



LUBYACE SYSTEM (SINGLE LINE LUBRICATION SYSTEM)

INSTRUCTION MANUAL

Product: LV3**-type (12 design) Distributing Valve

ATTENTION FOR SAFETY USE

Before operation, read carefully the instructions below for the safety use of LUBYACE lubrication system.

These safety-use instructions, composed of “ Warning” and “ Caution”, are designed to protect customers from any possible harm and damage caused by misusing this system. Read and follow these instructions carefully to prevent misuse-driven this system troubles and protect yourself from danger.



If ignoring instructions with this sign and operating wrong way, death or serious injury will happen.



If ignoring instructions with this sign and operating wrong way, injury and equipment damage will happen.



1. Turn off the control panel's power switch before installing, removing or maintaining the product; otherwise, electric shock will happen. Or the pump will operate automatically, eventually causing leakage or diffusion and tainting the surroundings.
2. Do not step on or pull the lubricator and pipe-related section as foothold or hand rail; you will slip and fall or it will damage the lubrication system.
3. Do not remodel or disassemble the equipment. If necessary, contact us beforehand. And if on-site maintenance job is needed, professional staff familiar with the mechanism must to work on it.



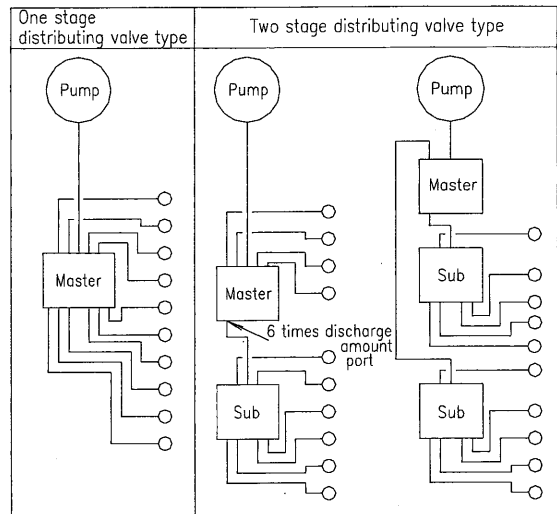
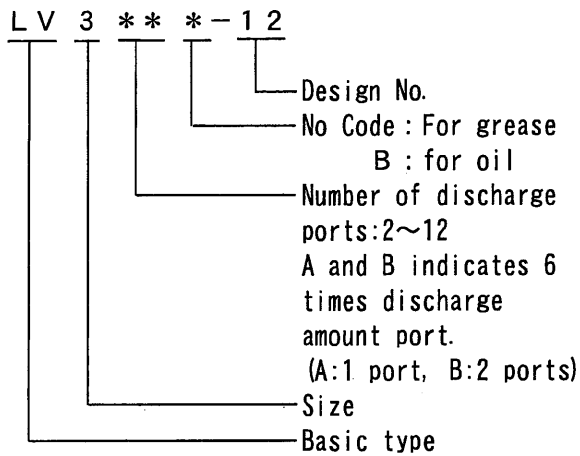
1. In case of air venting, protect the pump beforehand with vinyl case or the alternatives; otherwise, grease-contained air will diffuse and damage your eyes and other objects.
2. Use protectors whenever handling grease; otherwise eye damage or skin inflammation will happen when grease contacts your eyes or skin.
3. Do periodical inspection, such as checking grease amount and operation, to maintain the lubrication system. If do not, machine trouble driven by bearing injuring will happen.
4. Use the system within the rated capacity and under the adequate operational environment. If ignoring them and using it beyond the capacity or under the dangerous environment, including its installment nearby fire and explosives, the system will have mechanical problems or cause fire.

1. General Description

This distributing valve is used for single line proceeding operation diverging type "LUBYACE", connects to grease or oil pump with single feed pipe.

When pump performs pressurizing operation, lubricating oil operate 3~6 pistons in turn, with measured exactly to discharge a certain quantity or lubricant.

