HUBER TECHNOLOGY
WASTE WATER Solutions

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 1300 employees worldwide.

At our headquarters in Berching, more than 800 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 has been aquired 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 **www.huber.de**

If you wish to discuss your needs, please ask our experts for advice and support.

Fields of Activity

Wastewater Screening

Screens for any application

Screening is indispensable as the first step of municipal and industrial wastewater treatment.

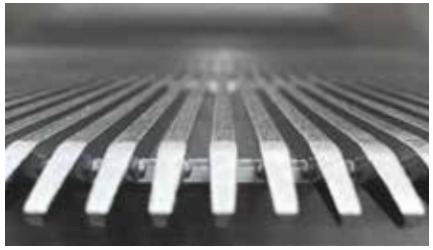
Debris must be removed in order to protect subsequent treatment processes from clogging and/or damage. Floating, settling and suspended solids are retained, depending on the bar spacing or perforation diameter, removed and finally discharged.

Based on the same ROTAMAT® principle “screening – washing – conveying – dewatering in a single unit” a family of ROTAMAT® screens has been developed and successfully introduced in the global market of wastewater treatment. In recent years the STEP SCREEN® and later the MAX® and LIQUID families have been added.

We offer the perfect HUBER screen for:

- any installation condition
- any flow rate
- any spacing or perforation size
- any application

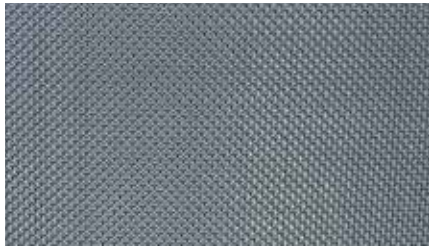
Bar screen.



Wedge wire.

Rolled perforated plate.

Bent perforated plate.



Mesh screen.

Wastewater Screening

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 application of 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® system

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 pre-thickened in a continuous thickener prior to being further thickened in a mechanical thickening system for subsequent anaerobic treatment.

Wastewater Screening

HUBER Grab Screen TrashLift

- Coarse screen system for the most demanding fields of application
- Small space requirement: 70°– 90° installation angle
- Channel width up to 4 m and channel depth up to 40 m
- Bar spacing 20 mm – 150 mm
- Reliable removal of large debris and sediment loads
- Easy to retrofit into existing channels

HUBER Grab Screen TrashLift for the reliable removal of large coarse materials.

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®.

Wastewater Screening

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

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 ≥ 6 mm

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

HUBER Multi-Rake Bar Screen RakeMax®

- High screenings 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® Hybrid
  - RakeMax® J
  - RakeMax® HF
- Bar spacing ≥ 1 mm

Wastewater Screening

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
- Unsusceptible 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.

Wastewater Screening

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

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

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

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
- Screen perforation ≥ 1 mm

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

- Screening, conveying, washing, dewatering and compaction in a single unit
- With integrated screenings press
- With integrated screenings washing (IRGA)
- Rotating screen basket with wedge wire or perforated plate
- Very high separation capacity due to fine slot widths

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

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

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
- Perforated plate 1 / 1.5 / 2 mm

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

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
- Wedge wire spacing: 0.5 – 6 mm
- Perforations: 2 – 6 mm

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 STEP SCREEN®.

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®.

Wastewater Screening

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

HUBER Sludge Acceptance Plant ROTAMAT® Ro3

- With the robust Fine Screen ROTAMAT® Ro1 or Micro Strainer ROTAMAT® Ro9
- With integrated screenings press
- With integrated screenings washing (IRGA)
- Optional with integrated grit trap (compact version ROTAMAT® Ro3.3)

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

HUBER Sludge Acceptance Plant RoFAS

- 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

Wastewater Screening

HUBER Screw Conveyor ROTAMAT® Ro8 / Ro8 T

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

HUBER Screw Conveyor ROTAMAT® 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

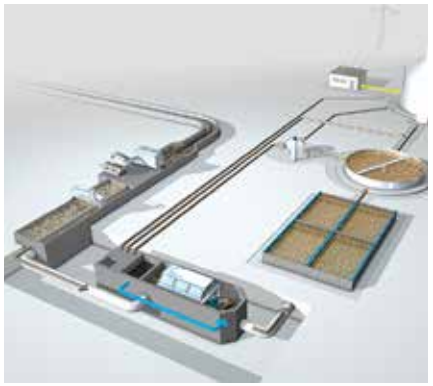
HUBER Drum Screen RoMesh® screen for the removal of fine and finest particles.

Wastewater Screening

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

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



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

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 AFS and COD reduction rates achieved by fine screening technology
- Low space requirements

Screenings Treatment

The first step in wastewater treatment is normally the removal of solids from the wastewater flow by means of screens. 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 treat ment is washing and compaction with a wash press. Fecal 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. 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 com pacted 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 con sequently the disposal costs.

