

Yamada

INSTRUCTION

OIL LUBRICATOR
SGR-55 MODEL No.880267



⚠ 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. This machine is a portable type oil lubricator to supply lubricant to machines and vehicles. The machine is provided with a 65 type air-powered pump on the cabinet with a capacity of 20 L, which is suitable to supply of oil.

The machine is also provided with a flow meter in the standard specification, which permits grasp the oil supply volume accurately.

<Note>

This machine, which is designed exclusively for oil, cannot be used for any substance other than lubricant.

- For Safe Operation

This manual 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.

- Warnings and Cautions

For safe use of this product, be sure to note the following: In this document, warnings and cautions are indicated by symbols. These symbols are for those who will operate this product and for those who will be nearby, for safe operation and for prevention of personal injury and property damage. The following warning and caution symbols have the meanings described below. Be sure to remember their meanings.



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.

Furthermore, to indicate the type of danger and damage, the following symbols are also used along with those mentioned above:



This symbol indicates a DON'T, and will be accompanied by an explanation on something you must not do.





















This symbol indicates a DO, and will be accompanied by instructions on something you must do in a certain situation.

- Precautions on Use

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



WARNING

-  - The operator and maintenance engineer should read the operation manual thoroughly before operating this product and performing maintenance in respect of this product.
-  - Always wear proper safety equipments (facemask, ear plugs, and safety shoes, etc.) when installing, operating and disassembling this product.
-  - Lock caster's stopper during and after the work, so that this product should not move unexpectedly. Also, do not use or leave this product in a slope or any unstable locations. This product moves freely when the caster is not locked and the damage only accident and the facilities pollution, etc. might occur. Such a secondary disaster becomes a responsibility on the user side.
-  - Make ground connection when working with flammable material or in explosive atmosphere. Rapid pumping of material can result in static electrical charge. Also, be sure to provide proper ventilation where a flammable atmosphere may exist.
-  - Execute the daily checkup.
-  - Use this product according to the product specification.
-  - Attach a valve (for stop in emergency) or regulator to the air supply pipe to keep supply air pressure under 0.7MPa.
-  - Be careful not to drop the cabinet when lifting it up to replace a pail. Catching a falling cabinet may cause hand injury by its edge.
-  - Make sure the valve of the oil gun is closed before running the pump. Operating with the valve open can cause a hose runaway.
-  - Discontinue it when you feel a hazard or abnormality during the work. And correspond according to the troubleshooting.
-  - Keep your face away from the exhaust and discharge ports. Material may suddenly come out. There is a possibility of losing eyesight if it strikes eyes.
-  - Stop pump operation immediately when a drum becomes empty. Running the pump dry will cause excessive vibration, resulting in reduction of pump life and damage to other equipment.
-  - Be very careful not to drop the grease gun. It may become damaged, resulting in leakage and malfunction.
-  - Do not aim exhalation part of this product at any person. Residual pressure may be left inside the gun even when the pump is not in operation. There is a possibility of losing eyesight if it strikes eyes.
-  - Before maintenance operation, be sure to stop air from being supplied to the pump, and release the internal pressure (both air and material) of the pump. There is danger such as spouting of the material when the maintenance work is done with air supplied.
-  - Gasoline is a high volatile fuel. Do not use it to clean the pump in any case, otherwise ignition or explosion may be caused.
-  - Modification of this pump may lead to death, bodily injury, or a failure. Do not modify it in any case because it involves a risk.
-  - Do not discharge material directly onto the ground. Dispose of harmful materials according to the requirements specified in MSDS or local regulations. Also, dispose of this product according to the local regulations after removing residual material from inside this product. (Please contact industrial waste disposal service.)



CAUTION



- Use this product for the material suitable for the specification. Parts may be corroded and material leak from the damaged parts can lead to environmental pollution. Also, follow handling notes (MSDS) of the manufacturer about the handling of the material used.



- Move this product slowly and carefully. Avoid any sudden movements like sudden start, stop, and turn. Material in this product may spill out.



- Take protective measures against rainwater and dust. It is likely to lead to the pollution of the material.



- Watch your step around this product to avoid tripping over the base and casters.



- Be careful about your hands when mounting/dismounting the cabinet or installing a pail. The edges of the cabinet and pail may cause hand injury. Also, be careful about your posture when moving the pump or lifting the cabinet to avoid back injury.



- Material remaining inside or on the surface of the pump may spill out by inserting or removing the pump into/from a pail. Be very careful not to get your clothing dirty.



- Keep hands and fingers away from this product during operation to avoid injury from moving parts.



- Do not touch the surfaces of the pump and the hose when pumping high-temperature material. Risk of burns exists.



- Be careful when handling the grease gun. Avoid finger injury from being caught between the lever and gun. The finger might be injured.



