

# Mallard Control Pressure Regulators



Continuously Improving  
Flow Control

# Mallard Model 5600 Pressure Regulator & 5600R Relief Valve

## Features

- > Easy maintenance
- > Variety of flow capacities
- > Rugged construction
- > Excellent control at low pressure settings
- > NACE compliance
- > Flanged connections available
- > Suitable for air and gas

## Specifications

Model 5600 pressure regulator  
 End connections  
 1" & 2" NPT female  
 Operating temperature  
 -20° to 150°F (-29° to 65°C)

The model 5600 pressure regulator shown with the model 5600R pressure relief valve are spring-loaded, self-operated and available in 1" and 2" sizes. They provide economical control of air, natural gas and a variety of other gases and are built to withstand the most difficult

processes and environments. They are offered in both low pressure and high pressure constructions and designed for inlet pressures up to 1500 psig and outlet pressures from 3 to 500 psig. Models 5600 and 5600R are well suited for high pressure, high capacity applications.



Model 5600  
Pressure Regulator



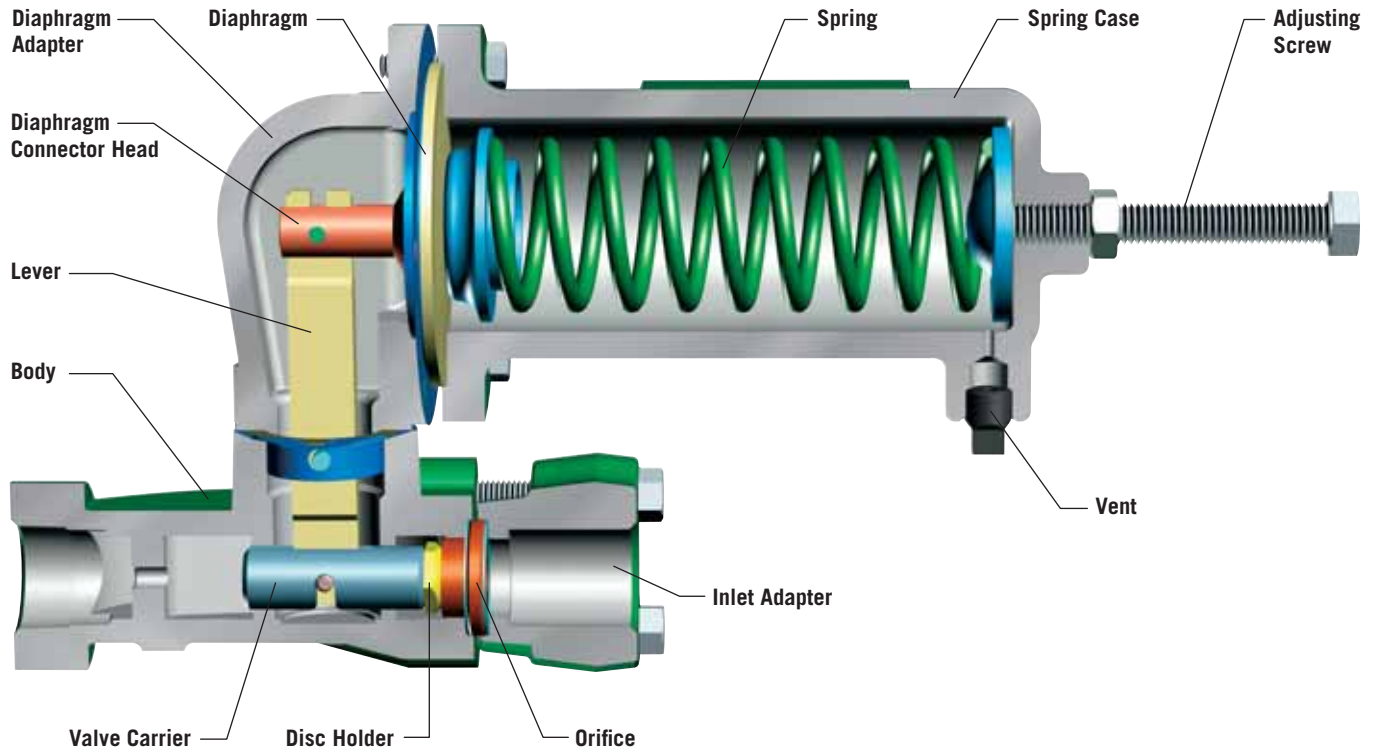
Model 5600R  
Pressure Relief Valve

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# Mallard Model 5600 Pressure Regulator & 5600R Relief Valve

## Component Parts



## Materials of Construction

Description	Material
Body	Ductile Iron Steel (Optional)
Inlet Adapter	Steel
Diaphragm Adapter	Ductile Iron Steel (Optional)
Spring Case	Ductile Iron Steel (Optional)
Orifice	Brass Stainless Steel (Opt.)
Valve Disc	Nylon or TFE Viton® (Optional)

Description	Material
Disc Holder	Brass Stainless Steel (Opt.)
Valve Carrier	Brass Stainless Steel (Opt.)
Diaphragm	Buna-N (Embedded Nylon Fabric) Viton® (Optional)
Lever	Steel
Diaphragm Connector Head	Brass Stainless Steel (Opt.)

## Flow Coefficients (C<sub>v</sub>)

Port Diameter (in.)	Flow Coefficient (C <sub>v</sub> )
1/8	0.49
3/16	1.11
1/4	2.03
3/8	4.61
1/2	8.18

# Mallard Model 5600 Pressure Regulator Flow Capacities

## Low Pressure, scfh of 0.6 Specific Gravity Gas, Based on 20% Droop

.01 Inlet Pressure (psig)	Outlet Pressure (psig)	Port Diameter (in.)									
		1" NPT					2" NPT				
		1/8	3/16	1/4	3/8	1/2	1/8	3/16	1/4	3/8	1/2
10	5	200	510	990	1700	2200	290	830	1300	3300	5900
20		400	770	1200	2000	2700	500	1200	2100	4800	9100
30		600	1100	1500	2200	3300	760	1600	2700	7000	11,000
50		950	1500	2100	2800	4100	1100	2200	3900	9800	17,000
60		1100	1750	2400	3000	4200	1250	2700	4500	11,100	19,500
75		1300	2100	2700	3400	4400	1500	3300	5400	13,000	23,000
100		1700	2400	2900	4000	4900	1900	4300	7000	17,000	30,000
150		2200	3000	3500	4600	5800	2800	6200	10,000	25,000	43,000
200		3000	3400	4200	5100	6100	3700	8200	13,000	32,000	57,000
250		3500	3800	4300	5900	6800	4500	10,000	17,000	38,000	70,000
400		3700	3900	4500	6400	—	7200	1600	28,000	64,000	—
500		4100	4300	4700	7400	—	9100	19,000	35,000	79,000	—
600		4300	4600	5000	—	—	10,000	24,000	42,000	—	—
1000		4600	4900	5600	—	—	18,000	39,000	69,000	—	—
1500		5000	5400	—	—	—	22,000	60,000	—	—	—
20	10	500	1200	1800	4100	4900	560	1300	2200	5100	9000
30		700	1400	2800	4200	5300	770	1500	3000	7000	11,000
50		1000	2300	4100	5100	6200	1100	2400	4300	9800	17,000
60		1150	2700	4200	5500	6500	1250	2800	5000	11,100	19,500
75		1400	3200	4400	6000	6800	1500	3400	5900	13,000	23,000
100		1600	3800	5000	6400	7300	1900	4400	7600	17,000	30,000
150		2400	4800	6200	7300	7900	2800	6200	11,000	25,000	43,000
200		3300	5800	6900	7700	8200	3700	8100	14,000	33,000	57,000
250		4000	5900	7300	8600	8700	4400	10,000	17,000	41,000	70,000
400		5400	6900	7600	9000	—	7200	16,000	28,000	62,000	—
500		6000	7100	7900	9700	—	8900	19,000	35,000	76,000	—
600		6500	7300	8200	—	—	10,000	23,000	42,000	—	—
1000		7200	7700	8400	—	—	18,000	40,000	72,000	—	—
1500		7400	8400	—	—	—	27,000	60,000	—	—	—
20		15	470	1000	1700	3300	4900	520	1100	1800	3500
30	600		1500	2500	4600	5200	740	1600	2800	5900	10,000
50	1000		2300	3800	5500	5700	1100	2400	4300	9800	16,000
60	1150		2700	4300	6100	6800	1250	2800	5000	11,100	18,000
75	1400		3300	5100	7000	8500	1500	3400	6000	13,000	23,000
100	1900		4300	6200	7600	9600	1900	4400	7800	17,000	30,000
150	2700		6100	7400	8000	9900	2800	6400	11,000	25,000	43,000
200	3600		7500	8500	9600	5800	3700	8300	14,000	30,000	57,000
265	4700		8400	9100	10,000	10,000	4800	10,000	19,000	39,000	74,000
400	7100		8700	10,000	11,000	11,000	7200	16,000	29,000	64,000	—
515	8300		8800	10,500	12,000	—	9200	20,000	37,000	82,000	—
600	8600		9600	10,800	—	—	11,000	23,000	42,000	—	—
1015	9600		10,000	11,000	—	—	18,000	40,000	71,000	—	—
1500	10,000		11,000	—	—	—	27,000	60,000	—	—	—

