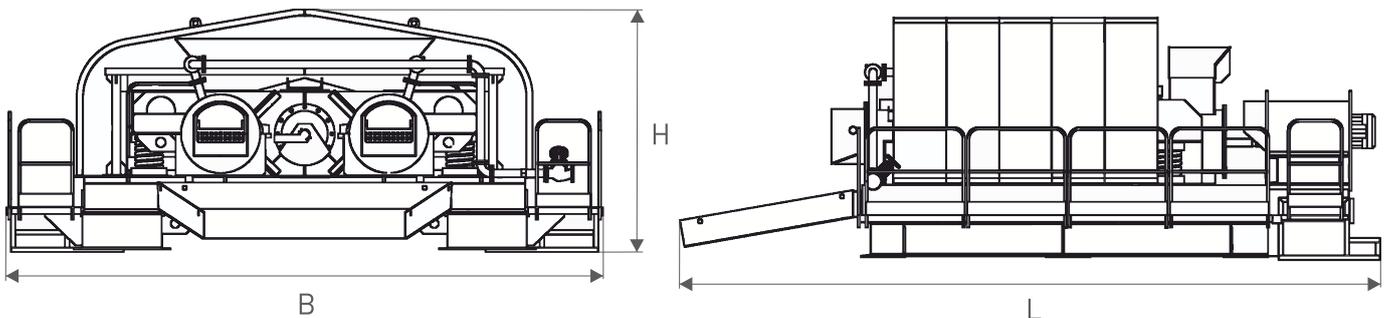
Parameters	KDS-15	KDS-18
Drum rated diameter, mm	1500	1800
Length of the drum with slop basin, mm	5057	6000
Diameter of loading opening, mm	1160±5	1400
Diameter of discharge opening, mm	600±5	700
Scrubber inclination angle, grad.	2	2...4
Raw material size, mm, not more than	200	200
Capacity m ³ /h (tons/h), not more than	70(140)	100(200)
Drum rotation rate, min ⁻¹	20	15.4
Electric motor capacity, KW	45	2x37
Overall dimensions, mm, not more than		
Length (L)	7200	8446
Width (B)	2810	3290
Height (H)	3040	3732
Weight, kg, not more than	13030	23050



VIBRATING DESINTEGRATOR

Vibrating disintegrator (DV) is designated for disintegration of clay materials and deposits that are difficult to wash with high content of sticky clay (over 50%) with simultaneous material classification.

It is used in development of noble metal placers.



Parameters	DV-20
Capacity, m ³ /h	30*
Washing degree	98%
Washing water flow rate, m ³ /h, not more than	80
Boulder coarseness, mm, not more than	200
Tool operating principle	vibration
Number of washing chambers, pcs	2
Normal loading weight, kg	3000
Motor power, kW	37
Number of revolutions, rpm	557
Overall dimensions, mm, not more than	
Length (L)	7940
Width (B)	6760
Height (H)	2770
Weight, kg, not more than	20000

*Depends on material washing time.

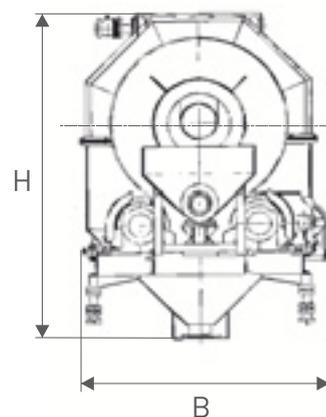
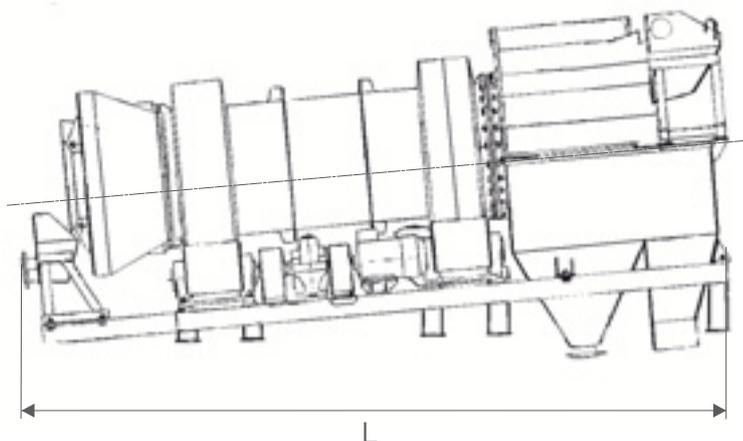


SCRUBBER AND WASHING TROMMEL

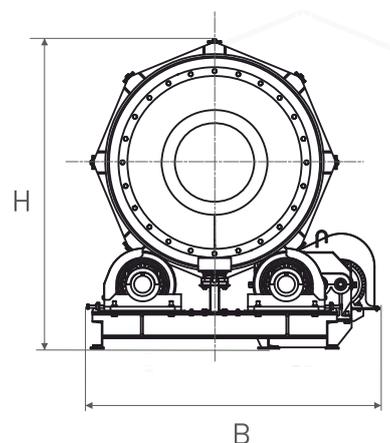
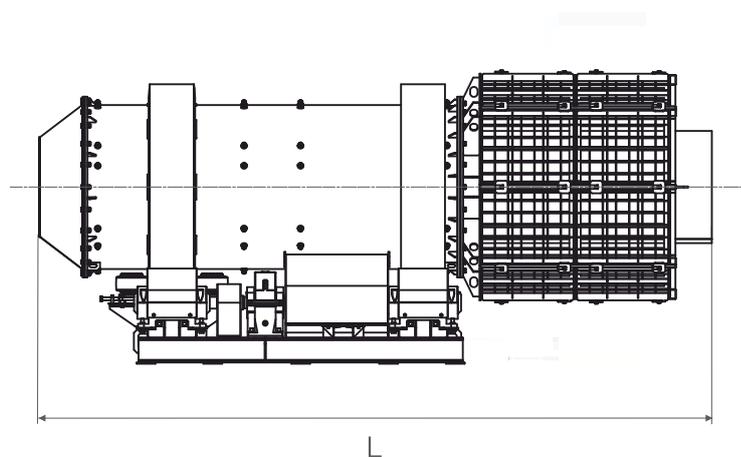
Scrubber (S) and washing trommel (WT) are designated for disintegration of clay material from natural soils, sands ore fields and placers, as well as for the use during washing of various raw materials during recycling of artificial recycled materials.

They are used in ore mining, metallurgic and construction industry.

Reverse-flow disintegration system



Direct-flow disintegration system



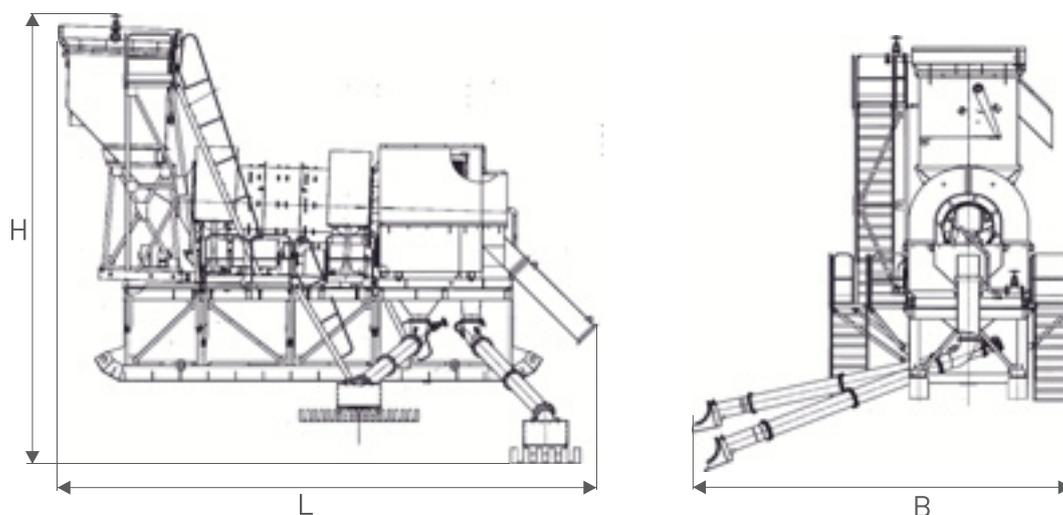


Parameters	SB-9	SB-9 PT	S-12	SB-12	S-15	SB-15	SB-18	SB-22M1
Desintegration scheme	Direct-flow disintegration scheme	Reverse-flow disintegration scheme		Direct-flow disintegration scheme				
Inner drum diameter, mm, not more than	900	900	1200	1200	1500	1500	1800	2250
Feed inlet diameter, mm, not more than	440	260	900	600	800	640	800	1000
Maximum size of part in feed, mm	100	100	150	150	200	200	300	300
Drum revolution speed, min, not more than	27-14	27-14	20	30	20	20	16	14
Input power, kW, not more than	7.5	11	15	18.5	18.5x2	45	37x2	75x2
Longitude angle of scrubber inclination, deg., within the range	2-4	4	0-6	0-6	1-4	1-4	2-4	4
Output, t/h, not more than	10	10	90					
easily washed				70	120	120	200	400
moderately washed				40	80	80	150	300
hardly washed				20	40	40	100	200
Overall dimensions, mm, not more than								
Length (L)	5420	4990	3810	5540	4555	8200	7630	9670
Width (B)	1775	1780	2115	2200	3260	2860	3290	4470
Height (H)	1940	2450	2230	2300	3110	3850	3620	4200
Weight, kg, not more than	5200	5100	6260	6000	12000	15300	25130	39050



WASHING TROMMEL SB-15IM

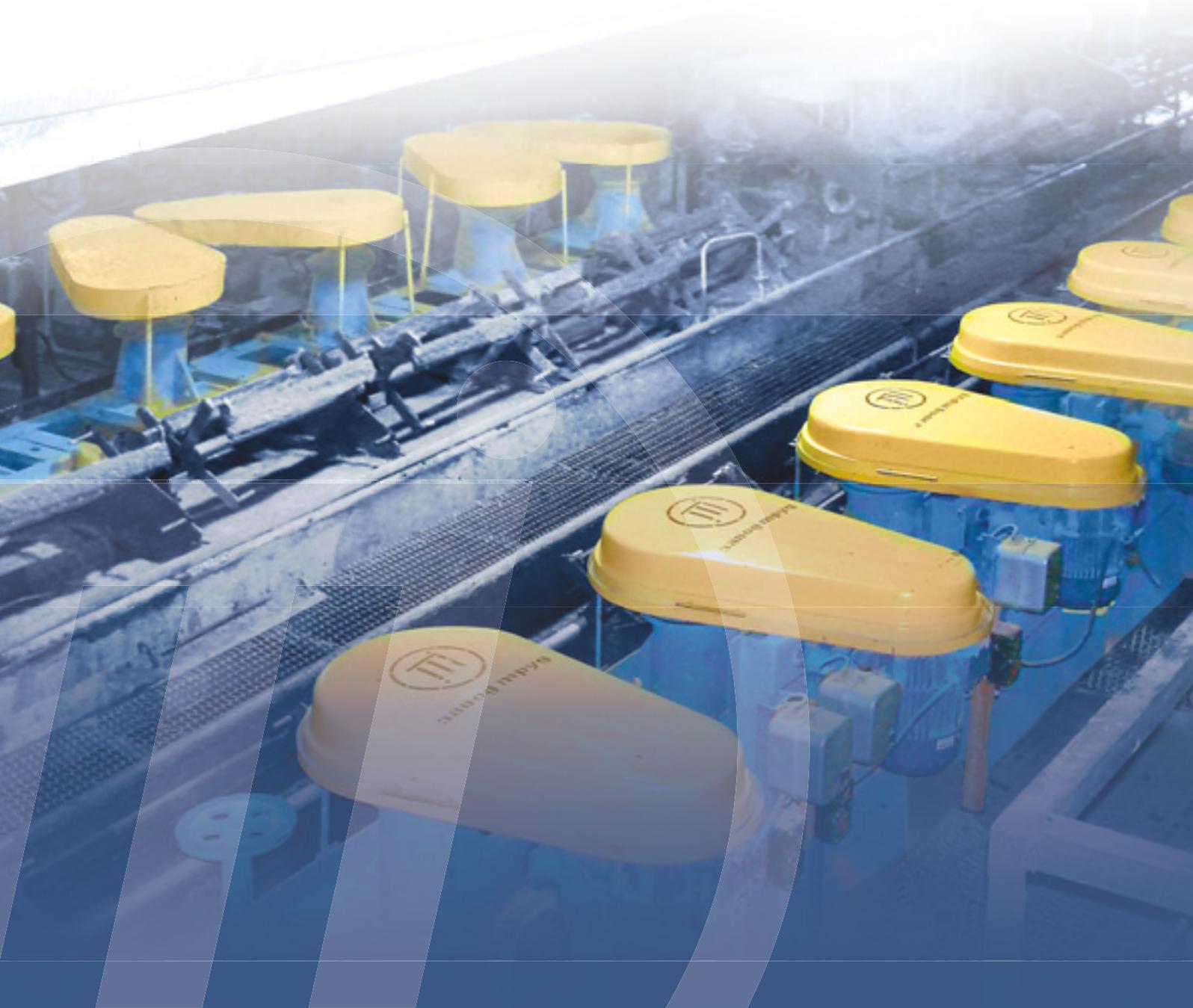
Washing trommel SB-15IM is designed for scrubbing and further classification of natural soils, sands, ore, rocks, and aggregates into three classes, as well as for washing of various types of raw materials in lines for human-made recycled materials disposal.



Parameters	SB-15IM
Inner drum diameter, mm, not more than	1500
Input diameter of loading opening, mm, not more than	640
Max raw material size, mm	200
Drum rotation rate, rpm, not more than	20
Rated capacity, KW, not more than	45
Longitude inclination angle of the scrubber, grad., limits	1-4
Capacity, tons/h, not more than	
for light washable material	120
for medium washable material	80
for hard washable material	40
Overall dimensions, mm, not more than	
Length (L)	11137
Width (B)	7920
Height (H)	9170
Weight, kg, not more than	27300



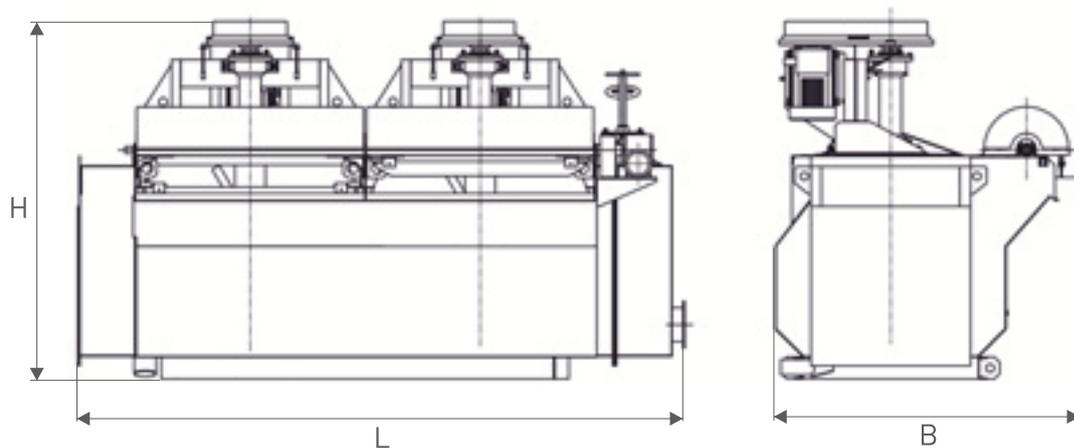
FLOTATION CONCENTRATION EQUIPMENT



MECHANICAL MULTI-COMPARTMENT FLOTATION CELL

Mechanical multi-compartment flotation cell (FM) is designed for nonferrous, rare, and ferrous metal ore dressing, as well as for preparation of mining chemical feedstock using the froth flotation method for the pulps with solid content of up to 40% (per mass), concentration of solids size below 0.174 mm above 45%, and the solids density of up to 4.7 tons/m³.

This equipment is used in ore dressing factories, as well as at the chemical and other enterprises.



Parameters	FM-0.2M	FM-0.4M3	FMR-10	FMR-0.1	FM-3.2	FM-6.3T
Pulping capacity, m ³ /min	0.25	0.4	1.5-2.5	1.5-2.5	3.5-6	7-12
Compartment capacity, m ³	0.15x2	0.37x2	1x2	1.2x2	3.2x2	6.3x2
Impeller diameter, mm	195	195	500	450	600	750
Capacity of the Impeller assembly electric motor, kW, not more than	3x2	3x2	5.5x2	5.5x2	11x2	30x2
Capacity of the foam remover electric motor, kW, not more than	0.55	0.55	1.1	1.1	1.5	2.2
Overall dimensions, mm, not more than	2 compart-ments					
Length (L)	1865	2330	2770	3700	4620	5420
Width (B)	1230	1180	1980	1980	2345	3150
Height (H)	1260	1625	2030	2030	2610	3000
Weight, kg, not more than	500	900	3280	2740	5400	8300

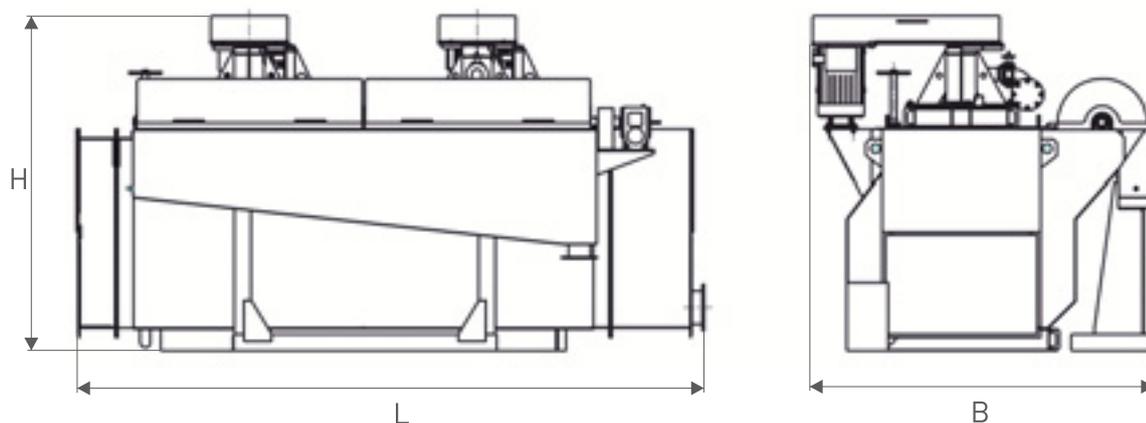
Quantity of compartments must be set according to flotation technology.



PNEUMATIC MECHANICAL FLOTATION CELL

Pneumatic mechanical flotation cell (FPM) is designed for nonferrous, rare, and ferrous metal ore dressing, as well as for preparation of mining chemical feedstock using the froth flotation method for the pulps with solid content of up to 40% (per mass), concentration of solids size less than 0.174 mm above 45%, and the solids density of up to 4.7 tons/m³.

This equipment is used in ore mining and metallurgical industries.



