

Wet Process Solutions

Dymatrix™

PFA Specialty Valves

PURFLON®

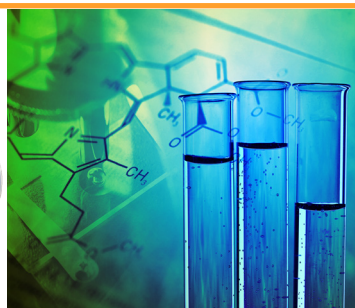
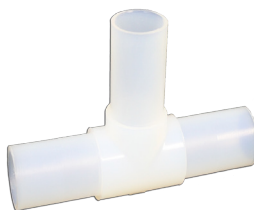
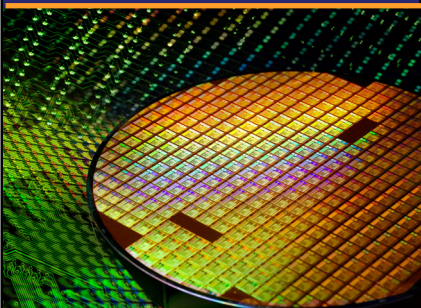
PFA Piping System

emtechnik
simply better

Compression Fittings

POLYTETRA

Heat Exchangers and Heaters



Specialty Valves • Pipe & Fittings • Compression Fittings • Heaters & Heat Exchangers

**The
Wet
Process
People™**



Dymatrix™ Specialty Valves

- Excellent durability and reliability
- Ideal for aggressive chemistry and UPW
- Compact design for easy OEM integration
- Custom solutions for your application



Diaphragm Valves

Diaphragm valves are an economical solution for a commodity diaphragm valve. SDV offers a large molded size range with multiple connection options. Available with air actuated, manual multi-turn and manual toggle actuators.

Stocked in Boston in the most popular configurations.

Multiport Valve Manifolds

These versatile custom manifolds eliminate fittings & dead space and are offered custom in a variety of end connections, actuators and options.

Tested at pressure beyond 1,000,000 cycles. Poppet style diaphragm allows media to recirculate on multiple feed lines while valve remains closed to the point of use.

Custom designed and manufactured in Boston quickly to meet your unique needs.

Needle Valves

Special diaphragm needle shape, in conjunction with dual stems create true linear flow. Easy to adjust to the desired flow rate without spiking like standard needle valves.

The high purity PTFE diaphragm isolates all media from the top works.

Stocked in Boston in the most popular configurations.

Pressure Regulators

HPRL series pressure regulators offer highly reliable pressure control in both manual and pneumatic versions. Easy to operate and simple to install. Adjust pressure by rotating the handle or through the pneumatic dome. Once the desired pressure is set, it automatically controls fluctuations.



SDV
Superior Diaphragm Valve
On/Off Manual/Pneumatic
Flare, S-300, FNPT, Tube
100psi 1/4" - 1"



MPV
Multiport Manifold Valve
On/Off Manual/Pneumatic
Flare, S-300, FNPT, Tube
100psi 1/4" - 1"



NVM
Manual Needle Valve
Fine Regulation
Flare, S-300, FNPT, Tube,
Baseplate
100psi 1/4" - 1/2"



HPRL
Pressure Regulator
Manual or Pneumatic
Full shut off (fail close)
Flare, S-300, FNPT, Tube
72.5psi 1/4" - 1"



Diaphragm Valves

SDV Superior Diaphragm Valves

- Excellent durability and reliability
- Ideal for chemical process & DI water
- Easily incorporated into OEM equipment
- In stock and ready to ship
- Proven to millions of cycles with no pressure loss



Materials of Construction

Wetted materials consist of PFA and PTFE.

Only high purity resins are used which pass Asahi quality standards including:

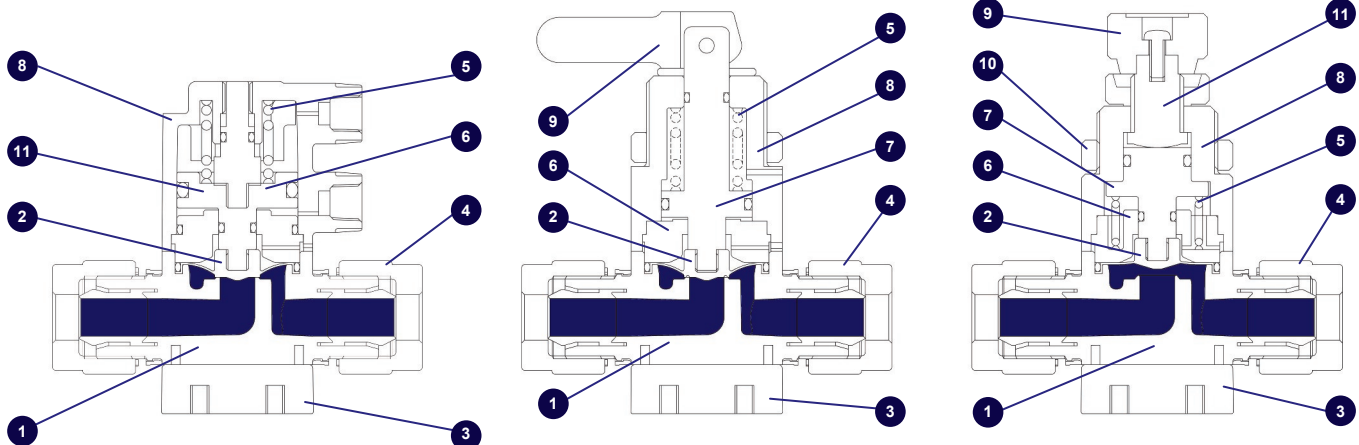
- Semi F57 TOC Leachout
- FDA CFR 21 177.2510
- TSE/BPE free

Specifications

- Size Range:** 1/4" to 1"
- Diaphragm:** PTFE
- Body:** PFA/PTFE
- O-ring:** Non wetted FKM Standard
EPDM or Kalrez® available
- Connections:** Flare, S-300, NPT, Custom
- Operation:** Air-Spring Closed
Air-Spring Open
Air-Air
Manual multi-turn
Toggle 90° handle
Toggle 180° handle
Toggle temporary on
- Max Pressure:** 100psi forward pressure
- Max Temp.:** 194°F (90°C) media
140°F (60°C) ambient
- N.C. Pilot:** 1/8" FNPT, 60psi (0.4 MPa)
N.O., A-A: 1/8" FNPT, 45psi (0.3 MPa)

Item Description Contact Actuated Manual Toggle

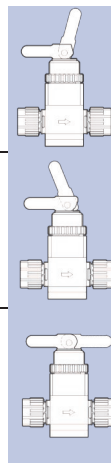
1	Body	Wetted		PFA/PTFE
2	Diaphragm	Wetted		PTFE
3	Base Plate	Non Wetted		PP
4	Nut	Non Wetted		PFA
5	Spring	Non Wetted		SS 304
6	Bushing	Non Wetted	PP	PVDF
7	Stem	Non Wetted	-	PVDF
8	Bonnet	Non Wetted	PPS	PP
9	Handle	Non Wetted	-	PP
10	Lock Nut	Non Wetted	-	PP
11	Piston	Non Wetted	PP	PVDF



Part Numbers & Description

In Stock Now	Size	Part Number	Description
	1/4"	841085102	Normally Closed Flare, PFA, FKM
	3/8"	841085103	
	1/2"	841085105	
	3/4"	841085107	
	1"	841085110	
	1/4"	841085202	Normally Open Flare, PFA, FKM
	3/8"	841085203	
	1/2"	841085205	
	3/4"	841085207	
	1"	841085210	
	1/4"	841085802	Air to Air Flare, PFA, FKM
	3/8"	841085803	
	1/2"	841085805	
	3/4"	841085807	
	1"	841085810	

Size	Part Number	Description
1/4"	841085502	Manual Toggle 90° Handle Flare, PFA, FKM
3/8"	841085503	
1/2"	841085505	
3/4"	841085507	
1"	841085510	
1/4"	841085602	Manual Toggle Temporary Flare, PFA, FKM
3/8"	841085603	
1/2"	841085605	
3/4"	841085607	
1"	841085610	
1/4"	841085702	Manual Toggle 180° Handle Flare, PFA, FKM
3/8"	841085703	
1/2"	841085705	
3/4"	841085707	
1"	841085710	

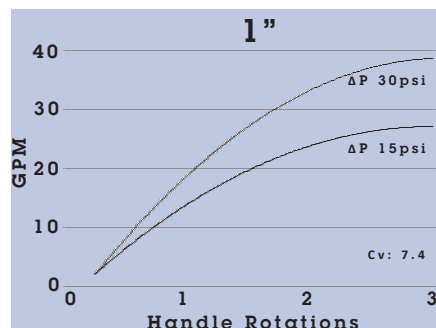
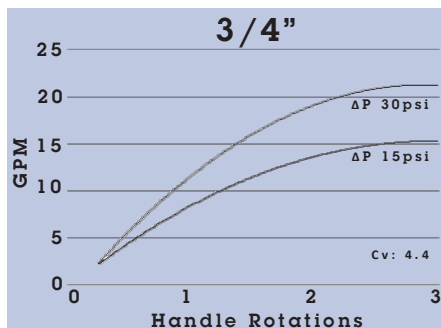
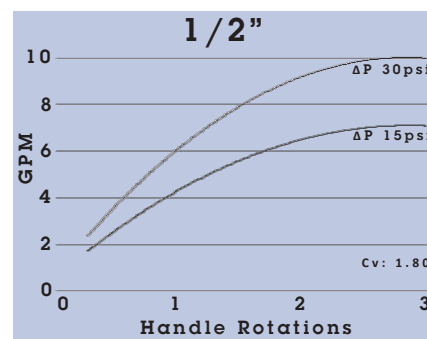
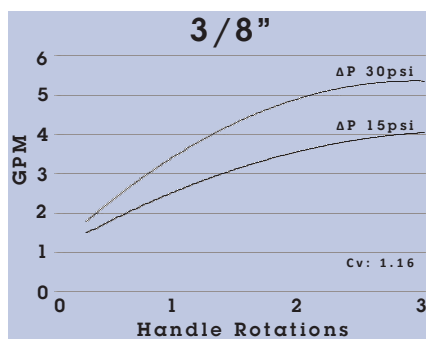
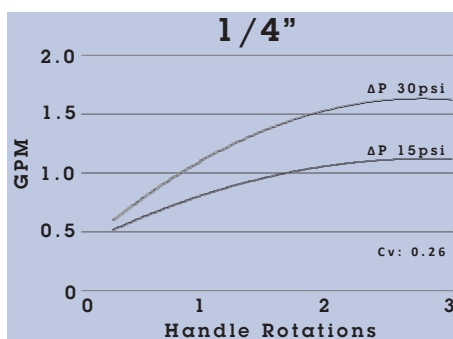


Size	Part Number	Description
1/4"	841085402	Manual Multi-turn Flare, PFA, FKM
3/8"	841085403	
1/2"	841085405	
3/4"	841085407	
1"	841085410	

Additional Options

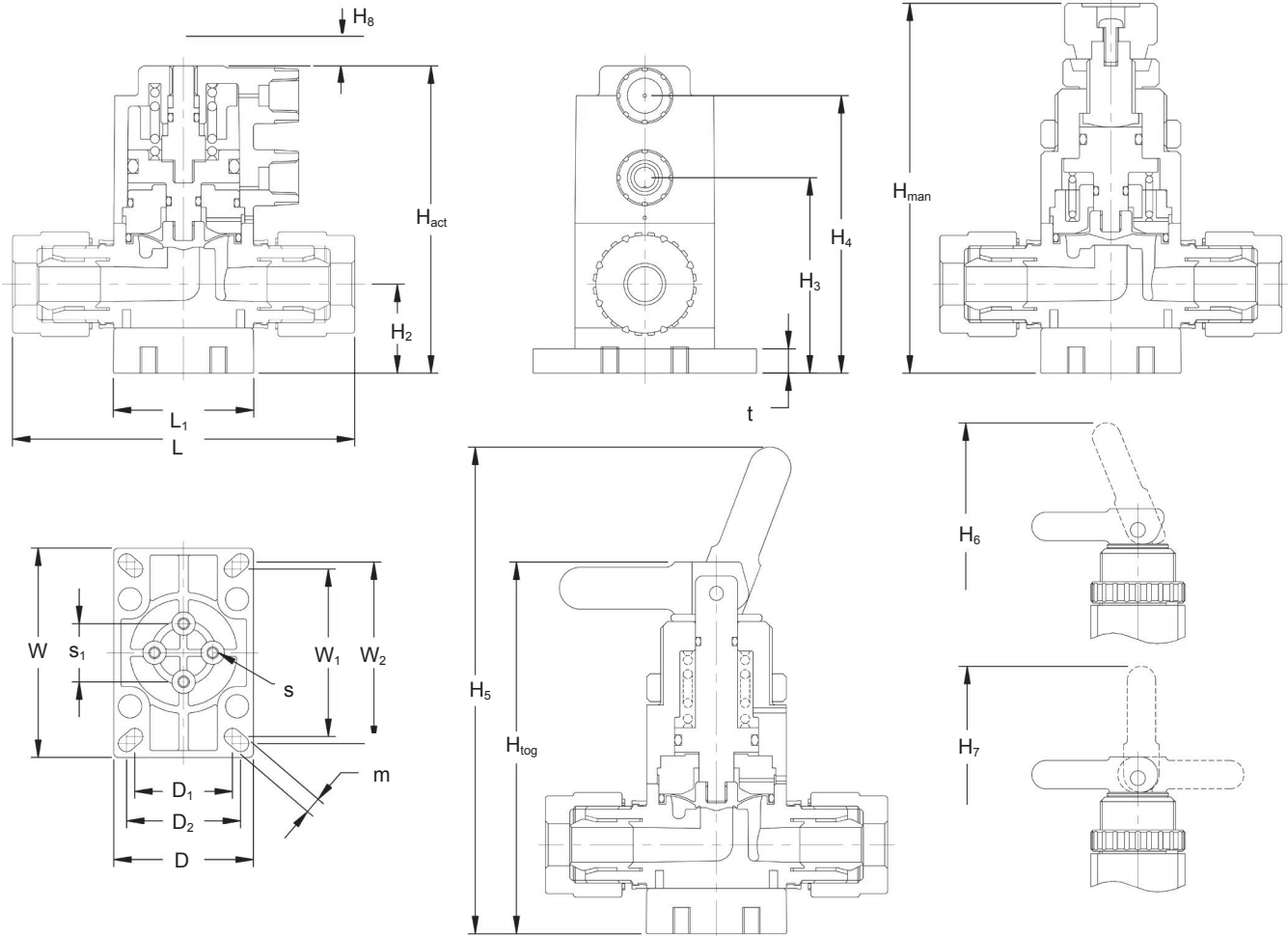
- Valve travel stop
- Bypass port
- Position switch
- PTFE coated hardware
- PVDF bonnet

