



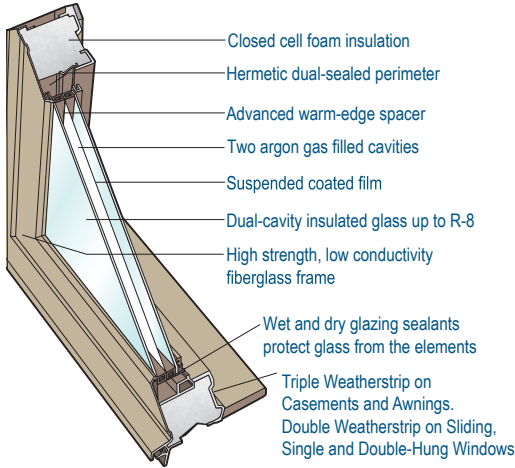
## 525-S Series Alpen Windows

Alpen's 525-S Series is the newest addition to our high performance fiberglass window lineup. By incorporating a new spacer technology into our best-selling 525 Series windows, the 525-S Series offers even higher performance at very low added cost. With full-frame R-values up to R-6.7 and a full catalogue of custom-design options, the 525-S Series offers outstanding value for residential and commercial buildings and for retrofit and new construction.

### Benefits:

- NFRC Certified thermal performance up to R-6.7
- Exceed Energy Star® standards
- AAMA Gold Labeled to Commercial Window (CW) performance
- Superior air and water infiltration resistance
- Glazing options for solar control and passive heat gain.
- Advanced triple-pane, suspended-film glazing technology stabilizes interior glass surface temperature to create comfortable indoor living spaces year-round.
- 99%+ UV blockage protects interior finishes
- Custom built to fit your budget and design
- Center-of-glass R-8

## Technical Specifications



A unique combination of 9 key technologies including a fully insulated fiberglass frame, suspended film, and gas-filled cavities maximize performance.

## 525-S Series Full Frame NFRC Thermal Performance:

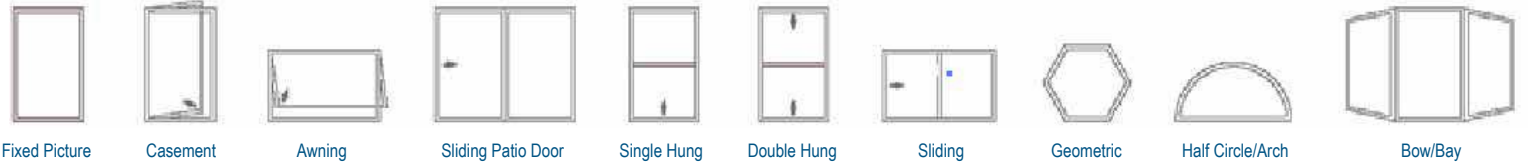
Styles	Alpenglass 5L					Alpenglass 5H				
	U-Factor	R-Value	SHGC	VT	CRF	U-Factor	R-Value	SHGC	VT	CRF
Picture Window LP	0.16	6.3	0.30	0.49	69	0.17	5.9	0.48	0.62	68
Picture Window HP	0.15	6.7	0.27	0.44	69	0.16	6.3	0.43	0.56	68
Casement	0.19	5.3	0.24	0.38	70	0.20	5.0	0.38	0.48	69
Awning	0.19	5.3	0.24	0.38	70	0.20	5.0	0.38	0.48	69
Single-Hung	0.18	5.6	0.25	0.41	61	0.19	5.3	0.40	0.51	60
Double-Hung	0.20	5.0	0.25	0.41	61	0.21	4.8	0.40	0.51	60
Horizontal Sliding	0.19	5.3	0.27	0.43	61	0.20	5.0	0.42	0.55	60
Sliding Patio Door	0.18	5.6	0.26	0.42	63	0.19	5.3	0.41	0.53	62

Note: Effective with all shipments on or after December 1, 2013

**Alpenglass 5L** utilizes low-e coated glass and suspended film plus inert-gas filled cavities to reduce unwanted solar heat gain and provide maximum insulation at an affordable price

**Alpenglass 5H** offers superior insulation and high solar heat gain for homes with passive solar design; 5H also utilizes low-e coated glass and suspended film and inert-gas filled cavities

## Window Styles



**Exterior Trim Accessories:** Nailing Fin, Aluminum Brick Mould, Aluminum Brick Mould with Nail Fin

**Interior Trim Accessories:** Jamb Extensions: 4-9/16", 6-9/16"; Pine and Oak

## Simulated Divided Lights

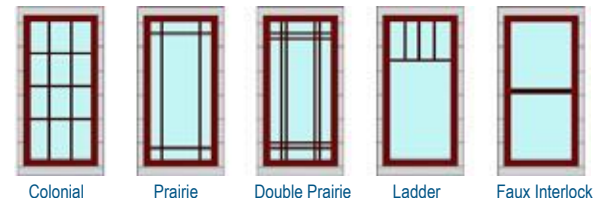
525-S Series Windows offer interior and exterior-applied Simulated Divided Lite (SDL) options\* in a range of colors and patterns.

### Interior (wood or composite)

Interior grille matches interior paint and color. For windows with interior wood veneer, grille is ready to stain.

### Exterior (aluminum)

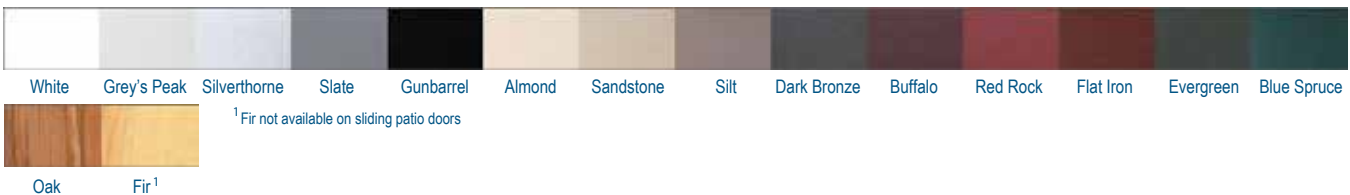
Exterior grille matches exterior paint color



\*Custom grille designs available

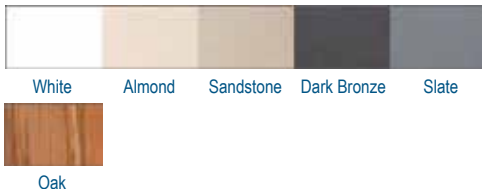
## Paint and Finish Options

### Picture Windows, Casements, Awnings and Sliding Patio Doors

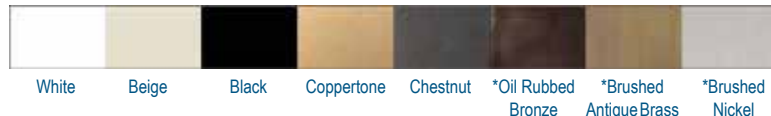


<sup>1</sup> Fir not available on sliding patio doors

### Single Hung, Double Hung and Sliding Window



### Hardware



\*Decorative metal hardware available as upgrade option, additional costs may apply





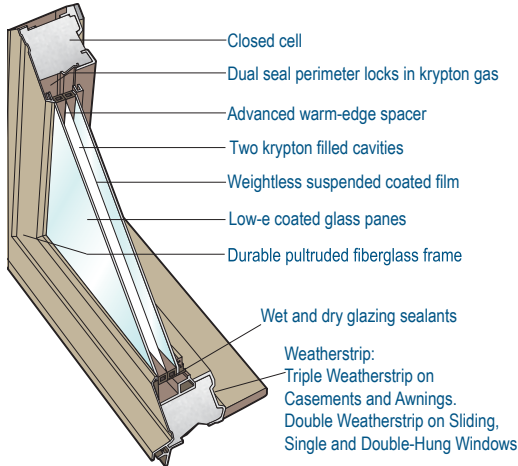
## 725 Series Alpen Windows

Alpen's 725 Series fiberglass windows deliver beauty, comfort and long-lasting durability. Triple-pane suspended-film glazing offers superior insulation in a range of performance levels to satisfy any home design. When used in conjunction with tight envelope construction and smart weatherization practices, 725 Series windows can help reduce energy loss.

### Benefits:

- NFRC certified thermal performance up to R-7.1
- Custom built with superior craftsmanship and quality
- Industry leading air and water infiltration resistance
- High interior condensation resistance factors (CRF)
- 99%+ UV blockage protects interior finishes
- Advanced glazing technology makes interior glass surface temperature warmer in the winter and cooler in the summer to enhance occupant comfort
- Multiple window styles and performance options offer design flexibility needed to meet net-zero energy, passive solar and other high performance home goals

## Technical Specifications



### 725 Series Full Frame NFRC Thermal Performance:

Styles	Alpenglass 7L					Alpenglass 7H				
	U-Factor	R-Value	SHGC	VT	CRF	U-Factor	R-Value	SHGC	VT	CRF
Picture Window LP	0.15	6.7	0.30	0.49	67	0.16	6.3	0.48	0.62	67
Picture Window HP	0.14	7.1	0.27	0.44	67	0.15	6.7	0.43	0.56	66
Casement	0.18	5.6	0.24	0.38	68	0.19	5.3	0.38	0.48	67
Awning	0.18	5.6	0.24	0.38	68	0.19	5.3	0.38	0.48	67
Single Hung	0.18	5.6	0.25	0.41	61	0.19	5.3	0.40	0.51	60
Double Hung	0.20	5.0	0.25	0.41	61	0.21	4.8	0.40	0.51	60
Horizontal Sliding	0.19	5.3	0.27	0.43	61	0.20	5.0	0.42	0.55	60
Sliding Patio Door	0.17	5.9	0.26	0.42	60	0.18	5.6	0.41	0.53	59

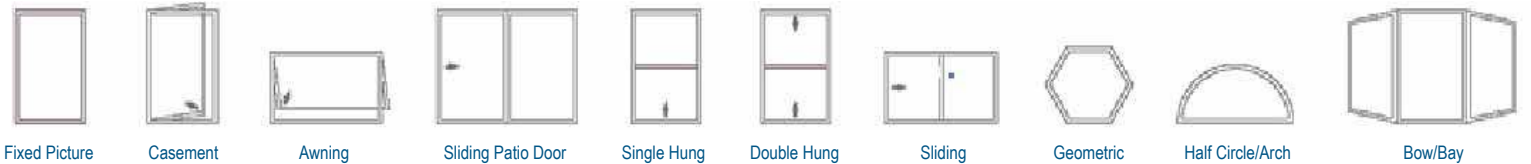
Effective with all shipments on or after December 1, 2013

**Alpenglass 7L** Designed to block unwanted heat gain during summer months, 7L low solar gain glass keeps south- and west-facing rooms cool in the summer and warm in the winter.

**Alpenglass 7H** Ideal for passive solar homes, 7H glass captures solar heat and insulates for winter warmth

A unique combination of 9 key technologies including a fully-insulated fiberglass frame, suspended film, and gas-filled cavities maximize performance.

## Window Styles



**Exterior Trim Accessories:** Nailing Fin, Aluminum Brick Mould, Aluminum Brick Mould with Nail Fin

**Interior Trim Accessories:** Jamb Extensions: 4-9/16", 6-9/16"; Pine and Oak

## Simulated Divided Lights

725 Series Windows offer interior and exterior-applied Simulated Divided Lite (SDL) options\* in a range of colors and patterns.

**Interior (wood or composite)**  
Interior grille matches interior paint and color. For windows with interior wood veneer, grille is ready to stain.

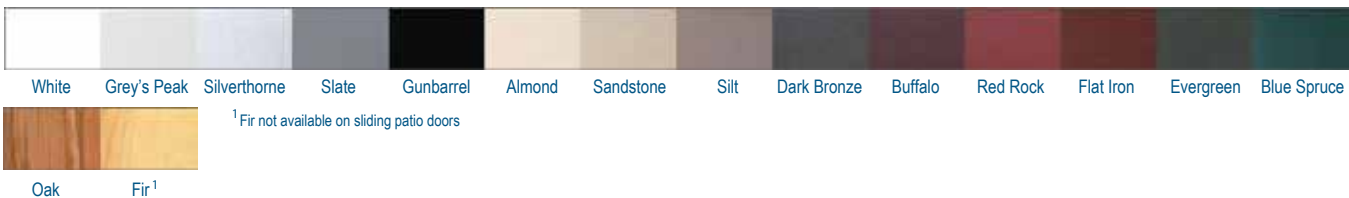
**Exterior (aluminum)**  
Exterior grille matches exterior paint color



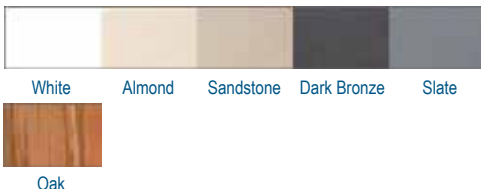
\*Custom grille designs available

## Paint and Finish Options

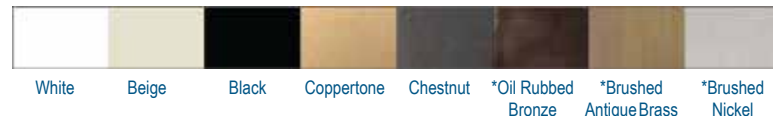
### Picture Windows, Casements, Awnings and Sliding Patio Doors



### Single Hung, Double Hung and Sliding Window



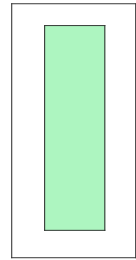
### Hardware



\* Decorative metal hardware available as upgrade option, additional costs may apply



Green indicates Energy Star Qualified in all 50 States



## Door Collection / Glass Design

Ratios are U factor and Solar Heat Gain factor but Alpen has higher efficiency glass than those posted.

### Smooth-Star®

### 6'8" Doors

#### Glass Size (Inches)

**22x64**

**20x64**

**Non-Impact**

Keystone™	.27 / .30	
Blackstone®	.27 / .30	.27 / .30
Crystalline™	.27 / .30	.27 / .30
Brookside (Discontinued 2014)		
Sedona	.27 / .30	.27 / .30
Sedona Art	.27 / .30	.27 / .30
Salinas®	.34 / .31	.34 / .31
Element	.27 / .30	
Maple Park®	.27 / .30	
Avonlea®	.27 / .30	
Saratoga™	.27 / .30	.27 / .30
Arden®	.27 / .30	
Texas Star	.27 / .30	
Wellesley™	.27 / .30	.27 / .30
Concorde™	.27 / .30	.27 / .30
Kensington™	.27 / .30	
Crystal Diamonds™	.27 / .30	.27 / .30
Contemporary™ (Discontinued 2014)		
Frosted Images®	.36 / .34	.36 / .34
Privacy Glass	.27 / .30	.27 / .30
Privacy with Simulated Divided Lites	.27 / .30	.27 / .30
Clear Glass	.36 / .34	.36 / .34
Clear with Internal Blinds	.37 / .28	.37 / .28
Clear with Simulated Divided Lites	.36 / .34	.36 / .34
Clear with Grilles Between Glass	.36 / .31	.36 / .31
Clear Low-E Glass	.30 / .19	.30 / .19
Clear Low-E with Internal Blinds	.32 / .23	.32 / .23
Clear Low-E with Simulated Divided Lites	.30 / .19	.30 / .19
Clear Low-E with Grilles Between Glass	.30 / .17	.30 / .17

# What is Wafflemat

Wafflemat is a foundation forming system that works by creating a pattern of voids on the underside of concrete foundation slabs that absorbs expanding soil. When concrete is poured over the Waffleboxes, it forms deep beams in two directions that support the structure directly on the soil and creates a very rigid foundation.



**Note: Foundations using the Wafflemat system must be designed by a licensed Civil or Structural engineer experienced in the design of concrete foundations on expansive soil, using soil test data provided by a licensed Geotechnical engineer.**

## About the Waffleboxes

Waffleboxes are 100% recycled plastic boxes over which concrete is poured to form the foundation support beams. They provide an excellent moisture barrier and insulated dead air space under the slab. The voids that are formed by Waffleboxes allow for the increasing volume of expanding soil under the concrete slab, thereby minimizing foundation cracking and movement.





Clean Water Made Easy

[www.cleanwaterstore.com](http://www.cleanwaterstore.com)

## Fleck 7000-SXT MangOX Installation & Start-Up Guide

*For MangOX Filters with PotPerm tank for use with chlorine bleach*

Thank you for purchasing a Clean Water System! With proper installation and a little routine maintenance your system will be providing iron free water for many years.

Please review this start-up guide entirely before beginning to install your system and follow the steps outlined for best results.

MANGOX MEDIA CONTAINS DUST.

USE PAPER MASK AND VENTILATE TO AVOID BREATHING

DUST.



Questions?

Call us toll-free: 1-888-600-5426 or 1-831-462-8500

Email us: [support@cleanwaterstore.com](mailto:support@cleanwaterstore.com)

See more information on our website: [www.cleanwaterstore.com/resources](http://www.cleanwaterstore.com/resources)



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## Packing List by Model

### 1.0 Cubic Foot MangOX:

Quantity	Description
1	Fleck 7000-SXT Backwash Control Valve
1	Pipe connector kit (either 1" or ¾")
1	Fleck 7000-SXT Bypass valve
1	Enpress filter tank with distributor tube installed
1	Media funnel
1	12 lbs Gravel
2	½ cubic foot boxes of MangOX filter media
1	Potassium permanganate black solution tank (remove white pad inside)

### 1.5 Cubic Foot MangOX:

Quantity	Description
1	Fleck 7000-SXT Backwash Control Valve
1	Pipe connector kit (either 1" or ¾")
1	Fleck 7000-SXT Bypass valve
1	Enpress filter tank with distributor tube installed
1	Media Funnel
1	16 lbs Gravel
3	½ cubic foot boxes of MangOX filter media
1	Potassium permanganate black solution tank (remove white pad inside)

### 2.0 Cubic Foot MangOx

Quantity	Description
1	Fleck 7000-SXT Backwash Control Valve
1	Pipe connector kit (either 1" or ¾")
1	Fleck 7000 Bypass valve
1	Enpress filter tank with distributor tube installed
1	Media funnel
1	16 lbs Gravel
4	½ cubic foot boxes of MangOx filter media
1	Potassium permanganate black solution tank (remove white pad inside)

### 2.5 Cubic Foot MangOX:

Quantity	Description
1	Fleck 7000-SXT Backwash Control Valve
1	Pipe connector kit (either 1" or ¾")
1	Fleck 7000-SXT Bypass valve
1	Enpress filter tank with distributor tube installed
1	Media funnel
1	16 lbs Gravel
5	½ cubic foot boxes of MangOX filter media
1	Potassium permanganate black solution tank (remove white pad inside)

## Pre-Installation

1. Review your packing list and make sure you have received all the parts before beginning installation.
2. If you are going to be turning off the water to the house and you have an electric water heater, shut off the power to the water heater before beginning installation in case water heater is accidentally drained.
3. Pick a suitable location for your filter system on a dry level spot where it won't be exposed to freezing temperatures. A minimum of 20 PSI is required. Maximum pressure is 90 PSI.
4. Get all of your plumbing parts together before beginning installation. Installation typically takes 3 to 5 hours. However after installation the MangOX MangOX Filter must be allowed to run through a complete backwash and rinse cycle.
5. After the system is installed and running, your water may be discolored, or full of sediment or rust, particularly if this is older or corroded piping. Typically this clears up over a day or two.

## Best Practices for Piping & Drain Installation

1. See typical installation (see Fig 2). The MangOX filter is installed after the pressure tank. If you are also installing a water softener, install the softener after the MangOX filter.
2. Make sure to follow to connect the in pipe to the Fleck 7000-SXT inlet and the outlet to the outlet (see Fig 2). As you face the Fleck 7000-SXT control from the front, the water enters on the right and exits on the left. From the back (see Fig 2) the water enters on the left. The inlet and outlet are attached to the bypass valve which is marked with arrows as well.
3. Make sure there is a working gate or ball valve before the Fleck 7000-SXT MangOX filter and also one after as shown in the diagram Fig 2. The pressure gauges are optional and perhaps not necessary but a hose bib (which is a faucet that you can attach a garden hose to) is strongly recommended after the MangOX filter before the second ball valve. This makes it easy to rinse your new MangOX filter on start-up and gives you a place to test the water before it enters your household plumbing.
4. If you will be using copper piping, do not sweat the copper pipe directly on to the Fleck 7000-SXT control valve. Avoid heating up the Fleck 7000-SXT control valve plastic with the torch.
5. You do not need unions to install your Fleck 7000-SXT control. If you need to remove it, the Fleck 7000-SXT has quick-release couplings that make it easy to put the MangOX MangOX filter on by-pass and remove the filter system from the piping.
6. The drain line tubing (not supplied) is connected to a drain from the drain outlet using flexible ½" ID tubing. Note that the drain can run up above the Fleck 7000-SXT control and into a drain, it does not have to drain down, as the filter backwashes under line pressure from your well pump. Most plumbing codes require an air-gap connection, so that if your sewer or septic tank backs up, it cannot cross connect with the drain tubing.

## How Your MangOX Filter Works

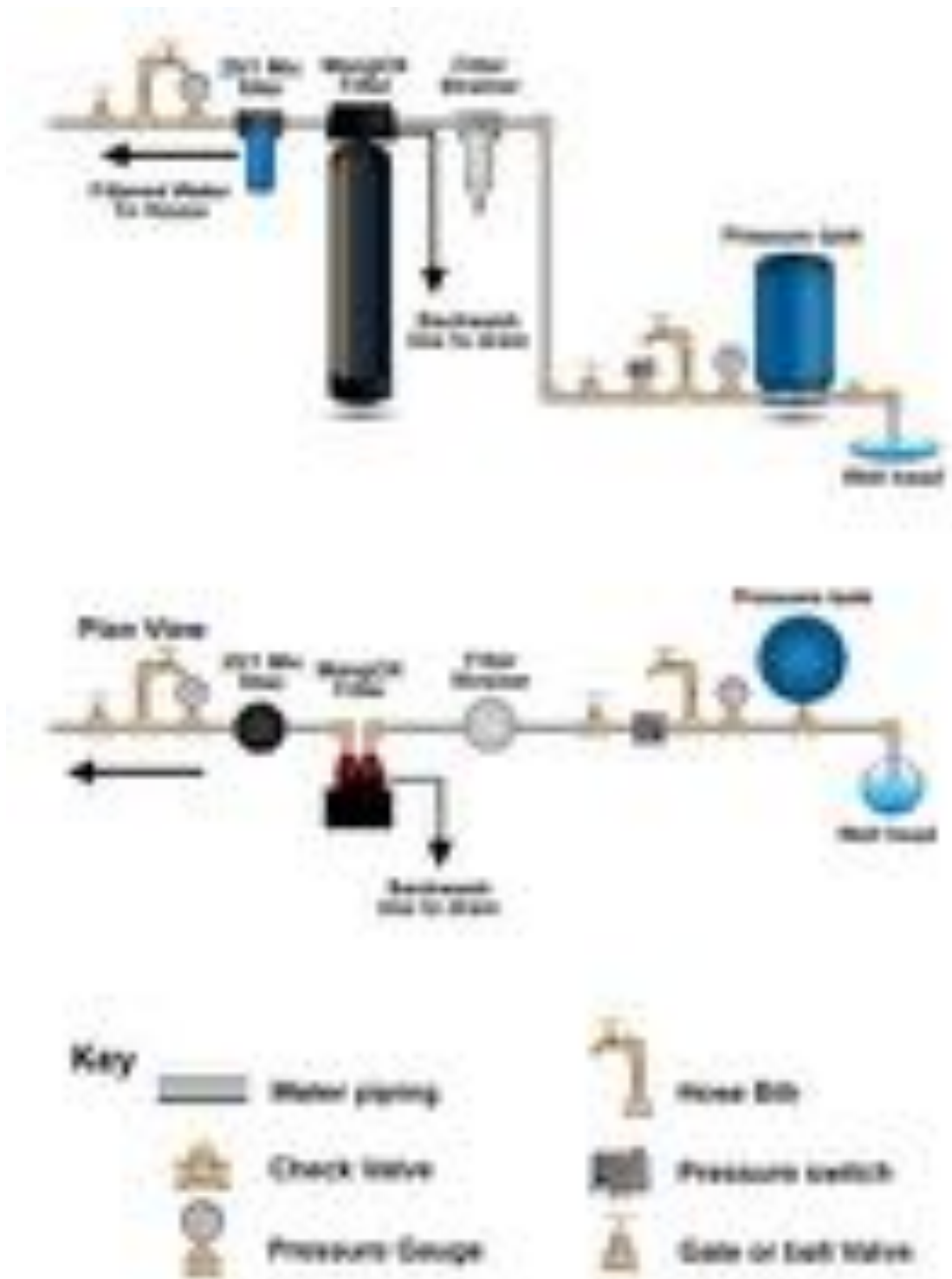
See Fig 1. In your MangOX the water enters the top of the tank (red arrows) and flows down through the media and up the distributor tube (blue arrows). Iron and manganese in the water turns to an oxidized particle upon contact with the media and is trapped in the media. During backwash, the water flow is reversed and water flows down the distributor tube and up through the media, lifting and expanding the MangOX media, and removing all the iron and rust trapped in the filter. During the backwash the MangOX is cleaned by the action of the water flowing through it.

**Fig 1** - MangOX Filter Tank Water Flow



# Fleck 7000 MangOx Chlorine Batch Installation & Startup Guide

**Fig 2** - Typical MangOX Fleck 7000-SXT piping installation with ball valve and hose bib after the filter



**Fig 3:** Fleck 7000 from the rear showing the inlet and outlet end-connector fittings 1" or 1-1/4" NPT in Noryl plastic. Brass end-connectors are also available for connecting to copper tubing.



**Fig 4** Fleck 7000 side view



## Assembly and Installation Instructions

1. Unscrew by hand the entire Fleck 7000-SXT control valve from top of tank if it was shipped screwed on. Place distributor tube in tank if not already inside tank. If not already done, make sure blue cap is on top of distributor tube, or wrap the top of distributor tube with electrical or duct tape. You do not want gravel or MangOX to go down the distributor tube.

**Plug or tape top of distributor tube to prevent media from entering distributor tube when adding media. Remove when finished.**

**Temporary plug**



2. Add filter gravel supplied first, using the funnel sent with the MangOX filter. **NOTE: Be sure not to let any parts of the bag or other foreign materials enter tank when adding media.**
3. Next add MangOX (MANG-OX media). Tank will be approximately 60% full.
4. Remove cap or tape from top of distributor tube.
5. If possible at this point, fill tank completely with water. This will allow the MangOX media to settle and eliminate the need of “purging” the air out of the tank later.
6. **NOTE Regarding Teflon tape and pipe sealants:** It is OK to use Teflon tape and pipe sealant on the water pipe connector threads, where you attach your pipes or plumbing to the Fleck 7000. **DO NOT USE any Teflon tape or pipe joint compound on the tank itself or on the threads where the Fleck 7000 threads into the tank.** Please Note: When installing Fleck 7000 backwash control-timer valve on to the top of the filter tank, do not over-tighten. Tighten with hands, there is no need for a pipe wrench or other wrench.
7. See how the Fleck by-pass is connected (Fig 5). Note that Items 2 in Fig 3 below are the pipe connectors and the other end is what gets attached to the control valve. Items 3 are the red clips that hold the pipe connectors to the by-pass valve. To put system on or off bypass do NOT remove the red clips. Just turn knobs (1). **Fleck 7000 is usually shipped in by-pass position.**
8. Make sure the by-pass valve is in the bypass position when starting the installation. Follow the IN and OUT arrows on the bypass valve and control valve for proper connection of in and out water piping. Leave in the BY-PASS position for now.

**Fig 5** Fleck 7000 By-Pass (1) & Pipe Connectors (2)



9. Lubricate the **by-pass valve o-rings only** on the pipe connectors with some vegetable oil or silicone grease and connect the bypass assembly to the Fleck 7000 control by sliding the bypass valve firmly into the body of the Fleck 7000. Once bypass is in far enough, you will be able to easily insert the red connector clips. **DO NOT USE PETROLEUM GREASE ON ANY PART OF THE FLECK 7000 CONTROL VALVE.**





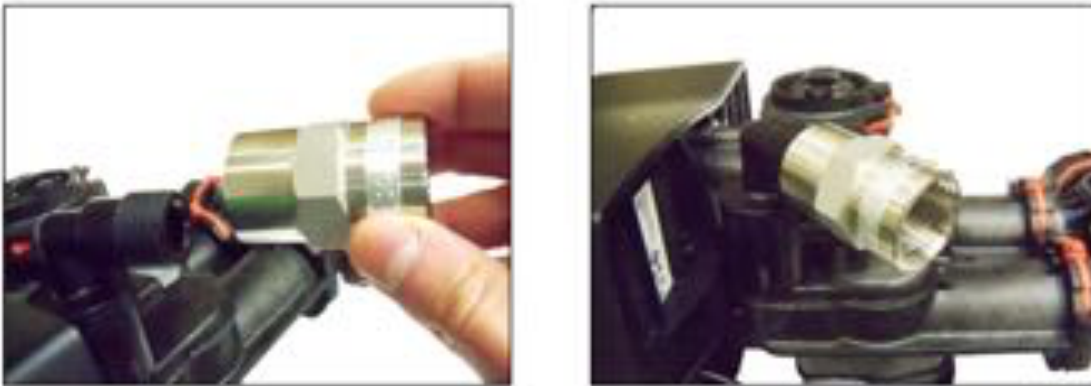
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## Fleck 7000 MangOx Chlorine Batch Installation & Startup Guide

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10. Now install your water pipes to the Fleck 7000-SXT bypass end connectors. Our preferred method is to wrap the pipe threads with 2 or 3 wraps of Teflon tape, then apply a thin coating of white non-hardening Teflon joint compound paste (available at all hardware stores) before attaching the pipe fittings. Make sure inlet is installed to the 'In' pipe connector on the bypass valve and outlet is on the "Out" connector.
11. Connect some flexible tubing from the drain connection on the Fleck 7000-SXT control valve to a suitable drain such as a septic tank or drain to a sewer. It is OK to run the drain line up and over the Fleck 7000-SXT MangOX filter up to 4 feet above the top of the tank. If the drain line will be more than 20 feet, and especially if your system is a 2.0 or 2.5 cubic foot size, use larger diameter tubing such as  $\frac{3}{4}$ " or 1". Note that it is desirable to be able to run the drain line into a bucket in order to test the backwash flow rate in the future. This is why hard piping the drain line is discouraged, however, if you do use hard PVC piping for the drain line, and you are able to remove the hard PVC drain piping and attach flexible tubing should you ever desire for testing purposes, it is OK to use rigid PVC pipe for the drain. Make sure the drain tubing is firmly clamped to the barbed fitting with a hose clamp to prevent leaks.
12. For the 1.5, 2.0 and 2.5 cubic foot and larger systems only: use external drain backwash flow control. If you have a 1.0 cubic foot size, the flow control is internal and there is no external flow control. Wrap some Teflon tape on the black drain fitting, and screw on the flow control. See Figure 6.

**Fig 6 - Stainless Steel Backwash Drain Flow Control (1.5, 2.0 and 2.5 Cubic Foot Systems Only)**



13. Next, connect the solution tank to the Fleck 7000 control valve with the black tubing, provided with the POT-PERM tank.

### Attaching the perm tubing to the perm solution tank & the Fleck 7000 brine valve



14. Begin by sliding the plastic injector nut on to the tubing by putting the tubing through the non-threaded side of the nut. Next, slide the black (or clear) compression ring on to the tubing with the narrower diameter going on first. Then slide the taller, white compression ring on to the tubing with the wider diameter going on first. The two compression rings should lay flush against each other on the tubing. Slide them in to the injector nut and place the tubing into the injector valve. Finally, push the injector nut, which now has the compression rings inside of it, on to the threading of the injector valve and rotate the nut clockwise, screwing it on to the injector valve. Tighten it down to finger tightness. The tubing should be firmly attached and not slide out if pulled on.



15. Repeat step 14 to attach the tubing to the solution tank. This uses the same process, but on the solution tank valve.
16. Remove the felt polypro pad in the POT-PERM tank and discard. (This would be needed if you were using permanganate powder). Add 1 quart of non-perfumed household bleach to the POT-PERM tank and add 2 gallons of water. Note the tank may NOT be used with solid chlorine pellets or powder, but it is OK to use liquid bleach. It is OK to use potassium permanganate powder with the MangOX system, but don't mix chlorine with permanganate... Use one or the other.

**Fig 7 Solution Tank Connection**



17. Set up your Programming. Start by plugging in your Fleck 7000-SXT control valve to an outlet.
18. Enter Master Programming by following these steps: Set the Time Of Day display to 12:01 P.M. Press the Extra Cycle button (to exit Setting Time of Day mode). Then press and hold the Up and Down buttons together until the programming icon replaces the service icon and the Display Format screen appears.
19. First item that displays should read: DF GAL (this stands for US gallons format, if it is different change by using the up or down arrow)
20. Press the extra cycle button one time.
21. 2nd item that displays should read: "St2b". If it is different, use the up or down arrow to reset to St2b which is the correct setting.
22. Press the extra cycle button one time.
23. 3rd item that displays should read: 'tc" (stands for time-clock delayed regeneration)
24. Press the extra cycle button one time.
25. Next item that displays is Unit Capacity. This is not used for the greensand filters and can be skipped. Press Extra Cycle button one time.
26. The 5th item that displays is the frequency of the regeneration each week and should say A – 7 for every 7 days. If you are having some problems with iron bleed-through after the filter has been online for a few days you may want to change it to A - 4. 13.
27. Press the extra cycle button one time. Next item should display: 1 – 10, which refers to 10 minutes of backwash. If your water is extremely high in iron you can change this setting to 12 or 14 minutes to allow some extra backwash time.
28. Press the extra cycle button one time. This is the cycle where solution is sucked in from the POT PERM Solution tank, and if bleach is in the tank, will chlorinate and clean the MangOX Mang-OX media with chlorine bleach. This cycle is 60 minutes long and should display: 2 – 60.

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## Fleck 7000 MangOx Chlorine Batch Installation & Startup Guide

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29. Press the extra cycle button one time. This cycle is a second backwash and will clean the media of any residual chlorine. This cycle should display: 3 – 5.
30. Press the extra cycle button one time. This is a rapid rinse and should display: 4 – 8.
31. Press the extra cycle button one time. This should display: 5 -12. This final cycle adds water to the POT PERM solution tank.
32. Press the extra cycle button one time. It will read: LF60 This refers to 60 hz electrical power which is we have in the U.S. If you are in a different country and use 50hz you can change it here.
33. Press the extra cycle button one time to return to the time of day and in-service position.
34. Now press the Extra Cycle button once more.
35. Set the current time of day: Press and hold either the Up or Down buttons until the programming icon replaces the service icon and the parameter display reads T0. Set the current time of day by pressing the up or down arrows until it is the current time of day. When the desired time is set, press the Extra Cycle button to resume normal operation, or wait 5 seconds and the unit will return to normal operation if no button is pressed.
36. You are done programming!
37. Turn on the water and leave the Fleck 7000 control on bypass and check for leaks. Leave the ball valve after the MangOX filter closed, so water is still off to the house, but connect a garden hose and open up the hose bib after the MangOX filter and allow the water to run for several minutes. This important step clears out any foreign material that may be in the pipes from the piping installation. If you do not have a valve installed after the MangOX filter and you do not have a hose bib, you will need to turn the water on inside the house to let the water run. Use a bathtub or laundry sink or other fixture that does not have an aerator screen.
38. Press the Extra Cycle button for a second or two which will start a manual backwash.
39. Now you can slowly turn the bypass valve to the service position. **You do NOT remove the red clips on the bypass knobs in order to turn the bypass valves from the bypass to the service position.** First open the Inlet Side of the bypass valve. Second slowly open the Outlet Side of the bypass until it is in the full service position. The Fleck 7000 bypass valve knobs are a little stiff, so you can use a screw driver placed in the holes to turn the knobs. Turn the bypass valve knobs in the correct direction which is counter-clockwise as you face the bypass valve knobs.
40. There should be no MangOX media coming out of the drain line, but the water will be black or dirty looking. At this point the MangOX filter will be in a backwash cycle. The backwash takes 10 minutes. If the water slows down or stops during the first 10 minutes of backwash, press the Extra Cycle to move the Fleck 7000-SXT control to the next cycle, the Rinse cycle. Then repeat the backwash and rinse after the rinse cycle is done, by pressing the Extra Cycle again. If you have high water pressure you may need to turn on the water slowly to the MangOX filter at first to prevent some MangOX fines from coming out the backwash. However it is normal for some small amount of fines to come out

during the backwash, although you do not want to see a large amount of media coming out, which would mean you have very high water pressure, or the drain flow control for the Fleck 7000-SXT is missing.

41. If possible verify that the backwash flow rate. You can easily run the drain hose to a bucket and using a watch verify the flow rate in gallons per minute. For example, if the backwash fills a 5 gallon bucket in 30 seconds, you have 10 gallons per minute or 10 GPM.

42. **An adequate backwash is critical to properly clean the MangOX media**

**1.0 Cubic Foot Model: 8 GPM minimum 10 GPM recommended**

**1.5 Cubic Foot Model: 8 GPM minimum 10 GPM recommended**

**2.0 Cubic Foot Model: 10 GPM minimum 12 GPM recommended**

**2.5 Cubic Foot Model: 13.0 GPM minimum 15 GPM recommended**

43. After the backwash cycle is complete, the 7000-SXT control enters the brine cycle, where it will draw in the chlorine bleach solution from the solution tank. This cycle takes 60 minutes.

44. The next cycle is the 2<sup>nd</sup> backwash cycle, then the rinse cycle, and finally it refills the solution tank as the last cycle.

45. After the MangOX filter has gone through a regeneration cycle, it may be necessary to repeat the above procedure once or two more times before the media is completely cleaned out.

### Maintaining Your MangOX Filter System

Once a week, or at least once a month, add 2 cups of household bleach to the auxiliary chlorine (POT PERM) tank. Never mix permanganate and chlorine bleach together or use permanganate, if you are also using bleach. Other than add bleach, there is little or no maintenance required. Every 5 – 10 years the MangOX media can be replaced for best results.

If your water has a lot of hydrogen sulfide odor or iron and manganese levels over 10 ppm, a chlorine feed pump may be needed to inject a small amount of chlorine before the well pressure tank and MangOX filter. In most cases this is not necessary but chlorination (or ozone, or peroxide injection) before the MangOX filter can greatly enhance the ability of the media to remove iron, manganese and hydrogen sulfide.

### Troubleshooting the Fleck 7000-SXT MangOX Filter

One problem that may occur is if you do not have enough backwash flow rate to properly clean the MangOX filter. You can verify the backwash flow rate by running the drain line into a bucket and timing it when the Fleck 7000-SXT is in Cycle 1 or backwash.

In some cases, the Fleck 7000-SXT may not be programmed correctly. See the Fleck 7000-SXT service manual for instructions on how to access the master programming. Your Fleck 7000-SXT should be set for FLtr or Filter mode and have two cycles, backwash and rinse.

If you are still getting some iron through the system, you can adjust the filter to backwash every 1 or 2 days. In some cases if the untreated water is high in hydrogen sulfide, or the iron level is over 5 ppm, a chlorinator system may be needed before the iron filter, in order for the MangOX media to work properly.

## Fleck 7000 Filter System (Non Flow Sensor) Standard Programming Guide

This is for the standard MangOX filter systems that do NOT have the optional flow sensor. If your system is equipped with a flow sensor, see next section Page 13. There are two types of programming, standard USER PROGRAMMING, where you can set the time of day and days between backwash. The second type is MASTER PROGRAMMING where you can set the length of the backwash and rinse cycles, and make sure the control is set to the correct settings for your type of MangOX filter:

### User Programming

1. Press the Up and Down buttons for five seconds while in service, and the time of day is NOT set to 12:01 PM.
2. **Day Override (Display Code DO): Set to 1 to 14** based on your particular filter system requirements. Use the Up or Down arrows to change the setting. This is the critical setting that allows your filter to backwash every fixed number of days. See your Installation and Start-up Guide for more information or contact us for suggestions for this setting. Press the Extra Cycle button.
3. **Regeneration Time (Display Code RT): Set to 2:00 am** generally or sometime when no water is being used, and no other filter or softener is likely to be in a regeneration cycle. Press the Extra Cycle button.
4. Press the Extra Cycle button to end User Programming Mode.

**The timer will exit Diagnostic Mode after 60 seconds if no buttons are pressed.  
Press the Extra Cycle button to exit Diagnostic Mode at any time.**

### Master Programming

**Perform a Master Reset:** Unplug the Fleck 7000 from the electrical wall outlet. Hold the Extra Cycle button while plugging in and powering up the unit. This resets all of the parameters in the unit.

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# Fleck 7000 MangOx Chlorine Batch Installation & Startup Guide

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**Enter Master Programming Mode:** Set the Time Of Day display to **12:01 P.M.** Press the Extra Cycle button (to exit Setting Time of Day mode). Then press and hold the Up and Down buttons together until the programming icon replaces the service icon and the Display Format screen appears.

Note, that when the Master Programming Mode is entered, all available option setting displays may be viewed and set as needed. Depending on current option settings, some parameters cannot be viewed or set.

1. **Display Format (Display Code DF): Set display to GAL** (stands for U.S. Gallons), or change to Liters or Cubic Meters if out of the U.S. Press the Extra Cycle button to go to the next step.
2. **Valve Type (Display code VT): Set to "St2b"**. If it is different, use the up or down arrow to reset to dF which is the correct setting. Press the extra cycle button one time
3. **Control Type (Display Code CT): Set to TC. Refers to Time Clock type, which it is.** Press the Extra Cycle button.
4. **Day Override (Display Code DO): Set to 7 or other** based on your particular filter system requirements. Use the Up or Down arrows to change the setting. This is the critical setting that allows your filter to backwash every fixed number of days. See your Installation and Start-up Guide for more information or contact us for suggestions for this setting. Press the Extra Cycle button.
5. **Regeneration Time: (Display Code RT): Set to 2:00 am** generally or sometime when no water is being used, and no other filter or softener is likely to be in a regeneration cycle. Press the Extra Cycle button.
6. BW – Stands for BackWash length in minutes. 1 – 10 refers to 10 minutes of backwash. If your water is extremely high in iron you can change this setting to 12 or 14 minutes to allow some extra backwash time, but 10 minutes is a good setting. Press the extra cycle button one time
7. BD – stands for Brine Draw. This is the cycle where solution is sucked in from the POT PERM Solution tank, and if bleach is in the tank, will chlorinate and clean the filter media with chlorine bleach. This cycle is 60 minutes long and should display: 2 – 60. Press the extra cycle button one time.
8. BW - This cycle is a second backwash and will clean the media of any residual chlorine. This cycle should display: 3 – 5. Press the extra cycle button one time.
9. RR – This is the Rapid Rinse cycle and should display: 4 – 8. Press the extra cycle button one time
10. BF - This is the Brine Fill, where the solution tank is refilled with water to make solution for the next cycle. . This should display: 5 -12. This mean it the cycle will last for 12 minutes. This final cycle adds water to the POT PERM solution tank. Press the extra cycle button one time.

