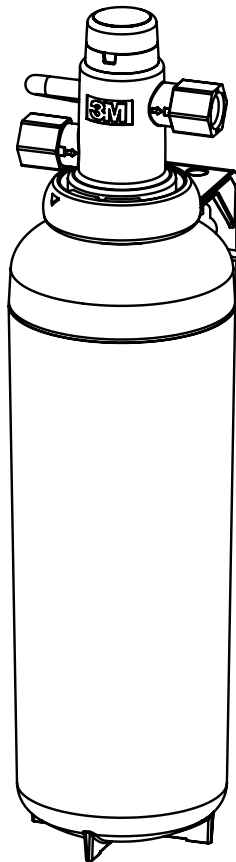


3M™ Water Filtration Products

Installation Manual

for 3M™ ScaleGard™ Blend Series of Products

(Original Instructions)



For ALL 3M™ ScaleGard™ Blend (SGB) Series of Products

Cartridges: B145-CLS, B145H-CLS, B165-CLS, B165H-CLS, B195-CLS, B195H-CLS, B1175H-S, B1175-S, ES145-CLS, ES165-CLS

Heads: BH3 ,BH3-NB, BH3-NPT, BH3-NB-NPT, BH3-BSP, BH3-NB-BSP

Heads and Local Monitors: BH3M, BH3M-NB, BH3M-NPT, BH3M-NB-NPT, BH3M-BSP, BH3M-NB-BSP

Heads and Wi-Fi Monitors: BH3WM, BH3WM-NB, BH3WM-NPT, BH3WM-NB-NPT, BH3WM-BSP, BH3WM-NB-BSP

Note: Installer - Please leave with owner/operator



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SAFETY INFORMATION

Read, understand, and follow all safety information contained in these instructions prior to installation and use of the 3M™ ScaleGard™ Blend (SGB) Series of products. Retain these instructions for future reference.

Intended use:

The 3M ScaleGard Blend (SGB) Series of products are intended for use in filtering potable water and have not been evaluated for other uses. The products are installed at the point of use and must be installed as specified in these installation instructions by a qualified professional.

EXPLANATION OF SIGNAL WORD CONSEQUENCES	
 WARNING:	Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury and/or property damage.
 CAUTION:	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury and/or property damage.
NOTICE:	Indicates a potentially hazardous situation, which, if not avoided, may result in property damage.

 WARNING:	
Read entire manual: Failure to follow all guides and rules could cause personal injury or property damage. - Check with your local public works department for plumbing codes. You must follow their guidelines as you install the Water Filtration system. - Your Water Filtration system will withstand up to 125 pounds per square inch (psi) water pressure. (100 psi (689 kPa) for B1175H-S & B1175-S only). If your water supply pressure is higher than 80 psi, install a pressure reducing valve before installing the Water Filtration system.	
To reduce the risk associated with choking: Do not allow children under 3 years of age to have access to small parts during the installation of this product.	
To reduce the risk associated with the ingestion of contaminants: Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.	
To reduce the risk associated with hazardous voltage due to an installer drilling through existing electric wiring or water pipes in the area of installation: Do not install near electric wiring or piping which may be in path of a drilling tool when selecting the position to mount the system bracket.	
To reduce the risks associated with hazardous voltage: - Keep equipment out of the reach of young children. Do not use the device if damaged. Do not use power cord if device is damaged. - Connect only to a circuit that is protected by a ground-fault circuit-interrupter (GFCI). - Disconnect power before servicing. - Unless battery power is being used, power must only be provided by a safety extra low voltage (SELV) type power supply supplied by 3M. Any rechargeable batteries used must be charged outside of the device.	
To reduce the risks associated with explosion, and corrosive chemicals: Do not install batteries backwards, charge, put in fire or mix with other battery types. Replace all batteries at the same time.	

 CAUTION

To reduce the risks associated with environmental contamination:

- Dispose of electronic and other waste, including batteries, in accordance with all applicable regulations.

NOTICE:

To reduce the risk associated with property damage due to water leakage or flooding:

- **Read and follow** Use Instructions before installation and use of this system.
- Change the disposable filter cartridge at the recommended interval; the disposable filter cartridge **MUST** be replaced every 12 months or sooner.
- Failure to replace the disposable filter cartridge at recommended intervals may lead to reduced filter performance and failure of the filter, causing property damage from water leakage or flooding.
- Installation and use **MUST** comply with all state and local plumbing codes.
- **Protect from freezing**, remove filter cartridge when temperatures are expected to drop below 40° F (4.4° C).
- **Do not install** systems in areas where ambient temperatures may go above 100° F (38° C).
- **Do not install** on hot water supply lines. The maximum operating water temperature of this system is 100°F (38°C).
- **Do not install** if water pressure exceeds 125 psi (862 kPa). (100 psi (689 kPa) for B1175H-S & B1175-S only). If your water pressure exceeds 80 psi (552 kPa), you must install a pressure limiting valve. Contact a plumbing professional if you are uncertain how to check your water pressure.
- **Do not install** where water hammer conditions may occur. If water hammer conditions exist you must install a water hammer arrester. Contact a plumbing professional if you are uncertain how to check for this condition.
- Where a backflow prevention device is installed on a water system, a device for controlling pressure due to thermal expansion must be installed. Contact a plumbing professional if you are uncertain how to select/install/maintain a thermal expansion device.
- Where a booster pump is installed on a water system, you must maintain and inspect the attached pressure switch regularly in accordance with the booster pump manufacturer's instructions. Contact a plumbing professional if you are uncertain how to maintain your booster pump system.
- Where a booster pump is installed on a water system, you must install an appropriate pressure relief valve. Pressure relief valve must be maintained and inspected every 6 months. Contact a plumbing professional if you are uncertain how select/install/maintain a pressure relief valve.
- Where a booster pump is installed on a water system, you must install an appropriate pressure regulating valve and regulate water pressure to <80psi. Contact a plumbing professional if you are uncertain how select/install/maintain a pressure regulating valve.
- **Do not** use a propane torch or other high temperature sources near system, cartridges, plastic fittings or plastic plumbing.
- **Do not** install in direct sunlight or outdoors.
- **Do not** install near water pipes which will be in path of a drilling tool when selecting the position to mount the bracket.
- Mount filter in such a position as to prevent it from being struck by other items used in the area of installation.
- Ensure that the location and fasteners will support the weight of the system when installed and full of water.
- Ensure all tubing and fittings are secure and free of leaks.
- **Do not** install unit if collet is missing. Contact 3M Water Filtration Products if collets are missing from any fittings.
- Take care when using pliers or pipe wrench to tighten plastic fittings, as damage may occur if over tightening occurs.
- On plastic fittings, never use pipe sealant or pipe dope. Use PTFE thread tape only, pipe dope properties may deteriorate plastic.
- Use compatible flexible tubing with 'push in connections' (such as PEX tubing, PE tubing, PP tubing).
- **Do not** install with rigid piping (such as copper, aluminum, stainless steel, chrome plated, or anodized tubing).

IMPORTANT NOTES:

- Note WRAS approved for cold water use only max 73°F (23°C).
- Failure to follow instructions will void warranty.
- Allow a minimum of 3" (7.62 cm) clear space under filter to facilitate filter change.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.

EMC REGULATORY COMPLIANCE

FCC Radio Frequency Rules and Regulations

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

BH3WM Series Models Contain FCC ID: Z64-CC3000EM

The 3M Filtration Monitor with Wi-Fi transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: Changes or modifications not expressly approved by 3M Company for compliance could void the user's authority to operate the equipment.

Industry Canada Radio Frequency Rules and Regulations

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Canadian Note: CAN ICES-3(B)/NMB-3(B)

BH3WM Series Models Contain transmitter module IC: 4511-CC3000EM

EMC Compliance Europe

This equipment complies with the requirements of the RTTE and EMC directives.

BH3WM Series Models compatible with 802.11 b/g Networks

Network Requirements:

BH3WM Series Models compatible with 802.11 b/g Networks

Pairing does not work with configuring devices that are MIMO devices.

Pairing does not work with configuring SISO devices at a channel width of 40MHz.

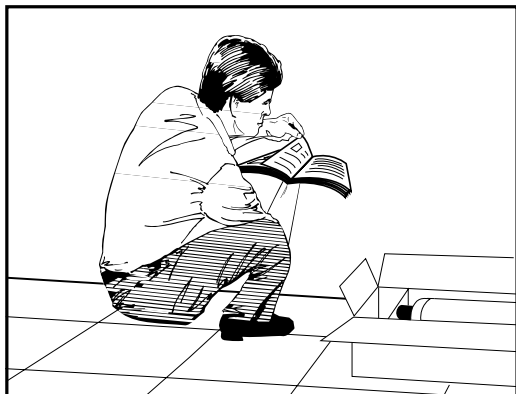
Pairing works at 802.11n rates only up to MCS7.

If using a Captive Wi-Fi network, please contact your local IT to set up a connection around the Captive Wi-Fi.

Wi-Fi network must be configured to allow transfer of UDP packets.

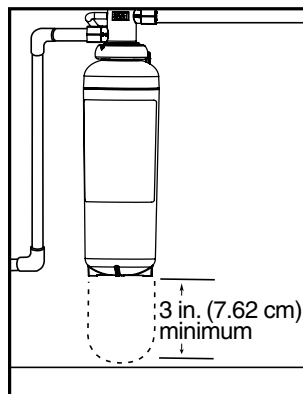
Contact your local IT for assistance.

INSTALLATION

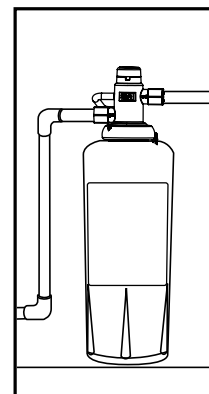


STEP 1

Remove system from the package and check parts list (page 20). **NOTE:** Be sure inlet water supply is turned off before installing.



For B145-CLS, B165-CLS, B195-CLS, B145H-CLS, B165H-CLS, B195H-CLS, ES145-CLS, ES165-CLS cartridges



For B1175-S and B1175H-S cartridges

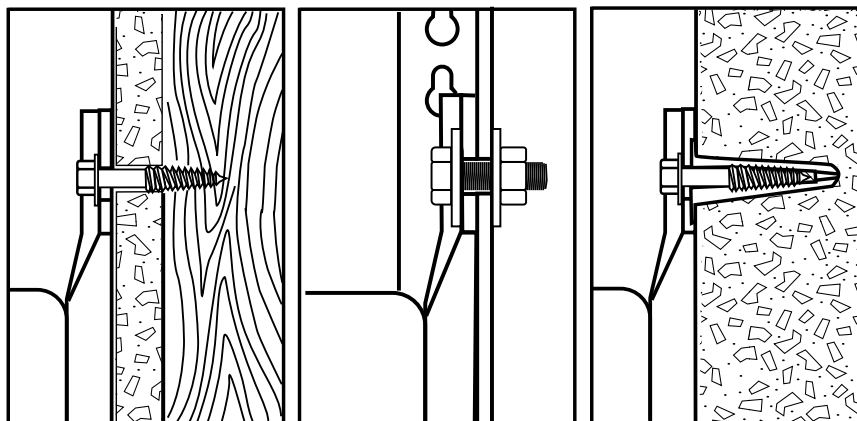
STEP 2

Select the installation location. **IMPORTANT:** Allow a minimum of 3" (7.62 cm) of space below cartridge for change-outs.

If installing a B1175-S or B1175H-S cartridge, please make sure to pair with the BH3-NB, BH3-NB-NPT or the BH3-NB-BSP heads. Cartridge must be placed on floor. Skip to Step 10.

BH3WM Series Models Contain transmitter module IC: 451I-CC3000EM, FCC ID: Z64-CC3000EM

The 3M Filtration Monitor with Wi-Fi transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

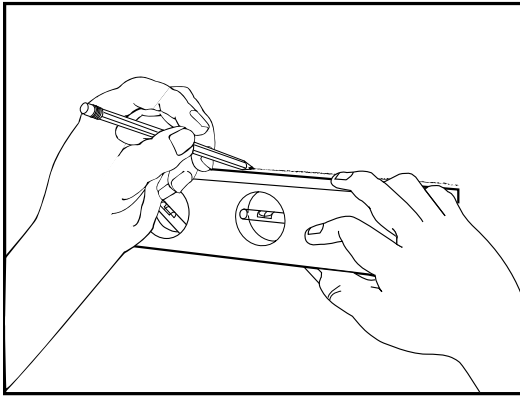


STEP 3

Select fasteners (not included) and tools appropriate for the installation location (wood beam, concrete, etc.).

