ASAHI SUNAC

Operation and Maintenance Manual

High Performance Plunger Type Airless Pump
SUPER BEAR

SP2544/54/78(S)

Ec'Coater™ エコーター

This manual contains important information on warnings and cautions. Read the manual thoroughly before starting to operate the equipment, and follow the instructions.
Always keep the manual handy until such time as the equipment is no longer being used.
If your manual is lost or worn badly, do not hesitate to contact our agency which is closest to you, or the Asahi Sunac Corporation, directly, and ask us to send you a new one.

26th Edition: February 10, 2026

Introduction

Thank you for purchasing our product High Performance Plunger Type Airless Pump SUPER BEAR < SP2544/54/78(S) >.

Please be sure to read this operation manual carefully before using this product so that you can always use it under the optimum conditions.
In particular, please fully understand the items in the specifications and use them according to the correct usage.

This product is used together with a spray gun, electrostatic controller, and paint regulator.
Be sure to read the instruction manuals for each device carefully.

If you have any questions, please contact us by clearly stating the "product number" and "serial number" and contacting us on the back cover.

Please keep this operation manual in a safe place where you can easily refer to it.

Contents

26th Edition: February 10, 2026

1 For Your Safety

Please understand the contents of this instruction manual and be sure to follow the handling method. If you use it without following this instruction manual, **you may injure your body or damage your equipment and fire.**

The following safety precautions should be considered as minimum basic safety measures when using our products.

●Precautions are displayed in the following two stages.

⚠ **WARNING**	Hazards that can result in death or serious injury.
⚠ **CAUTION**	Danger that may result in minor or moderate injury or physical damage only.

●Other important points are indicated as follows:

NOTE	Observations to ensure the equipment's performance and functions are fully operational.

In addition, please observe all national and local laws and regulations related to fire, electricity, and safety, as well as the rules and regulations of your own company or business division.

≪Range of use suitable for the product≫

This product is a pump that is installed in a coating environment with an exhaust system and is used to paint and materials for application and coating.

《Warning and precautions for safe use》

⚠ WARNING

Fire and explosion

Preventing fire and explosion in coating shop

- **Do not use halogenated hydrocarbon solvents.**
  The aluminum alloy contained in this product's components may undergo a chemical reaction and explode.
- **Do not use this product outside its specifications.**
  Using it out of specification range may result in a fire hazard.
- **Provide adequate ventilation with ventilation equipment.**
  Volatilized organic solvents and other substances may remain and ignite, creating a risk of fire.
- **Clean the coating room and exhaust system (ducts and fans) regularly.**
  If the accumulated powder simply peels off, a spark may occur, which could cause a dust explosion.
  In the unlikely event of a fire, paint residue etc. will make it easier for the fire to spread and result in greater damage.

Prevent fire and electric shock caused by faulty earthing

- **All conductive objects in the coating booth (paint containers, peripheral equipment, etc.) must be grounded with an earth wire.**
  In an atmosphere ionized by high voltage, poorly grounded conductors can become charged, creating a risk of fire or electric shock due to spark discharge.
  The earth should be **Class D grounding or higher** (ground resistance 100 Ω or less).
- **Always keep the workpiece earthed.**
  Risk of fire or electric shock due to spark discharge from charged workpieces.
- **The paint container must be grounded with an earth wire.**
  The paint path can cause the paint container to become charged, a risk of fire or electric shock.
- **Be sure to periodically remove any paint that has stuck to the hanger.**
  If paint adheres to the contact part between the hanger and the object, there is a risk of fire or electric shock due to poor earthing.
  The ground resistance value should be 1kΩ or less for metal (1MΩ or less for resin) (measurement voltage should be 500V or more).
- **Do not place any items in the coating booth that are not necessary for coating.**
  Static electricity can cause spark discharge, which can result in fire or electric shock.
- **Paint operator must take precautions to prevent static electricity.**
  Static electricity builds up on the human body, causing sparks to discharge, which may result in fire or electric shock.

《Warning and precautions for safe use》

⚠ WARNING

Fire and explosion

Prevent fires caused by ignition of paints and solvents

- **Do not bring any spark-producing devices, matches, lighters, etc.**
  Risk of explosion or fire due to ignition of flammable materials.

Equipment misuse

Preventing accidents caused by poor maintenance

- **Any abnormal noises or vibrations, immediately stop operation.**
  Product damage may result in a fire hazard.
- **Do not operate if any parts are damaged or missing.**
  Product damage may result in a fire hazard.
- **Do not use the equipment with the safety valve removed.**
  Malfunction or equipment damage may cause injury to the human body.

Human protection

Protection from solvents, air and paint pressure

- **Do not spray paint towards person**
  Harmful substances may cause serious injury, including inflammation and poisoning.
  Pressurized paint can cause personal injury.
- **Wear protective glasses, a protective mask, and protective gloves[*1] when handling paint.**
  Harmful substances may cause serious injury, such as inflammation or poisoning.
  Carefully read the safety data sheet (SDS[*2]) of the paint you are using and take appropriate exposure prevention and protective measures.
  *1 When using protective gloves for skin absorption protection or to prevent dirt, it is necessary to prevent static electricity from building up on the human body. Be sure to ground it properly. (Recommended protective gloves are those specified in JIS T8118, or earth bands, etc.)
  *2 SDS：Safety Data Sheet
- **Clean the coating room and exhaust device (ducts and fans) regularly.**
  If the exhaust device does not function properly, harmful substances may cause serious injury, including inflammation and poisoning.

《Warning and precautions for safe use》

⚠ WARNING

Human protection

Protection from moving parts

- **Do not touch the moving parts when activating the pump.**
  There is a risk of fingers getting caught in the moving parts, causing injury to the body.
- **When interrupting or ending work and before cleaning, disassembly and maintenance, stop the supply air to the pump. Be sure to release the pressure.**
  The pump may activate unexpectedly, posing a risk of injury if fingers become trapped in moving parts (such as the piston rod).
  There is a risk of serious injury, such as inflammation or poisoning symptoms, due to hazardous substances.
- **Do not leave the site while the pump is operating.**
  If someone is unaware that the pump is running, there is a risk of their fingers getting caught in the moving parts (piston rod, etc.) and sustaining personal injury.

Protection from high-pressure paint

- **Always use below the maximum output pressure.**
  If paint or materials are sprayed out of the equipment and enter the body through the eyes or mouth, there is a risk of serious injury such as inflammation or poisoning due to the harmful substances contained in the paint or materials.
- **Do not use paints or materials that are not intended for this product.**
  Deterioration due to heating, chemical reaction, or container alteration may cause the equipment to burst, and there is a risk of injury to the human body from fragments, pressurized paint or materials.
  Harmful substances can cause serious injury such as inflammation and poisoning.
  Deterioration due to heating, chemical reaction, or container alteration may cause the equipment to burst, and there is a risk of injury to the human body from fragments, pressurized paint or materials.
  Harmful substances can cause serious injury such as inflammation and poisoning.
- **Do not loosen any parts that secure the lid while it is pressurized.**
  There is a risk of injury to the human body from pressurized paint or materials. There is a risk of serious injury from inflammation or poisoning caused by harmful substances.
- **Do not use damaged hoses.**
  If the hose bursts, paint or materials may spray out and enter the body through the eyes or mouth, there is a risk of serious injury such as inflammation or poisoning due to the harmful substances contained in the paint or materials.

《Warning and precautions for safe use》

⚠ WARNING

Human protection

Protection from high-pressure paint

- **Do not touch the nozzle when the paint or material is under high pressure.**
  There is a risk of injury to the human body from pressurized paint or materials. There is a risk of serious injury from inflammation or poisoning caused by harmful substances.
- **Always release material and air pressure before cleaning, disassembly or maintenance work.**
  Do not remove or disassemble the nozzle or hose without first relieving the pressure. If paint, materials or cleaning fluids spray out and enter the body through the eyes or mouth, there is a risk of serious injury such as inflammation or poisoning due to the harmful substances contained in the paint or materials.
- **After work, make sure the paint and materials are not pressurized.**
  Pressurized paints and materials can cause injury to the human body.
  Harmful substances can cause serious injury such as inflammation and poisoning.

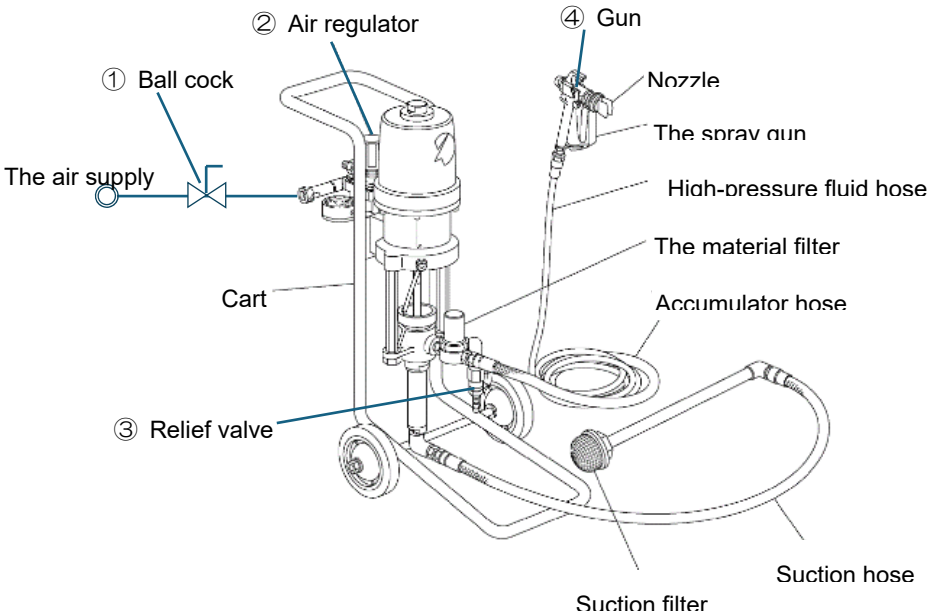
《The Need for Treatment》

If you are struck by paint or material, seek medical attention from a specialist.
In this case, you will need to tell your doctor exactly what type of paint or material you used.