HUBER Wash Press WAP®

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

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

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
- High BOD_5 return
- Quality factor of washed screenings: < 20 mg BOD_5/g DR
- Automatic wear detection
- Ideal for launder channels
- Dewatering performance of up to 50% DR
- 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 for launder channel operation

- 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 reasons 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 m^3 of wastewater according to DWA Work Sheet M369) from the digestable 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. Furthermore, wear of mechanical equipment, such as centrifuges, can be reduced.

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 most common grit separating systems in use are grit channels, circular grit traps and vortex grit traps. Grit is either separated by gravity sedimentation (grit channels) or centrifugal force (circular and vortex grit traps). Scrapers or screw con veyors are frequently used in grit channels for grit collection.

Pumps, inclined screw conveyors or integrated grit classifying screws are used for grit removal. Solids removal in the further course of the process is effected 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. Unaerated 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.

HUBER Complete Plant ROTAMAT® Ro5

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

HUBER Complete Plant ROTAMAT® Ro5 HD with Hydro-Duct feeder – the compact wastewater treatment plant.

HUBER Complete Plant ROTAMAT® Ro5 HD

- With a 0.5 – 10 mm screen
- High capture rate of 95 % / ≥ 0.20 mm
- For flows 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

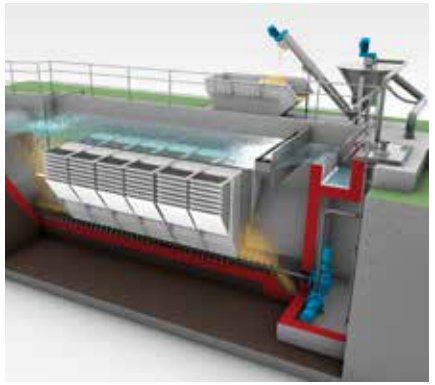
HUBER Coanda Complete Plant ROTAMAT® Ro5 C

- 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 ≥ 75 µm grain size is separated
- Optional aeration and large grease trap
- Maximum throughput capacity 850 l/s
- Stainless steel grit trap or concrete tank design



HUBER Grit Trap GritWolf® with subsequent grit washing plant.

Grit Separation

A pair of HUBER Circular Grit Trap HRSF systems.

HUBER Circular Grit Trap HRSF

- Available with stainless steel tank or for installation into a concrete tank
- High grit capture rate due to the inlet-induced rotational movement of the wastewater
- High grit separation of 95% / ≥ 0.20 mm
- Small footprint
- For flows up to 140 l/s
- Optional grease trap
- Optional integrated grit classifying screw

HUBER Vortex Grit Chamber VORMAX.

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 3000 l/s per unit
- 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

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. The high content of organic material, the wide volatile solids ratio of 10 to 80 %, is the reason why such grit slurries do not dewater well. The solids concentration remains somewhere between.

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.

Treatment of grit from wastewater treatment plants

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 costeffective 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 grit from sewer flushing 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 grit size
- 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 instead 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

Sturdy unit: external grit acceptance made easy.

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 m^3 storage volume
- Variable coarse material separator
- No ponding of water inside the tank

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

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)

Filtration and Micro-Screening

Advanced Wastewater Treatment

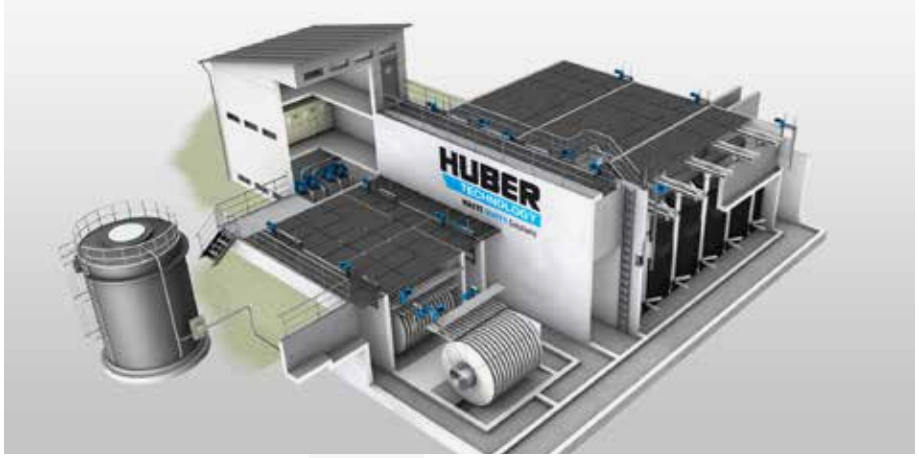
All EU member states have committed themselves to implementing the EU Water Framework Directive by the end of 2027 at the latest. The binding goal is for all water bodies to have a "good or very good ecological and chemical status" by then.

In order to achieve this ambitious goal, the requirements for discharge criteria of municipal wastewater treatment plants will become much stricter and more demanding in the near future. The focus is primarily on the extensive removal of dissolved organic micropollutants and a greater reduction of phosphorus inputs into water systems.

