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Direct-Acting Electromagnetic Block Valve

Instruction Manual

Manual No. 6999-12-065
Revision C
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Varian's direct-acting electromagnetic block valves (see Figure 1) are compact, right-angle valves available with NW16 or NW25 flange connections. They offer the safety of a spring-closed actuator and maintenance-free durability of a bellows-free valve.

These low-cost, compact, and reliable valves can be used in back-to-air, roughing, and high-vacuum applications. The valves will operate reliably from atmosphere to 10^{-9} Torr. They are designed to operate in any position with vacuum applied to either port.

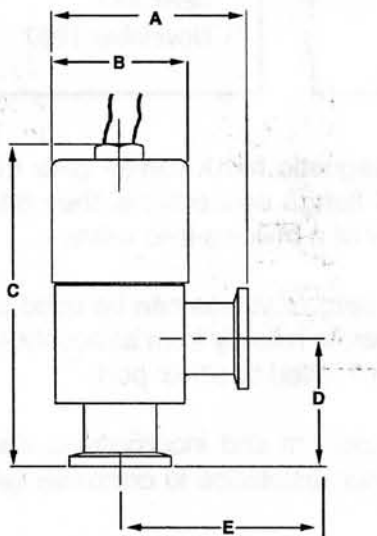
The valve body is made of aluminum and incorporates Klamp™ flanges. The nickel-plated version offers lower outgassing and higher resistance to corrosive gases. The lower cost version has a clear-coated exterior.

The valve is designed for continuous operation without the need for a control circuit. The valve can be baked in the closed position to 125°C (257°F) with the coil removed.

Direct-Acting Electromagnetic Block Valve

Specifications

Vacuum Range	Cleaned Aluminum	Atm to 10^{-4} Pascal
	Nickel-plated	Atm to 10^{-7} Pascal
Leak Rate	$<1 \times 10^{-9}$ std cc/sec (He)	
Ambient Temperature	15°C min to 40°C max (59 to 104°F)	
Bakeable to	Non-operating (closed) 125°C (257°F) with coil removed	
Electrical Power	23 Watts	
	100/115 V, 50/60 Hz	
	200/240 V, 50/60 Hz	
	12/24 VDC	
Loss of power	Valve closes in <25 msec	
Service Life	250,000 actuations	
Conductance	NW16 – 2.2 l/s	
	NW25 – 3.5 l/s	
	Very high permissible actuation frequency	



MODELS	A	B	C	D	E
NW16	2.50 (63.50)	2.28 (57.91)	4.43 (112.52)	1.58 (40.13)	1.58 (40.13)
NW25	2.98 (75.69)	2.28 (57.91)	4.83 (122.68)	1.98 (50.29)	1.98 (50.29)

Figure 1. Outline Drawing, Direct-Acting Electromagnetic Block Valve

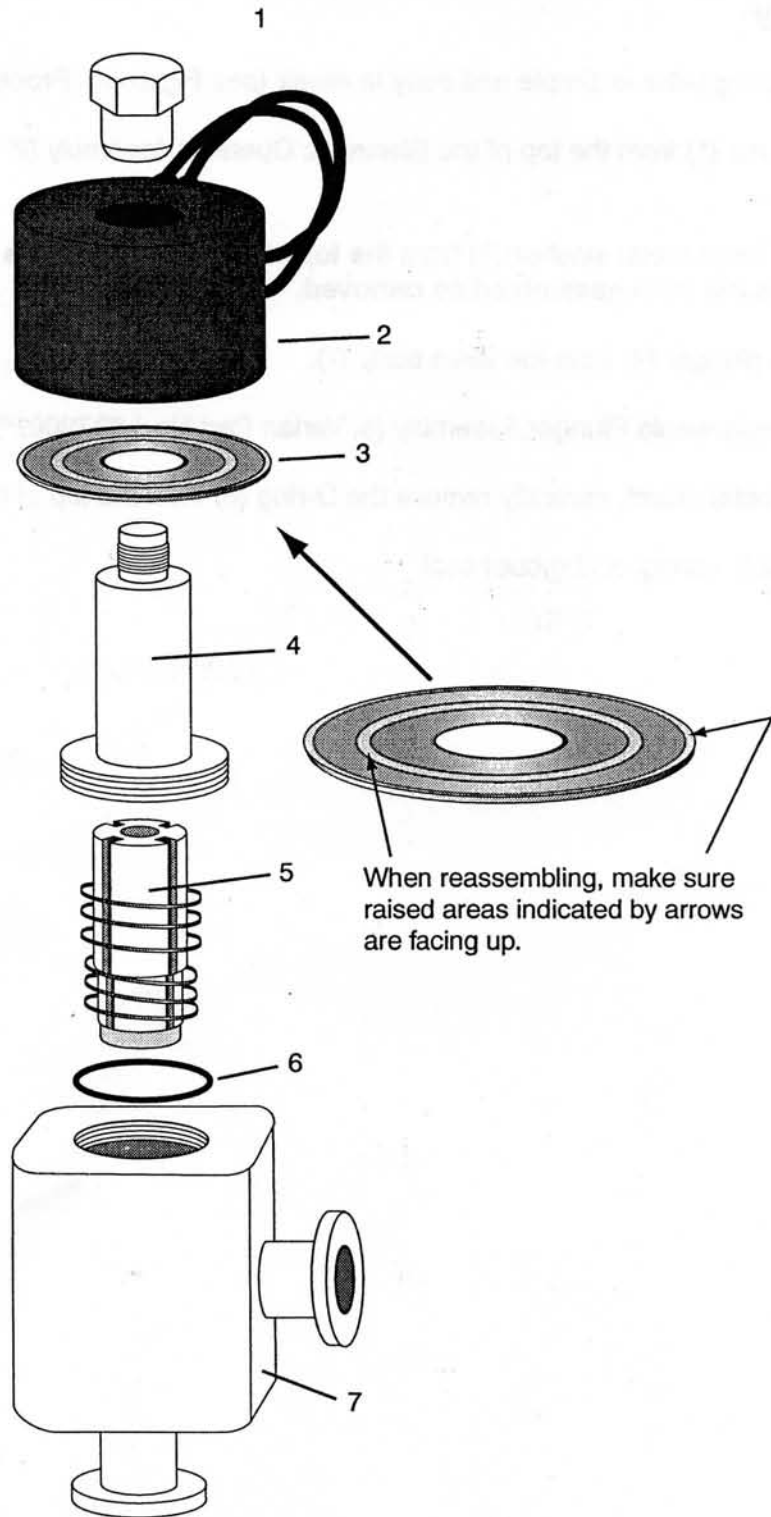


Figure 2. Exploded View, Directing-Acting Electromagnetic Block Valve

Disassembly

The direct-acting valve is simple and easy to repair (see Figure 2). Proceed as follows.

Remove the nut (1) from the top of the Electronic Operator Assembly (2) then lift the Assembly off the valve body.

Remove the large metal washer (3) from the top of the valve. **Note the orientation of the washer; the washer must be reassembled as removed.**

Unscrew the plunger (4) from the valve body (7).

Lift out the replaceable Plunger Assembly (5, Varian Part No. L9379001*).

With a non-metal object, carefully remove the O-ring (6) from the top of the valve body.

*Includes shaft, spring, and rubber seal