

Innovative Products

Worldwide





WASTE WATER Solutions – Worldwide

HUBER SE, headquartered in Berching, Germany, is globally active in the field of water, wastewater and sludge treatment. The family-owned company has been operating under the HUBER name since 1872 and the HUBER Group has now grown to over 1400 employees worldwide.

At our headquarters in Berching, more than 850 employees develop and manufacture products, manage projects and develop system solutions for municipalities and industries. They all work towards improvement of water quality.

HUBER supports its customers in around 60 countries through subsidiaries, offices or representatives by providing know-how and innovative products for water, wastewater and sludge treatment.

HUBER has a state-of-the-art factory where a wide range of machines and equipment for the international markets is manufactured. Our highly qualified employees use highly sophisticated manufacturing technologies.

To supply our customers with products of the highest quality, it was decided many years ago to make all products from stainless steel. Over the years, extensive experience and expertise have been acquired in manufacturing stainless steel products for the water and wastewater industry. As a result of the ongoing product improvement and our product innovation, we are able to offer a full range of products for the whole water and sludge sector and the global water and wastewater markets.

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This brochure provides a general overview of the HUBER products and their applications.

You can find out more information about all products and applications on the HUBER website www.huber.de or request details to be sent to you.

If you wish to discuss your needs, please ask the experts from the HUBER Group for advice and support.

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Mechanical wastewater treatment

Screens for any application

Mechanical treatment is indispensable as the first process step of preliminary treatment of both municipal and industrial wastewater.

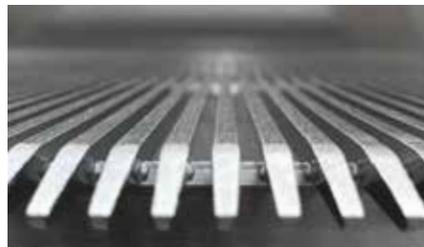
Disturbing coarse material has to be removed in order to protect the subsequent steps against damage/pollution or to relieve them. Floating, settling and suspended solids are retained, depending on the bar spacing or perforation diameter, removed and finally discharged.

Based on the ROTAMAT® principle of screening – washing – transport – dewatering in one unit, HUBER began developing the ROTAMAT® family at the start of the 1980s and successfully launched on the worldwide wastewater treatment market. In recent decades, the STEP SCREEN® and later the MAX family have been added.

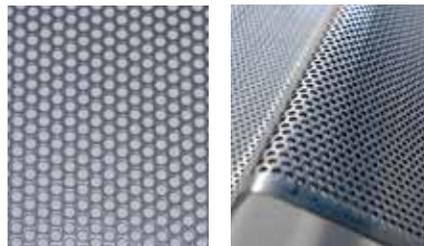
Overall, our product range includes various screens and screening systems, enabling us to offer the right solution for every application, taking into account the existing installation situation, the required flow rate and the desired separation efficiency.



Bar screen.



Wedge wire.



Rolled perforated plate.

Bent perforated plate.



Mesh screen.

Mechanical wastewater treatment



Ultra-fine screens for new applications

Our development of extremely fine screens for the separation of very fine particles permits new wastewater treatment applications for screens.

For the new type of membrane bioreactors increasingly used for biological wastewater treatment improved performance is required, especially for hollow fibre membranes, to ensure reliable separation of hair and fibrous material to allow the process to function effectively.

Another application for ultra-fine screens is river and sea outfalls. Frequently, raw wastewater is only treated mechanically prior to being discharged to rivers or seas. Reduction of the COD/BOD loads from such outfalls is required for the protection of the receiving water bodies if their self-cleaning capacity is insufficient.

These ultra-fine screens are able to remove undegradable and degradable, inorganic and organic material at the same time. Improved environmental protection is achieved by applying this new technology at reasonable costs. Chemical coagulation can temporarily be added to maintain the screening efficiency and high effluent quality even during peak loads. For many regions with insufficient wastewater treatment, if any at all, ultra-fine screening is a quick and affordable first step in the right direction.

CarbonWin® process

The CarbonWin® system recovers carbon from pre-treated raw sewage in a minimum of space, comparable to the application of a primary settlement tank. The high-performance and efficient HUBER fine screening technology makes it possible to produce primary sludge and change the process on sewage treatment plants size 5,000 to 50,000 PE from aerobic to anaerobic sludge stabilisation.

This clears the way for such sewage treatment plants to produce energy themselves and use the generated energy. The core part of the system is a fine screening unit. The screenings separated by the fine screening unit are prethickened in a continuous thickener prior to being further thickened in a mechanical thickening system for subsequent anaerobic treatment.

Mechanical wastewater treatment

HUBER Grab Screen TrashLift

- ▶ Coarse screen system for the most demanding fields of application
- ▶ Small space requirement: installation angle 70° – 90°
- ▶ Channel width up to 4 m and channel depth up to 30 m
- ▶ Bar spacing 20 mm – 150 mm
- ▶ Reliable removal of large debris and sediment loads
- ▶ Easy to retrofit into existing channels



Head section of the HUBER Grab Screen TrashLift in HUBER production, length of the entire screen 15 m.

HUBER Coarse Screen TrashMax®

- ▶ High-capacity screen due to the flexible number of screen rakes
- ▶ High operational safety due to efficient and reliable bar rack cleaning
- ▶ Reliable removal of even bulky coarse material
- ▶ Bar spacing > 20 mm



Robust screen for coarse material removal: HUBER Coarse Screen TrashMax®.

Mechanical wastewater treatment

HUBER Multi-Rake Bar Screen VersaMax®

- ▶ Reliable, sturdy multi-rake bar screen
- ▶ No bearings, sprockets or guides submerged in the water due to the special design of the rigid-backed chain
- ▶ Reliable removal of even bulky coarse material
- ▶ Bar spacing \geq 6 mm



HUBER screen with rigid-backed chain for maximum operating reliability.

HUBER Multi-Rake Bar Screen RakeMax®

- ▶ Very high screening discharge capacity
- ▶ Low head loss
- ▶ Low installation height above operating floor, even with deep channels
- ▶ Suitable for a very wide range of applications due to different design options, e.g.
 - ▶ RakeMax® J
 - ▶ RakeMax® HF
- ▶ Bar spacing \geq 1 mm



HUBER Multi-Rake Bar Screen RakeMax® – robust design for reliable operation.

Mechanical wastewater treatment

HUBER Multi-Rake Bar Screen RakeMax® CF

- ▶ The innovative variant of the well-proven HUBER Multi-Rake Bar Screen RakeMax®
- ▶ High hydraulic throughput capacity even with small bar spacings and narrow channels due to a U-shaped bar rack
- ▶ Very little space required due to vertical installation – ideal for narrow spaces and deep channels
- ▶ Increased separation efficiency through flow deflection in the bar rack
- ▶ Insusceptible to grit, gravel and stones
- ▶ Bar spacing ≥ 4 mm



The RakeMax® CF combines the benefits of maximum free screen surface and very high separation efficiency. Moreover, it is space-saving and reduces civil costs.

HUBER Detection System Safety Vision

- ▶ Continuous monitoring and intelligent early detection of critical course material
- ▶ Maximum machine availability and operational safety through protection of the screen and downstream machines
- ▶ On-line recording of screenings volumes for pollution load-dependent control leads to optimised run times of downstream systems
- ▶ Increased machine service life



HUBER Detection System Safety Vision for increased operational reliability.

Mechanical wastewater treatment

HUBER Belt Screen EscaMax®

- ▶ Excellent capture rate provided by two-dimensional screening elements
- ▶ Compact and robust design
- ▶ Easy to retrofit into existing channels
- ▶ For deep channels with high water levels
- ▶ Perforation diameter ≥ 3.5 mm
- ▶ Compact and robust design



HUBER Belt Screen EscaMax® – versatile headworks screen with high separation efficiency.

HUBER Band Screen CenterMax®

- ▶ Maximum retention of fibres and hair
- ▶ Operating reliability for membrane bioreactors
- ▶ Especially for narrow channels and high throughputs
- ▶ Very space-saving design
- ▶ High separation efficiency
- ▶ Perforation diameter ≥ 1 mm



The HUBER Band Screen CenterMax® combines high separation efficiency and high hydraulic capacity.

Mechanical wastewater treatment

HUBER Fine Screen ROTAMAT® Ro1

- ▶ Screening, conveying, washing, dewatering and compaction in a single unit
- ▶ With integrated screenings press
- ▶ With integrated screenings washing (IRGA)
- ▶ Positive screen cleaning with rotating rake
- ▶ Sturdy, well-proven screen
- ▶ Bar spacing ≥ 6 mm



HUBER Fine Screen ROTAMAT® Ro1 for channel or tank installation.

HUBER Rotary Drum Fine Screen ROTAMAT® Ro2 / RPPS

- ▶ Screenings removal, transport, washing, dewatering and compaction
- ▶ With integrated screenings press
- ▶ With integrated screenings washing (IRGA)
- ▶ Rotating screen basket with wedge wire or perforated plate
- ▶ Very high separation efficiency
- ▶ Bar spacing 0.5 – 6 mm
- ▶ Perforated plate 1.5 – 6 mm



HUBER Rotary Drum Fine Screen ROTAMAT® Ro2 with up to 3 m screen basket diameter.

Mechanical wastewater treatment

HUBER Perforated Plate Screen ROTAMAT® STAR

- ▶ Removal of hair and fibres to protect downstream membrane filtration plants
- ▶ Screenings removal, transport, washing, dewatering and compaction
- ▶ Increased throughput capacity due to the increased surface area provided by the folded perforated plate
- ▶ Very high separation efficiency
- ▶ Folded perforated plate: 1 / 1.5 / 2 mm



HUBER Perforated Plate Screen ROTAMAT® STAR for protecting downstream membrane filtration systems.

HUBER Micro Strainer ROTAMAT® Ro9

- ▶ Screening, conveying, washing, dewatering and compaction in a single unit
- ▶ With integrated screenings press
- ▶ With integrated screenings washing (IRGA)
- ▶ XL-version with longer screen basket and for higher flow and water level applications
- ▶ Worldwide proven technology – for many years
- ▶ Bar spacing 0.5 – 6 mm
- ▶ Perforated plate 2 – 6 mm



HUBER Micro Strainer ROTAMAT® Ro9 – the low-cost screen for small flows.

Mechanical wastewater treatment

HUBER Fine Screen STEP SCREEN® SSF

- ▶ Efficient removal and lifting of screenings
- ▶ High separation efficiency
- ▶ Easy to retrofit into existing channels with no or minimal modification required.
- ▶ Lifting of screenings from channel floor
- ▶ Very high hydraulic throughput capacity
- ▶ 3 or 6 mm spacing



HUBER Fine Screen STEP SCREEN® SSF – “the original”.

HUBER Fine Screen STEP SCREEN® SSV

- ▶ For deep channels and high discharge
- ▶ Space-saving installation with steep 75° inclination
- ▶ Lifting of screenings from channel floor
- ▶ Very high hydraulic throughput capacity
- ▶ 3 or 6 mm spacing



HUBER Fine Screen STEP SCREEN® SSV – the improved STEP SCREEN®.

Mechanical wastewater treatment

HUBER Sludge Acceptance Plant ROTAMAT® Ro3

- ▶ Mechanical cleaning of septic sludge with fine screen ROTAMAT® Ro1
- ▶ With integrated screenings press
- ▶ With integrated screenings washing (IRGA)
- ▶ Optional with integrated grit trap (compact version ROTAMAT® Ro3.3)



HUBER Sludge Acceptance Plant ROTAMAT® Ro3.3, well-proven in hundreds of installations worldwide.

