

Air Operation

Air operation available in three styles

- Standard Air pilot
- Diaphragm operator for amplification of low pressure signal.
 - will shift with input as low as 3PSI.
- Logic interface end cap.
 - allows direct mounting of logic elements.
 - convenient savings of piping and labor.



Air Pilot



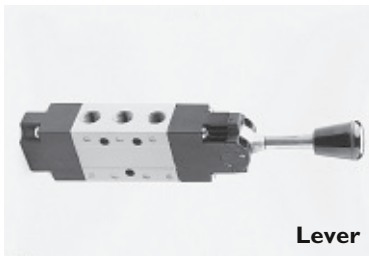
Diaphragm



Logic interface

Mechanical

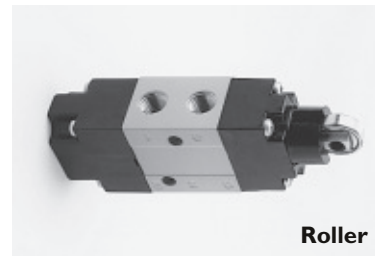
- Steel lever with black plastic knob (1/4 and larger) (for 1/8 valve see Toggle lever below)
- Panel mounting kit available for above pictured 1/4 lever valve (8D502.PM1).



Lever



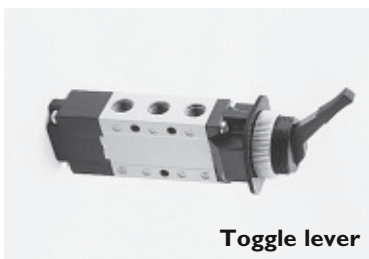
Foot



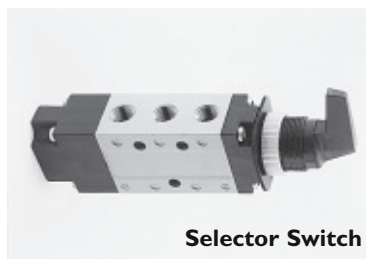
Roller

Panel Mountable

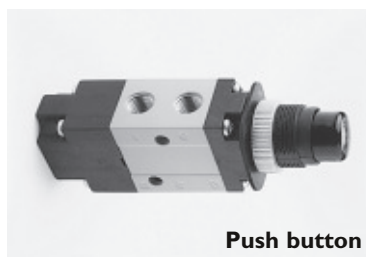
- Panel mount valves come with locking ring
- Palm and Push buttons available in black, red, or green



