

# ASCO™ Series 158 Valve Body

**SERIES  
158**

Single & Monoblock | 2-Way Normally Closed | NPT or ISO Threaded (3/4" to 3"), ANSI or ISO Flanged (2" to 3")



- Series 158 is designed exclusively for use with Series 159 Motorized Actuator
- These valve bodies are two-way and normally closed and designed for on/off control of commercial or industrial gas burners
- This product is a push-to-open valve which opens when the valve stem is depressed by an 159 motorized actuator – an internal return spring closes the valve (in less than 1 second) when the motorized actuator is de-energized
- End connections in a wide range of sizes and type are available for ease of installation and service
- These valves are provided with upstream and downstream pipe taps with plugs for routine testing

## Fluid

- Clean conventional fuel gas (Natural Gas, Methane, Butane and Propane)
- H2S containing fuel gas: with maximum Hydrogen Sulfide (H2S) content up to a maximum of 0.1% (1,000 PPM) by volume of dry gas\*
- Pure Hydrogen (H2)\*\*

## Construction

Valve Parts in Contact with Fluids	
Body	Die-cast aluminum
Bonnet	Die-cast aluminum
Seals	Nitrile
Springs	Zinc-plated steel
Stem Bushing	Delrin
Valve Stem	303 stainless steel
Discs	NBR
Retaining Ring	303 stainless steel
Pipe Plugs	Zinc-plated steel
Seal Ring	PTFE (models with overtravel)
Stem Connector	303 stainless steel

## Model Types

### Standard construction (quick opening trim):

For ON/OFF applications. To be used with an ON/OFF 159 ASCO motorized actuator.

### Standard construction (quick opening trim) w/ Valve Seal Overtravel:

For any "on-off" application in which the user, code or approval agency requires a valve seal overtravel arrangement. To be used with an ON/OFF 159 ASCO motorized actuator with Proof-Of-Closure Switch.

### Linear Trim:

For applications that require better flow control, such as low fire turn down. To be used with a High/Low/Off 159 ASCO motorized actuator.

### Linear w/Valve Seal Overtravel Trim:

For applications in which both valve seal overtravel and better flow control are required. To be used with a High/Low/Off 159 ASCO motorized actuator with Proof-Of-Closure Switch.

## Closeoff Pressure

75 psi (5.17 bar) maximum

\* See ASCO statement for H2S containing gas on Emerson.com, series 158 web page

\*\* See KIWA H2 test report on Emerson.com, series 158 web page



## Installation

Series 158 valve body mounts in any position directly to Series 159 motorized actuator.



## Approvals

### 158 Valve with 159 Actuator

- UL listed to standard 429 "Electrically Operated Valves", Guide YIOZ, File MP932 Safety Shutoff Valves ①
- CSA Certified to Automatic Gas Shutoff Valves ANSI Z21.21 CSA 6.5, C/I. File 113070 (meets applicable standard C22.2 No.139 requirements) ①
- FM Approved to Class 7400 "liquid and gas safety shutoff valves"
- Complies with RoHS directives
- Automatic shut-off valves for gas burners and gas appliances as per EN 161 Class A, Group 2, for gas families 1, 2 and 3 ②③
- SIL 2 capable

① UL & CSA certifications does not apply to ISO flanged products (0158A Series).

② Only when indicated "Class A" on the valve series label.

③ CE (EN13611 and EN161) does not apply to 158 valves with ANSI flanged connections (T158A Series).

## Ordering Information

Order by Catalog Number. Online configurator is available for this product on the ASCO Series 158 page on Emerson.com.

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## Codification

**8 158 A 1 00 X1 X0000**

**Connection Type** ←

8 = NPT Body Connection (Inches)  
 E = ISO 228/1 & ISO 7/1"Rp" body connections (combination thread, G)  
 T = Flanged Connections ANSI Class 150  
 0 = Flanged Connections ISO 1092-1 and ISO 1092-4

T and 0 flanged connection types are only available for the following pipe sizes: 2" High Flow, 2-1/2" and 3"

**Product Series** ←

158 = Valve Body

**Revision**

A = Initial Release ←

**Model Type** ←

**Single**

1 = Standard Trim  
 2 = Standard w/ Seal Overtravel Trim  
 3 = Linear Trim  
 4 = Linear w/ Seal Overtravel Trim

**Double Valve, Monoblock**

5 = Valve 1 & 2: Standard Trim  
 6 = Valve 1 & 2: Standard with Seal Overtravel Trim  
 7 = Valve 1: Standard Trim / Valve 2: Linear Trim  
 8 = Valve 1: Standard with Seal Overtravel Trim / Valve 2: Linear with Seal Overtravel Trim  
 A = Valve 1: Standard Trim / Valve 2: Standard with Seal Overtravel Trim  
 C = Valve 1: Standard Trim / Valve 2: Linear with Seal Overtravel Trim

**Option List**

X0000 = None  
 X0100 = Strainer  
 X0800 = Strainer + Silicon Free  
 X1500 = Silicon Free

**Vent Port Connection Type**

If body connection type 8 or T is chosen, the vent port connection type will default to NPT, denoted by code X1.  
 If body connection type E or 0 is chosen, the vent port connection type will default to ISO, denoted by code X2.