# Mallard Model 5600 Pressure Regulator Flow Capacities

## Low Pressure, scfh of 0.6 Specific Gravity Gas, Based on 20% Droop (Continued)

Inlet Pressure (psig)	Outlet Pressure (psig)	Port Diameter (in.)										
		1" NPT					2" NPT					
		1/8	3/16	1/4	3/8	1/2	1/8	3/16	1/4	3/8	1/2	
30	20 8 to 20 or 17 to 30 psig Spring	600	1500	2500	4600	6800	700	1600	2600	5200	9200	
40		800	2000	3400	5700	8100	900	2100	3500	7500	12,000	
50		1000	2300	4200	6800	9000	1100	2400	4300	9400	15,000	
60		1150	2700	4900	7500	9800	1250	2800	5100	11,000	18,000	
75		1400	3300	5900	8500	10,000	1500	3400	6100	13,000	23,000	
100		1800	4100	7400	9500	11,000	1900	4300	7800	17,000	29,000	
150		2700	6100	9200	11,000	12,000	2800	6300	11,000	23,000	42,000	
200		3600	8000	10,000	12,000	13,000	3700	8200	14,000	32,000	59,000	
270		4500	9800	11,000	13,000	14,000	4900	10,000	19,000	39,000	75,000	
400		7200	10,000	13,000	14,000	—	7300	16,000	28,000	63,000	—	
520		8800	11,000	13,500	15,000	—	9500	20,000	37,000	82,000	—	
600		10,000	12,000	13,800	—	—	11,000	24,000	43,000	—	—	
1020		11,000	12,300	15,000	—	—	18,000	40,000	73,000	—	—	
1500		12,000	13,000	—	—	—	27,000	60,000	—	—	—	
40		30 17 to 30 or 27 to 40 psig Spring	820	1700	2700	5100	7600	860	1800	2900	5300	8500
50	900		2200	3600	6400	8700	1000	2300	3800	7300	11,000	
60	1100		2600	4400	7500	9800	1200	2700	4700	8900	14,000	
75	1400		3300	5400	8800	11,000	1500	3400	5800	11,000	18,000	
100	1700		4100	6800	10,000	12,000	1800	4200	7800	16,000	28,000	
150	2600		6000	9100	13,000	14,000	2700	6100	11,000	20,000	44,000	
200	3500		8000	11,000	14,000	16,000	3600	8100	14,000	24,000	58,000	
280	4900		10,500	13,000	15,000	17,000	5000	11,000	20,000	46,000	80,000	
400	6900		13,000	15,000	17,000	—	7000	16,000	28,000	64,000	—	
530	9400		14,500	15,800	19,000	—	9500	20,000	37,000	86,000	—	
600	9700		15,000	16,000	—	—	10,000	23,000	42,000	—	—	
1030	16,000		18,000	18,000	—	—	19,000	41,000	73,000	—	—	
1500	16,400		18,500	—	—	—	27,000	61,000	—	—	—	
50	40 27 to 40 psig Spring		950	1800	3200	5500	8900	1000	2100	3400	5900	9900
60			1100	2300	4100	7600	10,000	1200	2600	4300	7900	12,000
75		1400	3000	5300	9300	12,000	1500	3400	5600	10,000	16,000	
100		1800	4100	7000	11,000	14,000	1900	4300	7200	13,000	24,000	
150		2700	6000	9500	14,000	17,000	2800	6200	10,000	22,000	39,000	
200		3500	7800	12,000	17,000	19,000	3600	8200	14,000	30,000	56,000	
290		5100	10,000	15,000	19,000	21,000	5200	11,000	20,000	46,000	81,000	
400		7100	15,000	18,000	21,000	—	7200	16,000	28,000	63,000	—	
540		9500	17,000	19,000	22,000	—	9600	21,000	38,000	86,000	—	
600		9800	18,000	21,000	—	—	10,000	23,000	42,000	—	—	
1040		17,500	20,000	23,000	—	—	18,000	41,000	73,000	—	—	
1500		20,000	22,000	—	—	—	27,000	61,000	—	—	—	

Capacity Information: Natural gas regulating capacities are given for selected inlet /outlet pressures. Flows are in scfh (60°F/14.7 psia) of 0.6 SG natural gas. To determine the equivalent regulating capacities of other gases, multiply the capacity given by 0.775, and divide by the square root of the appropriate specific gravity. If capacity is desired in normal cubic meters per hour, multiply the scfh capacity given by 0.0268.

