R.T.S.
ROCHEM®
Technical Services

FLAT SHEET/ FS MODULE

SELECTIVE SUBSTANCE SEPARATION
MF/ UF/ LP-RO - MEMBRANE CASSETTES

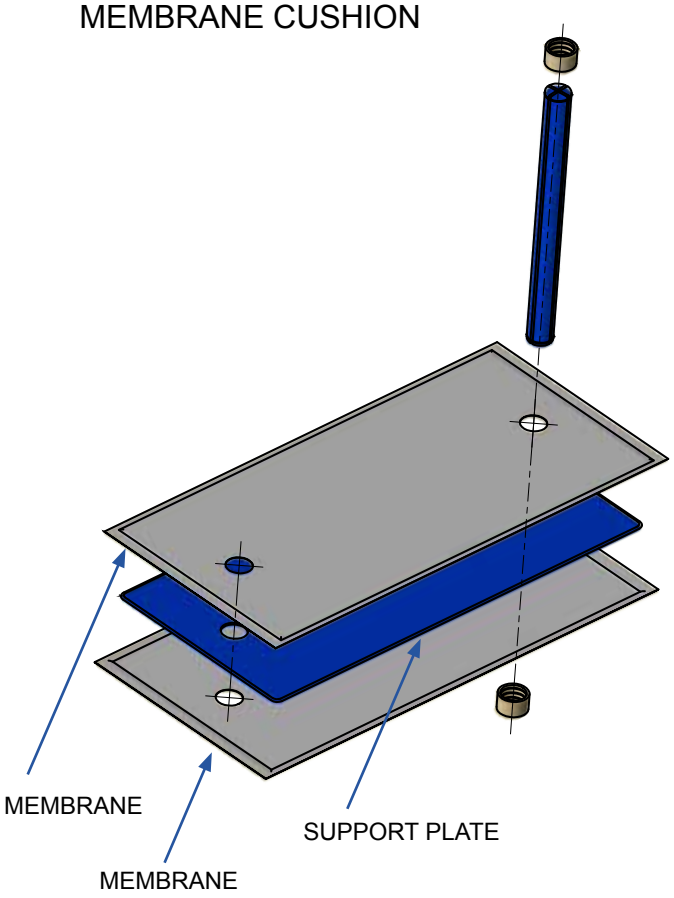
R.T.S.ROCHEM® Technical Services MEMBRANE AND MODULE TECHNOLOGY

R.T.S. ROCHEM® Technical Services

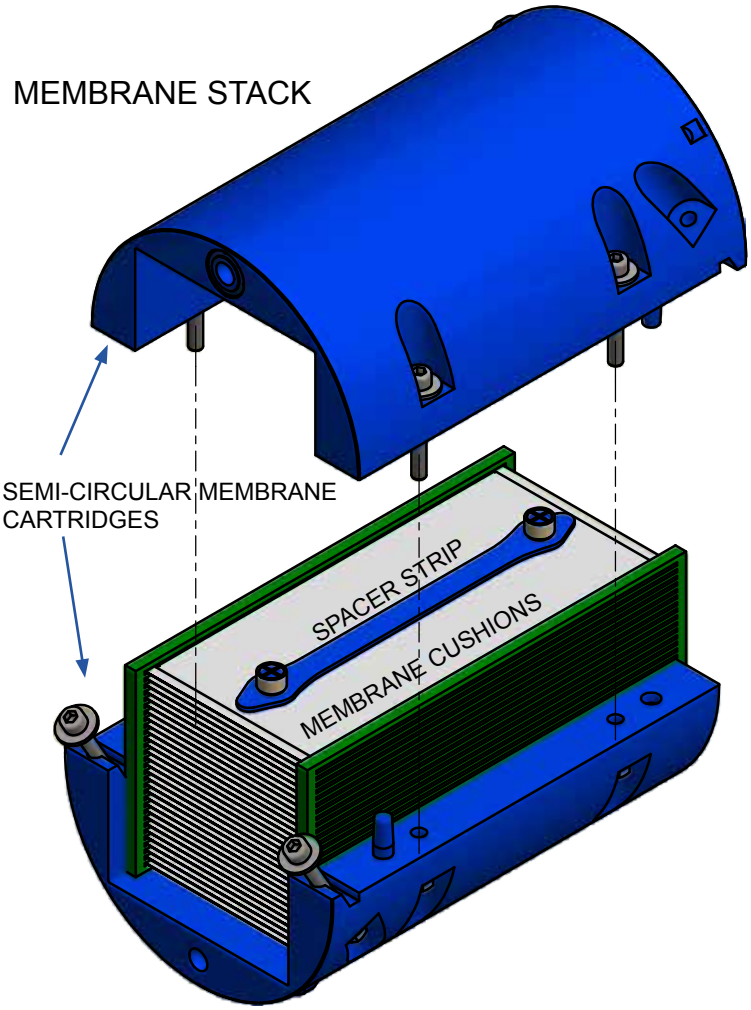
THE R.T.S. ROCHEM® Technical Services FLAT SHEET/ FS MODULES