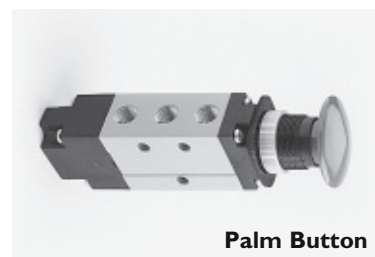
Toggle lever



Selector Switch



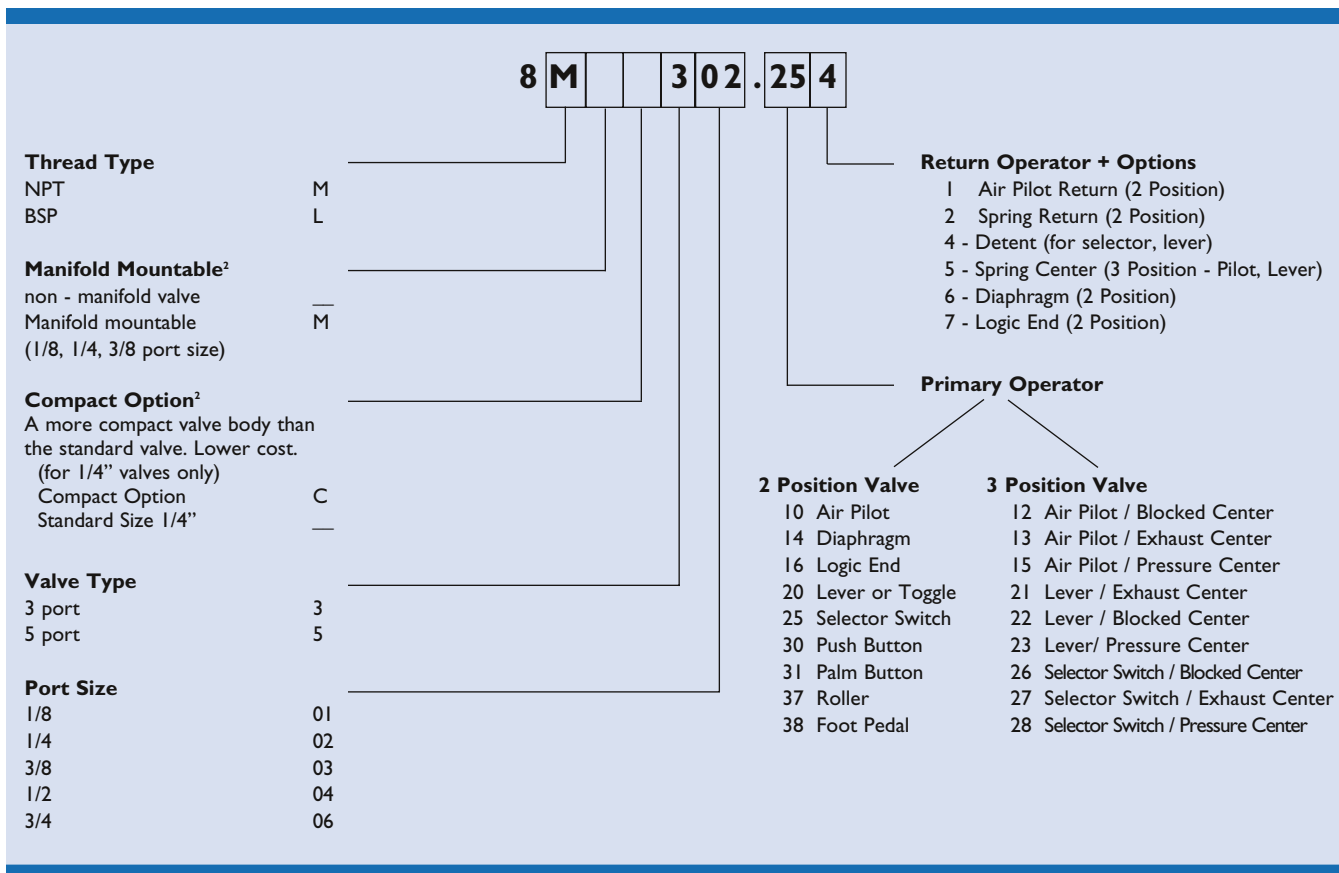
Push button



Palm Button

- Push/pull available not pictured

Part Number Guide



• For available valve combinations see page 53.

*For clarification of center position see symbols on page 54.

²Available Air Pilot only.

Logic / Pilot	--	8M502.161	8M503.161	--	--	
Logic / Spring	--	8M502.162	8M503.162	--	--	
Logic / Logic	--	8M502.167	8M503.167	--	--	
Lever / Detent	--	8M502.204	8M503.204	8M504.204	--	
Toggle / Detent	8M501.204	--	--	--	--	
Lever / Spring	--	8M502.202	8M503.202	--	--	
Push Button / Pilot*	8M501.301	8M502.301	8M503.301	--	--	
Push Button / Spring*	8M501.302	8M502.302	8M503.302	--	--	
Push / Pull*	--	8M502.304	--	--	--	
Palm Button / Pilot*	8M501.311	8M502.311	8M503.311	--	--	
Palm Button / Spring*	8M501.312	8M502.312	8M503.312	--	--	
Selector / Detent	--	8M502.254	8M503.254	--	--	
Foot / Spring	8M501.382 ¹	8M512.382	8M503.382 ¹	--	--	
Foot / Detent ¹	8M501.384	8M502.384	8M503.384	--	--	
Roller / Pilot	8M501.371	8M502.371	8M503.371	--	--	
Roller / Spring	8M501.372	8M502.372	8M503.372	--	--	

• Manifold mountable versions only available in Air Pilot operators up to 3/8 port size.
 * Buttons available in black, red, or green. (Push/pull NA in green)
¹Phase out product

