



4
Valves

A
Ball Valves

B
Regulators

C
Automatic Control Valves

Performance is standard: Design and features incorporated into every Watts ACV means consistent, dependable, high performance, positive control and long life.

Efficient design: The main valve, globe or angle pattern, is diaphragm actuated, hydraulically operated. Its four major components are the body, cover, interior seat and diaphragm/stem assembly.

Variable volume cover chamber: A synthetic rubber/nylon diaphragm is between the valve body and cover creating a sealed chamber into which line fluid and pressure is introduced. Varying the amount of pressure positions the stem assembly to open, close or modulate the valve as required.

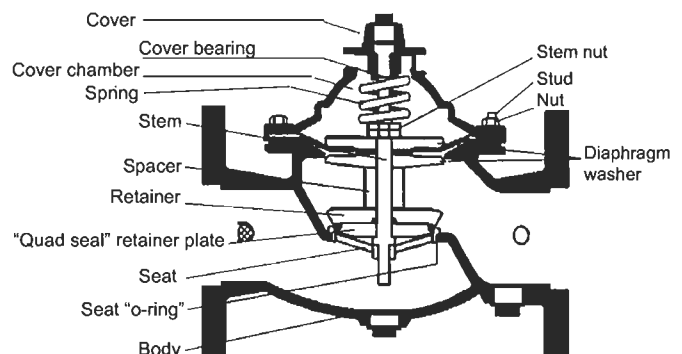
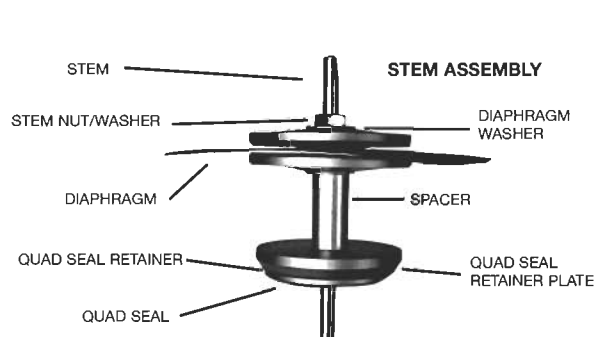
Precise alignment and stable throttling: A cover bearing and integral seat bearing guide the stem assembly for precise alignment with the seat. With the quad seal retainer plate, progressive opening/closing flows, stable throttling, low friction operation and positive closure is ensured.

Drip tight seal: Watts ACV leads the automatic valve industry by being the first to incorporate the dynamic quad seal. The seat, retained on 3 1/2+ sides, provides positive closure while eliminating the need to "bite" into the seal, adding years to the valve's life. Each quad seal has two usable sides.

Fused epoxy prolongs life: Applied under rigorous preparation and application standards, it is non-porous, improving the flow coefficient of the valve and effectively sealing the casting from interaction with the controlled liquid. The coating also protects the valve from the environment, preventing mineral buildup and rust, simplifies maintenance, and prolongs the life of the valve.

Multiple function performance: By varying the control/piping arrangement, the Watts ACV is able to perform a diversity of functions and applications. A multi-functioning valve results in more system protection at lower cost.

Simplified Maintenance: The main valve and pilot system can be serviced without removing the valve from the line.



Standard Production Valves

- * Wide range of sizes 1 1/4" - 24"
- * Fused epoxy coating 100% inside and out. (FDA and NSF approved, Meets AWWA standards)
- * Exclusive "QUAD SEAL"
 - retained on 3 1/2 + sides
 - positive drip-tight closure
 - longer life span (non-edged seat)
- * Diaphragm actuated (one moving part)
- * FDA approved diaphragm materials
- * Hydraulically operated (frictionless)
- * Top and bottom guided stem
- * Packless construction (less maintenance)

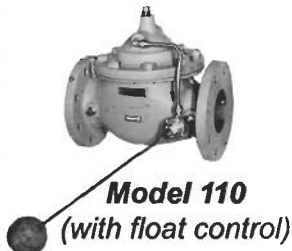
Watts ACV Base Main Valve Numbers:



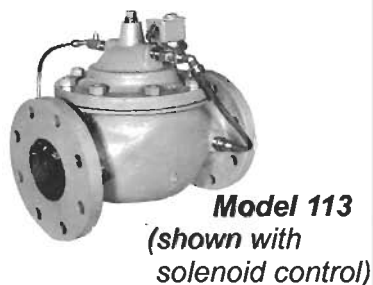
Model 100



Model 1100
(Model 100
Angle Pattern)



