

Vektak LLC 1334 East Sixth Ave. P.O. Box 625 Emporia, Ks. 66801 U.S.A.	Instruction Sheet	IS7127			
		REV:	A	ECN:	5138
		REV. BY/DATE:	ALS	9/26/23	
		APPR/DATE:	BCD	3/29/24	
TITLE: Alternating Pressure Valve					

Application Setup Guide

Alternating Pressure Valve

P/N's: 71-1125-01 and 47-1112-51



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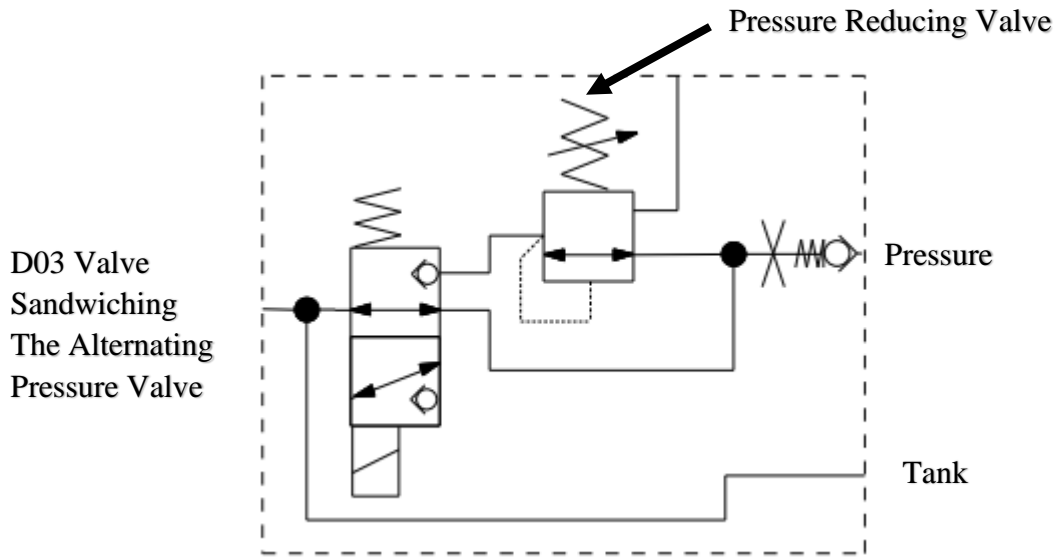
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Introduction to the Alternating Pressure Valve

The alternating pressure valve is used to toggle a system’s pressure between two preset points. This is done using an internal solenoid that when activated will decrease the system’s pressure. This alternating pressure allows for clamping a part with low pressure for initial positioning with a lower force. Once the clamps are in place the solenoid can be activated and the clamps can hold the part with full system pressure.

Operation

The alternating pressure valve is operated by a solenoid and the valve must be mounted between a D03 manifold and another D03 valve. When the solenoid is not activated the system pressure and the clamp pressure will be the same. Once activated, the alternating pressure valve will reduce the clamping pressure to the set pressure of the pressure reducing valve. The pressure reducing valve must be set manually using the hex at the end of the reducing valve.