Multiturn Flow Charts

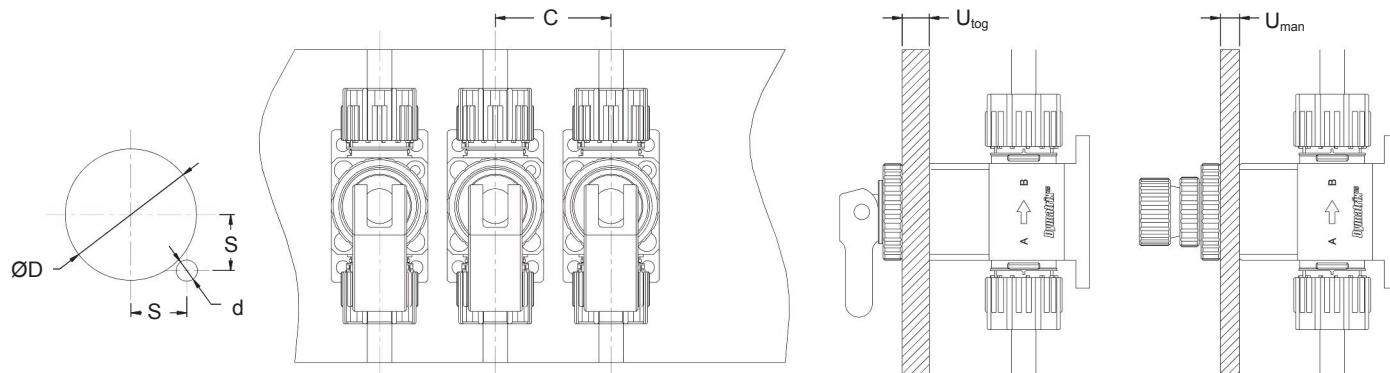


Size CV Valves

1/4"	0.26
3/8"	1.16
1/2"	1.80
3/4"	4.40
1"	7.40

Valve Dimensions


	1/4"		3/8"		1/2"		3/4"		1"	
L _{S300}	2.68	(68)	3.54	(90)	3.86	(98)	4.80	(122)	5.75	(146)
L _{Flare}	3.39	(86)	4.02	(102)	4.17	(106)	4.96	(126)	6.06	(154)
L _{NPT}	1.97	(50)	2.83	(72)	2.83	(72)	3.54	(90)	4.33	(110)
L1	1.18	(30)	1.57	(40)	1.57	(40)	1.97	(50)	2.36	(60)
H _{act}	2.76	(70)	3.46	(88)	3.46	(88)	4.09	(104)	5.45	(138.5)
H _{man}	3.50	(89)	4.17	(106)	4.17	(106)	5.28	(134)	6.34	(161)
H _{tog}	3.33	(84.5)	4.19	(106.5)	4.19	(106.5)	5.10	(129.5)	6.24	(158.5)
H2	0.71	(18)	1.00	(25.5)	1.00	(25.5)	1.34	(34)	1.54	(39)
H3	1.65	(42)	2.20	(56)	2.20	(56)	2.68	(68)	3.33	(84.5)
H4	2.40	(61)	3.13	(79.5)	3.13	(79.5)	3.74	(95)	4.59	(116.5)
H5	4.21	(107)	5.67	(144)	5.67	(144)	6.85	(174)	8.96	(227.5)
H6	4.17	(106)	5.63	(143)	5.63	(143)	6.83	(173.5)	8.94	(227)
H7	4.21	(107)	5.71	(145)	5.71	(145)	6.89	(175)	9.00	(228.5)
H8	0.06	(1.5)	0.06	(1.5)	0.12	(3)	0.14	(3.5)	0.18	(4.5)
t	0.20	(5)	0.28	(7)	0.28	(7)	0.28	(7)	0.28	(7)
D	1.18	(30)	1.57	(40)	1.57	(40)	1.97	(50)	2.36	(60)
D1	0.87	(22)	1.18	(30)	1.18	(30)	1.50	(38)	1.93	(49)
D2	-	-	-	-	-	-	-	-	1.65	(42)
W	1.97	(50)	2.52	(64)	2.52	(64)	3.11	(79)	3.54	(90)
W1	1.65	(42)	2.05	(52)	2.05	(52)	2.50	(63.5)	3.07	(78)
W2	-	-	-	-	-	-	-	-	2.83	(72)
m	0.16	(4)	0.22	(5.5)	0.22	(5.5)	0.28	(7)	0.28	(7)
s	M5 L7.5		M5 L7.5		M5 L7.5		M5 L7.5		M5 L9	
s1	0.79	(20)	0.79	(20)	0.79	(20)	0.98	(25)	0.98	(25)



Panel Mounting Dimensions

	1/4"		3/8"		1/2"		3/4"		1"	
D	0.94	(24)	1.34	(34)	1.34	(34)	1.65	(42)	1.65	(52)
S	0.22	(5.5)	0.22	(5.5)	0.22	(5.5)	0.22	(5.5)	0.22	(5.5)
d	0.43	(10.8)	0.57	(14.5)	0.57	(14.5)	0.73	(18.5)	0.91	(23)
C	1.57	(40)	1.97	(50)	1.97	(50)	2.36	(60)	2.76	(70)
U _{man}	0.39	(10)	0.39	(10)	0.39	(10)	0.39	(10)	0.45	(11.5)
U _{tog}	0.43	(11)	0.63	(16)	0.63	(16)	0.55	(14)	0.39	(10)

Multiport Valves

MPV Manifold Valves

- Fully customizable manifold configurations
- Poppet diaphragm eliminates dead space
- Able to fully flush each valve between processes
- Compact design fits perfectly into tight equipment
- Custom valves delivered within 4 weeks of order



Materials of Construction

Standard wetted parts utilize PTFE materials for maximum purity and chemical resistance. Only high purity resins are used which pass Asahi quality standards including:

- Semi F57/F40 Leachout
- FDA CFR 21 177.2510
- TSE/BPE free

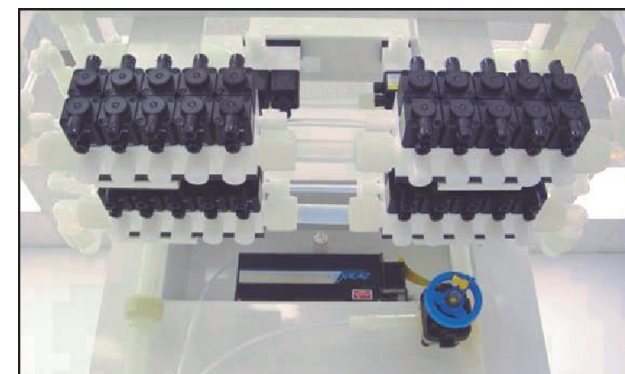
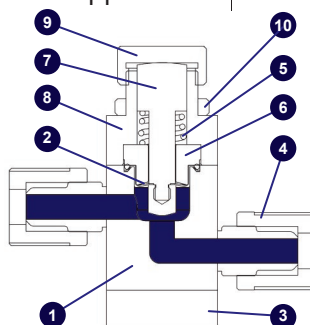
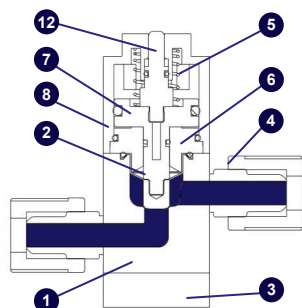
We also offer a wide range of body materials including PVDF, PP and ECTFE. All valves are designed and manufactured in Boston.

Specifications

- Size Range:** 1/8" to 1"
- Diaphragm:** PTFE
- Body:** PTFE, PFA, PVDF, E-CTFE, PP, PPn
- O-ring:** Non wetted FKM standard EPDM or Kalrez® available
- Connections:** Flare, NPT, Spigot, Sanitary TC S-300, Custom
- Operation:** Air-Spring Closed
Air-Spring Open
Air-Air
Manual multi-turn
- Max Pressure:** 100psi forward pressure
- Max Temp.:** 194°F (90°C) media
140°F (60°C) ambient
- N.C. Pilot:** 1/8" FNPT, 60psi (0.4 MPa)
- N.O., A-A:** 1/8" FNPT, 45psi (0.3 MPa)

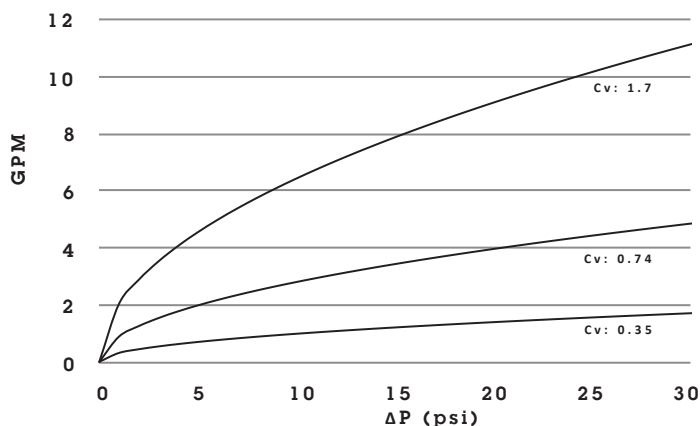
Item Description Contact N.C. N.O., A-A Manual

1	Body	Wetted	PTFE, PFA, PVDF, E-CTFE, PP, PPn		
2	Diaphragm	Wetted	PTFE		
3	Base Plate	Non Wetted	PPS		
4	Nut	Non Wetted	PFA		
5	Spring	Non Wetted	SS 304		
6	Bushing	Non Wetted	PPS	PVDF	PP
7	Stem	Non Wetted	-	PVDF	PP
8	Bonnet	Non Wetted	PPS	PPS	PP
9	Handle	Non Wetted	-	-	PP
10	Lock Nut	Non Wetted	-	-	PP
11	Piston	Non Wetted	PPS	PVDF	-
12	Indicator	Non Wetted	PP	-	-



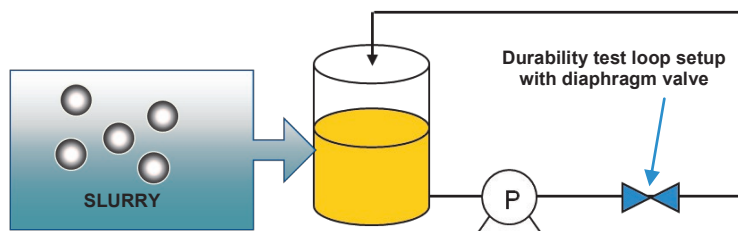
MPV's integrated on custom equipment manufactured at Asahi/America

Flow Chart



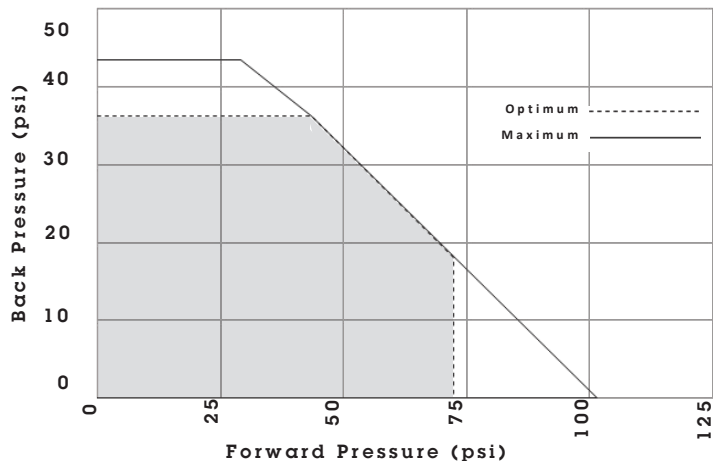
High Durability

Cycle tested without pressure loss to millions of cycles. Excellent sealing performance at high cycles, even in aggressive chemistry or slurry.



Cycles	0	50,000	100k	200k	350k	500k	1 million
MPV	Good	Good	Good	Good	Good	Good	Good
Comp A	Good	Good	Good	Fail (29 psi)	Fail (20 psi)	Fail (11.5 psi)	Fail (3 psi)
Comp B	Good	Good	Good	Fail (37.5 psi)	Fail (23 psi)	Fail (11.5 psi)	Fail (14.5 psi)

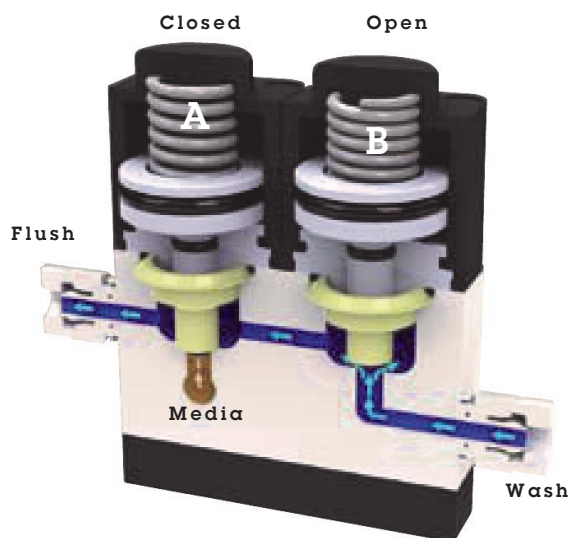
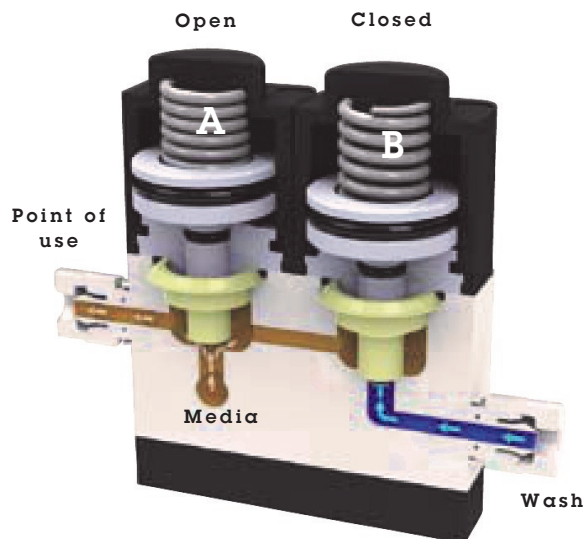
Operating Pressure



Example Application

Separate actuators control each valve individually.