Although binding legal framework conditions for the elimination of trace substances are not yet in place in many countries, more and more municipalities and associations are thinking about how these additional purification stages could be optimally implemented in the near future.

It is of great advantage to have an eye on the synergy effects of solids, phosphorus and micropollutant removal in order to make best use of them, taking into account all individual boundary conditions.

For these individual challenges, HUBER provides versatile and proven product solutions with its ideally matched product portfolio of cloth filtration, micro-screening, sand filtration and activated carbon adsorption.



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

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 fabric. 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 substances 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)
- Primary clarifier replacement, for carbon removal (HUBER CarbonWin®)
- 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

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 in 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 Active Carbon Filter CONTIFLOW® GAK applications:

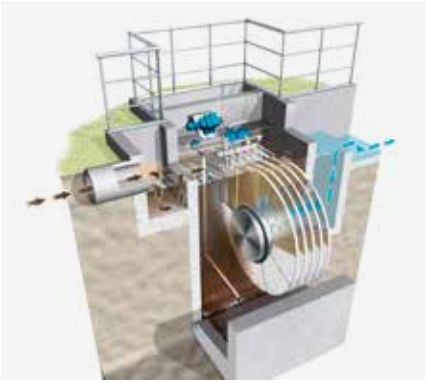
- Advanced treatment for the elimination of trace substances ("fourth treatment stage")
- Biological secondary filtration following ozonation ("BAC filtration")
- COD reduction: removal of dissolved organic compounds (process waters, condensate treatment)

Advanced wastewater treatment for 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®

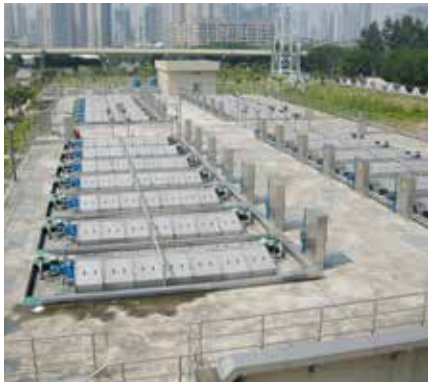
- Innovative, high-quality pile fabric for highest separation efficiencies
- High throughput capacity with low space requirement
- Gravity system, no lifting of wastewater required
- No rinsing water required for cleaning
- Continuous filtration even during filter cleaning
- Reliable separation of filterable solids
- Reliable retention of activated carbon powder in processes for the removal of trace substances



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 low space requirement
- Gravity system, no lifting of wastewater required
- 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®, stainless steel design.

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 filtrate as wash water
- Reliable separation of filterable solids
- Reliable retention of activated carbon powder in processes for the removal of trace substances

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

HUBER Active Carbon Filter CONTIFLOW® GAK

- Adsorption process with granulated activated carbon (GAC, German GAK)
- Ideal for advanced treatment for the removal of trace substances
- Easy integration on existing plants
- No shutdowns necessary for backwashing the filter bed
- No complicated, cost-intensive backwash technology for filter bed cleaning
- Activated carbon can be reactivated

Storm Water Treatment

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

An important part of our efforts to protect the environment in general, and our water resources in particular, is treatment of storm water and of overflows from combined sewer systems. The quality of many rivers, lakes and seas has significantly improved following the upgrading of old and construction of new waste water treatment plants. However, despite all these efforts and invest ment, there is still considerable pollution of our water bodies caused by combined and sanitary sewer over flows (CSOs and SSOs) during storm events. For the purpose of specific environmental protection appropriate measures will have to be taken in future to minimize these problems.

Screens for sewer overflows

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

As a result of climate change and the associated heavier rainfalls with strong screenings flushing in the combined sewer, the focus in the coming years must be placed more strongly on screenings handling. Especially in storm water overflows with unfavourable flow conditions, common system solutions without defined screenings discharge can quickly reach their limits. The result is overflowing of the screenings and discharge of screenings into the nearby watercourse.

In order to be able to work out 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. This is the only way to ensure that combined sewage screening works satisfactorily even with high coarse material loads and to avoid the discharge of unscreened sewage.

Storm Water Treatment

Storm water retention in sewer systems

Another HUBER focus are intelligent and efficient systems for controlled storm water retention in sewer systems. In order to save investment and operating costs, it is essential to utilize the existing sewer volumes more effectively for storm water retention by controlling the water levels within the system.

In many cases, with such an intelligent approach, construction of additional retention tanks can be avoided. Pollution by unavoidable storm water overflows can be minimized by installation of storm screens.

Discharged flow volume measurement

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 occurance 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 equipment.

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
- For problem-free retrofitting into existing structures

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

Storm Water Treatment

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

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 Pumping Stations Screen RoK4 with heating for outdoor installation.