**Pipe Size**

00 = No End Connector (Mid Size Body)  
 01 = No End Connector (Large Body)  
 11 = 3/4" (20mm)  
 12 = 1" (25mm)  
 13 = 1-1/4" (32mm)  
 14 = 1-1/2" (40mm)  
 16 = 2" (50mm)  
 36 = 2" - High Flow (50mm)  
 18 = 2-1/2" (65mm)  
 20 = 3" (80mm)

To order valve bodies without end connections:  
 select code "00" in Pipe Size for sizes 3/4" (20mm) to 2" (50mm)  
 select code "01" in Pipe Size for sizes 2" (50mm) High Flow to 3" (80mm)

## End Connection Kits

Pipe Size in (mm)	Adapter - Hardware Kit			
	NPT Threaded	ISO Threaded (Rp and G combination)	ANSI Flanged	ISO Flanged
3/4 (20)	M200687	M200688	-	-
1 (25)	M200685	M200686	-	-
1 1/4 (32)	M200683	M200684	-	-
1 1/2 (40)	M200681	M200682	-	-
2 (50)	M200679	M200680	-	-
2 (High Flow) (50)	M200836	M200694	M200872	M200875
2 1/2 (65)	M200835	M200692	M200873	M200876
3 (80)	M200834	M200690	M200874	M200877

## Other Kits

- Strainer Mid-size body (3/4" to 2"): M200830
- Strainer Big-size body (2" HF to 3"): M200831
- O-Ring replacement kit (2 units) for Mid-size body (3/4" to 2"): M200832
- O-Ring replacement kit (2 units) for Big-size body (2" HF to 3"): M200833

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## Double Valve Monoblock Specifications English (Metric)

Base Catalog Number			Orifice Nominal in (mm)	Pipe Size (Main) in (mm)	Flow Factor Cv (Kv = m³/h)	Flow Capacity Ft³/Hr (m³/h) ①	Gas Capacity BTU/Hr ①	Heat Output Capacity kW ①	Operating Pressure Differential		Close-Off Pressure psi (bar)
Standard Trim on Both Valves	Standard w/ Seal Overtravel Trim on Both Valves	Standard Trim on Valve 1 Std w/ Seal Overtravel Trim on Valve 2							Minimum psi (bar)	Maximum psi (bar)	
_158A511_X0000	_158A611_X0000	_158AA11_X0000	2 3/32 (53)	3/4 (20)	17.4 (15.0)	932 (26.4)	932,000	273	0	25 (1.7)	30 (2.1)
_158A512_X0000	_158A612_X0000	_158AA12_X0000	2 3/32 (53)	1 (25)	27.8 (24.0)	1,490 (42.2)	1,490,000	437	0	25 (1.7)	30 (2.1)
_158A513_X0000	_158A613_X0000	_158AA13_X0000	2 3/32 (53)	1-1/4 (32)	39.2 (33.9)	2,103 (59.6)	2,103,000	616	0	25 (1.7)	30 (2.1)
_158A514_X0000	_158A614_X0000	_158AA14_X0000	2 3/32 (53)	1-1/2 (40)	46.7 (40.4)	2,503 (70.9)	2,503,000	734	0	25 (1.7)	30 (2.1)
_158A516_X0000	_158A616_X0000	_158AA16_X0000	2 3/32 (53)	2 (50)	53.6 (46.4)	2,874 (81.4)	2,874,000	842	0	25 (1.7)	30 (2.1)
_158A536_X0000	_158A636_X0000	_158AA36_X0000	3 (76)	2 High Flow (50)	84.6 (73.2)	4,539 (128.5)	4,538,500	1,330	0	25 (1.7)	30 (2.1)
_158A518_X0000	_158A618_X0000	_158AA18_X0000	3 (76)	2-1/2 (65)	99.7 (86.2)	5,349 (151.5)	5,349,000	1,568	0	25 (1.7)	30 (2.1)
_158A520_X0000	_158A620_X0000	_158AA20_X0000	3 (76)	3 (80)	112.9 (97.6)	6,057 (171.5)	6,057,000	1,775	0	25 (1.7)	30 (2.1)
Standard Trim on Valve 1 Linear Trim on Valve 2	Standard w/ Seal Overtravel Trim on Valve 1 Linear w/Seal Overtravel Trim on Valve 2	Standard Trim on Valve 1 Linear w/ Seal Overtravel Trim on Valve 2									
_158A711_X0000	_158A811_X0000	_158AC11_X0000	2 3/32 (53)	3/4 (20)	15.4 (13.3)	827 (23.4)	827,000	242	0	25 (1.7)	30 (2.1)
_158A712_X0000	_158A812_X0000	_158AC12_X0000	2 3/32 (53)	1 (25)	22.3 (19.3)	1,198 (33.9)	1,198,000	351	0	25 (1.7)	30 (2.1)
_158A713_X0000	_158A813_X0000	_158AC13_X0000	2 3/32 (53)	1-1/4 (32)	32.7 (28.3)	1,756 (49.7)	1,756,000	515	0	25 (1.7)	30 (2.1)
_158A714_X0000	_158A814_X0000	_158AC14_X0000	2 3/32 (53)	1-1/2 (40)	41.1 (35.6)	2,207 (62.5)	2,207,000	647	0	25 (1.7)	30 (2.1)
_158A716_X0000	_158A816_X0000	_158AC16_X0000	2 3/32 (53)	2 (50)	48.7 (42.1)	2,610 (73.9)	2,610,000	765	0	25 (1.7)	30 (2.1)
_158A736_X0000	_158A836_X0000	_158AC36_X0000	3 (76)	2 High Flow (50)	76.4 (66.1)	4,097 (116.0)	4,097,000	1,201	0	25 (1.7)	30 (2.1)
_158A718_X0000	_158A818_X0000	_158AC18_X0000	3 (76)	2-1/2 (65)	90.9 (78.6)	4,874 (138.0)	4,874,000	1,428	0	25 (1.7)	30 (2.1)
_158A720_X0000	_158A820_X0000	_158AC20_X0000	3 (76)	3 (80)	97.6 (84.4)	5,236 (148.3)	5,236,000	1,535	0	25 (1.7)	30 (2.1)

① Capacity value is based on a gas having a heating value of 1000 Btu/Cu. ft. and a specific gravity of 0.64 at 2" W.C. inlet pressure per 1.0" W.C. Pressure Drop.