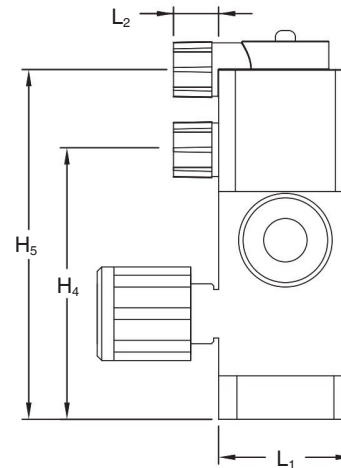
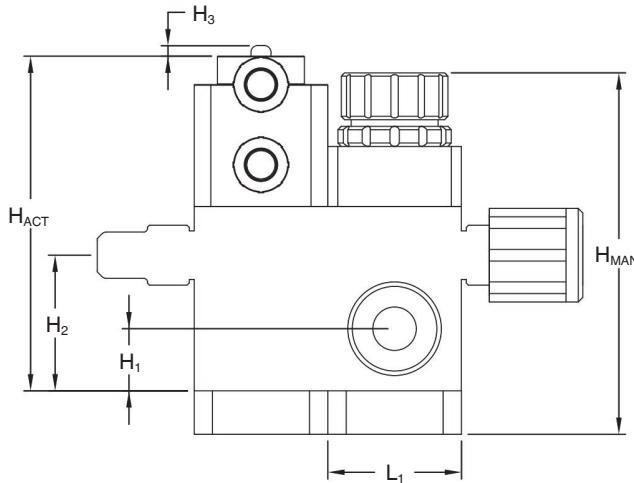
Actuator "A" controls flow of the media to the point of use. Actuator "B" controls flow of a secondary media which allows for complete washing of the media from the lines, prior to the next chemical operation.



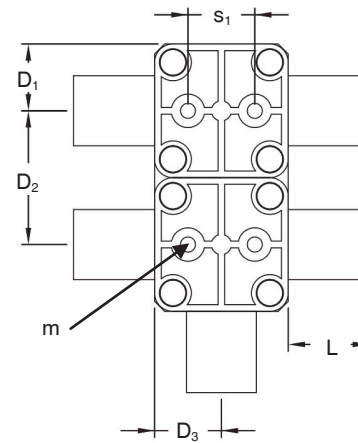
Scan QR code below to watch a multiport valve in action!



Valve Dimensions



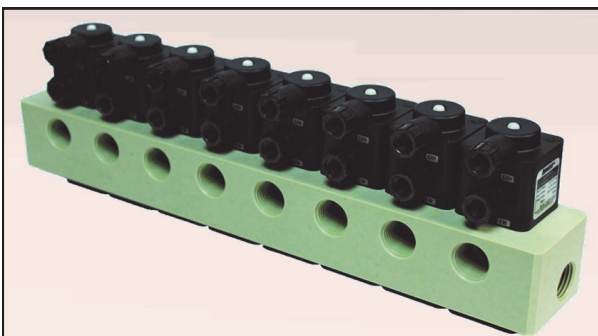
Note: All MPV's are custom designed to meet your specific needs. Dimensions shown are for reference. Consult Asahi/America engineers to begin designing your valve.



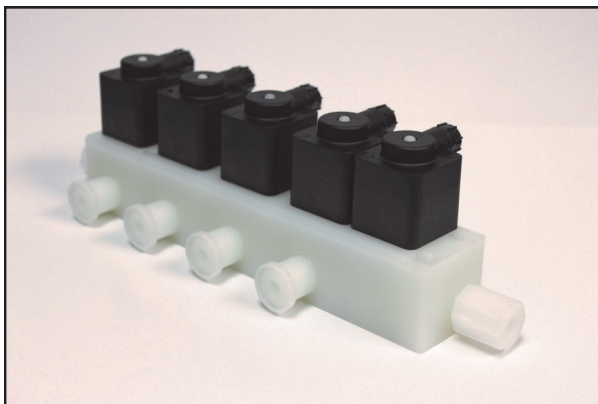
	1/4"	3/8"	1/2"	3/4"	1"
L _{S300}	0.59 (15)	0.75 (19)	0.98 (25)		
L _{Flare}	1.10 (28)	1.22 (31)	1.30 (33)		
L _{NPT}	0.39 (10)	0.63 (16)	0.63 (16)		
L ₁	1.57 (40)	1.57 (40)	1.57 (40)		
H _{act}	3.66 (93)	4.06 (103)	4.06 (103)		
H _{man}	3.29 (83.5)	3.68 (93.5)	3.68 (93.5)		
H _{man max}	3.41 (86.5)	3.80 (96.5)	3.80 (96.5)		
H ₁	1.54 (39)	1.71 (43.5)	1.71 (43.5)		
H ₂	1.30 (33)	1.69 (43)	1.69 (43)		
H ₃	0.12 (3)	0.12 (3)	0.12 (3)		
H ₄	2.40 (61)	2.80 (71)	2.80 (71)		
H ₅	3.33 (84.5)	3.72 (94.5)	3.72 (94.5)		
D ₁	0.79 (20)	0.79 (20)	0.79 (20)		
D ₂	1.57 (40)	1.57 (40)	1.57 (40)		
D ₃	0.79 (20)	0.79 (20)	0.79 (20)		
m	M5 L13				
s ₁	0.79 (20)	0.79 (20)	0.79 (20)		
Cv	0.26	0.74	1.7		

3/4" and 1" dimensions vary by configuration please consult factory.

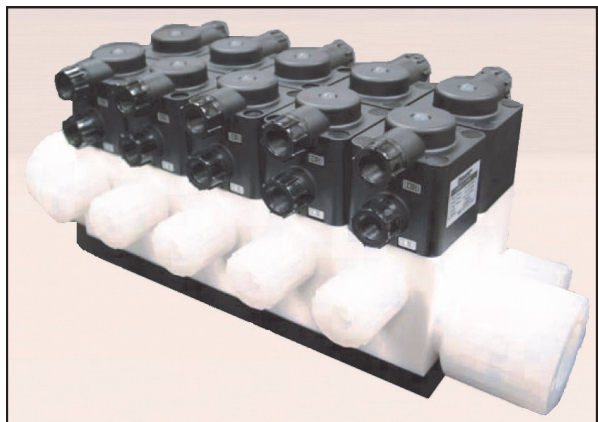
Example Applications



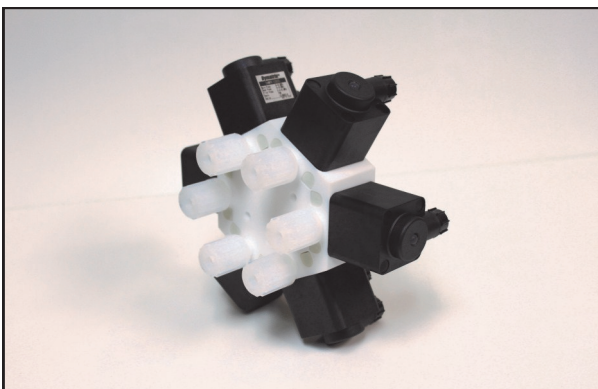
MPV810 Basic Distribution Block, PP Body w/ FNPT Ends



MPV56 Distribution with Fail Safe, PVDF Body w/ Sanitary Ends

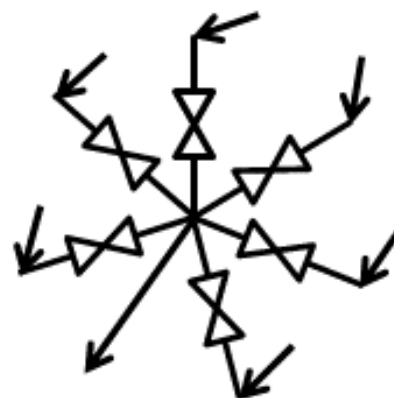
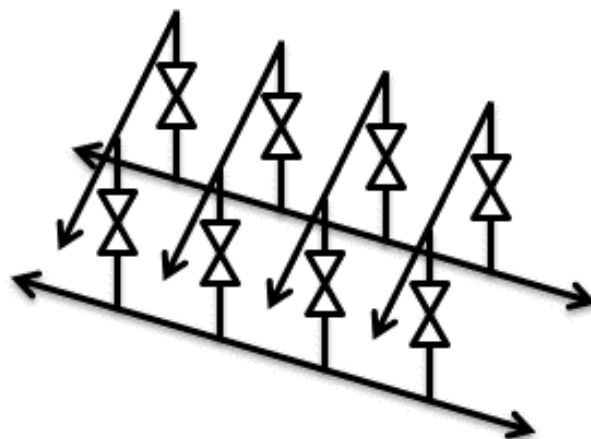
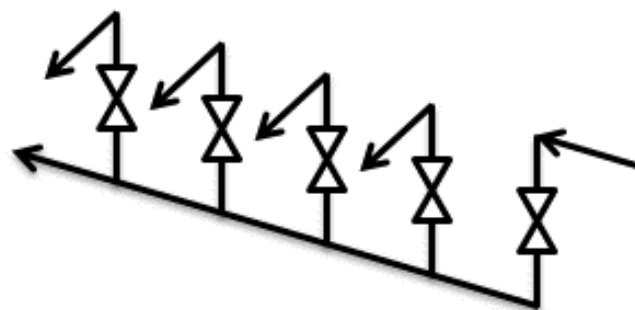
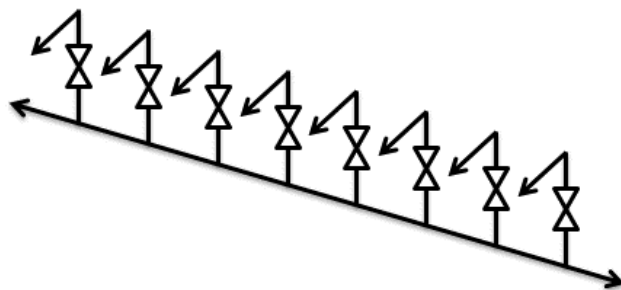


MPV810 Dual Media Distribution, PTFE Body w/ Flare Ends

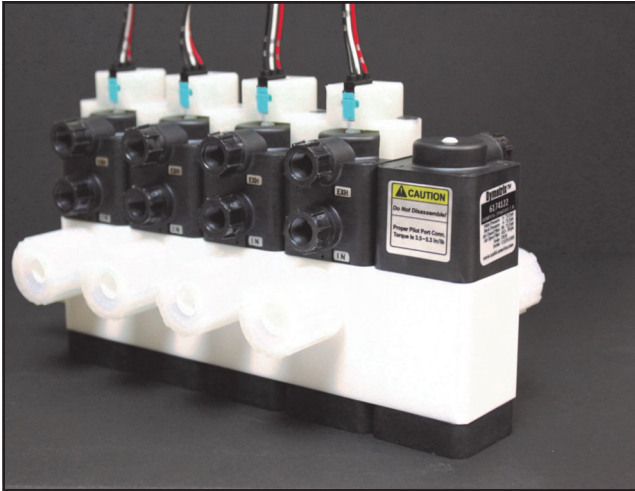


MPV67 Radial Distribution, PTFE Body w/ Flare Ends

Flow Diagrams



Additional Accessories



2 way electric position indicator



Electric solenoid with custom baseplate

Inquiry Submission Sheet

Contact Info:

Name: _____

Company: _____

E-mail: _____

Phone: _____

Media 1: _____

Pressure 1: _____

Temperature 1: _____

Media 2: _____

Pressure 2: _____

Temperature 2: _____

Connections: _____

Notes:

Flow Diagram

Email to: asahi@asahi-america.com

Needle Valves

NVM Needle Valve

- PTFE diaphragm isolates media from stems
- True linear flow output
- Non wetted stem threads for ultra high purity
- Straight, horizontal & vertical L available
- Corrosion and chemical resistant

Description

One piece integrated PTFE diaphragm and needle tip prevent chemical attack on the stem assembly and provide a high purity seal against biofilm buildup.

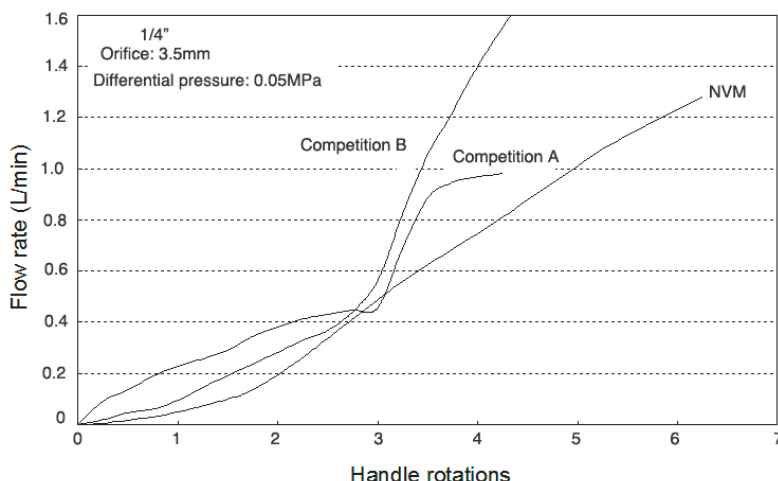
Proprietary needle tip design provides true linear flow output. Unique dual stem gears down manual turning for precise easy adjustment to set point.



Flow Control

Asahi's NVM provides complete linear flow throughout the range of operation which allows for better flow control.

Typical needle valves "jump" at a certain point. Competitor A and B experience high rate of flow change at three turns.



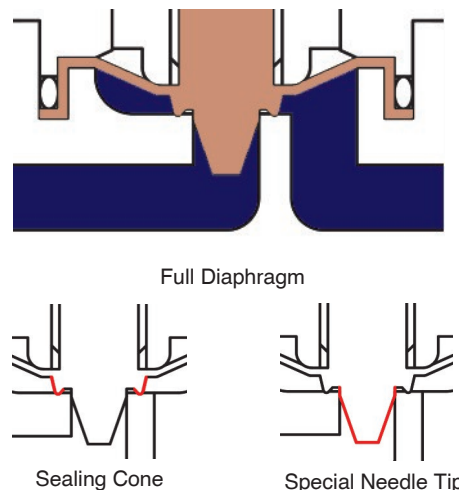
Specifications

- Size Range:** 1/4" to 1/2"
- Diaphragm:** PTFE
- Body:** PFA/PTFE
- Connections:** Flare, S-300, NPT, Custom
- Operation:** Manual multi-turn
- Max Pressure:** 100psi forward pressure
- Max Temp.:** 194°F (90°C)

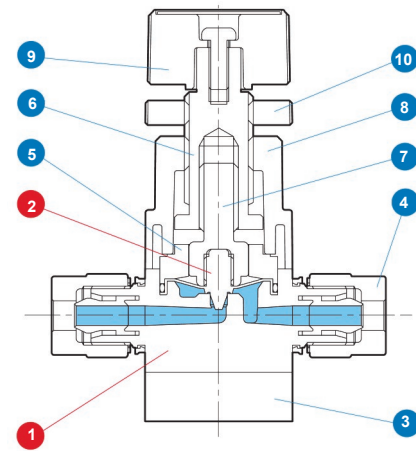
Diaphragm Design

Unique diaphragm design keeps media from contacting the dual stems, resulting in an ultrapure valve.

