

No
chemicals,
simply
chemistry.


CONSTANT CORROSION CONTROL

**Chemical Free
Water Treatment**
for Sealed Heating
and Cooling Systems

With Exclusive
Three-Zone Technology




eleXion

www.elexion.uk

Leading the Shift to Chemical-Free Water Treatment

Water treatment within closed-loop heating and cooling systems is changing.

For decades, the UK building services industry has relied on chemical dosing to protect systems from corrosion, scale and microbiological growth.

Traditional chemical treatment can create ongoing operational challenges, such as:

- **More complexity** - Regular testing and monitoring take time
- **Higher maintenance** - Ongoing dosing and servicing increase workload
- **Environmental impact** - Chemical use and disposal affect sustainability goals
- **System risk** - Incorrect dosing can lead to corrosion, scale and failures
- **Higher costs** - Ongoing treatment adds long-term expense

Across Europe, a different approach has been widely adopted since the 1970s. With the move from open-vented systems to modern closed-loop systems, dissolved oxygen can be controlled effectively without the need for chemical inhibitors.



Now, that approach is gaining momentum in the UK.

Growing demand from asset owners, designers and operators - combined with increasing sustainability expectations and evolving guidance - is accelerating the move towards chemical-free system protection. Imminent new UK legislation and guidance are expected in the industry, which will further support this shift.

Increasingly, the industry is recognising that maintaining stable system water conditions offers a simpler and more sustainable route to long-term system protection.

Chemical-Free Benefits



Improved Asset Protection

Stable system water conditions help protect heat exchangers, pumps, valves and pipework from corrosion damage.



Manufacturer Compliance

Maintaining correct system water quality supports manufacturer requirements and helps safeguard equipment warranties.



Simpler System Management

Without ongoing chemical dosing, monitoring and maintenance requirements are significantly reduced.



Sustained System Efficiency

Clean system water allows heat transfer equipment to operate as designed, maintaining performance and reducing unnecessary energy consumption.



Environmental Responsibility

Removing the need for chemical dosing eliminates the manufacture, transport, handling and disposal of treatment chemicals, reducing environmental impact and supporting sustainable building operation.

Why Building Operators Choose eleXion

Helping You Protect System Performance

- Reduce reliance on chemical treatment with modern water management strategies
- Protect heating and cooling systems from corrosion, scale and performance issues
- Improve long-term efficiency and help extend asset lifespan
- Support both new build and existing system upgrades
- Practical guidance for consultants, contractors and building operators
- Approaches aligned with sustainability goals and lower ongoing maintenance demands

Trusted Technical Expertise

- Technical expertise built on practical project experience across commercial building services systems
- Contributed to recognised industry guidance, including BSRIA publications such as the BG50 and other guides
- Supported wider industry standards including the upcoming HNTAS TS1 and BS 8635-1:2024
- Technical team with a combined industry experience of 70+ years in heating, cooling and communal systems

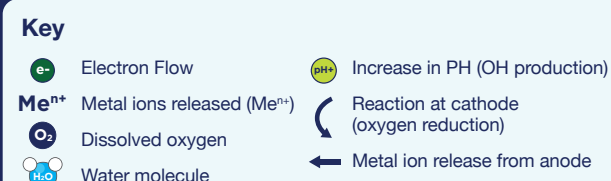
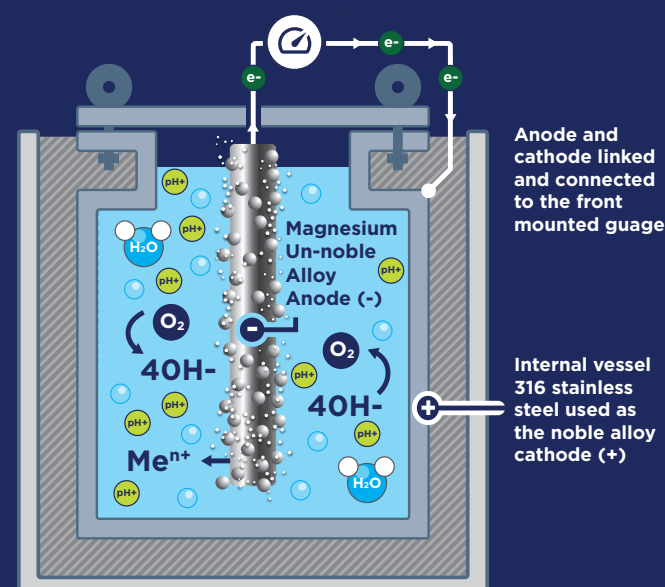
Proven European Approach

