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.
Specifications

Vacuum Range
- Cleaned Aluminum: Atm to 10^{-4} Pascal
- Nickel-plated: Atm to 10^{-7} Pascal

Leak Rate: <1 \times 10^{-9} \text{ std cc/sec (He)}

Ambient Temperature: 15^\circ C \text{ min to } 40^\circ C \text{ max (59 to 104^\circ F)}

Bakeable to
- Non-operating (closed): 125^\circ C (257^\circ 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

\begin{center}
\begin{tabular}{|c|c|c|c|c|c|}
\hline
\textbf{MODELS} & \textbf{A} & \textbf{B} & \textbf{C} & \textbf{D} & \textbf{E} \\
\hline
NW16 & 2.50 (63.50) & 2.28 (57.91) & 4.43 (112.92) & 1.58 (40.13) & 1.58 (40.13) \\
\hline
NW25 & 2.98 (75.69) & 2.28 (57.91) & 4.83 (122.68) & 1.98 (50.29) & 1.98 (50.29) \\
\hline
\end{tabular}
\end{center}

\textit{Figure 1. Outline Drawing, Direct-Acting Electromagnetic Block Valve}
When reassembling, make sure raised areas indicated by arrows are facing up.

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