Parameters	FPM-1.6*	FPM-3.2	FPM-6.3	FPM-8.5	FPM-16A
Pulping capacity, m ³ /min	3.5	3,5-6	7-12	15	25
Compartment capacity, m ³	1.6x2	3.2x2	6.3x2	8.5x2	16x2
Impeller diameter, mm	630	650	750	750	770
Capacity of the Impeller assembly electric motor, KW, not more than	5.5x2	7.5x2	30	30	37
Capacity of the foam remover electric motor, KW, not more than	1.2	1.5	2.2	w/o foam remover	
Overall dimensions, mm, not more than	2 compartments	2 compartments	2 compartments	2 compartments	2 compartments
Length (L)	5930/3990	4555	5420	8800	5920
Width (B)	2300	2495	3150	3300	3743
Height (H)	2604/1960	2453	3000	3750	4135
Weight, kg, not more than	6270/3558	4842	8300	12000	10200

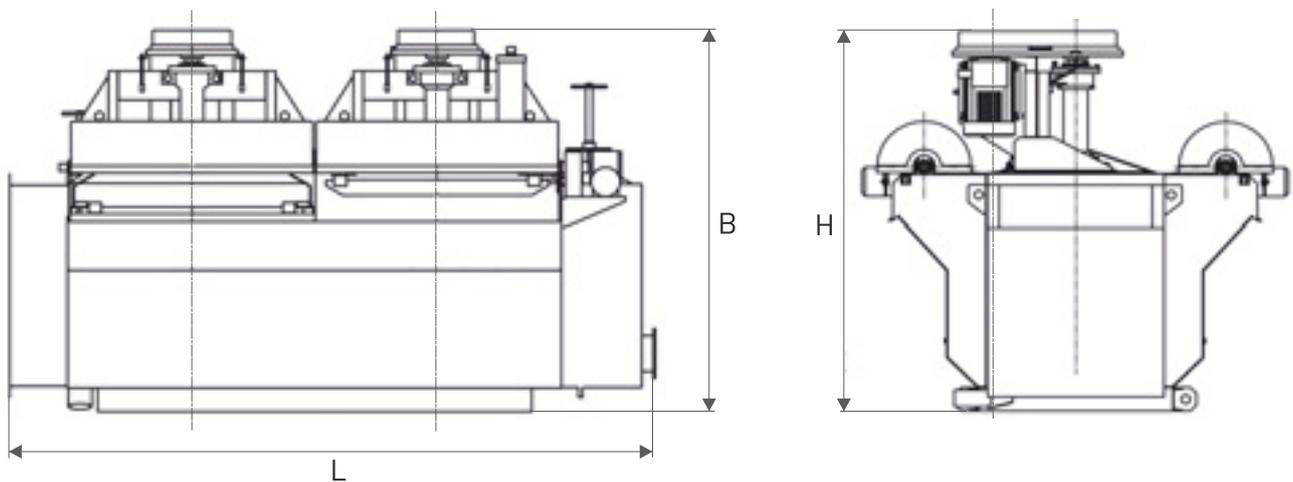
* Numerator contains value corresponding to the version with a suction compartment, denominator — the version w/o suction compartment.

** Quantity of compartments must be set according to flotation technology.

MECHANICAL FLOTATION AND FLOCCULATING CELL

Mechanical flotation and flocculating cell (FMF) is designed for nonferrous, rare, and ferrous metal ore dressing, as well as for preparation of mining chemical feedstock using the froth flotation method for the pulps with solid content of up to 40% (per mass), concentration of solids size below 0.174 mm above 45%, and the solids density of up to 4.7 tons/m³.

This equipment is used ore mining and metallurgical industries.



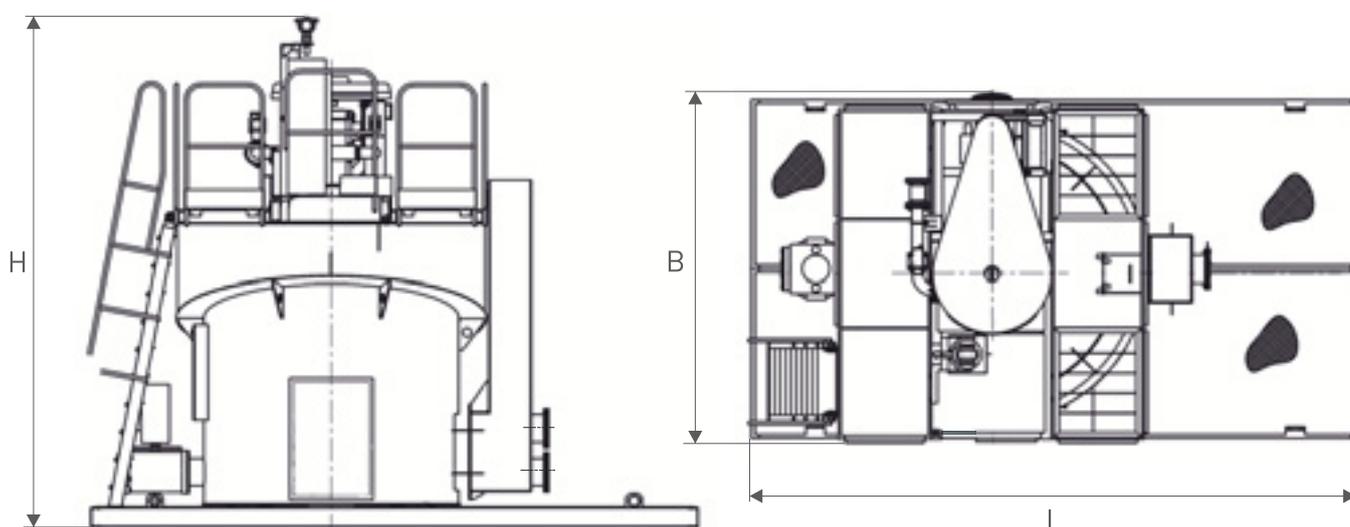
Parameters	FMF-0.15V	FMF-1V	FMF-UZV	FMF-3.2KS	FMF-3.2E
	Double-side foam removing			Single-side foam removing	
Pulping capacity, m ³ /min	0.3	2	6	6	6
Compartment capacity, m ³	1	1	3	3.2	3.2
Impeller diameter, mm	190	320	340	420	420
Capacity of the Impeller assembly electric motor, KW, below	1.5	3	7.5	11	11
Overall dimensions, mm, not more than	4 compartments	2 compartments	2 compartments	2 compartments	3 compartments
Length (L)	3180	3040	3000	4300	5900
Width (B)	1530	2560	3100	3200	3250
Height (H)	1540	2280	2730	3300	3300
Weight, kg, not more than	1250	2220	4000	4590	6750

Quantity of compartments must be set according to flotation technology.



MECHANICAL-AIR ROUND FLOTATION MACHINE, TYPE KF-6.5M

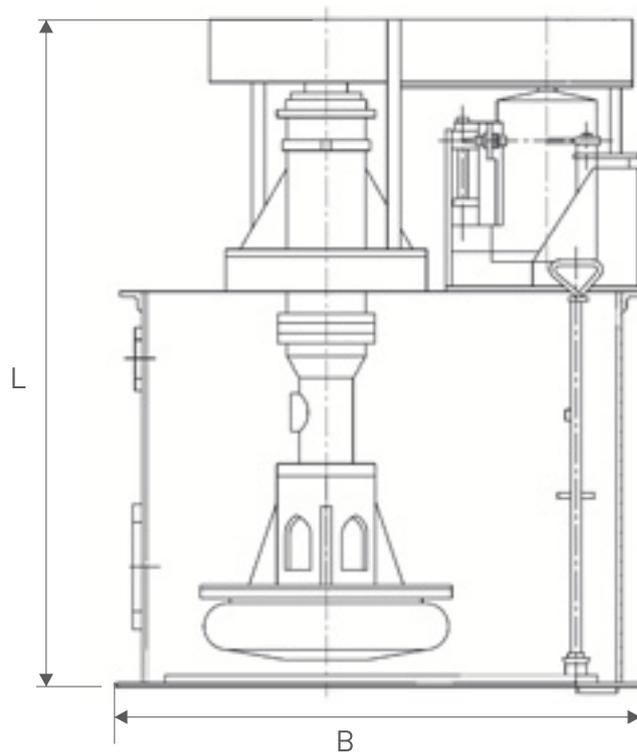
Mechanical-air round flotation machine, type KF-6.5M is designated for ore, coal and other minerals beneficiation by means of foam flotation. It is used in ore mining and metallurgic industries.



Parameters	KF-6.5M
Pulp output, m ³ /min	12
Chamber capacity, m ³	6.5
Impeller diameter, mm	490
Impeller unit drive electric motor power, kW, not more than	15
Foam remover electric motor power, kW, not more than	without foam remover
Overall dimensions, mm, not more than	monochamber
Length (L)	4800
Width (B)	2700
Height (H)	3650
Weight, kg, not more than	4860

PULP PUMPING CHAMBER PK-60/7

Pulp pumping chamber PK-60/7 is designated for pumping of flotation beneficiation products from one flotation operation to another. It is used during flotation.



Parameters	PK 60/7
Output, m ³ /h, not less than	60
Head, m, not more than	7
Impeller revolution speed, s ⁻¹ , (rpm), not more than	8,3 (500)
Coarseness of pumped material, mm, not more than	1
Electric motor power, kW, not more than	11
Electric motor input voltage, V	380
Overall dimensions, mm, not more than	
Length (L)	1600
Width (B)	1400
Height (H)	2300
Weight, kg, not more than	1800



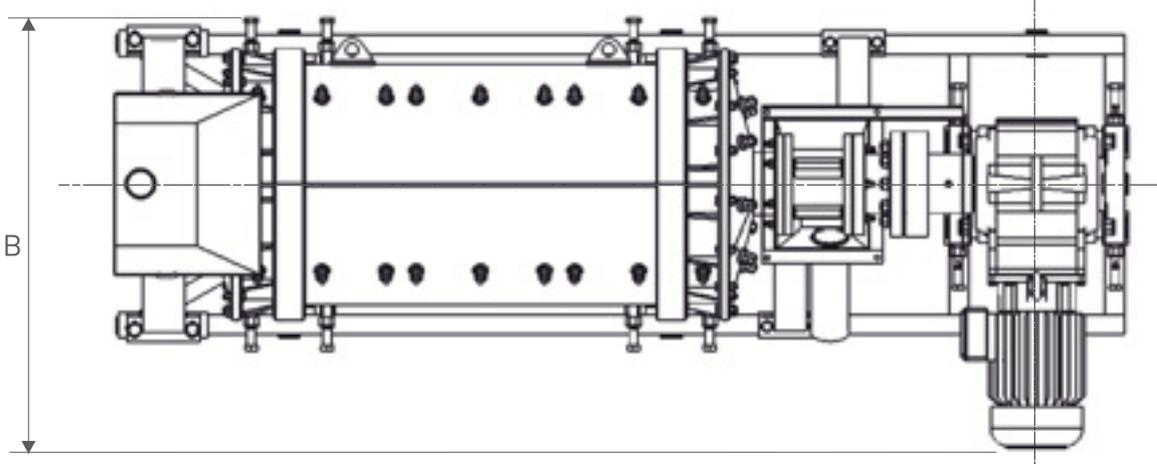
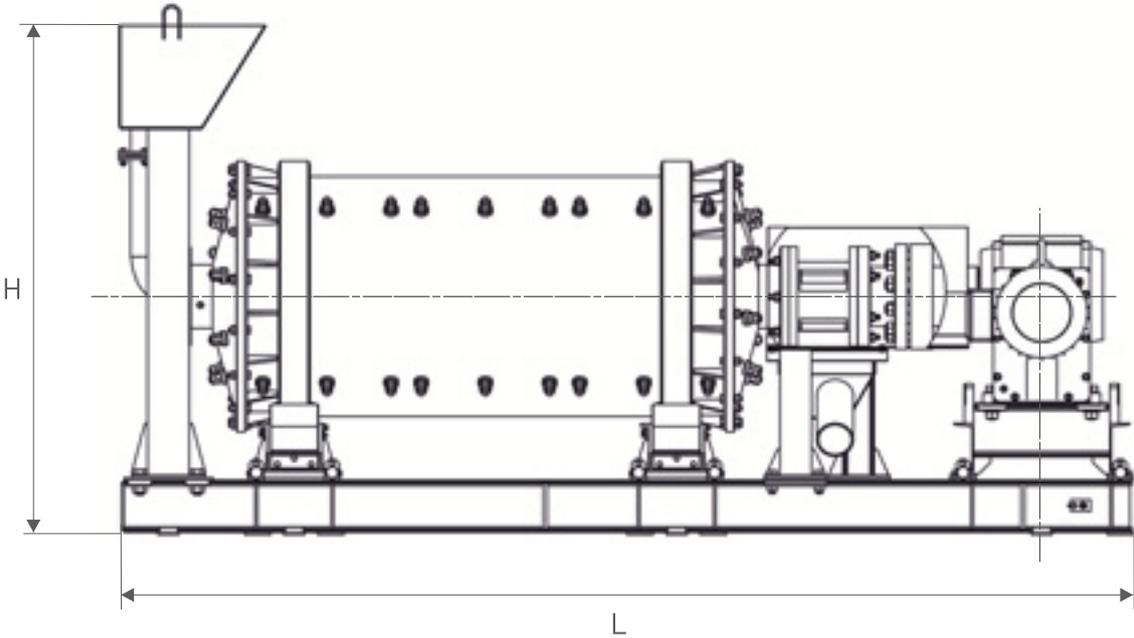
CRASHING AND MILLING EQUIPMENT





BALL MILL

Ball mill (MShC) is designated for fine wet grinding of metallic and non-metallic minerals. It is used in ore mining, construction and other industries.





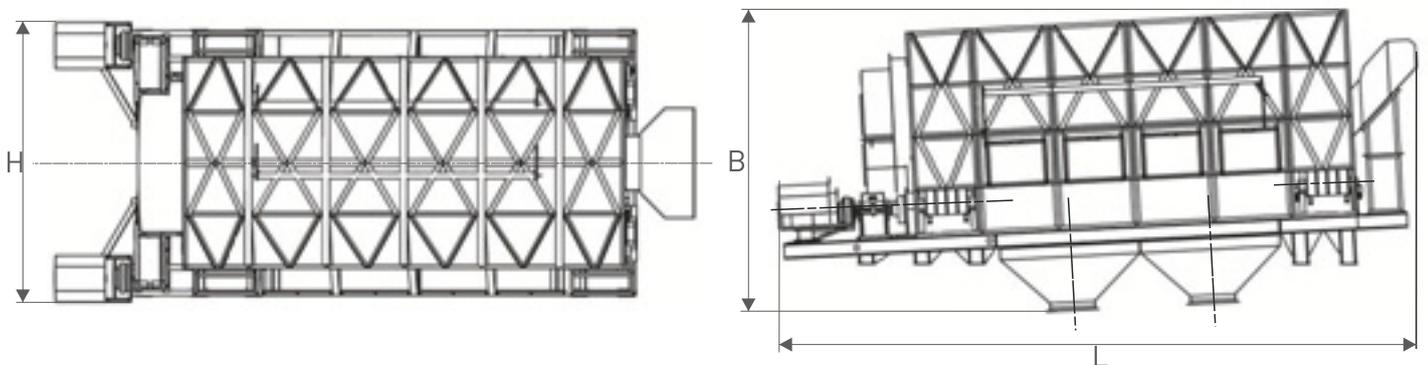
Parameters	MShC-0.9	MShC-2.1x3.0
Inner diameter of a drum, mm, not more than	1000	2100
Drum length, mm, not less than	1860	3000
Maximum feed size, mm	25	25
Output, t/h, not more than	2*	10...29
Drum revolution speed, min ⁻¹	36.5	24.3
Electric motor power, kW	22	200
Overall dimensions, mm, not more than		
Length (L)	4665	8350
Width (B)	1460	4280
Height (H)	1960	3095
Weight (without grinding bodies), kg, not more than	3522	22050

*Depends on grinding degree and coarseness of feed material, diameter and hardness of grinding bodies, degree of packing with grinding bodies, and drum revolution speed.

DRUM-TYPE SIEVE CRUSHER

Drum-type sieve crusher (DGB) is designed for mechanical crushing of coils (DGB-28M) and ores splitting under falling down (DGB-28R) with simultaneous classifying of crushing products and removal of uncrushable material.

This equipment is used at the open-air sites of coil and ore mining enterprises.

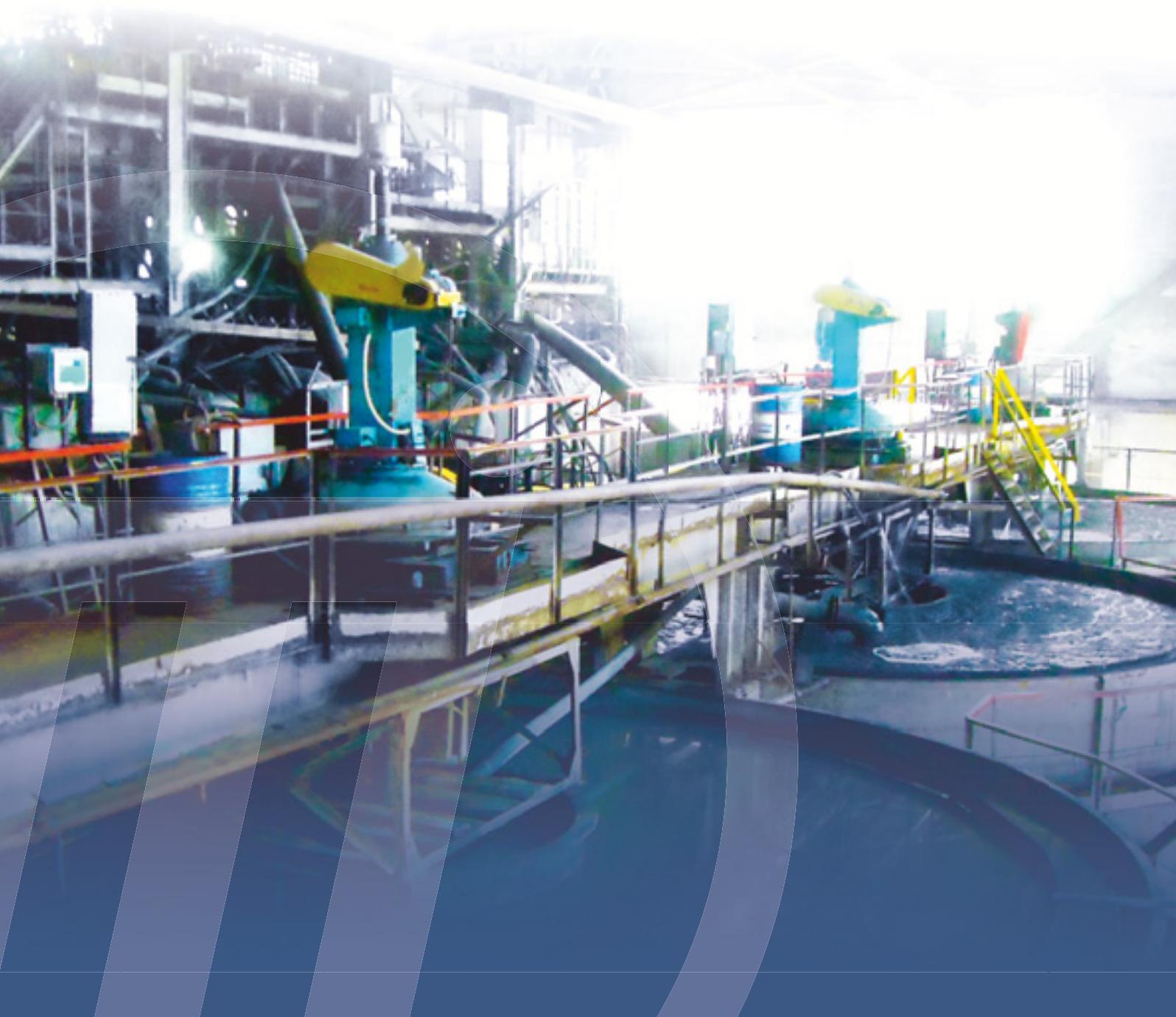


Parameters	DGB-28M
Capacity, tons/h, not more than	200
Raw material size, mm, not more than	500
Finished product size, mm, not more than	35...10
Inner drum diameter, mm	2800
Drum working length, mm	5000
Drum rotation rate, rpm, not more than	18
Screen and mesh sizes, mm	50...150*
Electric motor capacity, kW	55x2
Longitude inclination angle, grad.	3
Overall dimensions, mm, not more than	Multi-compartment
Length (L)	11350
Width (B)	5100
Height (H)	5535
Weight, kg, not more than	45400

*to be set by customer



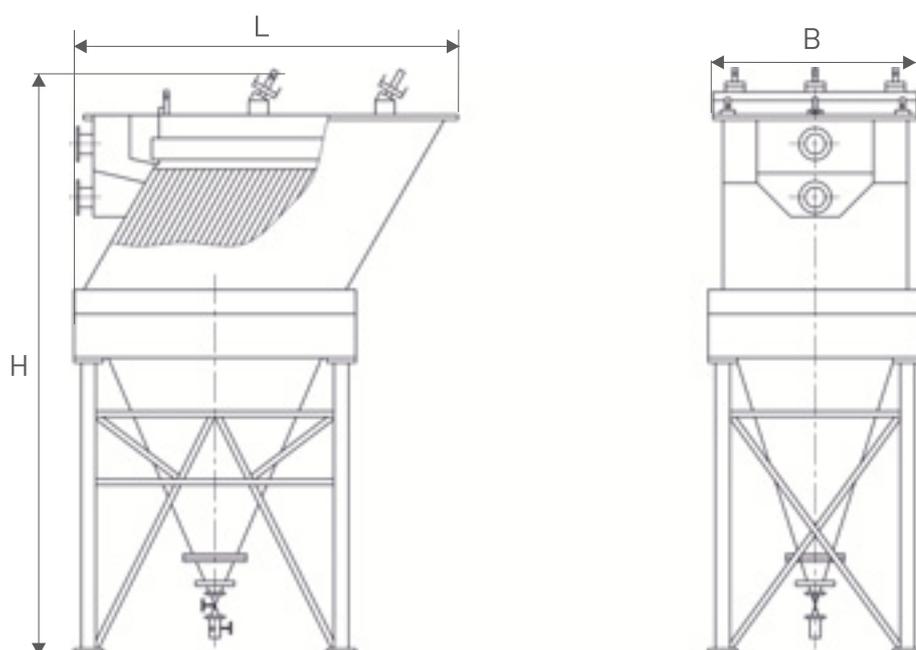
DEWATERING AND CLARIFYING EQUIPMENT





LAMELLA CLARIFIER

Lamella clarifier (SP) is designed to dewater and deslurrying the ore dressing products, as well as to clarify the recycled water and solutions with fast- and medium-deposited materials. This equipment is used at ore mining factories, metallurgical plants, as well as in oil containing sands.



