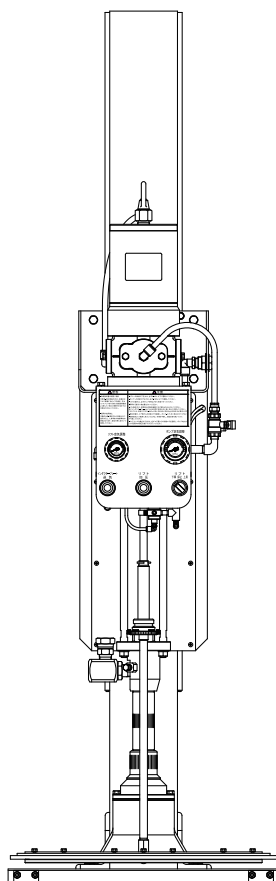


INSTRUCTION

High Viscosity Material Supply Pump Unit (Drum) 140 type series

SR140P25PDAL-F	MODEL No.881113
SR140P38PDAL-F	MODEL No.881114
SR140P50PDAL-F	MODEL No.881115



WARNING

Prior to operating this pump, be sure to read this operation manual for safety. After reading the manual, please keep it at hand any time for your quick reference.

YAMADA CORPORATION

- Preface

Thank you for purchasing a Yamada Pump.

The SR-140DAL series is air operated pump units designed for use with a 200 litre drum. With a combination of a type 140 air powered pump and an air operated lift, the unit is suitable for transferring/supplying high viscosity materials like grease.

Through pipes and hoses, material can be supplied to various sections of a work site. At each section, you can use material anytime just by controlling an outlet valve.

The inductor plate provides a tight seal between the plate and a drum, prevents an air pocket from forming in the suction port, and helps to pump and transfer material efficiently until a drum gets empty.

Furthermore, a punch plate attached to the bottom of the inductor plate makes it possible to use up material in a drum as much as possible.

- For Safe Operation

This document describes the items that are important for the user to operate this product safely, correctly, and efficiently. Before operating this product, read this manual thoroughly, in particular, "Warnings and Cautions" at the beginning of this manual, with a good understanding of its contents. Keep this manual carefully in an easy-to-access place so that the user may refer to it whenever necessary.

- Warnings and Cautions

To use this product safely, be sure to observe the contents of the following description. In this manual, warnings and cautions are indicated by using symbols. These symbols are intended to prevent death or serious injury that may be caused to the operator or those who are around the product and damage that may be caused to the articles that are around the product, as well as to use the product safely and correctly. Each symbol is indicated and has a meaning as shown below. Read the description with a good understanding of its contents.



WARNING : This indicates the existence of potential hazard which, if not avoided, will result in death or serious injury.



CAUTION : This indicates the existence of potential hazard which, if not avoided, may result in bodily injury or in physical damage.

To indicate the contents of danger and damage, the following symbols are used together with the above indications.



This symbol indicates an act that is prohibited (prohibition). The concrete contents of prohibition are indicated by the side of the indication.



This symbol indicates the contents that must be observed. The concrete contents of observance are indicated by the side of the indication.

- Precautions on Use

The following warnings and cautions are very important. Be sure to observe them.

WARNING

[Operating condition]



- Read this manual thoroughly before use.
For your safety, read and understand all information provided in this manual.
If you have lost or damaged your instruction manual, please contact us or our distributor to place an order.



- Restriction on handling
Never let anyone operate this unit without understanding this manual.

[Operating method]



- Understand this manual completely before operating the machine.
Operators and maintenance personnel are required to read this manual thoroughly before operating or servicing. Do not handle this machine without understanding the instructions.



- Do not use inappropriately.
Use of the product for any purpose other than those specified in this manual may result in personal injury or property damage. Be sure to use the unit in accordance with the specifications described in "6. Specifications" in this manual.

[Disassembly, maintenance and inspection]



- Shut off air supply.
Performing these tasks when air supply is on may cause a sudden movement of the lift or an unexpected discharge of material. Be sure to shut off the air source to stop the machine before servicing.



- No alternation is permitted.
Alternating the unit may result in personal injury or product malfunction. Please do not try to alter, modify, or change the machine.



- Replacement time for consumables
The life of consumables varies depending on operating conditions. Replace a degraded part with a new one.

CAUTION

[Installation and piping]



- Install an emergency stop valve.
Attach an emergency stop valve to the air piping (somewhere accessible between the air source and unit) and close this valve in case of emergency.



- Stop operation.
If any abnormality is found during operation, immediately stop the machine. Do not restart until the cause has been identified and corrected.



- Shut off air supply.
Shut off the air source BEFORE installation and piping.



- Install properly.
Install the unit properly according to the requirements for location and material, pressure resistance, and size of hoses and other device, avoiding lift operation failure and pipe leakage or breakage.



- Do not plumb directly.
Do not connect the material outlet and piping directly. Attach a flexible tube like a hose to connect the pump to the piping. The pump, if connected directly to the piping, may cause many problems (e.g., noise caused by vibration, damage to the piping, operation failure of the lift, and failure of maintenance).

[Shutdown and storage]



- When left unused for a long time (an hour or more) or shutdown
In such case, close the air source and open the bleeder valve to release residual pressure inside the pump. (Close the bleeder valve after the residual air and material is removed.)
If a drum is not mounted, move the lift to the lower limit and put a plastic bag over the inductor plate to prevent dust.

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1. Part names

1.1 Part names

Fig. 1 and Fig. 2 show the names of each part used in the instructions in this manual. Use them as a reference.

