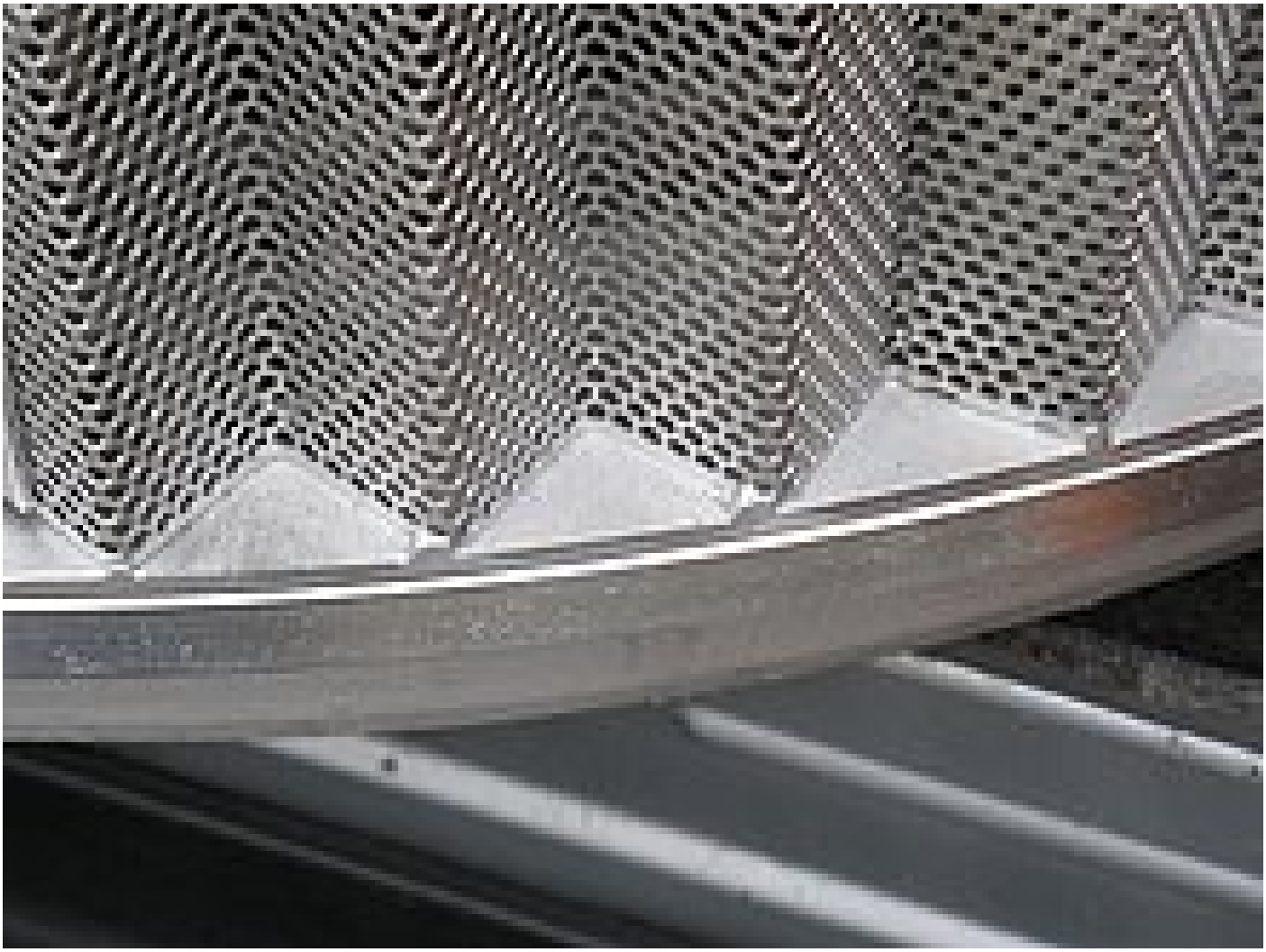
HUBER CS spol. s r.o.

HUBER TECHNOLOGY
WASTE WATER Solutions

Further developed ROTAMAT® Rotary Drum Fine Screen with increased hydraulic capacity: ROTAMAT® Perforated Plate Screen RPPS-Star

