



### Model Number

6 SA - 16 - 2 - 2 - BHY

#### Supply Threads

NPT 6  
British Parallel 6B  
British Taper 6T

#### Manifold Styles

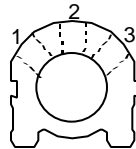
Single SA  
Parallel PA

#### Total Number of Ports

4 to 32

#### Port Locations

1 Left  
2 Center  
3 Right



#### Port Sizes

2 1/4"NPT(F)  
2B 1/4"BSPP(F)  
2T 1/4"BSPT(F)  
3 3/8"NPT(F)  
3B 3/8"BSPP(F)  
3T 3/8"BSPT(F)

**Accessories** (add accessory and anodizing designators to the end of the model number as needed)

- A Manifold only
- B Ball Valves
- C Ball Valves and Plain Flowmeters \*
- D Ball Valves and Flowmeters with Thermometers \*
- E Ball valves and Flowmeters with Thermometers and Pressure Gauges\*
- F Plain Flowmeters only \*
- H Port Quick Connect Plugs
- J Port Hose Barbs
- X Special (consult the factory)

#### Anodizing





- Y Red
- Z Blue

\* See page 15 for flowmeter information. Specify flow rate when ordering. Custom port spacing is required when using 1/4" ports with flowmeters. Flowmeters are installed on the return (left) side of parallel manifolds.

Contact the factory for other thread styles and sizes.

Quick delivery is standard for made-to-order manifolds. Please call for availability.

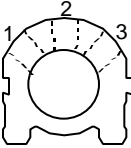
### Stocked 3/4" Manifolds

Total Number of Ports	1/4" Ports				3/8" Ports			
	 model number    length mm    in.		 model number    length mm    in.		 model number    length mm    in.		 model number    length mm    in.	
4	6SA- 4-2-2	190 7.5			6SA- 4-3-2	229 9		
6	6SA- 6-2-2	267 10.5			6SA- 6-3-2	330 13		
8	6SA- 8-2-2	343 13.5	6PA- 8-2-22	190 7.5	6SA- 8-3-2	432 17	6PA- 8-3-22	229 9
12			6PA-12-2-22	267 10.5			6PA-12-3-22	330 13
16			6PA-16-2-22	343 13.5			6PA-16-3-22	432 17

See page 8 for weights and dimensions.

## Model Number

**SA - 16 - 2 - 2 - BHY**

<p><b>Supply Threads</b></p> <p>NPT British Parallel British Taper</p>	<p><b>B</b> <b>T</b></p>	<p><b>SA</b> <b>PA</b></p>	<p><b>4</b> <b>to</b> <b>32</b></p>	<p><b>2</b> <b>2B</b> <b>2T</b> <b>3</b> <b>3B</b> <b>3T</b> <b>4</b> <b>4B</b> <b>4T</b></p>	<p><b>Port Locations</b></p> <p>1 Left 2 Center 3 Right</p> 	<p><b>Port Sizes</b></p> <p>2 1/4"NPT(F) 2B 1/4"BSPP(F) 2T 1/4"BSPT(F) 3 3/8"NPT(F) 3B 3/8"BSPP(F) 3T 3/8"BSPT(F) 4 1/2"NPT(F) 4B 1/2"BSPP(F) 4T 1/2"BSPT(F)</p>
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**Accessories** (add accessory and anodizing designators to the end of the model number as needed)

- A** Manifold only
- B** Ball Valves
- C** Ball Valves and Plain Flowmeters \*
- D** Ball Valves and Flowmeters with Thermometers \*
- E** Ball valves and Flowmeters with Thermometers and Pressure Gauges\*
- F** Plain Flowmeters only \*
- H** Port Quick Connect Plugs
- J** Port Hose Barbs
- X** Special (consult the factory)

**Anodizing**





- Y** Red
- Z** Blue

\* See page 15 for flowmeter information. Specify flow rate when ordering. Custom port spacing is required when using 1/4" ports with flowmeters. Flowmeters are installed on the return (left) side of parallel manifolds.

