

V-1000

Vacuum Control Valve

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- ▶ **Blades**
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Precise, Reliable, Responsive

Feature

Benefits

- Available in a complete vacuum system including headers, separators and droplegs
- Immediate response to changes in air flow resulting from changing sheet characteristics
- Optimum accuracy at both high and low volumes. Positive set points are maintained to within ± 12 mm WC (.5" H₂O), throughout its flow range capability
- Easy maintenance procedure is facilitated by new lift handles. The entire assembly can be removed for cleaning or replacement in less than five minutes.
- Reliable long life. New 316 stainless steel wetted parts, 317L stainless steel fillet welds used during fabrication and 316 stainless steel flanges provide optimum corrosion resistance
- Clean, trouble-free operation resulting from the new slotted orifice design
- Your control choice of new pneumatic remote control panel or, for improved operator convenience, the new Electronic Operator Interface System which allows adjustment of the vacuum set points from remote locations or through existing mill computer control systems

Applications

- For all critical applications
- Can be applied to any vacuum assisted element on the forming section, on high and low vacuum applications, and on both basement or basmentless machines
- Can be fitted to existing vacuum systems with only minor modifications

Contact your local Kadant specialist for our specific recommendation for your application

To find your local contact, refer to:

www.kadant.com

V-1000 Vacuum Control Valve

Description

The V-1000 Valve consists of two back to back piston assemblies (A) with different size pistons and rolling diaphragms. When regulated air pressure (B), controlling set point vacuum from the control panel is introduced between two diaphragms, the piston assembly floats upwards in the direction of the larger piston due to the force imbalance. As the smaller diaphragm rolls upwards, the adjoining piston uncovers slots (C) in the lower sleeve allowing air to flow from the regulated vacuum chamber (D) to the high vacuum header (E). When the regulated vacuum chamber reaches the set point vacuum the piston assembly is in a force-balance equilibrium. Higher vacuum in the regulated vacuum chamber will roll the piston assembly down, closing off more of the slot area to the vacuum header. Lower vacuum will allow the piston assembly to roll up in the direction that opens more of the slot area. If the vacuum remains above the set point level even after all of the slots in the lower sleeve are closed, the piston assembly will continue to roll down until the upper diaphragm has uncovered enough holes (F) open to the atmosphere to break the high vacuum.

A Unique Vacuum Controller

The patented V-1000 Vacuum Control Valve is unique in that it is a stand alone, vacuum controller. Once set, using an air signal, the valve will automatically maintain a desired vacuum level, opening and closing in response to changes in air flow, without the aide of external sensing elements and control loops.

Sealing, Throttling Action

A close look at the movement of convolution of the rolling diaphragm reveals the sealing and throttling action. The convolution remains firm due to the positive air pressure between the upper and lower diaphragms. The differential pressure from regulated vacuum is applied across the lower stainless piston and sleeve. Therefore, the rolling diaphragms remain virtually frictionless with a floating movement within the centre valve section.

Clean, Trouble-free Operation

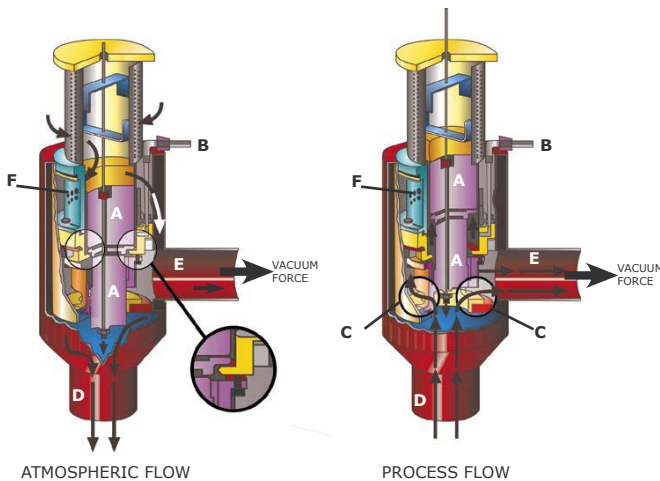
The large slot opening in the lower sleeve together with the water spray assembly, mounted below the valve, provides clean, trouble-free valve operation on any paper grade.

Extremely Fast Response

The V-1000 response is extremely fast because the bottom piston immediately senses regulated vacuum. A change from set point vacuum causes a force imbalance on the double-piston assembly and the diaphragms roll rapidly to seek a new equilibrium position either exposing more of the slot area or closing them off as necessary.

No controller Overlap

There is no overlap in the V-1000 Controller where atmospheric air can flow directly to the vacuum header. The air breaker holes are open only when the regulated vacuum exceeds the set point vacuum. (No air break on 8" V-1000).



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