11. It will read: LF60 This refers to 60 hz electrical power which is we have in the U.S. If you are in a different country and use 50hz you can change it here.
12. Press the extra cycle button one time to return to the time of day and in-service position.

## Fleck 7000 Metered Flow Sensor Filter System Programming Guide

**This is for Fleck 7000 backwash filters that have are equipped with the optional flow sensor.** There are two types of programming, standard USER PROGRAMMING, where you can set the time of day and gallons of water used and/or days between backwash. The second type is MASTER PROGRAMMING where you can set the length of the backwash and rinse cycles, and make sure the control is set to the correct settings for your type of MangOX filter:

### User Programming

You can go into User Programming and make adjustments if you want to the flow meter setting or Day Override setting. Use the User Programming to avoid having to go through the Master Programming for quick changes to these settings below:

1. Press the Up and Down buttons for five seconds while in service, and the time of day is NOT set to 12:01 PM.
2. **Day Override (Display Code DO): Set to 1 to 14** based on your particular filter system requirements. Use the Up or Down arrows to change the setting. This is the critical setting that allows your filter to backwash every fixed number of days. See your Installation and Start-up Guide for more information or contact us for suggestions for this setting. Press the Extra Cycle button.
3. **Regeneration Time (Display Code RT): Set to 2:00 am** generally or sometime when no water is being used, and no other filter or softener is likely to be in a regeneration cycle. Press the Extra Cycle button.
4. **Feed Water Hardness:** Use this setting to adjust the feed water hardness. Set for 20 for most applications. Press the Extra Cycle button. Note that actual 'Feed Water Hardness' is irrelevant to filter systems, since hardness is being removed. Rather this is just how the



5. **Fixed Reserve Capacity (Display Code RC): Set to 0.** No fixed reserve capacity is required for filters. Press the Extra Cycle button.
6. Press the Extra Cycle button to end User Programming Mode

## Master Programming Mode (for Flow Sensor type)

**Perform a Master Reset:** Unplug the Fleck 7000 from the electrical wall outlet. Hold the Extra Cycle button while plugging in and powering up the unit. This resets all of the parameters in the unit.

**Enter Master Programming Mode:** Set the Time Of Day display to **12:01 P.M.** Press the Extra Cycle button (to exit Setting Time of Day mode). Then press and hold the Up and Down buttons together until the programming icon replaces the service icon and the Display Format screen appears.

Note, that when the Master Programming Mode is entered, all available option setting displays may be viewed and set as needed. Depending on current option settings, some parameters cannot be viewed.

1. **Display Format (Display Code DF): Set display to GAL** (stands for U.S. Gallons), or change to Liters or Cubic Meters if out of the U.S. Press the Extra Cycle button to go to the next step.
2. **Valve Type (Display code VT): Set to DF2b.** This means it is set for standard Downflow mode, similar to a water softener so we can take advantage of the flow meter in this Fleck 7000 5-cycle valve, but we won't be using all the 5 cycles that the water softeners use. Press the Extra Cycle button to go to the next step.
3. **Control Type (Display Code CT): Set to Fd. This is the Meter Delayed option.** This tells the Fleck 7000 control to meter or keep track of the amount of water used, but then wait until the pre-set regeneration (backwash and rinse cycles) time, typically in the middle of the night. Press the Extra Cycle button.
4. **Unit Capacity (Display Code C): Set to 30.** Use this display to set the Unit Capacity. This setting specifies the treatment capacity of the unit. Since we are not using this for softening, where the capacity of the softening resin can be accurately defined, 30 is a number we can start with. This can be set higher or lower later which will allow the meter to backwash more or less frequently based on the capacity. Press the Extra Cycle button.
5. **Feedwater Hardness (Display Code H): Set to 10 to 20.** This is the feedwater hardness, that allows the meter to calculate the number of gallons between backwashes. It is a little meaningless for

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## Fleck 7000 MangOx Chlorine Batch Installation & Startup Guide

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filter valves, and is designed for water softener which remove calcium hardness in grains per gallons. However, if you set it to 20 , to start with, you will later see the number of gallons between cycles when you are finished programming based on your size of system. It is not that critical, because you want the filter to backwash once a week or every few days based on the type of filter system you have, by setting the Day OverRide.

6. **Reserve Selection (Display Code RS): Set to SF.** It is not relevant to filter control valves.
  
7. **Safety Factory (Display Code SF):** Set to 0.
  
8. **Day Override (Display Code DO): Set to 1 to 14** based on your particular filter system requirements. Use the Up or Down arrows to change the setting. This is the critical setting that allows your filter to backwash every fixed number of days. See your Installation and Start-up Guide for more information or contact us for suggestions for this setting. Press the Extra Cycle button.
  
9. **Regeneration Time: (Display Code RT): Set to 2:00 am** generally or sometime when no water is being used, and no other filter or softener is likely to be in a regeneration cycle. Press the Extra Cycle button.
  
10. **Regeneration Cycle Step Times:** Use this display to set the various minutes of each cycle. Some of the cycles will be set to 0. **Do not set any of the cycles to Off.** Use the Up or Down arrows to change the setting to the desired setting. Press the Extra Cycle button to accept the setting and move to the next parameter.
  - a. **B1 – Backwash: Set to 8 to 10 minutes.**
  - b. **BD - Brine Draw: Set to 0.**
  - c. **B2 - 2<sup>nd</sup> Backwash: Set to 0 for most applications.**
  - d. **RR - Rapid Rinse: Set to 6 to 8 minutes**
  - e. **BF - Brine Fill: Set to 0.**
  - f. **SV - Service (meaning it is in Service or filtering mode) no setting is needed for this.**  
Press the Extra Cycle button
  
11. **Flow Meter Type (Display Code FM):** Set to t1.2 (which is standard Fleck 7000 meter). Press the Extra Cycle button.
  
12. Press the Extra Cycle button to save all settings and exit Master Programming Mode. Note that the control valve may take several minutes to re-home and re-set after the Master Programming steps, do not unplug the control during this process.

## OWNER'S GUIDE

for the following

# Campbell *Water Filters*

1PS Sediment **10**

1PS-B Sediment **10**

1PS-B1 Sediment **10**

2PS Sediment

2PS-B Sediment

2PS-B1 Sediment

1PC Taste & Odor

1PC-B Taste & Odor

1PC-B1 Taste & Odor

2PC Taste & Odor

2PC-B Taste & Odor

2PC-B1 Taste & Odor

1PP Sediment **10**

1PP-B Sediment **10**

1PP-B1 Sediment **10**

2PP Sediment **10**

2PP-B Sediment **10**

2PP-B1 Sediment **10**

SEE CAUTIONS ON BACK COVER

## Whole House (Main Line) Connection Installation

Parts needed from:



You'll also need these:

• Sawhorses with the notch back or  
• Tube Cutter

• Adjustable wrench or pipe to fit  
over a 1-1/2" nut



1. Choose a location for the filter as close as possible to the main water line shutoff valve. Allow at least 1' clearance above and below filter housing.

2. Turn off main water line, then open nearest faucet to relieve pressure.

3. Use the Cutting Template (3-5/16" length) included in installation kit to mark the section of water pipe where the filter will be installed. Cut and remove that section of pipe with a fine-tooth hacksaw or Tube Cutter. File pipe ends with emery cloth or fine-tooth file.

4. For 1/2" pipe, slip Lock Nut (B) and Rubber Ferrules (C) onto the cut ends of the pipe. For 3/4" pipe, use Lock Nuts (B) and Brass Ferrules (C).

5. Wrap 3/4" ends of Brass Valves with Teflon Tape (E), then thread Valves into "M" and "O" ports in Filter Housing. Do not overtighten. Hand tight plus 1/2 turn should be sufficient.

6. Position Filter between cut ends of pipe, making sure that the "M" port of the Filter Housing is closest to the water source (water main shutoff valve).

7. Slide Lock Nuts over Ferrules and thread onto Brass Valves until tight (approx. 1-1/2 turns). Do not overtighten.

8. If your electrical system is grounded to your water pipes, install copper wire (not included) across Filter (see manual kit).

9. Close Brass Valves, then turn on water slowly at main shutoff valve, checking for leaks. Open Brass Valves. Tighten if leaks occur.

10. Run approximately 2 gallons of water through the filter before using it. **REMEMBER:** Periodically check connections for leaks. Tighten as needed.

## Cartridge Changing Instructions



### When do I change cartridges?

- When the water pressure becomes noticeably reduced.
- When there is a change in the taste of the water.
- When small particles appear in the water, or
- After 3 months of use.

### How do I change cartridges?

1. Whole House Installations: Close "IN" and "OUT" valves. Under Sink Installations: Turn off shut-off valve and open cold water faucet.
2. Depress pressure release button to relieve pressure ("E" model).
3. Loosen lock with 15mm wrench (included with filter).
4. Remove used cartridge (remove both in 2-cartridge models) and replace with new cartridge(s). (See Cartridge Replacement Guide below).
5. Check for proper position of locking ring in bowl. Lubricate with petroleum jelly. Retighten if worn.
6. Hand tighten bowl, being careful not to overtighten.
7. Turn on water slowly, checking for leaks. Hand tighten as necessary.

### CARTRIDGE PARTS & PARTS LIST

FILTER	WATER PROBLEM	REPLACEMENT PARTS
WPL, WPL-B, or WPL-B1	Sediment	One 100
ZPL, ZPL-B, or ZPL-B1	Sediment	Two 100
IPC, IPC-B, or IPC-B1	Sediment/Taste & Odor	One 100
ZPC, ZPC-B, or ZPC-B1	Sediment/Taste & Odor	Two 100

Other hollowwell components available from Campbell.

### CAUTIONS:

- Make certain that the filter system and installation comply with all applicable state and local regulations.
- Do not install where water temperature exceeds 100°F - the cold water tap.
- Do not install where water pressure exceeds 120 psi.
- Reduce flow when filtering.
- Avoid installing where filter will be exposed to direct sunlight.
- Do not use with water that is microbiologically unstable or otherwise quality deficient immediately before or after the system.
- Avoid exposure of filter to health hazard making waste connections.

NSF

The Campbell 10, 100 & 1000 are NSF  
certified for NSF 42, NSF 53, NSF 55 &  
NSF 58. These filters have been  
tested and certified by NSF International  
against NSF/ANSI Standard 42  
for Lead and NSF/ANSI Standard 53  
for Chlorine and Taste.

Maximum Flow: 10 gpm  
Maximum Water Temperature: 100°F  
Flow: 1000: 10 gpm for 1 year  
Flow: 100: 10 gpm for 1 year  
Flow: 10: 10 gpm for 1 year  
Flow: 1000: 10 gpm for 1 year  
Flow: 100: 10 gpm for 1 year  
Flow: 10: 10 gpm for 1 year

For more information, contact:

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Dochowville, PA 19520  
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Web: [www.campbellmfg.com](http://www.campbellmfg.com)

Product 11102



 Campbell

# CLEARWAVE® WATER CONDITIONER

MODEL: CW-125



The ClearWave® Water Conditioner is the solution to scale build-up due to hard water. The ClearWave installs easily and virtually eliminates scale build-up in pipes, faucets, and appliances.

**READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY BEFORE PROCEEDING WITH THE INSTALLATION.**

Please retain these instructions after installation.

Installed By: \_\_\_\_\_ Phone: \_\_\_\_\_ Installation Date: \_\_\_\_\_



**FIELD CONTROLS**

[www.fieldcontrols.com](http://www.fieldcontrols.com)

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### **BEFORE YOU INSTALL**

Please read the following information.

#### **CUSTOMER SATISFACTION AND WARRANTY REGISTRATION**

The ClearWave® unit is guaranteed for 18 months from the date of the original purchase against defects in workmanship and material. Warranty details can be found at the end of the manual. To activate your warranty please take a minute to fill out and mail the registration form located at the back of this manual to our warranty department today. This will allow us to better assist you if you have any questions about the ClearWave water conditioning system. It also allows us to keep the ClearWave system users informed on water quality issues and new product announcements.

#### **TESTING FOR HARDNESS AND IRON LEVELS**

The length of time required to alter the characteristics of the lime scale is dependent on the mineral makeup of the water being treated. The mineral makeup of the water can influence the operation of the ClearWave's electrical field. Before installing any water conditioning system, it is very important to know the type and concentration of minerals in the water being treated. Contact your local health department or county extension service to locate a water testing service near you.

#### **Iron Concentration**

A high concentration of iron (soluble and insoluble) causes a disruption and weakening of the ClearWave's electrical field, reducing its effectiveness on scale reduction. Under these conditions an iron removal system is required to filter out the iron prior to the ClearWave. We recommend an iron removal system for total iron levels above 0.3 ppm (parts per million).

#### **Water Hardness**

Definition of hardness:

(Taken from the 1992 edition of Standard Methods for the Examination of Water and Wastewater)

"Originally, water hardness was understood to be a measure of the capacity of water to precipitate soap. Soap is precipitated chiefly by the calcium and magnesium ions present. Other polyvalent cations also may



precipitate soap, but they often are in complex forms, frequently with organic constituents, and their role in water hardness may be minimal and difficult to define. In conformity with current practice, total hardness is defined as the sum of the calcium and magnesium concentrations, both expressed as calcium carbonate, in milligrams per liter.”

The current practice of determining water hardness is the measurement of the concentration of calcium and magnesium in the water. The traditional water softener removes the calcium and magnesium from the water through a process called ion exchange, which will show a change in hardness using the current practice for measuring water hardness. Since the ClearWave does not remove any calcium or magnesium ions from the water, testing the water before and after the installation of the ClearWave will not show any change. The best method of evaluation is to monitor the effects the ClearWave has on scale forming areas such as: the effects on humidifier media pad scaling, showerhead scaling, and the amount of soap needed to do the laundry.

The degree of water hardness in the table below (according to the Water Quality Association) will allow you to determine what type of water hardness you have after you receive your water test data.

If your water falls under the description of Soft or Slightly Hard the effects of the ClearWave on the scale (if any) will not be noticeable. Any water problem you have is probably not caused by calcium or magnesium. The maximum hardness level the ClearWave will effectively work on is 425 ppm or 25 gpg. Above these levels, the ClearWave should be used in conjunction with a traditional ion exchange water softener to remove hardness and condition the water. This allows you to minimize the salt used to remove the hardness and maintain the cost saving benefits of the ClearWave water-conditioning system.

<b>DESCRIPTION OF WATER HARDNESS</b>	<b>PARTS PER MILLION (PPM) OF CALCIUM CARBONATE EQUIVALENT</b>	<b>GRAINS PER GALLON (GPG) OF CALCIUM CARBONATE EQUIVALENT</b>
Soft	Less than 17.1	Less than 1.0
Slightly Hard	17.1 to 60	1.0 to 3.5
Moderately Hard	60 to 120	3.5 to 7.0
Hard	120 to 180	7.0 to 10.5
Very Hard	180 and above	10.5 and above

## **OPERATION TIMETABLE**

The following timetable should be used to evaluate the operation of the ClearWave during the first 90 days.

### **DAY 1:**

The ClearWave action immediately starts to loosen existing scale in both the hot and cold water systems. One should find soap lathers more easily.

### **DAY 5 AND ONWARDS:**

Scale begins to break down and come off water heater elements (immersion heaters) and tanks. Most particles are microscopic and will flow through your water system, but some small particles may be seen in the water coming from the hot water tap.

### **DAY 10 TO 16:**

It should be noticeably easier to wipe clean ceramic, plastic, glass, and metal surfaces. By now the quantity of bath soap, dish soap, laundry detergent, and laundry softening agents can be reduced. Scale should have loosened on faucets, showerheads, and frequently used appliances that boil water (such as coffee makers).

### **DAY 16 AND ONWARDS:**

Scale should continue to loosen from faucets, showerheads, and pipes. With the continuing break down and reduction of scale from the heating surfaces of water heaters, water should heat up quicker using less energy to achieve the desired temperature.

### **AFTER 1 TO 2 MONTHS:**

Any scaly crust or stains in toilets or under faucets should be significantly reduced. No new stains or crust should form. Mold that attaches to scale will begin to disappear from shower curtains and, once cleaned, should not reappear. Depending on the water hardness in the area, the full effects can take up to 12 weeks, especially if the system has been heavily scaled up over many years.

**Please note:** The ClearWave is NOT a water softener and doesn't not REMOVE calcium or magnesium from the water.

## **INSTALLATION**

### **WHERE TO INSTALL THE CLEARWAVE**

The ClearWave coils should be mounted on the water supply pipe as it enters the building, before the piping branches off to supply the water heater and any cold water taps. This allows the ClearWave to condition all of the water supplied to the building. The ClearWave should be mounted after any water meter or grounding cable attached to the water piping system. Install the ClearWave at least ten feet from any radio, television, or cordless telephone to eliminate any possible interference.

### **HOW TO INSTALL THE CLEARWAVE**

#### **Mounting the unit to the pipe**

Mount the ClearWave onto the pipe by routing a wire tie through the two holes on each end of ClearWave housing base. (See Figure 1) The performance of the ClearWave is not affected by the direction or orientation. The unit may be mounted horizontally, vertically, or diagonally. The ClearWave can be used effectively on any type of water pipe; galvanized, copper, or plastic.

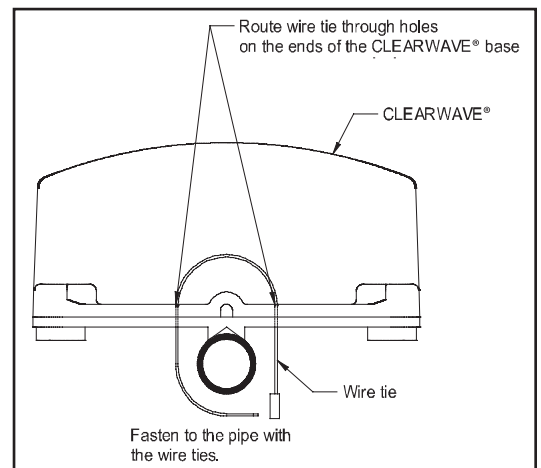


Figure 1

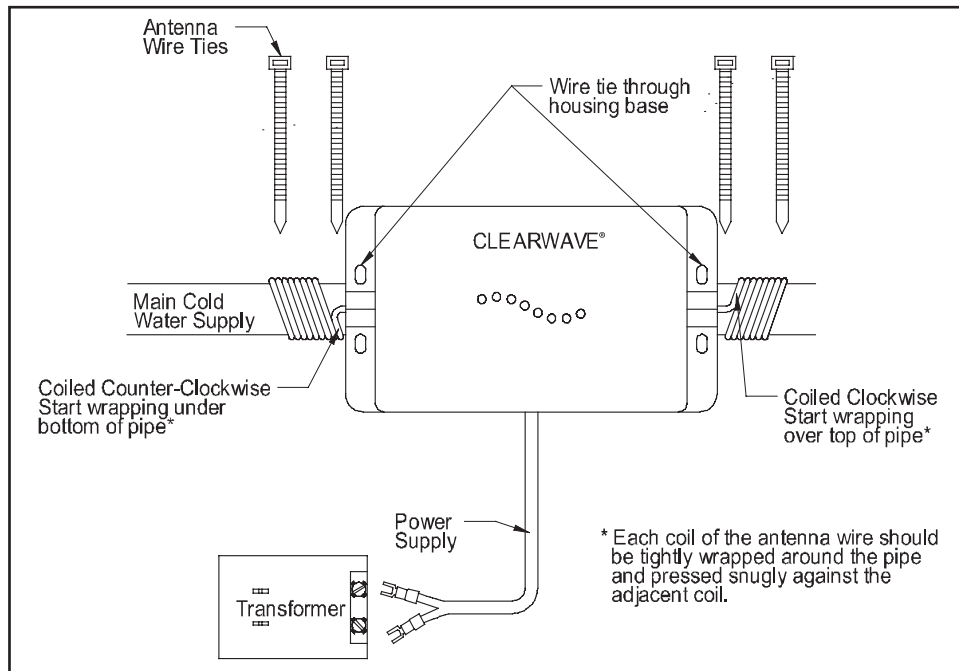


Figure 2

### Properly wrapping the antennae

The antennae wrap around the water pipe on each end of the ClearWave. (See Figure 2) A minimum of seven fully wrapped coils of the antenna wire, with each coil wrapped tightly against the pipe and pressed snugly against each other, is required for best results. The operation of the ClearWave and the antenna installation is not based on direction of water flow, but one antenna **MUST** be wrapped in a clockwise direction and the other wrapped in a counter-clockwise direction.

Wrap the right antenna clockwise (over the top of the pipe first), keeping the antenna wire tight against the pipe and the preceding coil. Secure the end of the right antenna wire to the water pipe with a wire tie. (See Figure 3) Wrap the left antenna counter-clockwise (under the bottom of the pipe first), keeping the antenna wire tight against the pipe and the preceding coil. Secure the end of the left antenna wire to the water pipe with a wire tie.

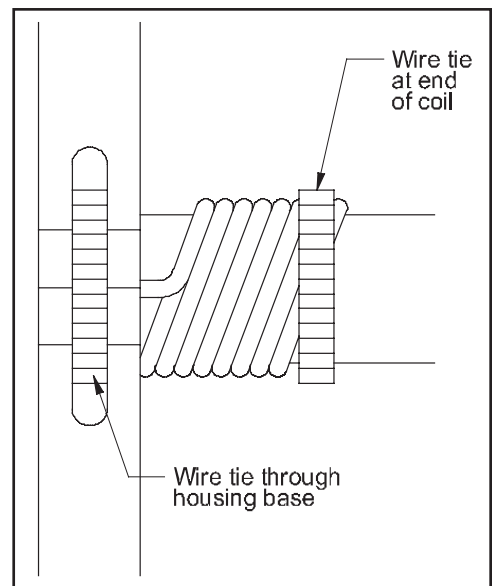


Figure 3

### Connecting to power supply

Insert the power supply terminals onto the power supply screw terminals and fasten securely. Plug the power supply into a standard electrical wall outlet. (See Figure 2) When energized, the ClearWave modulation indicator lights start flashing sequentially indicating that the ClearWave is functioning properly.

## **TROUBLESHOOTING**

### **POWER SURGES AND LOCK UPS**

Your ClearWave water conditioner is designed to operate continuously, providing years of improved water quality. If your water quality seems to have changed check the items below to determine that your ClearWave unit is functioning correctly. To reset the ClearWave, simply unplug the unit, wait 1 minute and reconnect the power supply. If your home is in an area where these types of problems occur, install a surge protector on the electrical outlet that the ClearWave transformer is plugged into.

### **LOOSE ANTENNA WIRES**

The antenna wires must be held tightly against the pipe and the coils must be pressed snugly against each other to transfer the energy into the water. If the antenna wires are loose, tighten them and also retighten the wire ties. Be sure that the antennae are wrapped in the proper direction.

(See Figure 2)

## **FREQUENTLY ASKED QUESTIONS**

### **HOW IT WORKS**

#### **Q. Will the ClearWave reduce the amount of calcium in my water?**

**A.** No. The ClearWave does not add or take away anything from your water. If you perform a water hardness test, you will notice no change in the calcium content (hardness).

#### **Q. Is the ClearWave effective in extremely hard water conditions?**

**A.** The ClearWave works effectively in water with hardness as high as 25 grains or 425 ppm. If your water is harder than this, we recommend you use a traditional salt softener in conjunction with the ClearWave. Mount the ClearWave prior to the softener for best results. **USAGE**

#### **Q. How many ClearWave units do I need for my home and what is the maximum pipe size it can be used on?**

**A.** One ClearWave will satisfy the requirements of most homes, since most homes have water mains of 1 inch or less. If your main water supply is larger than 1" but less than 1.5", then two ClearWaves installed side by side are recommended.

#### **Q. Will the ClearWave affect my water pressure?**

**A.** Many customers have noticed a substantial improvement in water flow due to the de-scaling effect of the plumbing system. This is especially true with customers who have well pumps, where pressure changes are more significant and noticeable.

#### **Q. Does the ClearWave affect iron particles in water?**

**A.** No. If iron content is high enough (above .30 ppm), then an iron filter is recommended prior to the ClearWave. One solution is the Automatic Backwash Iron/Sulfur filter sold by McMaster-Carr. Their phone number is 1-404-346-7000 and ask for part number 9843K13. It sells for about \$325.

### **PLACEMENT**

#### **Q. Is the performance of the ClearWave affected by the direction of the water flow?**

**A.** No.

#### **Q. Where, physically, do I install the ClearWave?**

**A.** On the main incoming water line before it splits to the water heater or other pipe branches; preferably indoors. If you must install the unit outside, make sure you mount the ClearWave in a waterproof enclosure.

**Q. Can the ClearWave be mounted vertically?**

**A.** Yes. It can be mounted horizontally, vertically, even diagonally. It is not affected by orientation.

**Q. Can the ClearWave be used on plastic pipe?**

**A.** Yes. The ClearWave can be used effectively on any type of water pipe; galvanized, copper or plastic.

**Q. Does the ClearWave need to be installed on the pipe?**

**A.** No. If the unit cannot be installed directly on the pipe, then we suggest mounting the unit on the wall and wrapping the antennae around the pipe. All that needs to touch the pipe is the antennae. Be sure to obtain the minimum of seven wraps per antenna.

**Q. When I move, can I take the ClearWave with me?**

**A.** Yes. Since there is no plumbing involved with the installation of the ClearWave, removal is as easy as unwrapping the antennae and unplugging the unit.

# Aqua-Pure®

Spec # \_\_\_\_\_

Quantity \_\_\_\_\_

## Models:

**AP430SS**

**Scale Inhibition System**

## Applications:

- Scale

## At a Glance:

- Unrestricted flow designed with 3/4" inlet/outlet connections
- Ideal for any size home and light commercial applications
- 304 Stainless Steel Head

Rated for  
up to **10**  
GPM Flow  
Rate



AP430SS

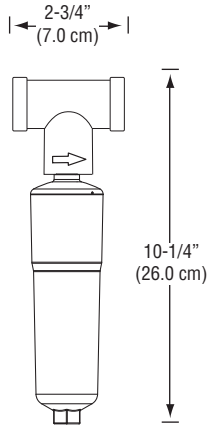
## Product Benefits:

- 3/4" inlet and outlet connections for easy installation and high flow rates
- Designed for scale and corrosion inhibition to help extend life of hot water systems, pipes and downstream plumbing fixtures
- Multi-application design effective on all types of hot water systems - boilers, tankless, and tank-type (gas or electric)
- Manufactured from FDA CFR-21 compliant materials

## Product Specifications:

Model No. (Part No.)	Inlet/ Outlet Size	Dimensions		Approx. Weight	Flow Rate	Max. Water Temp.	Max. Water Pressure	Std. Repl. Ctg. No.	Repl. Cart. Qty.
		Height	Diameter						
AP430SS (AP430-10)	3/4" NPT	10 1/4" (26.0)	2 3/4" (7.0 cm)	2.3 lbs. (1.0 kg)	10 gpm (37.9 lpm)	100 °F (37.8 °C)	125 psi (862 kPa)	AP431	1

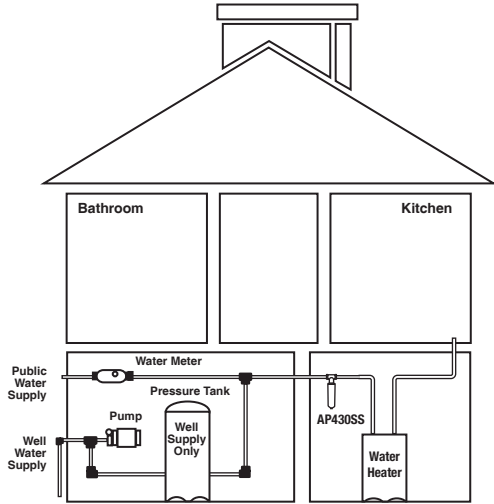
# Aqua-Pure®



AP430SS

## Easy Installation:

**CAUTION:** Diagram shown is for reference purposes only. Read installation and operation manual prior to installing the unit.



Spec # \_\_\_\_\_

Quantity \_\_\_\_\_

Model Number \_\_\_\_\_

Part Number \_\_\_\_\_

## Specifications:

- 3/4" NPT inlet and outlet ports
- System is a single vessel design
- System is manufactured from FDA CFR-21 compliant materials
- System has a maximum operating pressure of 125 psi (862 kPa) and operating temperature of 100 °F (37.8 °C)
- System to be installed on cold water line feeding the water heater
- 304 Stainless Steel Head

### Replacement Cartridge Options

Sediment Model	Load	Nominal Micron Rating	Application			Max. Flow Rate
			Sediment/ Rust	Chlorine Taste & Odor	Scale	
AP431	N/A	N/A			•	10 gpm (37.9 lpm)

### ⚠ WARNING:

**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.

### CAUTION:

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

- Read and follow Use Instructions before installation and use of this system.
- The disposable cartridge must be replaced every 6 months or sooner.

3M Purification Inc. recommends regularly scheduled maintenance and replacement of the filter cartridge(s) in order for the product to perform as advertised/sold.

**Limited Warranty** 3M Purification Inc. warrants the stainless steel head (excluding disposable cartridge(s)) to be free from defects in material and workmanship for twenty-five (25) years from the date of purchase. The disposable cartridge is warranted from defects in material and workmanship for a period of one (1) year from the date of purchase. This warranty does not cover failures resulting from abuse, misuse, alteration or damage not caused by 3M Purification Inc. or failure to follow installation and use instructions. No warranty is given as to the service life of any cartridge as it will vary with local water conditions and water consumption. **3M PURIFICATION INC. 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, CUSTOMER OR USAGE OF TRADE.** If the Product fails to satisfy this Limited Warranty during the warranty period, 3M Purification Inc. will replace the Product or refund your Product purchase price. This warranty does not cover labor. **The remedy stated in this paragraph is Customer's sole remedy and 3M Purification Inc.'s exclusive obligation. For additional information, see the entire Limited Warranty located in the product Installation and Operating Instruction Manual.**

**Limitation of Liability.** 3M Purification Inc. will not be liable for any loss or damage arising from this 3M Purification Inc. product, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability. Some states and countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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70-0201-9244-2  
REV 0411

# THE Challenger

## Combination Boiler <sup>and/or</sup> Water Heater User's Information Manual



**! WARNING**

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

### FOR YOUR SAFETY

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS**
  - Do not try to light any appliance
  - Do not touch any electrical switch; do not use any phone in your building.
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.



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### Definitions

The following terms are used throughout this manual to bring attention to the presence of potential hazards or important information concerning the product.

 **DANGER**

Indicates the presence of a hazardous situation which, if ignored, will result in death, serious injury or substantial property damage.

 **WARNING**

Indicates a potentially hazardous situation which, if ignored, can result in death, serious injury or substantial property damage.

 **CAUTION**

Indicates a potentially hazardous situation which, if ignored, may result in minor injury or property damage.

**NOTICE**

Indicates special instructions on installation, operation or maintenance, which are important to equipment but not related to personal injury hazards.

**BEST PRACTICE**

Indicates recommendations made by Triangle Tube for the installers which will help to ensure optimum operation and longevity of the equipment.

**NOTICE**

Triangle Tube reserves the right to modify the technical specifications and components of its products without prior notice.

**PRODUCT & SAFETY INFORMATION**



**HOMEOWNER:** The CHALLENGER installation manual is for use only by a qualified heating installer / service technician. Refer to this User's Information Manual for your reference. Failure to comply could result in severe personal injury, death or substantial property damage.



**TECHNICIAN:** When calling or writing about the CHALLENGER, please have the appliance model and serial number available.

**STOP! READ BEFORE SERVICING**



Failure to adhere to the guidelines on this page can result in severe personal injury, death or substantial property damage.

**Service and Maintenance**

- To avoid electric shock, disconnect electrical supply before performing service or maintenance.
- Allow the appliance to cool down prior to servicing to avoid severe burns.
- The CHALLENGER must be maintained as outlined in this manual and have at least annual service performed by a qualified service technician to ensure appliance / system reliability.

**CHALLENGER Operation**

- Do not block flow of combustion air to the CHALLENGER. If the combustion air blockage is easily accessible and removable, then remove it. If blockage is not obvious or cannot be removed, have the appliance and system checked by a qualified service technician.
- Do not allow contaminated air to enter the appliance's combustion air inlet. See page 2 for details.
- The CHALLENGER is equipped with a low water cut off device. The CH (central heating) system piping must be filled and pressurized to 12 psig [0.8 bar] prior to startup. The appliance will shut down if the pressure falls below 7 psig [0.5 bar].
- Should overheating occur or the gas supply fail to shut off, DO NOT turn OFF or disconnect the electrical supply to the pump. Instead, shut off the gas supply at a location external to the appliance.
- Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control, which has been under water.

**Appliance & System Water**

- Have the appliance and system water chemistry checked at least annually by a qualified service technician.
- Do not use petroleum-based cleaning or sealing compounds in the appliance or system. Gaskets and seals in the system may be damaged. This can result in substantial property damage.
- Do not use any product not specifically designed for hydronic heating systems. Serious damage to the appliance, piping system, personnel and / or property may result.
- Continual fresh makeup water will reduce the life of the CHALLENGER. Addition of oxygen can cause internal corrosion in the system components. All leaks in the piping system must be repaired at once to prevent makeup water.
- Do not add cold water to a hot appliance. Thermal shock can cause premature failure to the appliance heat exchanger.

**SECTION I - COMBUSTION AIR - PREVENTION OF CONTAMINATION**



If the **CHALLENGER** combustion air inlet is located in any area likely to cause or contain contamination, or if products, which would contaminate the air cannot be removed, the combustion air must be re-piped and terminated to another location. Contaminated combustion air will damage the appliance and its burner system, resulting in possible severe personal injury, death or substantial property damage.



Do not operate a **CHALLENGER** if its combustion air inlet or the appliance is located in or near a laundry room or pool facility. These areas will always contain hazardous contaminants.

Pool and laundry products and common household and hobby products often contain fluorine or chlorine compounds. When these chemicals pass through the burner and vent system, they can form strong acids. These acids can create corrosion of the heat exchanger, burner components and vent system, causing serious damage and presenting a possible threat of flue gas spillage or water leakage into the surrounding area.

Please read the following information. If contaminating chemicals will be present near the location of the combustion air inlet, the installer should pipe the combustion air inlet to another location per the **CHALLENGER** installation manual.

**Potential Contaminating Products**

- Spray cans containing chloro/fluorocarbons
- Permanent Wave Solutions
- Chlorinated wax
- Chlorine - based swimming pool chemicals and spa cleaners
- Calcium Chloride used for thawing ice
- Sodium Chloride used for water softening
- Refrigerant leaks
- Paint or varnish removers
- Hydrochloric acid / muriatic acid
- Cements and glues
- Antistatic fabric softeners used in clothes dryers
- Chlorine-type bleaches, detergents, and cleaning solvents found in household laundry rooms
- Adhesives used to fasten building products and other similar products

**Areas likely to find these products**

- Dry cleaning / laundry areas and establishments
- Beauty salons
- Metal fabrication shops
- Swimming pools and health spas
- Refrigeration Repair shops
- Photo processing plants
- Auto body shops
- Plastic manufacturing plants
- Furniture refinishing areas and establishments
- New building construction
- Remodeling areas
- Garages with workshops

## SECTION II - Maintenance Schedule

### Service Technician

At least on an annual basis the following maintenance should be performed by a qualified service technician:

#### General

- Attend to any reported problems.
- Inspect the interior of the appliance jacket area; clean and vacuum if necessary.
- Clean the condensate drain assembly and fill with fresh water.
- Check for leaks: water, gas, flue and condensate.
- Verify flue vent piping and air inlet piping are in good condition, sealed tight and properly supported.
- Check appliance water pressure, piping and expansion tank.
- Check control settings.
- Check ignition electrode (sand off any white oxide; clean and reposition).
- Check ignition wiring and ground wiring.
- Check all control wiring and connections.
- Check burner flame pattern (stable and uniform).

#### Additional items if combustion or performance is poor:

- Clean heat exchanger and flue ways.
- Remove burner assembly and clean burner head using compressed air only.

Once the maintenance items are completed, review the service with the owner.

### Owner Maintenance

#### Periodic

- Check the area around the appliance.
- Check and remove any blockage from the combustion air inlet and ventilation openings.
- Check the temperature/pressure gauge.

#### Monthly:

- Check vent piping.
- Check combustion air inlet piping.
- Check the pressure relief valve.
- Check the condensate drain assembly.

#### Every 6 months:

- Check appliance piping and gas supply piping for corrosion or potential signs of leakage.
- Operate the pressure relief valve.



Follow the maintenance procedures given throughout this manual. Failure to perform the service and maintenance or follow the directions in this manual could result in damage to the **CHALLENGER** or in system components, resulting in severe personal injury, death or substantial property damage.

## Maintenance Procedures

### SECTION III - MAINTENANCE PROCEDURES



The **CHALLENGER** must be inspected and serviced annually, preferably at the start of the heating season, by a qualified service technician. In addition, the maintenance and care of the appliance as outlined on page 3 and further explained on pages 4 through 6 must be performed to assure maximum efficiency and reliability of the appliance. Failure to service and maintain the **CHALLENGER** and the system components could result in equipment failure, causing possible severe personal injury, death or substantial property damage.

#### **NOTICE**

The following information provides detailed instruction for completing the maintenance items outlined in the maintenance schedule on page 3. In addition to this maintenance, the **CHALLENGER** should be serviced at the beginning of the heating season by a qualified service technician.

### Periodic Maintenance

#### Check the Surrounding Area



To prevent potential of severe personal injury, death or substantial property damage, eliminate all the materials listed on page 2 from the area surrounding the appliance and from the vicinity of the combustion air inlet. If contaminants are found:

Remove products immediately from the area. If they have been there for an extended period, call a qualified service technician to inspect the appliance for possible damage from acid corrosion.

If products cannot be removed, immediately call a qualified service technician to re-pipe the combustion air inlet piping and locate the combustion air intake away from the contaminated areas.

1. Combustible / flammable materials - Do not store combustible materials, gasoline or other flammable vapors or liquids near the appliance. Remove immediately if found.
2. Air contaminants - Products containing chlorine or fluorine, if allowed to contaminate the combustion air, will cause acidic condensate within the appliance. This will cause significant damage to the appliance. Read the list of potential materials listed on page 2 of this manual. If any of these products are in the room from which the appliance takes its combustion air, they must be removed immediately or the combustion air intake must be relocated to another area.

#### Check Combustion Air Inlets

1. Verify that ventilation air openings to the mechanical room are open and unobstructed.
2. Verify that the appliance's vent termination and combustion air intake are clean and free of obstructions. Remove any debris on the air intake or flue exhaust openings. If removing the debris does not allow the appliance to operate correctly, contact your qualified service technician to inspect the appliance and the vent / combustion air system.

#### Check Temperature Display and Pressure Gauge

1. Ensure the pressure reading on the pressure gauge does not exceed 25 psig [1.7 bar]. Higher pressure readings may indicate a problem with the expansion tank.
2. Ensure the temperature on the display panel does not exceed 194°F [90°C]. Higher temperature readings may indicate a problem with the operating thermostat controls.
3. Contact a qualified service technician if problem persists.

## Monthly Maintenance

### Check Vent Piping

1. Visually inspect the flue gas vent piping for any signs of blockage, leakage or deterioration of the piping. Notify a qualified service technician immediately if any problems are found.



#### WARNING

Failure to inspect the venting system as noted and have it repaired by a qualified service technician can result in the vent system failure, causing severe personal injury or death.

### Check Combustion Air Inlet Piping

1. Visually inspect the combustion air inlet piping for any signs of blockage. Inspect the entire length of the combustion air inlet piping to ensure piping is intact and all joints are properly sealed.
2. Notify a qualified service technician if any problems are found.

### Check Pressure Relief Valve

1. Visually inspect the primary pressure relief valve and the relief valve discharge pipe for signs of weeping or leakage.
2. If the pressure relief valve often weeps, the expansion tank may not be operating properly. Immediately contact a qualified service technician to inspect the unit and system.

### Check Vent Condensate Drain Assembly

1. While the appliance is operating, check the discharge end of the condensate drain tubing. Ensure no flue gas is leaking from the condensate drain tubing by holding your fingers near the termination.
2. If you notice flue gas leaking from the opening, this indicates a dry condensate drain trap. Fill the condensate trap assembly. Contact a qualified service technician to inspect the appliance and condensate line and refill the condensate trap if problem persists regularly.



#### WARNING

Under some circumstances the CHALLENGER may not produce enough condensate to keep the condensate trap full of liquid. If the trap is not full, small amounts of flue gases can be emitted into the surrounding area through the condensate drain line.

3. Ensure the condensate drain line is not blocked by pouring water through the top open port on the condensate drain assembly. The water should flow out of the end of the drain line. If water does not appear at the end of the drain line, contact a qualified service technician to inspect and clean the condensate line.
4. To fill the condensate drain assembly, slowly pour water into the top of the trap assembly until water appears at the end of the drain line. Stop filling.

### Check Automatic Air Vents (If Used)

1. Remove the cap "A" from any automatic air vent in the system and check operation by depressing valve "B" slightly with the tip of a screwdriver. See Fig. 1.
2. If the air vent valve appears to be working freely and not leaking, replace cap "A", screwing it on fully.
3. Loosen cap "A" one full turn to allow vent to operate properly.
4. Have the air vent replaced by a qualified service technician if it does not operate correctly.

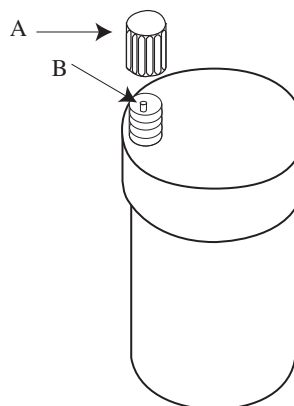


Fig. 1: Automatic Air Vent

## 6-Month Maintenance

### Check Water and Gas Piping

1. Remove the appliance front jacket panel and perform a gas leak inspection per steps 1 through 6 of the Operating Instructions on page 7. If gas odor or leak is detected, immediately shut down the appliance following procedures on page 7. Call a qualified service technician.
2. Visually inspect for leaks around the internal appliance water connections and around the heat exchanger. Visually inspect the external system piping, circulators, and system components and fittings. Immediately call a qualified service technician to repair any leaks.