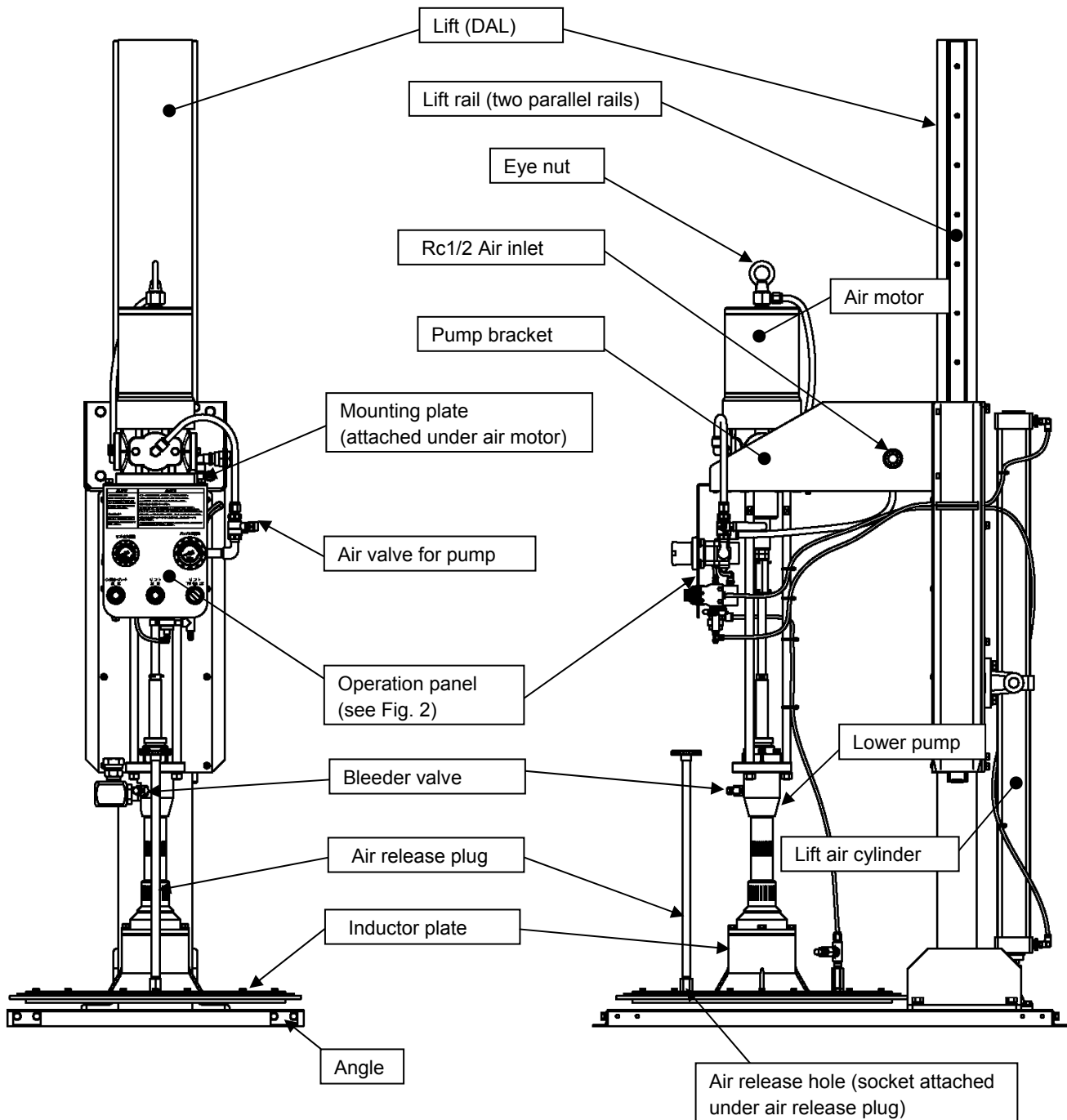


Fig. 1 Part names

Warnings/Cautions
Carefully read the label attached to the panel before use.

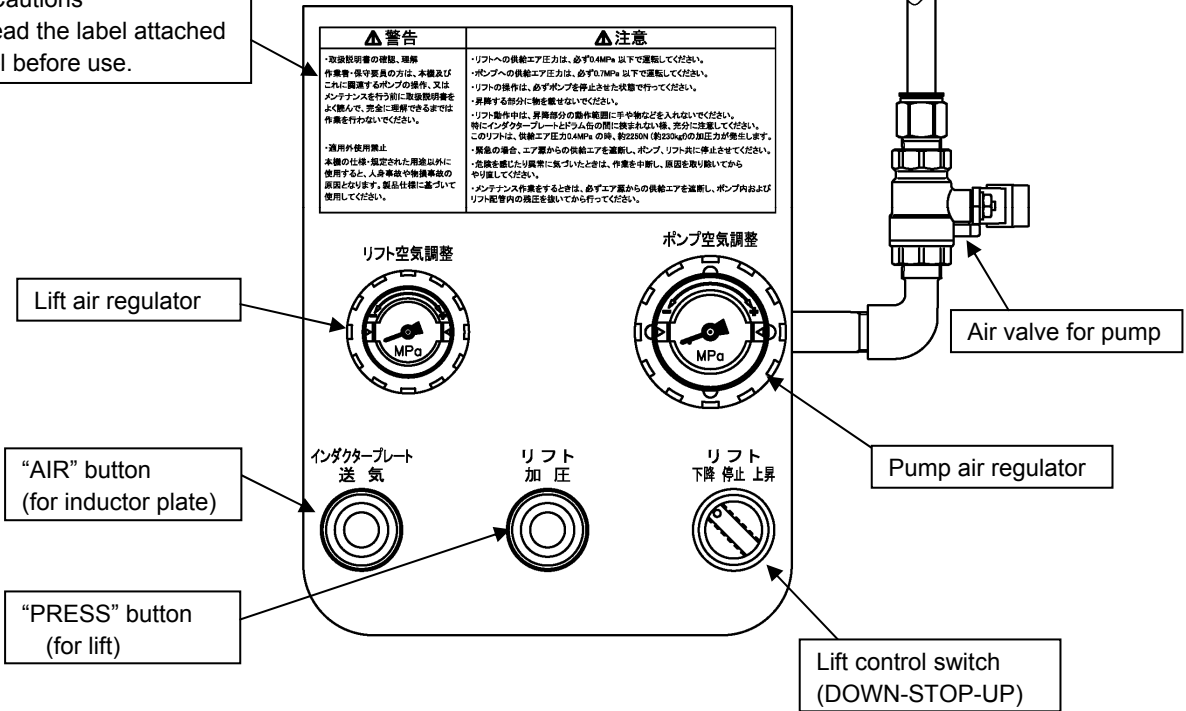







Fig. 2 Part names of operation panel

1.2 Contents of package

The unit is packed in a wooden box.
Open the box and inspect the product to make sure there is no part damaged or loosened due to vibration during transport. Also make sure the following accessories are included in the package: four angles, eight mounting bolts, and eight wave spring washers.

2. Installation

 CAUTION	
	- This unit rises up to a full height of 2503mm. Be sure to have enough space around the unit when installing.
	- Be sure to turn each air regulator all the way to the left (counterclockwise) BEFORE connecting hoses.
	- Keep yourself away from the lift when operating it. Do not touch any part of the unit other than the switches on the operation panel.
	- Do not put your hand or any other parts of your body between a drum and the inductor plate when installing a drum. An unexpected body injury may be caused.

2.1 Lift installation

- 1) Install the lift in your work site. Make sure the environment satisfies the following conditions:
 - A flat surface indoor (area where exhaust from the pump does not affect peripheral equipment)
 - Enough space for up/down movement of the lift (full height of the lift: 2503mm)
 - Enough space to perform maintenance
- 2) Attach the angles to the lift base with the furnished bolts and washers.
You can use either one of the two mounting positions shown below. Be sure to put one angle in each corner. (Fig. 3)
- 3) Secure the angles to the floor using anchor bolts (M12, sold separately).