- Technology introduced from established German engineering partners
- Based on recognised standards such as VDI 2035 and VDI 6044
- Focus on demineralisation and corrosion prevention rather than ongoing chemical use
- A simpler, lower-maintenance approach that supports reliable building performance

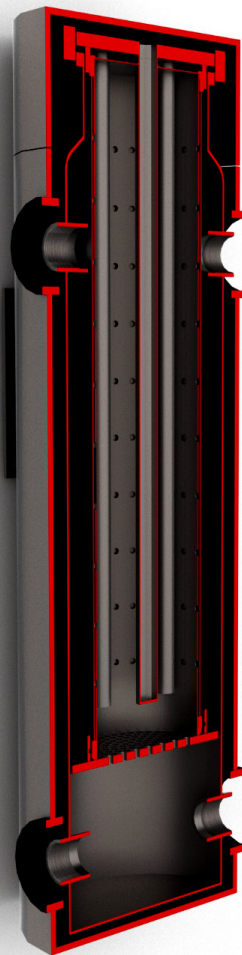
How does the technology work?

Chemical-free water treatment addresses the root causes of corrosion and scale rather than attempting to suppress them through chemical dosing.

By combining high-purity demineralised water with electrochemical corrosion protection, systems operate in a stable, low-conductivity environment that significantly reduces the conditions that allow corrosion to develop.



How redoX Protects Your System



redoX continuously maintains water quality without chemical dosing. By removing dissolved oxygen, magnetite and system debris, it helps reduce corrosion, protect performance and improve long-term reliability in heating and chilled water systems.

The advanced three-zone design improves oxygen removal, stabilises pH levels and can help restore existing systems affected by corrosion.

Key Features

Chemical-Free Protection

Removes dissolved oxygen to reduce corrosion without ongoing chemical treatment.

Advanced Filtration

Captures debris and contamination with high-capacity filtration and serviceable filter bags.

Magnetic Separation

High-strength neodymium magnets remove magnetite and ferrous particles for cleaner system water.

Three-Zone Technology

- Dirt settlement
- Air removal
- Electrochemical oxygen removal

Magnesium Anodes

Provide continuous protection by removing oxygen and helping maintain stable water conditions.

Intelligent Monitoring

Optional BMS connectivity allows remote monitoring of:

- Anode performance
- Filter pressure
- Water usage

Product Range



Key Technical Features of RedoX HP & RedoX models

Exclusive Three-Zone Technology

Three zone technology is exclusive to redoX systems. Zone 1 is our low velocity zone, where larger deposits are collected. The air and disbursement plate agitates the water allowing further debris to be collected in zone 1 while allowing microbubbles to be released into zone 2 where they are automatically vented. Smaller finer debris are then collected in the full body filter, with clean water entering zone 3.

Electrochemical Oxygen Reduction

Dissolved oxygen is continuously removed through electrochemical oxygen reduction. Large surface area, high-purity magnesium anodes increase oxygen removal while helping maintain a stable pH range.

High-Capacity Filter Basket

The full-body stainless steel filter basket provides a large filtration surface area, helping maintain designed flow rates and heat source performance.

38-Micron Filtration

The 38-micron filter significantly outperforms standard filters and Y-strainers, which typically allow smaller particles to pass through. The large surface area also supports annual servicing.

Magnetic Separation

A full-body 1200 gauss neodymium magnet is positioned directly in the water flow to capture magnetic debris and protect the filter basket from premature clogging.

