



Save Water, Save Life

Hemodialysis Water Treatment Systems





RIVAMED RIVAMED

CERTIFICATION & QUALITY STANDARDS

RIVAMED bases the design, manufacturing, and service processes of its hemodialysis water treatment systems on national and international quality standards. Our products are developed and certified in line with the principles of patient safety, treatment continuity, and full regulatory compliance. With strong engineering expertise and robust certification capabilities, RIVAMED provides reliable and sustainable solutions to healthcare institutions.

Certificates

- EU Medical Device Regulation (MDR) 2017/745 | CE
- ISO 13485 – Quality Management System for Medical Devices
- ISO 9001 – Quality Management System
- ISO 14001 – Environmental Management System
- ISO 45001 – Occupational Health and Safety Management System
- TSE Service Qualification Certificate
- After-Sales Service Qualification Certificate
- Certificate of Free Sale



ABOUT US

RIVAMED is a leading medical water treatment solutions provider specializing in hemodialysis and critical healthcare applications, built on advanced engineering expertise and a strong commitment to quality. As a Turkish manufacturer of hemodialysis water treatment systems certified under MDR 2017/745 (EU), RIVAMED designs and manufactures systems in full compliance with EN ISO 23500 series and European Pharmacopoeia (Ph. Eur.) requirements. Where applicable, system designs also align with AAMI standards, ensuring globally accepted water quality, maximum patient safety, and long-term operational reliability.

Our innovative solutions include hemodialysis water treatment, sterilization, neutralization, and disinfection systems, delivering consistently high-purity water for healthcare facilities worldwide.

Save Water, Save Life

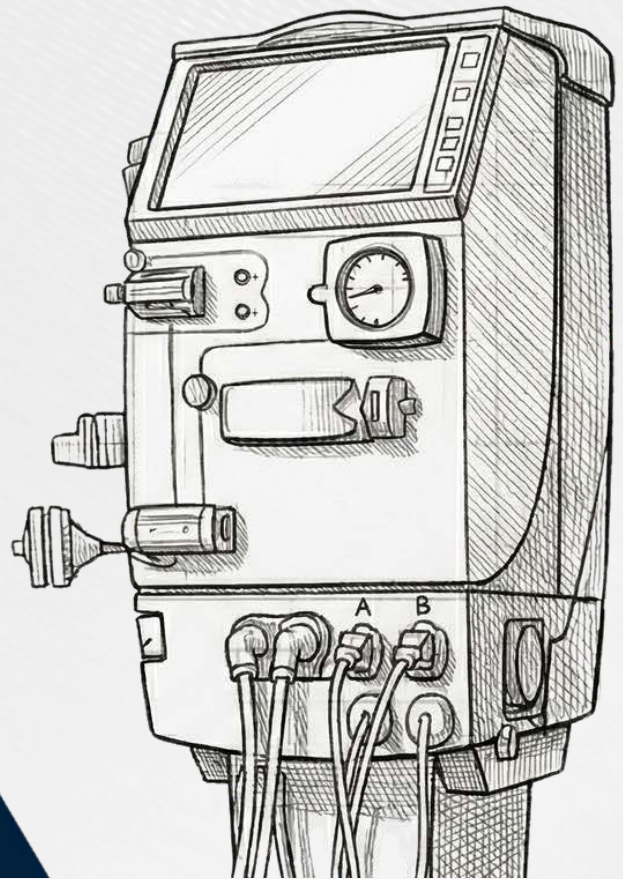
Guided by our vision “Save Water, Save Life,” and supported by a strong global presence in over 60 countries with comprehensive technical service capabilities, RIVAMED continues to set quality benchmarks in medical water technologies through continuous innovation and uncompromising standards.

60+
Countries

10+
Dealerships

1000+
Projects

ABOUT HEMODIALYSIS

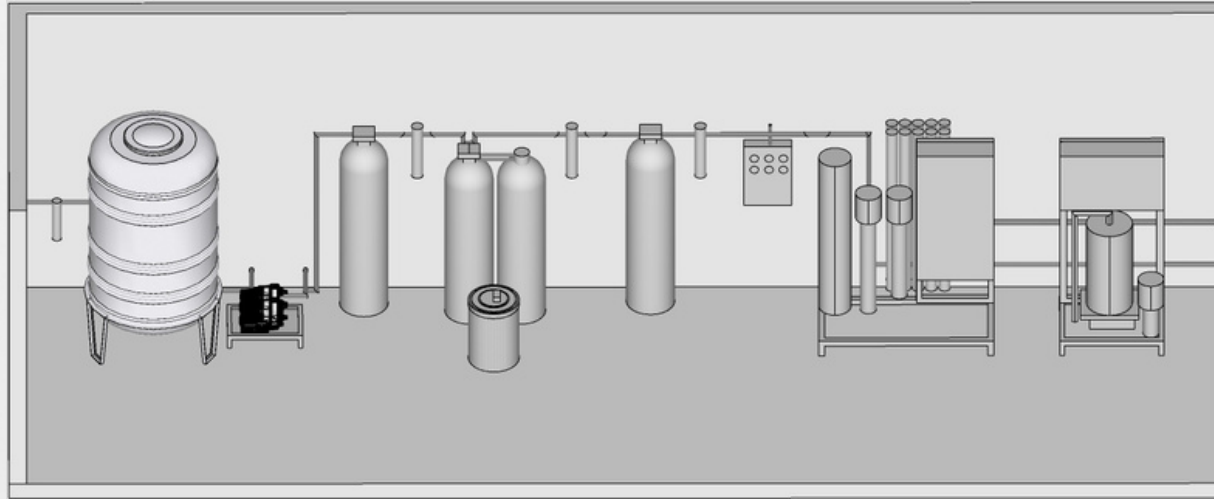


Hemodialysis is a life-sustaining treatment for patients with chronic or acute kidney failure, whose kidneys are no longer able to adequately remove waste products, excess fluids, and toxins from the blood. During treatment, the patient's blood is circulated through a dialyzer, commonly known as an artificial kidney, where waste substances and excess electrolytes are removed through diffusion and ultrafiltration. Cleaned blood is then safely returned to the patient's body.

Most hemodialysis patients undergo treatment approximately three times per week, with each session lasting around four hours. Throughout a single treatment session, 120–150 liters of dialysate are continuously prepared and delivered. Since dialysate is composed of more than 95% water and comes into indirect contact with the patient's bloodstream, water quality is critical to patient safety and treatment success.

RIVAMED hemodialysis water treatment systems are designed to produce pure water that complies with European Pharmacopoeia and international dialysis standards. By combining advanced filtration, reverse osmosis, and disinfection technologies, RIVAMED systems ensure consistent microbiological and chemical water quality. This reliability supports uninterrupted dialysis therapy, protects patients from potential contaminants, and contributes to improved clinical outcomes and overall quality of life.