《Warning and precautions for safe use》

＜Pressure Release Procedure＞

During inspection, nozzle removal, cleaning, or replacement, and when stopping spray operations, always follow this procedure to release the pressure.



Step 1: To prevent accidental paint discharge, engage the trigger lock on the gun.

Step 2: Close '① Ball Cock' and stop the supply of compressed air. (Stop the air supply to the pump and gun.) *If using an electric pump, turn off the power.

Step 3: Turn the pressure adjustment knob of the '② Air Regulator' to the left to bring the pressure in the air pathway to zero.

Step 4: Open the material filter '③ Relief Valve' to reduce the hydraulic pressure in the paint path.

Step 5: Release the gun's trigger lock, pull the '④ trigger,' and reduce the hydraulic pressure in the paint pathway to zero.

Step 6: Make sure that the paint pressure has dropped sufficiently, then lock the gun trigger again.

（If the hydraulic pressure does not fully release even after performing the pressure release procedure）

- Wrap the chip guard mounting nut or the hose terminal connector with a cloth or similar material, and slowly and carefully loosen it to reduce the pressure and discharge the paint inside.

《Warning and precautions for safe use》

⚠ CAUTION

- **Do not use this product outside its specifications.**
  Using it out of specification range may result damage to the product.

- **Hoses should be hung from the ceiling or side walls and not dragged across the floor.**
  It may cause damage such as scratches.
  When using conductive paint, be sure to suspend the paint hose from an insulating material such as a rubber tube.

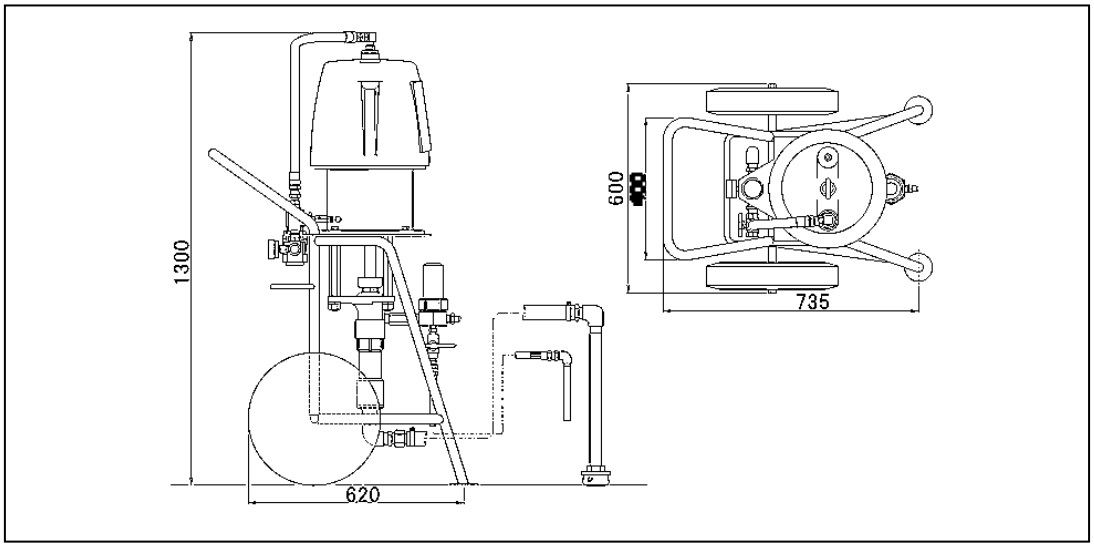
- **Check frequently for paint leaks, air leaks, and loose screw.**

●**A fire extinguisher should always be kept near the work area.**
In case of a fire, make sure to have equipment that has been regularly inspected installed at all times.

●**When disposing of this product, please dispose of it in accordance with the laws of your country.**

2 Specifications, Dimensions and System Configurations

● Dimensions



● Specifications

Model	SP2578	SP2554	SP2544
Name	SUPER BEAR		
Fluid flow	1:20	1:45	1:65
Maximum fluid working pressure	8L/min (Max. 30 L/min)	6L/min (Max. 20 L/min)	4L/min (Max. 14 L/min)
Dimensions	735L x 600W x 1300H (mm)		
Weight	102 kg	94 kg	91 kg
Compressor requirements	Continuous 5.5kW (7.5PS) Intermittent 3.7kW (5PS)		

● System Configurations

Pump	Suction filter Suction hose Air regulator Air pressure gauge Material filter Accumulator hose (Optional item) Duster gun (Optional item) Special tool
Airless spray gun	※
Nozzle	※
Material hose	※

Items marked with ※ do not come with the equipment as standard accessories.

Please choose suitable items from our painting equipment catalog that will best suit your applications.

3 Setting Up for Operation

① General Set-up Precautions

(1) This airless spray equipment uses compressed air as the power source of the fluid pressure pump. Use a compressor with a capacity of 3.7kW (5PS) or larger.

(2) Supply dry compressed air.

⚠ CAUTION

Wet compressed air, if supplied, may cause pump failure, such as valve shifting error, due to freezing or rusting. Watch water accumulation, etc. in the compressor tank.

(3) Pressure drop occurs when the air compressor is installed in a place far removed from the pump. The maximum compressed air pressure supplied to the pump is 0.5 MPa. Use a 3/4B hose or larger

(4) Securely ground the grounding wire. Connect a ring crimp terminal (that comes with the equipment) to the pump grounding terminal ⏚ , the other clip to a Class D grounding object.

⚠ WARNING

Improper grounding may cause electric shock, fire or explosion.

(5) When you noticed any symptom of failure, take corrective actions in accordance with the “6. Tear Down Inspection and Parts Replacement” and “7. Troubleshooting”. If your problems still exist after you did all this, don’t try to do anything further but immediately contact our agency near you or Asahi Sunac directly, giving us details about the problems. Please rest assured; we’ll take care of them.

② Unpacking and Connections

(Refer to “9. Exploded Diagram and Names of Parts” for part names.)

Being 100% inspected at the factory before shipment, the airless pump is ready for operation once connections are made with a hose and gun. Upon unpacking, however, please check the contents thoroughly for any damage that may have occurred in transit and for missing parts. If you find anything wrong, please get in touch with our agency near you or us directly at Asahi Sunac.

(1) Upon unpacking you’ll find that the equipment, high-pressure hose, and spray gun are not assembled yet. You’ll have to put them together in the manner as described below:

(2) Connect a ring crimp terminal (that comes with the equipment) to the pump grounding terminal ⏚ , the other clip to a Class D grounding object.

⚠ WARNING

Improper grounding may cause electrical shock, fire or explosion.

(3) Connect the accumulator hose to the joint at the outlet of cylinder-shaped material filter. And connect the fluid hose to the joint further down.

⚠ WARNING

Ensure that the fluid hose is hooked up securely. A loosely connected hose may provide injection and splash hazards, possibly causing personal injury or accident.

(4) Mount the spray gun at the end of high-pressure fluid hose. At this point, do not put the nozzle on, yet.

⚠ WARNING

When you mount the spray gun, lock trigger. If you fail to lock the trigger, it may be pulled accidentally and personal injury may result.

(5) Connect the air hose to the joint at the air regulator inlet.
Equipment setup is now complete.

⚠ WARNING

Don’t connect plural airless pumps on the same paint supply route. It may damage pump and hose because of over pressure.

4 Operation

① Operation

▲ Flushing the equipment before first use

Flush the equipment before first use. Check the fluid passage for leak at the same time. If there is any leak, retighten using two (2) special spanner, putting one on the joint, the other on the base. Remove foreign materials, as well.

NOTICE

Foreign materials, such as dust, contaminants, etc., may cause the nozzle to get clogged, resulting in inconsistent spray pattern. Flush thoroughly.

Equipment Flushing Procedure

(1) Provide 10 liters of solvent (cleaning thinner).
Fill an empty can (fluid container) with solvent (cleaning thinner). Put the suction pipe into the can and ensure that the suction filter is fully immersed in the solvent.
(2) Gradually open the air regulator (turn clockwise) and supply compressed air and then start operation. Set the compressed air at about 0.1 MPa.

CAUTION

In order to prevent an air regulator from getting damage , unlock the handle of air regulator before operate.

(3) Put the tip of spray gun into solvent and pull the trigger. Solvent circulates through the system, purging air inside (which comes out in the form of bubbles).
This will clean the liquid passage through the system, hose and gun.
(4) Once passage cleaning is done, pull the suction pipe off the fluid can and run the pump idly to completely remove residual solvent within the pump. And then close the air regulator (turn counter-clockwise).
Now it's ready for operation.