HUBER Sludge Acceptance Plant RotaShield®

- ▶ Faecal sludge acceptance plant for high solids throughput even with problematic materials
- ▶ Efficient coarse material removal through two-dimensional screening
- ▶ Effective cleaning of the large screening surface through the use of a spray nozzle bar
- ▶ Feeding possible by screw conveyor, via launder channel or pressure line
- ▶ Completely encased unit



Reliable faecal sludge acceptance system – the HUBER Sludge Acceptance Plant RotaShield®.

Mechanical wastewater treatment

HUBER Screw Conveyor Ro8 / Ro8 T

- ▶ Custom design and fabrication
- ▶ With conveyor tube (Ro8) or trough (Ro8 T)
- ▶ Completely encapsulated, odour-free plant



HUBER Screw Conveyor Ro8 / Ro8 T for all types of media to be conveyed and for any installation situation.

HUBER Drum Screen RoMesh®

- ▶ RoMesh® for fine, defined separation sizes
- ▶ Removal of hair, fibres and suspended solids
- ▶ Reduction of COD/BOD from river and sea outfalls
- ▶ Further improved performance after precipitation and flocculation
- ▶ Mesh 0.2 – 1.0 mm
Perforations 2 – 6 mm



HUBER Drum Screen RoMesh® for fine and finest material removal.

Mechanical wastewater treatment

HUBER Drum Screen LIQUID

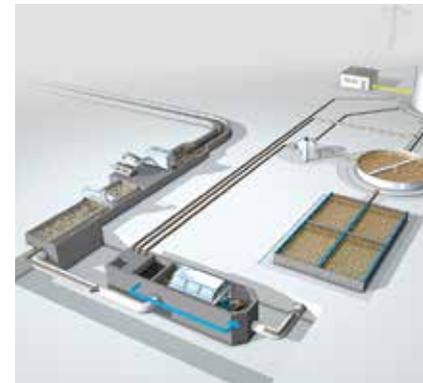
- ▶ Removal of hair and fibres to protect downstream membrane filtration plants
- ▶ COD and BOD removal prior to river or sea outfall applications
- ▶ Reduced load on the biological treatment system of sewage treatment plants without preliminary treatment
- ▶ Removal of algae from surface waters
- ▶ Available screen basket covers: wedge wire, perforated plate or mesh size 0.2 – 3 mm



HUBER Drum Screen LIQUID for high separation efficiency and screenings transport via gravity line.

HUBER CarbonWin®

- ▶ System for any application of carbon removal from raw sewage
- ▶ Optimises the energy balance on sewage treatment plants
- ▶ Change from aerobic to anaerobic sludge stabilisation
- ▶ Eliminates the need for a primary settlement tank
- ▶ Very high SS and COD reduction rates with fine screening technology
- ▶ Low space requirements



The HUBER CarbonWin® system provides innovative fine screening and can therefore be used to replace primary settlement tanks.

Screenings treatment

The removed screenings contain household waste, faecal matter, toilet paper and mineral solids. The screenings volume depends on the separation size of the screen.

The solids content of municipal untreated screenings varies between 5% and 20%, depending on the type of screen. Approximately 90% of the solids are volatile (organic). To reduce disposal costs and not to endanger the operating staff on sewage treatment plants through the formation of mould, screenings must be treated before they can be disposed of. The best method of screenings treatment is washing and compaction with a wash press. Faecal matter and other organic materials are removed and returned into the wastewater flow.

The high load of organic carbon contained within the wash water has a positive impact on the C/N ratio of the entire wastewater flow to the STP.

HUBER Wash Press WAP®

- ▶ Suitable for any application
- ▶ Up to 45% solids content
- ▶ High throughput capacity up to 12 m³/h
- ▶ Automatic wear detection
- ▶ Completely made of stainless steel



HUBER Wash Press WAP® installed behind a HUBER Fine Screen STEP SCREEN®.

Depending on the screen separation size and the inflow situation of the sewage treatment plant, the C/N ratio can be improved by up to 6 % with the result of an also improved denitrification performance with unfavourable nutrient ratios on the STP.

After washing, the screenings are compacted to reduce the water content and increase the solids concentration. Dewatering is improved by the removal of organic materials during washing. Depending on the selected washing process and press type, a weight and volume reduction of up to 80% can be achieved.

A wash press reduces the mass and volume of the screenings and consequently the disposal costs.

Screenings treatment



HUBER Wash Press WAP® SL guarantees maximum washout degree.

HUBER Wash Press WAP® SL

- ▶ Screenings wash press with a turbulent wash water flow
- ▶ High washout factor
- ▶ Quality factor of washed screenings: < 40 mg CSB / g DR
- ▶ Automatic wear detection
- ▶ Ideal for launder channels
- ▶ Up to 50 % solids content
- ▶ Design version WAP® SL HP with automatically controlled conical high pressure unit for dewatering results of up to 50% DR



HUBER Wash Press WAP® L with launder channel feeding system: redundant operation and optimal screenings dewatering.

HUBER Wash Press Launder WAP® L

- ▶ Screenings wash press for increased dewatering with launder channel feeding system
- ▶ Up to 45% solids content
- ▶ Up to 12 m³/h feed capacity
- ▶ Automatic wear detection
- ▶ Individually adaptable discharge situations due to flexible launder channel arrangement
- ▶ Up to 40 m launder channel length

Grit separation

For the reason of operating reliability of wastewater treatment plants, it is necessary to separate the grit transported with the wastewater and other mineral materials (an average of 60 l from 1000 m³ of wastewater according to DWA Work Sheet M369) from the digestible organic material. Separation of grit, gravel and other mineral matter is required to increase the reliability of wastewater treatment plant operation. Good grit separation prevents operational problems, such as grit sedimentation in aeration tanks and digestors, reduces wear of equipment, such as pumps or stirrers, and avoids clogging of sludge hoppers and sludge lines. In addition, it is also used to reduce material wear of mechanical sludge treatment equipment (e.g. centrifuges, etc.). While as much as possible of the mineral matter should be removed, as much organic matter as possible should remain in the wastewater. Testing of the grit capture rate is usually done with a grit particle size of 0.2 mm.

The grit separating systems used today are divided into longitudinal grit traps, circular grit traps and vortex grit traps, depending on their design and process layout. Grit is either separated by gravity sedimentation (grit channels) or centrifugal force (circular and vortex grit traps). Scrapers or screw conveyors are frequently used in grit channels for grit collection. Pumps, inclined screw conveyors or integrated grit classifying screws are used for grit removal.

In the further course of the process, solids are removed by pump, grit classifier or integrated grit classifying screw. Due to the significant organics content in the classified grit longitudinal grit traps are today additionally aerated to at least partly avoid settling of organic material in the grit trap and cause floating material (grease) to rise to the surface where it is retained in a grease trap chamber. Special grease separation systems remove the grease automatically and pass it on to further utilisation.

According to Kalbskopf, detention time is an important factor in the design of aerated grit channels. Un-aerated grit channels are dimensioned according to the surface overflow rate. However, even the best aerated grit channel cannot prevent high organic contents in the removed grit slurry. Only a good grit washer can guarantee almost complete separation of organic material from grit and produce clean grit.



Grit separation



Complete mechanical wastewater treatment in a single and compact unit.



Mechanical wastewater treatment in confined spaces.

HUBER Complete Plant ROTAMAT® Ro5

- ▶ With a 0.5 – 10 mm screen
- ▶ Aerated grit chamber designed according to DWA standards for reliable 90 % capture of 0.20 – 0.25 mm grit particles
- ▶ For flows of up to 300 l/s
- ▶ Also available as grit channel only
- ▶ With integrated grit classifying screw or grit removal pump
- ▶ Optionally available with aeration and separate grease trap
- ▶ Optional integrated grit washing plant

HUBER Complete Plant ROTAMAT® Ro5 HD

- ▶ With a 0.5 – 10 mm screen
- ▶ High capture rate of 95% / ≥ 0.20 mm
- ▶ For flows of up to 150 l/s
- ▶ With aeration and large grease trap
- ▶ Also available as grit channel only
- ▶ Compact unit with small footprint
- ▶ With integrated grit classifying screw or grit removal pump
- ▶ Optional integrated emergency by-pass
- ▶ Optional integrated grit washing plant

Grit separation

HUBER Coanda Complete Plant ROTAMAT® Ro5 C

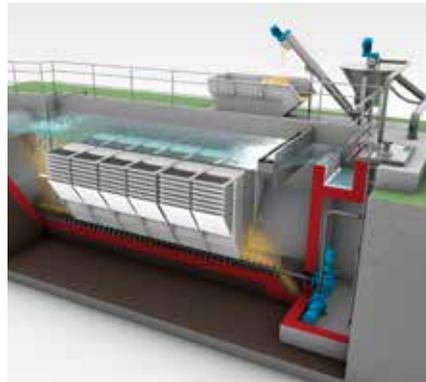
- ▶ Fine screen, screenings wash press, grit trap and grit classifier in a single unit
- ▶ Compact unit with small footprint
- ▶ Completely enclosed unit
- ▶ For flows of up to 25 l/s
- ▶ With integrated emergency overflow
- ▶ Ideal for small sewage treatment plants



Complete headworks in a single, enclosed and compact unit ideal for small plants.

HUBER Grit Trap GritWolf®

- ▶ High separation efficiency due to the integrated lamella separator
- ▶ 90% of grit particles of $\geq 75 \mu\text{m}$ grain size is separated
- ▶ Optional aeration and large grease trap
- ▶ For flows of up to 850 l/s
- ▶ Stainless steel grit trap or concrete tank design



HUBER Grit Trap GritWolf® with subsequent grit washing plant.

Grit separation



HUBER Circular Grit Trap HRSF in operation.

HUBER Circular Grit Trap HRSF

- ▶ Available with stainless steel tank or for installation in a concrete tank
- ▶ High grit capture rate due to the inlet-induced rotational movement of the wastewater
- ▶ High capture rate of 95% / $\geq 0.20 \text{ mm}$
- ▶ Low space requirements
- ▶ For flows of up to 140 l/s
- ▶ Optionally available with floating material separation
- ▶ Optional integrated grit classifying screw

HUBER Vortex Grit Chamber VORMAX

- ▶ Installation in a concrete structure
- ▶ Reliable bull gear stirrer drive with large hollow shaft
- ▶ High grit capture rate due to actively controlled vortex generation
- ▶ For flows of up to 3,000 l/s
- ▶ Inlet and outlet separated by 270° or 360° to provide for the maximum possible flow travel distance within the chamber
- ▶ Small pressure loss
- ▶ Grit removal by means of airlift or suction pump



HUBER Vortex Grit Chamber VORMAX.

Grit treatment

Grit from grit traps of wastewater treatment plants and grit from sewer and road cleaning are heavily contaminated with organic matter and debris. Such contamination in the heterogeneous mixture results in a relatively low dry residue content [DR], ranging between 40 % and 70 %, and in a relatively high loss on ignition [GV] in the range of 10 – 80 %.

The common performance criteria for the quality of grit removal are: the capture rate of 0.2 mm diameter grit particles; and the volatile solids concentration of the removed grit. The end product of excellent grit treatment is a reusable product with a volatile solids ratio of less than 3% and a water content of below 10%. Such grit treatment not only reduces the volume and mass of the removed grit, but also the disposal costs. If the clean grit product is reused, e.g. for road bedding, costs for grit disposal could be avoided.



As the composition of the polluted grit to be treated can vary greatly depending on its source of production, the decisive factor when planning a treatment plant is the selection of the best suited treatment system.

Treatment of sewage treatment plant grit

For the treatment of grit from grit traps on wastewater treatment plants, HUBER Coanda grit washers have proven to be the unrivalled best option. HUBER grit washers achieve an outstanding grit product containing below 3% volatile solids. It is so clean that cost-effective disposal and beneficial use is easily possible, e.g. in civil engineering works.

