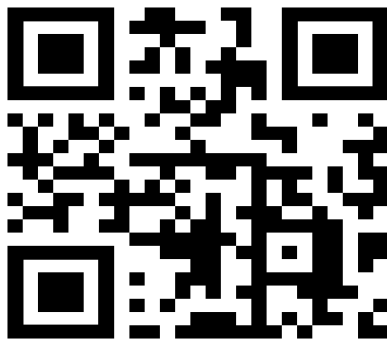




Series 127
Sizes: 1/2" - 4"

Steam Pressure Regulators



Series 127

Steam Pressure Regulating Valves

Sizes: 1/2" – 4" (15 – 100mm)

For Main Line or Large Process Service
 Standardly furnished with stainless steel seat and trim

The design of Watts Series 127 steam pressure regulators is based upon the tested and proven performance principles of reliable previous models. They are especially engineered and recommended for main line and high capacity process regulation service, heating applications, and are also suitable for dead-end service. The 127 Series are single seated, remote control, diaphragm type regulators, ideal for institutional, industrial, and commercial application; and no regulator offers greater service capabilities at such moderate cost.

Standard construction features stainless steel and nickel alloy seats and trim for either superheated or saturated steam service. Size 1/2" – 1 1/4" standardly furnished with Composition Disc construction (127SC). Initial pressures up to 150 lbs. When specially required with stainless steel valve disc; specify Series 127SS. Initial pressures up to 250 lbs. Sizes 1 1/2" and above standardly furnished with stainless steel valve disc (127SS). Bronze bodies with screwed connections are furnished in sizes 1/2" – 3" inclusive; and sizes 3" and 4" are also available in cast iron flanged bodies. Initial pressures up to 125 lbs.

Based upon initial pressures up to 250 lbs., an accurate selection of reduced pressure is possible in a range down to 5 lbs. and up to 150 lbs., depending on size of regulator and supply pressure. See page 7 for standard ranges available. Reduced pressure below those shown are also available at extra charge. Consult factory.

Because of the severe conditions imposed on any equipment in steam service, Watts engineers gave particular attention to the convenience of maintenance and the need to quickly restore regulator service when maintenance is required. As shown below, the Series 127 incorporates outstanding maintenance features. Springs and diaphragm chamber assemblies are easily changed and the valve is simple to adjust.



127

Maximum Working Pressures

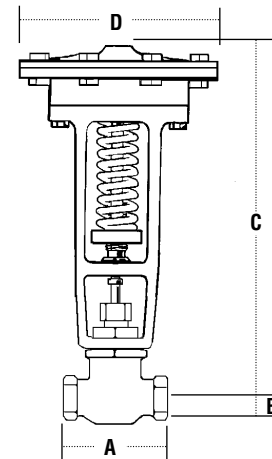
Bronze Bodies – Series 127SC – Initial Pressure up to 150 lbs. Sizes 1/2" – 1 1/4"
 Bronze Bodies – Series 127SS – Initial Pressure up to 250 lbs. Sizes 1/2" – 3"
 Iron Bodies – Standard Flange – Initial Pressure up to 125 lbs. Sizes 3" – 4". 125 lbs. W.S.P.

Dimensions – Weights

TYPE	SIZE (DN)		DIMENSIONS (approx.)						WEIGHTS	
	in.	mm	A		B		C		lbs.	kgs.
Bronze Body Female Screwed Connections	1/2	15	4	102	1	25	15	381	22.5	10
	3/4	20	4	102	1	25	15	381	23	10
	1	25	4 1/4	108	1 1/8	29	15	381	23.5	11
	1 1/4	32	4 1/2	114	1 1/4	32	15 1/8	384	24	11
	1 1/2	40	5 1/4	133	1 1/2	38	15 1/4	387	28	13
	2	50	6	152	1 3/4	45	15 3/8	391	32	15
Iron Body* Flanged Connections	2 1/2	65	7 1/4	184	2 1/8	54	15 3/4	400	34	15
	3	80	8	203	2 3/8	60	16 1/8	410	40	18
	4	100	12 1/8	308	4 1/2	114	16 3/4	426	84	38

Dimension "D" is 6", 8", or 10" depending upon reduced pressure range.

* Flange size connections 125 lbs. W.S.P.

