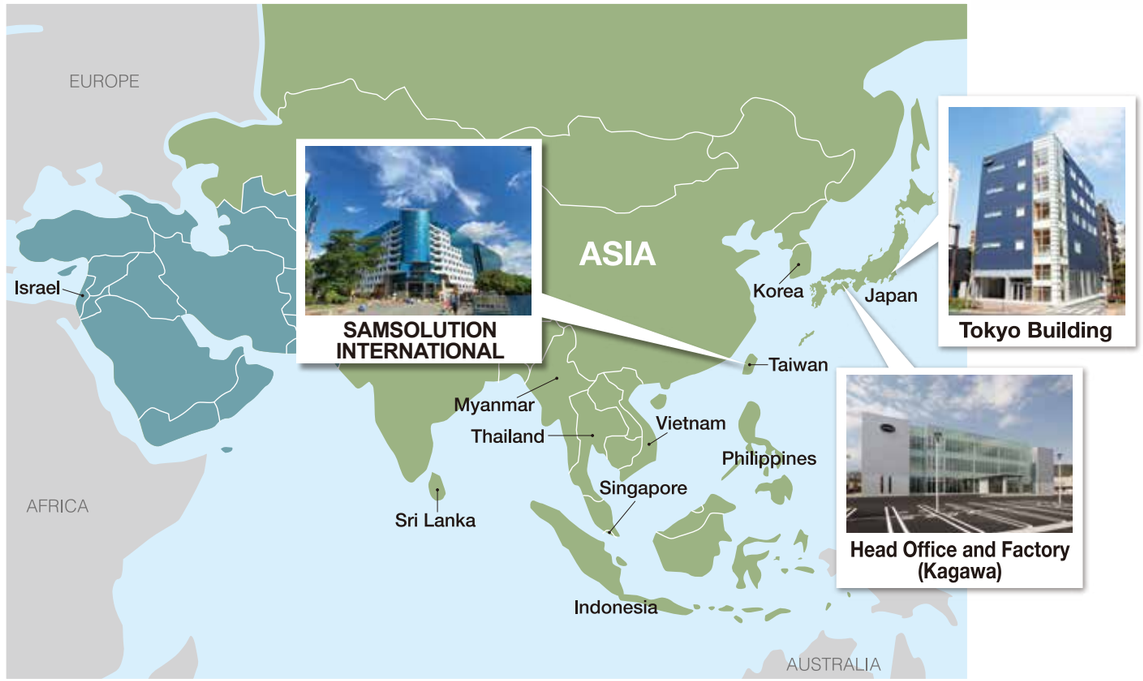
Network

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.

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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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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

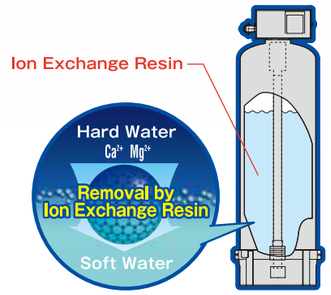
SAMSOFTENER サムソフナー

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)

SAMCLEAN

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.

Multi-Purpose Boiler Chemicals

Type	SAMCLEAN S-125
Capacity	18 kg
Package	Polyethylene Container

Chemical Injection Pump

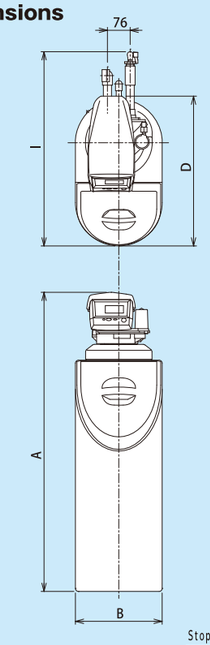
SAMSOFTENER
サムソフナー

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

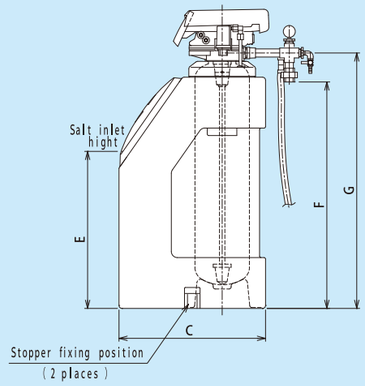
Dimensions

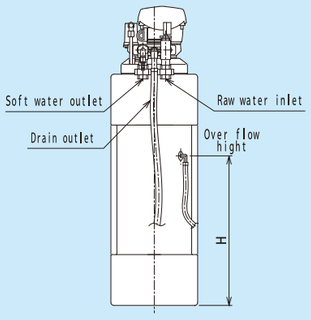


Dimensions Table

(mm)

