- **Designed for use with IMI Norgren Cadent™ 6 syringe pumps and Kloehn™ 6cm syringes**
- **Highly inert to most chemistries and designed for long life**
- **Available with PTFE or ceramic**
- **Available in distribution, non-distribution and loop configurations**
- **Rated to 100 psig (6.89 barg)**
- **Suitable for use in analytical, biotechnology, medical device, and diagnostic instruments**


## Specifications

**Physical**
**Valve Overall Dimensions**
**Diameter:**
1.30" (3.3cm)
**Length:**
1.90" (4.8cm)
**Mass:**
55 to 97 grams
**Life cycle[1] (Minimum):**
100,000 [Plug]
1,000,000 [Ceramic]

**Environmental**
**Operating Temperature:**
10°C to 40°C ( 50°F to 104°F)
**Operating Humidity:**
5% to 95% relative humidity, non-condensing at 40°C (104°F)
**Storage Temperature:**
-10°C to 85°C (13°F to 185°F)
**WEEE & RoHS Compliant**

**Chemical (wetted)**
**Orifice Diameter:**
See table for available diameters
**Port Specifications:**
1/4-28 flat bottom threaded ports, 0.245" deep
**Rated pressure**
Vacuum[2] to 100 psig (6.89 barg)
**Valve Mounting Hardware (supplied) Torque**
5.0 in-lbs.

[1]Tested with DI water using IMI standard protocol

[2]Vacuum pressure: -25inHg maximum at 2750ft elevation (1psia max).

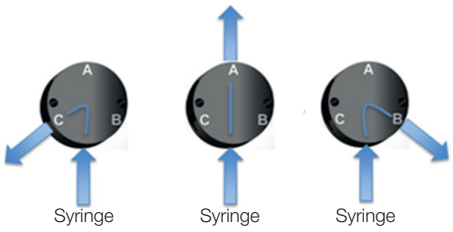
## Valve Flow Configuration Types

**Distribution**
Distribution valves have a flow path configuration that connects the syringe port to any of the other fluid ports through a central common port. Flow is bi-directional for each connection. The naming of each valve type is determined by the number of ports available to connect with the syringe port (the syringe port is not counted).

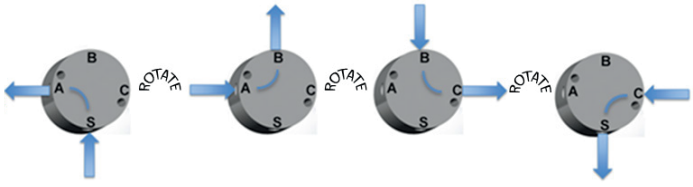
**Non-Distribution**
A non-distribution valve connects adjacent ports on a valve to allow fluid to flow between them. Fluid may be drawn into the syringe only from one of the adjacent ports. Non-distribution valves allow a "bypass" fluid path where the fluid flows through the valve without entering the syringe. An external pressure system is required to move fluids through any flow paths not involving the syringe port. The naming of each valve type is determined by the number of possible fluid paths.

**Loop**
A loop valve connects adjacent ports on a valve to create multiple simultaneous flow paths including the syringe port. These valves therefore only exist in even numbered port configurations. Fluid may be drawn into the syringe only from one of the adjacent ports. An external pressure system is required to move fluids through any flow paths not involving the syringe port.

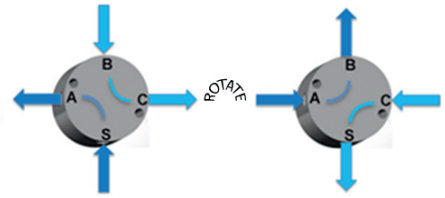
Bi-directional flow valves; not intended for use as shut-off or relief valves




Possible flow paths on a 3-Way Distribution Valve




Possible flow paths on a 4-Way Non-Distribution Valve




Possible flow paths on a 4-Way Loop Valve

| Face Seal Valves - Ceramic | | |
|---|---|---|
| **P/N** | **Orifice Size (in)** | **Valve Type** |
| 23550 | 0.059 | 3-Way Distribution |
| 23551 | 0.078 | 3-Way Distribution |
| 24898 | 0.059 | 4-Way Distribution |
| 23604 | 0.059 | 5-Way Distribution |
| 23370 | 0.059 | 8-Way Distribution |
| 24090* | 0.076 | 8-Way Distribution |
| 24105** | 0.040 | 12-Way Distribution |
| 23548 | 0.059 | 3-Way Non-Distribution |
| 23549 | 0.078 | 3-Way Non-Distribution |

| Optional Accessories | |
|---|---|
| **P/N** | **Description** |
| 18659 | Port Plug Screw, use with seal p/n 18781 |

| Seal Washers | |
|---|---|
| **P/N** | **Description** |
| 14271 | Teflon, 0.070" ID Hole, for 0.059" orifice |
| 18031 | Teflon, 0.095" ID Hole, for 0.076" orifice |
| 18033 | Teflon, 0.125" ID Hole, for 0.089" orifice |
| 18781 | Teflon, No hole, for port plug |

