

# BRINE TANKS

2024

EDITION FOR  
SNOWATE CATALOG

# Snowate

Hengshui Snowate Environmental  
Technology Co., Ltd.



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# HENGSHUI SNOWATE ENVIRONMENTAL TECHNOLOGY CO., LTD.

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## A TRUSTWORTHY SOURCING EXPERT ON WATER TREATMENT FACILITIES

As a senior sourcing expert on water treatment facilities and accessories, Hengshui Snowate Environmental Technology Co., Ltd. has extensive water treatment expertise, profound water treatment industry experience and a deep understanding of the water treatment industry purchasing demands. As a consequence, we are capable of providing one-stop purchase and technical support on water treatment facilities and accessories according to our customers' applications, thereby helping our customers to shorten the procurement cycle, reduce procurement costs and maximize economic benefits.

We integrate upstream supply chain products of the water treatment industry. In addition, we work with renowned suppliers and manufacturers. As a result, we can continuously supply high-quality water treatment components and systems for customers across the world to meet the needs of a Wide Range of Applications, Thereby Optimizing Water Resources and Promoting The Sustainable Development of The Global Environment.

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The logo for Snowate features the word "Snowate" in a white, sans-serif font. The letter "o" is replaced by a stylized white water droplet icon. A thin white vertical line is positioned to the left of the "S".

**Snowate**

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# Brine Tank

Brine tanks are made of PE plastic by rational molding or blow molding process, featuring good toughness, easy to clean, economical and durable, good resistant to heat and frozen, easy to install and move. It is available in both square and round shapes. It comes in a full range of sizes with a capacity up to 3000 L. It often comes in blue, white and gray colors.

It is widely used in food & beverage, pharmaceutical, electronic, printing and dyeing, oil & gas, acid pickling and electroplating industries to remove calcium and magnesium ions from water and make the hard water becomes soft.

## Structure

The brine tank is composed of lid, tank body, salt well, grid plate and salt valve (purchased separately).

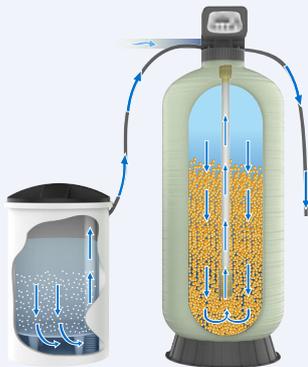


# How Do Brine Tank and Softener Tank Work?

## Working Process of Softener Tank

① Through the multiport control valve, the hard water is evenly distributed by the upper water distributor, and fully sprinkled on the ion exchange resins. The calcium and magnesium ions in the water are adsorbed by ion exchange resins. The softened water is collected through the lower water distributor into the center pipe, and then flows out from the other end of the multiport control valve.

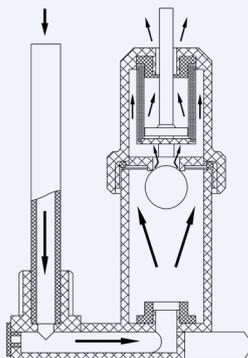
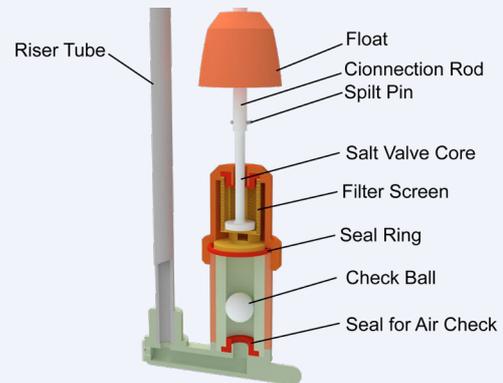
② Appropriate amount of softened salt is loaded into the brine tank and clean water is injected to dissolve it. When the ion exchange resin reaches the saturation state, the brine in the brine tank is pumped into the softener tank through the multiport control valve, and the salt brine begins to flush the resin layer to replace the calcium and magnesium ions adsorbed on the resins, so that the saturated resin is regenerated and its replacement performance is restored, and the calcium and magnesium ions are discharged with the waste liquid.



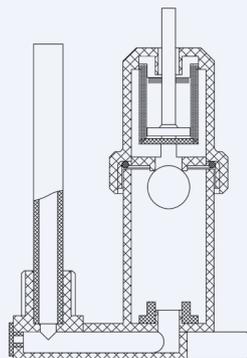
## Working Process of Salt Valve in the Brine Tank

The salt valve is composed of a riser tube, a float, a connection rod and a salt absorbing chamber (salt valve core, filter screen, seal ring, check ball and seal for air check).

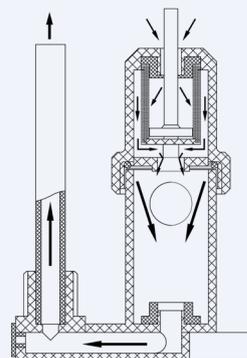
- ① **Water Injection (flow limited)**  
When injecting water into the brine tank, the check valve float in the brine suction chamber rises with the increasing water level.
- ② **Water Full Check**  
When the water injected reaches the limited height, the liquid level of the check valve float reaches the highest point. At this point, water injection into the brine tank stops;
- ③ **Salt Absorption**  
When the ion exchange resin in the water softener tank needs to be regenerated with brine, the check valve float drops continuously.
- ④ **Air Check**  
When the brine in the brine tank reaches the lowest liquid level, the salt absorption operation stops.



