

# Operation and Maintenance Manual

## Sealed Type Stainless Tank (for Hardener)

*HST20,40,60*



HST40



This manual contains critical warnings and cautionary instructions. It shall be carefully read before starting the use of the equipment. This manual shall be kept at your hand until the equipment is thrown away.

In case it is lost or damaged, please contact us or any of our distributors.

# Preface

Thank you very much for choosing our Sealed Type Stainless Tank (HST20/40/60).

In order to keep the equipment in the best condition for an extended period, please carefully read this manual before use. Above all, the specifications, warnings and prohibitory or cautionary instructions shown herein shall be fully understood and observed during the use of the equipment.

The equipment covered by this manual is designed for industrial coating work. It shall be used by those who have been duly trained regarding the handling and scope of application and have an understanding of the operating procedure.

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Contents of this instruction manual shall be fully understood and the instructions shown herein strictly observed. Using the machine without following instructions in this manual may lead to bodily injury or damage to properties.

The safety measures described herein are the minimum requirements and additional measures may also be required. All requirements provided by laws and legislations as well as rules and guidelines laid by your company or office shall be observed.

The cautionary instructions shown below shall be construed as minimum basic requirements for safety in the use of our product.

● **Cautionary instructions are shown in three levels as defined below.**

 <b>WARNING</b>	Calls the user's attention to a situation that may lead to bodily injury and describes how to avoid that situation.
 <b>CAUTION</b>	Calls the user's attention to a situation that may lead to damage or breakdown to the equipment and describes how to avoid that situation.
<b>NOTE</b>	Gives important or helpful information.

\* Please remember that the situation mentioned under CAUTION may also lead to a serious disaster under certain circumstances. All instructions are important for your safety and prevention of machine disorder and shall be strictly observed.

## **WARNING**

### **Scope of suitable use for the equipment**

- This sealed type stainless tank can store hardener including isocyanate and replace the air in the tank with nitrogen gas. This is not a paint tank that transfer liquid with pressure.
- This tank isn't class-1 or class-2 pressure vessels. Operate this tank with proper pressure as written in this manual and be sure not to exceed 0.2MPa.
- Don't use this tank for liquids that may generate steam due to steam, heating and chemical reaction.
- Choose the appropriate nitrogen gas (or dry air) as specified.
- Never unfasten the clamp which fixes the cap in pressuring because that can cause injury or accident from tank damage.
- There is the lower limit level sensor (substantially safe explosion proof specification). Don't use the sensor other than specified one in dangerous area.
- Never use any acid or corrosive substance or halogenated hydrocarbon solvent.
- If you have any doubt about the intended use of the product or the paint to be used, please contact us.
- The use of the equipment under conditions other than specified above is considered as abuse unless such use is approved by us.

#### **<<General safety instructions>>**

- Never apply a fluid or air pressure exceeding the allowable maximum to the equipment. All components and accessories to be used shall be durable against the maximum operating pressures mentioned above.
- Don't use this tank for liquids that may generate steam due to steam, heating and chemical reaction.
- Check the whole equipment everyday. If any unusual condition is found, turn off the main power switch and, if the problem can be solved within the specified scope of maintenance work, repair or replace faulty parts as necessary. If the unusual condition cannot be corrected within the specified scope of maintenance work, please contact us or any of our distributors for repair.
- To ensure a safe operation of the system, all operators shall read and understand this manual and labels attached to each unit. The equipment can only be operated by adequately trained personnel.
- Fire and electric codes and safety related regulations provided by the national or local government shall be observed during the work.

## **WARNING**

### **Danger from fire and explosion**

#### **<<Sources of ignition>>**

When the hardener is replaced or flows through a pipe, it generates static electricity, which may spark at any part of the coating machine if the tank isn't properly grounded. Sparks may ignite combustible volatile components of solvents, particles of sprayed paint, dust suspended in the air and other combustible substances to cause fire or explosion, resulting in serious injury or damage to the equipment.

- Always check that the tank and all conductive materials are correctly grounded.
- Do not put base component (or liquid reacted with hardener) in the tank.  
If you put base component in the tank filled with hardener, the tank may be heated suddenly due to chemical reaction. In addition, carbon dioxide gas can be occurred because of this chemical reaction rapidly. Stop operation and evacuate to safe place immediately with the cap of tank open.
- Do not operate in the vicinity of open flame, pilot lamp, drive unit such as electric motor or engine or another source of ignition.
- Never smoke in or around the tank or in the atmosphere containing solvent.
- Adequately ventilate the the place around the tank so that it will not be filled with a combustible (solvent containing) atmosphere generated by the solvent.
- Fire extinguishers with a sufficient capacity must be provided in the place around the tank.
- If you feel shocked even slightly by static electricity when handling the tank, immediately stop the operation and check that all components are grounded. Never restart the operation until the cause is located and corrective action taken.
- There is the lower limit level sensor (substantially safe explosion proof specification). Don't use the sensor other than specified one in dangerous area.
- Before checking the tank, be sure to reduce nitrogen gas and dry air supplied for replacement to zero. And if you attach the lower limit level sensor, please turn off the sensor.
- Do not overhaul or remodel the lower limit level sensor.