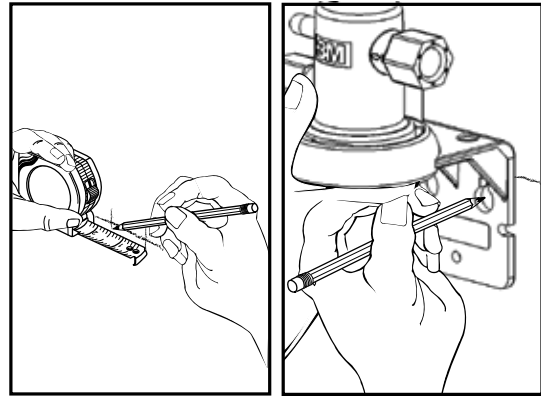
IMPORTANT: The location and fasteners must support the weight of the system when full of water.

INSTALLATION



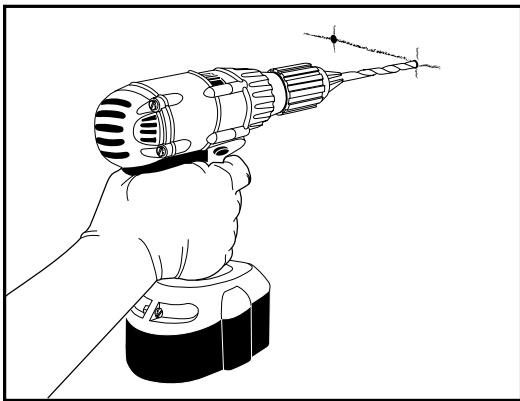
STEP 4

Draw a line using a level on the mounting surface.



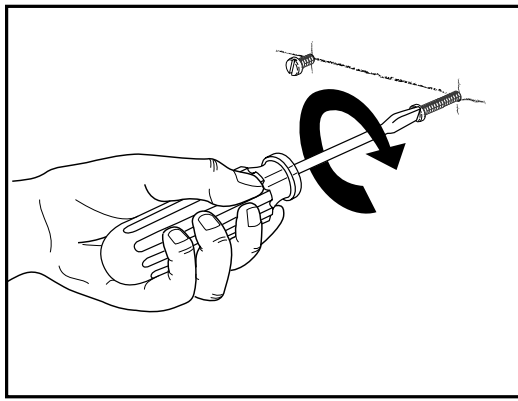
STEP 5

Mark the locations for the fasteners either by measuring the distance between the bracket holes or using the bracket itself.



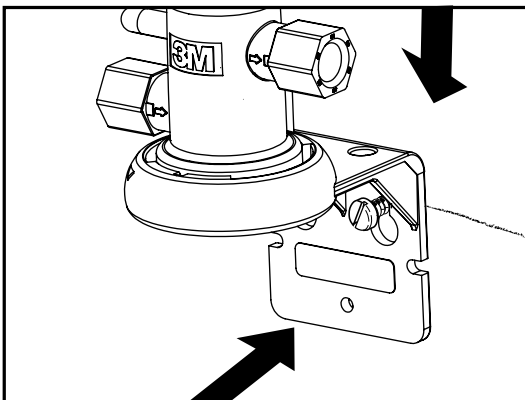
STEP 6

Drill holes for the fasteners.



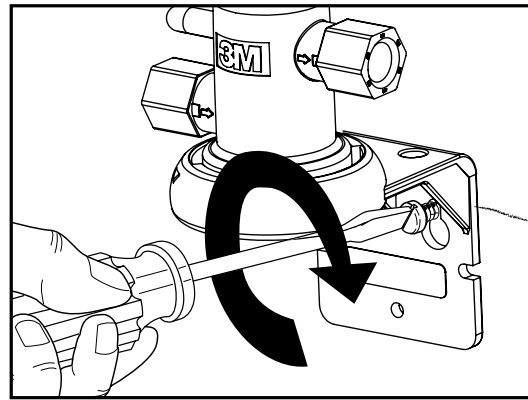
STEP 7

Allow 1/4"-3/8" (6-10 mm) of each fastener to protrude from the surface.



STEP 8

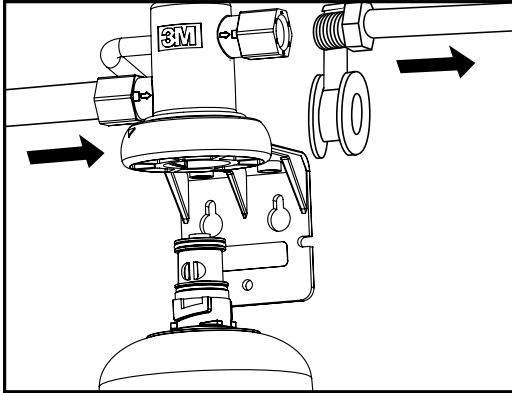
Install the head and bracket onto the fasteners.



STEP 9

Tighten fasteners.

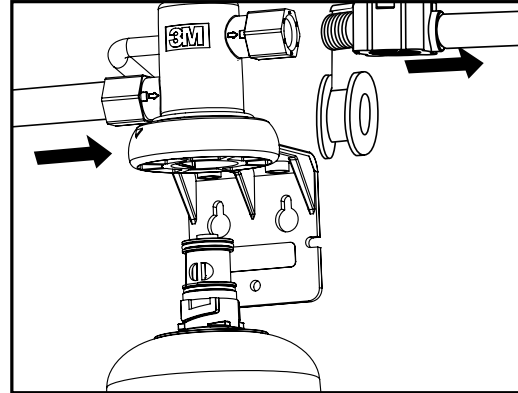
INSTALLATION



STEP 10a

for NPT & BSP style connections only

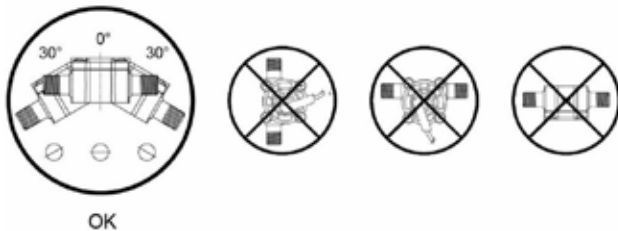
Install inlet (left) and outlet (right) piping. Be sure to use PTFE tape.
IMPORTANT: Hexagonal sockets on the head do not rotate.



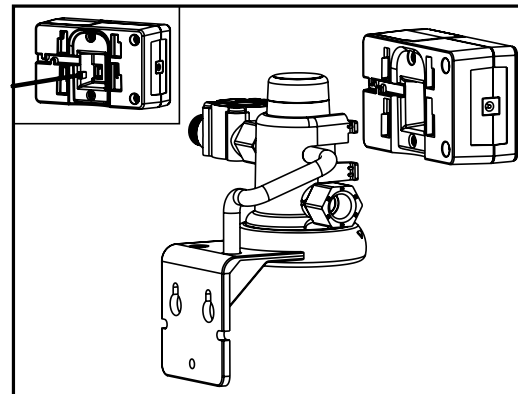
STEP 10b.1

for BH3M and BH3WM models

Install flow sensor to outlet of head before installing inlet (left) and outlet (right) piping. Make sure the flow sensor is flowing in the proper direction (arrow points to the right). Be sure to use PTFE tape.
IMPORTANT: Hexagonal sockets on the head do not rotate



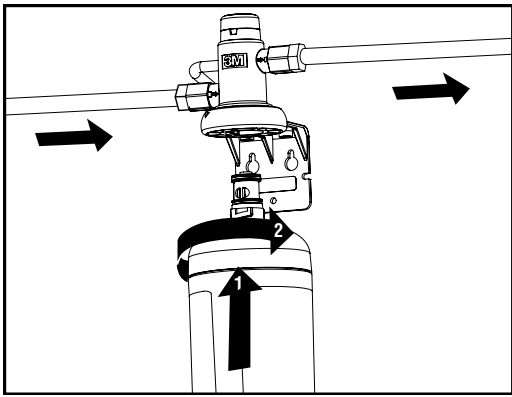
IMPORTANT: Flow sensor requires horizontal mounting. Maximum 30 degree tilt



STEP 10b.2

for BH3M and BH3WM models

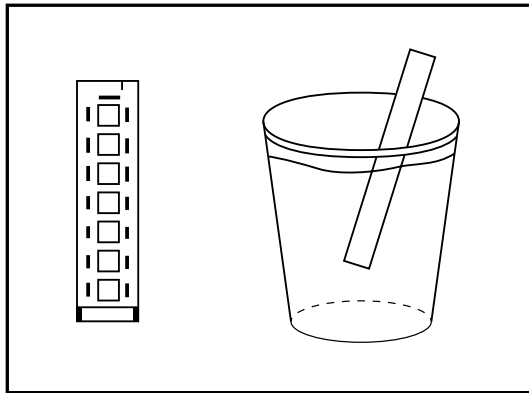
Plug flow sensor into back of monitor. Connect monitor to head using four tabs



STEP 11

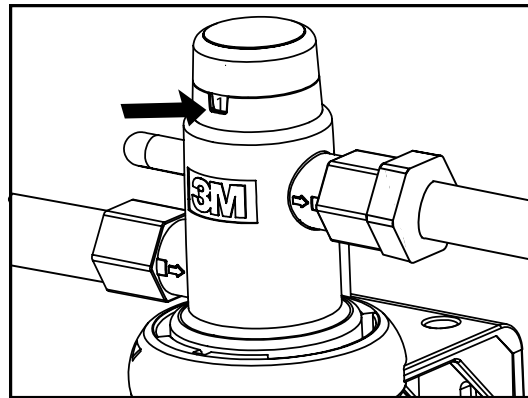
Remove sanitary cap from cartridge. Install cartridge with a quarter turn to the right until the cartridge comes to a complete stop. Flush new cartridge as noted on the Performance Data Sheet.

* If selecting models B145H-CLS, B165H-CLS, B195H-CLS, B1175H-S you need to consider that corrosion may occur in base metal systems as a result of low pH, where natural alkalinity levels are too low to buffer the effects of the ion exchange process. If low pH or its effects are observed it is recommended to review alternative means of scale prevention such as the alternative models in this range.



STEP 12

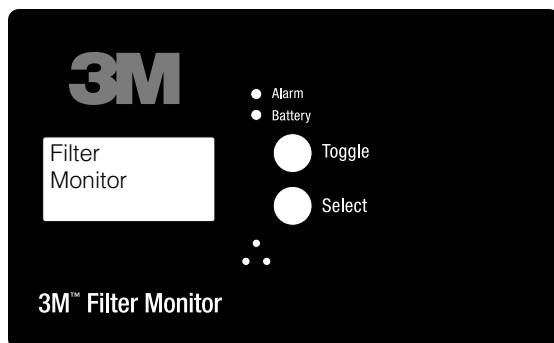
Complete water hardness test as per water hardness test kit instructions provided with new cartridge. The water sample used for completing the water hardness test should be taken upstream before the location of the new 3M™ ScaleGard™ Blend product. If your site is a new build, the water sample used for completing the water hardness test should be taken at a nearby existing site.



STEP 13

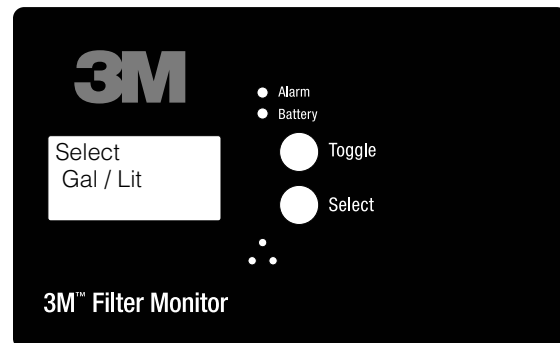
Based on water hardness test results (Step 12), set blend setting in head as per the food service application tables (see pages 11-19).