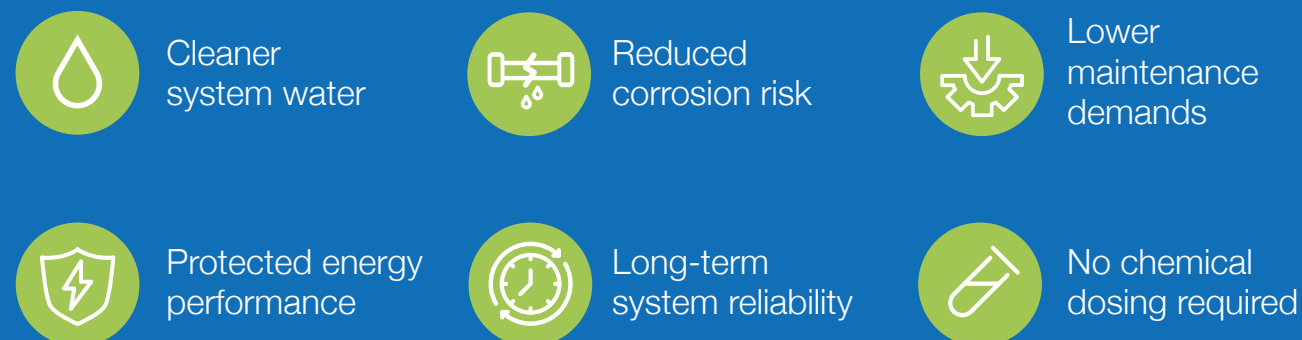
Simple Service Monitoring

Differential pressure gauges indicate when the filter requires servicing, while the front-mounted mA meter shows current anode performance.

Stainless Steel Construction

Unlike alternative systems that do not use the same construction, redoX is designed with high grade 316 stainless steel for all water contact elements and a 304 stainless steel outer jacket, supporting long-term durability, corrosion resistance, and operational life.

The Result



redoX HP

Chemical-free protection for domestic heat pumps and light commercial systems.

Designed for systems up to 5m³, redoX HP provides continuous water treatment for heat pumps, low-temperature heating and chilled water systems.

By removing dissolved oxygen, magnetite, debris and microbubbles, it helps protect sensitive components such as heat exchangers, pumps and control valves from corrosion, blockages and performance loss.

Suitable for both full flow and side stream installation, redoX HP helps maintain stable water quality while reducing maintenance demands and supporting long-term system efficiency.

Technical details

Model	FULL FLOW			SIDE STREAM		
	Max system volume (litres)	Connection size	Max flow rate (m3/hr)	Max system volume (litres)	Connection size	Max flow rate (m3/hr)
redoX HP 0.5	250	1 1/4"	TBA	500	3/4"	0.12
redoX HP 3	1,500		4.98	3,000		0.3
redoX HP 5	2,500		6.96	5,000		0.3

Model	Anode material	Magnet	Max temperature	Max pressure	Manufacturing standards	Outer case material	Vessel body material	Insulation
redoX HP 0.5	Magnesium	1,200 gauss	90 °C	6 bar	PED2014/68/EU	SS 304	SS 316	Armaflex 25mm
redoX HP 3								
redoX HP 5								

Model	Volume (litres)	Approx weight (empty - kg)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)
redoX HP 0.5	0.85	TBA	200	175	120	25	120	24	30	60	30
redoX HP 3	5		500	400	168	100	168	60			
redoX HP 5	14		700	600	204	100	204	80			

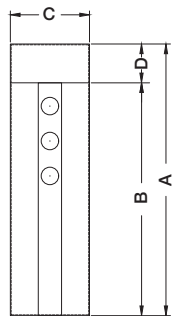
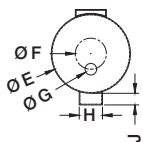


Ideal for:

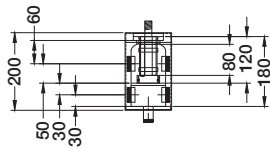
- Domestic heat pump systems
- Low-temperature heating systems
- Chilled water circuits
- Light commercial applications
- Retrofit and new-build projects

Key benefits:

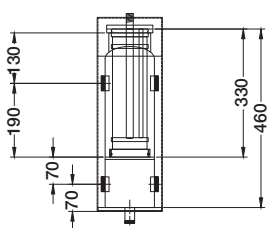
- Continuous chemical-free corrosion protection
- Removes dissolved oxygen to reduce corrosion risk
- Integrated 40-micron filtration for debris removal
- Full-body 1200 gauss neodymium magnet captures magnetite
- Three-zone technology for dirt separation and air removal
- High-purity magnesium anodes help maintain stable pH
- Differential pressure gauges for simple maintenance monitoring
- Suitable for full flow or side stream installation
- Unique three zone technology
- 316 stainless steel inner vessel
- 304 stainless steel outer shell



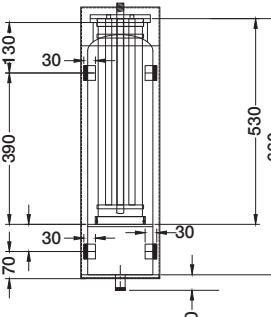
For detailed dimensional information of full range, please contact eleXion for data sheets, DWG's and Revit files.



