Mallard

Model 5600
1” and 2” Heavy-Duty Regulator

The Model 5600 is a spring-loaded, self-operated pressure regulator, available in 1” and 2” sizes and built to withstand the most difficult processes and environments. It is offered in both low-pressure and high-pressure constructions, and is designed for inlet pressures up to1500 psig and outlet pressures from 3 to 500 psig. The Model 5600 regulator is well suited for high pressure, high capacity applications (see Specifications).

Figure 1. Model 5600 Heavy-Duty Regulator

Regulator Features:

- Easy Maintenance
- Variety of Flow Capacities
- Rugged Construction
- Excellent Control at Low Pressure Settings
- NACE Compliance Option
- Flanged Connections Option

Regulator Specifications:

End Connections

- 1” NPT Female
- 2” NPT Female

Outlet Pressure Ranges

- See Table 1

Maximum Inlet and Differential Pressure

- See Table 2

Operating Temperature Limits

- -20 to +150ºF (-29 to +65ºC)

Port Diameters

- 1/8”
- 1/4"
- 3/8”
- 1/2”

Construction Materials

- Body: Steel or ductile iron
- Inlet Adapter: steel
- Diaphragm Adapter: steel or ductile iron
- Spring Case: steel or ductile iron
- Orifice: brass or 316 SST
- Valve Disk and Holder : brass holder w/TFE disk Or 302 SST holder w/TFE disk
- Valve Carrier: brass or SST
- Diaphragm: Buna-N or Viton (embedded nylon Fabric)
- Lever: steel
- Diaphragm Connector Head: brass or 302 SST

Flow Capacities

Low Pressure Regulator : See Table3
High Pressure Regulator: See Table 4

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 in the Specifications will be exceeded.

Table1. Outlet Pressure Ranges

	Outlet Pressure Range, psig	Maximum Outlet Pressure Over Pressure Setting (3), psig	Maximum Emergency Outlet Pressure psig.
Low Pressure	3 to 10	20	45
	8 to 20		
	17 to 30	20(1)	
	27 to 40	NOTE 1	
High Pressure	27 to 50	200	550
	46 to 95		
	90 to 150		
	150 to 200		
	200 to 275		
	275 to 500	200(2)	

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.

Table2. Maximum Inlet and Differential Pressures

Port Dia.	Maximum Allow. Inlet Pressure, PSIG(1)	Maximum Allowable Pressure Drop, PSID
1/8"	1500	1500
1/4"	1500	1000
3/8"	1000	500
1/2"	750	250

1. The sum of the outlet pressure setting an the maximum allowable pressure drop determines the maximum allowable inlet pressure for a given Installation. For example, with a ½" 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).

Table 3. Low Pressure Regulator Flow Capacities (scfh of 0.6 Specific Gravity Gas; based on 20% Droop

Inlet Pressure (PSIG)	Outlet Pressure (PSIG)	Port Diameter							
		1" NPT				2" NPT			
		1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
10	5 (3 to 10 psig or 8 to 20 psig spring)	200	990	1700	2200	290	1300	3300	5900
20		400	1200	2000	2700	500	2100	4800	9100
30		600	1500	2200	3300	760	2700	7000	11,000
50		950	2100	2800	4100	1100	3900	9800	17,000
60		1100	2400	3000	4200	1250	4500	11,100	19,500
75		1300	2700	3400	4400	1500	5400	13,000	23,000
100		1700	2900	4000	4900	1900	7000	17,000	30,000
150		2200	3500	4600	5800	2800	10,000	25,000	43,000
200		3000	4200	5100	6100	3700	13,000	32,000	57,000
250		3500	4300	5900	6800	4500	17,000	38,000	70,000
400		3700	4500	6400	-------	7200	28,000	64,000	-------
500		4100	4700	7400	-------	9100	35,000	79,000	-------
600		4300	5000	-------	-------	10,000	42,000	-------	-------
1000		4600	5600	-------	-------	18,000	69,000	-------	-------
1500		5000	-------	-------	-------	22,000	-------	-------	-------
20	10 (3 to 10 psig or 8 to 20 psig spring)	500	1800	4100	4900	560	2200	5100	9000
30		700	2800	4200	5300	770	3000	7000	11,000
50		1000	4100	5100	6200	1100	4300	9800	17,000
60		1150	4200	5500	6500	1250	5000	11,100	19,500
75		1400	4400	6000	6800	1500	5900	13,000	23,000
100		1600	5000	6400	7300	1900	7600	17,000	30,000
150		2400	6200	7300	7900	2800	11,000	25,000	43,000
200		3300	6900	7700	8200	3700	14,000	33,000	57,000
250		4000	7300	8600	8700	4400	17,000	41,000	70,000
400		5400	7600	9000	-------	7200	28,000	62,000	-------
500		6000	7900	9700	-------	8900	35,000	76,000	-------
600		6500	8200	-------	-------	10,000	42,000		-------
1000		7200	8400	-------	-------	18,000	7200	-------	-------
1500		7400	-------	-------	-------	27,000	-------	-------	-------

