

Eclipse Standardized Valve Train Segments

Series NFPA
Version 1

NFPA Standardized Valve Train Segments

Eclipse standard safety shut-off valve train segments are pre-piped and tested modules. They are ready for assembly with other piping components to meet the provisions of the NFPA 86-2007 standard for a complete gas valve train. Please refer to NFPA and Design Guide 791 for more information on additional components needed to meet the requirements.

Specifications	
Pipe Sizes	½", ¾", 1", 1-1/2", 2", 2-1/2", 3", 4", 6", 8"
Ambient Environment	Designed for typical indoor industrial applications
Ambient Temperature	+14°F to +140°F (-10°C to 60°C)
Ambient Humidity	5% to 95% relative humidity
Protection	NEMA 12; IP54
Process Fluid Media	Clean fuel gas such as natural (methane), propane, butane
Fluid Temperature	+5°F to +140°F (-15°C to 60°C)
Maximum Pressure	4.7 PSI (33 kPa)*
Electrical	120V +10% to -15%, 50-60Hz

* Note: Maximum pressure for the complete assembly is based on a final test pressure at 150% of this rating. Refer to the individual component ratings for maximum operating pressures.

Component Details

Safety Shut-Off Valve Automatic, slow-opening, fast-closing, with over travel proof of closure switch, aluminum body, and UL, FM, CSA approvals, NEMA 12**

Parameters	Pipe Sizes		
	1/2"-1-1/2"	2"	2-1/2"-8"
Maximum Operating Pressures	7 PSI (500 mbar)	15 PSI (1000 mbar)	10 PSI (700 mbar)
Temperature Range	-40 to +150°F (-40 to +65°C)	+5 to +140°F (-15 to +60°C)	+5 to +140°F*** (-15 to +60°C)

** Note: On 2" and above valves, the assembly can be converted from NEMA 12 to NEMA 4 with 2 of accessory p.n. 10021076, model AGA66.

*** Note: On 2-1/2"-8" valves, the actuator is rated for an operating temperature range of +14 to 140°F (-10 to +60°C)

High Gas Pressure Switch Automatic reset, 12-60"wc (30-150 mbar) settings, UL FM CSA approvals, NEMA 4, 7 PSI (500 mbar) maximum operating pressure, -40 to +140°F (-40 to +60°C)

Component Details (Continued)

Low Gas Pressure Switch Automatic reset, 2-20"wc (5-50 mbar) settings, UL FM CSA approvals, NEMA 4, 7 PSI (500 mbar) maximum operating pressure, -40 to +140°F (-40 to +60°C)

Flow Ratings

Flow at 1"wc drop for low pressure, 0.64 specific gravity natural gas at 60°F

Size		Flow, cfh	Flow, m3/h
Inches	Millimeters		
1/2"	15	345	10
3/4"	20	429	12
1"	25	457	13
1-1/2"	40	1368	39
2"	50	2370	67
2-1/2"	65	3850	109
3"	80	5300	150
4"	100	9490	269
6" & 8"	150 & 200	16800	475