Regulations requiring certain grit quality criteria, depending on the kind of its disposal and/or reuse, are coming into effect in more and more countries. So far, HUBER Coanda grit washers have easily met all such requirements and will most likely do so in the future, because they have defined the industry standards.

Grit treatment

Treatment of sewer grit and road refuse

The characteristics of grit from sewer flushing and from gully and road cleaning can vary widely. Their treatment must be customized, depending on required capacity, input material composition, output material quality, etc. Main process steps are: storage and balancing with HUBER Grit Acceptance Tank, debris separation with HUBER Wash Drum RoSF9, grit classifying and grit washing with HUBER Coanda Grit Washer RoSF4.

Where there is no wash water supply available, wash water treatment and recirculation is an option.

Based on their wide ranging experience and expertise, HUBER Engineers will design your customized grit treatment system for your specific needs.



Grit treatment

HUBER Coanda Grit Classifier RoSF3

- ▶ High capture rate: 95% of 0.20 mm
- ▶ Low organic content due to air injection
- ▶ Up to 3 t/h capacity
- ▶ Hydraulic capacity up 25 l/s
- ▶ Shafted screw with maintenance-free bearing in place of wear bars
- ▶ Completely made of stainless steel



HUBER Coanda Grit Classifier RoSF3.

HUBER Coanda Grit Washer RoSF4

- ▶ High capture rate: 95% of 0.20 mm
- ▶ Below 3% volatile solids (organics) in grit product
- ▶ Will also process grit slurries from sewage treatment plants
- ▶ Up to 3 t/h capacity
- ▶ Hydraulic capacity up 25 l/s
- ▶ Shafted screw with maintenance-free bearing in place of wear bars
- ▶ More than 2000 reference installations
- ▶ Low grit disposal costs



Innovative technology: HUBER Coanda Grit Washer RoSF4.

Grit treatment

HUBER Grit Acceptance System RoSF7

- ▶ Grit acceptance system suitable for
 - ▶ Sewer grit
 - ▶ Road refuse
 - ▶ Sink pit contents
- ▶ Nonclogging construction
- ▶ Different sizes available up to 25 m³ storage volume
- ▶ Variable coarse material separator
- ▶ No ponding of water inside the tank



Robust unit: external grit acceptance made easy.

HUBER Wash Drum RoSF9

- ▶ Raw material feeding with horizontal or vertical screw
- ▶ Removal of coarse material (e.g. 10 mm dia.) without wear
- ▶ Low loss of mineral solids due to spray nozzles on both sides
- ▶ High solids throughput capacity
- ▶ Suitable as sludge acceptance plant for most difficult septic sludge screening (HUBER Sludge Acceptance Plant RoFAS)



Washing of contaminated grit with the versatile HUBER Wash Drum RoSF9.

Filtration and micro-screening

Advanced wastewater treatment

With the new EU municipal wastewater directive, the discharge criteria for many municipal wastewater treatment plants are becoming significantly more demanding. The focus here is on the extensive elimination of dissolved organic trace elements (“fourth purification stage”) and the increased reduction of phosphorus ingress into the water.

In order to achieve the required discharge criteria, both proven and innovative processes for solids, phosphate and trace element elimination are used, which also take all local conditions into account and at the same time provide the maximum degree of synergies.



Flocculation filtration with HUBER Pile Cloth Media Filter Rotafilt® and downstream removal of micropollutants with HUBER Activated Carbon Filter CONTIFLOW® GAK.

For these individual applications, HUBER provides versatile and proven product solutions with its ideally matched product portfolio of

- ▶ cloth filtration
- ▶ sand filtration and
- ▶ activated carbon adsorption.

Filtration and micro-screening

Cloth filtration

The HUBER Pile Cloth Media Filter Rotafilt® consists of several rotatably arranged, disc-shaped filter elements. These are installed vertically and fitted with special filter bags made of innovative pile cloth. The water continuously flows through the individual filter discs from the outside to the inside. Particulate matter is reliably retained in the three-dimensional pile fabric structure.

At a defined pressure loss, the retained solids are reliably and effectively removed from the rotating filter elements via suction bars.

Typical applications:

- ▶ Retention of fine suspended solids in the sewage treatment plant effluent (sludge flocs, microplastics)
- ▶ Flocculation filtration for phosphorus elimination
- ▶ Prefiltration in processes for the removal of trace substances (ozonation, GAC)
- ▶ Secondary filtration in processes for the removal of trace substances (separation of PAH)

Micro screening

The HUBER Disc Filter RoDisc® consists of several rotatably arranged, disc-shaped microscreen elements, which are installed vertically. The water continuously flows through the disc elements from the inside to the outside via the central shaft. In the process,

particulate matter is reliably retained inside the discs. The microscreen discs, which are submerged by up to 65%, are cleaned fully automatically by high-pressure spray nozzle bars against the direction of filtration.

The filter fabric of the microscreen is made of polyester or optionally stainless steel and, depending on the fabric type, can have a separation limit of up to 10 µm.

Typical applications:

- ▶ Separation of fine suspended substances in the sewage treatment plant effluent (sludge flocs, microplastics)
- ▶ Prefiltration in processes for the removal of trace substances (ozonation, GAC)
- ▶ Prefiltration for drinking water production
- ▶ Treatment of surface waters and removal of algae
- ▶ Treatment of road run-off
- ▶ Separation of helminth eggs



Filtration and micro-screening

Sand filtration

The HUBER Sandfilter CONTIFLOW® is a deep-bed type upflow filter that provides continuous filter bed cleaning without the need to interrupt the filtration process for cleaning or backwashing. The CONTIFLOW® is available in a stainless steel tank or optionally in a concrete tank.

Its modular design ensures the optimal treatment of any throughput. In addition to mechanical filtration (AFS reduction, phosphorus elimination, removal of microplastics), the Sandfilter is also used as biological filtration (nitrogen reduction by denitrification, post-filtration in the 4th treatment stage).

Typical CONTIFLOW® applications:

- ▶ Retention of fine suspended solids in the sewage treatment plant effluent (sludge flocs, microplastics)
- ▶ Flocculation filtration for phosphorus elimination
- ▶ Prefiltration during the 4th treatment stage (ozonation, GAC)
- ▶ Biological secondary filtration in the 4th treatment stage (ozonation)
- ▶ Mechanical secondary filtration in the 4th treatment stage (separation of PAHs)
- ▶ Denitrification for biological nitrogen reduction
- ▶ Treatment of process water, cooling water and circulation water
- ▶ Treatment of surface waters and removal of algae



Filtration and micro-screening

Activated carbon adsorption

The HUBER Activated Carbon Filter CONTIFLOW® GAK is very similar to the HUBER Sandfilter CONTIFLOW® in design and function. As the wastewater flows through the filter bed of granulated activated carbon from bottom to top, micropollutants are adsorbed on the large inner surface of the granulated activated carbon. The HUBER Activated Carbon Filter CONTIFLOW® GAK can be designed as a stainless steel tank or as a concrete tank construction.

Typical HUBER Activated Carbon Filter CONTIFLOW® GAK applications:

- ▶ Adsorption of trace substances in the fourth treatment stage
- ▶ Biological secondary filtration in the fourth treatment stage after ozonation ("BAC filtration")
- ▶ COD reduction: removal of dissolved organic compounds (e.g. from process water)

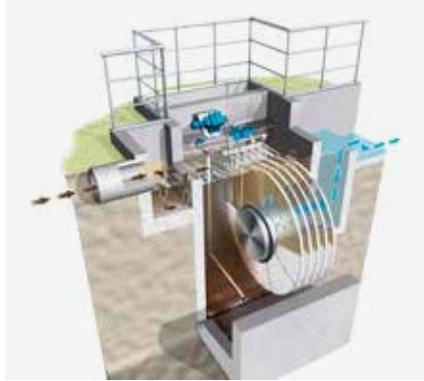


Advanced wastewater treatment for the removal of trace substances with the combined process of ozonation and downstream HUBER Activated Carbon Filter CONTIFLOW® GAK.

Filtration and micro-screening

HUBER Pile Cloth Media Filter RotaFilt®

- ▶ Innovative, high-quality pile fabric for highest separation efficiencies
- ▶ High throughput capacity with minimal space requirement
- ▶ Low pressure loss, filtration by gravity possible
- ▶ Separate wash water is not required for filter cleaning
- ▶ Continuous filtration even during filter cleaning
- ▶ Reliable retention of powdered activated carbon in the 4th treatment stage



Schematic representation of a HUBER Pile Cloth Media Filter RotaFilt®.

HUBER Disc Filter RoDisc®

- ▶ Micro screen with rotary stainless steel or polyester filter mesh from 10 µm
- ▶ High throughput capacity with minimal space requirement
- ▶ Low pressure loss, filtration by gravity
- ▶ Filtrate is used for cleaning
- ▶ Continuous filtration even during backwashing
- ▶ Reliable separation of filterable solids



24 installed HUBER Disc Filter RoDisc® units.

Filtration and micro-screening

HUBER Sandfilter CONTIFLOW®

- ▶ Versatile, proven depth filtration
- ▶ Modular design for high flexibility
- ▶ Durable, low-maintenance plant
- ▶ Filter bed cleaning during system operation
- ▶ No complicated, cost-intensive backwash technology for filter bed cleaning
- ▶ High efficiency due to the use of own filtrate as wash water
- ▶ Easy conversion to an activated carbon filter with GAC possible



HUBER Sandfilter CONTIFLOW®, stainless steel design.

HUBER Active Carbon Filter Contiflow® GAK

- ▶ Adsorption process with granulated activated carbon (GAC)
- ▶ Ideal for the removal of trace substances in the fourth treatment stage
- ▶ Easy integration in existing plants
- ▶ No shutdowns necessary for cleaning
- ▶ Activated carbon can be regenerated and largely reused



HUBER Active Carbon Filter Contiflow® GAK, stainless steel design, for the removal of trace substances.

Storm water treatment

Innovative technology and solutions for application in combined and storm water treatment systems

Advanced combined and stormwater treatment in wastewater transportation systems is a main issue with regard to sustainable environmental and water protection. The quality of many watercourses has been significantly increased meanwhile by building new wastewater treatment plants and upgrading or refurbishing existing wastewater transportation systems. Despite all these efforts, however, there are still ecological deficits. Some of the problems are caused in the discharges of combined and separated sewers during storm events when floating and coarse material from the sewers passes into the water bodies. For the purpose of specific environmental protection appropriate measures will have to be taken in future to strengthen the weak points of the system accordingly.

Combined wastewater screening

HUBER screens are used to retain debris and other coarse solids within the sewer systems and to prevent them from overflowing into receiving water bodies during storm events. We have a variety of screens suitable for application at sewer overflows. For such applications barscreens and perforated plate screens can be selected. We offer screens that are installed upstream of, on top, or down stream of overflow weirs. The optimally suited screen is selected depending on the required or desired capture rate, flow requirement and

structural conditions. Our global presence and experience allows our experts to propose the best solution to any problem.

Efficient removal of screenings

Monitoring the utilisation of storm water retention tanks and of overflows becomes ever more important to allow optimising the use of retention volumes and minimizing overflow occurrence and flows.

Especially in storm water overflows with unfavourable flow conditions, common system solutions without defined screenings discharge can quickly reach their limits. This results in overflowing of the screening plant and discharge of screenings into the nearby watercourse.

In order to provide a reliable solution even for unfavourable hydraulic and structural conditions, the HUBER combined water screening system can be equipped with a cross conveyor. The aim is to discharge the screenings in a defined way from the overflow structure or to return them to the combined sewer without circulating the screenings.



