



SCREW CONVEYOR AND SCREW PERCOLATIVE PRESS

STATE-OF-THE-ART TECHNOLOGIES AND WATER TREATMENT EQUIPMENT


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SCREW CONVEYOR

The screw conveyor with electric drive EVK (hereinafter referred to as the conveyor) is designed on the basis of an axle-less screw. EVK is designed for transportation of slurry (dewatered sludge) with a moisture content of 30 ... 80% retained on the waste grids, as well as any other friable or granular (0.5 - 6 mm), or small piece (6 - 80 mm) cargo (hereinafter referred to as products) in a horizontal position or at an inclination of up to 35°.

The screw conveyor can be operated as part of any production lines, where transportation of such products is required.



The conveyor axis-less screw is made of high-quality wear-resistant steel sheet grade S355JR (EN10027-1) with a thickness of 12 mm. The remaining parts contacting with the product being transported are made of corrosion-resistant materials like stainless steels grades AISI 304 and AISI 321 and polymeric materials (lining of high-polymeric polyethylene PE-1000).

The delivery set of the conveyor includes a control cabinet and remote control panel. The conveyor can work in manual and automatic mode. In automatic (periodic) mode, the conveyor operates from a signal coming from other equipment that is a part of processing train of the product.

Depending on the requirements applicable to the conveyor, it can have two layout solutions: with a pulling or pushing screw, as well as one or more filling hoppers.

The conveyor is manufactured in two standard versions: EVK 200 (with a screw diameter of 200 mm) and EVK 300 (with a screw diameter of 300 mm) and in boreal climatic modification, environmental class 3 according to GOST 15150-69.

ENGINEERING SPECIFICATION

Parameter	Unit	EVK 200	EVK 300
Performance	m ³ /h	2	3...9
Screw diameter, D	mm	200	300
Rated speed of the screw	rpm	21...23	11...26
Drive power consumption	kW	1.5...5.5	2.2...5.5
Conveying machine length	m	2...30	2...15
Overall width	mm	567	667
Loading height (from the floor to the hopper)	mm	750...1100	
Angle to the horizon at inclined transportation	grad.	not more than 35	

Conveyors with other technical characteristics are produced according to the individual requirement specification of the Customer.



SCREW PERCOLATIVE PRESS

The screw percolative press with electric drive EPVP 2 (hereinafter referred to as the press) is designed for thickening and transporting waste caught on sewer grids, as well as for washing this waste and returning soluble organic compounds contained in them to wastewater. At this, the amount of waste is reduced up to 10 times. As a rule, the press is operated as part of processing trains of mechanical sewage treatment at wastewater treatment plants.



All press parts contacting with water and waste are made of stainless steel grades AISI 304 or AISI 321. The delivery kit of the press includes a control cabinet and a remote control panel. The press can work in manual and automatic mode.

In automatic (periodic) mode, the press operates from a signal coming from other equipment that is a part of the processing train.

The press is manufactured in two standard versions like EPVP 2.200.500 and EPVP 2.200.1000, and in boreal climatic modification, environmental class 3 according to GOST 15150-69.

ENGINEERING SPECIFICATION

Parameter	Unit	2.220.500	2.220.1000	
Maximum performance	m ³ /h	2		
Rated screw speed	rpm	9.4		
Drive power consumption	kW	2,2		
Screw diameter, D	mm	220		
Service water pressure	bar	3–5		
Weight	kg	325	365	
Dimensions (Fig. 1)	Overall length, L	mm	3050*	3550*
	Overall width, B	mm	490	
	Overall height, H	mm	1660 ... 5310	
	Feed port length, L1	mm	500...1000	1000...1500
	Feed port width, B1	mm	240...500	
	Load height, h1	mm	min 470	
	Dump height, h2	mm	1350...5000	

* in the standard version at a dump height of 1350 mm.

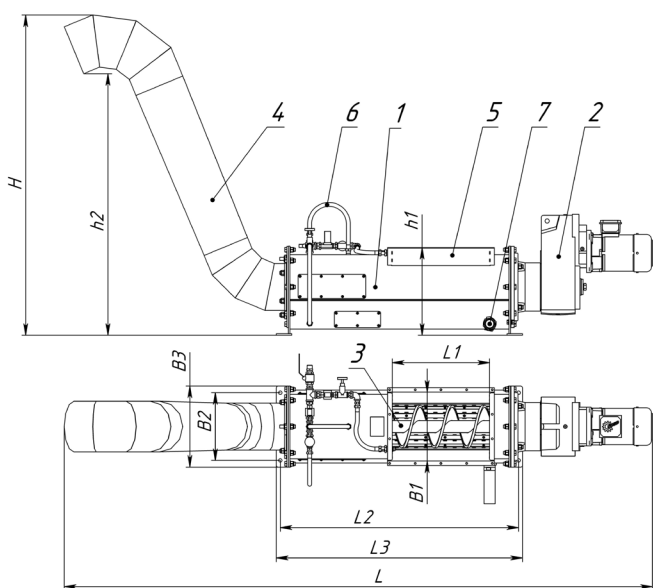


Figure 1. Screw percolative press EPVP

Presses with other technical characteristics (performance, dump height etc.) are produced according to the individual requirement specification of the Customer.

Design and function of the press

The press consists of the following main parts: casing (1), drive (2), screw (3) and drain pipe (4). Slurry is fed to the screw (3) of the press through the feed port (5). The screw is rotated by the drive (2) and move sludge into the pressing zone, where sludge is compressed between screw flights due to its variable pitch. The pressing zone is bounded by a sieve, waste remains inside the sieve, precipitate filtrate enters the press tray through a sieve.

The automatic washing system (6) carries out washing waste during press operation and periodic washing of the outer surface of the sieve and the press tray. Further, compacted and washed waste is fed to the discharge pipe (4), and from there to the collecting tank. Filtrate containing soluble organic compounds from waste is removed from the press through the drain pipe (7).

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