



Autotrol 172 Series Softener Filter Control Valves

Product Information



The 172 Series 2-inch side-mounted valve can be used with single-, dual- and triple-tank systems. Construction of lightweight, corrosion-proof, glass-filled Noryl* maximizes chemical resistance and durability. A static-seal flapper design offers the most reliable method for sealing a port. And the 172 valve's pressurized brine system doesn't need to rely on a time cycle for operation. Quick-connect fittings ensure easy installation on a variety of tanks.

	Size	Flow Rate 15 psi delta	Backwash Rate 50 psi Inlet Pres.	Tank Size	Clock	Digital Demand System
172	2 inch	145 gpm (32.9 m ³ /hr)	60 gpm (13.6 m ³ /hr)	42 inch	6 or 7 Day	480 Option

* Noryl is a registered trademark of General Electric Company.

Features and Operation

The GE Osmonics Autotrol 172 Series control valve is a corrosion-resistant, 2-inch composite water softener or filter valve.

The valve is made of glass-reinforced Noryl, a structural plastic designed to stand up to the rigors of water softener or filter service. The corrosion-proof materials make this an ideal valve for use with the variety of chemicals used in water treatment regeneration.

The 172 valve features a static sealing flapper valve design which minimizes problems with debris in the water. The flappers are driven by hydraulic plungers on rolling diaphragms which provide smooth, quiet operation. The diaphragms are controlled by a pilot-valve assembly.

Control options include the Autotrol 440 six- or seven-day timer. The 450 impulse timer can also be used. The 172 valve requires a three-minute start signal which can be provided by the Autotrol 480QC demand regeneration control.

The small timer used to operate the pilot valves allows the use of one synchronous motor. This motor operates both the program timer and the pilot valve control cam.

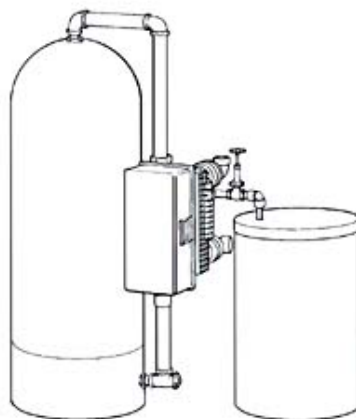
Backwash timers are adjustable from three to 15 minutes in three-minute steps. Brine rinse control time is adjustable from 22 to 62 minutes in four-minute steps.

The timer allows an installer or service person to manually index the cam, testing any one of the regeneration positions. This facilitates service and setup. The control is a five-cycle design. A separate pilot is provided to offer a hydraulic signal during regeneration. This allows for the easy use of service, bypass and lockout diaphragm valves.

The 172 valve is designed with quick disconnect fittings so that it can be set up with 2-inch NPT or BSPT brass adapters. Two inch PVC socket weld fittings are also available.



Sizing and Design



The 180 valve is available with six- or seven-day Model 440 electromechanical timers. The impulse timer control is also available and can be used with any remote device which produces a three- to five-minute signal to initiate a regeneration. The signal can be produced by an Autotrol 480QC, or a reset meter capable of producing the required signal.

The 180 series valve is also available as a five-cycle softener valve. The cycles are backwash, downflow brine, slow rinse, fast rinse and service. When used in filter applications, the 180 valve is available as a three- or five-cycle valve.

- o Backwash loosens, cleans and stratifies the ion exchange resin.
- o Brine is introduced in a downflow direction.
- o Rinse washes the excess brine and hardness ions out of the resin.
- o Pressurize packs the resin bed.
- o Brine Refill and Purge refills the brine tank and removes the last traces of excess brine.
- o Service provides continuous supply of soft water.

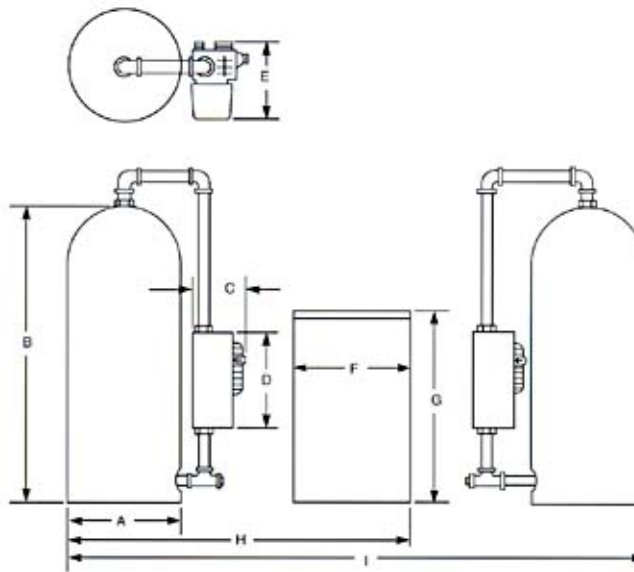
Softener Applications

Tank Size	Resin Vol. (Cu. Ft.)	Capacity (Grains)	Service Flow Rate Continuous (gpm)	Backwash Flow Rate (gpm)	Brine Tank			
					Tank Size (inches)	Salt Storage	Gravel (lbs)	Brine Line Pipe size (inch)
16 x 66	4.9	73,500	25	6	24 x 50	500	-	3/8
18 x 54	4.9	73,500	25	8	24 x 50	500	-	3/8
20 x 54	6.0	90,000	30	10	24 x 50	525	-	3/8
24 x 54	8.6	129,000	43	13	24 x 50	525	-	3/8
30 x 60	14.7	220,500	73	20	24 x 50	525	-	1/2
36 x 60	21.2	318,000	106	30	38 x 60	1,600	-	1/2
36 x 72	24.7	370,500	123	30	38 x 60	1,600	-	1/2
42 x 72	33.7	505,500	168	43	42 x 60	2,000	-	3/4
48 x 72	44.1	661,500	170	60	48 x 60	3,900	900	1
54 x 72	55.9	838,500	170	60	60 x 60	6,200	1,100	1