The R.T.S. ROCHEM® Technical Services FS Modules, have especially been developed for Ultrafiltration (UF) applications to separate bacteria, viruses and fine solids from water and wastewater with a high fouling potential. The most important characteristic of the module is the low specific energy consumption at high and steady state flux rates.

MEMBRANE CUSHION



MEMBRANE STACK



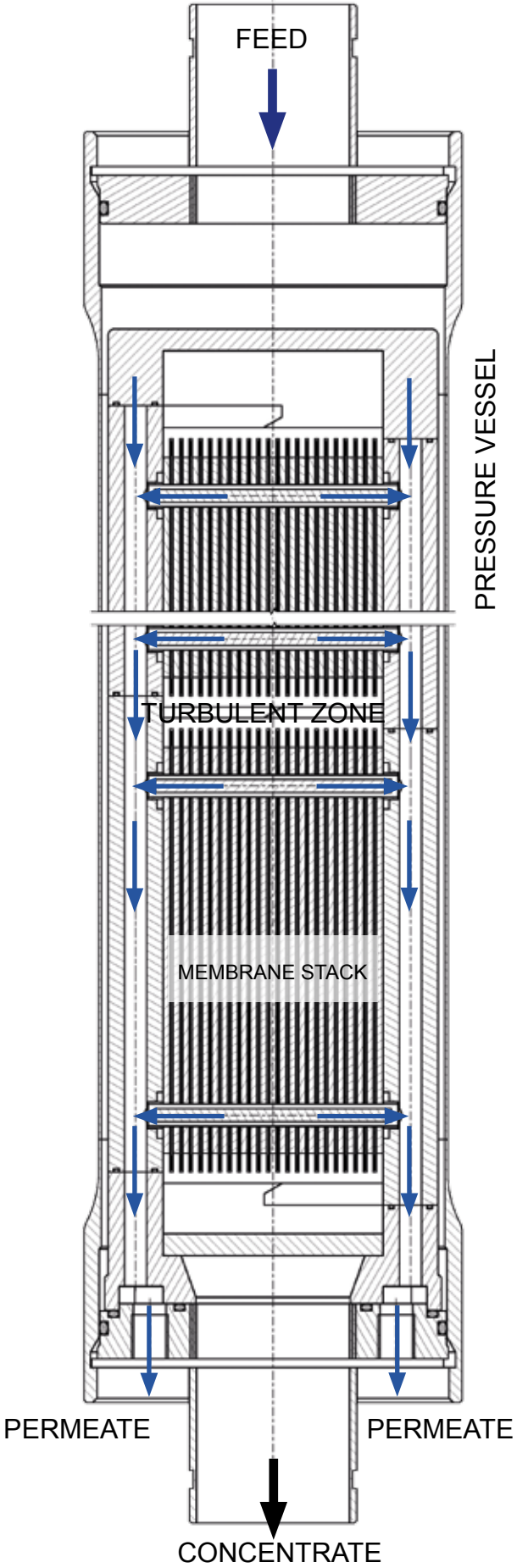
COMPOSITION OF THE R.T.S. ROCHEM® Technical Services MEMBRANE MODULE

