

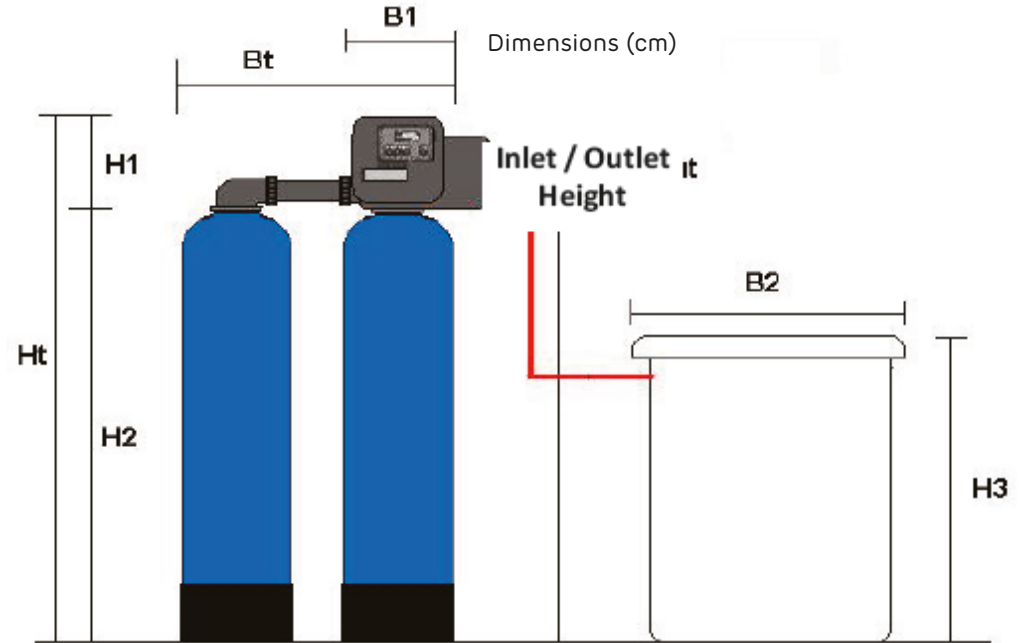


**HIGH
CAPACITY**

Monarch DS 1"

Alternating Duplex/Duplex Standby (DS)

High efficiency, high capacity water softeners.



model	valve H1	vessel H2	brine tank H3	softener Ht	Connection Ht	vessel B1	softener Bt	brine tank B2	weight (*) kg
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DS 10/44	19	42	44	61	47	22	45	32 sq	35
DS 20/44	19	89	84	108	94	22	45	44 sq	56
DS 30/44	19	89	84	108	94	27	64	44 sq	75
DS 40/44	19	112	84	131	117	27	64	44 sq	96
DS 50/44	19	139	84	158	144	27	64	44 sq	115
DS 60/44	19	123	83	142	128	32	77	67φ	147
DS 75/44	19	140	101	159	145	34	80	76φ	180
DS 100/44	19	168	93	187	173	37	92	87φ	235
DS 125/44	19	168	93	187	173	37	92	87φ	280
DS 150/44	19	167	124	186	172	41	96	87φ	340
DS 200/44	19	179	124	198	184	51	119	87φ	440

(*) total weight of the unit without water or filled brine tank

(**) sizes may vary dependant on components used and should only be used as a guide.

General conditions for installation

Connection IN & OUT:	1" male
Option side mount:	N/A
Drain connection(*):	3/4" or 1" for DLFC flows over 10 gpm
Electrical rating:	230V 50Hz 12V Transformer
max power rating:	6W
IP protection class:	Double isolated transformer
Minimum inlet pressure :	200 kPa (2 bar)
Maximum inlet pressure:	600 kPa (6 bar)
Vacuum:	no allowance
Average pressure loss (**):	100 kPa (1 bar)
Min-max water temperature:	5-35°C
Remarks	
(*)	Dependant on Drain line flow control.
(**)	Under normal circumstances.