## **WARNING**

### <<Grounding>

Class D grounding is required for the tank (to ensure an electric resistance not exceeding 100 ohms). The pump, products to be coated and all other coating machine components (in use or around the unit in use) shall be grounded to prevent accidents from static electricity. If no adequate grounding means is provided, the grounding work (class D grounding) shall be performed according to the technical standard for electric equipment.

The coating machine components shall be grounded as specified below.

#### (1) Grounding the pump

- When the pump connected to the tank with paint hose, attach a grounding wire to the grounding terminal provided at the pump body or car and connect the other end of the wire to a class D grounding means.

#### (2) Grounding the hoses

- All high-pressure hoses must be grounded to ground the whole coating system. When connecting additional hoses for extension, check that each hose is grounded.
- The paint hoses in use shall be checked every week to measure the electric resistance. The electric resistance shall be 100 ohms or less as obtained with class D grounding. If the maximum electric resistance is not indicated on the hose, contact the hose distributor or manufacturer.

Connect an ohmmeter to appropriate part of the hose to measure the resistance and, if it exceeds the permissible limit, immediately replace the hose with another one.

#### (3) Grounding the container of hardener

- The containers, if made of a conductive metal, shall be placed on a grounded floor or table.
- If hangers and earth clips are contaminated, complete grounding cannot be achieved. Keep hangers and earth clips clean and conductive (grounded).

#### (4) Grounding the container of solvent used for flushing

- The container, if made of a conductive metal, shall be placed on a grounded floor or table. Do not place it on a non-conductive sheet such as paper or corrugated cardboard.
- If hangers and earth clips are contaminated, complete grounding cannot be achieved. Keep hangers and earth clips clean and conductive (grounded).

### <<Safe flushing>>

- Before flushing, check that the mixing unit, whole coating machine and paint and solvent containers have been correctly grounded.
- Adequately ventilate the workplace so that it will not be filled with a combustible (solvent containing) atmosphere.

## **WARNING**

### Danger from toxic substances

#### <<Solvents>>

Halogenated hydrocarbon solvents may explode if brought into contact with aluminum or plated part of a pressure vessel (pump, heater, filter, valve, gun, etc.). The explosion may consequently lead to fatal bodily injury.

**Never use halogenated hydrocarbon solvents.**

#### ●Examples of halogenated hydrocarbon solvents

Chlorine group	Trichlorethylene, Tetrachlorethyleneand dichloroethylene
Bromine group	n- propyl bromide
Fluorocarbon group	NCFC-225, HFC-43-10mee, HFE-449s1 (HFE-7100)

(The above list does not include all halogenated hydrocarbons. For detail, contact the paint distributor or manufacturer.)

#### <<Influences on the human body>>

If a solvent containing atmosphere or fluid comes into contact with your eyes or mouth or a toxic substance is inhaled or swallowed and brought into your body, your nervous tissue may be destroyed to cause serious injury such as lifetime functional disorder. Immediately ask for adequate medical treatment.

#### **Necessity of medical treatment**

**Immediately receive medical treatment by a medical specialist such as orthopedist, not by a layman. At this time, you should tell him (her) the exact type of the hardener you used.**

- You may lapse into dyspnea or be poisoned by organic solvent in the mist of paint or spraying atmosphere. Do not use the equipment in a closed room, tunnel, tank or another poorly ventilated place. The user shall take enough care of persons and livestock around him as well as himself.
- The isocyanate used for two-component paint may hurt mucous membranes in your nose or throat. You should be acquainted with components of the paint, hardener, solvent and other volatile substances to be used. If you need further information, contact the paint or solvent manufacturer.
- When doing the spray coating work, always wear the protective goggles, working clothes and mask recommended by the paint or solvent manufacturer. Additional protective devices may be required depending on the paint components or ventilation level. Contact the paint or solvent manufacturer.

## **WARNING**

### **Danger from pressures**

This tank is operated with pressure higher than atmospheric pressure. Therefore, the route to pump is filled with the highly pressurized liquid. If the leaking hardener (paint) hits a person at a close distance, it hits his skin and a lot of toxic substances penetrate into his body. If he fails to receive adequate medical treatment, his nervous tissue may be destroyed to cause serious injury such as lifetime functional disorder or surgical amputation of damaged part of his body. You may be seriously injured if the paint is only pinged into your eyes or skin.