LOCAL MONITOR SETUP (BH3M, BH3M-NB, BH3M-NPT, BH3M-NB-NPT, BH3M-BSP, BH3M-NB-BSP)



STEP 1

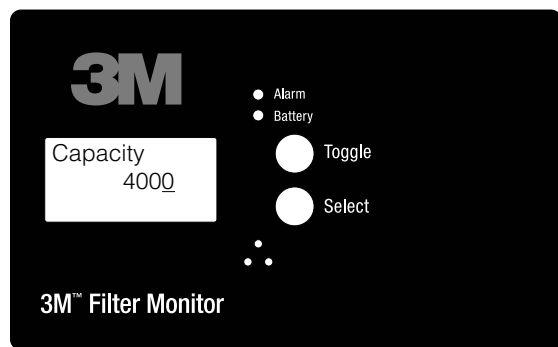
Install two AA batteries in monitor. Press both buttons on the monitor for 5 seconds to power ON.



STEP 2

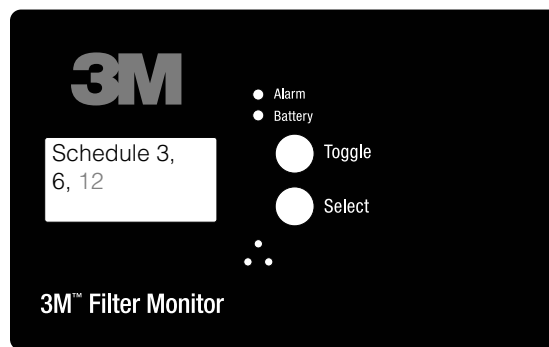
Select gallons or liters by using Toggle and Select buttons on the monitor.

LOCAL MONITOR SETUP CONT.



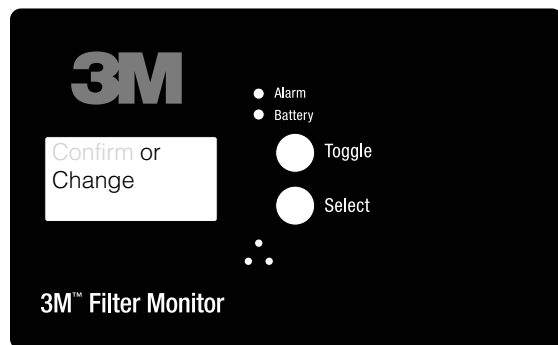
STEP 3

Set capacity as per the foodservice application tables (see pages 18-26) by using the Toggle and Select buttons on the monitor



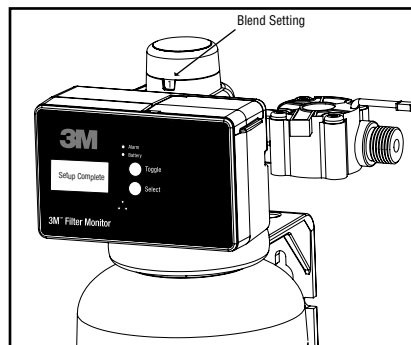
STEP 4

Set monthly change-out schedule by using Toggle and Select buttons on the monitor.



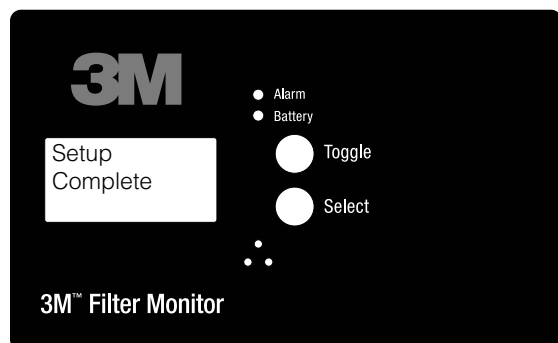
STEP 5

Confirm or Change capacity entered/scheduled by using Toggle and Select buttons on the monitor.



STEP 6

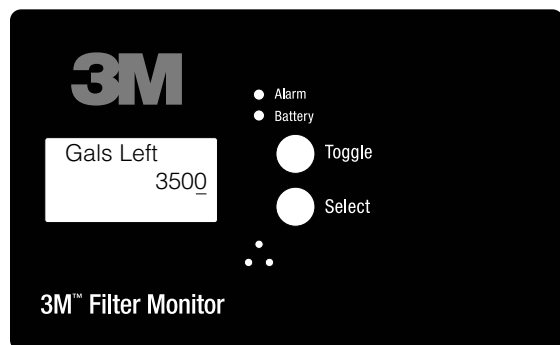
Set blend setting by turning knob in head as per the food service application tables (see pages 18-26).



STEP 7

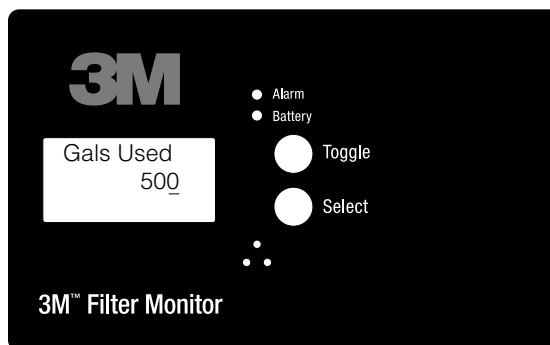
Setup Monitor procedure is now Complete. To Reset press both buttons on the monitor for 5 seconds. Repeat steps 2 - 6.

OPERATE MONITOR



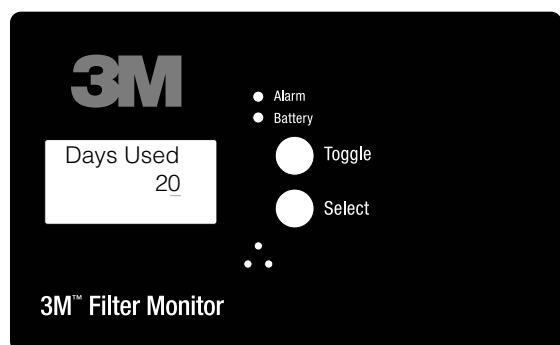
TIP 1

To Check on Remaning Volume Capacity (gals/liters): Press Toggle button 1x on the monitor.



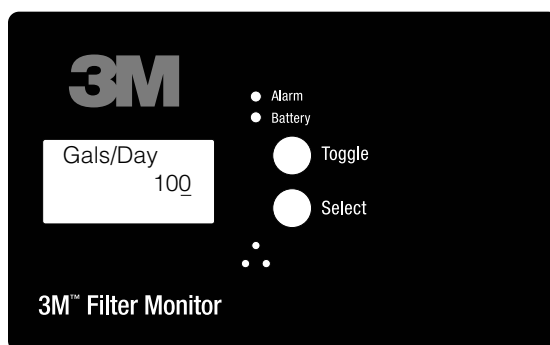
TIP 2

To Check on Consumed Volume Capacity (gals/liters): Press Toggle button 2x on the monitor.



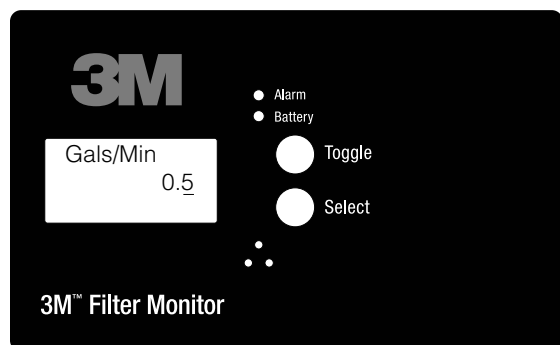
TIP 3

To Check on Consumed Time Capacity (days): Press Toggle button 3x.



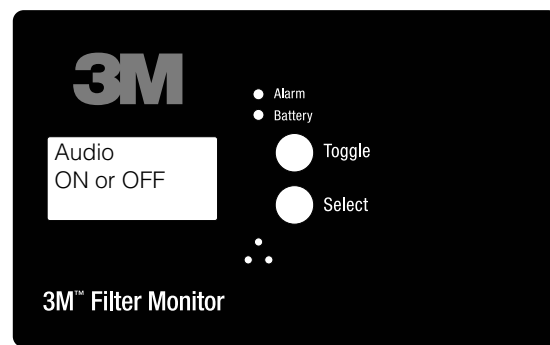
TIP 4

To Check on Flow Rate (gals/day OR liters/days): Press Toggle button 4x.



TIP 5

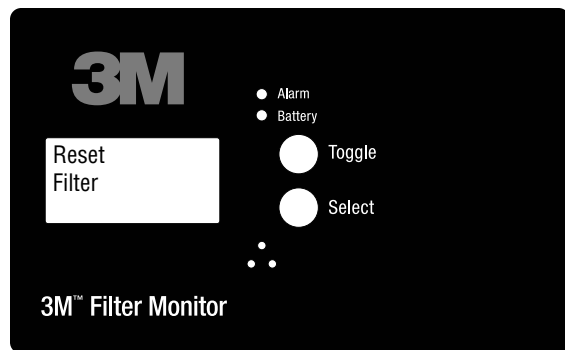
To Check on Flow Rate(gals/min OR liters/min): Press Toggle button 5x.



TIP 6

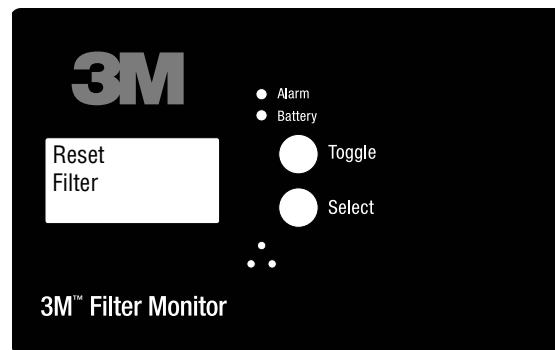
To Check/Change Audio Alarm setting: Press the Toggle button 6x. Press the Select button to change setting. Then use the Toggle and Select buttons to set audio ON or OFF.

OPERATE MONITOR CONT.



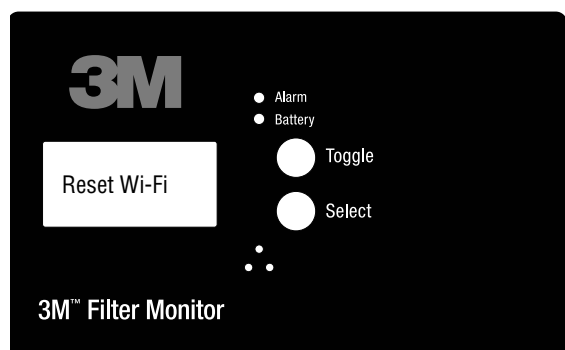
TIP 7

To replace same model cartridge: Press the Toggle button for 5 seconds to reset counter. Display will change from “Reset Filter...” to “Reset Complete” once operation is finished. Then install new cartridge.



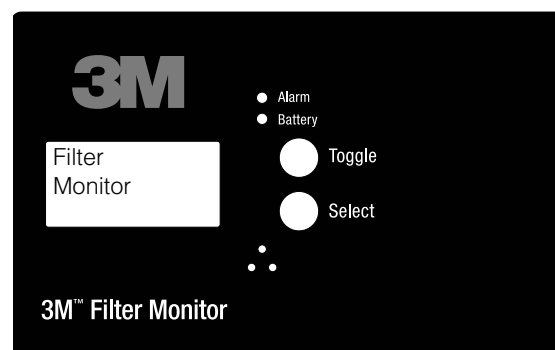
TIP 8

To Change Cartridge Type: Press the Toggle button for 5 seconds to reset counter. Then complete Local Monitor Setup Steps 1-7 (see pages 8-9).



TIP 9

To Reset Wi-Fi: Press the Select button for 5 seconds on the monitor to reset Wi-Fi. Then complete Site Wi-Fi Setup Instructions.

