

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" - 4" (15-100mm)
- 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" (15-40mm) NPT 250 psig (17.3 bar)
 - 2" (50mm) 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 (25mm), 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.

⚠ 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. 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	NPT Size in. (mm)	A	B	C	D
Union ends	1/2 (15)	4 7/8 (124)	2 (51)	8 13/16 (224)	4 5/16 (110)
	3/4 (20)	5 3/8 (136)	2 3/16 (56)	9 (229)	4 5/16 (110)
	1 (25)	5 7/8 (149)	2 5/16 (59)	9 1/8 (232)	4 5/16 (110)
	1 1/4 (32)	6 7/8 (175)	2 5/8 (67)	9 7/16 (240)	4 5/16 (110)
	1 1/2 (40)	7 1/2 (190)	2 13/16 (72)	9 5/8 (245)	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)

Bulb Size, Dimensions in. (mm)

Valve Size in. (mm)	E	F	G
1/2 - 2 (15-50) Copper Bulb	7/8 (22)	18 (457)	1 (25)
2 1/2 - 4 (65-100) Copper Bulb	1 1/8 (29)	36 (914)	1 1/4 (32)

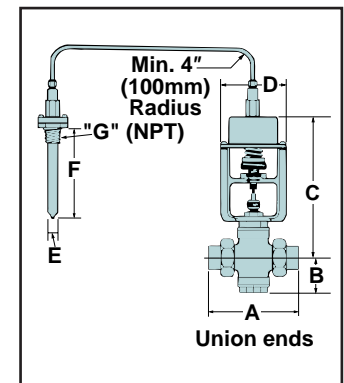
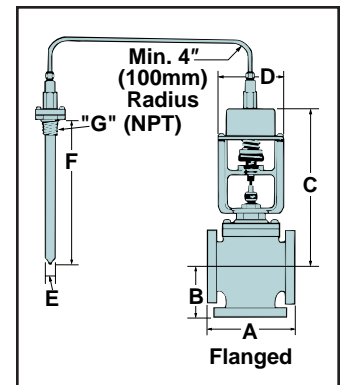
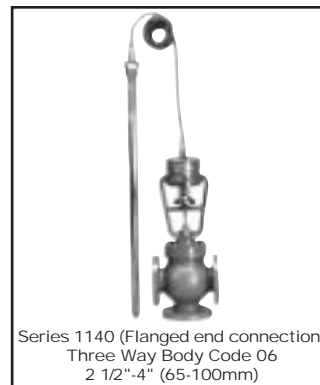
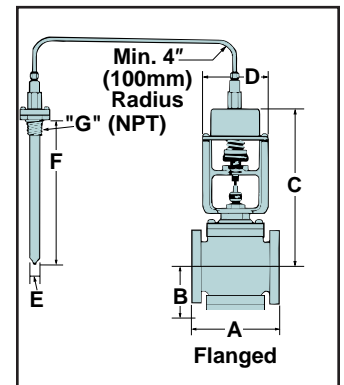
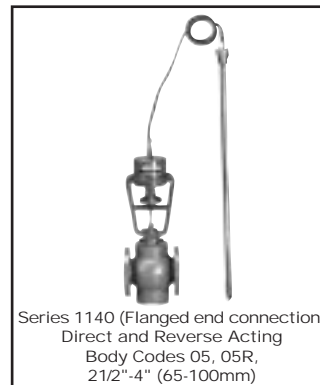
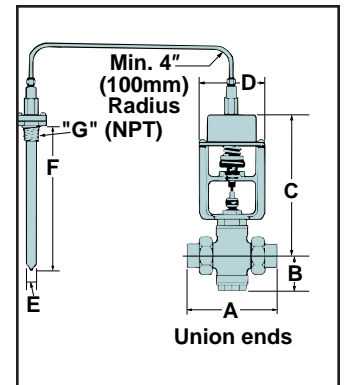
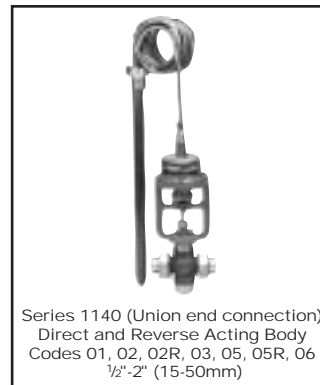
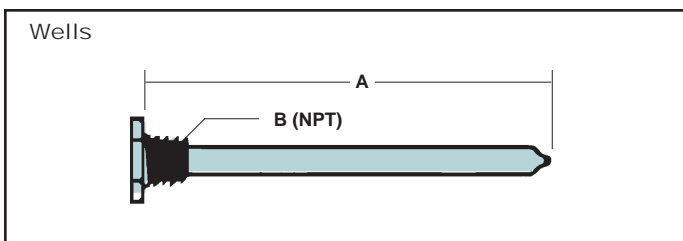
Wells, Dimensions in. (mm)

Series 1140

Regulator Bulb Size in. (mm)	A	B
7/8 x 18 (22 x 457)	18 1/2 (470)	1 (25)
1 1/8 x 36 (102 x 915)	36 1/2 (927)	1 1/4 (32)

Series 1141

5/8 x 11 (16 x 280)	11 1/2 (292)	1 (25)
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How to Size Series 1140 & 1141 Regulators

For Steam

1. Use the selection chart to determine the body code required.
2. Determine the capacity required by using the formulas and tables.
3. Determine the available initial steam inlet pressure.
4. Determine the outlet pressure required, based on your heating or cooling equipment.
5. Use the capacity tables to select the regulator required.

Example:

What size regulator is required to heat 500 GPH (1892 LPH) of water from 60°F (15.5°C) to 160° (71.1°C) [100°F (55°C) temperature rise]? The regulator inlet pressure is 15 psig (1.0 bar) and the heat exchanger operating pressure is 9 psig (.6 bar).

Solution:

Use Table 2 or 2A to determine the required capacity of 420 lbs./hr. (190 kg/hr.). Use the single seat body code 01 or 02 capacity tables. You can use a 1 1/4" (32mm) valve rated for 572 lbs./hr. (260 kg/hr.)

For Water

1. Use the selection chart to determine the body code required.
2. Determine the capacity required by using the formulas and tables.
3. Determine size required:
 - For **body codes 01, 02, and 02R** use Cv/Kv in capacity tables.
 - For **body codes 05, 05R, 06** use capacity graphs.

To determine the Cv when you know the required flow rate (in GPM) and the differential pressure; use the formula.

Gravity can be ignored when the water temperature is under 200°F (93°C)

Example:

To handle a maximum flow of 20 GPM at 22 psi differential, the Cv required is:

$$CV = \frac{20}{\sqrt{22}} = 4.26$$

Solution:

You can use a 3/4" (20mm) body code 01 or 02 with an actuator for the required temperature.

Note: To convert GPM to LPM, multiply the GPM by 3.78.