#### **Necessity of medical treatment**

**If you are hit by hardener or paint, immediately receive medical treatment by a medical specialist such as orthopedist, not by a layman. At this time, you should tell him (her) the exact type of the paint you used.**

- This tank isn't class-1 or class-2 pressure vessels. Operate this tank with proper pressure as written in this manual and be sure not to exceed 0.2MPa.
- Don't use this tank for liquids that may generate steam due to steam, heating and chemical reaction.
- Before using the system, always make sure that hose joints and all connections in the paint circuit are tight. Above all, check that joints of the hoses that move during operation are locked tight.
- Do not start using the system before fully understanding how to operate it.
- Inside of the nitrogen gas cylinder is high pressured. Handle and manage that based on high pressure gas safety law with reading the manual of gas cylinder carefully. When the damages, injuries and accidents are caused by wrong operation or inadequate management of the gas cylinder, our company will assume no responsibility.

#### **<<Safety valve of the tank>>**

- The safety valve is attached to the tank.  
Be sure to check if the device operates correctly.
- Do not remove or modify any part of a safety device. Doing so may lead to a malfunction or injury.

#### **<<Liquid replacement and tank washing>>**

- Do not put base component (or liquid reacted with hardener) in the tank.  
If you put base component in the tank filled with hardener, the tank may be heated suddenly due to chemical reaction. In addition, carbon dioxide gas can be occurred because of this chemical reaction rapidly. Stop operation and evacuate to safe place immediately with the cap of tank open.
- Never unfasten the clamp which fixes the cap in pressuring because that can cause injury or accident from tank damage.
- In liquid replacement or tank washing, be sure to reduce the pressure of nitrogen gas and dry air supplied for replacement to zero before removing clamp.  
Do not operate without reducing pressure.

## **WARNING**

### <<Safety of hoses>>

- Handle hoses with much care.

Be sure that hoses are not caught or pulled by another object or brought into contact with sharp edges.

- Before starting the operation, always make sure that hose joints and all connections in the paint circuit are tight. Above all, check that joints of the hoses that move during operation are locked tight.
- Do not pull any hose to drag or move the equipment.
- Never use any damaged hose. Check each hose throughout its length for scars, leak, wear, swells, cracks and loose fittings. In any of them is found, immediately withdraw the hose from service and replace it with a new one.
- Any hose with paint leak must be replaced with a new one.  
Use a standard hose complying with our specifications.

### <<Danger from misuse of the equipment>>

- Do not move the tank when it is under pressure.
- Never apply a fluid or air pressure exceeding the allowable maximum to the equipment during operation with this tank. All components and accessories to be used shall be durable against the maximum operating pressures mentioned above.
- To ensure a safe operation, all operators shall read and understand this manual and labels attached to each unit. The equipment can only be operated by adequately trained personnel.
- Fire and electric codes and safety related regulations provided by the national or local government shall be observed during the work.

## 2.1 Outline

The sealed type stainless tank is used for storing nitrogen gas in the sealed condition against the liquids that is reacted with the moisture in the air such as hardener.

The isocyanate-based hardener forms invisible substance (crystal dust) by chemical reaction with the moisture (OH group) in the air or other liquids. The air in the tank should be replaced by using nitrogen gas because the crystal dust can be adheres and accumulated to the tank and route and that can cause hardening reaction of all hardeners.

In the management with other than nitrogen gas, it can't be guaranteed against defects such as damage and clogging in the route caused by generation of crystal dust and gas. If nitrogen gas can't be prepared, you can use the air nearly absolute dry condition instead of nitrogen gas by putting the air dryer (heating system after cooling) and air filter with silica gel to compressor air. However, in this case, our company can't manage that.

For the hardener, use stainless pipe with low water absorbency and Teflon hose. Please don't use the nylon hose with highly absorbency and iron-based piping materials that can be oxidized because the hardener in the route may be hardened even if the route is suppose to be sealed. Especially in high temperature and humidity, the hardening reaction tends to occur.

### CAUTION

That can cause damage, failure and hardening trouble.

- Don't expose the hardener to the air
- Keep the inside of the tank replaced with nitrogen gas