▲ Starting and adjusting the pump

(5) Provide a paint fluid can.
(6) Repeat Step (1) through (3), with paint fluid.
(7) Adjust the air regulator to keep compressed air pressure at 0.2 to 0.5MPa.
The fluid pressure of:
SP2578 (with ratio of 1:20) is 20 times the compressed air pressure,
SP2554 (with ratio of 1:45) is 45 times the compressed air pressure,
SP2544 (with ratio of 1:65) is 65 times the compressed air pressure.

Therefore, when the ratio is:
1:20, fluid pressure will be 4MPa ~ 10MPa,
1:45, fluid pressure will be 9MPa ~ 22.5MPa,
1:65. fluid pressure will be 13MPa ~ 32.5MPa or more, causing the pump to stop.

⚠ WARNING

The fluid pressure can be 20, 45, or 65 times the operating air pressure, requiring extra care when operating the pump. Especially when the ratio is 1:65, the maximum compressed air pressure is only 0.5MPa, the resultant fluid pressure is so great that you have to be careful about safety and about equipment pressure resistance and durability. Use the minimum pressure that is required.

(8) Put the nozzle on the spray gun.

⚠ WARNING

Ensure that spray gun's trigger is locked. If you fail to do so, trigger could be pulled accidentally, resulting in personal injury.

(9) Check to see that there is no leak from the painting equipment or the joint between the painting equipment and hose.
If you find leak:
Bring the pressure down, Drain the fluid,
Then, locate the point of leakage, Retighten to fix the leak.

② Shutdown and Equipment Care

(1) After completion of painting operation, perform one of the two treatments.

1. Interruption or overnight shutdown with resumption due in 24 hours

① Leave the equipment filled with fluid.
In this case, because air will be purged from the fluid passage keeping the fluid in the way as if it were stored in a paint can, the fluid in the equipment will be kept free from solidification.

2. Long-term shutdown for a period beyond 24 hours

⚠ WARNING

When you use a kind of paint that precipitates rapidly or one that is of high viscosity, flush the equipment in accordance with "Equipment Flushing Procedure" on page 11 when you shutdown the equipment.

② Completely remove fluid from the equipment and keep it empty.
Any fluid paint left inside the equipment, how little it may be, will solidify.
Flush thoroughly with solvent.

⚠ CAUTION

When you flush, keep the solvent pressure as low as possible (the minimum pressure enough for flushing).

NOTICE

Leave the equipment filled with solvent until you use the equipment again. Do so each time you shutdown the equipment.

(2) Take the nozzle off the gun. Wipe the nozzle mounting surface on the gun with a solvent-soaked rag. Then clean the nozzle (you may dip it into solvent for a while for cleaning).

(3) Set the airless nozzle in the reversed direction with the rear end facing the nozzle cleaner, then loosen the nipple letting air jet out blowing out the materials that clogged the nozzle.

⚠ WARNING

Please exercise extreme care when cleaning or replacing the nozzle. Bring the pressure down following the "Pressure Relief Procedure" and then take the nozzle off. It is quite dangerous to try to remove paint stuck in the nozzle unless the pressure is completely removed, with the trigger locked.

Follow the procedure described below to relief pressure.

<<Pressure Relief Procedure>>

① Lock the trigger.

② Shut off air supply by turning the pressure control dial counter-clockwise, bringing down the pressure all the way.

③ Relive the ball cock, bring down the system pressure to zero.
Unlock the trigger and pull it for double-checking.

④ Lock the trigger again.

● **When the nozzle or hose is clogged or when it is suspected that some pressure still remains after going through the "Pressure Relief Procedure," slowly loosen the chip guard mounting nut or the connector at hose end, gradually releasing the pressure until it is completely relieved. Then inspect the nozzle and hose.**

(4) Clean the material filter when the day's work is done.

⚠ WARNING

Before you take parts apart, always drain all paint fluid from the system and relief the pump operating pressure down to zero.

(5) Operate the "three-way ball cock" when you have to bring down the pressure instantly, for safety reasons. However, to relive the paint fluid pressure down to zero, open the "ball cock."

⚠ WARNING

When you shutdown the equipment for interruption or overnight stoppage, always lock the spray gun trigger. If you fail to do so, it may be pulled accidentally, and personal injury may result.

③ Color change and additive addition precautions

(1) When you change paint fluids, thoroughly flush the can with solvent so that no paint residue may be left unremoved. (Paint residue may cause the nozzle to get clogged.)

(2) When you add additives, do so through the filter.

(3) When you change paint colors, take the suction pipe out of the paint can, pull the trigger discharging all paint from the system (this way you can save solvent), then flush it with solvent repeating suction-circulation-discharge circles as many time as it takes to completely flush the fluid passage from the inlet to outlet. After this, change paint colors.

5 Maintenance

Equipment Maintenance Guidelines

(1) When the pump V-packing is worn, replace.
(Rule of thumb: Replace every six months under normal operation condition.)

(2) When paint is solidified and accumulated in the pump, take it apart and clean.

⚠ WARNING

Before you take parts apart, always drain all paint fluid in the system and completely relieve the pump operating pressure and wrap air pressure down to zero.

(3) Flush the spray gun by shooting solvent. In addition, you need to clean the contacting surfaces between the seat housing and nozzle by wiping with a thinner-soaked rag. When paint is solidified in the gun, take it apart and clean.

⚠ WARNING

Please exercise extreme care when cleaning or replacing the nozzle. Bring the pressure down following the "Pressure Relief Procedure" and then take the nozzle off. It is quite dangerous to try to remove paint stuck in the nozzle unless the pressure is completely removed, with the trigger locked.

(4) Always keep the high-pressure fluid hose clean, free from paint residue and other contaminants. Remove deposited paint, if any. Always keep the hose free from mechanical shock.
(e.g., don't stomp on, don't put things on, don't run over with vehicle.)

⚠ WARNING

Never use a broken hose. Check the hose throughout its length for cut, fluid leak, wear, blister, scratches, and loose fitting. Should you find anything wrong, stop using the hose right there and then, and replace.

6 Tear Down Inspection and Parts Replacement Procedure

⚠ WARNING

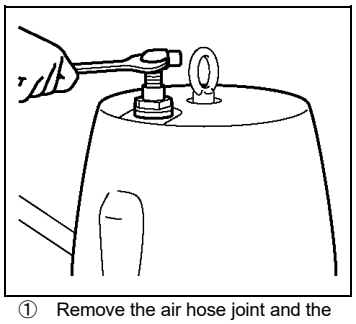
Before you take parts apart, always drain all paint fluid in the system and completely relieve the pump operating pressure and wrap air pressure down to zero.

① Air Motor

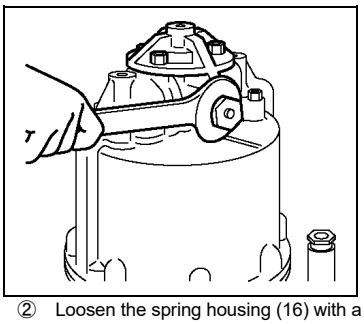
※ For the index number in parentheses ( ), see page 23.

When you apply grease to the cylinder interior or replace perishable parts, follow the procedure shown below. (See the exploded diagram for the index number referred to in the following instructions.)

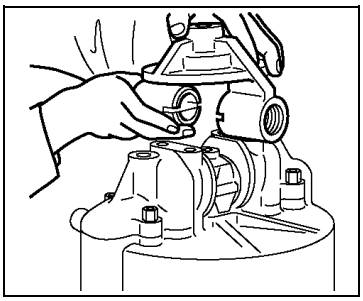
Before you take parts apart, always drain all paint fluid in the system and shutdown compressed air supply.

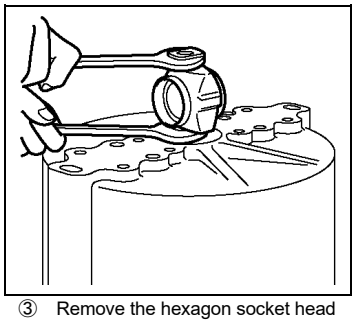


① Remove the air hose joint and the nipple (28) mounted on the cap (4), then remove the cap (4) itself. Now you can replenish oil in the valve.

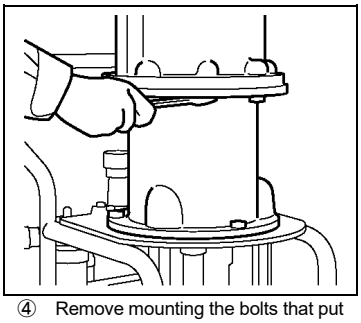


② Loosen the spring housing (16) with a spanner, Unscrew the four hexagon socket head cap screws in the pusher holder (9), Lift the pusher holder (9) up, Remove the roller (19), pin (20) and other parts.
If you find wear on the roller (19) and pin (20), replace them with new ones.

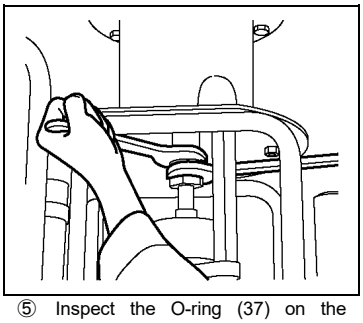




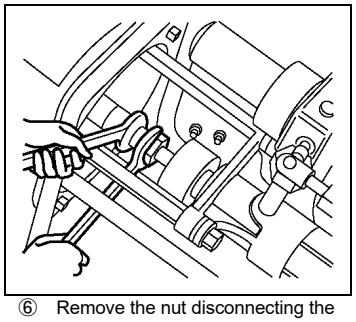
③ Remove the hexagon socket head cap screws from the two valve bodies (10), Remove the lock nut (24) with a spanner, putting it on the spool (23), Remove the cam (12).



