PAIL VACUUM PUMPS & CLEANERS

APPQ (Pump, closed cans)	(EX) Series
APPQO (Pump, closed cans)	(EX) Series
APPQO 300, APPQO 500 (Cleaner, open cans)	(EX) Series
APPQO 400, APPQO 550 (Cleaner, open cans)	(EX) Series
APPQO-H (Cleaner, open cans)	(EX) Series

INSTRUCTION MANUAL

- This manual contains safety and operating instructions, which will help you to use the device correctly and safely. Please read it carefully before using the device. Using the device in a wrong way may cause malfunction of the equipment and human injuries.

- Keep this manual in safe place, as you may need it in the future. Refer to it whenever necessary.

AQUA SYSTEM CO.,LTD.

1. To begin with

Thank you for purchasing Pail Vacuum Pump Cleaner! This pump for pail cans utilizes compressed air. It's a safe and convenient device, which will solve your problems concerning liquids collection. Before using the product, please carefully read this manual.

AQUASYSTEM Co., Ltd.

2. Specifications

Model	Main body's material	Packing's material	Hose's material	Permitted liquids
APPQ	Aluminum	Fluoro-rubber	PVC	General oil, water
APPQG			Oil-resistant PVC	Light oil, diesel oil, kerosene,
APPQAS		Fluoro-rubber + EPT	Internal 3-layer PP	Solvents, chemicals
APPQO		NBR	PVC	General oil, water
APPQOG			Oil-resistant PVC	Light oil, diesel oil, kerosene,
APPQOAS		Fluoro-rubber	Internal 3-layer PP	Solvents, chemicals
APPQO300		NBR	PVC	General oil, water
APPQO300G			Oil-resistant PVC	Light oil, diesel oil, kerosene,
APPQO300AS		Fluoro-rubber	Internal 3-layer PP	Solvents, chemicals
APPQO400		NBR	PVC	General oil, water
APPQO400G			Oil-resistant PVC	Light oil, diesel oil, kerosene,
APPQO400AS		Fluoro-rubber	Internal 3-layer PP	Solvents, chemicals
APPQO550		NBR	PVC	General oil, water
APPQO500		NBR	PVC	General oil, water
APPQO-H		NBR	PVC	General oil, water
APPQO-HG			Oil-resistant PVC	Light oil, diesel oil, kerosene,
APPQO-HAS		Fluoro-rubber	Internal 3-layer PP	Solvents, chemicals

* CAUTION! Before transferring specific solvents using an AS model, always take the pump's material specifications under consideration.

3. SAFETY PRECAUTIONS

⚠WARNING!

- The pump has been designed for use with pail cans. Do not use any other containers.
- All of the models cannot be used to collect acids and alkalis, which may cause corrosion.
- Connect the ground wire to pump's main body and nozzle, especially when using the device in hazardous areas and/or transferring inflammable or explosive liquids. Do not use fire.
- The device is already correctly and safely regulated. Do not deregulate it.

⚠DANGER!

- Please use a durable pail can with a sturdy brim and outlet. Not using a proper pail can may result in container's deformation.
- For APPQ/APPQO models use a compressor of min. 1 HP. For APPQO300/APPQO400/APPQO-H use a compressor of min. 3 HP. For APPQO500/APPQO550 use a compressor of min. 5 HP. Optimal pressure is 0.4 ~ 0.6 MPa. Too high pressure may damage the pail can.
- Do not collect high temperature objects/liquids (60℃ max). They may cause deformation of the hose and packing.
- When changing the liquid you are going to transfer, always carefully clean the pump out of the liquid transferred before. Not doing so may lead to dangerous chemical reactions.
- When the device stops operating or operates in a strange manner, immediately turn off the device and contact technical service. Do not use broken equipment, as it may result in accidents.

⚠CAUTION!

- After attaching device's main body to the pail can, make sure it's tightly fixed.
- The models sucking air release it through the exhaust outlet. Be careful when standing close to the exhaust outlet.
- When the tank becomes full, there is a risk that some of the liquid will leave the system with the exhaust air.

⚠CAUTION!

- The device is capable of collecting liquids contaminated by small particles of size no larger than 5 mm.
- Use a 3/8 air hose or larger. Small hose may be a reason of pressure reduction.
- A strainer is inserted into the air-coupling plug. Dirt may accumulate on the inner strainer, reducing device's performance. Remember to occasionally clean the strainer with soapy water. The strainer remains in the plug to protect it against deformation and you should not pull it out. Clean it the way it is.
- APPQAS model is originally equipped with an O-Ring made from fluoro-rubber. A spare O-Ring made from EPT (Ethylene Propylene Rubber) is included. When willing to collect corrosive liquids, change the O-Ring to the spare one. If corrosion still occurs, use an optional, special O-Ring made from perfluoro-rubber. Also, please refer to permitted liquids list.