Parameters	SP-0.3	SP-1A	SP-2A	SP-4A	SP-6A1*	SP-8A**	SP-12A1**	SP-16A**	SP-20**
Raw product throughput, m ³ /h	7.5	25	50	100	150	200	300	400	500
Pool area, m ²	0.3	1	2	4	6	8	12	16	20
Effective deposition area, m ²	6	20	40	80	120	160	240	320	400
Overall dimensions, mm, not more than									
Length (L)	1660	2550	2550	3900	2550	3900	3900	3900	3900
Width (B)	1160	1160	2190	2190	6700	4430	6700	8950	11150
Height (H)	3850	4700	5150	6100	5150	6100	6100	6100	6100
Weight, kg	1070	2090	3750	6200	11500	12240	21860	29270	36870

The raw product throughput is indicated for the fast concentrating slurries. The other slurries capacity must be determined based on the specific load on the pool area, which is established by laboratory measurements of slurry concentrating using certain flocculants.

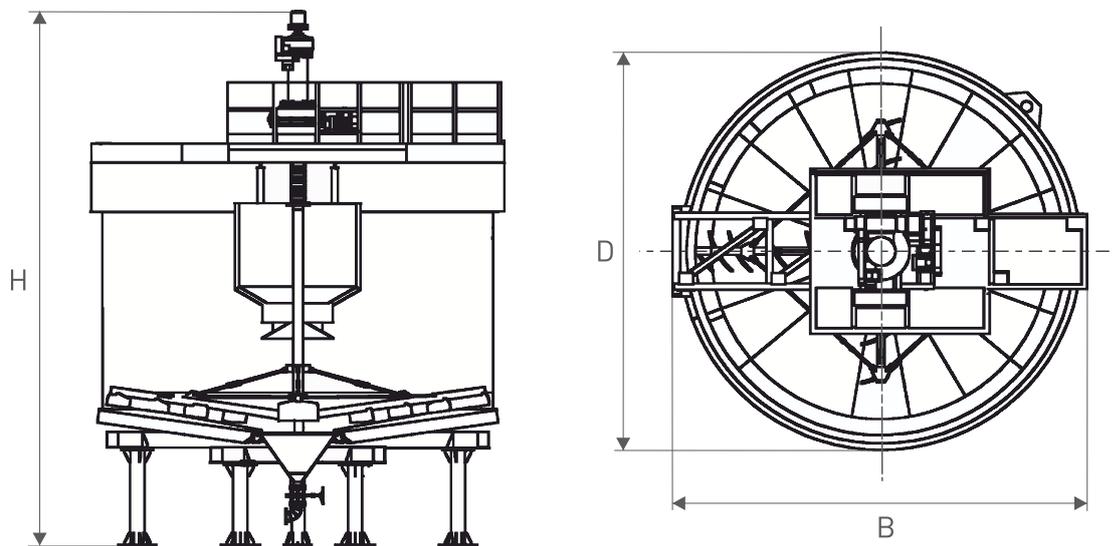
*Modular, formed using basic SP-2A.

**Modular, formed using basic SP-4A.



CIRCULAR CLARIFIER WITH A CENTRAL DRIVE AND A CONE BOTTOM

Circular clarifier with a central drive and a cone bottom (STs) is designed for dewatering and deslurrying of pulps and suspended mixtures, clarification of the recycled water and solutions, and well as for using as a technological equipment in hydrometallurgical process of nonferrous metals ore dressing. This equipment is used at ore mining factories, metallurgical, coil processing, chemical, and other plants. It can be delivered in standard and acid-proof versions according to customer's enquiry.



Parameters	STc-6A3	STc-9A2	STc-12A3	STc-15A3	STc-18A2	STc-25A1	STc-30A1	STc-50A**	STc-50A1***
Inner diameter of clarifier basin, m	6	9	12	15	18	25	30	50	50
Settlement area, m ²	28	63	110	175	250	490	700	1963	1963
Overall dimensions, m									
Outer diameter (D)	6.17	9.17	12.17	15.17	18.17	25.17	30.2	50.3	55.3
Width (B)	6.4	9.43	12.52	15.6	18.53	27.14	32.14	51.4	51.4
Height (H)	9.16	9.52	11.22	11.42	11.94	11.6	12.6	15.9	15.9
Weight, tons									
With metal basin	16.55	31.2	56.93	78.14	131.33	209.2	270	-	-
w/o metal basin	5.09	7.7	12.43	15.84	19.6	33.64	46	68	65.5

*H value includes rakes height (400 mm).

**Clarifier with a hydrostatic bearing.

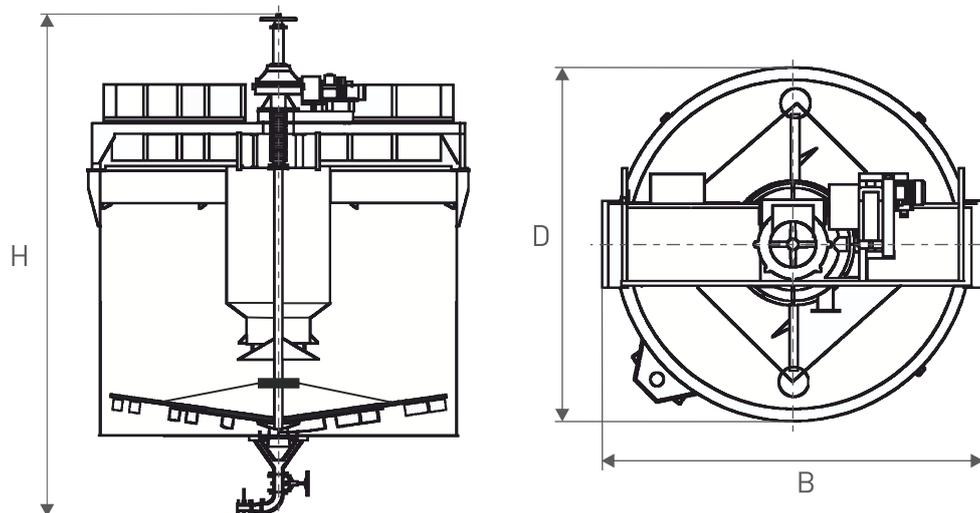
***Clarifier with a ball-thrust bearing.



CIRCULAR CLARIFIER WITH A CENTRAL DRIVE AND A FLAT BOTTOM

Circular clarifier with a central drive and a flat bottom (STs) is designed for dewatering and deslurrying of pulps and suspended mixtures, clarification of the recycled water and solutions, as well as for using as a technological equipment in hydrometallurgical process of nonferrous metals ore dressing. This equipment is used at ore mining factories, metallurgical, coil processing, chemical, and other plants.

It can be delivered in standard and acid-proof versions according to customer's enquiry.



Parameters	STc-2.5A2	STc-4A2	STc-6A2	STc-9A1	STc-12AC1	STc-15AC	STc-18AC
Inner diameter of clarifier basin (D), m	2.5	4.0	6.0	9.0	12.0	15.0	18.0
Basin depth acc. to pulp level (h), m	2.8	3	3.4	3.6	3.8	4	4.3
Settlement area, m ²	5	12	28	63	110	175	250
Overall dimensions, m							
Outer diameter (D)	2.61	4.11	6.16	9.17	12.2	15.2	18.2
Width (B)	2.79	4.17	6.39	9.4	12.6	15.6	18.6
Height (H)*	5.92	6.46	8.67	9.47	11	11.6	11.9
Weight, kg							
With metal basin	2.83	5.03	10.63	20.04	34.4	42.6	56.8
w/o metal basin	1.34	2.29	4.83	7.82	12.4	14.2	19.5

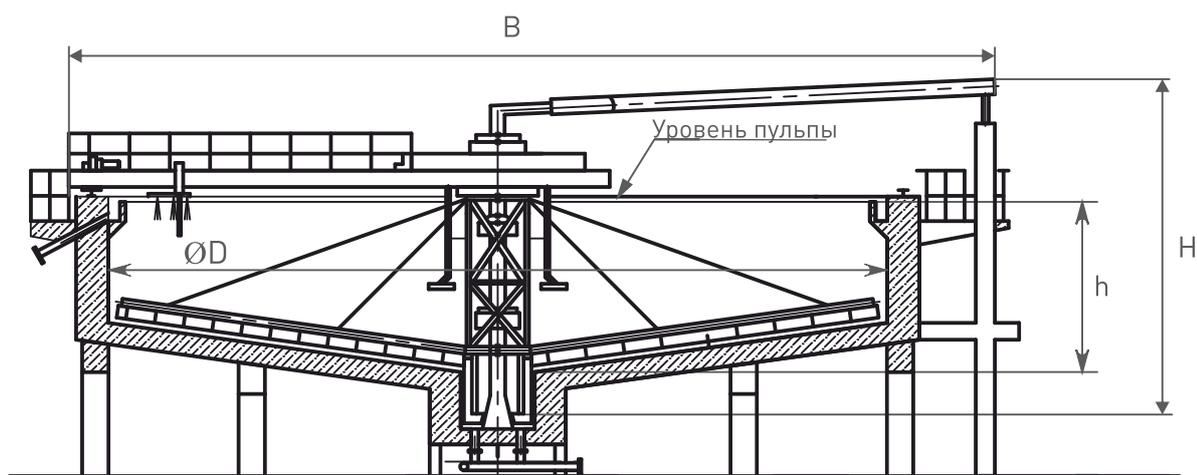
*H value includes rakes height (400 mm)



CIRCULAR CLARIFIER WITH A PINION DRIVE

Circular clarifier with a pinion drive (P) is designed for dewatering and deslurrying of pulps and suspended mixtures, clarification of the recycled water and solutions, as well as for using as a technological equipment in hydrometallurgical process of nonferrous metals ore dressing. This equipment is used in ore mining factories, metallurgical, coil processing, chemical, and other plants.

It can be delivered in standard and acid-proof versions according to customer's enquiry.



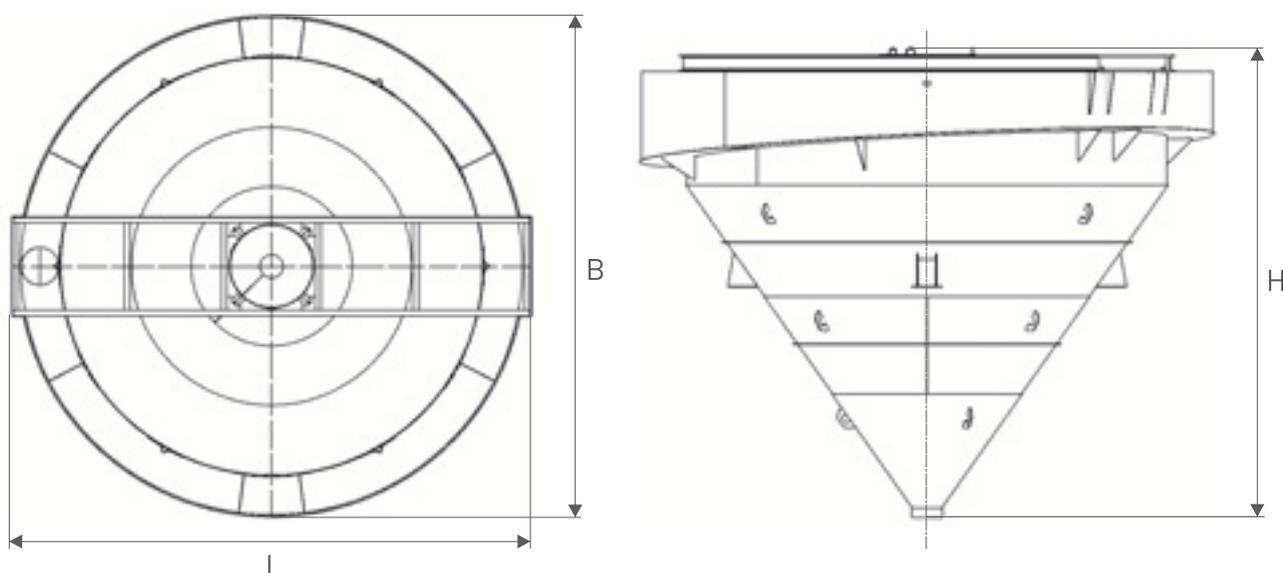
Parameters	P-25A	P-30A	P-30AC*
Inner diameter of clarifier basin (D), m	25	30	30
Basin depth in the centre acc. to pulp level (h), m	3.6	3.6	3.6
Settlement area, m ²	490	700	700
Overall dimensions of clarifier structures w/o basin, m			
Width (B)	27	32	32
Height (H)	7.7	7.9	8
Weight of clarifier structures, tons	27	29.4	29.4

*Clarifier with a detachable central support.



FLOCCULATION FUNNEL

Flocculation funnel (SV) is used for dehydration or deslimation of sands, as well as for wet classification of sand material into two classes by coarseness. It is used in construction industry.



Parameters	SV-4500	SV-5000
Overflow weir diameter, mm, not less than	4500	5000
Settlement mirror area, m ²	16	20
Operating volume, m ³	40	46
Overall dimensions, mm, not more than		
Length (L)	5480	6150
Width (B)	5310	6000
Height (H)	5290	4950
Weight, kg, not more than	3434	4136



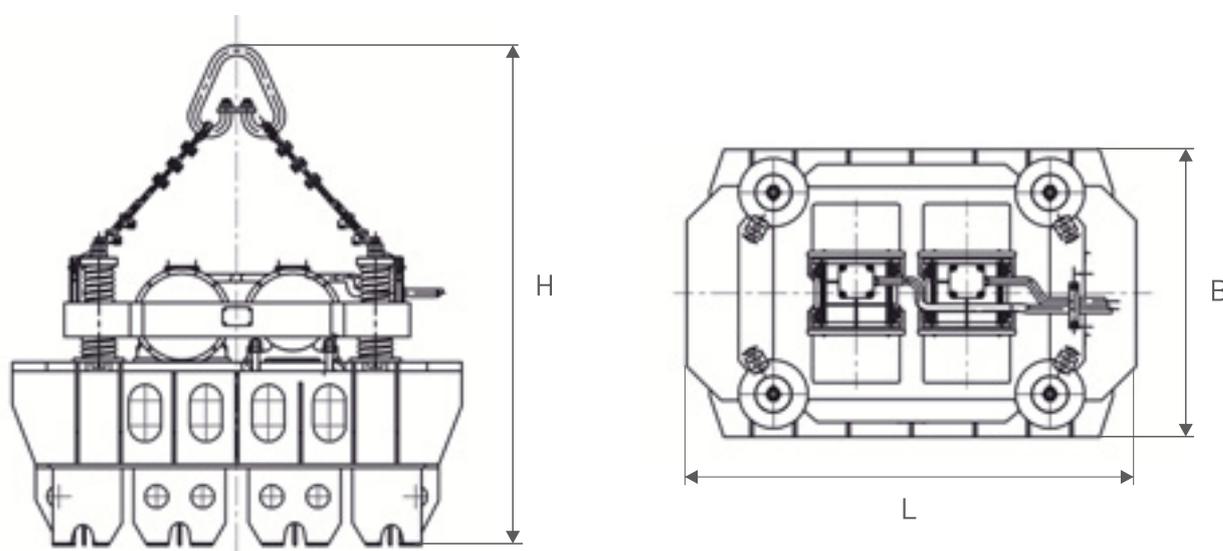
FEEDERS, UNLOADERS



VIBRATING UNLOADER

Vibrating unloader is designed to loosen frozen bulk solids (break stone, sand, ore concentrates, coil, etc.) for their discharge from 4-axial railway trolleys with the overall depth of 1,880 and 2,060 mm through the bottom openings by vibration-base material falling down.

This equipment is used at coil, ore mining, and construction plants.



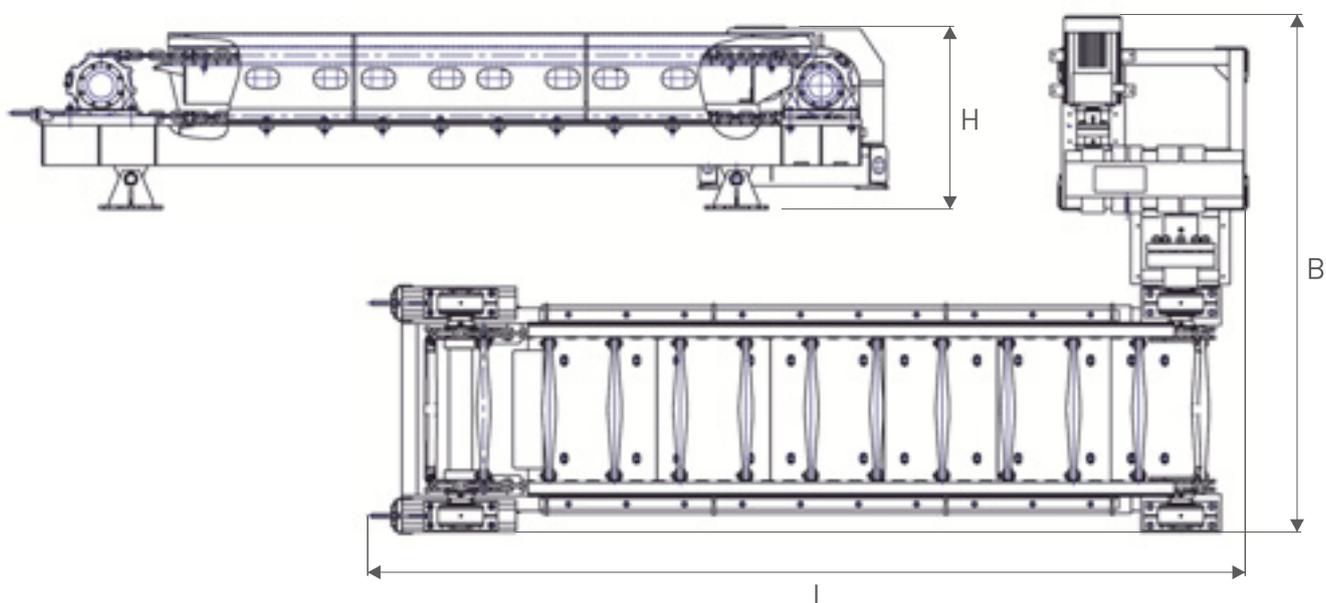
Parameters	V1-614M	S01-265	S01-266	S01-267
Capacity, tons/h	60-90	At least 190	Aggregates 220	180
Work tool type	vibropercussion	vibropercussion	vibropercussion	vibropercussion
Impact frequency, min ⁻¹	485	1440 [24 Hz]	1440	1000
Driving force of vibration unit, kN	80		196	80
Vibration motor, type	MVE 8000/1E	original	original	MVE 8000/1E
Rated power of vibration motor, kW	7.1	44	44	7.1
Voltage, V	380	380	380	380
Qty of vibration motors, pcs.	2	1	1	2
Overall dimensions, mm, below				
Length (L)	5300	3820	3360	1960
Width (B)	1900	2500	2500	1260
Height with a rope (H)	4900	3300	1410	2295
Weight, kg, not more than	5290	6900	5000	3050



SCRAPER FEEDER

Scraper feeder (PS) is designated for uniform transportation, feed and dosing of solid material.