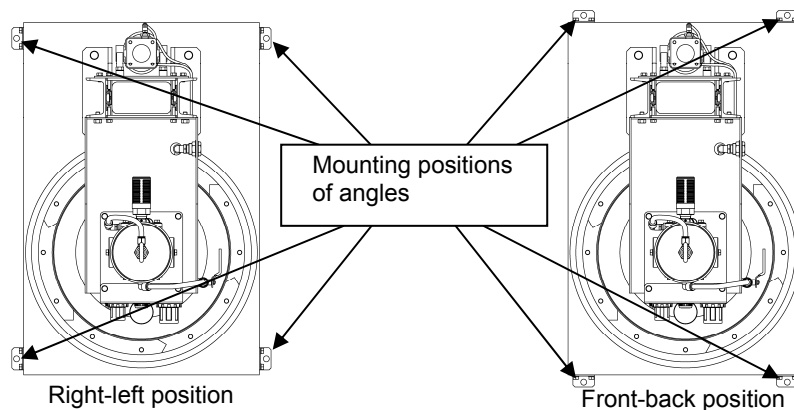


Fig. 3 Mounting positions of angles





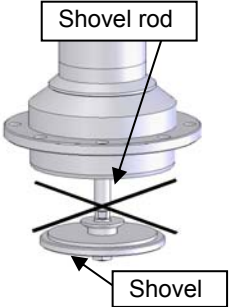
2.2 Discharge piping

- 1) Connect a discharge hose to the pump outlet. Make sure the hose satisfies the following requirements:
 - Resistant to material being pumped and unaffected by environment
 - Satisfying the following normal operation pressure:
 - 25×1 ratio pump: 18MPa or more
 - 38×1 ratio pump: 27MPa or more
 - 50×1 ratio pump: 35MPa or more
 - Recommended size: 3/4 inch or more
 - Hose fitting or joint: Connectable to G3/4(F) material outlet, hose union with a 30 degree male seat
 - Flexible hose, comfortable length for up/down movement of the lift
- 2) Connect the other end of the hose to a delivery pipeline. Attach a valve at the connection between the hose and the piping for maintenance and keep it closed until unit installation is completed.

2.3 Air piping

- 1) Attach an emergency stop valve to the air pipe (somewhere accessible between the air source and unit).
- 2) Select an air supply hose, fitting, and air equipment that satisfy the following requirements. With these devices, connect an air piping and the air inlet of the lift. Be careful not to let the hose get caught on peripheral equipment.
 - Designed for use with air and unaffected by environment
 - Normal operation pressure: 0.7MPa or more
 - Recommended size: 3/8 inch or more
 - Hose fitting or joint: Connectable to Rc1/2 air inlet
 - Comfortable hose length for up/down movement of the lift
 - Flow rate: 1300L/min (ANR) or more

2.4 Pump installation

 CAUTION	
<ul style="list-style-type: none"> - Total weight of the pump and inductor plate is more than 59kg. Use a chain block for installation to prevent injury. Be very careful during installation. - Before installing the pump, verify that the shovel at the bottom is NOT sticking out. Failure to follow this instruction may result in damage to the shovel rod causing a pump failure. (Fig. 4) - Do not put your hand between the pump body and shovel. Hand injury may be caused by a sudden movement. (Fig. 4)	 <p>Fig. 4 Shovel part</p>

Normally, the product is delivered with the pump already installed. If you have dismantled the pump for maintenance or replacement, mount it again according to the following procedure. The lift is compatible with any of the following pumps: SR140P25-D (854560), SR140P38-D (854561), SR140P50-D (854562)

① Connecting pump to inductor plate

Insert the lower part of the pump through the gasket into the inductor plate. Rotate the holes in the gasket and flanged part of the pump to align with the bolt holes in the inductor plate. Insert bolts with wave spring washers through each hole and tighten them securely. (Fig. 5)

Make sure the air release plug is positioned in the front side of the pump facing away from the bleeder valve.

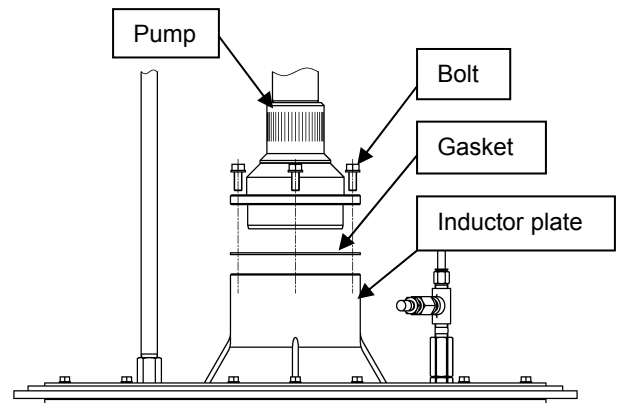


Fig. 5 Connecting pump to inductor plate

② Mounting pump on lift

Lift the pump together with the inductor plate using the eye nut on the top. Put the mounting plate of the pump on the pump bracket of the lift. Align the holes on the mounting plate with the screw holes on the pump bracket. Insert two bolts with wave spring washers on the back side of the pump and tighten them temporarily. (Fig. 6 and 7)

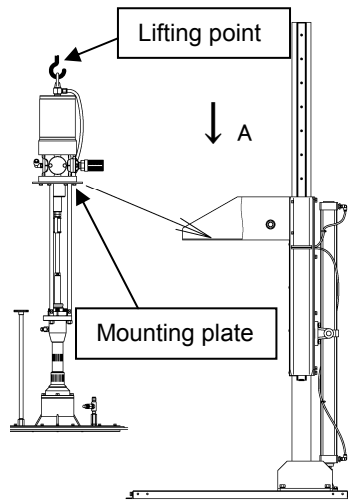


Fig. 6 Mounting pump on lift

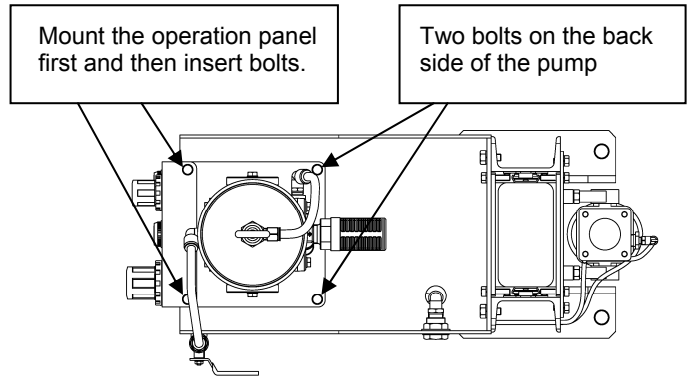










Fig. 7 View on arrow A in Fig. 6

③ Installing operation panel

Mount the operation panel on the front side of the mounting plate. Insert two bolts with wave spring washers and tighten them securely. Then, perform final tightening on the two bolts temporarily tightened above. (Fig. 7)

④ Connect tubes according to the wiring diagram on P.15 and carefully verify that the lift can be operated properly with the control switches.