Storm water treatment

This is the only way to ensure that combined sewage screening functions satisfactorily and that the discharge of unscreened wastewater is avoided, even under high coarse material loads.

Constant design retention level

Against the background that investment and operating costs need to be saved, it is advisable to utilise unused storage potentials through maintenance of a constant design retention level in combination with a HUBER screen. In addition to high economic benefits, the use of a HUBER screen can significantly minimise the ecological impact on the waters in the event of discharge.

Discharged flow volume measurement

Also the operational behaviour of storage structures is gaining increasing importance. Retention tanks for overflows are becoming ever more important to allow optimisation of the use of retention volumes and minimisation of overflow occurrence and flows.

It is essential to be able to measure discharged storm water flows and volumes. In the past this has not been possible where a storm screen was installed. This is now possible with our solution.



Storm water treatment

HUBER Storm Screen ROTAMAT® RoK1

- ▶ Automatically cleaned storm screen for combined and sanitary sewer overflows
- ▶ Excellent capture rate due to two-dimensional perforated plate design
- ▶ Continuous cleaning of the semi-circular perforated plate
- ▶ Minimum head loss due to installation at overflow weir invert height
- ▶ Easy retrofitting into existing structures



HUBER Storm Screen ROTAMAT® RoK1 installed on dry side of overflow weir.

HUBER Storm Screen ROTAMAT® RoK1 TS

- ▶ Combination of HUBER Storm Screen ROTAMAT® RoK1 and cross conveyor
- ▶ Reliable discharge of screenings back into the combined sewer or optionally into a container
- ▶ Reliable solution for high solids loads and/or unfavourable flow conditions
- ▶ Easy retrofitting into existing structures



HUBER Storm Screen ROTAMAT® RoK1 TS for the reliable removal of screenings.

Storm water treatment

HUBER Storm Screen ROTAMAT® RoK2

- ▶ Automatically cleaned storm screen for combined and sanitary sewer overflows
- ▶ Excellent capture rate due to two-dimensional perforated plate design
- ▶ Continuous cleaning of the semi-circular perforated plate
- ▶ Retention of all screenings on the foul water side
- ▶ A perfect solution for discharges with limited upstream head requirements
- ▶ Optional emergency overflow to avoid backwater
- ▶ Optional discharged flow volume measurement



HUBER Storm Screen ROTAMAT® RoK2 installed on four side of overflow weir.

HUBER Pumping Stations Screen ROTAMAT® RoK4

- ▶ Screening, vertical lifting, washing and compaction in a single and compact unit
- ▶ Prevents blocking of pumps and sewers
- ▶ Screenings dewatering and compaction
- ▶ Integrated bottom step to prevent deposits in the incoming sewer
- ▶ Easy to install into existing structures
- ▶ Can be easily removed for maintenance above ground level



HUBER Pumping Stations Screen ROTAMAT® RoK4 with heating for outdoor installation.

Heating and cooling with wastewater

Energy recovery from wastewater

Right below the ground, in sewers, is a hidden and seldom-used source of energy: our wastewater. Generally the temperature of sewage is in the range of 12 to 20 °C. Even during winter the wastewater temperature never drops below 10 °C, or only for a few days. This makes wastewater an excellent heat source for the operation of heat pumps.

Utilisation of wastewater as a heat source is especially suitable in large buildings, such as nursing homes, hospitals, schools or swimming baths. It is also possible to recover heat from the effluent of sewage treatment plants and use it e.g. for sludge drying.

As a link between the wastewater and heat pump, a heat exchanger is required to extract the heat energy contained within the wastewater. The heat exchanger transfers the thermal energy from the wastewater to the heat pump. The HUBER ThermWin process uses the HUBER Heat Exchanger RoWin. The specific feature of this system is that actual heat extraction from the wastewater takes place above ground and not in the sewer. All system components are easily accessible and easy to maintain.

Functional principle of the HUBER ThermWin:

A partial flow of the wastewater streaming through the sewer is passed through a screen to remove the coarse material from the wastewater flow. Preceding screening of the wastewater is necessary to prevent blocking of the heat exchanger.

The prescreened wastewater is lifted and flows by gravity through the above ground installed heat exchanger. The cooled wastewater then flows back to the sewer taking along the separated screenings. Heating of the secondary circuit, which is coupled with the heat pump, takes place inside the heat exchanger.

The heat pump lifts the temperature to the requested level. For applications with contaminated media the HUBER Heat Exchanger RoWin can be used. This type of heat exchanger has been developed especially for such applications and excels with its superior heat transfer capacity and automatic preventive cleaning of the heat exchanger surfaces.

Up to 80% of the useful heat can be recovered from the wastewater and utilized economically.

Heating and cooling with wastewater



Schematic diagram of heat recovery from raw sewage by means of an above ground installed HUBER ThermWin system.

The HUBER ThermWin system also offers the following important advantages:

- ▶ Efficient use of a regenerative energy source
- ▶ Long-term safe, renewable energy source
- ▶ Cost-effective, ecological system
- ▶ Independence of sewer geometry
- ▶ Fast implementation and utilisation of a rarely used resource
- ▶ Easy maintenance of all components
- ▶ Reduction of CO₂ emissions
- ▶ Simple but efficient control strategy
- ▶ Decoupling from fossil fuel use
- ▶ Cooling and heating with one single plant
- ▶ Permanently available heat potential

Heating and cooling with wastewater

HUBER Heat Exchanger RoWin

- ▶ Compact, odour-tight plant
- ▶ Continuous maximum heat transfer capacity
- ▶ Automatic cleaning of the heat exchanger surfaces
- ▶ Fully automatic operation
- ▶ Continuously stable hydraulic conditions
- ▶ Insusceptible to floating and coarse material
- ▶ Automatic removal of sediments
- ▶ Minimum maintenance requirements
- ▶ Various possible applications in both the municipal and industrial field
- ▶ Modular design, system options available
- ▶ Very small footprint with maximum heat exchanger surface
- ▶ Batch feeding with small or discontinuous volume flows



HUBER Heat Exchanger RoWin.



Functional model of a HUBER Heat Exchanger RoWin.

Heating and cooling with wastewater

HUBER Heat Exchanger RoWin C

- ▶ Can be installed directly in the wastewater flow
- ▶ No additional floor space required
- ▶ Ideal utilisation of the sewage treatment plant effluent
- ▶ Continuous operation of the complete system
- ▶ Variable height and width
- ▶ Low maintenance requirements
- ▶ Minimized wear
- ▶ No negative impact on sewers and wastewater treatment plants
- ▶ All year round, season-independent solar sewage sludge drying
- ▶ Fast utilisation of a rarely used resource



HUBER Heat Exchanger RoWin C.



HUBER Heat Exchanger RoWin C installed in a concrete channel.

Sludge treatment

Sewage sludge is continuously generated on municipal and industrial wastewater treatment plants during the process of organic pollutant degradation. In the past years, the annual volume of municipal sewage exceeded 10 million tons of dry substance in Europe alone, and the trend continues upward. Due to the very different rates of connection in the individual countries, with e.g. a rate of virtually 100% in the EU member states, and therefore regionally very different sewage sludge volumes it is only understandable that there are controversial approaches as regards sludge disposal ways.

In some countries, due to new legislation and eco-political consideration, some disposal methods have been prohibited or at least restricted, such as landfilling of sewage sludge. For many states the recovery of materials contained within sewage sludge still plays an important role. This applies to both landscaping and sludge spreading on agricultural land.

The fertilization effect of sewage sludge and especially its phosphorus content is normally sufficient to cover the nutrients demand of typical agricultural land. On the other hand, there are a lot of countries where the agricultural application of sewage sludge is met with much scepticism due to its potential heavy metal pollution and content of organic pollutants, such as PFT. In these countries there has been a clear trend towards concepts for thermal sewage sludge treatment for some years already, partly combined with solutions to recover the phosphorus contained

within sewage sludge. Against this political and economic background, it is understandable that the sewage sludge disposal is discussed very differently. Even if there is no generally accepted concept for future sewage sludge disposal existing presently, adequate sludge pre-treatment is required with all concepts described above.

A major pre-treatment step is to reduce the water content of the sludge. Sewage sludge generated on wastewater treatment plants typically shows a DR between 1 and 5% depending on where exactly it is generated. The average DR content of digested sludge is 4 – 5%. This means that one cubic metre of digested sewage sludge contains 950 l water, which would always have to be transported without prior dewatering. The major benefits of dewatering and drying are weight and volume reduction and the increased thermal value.

HUBER offers solutions for the entire process chain:

Screening – thickening – dewatering – drying – all from one source.

Sludge treatment



Sludge transport:

- ▶ Screw conveyor



Sludge thickening:

- ▶ Disc thickener
- ▶ Belt thickener
- ▶ Screw thickener



Sludge drying:

- ▶ Solar dryer
- ▶ Belt dryer
- ▶ Disc dryer



Sludge screens:

- ▶ Sludgecleaner



Sludge dewatering:

- ▶ Screw press
- ▶ Belt filter press



Sludge drying:

- ▶ Complete sludge drying plants
- ▶ Energy-efficient, dependable and reliable in operation

Mechanical sludge treatment

Mechanical sludge treatment includes the processes of sludge screening, thickening and dewatering.

Sludge screening

Sludge screening is a mechanical treatment stage that primarily achieves homogenisation and separation of foreign matter and ensures undisturbed further treatment of the sludge, irrespective of the subsequent treatment methods applied. Operating problems, such as clogging of pipelines, pumps, heat exchangers, tressing on stirrers and aeration plants, scum, as well as damage in downstream drying units, can reliably be prevented using HUBER sludge screens. For decades, the HUBER Sludgecleaner STRAINPRESS® has proven itself the world over as a reliable solution for sludge screening.



Sludge thickening

With regard to economical further treatment and disposal of sewage sludge, it is necessary to reduce the sludge volumes produced in the course of the wastewater treatment process. The volume reduction is achieved by separation of parts of the sludge liquor at different points in the sludge treatment process chain. The main field of application of thickening systems is volume reduction of primary and excess sludge prior to stabilisation.

HUBER offers belt thickeners as well as screw thickeners and disc thickeners as filtration units. The selection of the most suitable technology for individual applications depends on project-specific parameters, such as throughput capacity or operating and investment costs, but also on other criteria, such as operating reliability, flexibility and process complexity.

Mechanical sludge treatment

Sludge dewatering

Sludge produced in municipal and industrial wastewater treatment plants requires dewatering prior to further treatment or utilisation. In order to reduce the costs of sludge disposal and further utilisation, the sludge must be dewatered to the highest possible solids content. The system technology must be as reliable and easy to operate as possible. With the screw press, HUBER offers a particularly robust technology for sludge dewatering. Combined with many years of experience in sludge conditioning and conveying, the optimal dewatering process can be offered for a wide range of applications.

Flocculant mixing

Flocculant mixing plays a key role in the mechanical thickening and dewatering of sludge. In addition to the consumption of flocculant and the associated operating costs, the performance data of the subsequent thickening or dewatering is directly influenced here. Throughput and dewatering efficiency can be increased by optimised flocculant mixing, allowing unattended, automated operation. HUBER offers the specially developed HUBER Injection and Mixing Valve and the HUBER Inline Polymer Mixer IPM for optimum process results.



Mechanical sludge treatment



Tailored HUBER solutions for handling dewatered sludge.

HUBER conveyors

- ▶ Customized conveying systems for dewatered sludge
- ▶ Transport solution designed to suit all specific requirements
 - ▶ Delivery rates; indoor/outdoor installation; type and arrangement of container, number of containers
- ▶ Available with any level of automation
- ▶ 100% odour encasement possible



Rotating distribution screw Ro8 TC for dewatered sludge.

