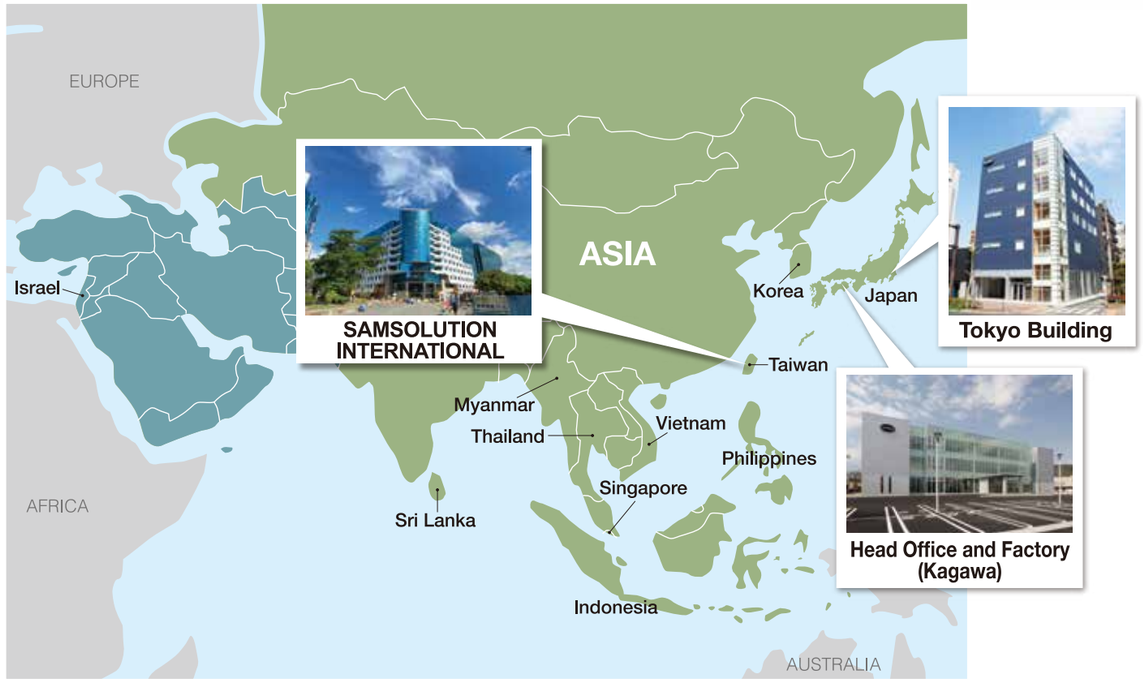
## Network

We, SAMSON Co., Ltd., have been engaged in the manufacture and sales of various Boilers and Food Processing Equipment since our foundation in 1945, and have been enjoying a good reputation from customers in various industrial fields of Japan.
In overseas markets, we have devoted ourselves to exporting our products into mainly Asian countries for a long period and have delivered them to many customers.
After delivery, our authorized distributors in the respective countries have taken care of maintenance services on our equipment through the cooperation from customers.
We are supporting our distributors for the improvement of maintenance technology and we hope our customer can operate our products safely without any trouble.





## SAMSON CO.,LTD.

**Tokyo Building(International Division)**

| | |
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| WEB SITE | https://www.samson.co.jp/en/ |

**SAMSOLUTION INTERNATIONAL CO., LTD.**

| | |
|---|---|
| ADDRESS | 7F-8, NO.12, LN.609, SEC.5,CHONGXIN RD., SANCHONG DIST., NEW TAIPEI CITY 24159, TAIWAN(R.O.C.) |
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| WEB SITE | https://www.samson.co.jp/tw/ |


SAMSOLUTION

SAMSOLUTION WATER TREATMENT SYSTEM

For a sustainable future of energy and food

Made in Japan since 1945

# Water Treatment Equipment

LINE UP

Good water is the basis
for all activities

# Proper Water Treatment is Essential for Boilers

Boilers are evolving day by day. Even if a boiler has high performance, you cannot operate it efficiently without daily maintenance and inspection.
Especially, water treatment equipment is very important to operate the boiler for a long time.

## Typical Trouble with Water

### Pitting of water tube due to scale sticking, and fuel loss

Scale is a product that silica and hardness elements of calcium and magnesium in feed water have solidified in the boiler.

Scale has a very low heat conductivity. Therefore, if scale sticks to the water tube, heat conduction is remarkably inhibited and heat efficiency of the boiler is lowered.