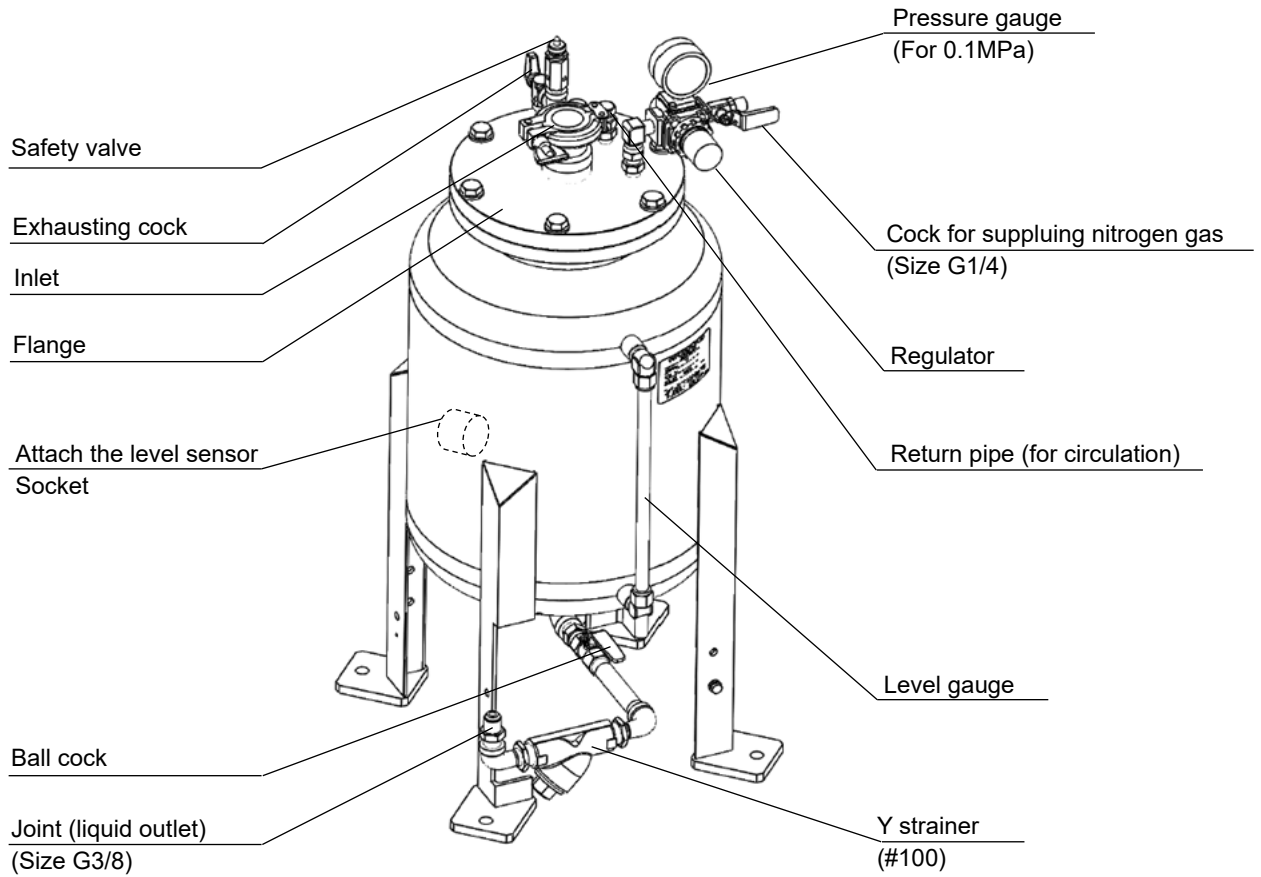
## 2.2 Specifications

Name:	Sealed type stainless tank
Viscosity range:	25mPa·s~3000mPa·s
Max. nitrogen gas pressure:	less than 0.2MPa
Materials in contact:	Stainless, Teflon
Usable paint:	Two-component hardener for urethane
Explosion protection:	Lower limit level sensor (optional device)

Model	HST20	HST40	HST60
Part no.	2188-1	2189-1	2190
Capacity	20L	40L	60L
Max. capacity (Pole gauge upper limit)	21L	40L	60L
min. capacity (Pole gauge lower limit)	4.5L	9L	9L
min. capacity (Detection of level sensor)	6L	11L	11L
Size	W360×D390×H780	W450×D510×H850	W450×D510×H1010
Size (with level sensor)	W360×D570×H780	W450×D690×H850	W450×D690×H1010
Weight	25kg	31kg	35kg
Weight (with level sensor)	27kg	33kg	37kg

