



SV-1500 Series

3-Way Solenoid Valves

INSTRUCTION SHEET

M2199/1009

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Unpacking Instructions

Remove the Packing List and verify that you have received all equipment, including the following (quantities in parentheses):

SV-1500 Series 3-Way Solenoid Valve (1)

Operator's Manual (1)

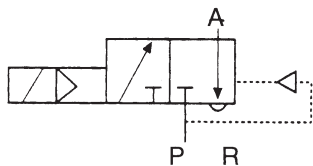
If you have any questions about the shipment, please call the OMEGA Customer Service Department.

When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

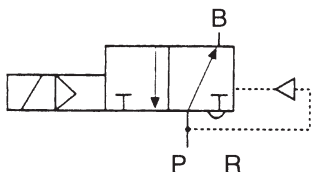
The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

**Operation C
NORMALLY CLOSED**



3-way normally closed, when de-energized outlet A vented.

**Operation D
NORMALLY OPEN**



3-way normally open, when de-energized outlet B pressurized

Available Models

Normally Closed	Normally Open	Port Connection (NPT)		C _v ¹	Pressure Range ² (PSI)	Orifice Diameter (in)	Weight (lbs)
Part Number	Part Number	P, A, B	R				
SV-1501	SV-1511	1/4	3/8	1.1	7-230 ³	5/16	2.2
SV-1502	SV-1512	3/8	3/4	2.7	7-230 ³	7/16	2.6
SV-1503	SV-1513	1/2	3/4	3.0	7-230 ³	7/16	2.6
SV-1504	SV-1514	3/4	1	7.7	7-230 ³	3/4	4.9
SV-1505	SV-1515	1	1-1/4	11.7	7-140	1	6.0
SV-1506	SV-1516	1-1/2	2	28	7-140	1-1/2	15.0

¹ Port R is always one size larger than the other ports. Therefore, flow rates from A to R are 1.5 to 2 times greater than the above values.

² Operating with less than a 7 PSI pressure will yield unpredictable flow characteristics.

³ Maximum pressure for UL-listed valves is 170 PSI.

Description

The SV-1500 Series 3-way solenoid valves are an internally piloted poppet valves with epoxy encapsulated coil and brass bodies. Manual override is standard. The valves feature quick exhaust design, Buna-N seal, and a temperature range of -10 to 90°C (14 to 194°F). The valves are ideal for compressed air for actuating large-sized cylinders and actuated ball valves. Electrical connection is by cable plug.

Fluids handled

Neutral gases and liquids, providing the medium does not attack brass valve body or seal material B (NBR). Pressure range as quoted on valve label.

Installation

Before installing the valve make sure all pipework is free of foreign matter (metal filings, seal material, welding scale, etc.). Seal according to state of the art. Installation position as required, but preferably with coil uppermost since installation in this position tends to prevent foreign matter remaining in pilot chamber (increased life). A line strainer upstream of valve, protects against effects of foreign matter.

Do not use the coil for leverage when installing the valve.

Pipework should be supported such that the valve body is not under strain. Make sure that pilot tappings in the valve body are not blocked by pipe ends, seal material etc. Make sure that full cross-sectional flow area is maintained at inlet and outlet of valve. Avoid restrictions. Two holes are provided in the valve body for attaching purposes. The screws on the pilot valve body which are sealed with red lacquer should not be interfered with.

Spare Parts

Replacement of pilot valve: Loosen the two unsealed M 4 screws and remove pilot valve. Mount new pilot valve in correct position and re-tighten screws. A main valve circuit function C requires a pilot valve. Main valve circuit function D requires pilot valve circuit function C. Replacement of internals: With valves of 8 and 12 mm orifice remove pilot valve, withdraw piston and replace any damaged parts. For valves with 20 to 40 mm orifice sizes, loosen socket-head screws on the flange plate above the valve body, remove the flange plate with the pilot valve and replace parts as required. For spare parts information, see the reverse side.