5 Port - 3 Position Valves

Activation / Return	1/8	1/4	3/8	1/2	3/4	Symbol
Lever / Detented Pressure Center	--	8M502.234	8M503.234	--	--	
Lever / Detented Blocked Center	--	8M502.224	8M503.224	--	--	
Lever / Detented Exhaust Center	--	8M502.214	8M503.214	--	--	
Lever / Spring centered Pressure Center	--	8M502.235	8M503.235	--	--	
Lever / Spring centered Blocked Center	--	8M502.225	8M503.225	--	--	
Lever / Spring centered Exhaust Center	--	8M502.215	8M503.215	--	--	
Selector / Detented Blocked Center	--	8M502.264	8M503.264	--	--	
Selector / Detented Exhaust Center	--	8M502.274	8M503.274	--	--	
Selector / Detented Pressure Center	--	8M502.284	8M503.284	--	--	
Pilot / Pilot Pressure Center	8MM511.155	8MM512.155	8MM513.155	8M514.155	8M516.155	
Pilot / Pilot Blocked Center	8MM511.125	8MM512.125	8MM513.125	8M514.125	8M516.125	
Pilot / Pilot Exhaust Center	8MM511.135	8MM512.135	8MM513.135	8M514.135	8M516.135	

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Specifications

Temperature Rating:	0°F to 160°F (-18°C to 71°C) 0°F to 175°F (-18°C to 80°C)	1/8, 1/4, 3/8 Valve 1/2, 3/4 Valve															
Maximum Pressure:	150 PSI (10 bar)																
Air Condition:	40 Micron filtered, lubricated, or non-lubricated																
Spool:	Static seal sleeve with balanced spool																
Electrical:	<p>Power Consumption</p> <table border="0"> <tr> <td>Revision #0 solenoids</td> <td>All coils</td> <td>5 watts</td> </tr> <tr> <td>Revision #1 solenoids (new)</td> <td>≥110V</td> <td>3 watts</td> </tr> <tr> <td></td> <td>≤110V</td> <td>2 watts</td> </tr> </table> <p>(24VDC offers 1 watt option)</p> <p>Coil and Connector:</p> <p>Continuous duty on both versions</p> <table border="0"> <tr> <td>Revision #0 solenoids</td> <td>Class H</td> <td>NEMA 4 / IP65</td> </tr> <tr> <td>Revision #1 solenoids (new)</td> <td>Class C</td> <td>NEMA 4 / IP65</td> </tr> </table> <p>UL listed (UL / CSA approved available, see "solenoid operator options") CE approved</p>		Revision #0 solenoids	All coils	5 watts	Revision #1 solenoids (new)	≥110V	3 watts		≤110V	2 watts	Revision #0 solenoids	Class H	NEMA 4 / IP65	Revision #1 solenoids (new)	Class C	NEMA 4 / IP65
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Revision #1 solenoids (new)	Class C	NEMA 4 / IP65															
Internal / External Pilot:	Solenoid valves are available in internally or externally piloted configurations (External pilot only available in 8mm, 1/4 and 3/8 - 2 position) Internal pilot taken from port 1																
Manual Override:	All solenoid valves come with a locking manual override.																

Response Times:

Valve	1/8	1/4, 3/8	1/2, 3/4
Solenoid / Solenoid	19ms / 18ms	22ms / 21ms	35ms / 33ms
Solenoid / Spring	24ms / 39ms	28ms / 52ms	35ms / 104ms
Air Pilot / Air Pilot	23ms / 22ms	17ms / 15ms	22ms / 20ms
Air Pilot / Spring	23ms / 27ms	17ms / 24ms	17ms / 37ms

(tested at 85PSI)

*figures represent ON/OFF response time

Flow:

Valve Size	C1/8*	1/8	C1/4*	1/4	3/8	1/2	3/4
Cv	0.8	0.7	1.0	1.3	1.7	4.2	4.8
SCFM (max) at 85psi	36	30	46	60	100	208	254

*compact version

Shift Pressure:

Valve	Pressure
Air Pilot / Air Pilot	28 PSI (2 Bar)
Air Pilot / Spring	30 PSI (2 Bar)
Diaphragm / Diaphragm	3 PSI (0.2 Bar)
Diaphragm / Spring	5 PSI (0.3 Bar)
Diaphragm / Air Pilot	3 PSI (0.2 Bar)

Static Overload:

103PSI (7.1 Bar)
(Diaphragm)

Ports:

NPT standard, available in
BSP parallel thread (G)