Model 110
(with float control)



Model 113
(shown with
solenoid control)



Model 115
(shown as pressure
reducing valve)



Model 118

Other models not shown:

116
127
413
513
813



BASIC VALVE

- * Body and Cover
 - Ductile Iron: ASTM A536 65-45-12
 - Fused Epoxy Coated 100% inside/outside
- * Seat - Stainless Steel - AISI 316 - 11/4" - 8"
 - Bronze ASTM B62 - 10" - 24"
 - Optional: Stainless Steel - AISI 316 - 10" - 24"
- * Stem - Stainless Steel - AISI 303
- * Spring - Stainless Steel - AISI 302
- * Elastomers
 - Diaphragm: Nylon reinforced BUNA-N (Nitrile)
 - "Quad Seal": BUNA-N (Nitrile)
 - Other materials available

HYDRAULIC CONTROL PILOTS

- * Bodies: ASTM B584, Alloy C84400
- * Internals: Stainless Steel - AISI 303
- * Elastomers: BUNA-N (Nitrile)
- Other materials available

MISCELLANEOUS CONTROL ACCESSORIES

- * Bodies: Brass - ASTM B584, Alloy C84400
- * Internals: Stainless Steel - AISI 303
- * Elastomers: (where applicable): BUNA-N (Nitrile)
- Other materials available

ELECTRICAL

- * 120 VAC, 60 Hz, Optional voltage available
- * Body: Brass, Optional: Stainless Steel
- * Enclosure: General Purpose (NEMA Type 1, 2, 3, 3S, 4, 4X)
 - Optional: Explosion proof (NEMA Type 3, 3S, 4, 4X, 6P, 7, 9)

CONTROL CIRCUIT STRAINER

11/4"-3" In-line, Flo-clean, Optional: Isolation Cocks
4-24" External, "Y" strainer + Isolation Cocks

CONTROL TUBING/FITTINGS

- * Copper, seamless annealed/Brass flared end
- Optional: Stainless Steel / Stainless Steel

OPERATING TEMPERATURES (BUNA-N)

- * Water: +32 degrees to 180 degrees F

END CONNECTIONS/MAXIMUM WORKING PRESSURE

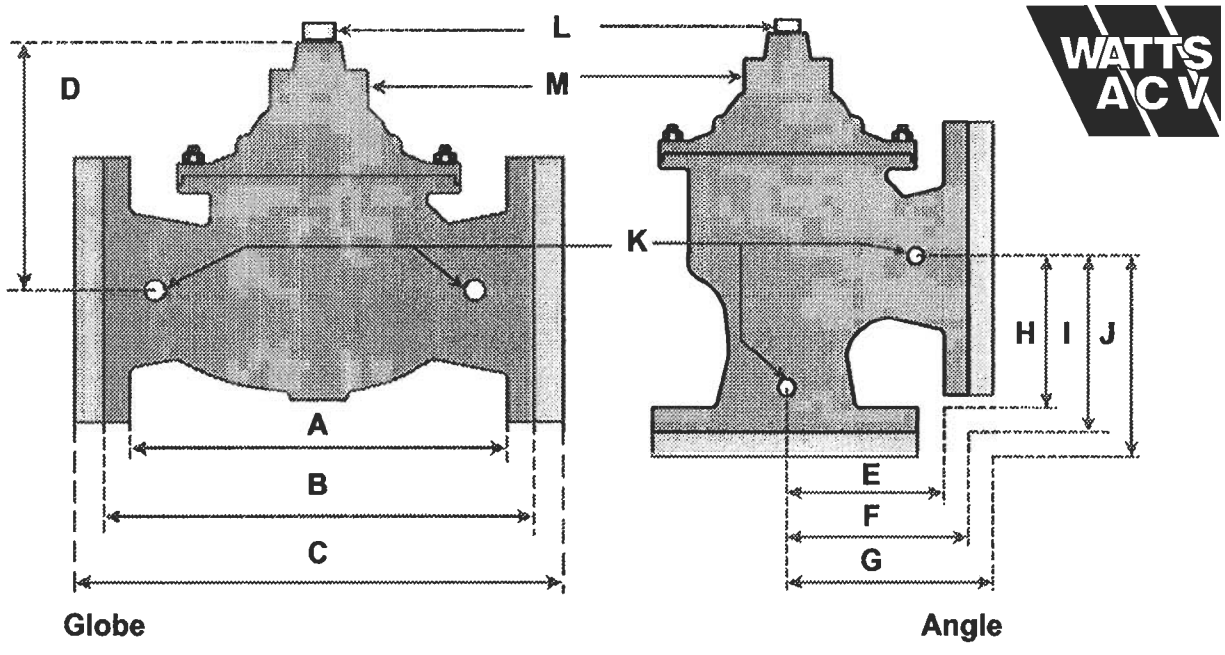
Ductile Iron: 150# F.F. Flange: ANSI B16.42 / 250 PSIG;
300# R.F. Flange: ANSI B16.42 / 400 PSIG;
Threaded: ANSI B16.4 / 400 PSIG