# 3

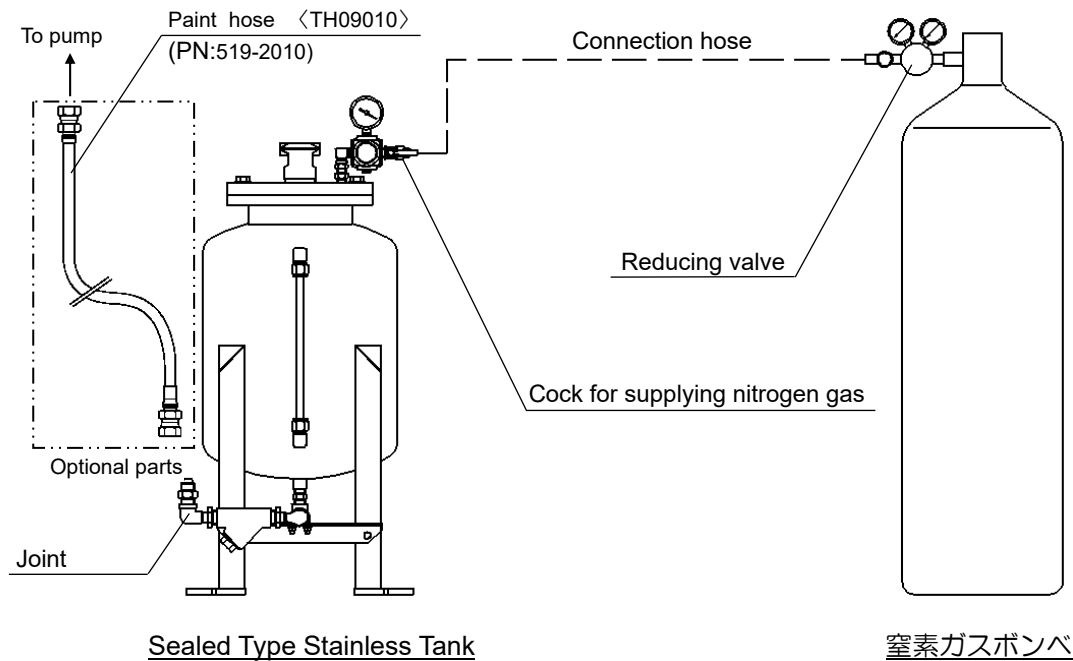
## Main Components



# 4

## Construction Example

The following is construction example of paint hose and nitrogen gas.



This tank is 100% inspected at the manufacturer's factory. However, some parts may be damaged or lost during transportation. After unpackaging, please check carefully for missing or damaged parts and, if any, contact us or any of our distributors.

### 5-1 Caution in unpackaging

- (1) Check each unit for broken fittings and screws and for gouges and dents around the periphery.
- (2) Check the electric components in the ACW1200E control unit and remount them if disconnected.
- (3) Tighten loose bolts, nuts and joints if any.
- (4) Check the air pressure gauge for damage and replace it with a new one if necessary.

### 5-2 Installation place and caution in installing

- (1) Class D grounding work is required for the tank.
- (2) It can be installed in any place other than class 0 dangerous areas if the lower limit level sensor is attached.
- (3) This tank shall be installed with enough space reserved around it for routing of the paint hoses and air tubes and for ease of maintenance by fixing with tools such as anchor bolt.

### 5-3 Connection of flow meter cables (exclusive)

In the installation in a dangerous area, refer to the followings.

For the operation of ex-proof device, "Safety check" before operation is important.

## **WARNING**

### **To prevent injury**

- Never remodel the equipment or use a combination of units other than specified as doing so may lead to an accident. If remodeling or structural change is required, please contact the responsible personnel of us.

### **To prevent fire and explosion**

- Check that all units have been completely grounded.
- Adequately ventilate the workplace so that it will not be filled with a combustible (solvent containing) atmosphere.

#### 5-3-1 Before starting the work

- (1) The grounding work according to the "Guidelines for Electric Equipment Protection against Explosion at Factories" is required for the equipment and all devices and tools used for operation, maintenance and servicing of the equipment in a "dangerous area" where, for example, a combustible (explosive) atmosphere exists.
- (2) When directly involved in the work in a place where a combustible (explosive) atmosphere exists, all operators shall have full knowledge about the explosion prevention and electric work and fully check the safety of everything including the devices and tools to be used and (anti-static) working clothes.

### 5-3-2 Working tools

- (1) The tools connected with an “outlet” when used, e.g. power drills and illuminators, must be checked before work. Scared, thinned (elongated), swelled or otherwise deformed cables must be always checked for.
- (2) Perform a continuity test using an ohmmeter between metallic part or grounding terminal of each tool and the power cable terminal and ground the tool before use.
- (3) The “outlet” used in a dangerous area must be equipped with an interlock to open or close contacts after a given delay. A capability of making electric circuits completely continuous or open when the plug is inserted or removed is a precondition for the explosion-proof equipment.
- (4) A power supply intermittently connected to a tool may become a source of ignition. Preventive measures against human errors and correct operating procedures shall be strictly observed in working.

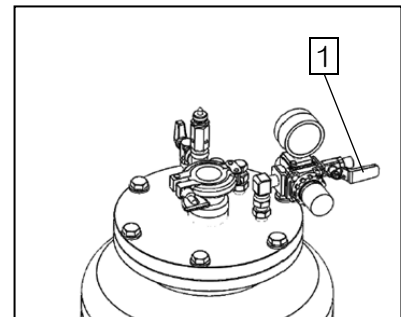
### 5-3-3 Grounding

For the tank installed in a dangerous area, the main body and grounding terminals (e.g. terminals provided in the spray booth) shall be grounded according to the “Guidelines for Electric Equipment Protection against Explosion at Factories.”

- (1) A continuity test shall be performed between the main bodies of the ACW mixing unit and local operation panel (optional) and the grounding terminals to check that there is a continuity meeting the standard for class D grounding.
- (2) Thoroughly read the paragraph of “Grounding” in section 1 “For Safe and Correct use” before starting the work.