redoX HP 0.5



redoX HP 3



redoX HP 5

- 1

Wall bracket
- 2

Outer shell
- 3

Inner vessel
- 4

Removable lid
- 5

Vessel lid
- 6

AAV socket
- 7

Drain
- 8

Inlet connections (left or right)
- 9

Outlet connection (left or right)
- 10

Air & dirt disbursement plate
- 11

40 micron filter
- 12

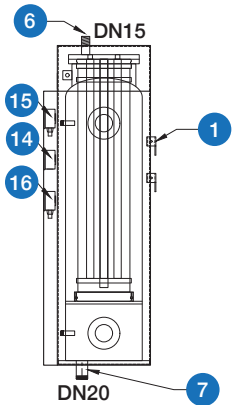
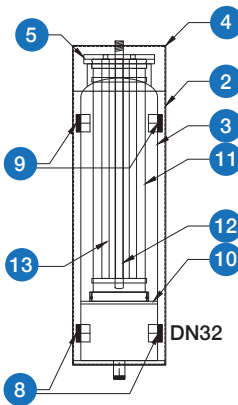
magnet
- 13

Anode(s)
- 14

mA meter
- 15

Inlet DP gauge
- 16

Outlet DP gauge



Chemical-free protection for commercial heating and cooling systems.

Designed for closed-loop systems from 10–100m³, redoX provides continuous water treatment for commercial heating and chilled water applications.

By removing dissolved oxygen, magnetite, debris and microbubbles, it helps protect critical plant equipment from corrosion, blockages and efficiency loss. Installed on a side-stream circuit, redoX maintains stable water quality without ongoing chemical dosing.

Ideal for larger commercial environments including offices, leisure facilities, communal heating networks, data centres and public sector buildings.



Ideal for:

- Commercial HTG and CHW systems
- Low-temperature heating networks
- Heat pump installations
- Retrofit and new-build projects

Key benefits:

- Continuous chemical-free corrosion protection
- Side-stream installation for larger systems
- Removes dissolved oxygen to reduce corrosion risk
- Integrated 40-micron filtration for debris removal
- Full-body neodymium magnet captures magnetite
- Three-zone technology for dirt separation and air removal
- High-purity magnesium anodes help maintain stable pH
- Supports VDI 2035 water quality standards
- Unique three zone technology
- 316 stainless steel inner vessel
- 304 stainless steel outer shell

