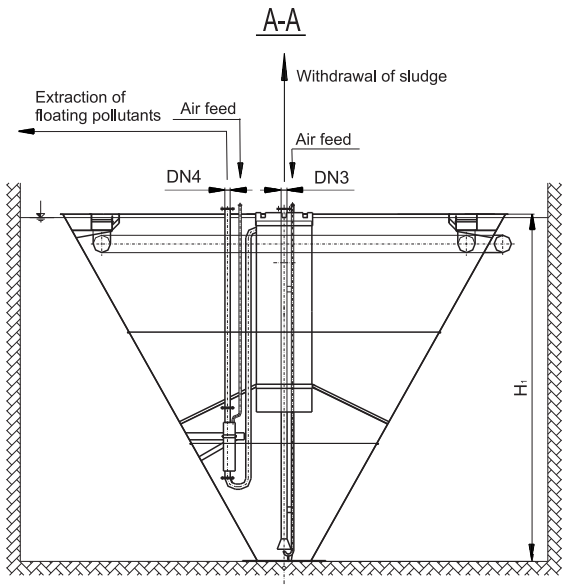
Hopper-bottomed final sedimentation tank

KUNST DNVK-1-K through DNVK-6-K



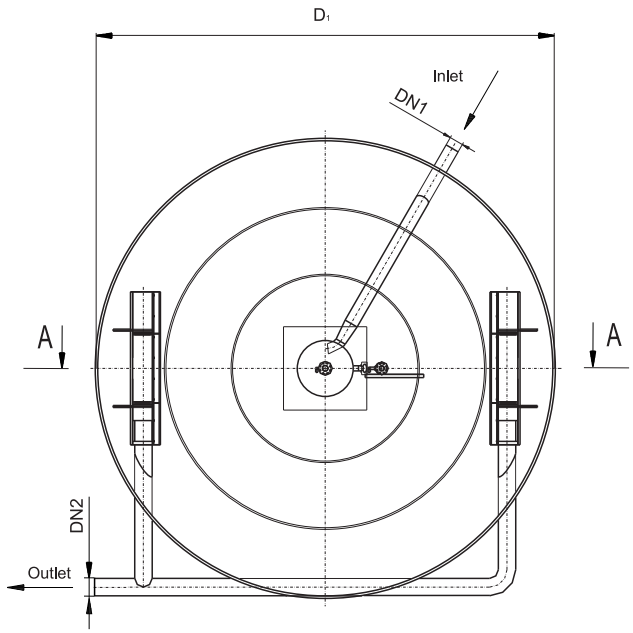


TABLE OF MAIN DIMENSIONS:

Parameter	Designation		Size and designation of final sedimentation tank					
			DNVK-1-K	DNVK-2-K	DNVK-3-K	DNVK-4-K	DNVK-5-K	DNVK-6-K
Tank width	D1	mm	3300	4000	4900	5300	6200	6600
Total tank height	H1	mm	4300	4300	4300	5000	5000	5000
Total tank volume	V_{DN}	m^3	14,2	20,2	29,4	41,2	55	62,9
Dimension of inlet pipe	DN 1	mm	125	125	150	150	200	200
Dimension of outlet pipe	DN 2	mm	150	150	200	200	250	250
Dimension of sludge outlet pipe	DN 3	mm	80	80	80	80	80	80
Dimension of floating pollutants	DN 4	mm	65	65	65	65	65	65
Maximal daily inlet	Q_h	m^3/h	10,65	14,9	21,85	28,5	38	43,75
Maximal daily inlet	Q_d	m^3/h	5	7,05	10,8	14,05	18,75	22,65
Average daily inlet	Q_{24}	m^3/d	82,5	123,75	189,75	247,5	330	412,5
Basic recirculation ratio	R_k	% of Qd	100	100	100	100	100	100
Specific waste water prodution per PE	spQ_{PE}	l/PE.d	150	150	150	150	150	150
Possible number of connected PE	n_{PE}	piece	500	750	1150	1500	2000	2500

R.č. DNVK-K 02/08-A-en

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Hopper-bottomed final sedimentation tank

KUNST DNVK-1-K through DNVK-6-K

APPLICATION

Final sedimentation tanks DNVK-1-K through DNVK-6-K are designated for waste water treatment plants of small and medium size. They are used for sedimentation and withdrawal of activated sludge which is contained in the waste water due to the preceding treatment stage. They are designed for directly connection after the activation tank WWTP KUNST iK-1000 through iK-5000 PE.

FUNCTIONAL PRINCIPLE

The waste water is feed by means of inlet pipe and tangentially inlet into the central degasification and flocculation cylinder of the tank. Sludge sediments in the sludge part of the tank, whence it is removed and directly pumped into the pipe of recirculation sludge using a special mammoth pump. This pipe is integrated in the tank, what simplifies the construction as well as technology of the entire system. Effluent water is withdrawn using two jointed gutters that are placed in the middle of the tank and equipped with skimming wall and adjustable overfall. Thanks to a novel solution, skimming of floating pollutions into the flocculation cylinder can be done continuously. Further, it is possible to skim floating pollutions cyclically using another mammoth pump and collecting tank. The maximum area loading for this type series is u=1.2 m/h and the load of the separation plane with undissolved material NA=4.8 kg/m3.h without consideration of the recycle sludge. The recycle ratio is assumed to be 100% Qd. For design coefficients of daily and hourly irregularity are taken into account according to CSN 75 6401- waste water treatment plants for more than 500 pollutions equivalents. The specific waste water production is assessed to be 150 l/PE.d. Furthermore higher loaded water, which is contrarily to the initial design mostly discharged, is also considered. The equipment of DNVK is protected by utility pattern of the company KUNST, spol.

MATERIAL DESIGN

The entire equipment of the final sedimentation tank is made out of stainless steel. This ensures long plant lifetime without necessity of work and cost intensive maintenance. Material design of footbridge is construction steel with subsequently metallization and protective coating or, according to contract, stainless steel.

OPERATION OF FINAL SEDIMENTATION TANK

The operation of the entire DNVK is limited to occasional cleaning of the overfall edge, if necessary gutters and skimming unit for floating pollutions. These operations need to be done within certain periods of time or as necessary. The operation of pumps and gutters is individual solved using a footbridge.

DELIVERY FORM

The equipment is the total DNVK including delivery and installation or according to contract. The disposition of equipment can be individually reviewed and upgraded to enhance comfort and process and is the subject of the technical explanation. The supplier reserves in compliance with the parameters of the equipment right for a change of deliveries contrary graphical illustrations.

DELIVERY DATE

According to contract

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