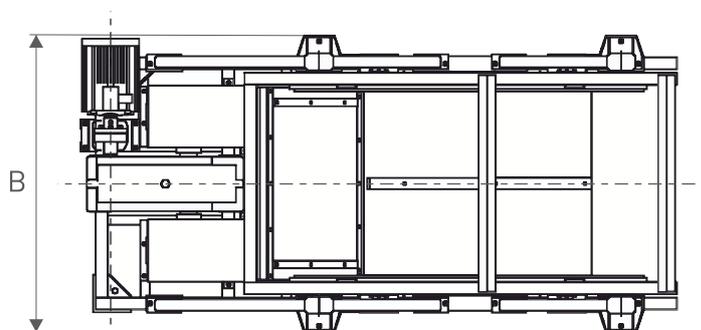
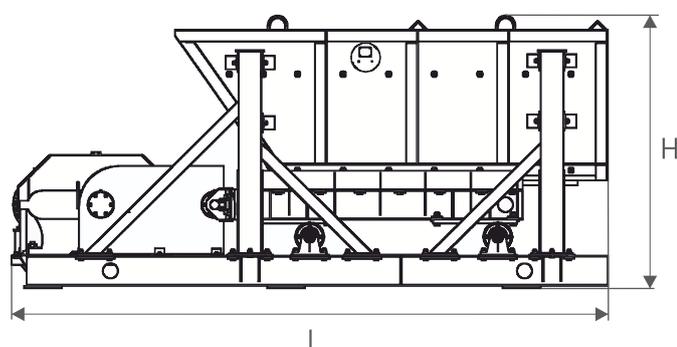
It is used in ore mining, mining, coal, construction and other industries.



Parameters	PS-4	PS-8
Output, m ³ /h	100	50
Surface width, mm	910	1010
Transporting length, mm	4350	8330...8570
Maximum size of transported material parts, mm	300	200
Electric motor power, kW	11	11
Feeder inclination angle, deg., not more than	20	20
Overall dimensions, mm, not more than		
Length (L)	5020	9365
Width with drive (B)	3055	3100
Height (H)	1070	1080
Weight, kg, not more than	5190	7340

SHAKING FEEDER

Shaking feeder (PK) is designated for dosed uniform feed of bulk materials to process machines (scrubbers, log washers etc.) or transporting mechanisms. It is used at CHPPs operating on solid fuel and factories in ore mining, coal and construction industries.



Parameters	PK-200
Output, t/h, not more than	200*
Material coarseness, mm, not more than	400
Effective width of bin, mm, not more than	1000
Effective length of bin, mm, not more than	1400
Bin stroke, mm	200
Bin stroke rate within the range, min	17.5-35
Overall dimensions, mm, not more than	
Length (L)	3140**
Width with drive (B)	1570
Height (H)	1450
Weight, kg, not more than	1750

*Output with bin stroke 35 strokes/min.

**Length without bin stroke.



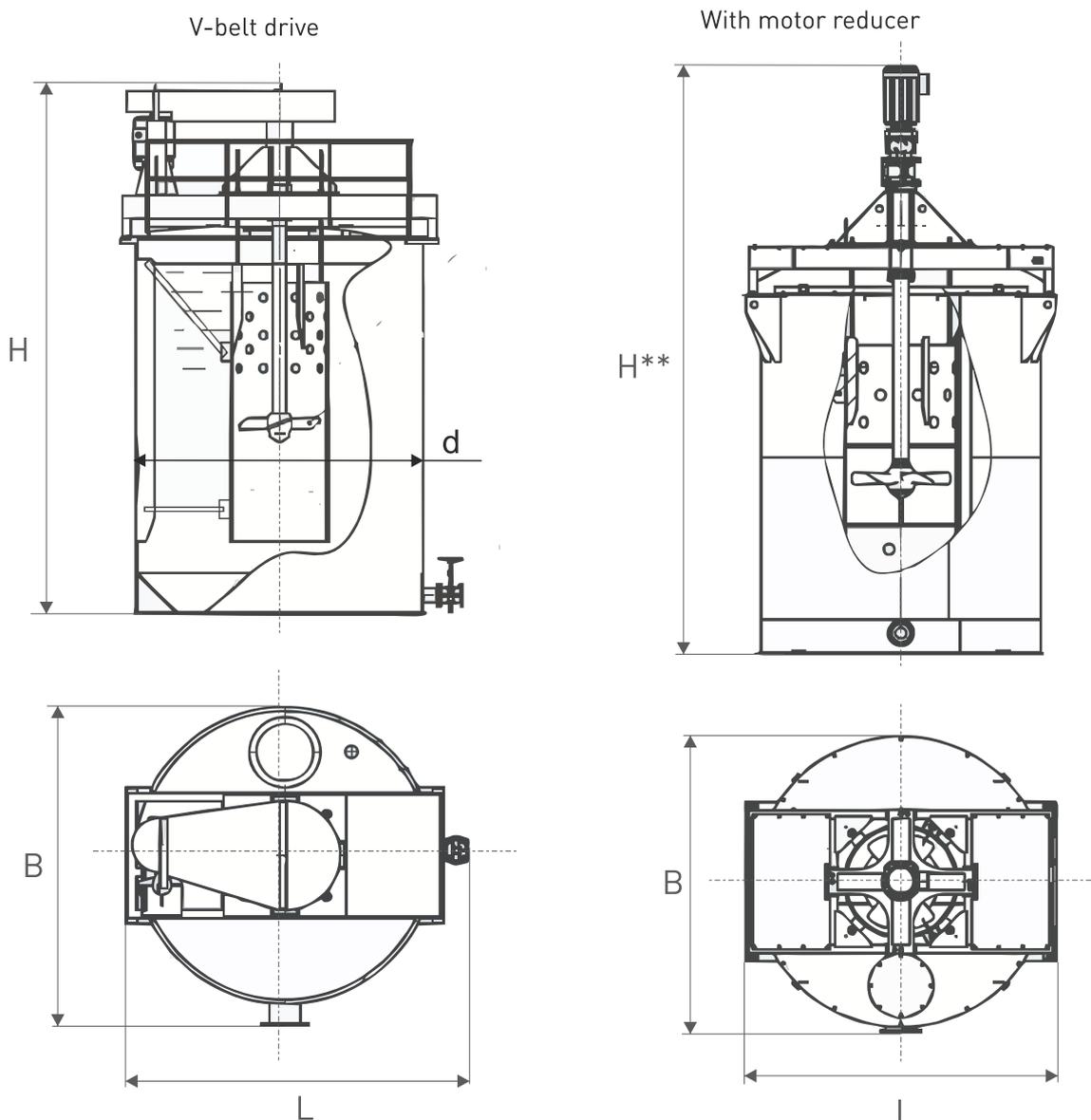
PULP PREPARATION EQUIPMENT



CONDITIONING TANK

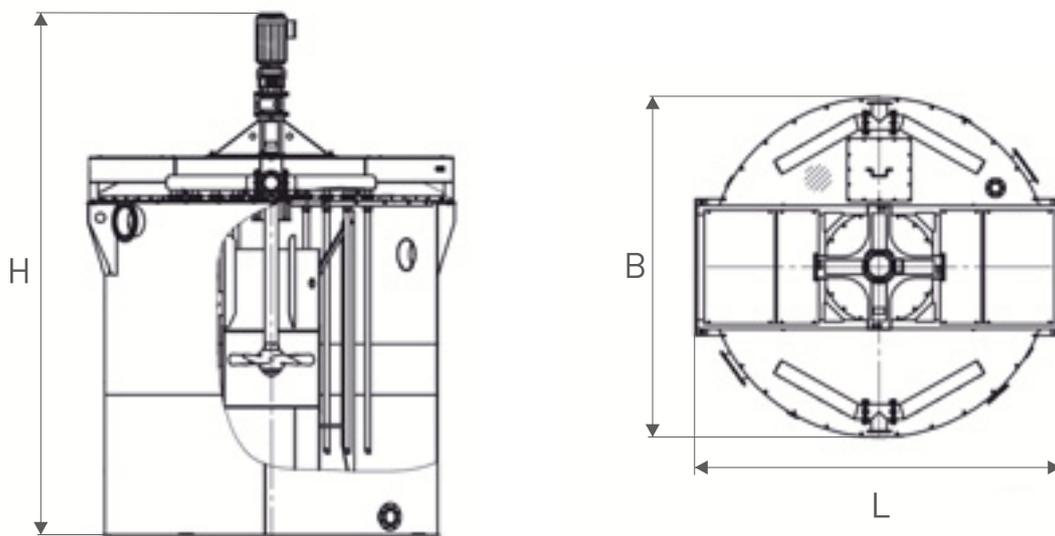
Conditioning tank (KChR) is designated for contacting ore pulps with reagents before flotation process, for reagent dilution and other similar technological processes at beneficiation objects in chemical, metallurgical and other industrial sectors.

Conditioning tank is designated for operation with the content of solid matter in the pulp of up to 60% (weight), coarseness of particles is 0.5 mm (solids specific gravity up to 5 g/cm^3) and 1 mm (solids specific weight up to 2.65 g/cm^3) with pulp density up to 1700 kg/m^3 . It is used in ore mining, metallurgic and coal industries.





KChR-30, KChR-40



Parameters	KChR-0,8A	KChR-1	KChR-1.6A	KChR-3.15A	KChR-6.3A	KChR-12.5A	KChR-25A1	KChR-30	KChR-40	KChR-50A	KChR-100A
Capacity, m ³	0,8	1	1.6	3.15	6.3	12.5	25.0	30	40	50.0	100.0
Tank diameter (inner without lining) d, mm	1040	1040	1290	1640	2040	2540	3000	3500	4000	4040	5040
Motor power, kW, not more than	1,5	2.2	2.2	4.0	5.5	11.0	15.0	22.0	30.0	22.0	37.0
Overall dimensions, mm, not more than											
Length (L)	1400	1326	1600	2000	2500	2900	3500	3890	4590	4500	5500
Width (B)	1300	1140	1500	1900	2300	2800	3300	3640	4140	4400	5400
Height (H)	2500	3180	2800	3400	4100	4500	5700	5590	6375	7100	8400
Weight, kg, not more than											
without case	400	-	500	700	1000	1800	2500	-	-	4500	6000
with case	800	705	1200	1500	2250	4000	6000	6610	8920	10500	15500

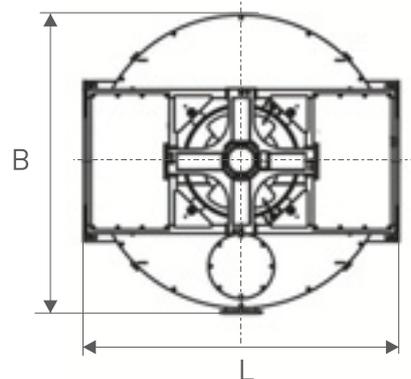
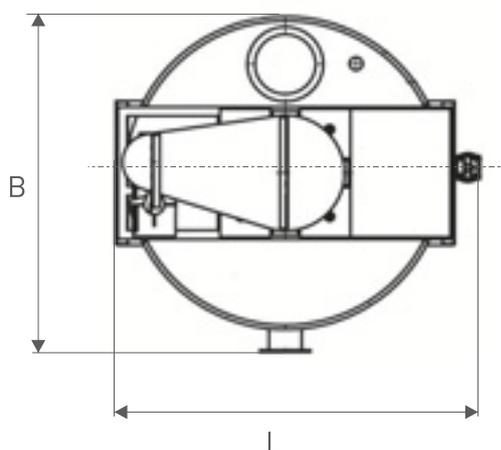
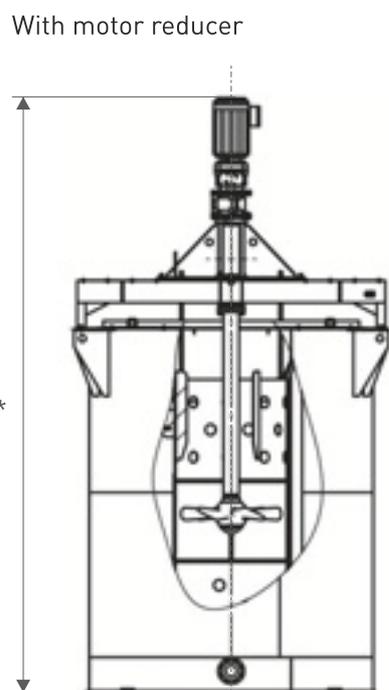
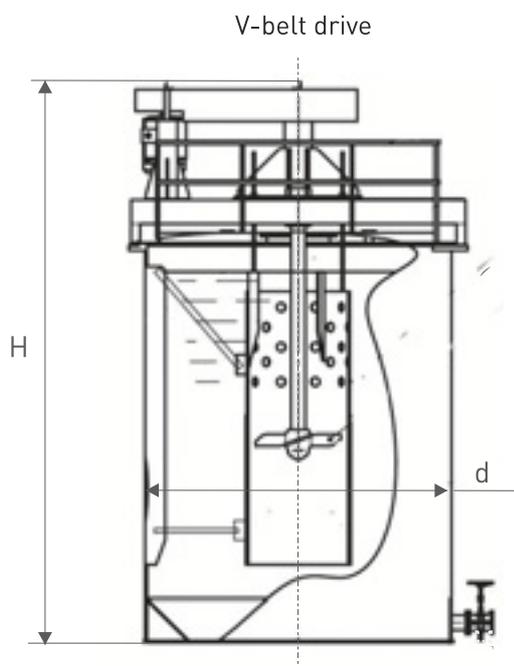
*Relation of diameter and case height may be changed after customer's request.

**Size depends on motor reducer type.

HEAVY-DUTY CONDITIONING TANK

Conditioning tank (KChR) is designated for contacting ore pulps with reagents before flotation process, for reagent dilution and other similar technological processes at beneficiation objects in chemical, metallurgical and other industrial sectors.

Conditioning tank is designated for operation with coarseness of particles of 1 mm (solids specific gravity up to 5 g/cm^3) and 2.2 mm (solids specific weight up to 2.65 g/cm^3). It is used in ore mining, metallurgic and coal industries.





Parameters	KChR-0.8T	KChR-1.6T	KChR-3.15A	KChR-6.3T	KChR-12.5T	KChR-25T	KChR-50T	KChR-100T
Capacity, m ³	0.8	1.6	3.15	6.3	12.5	25.0	50.0	100.0
Tank diameter (inner without lining) d, mm	1040	1290	1640	2040	2540	3000	4040	5040
Motor power, kW, not more than	2.2	5.5	7.5	15.0	22.0	30.0	45.0	55.0
Overall dimensions, mm, not more than								
Length (L)	1400	1600	2000	2500	2900	3500	4500	5500
Width (B)	1300	1500	1900	2300	2800	3300	4400	5400
Height (H)	2500	2800	3400	4100	4500	5700	7100	8400
Weight, kg, not more than								
without case	600	1100	1300	1600	2650	4200	6000	8000
with case	850	1800	2200	2700	4700	6900	11500	16000

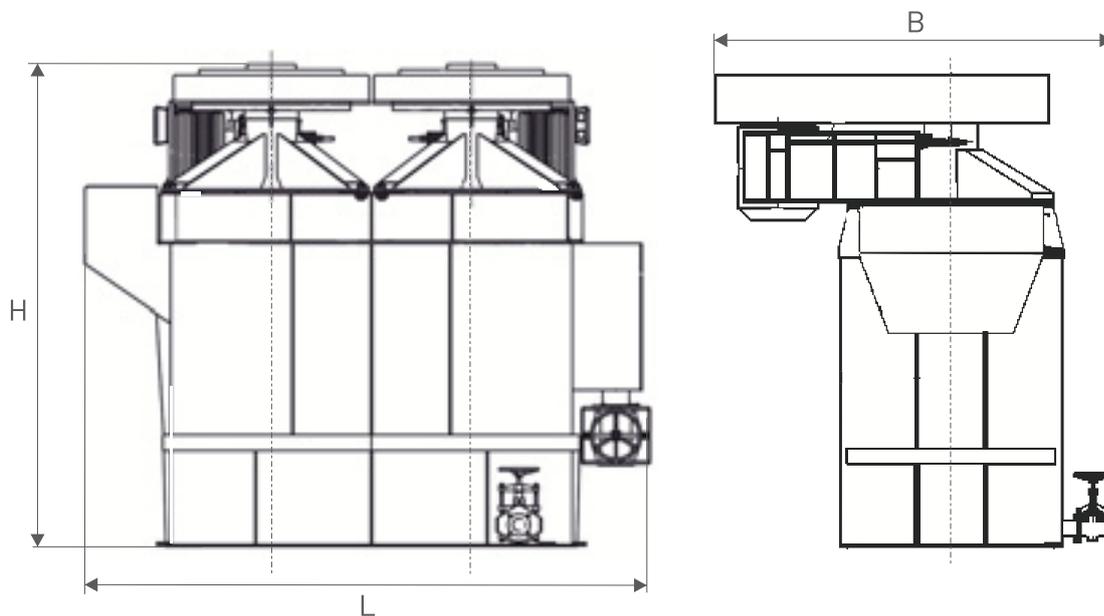
*Relation of diameter and case height may be changed after customer's request.

**Size depends on motor reducer type.

ATTRITION MACHINE

Attrition machine (MO) is designated for attrition of ferrous films from the surface of silica sands, disintegration of hardened particles. It is used as repulpator in the chain of apparatuses during soil cleaning from contaminating substances and for lime slacking.