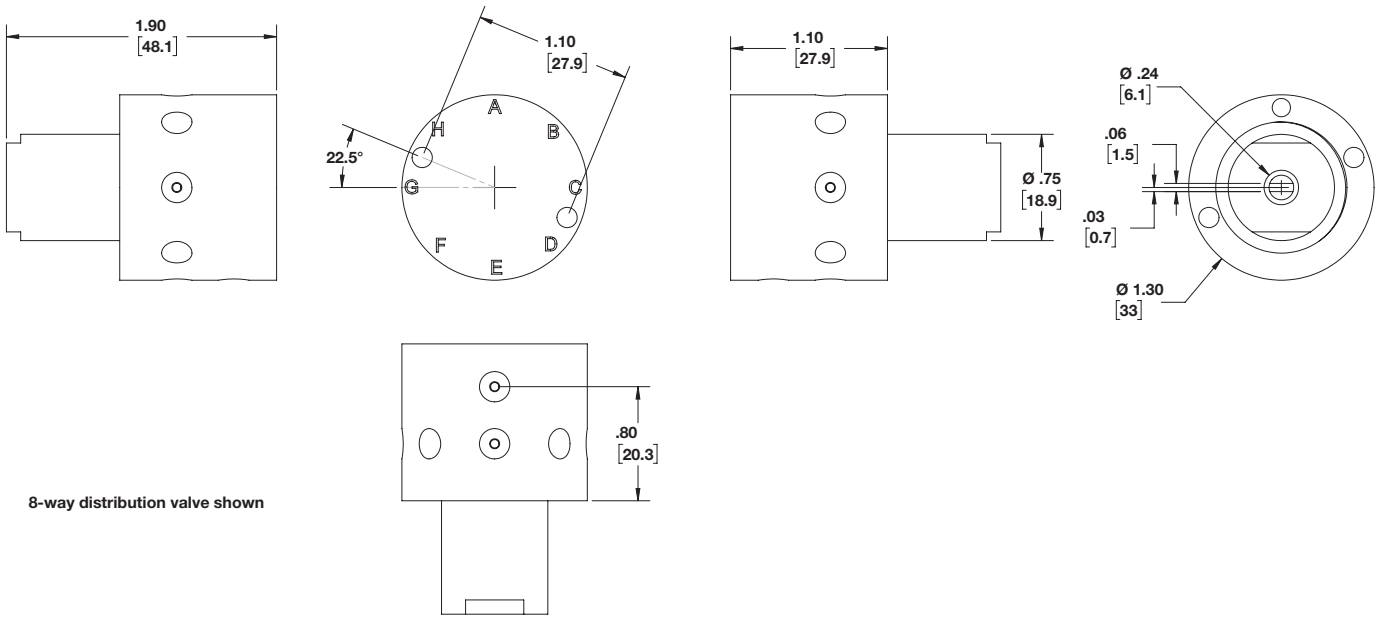
Wetted materials: alumina ceramic, FFKM (seals)

*Overall length: 2.50"

**Overall length: 2.70"

For customization requests, contact us at IMIKloehncustomersupport@imi-precision.com

Dimensions in inches [mm]
Projection/Third angle




**8-way distribution valve shown**

| Plug Valves | | | | | |
|---|---|---|---|---|---|
| **P/N** | **Orifice Size (in)** | **Valve Type** | **P/N** | **Orifice Size (in)** | **Valve Type** |
| 19218 | 0.059 | 1-Way Distribution | 19194 | 0.031 | 3-Way Non-Distribution |
| 18247 | 0.059 | 1-Way Distribution | 17615 | 0.059 | 3-Way Non-Distribution |
| 18248 | 0.076 | 1-Way Distribution | 18192 | 0.076 | 3-Way Non-Distribution |
| 99884 | 0.031 | 3-Way Distribution | 18680 | 0.089 | 3-Way Non-Distribution |
| 17616 | 0.059 | 3-Way Distribution | 24699 | 0.090 | 3-Way Non-Distribution |
| 18189 | 0.076 | 3-Way Distribution | 17712 | 0.059 | 4-Way Non-Distribution |
| 23554 | 0.031 | 4-Way Distribution | 18191 | 0.076 | 4-Way Non-Distribution |
| 17617 | 0.059 | 4-Way Distribution | 24697 | 0.059 | 4-Way Loop |
| 18190 | 0.076 | 4-Way Distribution | 29621 | 0.059 | 6-Way Loop |
| 17618 | 0.059 | 5-Way Distribution | | | |
| 18188 | 0.076 | 5-Way Distribution | | | |
| 24701 | 0.031 | 6-Way Distribution | | | |
| 17619 | 0.059 | 6-Way Distribution | | | |
| 18193 | 0.076 | 6-Way Distribution | | | |
| 19323 | 0.031 | 8-Way Distribution | | | |
| 17620 | 0.059 | 8-Way Distribution | | | |
| 17877 | 0.076 | 8-Way Distribution | | | |

