

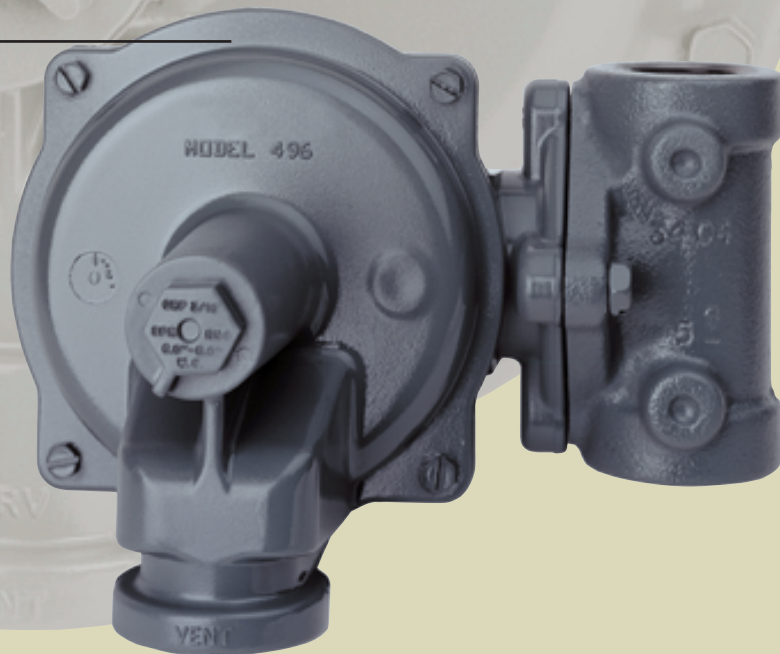
61R2

STANDARD REGULATOR



COMPACT REGULATOR

496



61R2 AND 496 REGULATORS

General Information

The Model 61R2 and 496 Compact Regulator (CR) are designed to deliver reliable and safe regulation of natural gas, air, nitrogen, carbon dioxide, propane and other non-corrosive gases for residential, light commercial and light industrial applications. Outlet pressures between 3.5" and 2 lbs. are available. Operating temperature range is -20 F to 150 F (-28.9 C to 65.5 C).

The diaphragm case is spring-loaded and easily removed for routine inspection without disturbing the line connection. Both regulators have an internal relief valve designed to control the maximum allowable buildup of downstream pressure. All models conform to ANSI code B109.4-1998 and CGA Service Type Regulator Specification CAN/CGA-6, 18-M95.

Corrosion Protection

The protective finish on all Global regulators resists corrosive effects of weather and harsh environments. This greatly inhibits the oxidation of metal surfaces that may eventually compromise the integrity of the metal. A finish enamel topcoat further protects the regulator.

Valve bodies may be coated with either yellow zinc chromate, clear zinc, or E-coat.

High Tensile Strength Valve Bodies

Each Global regulator is equipped with a high tensile strength cast iron valve body that rotates 360 degrees.

The 496 regulator rotates in 90 degree increments.

Available body sizes for both Global regulators are: 3/4" x 3/4", 3/4" x 1" and 1" x 1".

The 61R2 is also available in sizes: 3/4" x 1 1/4", 1" x 1 1/4", 1 1/4" x 1 1/4".

The 496 is also available in sizes: 3/8" x 3/8", 1/2" x 1/2".

Application

Both models are equipped with an internal relief valve with passages designed to maximize the release of gas as quickly and efficiently as possible. It is set to relieve at 7" to 10" W.C. above normal outlet pressure setting.

Both models are also equipped with an extra large, removable, insect-proof, stainless-steel, screened vent to resist freeze-ups and to exclude foreign matter. The vent is threaded 3/4" or 1" NPT and is suitable for indoor installations.

Options

The regulator vent opening should face downward (6 o'clock) to minimize the chance of blockage from ice and snow. If not, a plastic elbow vent with a protective screen may be screwed into the vent (Global part # 041-01092-001).

