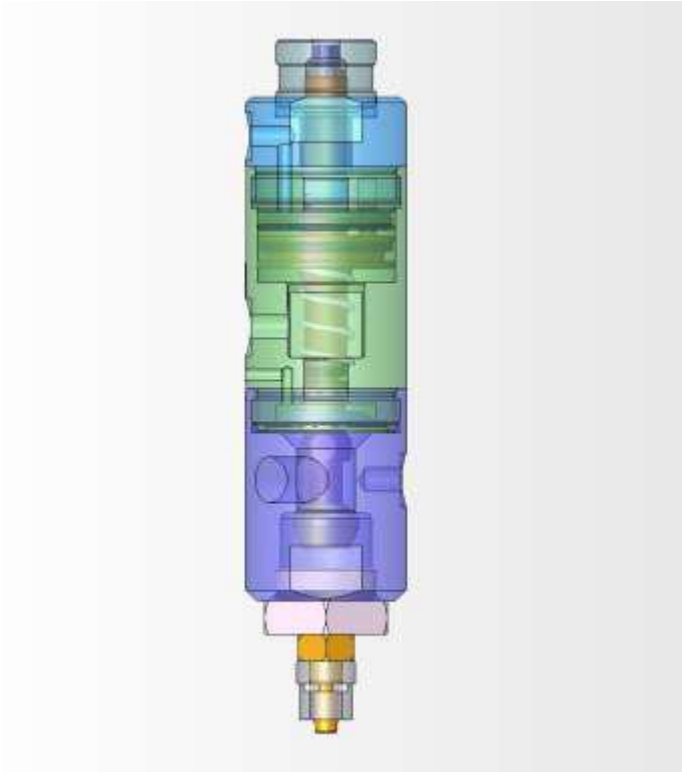
DISPENSING VALVE

MODEL VP300

◂INSTRUCTION MANUAL▸



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1. INTRODUCTION

The VP300 is a multipurpose, poppet-type pneumatic valve.

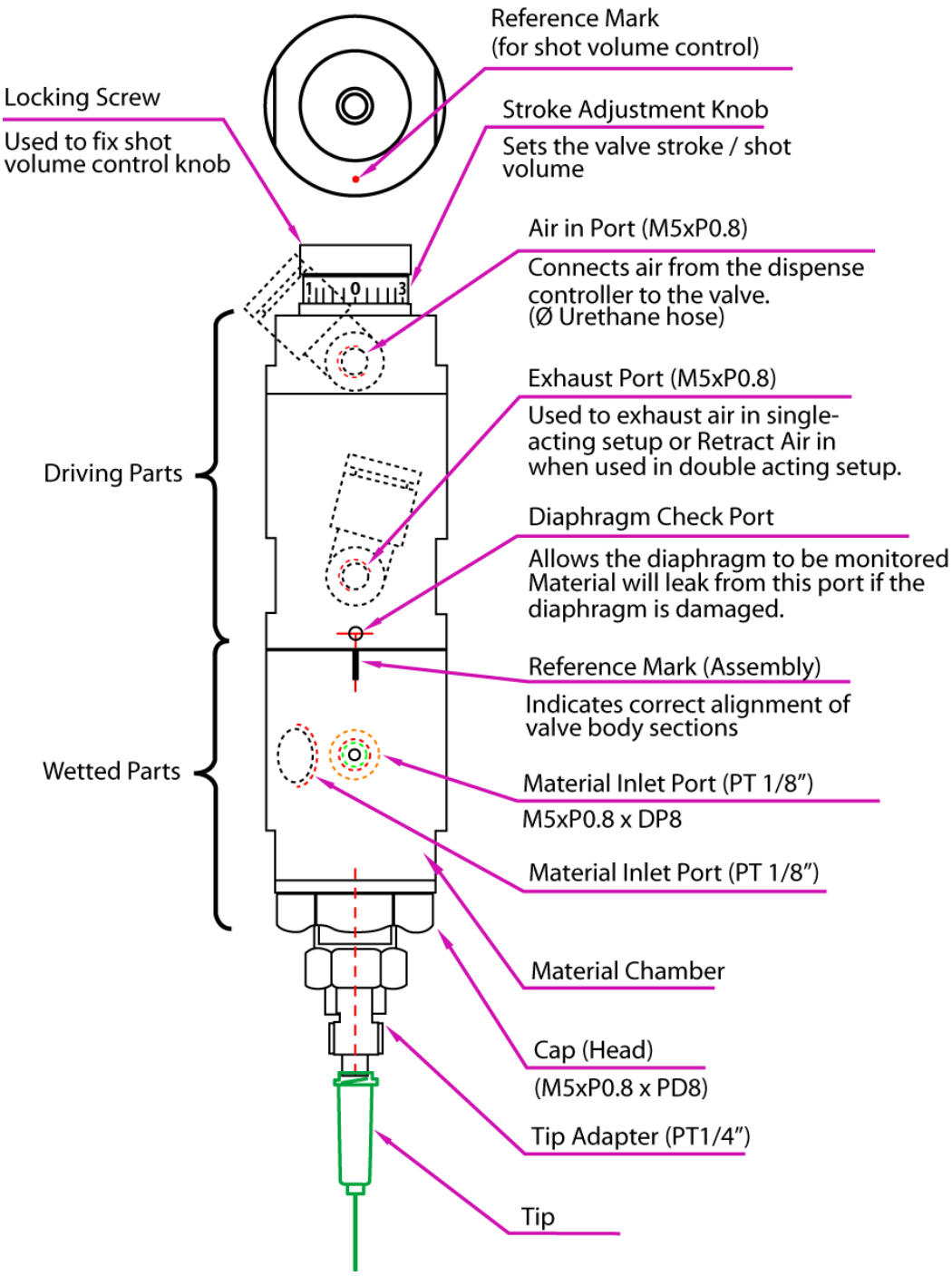
This valve can dispense low viscosity to mid-high viscosity materials.