Furthermore, the portion of the water tube to which scale is stuck is heated locally, so that the material strength of such tube will degrade.

Consequently, there may be a possibility of tube swelling and bursting.

### Corrosion pitting

Corrosion is the phenomenon that metal materials are oxidized.

Corrosion wastage, pitting, and clogging of tubes with corrosion product are called “Corrosion Trouble”.

Corrosion pitting occurring on the inner surface of tubes varies in size from small (1 to 3 mm) to large (20 to 40 mm) diameter.

If this problem is left untreated, serious water leakage may occur, making it impossible to operate the boiler.

## Cause of Trouble

- Insufficient softening of boiler raw water
- Scaling of silica that cannot be treated by water softener
- Improper pH value of boiler water
- Dissolved oxygen in feed water

## Recommended Countermeasures

### Installation of Water Softener

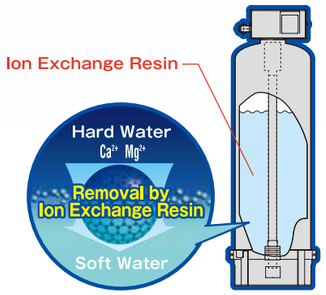
SAMSOFTENER サムソフナー

### Functions of Water Softener

City water and well water contain hardness elements such as calcium and magnesium (called hard water). If you continue to use such water without any treatment, it may cause the equipment to reduce its efficiency, service life or product quality.

Water softener will eliminate hardness elements in the water by passing them through Ion Exchange Resin and change hard water into soft water. As a result, you can prevent troubles as mentioned above.

Meanwhile, you can use this Ion Exchange Resin repeatedly for a certain period by regenerating it with salt (NaCl).




### Chemical Injection
(Boiler Chemicals + Chemical Injection Equipment)

Our multi-purpose boiler chemicals have a function to prevent scale sticking and corrosion, adjust pH, and disperse sludge.

All materials used in these products comply with FDA standards and can be used safely in food processing factories.

For injection of boiler chemicals, use of our proprietary injection equipment is recommended.

SAMCLEAN


**Multi-Purpose Boiler Chemicals**

| | |
|---|---|
| Type | SAMCLEAN S-125 |
| Capacity | 18 kg |
| Package | Polyethylene Container |

**SAMCLEAN S-125**
Category Code : G6, G7
NSF Registration No. 166985

Chemical Injection Pump

SAMSOFTENER
サムソフナー

Longtime seller over
a quarter century

# SS Type

- Fully automatic water softener which does not require a lot of time and labor
- Compact, one-box type, incorporating salt water tank in the equipment
- Easy-to-see digital liquid crystal display of operating conditions
- Easy to set up for everybody
- Easy to replenish salt

## Easy-to-see digital liquid crystal display

Easy to understand ON/OFF status of power source at a glance

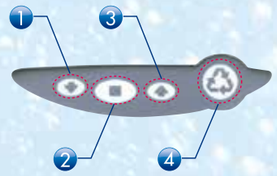
Easy to set regeneration cycle or a day of the week to perform regeneration


In case of power failure, 8 hours of backup is available.

During regeneration, the remaining time is indicated.

Manual regeneration can be operated by pressing one button.

## Easy to set by pressing relevant buttons

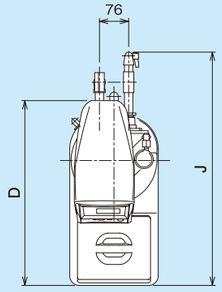



| No. | Function |
|---|---|
| 1 | Scrolls setting items or reduces values |
| 2 | Selects and enters an item or value |
| 3 | Scrolls setting items or increases values |
| 4 | Performs manual regeneration |

## Salt replenishment is very easy!

You can load 25 kg salt at a time from the large inlet directly into the salt water tank.

