EVERPURE®

claris watertechnology

Everpure Claris filter cartridge family

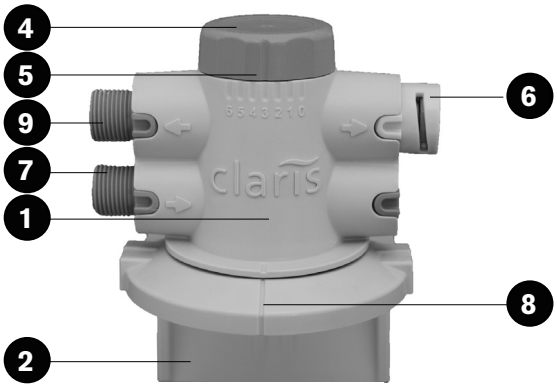
Installation and Operation Guide

70.900.886/V1

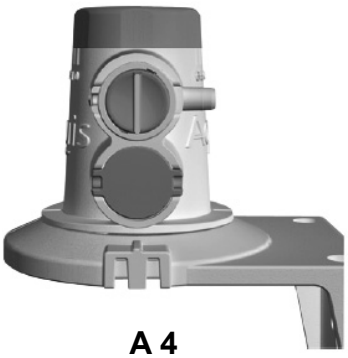
Index

Overview of components

A 1



A 2



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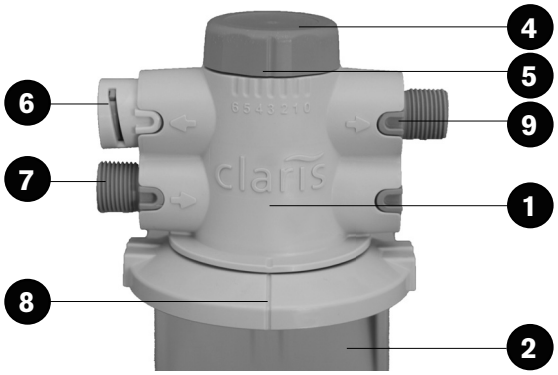
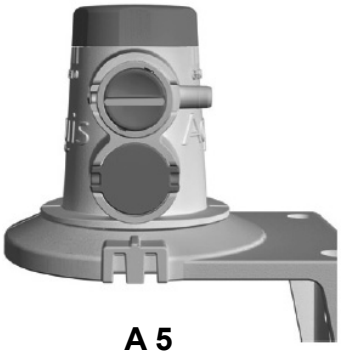


A 3



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Definitions of terms

1 Filter head
2 Mounting bracket
3 Filter cartridge
4 Bypass adjustment cap
5 Bypass levels
6 Flush/pressure release valve
7 Inlet
8 End position mark
9 Outlet

1. General information

The filter system consists of the following parts (see page 3):
- Filter head
- Mounting bracket
- Filter cartridge

The filter cartridges are available in 5 sizes (S/M/L/XL/XXL).
The corresponding filter head and mounting bracket fits to all cartridge sizes.

2. Special instructions

2.1 Staff
The installation and maintenance of the filter systems may only be carried out by trained and authorised personnel.

2.2 Disclaimer
Information contained in this document is believed to be accurate at the time of publication,
but does not constitute a contractual offer. The right is reserved to alter specifications without prior notice. Illustrations and tabulated data are for guidance only. Everpure does not assume liability for any damages, including subsequent damages, that may result from incorrect installation or usage of the products.
Everpure does not assume liability for damage caused by using parts from other manufacturers.

2.3 Safety Information
- Only cold water of potable water quality may be used to feed the system.
- All components must be stored dry within a temperature limit of -15° to 45° C (5 °F to 113 °F)
- The system must be sited in a frost-proof place and be protected from direct sunlight.
- The system must not come into contact with chemicals, solvents or other vapours.
- Before commissioning the filter system, the fed appliance must be free of lime.
- The filter cartridge must not be opened or damaged.
- The filter cartridge should be replaced if not used for very long periods.
- Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- After 5 years of use (latest 6 years after production date) the filter head and wall mounting bracket must be replaced (this also applies to hoses and gaskets) – please check the date on the production stamp.
- After a longer downtime or maintenance works rinse the system thoroughly – see table for flush volume.