- Continued -

Table 3. (Continued). Low Pressure Regulator Flow Capacities (scfh of 0.6 Specific Gravity Gas; 20% Droop)

Inlet Pressure (PSIG)	Outlet Pressure (PSIG)	Port Diameter							
		1" NPT				2" NPT			
		1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
20	15 (8 to 20 psig spring)	470	1700	3300	4900	520	1800	3500	5700
30		600	2500	4600	5200	740	2800	5900	10,000
50		1000	3800	5500	5700	1100	4300	9800	16,000
60		1150	4300	6100	6800	1250	5000	11,100	18,000
75		1400	5100	7000	8500	1500	6000	13,000	23,000
100		1900	6200	7600	9600	1900	7800	17,000	30,000
150		2700	7400	8000	9900	2800	11,000	25,000	43,000
200		3600	8500	9600	5800	3700	14,000	30,000	57,000
265		4700	9100	10,000	10,000	4800	19,000	39,000	74,000
400		7100	10,000	11,000	11,000	7200	29,000	64,000	-------
515		8300	10,500	12,000	-------	9200	37,000	82,000	-------
600		8600	10,800	-------	-------	11,000	42,000	-------	-------
1015		9600	11,000	-------	-------	18,000	71,000	-------	-------
1500		10,000	-------	-------	-------	27,000	-------	-------	-------
30	20 (8 to 20 psig or 17 to 30 psig spring)	600	2500	4600	6800	700	2600	5200	9200
40		800	3400	5700	8100	900	3500	7500	12,000
50		1000	4200	6800	9000	1100	4300	9400	15,000
60		1150	4900	7500	9800	1250	5100	11,000	18,000
75		1400	5900	8500	10,000	1500	6100	13,000	23,000
100		1800	7400	9500	11,000	1900	7800	17,000	29,000
150		2700	9200	11,000	12,000	2800	11,000	23,000	42,000
200		3600	10,000	12,000	13,000	3700	14,000	32,000	59,000
270		4500	11,000	13,000	14,000	4900	19,000	39,000	75,000
400		7200	13,000	14,000	-------	7300	28,000	63,000	-------
520		8800	13,500	15,000	-------	8500	37,000	82,000	-------
600		10,000	13,800	-------	-------	11,000	43,000	-------	-------
1020		11,000	15,000	-------	-------	18,000	73,000	-------	-------
1500		12,000	-------	-------	-------	27,000	-------	-------	-------

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Table 3.(continued) Low Pressure Regulator Flow Capacities (scfh of 0.6 Specific Gravity Gas; 20% Droop)