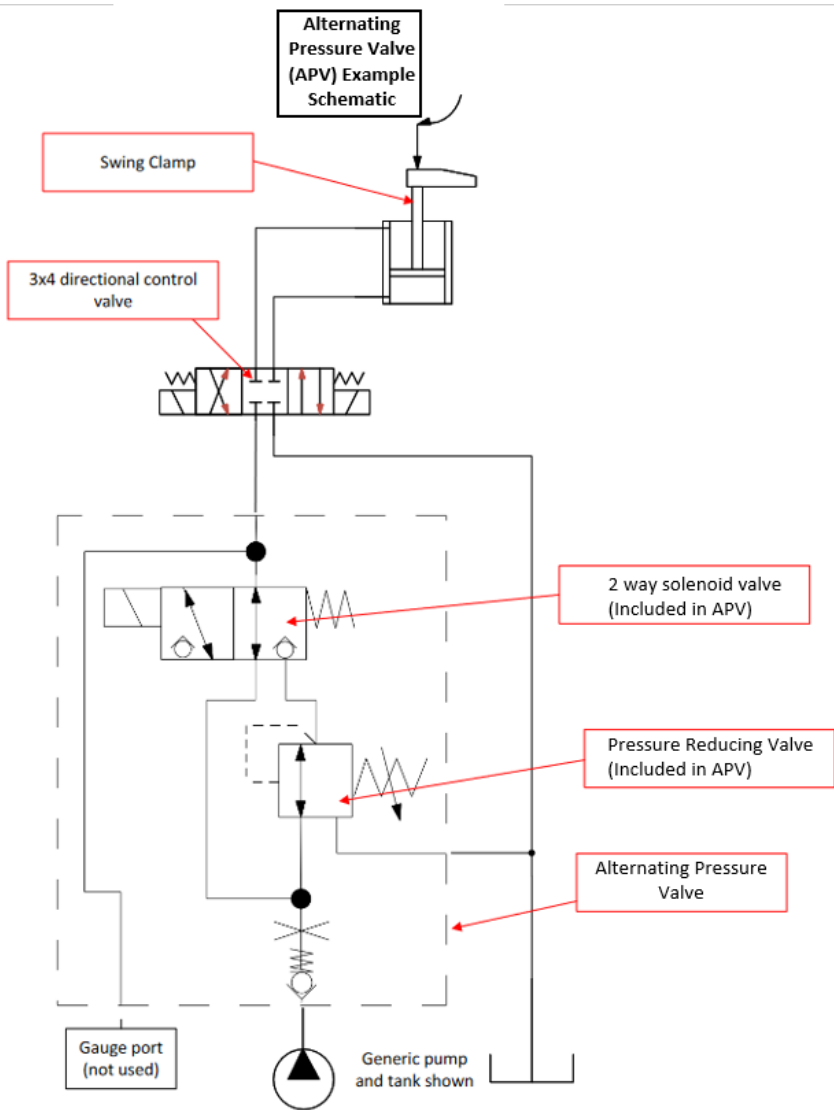
When using the alternating pressure valve underneath a directional control valve, always remove the check valve from the pressure port of the directional control valve and relocate it to the pressure port of the alternating pressure valve before final assembly. If the check valve is not relocated, the valve can only shift from low to high and not high to low.

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Applications

The alternating pressure valve can be used in several different ways to allow for unique clamping methods. One of the most common uses for the alternating pressure valve is for initial positioning of parts before clamping. This allows for a clamp, cylinder, or part crowder to activate first under low pressure to precisely locate the part before full system pressure is used for clamping. The advantage of locating the part under lower pressure is it allows for more precise positioning of the part with minimal chance of binding. The solenoid can then be deactivated, and the alternating pressure circuit will clamp with full system pressure.

Another application of the alternating pressure valve is to start with high pressure clamping, machining a section of the part, and then activate the solenoid to reduce the clamping pressure to relief stress on a part.



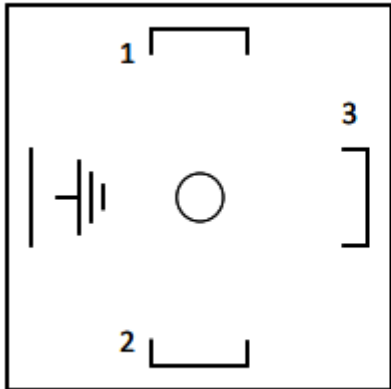
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Mounting, Plumbing & Wiring

The alternating pressure valve must be mounted between two D03 manifolds. This could be a manifold block and a direction control valve, a directional control valve and pressure reducing control block, or any desired combination of D03 manifolds.

When using the alternating pressure valve underneath a directional control valve always remove the check valve from the pressure port of the directional control valve and relocate it in the pressure port of the alternating pressure valve before final assembly. If the check valve is not relocated, the valve can only shift from low to high and not high to low.

The Alternating Pressure Solenoid Valve is shipped with a DIN43650 Connector. The wiring diagram for the DIN connector can be seen below. If an M12 connector is desired, Vekttek part number 27-7422-02 can be ordered.



- 1: +24VDC**
- 2: COMMON**
- 3: NOT USED FOR SINGLE SOLENOID**
- G: GROUND**

Valve Timing

The alternating pressure valve is normally open so when the solenoid is not activated, the pressure will build to system pressure. The timing of the system can easily be adjusted, simply by changing the period when the solenoid receives power. This provides an advantage over the manual low-high valve which can only be timed by adjusting the sequence valve.

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Q & A

Q: Will the alternating pressure valve work with any Vektek device?

A: Yes, the alternating pressure valve can be used with single acting and double acting devices.

Q: Can I used the alternating pressure valve to control more than one device?

A: Yes, it can be used with however many devices you want on one circuit.

Trouble Shooting

Problem	Cause	Corrective Action
My valve can only shift from low to high and not high to low	If used with a directional control valve the check valve may not have been relocated during installation.	Take the check valve out of control valve and relocate it to the pressure port of the alternating pressure valve.
The clamps on my alternating pressure valve circuit are clamping with too high or low of a pressure.	The pressure reducing valve is set at too high or low of a pressure.	Adjust the pressure reducing valve and lower or raise the set pressure to your desired reduced pressure by adjusting the hex on the reducing valve.