Other Options

2 lb. Regulator

Seal Wires

Angle Body

Large Body to 1 1/4" (61R2 only)

61R2 REGULATOR

Description

The 61R2 has a 6-inch diaphragm that uses its large area to provide consistent regulation over a wide range of flows. The 61R2 has been a staple of the gas industry for almost 40 years.

Construction

Valve Body - Cast iron, 125 psig working pressure

Spring and Lower Case - Die-cast aluminum

Orifice - Brass or aluminum

Valve Seat - One-piece molded Buna-N

Fulcrum Pin - Brass

Throat/Support/Stem Guide - Cast aluminum,
integral to lower case

Diaphragm Plate - Plated Steel

Diaphragm - Polyester fabric reinforced Buna-N with
integral relief seat and case flange seal

Vent Valve - Precision-fit polypropylene valve and seat

Adjustment Screw - ABS cycolac

Closing Cap - ABS cycolac with integral relief valve stop and a hole for tamper seal wire



496 COMPACT REGULATOR

Description

The 496 Compact Regulator (CR) uses a 4-inch molded, roll-out diaphragm to provide the capacity and relief performance expected from larger regulators. The reduced size and weight makes for easier handling, installation and reduced shipping charges.

Construction

Valve Body - Cast iron, 125 psig working pressure

Spring and Lower Case - Die-cast aluminum

Orifice - Brass or aluminum

Valve Seat - One-piece molded Buna-N

Valve Stem - Zamak

Fulcrum Pin - Brass

Throat/Support/Stem Guide - Cast aluminum, integral to lower case

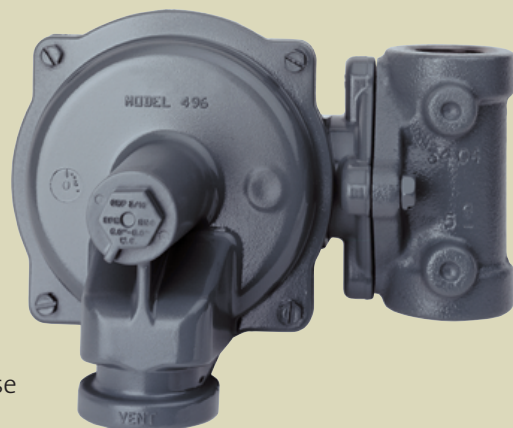
Diaphragm Plate - Plated Steel

Diaphragm - Polyester fabric reinforced Buna-N with integral relief seat and case flange seal

Vent Valve - Precision-fit polypropylene valve and seat

Adjustment Screw - ABS cycolac

Closing Cap - ABS cycolac with integral relief valve stop and a hole for tamper seal wire