TYPICAL HEMODIALYSIS WATER



PRE-TREATMENT SYSTEM

The pre-treatment system conditions the incoming water and protects the reverse osmosis unit by removing physical, chemical, and organic contaminants.

A washable pre-filter removes coarse particles and sediments, allowing repeated use through simple cleaning.

A multimedia filter removes suspended solids and turbidity while also reducing iron and manganese, ensuring stable and reliable system operation and protecting downstream components.

A tandem water softener system removes calcium and magnesium hardness to prevent scaling, while providing continuous operation during regeneration cycles.

An activated carbon filter removes free chlorine, chloramines, organic compounds, taste, and odor, protecting RO membranes from oxidative damage and improving overall water quality.

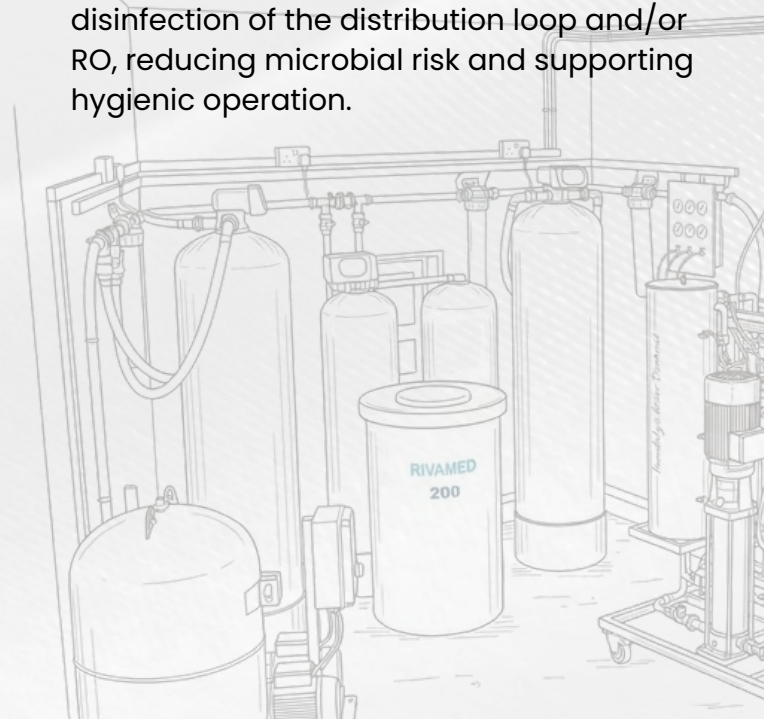
Microfiltration provides fine particle removal at low micron levels and protects downstream units between sand, carbon, and softening stages. It ensures operational safety and prolongs system lifetime.

REVERSE OSMOSIS AND HEAT DISINFECTION

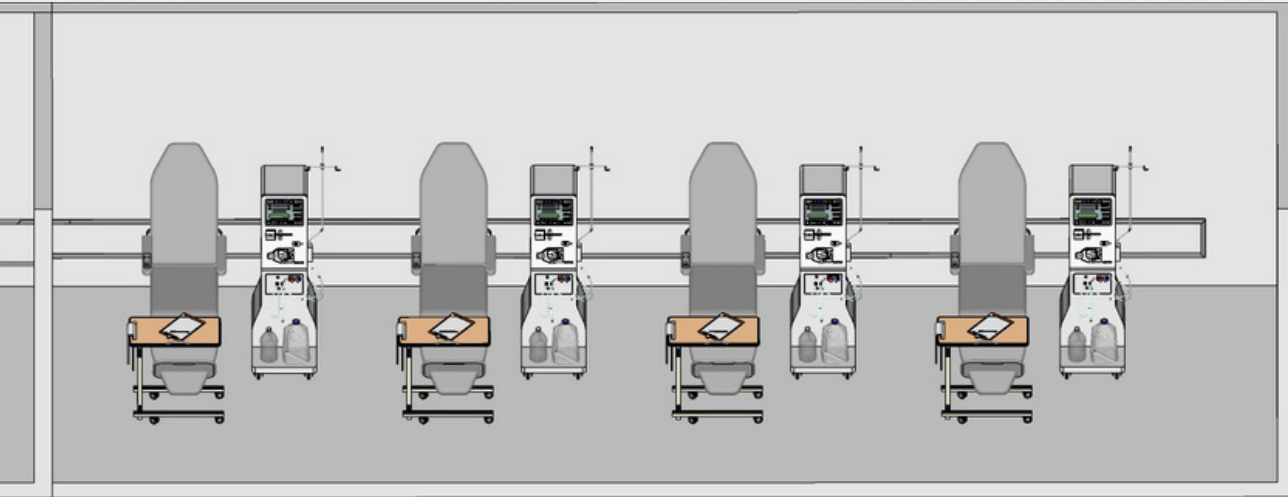
The reverse osmosis system operates with a high-pressure pump and membrane filtration technology to remove dissolved salts, heavy metals, bacteria, viruses, endotoxins, and other contaminants. By applying pressure, water passes through semi-permeable membranes while impurities are rejected.

The system produces high-purity water compliant with ISO, European Pharmacopoeia, and AAMI standards, ensuring safe and consistent water quality for hemodialysis applications.

Heat disinfection ensures effective disinfection of the distribution loop and/or RO, reducing microbial risk and supporting hygienic operation.



TREATMENT SYSTEM COMPONENTS

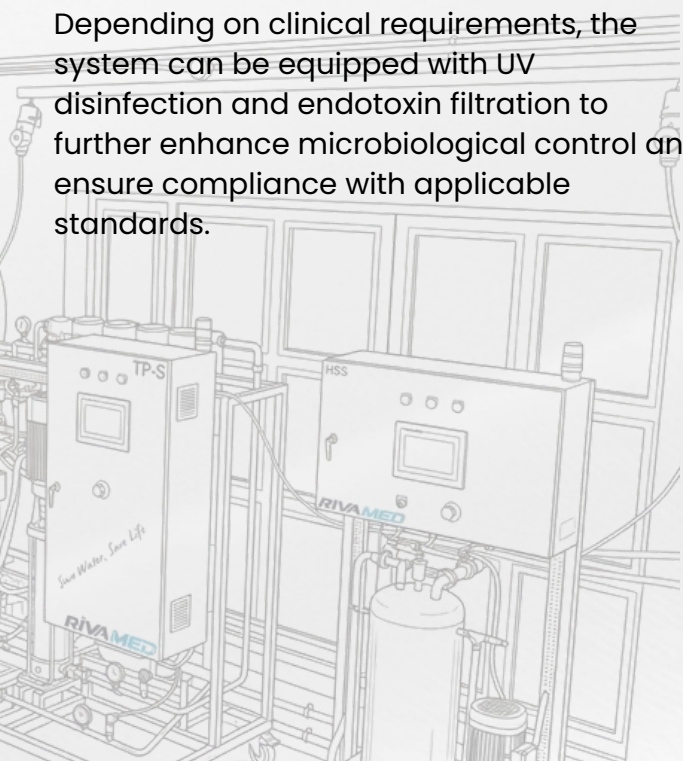


WATER DISTRIBUTION LOOP

The purified water is distributed through a PEX-A piping loop designed for continuous circulation. The smooth internal surface of PEX-A piping minimizes bacterial growth and biofilm formation, maintaining microbiological safety.