## Single Valve, Specifications English (Metric)

Base Catalog Number		Orifice Nominal in (mm)	Pipe Size (Main) in (mm)	Flow Factor Cv (Kv = m³/h)	Flow Capacity Ft³/Hr (m³/h) ①	Gas Capacity BTU/Hr ①	Heat Output Capacity kW ①	Operating Pressure Differential		Close-Off Pressure psi (bar)
Standard Trim	Standard w/ Seal Overtravel Trim							Minimum psi (bar)	Maximum psi (bar)	
_158A111_X0000	_158A211_X0000	2 3/32 (53)	3/4 (20)	18.2 (15.7)	974 (27.6)	974,000	285	0	25 (1.7)	75 (5.2)
_158A112_X0000	_158A212_X0000	2 3/32 (53)	1 (25)	30.1 (26.0)	1,613 (45.7)	1,613,000	473	0	25 (1.7)	75 (5.2)
_158A113_X0000	_158A213_X0000	2 3/32 (53)	1-1/4 (32)	49.8 (43.1)	2,671 (75.6)	2,671,000	783	0	25 (1.7)	75 (5.2)
_158A114_X0000	_158A214_X0000	2 3/32 (53)	1-1/2 (40)	58.6 (50.7)	3,143 (89.0)	3,143,000	921	0	25 (1.7)	75 (5.2)
_158A116_X0000	_158A216_X0000	2 3/32 (53)	2 (50)	72.3 (62.5)	3,878 (109.8)	3,878,000	1,137	0	25 (1.7)	75 (5.2)
_158A136_X0000	_158A236_X0000	3 (76)	2 High Flow (50)	95.4 (82.5)	5,118 (144.9)	5,118,000	1,500	0	25 (1.7)	50 (3.4)
_158A118_X0000	_158A218_X0000	3 (76)	2-1/2 (65)	124.7 (107.9)	6,690 (189.5)	6,690,000	1,961	0	25 (1.7)	50 (3.4)
_158A120_X0000	_158A220_X0000	3 (76)	3 (80)	145.8 (126.1)	7,822 (221.5)	7,822,000	2,292	0	25 (1.7)	50 (3.4)
Linear Trim	Linear w/ Seal Overtravel Trim									
_158A311_X0000	_158A411_X0000	2 3/32 (53)	3/4 (20)	15.8 (13.6)	845 (23.9)	845,000	248	0	25 (1.7)	75 (5.2)
_158A312_X0000	_158A412_X0000	2 3/32 (53)	1 (25)	24.5 (21.2)	1,315 (37.2)	1,315,000	385	0	25 (1.7)	75 (5.2)
_158A313_X0000	_158A413_X0000	2 3/32 (53)	1-1/4 (32)	38.9 (33.6)	2,085 (59.0)	2,085,000	611	0	25 (1.7)	75 (5.2)
_158A314_X0000	_158A414_X0000	2 3/32 (53)	1-1/2 (40)	50.7 (43.8)	2,718 (77.0)	2,718,000	797	0	25 (1.7)	75 (5.2)
_158A316_X0000	_158A416_X0000	2 3/32 (53)	2 (50)	62.5 (54.0)	3,350 (94.9)	3,350,000	982	0	25 (1.7)	75 (5.2)
_158A336_X0000	_158A436_X0000	3 (76)	2 High Flow (50)	92.5 (80.0)	4,964 (140.6)	4,964,000	1,455	0	25 (1.7)	50 (3.4)
_158A318_X0000	_158A418_X0000	3 (76)	2-1/2 (65)	116.6 (100.8)	6,253 (177.1)	6,252,500	1,832	0	25 (1.7)	50 (3.4)
_158A320_X0000	_158A420_X0000	3 (76)	3 (80)	138.0 (119.3)	7,402 (209.6)	7,402,000	2,169	0	25 (1.7)	50 (3.4)

① Capacity value is based on a gas having a heating value of 1000 Btu/Cu. ft. and a specific gravity of 0.64 at 2" W.C. inlet pressure per 1.0" W.C. Pressure Drop.

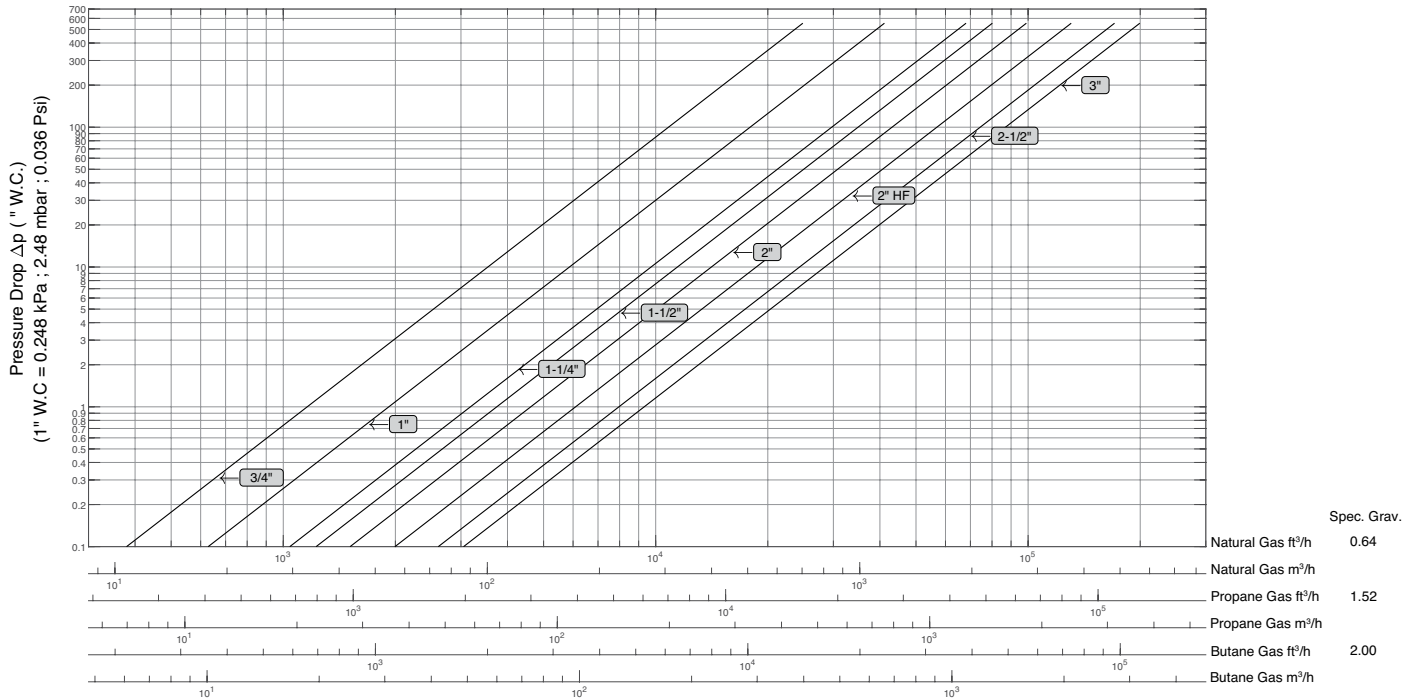
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Single & Monoblock | 2-Way Normally Closed | NPT or ISO Threaded (3/4" to 3"), ANSI or ISO Flanged (2" to 3")

