

# ROTAMAT® Ultra-Fine Drum Screen RoMesh®



- for removal of hair, fiber and suspended solids
- for reduction of COD, BOD and P
- for scum screening



## ►► Applications

Ultra-fine screening of

- municipal wastewater
- scum
- industrial effluents
- drinking water
- process water

## ►► Objectives

- Protection of equipment and processes from clogging and tressing
- Pretreatment of influents to MBR systems
- Removal of BOD, COD or P from river and sea outfalls
- Product recovery from effluents
- Improved sludge / biosolids quality

## ►► Operation

The RoMesh® unit features a slowly rotating drum with a screen basket. The screen is made of wedge wire, a wire mesh or a perforated plate. Feed water flows over a pair of chutes to both sides of the rotating screen. The water flows by gravity through the screen basket, from the inside out. Filtrate is collected in a trough wherefrom it drains by gravity.

The rotating screen is cleaned with one or two spray bars, depending on the screen's size, either continuously or intermittently, determined by the solids loading and the fineness of the screen. If the screen is fine enough to prevent clogging of the spray nozzles, a portion of the filtrate can be used as spray water. A booster pump is typically provided.

The screenings slide down to the invert of the screen drum. Rotating baffles push the screenings towards the end of the screen drum where they drop through a chute onto a conveyor or directly into a wash press.

Where removal of BOD, COD or Phosphorus is the objective, chemical pretreatment of the influent by precipitation and/or flocculation can be provided to further improve the screen's capture rate.



Sketch of the ultra-fine drum screen RoMesh®

## Screen openings

- Wire mesh with square mesh sizes of 0.008, 0.02, 0.03 or 0.04 inch (0.2, 0.5, 0.75 or 1 mm)
- Wedge wire with spacing of 0.08 or 0.12 inch (2 or 3 mm)
- Perforations with a diameter of 1/8 inch (3 mm)

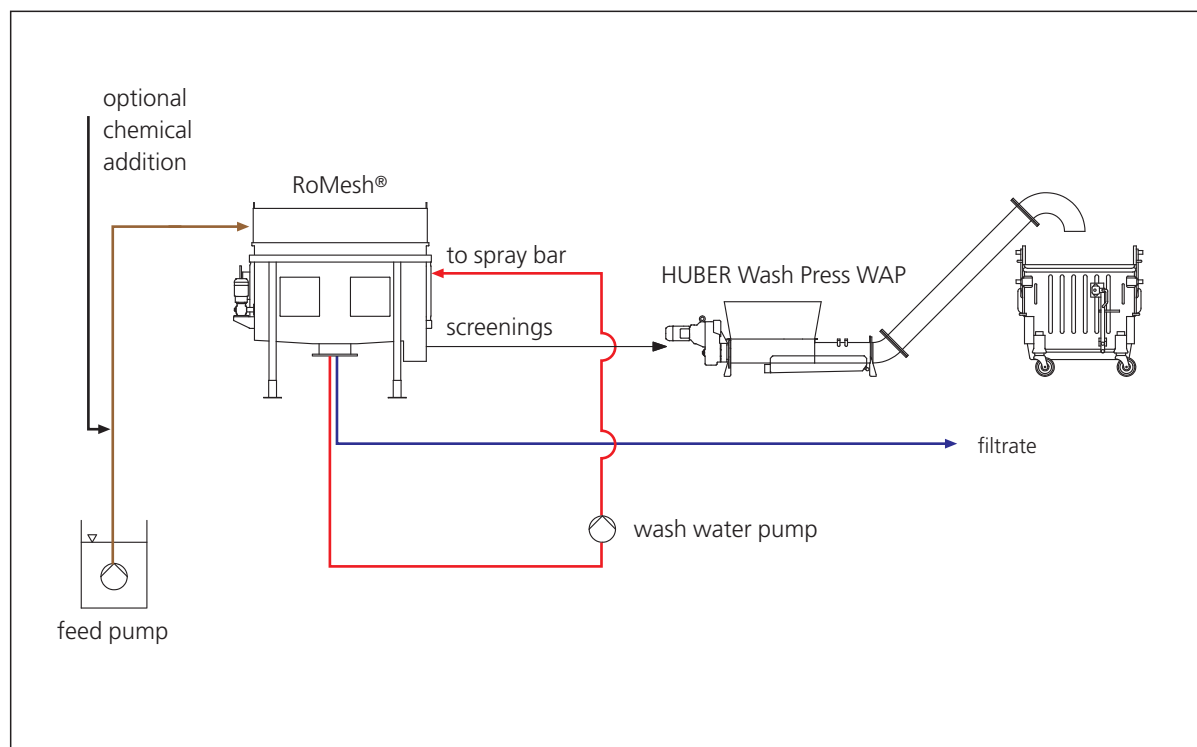
## Size and capacity

RoMesh® units are available in different sizes. The screen drum of the largest unit is 10 ft (3 m) long and has a diameter of 5.25 ft (1.6 m).

The capacity depends not only on the size of the unit, but also on the type of the screen, size of its openings, as well as on the solids concentration in the feed flow. Up to 4,400 GPM or 6.4 MGD (280 l/s) of raw municipal wastewater can be screened with a single unit that is provided with 1/8 inch (3 mm) perforations. This largest unit can remove a screenings load of up to 3 CFM (5.2 m<sup>3</sup>/h).

## Benefits

- Outstanding capture rate
- Complete removal of hair and fiber
- Reliable, self-cleansing operation
- Simple and compact design
- Quick and easy installation
- Easy access for operation and maintenance
- Few and easily replaceable wear parts
- Completely enclosed, no odor nuisance
- Optional frost-protection for outdoor installation
- Optional wash water recirculation
- All structural parts are made of stainless steel for long life
- Pickled in an acid bath for optimal finishing and corrosion protection



Flow diagram of a RoMesh® screen and a HUBER Wash Press WAP with (optional) chemical pre-treatment of the influent and wash water recirculation

## ➤➤ Application Examples

### Protection of MBR systems

Membrane bioreactors (MBR) using hollow fiber membranes are clogged and damaged by hair and fiber. For their protection every hair and fiber has to be removed from the influent. Screening with a mesh size of 0.04 inch (1 mm) or smaller is required.

### River and sea outfalls

Where biological treatment is not available, the mechanical treatment should be as thorough as possible. Ultra-fine screening removes up to 60 % of suspended solids and up to 30 % of BOD/COD. Removal can be further improved by flocculation to:

- 95 % of suspended solids
- 65 % of BOD/COD
- 60 % of Phosphorous (P)

### Scum screening

Scum screens are provided with 0.08 or 0.1 inch (2 or 2.5 mm) wedge sections.

### Process water

Ultra-fine screening permits reuse of effluent as wash water or process water.

### Industrial effluent pre-treatment / product recovery

- Pulp and paper: Removal and recovery of paper fibers
- Meat processing: Recovery of scraps
- Agriculture: Separation of fruit residues and peels
- Breweries: Pre-treatment of all effluents
- Laundries: Removal of fibers



*Complete separation of fibers*



*Screenings discharged from a HUBER Wash Press WAP*

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Subject to technical modification

**ROTAMAT®**

**Rotary Drum Screen**

**RoMesh®**