Filter system	Flush volume after 1 week of stagnation	Flush volume after 4 weeks of stagnation
Claris S	2 liters (0.5 US gal)	10 liters (3 US gal)
Claris M	3 liters (1.0 US gal)	15 liters (4 US gal)
Claris L	5 liters (1.5 US gal)	25 liters (7 US gal)
Claris XL	8 liters (2.0 US gal)	40 liters (11 US gal)
Claris XXL	12 liters (3.0 US gal)	60 liters (16 US gal)

3. Applications

The CLARIS filter systems are typically used to feed the following appliances:
- Coffee and espresso machines
- Drinks vending machines
- Combi Steamers and Self-Cooking Systems
- Steam Cookers and Ovens

The systems can be operated horizontally or vertically, depending on the space available.

4. Function

The CLARIS filter systems use ion-selective filter medium to reduce the carbonate hardness of potable water.
The DuoBlend® bypass valve in the filter head can be used to precisely adjust the carbonate hardness of the filtered water and to adapt it to the application.
The filter material also reduces heavy metal ions like lead, copper and cadmium.
The integrated active carbon block reduces undesirable cloudiness, organic impurities, odour and taste and chlorine residue from the filtrate and bypass water.

5. Installation and Bypass level adjustment

5.1 Initial installation

At first identify a suitable place to install the filter system. Note the information provided in chapter 2.
Before you start installing the system, shut off the water supply and disconnect the equipment from the power supply.
Before installation check the filter system and the accessories for any damage – particular attention must be paid when inspecting the o-rings and gaskets.
After storage below 0° C (32 °F) the filter cartridge must be stored at the ambient temperature of the installation location for at least 24 hours.

NOTE: The hoses for the supply and discharge line are not supplied as standard but can be ordered as accessories. A test kit for determining the water hardness is also available as an accessory. You will find more details in section 9.

5.1.1 Installation of filter head / Mounting bracket / Filter cartridge

The system can be operated either freestanding or wall mounted in a vertical or horizontal position.

1) If mounting vertically to a wall, securely connect the mounting bracket to the wall using suitable Ø 5mm screws (#10-12 x ¾" tap screws) (Not included).
   Please note: we recommend to install the XXL freestanding vertical or horizontal. If wall mounting of XXL is required first firmly attach an additional mounting block to the wall to allow adequate clearance between the filter cartridge and wall.
2) Install the hoses for the water inlet and outlet to the filter head and respect the following:
   - Note the direction of flow – indicated by arrows on the filter head!
   - Max. Torque 10 Nm (88 lbf in) on 3/8" threaded connections when using genuine Claris accessory hoses.
   - Filter heads with threaded connections must only use connecting hoses with flat gaskets. Don't use hoses or adapter with conical screw connections, they damage the connectors on the filter head and invalidate any warranty claims.
   - Only use adaptor nipples of a matching connection type and length to the head connectors, adaptor nipples must not contact and rest axially on the head. Adaptors of improper design can damage the connections of the filter head and invalidate any warranty claims.
3) Open the flush/pressure release valve (see page 3, A 5) and direct the flush hose into a suitable container (e.g. bucket) or to the drain.
4) Turn on the water supply.
5) Insert the filter cartridge into the filter head and turn it clockwise until the end position is reached. This vents the system and flushes the filter cartridge (filter size S/M > 5 l / 1.5 US gal; filter size L/XL > 10 l / 3.0 US gal; filter size XXL > 15 l / 4.0 US gal). You can check the correct end position using the matching marks on the mounting bracket and filter cartridge (see page 3, position 8).
6) Close the flush/pressure release valve (see page 3, A 4)
7) After first installation of the filter system the outlet hose and the appliance must flushed. Rinse and vent the hose and the appliance with a minimum of 2 litre (0.5 US gal). In cases where you can not flush the appliance, remove the hose from the appliance and rinse it separately.
8) The system is now ready for use. After installing the system and inserting the filter cartridge, check all components for leaks, water must not escape from any point.

5.1.2 Replacing a filter cartridge

1) Slowly unscrew the used cartridge by turning counter-clockwise. This will unlock it from the filter head and enable it to be removed. During this process, incoming tapwater supply and outgoing filtered water valves in the filter head shut-off automatically.
   The system will expand and a small amount of expansion water may escape from the flush hose due to peaks in pressure.
   Please keep this in mind and place a suitable container underneath the flush hose.
2) Open the flush/pressure release valve (see page 3, A 5) and lead the rinsing hose into a suitable container (e.g. bucket) or to the drain.
3) Remove the new filter cartridge from its packaging and check for any damage.
4) Insert the filter cartridge into the filter head and turn the cartridge clockwise until its end position is reached (see page 3, position 8). The flow in the filter head is reopened and the system vented and flushed via the flush/pressure release valve (cartridge size S/M > 5 l / 1.5 US gal; cartridge size L/XL > 10 l / 3.0 US gal; cartridge size XXL > 15 l / 4.0 US gal).
5) Close the flush/pressure release valve (see page 3, A 4) - the system is now ready for use.
6) After replacing the filter cartridge, check all components for seal integrity, water must not escape from any point.