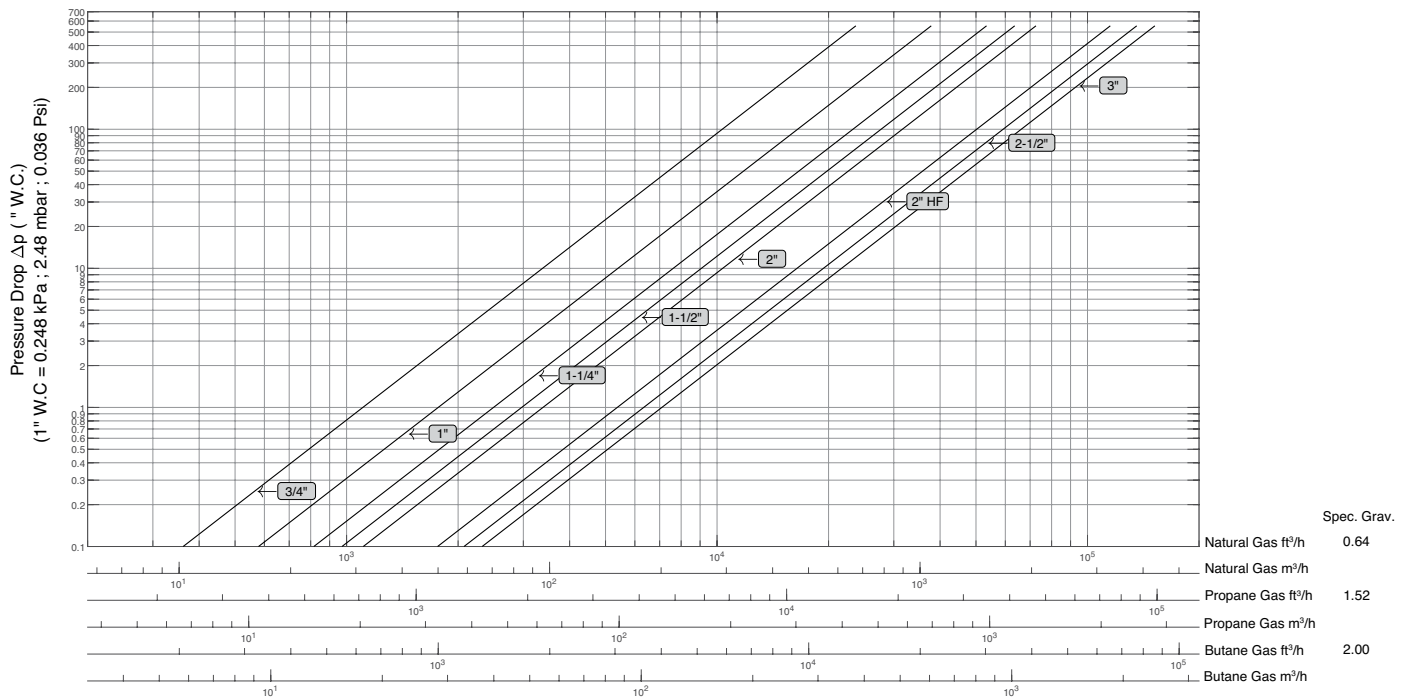
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## Gas Flow Charts

### Single Valve



### Double Monoblock Valve



Notes: Flow curves are based on the following standard conditions: 5 psi (0.3 bar) inlet pressure and 68°F (20°C) fluid temperature. The Single and Monoblock Valve Flow Curves are based on Standard Seal constructions.