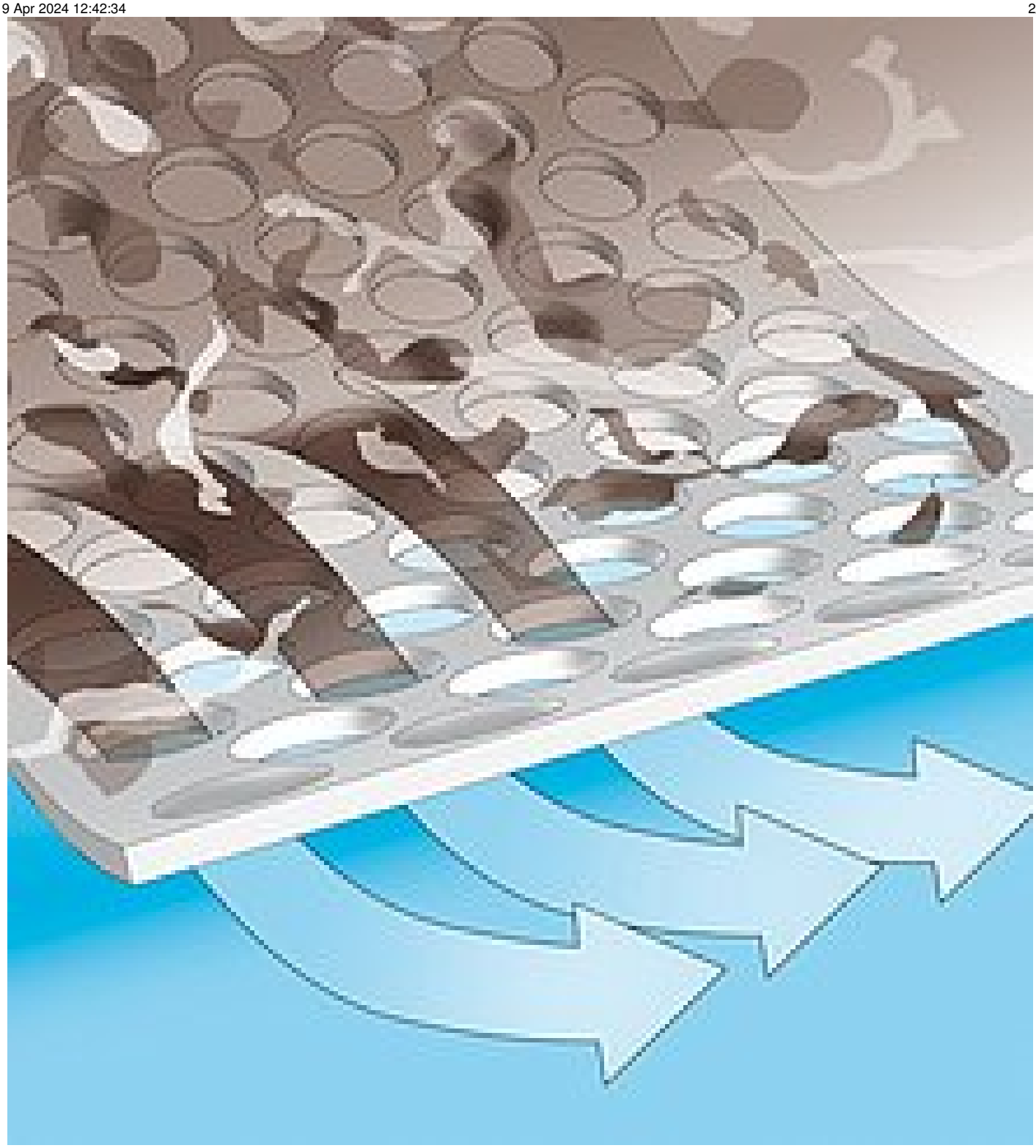


Star-shaped screen drum of the ROTAMAT® Perforated Plate Screen RPPS-Star

On the basis of the worldwide known and well-proven system of HUBER ROTAMAT® fine screens with wedge wire screen basket we developed the ultra-fine ROTAMAT® Perforated Plate Screen RPPS with perforated plate. The two-dimensional screen (perforated plate) ensures the reliable removal of hairs and fibres and avoids that:

- fibres and hairs hinder the stable operation of membrane plants and increase maintenance requirements, these materials tend to entangle on the membranes and lead to reduced membrane plant efficiency
- these products form tresses in the wastewater treatment plant, this would impair oxygen supply to the aeration system with the result of problems occurring in the sludge treatment line

These screens with a two-dimensional perforated plate rely on the unique system of HUBER ROTAMAT® machines which combines screening, washing, transport, compaction and dewatering in a single unit. Additional advantages, such as shear-force resistant and wear resistant screen surface cleaning and a high frequency of screen surface cleaning per minute, guarantee maximum efficiency and operating reliability. Perforated plate for two-dimensional screenings is primarily used for screens with apertures > 1 mm. For finer screening < 1 mm we use the newly developed ROTAMAT® Membrane Screen RoMem with filter mesh. HUBER ROTAMAT® Perforated Plate Screen RPPS units are equipped with 1 to 5 mm perforated plate. The selection of the mesh size or perforation depends on to what extent hairs and fibres must be removed to meet the specific requirements of the downstream clarification systems.



Two-dimensional screen basket of a ROTAMAT® Perforated Plate Screen RPPS

Two-dimensional perforated plate screens achieve a high removal of hairs and fibres, i.e. two to four times the amount of solids are removed than one-dimensional screens are able to separate. The significantly increased separation efficiency is accompanied by a high level of screen surface blinding and requires larger dimensioning of the fine screens compared to other commonly known wedge wire screens. Conventionally, a screen basket with bigger external dimensions is used to achieve larger dimensioning with the result of significantly increased investment costs and even building costs as a bigger channel is required. We have solved this problem with our ROTAMAT® Perforated Plate Screen RPPS-Star: The perforated plate of the screen basket is folded in axial direction like an accordion. The zig-zag folds form the star-shaped screen basket (RPPS-Star). This increases the screen basket surface by about 30 % with still the same nominal diameter.

The filter drum of the ROTAMAT® Perforated Plate Screen RPPS-Star is cleaned by a water jet spraying against wastewater flow direction. This ensures that fibres and screenings are reliable washed from the drum surface and removed by the centrally arranged conveying screw. With this innovation we have made a ’traditional’ machine fit for the future. We are well prepared for higher future requirements related to separation efficiency and hydraulic throughput. The extensive experience gathered from real size installations is reflected in the continuous development and optimisation of our fine screens.

Compared to one-dimensional wedge wire screens, the two-dimensional perforated plate screen achieves a significantly higher

separation efficiency. Due to its star-shaped screen drum the ROTAMAT® Perforated Plate Screen RPPS-Star has a by about 30 % larger screening surface, with the same small nominal diameter and with the result of a significantly increased hydraulic throughput capacity.

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