2. Key to Type Code and Basic Construction of Distributing Valve's Connection

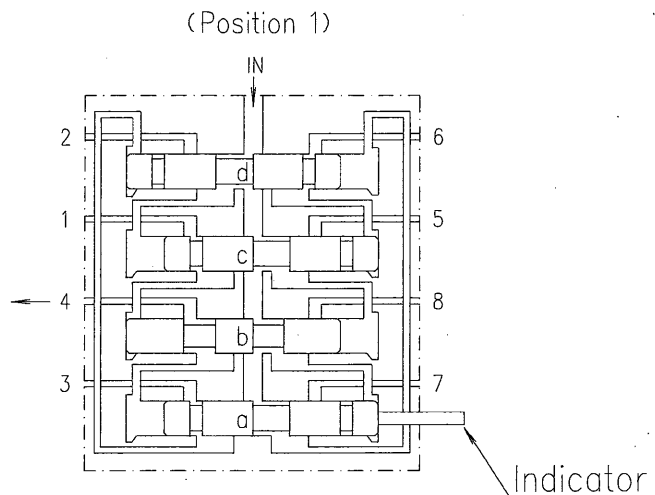


Note) Upper diagram is an example of construction in the case of 10 feed ports will equal lubrication quantity.

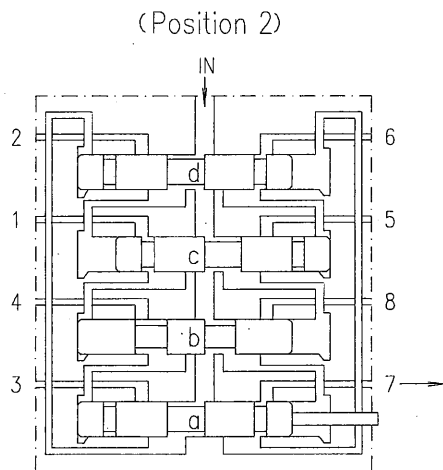
3. Specifications

Distributing valve		Master or Sub											Master			
Type	LV	302	303	304	305	306	0 7	308	309	310	311	312	3A4	3A6	3B2	3B4
Number of discharge ports		2	3	4	5	6	7	8	9	10	11	12	4	6	2	4
Discharge rate cm ³ /st		0.52	0.26	0.13									0.13		0.065	
Number of connecting port to sub-distributing valve		-----											1		2	
Discharge rate to sub-distributing valve cm ³ /st		-----											0.78		0.39	
Max. working pressure MPa	For grease	17														
	For oil	7														
Min. working pressure MPa	For grease	1.5														
	For oil	3														
Working temperature range °C	For grease	0~+50 (No. 2 grease)														
		-5~+50 (No. 0~1 grease)														
	For oil	-5~+50														
Grease in use	For grease	NLGI consistency No. 0~2 grease														
	For oil	suitable for ISO VG68 or 100														
Weight	kg	0.25						0.33								

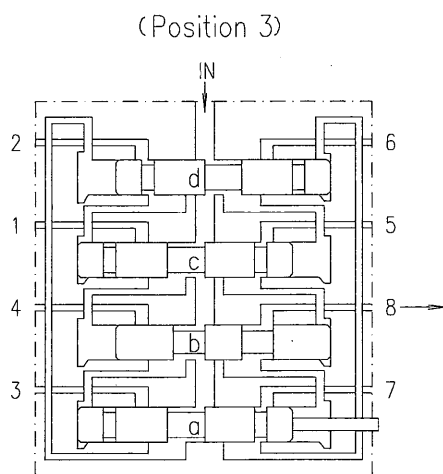
4. Principle of Operation



When the four pistons are positioned at the location shown on the left figure and the pressure is applied through the supply port (IN), the piston (a) moves to the left and a certain quantity of lubricant is discharged from the discharge port (4)



As the piston (a) has moved and the passage is opened, the piston (d) moves to the left and a certain quantity of lubricant is discharged through the discharge port (7). Then, the piston, (c) and (b) are moved by the same procedure and a certain amount of lubricant is discharged from the discharge ports (2) and (5).