61R2 REGULATOR CAPACITY PERFORMANCE

Capacity 3/4" Outlet 61R2 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +2.0"-1.0" W.C. from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
1		200	225	400	450	500
2		300	350	500	550	650
5	300	525	625	650	875	900
10	400	700	1000	1025	1050	1175
15	600	900	1200	1225	1250	1300
20	775	1100	1450	1475	1500	1550
25	900	1250	1475	1500	1525	
30	1000	1400	1525	1525	1550	
40	1225	1575	1675	1700		
50	1350	1700	1800			
60	1500	1825	1875			
80	1650	1850				
100	1700	1900				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1" Outlet 61R2 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +2.0"-1.0" W.C. from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
1		200	275	375	475	500
2		300	450	575	675	725
5	250	550	800	1050	1175	1200
10	400	825	1300	1550	1600	1625
15	525	1075	1600	2000	2025	2050
20	625	1300	2000	2200	2225	2300
25	700	1425	2200	2300	2325	
30	775	1600	2325	2400	2425	
40	950	2000	2400	2450		
50	1100	2200	2450			
60	1300	2400	2500			
80	1550	2450				
100	1950	2500				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1 1/4" Outlet 61R2 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +2.0"-1.0" W.C. from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
1		200	275	375	400	450
2		275	425	525	550	650
5	300	525	650	775	900	1000
10	400	800	900	925	1000	1100
15	525	1050	1050	1075	1100	1200
20	625	1225	1200	1300	1400	1500
25	700	1425	1400	1425	1450	
30	775	1600	1625	1625	1650	
40	950	1750	1800	1900		
50	1100	1800	1900			
60	1175	1900	1950			
80	1550	2000				
100	1900	2100				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 3/4" Outlet 61R2 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +/-10% from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
5	200	300	400	450	550	650
10	300	450	650	700	825	900
15	350	625	850	950	1250	1125
20	450	775	1000	1100	1425	1500
25	550	950	1200	1300	1700	
30	625	1050	1400	1550		
40	825	1425	1625	1800		
50	1000	1600	1750			
60	1150	1850	1950			
80	1425	2200				
100	1700	2250				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1" Outlet 61R2 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +/-10% from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
5	200	300	400	525	575	725
10	275	500	700	875	1000	1150
15	400	650	950	1200	1300	1500
20	475	825	1250	1600	1700	1725
25	600	1050	1500	2000	2050	
30	700	1200	1875	2200	2300	
40	875	1600	2400	2850		
50	1050	1950	2700			
60	1175	2325	3000			
80	1450	2700				
100	1700	2725				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1 1/4" Outlet 61R2 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +/-10% from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
5	200	275	400	500	525	675
10	300	450	650	750	775	900
15	375	600	825	900	950	1200
20	500	700	1000	1100	1150	1500
25	550	850	1200	1250	1350	
30	650	1000	1400	1425	1600	
40	775	1200	1750	1800		
50	900	1400	1950			
60	1050	1600	2200			
80	1425	1800				
100	1700	2000				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

CAPACITY FOR OTHER GASES

Our Regulators may be used for regulating other gases. To determine flow capacities of other gases, multiply the figures in the capacity table by the correction factors listed in the following Table.

GAS	SPECIFIC GRAVITY	CORRECTION FACTOR
Air	1	0.77
Carbon Dioxide	1.52	0.63
Nitrogen	0.97	0.79
Propane	1.53	0.63
Propane-Air mix	1.2	0.71

For determining capacities for other gases not listed in the table, use the following relationship to calculate the correction factor.

$$\text{Correction Factor} = \sqrt{\frac{0.6}{\text{Specific Gravity of the Gas}}}$$