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 sedimentation
- Easy retrofitting into existing structures
- Can be easily removed for maintenance above ground level

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 to be applied 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 innovative HUBER ThermWin system which has been developed especially for such applications uses the HUBER RoWin Heat Exchanger. 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:

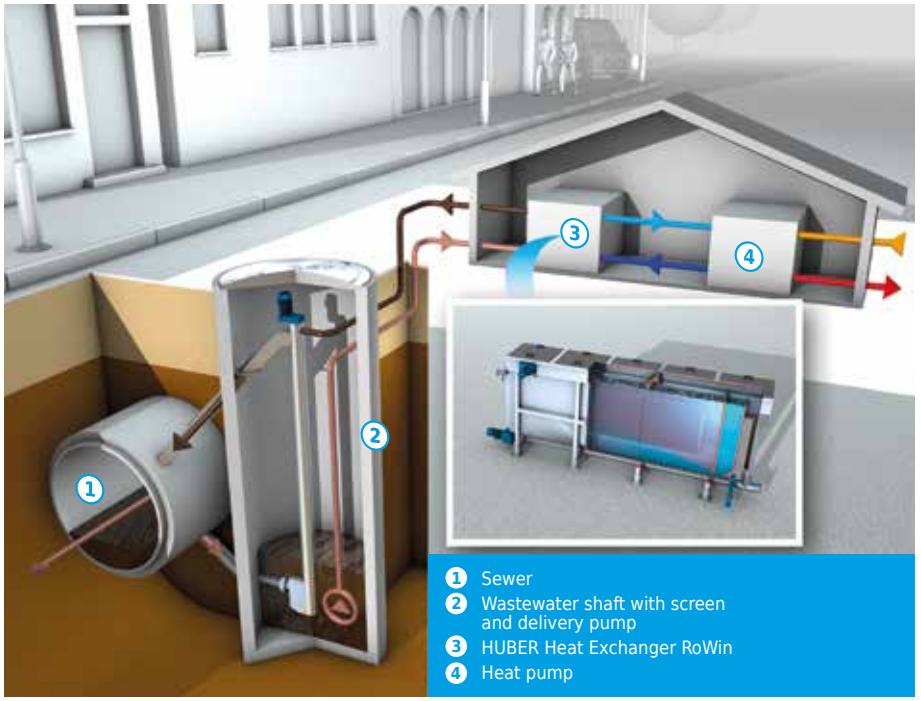
A partial flow of the wastewater streaming through the sewer is passed through a screen to remove the coarse material from the wastewater flow. Preceding screening of the wastewater is necessary to prevent blocking of the heat exchanger.

The prescreened wastewater is lifted and flows by gravity through the above ground installed heat exchanger, the cooled wastewater 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 offers the following important advantages:

- Efficient use of a regenerative energy source
- Cost-effective, ecological system
- Fast implementation and utilisation of a rarely used resource
- Reduction of CO_2 emissions
- Decoupling from fossil fuel use
- Permanently available heat potential
- Long-term safe, renewable energy source
- Independence of sewer geometry
- Easy maintenance of all components
- Simple but efficient control strategy
- Cooling and heating with one single plant

HUBER Heat Exchanger RoWin

- Compact, odour-tight plant
- Continuous maximum heat transfer capacity
- Automatic cleaning of the heat exchanger surfaces
- Fully automatic operaiton
- Continuously stable hydraulic conditions
- Unsusceptible 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.

HUBER Heat Exchanger RoWin C installed in a concrete channel.

HUBER Heat Exchanger RoWin C

- Can be installed directly in the wastewater flow
- No additional floor space required
- Ideal utilisation of the WWTP 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

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 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 the approach to recover the phosphorus contained within sewage sludge. Against this political and economic background it is understandable that the sewage sludge disposal issue can be discussed quite controversially.

Even if there is no generally accepted concept for future sewage sludge disposal existing presently, adequate sludge pretreatment 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 45%. This means that one cubic metre of digested sewage sludge contains 950 l, which would permanently 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 screening:

- Coarse material separator

Sluge thickening:

- Disc thickener
- Belt thickener
- Screw thickener

Sludge dewatering:

- Screw press
- Belt filter press

Sludge drying:

- Solar dryer
- Belt dryer
- Disc dryer

Sludge drying:

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

Mechanical Sludge Treatment

Mechanical sludge treatment primarily comprises 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 therefore undisturbed further treatment of the sludge, irrespective of the subsequent treatment methods applied. Operating problems, such as clogging of pipelines, pumps, heat exchangers or downstream filtration units, tressing on stirrers and aeration plants, scum in settling and sludge tanks as well as damage in downstream drying units, can reliably be prevented by using HUBER sludge screens.

The STRAINPRESS® is a horizontal, pipe-shaped coarse material separator. The coarse material is separated continuously under pressure and periodical cleaning of the screening zone by backwashing is thereby not required.

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 seletion 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.

Sludge dewatering

Sludge produced in municipal and industrial wastewater treatment plants requires dewatering prior to further treatment or utilisation. In view of increasing sludgedisposal costs it has become necessary to concentrate the sludge to a high solids content. HUBER offers for this purpose commonly known systems for continuous sludge dewatering, e.g. belt filter presses, but has also developed a machine for smaller and medium-sized wastewater treatment plants, the HUBER Screw Press.