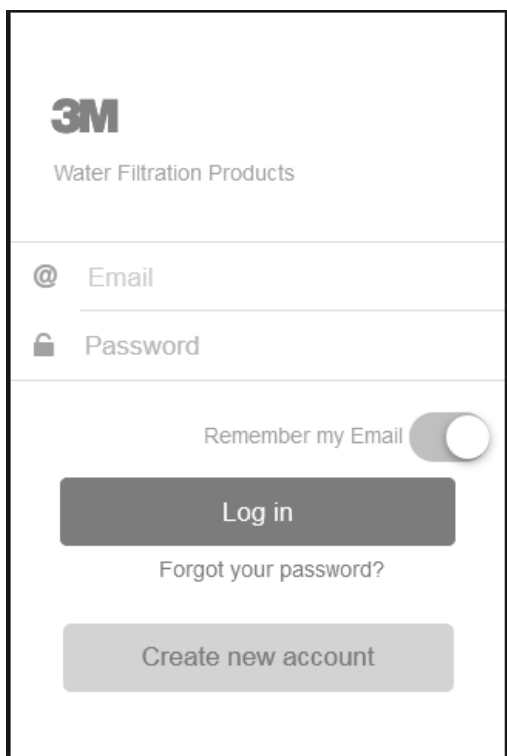


TIP 10

To Turn Monitor Display OFF: Press toggle button repeatedly until the display powers off. To Turn Display ON: Press toggle button 1X.

WI-FI Monitor SETUP (BH3WM, BH3WM-NB, BH3WM-NPT, BH3WM-NB-NPT, BH3WM-BSP, H3WM-NB-BSP)

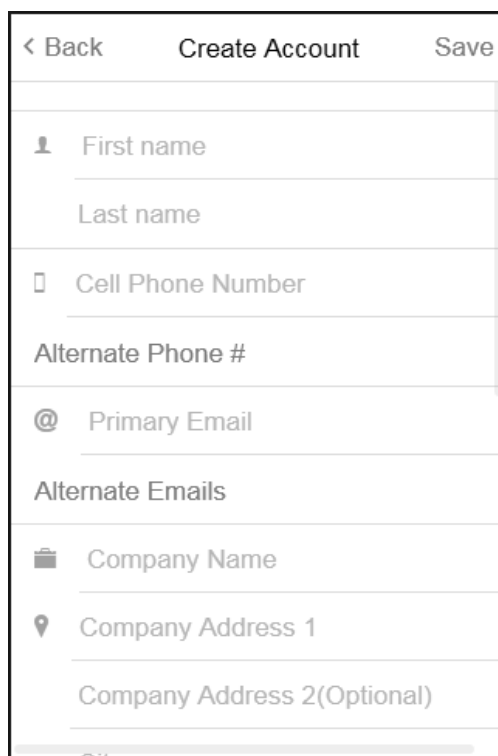
- **Wi-Fi Monitor APP – Create New Account Instructions (APP available via iTunes and Google Play)**



The screenshot shows the login and account creation interface of the 3M Water Filtration Products app. At the top is the 3M logo and the text 'Water Filtration Products'. Below this are input fields for 'Email' (with an '@' icon) and 'Password' (with a lock icon). A 'Remember my Email' toggle switch is positioned to the right of the password field. There are three buttons: a dark grey 'Log in' button, a smaller text link 'Forgot your password?' below it, and a light grey 'Create new account' button at the bottom.

Wi-Fi Monitor APP - STEP 1

Press Create New Account button

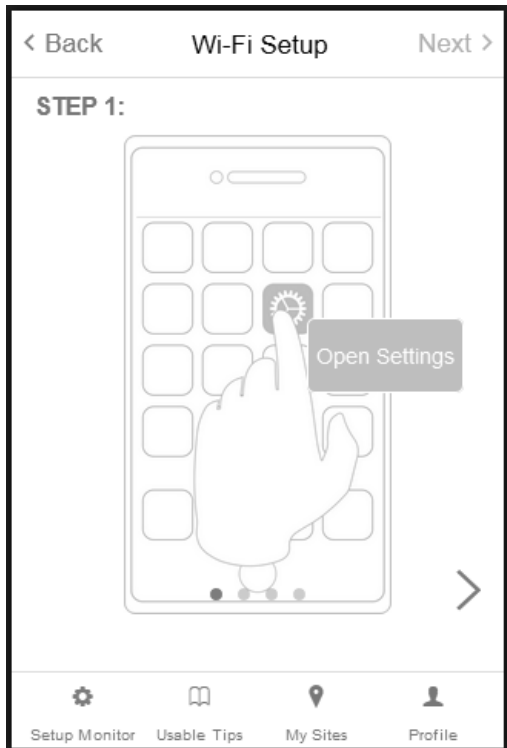


The screenshot shows the 'Create Account' form in the app. The title bar at the top has '< Back', 'Create Account', and 'Save' buttons. The form contains several input fields: 'First name' and 'Last name' (with a person icon), 'Cell Phone Number' (with a phone icon), 'Alternate Phone #' (with a phone icon), 'Primary Email' (with an '@' icon), 'Alternate Emails', 'Company Name' (with a briefcase icon), 'Company Address 1' (with a location pin icon), and 'Company Address 2(Optional)'. A vertical scrollbar is visible on the right side of the form.

Wi-Fi Monitor APP - STEP 2

Complete form and then press Save

Wi-Fi Monitor Setup – Instructions (BH3WM, BH3WM-NB, BH3WM-NPT, BH3WM-NB-NPT)



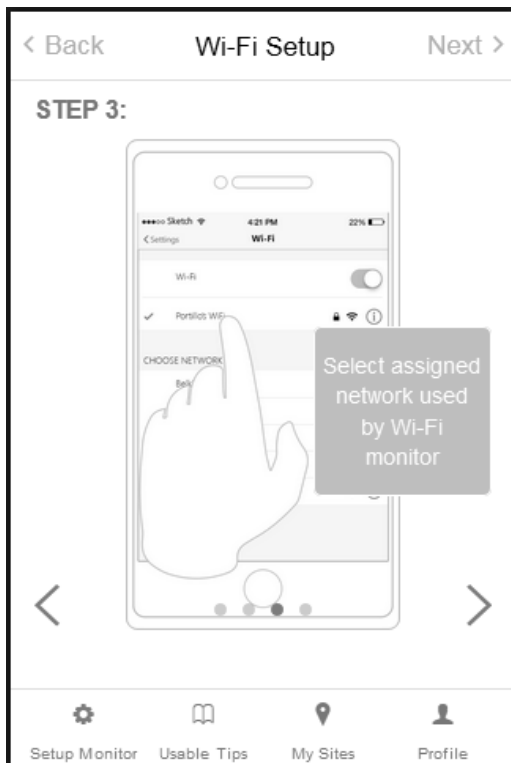
Wi-Fi Monitor Setup - STEP 1

Open settings on your smart phone.



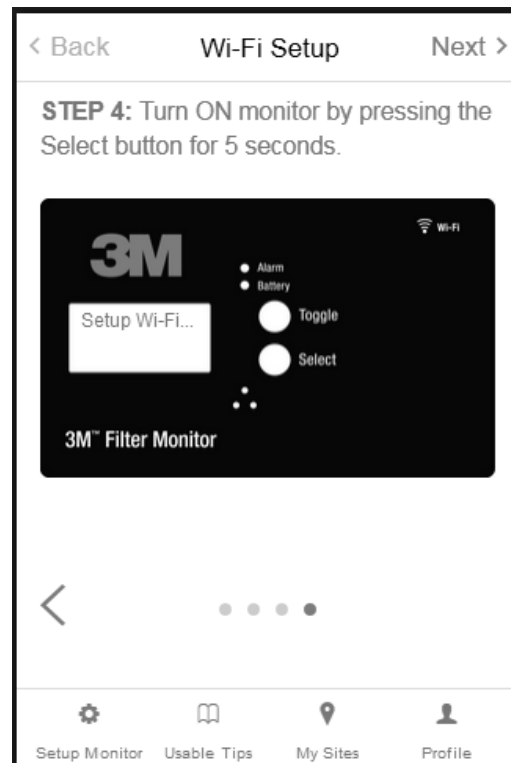
Wi-Fi Monitor Setup - STEP 2

Tap on Wi-Fi.



Wi-Fi Monitor Setup - STEP 3

Select assigned network used by Wi-Fi monitor.
NOTE – Requires 802.11 b/g wireless network.



Wi-Fi Monitor Setup - STEP 4

Install two AA batteries in monitor. Then turn ON monitor by pressing the Select button on the monitor for 5 seconds.

Wi-Fi Monitor Setup – Instructions Cont.

< Back Wi-Fi Setup

STEP 5: Verify site Wi-Fi Network and enter password to connect.

Enter Wi-Fi Credentials

wifiName

Password

Connect

Setup Monitor Usable Tips My Sites Profile

Wi-Fi Monitor Setup - STEP 5

Verify site Wi-Fi Network and enter password to connect.

< Back New Site Information Next >

STEP 6:

Is your profile information the same as the new site information? Yes

First name

Last name

Cell Phone Number

Primary Email

Re Enter Primary Email

Site Name

Site Address 1

Setup Monitor Usable Tips My Sites Profile

Wi-Fi Monitor Setup - STEP 6

Complete form and then press Next.

< Back Setup Monitor Next >

STEP 7: Select your specifications

All Feilds are Mandatory.

Cartridge Model Please Select >

Water Hardness Units of Measure Please Select >

Inlet Water Hardness (test strip provided with cartridge) Please Select >

Application Please Select >

Setup Monitor Usable Tips My Sites Profile

Wi-Fi Monitor Setup - STEP 7

Select your specifications.

< Back Setup Monitor Finish

STEP 8: Press Toggle button 1x and then press both buttons on the monitor for 5 seconds to start.

3M Filter Monitor

3M™ Filter Monitor

Setup Monitor Usable Tips My Sites Profile

Wi-Fi Monitor Setup - STEP 8

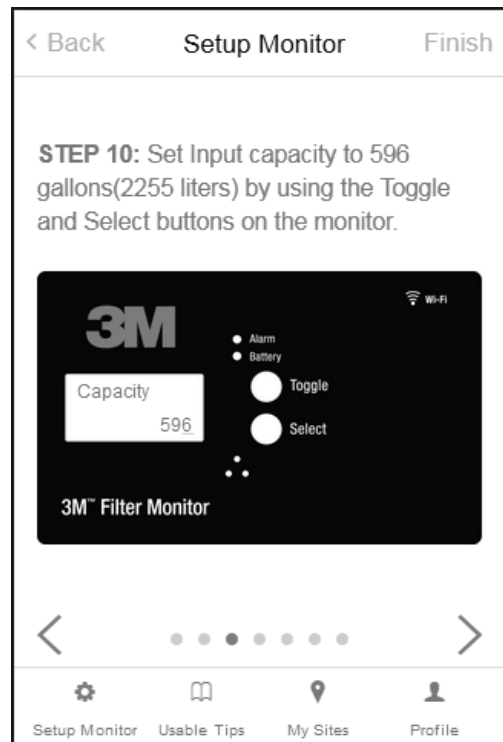
Press Toggle button 1x and then press both buttons on the monitor for 5 seconds to start.

Wi-Fi Monitor Setup – Instructions Cont.



Wi-Fi Monitor Setup - STEP 9

Select gallons or liters by using Toggle and Select buttons on the monitor.



Wi-Fi Monitor Setup - STEP 10

Set capacity as per APP instructions by using the Toggle and Select buttons on the monitor.



Wi-Fi Monitor Setup - STEP 11

Set monthly change-out schedule as per APP instructions by using the Toggle and Select buttons on the monitor.



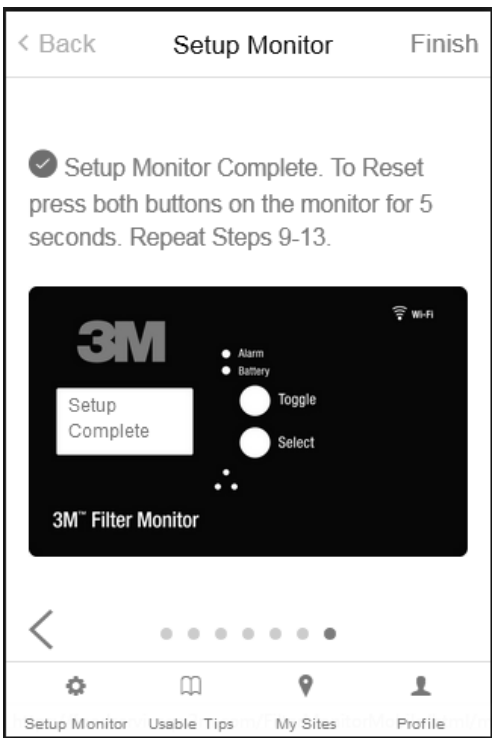
Wi-Fi Monitor Setup - STEP 12

Confirm or Change capacity entered/scheduled by using Toggle and Select buttons on the monitor. If change is Selected, return to STEP 9.

