

The background of the advertisement is a circular industrial machine, possibly a lathe or a similar turning machine. A bright, intense light source, likely a welding torch or a cutting tool, is positioned at the center of the machine's opening. This light source is creating a large amount of bright orange and yellow sparks that are flying outwards in all directions. The machine's interior is dark, and the overall scene is dominated by the blue and white tones of the machine's metal and the bright light of the welding process. The text is overlaid on the right side of the image, which is a dark blue semi-transparent area.

**WINKELMANN**  
OEM Competence

Reliable.  
Flexible.  
Customised.

Your OEM partner for  
high-quality components  
and systems.



# WINKELMANN

## OEM Competence

Winkelmann is one of the global leading original equipment manufacturers (OEM) for expansion vessels, water storage tanks and manifolds. As part of the Winkelmann Building+Industry business unit of the Winkelmann Group in Germany, the Winkelmann brand represents our OEM business with components and systems in buildings of all types and sizes as well as in a wide variety of industrial sectors and industries. Comprehensive technical expertise, holistic thinking and customer focus make us a reliable OEM partner developing and manufacturing customised and unique solutions. Winkelmann offers a broad range of standard products as well as customised solutions in the fields of:

- ✓ **Flat expansion vessels**
- ✓ **Expansion vessels for heating & cooling systems**
- ✓ **Expansion vessels for potable water systems**
- ✓ **Water storage tanks**
- ✓ **Manifolds**



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## Our roots – The Winkelmann Group

### Where are we coming from

More than a century ago, Heinrich Winkelmann and Caspar Pannhoff established a small independent company to produce raw products for the enamel goods industry. The company grew rapidly and over the years developed into a modern medium-sized business, which still has its headquarters in Ahlen, Westphalia. During the expansion phase, the founders of the company always took particular care to ensure production efficiency, the necessary research and development, and the technical perfection of their products were the priority.

### What do we stand for

With its three divisions Automotive, Flowforming and Building+Industry, the Winkelmann Group is today one of the leading groups of companies in the field of metal forming for well-known customers from a wide range of industries. In the tradition of an established family business, all our decisions are based on long-term thinking while remaining innovative and flexible. Our orientation to growth and success places a high priority on sustainable development, the quality of our processes and products, and on a high level of customer satisfaction.



## Our strength

### The Building+Industry business unit

The powerful Reflex brand, together with the Sinus, Nema and Winkelmann OEM Competence brands, form the business unit Winkelmann Building+Industry, with an international team of over 1,800 employees and a presence in more than 20 countries around the world.

Building+Industry stands for the various industries, that are supplied with our products and solutions: from small family houses and commercial buildings up to complex industrial facilities and special customised solutions. We react flexibly depending on the challenges posed by different markets and technologies.

## WINKELMANN BUILDING+INDUSTRY



nema

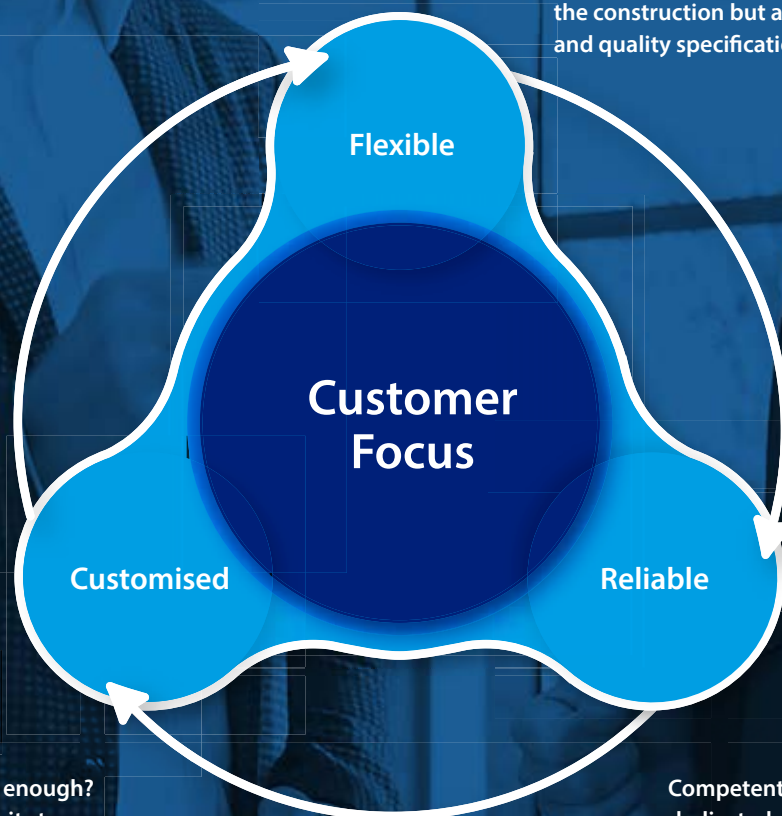
**WINKELMANN**  
OEM Competence



## Our OEM competence

Our collaboration is based on a complete understanding of your needs, the importance of your process, and your current and future challenges. We aim to become an integral part of your business and to help pave the way for your success.

We offer a broad range of standard products that, after minor modification, can be used for a wide range of applications. We also develop individual components meeting the most diversified customer demands. This applies to the geometry and material selection of the construction but also to the definition of process and quality specifications.



Standard is not enough? There are no limits to our customised solutions. We develop individual components and systems for seamless integration into your system.

Competent and comprehensive support by dedicated contact persons ensures the highest reliability at any point in the process — from technical coordination and production in one of our highly efficient production sites up to conceiving tried and tested logistics concepts.

# Your journey with our OEM team

Your business and requirements are the operational starting point for each project phase—from the idea, through production, to logistics. We devise solutions in collaboration with you to meet the high demands of your market.







# Flat Expansion Vessels



## Flat expansion vessels

Pressure is created in heating and cooling systems by temperature and process-inherent volume changes in the water system. The pressure in the systems is maintained by the functional principle of an expansion vessel which absorbs these changes in volume and therefore largely keeps the pressure constant.

Our flat expansion vessels are designed for installation in boilers of heating, cooling and heat pumps systems. Its flat geometry is space-saving and therefore the ideal component for efficient integration in your application.

### Your benefits

- ✓ For closed heating, cooling and heat pumps systems
- ✓ Long-lasting epoxy resin coating
- ✓ With standard and customised thread connection
- ✓ Non-replaceable membrane according to DIN EN 13831



### Efficient production

Our flat expansion vessels are manufactured in our modern and high efficient production sites, which guarantee best quality and flexibility every day. Due to automated assembly lines, we are able to produce high capacities and handle large volumes within a very short time.



### Innovative PP membrane

The PP membrane that we produce for our flat vessels was awarded with the Plus X Award as Best Product 2017 as well as in the categories Innovation, High Quality and Functionality.