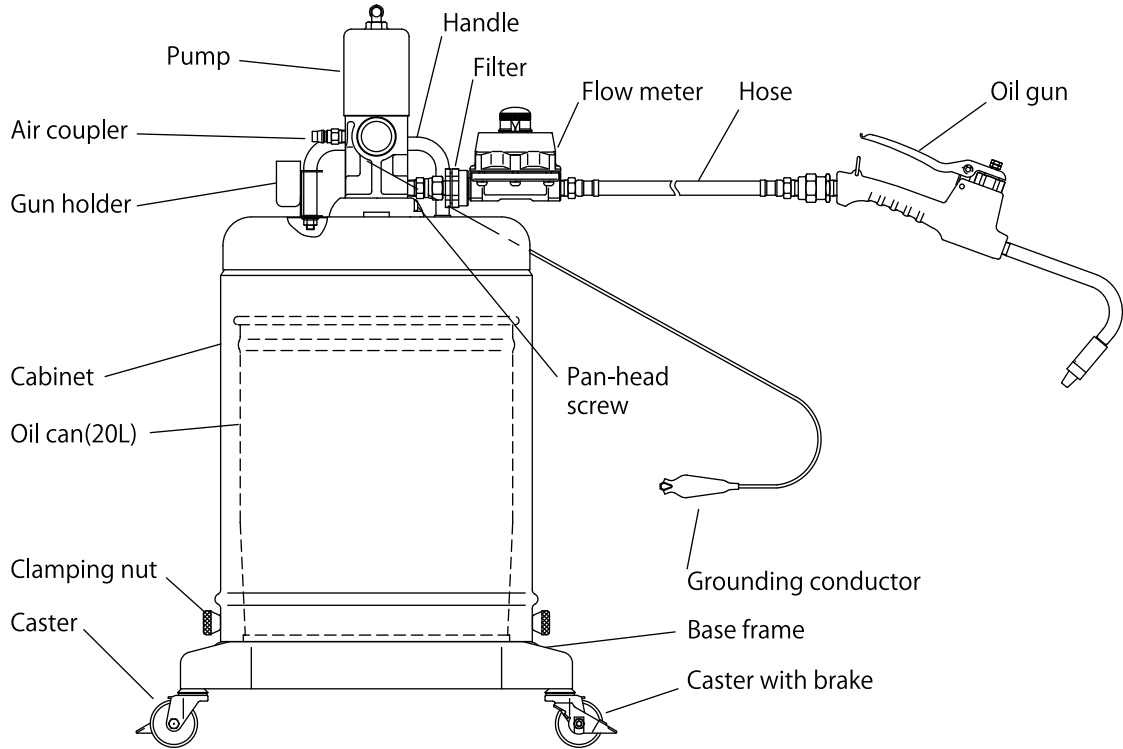
- Stop the air supply source after the end of work when not using this pump for a long time such as nighntimes and holidays. Also, open the valve of the exhalation port and liberate pressure in the pump and the hose. There is a possibility of polluting facilities because of the damage of the hose and the leakage of the valve. Such a secondary disaster becomes a responsibility on the user side.

Table of Contents

- Preface	
- For Safe Operation	
- Warnings and Cautions	
- Precautions on Use	
1. Names and Materials of Parts	
1.1 Names and Materials of Parts	1
1.2 Contents of Package	1
2. Principle of Operation	
2.1 Function of the Air Motor	2
2.2 Function of the Lower Pump	2
3. Preparations before Operation	3
4. How to Operate the Machine	4
5. Maintenance and Inspection	
5.1 Troubleshooting and Corrective Measures	5
5.2 Maintenance and Inspection	6
6. Disassembly and Assembly	6
7. Parts Disassembly Drawing and Parts List	
7.1 880267 SGR-55	8
7.2 850206 Oil Gun Ass'y	8
7.3 850792 Pump Ass'y	9
8. Specification	10
9. Limited Warranty	11

1. Names and Materials of Parts

1.1 Names and Materials of Parts



1.2 Contents of Package

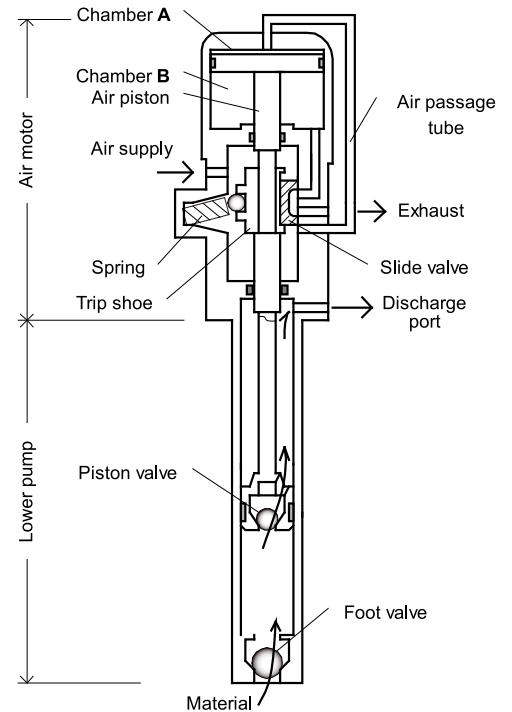
The main equipment and accessories are packed in different cases. Open the top part of the corrugated fiberboard case and check if the pump assembly and oil can are not damaged and if accessories are all contained in the package.

2. Principle of Operation

The YAMADA Air-powered Pump is a reciprocating type pump that is driven by compressed air. This pump consists of an air motor to drive the pump and a lower pump to draw up the liquid material as shown in the figure.