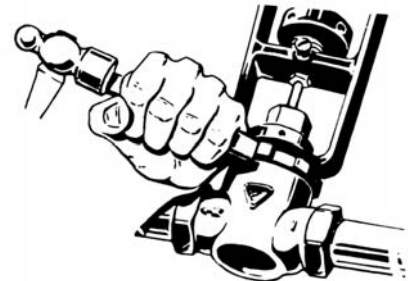


Outstanding Maintenance Features

All steam pressure regulators have certain fundamental design factors, but not all competitive designs have the outstanding accessible features incorporated in the latest Watts design. As evidenced in the following illustrations, Watts Series 127 was purposely designed with ease of servicing and to simplify stocking flexibility or job change pressure specifications.



Diaphragm chamber is easily changed by the removal of two bolts. Chambers and springs are interchangeable for all sizes.



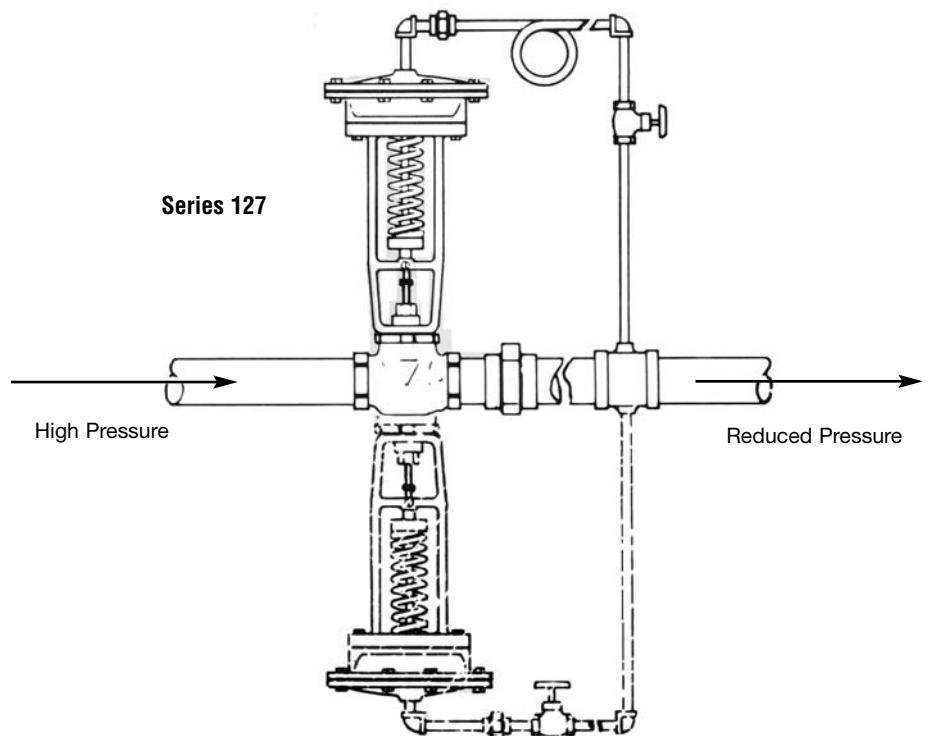
Lugs on the bonnet permit easy removal of the topwork by applying a hammer and blunt tool as illustrated, to expose valve disc and seat.



Valve disc and seat can be easily serviced, but STANDARDLY FURNISHED stainless steel and nickel alloy seats and trim reduce maintenance and increase longevity.

Basic Installation Information

Series 127 may be installed with the diaphragm above or below the line. It may also be installed in a vertical line. Pressure connections must always have a water seal.



Series 127SS Process Steam Pressure Regulators

Sizes: 1/2" – 4"

Series 127 Process Steam Pressure Regulators are single seated, direct acting, diaphragm type regulators ideal for institutional, industrial, and commercial applications. They are engineered and recommended for mainline and high capacity process service heating applications. Watts engineers gave particular attention to the convenience of maintenance and the need to quickly restore regulator service when maintenance is required. The springs and diaphragm chamber assemblies of Series 127 are easily changed and the valve is simple to adjust.

Features

- Bronze body, threaded connection (127SS)
- Iron body, Flanged connection (F127SS)
- Single seated, direct acting
- Standardly furnished with stainless steel valve disc

Models

127SS – Bronze body, threaded connections, and stainless steel disc 1/2" – 3"

F127SS – Iron body, flanged connections, and stainless steel disc 3" and 4"

Materials

Body 127SS:	Bronze
Body F127SS:	Iron
Diaphragm:	Buna-N on Nylon
Seat/Trim:	Stainless Steel and Nickel Alloy
Disc 127SS/F127SS:	Stainless steel

Pressures

Maximum Working Pressure: 127SS initial pressures up to 250psi (17.2 bar)

Maximum Working Pressure: F127S initial pressures up to 125psi (8.6 bar)



