Valco Instruments Co. Inc.

Installation and Operation

Manually Operated Valco Prime/Purge Valves

Description

Valco high-pressure prime/purge valves feature quality engineering, precision machining, and extremely low internal volume (< 2 µl), making them the ideal choice in the most demanding liquid or supercritical fluid chromatography or extraction systems. When used in the prescribed manner, they offer years of trouble-free service.

The long lifetime is accomplished by minimizing wear materials in the flowpath; we start with naturally hard materials and then further harden them before incorporating them in the valve. (The materials listed in the last column of the table below are for the seal which isolates the valve flowpath from the standoff and actuator assembly.) The seat is machined out of the body material, then deburred with a special abrasive fluid. After that, a cold-forming process tempers the stainless steel seat to increase its hardness. The stainless steel needles undergo a special roller burnishing process to increase the hardness of the needle point, and cobalt alloy needles are polished to a finish of less than 2 µ-inch.

Configurations

Manual prime/purge valves come with 1/16" tubing connections and a choice of two temperature ranges. The following table delineates the options, and describes the various needle and sealing materials for each model.

Part No.	Connection	Bore (mm/in)	Max temp (°C)	Max press (psi)	Knob length (in)	Needle material	Seal material
SFV	1/16"	0.50/0.020	100	10,000	1	Cobalt alloy	PAEK/TFE
SFVL	1/16"	0.75/0.030	100	10,000	1	Cobalt alloy	PAEK/TFE
SFVHT	1/16"	0.50/0.020	300	6,000	2	Cobalt alloy	Polyimide
SFVLHT	1/16"	0.75/0.030	300	6,000	2	Cobalt alloy	Polyimide
SFVHT4	1/16"	0.50/0.020	300	6,000	4	Cobalt alloy	Polyimide
SFVLHT4	1/16"	0.75/0.030	300	6,000	4	Cobalt alloy	Polyimide

Mounting Instructions

There are two different mounting methods for the valve:

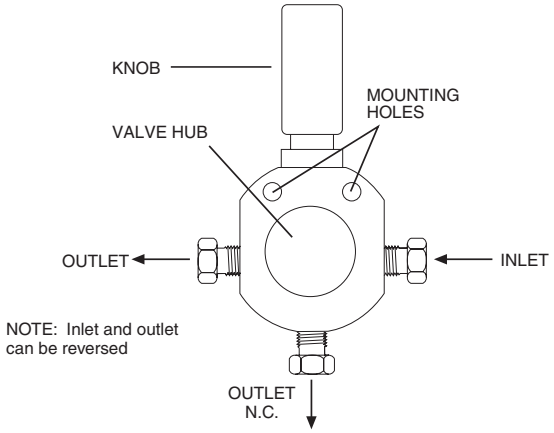
1. Use the two mounting holes in the valve body. Clearance is provided for #6 screws.
2. Order clamp ring CR4. Mount the clamp ring to the desired panel or bracket, then slide the valve hub into the clamp ring and tighten the clamp ring screw to secure the valve.

NOTE: High temperature versions can be mounted to a single valve heater block (product number HB or HBS) via the hub on the valve body.

Operation

In the prime/purge model, liquid flows around the needle when the valve is closed, relieving back pressure from the column. Rotating the valve knob counterclockwise (CCW) opens the valve, venting mobile phase to waste to prime the pump. Turning the valve knob clockwise (CW) closes the valve. Rotation from closed to the fully open position requires less than one full turn.

Prime/purge valves are not intended to meter or regulate flow, but rather to be opened and closed quickly and completely.



Maintenance

These valves are precision engineered, aligned, and assembled to achieve the high degree of performance that they deliver. They are not designed to be altered or disassembled in any way by the user, and doing so ***voids the warranty***.

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TN-610 11/03