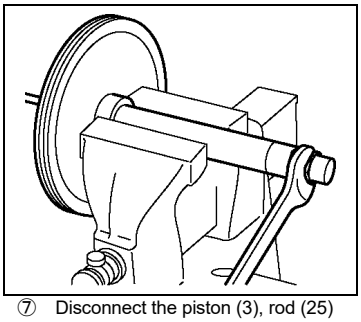
④ Remove mounting the bolts that put the cylinder (1) and stand (2) together,
Lift the cylinder (1) up,
The piston (3) will be exposed.



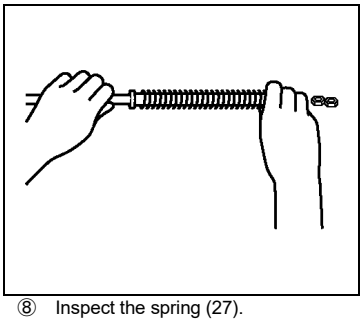
⑤ Inspect the O-ring (37) on the piston (3).
If you find damage or wear, replace the O-ring with a new one.
Clean the cylinder (1) interior and then apply grease.



⑥ Remove the nut disconnecting the air motor and material cylinder.
Lift the piston (3) up.



⑦ Disconnect the piston (3), rod (25) and adaptor (8) from one another,
Pull out the rod (25) and spring (27).



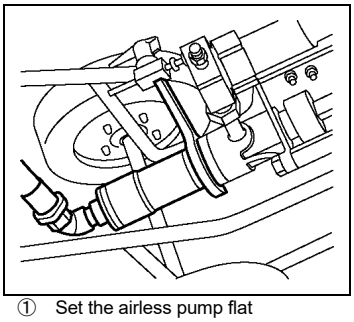
⑧ Inspect the spring (27).
When valve-shifting response is slow due to spring fatigue, replace the spring (27) with a new one.
Reassemble in the reverse order.

② Material Cylinder

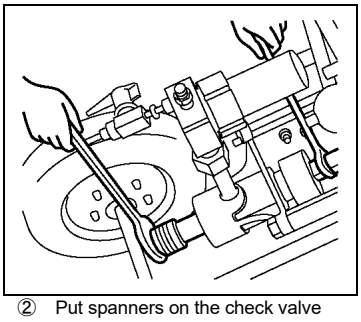
※ For the index number in parentheses ( ), see page 25.

Shown below are the replacement procedures for the booster V-packing (23) at the upper end of the piston and the suction V-packing (23) at the lower end of the piston.

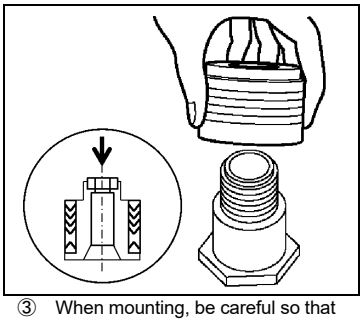
Suction V-packing Replacement Procedure



① Set the airless pump flat horizontally,
Remove the cylinder (14) from the pump housing (1) using a special spanner.



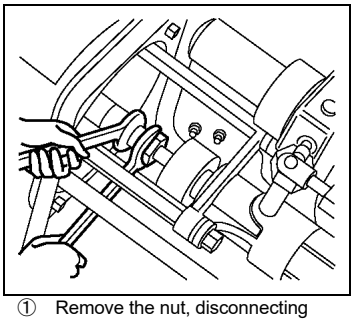
② Put spanners on the check valve body (8) and piston rod (6), and Remove the check valve (8).
Check the packing retainer (5) for wear or damage on the sliding surface,
Replace it with a new one, if you find wear or damage, and
Replace the V-packings (23) with a new ones.



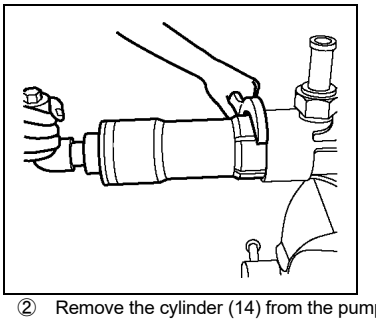
③ When mounting, be careful so that the direction in which the packing retainer (5) and new V-packings (23) each is installed is correct – if you install them in a wrong manner, they just don't work the way they should.
Reassemble in the reverse order.

Booster V-packing Replacement Procedure

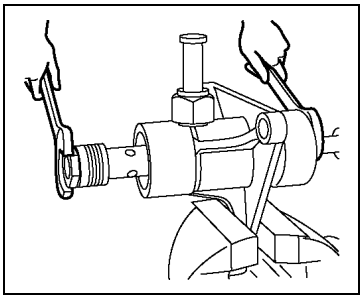
Packing can be adjusted by retightening the packing retainer (2). To service set the pump flat horizontally.

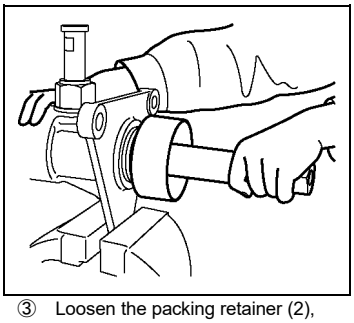


① Remove the nut, disconnecting the air motor and material cylinder.
Remove the stay mounting screw, leaving the material cylinder alone.

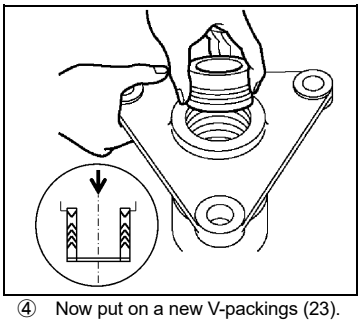


② Remove the cylinder (14) from the pump housing (1),
Remove the check valve body (8),
Remove the suction packings.





③ Loosen the packing retainer (2),
Pull out the piston rod (6), then
Remove the V-packings (23).



④ Now put on a new V-packings (23).
At this point, be careful so that the direction in which the packing retainer (5) and new V-packings (23) each is installed is correct – if you install them in a wrong way, they just don't work the way they should.

⑤ Assembly Precautions

1. Cylinder (14) clearance should be such that it can be pushed in by hand.
   When it's too tight, do not use plain washers (11) at all or use only one washer.
   If the clearance is too tight, cylinder stroke may get sticky.
   If the clearance is too loose, suction failure may occur.
2. To mount the packing retainer (2), tighten it by hand as far as you can.
   Then tighten it further with a spanner for another 15°~30°.
   If you tighten excessively, operational failure may occur.
   If you tighten insufficiently, oil leak may occur.
   Proper retightening at the end of service work helps packing to last longer.
3. When you attach the material cylinder part to the air motor part, be sure to check that the pressure of the air route is 0MPa and the pump won't operate.

7 Troubleshooting

※ Refer to “9. Exploded Diagram and Names of Parts” for part index numbers.

Symptom	Cause	Remedy
1. No fluid pressure	① Air regulator not opened.	① Fully open.
	② Defective pressure gauge (Contrary to the meter reading, fluid pressure builds up normally.)	② Replace it with a new one.
	③ Suction valve sticky due to solidified paint left unremoved, which is accounted for by poor cleaning. post-shutdown cleaning.	③ Flush thoroughly with thinner. If hardened paint still remains after that, disassemble pump and clean.
	④ Defective air regulator	④ Take parts apart and clean the air regulator or replace with a new one.
2. Pressure does not rise to working pressure	① Air in fluid passage	① Pull spray gun trigger for air bubble purging through fluid circulation.
	② Insufficient fluid supply	② Replenish fluid.
	③ Worn V-packings	③, ④ Replace V-packings following pump housing replacement procedure.
	④ V-packing installed in reversed direction	
	⑤ Clogged suction filter not sucking enough	⑤ Clean suction filter.
	⑥ Swollen suction hose with fluid passage (I.D.) that got too small	⑥ Replace the suction hose with a new one.
3. Fluid flow drops	① Insufficient compressed air supply capacity	① Replace compressor with one with larger capacity.
	② Compressed air supply pump too small in diameter	② Use larger hose in terms of diameter.
	③ Much compressed air consumed elsewhere	③ Provide a separate pipe line.
	④ Air regulator not operating properly or setting pressure too low	④ Readjust.
	⑤ Fluid level too low in the paint can	⑤ Replenish fluid.
	⑥ Worn air cylinder valve or V-packings	⑥ Replace the worn parts in accordance with the Parts Replacement Procedure.
	⑦ Nozzle or filter getting clogged with foreign materials	⑦ Flush and clean each part.
	⑧ Worn spray nozzle	⑧ If worn too fast, suspect nozzle compatibility with fluid. We have various kinds of spray nozzles for you to choose from. Please contact us to determine the spray nozzle that will best serve your purpose. Also, don’t use a pressure that is higher than required: an excessive pressure will make the service life of a hose shorter.
	⑨ Material filter is clogged.	⑨ Clean the material filter.