* Please remember, that the safety measures and warnings pointed out in this manual are not exhaustive for all possible situations. Although we have designed our product to be as safe as possible, persons operating and maintaining the device should strictly follow all safety rules in the operation/maintenance area.

APPQ Usage Instructions

Product's state and usage conditions (after delivery):

Pail can/rectangular metal can type: closed can with a 40 mm outlet (not included)

Air regulator's thread: blue (opening: 1 mm)

Input air pressure: 0.4 ~ 0.6 MPa

How to use it:

① Unfasten the retaining nut and put device's main body on can's outlet.

② Fasten the retaining nut and fix the pump firmly.

③ Connect the air hose while the air valve is closed.

④ Opening the air valve will begin the suction (of a liquid).

⑤ Once the can becomes full (pail can: approx. 18 liters; rectangular metal can: approx. 15 liters), the device will automatically stop suction.

⑥ After you have finished collecting liquid, close the air valve.

⑦ Disconnect the air hose.

⑧ Unfasten the retaining nut and disassemble pump's main body from the can.

⑨ Cover the can with a dedicated lid.

* At input pressure: 0.4 MPa and below

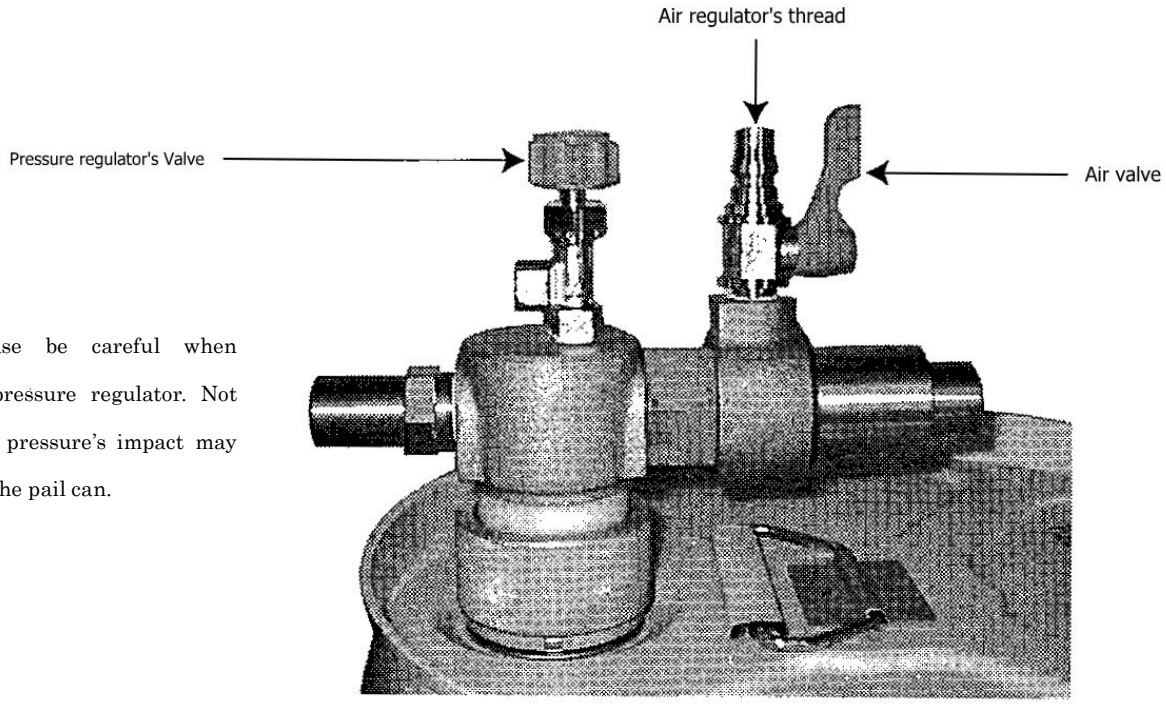
Air regulator's thread: change to a red one (opening: 4 mm, INCLUDED)

Pressure regulator's valve: Please regulate by gradually closing the valve from a fully open state

* At input pressure: 0.6 and over

Air regulator's thread: red (opening: 1 mm)

Pressure regulator's valve: Please regulate by gradually closing the valve from a fully open state



CAUTION! Please be careful when manipulating the pressure regulator. Not paying attention to pressure's impact may result in damaging the pail can.