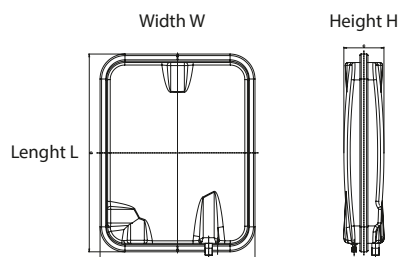


### Certified quality

Our production sites have been certified according to the common standards for industrial and sustainable manufacturing (ISO 9001 and ISO 14001). We can therefore provide our OEM customers with evidence of compliance with all required international standards—confirmed by independent certification authorities.



## Flat Expansion Vessels

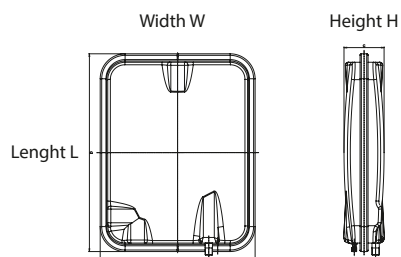


### Technical Features

- For closed heating and cooling systems, particular for installation in a boiler
- Membrane according to DIN EN 13831, butyl or SBR membrane
- Colour: red/silver
- Max. operating pressure: 3 bar



	Type	Dimensions L x W [mm]	Height [mm]	Operating temperature [°C]	Pre-charge pressure [bar]	Connection
<b>CRF</b>	CRF 7	438 x 250	85	90	0.75	G 3/8"
	CRF 8		94			G 3/8", G 1/2"
	CRF 10		111			G 3/8", G 1/2"
	CRF 12		136			G 3/8", G 1/2"
<b>ROM</b>	ROM 12	444 x 350	108	90-120	0.75	G 3/8", G 1/2"
	ROM 13		118			G 1/2"
	ROM 15		134			G 1/2", G 3/4"
	ROM 18		158			G 1/2", G 3/4"
	ROM 24		180			G 1/2", G 3/4"
<b>CRI</b>	CRI 6.5	340 x 300	74	90	0.75	G 3/8"
	CRI 8		94			G 3/8", G 1/2"
	CRI 10		110			G 3/8", G 1/2"
<b>RN</b>	RN 6	500 x 210	84	90-110	0.75	G 3/8"
	RN 8		100			G 3/8", G 1/2"
	RN 10		150			
	RN 12		175			
	RN 15		220			G 1/2", G 3/4"
<b>CRX</b>	CRX 6	410 x 267	84	90-110	0.75	G 1/2"



## Flat Expansion Vessels

### Technical Features

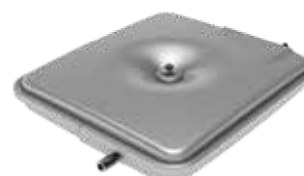
- For closed heating and cooling systems, particular for installation in a boiler
- Membrane according to DIN EN 13831, butyl or SBR membrane
- Colour: red/silver
- Max. operating pressure: 3 bar



Type	Dimensions L × W [mm]	Height H [mm]	Operating temperature [°C]	Pre-charge pressure [bar]	Connection	
<b>BRF</b>	BRF 6	423 × 260	78	90	0.75	G ½"



<b>SVR</b>	SVR 7	461 × 333	58	90	0.75	G ¾"
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<b>VKC</b>	VKC 10	430 × 389	72,5	90	0.75	G ¾"
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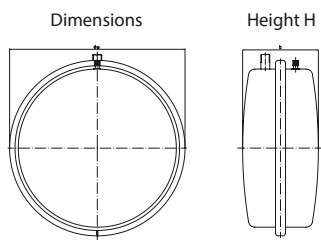
<b>VKN</b>	VKN 12	464 × 404	93	90–110	0.75	G ¾", G ½"
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<b>RUK</b>	RUK 12	470 × 212	170	90	0.75	G ¾"
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## Flat Expansion Vessels



### Technical Features

- For closed heating and cooling systems, particular for installation in a boiler
- Membrane according to DIN EN 13831, butyl or SBR membrane
- Colour: red/silver
- Max. operating pressure: 3 bar



Type	Dimensions [mm]	Height H [mm]	Operating temperature [°C]	Pre-charge pressure [bar]	Connection	
<b>DXM</b>	DXM 8	Ø 324	115	90	0.75	G 3/8"



<b>DUK</b>	DUK 6	Ø 337	75	90	0.75	G 3/8", G 1/2"
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<b>DN</b>	DN 6.5	Ø 380	90.5	90	0.75	G 1/2"
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<b>DGN</b>	DGN 5		60			G 3/8", G 1/2"
	DGN 6		72.5			G 3/8"
	DGN 7		82			G 3/8"
	DGN 8	Ø 389	88	90	0.75	G 3/8", G 1/2", G 3/4"
	DGN 10		92.5			
	DGN 11		118			G 3/8", G 1/2"
	DGN 12		138			

# Expansion Vessels



# Expansion vessels

The correct pressure and water quality is the fundamental requirement for the proper operation of water-based heating, solar, cooling and pressure booster systems. Winkelmann therefore offers a broad range of expansion vessels and separation technology.

Our vessels maintain the pressure, compensate volume fluctuations, and provide a water seal, while our separation technology improves the water quality by preventing the reduction of performance and service life caused by unwanted particles and substances.

## Your benefits

- ✓ **Vessels for heating, chilled water & solar applications**
- ✓ **Vessels for potable water and service water applications**
- ✓ **Full product range available in diaphragm and bladder versions**
- ✓ **From 2 to 5,000 litres from our own production facilities**



## Efficient production

Our expansion vessels and separators are manufactured in our modern and high efficient production sites, which guarantee best quality and flexibility every day. Due to automated assembly lines we are able to produce high capacities and handle large volumes within a very short time.



## Durable and reliable systems

The high-quality expansion vessels and separation technology prevent corrosion and operational failures. Our customers therefore benefit from long-lasting systems and maximum operational safety.



## Certified quality

Our production sites have been certified according to the common standards for industrial manufacturing. We can therefore provide our OEM customers with evidence of compliance with all required international standards confirmed by independent certification authorities.