**Have leaks fixed at once by a qualified service technician. Failure to comply could result in severe personal injury, death or substantial property damage.**

### Operate Pressure Relief Valve

1. Before proceeding, verify that the relief valve outlet has been piped to a safe place of discharge, avoiding any possibility of scalding from hot water.



**To avoid water damage or scalding due to valve operation, a discharge line must be connected to the relief valve outlet and directed to a safe place of disposal. This discharge line must be installed by a qualified service technician or heating / plumbing installer in accordance with the CHALLENGER installation manual. The discharge line must be terminated so as to eliminate possibility of severe burns or property damage should the valve discharge.**

2. Read the temperature and pressure gauge to ensure the system is pressurized. Lift the relief valve top lever slightly, allowing water to relieve through the valve and discharge piping.
3. If water flows freely, release the lever and allow the valve to seat. Watch the end of the relief valve discharge pipe to ensure that the valve does not weep after the line has had time to drain. If the valve weeps, lift the lever again to attempt to clean the valve seat. If the valve does not properly seat and continues to weep afterwards, contact a qualified service technician to inspect the valve and system.
4. If the water does not flow from the valve when you lift the lever completely, the valve or discharge line may be blocked. Immediately shut the appliance down per the instructions on page 7. Call a qualified service technician to inspect the valve and system.



SECTION IV - OPERATING INSTRUCTIONS

**FOR YOUR SAFETY READ BEFORE LIGHTING**





**If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.**

- A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. **DO NOT** try to light the burner by hand.
- B. **BEFORE OPERATING**, smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.
 


**WHAT TO DO IF YOU SMELL GAS**

  - Do not try to light any appliance.
  - Do not touch any electric switch; do not use any phone in your building
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.
- C. Use only your hand to turn the external manual gas valve. Never use tools. If the valve will not turn by hand, don't try to repair it; call a qualified service technician. Force or attempted repair may result in a fire or explosion.
- D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

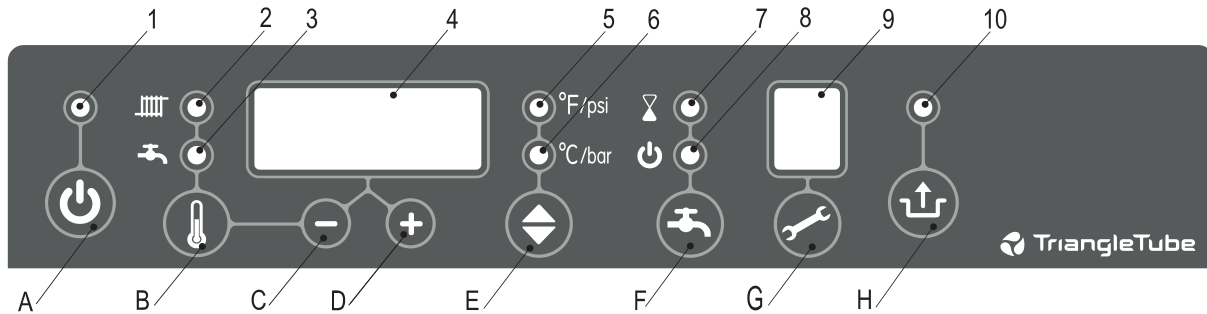
**OPERATING INSTRUCTIONS**

1. **STOP!** Read the safety information above. This appliance is equipped with an ignition device which automatically lights the burner. **DO NOT** try to light the burner by hand.
2. Set room thermostat(s) to lowest setting. Turn the external manual gas valve handle clockwise  "CLOSE" (valve handle shall be perpendicular to gas piping).
3. Turn "OFF" all electrical power to the appliance.
4. Remove the front jacket panel on the appliance.
5. Turn the external manual gas valve handle counter clockwise  to "OPEN" gas supply (valve handle shall be parallel to gas piping).
6. Wait five (5) minutes to clear out any gas. If you then smell gas in the jacket enclosure or around the appliance, **STOP!** Follow "B" in the safety information above. If you don't smell gas, go to the next step.
7. Turn "ON" all electric power to the appliance. Push ON/OFF button on the CHALLENGER control panel display until LED above button is lit.
8. Set room thermostat(s) to desired setting(s).
9. The CHALLENGER control panel display will show a sequence of numbers (1,2,3,4) as the right digit. Sequence digit 3 or 4 indicates the appliance is firing. A blank display means there is no call for heat (all external thermostats are satisfied).
10. If the appliance will not operate with a call for heat and the system piping is not hot, follow the instructions "To Turn Off Gas to Appliance", below and call your service technician or gas supplier.
11. Replace the front jacket panel. Make sure the panel is seated firmly in place and all mounting screws are tightened.

**TO TURN OFF GAS TO APPLIANCE**

1. Set the room thermostat to lowest setting.
2. Turn "OFF" all electric power to the appliance if service is to be performed.
3. Turn the external manual gas valve handle clockwise  to "CLOSE", (valve handle shall be perpendicular to gas piping).

SECTION V - Appliance Control Display



**Read-Out**

1. On/Off (Lit when on)
2. CH operation or setting maximum CH temperature
3. DHW operation or setting DHW temperature
4. Main display with temperature of CH or DHW or CH water pressure or fault code
5. Temperature °F or pressure psi
6. Temperature °C or pressure bar
7. DHW function eco (learned)
8. DHW function on (minimum block temp)
9. Operating display
10. Flashes to indicate fault

**Operation**

- A. On/Off button
- B. CH /DHW/parameter button
- C. - button
- D. + button
- E. Units U.S. customary or metric
- F. DHW function off/eco/on
- G. Service button
- H. Reset/store button

**Appliance ON/OFF**

1. The appliance operation is started using the ① ON/OFF button.
2. When appliance is in operation, the green LED above the ① ON/OFF will be lit.
3. When the appliance is not in operation, the green LED above the ① ON/OFF will not be lit. The main display will show “OFF” and the operating display will show - .

**Units**

Press Up or Down arrow button to change the displayed units from U.S. Customary (°F or psi) to metric (°C or bar). The °F/psi LED will be lit for U.S. Customary units or °C/bar LED will be lit for metric units.

**NOTICE**

**Units cannot be changed if the main display (Parameter Mode) or operating display (Error Mode) is flashing.**



**Additional DHW Functions**

Additional DHW setting can be activated by pressing the 🚰 DHW button.


- ON (① LED lit above the 🚰 DHW button)
- The appliance DHW function is activated continuously. The appliance will maintain a minimum heat exchanger temperature to assure instant delivery of hot water.
- ECO (⚙️ LED lit above the 🚰 DHW button)
- The DHW function is self-learning. The appliance will maintain a minimum heat exchanger temperature during times with typical domestic demands, learned over the past 3 days of use.
- OFF (no LED lit) - The appliance will not maintain a minimum heat exchanger temperature. This will affect the delivery and performance of the initial DHW temperature.

**BEST PRACTICE**

**In application in which the DHW is not utilized or the DHW demand is minimal, set the DHW function to OFF.**

 Main Display	 Operating Display	Function
OFF	—	Press ① button to turn appliance ON LED lite above ① button will be lit when appliance is ON
XXP		No demand for heat
XXP	A	Control self-test
XXX	1	Fan pre purge or post purge cycle
XXX	2	Ignition sequence
XXX	3	Burner ON for space heating (CH)
XXX	4	Burner ON for domestic hot water (DHW)
XXX	6	Burner OFF due to reaching temperature setpoint
	7	Space Heating (CH) post pump cycle
	8	Burner ON for DHW pre-heating
	9	Burner ON for freeze protection
LOP*		Raise CH pressure above 7 psig [0.5 bar]

The  LED will be lit for CH (central heating call)

The  LED will be lit for DHW (domestic call)

**NOTICE**

**“X” represents temperature or pressure readings. When temperature is displayed it will be followed by “°F” or “°C” in the main display and the appropriate LED will be lit. When pressure is displayed it will be followed by a “P” in the main display. Pressure can only be read when the operating display is blank or shows a “A”.**

\* If factory installed CH Low Water Cut Off (LWCO) is below 7 psig [0.5 bar] the main display will flash a soft lockout of LOP (burner and CH primary pump is blocked) followed by the pressure reading. Once CH system pressure is increased above 7 psig [0.5 bar] normal boiler operation will be restored. Check LWCO wiring if LOP flashes to 90\_P (PSI) or 6.0\_P (bar).

### Setting the Appliance Parameters

1. Press the “” button at the display panel for approximately 2 to 3 seconds until main display begins to flash.
2. Press the “” button repeatedly to scroll through the list of parameters. The operating display will show the parameter number and main display will show the parameter setting.
3. To modify a parameter press the + or - buttons.
4. Press the “” button to scroll to the next parameter to be changed.

5. After all parameters have been changed, press the button to close the setting menu and store the changes. The main display will go blank and a P will be displayed in the operating display to let you know the control was programmed.

**NOTICE**

**If the reset button is not pressed within 30 seconds, the settings menu is automatically closed and the changes are stored.**



**If the ON/OFF button is pressed prior to the resets button, the settings menu is closed and the changes are NOT stored.**

Main Display		Operating Display		Description	Adjustments
LED (Flashing)	Factory Settings	Parameters (Flashing)			
	186°F [86°C]			Boiler set point temperature	Adjustment range 86°F to 194°F [30°C to 90°C]
	120°F [49°C]			DHW (domestic) setpoint temperature	Adjustment range 104°F to 149°F [40°C to 65°C]
	0	1		Installation type	0=Combi (Heat and DHW) 1=Heating + SMART I.F.W.H. 2=DHW only (no heating system required) 3=Heating only
	0	2		CH pump continuous	0=Intermittent pump on for heat and post purge 1=Pump continuously active except during DHW call or if outside temperature is above parameter 7 with the outdoor sensor installed - Warm Weather Shut Down.
	86°F [30°C]	5		Min. supply temperature of the heat curve	Adjustment range 60°F to 140°F [16°C to 60°C]
	0°F [-18°C]	6		Min. outside temperature of the heat curve	Adjustment range -22°F to 50°F [-30°C to 10°C]
	64 °F [18°C]	7		Max. outside temperature of the heat curve	Adjustment range 60°F to 78°F [16°C to 26°C]
	1	8		CH pump post purge period	Adjustment range 0 to 15 minutes
	0	o		Waiting time after a DHW demand before a CH demand is answered <sup>①</sup>	Adjustment range 0 to 15 minutes
	0	P		Anti-cycling period during CH operation <sup>②</sup>	Minimal switch-off time in CH operation Adjustable from 0 to 15 minutes

<sup>①</sup> The waiting time starts at the end of the DHW call (no DHW flow - DHW flow switch contacts are open) and blocks the burner and CH circulator. if DHW function is turned ON ( LED is lit above the DHW button) or ECO is ON ( LED is lit above DHW button) than the burner will continue to fire for DHW until a minimum heat exchanger temperature is achieved. Burner and CH circulator will continue to be blocked until the remaining waiting time ends. This feature only applies if parameter 1 is set to 0.

<sup>②</sup> The anti-cycling time starts when burner shuts down during a CH call due to boiler water reaching the boiler set point temperature plus a 6°F [3°C] differential. The CH circulator will continue to operate while the burner is blocked.

**Error (Hard Lockout) Mode**

If a system fault occurs, the system enters a hard lockout condition which requires a manual reset by pressing the RESET button . A hard lock is indicated by a flashing [E] on the operating display as well as a flashing LED light above the reset  button. The error code is located on the main display. The error must be corrected before the control will reset.

 **CAUTION**

The appliance freeze protection feature is disabled during a Hard Lockout, however the CH circulator will operate.



 **CAUTION**



During a hard lockout or low water condition the appliance will not re-start without service. If the heating system is left unattended in cold weather appropriate safeguards or alarms should be installed to prevent property damage.

Temperature (°F)	Temperature (°C)	NTC (kOhm)
-22	-30	191.70
-4	-20	98.82
14	-10	58.82
32	0	38.18
50	10	27.79
68	20	19.77
78	25	17.09
86	30	15.81
104	40	8.65
122	50	4.61
140	60	3.25
158	70	2.54
176	80	1.79
194	90	1.27
212	100	0.95

Table 6: 12 K Ohm NTC Sensor Resistance

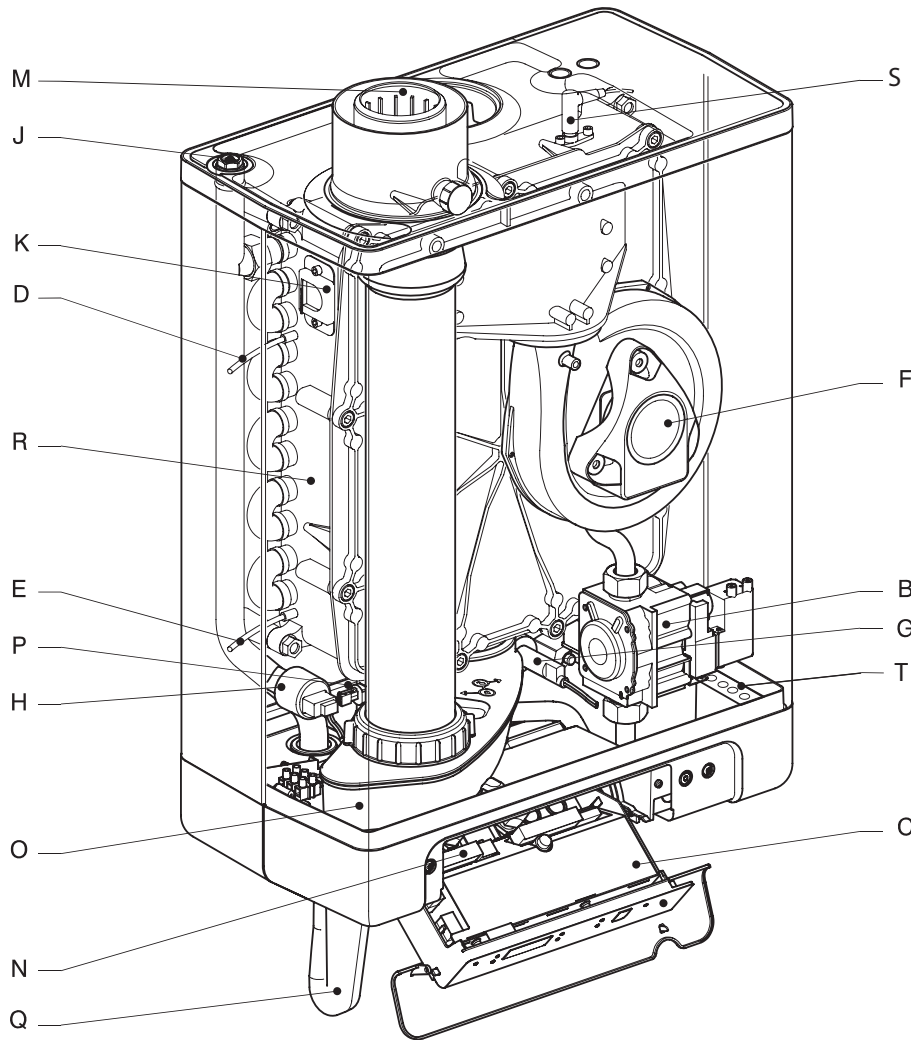
## Error (Hard Lockout) Codes\*

 Main Display	 Operating Display (Flashing)	Error Description	Possible Solution
10, 11, 12, 13, 14	E	- CH supply sensor fault S1	<ul style="list-style-type: none"> <li>• Check wiring for break</li> <li>• Check for proper flow direction</li> <li>• Replace S1</li> <li>• E10 Open sensor</li> <li>• E 11 Shorted sensor</li> <li>• E12 Decreased too quickly</li> <li>• E13 Increased too quickly</li> <li>• E14 Stuck</li> </ul>
20, 21, 22, 23, 24	E	- CH return sensor fault S2	<ul style="list-style-type: none"> <li>• Check wiring for break</li> <li>• Check for proper flow direction</li> <li>• Replace S2</li> <li>• E 20 Open sensor</li> <li>• E 21 Shorted sensor</li> <li>• E22 Decreased too quickly</li> <li>• E23 Increased too quickly</li> <li>• E24 Stuck</li> </ul>
0	E	- Sensor fault after self check	<ul style="list-style-type: none"> <li>• Replace S1 and/or S2</li> </ul>
1, 28	E	- Temperature too high	<ul style="list-style-type: none"> <li>• Air in installation</li> <li>• Pump not running</li> <li>• Insufficient flow in installation, shut off valves closed, pump setting too low</li> <li>• Flow switch sticking or miss-installed</li> <li>• Check for wiring</li> </ul>
2	E	- CH supply sensor S1 and CH return sensor S2 interchanged	<ul style="list-style-type: none"> <li>• Check for proper flow direction</li> <li>• Replace S1 or S2</li> </ul>
4	E	- No flame signal	<ul style="list-style-type: none"> <li>• Manual gas shut off valve closed</li> <li>• Remove air from gas pipe</li> <li>• Gas supply pressure too low or failing</li> <li>• Gas valve or ignition unit not powered</li> <li>• Incorrect ignition gap</li> <li>• Check adjustment of gas valve</li> </ul>
5	E	- Poor flame signal	<ul style="list-style-type: none"> <li>• Condensate drain blocked</li> <li>• Check adjustment of gas valve</li> </ul>
6	E	- Flame detection fault	<ul style="list-style-type: none"> <li>• Replace ignition cable + spark plug cap</li> <li>• Replace ignition unit at gas valve</li> <li>• Replace boiler controller</li> </ul>
8	E	- Incorrect fan speed	<ul style="list-style-type: none"> <li>• Fan catching on casing</li> <li>• Wiring between fan and casing</li> <li>• Check wiring for poor wire contact</li> <li>• Replace fan</li> </ul>
29,30	E	- Gas valve relay fault	<ul style="list-style-type: none"> <li>• Replace boiler controller</li> </ul>
18, 19	E	- Flue sensor fault	<ul style="list-style-type: none"> <li>• E18 open sensor</li> <li>• E19 Shorted sensor</li> <li>• Check/Replace sensor</li> </ul>
7,16, 17	E	- DHW sensor fault	<ul style="list-style-type: none"> <li>• E16 Shorted sensor</li> <li>• E17 Open sensor</li> <li>• Check/replace sensor</li> <li>• E7 Excessive temperature</li> <li>• Check gas orifice</li> <li>• Check combustion settings</li> </ul>
50F		- Improper frequency	<ul style="list-style-type: none"> <li>• Verify ground</li> <li>• Frequency should be between 45 and 65 Hz</li> </ul>

\* Red LED above  button will flash, correct condition, and press  button.

**NOTICE**

**If outdoor sensor is shorted the boiler will not enter into a hard lockout but will maintain the minimum supply temperature of the heat curve.**



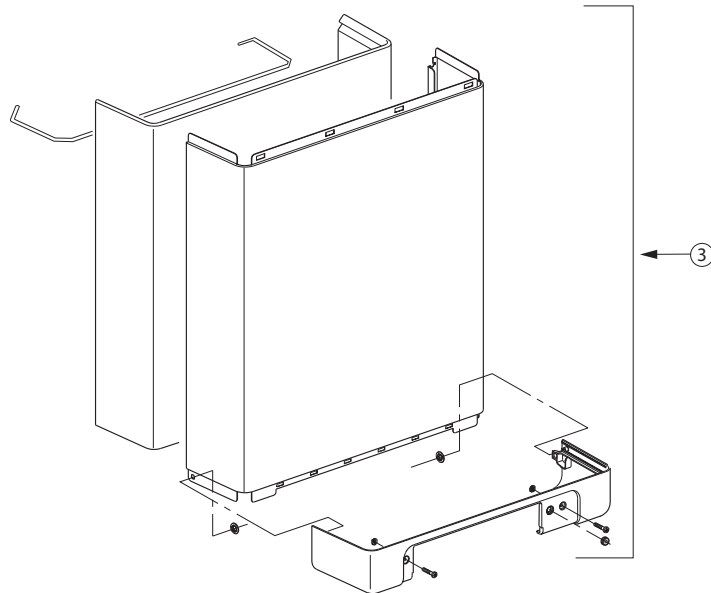
- |                        |   |                                   |
|------------------------|---|-----------------------------------|
| B. Gas valve           | H. LWCO/CH pressure sensor  | O. Condensate pan                 |
| C. Control/Display     | J. Pressure relief and air vent assembly  | P. DHW sensor S3                  |
| D. CH supply sensor S1 | K. Sight glass  | Q. Condensate drain trap assembly |
| E. CH Return sensor S2 | M. Vent/Air adapter (80/125 concentric optional shown or 3" standard not shown) | R. Heat exchanger                 |
| F. Blower              | N. Low voltage/terminal strip X4  | S. Ignition electrode             |
| G. DHW flow switch     | T. High voltage terminal strip  |                                   |

**CHALLENGER Internal Components**

**⚠ WARNING**

Replacement parts must be purchased through a local Triangle Tube distributor. When ordering part please provide the model number and description and/or part number of replacement part. Use only genuine

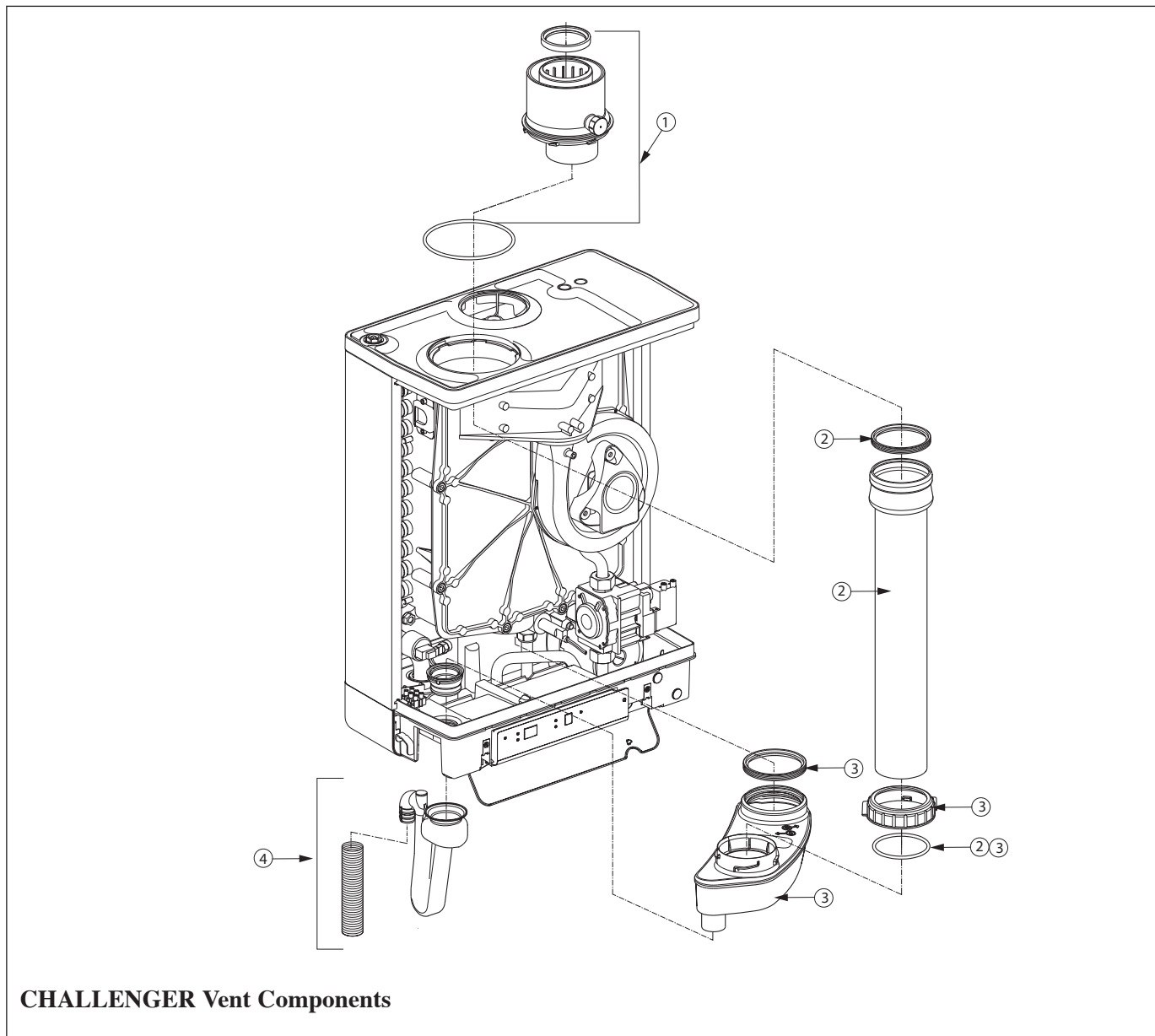
Triangle Tube replacement parts to ensure warranty coverage and to avoid damage to appliance and improper operation of appliance. Contact Triangle Tube at 856-228-8881 or [www.triangletube.com](http://www.triangletube.com) for list of distributors nearest you.



**CHALLENGER Front Door**

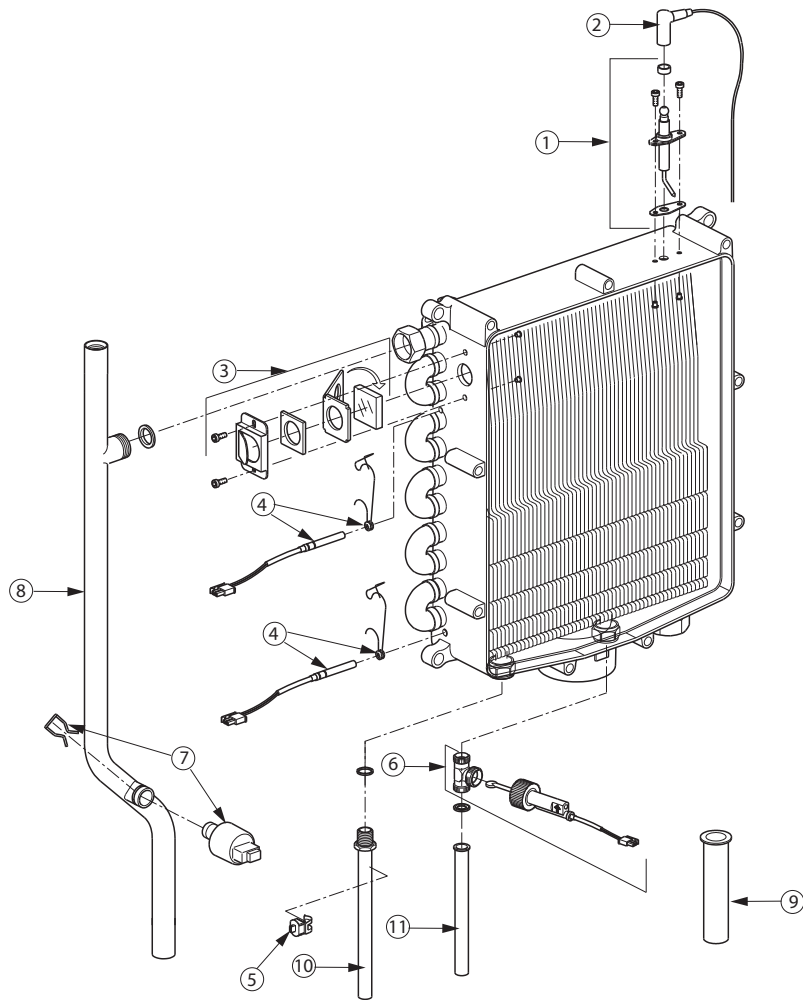
Item	Part Number CC85	Part Number CC105	Part Number CC125	Description
1		CCRKIT04		Wall Bracket Assembly (Not Shown)
2		CCRKIT05		Pipe Connectors & Brackets Assembly (Not Shown)
2A		CCFTG01		Connector Pipe CH (Not Shown) - 1/Kit
2B		CCFTG02		Connector Pipe DHW (Not Shown) - 1/Kit
3	CCRKIT06	CCRKIT07	CCRKIT08	Front Door Assembly





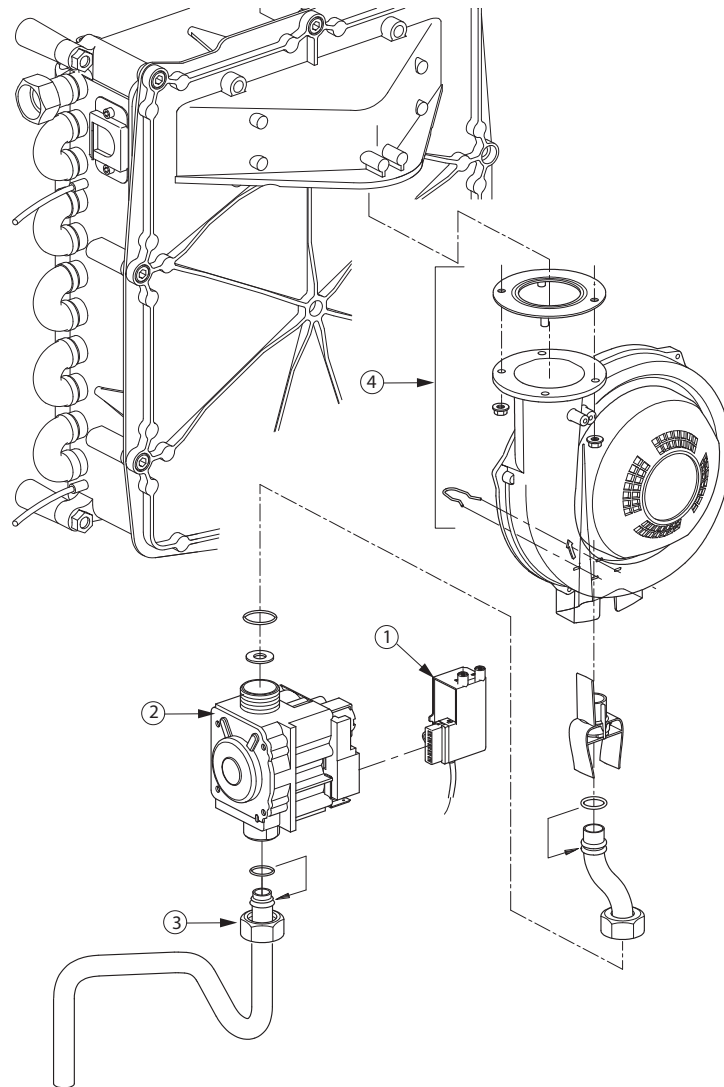
**CHALLENGER Vent Components**

Item	Part Number CC85	Part Number CC105	Part Number CC125	Description
1	CCRKIT09			80/125 Concentric Vent /Air Adaptor Assembly (optional - shown)
	CCRKIT35			3" Vent/Air Adaptor Assembly ( standard - not shown)
2	CCRKIT10	CCRKIT11	CCRKIT12	Vent Assembly
3	CCRKIT13			Condensate Collector Assembly
4	CCRKIT14			Condensate Drain Trap Assembly



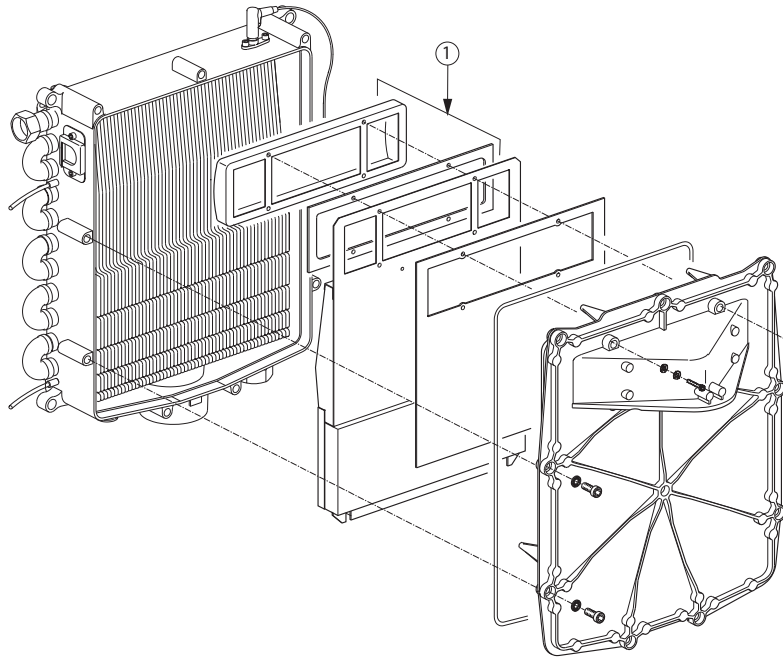
**CHALLENGER Internal Components**

Item	Part Number CC85	Part Number CC105	Part Number CC125	Description
1		CCRKIT15		Igniter Assembly
2		CCCLB01		Ignition Cable
3		CCRKIT16		Sight Glass Assembly
4		CCRKIT17		CH Sensor Assembly - 1/Kit
5		CCSENS02		DHW Sensor
6		CCRKIT18		DHW Flow Switch Assembly
7		CCRKIT19		LWCO/CH Pressure Sensor Assembly
8	CCRKIT20	CCRKIT21	CCRKIT22	CH Supply pipe Assembly
9		CCRKIT23		CH Return Pipe Assembly
10		CCRKIT26		DHW Supply Pipe Assembly
11		CCRKIT27		DHW Return Pipe Assembly



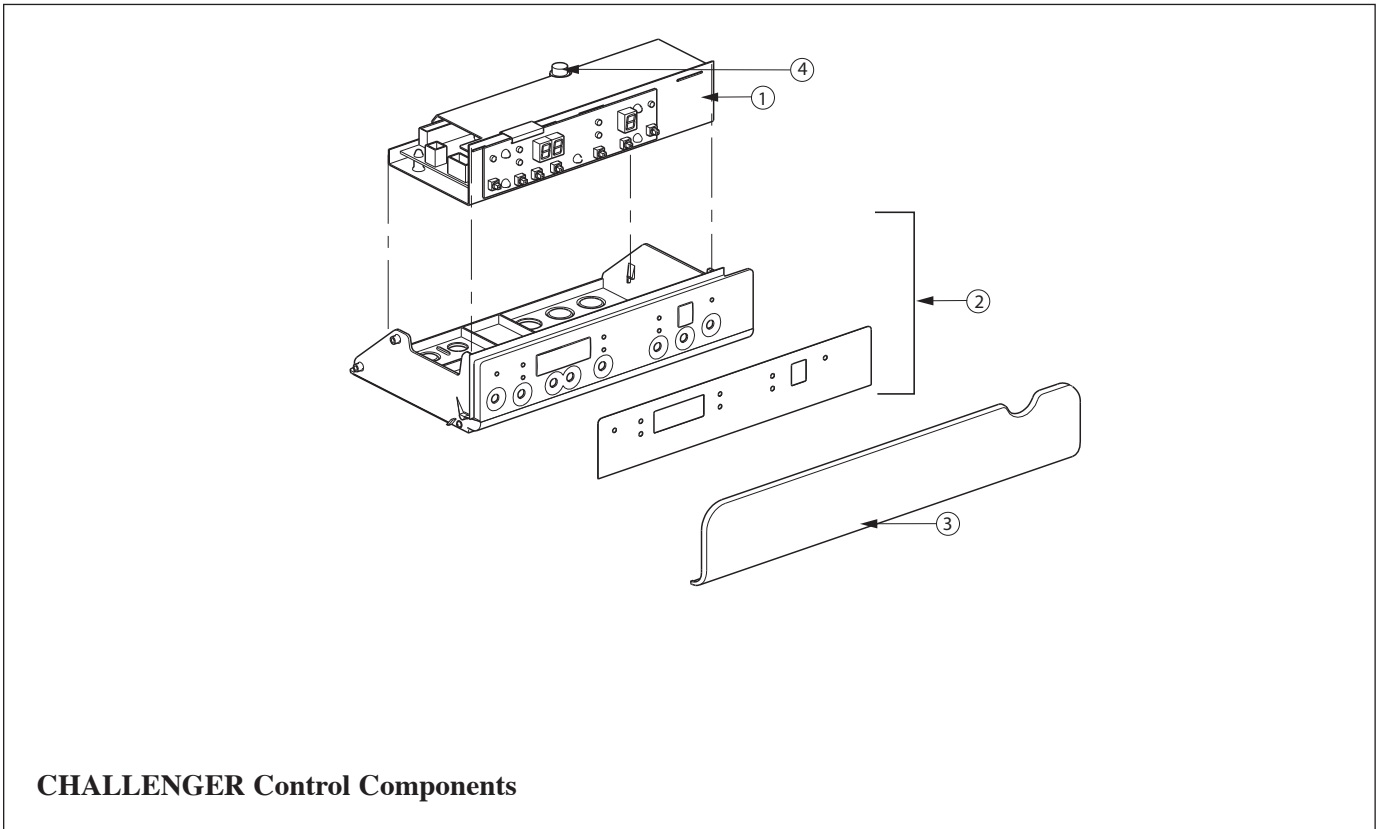
**CHALLENGER Blower & Gas Valve Components**

Item	Part Number CC85	Part Number CC105	Part Number CC125	Description
1		CCRKIT28		Ignition Transformer Assembly
2		CCRKIT29		Gas Valve Assembly
3	CCRKIT30	CCRKIT31		Gas Pipe Assembly
4		CCRKIT32		Blower Assembly



**CHALLENGER Burner Components**

Item	Part Number CC85	Part Number CC105	Part Number CC125	Description
1	CCRKIT33			Burner Assembly



Item	Part Number CC85	Part Number CC105	Part Number CC125	Description
1		CCCON01		Control/Display
2		CCCS01		Housing Plastic Control
3		CCRKIT34		Flip Panel
4		CCFUSE01		Fuse - 1/Kit

Scale 1:100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Scale 1:100

# Honeywell

## Operating Manual

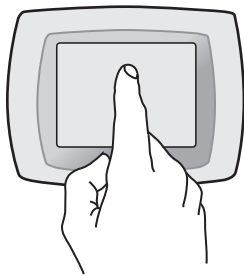


### ***VisionPRO® TH8000 Series***

Touchscreen Programmable Thermostat



69-1894EFS-03



M29343



**BE CAREFUL!** Never use sharp instruments, such as a pencil or pen, to press touchscreen keys. To prevent damage to the thermostat, always press keys with your fingertip.

### **This manual covers the following models**

**TH8110U:** For 1 Heat/1 Cool systems

**TH8320U:** For up to 3 Heat/2 Cool systems

**TH8321U:** For up to 3 Heat/2 Cool systems with dehumidification

(Pull thermostat from wallplate and turn over to find model number)

This thermostat contains a Lithium battery which may contain Perchlorate material. Perchlorate Material—special handling may apply, See [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)

### **Need Help?**

For assistance with this product please visit <http://yourhome.honeywell.com> or call Honeywell Customer Care toll-free at **1-800-468-1502**

## **Read and save these instructions.**

® U.S. Registered Trademark.

US Patent No. 6595430, D509151 and other patents pending.

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#### This thermostat is ready to go!

Your new thermostat is pre-programmed and ready to go. See [page 3](#) to check settings.



**CAUTION: EQUIPMENT DAMAGE HAZARD.** To prevent possible compressor damage, do not operate cooling system when outdoor temperature is below 50°F (10°C).

## About your new thermostat

Congratulations! You've just purchased the world's most advanced, easy-to-use thermostat. It has been designed to give you many years of reliable service and touch-screen climate control.

### Features

- 7-day program schedules maximize comfort and economy.
- Armchair programming: Just pull thermostat from the wall to set schedules.
- Energy-saving settings for maximum cost savings.
- One-touch temp control overrides program schedule at any time.
- Precise comfort control keeps temperature within 1°F of the level you set.
- Change/check reminders let you know when to service or replace filters, batteries and other critical components.
- Large touchscreen display with backlight is easy to read—even in the dark.
- Select models display and control summer humidity.
- Select models accommodate optional outdoor or indoor remote sensors.

## This thermostat is ready to go!

Your new thermostat is pre-programmed and ready to go. Just set the time and day. Then check the settings below and change if needed:

1. **Set clock**.....See page 6
2. **Select fan setting:** Preset to Auto.....See page 7
3. **Select system setting:** Preset to Heat .....See page 8
4. **Program schedules:** Preset to energy-saving levels while you're at work or asleep (assumes you wake at 6 am, leave at 8 am, return at 6 pm and go to bed at 10 pm).....See pages 10-13



**ONE-TOUCH TEMP CONTROL:** You can override the program schedule at any time, and manually adjust the temperature (see pages 12-14).

## Quick reference to controls

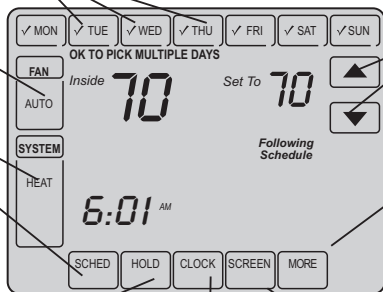
Press day(s) to set program schedule (see page 11)

Press to select fan operation (see page 7)

Press to select system type (see page 8)

Press to set program schedule (see page 11)

ENGLISH



Press to adjust temperature settings (see pages 11-14)

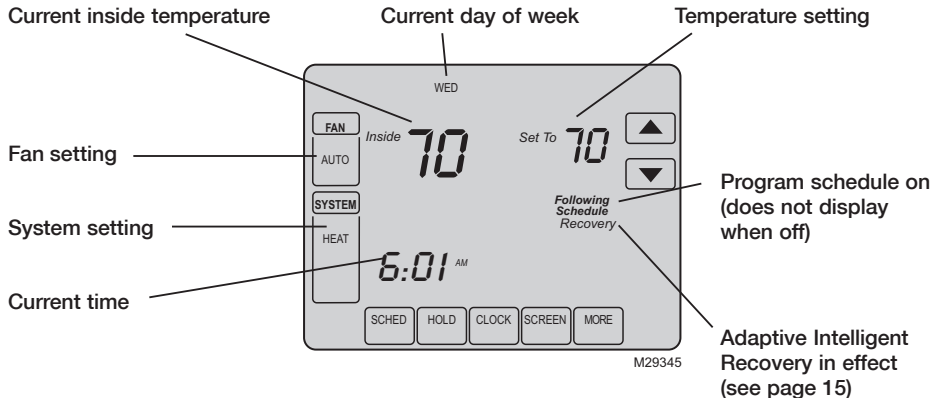
Press for more options (select models only)

Press to override program schedule (see pages 12-14)

Press to set clock (see page 6)

Press to lock keypad for 30 seconds to clean screen (see page 17)

## Quick reference to status display

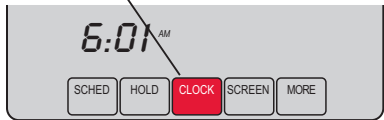


### Other display messages:

- **Cool On:** Cooling system is activated
- **Heat On:** Heating system is activated
- **Aux Heat On:** Auxiliary heating system is activated

## Clock setting

Press **CLOCK**



M29346

Adjust time, then press **DONE**



M29347

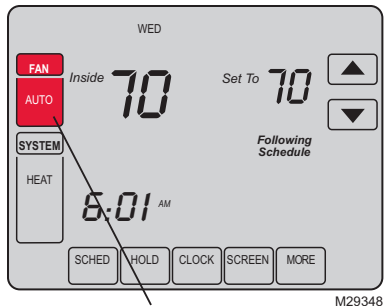
To set the current time display, press **CLOCK**, then press **▲** or **▼** to adjust the time. Press and hold **▲** or **▼** to advance the time more quickly.