The loop is equipped with quick-connected non-spill valves, enabling hygienic connections, easy maintenance, and operational flexibility. Continuous circulation ensures uniform water quality and immediate availability at all hemodialysis points.

Depending on clinical requirements, the system can be equipped with UV disinfection and endotoxin filtration to further enhance microbiological control and ensure compliance with applicable standards.



RIVAMED WATER SOLUTIONS

RIVAMED offers reverse osmosis and heat disinfection comprehensive product portfolio including the RM, RO, TP, RO Mini and HSS series, designed to supply hemodialysis centers from small-scale installations to large facilities feeding up to 104 hemodialysis machines using one system. Each system is engineered for continuous 24/7 operation with hygienic, dead-leg-free design principles and long-term mechanical reliability.

System configuration, hydraulic layout, and component selection are custom-engineered based on feed water analysis, required flow rates, redundancy level, and international hemodialysis standards. Project-specific design approach ensures consistent permeate quality, optimized system performance, operational safety, and full compliance with hemodialysis water quality requirements.

Save Water, Save Life

PORTABLE REVERSE OSMOSIS SYSTEM

In environments where space and time are critical—such as homes or intensive care units—water treatment systems face unique challenges related to accessibility, reliability, and safety. RIVAMED portable, compact, and low-noise reverse osmosis units are specifically designed to deliver superior performance in settings where space is limited and flexible positioning is essential, while prioritizing optimal performance.

Compact and Quiet

Quiet operation and space savings thanks to the compact design.

Extended Equipment Lifetime

Resource efficiency through programmable Start/Stop functions.

Modular Pre-treatment Design

Customizable according to needs, offering flexible investment options.

User-Friendly Interface

Easy-to-use, menu-driven, and intuitive control panel.

Efficient RO Solution

Optimized performance for small hemodialysis units.

Maximum Hygiene

Microbiological protection through automatic flushing and product water recirculation.

Hardware-Supported Monitoring

Full documentation of operating data and disinfection processes.

High-Quality Disinfection

Procedure-guided, accurate, and error-free hygiene processes.

OPTIONAL CONFIGURATIONS

- Leak Detector
- Ultrafiltration (Bacteria and Endotoxin Filter)
- Remote Monitoring and Control
- Hardness Analyzer



TECHNICAL INFRASTRUCTURE

- Enhanced chemical and microbiological purity
- Compact and optimized design ensuring space efficiency
- Semi-automatic chemical and fully automatic thermal disinfection programs
- High-rejection polyamide membrane
- Product water pressure balancing valve for precise system pressure control
- Continuous monitoring of conductivity, pressure, and temperature values
- Programmable, multiple, and independent start/stop functions
- Adjustable interval flushing programs
- Automatic self-test function upon system start-up
- Monitoring and control via a microprocessor-controlled panel
- Software update capability for continuous improvement
- Automatic restart after power failure
- Advanced safety parameters including permeate overpressure, conductivity, overtemperature, dry-run motor protection, and operating history logging
- Buffer tank equipped with level switches for operational convenience
- Dead-leg-free design for maximum hygiene
- Password-protected user access levels
- Visual and audible alarm system
- Braked wheels for easy mobility
- Product water and softened water sampling valves
- Optional Heat Disinfection

OPTIMIZED FOR HOME HEMODIALYSIS

#homedialysis



TECHNICAL DATA

PARAMETER	RM 100	RO Mini	RO Mini (H)
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1. PERFORMANCE DATA

Dimensions (W x D x H)	50 x 80 x 90 cm	26 x 53 x 62 cm	
Weight	75 kg	35 kg	40 kg
Permeate Capacity	< 140 lt/h	70-140 lt/h	
Point of Use (Dialysis Machine)	1-2		
Dialysis Water Pressure	2-6 bar		
Concentrate Pressure	< 13 bar		
Salt Rejection Rate	> 96%		
Bacteria and Endotoxin Removal	> 99%		
System Recovery	< 70%		
Noise Level	< 50 dB (A)		
Heat Disinfection	X	X	✓

2. WATER CONNECTIONS

Soft Water Inlet	Hose nozzle DN 20
Product Water	Quick connection DN 6
Wastewater	Hose nozzle DN 8

3. ELECTRICAL SAFETY

Mains Plug	CEE 7		
Supply Voltage	220-230 V AC		
Power Consumption	Max 393 W	Max 270 W	Max 1500 W
Water Protection Rating	IP44		
Leakage Currents	Comply with ANSI/AAMI IEC 60601-1 standard		
Applied Part Classification	I		
Protection Type	Type B		

TECHNICAL DATA

PARAMETER

RM 100

RO Mini | RO Mini (H)

4. FEED WATER

Quality	Tap Water	
Hardness	< 450 ppm	< 270 ppm*
SDI	< 3	
Conductivity	< 2000 µS/cm	
TDS	< 1200 mg/l	
Iron	< 0.1 mg/l	
Free Chlorine	< 0.1 mg/l	
Temperature Range	5 – 35 °C	
pH Value	6.5 – 8.5	

5. AMBIENT CONDITIONS

Shipping / Storage Temperature	+1 to +45 °C	
Operating Temperature	+1 to +35 °C	
Humidity	Max 90% relative humidity, non-condensing environment	
Installation Altitude	< 2000 m above sea level	