**Contact the factory for other thread styles and sizes.**

**Quick delivery is standard for made-to-order manifolds. Please call for availability.**

**Stocked 1" Manifolds**

Total Number of Ports	1/4" Ports				3/8" Ports			
								
	model number	length mm in.	model number	length mm in.	model number	length mm in.	model number	length mm in.
4	SA- 4-2-2	190 7.5			SA- 4-3-2	229 9		
6	SA- 6-2-2	267 10.5			SA- 6-3-2	330 13		
8	SA- 8-2-2	343 13.5	PA- 8-2-22	190 7.5	SA- 8-3-2	432 17	PA- 8-3-22	229 9
10	SA- 10-2-2	419 16.5			SA- 10-3-2	533 21		
12	SA- 12-2-2	495 19.5	PA- 12-2-22	267 10.5	SA- 12-3-2	635 25	PA- 12-3-22	330 13
16	SA- 16-2-2	648 25.5	PA- 16-2-22	343 13.5	SA- 16-3-2	838 33	PA- 16-3-22	432 17
20			PA- 20-2-22	419 16.5			PA- 20-3-22	533 21
24			PA- 24-2-22	495 19.5			PA- 24-3-22	635 25
32			PA- 32-2-22	648 25.5			PA- 32-3-22	838 33

See page 8 for weights and dimensions.



# 1-1/2" ALUMINUM MANIFOLDS

## Model Number

12 SA - 16 - 2 - 2 - BHY

### Supply Threads

NPT 12  
British Parallel 12B  
British Taper 12T

### Manifold Styles

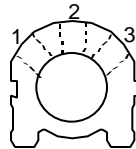
Single SA  
Parallel PA

### Total Number of Ports

4 to 32

### Port Locations

1 Left  
2 Center  
3 Right



### Port Sizes

3 3/8"NPT(F)  
3B 3/8"BSPP(F)  
3T 3/8"BSPT(F)  
4 1/2"NPT(F)  
4B 1/2"BSPP(F)  
4T 1/2"BSPT(F)  
6 3/4"NPT(F)  
6B 3/4"BSPP(F)  
6T 3/4"BSPT(F)

**Accessories** (add accessory and anodizing designators to the end of the model number as needed)

- A Manifold only
- B Ball Valves
- C Ball Valves and Plain Flowmeters \*
- D Ball Valves and Flowmeters with Thermometers \*
- E Ball valves and Flowmeters with Thermometers and Pressure Gauges\*
- F Plain Flowmeters only \*
- H Port Quick Connect Plugs
- J Port Hose Barbs
- X Special (consult the factory)

### Anodizing



- Y Red
- Z Blue

\* See page 15 for flowmeter information. Specify flow rate when ordering. Custom port spacing is required when using 1/4" ports with flowmeters. Flowmeters are installed on the return (left) side of parallel manifolds.

Contact the factory for other thread styles and sizes.

Quick delivery is standard for made-to-order manifolds. Please call for availability.