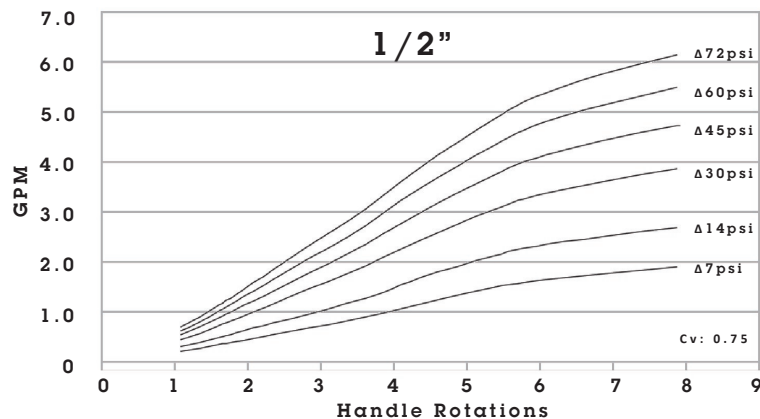
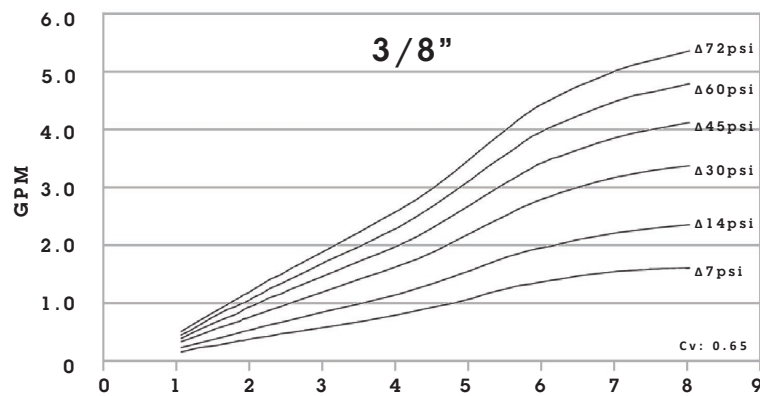
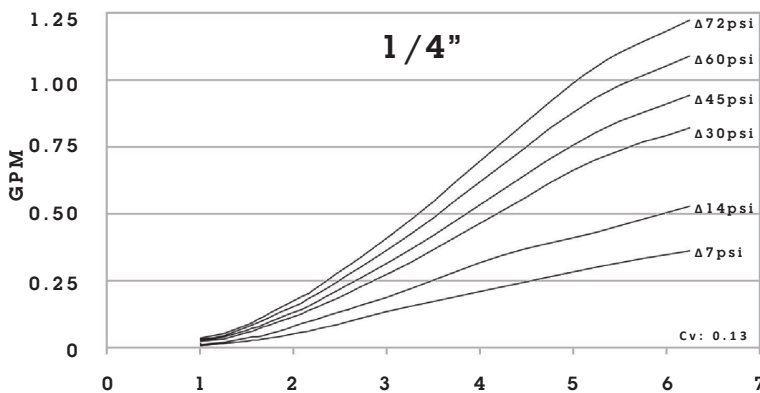
A sealing cone is placed around the needle to protect the special needle tip and completely stop flow when closed. All PTFE wetted parts provide excellent chemical compatibility.



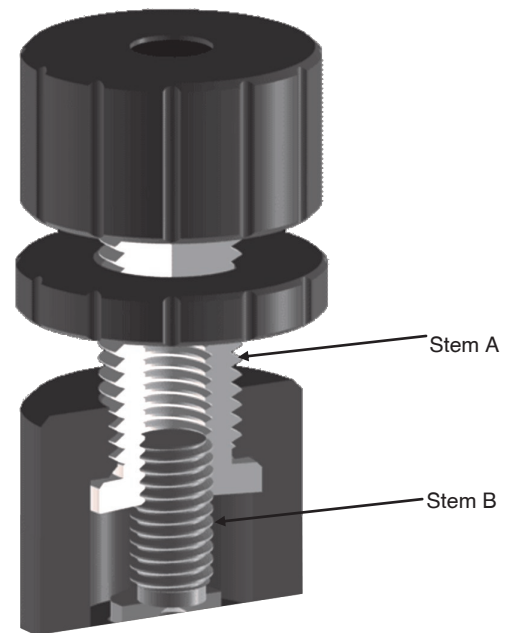
Item	Description	Contact	Material
1	Body	Wetted	PFA/PTFE
2	Diaphragm	Wetted	PTFE
3	Base Plate	Non Wetted	PPS
4	Nut	Non Wetted	PFA
5	Bushing	Non Wetted	PP
6	Stem A	Non Wetted	PP
7	Stem B	Non Wetted	PPS
8	Bonnet	Non Wetted	PP
9	Handle	Non Wetted	PP
10	Lock Nut	Non Wetted	PP



Flow Charts



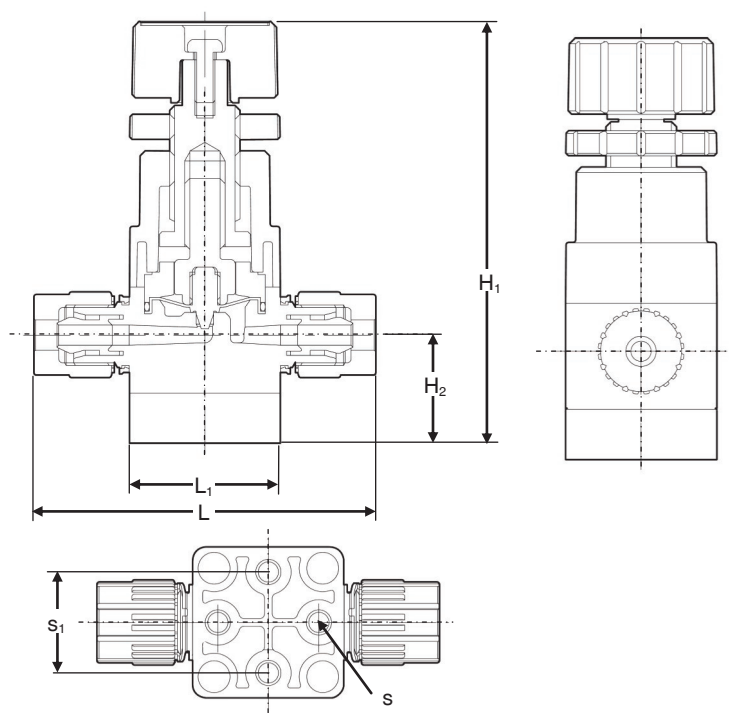
Precision Stem



The unique dual stem in the NVM needle valve works like gear reduction to provide precise fine tuning.

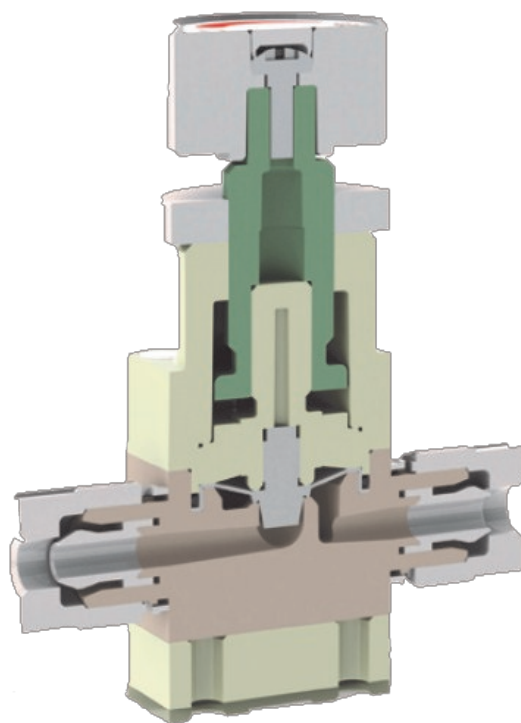
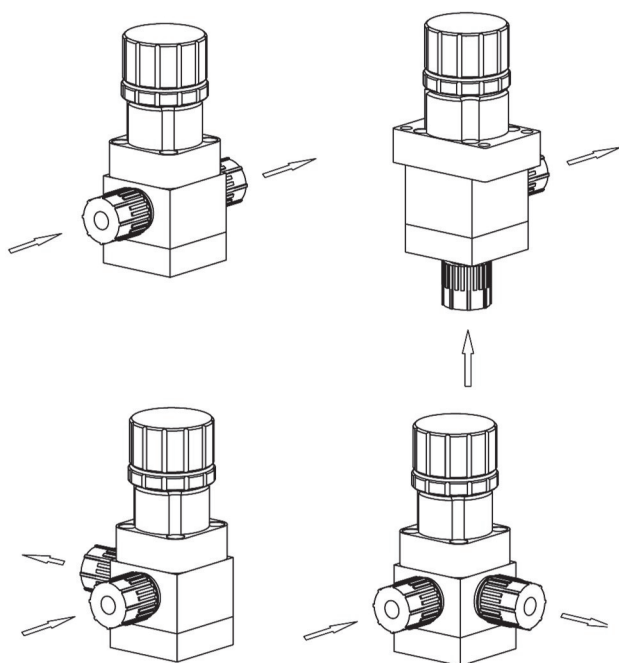
Stem A is designed with a left handed thread on the inside and a right handed thread on the outside. The two thread sets also have different thread pitch sizes. As the threads move in opposite directions, their resulting travel is the difference between the pitches. This reduction provides smooth and precision control of the valve setting and flow rate adjustment.

Dimensions



	1/4"	3/8"	1/2"
L _{S300}	2.67 (68)	3.34 (85)	3.66 (93)
L _{Flare}	3.38 (86)	3.81 (97)	3.97 (101)
L _{NPT}	3.54 (90)	3.74 (95)	3.74 (95)
L1	1.18 (30)	1.37 (35)	1.37 (35)
H1	3.18 (81)	3.77 (96)	3.77 (96)
	3.66 (93)	4.40 (112)	4.40 (112)
H2	0.84 (21.5)	1.02 (26)	1.02 (26)
s	M5 L10	M5 L13	M5 L13
s1	0.79 (20)	0.79 (20)	0.79 (20)
Cv	0.13	0.65	0.75

Available Models



Part Numbers

	Size	Part Number	Description	Model Code
In Stock Now	1/4"	841066302	Flare, PFA, FKM, Baseplate	AVNVM-MAFI0SV006
	3/8"	841066303		AVNVM-MAFI0SV010
	1/2"	841066305		AVNVM-MAFI0SV012

Pressure Regulator

HPRL-M Manual Pressure Regulator

- Quick & accurate response
- Good stability & repeatability
- Adjustable under pressure
- Small footprint & small profile for tight installations



Materials of Construction

Wetted materials consist of PTFE.

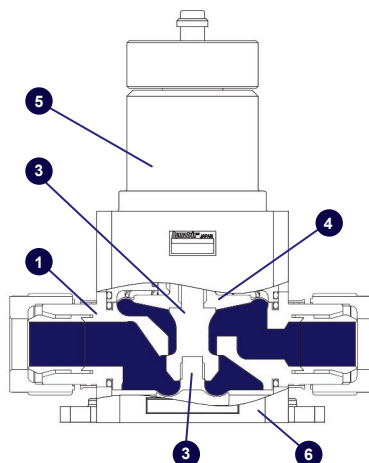
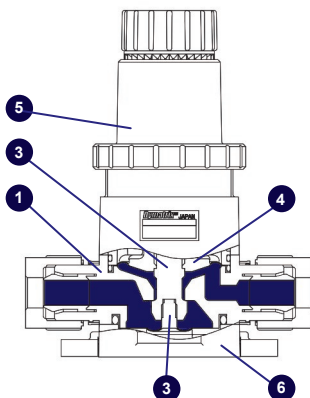
Only high purity resins are used which pass Asahi quality standards including:

- Semi F57 TOC Leachout
- FDA CFR 21 177.2510
- TSE/BPE free

Item	Description	Contact	Manual
1	Body	Wetted	PTFE
2	Seat	Wetted	PTFE
3	Diaphragm	Wetted	PTFE
4	Diaphragm	Wetted	PTFE
5	Drive Parts	Non Wetted	PVDF
6	Base Plate	Non Wetted	PVDF

1/4" - 1/2"

3/4" - 1"



Specifications

Size Range:	1/4" to 1"
Diaphragm:	PTFE
Body:	PTFE
O-ring:	Non wetted FKM Standard EPDM or Kalrez® available
Connections:	Flare, S-300, NPT
Operation:	Manual
Pressure:	14.5 - 72.5psi
Max Temp.:	194°F (90°C) media 140°F (60°C) ambient

Push2Lock™ Handle

Unique Push2Lock™ handle allows ease of use when setting the regulator. Simply press down on the top of handle to lock the stem position from turning. A light pull up releases the handle for adjustment. A panel mount nut is also built directly into the bonnet assembly. Push2Lock™ is currently available in 1/4" - 1/2" models.