Symptom	Cause	Remedy
4. Fluttering spray and tails	① ① through ③ per 3 above, apply	① Check ① through ③ per 3 above
	② Fluid viscosity too high	② Adjust viscosity to proper level
	③ Clogged or contaminated nozzle	③ Clean
5. Pump does not stop when stop spraying	① No fluid	① Replenish fluid
	② Leak from fluid passage	② Bring fluid pressure down to zero and retighten
	③ Worn V-packings	③ Replace V-packings with new ones.
6. Air motor fails to run	① Worn or damaged roller(19), pin(20)	① Replace following the Part Replacement Procedure
	② Damage or burrs on the sliding surfaces of cam (12), pusher holder (9) and pusher (15)	② Replace following the Part Replacement Procedure
	③ Spring (27) fatigue	③ Replace following the Part Replacement Procedure
7. Pump operates, but output low	① Clogged suction filter	① Remove and clean.
	② Worn V-packings effect suction performance	② Replace packings with new ones
	③ Foreign materials between valve seat and ball	③ Remove and clean

NOTICE

V-packing Replacement Precautions

(1) Install V-packings in the correct direction with the convex side pointing in the right direction.

(2) Cylinder ⑭ clearance should be such that it can be pushed in by hand. When it's too tight, do not use plain washers ⑪ at all or use only one washer.
If the clearance is too tight, operation failure may occur.
If the clearance is too loose, suction failure may occur.

(3) To mount the packing retainer ②, tighten it by hand as far as you can. Then tighten it further with a spanner for another 15° ~ 30°.
If you tighten excessively, operation failure may occur.
If you tighten insufficiently, oil leak may occur.
Proper retightening at the end of service work helps packing to last longer.

⚠ CAUTION

When you replace the suction filter ⑳ on page 22, be sure to wear safety gloves to avoid possible injury.

8 Performance Tips

(1) Always pay attention to pressure

- Don't raise output pressure more than required.
- Always lock the trigger of your gun – each time you stop spraying for a break or interruption.
- When you found leak from joint,
  Bring the pressure down,
  Drain the fluid,
  Locate the point of leakage,
  Retighten.
- Use the lowest pressure possible, when:
  Flushing the fluid circulation passage in the system,
  Circulating fluid.
  (Air pressure at about 0.1MPa)

(2) Is the material hose OK?

- Is there any sharp bending along the line?
- Are hose fittings tight enough?
- No hose damage?
- No trace of any heavy object placed on the hose?

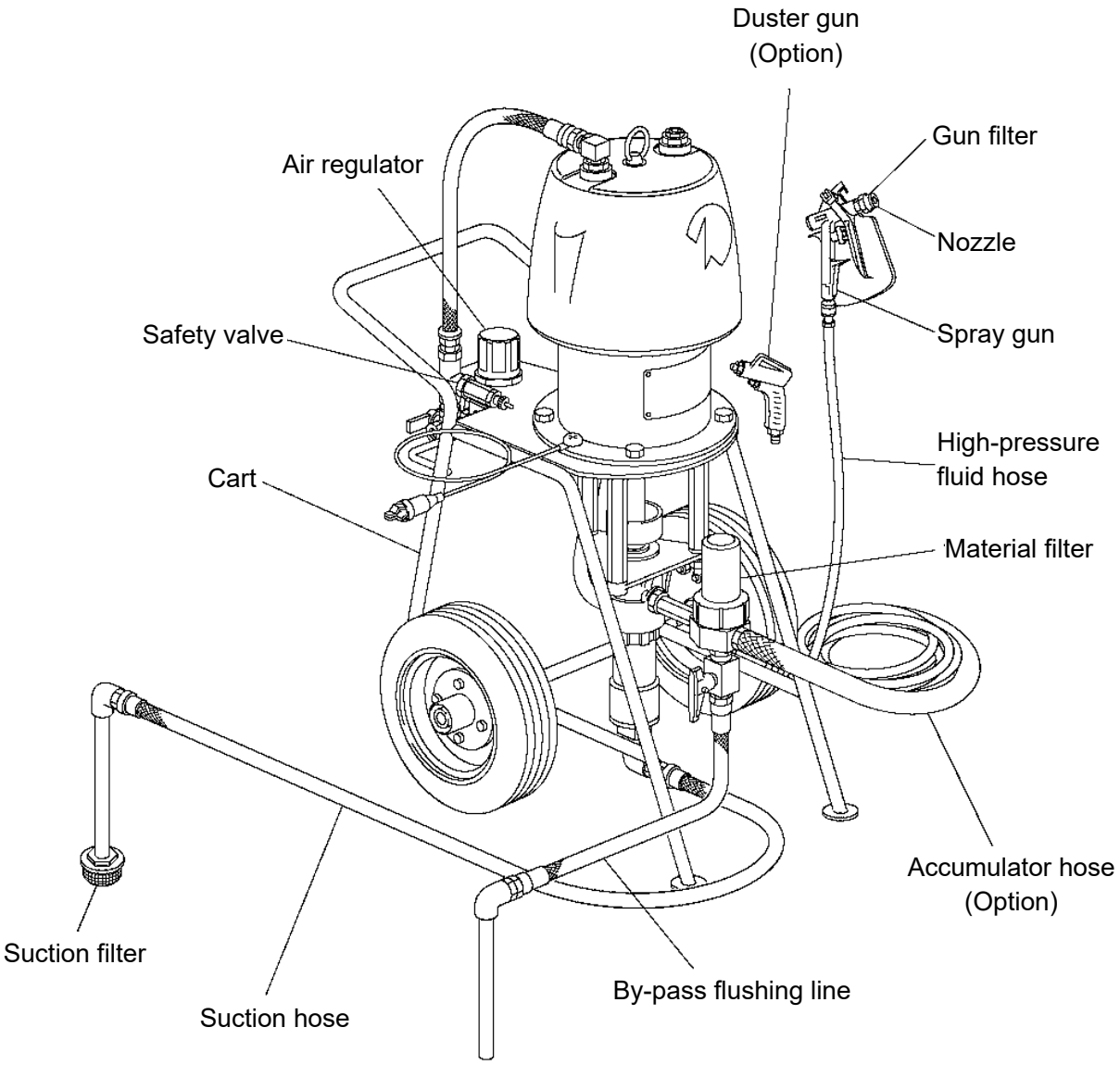
(3) When changing paints or adding additives …..

- When you change paint fluid, thoroughly flush the can with solvent so that no paint residue may be left unremoved. (Paint residue may cause the nozzle to get clogged.)
- When you add additives, do so through the filter.
- When you change paint colors, take the suction pipe out of the paint can, pull the trigger discharging all paint from the system (this way you can save solvent), then flush it with solvent repeating suction-circulation-discharge circles as many time as it takes to completely flush the fluid passage from the inlet to outlet. After this, change paint color.

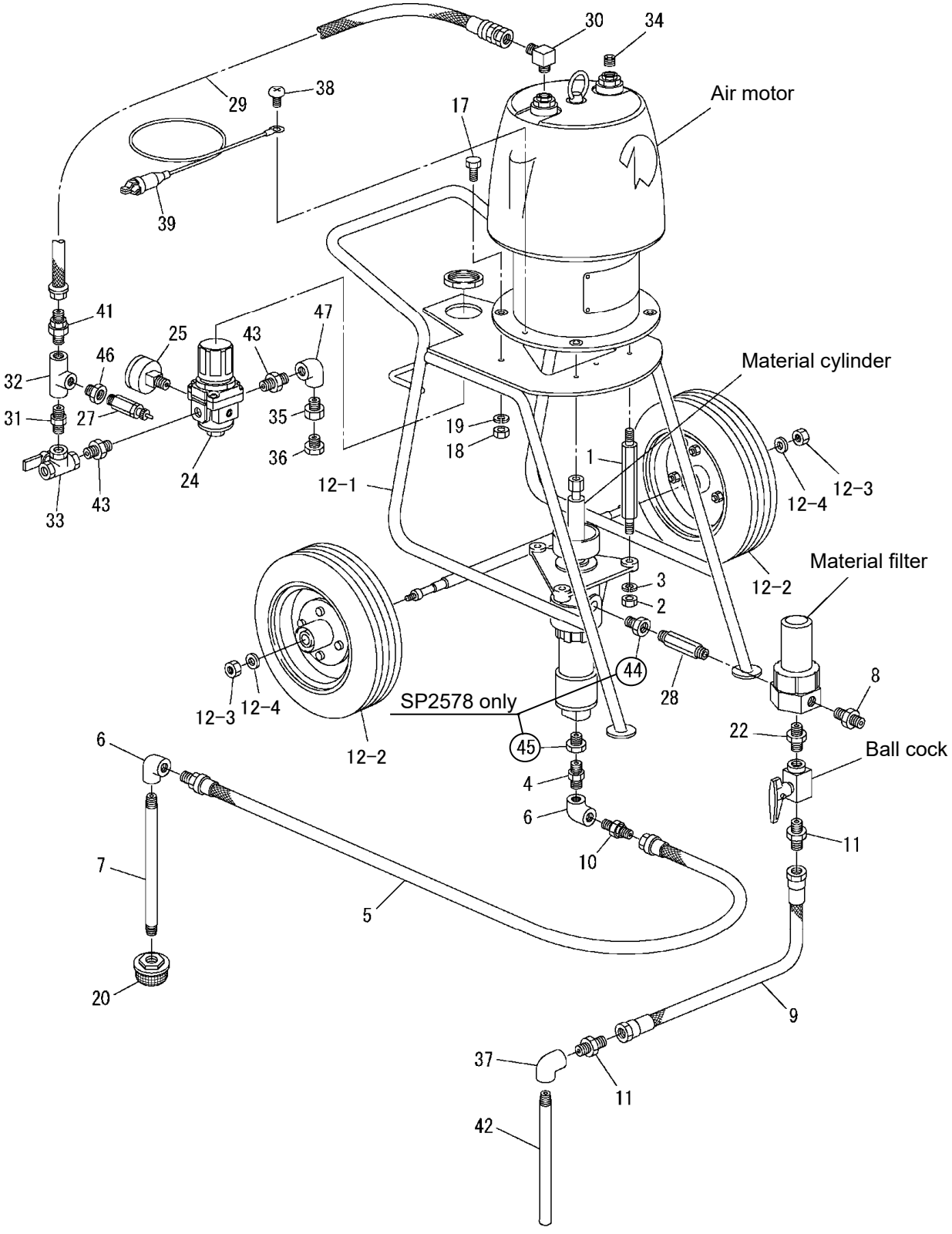
(Note) The specifications and configurations of this equipment are subject to change without prior notice due to improvements being made continuously.