496 REGULATOR CAPACITY PERFORMANCE

Capacity 3/8" Outlet 496 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +2.0"-1.0" W.C. from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
1		100	160	190		
2		150	200	220		
5	180	200	250	260		
10	190	220	270	280		
15	200	240	280	290		
20	220	260	290	300		
25	230	260	290	300		
30	240	270	300	300		
40	250	280	300	300		
50	260	300	300			
60	270	300	300			
80	300	300				
100	300	300				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1/2" Outlet 496 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +2.0"-1.0" W.C. from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
1			110	200	220	
2			210	240	300	
5	220	290	330	390		
10	290	350	420	480		
15	350	410	470	550		
20	410	490	500	560		
25	430	500	550	580		
30	470	520	580	590		
40	500	570	600	600		
50	550	600	600			
60	570	600	600			
80	600	600				
100	600	600				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 3/4" Outlet 496 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +2.0"-1.0" W.C. from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
1		200	275	300	400	500
2		250	400	475	575	775
5	275	400	675	725	875	1050
10	400	650	900	950	1000	1175
15	500	775	1100	1100	1150	1300
20	600	1000	1175	1250	1300	1350
25	675	1100	1225	1350	1375	
30	775	1250	1300	1475	1500	
40	900	1300	1350	1525		
50	1050	1375	1425			
60	1250	1425	1500			
80	1500	1500				
100	1550	1550				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1" Outlet 496 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +2.0"-1.0" W.C. from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
1			200	250	300	425
2			300	350	475	550
5	250	450	600	725	950	1150
10	375	750	900	1200	1250	1700
15	500	950	1150	1550	1550	1800
20	600	1200	1350	1600	1600	1950
25	675	1350	1600	1650	1650	
30	775	1550	1800	1825	1850	
40	950	1875	1900	1950		
50	1100	2000	2025			
60	1250	2075	2100			
80	1500	2200				
100	1800	2250				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 3/8" Outlet 496 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +/-10% from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
5	150	280	330	380		
10	240	400	430	440		
15	310	440	460	500		
20	350	450	480	510		
25	380	460	500	530		
30	430	490	520	560		
40	450	510	560	580		
50	460	550	570			
60	470	560	590			
80	540	570				
100	570	580				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1/2" Outlet 496 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +/-10% from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
5	160	290	340	420		
10	250	420	480	500		
15	320	490	520	620		
20	360	510	590	650		
25	390	550	660	700		
30	440	590	720	760		
40	520	700	800	810		
50	530	750	840			
60	580	870	920			
80	670	910				
100	750	1000				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 3/4" Outlet 496 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +/-10% from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
5	200	300	350	500	550	650
10	325	500	600	700	800	1050
15	425	650	725	900	1050	1150
20	525	725	850	1050	1200	1400
25	575	850	1000	1175	1300	
30	600	900	1100	1300	1500	
40	700	950	1250	1500		
50	800	1100	1400			
60	900	1250	1500			
80	1100	1425				
100	1200	1500				

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Capacity 1" Outlet 496 Regulator Set Point 2 PSIG @ 50 SCFH

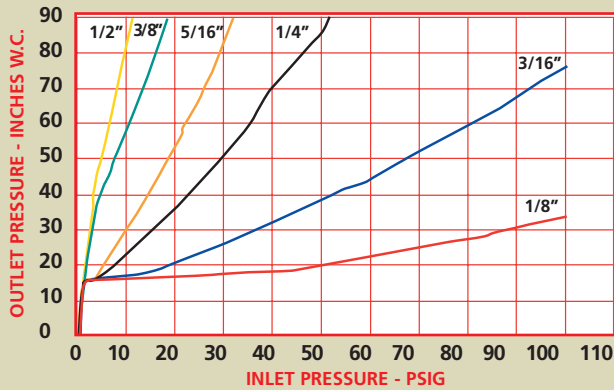
SCFH 0.60 Specific gravity gas @ 60 degree F and 14.7 PSIA.
Outlet pressure variance not to exceed +/-10% from set point

Inlet (PSIG)	Orifice Size					
	1/8	3/16	1/4	5/16	3/8	1/2
5	250	275	350	400	450	750
10	300	425	550	650	900	1050
15	400	500	700	1000	1050	1200
20	475	650	800	1200	1300	1500
25	550	700	1000	1300	1400	
30	650	850	1100	1400	1500	
40	800	1050	1300	1500		
50	900	1225	1500			
60	1000	1350	1700			
80	1300	1800				
100	1700	2000				

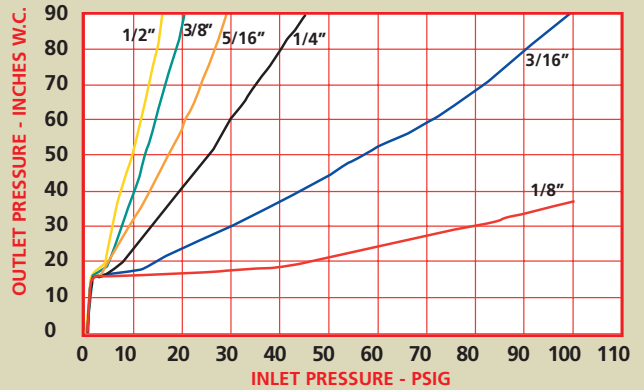
For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size