Resin

Type:	Strong acid cation resin - softening ,food grade quality
Life span:	15 years under normal circumstances

Ion exchange (for average salt consumption of 150 g/L)

Litres of resin	10	20	30	40	50	60	75	100	125	150	200
Capacity Kg CaCO ₃	0.5	1	1.5	2	2.5	3	3.8	5	6.3	7.5	10
M ³ @ 300ppm	1.6	3.3	5	6.6	8.3	10	13	17	21	25	33
Salt consumption	1.5	3	4.5	6	7.5	9	11	15	19	23	30

Regeneration

Alternating Duplex (Duty Standby) Total time:

Total time min :	65	65	79	71	81	73	75	97	97	82	95
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Remarks When sizing a duplex softener, the interval between regenerations should not be more frequent than every 6 hours, to allow brine creation. Additionally, the interval between regenerations should not be more than 4 days, to prevent tracking of water through the vessel. In all cases, BV exchange should be considered in conjunction with the regeneration frequency calculated.

Flow rate

Litres of resin	10	20	30	40	50	60	75	100	125	150	200
Nominal M ³ /h	0.4	0.8	1.2	1.6	2	2.4	3	4	5	6	6.4
Minimum L/h	60	60	60	60	60	60	60	60	60	60	60

Consumption of rinse water

C Litres of resin	10	20	30	40	50	60	75	100	125	150	200
1.Backwash	32	32	52	52	52	74	95	95	95	132	170
2.Brining + Slow rinse	72	67	124	102	110	153	188	263	246	282	440
4.Fast rinse	39	39	62	62	62	89	114	114	114	159	204
Total ***	143	138	238	216	224	316	397	472	455	573	814

(***) Figures based on 60 PSI pressure.

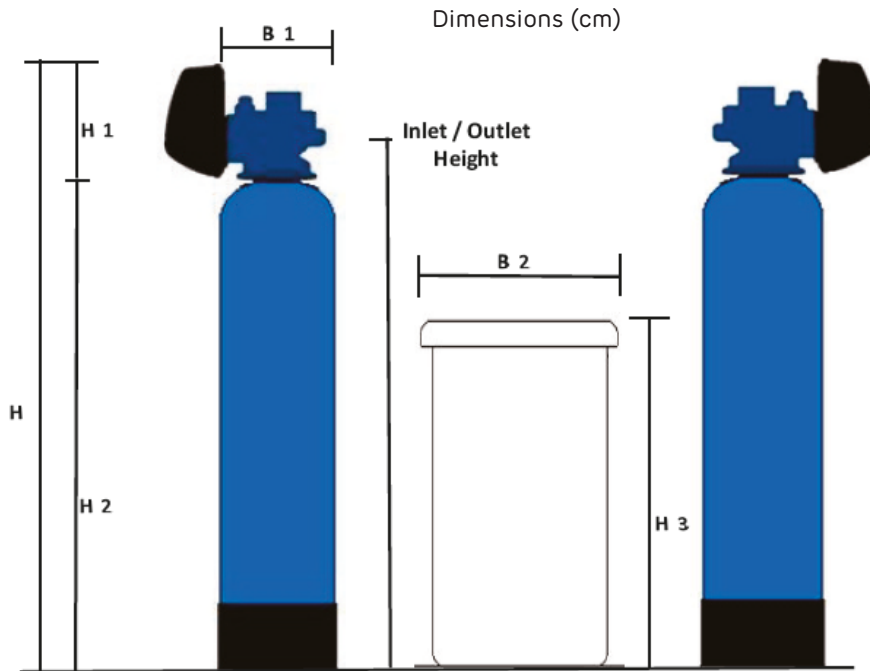
10/12/2018

Peak flow rates: 1 litre of resin will give 1 litre of soft water per minute.
i.e. multiply litres of resin by 60 to get peak L/h

Monarch DS 1.25"

Alternating Duplex/Duplex Standby (DS)

High efficiency, high capacity water softeners.



model	valve H1	vessel H2	brine tank H3	softener Ht	Inlet / Outlet	vessel B1	brine tank B2	weight (*) kg
DS 75/54	19	140	101	159	145	34	76 ϕ	166
DS 100/54	19	168	87	187	173	37	93 ϕ	210
DS 125/54	19	168	87	187	173	37	93 ϕ	232
DS 150/54	19	167	124	186	172	41	87 ϕ	316
DS 200/54	19	179	124	198	184	51	87 ϕ	410

(*) Estimated weight of the system without water or salt.

(**) Sizes may vary dependant on components used and should only be used as a guide.