3. Operating method

 CAUTION	
	- Keep your face away from the bleeder valve. Material may spurt out together with compressed air.
	- Do not exceed the maximum operating pressure of the pump (0.7MPa). Overpressure may cause a product failure resulting in serious personal injury and/or property damage.
	- Keep your hand away from the three studs connecting the air motor and lower pump. Fingers can get caught in the reciprocating plunger.
	- If a defect occurs during lift operation, immediately stop the lift by adjusting the lift control switch to "STOP".
	- To prevent excessive pressure in a drum, do not push the "AIR" button when the lift control switch is set to "STOP".
	- Leave the lift control switch "DOWN" until a drum becomes empty. A suction failure may be caused if the switch is set to "STOP". Also, if the "AIR" button is pushed when there is still material in a drum, air bubbles will be produced in material.
	- When the lift stops due to a foreign object caught in the sliding part, be sure to move the lift to the opposite direction BEFORE removing an object. The lift may suddenly start moving if a foreign object is removed directly.

3.1 Description of control and valve

- Pump Air Regulator

Function : Controlling air pressure for pump operation.

To operate: Clockwise turn will increase pressure. Counterclockwise turn will decrease pressure.
(It can be locked by pushing the knob in.)

Note : The maximum allowable operating pressure of the pump is 0.7MPa. DO NOT exceed this limit.

Remark : Discharge pressure can be calculated by multiplying the air pressure by the pump ratio.

- Air Valve, Pump (ball valve attached to the right side of pump air control)

Function : Starting/Stopping the pump.

To operate: When the lever is parallel to the pipe, the valve is open. If the lever is perpendicular to the pipe, the valve is closed.

Note : In case of emergency, close the emergency stop valve attached to the air piping instead of this valve.

- Lift Air Regulator

Function : Controlling air pressure for lift and inductor plate operation.

To operate: Clockwise turn will increase pressure. Counterclockwise turn will decrease pressure.
(It can be locked by pushing the knob in.)

Note : Set the normal operating air pressure to 0.4MPa.

- Lift Control switch (UP/DOWN/STOP)

Function : Raising/Lowering/Stopping the lift. While moving up by air pressure, the lift moves down by its own weight. In the "STOP" mode, air supply is turned off and the lift stops in a balanced position by residual pressure. The lift speed is maintained at a constant level by the throttle valves attached on the air inlet of the air cylinder of the lift.

To operate: Adjust the switch to each position depending on the intended use.

- PRESS button, Lift

Function : Setting the inductor plate in a drum and filling the inductor plate with material.

To operate: Push the button while the lift control switch is "DOWN". It functions only when the "Press" button is depressed. Keep holding the button as long as you need. Note that this button doesn't work unless the lift control switch is set to "DOWN".

- AIR button, Inductor Plate

Function : Separating the inductor plate from a drum when a drum becomes empty.

To operate: Air is supplied as long as the button is depressed.

Note : Pressing the button when a drum is not empty may be a cause of air bubbles in material.

- Bleeder Valve

Function : Removing air from the pump and inductor plate after setting the inductor plate in a drum.

To operate: Holding the hexagonal head with a wrench (13mm), counterclockwise turn will open the valve.
Clockwise turn (all the way) will close the valve. 3-4 turns will be enough for bleeding.

Note : Be sure to close the valve securely after releasing air.

- Air Release Plug









Function : Removing air from the pump and inductor plate when setting the inductor plate in a drum. Open the plug before inserting the inductor plate into a drum and close it once material comes out of the air release hole.

To operate: Open and close by turning the plug holding the knurled part on the top by hand. Left turn will loosen the plug. Right turn will tighten the plug. Be sure to securely turn it when closing (tightening).

3.2 Placement of drum

- 1) Adjust the lift control switch to "DOWN" before turning on air supply.
- 2) Gradually increase lift air pressure up to 0.4MPa by adjusting the lift air regulator knob. Then adjust the lift control switch to "UP" to raise the lift to the full height.
- 3) Turn the air release plug on the inductor plate 3-4 times counterclockwise to loosen it.
- 4) Place a 200 litre drum right under the inductor plate. Turn the switch to "DOWN" to lower the lift. Turn the switch to "STOP" when the inductor plate has reached 2-3 cm above a drum. Then, readjust the position of a drum.
- 5) Again, set the lift control switch to "DOWN". The inductor plate will automatically stop when it reaches the brim of the drum.
- 6) Press the "PRESS" button with the lift control switch set to "DOWN". The inductor plate will be gradually pressed into a drum while air is being released from the air release hole. Keep holding the "PRESS" button until material comes out of the hole. Stop pressing the button and secure the plug.
- 7) In the event material doesn't come out of the hole even though the button is held down, please follow the following procedure:
 - ①Close the air release plug on the inductor plate.
 - ②Close the valve on the piping to prevent material from being discharged.
 - ③Open the bleeder valve by turning it 3-4 times for releasing air.
 - ④Open the air valve for the pump and increase air pressure gradually with the pump air regulator. The pump will start operating at approx. 0.05MPa. Adjust the pump air regulator to set pump speed to 5-8 seconds per cycle.
 - ⑤Keep pressing the "PRESS" button until material comes out of the bleeder valve.
 - ⑥Once material comes out, close the bleeder valve. Then, close the air valve for pump and set the pump air regulator to 0MPa.

3.3 Operation


 CAUTION	
	- Material, if containing air bubbles, may gush out when discharged. Put a plastic bag over the material outlet to receive spurting material.
	- Do not exceed the maximum operating pressure of the pump (0.7MPa). Overpressure may cause a product failure resulting in serious personal injury and/or property damage.
	- Keep your hand away from the three studs connecting the air motor and lower pump. Fingers can get caught in the reciprocating plunger.
	- If a defect occurs during lift operation, immediately stop the lift by adjusting the lift control switch to "STOP".
	- Do not push the "AIR" button when the lift control switch is set to "STOP" to prevent excessive pressure in a drum.
	- Leave the lift control switch "DOWN" until a drum becomes empty. A suction failure may be caused by setting the switch to "STOP". Also, if the "AIR" button is pushed when there is still material in a drum, air bubbles will be produced in material.
	- When the lift stops due to a foreign object caught in the sliding part, be sure to move the lift to the opposite direction BEFORE removing an object. The lift may suddenly start moving if a foreign object is removed directly.

- 1) When filling the delivery piping with material for the first time, the air inside the piping will blow out. Please follow the following procedure.
 - ① Put a plastic bag over the material outlet to receive discharged material.
 - ② Open the valve on the delivery piping.
 - ③ Open the air valve for the pump and set the pump air regulator for minimum operating pressure.
 - ④ The pump will start discharging material from the outlet. Once the air in the piping is released completely, close the air valve for the pump and set the pump air regulator to 0MPa.
 - ⑤ The pump is now ready for operation.
- 2) Adjust the pump air regulator to set to the desirable operating pressure. An estimate of the material discharge pressure to the supply air pressure is calculated by “supply air pressure × pump ratio”.
(e.g. When operating a 38:1 ratio pump at 0.7MPa supply air pressure, material will be discharged at approx. 26.6MPa.)