127SS



F127SS

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

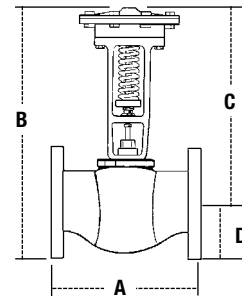
NOTICE

Inquire with governing authorities for local installation requirements

Dimensions

MODEL	SIZE	DIMENSIONS (APPROX.)							
		A		B		C		D	
	<i>in.</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>
127	1/2	4	102	16	406	15	381	1	25
127	3/4	4	102	16	406	15	381	1	25
127	1	4 1/4	108	16 1/8	410	15	381	1 1/8	29
127	1 1/4	4 1/2	114	16 3/8	416	15 1/8	384	1 1/4	32
127	1 1/2	5 1/4	133	16 3/4	425	15 1/4	387	1 1/2	38
127	2	6	152	17 1/8	435	15 3/8	391	1 3/4	44
127	2 1/2	7 1/4	184	17 7/8	454	15 3/4	400	2 1/8	54
127	3	8	203	18 1/2	470	16 1/8	410	2 3/8	60
F127*	3	8	203	20 1/2	521	16 3/4	425	3 3/4	95
F127*	4	12 1/8	308	21 1/4	540	16 3/4	425	4 1/2	114

*Iron body, flanged connections



Capacities

Quick Reference Capacity Chart

MAXIMUM CAPACITIES In Pounds or Kilograms (lbs. or kgs.) per Hour of Steam

MODEL	SIZE (DN)	INITIAL PRESSURE		FROM 50PSI (3.4 BAR)		FROM 100PSI (6.9 BAR)		FROM 150PSI (10.3 BAR)		FROM 200PSI (13.8 BAR)		FROM 250PSI (17.2 BAR)	
		REDUCED PRESSURE		UP TO 20PSI (1.4 BAR)		UP TO 50PSI (3.4 BAR)		UP TO 70PSI (4.8 BAR)		UP TO 90PSI (6.2 BAR)		UP TO 125PSI (8.6 BAR)	
	<i>in.</i>	<i>lbs./hr.</i>	<i>kgs./hr.</i>	<i>lbs./hr.</i>	<i>kgs./hr.</i>	<i>lbs./hr.</i>	<i>kgs./hr.</i>	<i>lbs./hr.</i>	<i>kgs./hr.</i>	<i>lbs./hr.</i>	<i>kgs./hr.</i>	<i>lbs./hr.</i>	<i>kgs./hr.</i>
127	1/2	218	99	387	175	555	252	731	332	900	408		
127	3/4	492	223	875	397	1255	569	1653	750	2037	924		
127	1	878	398	1560	708	2237	1015	2943	1131	3631	1647		
127	1 1/4	1370	621	2436	1105	3493	1584	4599	2086	5668	2570		
127	1 1/2	1973	895	3508	1591	5030	2282	6623	3004	8163	3703		
127	2	3518	1596	6253	2836	8967	4067	11807	5356	14553	6601		
127	2 1/2	5494	2492	9766	4430	14006	6353	18442	8365	22730	10310		
127	3	7906	3586	14054	6375	20154	9142	26538	12037	32709	14837		
F127	3	7906	3586	14054	6375	20154	9142	–	–	–	–		
F127	4	8301	3765	14756	6693	21161	9598	–	–	–	–		

Example: Initial Pressure is 100psi (6.9 bar), Reduced Pressure is 50psi (3.4 bar) and Capacity required is 1500 lbs. (680 kgs.) of steam per hour. By referring to the proper initial reduced pressure column "From 100psi/Up to 50psi (6.9 – 3.4 bar)", you will find the capacity of 1560 lbs./hr. (708 kgs./hr.) for the 1" Model 127 valve corresponds most closely to the required capacity of 1500 lbs./hr.

Notes: For reduced pressures greater than those shown for each Initial Pressure column above, refer to the Detailed Capacity Table in the Watts brochure F-127. Be sure to determine both Initial Pressure and Reduced Pressure setting, or the range required.



Size and Capacity Information

For Watts Series 127 and 152A Pressure Regulators

For steam service the correct size valve is most important for satisfactory regulator service, and selection should be carefully considered. In a broad sense, the smallest size regulator that will satisfy the peak demands of a given installation is the correct size. If a regulator is too large, wire drawing of the seat and disc will result — if too small, service will be inadequate and regulation will be uneven. Size of the valve is in direct relation to the demand and it is determined by the weight of steam required under given initial and reduced pressures.