Press **DONE** to save & exit (or press **CANCEL** to exit without changing the time).

**Note:** The real-time clock should never require adjustment since it automatically updates for daylight savings time, and stores all date/time information.

**Note:** To change the current week day display, see page 22.

## Fan setting



Press FAN

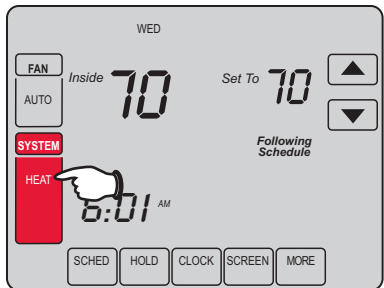
**Note:** If a fan schedule is programmed, “Auto” will run the fan schedule.

Press **FAN** to select fan operation, then press **DONE**.

- **On:** Fan is always on.
- **Auto:** Fan runs only when the heating or cooling system is on.
- **Circ:** Fan runs randomly, about 35% of the time, not counting any run time with the heating or cooling system.

You can press **FAN** to override the fan settings you’ve programmed for different time periods (see page 11). If you select On or Circ, the setting you select will remain active until you press **FAN** again to select Auto (see page 27 for more information).

## System setting



M29349

Press the **SYSTEM** button to select, then press **DONE**.

- **Heat:** Thermostat controls only the heating system.
- **Cool:** Thermostat controls only the cooling system.
- **Off:** Heating and cooling systems are off.
- **Auto:** Thermostat automatically selects heating or cooling depending on the indoor temperature.\*\*
- **Em Heat** (only for heat pumps with auxiliary heat): Thermostat controls Emergency and Auxiliary Heat. Compressor is locked out.\*\*

\*\* Select models only



## Save money by setting program schedules

It's easy to program your system for maximum energy savings. You can program four time periods each day, with different settings for weekdays and weekends.

**WAKE**

6:00 am

70°

Set to the time you awaken and the temperature you want during the morning, until you leave for the day.

**LEAVE**

8:00 am

62°

Set to the time you leave home and the temperature you want while you are away (usually an energy-saving level).

**RETURN**

6:00 pm

70°

Set to the time you return home and the temperature you want during the evening, until bedtime.

**SLEEP**





10:00 pm

62°

Set to the time you go to bed and the temperature you want overnight (usually an energy-saving level).

## Energy-saving settings for maximum cost savings

This thermostat is pre-set with energy-saving program settings. We recommend these settings, since they can reduce your heating/cooling expenses by as much as 33%. (See next page to adjust times and temperatures of each time period.)

		Heat (Mon-Fri)	Cool (Mon-Fri)	Heat (Sat-Sun)	Cool (Sat-Sun)
<b>Wake</b> (6:00 am)		70°	78°	70°	78°
<b>Leave</b> (8:00 am)		62°	85°	62° <small>[Or cancel period]</small>	85° <small>[Or cancel period]</small>
<b>Return</b> (6:00 pm)		70°	78°	70° <small>[Or cancel period]</small>	78° <small>[Or cancel period]</small>
<b>Sleep</b> (10:00 pm)		62°	82°	62°	82°

## To adjust program schedules

Press **SCHED**

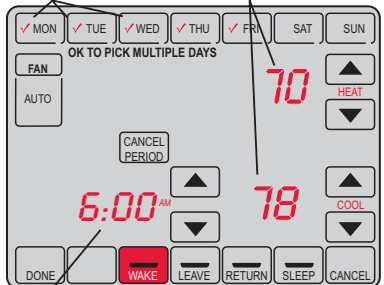


Press **EDIT**



Select day(s)

Set heat/cool levels



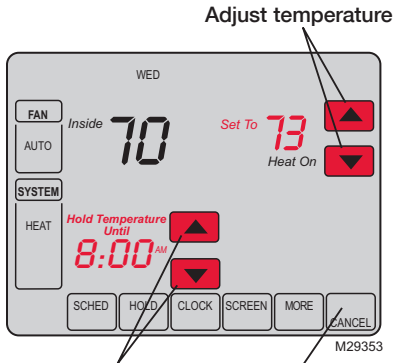
Set time for program period to start

1. Press **SCHED**, then **EDIT**.
2. Press day buttons (**MON-SUN**) to select day(s).
3. Press **▲** or **▼** to set Wake time for selected day(s).
4. Press **▲** or **▼** to set Heat and Cool temperature for this time period.
5. Press other time periods (**LEAVE**, **RETURN**, **SLEEP**) to set time and temperatures for each.
6. Press **DONE** to save & exit (or press **CANCEL** to exit without saving changes).

**Note:** You can press **CANCEL PERIOD** to eliminate any unwanted time period.

**Note:** Press **FAN** to customize fan settings for any time period (see page 7).

## Program schedule override (temporary)

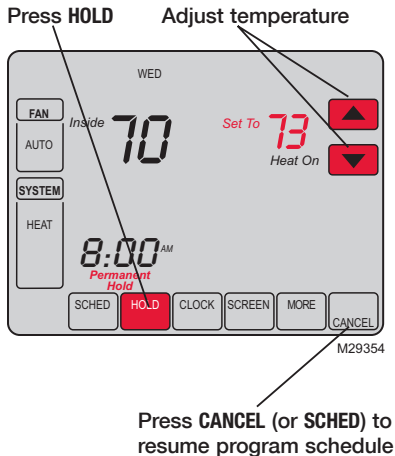


Press ▲ or ▼ to immediately adjust the temperature. This will temporarily override the temperature setting for the current time period.

The new temperature will be maintained only until the time you set. When the timer expires, the program schedule will resume and set the temperature to the level you've programmed for the current time period.

To cancel the temporary setting at any time, press **CANCEL** (or **SCHED**). The program schedule will resume.

## Program schedule override (permanent)

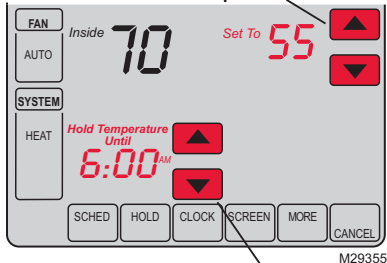


Press **HOLD** to permanently adjust the temperature. This will turn off the program schedule.

Whatever temperature you set will be maintained 24 hours a day until you manually change it or press **CANCEL** (or **SCHED**) to cancel “Hold” and resume the program schedule.

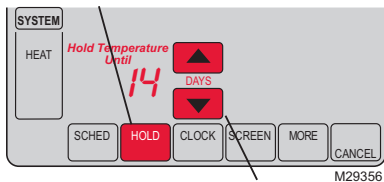
## Vacation hold

1. Set temperature



2. Press HOLD to set time for schedule to resume

3. Press HOLD twice



4. Press to select number of days

This feature can suspend the program schedule for extended periods of time.

Press ▲ or ▼ to set the temperature you want, then press ▲ or ▼ to set the time of day you want the schedule to resume when you return. Press **HOLD** twice, then press ▲ or ▼ to select the number of days.

Whatever temperature you set will be maintained 24 hours a day for the number of days you select. After this number of days have elapsed, the previously programmed schedule will resume at the time you set.

If you return earlier than expected, press **CANCEL** (or **SCHED**) to cancel “Hold” and resume the program schedule.

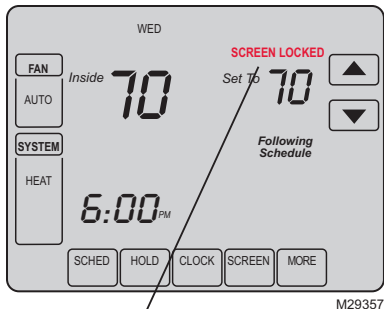
## Special features

**Auto Changeover:** When set to Auto, the thermostat automatically selects heating or cooling depending on the indoor temperature.

**Adaptive Intelligent Recovery:** This feature allows the thermostat to “learn” how long the furnace and air conditioner take to reach programmed temperature settings, so the temperature is reached at the time you set. For example: Set the Wake time to 6 am, and the temperature to 70°. The heat will come on before 6 am, so the temperature is 70° by the time you wake at 6. The message “Recovery” is displayed when the system is activated before a scheduled time period.

**Compressor Protection:** This feature forces the compressor to wait a few minutes before restarting, to prevent equipment damage. During the wait time, the message “Wait” is displayed on screen.

## Screen lock



See advanced function **0670** (page 25) for screen lock options

To prevent tampering, the screen can be partially or fully locked.

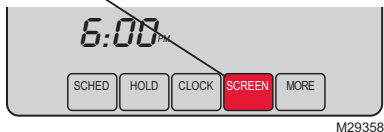
When partially locked, the screen displays **SCREEN LOCKED** for several seconds if a locked key is pressed. To unlock the screen, press any unlocked key while **SCREEN LOCKED** appears on the screen.

When the screen is fully locked, no keys function. To lock or unlock the screen, see advanced function **0670** on page 25.

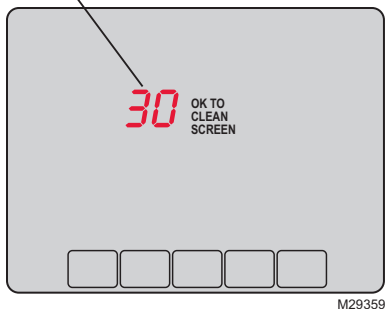


## Screen cleaning

Press **SCREEN**



Screen lock timer (30 seconds)

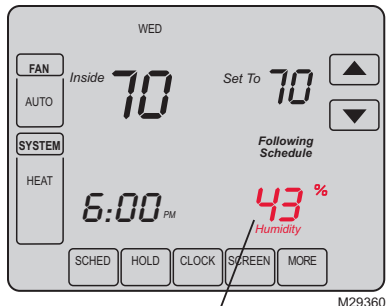


Press **SCREEN** to lock the screen for cleaning. The screen will remain locked for 30 seconds so you can clean the screen without changing any settings.

After 30 seconds, press **DONE** to resume normal operation, or press **SCREEN** again if you require more time for cleaning.

**Note:** Do not spray any liquid directly on the thermostat. Spray liquids onto a cloth, then use the damp cloth to clean the screen. Use water or household glass cleaner. Avoid abrasive cleansers.

## Humidity level display (select models)



Indoor humidity level

Select models can display the current indoor humidity level.

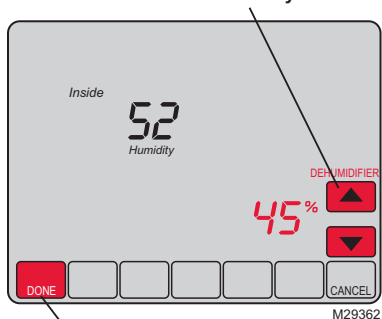
(If an optional outdoor sensor is installed, the outdoor temperature is shown instead of the humidity level. Press **MORE** to display the humidity level.)

## Dehumidification control (select models)

Press **MORE** until humidity is displayed



Press to set desired humidity



Press to save & exit

Select models allow you to decrease summer humidity.

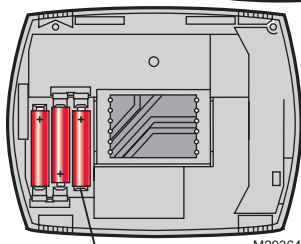
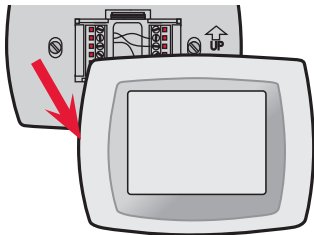
The thermostat monitors humidity. When humidity increases, the thermostat runs the air conditioner longer to reduce humidity (up to 3°F below your cooling temperature setting).

Press **MORE** until the humidity screen is displayed, then press ▲ or ▼ to set the desired humidity level.

Press **DONE** to save and exit, or press **CANCEL** to exit without saving changes.

## Battery replacement

Grasp thermostat and pull to remove from wallplate



Insert 3 fresh AAA alkaline batteries

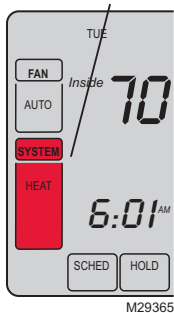
Batteries are optional (to provide backup power) if your thermostat was wired to run on AC power when installed.

Install fresh batteries immediately when the **LO BATT** warning begins flashing. The warning flashes about 30 days before batteries are depleted.

Even if the warning does not appear, you should replace batteries once a year, or before leaving home for more than a month.

## Advanced functions

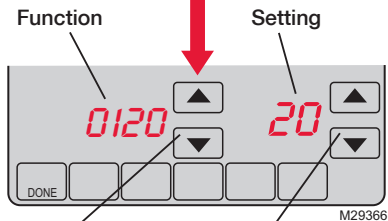
1. Press **SYSTEM**.



2. Press and hold blank center key until the display changes.



3. Change settings as required (see pages 22-25).



4. Press **DONE** to exit & save changes.

Press ▲/▼ to select function

Press ▲/▼ to change setting

## Advanced functions

### Year setting (first two digits)

Function Press ▲/▼ to change the first two digits of the year:

**0120**

Options: **20** = Year **20xx**  
**21** = Year **21xx**

### Year setting (second two digits)

Function Press ▲/▼ to change the last two digits of the year:

**0130**

Options: **01 - 99** (i.e., 2001 - 2099)

### Month setting

Function Press ▲/▼ to change the current month:

**0140**

Options: **1 - 12** (i.e., January - December)

### Date setting

Function Press ▲/▼ to change the current date:

**0150**

Options: **1 - 31**

## Advanced functions

### Program schedule on/off

Function Press ▲/▼ to turn the program schedule on or off:

**0160**

- Options:
- 0 Program schedule is off. Thermostat is non-programmable.
  - 4 Program schedule is on (7-day programmable).

### Temperature format (°F/°C)

Function Press ▲/▼ to set the temperature display format:

**0320**

- Options:
- 0 Fahrenheit
  - 1 Celsius

### Daylight savings time on/off

Function The thermostat is pre-programmed to automatically adjust to daylight savings time.

**0330**

Press ▲/▼ to select an option:

- Options:
- 0 Off: No adjustment for daylight savings time
  - 1 On: Auto-change to daylight savings time (through 2006, and for areas that do not use the new 2007 DST calendar)
  - 2 On: Auto-change to daylight savings time (2007 and beyond, for areas that use the new 2007 DST calendar)

## Advanced functions

### Furnace filter change reminder

**Function**      This feature displays an alert to remind you to change the furnace filter.  
**0500**            Press ▲/▼ to set the desired reminder interval:

- Options:**
- 0** Off (no reminder to change furnace filter)
  - 1** Reminder after 10-day run time (about 1 month)
  - 2** Reminder after 30-day run time (about 3 months)
  - 3** Reminder after 60-day run time (about 6 months)
  - 4** Reminder after 90-day run time (about 9 months)
  - 5** Reminder after 120-day run time (about 1 year)
  - 6** Reminder after 365-day run time (about 3 years)

**Note:** Press RESET to cancel the alert

### Humidifier pad change reminder

**Function**      This feature displays an alert to remind you to change the humidifier pad.  
**0510**            Press ▲/▼ to set the desired interval:

- Options:**
- 0** Off (no reminder to change humidifier pad)
  - 1** Reminder after 3 months
  - 2** Reminder after 6 months
  - 3** Reminder after 1 year

**Note:** Press RESET to cancel the alert



## Advanced functions

### UV lamp change reminder

**Function** This feature displays an alert to remind you to change the ultraviolet lamp.

**0520** Press ▲/▼ to set the desired interval:

- Options:**
- 0** Off (no reminder to change UV lamp)
  - 1** Reminder after 1 year

**Note:** Press RESET to cancel the alert

### Program schedule periods

**Function** Press ▲/▼ to set the number of program periods:

**0540**

- Options:**
- 2** Two program periods (Wake, Sleep)
  - 4** Four program periods (Wake, Leave, Return, Sleep)

### Clock format

**Function** Press ▲/▼ to set the clock display format:

**0640**

- Options:**
- 12** 12-hour clock (i.e., “3:30 pm”)
  - 24** 24-hour clock (i.e., “15:30”)

### Screen lock

**Function** Press ▲/▼ to choose a screen lock setting (see page 16):

**0670**

- Options:**
- 0** Screen is unlocked (fully functional)
  - 1** All functions locked except temperature controls and CANCEL key
  - 2** Screen is fully locked

## In case of difficulty

If you have difficulty with your thermostat, please try the following suggestions. Most problems can be corrected quickly and easily.

### Display is blank

- Check circuit breaker and reset if necessary.
- Make sure power switch at heating & cooling system is on.
- Make sure furnace door is closed securely.
- If thermostat is battery powered, make sure fresh AAA alkaline batteries are correctly installed (see page 20).

### No response to key presses (or temperature will not change)

- Check to make sure the thermostat is not locked (see page 25).
- Make sure heating and cooling temperatures are set to acceptable ranges:
- Heat: 40° to 90°F (4.5° to 32°C)
  - Cool: 50° to 99°F (10° to 37°C)

### Backlight is dim

- If thermostat is battery powered, make sure fresh AAA alkaline batteries are correctly installed (see page 20).
- If thermostat is AC powered, a dim display is normal. The backlight remains on at a low level, and brightens when a key is pressed.

## In case of difficulty

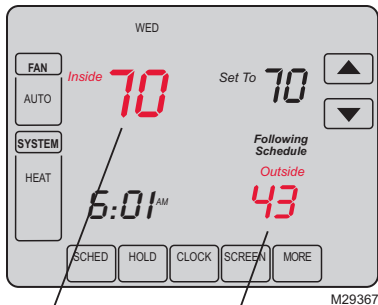
### Heating or cooling system does not respond

- Press **SYSTEM** to set system to Heat. Make sure the temperature is set higher than the Inside temperature.
- Press **SYSTEM** to set system to Cool. Make sure the temperature is set lower than the Inside temperature.
- Check circuit breaker and reset if necessary.
- Make sure power switch at heating & cooling system is on.
- Make sure furnace door is closed securely.
- If “Wait” is displayed, the compressor protection timer is on. Wait 5 minutes for the system to restart safely, without damaging the compressor (see page 15).

### Display shows Fan Auto and On or Auto and Circ at the same time

- This is normal operation. Auto indicates the thermostat is following the programmed fan setting. If Auto and On is shown, the fan is scheduled for “On” during this period (see page 7).

## Optional remote sensors (select models)



Inside  
temperature

Outside  
temperature

If an outdoor sensor is installed, the current outdoor temperature is displayed.

If an indoor remote sensor is installed, the display shows the indoor temperature at the location of the sensor. (The internal sensor in the thermostat is disabled.)

If more than one indoor sensor is installed, the display shows an average of temperature readings from all sensors.

## 5-year limited warranty

Honeywell warrants this product, excluding battery, to be free from defects in the workmanship or materials, under normal use and service, for a period of five (5) years from the date of purchase by the consumer. If at any time during the warranty period the product is determined to be defective or malfunctions, Honeywell shall repair or replace it (at Honeywell's option).

If the product is defective,

- (i) return it, with a bill of sale or other dated proof of purchase, to the place from which you purchased it; or
- (ii) call Honeywell Customer Care at 1-800-468-1502. Customer Care will make the determination whether the product should be returned to the following address: Honeywell Return Goods, Dock 4 MN10-3860, 1885 Douglas Dr. N., Golden Valley, MN 55422, or whether a replacement product can be sent to you.

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by Honeywell that the defect or malfunction was caused by damage which occurred while the product was in the possession of a consumer.

Honeywell's sole responsibility shall be to repair or replace the product within the terms stated above. HONEYWELL SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.

THIS WARRANTY IS THE ONLY EXPRESS WARRANTY HONEYWELL MAKES ON THIS PRODUCT. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS HEREBY LIMITED TO THE FIVE-YEAR DURATION OF THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

If you have any questions concerning this warranty, please write Honeywell Customer Relations, 1985 Douglas Dr, Golden Valley, MN 55422 or call 1-800-468-1502. In Canada, write Retail Products ON15-02H, Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V4Z9.

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US Patent No. 6595430, D509151; other patents pending

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Printed in U.S.A.

The Honeywell logo is displayed in a bold, red, sans-serif font. The letters are thick and closely spaced, with a distinctive shape for the 'y' and 'w'.

# NEST

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Intelligent Thermostat



# Nest Senses and Learns



## Senses and learns from you.

Nest Senses™ is a combination of sensors and algorithms that help Nest understand what's happening around it. It's all built in.



### Activity sensors

Nest's activity sensors have a 180° wide-angle view so Nest knows when to call itself to help.



### Humidity sensor

Nest's humidity sensor activates Smart Thermostat when indoor humidity is low. Airflow can cut your heating costs up to 30%.



### Weather aware

Nest uses its Wi-Fi connection to keep an eye on current weather conditions and forecasts so it can understand how the outside temperature affects your energy use.



### Temperature Sensors

Nest's temperature sensors track your home's heating and cooling. A one-degree difference can reduce energy use up to 1%, so precision is important.



# NEST is Always Connected

## Always connected.

Monitor Nest and adjust the temperature from the office, the car, your smartphone, your couch, anywhere. You just need Wi-Fi and an internet connection at home.



### Real-time control

Control your home's temperature from your laptop, smartphone or tablet. Make adjustments in real-time, even from home.



### Your Nest Account

Log in online or download the Nest Mobile app to your smartphone. You'll be able to see and adjust your schedule, change the temperature and check weather.



### Automatic updates

Software updates will load automatically as long as Nest is connected to your Wi-Fi.



### Secure, private & reliable

Nest is completely secure and uses public key cryptography. Its security features include HTTPS, SSL and 128-bit encryption.



# Heat/Cool Range Schedule



When you set a Range Schedule

- One can program both heating and cooling temperatures for any given set-point.
- Range Schedules can't be learned, only programmed.
  - When using a Range Schedule, Learning Mode will be paused

These thermostat has also gotten an upgrade. We've made a few updates to Nest's ability to program both heating and cooling.

- **Range Schedules:** We've added Range to the Heating/Cooling/OFF menu. A Range Schedule is available in Homes with both Heat and AC and allows auto switching between the two. You set a range of temperatures that you want - (low side to T1, for example. When the temperature falls outside that range, Nest will automatically turn on heating or cooling. Range isn't currently compatible with Auto-Schedule, but that doesn't mean you can't save energy. The Heat Leaf will still appear if you set an energy saving range of temps.

# Nest Range Setting on My Thermostat

- Heats when temperature is below 68 degrees
- Cools when temperature is above 78 degrees
- Currently house temperature is 69 degrees



# NEST Auto Away

- **What is Auto-Away?**
  - Nest uses its activity sensors to detect when a person's nearby or when you're using Nest.
  - If Nest doesn't notice you for a while, it can start Auto-Away.
    - It'll turn down your system until your home reaches a minimum or maximum temperature.
    - You choose those temps when you set up your Nest.
    - So, if your minimum Auto-Away temp is 50° and it starts getting colder, Nest will maintain the house at 50° till you get home.
  - Nest will turn on Auto-Away a couple hours after you left.
    - On the other hand, if you generally spend the day working in your room, Nest will learn and give you more time before it turns on Auto-Away.



# NEST Phone App Screens

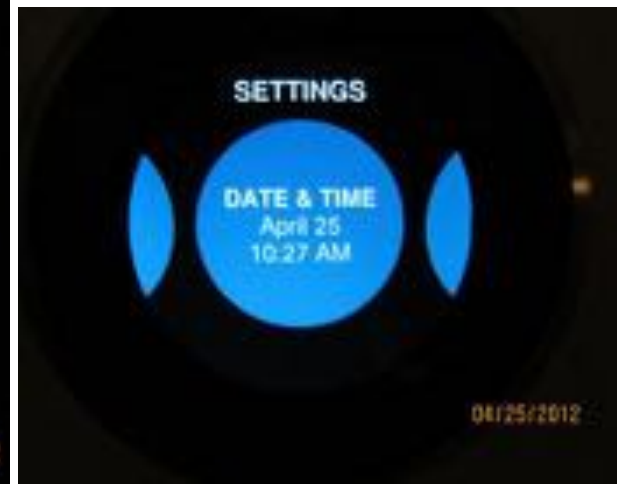
## Control Your Thermostat from you Phone



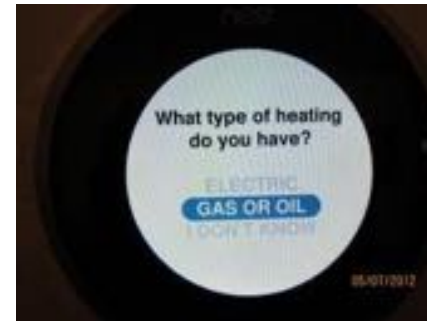
# NEST Saves Energy

- **Auto Away**
  - Turns heating or air conditioning off when you are away
- **Airwave**
  - Airwave technology takes advantage of the fact that your air conditioner's compressor stays cold for 5-10 minutes after its been turned off
- **Nest Leaf**
  - When adjusting the temperature shows energy saving settings
- **Learning**
  - Learns to adjust temperature at night

# My NEST Thermostat



# My NEST Thermostat (cont.)





# NEST Energy Report for May

## Summary for Cupertino, CA for May

You used 17 hours heating and 1 hour cooling.



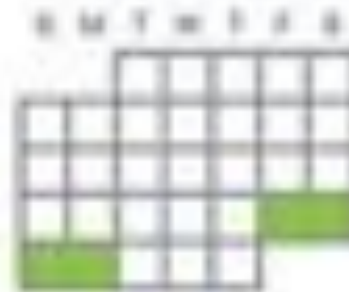
Check Energy History on the third or fourth day to see exactly when your system was on for the last 10 days.  
[Learn More](#)



You earned 4 LEAFs

The national average: 17 LEAFs this month.

You earn 1 LEAF for saving energy for at least an hour a day. [Learn about the LEAF](#)



# Manual and Installation book of Stove



## Water Stove Spectra



HEATING BOILERS • SOLAR PANELS • AIR CONDITIONERS  
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[www.cichewicz.com](http://www.cichewicz.com)

With us heating makes economies!



**Manual and Installation book of  
boiler  
Table of contents**

<b>1) Advantages of Water Stove Spectra</b>	<b>- 3 -</b>
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<b>3) Technical data</b>	<b>- 3 -</b>
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With us heating makes economies!

## 1) Advantages of SPECTRA

- ✓ Fuel: wood (wet max 20%), wood briquets (wet max 20%)
- ✓ Easy connection to radiator's installation system
- ✓ Built in safety cooling loop
- ✓ Primary and secondary air provides excellent burning
- ✓ Ceramic plate burns flue gases completely
- ✓ Easy to clean and service
- ✓ Special piro-glas secure from dirties.

## 2) Short description

A fireplace with a water jacket can power central heating systems and provide hot household water while offering a decorative quality in the interior. It is intended mainly for use in single-family houses, service workshops, shops, utility buildings, etc.

The fireplace has an optionally installed ex-changer in the form of a pipe coil, a cooling water jacket and a unique self-cleaning system for the glass front which practically frees you from the need to clean it yourselves.

## 3) Technical data

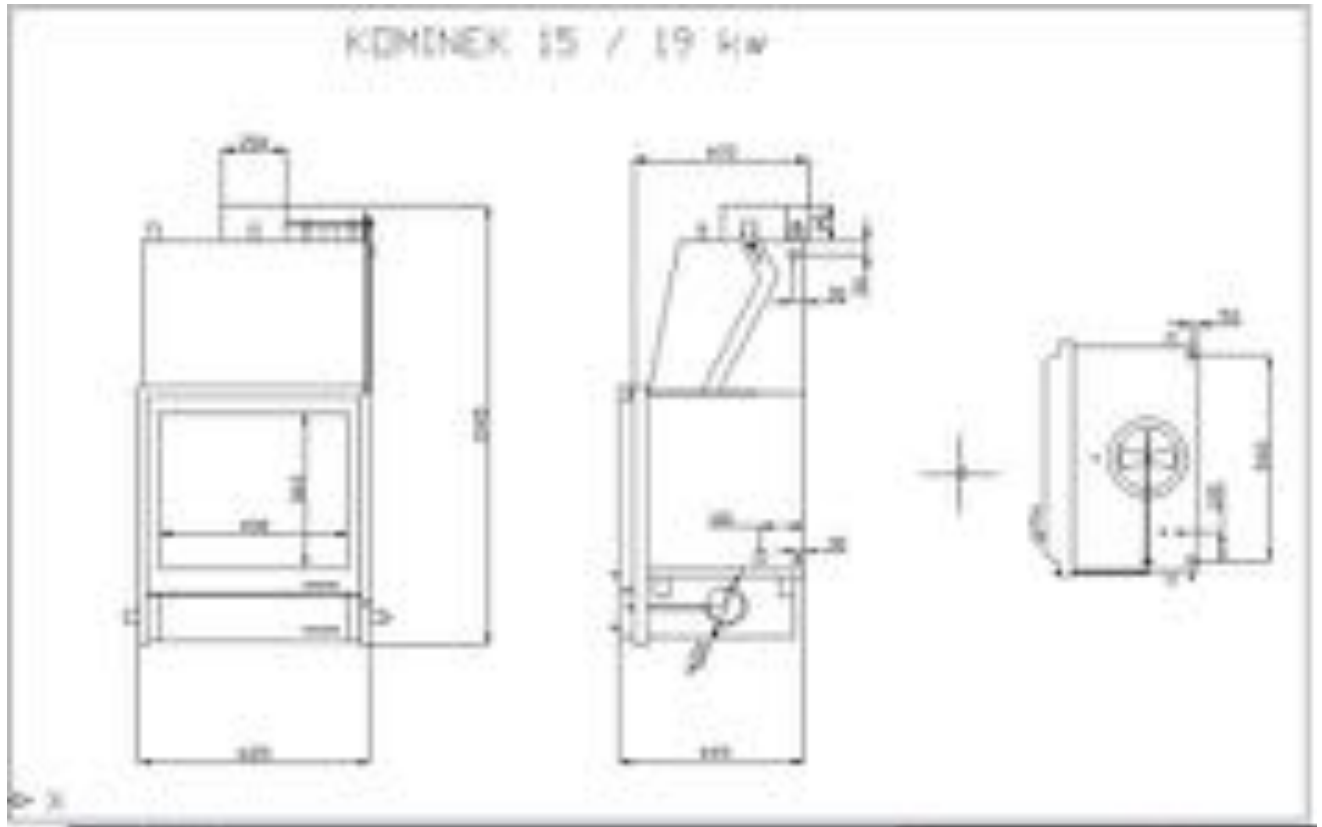
Type	Unit	Spectra 15 / 19	Spectra 25
Power Range (Output):	kW	15, 19	20-25
Fuel:		Wood/Briquets (max. Wet 20%, 30-55cm long)	
Efficiency:	%	79-89	
Dimensions: Height x Width x Depth	mm	1465 x 630 x 520	1465 x 6800 x 520
Stove Water Volume:	dm <sup>3</sup>	40 10.6 Gal	50 13.2 Gal
Max. Working Pressure:	bar	2	Spectra 3660—15.9 Gal
Flue gases Temperature:	°C	>250	
Recommended Chimney Underpressure	Pa	20	
Recommended High of the Chimney	m	8	
Recommended Chimney's Intersection	cm <sup>2</sup>	400	

### 3.1) Structure of SPECTRA:

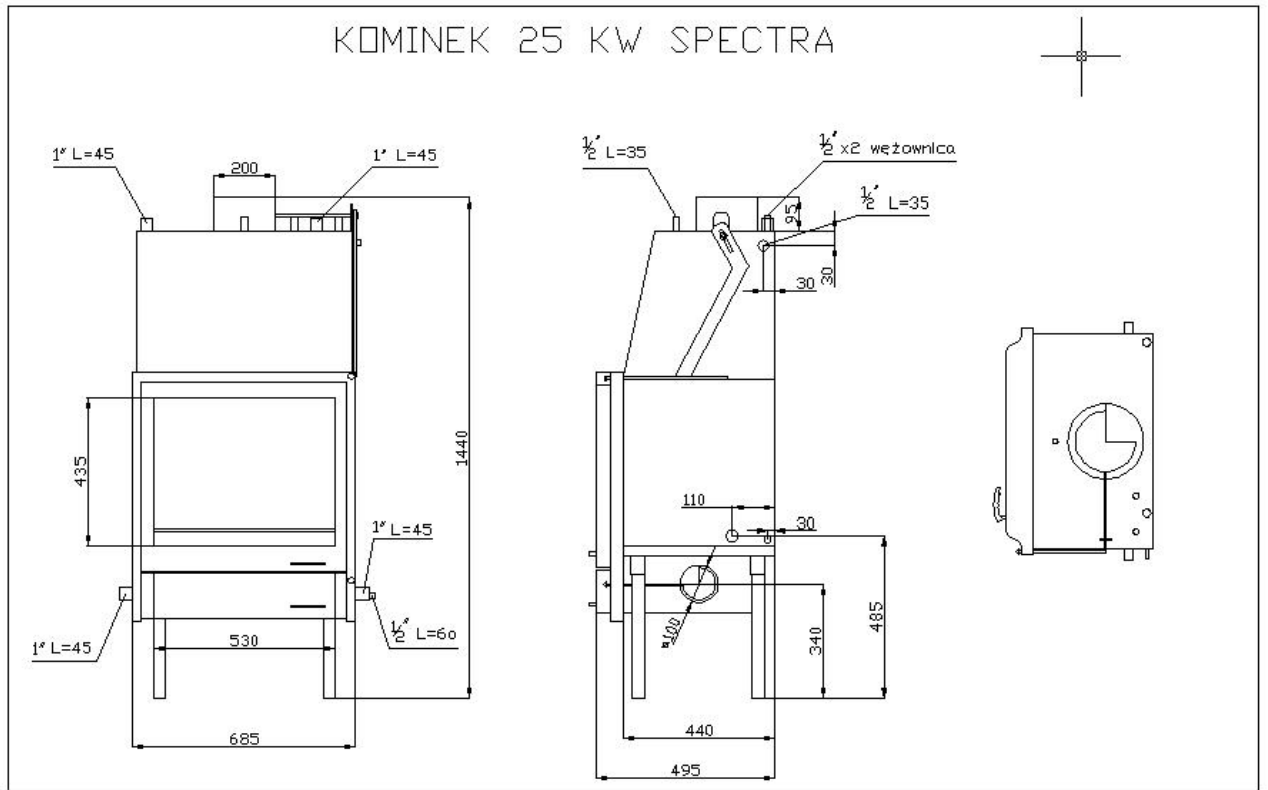
SPECTRA is made from the steel (4-5 mm) with built in the upper part water coat. Heat exchanger is made from special horizontal steel tubes, which are covered by flame during fire. This solution is giving high efficiency. The grill is made from cast iron and it is placed in the middle of ceramic plate. To the combustion chamber is delivered primary and secondary air. Under the grill there is placed ash drawer and primary air regulation.

### 3.2) Dimensions of SPECTRA:

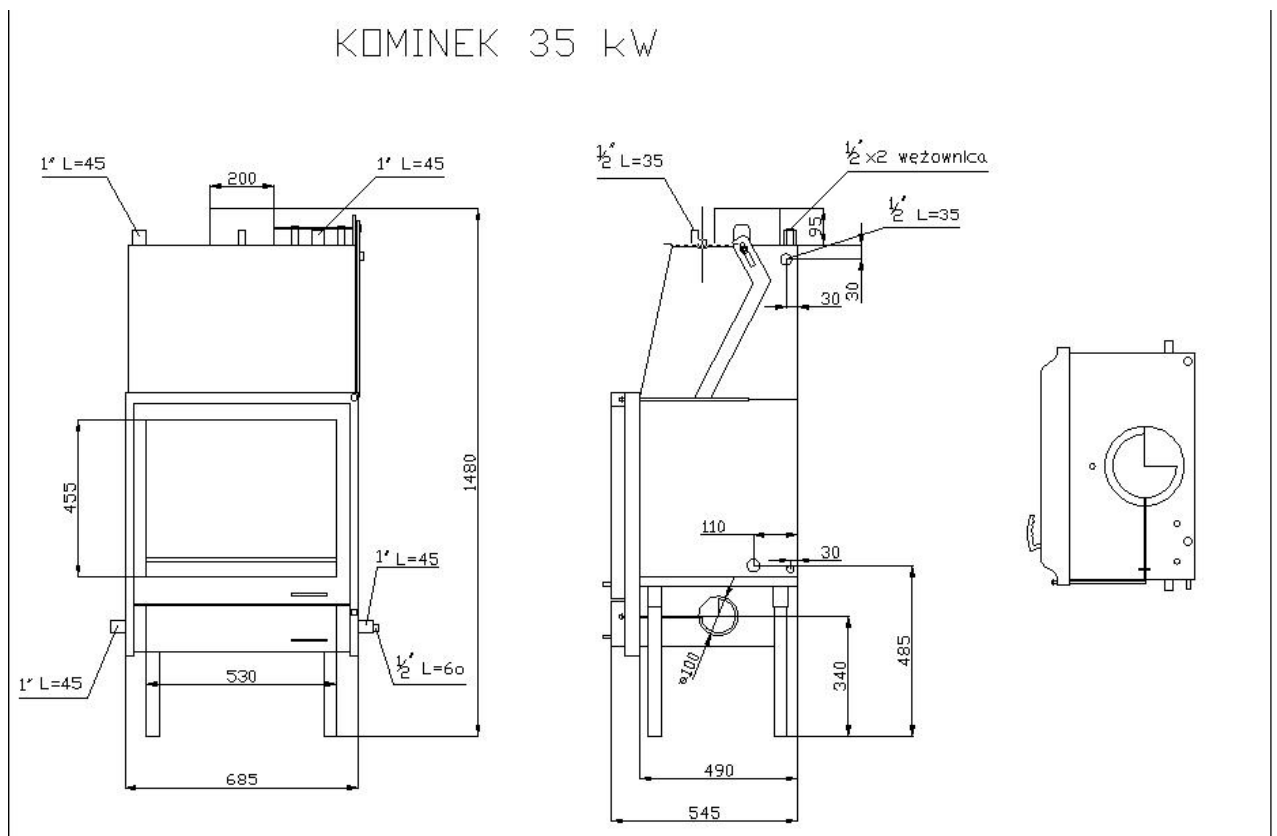
**Model: 15kW and 19kW**



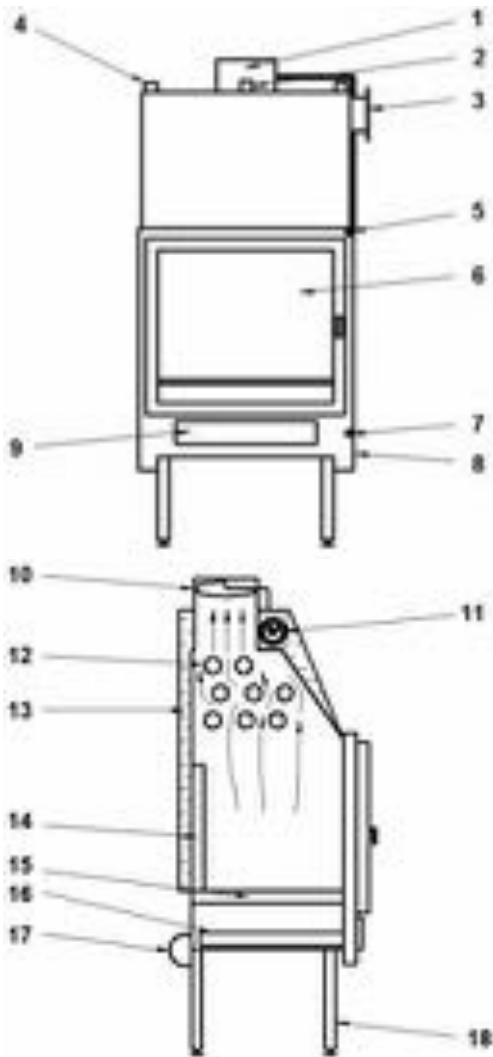
## Model 25kW:



## Model 35kW:



### 3.4) Schema of SPECTRA:



- 1 Flue gases connection
- 2 Sensors assembly slot
- 3 Safety coil connection
- 4 Water outlet (left and right side)
- 5 Flue gases throttle opening unit
- 6 Fire-doors
- 7 Air throttle opening unit
- 8 Water Return (left and right side)
- 9 Air choke in ash drawer
- 10 Flue gases throttle
- 11 Built Safety Coil
- 12 Tubular channels of water jacket
- 13 Water jacket
- 14 Fire-clay bricks
- 15 Cast-iron grid cased with fire-clay
- 16 Ash drawer
- 17 Additional air lead  $\varphi=100$  mm.
- 18 Leg of fireplace with control of height.

### Cross-section of Spectra:



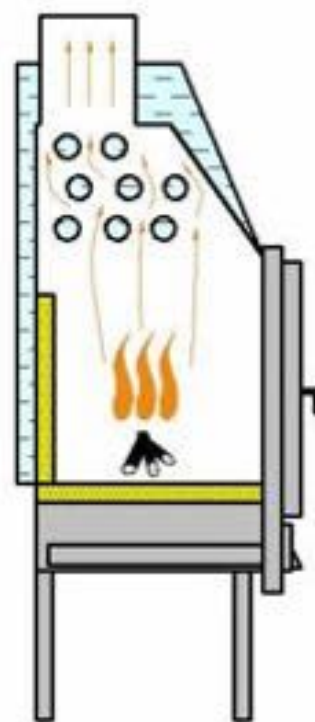
### **3.5) SPECTRA principle of working:**

During burning in fireplace flue gases wash fireplace walls and exchanger tubular passing on warmth to heating factor, and they hit to chimney then.