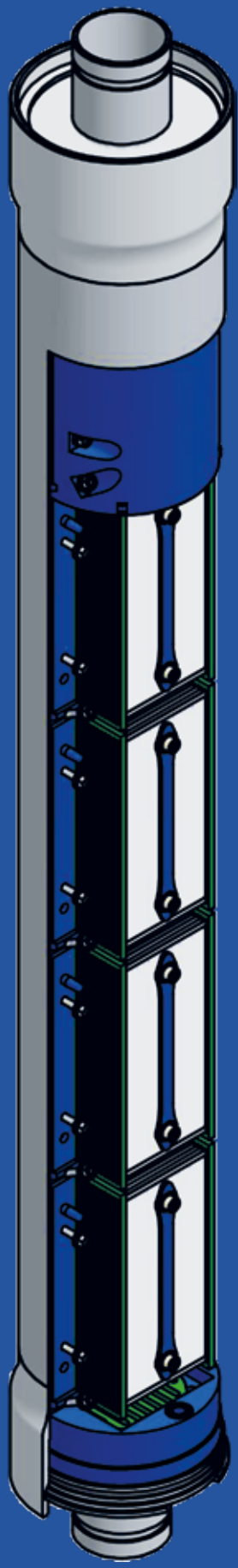
Central part of the R.T.S. ROCHEM® Technical Services FS Module is the membrane cushion consisting of one support plate and two membranes.
Advanced ultrasonic welding and fully automated production guarantees perfect sealing of the cushions.
The membrane cushions combined with the customizable spacer strips are stacked inside two patented semi circular cartridges.
The typical FS Module contains up to 10 membrane stacks.
The cartridges are placed in series in a pressure vessel thus allowing a straight feed flow.

R.T.S. ROCHEM® TECHNICAL SERVICES OPEN CHANNEL

R.T.S. ROCHEM® Technical Services

AXIAL SECTION FS MODULE



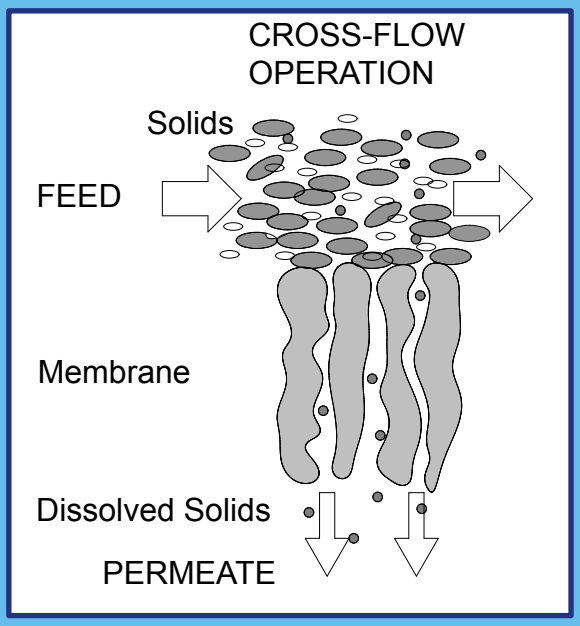


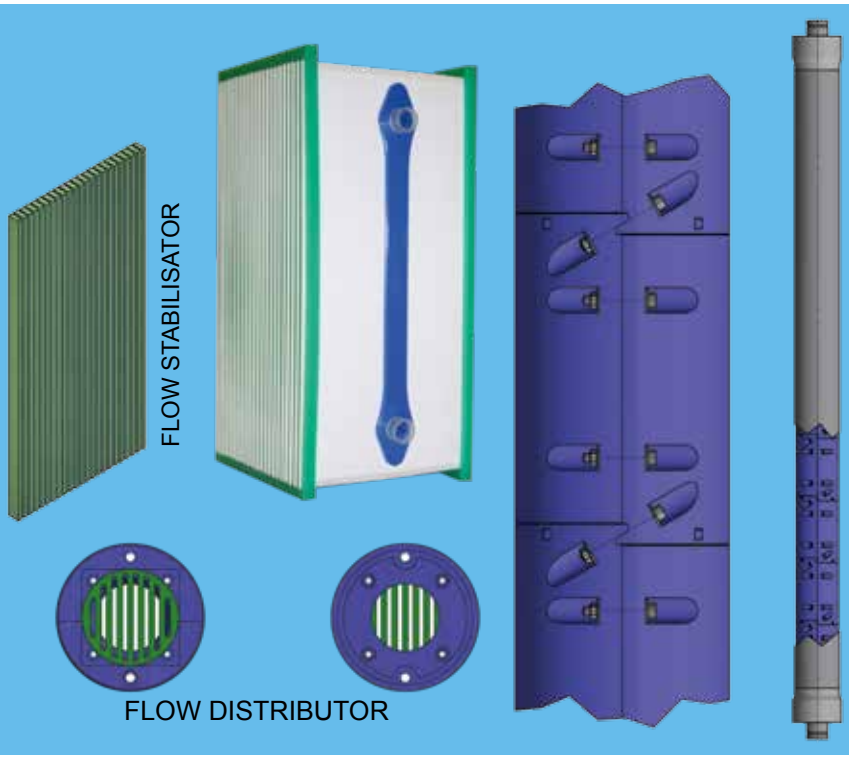
ROCHEM® FS /FLAT SHEET OPEN CHANNEL for MF,UF,RO,NF-FILTRATION since 1994, improved 2015 MBR APPROVED SYSTEM IMO 340.549