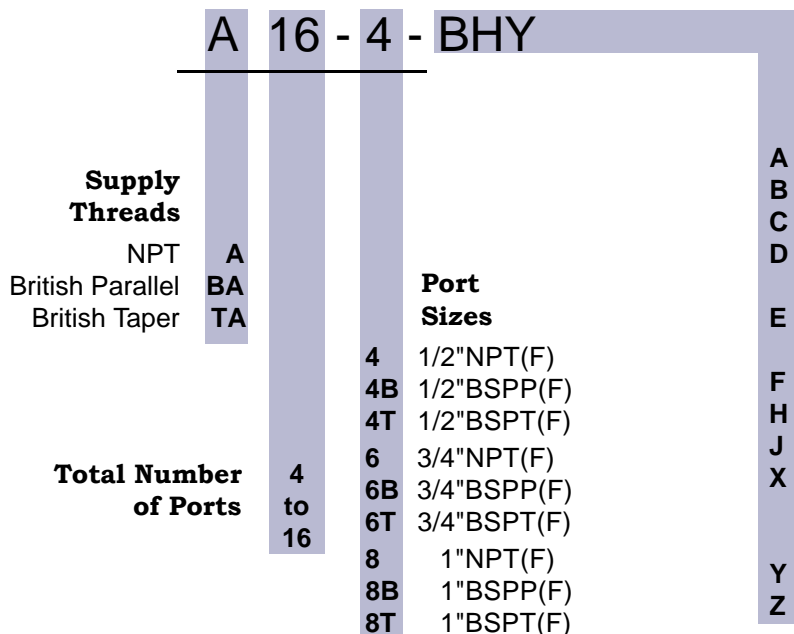
### Stocked 1-1/2" Manifolds

Total Number of Ports	1/2" Ports					
						
	model number	length		model number	length	
		mm	in.		mm	in.
4	12SA- 4-4-2	254	10			
6	12SA- 6-4-2	356	14			
8	12SA- 8-4-2	457	18	12PA- 8-4-22	254	10
10	12SA- 10-4-2	559	22			
12	12SA- 12-4-2	660	26	12PA- 12-4-22	356	14
16	12SA- 16-4-2	864	34	12PA- 16-4-22	457	18
20				12PA- 20-4-22	559	22
24				12PA- 24-4-22	660	26
32				12PA- 32-4-22	864	34

See page 8 for weights and dimensions.

# SMARTFLOW<sup>®</sup> 2" ALUMINUM MANIFOLDS

## Model Number



**Accessories** (add accessory and anodizing designators to the end of the model number as needed)

- A** Manifold only
- B** Ball Valves
- C** Ball Valves and Plain Flowmeters \*
- D** Ball Valves and Flowmeters with Thermometers \*
- E** Ball valves and Flowmeters with Thermometers and Pressure Gauges \*
- F** Plain Flowmeters only \*
- H** Quick Connect Plugs
- J** Port Hose Barbs
- X** Special (consult the factory)

**Anodizing**

- Y** Red
- Z** Blue

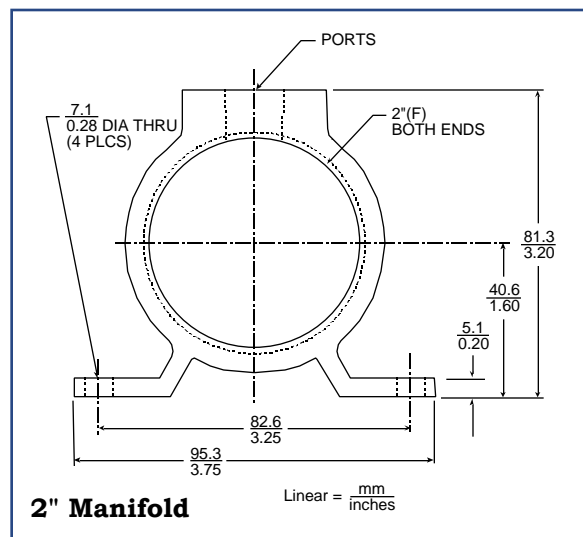
\* See page 15 for flowmeter information. Specify flow rate when ordering.

Contact the factory for other thread styles and sizes.

Quick delivery is standard for made-to-order manifolds. Please call for availability.