The fire-clay contributions being in combustion space after warming by a long term hold warmth what as well as allows to more precise burning down in washing it flue gases the carbon monoxide it makes easier lighting the next parties of fuel.

The natural chimney draught which secures the corrects work of device is controllable by flue gases throttle and air choke. Shutting the throttles causes the decrease and the opening the enlargement of chimney draught strength. If we will deliver more air the combustion will be more intensive.

Proper setting these throttles will be large influence on obtainment suitable thermal comfort and use fireplace



## **4) Using SPECTRA**

### **4.1) Fuel:**

#### **4.1.1) Kinds of fuels.**

Fireplace be corresponsive to combustion as well as briquettes and woods - They should pose the leaflike trees' chunks of wood of large hardness basic fuel, such as: oak, beech, acacia, ash whether hornbeam. They can be this also softer woods from: birch whether poplar.

We can applying briquettes about low moisture and contents of ash also effective combustion. It should however remember that their heat value is higher from leaflike trees' logs loading to combustion space should be smaller.

We can as supplement substitutionally apply coniferae's chunks of wood. However we in this case have to take under attention quicker the overgrowing the internal walls of fireplace as well as window panel, and what cleaning for this goes more frequent.

#### **4.1.2) Humidity, sizes.**

Recommended humidity of fuel is about 20%. This is important with regard on heat value of wood which changes near change of humidity fundamentally. Near humidity on level 20% heat value this about 12,5 MJ / kg however near humidity 50% already only about 7,5 MJ / kg.



Using fuel of large humidity causes his larger waste as well as causes the condensations of water steam inside fireplace. Condensate accelerates the corrosions of steel exchanger of fireplace.

To get wood humidity about 20% near natural drying it should be seasoned where through the least 18 months. Near seasoning of wood by period since 6 months till year the humidity of wood will be on level 45% to 30%.

The diameter of logs of wood should carry out 10-20 cm. and their length should make possible them free loading to chamber.

#### **4.2) Burning up SPECTRA:**

Before first lighting as well as after long term of non-use of fireplace, before accession to use should check the patency of channels of fireplace and chimney as well as the heating factor in installation.

- 1) Open the fire-doors and throttles of flue gases (pressing levers 5)
- 2) Set the initially air inlet (lever 7).
- 3) On grill to arrange the kindling-fuel ( the paper or kindling-fuel grilowa) and at the top little twig and pieces of wood about diameter 3-5cm.
- 4) Fire the paper and close fire-doors.
- 5) When burning fuel creates the shell of heat unlock fire-doors to supply the chamber with chunks of wood or briquette.
- 6) Close the fire-doors and regulate the process of combustion with throttles of flue gases and air.
  - a. As well as the throttles are more open the chimney draught it larger and the combustion is more intensive (larger power)
  - b. As well as the throttles are more closed the chimney draught is smaller and the combustion is freer (smaller cardinality).
  - c. The protrusion the mechanism of throttle of flue gases causes her lock and inserting opening.
  - d. The air choke is open when lever is in horizontal position and closed when it is in perpendicular position.
- 7) Fuel make-up can happen only at that time when fires over heat start burning down. We close the air choke, we unlock the throttle of flue gases and we unlock fire-doors then slow. We supply fuel and close fire-doors. We make the adjustment of draught.

We put, in aim to obtain the maximum power, to boiler 5-7 chunks of about diameter from 10 cm. to 20 cm and we unlock the throttles of flue gases and air entirely.

To get the lower power of fireplace we should charge smaller quantity fuel and adjust throttles in such way to fire was not too intensive.

At first burning up in fireplace water can show inside fireplace ("perspiration fireplace"). This normal effect is because the temperature of flue gases at cold fireplace can fall below temperature of dew and the condensation of water steam follows. Effect goes out after heating fireplace and installation.

If during work flue gases get out outside, enlarge the strength of the chimney draught across openly the throttles of fumes and air.

**Warning!** During use of fireplace please remembering that the external elements can be heated and they can cause burn.

**Warning!** Please do not place the combustible materials in nearby of fireplace.

### **4.3) CLEANING I CONSERVATION SPECTRA:**

The keeping up the cleanness in channels and chamber of fireplace is the condition of correct, effective and safe work of device.

Sediment on walls of water jacket has influence on exchange of warmth among flue gases and heating factor and what effect for this goes it has on efficiency of fireplace.

The everyday conservation should to consist on emptying ash from drawer and the cosmetics of device.

We clean the window panel of fire-doors in dependence from degree her smokiness, using the special detergents.

We clean chamber and tubular exchanger in dependence from sediment on surface. If the layer of chimney soot is above 2-3mm we should to brush down walls by steel brush. It is possible to apply chemical means to prevent generation excessive deposition of chimney soot.

We should periodically oil device with (for example: with liquid WD-40) movable elements of fireplace: the mechanisms of throttles the, hinges, the handle of closing the fire-doors.

Yearly we should to brush down combustion ducts.

**Warning!** We make on non-working device all maintenance actions

### **4.4) Safety of using Spectra:**

In order to safely use of fireplace with water jacket:

- It is not allowed to receive cold water during work of device if the temperature of fireplace crosses 40°C because this can cause the failure of water jacket.
- Do not allow to boiled water in fireplace
- Do not touch front the warmed elements of fireplace because this threatens burns.
- Does not it flood fire in fireplace with water.
- Do not use different fuel than recommended.
- Do not store in nearby of fireplace any combustible materials.
- Use the fireplace according with operating manual.

## **5) System**

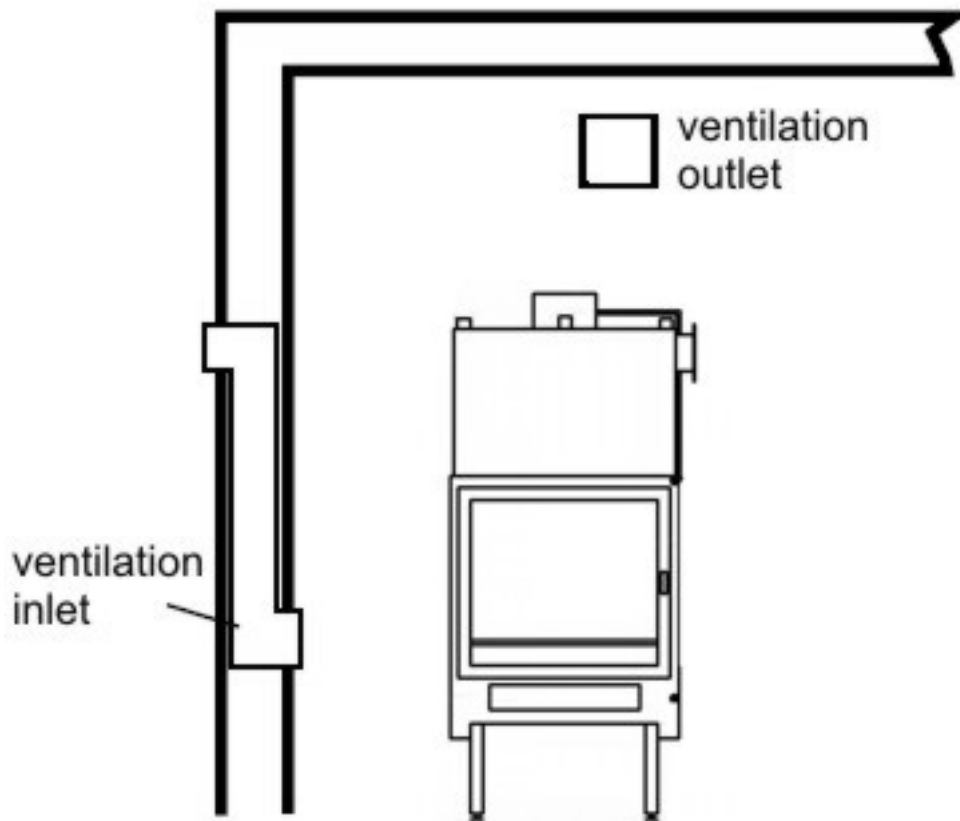
## 5.1) Standards

- Heating System – during installation and operation of the boiler it is very important to keep safe distance from the inflammable materials. The boiler is allowed to work only in open type heating systems!
- Electrical installation – the regulator's power supply is 230V/50Hz
- Chimney – It must be done with respect to current norms and regulations. Due boiler gasses temperature 90-100 C it is obligatory to put the INOX or other material tubes into the chimney. Required chimney draught is 0,1 – 0,2 mbar. Installation according to ADJ does entail some testing of the chimney, which may be carried out by a sweep
- Important sources of guidance installers: 98/37/EEG; 89/336/EEG; 73/23/EEG; EN 55014-1, 1993 /A1, 1997; EN 55014-1; EN 55014-2 C1 1998; EN 61000-3-2; EN 61000-4-2, -3-4-5-6-11, Level2; EN 50165; EN 50165 C1; EN 60335-1; EN 303-5; EN 12809; EN 13394

## 5.2) Combustion ducts, ventilation:

At connecting fireplace flue - should turn attention on following recommendations:

- To provide the correct work of device the chimney draught should figure out about 15 Pa.
- The flue should be performed from heat-resistant steel and leaded straight as possible and with the smallest number of deflecting.
- Connecting flue with chimney should be made at an angle of 45°.
- The assembly of simple section after exit from flue connection courts about length min. 30 cm directly.
- The connections of flue should be tight.
- Fireplace should be connected to individual flue.
- External chimneys should be insulated.
- Room in which fireplace will be installed should be equipped in ventilations.
- The minimum intersection of chimney is 400 cm<sup>2</sup> and height this 6-8 m.
- Air to fireplace should be brought by channel about intersection =100mm



Natural chimney draught generated by chimney institutes the basis of correct of fireplace. If it is too low can cause the flue gases regress to room and too high draught accelerates the process of combustion, which leads to quicker burning of fuel and can cause non-controlment raise of temperature of factor in water jacket.

Factors causing disturbances in chimney draught:

- Too low chimney,
- Too small intersection of chimney,
- Low atmospheric pressure,
- The atmospheric large humidity,
- The small difference of temperature among internal air and external.
- Polluted flues or ducts of fireplace.
- Lack or failure working ventilation of air.

## **6) Boiler installation systems:**

Fireplace with water jacket should be connected in system of installation of central heating so as boilers on solid fuel.

Fireplace should be secured with norm peaceably PN -91 / B -02413 with open dish. The dish pipe and pipe of safety about should have min. diameter 25mm. Pipes from dish should be diverted: transfer and signalling.

Hydraulic connecting depends on connecting of supply and the return to installation of central heating (look the drawing below). Because we have at command along two feeding and return connectors it is recommended to connect crosswise ducts.

One pair of connectors attends to connecting to installation c.h., second meanwhile to connecting storage tank. Unless non-connect storage tank - we blind connectors.

**Example design installation:**





**INSTITUTUL TEHNIC DE CONSTRUCȚII**  
STRADA 130 NR. 10, BUCUREȘTI 060000 ROMANIA

**PANZIARUL ZONII NR. 20**

Organizație de proiectare  
 pentru proiectarea, executarea și  
 administrarea lucrărilor  
 de construcții-civile

Proiectant: **ING. GHEORGHE ȘTEFĂNESCU**  
STR. 130 NR. 10  
 BUCUREȘTI

**PCZ** - PROIECTAREA, CONSTRUCȚIA ȘI  
 ADMINISTRAREA ZONELOR DE CONSTRUCȚII  
 CIVILE

Proiectarea, executarea și administrarea lucrărilor de construcții-civile  
 în conformanță cu prevederile legislației în vigoare

Proiectarea și executarea lucrărilor de construcții-civile  
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Proiectarea și executarea lucrărilor de construcții-civile  
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Proiectant: **ING. GHEORGHE ȘTEFĂNESCU**

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	Parameter	Measure	Value	Requirement
Fuel	Type		Beech wood in the form of logs	The wood of deciduous trees
	Q (r/i) gross caloric power of raw fuel	MJ/kg or Btu(hr)/lb.	15.82 or 6823.1	none
	Wr (Water content)	%	13.56	16 +/- 4
	Thermal power of furnace	KW/Btu	29.4/100316.97	none
	Useful thermal output	KW/Btu	22.2/75749.55	20-25
	Thermal power of convective heat	KW/Btu	6.8/23202.56	6.8
	Efficiency	%	76.5 +/- 1.1	>= 76.5
Emissions*	CO	%	.73	<= 1.0
	NO2	Mg/m3 or ppm	200 or 106.28	none

\*based on the 13% share of oxygen in the dry flue gas





**200DX RecoupAerator**  
Manual & Installation Guide



p.740.594.2277  
800.535.3448  
ultimateair.com  
info@ultimateair.com

178 Mill Street Athens, Ohio 45701



## Introduction

Thank you for your recent purchase of the most advanced air filtration and energy recovery ventilation available today. Your RecoupAerator is designed to bring fresh filtered air indoors to your home or business while simultaneously exhausting stale air.

The 200DX is an Energy Recovery Ventilator (ERV), meaning the RecoupAerator captures temperature and moisture from the stale, outgoing air and transfers it to the incoming Fresh Air. No matter what the season, you will be comfortable breathing fresh clean air.



In addition to having an energy transfer rating of 96%, the RecoupAerator moderates indoor humidity in the winter and turns away outdoor humidity in the summer.

- Automatically self-balances air flow
- 96%+ heat recovery efficiency
- 95% filtration at 1.8 microns (MERV 12)
- Up to 75% moisture transfer capability (depending on season)
- UL listed and certified
- ECM motors with Permanently lubricated Ball Bearing
- Optional Pressure Transmitter (senses and adjusts for changes in indoor air pressure)
- Optional CO<sub>2</sub>Guard™ (senses and adjusts for elevations in CO<sub>2</sub>)
- EconoCool™ (brings in cool, filtered night air in summer)
- Compatible with many IAQ monitors and fans
- Automatic frost prevention down to 10° F
- Variable blower speed
- Quiet operation
- Low/easy maintenance
- Exceeds ASHRAE 62.2 ventilation recommendations
- No drain required
- Filter service indicator
- Fully insulated
- 5-year Warranty

## Specifications

<b>Model</b>	RecoupAerator 200DX Energy Recovery Ventilator (ERV). Includes pre-filters, patented energy transfer/filtration material, fans, controls, and motors.
<b>Airflow Capacity</b>	~30– 200CFM
<b>Sensible Apparent Efficiency</b>	96%
<b>Heat Exchange Type</b>	Patented rotary random matrix polymer
<b>Filtration</b>	Energy transfer/filtration material 95% effective at 1.8 microns (MERV 12), replaceable, with washable aluminum pre-filter
<b>Electrical Ratings</b>	120 VAC, 60 Hz., 6.0 amp (start up)
<b>Fuse (low voltage)</b>	¼ Amp, 250V 3AG slow blow fuse
<b>Dimensions</b>	25 in. H x 19 in. W x 25 in. D (63.5 cm H x 48.25 cm W x 63.5 cm D)
<b>Unit Weight</b>	72 lb (32 kg)
<b>Shipping Weight</b>	80 lb (36 kg)
<b>Mounting</b>	May be mounted by vertically or horizontally by suspending from floor joists, or placed on floor or shelf in conditioned spaces such as attics, basements, and utility rooms. Collars (four) are 6" in diameter.
<b>Maintenance</b>	Clean filters approximately every 6 months and replace when necessary

## General Information

<b>Application</b>	The 200DX is an Energy Recovery Ventilator (ERV), meaning that the RecoupAerator captures temperature and moisture from the stale, outgoing air and transfers it to the incoming air stream.
<b>Controls</b>	RecoupAerator is equipped with a variable speed controller, unlimited boost function capability (i.e., you can add timers and controllers), “check filter” indicator light, EconoCool™ equipped, auxiliary IAQ and timer inputs, furnace wiring terminals, and auxiliary output. These controls allow you to adjust the airflow as needed to maintain a comfortable level of fresh air. The “check filter” indicator light is designed to let you know when to check and/or clean/replace your pre-filters and energy transfer/filtration material. For systems in which constant ventilation is not required, a remote on/off switch, timer, and/or furnace inputs can be wired directly to the unit.
<b>Frost Control</b>	Programmed to regulate heat exchange automatically to prevent frost build-up down to approximately 10° F. During this mode, the Wall Dials green light will be flashing.

## Installation Guide

We strongly recommend a licensed HVAC technician install this product, because of complex considerations such as airflow dynamics and condensation issues. Read these instructions carefully before beginning any installation procedure. Failure to follow them closely may reduce ventilation effectiveness, cause a hazardous condition, and/or invalidate your warranty. Installation by non-licensed HVAC personnel may void the warranty.

Unpack your RecoupAerator and check to make sure that the following are included and undamaged:

- UltimateAir RecoupAerator 200DX Energy Recovery Ventilator with four (4) starter collars packaged inside the RecoupAerator.
- Literature package with maintenance guide, parts list, registration card, and warranty.
- Wall mount control dial (pre-wired for test run, and shipped inside the RecoupAerator).
- Control options if ordered.

### When installing:

1. **Test Run the RecoupAerator by plugging into a power outlet and adjust the blower speed with the included Wall Dial.**

Familiarize yourself with the intake and outlet duct configuration and installation dimensions. Decide how you will mount the unit. We recommend ACCA's manuals D & J for proper load calculations and duct sizing.

2. After installation is complete, fill in contractor's name and phone number on the last page of this manual, and be sure to **complete the Warranty Registration** to validate the installation.

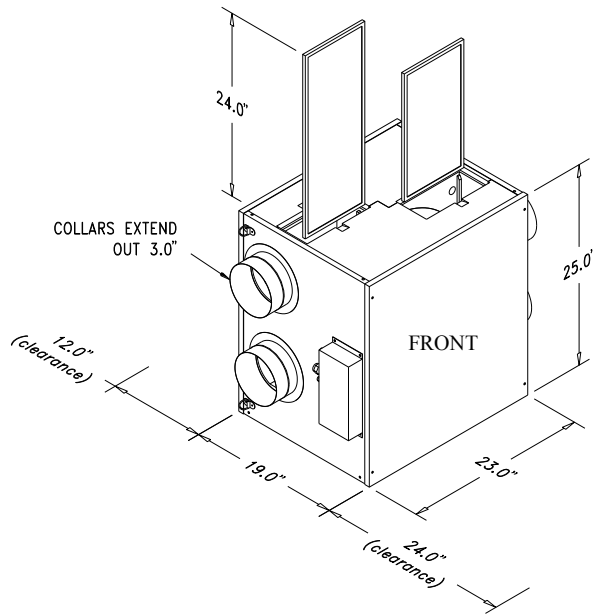
## **CAUTION**

*Always disconnect the power supply before wiring to prevent electrical shock and/or equipment damage.*

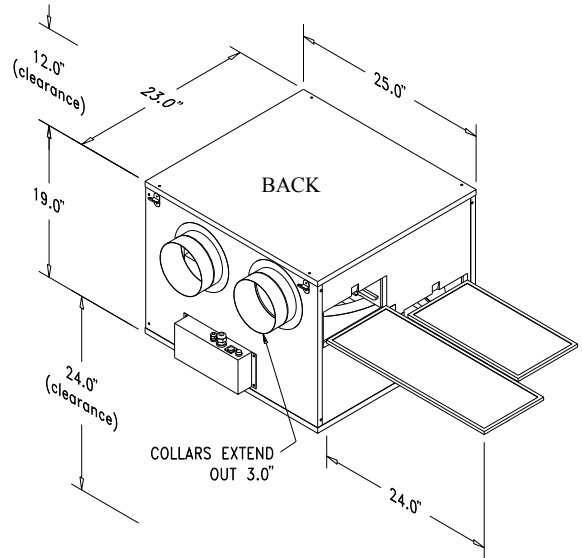
*The RecoupAerator is equipped with a three-pronged grounding plug for your protection against shock hazards and should be plugged directly into a properly grounded, 120V, 15 amp, three-pronged wall receptacle. If only a two-pronged outlet is available, it must be replaced with a properly grounded three-pronged receptacle in accordance with the National Electrical Code and local codes and ordinances. A qualified electrician should do this work. Use proper circuit protection. If you have any doubts about the grounding in your house, contact a qualified electrician.*

# Initial Considerations

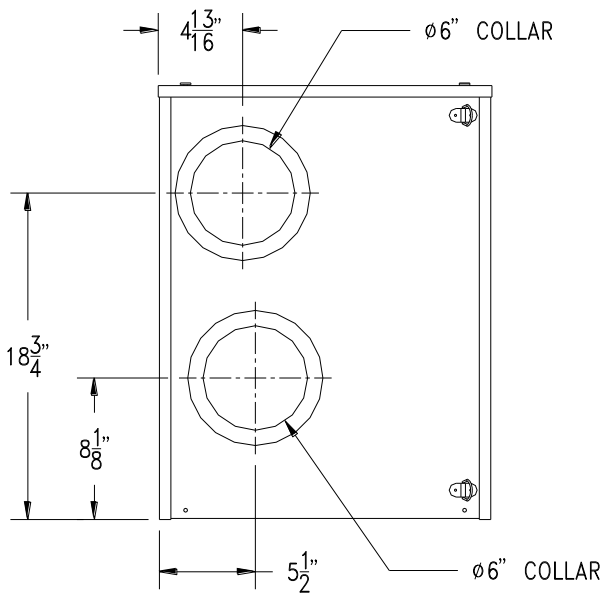
## Vertical Installation



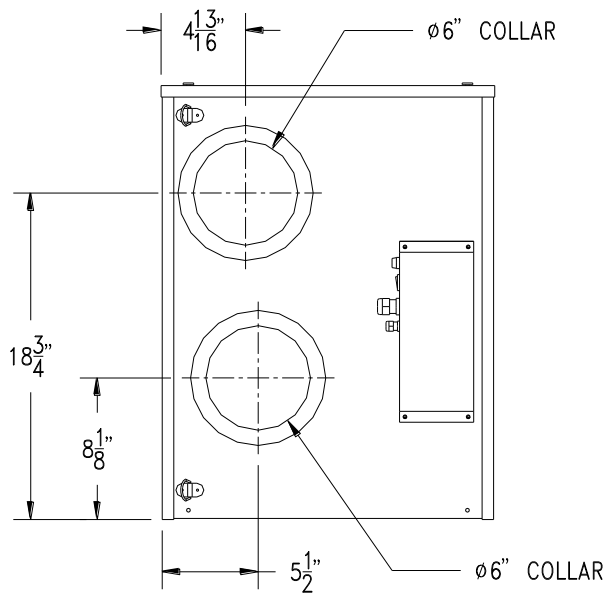
## Horizontal Installation



## Connect to the Inside



## Connect to the Outside



## Installation Options

### Option 1: Dedicated Ventilation Ducting

This is the most complete installation option and is ideal for new construction. Use option 1 when a home or business is especially concerned with health issues (e.g., when an occupant has asthma or severe allergies). Option 1 is the only option for homes and businesses without existing forced air ductwork. Option 1 is also used for homes employing radiant heat flooring or geothermal heating.

The more rooms to which ductwork is run, the more effective the system will be. Dedicated ductwork is installed for the exhaust intake and the fresh air delivery. The kitchen, laundry room, and other areas with high contamination should contain registers for the exhaust intakes. Areas such as the living room, den, and bedrooms should receive the full benefit of the fresh air being brought in, and a good installation will feature supply vents in these locations. As a general note, fresh air is generally supplied at floor level, and stale air is removed at ceiling level.

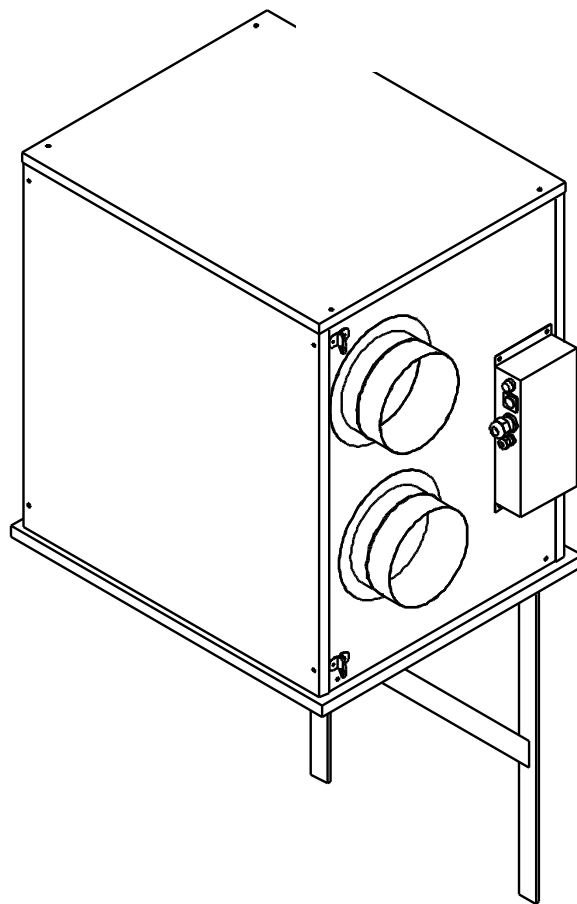
A simpler but somewhat less effective version of this system uses one exhaust and one or more delivery registers located strategically to encourage circulation throughout the house.





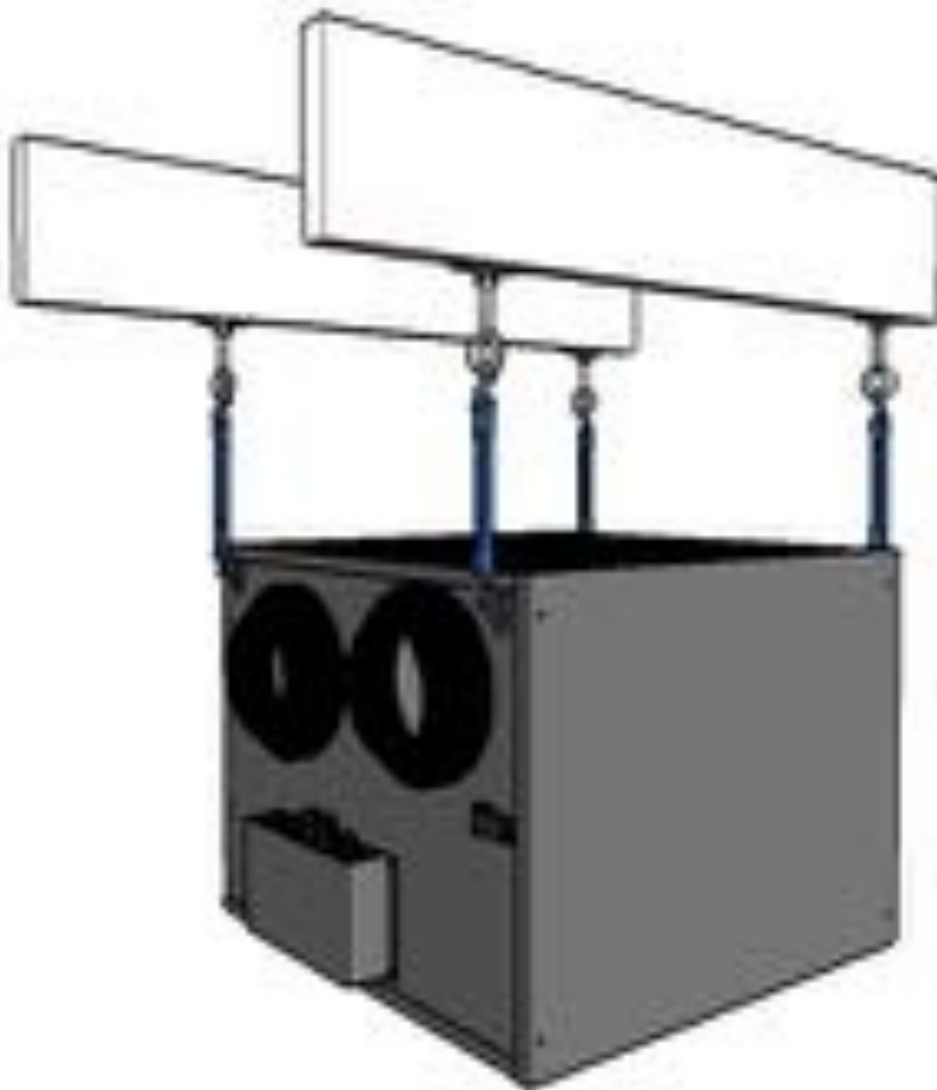
## Positioning Your RecoupAerator

Position the RecoupAerator in a location convenient to existing ducting and furnace/forced air system. We don't recommend that the RecoupAerator be mounted in an unconditioned space, as this will affect the performance and longevity of the unit. If possible, locate equipment away from the quiet rooms (e.g., bedrooms) in the house. Avoid directly suspending the RecoupAerator from the mid-span area of joists. This can result in structural vibration. Allow adequate space for maintenance and service of the RecoupAerator.



**Vertical Floor Mount.** The RecoupAerator rests on four rubber feet when mounted vertically. Set the machine on a flat, dry, level surface at least 20" x 24" which is able to support a minimum of 85 lbs. Allow 24" above for removal of the top cover and pre-filters so they may be easily lifted away for service of the heat recovery/filtration material. Allow 24" on the front side of the unit for service and cleaning.

**Horizontal.** Use a Ceiling Mounting Kit to suspend the RecoupAerator from the “D” rings located on the four corners. Allow adequate space (12”) between the ceiling and the unit to allow for servicing. Allow 24” below the unit for servicing. Allow 24” on the filter access side of the unit.

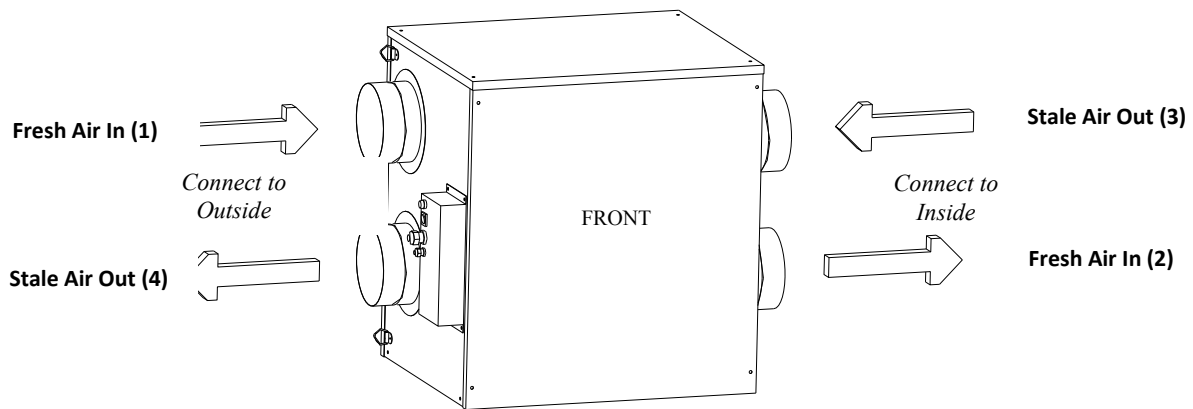


**Ducting between the RecoupAerator and the outdoors must be insulated and sealed with a vapor barrier to prevent 'sweating'.**

### Planning the Duct Work

Locate all four collars and attach to the unit at each of the four 6" holes. Peel the backing from the double-sided tape on the collars and then attach them to the unit with three self drilling screws each (provided).

Two duct holes are labeled Connect to Outside. The other two duct holes are labeled Connect to Inside.



To ensure maximum airflow, use the largest practical duct for the installation. Design and installation of ductwork must be in accordance with HVAC standards and regulations to allow required quantities of fresh air to circulate through the building. Under no circumstances should the trunk duct size be less than six inches, as this will restrict the airflow considerably. Insulated flex ducts tend to reduce air noise levels but add airflow resistance, and galvanized ducts provide the least resistance to airflow, but may amplify noise. Duct connections inside each building will vary. The outside duct connections are the same for most installations and must be insulated..

## General Duct Design Guidelines

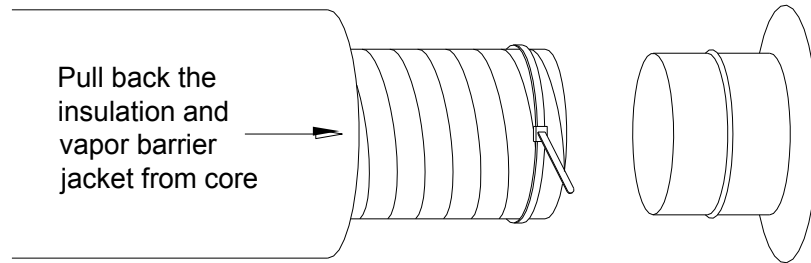
1. Use a minimum of six-inch-diameter round duct or equivalent for all connections to and from the RecoupAerator. Use of eight-inch ducts on main trunks is recommended, especially for ducts running to the outside. A licensed HVAC contractor should do the duct design calculations.
2. To minimize backpressure: Make the intake and exhaust duct runs as short and straight as possible. Always use 45-degree elbows instead of 90-degree where practical. Where flex duct is used, make sure that no “crimping” or “collapsing” of the duct occurs. Stretch flex duct evenly to avoid air restriction. Use “Y” connections instead of “T” connections wherever possible.
3. Position outdoor fresh air intakes away from known sources of pollution such as dryer vents, chimneys, and automobile exhaust. Locate fresh air intake and stale air exhaust at least six to ten feet apart, 40 inches from the corner of the building, and above the projected snow plane (above 18 inches if possible).
4. Position inside grill/register vents so that fresh air does not blow directly onto occupants or the thermostat.
5. Fasten joints between duct components with screws, sealant, and/or rivets and wrap them with metal foil duct tape to ensure no leaks.
6. Minimize any noise transmission through the ducts by using a short run (2-3 ft) of insulated flex duct on duct trunks coming from the unit and going to the inside of the house. If this isn’t enough, you can install an optional duct muffler.
7. If you install a RecoupAerator in an unconditioned space (not recommended), you must insulate the section(s) of the inside ducts, and possibly the unit itself, which are exposed to an unconditioned environment.
8. Ensure that ducting to the outdoors is installed above anticipated snow and flood lines, and is fitted with screened weather caps to prevent animal, insect, and debris entry.

Final duct system should exhibit less than 0.6 in. wg total external static pressure at maximum airflow. Lowering the static pressure will lessen the electrical usage.

## Flexible Ducting Tips

1. Ensure that your duct installation follows the following standards:
  - a. **Mechanical integrity** The system will remain as built for the life of the building, without developing leaks, obstructions, or insulation failures.
  - b. **Freedom from leaks** All air moved by the air handler will be drawn from and delivered to the intended conditioned spaces.
  - c. **Proper insulation** Conditioned air should not exchange heat with unconditioned spaces.
2. Size ductwork according to recognized industry standards such as Manuals D and J, published by the Air Conditioning Contractors of America (ACCA).
3. Follow guidelines and instructions provided with duct installation materials.
4. Tapes and sealants used on connections should be listed for UL 181B, *Closure Systems for Use with Flexible Air Ducts and Connectors*.
5. Assemble the tools to install non-metallic flexible duct:
  - a. **Knife or Scissors/Wire Cutter:** Use knife or scissors to cut duct wall. Use wire cutters to cut spiral wire helix.
  - b. **Foil Tape:** Use only tapes that have been listed and labeled to Standard UL 181B and labeled "181B-FX". Use two wraps of 1½" minimum width.
  - c. **Draw Band/Plastic Clamp/Clamp Tool:** Use for low-pressure systems up to four-inch wg (diameters of three to 10') and up to two-inch wg (diameters of 12" and over). To achieve proper tensioning of clamp, set clamp to max tension setting.
6. Use the minimum length of flexible duct necessary to make connections.
7. Support hardware (e.g., terminal devices, couplings, and fittings) independently of flexible duct using elbows or other devices.
8. Repair torn or damaged vapor barrier jacket. If internal core is penetrated, replace or splice flexible duct.
9. Install duct fully extended along straightest path possible.
10. Flexible duct shall be supported at manufacturer's recommended intervals, but at no greater distance than five feet, and the maximum permissible sag is ½" per foot of spacing between supports.
11. In no case will the hanger or saddle material supporting the flexible duct be less than 1½" wide.

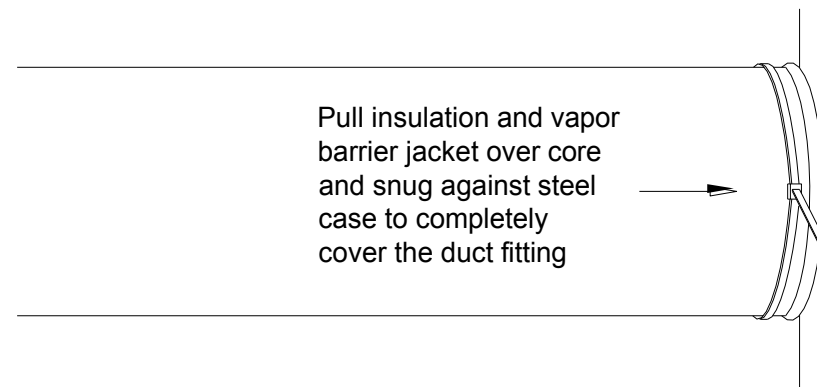
## Attaching flexible ductwork to RecoupAerator Collars



Apply mastic over the fitting and / or inside the duct core before pulling the inner lining at least 1-inch over the fitting.



Secure the inner core to the fitting using a draw band or three wraps of pressure-sensitive tape - apply additional mastic over the connection.



Mechanically fasten the vapor barrier jacket with a draw band

## Tips on Making a Noisy Duct System Quieter

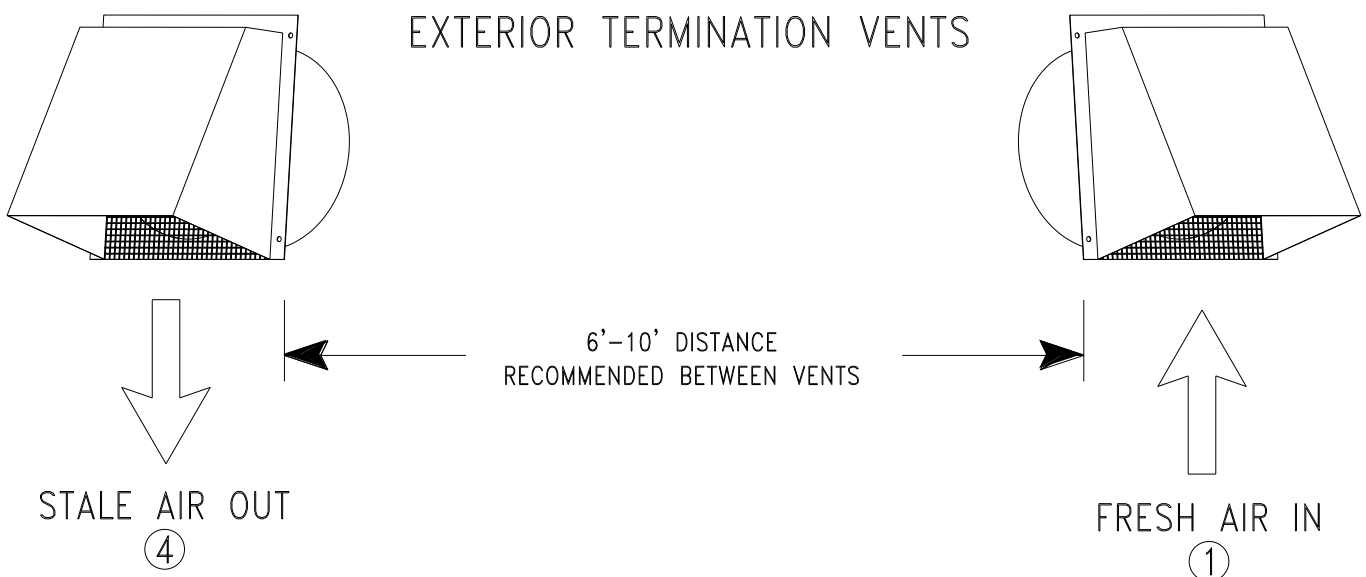
In some installations, the unit may be too noisy for the occupants. Here are some options for correcting the situation:

1. When installing the unit, allow for a three-foot section of insulated flexible duct to go from the starting collar on the unit to the rest of the ductwork (on all four collars). This will help dampen noise being transmitted from the unit into the home or business, at the source.
2. Locate the unit farther away from the source of the noise pollution area (e.g., if the unit is close to a living room vent where the noise is too loud, locate the unit farther away from this location). This will allow the noise to dissipate in the longer duct length.
3. Wire the RecoupAerator to run only with the furnace air handler.
4. Run at the lowest flow setting necessary for fresh air requirements.

## Ducting to Outside

**Note: The ducts to the outside must be insulated.** The starting collars labeled *Connect to Outside* must be ducted to the outside of the building, and the following precautions should be taken.

1. The ends of the two ducts should be as far apart as practical (at least six feet, either horizontally or vertically) to minimize re-circulation of the exhaust air.
2. Terminate the ducts using exterior weather hoods. Ensure that the exterior weather caps have wire mesh to keep out birds, small animals, insects, and debris. Angle the weather caps down and away from each other and place them away from exhaust vents for other appliances such as dryers or hot water heaters. Avoid placing air intake vents near exhaust vents from adjacent buildings or sources of automobile exhaust. Never place an air intake in a garage, for instance.
3. Make sure that the joints between the termination vents and the walls are sealed to prevent air and moisture penetration.





## Wiring and Controls

### CAUTION

*Before performing any service to your RecoupAerator, switch off the unit and disconnect power from the unit. You must disconnect power by either unplugging the unit or by switching the applicable breaker in your breaker box to off. Otherwise, the main power to the unit will remain hot and could cause serious bodily injury.*

### Basic Electrical Wiring

The RecoupAerator Model 200DX is supplied with two blower motors, one energy recovery wheel drive motor, and a detached wall controller that can be mounted near the unit or in a remote location. Follow all applicable electrical codes.

