

Pressure and/or Temperature Pilot Operated Steam Regulators Series 2000

The Hoffman Specialty Series 2000 consists of main valves, pilot valves, wells and hardware kits. They are designed to meet a wide range of temperature, pressure and capacity requirements and provide accurate, dependable, low maintenance operation. The Series 2000 Regulators meet MIL Spec MIL-V-16733D (Type IV) and MIL-V-18433B (Type I, Style A, Class 2).

Main Valves

- Sizes available: 1/2" - 6" (150mm)
- Cast iron body with 30,000 tensile
- Maximum rating 250 psig (17.3 bar) at 450°F (232°C)
- Full, normal and reduced ports available

Pilots

- Spring • Temperature • Air • Solenoid
- Electro-Pneumatic Transducer

Part of the



EQUIPMENT SELECTION PROGRAM

For Series 2000 Regulator selection and sizing information, please refer to "Selection Guidelines" on page 139.

For computer aided selection of steam regulators and pilots, please refer to the "Steam Specialty Component Selectors" on the Hoffman Specialty website, www.hoffmanspecialty.com or, for a stand-alone version of EPS-PLUS, contact your local Hoffman Specialty Representative (see back cover for listing).

Basic Selection Data

Select main valve based on required sizing information.
Select type of pilots required.
Select hardware package based on main valve size and type of pilots used.

Example

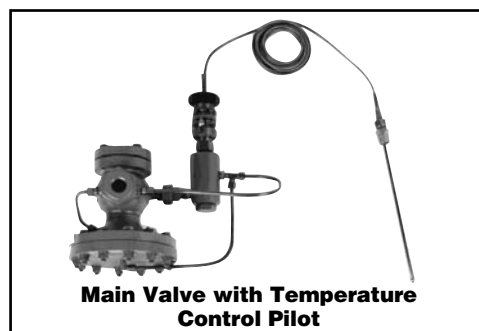
For a 1 1/2" Full Port Valve using a combination of temperature pilot for 50-200°F (10-93°C) range and a spring pilot with 5-60 psig (0.14-4.1 bar) range and a Normally Closed solenoid pilot...

Specify on purchase order

- 402412 Main Valve Full Port
- 400866 STPA-200 Temperature Pilot
- 400278 SPS-60 Spring Pilot
- 402255 Normally Closed Solenoid Pilot
- 400641 Hardware Kit



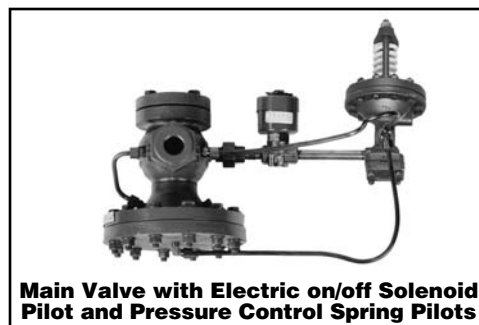
Main Valve with Pressure Control Spring Pilot



Main Valve with Temperature Control Pilot



Main Valve with Pressure Control Air Pilot



Main Valve with Electric on/off Solenoid Pilot and Pressure Control Spring Pilots

***Contact your local Hoffman Specialty representative for information on Noise Silencers for Steam Regulators.**

Series 2000 Main Valves

The Series 2000 Main valve is rugged and stable in response for trouble free, dependable operation over a wide range of conditions and applications.

- For continuous or dead end service within .01% leakage of the valve's rated capacity
- Packless construction eliminates many service problems
- Complete range of port sizes:
 - Full
 - Normal
 - Reduced
 } High Pressure Models
2100, 2200 & 2300
- Low pressure {Models 2150 & 2250}
- Positive travel stop and back up of diaphragm prevents over pressurizing from low pressure side
- Maintains accurate and stable control of pressure or temperature
- Two-ply stainless steel diaphragm provides greater accuracy of control over the entire capacity range and a longer life

- Minimum differential pressure:
Model 2100, 2200 & 230015 psi (1.0 bar)
Model 2150, 22503 psi (.2 bar)
- Maximum differential pressure 150 psi (10.3 bar). A two stage reduction should be used for pressure drops greater than 150 psi (10.3 bar). Models 2150 & 2250 have maximum 30 psi differential pressure
- Maximum temperature 450°F (232°C)

Materials of Construction	
Part	Specifications
Body	Cast Iron ASTM A126-71
Stem	Stainless Steel ASTM A581, A582
Seat	Stainless Steel ASTM A582
Plug	Stainless Steel ASTM A582
Diaphragm	Stainless Steel ASTM A240
Gaskets	Non-asbestos ASTM F-104
Nuts/Bolts	ASTM A325 GRADE 5
Copper Tubing	ASTM B75 ALLOY 122

Selection Guide

Main Valve Body Styles					
Size in.	Model Number				
	2100 Screwed NPT max. pressure 250 psig (17.3 bar)	2150 Screwed NPT max. pressure 30 psig (2.1 bar)	2200 ANSI 125 Flanged max. pressure 125 psig (8.6 bar)	2250 ANSI 125 Flanged max. pressure 30 psig (2.1 bar)	2300 ANSI 250 Flanged max. pressure 250 psig (17.3 bar)
1/2	X				
3/4	X	X			
1	X	X			
1 1/4	X	X			
1 1/2	X	X			
2	X	X	X	X	X
2 1/2			X	X	X
3			X	X	X
4			X	X	X
6			X	X	X

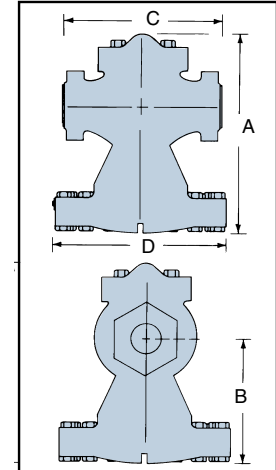
Pressure and/or Temperature Pilot Operated Steam Regulators (continued)

Series 2000 Main Valves

Dimensions (Main Valves)

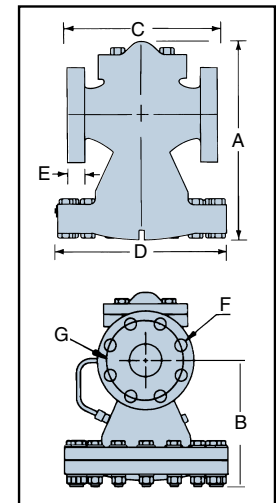
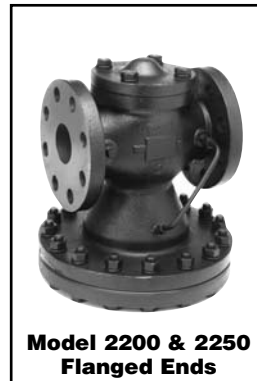
Model 2100 and 2150 Screwed NPT Ends — Maximum pressure 250 psig (17.3 bar)

NPT Valve Size in.	Dimensions in. (mm)			
	A	B	C	D
1/2	7 7/8 (200)	4 3/4 (121)	5 1/8 (130)	7 (178)
3/4	7 7/8 (200)	4 3/4 (121)	5 1/8 (130)	7 (178)
1	7 7/8 (200)	4 3/4 (121)	5 1/8 (130)	7 (178)
1 1/4	9 1/2 (241)	5 3/4 (146)	7 1/2 (191)	8 3/4 (222)
1 1/2	9 1/2 (241)	5 3/4 (146)	7 1/2 (191)	8 3/4 (222)
2	11 3/4 (298)	7 5/8 (194)	9 1/4 (235)	10 (254)



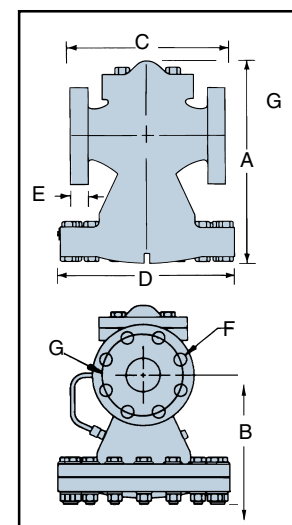
Model 2200 and 2250 Flanged Ends — Maximum pressure 125 psig (8.6 bar)

Valve Size in. (mm)	Dimensions in. (mm)					Bolt Holes		
	A	B	C	D	E	Hole Dia. in. (mm) F	No. of holes	Bolt Circ. in. (mm) G
2 (50)	11 3/4 (298)	7 5/8 (194)	8 (203)	10 (254)	5/8 (16)	3/4 (19)	4	4 3/4 (121)
2 1/2 (65)	15 5/8 (397)	9 5/8 (244)	9 5/8 (238)	12 (305)	1 1/16 (17)	3/4 (19)	4	5 1/2 (140)
3 (80)	16 9/16 (421)	10 3/16 (259)	10 (254)	13 1/8 (333)	3/4 (19)	3/4 (19)	4	6 (152)
4 (100)	19 (483)	12 (305)	11 7/8 (302)	16 5/8 (422)	15/16 (23.8)	3/4 (19)	8	7 1/2 (191)
6 (150)	24 3/16 (614)	15 5/8 (397)	15 1/2 (384)	22 3/4 (578)	1 (25)	7/8 (22)	8	9 1/2 (241)



Model 2300 Flanged Ends — Maximum pressure 250 psig (17.3 bar)

Valve Size in. (mm)	Dimensions in. (mm)					Bolt Holes		
	A	B	C	D	E	Hole Dia. in. (mm) F	No. of holes	Bolt Circ. in. (mm) G
2 (50)	11 3/4 (298)	7 5/8 (194)	8 1/2 (216)	10 (254)	7/8 (22)	3/4 (19)	8	5 (127)
2 1/2 (65)	15 5/8 (397)	9 5/8 (244)	10 (254)	12 (305)	1 (25)	7/8 (22)	8	5 7/8 (149)
3 (80)	16 9/16 (421)	10 3/16 (259)	10 3/4 (273)	13 1/8 (333)	1 1/8 (29)	7/8 (22)	8	6 5/8 (168)
4 (100)	19 (483)	12 (305)	12 1/2 (318)	16 5/8 (422)	1 1/4 (32)	7/8 (22)	8	7 7/8 (200)
6 (150)	24 3/16 (614)	15 5/8 (397)	16 (406)	22 3/4 (578)	1 7/16 (37)	7/8 (22)	12	10 5/8 (270)



Regulators

Series 2000 Main Valves

Steam Capacities — Reduced Port lbs./hr. (kg/hr.)

Models 2100, 2200, 2300

		Main Valve Size									
Pressure psig (bar)		NPT Size, in.					Flanged Valves, in. (mm)				
IN	OUT††	½"NPT	¾"NPT	1"NPT	1¼"NPT	1½"NPT	2"NPT/Flange	2½"(65)	3"(80)	4"(100)	6"(150)
Cv		1.0	3.9	5.9	10.6	16.2	21.1	28.3	41.3	70.2	163
20† (1.4)	0-5 (0-0.34)	50 (23)	220 (100)	280 (127)	480 (218)	620 (281)	860 (390)	1360 (617)	1840 (835)	3090 (1402)	7120 (3230)
25† (1.7)	10 (0.7)	57 (26)	250 (113)	300 (136)	550 (249)	700 (317)	970 (439)	1560 (708)	2100 (953)	3670 (1665)	8200 (3720)
	0-5 (0-0.34)	58 (26)	260 (118)	400 (181)	620 (281)	780 (353)	1080 (489)	1630 (739)	2240 (1016)	3940 (1787)	8500 (3856)
30† (2.1)	15 (1.0)	62 (28)	290 (132)	430 (195)	700 (318)	800 (363)	1100 (499)	1710 (776)	2400 (1089)	4000 (1814)	9500 (4309)
	0-10 (0-0.7)	65 (29)	300 (136)	460 (209)	780 (354)	920 (417)	1180 (535)	1835 (832)	2520 (1143)	4500 (2041)	10170 (4613)
40 (2.8)	25 (1.7)	72 (33)	320 (145)	360 (163)	730 (331)	950 (431)	1260 (572)	2050 (930)	2500 (1134)	4650 (2109)	10000 (4536)
	0-20 (0-1.4)	78 (35)	370 (168)	480 (218)	840 (381)	1150 (522)	1380 (626)	2250 (1021)	3000 (1361)	5400 (2449)	11500 (5216)
50 (3.5)	35 (2.4)	81 (37)	370 (168)	480 (218)	900 (408)	1150 (522)	1450 (658)	2300 (1043)	3200 (1452)	5200 (2359)	11100 (5035)
	30 (2.1)	93 (42)	410 (185)	530 (240)	1050 (476)	1400 (635)	1680 (762)	2700 (1225)	3520 (1597)	6100 (2767)	13000 (5897)
	0-25 (0-1.7)	100 (45)	420 (190)	580 (263)	1100 (499)	1460 (662)	1800 (816)	2800 (1270)	3700 (1678)	6640 (3012)	14000 (6350)
60 (4.2)	45 (3.1)	95 (43)	420 (191)	530 (240)	1000 (453)	1300 (590)	1650 (748)	2650 (1202)	3350 (1520)	5800 (2631)	14000 (6350)
	40 (2.8)	104 (47)	450 (204)	610 (277)	1100 (499)	1600 (726)	1850 (839)	3000 (1361)	3860 (1751)	6800 (3084)	15200 (6895)
	35 (2.4)	111 (50)	470 (213)	660 (299)	1150 (522)	1720 (780)	1970 (894)	3150 (1429)	4200 (1905)	7300 (3311)	15800 (7167)
	0-30 (0-2.1)	115 (52)	480 (218)	680 (308)	1200 (544)	1820 (826)	2200 (998)	3300 (1497)	4450 (2019)	7800 (3538)	17100 (7757)
75 (5.2)	55 (3.8)	118 (53)	550 (249)	720 (327)	1350 (612)	1900 (862)	2150 (975)	3400 (1542)	4800 (2177)	8000 (3629)	16200 (7348)
	50 (3.5)	127 (57)	570 (259)	750 (340)	1400 (635)	2030 (921)	2400 (1089)	3500 (1588)	5050 (2291)	8500 (3856)	16700 (7575)
	45 (3.1)	134 (60)	580 (264)	800 (363)	1430 (649)	2120 (962)	2550 (1157)	3650 (1656)	5300 (2404)	9100 (4128)	17800 (8074)
	0-40 (0-2.8)	138 (62)	590 (268)	860 (390)	1450 (658)	2200 (998)	2650 (1202)	3750 (1701)	5520 (2504)	9300 (4218)	20000 (9072)
100 (6.9)	75 (5.2)	151 (68)	600 (272)	900 (408)	1740 (789)	2450 (1111)	3100 (1406)	4300 (1950)	6200 (2812)	10400 (4717)	21200 (9616)
	60 (4.2)	174 (78)	670 (304)	990 (449)	1830 (830)	2750 (1247)	3450 (1565)	5000 (2268)	7000 (3175)	11300 (5126)	25000 (11340)
	0-50 (0-3.5)	177 (80)	690 (312)	1000 (454)	1870 (848)	2880 (1306)	3600 (1633)	5100 (2313)	7300 (3311)	11970 (5430)	27000 (12247)
125 (8.6)	100 (6.9)	175 (79)	650 (295)	1000 (453)	1900 (862)	2700 (1225)	3350 (1520)	4950 (2245)	7000 (3175)	12000 (5443)	24000 (10886)
	75 (5.2)	213 (97)	750 (340)	1200 (544)	2150 (975)	3250 (1474)	4300 (1950)	6000 (2722)	8350 (3788)	14000 (6350)	30000 (13608)
	0-50 (0-3.5)	215 (98)	800 (363)	1230 (558)	2200 (998)	3400 (1542)	4400 (1996)	6100 (2767)	8700 (3946)	14600 (6623)	32200 (14606)
150 (10.3)	125 (8.6)	198 (90)	810 (367)	1200 (544)	2300 (1043)	3250 (1474)	4100 (1860)	5750 (2608)	8000 (3629)	13600 (6169)	27800 (12610)
	100 (6.9)	240 (109)	930 (422)	1400 (635)	2750 (1247)	3850 (1746)	4800 (2177)	6900 (3130)	9500 (4309)	16300 (7399)	35700 (16194)
	0-75 (0-5.2)	254 (115)	950 (431)	1480 (671)	2760 (1252)	4000 (1814)	5200 (2359)	7100 (3221)	10400 (4717)	17200 (7802)	39500 (17917)
175 (12.1)	150 (10.3)	220 (100)	920 (417)	1400 (635)	2600 (1179)	3600 (1633)	4500 (2041)	6600 (2994)	9300 (4218)	15300 (6940)	31150 (14129)
	125 (8.6)	226 (103)	1050 (476)	1570 (712)	3000 (1361)	4360 (1978)	5320 (2413)	7600 (3447)	10800 (4898)	18200 (8255)	40150 (18212)
	100 (6.9)	290 (132)	1100 (499)	1640 (744)	3100 (1406)	4600 (2087)	5800 (2631)	7900 (3583)	11700 (5307)	19960 (9053)	45700 (20729)
	0-75 (0-5.2)	295 (134)	1150 (522)	1680 (762)	3200 (1452)	4650 (2109)	5800 (2631)	8000 (3629)	11750 (5329)	20100 (9117)	46400 (21047)
200 (13.8)	150 (10.3)	291 (132)	1130 (513)	1650 (748)	3100 (1406)	4600 (2087)	5800 (2630)	8400 (3810)	11380 (5162)	16900 (7666)	44500 (20185)
	125 (8.6)	327 (148)	1200 (544)	1850 (839)	3250 (1474)	5000 (2268)	6500 (2948)	9100 (4128)	13100 (5942)	20100 (9117)	52200 (23678)
	0-100 (0-6.9)	330 (150)	1250 (567)	1900 (862)	3300 (1497)	5200 (2359)	6800 (3084)	9100 (4128)	13300 (6033)	22600 (10251)	52500 (23814)
225 (15.5)	175 (12.1)	315 (143)	1260 (572)	1750 (794)	3150 (1429)	5150 (2336)	6400 (2903)	8800 (3992)	12330 (5593)	21500 (9752)	45800 (20775)
	150 (10.3)	355 (161)	1370 (621)	2000 (907)	3650 (1656)	5730 (2599)	7150 (3243)	9870 (4477)	14000 (6350)	24080 (10923)	53300 (24177)
	0-125 (0-8.6)	370 (168)	1430 (649)	2050 (930)	4020 (1823)	5950 (2699)	7500 (3402)	10300 (4672)	14760 (6695)	25400 (11521)	58640 (26599)
250 (17.2)	200 (13.8)	339 (154)	1350 (612)	1880 (853)	3400 (1542)	5500 (2495)	6850 (3107)	9090 (4123)	13260 (6015)	23110 (10483)	50400 (22861)
	175 (12.1)	380 (172)	1480 (671)	2150 (975)	3970 (1801)	6150 (2799)	7680 (3483)	10400 (4717)	15050 (6827)	25860 (11730)	58500 (26536)
	150 (10.3)	405 (184)	1550 (703)	2250 (1021)	4440 (2014)	6600 (2994)	8300 (3765)	11300 (5126)	16300 (7394)	27800 (12610)	63400 (28758)
	0-125 (0-8.6)	410 (186)	1550 (703)	2250 (1021)	4500 (2041)	6650 (3016)	8330 (3778)	11360 (5153)	16400 (7439)	28100 (12746)	64300 (29166)

Note: Capacity based on saturated steam at valve inlet. Pressure differential must be at least 15 psi (6.9 bar) for valve to operate.
 †For inlet pressures below 30 psig (2.1 bar), refer to the Low Pressure Steam Capacity Chart, Models 2150 and 2250, page 48.
 ††When the outlet steam pressure is 50% or less of the inlet pressure, always use the lowest outlet pressure shown in the capacity table.