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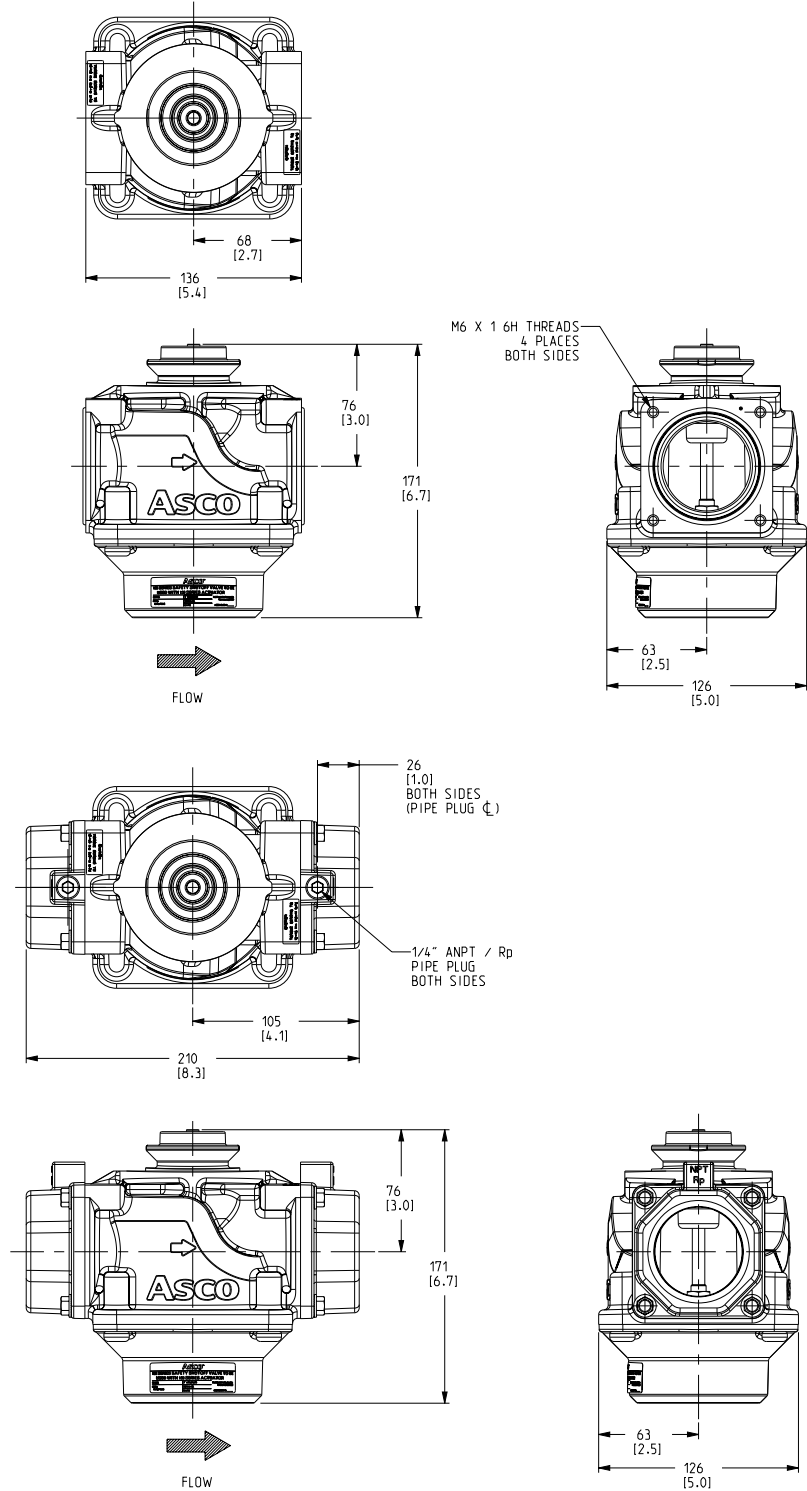
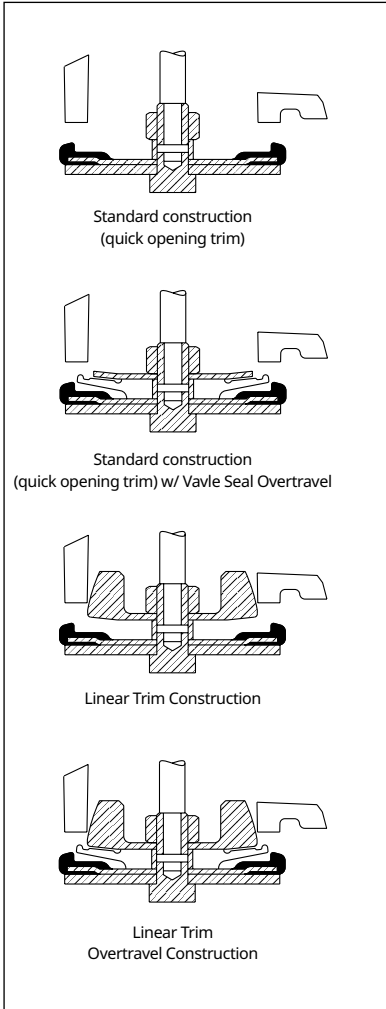
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## Dimensions: mm (inches)