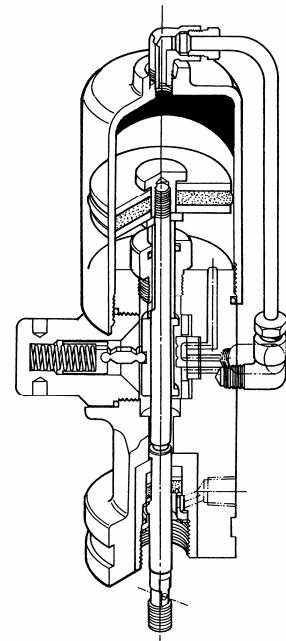
2.1 Function of the Air Motor

- 1) In the status shown in the figure at right, the air piston reaches the upper limit and is now about to go down.
- 2) The compressed air fed from the air supply port is applied to the chamber A through the air passage tube from the path provided in the lower part of the slide valve. The air pressure of the chamber B is discharged out through the slide valve.
- 3) As a result, the air piston starts to go down.
- 4) When the air piston collides with the trip shoe, the slide valve is momentarily tripped downward by the function of the trip mechanism.
- 5) As a result, the air supply is conducted to the chamber B and the chamber A is conducted to the exhaust port, so that the air piston is changed to go up.
- 6) Thus, the air motor continues its reciprocating motion automatically as long as the supply air is fed to it.



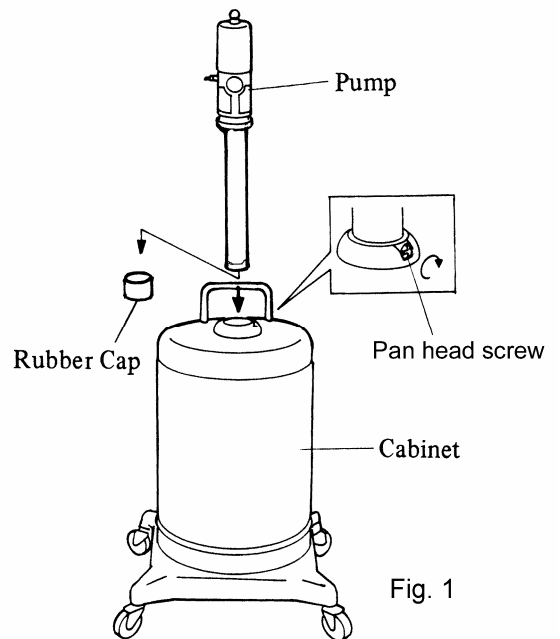
2.2 Function of the Lower Pump

- 1) The lower pump integrated with the air motor traces the reciprocating motion of the air motor.
- 2) This reciprocating motion of the piston causes a sucking operation and a compressive operation to the suction valve and the piston valve of the lower pump, thereby discharging the liquid intermittently.
- 3) This reciprocating motion is automatically continued until the delivery side is closed and the liquid compressive pressure of the lower pump is balanced with the pressure of the air motor.



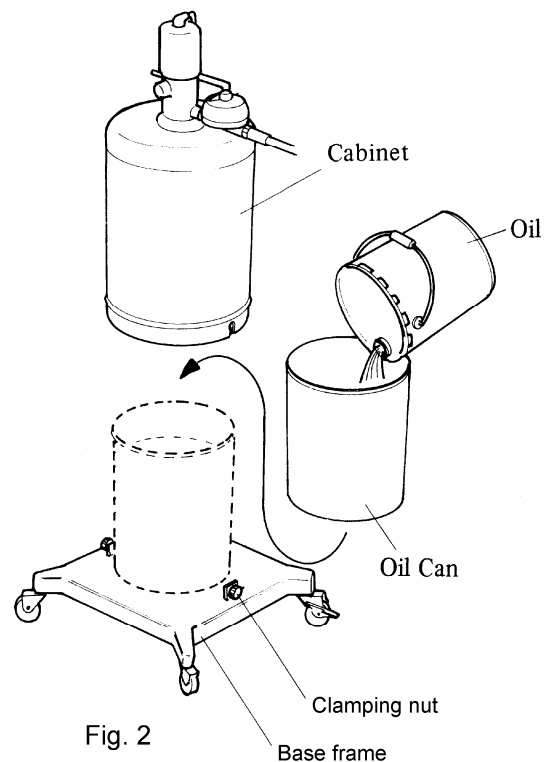
3. Preparations before Operation

- 1) First loosen the pan-head screw and take out the pump from the cabinet.
Remove the rubber cap at the bottom of the pump Ass'y, insert the pump into the cabinet, and fix it with a pan-head screw. Refer to <Assembly of Equipment> indicated on the top surface of the corrugated fiberboard case. (Fig.1)
- 2) Loosen the two clamping nuts at the bottom of the cabinet (turn them counterclockwise), and remove the cabinet from the base frame. (Fig.2)
- 3) Transfer the oil to the exclusive use oil can. (Fig.2)
- 4) Place a oil can in the middle of the base frame and install the cabinet as it was. Tighten the clamping nut on both sides equally. (Fig.2)
- 5) Install the attached hose and the gun at the oil discharge port of the pump, and clamp the connecting portion securely.
- 6) Connect the attached air coupler to the air hose and fix it with a hose band. (The air hose is separately available.) If the air coupler to be connected to the compressor is not available, purchase it separately.
- 7) When the air coupler is connected to the pump, the pump will be operated for a while, and the pump and hose will be filled with oil. After that, the pump operation will stop. If the gun lever is pulled in this status, the oil lubricator can be used any time.









<Note>

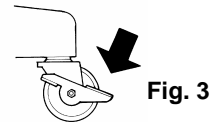
- Install the air regulator (separately available) at the air supply port of the pump. The dedicated air regulator is available as the standard product. Please use it
- Using the air regulator permits adjusting the supply air pressure to the pump and reducing the wasteful motion of the pump, with the result that the operability is improved and the pump life is extended. In the normal operating status, the pointer of the pressure gauge should be at 0.3 to 0.5 MPa.



4. How to Operate the Machine

 WARNING	
	- When the machine is operated, electrostatic sparks may give a shock to the human body or cause death or bodily injury due to a fire or explosion. Be sure to perform grounding securely by using a grounding conductor according to the operating environment.