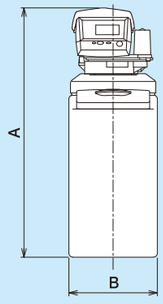
## Dimensions

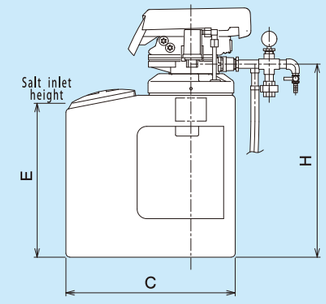


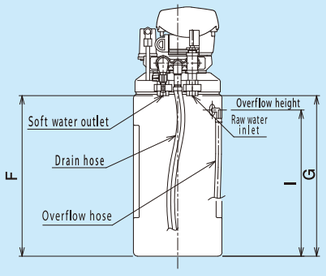

### Dimensions Table

(mm)

| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| SS-1D /SS-1DE | 648 | 230 | 440 | 481 | 400 | 417 | 417 | 502 | 380 | 607 |
| SS-2D /SS-2DE | 1,000 | 290 | 490 | 501 | 525 | 757 | 757 | 854 | 500 | 644 |
| SS-3D /SS-3DE | 1,299 | 290 | 490 | 501 | 827 | 1,056 | 1,056 | 1,153 | 802 | 644 |
| SS-4D /SS-4DE | 1,250 | 350 | 630 | 611 | 770 | 1,007 | 1,007 | 1,104 | 736 | 779 |
| SS-5D /SS-5DE | 1,301 | 350 | 630 | 611 | 770 | 1,058 | 1,058 | 1,155 | 736 | 779 |
| SS-6D /SS-6DE | 1,403 | 400 | 710 | 666 | 824 | 1,144 | 1,144 | 1,257 | 790 | 878 |




This drawing shows SS-1D.
Shapes vary depending on models and specifications.

## Specification Table

| Item | | Unit | SS-1D SS-1DE | SS-2D SS-2DE | SS-3D SS-3DE | SS-4D SS-4DE | SS-5D SS-5DE | SS-6D SS-6DE |
|---|---|---|---|---|---|---|---|---|
| Resin | | — | Strongly acidic cation exchange resin | | | | | |
| Resin Quantity | | ℓ | 6 | 12 | 20 | 30 | 40 | 54 |
| Maximum Flow Volume | | m³/h | 0.36 | 0.72 | 1.2 | 1.8 | 2.5 | 3.0 |
| Removal Hardness Weight | | g/cycle | 270 | 535 | 895 | 1,340 | 1,785 | 2,410 |
| Maximum Water Sampling Rate | | m³/cycle | 2.7 | 5.4 | 9.0 | 13.4 | 17.9 | 24.1 |
| Regeneration Time | | min/regeneration | 97 | 115 | 91 | 105 | 94 | 110 |
| Displacement | | ℓ/regeneration | 89 | 160 | 255 | 296 | 388 | 590 |
| Salt Consumption | | kg/regeneration | 1.2 | 1.8 | 2.6 | 4.1 | 5.2 | 7.0 |
| Maximum Salt Storage | | kg | 24 | 40 | 43 | 70 | 82 | 117 |
| Normal Hydraulic Pressure | | MPa | 0.15～0.40 | | | 0.20～0.40 | | |
| Water/Room Temperature | | ℃ | Water temperature : 4 to 38 , Room temperature : 1 to 49 | | | | | |
| Regeneration Period | Time Regeneration | | 1 to 7 times/week or once/1 to 14 days | | | | | |
| | Signal Input Regeneration | | Conforms to the signal (voltage of 100 VAC) input from the outside | | | | | |
| Power Consumption | | W | 0.3 (4.0 for only two minutes during regeneration) | | | | | |
| Power Supply | | V | 100 AC (50/60 Hz in common)* | | | | | |
| Piping Boss Diameter (Outlet/Inlet×Scupper) | | A | 20 × 10 | | | | | 25 × 15 |
| Connecting Piping Diameter | | A | 15 | 20 | | | | 25 |
| Drainage Hose | | mm | ϕ16 × ϕ20 | | | | | ϕ21 × ϕ27 |
| Overflow Hose | | mm | ϕ12 × ϕ15 | | | | | |
| Packaging Weight | | kg | 16 | 25 | 36 | 48 | 58 | 74 |
| Operating Weight | | kg | 47 | 78 | 107 | 165 | 195 | 273 |

1. The quality of raw water should be in the following conditions:
   Turbidity Less than 2 Iron Less than 0.3 mg/L
   Chromaticity Less than 5 Manganese Less than 0.05 mg/L
   Not meeting the above conditions may cause clogging or performance degradation.
2. The model number of impulse timer specification is suffixed with E.
3. Weight of Hardness Eliminated is calculated in terms of $CaCO_3$.
4. Max. Water Supply Volume is a value where Total Hardness is 100 mg/L.
5. Drain Water Volume is a value where Raw Water Pressure is 0.40 MPa.
6. Salt Consumption varies depending on the storage amount and dissolution time of salt.

