

“Top Gun” High Pressure Regulator Application

In the tradition of providing the best of the best, WellMark has developed the “Top Gun” Series 2001PR for accurate reduction of high pressure gas before it enters the distribution system. It is designed for inlet pressures up to 1500 psi and outlet pressures from 27 to 500 psi.



Features

- Multiple Orifice Sizes: Brass or Stainless
- Easy Maintenance
- 6 Spring Ranges
- Rugged WCB Cast Steel Body
- NACE Compatible Option

Specifications

Connection 1" and 2" FNPT
 Seat Ring Orifices 1/8", 3/16", 1/4", 3/8" or 1/2"
 Operating Temperature -20°F to +150°F
 Materials See Parts & Materials
 Maximum Inlet Pressure and Pressure Drop See Table 1
 Outlet Pressure Ranges See Table 2
 Flow Capabilities See Table 3

Overpressure Protection

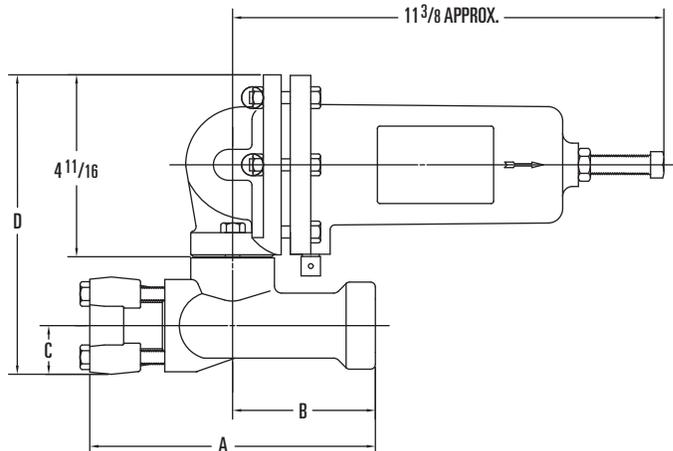
As is true with most regulators, the WellMark “Top Gun” Series 2001PR Regulator has an outlet pressure rating that is lower than the inlet pressure rating. Overpressure protection is needed to avoid overpressure if the actual inlet pressure can exceed the outlet pressure rating.

Table 1. Max. Inlet Pressures and Pressure Drops

Port Diameter	1/8"	3/16"	1/4"	3/8"	1/2"
MAX. ALLOWABLE INLET PRESSURE, PSIG (1)	1500	1500	1500	1000	750
MAX. ALLOWABLE PRESSURE DROP, PSID	1500	1500	1000	500	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 3/8" seat ring orifice (maximum pressure drop of 500 psi) and a 275 psig outlet pressure setting, the maximum inlet pressure is 775 psig (500 psi + 275 psig).

Dimensional Data



General Dimensions

Size	A	B	C	D
1"	7 3/8	3 11/16	1 3/16	7 5/8
2"	7 7/8	3 15/16	2"	8 7/16

Table 2. Outlet Pressure Ranges

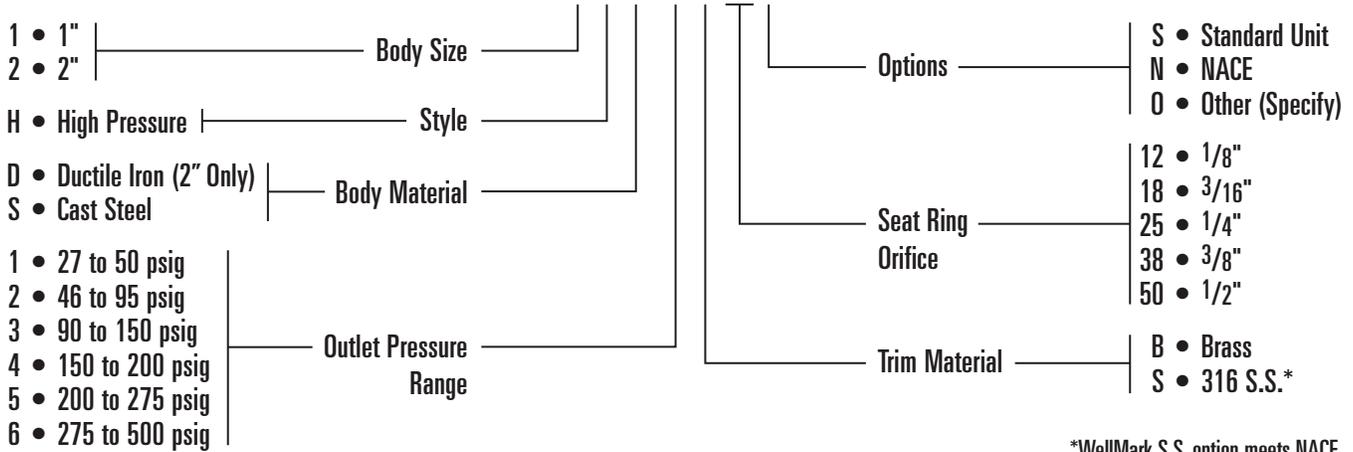
Outlet Pressure Range, Psig	27-50	46-95	90-150	150-200	200-275	275-500
MAXIMUM OUTLET PRESSURE OVER PRESSURE SETTING (1), PSIG			200			200(2)
MAXIMUM EMERGENCY OUTLET (CASING) PRESSURE, PSIG			550			