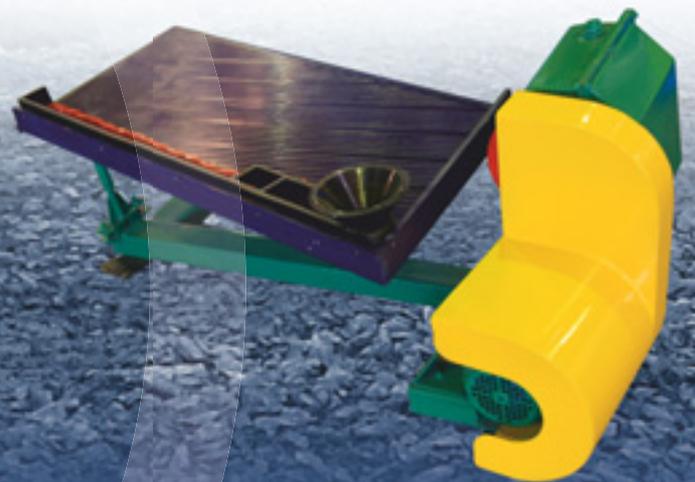
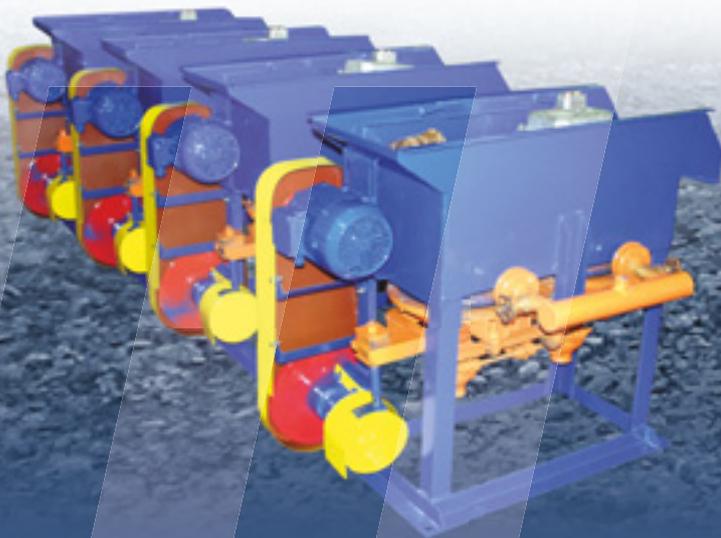
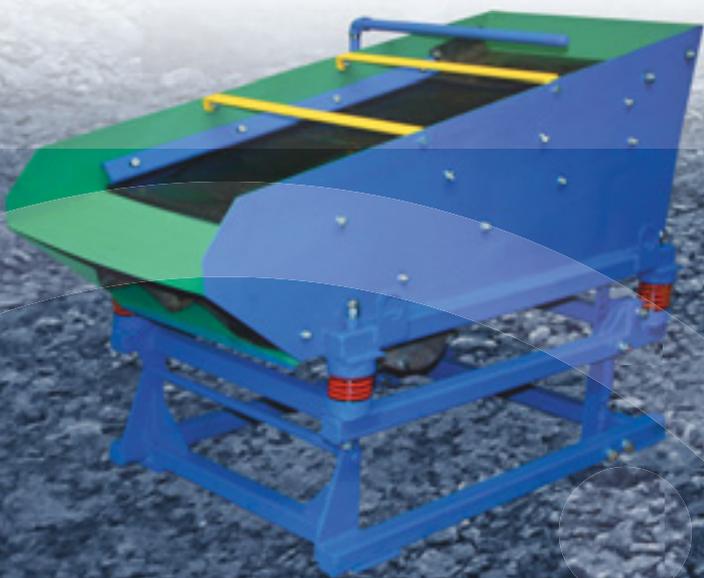
It is used in ore mining industry and at the plants engaged in beneficiation of glass and molding sands.



Parameters	MO-5	MO-20A1
Output, t/h	5-8	20-30
Content of solids in pulp, %	up to 72	up to 72
Effective volume, m ³	1.2	4.2
Installed power, kW	11x2	30x2
Overall dimensions, m		
Length (L)	2400	3570
Width (B)	1650	2230
Height (H)	2440	3100
Weight, kg	2910	6165



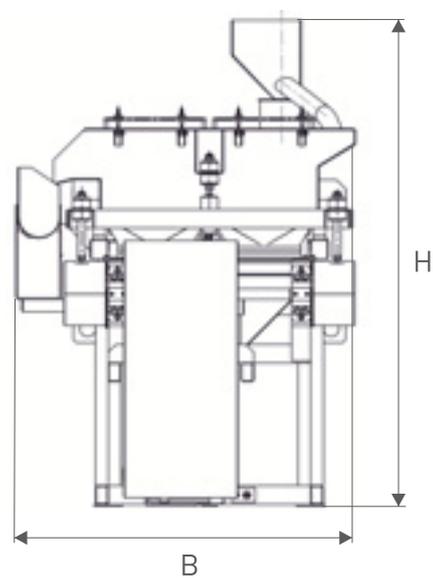
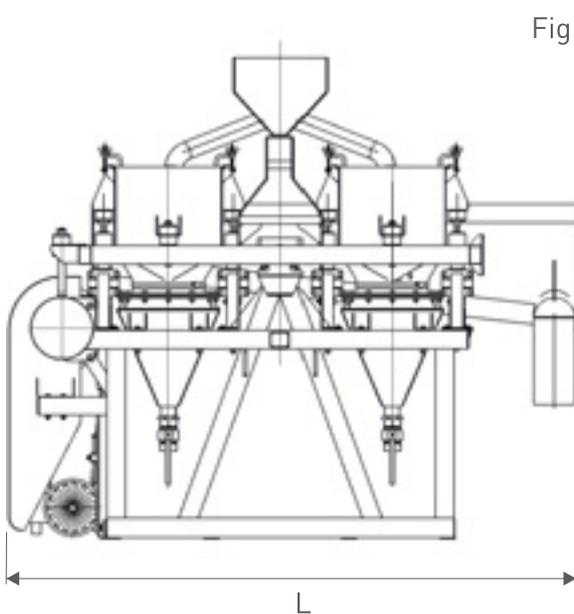
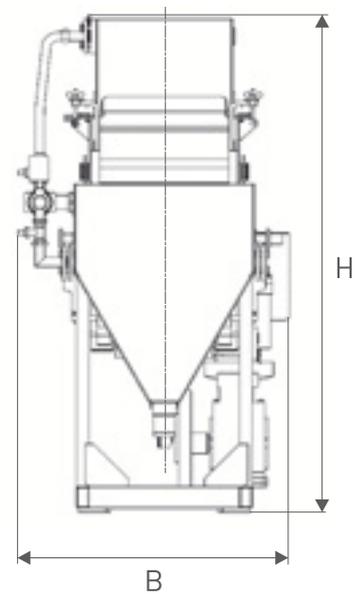
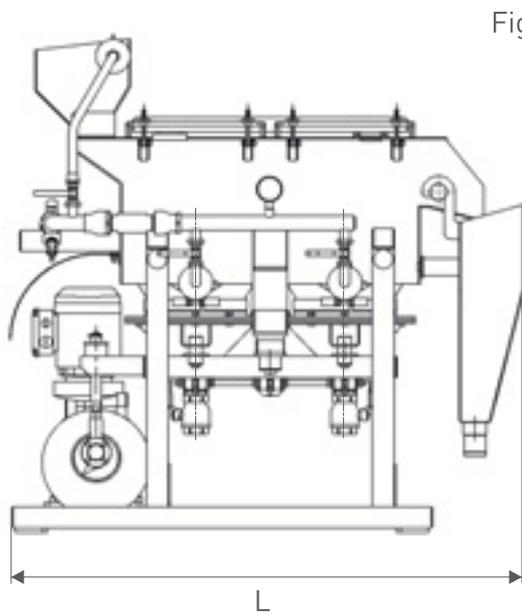
LABORATORY EQUIPMENT

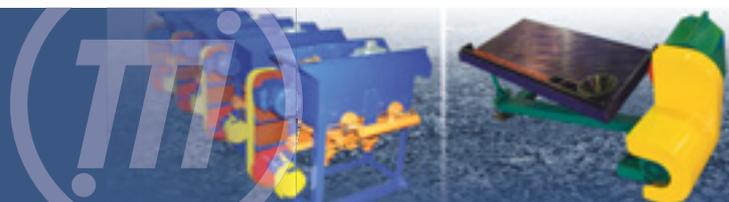


LABORATORY JIG

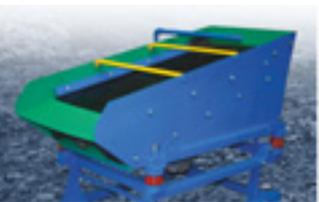
Jig is designated for continuous gravitational beneficiation of prepared ores in water.

It is used in laboratory practice and within pilot plants for exploring beneficiation ability of gold, polymetallic, rare metal ores, diamonds, coal and many other minerals.



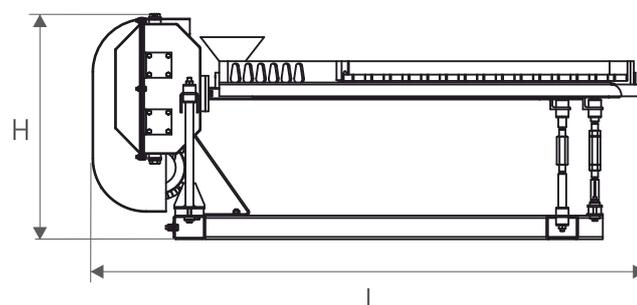
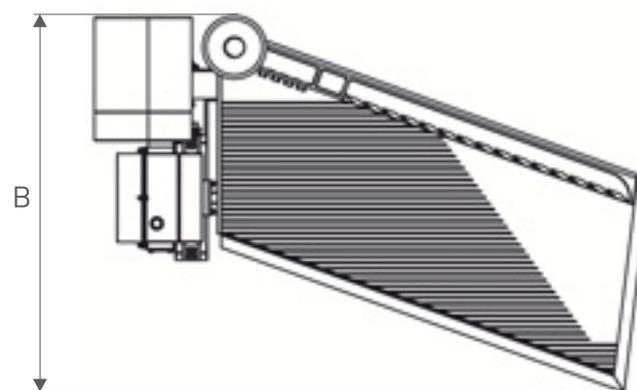
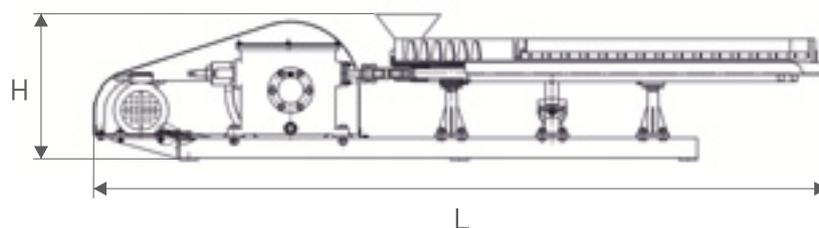
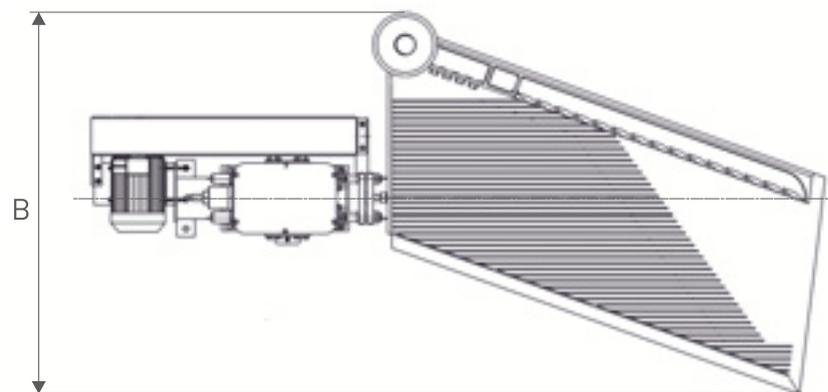


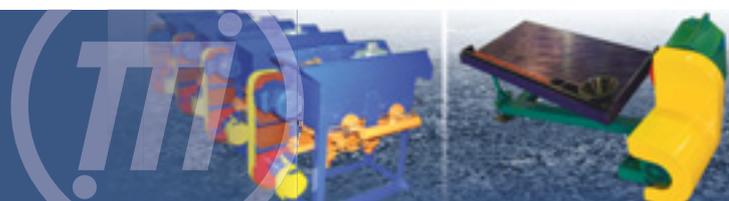
Parameters	MFL-0.012M	MFL-0.025
	Fig. 1	Fig. 2
Number of chambers, pcs.	1	2
Feed product output, t/h	0.9	1.5
Feed coarseness, mm, not more than	8	8
Screen area, m ²	0.2	0.36
Frequency of cones stroke, min, within the range	180-360	210-380
Installed power, kW	0.75	1.1
Overall dimensions, mm, not more than		
Length (L)	1185	1522
Width (B)	590	1078
Height (H)	1165	1550
Weight, kg, not more than	203	540



LABORATORY CONCENTRATING TABLE

Concentrating table is designated for periodical and continuous gravitational beneficiation of placers and milled ores in water. It is used in laboratory practice, within pilot plants, at plants during finishing operations for obtaining of gravity gold concentrate.



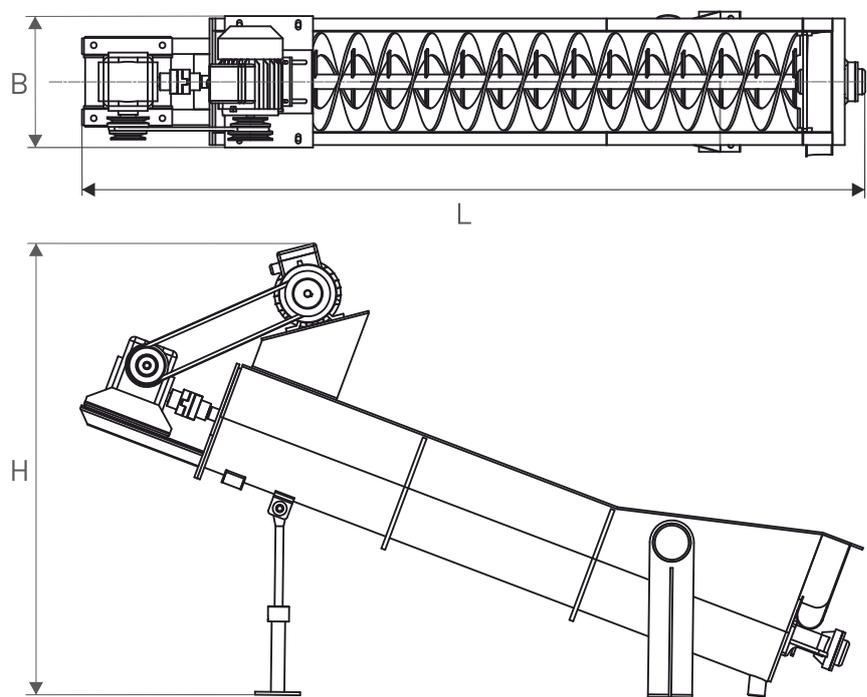


Parameters	SKO-0.5L	30A-KcM2T	SKO-1-1M1
Deck shape	Parallelogram		Trapezoid
Drive type	Inertia	Crank	
Power supply	L e f t		
Material processing	S a n d		
Deck cover	P o l y u r e t h a n e		
Number of decks	1	1	1
Total deck area, m ² , not less than	0.5	0.5	1
Deck stroke frequency, min ⁻¹ , within the range	280-400	300; 375; 450	300; 375; 450
Feed coarseness, mm, within the range	0.20-3.0	0.04-3.0	0.2-2
Stroke length, mm (shutoff lim. ± 2 mm)	4-16	6-16	6-16
Capacity, t/h	0.05	0.05	0.4
Installed power, kW, not more than	0.37	0.37	1.1
Overall dimensions, mm, not more than			
Length (L)	1550	1760	2625
Width (B)	660	890	690
Height (H)	660	380	420
Weight, kg, not more than	100	80	210

LABORATORY SPIRAL CLASSIFIER

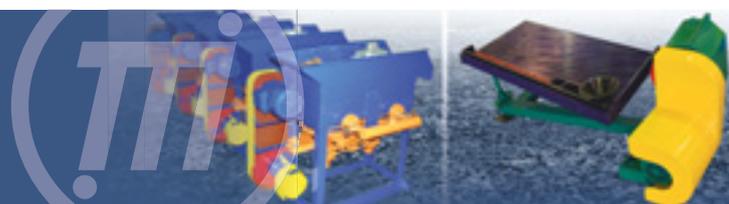
Spiral classifier is designated for separation of grinded material by coarseness in water and for dehydration of products during beneficiation of all categories of minerals (ores, placers, building materials etc.).

It is used in laboratory practice in periodical mode and within pilot installations in continuous mode.



Parameters	56G-Kr	47G-Kr
Output, kg/h, not more than		
sand	500	500
discharge	260	300
Feed coarseness, mm, not more than	2.5	2.5
Installed power, kW	0.27	0.27
Overall dimensions, mm, not more than		
Length (L)	1600	1590
Width with drive (B)	300	295
Height (H)*	760	840
Weight, kg, not more than	75	75

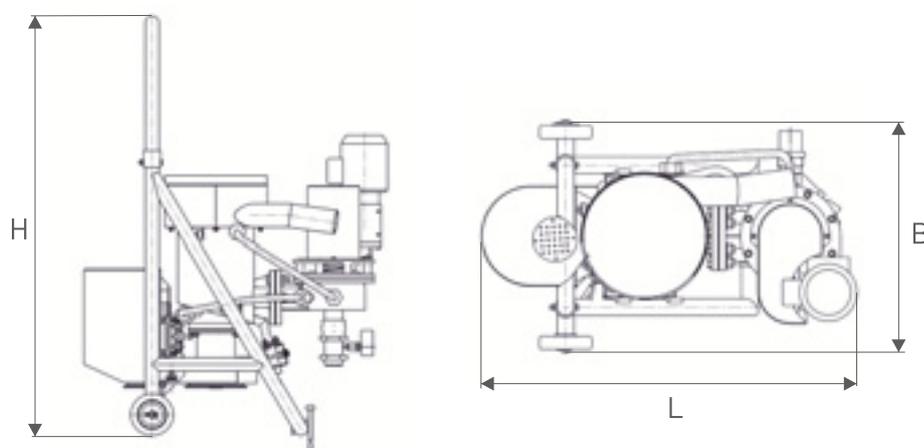
*Height with rake lift.



LABORATORY CENTRIFUGAL JIG

Centrifugal jig (COM) with screen area of 0.05 m² is designated for beneficiation of gold-bearing grinded ore and placer material by means of jigging in centrifugal field. The machine may be used for beneficiation of other raw materials.

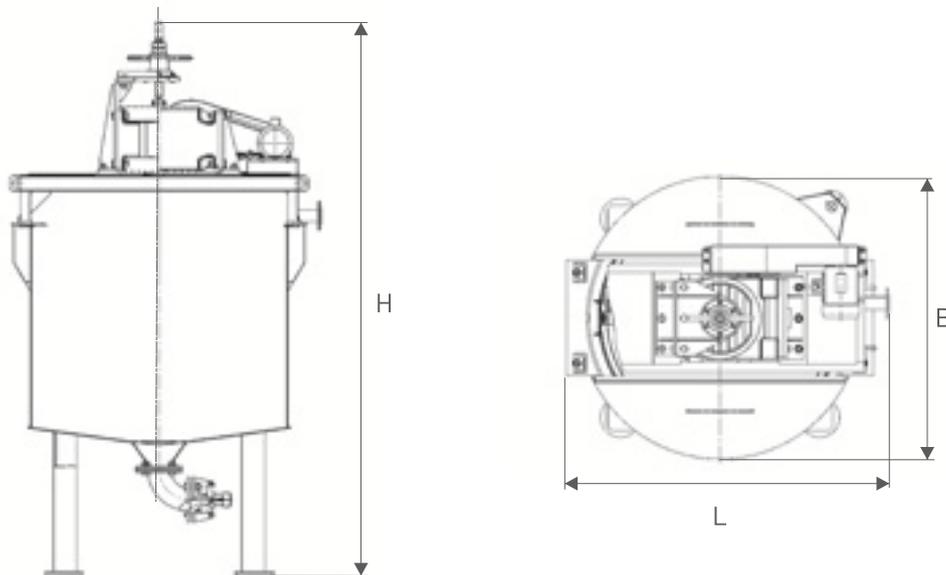
It is used in laboratory practice within pilot installations, and at enterprises during finishing operations.