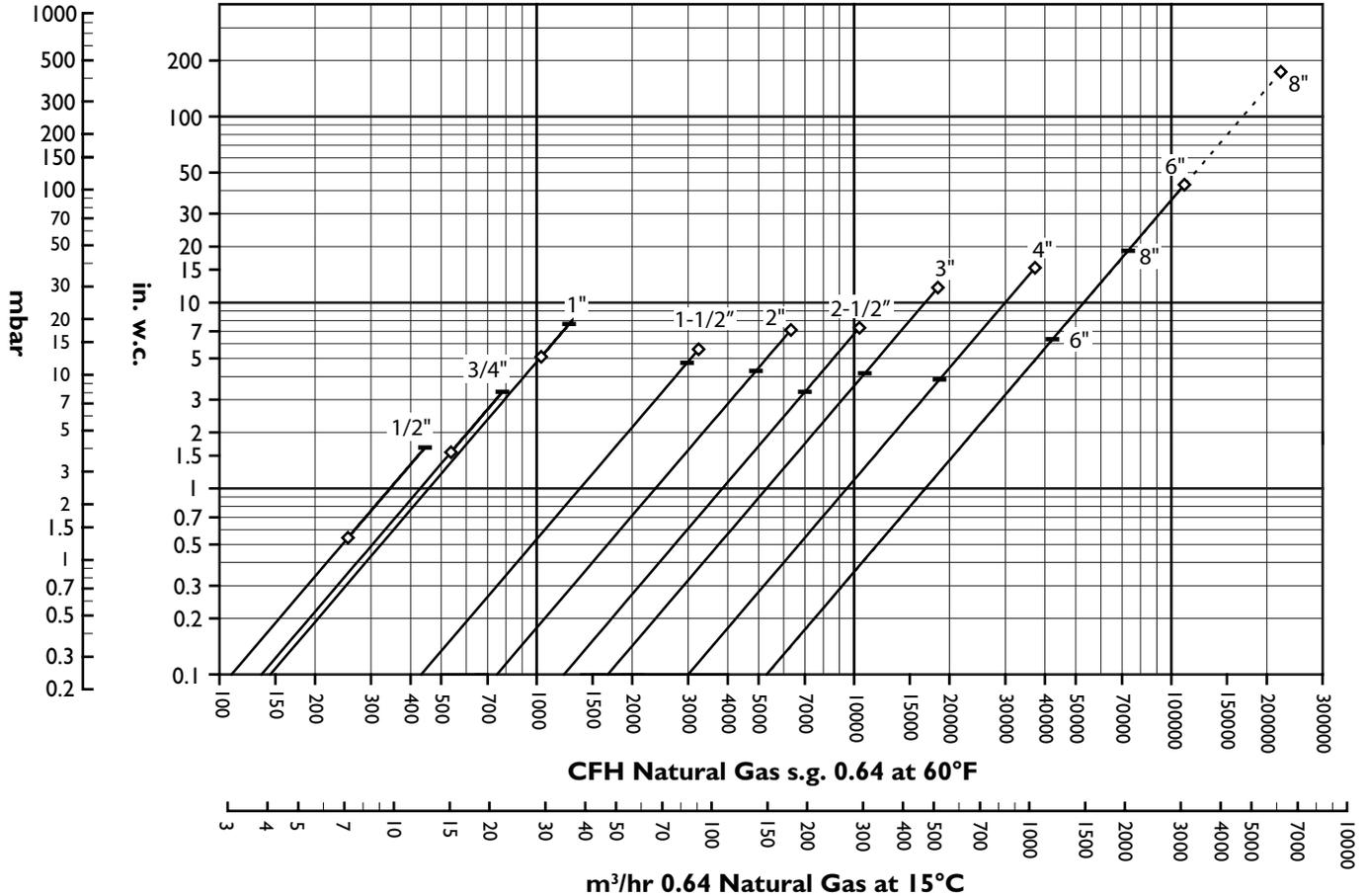
Gas Flows

For flows of a gas with a different specific gravity, use
 $Q_2 = Q_1 * \text{SQRT} (0.64/\text{SG}_2)$; where
 Q_2 = new flow
 Q_1 = flow from the table
 SQRT = square root function
 SG_2 = specific gravity of the new gas

For gas at a different temperature, use
 $Q_2 = Q_1 * \text{SQRT} (520/\text{T}_{\text{abs}2})$; where
 Q_2 = new flow
 Q_1 = flow from the table
 SQRT = square root function
 $\text{T}_{\text{abs}2}$ = Absolute temperature of the new gas (460 + °F)

In the graph below, the bar represents the flow at which the velocity pressure is at the value of 0.5"wc (1.25mbar) for the pipe size. The diamond is the flow that produces 10"wc drop in 100 feet (25mbar/30m) of the pipe size.