Wi-Fi Monitor Setup – Instructions Cont.



Wi-Fi Monitor Setup - STEP 13
Set blend setting on the head as per APP instructions.



Wi-Fi Monitor Setup - STEP 14
Setup Monitor Complete. To Reset press both buttons on the monitor for 5 seconds. Repeat Steps 9-13.

CARTRIDGE CHANGE INSTRUCTIONS

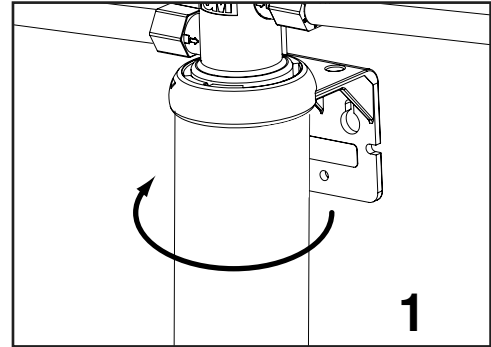
NOTICE:

To reduce the risk associated with property damage due to water leakage or flooding:

- Change the disposable filter cartridge at the recommended interval; the disposable filter cartridge **MUST** be replaced every 12 months or sooner.
- Failure to replace the disposable filter cartridge at recommended intervals may lead to reduced filter performance and failure of the filter, causing property damage from water leakage or flooding.

STEP 1

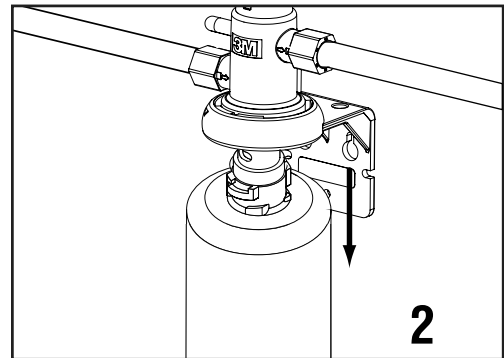
Turn cartridge slowly to the left, about 1/4 turn, until it stops (when arrows line up). At this position, both inlet and outlet ports are closed & water pressure has been relieved. Inlet water will automatically turn off.



STEP 2

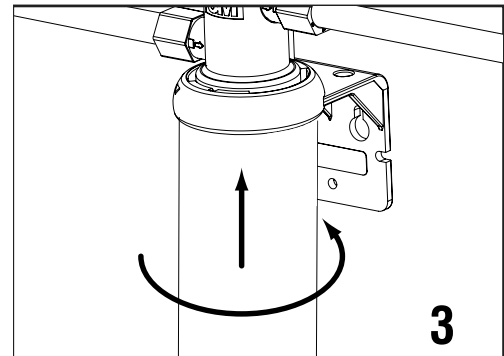
Pull used cartridge straight down & discard.

Note: There may be a small amount of residual water drainage after pressure is relieved and during cartridge removal.



STEP 3

Remove sanitary cap from top of new cartridge. Moisten o-ring with water and push new cartridge into filter head. Turn cartridge 1/4 turn to the right until it stops. Top surface of cartridge will become flush with bottom of the head when fully engaged. The label should be facing forward.



STEP 4

Inlet water will automatically turn on. Flush new filter cartridge in accordance with Performance Data Sheet expelling any trapped air and carbon fines. Water may run cloudy with air but will quickly clear. System is now ready for use.

STEP 5

Complete water hardness test as per water hardness test kit instructions provided with new cartridge. The water sample used for completing the water hardness test should be taken upstream before the location of the new ScaleGard Blend product. If your site is a new build, the water sample used for completing the water hardness test should be taken at a nearby existing site.

STEP 6

Based on water hardness test results (Step 5), set blend setting in head as per the food service application tables (see pages 18-26).

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Solution
Wi-Fi monitor error "fail@cfg" appears on monitor screen	The monitor waits for 5 minutes displaying "Setup Wi-Fi." for the Wi-Fi credentials from the mobile, if not, the monitor LCD will display timeout "Fail@CFG."	Make sure the password is typed and connect button is pressed on the App within 5 minutes after the monitor enters "Setup Wi-Fi..." mode.
Wi-Fi monitor error "fail@uid" appears on monitor screen	The UDP packet which shares the user id never reached the monitor from the mobile or timed out or blocked by the Wi-Fi network.	Retry after opening up UDP ports (use router port forwarding rules) 51000, 5353 and 15000 in the router settings if firewall is ON or TCP/UDP packets are blocked.
Wi-Fi monitor error "fail@???" appears on monitor screen	Happens when the Wi-Fi event submission fails after successful pairing due to slow server connectivity issue from the monitor to the server.	Retry until the Wi-Fi event submission travels successfully over the internet.
3M Filter Monitor APP times out	The app times out when there are problems in the network during Wi-Fi credential sharing, UDP communication and Wi-Fi event submission.	Correct the network based on errors displayed on the monitor.
Wi-Fi monitor will not pair/upload	The app times out when there are problems in the network during Wi-Fi credential sharing, UDP communication and Wi-Fi event submission.	Correct the network based on errors displayed on the monitor.
Wi-Fi monitor will not pair/upload	Captive Wi-Fi	Whitelist MAC ID shown on the Filter monitor product label by contacting local site admin.
Wi-Fi monitor will not pair/upload	Wi-Fi tethered via Apple Cellular network, MIMO devices (eg: Wi-Fi Dongle) will not work.	Change to a different Wi-Fi.
Wi-Fi monitor will not pair/upload	The APP or the Wi-Fi monitor times out.	Logout of APP and then log back into the APP. Also, power OFF and reset Wi-Fi monitor by removing batteries or unplugging from electrical outlet.
Wi-Fi monitor "Low Battery" LED light turns ON	Expired batteries.	Replace batteries or connect to power supply.
Wi-Fi monitor "Alarm" LED light turns ON	Filter cartridge has 20% life remaining.	Order new filter cartridge.
Wi-Fi monitor "Alarm" LED light turns ON and blinks	Filter cartridge has 0% life remaining.	Replace filter cartridge.
Hardness of product water too high	Blend setting too high.	Adjust blend valve to lower setting.
Hardness of product water too low	Blend setting too low.	Adjust blend valve to higher setting.
Pressure of product water too low	Filter plugged.	Replace Filter cartridge.

Cartridge Settings & Capacities

Vending

Inlet Water Hardness					Vending Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	1,234 (4,671)	1,745 (6,606)	2,909 (11,010)	4,882 (18,480)	1,728 (6,539)	2,443 (9,249)	4,072 (15,414)	6,835 (25,872)	6
120	7	8	7	12	1,028 (3,893)	1,454 (5,505)	2,424 (9,175)	4,069 (15,400)	1,440 (5,450)	2,036 (7,707)	3,394 (12,845)	5,696 (21,560)	6
140	8	10	8	14	787 (2,977)	1,112 (4,210)	1,854 (7,017)	3,057 (11,571)	1,101 (4,168)	1,557 (5,894)	2,596 (9,824)	4,280 (16,199)	5
160	9	11	9	16	596 (2,255)	842 (3,189)	1,404 (5,315)	2,229 (8,437)	834 (3,157)	1,179 (4,465)	1,966 (7,441)	3,120 (11,812)	4
180	11	13	10	18	530 (2,004)	749 (2,835)	1,248 (4,725)	1,981 (7,500)	741 (2,806)	1,048 (3,969)	1,747 (6,615)	2,774 (10,499)	4
200	12	14	11	20	408 (1,546)	578 (2,187)	963 (3,645)	1,528 (5,785)	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	3
220	13	15	12	22	371 (1,406)	525 (1,988)	875 (3,313)	1,389 (5,259)	520 (1,968)	735 (2,783)	1,225 (4,639)	1,945 (7,363)	3
240	14	17	13	24	340 (1,289)	481 (1,822)	802 (3,037)	1,274 (4,821)	477 (1,804)	674 (2,551)	1,123 (4,252)	1,783 (6,750)	3
260	15	18	15	26	275 (1,041)	389 (1,472)	648 (2,453)	1,029 (3,894)	385 (1,457)	544 (2,061)	907 (3,435)	1,440 (5,452)	2
280	16	20	16	28	255 (966)	361 (1,367)	602 (2,278)	955 (3,616)	357 (1,353)	505 (1,914)	842 (3,189)	1,337 (5,062)	2
300	18	21	17	30	238 (902)	337 (1,276)	562 (2,126)	892 (3,375)	334 (1,263)	472 (1,786)	786 (2,977)	1,248 (4,725)	2
320	19	22	18	32	223 (846)	316 (1,196)	527 (1,993)	836 (3,164)	313 (1,184)	442 (1,674)	737 (2,791)	1,170 (4,429)	2
340	20	24	19	34	210 (796)	297 (1,126)	496 (1,876)	787 (2,978)	294 (1,114)	416 (1,576)	694 (2,626)	1,101 (4,169)	2
360	21	25	20	36	199 (752)	281 (1,063)	468 (1,772)	743 (2,812)	278 (1,052)	393 (1,488)	655 (2,480)	1,040 (3,937)	2
380	22	27	21	38	188 (712)	266 (1,007)	443 (1,679)	704 (2,664)	263 (997)	372 (1,410)	621 (2,350)	985 (3,730)	2
400	23	28	22	40	159 (601)	225 (850)	374 (1,417)	594 (2,250)	222 (842)	315 (1,191)	524 (1,984)	832 (3,150)	1
440	26	31	25	44	144 (547)	204 (773)	340 (1,289)	540 (2,045)	202 (765)	286 (1,082)	477 (1,804)	756 (2,863)	1
480	28	34	27	48	132 (501)	187 (709)	312 (1,181)	495 (1,875)	185 (702)	262 (992)	437 (1,654)	693 (2,625)	1
520	30	36	29	52	122 (463)	173 (654)	288 (1,090)	457 (1,731)	171 (648)	242 (916)	403 (1,526)	640 (2,423)	1
560	33	39	31	56	113 (430)	160 (607)	267 (1,012)	425 (1,607)	159 (601)	225 (850)	374 (1,417)	594 (2,250)	1
600	35	42	34	60	106 (401)	150 (567)	250 (945)	396 (1,500)	148 (561)	210 (794)	349 (1,323)	555 (2,100)	1
640	37	45	36	64	99 (376)	140 (532)	234 (886)	371 (1,406)	139 (526)	197 (744)	328 (1,240)	520 (1,969)	1
680	40	48	38	68	93 (354)	132 (500)	220 (834)	350 (1,323)	131 (495)	185 (700)	308 (1,167)	489 (1,853)	1