Parameters	COM-0.05M2
Screen area, m ² , not less than	0.05
Number of jigging boxes	1
Feed rate, t/h, not more than	0.2
Feed coarseness, mm, not more than	2
Centripetal acceleration of material on the screen, m/s ² , within the range	50-200; 100-400
Electric motor power, kW, not more than	
rotor	0.37
hydropulsator	0.12
Vibration frequency of underscreen water, min ⁻¹ , within the range	159-318
Maximum vibration amplitude underscreen water on the screen, mm	7.5
Overall dimensions, mm, not more than	
Length (L)	715
Width with a drive (B)	440
Height (H)	1000
Weight, kg, not more than	71

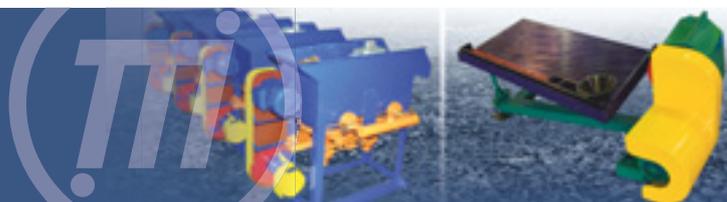
SINGLE-COMPARTMENT CIRCULAR THICKENER WITH CENTRAL DRIVE

Single-compartment circular thickener with central drive (SC) is designated for thickening, de-sliming of pulps, cleaning of circulating water and solutions. It is used in laboratory practice within pilot installations.



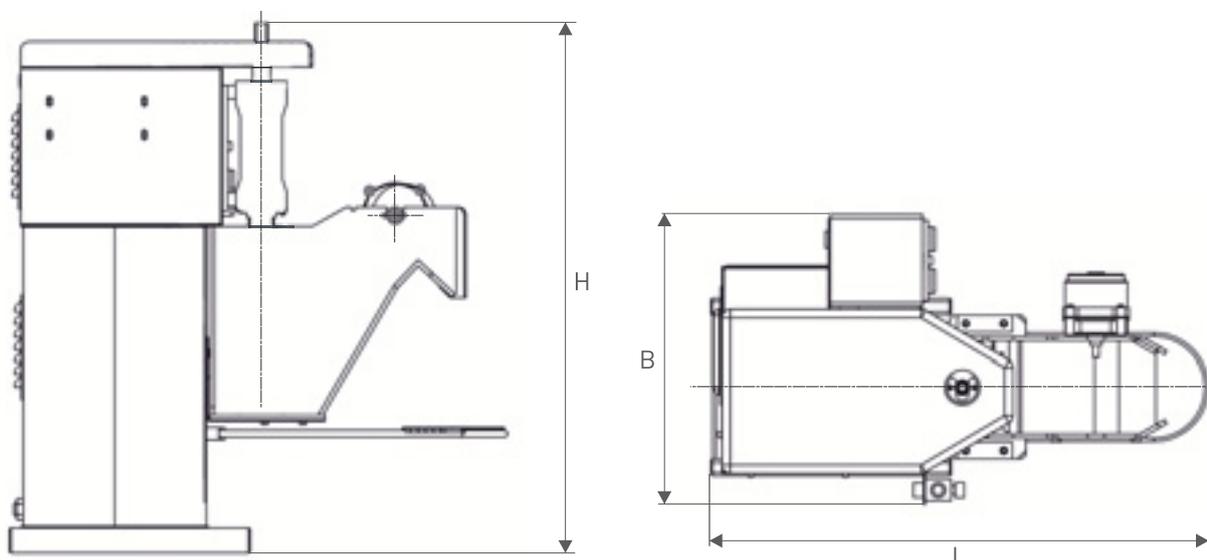
Parameters	SC-1
Internal pan diameter, mm	1000
Central depth of pan, mm	800
Settlement area, m ²	0.8
Period of shaft revolving arm revolution, min	0.2... 0.8
Revolving arms rise height, (stroke) mm	70
Rotating mechanism engine power, kW	0.25
Specific surface feed load, m ³ /m ² h, not more than	8
Overall dimensions, mm, not more than	
Length (L)	1210
Width (B)	1150
Height (H)*	2200*
Weight, kg, not more than	
without pan	390

*Height with rise height.



LABORATORY FLOCCULATING DENVER UNIT CELL

Flocculating Denver unit cell (FMF) is designated for simulation of foam flotation in periodical mode. It is used in laboratory practice.

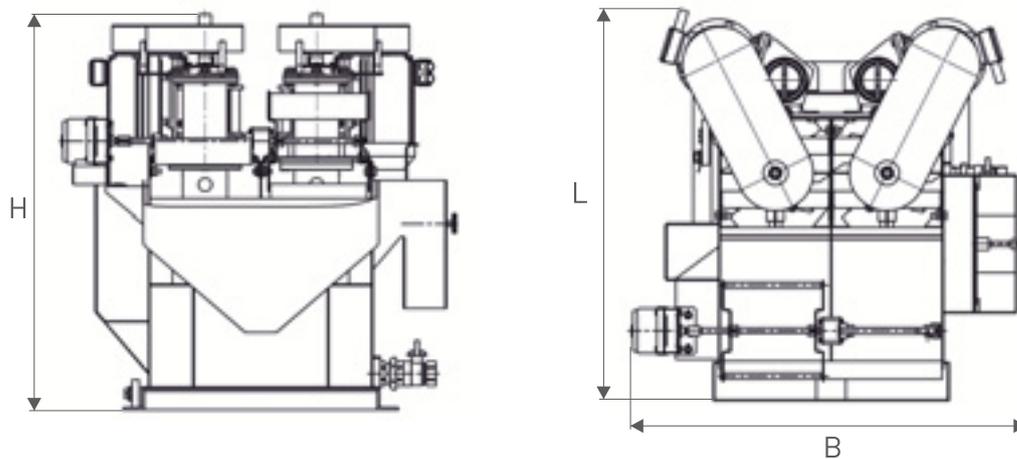


Parameters	FMF-0,2(l)	FMF-1(l)	FMF-3(l)
Chamber capacity, l	0.2-0.3	0.5;0.75;1	3
Impeller diameter, mm	26	38	55
Impeller drive electric motor power, kW, not more than	0.09	0.09	0.18
Foam remover electric motor power, kW	0.009	0.009	0.009
Overall dimensions, mm, not more than			
Length (L)	400	400	540
Width with drive (B)	347	347	350
Height (H)	643	643	650
Weight, kg, not more than	22	24	27

LABORATORY MECHANICAL FLOTATION MACHINE

Laboratory mechanical flotation machine (MFL, FMF) is designated for foam flotation of non-ferrous metal ores, coal and other mineral raw materials in periodical and continuous modes.

It is used in laboratory practice for flotation process simulation.



Parameters	MFL-3	MFL-0.012	MMFL-0,025		FMF-030
Chamber capacity, l	3	12	25		30
Number of chambers in the machine	6	2	2	4	2
Impeller type	ejecting	ejecting	classic		ejecting
Impeller diameter, mm	67	86	115		102
Flotation cell design	plexiglass	rustless metal	metallic		plexiglass
Impeller unit drive electric motor power, kW, not more than	0.09	0.37	0.55		0.37
Overall dimensions, mm, not more than					
Length (L)	980	645	940	1650	800
Width (B)	540	630	690	690	790
Height (H)	980	680	1220	1220	830
Weight, kg, not more than	85	76	140	260	60



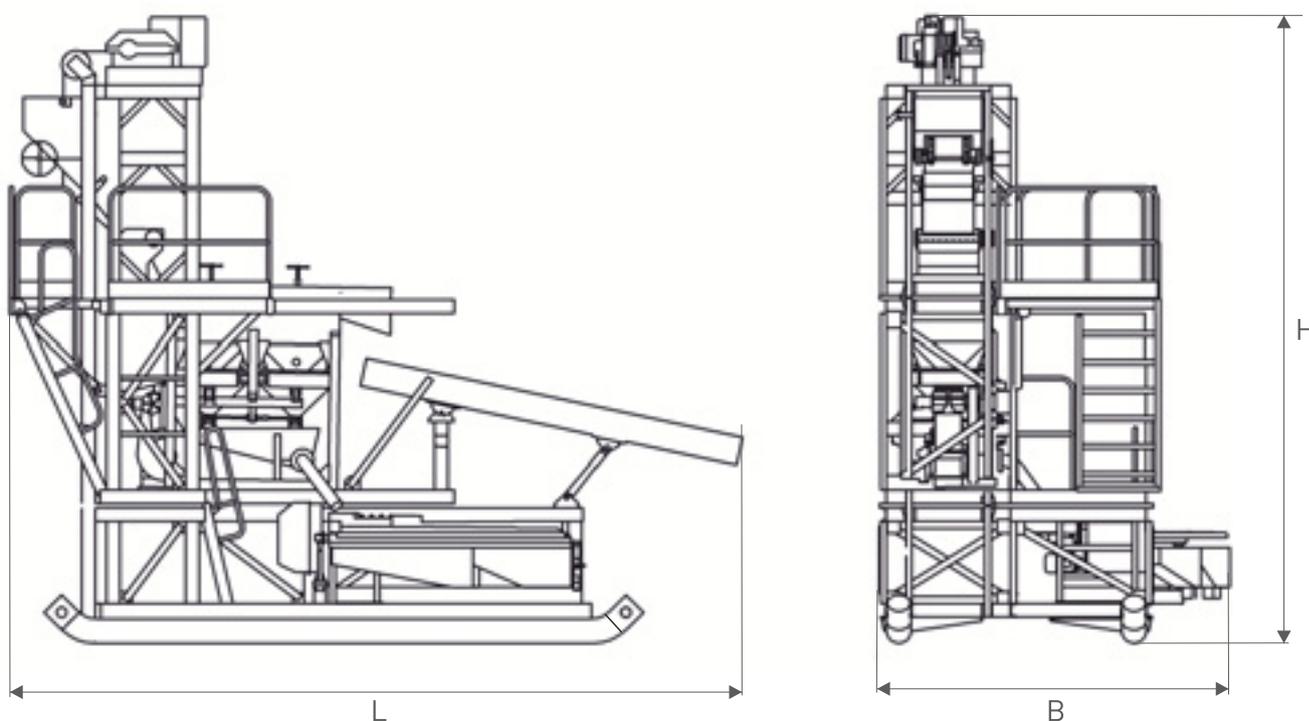
RAW PROCESSING EQUIPMENT





PRIMARY CONCENTRATE WASHING MACHINE

Primary concentrate washing machine (ShDU) is designed to upgrade gold containing concentrates in ore dressing gravity plants, dredges, and wash plants. This machine can also be used for processing gravity concentrates of poly-metal and rare metal ores and aggregates.



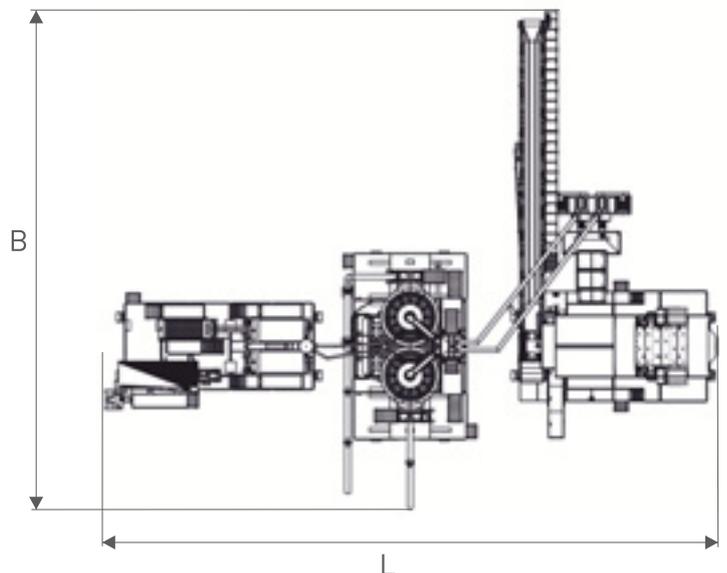
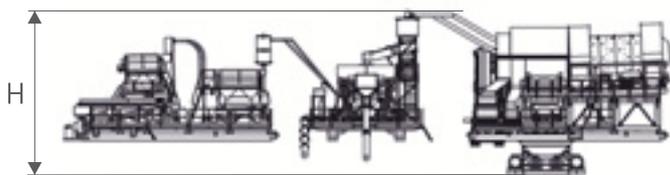
Parameters	ShDU-0.2	ShDU-1
Raw material capacity, tons/h, not more than	0.9	10
Raw material size, mm, not more than	8	10
Summary rated capacity of electric motors, kW	2.95	2.57
Overall dimensions, mm, not more than		
Length (L)	4610	6500
Width (B)	3080	3240
Height (H)	3120	5600
Weight, kg, not more than	1990	5700



SIBIR THE MODULAR ORE DRESSING PLANT

SIBIR the modular ore dressing plant is designed to extract gold, platinum, and rare metals from alluvial sands, drilled bed-rocked ore materials, and human-made waste piles of preparation plants.

Such complexes are normally installed on platforms equipped with rails for transportation using quarry machinery. The complexes are based on a scrubber improved using jigging technology.

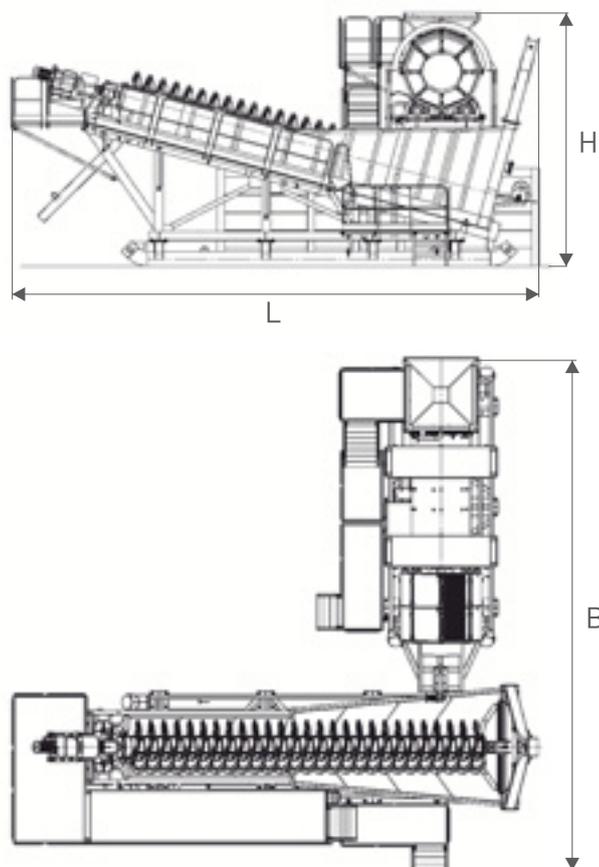


Parameters	Sibir-25	Sibir-50	Sibir-100	Sibir-200
	Two modules			three modules
Capacity, m ³ /h (tons/h)				
for light washable material	25(40)	50(85)	100(170)	200(350)
for medium washable material	20(32)	40(65)	80(130)	170(300)
for hard washable material	15(25)	30(50)	60(100)	120(200)
Raw material size, mm, below	150	200	300	300
Summary rated capacity of electric motors, kW	29.6	125.6	156.2	317
Overall dimensions, mm (in working position), mm, not more than:				
Length (L)	18410	24190	28400	39950
Width (B)	10105	20630	12220	21280
Height including benches (H)	7805	7670	9200	9420
Weight (including water piping), kg, not more than	38250	65000	79000	145110



SAND PROCESSING PLANT UPP-12

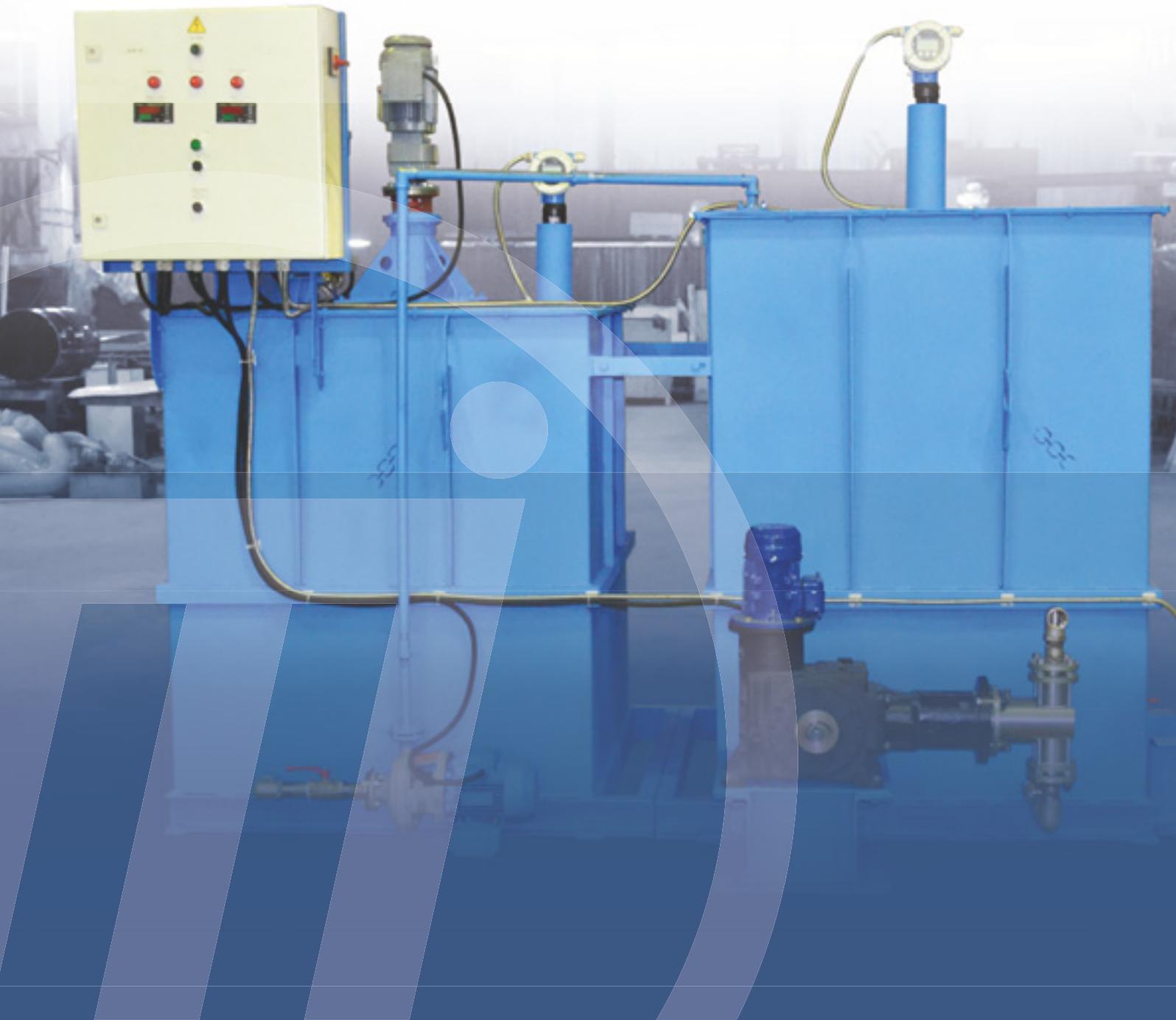
Sand processing plant UPP-12 is designated for disintegration of clay material from natural soils, sands, ore and placer fields. It is used in ore mining and construction industry.