HUBER Distribution Screw Ro8 TC

- ▶ Conveyor system for dewatered sludge
- ▶ Transport solution downstream of dewatering machines
- ▶ Sludge transport into several containers or to an open area
- ▶ Swivelling screw and chute
- ▶ Suitable for indoor and outdoor installation
- ▶ Degree of automation depending on customer request/conditions

Mechanical sludge treatment

HUBER Sludg cleaner STRAINPRESS®

- ▶ High throughput capacity up to 200 m³/h
- ▶ Continuous coarse material separation under pressure
- ▶ No washwater needed
- ▶ Suitable for pressure-fed pipelines (in-line installation)
- ▶ Integrated coarse material dewatering
- ▶ Two sizes available
- ▶ Adjustable screen perforation
- ▶ Completely made of stainless steel



HUBER Sludg cleaner STRAINPRESS® – continuous pressurised coarse material separation.

HUBER Disc Thickener S-DISC

- ▶ Throughput capacity up to 40 m³/h
- ▶ Minimised operator attention
- ▶ High operational reliability
- ▶ Adjustable for varying degrees of thickening
- ▶ Minimised wash water demand
- ▶ Low solids load in filtrate
- ▶ Wear-resistant stainless steel filter mesh
- ▶ No need for lubrication
- ▶ Virtually noiseless operation
- ▶ Specific power consumption < 0.02 kWh/m³



Unique thickener: HUBER Disc Thickener S-DISC.

Mechanical sludge treatment



Extremely sturdy: HUBER Rotary Screw Thickener S-DRUM.

HUBER Rotary Screw Thickener S-DRUM

- ▶ Feed capacity up to 110 m³/h
- ▶ Two sizes available
- ▶ High solids capacity
- ▶ Enclosed design to eliminate odour nuisance
- ▶ Completely made of stainless steel
- ▶ Low wash water demand
- ▶ Low energy demand



HUBER Belt Thickener DrainBelt – applications worldwide.

HUBER Belt Thickener DrainBelt

- ▶ Feed capacity up to 100 m³/h
- ▶ Four sizes available
- ▶ Low polymer consumption
- ▶ Minimum operating costs
- ▶ Extremely high degree of separation
- ▶ Variable belt speeds
- ▶ Low energy consumption

Mechanical sludge treatment

HUBER Bogenpress B-PRESS

- ▶ Belt filter press with throughput up to 1000 kg_{DR}/h
- ▶ Three sizes available
- ▶ Versatile use
- ▶ High efficiency (low polymer and power consumption)
- ▶ High capacity (due to extended predewatering zone)
- ▶ Application-optimized design



The HUBER Bogenpress B-PRESS can be combined with the HUBER Belt Thickener DrainBelt unit to further increase capacity.

HUBER Screw Press S-PRESS

- ▶ Feed capacity up to 500 kg_{DR}/h
- ▶ Two sizes available
- ▶ Extremely sturdy design
- ▶ Especially suitable for industrial sludges
- ▶ Well-proven in hundreds of installations
- ▶ Virtually noiseless operation



HUBER Screw Press S-PRESS: specific power consumption < 0.01 kWh/kg_{DR}.

Mechanical sludge treatment



HUBER Screw Press Q-PRESS®.

HUBER Screw Press Q-PRESS®

- ▶ Feed capacity up to 540 kg_{DR}/h
- ▶ Four sizes available
- ▶ High dewatering performance
- ▶ Low energy demand
- ▶ Easy to operate & maintain
- ▶ Compact, enclosed design
- ▶ Optional mobile units



HUBER Screw Press Q-PRESS® – mobile unit for on-site testing.

HUBER Screw Press Q-PRESS®, mobile demo unit

- ▶ Original scale demo unit
- ▶ Complete with dosing station, pumps, mixer, etc.
- ▶ Customer support from HUBER service experts available
- ▶ Reliably predictable throughput, dewatering results, polymer consumption

Mechanical sludge treatment



HUBER Injection and Mixing Valve for sludge conditioning.

HUBER Injection and Mixing Valve

- ▶ Multipoint flocculant injection
- ▶ Pneumatic adjustment of mixing performance
- ▶ Automatic adaptation to changing sludge conditions
- ▶ Automatic flushing function
- ▶ Not susceptible to clogging



Motorised HUBER Inline Polymer Mixer IPM.

HUBER Inline Polymer Mixer

- ▶ Motorised flocculant admixture
- ▶ With variable speed for maximum mixing performance
- ▶ Also for highly viscous sludges and highly concentrated flocculant solutions
- ▶ Enables efficient configuration of flocculant dosing
- ▶ Virtually no pressure loss

Thermal sludge treatment

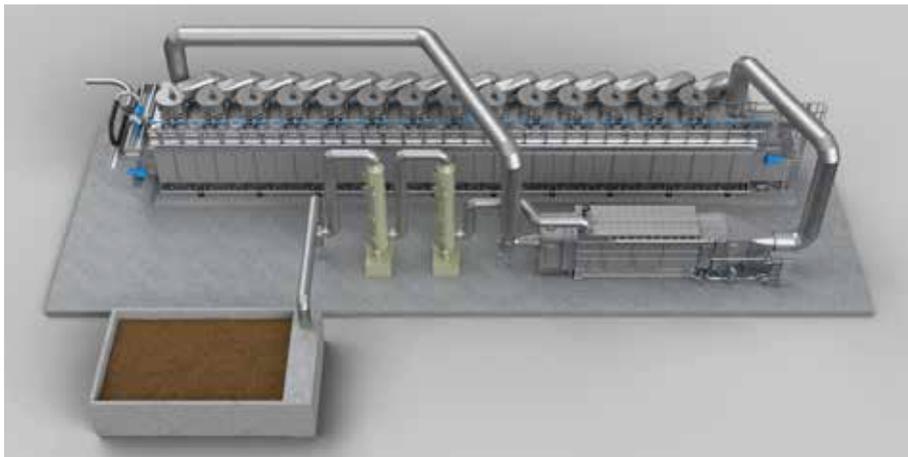
Future-proof sewage sludge treatment

The existing and future challenges in sewage sludge treatment require the generated dewatered sewage sludge to be processed with further process steps to such an extent that safe disposal or even economic use is possible. The objectives of sustainable environmental management have to be reconciled with economic aspects and practical solutions for the operator on site.

With our machines and plants, we provide customised solutions.

Efficient solutions to minimise the volume of sludge for disposal

Sewage sludge is dried to minimise its quantity and thus transport and disposal costs. Handling and storage of dried sludge is easy and all further disposal and utilization methods are possible.



Depending on country-specific regulations, use as fertiliser is possible or energy use as fuel makes sense, whereby the calorific value of fully dried sludge is comparable to that of brown coal.

Thermal energy from different energy sources

Thermal drying involves the evaporation or vaporisation of capillary water, surface water and cellular water, which requires thermal energy. Typical energy sources are the sun (solar drying) as well as site-specific waste heat (e.g. from a combined heat and power plant) or excess steam from power generation (exhaust steam from a turbine). Extensive mechanical dewatering of the sludge is necessary beforehand.

Thermal sludge treatment

We supply three different kinds of HUBER sludge drying systems, which differ greatly in terms of space requirements, temperature level and heating medium.

Solar sludge drying:

In a greenhouse where a mechanical sludge turner is installed, the sludge is dried to a solids content of usually 65% DR. HUBER solar dryers are used on small and medium-sized wastewater treatment plants as well as on very large plants.



Medium-temperature belt dryer:

The sludge is dried with hot air (70° up to 150° Celsius) in the belt dryer. The dried product has a solids concentration ranging from 70% DR up to 95% HUBER belt dryers are used on medium to very large sewage treatment plants.



Disc dryer:

The disc dryer is a contact dryer designed for the partial drying of dewatered sewage sludge to 40 – 45% DR. Heating takes place by means of saturated steam (up to max. 10 bar). HUBER disc dryers are often used in combination with fluidized bed incinerators for medium to large and very large volumes of sewage sludge.



Thermal sludge treatment

Solar sewage sludge drying

The basic principle is sewage sludge drying inside a greenhouse. This solution allows for continuous system operation so that the sludge bed in the greenhouse remains constant. Due to the special features of the sludge turning assembly, particularly the backmixing function, an open-pored and slightly wet sludge bed is generated that causes neither odour problems nor unnecessary dust loading.

The sludge is fed manually, with a wheel loader for example, or automatically by special conveyors, directly from the dewatering system.

The dried sludge can be stored in a ground deposit at the end of the drying hall or mechanically transported directly to a loading station.

The HUBER Sludge Turner SOLSTICE® is the heart of the HUBER SRT drying system. It consists of a rotating double shovel which is used for two different

motion sequences. The sludge turning function ensures mixing, breaking up, aeration and transport of the sludge. The second function of the shovel is to transport sludge. This means that the sludge turner takes up some sludge at a defined point and transports it inside a shovel to another point. This ensures that dry sludge is back-mixed into wet sludge and sludge feeding and removal can take place at the same gable side of the hall.

The HUBER SRT system is not only suitable for pure solar drying but also ideal to be combined with a high performance floor heating or hot air blower. Optimized with this type of heating, the SRT system can be used for all year round, season-independent solar sewage sludge drying. This eliminates the need for storage facilities for wet sludge and saves the floor space required for solar drying without additional heating as solar drying alone is unable to dry wet sludge during winter.



Thermal sludge treatment

HUBER Solar Active Dryer

Simple, ecological system with the HUBER Sludge Turner SOLSTICE® and with self-regulating climate technology for sustainable cost reduction

- ▶ Continuous sludge processing by continuous transport of the sludge through the drying line
- ▶ Spreading, granulation and transport of the sewage sludge for a stable dry granulate
- ▶ True backmixing of sludge for a perfect drying bed preventing any odour or dust
- ▶ Suitable both for decentralized solutions from 1,000 t sludge (original substance) per year and large-scale plants
- ▶ Modular design providing for the option of fully automatic sludge feeding and removal

- ▶ Sludge feeding and removal can take place at opposite ends or the same end, as requested.
- ▶ Optional use of exhaust heat to support solar drying
- ▶ Simple process with robust technology and low primary energy consumption



Dewatered sewage sludge becomes dry, stable sludge granulate.



Parallel operation of HUBER Sludge Turner SOLSTICE® units.

Thermal sludge treatment

Belt dryer

The HUBER Belt Dryer BT is characterized by highest efficiency and reliability. The unique HELIX air flow ensures lowest values for thermal and electrical energy consumption. A sludge feeding system specially developed by HUBER, the extruder, guarantees continuously constant drying conditions and a low-dust end product that can be dried to over 90% dry residue without any problems. The extruder eliminates

the need for costly and wear-intensive backmixing of already dried material. Low process temperatures of approx. 70 to max. 150°C ensure safe operating conditions and open up the possibility of efficiently using waste heat at low temperature levels, such as in CHP plants. The fully automatic plant control system with clear process visualisation reduces the need for operator attendance to a minimum. Over 20 years of experience and more than 70 belt dryers worldwide speak for themselves.



Thermal sludge treatment



HUBER Belt Dryer BT for sewage sludge drying up to > 90% DR.

HUBER Belt Dryer BT

- ▶ Sludge throughput up to 6 t/h per line
- ▶ Water evaporation up to 4 t/h per line
- ▶ Low-dust high-efficiency drying
- ▶ Small exhaust air mass flow
- ▶ Input DR based throughput control for optimal operation
- ▶ Utilisation of site-specific exhaust heat
- ▶ Conforms to ATEX regulations
- ▶ Automatic operation over 24 hours per day
- ▶ Thermal energy requirement 0.8 – 0.85 kWh/kg_{water}
- ▶ Electrical energy requirement 0.03 – 0.15 kWh/kg_{water}



Thermal sludge treatment

Disc dryer

The new HUBER Disc Dryer RotaDry® completes the HUBER product portfolio with contact drying. In combination with a sewage sludge mono-combustion plant, this dryer can dry sewage sludge to the ideal DR content.