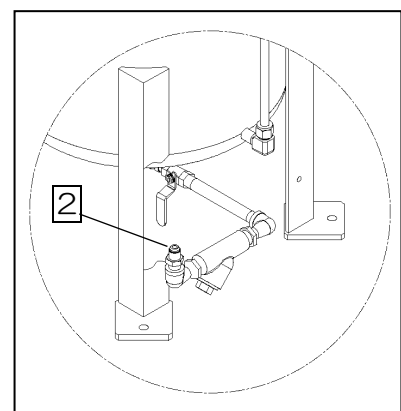
### 5-4 Connection of nitrogen gas hose

- (1) Use the hose without any oils and dusts.
  - (2) Make sure that the pressure gauge of the cylinder value is zero and connect the nitrogen gas supply cock (size G1/4) to 1 from safety valve (outlet).
  - (3) Use the hose of solvent resistance type with low absorbency.
- See “4 Construction Example”.



### 5-5 Connection of paint hose

- (1) Connect the joint in lower part of the tank and the inlet of the paint in each pump (feeder).
- (2) In lower part of the tank, joint 2 (size: G3/8). Be sure to use Teflon hose with mouthpiece made by SUS.
- (3) In the pump side, attach the hose by replacing the bushing of inlet to hose joint (size: G3/8).



# 6

## Flushing (for Tank)

After the location is determined and the air and paint hoses are connected, please do the flushing operation. Wash the tank based on this section regularly.

### **WARNING**

#### **To prevent danger from toxic substances and compressor**

- When working, wear a face mask, safety goggles and protective clothes for protection against organic solvents.
- Adequately ventilate the workplace so that it will not be filled with a combustible (solvent containing) atmosphere.

#### **To prevent fire and explosion**

- Check that all units have been correctly grounded.

### **CAUTION**

#### **There is a possibility of machine disorder, malfunction, or hardening in the mid-line.**

- Failure to flush leads to the outflow of wastes, etc., which clogs the flow meters to cause a malfunction or damages the valve or check valve seat, resulting in a reverse flow of the paint. Never fail to flush.
- For the flushing fluid, do not use any lacquer and alcohol based solution. These liquids are reacted with hardeber and accumulate in the paint route. That can cause device trouble or gelation in paint route. Use the specified washing liquid recommended by paint company.
- Do not use collected and recycled solution for device flushing.

- (1) Close the stopcock of nitrogen gas cylinder and also close the reducing valve.
- (2) Close the cock for supplying nitrogen gas in upper part of the tank and discharge nitrogen gas by opening discharge cock to put the pressure inside the tank to zero.
- (3) Discharge the remaining hardeners from return or drain by using the pump connected to the tank.
- (4) Put the washing solvent in the tank with funnel. If needed, remove hex bolts (6 pcs) of the flange and wash inside the tank with blush.
- (5) Absorbe washing solvent with pump and circulate for a while.
- (6) Discharge washing liquid from return or drain of the pump and check the pump is empty.
- (7) Put the new washing liquid, absorb with the pump and discharge that again.
- (8) Disassemble and wash filters such as paint filter and Y strainer.
- (9) Check whether there aren't any leakages in connector, joint and pipe. If the leakage is found, tighten and replace the certain part.
- (10) When the operation would be stopped for more than 1 week, the pump and route of the tank should leave to be filled with washing solvent. In this case, the nitrogen gas doesn't have to be supplied.

\*The name of the above, refer to "3 Main Components" or "8 Names of Parts".

 **WARNING**
**To prevent danger from toxic substances and compressor**

- Wear a face mask, goggles and protective clothes for protect against organic solvents. Isocyanate, a chemical agent used as hardener, may hurt your nose or throat.
- Wear a face mask during the work. Additional protective devices may be required depending on the paint components or ventilation level. Contact the paint manufacturer.
- Adequately ventilate the workplace so that it will not be filled with a combustible (solvent containing) atmosphere.

**To prevent fire and explosion**

- Check that all units have been correctly grounded.
- Adequately ventilate the workplace so that it will not be filled with a combustible (solvent containing) atmosphere.

**7-1 Hardener supply**

- (1) Put the hardeners in the tank with attached funnel in order not to adhere to around inlet or gasket. If hardeners adhere, wipe off immediately with waste impregnated by washing solvent.
- (2) Put it as checking level gauge in the side of the tank so as not to overflow the hardener. put the hardener slowly because that may overflow due to small caliber of funnel. After supplying hardeners, wash the funnel and keep it clean.
- (3) Set the gasket and attach the blind cap of the tank tightly.
- (4) Open the stopcock of nitrogen gas cylinder and then, open reducing valve a little (until the needle of pressure gauge leaves from the pin).
- (5) Close the exhausting cock in upper part of the tank. Open the supplying cock for nitrogen gas and adjust pressure to 0.01~0.02MPa. To discharge the air in the tank, replace the air to nitrogen gas by opening exhausting cock for 10 seconds.
- (6) Absorb the hardeners with pump. Operate that based on instruction manual.
- (7) For leakage test, fill up the nitrogen gas (0.01~0.02MPa) and close the supplying cock. After 2 hours, if the pressure goes down to three fourth, leakages may occur.