Component Materials

Body:	Aluminum Zinc alloy	manifold versions (8MM) Non-manifold (8M)
End Caps:	Zinc, Aluminum, or Nylon Varies according to actuator	
Spool Cages:	Zinc die cast 1/8, 1/4, 3/8 Valve	
Seal Retainers:	Zinc die cast 1/2, 3/4 Valve	
Seal Spacers:	Acetal 1/2, 3/4 Valve	
Seals:	Nitrile rubber 1/2, 3/4 Valve	
	Polyurethane 1/8, 1/4, 3/8 Valve	
Spool:	Nickel plated aluminum	
Loading washer:	Acetal resin 1/8, 1/4, 3/8 Valve	
	Hytrell 1/2, 3/4 Valve	
Piston Operator	Anodized aluminum	
Spring:	Zinc plated steel, yellow chromate	
Spring plate:	Anodized aluminum 1/8, 1/4, 3/8 Valve	
	Acetal resin 1/2, 3/4 Valve	
Screws:	Zinc plated steel	

Mechanical, Diaphragm, Air Logic

In order to obtain total length of valve, add valve body to operator of choice.
 Valve body on this page right. Operators on this page and next.

Dimensions (Inches)

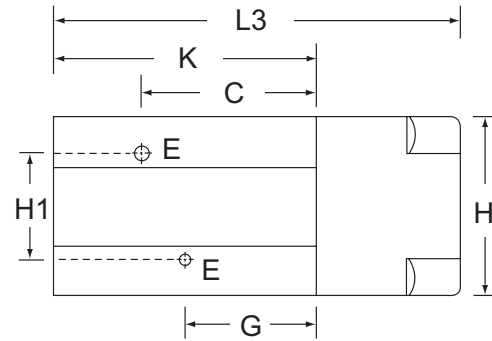
Valve size	C	CI	E(Dia)	G	H	HI	L5	L3
1/8	0.95	1.03	0.17	0.59	1.51	1.12	3.17	2.46
1/4	1.22	1.26	0.25	0.81	1.80	1.12	3.94	3.07
3/8	1.22	1.26	0.13	0.81	1.80	1.12	3.94	3.07

Valve size	K	M	V	VI	X	Y	Z	Valve Width
1/8	1.36	2.07	0.71	0.68	0.75	1.87	0.20	0.87
1/4	1.65	2.52	0.87	0.83	0.87	2.24	0.28	1.22
3/8	1.65	2.52	0.87	0.83	0.87	2.24	0.28	1.22

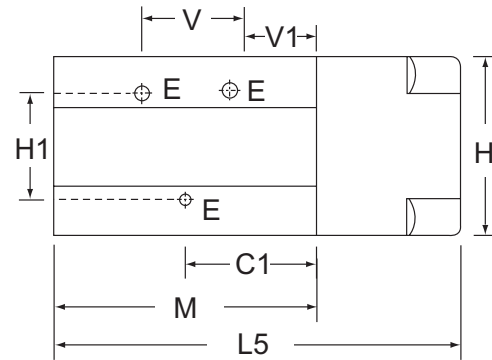
* Note - 5 port 3/8 valve has exhaust ports of 1/4 NPT

Valve Body

3 Port



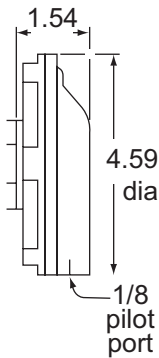
5 Port



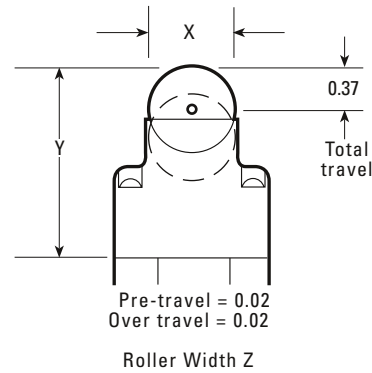
***Note: 2 and 3 position body have the same dimensions**