The VP300 valve has a "Suck-back effect". This eliminates lumping at the end of needle after dispensing. The VP300 can be used with Silicone, RTV, Epoxy, rubber adhesives, grease, and liquids containing filler. A diaphragm located between driving parts and wetted parts increases the valve life and reduces valve maintenance.

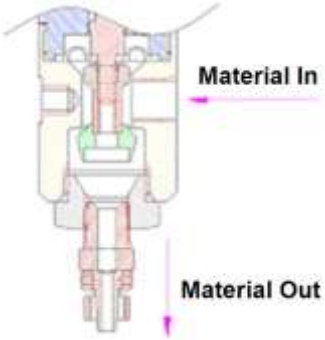
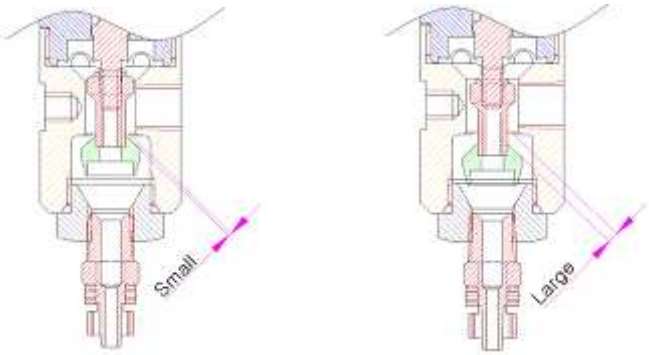
2. SPECIFICATIONS

Operating Air Pressure	4.0~6.0kgf/㎠(60-90PSI)
Material Delivery Pressure	Max 6.0kgf/㎠ (90PSI)
Cycle Rate	300cylces/min(half stroke)
Flow Rate (KV value)	MAX 2.4ℓ/min
Minimum Shot Size	0.05cc
Valve Structure	Poppet type
Weight	285g (10oz)
Driving part materials	Body: AL Hard Anodizing (Black) Piston, Rod: SUS303 Piston Seal: NBR
Wetted part materials	Chamber: AL Hard Anodizing (Black) CAP: AL Hard Anodizing (Black) Diaphragm: UHMW-PE Valve Seat: UHMW-PE O-Ring (CAP): Viton
Connecting Ports	Operating Air Inlet: M5*P0.8, ø6Urethane Hose Material Inlet: BSPT1/8" Material Outlet: M5*P0.8*DP 8