9 Exploded Diagram and Names of Parts

● Appearance



SP2544	SP2554	SP2578
40381-3	40342	40342-1
SP2544S	**SP2554S**	**SP2578S**
40382-3	40379-7	40379-8



Airless Pump SP2544 (40381-3), SP2554 (40342), SP2578 (40342-1)

No.	Part No.	Part Name	Qty	Remarks
1	4108-001	Stay	3	
2	15-12000	Hex. nut	3	
3	41-52000	Spring washer	3	
4	242-1010	Barrel nipple	1	
5	5607	Suction hose	1	
6	201-3010	Elbow	2	
7	4305-101	Suction pipe	1	
8	3201-047	Fitting	1	
9	508-1010	Material hose	1	
10	3201-048	Fitting	1	
11	3201-012	Fitting	2	
12	2068-7	Cart	1set	
12-1	2068-701	Cart frame	1	※
12-2	309-0009A	Wheel	2	※
12-3	15-11200	Hex. nut	2	※
12-4	37-11200	Plain washer	2	※
17	01-11030	Hex. bolt	4	
18	15-11000	Hex. nut	4	
19	41-51000	Spring washer	4	
20	0527-0410	Suction filter	1	40 mesh
22	287-2003	High-pressure nipple	1	
24	301-0069	Air regulator	1	

No.	Part No.	Part Name	Qty	Remarks
25	305-0012	Pressure gauge	1	
27	310-0006	Safety valve	1	
28	3208-015	Nipple	1	
29	544-1006	Air hose	1	
30	295-2404	L-shaped nipple	1	
31	242-1006	Barrel nipple	1	
32	205-3006	Tee	2	
33	325-0048	Three-way ball cock	1	
34	244-2004	Hex. socket plug	1	
35	234-3007	Bushing	1	
36	234-3004	Bushing	1	
37	293-2003	High-pressure elbow	1	
38	68-10406	Screw	1	
39	40338-024	Grounding wire	1	
41	299-2604	Hose nipple	1	
42	40402-003	Drain pipe	1	
43	287-2006	High-pressure nipple	2	
44	291-2011	High-pressure bush	1	SP2578 exclusive use
45	234-3019	Bush	1	SP2578 exclusive use
46	234-3006	Bush	1	
47	201-3006	Elbow	1	

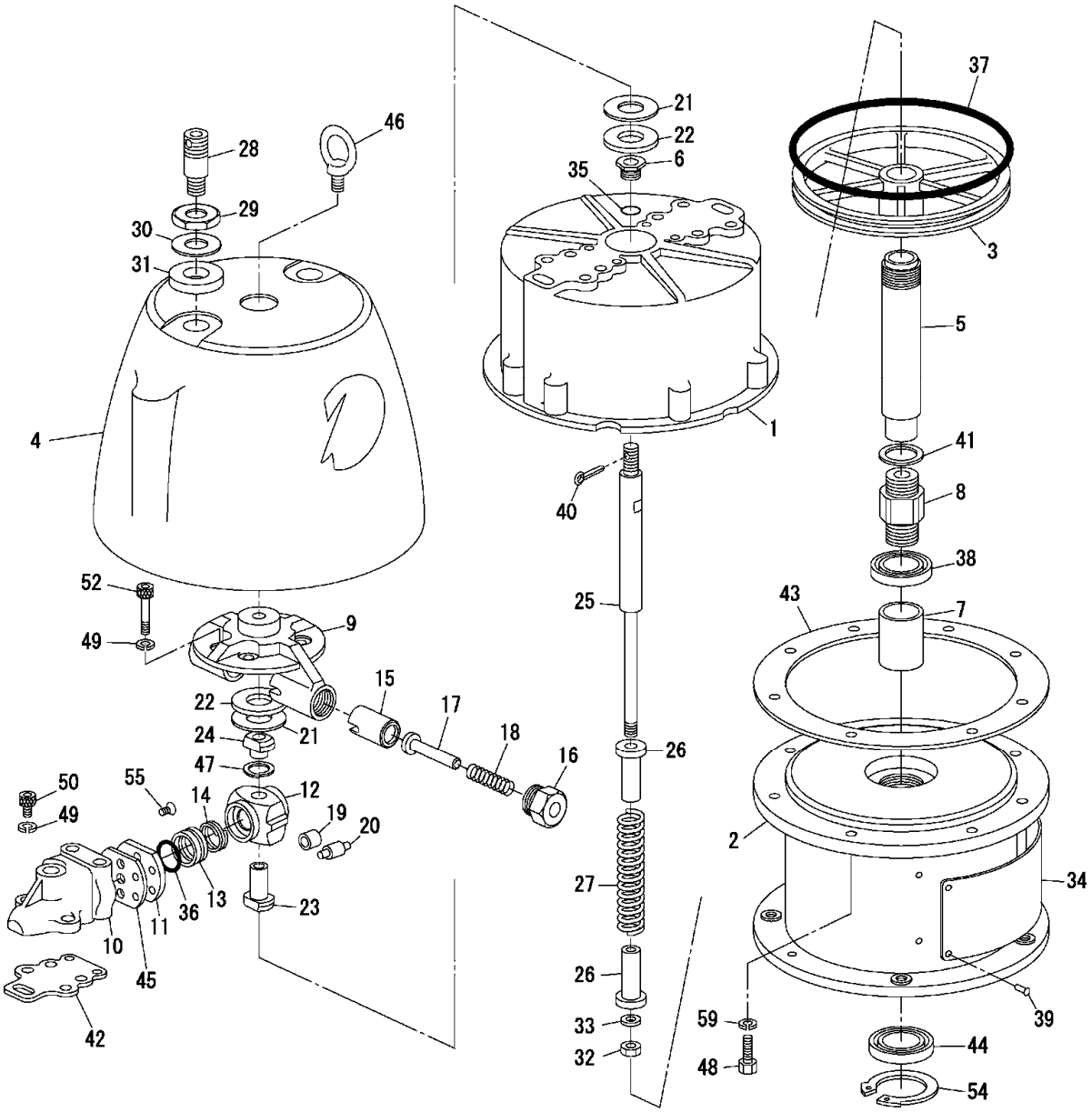
Items marked with ※ No.12-1,12-2,12-3,12-4 are accessory of No.12 cart.

Airless Pump SP2544S (40382-3), SP2554S(40379-7), SP2578S(40379-8) SUS specification

No.	Part No.	Part Name	Qty	Remarks
1	4108-001	Stay	3	
2	15-12000	Hex. nut	3	
3	41-52000	Spring washer	3	
4	242-4010	Barrel nipple	1	
5	5615	Suction hose	1	
6	201-4010	Elbow	2	
7	4325-002	Suction pipe	1	
8	3211-026	Fitting	1	
9	508-2010	Material hose	1	
10	3211-027	Fitting	1	
11	299-4303	Fitting	2	
12	2068-7	Cart	1set	
12-1	2068-701	Cart frame	1	※
12-2	309-0009A	Wheel	2	※
12-3	15-11200	Hex. nut	2	※
12-4	37-11200	Plain washer	2	※
17	01-11030	Hex. bolt	4	
18	15-11000	Hex. nut	4	
19	41-51000	Spring washer	4	
20	0527-0410	Suction filter	1	40 mesh
22	287-4003	High-pressure nipple	1	
24	301-0069	Air regulator	1	

No.	Part No.	Part Name	Qty	Remarks
25	305-0012	Pressure gauge	1	
27	310-0006	Safety valve	1	
28	3218-015	Nipple	1	
29	544-1006	Air hose	1	
30	295-2404	L-shaped nipple	1	
31	242-1006	Barrel nipple	1	
32	205-3006	Tee	2	
33	325-0048	Three-way ball cock	1	
34	244-2004	Hex. socket plug	1	
35	234-3007	Bushing	1	
36	234-3004	Bushing	1	
37	293-4003	High-pressure elbow	1	
38	68-10406	Screw	1	
39	40338-024	Grounding wire	1	
41	299-2604	Hose nipple	1	
42	6236-018	Drain pipe	1	
43	287-2006	High-pressure nipple	2	
44	291-4011	High-pressure bush	1	SP2578S exclusive use
45	234-4019	Bush	1	SP2578S exclusive use
46	234-3006	Bush	1	
47	201-3006	Elbow	1	

