

D4PM0 Series

DOUBLE SEAT MIX PROOF VALVES



SPX FLOW is a leading innovator of process solutions with decades of experience in valve design covering premium brands such as APV™ and Waukesha Cherry-Burrell™. From the supply of engineered components to complete process engineering and design, we specialize in helping our customers improve their plant's performance and profitability.

Based on more than 60 years experience in valve design and manufacturing, SPX FLOW has developed the D4PMO Series hygienic double seat mix proof valve to fulfill the demands of today's process industry. Installing the D4PMO valves is an investment in efficiency, production flexibility, and uptime. When designing this valve, great emphasis has been put on facilitating return on investment, safety, and maintenance.

SPX FLOW, Inc. (NYSE:FLOW) is a leading manufacturer of innovative flow technologies, many of which help define the industry standard in the market segments they serve. From its headquarters in Charlotte, North Carolina, it operates a sales and support network, centers of manufacturing excellence, and advanced engineering facilities, throughout the world. Its cutting-edge flow components and process equipment portfolio includes a wide range of pumps, valves, heat exchangers, mixers, homogenizers, separators, filters, UHT, and drying technology that meet many application needs. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

Incorporating many leading brands, SPX FLOW has a long history of serving the food and beverage, power and energy, and industrial market sectors. Its designs and engineered solutions help customers drive efficiency and productivity, increase quality and reliability, and meet the latest regulatory demands. In-depth understanding of applications and processes, state-of-the-art Innovation Centers, and advanced pilot/testing technology further assist in optimizing processes and reducing timescales to reliably meet production targets.

To learn more about SPX FLOW capabilities, its latest technology innovations and complete service offerings, please visit www.spxflow.com.

D4PMO Double Seat Mix Proof Valves for PMO Compliant Continuous Processing

The next generation of mix proof valve technology is the result of continued development from both APV™ and Waukesha Cherry-Burrell™ process technologies. Used for the reliable separation and continuous processing of dissimilar fluids in Grade A dairy, the D4PMO Series helps fulfill today's customer demands for production flexibility, high productivity, rapid return on investment (ROI), and enhanced product quality across various applications in the fluid milk, cheese, cream, whey, and yogurt industries.

FEATURES AND BENEFITS

High value, Low life cycle costs:

- Newest generation continuous process PMO valve helps maximize plant uptime and allows flexibility in cleaning and dairy production schedules
- "All In" standard features provide exceptional value and help to increase ROI to align with customer budgets
- Reduced inventory costs with same seal kit used on multiple size ranges such as one kit for 1.5" - 3.0" sizes
- Minimal CIP losses improve cost savings
- Low air consumption and air supply requirements
- Long housing ports ease manifold building
- Integrated shaft seal flush reduces need for external piping
- Mixed sizes and legacy centerline dimensions available to fit complex or existing installations with minimal piping rework

Reliable performance:

- Innovative control unit design for fully integrated position and seat lift detection without external sensors
- Fully balanced design helps to prevent hydraulic blocking, withstand pressure spikes, and enables flexible flow direction without slamming
- Light overall weight helps support handling without lifting tools
- Slim stainless actuator is fully enclosed to prevent fluid ingress
- No compressed air needed for removal and servicing
- Range of control units and bus communication for automated operation

Cleanability:

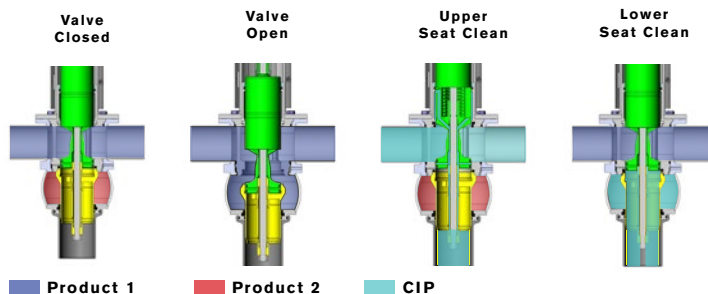
- Designed to the latest 3-A Sanitary Standard 85-02 for PMO compliance
- Demonstrated ability to clean product-contact surfaces without full actuation of the valve
- Integrated flow channels clean product-contact portions of the upper balancer during seat lift movement so no cumbersome adapters or external piping are required

TECHNICAL DATA

TECHNICAL DATA	
SIZES	OD Tube 1.5" - 4" - mixed sizes available upon request
HOUSING TYPES	41, 42, 43, 44 Centerline dimensions to match legacy W75 series available upon request
PRODUCT-WETTED PARTS	1.4404/AISI 316L Other stainless steel parts 1.4301/AISI 304
SEAL MATERIALS	EPDM, FPM All seals comply with the FDA requirement
SURFACES	Inside: Ra .32 µ-in (0.8 µm) with Electro-polish Outside: Glass -blasted, satin finish
PRODUCT PRESSURE	145 psi (10 bar)
MAX. TEMPERATURE	EPDM: 275°F / 135°C (short time 284°F / 140°C) FPM 275°F / 135°C (not to be used for steam)
STERILIZATION TEMPERATURE	EPDM: (short time) 284°F / 140°C
REQUIRED AIR PRESSURE	73 psi (5 bar), valve normally closed

THEORY OF OPERATION:

Double seat mix proof valves are used to efficiently process two different fluids (typically product and CIP) through the valve simultaneously. The D4PMO mix proof design has two seats which isolate the upper and lower pipe lines when the valve is in the fail-safe closed position. The innovative atmospheric vent cavity design in between the seats creates dual paths for any leakage should the seals fail as well as a drain for CIP solution during seat cleaning. Also, the upper seat clean movement allows integrated CIP flows to clean the portion of upper balancer exposed to product when open without the need for external flush piping.