# Expansion Vessels

Heating, chilled water & solar applications

## Technical Features

- For closed heating and cooling systems
- With thread connections
- Vertical from 35 litres
- Non-replaceable SBR diaphragm according to DIN EN 13831
- Max. operating temperature 70°C
- For antifreeze addition of maximum 50%
- Approval according to Pressure Equipment Directive 97/23/EC
- Long-lasting epoxy resin coating
- Max. permissible system temperature 120°C



## NG vessel

Type	Dimensions [mm]	Height H [mm]	Height h [mm]	perm. op. overpressure [bar]	Connection
NG 8	Ø 206	318	-	1.5	R ¾"
NG 12	Ø 280	275	-	1.5	R ¾"
NG 18	Ø 280	382	-	1.5	R ¾"
NG 25	Ø 280	494	-	1.5	R ¾"
NG 35	Ø 354	459	130	1.5	R ¾"
NG 50	Ø 409	469	158	1.5	R ¾"
NG 80	Ø 480	565	165	1.5	R 1"
NG 100	Ø 480	675	165	1.5	R 1"
NG 140	Ø 480	886	165	1.5	R 1"
N 200	Ø 634	758	205	1.5	R 1"
N 250	Ø 634	888	205	1.5	R 1"
N 300	Ø 634	1.092	235	1.5	R 1"
N 400	Ø 740	1.102	245	1.5	R 1"
N 500	Ø 740	1.321	245	1.5	R 1"
N 600	Ø 740	1.531	245	1.5	R 1"
N 800	Ø 740	1.996	245	1.5	R 1"
N 1000	Ø 740	2.413	245	1.5	R 1"

## Expansion Vessels (bladder)

Potable water and service water applications

### Technical Features

- Only for systems not required to meet DIN 1988, such as fire-fighting and service water systems, underfloor heating and geothermal installations
- Components in contact with water are corrosion-protected
- Bladder according to DIN EN 13831/replaceable from 50 litres
- Max. operating temperature 70°C
- From Ø 1,000 mm including pressure gauge
- Approval according to Pressure Equipment Directive 97/23/EC
- Long-lasting epoxy resin coating
- WRAS and/or ACS certified, other certifications available on request



### DE vessel

Type	Dimensions [mm]	Height H [mm]	Height h [mm]	perm. op. overpressure [bar]	Connection
DE 0.65	Ø 122	130	-	10.0	on request
DE 1	Ø 122	170	-	10.0	on request
DE 2	Ø 132	260	-	10.0	G ¾"



### NEL vessel

NEL 5	Ø 220	233	-	10.0	1"
NEL 8	Ø 220	296	-	10.0	1"
NEL 12	Ø 220	410	-	10.0	1"
NEL 19	Ø 280	434	-	10.0	1"
NEL 24	Ø 280	484	-	10.0	1"
NEL 35	Ø 354	465	-	10.0	1"
NEL 50	Ø 410	523	-	10.0	1"
NEL 60	Ø 410	593	-	10.0	1"

Further standard vessels are also available in 16 bar and 25 bar



### NEX vessel

Type	Dimensions [mm]	Height H [mm]	Height h [mm]	perm. op. overpressure [bar]	Connection
NEX 50	Ø 410	650	130	10.0	1"
NEX 60	Ø 410	721	130	10.0	1"
NEX 80	Ø 480	791	170	10.0	1"
NEX 100	Ø 480	924	170	10.0	1"

Further standard vessels are also available in 16 bar and 25 bar



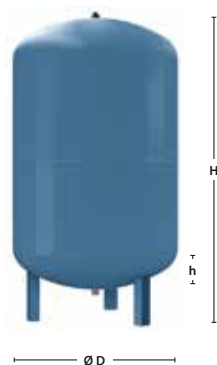
### DE vessel

Type	Dimensions [mm]	Height H [mm]	Height h [mm]	perm. op. overpressure [bar]	Connection
DE 100	Ø 480	852	143	10.0	G 1"
DE 200	Ø 634	967	150	10.0	G 1 ¼"
DE 300	Ø 634	1,267	150	10.0	G 1 ¼"
DE 400	Ø 740	1,245	139	10.0	G 1 ¼"
DE 500	Ø 740	1,475	133	10.0	G 1 ¼"
DE 600	Ø 740	1,859	263	10.0	G 1 ½"
DE 800	Ø 740	2,324	263	10.0	G 1 ½"
DE 1000	Ø 740	2,804	261	10.0	G 1 ½"
DE 1000	Ø 1,000	2,001	286	10.0	DN65/PN16
DE 1500	Ø 1,200	1,991	291	10.0	DN65/PN16
DE 2000	Ø 1,200	2,451	291	10.0	DN65/PN16
DE 3000	Ø 1,500	2,531	320	10.0	DN65/PN16
DE 4000	Ø 1,500	3,080	320	10.0	DN65/PN16
DE 5000	Ø 1,500	3,645	320	10.0	DN65/PN16

Further standard vessels are also available in 16 bar and 25 bar

## Expansion Vessels (diaphragm)

Potable water and service water applications



### Technical Features

- Only for systems not required to meet DIN 1988, such as fire-fighting and service water systems, underfloor heating
- Components in contact with water are corrosion-protected
- Non-replaceable diaphragm according to DIN EN 1383
- Max. operating temperature 70°C
- Pre-charge pressure: 2.0/4.0 bar
- Approval according to Pressure Equipment Directive 97/23/EC
- Long-lasting epoxy resin coating
- With factory-pressurised gas chamber
- WRAS and/or ACS certified, other certifications available on request

### DC vessel

Type	Dimensions [mm]	Height H [mm]	Height h [mm]	perm. op. overpressure [bar]	Connection
DC 25	Ø 289	510	–	10.0	G 1"
DC 50	Ø 418	588	115	10.0	R 1"
DC 80	Ø 489	676	103	10.0	R 1"
DC 100	Ø 489	782	103	10.0	R 1"
DC 140	Ø 489	997	104	10.0	R 1"
DC 200	Ø 643	883	91	10.0	R 1"
DC 300	Ø 643	1,184	93	10.0	R 1"
DC 400	Ø 749	1,173	81	10.0	R 1"
DC 500	Ø 749	1,392	82	10.0	R 1"
DC 600	Ø 749	1,629	75	10.0	R 1"