Inlet Pressure (PSIG)	Outlet Pressure (PSIG)	Port Diameter							
		1" NPT				2" NPT			
		1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
40	30 (17 to 30 psig or 27 to 40 psig spring)	820	2700	5100	7600	860	2900	5300	8500
50		900	3600	6400	8700	1000	3800	7300	11,000
60		1100	4400	7500	9800	1200	4700	8900	14,000
75		1400	5400	8800	11,000	1500	5800	11,000	18,000
100		1700	6800	10,000	12,000	1800	7800	16,000	28,000
150		2600	9100	13,000	14,000	2700	11,000	20,000	44,000
200		3500	11,000	14,000	16,000	3600	14,000	24,000	58,000
280		4900	13,000	15,000	17,000	6000	20,000	46,000	80,000
400		6900	15,000	17,000	-------	7000	28,000	64,000	-------
530		9400	15,800	19,000	-------	9500	37,000	86,000	-------
600		9700	16,000	-------	-------	10,000	42,000	-------	-------
1030		16,000	18,000	-------	-------	19,000	73,000	-------	-------
1500		16,400	-------	-------	-------	27,000	-------	-------	-------
50	40 (27 to 40 psig spring)	950	3200	5500	8900	1000	3400	5900	9900
60		1100	4100	7600	10,000	1200	4300	7900	12,000
75		1400	5300	9300	12,000	1500	5600	10,000	16,000
100		1800	7000	11,000	14,000	1900	7200	13,000	24,000
150		2700	9500	14,000	17,000	2800	10,000	22,000	39,000
200		3500	12,000	17,000	19,000	3600	14,000	30,000	56,000
290		5100	15,000	19,000	21,000	5200	20,000	46,000	81,000
400		7100	18,000	21,000	-------	7200	28,000	63,000	-------
540		9500	19,000	22,000	-------	9600	38,000	86,000	-------
600		9800	21,000	-------	-------	10,000	42,000	-------	-------
1040		17,500	23,000	-------	-------	18,000	73,000	-------	-------
1500		20,000	-------	-------	-------	2,700	-------	-------	-------

Table 4. High Pressure Regulator Flow Capacities (scfh of 0.6 Specific Gravity Gas; based on 20% Droop)

Inlet Pressure (PSIG)	Outlet Pressure (PSIG)	Port Diameter							
		1" NPT				2" NPT			
		1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
40	30 (27 to 50 psig spring)	800	2400	4400	6400	850	2600	4500	7200
50		900	3200	5600	7700	1000	3500	5900	9700
60		1100	3900	6300	8900	1200	4200	7300	12,000
75		1400	4700	7700	10,000	1500	5300	9400	15,000
100		1700	6400	9400	11,000	1800	6900	12,000	23,000
150		2600	8800	12,000	14,000	2700	10,000	20,000	39,000
200		3500	9400	14,000	15,000	3600	13,000	24,000	57,000
280		4900	13,000	15,000	16,000	5000	19,000	45,000	78,000
400		6900	15,000	17,000	-------	7000	28,000	64,000	-------
530		9400	15,800	18,000	-------	9500	37,000	85,000	-------
600		9700	16,000	-------	-------	10,000	42,000	-------	-------
1030		16,000	18,000	-------	-------	19,000	73,000	-------	-------
1500		16,400	-------	-------	-------	27,000	-------	-------	-------
60	50 (46 to 95 psig spring)	900	3100	5200	8100	1000	3200	5300	12,000
75		1300	3800	7200	10,000	1400	3900	7300	16,000
100		1700	5700	10,500	13,000	1800	5800	10,000	21,000
150		2600	8700	13,000	17,000	2700	9,000	15,000	36,000
200		3500	11,000	16,000	19,000	3600	12,000	21,000	55,000
300		5300	14,000	20,000	23,000	5500	19,000	48,000	83,000
400		6900	17,000	23,000	-------	7000	27,000	63,000	-------
550		9600	20,000	26,000	-------	9700	38,000	88,000	-------
600		9800	21,000	-------	-------	10,000	42,000	-------	-------
1050		17,000	27,000	-------	-------	19,000	74,000	-------	-------
1500		19,000	-------	-------	-------	27,000	-------	-------	-------
100	75 (46 to 95 psig spring)	1700	5000	8000	13,000	1800	5200	9000	14,000
125		2200	6700	10,000	15,000	2300	6900	11,000	18,000
200		3500	10,000	16,000	22,000	3600	11,000	19,000	30,000
250		4400	13,000	19,000	24,000	4500	14,000	26,000	44,000
325		5700	16,000	23,000	27,000	5800	18,000	36,000	67,000
400		7100	19,000	27,000	-------	7200	24,000	47,000	-------
575		9700	23,000	30,000	-------	9800	37,000	92,000	-------
600		9900	25,000	-------	-------	10,000	39,000	-------	-------
1075		18,000	32,000	-------	-------	19,000	75,000	-------	-------
1500		23,000	-------	-------	-------	24,000	-------	-------	-------