# Mallard Model 5600 Pressure Regulator Flow Capacities

High Pressure, scfh of 0.6 Specific Gravity Gas, Based on 20% Droop

Inlet Pressure (psig)	Outlet Pressure (psig)	Port Diameter (in.)									
		1" NPT					2" NPT				
		1/8	3/16	1/4	3/8	1/2	1/8	3/16	1/4	3/8	1/2
60	50 psig Spring	900	2000	3100	5200	8100	1000	2100	3200	5300	12,000
75		1300	2800	3800	7200	10,000	1400	2900	3900	7300	16,000
100		1700	3500	5700	10,500	13,000	1800	3600	5800	10,000	21,000
150		2600	5700	8700	13,000	17,000	2700	5800	9000	15,000	36,000
200		3500	7800	11,000	16,000	19,000	3600	7900	12,000	21,000	55,000
300		5300	10,500	14,000	20,000	23,000	5500	11,000	19,000	48,000	83,000
400		6900	13,000	17,000	23,000	—	7000	15,000	27,000	63,000	—
550		9600	16,000	20,000	26,000	—	9700	21,000	38,000	88,000	—
600		9800	17,000	21,000	—	—	10,000	23,000	42,000	—	—
1050		17,000	23,000	27,000	—	—	19,000	42,000	74,000	—	—
1500		19,000	25,000	—	—	—	27,000	60,000	—	—	—
60	50 psig Spring	800	1500	2400	4300	6400	900	1600	2500	4400	7300
75		1200	2100	3100	5500	8000	1300	2200	3200	6100	9300
100		1500	3100	4200	7500	10,000	1600	3400	4300	7600	12,000
150		2400	4500	6700	11,000	14,000	2500	4600	7100	12,000	19,000
200		3400	6600	9400	14,000	17,000	3500	6700	9600	16,000	27,000
300		5200	8900	11,000	16,000	20,000	5300	10,000	14,000	27,000	51,000
400		6800	11,000	15,000	20,000	—	6900	13,000	21,000	46,000	—
550		9500	13,000	17,000	23,000	—	9600	18,000	29,000	87,000	—
600		9800	14,000	19,000	—	—	10,000	20,000	35,000	—	—
1050		14,000	19,000	22,000	—	—	18,000	41,000	73,000	—	—
1500		18,000	24,000	—	—	—	26,000	59,000	—	—	—
100	75 psig Spring	1700	3200	5000	8000	13,000	1800	3300	5200	9000	14,000
125		2200	4300	6700	10,000	15,000	2300	4400	6900	11,000	18,000
200		3500	7300	10,000	16,000	22,000	3600	7400	11,000	19,000	30,000
250		4400	9400	13,000	19,000	24,000	4500	9500	14,000	26,000	44,000
325		5700	11,000	16,000	23,000	27,000	5800	12,000	18,000	36,000	67,000
400		7100	14,000	19,000	27,000	—	7200	15,000	24,000	47,000	—
575		9700	18,000	23,000	30,000	—	9800	22,000	37,000	92,000	—
600		9900	19,000	25,000	—	—	10,000	23,000	39,000	—	—
1075		18,000	27,000	32,000	—	—	19,000	42,000	75,000	—	—
1500		23,000	32,000	—	—	—	24,000	60,000	—	—	—
125		100 psig Spring	2000	3600	5500	9200	13,000	2100	3700	5600	9800
150	2500		4600	6800	11,000	16,000	2600	4900	7400	12,000	18,000
200	3600		6600	9400	13,000	22,000	3700	6900	10,000	17,000	27,000
250	4400		8500	11,000	18,000	26,000	4500	8700	13,000	22,000	34,000
300	5300		9800	14,000	21,000	30,000	5400	10,000	16,000	27,000	44,000
350	6100		10,000	16,000	25,000	32,000	6300	12,000	19,000	33,000	57,000
400	7000		13,000	18,000	27,000	—	7200	14,000	21,000	39,000	—
600	9500		18,000	23,000	35,000	—	10,000	21,000	34,000	69,000	—
1100	19,500		28,000	35,000	—	—	19,000	43,000	74,000	—	—
1500	25,000		35,000	—	—	—	27,000	59,000	—	—	—
150	125 psig Spring		2400	4600	6700	11,000	17,000	2500	5000	8100	12,000
200		3500	6800	10,000	15,000	23,000	3600	7400	11,000	19,000	30,000
250		4300	8900	12,000	19,000	29,000	4400	9400	14,000	24,000	39,000
300		5200	10,000	15,000	25,000	34,000	5300	11,000	17,000	31,000	48,000
375		6600	13,000	18,500	28,000	39,000	6600	13,600	21,400	38,300	59,400
400		7300	14,500	19,000	29,000	—	7300	15,000	24,000	43,000	65,000
500		7900	15,000	25,000	36,000	—	8800	19,000	30,000	59,000	—
625		10,000	22,000	29,000	41,000	—	11,000	24,000	40,000	79,000	—
1125		18,000	33,000	42,000	—	—	19,000	44,000	79,000	—	—
1500		26,000	43,000	—	—	—	27,000	60,000	—	—	—

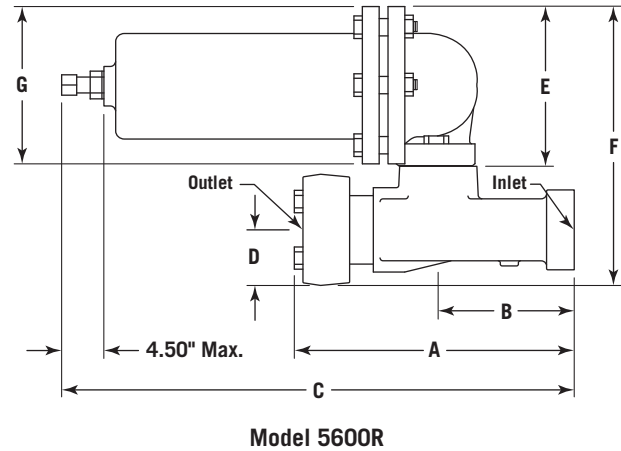
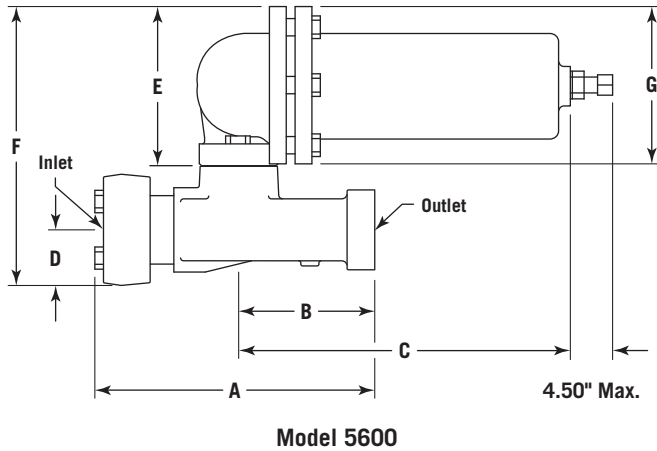


# Mallard Model 5600 Pressure Regulator Flow Capacities

## High Pressure, scfh of 0.6 Specific Gravity Gas, Based on 20% Droop (Continued)

Inlet Pressure (psig)	Outlet Pressure (psig)	Port Diameter (in.)									
		1" NPT					2" NPT				
		1/8	3/16	1/4	3/8	1/2	1/8	3/16	1/4	3/8	1/2
200		3400	6800	10,000	16,000	26,000	3500	7300	11,000	18,000	30,000
250	150	4400	8800	13,000	20,000	32,000	4500	9500	15,000	26,000	38,000
300		5300	10,000	15,000	24,000	35,000	5400	11,000	19,000	32,000	52,000
400	90 to 150	7100	14,000	22,000	34,000	42,000	7200	15,000	26,000	46,000	77,000
450	or	7700	17,000	24,000	36,000	—	8100	18,000	29,000	54,000	—
650	150 to 200	9000	24,000	33,000	49,000	—	10,000	25,000	44,000	88,000	—
800	psig	13,000	29,000	38,000	—	—	14,000	30,000	54,000	—	—
1150	Spring	20,000	38,000	49,000	—	—	21,000	46,000	78,000	—	—
1500		26,000	47,000	—	—	—	27,000	60,000	—	—	—
250		4200	8300	12,000	20,000	30,000	4300	9100	13,000	23,000	42,000
300	200	5200	10,000	16,000	25,000	35,000	5300	11,000	18,000	33,000	52,000
450		7800	16,000	26,000	43,000	50,000	7900	17,000	29,000	52,000	84,000
600	150 to 200	9500	22,000	34,000	55,000	—	10,000	23,000	40,000	75,000	—
700	or	11,000	25,000	40,000	61,000	—	12,000	27,000	47,000	90,000	—
800	200 to 275	13,000	30,000	43,000	—	—	14,000	31,000	54,000	—	—
1000	psig	16,000	37,000	50,000	—	—	17,000	39,000	69,000	—	—
1200	Spring	20,000	41,000	59,000	—	—	21,000	48,000	83,000	—	—
1500		26,000	53,000	—	—	—	27,000	60,000	—	—	—
300		4900	9000	15,000	28,000	42,000	5000	10,000	17,000	30,000	52,000
400	250	7000	14,000	23,000	40,000	56,000	7100	15,000	25,000	47,000	76,000
500		8500	18,000	29,000	51,000	65,000	8600	19,000	34,000	62,000	103,000
600	200 to 275	9500	22,000	34,000	59,000	—	10,000	23,000	41,000	78,000	—
750	psig	12,500	28,000	44,000	69,000	—	13,000	29,000	51,000	106,000	—
1000	Spring	16,000	39,000	58,000	—	—	17,000	40,000	68,000	—	—
1250		21,000	49,000	69,000	—	—	22,000	50,000	87,000	—	—
1500		26,000	59,000	—	—	—	27,000	60,000	—	—	—
300	275	4700	9000	15,000	28,000	39,000	4800	10,000	17,000	29,000	43,000
400		6900	14,000	25,000	40,000	54,000	7000	15,000	26,000	47,000	73,000
525	200 to 275	8600	18,000	35,000	68,000	94,000	9200	20,000	36,000	69,000	112,000
775	or	11,000	28,000	51,000	95,000	—	12,000	30,000	52,000	112,000	—
1000	275 to 500	16,000	39,000	67,000	—	—	17,000	40,000	68,000	—	—
1275	psig	21,000	50,000	87,000	—	—	22,000	51,000	89,000	—	—
1500	Spring	26,000	60,000	—	—	—	26,000	61,000	—	—	—
400		6600	11,000	16,000	31,000	42,000	7000	13,000	21,000	35,000	54,000
550	300	9700	18,000	23,000	44,000	63,000	9800	20,000	30,000	52,000	78,000
600		9900	19,000	26,000	48,000	—	10,000	21,000	34,000	59,000	—
700	275 to 500	11,000	23,000	30,000	54,000	—	12,000	26,000	40,000	72,000	—
800	psig	13,000	26,000	35,000	61,000	—	14,000	29,000	47,000	81,000	—
900	Spring	15,000	29,000	39,000	—	—	16,000	34,000	53,000	—	—
1300		22,000	43,000	58,000	—	—	23,000	50,000	80,000	—	—
1500		26,000	49,000	—	—	—	27,000	58,000	—	—	—
500		8300	16,000	24,000	44,000	62,000	8800	17,000	28,000	49,000	77,000
650	400	10,000	24,000	33,000	61,000	86,000	11,000	25,000	40,000	75,000	112,000
800		13,000	30,000	41,000	76,000	—	14,000	31,000	51,000	95,000	—
900	275 to 500	15,000	34,000	49,000	85,000	—	16,000	36,000	58,000	110,000	—
1000	psig	17,000	38,000	54,000	—	—	18,000	40,000	66,000	—	—
1200	Spring	20,000	46,000	63,000	—	—	21,000	48,000	80,000	—	—
1400		24,000	55,000	76,000	—	—	25,000	57,000	96,000	—	—
1500		26,000	60,000	—	—	—	27,000	61,000	—	—	—
550	500	8700	16,000	26,000	50,000	77,000	9000	18,000	30,000	53,000	89,000
750		12,000	28,000	40,000	78,000	100,000	13,000	29,000	48,000	90,000	141,000
900	275 to 500	15,000	34,000	52,000	92,000	—	16,000	35,000	60,000	113,000	—
1000	psig	17,000	39,000	60,000	100,000	—	18,000	40,000	67,000	130,000	—
1500	Spring	26,000	59,000	72,000	—	—	27,000	60,000	82,000	—	—