Thus, the incineration can be operated in a self-sustaining and energy-efficient way. The excess steam from the electricity production is used as a heating medium. An optimised control concept for external sludge, the maintenance-friendly design and a holistic process distinguish the HUBER Disc Dryer RotaDry® as the perfect sewage sludge dryer for subsequent incineration.



Thermal sludge treatment

HUBER Disc Dryer RotaDry®

- ▶ Partial drying to 40 to 45% dry residue (DR)
- ▶ Homogeneous drying to a DR required for self-sustaining sludge mono-incineration
- ▶ Throughput of approximately 8 to 15 t/h dewatered sludge with 25% DR
- ▶ Water evaporation from 2 to 6.5 t/h per dryer
- ▶ Exhaust steam from turbine as heat carrier
- ▶ Compact design
- ▶ Proven and durable technology
- ▶ Thermal energy requirement approx. 0.85 kWh/kg_{water}
- ▶ Electrical energy requirement 0.03 – 0.05 kWh/kg_{water}



A HUBER Disc Dryer RotaDry® during installation on site.



Flotation

Principle of flotation

During dissolved air flotation, very fine gas bubbles of 20 – 40 µm are released, which together with the particles present in the wastewater, form an agglomerate. This agglomerate has a lower density than water and rises to the water surface. Nonfloatable particles are separated via conical selection chambers. The particle-free clear water passes through an immersion wall and is then available for further use. If a tube flocculator is installed upstream of the flotation plant, so-called precipitants and flocculants can be added, which improve the clarification performance accordingly.



The flotation process is suitable for various applications.

HUBER Dissolved Air Flotation Plant HDF

- ▶ Compact and modular design for throughputs up to 300 m³/h
- ▶ Simple, reliable saturation system using a multiphase pump
- ▶ Low space requirement due to an integrated lamella separator
- ▶ Suitable for the pre-treatment of industrial wastewater or secondary treatment of municipal wastewater
- ▶ Very high reduction rates for COD, solids and phosphate



Versatile wastewater treatment for numerous industrial applications.

Flotation



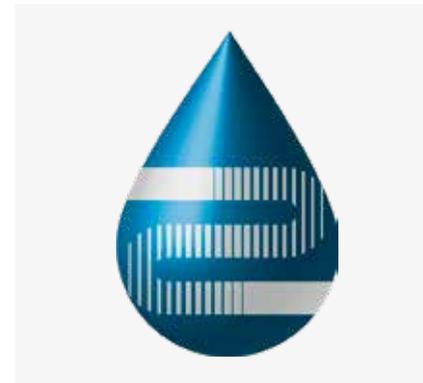
Flotation plant HDF S for high solids loads.

HUBER Dissolved Air Flotation Plant HDF S

- ▶ Flat construction with a large water surface of up to 160 m³/h
- ▶ Simple, reliable saturation system using a saturation pump
- ▶ Machines can be mounted in standard containers as mobile units
- ▶ Suitable for high solids loads and for activated sludge separation as an alternative to conventional secondary clarification

HUBER Chemicals Dosing DIGIT-DOSE

- ▶ High load fluctuations in industrial wastewater inevitably lead to constant manual adjustments or cost-intensive overdosing of chemicals
- ▶ DIGIT-DOSE for the intelligent regulation of the chemicals dose to be added in flotation plants as required
- ▶ Saves operating resources and disposal costs and reduces time expenditure
- ▶ Can be retrofitted to all HUBER flotation systems



DIGIT-DOSE saves operating resources and working time.

Solutions for industry

Industrial customers earn money with the production and sales of products or generation of energy, e.g. biomass energy. The treatment of the resulting wastewater streams and sludge is not the company's "core business" and is clearly subordinate to production. However, controlled wastewater treatment and the recycling of residual materials are not only absolutely necessary from an economic point of view, but can even form part of the environmental concept or corporate philosophy.

We understand your needs!

HUBER as a partner in the field of wastewater and residue treatment develops solutions and provides advisory services on economically reasonable concepts for wastewater, disposal and energy recovery.

HUBER SE, together with its global locations, is one of only a handful of suppliers worldwide who supply the complete range of technological equipment for wastewater and process water treatment as well as for sludge treatment and reuse of energy and heat. We are able to generate complete processes with our HUBER machines and plants, in other words: We offer complete systems and assume the process engineering responsibility for these systems.

However, wastewater treatment alone is not enough today. The next step: Close The Loop! The treatment of clarified wastewater to high quality service water for production processes saves expensive potable water and avoids wastewater.

Our philosophy of leaving no resource unused includes also production sludge. Sludge treatment and utilisation is an aspect to be taken into account with any holistic approach. This should not only include cost-effective disposal of sludge but also its energetic utilisation. HUBER therefore also offers technologies that allow utilisation of the energetic potentials of wastewater.

So you see, there is a variety of approaches for converting a costly wastewater project into a profitable water treatment and sludge utilisation project or energy recycling project.

Our industry team who are specialists, having acquired their specific knowledge in a variety of successful projects, will be pleased to support you with their expertise.

Let us work together with you to develop your projects!

Solutions for industry



HUBER Dissolved Air Flotation Plant HDF for grease and solids reduction prior to indirect discharge.



Sludge dewatering with HUBER Screw Press Q-PRESS® 800.2.

Meat processing industry / slaughterhouses:

- ▶ Cattle, pigs, poultry processing
- ▶ Slaughterhouses
- ▶ Meat processing companies
- ▶ Convenience food / ready-to-eat products
- ▶ Production wastewater
- ▶ Screening of wash water from cattle truck washing
- ▶ Further treatment of slaughter by-products (animal rendering plants)

Process solutions:

- ▶ Wastewater screening / coarse material reduction
- ▶ Removal of grit and settleable material
- ▶ Reduction of grease and COD
- ▶ Direct and indirect discharge
- ▶ Minimisation of sludge and residues
- ▶ Water recycling
- ▶ Phosphate secondary treatment
- ▶ Biomass separation

Mechanical equipment:

- ▶ Coarse screening > 6 mm
- ▶ Fine screening > 0.2 mm
- ▶ Grit traps and grit washing
- ▶ Dissolved air flotation with DIGIT-DOSE
- ▶ Sludge thickening, dewatering and drying
- ▶ Filtration, polishing stage
- ▶ Energy recovery from wastewater

Solutions for industry

Milk processing industry / dairies / cheese dairies:

- ▶ Milk of any origin
- ▶ Milk production and processing
- ▶ Fresh dairy products / cream / milk fat products
- ▶ Long-life milk products (milk powder) / cheese
- ▶ Processing / mixtures
- ▶ Production wastewater
- ▶ Vehicle wash water



Dissolved air flotation plant for reliable wastewater treatment.

Process solutions:

- ▶ Pre-screening
- ▶ Grit and settleable material
- ▶ Reduction of grease and COD
- ▶ Direct and indirect discharge
- ▶ Minimisation of sludge and residues
- ▶ Phosphate and solids polishing stage
- ▶ Energy recovery and wastewater cooling

Mechanical equipment:

- ▶ Fine screening > 0.2 mm
- ▶ Grit traps and grit washing
- ▶ Dissolved air flotation plants
- ▶ Sludge thickening and dewatering
- ▶ Filtration, polishing stage
- ▶ Sludge drying and utilisation



RoWin Heat Exchanger for energy recovery.

Solutions for industry



HUBER Drum Screen RoMesh® for micro screening.



HUBER Dissolved Air Flotation Plant HDF for internal water recycling.

Plastics recycling industry:

- ▶ Post-consumer foil
- ▶ Post-commercial foil
- ▶ Agricultural and construction foil
- ▶ PET recycling
- ▶ Rigid plastic recycling

Process solutions:

- ▶ Pre-cleaning (plastics, labels and sand)
- ▶ Micro screening
- ▶ Internal water recycling
- ▶ Energy recovery from hot process rinsing water streams
- ▶ Separation and treatment of process sludge

Mechanical equipment:

- ▶ Fine screening (≥ 0.08 mm)
- ▶ Grit traps and grit washing
- ▶ Dissolved air flotation
- ▶ Biomass separation tertiary filtration
- ▶ Sludge thickening, dewatering and drying
- ▶ Heat exchanger
- ▶ Individual and turnkey solutions as well as container and frame solutions

Solutions for industry

Disposal industry / biowaste / biogas:

- ▶ Biogas plants / food waste
- ▶ Disposal companies
- ▶ Road refuse and sewer grit
- ▶ Waste treatment plants

Process solutions:

- ▶ Coarse screens, special screens
- ▶ Removal of coarse material from fermentation residues (plastics,...)
- ▶ Special grit traps
- ▶ Reduction of COD and solids
- ▶ Fermentation residue dewatering
- ▶ Complete grit treatment with / without water recycling
- ▶ Sludge drying / utilisation

Mechanical equipment:

- ▶ Grit acceptance tank
- ▶ Specially designed coarse screens
- ▶ Grit traps and grit washing (special machines)
- ▶ Dissolved air flotation plants
- ▶ Sludge thickening and dewatering
- ▶ Sludge screening machines / coarse material removal
- ▶ Energy recovery



Complete treatment system for sewer grit and road refuse.



Plastics separated by fermentation residue screening.

Solutions for industry

Wood processing industry / paper industry:

- ▶ Wood processing / fibreboard production
- ▶ Sawmills
- ▶ Pulp and paper industry

Process solutions:

- ▶ Lumber yard surface water screening
- ▶ Fine screening prior to indirect discharge
- ▶ Sludge removal from wet scrubber wastewater
- ▶ Reduction of COD and solids
- ▶ Thickening/dewatering of wood and paper sludge
- ▶ Water recycling
- ▶ Sludge drying and biomass recycling

Mechanical equipment:

- ▶ Coarse and fine screens
- ▶ Grit traps and grit washing
- ▶ Dissolved air flotation plants
- ▶ Sludge thickening and dewatering
- ▶ Energy recovery and wastewater cooling
- ▶ Sludge drying



Sludge drying in industry with the HUBER Belt Dryer BT.



HUBER Multi-Rake Bar Screen RakeMax® for river water screening in paper industry.

Solutions for industry



HUBER Drum Screen RoMesh® for fine and finest material removal.



HUBER Heat Exchanger RoWin for energy recovery.

Other industries:

- ▶ Tanneries / leather industry
- ▶ Textile industry
- ▶ Fruit and vegetable industry
- ▶ Petrochemical industry / refineries
- ▶ Pharmaceutical industry
- ▶ Automotive industry
- ▶ Metal processing industry
- ▶ Chemical industry
- ▶ Ships and marine applications
- ▶ Airports

Process solutions for

- ▶ Screening
- ▶ Grit removal
- ▶ Reduction of COD, grease and solids
- ▶ Filtration
- ▶ Advanced effluent treatment
- ▶ Sludge and residue treatment
- ▶ Water and heat recycling

Mechanical equipment:

- ▶ Coarse and fine screens
- ▶ Dissolved air flotation plants
- ▶ Sludge thickening and dewatering
- ▶ Screens with grit trap
- ▶ Filtration
- ▶ Membrane bioreactor
- ▶ Sludge treatment and dewatering
- ▶ Energy recovery and wastewater cooling

Solutions in container design and rental systems

HUBER also offers solutions in container design as permanent installations or for rental for temporary operation, bridging gaps or simply for quick and flexible use when there are bottlenecks. Container or rental plants of this kind are either designed with a HUBER Dissolved Air Flotation Plant HDF for pre/post-treatment of wastewater, with a HUBER Screw Press Q-PRESS® for sludge dewatering or with HUBER screening technology.