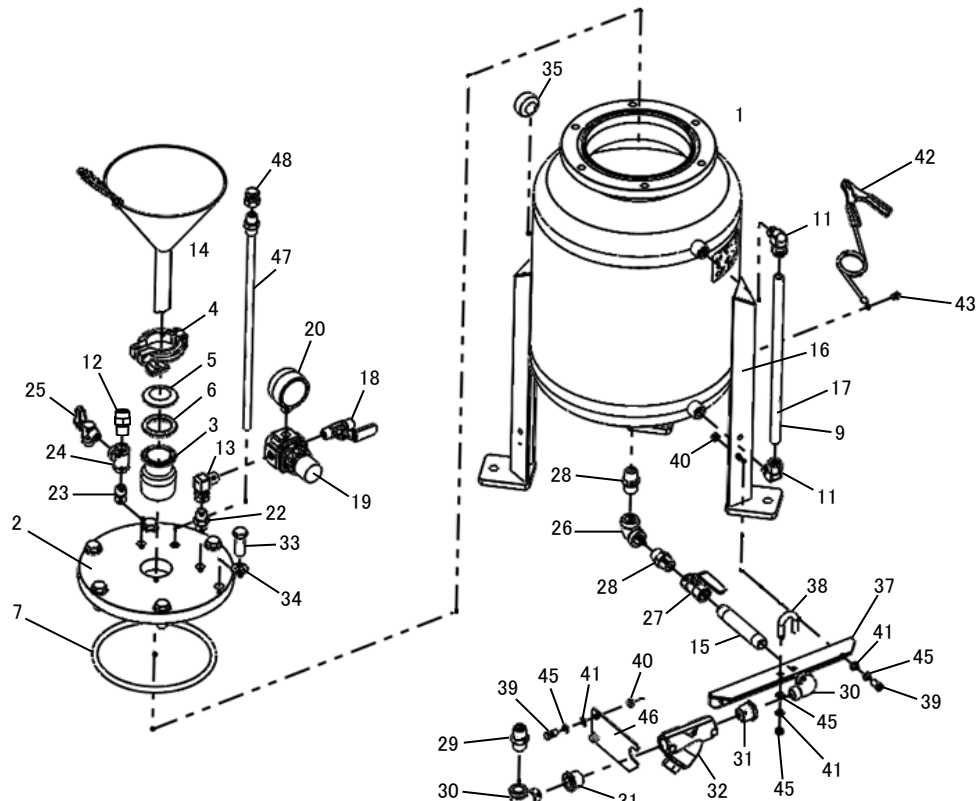
\*The name of the above, refer to “3 Main Components” or “8 Names of Parts”.

**7-2 Operation of the tank**

- (1) Before operation, make sure if the tank is filled with hardeners. When the hardeners decrease, the hardened trush flow into the tank and damages or defects of the device can be occurred.
- (2) There is the lower limit level sensor as optional device. If you attach that (substantially safe ex-proof specification), read the instruction manual of the level sensor carefully.

 **CAUTION**
**There is a possibility of damages or defects of the device and hardening troubles.**

- If there is leakage in the tank, the nitrogen gas runs out in just a day. That is the almost same as not replacing the air to nitrogen gas. And the crystal dust and hardened trush can be clogged in the tank. Inspect the leakage and pressure regularly and if there are some defects, repair that right away.



Sealed Type Stainless Tank 20ℓ<2188-1> • 40ℓ<2189-1> • 60ℓ<2190>

No.	Part No.	Name	Qty'	Remarks
1	2188-101	Tank body	1	20L
	2189-101	Tank body	1	40L
	2190-001	Tank body	1	60L
2	2188-002	Tank lid	1	
3	2188-003	Threaded adapter	1	
4	2188-004	Clamp band	1	
5	2188-005	Blind cap	1	
6	2188-006	Gasket	1	
7	102-6170	O ring	1	
8	Nil			
9	360-0153	Plastic ball	1	
10	Nil			
11	342-0224	Elbow union	2	
12	310-0008	Safety valve	1	
13	22C-2202	Union 90° elbow	1	
14	5414-014	Funnel	1	
15	2188-015	Long nipple	1	20L
	2190-015	Long nipple	1	40, 60L
16	5241-001	Gr.Terminal name plate	1	
17	57A-0003	Teflon tube	1	20, 40L
	57A-0005	Teflon tube	1	60L
18	325-0003	Ball cock	1	
19	301-0025	Air regulator	1	
20	305-0025	Pressure gauge	1	
21	Nil			
22	247-2202	Hose joint	1	
23	242-1002	Barrel nipple	1	
24	205-3002	Tee	1	