<NOTE>



Material viscosity changes with seasons. It is recommended to make a note of appropriate pressure for each season.

3.4 Replacement of drum

 CAUTION	
	- Do not try to separate the inductor plate from a drum at once with the “PRESS” button depressed. Compressed air built up inside a drum may be released causing a spurt of residual material.





- 1) When a drum becomes empty, the pump will run dry and NOT stop automatically. Close the pump air valve and adjust air pressure to 0MPa using the pump air regulator.
- 2) Verify that the lift control switch is set to “DOWN” and the air release plug on the inductor plate is closed.
- 3) Keep holding the “AIR” button until the inductor plate reaches 10cm below the point where it is separated from a drum. The inductor plate sometimes separates automatically from a drum. If it doesn't, press and release the “AIR” button repeatedly to separate the inductor plate gradually from a drum.
- 4) Once the inductor plate is separated from a drum, turn the switch to “UP” to raise the lift to the upper limit.
- 5) Set a new drum according to the procedure described in “3.2 Placement of drum”.

3.5 After work

 CAUTION	
	- After work or when shutting down the unit for a long period, be sure to turn off the air supply source to disconnect air supply to the pump, and open the valves on the material outlet or gun to release residual pressure inside the pump and piping. Failure to shut off air may cause damage to the hoses and pipes and/or leak in the valves and gun. Any secondary accidents caused by the failure mentioned above are the responsibility of the users.

- 1) Close the air valve for the pump and set the pump air regulator to 0MPa.
- 2) Adjust the lift control switch to “DOWN”.

4. Maintenance and inspection

 CAUTION	
	- Be careful not to allow the pump and lift to accidentally operate during maintenance and inspection.
	- When performing maintenance or inspection, notify workers by hanging a sign or other method to keep them from touching the unit.
	- Gasoline is a high volatile fuel. Never use it for cleaning of the unit. Risk of fire or explosion may exist.

4.1 Maintenance and inspection

INTERVAL	ACTION
Daily	① Inspect operation of pump.
	② Inspect operation of lift.
Weekly	③ Lubricate pump. (turbine oil, class#1, additive-free: ISO V 32)
Annually	④ Check for loose bolts and nuts.
	⑤ Clean and lubricate lift rail. (lithium soap base grease: No.1)
Triennially	⑥ Overhaul pump.

① Inspect operation of pump

Inspect pump to ensure the following:

- The pump operates normally and smoothly,
- There is no air/material leak in each part of the pump or air/material piping,
- There is no abnormal noise during pump operation, and
- There is no abrasion or deterioration apparently in each part of the pump.

② Inspect operation of lift

Inspect lift to ensure the following:

- The lift operates normally and smoothly,
- There is no air leak in air piping of the lift,
- There is no abnormal noise during lift operation, and
- There is no abrasion or deterioration apparently in each part of the lift.

③ Lubricate pump

Lubricate pump according to the following procedure:

- Close the air valve for the pump and set the pump air regulator knob to 0MPa.
- Disconnect a tube from fitting on the air inlet. (Fig. 8)
- Apply a few drops of lubricant oil (turbine oil, class#1, additive-free: ISO VG 32) to the port of the fitting from which the tube has been disconnected.
- Reinsert the tube all the way into the fitting. Then, pull it to ensure it is securely connected.

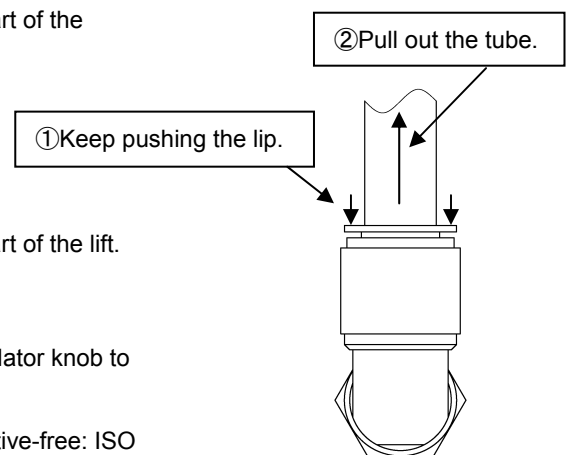


Fig. 8 Removal of tube

④Check for loose bolts and nuts

Check bolts and nuts according to the following procedures:

- Completely shut down the pump and lift by disconnecting from the air source, for example.
- Ensure that all visible bolts and nuts on the pump and lift cannot be loosened by hand.

⑤Clean and lubricate lift rail

Clean and lubricate according to the following procedures:

- Shut off the lift.
- Wipe off any visible contaminated grease on the lift rail.
- Apply clean grease (lithium soap based grease: No.1) to slide rail grooves. (Fig. 9)
- Move the lift to clean and lubricate the other section of the rail.

⑥Overhaul pump

Pump needs to be overhauled triennially. Please contact the retail store where you purchased your pump or our business office for overhaul. Earlier overhaul is recommended depending on use frequency and deterioration degree.

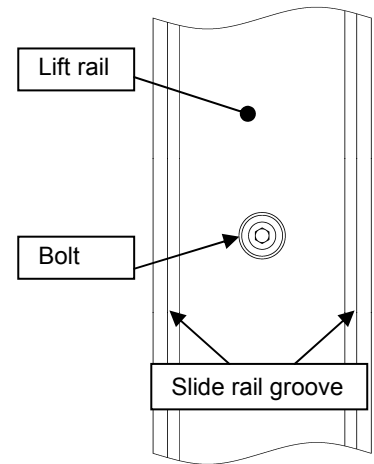


Fig. 9 Where to apply grease on lift rail

4.2 Troubleshooting

If you suspect that you have a problem with your product, consult the table below for some common problems and their solutions. Contact the retail store where you purchased your product or our business office if all else fails.