The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

Cartridge Settings & Capacities

Drip Coffee

Inlet Water Hardness					Drip Coffee Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	1,234 (4,671)	1,745 (6,606)	2,909 (11,010)	4,882 (18,480)	1,728 (6,539)	2,443 (9,249)	4,072 (15,414)	6,835 (25,872)	6
120	7	8	7	12	1,028 (3,893)	1,454 (5,505)	2,424 (9,175)	4,069 (15,400)	1,440 (5,450)	2,036 (7,707)	3,394 (12,845)	5,696 (21,560)	6
140	8	10	8	14	787 (2,977)	1,112 (4,210)	1,854 (7,017)	3,057 (11,571)	1,101 (4,168)	1,557 (5,894)	2,596 (9,824)	4,280 (16,199)	5
160	9	11	9	16	596 (2,255)	842 (3,189)	1,404 (5,315)	2,229 (8,437)	834 (3,157)	1,179 (4,465)	1,966 (7,441)	3,120 (11,812)	4
180	11	13	10	18	530 (2,004)	749 (2,835)	1,248 (4,725)	1,981 (7,500)	741 (2,806)	1,048 (3,969)	1,747 (6,615)	2,774 (10,499)	4
200	12	14	11	20	408 (1,546)	578 (2,187)	963 (3,645)	1,528 (5,785)	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	3
220	13	15	12	22	371 (1,406)	525 (1,988)	875 (3,313)	1,389 (5,259)	520 (1,968)	735 (2,783)	1,225 (4,639)	1,945 (7,363)	3
240	14	17	13	24	340 (1,289)	481 (1,822)	802 (3,037)	1,274 (4,821)	477 (1,804)	674 (2,551)	1,123 (4,252)	1,783 (6,750)	3
260	15	18	15	26	275 (1,041)	389 (1,472)	648 (2,453)	1,029 (3,894)	385 (1,457)	544 (2,061)	907 (3,435)	1,440 (5,452)	2
280	16	20	16	28	255 (966)	361 (1,367)	602 (2,278)	955 (3,616)	357 (1,353)	505 (1,914)	842 (3,189)	1,337 (5,062)	2
300	18	21	17	30	238 (902)	337 (1,276)	562 (2,126)	892 (3,375)	334 (1,263)	472 (1,786)	786 (2,977)	1,248 (4,725)	2
320	19	22	18	32	223 (846)	316 (1,196)	527 (1,993)	836 (3,164)	313 (1,184)	442 (1,674)	737 (2,791)	1,170 (4,429)	2
340	20	24	19	34	210 (796)	297 (1,126)	496 (1,876)	787 (2,978)	294 (1,114)	416 (1,576)	694 (2,626)	1,101 (4,169)	2
360	21	25	20	36	199 (752)	281 (1,063)	468 (1,772)	743 (2,812)	278 (1,052)	393 (1,488)	655 (2,480)	1,040 (3,937)	2
380	22	27	21	38	188 (712)	266 (1,007)	443 (1,679)	704 (2,664)	263 (997)	372 (1,410)	621 (2,350)	985 (3,730)	2
400	23	28	22	40	159 (601)	225 (850)	374 (1,417)	594 (2,250)	222 (842)	315 (1,191)	524 (1,984)	832 (3,150)	1
440	26	31	25	44	144 (547)	204 (773)	340 (1,289)	540 (2,045)	202 (765)	286 (1,082)	477 (1,804)	756 (2,863)	1
480	28	34	27	48	132 (501)	187 (709)	312 (1,181)	495 (1,875)	185 (702)	262 (992)	437 (1,654)	693 (2,625)	1
520	30	36	29	52	122 (463)	173 (654)	288 (1,090)	457 (1,731)	171 (648)	242 (916)	403 (1,526)	640 (2,423)	1
560	33	39	31	56	113 (430)	160 (607)	267 (1,012)	425 (1,607)	159 (601)	225 (850)	374 (1,417)	594 (2,250)	1
600	35	42	34	60	106 (401)	150 (567)	250 (945)	396 (1,500)	148 (561)	210 (794)	349 (1,323)	555 (2,100)	1
640	37	45	36	64	99 (376)	140 (532)	234 (886)	371 (1,406)	139 (526)	197 (744)	328 (1,240)	520 (1,969)	1
680	40	48	38	68	93 (354)	132 (500)	220 (834)	350 (1,323)	131 (495)	185 (700)	308 (1,167)	489 (1,853)	1

The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

Cartridge Settings & Capacities

Tea

Inlet Water Hardness					Tea Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	1,234 (4,671)	1,745 (6,606)	2,909 (11,010)	4,882 (18,480)	1,728 (6,539)	2,443 (9,249)	4,072 (15,414)	6,835 (25,872)	6
120	7	8	7	12	1,028 (3,893)	1,454 (5,505)	2,424 (9,175)	4,069 (15,400)	1,440 (5,450)	2,036 (7,707)	3,394 (12,845)	5,696 (21,560)	6
140	8	10	8	14	787 (2,977)	1,112 (4,210)	1,854 (7,017)	3,057 (11,571)	1,101 (4,168)	1,557 (5,894)	2,596 (9,824)	4,280 (16,199)	5
160	9	11	9	16	596 (2,255)	842 (3,189)	1,404 (5,315)	2,229 (8,437)	834 (3,157)	1,179 (4,465)	1,966 (7,441)	3,120 (11,812)	4
180	11	13	10	18	530 (2,004)	749 (2,835)	1,248 (4,725)	1,981 (7,500)	741 (2,806)	1,048 (3,969)	1,747 (6,615)	2,774 (10,499)	4
200	12	14	11	20	408 (1,546)	578 (2,187)	963 (3,645)	1,528 (5,785)	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	3
220	13	15	12	22	371 (1,406)	525 (1,988)	875 (3,313)	1,389 (5,259)	520 (1,968)	735 (2,783)	1,225 (4,639)	1,945 (7,363)	3
240	14	17	13	24	340 (1,289)	481 (1,822)	802 (3,037)	1,274 (4,821)	477 (1,804)	674 (2,551)	1,123 (4,252)	1,783 (6,750)	3
260	15	18	15	26	275 (1,041)	389 (1,472)	648 (2,453)	1,029 (3,894)	385 (1,457)	544 (2,061)	907 (3,435)	1,440 (5,452)	2
280	16	20	16	28	255 (966)	361 (1,367)	602 (2,278)	955 (3,616)	357 (1,353)	505 (1,914)	842 (3,189)	1,337 (5,062)	2
300	18	21	17	30	238 (902)	337 (1,276)	562 (2,126)	892 (3,375)	334 (1,263)	472 (1,786)	786 (2,977)	1,248 (4,725)	2
320	19	22	18	32	223 (846)	316 (1,196)	527 (1,993)	836 (3,164)	313 (1,184)	442 (1,674)	737 (2,791)	1,170 (4,429)	2
340	20	24	19	34	210 (796)	297 (1,126)	496 (1,876)	787 (2,978)	294 (1,114)	416 (1,576)	694 (2,626)	1,101 (4,169)	2
360	21	25	20	36	199 (752)	281 (1,063)	468 (1,772)	743 (2,812)	278 (1,052)	393 (1,488)	655 (2,480)	1,040 (3,937)	2
380	22	27	21	38	188 (712)	266 (1,007)	443 (1,679)	704 (2,664)	263 (997)	372 (1,410)	621 (2,350)	985 (3,730)	2
400	23	28	22	40	159 (601)	225 (850)	374 (1,417)	594 (2,250)	222 (842)	315 (1,191)	524 (1,984)	832 (3,150)	1
440	26	31	25	44	144 (547)	204 (773)	340 (1,289)	540 (2,045)	202 (765)	286 (1,082)	477 (1,804)	756 (2,863)	1
480	28	34	27	48	132 (501)	187 (709)	312 (1,181)	495 (1,875)	185 (702)	262 (992)	437 (1,654)	693 (2,625)	1
520	30	36	29	52	122 (463)	173 (654)	288 (1,090)	457 (1,731)	171 (648)	242 (916)	403 (1,526)	640 (2,423)	1
560	33	39	31	56	113 (430)	160 (607)	267 (1,012)	425 (1,607)	159 (601)	225 (850)	374 (1,417)	594 (2,250)	1
600	35	42	34	60	106 (401)	150 (567)	250 (945)	396 (1,500)	148 (561)	210 (794)	349 (1,323)	555 (2,100)	1
640	37	45	36	64	99 (376)	140 (532)	234 (886)	371 (1,406)	139 (526)	197 (744)	328 (1,240)	520 (1,969)	1
680	40	48	38	68	93 (354)	132 (500)	220 (834)	350 (1,323)	131 (495)	185 (700)	308 (1,167)	489 (1,853)	1

The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

Cartridge Settings & Capacities

Espresso

Inlet Water Hardness					Espresso Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	1,234 (4,671)	1,745 (6,606)	2,909 (11,010)	4,882 (18,480)	1,728 (6,539)	2,443 (9,249)	4,072 (15,414)	6,835 (25,872)	6
120	7	8	7	12	918 (3,473)	1,298 (4,912)	2,163 (8,187)	3,567 (13,499)	1,285 (4,862)	1,817 (6,877)	3,028 (11,461)	4,993 (18,899)	5
140	8	10	8	14	681 (2,577)	963 (3,645)	1,605 (6,075)	2,547 (9,642)	953 (3,608)	1,348 (5,103)	2,247 (8,504)	3,566 (13,499)	4
160	9	11	9	16	596 (2,255)	842 (3,189)	1,404 (5,315)	2,229 (8,437)	834 (3,157)	1,179 (4,465)	1,966 (7,441)	3,120 (11,812)	4
180	11	13	10	18	454 (1,718)	642 (2,430)	1,070 (4,050)	1,698 (6,428)	635 (2,405)	899 (3,402)	1,498 (5,670)	2,377 (9,000)	3
200	12	14	11	20	408 (1,546)	578 (2,187)	963 (3,645)	1,528 (5,785)	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	3
220	13	15	12	22	325 (1,230)	460 (1,740)	766 (2,899)	1,216 (4,602)	455 (1,722)	643 (2,435)	1,072 (4,059)	1,702 (6,443)	2
240	14	17	13	24	298 (1,127)	421 (1,595)	702 (2,658)	1,114 (4,219)	417 (1,578)	590 (2,232)	983 (3,721)	1,560 (5,906)	2
260	15	18	15	26	275 (1,041)	389 (1,472)	648 (2,453)	1,029 (3,894)	385 (1,457)	544 (2,061)	907 (3,435)	1,440 (5,452)	2
280	16	20	16	28	255 (966)	361 (1,367)	602 (2,278)	955 (3,616)	357 (1,353)	505 (1,914)	842 (3,189)	1,337 (5,062)	2
300	18	21	17	30	238 (902)	337 (1,276)	562 (2,126)	892 (3,375)	334 (1,263)	472 (1,786)	786 (2,977)	1,248 (4,725)	2
320	19	22	18	32	223 (846)	316 (1,196)	527 (1,993)	836 (3,164)	313 (1,184)	442 (1,674)	737 (2,791)	1,170 (4,429)	2
340	20	24	19	34	187 (707)	264 (1,001)	441 (1,668)	699 (2,647)	262 (990)	370 (1,401)	617 (2,335)	979 (3,706)	1
360	21	25	20	36	177 (668)	250 (945)	416 (1,575)	660 (2,500)	247 (935)	349 (1,323)	582 (2,205)	925 (3,500)	1
380	22	27	21	38	167 (633)	236 (895)	394 (1,492)	626 (2,368)	234 (886)	331 (1,253)	552 (2,089)	876 (3,316)	1
400	23	28	22	40	159 (601)	225 (850)	374 (1,417)	594 (2,250)	222 (842)	315 (1,191)	524 (1,984)	832 (3,150)	1
440	26	31	25	44	144 (547)	204 (773)	340 (1,289)	540 (2,045)	202 (765)	286 (1,082)	477 (1,804)	756 (2,863)	1
480	28	34	27	48	132 (501)	187 (709)	312 (1,181)	495 (1,875)	185 (702)	262 (992)	437 (1,654)	693 (2,625)	1
520	30	36	29	52	122 (463)	173 (654)	288 (1,090)	457 (1,731)	171 (648)	242 (916)	403 (1,526)	640 (2,423)	1
560	33	39	31	56	113 (430)	160 (607)	267 (1,012)	425 (1,607)	159 (601)	225 (850)	374 (1,417)	594 (2,250)	1
600	35	42	34	60	106 (401)	150 (567)	250 (945)	396 (1,500)	148 (561)	210 (794)	349 (1,323)	555 (2,100)	1
640	37	45	36	64	89 (338)	126 (478)	211 (797)	334 (1,266)	125 (474)	177 (670)	295 (1,116)	468 (1,772)	0
680	40	48	38	68	84 (318)	119 (450)	198 (750)	315 (1,191)	118 (446)	167 (630)	278 (1,051)	441 (1,668)	0