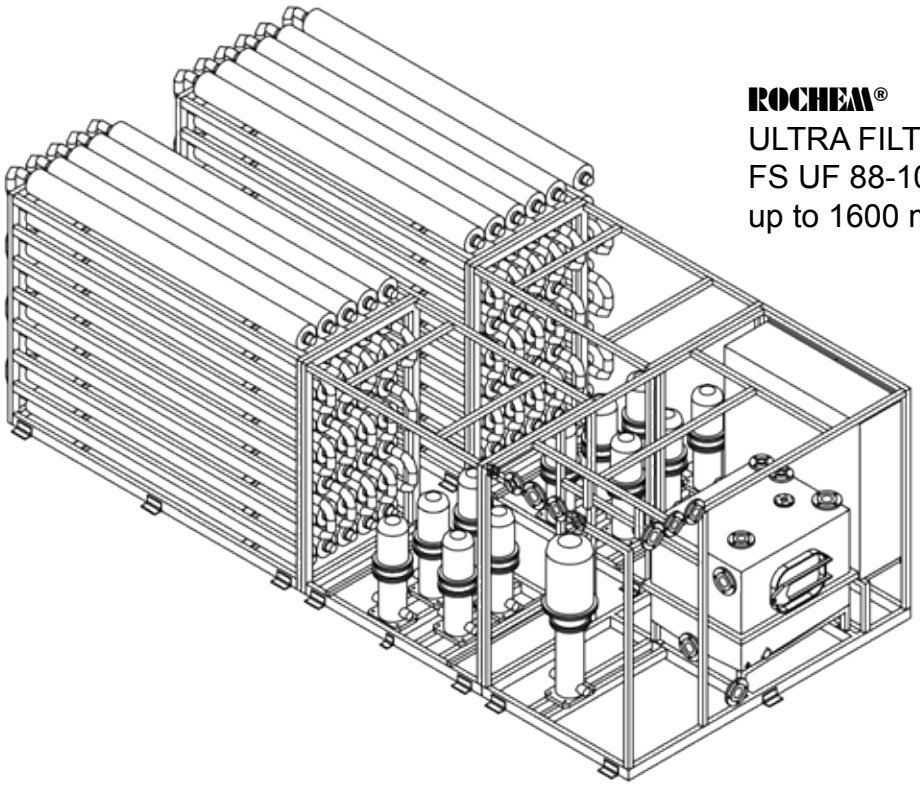
R.T.S. ROCHEM® Technical Services

WATER FLOW INSIDE THE MODULE

The feed water is pressurized and sent to the FS Module. The feed passes through the open channel created by the spacers parallel to the membrane surface. Filtration takes place in orthogonal direction to the feed flow, this creates the cross flow operation as shown in the diagram below. Pure water permeates through the membrane cushion and is then directed into the permeate channel of the cartridge half case. The membrane cushion permeate outlets are sealed from the feed by the spacer strips. The pure water then exits the module through the permeate hose connectors. The section drawing shows the flow through the membrane cushions.



