

ROTAMAT® RoK 4 Fine Screen for Confined Spaces



Fine Screen with vertical lifting, dewatering and compaction of the screenings

- Compact unit, easy to fit into confined spaces
- Prevents clogging of sewers and pumps
- Made of stainless steel, pickled in an acid bath



➤➤ Challenge

Pumps in lift stations require a lot of maintenance. Pumps with a large clear passage are used to prevent frequent clogging. However, those pumps have a poor efficiency, particularly where the flow is low. Grinder pumps are subject to high wear, thus also requiring frequent maintenance in difficult to reach spaces.

Pump failure leads to back-flooding in sewer systems, sometimes causing substantial damage.

➤➤ Solution

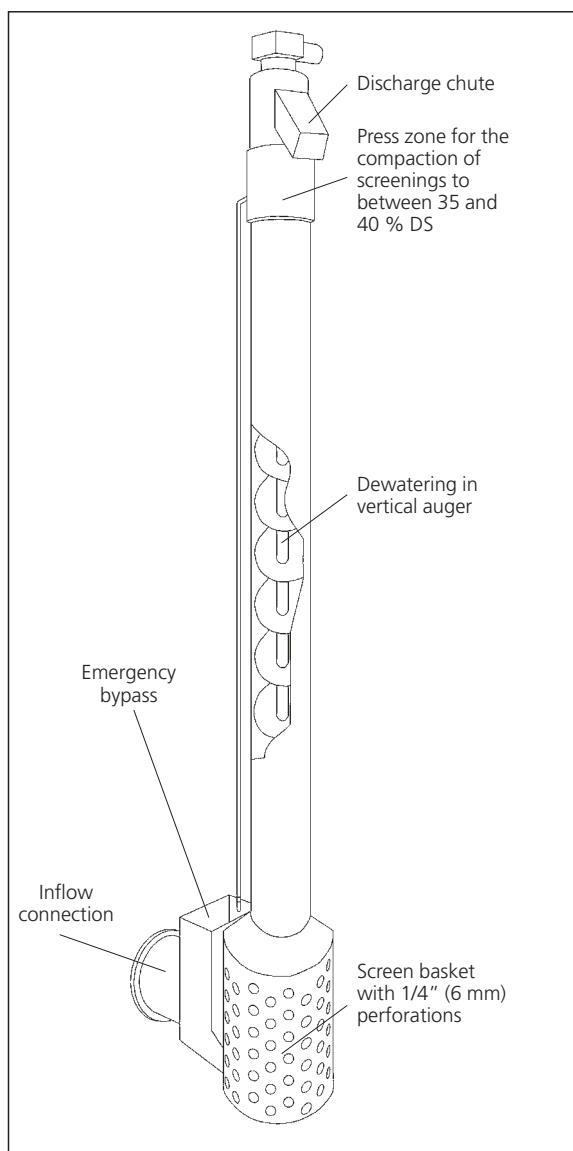
Upstream screening protects pumps from clogging and permits the use of high-efficiency pumps. In addition, removal of coarse solids protects the sewers by preventing deposits and reducing septicity, odor and concrete corrosion.

The RoK 4 screen is the ideal solution for this task. It is extremely compact and fits into confined spaces, such as wet wells and manholes. It vertically lifts the screenings, and dewateres and compacts them at the same time.



RoK 4 screen installation in a confined pump station

Design



This extremely compact and slim screen is ideally suited for retrofitting into existing confined structures (e.g. lift stations or manholes). The inflow drops into the screen basket; back-flooding and deposits in the incoming sewer are thus prevented.

Capacity

Size	Flow	
	[l/s]	[MGD]
300	46	1.05
500	120	2.7
700	180	4.1

Features

The RoK 4 consists of a vertical screen basket and a shafted auger in a vertical tube. The wastewater flows through an inflow connection and a chamber into the screen basket. The top of this chamber is open and serves as an emergency bypass, e.g. in case of a power failure. The inflow drops into the screen basket thus generating turbulence for the removal of fecal matter from the solids (washing action).

The screen is provided with 1/4" (6 mm) perforations; other sizes are available on request. When the water level in the screen basket rises above the invert level of the inflow connection, the auger is started for a short time period. Within the screen basket the flights of the screw are equipped with a wear-resistant brush for effective cleaning of the screen.

As the screenings are gradually elevated by the auger, they are dewatered by gravity drainage. A screenings compaction zone is located near the upper end of the auger. Water is pressed out of the screenings through perforations in the vertical tube. The filtrate drains through a hose back into the inlet chamber. The compacted screenings are discharged through a chute into a container or endless bagger thus eliminating odor nuisance.

Benefits

- Eliminates pump failure due to clogging
- Screening, lifting, dewatering, compaction and bagging in a single and compact unit
- Single, easily accessible drive
- Excellent fecal washing due to turbulent flow
- Optional frost-protection for outdoor installation
- Quick and easy installation into confined structures
- Easy retrofitting with little need for construction work
- Integrated bypass for power failure
- Sturdy design, reliable operation
- Easy and inexpensive operation and maintenance
- Made of stainless steel, pickled in an acid bath
- Over a hundred installations

Applications

- In the headworks of small to medium size wastewater treatment plants
- In pump or lift stations
- In sewer manholes or other sewer structures

►► Examples

A few examples, selected from over a hundred of RoK 4 installations.



Thermally insulated and heat-traced unit



Outdoor-installation with frost-protection



Screenings discharge into a bagger



Another indoor-installation

HUBER TECHNOLOGY, Inc.

9805 NorthCross Center Ct.
Suite H
Huntersville, NC 28078

Phone: (704) 949 - 1010

Fax: (704) 949 - 1020

huber@hhusa.net

<http://www.huber-technology.com>

Subject to technical modification

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for Confined Spaces
RoK 4**