LINCOLN INDUSTRIAL

Duo-Matic™ Metering Valves
Models 251317 (LD52), 251318 (LD54) 251319 (LD56) and 251320 (LD58)

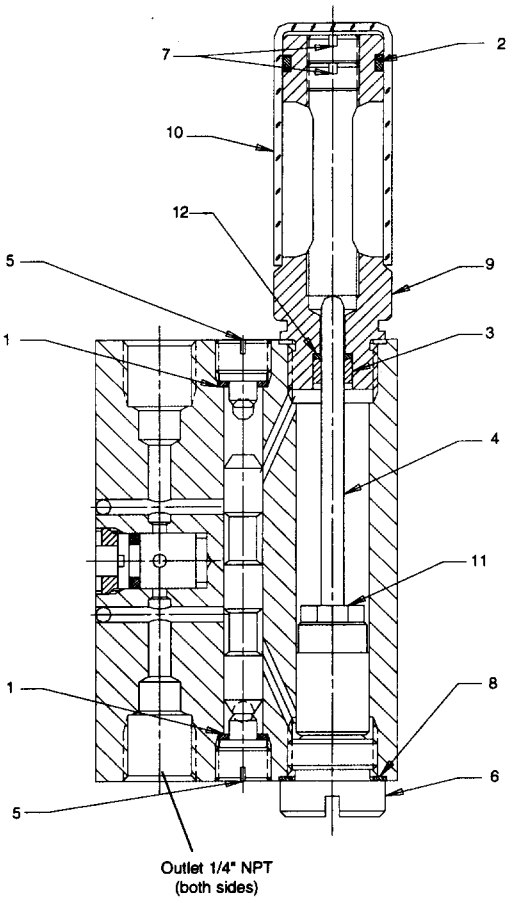
Specifications:
Output per cycle: .011 to .289 in^3, (.180 to 4.736 cm^3)
Inlet size - 3/8" NPT
Outlet size - 1/4" NPT
Operating pressure: 500 to 3500 psi, (34 to 240 bar)
Operating temperature: -15°F to 350°F, (-26°C to 175°C)
Seal material: Fluorocarbon (Viton)

Description:
A Duo-Matic metering valve is a positive displacement valve with an adjustable-stroke piston to dispense measured volumes of oil or grease. After adjustment to the desired setting, the valve will dispense an equal volume of lubricant through each of two outlet ports. To use only one port, an internal rotary valve can be set to combine (crossport) both outlets. One port is then plugged, and the remaining port receives twice the preset volume.

Multiple valve assemblies are available to service up to eight lubrication points. A visual indicator on each measuring piston verifies movement of the piston.

Adjustment of Lubricant Output:
For maximum output move the lock screw and the adjustment screw (7) to the uppermost position. Turning both screws in until they stop reduces the output to minimum setting. Metering valves will not adjust lower than the minimum setting.

After the metering valve has been set for the desired output, tighten the lock screw against the adjustment screw.



Service Parts

Item No.	Description	Part No.	251317 (2 outlet)	251318 (4 outlet)	251319 (6 outlet)	251320 (8 outlet)
1	Sealing ring	209121588	2	4	6	8
2	o-ring	219122235	1	2	3	4
3	u-cup seal	220137352	1	2	3	4
4	Indicator pin	301173583	1	2	3	4
5	M10 x 1 closure plug	303174041	2	4	6	8
6	M16 x 1.5 closure plug	303175141	1	2	3	4
7	Ring screw	303175522	2	4	6	8
8	Sealing ring	306187541	2	4	6	8
9	Adjusting sleeve	420211884	1	2	3	4
10	Protective cap	420221361	1	2	3	4
11	Holding screw	420223513	1	2	3	4
12	Prop washer	420241271	1	2	3	4