＊ 100—240V can be available by transformer.

SAMSOFTENER
サムソフナー

Medium Class to meet actual water consumption

# SSM Type

Features

**Fully Automatic System**

You can perform automatic regeneration for 5 processes by fully automatic timer. You can also perform regeneration as needed.

**Reliable Salt Water Adjusting Equipment**

SAMSON's proprietary structure always supplies you with higher concentration salt water.

6 varieties of large capacity models

# SSL Type

Features

**Fully Automatic System**

You can perform automatic regeneration for 5 processes by fully automatic timer. You can also perform regeneration as needed.

**Reliable Salt Water Adjusting Equipment**

SAMSON's proprietary structure always supplies you with higher concentration salt water.

**Gathering and distributing water pipe of high performance**

Excellent water distribution to Ion Exchange Resin makes it possible to prevent channeling.



## *We recommend you to operate SAMSON water softener in order to produce the following water.*

### Boiler Water

Prevents a drop in heat efficiency due to scale, and saves fuels and chemicals used. In addition, the need for washing water tube is eliminated.

### Feed Water for Electrolytic Water Generator

Prevents scale from sticking to electrodes and extends the life of the equipment.

### Cooling Water for Garbage Incinerator

Reduces the number of cleaning times of water pipe, and extends the life of the equipment.

### Water for Hair and Beauty Saloon

Helps keep hands smooth and saves the amount of shampoo used.

### Cleaning Water

Saves the amount of detergent used, keeps clothes beautiful, and improves whiteness of linen.

### Dyeing Water

Makes it easy to dye and wash. Moreover, dyed colors become more brilliant.

### Cooling Water for Air Conditioner

Prevents scale from sticking to the cooling tower, and reduces chemicals used and blow volume.

### Water for Public Bath

Reduces the frequency of piping replacement.

Taking a soft water bath is healthy for your skin, and the soft water can create more foam.

## *OPTION*

***Common in SS, SSM, and SSL Series***

### *Water Softener Regeneration Signal Output*

Water softener outputs an external signal at the time of regeneration. Both voltage contact and non-voltage contact are available (except for SS-03D, DE).


### *Outdoor Specification*

Select this specification in the case of outdoor installation (except for SS-03D, DE).

### *Specification for 24 Hours of Operation*

***(applicable model: SS-D, SSM-D, and SSL-D)***

Select this specification in the case of operating impulse timer based water softener continuously for 24 hours.

This controls a motor valve to prevent hard water from entering the feed water tank.

We have "S system" suitable for one unit of water softener and "W system" for its two units.

### *Fixed Volume Regeneration Specification*

***(applicable model: SS-DE, SSM-DE, and SSL-DE)***

This specification model includes a control panel, through which automatic regeneration takes place at the time of reaching the set volume.

This is applicable to DE type water softener which regenerates due to the external signal.

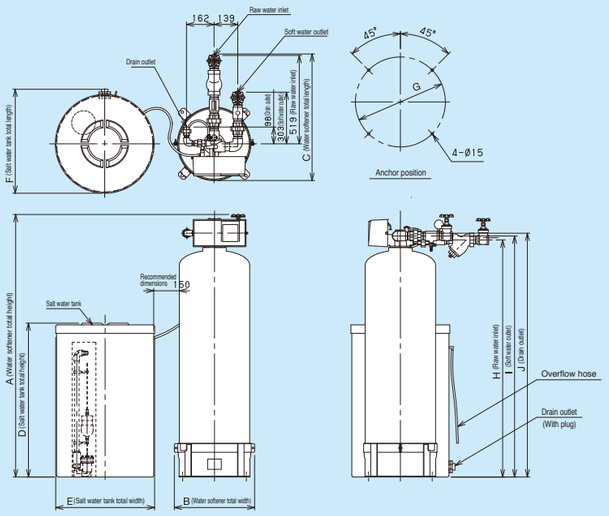
We have "EFR-S Series" suitable for one unit of water softener and "EFR-W Series" for its two units.

SAMSOFTENER サムソフナー

# SSM Type

## Dimensions

- This drawing shows SSM-100D and SSM-100DE.
- This drawing shows the product that is assembled and installed on site.