# Mallard Model 5600 Pressure Regulator & 5600R Relief Valve



## Dimensional Data (in., mm), Model 5600/5600R

Model	Dimension (in., mm)													
	A		B		C		D		E		F		G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
5600 LP 1"	7.38	187.45	3.69	93.73	8.50	215.90	1.19	30.23	7.19	182.63	10.31	261.87	7.12	180.85
5600 HP 1"	7.38	187.45	3.69	93.73	9.12	231.65	1.19	30.23	4.82	122.43	7.94	201.68	4.75	120.65
5600 LP 2"	7.88	200.15	3.94	100.08	8.50	215.90	2.00	50.80	7.19	182.63	11.00	279.40	7.12	180.85
5600 HP 2"	7.88	200.15	3.94	100.08	9.12	231.65	2.00	50.80	4.82	122.43	8.63	219.20	4.75	120.65

## Outlet Pressure Ranges

Outlet Pressure Range (psig)	Low Pressure (psig)	
	Max. Outlet Pressure Over Pressure Setting	Max. Emergency Outlet Pressure
3 to 10	20	45
8 to 20		
17 to 30		
27 to 40		
	Note 1	

Outlet Pressure Range (psig)	High Pressure (psig)	
	Max. Outlet Pressure Over Pressure Setting	Max. Emergency Outlet Pressure
27 to 50	200	550
46 to 95		
90 to 150		
150 to 200		
200 to 275		
275 to 500		
	200 <sup>2</sup>	

CAUTION: Model 5600 regulators have an outlet pressure rating that is lower than the inlet pressure rating. Consequently, overpressure protection is required if the actual inlet pressure can exceed the regulator's outlet pressure rating. To avoid overpressure, provide an appropriate overpressure protection device to ensure that none of the limits listed will be exceeded.

1. This applies to outlet pressure settings below 25 psig only. For pressure setting above 25 psig, outlet pressure is limited to 45 psig, the maximum emergency outlet pressure.
2. This applies to outlet pressure settings below 350 psig only. For pressure setting above 350 psig, outlet pressure is limited to 550 psig, the maximum emergency outlet pressure.
3. Internal parts of the regulator may be damaged if the outlet pressure exceeds the pressure setting beyond the amounts shown.

## Maximum Inlet & Differential Pressures

Port Diameter (in.)	Max. Allowable Inlet Pressure (psig)	Max. Allowable Pressure Drop (psid)	
		TFE/Nylon Disc	Viton® Disc
		3/16, 1/8	1500
1/4	1500	1000	
3/8	1000	500	
1/2	750	250	

1. The sum of the outlet pressure setting and the maximum allowable pressure drop determines the maximum allowable inlet pressure for a given installation. For example, with a 1/2" port diameter (maximum pressure drop of 250 psi) and a 400 psig outlet pressure setting, the maximum inlet pressure is 650 psig (250 psi plus 400 psig).