Open

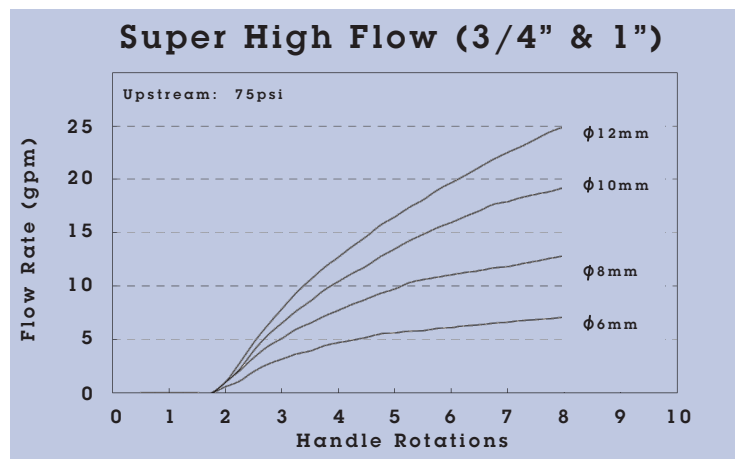
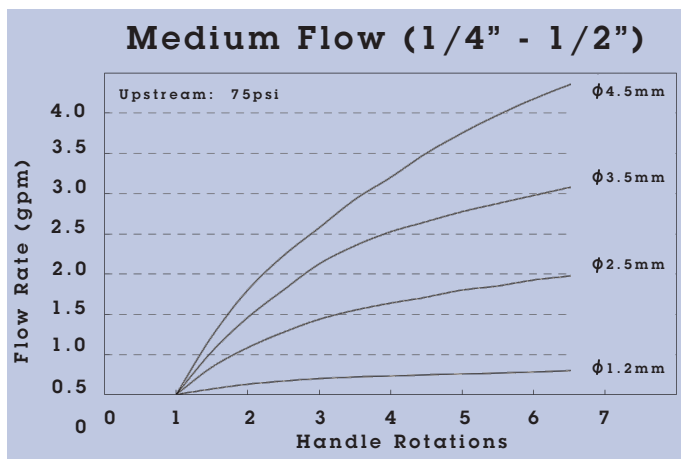
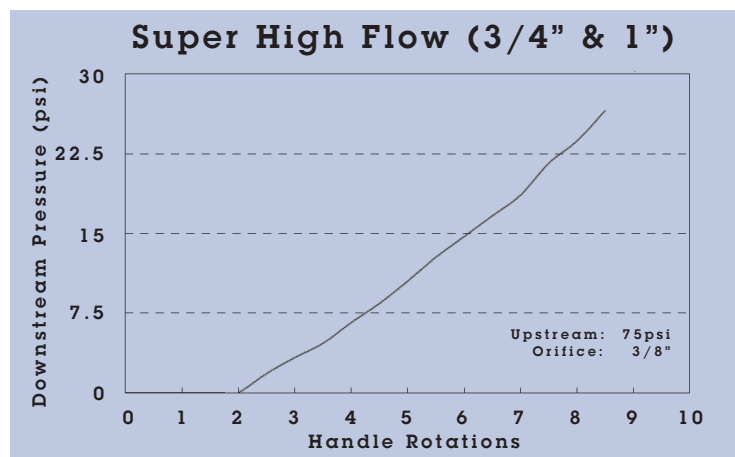
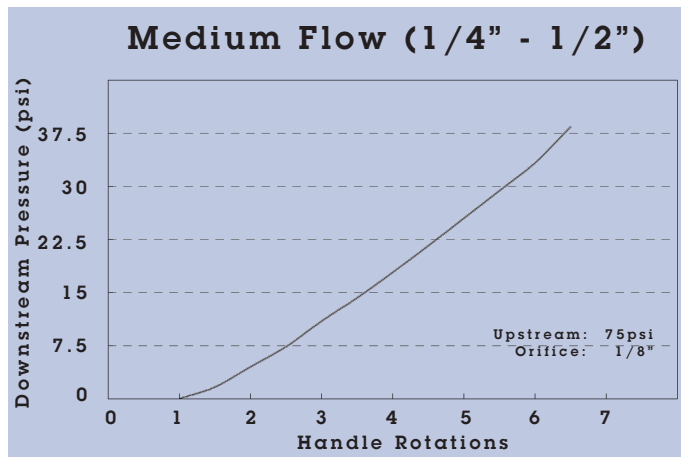
Locked



Part Numbers & Description

Size	Part Number	Description
1/4"	6194502	Medium Flow Flare, PTFE, FKM
3/8"	6194503	
1/2"	6194505	
3/4"	6196507	Super High Flow Flare, PTFE, FKM
1"	6196510	

Flow Charts



Medium Flow (1/4" - 1/2")

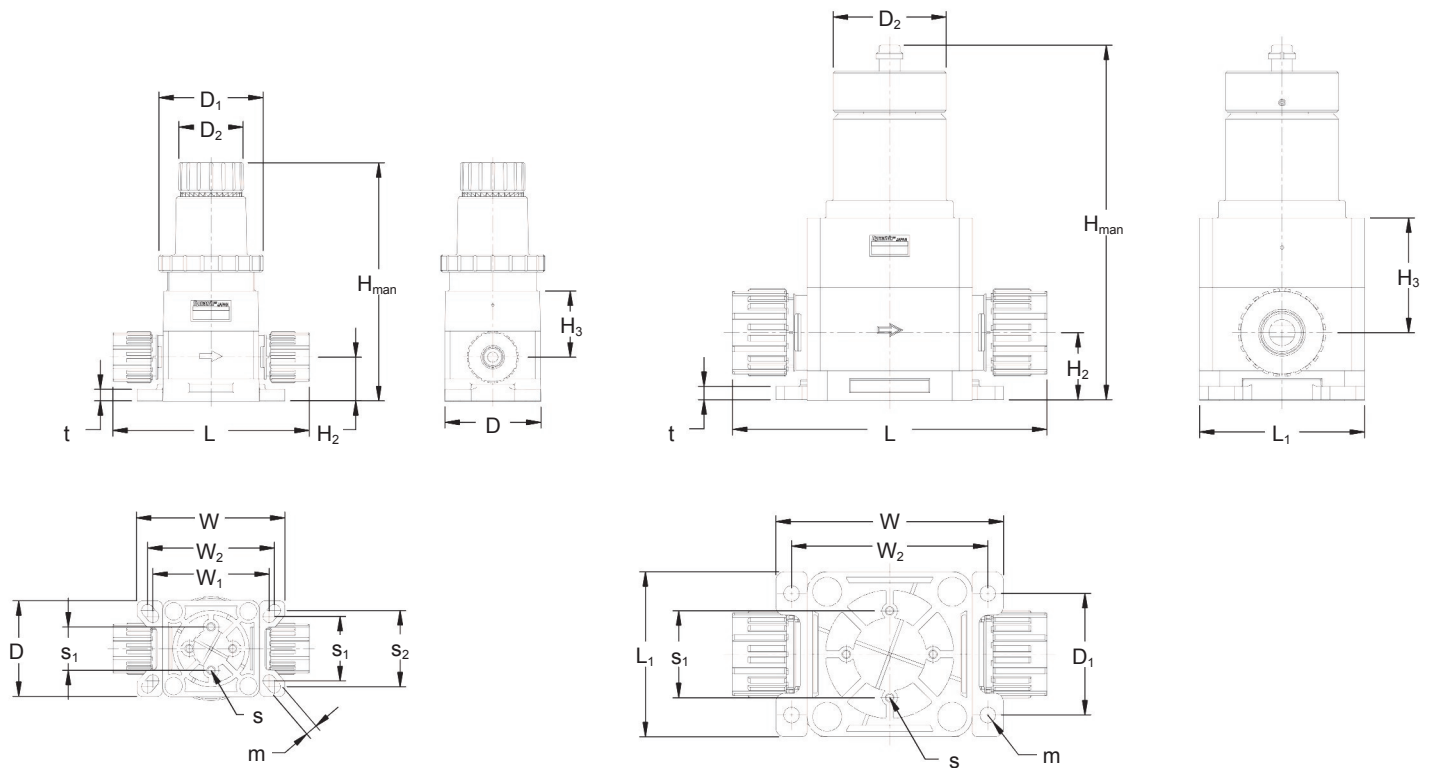
Orifice Size	Flow Range (gpm)
0.050"	0.10 to 0.35
0.100"	0.50 to 1.50
0.137"	0.75 to 2.50
0.175"	1.20 to 4.00

For reference only

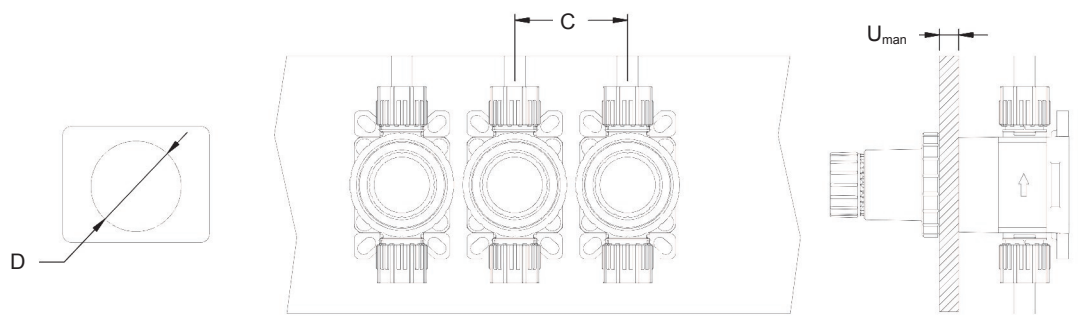
Super High Flow (3/4" - 1")

Orifice Size	Flow Range (gpm)
0.250"	4.0 to 8.0
0.315"	6.5 to 13
0.400"	9.0 to 20
0.500"	11 to 26

For reference only

Valve Dimensions
1/4" - 1/2"
3/4" - 1"


	1/4"		3/8"		1/2"		3/4"		1"	
L _{S300}	3.66	(93)	4.13	(105)	4.45	(113)	6.57	(167)	7.13	(181)
L _{Flare}	4.37	(111)	4.61	(117)	4.76	(121)	6.73	(171)	7.44	(189)
L _{NPT}										
L1	2.17	(55)	2.17	(55)	2.17	(55)	3.74	(95)	3.74	(95)
H _{man}	5.41	(137.5)	5.41	(137.5)	5.41	(137.5)	8.05	(204.5)	8.05	(204.5)
H2	1.00	(25.5)	1.00	(25.5)	1.00	(25.5)	1.54	(39)	1.54	(39)
H3	1.50	(38)	1.50	(38)	1.50	(38)	2.60	(66)	2.60	(66)
t	0.28	(7)	0.28	(7)	0.28	(7)	0.31	(8)	0.31	(8)
D	2.17	(55)	2.17	(55)	2.17	(55)	3.74	(95)	3.74	(95)
D1	1.46	(37)	1.46	(37)	1.46	(37)	2.76	(70)	2.76	(70)
D2	1.73	(44)	1.73	(44)	1.73	(44)				
W	3.35	(85)	3.35	(85)	3.35	(85)	5.76	(131)	5.76	(131)
W1	2.64	(67)	2.64	(67)	2.64	(67)				
W2	2.87	(73)	2.87	(73)	2.87	(73)	4.45	(113)	4.45	(113)
m	0.28	(7)	0.28	(7)	0.28	(7)	0.35	(9)	0.35	(9)
s	M5 L6	M5 L6	M5 L6	M5 L6	M5 L6	M5 L6	M5 L8	M5 L8	M5 L8	M5 L8
s1	0.98	(25)	0.98	(25)	0.98	(25)	1.97	(50)	1.97	(50)



Panel Mounting Dimensions

	1/4"		3/8"		1/2"		3/4"		1"	
D	2.05	(52)	2.05	(52)	2.05	(52)				
C	2.56	(65)	2.56	(65)	2.56	(65)				
U _{man}	0.43	(11)	0.43	(11)	0.43	(11)				

Pressure Regulator

HPRL Pneumatic Regulator

- Quick & accurate response
- Good stability & repeatability
- Adjustable under pressure
- Small footprint for tight installations



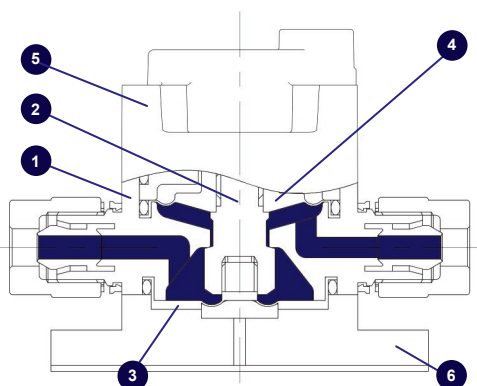
Materials of Construction

Wetted materials consist of PTFE.

Only high purity resins are used which pass Asahi quality standards including:

- Semi F57 TOC Leachout
- FDA CFR 21 177.2510
- TSE/BPE free

Item	Description	Contact	Manual
1	Body	Wetted	PTFE
2	Seat	Wetted	PTFE
3	Diaphragm	Wetted	PTFE
4	Diaphragm	Wetted	PTFE
5	Actuator Housing	Non Wetted	PVDF
6	Base Plate	Non Wetted	PVDF



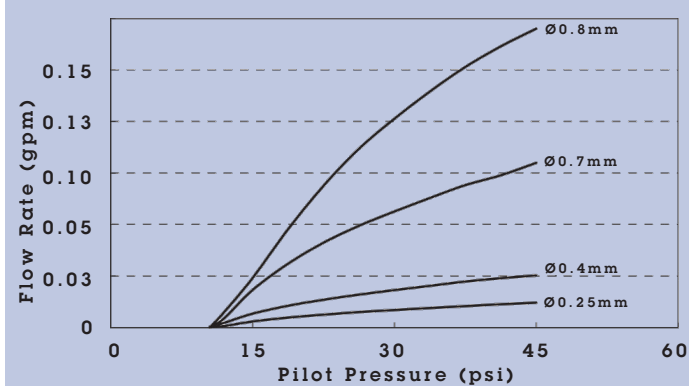
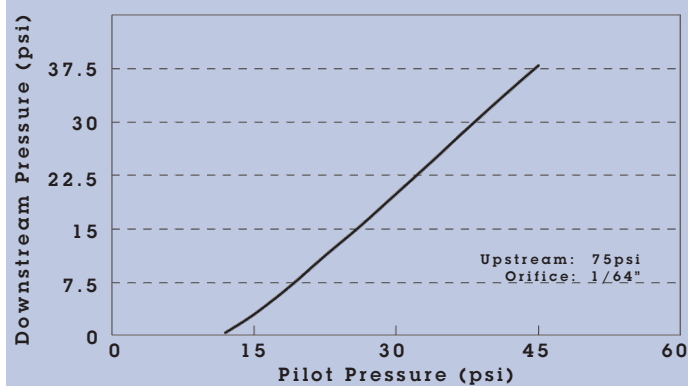
Specifications

Size Range:	1/4" to 1"
Diaphragm:	PTFE
Body:	PTFE
O-ring:	Non wetted FKM Standard EPDM or Kalrez® available
Connections:	Flare, S-300, NPT
Operation:	Pneumatic
Pressure:	14.5 - 72.5psi
Max Temp.:	194°F (90°C) media 140°F (60°C) ambient
Pilot:	1/8" FNPT (top or side)

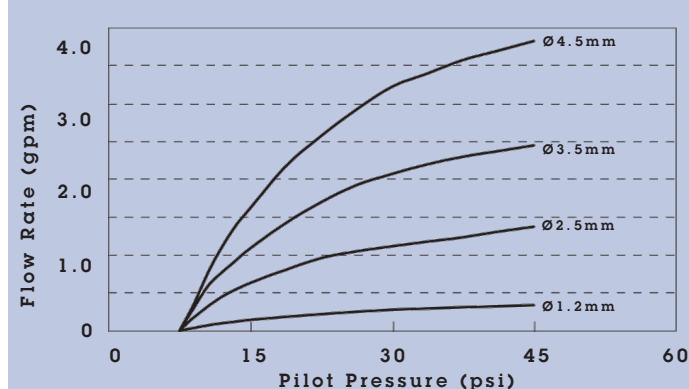
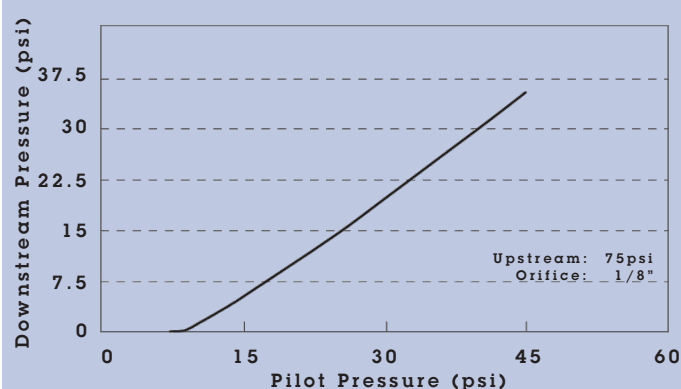
Stock Part Numbers