It is this wide range of products combined with many years of experience that enables HUBER to select the best suited technology for each individual application.

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

HUBER conveyors for any installation situation.

HUBER Screw Conveyor Ro8 V

- Conveying height up to 15 m
- Throughput capacity up to 6 m^3/h
- Minimum maintenance requirements as the screw speed can be adjusted to the operation
- Centrally supported screw conveyor

HUBER Sludgecleaner STRAINPRESS®

- Throughput capacity up to 200 m^3/h
- Continuous coarse material separation under pressure
- No washwater needed
- Suitable for pressure-fed pipelines (in-line installation)
- Integrated coarse material dewatering
- Two system sizes
- Adjustable screen perforation
- Completely made of stainless steel

HUBER Sludgecleaner STRAINPRESS® – continuous pressurised coarse material separation.

HUBER Disc Thickener S-DISC

- Throughput capacity up to 40 m^3/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/m^3

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 m^3/h
- Two sizes available
- High solids capacity
- Enclosed design to eliminate odour nuisance
- Completely made of stainless steel
- Low wash water demand
- Low energy consumption

HUBER Belt Thickener DrainBelt – applications worldwide.

HUBER Belt Thickener DrainBelt

- Feed capacity up to 100 m^3/h
- Four sizes available
- Low polymer consumption
- Minimum operating costs
- Extremely high degree of separation
- Variable belt speeds
- Low energy consumption

HUBER Bogenpress B-PRESS

- Belt filter press
- Feed capacity up to 1000 kg_{DR}/h
- Three sizes available
- Versatile sludge press
- 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 operation
- 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

Thermal Sludge Treatment

Future-proof sewage sludge treatment

The existing and future challenges in sewage sludge treatment require that the generated dewatered sewage sludge is 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.

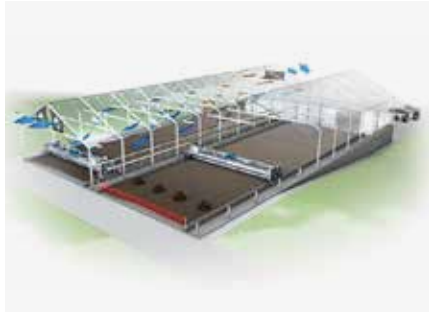
Thermal energy from different energy sources

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.

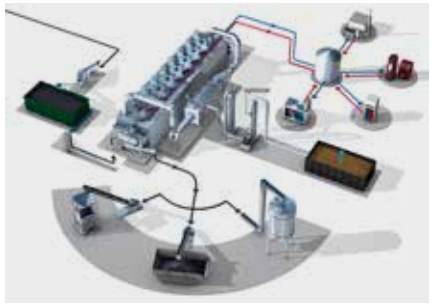
Thermal Sludge Treatment

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

Solare sludge dryer:
In a greenhouse where a mechanical sludge turner is installed, the sludge is dried to a solids content of usually 65% DS. 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% DS up to 95% DS. 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 is 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

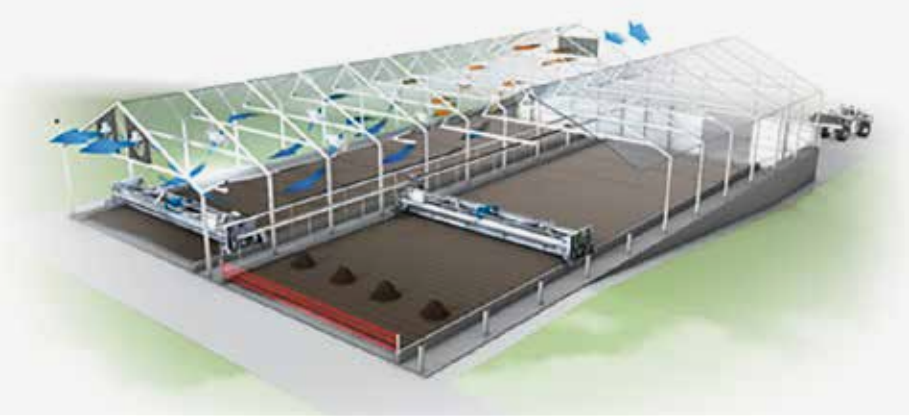
Solar sewage sludge drying

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 is the transport of sludge in the turner shovel, i.e. the sludge turner takes up some sludge at a defined point and transports it inside its 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 such a 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 selfregulating 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 back-mixing of already dried material.