3. PART DESCRIPTION



4. OPERATION PRINCIPLES

<table>
<tr><th>Dispensing OFF</th><th colspan="3">Dispensing ON</th></tr>
<tr><td>  </td><td>  </td><td>short | Stroke | long
small | Shot Volume | large</td><td>  </td></tr>
<tr><td> 
</td><td colspan="3"> 
</td></tr>
<tr><td>In the "Normal" state (air off), the diaphragm is closed – material is not dispensed.</td><td colspan="3">When air is applied, the valve seat is opened and material is dispensed.</td></tr>
<tr><td>Because "Air" is not entering into the driving parts, the diaphragm's needle and valve seat are closed. In this case, the material path is closed, so material is not dispensed.</td><td colspan="3">If air is applied to the valve, the valve seat will drop according to the shot volume control knob. At this time material will be dispensed.

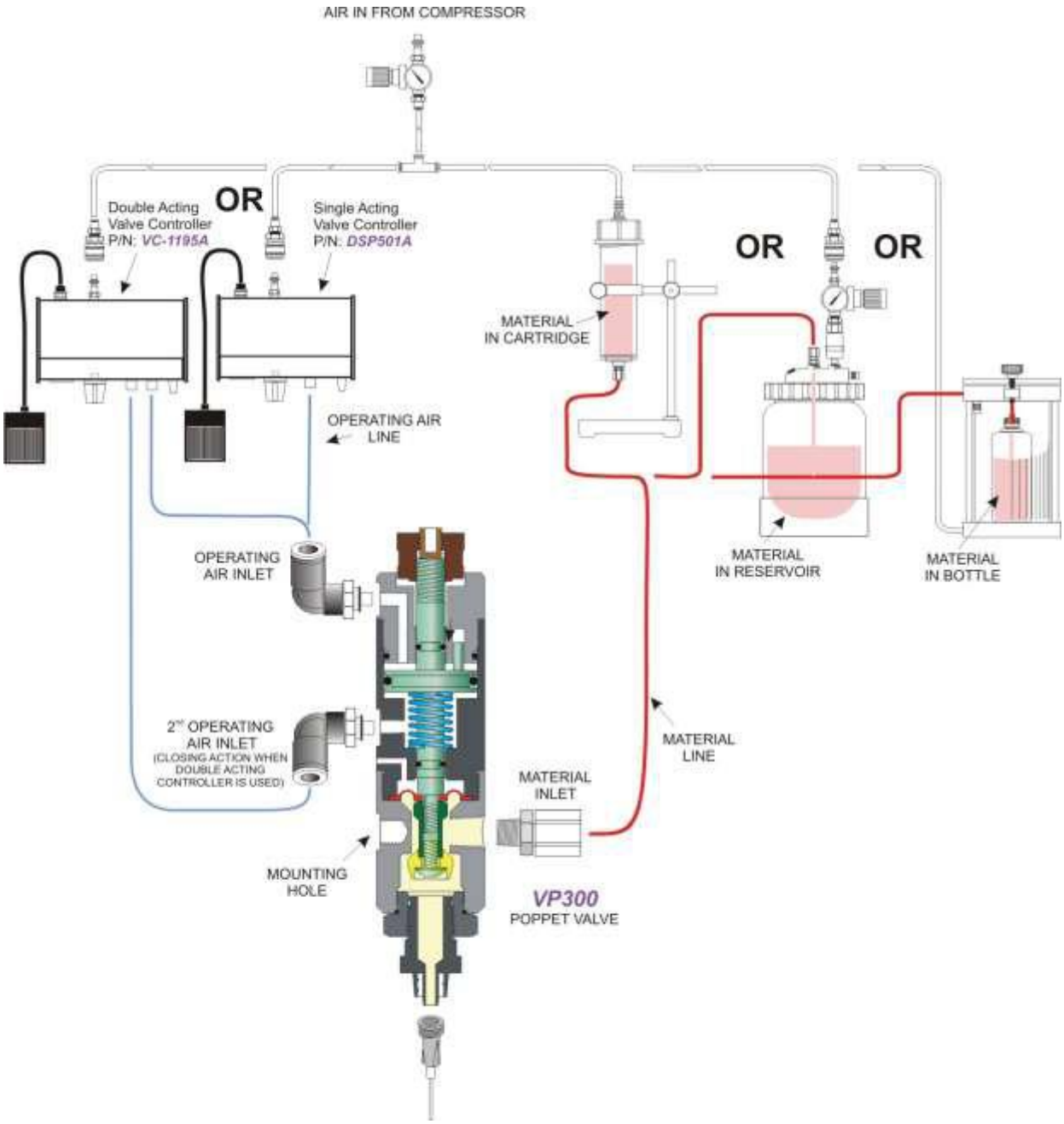
You can increase or decrease the shot volume by adjusting the stroke (shot volume control knob).