## Dimensions Table

| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| SSM-70D SSM-70DE | 1,592 | 394 | 714 | 758 | 460 | 485 | ϕ446 | 1,443 | 1,466 | 1,482 |
| SSM-100D SSM-100DE | 1,540 | 471 | 742 | 903 | 580 | 610 | ϕ528 | 1,391 | 1,414 | 1,430 |
| SSM-150D SSM-150DE | 1,633 | 555 | 804 | 903 | 580 | 610 | ϕ652 | 1,484 | 1,507 | 1,523 |

## Specification Table

| Item | | Unit | SSM-70D SSM-70DE | SSM-100D SSM-100DE | SSM-150D SSM-150DE |
|---|---|---|---|---|---|
| Resin | | — | Strongly acidic cation exchange resin | | |
| Resin Quantity | | ℓ | 74 | 105 | 157 |
| Maximum Flow Volume | | ㎥/h | 5.6 | 7.0 | 9.0 |
| Removal Hardness Weight | | g/cycle | 3,120 | 4,460 | 6,690 |
| Maximum Water Sampling Rate | | ㎥/cycle | 31 | 44.5 | 66.5 |
| Regeneration Time | | min/regeneration | 88 | 104 | 134 |
| Displacement | | ℓ/regeneration | 800 | 1,200 | 1,800 |
| Salt Consumption | | kg/regeneration | 8.4 | 12 | 18 |
| Maximum Salt Storage | | kg | 47 | 136 | 114 |
| Normal Hydraulic Pressure | | MPa | 0.20~0.40 | | |
| Water/Room Temperature | | ℃ | Water temperature : 4 to 40 , Room temperature : 1 to 49 | | |
| Regeneration Period | Time Regeneration | | 1 to 7 times/week or once/1 to 14 days | | |
| | Signal Input Regeneration | | Conforms to the signal (voltage of 100 VAC) input from the outside | | |
| Power Consumption | | VA | 3 (200 for only one minutes during regeneration) | | |
| Power Supply | | V | 100 AC (50/60 Hz in common)* | | |
| Connecting Piping Diameter | | A | 40 | | |
| Drain Piping Diameter | | A | 20 | | |
| Overflow Hose | | — | ϕ12 × ϕ15 | | |
| Product Weight | | kg | 115 | 150 | 220 |
| Operating Weight | | kg | 290 | 475 | 645 |
| Capacity of Salt Water Tank | | ℓ | 100 | 200 | 200 |

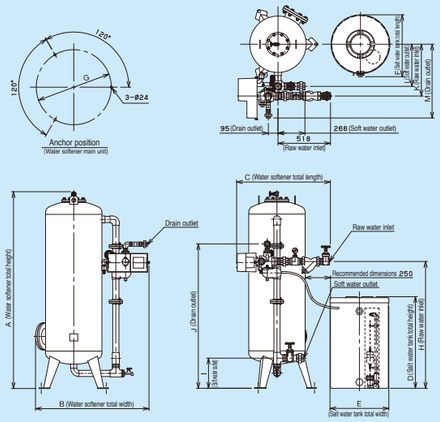
1. The quality of raw water should be in the following conditions:
   Turbidity Less than 2 Iron Less than 0.3 mg/L
   Chromaticity Less than 5 Manganese Less than 0.05 mg/L
   Not meeting the above conditions may cause clogging or performance degradation.
2. The model number of impulse timer specification is suffixed with E.
3. Weight of Hardness Eliminated is calculated in terms of $CaCO_3$.
4. Max. Water Supply Volume is a value where Total Hardness is 100 mg/L.
5. Drain Water Volume is a value where Raw Water Pressure is 0.40 MPa.
6. Salt Consumption varies depending on the storage amount and dissolution time of salt.
7. Gross Weight includes the weight of salt water tank and its accessories.
* 100—240V can be available by transformer.



# SSL Type

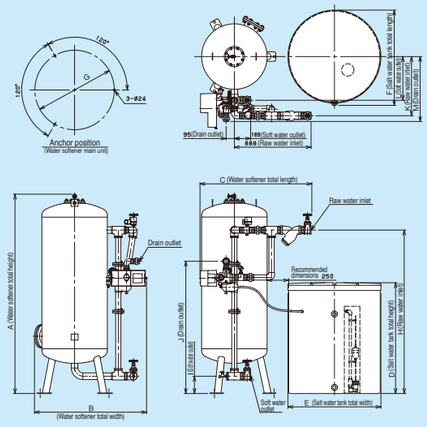
## Dimensions

- This drawing shows SSL-200D and SSL-200DE.
- This drawing shows the product that is assembled and installed on site.