The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

Cartridge Settings & Capacities

Boiler Combi-Oven

Inlet Water Hardness					Boiler Combi-Oven Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	817 (3,093)	1,155 (4,374)	1,926 (7,290)	3,057 (11,571)	1,144 (4,330)	1,618 (6,123)	2,696 (10,205)	4,279 (16,199)	3
120	7	8	7	12	681 (2,577)	963 (3,645)	1,605 (6,075)	2,547 (9,642)	953 (3,608)	1,348 (5,103)	2,247 (8,504)	3,566 (13,499)	3
140	8	10	8	14	511 (1,933)	722 (2,734)	1,204 (4,556)	1,910 (7,232)	715 (2,706)	1,011 (3,827)	1,685 (6,378)	2,675 (10,125)	2
160	9	11	9	16	447 (1,691)	632 (2,392)	1,053 (3,986)	1,672 (6,328)	625 (2,368)	885 (3,349)	1,474 (5,581)	2,340 (8,859)	2
180	11	13	10	18	397 (1,503)	562 (2,126)	936 (3,544)	1,486 (5,625)	556 (2,105)	786 (2,977)	1,311 (4,961)	2,080 (7,875)	2
200	12	14	11	20	318 (1,203)	449 (1,701)	749 (2,835)	1,189 (4,500)	445 (1,684)	629 (2,381)	1,048 (3,969)	1,664 (6,300)	1
220	13	15	12	22	289 (1,093)	408 (1,546)	681 (2,577)	1,081 (4,091)	404 (1,531)	572 (2,165)	953 (3,608)	1,513 (5,727)	1
240	14	17	13	24	265 (1,002)	374 (1,417)	624 (2,362)	991 (3,750)	371 (1,403)	524 (1,984)	874 (3,307)	1,387 (5,250)	1
260	15	18	15	26	244 (925)	346 (1,308)	576 (2,181)	914 (3,461)	342 (1,295)	484 (1,832)	806 (3,053)	1,280 (4,846)	1
280	16	20	16	28	227 (859)	321 (1,215)	535 (2,025)	849 (3,214)	318 (1,203)	449 (1,701)	749 (2,835)	1,189 (4,500)	1
300	18	21	17	30	212 (802)	300 (1,134)	499 (1,890)	792 (3,000)	297 (1,122)	419 (1,588)	699 (2,646)	1,109 (4,200)	1
320	19	22	18	32	199 (752)	281 (1,063)	468 (1,772)	743 (2,812)	278 (1,052)	393 (1,488)	655 (2,480)	1,040 (3,937)	1
340	20	24	19	34	187 (707)	264 (1,001)	441 (1,668)	699 (2,647)	262 (990)	370 (1,401)	617 (2,335)	979 (3,706)	1
360	21	25	20	36	177 (668)	250 (945)	416 (1,575)	660 (2,500)	247 (935)	349 (1,323)	582 (2,205)	925 (3,500)	1
380	22	27	21	38	150 (570)	213 (806)	355 (1,343)	563 (2,131)	211 (798)	298 (1,128)	497 (1,880)	788 (2,984)	0
400	23	28	22	40	143 (541)	202 (765)	337 (1,276)	535 (2,025)	200 (758)	283 (1,072)	472 (1,786)	749 (2,835)	0
440	26	31	25	44	130 (492)	184 (696)	306 (1,160)	486 (1,841)	182 (689)	257 (974)	429 (1,624)	681 (2,577)	0
480	28	34	27	48	119 (451)	168 (638)	281 (1,063)	446 (1,687)	167 (631)	236 (893)	393 (1,488)	624 (2,362)	0
520	30	36	29	52	110 (416)	156 (589)	259 (981)	411 (1,558)	154 (583)	218 (824)	363 (1,374)	576 (2,181)	0
560	33	39	31	56	102 (387)	144 (547)	241 (911)	382 (1,446)	143 (541)	202 (765)	337 (1,276)	535 (2,025)	0
600	35	42	34	60	95 (361)	135 (510)	225 (850)	357 (1,350)	133 (505)	189 (714)	315 (1,191)	499 (1,890)	0
640	37	45	36	64	89 (338)	126 (478)	211 (797)	334 (1,266)	125 (474)	177 (670)	295 (1,116)	468 (1,772)	0
680	40	48	38	68	84 (318)	119 (450)	198 (750)	315 (1,191)	118 (446)	167 (630)	278 (1,051)	441 (1,668)	0

The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

Cartridge Settings & Capacities

Boiler Steamer

Inlet Water Hardness					Boiler Steamer Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	817 (3,093)	1,155 (4,374)	1,926 (7,290)	3,057 (11,571)	1,144 (4,330)	1,618 (6,123)	2,696 (10,205)	4,279 (16,199)	3
120	7	8	7	12	681 (2,577)	963 (3,645)	1,605 (6,075)	2,547 (9,642)	953 (3,608)	1,348 (5,103)	2,247 (8,504)	3,566 (13,499)	3
140	8	10	8	14	511 (1,933)	722 (2,734)	1,204 (4,556)	1,910 (7,232)	715 (2,706)	1,011 (3,827)	1,685 (6,378)	2,675 (10,125)	2
160	9	11	9	16	447 (1,691)	632 (2,392)	1,053 (3,986)	1,672 (6,328)	625 (2,368)	885 (3,349)	1,474 (5,581)	2,340 (8,859)	2
180	11	13	10	18	397 (1,503)	562 (2,126)	936 (3,544)	1,486 (5,625)	556 (2,105)	786 (2,977)	1,311 (4,961)	2,080 (7,875)	2
200	12	14	11	20	318 (1,203)	449 (1,701)	749 (2,835)	1,189 (4,500)	445 (1,684)	629 (2,381)	1,048 (3,969)	1,664 (6,300)	1
220	13	15	12	22	289 (1,093)	408 (1,546)	681 (2,577)	1,081 (4,091)	404 (1,531)	572 (2,165)	953 (3,608)	1,513 (5,727)	1
240	14	17	13	24	265 (1,002)	374 (1,417)	624 (2,362)	991 (3,750)	371 (1,403)	524 (1,984)	874 (3,307)	1,387 (5,250)	1
260	15	18	15	26	244 (925)	346 (1,308)	576 (2,181)	914 (3,461)	342 (1,295)	484 (1,832)	806 (3,053)	1,280 (4,846)	1
280	16	20	16	28	227 (859)	321 (1,215)	535 (2,025)	849 (3,214)	318 (1,203)	449 (1,701)	749 (2,835)	1,189 (4,500)	1
300	18	21	17	30	212 (802)	300 (1,134)	499 (1,890)	792 (3,000)	297 (1,122)	419 (1,588)	699 (2,646)	1,109 (4,200)	1
320	19	22	18	32	199 (752)	281 (1,063)	468 (1,772)	743 (2,812)	278 (1,052)	393 (1,488)	655 (2,480)	1,040 (3,937)	1
340	20	24	19	34	187 (707)	264 (1,001)	441 (1,668)	699 (2,647)	262 (990)	370 (1,401)	617 (2,335)	979 (3,706)	1
360	21	25	20	36	177 (668)	250 (945)	416 (1,575)	660 (2,500)	247 (935)	349 (1,323)	582 (2,205)	925 (3,500)	1
380	22	27	21	38	150 (570)	213 (806)	355 (1,343)	563 (2,131)	211 (798)	298 (1,128)	497 (1,880)	788 (2,984)	0
400	23	28	22	40	143 (541)	202 (765)	337 (1,276)	535 (2,025)	200 (758)	283 (1,072)	472 (1,786)	749 (2,835)	0
440	26	31	25	44	130 (492)	184 (696)	306 (1,160)	486 (1,841)	182 (689)	257 (974)	429 (1,624)	681 (2,577)	0
480	28	34	27	48	119 (451)	168 (638)	281 (1,063)	446 (1,687)	167 (631)	236 (893)	393 (1,488)	624 (2,362)	0
520	30	36	29	52	110 (416)	156 (589)	259 (981)	411 (1,558)	154 (583)	218 (824)	363 (1,374)	576 (2,181)	0
560	33	39	31	56	102 (387)	144 (547)	241 (911)	382 (1,446)	143 (541)	202 (765)	337 (1,276)	535 (2,025)	0
600	35	42	34	60	95 (361)	135 (510)	225 (850)	357 (1,350)	133 (505)	189 (714)	315 (1,191)	499 (1,890)	0
640	37	45	36	64	89 (338)	126 (478)	211 (797)	334 (1,266)	125 (474)	177 (670)	295 (1,116)	468 (1,772)	0
680	40	48	38	68	84 (318)	119 (450)	198 (750)	315 (1,191)	118 (446)	167 (630)	278 (1,051)	441 (1,668)	0

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Cartridge Settings & Capacities

Boilerless Combi-Oven

Inlet Water Hardness					Boilerless Combi-Oven Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	801 (3,031)	1,132 (4,286)	1,887 (7,144)	2,996 (11,339)	0
120	7	8	7	12	477 (1,804)	674 (2,551)	1,123 (4,252)	1,783 (6,750)	667 (2,526)	944 (3,572)	1,573 (5,953)	2,496 (9,450)	0
140	8	10	8	14	408 (1,546)	578 (2,187)	963 (3,645)	1,528 (5,785)	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	0
160	9	11	9	16	357 (1,353)	505 (1,914)	842 (3,189)	1,337 (5,062)	500 (1,894)	708 (2,679)	1,179 (4,465)	1,872 (7,087)	0
180	11	13	10	18	318 (1,203)	449 (1,701)	749 (2,835)	1,189 (4,500)	445 (1,684)	629 (2,381)	1,048 (3,969)	1,664 (6,300)	0
200	12	14	11	20	286 (1,082)	404 (1,531)	674 (2,551)	1,070 (4,050)	400 (1,515)	566 (2,143)	944 (3,572)	1,498 (5,670)	0
220	13	15	12	22	260 (984)	368 (1,392)	613 (2,319)	973 (3,682)	364 (1,378)	515 (1,948)	858 (3,247)	1,362 (5,154)	0
240	14	17	13	24	238 (902)	337 (1,276)	562 (2,126)	892 (3,375)	334 (1,263)	472 (1,786)	786 (2,977)	1,248 (4,725)	0
260	15	18	15	26	220 (833)	311 (1,178)	518 (1,963)	823 (3,115)	308 (1,166)	436 (1,649)	726 (2,748)	1,152 (4,361)	0
280	16	20	16	28	204 (773)	289 (1,093)	481 (1,822)	764 (2,893)	286 (1,082)	404 (1,531)	674 (2,551)	1,070 (4,050)	0
300	18	21	17	30	191 (722)	270 (1,021)	449 (1,701)	713 (2,700)	267 (1,010)	377 (1,429)	629 (2,381)	999 (3,780)	0
320	19	22	18	32	179 (676)	253 (957)	421 (1,595)	669 (2,531)	250 (947)	354 (1,339)	590 (2,232)	936 (3,544)	0
340	20	24	19	34	168 (637)	238 (900)	396 (1,501)	629 (2,382)	235 (891)	333 (1,261)	555 (2,101)	881 (3,335)	0
360	21	25	20	36	159 (601)	225 (850)	374 (1,417)	594 (2,250)	222 (842)	315 (1,191)	524 (1,984)	832 (3,150)	0
380	22	27	21	38	150 (570)	213 (806)	355 (1,343)	563 (2,131)	211 (798)	298 (1,128)	497 (1,880)	788 (2,984)	0
400	23	28	22	40	143 (541)	202 (765)	337 (1,276)	535 (2,025)	200 (758)	283 (1,072)	472 (1,786)	749 (2,835)	0
440	26	31	25	44	130 (492)	184 (696)	306 (1,160)	486 (1,841)	182 (689)	257 (974)	429 (1,624)	681 (2,577)	0
480	28	34	27	48	119 (451)	168 (638)	281 (1,063)	446 (1,687)	167 (631)	236 (893)	393 (1,488)	624 (2,362)	0
520	30	36	29	52	110 (416)	156 (589)	259 (981)	411 (1,558)	154 (583)	218 (824)	363 (1,374)	576 (2,181)	0
560	33	39	31	56	102 (387)	144 (547)	241 (911)	382 (1,446)	143 (541)	202 (765)	337 (1,276)	535 (2,025)	0
600	35	42	34	60	95 (361)	135 (510)	225 (850)	357 (1,350)	133 (505)	189 (714)	315 (1,191)	499 (1,890)	0
640	37	45	36	64	89 (338)	126 (478)	211 (797)	334 (1,266)	125 (474)	177 (670)	295 (1,116)	468 (1,772)	0
680	40	48	38	68	84 (318)	119 (450)	198 (750)	315 (1,191)	118 (446)	167 (630)	278 (1,051)	441 (1,668)	0