Capacity



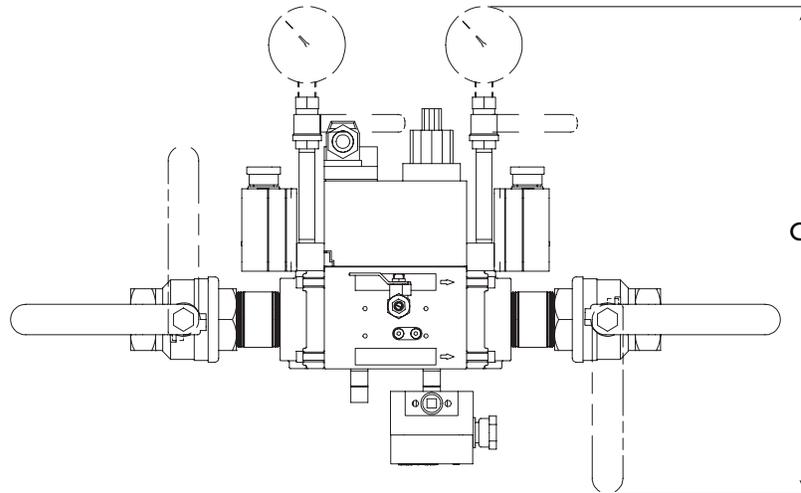
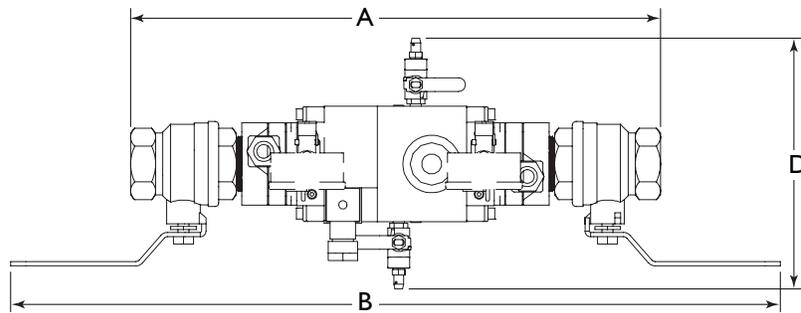
Dimensions

Part Number	Size	Length (A)	Clearance Length (B)	Clearance Height (C)	Depth (D)	Weight lbs (kg)
I0029408	1/2"	14 (356)	19 (490)	15 (369)	8 (191)	10.9 (4.95)
I0029412	3/4"	15 (368)	21 (544)	15 (379)	7 (189)	11.3 (5.14)
I0029414	1"	15 (373)	21 (532)	15 (377)	8 (191)	12.0 (5.46)
I0029416	1-1/2"	18 (461)	26 (670)	17 (425)	9 (219)	23.4 (10.6)
I0029418	2"	24 (616)	32 (804)	16 (407)	9 (234)	28.7 (13.0)
I0029420	2-1/2"	27 (675)	36 (924)	20 (495)	9 (238)	44.9 (20.4)
I0029422	3"	29 (728)	38 (957)	20 (508)	9 (235)	54.9 (24.9)
I0029424	4"	33 (841)	48 (1227)	19 (485)	20 (503)	151 (68.5)
I0029426	6"	39 (990)	54 (1363)	22 (562)	20 (503)	231 (105)
I0029428	8"	40 (1025)	61 (1556)	22 (562)	27 (681)	308 (140)

Dimensions may vary 2% due to pipe thread engagement tolerances. All dimensions in inches (millimeters).

Note: Pressure gauges are shown for reference and are not included in the assembly. The gage port has a pipe plug installed.

