Duplex

FLECK 9000 DUPLEX Valve

SIATA 132 and
XP MODE Controller

Duplex softeners give a continuous supply of softened water. Duplex systems use two resin columns, one in service, the second on standby. The water flow to service is metered and when the service column is exhausted, the control valve automatically switches, putting the second unit on line. The exhausted resin in the first column is then regenerated and remains on standby until the second column is exhausted, then the valve switches back to the first column again. Duplex softeners are normally sized to give one regeneration per column per day, but each column can be regenerated more frequently if required. Parallel run systems with both vessels on line at the same time are available.

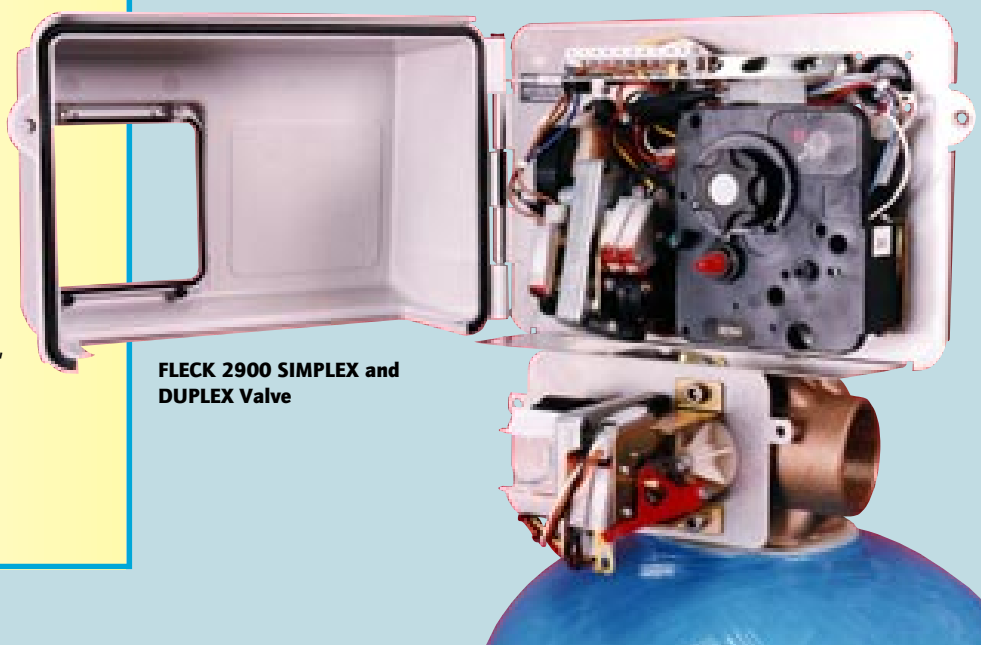
Valve Size

Valve sizes are determined according to the required flow rates and the volume of resin in the vessel. With very hard water the valve may need to be sized larger than the flow rate would suggest to cope with the extra resin required.

Pipe connection sizes range from $^{3}/_{4}$" to 3" for standard valves providing flow rates up to 45m^{3}/hour. For higher flow rates water is piped directly to the vessel with water passing through the central valve only during regeneration.

Capacity

The capacity of a particular softener is a function of the amount of resin in the column, the hardness of the water supply and the amount of salt used at each regeneration. It is most efficient, to regenerate frequently with a minimal amount of salt. The tables show the performance of our softeners at a typical hardness of 300 ppm.



FLECK 2900 SIMPLEX and
DUPLEX Valve

Domestic & Commercial Softeners

10L Trident (5600 SE)

30L Caribbean C/W hood

20L Titan (5600)

4L Trojan (255)

The All New Wizard Softener

We are also able to supply a range of domestic & commercial softeners for use in applications such as dishwashing, catering, laundry, washroom and hospitals. These range from small under table units capable of treating the water for a specific piece of equipment, through to whole of house units capable of treating the water for families of up to 10 people!

A range of hot water softeners is also available, along with a series of break tanks and booster sets to cover all your water needs in the commercial sector.

Compact RO C4000

Other Products in our Range

We are able to supply a full range of water treatment equipment including Reverse Osmosis Systems (pictured), iron and manganese removal filters, carbon filters, backwashing sediment filters, pH correction systems, demineralisers and the full range of resin and filter media.

FOR DETAILS ON WATER SOFTENING OR ANY OF THE ABOVE MENTIONED EQUIPMENT PLEASE CONTACT US ON THE TELEPHONE NUMBER BELOW.