 CAUTION	
	- The supply air pressure should be 0.7 MPa or less. If the primary pressure is more than 0.7 MPa, install an air regulator on the air line and adjust the pressure to 0.7 MPa or less.
	- After the end of daily work or when the machine is not operated for a long time, be sure to shut off the supply air and open the discharge port valve to bleed the internal pressure of the pump and hose. Any secondary accident such as pollution of installation, due to hose damage or leakage from the valve without shutting off the supply air, shall be attributable to the user's responsibility.
	- During machine operation or after completion of movement, be sure to lock the caster brake for locking. A turnover of equipment may pollute the installation. (Fig.3)
	- During oil change, take extreme care not to allow sand and dust to adhere on the suction tube of the pump. If sand is mixed in the oil, it will give breakage to the pump and also damage to the important machine.



<Note>

Using the air regulator permits adjusting the supply air pressure to the pump and reducing the wasteful motion of the pump, with the result that the operability is improved and the pump life is extended. In the normal operating status, the pointer of the pressure gauge should be at 0.3 to 0.5 MPa.

- 1) First loosen the pan-head screw and take out the pump from Before starting oil supply, be sure to turn the knob of the oil meter counterclockwise to reset to the "0" position.(Fig.4a)
- 2) The pump is operated by pulling the lever of the oil gun, and oil is discharged. To continuously discharge the oil, hook the lever to the hardware provided at the gun rear. (Fig.4b)
If the discharge oil pressure is so high as to cause splashes, adjust the supply air pressure with the air regulator.
- 3) After completion of oiling work, be sure to shut off the supply air of the pump and bleed the internal air of the hose. For bleeding the internal pressure of the pump and hose, Insert the oil gun in the return hole of the lid and pull the gun lever. (Fig.5)

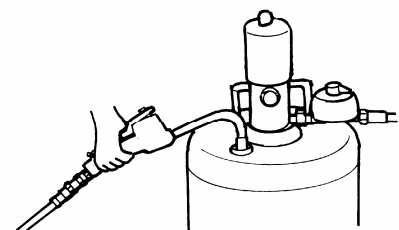
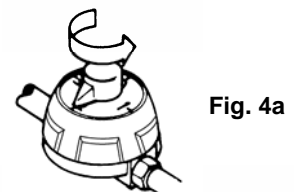
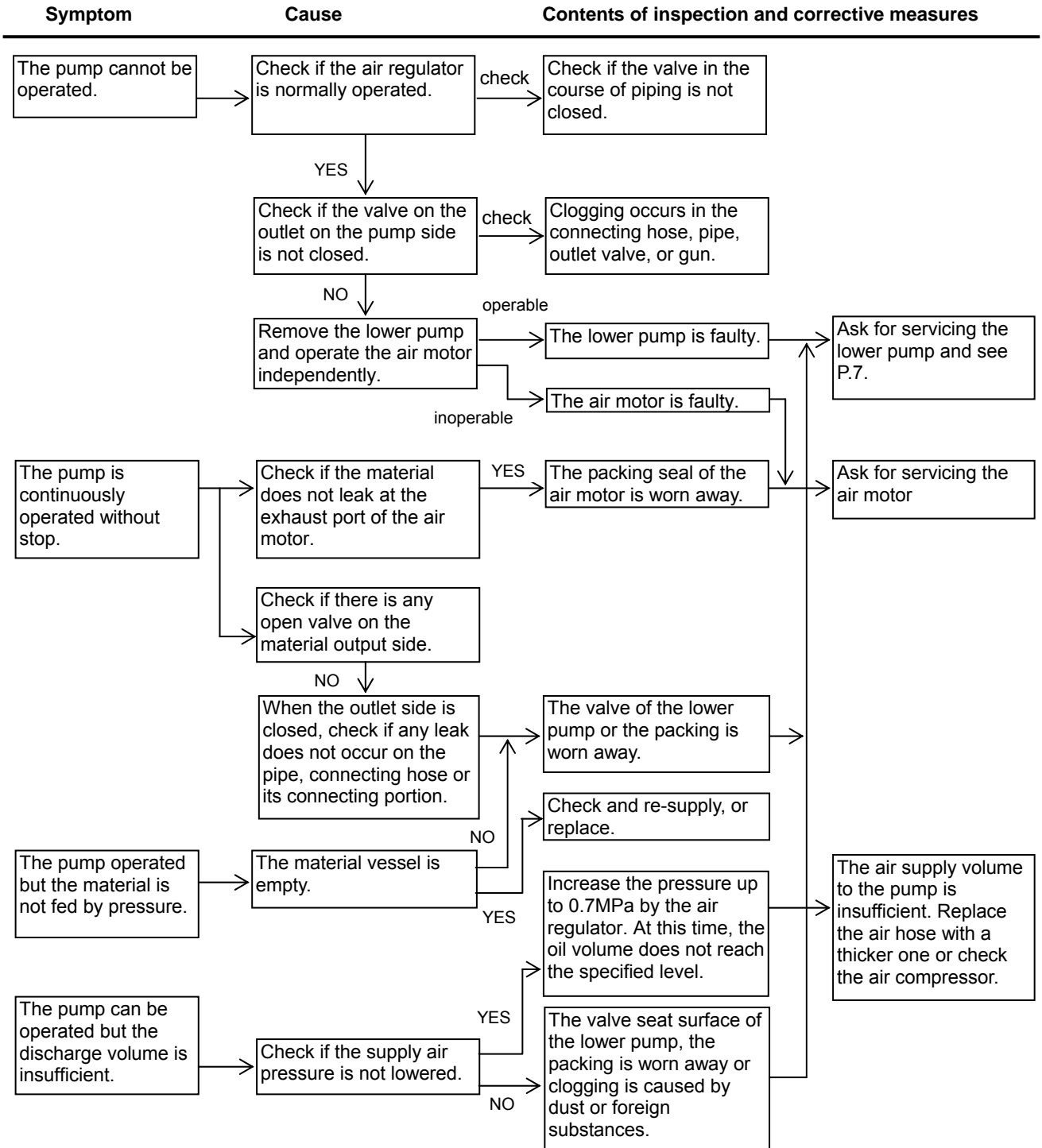