Container systems with flotations

- ▶ Pre- or post-treatment of wastewater, including partial flows
- ▶ Reduction of solids, grease and COD
- ▶ Up to 80 m³/h in container systems
- ▶ Plug and play, fully equipped for fast implementation
- ▶ Available to lease

Container systems for sludge dewatering

- ▶ Volume reduction of industrial or municipal sludge
- ▶ Screw presses built into container
- ▶ Plug and play
- ▶ Available to lease

Rental plants for mechanical wastewater treatment

- ▶ Screens, screening systems, ultra-fine screens and disc filters
- ▶ Containers or individual machines
- ▶ Various separation capacities and throughputs available for rent



Rental plant for wastewater pre-treatment in the dairy industry, approx. 15 m³/h throughput.



Container system as permanent installation in the dairy industry, approx. 35 m³/h throughput.



Container systems for sludge dewatering for rent or as permanent installations.

Water intake solutions

System solutions for the intake of river and sea water for use in drinking water production, in power plants or in desalination and industrial plants

Mechanical water purification is the first treatment stage in river and sea water extraction. It determines the efficiency of the subsequent process steps as well as the economy and safety of the entire plant during operation, whether in drinking water production, seawater desalination plants, power plants or industrial processes.

The water must be mechanically treated to such an extent that subsequent process steps are protected from possible damage by pollutants. As a first step, screen systems are used for the removal of floating debris and the separation of coarse and fine pollutants. Depending on the required water purity, fine and ultrafine screening can be added

as a supplementary cleaning stage to remove finer particles from the water.

HUBER offers its customers a comprehensive portfolio of innovative mechanical treatment systems for water intake, for both new plants and the modernisation of existing plants. The systems are customised to the individual needs and the required water quality of each project.

Apart from the prevailing flow conditions and the water quality at the extraction point, the right choice of material in the design of the screening system and corrosion protection in seawater applications are decisive here. In addition, when planning and implementing the projects, our experts take into account optimal environmental compatibility, fish protection and solutions for the jellyfish blooms that occur in coastal regions. This ensures economic operation in harmony with the environment.



Water intake solutions

Applied machine technology

HUBER Grab Screen TrashLift

- ▶ Coarse screen as first stage in intake structures
- ▶ For channel widths of up to 4 m and channel depths of up to 30 m
- ▶ Bar spacings 20 – 150 mm
- ▶ Reliable removal of coarse pollutants close to the floor
- ▶ Installation angle of 70° to 90°



The HUBER Grab Screen TrashLift is also suitable for very deep channels.

HUBER Coarse Screen TrashMax®

- ▶ Coarse screen as the first treatment stage of intake structures for the removal of bulky materials such as flotsam, debris and rubble
- ▶ High operational reliability combined with high intake and discharge capacity of the screen rakes and compact design
- ▶ Bar spacings from 20 mm
- ▶ For channel widths of up to 4 m and channel depths of up to 20 m
- ▶ Installation angle: 80°



HUBER Coarse Screen TrashMax® impresses with a high coarse material discharge rate.

Water intake solutions

HUBER Multi-Rake Bar Screen RakeMax®

- ▶ Coarse screen as first treatment stage
- ▶ High screenings discharge capacity
- ▶ For channel widths of up to 4 m and channel depths of up to 25 m
- ▶ Bar spacings 2 – 150 mm
- ▶ Installation angle up to 50° to 85°



HUBER Multi-Rake Bar Screen RakeMax® offers versatile operation.

HUBER Band Screen CenterMax®

- ▶ Fine screen as second stage in intake structures
- ▶ Centre flow principle
- ▶ Reliable removal of debris without carry-over
- ▶ Perforated plate / mesh size between 1 – 10 mm
- ▶ For channel widths of up to 4 m and channel depths of up to 18 m
- ▶ Installation angle of 90°



HUBER Band Screen CenterMax® for high separation efficiency without carry-over.

Water intake solutions

HUBER Band Screen DualMax®

- ▶ Fine screen as second cleaning stage in intake structures
- ▶ Dual flow principle
- ▶ Reduced laminar flow at the machine outlet enables shorter channels and cost optimisation of the overall structure
- ▶ Highly robust for low-maintenance operation
- ▶ Perforated plate / mesh size between 1 – 10 mm
- ▶ Channel width up to 6 m and channel depths up to 18 m
- ▶ Installation angle of 90°



HUBER Band Screen DualMax® for optimum flow conditions and high separation efficiency.

HUBER Band Screen DiscMax®

- ▶ Fine screen as second cleaning stage in intake structures
- ▶ Throughflow principle
- ▶ Reliable removal of pollutants without carry-over
- ▶ Perforated plate / mesh size between 1 – 10 mm
- ▶ Channel width up to 3.5 m and channel depths up to 25 m
- ▶ Installation angle of 90°



HUBER Band Screen DiscMax® for high separation efficiency according to the throughflow principle.

MENA-Water MBR Package Plants for Wastewater Treatment

MENA-Water offers complete MBR package plants, pre-assembled as containerized system in standard sizes. This facilitates easy transportation, fast availability and smooth start-up of the MBR plant.

Complete plug-and-play solution

Benefits of MBR Package Plants

- ▶ Well-proven, complete and clean system solution
- ▶ Compact footprint combined with convenient accessibility
- ▶ Minimum works for site installation and civil structures
- ▶ Full automatic system operation with online monitoring facility
- ▶ Adaptable to future demand due to modular system

MBR Package Plant capacity

- ▶ Standard range is up to 2,000 m³/d in one container (16,000 PE)
- ▶ Customized sizes available for bigger capacities



Compact design and mature technology.



Adaptable to future demand due to modular system.

MENA-Water Package Plants for Drinking Water Treatment

SafeDrink Package Plant

Benefits of SafeDrink Package Plants

- ▶ Pre-engineered complete system in ISO containers
- ▶ Small footprint
- ▶ Simple operation and maintenance
- ▶ Low energy consumption
- ▶ Working on gravity sand filter and lamella settler principle
- ▶ Higher throughputs possible through modular arrangement of units
- ▶ European quality components
- ▶ Fast delivery and start-up due to the mobile concept
- ▶ Very good price-performance ratio
- ▶ Highly stable process that produces quality water even during peaks
- ▶ Effectively removes turbidity, suspended solids, colour, odour and TOC
- ▶ Produces highly pure water that meets WHO Drinking Water standards

Typical applications

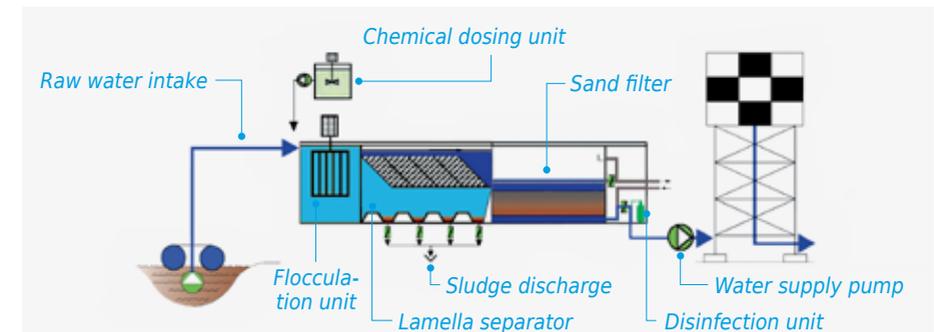
- ▶ Potable water for cities and villages
- ▶ Grey water treatment

MBR Package Plant capacity

- ▶ Standard range is up to 2500 m³/d in one container (20,000 PE)
- ▶ Customized sizes available for bigger capacities



Mobile and reliable drinking water treatment by MENA-Water.



Optimized process scheme to achieve high quality drinking water.

MENA-Water Reverse Osmosis Plant

Plug & Play Reverse Osmosis Plant

The high quality material and components from leading manufacturers are selected in order to provide quality products for a long-lasting plant and smooth operation.

The systems are suitable for the purification and treatment of seawater and brackish water. Even industrial or municipal wastewater can be treated if the MENA-Water MBR system (membrane bioreactor) is installed upstream.

Typical applications

- ▶ Drinking water
- ▶ Food industry
- ▶ Industrial effluent recycling

Reverse osmosis systems are capable of removing dissolved salts and other impurities such as bacteria, sugars, proteins, dyes and constituents with large molecular weight.

MENA-Water plants are designed, engineered, pre-assembled and factory tested with highest quality standards to provide easy and quick shipping, installation in small footprint areas and for limited site installation work to save the customer money and time.

Features

- ▶ Filtration and chemical pre-treatment
- ▶ 8" & 4" TFC energy-saving membranes
- ▶ Membrane FRP pressure vessels
- ▶ Corrosion-resistant high-pressure pumps

- ▶ PLC electrical control panel for auto control from HMI
- ▶ Panel mounted flow meters, TDS, pH, ORP meter / controller
- ▶ Low and high pressure switches
- ▶ Post-treatment (e.g. disinfection, neutralisation)
- ▶ Stainless steel Bourdon tube pressure gauges
- ▶ Corrosion resistant high pressure piping
- ▶ Corrosion resistant steel frame
- ▶ Auto-flush system

MBR Package Plant capacity

- ▶ Standard range is up to 2,500 m³/d in one container (20,000 PE)
- ▶ Customized sizes available for bigger capacities



Pre-treatment stage using ultra filtration for suspensions removal.



Post-treatment stage for salinity removal.

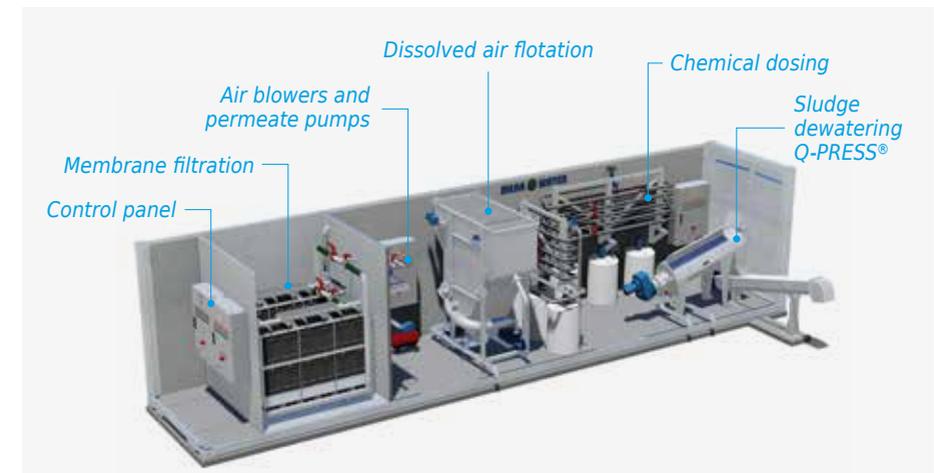
MENA-Water Package Plant for Industrial Wastewater

Process water and waste water treatment is critical for every industry. Industrial wastewater treatment needs are different from municipal wastewater treatment. Each industry has its own set of requirements which determines treatment needs: from ultra clean process water to recycling of waste water. In our Package Effluent Treatment Solutions, MENA-Water considers the optimal design, selection of durable equipment and professional project execution with minimal maintenance requirements.

As a specialist in industrial wastewater treatment MENA-Water offers different solutions for all types of industries as complete systems including package plants that can include physical chemical processes and advanced biological system incorporating MBR technology followed by reverse osmosis for complete reuse.