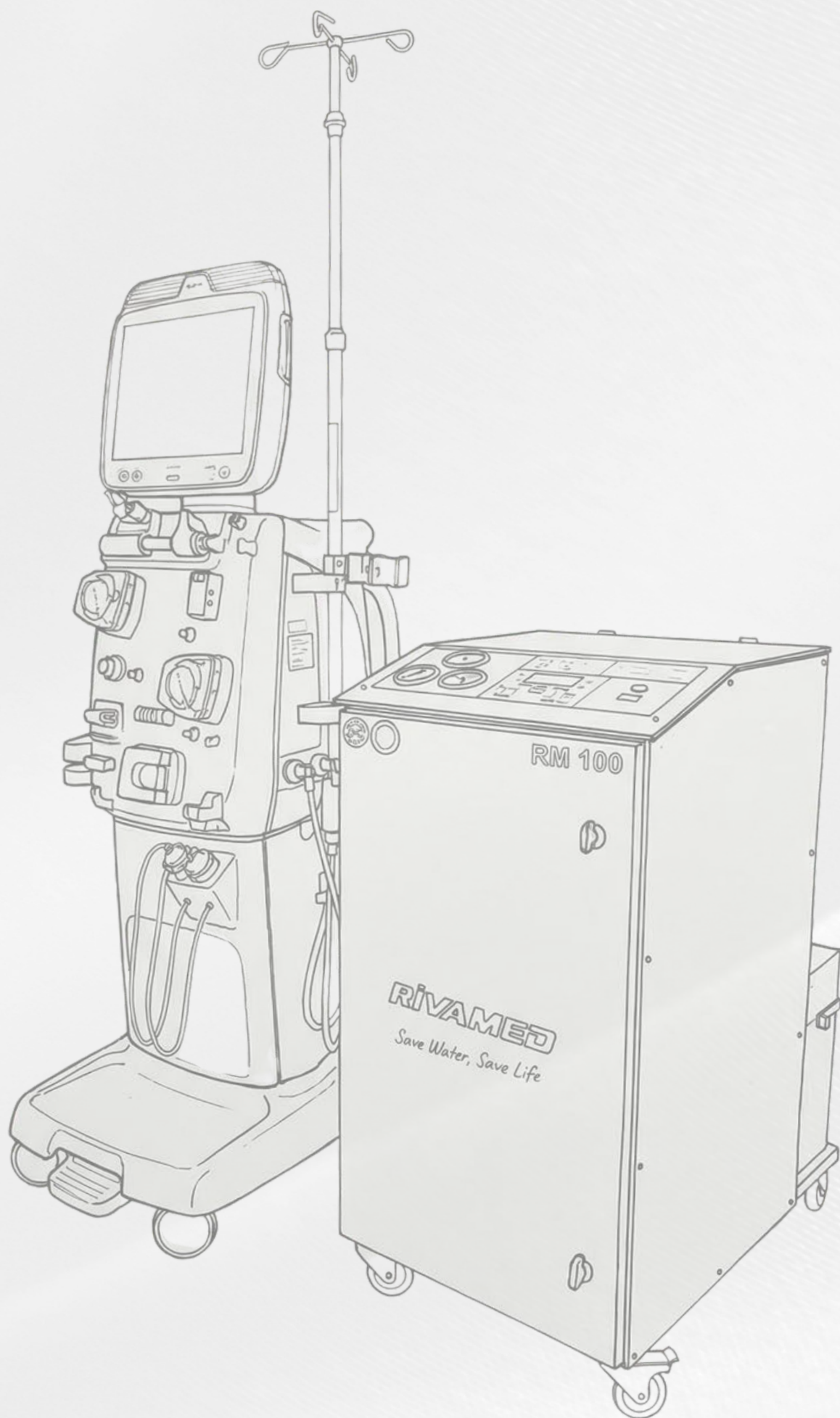
6. FIELD REQUIREMENTS

Inlet Water Pressure	2 – 6 bar dynamic pressure	
Drainage	Max 50 cm from ground level	

7. PRE-TREATMENT OPTIONS

Cartridge Filter	Standard	Optional
Activated Carbon Filter	Standard	Optional
Tandem Water Softening	Standard	Optional
Transport Trolley	Integrated	Optional

* Water softener is recommended.



PROVIDING SERVICE TO +60 COUNTRIES

CENTRAL REVERSE OSMOSIS SYSTEM

RM/HD-RO SERIES

RIVAMED RM/HD-RO is designed as an economical and optimal solution for hemodialysis centers, capable of producing high-quality permeate water using municipal water as the feed source.

Engineered in full compliance with international hemodialysis standards and regulations, RIVAMED RM/HD-RO features an integrated chemical disinfection structure housed within a semi-enclosed cabinet, combining PVC-U and stainless steel piping to deliver an excellent budget solution.

The system is designed to operate in full compatibility with RIVAMED Heat Disinfection and Ultrafiltration Systems for the thermal disinfection of distribution loops and hemodialysis machines.



RIVAMED RM/HD-RO Series can be configured with two units operating in parallel and series providing a redundant and double-pass configuration. This architecture significantly enhances treatment safety, ensures system continuity, and improves overall operational reliability.



TECHNICAL INFRASTRUCTURE

- | | | |
|--|---|--|
| ✓ Increased chemical and microbiological purity | ✓ Permeate recirculation - Water saving | ✓ TFT 3.8" LCD screen |
| ✓ Semi-automatic chemical disinfection | ✓ High removal efficiency membrane | ✓ Permeate pressure safety valve |
| ✓ Conductivity, pressure, temperature, and flow monitoring | ✓ Programmable on/off function | ✓ Interval flush program |
| ✓ Automatic self-test and software update | ✓ PVC-U and stainless steel piping | ✓ Protected authorized control system |
| ✓ Visual and audio alarm / Motor protection | ✓ Automatic startup after power outage | ✓ Wheels with adjustable brakes for easy transport |
| ✓ Stainless steel chassis | ✓ Microprocessor control card | |

OPTIONAL CONFIGURATIONS



Leak Detector



Ultrafiltration
(Bacteria and
Endotoxin Filter)



Permeate Tank Control



Distribution Loop Heat
Disinfection

Save Water, Save Life

TECHNICAL DATA

PARAMETER	RM/HD-RO 250 – 1000	RM/HD-RO 1500 – 3000
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1. PERFORMANCE DATA

Dimensions (W x D x H)	90 x 65 x 180 cm	235 x 90 x 160 cm
Weight	Max 250 kg	Max 400 kg
Permeate Capacity	250 – 1500 lt/h	1500 – 3000 lt/h
Point of Use (dialysis machine)	Up to 31	Up to 62
Dialysis Water Pressure	2–6 bar	
Concentrate Pressure	< 20 bar	
Salt Rejection Rate	> 99% NaCl	
Bacteria and Endotoxin Removal	> 99%	
System Recovery	Up to 75%	
Noise Level	< 70 dB (A)	

2. WATER CONNECTIONS

Softened Water Inlet	DN 15 Thread	DN 25 Thread
Product Water Inlet	DN 15 Thread	DN 20 Thread
Wastewater	DN 15 Thread	DN 15 Thread

3. ELECTRICAL & SAFETY SPECIFICATIONS

Power Plug	CEE 16 A	
Power Supply Voltage	380–400 V AC – 3 Phase / 220–230 V AC	
Power Consumption	Max 3 kW	Max 5.5 kW
Protection Degree	IP44	
Operating Mode	Continuous operation	
Leakage Currents	Comply with ANSI/AAMI IEC 60601-1 standard	
Protection Class	I	
Applied Part Classification	Type B	

TECHNICAL DATA

PARAMETER

RM/HD-RO 250 – 3000

4. FEED WATER

Quality	Softened Tap Water / Well Water*
Hardness	< 1.78 ppm CaCO ₃ (0.018 mmol/l)
SDI	< 3
Conductivity	< 2000 µS/cm
TDS	< 1200 mg/l
Iron	< 0.1 mg/l
Free Chlorine	< 0.1 mg/l
Temperature	5 – 35 °C
pH	6.5 – 8.5