Relief Valve Performance Data for the 61R2 Regulator

Lever Blocked with Valve Disk in Wide Open Position



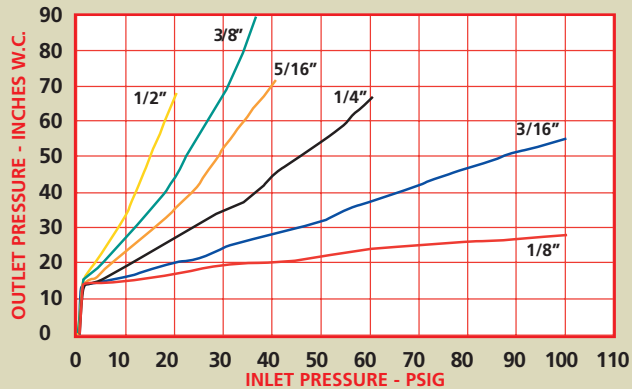
Relief Valve Performance - Model 61R2
Set Pressure 7" W.C., 1" Screened Vent



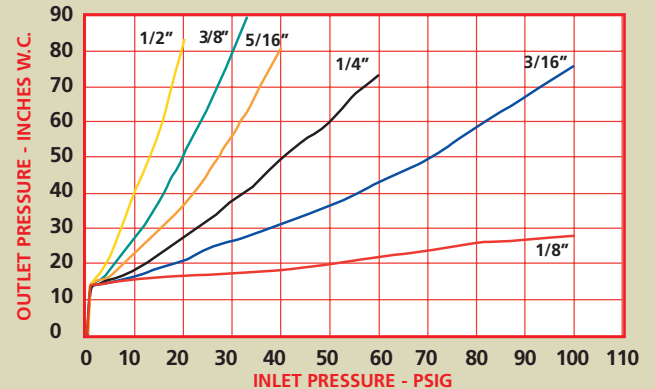
Relief Valve Performance - Model 61R2
Set Pressure 7" W.C., 3/4" Screened Vent

Relief Valve Performance Data for the 496 Regulator

Lever Blocked with Valve Disk in Wide Open Position



Relief Valve Performance - Model 496
Set Pressure 7" W.C., 1" Screened Vent



Relief Valve Performance - Model 496
Set Pressure 7" W.C., 3/4" Screened Vent

REGULATOR SPRING CHART FOR 61R2

*61 Series Regulators have a maximum outlet pressure of 2 lbs. (56")

Part No.	Color	Normal Spring Range
071-01637-001	Silver	3.5"-10.5" W.C.
071-01637-004	Green	3.5"-14.0" W.C.
071-01637-005	Red	8.75"-24.5" W.C.
071-01637-006	Blue	6.0"-8.0" W.C.
071-01637-007	Black	1 lb.-2 lbs.

REGULATOR SPRING CHART FOR 496

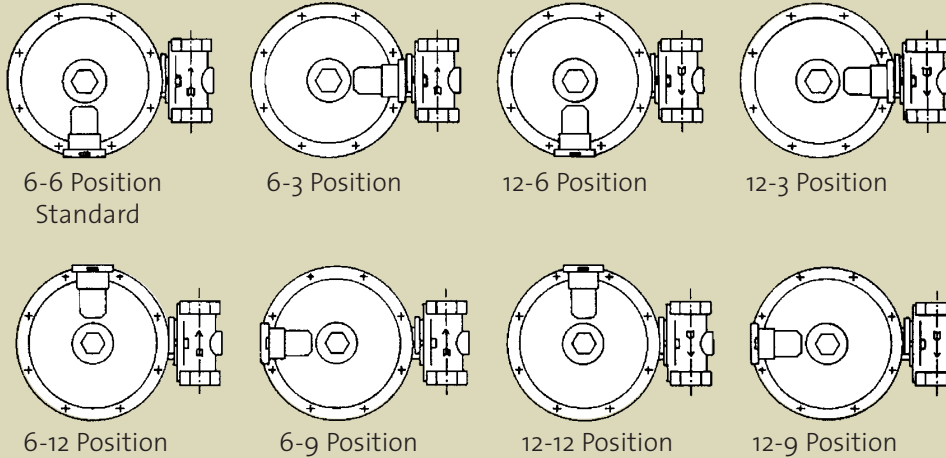
*496 Series Regulators have a maximum outlet pressure of 2 lbs. (56")