Size	Part Number	Description
1/4"	6193102	Low Flow Flare, PTFE, FKM
1/4"	6194102	Medium Flow
3/8"	6194103	Flare, PTFE, FKM
1/2"	6194105	
1/2"	6194505	High Flow
3/4"	6196507	Flare, PTFE, FKM
3/4"	6194107	Super High Flow
1"	6194110	Flare, PTFE, FKM

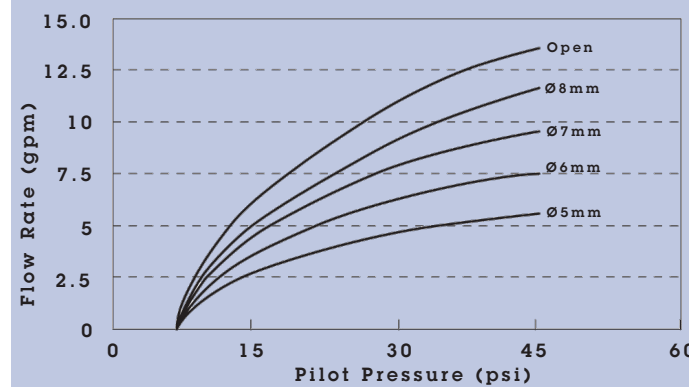
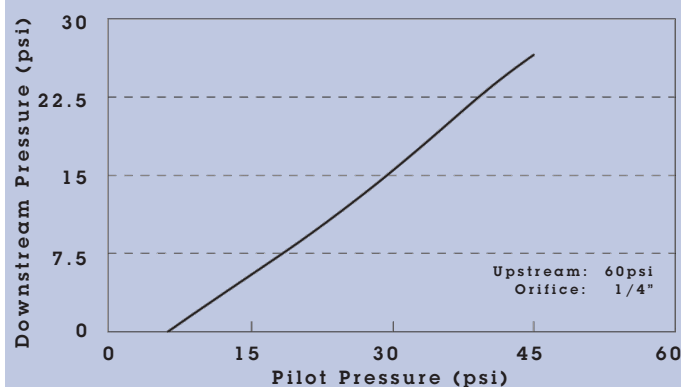
Low Flow Charts (1/4")



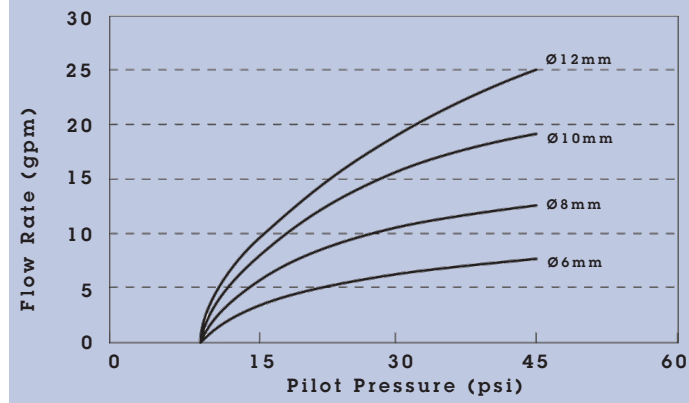
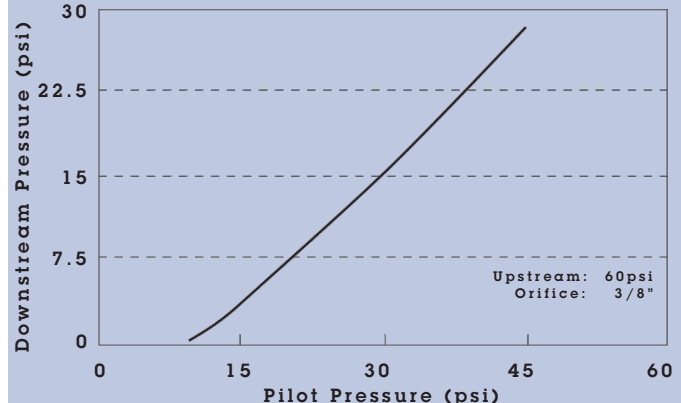
Medium Flow Charts (1/4" - 1/2")

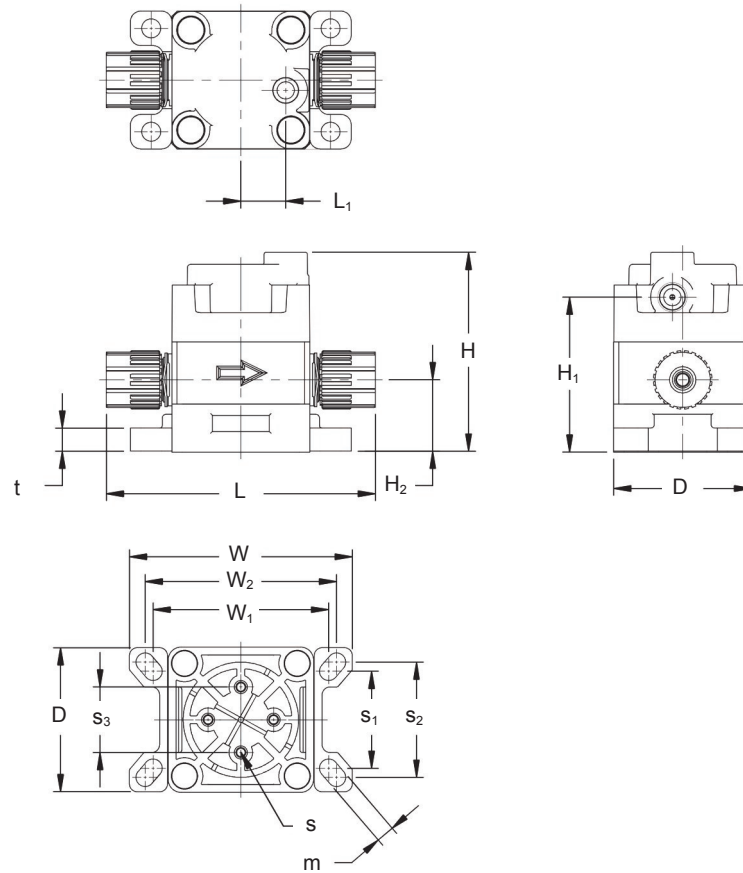


High Flow Charts (1/2" - 3/4")



Super High Flow Charts (3/4" - 1")

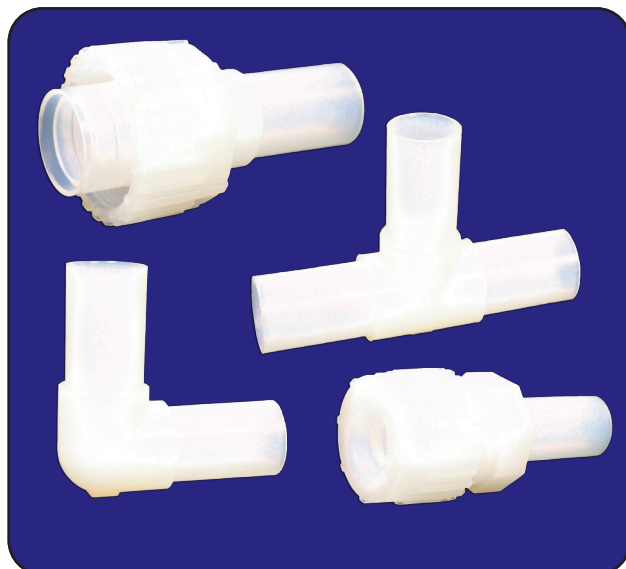


Valve Dimensions


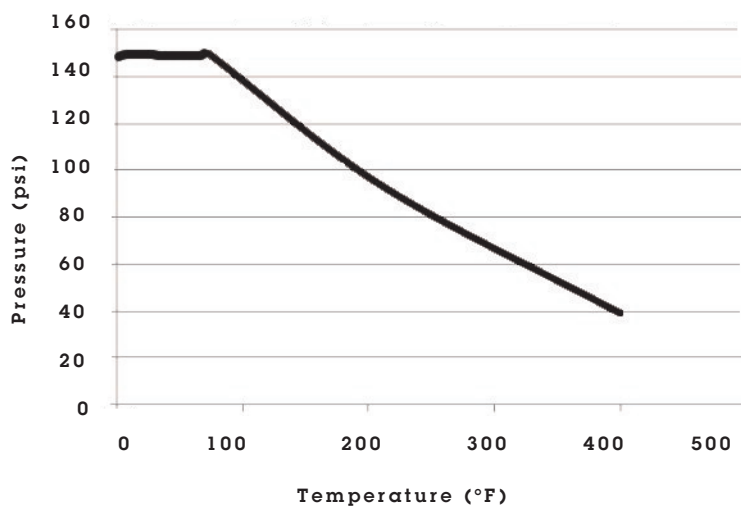
	1/4" LF	1/4" MF	3/8" MF	1/2" MF	1/2" HF	3/4" HF	3/4" SHF	1" SHF
Part #	6193102	6194102	6194103	6194105	6194505	6196507	6194107	6194110
L _{S300}	3.07 (78)	3.66 (93)	4.13 (105)	4.45 (113)	5.24 (133)	5.79 (147)	6.57 (167)	7.13 (181)
L _{Flare}	3.78 (96)	4.37 (111)	4.61 (117)	4.76 (121)	5.55 (141)	5.94 (151)	6.73 (171)	7.44 (189)
L _{NPT}	3.54 (90)	4.13 (105)	4.53 (115)	4.53 (115)	5.31 (135)	6.10 (155)	6.89 (175)	6.89 (175)
L1	0.51 (13)	0.79 (20)	0.79 (20)	0.79 (20)	0.92 (23.4)	0.92 (23.4)	1.05 (26.6)	1.05 (26.6)
H	2.28 (58)	2.66 (67.5)	2.66 (67.5)	2.66 (67.5)	3.70 (94)	3.70 (94)	4.49 (114)	4.49 (114)
H1	1.77 (45)	2.07 (52.5)	2.07 (52.5)	2.07 (52.5)	2.91 (74)	2.91 (74)	3.43 (87)	3.43 (87)
H2	0.83 (21)	1.00 (25.5)	1.00 (25.5)	1.00 (25.5)	1.34 (34)	1.34 (34)	1.54 (39)	1.54 (39)
t	0.28 (7)	0.28 (7)	0.28 (7)	0.28 (7)	0.31 (8)	0.31 (8)	0.31 (8)	0.31 (8)
D	1.57 (40)	2.17 (55)	2.17 (55)	2.17 (55)	2.95 (75)	2.95 (75)	3.74 (95)	3.74 (95)
W	2.52 (64)	3.35 (85)	3.35 (85)	3.35 (85)	4.76 (121)	4.76 (121)	5.16 (131)	5.16 (131)
W1	2.05 (52)	2.64 (67)	2.64 (67)	2.64 (67)	4.06 (103)	4.06 (103)	4.45 (113)	4.45 (113)
W2	-	2.87 (73)	2.87 (73)	2.87 (73)	-	-	-	-
m	0.22 (5.5)	0.28 (7)	0.28 (7)	0.28 (7)	0.28 (7)	0.28 (7)	0.35 (9)	0.35 (9)
s	M5 L6	M5 L6	M5 L6	M5 L6	M5 L8	M5 L8	M5 L8	M5 L8
s1	1.18 (30)	1.46 (37)	1.46 (37)	1.46 (37)	1.97 (50)	1.97 (50)	2.76 (70)	2.76 (70)
s2	-	1.73 (44)	1.73 (44)	1.73 (44)	2.36 (60)	2.36 (60)	-	-
s3	0.98 (25)	0.98 (25)	0.98 (25)	0.98 (25)	1.57 (40)	1.57 (40)	1.97 (50)	1.97 (50)

PFA Piping System

- Ultra high purity PFA resin (SEMI tested)
- High chemical and temperature resistance make it ideal for aggressive applications
- Complimented by Asahi's cutting-edge welding equipment
- Welded joints reduce leaks and system risk
- Available with Dymatrix™ valves



Pressure Rating



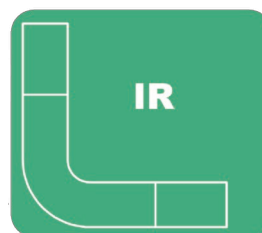
Supply Range

Pipe & Fittings: 20-32mm (1/2" - 1")

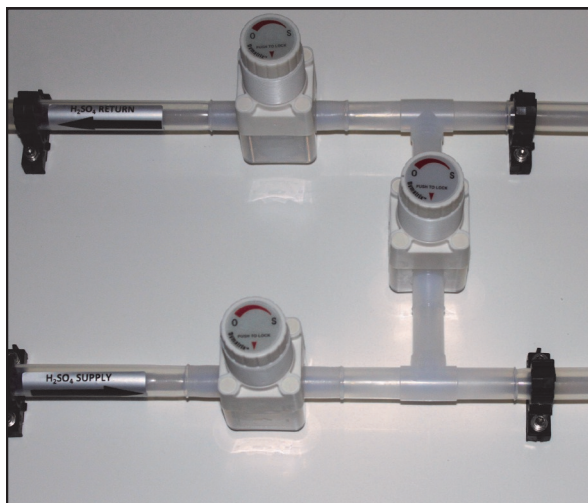
SDR21 150psi

Valves: 20-32mm (1/2" - 1") SDR21 PFA
Spigot, Flare, S-300

Welding:



Dymatrix™ Valves



Ideal Applications

- Ultra Pure Chemical Transfer
- Elevated Temperature
- Aggressive Chemical
- Biotech and Laboratory

Semi F40 Leachout Test Data

Leachable Testing for Semi F57 per Semi F40
Static Value at 85 ± 5°C for 7 days (µg/m2)

	F57-0212 Spec	Pipe Result	Fitting Result
Bromide	≤ 100	X	X
Chloride	≤ 3000	X	X
Fluoride	≤ 60,000	680	6525
Nitrate	≤ 100	X	X
Nitrite	≤ 100	X	X
Phosphate	≤ 300	X	X
Sulfate	≤ 300	X	4
Aluminum	≤ 10	0.1	2
Arsenic	Report	X	X
Barium	≤ 15	X	X
Boron	≤ 30	3.1	7
Cadmium	Report	X	X
Calcium	≤ 30	X	4
Chromium	≤ 1	X	0.2
Copper	≤ 15	X	X
Iron	≤ 5	X	0.8
Lead	≤ 1	X	X
Lithium	≤ 2	X	X
Magnesium	≤ 5	X	0.9
Manganese	≤ 5	X	X
Nickel	≤ 1	1	X
Potassium	≤ 15	X	X
Sodium	≤ 15	X	0.4
Strontium	≤ 0.5	X	X
Titanium	Report	X	X
Tin	Report	X	X
Zinc	≤ 10	0.6	1.6
TOC	≤ 60,000	100	128

"X" means below detection limit.