Items marked with ※ No.12-1,12-2,12-3,12-4 are accessory of No.12 cart.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Air motor AM2512 (0109-3)

No.	Part No.	Part Name	Qty	Remarks
1	0109-001	Cylinder	1	
2	0109-002A	Stand	1	
3	0109-003	Piston	1	
4	0109-004A	Cap	1	
5	0109-005	Piston rod	1	
6	0109-006	Bushing	1	
7	0109-007	Bushing	1	
8	0109-008	Adaptor	1	
9	0109-009	Pusher holder	1	
10	0109-010	Valve body	2	
11	0109-011	Plate	2	
12	0109-012	Cam	1	
13	0109-013	Valve block	2	
※14	0109-014	Spring	2	
15	0109-115	Pusher	2	
16	0109-016	Spring housing	2	
17	0109-017	Pin	2	
※18	0109-018	Spring	2	
※19	0109-119	Roller	2	
※20	0109-120	Pin	2	
21	0109-021	Ring	2	
※22	0109-022	Shock absorber	2	
23	0109-023	Spool	1	
24	0109-024	Lock nut	1	
25	0109-125	Rod	1	
26	0109-026	Spring retainer	2	
※27	0109-027	Spring	1	
28	0109-028	Nipple	2	
29	0109-029	Nut	2	

No.	Part No.	Part Name	Qty	Remarks
30	0109-030	Ring	2	
31	0109-031	Washer	2	
32	0109-032	Nut	1	
33	0109-199	Stopper	1	
34	0109-334	Nameplate	1	
35	101-60125	O-ring	1	
※36	101-6040	O-ring	2	
※37	101-6240	O-ring	1	
※38	142-4003	Y-shaped packing	1	
39	91-40408	Parker stud	4	
40	49-10220	Cotter pin	1	
41	146-7022	Gasket	1	
42	147-6008	Gasket	2	
43	146-6011	Gasket	1	
※44	151-0020	Oil seal	1	
45	147-6011	Gasket	2	
46	04-11600	Eye bolt	1	
47	48-51200	Spring washer	1	
48	01-11240	Hex. bolt	8	
49	41-51200	Spring washer	8	
50	03-51235	Hex. socket bolt	4	
52	03-512105	Hex. socket bolt	4	
54	56-75800	Stop ring	1	
55	69-10514	Screw	8	
56	0109-048	Sound proof mat	1	
57	0109-049	Sound proof mat	2	
58	0109-050	Sound proof mat	2	
59	0C-91200	Spring washer	8	

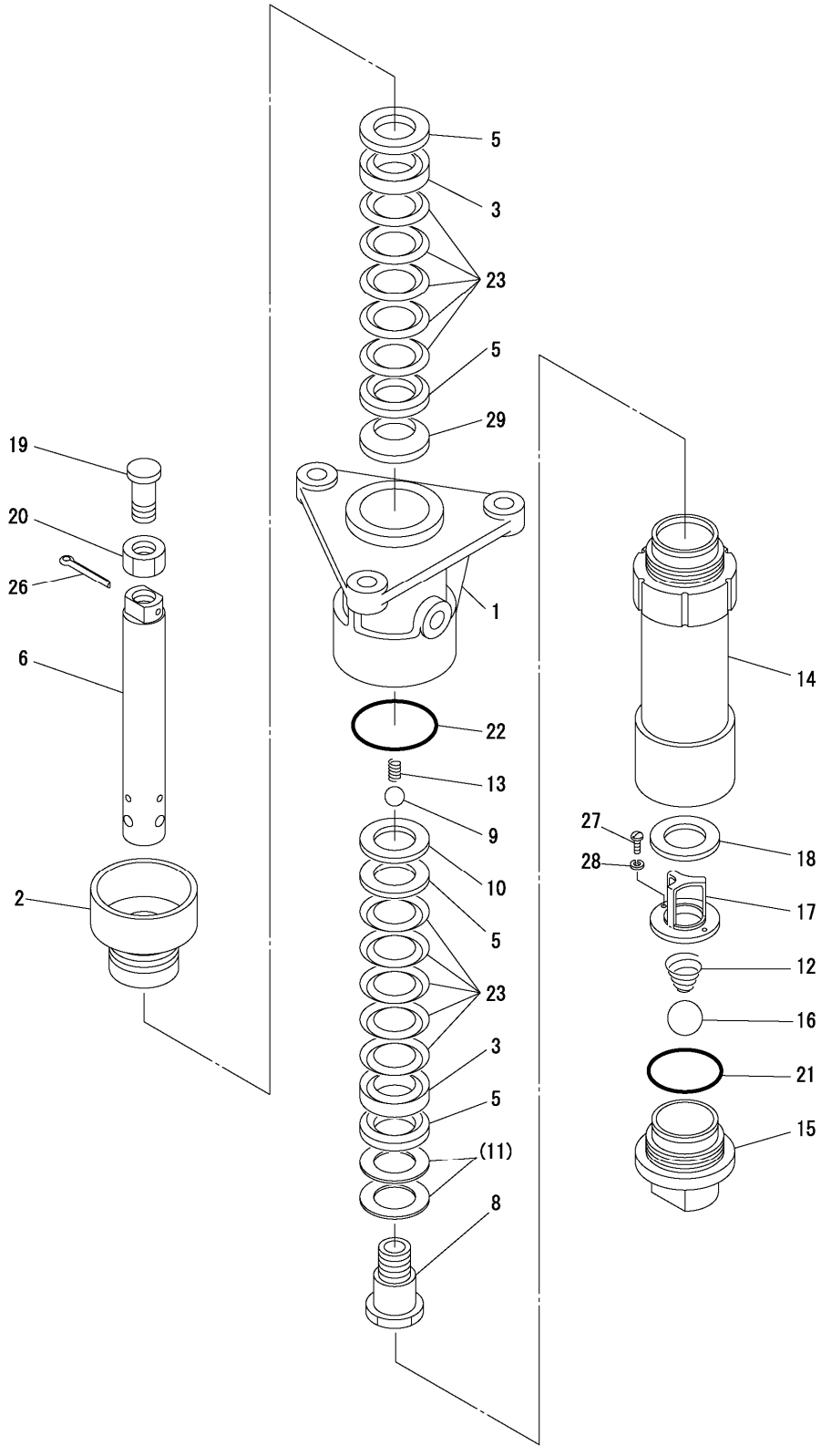
Items marked with ※ are the parts we recommend you to carry in stock.

Material cylinder

SP2544<0295-8>•SP2554<0288>•SP2578<0296-5>

Material cylinder (SUS)

SP2544S<0285-3>•SP2554S<0275-5>•SP2578S<0276-1>



Material cylinder (1:65, 1:45, 1:20) SP2544<0295-8>, SP2554<0288>, SP2578<0296-5>

The part number on the top is for a 1:65 ratio The part number in the middle is for a 1:45 ratio The part number at the bottom is for a 1:20 ratio

No.	Part No.	Part Name	Qty	Remarks
1	0295-001A 0270-001A 0296-101A	Pump housing	1	
2	0295-802 0288-002 0296-502	Packing retainer (with cup)	1	
3	0295-003 0270-003 0296-003	Retainer	2	
5	0204-005 0270-005 0296-005	Packing retainer	4	
6	0295-106 0270-106 0296-106	Piston rod	1	
8	0295-108 0270-108 0296-108	Check valve	1set	
※9	0280-016 0280-016 0204-016	Valve ball	1	
10	0204-010 0270-010 0296-010	Ring	1	
11	0204-011 0270-011 0296-011	Plain washer	(2)	There are cases where this item is not used.
※12	0295-012 0270-012 0270-012	Spring	1	
※13	0270-013 0270-013 0296-013	Spring	1	
14	0295-014 0270-014 0296-114	Cylinder	1	
15	0295-215 0270-115 0296-115	Foot valve	1set	

No.	Part No.	Part Name	Qty	Remarks
※16	0204-016 0206-016 0206-016	Valve ball	1	
17	0295-115-3 0270-115-3 0296-027	Ball guide	1	
18	0295-017 0270-017 —	Stop ring	1	
19	0295-118 0270-018 0296-018	Stud bolt	1	
20	0270-019 0270-019 0270-019	Nut	1	
※21	102-2055 102-2060 102-2085	O-ring	1	
※22	102-2060 102-2070 102-2090	O-ring	1	
※23	V853200445 V853930545 V855600780	V-packing	10	
26	49-10440 49-10445 49-10445	Split pin	1	
27	66-10512	Slotted plain hd screw	4	Special for 1:20
28	41-50500	Spring washer	4	Special for 1:20
29	0295-026 0288-026 0296-028	Ring spring	1	

[SUS specification] Material cylinder (1:65, 1:45, 1:20) SP2544S<0285-3>, SP2554S<0275-5>, SP2578S<0276-1S>

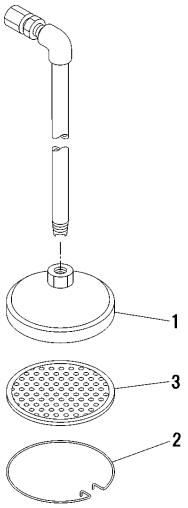
The part number on the top is for a 1:65 ratio The part number in the middle is for a 1:45 ratio The part number at the bottom is for a 1:20 ratio