## Dimensions

- This drawing shows SSL-500D and SSL-500DE.
- This drawing shows the product that is assembled and installed on site.




| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSL-200D SSL-200DE | 1,940 | 1,119 | 924 | 903 | 580 | 610 | ϕ740 | 1,250 | 297 | 1,423 | 510 | 415 | 726 |
| SSL-300D SSL-300DE | 2,055 | 1,215 | 924 | 888 | 720 | 750 | ϕ840 | 1,344 | 281 | 1,531 | 561 | 466 | 711 |
| SSL-400D SSL-400DE | 2,069 | 1,308 | 924 | 893 | 910 | 945 | ϕ940 | 1,337 | 264 | 1,524 | 611 | 516 | 761 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSL-500D SSL-500DE | 2,308 | 1,298 | 1,295 | 1,283 | 1,076 | 1,103 | ϕ920 | 1,892 | 200 | 1,531 | 685 | 506 | 751 |
| SSL-600D SSL-600DE | 2,348 | 1,391 | 1,326 | 1,283 | 1,076 | 1,103 | ϕ1,000 | 1,932 | 200 | 1,569 | 735 | 556 | 801 |
| SSL-800D SSL-800DE | 2,388 | 1,527 | 1,376 | 1,283 | 1,076 | 1,103 | ϕ1,100 | 1,971 | 200 | 1,611 | 785 | 606 | 851 |

## Specification Table

| Item | | Unit | SSL-200D SSL-200DE | SSL-300D SSL-300DE | SSL-400D SSL-400DE | SSL-500D SSL-500DE | SSL-600D SSL-600DE | SSL-800D SSL-800DE |
|---|---|---|---|---|---|---|---|---|
| Resin | | — | Strongly acidic cation exchange resin | | | | | |
| Resin Quantity | | ℓ | 200 | 300 | 400 | 500 | 600 | 800 |
| Maximum Flow Volume | | ㎥/h | 16 | 20 | 22 | 26 | 30 | 32 |
| Removal Hardness Weight | | g/cycle | 8,920 | 13,380 | 17,850 | 22,310 | 26,770 | 35,700 |
| Maximum Water Sampling Rate | | ㎥/cycle | 89 | 133.5 | 178.5 | 223 | 267.5 | 357 |
| Regeneration Time | | min/regeneration | 111 | 134 | 168 | 171 | 205 | 252 |
| Displacement | | ℓ/regeneration | 2,400 | 4,000 | 5,400 | 6,300 | 8,000 | 10,300 |
| Salt Consumption | | kg/regeneration | 24 | 36 | 48 | 60 | 72 | 96 |
| Maximum Salt Storage | | kg | 90 | 130 | 260 | 590 | 540 | 450 |
| Normal Hydraulic Pressure | | MPa | 0.20~0.40 | | | | | |
| Water/Room Temperature | | ℃ | Water temperature : 4 to 40 , Room temperature : 1 to 49 | | | | | |
| Regeneration Period | Time Regeneration | | 1 to 7 times/week or once/1 to 14 days | | | | | |
| | Signal Input Regeneration | | Conforms to the signal (voltage of 100 VAC) input from the outside | | | | | |
| Power Consumption | | VA | 3 (200 for only one minutes during regeneration) | | | 3 (Maximum 210 during regeneration) | | |
| Power Supply | | V | AC100 (50/60 Hz in common)* | | | | | |
| Connecting Piping Diameter | | A | 50 | | | 65 | | |
| Drain Piping Diameter | | A | 25 | 40 | | | | |
| Overflow Diameter | | A | 20 | | | | | |
| Product Weight | | kg | 430 | 580 | 780 | 890 | 1,050 | 1,340 |
| Operating Weight | | kg | 940 | 1,350 | 1,920 | 2,490 | 2,820 | 3,270 |
| Capacity of Salt Water Tank | | ℓ | 200 | 300 | 500 | 1,000 | 1,000 | 1,000 |

1. The quality of raw water should be in the following conditions:
   Turbidity Less than 2 Iron Less than 0.3 mg/L
   Chromaticity Less than 5 Manganese Less than 0.05 mg/L
   Not meeting the above conditions may cause clogging or performance degradation.
2. The model number of impulse timer specification is suffixed with E.
3. Weight of Hardness Eliminated is calculated in terms of $CaCO_3$.
4. Max. Water Supply Volume is a value where Total Hardness is 100 mg/L.
5. Drain Water Volume is a value where Raw Water Pressure is 0.40 MPa.
6. Salt Consumption varies depending on the storage amount and dissolution time of salt.
7. Gross Weight includes the weight of salt water tank and its accessories.
* 100—240V can be available by transformer.