Pistons, (a), (b), (c) and (d) are operated according to the process completely symmetric to the operations described above and the lubricant is quantitatively discharged from the discharge ports (8), (3), (6) and (1) and one cycle is completed.

5. List of Discharge Ports

LV302			
LV303			
LV304			
LV305			
LV306			
LV307			
LV308			

- Discharge port
- ⊙ Discharge port
(Connecting port to sub-distributing valve)
- Plug (impossible to remove)
- No processing of discharge port

LV309			
LV310			
LV311			
LV312			
LV3A4			
LV3A6			
LV3B2			
LV3B4			

6. Cautionary Instructions for Handling

- 1) Since this distributing valve is a proceeding operation type system, do not plug up discharge port. It stops operating if one of the discharge ports is plugged.
 - 2) When operating odd number of discharge ports, or the discharge amount should be doubled, use the exclusive collective attachment, for collection of two ports T322. (Refer to figure 1 below)
 - 3) Feed pipe-line from discharge port to bearing is used steel pipe or polyethylene tube to plan within $\phi 6 \times \phi 4:4m$, $\phi 4 \times \phi 2.6:3m$.
 - 4) If this distributing valve do not operate properly, it is almost caused by dust. Remove piston, wash it and valve body, and clean them with oil very well.
In addition, change gasket packing (hard fiber $\phi 10 \times \phi 8 \times 0.5t$: refer to figure 2 below) When reassembling them.
 - 5) When installing distributing valve, do not screw excessively tightened. It may cause troubles by deformation of piston or valve body. In addition, recommended tightening torque of mounting screw (M5) is $540 \sim 740 \text{ N} \cdot \text{cm}$.
 - 6) Steel ball for preventing backflow (for oil: check gasket packing) is fixed inside the discharge port of valve body.
 - 7) Recommended tightening torques are ; Feed port (Rc1/4) : $1670 \sim 1960$, Discharge port (Rp1/8) : $1000 \sim 1200$, Collective attachment : $1300 \sim 1500 \text{ (N} \cdot \text{cm)}$.
- When installing Collective attachment, tighten plug side and discharge side by turns alternately.