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

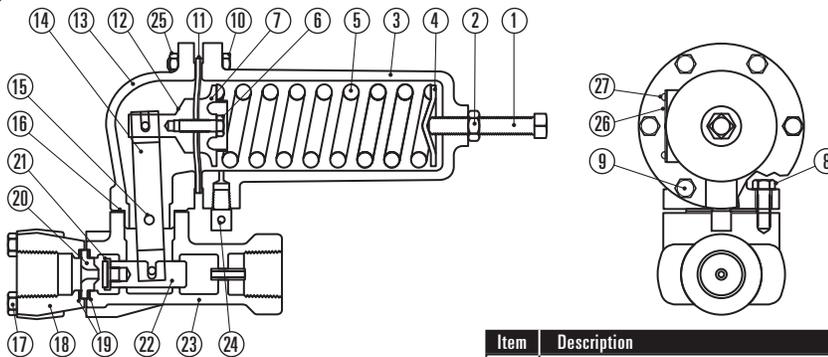
“Top Gun” High Pressure Regulator Determining the Model Number

Example given: A 1" Model 2001PR High Pressure Regulator Constructed of Cast Steel with an Outlet Pressure Range of 46 to 95 psig, Utilizing Brass Trim with a 1/8" Seat Ring Orifice and No Options Chosen.

MODEL 1 H S-2 B 12 S



*WellMark S.S. option meets NACE requirements. When ordering, use the "N" designation.



Parts List

Item	Description	Qty.	Part No.
1	ADJ. SCREW, 27-50 OUTLET PRESSURE	1	11014
	ADJ. SCREW, 46-95 OUTLET PRESSURE	1	11013
	ADJ. SCREW, 90-500 OUTLET PRESSURE	1	10097
2	JAM NUT, STEEL	1	10098
3	SPRING HOUSING, STEEL	1	40440
4	UPPER SPRING GUIDE, UP TO 275 PSI	1	11001
	UPPER SPRING GUIDE, ABOVE 275 PSI	1	11032
5	SPRING, 27-50 OUTLET PRESSURE	1	11027
	SPRING, 46-95 OUTLET PRESSURE	1	11028
	SPRING, 90-150 OUTLET PRESSURE	1	11002
	SPRING, 150-200 OUTLET PRESSURE	1	11029
	SPRING, 200-275 OUTLET PRESSURE	1	11030
6	SPRING, 275-500 OUTLET PRESSURE	1	11031
6	CAP SCREW	1	11012
7	LOWER SPRING GUIDE, UP TO 275 PSI	1	40445
	LOWER SPRING GUIDE, ABOVE 275 PSI	1	40446
8	CAP SCREW	2	10090
9	CAP SCREW	2	11011
10	CAP SCREW	4	11010
11*	DIAPHRAGM, NEOPRENE	1	11004
	DIAPHRAGM, VITON®**	1	11033
12	CONNECTOR HEAD ASSEMBLY, BRASS	1	21052
	CONNECTOR HEAD ASSEMBLY, 316 S.S.**	1	21053
13	DIAPHRAGM ADAPTER, STEEL	1	40443
14	LEVER ASSEMBLY	1	21023
15	PIN, STAINLESS STEEL	1	11000