General conditions for installation

Connection IN & OUT:	1.25" male
Option side mount:	N/A
Drain connection(*):	3/4" or 1" for DLFC flows over 10 gpm
Electrical rating:	230V 50Hz 12V Transformer
Max power rating:	6W
IP protection class:	Double isolated transformer
Minimum inlet pressure :	200 kPa (2 bar)
Maximum inlet pressure:	600 kPa (6 bar)
Vacuum:	no allowance
Average pressure loss (**):	100 kPa (1 bar)
Min-max water temperature:	5-35°C

Remarks

(*) Dependant on Drain line flow control.

(**) Under normal circumstances.

It is always recommended to install a 25µ cartridge filter before a softener.

Resin

Type	: Strong acid cation resin - softening ,food grade quality
Life span	: 15 years under normal circumstances

Ion exchange (for average salt consumption of 150 g/L)

litres of resin	75	100	125	150	200
Capacity kg CaCO ₃	3.8	5	6.3	7.5	10
M ³ @ 300ppm	13	17	21	25	33
Salt consumption kg / regen.	11	15	19	22.5	30

Regeneration

Alternating Duplex (Duty Standby) Total time:

total time min :	75	97	97	82	95
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Remarks When sizing a duplex softener, the interval between regenerations should not be more frequent than every 6 hours, to allow brine creation. Additionally, the interval between regenerations should not be more than 4 days, to prevent tracking of water through the vessel. In all cases, BV exchange should be considered in conjunction with the regeneration frequency calculated.

Flow rate

litres of resin		75	100	125	150	200
nominal	M ³ /h	3.0	4.0	5.0	6.0	8.0
minimum	L/h	60				

Consumption of rinse water

	litres of resin	75	100	125	150	200
1.Backwash	litres	95	95	95	132	170
2.Brining + Slow rinse	litres	188	263	246	282	440
4.Fast rinse	litres	114	114	114	159	204
Total ***	litres	397	472	455	573	814

(***) Figures based on 60 PSI pressure.

Peak flow rates: 1 litre of resin will give 1 litre of soft water per minute.

i.e. multiply litres of resin by 60 to get peak L/h

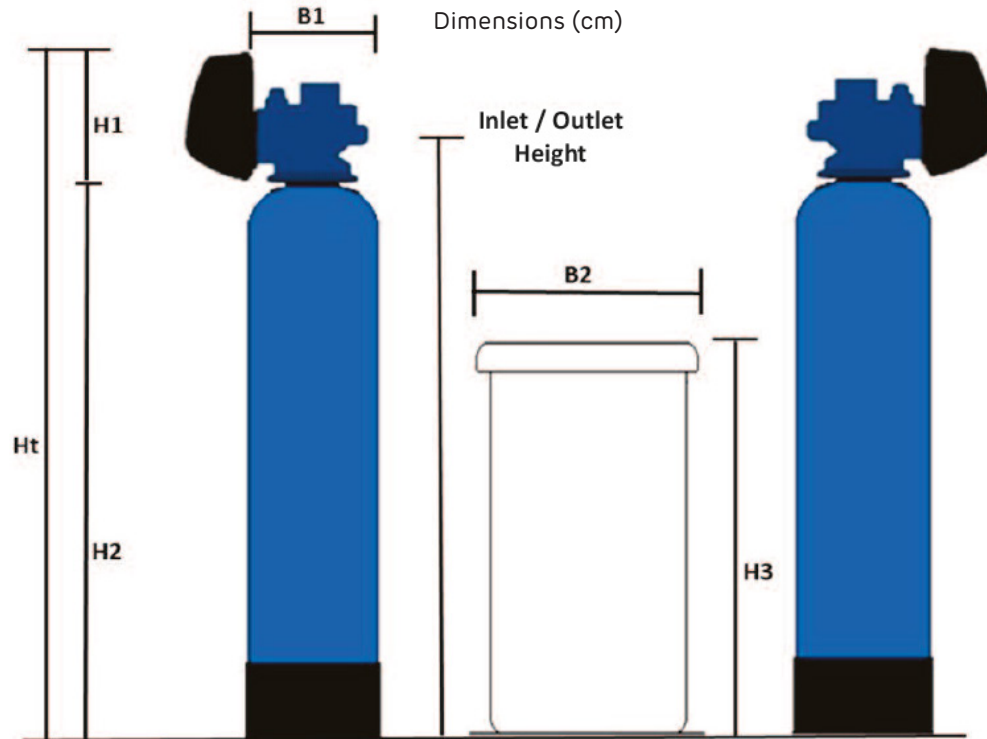
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Monarch DS 1.5"