**Stocked 2" Manifolds**

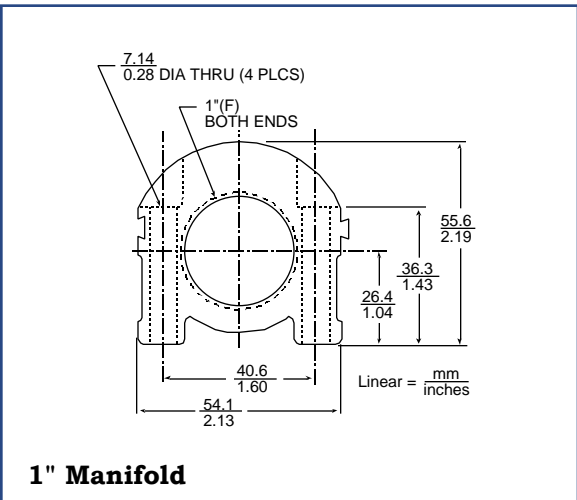
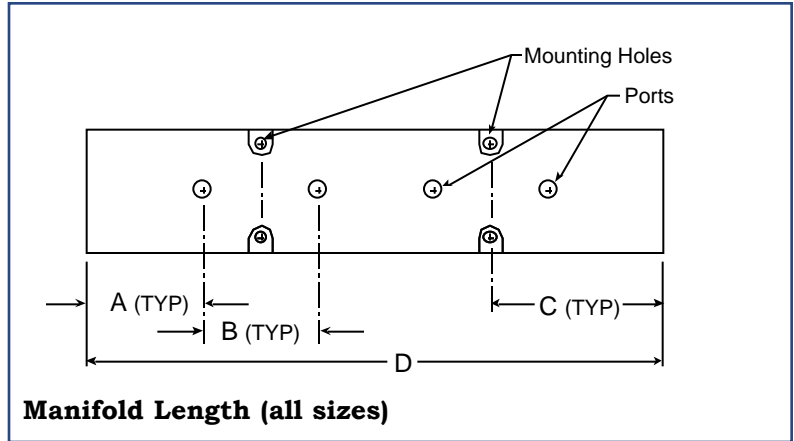
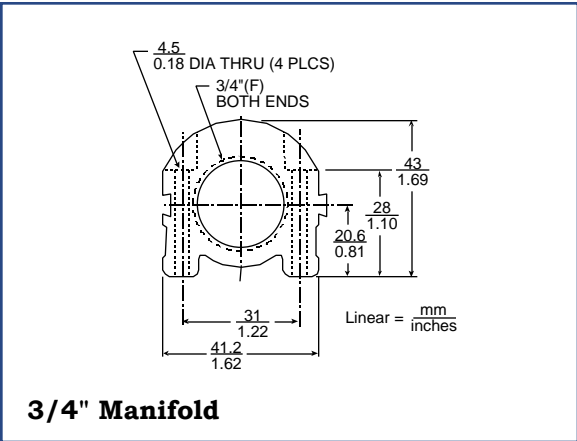
Total Number of Ports	1/2" Ports		
	model number	length	
		mm	in.
4	A4-4	254	10
6	A6-4	356	14
8	A8-4	457	18
12	A12-4	660	26
16	A16-4	864	34



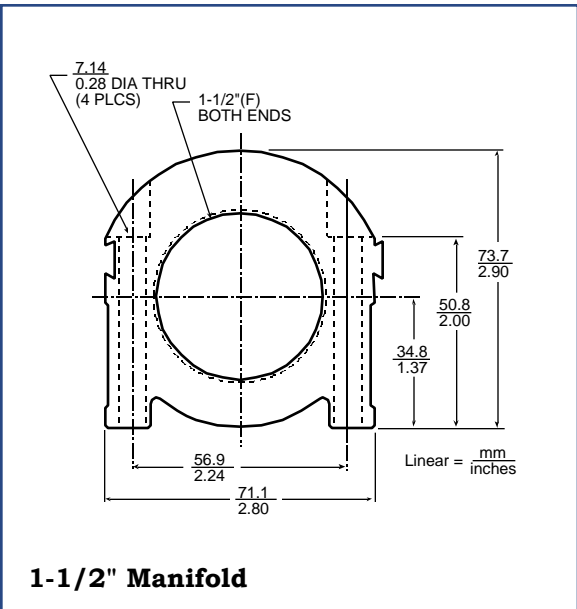
See page 8 for weights and dimensions.