APPQO Usage Instructions

Product's state and usage conditions (after delivery):

Pail can type: open can (not included)

Air regulator's thread: red (opening: 4 mm)

Air regulator's valve: fully open.

Input air's pressure: 0.4 ~ 0.6 MPa

How to use it:

① Put the device's main body on the pail can, and make sure that pail can's brim properly fits to the main body's black O-Ring seal.

② After making sure that the air valve is closed, connect the air hose.

③ Opening the air valve will begin the suction (of a liquid).

④ Collect the liquid. After the can becomes full (approx. 18 liters), the device will automatically stop suction.

⑤ After you have finished collecting the liquid, close the air valve.

⑥ Disconnect the air hose.

⑦ Disassemble pump's main body from the pail can.

* At input pressure: 0.4 MPa and below

Air regulator's thread: red (opening: 4 mm)

Pressure regulator's valve: Please regulate by gradually closing the valve from a fully open state

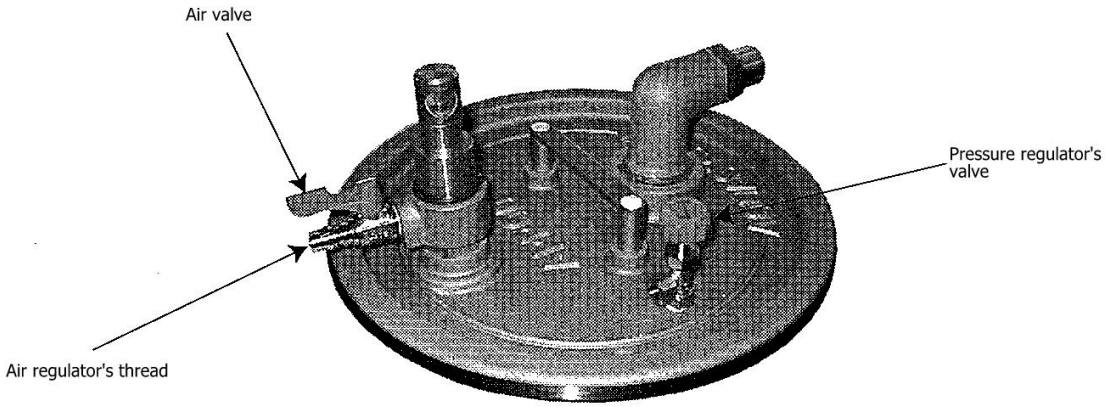
* At input pressure: 0.6 and over

Air regulator's thread: red (opening: 1 mm, INCLUDED)

Pressure regulator's valve: Please regulate by gradually closing the valve from a fully open state

CAUTION!

Please be careful when manipulating the pressure regulator. Not paying attention to pressure's impact may result in damaging the pail can.



APPQO 300&500 Usage Instructions

Product's state and usage conditions (after delivery):

Pail can type: open can (not included)

Input air pressure: 0.4 ~ 0.6 MPa

How to use it:

① Put the device's main body on the pail can, and make sure that pail can's brim properly fits to the main body's bottom black O-Ring seal.

② After making sure that the air valve is closed, connect the air hose.

③ Opening the air valve will begin the suction (of a liquid or small particles).

④ After you have finished collecting the liquid or particles, close the air valve.

⑤ Disconnect the air hose.

⑥ Disassemble pump's main body from the pail can.

CAUTION

The suction will not stop when the pail can becomes full. Once the pail can becomes full, the air sucked by the device may vaporize the liquid. To automatically stop suction after filling the can, please install an optional oil-stopper.

If you are willing to collect small particles like dust or powder, by all means install a filter. Without it, the particles may be exhausted back into to the air.

When utilizing pressure lower than 0.4 MPa, the device may have a considerably low suction rate. Pressure higher than 0.6 MPa may be dangerous to the pail can. Please, do not exceed it.

APPQO 400&550 Usage Instructions

Product's state and usage conditions (after delivery):

Pail can type: open can (not included)

Input air pressure: 0.4 ~ 0.6 MPa

How to use it:

① Assemble and install the oil stopper (if you find it difficult to insert the oil stopper, grease the O-ring with oil or wet it).

② Put the device's main body on the pail can, and make sure that pail can's brim properly fits to the main body's bottom packing.

③ Connect the air hose while the air valve is closed.

④ Opening the air valve will begin the suction (of a liquid and small particles).

⑤ Once the can becomes full (approx. 17 liters), the device will automatically stop suction.

⑥ After you have finished collecting liquid, close the air valve.

⑦ Disconnect the air hose.

⑧ Disassemble pump's main body from the pail can.