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Formulas for Sizing

Heating liquids other than water (A) rate of flow—fluid to be heated (gal./hr.) (B) Weight of fluid (lbs./gal.) (see Table 1.) (C) Fluid temperature rise (degrees fahrenheit). (D) Specific heat of fluid being heated (see Table 1.)	$(\text{lbs. of steam/hr.}) = \frac{(A) \times (B) \times (C) \times (D)}{1,000}$ <p>To convert lbs. of steam/hr. to kg of steam/hr.; multiply lbs. of steam/hr. by .454.</p>
Cv determination	$\frac{\text{GPM} \sqrt{\text{specific gravity}}}{\sqrt{\text{pressure drop}}} = \text{Cv required}$

Table 1 – Weights and Specific Heats of Liquids at 60°F (16°C)

Liquid	Weight lbs./gal.	Specific Heat BTU/lb./ °F
Fuel Oil (No. 6)	7.909 to 8.448	0.4 to 0.5
Heat Transfer Oil (Light)	8.17	0.82
Mineral Oil	7.67	0.65
Olive Oil	7.67	0.47
Petroleum Oil	6.84	0.50
Water	8.337	1.00

Cv (Kv) Values

Body Code	Size, in. (mm) NPT								
	1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1/2 (40)	2 (50)	2 1/2 (65)	3 (80)	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)

Series 1140 & 1141 (continued)

Table 2 – Lbs. of Steam Per Hr. to Heat Water

Temp. Rise(°F)	Water - Gallons Per Hour																
	100	150	200	300	400	500	750	1000	1500	2000	3000	4000	5000	7500	10000	15000	20000
10	9	13	17	25	33	42	63	83	125	170	250	330	420	630	830	1250	1700
20	17	25	34	50	68	83	125	166	250	340	500	700	830	1250	1700	2500	3400
30	25	37	50	70	100	120	190	250	370	500	750	1000	1200	1900	2500	3700	5000
40	34	50	68	100	135	165	250	335	500	700	1000	1350	1650	2500	3350	5000	7000
50	42	63	84	125	170	210	310	420	630	840	1250	1680	2100	3100	4200	6300	8400
60	50	75	100	150	200	250	375	500	750	1000	1500	2000	2500	3750	5000	7500	10000
80	67	100	135	200	270	330	500	670	1000	1400	2000	2700	3300	5000	6700	10000	14000
100	83	125	166	250	330	420	630	830	1300	1700	2500	3300	4200	6300	8300	13000	17000
120	100	150	200	300	400	500	750	1000	1500	2000	3000	4000	5000	7500	10000	15000	20000
140	116	175	235	350	470	580	880	1160	1800	2400	3500	4700	5800	8800	11600	18000	24000
160	135	200	270	400	540	660	1000	1350	2000	2800	4000	5400	6600	10000	13500	20000	28000

Table 2A – Kg of Steam Per Hr. to Heat Water

Temp. Rise(°C)	Water - Liters Per Hour																
	378	568	757	1135	1515	1890	2840	3785	5680	7570	11355	15140	18925	28390	37855	56780	75710
5.6	4	6	8	11	15	19	28	38	57	77	113	150	190	285	375	570	770
11.1	8	11	15	23	31	38	56	75	113	155	227	320	375	570	770	1135	1540
16.7	11	17	23	32	45	54	86	113	168	227	340	450	545	860	1135	1590	2270
22.2	15	23	32	45	61	75	113	152	227	320	450	610	750	1135	1520	2270	3175
27.8	19	29	38	57	77	95	140	190	285	380	570	760	950	1405	1900	2860	3810
33.3	23	34	45	68	91	113	170	227	340	455	680	910	1135	1700	2270	3400	4535
44.4	30	45	61	91	122	150	227	300	455	635	910	1225	1500	2270	3040	4535	6350
55.6	38	57	75	113	150	190	285	375	590	770	1135	1500	1900	2860	3765	5900	7710
66.6	45	68	91	136	181	227	340	455	680	910	1360	1815	2270	3400	4535	6800	9070
77.8	53	79	106	159	213	263	400	525	820	1090	1590	2130	2630	3990	5260	8165	10886
88.9	61	91	122	181	245	299	455	612	910	1270	1815	2550	3000	4535	6125	9070	12700

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Component Ordering Information

Body Bracket Assemblies

Part Number	NPT Size in. (mm)	Body Code	Weight lbs. (kg)
401299	1/2 (15)	01	8 (3.6)
401300	3/4 (20)	01	10 (4.5)
401301	1 (25)	01	11 (5.0)
401302	1 1/4 (32)	01	12 (5.4)
401303	1 1/2 (40)	01	15 (6.8)
401304	2 (50)	01	21 (9.5)
401305	1/2 (15)	02	2 (.9)
401306	3/4 (20)	02	6 (2.7)
401307	1 (25)	02	6 (2.7)
401308	1 1/4 (32)	02	10 (4.5)
401309	1 1/2 (40)	02	10 (4.5)
401310	2 (50)	02	15 (6.8)
401312	1/2 (15)	02R	7 (3.2)
401311	3/4 (20)	02R	9 (4.1)
401313	1 (25)	02R	11 (5.0)
401314	1 1/4 (32)	02R	13 (5.9)
401317	1 1/2 (40)	02R	17 (7.7)
401320	2 (50)	02R	22 (10)
401321	3/4 (20)	03	10 (4.5)
401322	1 (25)	03	10 (4.5)
401323	1 1/4 (32)	03	12 (5.4)
401324	1 1/2 (40)	03	15 (6.8)
401325	2 (50)	03	18 (8.2)
401350	3/4 (20)	05	9 (4.1)
401353	1 (25)	05	9.3 (4.2)
401356	1 1/4 (32)	05	10 (4.5)
401359	1 1/2 (40)	05	14 (6.4)
401362	2 (50)	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 (20)	05R	9 (4.1)
401380	1 (25)	05R	11 (5.0)
401383	1 1/4 (32)	05R	12 (5.4)
401386	1 1/2 (40)	05R	15 (6.8)
401389	2 (50)	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 (15)	06	8 (3.6)
401397	3/4 (20)	06	9 (4.1)
401398	1 (25)	06	10 (4.5)
401399	1 1/4 (32)	06	12 (5.4)
401400	1 1/2 (40)	06	15 (6.8)
401401	2 (50)	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 in. (mm)	Body Code	Bulb Size (dia. x length)	Weight lbs. (kg)
400558	40-80 (4.4-27)	1/2-2 (15-50)	All	7/8 x 18 (22 x 457)	7 (3.2)
400561	60-100 (16-38)	1/2-2 (15-50)	All	7/8 x 18 (22 x 457)	7 (3.2)
400562	80-120 (27-49)	1/2-2 (15-50)	All	7/8 x 18 (22 x 457)	7 (3.2)
400563	100-140 (38-60)	1/2-2 (15-50)	All	7/8 x 18 (22 x 457)	7 (3.2)
400567	120-160 (49-71)	1/2-2 (15-50)	All	7/8 x 18 (22 x 457)	7 (3.2)
400606	140-180 (60-82)	1/2-2 (15-50)	All	7/8 x 18 (22 x 457)	7 (3.2)
400607	160-200 (71-93)	1/2-2 (15-50)	All	7/8 x 18 (22 x 457)	7 (3.2)
400570	180-220 (82-104)	1/2-2 (15-50)	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. (mm)	Body Code	Bulb Size (dia. X length)	Weight lbs (kg)
400980	120-160 (49-71)	1/2 -2 (15-50)	All	5/8 X 11 (16 X 280)	7 (32)
400981	140-180 (60-82)	1/2 -2 (15-50)	All	5/8 X 11 (16 X 280)	7 (32)
400982	160-200 (71-93)	1/2 -2 (15-50)	All	5/8 X 11 (16 X 280)	7 (32)
400983	180-220 (82-104)	1/2 -2 (15-50)	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) 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	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)