5. OPERATING CONDITIONS

Transportation / Storage Temperature	+1 to +45 °C
Operating Temperature	+1 to +35 °C
Relative Humidity	Max. 90% relative humidity, non-condensing environment
Installation Altitude	< 2000 m above sea level

6. SITE REQUIREMENTS

Water Supply	2 – 6 bar dynamic pressure**
Wastewater	50 mm piping, gravity drainage for 3 m ³ /h***

7. PRE-TREATMENT

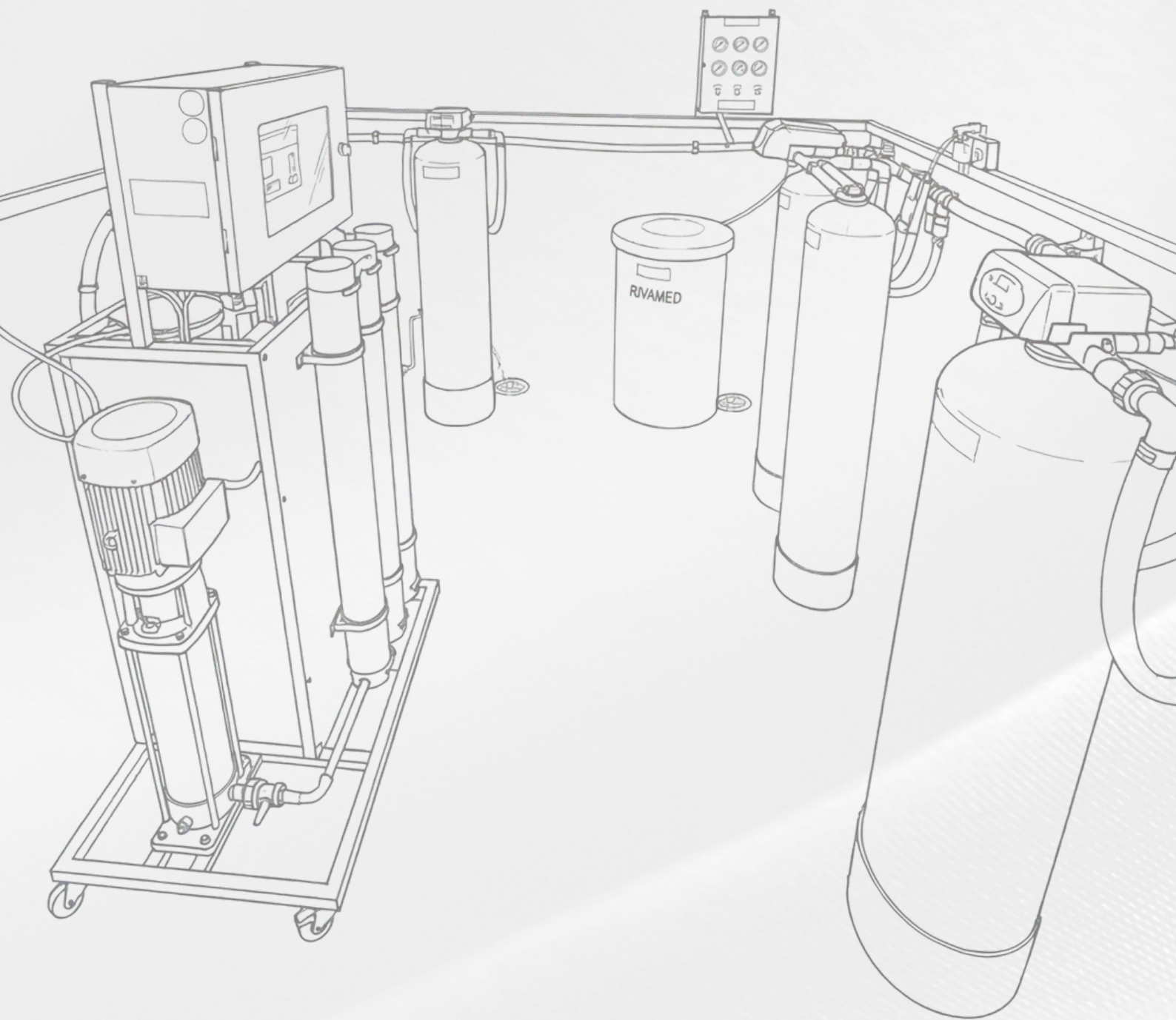
Suggested Units

90 µm washable filter, multimedia filter, tandem water softener, activated carbon filter, microfiltration

* When two RM/HD-RO units are connected in series.

** A pressure reducing valve or a pressure boosting pump may be required.

*** Maximum 50 cm above floor level.



RO SERIES

CENTRAL REVERSE OSMOSIS SYSTEM

RIVAMED RO Series is designed to guarantee optimal product water quality using municipal water and to provide a suitable solution for hemodialysis centers.

RO Series is engineered in compliance with various international standards and regulations applicable to hemodialysis applications.

For the thermal disinfection of distribution loops and hemodialysis machines, the RIVAMED RO Series integrates seamlessly with our Heat Disinfection and Ultrafiltration Systems.

Its user-friendly interface simplifies configuration and monitoring processes while also enabling easy connectivity and software updates.



SYSTEM FEATURES AND ADVANTAGES

- ✓ Operation history recording with safety parameters including overpressure, conductivity, overtemperature, dry running, and motor protection
- ✓ Level-controlled AISI 316 stainless steel buffer tank for operational ease and motor protection
- ✓ Dead-leg-free design providing maximum hygiene
- ✓ Automatic system restart after power failure
- ✓ AISI 316 stainless steel piping and chassis
- ✓ Password-protected user authorization levels
- ✓ Visual LED indicator with audible alarm
- ✓ Braked wheels for ease of transportation
- ✓ Product water tank control option
- ✓ Product water and return line sampling valves

RIVAMED RO Series can be configured with two units operating together in a redundant or series configuration; this enables multi-stage and double-pass operation, thereby enhancing treatment safety, system continuity, and operational reliability.