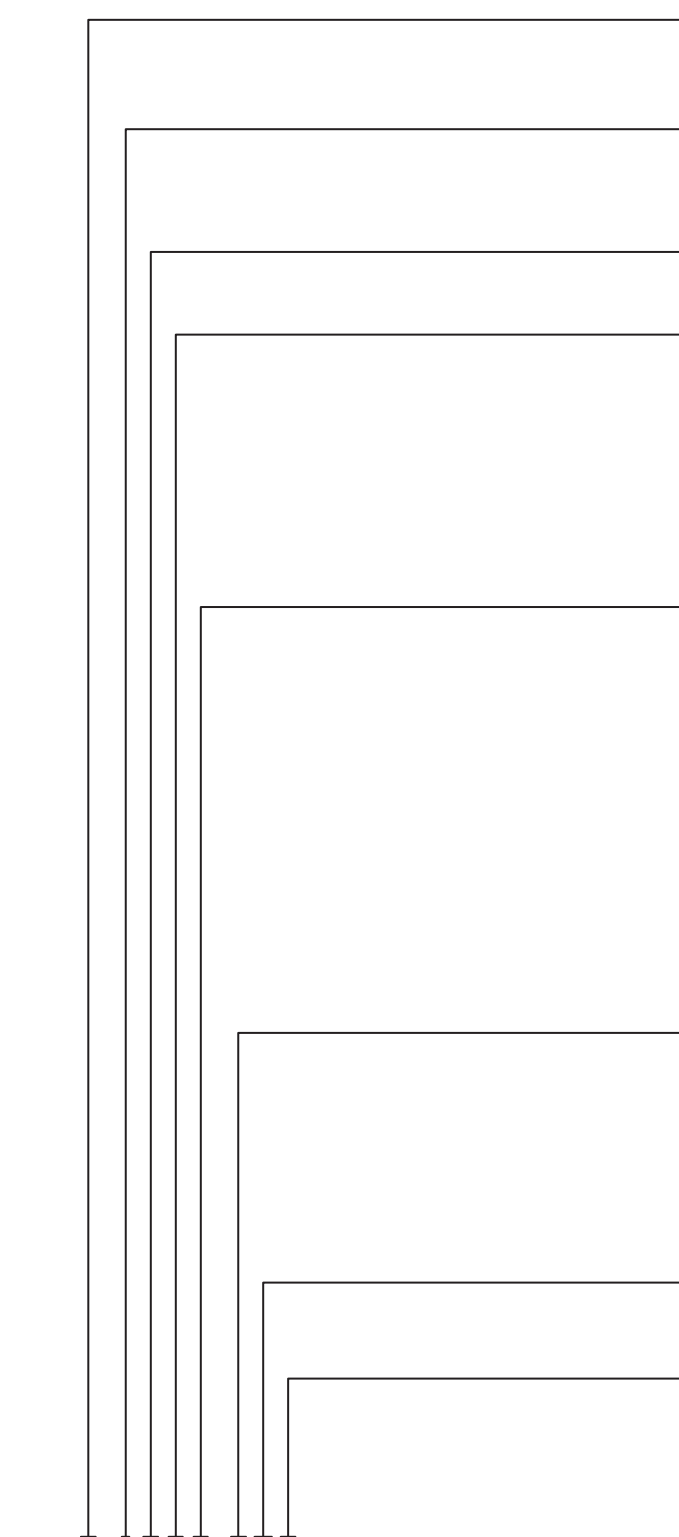
## Model 5600R Pressure Relief Settings

Low Pressure (psig)	High Pressure (psig)
3 to 8	30 to 70
6 to 17	50 to 95
15 to 22	75 to 175
20 to 35	150 to 250
27 to 50	



# Mallard Model 5600 Pressure Regulator & 5600R Relief Valve

## Part Number Codes



**5600 - 1 H D G - T 4 S**  
Example

### Model

**R** • Relief Valve                      **None** • Regulator

### Body Size & End Connection

**1** • 1" FNPT                              **C** • 1" 600# RF  
**2** • 2" FNPT                              **D** • 2" 150# RF  
**A** • 1" 150# RF                            **E** • 2" 300# RF  
**B** • 1" 300# RF                            **F** • 2" 600# RF

### Style

**L** • Low Pressure (Spring Code A-D Only)  
**H** • High Pressure (Spring Code E-K Only)

### Body Material

**D** • Ductile Iron                            **W** • WCC Steel

### Outlet or Relief Pressure Range

#### Outlet Pressure Range (Model 5600 Only)

**Low Pressure**  
**A** • 3 to 10 psig                            **C** • 17 to 30 psig  
**B** • 8 to 20 psig                            **D** • 27 to 40 psig  
**High Pressure**  
**E** • 27 to 50 psig                            **H** • 150 to 200 psig  
**F** • 46 to 95 psig                            **J** • 200 to 275 psig  
**G** • 90 to 150 psig                            **K** • 275 to 500 psig

#### Relief Pressure Range (Model 5600R Only)

**Low Pressure**  
**L** • 3 to 8 psig                                **P** • 20 to 35 psig  
**M** • 6 to 17 psig                            **Q** • 27 to 50 psig  
**N** • 15 to 22 psig  
**High Pressure**  
**R** • 30 to 70 psig                            **T** • 75 to 175 psig  
**S** • 50 to 95 psig                            **W** • 150 to 250 psig

### Trim Material

#### Model 5600 Only

**T** • Brass / TFE (For Pressure Drops up to 1500 psi)  
**U** • Brass / Nylon (For Pressure Drops 200 to 1500 psi)  
**V** • Brass / Viton® (For Pressure Drops Below 200 psi)  
**W** • Stainless Steel / TFE (For Pressure Drops up to 1500 psi)  
**X** • Stainless Steel / Nylon (For Pressure Drops 200 to 1500 psi)  
**Y** • Stainless Steel / Viton® (For Pressure Drops Below 200 psi)

Note: Reference "Maximum Inlet & Differential Pressures" chart on page 8.

#### Model 5600R Only

**B** • Brass  
**S** • Stainless Steel

Note: Nylon is only recommended for use with springs H, J and K.

### Port Diameter

**1** • 1/8"                                      **4** • 1/2"  
**2** • 1/4"                                      **5** • 3/16" (Model 5600 Only)  
**3** • 3/8"

### Options

**S** • None                                      **N** • NACE MR0175



Mallard Control

# Mallard Model 5602 Air Set Regulator

## Features

- > Superior regulation characteristics
- > Rugged, corrosion-resistant construction
- > Excellent stability & repeatability
- > Built-in 40 micron filter & dripwell (5602 only)
- > Self-relieving
- > Low droop at high flow
- > Variety of mounting options
- > Low cost

## Specifications

Flow capacity  
20 scfm at 100 psig supply  
20 psig outlet

Sensitivity: 1" of water

Supply pressure  
250 psig max. at 100°F (38°C)

Air consumption  
Less than 6 scfh

Weight: 1 lb., 3 oz. (.54 kg)

The Model 5602 is an adjustable air regulator designed for instrumentation and general purpose use. Careful design and quality materials throughout assure long, trouble-free operation in the most difficult industrial environments. The model 5602NF is a non-filter regulator built to the same specifications as the 5602.

## Materials of Construction

Description	Material
Body	Die-Cast Aluminum Alloy, Vinyl Paint, Stainless Steel, Brass, Plated Steel or Acetal
Diaphragm	Buna-N Viton® (Optional)
Knob	Phenolic Plastic



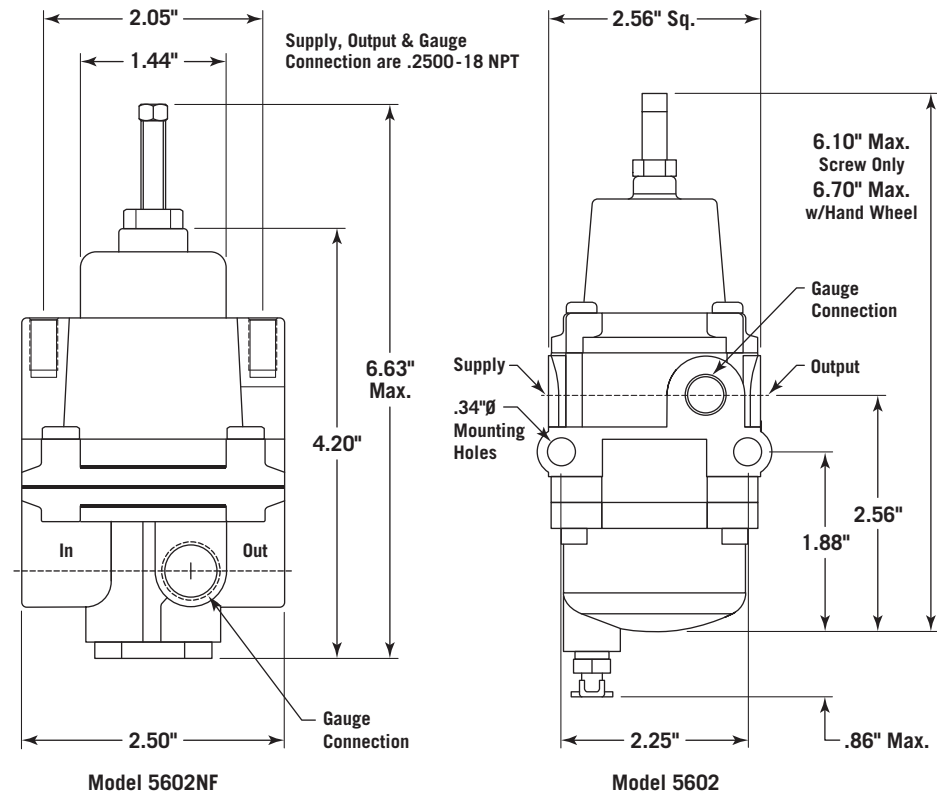
## Ordering Information

Model Number	Output Range (psi)
5602-1	0 to 30
5602-2	0 to 60
*5602-3	0 to 120
5602NF-1	0 to 30
5602NF-2	0 to 60
*5602NF-3	0 to 120

## Options: Add Letter Onto End of Part Number

- G • Gauge
  - T • Tapped bonnet
  - N • NACE and tapped bonnet
  - K • Knob handle
- \*Note: NACE option max outlet pressure 100 psi

## Dimensional Data (in.)



# Mallard Model 5607 High Flow Pressure Regulator

The Model 5607 regulator is specifically designed for applications that require substantial flow capacity and accurate pressure control. A balanced poppet valve, utilizing a rolling diaphragm, ensures constant output pressure even during wide supply pressure variations. Stability of regulated pressure is accurately maintained under varying flow conditions through the use of an aspirator tube which adjusts the air supply in accordance with the flow velocity. Careful design and quality materials throughout assure long, trouble-free operation in the most difficult industrial environments.