The Right Product
...At the Right Price
...At the Right Time

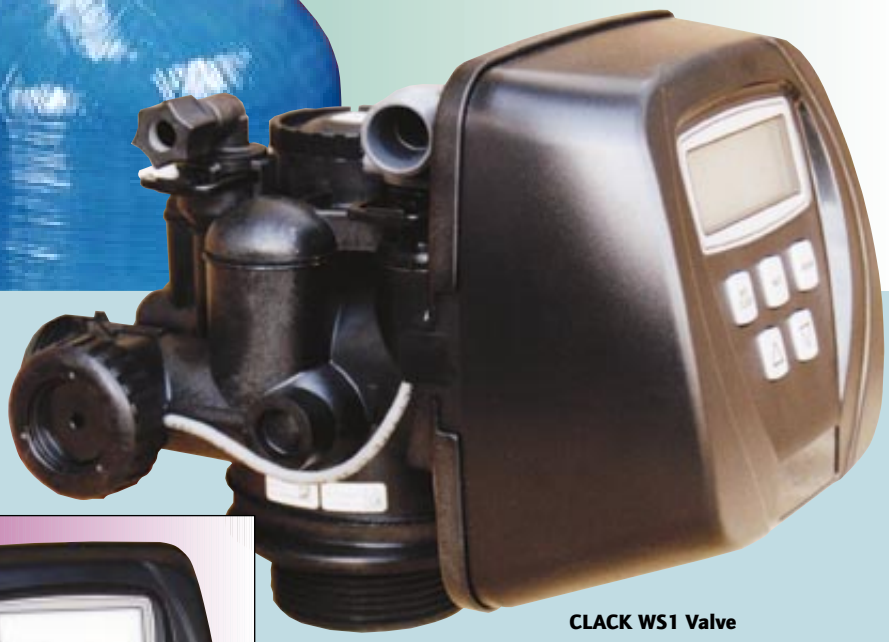
The complete answer to

Hard Water

from the water treatment specialists

FLECK 2750 SIMPLEX Valve

Simplex

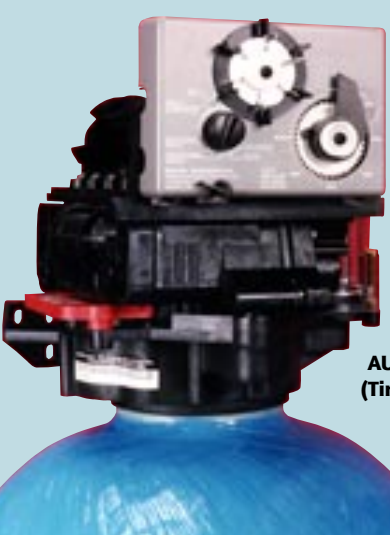


CLACK WS1 Valve

Simplex or single column water softeners are best suited to consistent demand applications of moderate total water consumption. Regeneration is controlled by the multiport valve head assembly. Time clock and delayed regeneration meter controlled softeners are normally programmed to regeneration at 2.00am, or at a convenient period of low water use. 'Immediate regeneration' meter controlled softeners regenerate the resin column as soon as the water meter zeros out.

During regeneration the single column control valves will bypass hard water to service unless a bypass closedown facility is specified.

Generally, Simplex softeners will need to be sized to give at least one day's softened water output before regeneration.



AUTOTROL 255 Valves
(Timer & Meter Control)

How do Water Softeners Work?

Water Softeners work by a process known as ion exchange. The hard water passes through a high quality cation exchange resin column inside a pressure vessel. The resin removes the positively charged Calcium and Magnesium ions from solution and exchanges them for ions of Sodium. When the resin becomes exhausted it is regenerated by drawing a solution of common salt - called brine - through the column. During regeneration the calcium and magnesium ions are then released from the resin and replaced again with those of Sodium from the brine. The unwanted ions are flushed to drain along with the excess brine. Regeneration takes between 60 to 180 minutes depending on the size of the softener, and can be repeated as often as necessary.