Fig. 5

5. Maintenance and Inspection

5.1 Troubleshooting and Corrective Measures

If the pump operation becomes unstable or trouble is caused to its oil discharge during operation, make a check according to the following procedure.

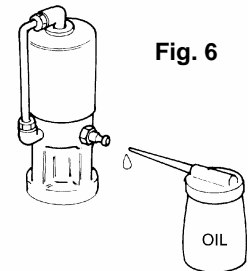


5.2 Maintenance and Inspection

[Oiling]

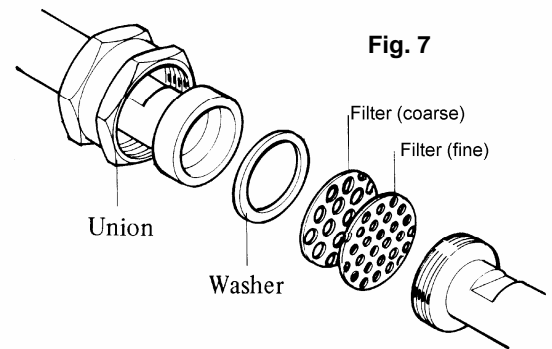
For lubrication of the pump, perform oiling once every 10 days with lubricating oil. (Fig.6)
Supply the lubricating oil as following.

- 1) Remove the air regulator.
- 2) Inject a few drops of lubricating oil (approx. 0.5 ml) into the air supply port as shown in the figure at right.
Use turbine oil class 1 ISO (VG-32) or equivalent as the lubricating oil.



[Inspection]

- 1) Oil is a fluid and easily polluted. Keep it clean at all times.
- 2) To protect the oil meter, a filter is installed between the pump and the oil gun. If filter clogging occurs, the oil flow is get worse. Clean the filter sometimes. (Fig.7)
- 3) The oil-proof hose is a consumable product. Check it periodically. If any blemish or leakage is found, replace the hose a little earlier.
- 4) The packing of the pump will be worn away. Check and replace it at least once a year.



6. Disassembly and Assembly

When the pump operation becomes defective or stops, do not disassemble the pump thoughtlessly but refer to the item on P.5 (Troubleshooting and Corrective Measures), and judge the condition carefully and disassemble only the minimum necessary parts.

The air motor is rarely touched directly, so its failure rate is very low. The air motor does not need to be disassembled. If disassembling is required, ask the dealer to disassemble the air motor.

WARNING
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"></div> <div> <p>- Gasoline is a high-volatility material. Do not use gasoline to clean the pump in any case, otherwise it may cause ignition or explosion.</p> </div> </div>

CAUTION
<div style="display: flex; align-items: flex-start;"> <div style="margin-bottom: 10px; margin-right: 10px;"></div> <div> <p>- Before starting disassembling or inspecting the machine, be sure to shut off the supply air and open the outlet valve to release the internal pressure of the machine.</p> </div> </div> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;"></div> <div> <p>- When washing parts, do not use such a liquid as corrodes aluminum, copper alloy, iron, etc.</p> </div> </div>

[Disassembling the air motor and the lower pump]

- 1) Shut off the air that is supplied to the pump to release the internal pressure of the pump.
- 2) Disconnect the air connection hose, material hose, etc. from the pump.
- 3) Unscrew the pan-head screw of the body supporter that fixes the pump. Pull out the pump upward, and the pump can be removed from the cabinet.(Fig.8)
- 4) Fix the air motor body of the pump on a vise. (Fig.9)

<Note>

The air cylinder is easily damaged. Do not fix it on the vise in any case.

- 5) Set a pipe wrench on the knurling part of the suction tube and unscrew the suction tube to remove the suction tube. (Fig.9)
- 6) Pull out the pin of the piston rod and unscrew the connecting rod to remove it. Then, the air motor and the lower pump can be separated from each other.

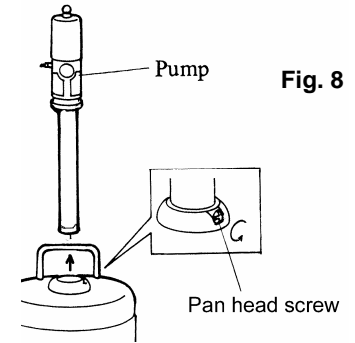


Fig. 8

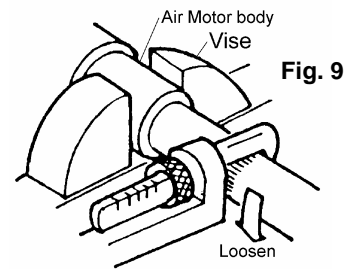


Fig. 9

[Disassembling the lower pump]