1. Capacities listed are based on 20 gpg at intermittent flow rates. Capacities are based on 1,000 grains of capacity per 0.26 lbs. of salt.
2. For service flows above 106 gpm use an auxiliary service valve. Below 106 gpm, service may flow through the 172 valve.
3. Specifications shown are for standard softener resins such as Dow C-100 with #20 flint gravel underbedding. Different resins will produce different results. Consult with the manufacturer of the softener system for their specification data.

Installed Dimensions



172 Series Valve

Tank Size	A	B	C	D	E	F	G	H	I
16 x 66	16 (41)	88 (224)	12 (31)	20 (51)	14 (36)	24 (61)	50 (127)	56 (142)	86 (218)
18 x 54	18 (46)	69 (175)	12 (31)	20 (51)	14 (36)	24 (61)	50 (127)	58 (147)	90 (229)
20 x 54	20 (51)	69 (175)	12 (31)	20 (51)	14 (36)	24 (61)	50 (127)	60 (152)	94 (239)
24 x 54	24 (61)	69 (175)	12 (31)	20 (51)	14 (36)	24 (61)	50 (127)	64 (163)	102 (259)
30 x 60	30 (76)	82 (208)	12 (31)	20 (51)	14 (36)	24 (61)	50 (127)	70 (178)	114 (290)
36 x 60	36 (91)	82 (208)	12 (31)	20 (51)	14 (36)	38 (97)	60 (152)	90 (229)	140 (356)
42 x 72	42 (107)	96 (244)	12 (31)	20 (51)	14 (36)	38 (97)	60 (152)	90 (229)	140 (356)
48 x 72	48 (122)	96 (244)	12 (31)	20 (51)	14 (36)	48 (122)	60 (152)	112 (285)	174 (442)
54 x 72	54 (137)	96 (244)	12 (31)	20 (51)	14 (36)	60 (152)	60 (152)	130 (330)	200 (508)

- o Dimensions are shown in inches and (centimeters).
- o Dimensions shown above are typical installed dimensions. Consult with the softener system manufacturer for complete dimensional information.
- o For systems where there are two tanks installed in parallel or triple systems, it is recommended that each tank have its own brine tank.



Filter Applications

	Backwash** Flow Rate gpm/ft. (mL/min/cm)	Service Flow Rate gpm/ft. (mL/min/cm)	Recommen- ded Bed Depth inches (cm)	Bed Expansion/ Freeboard As % Bed Depth	Weight lbs/cu. ft. (grams/liter)	Regenerant Required per cu. ft. (m)	pH Range
Manganese Greensand for Iron Removal	8 - 12 (33 - 49)	5 (20)	30 (76)	35 - 50%	85 (1,362)	2 - 4 oz. KMnO ₄	6.7 or higher
Regular Birm* for Iron Removal	Max. practical limit of iron and/or manganese removal - 15 ppm Hydrogen Sulfide (H ₂ S) - 5 ppm					(1.6 - 3.2 grams)	
	10 - 12 (41 - 49)	5 (20)	30 - 36 (76 - 91)	35 - 50%	48 (769)	None	6.7 or higher
Water supply must be free of H ₂ S and have dissolved oxygen of 15% of the iron content.							
Aridzorb* for Iron Removal	8 - 10 (33 - 41)	7 (29)	30 (76)	50%	45 (721)	3 - 6 oz. KMnO ₄	7.0 or higher
	Iron removal up to 20 ppm - Silica (SiO ₂) content must be minimum of 6 ppm					(2.4 - 4.8 grams)	
Activated Carbon for Taste and Odor Removal	8 - 10 (33 - 41)	5 (20)	30 (76)	35 - 50%	33 (529)	None	Wide Range
Filter - Ag. for Sediment (Turbidity) Removal	8 - 10 (33 - 41)	5 (20)	24 - 36 (61 - 91)	50%	25 (401)	None	Wide Range
Filter Sand for Sediment (Turbidity) Removal	12 - 15 (49 - 61)	3 - 5 (12 - 20)	24 - 30 (61 - 76)	35 - 50%	100 (1,602)	None	Wide Range
	Sand is also used for High Rate Sand Filters with Service Rates of 15 - 20 gpm/sq. ft. and backwash at the same rate.						
Anthrafilt for Sediment (Turbidity) Removal	8 - 12 (33 - 49)	3 - 5 (12 - 20)	24 - 30 (61 - 76)	35 - 50%	50 (801)	None	Wide Range

* Birm and Aridzorb are registered trademarks of Clack, Inc. and Arizona Minerals, respectively.

** Range of backwash rate corresponds with range of desired bed expansion.