No.	Part No.	Name	Qty'	Remarks
25	325-0043	Ball valve	1	
26	201-4003	Elbow	1	
27	325-0022	Ball cock	1	
28	287-4003	High pressure nipple	2	
29	299-4303	Hose nipple	1	
30	203-4003	Female/ male elbow	2	
31	234-4004	Bush	2	
32	320-4004-5	Y strainer	1	
33	01-11235	Hex bolt	6	
34	37-11200	Plain washer	6	
35	244-4010	Hex socket plug	1	
36	Nil			
37	2188-137	Angle iron	1	20L
	2189-137	Angle iron	1	40, 60L
38	98-10603	U bolt	1	
39	01-10615	Hex bolt	4	
40	15-10600	Hex nut	6	
41	41-80600	Spring washer	6	
42	40338-024	Earth cable	1	
43	13-10410	3 pont SEMS screw	1	
44	5254-043	Model name plate(HST)	1	
45	37-10600	Plain washer	6	
46	2188-146	Stopper	1	20L
	2189-146	Stopper	1	40, 60L
47	2188-018	Return pipe	1	20L
	2189-018	Return pipe	1	40L
	2190-018	Return pipe	1	60L
48	278-4002	Plug	1	

Notes: The form or specification may change without prior notice.

# 9

## List of Consumable Parts

Durable lives of the parts may vary depending on the liquid type and liquid replacing frequency. The values shown below should be taken as reference lives.

Part No.	Name	Qty'	Durable life	Remarks
2188-006	Gasket	1	6 months	Replace every 6 months.
102-6170	O ring (G170)	1	Overhauled	Replace every 6 months.
320-4004-05	Screen	1	12 months	#100 For Y strainer
5414-014	Funne;	1	12 months	
301-0025	Air regulator	1	24 months	
305-0025	Pressure gauge	1	24 months	
310-0008	Safety valve	1	24 months	

# 10

## Inspection Items

### 10-1 Pre-work inspection

Check the following items at the start of the everyday work.

Units of ACW1200E			
Check item	Check method	Criteria	Corrective action
Fluid leak from pipe in lower part of tank	Check with eyes.	No fluid leak allowed.	•Tighten the pipe.
Fluid leak from Y strainer	Check with eyes.	No fluid leak allowed.	•Wash the gasket of Y strainer.
The rest of hardeners	Check with eyes.	The amount is enough.	•Replace the hardeners.
Gas liak of nitrogen gas	Stop the gas and check the change of pressure	No gas leak and change allowed	•Replace the gasket of inlet. •Replace O ring of flange •Replace air devices in upper part.
The rest of nitrogen gas	Pressure gauge Check with eyes.	The amount is enough.	•Replace the gas cylinder. *Replace before it runs out
Air quality of dry air supplying device			•Refer to the instruction manual of device *For the dry device such as silica gel, replace that in the repace time of silica gel.

### 10-2 Monthly inspection

Check the following items every month.

Units of ACW1200E			
Check item	Check method	Criteria	Corrective action
Clogging matter in Y strainer	Check with eyes.	No filter clogging and no dirt.	•Wash or replace #100 Screen (320-4004-05)

ASAHI SUNAC CORPORATION (the “Company”) shall provide the original purchaser (the “Purchaser”) with warranty service for a period of 6 months from the date of purchase of the product, as follows:

- Should you find defects in design or workmanship with regard to parts, ship them back to the Company, with freight prepaid. The Company shall repair or replace the parts free of charge and reimburse the freight charges, provided that, as a result of an inspection and investigation of the parts conducted by the Company, the defects are deemed to be attributable to the factors within the Company’s responsibility.
- In the following cases, free after-sales service is not provided.
  1. Failure resulting from an inappropriate method of installing this equipment.
  2. Failure resulting from a use method not conforming to this instruction manual or mishandling.
  3. Failure resulting from insufficient maintenance management of this equipment and incorrect handling such as non-conformance to the procedures specified in this instruction manual.
  4. Failure resulting from unauthorized alteration or structure change of this equipment without the Company’s consent.
  5. Failure due to force majeure such as earthquake, disaster, flood disaster or lightning.
  6. Warranty for consumables worn or deteriorated even in the case where this equipment is used correctly.
  7. Repair after the machine has been used outside Japan, and shipping cost.
  8. In addition to the above, failure due to circumstances beyond our control.
- As for items such as parts purchased by the Company from another manufacturer, the warranty of that manufacturer shall apply.
- As for any parts deemed to be defective, the Company shall not be held liable for any expenses beyond the provision of repair or replacement parts free of charge.
- The Company shall not be held liable for any damage to the Purchaser caused by factors not attributable to the Company, such as misuse of product, etc.

【MEMO】

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- When transferring this machine to another owner, attach the instruction manual to the machine.
  - This machine has been manufactured according to the laws and legislations of Japan and may only be used in Japan.

When using the machine in another country, it is necessary to observe the safety standards in that country.

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10th Edition: January 5, 2026

## ASAHI SUNAC CORPORATION

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English



Chinese

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