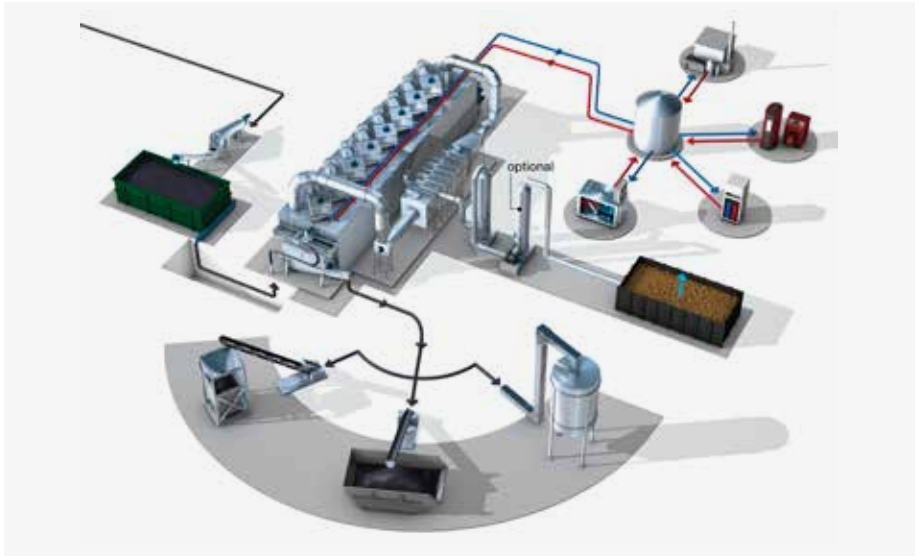
Low process temperatures of approx. 70 to max. 150°C ensure safe operating conditions and open up the possibility of efficiently using waste heat at low temperature levels, such as in CHP plants. The fully automatic plant control system with clear process visualisation reduces the need for operator attendance 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 demand 0.8 – 0.85 kWh/kg_{water}
- Electrical energy demand 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, for a self-sustaining and energyefficient incineration.

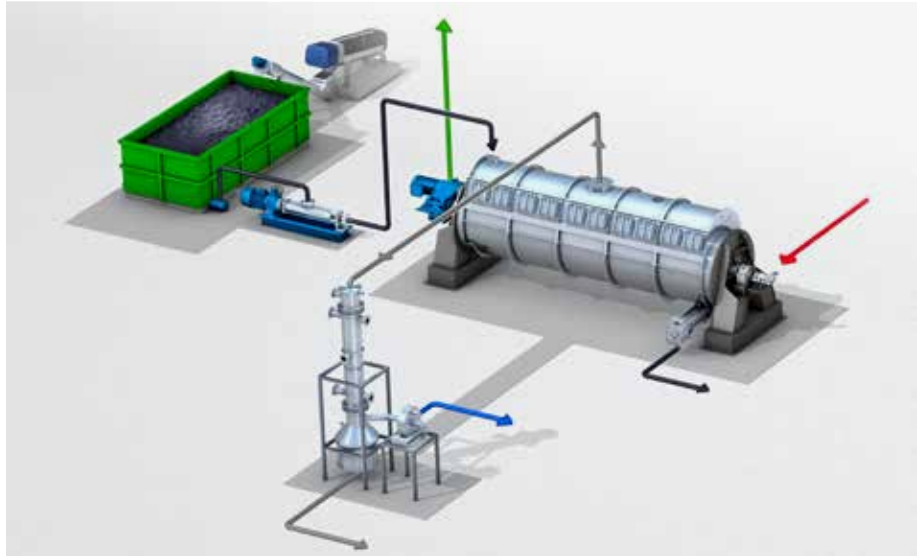
The excess steam from the electricity production is used as heating medium. A reliable condensate removal system, an innovative control system and an optimised feed system make the HUBER Disc Dryer RotaDry® the perfect sewage sludge dryer for subsequent incineration.

Thermal Sludge Treatment

A HUBER Disc Dryer RotaDry® during installation on site.

HUBER Disc Dryer RotaDry®

- Partial drying to 40 to 45% dry residue (DR)
- Homogeneous drying to a DR required for self-sustaining sludge monoincineration
- Throughput of approximately 8 to 15 t/h dewatered sludge with 25% DR
- Water evaporation from 3.5 to 5.5 t/h per dryer
- Exhaust steam from turbine as heat carrier
- Compact design
- Proven and durable technology
- Thermal energy demand approx. 0.85 kWh/kg_{water}
- Electrical energy demand approx. 0.03 – 0.05 kWh/kg_{water}



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. Nonflotatable 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

DIGIT-DOSE saves operating resources and working time.

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

Industrial Wastewater Treatment

Industrial customers earn their money with the production and sale of their products or generation of energy, e.g. biomass energy. Although the treatment of production wastewater and sludges is not their core business but of secondary importance compared to production, orderly wastewater treatment and reuse of residual materials is absolutely necessary not only from the business management point of view but demonstrates ecological awareness and can therefore even be part of a company's business philosophy.

We understand your needs!

HUBER as partner in the field of wastewater and residue treatment develops solutions and provides advisory service 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 to take is '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 also includes production sludge. Sludge treatment and utilisa tion 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 offers therefore also 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!

Industrial Wastewater Treatment

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)

Processes:

- 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

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

Industrial Wastewater Treatment

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

Processes:

- 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

Equipment:

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

Dissolved Air Flotation Plant for reliable wastewater treatment.