NOTE: The flush water will be milky or cloudy at first. This is due to the dispersing air and will clear up quickly. Now check that the cartridge position is correct by ensuring the marks on the wall mounting bracket and filter cartridge are aligned (see page 3, position 8). When inserting the cartridge, check the position of the cartridge label. This should face forwards once in the end position so that all of the necessary information is visible.

5.1.3 Determining the carbonate hardness

Use the corresponding test kit to determine the carbonate hardness in the water supply. A test kit for determining water hardness is available as an accessory.

In order to compensate for fluctuations in the quality of feed water and measuring errors of the test kit we recommend to add 2° KH / 2° Clarke / 30 PPM / 3° FH to the value determined.
Use this value to determine the recommended bypass level setting according to chapter 5.1.4 and for the determination of the filter capacity according to chapter 5.1.5.

5.1.4 Bypass level adjustment

To adjust the bypass level for your application, lift up the bypass adjustment cap (see page 3, position 4) and set the bypass level specified in the table in chapter 10. Then push down the bypass adjustment cap back onto the filter head to lock the cap in position.

NOTE: Filter heads with fixed bypass position are pre-adjusted and the bypass adjustment cap is fixed; for example a Claris head with label „zero bypass“ can not be lifted to set another bypass level.

NOTICE: Adjust the bypass level only with the cartridge assembled to the head.

5.1.5 Determining the filter capacity

Based on the carbonate hardness level of the water supply and your application, use the tables in chapter 10 to identify the recommended bypass setting and the resultant filter cartridge capacity.

Please mark the installation and replacement dates in the corresponding boxes on the cartridge label.

5.2 Safety-related installation instructions

- Water pressure at the filter system inlet must not exceed 8 bar (116 psi). A pressure reducer must be installed on the water supply side of the filter system if the inlet pressure exceeds 8 bar (116 psi).
- A shut-off valve must be installed upstream of the filter system.
- If a water softener is installed upstream, use filter only for tapwater > 6° dH / 10,7° FH / 107 PPM total hardness.
- No copper pipes, galvanised or nickel-coated pipes or intermediate parts may be installed between the filter system and the point of dispense.
- All components must be installed according to country-specific guidelines. Check for compliance with state and local laws and regulations.
- DIN 1988 should be noted for installing and operating the system.
- We recommend only using genuine accessory hoses for the CLARIS system because these have a longer thread.
- If the cartridge is removed from the filter head without being replaced by a new one, the water supply to the filter head must be shut off.
- Do not connect any devices to the flush valve and/or flush hose.
- Notice for espresso coffee machines: If copper or nickel coated copper parts are used in installations their surfaces can migrate copper ions if in contact with water. Limestone coating deposits on contacting parts, such as pipes or boilers, can also impact the level of migration. To avoid the migration of copper ions in the water we recommend you avoid the use of copper or other nickel-coated copper materials. For installations which still consist mainly of copper or nickel-coated copper surfaces, we recommend to set the bypass level one position higher as indicated in the coffee-espresso table.

6. Settings / Capacities

The unique DuoBlend® bypass valve technology enables precise adjustment of carbonate hardness in the filtered water. It is possible to adjust the bypass level to best suit the appliance type, i.e. hot drinks with steam (COFFEE-ESPRESSO), without steam (VENDING), as well as for Combi Steamers, Self - Cooking Systems, Steam Cookers and Ovens whether using direct injection or boiler systems, in order to maximise cartridge capacity taking into consideration local water quality.

7. Service / Maintenance

Reliable system function can only be achieved if the filter cartridge is replaced on a regular basis.
The replacement cycle depends on the carbonate hardness of the water supply, the application and the bypass level.
We would recommend replacing the filter cartridge after 6 months and no later than 12 months depending on usage.

The operator undertakes to check the system for leaks every day.

When the filter cartridge is replaced, all parts must be checked for impurities and damage. Damaged parts must be replaced and impurities remedied.