⚠<u>Notice</u>
The maximum stroke length is 3mm(6rotations). There is no effect after turning the knob more than (6) rotations.
Fix the stroke by tightening the set screw after set up.</td></tr>
</table>

5. OPERATING PROCEDURE

5-1. Setup

▸example for general installation



5-1-1)

Fasten the valve firmly using mount hole.
(M5*P0.8*D98)

5-1-2)

Connect air hose to Operating Air Inlet Port and Controller.
Valve driving pressure is

Min 4.0kgf/㎠ or more.

⚠**Notice**

If the valve uses the internal spring to close, it is classified as single-actuating type.
If the valve closes too slowly, change to a double-actuating setup.
*refer to 5-1.Setup

5-1-3)

Connect a suitable sized needle to the outer port (BSPT1/8").

5-1-4)

Set the shot volume using the shot volume control knob, then lock the position by tightening the set screw.

⚠**Important**

The "Suck-back effect" occurs when the valve is closed. This suck-back effect occurs because of the change in the volume of the material area as the poppet moves up in the valve.

“Suck-back effect" will be effected by the material viscosity, material delivery pressure and stroke length.

That is,

Suck-back effect ↓ ∝ (is proportional)
- material viscosity ↑
- material delivery pressure ↑
- stroke size ↓

5-2. Maintenance

5-2-1) Cleaning

① Wash valve thoroughly after using if dispensing liquid which has a tendency to harden or to damage the wetted parts.

② Dispense all liquid entirely from pressure container, liquid supply hose and wetted parts until sufficient air comes out.

③ Wash the inside of the valve with a small amount of the proper solvent.

④ Wash thoroughly, alternating between air→solvent→air→solvent.

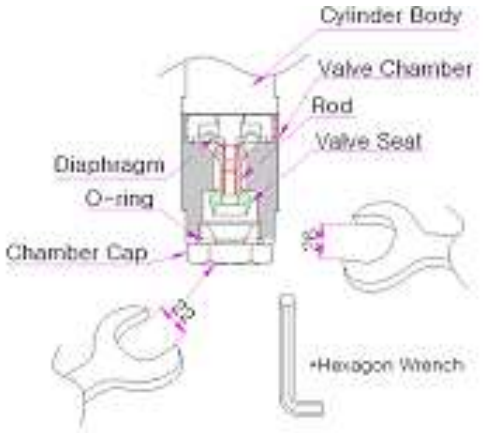
5-2-2) Disassembly

① When disassembly is required for cleaning or replacing parts, please refer to "7. Exploded View & Parts List".

② Separate "Chamber CAP" with two spanners(#26, #22).

③ Carefully remove the "Valve Seat" with L (hexagonal) wrench(#2).

④ Remove the "Cylinder Body" and "Valve Chamber" using two spanners (#26, #22).



