Sand trap with mixing pump

KUNST LPH-1-K and LPH-2-K

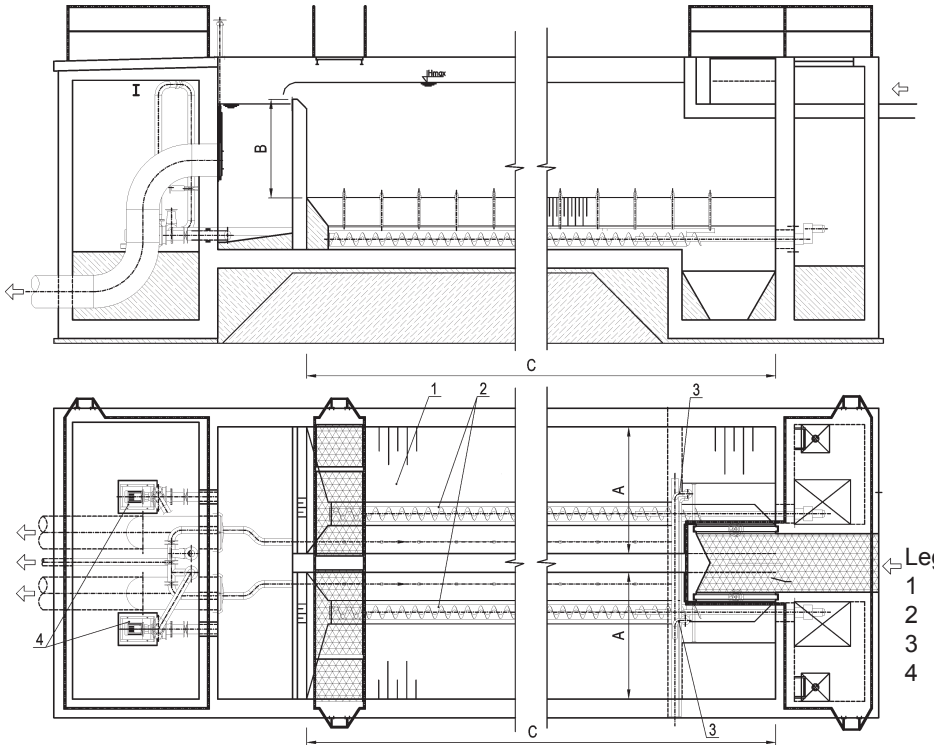

CHART WITH MAIN DIMENSIONS:

Parameter	Variable /Unit	Size 1	Size 2
Daily flow rate (calculated)	Q_d=Q_v (l/s)	150	250
One chamber size			
Chamber width	A (m)	1,7	2,4
Efficient depth above sand bed	B (m)	2,1	2,6
Efficient length of separation space	C (m)	15	18
Two chambers			
Overall flow area	S_p (m^2)	7,1	12,4
Overall efficient capacity	V_u (m^3)	107	223

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APPLICATION

The horizontal sand trap (hereinafter referred to as "LPH") is designed for separation of sand with grain size exceeding 0,2 mm from the incoming water under mixing and subsequent removal of sand. It is used as upstream protection of the following equipment against abrasion and fouling due to sedimentation. This sand trap has been designed in cooperation with the company HYDROPROJEKT CZ a.s. and comprises all advantages of previous horizontal trap types and concurrently removes the main disadvantage of aerated grit chambers, i.e. unwished import of oxygen and loss of lightly decomposable organic matters important for biological stages in waste water treatment plants in the process of further nutrients removal. As multistage equipment, comprising coarsely purifying units such as grit trap, coarse and fine racks, this LPH is used particularly for waste water treatment plants with capacities exceeding 10 000 EO.

FUNCTIONAL PRINCIPLE

Preliminarily treated waste water with content of sand goes in the inlet chamber of the LPH. With respect to possible highly variable inflow velocity this equipment is designed with two chambers for possibility of separation in one or in both chambers. The water flow is deflected perpendicularly to the LPH axis and ascends in the cylindrical part with mixing nozzles. Sand is periodically withdrawn from the trap to the next treatment stage (a pumping pit situated on the inlet side) by means of a shaftless spiral conveyer in the bottom part of the sand bed space. The conveyer drive is installed in a dry chamber. The abrasion-resistant and metal-clad conveyer chute is designed as part of the conveyer. The conveyer itself runs in permanent duty or in cycles. Sand from the pumping pit is removed periodically by means of special airlift pumps and conveyed to other peripheral equipment, such as sand separator or grit washer, to be made free of organic matters and then into a container for further disposal. The space with spiral conveyer driving units should be preferably dewatered and ventilated.

MATERIAL DESIGN

Piping, pumps, gates, spillway edges, anchoring and jointing material and service bridge are made of abrasion-resistant steel. Sludge pumps are designed in accordance with the manufacturer's specifications as agreed for the given application and medium characteristics. Non-metal parts are made from composites and abrasion-resistant plastic materials.

OPERATION AND MAINTENANCE

Operation of this equipment does not require permanent attendance and its routine maintenance should be done in compliance with instructions as stated in the operating manual. Separated sand should be removed as needed.

DELIVERY FORM

Standard delivery includes on-site installation of the entire equipment with accessories and peripheral equipment according to a contract. Accessories (as well as particular dimensions, see chart) can be optionally changed upon agreement and technical clarification. The customer is responsible for the building part project or the final site solution can be completely projected by the manufacturer upon agreement. The same is valid also for layout of peripheral equipment.
The supplier reserves the right of changes in its deliveries contrary to graphical figures, however, in compliance with the agreed parameters.

DELIVERY DATE

According to contract.

R.č. LPH-K 10/10-A-en

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