Simplex Water Softener Parameters

Softener Size (litres of resin)	10	14	20	25	30	40	50	60	75	80	100	120	140	190	250	350	500	750	1000	1250
Flow Rate Information																				
Capacity at 300ppm Total Hardness (m^3)	1.67	2.34	3.34	4.18	5.01	6.68	8.35	10.02	12.53	13.36	16.70	20.04	23.38	31.73	41.75	58.45	83.50	125.25	167.00	208.75
Service Flow m^3/hour	0.40	0.56	0.80	1.00	1.20	1.60	2.00	2.40	3.00	3.20	4.00	4.80	5.60	7.60	10.00	14.00	20.00	30.00	40.00	50.00
Regen Information																				
Salt used per Regen (kgs)	1.40	1.96	2.80	3.50	4.20	5.60	7.00	8.40	10.50	11.20	14.00	16.80	19.60	26.60	35.00	49.00	70.00	105.00	140.00	175.00
Total Water used per Regen (m^3)	0.069	0.070	0.104	0.115	0.175	0.217	0.219	0.363	0.394	0.398	0.582	0.590	0.810	0.920	1.734	2.317	3.467	4.814	6.737	8.024
Maximum Flow to Drain (litres per min)	4.54	4.54	4.54	5.68	9.08	9.08	9.08	13.25	15.14	15.14	18.93	18.93	26.50	32.17	37.85	56.78	94.63	132.48	170.33	227.10
Maximum Flow Period (minutes)	4	8	8	8	8	12	12	12	12	12	16	16	16	16	20	20	20	20	20	20
Regen Duration (minutes)	38	38	48	48	68	72	72	72	72	72	96	96	96	96	120	140	140	140	140	140
Dimensions & Weights																				
Brine Tank Volume (litres)	80	80	80	80	80	120	120	200	200	200	250	250	350	500	500	750	1000	1800	2 x 1800	2 x 1800
Salt Storage Capacity (kgs)	80	80	80	80	80	120	120	200	200	200	250	250	350	500	500	750	1000	1800	3600	3600
Brine Tank Dimensions (diam x height - mm)	458 x 628	458 x 628	458 x 628	458 x 628	458 x 628	462 x 800	462 x 800	555 x 980	555 x 980	555 x 980	555 x 1170	555 x 1170	650 x 1240	1050 x 900	1050 x 900	995 x 1310	1092 x 1350	1360 x 1520	1360 x 1520	1360 x 1520
Working Weight (kgs)	110	110	120	130	140	200	220	320	335	360	420	490	620	880	1000	1450	2000	3000	4000	5000
Vessel Size (diam x height - inches)	8 x 17	8 x 22	8 x 35	9 x 35	10 x 35	10 x 44	10 x 54	12 x 48	13 x 54	13 x 54	14 x 65	14 x 65	16 x 65	18 x 65	21 x 60	24 x 69	30 x 72	36 x 72	42 x 78	48 x 82
Valve Specifications																				
Clack WS1 Connections: 1" BSP inlet & outlet. 3/4" BSP drain	Maximum Flow Rated at 6.00m^3 per hour																			
Fleck 5600 Connections: 1" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 3.80m^3 per hour																			
Fleck 2510 Connections: 1" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 5.40m^3 per hour																			
Fleck 2750 Connections: 1" BSP inlet & outlet. 1/2" BSP drain	Maximum Flow Rated at 6.80m^3 per hour																			
Fleck 2850 Connections: 1.5" BSP inlet & outlet. 1" BSP drain	Maximum Flow Rated at 12.50m^3 per hour																			
Fleck 2900 Connections: 2" BSP inlet & outlet. 3/4" BSP drain	Maximum Flow Rated at 23.00m^3 per hour																			
Fleck 3900 Connections: 3" BSP inlet & outlet. 2" BSP drain	Maximum Flow Rated at 48.00m^3 per hour (Higher flow options available)																			
Autotrol 255 Connections: 1" BSP inlet & outlet. 1/2" BSP drain	Maximum Flow Rated at 3.80m^3 per hour																			
Autotrol 268 Connections: 1.75" NPT inlet & outlet. 3/4" BSP drain	Maximum Flow Rated at 6.00m^3 per hour																			
Autotrol Magnum Cv Connections: 1.5" or 2" inlet & outlet. 1.5" BSP drain	Maximum Flow Rated at 18.00m^3 per hour																			
Siata 132 Connections: 1" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 7.00m^3 per hour																			
Siata 230 Connections: 1.5" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 10.00m^3 per hour																			
Siata 250 Connections: 2" BSP inlet & outlet. 1" BSP drain	Maximum Flow Rated at 21.00m^3 per hour																			
Siata 360 Connections: 2" BSP inlet & outlet. 1 1/2" BSP drain	Maximum Flow Rated at 45.25m^3 per hour (Higher flow options available)																			

PLEASE NOTE: When sizing softeners, please ensure that the valve being used is able to handle the flow rate required by the system. The solid bars denote which size softeners the respective valves can be installed on.
All data is approximate and may vary due to site conditions and installation constraints. It should therefore be used as a guide only and suitable over capacity included to facilitate effective operation. Maximum flow rates are based on manufacturers data, at a pressure drop of 1.8 bar under test conditions, and as such may not always be replicated on site.