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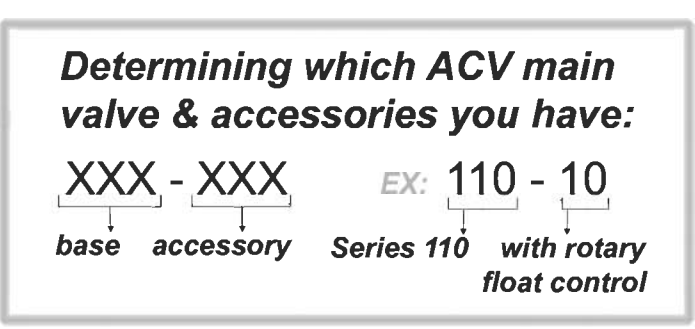
Dimensions: All Watts ACV base valves have similar dimensions as shown.



- 4**
Valves
- A**
Ball Valves
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Regulators
- C**
Automatic Control Valves

	A	B	C	D	E	F	G	H	I	J	K	L	M	SHIPPING WEIGHT
VALVE SIZE	GLOBE THRD.	GLOBE 150#	GLOBE 300#	COVER TO CENTER	ANGLE THRD.	ANGLE 150#	ANGLE 300#	ANGLE THRD.	ANGLE 150#	ANGLE 300#	PORT SIZE	PORT SIZE	PORT SIZE	
1-1/4	7-1/4			3-1/2	3-1/4			1-7/8			1/4	1/2	1/8	15
1-1/2	7-1/4	8-1/2	9	3-1/2	3-1/4	4		1-7/8	4		1/4	1/2	1/8	15
2	9-3/8	9-3/8	10	4-15/16	4	4	4-1/4	4	4	4-1/4	1/2	1/2	1/4	35
2-1/2	11	11	11-5/8	7	5-1/2	5-1/2	5-13/16	4	4	4-5/16	1/2	1/2	3/8	65
3	10-1/2	12	13-1/4	7	5-1/4	5-3/4	6-1/8	5-1/4	5-3/4	6-1/8	1/2	1/2	3/8	95
4		15	15-5/8	8-5/8		6-3/4	7-1/8		6-3/4	7-1/8	1/2	1/2	3/8	190
6		20	21	11-3/4		8-1/2	8-7/8		8-1/2	8-7/8	1/2	1/2	1/2	320
8		25-3/8	26-3/8	15-3/4		11	11-1/2		11	11-1/2	1/2	1	1/2	650
10		29-3/4	31-1/8	18-3/4		14-7/8	15-5/8		14-7/8	15-5/8	1	1	1	940
12		34	35-1/2	20-5/8		17	17-3/4		17	17-3/4	1	1	1	1675
14		39	40-1/2	22-1/4							1	1	1	1500
16		41-3/8	43-1/2	26-1/4							1	1	1	3100

- ### Accessory List
- Float control
 - Solenoid control
 - Pump control
 - Rate of flow
 - Pressure reducing
 - Pressure relief & sustaining
 - Check valves
 - Altitude valves



WATTS ACV Accessories on following page.

COMMONLY ORDERED WATTS ACV ACCESSORIES

Rate of Flow Control Pilot

Opens fully when the level reaches the preset low point and shuts off drip tight when the high level is reached. The rotary 3-port pilot is equipped with a vertical rod which allows the float to rise and lower to the adjustable upper and lower stops. Inches: 3/8.