Part No.	Color	Normal Spring Range
071-03409-002	Silver	3.5"-10.5" W.C.
071-03409-003	Green	6.0"-14.0" W.C.
071-03409-004	Red	12.0"-28.0" W.C.
071-03409-001	Blue	6.0"-8.0" W.C.
071-03406-002	Black	1 lb.-2 lbs.

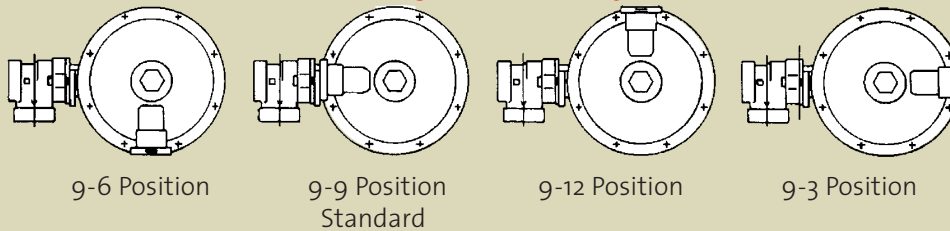
MAXIMUM INLET PRESSURE

Orifice Size	Inlet Pressure (PSIG)	Brass Part No.*	Aluminum Part No.*
1/8"	125	018-01029-001	019-01029-001
3/16"	125	018-01029-002	019-01029-002
1/4"	60	018-01029-003	019-01029-003
5/16"	40	018-01029-035	019-01029-035
3/8"	40	018-01029-004	019-01029-004
7/16"	40	018-01029-006	019-01029-006
1/2"	20	018-01029-005	019-01029-005
9/16"	20	018-01029-007	019-01029-007

Straight Valve Body



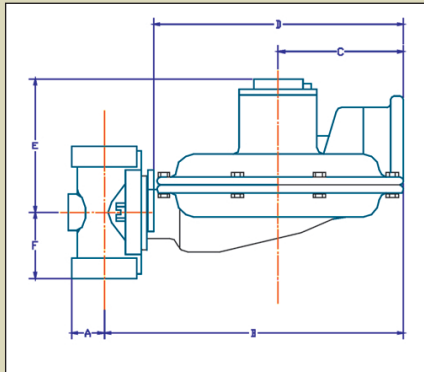
Angle Valve Body



MODEL - 61R2 STRAIGHT BODY

DIMENSIONS

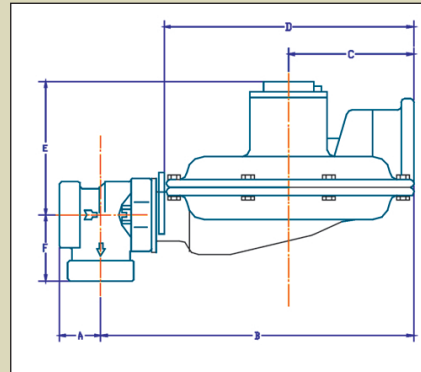
INLET	OUTLET	A	B	C	D	E	F
3/4"	3/4"	1.0"	9.0"	3.5"	7.4"	3.7"	2.0"
3/4"	1"	1.0"	9.0"	3.5"	7.4"	3.7"	2.0"
1"	1"	1.0"	9.0"	3.5"	7.4"	3.7"	2.0"
3/4"	1-1/4"	1.1"	9.0"	3.5"	7.4"	3.7"	2.0"
1"	1-1/4"	1.1"	9.0"	3.5"	7.4"	3.7"	2.0"
1-1/4"	1-1/4"	1.1"	9.0"	3.5"	7.4"	3.7"	2.0"