## Ordering Information

Model Number	Control Range (psi) Port Size 1/2" NPT
5607-01	0 to 15
5607-03	0 to 30
5607-06	0 to 60
5607-15	2 to 150

## Materials of Construction

Description	Material
Body	Die-Cast Aluminum Alloy, Vinyl Paint, SS, Brass Plated Steel or Acetal
Diaphragm	Buna-N
Knob	Phenolic Plastic

## Options: Add Letter Onto End of Part Number

- E • Tapped vent: Allows captured exhaust.
- G • Pressure gauge: 2" face, back-mounted. Ranges include 0-15 psig, 0-30 psig, 0-60 psig & 0-160 psig. When specified with regulator, the correct range will be supplied.
- B • Mounting bracket: Steel (dichromate finish) bracket for side mounting.
- L • Low bleed: Reduces steady-state air consumption by approximately 50%.
- H • High bleed: Provides more dynamic performance at lower pressure and flow rates.
- C • Check valve: Allows quick dumping of output line pressure through the supply air line when the supply is shutdown.
- N • Non-relieving: Used in applications where it is desirable to relieve pressure downstream of the regulator, for some constant flow applications, and where the gas flowing through the regulator must not escape at the regulator. Non-relieving regulators should not be used for low or no flow applications.
- T • Tamperproof cover: An aluminum tubular cover placed over a slotted head adjusting screw and screwed onto the bonnet of the regulator with a wrench. Prevents ordinary hand adjustments.

## Features

- > High flow capacity  
Up to 80 scfm
- > Sensitive: Responds quickly to minute changes in downstream pressure.
- > Stable output: Dampening action of aspirator tube maintains downstream pressure.
- > Accurate & reliable: Poppet valve balanced by compensating rolling diaphragm is designed to give millions of cycles.
- > Low noise: Honking and buzzing eliminated by action of integral baffle and aspirator tube.
- > Simplified maintenance: Can be disassembled and serviced without removal from air line.

## Specifications

End connection: 1/2" FNPT

Exhaust capacity

Downstream 5 psig  
above set 4 scfm

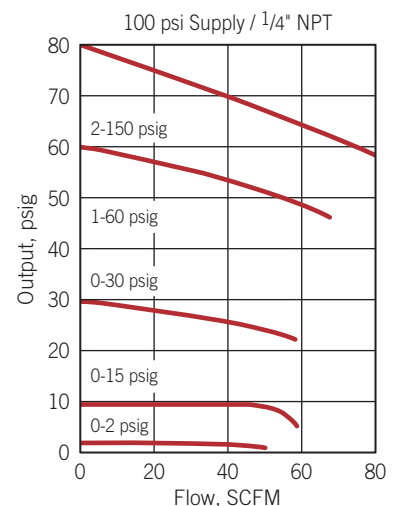
Air consumption, maximum (Steady-state)

From 1 to 12.5 scfh depending on output pressure range

Maximum supply pressure  
250 psig at 100°F

Mounting: Pipe, panel or bracket  
Weight: 1 lb., 10 oz. (.74 kg)

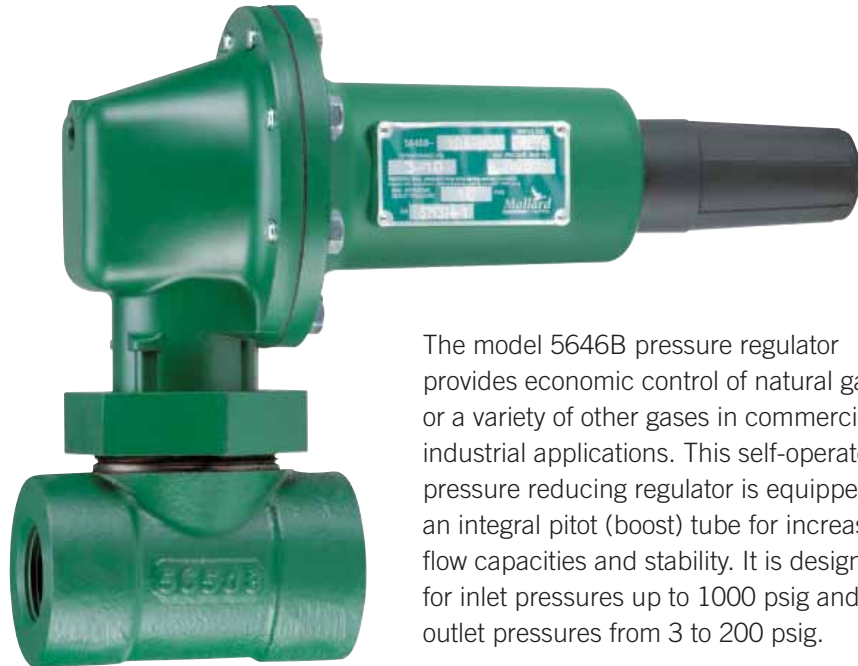
## Flow Characteristics



# Mallard Model 5646B Pressure Regulator

## Features

- Rugged construction: Available in a ductile iron body and aluminum diaphragm case.
- Easy maintenance: Union connection between the diaphragm case and body allows easy access to trim parts without removing the regulator from the line.
- Installation flexibility: The diaphragm case can be rotated in relation to the regulator body to allow installation in locations with limited space. The regulator may be installed in any position without affecting performance, provided the spring case vent is protected from the elements.
- Wide range of flow capacities: A variety of orifice sizes are available to satisfy a wide range of flow requirements.
- Tight shutoff: A soft seat disc, available in nitrile (buna), fluoroelastomer (viton®) or polyurethane, provides excellent shutoff performance.



The model 5646B pressure regulator provides economic control of natural gas, air, or a variety of other gases in commercial and industrial applications. This self-operated pressure reducing regulator is equipped with an integral pitot (boost) tube for increased flow capacities and stability. It is designed for inlet pressures up to 1000 psig and outlet pressures from 3 to 200 psig.

## Specifications

Body size: 1" & 2"  
 Orifice sizes: 1/8", 3/16", 1/4", 3/8" & 1/2"  
 Maximum body inlet pressure: 1000 psig at 100°F  
 Maximum soft seat disc inlet / differential pressure  
 Polyurethane: 1000 psig / 1000 psid  
 Buna: 600 psig / 400 psid & Viton®: 300 psig / 250 psid  
 Operating temperature range: -20 to 150°F (-29° to 65°C)  
 Approximate Weight: 6 lb., 8 oz. (3 kg)

## Materials of Construction

Description	Material
Body	Ductile Iron
Spring & Diaphragm Casings	Die-Cast Aluminum
Diaphragm	Nylon-Reinforced Buna Nomex-Reinforced Viton® (Optional)
O-Rings	Buna Viton® (Optional)
Orifice	Brass, Stainless Steel
Disc Holder w/Soft Seat Disc	Brass w/Polyurethane or Buna Disc Stainless Steel w/Polyurethane Disc Stainless Steel w/Buna Disc Stainless Steel w/Viton® Disc

## Flow Capacities, scfh of 0.6 Specific Gravity Gas, Based on 20% Droop

Inlet Pressure (psig)	Outlet Pressure (psig)	Port Diameter (in.)				
		All Body Sizes 1/8	3/16	1/4	3/8	1/2
10		325	730	1160	1980	2520
15	5	450	910	1540	2560	5000
20		540	1230	2100	3450	6900
30	3 to 10	690	1610	2900	4850	11,250
50	psig	1000	2550	4500	8000	13,500
75	Yellow	1400	3130	5750	9770	14,600
100	Spring	1800	4270	7300	12,750	16,200
125		2150	4550	8100	15,150	—
15		180	270	360	520	700
20	10	240	350	460	690	920
25		280	410	550	820	1090
50	10 to 95	460	680	910	1350	1800
75	psig	630	950	1270	1870	2500
100	Dark	810	1210	1620	2390	3200
150	Green	1160	1740	2330	3430	—
200	Spring	1520	2270	3040	4480	—
300		2230	3330	4450	6570	—
500		3640	5450	7290	—	—

Capacity Information: Natural gas regulating capacities are given for selected inlet/outlet pressures. Flows are in scfh (60°F/14.7 psia) of 0.6 SG natural gas. To determine the equivalent regulating capacities of other gases, multiply the capacity given by 0.775, and divide by the square root of the appropriate specific gravity. If capacity is desired in normal cubic meters per hour, multiply the scfh capacity given by 0.0268.