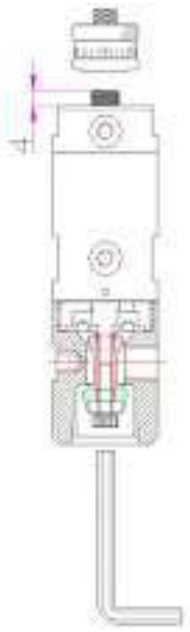
⑤ Remove the "Rod" from spanner(#8).

⑥ Remove the "Diaphragm" from the valve body.

5-2-3) Assembly

Reverse the Disassemble instructions above. See additional assembly notes below:

① Install the valve seat and fasten with L (hexagon) wrench after inserting bolt.
Separate the shot volume control knob as shown in the picture. Tighten the shaft by turning the L (hexagon)-wrench slowly a distance of 4 mm.



② When assembling the cylinder body and valve chamber, the valve chamber reference mark and port (ø2 hole) of cylinder body should be aligned.

③ Be sure to install the Valve Seat in the correct orientation.

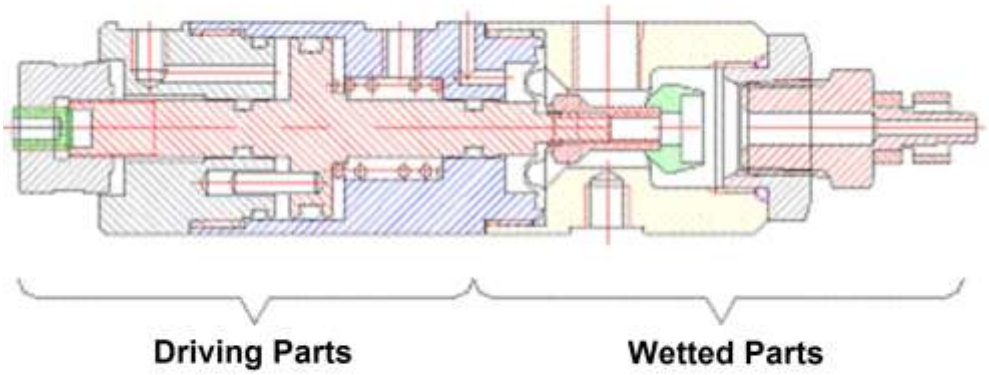
5-3. Notes

① If there is air between the inner port and outer ports, or if there is air in the material itself, it will be more difficult for the valve to close and the Suck-back effect will be reduced.
Remove air from the material before using the valve.

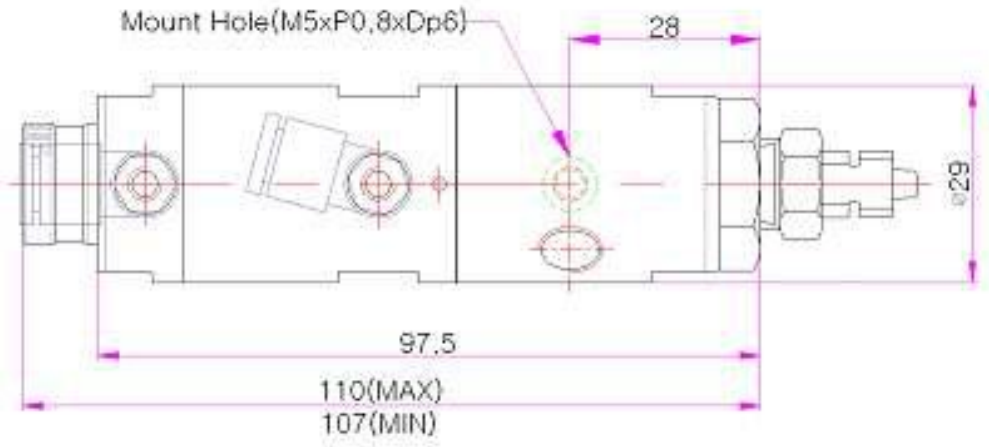
② Bleed air from the valve by dispensing continuously at low material pressure, with the valve pointed upward, before placing in production.

