



VULCAN

INDUSTRIES, INC.



Model ESR
STAIR SCREEN

Model ESR STAIR SCREEN

The Model ESR Stair Screen is an automatic, self cleaning, fine screen for primary screening or sludge screening in municipal and industrial sewage treatment installations. The screens are also ideal for industrial applications such as slaughterhouses, tanneries, breweries, and paper plants. The design of the Stair Screen allows for easy installation in new and existing facilities without channel modification. With a maximum setting angle of 57°, the Stair Screen has a compact overall footprint.

CONSTRUCTION

The side frames of the Stair Screen are constructed of formed stainless steel plate having a thickness of 0.24" (6 mm). The screening elements (aka lamellas) in the screening area are stainless steel. The lamellas in the transport area can be stainless steel or a corrosion resistant, UV stabilized synthetic material, depending on the overall height of the screen. The drive system consists of a gear reducer, motor, and a dual chain transmission system with automatic chain tensioning devices. To prevent corrosion, ease maintenance and ensure years of reliable service, the drive system is located completely above the maximum water level, and the gear reducer and motor are encapsulated away from the corrosive atmosphere of the channel. All moving parts of the drive system are protected by removable enclosure panels. The screen portions above the channel can be equipped with removable panels to enhance aesthetics and reduce odor.



A

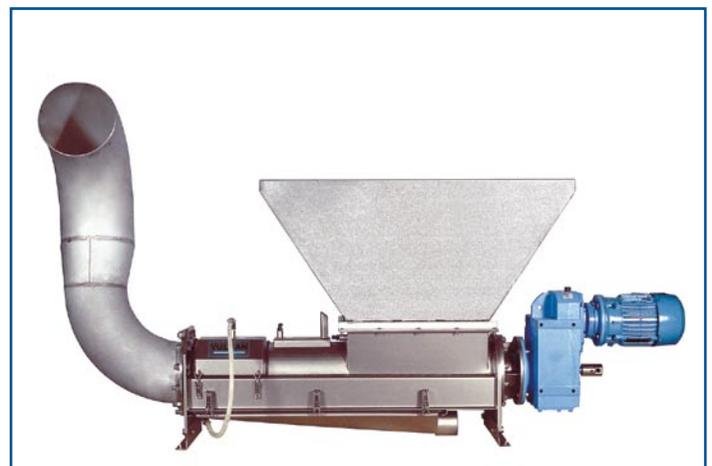


B

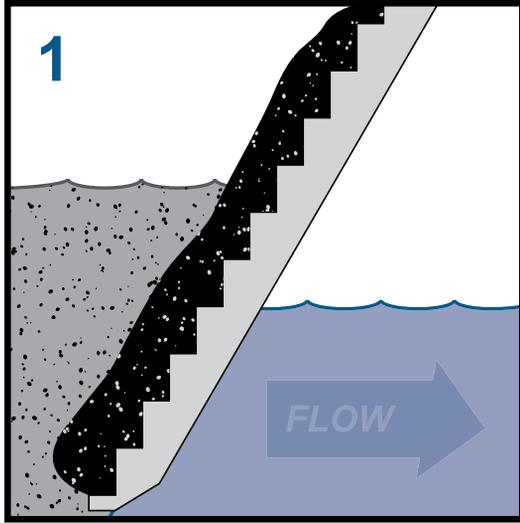
The low profile bottom step can be accompanied by a removable diverter plate that extends from the upstream side of the flush bottom base plate to the bottom row of steps (See Figure A) or a spring-loaded grit flap (See Figure B) Both options help prevent grit and heavy debris from accumulating in front of or under the lamellas. Note the wide plastic sleeves along the bottom row of steps. These sleeves are mounted on the fixed lamellas and they prevent metal-to-metal contact between the movable and fixed lamellas while they maintain the specified bar spacing during operation.

POST-SCREENING DEVICES

In addition to primary screening devices, Vulcan Industries offers a wide array of post-screening and dewatering devices. The Model EWP Washing Press and Model ESP Screw Press provide dewatering and transport for screenings. Connect multiple screening devices to a single post-screening dewatering and compacting device with a conveyor from Vulcan Industries. To assemble the most cost effective and efficient array of screening and post-screening devices, please contact your Vulcan Industries representative.