# STANDARD ALUMINUM MANIFOLD DIMENSIONS



Dimension Chart (mm/inches)				
MANIFOLD SIZE	PORT SIZE	A	B	C
3/4" & 1"	1/8"	38.1 1.5	25.4 1.0	50.8 2.0
	1/4"		38.1 1.5	57.2 2.25
	3/8"		50.8 2.0	63.5 2.5
	1/2"		50.8 2.0	63.5 2.5
1-1/2"	1/4"	38.1 1.5	38.1 1.5	57.2 2.25
	3/8"	50.8 2.0	50.8 2.0	63.5 2.5
	1/2"	50.8 2.0	50.8 2.0	76.2 3.0
	3/4"	50.8 2.0	76.2 3.0	88.9 3.5
2"	1/2"	50.8 2.0	50.8 2.0	25.4 1.0
	3/4"		76.2 3.0	
	1"		76.2 3.0	



**Total Manifold Length**  
 $D = [(number\ of\ ports - 1) \times B] + (2 \times A)$

Manifold Weight		
3/4"	.15 lbs/in	2.65 g/mm
1"	.27 lbs/in	4.78 g/mm
1-1/2"	.44 lbs/in	7.79 g/mm
2"	.29 lbs/in	5.13 g/mm



# STAINLESS STEEL MANIFOLDS



Stainless Steel manifold

## Specifications

Material .....304 Stainless Steel  
 Temperature Rating...up to 250°F (121°C)  
**Maximum Working Pressure Ratings**  
 Gas (air, inert gas).....125 psig  
 Liquid (oil, water, benign fluids)....250 psig

**Optional Ball Valves** .....large port brass  
 to match port size

**Optional Flowmeters**  
 with temperature gauges  
 with pressure and temperature gauges  
 flow rate options:

- 1.5 gallons per minute
- 2.5 gallons per minute
- 8.0 gallons per minute
- 10 liters per minute
- 30 liters per minute

Other flow rate options are available with non-standard port spacing. Please contact the factory for details.

## General Description

Smartflow® stainless steel manifolds are formed and welded from 304 stainless steel. The manifolds are 100% leak tested for quality assurance before shipping.

Smartflow stainless steel manifolds are excellent for high-flow applications where durability is important. Manifold bodies are made from 1-1/2" or 2" square tube to allow maximum flow. Custom modifications are easily handled to provide the exact configuration you need.

## Model Number

**Contact the factory for other thread styles and sizes.**

<b>8</b>		<b>SS - 16 - 2 - BH</b>		
<b>Inlet Sizes</b> (all threads female)				<b>Port Sizes</b> (all threads female)
1"NPT	<b>8</b>			<b>2</b> 1/4"NPT
1"BSPP	<b>8B</b>			<b>2B</b> 1/4"BSPP
1-1/2"NPT	<b>12</b>			<b>3</b> 3/8"NPT
1-1/2"BSPP	<b>12B</b>			<b>3B</b> 3/8"BSPP
				<b>4</b> 1/2"NPT
				<b>4B</b> 1/2"BSPP
				<b>6</b> 3/4"NPT
				<b>6B</b> 3/4"BSPP
<b>Manifold Styles</b>				
Single	<b>SS</b>			
Parallel	<b>PSS</b>			
		<b>4</b>	<b>Total Number to of Ports</b>	
		<b>32</b>		

- Accessories** (add accessory designators to the end of the model number as needed)
- A** Manifold only
  - B** Ball Valves
  - C** Ball Valves and Plain Flowmeters \*
  - D** Ball Valves and Flowmeters with Thermometers \*
  - E** Ball valves and Flowmeters with Thermometers and Pressure Gauges \*
  - F** Plain Flowmeters only \*
  - H** Quick Connect Plugs, same size as manifold port
  - J** Hose bars, same size as manifold port
  - X** Special

\* See page 15 for flowmeter information. Specify flow rate when ordering. Custom port spacing is required when using 1/4" ports with flowmeters.