CAUTION

If you are willing to collect small particles, like dust or powder, by all means install a filter. Without it, the particles will be exhausted back into to the air.

When utilizing pressure lower than 0.4 MPa, the device may have a considerably low suction rate. Pressure higher than 0.6 MPa may be dangerous to the pail can. Please, do not exceed it.

APPQO-H Usage Instructions

Product's state and usage conditions (after delivery):

Pail can: SUS pail can

Input air pressure: 0.4 ~ 0.6 MPa

How to use it:

① Put the device's main body on the pail can, and make sure that pail can's brim properly fits to the main body's bottom packing.

② Connect the air hose while the air valve is closed.

③ Opening the air valve will begin the suction (of a liquid and small particles).

④ Once the can becomes full (approx. 17 liters), the device will automatically stop suction.

⑤ After you have finished collecting liquid, close the air valve.

⑥ Disconnect the air hose.

⑦ Disassemble pump's main body from the pail can.

CAUTION

* If you are willing to collect small particles, like dust or powder, by all means install a filter. Without it, the particles will be exhausted back into to the air.

* Use a SUS can. Normal can may not resist vacuum's force.

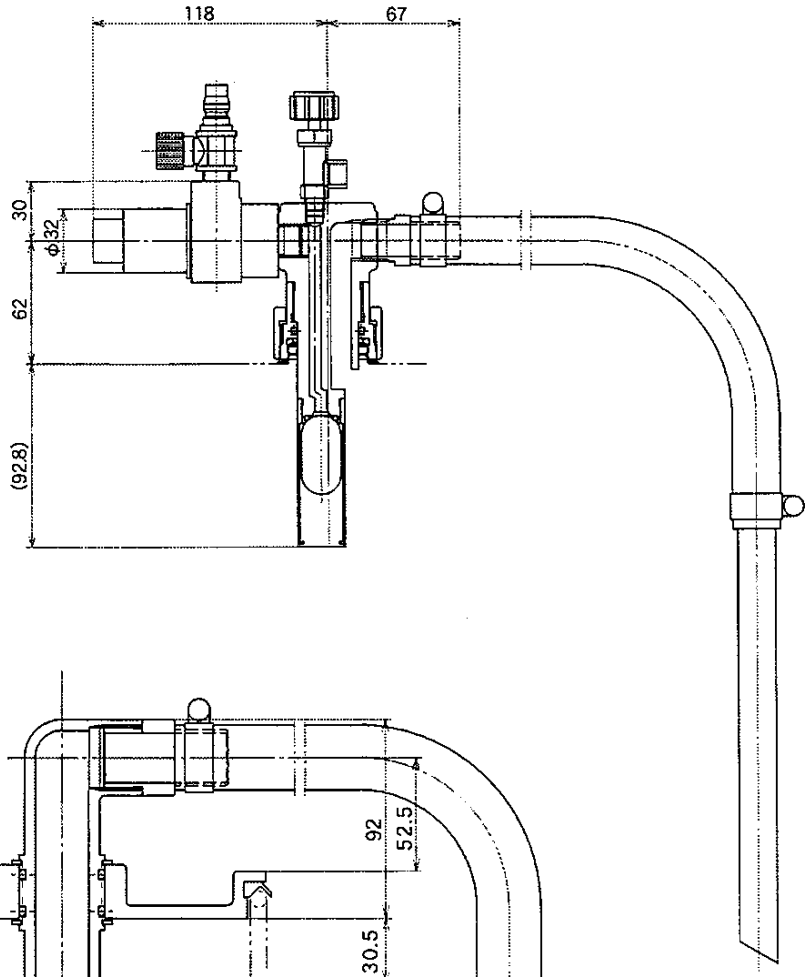
TROUBLESHOOTING

If the pump operates in a strange manner, immediately turn it off and carefully read the troubleshooting section below:

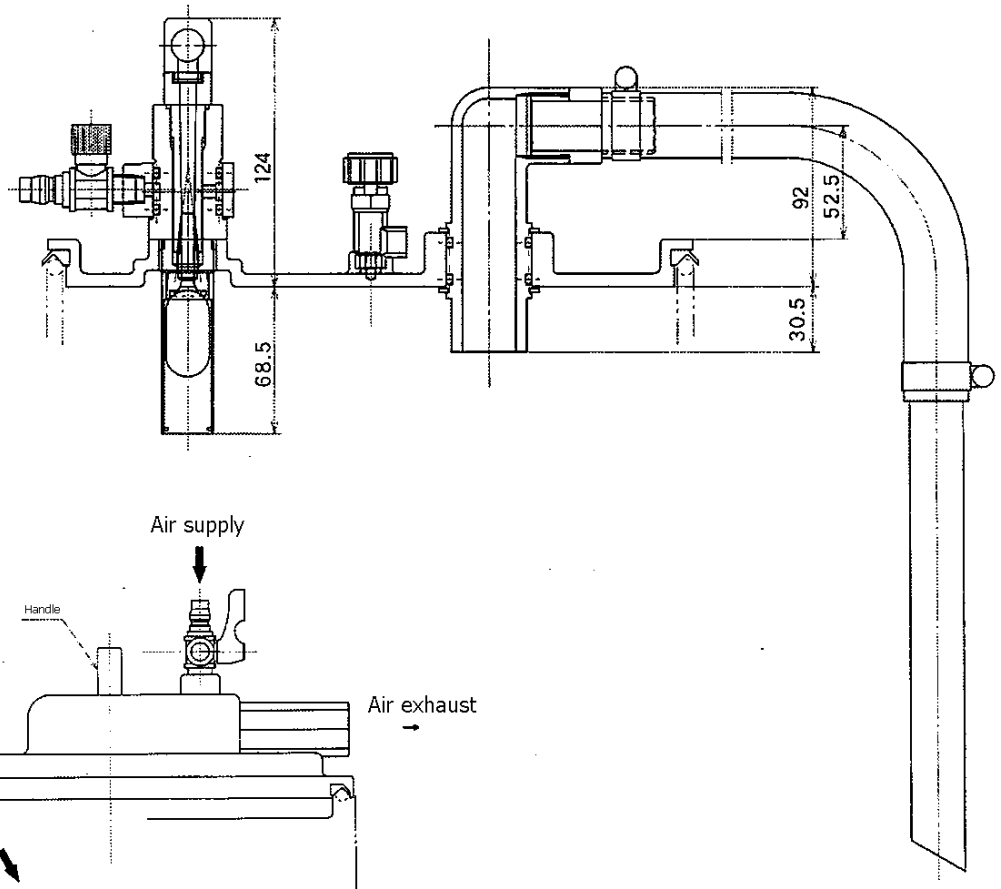
- APPQ, APPQO, APPQO300, APPQO400, APPQO500, APPQO550, APPQO-H

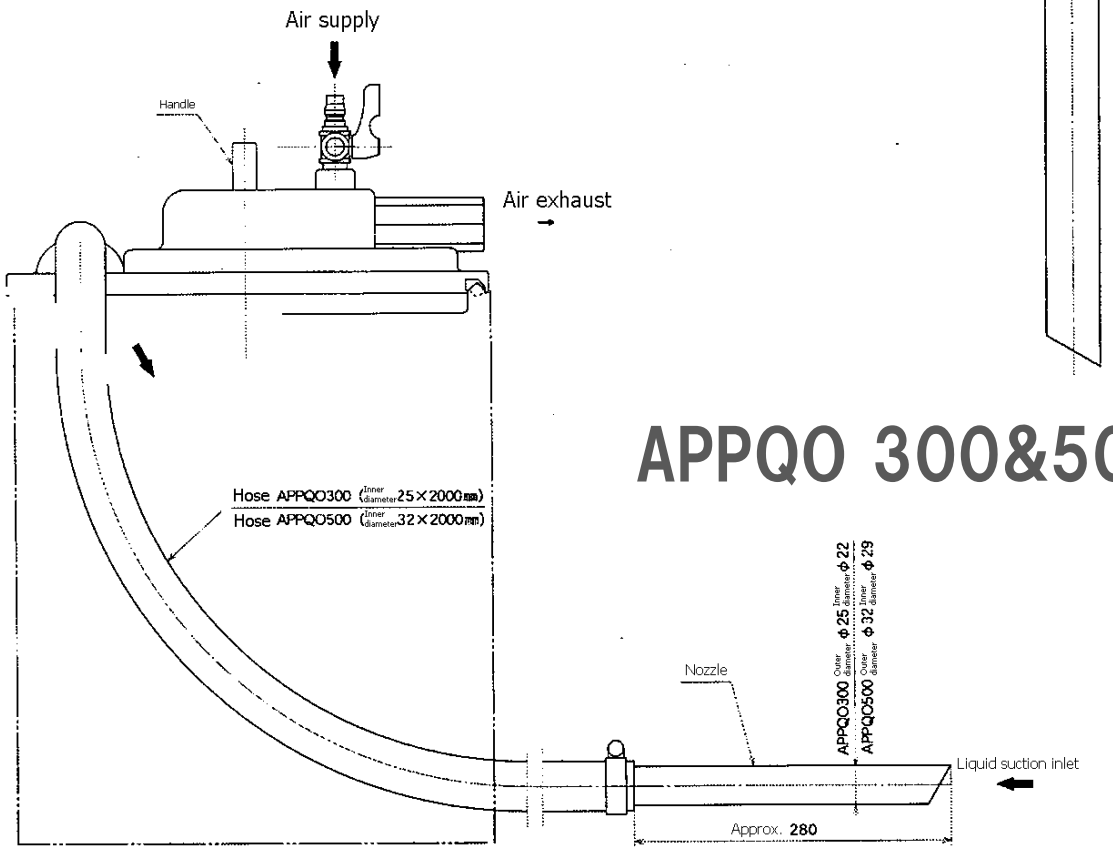
Symptom	Make sure that…
There is no suction at all.	● The air hose is properly connected to the pump. ● Pump's main body is tightly fixed to the can. ● The air valve has been opened. ● The can has not become deformed.
The suction rate is very low.	● Air input pressure is not too low. ● The air valve is fully open. ● Liquid's viscosity is not too high. ● The pressure regulator is properly set.
The drum can is deforming.	● The air pressure is not too high. ● The pressure regulator is properly set. ● The pail can is durable enough.