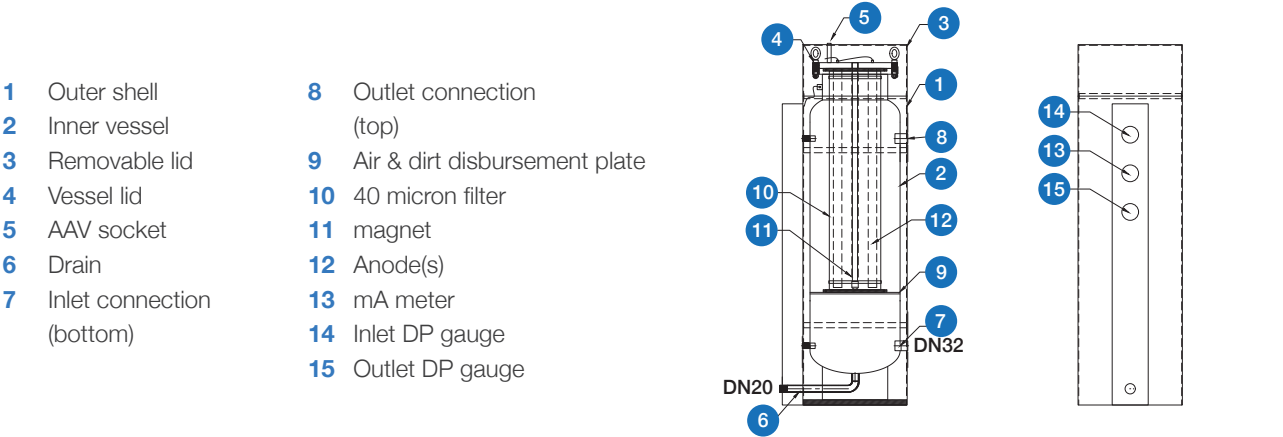
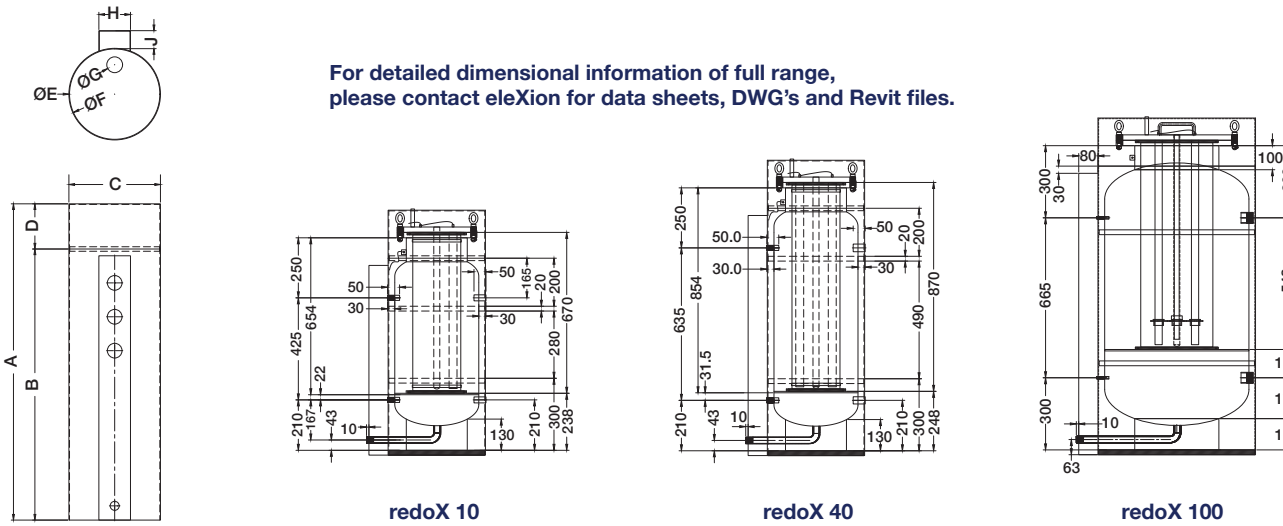
Technical details

Speak to us about higher pressures & temperatures

Model	Connection size	Max flow rate (m3/hr)	Max system volume (litres)	
			LTHW	CHW
redoX 10	¾"	0.3	10m3	5m3
redoX 20	1"	0.6	20m3	15m3
redoX 40	1"	1.2	40m3	30m3
redoX 70	1 ¼"	2.7	70m3	50m3
redoX 100	1 ½"	4.8	100m3	75m3

Model	Anode material	Magnet	Max temperature	Max pressure	Manufacturing standards	Outer case material	Vessel body material	Insulation
redoX 10	Magnesium	1,200 gauss	90 °C	10 bar	PED2014/68/EU	SS 304	SS 316	Armaflex 25mm
redoX 20								
redoX 40								
redoX 70								
redoX 100								

Model	Volume (litres)	Approx weight (empty - kg)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)
redoX 10	75	108	1,020	820	405	200	405	400	70	140	80
redoX 20	85	115	1,100	900	405		405	400			
redoX 40	95	125	1,230	1,030	405.4		405.4	400			
redoX 70	110	135	1,400	1,200	405.4		405.4	400			
redoX 100	292	240	1,400	1,200	655		655	650			



redoX HC+

Chemical-free protection for large-scale heating and cooling infrastructure.

Designed for systems from 100–1,000m³, redoX HC+ provides continuous water treatment for large, high-demand heating and cooling networks.

Built for environments where reliability is critical, it removes dissolved oxygen, magnetite, debris and microbubbles to help protect major plant equipment from corrosion, fouling and performance loss, without ongoing chemical dosing.

By removing the need for ongoing chemical dosing, storage, monitoring and disposal, it helps operators significantly reduce long-term maintenance costs while protecting critical infrastructure.

Ideal for data centres, district heating networks and large industrial systems where traditional chemical treatment can be costly and complex to manage.