Item	Description	Qty.	Part No.
16*	GASKET	1	11008
17	CAP SCREW, 1"	4	11009
	CAP SCREW, 2"	4	11050
18	INLET ADAPTER, 1" STEEL	1	40442
	INLET ADAPTER, 2" STEEL	1	40589
19*	INLET BODY GASKET, COPPER	2	11005
	INLET BODY GASKET, COMPOSITION**	2	11015
20	ORIFICE, BRASS 1/8"	1	21042
	ORIFICE, BRASS 3/16"	1	21112
	ORIFICE, BRASS 1/4"	1	21028
	ORIFICE, BRASS 3/8"	1	21040
	ORIFICE, BRASS 1/2"	1	21041
	ORIFICE, 316 S.S. 1/8***	1	21043
	ORIFICE, 316 S.S. 3/16***	1	21093
	ORIFICE, 316 S.S. 1/4***	1	21044
	ORIFICE, 316 S.S. 3/8***	1	21045
	ORIFICE, 316 S.S. 1/2***	1	21046
21*	VALVE DISK ASSEMBLY, BRASS/TFE	1	21026
	VALVE DISK ASSEMBLY, 316 S.S./TFE**	1	21047
22	VALVE CARRIER, BRASS	1	31005
	VALVE CARRIER, 316 S.S.**	1	31011
23	BODY, 1" STEEL WCB	1	40444
	BODY, 2" DUCTILE IRON	1	40588
24	BREATHER	1	05011-1640
25	HEX NUT	4	05000-1726
26	NAME PLATE	1	21039
27	DRIVER SCREW	4	10075
28	PLUG 1/8" NPT, 2" ONLY	1	06000-0494

*Included in Repair Kits: Repair Kit for Brass Trim Part No. 21054, Repair Kit for 316 S.S. Trim Part No. 21055

**Meets NACE MR0175-2002 Specifications



“Top Gun” High Pressure Regulator

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

Outlet Pressure Range, psig	Inlet Pressure, psig	Outlet Pressure, psig	Seat Ring Orifice Diameter (Inches)				
			1/8	3/16	1/4	3/8	1/2
27-50	50	60	900	2000	3100	5200	8100
		75	1300	2800	3800	7200	10,000
		100	1700	3500	5700	10,500	13,000
		150	2600	5700	8700	13,000	17,000
		200	3500	7800	11,000	16,000	19,000
	600	300	5300	10,500	14,000	20,000	23,000
		400	6900	13,000	17,000	23,000	—
		550	9600	16,000	20,000	26,000	—
		1050	17,000	23,000	27,000	—	—
		1500	19,000	25,000	—	—	—
46-95	50	60	800	1500	2400	4300	6400
		75	1200	2100	3100	5500	8000
		100	1500	3100	4200	7500	10,000
		150	2400	4500	6700	11,000	14,000
		200	3400	6600	9400	14,000	17,000
	600	300	5200	8900	11,000	16,000	20,000
		400	6800	11,000	15,000	20,000	—
		550	9500	13,000	17,000	23,000	—
		1050	14,000	19,000	22,000	—	—
		1500	18,000	24,000	—	—	—
46-95	75	100	1700	3200	5000	8000	13,000
		125	2200	4300	6700	10,000	15,000
		200	3500	7300	10,000	16,000	22,000
		250	4400	9400	13,000	19,000	24,000
		325	5700	11,000	16,000	23,000	27,000
	600	400	7100	14,000	19,000	27,000	—
		575	9700	18,000	23,000	30,000	—
		600	9900	19,000	25,000	—	—
		1075	18,000	27,000	32,000	—	—
		1500	23,000	32,000	—	—	—
90-150	100	125	2000	3600	5500	9200	13,000
		150	2500	4600	6800	11,000	16,000
		200	3600	6600	9400	13,000	22,000
		250	4400	8500	11,000	18,000	26,000
		300	5300	9800	14,000	21,000	30,000
	600	350	6100	10,000	16,000	25,000	32,000
		400	7000	13,000	18,000	27,000	—
		600	9500	18,000	23,000	35,000	—
		1100	19,500	28,000	35,000	—	—
		1500	25,000	35,000	—	—	—
90-150	125	150	2400	4600	6700	11,000	17,000
		200	3500	6800	10,000	15,000	23,000
		250	4300	8900	12,000	19,000	29,000
		300	5200	10,000	15,000	25,000	34,000
		375	6600	13,000	18,500	28,000	39,000
	600	400	7300	14,500	19,000	29,000	—
		500	7900	15,000	25,000	36,000	—
		625	10,000	22,000	29,000	41,000	—
		1125	18,000	33,000	42,000	—	—
		1500	26,000	43,000	—	—	—
90-150	150	200	3400	6800	10,000	16,000	26,000
		250	4400	8800	13,000	20,000	32,000
		300	5300	10,000	15,000	24,000	35,000
		400	7100	14,000	22,000	34,000	42,000
		450	7700	17,000	24,000	36,000	—
	600	650	9000	24,000	33,000	49,000	—
		800	13,000	29,000	38,000	—	—
		1150	20,000	38,000	49,000	—	—
		1500	26,000	47,000	—	—	—