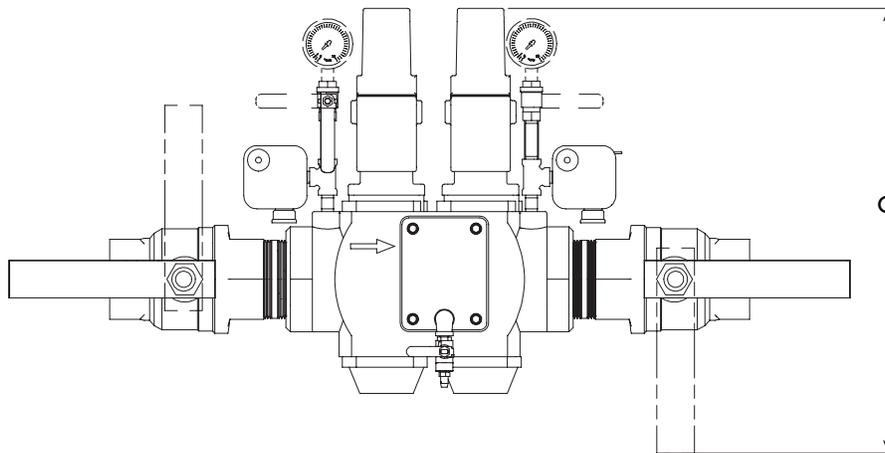
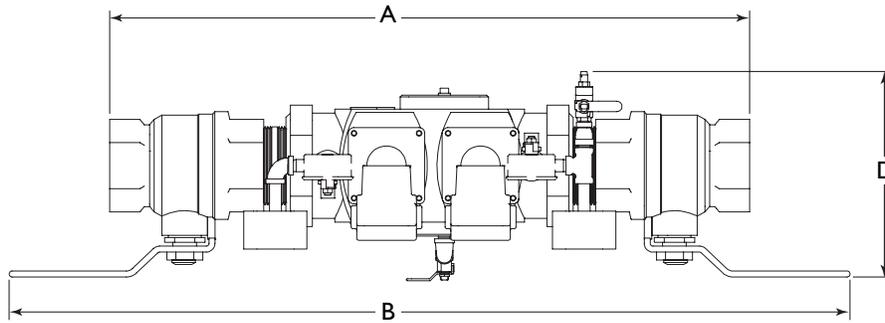
Sizes 1/2" – 1-1/2" NPT



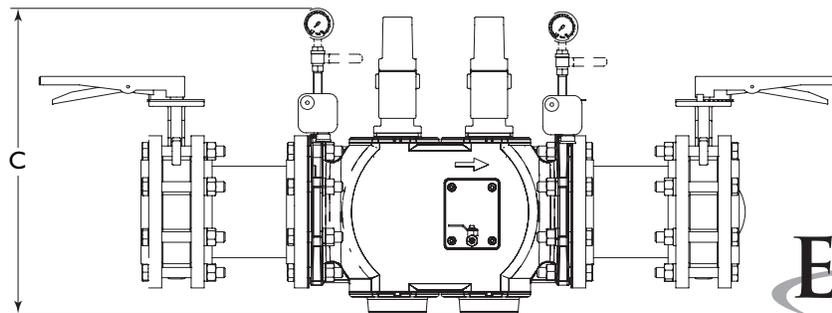
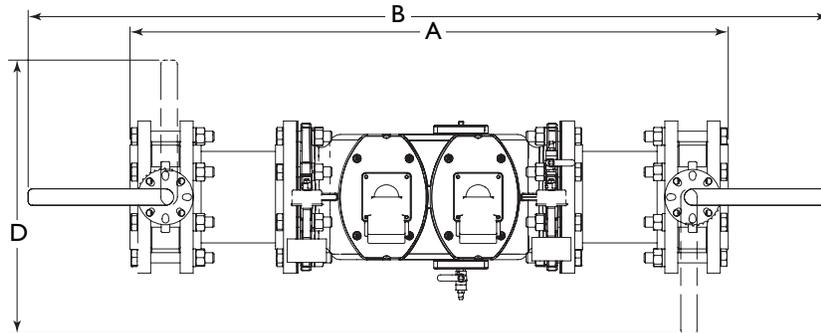
Dimensions

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Sizes 2" – 3", NPT



Sizes 4" – 8", Flange Class 150



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