PROBLEM	POSSIBLE CAUSE	REMEDY
Pump doesn't run	Compressor is off.	Turn on compressor.
	Valve on air piping is closed.	Open valve.
	Air pressure setting is under 0.2MPa.	Set air pressure to 0.2MPa or above.
	Valve on material outlet is closed.	Open valve.
	Frost occurs inside silencer.	Use dry air.
	O ring on sliding part of air piston is worn out. (Air leak occurs from silencer.)	Replace worn out or damaged part.
	Block (773065) and ball (686271) in valve body (804815) are worn out.	
Any parts (e.g. spring, pin) used in switching system in valve body (804815) or air motor (804814) are damaged.		
Air leak from air motor	- Fasteners are loose. - O rings and packings are worn out.	- Retighten loose parts. - Replace worn part.
Air leak from silencer during shutdown	- Foreign object is caught between block (773065) and valve seat (716246) in valve body (804815). - Seating part is worn out.	- Remove foreign object. - Replace worn part.
Pump doesn't run and air leaks from silencer	- Foreign object is caught between spindle (716299) and valve switcher (832996) in air motor (804814). - There exists damage that prevents sliding movement of parts below.	- Remove foreign object. - Replace worn part.
Pump doesn't draw material at first time of operation	Pump operating speed is so fast that lower pump suction cannot keep up with pump movement. (Valve inside lower pump is not working well.)	Set pump speed to 5-8 sec. per cycle until material is pumped out.
Material cannot be pumped out	If upward movement of plunger is faster, - seat surface of piston valve is defective (wear of seat surface, inclusion of foreign material) or, - packings are damaged.	- Remove foreign object. - Replace worn part.
	If downward movement of plunger is faster, - seat surface of foot valve is defective (wear of seat surface, inclusion of foreign material), - packings are damaged, or - shovel rod is bent.	
	If downward movement of plunger is faster, operating speed is so fast that lower pump suction cannot keep up with pump movement. (Vacuum is caused inside lower pump.)	Decrease air pressure until material comes out. (This pressure is the upper limit of normal operating pressure.)
	Connecting rod connecting air motor and lower pump is completely separated from air motor. (In this case, parts inside of lower pump may be damaged.)	Inspect inside lower pump first, then replace damaged part, and retighten each part.
Pump doesn't stop	Leak occurs in delivery pipe.	- Retighten loosened parts. - Replace damaged part.
	Leak occurs in lower pump (connections are loosened or o ring, backup ring, or packing is damaged).	
Material leak from lower pump	- Fasteners are loose. - O ring, backup ring, or packing is damaged.	- Retighten loosened parts. - Replace damaged part.
Material contains air bubbles even after bleeding	Internal diameter of drum is larger than specified.	Use JIS-approved drum.
	Air release plug is loosened.	Secure air release plug.
	Packing of inductor plate is deteriorated.	Replace packing.
	- Fasteners are loosened. - O ring or backup ring is damaged.	- Retighten loosened parts. - Replace damaged part.
Material leak around inductor plate	Internal diameter of drum is larger than specified.	Use JIS-approved drum.
	Drum surface is uneven.	Use straight side drum.
	Packing of inductor plate is deteriorated.	Replace packing.
Lift doesn't move up/down	Compressor is off.	Turn on compressor.
	Air supply is off.	Turn on air supply.
	Valve on air piping is closed.	Open valve.
	Air pressure setting is not enough.	Set air pressure to 0.4MPa.
	Drum surface is uneven.	Use straight side drum.
	Cylindrical section of lift air cylinder is dent.	Replace part.
	Foreign object is caught in sliding part of lift. Foreign object is caught in slider roller of lift rail.	Remove foreign object.
Drum raises together with lift	Lift control switch is adjusted to "UP".	Adjust switch to "DOWN".
Lift doesn't raise with AIR button	Lift control switch is adjusted to "STOP".	Adjust switch to "DOWN".
	Air release plug on inductor plate is not secured.	Tighten air release plug.

4.3 Consumables

1) **Pump**

Refer to “Instruction Manual for APP067U” for replacement time for consumables used in the pump. The replacement time should be used only as a guide. Consumption varies depending on use conditions. Also, be sure to replace a part when you find any defect like a leak during operation.

2) **Lift**

- The plastic tubes will be degraded naturally. Replace them all every six years.
- The switches and regulators should be replaced if you find they are not working properly. Never use a defective device.

3) **Inductor Plate**

- The wiper will get worn out due to sliding contact with a drum. Considering natural degradation, replace it every six years.
- The gasket used for the connection between the pump and inductor plate will get worn out by repetitive mounting and removal of the inductor plate. Replace it with a new one when it is damaged at the time of inductor plate removal.

4.4 Design standard use period

Design standard use period is established for the product. (See the table below.)

Use of the product beyond this period may result in personal injury or property damage.

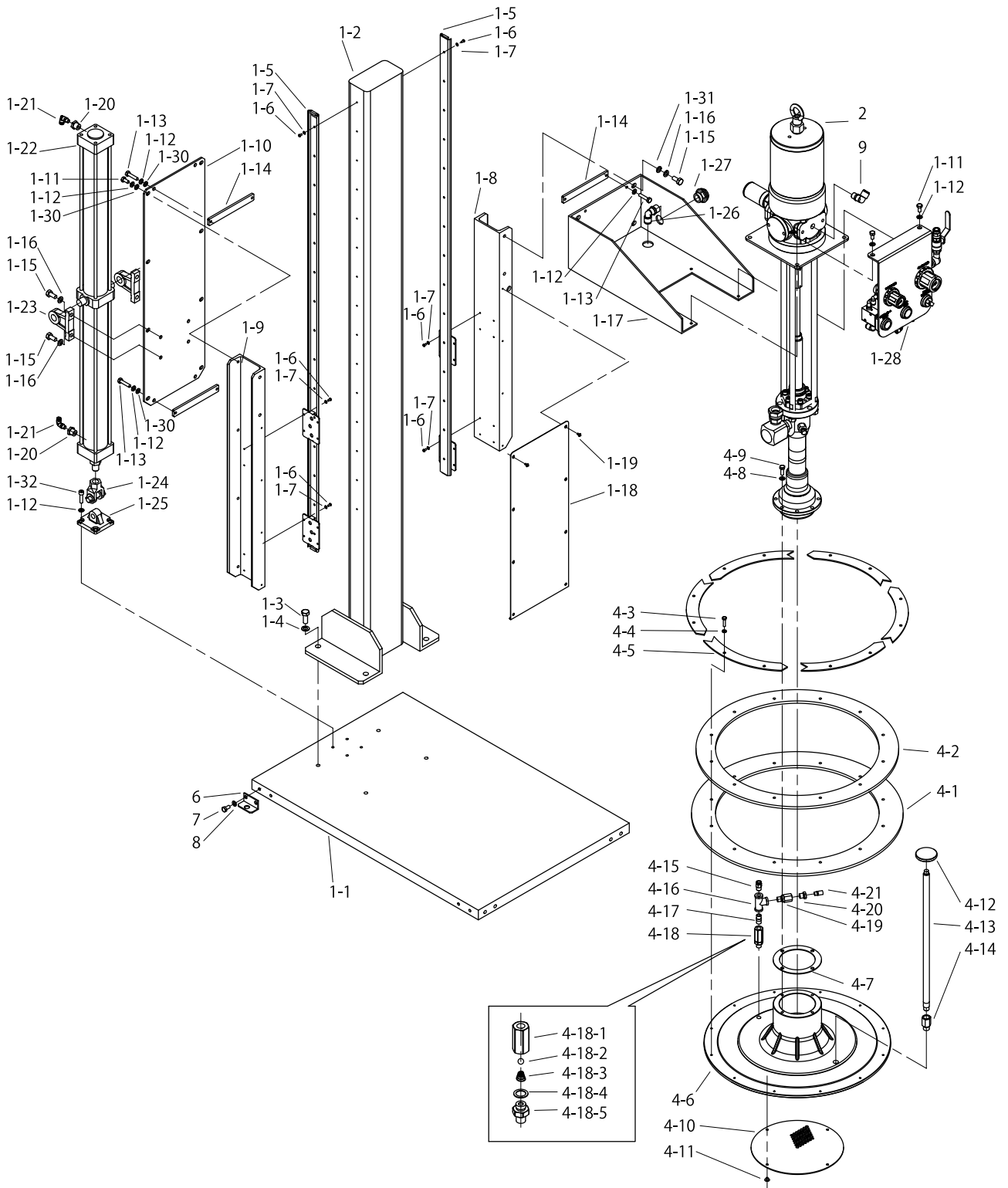
- **Pump**---Refer to “Instruction Manual for APP067U”.