Series 2000 Main Valves

Steam Capacities – Low Pressure lbs./hr. (kg/hr.)

Models 2150, 2250

		Main Valve Size								
Pressure psig (bar)		NPT Size, in.					Flanged Valves, in. (mm)			
IN	OUT††	¼"NPT	1"NPT	1¼"NPT	1½"NPT	2"NPT/Flange	2½"(65)	3"(80)	4"(100)	6"(150)
Cv		6.1	10.5	21.5	26.8	43	53.2	63.8	127.1	347.9
5 (.35)	2 (.14)	100 (45)	200 (91)	450 (204)	500 (227)	750 (340)	950 (431)	1050 (476)	2350 (1066)	7600 (3447)
	0-1 (0-07)	140 (64)	240 (109)	490 (222)	550 (249)	850 (386)	1075 (488)	1200 (544)	2500 (1134)	7700 (3493)
6 (.42)	3 (.21)	105 (48)	210 (95)	470 (213)	540 (245)	800 (363)	1075 (488)	1150 (522)	2400 (1089)	7700 (3493)
	0-1 (0-07)	160 (73)	295 (134)	540 (245)	660 (299)	1050 (476)	1200 (544)	1350 (612)	2600 (1179)	8000 (3629)
7 (.49)	4 (.28)	115 (52)	215 (98)	485 (220)	570 (259)	870 (395)	1150 (522)	1300 (590)	2450 (1111)	7900 (3583)
	0-2 (0-14)	175 (79)	325 (147)	560 (254)	760 (345)	1200 (544)	1300 (590)	1500 (680)	2800 (1270)	8300 (3765)
8 (.56)	5 (.35)	120 (54)	220 (100)	500 (227)	600 (272)	940 (426)	1200 (544)	1400 (635)	2550 (1157)	8150 (3697)
	0-3 (0-21)	180 (82)	340 (154)	630 (286)	800 (363)	1250 (567)	1350 (612)	1550 (703)	3250 (1474)	9243 (4192)
9 (.62)	6 (.42)	125 (57)	230 (104)	520 (236)	630 (286)	1000 (454)	1350 (612)	1550 (703)	2800 (1270)	8400 (3810)
	4 (.28)	190 (86)	350 (159)	650 (295)	815 (370)	1320 (599)	1500 (680)	1800 (816)	3350 (1520)	9600 (4355)
	0-2 (0-14)	230 (104)	405 (184)	720 (327)	940 (426)	1500 (680)	1600 (726)	1900 (862)	3550 (1610)	9700 (4400)
10 (0.7)	7 (.49)	130 (59)	240 (109)	540 (245)	670 (304)	1050 (476)	1500 (680)	1650 (748)	3000 (1361)	10300 (4672)
	5 (.35)	200 (91)	350 (159)	730 (331)	860 (390)	1400 (635)	1750 (794)	1900 (862)	3450 (1565)	11300 (5126)
	0-2 (0-14)	250 (113)	420 (191)	820 (372)	1040 (472)	1600 (726)	1800 (816)	2100 (953)	3600 (1633)	12000 (5443)
12 (.83)	9 (.62)	140 (64)	250 (113)	570 (259)	700 (318)	1100 (499)	1750 (794)	1800 (816)	3300 (1497)	10700 (4854)
	7 (.49)	210 (95)	360 (163)	750 (340)	800 (363)	1460 (662)	2000 (907)	2300 (1043)	3600 (1633)	11200 (5080)
	5 (.35)	250 (113)	410 (186)	900 (408)	1050 (476)	1700 (771)	2150 (975)	2650 (1202)	4000 (1814)	12000 (5443)
	0-2 (0-14)	300 (136)	480 (218)	940 (426)	1200 (544)	1850 (839)	2300 (1043)	2700 (1225)	4400 (1996)	12500 (5670)
15 (6.9)	12 (.83)	150 (68)	270 (122)	600 (272)	740 (336)	1170 (531)	1800 (816)	1900 (862)	3600 (1633)	11000 (4990)
	10 (.7)	215 (98)	385 (175)	800 (363)	920 (417)	1500 (680)	2250 (1021)	2550 (1157)	4200 (1905)	12500 (5670)
	8 (.56)	260 (118)	450 (204)	940 (426)	1100 (499)	1750 (794)	2400 (1089)	2900 (1315)	4800 (2177)	14000 (6350)
	5 (.35)	315 (143)	510 (231)	1000 (454)	1250 (567)	2020 (916)	2550 (1157)	3200 (1452)	5400 (2449)	14300 (6486)
0-2.5 (0-17)	345 (156)	540 (245)	1040 (472)	1360 (617)	2200 (998)	2600 (1179)	3300 (1497)	6000 (2722)	14500 (6577)	
20 (1.4)	17 (1.2)	160 (73)	290 (132)	640 (290)	800 (363)	1300 (590)	1450 (658)	2000 (907)	3800 (1724)	14000 (6350)
	15 (1.0)	220 (100)	400 (181)	835 (379)	1140 (517)	1850 (839)	2000 (907)	3100 (1406)	5000 (2268)	16000 (7258)
	10 (.7)	360 (163)	600 (272)	1150 (522)	1420 (644)	2300 (1043)	2500 (1134)	3950 (1792)	7200 (3266)	16500 (7484)
	0-5 (0-35)	400 (181)	670 (304)	1250 (567)	1630 (739)	2650 (1202)	2650 (1202)	4550 (2064)	7300 (3311)	17000 (7711)
25 (1.7)	22 (1.5)	170 (77)	320 (145)	670 (304)	870 (395)	1400 (635)	1750 (794)	2200 (998)	4000 (1814)	12000 (5443)
	20 (1.4)	230 (104)	420 (191)	865 (392)	1100 (499)	1800 (816)	2400 (1089)	3300 (1497)	6000 (2722)	14000 (6350)
	15 (1.0)	335 (160)	650 (295)	1215 (551)	1490 (676)	2400 (1089)	2700 (1225)	4000 (1814)	8200 (3720)	16500 (7484)
	10 (.7)	430 (195)	720 (327)	1325 (601)	1700 (771)	2800 (1270)	3000 (1361)	4600 (2087)	8300 (3765)	19500 (8845)
	0-5 (0-35)	460 (209)	770 (349)	1380 (626)	1900 (862)	3100 (1406)	3200 (1452)	5000 (2268)	8300 (3765)	20000 (9072)
30 (2.1)	27 (1.9)	180 (82)	330 (150)	690 (313)	935 (424)	1500 (680)	2000 (907)	2200 (998)	4200 (1905)	12500 (5670)
	25 (1.7)	240 (109)	430 (195)	885 (401)	1225 (556)	1900 (862)	2450 (1111)	3380 (1533)	7020 (3184)	14700 (6668)
	20 (1.4)	375 (170)	670 (304)	1250 (567)	1550 (703)	2500 (1134)	2750 (1247)	4070 (1846)	8800 (3992)	17300 (7847)
	15 (1.0)	450 (204)	760 (345)	1375 (624)	1770 (803)	2950 (1338)	3150 (1429)	4660 (2114)	9080 (4119)	20000 (9072)
	0-10 (0-7)	520 (236)	870 (395)	1575 (714)	2100 (953)	3400 (1542)	3600 (1633)	5480 (2486)	9300 (4218)	21300 (9662)

Capacity based on saturated steam at valve inlet. Maximum inlet pressure 30 psi (2.1 bar).

Capacity based on 1 psi (.07 bar) accuracy of control. Pressure differential must be at least 3 psi (.21 bar) in order for valve to operate.

Series 2000 Main Valve Ordering Information

Series 2000 main valves, pilots, wells, and hardware kits **MUST BE ORDERED** as separate line items.

Model Number	Part Number	Size in. (mm)	Port	End Connections	Maximum Pressure psig (bar)	Weight lbs. (kg)
2100	402439	½ NPT	Full	Screwed NPT	250 (17.3)	23 (10.4)
2100	402436	½ NPT	Normal	Screwed NPT	250 (17.3)	23 (10.4)
2100	402433	½ NPT	Reduced	Screwed NPT	250 (17.3)	23 (10.4)
2100	402442	¾ NPT	Full	Screwed NPT	250 (17.3)	23 (10.4)
2100	402457	¾ NPT	Normal	Screwed NPT	250 (17.3)	23 (10.4)
2100	402460	¾ NPT	Reduced	Screwed NPT	250 (17.3)	23 (10.4)
2100	402445	1 NPT	Full	Screwed NPT	250 (17.3)	23 (10.4)
2100	402463	1 NPT	Normal	Screwed NPT	250 (17.3)	23 (10.4)
2100	402466	1 NPT	Reduced	Screwed NPT	250 (17.3)	23 (10.4)
2100	402409	1¼ NPT	Full	Screwed NPT	250 (17.3)	44 (20)
2100	402469	1¼ NPT	Normal	Screwed NPT	250 (17.3)	44 (20)
2100	402472	1¼ NPT	Reduced	Screwed NPT	250 (17.3)	44 (20)
2100	402412	1½ NPT	Full	Screwed NPT	250 (17.3)	44 (20)
2100	402475	1½ NPT	Normal	Screwed NPT	250 (17.3)	44 (20)
2100	402478	1½ NPT	Reduced	Screwed NPT	250 (17.3)	44 (20)
2100	402448	2 NPT	Full	Screwed NPT	250 (17.3)	64 (29)
2100	402451	2 NPT	Normal	Screwed NPT	250 (17.3)	64 (29)
2100	402454	2 NPT	Reduced	Screwed NPT	250 (17.3)	64 (29)
2200	402592	2 (50)	Full	Flanged	125 (8.6)	67 (30)
2200	402595	2 (50)	Normal	Flanged	125 (8.6)	67 (30)
2200	402598	2 (50)	Reduced	Flanged	125 (8.6)	67 (30)
2200	402541	2½ (65)	Full	Flanged	125 (8.6)	175 (79)
2200	402544	2½ (65)	Normal	Flanged	125 (8.6)	175 (79)
2200	402547	2½ (65)	Reduced	Flanged	125 (8.6)	175 (79)
2200	402523	3 (80)	Full	Flanged	125 (8.6)	215 (98)
2200	402526	3 (80)	Normal	Flanged	125 (8.6)	215 (98)
2200	402529	3 (80)	Reduced	Flanged	125 (8.6)	215 (98)
2200	402505	4 (100)	Full	Flanged	125 (8.6)	297 (135)
2200	402508	4 (100)	Normal	Flanged	125 (8.6)	297 (135)
2200	402511	4 (100)	Reduced	Flanged	125 (8.6)	297 (135)
2200	402487	6 (150)	Full	Flanged	125 (8.6)	535 (243)
2200	402490	6 (150)	Normal	Flanged	125 (8.6)	535 (243)
2200	402493	6 (150)	Reduced	Flanged	125 (8.6)	535 (243)
2300	402601	2 (50)	Full	Flanged	250 (17.3)	70 (32)
2300	402604	2 (50)	Normal	Flanged	250 (17.3)	70 (32)
2300	402607	2 (50)	Reduced	Flanged	250 (17.3)	70 (32)
2300	402532	2½ (65)	Full	Flanged	250 (17.3)	181 (82)
2300	402535	2½ (65)	Normal	Flanged	250 (17.3)	181 (82)
2300	402538	2½ (65)	Reduced	Flanged	250 (17.3)	181 (82)
2300	402514	3 (80)	Full	Flanged	250 (17.3)	221 (100)
2300	402517	3 (80)	Normal	Flanged	250 (17.3)	221 (100)
2300	402520	3 (80)	Reduced	Flanged	250 (17.3)	221 (100)
2300	402496	4 (100)	Full	Flanged	250 (17.3)	305 (138)
2300	402499	4 (100)	Normal	Flanged	250 (17.3)	305 (138)
2300	402502	4 (100)	Reduced	Flanged	250 (17.3)	305 (138)
2300	402481	6 (150)	Full	Flanged	250 (17.3)	552 (250)
2300	400185	6 (150)	Normal	Flanged	250 (17.3)	552 (250)
2300	402484	6 (150)	Reduced	Flanged	250 (17.3)	552 (250)
2150	402664	¾ NPT	NA	Screwed NPT	30 (2.1)	22.5 (10.2)
2150	402667	1 NPT	NA	Screwed NPT	30 (2.1)	22.5 (10.2)
2150	402649	1¼ NPT	NA	Screwed NPT	30 (2.1)	42 (19)
2150	402652	1½ NPT	NA	Screwed NPT	30 (2.1)	42 (19)
2150	402655	2 NPT	NA	Screwed NPT	30 (2.1)	62 (28)
2250	402658	2 (50)	NA	Flanged	30 (2.1)	67 (30)
2250	400751	2½ (65)	NA	Flanged	30 (2.1)	175 (79)
2250	400752	3 (80)	NA	Flanged	30 (2.1)	215 (98)
2250	400754	4 (100)	NA	Flanged	30 (2.1)	297 (135)
2250	400757	6 (150)	NA	Flanged	30 (2.1)	535 (243)

Hardware Kit Ordering Information

One kit per main valve is required to connect the pilot valve(s).

Part Number	Description	Size in.	Wt. (Approx.) lbs. (kg)
400638	Kit used when main valve has temperature or solenoid pilots only	½ - 2 NPT and 2" (50mm)	2 (1.0)
400640	Kit used when main valve has temperature or solenoid pilots only	2½ - 6 (65 - 150mm)	4 (2.0)
400641	Kit used when main valve has a spring or air pressure pilot or in combination with temperature or solenoid pilots	½ - 2 NPT and 2" (50mm)	1 (0.5)
400643	Kit used when main valve has a spring or air pressure pilot or in combination with temperature or solenoid pilots	2½ - 6 (65 - 150mm)	2 (1.0)

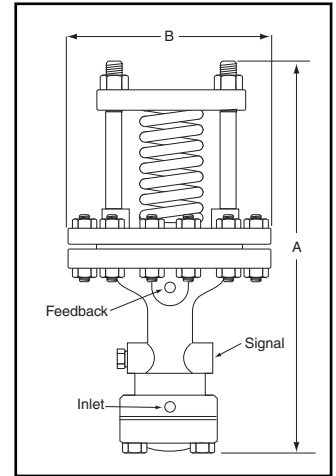
Pressure and/or Temperature Pilot Operated Steam Regulators (continued)

Series SPS Spring Pressure Control Pilots

The Series SPS Spring pilot valves are designed for applications such as steam to hydronic converters, domestic hot water, manufacturing process, or

others that require constant outlet pressure. The Series SPS can also be used in conjunction with a series STPA Temperature pilot as a pressure limiter.

- Tight shut-off provided by hardened stainless steel disc and seat
- Packless construction eliminates seals that wear out and leak
- Travel stop and cover on diaphragm helps prevent over pressurization damage
- Removable strainer helps prevent debris from entering pilot
- Maximum temperature 450°F (232°C)
- Maximum inlet operating pressure 250 psig (17.3 bar)
- Outlet Pressure:
 - Minimum 2 psig (0.1 bar)
 - Maximum 175 psig (11.9 bar)
- Normal accuracy ±1 psig (0.07 bar)



Dimensions in. (mm)

Model	A	B
SPS-30	8¾ (222)	4⅝ (117)
SPS-60	8¾ (222)	4⅝ (117)
SPS-175	8¾ (222)	4⅝ (117)

Materials of Construction	
Part	Specifications
Body	Cast Iron ASTM A126
Stem	Stainless Steel ASTM A582
Seat Ring	Stainless Steel ASTM A582
Diaphragm Screw	Steel ASTM A108
Pusher Plate	Steel ASTM A108
Adjusting Spring	Steel ASTM A229
Strainer	Stainless Steel ASTM A167
Diaphragm	Stainless Steel ASTM A666
Gaskets	Grafoil
Disc	Stainless Steel ASTM A276

Ordering Information

Spring Pilots

Model Number	Part Number	Outlet Pressure Range psig (bar)	Maximum Pressure psig (bar)	Weight (Approx.) lbs. (kg)	Spring Color
SPS-30	400277	2 - 30 (0.1-2.0)	250 (17.3)	7 (3.2)	Blue
SPS-60	400278	5 - 60 (0.3-4.1)	250 (17.3)	7 (3.2)	Red
SPS-175	400280	20 - 175 (1.4-11.9)	250 (17.3)	7 (3.2)	Gold

Note: When Spring pilots are used with Safety Relief valves, the Safety Relief valve must be at least 5 psi (.35 bar) higher than the desired steam operating pressure.

Series AP Air Pressure Control Pilots

The Series AP Air Pressure pilot valves are designed for applications such as injection molding, lab equipment, or others that require frequent outlet pressure changes. The **required Air PRV Regulator** allows remote adjustment of the outlet steam pressure.