Extruded Pipe, Balazs 11-08318

Molded Fitting, Balazs 05-04645

SEMI E49.2 cycle testing available upon request.

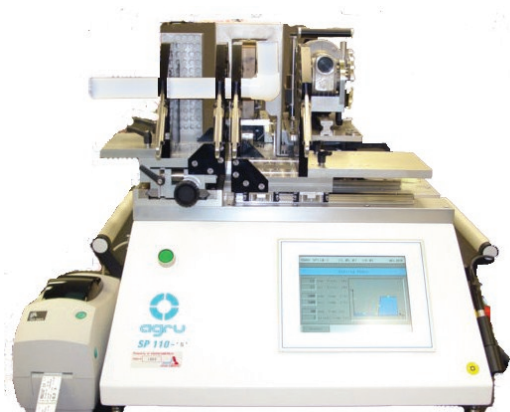
IR Fusion

There are a wide variety of welding methods available for high purity plastic piping systems. Choosing the right welding method can have a significant impact on your system quality and piping installation. Asahi/America offers the latest technology of welding equipment in all these methods and supports them with operator training, field service and factory service.

IR Fusion

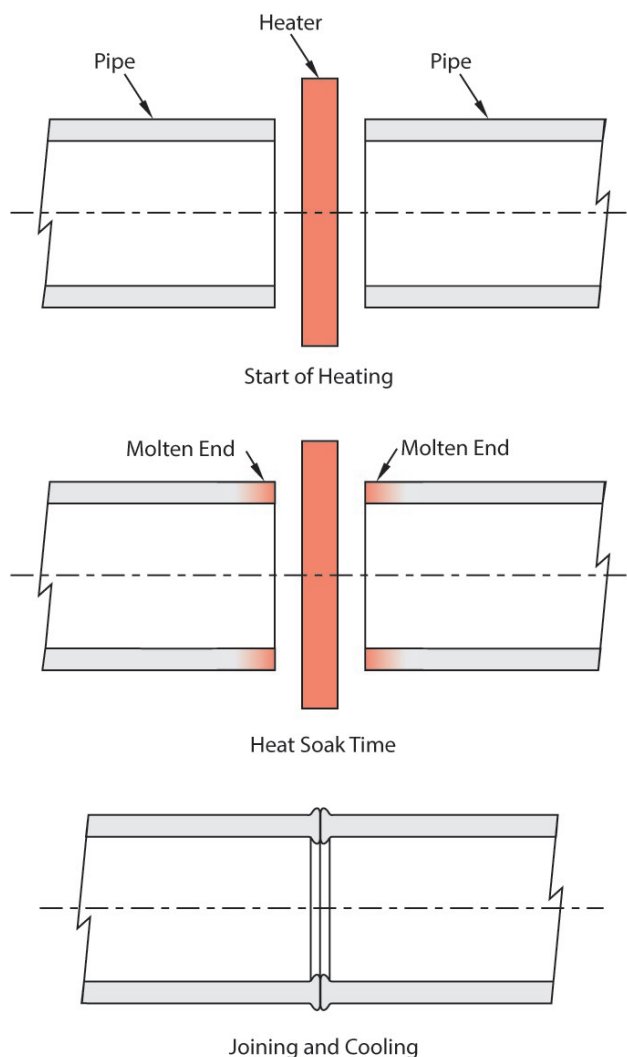
Asahi/America strongly recommends the use of IR fusion for all high purity and critical systems whenever possible, due to its cleanliness and reliability.

IR fusion is a form of butt fusion where the piping components do not contact the heating plate. This eliminates contamination from the heating element into the weld zone, which occurs in contact butt and socket fusion. The interior welds on IR fusion are significantly smaller than contact butt and socket fusion.



SP-110-S IR Fusion Equipment

Asahi/America's cutting-edge SP series of IR fusion equipment is fully automated. When utilizing IR fusion with our equipment, you receive unmatched reliability and repeatability of the weld process. This reduces operator error, prevents cold welds and makes QC/QA inspection easier.



Beadless Fusion



Beadless Fusion

Beadless fusion is utilized for critical chemical process lines where weld beads can effect the media chemistry. Applications include slurry delivery for CMP and cleaning chemistries.

Asahi's SP110-B beadless welding equipment is fully automated and provides a smooth internal weld surface. The tool features complete weld validation.

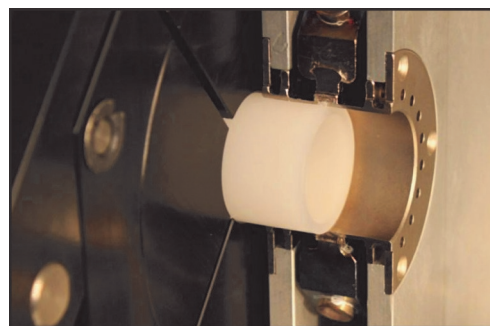
SP-110-B Beadless Fusion Equipment

Design Consideration

Fabrication and design must consider the limitation of the welding equipment fixtures when securing the components. Additional considerations must be accounted for during beadless welding to ensure the internal balloon used during joining may be removed.

Balloons must be purchased new with tool rentals and should be included in your project budget. It is recommended to purchase a few balloons of each size.

Consult Asahi/America's engineering staff with any design concerns.

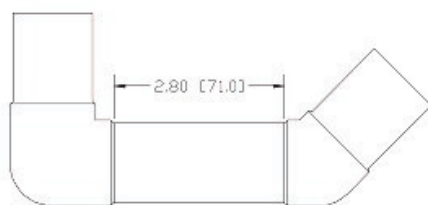
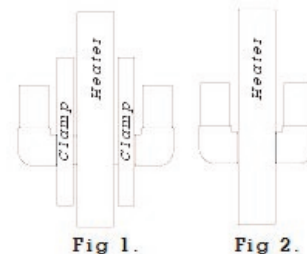


Pipe being clamped into weld head

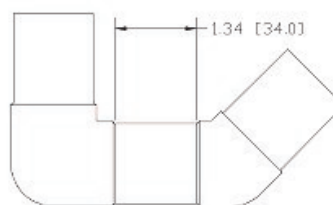
Recommended Distance

The recommended design distance for using Asahi's SP 110-B automated clamps is 2.80" [71mm]. Figure 1.

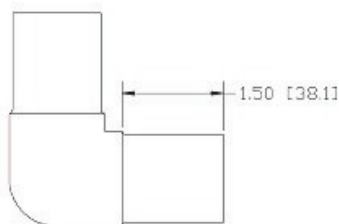
The minimum distance between fitting shoulders is 1.34" [34mm]. This is achieved using manual clamping and should be performed by Asahi/America or Asahi certified and approved installers. Figure 2.



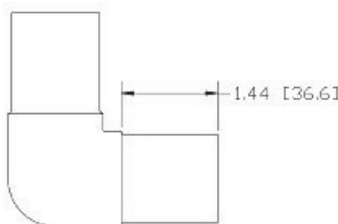
Standard Final Distance



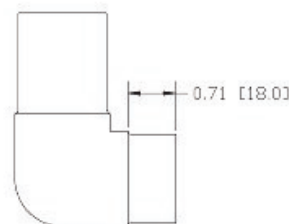
Minimum Final Distance



Molded Length

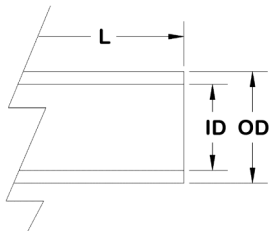


After Planing



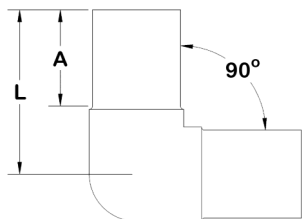
Manual Clamp

Pipe



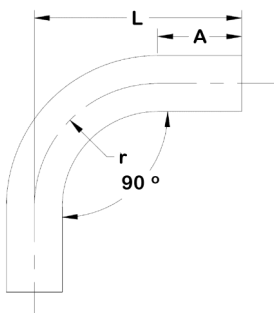
OD	Nominal	OD	ID	Length	Part Number
20mm	1/2"	0.787	0.638	10'	884301005
25mm	3/4"	0.984	0.830	10'	884301007
32mm	1"	1.260	1.071	10'	884301010

90 Elbow



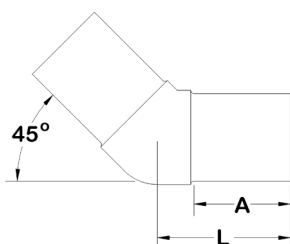
OD	Nominal	A	L	Part Number
20mm	1/2"	1.50	2.22	884302005
25mm	3/4"	1.50	2.31	884302007
32mm	1"	1.48	2.46	884302010

90 Sweep Elbow



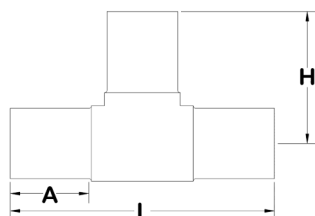
OD	Nominal	r	A	L	Part Number
20mm	1/2"	2.50	1.50	4.00	884302105
25mm	3/4"	2.50	1.50	4.00	884302107
32mm	1"	3.00	1.50	4.50	884302110

45 Elbow



OD	Nominal	A	L	Part Number
20mm	1/2"	1.50	2.00	884314005
25mm	3/4"	1.50	2.00	884314007
32mm	1"	1.50	2.00	884314010

Tee



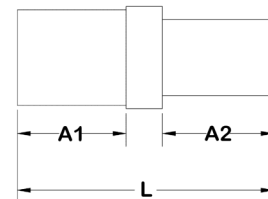
OD	Nominal	A	L	H	Part Number
20mm	1/2"	1.50	4.43	2.22	884318005
25mm	3/4"	1.50	4.60	2.31	884318007
32mm	1"	1.48	4.88	2.46	884318010

Dimensional Data

SDR 21 / PN 10 / 150 PSI

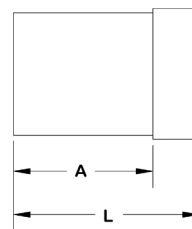
Concentric Reducer

OD x OD	Nominal	A1	A2	L	Part Number
25mm x 20mm	3/4" x 1/2"	1.50	1.50	3.50	884324101
32mm x 25mm	1" x 3/4"	1.50	1.50	3.50	884324131



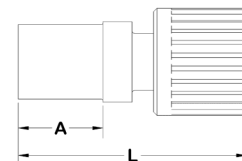
End Cap

OD	Nominal	A	L	Part Number
20mm	1/2"	1.50	2.00	884343005
25mm	3/4"	1.50	2.00	884343007
32mm	1"	1.49	2.01	884343010



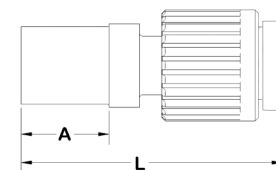
Weld X S-300

mm x inch	A	L	Part Number
20mm x 1/2"	1.50	3.0	884306005
20mm x 3/4"	1.50	3.4	884306101
25mm x 3/4"	1.50	3.4	884306007
25mm x 1"	1.50	3.9	884306131
32mm x 1"	1.50	3.9	884306010



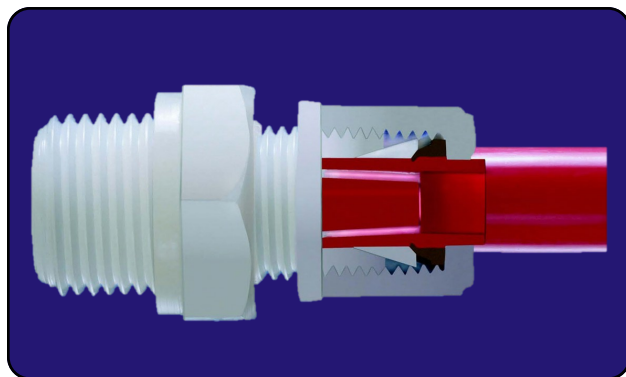
Weld X Spacesaver S-300

mm x inch	A	L	Part Number
20mm x 1/2"	1.50	3.0	884305005
20mm x 3/4"	1.50	3.4	884305101
25mm x 3/4"	1.50	3.4	884305007
25mm x 1"	1.50	3.9	884305131
32mm x 1"	1.50	3.9	884305010



1C Compression Fittings

- Easy install, No tools required!
- Reuse existing tubing repeatedly
- High temperature and pressure rating
- Bio/Pharm & Analytical Industry standard

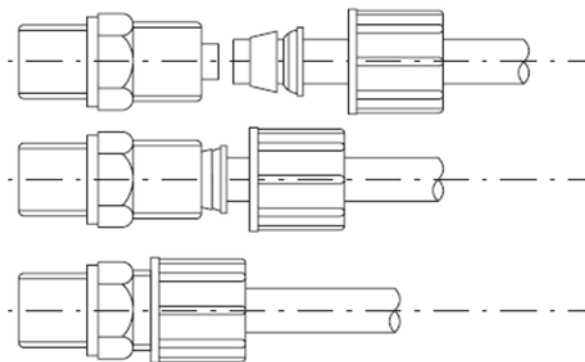


Installation Instructions

No Tools Required:

Traditional tubing connections require the use of a *cold* or *heated* iron to shape a portion of the tube end.

Compression fittings are secured by friction on the tube outside diameter. Designed for smooth PFA tubing, the double ferrule will not slip.