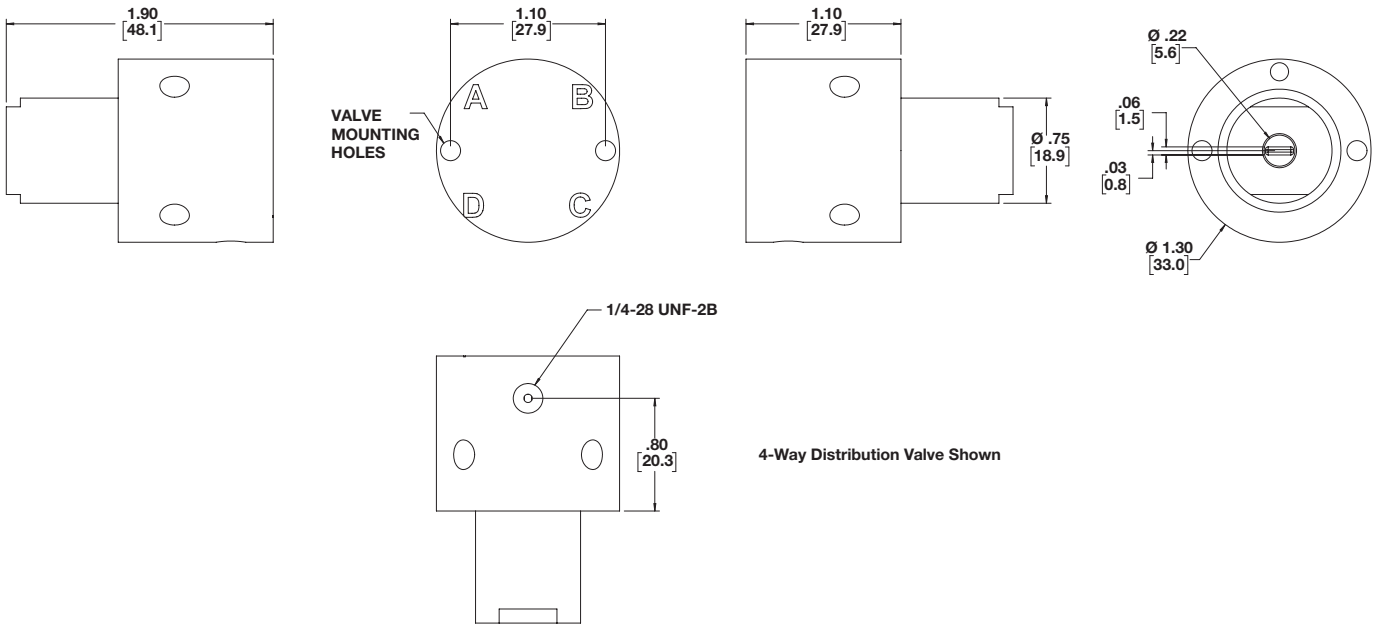
| Optional Accessories | |
|---|---|
| **P/N** | **Description** |
| 18659 | Port Plug Screw, use with seal p/n 18781 |

| Seal Washers | |
|---|---|
| **P/N** | **Description** |
| 14271 | Teflon, 0.070" ID Hole, for 0.059" orifice |
| 18031 | Teflon, 0.095" ID Hole, for 0.076" orifice |
| 18033 | Teflon, 0.125" ID Hole, for 0.089" orifice |
| 18781 | Teflon, No hole, for port plug |

Wetted materials: PCTFE, PTFE

For customization requests, contact us at IMIKloehn™customersupport@imi-precision.com

Dimensions in inches [mm]
Projection/Third angle




**4-Way Distribution Valve Shown**

## Warning

Improper selection, misuse, age or malfunction of components used in systems can cause failure in various modes. The system designer is warned to consider the failure modes of all component parts and to provide adequate safeguards to prevent personal injury or damage to equipment or property in the event of such failure modes. System designers and end-users are cautioned to consult instruction sheets and specifications available from the factory. The system designer/end-user is responsible for verifying that all requirements for the application are met. Due to unlimited application, system conditions and chemistries, it is the buyers responsibility to validate the product within their specific application.

**Proposition 65:** These products may contain chemicals known to the state of California to cause cancer, or birth defects, or other reproductive harm.