- Lightweight, compact size prevents strain on mounting pipes
- Tight shut-off provided by hardened stainless steel pin and seat
- Packless construction eliminates seals that wear out and leak
- Travel stop and cover on diaphragm helps prevent over pressurization damage
- Removable strainer helps prevent debris from entering pilot
- No bias relay required
- Compatible with Pneumatic Temperature Pilots
- Maximum temperature 450°F (232°C)
- Maximum operating pressure 250 psig (17.3 bar)

Materials of Construction	
Part	Specifications
Body	Steel ASTM A108
Pin	Stainless Steel ASTM A581
Seat	Stainless Steel ASTM A582
Diaphragm Button	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM A313
Strainer	Stainless Steel ASTM A240
Diaphragm	Beryllium Copper ASTM B194
Upper Diaphragm	Stainless Steel ASTM A240
Gaskets	Copper ASTM B152

Ordering Information

Air Pilots

Model Number	Part Number	Pressure Ratio	Maximum Pressure lbs. (bar)	Weight (Approx.) lbs. (kg)
AP-1A	400556	1 : 1	250 (17.3)	4 (1.8)
AP-4A	400557	4 : 1	250 (17.3)	5 (2.3)

Air PRV Regulators

The Model Air PRV is designed to regulate air pressure directly to Air Pressure Control Pilots.

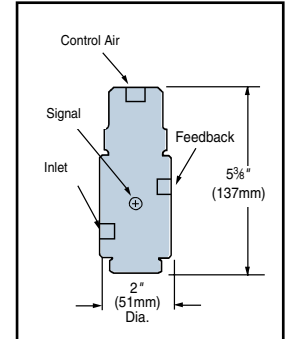
Ordering Information

Air PRV Regulators

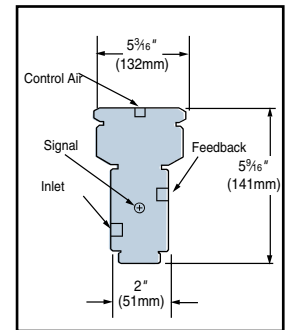
Model Number	Part Number	Weight (Approx.) lbs. (kg)
Air PRV (Regulator w/gauge)	402722	1 (.5)



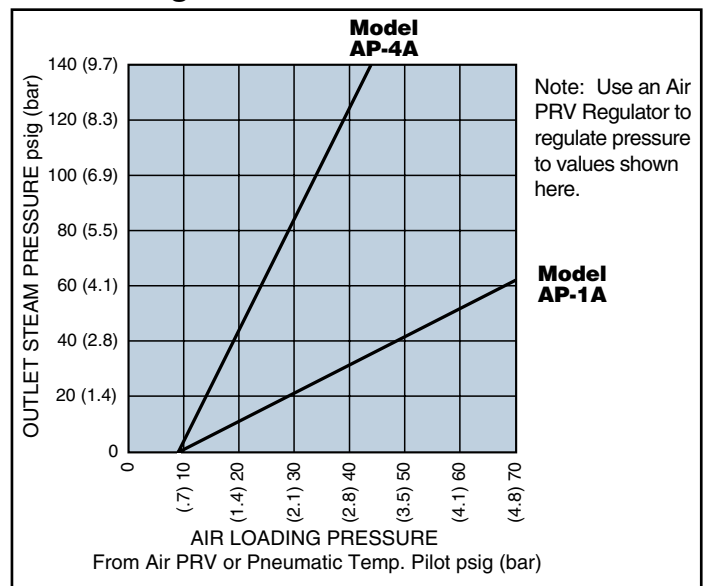
Model AP-1A



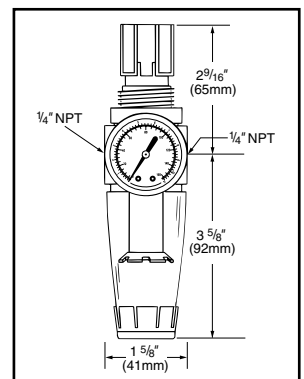
Model AP-4A



Air Loading Data



Air PRV Regulator

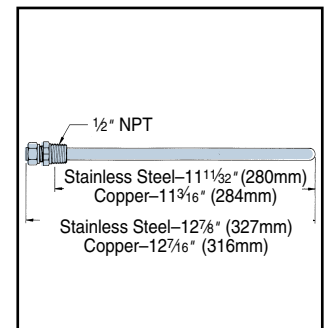
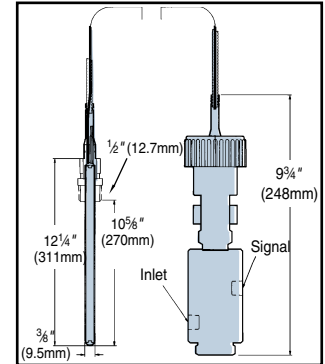


**Pressure and/or Temperature Pilot Operated Steam Regulators (continued)
Series STPA Self-Contained Temperature Control Pilots**

The Series STPA Self-Contained Temperature pilot valves are designed for applications such as steam to water converters, domestic hot water, manufacturing

process, or others that require accurate temperature control of heated fluids.

- Lightweight, compact size prevents strain on mounting pipes
- Easy temperature adjustment with calibrated dial
- Fast, easy installation
- Non-metallic, lockable temperature adjustment knob
- Tight shut-off provided by hardened stainless steel plug and seat
- Packless construction eliminates seals that wear out and leak
- Removable strainer helps prevent debris from entering pilot
- Bulb overhear protection up to 100°F (55.6°C)
- Durable 1/2" (15mm) NPT copper bulb with standard 10 ft. (3m) armored capillary (other lengths available)
- Optional Wells:
 - Copper
 - Stainless Steel
- Accuracy of control ± 10°F (± 5.6°C) with system recirculation
- Maximum temperature 450°F (232°C)
- Maximum operating pressure 250 psig (17.3 bar)



Materials of Construction	
Part	Specifications
Body	Steel ASTM A108
Plug	Stainless Steel ASTM A582
Seat	Stainless Steel ASTM A582
Brass Components	CDA 360 ASTM B16
Tubing	Copper ASTM B75
Springs	Stainless Steel ASTM A313
Strainer	Stainless Steel ASTM A240
Gasket	Copper ASTM B152

Ordering Information

Wells

Model	Part Number	Weight (Approx.) lbs. (kg)
Well, Copper	405529	1 (.5)
Well, SS	405532	3 (1.4)

Note: These wells are only for use with Self-Contained Temperature Pilots.

Ordering Information

Self-Contained Temperature Pilots (Optional wells must be ordered separately)

Model Number	Part Number	Temperature Range °F (°C)	Capillary Length ft. (m)	Maximum Pressure psig (bar)	Weight lbs. (kg)
STPA-200	400866	50–200 (10–93)	10 (3)	250 (17.3)	6 (2.7)
STPA-200	400868	50–200 (10–93)	15 (4.6)	250 (17.3)	6 (2.7)
STPA-200	400869	50–200 (10–93)	20 (6.1)	250 (17.3)	6 (2.7)
STPA-200	400874	50–200 (10–93)	25 (7.6)	250 (17.3)	6 (2.7)
STPA-200	400875	50–200 (10–93)	30 (9.1)	250 (17.3)	6 (2.7)
STPA-300	400880	150–300 (66–149)	10 (3)	250 (17.3)	6 (2.7)
STPA-300	400881	150–300 (66–149)	15 (4.6)	250 (17.3)	6 (2.7)
STPA-300	400884	150–300 (66–149)	20 (6.1)	250 (17.3)	6 (2.7)
STPA-300	400889	150–300 (66–149)	25 (7.6)	250 (17.3)	6 (2.7)
STPA-300	400890	150–300 (66–149)	30 (9.1)	250 (17.3)	6 (2.7)
STPA-400	400892	250–400 (121–204)	10 (3)	250 (17.3)	6 (2.7)

Ordering Information

Actuator Assemblies (includes actuator, knob and set screw)

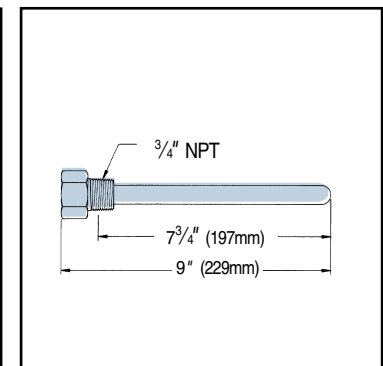
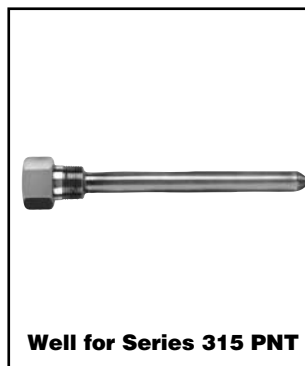
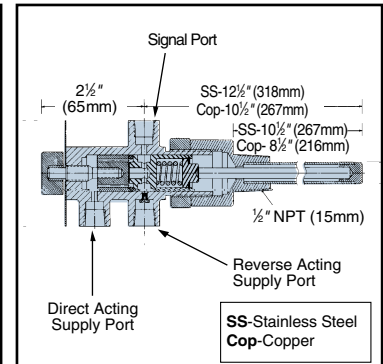
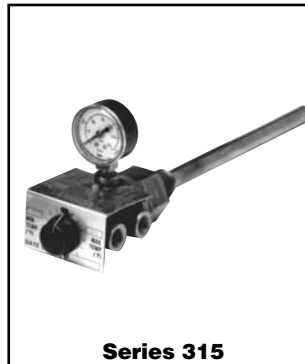
Model Number	Part Number	Temperature Range °F	Temperature Range (°C)	Capillary Length ft. (m)	Weight lbs. (kg)
STPA-200	400844	50–200	(10–93)	10 (3)	3 (1.4)
STPA-200	400845	50–200	(10–93)	15 (4.6)	3 (1.4)
STPA-200	400847	50–200	(10–93)	20 (6.1)	3 (1.4)
STPA-200	400848	50–200	(10–93)	25 (7.6)	3 (1.4)
STPA-200	400850	50–200	(10–93)	30 (9.1)	3 (1.4)
STPA-300	400851	150–300	(66–149)	10 (3)	3 (1.4)
STPA-300	400853	150–300	(66–149)	15 (4.6)	3 (1.4)
STPA-300	400854	150–300	(66–149)	20 (6.1)	3 (1.4)
STPA-300	400856	150–300	(66–149)	25 (7.6)	3 (1.4)
STPA-300	400857	150–300	(66–149)	30 (9.1)	3 (1.4)
STPA-400	400859	250–400	(121–204)	10 (3)	3 (1.4)

Pneumatic Temperature Control Pilots

Series 315 PNT For Shop Quality Air

The Series 315 PNT Pneumatic Temperature pilots are designed for applications such as refineries and factories, or others where rapidly changing load requirements occur. Pneumatic temperature pilots provide greater accuracy than self-contained temperature pilots. **An Air Pressure Pilot, an Air PRV Regulator and a Series 2000 Main Valve Steam Regulator *must* be used with the Model 315 PNT.**

- Lightweight, compact size prevents strain on mounting pipes
- Can be remotely located from the Main Valve and Air Pressure Pilot
- Bi-metallic temperature sensing
- Bulb options:
 - Brass
 - Teflon® coated brass
 - Stainless Steel
- Direct or reverse acting modes of operation
- Optional wells (for brass bulb models only) allow bulb removal without draining system
- Air Consumption 0.50 scfm (.014m³)
- Supply Air Pressure
 - Nominal 18 psig (1.2 bar)
 - Minimum 12 psig (0.8 bar)
 - Maximum 36 psig (2.4 bar)
- Signal pressure at set-point temperature
 - 50% of supply pressure
 - 9 psig (0.6 bar) at nominal supply pressure
 - 6 psig (0.4 bar) at minimum supply pressure
 - 18 psig (1.2 bar) at maximum supply pressure
- Temperature Control Range
 - 50-300°F (10-149°C)
 - 200-450°F (93-232°C)
- Accuracy of control ± 4°F (± 2.2°C) with system recirculation



Ordering Information

Pneumatic Temperature Pilot

Model Number	Part Number	Temperature Range °F (°C)	Weight (Approx.) lbs. (kg)
315 Brass	402967	50-300 (10-149)	3 (1.4)
315 Teflon coated Brass	402970	50-300 (10-149)	3 (1.4)
315 Stainless Steel	402973	50-300 (10-149)	3 (1.4)
315 Stainless Steel	400461	200-450 (90-232)	3 (1.4)

Wells (Only for use with Model 315 with a brass bulb)

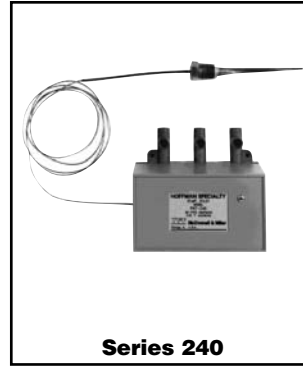
Model Number	Part Number	Weight (Approx.) lbs. (kg)
Well, Brass	400400	2 (.9)
Well, Teflon coated Brass	400463	2 (.9)
Well, Stainless Steel	403803	2 (.9)

Refer to Ordering Information on:
 – Air Pressure Control Pilots
 – Air PRV Regulators

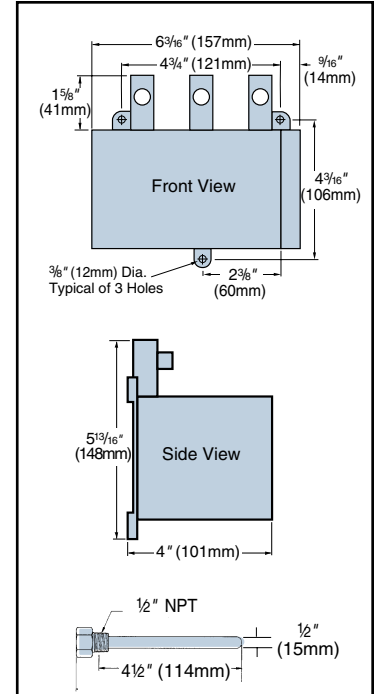
Series 240 PNT For Control Quality Air

The Model 240 PNT Pneumatic Temperature pilots are designed for applications such as offices, schools, hospitals, or others where the unit will operate with a pneumatic temperature control system. The Model 240 PNT is specifically designed for the low air consumption required in such systems. They are also recommended for environments requiring rapidly changing loads or close temperature control. **An Air Pressure Pilot, an Air PRV Regulator and a Series 2000 Main Valve Steam Regulator *must* be used with the Model 240 PNT.**

- Low air consumption of 0.008 scfm (.00022m³)
- Calibrated temperature dial allows easy adjustment
- Copper sensing element
- Copper well (included) allows bulb removal without draining system
- Capillary length 6 ft. (1.8m)
- Supply Air Pressure
 - Nominal 20 psig (1.4 bar)
 - Minimum 15 psig (1.0 bar)
 - Maximum 30 psig (2.1 bar)
- Signal Range
 - 0.5 psig (.035 bar) minimum outlet pressure to within 0.5 psig (.035 bar) of supply pressure
- Temperature Control Range
 - 20° to 240°F (-7 to 116°C)
- Ambient Temperature Range
 - 40° to 150°F (4 to 66°C)
- Accuracy of control ± 4°F (± 2.2°C) with system recirculation



Series 240



Regulators

Ordering Information

Pneumatic Temperature Pilots

Model Number	Part Number	Weight (Approx.) lbs. (kg)
240 PNT	400931	3 (1.4)

Refer to Ordering Information on:

- Air Pressure Control Pilots
- Air PRV Regulators

Electronic Temperature Control Pilots

Series GT610-IP Electro-Pneumatic Transducer

The Series GT610-IP Electro-Pneumatic transducer is designed for temperature control applications with a 35 psig (2.4 bar) clean filtered air supply and where a 4 to 20 mA DC or 0 to 10 VDC signal is provided by an electronic sensor. **An Air Pressure Pilot, an Air PRV Regulator and a Series 2000 Main Valve Steam Regulator *must* be used with the Series GT610-IP Relay.**

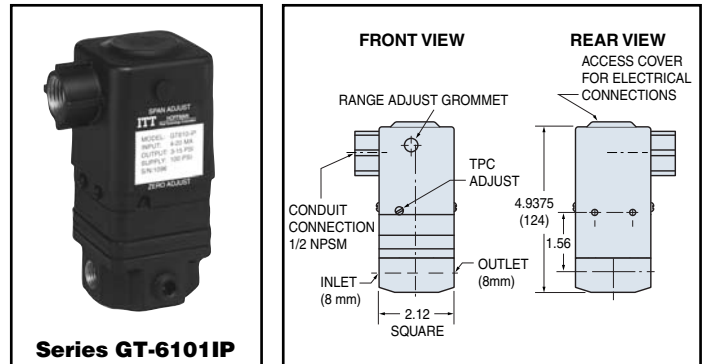
- 6-30 psig (.42 - 2.1 bar) modulated air output
- Optional gauge ports available to monitor output signal
- Supply pressure:
 - Minimum 15 psig (1.0 bar)
 - Maximum 36 psig (2.5 bar)
- Maximum steam output pressure from main valve:
 - 21 psig (1.5 bar) model AP-1 air pressure pilot
 - 84 psig (5.8 bar) model AP-4 air pressure pilot

Ordering Information

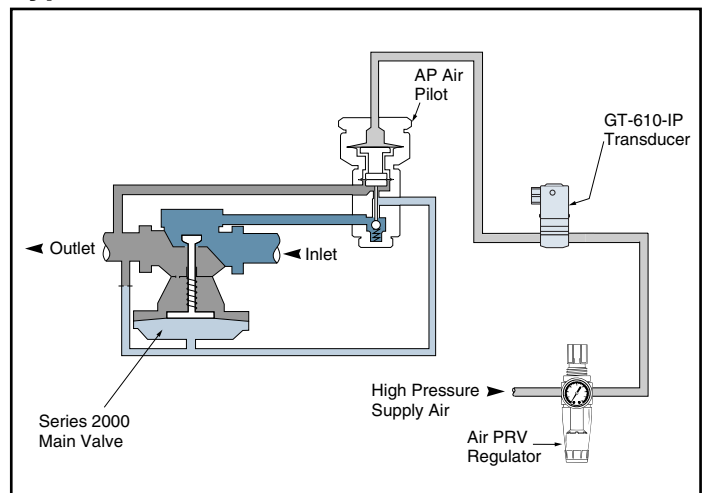
Model Number	Part Number	Input Signal	Maximum Air Pressure psig (bar)	Weight lbs. (kg)
GT6108	401252	4 - 20 mA	36 (2.5)	2.5 (1.2)
GT6102	401253	0 - 10 VDC	36 (2.5)	2.5 (1.2)

Refer to Ordering Information on:

- Air Pressure Control Pilots
- Air PRV Regulators



Typical Installation

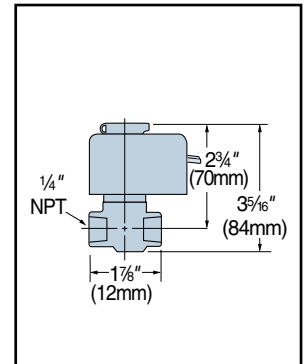


Series SLD Solenoid Pilots

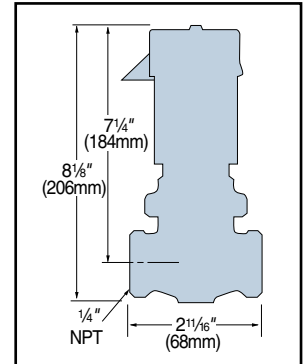
Solenoid pilots are used with other pilots for overrides in domestic hot water or safety applications. The “Normally Closed” Solenoid pilots are designed to shut down the Main valve if there is a power failure.