Series 1140 & 1141

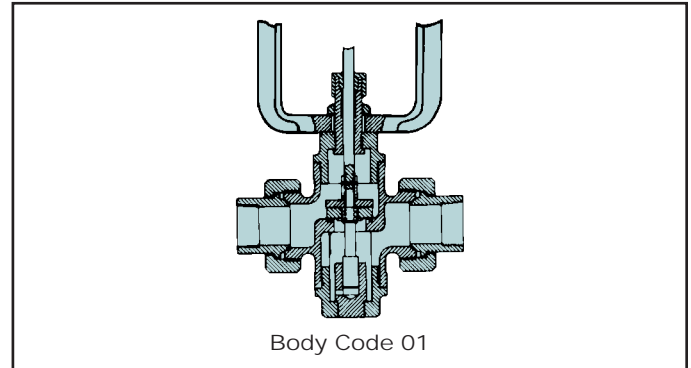
Direct Acting

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:
 - ½" (15mm) — 50 psi (3.5 bar)
 - ¾" (20mm) — 50 psi (3.5 bar)
 - 1" (25mm) — 32 psi (2.2 bar)
 - 1¼" (32mm) — 20 psi (1.4 bar)
 - 1½" (40mm) — 16 psi (1.1 bar)
 - 2" (50mm) — 8 psi (.55 bar)



Ordering Information

Series 1140 Regulators (Cross ambient filled)

NPT 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									
½ (15)	400000	400001	400409	400002	400003	400004	400005	400006	12 (5.4)
¾ (20)	400794	401165	400541	401037	400058	400059	400060	400061	13 (5.9)
1 (25)	400716	400025	400110	400373	400111	400112	400113	400114	15 (6.8)
1¼ (32)	401166	400028	400173	400671	400174	400175	400176	400184	16 (7.3)
1½ (40)	400601	400037	400687	401036	400227	400228	400229	400230	19 (8.6)
2 (50)	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. (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					
½ (15)	406000	406001	406002	406003	12 (5.4)
¾ (20)	406004	406005	406006	406007	13 (5.9)
1 (25)	406008	406009	406010	406011	15 (6.8)
1¼ (32)	406012	406013	406014	406015	16 (7.3)
1½ (40)	406016	406017	406018	406019	19 (8.6)
2 (50)	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)

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

Capacities – Steam Flow, lbs./hr. (kg/hr.) vs Pressure Drop psi (bar)

Body Code 01 Direct Acting, Single Seated Valves

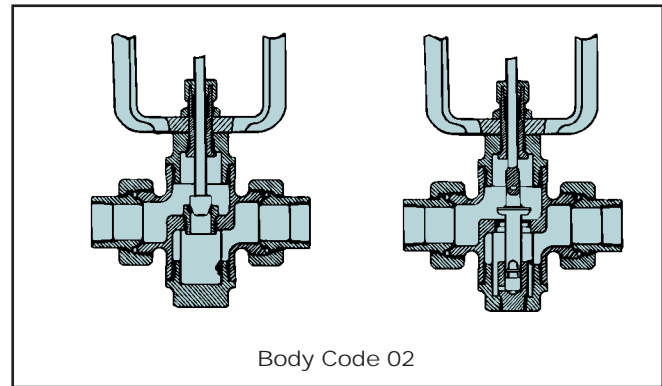
NPT Size in. (mm)			1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)
Pressure psi (bar)			Steam Flow lbs./hr. (kg/hr.)					
Inlet	Outlet	Drop						
3 (.2)	2 (.14)	1 (.07)	33 (14)	70 (31)	134 (60)	195 (88)	244 (110)	305 (138)
	1 (.07)	2 (.14)	45 (20)	96 (43)	185 (83)	269 (122)	336 (152)	420 (190)
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)				

Regulators

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" (15mm)—Removable stainless steel seat and cone disc
3/4" - 2" (20-50mm)—Integral stainless steel seat ring and bottom guided seat disc
- Body—Brass body, union ends
- Maximum Differential Pressure:
1/2" (15mm) - 125 psi (8.6 bar) 1 1/4" (32mm)- 20 psi (1.4 bar)
3/4" (20mm) - 60 psi (4.1 bar) 1 1/2" (40mm)- 16 psi (1.1 bar)
1" (25mm) - 32 psi (2.2 bar) 2" (50mm)- 8 psi (.55 bar)



Ordering Information

Series 1140 Regulators (Cross ambient filled)

NPT 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									
1/2 (15)	400009	400010	400713	400715	400011	400012	400013	400014	12 (5.4)
3/4 (20)	400697	400064	400720	400721	400065	400066	400067	400068	13 (5.9)
1 (25)	400143	400115	400725	400726	400116	400117	400118	400119	15 (6.8)
1 1/4 (32)	400179	400029	400180	400731	400181	400031	400182	400032	16 (7.3)
1 1/2 (40)	400232	400735	400233	400741	400234	400235	400236	400237	19 (8.6)
2 (50)	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.

NPT 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 (15)	406024	406025	406026	406027	12 (5.4)
3/4 (20)	406028	406029	406030	406031	13 (5.9)
1 (25)	406032	406033	406034	406035	15 (6.8)
1 1/4 (32)	406036	406037	406038	406039	16 (7.3)
1 1/2 (40)	406040	406041	406042	406043	19 (8.6)
2 (50)	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)

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Capacities – Steam Flow, lbs./hr. (kg/hr.) vs Pressure Drop psi (bar)

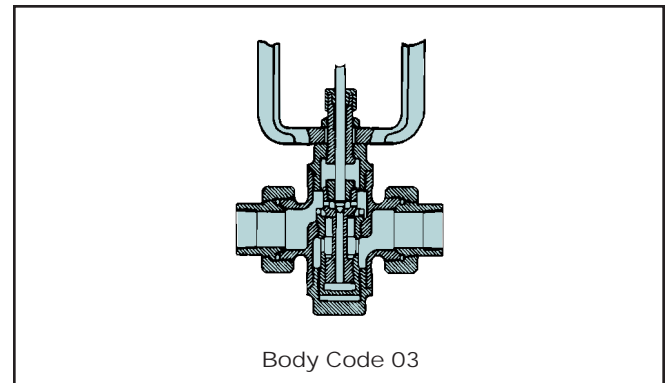
Body Code 02 Direct Acting, Single Seated Valves

NPT Size in. (mm)			1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)
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)					
	40 (2.8)	50 (3.5)	424 (192)					
100 (6.9)	90 (6.3)	10 (.69)	262 (118)					
	80 (5.6)	20 (1.4)	354 (160)					
	70 (4.9)	30 (2.1)	408 (185)					
	60 (4.2)	40 (2.8)	443 (200)					
	50 (3.5)	50 (3.5)	462 (209)					
125 (8.6)	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)						

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— $\frac{3}{4}$ " (20mm) through 2" (50mm)—brass body, union ends
- Maximum Differential Pressure:
 $\frac{3}{4}$ " (20mm) — 250 psi (17.3 bar)
 1" (25mm) — 200 psi (13.8 bar)
 1 $\frac{1}{4}$ " (32mm) — 200 psi (13.8 bar)
 1 $\frac{1}{2}$ " (40mm) — 200 psi (13.8 bar)
 2" (50mm) — 150 psi (10.3 bar)



Ordering Information

Series 1140 Regulators (Cross ambient filled)

NPT 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									
$\frac{3}{4}$ (20)	400700	400073	400084	400755	400085	400086	400087	400088	13 (5.9)
1 (25)	400251	400129	400130	400160	400131	400132	400133	400134	15 (6.8)
1 $\frac{1}{4}$ (32)	400189	400190	400191	400592	400192	400193	400194	400196	16 (7.3)
1 $\frac{1}{2}$ (40)	400242	400244	400167	400784	400245	400246	400449	400248	19 (8.6)
2 (50)	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.