# Water Storage Tanks

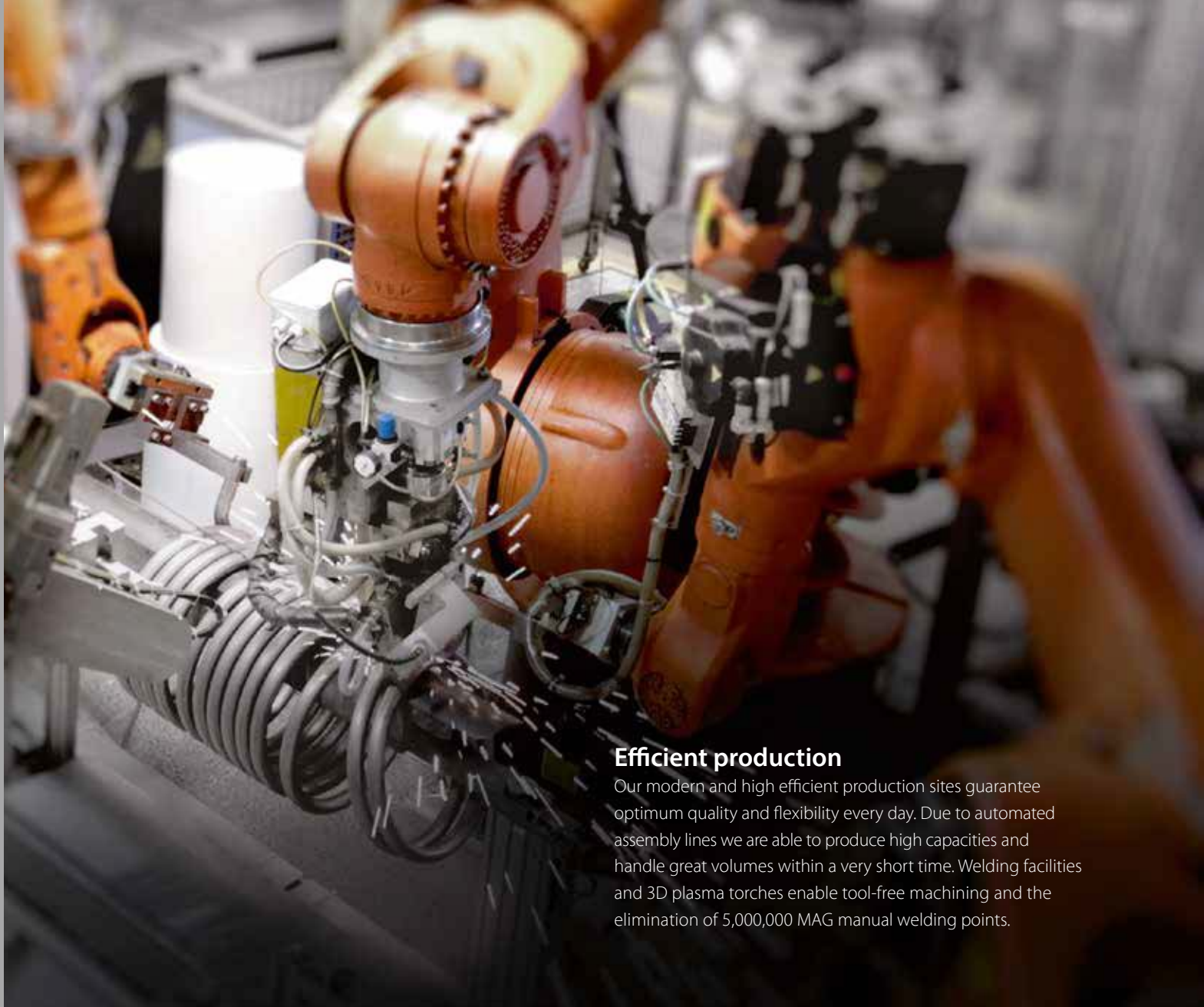
# Water storage tanks

Winkelmann tanks are used to efficiently heat and store drinking water. The many different types and comprehensive range of accessories ensure solutions are available for applications from private houses and public buildings to industrial structures.

In addition to specific solutions – from projecting to serial production level – we also offer our customers an extensive standard product portfolio in a range of sizes with different insulation options and properties.

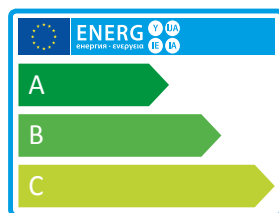
## Your benefits

- ✓ **Hot water storage tanks & Buffer tanks**
- ✓ **For heating, cooling and heat pump systems**
- ✓ **Available in energy efficiency classes A, B and C**
- ✓ **Highest quality and production standards**



## Efficient production

Our modern and high efficient production sites guarantee optimum quality and flexibility every day. Due to automated assembly lines we are able to produce high capacities and handle great volumes within a very short time. Welding facilities and 3D plasma torches enable tool-free machining and the elimination of 5,000,000 MAG manual welding points.



## Energy efficiency classes A, B and C

We produce, test and supply products to customer requirements strictly in keeping with the specifications of European standards and laws (as from September 2017, for example, in conformity with the new standards and labelling requirements in keeping with ErP Directive). We therefore offer insulation variants in energy efficiency classes A to C by using the closed-cell polyurethane foam "ecolso" or fleece.



## Certified quality

Our production sites have been certified according to the common standards for industrial and sustainable manufacturing. We can therefore provide our OEM customers with evidence of compliance with all required international standards —confirmed by independent certification authorities.



# Hot water storage tanks

With one heating coil, efficiency class A



## Technical Features

- Vertical tank with one heating coil for all heating systems
- Corrosion resistant glass-lined, produced according to DIN 4753 T3 and EN DIN 12897
- With magnesium anode, thermometer, adjustable feet and service opening
- Preinstalled insulation
- Max. operating pressure: Heating water 10 bar, potable water 10 bar
- Max. operating temperature: Heating water 110°C, potable water 95°C



## Aqua A

Type	Volume [l]	Ø d with iso [mm]	Height h with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With "ecoloso" insulation and foil jacket</b>								
VF-1 150	159	650 × 650	1,137	1,212	52	0.83	36	A
VF-1 200	197	650 × 650	1,329	1,384	60	0.95	39	A
VF-1 300	302	750 × 750	1,374	1,451	86	1.28	49	A
VF-1 400	382	790 × 790	1,671	1,729	108	1.75	51	A
VF-1 500	473	790 × 790	2,001	2,037	126	1.88	58	A

\* EEC = Energy efficiency class

## What are the benefits of class A?

The higher the energy efficiency class, the better the heat insulation and therefore the lower the heat loss. Both the material thickness and the exceptional quality of the insulation have a direct impact on the efficiency class. It means that customers have the option to choose between

the initial outlay and cutting energy consumption and thus cost. Our hot water storage tanks are available in efficiency classes A, B and C, meaning all the ErP Directive's requirements are accounted for.