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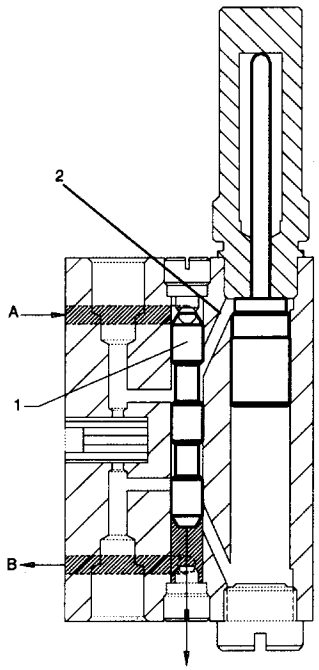
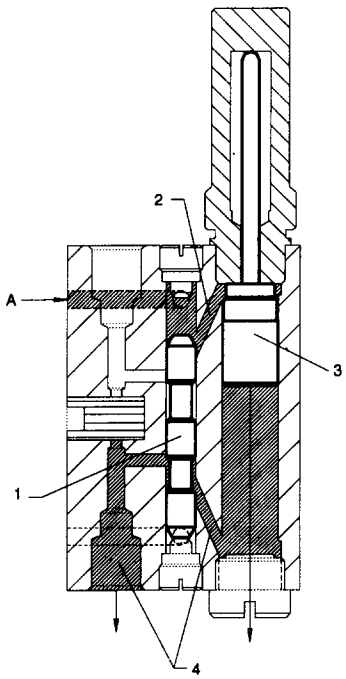
Operation:



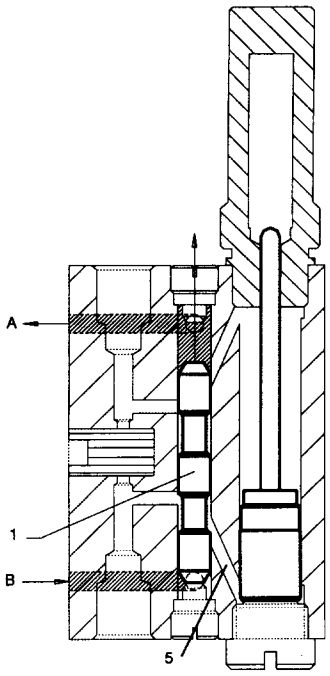
Stage 1



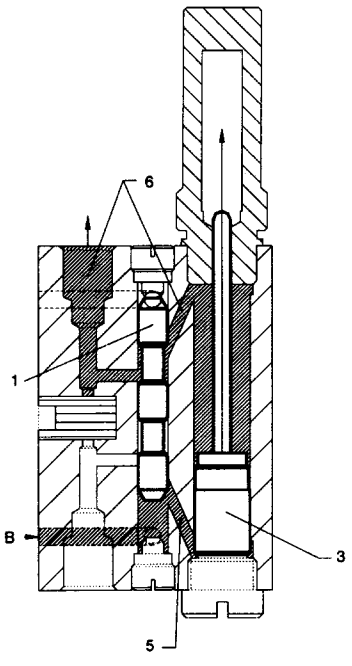
Stage 2

Stage 1
Pressurized lubricant enters the valve through main line A, forcing the control piston 1 "down" and opening passage 2. Displaced lubricant is relieved through main line B, which is open to the reservoir.

Stage 2:
Lubricant enters passage 2, pressurizing top of the main piston 3. Piston 3 moves down dispensing lubricant out through passage 4 to lubrication point.



Stage 3



Stage 4

Stage 3:
Reversing valve switches lubricant supply from line A to line B, forcing control piston 1 "up" and opening passage 5. Displaced lubricant is relieved through main line A.

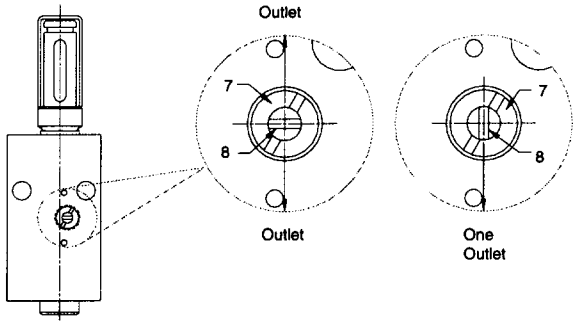
Stage 4:
Lubricant enters passage 5, pressurizing bottom of the main piston 3. Piston 3 moves "up" dispensing lubricant out through passage 6 to lubrication point.