NPT 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					
$\frac{3}{4}$ (20)	406072	406073	406074	406075	13 (5.9)
1 (25)	406076	406077	406078	406079	15 (6.8)
1 $\frac{1}{4}$ (32)	406080	406081	406082	406083	16 (7.3)
1 $\frac{1}{2}$ (40)	406084	406085	406086	406087	19 (8.6)
2 (50)	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)

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

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

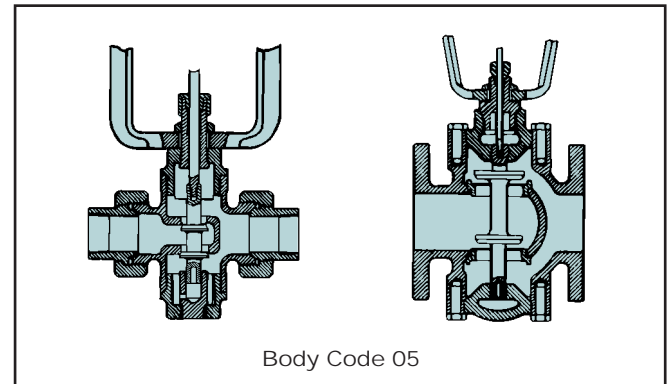
NPT Size in. (mm)			3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)
Pressure psi (bar)			Steam Flow lbs./hr. (kg/hr.)				
Inlet	Outlet	Drop					
3 (.2)	2 (.14)	1 (.07)	52 (23)	96 (43)	159 (72)	244 (110)	305 (138)
	1 (.07)	2 (.14)	72 (32)	133 (60)	218 (98)	336 (152)	420 (190)
5 (.35)	3 (.21)	2 (.14)	77 (34)	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)
	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)
150 (10.3)	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)
	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)
175 (12.1)	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)	
	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)	
200 (13.8)	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)	
	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)	
250 (17.3)	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)				
250 (17.3)	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)				

Regulators

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" (20-50mm) – 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" (20mm) – 250 psi (17.3 bar)
1" - 1 1/2" (25 - 40mm) – 200 psi (13.8 bar)
2" (50mm) – 150 psi (10.3 bar)
2 1/2" - 4" (65 - 100mm) – 125 psi (8.6 bar) (iron body, flanged)



Ordering Information

Series 1140 Regulators (Cross ambient filled)

NPT 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 (20)	405552	401106	400662	400096	400099	400102	400325	400100	13 (5.9)
1 (25)	400829	400647	400476	400722	400159	400162	400690	400702	15 (6.8)
1 1/4 (32)	400201	400770	400843	400532	400204	400207	400210	400211	16 (7.3)
1 1/2 (40)	400264	400772	400852	400326	400267	400270	400723	400340	19 (8.6)
2 (50)	400809	400318	400321	400718	400324	400327	400330	400333	25 (11.4)
2 1/2 (65)	400711	400358	401169	400360	400363	400142	401018	400364	88 (40)
3 (80)	400699	400578	400377	400990	400390	400391	400393	400394	95 (43)
4 (100)	400529	400419	400691	400420	400423	400426	400686	400683	125 (57)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

NPT 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					
3/4 (20)	406096	406097	406098	406099	13 (5.9)
1 (25)	406100	406101	406102	406103	15 (6.8)
1 1/4 (32)	406104	406105	406106	406107	16 (7.3)
1 1/2 (40)	406108	406109	406110	406111	19 (8.6)
2 (50)	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)

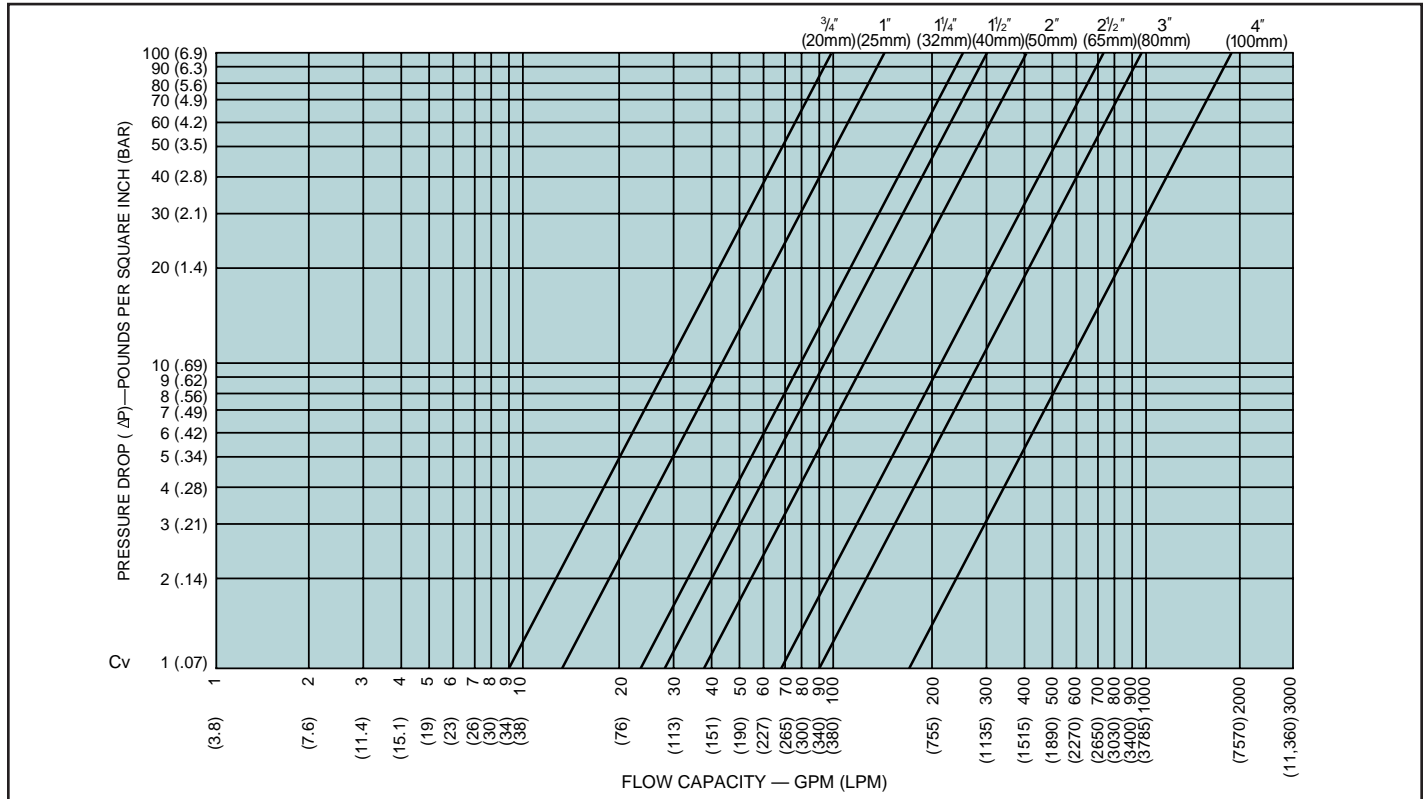
Capacities – Steam Flow, lbs./hr. (kg/hr.) vs Pressure Drop psi (bar)