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Table 4 (continued). High Pressure Regulator Flow Capacities (scfh of 0.6 Specific Gravity Gas; 20% Droop)

Inlet Pressure (PSIG)	Outlet Pressure (PSIG)	Port Diameter							
		1" NPT				2" NPT			
		1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
125	100 (90 to 150 psig spring)	2000	5500	9200	13,000	2100	5600	9800	15,000
150		2500	6800	11,000	16,000	2600	7400	12,000	18,000
200		3600	9400	13,000	22,000	3700	10,000	17,000	27,000
250		4400	11,000	18,000	26,000	4500	13,000	22,000	34,000
300		5300	14,000	21,000	30,000	5400	16,000	27,000	44,000
350		6100	16,000	25,000	32,000	6300	19,000	33,000	57,000
400		7000	18,000	27,000	-------	7200	21,000	39,000	-------
600		9500	23,000	35,000	-------	10,000	34,000	69,000	-------
1100		19,500	35,000	-------	-------	19,000	74,000	-------	-------
1500		25,000	-------	-------	-------	27,000	-------	-------	-------
150	125 (90 to 150 psig spring)	2400	6700	11,000	17,000	2500	8100	12,000	20,000
200		3500	10,000	15,000	23,000	3600	11,000	19,000	30,000
250		4300	12,000	19,000	29,000	4400	14,000	24,000	39,000
300		5200	15,000	25,000	34,000	5300	17,000	31,000	48,000
375		6500	18,500	28,000	39,000	6600	21,400	38,300	59,400
400		7000	19,000	29,000	-------	7300	24,000	43,000	-------
500		7900	25,000	36,000	-------	8800	30,000	59,000	-------
625		10,000	29,000	41,000	-------	11,000	40,000	79,000	-------
1125		18,000	42,000	-------	-------	19,000	79,000	-------	-------
1500		26,000	-------	-------	-------	27,000	-------	-------	-------
200	150 (90 to 150 psig or 150 to 200 psig spring)	3400	10,000	16,000	26,000	3500	11,000	18,000	30,000
250		4400	13,000	20,000	32,000	4500	15,000	26,000	38,000
300		5300	15,000	24,000	35,000	5400	19,000	32,000	52,000
400		7100	22,000	34,000	42,000	7200	26,000	46,000	77,000
450		7700	24,000	36,000	-------	8100	29,000	54,000	-------
650		9000	33,000	49,000	-------	10,000	44,000	86,000	-------
800		13,000	38,000	-------	-------	14,000	54,000	-------	-------
1150		20,000	49,000	-------	-------	21,000	78,000	-------	-------
1500		26,000	-------	-------	-------	27,000	-------	-------	-------

- Continued -

Table 4 (Continued). High Pressure Regulator Flow Capacities (scfh of 0.6 Specific Gravity Gas; 20% Droop)