- **Lift and inductor plate**---10years

Standard Conditions of Use for Lift and Inductor Plate	
Application	Pumping and transferring grease
Season	Spring and Fall
Temperature	20°C
Material being pumped	Lithium Soap Grease: No.1
Container	Open Head Drum (200L): JIS Z 1600 class 1
Operating pressure for lift	0.4MPa
Daily Amount of Material being pumped	200L
Operating Days per year	260 days (5 days a week)

5. Parts Disassembly Drawing and Parts List

■Parts Disassembly Drawing



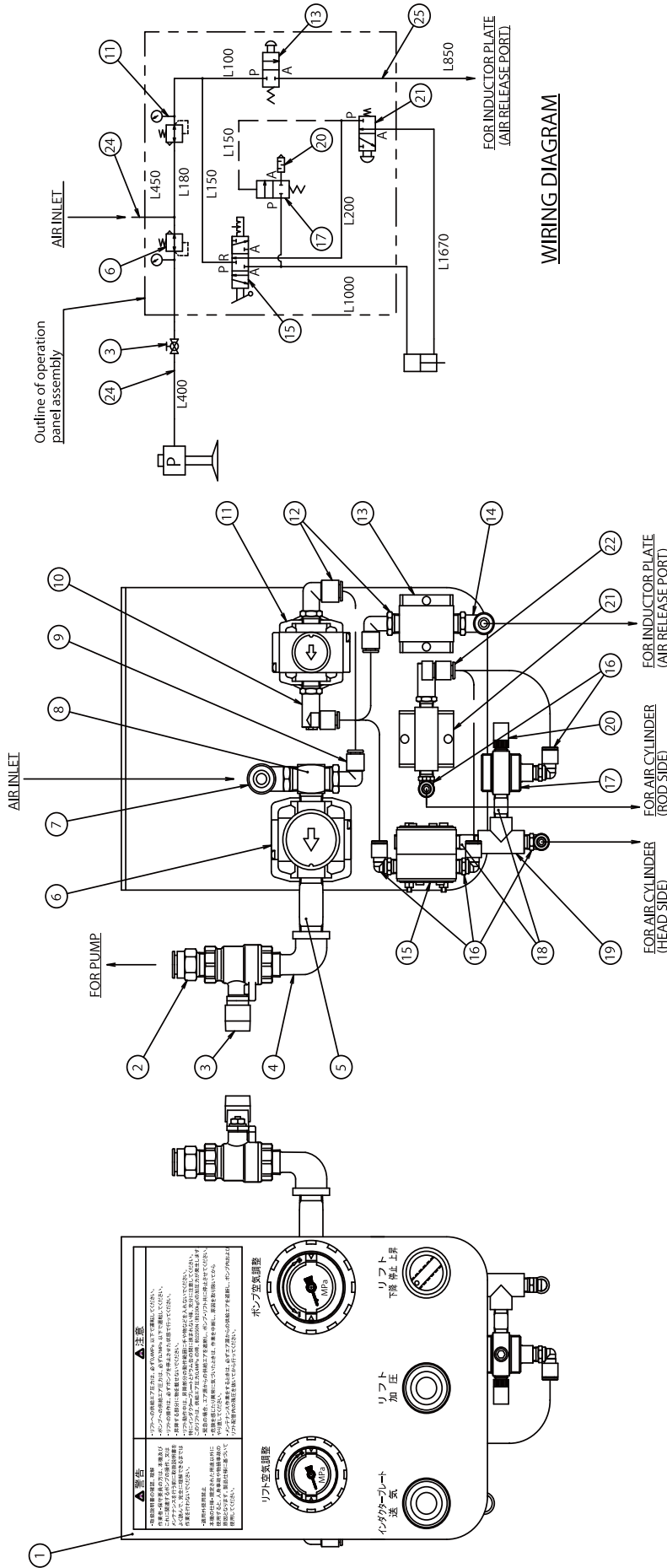
■Parts List

No.	Part No.			Description	Qty
	SR140P25DAL <881113>	SR140P38DAL <881114>	SR140P50DAL <881115>		
1	(854564)			Drum lift assembly	—
1-1	832981			Drum base assembly	1
1-2	832983			Lift assembly	1
1-3	611197			Bolt	4
1-4	631918			Spring washer	4
1-5	686328			Roller pack	2
1-6	686327			Bolt	46
1-7	631495			Washer	46
1-8	716324			Roller base	1
1-9	716323			Roller base	1
1-10	716325			Plate	1
1-11	611145			Bolt	12
1-12	631916			Spring washer	22
1-13	611153			Bolt	6
1-14	716326			Spacer	3
1-15	611172	←	←	Bolt	8
1-16	631917			Spring washer	8
1-17	832982			Pump base assembly	1
1-18	716327			Cover	1
1-19	602992			Screw	8
1-20	686326			Bushing	2
1-21	686324			Throttle	2
1-22	686308			Air cylinder	1
1-23	686309			Trunnion holder	1
1-24	686310			Knuckle joint	1
1-25	686311			Clevis	1
1-26	683821			Elbow fitting	1
1-27	686329			Pannel union	1
1-28	804822			Operation pannel assembly	1
1-30	631013			Plain washer	12
1-31	631014			Plain washer	4
1-32	619151			Bolt	4
2	854560	854561	854562	Pump assembly	1
4	(804823)			Inductor plate assembly	—
4-1	770218			Packing	1
4-2	770217			Packing	1
4-3	611103			Bolt	12
4-4	631418			Spring washer	12
4-5	710931			Plate	6
4-6	716332			Follow plate	1
4-7	772150			Gasket	1
4-8	631916			Spring washer	4
4-9	611148			Bolt	4
4-10	716333			Filter	1
4-11	686331			Screw	4
4-12	701764			Handle	1
4-13	715802	←	←	Valve rod	1
4-14	715803			Socket	1
4-15	682802			Fitting	1
4-16	634061			Tee	1
4-17	634802			Nipple	1
4-18	800977			Check valve	1
4-19	685680			Relief valve	1
4-20	634595			Bushing	1
4-21	681170			Silencer	1
6	716322			Angle	4
7	611145			Bolt	8
8	631916			Spring washer	8
9	683820			Elbow fitting	1