### Single Valve - 3/4", 1", 1 1/4", 1 1/2" and 2"

#### Trim Types



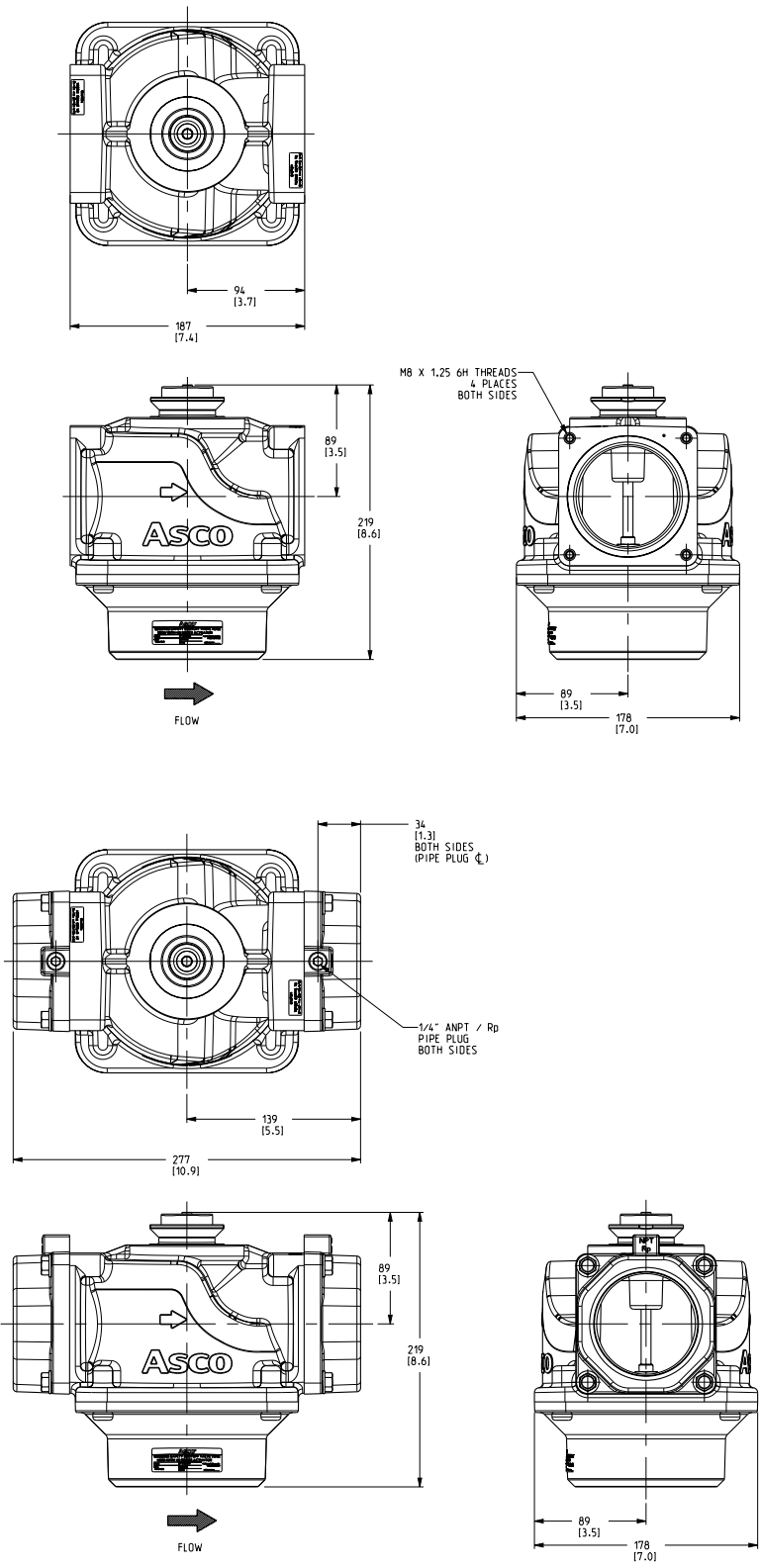
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## Dimensions: mm (inches)

### Single Valve - 2" High Flow, 2 1/2" and 3"



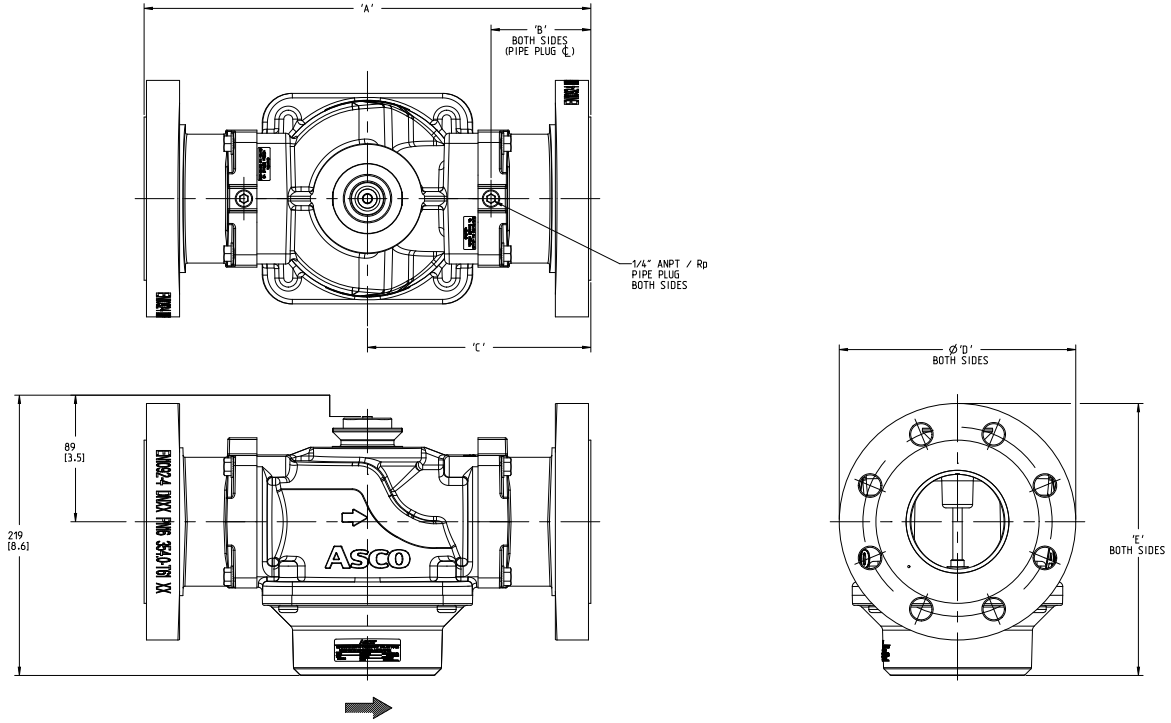
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Single & Monoblock | 2-Way Normally Closed | NPT or ISO Threaded (3/4" to 3"), ANSI or ISO Flanged (2" to 3")

## Dimensions: mm (inches)

### Single Valve With Flanges - 2" High Flow, 2 1/2" and 3"



Flange Std.	DN Size	Nominal Pipe Size	A	B	C	Ø D	E
EN-1092-4	80	-	378 [14.9]	84 [3.3]	189 [7.4]	200 [7.9]	230 [9.1]
	65	-	389 [15.3]	90 [3.5]	194 [7.6]	185 [7.3]	223 [8.8]
	50	-	389 [15.3]	90 [3.5]	194 [7.6]	165 [6.5]	213 [8.4]
ASME B16.5	-	3"	377 [14.8]	84 [3.3]	188 [7.4]	190 [7.5]	225 [8.9]
	-	2-1/2"	388 [15.3]	89 [3.5]	194 [7.6]	180 [7.1]	220 [8.7]
	-	2"	388 [15.3]	89 [3.5]	194 [7.6]	152 [6.0]	206 [8.1]

