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VANEX

UNITS FOR CONTINUOUS MACHINE
THICKENING OF VARIOUS SLUDGE TYPES
AND OF OTHER MEDIA

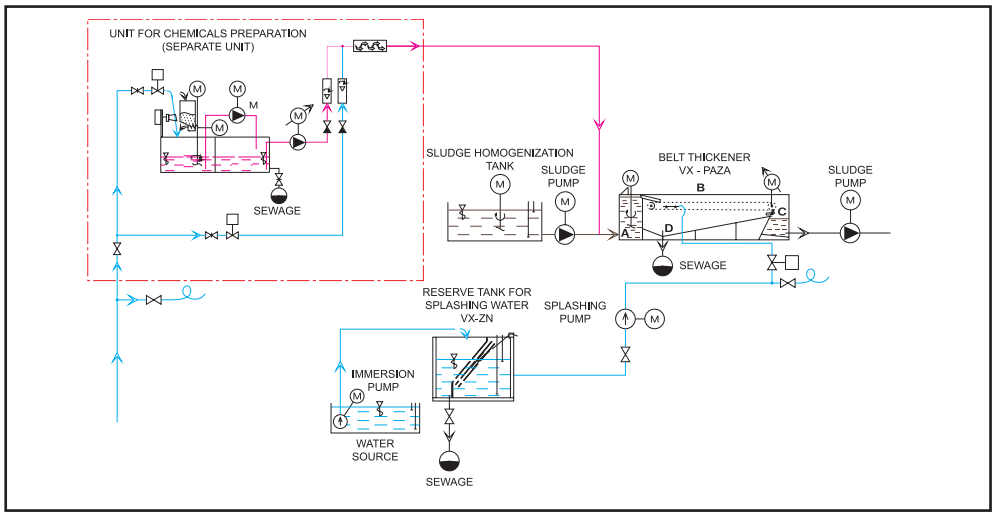
BELT THICKENER
VX - PAZA

BELT THICKENER VX - PAZA

The belt thickeners are machines designed for continuous thickening of various sludge types.
During thickening process the free liquid component - filtrate - is separated from the thickened sludge. This filtrate can be further processed.

The recommended implementation of the thickener VX - PAZA into the technological process is shown in the following diagram:

The thickened sludge is pumped into the thickener using the displacement mud pump. The performance of this pump is continuously controlled through a frequency converter.



In most cases the flocculant solution must be added to the thickened sludge before its entering into the thickener, this way the sludge flocculates (aggregates to bigger clusters - floccculus) and the filtrate separation occurs.

In case of variable amount of the sludge pumped into the thickener (mainly influenced by changing dry matter of the incoming sludge) also the amount of added flocculation medium solution has to be changed.

In certain cases the thickening process can be realized also without using the flocculation media.

But in such a process the thickening parameters are worsened, which can be seen mainly in the inferior quality of the outgoing filtrate.

The main part of a thickener is the polypropylene tank with covering that is divided in the inlet part (A), draining part (B), outlet part (D) of the filtrate and in the part of thickened sludge removal (C).The draining process takes place in two basic successive technological sectors:

I. Homogenization sector - part of the technological cycle after adding of flocculation medium to the sludge, mixing of the sludge and of organic flocculation medium solution, sludge flocculation and filtrate separation.

Above mentioned process takes place in the sludge piping and in the inlet part (A) of the thickener, where also the low-speed mixer is implemented.

In case of not using the flocculants, unit operates without homogenization sector.

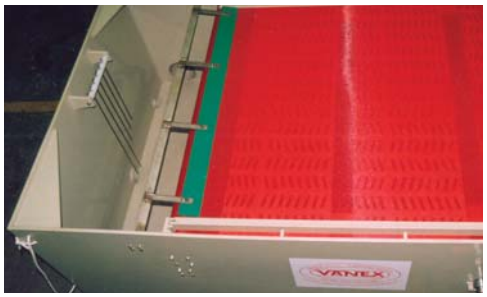
II. Gravitation draining sector - the gravitation draining of the sludge takes place in thickener's draining part (B) on the filter sieve. In this sector the sludge is carried by the movement of the filter sieve that is driven through an engine with gearbox.

To increase the dry matter volume of the sludge on the thickener output can be used the „disrupting" blade that is implemented on the end of the thickeners gravitation sector. This blade damages the layer of the drained sludge which enables draining of the filtrate

left on the upper layer of the pressed sludge.

Cleaning of the filter sieve is made with spraying nozzles. To spray the sieve the separated filtrate (depending on its quality) or water from water cleaning unit output (eventually another service water) can be used.

The filtrate quality and performance of the thickener are influenced by the type of the filter sieve.The sieve



type is specified according to sludge features and according to type of used flocculation medium.

The filtrate drains through the filter sieve into the thickener's outlet part (D). Filtrate from the outlet part is led away for its further processing gravitationally.

In case of customer's requirement the filtrate can be pumped automatically by switching the pump through level indicators that check the filtrate quantity in the outlet part of the thickener.

After passage through the gravitation sector the sludge falls into the part C and continues gravitationally for the further processing (belt press, centrifuge, septization tower, etc.).

The thickened sludge - similarly to filtrate - can be pumped with a pump that is switched through level indicators eventually controlled via frequency converter.

The thickener needs for its operation power system 3/N/PE AC, 400/230 V, 50 Hz, TN - S, with required input according to enclosed table.

The presented operating parameters are informative. They depend on the type and quality of the sludge, on the type of flocculation medium, on the filter sieve and on the operating personnel.

Vanex modifies its products according to given requirements and according to conditions in all localities.

REFERENCES

Nowadays Vanex products are delivered and put into operation in more than 340 localities.
For more information about our company, our products and references see our web page www.vanex.sk.

Representation:

Technical parameters:

Type	Length (m)	Width (m)	Height (m)	Weight (kg)	Input (kW)
VX – PAZA 6	3,94	1,26	1,26	430	1,1
VX – PAZA 8	3,94	1,46	1,26	470	1,1
VX – PAZA 10	3,94	1,66	1,26	510	1,1
VX – PAZA 12	3,94	2,18	1,26	595	1,1
VX – PAZA 20	3,94	2,87	1,26	700	1,65

Operating parameters:

Type identification	Output (m3/hr)	Dry matter		Flocculant dose (g/kg a.s.)
		Input (%)	Output (%)	
VX – PAZA 6	5 - 15	0,5 - 1	3 - 7	2 - 3,5
VX – PAZA 8	15 - 25		3 - 7	
VX – PAZA 10	17 - 30		3 - 7	
VX – PAZA 12	25 - 40		3 - 7	
VX – PAZA 20	32 - 50		3 - 7	

Except belt presses and mobile lines for sludge draining Company Vanex spol. s r.o. (Vanex limited) produces for better environment thickeners, units for chemicals preparation (solutions from powdery substances – flocculants and from emulsions), tanks and plastic constructions for various purposes, low-speed belt conveyers and screw conveyers.
Vanex spol s r.o. delivers also components for sludge processing lines. The company carries out their assembly, maintenance as well as the reconstructions of older devices.
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