800977 Check valve

No.	Part No.	Description	Qty
4-18-1	704407	Valve body	1
4-18-2	630316	Ball	1
4-18-3	704408	Tapered spring	1
4-18-4	706513	Washer	1
4-18-5	704409	Union	1

804822 OPERATION PANEL ASSEMBLY



BACK

25	570068	Tube (black)	1	15	686314	Switching valve	1	5	686184	Nipple	1
24	570145	Tube (white)	1	14	683585	Elbow fitting	1	4	634032	Elbow	1
23	570170	Tube (black)	1	13	686316	Switching valve	1	3	665731	Valve	1
22	686322	Elbow fitting	1	12	682649	Elbow fitting	2	2	684524	Fitting	1
21	686315	Switching valve	1	11	686312	Regulator	1	1	716344	Operation panel	1
20	681170	Silencer	1	10	684151	Elbow fitting	1	1	REF. OF THE DWG. OF DESCRIPTION	QTY	
19	634060	Tee	1	9	684550	Elbow fitting	1	1			
18	634801	Nipple	2	8	686330	Tee	1	1			
17	686317	Air operate valve	1	7	683820	Elbow fitting	1	1			
16	682933	Elbow fitting	5	6	686313	Regulator	1	1			
OPERATION PANEL ASSEMBLY											
804822											

6. Specifications

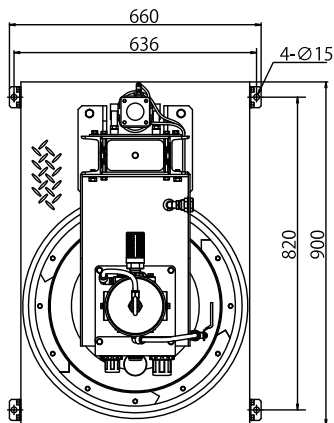
6.1 Unit specifications

Product No.		881113	881114	881115
Model (Pump)		SR140P25DAL (SR140P25-D)	SR140P38DAL (SR140P38-D)	SR140P50DAL (SR140P50-D)
Air Inlet		Rc1/2		
Material Outlet		G3/4(F)		
Applicable Container		Open head drum equivalent to JIS Z 1600 class 1 (200L) Height limit: 900 mm or less		
Primary Air Pressure		Maximum: 1.0MPa		
Air Pressure for Lift Operation		Maximum: 0.4MPa (normal operation pressure)		
Amb. Temp. Range	Env. Temperature	0-60 °C		
	Material Temp.	0-80 °C		
Weight		173.0 kg		

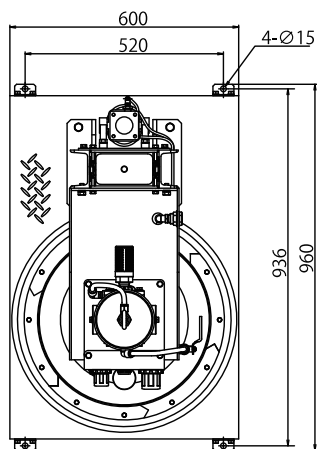
6.2 Pump specifications

Refer to "Instruction Manual for APP067U" for pump specification.

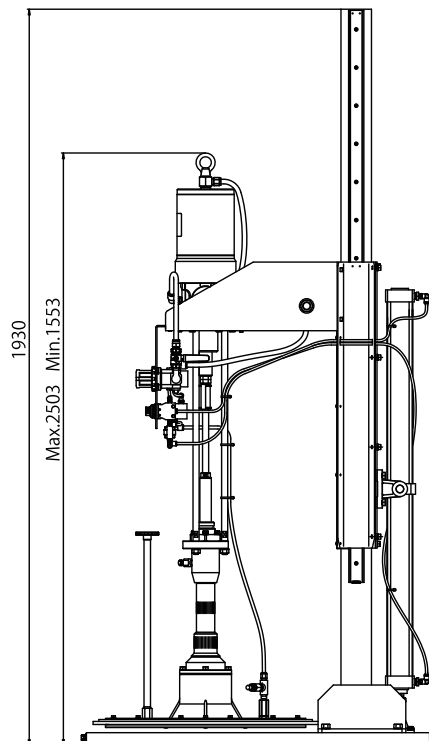
6.3 Dimensions



Mounting dimensions of angles and anchor bolts
(for right-left position)



Mounting dimensions of angles and anchor bolts
(for front-back position)



7. Trouble Information Fax Form

Complete necessary information in the following fax form since your information is necessary to find the cause of the trouble or failure and it enriches our repair services. After filling it, send it to us.

Trouble Information Fax Form	
Company name _____	Name _____
Address _____ _____	Department name _____
	Contact information Tel. () _____ - _____ Fax. () _____ - _____
Product name	Model
Duration of use 20__year__month to _____year__month	SERIAL No. (LOT No.)
Operation frequency <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent _____hour/day/week/month	Purchase date _____ Sales outlet _____
Machine conditions (descriptions of the trouble)	

8. Limited Warranty

If an abnormality occurs during normal operation in accordance with the operating instructions and other operating cautions within the warranty period (12 months after date of purchase) that can be attributed to a manufacturing defect, the defective parts of this product will be serviced or the product will be replaced free of charge. However, this warranty will not cover compensation for incidental damage or any malfunction listed below.

1. Warranty period

This warranty will be valid for a period of 12 months after the date of purchase.

2. Warranty

If, during the warranty period, any of the material of the genuine parts of this product or the workmanship of this product is found defective, and is so verified by our company, the servicing cost will be fully born by our company.

3. Exclusion

Even during the warranty period, this warranty does not cover the following:

- 1) Malfunction arising from use of parts other than manufacturer-specified genuine parts
- 2) Malfunction arising from misuse or operating errors, or lack of storage or maintenance care
- 3) Malfunction arising from use with a fluid that may cause corrosion, inflation or dissolution of the component parts of the product
- 4) Irregularity arising from repair made by other than by our firm, our regional office, dealer or authorized service personnel
- 5) Malfunction arising from modification of the product by other than authorized service personnel
- 6) Wear and tear of parts that must be regularly replaced in the course of normal operation, such as packings, O-rings
- 7) Malfunction and/or damage due to transportation, moving or droppage of the product after purchase
- 8) Malfunction and/or damage due to fire, earthquake, flood or other force majeure
- 9) Malfunction arising from use of compressed air that contains impurities or excessive moisture, or use of gases or fluids other than the specified compressed air
- 10) Malfunction arising from use with a fluid that causes excessive abrasion or use of lubricating oil other than that specified for this product

Furthermore, this warranty does not cover the rubber parts, or other parts that are subject to wear in normal operation, used in this product and its accessories.

4. Parts

Parts for this product will be kept available for 5 years after discontinuation of production. Once 5 years have elapsed after close of production, availability of parts for this product cannot be guaranteed.

Manufactured by

YAMADA CORPORATION

INTERNATIONAL DEPARTMENT

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