RO SERIES



- Enhanced chemical and microbiological purity
- Implementation of water and energy saving technology through product water recirculation and pump control based on the water demand of hemodialysis machines
- Compact design optimized for space efficiency
- Semi-automatic chemical disinfection
- Polyamide membranes with high rejection rates
- Use of a product water pressure stabilizing valve for precise system pressure control
- Continuous monitoring of conductivity, pressure, temperature, product and concentrate flow
- Programmable multiple independent on/off timer functions
- Adjustable interval flushing timer programs
- Built-in self-test function activated when power is supplied
- Monitoring and control via a PLC/microprocessor-controlled control panel with a multicolor touchscreen interface
- Software update capability for continuous improvements

OPTIONAL CONFIGURATIONS



**Ultrafiltration
(Bacteria and
Endotoxin Filter)**



**Distribution Loop
Heat Disinfection**



Leak Detector



**Remote Monitoring
and Control**



TECHNICAL DATA

PARAMETER	RO-S	RO-XL
1. PERFORMANCE DATA		
Dimensions (W x D x H)	140 x 55 x 135 cm	155 x 85 x 190 cm*
Weight	190 kg	350 kg
Permeate Capacity	250 – 1750 lt/h	1000 – 5000 lt/h
Point of Use (Dialysis Machine)	Up to 36	Up to 104
Dialysis Water Pressure	2 – 6 bar	
Concentrate Pressure	< 20 bar	
Salt Rejection Rate	> 99% NaCl	
Bacteria and Endotoxin Removal	> 99%	
System Recovery	Up to 75%	
Noise Level	< 70 dB (A)	
2. WATER CONNECTIONS		
Soft Water Inlet	DN 25	
Product Water	20 mm PEX-A connection	25 mm PEX-A connection
Waste Water	DN 15 hose nozzle	DN 20 hose nozzle
3. ELECTRICAL SAFETY		
Power Plug	CEE 16 A	
Supply Voltage	380–400 V AC	
Energy Consumption	Max 3 kW	Max 5.5 kW
Degree of Water Protection	IP44	
Working Mode	Continuous operation	
Runaway Currents	Comply with ANSI/AAMI IEC 60601-1 standard	
Application Part Classification	I	
Type of Protection	Type B	

* In RO-XL Series, when capacity is increased to >3000 lt/h, the dimensions reach a maximum of 212 x 85 x 190 cm.

TECHNICAL DATA

PARAMETER	RO-S	RO-XL
4.FEED WATER		
Quality	Softened Tap Water / Well Water*	
Hardness	< 1.78 ppm CaCO ₃ (0.018 mmol/l)	
SDI	< 3	
Conductivity	< 2000 µS/cm	
TDS	< 1200 mg/l	
Iron	< 0.1 mg/l	
Free Chlorine	< 0.1 mg/l	
Temperature Range	5 – 35 °C	
pH Value	6.5 – 8.5	
5.AMBIENT CONDITIONS		
Shipping / Storage Temperature	+1 to +45 °C	
Operating Environment	+5 to +35 °C	
Humidity	Max. 90% relative humidity, non-condensing environment	
Installation Altitude	< 2000 m above sea level	
6.FIELD REQUIREMENTS		
Water Supply	2 – 6 bar dynamic pressure**	
Wastewater	50 mm piping, gravity drainage for 3 m³/h	
7.PRE-TREATMENT		
Suggested Units	90 µm washable filter, multimedia filter, tandem water softener, activated carbon filter, microfiltration	

* When two RIVAMED RO units are connected in series.

** Pressure reducing valve or a pressure boosting pump may be required.



***FAST AND RELIABLE TECHNICAL
SERVICE NETWORK***

TP SERIES

CENTRAL REVERSE OSMOSIS SYSTEM

Utilizing a dual-stage configuration, the RIVAMED TP Series ensures high product water quality using municipal water as the feed source. RIVAMED TP Series is designed in compliance with various international standards and regulations applicable to hemodialysis.

Engineered in full compliance with international hemodialysis standards and regulatory requirements, the TP Series prioritizes operational safety through its two fully independent RO stages. In the event that one stage becomes inactive, the operator can easily activate the second stage independently via the control panel, thereby ensuring continuous operation. In addition, parallel operation allows the product water capacity to be increased when required.

For the thermal disinfection of distribution loops and hemodialysis machines, TP Series can be easily integrated with RIVAMED Heat Disinfection and Ultrafiltration Systems. Its user-friendly interface simplifies configuration and monitoring processes while also enabling easy connectivity and software updates.



Up to 85% Water Recovery & Energy Saving

Ultra-Pure Water with HDF Capability

Smart PLC / Microprocessor Control System

Comprehensive Safety & Protection



- Enhanced chemical and microbiological purity through twin-pass operation
- Implementation of water and energy saving technology through product water recirculation, concentrate recovery, and capacity control in accordance with the demand of hemodialysis machines
- Compact and streamlined design providing efficient use of installation space
- Semi-automatic chemical disinfection and optional fully automatic heat disinfection programs
- Use of high rejection rate polyamide membranes
- Integrated permeate pressure holding valve for precise system pressure control
- Continuous monitoring of conductivity, pressure, temperature, product water flow, and concentrate flow for each module
- Programmable multiple independent on/off functions
- Adjustable interval flushing timer programs
- Built-in self-test function activated upon power-up
- Automatic activation of emergency mode in the event of electronic failures
- Monitoring and control via a PLC/microprocessor-controlled control panel with a multi-color touchscreen interface

OPTIONAL CONFIGURATIONS

- Leak Detector
- Ultrafiltration (Bacteria and Endotoxin Filter)
- Remote Monitoring and Control
- Heat Disinfection



TECHNICAL DATA

PARAMETER	TP-S	TP-XL
1. PERFORMANCE DATA		
Dimensions (W x D x H)	150 x 80 x 160 cm	226 x 115 x 170 cm
Weight	Max 350 kg	Max 600 kg
Permeate Capacity	350 – 1650 lt/h	1000 – 5000 lt/h
Point of Use (dialysis machine)	Up to 34	Up to 104
Dialysis Water Pressure	2 – 6 bar	
Concentrate Pressure	< 20 bar	
Salt Removal Rate	> 99% NaCl	
System Recovery	Up to 85%	
Bacteria and Endotoxin Removal	> 99%	
Noise Level	< 70 dB (A)	
Heat Disinfection	Optional	
2. WATER CONNECTIONS		
Soft Water Supply	DN 25 hose nozzle	
Production Water	20 mm PEX-A connection	25 mm PEX-A connection
Wastewater	DN 15 hose nozzle	DN 25 hose nozzle
3. ELECTRICAL SAFETY		
Energy Consumption	Max 5.5 kW	Max 11 kW / 22 kW*
Power Plug	CEE 16–32 A	
Supply Voltage	380–400 V AC / 220–230 V AC	380–400 V AC
Water Protection Degree	IP44	
Working Mode	Continuous operation	
Leakage Currents	Comply With ANSI/AAMI IEC 60601-1 standard	
Protection Type	I	
Application Part Classification	Type B	

* In case of heat disinfection

TECHNICAL DATA

PARAMETER

TP-S

TP-XL

4. FEED WATER

Quality	Softened Tap Water
Hardness	1.78 ppm CaCO ₃ (0.018 mmol/l)
SDI	< 3
Conductivity	< 2000 µS/cm
TDS	< 1200 mg/l
Iron	< 0.1 mg/l
Free Chlorine	< 0.1 mg/l
Temperature Range	5-35 °C
pH Value	6.5-8.5

5. ENVIRONMENTAL CONDITIONS

Shipping / Storage Temperature	+1 to +45 °C
Operating Temperature	+1 to +35 °C
Humidity	Max. 90% relative humidity, non-condensing environment
Installation Altitude	< 2000 m above sea level

6. FIELD REQUIREMENTS

Water Supply	2 – 6 bar dynamic pressure*
Wastewater	50 mm, gravity drainage for 3 m ³ /h** 70 mm, gravity drainage for 7 m ³ /h**

7. PRE-TREATMENT

Suggested Units

90 µm washable filter, multimedia filter, tandem water softener, activated carbon filter, microfiltration

* Pressure reducing valve or a pressure boosting pump may be required.