*Design and specifications are subject to change without notice. See page 35 for special manifold pressure rating notes.*

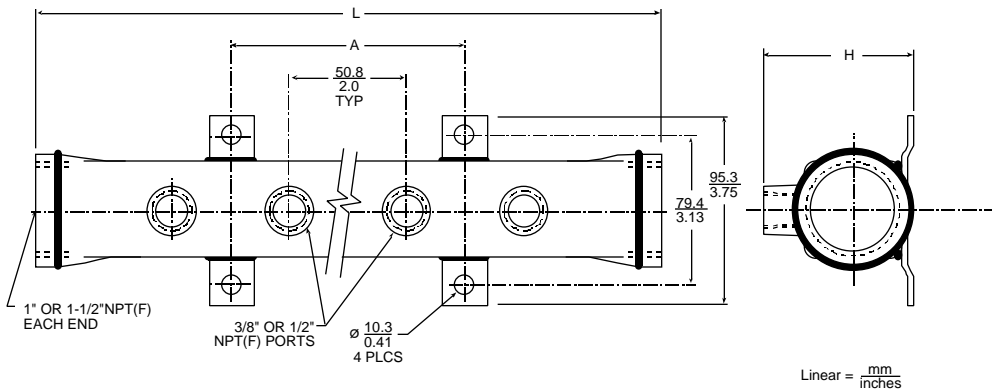


# STAINLESS STEEL MANIFOLDS

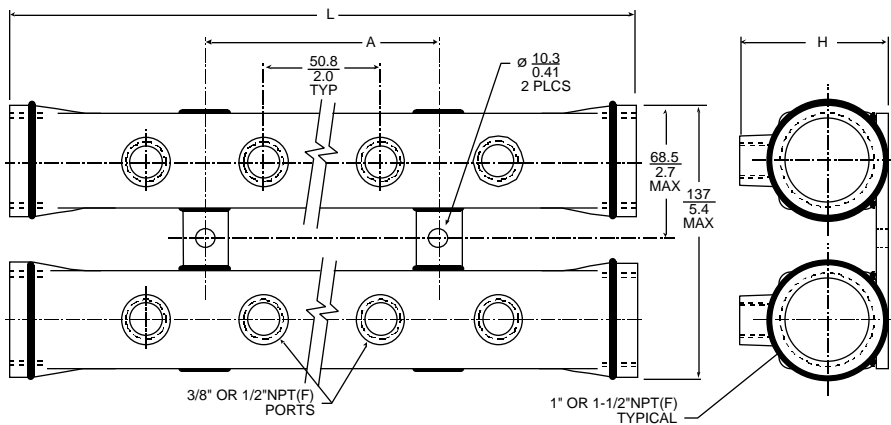
## Model Numbers and Dimensions

	Single Manifolds	Parallel Manifolds	Dimension A	Dimension L	Dimension H
1" Inlet	8SS - 4 - □ - A	8PSS - 8 - □ - A	102mm / 4"	286mm / 11.25"	64mm 2.5" max.
	8SS - 6 - □ - A	8PSS - 12 - □ - A	203mm / 8"	387mm / 15.25"	
	8SS - 8 - □ - A	8PSS - 16 - □ - A	305mm / 12"	489mm / 19.25"	
	8SS - 10 - □ - A	8PSS - 20 - □ - A	406mm / 16"	591mm / 23.25"	
	8SS - 12 - □ - A	8PSS - 24 - □ - A	508mm / 20"	692mm / 27.25"	
	8SS - 14 - □ - A	8PSS - 28 - □ - A	610mm / 24"	794mm / 31.25"	
8SS - 16 - □ - A	8PSS - 32 - □ - A	711mm / 28"	895mm / 35.25"		
1-1/2" Inlet	12SS - 4 - □ - A	12PSS - 8 - □ - A	102mm / 4"	299mm / 11.75"	76mm 3" max.
	12SS - 6 - □ - A	12PSS - 12 - □ - A	203mm / 8"	400mm / 15.75"	
	12SS - 8 - □ - A	12PSS - 16 - □ - A	305mm / 12"	502mm / 19.75"	
	12SS - 10 - □ - A	12PSS - 20 - □ - A	406mm / 16"	603mm / 23.75"	
	12SS - 12 - □ - A	12PSS - 24 - □ - A	508mm / 20"	705mm / 27.75"	
	12SS - 14 - □ - A	12PSS - 28 - □ - A	610mm / 24"	806mm / 31.75"	
12SS - 16 - □ - A	12PSS - 32 - □ - A	711mm / 28"	908mm / 35.75"		