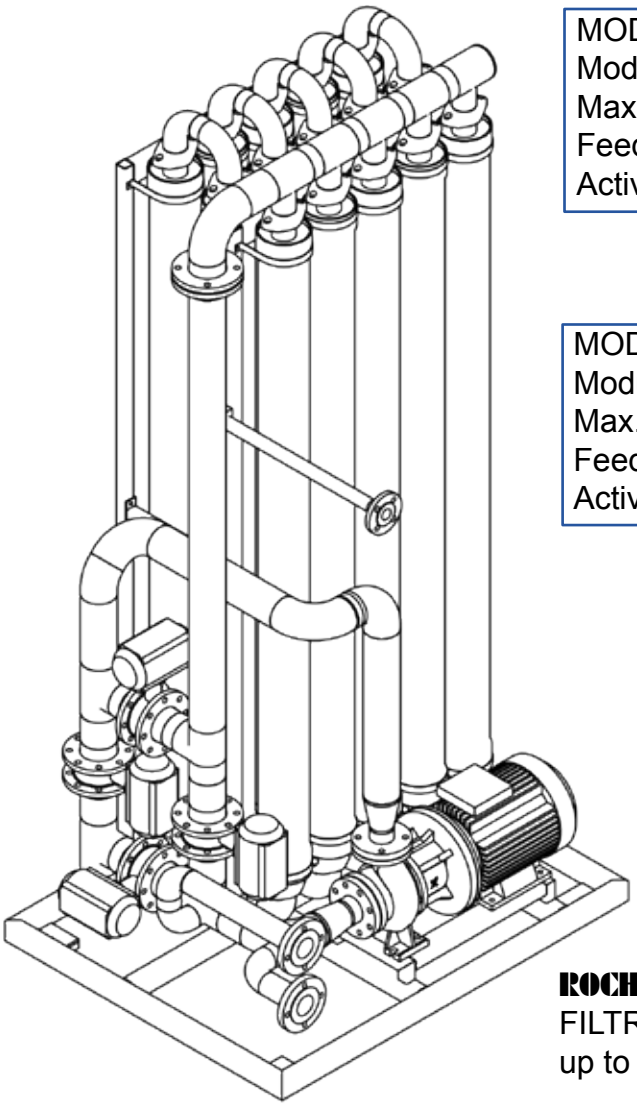




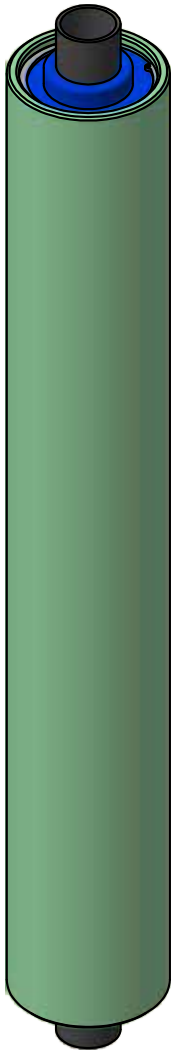
ROCHEM®
ULTRA FILTRATION UNIT
FS UF 88-10
up to 1600 m^3/day

IMPROVED TECHNOLOGY- FURTER DEVELOPMENT OF THE R.T.S. ROCHEM® MEMBRANE MODULE

R.T.S. ROCHEM® Technical Services



MODULE SPECIFICATIONS
Module Vessel : GRP
Max. Operation Pressure: 10 bar (145PSI)
Feed Spacer: 1,4mm
Active Area: up to 10m² (108ft²)



MODULE SPECIFICATIONS
Module Vessel : Stainless Steel
Max. Operation Pressure: 25 bar (363PSI)
Feed Spacer: 3,0mm
Active Area: up to 6,8m² (74ft²)

ROCHEM®
FILTRATION UNIT
up to 144 m^3/day

OPERATING & CLEANING LIMITS

- Membrane Material: PAN
- Molecular Weight Cut-off: 20kD
- Maximum Water Flux 60 -80 l/m²h [a)]
- Maximum Operating Temperature 40°C (104°F) [b)]
- pH Range, Continuous Operation 3 – 10 [b)]
- pH Range, Short-term Cleaning 1 – 12 [c)]
- Free Chlorine Tolerance < 0.1 ppm [d)]

NOTE:
a) For other application with higher TSS values the flux may be reduced.
b) Maximum temperature for continuous operation above pH 10 is 35°C (95°F) c)
c) Refer to the Cleaning Guidelines in the specification sheet
d) Under certain conditions, the presence of free chlorine and other oxidizing agents might cause premature membrane failure. Since oxidation damage is not covered under warranty, ROCHEM® recommends removing the free chlorine by pretreatment prior to membrane exposure