# Hot water storage tanks

With one heating coil, efficiency class B, C

## Technical Features

- Vertical tank for all heating systems
- Corrosion resistant glass-lined, produced according to DIN 4753 T3 and EN DIN 12897
- With magnesium anode, thermometer, adjustable feet and service opening
- Up to 2,000 litres, preinstalled insulation
- Max. operating pressure: Heating water 10 bar, potable water 10 bar
- Max. operating temperature: Heating water 110°C, potable water 95°C



## Aqua

Type	Volume [l]	Ø d with iso [mm]	Height h with iso [mm]	Tilt height ca, [mm]	Weight [kg]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With "ecolso" insulation and foil jacket</b>								
VF-1 150	156	540	1,219	1,270	43	0.75	56	B
VF-1 200	197	600	1,475	1,525	62	0.95	55	B
VF-1 200	197	540	1,475	1,525	56	0.95	68	C
VF-1 300	303	700	1,334	1,441	78	1.4	69	B
VF-1 400	384	750	1,631	1,719	99	1.8	69	B
VF-1 400	384	700	1,631	1,719	99	1.8	84	C
VF-1 500	476	750	1,961	2,029	128	1.9	73	B
VF-1 500	476	700	1,961	2,029	128	1.9	99	C
<b>With 100 mm fleece insulation</b>								
VF-1 750	750	950	2,023	2,104	259	3.7	123	C
VF-1 1000	976	1,050	2,050	2,158	322	4.5	142	C
VF-1 1500	1,500	1,240	2,216	2,371	480	6.0	171	C
VF-1 2000	2,000	1,440	2,126	2,226	650	7.0	188	C
VF-1 3000	2,800	1,440	2,878	3,040	790	9.5	–	C
<b>With "ecolso" insulation and steel sheet jacket</b>								
VB-1 100	100	512	849	960	50	0.61	50	C
VB-1 150	156	540	1,219	1,270	47	0.75	56	B
VB-1 200	197	540	1,475	1,525	67	0.95	68	C
VB-1 300	303	700	1,334	1,441	102	1.4	69	B
VB-1 400	384	700	1,657	1,719	123	1.8	84	C
VB-1 500	476	700	1,961	2,029	144	1.9	99	C

\* EEC = Energy efficiency class

# Hot water storage tanks

With two heating coils

## Technical Features

- Vertical storage tank for solar energy systems
- Corrosion resistant glass-lined, produced according to DIN 4753 T3 and EN DIN 12897
- With magnesium anode, thermometer, adjustable feet and service opening
- Up to 2,000 litres, preinstalled insulation
- Max. operating pressure: Heating water 10 bar, potable water 10 bar
- Max. operating temperature: Heating water 110°C, potable water 95°C



### Aqua Solar A

Type	Volume [l]	Ø d with iso [mm]	Height h with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With "ecolso" insulation and foil jacket</b>								
VF-2 200	196	500	1,329	1,384	68	0.95/0.67	40	A
VF-2 300	300	597	1,374	1,452	97	1.42/0.84	48	A
VF-2 400	380	597	1,671	1,729	120	1.75/1.00	53	A
VF-2 500	470	597	2,001	2,037	141	1.88/1.28	58	A

\* EEC = Energy efficiency class



### Aqua Solar

Type	Volume [l]	Ø d with iso [mm]	Height h with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With "ecolso" insulation and foil jacket</b>								
VF-2 200	196	600	1,475	1,524	64	0.7/0.95	52	B
VF-2 200	196	540	1,475	1,530	67	0.7/0.95	71	C
VF-2 300	303	700	1,294	1,438	90	0.85/1.45	70	B
VF-2 300 S	299	650	1,834	1,884	103	0.8/1.55	62	B
VF-2 300 S	299	600	1,834	1,884	99	0.8/1.55	83	C
VF-2 400	382	700	1,657	1,721	117	1.5/1.8	86	C
VF-2 400	382	750	1,657	1,721	111	1.5/1.8	68	B
VF-2 500	482	750	1,961	2,029	130	1.3/1.9	78	B
VF-2 500	474	700	1,961	2,029	134	1.3/1.9	100	C
<b>With 100 mm fleece insulation</b>								
VF-2 750	751	950	2,035	2,104	216	1.17/1.93	129	C
VF-2 1000	972	1,050	2,050	2,130	320	1.12/2.45	146	C
VF-2 1500	1,500	1,200	2,216	2,250	495	1.9/3.8	171	C
VF-2 2000	2,000	1,400	2,126	2,200	670	2.25/4.2	188	C
VF-2 3000	3,000	1,400	2,875	3,300	820	3.4/6.8	-	C
<b>With "ecolso" insulation and steel sheet jacket</b>								
VB-2 300 S	299	600	1,834	1,884	99	0.8/1.55	83	C
VB-2 400	382	700	1,657	1,721	138	1.5/1.8	86	C
VB-2 500	474	700	1,961	2,029	155	1.3/1.9	100	C

\* EEC = Energy efficiency class



# Hot water storage tanks

For heat pump applications

## Technical Features

- High-efficiency tank with greater heating surface, for use in heat pump systems in particular or in systems with high hot water requirements
- Corrosion resistant glass-lined, produced according to DIN 4753 T3 and EN DIN 12897
- With magnesium anode and thermometer, adjustable feet and service opening
- With 1 ½" coupling
- Tank up to 500 litres with "ecolso" insulation and foil jacket, tanks above 500 litres with 100 mm fleece insulation
- Preinstalled insulation
- Max. operating pressure: Heating water 10 bar, potable water 10 bar
- Max. operating temperature: Heating water 110°C, potable water 95°C



## Aqua heat Pump

Type	Volume [l]	Ø d with iso [mm]	Height h with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With one heating coil</b>								
AH 300/1_B	302	700	1,334	1,441	139	3.2	70	B
AH 400/1_B	380	750	1,631	1,722	170	5.0	68	B
AH 400/1_C	380	700	1,631	1,722	164	5.0	86	C
AH 500/1_B	469	750	1,961	2,029	222	6.2	78	B
AH 500/1_C	469	700	1,961	2,029	216	6.2	100	C
AH 750/1_C	729	950	2,050	2,107	263	7.0	141	C
AH 1000/1_C	965	1,050	2,083	2,158	335	9.2	140	C
<b>With two heating coils</b>								
AH 400/2_B	374	750	1,591	1,722	189	1.4/3.2	68	B
AH 400/2_C	374	700	1,591	1,722	181	1.4/3.2	87	C
AH 500/2_B	469	750	1,961	2,039	235	1.6/4.3	78	B
AH 500/2_C	469	700	1,961	2,020	247	1.6/4.3	100	C
AH 750/2_C	727	950	2,050	2,107	290	2.2/5.2	128	C
AH 1000/2_C	965	1,050	2,085	2,158	385	3.1/6.1	141	C

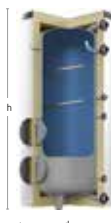
\* EEC = Energy efficiency class

## Accumulation tanks

To be used with external heat sources

### Technical Features

- Vertical tank for hot water heating purposes by using external charging systems
- Corrosion resistant glass-lined, produced according to DIN 4753 T3 and EN DIN 12897
- With magnesium anode, thermometer and adjustable feet
- With up to four flanges for additional heat sources depending on tank size
- Tank up to 500 litres with "ecoloso" insulation and foil jacket, tanks above 500 litres with at least 100 mm fleece insulation
- Up to 2,000 litres, preinstalled insulation
- Max. operating pressure: Potable water 10 bar
- Max. operating temperature: Potable water 95°C