Benefits of Industrial Package Plants

- ▶ Pre-engineered and pre-assembled
- ▶ Factory tested plug & play versions
- ▶ Permanent solutions – stainless steel
- ▶ Small footprint and optimised design
- ▶ Quality components (EU)
- ▶ Redundant components
- ▶ Easy to operate & maintain
- ▶ Eco-friendly features
- ▶ Optimised OPEX – low operation costs
- ▶ Online web based monitoring
- ▶ Mobile versions available



Package plants for industrial wastewater treatment.

Safety for Potable Water and Wastewater – Safe Access Solutions

HUBER stainless steel products are the best for use in water supply or municipal and industrial wastewater treatment.

Our professionally manufactured products made of stainless steel meet the strictest requirements:

- ▶ Unparalleled life
- ▶ Optimal corrosion protection after passivation by pickling in an acid bath
- ▶ Standardisation saves costs and simplifies design
- ▶ Safety for people and the environment

It is our objective to offer perfect products to our customers. Our well-trained and highly motivated employees manufacture our products in our state-of-the-art stainless steel only factory to guarantee consistently high product quality. We have the philosophy that a high degree of vertical manufacturing integration is in the best interests of our customers. To prevent any cross-contamination of our stainless steel products with carbon steel rust and dust, we use only stainless steel in our factory. Our machinery and manufacturing processes are specifically designed for the material stainless steel. Every stainless steel product, before it leaves our factory, is passivated by full submergence in an acid (pickling) bath for perfect surface finishing and corrosion protection.

As potable water is our most important resource and should sufficiently be available for all people, HUBER considers it especially important to offer innovative treatment techniques particularly for this field.

Drinking water must be pure, i.e. clear and free of pathogens, odour and colour. To comply with these requirements, certain standards have to be met during collection, treatment and distribution of the drinking water.

Many waterworks, however, do not meet these standards and are a danger to our health and environment. It is important to identify such risks as early as possible to prevent further damage.

We have developed systems for waterworks that prevent contamination of drinking water, such as special air filtering systems. As the water level in drinking water reservoirs changes, air is drawn in and out.

In the course of this process oxygen, nitrogen and other particles contained in the air pass into the water chamber. If the air entering the reservoir contains particles, micro-organisms like germs, spores, pollen or fungi, the drinking water becomes contaminated.

Our air filter systems, with integrated filter media, retain dust and other fine particles and therefore prevent contamination and health hazards.

Safety for Potable Water and Wastewater – Safe Access Solutions

The HUBER product range includes of course additional products made of stainless steel that meet the state-of-the-art standards in all fields. In any case, an overall concept must be developed and consistently implemented for all areas of the building and system technology.

The material stainless steel offers all possibilities. Combined with careful professional treatment, stainless steel products are a guarantee for an unsurpassed life span and optimal equipment performance.



Manhole covers

Manhole covers with a centrally raised profile

- ▶ Round and rectangular stainless steel manhole covers
- ▶ Easy to handle by a single person, no maintenance
- ▶ Attack proof, certified to security of DIN EN 1627, resistance class RC3



HUBER manhole cover certified to resistance class RC3.

Manhole covers flush with the ground

- ▶ Certified to DIN EN 124, resistance class A15, B125, D400 and E600
- ▶ Attack proof, certified to security of DIN EN 1627, resistance class RC3
- ▶ Installation flush with the ground



Load bearing HUBER Manhole Cover SD7.

Safety climbing systems

Safety climbing systems

- ▶ Security tested, with CE label
- ▶ Access ladders and climbing devices with or without fall protection
- ▶ Suitable entrance aids



HUBER safety access ladder with fall protection.

Entrance aids

- ▶ In accordance with DIN 19572
- ▶ Safe access
- ▶ Various design options



HUBER Entrance Aid EH KV, folding, extendable.

Technical doors

Stainless steel doors

- ▶ Attack proof, certified to security of DIN EN 1627, RC3 and RC4
- ▶ Single and double doors
- ▶ Heat-insulated to minimise condensation



Attack-proof HUBER security door.

Pressure-tight doors

- ▶ Pressure-tight up to a water gauge of 30 m (3 bar)
- ▶ For embedding in concrete or retrofitting through bolted fixing
- ▶ All materials compatible with drinking water



Pressure-tight HUBER doors for safe access to reservoirs.

Hygiene in drinking water reservoirs

Hygiene in drinking water reservoirs

- ▶ Hygiene in water supply and storage
- ▶ Clean air = clean water
- ▶ Pathogen and germ retaining filters



HUBER Air Filter Plant for clean drinking water.

Active forced ventilation

- ▶ Proven complete system with pipe ventilator
- ▶ Minimised condensation, prevention of structural damage
- ▶ Improved hygiene in reservoirs with little dynamics



HUBER complete system of active forced ventilation.

HUBER Global Service – always there for you!

Start a long-term relationship with a competent partner at your side – HUBER Global Service.

With our worldwide HUBER service locations, we are your competent contact around the clock. Even for complex challenges, we will find an economical and sustainable service solution for you and ensure smooth and reliable plant operation.

With our comprehensive service product portfolio, starting from installation and commissioning to spare parts supply, repair and preventive maintenance, we stand for all-round service.

All necessary repair and maintenance work is carried out in manufacturer quality and exclusively with original parts. Preventive service measures ensure that your system is always available.

With our services, we ensure the long-term value retention of your machine, the minimisation of downtimes and the maximum efficiency of your machine technology.

In order to meet the constantly increasing demands, it is our special concern to always grow with these demands and to develop further – your requirement is our incentive!

We stand for excellent quality, punctual and high-quality processing, many years of experience and professional competence!

A strong and reliable partner – for the lifetime of the machine!

Your trust is our promise!



Available worldwide and active for you.

HUBER Global Service – always there for you!



Specialists on site for you.

HUBER service engineers

- ▶ Highly qualified personnel
- ▶ Outstanding quality of the work carried out
- ▶ Continuous training and further education on new products and the latest techniques
- ▶ Comprehensive know-how
- ▶ Selected planning especially for your requirements
- ▶ Environmentally conscious – digital process handling

Warranty on services performed

Global HUBER Consultancy Service

- ▶ On-site advice from competent service specialists
- ▶ Information on the operation and condition of your machine
- ▶ Important information on necessary measures
- ▶ Many years of practical experience worldwide as a HUBER service technician



Customer proximity is our highest priority – on-site consultancy by HUBER experts.

Our HUBER service consultants speak the same language as the operating and maintenance personnel at wastewater treatment plants

HUBER Global Service – always there for you!

Original spare parts

- ▶ Manufacturer expertise (OEM)
- ▶ Guaranteeing compliance with all requirements for accurate fit and material quality
- ▶ In compliance with all safety requirements
- ▶ Complete corrosion protection from pickling bath and passivation
- ▶ Reliable long-term spare parts supply

Only original HUBER spare parts meet all requirements for optimal use in your HUBER machine.



Specially developed for the flawless operation of your machine.

HUBER service academy

- ▶ Operator training & needs-based training concepts
- ▶ On site or in our HUBER factory
- ▶ For new employees or to optimise and further develop existing knowledge
- ▶ Theoretical knowledge transfer & practical handling of machine and process technology
- ▶ Reduce operating costs & optimise performance

This provides your employees with knowledge of the highest quality!



Technical and specialist expertise to optimally develop your employees with the latest qualifications.

HUBER Global Service – always there for you!



Sharing expert knowledge effectively and remotely.

Augmented reality and remote support centre

- ▶ The use of data glasses enables direct individual communication with a HUBER expert
- ▶ HUBER service expertise – live for every customer, anywhere in the world – via specially established communication centres
- ▶ Projection and on-screen instructions onto a display built into the smart glasses for interactive support

Installation and commissioning

- ▶ By highly qualified HUBER service engineers
- ▶ Execution according to regulations including function test
- ▶ Instruction and training of site staff for ideal operation of the system



Successful start of operation due to professional installation.

HUBER Global Service – always there for you!

Repairs

- ▶ Minimisation of downtimes
- ▶ High level of expertise & highly flexible service team
- ▶ Warranty on work performed

Factory repairs

- ▶ Disassembly on site & transport to the HUBER plant
- ▶ Complete overhaul with warranty
- ▶ Installation & recommissioning with performance test



Efficient and professional execution.

Service for products from other manufacturers

- ▶ All service solutions from one source
- ▶ Repair service
- ▶ Maintenance service
- ▶ Spare parts service
- ▶ Plant optimisation service



Comprehensive service expertise from one source.

HUBER Global Service – always there for you!

Operational support

- ▶ Support of your staff in operating your plants by HUBER service specialists
- ▶ Training and expert advice for operating personnel on site
- ▶ Development of individual operating solutions
- ▶ Service concept tailored exactly to your requirements
- ▶ Optimum operation of the entire plant



Transfer of know-how to the operating personnel for optimum operation of the entire system.

System optimisation

- ▶ Determination of the current status by analysing machine parameters such as operating hours, consumption of consumables, etc.
- ▶ Development of a machine and plant optimisation concept
- ▶ Derivation of necessary optimisation measures
- ▶ Guarantee of economic operation



Expert support for the optimal operation of your plant.

HUBER Global Service – always there for you!

Plant refurbishment

- ▶ Consideration and demonstration of the economic efficiency of a refurbishment
- ▶ Development of a refurbishment plan based on your specific requirements
- ▶ Definition of necessary work
- ▶ Ensuring the service life of your plant through value-preserving service measures



Conserving resources – in the spirit of sustainability.

Retrofit – Control unit replacement

- ▶ Everything from a single source: one contact person for machine and control system
- ▶ Control system perfectly adapted to the machine
- ▶ Checking and replacement of the hardware
- ▶ Latest software releases
- ▶ Trouble-free installation according to the latest regulations, including all test protocols
- ▶ Fast availability of spare parts



Steer into a safe future in good time with new technologies.

HUBER Global Service – always there for you!

HUBER service and maintenance concepts

A HUBER Service and Maintenance Contract will guarantee you maximum operating reliability for you and your plants at constantly high system performance and at the same time low and calculable operating costs!

The contract provides regular, load and status dependent maintenance and detailed inspection by a HUBER service engineer. The detailed result of each inspection and maintenance is subsequently exactly documented in a machine-specific HUBER checklist. It goes without saying that with every HUBER service contract we also

guarantee the operational safety and availability of your equipment until the next service date. You get the “HUBER-Machine-Protection” service package as a function & operation guarantee to cover this!



Type HS 1	Type HS 2	Type HS 3	HUBER FULL SERVICE
<ul style="list-style-type: none"> ✓ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists ✓ Ensuring functional and operational safety with the “HUBER Machine-Protection-Letter” 	<ul style="list-style-type: none"> ✓ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists ✓ Ensuring functional and operational safety with the “HUBER Machine-Protection-Letter” ✓ 24/7 Hotline-Service ✓ 48-hour emergency service 	<ul style="list-style-type: none"> ✓ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists ✓ Ensuring functional and operational safety with the “HUBER Machine-Protection-Letter” ✓ 24/7 Hotline-Service ✓ 48-hour emergency service ✓ Machine and plant optimisation package 	<ul style="list-style-type: none"> ✓ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists ✓ 24/7 Hotline-Service ✓ 48-hour emergency service ✓ Spare parts and wear parts including shipping and transport costs ✓ Repairs and replacements of spare parts and wear parts ✓ Travel costs and associated additional expenses of the HUBER service technician assignment ✓ On-call service and weekend standby of our service technicians

On the safe side with a HUBER Service partnership.



HUBER SE

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0.1 – 1.2024 – 5.2016