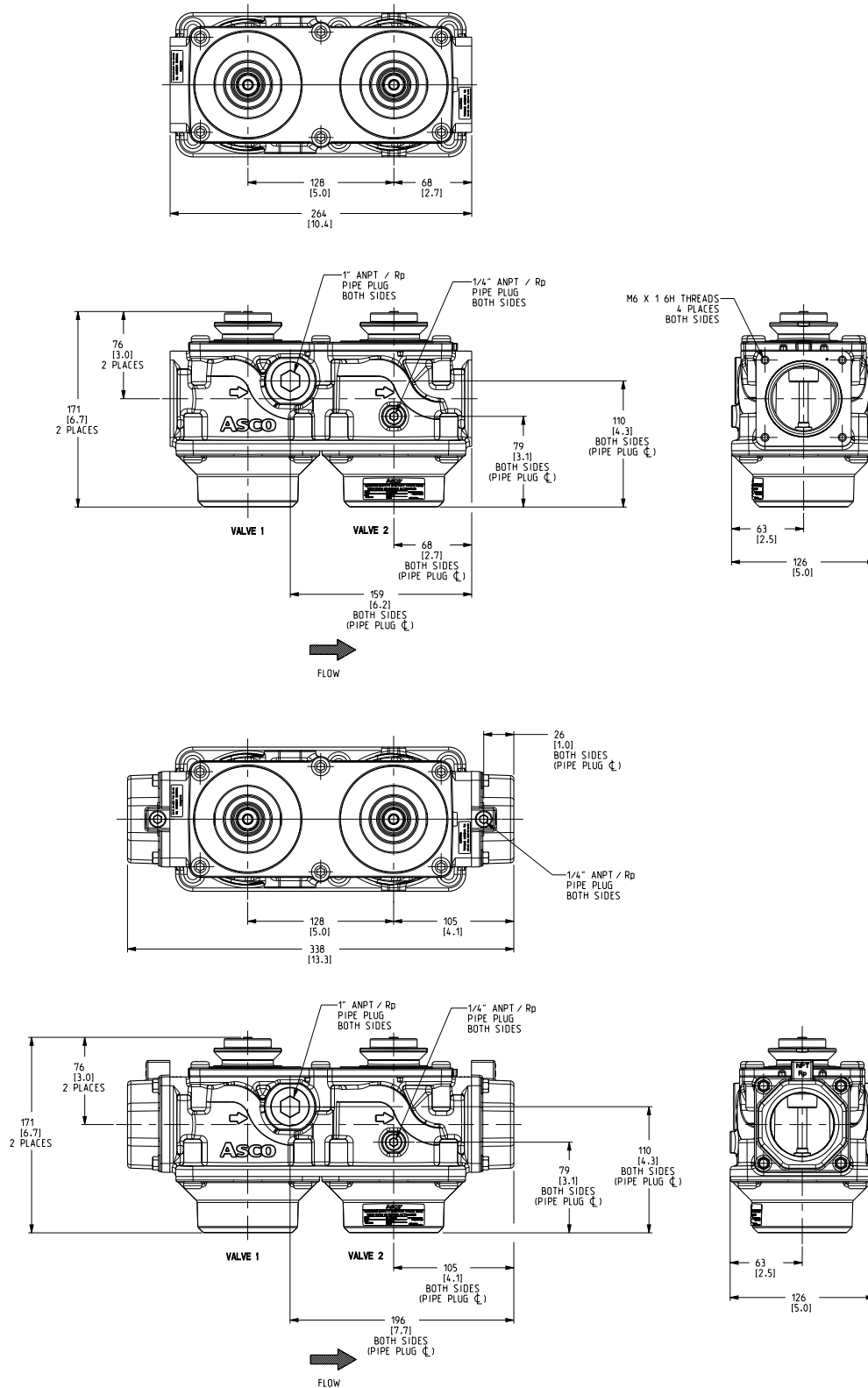
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Single & Monoblock | 2-Way Normally Closed | NPT or ISO Threaded (3/4" to 3"), ANSI or ISO Flanged (2" to 3")