It is important when ordering to give certain other information so that our engineers can specify the proper combination of diaphragm, seat and disc, springs or weights that will serve your need best. Our engineering department will also be glad to help solve any installation problems that are encountered.

Steam Capacity Chart

Chart I

		INITIAL PRESSURE																										
		10.64	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250		
REDUCED PRESSURE	0.0	1360																										
	5.	1110	1830																									
	10.		1670	2250																								
	15.				2790																							
	20.					3350																						
	25.						3890																					
	30.							4430																				
	35.								4850																			
	40.									5390																		
	45.										5950																	
	50.											6480																
	55.												7020															
	60.													7560														
	65.														8110													
	70.															8540												
	75.																9080											
80.																	9620											
85.																		10150										
90.																			10720									
95.																				11240								
100.																					11780							
																					12130							
																						12820						
																							13360					
																								13860				

Table of Valve Co-Efficients for Steam

Table A

MODEL	CO-EFFICIENTS PER SIZE							
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
127	.065	.147	.262	.409	.589	1.05	1.64	2.36
152A, 252A	.024	.085	.120	.132	.187	.216	—	—

How to Use Steam Capacity Chart

1. To find correct valve size when initial and reduced pressure and amount of steam (pounds per hour) are known.

In Chart I under the known initial pressure and opposite the required reduced pressure select the figure shown. Divide the amount of steam required by this figure. The quotient thus obtained is the valve co-efficient. Select a valve size whose co-efficient is equal to or next larger than this figure.

Example:

Initial pressure is 100 lbs.
 Amount of Steam 275 lbs. per hour
 Reduced pressure is 45 lbs.
 Under 100 and opposite 45 is the figure 5950
 Co-efficient is $275 \div 5950$ equals .046

For Type 127, the nearest valve co-efficient in Table A is .065, which corresponds to a 1/2" valve.

For Type 152A, the nearest valve co-efficient in Table A is .085, which corresponds to a 3/4" valve.

2. To determine the valve size when the amount of radiation, initial and reduced pressure are given.

Convert the radiation to pounds of steam by dividing the square feet of radiation by 4, then proceed as in 1.

3. To determine the size of valve necessary for steam coil heater in water storage tank when initial and reduced pressures are given and heater recovery capacity in gallons per hour is known.

Multiply cap. gal. per hr. by .93 for 80° rise per hr.
 Multiply cap. gal. per hr. by 1.16 for 100° rise per hr.
 Multiply cap. gal. per hr. by 1.62 for 140° rise per hr.
 Multiply cap. gal. per hr. by 1.74 for 150° rise per hr.
 The resulting figure is pounds of steam required.
 Determine valve size as shown in 1.

4. To determine the capacity of a valve when the initial and reduced pressure are known.

In Chart I under the known initial pressure and opposite the known reduced pressure select the figure shown. Multiply this by the co-efficient for the size of the valve. The result is the cap. in lbs. steam per hr.

Series 127 Standard Reduced Pressure Range Chart

The Table shows minimum and maximum reduced pressure ranges obtainable with various selections of chamber diameters and adjusting spring, depending on supply pressures.