APPQ



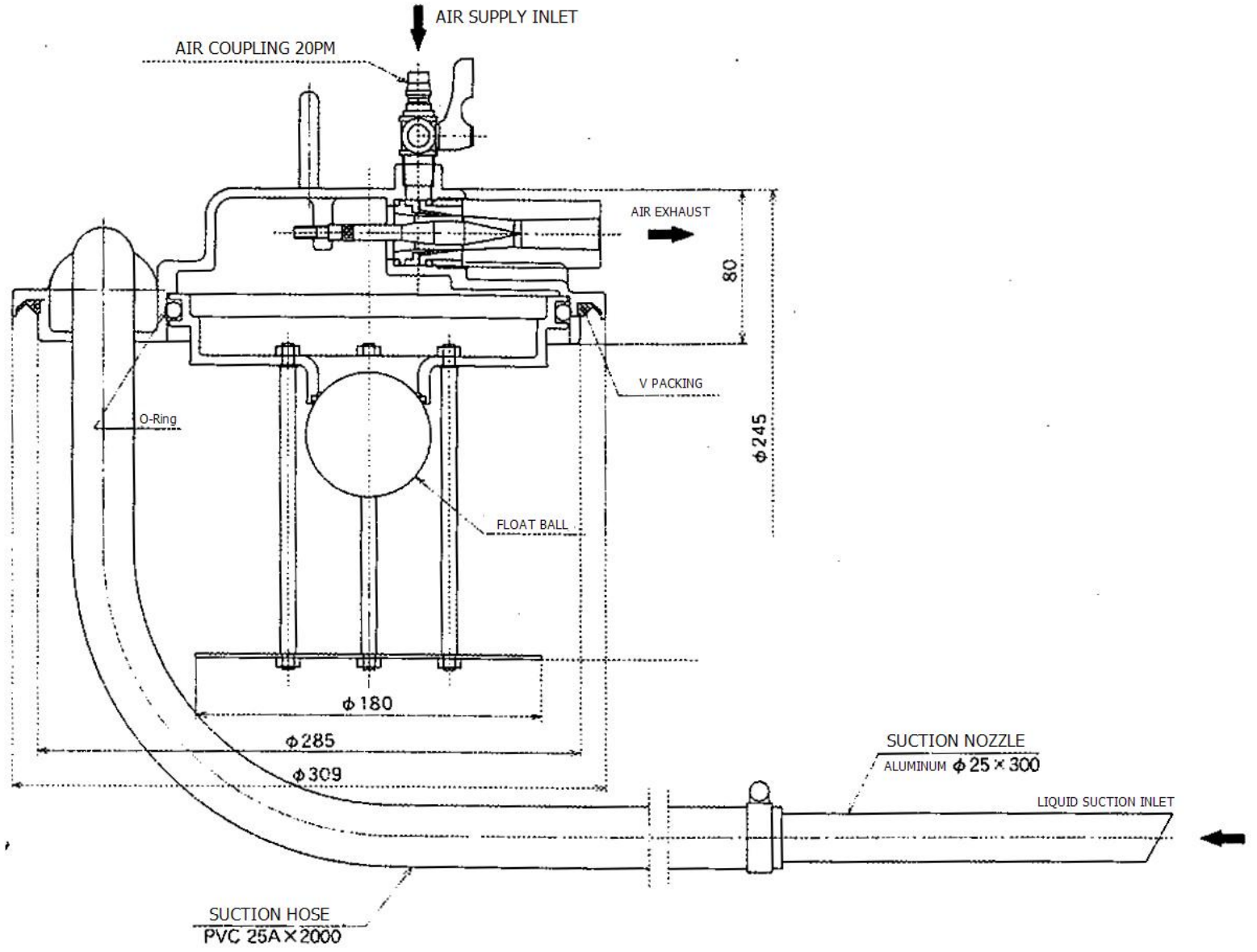
APPQO



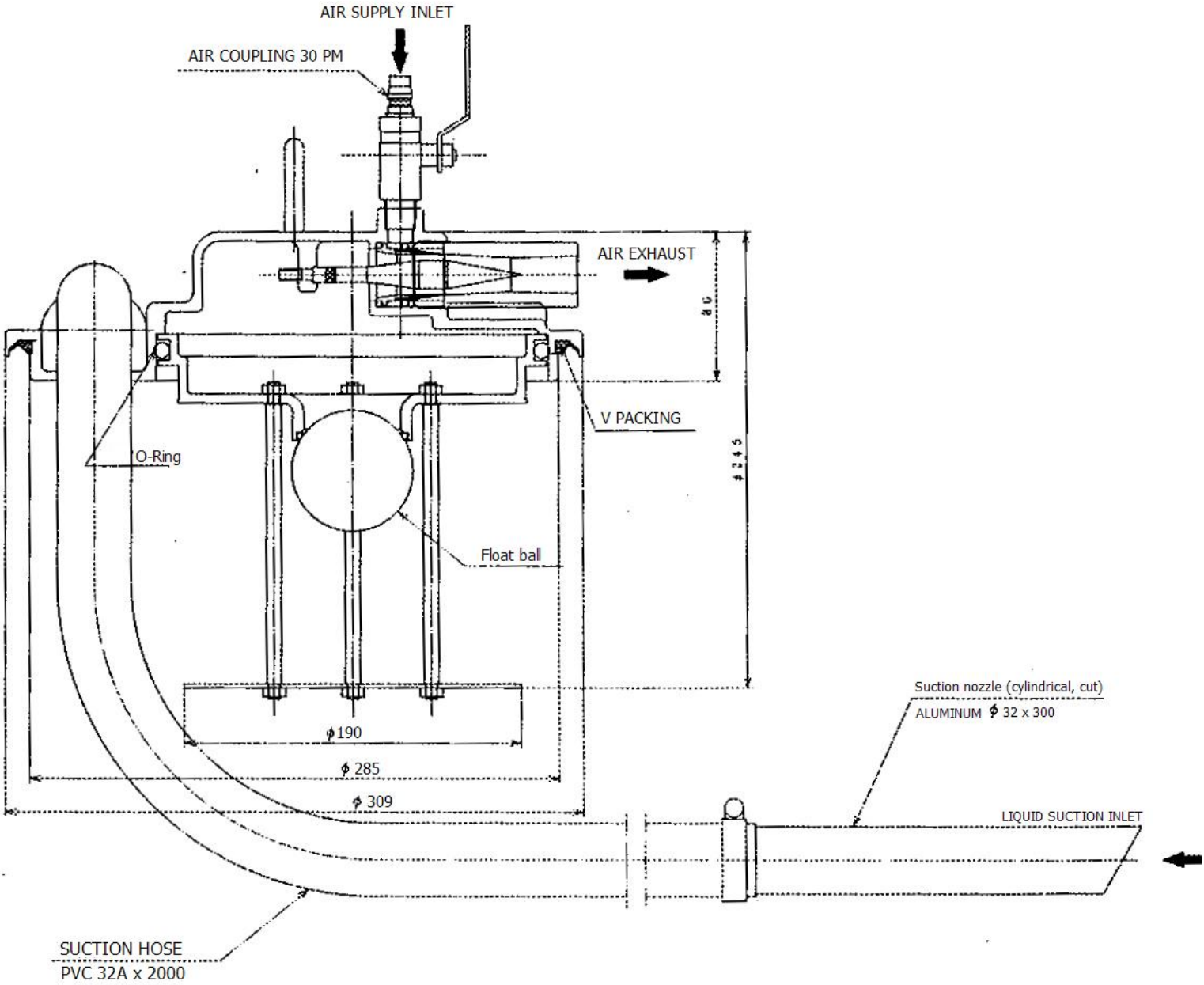


APPQO 300&500

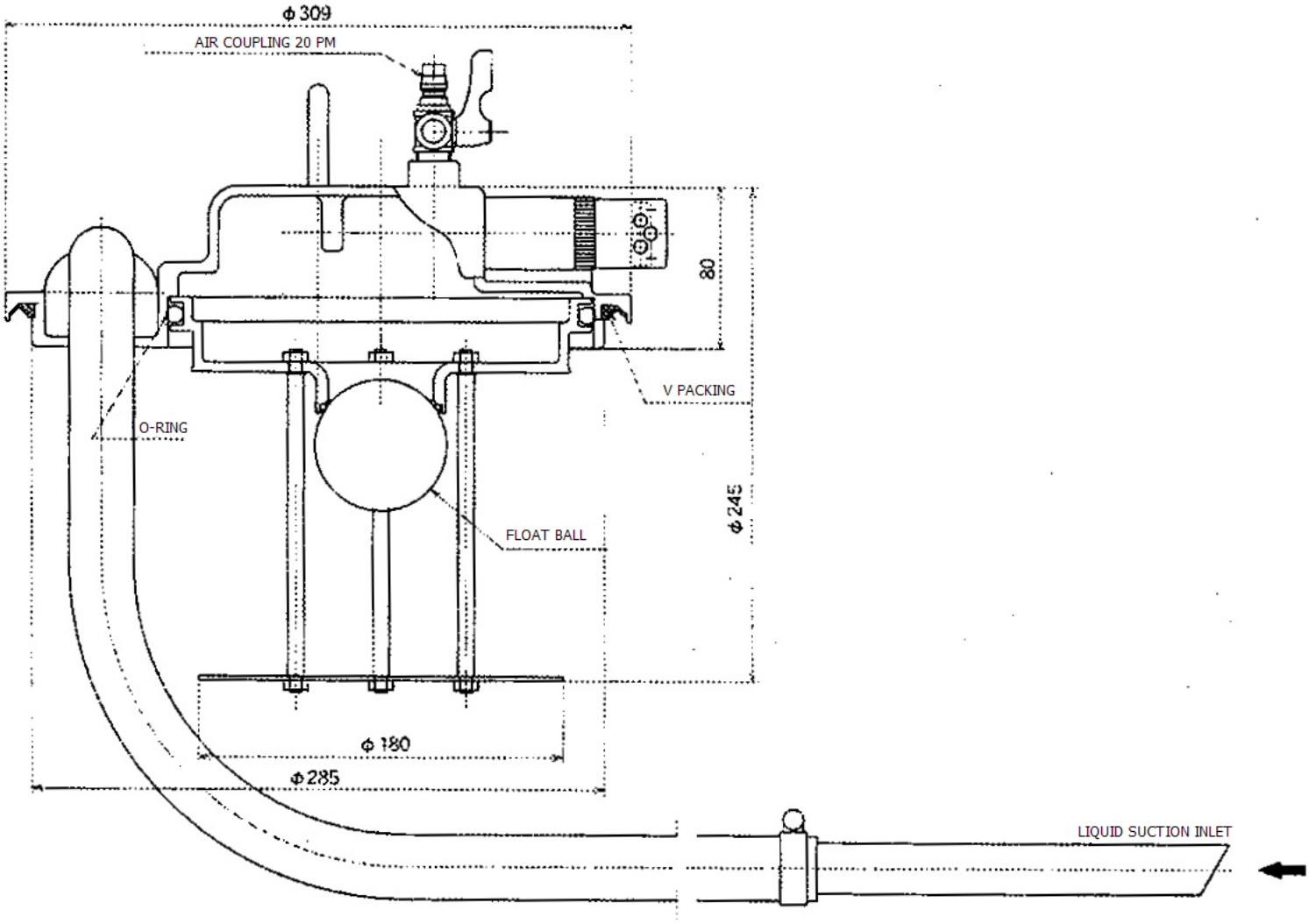
APPQO 400


AIR SUPPLY INLET
AIR COUPLING 20PM
AIR EXHAUST
80
V PACKING
O-Ring
Φ245
FLOAT BALL
Φ180
Φ285
Φ309
SUCTION NOZZLE
ALUMINUM Φ25×300
LIQUID SUCTION INLET
SUCTION HOSE
PVC 25A×2000

APPQO 550


AIR SUPPLY INLET
AIR COUPLING 30 PM
AIR EXHAUST
V PACKING
O-Ring
Float ball
ϕ190
ϕ 285
ϕ 309
Suction nozzle (cylindrical, cut)
ALUMINUM ϕ 32 x 300
LIQUID SUCTION INLET
SUCTION HOSE
PVC 32A x 2000

APPQO-H


ϕ309
AIR COUPLING 20 PM
80
V PACKING
O-RING
ϕ245
FLOAT BALL
ϕ180
ϕ285
LIQUID SUCTION INLET

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