8. Technical data

Dimensions		S	M	L	XL	XXL
Height, filter system	[mm]	365	475	410	525	525
Height, filter cartridge	[mm]	315	425	360	475	475
Diameter of filter cartridges	[mm]	95	95	136	136	175
Min. distance from ground	[mm]	40	40	40	40	40
Weight, filter cartridge	[kg]	1.3	1.8	3.2	4.3	6.5
Operating data						
Max. working pressure		2 - 8 bar (29 - 116 psi)				
Water temperature / ambient temperature		4° - 30° C (39 °F - 86 °F)				

9. Order information for Everpure-Claris filters

Description	S	M	L	XL	XXL
Filter system, 3/8“ thread in left/out right	4339-00	4339-01	4339-02	4339-03	4339-04
Filter cartridges	4339-10	4339-11	4339-12	4339-13	4339-14
Single filter head 3/8” thread, in & out on left	4339-20				
Single filter head 3/8” thread, in left/out right	4339-21				
Single filter head 3/8” - QCF, in & out on left	4339-22				
Single filter head 3/8” - QCF, in left/out right	4339-23				
Single filter head 1/4” - QCF, in & out on left	4339-24				
Single filter head 1/4” - QCF, in left/out right	4339-25				
Flow Sensor with programming and display unit (3/8“) - liter version (up to 100l/h)	4339-30				
Flow Sensor with programming and display unit (3/8“) - US gallon version (up to 26 USgal/h)	4339-31				
Flow Sensor with programming and display unit (3/8“) - US gallon version (up to 184 USgal/h)	4339-32				
Test kit for determining carbonate hardness	4339-40				
Connection hose, 1500mm, 3/8“ x 3/8“ connection, with flat gasket	4339-50				
Connection hose, 1500mm, 3/8“ x 3/4“ connection, with flat gasket	4339-51				

10a. Settings and Capacities in liters

Coffee and Vending machines

Coffee-Espresso

°KH	°Clarke (GB)	PPM	°FH	By-pass-levels	capacity in liters S	M	L	XL	XXL
< 6	8	107	11	5	3'000	5'000	9'200	13'200	22'000
7	9	125	13	5	2'570	4'280	7'890	11'310	18'860
8	10	143	14	4	1'870	3'120	5'750	8'250	13'750
9	11	161	16	4	1'670	2'780	5'110	7'330	12'220
10	13	179	18	4	1'500	2'500	4'600	6'600	11'000
11	14	196	20	4	1'360	2'270	4'180	6'000	10'000
12	15	214	21	3	1'070	1'790	3'290	4'710	7'860
13	16	232	23	3	990	1'650	3'030	4'350	7'250
14	18	250	25	3	920	1'530	2'820	4'040	6'730
15	19	268	27	3	860	1'430	2'630	3'770	6'290
16	20	286	29	3	800	1'340	2'470	3'540	5'890
17	21	304	30	3	760	1'260	2'320	3'330	5'550
19	24	339	34	3	680	1'130	2'070	2'980	4'960
21	26	375	38	2	540	890	1'640	2'360	3'930
23	29	411	41	2	490	810	1'500	2'150	3'590
26	33	464	46	2	430	720	1'330	1'900	3'170
29	36	518	52	2	390	650	1'190	1'710	2'840
33	41	589	59	2	340	570	1'040	1'500	2'500
38	48	679	68	2	300	490	910	1'300	2'170

The COFFEE-ESPRESSO application describes the production of hot drinks with steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Vending

°KH	°Clarke (GB)	PPM	°FH	By-pass-levels	capacity in liters S	M	L	XL	XXL
< 6	8	107	11	6	3'540	6'250	11'670	16'670	27'500
7	9	125	13	6	3'040	5'360	10'000	14'280	23'570
8	10	143	14	5	2'120	3'750	7'000	10'000	16'500
9	11	161	16	5	1'890	3'330	6'220	8'890	14'670
10	13	179	18	5	1'700	3'000	5'600	8'000	13'200
11	14	196	20	5	1'550	2'730	5'090	7'270	12'000
12	15	214	21	4	1'180	2'080	3'890	5'550	9'170
13	16	232	23	4	1'090	1'920	3'590	5'130	8'460
14	18	250	25	4	1'010	1'790	3'330	4'760	7'860
15	19	268	27	4	940	1'670	3'110	4'440	7'330
16	20	286	29	4	880	1'560	2'920	4'170	6'880
17	21	304	30	4	830	1'470	2'750	3'920	6'470
19	24	339	34	4	750	1'320	2'460	3'510	5'790
21	26	375	38	3	580	1'020	1'900	2'720	4'490
23	29	411	41	3	530	930	1'740	2'480	4'100
26	33	464	46	3	470	820	1'540	2'200	3'630
29	36	518	52	3	420	740	1'380	1'970	3'250
33	41	589	59	3	370	650	1'210	1'730	2'860
38	48	679	68	3	320	560	1'050	1'500	2'480