CONTROL UNITS

CU4plus Series



FEATURES AND BENEFITS

- Innovative seat lift detection is fully integrated without need for external sensor wiring
- Reliability and long service life - robust clamp connection, reinforced stainless steel air coupling threads to avoid air leakages, and water tight seals
- Ease of operation - contains manual override solenoids and adjustment screw to throttle air flow to actuator to ensure optimal opening and closing
- Clarity - clear and bright indication of valve position - 5 diodes in LED panel and convenient location
- Standardization - same control top used on various SPX FLOW valve lines, offers common look and controls interface
- NEMA 6 (IP67) washdown rating

CONNECTOR OPTIONS

- S/O Cord Grip for hard wire (standard)
- M12 4-pin connector (optional)

INTERFACE OPTIONS

- AS-i Field Bus Card

POSITION INDICATION

- Automatic teaching of all positions with press of single button
- Detection of all positions (open, close, upper/lower seat lifts)

SOLENOID VALVES

- 3 Solenoids (seat lift)

8681 Control Tops



FEATURES AND BENEFITS

- Contact free position sensor including (3) programmable feedback signals
- Positions easily taught via intuitive push buttons or Autotune feature to ensure quick & easy set-up
- Ultra-bright 360° visual LED position indication with adjustable red, yellow, & green color assignments provide clarity from all points of view and avoid confusion
- Manual override and air throttle adjustable solenoids to assist start-up, maintenance, and troubleshooting
- Up to IP69K washdown rating available (IP65/67 as standard) for high washdown environments
- Built-in microcontroller tracks cycles and alerts operator when preventive maintenance is required
- Simple and robust stainless steel adapter & chemically resistant polycarbonate head
- Supplied by industry leading Burkert Fluid Controls

CONNECTOR OPTIONS

- Quick Disconnect Pin Connector

INTERFACE OPTIONS

- AS-i Field Bus Card
- DeviceNet™ Field Bus Network Card

POSITION INDICATION

- (3) programmable position sensors in control top

SOLENOID VALVES

- 24V DC
- Manual override and air throttle adjustment
- Up to (3) available in control top

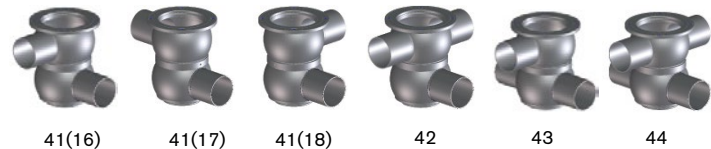
Typical product applications

Dairy

Fluid milk, Raw milk,
Skimmed milk, Milk concentrate,
Cheese, Cream, Whey, Yogurt,
Raw receiving,
Supply and discharge on
HTST pasteurization,
Filler supply lines,
Batching/blending distribution,
CIP supply and return distribution



HOUSING COMBINATIONS Shut-Off Valves



D4PMO Series Double Seat Mix Proof Valves



PRODUCT DIMENSIONS

D4PMO

DIMENSIONS IN		A	A1	B	ØDo	ØDi	F	H	L	L1
D4PMO	1.5	25.6	28.1	4.7	1.5	1.4	4.9	2.5	32.7	35.2
	2.0	25.8	28.3	4.9	2.0	1.9	4.9	3.0	33.6	36.1
	2.5	25.9	28.4	5.2	2.5	2.4	4.9	3.4	34.5	37
	3.0	26.2	28.7	5.4	3.0	2.4	4.9	3.9	35.4	37.9
	4.0	30.8	33.3	6.1	4.0	3.8	5.6	4.9	41.4	43.9

Minimal clearance required for installation and valve insert removal

DIMENSIONS IN		P (FROM CENTERLINE, ABOVE VALVE)	Q (FROM CENTERLINE, BELOW VALVE)
D4PMO	1.5	34.3	7.8
	2.0	34.6	8.5
	2.5	35.0	9.2
	3.0	35.4	9.9
	4.0	39.0	11.9

NOTE: Add the following approximate dimension to "F" for each clamp port connection: 0.5" for valve sizes 1.5" - 3.0", 0.62" for valve size 4".

Based in Charlotte, North Carolina, SPX FLOW, Inc. (NYSE: FLOW) is a multi-industry manufacturing leader. For more information, please visit www.spxflow.com

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Assembled and tested in Delavan, WI USA

SPX FLOW, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction, dimensional data and certifications as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit www.spxflow.com.

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