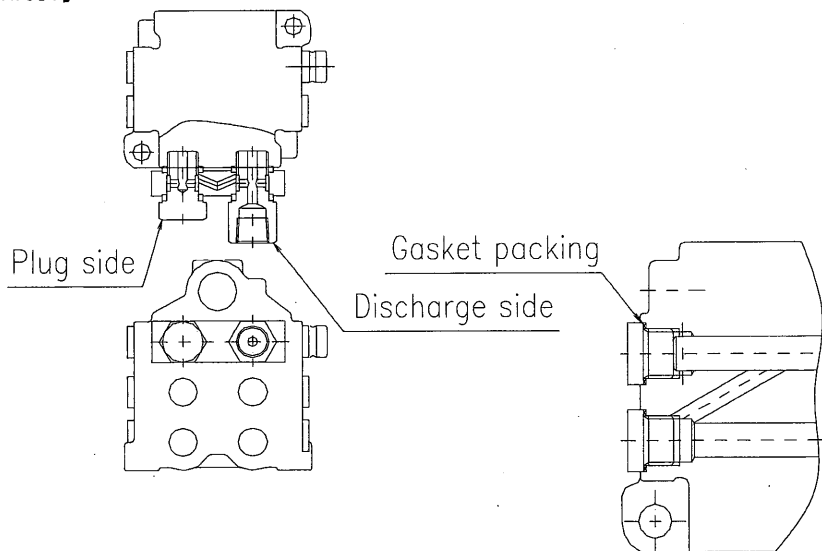


Figure 1

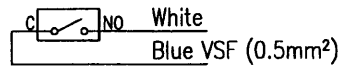
Figure 2

Optional Parts

LV3-K-type Procedure for installation of detection switch

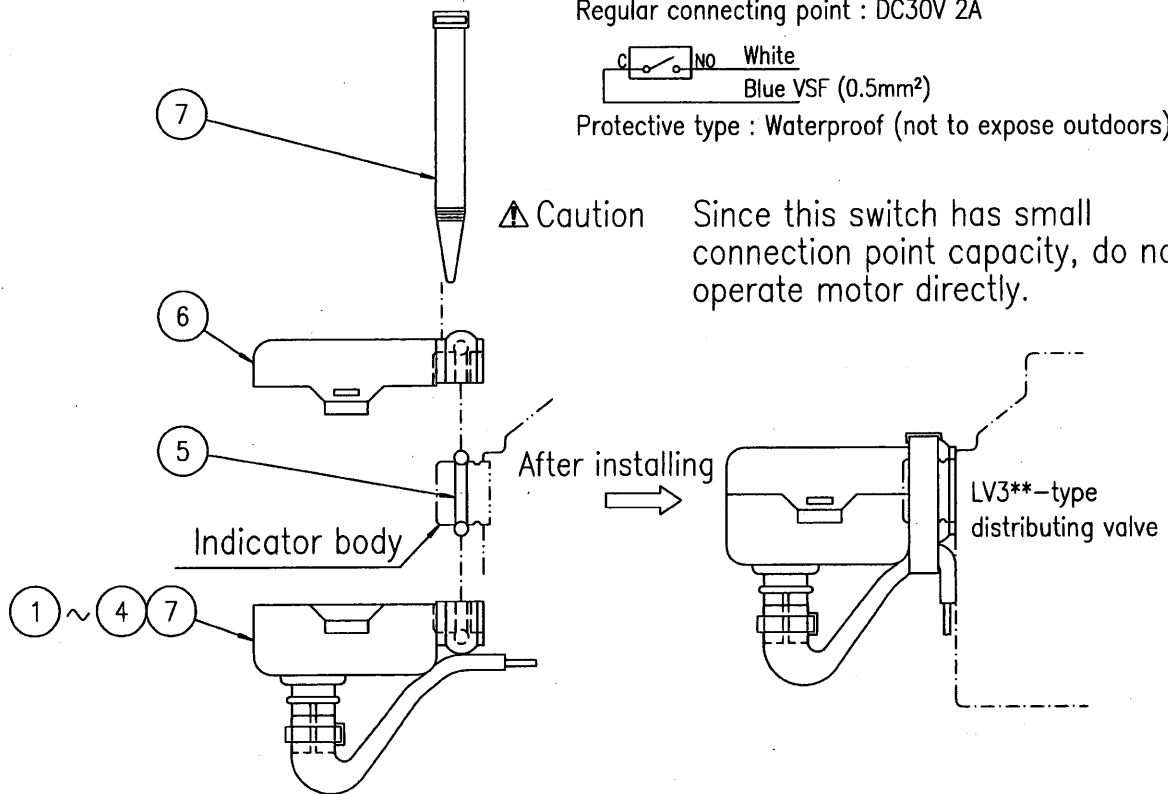
- 1) Put the O-ring on the indicator body.
- 2) Fixed indicator body by putting it with detection switch cover (1, 2).
- 3) Band together neck of the cover so as not to come off detection switch.
It is better to band together with lead wire to prevent wire from breaking.
- 4) Detection switch assembly is waterproof construction, it is better to install lead wire gasket downward.

Note) Specification of detection switch
Regular connecting point : DC30V 2A



Protective type : Waterproof (not to expose outdoors)

⚠ Caution Since this switch has small connection point capacity, do not operate motor directly.



【Parts list】

7	Wiring band	1	FP1093-7	} Local installation P9 1A IDφ6×280L, Black, JISC2410 For φ2.13
6	Detection switch cover (2)	1	1121017A-2	
5	O-ring	1	KP1A009	
4	Vinyl tube	1	1132094-4	
3	Seal switch	1	1132330	
2	Lead wire gasket	1	1131990-1	
1	Detection switch cover (1)	1	1121017A-1	
REF. NO.	PART NAME	QTY	PART NO.	REMARKS