- 1) Disconnecting the piston rod of the air motor from the connecting rod by removing the pin. (Fig.10)
- 2) The ball, cap-packing, spring, etc. can be disassembled by unscrewing the valve seat with the housing of the intake valve ass'y secure. Wash and check each part. Replace the worn parts, if any. (Fig.11)

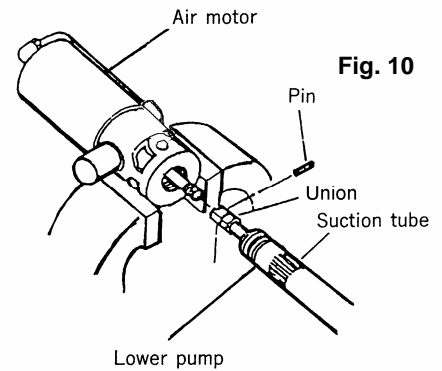


Fig. 10

[Disassembling the air motor]

- The air motor is not easily adjusted at assembly. If an air motor failure is found at maintenance and inspection, ask the dealer to repair the air motor.
- For the user who intends to perform maintenance, the manual related to the disassembly and structure of the motor is available as a separate volume. Ask the dealer for further information. (Separately OSA 006 U : Instruction for Oil Pump Type 65)

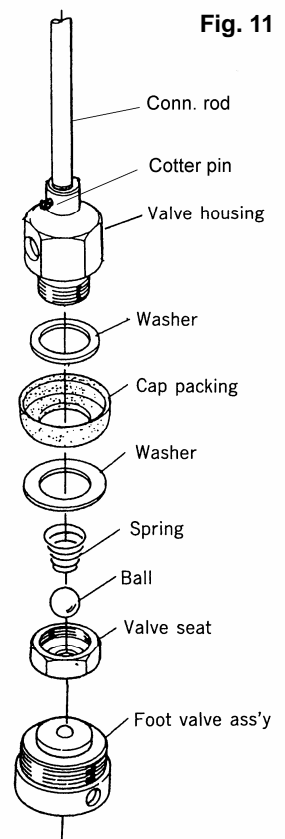
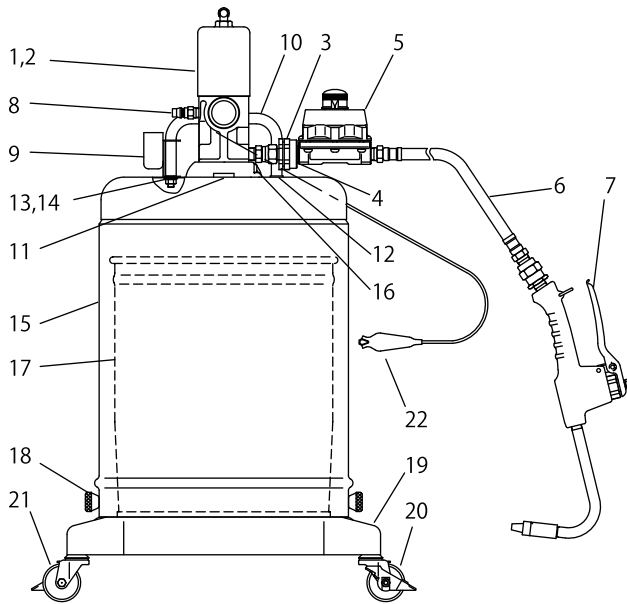


Fig. 11

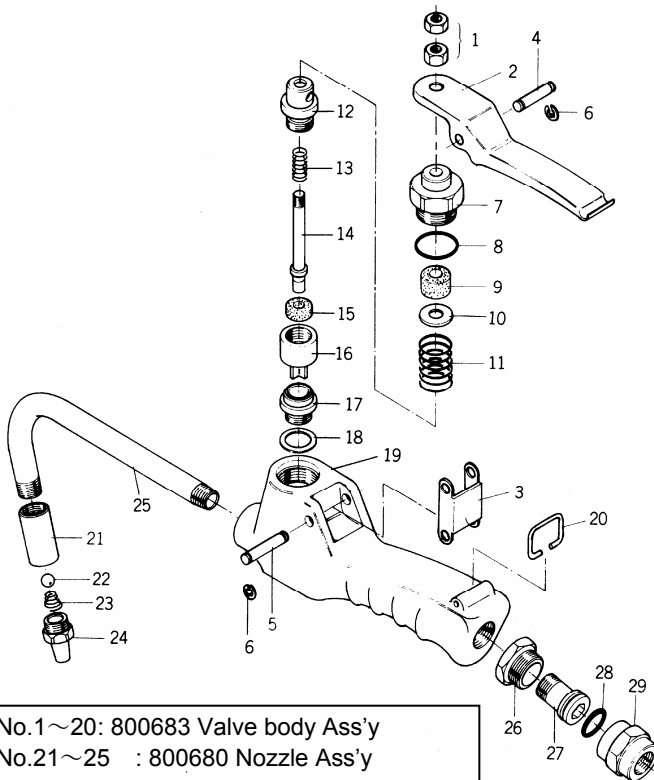
7. Parts Disassembly Drawing and Parts List

7.1 880267 SGR-55



No.	Parts No.	Descriptions	Q'ty
1	850792	Pump Ass'y	1
2	681170	Silencer	1
3	802538	Filter	1
4	702589	Washer	1
5	802570	Oil meter	1
6	695052	Hose	1
7	850206	Oil gun	1
8	680743	Air coupler (plug)	1
9	830138	Gun holder	1
10	705841	Handle	1
11	770754	Return	1
12	631013	Washer	2
13	631420	Spring washer	2
14	627012	Nut	2
15	830800	Cabinet	1
16	602296	Pan-head screw	1
17	682905	Oil can	1
18	704570	Clamping nut	2
19	831098	Base frame	1
20	681767	Caster(with brake)	1
21	680136	Caster	1
22	681769	Grounding conductor	1
-	790654	Type & Model No-label	1
-	790266	Caution-label	1
-	790367	Caution-label	1

