

[Home](#) ■ [Products](#) ■ [Membrane Filtration \(MBR\)](#)

## HUBER Membrane Filtration VRM®



### Unique, rotating membrane filtration for MBR applications

- Maximum throughputs – minimized energy consumption
- Insensitive to minor membrane damage

In the HUBER Membrane Filtration VRM®, high-quality ultrafiltration membranes with 38 nm pore size separate the clear water from the activated sludge. The biomass and virtually all germs and bacteria are reliably retained by the membrane as a physical barrier.

The produced permeate is hygienically safe, odourless and free of particles and thus can be reused without problems.

MBR plants are a combination of a biological treatment stage and a subsequent filtration unit, such as the HUBER Membrane Filtration VRM®. This combination eliminates the need for conventional secondary clarification in a settling tank. The combined process is called "membrane bioreactor" (MBR).

We use the unique BIO-CEL® membrane laminate of MICRODYN-NADIR for our HUBER Membrane Filtration VRM® units.

In contrast to real plate membranes the membrane laminates are not welded onto a carrier plate but laminated onto a spacer fabric (see photo) and then tight welded to obtain trapezoidal membrane modules.

The high-quality BIO-CEL® modules of MICRODYN-NADIR excel for their long life and are inexpensive to clean. As ultrafiltration membranes they guarantee excellent effluent quality.

In contrast to conventional flat membrane modules BIOCEL® membrane modules can be backwashed like hollow fibre modules but are hardly susceptible to blockage.

## Rotating Air Boost – energy-efficient, intensive membrane cleaning

To prevent the formation of covering layers on the membrane, a powerful cross flow with high turbulences is generated on the membrane surfaces by introducing air. The HUBER Membrane Filtration VRM® uses a unique and highly energy-efficient cleaning method for this purpose: the rotating air boost.

The trapezoidal membrane segments slowly rotate (at 1 rpm) around a centrally arranged air distributor. One after the other, the segments are exposed to the powerful air stream. Fouling and particles are removed effectively and reliably.

Compared to static plate systems the air can be blown in at only half the depth required otherwise and also only half the scouring air flow is necessary. As a result, total energy consumption of large VRM® units can be reduced to below 100 Wh/m<sup>3</sup>.

## Benefits

### Unique product benefits:

- Unique, rotating filtration unit with highly efficient, centrally introduced scouring air
- Extremely high throughput capacities of up to 300 m<sup>3</sup>/h per unit
- Well-proven backwash-type ultrafiltration membranes of robust, high-quality membrane laminate
- Effluent in compliance with the presently applicable discharge standards (e.g. European Directive for Bathing Water, US Title 22)
- Ideal for municipal and industrial wastewater treatment and "green building" applications

### Maximum customer benefit:

- Minimized scouring air demand through efficient rotating air boost technology (< 200 l/m<sup>2</sup>h)
- Low specific energy consumption due to reduced air injection depth (up to < 0.1 kWh/m<sup>3</sup> permeate)
- Insensitive to clogging, sludge sediments and membrane damage ("self-healing" membrane)
- Minimum space requirements due to very high packing density
- Reliable retention of all solids (e.g. microplastics) and bacteria (e.g. multi-resistant germs)
- Complete MBR solutions from one source with 48h service

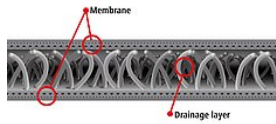
## Downloads

 [Brochure: HUBER Vacuum Rotation Membrane VRM® Bioreactor](#) [pdf, 732 KB]

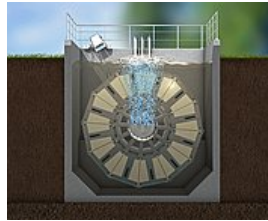
## Case Studies

- [Easy Upgrade - A membrane bioreactor enables a meat processor to upgrade its wastewater treatment system with little fuss](#)
- [Wastewater Treatment in the Dairy Industry – Development of customized solutions for direct and indirect discharge](#)
- [Press release: New HUBER Membrane Filtration VRM®](#)
- [HUBER all-round package for STP Larnaca](#)
- [Leading global brewer buys its first HUBER MBR plant](#)
- [Fresh water savings in breweries: HUBER SE develops innovative process chain with Bavarian project partners](#)
- [Industrial wastewater treatment with HUBER Membrane Bioreactor at GZM Extraktionswerk AG, Lyss, Switzerland](#)
- [A complete wastewater treatment concept for a meat processing company](#)
- [Successful HUBER overall concept for beverage industry in Croatia](#)
- [Membrane technology for wastewater recycling in textile industry](#)
- [Membrane technology for 5-star resorts](#)
- [HUBER VRM® Membranes in Bavaria's Largest Municipal MBR System](#)
- [Two HUBER VRM® units retrofitted into an existing plant, piece by piece](#)
- [VRM® unit for Training Centre for Membrane Technology in Seelscheid](#)
- [Successful start-up of the largest municipal MBR plant in Russia](#)
- [Romanos Hotel - Greece](#)
- [Labour Camp - Jebel Ali, Dubai](#)
- [HUBER MBR solution for 5-star luxury hotel Xanadu Island Resort](#)

# Design Sketch



Membrane detail



Rotating Air Boost: energy-efficient, intensive membrane cleaning



Animation: HUBER Membrane Filtration VRM®  
<https://www.youtube.com/watch?v=iLMNWK14xfk>



Video: HUBER Membrane Filtration VRM® - bioreactor in meat processing industry  
<https://www.youtube.com/watch?v=dEGT0qbIBWE>



Video: HUBER Membrane Filtration VRM® - here bioreactor in beverage industry  
<https://www.youtube.com/watch?v=T5sOUqy-zxk>

## More products of this group: Membrane Filtration (MBR)

- [MENA-Water MBR sewage treatment plants](#)

Adresse / address: HUBER SE · Industriepark Erasbach A1 · 92334 Berching · Germany · Telefon / phone: + 49 - 84 62 - 201 - 0 · Fax / fax: + 49 - 84 62 - 201 - 810  
e-mail: [info@huber.de](mailto:info@huber.de) · Internet: <http://www.huber.de>

Sitz der Gesellschaft / Headquarters: Berching · AG Nürnberg / Register of companies: HRB 25558  
Vorstand / Board: Georg Huber (Vorsitzender / CEO), Dr.-Ing. Oliver Rong (stellvertretender Vorsitzender / Vice CEO), Dr.-Ing. Johann Grienberger, Rainer Köhler  
Aufsichtsratsvorsitzender / Chairman of the Supervisory Board: Alois Ponnath



USt (VAT)-IdNr.: DE 812353219  
Bank: HypoVereinsbank Nürnberg (BLZ 760 200 70) 5 008 409 · SWIFT-BIC: HYVEDEMM460 · IBAN: DE 30 7602 0070 0005 0084 09