# Mallard Model 5646B Pressure Regulator

## Flow Capacities, scfh of 0.6 Specific Gravity Gas, Based on 20% Droop

Inlet Pressure (psig)	Outlet Pressure (psig)	Port Diameter (in.)				
		All Body Sizes 1/8	3/16	1/4	3/8	1/2
20	15	450	950	1480	2950	5100
30		660	1440	2530	4800	7480
50		1000	2480	4200	7700	11,500
75		1400	3000	5400	10,700	16,300
100		1800	3800	7850	14,200	18,500
150		2600	5800	11,500	18,000	—
200		3300	7350	14,300	22,200	—
400		6100	14,800	24,500	—	—
600		9070	21,000	—	—	—
750		11,500	—	—	—	—
1000	15,550	—	—	—	—	
30	20	640	1430	2500	4600	7280
50		1000	2320	4000	7800	11,300
75		1400	3000	5400	10,700	16,300
100		1800	3800	7850	14,800	18,500
150		2600	5800	11,500	20,500	—
200		3300	7350	14,300	25,200	—
400		6100	14,800	24,500	—	—
600		9070	21,000	—	—	—
750		11,500	—	—	—	—
1000		15,500	—	—	—	—
30	25	580	1000	1300	1950	2600
50		1000	1700	2300	3350	4500
75		1400	2350	3150	4650	6250
100		1000	3050	4050	5950	8000
150		2600	4350	5800	8600	—
200		3300	5700	7600	11,200	—
300		4800	8300	11,150	16,400	—
400		6400	10,900	14,700	—	—
500		8000	13,600	18,200	—	—
750		11,500	20,250	—	—	—
1000	15,500	26,850	—	—	—	
40	30	780	1620	2800	4400	5800
50		950	2100	3700	5600	7700
75		1400	3000	5000	8600	11,400
100		1800	3800	7250	10,700	16,000
150		2600	5800	10,500	16,500	23,000
200		3300	7350	12,800	21,000	29,000
300		4800	10,800	17,800	26,000	—
400		6500	13,700	23,000	28,000	—
750		11,500	23,400	30,300	—	—
1000		15,500	31,000	—	—	—
50	40	900	2000	3400	5500	7100
75		1400	3000	5000	8200	10,300
100		1800	3800	7250	10,700	16,000
150		2600	5800	10,500	16,500	25,000
200		3300	7350	12,800	22,000	33,000
300		4800	10,800	17,800	28,000	—
400		6500	13,700	23,000	32,000	—
750		11,500	25,400	34,300	—	—
1000		15,500	34,400	—	—	—

Inlet Pressure (psig)	Outlet Pressure (psig)	Port Diameter (in.)					
		All Body Sizes 1/8	3/16	1/4	3/8	1/2	
60	50	1020	2100	3900	6300	9000	
75		1350	2900	5200	8900	13,500	
100		1760	3750	6900	12,500	16,800	
150		2600	5800	10,500	19,000	33,400	
200		3300	7350	12,300	24,000	42,500	
300		4800	10,800	19,000	33,000	—	
400		6500	13,700	25,000	46,000	—	
750		11,500	25,400	43,400	—	—	
1000		15,500	34,000	—	—	—	
80		75	1190	2300	3450	5000	6250
90	1450		2900	4250	6300	7100	
100	1680		3450	4900	7600	8050	
150	2500		5400	7300	12,000	—	
200	3300		7100	9700	15,700	—	
300	4800		10,400	14,200	20,450	—	
400	6400		13,700	18,700	—	—	
500	8000		17,000	23,000	—	—	
750	11,500		25,000	—	—	—	
1000	15,500		34,000	—	—	—	
110	100	1640	3500	5900	7900	9300	
125		2000	4400	7300	12,000	14,500	
150		2500	5500	9000	16,000	23,500	
200		3300	7000	12,000	21,000	34,600	
300		4800	10,500	18,000	30,100	51,000	
400		6400	13,700	25,000	44,500	70,000	
500		8040	17,200	32,000	66,000	84,000	
800		12,100	30,000	44,000	89,000	—	
1000		15,500	36,000	57,000	—	—	
135		125	1960	4200	7600	11,500	13,900
150	2340		5000	8900	15,700	20,000	
200	3300		7000	13,100	26,000	32,500	
300	4800		10,500	19,400	38,000	52,000	
400	6400		13,700	26,400	51,000	90,000	
500	8040		17,200	33,400	68,000	105,000	
800	12,100		30,000	46,500	99,000	—	
1000	15,500		36,000	63,000	—	—	
200	150		2900	7150	11,000	21,200	30,500
300			4600	11,100	19,000	31,200	45,000
400		6400	14,800	24,800	39,500	50,000	
500		8150	18,000	32,000	50,500	52,000	
750		12,000	27,000	45,000	52,500	—	
1000		15,200	35,500	58,000	—	—	
250		200	3800	8250	15,000	30,500	40,000
300			4600	11,100	19,200	35,500	52,000
400			6400	14,800	27,000	52,000	65,000
500			8150	18,000	33,000	60,000	68,000
750	12,000		27,000	49,000	62,000	—	
1000	15,200		35,500	63,000	—	—	
300	100 to 200		4600	11,100	19,200	35,500	52,000
400			6400	14,800	27,000	52,000	65,000
500			8150	18,000	33,000	60,000	68,000
750			12,000	27,000	49,000	62,000	—
1000		15,200	35,500	63,000	—	—	

Capacity Information: Natural gas regulating capacities are given for selected inlet/outlet pressures. Flows are in scfh (60°F/14.7 psia) of 0.6 SG natural gas. To determine the equivalent regulating capacities of other gases, multiply the capacity given by 0.775, and divide by the square root of the appropriate specific gravity. If capacity is desired in normal cubic meters per hour, multiply the scfh capacity given by 0.0268.