### Aqua Load

Type	Volume [l]	Ø d with iso [mm]	Height h with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Heat losses [W]	EEC*
<b>With one flange</b>							
AL 300/R_C	301	600	1,834	1,892	90	83	C
AL 500/R_C	477	700	1,958	2,044	155	100	C
AL 750/R_C	751	750 / 950	1,917 / 2,035	1,990	214	123	C
AL 1000/R_C	972	850 / 1,050	1,934 / 2,060	2,025	267	142	C
<b>With two flanges</b>							
AL 300/R2_C	301	600	1,834	1,892	90	83	C
AL 500/R2_C	477	700	1,958	2,044	155	100	C
AL 750/R2_C	751	750 / 950	1,917 / 2,035	1,990	214	123	C
AL 1000/R2_C	972	850 / 1,050	1,934 / 2,060	2,025	267	142	C
AL 1500/R2_C	1,459	1,000 / 1,240	2,122 / 2,215	2,200	390	171	C
AL 2000/R2_C	1,986	1,200 / 1,440	2,033 / 2,126	2,235	550	188	C
AL 3000/R2	2,780	1,200 / 1,440	2,800 / 2,876	2,848	630	-	-
<b>With three flanges</b>							
AL 1500/R3_C	1,459	1,000 / 1,240	2,122 / 2,215	2,220	395	171	C
AL 2000/R3_C	1,986	1,200 / 1,440	2,033 / 2,126	2,235	555	188	C
AL 3000/R3	2,780	1,200 / 1,440	2,800 / 2,876	2,848	635	-	-
<b>With four flanges</b>							
AL 3000/R4	2,780	1,200 / 1,440	2,800 / 2,876	2,848	642	-	-
AL 4000/R4	4,040	1,500 / 1,740	2,721 / 2,841	2,845	939	-	-
AL 5000/R4	4,914	1,500 / 1,740	3,230 / 3,350	3,311	1,070	-	-

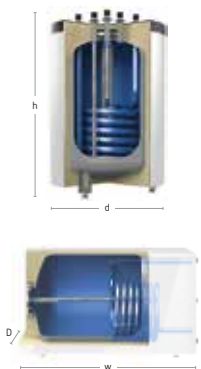
\* EEC = Energy efficiency class

# Hot water storage tanks

## Compact design

### Technical Features

- Corrosion resistant glass-lined, produced according to DIN 4753 T3 and EN DIN 12897
- With magnesium anode, thermometer and preinstalled insulation
- Max. operating pressure: Heating water 10 bar, potable water 10 bar
- Max. operating temperature: Heating water 110°C, potable water 95°C



### Aqua Compact

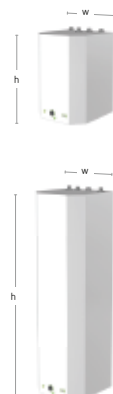
Type	Volume [l]	Ø d with iso [mm]	Height h with iso [mm]	Tilt height ca. [mm]	Width w [mm]	Weight [kg]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>Aqua Compact; Vertical position</b>									
V-AO 120	120	560	800	980	–	56	0.71	53	B
V-AO 160	146	560	1,036	1,132	–	79	0.71	62	C
<b>Aqua Compact; Horizontal position</b>									
V-US 150	150	620	590	–	1.045	85	0.9	41	B
V-US 250	250	653	644	–	1.125	114	0.9	61	B

\* EEC = Energy efficiency class

## Wall-hung tanks in compact design

### Technical Features

- Suitable with all conventional energy sources
- Corrosion resistant glass-lined, produced according to DIN 4753 T3 and EN DIN 12897
- Variant E (electrical heating element) with high-quality ceramic immersion heater: Capacity 3,000 W at 400 V or 1,000 W at 230 V
- Steel sheet jacket with "ecoloso" insulation system
- Regulating range: 7°C–85°C, shut-down at 110°C
- Max. operating pressure: Heating water 10 bar, potable water 10 bar
- Max. operating temperature: Heating water 110°C, potable water 95°C



### Aqua Compact

Type	Volume [l]	Ø d [mm]	Width w [mm]	Height h with iso [mm]	Weight [kg]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With one heating coil</b>								
V-WH 60-1	67	398	461	700	52	0.75	38	B
V-WH 110-1	112	398	461	1,065	65	0.95	48	B
V-WH 160-1	171	398	461	1,492	91	0.95	63	C
<b>With one heating coil and electrical heating element</b>								
V-WH 60-1/E	65	398	461	700	58	0.75	38	B
V-WH 110-1/E	110	398	461	1,065	71	0.95	48	B
V-WH 160-1/E	164	398	461	1,492	97	0.95	63	C
<b>With electrical heating element</b>								
V-WH 60/E	71	398	461	700	51	–	38	B
V-WH 100/E	117	398	461	1,065	64	–	48	B
V-WH 160/E	171	398	461	1,492	90	–	63	C

\* EEC = Energy efficiency class

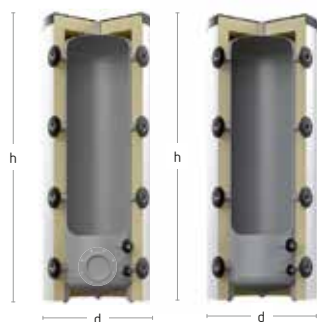


# Buffer tanks

## Without heating coil for heating systems

### Technical Features

- Tank container from S235JRG2 (RSt 37-2) quality steel for heating applications;
- Buffer tank for cooling systems available on demand
- Tank interior untreated, exterior powder-coated
- Up to 2,000 litres, preinstalled insulation
- Fleece insulation with foil jacket (up to 1,000 litres with 100 mm insulation, above 1,000 litres with 120 mm insulation)
- Max. operating pressure: tank 3 bar (from 1,500: 6 bar)
- Max. operating temperature: Tank 95°C



### Heat

Type	Volume [l]	Ø d without/with iso [mm]	Height h without/with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Sleeves 9x [Inch"]	Heat losses [W]	EEC*
<b>With fleece insulation and foil jacket with (PHF) or without flange (PH)</b>								
V-PH(F) 300	300	597/797	1,320	1,355	62	Rp 1 ½	79	C
V-PH(F) 500	500	597/797	1,950	1,974	75	Rp 1 ½	106	C
V-PH(F) 800	800	790/990	1,825	1,870	127	Rp 1 ½	132	C
V-PH(F) 1000	1,000	790/990	2,115	2,153	142	Rp 1 ½	141	C
V-PH(F) 1500	1,500	1,000/1,240	2,120	2,178	189	Rp 1 ½	167	C
V-PH(F) 2000	2,000	1,200/1,440	2,122	2,200	269	Rp 1 ½	188	C
<b>Without insulation, with flange</b>								
V-PH 300	300	597/-	1,320	1,355	58	Rp 1 ½	-	-
V-PH 500	500	597/-	1,950	1,975	71	Rp 1 ½	-	-
V-PH 800	800	790/-	1,825	1,870	121	Rp 1 ½	-	-
V-PH 1000	1,000	790/-	2,115	2,153	135	Rp 1 ½	-	-
V-PH 1500	1,500	1,000/-	2,120	2,178	181	Rp 1 ½	-	-
V-PH 2000	2,000	1,200/-	2,122	2,200	257	Rp 1 ½	-	-
V-PH 3000	3,000	1,500/1,740	2,101	2,205	570	Rp 1 ½	-	-
V-PH 4000	4,000	1,500/1,740	2,676	2,756	677	Rp 1 ½	-	-
V-PH 5000	5,000	1,500/1,740	3,211	3,264	814	Rp 1 ½	-	-