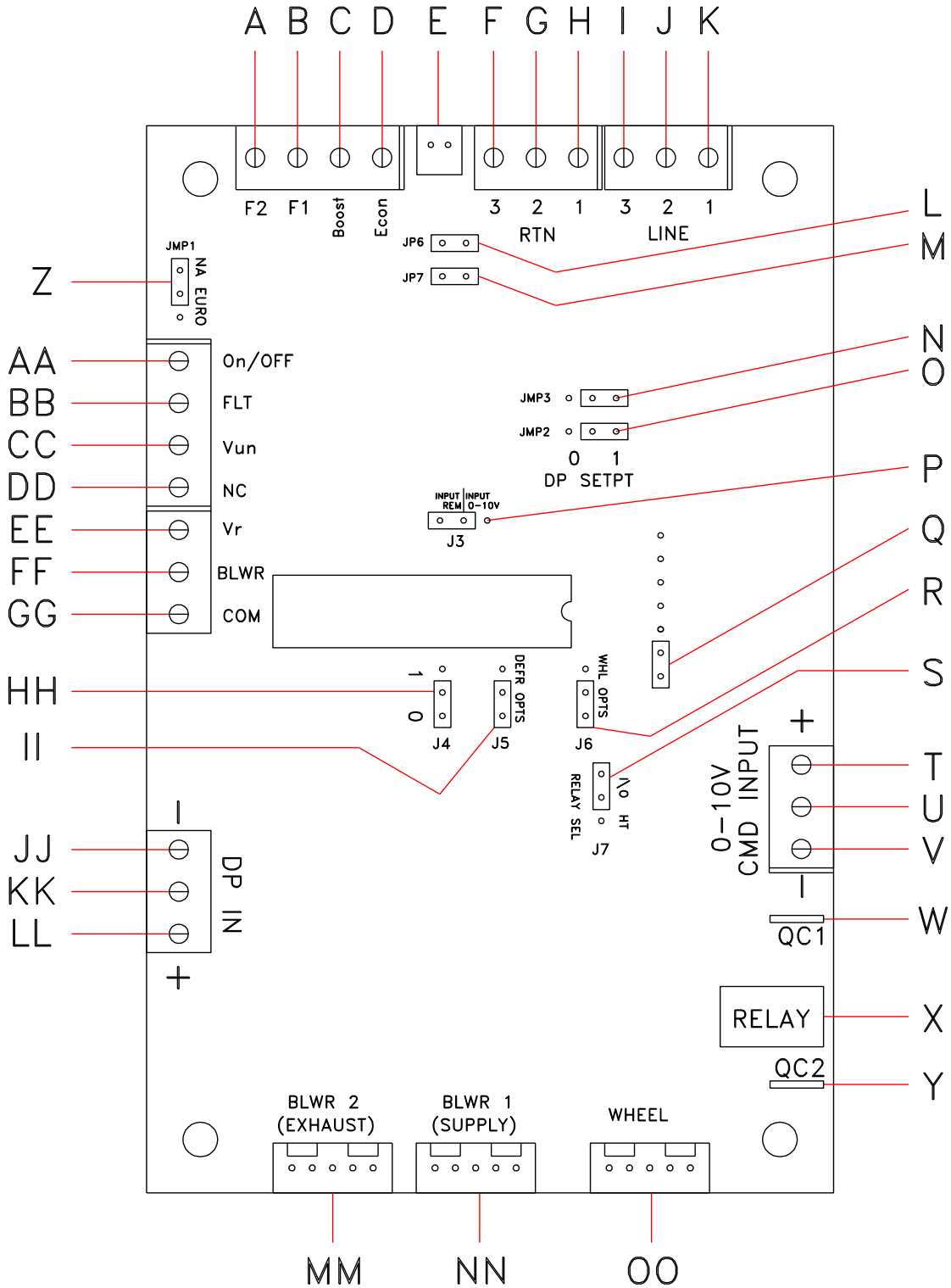
The RecoupAerator can be wired in a number of different ways depending on desired features. This section of the manual describes each benefit option and shows the wiring procedure to accomplish them.

### Factory Default Settings

**Airflow.** This unit contains two blower motors, each independently controlling the airflow coming into the building (Blower 1, supply), and leaving the building (Blower 2, exhaust). The unit has the capability of lowering the airflow from the building going to the outside by a selectable set of offset jumpers on the three-motor control board. Factory settings provide for “balanced” airflow, that is, equal airflow both coming into the building and exiting the building.

**Input.** The RecoupAerator comes equipped to handle several different types of control input. From the factory, The RecoupAerator is wired with the North American Wall Dial Control, unless otherwise specified at the time of order.

**EconoCool.** This unit comes with an economic ‘night’ flush feature. There is a small silver toggle switch mounted next to the Main Power switch to turn EconoCool ON and OFF. Please see the ‘econocool’ section in this manual for further detail.



**Three-motor Main Control Board**

### 3-Motor Main Control Board

- A. F2: Wiring input from furnace. 24 VAC common. In some cases “C” post from thermostat wiring on the furnace. If wiring to furnace, REMOVE Jumpers at L and M (JP6 & JP7).
- B. F1: Wiring input from furnace. 24 VAC line. In some cases “G” post from thermostat wiring on the furnace. If wiring to furnace, REMOVE jumpers at L and M.
- C. Boost input. When this post receives a 24 VAC from I, J, or K, the unit will be turned on to high speed (max air flow).
- D. EconoCool input: When this post receives a 24 VAC signal from I, J, or K, the EconoCool function will be enabled.
- E. Temperature thermistor input. Temperature thermistor located in the incoming air stream (duct 1) is fed to the controller through this input.
- F. RET 3: 24 VAC return post. Common from the internal transformer.
- G. RET 2: 24 VAC return post. Common from the internal transformer.
- H. RET 1: 24 VAC return post. Common from the internal transformer.
- I. LINE 3: 24 VAC line post. Line voltage from the internal transformer.
- J. LINE 2: 24 VAC line post. Line voltage from the internal transformer.
- K. LINE 1: 24 VAC line post. Line voltage from the internal transformer.
- L. JP6: Jumper connects 24 VAC Line from internal transformer to F1.
- M. JP7: Jumper connects 24 VAC return from internal transformer to F2.
- N. JMP3: Offset / DP Set point jumper. Selects air flow offsets. See Air Flow offsets in this manual for further detail.
- O. JMP2: Offset / DP Set point jumper. Selects air flow offsets. See Air Flow offsets in this manual for further detail.
- P. J3: Control Input jumper. Selects control input from either the Wall Dial Control, or a 0-10V DC input voltage (at T and V). When J3 is in the 0-10V position, JMP1 MUST be in the EU position for the 0-10V input to work.
- Q. Programming jumper. Must be in place for to run RecoupAerator.
- R. J6: Wheel Options. Control for heat wheel rotation. Default ‘0’ position
- S. J7: Relay selection. Jumper selects whether the normally open relay (X) closes when the unit turns on (position I/O), or when the temperature thermistor reads below 10°F (position HT). Default is position I/O.
- T. 0-10V DC input post. When J3(P) is in the 0-10V position, a positive line voltage 0-10V DC may be used to control the RecoupAerator operation. When J3 is in 0-10V position, JMP1 MUST be in EU position for the 0-10V input to work.
- U. Not connected. Empty socket.

- V. 0-10V DC input post. When J3 is in the 0-10V position, this post connects to the negative side of the 0-10V DC control.
- W. QC1: Quick Connect 1. Used as an auxiliary output control option. QC1 will be electrically connected to QC2 when the relay (X) is closed. Max rating: 1A@24VAC.
- X. Low voltage pilot duty relay. Normally open. Closes according to selection made at J7 (S). Default: closes when the ERV is turned on.
- Y. QC2: Quick Connect 2. Used as an auxiliary output control option. QC2 will be electrically connected to QC1 when the relay (X) is closed. Max rating: 1A@24VAC.
- Z. JMP1: Remote control input selection. Default wall controller in the North American remote wall control (NA position). J3 (P) must be in REM INPUT position. When J3 is in 0-10V position, JMP1 MUST be in EU position for the 0-10V input to work.
- AA. On/Off terminal. For wiring to mating terminal on NA wall controller.
- BB. FLT terminal. For wiring to mating terminal on NA wall controller.
- CC. Vun terminal. For wiring to mating terminal on NA wall controller.
- DD. NC terminal. *Do not wire to this Empty terminal.*
- EE. Vr terminal. For wiring to mating terminal on NA wall controller.
- FF. BLWR terminal. For wiring to mating terminal on NA wall controller.
- GG. COM terminal. For wiring to mating terminal on NA wall controller.
- HH. J4: Blower control jumper. Default is '0' position for CFM control.
- II. J5: DEFR OPTS: Defrost Options Jumper. Default position is the '0'. Between 18°F - 8°F The wheel slows to prevent frost accumulation, and OFF when outside temperature is below 8°F. The '1' position will simply shut down the machine at below 8°F. Postion '1' is intended for use with a fresh air pre-heater.
- JJ. DP IN: Delta pressure control input, negative (-) side. Not functional without Pressure Control Transmitter option. Standard Recoupaerator has air flow offset capabilities, see Airflow Offsets.
- KK. Not connected. Empty socket.
- LL. DP IN: Delta pressure control input, positive(+0) side. Not functional without Pressure Control Transmitter option. Standard Recoupaerator has air flow offset capabilities, see Airflow Offsets.

## Low Voltage Accessories:

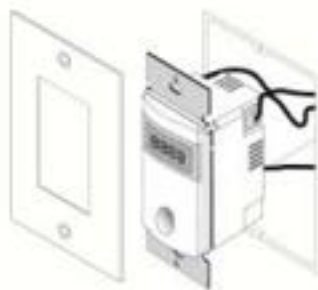
Your RecoupAerator is designed with the latest low voltage control technology. Equipped with a 20 volt-ampere (VA), 120 to 24 VAC transformer, this auxiliary low voltage power can be accessed at the three-motor Main Control board inside the power switch cover. Use the screw terminals labeled 24 VAC LINE (1, 2, or 3) and 24 VAC RETURN (1, 2, or 3) to power low voltage accessories.

**Limitations:** *Note that your RecoupAerator uses 4 VA under normal operating conditions, thus leaving 16 VA for optional accessories. When designing your control strategy, keep in mind that you can over draw the 20 VA.*

Below are accessories UltimateAir offers, along with their power usage.



**Boost Timer 1.4 VA**



**CO<sub>2</sub> sensing switch 3 VA**



**Pressure Transmitter 3 VA**

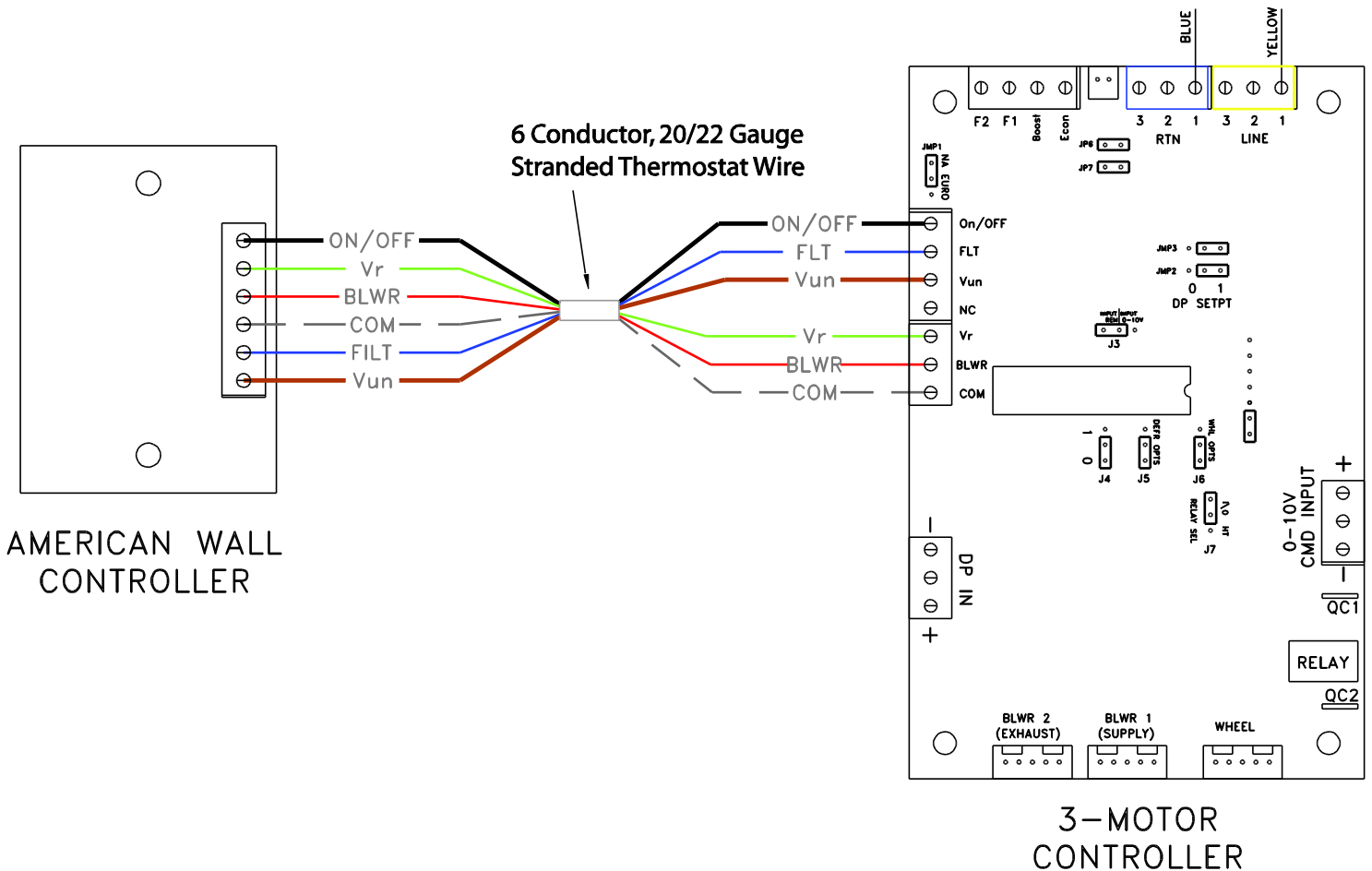
## Wall Dial Flow Control – *Included with the RecoupAerator*

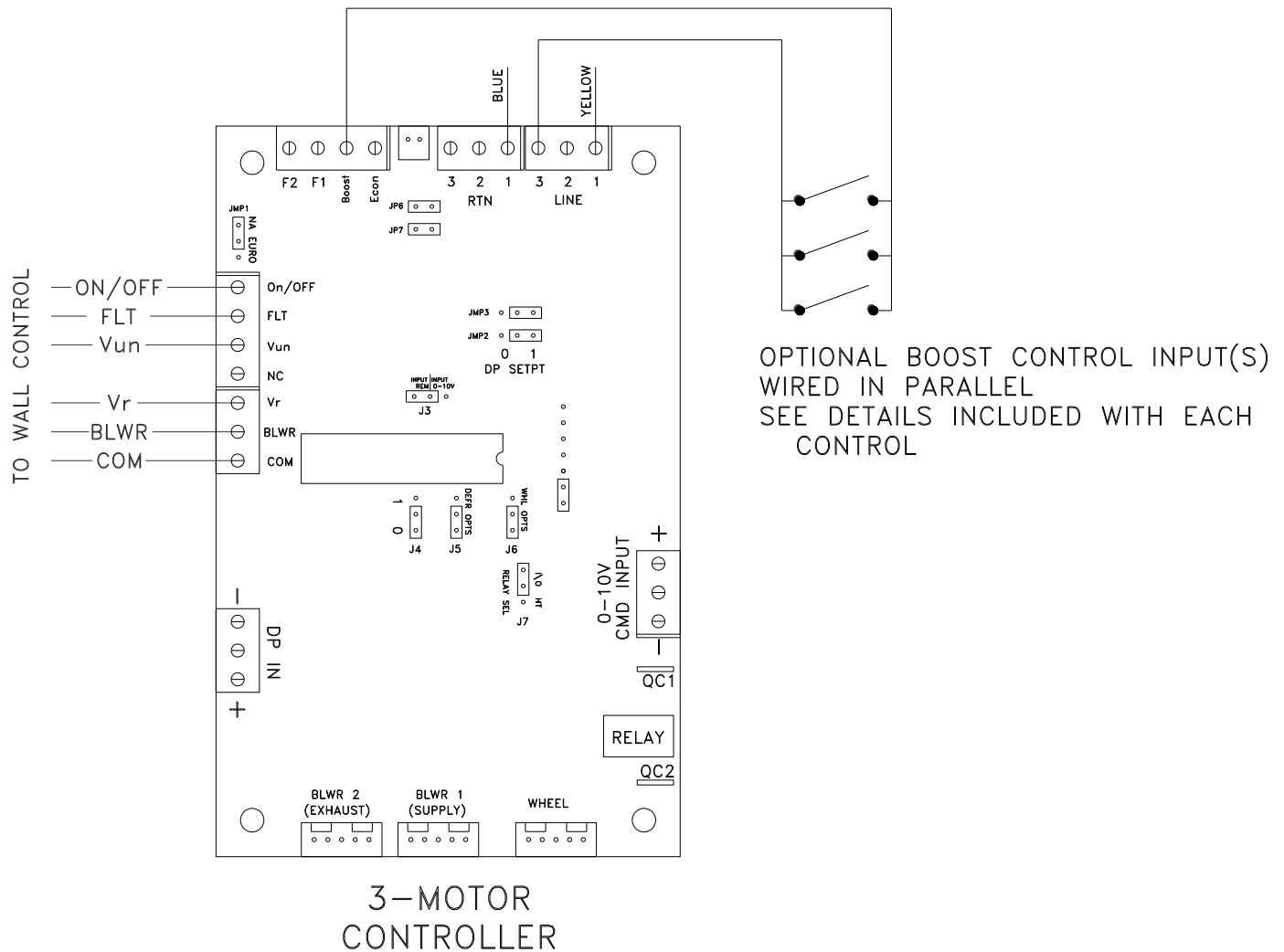


The 200DX comes equipped with this Wall Dial Flow Control pre-wired. Follow these steps to re-wire the dial control to a more convenient location.

1. Run the unit before un-wiring, to be sure that everything is working.
2. Following all applicable electrical codes, Determine the location where the Wall Dial will be mounted and the length of 6-conductor wire (20/22 gauge) necessary to run from the RecoupAerator to the Wall Dial
3. Be sure the RecoupAerator is switched OFF and unplugged. Using a flat screw driver or a 5/16 nut driver, remove the exterior electrical cover.

4. Un-wire the Wall Controller from the RecoupAerator, note the terminal labels.
5. After stripping 1/4" of insulation from each of the wire ends, complete the wiring by matching each labeled between the 3-Motor Main Control and the Wall Dial. Be sure all connections are secure by lightly pulling each wire.
6. If wiring to a furnace, you MUST REMOVE jumpers JP6 and JP7. If NOT wiring to a furnace, jumpers JP6 and JP7 MUST be in place. See furnace wiring for more detail in this manual.





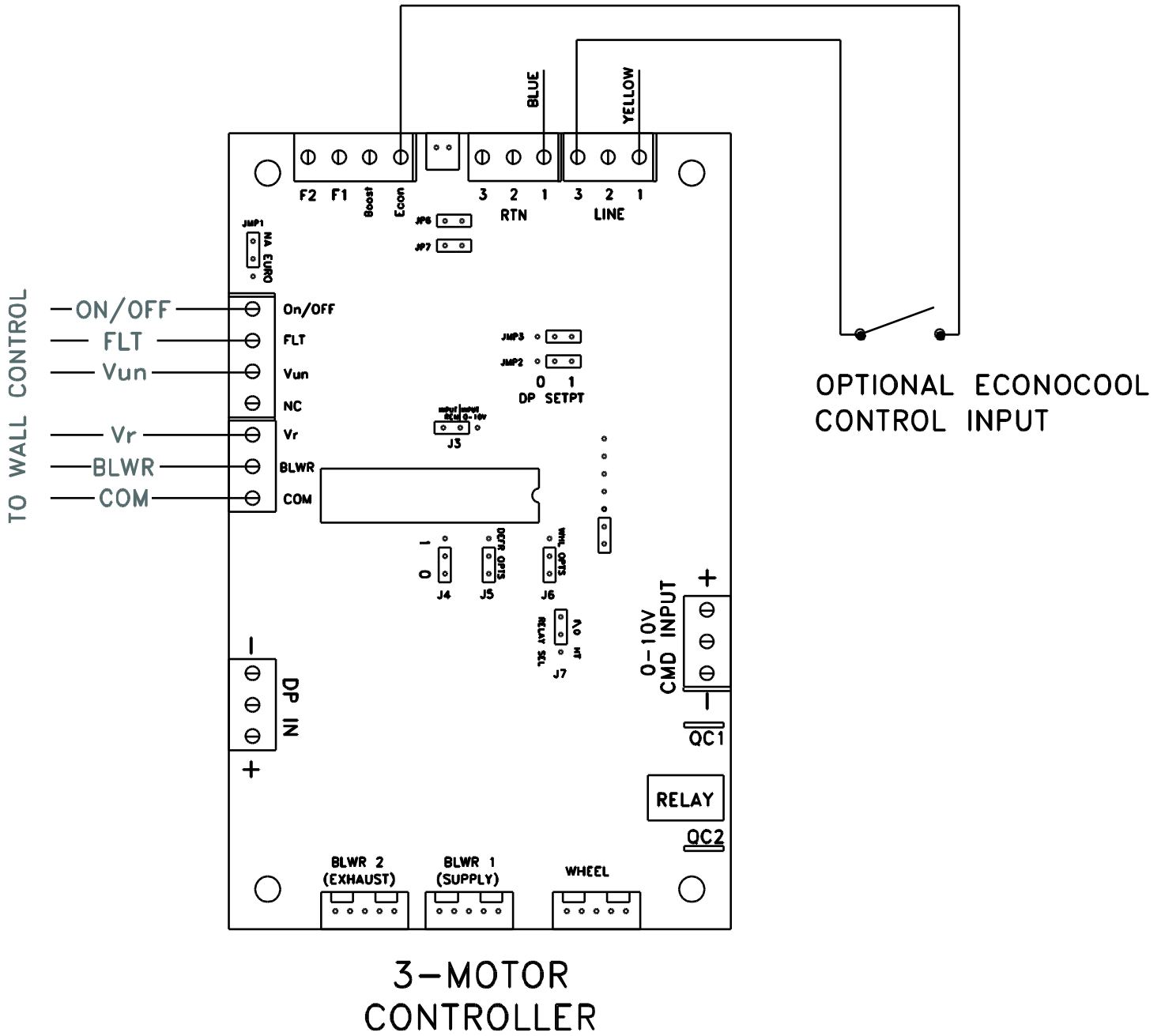
On the three-motor controller, there is one screw terminal specifically for **Boost** input. This feature allows for an override of the RecoupAerator's variable speed ability. Boost is useful for running at maximum air flow (200CFM) using a low-voltage signal input such as the optional Boost Timer. Typically, Boost inputs include bathroom timers, CO<sub>2</sub> monitors, and humidity monitors. Note that all Switch relays must be capable of switching **LOW VOLTAGE (24vac)**. *High Voltage Contacts (110VAC) will often fail used with 24VAC because of the lack of required high voltage arcing to keep them clean and functional.*

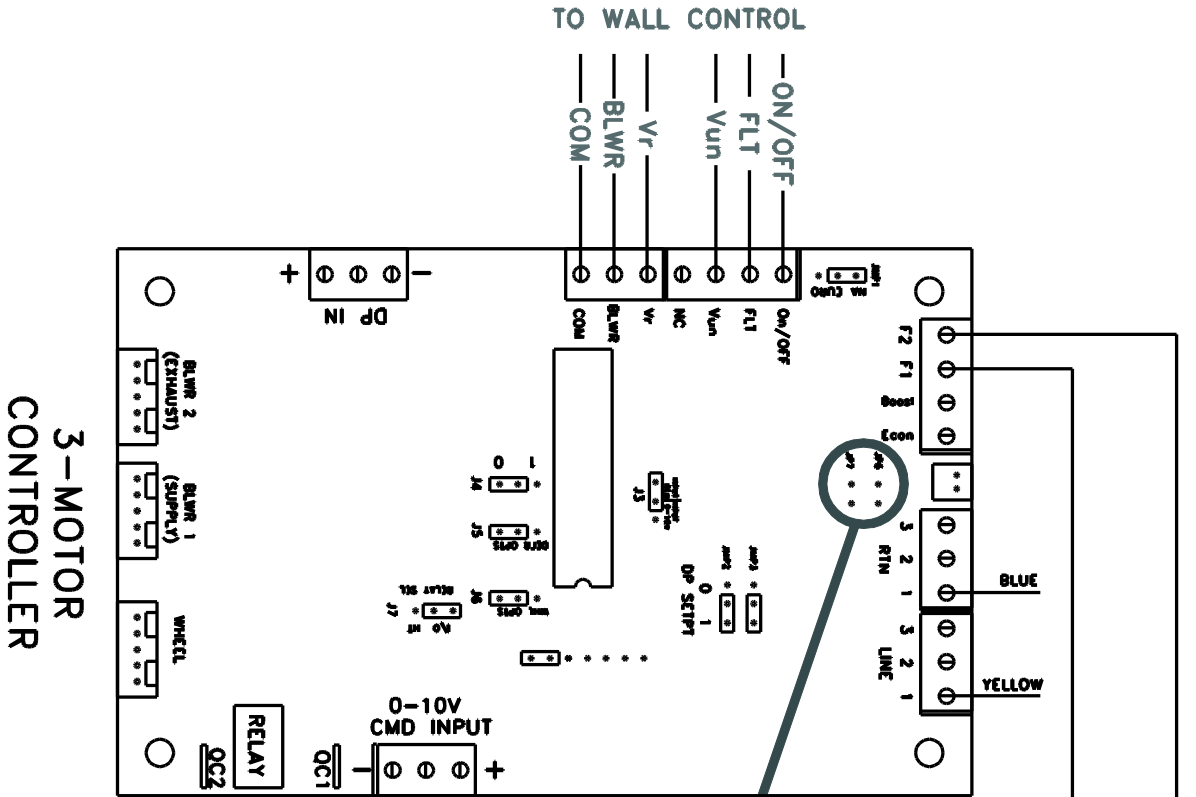


## EconoCool™

The RecoupAerator is EconoCool™ equipped, so the outside air during summer months may be utilized to cool your home or business (e.g., during the night), thereby providing AC energy savings and Comfort. The built-in temperature sensor on the incoming air stream automatically stops energy recovery between 55° and 70° Fahrenheit. The EconoCool™ toggle switch must be ON for this function to work.



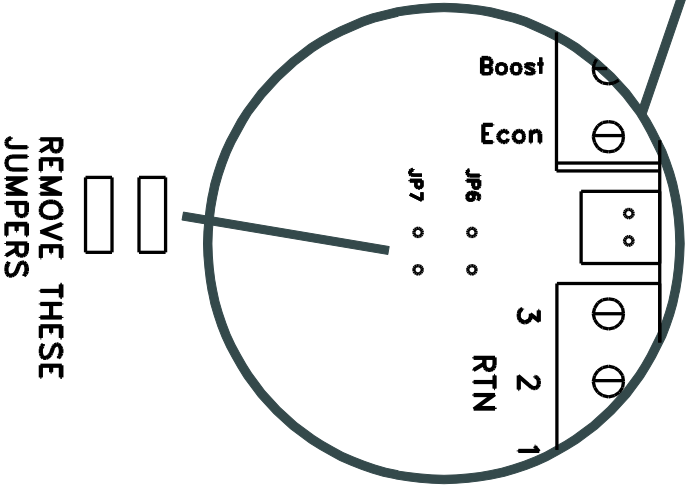




**3-MOTOR  
CONTROLLER**

CONNECT TO FORCED AIR SYSTEM  
COMMON TERMINAL (TYPICALLY 'C')  
CONNECT TO FORCED AIR SYSTEM  
AIR HANDLER LINE SIGNAL  
(24VAC, TYPICALLY 'G')

WHEN WIRING AN INPUT TO F1 & F2,  
JUMPERS JP6 AND JP7 MUST  
BE REMOVED



REMOVE THESE  
JUMPERS

## Optional Pressurization / Airflow Offset

(Boost mode will over-ride any pressurization offset)

Your RecoupAerator can affect your home's or business's indoor air pressure by allowing for an air flow offset between the incoming and outgoing air streams, thus discouraging moisture and gases from entering the wall cavities . Implement the optional airflow offset only if you're a qualified specialist familiar with indoor pressure-related issues. The factory setting for this feature is balanced air flow into and out of the space with respect to outside.

**\*\*Note:** the standard airflow offset feature is different from the Pressure Control Transmitter option, which continuously samples indoor and outdoor pressure and adjusts airflow to provide desired indoor air pressure.

1. To offset airstreams, locate the Three-Motor Main Control Board mounted under the power switch cover.
2. Inside on the Main Control Board, locate the jumpers labeled JMP2 and JMP3, which determine the offset between the two air streams at maximum air flow. Notice on the board directly beside these jumpers are the numbers "0" and "1". These numbers refer to the position of the jumpers. The factory setting is: JMP2 = JMP3 = 1, which means no offset is in effect and the unit will provide balanced supply and exhaust air flow.
3. Shut OFF the main power switch and disconnect the 110VAC power source.
4. Move the jumpers to set the jumper configurations for their corresponding air flow offset as follows:

***JMP2 & JMP3= 1 no offset balanced default setting***

***JMP2= 1, JMP3= 0 ~20 cfm offset***

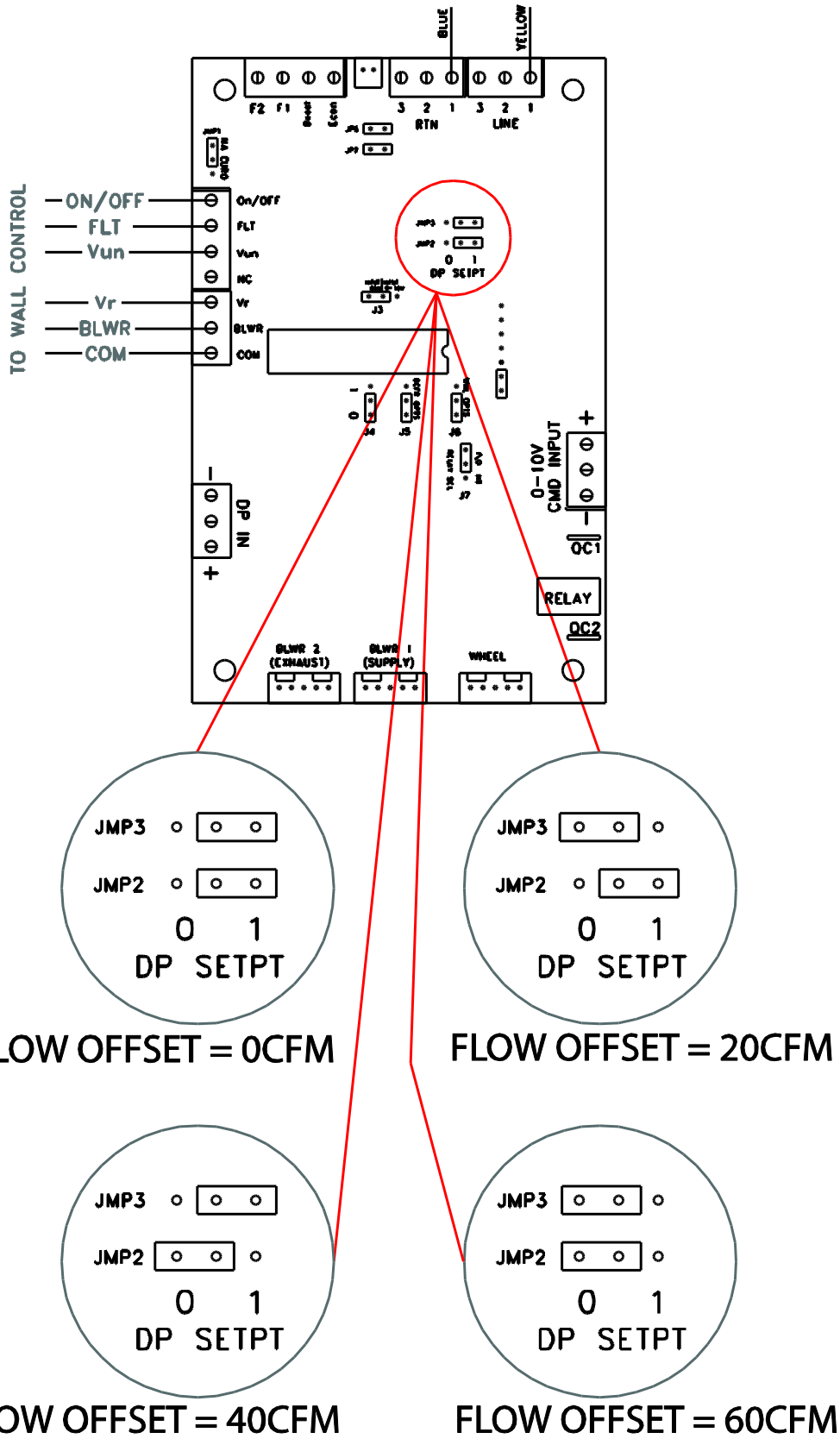
***JMP2= 0, JMP3= 1 ~40 cfm offset***

***JMP2= 0, JMP3= 0 ~60 cfm offset***

\*Note: airflow is approximate.

\*See following diagram for further instruction

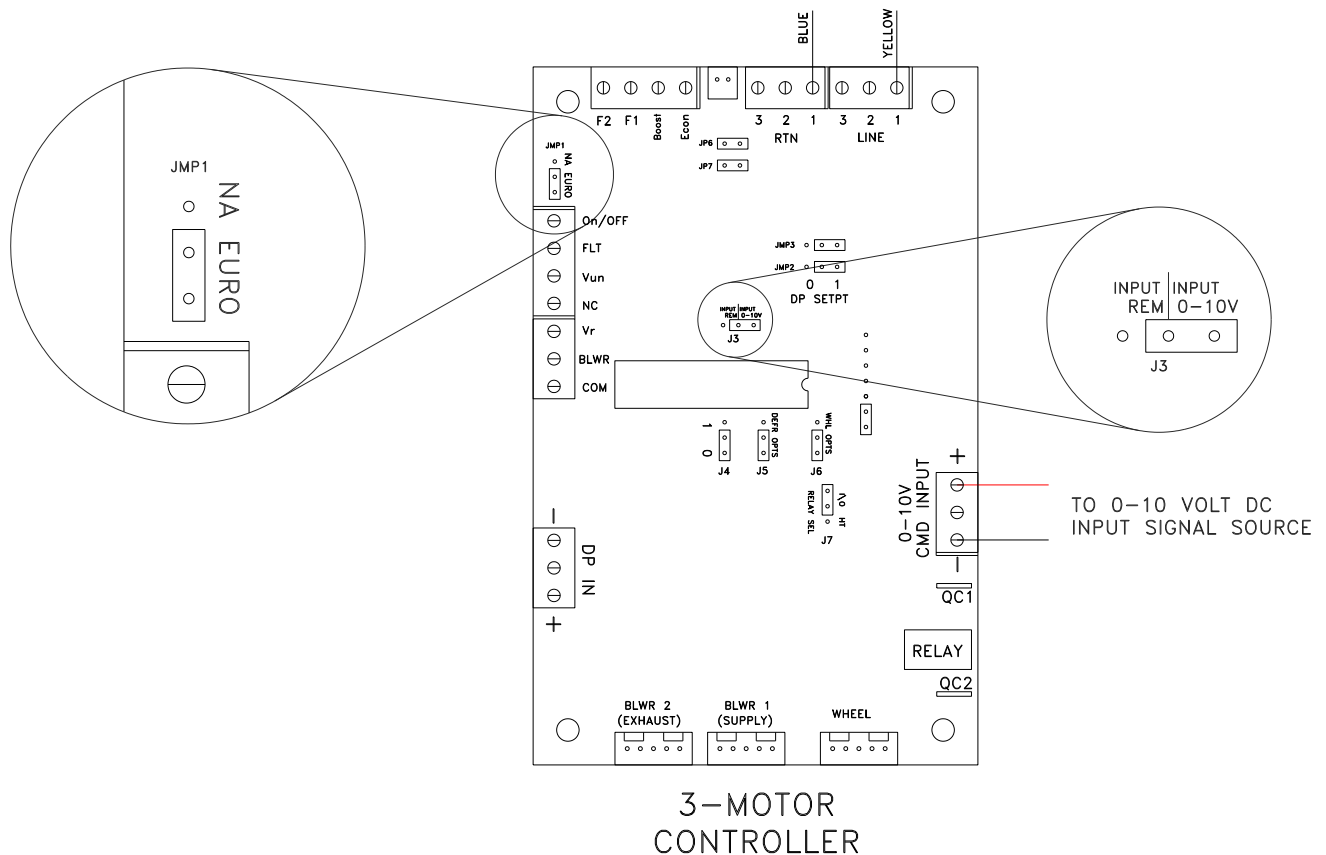
When an offset is selected, the unit will drop the exhaust air flow by the specified amount at the maximum air flow setting. At lower air flow settings, the air streams will become proportionally closer together until they are equal at the minimum air flow.



## Using a 0-10 VDC Input Signal Control System

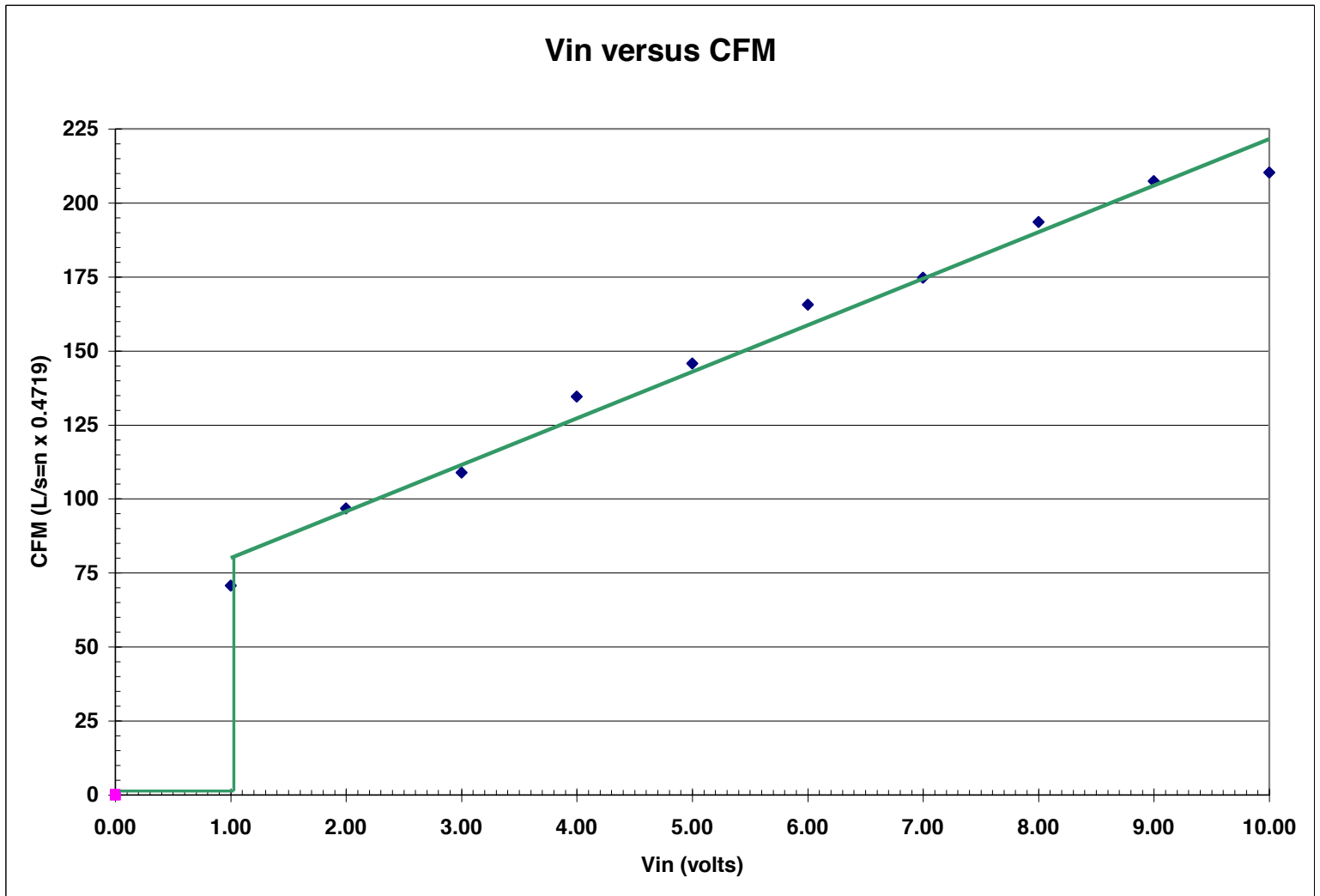
Your RecoupAerator can be programmed into a “smart house” control, so that it can be controlled remotely or using any 0-10 VDC control signal. To set up a 0-10 VDC input signal control system, **disconnect all power to the unit.**

1. Set jumpers JMP1 to the EU position, and J3 to the 0-10V INPUT position on the three-motor controller as shown in the drawing below to enable the 0-10 VDC control input.
2. If a Wall Dial Control is attached to the unit, remove it. You do not need a Wall Controller when operating the unit with a 0-10VDC input control signal.
3. Locate the two screw terminals labeled “0-10V CMD INPUT”, as shown above, and connect the signal control wires to these posts as indicated.



Boost, EconoCool™, air flow offsets, and furnace input functions are still operational when using the 0-10V input signals to control the unit. Review following graph for the input VDC versus airflow relationship to help program your control.