Parameters	UPP-12
Output, t/h, not more than	70
Total installed power of electric motors, kW	26
Overall dimensions, mm, not more than	
Length (L)	11740
Width (B)	11300
Height (H)	5700
Weight, kg, not more than	26000

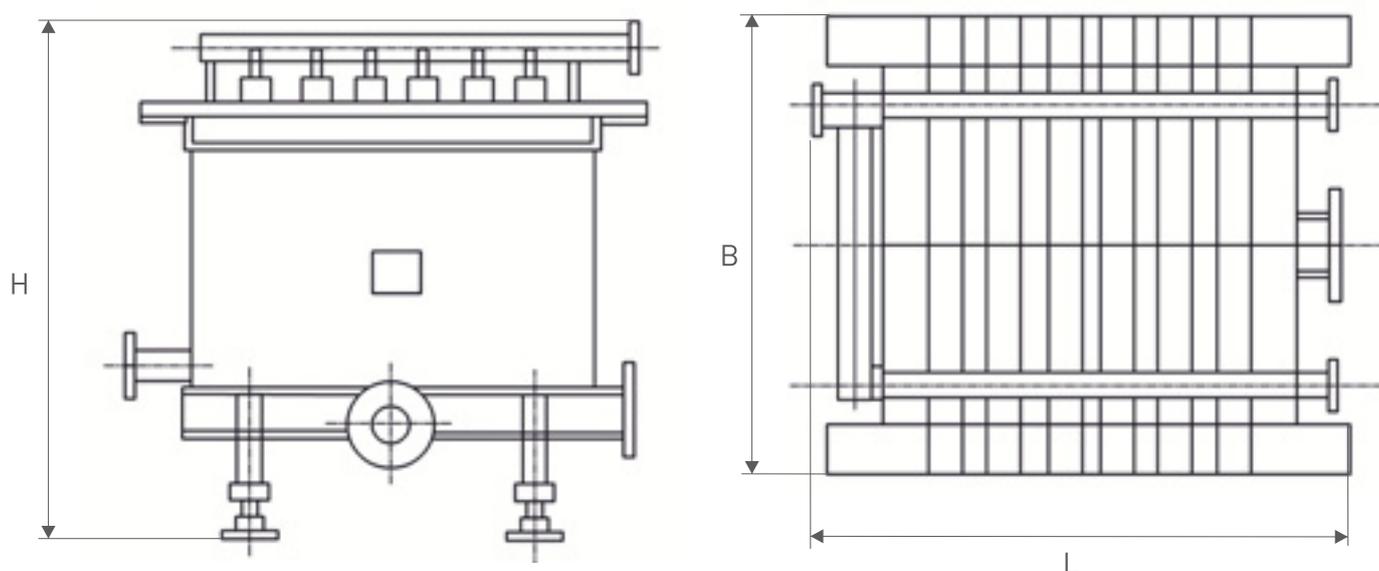


OTHER EQUIPMENT



ELECTROLYTIC CELL UNITS

The plant offers cases and separate parts of EU electrolytic cells made of titanium VT 1-0, cathode and anode resin and polyurethane cells. Electrolytic cell (EU) is designated for processing of solutions containing electroactive components in small concentrations, namely for extraction of noble, rare and non-ferrous metals from industrial solutions and sewages of hydrometallurgical and galvanic productions with initial fraction mass of metals from 0.02 to 2 g/l to residual concentrations less than 1.0 mg/l. It is used in metallurgical industry.

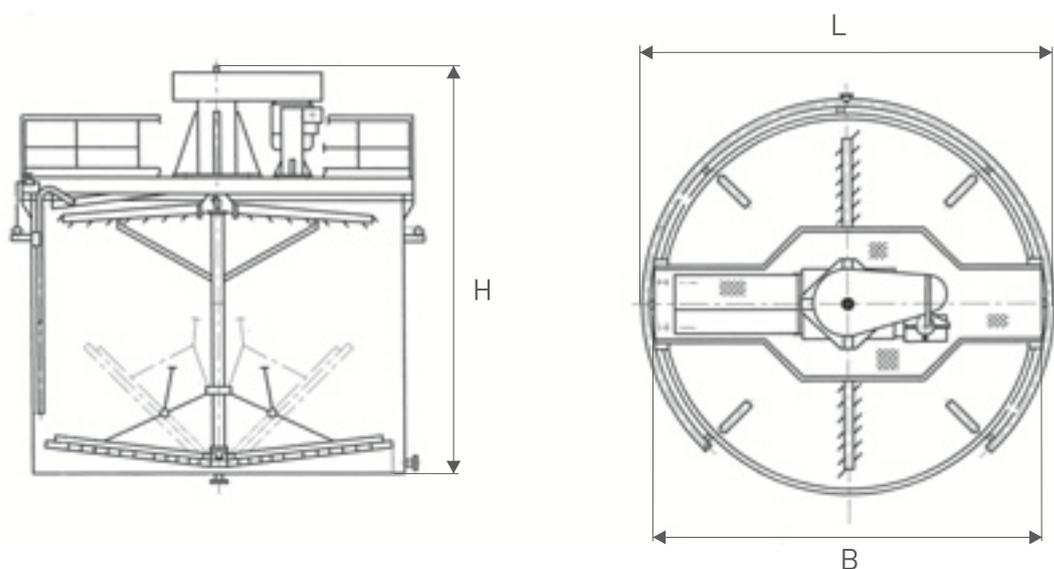


Parameters	EU-1V	EU-2V	EU-3V	EU-5V	EU-10V
Overall dimensions, mm, not more than					
Length (L)	400	500	600	850	1350
Width (B)	750	750	750	750	750
Height (H)	890	890	890	890	890



MECHANICAL-AIR STIRRERS

Mechanical-air stirrers (PPM) are designated for intensive stirring of fine grinded ores in cyanide and other solutions in order to dilute metal contained in ore. It is used in ore mining industry.

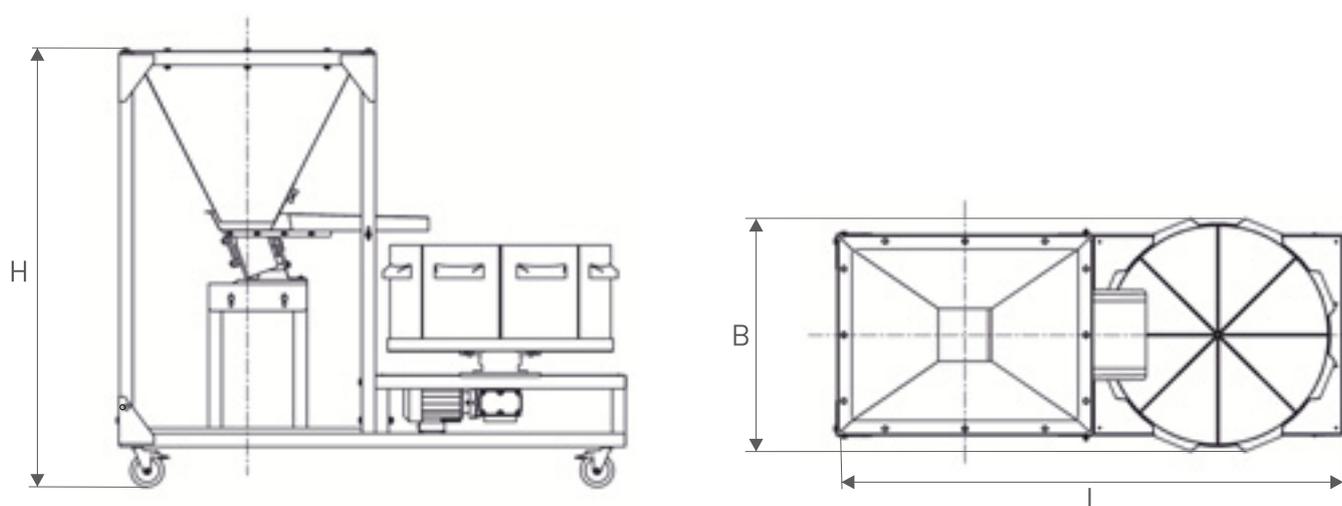


Parameters	PPM-6T	PPM-8T
Nominal pan diameter, mm	6000	8000
Pan depth, mm	4.5	6000
Effective volume of pan, m ³	110	275
Revolutions of vertical shaft, rpm	6	6
Feed coarseness, mm	0.3	0.3
Air pressure, kg/cm ²	1.2-1.6	1.5-2.0
Air flow rate, m ³ /min		
without side air lifts	0.9-1.2	1.8-2.2
with side air lifts	1,4-1.9	2.8-3.4
Overall dimensions, mm, not more than		
Length (L)	7100	8330
Width (B)	6000	8000
Height (H)	6300	8770
Weight, kg, not more than	4500	4793

COAL SAMPLE SPLITTER

Coal sample splitter (DPU) is designated for coal, coke and other bulk grinded material sample splitting for equal size and content parts.

It is used at coal beneficiation plants and in laboratories of coal and other industry plants.

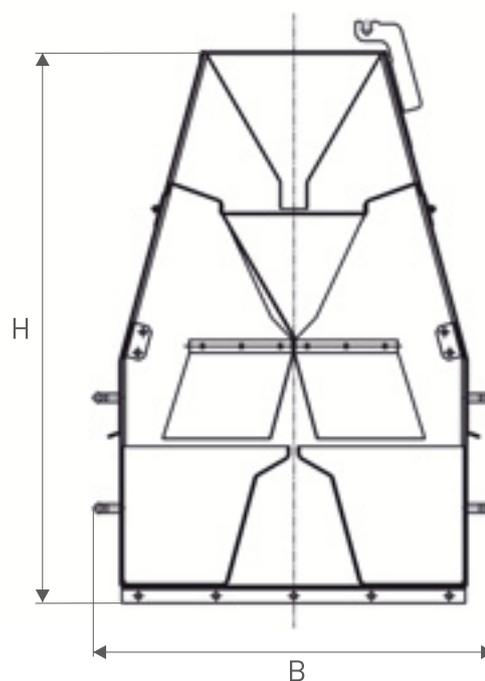
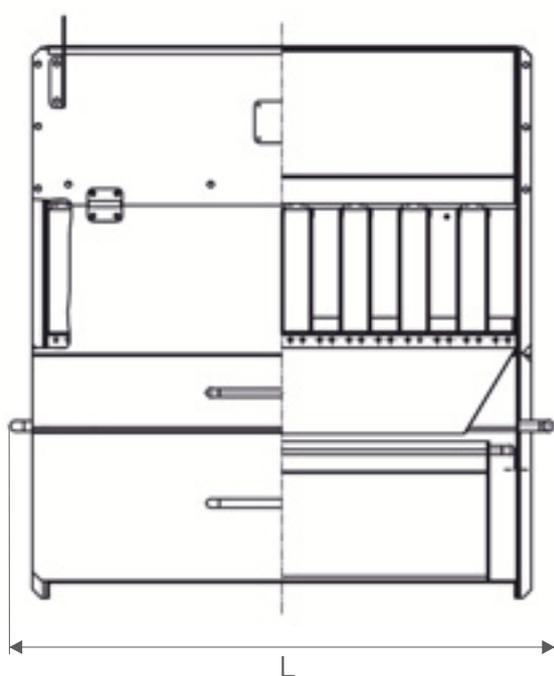


Parameters	DPU-100
Feed hopper capacity, m ³ , not more than	0.16
Feed weight, kg, not more than	100
Coarseness of splitted material, mm, within the range	0.3... 16
Number of sectors (tanks) simultaneously spinning on the tray, pcs	8
Tray spinning speed, rpm	16±2
Installed power of motor reducer 5P570T801Ч4, kW, not more than	0.75
Tray stroke length, mm, not more than	1.5
Tray stroke frequency, s ⁻¹ , not more than	60
Overall dimensions, mm, not more than	
Length (L)	1900
Width with drive (B)	880
Height (H)	1660
Weight, kg, not more than	320



RIFFLE SAMPLE DIVIDER (JOHNSON'S DIVIDER)

Riffle sample divider (DPSch) is designated for division of bulk material samples (ore, coal, sand etc.) into two parts of equal size and content. It is used in industrial and scientific laboratories of different industrial fields, including coal ones.

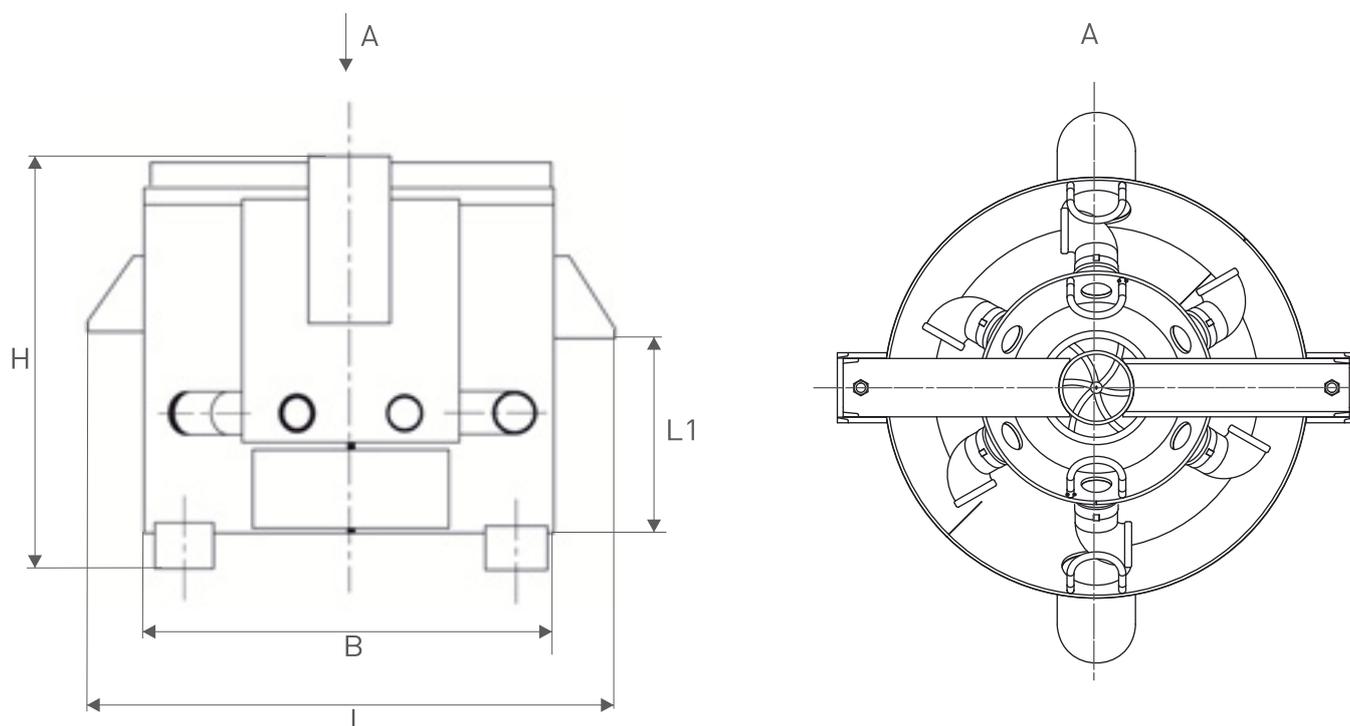


Parameters	DPSch-5	DPSch-10
Sample material coarseness, mm, not more than	5	10
Number of chutes, pcs.	24	16
Chute width, mm, not more than	15	30
Sample receptacle capacity, dm ³ , not more than	2x8.25	2x11.4
Overall dimensions, mm, not more than		
Length (L)	495	630
Width (B)	460	460
Height (H)	615	680
Weight, kg, not more than	32	42

WET RIFFLE

Wet riffle (PD) is designated for separation of pulp flows into parts of equal volume.

It is used in modular beneficiation installations and beneficiation plants.

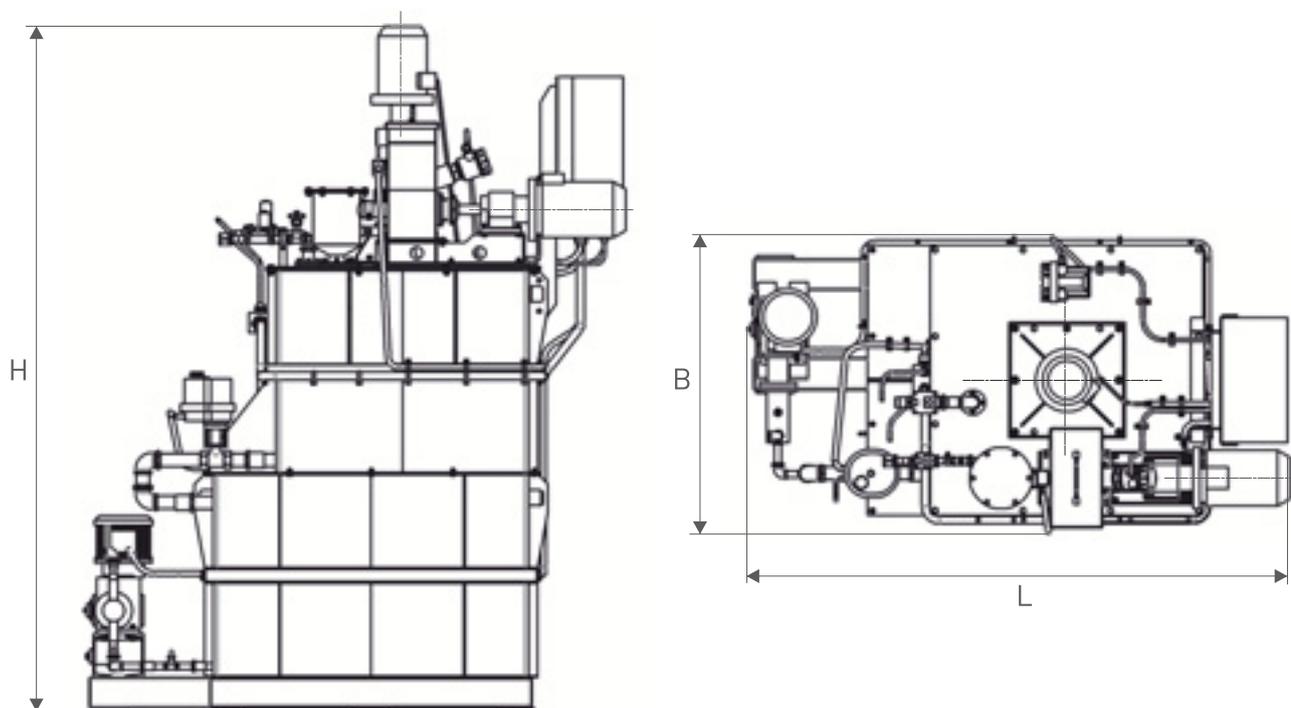


Parameters	PD-1	PD-2	PD-3	PD-4	PD-5	PD-6
Output, m ³ /h, within the range	2-4	4-8	8-16	16-31.5	31.5-63	63-125
Number of streams after separation, within the range	2-3	2-6	2-3	2-6	2-6	4-6
Torque, kgs/m, not more than	4.6	6.9	19	29	56	164
Overall dimensions, mm, not more than						
Length (L)	675	675	792	792	880	960
Length (L1)	250	250	300	300	300	300
Width (B)	530	528	644	644	735	800
Height (H)	460	460	640	640	780	792
Weight, kg, not more than	84.2	86.4	124.7	135.5	200.5	240.5



FLOCCULANT PREPARATION COMPLEX

Flocculant preparation complex (KPF) is designated for automatic preparation of solution from dry powders with working concentration of 0.05-0,1%. It is used in ore mining, coal, metallurgical and chemical industries.