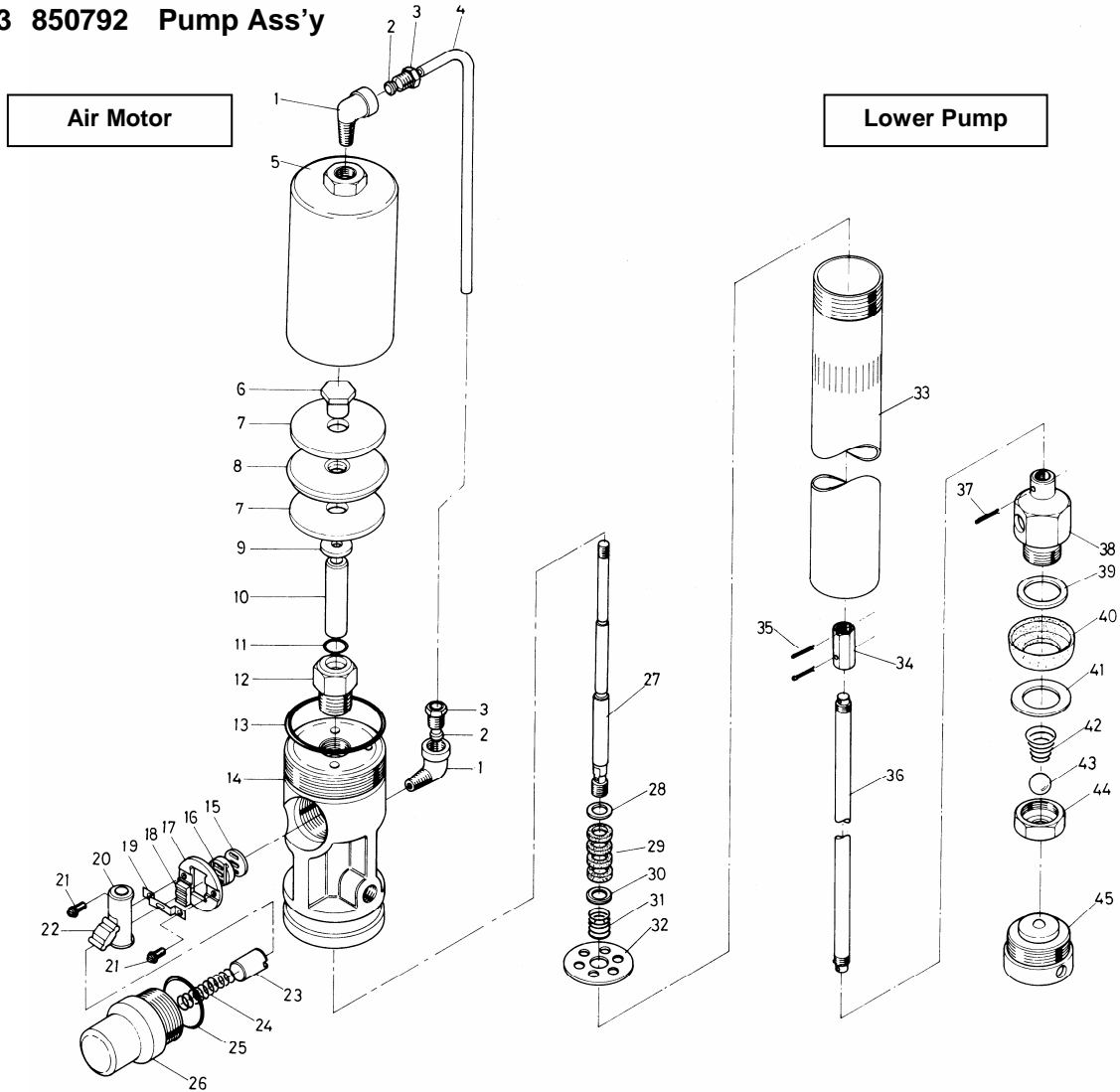
7.2 850206 Oil Gun Ass'y



No.1~20: 800683 Valve body Ass'y
 No.21~25 : 800680 Nozzle Ass'y
 No.26~29 : 800684 Swivel joint Ass'y

No.	Parts No.	Descriptions	Q'ty
1	627290	Nut	2
2	703095	Handle	1
3	703097	Link	1
4	703096	Pin	1
5	703098	Pin	1
6	630777	E-stop ring	4
7	703089	Packing holder	1
8	640019	O-ring	1
9	680275	Packing	1
10	703090	Washer	1
11	707378	Spring	1
12	703094	Spring holder	1
13	703093	Spring	1
14	703088	Valve stem	1
15	770319	Packing	1
16	795021	Valve	1
17	703100	Valve seat	1
18	703101	Washer	1
19	703091	Body	1
20	703099	Handle hanger	1
21	703323	Union	1
22	630316	Ball	1
23	703322	Spring	1
24	703324	Nozzle	1
25	703321	Nozzle pipe	1
26	703328	Swivel nut	1
27	703327	Swivel stud	1
28	640014	O-ring	1
29	703329	Swivel body	1

7.3 850792 Pump Ass'y



<Note>

If an air motor failure is found at maintenance and inspection, ask the dealer to repair the air motor.