Body Code 05 Direct Acting, Balanced Double Seated Valves

NPT Size in. (mm)			¾ (20)	1 (25)	1¼ (32)	1½ (40)	2 (50)	2½ (65)	3 (80)	4 (100)
Pressure psi (bar)			Steam Flow lbs./hr. (kg/hr.)							
Inlet	Outlet	Drop								
3 (.2)	2 (.14)	1 (.07)	112 (50)	159 (72)	305 (138)	354 (160)	476 (215)	854 (387)	1090 (494)	2200 (997)
	1 (.07)	2 (.14)	155 (70)	218 (98)	420 (190)	487 (220)	655 (297)	1180 (535)	1500 (680)	3020 (1369)
5 (.35)	3 (.21)	2 (.14)	164 (74)	231 (104)	445 (201)	516 (234)	694 (314)	1250 (567)	1590 (721)	3200 (1451)
	2 (.14)	3 (.21)	195 (88)	276 (125)	530 (240)	615 (278)	827 (375)	1480 (671)	1880 (852)	3820 (1732)
10 (.7)	8 (.56)	2 (.14)	186 (84)	263 (119)	505 (229)	586 (265)	785 (356)	1410 (639)	1800 (816)	3640 (1651)
	6 (.42)	4 (.28)	251 (113)	355 (161)	683 (309)	792 (359)	1060 (480)	1910 (866)	2430 (1102)	4910 (2227)
	4 (.28)	6 (.42)	293 (132)	413 (187)	795 (360)	922 (418)	1240 (562)	2230 (1011)	2830 (1283)	5720 (2594)
15 (1.0)	12 (.83)	3 (.21)	247 (112)	348 (157)	670 (303)	777 (352)	1050 (476)	1880 (852)	2390 (1084)	4820 (2186)
	9 (.62)	4 (.28)	329 (149)	465 (210)	895 (405)	1040 (471)	1400 (635)	2510 (1138)	3190 (1446)	6440 (2921)
	6 (.42)	6 (.42)	376 (170)	532 (241)	1020 (462)	1190 (539)	1600 (725)	2560 (1161)	3640 (1651)	7360 (3338)
20 (1.4)	16 (1.1)	4 (.28)	305 (138)	432 (195)	830 (376)	963 (436)	1290 (585)	2320 (1052)	2950 (1338)	5980 (2712)
	12 (.83)	8 (.56)	403 (182)	569 (258)	1100 (498)	1270 (576)	1710 (775)	3070 (1392)	3900 (1769)	7880 (3574)
	8 (.56)	12 (.83)	455 (206)	644 (292)	1240 (562)	1440 (653)	1930 (875)	3470 (1573)	4410 (2000)	8910 (4041)
25 (1.7)	20 (1.4)	5 (.35)	363 (164)	514 (233)	988 (448)	1150 (521)	1540 (698)	2770 (1256)	3520 (1596)	7110 (3225)
	15 (1.0)	10 (.7)	476 (215)	672 (304)	1290 (585)	1500 (680)	2020 (916)	3620 (1642)	4600 (2086)	9310 (4223)
	10 (.7)	15 (1.0)	531 (240)	750 (340)	1440 (653)	1670 (752)	2250 (1020)	4040 (1832)	5140 (2331)	10400 (4717)
30 (2.1)	25 (1.7)	5 (.35)	389 (176)	550 (249)	1060 (480)	1230 (557)	1650 (748)	2960 (1342)	3760 (1705)	7610 (3451)
	20 (1.4)	10 (.7)	515 (233)	727 (329)	1400 (635)	1620 (734)	2180 (988)	3910 (1773)	4980 (2258)	10100 (4581)
	15 (1.0)	15 (1.0)	582 (264)	823 (373)	1580 (716)	1940 (879)	2470 (1120)	4430 (2009)	5630 (2553)	11400 (5171)
40 (2.8)	35 (2.4)	5 (.35)	435 (197)	615 (278)	1180 (535)	1370 (621)	1840 (834)	3310 (1501)	4210 (1909)	8510 (3860)
	30 (2.1)	10 (.7)	583 (264)	824 (373)	1590 (721)	1840 (834)	2470 (1120)	4440 (2013)	5640 (2558)	11400 (5171)
	20 (1.4)	20 (1.4)	727 (329)	1080 (489)	1980 (898)	2290 (1038)	3080 (1397)	5530 (2508)	7030 (3188)	14200 (6441)
50 (3.5)	40 (2.8)	10 (.7)	646 (293)	913 (414)	1760 (798)	2040 (925)	2740 (1242)	4910 (2227)	6250 (2835)	12600 (5715)
	30 (2.1)	20 (1.4)	825 (374)	1170 (530)	2240 (1016)	2600 (1179)	3500 (1587)	6250 (2835)	7980 (3619)	16100 (7302)
	20 (1.4)	30 (2.1)	890 (403)	1260 (571)	2420 (1097)	2810 (1274)	3780 (1714)	6780 (3075)	8620 (3910)	17400 (7892)
60 (4.1)	50 (3.5)	10 (.7)	702 (318)	992 (449)	1910 (866)	2210 (1002)	2900 (1315)	5340 (2422)	6790 (3079)	13700 (6214)
	40 (2.8)	20 (1.4)	913 (414)	1290 (585)	2480 (1124)	2880 (1306)	3870 (1755)	6940 (3147)	8830 (4005)	17900 (8119)
	30 (2.1)	30 (2.1)	1010 (458)	1430 (648)	2750 (1247)	3190 (1446)	4290 (1945)	7700 (3492)	9790 (4440)	19800 (8981)
70 (4.8)	60 (4.2)	10 (.7)	754 (342)	1070 (485)	2050 (929)	2380 (1079)	3200 (1451)	5740 (2603)	7300 (3311)	14800 (6713)
	50 (3.5)	20 (1.4)	994 (450)	1400 (635)	2700 (1224)	3130 (1419)	4210 (1909)	7560 (3429)	9610 (4359)	19400 (8799)
	40 (2.8)	30 (2.1)	1120 (508)	1590 (721)	3050 (1383)	3540 (1605)	4760 (2159)	8540 (3873)	10900 (4944)	22000 (9979)
80 (5.5)	70 (4.9)	10 (.7)	803 (364)	1130 (512)	2180 (988)	2530 (1147)	3400 (1542)	6110 (2771)	7700 (3492)	15700 (7121)
	60 (4.2)	20 (1.4)	1070 (485)	1510 (684)	2900 (1315)	3360 (1524)	4520 (2050)	8120 (3686)	10300 (4672)	20900 (952)
	50 (3.5)	30 (2.1)	1210 (548)	1720 (780)	3300 (1496)	3830 (1737)	5150 (2336)	9240 (4191)	11700 (5307)	23800 (10795)
90 (6.2)	80 (4.2)	10 (.7)	849 (385)	1200 (544)	2310 (1047)	2680 (1215)	3600 (1632)	6460 (2930)	8210 (3724)	16600 (7529)
	70 (4.9)	20 (1.4)	1130 (512)	1600 (725)	3080 (1397)	3570 (1619)	4800 (2177)	8610 (3905)	10900 (4944)	22100 (1024)
	60 (4.2)	30 (2.1)	1310 (594)	1850 (839)	3550 (1610)	4120 (1868)	5540 (2512)	9940 (4508)	12600 (5715)	25600 (11612)
100 (6.9)	90 (6.3)	10 (.7)	893 (405)	1260 (571)	2430 (1102)	2820 (1279)	3790 (1719)	6800 (3084)	8640 (3919)	17500 (7938)
	80 (5.6)	20 (1.4)	1210 (548)	1700 (771)	3280 (1487)	3800 (1723)	5110 (2317)	9170 (4159)	11700 (5307)	23600 (10704)
	70 (4.9)	30 (2.1)	1390 (630)	1960 (889)	3780 (1714)	4380 (1998)	5810 (2635)	10600 (4808)	13400 (6078)	27200 (12337)
125 (8.6)	110 (7.6)	15 (1.0)	1200 (544)	1690 (766)	3250 (1474)	3770 (1710)	5070 (2299)	9100 (4127)	11600 (5261)	23400 (10614)
	100 (6.9)	25 (1.7)	1480 (671)	2090 (948)	4030 (1828)	4670 (2118)	6280 (2848)	11300 (5125)	14300 (6486)	29000 (13154)
	90 (6.3)	35 (2.4)	1670 (757)	2370 (1075)	4550 (2063)	5280 (2395)	7100 (3220)	12700 (5760)	16200 (7348)	32800 (14878)
150 (10.3)	130 (8.9)	20 (1.4)	1480 (671)	2090 (948)	4030 (1828)	4670 (2118)	6280 (2848)	11300 (5125)	14300 (6486)	29000 (13154)
	120 (8.2)	30 (2.1)	1160 (526)	2480 (1124)	4780 (2168)	5540 (2512)	7450 (3379)	12700 (5760)	16200 (7348)	32800 (14878)
	110 (7.6)	40 (2.8)	1950 (884)	2760 (1251)	5300 (2404)	6150 (2789)	8270 (3751)	14800 (6713)	18800 (852)	38200 (1732)
175 (12.1)	150 (10.3)	25 (1.7)	1780 (807)	2510 (1138)	4830 (2190)	5600 (2540)	7450 (3379)	12700 (5760)	16200 (7348)	32800 (14878)
	130 (8.9)	45 (3.1)	2230 (1011)	3150 (1428)	6050 (2744)	7020 (3184)	9520 (4318)	16600 (7529)	21100 (952)	42200 (1917)
	110 (7.6)	65 (4.5)	2480 (1124)	3510 (1592)	6750 (3061)	7830 (3551)	10600 (4808)	17600 (7968)	22500 (1024)	45000 (2045)
200 (13.8)	170 (11.8)	30 (2.1)	2080 (943)	2900 (1315)	5580 (2531)	6470 (2934)	8670 (3919)	15500 (7038)	19600 (8881)	39600 (1797)
	150 (10.3)	50 (3.5)	2500 (1134)	3540 (1605)	6800 (3084)	7890 (3579)	10600 (4808)	17600 (7968)	22500 (1024)	45000 (2045)
	130 (8.9)	70 (4.9)	2780 (1261)	3930 (1782)	7550 (3424)	8760 (3973)	11800 (5353)	20600 (9386)	26400 (1200)	53000 (2400)
250 (17.3)	170 (11.8)	30 (2.1)	2080 (943)	2900 (1315)	5580 (2531)	6470 (2934)	8670 (3919)	15500 (7038)	19600 (8881)	39600 (1797)
	150 (10.3)	50 (3.5)	2500 (1134)	3540 (1605)	6800 (3084)	7890 (3579)	10600 (4808)	17600 (7968)	22500 (1024)	45000 (2045)
	130 (8.9)	120 (8.2)	3630 (1646)	5080 (2304)	9600 (4348)	11100 (5037)	15000 (6803)	26400 (1200)	33600 (1524)	68000 (3084)