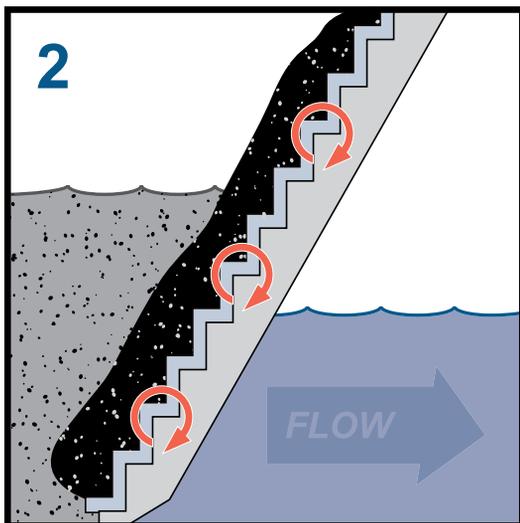
Model EWP Washing Press



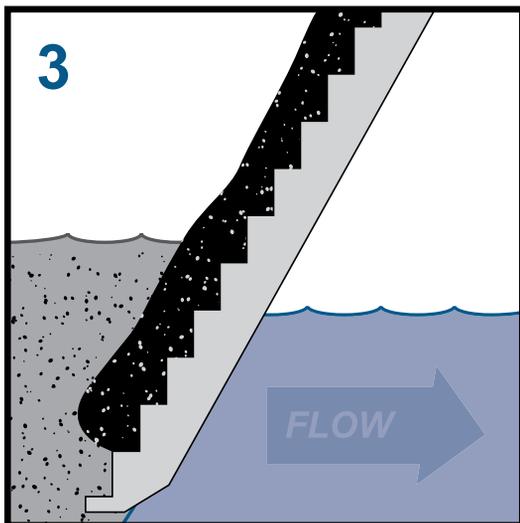
OPERATION

The Stair Screen operates on a system of alternating fixed and movable stair-shaped screening elements, or lamellas that extend over the entire screening surface. The nominal space between the screening elements is variable between 1/4" and 1/32". Actual available sizes include 6 mm, 5 mm, 3 mm, 2 mm and 1 mm. Please contact Vulcan if a different bar spacing is required.

- 1 Debris from the flow stream collects on the screening surface to form a mat. This mat acts as a filter to remove particles that would otherwise pass between the lamellas. Typically a thick screenings mat can be formed due to the low headloss characteristics of this type of screen.