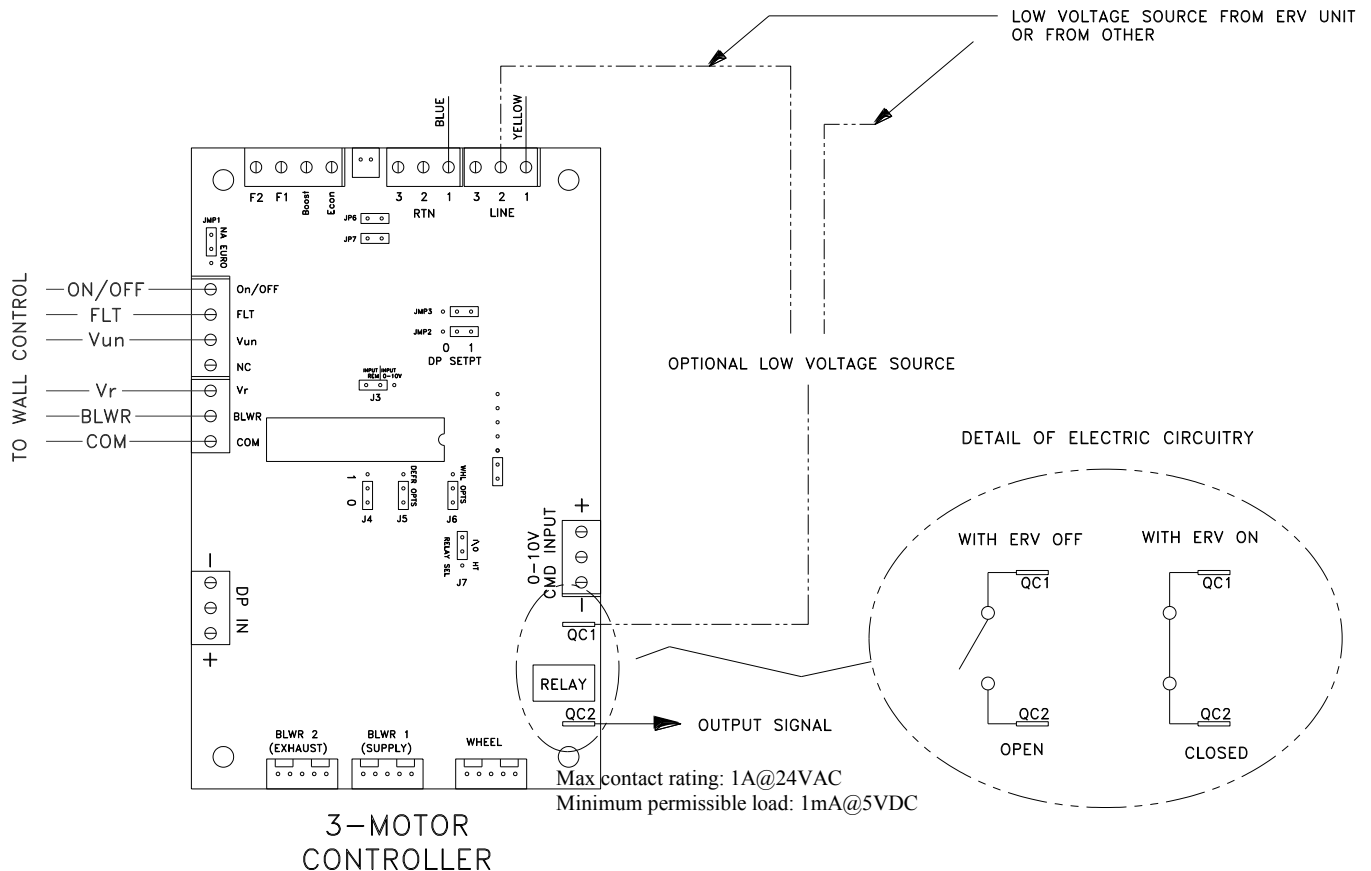
## Using a 0-10 VDC Input Signal Control System cont...



*Note: Curves are generated from actual test data but should only be used as general guidelines. Actual results may vary.*

## Optional Auxiliary Output

Your RecoupAerator allows you to run auxiliary options, such as duct power dampers, fans, humidifiers, and dehumidifiers. For instance, you can use the auxiliary output to turn on the furnace fan. Your RecoupAerator is equipped with a low-voltage pilot-duty relay (normally open) on the three-motor controller (denoted 'X' in the 3 motor controller description). The relay controls any auxiliary options you may want to operate in conjunction with your ventilation unit. When the RecoupAerator is turned on by the Wall Dial Control or by other means (e.g., fan, furnace, boost, and building input), the relay switches from normally open to closed, completing the circuit between QC1 (1/4" quick-disconnect tab) and QC2 (1/4" quick-disconnect tab), denoted as "W" and "Y" on the 3 Motor Main Control description. Jumper J7 must be in the I/O position for this relay to activate on unit start.





## Service & Maintenance

### CAUTION

*Before performing any service to RecoupAerator, switch off and disconnect power to the unit. You must disconnect power by either unplugging the unit or by switching the applicable breaker in your breaker box to OFF. Otherwise, the main power to the unit will remain hot and could cause serious bodily injury.*

### Maintenance Check List

- √ Check pre-filters and energy transfer/filtration material every six months or when the *Check Filter* light comes on. The *Check Filter* light comes on every 90 days of continuous operation. Turn off the *Check Filter* light using the directions in “Check Filter LED” below.
- √ Clean pre-filters every 3 to 4 months if continuously operated, or every 6 months otherwise.
- √ Replace energy transfer/filtration material when necessary.
- √ Check exterior weather caps regularly.
- √ Lightly vacuum or dust the cabinet interior yearly.

### Check Filter Light on the Wall Dial

The “check filter” indicator light is located on the front side of the wall controller and will light up (red) after a continuous operation of 90 days. Because of differences in indoor and outdoor environments, the filters may or may not need cleaning/replacement every 90 days. The light is only an indication to check the filtration material. To reset the light (turn it off), locate the small hole in the faceplate of your control cover just below the red check filter light. Using a small-diameter object, such as a paper clip, hold 2 seconds until the light goes OFF. The light will come on again after approximately 90 days. Check your pre-filters and energy wheel transfer/filtration material for cleanliness at this time.

***To order replacement filtration materials, visit us online at:  
[www.ultimateair.com](http://www.ultimateair.com)***

## Exterior Weather Hoods

Check your exterior weather hoods periodically throughout the year to ensure that the fresh air inlet and stale air exhaust hoods mounted on the outside of the building do not become clogged with debris such as leaves, grass, snow, or nests. Remove any debris by hand or wipe out the caps with a dry cloth.



## Aluminum Pre-filters

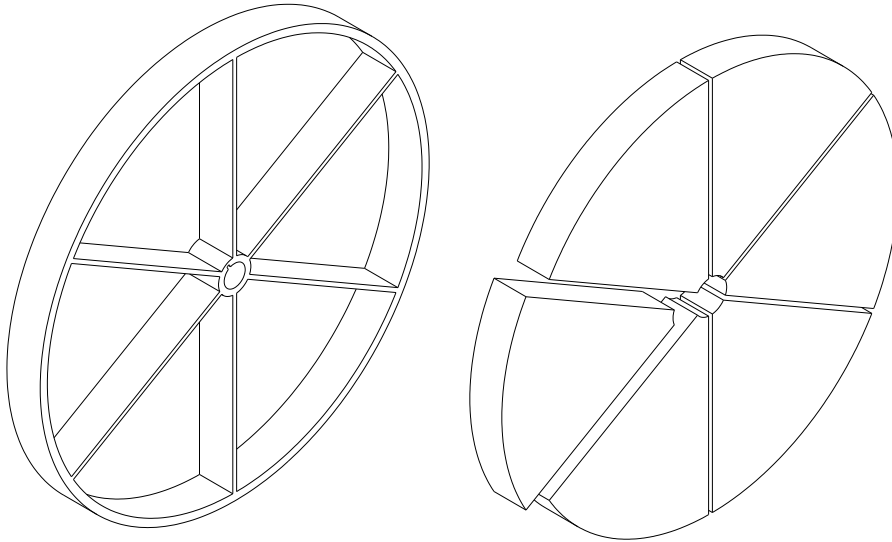
Clean the aluminum pre-filters at least once every six months. Clean more frequently if necessary. To clean the filters:

1. Disconnect power to the RecoupAerator
2. Unlatch the filter access cover
3. Remove the two rectangular filter cover inserts. They will easily lift free
4. Slide the two aluminum pre-filters out (one from each opening), there is one long pre-filter and one short pre-filter.
5. Check the pre-filters for build-up. The pre-filters may be cleaned by soaking in warm soapy water, then rinse. If they are clogged a new set should be purchased from UltimateAir. Pre-filters should be mostly dry before reinstalling.
6. Replace the filter cover insert blocks and access cover
7. Restore power to the unit.

*To order replacement filtration materials, visit us online at:*  
[www.ultimateair.com](http://www.ultimateair.com)

## Energy Transfer/Filtration Material (“Filter Pies”)

The UltimateAir’s patented energy transfer wheel contains six removable filter pie wedges which periodically require replacement. These pies are also known as ‘energy transfer/filtration material’ because they not only filter incoming air, they also transfer heat and moisture from one air stream to the other giving the machine the 96% Heat/Energy recovery rating.



1. Disconnect power to the RecoupAerator
2. Unlatch the filter access cover
3. Remove the two rectangular filter cover insert blocks.
4. Remove the long aluminum pre-filter as explained in the Aluminum Pre-Filter section on the previous page.
5. If the energy transfer/filtration material is dark gray or darker, it should be hand washed or replaced. Pull out the exposed filter material “pie wedges”, manually rotating the wheel to access the remaining wedges.
6. Rotate the wheel by hand, making sure that the pieces are completely and evenly replaced below the level of the spokes so that none drag as the wheel rotates. Access both sides of the wheel to adjust the wedges.
7. Replace the aluminum pre-filters, rectangular insert blocks, and the access cover and restore power.

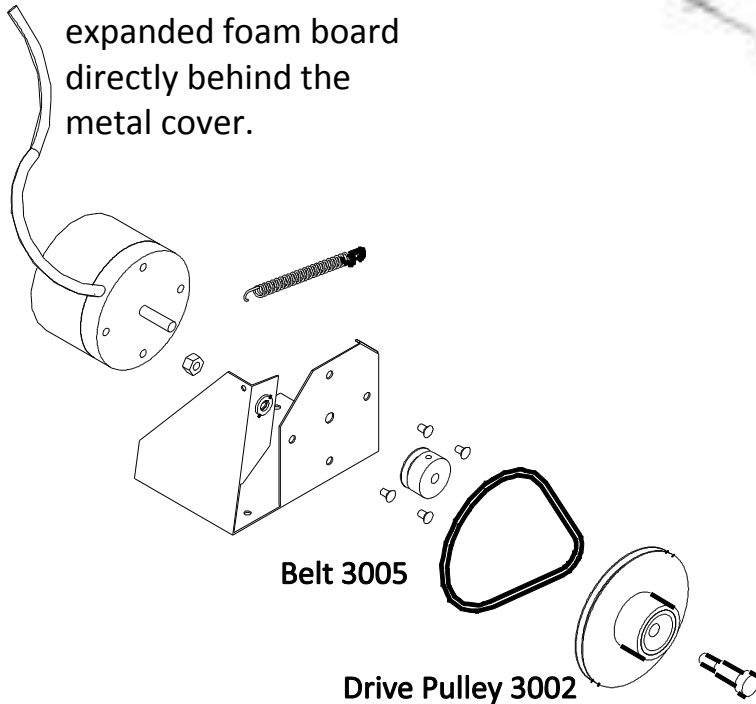
## Changing the Belt Part #3005

The Drive Roller Belt connects the drive motor to the rubber drive roller, which rotates the energy recovery wheel. Please follow these steps to replace the Drive Roller Belt.

*This should be done by a HVAC installer.*

*Technical support is available by calling UltimateAir ..... 800.535.3448*

1. Disconnect power, and turn the main switch OFF (white dot will be out).
2. Remove the filter access cover.
3. Remove the four hex head (5/16") screws holding the 'front' metal cover then remove the white expanded foam board directly behind the metal cover.



**Continued...**

1. The wiring remains connected. Remove the two screws holding the motor mount/ drive roller assembly in place. They are visible and closest to you. The rear of the motor mount sits on two snap top posts.

2. Once the screws are out, reach in and firmly rock the motor mount assembly to unsnap the rear posts.

3. *Replace Drive Roller Belt by stretching and rolling the new belt onto the pulleys.*

4. Install motor mount / drive roller assembly back into the unit by first snapping the rear posts, then replacing the two screws.

5. Install white foam board then the metal front cover.

6. Operate unit with wheel visible through top door to verify rotation.

7. Replace the filter access cover.

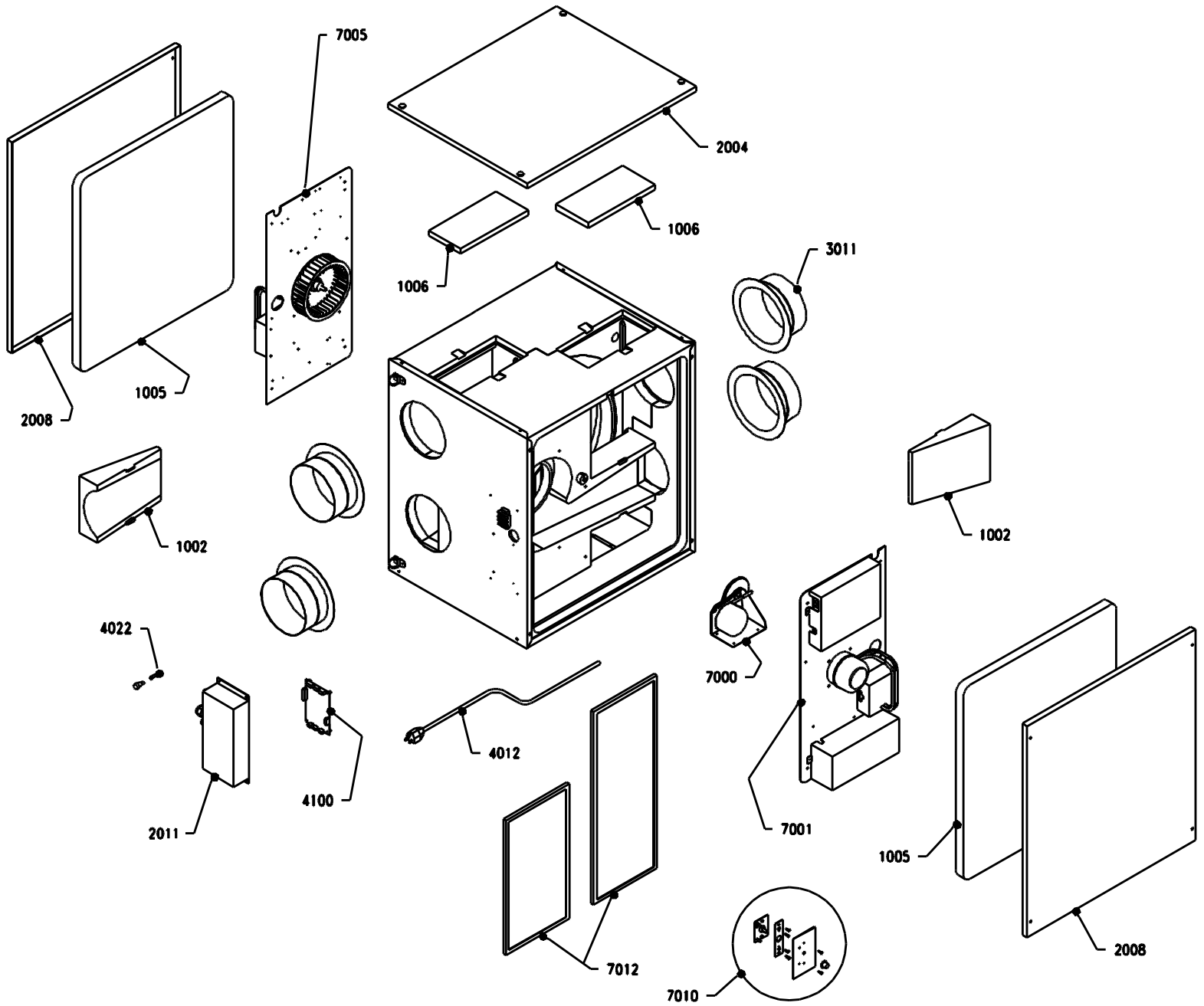


# Troubleshooting

Problem	Possible Cause	Recommended Solution
<b>Green Light on Wall Dial Control does not come on</b>	Power switch mounted on machine is Off.....	Check that Main 110VAC switch  Use a jump wire from LINE 24V on the Main Board mounted inside the power switch cover to the boost BST terminal on the same board to see if machine responds by running at full flow. The problem may be in the Wall Dial if Boost works correctly.
	Blown fuse.....	Check and replace the main fuse. ¼ amp
	Connections may not be grounded properly At least 100 VAC may not be reaching the machine	Verify all connections and replace any loose wiring
	Jumpers on three-motor controller may not be in the correct position Wires from the Main Control Board in the power switch cover to the wall Dial may be crossed, Notice order of wire labels Wires may not be securely connected in terminals	Make sure that NA/EURO jumper is in the correct position.
<b>Green Light on Wall Dial Flashing</b>	The RecoupAerator shuts off automatically at below 10° F to protect from frost forming inside the machine	Wait for outside temperatures to rise above 10° F or Purchase an efficient pre-heater option from UltimateAir for operation below 10° F. Temperature Probe Problem?

Problem	Possible Cause	Recommended Solution
<b>Excess humidity</b>	Flow speed set too low (during heating season) RecoupAerator not operating continuously (during heating season) Moisture-producing source (e.g., indoor pool, hot tub, or unvented crawl space)	Set speed higher at wall controller Operate RecoupAerator continuously Consider additional exhaust fans in moisture-producing areas (e.g., bathrooms and kitchens)
<b>What's that sound?</b>	Small noises in the system  Obstructions in pre-filters and ducts  Heat recovery wheel rubbing on insulation	Short, insulated duct runs will minimize noise transmission through ductwork Insulated Flexible duct connected to the machine for 3 feet will minimize noise transmission through hard duct Clear airways of any and all obstructions, including termination vents and pre-filters Make sure pies are flush with heat recovery wheel edge and not rubbing
<b>Poor air flow</b>	Leaves or similar may be obstructing vents Restrictions in ductwork Dirty energy filtration material Ductwork too long, too many bends/elbows Wall controller is not at the right setting	Remove obstructions from any and all airways Remove any duct obstructions, excessive bends, and improperly Contact your HVAC service professional to fix ducting Adjust wall controller setting
<b>Cold air</b>	Un-insulated duct in unconditioned air space Heat recovery wheel not rotating or one of the two blowers is not running	Insulate all duct work in unconditioned air spaces  Check for broken or slipping wheel drive belt

# Assembly & Parts Diagrams





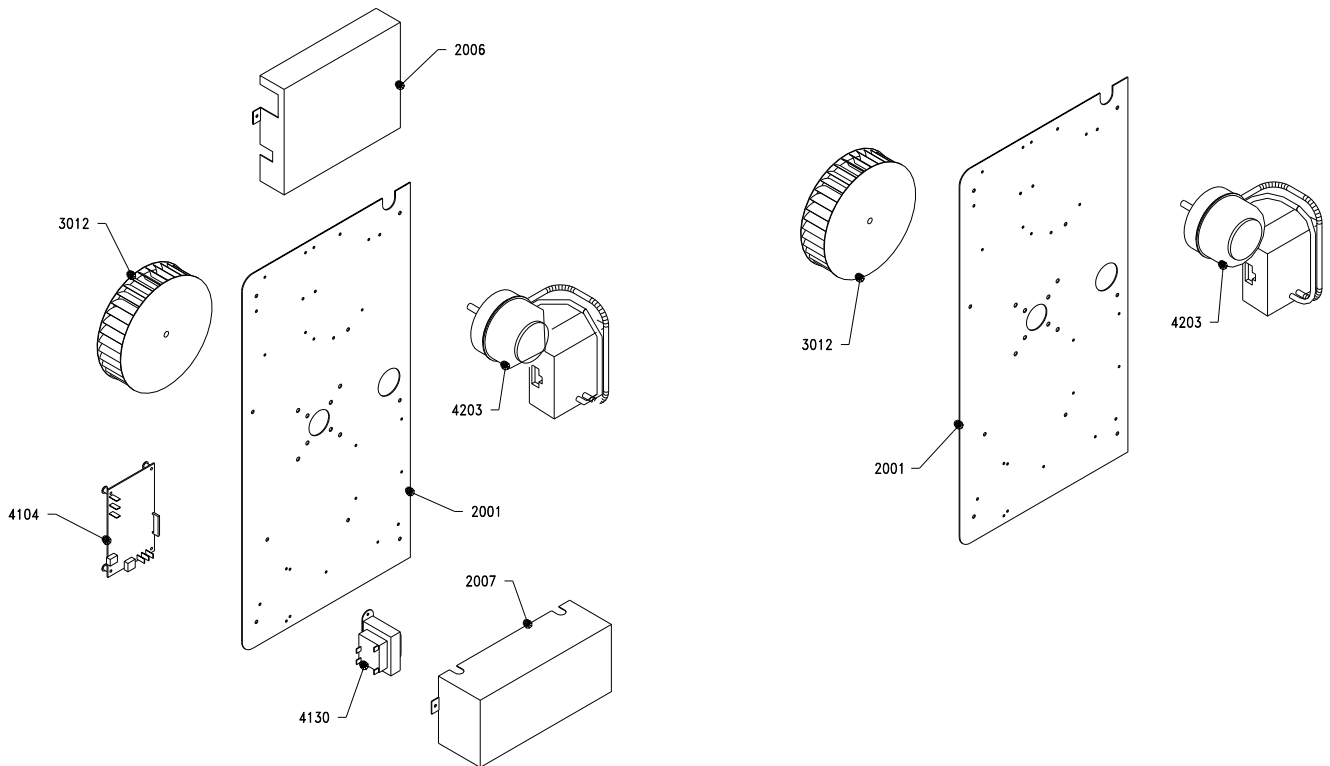
## General RecoupAerator 200DX Assembly

Part No.	Part Description	Qty
1002	Transition Cover	2
1005	Door Insulation	2
1006	Filter Door Insulation	2
2004	Top Door	1
2008	Front Door	2
2011	Exterior Electronics Cover	1
3011	6" Starter Collars	4
4012	Power Cord	1
4022	1/4 Amp Fuse	1
4100	Three Motor Controller	1
7000	Drive Roller / Motor Mount Assembly	1
7001	Front Motor Plate Assembly	1
7005	Back Motor Plate Assembly	1
7010	American Wall Controller Assembly	1
7012	Pre-Filter Set	1

## Assemblies 7001

&

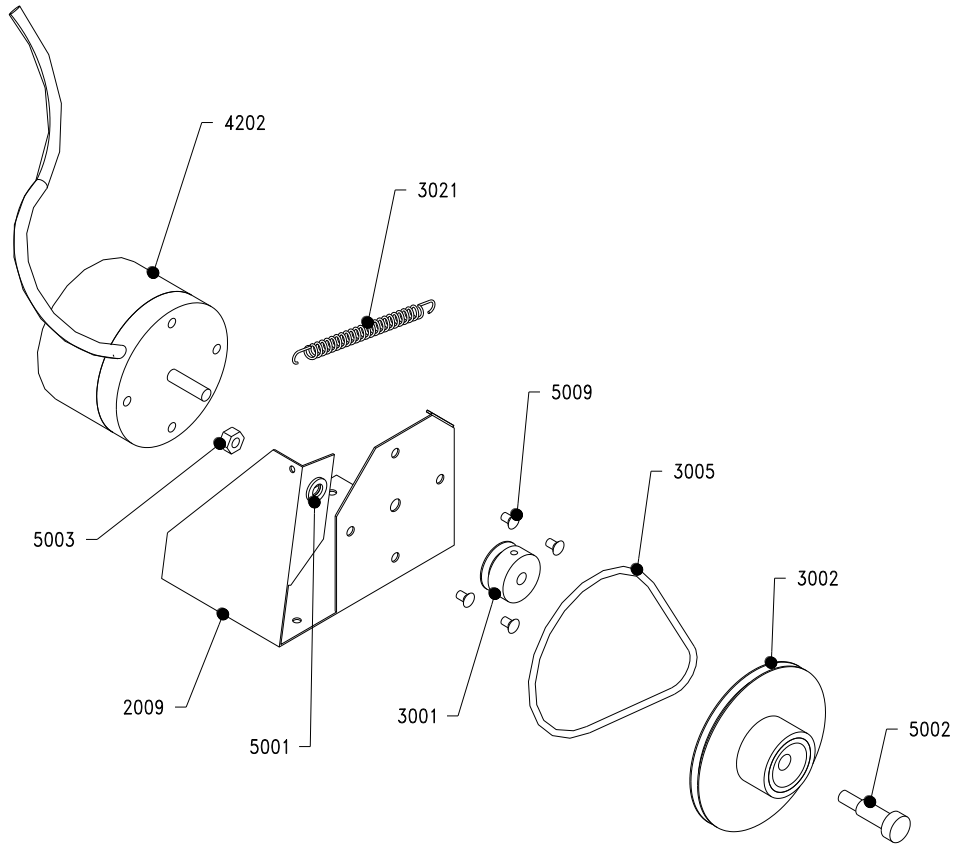
## 7005



### Electronics Assemblies

Part No.	Part Description	Qty
2001	Electronics Plate	2
2006	Electronics Cover 1	1
2007	Electronics Cover 2	1
3013	Impeller	2
4104	Wheel Drive	1
4130	Transformer	1
4201	Blower Motor	2

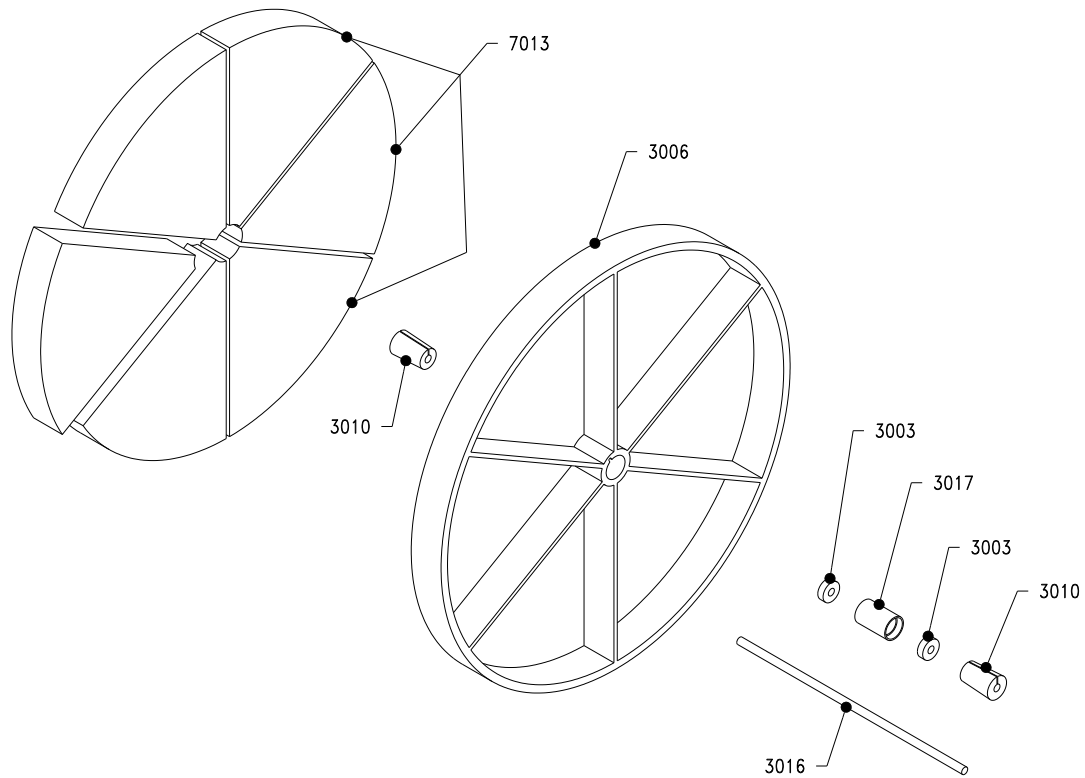
## Assembly 7000



### Drive Motor Assembly

Part No.	Part Description	Qty
2009	Drive Roller / Motor Mount	1
3001	Small Motor Pulley	1
3002	Drive Roller Pulley Assembly	1
3005	Driver Roller Belt	1
3021	Drive Roller Spring	1
4202	HRW Drive Motor	1
5001	M6 Metric Masher	1
5002	Metric Shoulder Screw	1
5003	Metric Locknut	1
5009	Flat Head Machine Screw	4

## Assembly 7014

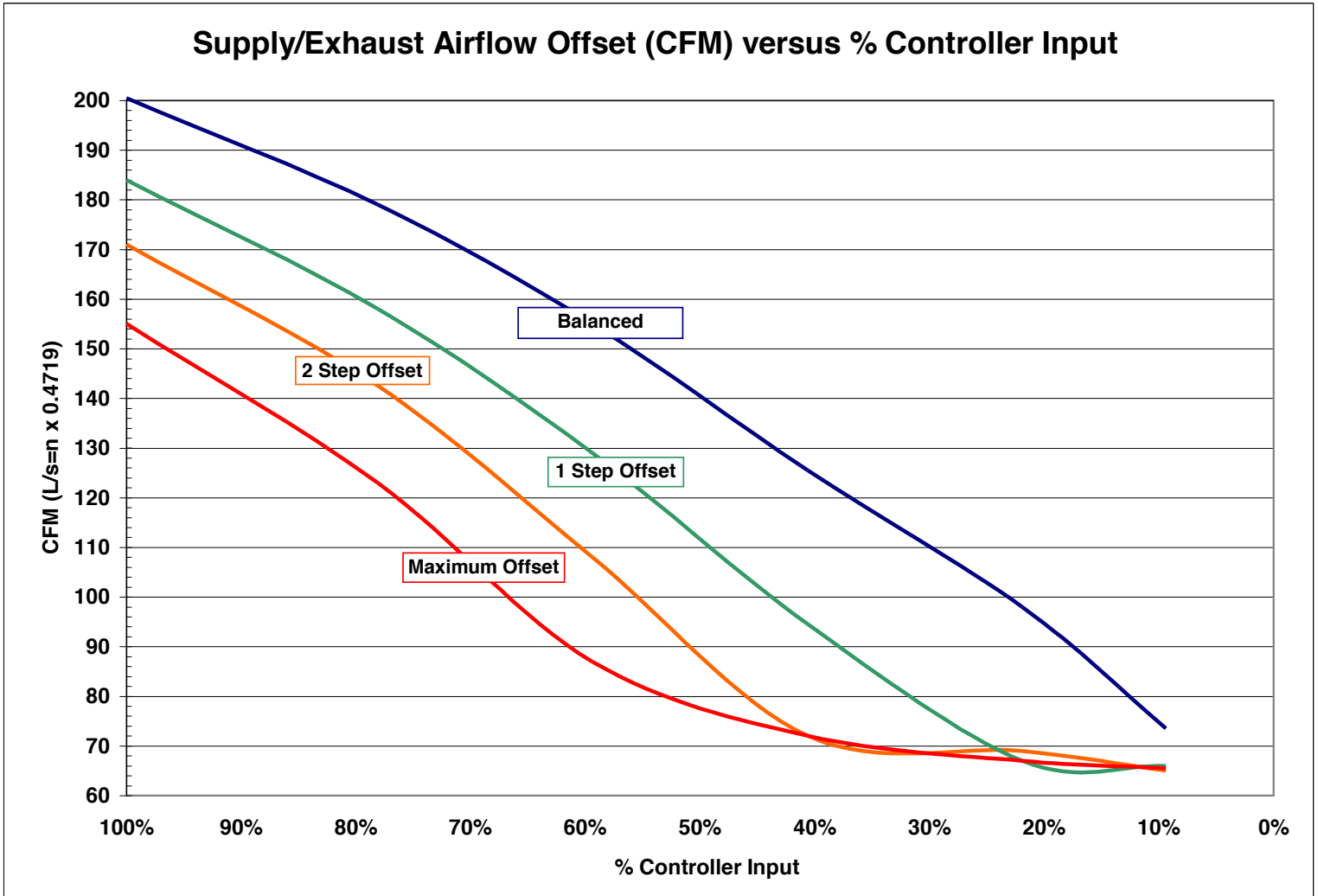


### Heat Recovery Wheel Assembly

Part No.	Part Description	Qty
3003	Bearings	2
3006	Energy Recovery Wheel	1
3010	Centering Cone	2
3016	Shaft	1
3017	Hub	1
7013	Energy Transfer/Filtration Material (set of 6 "pies")	1

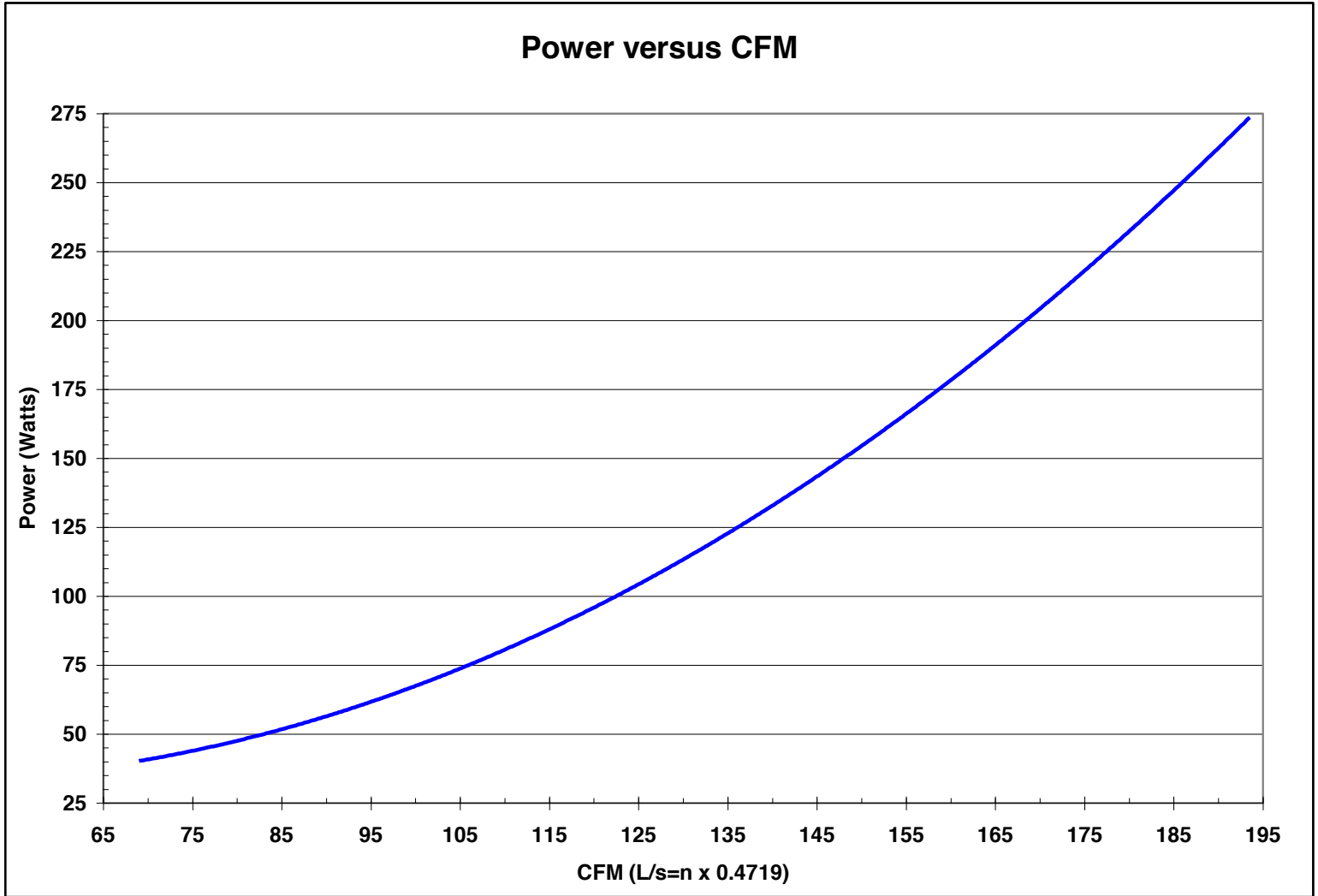
# Technical Data

## Airflow Curve



*Note: Curves are generated from actual test data but should only be used as general guidelines. Actual results may vary.*

## Power Curve



*Note: The power curve was generated using the average air flow rate over all four ducts.*

# Dibble Radon Ports





# Fantech

## Installation Instructions for Radon Fans Model HP/FR

READ & SAVE THESE INSTRUCTIONS!



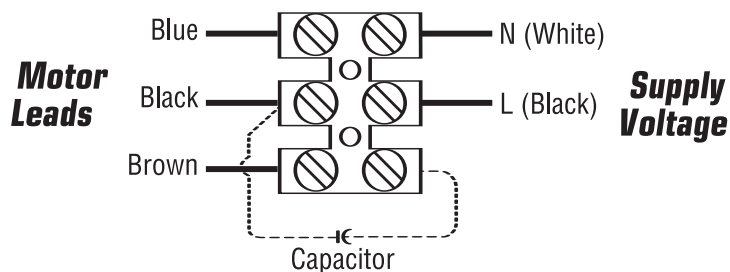
### Warnings

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED, MAKE SURE ELECTRICAL SERVICE TO THE FAN IS LOCKED IN "OFF" POSITION.

1. Suitable for use with solid-state speed control.
2. This unit has rotating parts and safety precautions should be exercised during installation, operation and maintenance.
3. CAUTION: "For General Ventilation Use Only. Do Not Use To Exhaust Hazardous Or Explosives Materials and Vapors."
4. **WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS-OBSERVE THE FOLLOWING:**
  - a. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the factory.
  - b. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
  - c. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
  - d. The combustion airflow needed for safe operation of fuel burning equipment may be affected by this unit's operation. Follow the heating equipment manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) and the local code authorities.
  - e. When cutting or drilling into wall or ceiling, do not damage electrical wires or other hidden utilities.
  - f. Ducted fans must always be vented to the outdoors.
  - g. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application.
  - h. NEVER place a switch where it can be reached from a tub or shower.
5. WARNING! Check voltage at the fan to see if it corresponds to the motor nameplate.

**GUARDS MUST BE INSTALLED WHEN FAN IS WITHIN REACH OF PERSONNEL OR WITHIN SEVEN (7) FEET OF WORKING LEVEL OR WHEN DEEMED ADVISABLE FOR SAFETY.**

### Wiring Diagram





## Five (5) Year Warranty

*This warranty supersedes all prior warranties*

Installation that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

### **DURING ENTIRE WARRANTY PERIOD:**

FANTECH will repair or replace any part which has a factory defect in workmanship or material. Product may need to be returned to the fantech factory, together with a copy of the bill of sale and identified with RMA number.

### **FOR FACTORY RETURN YOU MUST:**

- Have a Return Materials Authorization (RMA) number. This may be obtained by calling FANTECH either in the USA at 1.800.747.1762 or in CANADA at 1.800.565.3548. Please have bill of sale available.
- The RMA number must be clearly written on the outside of the carton, or the carton will be refused.
- All parts and/or product will be repaired/replaced and shipped back to buyer; no credit will be issued.

OR

The Distributor may place an order for the warranty part and/or product and is invoiced. The Distributor will receive a credit equal to the invoice only after product is returned prepaid and verified to be defective.

FANTECH WARRANTY TERMS DO NOT PROVIDE FOR REPLACEMENT WITHOUT CHARGE PRIOR TO INSPECTION FOR A DEFECT. REPLACEMENTS ISSUED IN ADVANCE OF DEFECT INSPECTION ARE INVOICED, AND CREDIT IS PENDING INSPECTION OF RETURNED MATERIAL. DEFECTIVE MATERIAL RETURNED BY END USERS SHOULD NOT BE REPLACED BY THE DISTRIBUTOR WITHOUT CHARGE TO THE END USER, AS CREDIT TO DISTRIBUTOR'S ACCOUNT WILL BE PENDING INSPECTION AND VERIFICATION OF ACTUAL DEFECT BY FANTECH.

### **THE FOLLOWING WARRANTIES DO NOT APPLY:**

- Damages from shipping, either concealed or visible. Claim must be filed with freight company.
- Damages resulting from improper wiring or installation.
- Damages or failure caused by acts of God, or resulting from improper consumer procedures, such as:
  1. Improper maintenance
  2. Misuse, abuse, abnormal use, or accident, and
  3. Incorrect electrical voltage or current.
- Removal or any alteration made on the FANTECH label control number or date of manufacture.
- Any other warranty, expressed, implied or written, and to any consequential or incidental damages, loss or property, revenues, or profit, or costs of removal, installation or reinstallation, for any breach of warranty.

### **WARRANTY VALIDATION**

- The user must keep a copy of the bill of sale to verify purchase date.
- These warranties give you specific legal rights, and are subject to an applicable consumer protection legislation. You may have additional rights which vary from state to state.

#### United States

1712 Northgate Blvd.,  
Sarasota, FL 34234  
Phone: 800.747.1762; 941.309.6000  
Fax: 800.487.9915; 941.309.6099  
www.fantech.net; info@fantech.net

#### Canada

50 Kanalfakt Way,  
Bouctouche, NB E4S 3M5  
Phone: 800.565.3548; 506.743.9500  
Fax: 877.747.8116; 506.743.9600  
www.fantech.ca; info@fantech.ca

Fantech, reserves the right to modify, at any time and without notice, any or all of its products' features, designs, components and specifications to maintain their technological leadership position.

Article #: 301077  
Item #: 401443  
Rev Date: 010307



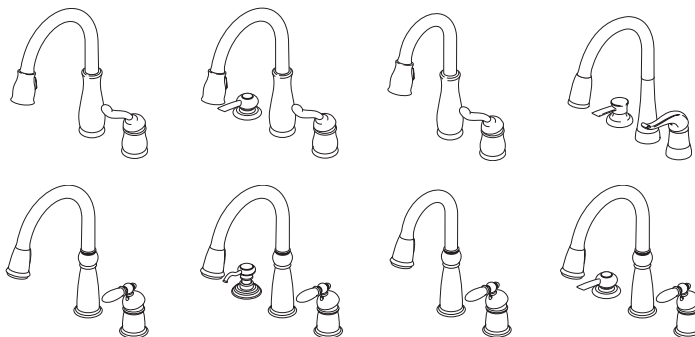
69900

# SINGLE LEVER PULL DOWN KITCHEN FAUCETS

## PALANCA DESLIZABLE PARA LLAVES DE COCINA

## ROBINETS MONOCOMMANDE À BEC-DOUCHETTE RÉTRACTABLE POUR ÉVIER DE CUISINE

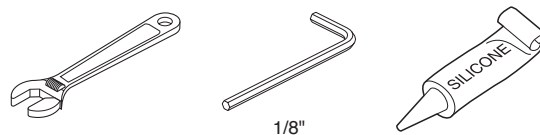
Models/Modelos/Modèles  
955-DST, 955-SD-DST, 978-DST,  
978-SD-DST, 978-WE-DST, 9955-  
DST, 9978-DST,  
16955-SD-DST & 16970-SD-DST  
Series/Series/Seria



Write purchased model number here.  
Escriba aquí el número del modelo comprado.  
Inscrivez le numéro de modèle ici.