# Chemical Injection Equipment

## Keeps boiler in good condition for a longer period by Chemical Injection

This equipment is intended to inject boiler chemicals essential to maintain the boiler in good condition. The operation becomes very easy by undiluted solution injection system. And the dilution is not difficult either.

Chemical Injection Pump
CP-X series

Chemical Injection Pump with basic injection function
CP-W series

| Model | Applicable Boiler Model |
|---|---|
| CP-W-30-VTCET-BW | EB-160 — 500(P)N |
| CP-X-31D-VTCET-BW | TU-100-500(P)R<br>RBO-750 — 2500(P)GN<br>RBO-750 — 2500(P)LN |

### Accessories

| | |
|---|---|
| ①Nylon Hose (4 ID × 6 OD) | 2.5 m |
| ②PVC Braided Hose (4 ID × 9 OD) | 0.5 m |
| ③Air-Releasing PVC Hose (4 ID × 6 OD) | 1 m |
| ④Special Straight Check Valve (set pressure of 0.12 MPa) | 1 (SC3-4E) |
| ⑤Foot Valve (for 4 ID × 9 OD, Valve Seat is made of PTFE) * Only for CP-W | 1 (FV-4ET) |
| ⑥Pump-Mounting Bolt and Nut (M5×30) | 2 sets |
| ⑦Operation Manual | 1 |

In the case of installing a unit (pump+tank), ② and ⑥ are not provided.

| Pump Model | | CP-X-31D | CP-W-30 |
|---|---|---|---|
| Max. Capacity | | 28 mL/min | 30 mL/min |
| Max. Discharge Pressure | | 1.5 MPa | 1.0 MPa |
| Connection Size | Discharge Side | 4 ID × 6 OD (PA hose) | |
| | Suction Side | 4 ID × 9 OD (PVC hose) | |
| | Air Release | 4 ID × 6 OD (PVC hose) | |
| Drive System | | Electromagnetic | Solenoid |
| Power Supply | | AC 100—240V Single-phase | |
| Frequency | | 50/60Hz | |
| Peak Current | | 2.2A | 2.0A |
| Peak Power Consumption | | 220VA | 200VA |
| Average Power Consumption | | 16W | 15W |
| Cable | | 75℃ HVCTF 3×0.75㎟ Length 2 m | φ5—φ10 Cabtyre Cable 2 m |

# Boiler Chemicals

## Multi-Functional Chemicals for protection against corrosion and scale sticking

Maintains Boiler Water in good condition by pH control, scale dispersion, etc.

- Adjust pH of the boiler water to a proper value, and form the corrosion protective film on the inner surface of the boiler.
- Organic acid, organic acid salt and alkaline agent included in boiler chemicals act to disperse hardness elements leaked from the water softener as well as ion oxide.
- Transforming silica which cannot be treated by the water softener into water-soluble silicate sodium prevents scale from sticking to the inside of the boiler.

Multi-Purpose Boiler Chemicals

| | |
|---|---|
| Type | SAMCLEAN S-125 |
| Capacity | 18 kg |
| Package | Polyethylene Container |

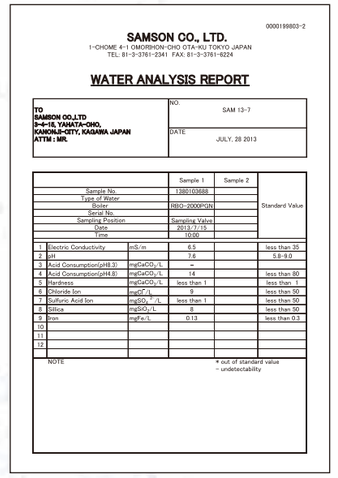
**SAMCLEAN S-125**
Category Code : G6, G7
NSF Registration No. 166985



# Water Analysis Services

In order to operate the boiler at high efficiency for a long time, it is important and essential to analyze water quality and understand it.

With a computer-based data management system, we monitor trends in water quality and submit an analysis report to our customers.