Mallard Control

# Mallard Model 5646B Pressure Regulator

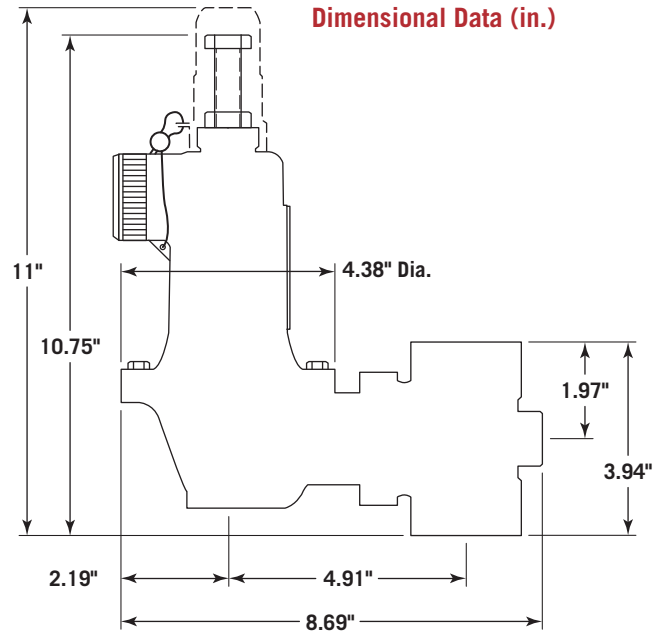
## Flow Coefficients (C<sub>v</sub>)

Port Diameter (in.) / Flow Co. (C <sub>v</sub> )				
1/8	3/16	1/4	3/8	1/2
0.43	1.00	1.70	3.40	5.30

## Max. Outlet Pressure

Criteria	Max. Pressure (psig)
Max. outlet pressure over pressure setting to prevent damage to internal parts.	100
Max. outlet pressure to prevent leak to atmosphere. Damage to internal parts may occur.	250
Max. outlet pressure to prevent burst of diaphragm housing. Leak to atmosphere and damage to internal parts may occur.	400

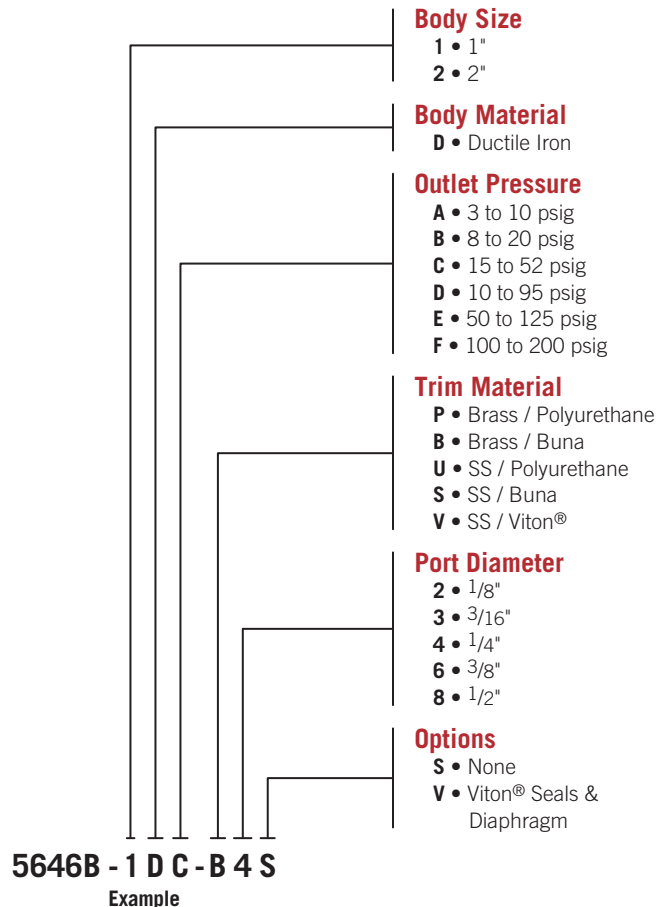
Overpressure Protection: The model 5646B regulator's outlet pressure rating is lower than its inlet pressure rating. Consequently, overpressure protection is required if the actual inlet pressure of a given application can exceed the regulator's outlet pressure rating. To avoid overpressure, the user must provide an appropriate pressure relieving or pressure limiting device to ensure that none of the limits shown are exceeded.



## Maximm Inlet / Differential Pressures

Spring Range	Orifice (in.)	Max. Inlet Pressure (psig)	Max. Differential Pressure (psig)
3 to 10 psig	1/8	125	125
	3/16	125	125
	1/4	125	125
	3/8	125	125
	1/2	100	100
8 to 20 psig	1/8	1000	1000
	3/16	600	600
	1/4	400	400
	3/8	200	200
	1/2	100	100
15 to 52 psig	1/8	1000	1000
	3/16	1000	1000
	1/4	800	800
	3/8	500	500
10 to 95 psig	1/2	250	250
	1/8	1000	1000
	3/16	1000	1000
50 to 125 psig	1/4	1000	1000
	3/8	600	600
	1/2	350	350
	1/8	1000	1000
100 to 200 psig	3/16	1000	1000
	1/4	1000	1000
	3/8	800	800
	1/2	500	500
100 to 200 psig	1/8	1000	1000
	3/16	1000	1000
	1/4	1000	1000
100 to 200 psig	3/8	1000	800
	1/2	750	500

## Part Number Codes





# Mallard Model 5660 & 5670 High Pressure Regulators

The model 5660 and 5670 are designed to reduce high inlet pressures to working pressures. Careful design and quality materials throughout assure long, trouble-free operation in the most difficult industrial environments.



## Features

- > Non-venting
- > Seating surface is field repairable by simply rotating the seat block 90 degrees to a new seating surface

## Specifications

Connections: 1/4" FNPT  
 Operating temperature range  
 -70 to 225°F (-57 to 107°C)  
 Maximum inlet pressure  
 6000 psig at 100°F (38°C)  
 (model 5660)  
 5500 psig at 100°F (38°C)  
 (model 5670)  
 Outlet ranges  
 0 to 125 psi, 0 to 150 psi  
 & 0 to 225 psi

## Materials of Construction

Description	Material
Body & Bonnet	Forged Brass (5660) 316 Stainless Steel (5670)
Seat	Nylon

Description	Material
Seals	TFE & Buna-N
Nozzle	316 Stainless Steel
Filter	40 Micron Screen

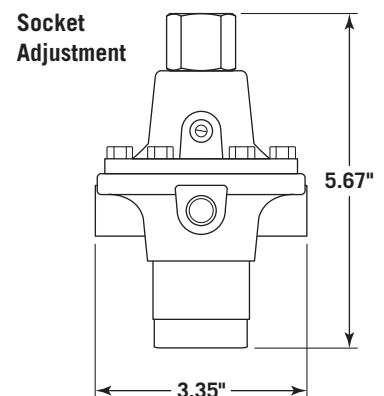
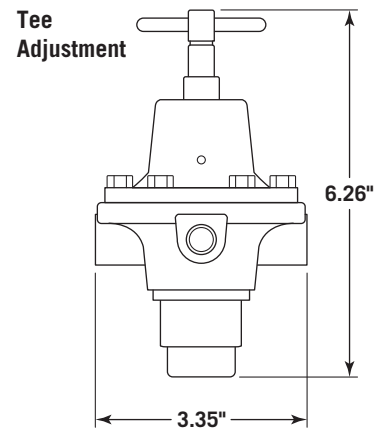
## Ordering Information

Max. Outlet Pressure	Model 5660	
	Adjusting Screw	Model Number
125 psi	Socket	5660-1
	Tee	5660-2
150 psi	Socket	5660-3
	Tee	5660-4
225 psi	Socket	5660-5
	Tee	5660-6

Max. Outlet Pressure	Model 5670	
	Adjusting Screw	Model Number
125 psi	Socket	5670-1
150 psi		5670-3
225 psi		5670-5

## Flow Capacities, scfh of 0.6 Specific Gravity Gas

Spring Range (psig)	Outlet Press. Setting (psig)	Inlet Pressure (psig)						
		100	250	500	750	1000	1500	2000
0 to 125	25	290	480	650	750	770	800	820
	50	400	800	1000	1200	1300	1400	1500
	75	400	900	1400	1600	1700	1800	1900
0 to 150	75	350	800	1300	1500	1600	1700	1800
	150	—	1000	1800	2300	2600	2800	3000
0 to 225	150	—	900	1700	2200	2250	2750	3000
	225	—	800	2100	2900	3500	4000	4500





CIRCOR Energy is a global manufacturer of highly engineered valve and pipeline products that continuously develops precision technologies to improve our customers' ability to control the flow of the world's natural resources, from sub-sea to land, and in severe environments.

**Continuously Improving Flow Control. Worldwide.**

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