	A	B	C	D	E	F	G	H	I
SS-1D /SS-1DE	648	230	440	481	400	417	502	380	615
SS-2D /SS-2DE	1,000	290	490	500	525	757	854	500	650
SS-3D /SS-3DE	1,299	290	490	500	827	1,056	1,153	802	650
SS-4D /SS-4DE	1,250	350	630	630	770	1,007	1,104	736	784
SS-5D /SS-5DE	1,301	350	630	630	770	1,058	1,155	736	784
SS-6D /SS-6DE	1,403	400	710	710	824	1,144	1,257	790	880





This drawing shows SS-2D.
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					
Regeneration Period: 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.

Easy-to-see digital liquid crystal display

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

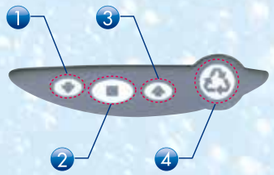
Easy to set regeneration cycle or a day of the week to perform regeneration

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.

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.

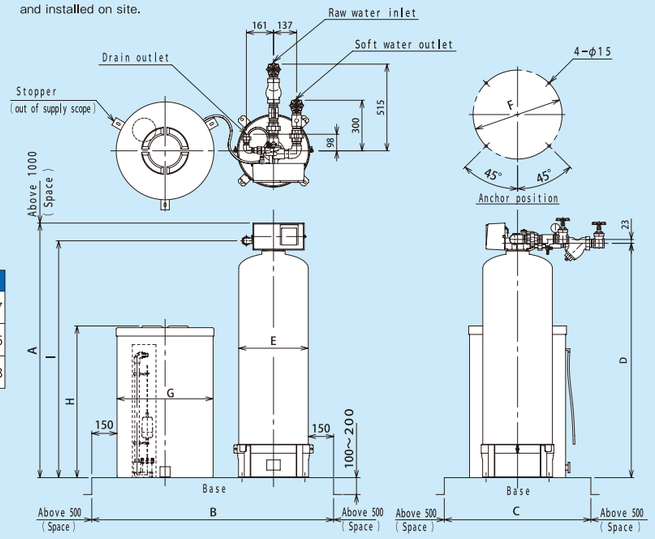
We have "EFR-S Series" suitable for one unit of water softener and "EFR-W Series" for its two units.

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
SSM-70D SSM-70DE	1,563	1,225	740	1,442	φ336	φ446	φ440	755	1,457
SSM-100D SSM-100DE	1,511	1,435	870	1,391	φ413	φ528	φ570	900	1,405
SSM-150D SSM-150DE	1,604	1,575	870	1,484	φ555	φ652	φ570	900	1,498

Specification Table

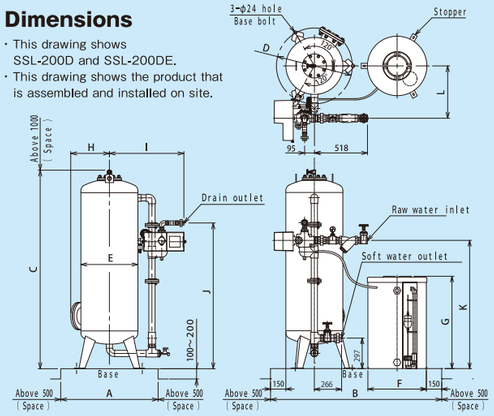
Item		Unit	SSM-70D SSM-70DE	SSM-100D SSM-100DE	SSM-150D SSM-150DE
Resin		—	Strongly acidic cation exchange resin		
Resin Quantity		ℓ	74	105	157
Maximum Flow Volume		㎥/h	5.6	7.0	9.0
Removal Hardness Weight		g/cycle	3,120	4,460	6,690
Maximum Water Sampling Rate		㎥/cycle	31	44.5	66.5
Regeneration Time		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.