Outlet Pressure Range, psig	Inlet Pressure, psig	Outlet Pressure, psig	Seat Ring Orifice Diameter (Inches)						
			1/8	3/16	1/4	3/8	1/2		
150-200	150	200	3400	6200	9300	16,000	24,000		
		250	4300	8800	12,000	20,000	27,000		
		300	5300	10,000	15,000	24,000	30,000		
		400	7100	14,000	21,000	32,000	38,000		
		450	7600	15,000	24,000	36,000	—		
	600	650	9000	21,000	33,000	48,000	—		
		800	13,000	27,000	37,000	—	—		
		1150	19,500	34,000	49,000	—	—		
		1500	26,000	44,000	—	—	—		
		150-200	200	250	4200	8300	12,000	20,000	30,000
300	5200			10,000	16,000	25,000	35,000		
450	7800			16,000	26,000	43,000	50,000		
600	9500			22,000	34,000	55,000	—		
700	11,000			25,000	40,000	61,000	—		
600	800		13,000	30,000	43,000	—	—		
	1000		16,000	37,000	50,000	—	—		
	1200		20,000	41,000	59,000	—	—		
	1500		26,000	53,000	—	—	—		
	200-275		200	250	4200	8200	11,000	20,000	29,000
300		5200		10,000	14,500	25,000	35,000		
450		7700		16,000	24,000	40,000	50,000		
600		9500		22,000	31,000	51,000	—		
700		11,000		25,000	35,000	55,000	—		
600		800	13,000	29,000	42,000	—	—		
		1000	16,000	36,000	50,000	—	—		
		1200	19,000	41,000	55,000	—	—		
		1500	26,000	51,000	—	—	—		
		200-275	250	300	4900	9000	15,000	28,000	42,000
400	7000			14,000	23,000	40,000	56,000		
500	8500			18,000	29,000	51,000	65,000		
600	9500			22,000	34,000	59,000	—		
750	12,500			28,000	44,000	69,000	—		
600	1000		16,000	39,000	58,000	—	—		
	1250		21,000	49,000	69,000	—	—		
	1500		26,000	59,000	—	—	—		
	200-275		275	300	4700	9000	15,000	28,000	39,000
				400	6900	14,000	25,000	40,000	54,000
525		8600		18,000	35,000	68,000	94,000		
775		11,000		28,000	51,000	95,000	—		
1000		16,000		39,000	67,000	—	—		
600		1275	21,000	50,000	87,000	—	—		
		1500	26,000	60,000	—	—	—		
		275-500	275	300	4500	7500	10,000	20,000	31,000
				400	6600	12,000	16,000	31,000	43,000
				525	8600	16,000	21,000	39,000	56,000
775	11,000			24,000	32,000	55,000	—		
1000	17,000			32,000	43,000	—	—		
600	1275		21,000	40,000	53,000	—	—		
	1500		26,000	46,000	—	—	—		
	275-500		300	400	6600	11,000	16,000	31,000	42,000
				550	9700	18,000	23,000	44,000	63,000
				600	9900	19,000	26,000	48,000	—
700		11,000		23,000	30,000	54,000	—		
800		13,000		26,000	35,000	61,000	—		
600		900	15,000	29,000	39,000	—	—		
		1300	22,000	43,000	58,000	—	—		
		1500	26,000	49,000	—	—	—		
		275-500	400	500	8300	16,000	24,000	44,000	62,000
				650	10,000	24,000	33,000	61,000	86,000
800	13,000			30,000	41,000	76,000	—		
900	15,000			34,000	49,000	85,000	—		
1000	17,000			38,000	54,000	—	—		
600	1200		20,000	46,000	63,000	—	—		
	1400		24,000	55,000	76,000	—	—		
	1500		26,000	60,000	—	—	—		
	275-500		500	550	8700	16,000	26,000	50,000	77,000
				750	12,000	28,000	40,000	78,000	100,000
900		15,000		34,000	52,000	92,000	—		
1000		17,000		39,000	60,000	100,000	—		
1500		26,000		59,000	72,000	—	—		