R.T.S. ROCHEM® Technical Services OFFERS: SERVICE/ MAINTENANCE/ SYSTEM DESIGN/ ENGINEERING/ SYSTEM OPERATION/ CUSTOMER FOCUSED/ SPECIAL MEMBRANES/ SPECIAL CHEMICALS/ MODULE MANUFACTURING

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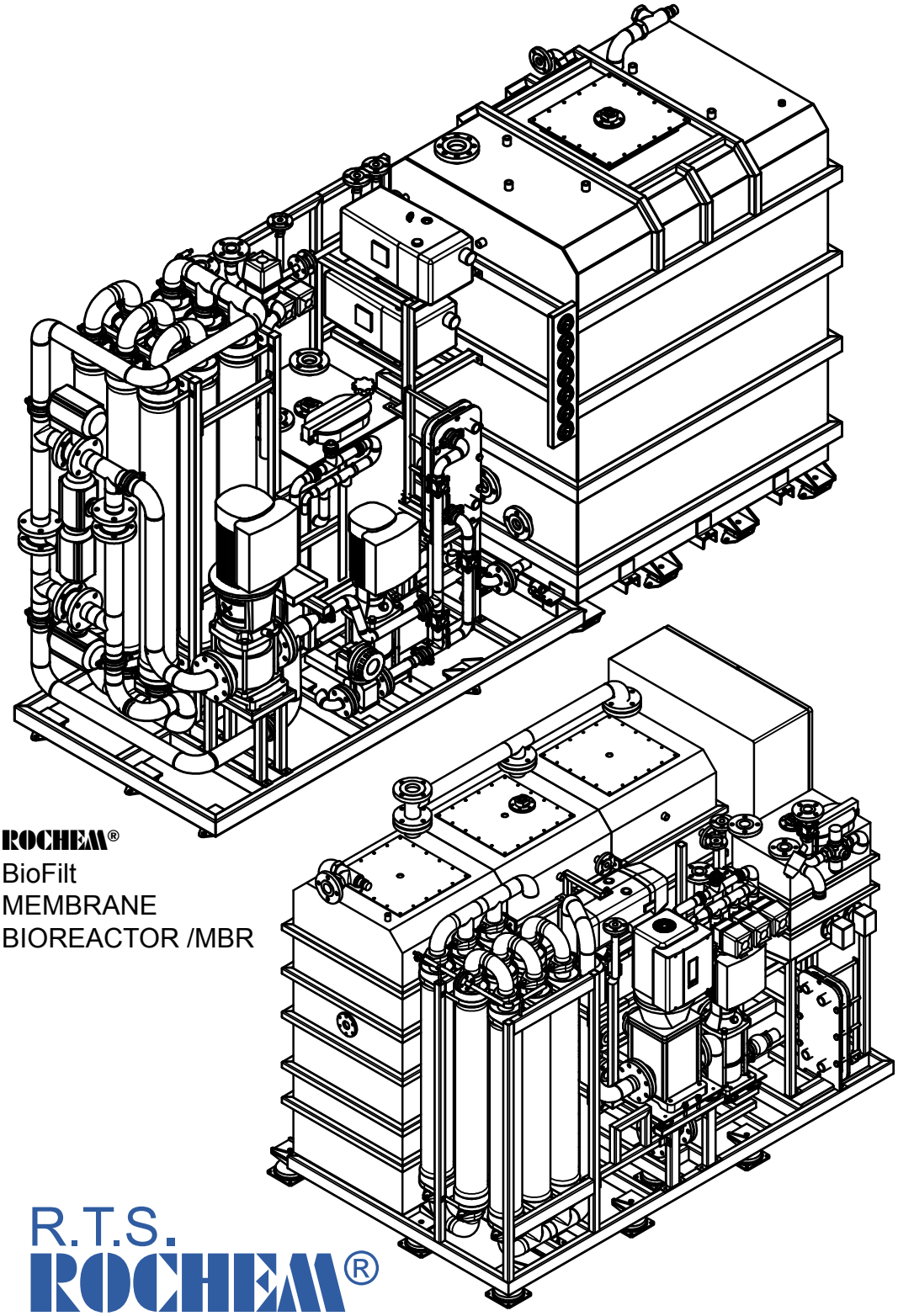

ROCHEM®
BioFilt
MEMBRANE
BIOREACTOR /MBR

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