The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

Cartridge Settings & Capacities

Boilerless Steamer

Inlet Water Hardness					Boilerless Steamer Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	801 (3,031)	1,132 (4,286)	1,887 (7,144)	2,996 (11,339)	0
120	7	8	7	12	477 (1,804)	674 (2,551)	1,123 (4,252)	1,783 (6,750)	667 (2,526)	944 (3,572)	1,573 (5,953)	2,496 (9,450)	0
140	8	10	8	14	408 (1,546)	578 (2,187)	963 (3,645)	1,528 (5,785)	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	0
160	9	11	9	16	357 (1,353)	505 (1,914)	842 (3,189)	1,337 (5,062)	500 (1,894)	708 (2,679)	1,179 (4,465)	1,872 (7,087)	0
180	11	13	10	18	318 (1,203)	449 (1,701)	749 (2,835)	1,189 (4,500)	445 (1,684)	629 (2,381)	1,048 (3,969)	1,664 (6,300)	0
200	12	14	11	20	286 (1,082)	404 (1,531)	674 (2,551)	1,070 (4,050)	400 (1,515)	566 (2,143)	944 (3,572)	1,498 (5,670)	0
220	13	15	12	22	260 (984)	368 (1,392)	613 (2,319)	973 (3,682)	364 (1,378)	515 (1,948)	858 (3,247)	1,362 (5,154)	0
240	14	17	13	24	238 (902)	337 (1,276)	562 (2,126)	892 (3,375)	334 (1,263)	472 (1,786)	786 (2,977)	1,248 (4,725)	0
260	15	18	15	26	220 (833)	311 (1,178)	518 (1,963)	823 (3,115)	308 (1,166)	436 (1,649)	726 (2,748)	1,152 (4,361)	0
280	16	20	16	28	204 (773)	289 (1,093)	481 (1,822)	764 (2,893)	286 (1,082)	404 (1,531)	674 (2,551)	1,070 (4,050)	0
300	18	21	17	30	191 (722)	270 (1,021)	449 (1,701)	713 (2,700)	267 (1,010)	377 (1,429)	629 (2,381)	999 (3,780)	0
320	19	22	18	32	179 (676)	253 (957)	421 (1,595)	669 (2,531)	250 (947)	354 (1,339)	590 (2,232)	936 (3,544)	0
340	20	24	19	34	168 (637)	238 (900)	396 (1,501)	629 (2,382)	235 (891)	333 (1,261)	555 (2,101)	881 (3,335)	0
360	21	25	20	36	159 (601)	225 (850)	374 (1,417)	594 (2,250)	222 (842)	315 (1,191)	524 (1,984)	832 (3,150)	0
380	22	27	21	38	150 (570)	213 (806)	355 (1,343)	563 (2,131)	211 (798)	298 (1,128)	497 (1,880)	788 (2,984)	0
400	23	28	22	40	143 (541)	202 (765)	337 (1,276)	535 (2,025)	200 (758)	283 (1,072)	472 (1,786)	749 (2,835)	0
440	26	31	25	44	130 (492)	184 (696)	306 (1,160)	486 (1,841)	182 (689)	257 (974)	429 (1,624)	681 (2,577)	0
480	28	34	27	48	119 (451)	168 (638)	281 (1,063)	446 (1,687)	167 (631)	236 (893)	393 (1,488)	624 (2,362)	0
520	30	36	29	52	110 (416)	156 (589)	259 (981)	411 (1,558)	154 (583)	218 (824)	363 (1,374)	576 (2,181)	0
560	33	39	31	56	102 (387)	144 (547)	241 (911)	382 (1,446)	143 (541)	202 (765)	337 (1,276)	535 (2,025)	0
600	35	42	34	60	95 (361)	135 (510)	225 (850)	357 (1,350)	133 (505)	189 (714)	315 (1,191)	499 (1,890)	0
640	37	45	36	64	89 (338)	126 (478)	211 (797)	334 (1,266)	125 (474)	177 (670)	295 (1,116)	468 (1,772)	0
680	40	48	38	68	84 (318)	119 (450)	198 (750)	315 (1,191)	118 (446)	167 (630)	278 (1,051)	441 (1,668)	0

The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

Cartridge Settings & Capacities

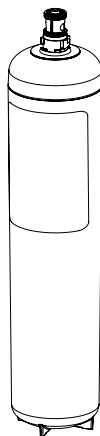
Warewashing

Inlet Water Hardness					Warewashing Application [Capacity in Gallons (Litres)]								Bypass Setting
ppm (mg/L)	gpg	English Degree (Clarke or E)	German Degree (DH or KH)	French Degree (FH)	B145-CLS/ ES145-CLS	B165-CLS/ ES165-CLS	B195-CLS	B1175-S	B145H-CLS	B165H-CLS	B195H-CLS	B1175H-S	
100	6	7	6	10	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	801 (3,031)	1,132 (4,286)	1,887 (7,144)	2,996 (11,339)	0
120	7	8	7	12	477 (1,804)	674 (2,551)	1,123 (4,252)	1,783 (6,750)	667 (2,526)	944 (3,572)	1,573 (5,953)	2,496 (9,450)	0
140	8	10	8	14	408 (1,546)	578 (2,187)	963 (3,645)	1,528 (5,785)	572 (2,165)	809 (3,062)	1,348 (5,103)	2,140 (8,100)	0
160	9	11	9	16	357 (1,353)	505 (1,914)	842 (3,189)	1,337 (5,062)	500 (1,894)	708 (2,679)	1,179 (4,465)	1,872 (7,087)	0
180	11	13	10	18	318 (1,203)	449 (1,701)	749 (2,835)	1,189 (4,500)	445 (1,684)	629 (2,381)	1,048 (3,969)	1,664 (6,300)	0
200	12	14	11	20	286 (1,082)	404 (1,531)	674 (2,551)	1,070 (4,050)	400 (1,515)	566 (2,143)	944 (3,572)	1,498 (5,670)	0
220	13	15	12	22	260 (984)	368 (1,392)	613 (2,319)	973 (3,682)	364 (1,378)	515 (1,948)	858 (3,247)	1,362 (5,154)	0
240	14	17	13	24	238 (902)	337 (1,276)	562 (2,126)	892 (3,375)	334 (1,263)	472 (1,786)	786 (2,977)	1,248 (4,725)	0
260	15	18	15	26	220 (833)	311 (1,178)	518 (1,963)	823 (3,115)	308 (1,166)	436 (1,649)	726 (2,748)	1,152 (4,361)	0
280	16	20	16	28	204 (773)	289 (1,093)	481 (1,822)	764 (2,893)	286 (1,082)	404 (1,531)	674 (2,551)	1,070 (4,050)	0
300	18	21	17	30	191 (722)	270 (1,021)	449 (1,701)	713 (2,700)	267 (1,010)	377 (1,429)	629 (2,381)	999 (3,780)	0
320	19	22	18	32	179 (676)	253 (957)	421 (1,595)	669 (2,531)	250 (947)	354 (1,339)	590 (2,232)	936 (3,544)	0
340	20	24	19	34	168 (637)	238 (900)	396 (1,501)	629 (2,382)	235 (891)	333 (1,261)	555 (2,101)	881 (3,335)	0
360	21	25	20	36	159 (601)	225 (850)	374 (1,417)	594 (2,250)	222 (842)	315 (1,191)	524 (1,984)	832 (3,150)	0
380	22	27	21	38	150 (570)	213 (806)	355 (1,343)	563 (2,131)	211 (798)	298 (1,128)	497 (1,880)	788 (2,984)	0
400	23	28	22	40	143 (541)	202 (765)	337 (1,276)	535 (2,025)	200 (758)	283 (1,072)	472 (1,786)	749 (2,835)	0
440	26	31	25	44	130 (492)	184 (696)	306 (1,160)	486 (1,841)	182 (689)	257 (974)	429 (1,624)	681 (2,577)	0
480	28	34	27	48	119 (451)	168 (638)	281 (1,063)	446 (1,687)	167 (631)	236 (893)	393 (1,488)	624 (2,362)	0
520	30	36	29	52	110 (416)	156 (589)	259 (981)	411 (1,558)	154 (583)	218 (824)	363 (1,374)	576 (2,181)	0
560	33	39	31	56	102 (387)	144 (547)	241 (911)	382 (1,446)	143 (541)	202 (765)	337 (1,276)	535 (2,025)	0
600	35	42	34	60	95 (361)	135 (510)	225 (850)	357 (1,350)	133 (505)	189 (714)	315 (1,191)	499 (1,890)	0
640	37	45	36	64	89 (338)	126 (478)	211 (797)	334 (1,266)	125 (474)	177 (670)	295 (1,116)	468 (1,772)	0
680	40	48	38	68	84 (318)	119 (450)	198 (750)	315 (1,191)	118 (446)	167 (630)	278 (1,051)	441 (1,668)	0

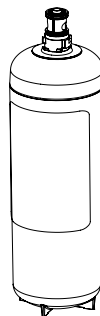
The stated capacities are intended as guidelines. The capacities may vary according to dispensed volume and machine type. Please contact us at 1-866-990-9785 for recommendations.

3M™ SCALEGARD™ BLEND SERIES PARTS IDENTIFICATION LIST

Repl. Ctg.	
Model # / Part #	Rated Flow
B145-CLS / 5629701	0.5 gpm (1.9 lpm)
B145H-CLS / 5629702	0.5 gpm (1.9 lpm)
ES145-CLS / 5629703	0.5 gpm (1.9 lpm)
B165-CLS / 5630401	0.5 gpm (1.9 lpm)
B165H-CLS / 563402	0.5 gpm (1.9 lpm)
ES165-CLS / 5630403	0.5 gpm (1.9 lpm)
B195-CLS / 5630501	0.5 gpm (1.9 lpm)
B195H-CLS / 5630502	0.5 gpm (1.9 lpm)
B1175-S / 5630601	1.0 gpm (3.8 lpm)
B1175H-S / 5630602	1.0 gpm (3.8 lpm)



B195-CLS
B195H-CLS



B165-CLS
B165H-CLS
ES165-CLS

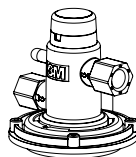


B145-CLS
B145H-CLS
ES145-CLS

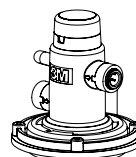


B1175-S
B1175H-S

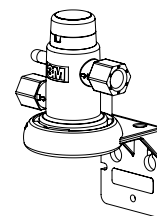
Repl. Head	
Model #	Part #
BH3	6240801
BH3-NB	6240802
BH3M	6240803
BH3WM	6240804
BH3M-NB	6240805
HB3WM-NB	6240806
BH3-NPT	6240807
BH3-NB-NPT	6240808
BH3M-NPT	6240809
BH3WM-NPT	6240810
BH3M-NB-NPT	6240811
BH3WM-NB-NPT	6240812
BH3-BSP	6240813
BH3-NB-BSP	6240814
BH3M-BSP	6240815
BH3WM-BSP	6240816
BH3M-NB-BSP	6240817
BH3WM-NB-BSP	6240818



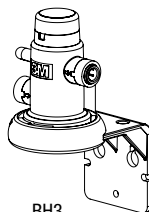
BH3-NB-NPT
BH3-NB-BSP



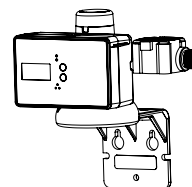
BH3-NB



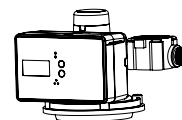
BH3-NPT
BH3-BSP



BH3



BH3M
BH3WM



BH3M-NB
BH3WM-NB

Repl. Parts	
Part #	Description
6240901	Local Monitor and Shroud Assembly
6240902	Wi-Fi Monitor and Shroud Assembly
25-333001	3/8" NPT Flow Sensor
25-333002	3/8" BSP Flow Sensor
25-64101	5 VDC Power Supply
25-72301	6' Extension Cable

NOTES

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Product Use:

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer:

3M warrants that this product (excluding filter cartridge or filter membrane) will be free from defects in material and manufacture for the period of one (1) year from the date of purchase. The filter cartridge or membrane is warranted to be free from defects in material and manufacture for one (1) year from the date of purchase. No warranty is given as to the service life of any filter cartridge or membrane as it will vary with local water conditions and water consumption. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. This warranty does not cover labor. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

This warranty gives you specific legal rights, and you may have other rights which may vary from state to state, or country to country. For any warranty questions, please call 866.990.9785 or mail your request to: Warranty Claims, 3M Purification Inc., 400 Research Parkway, Meriden, CT 06450. Proof of purchase (original sales receipt) must accompany the warranty claim, along with a complete description of the Product, model number and alleged defect.

Limitation of Liability:

Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



Systems tested and certified by NSF International against NSF/ANSI Standard 42 for the reduction of the claims specified on the Performance Data Sheet and against CSA B483.1.

All models with the exception B1175-S and B1175H-S are tested and certified by NSF International against NSF/ANSI Standard 42.

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Please recycle.



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