Specifications

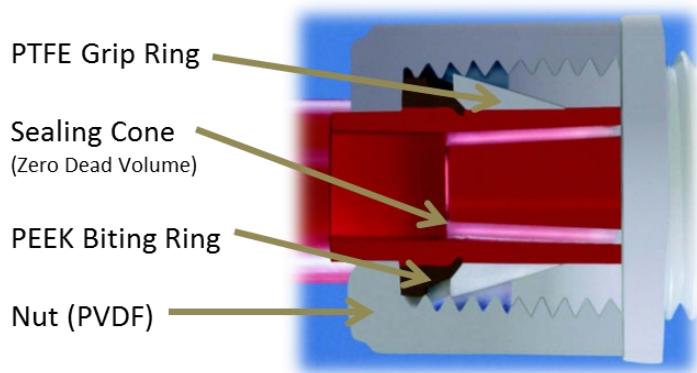
Stock Materials: PFA

Available Materials: PP, PVDF, E-CTFE, Nylon

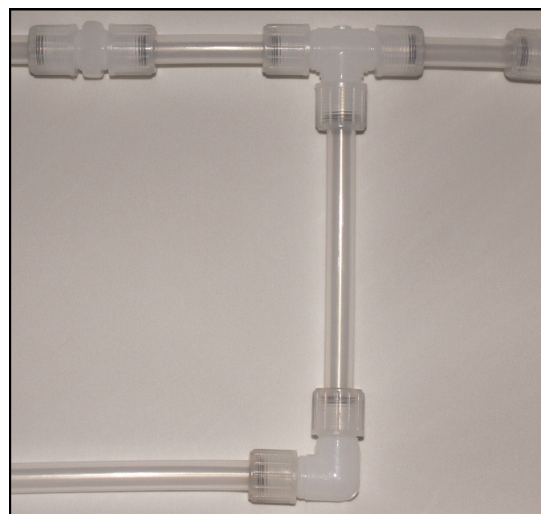
Stock Size Range: 1/8" x 1/4"
1/4" x 3/8"
3/8" x 1/2"
1/2" x 3/4"

Available Size Range: 2 x 4mm through 18 x 20mm

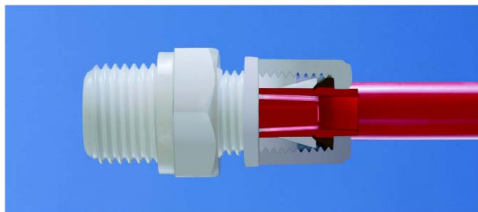
Compression Components



1C Compression Fittings



1C Compression Fittings



Model Code	OD	OD	Union	Part #	Model
1C100T03	1/4"	1/4"		840200705	1C100T03PF
1C100T11	3/8"	3/8"		840200710	1C100T11PF
1C100T15	1/2"	1/2"		840200720	1C100T15PF
1C100T20	3/4"	3/4"		840200730	1C100T20PF



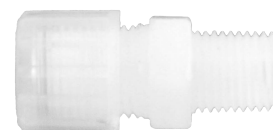
Model Code	OD	OD	90 Elbow	Part #	Model
1C200T03	1/4"	1/4"		840207975	1C200T03PF
1C200T11	3/8"	3/8"		840207980	1C200T11PF
1C200T15	1/2"	1/2"		840207990	1C200T15PF
1C200T20	3/4"	3/4"		840208000	1C200T20PF



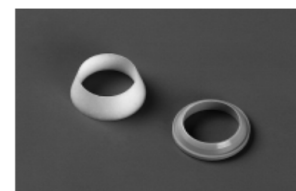
Model Code	OD	OD	Tee OD	Part #	Model
1C300T03	1/4"	1/4"	1/4"	840215445	1C300T03PF
1C300T11	3/8"	3/8"	3/8"	840215450	1C300T11PF
1C300T15	1/2"	1/2"	1/2"	840215460	1C300T15PF
1C300T20	3/4"	3/4"	3/4"	840215470	1C300T20PF



Model Code	OD	NPT	Union x Male NPT	Part #	Model
1C100MN0314	1/4"	1/4"		840202075	1C100MN0314PF
1C100MN0318		1/8"		840202065	1C100MN0318PF
1C100MN1112	3/8"	1/2"		840202130	1C100MN1112PF
1C100MN1114		1/4"		840202110	1C100MN1114PF
1C100MN1534	1/2"	1/2"		840202160	1C100MN1512PF
1C100MN1512		1/4"		840202160	1C100MN1514PF



Size	PTFE Seal Ring Part #	PEEK Biting Ring Part #
1/4"	840200360	840200490
3/8"	840200370	840200500
1/2"	840200380	840200510
3/4"	840200390	840200520

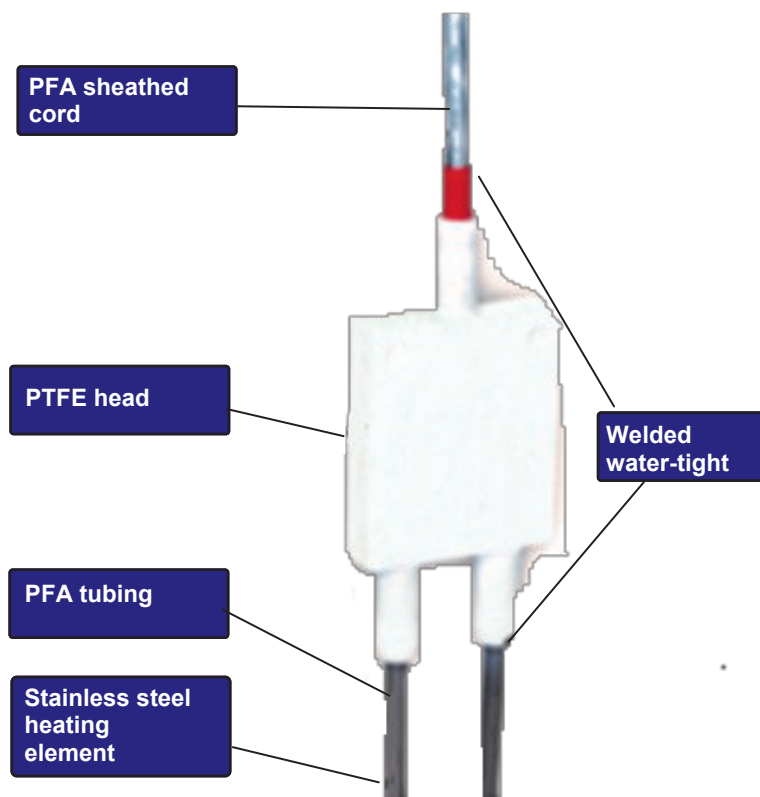


Electric Immersion Heaters

- Completely submersible PTFE head resists corrosion
- No riser length required
- PFA encapsulation on SS heater and wiring
- Excellent heat transfer
- Integrated thermocouple

Description

Polytetra series electric heaters are fully submersible in even the most aggressive chemicals. The stainless steel heating element is encapsulated with non permeable PFA with no air gap between materials to allow for the most efficient heat transfer. Electrical connections are made inside the PTFE head which is welded by a proprietary process to both the PFA encapsulated heating element and wiring. Heaters are available in many shapes including spiral wound or flat reciprocating. Custom bent units are also available to meet the most unique applications.

**Specifications**

Power Range: 500 to 4,000 watts

Multiple heaters can be bundled
for higher wattage

Voltage: 110, 220, 400, 480 or 600

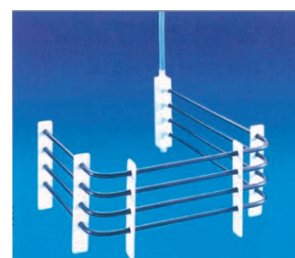
Options

- Custom Brackets
- Bundled Assemblies
- Control Box
- Level Switches

Please consult
Asahi's engineering staff
about these
options at time of
design.



Custom Installation
Bracket



Shell and Tube Heat Exchangers

- All thermoplastic heat exchangers
- High coefficient of heat transfer
- Custom engineered for your needs
- Infrared welded shell & connections



Description

Polytetra Series shell and tube heat exchangers are specified and installed with confidence throughout the world. Designed specifically for each customer ensuring proper heat exchange rate. Completely customizable end and top connections and top orientations.

Offering the widest range of thermoplastic materials, Polytetra heat exchangers are the perfect solution for your specific corrosion resistant requirements.

Polytetra heat exchangers are Ideal for use with saturated steam or hot water to heat up solutions and glycol chilled water to cool your process and in high purity applications such as semiconductor or pharmaceutical manufacturing or industrial applications such as plating, etching or coating shops with aggressive chemicals.

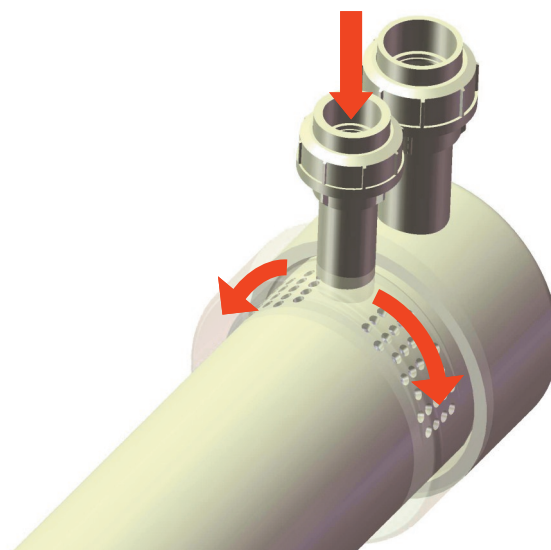
Specifications

Materials: PFA, E-CTFE, PVDF, PP, PE
Surface Area: up to 750 ft² (70 m²) per unit
Connections: Union, Flange, Spigot, NPT, Flare, Custom

Diverted Flow

Polytetra heat exchangers solve the problem of tube wear by preventing direct flow of the entering heating/cooling media onto the thin walled tubing for even flow throughout.

Flow is diverted to the side of the shell avoiding possible high forces from damaging the thin wall internal tubes. This design also proves more efficient by spreading the initial contact of temperature control media to more than just a concentrated area.

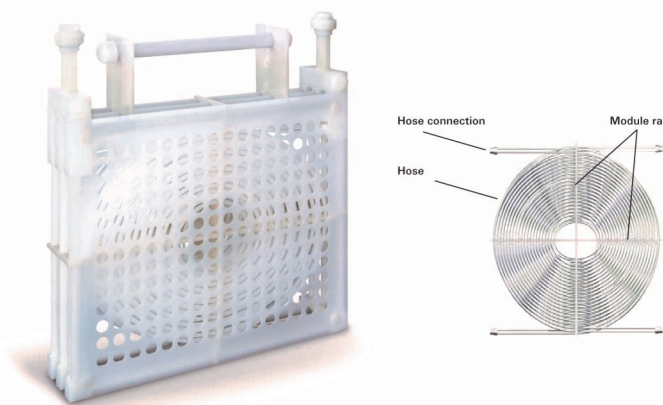


Modular Heat Exchangers

Modular heat exchangers are used for the cooling or heating of aggressive liquids in containers. They are completely manufactured from the PVDF, PP, PFA or PE material.

These heat exchangers are manufactured from individual hose modules and standardized components. The hose modules consist of hose spirals, which are inserted into rails and welded with specially developed connections to specially constructed welding and assembling devices. These hose modules are then fitted to a rigid frame, into which the medium's supply and discharge pipelines are integrated.

The standard modules are manufactured in four sizes and they can now easily be combined to reach exchange surfaces from 4 ft² to 500 ft².



The position and type of the connections pipework can be designed for the specific customer. The heat exchanger can be mounted on a wall or floor. Protective plates can be added to one or both sides to avoid mechanical damage on the thin wall process tubes.

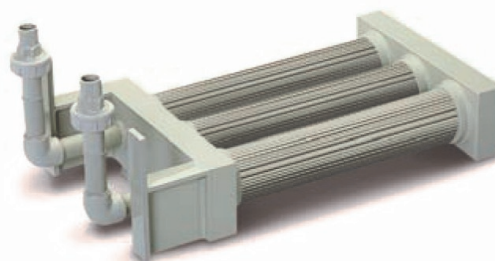
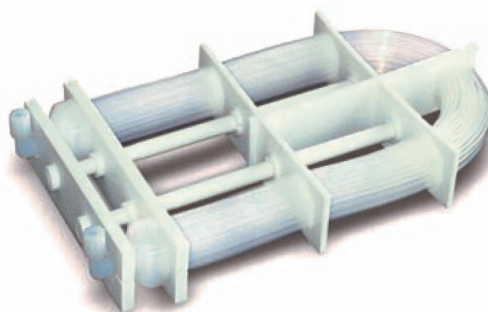
Every single hose module as well as the complete heat exchanger is pressure tested.

Bundled Heat Exchangers

Bundled heat exchangers are particularly suitable for small baths or whenever the space availability is limited. High outputs in the smallest space can be realized due to the good ratio between the exchange surface and space required in connection with a thin-walled tube.

Designed to be incorporated into OEM products, bundled heat exchangers offer complete customization in connection style and position. These cost effective units can efficiently heat or cool any chemical or combination of chemicals needed.

The heat exchangers are similar in design to shell and tube models but utilized where immersion into the bath can be accomplished.



Heat Exchanger Questionnaire

Interested in having us work up a quote for your next project?

Please complete the following three page questionnaire and fax it back to us at 800-426-7058.

Data for calculation of heat requirements

Circular Container Inner Dimensions

Inner Diameter _____ in

Height _____ in

Fluid Level _____ in

Max fitting dimensions for heat exchanger

Outer diameter of heat exchanger =
inner diameter of container _____ in

Entire inner surface of container can be used ☐ Yes ☐ No

If no, please indicate minimum inner
diameter of heat exchanger _____ in

Agitator ☐ Yes ☐ No

Medium Composition

Trade Name _____

Chemical Formula _____

Incrusting Medium ☐ Yes ☐ No

Special characteristics such as high density,
specific heat capacity differing greatly from water ☐ Yes ☐ No

If yes, please specify _____

I. Heating

1. Heating-up phase

bath volume _____ gal.

initial temperature _____ °F

target temperature _____ °F

Heat Exchanger Questionnaire

heating time _____ max. _____ h

heating medium: ☐ steam ☐ water ☐ other _____

inlet temperature of heating medium _____ °F

pressure _____ psi

II. Cooling

target temperature _____ °F

cooling medium ☐ water ☐ other _____

inlet temperature of cooling medium _____ max. _____ °F

Rectifier output 100% capacity utilization

voltage _____ V

power _____ A

maximum rating you require _____ %

If this data is not known, please submit the following information:

Exothermic Heat

By how many °F does the temperature rise per hour during the process if no cooling is carried out? _____ °F

target temperature _____ °F

bath volume _____ gal

inlet temperature of cooling medium _____ max. _____ °F

Once the questionnaire has been completed, please fax it back to us at 800-426-7058.

Heat Exchanger Questionnaire

Customer Information:

☐ plant manager

☐ reseller

☐ galvanic

☐ other

☐ project

☐ estimated required delivery

Remarks:

Drawing:

Company:

Contact:

Address:

Phone:

Fax:

Email:

Once the questionnaire has been completed, please fax it back to us at 800-426-7058.

Another Corrosion Problem Solved.TM



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