“Normally Open” Solenoid pilots are designed for heating, or other applications where overheating will not be harmful, since they remain open during a power failure.

- Remote control
- Emergency shut-down feature
- Automatic start-up and shut-down capability (timer required)
- More economical to use than electric shut-off valves
- Operating modes
 - Normally Open
 - Normally Closed
- 120 volt electrical service required
- Maximum operating pressure 250 psig (17.3 bar)



⚠ WARNING	
	<p>Do not use “Normally Open” Solenoid pilots for direct temperature control in domestic water applications. Failure to follow this warning can cause serious burns, personal injury, or death.</p>



Ordering Information

Model Number	Part Number	Operating Mode	Inlet Pressure Operating Range psig (bar)		Weight (Approx.) lbs. (kg)
SLD-100	402247	Normally Open	0-100	(0-6.9)	1 1/2 (.68)
SLD-250	402259	Normally Open	0-250	(0-17.3)	6 (2.7)
SLD-100	402255	Normally Closed	0-100	(0-6.9)	1 1/2 (.68)
SLD-250	402258	Normally Closed	0-250	(0-17.3)	6 (2.7)

Self-Contained Pressure Reducing Valves

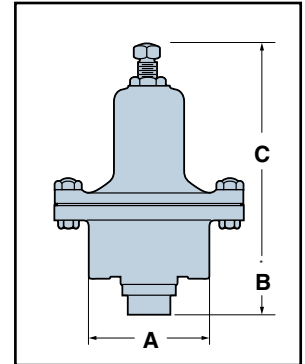
Series 754

The Series 754 is designed for applications such as commercial kitchens, labs, dry cleaners, or others that require system pressure reduction of steam in small equipment.

- For steam service
- For controlling steam pressure, where an accurate tight closing valve is required, on applications such as:
 - Small sterilizers
 - Cooking kettles or tables
 - Hand irons
 - Heating coils
 - Coffee urns
 - Unit heaters and pressing machines
- Adjustable outlet pressure
- Single seated for dead-end or continuous service
- Sizes 1/2" - 1" NPT
- Maximum pressure drop 100 psi (6.9 bar) – for more than 100 psi (6.9 bar) use multiple valves in series
- Minimum reduced pressure 1 psig (.069 bar)
- Maximum non-shock pressure 250 psig (17.3 bar) at 400°F (204°C)
- Maximum temperature 400°F (204°C)

How to Size Series 754 Valves

1. Determine the available initial steam inlet pressure.
2. Determine the reduced outlet pressure required based on your equipment.
3. Determine the capacity required.
4. Apply the specifications (as determined in steps (1-3) to the basic steam capacity table on the following page, and the information below.



Dimensions in. (mm)

NPT Size in.	A	B	Weight (Approx.) lbs. (kg)
1/2	3 1/4 (82)	6 1/2 (165)	8 (3.6)
3/4	3 1/4 (82)	6 1/2 (165)	8 (3.6)
1	4 1/2 (114)	8 1/2 (216)	18 (8.2)

Materials of Construction	
Part	Specifications
Body	Cast Iron
Seat	Stainless Steel
Diaphragm	Phosphor Bronze
Disc	Stainless Steel
Spring	Steel-Cadmium Plated
Connections	Screwed NPT

Ordering Information

Model Number	Part Number	NPT Size In.	Outlet Pressure Range psig (bar)
754	403050	1/2	0 - 10 (0 - 0.69)
754	403051	1/2	10 - 50 (0.69 - 3.5)
754	403052	1/2	40 - 100 (2.8 - 6.9)
754	403053	3/4	0 - 10 (0 - 0.69)
754	403054	3/4	10 - 50 (0.69 - 3.5)
754	403055	3/4	40 - 100 (2.8 - 6.9)
754	403056	1	0 - 10 (0 - 0.69)
754	403057	1	10 - 30 (0.69 - 2.1)
754	403058	1	30 - 50 (2.0 - 3.5)
754	403059	1	40 - 85 (2.8 - 5.8)

Series 754 (continued)

Capacities

Basic Steam Table - Pounds Per Hour (kg/hr.)

1/2 & 3/4 Inch Valves											
Outlet Pressure psig (bar)	Inlet Pressure psig (bar)										
	10 (.7)	20 (1.4)	30 (2.1)	40 (2.8)	50 (3.5)	70 (4.8)	100 (6.9)	125 (8.6)	150 (10.3)	200 (13.8)	250 (17.3)
2 (.14)	46 (21)	65 (30)	83 (38)	102 (46)	121 (55)	158 (72)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
5 (.35)	38 (17)	65 (30)	83 (38)	102 (46)	121 (55)	158 (72)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
10 (.7)		61 (28)	83 (38)	102 (46)	121 (55)	158 (72)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
15 (1.0)		45 (20)	83 (38)	102 (46)	121 (55)	158 (72)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
20 (1.4)			71 (32)	102 (46)	112 (51)	158 (72)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
25 (1.7)				81 (37)	108 (49)	158 (72)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
30 (2.1)				79 (36)	68 (31)	158 (72)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
40 (2.8)					87 (40)	108 (49)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
50 (3.5)						138 (63)	214 (97)	261 (119)	307 (140)	401 (182)	494 (225)
60 (4.1)							188 (86)	261 (119)	307 (140)	401 (182)	494 (225)
70 (4.8)							195 (89)	261 (119)	307 (140)	401 (182)	494 (225)
100 (6.9)								201 (91)	298 (136)	401 (182)	494 (225)

1 Inch Valves											
Outlet Pressure psig (bar)	Inlet Pressure psig (bar)										
	10 (.7)	20 (1.4)	30 (2.1)	40 (2.8)	50 (3.5)	70 (4.8)	100 (6.9)	125 (8.6)	150 (10.3)	200 (13.8)	250 (17.3)
2 (.14)	130 (59)	184 (84)	236 (107)	289 (131)	342 (156)	448 (204)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
5 (.35)	106 (48)	184 (84)	236 (107)	289 (131)	342 (156)	448 (204)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
10 (.7)		184 (84)	236 (107)	289 (131)	342 (156)	448 (204)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
15 (1.0)		128 (58)	236 (107)	289 (131)	342 (156)	448 (204)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
20 (1.4)			201 (91)	289 (131)	342 (156)	448 (204)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
25 (1.7)				225 (102)	342 (156)	448 (204)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
30 (2.1)					284 (129)	448 (204)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
40 (2.8)					247 (112)	394 (179)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
50 (3.5)						390 (177)	607 (276)	739 (336)	871 (396)	1135 (516)	1400 (637)
60 (4.1)							528 (240)	739 (336)	871 (396)	1135 (516)	1400 (637)
70 (4.8)							470 (214)	739 (336)	858 (390)	1135 (516)	1400 (637)
100 (6.9)								569 (259)	844 (384)	1135 (516)	1400 (637)

Thermostatic Temperature Regulators Series 1140 & 1141

The Series 1140 & 1141 Temperature Regulators are designed to maintain a desired temperature for commercial and institutional heating and cooling applications. They are self-actuated and vapor pressure operated.

- Operating modes
 - Direct Acting
 - Reverse Acting
 - Three Way
- Available in sizes 1/2" - 2" NPT
2 1/2" - 4" (65 - 100mm) Flanged
- Available in various body styles with different seating arrangements
- Hermetically sealed actuator available in temperature control ranges of 40°F (4.4°C) through 220°F (104°C) in increments of 40°F (22.2°C)
- Optional wells available in copper or stainless steel
- Heavy duty 10 ft. (3mm) capillary with flexible armor and reinforced ends
- Maximum body pressure
 - 1/2" -1 1/2" NPT 250 psig (17.3 bar)
 - 2" NPT 200 psig (13.8 bar)
 - 2 1/2" - 4" (65-100mm) Flanged 125 psig (8.6 bar)
- Maximum body temperature 406°F (208°C)

Series 1140 Regulators are cross ambient filled and may be used where ambient temperature exceeds the set control temperature. Series 1141 Regulators are *not* cross ambient filled and should not be used where ambient temperature exceeds the set control temperature.

How to Select

Standard Unit Orders

1. Determine body style based on type of service. See Selection Data Chart below.
2. For complete units provide the 6 digit part number and description in the following format.

1140 TMP REG – Body Code – Body Size – Temperature Range

For example, to order a 1 inch NPT, 02 body, 140° to 180°F (60-82°C) degree range unit with standard bulb and capillary, your order should have the following:


Hoffman Specialty Part Number – 400117 Description – 1140 TMP REG 02 1.0 140 – 180

Select a range with the operating set point in the mid or upper portion of the range.

3. Units may also be ordered as Body Bracket Assemblies with separate Actuators. This offers a large variety of applications while maintaining low stock.

For Series 1140 and 1141 Temperature Regulator selection and sizing information, please refer to "Selection Guidelines" on page 154.

For computer aided selection of steam and water regulators, please refer to the "Steam Specialty Component Selectors" on the Hoffman Specialty website, www.hoffmanspecialty.com or, for a stand-alone version of EPS-PLUS, contact your local Hoffman Specialty Representative (see back cover for listing).

⚠ WARNING	
	<p>Series 1140 and 1141 Regulators fail open. An alarm or cut-off must be installed on applications where overheated water could cause harm.</p> <p>Failure to follow this warning could cause serious burns, personal injury, or death.</p>

Selection Data

Body Code	Service		Body Design	Recommended Application
	Water	Steam		
01	X	X	Two way Heating	Low pressure up to 50 psi (3.5 bar) Differential (Composition Disc)
02	X	X	Two way Heating	Low & High pressure up to 125 psi (8.6 bar) Differential (SS Seat and Disc)
02R	X		Two way Cooling	
03		X	Two way Heating	High pressure up to 250 psi (17.3 bar) Differential (SS Seat and Disc)
05	X	X	Two way Heating	High pressure up to 250 psi (17.3 bar) Differential (Double Seated SS)
05R	X		Two way Cooling	
06	X		Three way Mixing or Diverting	Sliding piston three way valve

Series 1140 & 1141 Regulators (continued)

Dimensions in. (mm)

Body Type	Size in. (mm)	A	B	C	D
Union ends	1/2 NPT	4 7/8 (124)	2 (51)	8 13/16 (224)	4 5/16 (110)
	3/4 NPT	5 3/8 (136)	2 3/16 (56)	9 (229)	4 5/16 (110)
	1 NPT	5 7/8 (149)	2 5/16 (59)	9 1/8 (232)	4 5/16 (110)
	1 1/4 NPT	6 7/8 (175)	2 5/8 (67)	9 7/16 (240)	4 5/16 (110)
	1 1/2 NPT	7 1/2 (190)	2 13/16 (72)	9 5/8 (245)	4 5/16 (110)
	2 NPT	8 1/2 (216)	3 13/16 (97)	10 (254)	4 5/16 (110)
Flanged 05 05R	2 1/2 (65)	7 5/8 (124)	4 9/16 (116)	16 5/8 (422)	6 3/8 (162)
	3 (80)	8 3/4 (222)	5 1/4 (133)	16 7/8 (428)	6 3/8 (162)
	4 (100)	10 1/4 (260)	5 7/8 (149)	17 3/8 (441)	6 3/8 (162)
Flanged 06	2 1/2 (65)	9 (229)	5 (127)	16 3/8 (416)	6 3/8 (162)
	3 (80)	9 1/2 (241)	5 1/4 (133)	16 3/4 (425)	6 3/8 (162)
	4 (100)	10 1/4 (260)	6 1/2 (165)	16 1/8 (410)	6 3/8 (162)

Copper Bulb Size, Dimensions in. (mm)

Valve Size in. (mm)	Actuator		E	F	G NPT
	1140	1141			
1/2 - 2 NPT	X		7/8 (22)	18 (457)	1
1/2 - 2 NPT		X	5/8 (16)	11 (280)	1
2 1/2 - 4 (65-100)	X		1 1/8 (29)	36 (914)	1 1/4

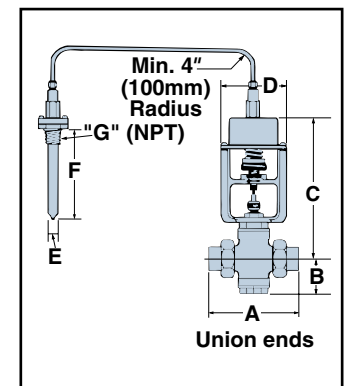
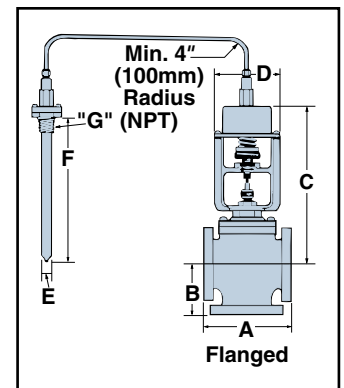
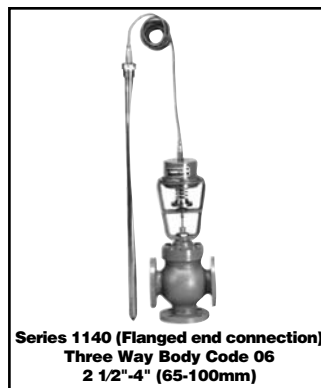
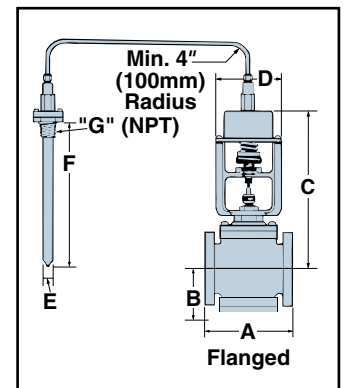
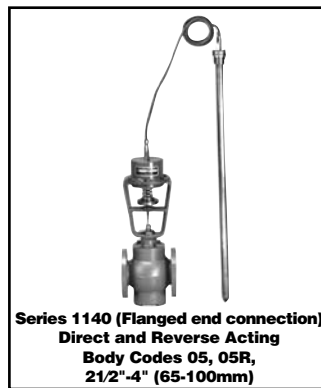
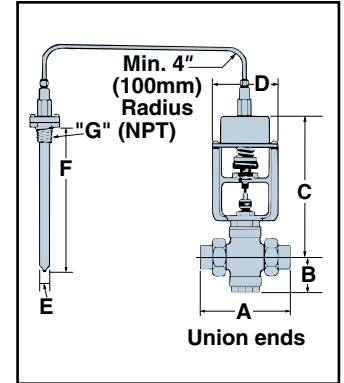
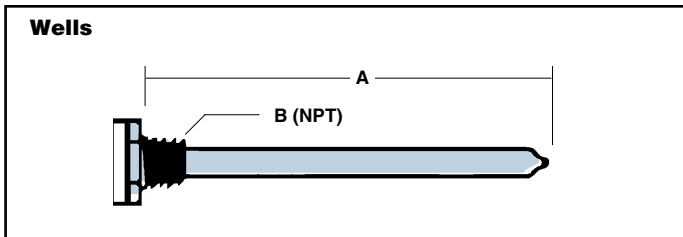
Wells, Dimensions in. (mm)

Series 1140

Regulator Bulb Size in. (mm)	A	B
7/8 x 18 (22 x 457)	18 1/2 (470)	1
1 1/8 x 36 (102 x 915)	36 1/2 (927)	1 1/4

Series 1141

5/8 x 11 (16 x 280)	11 1/2 (292)	1
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Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Cv (Kv) Values

Body Code	Valve Size								
	NPT Valve Size, in.						Flanged Valve Size, in. (mm)		
	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT	2 1/2 (65)	3 (88)	4 (100)
	Cv (Kv) Values								
01	2.7 (2.3)	5.7 (4.9)	11 (9.5)	16 (13.8)	20 (17.3)	25 (21.6)			
02 & 02R	2.7 (2.3)	5.7 (4.9)	11 (9.5)	16 (13.8)	20 (17.3)	25 (21.6)			
03		4.3 (3.7)	7.9 (6.8)	13 (11.3)	20 (17.3)	25 (21.6)			
05 & 05R		9.2 (8)	13 (11.3)	25 (21.6)	29 (25.1)	39 (33.7)	70 (60.6)	89 (77)	180 (155.7)
06	3.0 (2.6)	5.5 (4.8)	8.2 (7.1)	12.5 (10.8)	17.3 (15.0)	31.8 (27.5)	50 (43.2)	67 (58)	95 (82.2)

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Component Ordering Information