Electrical Connection

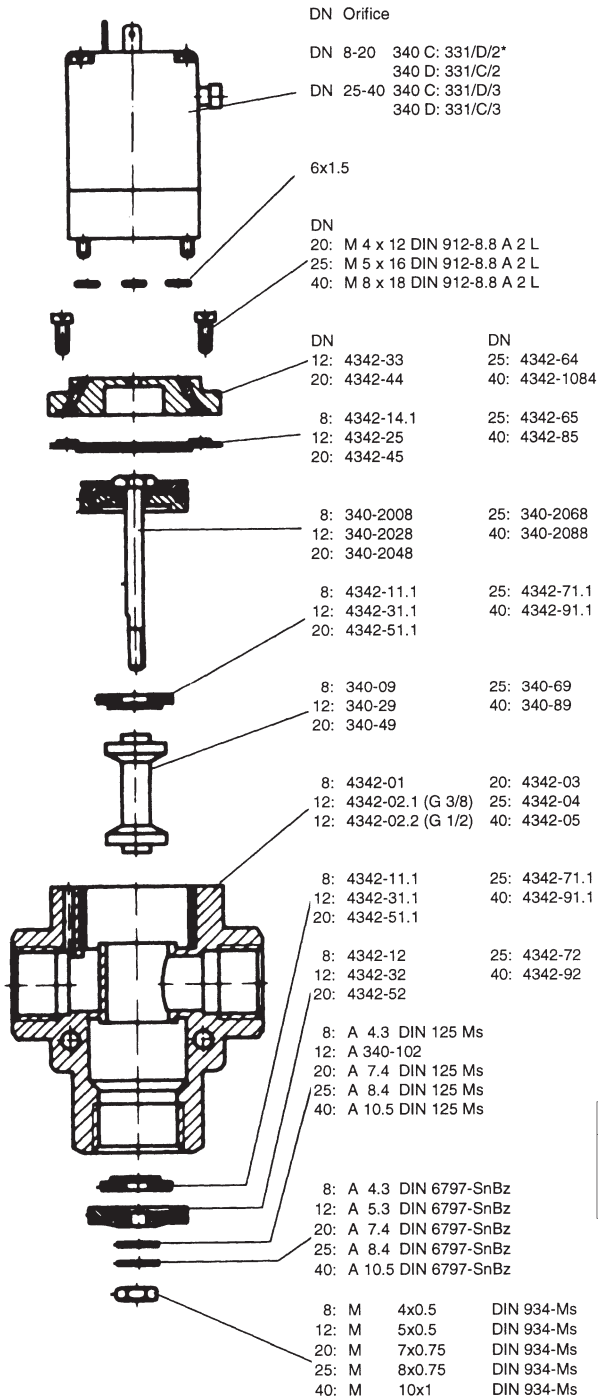
Make sure supply voltage/frequency corresponds with the label. Voltage tolerance ±10%. Electrical connection is by a cable plug. Note earth-connector. Flat terminal = earth; cable plug insert can be positioned at 90° intervals. Tightening torque for cable plug is 1 Nm.

Troubleshooting

Check port connections, operating pressure and voltage. Make sure pilot channels are clear. During transportation it is possible for the piston to assume a mid-position. Solution: Apply pressure to inlet port P and temporarily block port A/B or by means of a finger through port R push the piston to its end position.

The valve is maintenance-free. With dirty fluid media occasional cleaning is required.

Spare Parts

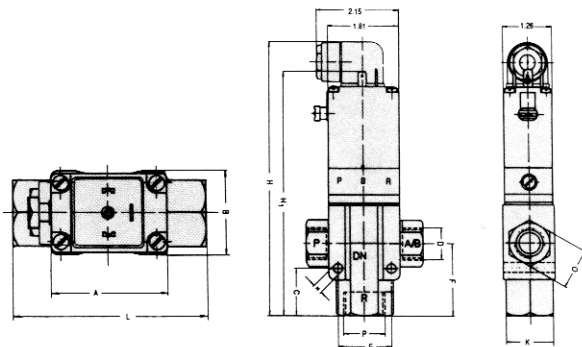


*Use voltage/frequency and seal material

- Spare part kit
8: E-0340-01 ES-000-00
12: E-0340-02 ES-000-00
20: E-0340-03 ES-000-00
25: E-0340-04 ES-000-00
40: E-0340-05 ES-000-00

Specifications

- Mounting Position:** Any (preferably with solenoid system upright)
- Max. Ambient Temp.:** 54°C (130°F)
- Voltage Tolerance:** ±10%
- Power Consumption in Warm State:** ac: 30 VA/8 W
dc: 8 W (hold)
- Opening Time (msec):** 25-125
depending on orifice and pressure
- Closing Time (msec):** 25-125
- Cycling Rate:** 150-1000 cpm
- Duty Cycle:** Continuous (100%)
- FM Approvals:** Nonincendive for hazardous locations Class I Div. 2 Group A, B, C, D; Class II Div. 2 Group F, G; Class III Div. 1 and 2; Operating Temperature T4A
- Dimensions:** See below



ORIFICE DIA.	D (NPT)	P (NPT)	A	B	C	N	E	F	H	H ₁	O	K	L
5/16	1/4	3/8	1.81	1.30	0.91	0.28	1.18	1.36	6.08	5.33	7/18	7/8	2.56
7/16	3/8	3/4	1.81	1.30	1.22	0.28	1.34	1.85	7.07	6.32	1-1/16	1-1/4	3.00
7/16	1/2	3/4	1.81	1.30	1.22	0.28	1.34	1.85	7.07	6.32	1-1/16	1-1/4	3.00
3/4	3/4	1	2.44	2.05	1.65	0.35	1.89	2.48	8.44	7.70	1-7/16	1-5/8	3.54
1	1	1-1/4	2.83	2.36	1.73	0.35	2.60	2.93	9.43	8.68	1-5/8	2-1/8	4.33
1-1/2	1-1/2	2	3.94	3.46	2.56	0.51	3.66	4.09	11.54	10.79	2-3/16	3-1/16	6.02

Conversion Table

DN 8	DN 12	DN 20	DN 25	DN 40
↓	↓	↓	↓	↓
5/16"	7/16"	3/4"	1"	1-1/2"



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WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA'S WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA'S WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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