Series 1140 & 1141 (continued)

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



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

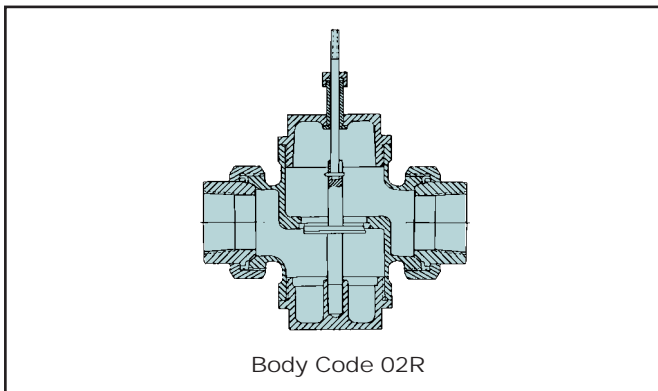
Reverse Acting

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" (20-50mm)
- Maximum Differential Pressure:
1/2" (15mm) – 125 psi (8.6 bar)
3/4" (20mm) – 60 psi (4.1 bar)
1" (25mm) – 32 psi (2.2 bar)
1 1/4" (32mm) – 20 psi (1.4 bar)
1 1/2" (40mm) – 16 psi (1.1 bar)
2" (50mm) – 8 psi (.55 bar)



Ordering Information

Series 1140 Regulators (Cross ambient filled)

NPT 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									
1/2 (15)	401171	400485	400527	400544	401006	400407	400077	401172	12 (5.4)
3/4 (20)	400075	400078	400319	400695	400080	401174	400698	400079	13 (5.9)
1 (25)	400125	400128	400109	400806	400758	401175	400604	400665	15 (6.8)
1 1/4 (32)	401177	401178	400186	400206	400187	400188	401184	401186	16 (7.3)
1 1/2 (40)	400238	400241	400590	400764	401187	400247	401189	401190	19 (8.6)
2 (50)	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.