□ = port thread size [3 = 3/8"NPT(F) or 4 = 1/2"NPT(F)]



**Single Manifold**

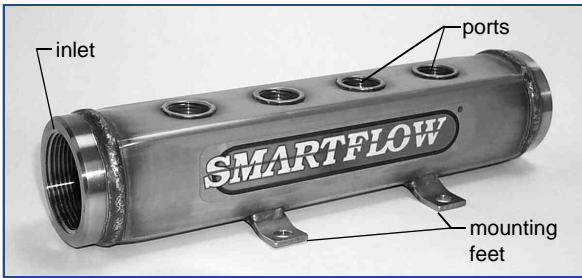


**Parallel Manifold**

Dimensions shown are for manifolds with NPT threads only. Contact the factory for manifold dimensions with BSPP threads.



# STAINLESS STEEL MANIFOLDS *with Low-Profile Ports*



**SMARTFLOW**® stainless steel manifolds are suitable for a wide range of liquid handling applications with some of the largest inlet sizes available. 304 Stainless Steel material is ideal where chemical compatibility and corrosion resistance are imperative.

These economical manifolds feature:

- 1" or 1-1/2"NPT(F) inlet/outlet
- 3/8" or 1/2"NPT(F) ports
- 4, 6, 8, 10, 12, 14, or 16 ports per manifold section
- Single or parallel mounting
- Integral mounting brackets
- Leak-free operation
- Optional ball valves and flowmeters
- Fast delivery

You will achieve optimal fluid flow in your applications with these durable, leak-tested manifolds. The **SMARTFLOW** name is your guarantee of quality, ease of installation, and worry-free dependability.

## Specifications

Material .....304 Stainless Steel  
 Inlet/Outlet Sizes.....1" or 1-1/2"NPT(F)  
 Port Sizes.....3/8" or 1/2"NPT(F)  
 Max Temperature.....250°F (121°C)  
 Optional Ball Valves.....Large Port Brass

### Max Working Pressure Ratings:

Gas (air, inert gas) .....125 psig  
 Liquid (water, benign fluids).....250 psig

## Model Number

	8	SL	-	8	-	3	-	A
<b>Inlet Sizes</b>								
1"NPT(F)	8							
1-1/2"NPT(F)	12							
<b>Manifold Styles</b>								
Single		SL						
Parallel		PSL						
				4				
				6				
				8				
				10				
				12				
				14				
				16				
				20		parallel only		
				24		parallel only		
				28		parallel only		
				32		parallel only		

**Inlet Sizes**  
 1"NPT(F) 8  
 1-1/2"NPT(F) 12

**Port Sizes**  
 3 3/8"NPT(F)  
 4 1/2"NPT(F)

**Manifold Styles**  
 Single SL  
 Parallel PSL

**Total Number of Ports**  
 4  
 6  
 8  
 10  
 12  
 14  
 16  
 20 parallel only  
 24 parallel only  
 28 parallel only  
 32 parallel only

### Accessories

(add accessory designators to the end of the model number as needed)

- Manifold only **A**
- Ball valves **B**
- \*Ball valves and plain flowmeters **C**
- \*Ball valves and flowmeters with thermometers **D**
- \*Ball valves and flowmeters with thermometers and pressure gauges **E**
- Ball valves and flowmeters with thermometers and liquid-filled pressure gauges **EL**
- \*Plain flowmeters only **F**
- Quick connect plugs, same size as manifold port **H**
- Hose barbs, same size as manifold port **J**

\* Contact customer service for flowmeter details

**Ask us about custom configurations!**

Invotec Solutions Limited  
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[www.invotecsolutions.co.uk](http://www.invotecsolutions.co.uk)

*Design and specifications are subject to change without notice.*