Duplex Water Softener Parameters

Softener Size (litres of resin)	10	14	20	25	30	40	50	60	75	80	100	120	140	190	250	350	500	750	1000	1250
Flow Rate Information																				
Capacity at 300ppm Total Hardness (m^3)	1.67	2.34	3.34	4.18	5.01	6.68	8.35	10.02	12.53	13.36	16.70	20.04	23.38	31.73	41.75	58.45	83.50	125.25	167.00	208.75
Service Flow m^3/hour	0.40	0.56	0.80	1.00	1.20	1.60	2.00	2.40	3.00	3.20	4.00	4.80	5.60	7.60	10.00	14.00	20.00	30.00	40.00	50.00
Regen Information																				
Salt used per Regen (kgs)	1.40	1.96	2.80	3.50	4.20	5.60	7.00	8.40	10.50	11.20	14.00	16.80	19.60	26.60	35.00	49.00	70.00	105.00	140.00	175.00
Total Water used per Regen (m^3)	0.142	0.142	0.155	0.176	0.193	0.206	0.325	0.371	0.394	0.394	0.440	0.447	0.758	0.917	1.516	2.317	3.467	4.814	6.737	8.024
Maximum Flow to Drain (litres per min)	4.54	4.54	5.68	7.57	9.08	9.08	9.08	13.25	15.14	15.14	18.93	18.93	26.50	26.50	26.50	56.78	94.63	132.48	170.33	227.10
Maximum Flow Period (minutes)	6	6	6	6	6	6	6	6	6	6	6	6	8	10	10	20	20	20	20	20
Regen Duration (minutes)	70	70	70	70	70	76	80	80	80	80	80	80	94	120	120	140	140	140	140	140
Dimensions & Weights																				
Brine Tank Volume (litres)	80	80	120	120	120	200	200	200	250	250	350	500	500	750	1000	1000	2 x 1000	2 x 1800	2 x 1800	2 x 1800
Salt Storage Capacity (kgs)	80	80	120	120	120	120	200	200	250	250	350	500	500	750	1000	1000	2000	3600	3600	3600
Brine Tank Dimensions (diam x height - mm)	458 x 628	458 x 628	458 x 628	458 x 628	458 x 628	462 x 800	462 x 800	462 x 800	555 x 980	555 x 980	555 x 1170	650 x 1240	650 x 1240	995x1310	1050 x 900	995 x 1310	1092 x 1350	1360 x 1520	1360 x 1520	1360 x 1520
Working Weight (kgs)	220	220	240	260	280	400	440	640	700	720	840	1080	1240	1450	2000	2900	4000	6000	8000	10000
Vessel Size (diam x height - inches)	8 x 17	8 x 22	8 x 35	9 x 35	10 x 35	10 x 44	10 x 54	12 x 48	13 x 54	13 x 54	14 x 65	14 x 65	16 x 65	18 x 65	21 x 60	24 x 69	30 x 72	36 x 72	42 x 78	48 x 82
Valve Specifications																				
Fleck 9000 - 3/4" Connections: 1" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 3.60m^3 per hour																			
Fleck 9000 - 1" Connections: 1" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 4.40m^3 per hour																			
Fleck 9500 Connections: 1.5" BSP inlet & outlet. 1" BSP drain	Maximum Flow Rated at 9.60m^3 per hour																			
Fleck 2900 Connections: 2" BSP inlet & outlet. 1 3/4" BSP drain	Maximum Flow Rated at 23.00m^3 per hour																			
Fleck 3900 Connections: 3" BSP inlet & outlet. 2" BSP drain	Maximum Flow Rated at 48.00m^3 per hour (Higher flow options available).																			
Autotrol Ready Soft Connections: 1" BSP inlet & outlet. 1/2" BSP drain	Maximum Flow Rated at 3.80m^3 per hour																			
Autotrol Magnum Cv Connections: 1.5" or 2" BSP inlet & outlet. 1.5" BSP drain	Maximum Flow Rated at 18.00m^3 per hour																			
Siata 132 Connections: 1" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 7.00m^3 per hour																			
Siata 230 Connections: 1.5" BSP inlet & outlet. 1/2" hose barb drain	Maximum Flow Rated at 10.00m^3 per hour																			
Siata 250 Connections: 2" BSP inlet & outlet. 1" BSP drain	Maximum Flow Rated at 21.00m^3 per hour																			
Siata 360 Connections: 2" BSP inlet & outlet. 1 1/2" BSP drain	Maximum Flow Rated at 45.25m^3 per hour (Higher flow options available).																			

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