## Dimensions: mm (inches)

### Double Monoblock Valve - 3/4", 1", 1 1/4", 1 1/2" and 2"





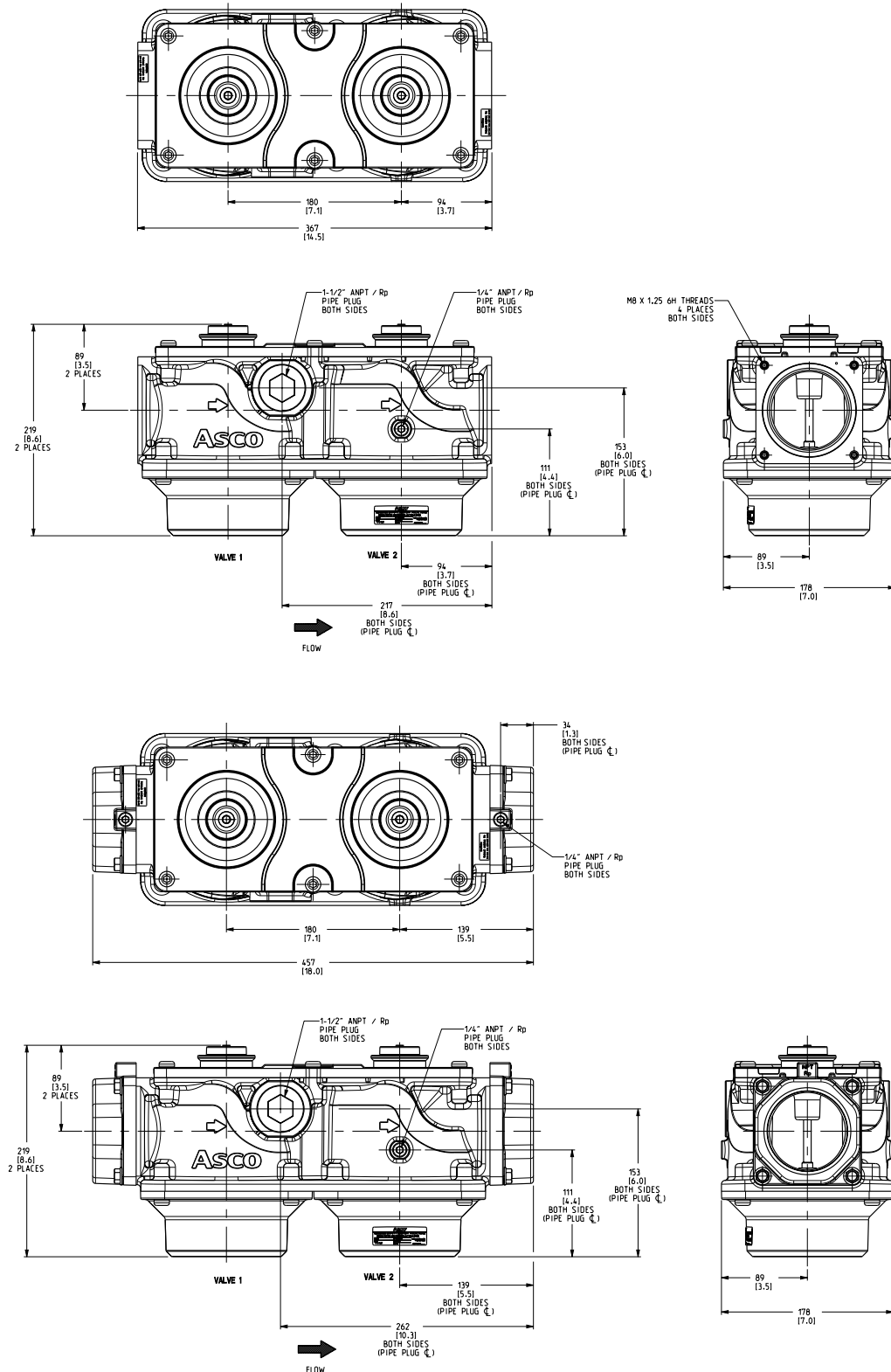
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## Dimensions: mm (inches)

### Double Monoblock Valve - 2" High Flow, 2 1/2" and 3"



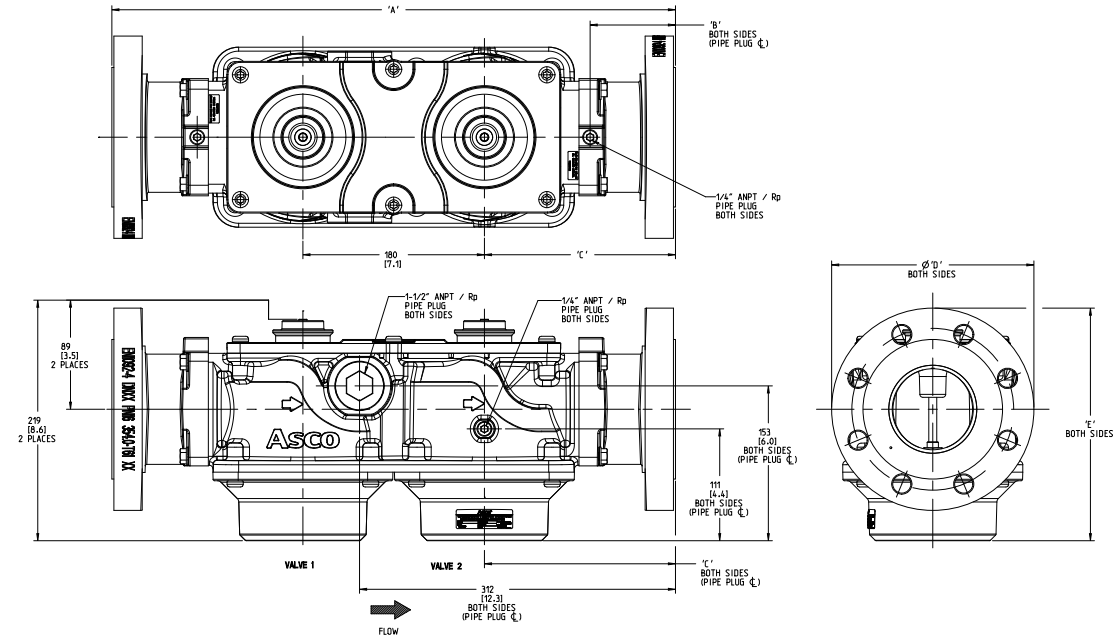
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## Dimensions: mm (inches)

### Double Monoblock Valve With Flanges - 2" High Flow, 2 1/2" and 3"



Flange Std.	DN Size	Nominal Pipe Size	A	B	C	Ø D	E
EN-1092-4	80	-	557 [21.9]	84 [3.3]	189 [7.4]	200 [7.9]	230 [9.1]
	65	-	568 [22.4]	90 [3.5]	194 [7.6]	185 [7.3]	223 [8.8]
	50	-	568 [22.4]	90 [3.5]	194 [7.6]	165 [6.5]	213 [8.4]
ASME B16.5	-	3"	556 [21.9]	84 [3.3]	188 [7.4]	190 [7.5]	225 [8.9]
	-	2-1/2"	567 [22.3]	89 [3.5]	194 [7.6]	180 [7.1]	220 [8.7]
	-	2"	567 [22.3]	89 [3.5]	194 [7.6]	152 [6.0]	206 [8.1]