No.	Part No.	Part Name	Qty	Remarks
1	0285-001 0275-001 0276-101	Pump housing	1	
2	0285-302 0275-502 0276-102	Packing retainer (with cup)	1	
3	0295-003 0270-003 0296-003	Retainer	2	
5	0285-005 0275-005 0276-005	Packing retainer	4	
6	0285-106 0275-006 0276-106	Piston rod	1	
8	0285-008 0275-108 0276-108	Check valve	1set	
※9	0290-116 0290-116 0224-116	Valve ball	1	
10	0285-010 0275-010 0276-010	Ring	1	
11	0285-011 0275-011 0276-011	Plain washer	(2)	There are cases where this item is not used.
※12	0285-012 0275-012 0275-012	Spring	1	
※13	0275-013 0275-013 0276-013	Spring	1	
14	0285-014 0275-014 0276-114	Cylinder	1	
15	0285-215 0275-115 0276-115	Foot valve	1set	

No.	Part No.	Part Name	Qty	Remarks
※16	0224-116 0226-016 0226-016	Valve ball	1	
17	0295-115-3 0270-115-3 0296-027	Ball guide	1	
18	0285-017 0275-017 -	Stop ring	1	
19	0295-118 0270-018 0296-018	Stud bolt	1	
20	0270-019 0270-019 0270-019	Nut	1	
※21	102-2055 102-2060 102-2085	O-ring	1	
※22	102-2060 102-2070 102-2090	O-ring	1	
※23	V853200445 V853930545 V855600780	V-packing	10	
26	49-10440 49-10445 49-10445	Split pin	1	
27	68-70512	Cross recessed pan hd screw	4	Special for 1:20
28	41-70500	Spring washer	4	Special for 1:20
29	0295-026 0288-026 0296-028	Ring spring	1	

Items marked with ※ are the parts we recommend you to carry in stock.

Suction filter
Option



Suction filter SF1408 (0502-1) (Option)

No.	Part No.	Part Name	Qty	Remarks
1	0502-101	Filter body	1	
2	0502-002	Snap	1	

No.	Part No.	Part Name	Qty	Remarks
※3	0502-003-04	Screen	1set	40 mesh

Items marked with ※ are the parts we recommend you to carry in stock.

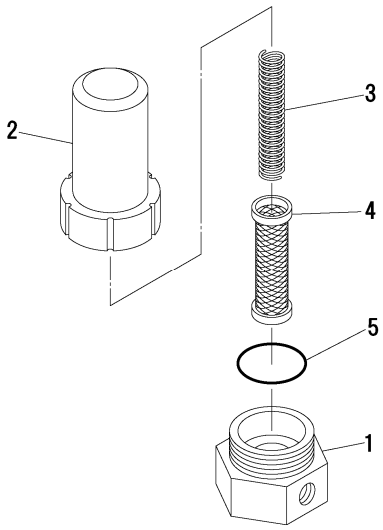
Suction filter SF1408S (0522) (Option) SUS specification

No.	Part No.	Part Name	Qty	Remarks
1	0502-101	Filter body	1	
2	0502-002	Snap	1	

No.	Part No.	Part Name	Qty	Remarks
※3	0512-003-04	Screen	1set	40 mesh

Items marked with ※ are the parts we recommend you to carry in stock.

Material filter
MF100E<0424>
Material filter
MF100ES<0425>



Material filter MF100E (0424)

No.	Part No.	Part Name	Qty	Remarks
1	0424-001	Base	1	
2	0424-002	Housing	1	
3	0409-004	Spring	1	

No.	Part No.	Part Name	Qty	Remarks
※4	0414-005-04	Screen	1	40 mesh
5	102-2055	O-ring	1	

Items marked with ※ are the parts we recommend you to carry in stock.

Material filter MF100ES (0425) SUS specification

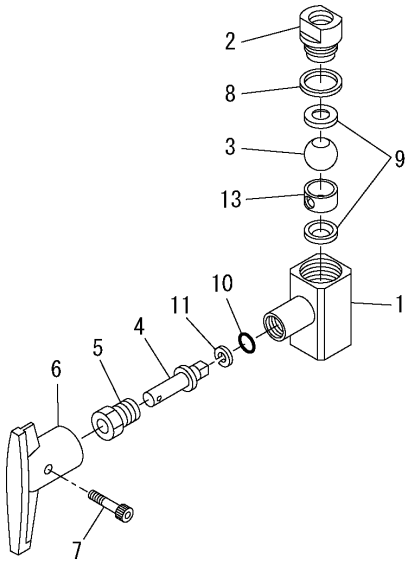
No.	Part No.	Part Name	Qty	Remarks
1	0425-001	Base	1	
2	0425-002	Housing	1	
3	0419-004	Spring	1	

No.	Part No.	Part Name	Qty	Remarks
※4	0414-005-04	Screen	1	40 mesh
5	102-2055	O-ring	1	

Items marked with ※ are the parts we recommend you to carry in stock.

Ball cock
HPC3T<0901>

Ball cock
HPC3TS<0911>



Ball cock HPC3T (0901)

No.	Part No.	Part Name	Qty	Remarks
1	0901-201	Body	1	
2	0901-002	Seat housing	1	
※3	0901-003	Valve ball	1	
4	0901-104	Handle shaft	1	
5	0901-105	Packing retainer	1	
6	0901-006	Handle	1	

No.	Part No.	Part Name	Qty	Remarks
7	03-50422	Hex. socket bolt	1	
※8	146-2001	Gasket	1	
※9	145-2001	Ball seat	2	
※10	101-6010	O-ring	1	
※11	106-2010	Backup ring	1	
13	0901-013	Spacer	1	

Items marked with ※ are the parts we recommend you to carry in stock.

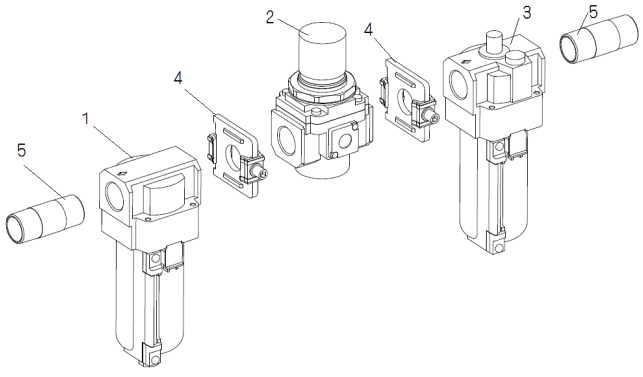
Ball cock HPC3TS (0911) SUS specification

No.	Part No.	Part Name	Qty	Remarks
1	0901-201	Body	1	
2	0911-002	Seat housing	1	
※3	0901-003	Valve ball	1	
4	0911-104	Handle shaft	1	
5	0911-105	Packing retainer	1	
6	0901-006	Handle	1	

No.	Part No.	Part Name	Qty	Remarks
7	03-50422	Hex. socket bolt	1	
※8	146-2001	Gasket	1	
※9	145-2001	Ball seat	2	
※10	101-6010	O-ring	1	
※11	106-2010	Backup ring	1	
13	0901-013	Spacer	1	

Items marked with ※ are the parts we recommend you to carry in stock.

Air combination
Option



Air combination (6160-001)

No.	Part No.	Part Name	Qty	Remarks
1	303-0007	Air filter	1	
2	301-0069	Air regulator	1	

No.	Part No.	Part Name	Qty	Remarks
3	302-0005	Lubricator (oiler)	1	
4	341-0020	Spacer assembly	2	Packing used: 373-0021
5	6160-001-9	Nipple	2	

10 Maintenance Log

Shown below is a maintenance log format of a kind we recommend you to keep. Each time that you conduct a maintenance service, such as replacement of a part, tear-down cleaning, post-failure repair, etc., record the details. In the long run, you will find that such a log is very valuable in keeping your equipment in a consistently good operating condition.

Equipment name			SUPER BEAR 30 / SP2544 / SP2544S SUPER BEAR 20 / SP2554 / SP2554S SUPER BEAR 10 / SP2578 / SP2578S		Date of acquisition: YYYY/MM/DD	
Date of service			Portion worked on	Description	Results	Who serviced
						In-house / Agency / Asahi Sunac
						In-house / Agency / Asahi Sunac
						In-house / Agency / Asahi Sunac
						In-house / Agency / Asahi Sunac
						In-house / Agency / Asahi Sunac
						In-house / Agency / Asahi Sunac
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						In-house / Agency / Asahi Sunac
						In-house / Agency / Asahi Sunac

NOTE: Due to continuous improvements and modifications, the configurations and specifications of the equipment specified herein are subject to change without prior notice.

11 Warranty

ASAHI SUNAC CORPORATION (the “Company”) shall provide the original purchaser (the “Purchaser”) with warranty service for a period of one (1) year 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 to 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 lightening.
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.

- When a transfer of title of this equipment takes place, please ensure that this Operation and Maintenance Manual is handed over to the new owner.
- This equipment is manufactured in compliance with the Laws and Regulations of Japan.
  In the rare eventuality of this equipment being used outside Japan, compliance with the safety standards of the relevant countries is of course mandatory.

26th Edition: February 10, 2026

ASAHI SUNAC CORPORATION

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