** Maximum 50 cm above floor level.

TP-XL (H)

CENTRAL REVERSE OSMOSIS WITH HEAT DISINFECTION

Utilizing a dual-stage configuration, RIVAMED TP-XL (H) ensures high product water quality using municipal water as the feed source. RIVAMED TP-XL (H) is designed in compliance with various international standards and regulations applicable to hemodialysis.

Engineered in full compliance with international hemodialysis standards and regulatory requirements, the TP-XL (H) prioritizes operational safety through its two fully independent RO stages. In the event that one stage becomes inactive, the operator can easily activate the second stage independently via the control panel, thereby ensuring continuous operation. In addition, parallel operation allows the product water capacity to be increased when required.

For heat disinfection of distribution loops and reverse osmosis, TP-XL (H) is equipped with an integrated heat disinfection system, with ultrafiltration available as an optional feature. Its user-friendly interface simplifies configuration and monitoring processes while also enabling easy connectivity and software updates.



Up to 85% Water Recovery & Energy Saving

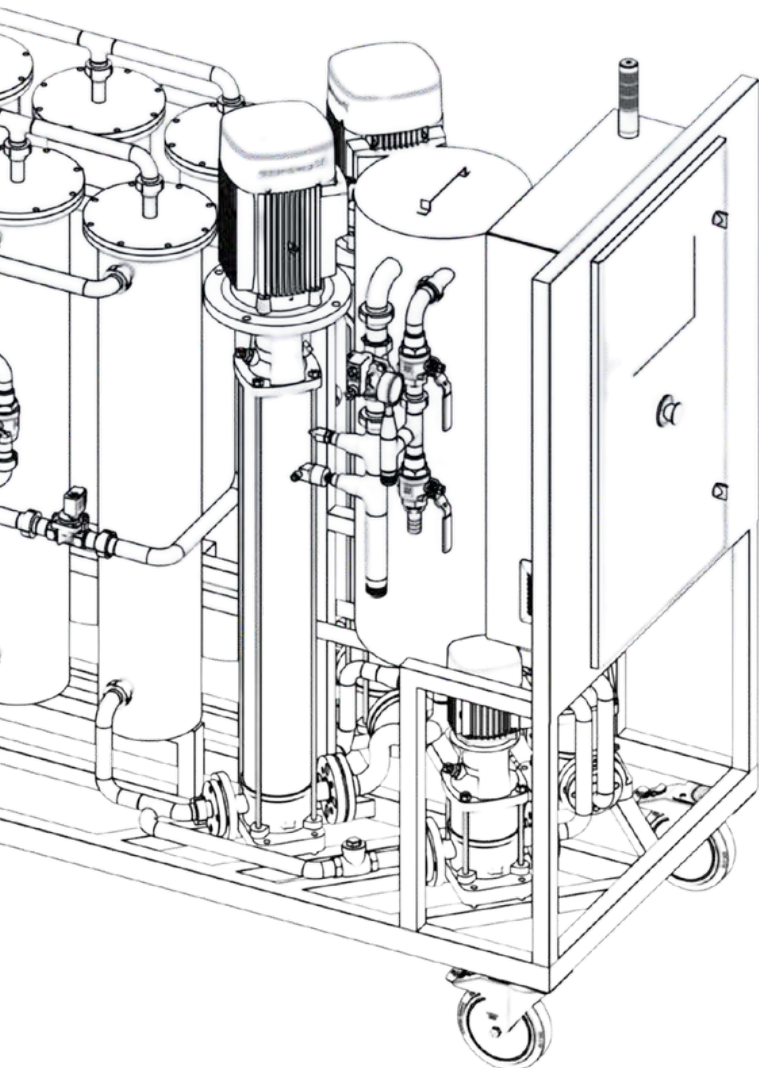
Ultra-Pure Water with HDF Capability

Integrated Heat Disinfection

Comprehensive Safety & Protection



- Enhanced chemical and microbiological purity through twin-pass operation
- Implementation of water and energy saving technology through product water recirculation, concentrate recovery, and capacity control in accordance with the demand of hemodialysis machines
- Compact and streamlined design providing efficient use of installation space
- Semi-automatic chemical disinfection and fully automatic heat disinfection programs
- Heat sanitizable polyamide membranes
- Integrated permeate pressure holding valve for precise system pressure control
- Continuous monitoring of conductivity, pressure, temperature, product water flow, and concentrate flow for each module
- Programmable multiple independent on/off functions
- Adjustable interval flushing timer programs
- Built-in self-test function activated upon power-up
- Emergency mode in the event of electronic failures
- Monitoring and control via a microprocessor-controlled control panel with a multi-color touchscreen interface
- Remote monitoring and control

**OPTIONAL CONFIGURATIONS**

- Leak Detector
- Ultrafiltration (Bacteria and Endotoxin Filter)

TECHNICAL DATA

PARAMETER

TP-XL (H)

1. PERFORMANCE DATA

Dimensions (W x D x H)	190 x 90 x 180 cm
Weight	Max 1000 kg
Permeate Capacity	1000 – 5000 lt/h
Point of Use (Dialysis Machine)	Up to 104
Dialysis Water Pressure	2 – 6 bar
Concentrate Pressure	< 20 bar
Salt Removal Rate	> 99% NaCl
System Recovery	Up to 85%
Bacteria and Endotoxin Removal	> 99%
Noise Level	< 70 dB (A)
Heat Disinfection	Integrated

2. WATER CONNECTIONS

Soft Water Supply	DN 40 hose nozzle
Permeate	25mm PEX-A Connection
Wastewater	DN 25 hose nozzle

3. ELECTRICAL SAFETY

Energy Consumption	Max 18 kW
Power Plug	CEE 16-32 A
Supply Voltage	380-400 V AC
Water Protection Degree	IP44
Working Mode	Continuous operation
Leakage Currents	Comply With ANSI/AAMI IEC 60601-1 standard
Protection Type	I
Application Part Classification	Type B

TECHNICAL DATA

PARAMETER

TP-XL (H)

4. FEED WATER

Quality	Softened Tap Water
Hardness	1.78 ppm CaCO ₃ (0.018 mmol/l)
SDI	< 3
Conductivity	< 2000 µS/cm
TDS	< 1200 mg/l
Iron	< 0.1 mg/l
Free Chlorine	< 0.1 mg/l
Temperature Range	5–35 °C
pH Value	6.5–8.5

5. ENVIRONMENTAL CONDITIONS

Shipping / Storage Temperature	+1 to +45 °C
Operating Temperature	+1 to +35 °C
Humidity	Max. 90% relative humidity, non-condensing environment
Installation Altitude	< 2000 m above sea level