Body Bracket Assemblies

Part Number	Size in. (mm)	Body Code	Weight lbs. (kg)
401299	1/2 NPT	01	8 (3.6)
401300	3/4 NPT	01	10 (4.5)
401301	1 NPT	01	11 (5.0)
401302	1 1/4 NPT	01	12 (5.4)
401303	1 1/2 NPT	01	15 (6.8)
401304	2 NPT	01	21 (9.5)
401305	1/2 NPT	02	2 (.9)
401306	3/4 NPT	02	6 (2.7)
401307	1 NPT	02	6 (2.7)
401308	1 1/4 NPT	02	10 (4.5)
401309	1 1/2 NPT	02	10 (4.5)
401310	2 NPT	02	15 (6.8)
401312	1/2 NPT	02R	7 (3.2)
401311	3/4 NPT	02R	9 (4.1)
401313	1 NPT	02R	11 (5.0)
401314	1 1/4 NPT	02R	13 (5.9)
401317	1 1/2 NPT	02R	17 (7.7)
401320	2 NPT	02R	22 (10)
401321	3/4 NPT	03	10 (4.5)
401322	1 NPT	03	10 (4.5)
401323	1 1/4 NPT	03	12 (5.4)
401324	1 1/2 NPT	03	15 (6.8)
401325	2 NPT	03	18 (8.2)
401350	3/4 NPT	05	9 (4.1)
401353	1 NPT	05	9.3 (4.2)
401356	1 1/4 NPT	05	10 (4.5)
401359	1 1/2 NPT	05	14 (6.4)
401362	2 NPT	05	19 (8.6)
401365	2 1/2 (65)	05	64 (29)
401368	3 (80)	05	85 (39)
401371	4 (100)	05	115 (52)
401377	3/4 NPT	05R	9 (4.1)
401380	1 NPT	05R	11 (5.0)
401383	1 1/4 NPT	05R	12 (5.4)
401386	1 1/2 NPT	05R	15 (6.8)
401389	2 NPT	05R	21 (9.5)
401392	2 1/2 (65)	05R	74 (34)
401387	3 (80)	05R	80 (36)
401395	4 (100)	05R	115 (52)
401396	1/2 NPT	06	8 (3.6)
401397	3/4 NPT	06	9 (4.1)
401398	1 NPT	06	10 (4.5)
401399	1 1/4 NPT	06	12 (5.4)
401400	1 1/2 NPT	06	15 (6.8)
401401	2 NPT	06	21 (9.5)
401402	2 1/2 (65)	06	98 (44)
401403	3 (80)	06	98 (44)
401404	4 (100)	06	125 (57)

Series 1140 Actuators (Cross ambient filled)

Part Number	Temperature Range °F (°C)	Body Size		Body Code	Bulb Size (dia. x length)	Weight lbs. (kg)
		in. (mm)				
400558	40-80 (4.4-27)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400561	60-100 (16-38)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400562	80-120 (27-49)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400563	100-140 (38-60)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400567	120-160 (49-71)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400606	140-180 (60-82)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400607	160-200 (71-93)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400570	180-220 (82-104)	1/2-2	NPT	All	7/8 x 18 (22 x 457)	7 (3.2)
400428	40-80 (4.4-27)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)
400572	60-100 (16-38)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)
400573	80-120 (27-49)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)
400574	100-140 (38-60)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)
400575	120-160 (49-71)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)
400615	140-180 (60-82)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)
400616	160-200 (71-93)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)
400617	180-220 (82-104)	2 1/2-4 (65-100)		05&06	1 1/8 x 36 (29 x 914)	20 (9.1)

Series 1141 Actuators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

Part Number	Temperature Range °F (°C)	Body Size In.	Body Code	Bulb Size (dia. X length)	Weight lbs (kg)
400980	120-160 (49-71)	1/2 -2 NPT	All	5/8 x 11 (16 x 280)	7 (32)
400981	140-180 (60-82)	1/2 -2 NPT	All	5/8 x 11 (16 x 280)	7 (32)
400982	160-200 (71-93)	1/2 -2 NPT	All	5/8 x 11 (16 x 280)	7 (32)
400983	180-220 (82-104)	1/2 -2 NPT	All	5/8 x 11 (16 x 280)	7 (32)

Note: All models have copper bulb and 10 ft. (3m) capillary.

Wells (Refer to the Actuator Ordering Information chart [above] to determine proper bulb size)

Part Number	Series	Material	Bulb Size (Dia. x Length)		Weight lbs. (kg)
			in. (mm)		
400445	1141	Copper	5/8 x 11 (16 x 280)		2 (.9)
401179	1140	Copper	7/8 x 18 (22 x 457)		2 (.9)
401181	1140	Copper	1 1/8 x 36 (29 x 914)		4 (1.8)
401180	1140	SS	7/8 x 18 (22 x 457)		3 (1.4)
405526	1140	SS	1 1/8 x 36 (29 x 914)		4 (1.8)

Thermostatic Temperature Regulators (continued) Series 1140 & 1141

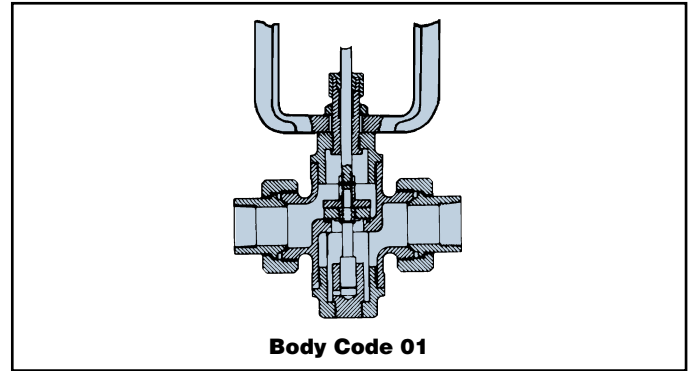
Direct Acting

The Series 1140 and 1141 Direct Acting Regulators are designed for commercial and institutional heating systems and equipment applications such as hot water tanks, vats,

steam tables, sterilizing equipment, instantaneous heaters, apartment buildings, or others that require steam temperature control.

Body Code 01

- Steam or Water Service—
for Positive dead end service
- Single Seat, Composition Disc, Brass Trim—
Brass integral seat
- Body—Brass body, union ends
- Maximum Differential Pressure:
 - 1/2" NPT — 50 psi (3.5 bar)
 - 3/4" NPT — 50 psi (3.5 bar)
 - 1" NPT — 32 psi (2.2 bar)
 - 1 1/4" NPT — 20 psi (1.4 bar)
 - 1 1/2" NPT — 16 psi (1.1 bar)
 - 2" NPT — 8 psi (.55 bar)



Ordering Information - (For Assembled Body Bracket and Actuators) Series 1140 Regulators (Cross ambient filled)

Size in.	Temperature Range								Weight (Approx.) lbs. (kg)
	40–80°F (4.4–27°C)	60–100°F (16–38°C)	80–120°F (27–49°C)	100–140°F (38–60°C)	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number									
1/2 NPT	400000	400001	400409	400002	400003	400004	400005	400006	12 (5.4)
3/4 NPT	400794	401165	400541	401037	400058	400059	400060	400061	13 (5.9)
1 NPT	400716	400025	400110	400373	400111	400112	400113	400114	15 (6.8)
1 1/4 NPT	401166	400028	400173	400671	400174	400175	400176	400184	16 (7.3)
1 1/2 NPT	400601	400037	400687	401036	400227	400228	400229	400230	19 (8.6)
2 NPT	400923	401292	400097	400708	400287	400288	400038	400289	25 (11.4)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

NPT Size in.	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number					
1/2 NPT	406000	406001	406002	406003	12 (5.4)
3/4 NPT	406004	406005	406006	406007	13 (5.9)
1 NPT	406008	406009	406010	406011	15 (6.8)
1 1/4 NPT	406012	406013	406014	406015	16 (7.3)
1 1/2 NPT	406016	406017	406018	406019	19 (8.6)
2 NPT	406020	406021	406022	406023	25 (11.4)

Series 1140 & 1141 Wells

Part Number	Series	Material	Bulb Size (dia x length in (mm))	Weight lbs. (kg)
400445	1141	Copper	5/8 x 11 (16 X 280)	2 (.9)
401179	1140	Copper	7/8 x 18 (22 X 457)	2 (.9)
401180	1140	316 SS	7/8 x 18 (22 X 457)	3 (1.4)

Series 1140 & 1141 (continued)
Capacities – Steam Flow, lbs./hr. (kg/hr.) vs Pressure Drop psi (bar)
Body Code 01 Direct Acting, Single Seated Valves

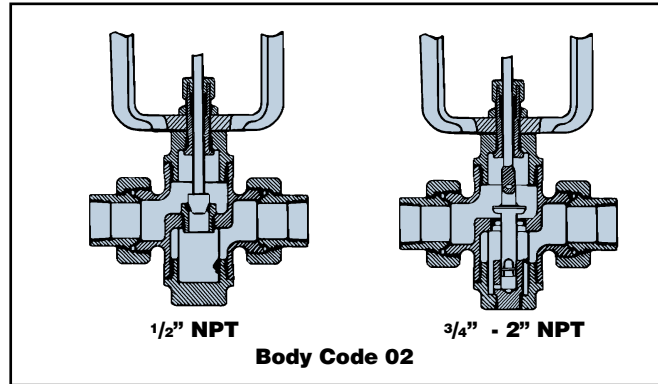
Size in.			1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Pressure psi (bar)			Steam Flow lbs./hr. (kg/hr.)					
Inlet	Outlet	Drop						
3 (.2)	2 (.14)	1 (.07)	33 (14)	70 (31)	134 (60)	195 (88)	244 (110)	305 (138)
	1 (.07)	2 (.14)	45 (20)	96 (43)	185 (83)	269 (122)	336 (152)	420 (190)
5 (.35)	3 (.21)	2 (.14)	48 (21)	101 (45)	196 (88)	285 (129)	356 (161)	445 (202)
	2 (.14)	3 (.21)	57 (25)	121 (54)	233 (105)	339 (153)	424 (192)	530 (240)
10 (.7)	8 (.56)	2 (.14)	54 (24)	115 (52)	222 (100)	323 (146)	404 (183)	505 (229)
	6 (.42)	4 (.28)	74 (33)	156 (70)	300 (136)	437 (198)	546 (247)	683 (310)
	4 (.28)	6 (.42)	86 (39)	181 (82)	350 (158)	509 (231)	636 (288)	795 (360)
15 (1.0)	12 (.83)	3 (.21)	72 (32)	153 (69)	295 (133)	429 (194)	536 (243)	
	9 (.62)	6 (.42)	97 (44)	204 (92)	394 (178)	572 (259)	716 (325)	
	6 (.42)	9 (.62)	110 (49)	233 (105)	450 (204)	654 (296)	818 (371)	
20 (1.4)	16 (1.1)	4 (.28)	90 (40)	190 (86)	365 (165)	531 (241)		
	12 (.83)	8 (.56)	118 (53)	250 (113)	482 (258)	701 (318)		
	8 (.56)	12 (.83)	134 (60)	282 (128)	545 (288)	792 (359)		
25 (1.7)	20 (1.4)	5 (.34)	107 (48)	225 (102)	435 (197)			
	15 (1.0)	10 (.69)	140 (63)	295 (133)	569 (258)			
	10 (.69)	15 (1.0)	156 (70)	329 (149)	635 (288)			
30 (2.1)	25 (1.7)	5 (.34)	114 (51)	241 (109)	465 (211)			
	20 (1.4)	10 (.69)	151 (68)	319 (144)	615 (279)			
	15 (1.0)	15 (1.0)	171 (77)	361 (163)	696 (315)			
40 (2.8)	35 (2.4)	5 (.34)	128 (58)	270 (122)				
	30 (2.1)	10 (.70)	171 (77)	361 (163)				
	20 (1.4)	20 (1.4)	213 (96)	450 (204)				
50 (3.5)	40 (2.8)	10 (.69)	190 (86)	400 (28)				
	30 (2.1)	20 (1.4)	242 (109)	511 (35)				
	20 (1.4)	30 (2.1)	261 (118)	552 (38)				

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Body Code 02

- Steam or Water Service—
Used for dead end shut-off where higher temperatures and pressures prevail
- Stainless Steel Single Seat and Trim—
1/2" —Removable stainless steel seat and cone disc
3/4" - 2" —Integral stainless steel seat ring and bottom guided seat disc
- Body—Brass body, union ends
- Maximum Differential Pressure:
1/2" NPT - 125 psi (8.6 bar) 1 1/4" NPT - 20 psi (1.4 bar)
3/4" NPT - 60 psi (4.1 bar) 1 1/2" NPT - 16 psi (1.1 bar)
1" NPT - 32 psi (2.2 bar) 2" NPT - 8 psi (.55 bar)



Ordering Information - (For Assembled Body Bracket and Actuators)

Series 1140 Regulators (Cross ambient filled)

Size in.	Temperature Range								Weight (Approx.) lbs. (kg)
	40–80°F (4.4–27°C)	60–100°F (16–38°C)	80–120°F (27–49°C)	100–140°F (38–60°C)	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number									
1/2 NPT	400009	400010	400713	400715	400011	400012	400013	400014	12 (5.4)
3/4 NPT	400697	400064	400720	400721	400065	400066	400067	400068	13 (5.9)
1 NPT	400143	400115	400725	400726	400116	400117	400118	400119	15 (6.8)
1 1/4 NPT	400179	400029	400180	400731	400181	400031	400182	400032	16 (7.3)
1 1/2 NPT	400232	400735	400233	400741	400234	400235	400236	400237	19 (8.6)
2 NPT	401168	400040	400291	400341	400292	400293	400041	400043	25 (11.4)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

Size in. (mm)	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number					
1/2 NPT	406024	406025	406026	406027	12 (5.4)
3/4 NPT	406028	406029	406030	406031	13 (5.9)
1 NPT	406032	406033	406034	406035	15 (6.8)
1 1/4 NPT	406036	406037	406038	406039	16 (7.3)
1 1/2 NPT	406040	406041	406042	406043	19 (8.6)
2 NPT	406044	406045	406046	406047	25 (11.4)

Series 1140 & 1141 Wells

Part Number	Series	Material	Bulb Size (dia x length in (mm))	Weight lbs. (kg)
400445	1141	Copper	5/8 x 11 (16 X 280)	2 (.9)
401179	1140	Copper	7/8 x 18 (22 X 457)	2 (.9)
401180	1140	316 SS	7/8 x 18 (22 X 457)	3 (1.4)

Series 1140 & 1141 (continued)
Capacities – Steam Flow, lbs./hr. (kg/hr.) vs Pressure Drop psi (bar)

Body Code 02 Direct Acting, Single Seated Valves

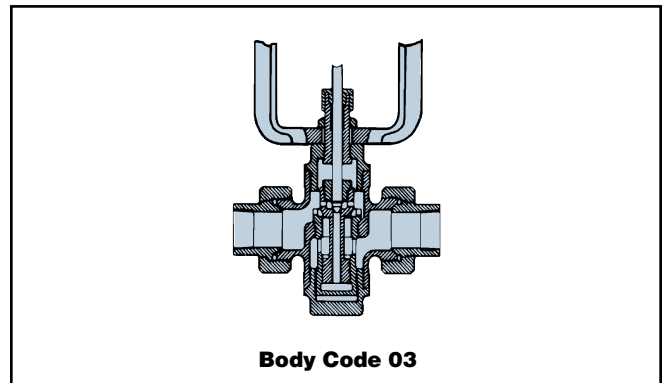
Size in.			½ NPT	¾ NPT	1 NPT	1¼ NPT	1½ NPT	2 NPT
Pressure psi (bar)			Steam Flow lbs./hr. (kg/hr.)					
Inlet	Outlet	Drop						
3 (.2)	2 (.14)	1 (.07)	33 (14)	70 (31)	134 (60)	195 (88)	244 (110)	305 (138)
	1 (.07)	2 (.14)	45 (20)	96 (43)	185 (83)	269 (122)	336 (152)	420 (190)
5 (.35)	3 (.21)	2 (.14)	48 (21)	101 (45)	196 (88)	285 (129)	356 (161)	445 (201)
	2 (.14)	3 (.21)	57 (25)	121 (54)	233 (105)	339 (153)	424 (192)	530 (240)
10 (.7)	8 (.56)	2 (.14)	54 (24)	115 (52)	222 (100)	323 (146)	404 (183)	505 (229)
	6 (.42)	4 (.28)	74 (33)	156 (70)	300 (136)	437 (198)	546 (247)	683 (309)
	4 (.28)	6 (.42)	86 (39)	181 (82)	350 (158)	509 (230)	636 (288)	795 (360)
15 (1.0)	12 (.83)	3 (.21)	72 (32)	153 (69)	295 (133)	429 (194)	536 (243)	
	9 (.62)	6 (.42)	97 (44)	204 (92)	394 (178)	572 (259)	716 (324)	
	6 (.42)	9 (.62)	110 (49)	233 (105)	450 (204)	654 (296)	818 (371)	
20 (1.4)	16 (1.1)	4 (.28)	90 (40)	190 (86)	365 (165)	531 (240)		
	12 (.83)	8 (.56)	118 (53)	250 (113)	482 (218)	701 (317)		
	8 (.56)	12 (.83)	134 (60)	282 (127)	545 (247)	792 (359)		
25 (1.7)	20 (1.4)	5 (.34)	107 (48)	225 (102)	435 (197)			
	15 (1.0)	10 (.69)	140 (63)	295 (133)	569 (258)			
	10 (.70)	15 (1.0)	156 (70)	329 (149)	635 (288)			
30 (2.1)	25 (1.7)	5 (.34)	114 (51)	241 (109)	465 (210)			
	20 (1.4)	10 (.69)	151 (68)	319 (144)	615 (278)			
	15 (1.0)	15 (1.0)	171 (77)	361 (163)	696 (315)			
40 (2.8)	35 (2.4)	5 (.34)	128 (58)	270 (122)				
	30 (2.1)	10 (.69)	171 (77)	361 (163)				
	20 (1.4)	20 (1.4)	213 (96)	450 (204)				
50 (3.5)	40 (2.8)	10 (.69)	190 (86)	400 (181)				
	30 (2.1)	20 (1.4)	242 (109)	511 (231)				
	20 (1.4)	30 (2.1)	261 (118)	552 (250)				
60 (4.1)	50 (3.5)	10 (.69)	206 (93)	435 (197)				
	40 (2.8)	20 (1.4)	268 (121)	565 (256)				
	30 (2.1)	30 (2.1)	297 (134)	627 (284)				
70 (4.8)	60 (4.2)	10 (.69)	221 (100)					
	50 (3.5)	20 (1.4)	292 (132)					
	40 (2.8)	30 (2.1)	329 (149)					
	30 (2.1)	40 (2.8)	343 (155)					
80 (5.5)	70 (4.9)	10 (.69)	236 (107)					
	60 (4.2)	20 (1.4)	313 (141)					
	50 (3.5)	30 (2.1)	356 (161)					
	40 (2.8)	40 (2.8)	378 (171)					
90 (6.2)	80 (5.6)	10 (.69)	249 (112)					
	70 (4.9)	20 (1.4)	332 (150)					
	60 (4.2)	30 (2.1)	383 (173)					
	30 (2.1)	40 (2.8)	413 (187)					
100 (6.9)	40 (2.8)	50 (3.5)	424 (192)					
	90 (6.3)	10 (.69)	262 (118)					
	80 (5.6)	20 (1.4)	354 (160)					
	70 (4.9)	30 (2.1)	408 (185)					
125 (8.6)	60 (4.2)	40 (2.8)	443 (200)					
	50 (3.5)	50 (3.5)	462 (209)					
	110 (7.6)	15 (1.0)	351 (159)					
	100 (6.9)	25 (1.7)	435 (197)					
	90 (6.3)	35 (2.4)	491 (222)					
	80 (5.6)	45 (3.1)	529 (239)					
	70 (4.9)	55 (3.8)	554 (251)					
	60 (4.2)	65 (4.4)	564 (255)					