MODEL - 61R2 90° ANGLE BODY

DIMENSIONS

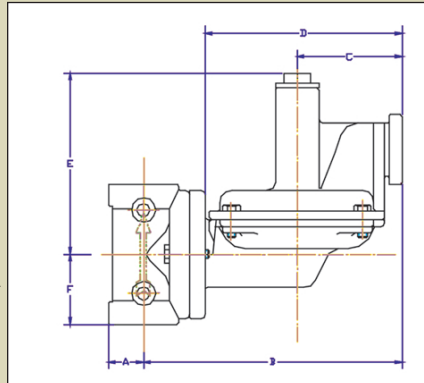
INLET	OUTLET	A	B	C	D	E	F
3/4"	3/4"	1.2"	9.0"	3.5"	7.4"	3.7"	2.0"
3/4"	1"	1.2"	9.0"	3.5"	7.4"	3.7"	2.0"
1"	1"	1.2"	9.0"	3.5"	7.4"	3.7"	2.0"



MODEL - 496 STRAIGHT BODY

DIMENSIONS

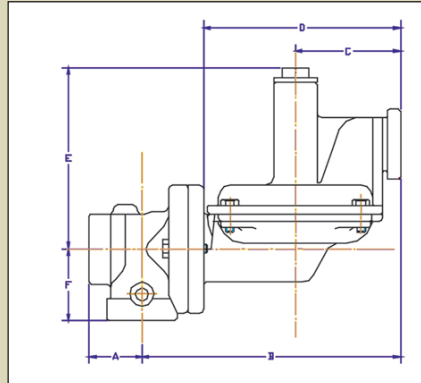
INLET	OUTLET	A	B	C	D	E	F
3/4"	3/4"	1.0"	7.3"	3.0"	5.7"	5.2"	2.0"
3/4"	1"	1.0"	7.3"	3.0"	5.7"	5.2"	2.0"
1"	1"	1.0"	7.3"	3.0"	5.7"	5.2"	2.0"



MODEL - 496 90° ANGLE BODY

DIMENSIONS

INLET	OUTLET	A	B	C	D	E	F
3/4"	3/4"	1.5"	7.3"	3.0"	5.7"	5.2"	2.0"
3/4"	1"	1.5"	7.3"	3.0"	5.7"	5.2"	2.0"
1"	1"	1.5"	7.3"	3.0"	5.7"	5.2"	2.0"





Required Ordering Information

1. Straight or angle body, inlet and outlet pipe sizes
2. Maximum and minimum inlet pressures (psi)
3. Outlet pressure setting (ounces or inches W.C.)
4. Minimum flow setting (cubic feet per hour)
5. Desired maximum gas capacity (cubic feet per hour)
6. Your standard orifice size
7. Relief valve setting
8. Your paint standard

Warranty

Global Metering Systems warrants its regulators against defects in materials and workmanship under normal use and service. Global Metering Systems liability and customer's exclusive remedy under this or any warranty extends for a period of one (1) year from the date of shipment and is expressly limited to repayment of the purchase price, repair or replacement upon assurance satisfactory to Global Metering Systems that reported defects were not caused by improper installation, tampering, physical abuse or misuse, and upon the customer's returning the product(s) to our factory or warehouse and prepaying all freight charges for the products. Global Metering Systems may require the return of the equipment to establish any claim. This warranty is made in lieu of all other warranties, express, implied, or statutory, with respect to quality, merchantability or fitness for particular purpose.

Due to continuous development, the information on this document is subject to change.

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