RoWin Heat Exchanger for energy recovery.

Industrial Wastewater Treatment

HUBER Dissolved Air Flotaton Plant HDF for solids separation in a beverage industry.

HUBER Screw Press Q-PRESS® for surplus sludge dewatering in mineral water / mixed beverage industry.

Beverage industry / breweries:

- Breweries
- Malt factories
- Distilleries, wine producers
- Non-alcoholic beverages
- Mineral water industry
- Fruit juice industry

Processes:

- Pre-screening (broken glass, bottle labels, ...)
- Removal of settleable solids
- Reduction of COD and solids
- Direct and indirect discharge
- Minimisation of sludge and residues

Equipment:

- Fine screening > 0.2 mm
- Grit traps and grit washing
- Dissolve air flotation
- Sludge thickening and dewatering
- Biomass separation, tertiary filtration
- Energy recovery and wastewater cooling

Industrial Wastewater Treatment

Disposal industry / biowaste / biogas:

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

Processes:

- Coarse screens, special screeens
- 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

Equipment:

- Grit acceptance tank
- Specially designed coarse screens
- Grit traps and grit washing (special machines)
- Dissolved air flotaion 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.

Industrial Wastewater Treatment

Sludge drying in industry with the HUBER Belt Dryer BT.

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

Wood processing industry / paper industry:

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

Processes:

- 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

Equipment:

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

Industrial Wastewater Treatment

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

Processes:

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

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

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 intakes, 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.

Applied machine technology

HUBER Grab Screen TrashLift

- Coarse screen system as first stage in intake structures
- For channel widths of up to 4 m and channel depths of up to 40 m
- Bar spacings 20 – 150 mm
- Reliable removal of large debris and sediment loads
- Installation angle of 90°

HUBER Grab Screen TrashLift for coarse material removal.

HUBER Band Screen CenterMax® HF

- Fine screen as second stage in intake structures
- Centre flow principle
- Reliable removal of debris without carry-over
- Bar spacings 2 – 10 mm (mesh or perforated plate)
- For channel widths of up to 3.5 m and channel depths of up to 25 m
- Installation angle of 90°

HUBER Band Screen CenterMax® HF as second stage of drinking water treatment.

HUBER Band Screen DiscMax®

- Fine screen as second stage in intake structures
- Throughflow principle
- Reliable removal of debris without carry-over
- Bar spacings 2 – 10 mm (mesh or perforated plate)
- For channel widths of up to 3.5 m and channel depths of up to 25 m
- Installation angle of 90°

HUBER Band Screen DiscMax® as second stage in a water intake process.

HUBER Multi-Rake Bar Screen RakeMax® V

- Coarse screen as first treatment stage
- High screenings discharge capacity
- For channel widths of up to 5 m and channel depths of up to 25 m
- Bar spacings 15 – 150 mm
- Installation angle of up to 90°

River water screening with the HUBER Multi-Rake Bar Screen RakeMax® V for high volumes of wastewater.

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 straight 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

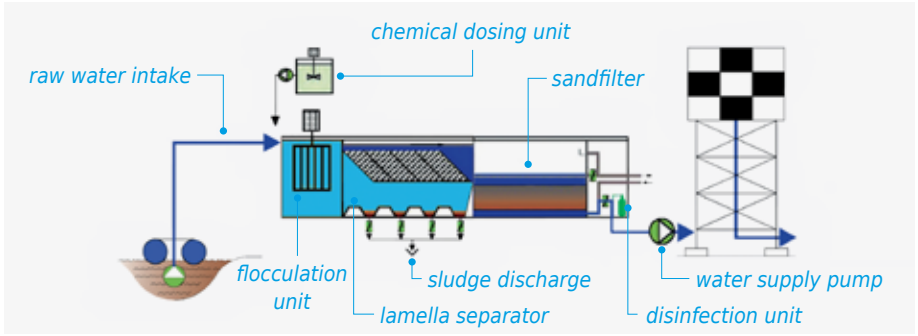
Typical applications

- Potable water for cities and villages
- Grey water treatment

SafeDrink 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 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 long life time of plant and smooth operation.

The system is suitable to purify and treat seawater, high brackish, brackish, and even industrial or municipal water when treated with the Membrane Bioreactor (MBR) prior to the reverse osmosis plant.

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, factory tested with highest quality standards to provide easy and quick shipping, installation in small footprint area and for limited site installation work to save the customer money and time.

Standard 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 chlorination and pH adjustment
- Stainless steel Bourdon tube pressure gauges
- Corrosion resistant high pressure piping
- Corrosion resistant steel frame
- Auto-flush system

Reverse Osmosis 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.