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Body Code 03

- Steam Service Only—
Used for dead end service up to maximum body steam pressure
- Stainless Steel Balanced Single Seat and Trim—
Removable stainless steel seat, disc, and balancing piston
- Body— $\frac{3}{4}$ " through 2" NPT—brass body, union ends
- Maximum Differential Pressure:
 $\frac{3}{4}$ " NPT — 250 psi (17.3 bar)
 1" NPT — 200 psi (13.8 bar)
 1 $\frac{1}{4}$ " NPT — 200 psi (13.8 bar)
 1 $\frac{1}{2}$ " NPT — 200 psi (13.8 bar)
 2" NPT — 150 psi (10.3 bar)



Ordering Information - (For Assembled Body Bracket and Actuators)

Series 1140 Regulators (Cross ambient filled)

Size in.	Temperature Range								Weight (Approx.) lbs. (kg)
	40–80°F (4.4–27°C)	60–100°F (16–38°C)	80–120°F (27–49°C)	100–140°F (38–60°C)	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
	Part Number								
$\frac{3}{4}$ NPT	400700	400083	400084	400755	400085	400086	400087	400088	13 (5.9)
1 NPT	400251	400129	400130	400160	400131	400132	400133	400134	15 (6.8)
1 $\frac{1}{4}$ NPT	400189	400190	400191	400592	400192	400193	400194	400196	16 (7.3)
1 $\frac{1}{2}$ NPT	400242	400244	400167	400784	400245	400246	400449	400248	19 (8.6)
2 NPT	400303	400304	400798	400800	400305	400306	400307	400308	25 (11.4)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

Size in.	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
	Part Number				
$\frac{3}{4}$ NPT	406072	406073	406074	406075	13 (5.9)
1 NPT	406076	406077	406078	406079	15 (6.8)
1 $\frac{1}{4}$ NPT	406080	406081	406082	406083	16 (7.3)
1 $\frac{1}{2}$ NPT	406084	406085	406086	406087	19 (8.6)
2 NPT	406088	406089	406090	406091	25 (11.4)

Series 1140 & 1141 Wells

Part Number	Series	Material	Bulb Size (dia x length in (mm))	Weight lbs. (kg)
400445	1141	Copper	$\frac{5}{8}$ x 11 (16 X 280)	2 (.9)
401179	1140	Copper	$\frac{7}{8}$ x 18 (22 X 457)	2 (.9)
401180	1140	316 SS	$\frac{7}{8}$ x 18 (22 X 457)	3 (1.4)

Series 1140 & 1141 (continued)

Body Code 03 Direct Acting, Balanced Single Seated Valves (Steam Service Only)

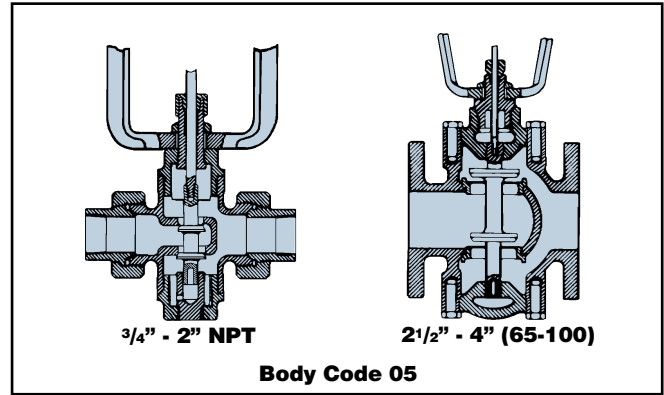
Size in.			¾ NPT	1 NPT	1¼ NPT	1½ NPT	2 NPT
Pressure psi (bar)			Steam Flow lbs./hr. (kg/hr.)				
Inlet	Outlet	Drop					
3 (.2)	2 (.14)	1 (.07)	52 (23)	96 (43)	159 (72)	244 (110)	305 (138)
	1 (.07)	2 (.14)	72 (32)	133 (60)	218 (98)	336 (152)	420 (190)
5 (.35)	3 (.21)	2 (.14)	77 (34)	141 (63)	231 (104)	356 (161)	445 (201)
	2 (.14)	3 (.21)	91 (41)	167 (75)	276 (125)	424 (192)	530 (240)
10 (.7)	8 (.56)	2 (.14)	87 (39)	160 (72)	263 (119)	404 (183)	505 (229)
	6 (.42)	4 (.28)	117 (53)	216 (97)	355 (161)	546 (247)	683 (309)
	4 (.28)	6 (.42)	138 (62)	251 (113)	413 (187)	636 (288)	795 (360)
15 (1.0)	12 (.83)	3 (.21)	115 (52)	212 (96)	348 (157)	536 (243)	670 (303)
	9 (.62)	6 (.42)	154 (69)	283 (128)	465 (210)	716 (324)	895 (405)
	6 (.42)	9 (.62)	176 (79)	323 (146)	532 (241)	818 (371)	1020 (462)
20 (1.4)	16 (1.1)	4 (.28)	143 (64)	262 (118)	432 (195)	664 (301)	830 (376)
	12 (.83)	8 (.56)	188 (85)	346 (156)	569 (258)	876 (397)	1100 (498)
	8 (.56)	12 (.83)	213 (96)	391 (177)	644 (292)	990 (449)	1240 (562)
25 (1.7)	20 (1.4)	5 (.34)	170 (77)	312 (141)	514 (233)	790 (358)	988 (448)
	15 (1.0)	10 (.69)	222 (100)	408 (185)	672 (304)	1030 (467)	1290 (585)
	10 (.69)	15 (1.0)	248 (112)	456 (206)	750 (340)	1150 (521)	1440 (653)
30 (2.1)	25 (1.7)	5 (.34)	182 (82)	334 (151)	550 (249)	846 (383)	1060 (480)
	20 (1.4)	10 (.69)	240 (108)	442 (200)	727 (329)	1120 (508)	1400 (635)
	15 (1.0)	15 (1.0)	272 (123)	500 (226)	823 (373)	1270 (576)	1580 (716)
40 (2.8)	35 (2.4)	5 (.34)	203 (92)	374 (169)	615 (278)	946 (429)	1180 (535)
	30 (2.1)	10 (.69)	273 (123)	501 (227)	824 (373)	1270 (576)	1590 (721)
	20 (1.4)	20 (1.4)	340 (154)	624 (283)	1030 (467)	1580 (716)	1980 (898)
50 (3.5)	40 (2.8)	10 (.69)	302 (136)	555 (251)	913 (414)	1400 (635)	1760 (798)
	30 (2.1)	20 (1.4)	386 (175)	709 (321)	1170 (530)	1790 (811)	2240 (1016)
	20 (1.4)	30 (2.1)	416 (188)	765 (347)	1260 (571)	1940 (879)	2420 (1097)
60 (4.1)	50 (3.5)	10 (.69)	328 (148)	603 (273)	992 (449)	1530 (694)	1910 (866)
	40 (2.8)	20 (1.4)	427 (193)	784 (355)	1290 (585)	1980 (898)	2480 (1124)
	30 (2.1)	30 (2.1)	473 (214)	869 (394)	1430 (648)	2200 (997)	2750 (1247)
70 (4.8)	60 (4.2)	10 (.69)	353 (160)	648 (293)	1070 (485)	1640 (743)	2050 (929)
	50 (3.5)	20 (1.4)	464 (210)	853 (386)	1400 (635)	2160 (979)	2700 (1224)
	40 (2.8)	30 (2.1)	525 (238)	964 (437)	1590 (721)	2440 (1106)	3050 (1383)
	30 (2.1)	40 (2.8)	546 (247)	1000 (453)	1650 (748)	2540 (1152)	3180 (1442)
80 (5.5)	70 (4.9)	10 (.69)	375 (170)	690 (312)	1130 (512)	1750 (793)	2180 (988)
	60 (4.2)	20 (1.4)	499 (226)	916 (415)	1510 (684)	2320 (1052)	2900 (1315)
	50 (3.5)	30 (2.1)	568 (257)	1040 (471)	1720 (780)	2640 (1197)	3300 (1496)
	40 (2.8)	40 (2.8)	602 (273)	1110 (503)	1820 (825)	2800 (1270)	3500 (1587)
90 (6.2)	80 (5.6)	10 (.69)	397 (180)	729 (330)	1200 (544)	1850 (839)	2310 (1047)
	70 (4.9)	20 (1.4)	529 (239)	972 (440)	1600 (725)	2460 (1115)	3080 (1397)
	60 (4.2)	30 (2.1)	611 (277)	1120 (508)	1850 (839)	2840 (1288)	3550 (1610)
	50 (3.5)	40 (2.8)	658 (298)	1210 (548)	1990 (902)	3060 (1388)	3830 (1737)
100 (6.9)	40 (2.8)	50 (3.5)	675 (306)	1240 (562)	2040 (925)	3140 (1424)	3930 (1782)
	90 (6.3)	10 (.69)	418 (189)	767 (347)	1260 (571)	1940 (879)	2430 (1102)
	80 (5.6)	20 (1.4)	563 (255)	1030 (467)	1700 (771)	2620 (1188)	3280 (1487)
	70 (4.9)	30 (2.1)	649 (294)	1190 (539)	1960 (889)	3020 (1369)	3780 (1714)
125 (8.6)	60 (4.2)	40 (2.8)	705 (319)	1300 (589)	2130 (966)	3280 (1487)	4100 (1859)
	50 (3.5)	50 (3.5)	735 (333)	1350 (612)	2220 (1006)	3420 (1551)	4280 (1941)
	110 (7.6)	15 (1.0)	559 (253)	1030 (467)	1690 (766)	2600 (1179)	3250 (1474)
	100 (6.9)	25 (1.7)	692 (313)	1270 (576)	2090 (948)	3220 (1460)	4030 (1828)
150 (10.3)	90 (6.3)	35 (2.4)	783 (355)	1440 (653)	2370 (1075)	3640 (1651)	4550 (2063)
	80 (5.6)	45 (3.1)	843 (382)	1550 (703)	2550 (1156)	3920 (1778)	4900 (2222)
	70 (4.9)	55 (3.8)	882 (400)	1620 (734)	2670 (1211)	4100 (1859)	5130 (2326)
	60 (4.2)	65 (4.5)	899 (407)	1650 (748)	2720 (1233)	4180 (1896)	5230 (2372)
175 (12.1)	130 (8.9)	20 (1.4)	692 (313)	1270 (576)	2090 (948)	3220 (1460)	4030 (1828)
	120 (8.2)	30 (2.1)	821 (372)	1510 (684)	2480 (1124)	3820 (1732)	4780 (2168)
	110 (7.6)	40 (2.8)	912 (413)	1670 (757)	2760 (1251)	4240 (1923)	5300 (2404)
	100 (6.9)	50 (3.5)	976 (442)	1790 (811)	2950 (1338)	4540 (2059)	5680 (2576)
200 (13.8)	90 (6.3)	60 (4.2)	1020 (462)	1880 (852)	3090 (1401)	4760 (2159)	5950 (2698)
	80 (5.6)	70 (4.9)	1050 (476)	1930 (875)	3170 (1437)	4880 (2213)	6100 (2766)
	70 (4.9)	80 (5.6)	1060 (480)	1950 (884)	3210 (1456)	4940 (2240)	6180 (2803)
	150 (10.3)	25 (1.7)	830 (376)	1520 (689)	2510 (1138)	3860 (1750)	
250 (17.3)	130 (8.9)	45 (3.1)	1040 (471)	1910 (866)	3150 (1428)	4840 (2195)	
	110 (7.6)	65 (4.5)	1160 (526)	2130 (966)	3510 (1592)	5400 (2449)	
	90 (6.3)	85 (5.9)	1220 (553)	2240 (1016)	3680 (1669)	5660 (2567)	
	80 (5.6)	95 (6.6)	1230 (557)	2250 (1020)	3710 (1682)	5700 (2585)	
250 (17.3)	170 (11.8)	30 (2.1)	959 (435)	1760 (798)	2900 (1315)	4460 (2023)	
	150 (10.3)	50 (3.5)	1170 (530)	2150 (975)	3540 (1605)	5440 (2467)	
	130 (8.9)	70 (4.9)	1300 (589)	2390 (1084)	3930 (1782)	6040 (2739)	
	110 (7.6)	90 (6.3)	1370 (621)	2510 (1138)	4130 (1873)	6360 (2884)	
	100 (6.9)	100 (6.9)	1380 (625)	2540 (1152)	4170 (1891)	6420 (2912)	
	210 (14.5)	40 (2.8)	1220 (553)				
190 (13.1)	60 (4.2)	1430 (648)					
170 (11.8)	80 (5.6)	1570 (712)					
150 (10.3)	100 (6.9)	1660 (752)					
130 (8.9)	120 (8.2)	1700 (771)					
120 (8.2)	130 (8.9)	1710 (775)					

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Body Code 05

- Steam or Water Service – For high steam pressure and/or high capacity applications.
- Stainless Steel Double Seat and Trim – Trim consists of seat rings and center guided plunger. Double seated valves have 1% allowable leakage rate.
- Body – 3/4" - 2" NPT – brass body, union ends
2 1/2" - 4" (65-100mm) – Iron body, flanged, faced and drilled for 125 lbs. (13.8 bar) standard
- Maximum Differential Pressure:
3/4" NPT – 250 psi (17.3 bar)
1" - 1 1/2" NPT – 200 psi (13.8 bar)
2" NPT – 150 psi (10.3 bar)
2 1/2" - 4" (65 - 100mm) – 125 psi (8.6 bar) (iron body, flanged)



Ordering Information - (For Assembled Body Bracket and Actuators)

Series 1140 Regulators (Cross ambient filled)

Size in. (mm)	Temperature Range								Weight (Approx.) lbs. (kg)
	40–80°F (4.4–27°C)	60–100°F (16–38°C)	80–120°F (27–49°C)	100–140°F (38–60°C)	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number									
3/4 NPT	405552	401106	400662	400096	400099	400102	400325	400100	13 (5.9)
1 NPT	400829	400647	400476	400722	400159	400162	400690	400702	15 (6.8)
1 1/4 NPT	400201	400770	400843	400532	400204	400207	400210	400211	16 (7.3)
1 1/2 NPT	400264	400772	400852	400326	400267	400270	400723	400340	19 (8.6)
2 NPT	400809	400318	400321	400718	400324	400327	400330	400333	25 (11.4)
2 1/2 (65)	400428+ 401365	400572+ 401365	400573+ 401365	400574+ 401365	400575+ 401365	400615+ 401365	400616+ 401365	400617+ 401365	88 (40)
3 (80)	400428+ 401368	400572+ 401368	400573+ 401368	400574+ 401368	400575+ 401368	400615+ 401368	400616+ 401368	400617+ 401368	95 (43)
4 (100)	400428+ 401371	400572+ 401371	400573+ 401371	400574+ 401371	400575+ 401371	400615+ 401371	400616+ 401371	400617+ 401371	125 (57)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

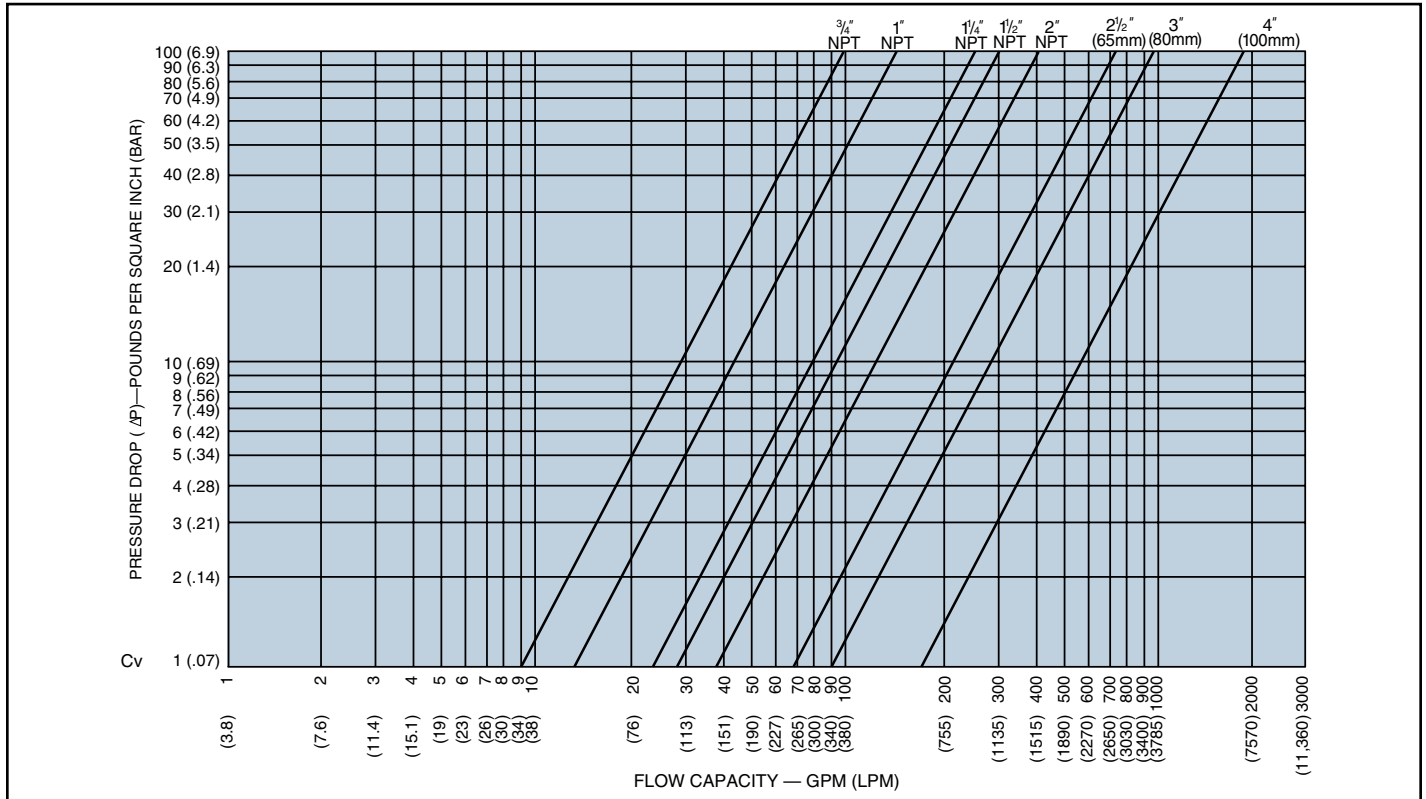
Size in.	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number					
3/4 NPT	406096	406097	406098	406099	13 (5.9)
1 NPT	406100	406101	406102	406103	15 (6.8)
1 1/4 NPT	406104	406105	406106	406107	16 (7.3)
1 1/2 NPT	406108	406109	406110	406111	19 (8.6)
2 NPT	406112	406113	406114	406115	25 (11.4)