Inlet Pressure (PSIG)	Outlet Pressure (PSIG)	Port Diameter							
		1" NPT				2" NPT			
		1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
250	200 (150 to200 psig or 200 to 275 psig spring)	4200	12,000	20,000	30,000	4300	13,000	23,000	42,000
300		5200	16,000	25,000	35,000	5300	18,000	33,000	52,000
450		7800	26,000	43,000	50,000	7900	29,000	52,000	84,000
600		9500	34,000	55,000	-------	10,000	40,000	75,000	-------
700		11,000	40,000	61,000	-------	12,000	47,000	90,000	-------
800		13,000	43,000	-------	-------	14,000	54,000	-------	-------
1000		16,000	50,000	-------	-------	17,000	69,000	-------	-------
1200		20,000	59,000	-------	-------	21,000	83,000	-------	-------
1500		26,000	-------	-------	-------	27,000	-------	-------	-------
300	250 (200 to 275 psig spring)	4900	15,000	28,000	42,000	5000	17,000	30,000	52,000
400		7000	23,000	40,000	56,000	7100	25,000	47,000	76,000
500		8500	29,000	51,000	65,000	8600	34,000	62,000	103,000
600		9500	34,000	59,000	-------	10,000	41,000	78,000	-------
750		12,500	44,000	69,000	-------	13,000	51,000	106,000	-------
1000		16,000	58,000	-------	-------	17,000	68,000	-------	-------
1250		21,000	69,000	-------	-------	22,000	87,000	-------	-------
1500		26,000	-------	-------	-------	27,000	-------	-------	-------
300	275 (200 to 275 psig or 275 to 500 psig spring)	4700	15,000	28,000	39,000	4800	17,000	29,000	43,000
400		6900	25,000	40,000	54,000	7000	26,000	47,000	73,000
525		8600	35,000	68,000	94,000	9200	36,000	69,000	112,000
775		11,000	51,000	95,000	-------	12,000	52,000	112,000	-------
1000		16,000	67,000	-------	-------	17,000	68,000	-------	-------
1275		21,000	87,000	-------	-------	22,000	89,000	-------	-------
1500		26,000	-------	-------	-------	26,000	-------	-------	-------
400	300 (275 to 500 psig spring)	6600	16,000	31,000	42,000	7000	21,000	35,000	54,000
550		9700	23,000	44,000	63,000	9800	30,000	52,000	78,000
600		9900	26,000	48,000	-------	10,000	34,000	59,000	-------
700		11,000	30,000	54,000	-------	12,000	40,000	72,000	-------
800		13,000	35,000	61,000	-------	14,000	47,000	81,000	-------
900		15,000	39,000	-------	-------	16,000	53,000	-------	-------
1300		22,000	58,000	-------	-------	23,000	80,000	-------	-------
1500		26,000	-------	-------	-------	27,000	-------	-------	-------

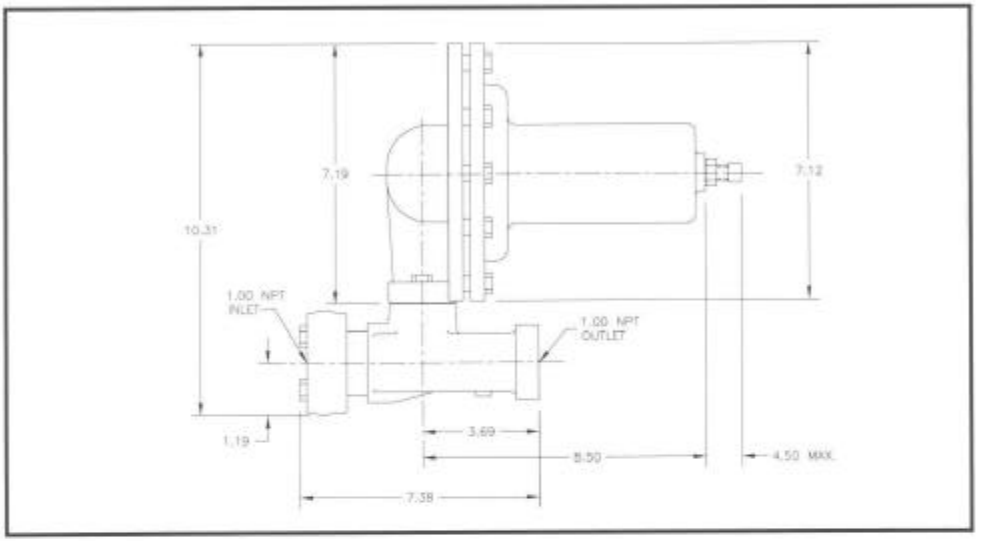
- Continued -

Table 4 (Continued). High Pressure Regulator Flow Capacities (scfh of 0.6 Specific Gravity Gas; 20% Droop)