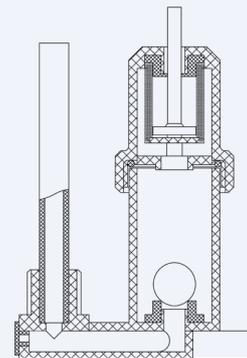
Water Injection (Current Limited)



Water Cut-off



Salt Suction



Air Cut-off

# Round Brine Tank

The round brine tank is made of PE by rotational molding process, featuring good toughness, clean and beautiful appearance, economical and durable, good resistant to heat and frozen. It is widely used in food & beverage, pharmaceutical, electronic, printing & dyeing, acid pickling and electroplating industries.

It is further divided into straight barrel brine tank and tapered barrel brine tank by shape. The straight barrel brine tank has a capacity of 15–3000 L, and it comes in white and packaged in woven bags. While the tapered barrel brine tank has a capacity of 60–2000 L, and it also comes in white and packaged in woven bags.



**Round Brine Tank – Straight Type (15 L – 3000 L)**

Model	Capacity (L)	Diameter (mm)	Brine Well Size (mm)	Color	Thickness (mm)	Packing	Material
R15L	15	φ220 × H450	-	White	2	1 sets / woven bags	PE
R25L	25	φ260 × H460	-	White	2		PE
R60L	60	φ330 × H750	φ100 × H725	White	2.5		PE
R100L	100	φ400 × H850	φ100 × H845	White	2.5		PE
R200L	200	φ520 × H1100	φ100 × H1045	White	3.5		PE
R300L	300	φ560 × H1200	-	White	3.5		PE
R500L	500	φ730 × H1200	φ135 × H1310	White	4		PE
R800L	800	φ900 × H1300	-	White	4.5		PE
R1000L	1000	φ1090 × H1335	φ135 × H1430	White	5		PE
R1500L	1500	φ1130 × H1500	φ135 × H1540	White	6		PE
R2000L	2000	φ1320 × H1500	φ135 × H1650	White	7		PE
R3000L	3000	φ1500 × H1750	φ125 × H1630	White	8		PE

## Features

- **Lightweight but resilient material**  
Made of PE, lightweight but resilient material, easy handling, vibration-resistant, impact-resistant.
- **Good corrosion resistance**  
Excellent resistant to all kinds of acids and bases.
- **Clean & beautiful**  
Streamline shape and beautiful appearance, smooth inner and outer surfaces, and can remove dirt easily.
- **Economical & durable**  
Seamless tank body, not easy to break, anti-aging, leakage-proof.
- **Heat and cold resistant.**  
Good heat and cold resistant, and can be used at a temperature ranging from -40 °C to 60 °C.



### Round Brine Tank – Cone Type (60 L – 2000 L)

Model	Capacity (L)	Diameter (mm)	Brine Well Size (mm)	Color	Thickness (mm)	Packing	Material
R60L	60	Φ390 × H810	Φ100 × H725	White	3	4 sets/woven bags	PE
R100L	100	Φ450 × H940	Φ100 × H845	White	3	5 sets/woven bags	PE
R145L	145	Φ500 × H1060	Φ100 × H955	White	3	5 sets/woven bags	PE
R200L	200	Φ580 × H1070	Φ90 × H986	White	4	5 sets/woven bags	PE
R350L	350	Φ740 × H1275	Φ135 × H1250	White	4	4 sets/woven bags	PE
R500L	500	Φ840 × H1335	Φ135 × H1310	White	4	4 sets/woven bags	PE
R750L	750	Φ960 × H1395	Φ135 × H1370	White	4	4 sets/woven bags	PE
R1000L	1000	Φ1080 × H1460	Φ135 × H1430	White	4	3 sets/woven bags	PE
R1500L	1500	Φ1240 × H1575	Φ135 × H1540	White	4	3 sets/woven bags	PE
R2000L	2000	Φ1360 × H1690	Φ135 × H1650	White	5	2 sets/woven bags	PE

# Square Brine Tank

The square brine tank is made of PE by blow molding process with a capacity of 25–100 L and available in black, blue and gray colors. It features good toughness, clean and beautiful appearance, economical and durable, good resistant to heat and frozen. Besides, its square structure makes it can be easily stored in a small space, saving space. It is widely used in food & beverage, pharmaceutical, electronic, printing & dyeing, oil & gas, acid pickling and electroplating industries.