VALVE SIZE	MODEL	INITIAL PRESSURE																			
		25		50		75		100		125		150		175		200		225		250	
		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
1/2"	206	14	25	19	50	20	75	21	100	22	104	23	105	24	106	25	107	26	108	27	109
	208	10	25	10	50	11	50	11	51	12	51	12	52	13	52	13	53	14	53	14	54
	108	3	17	3	17	4	18	4	18	5	19	5	19	6	20	6	20	7	21	7	21
	110	2	9	2	9	3	9	3	10	3	10	3	10	4	10	4	11	4	11	4	11
3/4"	206	13	25	20	50	22	75	24	100	26	108	28	110	30	112	32	114	34	116	36	118
	208	10	25	11	50	12	51	13	52	14	53	15	54	16	55	17	56	18	57	19	58
	108	2	17	3	18	4	19	4	20	6	21	7	22	8	23	9	24	10	25	11	26
	110	2	9	2	9	3	10	3	10	4	11	4	11	5	12	5	12	6	13	6	13
1"	206	13	25	–	50	24	75	26	100	29	108	31	110	34	113	36	115	39	118	41	120
	208	10	25	11	50	12	51	13	52	14	53	15	54	16	55	17	56	18	57	19	58
	108	3	17	4	18	5	19	6	20	7	21	8	22	9	23	10	24	11	25	12	26
	110	2	9	2	9	3	10	3	10	4	11	4	11	5	12	5	12	6	13	6	13
1 1/4"	206	13	25	23	50	26	75	29	100	32	112	35	115	38	118	41	121	44	124	47	127
	208	14	25	15	50	16	55	17	56	18	57	19	58	20	59	21	60	22	61	23	62
	108	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33
	110	1	9	2	10	3	11	4	12	4	12	5	13	6	14	7	15	7	15	8	16
1 1/2"	206	15	25	24	50	28	75	31	100	35	117	38	120	42	124	45	127	49	130	52	134
	208	11	25	13	50	15	52	17	54	19	56	21	58	23	60	25	62	27	64	29	66
	210	7	25	8	30	9	31	10	32	11	33	12	34	13	35	14	36	15	37	16	38
	110	3	10	4	11	5	12	6	13	7	14	8	15	9	16	10	17	11	18	12	19
2"	206	16	25	25	50	31	75	36	100	42	115	47	120	53	126	58	133	64	137	69	142
	208	9	25	12	50	15	53	18	56	21	59	24	62	27	65	30	68	33	71	36	74
	210	6	29	7	30	9	32	10	33	12	35	13	36	15	38	16	39	18	41	19	42
	110	4	9	5	10	7	12	8	13	10	15	11	16	13	18	14	19	16	21	17	22
2 1/2"	206	11	25	27	50	35	75	42	100	50	118	57	125	65	133	72	140	80	148	87	155
	208	11	25	15	50	19	54	23	58	27	62	31	66	35	70	39	74	43	78	47	82
	210	7	25	9	30	12	33	14	35	17	38	19	40	22	43	24	45	27	48	29	50
	110	4	10	6	12	9	15	11	17	14	20	16	22	19	25	21	27	24	30	26	32
3" & 4"	206	18	25	30	50	40	75	50	100	60	120	70	130	80	140	90	150	100	160	110	170
	208	12	25	18	50	24	56	30	62	36	68	42	74	48	80	54	86	60	92	66	98
	210	8	25	1	32	15	36	18	39	22	43	25	46	29	50	32	53	36	57	39	60
	110	5	11	8	14	12	18	15	21	16	28	20	31	26	32	29	35	33	39	36	42

Note: Consult factory for special ranges below those shown, providing initial pressure, reduced pressure and valve sizes.

■ Shaded areas are not for 3" & 4" flanged valves, maximum pressure 125.

Quick Reference Capacity Chart for Average Conditions

MODEL	SIZE	INITIAL PRESSURE									
		FROM 50	FROM 75	FROM 100	FROM 125	FROM 150	FROM 175	FROM 200	FROM 225	FROM 250	
		REDUCED PRESSURE									
		UP TO 20	UP TO 35	UP TO 50	UP TO 60	UP TO 70	UP TO 80	UP TO 90	UP TO 100	UP TO 125	
<i>Maximum Capacities in lbs. of Steam per Hour</i>											
127	1/2"	218	302	387	474	555	643	731	811	900	
	3/4"	492	682	875	1072	1255	1454	1653	1834	2037	
	1"	878	1216	1560	1911	2237	2591	2946	3268	3631	
	1 1/4"	1370	1898	2436	2984	3493	4045	4599	5102	5668	
	1 1/2"	1973	2733	3508	4297	5030	5825	6623	7348	8163	
	2"	3518	4872	6253	7660	8967	10,385	11,807	13,099	14,553	
	2 1/2"	5494	7610	9766	11,964	14,006	16,220	18,442	20,459	22,730	
252A, 152A	3"	7906	10,950	14,054	17,216	20,154	23,340	26,538	29,441	32,709	
	4"	8301	11,497	14,756	18,076						
152A	1/2"	80	111	143	175	205	237	270	299	332	
	3/4"	285	394	506	620	726	841	956	1060	1178	
	1"	402	557	715	875	1025	1186	1349	1497	1663	
152A	1 1/4"	442	613	786	962	1127	1305	1484	1646	1830	
	1 1/2"	665	870	1120	1355	1600	1950	2230	2460	2725	
	2"	765	1000	1285	1490	1840	2242	2564	2829	3134	

Example: Initial pressure is 100 lbs., reduced pressure is 50 lbs. and capacity required is 1500 lbs. of steam per hour. By referring to the proper initial reduced pressure column (100 up to 50) 1560 lbs. per hour is closest to Required Capacity and corresponds to a Type 127 valve, size 1".

Note: For reduced pressure above those shown for each initial pressure column, refer to Detailed Capacity Table.

■ Shaded areas are not for 3" & 4" flanged valves, maximum pressure 125.