6. SECTIONAL DRAWING & DIMENSIONS

▸ Cross-sectional View



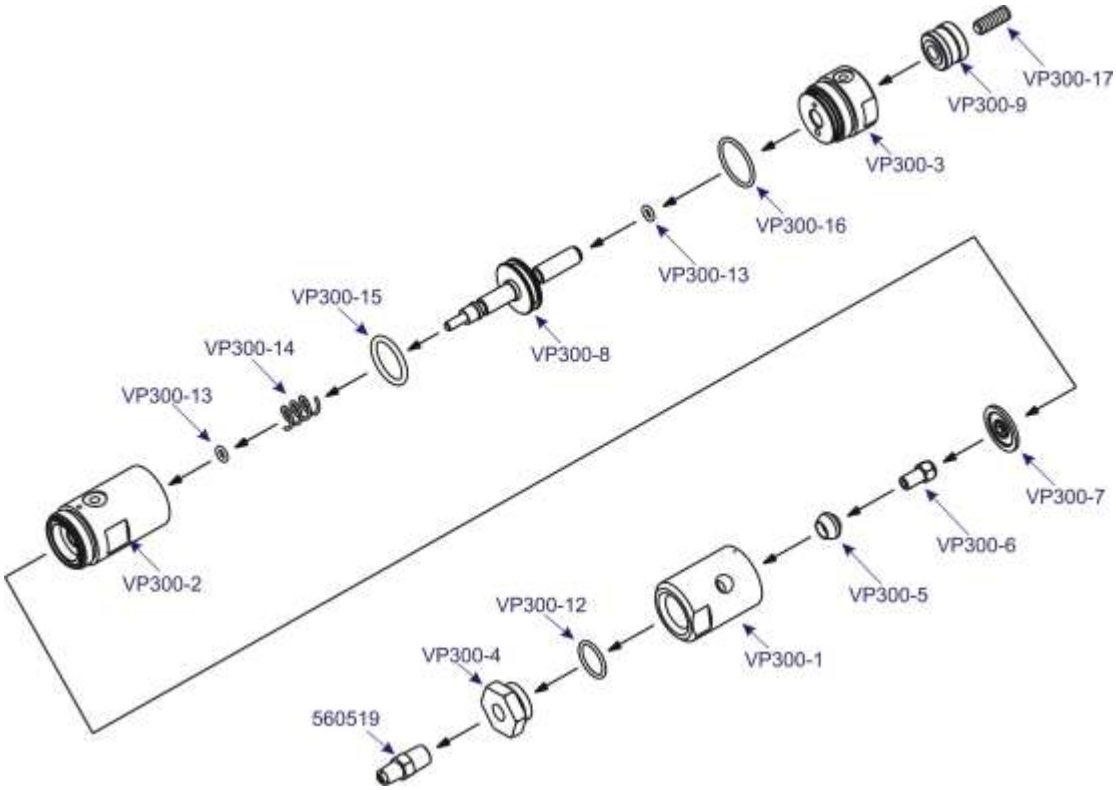
▸ Dimension



- Measurements shown in millimeters.

7. EXPLODED VIEW & PARTS LIST

▸ Exploded View



▸ Parts List

No	Part Name	Q'TY	No	Part Name	Q'TY
VP300-1	CHAMBER	1	VP300-9	CONTROL KNOB	1
VP300-2	CYLINDER BODY	1	560519	L.L. ADAPTER	1
VP300-3	CYLINDER CAP	1	561964	ELBOW FITTING	1
VP300-4	CHAMBER CA	1	VP300-12	O-RING (AS016)	1
VP300-5	VALVE SEAT	1	VP300-13	O-RING (P5)	2
VP300-6	ROD	1	VP300-14	SPRING	1
VP300-7	DIAPHRAGM	1	VP300-15	O-RING (P21)	1
VP300-8	PISTON	1	VP300-16	O-RING (AS020)	1
			VP300-17	FIXING SCREW	1

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