Series 1140 & 1141 Wells

Part Number	Series	Material	Bulb Size (dia x length in (mm))	Weight lbs. (kg)
400445	1141	Copper	5/8 x 11 (16 x 280)	2 (.9)
401179	1140	Copper	7/8 x 18 (22 x 457)	2 (.9)
401181	1140	Copper	1 1/8 x 36 (29 x 914)	4 (1.8)
401180	1140	316 SS	7/8 x 18 (22 x 457)	3 (1.4)
405526	1140	316 SS	1 1/8 x 36 (29 x 914)	4 (1.8)

Thermostatic Temperature Regulators (continued)
Series 1140 & 1141 (continued)

Capacities — Water Flow vs Pressure Drop
Body Code 05 Direct Acting, Double Seated Valves



Series 1140 & 1141 (continued)

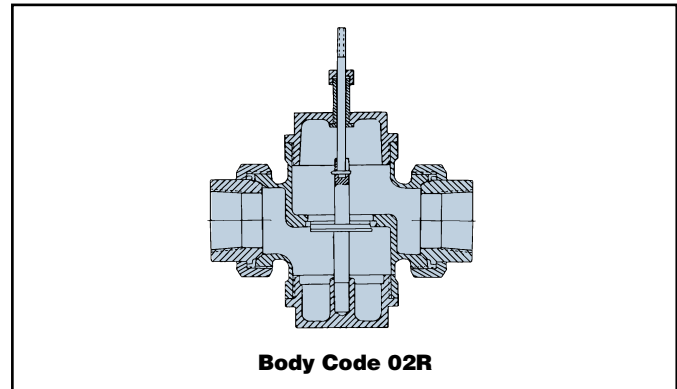
Reverse Acting

The Series 1140 and 1141 Reverse Acting Regulators are designed for commercial and institutional cooling

applications such as re-circulating lines, diesel engines, cooling towers, or others that require liquid temperature control.

Body Code 02R

- Steam or Water Service—
Used for general cooling service where dead end shut-off is required
- Stainless Steel Single Seat and Trim—
Trim consists of stainless steel seat ring and bottom guided disc
- Body—Brass body, union ends 3/4" - 2" NPT
- Maximum Differential Pressure:
 1/2" NPT – 125 psi (8.6 bar)
 3/4" NPT – 60 psi (4.1 bar)
 1" NPT – 32 psi (2.2 bar)
 1 1/4" NPT – 20 psi (1.4 bar)
 1 1/2" NPT – 16 psi (1.1 bar)
 2" NPT – 8 psi (.55 bar)



Ordering Information - (For Assembled Body Bracket and Actuator)

Series 1140 Regulators (Cross ambient filled)

Size in.	Temperature Range								Weight (Approx.) lbs. (kg)
	40–80°F (4.4–27°C)	60–100°F (16–38°C)	80–120°F (27–49°C)	100–140°F (38–60°C)	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
	Part Number								
1/2 NPT	401171	400485	400527	400544	401006	400407	400077	401172	12 (5.4)
3/4 NPT	400075	400078	400319	400695	400080	401174	400698	400079	13 (5.9)
1 NPT	400125	400128	400109	400806	400758	401175	400604	400665	15 (6.8)
1 1/4 NPT	401177	401178	400186	400206	400187	400188	401184	401186	16 (7.3)
1 1/2 NPT	400238	400241	400590	400764	401187	400247	401189	401190	19 (8.6)
2 NPT	400905	400599	400136	400297	400374	400424	400776	401192	25 (11.4)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

Size in.	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
	Part Number				
1/2 NPT	406048	406049	406050	406051	12 (5.4)
3/4 NPT	406052	406053	406054	406055	13 (5.9)
1 NPT	406056	406057	406058	406059	15 (6.8)
1 1/4 NPT	406060	406061	406062	406063	16 (7.3)
1 NPT	406064	406065	406066	406067	19 (8.6)
2 NPT	406068	406069	406070	406071	25 (11.4)

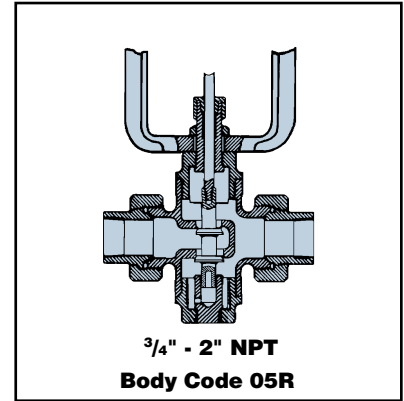
Series 1140 & 1141 Wells

Part Number	Series	Material	Bulb Size (dia x length in (mm))	Weight lbs. (kg)
400445	1141	Copper	5/8 x 11 (16 X 280)	2 (.9)
401179	1140	Copper	7/8 x 18 (22 X 457)	2 (.9)
401180	1140	316 SS	7/8 x 18 (22 X 457)	3 (1.4)

Thermostatic Temperature Regulators (continued)
Series 1140 & 1141 (continued)

Body Code 05R

- Steam or Water Service
- Stainless Steel Trim— center guided plunger
- Body— $\frac{3}{4}$ " - 2" NPT—brass body, union ends
 $2\frac{1}{2}$ " - 4" (65-100mm)—Iron body, flanged, faced and drilled for 125 lbs. (13.8 bar) standard
- Maximum Differential Pressure:
 $\frac{3}{4}$ " NPT — 250 psi (17.3 bar)
 1" - 2" NPT — 200 psi (13.8 bar)
 $2\frac{1}{2}$ " - 4" (65 - 100mm) — 125 psi (8.6 bar) (iron body, flanged)



Ordering Information - (For Assembled Body Bracket and Actuator)
Series 1140 Regulators (Cross ambient filled)

Size in. (mm)	Temperature Range								Weight (Approx.) lbs. (kg)
	40–80°F (4.4–27°C)	60–100°F (16–38°C)	80–120°F (27–49°C)	100–140°F (38–60°C)	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number									
$\frac{3}{4}$ NPT	400664	400106	400915	400107	400108	401193	400368	400104	13 (5.9)
1 NPT	405017	400171	400924	400446	400172	400652	400685	401195	15 (6.8)
$1\frac{1}{4}$ NPT	400481	400933	400219	400220	400222	401196	400225	400680	16 (7.3)
$1\frac{1}{2}$ NPT	400942	400539	400286	400282	400285	400913	400815	401198	19 (8.6)
2 NPT	400339	400342	400963	400969	400164	400469	401199	401201	25 (11.4)
$2\frac{1}{2}$ (65)	400428+	400572+	400573+	400574+	400575+	400615+	400616+	400617+	88 (40)
	401392	401392	401392	401392	401392	401392	401392	401392	
3 (80)	400428+	400572+	400573+	400574+	400575+	400615+	400616+	400617+	95 (43)
	401387	401387	401387	401387	401387	401387	401387	401387	
4 (100)	400428+	400572+	400573+	400574+	400575+	400615+	400616+	400617+	125 (57)
	401395	401395	401395	401395	401395	401395	401395	401395	

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

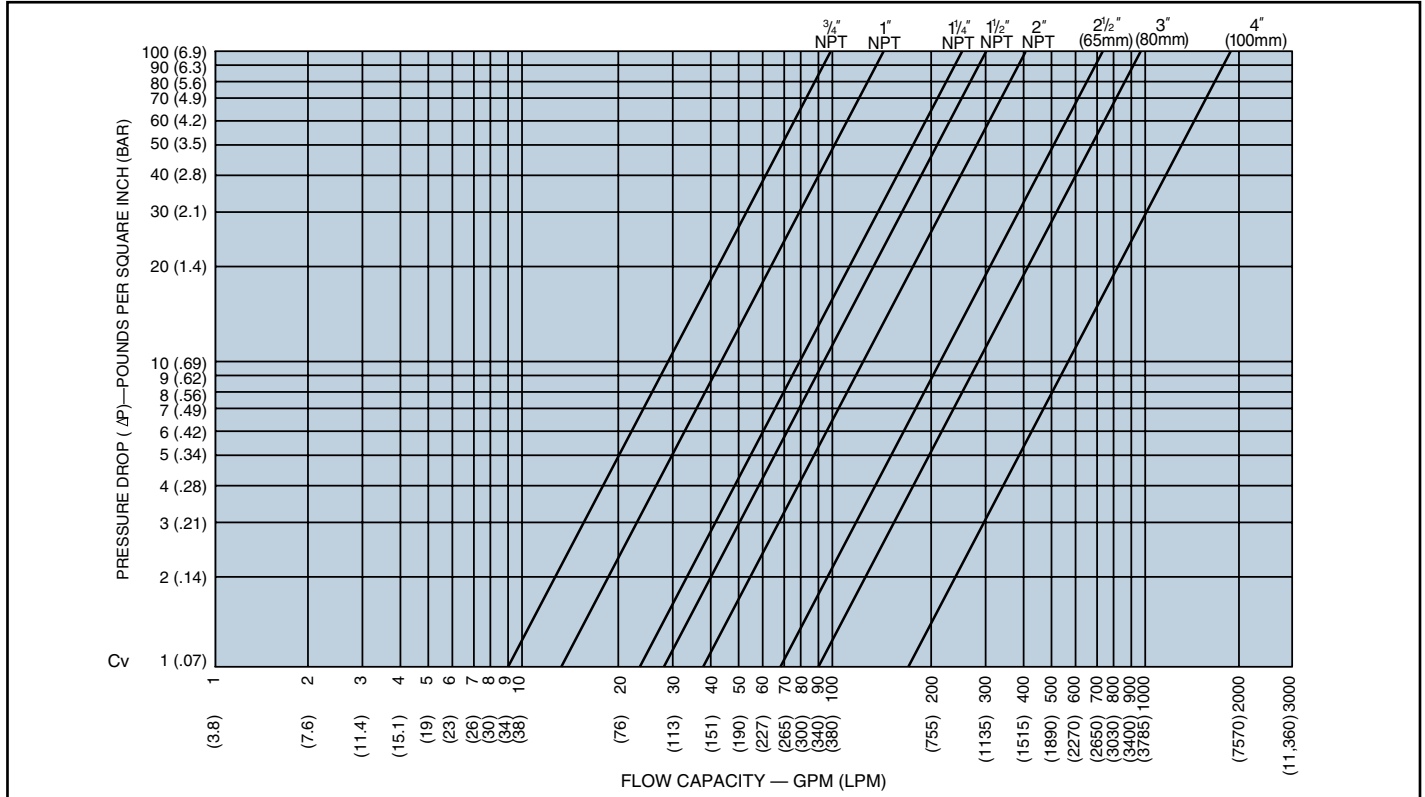
Size in.	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number					
$\frac{3}{4}$ NPT	406120	406121	406122	406123	13 (5.9)
1 NPT	406124	406125	406126	406127	15 (6.8)
$1\frac{1}{4}$ NPT	406128	406129	406130	406131	16 (7.3)
$1\frac{1}{2}$ NPT	406132	406133	406134	406135	19 (8.6)
2 NPT	406136	406137	406138	406139	25 (11.4)

Series 1140 & 1141 Wells

Part Number	Series	Material	Bulb Size (dia x length in (mm))	Weight lbs. (kg)
400445	1141	Copper	$\frac{5}{8}$ x 11 (16 x 280)	2 (.9)
401179	1140	Copper	$\frac{7}{8}$ x 18 (22 x 457)	2 (.9)
401181	1140	Copper	$1\frac{1}{8}$ x 36 (29 x 914)	4 (1.8)
401180	1140	316 SS	$\frac{7}{8}$ x 18 (22 x 457)	3 (1.4)
405526	1140	316 SS	$1\frac{1}{8}$ x 36 (29 x 914)	4 (1.8)

Series 1140 & 1141 (continued)

Capacities — Water Flow vs Pressure Drop
Body Code 05R Reverse Acting, Double Seated Valves



Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

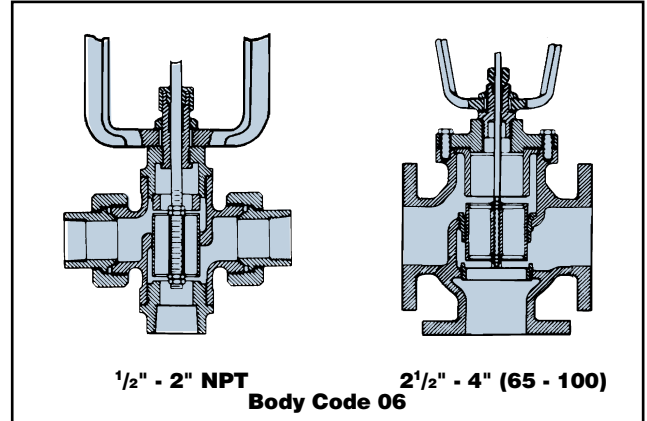
Three Way

The Series 1140 and 1141 Three Way Regulators are designed for commercial and institutional applications

such as boilers, engines, or others that require mixing, tempering, or diverting liquids at a set temperature.

Body Code 06

- Water Service Only
- Nickel Plated Piston, Brass Trim—Sliding piston
- Body— $\frac{1}{2}$ " - 2" NPT—brass body, union ends, bottom connection screwed
- $2\frac{1}{2}$ " - 4" (65-100mm)—iron body, flanged, faced and drilled for 125 lbs. (13.8 bar) standard
- Maximum Pressure 250 psig (17.3 bar)
- Maximum Differential Pressure:
 $\frac{1}{2}$ " - $\frac{3}{4}$ " NPT — 250 psi (17.3 bar)
 1" - 2" NPT — 200 psi (13.8 bar)
 $2\frac{1}{2}$ " - 4" (65 - 100mm) — 125 psi (8.6 bar)
- Maximum Body Temperature — 350°F (177°C)



Ordering Information - (For Assembled Body Bracket and Actuator)

Series 1140 Regulators (Cross ambient filled)

Size in. (mm)	Temperature Range								Weight (Approx.) lbs. (kg)
	40–80°F (4.4–27°C)	60–100°F (16–38°C)	80–120°F (27–49°C)	100–140°F (38–60°C)	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number									
$\frac{1}{2}$ NPT	400030	400676	400803	400523	400033	400036	400039	401232	12 (5.4)
$\frac{3}{4}$ NPT	400517	400091	400092	400361	400093	400094	400095	400023	13 (5.9)
1 NPT	400148	400149	400871	400872	400150	400151	400152	400026	15 (6.8)
$1\frac{1}{4}$ NPT	400876	400199	400877	400878	400200	400202	400034	400035	16 (7.3)
$1\frac{1}{2}$ NPT	400259	400260	400049	400883	400261	400262	402266	400263	19 (8.6)
2 NPT	400310	400311	400312	400376	400313	400314	400315	400044	25 (11.4)
$2\frac{1}{2}$ (65)	400428+ 401402	400572+ 401402	400573+ 401402	400574+ 401402	400575+ 401402	400615+ 401402	400616+ 401402	400617+ 401402	88 (40)
3 (80)	400428+ 401403	400572+ 401403	400573+ 401403	400574+ 401403	400575+ 401403	400615+ 401403	400616+ 401403	400617+ 401403	95 (43)
4 (100)	400428+ 401404	400572+ 401404	400573+ 401404	400574+ 401404	400575+ 401404	400615+ 401404	400616+ 401404	400617+ 401404	125 (57)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

Size in.	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number					
$\frac{1}{2}$ NPT	406140	406141	406142	406143	12 (5.4)
$\frac{3}{4}$ NPT	406144	406145	406146	406147	13 (5.9)
1 NPT	406148	406149	406150	406151	15 (6.8)
$1\frac{1}{4}$ NPT	406152	406153	406154	406155	16 (7.3)
$1\frac{1}{2}$ NPT	406156	406157	406158	406159	19 (8.6)
2 NPT	406160	406161	406162	406163	25 (11.4)