## Features

- Lightweight but resilient material**  
 Made of PE, lightweight but resilient material, easy handling, vibration-resistant, impact-resistant.
- Good corrosion resistance**  
 Excellent resistant to all kinds of acids and bases.
- Clean & beautiful**  
 Streamline shape and beautiful appearance, smooth inner and outer surfaces, and can remove dirt easily.
- Economical & durable**  
 Seamless tank body, not easy to break, anti-aging, leakage-proof.
- Heat and cold resistant.**  
 Good heat and cold resistant, and can be used at a temperature ranging from -40 °C to 60 °C.

## Specification of Square Brine Tank (25L – 100L)

Model	Capacity (L)	Diameter (mm)	Brine Well Size (mm)	Color	Thickness (mm)	Packing	Packing
S25L	25L	260 × 260 × 470	Φ90 × H440	gray/blue/black	3	5 sets / cartons	PE
S60-70L	60-70L	330 × 330 × 860	φ90 × H785	gray/blue/black/beige	3	5 sets / woven bags	PE
SF70L	70L	330 × 330 × 885	φ90 × H770	gray/blue/black	4-5	5 sets / cartons	PE
S100L	100L	390 × 390 × 860	φ90 × H785	gray/blue/black/beige	3	5 sets / woven bags	PE
SF100L	100L	390 × 390 × 870	φ90 × H795	gray/blue/black	4-5	5 sets / cartons	PE

### Notes:

- Each product includes: brine tanks body, blow-molded lid, salt grid, brine well.
- Brine valve, hose pipe and liquid level control switch need extra cost.
- The products are all adopted new imported materials, no messy materials.

# Brine Tank Selection Comparison Table

The table below is a brine tank selection comparison table.



**Amount of Renewable Resin**



**Maximum Resin Tank Capacity**



**Salt Valve**

<b>70L</b>	45 L	1054	F1600/F434/F434W
<b>100L</b>	65 L	1252	
<b>145L</b>	100 L	1465	
<b>200L</b>	135 L	1665	
<b>350L</b>	255 L	2162	F1700/F454
<b>500L</b>	365 L	3065	
<b>750L</b>	530 L	3072	
<b>1000L</b>	730 L	3672	
<b>1500L</b>	1090 L	4872	
<b>2000L</b>	1445 L	6079	
<b>3000L</b>	2170 L	8079	

Notes:

F434/F434W/F454 is provided with a water injection protective device.

Brine tank capacity  $\geq$  Softener tank capacity.

## BRINE VALVE

Model	EXTERNAL PIPE	INNER CIAM	FUNCTION	Apply to salt box
F1600	3/8"	90 mm	Air Check	Suitable for up to 200L
F1600N	3/8"	100 mm	Air Check + Water protection	Suitable for more than 200L
F434W	3/8"	90 mm	Air Check + Water protection	Suitable for up to 200L
F434Q	3/8"	90 mm	Air Check + Water protection	Suitable for up to 200L
F1700	12 mm	130 mm	Air Check	Suitable for more than 200L
F454	12 mm	130 mm	Air Check + Water protection	Suitable for more than 200L

Notes: Brine valve length can be customized



**F1600 F1600N F434W F434Q F1700 F454**

## Installation Process

- 1** Assemble the brine grate and bracket first, the brine well is preinstalled on the brine grate
- 2** Place the assembled brine grate in the brine tank
- 3** Connect the retaining ring with the overflow elbow, fix the overflow line and brine well.
- 4** Adjust the salt valve buoy to control the water level according to actual requirements and put the salt valve into the salt well
- 5** Insert the pipe from the brine suction port into the salt well and connect it with salt valve
- 6** Place the salt well cover and brine tank cover and the brine tank assembly is finished

## Precautions on Adding Salt

-  Before use, open the brine tank lid of the water softener and visually check the salt level. Do not make the salt level lower than 1/3 of the height of the brine tank; do not use up all the salt in the brine tank before adding salt again; add appropriate amount of salt to ensure that water will not overflow the brine tank during salt absorption.
-  In water softener, special salt needs to be added regularly to regenerate the resin layer. The water used to dissolve the salt shall come from the water softener and be injected quantitatively, while ensuring that there is always sufficient salt in the brine tank.
-  Add full-grain or pellet softener salt to the brine tank of the water softener. Do not use salt with impurities and sediment, otherwise, the water softener may not work properly.

## Water Tank Overflow Causes & Solutions



Too much water injected into the brine tank or too much remaining water in the brine tank.



Install a liquid level switch; set an appropriate injection timing; adjust the water pressure to make it stable.



Pipeline blockage



When the pipeline is blocked, clean it up promptly.



Multifport control valve failure



Replace or repair the multifport control valve timely when it fails.

## Related Industries

Brine tank mainly works with water softener systems for the pretreatment of domestic water treatment and industrial water treatment as well as the for reclaimed water of wastewater treatment.



Food & Beverage



Pharmaceutical



Oil & Gas



Printing, Dyeing & Textile



Electronic



Iron & Steel



Seawater Desalination



Drinking Water



Electroplating

☹️ Water with impurities

☺️ Use activated carbon filter and similar equipment to remove impurities from water before softening.

☹️ Salt valve blockage

☺️ Clean the salt valve timely.

☹️ Ejector blockage

☺️ Clean the ejector promptly.

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