Cross-Porting of Outlets

This feature enables one outlet only and provides double the lubricant volume per lubrication cycle.

Rotary valve (8) in a horizontal position isolates internal connecting passages and provides for 2 outlets.

Rotary valve (8) in a vertical position links internal connecting passages and provides for 1 outlet.



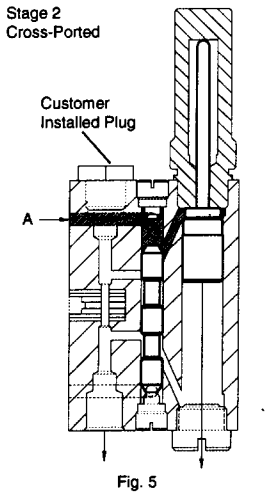


Fig. 5

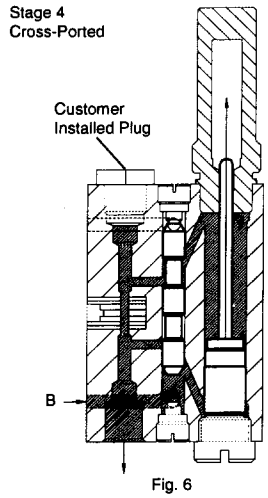


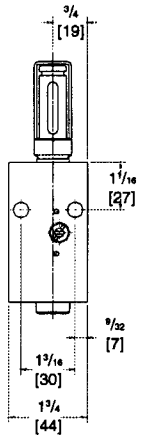
Fig. 6

Figure 5 shows Stage 2 and Figure 6 shows stage 4 of the operation cycle with the feature operative.

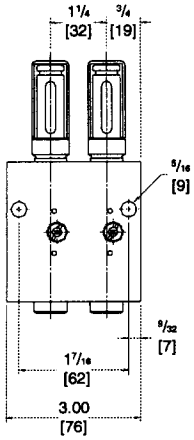
To change cross-porting:
- relieve pressure from both lines
- loosen lock screw (7)
- turn rotary valve (8) through 90°.
- Tighten lock screw (7)
- **Plug unwanted outlet**

Dimensions

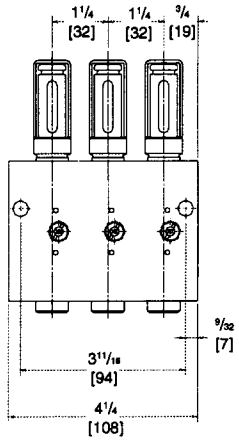
Model 251317 (LD52)



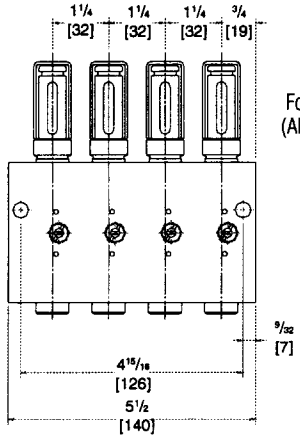
Model 251318 (LD54)



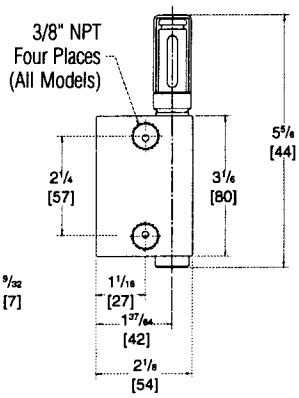
Model 251319 (LD56)



Model 251320 (LD58)



End View



Caution: Always relieve pressure before servicing or disassembling valves.

Note: If removed for cleaning, control and measuring pistons must be returned to the same location and position as they were before disassembly.

Tools required

1. Combination wrench: 19 mm, 22 mm
2. Large and medium screwdriver (for slot screws)

RETAIN THIS INFORMATION FOR FUTURE REFERENCE

When ordering replacement parts, list: Part Number, Description, Model Number and Series Letter.
LINCOLN provides a Distributor Network that stocks equipment and replacement parts.