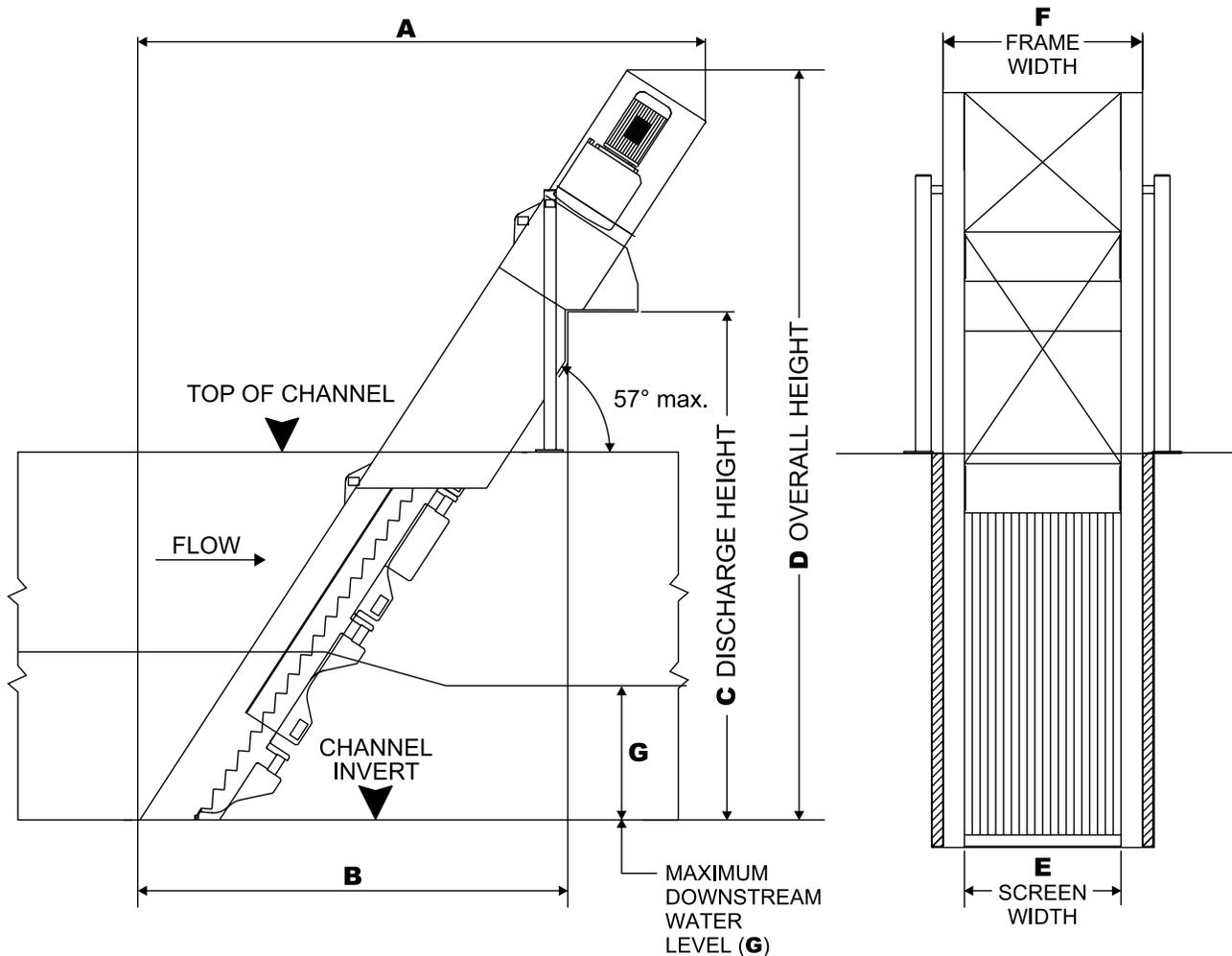


- 2 When the differential or high level reaches a predetermined level, the movable lamellas are activated. The movable lamellas rotate upward, lifting the debris to the next highest level of fixed lamellas, and then rotate back to their original position. The drive system provides a positive mechanical action throughout the complete rotation of the movable lamellas. This enables the unit to drive through any debris that may accumulate under the screening surface.



- 3 The lamellas move the debris from the screening area in the channel to a transport area above the operating floor. The intermittent and slow progress from channel to discharge allows the debris to shed excess water while suspended on the fixed lamellas. Once the debris reaches the top step it is discharged to a conveyor, post-screening device or suitable container. The rotation of the movable lamellas mechanically forces debris off of the Stair Screen at the point of discharge without the need for brushes or spray systems.

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Type	A	B	C	D	E	F	G	MOTOR
ESR 13	6' 9"	4' 6"	4' 3"	8' 2"	12" - 55"	19" - 62"	1' 10"	1 HP
ESR 17	7' 7"	5' 4"	5' 6"	9' 5"	12" - 55"	19" - 62"	2' 9"	1 - 1.5 HP
ESR 23	8' 7"	6' 4"	7'	11'	14" - 78"	23" - 87"	3' 4"	2 HP
ESR 28	10' 3"	7' 8"	9' 1"	13' 6"	16" - 78"	25" - 87"	4' 7"	2 - 3 HP
ESR 34	11' 3"	8' 3"	10' 10"	15' 2"	16" - 78"	25" - 87"	5' 11"	3 HP
ESR 42	13' 3"	10' 8"	13' 9"	18'	18" - 78"	31" - 91"	5' 11"	5 - 7.5 HP