No.	Parts No.	Descriptions	Q'ty	No.	Parts No.	Descriptions	Q'ty
1	701768	Elbow	2	24	701825	Spring	1
2	701765	Tube sleeve	2	25	682976	O-ring	1
3	701766	Tube gland	2	26	710672	Spring cover	1
4	708523	Air passage tube	1	27	706068	Piston rod	1
5	708311	Air cylinder bonnet	1	28	702725	Washer	1
6	701811	Cap nut	1	29	770287	Gland packing	4
7	701815	Plate	2	30	702726	Packing retainer	1
8	770180	Piston packing	1	31	702727	Spring	1
9	701810	Washer	1	32	704297	Washer	1
10	706067	Spindle bush	1	33	703010	Suction tube	1
11	640012	O-ring	1	34	706091	Union	1
12	706066	Gland housing	1	35	632039	Pin	2
13	770182	O-ring	1	36	703011	Connecting rod	1
14	706077	Air motor body	1	37	632039	Pin	1
15	770181	Valve seat gasket	1	38	702772	Valve housing	1
16	701822	Valve seat	1	39	702773	Washer	1
17	590085	Valve guide plate	1	40	770292	Cap-packing	1
18	701823	Valve slide	1	41	702774	Washer	1
19	701816	Valve supporter	1	42	702776	Spring	1
20	705659	Trip shoe	1	43	630324	Ball	1
21	681768	Screw (w/spring)	2	44	702775	Valve seat	1
22	705661	Trip shoe guide	1	45	830295	Foot valve Ass'y	1
23	704893	Spring holder	1				

8. Specification

■ Engineering Data

TYPE		SGR-55
MODEL No.		880267
PUMP RATIO (NOMINAL)		55 x 1
FLUID CONNECTION	DISCHARGE PORT	Oil gun
AIR CONNECTION	SUPPLY PORT	Coupler plug, PS-20PM
OPERATING AIR PRESSURE		0.2 ~ 0.7 MPa
MAXIMUM OPERATING NOISE	A-WEIGHTED SOUND PRESSURE LEVEL *1	86 dB
	A-WEIGHTED SOUND POWER LEVEL *2	96 dB
AMB. TEMP. RANGE	ENV. TEMPERATURE	0 ~ 60 °C
	MATERIAL TEMP.	0 ~ 80 °C
WEIGHT		16.0 kg
ACCESSORIES		Hose (695052) 3/8×1.5m Oil gun (850206) Oil meter (802570) 3~10 L/min Oil can (682905) 20 L Air coupler (680743)

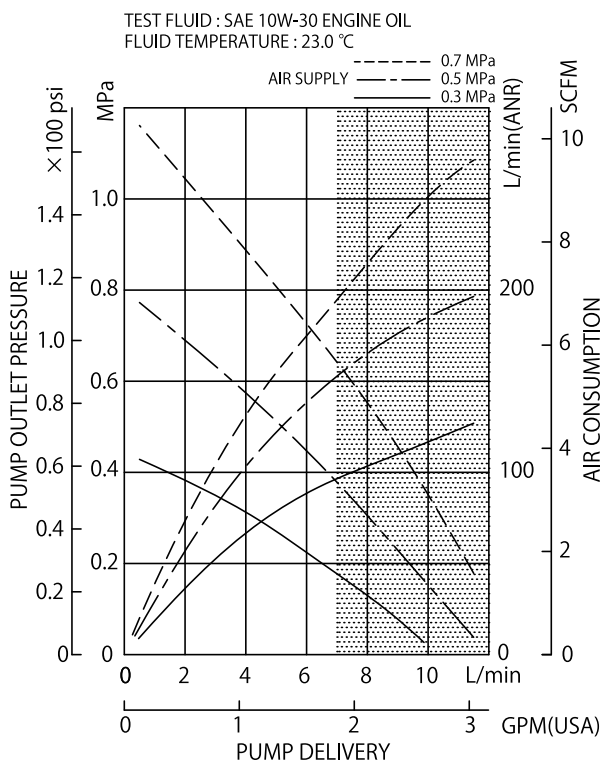
*1 Measurement method of A-weighted sound pressure level is based on ISO 1996.

*2 Measurement method of A-weighted sound power level is based on ISO 3744.

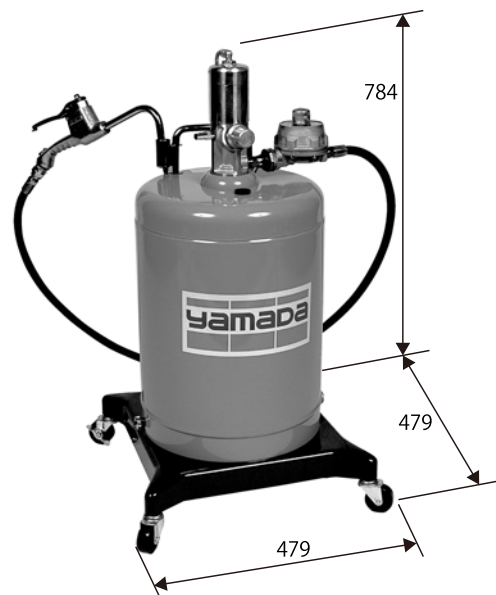
■ Performance Curve (only the pump)

<Note>

The continuous pump operation should be avoided if the desired delivery is in the range shaded in the figure below.



■ Dimensions



9. 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, balls, and valve seats
- 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.

MEMO.

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