The VENDING application describes the production of hot drinks without steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Combi Steamers / Self-Cooking Systems / Steam Cookers / Ovens

Direct Injection

°KH	°Clarke (GB)	PPM	°FH	By-pass-levels	capacity in liters S	M	L	XL	XXL
< 6	8	107	11	0	1'500	2'500	4'660	6'670	11'000
7	9	125	13	0	1'290	2'140	4'000	5'710	9'430
8	10	143	14	0	1'130	1'880	3'500	5'000	8'250
9	11	161	16	0	1'000	1'670	3'110	4'440	7'330
10	13	179	18	0	900	1'500	2'800	4'000	6'600
11	14	196	20	0	820	1'360	2'550	3'640	6'000
12	15	214	21	0	750	1'250	2'330	3'330	5'500
13	16	232	23	0	690	1'150	2'150	3'080	5'080
14	18	250	25	0	640	1'070	2'000	2'860	4'710
15	19	268	27	0	600	1'000	1'870	2'670	4'400
16	20	286	29	0	560	940	1'750	2'500	4'120
17	21	304	30	0	530	880	1'650	2'350	3'880
19	24	339	34	0	470	790	1'470	2'100	3'470
21	26	375	38	0	430	710	1'330	1'900	3'140
23	29	411	41	0	390	650	1'220	1'740	2'870
26	33	464	46	0	350	580	1'070	1'540	2'540
29	36	518	52	0	310	520	960	1'380	2'270
33	41	589	59	0	270	450	850	1'210	2'000
38	48	679	68	0	240	390	730	1'050	1'740

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

Boiler System

°KH	°Clarke (GB)	PPM	°FH	By-pass-levels	capacity in liters S	M	L	XL	XXL
< 6	8	107	11	3	2'140	3'570	6'670	9'520	15'710
7	9	125	13	3	1'840	3'060	5'710	8'160	13'470
8	10	143	14	2	1'410	2'340	4'370	6'250	10'310
9	11	161	16	2	1'250	2'080	3'890	5'550	9'170
10	13	179	18	2	1'130	1'880	3'500	5'000	8'250
11	14	196	20	2	1'020	1'700	3'180	4'550	7'500
12	15	214	21	2	940	1'560	2'920	4'170	6'870
13	16	232	23	2	870	1'440	2'690	3'850	6'350
14	18	250	25	2	800	1'340	2'500	3'570	5'890
15	19	268	27	2	750	1'250	2'330	3'330	5'500
16	20	286	29	2	700	1'170	2'190	3'120	5'160
17	21	304	30	2	660	1'100	2'060	2'940	4'850
19	24	339	34	2	590	990	1'840	2'630	4'340
21	26	375	38	1	480	790	1'480	2'120	3'490
23	29	411	41	1	430	720	1'350	1'930	3'190
26	33	464	46	1	380	640	1'200	1'710	2'820
29	36	518	52	1	340	570	1'070	1'530	2'530
33	41	589	59	1	300	510	940	1'340	2'220
38	48	679	68	1	260	440	820	1'170	1'930

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

10b. Settings and Capacities in gallons (US)

Coffee and Vending machines

Coffee-Espresso

°KH	Grains (US)	PPM	°FH	By-pass-levels	capacity in US gal S	M	L	XL	XXL
< 6	6	107	11	5	790	1'320	2'430	3'490	5'810
7	7	125	13	5	680	1'130	2'080	2'990	4'980
8	8	143	14	4	490	820	1'520	2'180	3'630
9	9	161	16	4	440	730	1'350	1'940	3'230
10	10	179	18	4	400	660	1'220	1'740	2'910
11	11	196	20	4	360	600	1'100	1'590	2'640
12	12	214	21	3	280	470	870	1'240	2'080
13	14	232	23	3	260	440	800	1'150	1'920
14	15	250	25	3	240	400	750	1'070	1'780
15	16	268	27	3	230	380	700	1'000	1'660
16	17	286	29	3	210	350	650	940	1'560
17	18	304	30	3	200	330	610	880	1'470
19	20	339	34	3	180	300	550	790	1'310
21	22	375	38	2	140	240	430	620	1'040
23	24	411	41	2	130	210	400	570	950
26	27	464	46	2	110	190	350	500	840
29	30	518	52	2	100	170	310	450	750
33	34	589	59	2	90	150	280	400	660
38	40	679	68	2	80	130	240	340	570