Alternating Duplex/Duplex Standby (DS)

High efficiency, high capacity water softeners.



model	valve H1	vessel H2	brine tank H3	softener Ht	IN&OUT	vessel B1	brine tank B2	weight (*) kg
DS 75/64	20	167	83	187	172	37	67 ϕ	250
DS 100/64	20	167	101	187	172	56	76 ϕ	275
DS 150/64	20	168	111	208	196	61	100 ϕ	375
DS 200/64	20	179	124	199	187	51	87 ϕ	450
DS 250/64	20	163	111	183	171	56	100 ϕ	461
DS 350/64	20	188	111	208	196	61	100 ϕ	534
DS 500/64	20	188	129	208	196	61	107 ϕ	734

(*) Estimated weight of the system without water or salt.

(**) Sizes may vary dependent on components used and should only be used as a guide.

General conditions for installation

Connection IN & OUT:	1.5" female
Drain connection(*):	3/4", 1" or 1.25" dependent on flow
Electrical rating:	230V 50Hz 12V transformation
Max power rating:	6W
IP protection class:	Double isolated transformer
Minimum inlet pressure :	200 kPa (2 bar)
Maximum inlet pressure:	600 kPa (6 bar)
Vacuum:	No allowance
Average pressure loss (**):	100 kPa (1 bar)
Min-max water temperature:	5-35°C

Remarks

(*) Dependent on Drain line flow control.

(**) Under normal circumstances - it is always recommended to install a 25µ-cartridge filter

Resin

Type	: Strong acid cation resin - softening ,food grade quality
Life span	: 15 years under normal circumstances

Ion exchange (for average salt consumption of 150 g/L)

	litres of resin	75	100	150	200	250	350	500
capacity	kg CaCO ₃	3.8	5.0	7.5	10.0	12.5	17.5	25.0
	M ³ @ 300 ppm	12.5	16.7	25.0	33.0	41.6	58.3	83.3
salt consumption	kg salt/regen.	11.3	15.0	22.5	30.0	37.5	52.5	75.0

Regeneration

Alternating Duplex (Duty Standby)

Total time:	77	94	82	95	72	94	85
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Remarks When sizing a duplex softener, the interval between regenerations should not be more frequent than every 6 hours, to allow brine creation. Additionally, the interval between regenerations should not be more than 4 days, to prevent tracking of water through the vessel. In all cases, BV exchange should be considered in conjunction with the regeneration frequency calculated.

Flow rate

	litres of resin	75	100	150	200	250	350	500
nominal	m ³ /h	3.0	4.0	6.0	8.0	10.0	14.0	20.0
minimum	L/h	120.00						

Consumption of rinse water

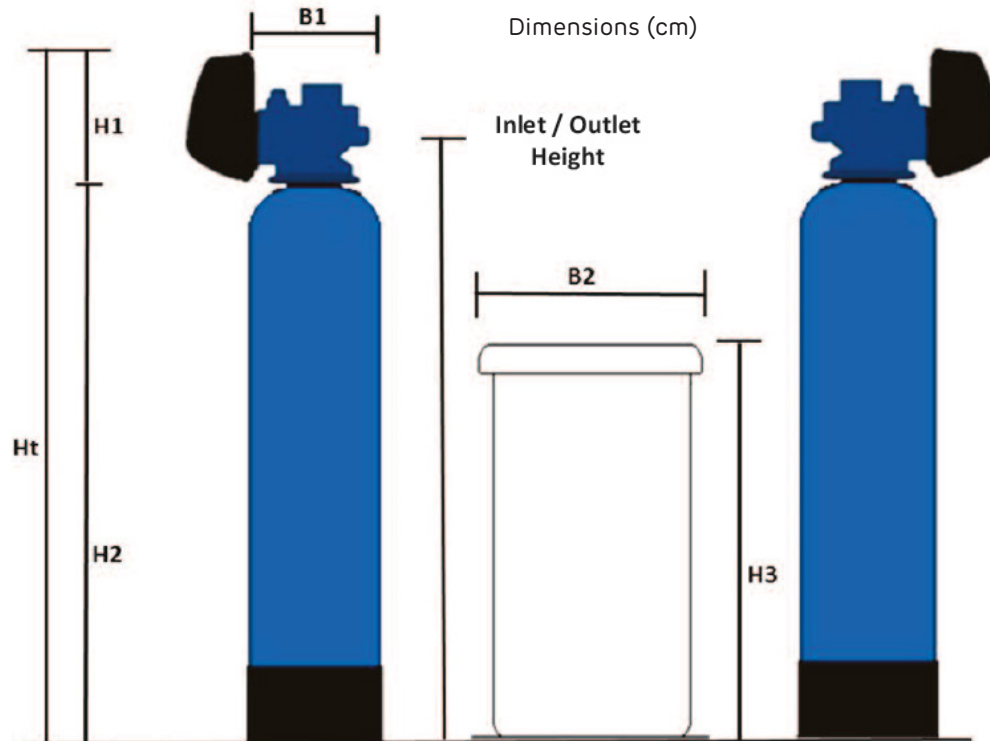
	litres of resin	75	100	150	200	250	350	500
1.Backwash	litres	80	95	132	170	246	310	470
2.Brine/Slow Rinse	litres	238	258	282	528	972	752	1197
4.Fast rinse	litres	60	80	159	204	295	450	950
total	litres	378	433	573	902	1513	1512	2617