SAMSON CO., LTD.
1-CHOME 4-1 OMORIHON-CHO OTA-KU TOKYO JAPAN
TEL: 81-3-3761-2341 FAX: 81-3-3761-6224

WATER ANALYSIS REPORT

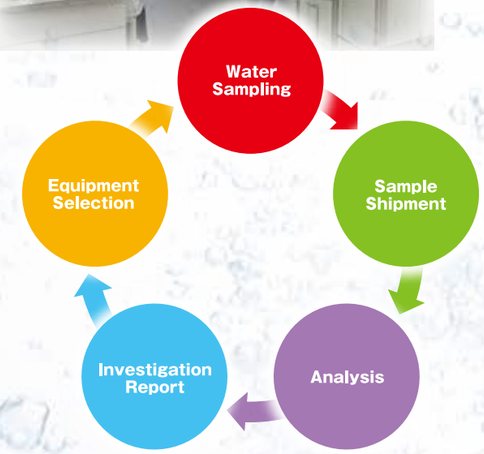
TO
SAMSON CO.,LTD
9-4-16, YAHATA-CHO,
KAWASAKI-CITY, KAGAWA JAPAN
ATTN : MR.

NO: SAM 13-7
DATE: JULY, 28 2013

| | | Sample 1 | Sample 2 | |
|---|---|---|---|---|
| Sample No. | | 1305103688 | | |
| Type of Water | | Boiler | | |
| Serial No. | | RBO-2000PGN | | Standard Value |
| Sampling Position | | Samplina Valve | | |
| Date | | 2013/7/15 | | |
| Time | | 10:00 | | |
| 1 | Electric Conductivity | mS/m | 6.5 | less than 35 |
| 2 | pH | | 7.6 | 5.8-9.0 |
| 3 | Acid Consumption(pH4.8) | mgCaCO3/L | ~ | |
| 4 | Acid Consumption(pH4.8) | mgCaCO3/L | 14 | less than 80 |
| 5 | Hardness | mgCaCO3/L | less than 1 | less than 1 |
| 6 | Chloride Ion | mgCl-/L | 9 | less than 50 |
| 7 | Sulfuric Acid Ion | mgSO4 2-/L | less than 1 | less than 50 |
| 8 | Silica | mgSiO2/L | 8 | less than 50 |
| 9 | Iron | mgFe/L | 0.13 | less than 0.3 |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |

NOTE
* out of standard value
~ undetectability

Please consider the most suitable model based on analysis of raw water.




### Standard Value of Feed Water for Samson Boiler

| Division | Control Item | Unit | Standard Value |
|---|---|---|---|
| Feed Water | pH (at 25℃) | | 5.8—9.0 |
| | Hardness | mgCaCO3/ℓ | Less than 1 |
| | Oils and Fats | mg/ℓ | Keep at low level |
| | Dissolved Oxygen | mgO/ℓ | Keep at low level |
| | Iron | mgFe/ℓ | Less than 0.3 |
| | Electric Conductivity | mS/m | Less than 35 |
| | Acid Consumption (pH4.8) | mgCaCO3/ℓ | Less than 80 |
| | Chloride Ion | mgCl⁻/ℓ | Less than 50 |
| | Sulfate Ion | mgSO4 2⁻/ℓ | Less than 50 |
| | Silica | mgSiO2/ℓ | Less than 50 |
| Boiler Water | pH (at 25℃) | | 11.0—11.8*1 |
| | Acid Consumption (pH4.8) | mgCaCO3/ℓ | 100—800 |
| | Acid Consumption (pH8.3) | mgCaCO3/ℓ | 80—600*2 |
| | Electric Conductivity | mS/m | Less than 400 |
| | Chloride Ion | mgCl⁻/ℓ | Less than 400*3 |
| | Sulfate Ion | mgSO4 2⁻/ℓ | Less than 400*3 |
| | Active Chemical Ingredients | | More than 10*4 |
| | Phosphate Ion | mgPO4 3⁻/ℓ | More than 20*5 |
| | Silica | mgSiO2/ℓ | Less than 400*6 |

*1 Keep the pH of the boiler water at around the upper limit of the standard value range. This prevents silica scale and corrosion from occurring in the boiler in standby condition.
*2 Maintain more than 1.5 times of silica concentration.
*3 Under the condition of $Cl^- + SO_4^{2-} \leq 700$ mg/ℓ
*4 Applicable to the case where phosphate is not included.
*5 Applicable to the case of using treatment chemicals including phosphate in the boiler.
*6 Standard value of silica concentration in the case of using treatment chemicals in the boiler.