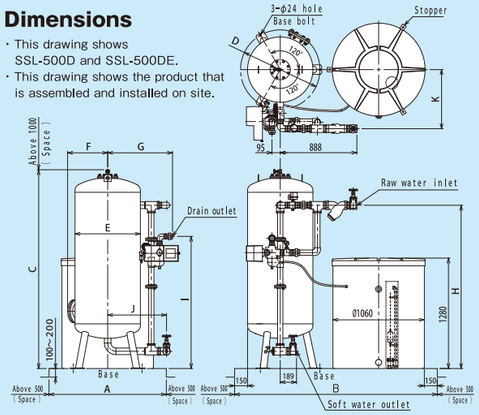


Dimensions Table

	A	B	C	D	E	F	G	H	I	J	K	L
SSL-200D SSL-200DE	950	1,670	1,936	φ740	φ556	φ570	900	377	726	1,422	1,250	510
SSL-300D SSL-300DE	1,030	1,910	2,052	φ840	φ658	φ710	890	421	711	1,531	1,343	561
SSL-400D SSL-400DE	1,200	2,200	2,065	φ940	φ758	φ900	890	465	761	1,524	1,336	611

Dimensions

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



Dimensions Table

	A	B	C	D	E	F	G	H	I	J	K
SSL-500D SSL-500DE	1,360	2,350	2,304	φ920	φ758	465	751	1,892	1,531	682	685
SSL-600D SSL-600DE	1,360	2,450	2,344	φ1,000	φ858	508	801	1,932	1,571	732	735
SSL-800D SSL-800DE	1,360	2,550	2,384	φ1,100	φ958	593	851	1,971	1,610	782	785

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	114	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 RBO-750 — 2500(P)GN 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.

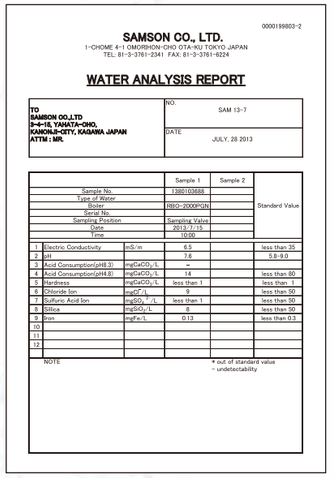
Multi-Purpose Boiler Chemicals

Type	SAMCLEAN S-125
Capacity	18 kg
Package	Polyethylene Container

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

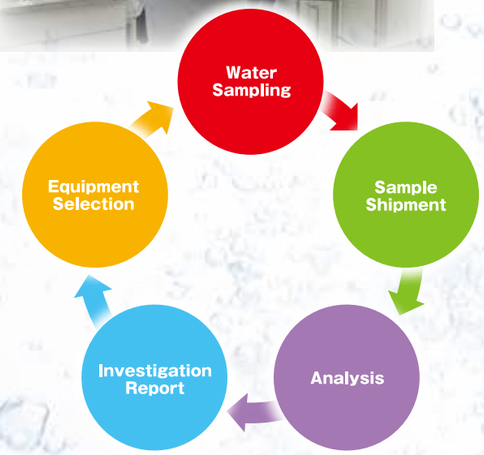
TO
SAMSON CO.,LTD
9-4-16, YAMATA-CHO,
KAWAGUCHI-CITY, KAGAWA JAPAN
ATTN : MR.

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(pH8.3)	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	$mgCaCO_3/\ell$	Less than 1
	Oils and Fats	mg/ℓ	Keep at low level
	Dissolved Oxygen	mgO/ℓ	Keep at low level
	Iron	$mgFe/\ell$	Less than 0.3
	Electric Conductivity	mS/m	Less than 35
	Acid Consumption (pH4.8)	$mgCaCO_3/\ell$	Less than 80
	Chloride Ion	$mgCl^-/\ell$	Less than 50
	Sulfate Ion	$mgSO_4^{2-}/\ell$	Less than 50
	Silica	$mgSiO_2/\ell$	Less than 50
Boiler Water	pH (at 25℃)		11.0—11.8*1
	Acid Consumption (pH4.8)	$mgCaCO_3/\ell$	100—800
	Acid Consumption (pH8.3)	$mgCaCO_3/\ell$	80—600*2
	Electric Conductivity	mS/m	Less than 400
	Chloride Ion	$mgCl^-/\ell$	Less than 400*3
	Sulfate Ion	$mgSO_4^{2-}/\ell$	Less than 400*3
	Active Chemical Ingredients		More than 10*4
	Phosphate Ion	$mgPO_4^{3-}/\ell$	More than 20*5
	Silica	$mgSiO_2/\ell$	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 $Cl^- + SO_4^{2-} \leq 700\ mg/\ell$
*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.