6. FIELD REQUIREMENTS

Water Supply	2 – 6 bar dynamic pressure*
Wastewater	HT 100 mm, gravity drainage for 7 m ³ /h**

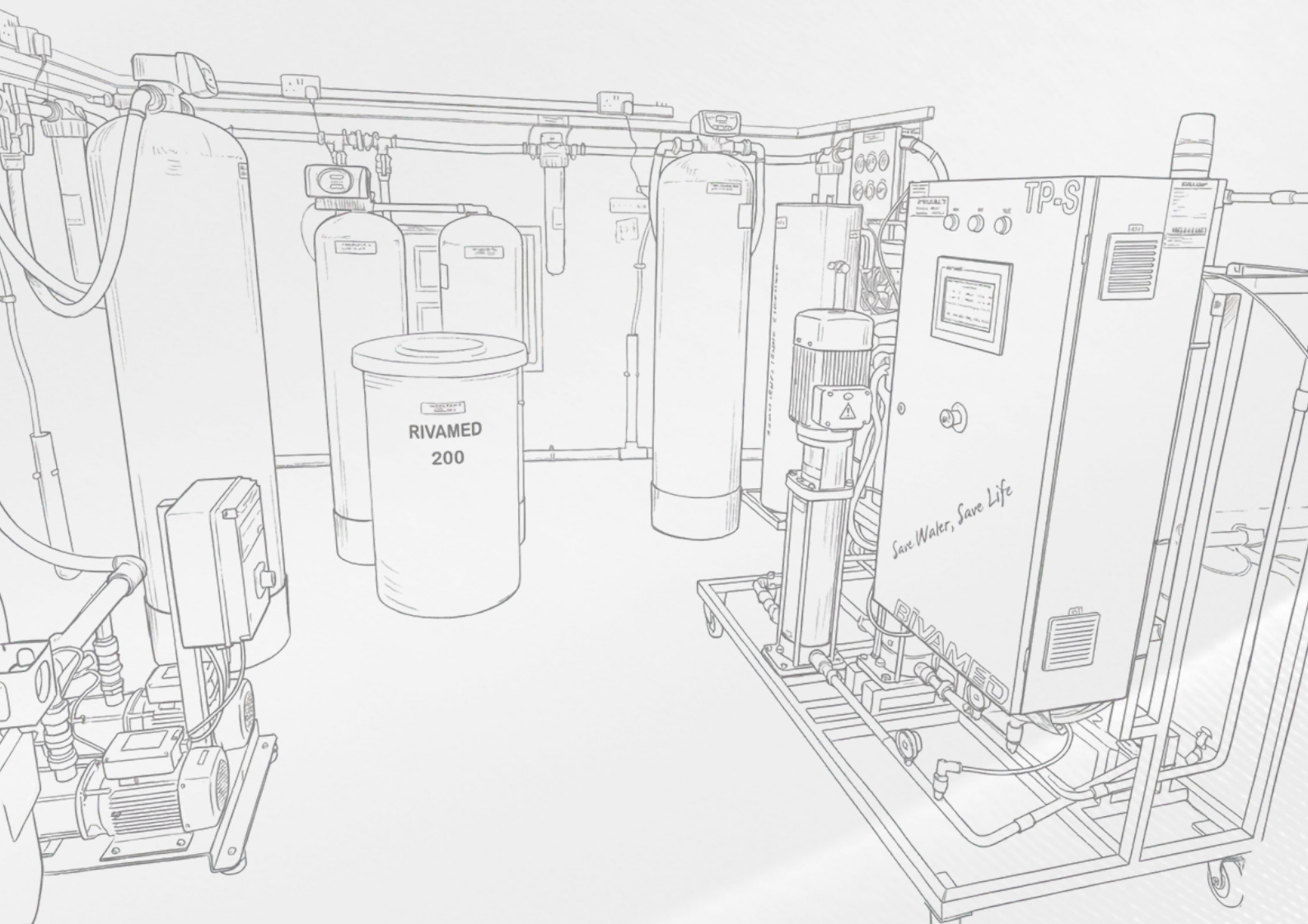
7. PRE-TREATMENT

Suggested Units

90 µm washable filter, multimedia filter, tandem water softener, activated carbon filter, microfiltration

*Pressure reducing valve or a pressure boosting pump may be required.

**Maximum 50 cm above floor level.



TURNKEY SOLUTIONS

RIVAMED HSS Series is an online thermal disinfection system designed for effective disinfection of hemodialysis water distribution loops, hemodialysis machines, connection hoses and reverse osmosis ensuring high microbiological safety and hygienic operation. The series is optionally available with an integrated 500 liter storage tank, enabling simultaneous thermal disinfection of multiple hemodialysis machines at the same time.

Equipped with an in-line heating system, the HSS Series provides fast and energy efficient thermal disinfection. Fully compatible with RIVAMED reverse osmosis systems, the series allows simultaneous disinfection of hemodialysis machines and distribution loops, supporting continuous operation and maximizing operational safety.

Manufactured from AISI 316 stainless steel and equipped with a PLC/Microprocessor controlled touchscreen interface, along with comprehensive safety and monitoring functions, the RIVAMED HSS Series offers a reliable, hygienic, and flexible thermal disinfection solution for modern hemodialysis centers.



- Fast and energy efficient operation
- Simultaneous thermal disinfection of the distribution loop and hemodialysis machines
- PLC/Microprocessor control with touchscreen interface and safety-test
- Can be integrated into all Rivamed central water treatment systems

TECHNICAL DATA

PARAMETER	HSS
1. PERFORMANCE DATA	
Dimensions (W × D × H)	73 x 73 x 155 cm
Weight	120-150 kg
Heat Disinfection Extraction Rate	150 lt/h
Integrated Hemodialysis Machine Disinfection	3 pcs at the same time
Maximum Pressure	6 bar
Hot Disinfection Temperature	60 – 87 °C
Noise Level	< 70 dB (A)
2. WATER CONNECTIONS	
Water Supply	25 mm PEX-A connection
Product Water	25 mm PEX-A connection*
Drain Water	Hose nozzle DN 25
3. ELECTRICAL SAFETY	
Mains Plug	CEE socket
Supply Voltage	380-400 V AC 50/60 Hz
Power Consumption	Max 19 kW
Water Protection Rating	IP44
Applied Parts Classification	Type B
Protection Against Electric Shock	I
Leakage Currents	Comply with ANSI/AAMI IEC 60601-1
Operating Mode	Continuous operation
4. AMBIENT CONDITIONS	
Shipping / Storage / Operating	+1 to +45 °C
Conditions	+1 to +35 °C
Humidity	Max. 90% relative humidity, non-condensing
Installation Altitude	< 2000 m above sea level

* Three different loops can be supplied.

RIVAMED



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Save Water, Save Life

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