**Control
14**



Pressure Reducing Pilot

Automatically reduces a higher inlet pressure to a constant lower outlet pressure regardless of changing flow rate and/or varying inlet pressure. Useful for dead-end systems and/or systems using high demand, on-off equipment. Inches: 1/4, 3/8.

**Control
15**



Pressure Reducing Control Valve

Same as above model except for use where remote sensing is desired. Inches: 1/4, 3/8.

**Control
15-1**



Pressure Relief Pilot

Installed on a by-pass line, mainline pressure is accurately controlled by relief of excess pressure. Installed in a mainline it prevents upstream pressure from dropping below a preset minimum. Inches: 3/8, 1/2, 3/4.

**Control
16**



Pressure Relief Valve

Direct acting, spring loaded, diaphragm type relief valves. Held closed by a compression spring above the diaphragm. Control psi is applied to the chamber beneath the diaphragm through a sensing port to allow or constrict flow. Inches: 3/8, 1/2, 3/4.

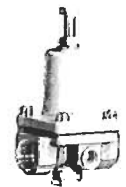
**Control
16-5**



Pressure Reducing Pilot

Direct acting diaphragm actuated control pilot. Integrally sensed, normally open, throttles closed by pressure against spring. Adjustable pressure settings. Inches: 1/2.

**Control
263 AP**



Pressure Reducing Pilot

Direct acting diaphragm actuated control pilot. Integrally sensed, normally open, throttles closed by pressure against spring. Adjustable pressure settings. Inches: 1/2.

**Control
PV 10-C**



Pressure Reducing Pilot

Direct acting diaphragm actuated control pilot. Integrally sensed, normally open, throttles closed by pressure against spring. Adjustable pressure settings. Inches: 1/2.

**Control
PV 20-C**



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Main Valve Kits												
ELASTOMER KITS (Buna-N - all rubber parts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VALVE SIZE	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16
ORDER #	5346-01	5346-01	5346-01	3313-01	3313-01	3302-01	3401-01	3352-01	5685-01	5686-01	5687-01	5688-01