Operators

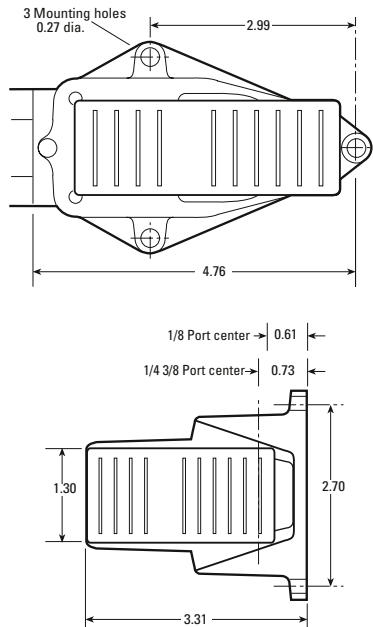
Diaphragm 1/4 3/8



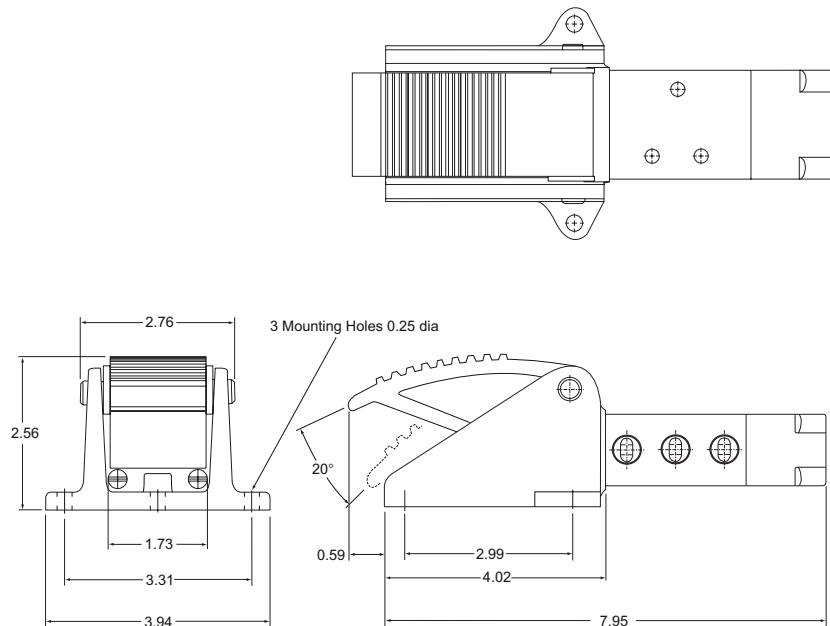
Roller



Foot (rev #0, phase out)



Foot new version 8M512.382



CERAMIC TECHNOLOGY

FOR THE COST OF ORDINARY SPOOL VALVES...ISOMAX DX

ONE OF THE MOST RELIABLE VALVES YOU'LL EVER OWN

- Extremely Long Life
- Over 50,000,000 Life Cycles⁽¹⁾
- Unique Ceramic Slide plate design
- Runs On Dry , Filtered, Or Lubricated Air
- Stiction Free: No O-Ring Seals To Creep Into Metal Pores

PERFORMANCE DOES NOT DEGRADE OVER TIME WITH USE

- Sliding Plate Action Minimizes Contaminant Build-Up Which Causes Reduced Flow And Shorter Valve Life
- High Air Flow
- Out Performs Most Competitors Valves

UNIQUE FEATURES ONLY IN ISOMAX DX

- Miniature Pneumatic Logic, Timers And Valves Can Mount Directly To The Valve Reducing Components And Installation Time.
- True, Three Position, Blocked Center Valves That Pass Extremely Demanding Bubble Tests.

A MAINTENANCE PERSONS ANSWER....

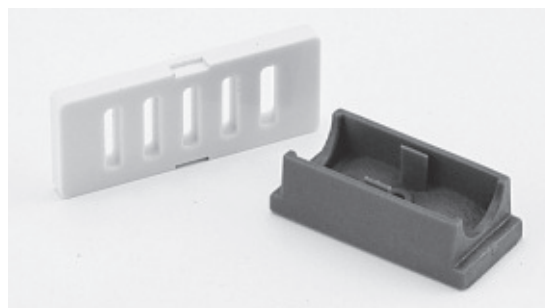
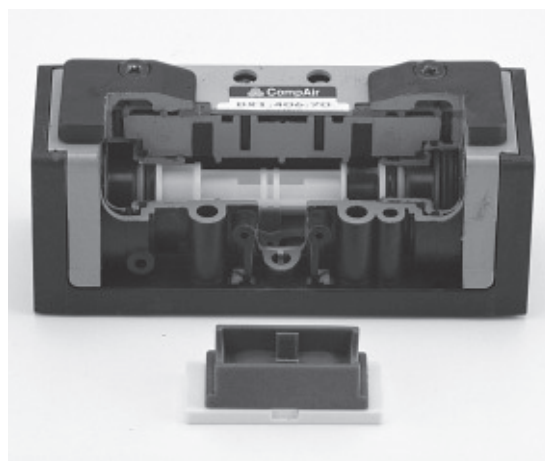
- Long Life Means Low Maintenance And Less Potential Downtime
- Mounting Screws Held Captive Into Place. No More Dropping Them On The Floor
- Ceramic plate reduces the problems normally associated with dirty air.
- Built-In Manual Over Ride Into Every Valve
- Valves Can Be Internally Or Externally Piloted. Simply "Flip" A Gasket To Convert.
- Easy To Assemble And Disassemble.