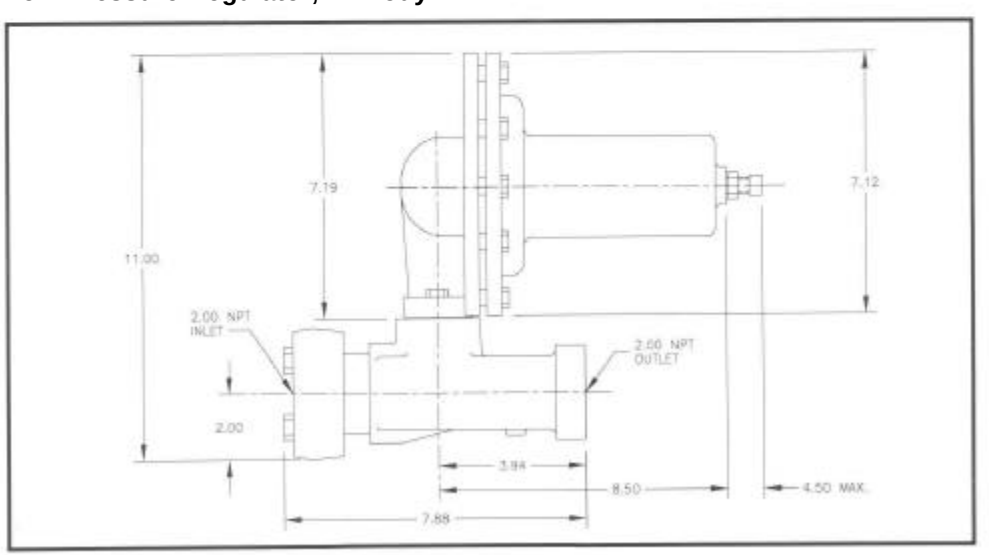
Inlet Pressure (PSIG)	Outlet Pressure (PSIG)	Port Diameter							
		1" NPT				2" NPT			
		1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
500	400 (275 to 500 psig spring)	8300	24,000	44,000	62,000	8800	28,000	49,000	77,000
650		10,000	33,000	61,000	86,000	11,000	40,000	75,000	112,00
800		13,000	41,000	76,000	-------	14,000	51,000	95,000	-------
900		15,000	49,000	85,000	-------	16,000	58,000	110,000	-------
1000		17,000	54,000	-------	-------	18,000	66,000	-------	-------
1200		20,000	63,000	-------	-------	21,000	80,000	-------	-------
1400		24,000	76,000	-------	-------	25,000	96,000	-------	-------
1500		26,000	-------	-------	-------	27,000	-------	-------	-------
550	500 (275 to 500 psig spring)	8,700	26,000	50,000	77,000	9000	30,000	53,000	89,000
750		12,000	40,000	78,000	100,000	13,000	48,000	90,000	141,000
1		15,000	52,000	92,000	-------	16,000	60,000	113,000	-------
1000		17,000	60,000	100,000	-------	18,000	67,000	130,000	-------
1500		26,000	72,000	-------	-------	27,000	82,000	-------	-------

REGULATOR DIMENSIONS:

Low-Pressure Regulator, 1” Body

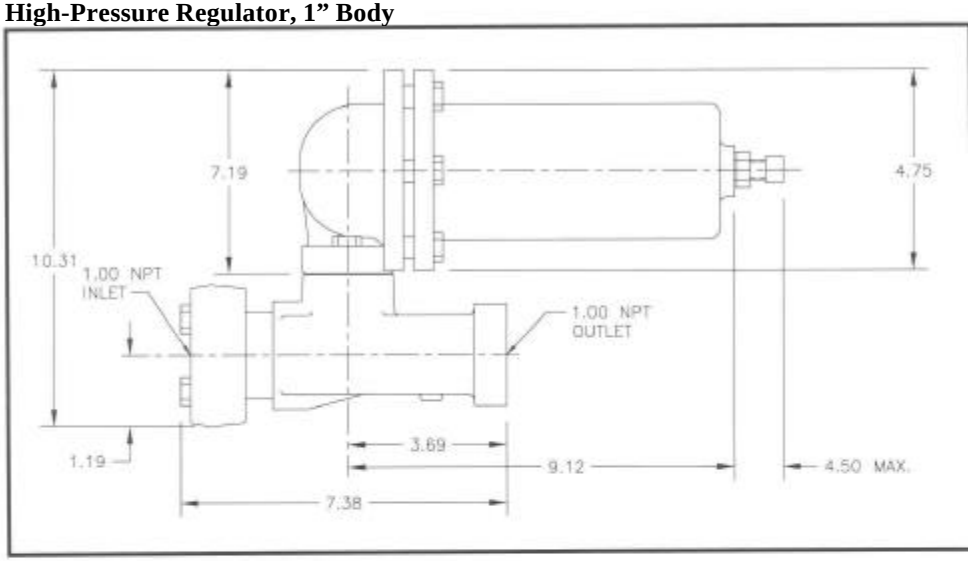


Low-Pressure Regulator, 2” Body

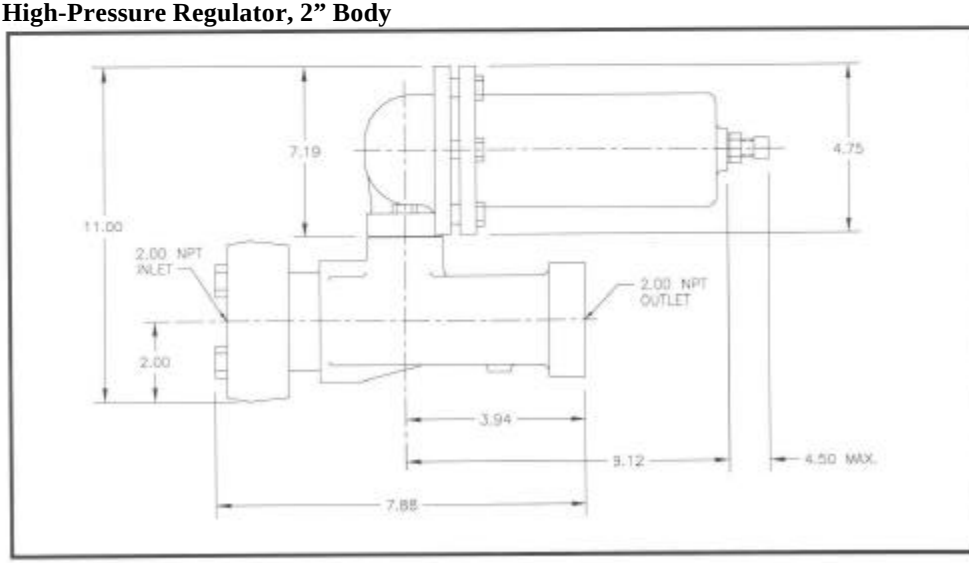


REGULATOR DIMENSIONS:

High-Pressure Regulator, 1” Body



High-Pressure Regulator, 2” Body



Mallard

Model Number Information

Sample Model Number: 5800- 1 H D G - B 4 S

BODY SIZE	CODE
1”	1
2”	2

STYLE	CODE
Low Pressure (Spring Code A-D only)	L
High Pressure (Spring code E-H only)	H

BODY MATERIAL	CODE
WCC Carbon Steel	W
Ductile Iron	D

OUTLET PRESSURE RANGE	CODE
Low Pressure:	
3 to 10 psig (0.2 to 0.7 bar)	A
8 to 20 psig (0.5 to 1.4 bar)	B
17 to 30 psig (1.2 to 2.0 bar)	C
27 to 40 psig (1.9 to 2.7 bar)	D
High Pressure :	
27 to 50 psig (1.9 to 3.4 bar)	E
46 to 95 psig (3.2 to 6.5 bar)	F
90 to 150 psig (6.2 to 10.3 bar)	G
150 to 200 psig (10.3 to 13.7 bar)	H
200 to 275 psig (13.7 to 18.9 bar)	J
275 to 500 psig (18.9 to 34.5 bar)	K

TRIM MATERIAL	CODE
Brass	B
Stainless Steel	S

PORT DIAMETER	CODE
1/8”	1
¼”	2
3/8”	3
½”	4

OPTIONS	CODE
None	S
NACE	N

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