



Pure Innovation.™

# The Vanguard®V2 Self-Cleaning Filter Screen

The Vanguard®V2 Screen by Nova Water Technologies LLC is an innovative self-cleaning filter screen for use in the headworks of a wastewater treatment plant or any facility where efficient screening is needed. The Vanguard®V2 Screen uses molded acetal resin elements mounted on a series of stainless steel filter shafts to form a continuous belt and remove all plastics and papers from a plant's influent, prior to the biological treatment process. Maintenance on downstream equipment is greatly reduced.

The filter elements are arranged on 304 stainless steel shafts, as shown below in figure No.1. Each filter element is mounted on two separate shafts (shafts not shown for clarity) and each shaft has 304 stainless steel rollers, one on each end. The rollers allow the belt to travel smoothly around the inside of the heavy duty AISI 304L stainless steel frame, with minimal friction. The elements are mounted closely to one another and the sides of each molded element are "ribbed" so the openings in the belt are restricted both horizontally and vertically for maximum solids capture.

Unique to the Vanguard®V2 Screen is that it does not require double-link conveyor chain to support the screening belt. Instead, the Vanguard®V2 Screen uses thick stainless steel side plates to support the shafts and filter elements. The lack of conveyor chain on each side of the belt greatly reduces its weight. This reduction in weight significantly reduces the wear and tear on the

Figure No. 1- Section of Acetal Resin Elements



Figure No.2 - Single Wide Vanguard®V2 Screen

components of the belt and the frame, and lowers maintenance costs throughout its life cycle. The molded acetal resin elements insure removal of all solids larger than the defined opening. Standard opening sizes between the elements are 3mm, 6mm, 10mm, and 15mm. Each element has a hook or "tooth" facing the direction of flow, which aids in the removal of very large solids.

The screen is normally operated on a timer with a float switch override. While sitting still in the channel, a layer of solids build up on the face of the screening belt and aid in the removal of finer solids. The heavier the mat that builds up on the face of the screen, the easier it releases in the discharge area.

Once the drive is actuated, the belt moves up the face of the screen and towards the head-end of the machine. At the top of the frame, after passing over the drive sprocket the belt reverses direction and the elements wipe themselves clean for the first time. As the belt continues along its path towards the channel, a set of guide rails cause the elements to retract to their original position, thus wiping themselves clean for a second time. These two self-cleaning actions remove virtually all of the solids on the face of the belt. What little solids are not removed by the two self-cleaning actions are removed by a rotating brush with multiple rows of bristles, that moves counter to the direction of belt travel.

Another unique feature of the Vanguard®V2 Screen is the "dismountable head." That is, the whole top end of the machine can be removed separately from the portion of the screen installed in the channel. Therefore it is not necessary to remove the whole screen from the channel for any maintenance procedures.

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## Typical Applications

- Municipal wastewater treatment plants
- Pulp and paper mill waste treatment plants
- Chemical processing plants
- Dairies
- Slaughthouses
- Laundries
- Textile mills
- Food processing
- Tanneries

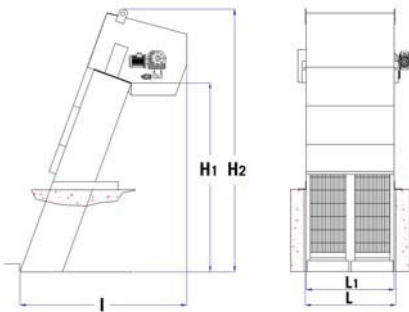


Figure No. 4 Refer to chart below

As shown in Figure No. 3, the Vanguard®V2 Screen is capable of removing large amounts of non-biological solids from your plant influent. These solids are usually discharged into either a dumpster, on to a conveyor, or directly into a compactor/washer for fecal removal and solids reduction prior to being trucked to the landfill. The Compactor®, another innovative product from Nova Water, is available for additional treatment of your screenings and can reduce transportation and disposal costs by up to 75%.

The Vanguard®V2 Screen comes with all 304 stainless steel covers as standard and a torque limiter built into the gear motor. The Vanguard®V2 Screen can also be supplied with such options as a mechanical or electronic variable speed drive; a wash header with solenoid valve for washing screenings right on the belt; a shock relay type overload protection device; and upgraded materials such as AISI 316 stainless steel.



Figure No. 3  
Double Wide Installation

Single Belt Models	Approximate Dimensions					POWER HP	WEIGHT LBS.
	L	L1	H1	H2	I		
V2 3016	1'0"	11"	5'3"	8'2"	5'10"	0.33	880
V2 5016	1'8"	1'7"	5'3"	8'2"	5'10"	0.33	990
V2 7516	2'6"	2'5"	5'3"	8'2"	5'10"	0.33	1125
V2 1016	3'4"	3'3"	5'3"	8'2"	5'10"	0.5	1260
V2 3022	1'0"	11"	7'3"	10'2"	6'6"	0.33	1210
V2 5022	1'8"	1'7"	7'3"	10'2"	6'6"	0.33	1300
V2 7522	2'6"	2'5"	7'3"	10'2"	6'6"	0.5	1410
V2 1022	3'4"	3'3"	7'3"	10'2"	6'6"	0.5	1940
V2 1222	3'11"	3'10"	7'3"	10'2"	6'6"	0.75	2090
Double Belt Models	L	L1	H1	H2	I	POWER HP	WEIGHT LBS.
V2 1522	4'11"	4'10"	7'3"	10'2"	6'6"	0.75	2530
V2 2022	6'7"	6'6"	7'3"	10'2"	6'6"	1.0	3080
V2 2422	7'9"	7'8"	7'3"	10'2"	6'6"	1.5	3700

Notes: Above dimensions based on a 70 degree angle of inclination from the horizontal. Consult factory for models with higher discharge heights.