\* EEC = Energy efficiency class



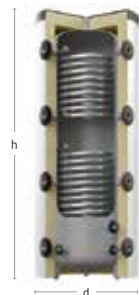
# Buffer tanks

## With heating coil for heating systems

### Technical Features

- Tank container made from S235JRG2 (RSt 37-2) quality steel for heating applications
- Buffer tank for cooling systems available on demand
- Tank interior untreated, exterior powder-coated
- Up to 2,000 litres, preinstalled insulation
- Fleece insulation with foil jacket (up to 1,000 litres with 100 mm insulation, above 1,000 litres with 120 mm insulation)
- Max. operating pressure: Tank 3 bar (from 1,500: 6 bar)
- Max. operating temperature: Tank 95°C

### Heat



Type	Volume [l]	Ø d without/with iso [mm]	Height h without/with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Sleeves 9x [Inch"]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With one heating coil, with fleece insulation and foil jacket</b>									
V-PHW 300	300	597/797	1,320	1,355	82	Rp 1 ½	1.34	79	C
V-PHW 500	500	597/797	1,950	1,975	100	Rp 1 ½	1.88	106	C
V-PHW 800	800	790/990	1,825	1,870	197	Rp 1 ½	3.76	132	C
V-PHW 1000	1,000	790/990	2,115	2,153	225	Rp 1 ½	4.48	141	C
V-PHW 1500	1,500	1,000/1,240	2,120	2,178	272	Rp 1 ½	4.48	167	C
V-PHW 2000	2,000	1,200/1,440	2,122	2,200	352	Rp 1 ½	4.48	188	C
<b>With one heating coil, without insulation</b>									
V-PHW 300	300	597/-	1,320	1,355	74	Rp 1 ½	1.34	-	-
V-PHW 500	500	597/-	1,950	1,975	95	Rp 1 ½	1.88	-	-
V-PHW 800	800	790/-	1,825	1,870	190	Rp 1 ½	3.76	-	-
V-PHW 1000	1,000	790/-	2,115	2,153	216	Rp 1 ½	4.48	-	-
V-PHW 1500	1,500	1,000/-	2,120	2,178	265	Rp 1 ½	4.48	-	-
V-PHW 2000	2,000	1,200/-	2,122	2,200	351	Rp 1 ½	4.48	-	-
V-PHW 3000	3,000	1,500/1,740	2,101	2,205	637	Rp 1 ½	5.00	-	-
V-PHW 4000	4,000	1,500/1,740	2,676	2,756	754	Rp 1 ½	6.00	-	-
V-PHW 5000	5,000	1,500/1,740	3,211	3,264	871	Rp 1 ½	7.00	-	-
<b>With two heating coils, with fleece insulation and foil jacket</b>									
V-PHWW 500	500	597/797	1,950	1,975	125	Rp 1 ½	1.17/1.88	106	C
V-PHWW 800	800	790/990	1,825	1,870	267	Rp 1 ½	1.36/2.47	132	C
V-PHWW 1000	1,000	790/990	2,115	2,153	308	Rp 1 ½	2.47/3.10	141	C
V-PHWW 1500	1,500	1,000/1,240	2,120	2,178	355	Rp 1 ½	2.37/3.72	167	C

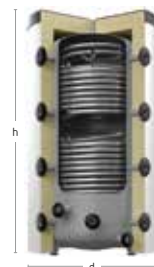
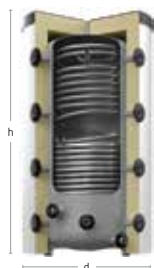
\* EEC = Energy efficiency class

## Combination tanks

For heating and hot water preparation

### Technical Features

- Tank container made from S235JRG2 (RSt 37-2) quality steel for heating applications
- Buffer tank for cooling systems available on demand
- Tank interior untreated, exterior powder-coated
- Up to 2,000 litres, preinstalled insulation
- Fleece insulation with foil jacket (up to 1,000 litres with 100 mm insulation, above 1,000 litres with 120 mm insulation)
- Max. operating pressure: Tank 3 bar (from 1,500: 6 bar)
- Max. operating temperature: Tank 95°C



### Heat Combi

Type	Volume [l]	Ø d without/with iso [mm]	Height h without/with iso [mm]	Tilt height ca. [mm]	Weight [kg]	Sleeves 9x [Inch"]	Heating surface [m <sup>2</sup> ]	Heat losses [W]	EEC*
<b>With one heating coil</b>									
V-EWS 500-1	428	600/840	1,970	1,974	92	Rp 1 ½	1.60	106	C
V-EWS 800-1	722	790/1,030	1,850	1,870	131	Rp 1 ½	2.60	132	C
V-EWS 1000-1	852	790/1,030	2,140	2,153	152	Rp 1 ½	2.60	141	C
V-EWS 1500-1	1,332	1,000/1,240	2,130	2,178	219	Rp 1 ½	2.15	167	C
<b>With two heating coils</b>									
V-EWS 500-2	418	600/840	1,970	1,974	106	Rp 1 ½	1.14/1.60	106	C
V-EWS 800-2	706	790/1,030	1,850	1,870	152	Rp 1 ½	1.75/2.60	132	C
V-EWS 1000-2	833	790/1,030	2,140	2,153	179	Rp 1 ½	2.20/2.60	141	C
V-EWS 1500-2	1,317	1,000/1,240	2,130	2,178	237	Rp 1 ½	2.20/2.60	167	C

\* EEC = Energy efficiency class

## Accessories on demand



Screw-in electric heating element 1 ½"



Flange-type electric heating element



Ribbed-pipe heat exchanger



Magnesium protective anodes



Impressed-current anodes



# Manifolds



## Manifolds

In the field of heating and air-conditioning, we offer a particularly wide and high-quality range of components for distributing water and steam— from our unique compact manifolds with the sine curve via hydraulic separators perfectly matched to your requirements, to custom-built buffer storage vessels. Specifically manufactured insulating materials round up our product portfolio. Whether in a single-family house or an industrial plant, we offer the optimum solution to an extremely wide range of requirements.