Ideal for:

- Data centres
- District heating networks
- Industrial heating systems
- Large scale chilled water networks
- Critical infrastructure projects

Key benefits:

- Continuous chemical-free corrosion protection
- Designed for large system volumes
- Removes dissolved oxygen to reduce corrosion risk
- Air disbursement tube for rapid release of microbubbles
- Helps maintain efficient heat transfer
- Low velocity zone allows dirt settlement
- Reduces fouling in pipework and heat exchangers
- Supports compliance with recognised guidance
- Reduces chemical handling and disposal requirements
- 316 stainless steel construction inner vessel
- 304 stainless steel external jacket

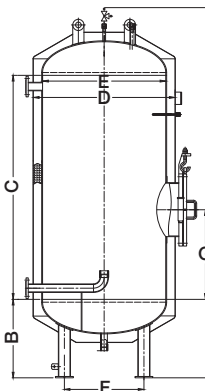
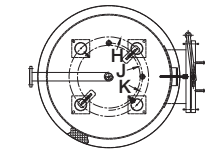
Technical details

Speak to us
about higher
pressures &
temperatures

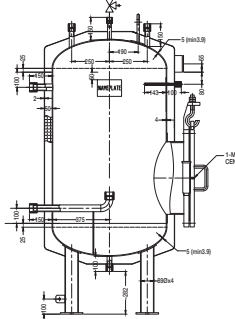
Model	Connection size	Max flow rate (m ³ /hr)	Max system volume (litres)	
			LTHW	CHW
redoX HC+ 150	1 ½"	6	150,000	100,000
redoX HC+ 300	2"	12	300,000	180,000
redoX HC+ 600	DN65	24	600,000	440,000
redoX HC+ 900	DN80	37.5	900,000	540,000

Model	Anode material	Magnet	Max temperature	Max pressure	Manufacturing standards	Outer case material	Vessel body material	Insulation
redoX HC+ 150	Magnesium	1,200 gauss	90 °C	10 bar	PED2014/68/EU	SS 304	SS 316	75mm Rockwall
redoX HC+ 300								
redoX HC+ 600								
redoX HC+ 900								

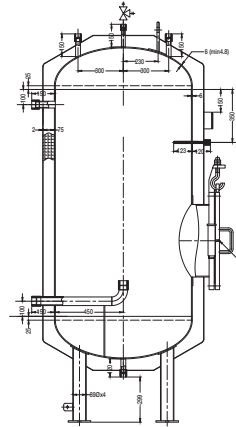
Model	Volume (litres)	Approx weight (empty - kg)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)
redoX HC+ 150	500	390	2,117	600	1,025	858	750	500	300	R250	R190	-
redoX HC+ 300	1,000	650	2,779	700	1,500	1,062	900	580	500	R300	R230	R290
redoX HC+ 600	2,000	1,070	3,304	700	2,000	1,266	1,100	710	800	R355	R280	R300
redoX HC+ 900	3,000	1,300	3,454	800	2,000	1,466	1,300	810	800	R405	R300	R330



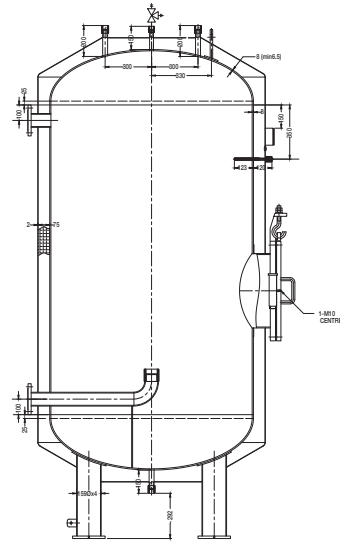
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redoX HC+ 150



redoX HC+ 300



redoX HC+ 900

- 1

Outer shell
- 2

Inner vessel
- 3

Manhole
- 4

Inlet connection
- 5

Outlet connection
- 6

Drain
- 7

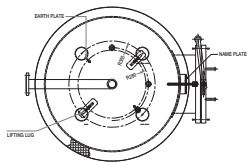
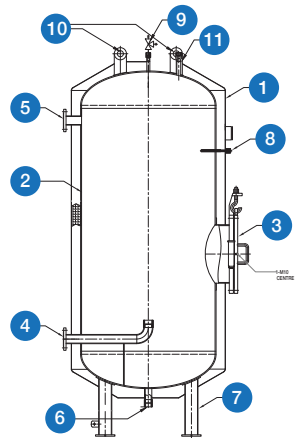
Support legs
- 8

Pressure/temperature gauge
- 9

AAV socket
- 10

Lifting eyes
- 11

Quick vent socket



Need advice on the right system for your application?

Speak to our team about product selection,
system design support and technical guidance.

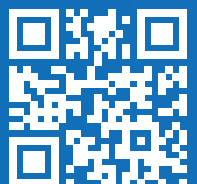


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