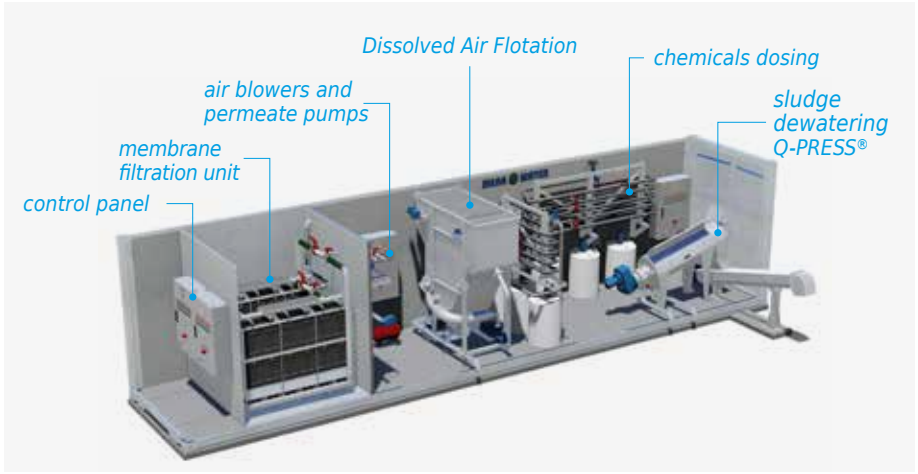
MENA-Water Package Plant for Industrial Wastewater

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. MENA-Water considers in our Package Effluent Treatment Solutions 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 ideal for water and wastewater treatment applications – whether municipal or industrial.

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

- Unparalelled life
- Optimal corrosion protection after passivation by pickling in an acid bath
- Standardisation saves costs and simplifies design
- Excellent hygienic characteristics for health and safety

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.

Potable water is a most important resource that should be available for all people in sufficient quantity and quality. We offer the highest quality products for the treatment of drinking water.

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.

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

All HUBER products are made of stainless steel and exceed the latest standards and quality requirements.

If stainless steel products are manufactured and treated according to best practice, they will provide excellent performance for many, many years of use.

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

HUBER safety access ladder with fall protection.

Safety climbing systems

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

HUBER Entrance Aid EH VSD, collapsible, with double handle.

Entrance aids

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

Technical doors

Stainless steel doors

- Attack proof, certified to security of DIN EN 1627, RC3 and RC4
- Single and double doors
- Thermally insulated for reduced 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 in conformance with KTW and DVGW standards

Pressure-tight HUBER doors for safe access to reservoirs.

Hygiene in drinking water reservoirs

HUBER Air Filter Plant for clean drinking water.

Hygiene in drinking water reservoirs

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

HUBER complete system of active forced ventilation.

Active forced ventilation

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

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.

Our 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

Successful start of operation due to professional installation.

Installation and commissioning

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

HUBER Global Service – always there for you!

Repairs

- Minimisation of downtimes
- High professional competence
- Highly flexible service team
- Warranty

Efficient and professional execution.

Factory repairs

- Dismantling on site
- Transport to the HUBER factory
- Complete overhaul with warranty
- Return transport to the site
- Installation & recommissioning with performance test

Complete overhaul at our HUBER factory.

HUBER Global Service – always there for you!

Specially developed for the flawless operation of your machine.

Original spare parts

- 100 % exact fit
- Flawless function
- Safety tested
- Certified
- Long-term reliability of operation
- Absolutely corrosion resistant due to accurate handling of stainless steel – pickling and passivation

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

Comprehensive service expertise from one source.

Service for products from other manufacturers

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

HUBER Global Service – always there for you!

Training & education

- Demand-oriented training concepts
- On site or in our HUBER factory
- For new employees or to optimise and further develop existing knowledge

This provides your employees with knowledge of the highest quality!

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

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!

Use of resources – for the sake of sustainability.

Plant refurbishment

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

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

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

HUBER Global Service – always there for you!

International service consultants

- On-site advice from experienced HUBER service specialists
- Information on the operation and condition of your machine
- Important information on necessary service measures

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

Augmented reality

- The use of data glasses enables direct individual communication with a HUBER expert.
- HUBER service expertise – live for every customer, anywhere in the world
- Possible via smart devices (smartphone, tablet, laptop, etc.)

Remote support – not on site, yet there with you live.

HUBER Global Service – always there for you!

HUBER service systems

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 function & operation guarantee to cover this!

Type HS 1	Type HS 2	Type HS 3	HUBER FULL SERVICE (NEW)
☑ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists	☑ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists	☑ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists	☑ Annual, preventive maintenance in accordance with detailed manufacturer maintenance checklists
☑ Ensuring functional and operational safety with the “HUBER Machine-Protection-Letter”	☑ Ensuring functional and operational safety with the “HUBER Machine-Protection-Letter”	☑ Ensuring functional and operational safety with the “HUBER Machine-Protection-Letter”	☑ 24/7 Hotline-Service
	☑ 24/7 Hotline-Service	☑ 24/7 Hotline-Service	☑ 48-hour emergency service
	☑ 48-hour emergency service	☑ 48-hour emergency service	☑ Spare parts and wear parts including shipping and transport costs
		☑ Machine and plant optimisation package	☑ Repairs and replacements of spare parts and wear parts
			☑ Travel costs and associated additional expanses 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.

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