### Your benefits

- ✓ Sinusoidal designs
- ✓ Efficient and space-saving
- ✓ Easy to install
- ✓ For heating and cooling systems



### Efficient production

Our state-of-the-art production sites guarantee high levels of efficiency and flexibility every day. Due to modern facilities, CNC-controlled plasma cutter and optimised processes, we are able to produce customised systems within a very short time.



### Innovation Prize of the German Economy

First innovation award in the world



### Certified quality

Our production sites have been certified according to the common standards for industrial and sustainable manufacturing. If desired, we can also deliver our products with TÜV certification (single unit acceptance).

## Manifolds



Small manifolds according to individual specifications:

- Size of chamber
- Distance between connections
- Connection design
- Incl. individual insulation

## Hydraulic separator



Individual designs from 3 m<sup>3</sup>/h to 300 m<sup>3</sup>/h. Output and connections according to individual specifications:

- Immersion sensor well
- Drain / aeration set
- Magnetite separators

## HydroFixx



Manifold incl. hydraulic separator

- Optimum hydraulic performance in any operating position
- Awarded with the Innovation Prize of the German Economy
- Easy-to-install





## MultiFlow Domestic

**Manifold-separator combination divided into three temperature zones**

- Reduced heating costs due to low return flow temperatures
- Optimum hydraulic system with two temperature zones
- Ideal with in-floor heating and radiator combination
- Increased efficiency of the heating system due to the optimized exploitation of the calorific value



## Back-to-back cascade module

- Individual connection to each type of boiler
- Space-saving miracle due to the integrated hydraulic separator
- Innovative primary distribution method



## EasyFlow cascade module

- Primary and secondary distribution in one component
- Individual combinations of any number of heating boilers and heating circuits
- Free-standing or suitable for wall mounting



## Modular cascade

**Modular cascade solution especially for wallhung boilers**

- Power ratings up to 1200 kW
- Special solutions for higher power ratings are possible
- Optimised packaging size



## Accessories



### Connection sets, Adaptor pieces, Pipe groups

- Individually manufactured acc. to specifications
- Connection sets
- Complete pre-mounted groups incl. fittings
- Steel or stainless steel



### Maintenance box – magnetite separation module

- Suitable for the MonoFixx 80/80, as an optional extra for magnetite separation
- To be connected to the boiler return line beneath the manifold
- Enables dirt and sludge separation during operation



### Magnetite separation module for small hydraulic separators

- Magnetic insert for separation of ferromagnetic substances
- Enables dirt and sludge separation during operation



### MonoFixx

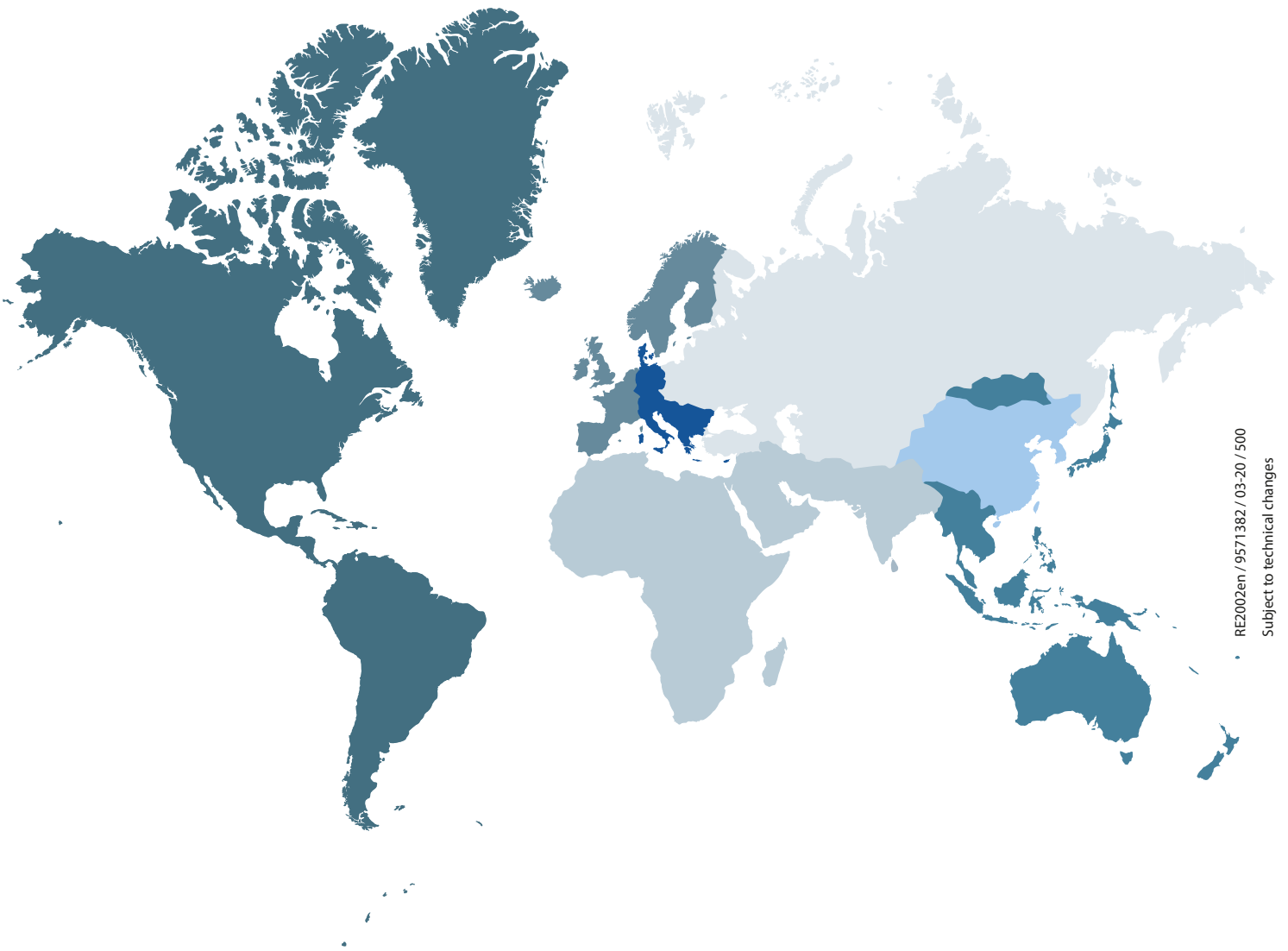
- Hydraulic separator manifold to be connected to a standard pump
- Pressure-tested and pre-painted at the factory.

# Notes

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Subject to technical changes

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