NPT 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 (15)	406048	406049	406050	406051	12 (5.4)
3/4 (20)	406052	406053	406054	406055	13 (5.9)
1 (25)	406056	406057	406058	406059	15 (6.8)
1 1/4 (32)	406060	406061	406062	406063	16 (7.3)
1 (40)	406064	406065	406066	406067	19 (8.6)
2 (50)	406068	406069	406070	406071	25 (11.4)

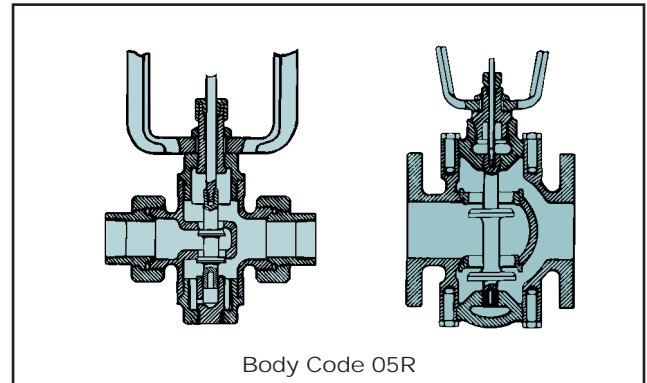
Series 1140 & 1141 Wells

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)

Series 1140 & 1141 (continued)

Body Code 05R

- Steam or Water Service
- Stainless Steel Trim — center guided plunger
- Body— $\frac{3}{4}$ " - 2" (20-50mm)—brass body, union ends
2½" - 4" (65-100mm)—Iron body, flanged, faced and drilled for 125lbs. (13.8 bar) standard
- Maximum Differential Pressure:
 $\frac{3}{4}$ " (20mm) — 250 psi (17.3 bar)
 1" - 2" (25 - 50mm) — 200 psi (13.8 bar)
 2½" - 4" (65 - 100mm) — 125 psi (8.6 bar) (iron body, flanged)



Ordering Information

Series 1140 Regulators (Cross ambient filled)

NPT 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									
$\frac{3}{4}$ (20)	400664	400106	400915	400107	400108	401193	400368	400104	13 (5.9)
1 (25)	405017	400171	400924	400446	400172	400652	400685	401195	15 (6.8)
1¼ (32)	400481	400933	400219	400220	400222	401196	400225	400680	16 (7.3)
1½ (40)	400942	400539	400286	400282	400285	400913	400815	401198	19 (8.6)
2 (50)	400339	400342	400963	400969	400164	400469	401199	401201	25 (11.4)
2½ (65)	400959	400378	400375	403642	401021	401202	401204	401205	88 (40)
3 (80)	400799	400405	400408	401207	401208	401210	400763	401211	95 (43)
4 (100)	401223	400429	400593	401226	401228	400526	401229	401231	125 (57)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

NPT 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					
$\frac{3}{4}$ (20)	406120	406121	406122	406123	13 (5.9)
1 (25)	406124	406125	406126	406127	15 (6.8)
1¼ (32)	406128	406129	406130	406131	16 (7.3)
1½ (40)	406132	406133	406134	406135	19 (8.6)
2 (50)	406136	406137	406138	406139	25 (11.4)

Series 1140 & 1141 Wells

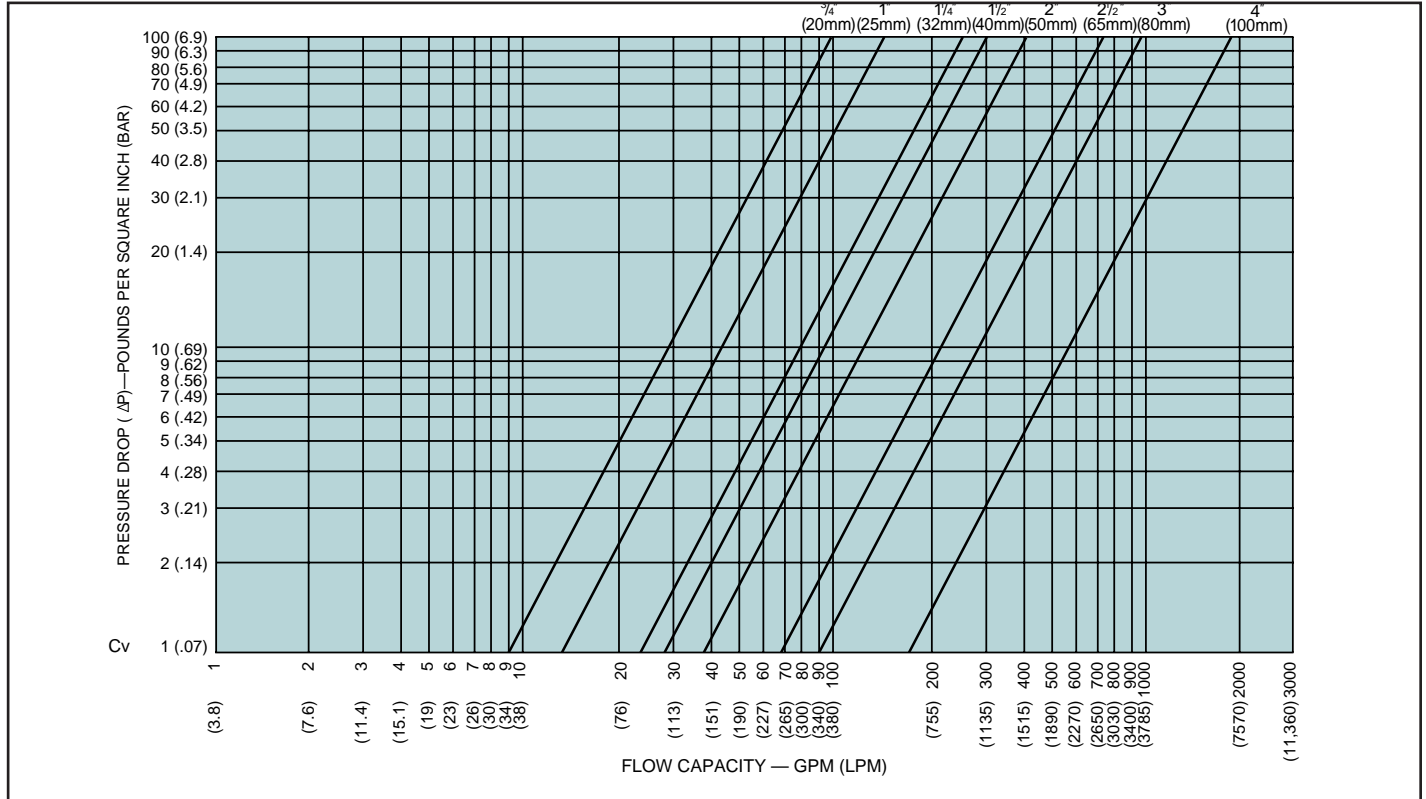
Part Number	Series	Material	Bulb Size (dia X length in (mm))	Weight lbs. (kg)
400445	1141	Copper	$\frac{5}{8}$ X 11 (16 X 280)	2 (.9)
401179	1140	Copper	$\frac{7}{8}$ X 18 (22 X 457)	2 (.9)
401181	1140	Copper	1½ X 36 (29 X 914)	4 (1.8)
401180	1140	316 SS	$\frac{7}{8}$ X 18 (22 X 457)	3 (1.4)
405526	1140	316 SS	1½ X 36 (29 X 914)	4 (1.8)

Thermostatic Temperature Regulators (continued)

Series 1140 & 1141 (continued)

Capacities — Water Flow vs Pressure Drop

Body Code 05R Reverse Acting, Double Seated Valves



Regulators

Series 1140 & 1141 (continued)