Controls - Buna-N (all rubber parts)	COMPLETE UNITS			ELASTOMER KITS	OVERHAUL KITS
	RANGE	BRASS	SS		
10 - ROTARY FLOAT CONTROL 1/8"		<input type="checkbox"/> 3108-02	<input type="checkbox"/> 3108-03	<input type="checkbox"/> 6391-01	N/A
14 - RATE OF FLOW CONTROL		N/A	N/A	<input type="checkbox"/> 3297-01	<input type="checkbox"/> 9686-01
16 - RELIEF/SUSTAINING CONTROL	5-20 PSI 20-250 PSI (STD) 100-500 PSI	<input type="checkbox"/> 6060-02 <input type="checkbox"/> 3031-02 <input type="checkbox"/> 6508-02	<input type="checkbox"/> 9166-02	<input type="checkbox"/> 4375-01	<input type="checkbox"/> 9687-01
27 - ALTITUDE CONTROL	5-20 FEET 10-75 FEET (STD) 50-225 FEET	<input type="checkbox"/> 8783-02 <input type="checkbox"/> 5010-02 <input type="checkbox"/> 5171-02	N/A	<input type="checkbox"/> 5610-01	<input type="checkbox"/> 9688-01
23 - PILOT ON FIG.27/17-1 3-PORT (LOWER UNIT)		<input type="checkbox"/> 5020-02	N/A	<input type="checkbox"/> 5699-01	<input type="checkbox"/> 9688-01
263 - PRESSURE REDUCING CONTROL	0-30 PSI 20-175 PSI (STD) 100-300 PSI	<input type="checkbox"/> 22948 <input type="checkbox"/> 0335080 <input type="checkbox"/> 0335076	N/A	<input type="checkbox"/> 0864939 (STD) <input type="checkbox"/> 0335110	N/A
263SS - PRESSURE REDUCING CONTROL	0-30 PSI 20-175 PSI (STD) 100-300 PSI	N/A	<input type="checkbox"/> 9831-01 <input type="checkbox"/> 0335079 <input type="checkbox"/> 0335080	<input type="checkbox"/> 0864939 (STD) <input type="checkbox"/> 0335110	N/A
263RS - PRESSURE REDUCING CONTROL	0-30 PSI 20-175 PSI (STD) 100-300 PSI	N/A	<input type="checkbox"/> 9769-02 <input type="checkbox"/> 9769-01 <input type="checkbox"/> 9769-03	<input type="checkbox"/> 0335110	N/A
263DCR - RATE OF FLOW CONTROL	0-30 PSI 20-175 PSI 100-300 PSI	<input type="checkbox"/> 2557-01 N/A N/A	N/A	<input type="checkbox"/> 2655-01	N/A
75-2 CHAMBER MOUNTED FLOAT CONTROL		(ALUM/SS) <input type="checkbox"/> 8127-08	N/A	<input type="checkbox"/> 8863-01	<input type="checkbox"/> 2589-01
PV20 - PRESSURE RELIEF/SUSTAINING/SURGE	0-30 PSI 20-175 PSI (STD) 100-300 PSI	<input type="checkbox"/> 0598351 <input type="checkbox"/> 0598395 <input type="checkbox"/> 0598356	<input type="checkbox"/> 2524-02 <input type="checkbox"/> 2524-01 <input type="checkbox"/> 2524-03	<input type="checkbox"/> 0864938	N/A
22 - ACCELERATOR 3-PORT W/ORIFICE SUPPLY		<input type="checkbox"/> 3202-02	<input type="checkbox"/> 7932-07	<input type="checkbox"/> 3298-01	<input type="checkbox"/> 7064-01
22-1 - ACCELERATOR 3-PORT		<input type="checkbox"/> 5353-02	<input type="checkbox"/> 5353-05	<input type="checkbox"/> 6971-01	<input type="checkbox"/> 7064-02
10-11 - MODULATING FLOAT CONTROL		<input type="checkbox"/> 780097	<input type="checkbox"/> 10204-13	N/A	N/A
17-2 EXCESS FLOW CONTROL		N/A	<input type="checkbox"/> 5918-09	<input type="checkbox"/> 7705-01	<input type="checkbox"/> 2590-01
200-1 AUXILIARY DRAIN VALVE		<input type="checkbox"/> 3117-02	(ALUM/SS) <input type="checkbox"/> 3117-17	<input type="checkbox"/> 3304-01	<input type="checkbox"/> 2593-01
65-8 FLOAT CONTROL		(ALUM/SS) <input type="checkbox"/> 7907-08	(STEEL/SS) <input type="checkbox"/> 7907-07	N/A	<input type="checkbox"/> 8272-07
201-1 AUXILIARY DRAIN VALVE		<input type="checkbox"/> 3129-02	N/A	<input type="checkbox"/> 7977-01	<input type="checkbox"/> 9689-01

4
Valves

A
Ball Valves

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Regulators

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Automatic Control Valves

Watts ACV Model No.	Cla-Val Model No.	Description
114	40-01	Rate of Flow Control Valve
116	50-01	Pressure Relief Control Valve
116-5	50-01D	Pressure Sustaining and Check Valve
116-52	52-03	Surge Anticipator Control Valve
116-31	58-01	Pressure Sustaining and Solenoid Shutoff
513-5	60-11	Dual Chamber Booster Pump Control Valve
413-21	60-31	Single Chamber Booster Pump Control Valve
513-6	61-02	Deep Well Pump Control Valve
118-3	81-02	Non-Surge Check Valve (Opening / Closing Speed Controls)
115	90-01	Pressure Reducing Control Valve
115-3	90-01D	Pressure Reducing and Check Valve
115-2	92-01	Pressure Reducing and Pressure Sustaining Control Valve
115-4	93-01	Pressure Reducing and Solenoid Shutoff
110-14	124-01	On - Off Float Valve (6" and smaller)
110-14	124-02	On - Off Float Valve (8" and larger)
110-10	129-01	Modulating Float Valve
113-12	136-01A	Solenoid Control Valve (3" and smaller)
113-6	136-03ABC	Solenoid Control Valve (w/High Capacity Controls)
127-1	210-01	One Way Flow Altitude Control Valve
127-2	210-06	Two Way Flow Altitude Control Valve
127-11	210-03	One Way Flow Altitude Control Valve (delayed opening)

**Watts
Cla-Val
Cross
Reference
Chart**