The COFFEE-ESPRESSO application describes the production of hot drinks with steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Vending

°KH	Grains (US)	PPM	°FH	By-pass-levels	capacity in US gal S	M	L	XL	XXL
< 6	6	107	11	6	940	1'650	3'090	4'400	7'270
7	7	125	13	6	800	1'420	2'640	3'770	6'230
8	8	143	14	5	560	990	1'850	2'650	4'360
9	9	161	16	5	500	880	1'640	2'350	3'880
10	10	179	18	5	450	790	1'480	2'120	3'490
11	11	196	20	5	410	720	1'350	1'920	3'170
12	12	214	21	4	310	550	1'030	1'470	2'420
13	14	232	23	4	290	510	950	1'360	2'240
14	15	250	25	4	270	470	880	1'260	2'080
15	16	268	27	4	250	440	820	1'170	1'940
16	17	286	29	4	230	410	770	1'100	1'820
17	18	304	30	4	220	390	730	1'040	1'710
19	20	339	34	4	200	350	650	930	1'530
21	22	375	38	3	150	270	500	720	1'190
23	24	411	41	3	140	250	460	660	1'080
26	27	464	46	3	120	220	410	580	960
29	30	518	52	3	110	200	370	520	860
33	34	589	59	3	100	170	320	460	760
38	40	679	68	3	90	150	280	400	660

The VENDING application describes the production of hot drinks without steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Combi Steamers / Self-Cooking Systems / Steam Cookers / Ovens

Direct Injection

°KH	Grains (US)	PPM	°FH	By-pass-levels	capacity in US gal S	M	L	XL	XXL
< 6	6	107	11	0	400	660	1'230	1'760	2'910
7	7	125	13	0	340	560	1'060	1'510	2'490
8	8	143	14	0	300	500	930	1'320	2'180
9	9	161	16	0	260	440	820	1'170	1'940
10	10	179	18	0	240	400	740	1'060	1'740
11	11	196	20	0	220	360	670	960	1'580
12	12	214	21	0	200	330	620	880	1'450
13	14	232	23	0	180	300	570	810	1'340
14	15	250	25	0	170	280	530	760	1'240
15	16	268	27	0	160	260	490	700	1'160
16	17	286	29	0	150	250	460	660	1'090
17	18	304	30	0	140	230	440	620	1'020
19	20	339	34	0	120	210	390	560	920
21	22	375	38	0	110	190	350	500	830
23	24	411	41	0	100	170	320	460	760
26	27	464	46	0	90	150	280	410	670
29	30	518	52	0	80	140	250	370	600
33	34	589	59	0	70	120	230	320	530
38	40	679	68	0	60	100	190	280	460

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

Boiler System

°KH	Grains (US)	PPM	°FH	By-pass-levels	capacity in US gal S	M	L	XL	XXL
< 6	6	107	11	3	570	940	1'760	2'520	4'150
7	7	125	13	3	490	810	1'510	2'160	3'560
8	8	143	14	2	370	620	1'160	1'650	2'720
9	9	161	16	2	330	550	1'030	1'470	2'420
10	10	179	18	2	300	500	930	1'320	2'180
11	11	196	20	2	270	450	840	1'200	1'980
12	12	214	21	2	250	410	770	1'100	1'810
13	14	232	23	2	230	380	710	1'020	1'680
14	15	250	25	2	210	350	660	940	1'560
15	16	268	27	2	200	330	620	880	1'450
16	17	286	29	2	190	310	580	820	1'360
17	18	304	30	2	170	290	540	780	1'280
19	20	339	34	2	160	260	490	700	1'150
21	22	375	38	1	130	210	390	560	920
23	24	411	41	1	110	190	360	510	840
26	27	464	46	1	100	170	320	450	740
29	30	518	52	1	90	150	280	400	670
33	34	589	59	1	80	140	250	350	590
38	40	679	68	1	70	120	220	310	510

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

Notes

Notes

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