Ceramic Slide Plate, With Thermoplastic Valve Member:

As Valve is Cycled, The Two Components Literally, "Wear Together" on the Micron Level. This Produces a Near Perfect Seal, Virtually Eliminating Leakage And Giving The ISOMAX DX Valve It's Reputation For Long Life.

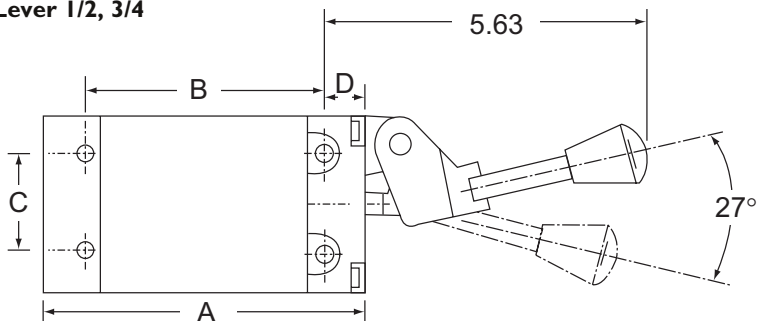
Ceramic Slide Plate

The design of the ceramic is more effective in handling dirty air.



(1) Test Conditions: Filtered (40 Micron) dry air (-40C/F Dew Point), non-lubricated, operating pressure 109 psi, temperature 68 Deg F, at 60 cycles per minute.

Lever 1/2, 3/4

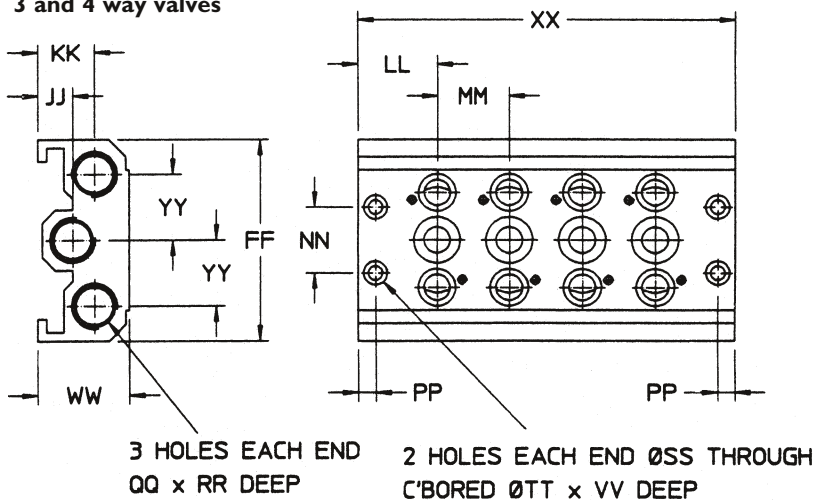


Valve type	A	B	C	D
3 Port	4.72	3.39	1.73	0.67
5 Port	6.14	4.80	1.73	0.67

* mounting holes 0.33 inch diameter

Manifolds

3 and 4 way valves



Dimensions (Inches)

Valve size	FF	WW	YY	JJ	KK	LL	MM
Compact 1/8	3.74	1.00	0.83	0.43	0.43	0.98	0.74
1/8 + Compact 1/4	2.60	1.14	0.87	0.47	0.65	0.98	1.06
1/4, 3/8	3.66	1.65	1.20	0.63	1.02	1.44	1.30

	NN	PP	QQ	RR	SS	TT	VV
Compact 1/8	0.83	0.31	1/4*	0.39	0.18	0.31	0.20
1/8	0.87	0.24	1/4*	0.39	0.18	0.31	0.20
1/4, 3/8	1.20	0.31	1/2*	0.59	0.26	0.43	0.28

XX Dimension

Number of Stations	2	4	6	8	10
Compact 1/8	2.72	4.21	5.71	7.28	8.70
1/8	3.33	5.16	7.28	9.41	11.54
1/4, 3/8	4.17	6.77	9.37	11.97	14.57

3 and 5 port manifolds have identical dimensions.

*QQ dimension - One of the three holes is not tapped on the 3 port version.