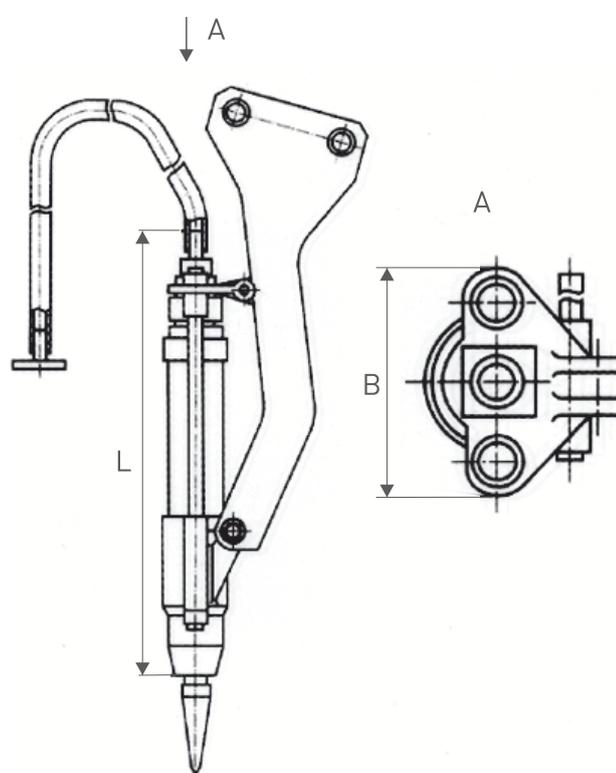


Parameters	KPF-0,3	KPF-0,7	KPF-1,3
Finished solution output, m ³ /h	0.3	0.7	1.3
Overall dimensions, mm, not more than			
Length (L)	1730	2300	3200
Width (B)	900	1300	1800
Height (H)	2200	2600	2150
Weight, kg, not more than	950	1250	1400

PNEUMATIC HAMMER ATTACHMENT

Pneumatic hammer attachment (PN) is designated for destruction of rock, frozen soils, concrete and asphalt coverings, brick, concrete and reinforced concrete buildings and structures, as well as for soil compaction and pile, pipe and groove installation.

It is used in construction industry.



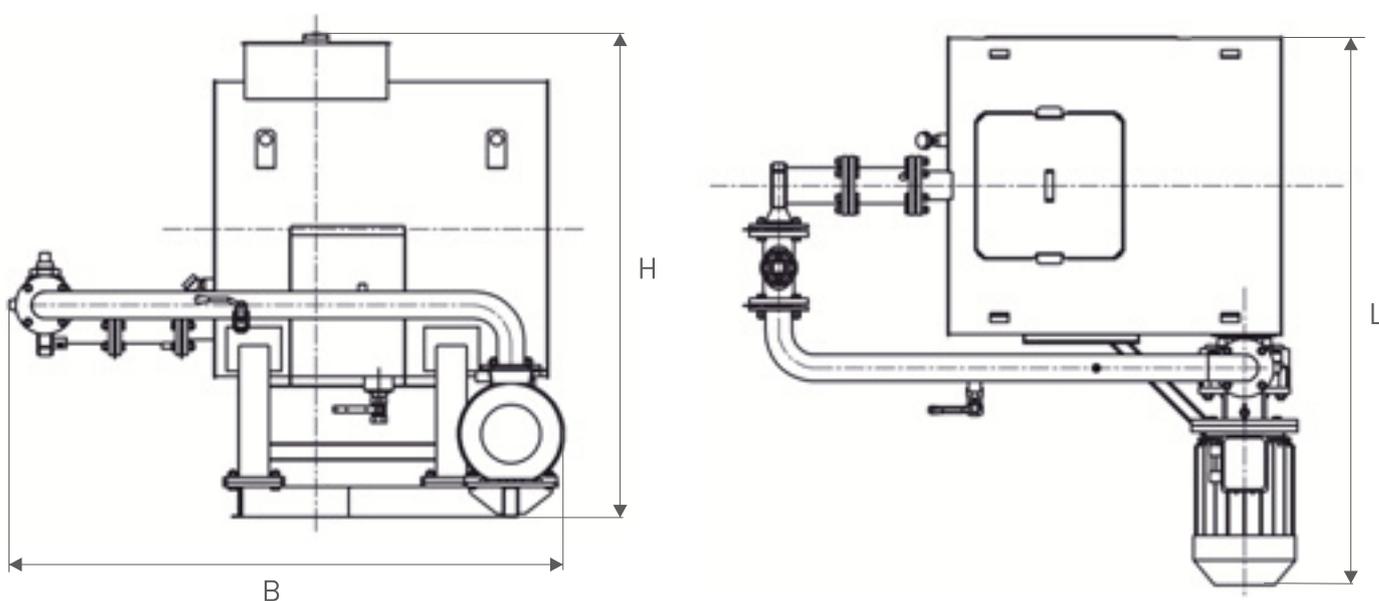
Parameters	PN-1700M4
Maximum pressure of compressed air, MPa	0.7
Operating pressure of compressed air, MPa, not more than	0.6
Single impact energy, J	1700
Impact frequency, min^{-1} , not less than	396
Internal diameter of air hose, mm	50
Overall dimensions, mm, not more than	
Length (without tool) (L)	1700
Width with drive (B)	420
Weight, kg, without tool (with tool)	450 (550)



FEED PREPARATION MACHINE

Feed preparation machine (APK) is designated for preparation of liquid feeds from grain products.

It is used in animal husbandry.

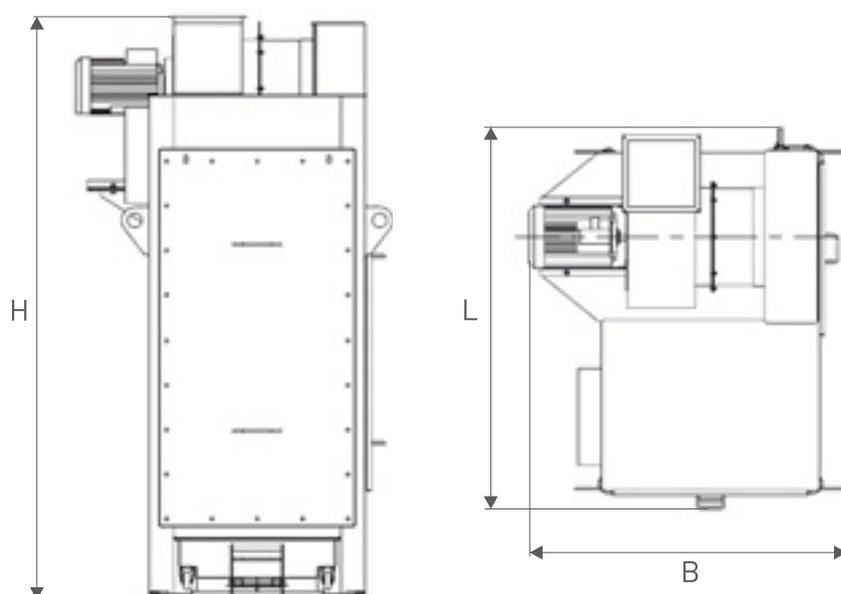


Parameters	Siberi-APK-0.7
Capacity of mixer tank, l, not more than	700
Time of feed mix preparation to required temperature and fine grinding, hm not more than	1.5-2
Feed mix heating temperature, °C	+52±2
Electric motor power, kW	15
Overall dimensions, mm, not more than	
Length (L) (without servicing area)	1200
Width (B)	1820
Height (H)	1580
Weight, kg, not more than	410

INDUSTRIAL DUST EXHAUSTER

Industrial dust exhauster (PPU-6) is used for removal of welding aerosol emitted during welding, gas or plasma arc cutting of metals, for removal of dry dust (without any acidic or explosive components) formed during grinding of non-sparking metals, collection of particles of fine aerosols from 0.5 to 1 micron.

It is used in construction and machine building industries.



Parameters	PPU-6
Maximum contaminated air exhaustion rate, m ³ /h	6000
Filtration effectiveness, %, within the range	95-99
Pressure of air supplied to filter regeneration system, MPa	0.6(6)
Allowable pressure (depression) inside the apparatus, kPa (kgs/m ²)	50(500)
Mass fraction of dust in treated gas at the inlet, g/m ³ , not more than	10
Overall dimensions, mm, not more than	
Length (L)	1600
Width (B)	1310
Height (H)	2450
Weight of air cleaner with components, kg, not more than	1193



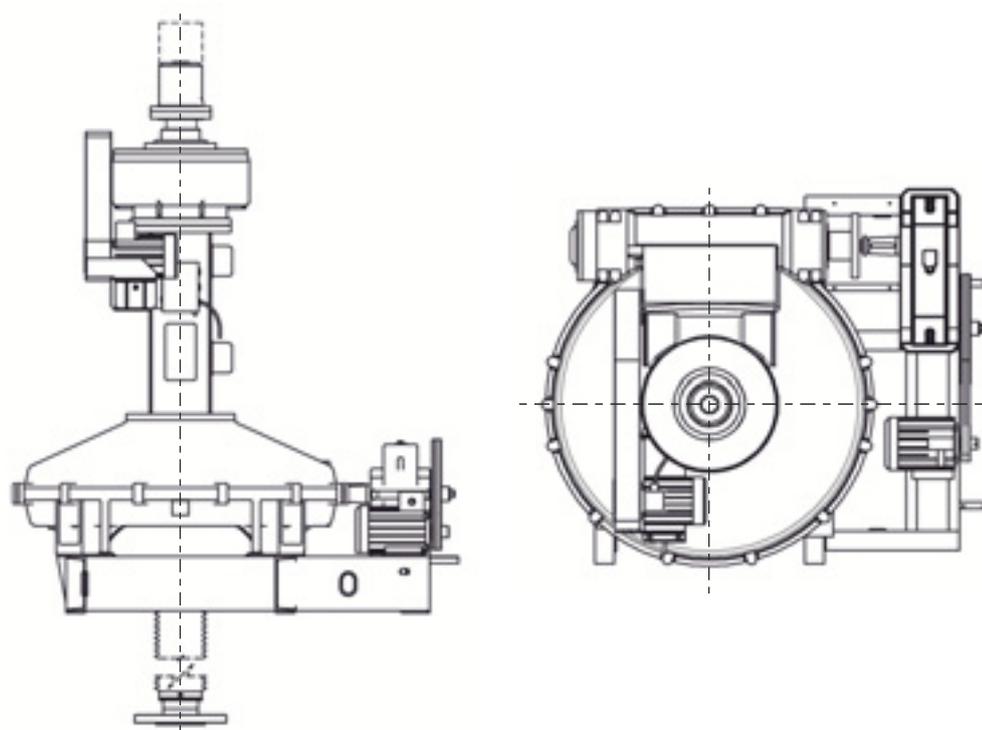
SPARE PARTS



DRIVE FOR HEAVY-DUTY THICKENER

Drive for thickener (GT) is designated for installation on frames of single-chamber heavy-duty closed thickeners.

It is used in ore mining, metallurgic and coal industries.

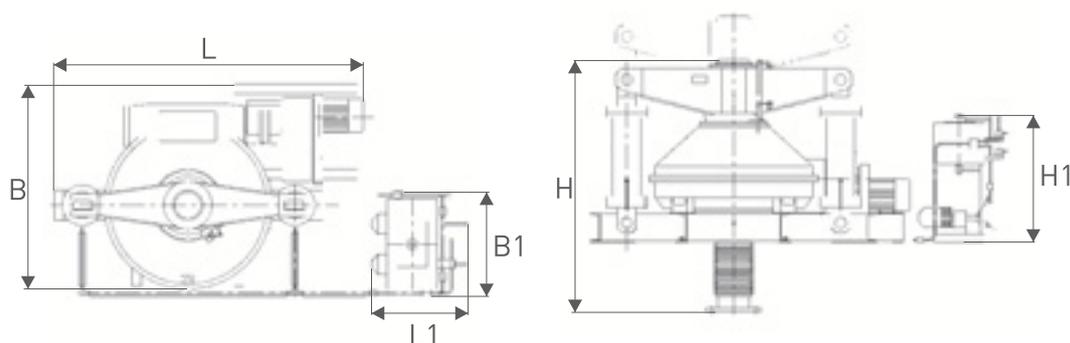


Parameters	GT-12C	GT-20
Drive power, kW, not more than	5.5	5.5
Torque at vertical shaft, kNm	48	50
Vertical shaft revolution frequency, mm, not more than	0.25-0.5	0.25-0.5
Rise height of vertical shaft, mm, not more than	400	400
Rise time, min	7	7
Load capacity of lifting mechanism, kg, not more than	15000	20000
Weight, kg	3880	5960



UNIFIED DRIVE UNP-20

Unified drive UNP-20 is designated for modernization of used thickeners, applied in low rooms, as well as for creation of new thickeners without stage regulation of revolution speed and automatic control of rotary moment. It is used in ore mining, metallurgical and coal industries.

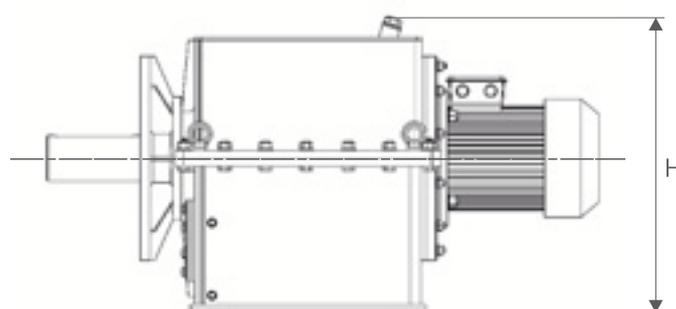
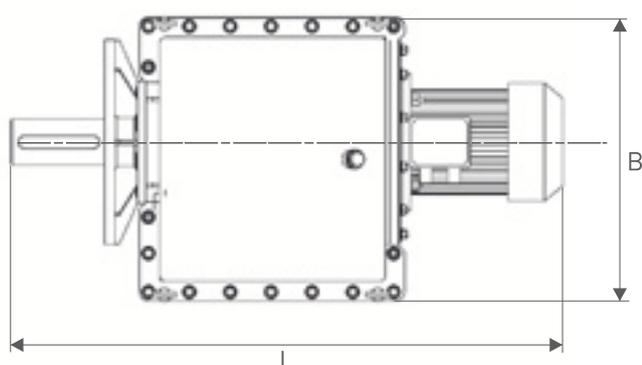


Parameters	UNP-20
Revolution mechanism	
Electric motor	
type	AIR 132SU3
power, kW	7.5
Revolving arms revolution frequency, rpm	0.3...0.6
Overall dimensions, mm, not more than	
Length (L)	3030
Width (B)	2020
Height (H)	2460
Lifting mechanism	
Pump unit	
Electric motor, power, kW	3
Pump, output, l/min	15
Hydraulic cylinders, q-ty, pcs	2
Motor, kgs/cm	100
Lifting force	2x25000
Vertical shaft lifting height, mm	400
Overall dimensions, mm, not more than	
Length (L1)	1100
Width (B1)	950
Height (H1)	1260
Overall weight, kg	7100

MOTOR REDUCER

Motor reducer is an aggregate represented by electric motor and reducer combined in one unit.

It is used in all industries.

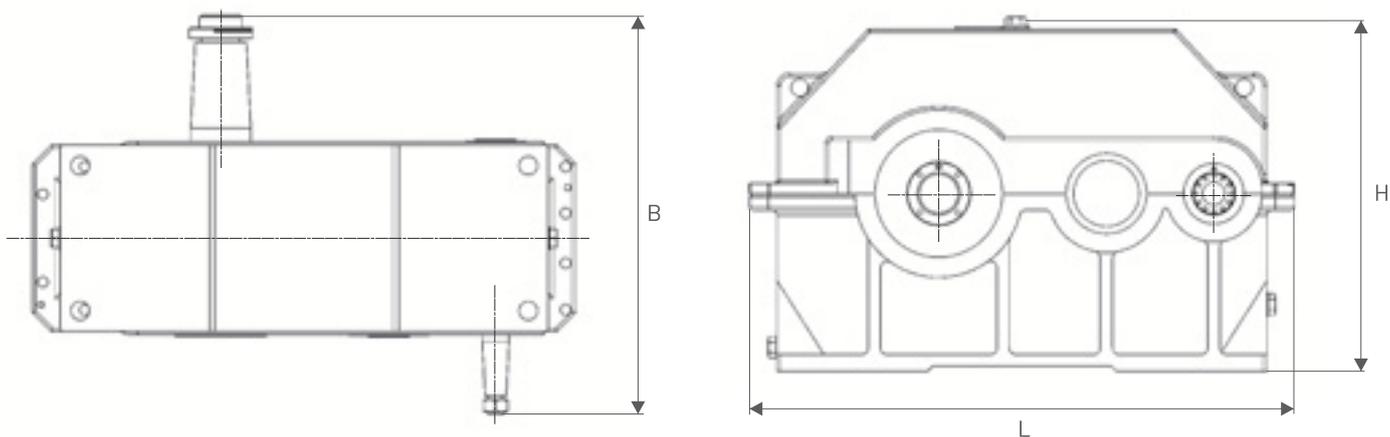


Parameters	MRC-210	MRC-200M
Nominal torque at output shaft, Nxm	6600	9000
Output shaft revolution speed, rpm	7.24	7.24
Motor	5A112M4	5A132S4
Revolution speed, rpm	1500	1500
Power, kW	5.5	7.5
Overall dimensions, mm, not more than		
Length (L)	1215	1180
Width (B)	535	695
Height (H)	650	650
Total weight (without oil), kg	510	490



CYLINDRICAL REDUCER

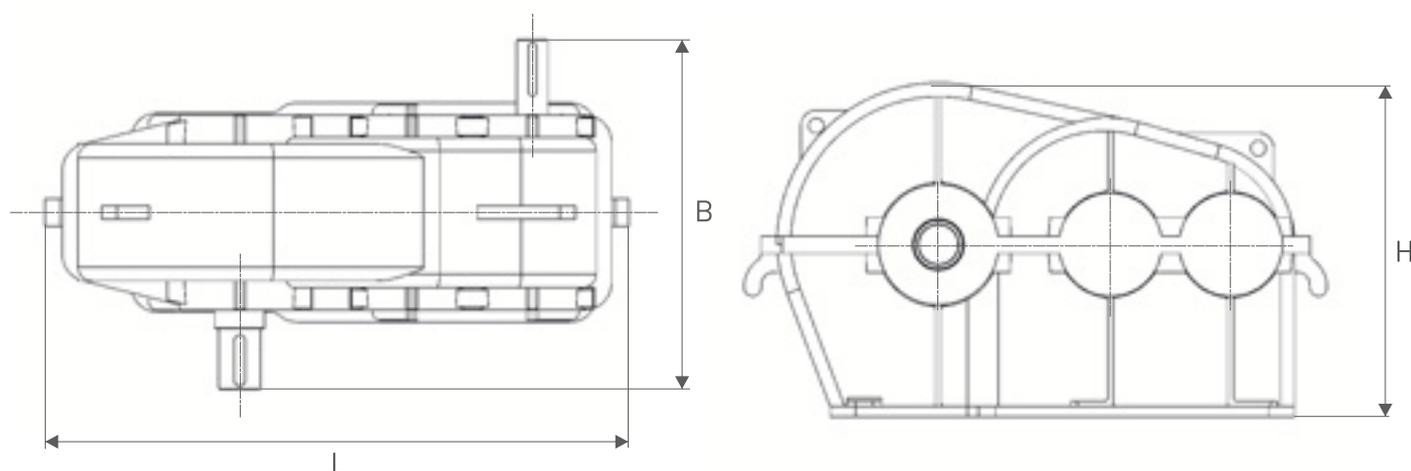
Cylindrical reducer is used for transfer of rotary motion between shafts located parallel to each other. It is used in all industries.



Parameters	RC2-125	RC2-160	RC2-200	RC2-250	RC2-315N	A-700M
Nominal torque at output shaft, Nxm	1250	1250	1650	5000	7500	12000
Output shaft revolution speed, rpm	1500	1500	1500	1500	1500	1500
Overall dimensions, mm, not more than						
Length (L)	440	555	670	812	1030	1782
Width (B)	300	330	400	480	720	1510
Height (H)	225	335	416	530	660	1290
Weight, kg, not more than	72	95	170	328	560	3040

DREDGE REDUCER

Dredge reducer is designated for increase of torque and decrease of revolution frequency in drive mechanisms of dredge and other beneficiating equipment. It is used in all industries.



Parameters	R313-14N	R316-1N	R349-1N
Reduction ratio	46.6	16.05	31.4
Power at input shaft, kW	40	73	22
Number of revolutions at input shaft, rpm	615/1000	750/1100	590/1000
Overall dimensions, mm, not more than			
Length (L)	2195	1695	1270
Width (B)	820	1090	610
Height (H)	1030	970	810
Weight, kg	2260	1950	776