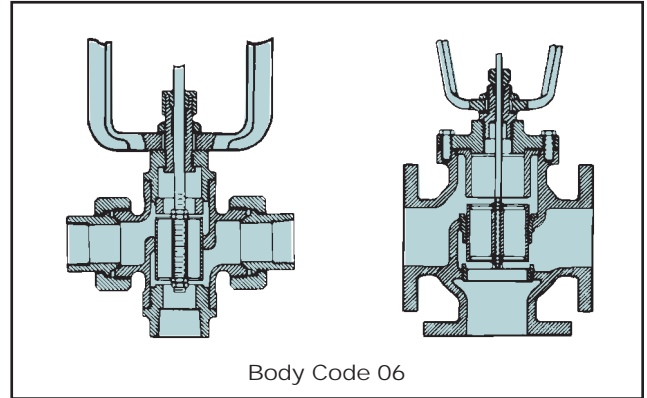
Three Way

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" (50mm)—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:
 $\frac{1}{2}$ " - $\frac{3}{4}$ " (15 - 20mm) — 250 psi (17.3 bar)
1" - 2" (25 - 50mm) — 200 psi (13.8 bar)



Ordering Information

Series 1140 Regulators (Cross ambient filled)

NPT 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									
$\frac{1}{2}$ (15)	400030	400676	400803	400523	400033	400036	400039	401232	12 (5.4)
$\frac{3}{4}$ (20)	400517	400091	400092	400361	400093	400094	400095	400023	13 (5.9)
1 (25)	400148	400149	400871	400872	400150	400151	400152	400026	15 (6.8)
$1\frac{1}{4}$ (32)	400876	400199	400877	400878	400200	400202	400034	400035	16 (7.3)
$1\frac{1}{2}$ (40)	400259	400260	400049	400883	400261	400262	402266	400263	19 (8.6)
2 (50)	400310	400311	400312	400376	400313	400314	400315	400044	25 (11.4)
$2\frac{1}{2}$ (65)	400166	400352	400353	401000	400354	400355	400046	400356	88 (40)
3 (80)	400410	400385	400479	401011	400386	400387	400388	400052	95 (43)
4 (100)	400414	400415	400416	401019	400417	400074	400418	400076	125 (57)

Series 1141 Regulators (Non-cross ambient filled)

Do not use where ambient temperature exceeds set temperature control.

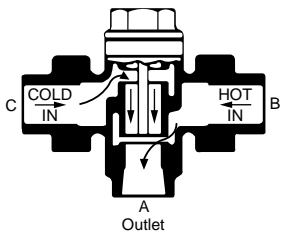
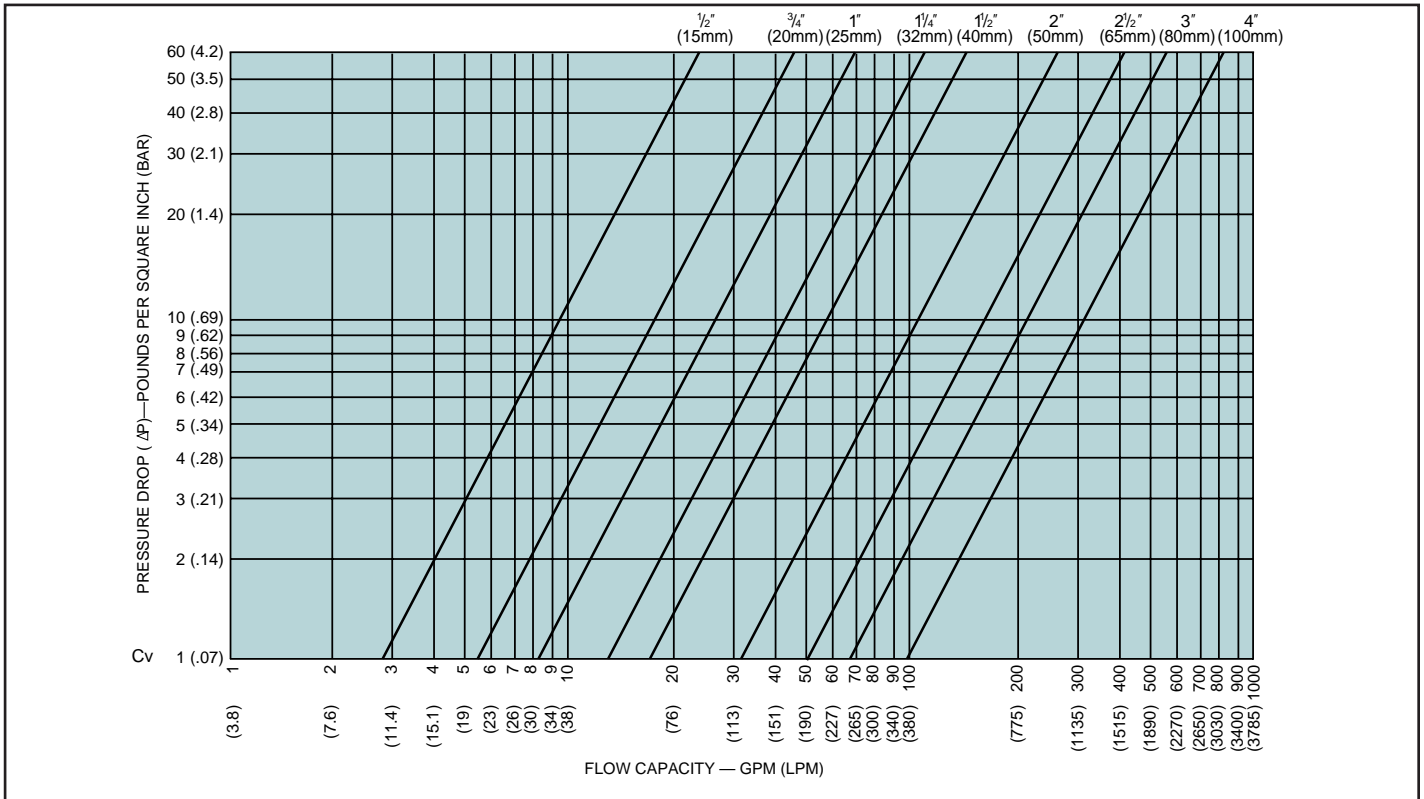
NPT Size in. (mm)	Temperature Range				Weight (Approx.) lbs. (kg)
	120–160°F (49–71°C)	140–180°F (60–82°C)	160–200°F (71–93°C)	180–220°F (82–104°C)	
Part Number					
$\frac{1}{2}$ (15)	406140	406141	406142	406143	12 (5.4)
$\frac{3}{4}$ (20)	406144	406145	406146	406147	13 (5.9)
1 (25)	406148	406149	406150	406151	15 (6.8)
$1\frac{1}{4}$ (32)	406152	406153	406154	406155	16 (7.3)
$1\frac{1}{2}$ (40)	406156	406157	406158	406159	19 (8.6)
2 (50)	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)

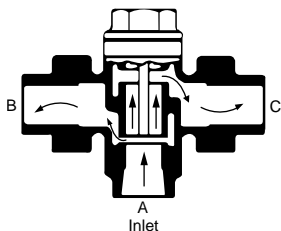
Thermostatic Temperature Regulators (continued)
Series 1140 & 1141 (continued)

Capacities — Water Flow vs Pressure Drop
Body Code 06 Three Way Valves



Series 1140 & 1141
3-way valve
mixing service

When temperature increases piston moves down closing port 'B' opening port 'C'.



Series 1140 & 1141
3-way valve
diverting service

When temperature increases piston moves down closing port 'B' opening port 'C'.