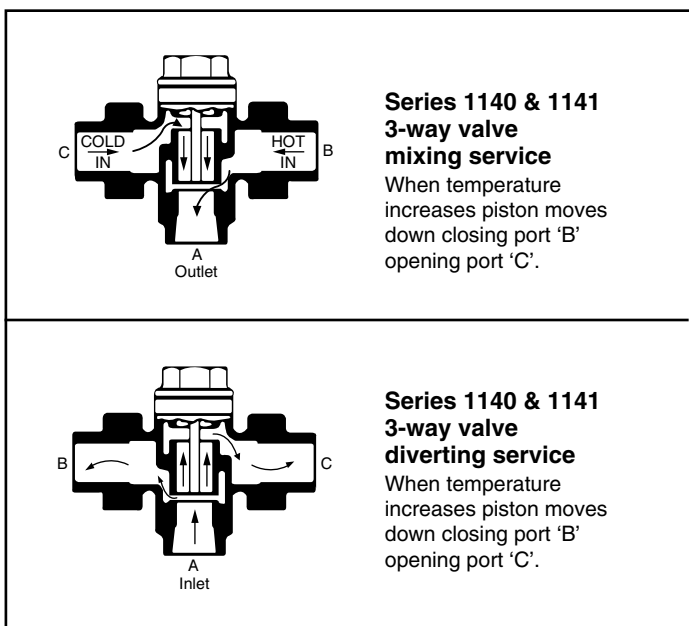
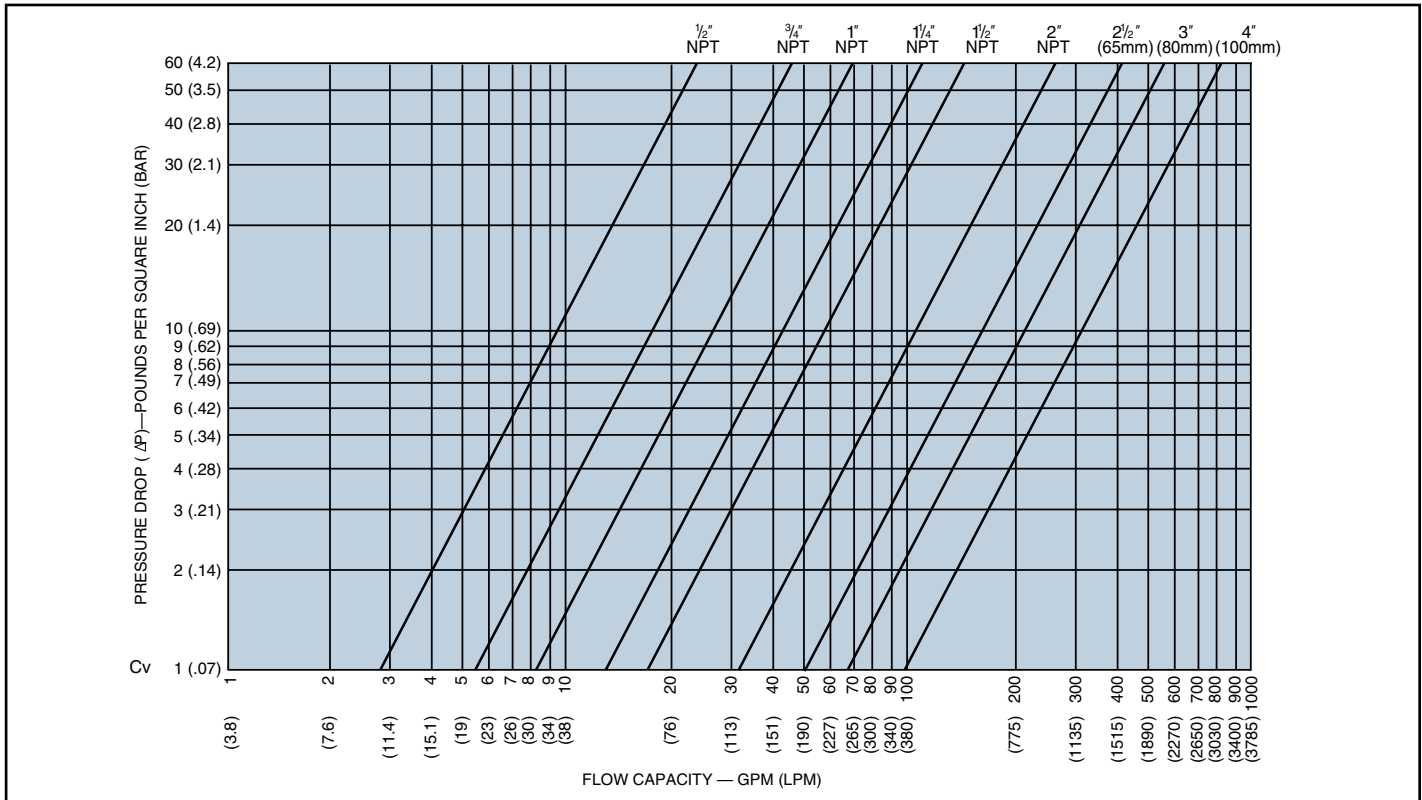
Series 1140 & 1141 Wells

Part Number	Series	Material	Bulb Size (dia x length in (mm))	Weight lbs. (kg)
400445	1141	Copper	$\frac{5}{8}$ x 11 (16 x 280)	2 (.9)
401179	1140	Copper	$\frac{7}{8}$ x 18 (22 x 457)	2 (.9)
401181	1140	Copper	$1\frac{1}{8}$ x 36 (29 x 914)	4 (1.8)
401180	1140	316 SS	$\frac{7}{8}$ x 18 (22 x 457)	3 (1.4)
405526	1140	316 SS	$1\frac{1}{8}$ x 36 (29 x 914)	4 (1.8)

Series 1140 & 1141 (continued)

Capacities — Water Flow vs Pressure Drop

Body Code 06 Three Way Valves



Tempering Valves

Series 21

Hoffman Specialty Tempering Valves are designed to control temperature in water mixing applications such as radiant floor heating, domestic hot water and industrial processing. They can also be used to divert

flow in cooling systems. Series 21 Valves can be used for residential, industrial, commercial or institutional applications.

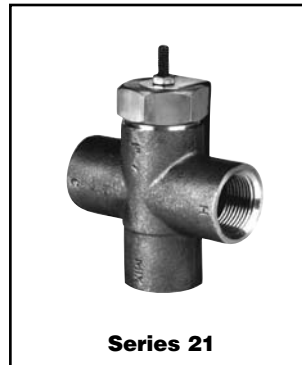
Series 21

- Fast acting, corrosion resistant actuator
- Solid filled thermostatic actuator exerts high operating force and provides reliable service
- Easy temperature adjustment
- No special tools required
- Cast brass body
- Adjustable temperature ranges
 - Model 21 140–200°F (60–93°C)
 - Model 21H 100–200°F (38–93°C)
 - Model 21LT 100–140°F (38–60°C)
- Maximum pressure 125 psig (8.6 bar)
- Maximum hot water supply temperature 235°F (113°C)

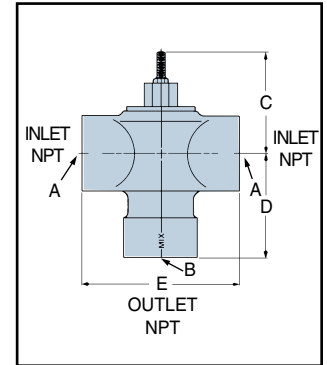
Model 21 provides wide temperature adjustment range for hot and cold water mixing in applications other than domestic hot water.

Model 21H provides widest temperature adjustment range for radiant heating applications where accurate temperature control is less critical.

Model 21LT provides the greatest accuracy of temperature control in mixing domestic water.




Series 21



Dimensions in. (mm)

NPT Size In. A	NPT Size In. B	C	D	E
3/4	3/4	2 3/4 (70)	1 7/8 (48)	3 3/4 (95)
1	1	2 3/4 (70)	2 (50)	4 (102)
1 1/4	1 1/4	3 7/8 (98)	3 7/8 (98)	5 1/4 (133)
1 1/2	1 1/2	3 7/8 (98)	3 7/8 (98)	5 1/4 (133)
2	2	3 7/8 (98)	3 7/8 (98)	6 (152)

⚠ WARNING

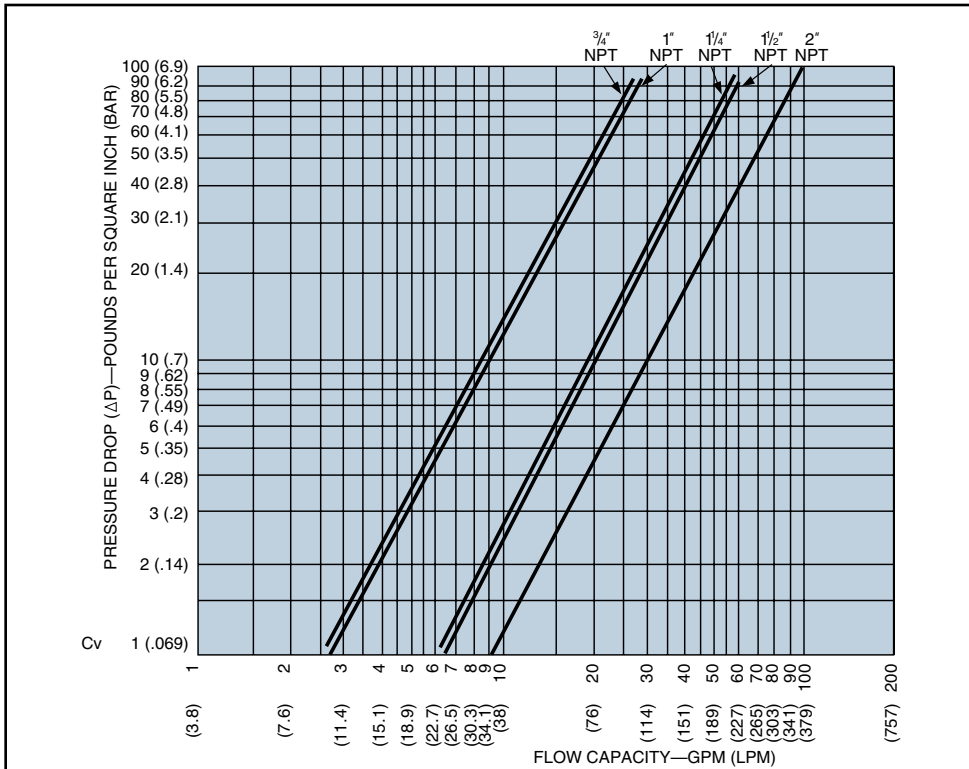


Do not use Tempering Valves as anti-scald devices. Tempering valves may need to be used in conjunction with an anti-scald device.

Failure to follow this warning could cause serious burns, personal injury or death.

Series 21 (continued)

Capacities



Ordering Information

Adjustable range of 140 to 200°F (60 to 93°C). Maximum supply temperature 235°F (113°C).

Model Number	Part Number	NPT Size in.	Weight lbs. (kg)
21	401239	3/4	3 (1.4)
21	401242	1	3 (1.4)
21	401245	1 1/4	6 (2.7)
21	401248	1 1/2	7 (3.2)
21	401251	2	9 (4.1)

Adjustable range of 100 to 200°F (38 to 93°C). Maximum supply temperature 235°F (113°C).

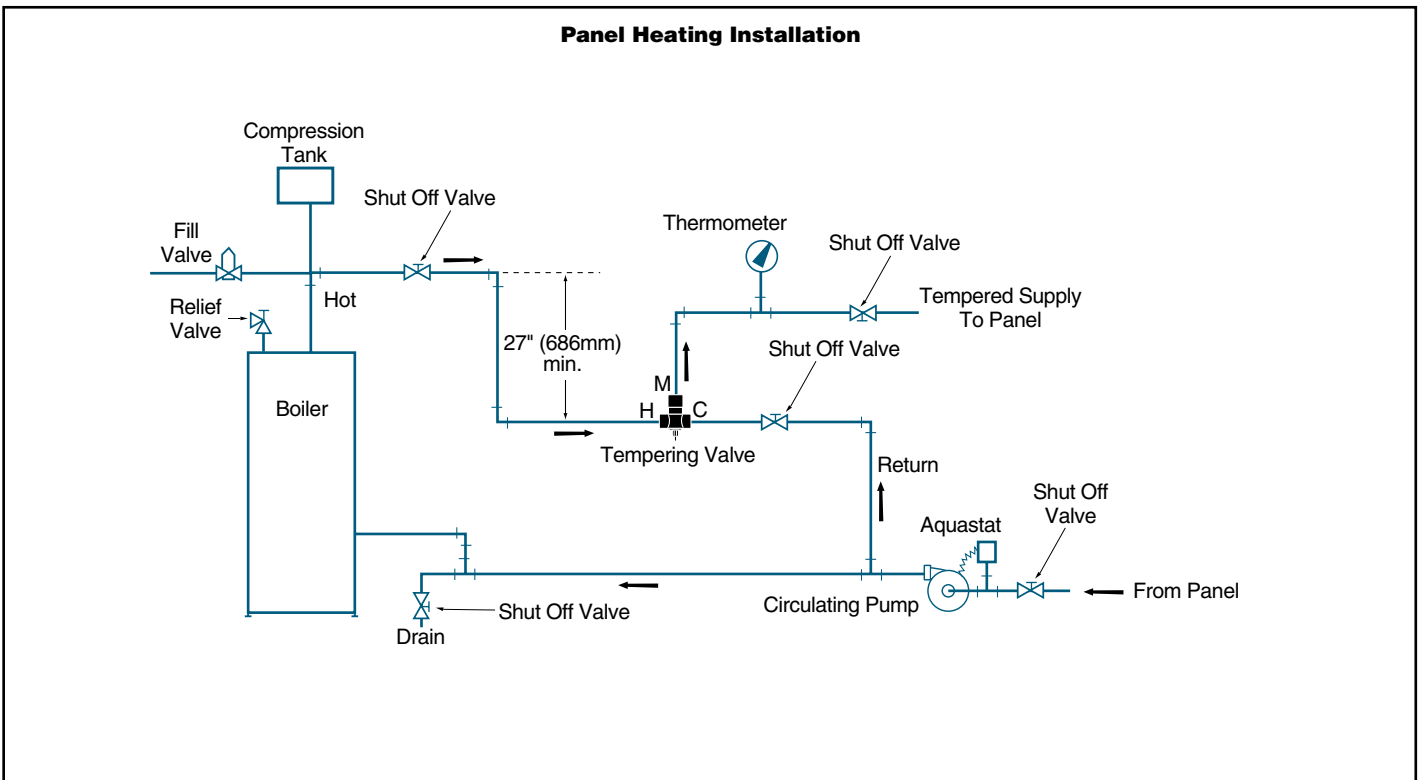
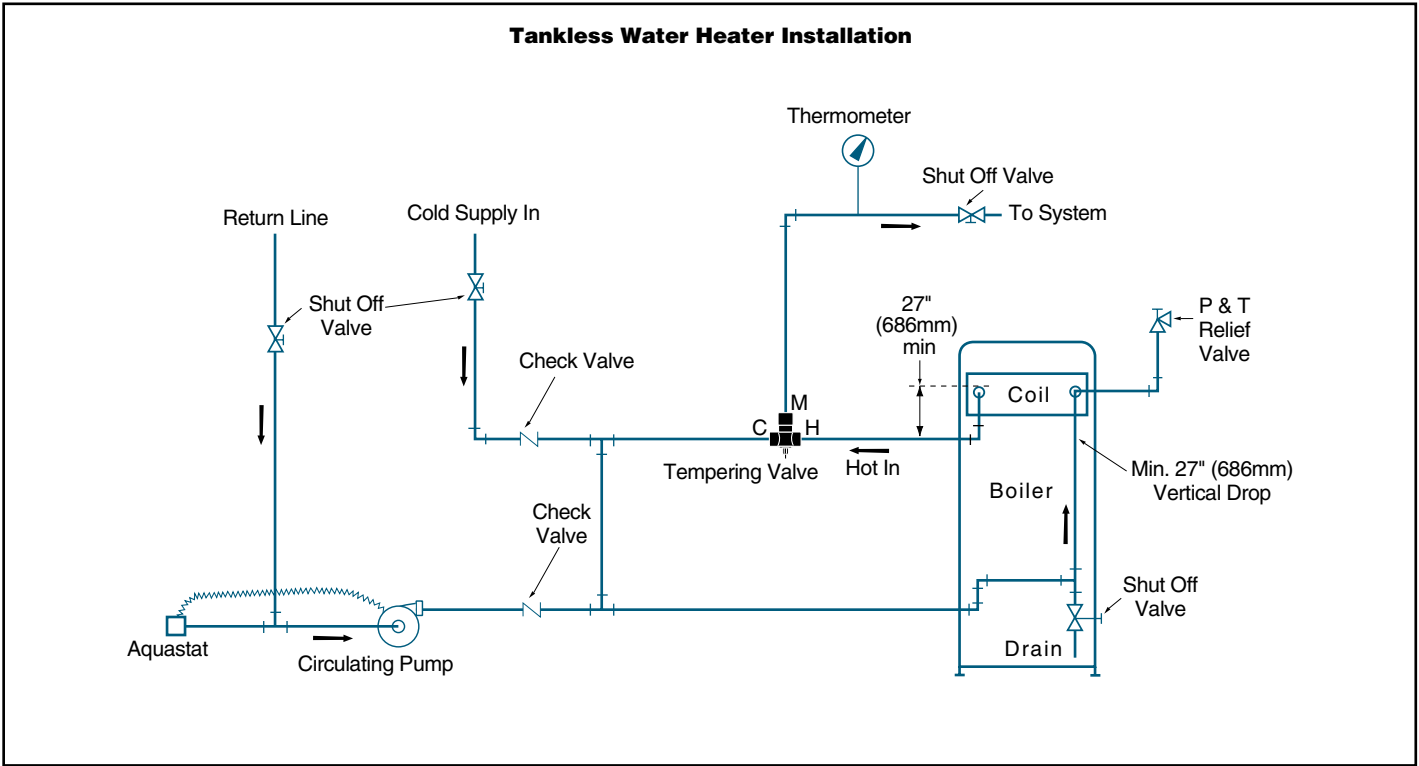
Model Number	Part Number	NPT Size in.	Weight lbs. (kg)
21H	401024	3/4	3 (1.4)
21H	401030	1	3 (1.4)
21H	401033	1 1/4	6 (2.7)
21H	401048	1 1/2	7 (3.2)
21H	401102	2	9 (4.1)

Adjustable range of 100 to 140°F (38 to 60°C). Maximum supply temperature 235°F (113°C).

Model Number	Part Number	NPT Size in.	Weight lbs. (kg)
21LT	401281	3/4	3 1/2 (1.6)
21LT	401284	1	3 1/2 (1.6)
21LT	401287	1 1/4	6 1/2 (2.9)
21LT	401290	1 1/2	7 1/2 (3.4)
21LT	401293	2	9 1/2 (4.3)

Thermostatic Temperature Regulators (continued)
Series 21 Applications

Regulators



Note: Circulating pumps, illustrated in the above applications, circulate tempered water through the system. The aquastat shuts the circulating pump off if the tempered water exceeds the temperature set point, which is normally $\pm 5^{\circ}\text{F}$ ($\pm 2^{\circ}\text{C}$) of the tempering valve discharge.

Thermostatic Temperature Regulators (continued)
Series 21 (continued)