Peak flow rates: 1 litre of resin will give 1 litre of soft water per minute.
i.e. multiply litres of resin by 60 to get peak L/h

Monarch DS 2"

Alternating Duplex/Duplex Standby (DS)

High efficiency, high capacity water softeners.



model	valve H1	vessel H2	brine tank H3	softener Ht	Inlet / Outlet	vessel B1	brine tank B2	weight (*) kg
DS 200/84	22	179	124	201	191	61	87 ϕ	460
DS 250/84	22	163	124	185	175	61	87 ϕ	495
DS 300/84	22	188	111	210	200	77	100 ϕ	690
DS 350/84	22	188	111	210	200	61	100 ϕ	772
DS 400/84	22	205	111	227	200	61	100 ϕ	872
DS 500/84	22	205	111	227	217	77	100 ϕ	1109
DS 700/84	22	215	129	237	227	93	107 ϕ	1484

(*) Estimated weight of the system without water or salt.

(**) Sizes may vary dependent on the components used and should only be used as a guide.

General conditions for installation

Connection IN & OUT:	2" female
Option side mount:	N/A
Drain connection(*):	1" for DLFC 10 - 25gpm 1.25" Over 25gpm
Electrical rating:	230V 50Hz 12V Transformer
Max power rating:	6W
IP protection class:	Double isolated transformer
Minimum inlet pressure :	200 kPa (2 bar)
Maximum inlet pressure:	600 kPa (6 bar)
Vacuum:	no allowance
Average pressure loss (**):	100 kPa (1 bar)
Min-max water temperature:	5-35°C

Remarks

(*) Dependent on Drain line flow control.

(**) Under normal circumstances.

It is always recommended to install a 25µ cartridge filter before a softener.

Resin

Type	: Strong acid cation resin - softening ,food grade quality
Life span	: 15 years under normal circumstances

Ion exchange (for average salt consumption of 150 g/L)

	litres of resin	200	250	300	350	400	500	700
Capacity	kg CaCO ₃	10	12.5	15	18	20	25	35
	m ³ @ 300ppm	33	42	50	59	67	83	117
Salt consumption	kg / regen.	30	38	45	53	56	75	105

Regeneration

Alternating Duplex (Duty Standby)

total time min :	95	72	94	77	85	92	83
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Remarks When sizing a duplex softener, the interval between regenerations should not be more frequent than every 6 hours, to allow brine creation. Additionally, the interval between regenerations should not be more than 4 days, to prevent tracking of water through the vessel. In all cases, BV exchange should be considered in conjunction with the regeneration frequency calculated.

Flow rate

	litres of resin	200	250	300	350	400	500	700
nominal	m ³ /h	8	10	12	14	16.0	20.0	28.0
minimum	L/h	342						

Consumption of rinse water

	litres of resin	200	250	300	350	400	500	700
1.Backwash	litres	170	246	310	247	285	378	660
2.Brining + Slow	litres	528	972	752	803	920	1488	1638
4.Fast rinse	litres	204	295	450	295	340	454	795
total	litres	902	1513	1512	1345	1550	2320	3093

Peak flow rates: 1 litre of resin will give 1 litre of soft water per minute.

i.e. multiply litres of resin by 60 to get peak L/h

Softeners
up to 3"
available