**WARNING:** this faucet is not to be used with portable dishwashers!  
**ADVERTENCIA:** ¡esta llave no se debe utilizar con maquinas lavapla tos portatiles!  
**AVERTISSEMENT:** on ne doit pas brancher un lave-vaisselle portatif sur ce robinet!

**You may need**  
**Usted puede necesitar**  
**Articles dont vous pouvez avoir besoin:**



### For easy installation of your Delta faucet you will need:

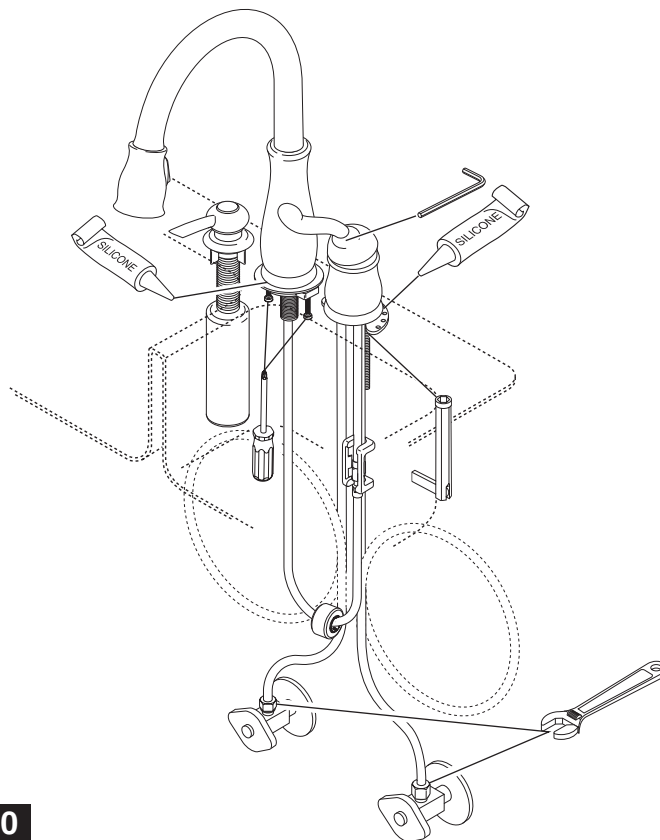
- To **READ ALL** the instructions completely before beginning.
- To **READ ALL** warnings, care, and maintenance information.

### Para instalación fácil de su llave Delta usted necesitará:

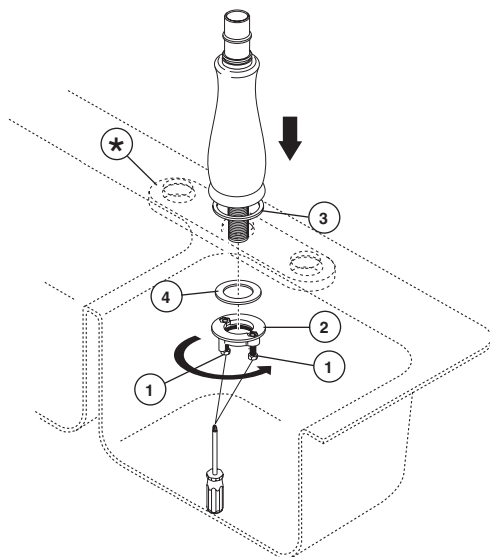
- **LEER TODAS** las instrucciones completamente antes de empezar.
- **LEER TODOS** los avisos, cuidados, e información de mantenimiento.

### Pour installer votre robinet Delta facilement, vous devez:

- **LIRE TOUTES** les instructions avant de débiter;
- **LIRE TOUS** les avertissements ainsi que toutes les instructions de nettoyage et d'entretien.



69900

**1****Spout Installation**

**NOTE:** These faucets are designed to fit a maximum thickness of 2 1/4".

\*If you are installing the faucet on a Stainless Steel or a thin sink use RP37490 Stabilization Plate SUPPLIED WITH FAUCET.

**SHUT OFF WATER SUPPLIES.**

Thread screws (1) approximately 4 complete turns into mounting nut (2). Position spout assembly on sink, in center of mounting hole. Make sure that white gasket (3) is properly aligned in cavity of base. *OPTION: If surface is uneven, use silicone sealant under the gasket.* Secure spout with mounting nut (2) and washer (4). After hand tightening mounting nut, tighten screws (1) until snug.

**Instale el Ensemble del surtidor**

**NOTA:** Estas llaves de agua están diseñadas para caber en una encimera de un grosor de 2 1/4"

\*Si usted está instalando la llave de agua en un fregadero de Acero Inoxidable o un fregadero delgado use una chapa estabilizadora INCLUIDA CON SU LLAVE DE AGUA.

**CIERRE LOS SUMINISTROS DE AGUA.**

Enrosque los tornillos (1) aproximadamente 4 vueltas completas en la tuerca de montaje (2). Coloque el ensamble del surtidor en el fregadero asegurándose que el blanco empaque (3) quede debidamente alineado en la cavidad de la base. *OPCIÓN: Si la superficie está desnivelada, use sellador de silicona por debajo del empaque.* Fije el surtidor con la tuerca de montaje (2) y la arandela (4). Después de apretar a mano la tuerca de montaje, apriete los tornillos (1) hasta que queden ajustados.

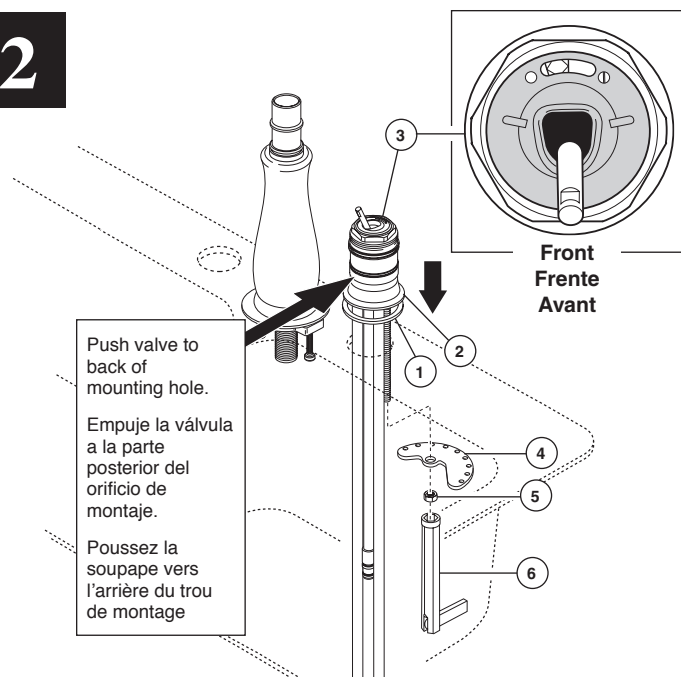
**Installation du bec**

**NOTE :** Ces robinets sont conçus pour être montés dans un comptoir ayant une épaisseur d'au plus 2 1/4 po.

\*Si vous installez le robinet sur un évier en acier inoxydable ou sur un évier de faible épaisseur, utilisez la plaque de stabilisation RP37490. ELLE EST FOURNIE AVEC LE ROBINET.

**COUPEZ L'EAU CHAUDE ET L'EAU FROIDE.**

Introduisez les vis (1) dans l'écrou de montage (2) et serrez-les en faisant environ quatre tours complets. Placez le bec sur l'évier en vous assurant que le blanc joint plat (3) est bien placé dans la cavité de la base. *FACULTATIF : Si la surface est inégale, appliquez du composé d'étanchéité à la silicone sous le joint.* Fixez le bec à l'aide de l'écrou de montage (2) et de la rondelle (4). Après avoir serré l'écrou de montage à la main, serrez les vis (1) pour obtenir un ajustement serré.

**2****Valve Assembly Installation**

Slide the gray gasket (1) up over tubes of valve assembly and place in groove in base (2). Feed tubes down through hole in sink making sure that the gasket is properly seated. Push valve assembly (3) to back of mounting hole as shown above. Secure valve assembly to sink with mounting bracket (4) and nut (5) using wrench (6) supplied with your faucet.

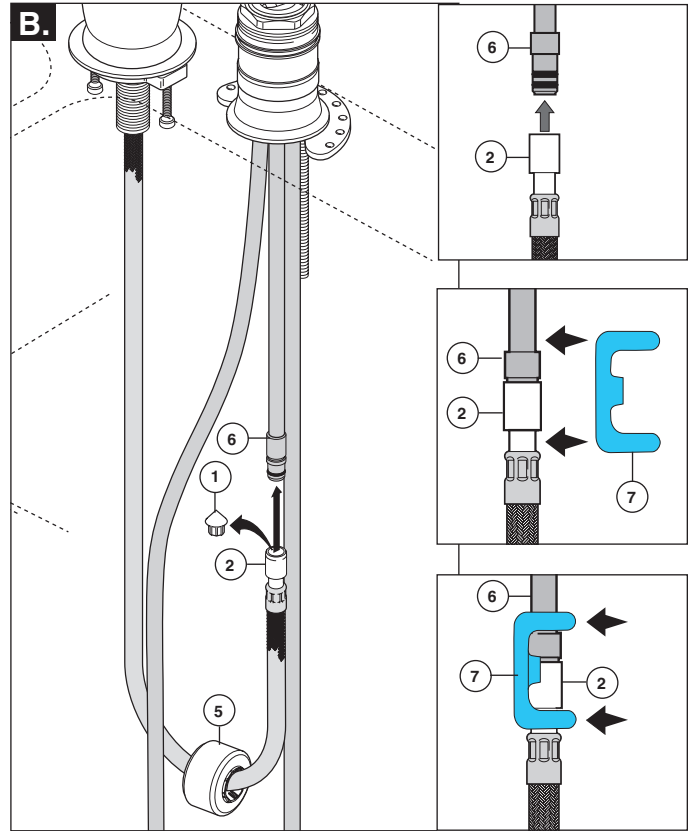
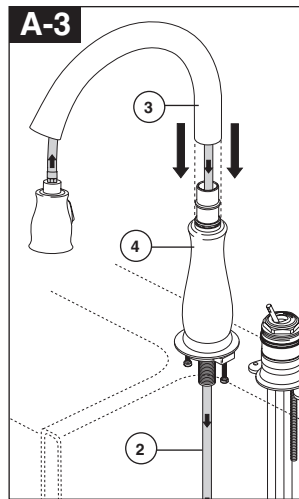
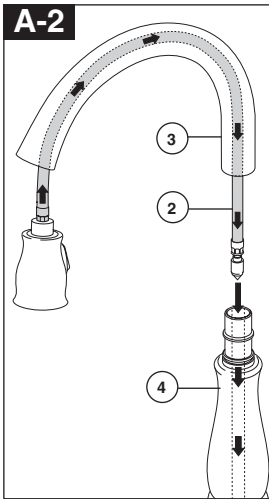
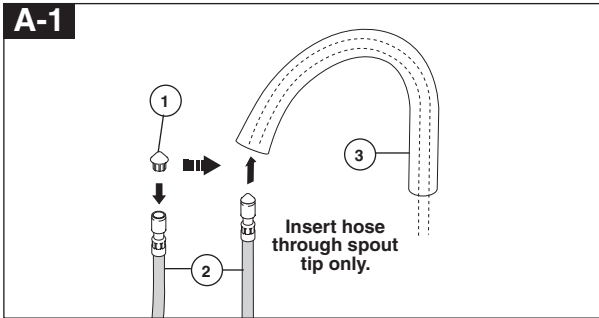
**Instale el Ensemble de la Vavula**

Deslice el gris empaque (1) sobre las tuberías del ensamble de la válvula y colóquelo en la muesca ubicada en la base (2). Deslice las tuberías hacia abajo por el orificio en el fregadero asegurándose que el empaque esté apropiadamente sentado. Empuje el ensamble de la válvula (3) a la parte posterior del orificio de montaje como se muestra arriba. Fije el ensamble de la válvula al fregadero con el soporte para la instalación (4) y la tuerca (5) usando la llave de tuerca (6) incluida con la llave de agua.

**Installez le robinet**

Faites remonter le gris joint (1) sur les tubes de la soupape et introduisez-le dans la rainure de la base (2). Par le dessus, introduisez les tubes dans le trou de l'évier en vous assurant que le joint est bien calé. Poussez la soupape (3) vers l'arrière du trou de montage comme le montre la figure ci-dessus. Puis fixez-la à l'évier avec le support de montage (4) et l'écrou (5) à l'aide de l'outil (6) fourni avec le robinet.

# 3



## Hose Installation

- A.** Insert hose guide (1) into end of hose (2) as shown. Feed hose assembly (2) through spout (3) and hub (4). Slide spout assembly onto hub. **Use caution not to pinch fingers.** Rotate spout assembly to ensure smooth operation.
- B.** Remove hose guide (1). Slide hose weight (5) over end of hose (2). Push hose end (2) onto hose (6). Attach clip (7) over hoses as shown. Pull down moderately to ensure connection has been made.

## Instalación De la Manguera

- A.** Introduzca la guía de la manguera (1) en el extremo de la manguera (2) como se muestra. Deslice el ensamble de la manguera (2) por el surtidor (3) y la base acampanada (4). Deslice el ensamble del surtidor en la base acampanada. **Tenga cuidado de no pellizcarse los dedos.** Gire el ensamble del surtidor para asegurar una función suave.
- B.** Quite la guía de la manguera (1). Deslice la pesa de la manguera (5) sobre la boquilla de la manguera (2). Presione el extremo de la manguera (2) en la manguera (6). Conecte el gancho (7) sobre las mangueras como se muestra. Moderadamente hale hacia abajo para asegurar la conexión se a hecho.

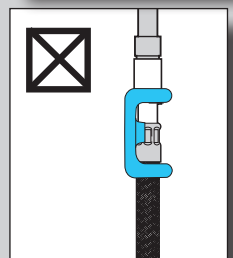
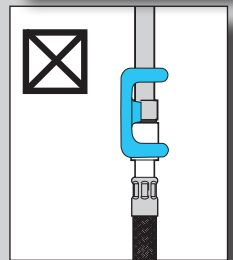
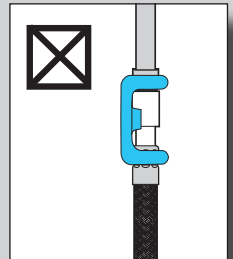
## Installation de Flexible

- A.** Introduisez le guide du tuyau souple (1) dans l'extrémité du tuyau souple (2) comme le montre la figure. Insérez le tuyau souple (2) dans le bec (3) et le porte-bec (4). Glissez le bec sur le porte-bec. **Prenez garde de vous pincer les doigts.** Faites pivoter le bec pour vous assurer qu'il bouge librement.
- B.** Enlevez le guide du tuyau souple (1). Faites glisser la masselotte (5) sur l'extrémité du tuyau (2). Poussez l'embout du tuyau souple (2) sur le tuyau souple (6). Fixez l'agrafe (7) sur les tuyaux souples comme le montre la figure. Tirez modérément sur le raccord pour vous assurer qu'il est solide.

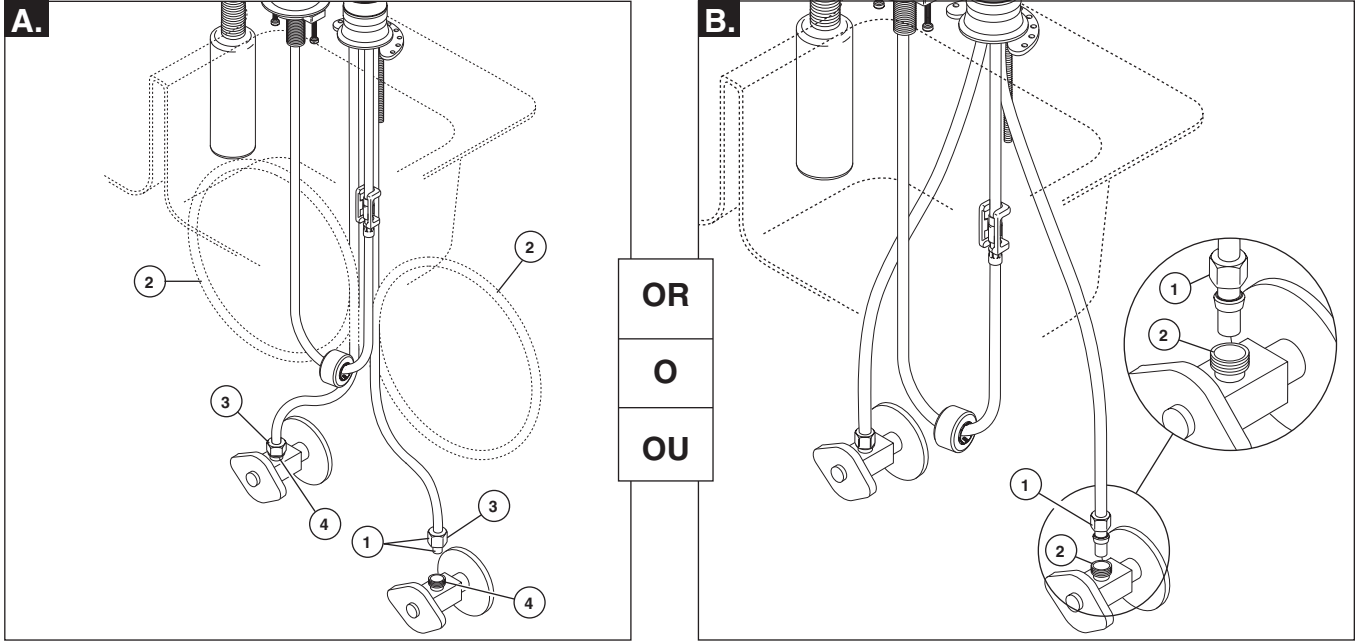
## Incorrect Installations.

### Instalaciones incorrecta.

### Installations incorrecte.



4



**A. Water Line Connections**

Ensure all fittings and end connections are free of debris. Faucet fittings (1) are 3/8" compression, with ends colored red for hot and blue for cold. Loop tubing (2) if it is too long. **Note: Recommended tubing minimum bend diameter is 8".** Secure metal nut (3) on faucet tube to supply valve connection (4) and hand tighten, then tighten one additional turn with wrench. **DO NOT OVERTIGHTEN.** Repeat for other tube. **WARNING: Do not use pipe dope or other sealants on water line connections.**

**B. Custom Fit Connections**

If you determine the PEX supply tubing for this faucet is too long and must be shorter to create an

acceptable installation, be sure to read the instructions and plan ahead. When cutting the supply tubing the installer accepts the responsibility to do so in a way that allows a leak-free joint to be created. Delta is not responsible for tubing that is cut too short or cut in a way that will not allow for a leak-free joint.

For custom fit installations, you must use RP50952 sleeves supplied with model and nuts included on supply lines. **Tube cut must be straight.** See plastic sleeve installation instructions found in RP50952 and included in this document for more information.

Secure metal nut (1) on faucet tube to supply valve connection (2) and hand tighten, then tighten an additional 2 turns with wrench. **DO NOT OVERTIGHTEN.** Repeat for other tube.

**Potential Problems and Remedies**

- **Tubing is not cut perpendicular to the axis of the tube:** carefully make an additional cut, being careful not to cut the tube too short.
- **Tubing is cut too short:** buy a coupling union and a replacement supply line that mate together from a store. The coupling union end intended to connect to the faucet must mate to the standard 3/8" connection nuts and plastic sleeves supplied with the faucet.
- **The plastic sleeve or connection nut is lost:** purchase a replacement nut and/or plastic sleeve that are designed to seal with PEX tubing. **NOTICE: DO NOT use a metal sleeve, RP51243 gasket (supplied with faucet) or ferrule in the place of the plastic sleeve supplied, it may not create a leak-free joint.** **WARNING: Do not use pipe dope or other sealants on water line connections.**

**A. Conexiones a la Línea de Agua**

Asegúrese que todos los accesorios y las conexiones finales estén libres de residuos. Los accesorios (1) son de compresión de 3/8", con los extremos de color rojo para el agua caliente y azul para el agua fría. Enlace las tuberías (2) si es muy larga. **Nota: La curva mínima recomendada es de 8" de diámetro.** Fije la tuerca de metal (3) en el tubo de la llave de agua a la conexión (4) y apriete a mano, luego apriete con una vuelta adicional con una llave de tuercas. **NO APRIETE DEMASIADO.** Repita con el otro tubo. **AVISO: No use compuesto para tuberías u otros selladores en las conexiones de la tubería de agua.**

**B. Conexiones Especiales**

**AVISO: Si usted determina que la tubería PEX para el suministro de agua para esta llave de agua es muy larga y debe recortarse para crear una instalación aceptable, asegúrese leer las instrucciones y planifique de**

antemano. Cuando corte la tubería de suministro el instalador acepta la responsabilidad de hacerlo de una manera que permite crear una articulación sin filtraciones. Delta no se responsabiliza por las tuberías que se han cortado demasiado cortas o cortadas de una manera que no permite una articulación libre de filtración.

Para instalaciones hechas a la medida, usted debe usar mangas RP50952 incluidas con el modelo y las tuercas incluidas en las tuberías de suministro. El corte del tubo debe ser recto. Vea las instrucciones para la instalación de la manga plástica incluida con el RP50952 y para más información incluida en este documento.

Fije la tuerca de metal (1) en la tubería de la llave de agua / grifo a la conexión de la válvula de suministro (2) y apriete a mano. Con la llave de tuercas, apriete la tuerca dándole 2 vueltas más de si fuera apretado a mano. **NO APRIETE DEMASIADO.** Repita con la otra tubería.

**Problemas Potenciales y Soluciones**

- **La tubería no está cortada perpendicular al eje del tubo:** cuidadosamente haga un corte adicional, teniendo cuidado de no cortar el tubo demasiado corto.
- **La tubería está cortada demasiado corta:** compre en un almacén un acoplamiento de unión y una tubería de suministro de repuesto que acople. El extremo de la unión de acoplamiento que es para conectar a la llave de agua debe acoplarse con las tuercas estándares de 3/8" y mangas de plástico incluidas con la llave de agua / grifo.
- **La manga plástica o la tuerca de conexión se ha perdido:** compre una tuerca de repuesto y/o manga plástica diseñada para sellar con la tubería PEX. **AVISO: No use una manga de metal, RP51243 empaque (suministrado con el grifo) o casquillo, en vez de la manga incluida puede no crear una articulación sin filtración.** **AVISO: No use compuesto para tuberías u otros selladores en las conexiones de la tubería de agua.**

**A. Branchement à la tuyauterie**

Assurez-vous que tous les raccords sont exempts de corps étrangers. Le branchement est effectué au moyen de raccords de robinetterie (1) 3/8 po à compression. L'extrémité du raccord d'eau chaude est rouge et celle du raccord d'eau froide est bleue. Faites une boucle avec le tube (2) s'il est trop long. **Note : Le diamètre minimal de la courbure doit être d'au moins 8 po.** Vissez l'écrou métallique (3), qui se trouve sur le tube du robinet, sur le raccord du robinet d'alimentation (4) et serrez-le à la main, puis faites un tour supplémentaire avec une clé. **PRENEZ GARDE DE TROP SERRER.** Raccordez l'autre tube de la même manière. **MISE EN GARDE : N'utilisez pas de pâte à joint ni d'autres produits d'étanchéité sur les raccords de tuyauterie.**

**B. Spéciaux Tuyauterie Branchement**

**NOTIFICATION : Si le tube d'alimentation en PEX de ce robinet est trop long et doit être raccourci, lisez**

les instructions et prenez le temps de réfléchir. Vous devez couper le tube de manière à obtenir un joint étanche. Delta n'accepte aucune responsabilité si le tube a été coupé trop court ou d'une manière qui empêche le joint d'être étanche.

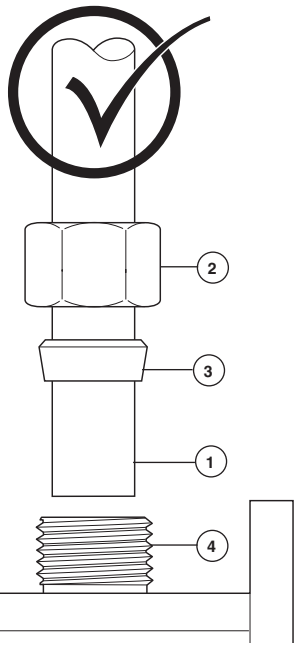
Dans le cas des installations sur mesure, vous devez utiliser les manchons RP50952 fournis avec le robinet et les écrous qui se trouvent sur les arrivées d'eau. Le tube doit être coupé d'équerre. Pour obtenir plus de renseignements, veuillez consulter les instructions d'installations des manchons en plastique qui se trouvent dans le kit RP50952 et qui sont incluses dans le présent document.

Vissez l'écrou métallique (1), qui se trouve sur le tube du robinet, sur le raccord du robinet d'alimentation (2) et serrez-le à la main. Serrez-le à la main, puis faites deux tours à l'aide d'une clé. **PRENEZ GARDE DE TROP SERRER.** Raccordez l'autre tube de la même manière.

**Problèmes possibles et correctifs**

- **Le tube n'est pas sectionné perpendiculairement à son axe :** Faites une nouvelle coupe en prenant garde de ne pas trop raccourcir le tube.
- **Vous avez coupé le tube trop court :** Achetez un raccord-union et un tube d'arrivée d'eau de rechange dans un magasin. L'extrémité du raccord-union à raccorder au robinet doit être compatible avec les écrous 3/8 po standard et les manchons en plastique fournis avec le robinet.
- **Vous avez perdu un manchon en plastique ou un écrou de raccordement :** Achetez un écrou et/ou un manchon en plastique conçus pour former un raccord étanche avec un tube PEX. **NOTIFICATION : Évitez d'utiliser un manchon métallique, RP51243 le joint (fournie avec le robinet) ou une virole à la place du manchon en plastique fourni. Le joint ne sera pas étanche. MISE EN GARDE : N'utilisez pas de pâte à joint ni d'autres produits d'étanchéité sur les raccords de tuyauterie.**

**Correct method**  
**Método Correcto**  
**Bonne méthode**



### Custom Fit Connections - Plastic Sleeve Installation Instructions

1. Identify desired length of tube (1). Leave 1" - 2" of extra length to allow for easier installation and cut tube. Ensure cut is straight and burr free.
2. Slide nut (2) and plastic sleeve (3) onto cut tube. Ensure sleeve is oriented as shown.
3. Insert tube into outlet fitting (4). Tube should touch bottom of hole inside fitting.
4. Slide plastic sleeve down tube until it engages top of fitting. **NOTICE: Failure to use plastic sleeve in the correct orientation will result in disconnection and possible water damage.**
5. Slide nut over plastic sleeve. With wrench, tighten nut 2 turns past finger tight.

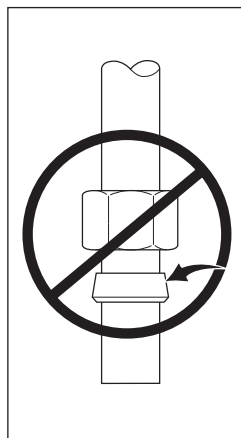
### Conexiones Especiales - Instrucciones d'instalaciones de la mancha en plastique

1. Identifique la longitud deseada del tubo (1). Deje 1" - 2" de soltura para una instalación más fácil y sin rebabas. Asegure que el corte sea recto y sin rebabas.
2. Resbale la tuerca (2) y la manga plástica (3) sobre el tubo cortado. Asegure la manga se orienta según lo demostrado.
3. Introduzca el tubo dentro del accesorio (4). El tubo debe tocar el fondo del agujero dentro del accesorio.
4. Deslice la manga plástica hacia abajo en el tubo hasta que encaje el la parte superior del accesorio. **AVISO: El no usar la manga plástica en la orientación correcta resultará en desconexión y posible daño por agua.**
5. Deslice la tuerca sobre la manga plástica. Con la llave de tuercas, apriete la tuerca dándole 2 vueltas más de si fuera apretado a mano.

### Spéciaux Branchement - Instrucciones para la Instalación de la Manga Plástica

1. Identifiez la longueur désirée du tube (1). Laissez 1 à 2 pouces de la longueur supplémentaire pour faciliter l'installation et coupez le tube. Faites une coupe d'équerre et enlevez les bavures.
2. Glissez l'écrou (2) et la manchon en plastique (3) sur le tube coupé. Assurez la manchon est orienté comme montré.
3. Introduisez le tube dans le raccord (4). Le tube doit toucher le fond du trou à l'intérieur du raccord.
4. Faites glisser le manchon en plastique dans le tube jusqu'à ce qu'il pénètre dans la partie supérieure du raccord. **NOTIFICATION : Si le manchon en plastique n'a pas été installé dans l'orientation correcte, le raccord peut se défaire et l'eau peut occasionner des dommages.**
5. Faites glisser l'écrou sur le manchon en plastique. Serrez-le à la main, puis faites deux tours à l'aide d'une clé.

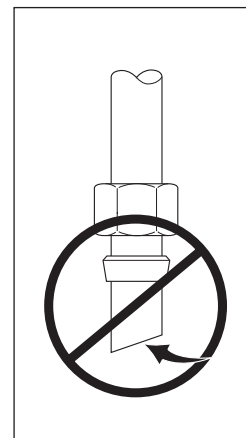
**Incorrect Installation**  
**Instalación Incorrecta**  
**Installation Incorrecte**



**Do not** install sleeve upside down.

**No instale** la manga boca abajo.

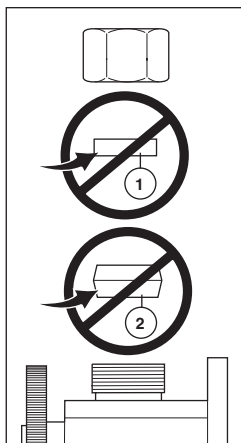
**N'installez pas** le manchon à l'envers.



Ensure cut is straight.

Asegúrese que el corte esté recto.

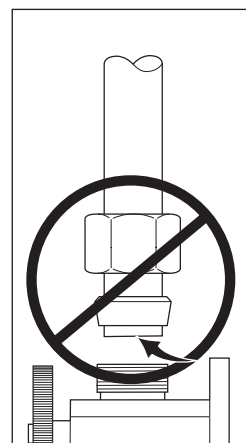
Assurez-vous que la coupe est droite.



**Do not** use RP51243 gasket (1) supplied with PEX tubing or brass ferrule (2) supplied with valve stops.

**No use** RP51243 empaque (1) suministrado con el tubería de PEX o el casquillo de bronce (2) suministrado con las válvulas de cierre.

**N'utilisez pas** RP51243 le joint (1) fournie avec la tuyauterie de PEX ou la bague en cuivre (2) fournie avec les robinets d'arrêt.

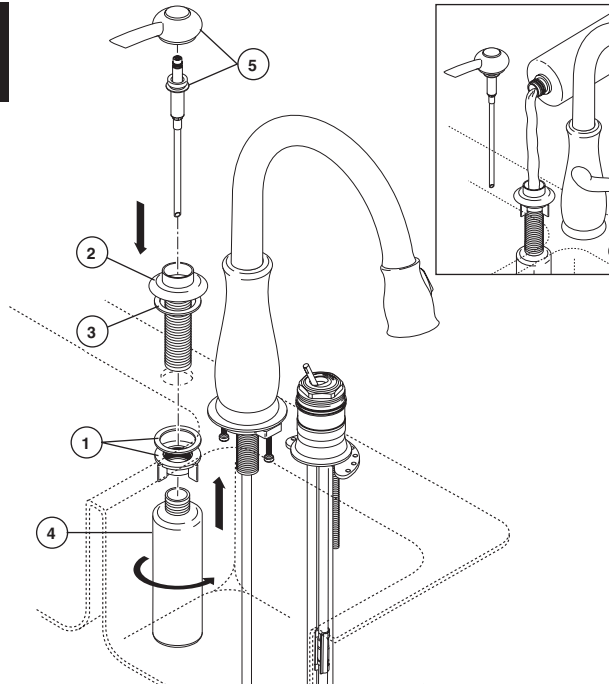


Ensure tube is fully inserted into stop before sliding sleeve down to engage top of fitting.

Asegúrese que el tubo este completamente introducido dentro del tope antes de deslizar la manga hacia abajo para encajar la parte superior del accesorio.

Assurez-vous que le tube est introduit entièrement dans le robinet d'arrêt avant de faire glisser le manchon vers le bas pour le fixer à la partie supérieure du raccord.

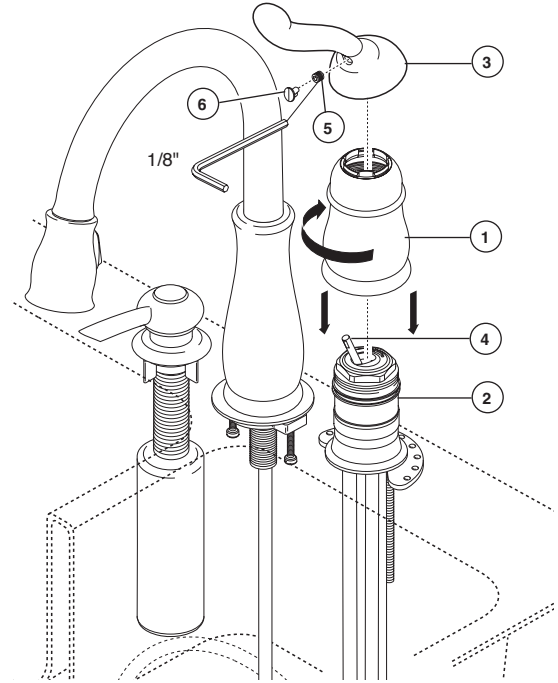
5



### Soap Dispenser Installation

Remove nut and gasket (1). Insert body (2) and gasket (3) through selected hole in sink. Make sure gasket (3) is properly seated in the base. Secure body to sink with nut and gasket (1). From under the sink screw the bottle (4) onto the body assembly shank. Insert pump and head (5) into body (2). **Note: To fill, lift the head and pump assembly out of the bottle and pour not more than 8 oz. into bottle. DO NOT remove bottle each time as this weakens the neck. Pull pump and head assembly out occasionally to soak and pump warm water through pump to remove soap build-up.**

6



Thread sleeve (1) over bonnet (2) and hand tighten. Place handle (3) on stem (4) and secure with set screw (5). Install button (6) into set screw hole.

### Instale el Dispensador de Jabón

Quite la tuerca y el empaque (1). Introduzca el cuerpo (2) y el empaque (3) a través del agujero seleccionado en el fregadero. Asegure que el empaque (3) esté apropiadamente sentado en la base. Fije el cuerpo al fregadero con la tuerca y el empaque (1). Desde la parte interior del fregadero, atornille la botella (4) en el cuerpo del ensamble de la espiga. Introduzca la bomba y la cabeza (5) dentro del cuerpo (2). **Nota: Para llenar, levante la cabeza y la bomba de la botella y vierta no más de 8 oz dentro de la botella. NO saque la botella cada vez ya que esto debilitaría el cuello. De vez en cuando, hale la bomba y la cabeza fuera y deje remojando y bombée agua tibia a través de la bomba para remover la acumulación del jabón.**

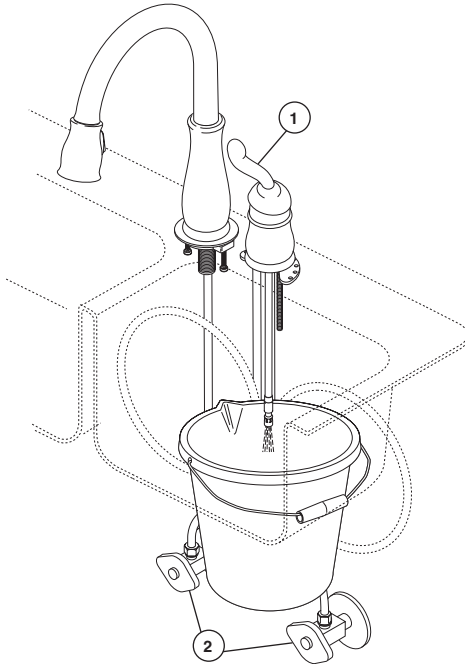
Rosque el excedente de la manga del ajuste (1) el capó (2) y la mano aprieta. Coloque la manija (3) en el vástago (4) y asegúrela con el tornillo de presión (5). Instale el botón (6) en el agujero del tornillo de presión.

### Installez le distributeur de savon

Enlevez l'écrou et joint (1). Introduisez le corps (2) et le joint (3) dans le trou approprié de l'évier. Assurez-vous que le joint (3) est bien calé dans la base. Fixez le corps à l'évier avec l'écrou et joint (1). Par le dessous de l'évier, vissez la bouteille (4) sur le manchon du corps. Introduisez la pompe et la tête (5) dans le corps (2). **Note : Pour remplir la bouteille, soulevez la tête avec la pompe. Ne versez pas plus de 8 onces de liquide. ÉVITEZ d'enlever la bouteille à chaque fois pour ne pas affaiblir le goulot. Enlevez la tête avec la pompe à l'occasion et faites tremper l'ensemble dans l'eau chaude pour enlever les dépôts de savon.**

Filetez l'excédent de la douille d'équilibre (1) le capot (2) et la main serrent. Placez la poignée (3) sur la tige (4) et la fixez avec la vis de réglage (5). Installez le bouton (6) sur le trou de vis de réglage.

7



#### Flush Supply Lines

Because your sprayer has been factory assembled to the hose, we do not recommend removing to flush the lines. Instead, if possible, we recommend placing a bucket below the outlet fitting and one of two options:

1. With the valve in mix open position (1), slowly open and close the supply stops (2).
2. With the supply stops open (2), slowly open and close the handle in the mix position (1).

This will prevent debris from being lodged in the hose and sprayer.

#### Deje correr el agua por las tuberías de suministro

Debido a que el rociador se ha ensamblado a la manguera en la fábrica, no recomendamos quitarlo para limpiar las tuberías/líneas. En cambio, si es posible, recomendamos colocar una cubeta debajo de la conexión de salida y una de las dos siguientes opciones.

1. Con la válvula en posición mixta (1), lentamente abra y cierre las llaves de paso (2).
2. Con las llaves de paso abiertas (2), lentamente abra y cierre la manija en la posición mixta (1).

Esto evitará que residuos permanezcan en la manguera y en el rociador.

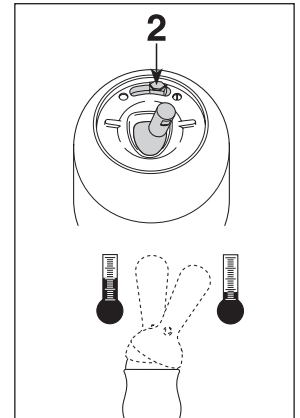
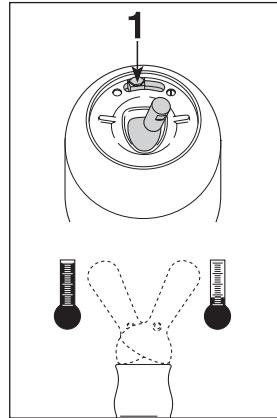
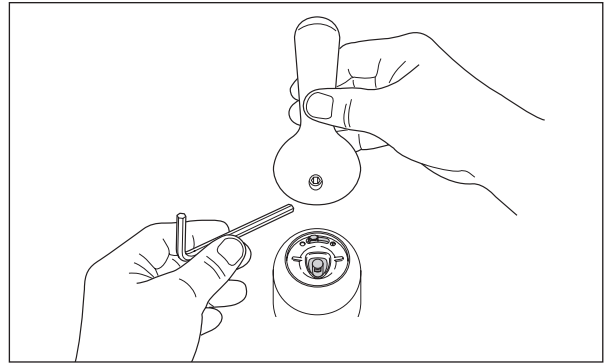
#### Rincez les tuyaux d'alimentation

Étant donné que le pulvérisateur a été fixé au tuyau souple en usine, nous vous déconseillons de l'enlever pour rincer les tuyaux d'alimentation. Nous vous recommandons plutôt de placer, dans la mesure du possible, un seau sous le raccord de sortie et d'employer l'une des deux solutions suivantes :

1. Alors que la soupape est en position de mélange (1), ouvrez les robinets d'arrêt lentement (2), puis refermez-les.
2. Alors que les robinets d'arrêt sont ouverts (2), amenez la manette doucement en position de mélange (1), puis ramenez-la en position de fermeture.

Cette opération sert à évacuer les corps étrangers qui pourraient se trouver dans le tuyau souple et le pulvérisateur.

8



#### Setting The Handle Limit Stop (Optional)

This faucet includes an integrated handle limit stop that has two positions. Position 1, to the left, allows full handle motion (the full range between "all cold" to "all hot"). The faucet is set in position 1 in the factory. Position 2, to the right, allows half of the normal handle motion ("all cold" to "mixed hot/cold").

The handle limit stop can be adjusted by the homeowner once the faucet is installed. Setting the handle limit stop in position 2 may help to prevent scalding because it limits the amount of hot water in the mix; however, this handle limit stop will not always prevent scalding because it does not compensate for incoming pressure or sudden water temperature changes.

**To change positions of the handle limit stop:** remove the handle; move the valve stem to the all cold position so the water is on; change the position of the handle limit stop; turn off the water; reinstall the handle.

#### Fijando la parada de límite de la manija (opcional)

Esta llave de agua incluye una manija integrada, que tiene dos posiciones, para limitar la temperatura. La posición 1, a la izquierda, permite el movimiento completo de la manija (el alcance completo entre el agua "totalmente fría" hasta "totalmente caliente"). La fábrica preselecciona la llave de agua (grifo) a la posición 1. La posición 2, a la derecha, permite la mitad del alcance de movimiento normal de la manija ("totalmente fría" a la posición "mixta caliente/fría").

Una vez que la llave de agua (grifo) se ha instalado, el límite rotacional de la manija puede ajustarse por el propietario de la residencia. Ajustando la manija de ajuste del tope del límite de la temperatura a la posición 2 puede ayudar a prevenir escaldaduras porque limita la cantidad de agua caliente en la mezcla; sin embargo, esta manija que limita la temperatura del agua no siempre prevendrá escaldaduras porque no compensa la presión del agua de entrada o cambios repentinos de la temperatura del agua.

**Para cambiar las posiciones de la manija que limitan la temperatura:** quite la manija; cambie la posición de la espiga de la válvula a la posición totalmente fría de manera que el agua este abierta; cambie la posición de la manija que limita la temperatura; cierre el agua; reinstale la manija.

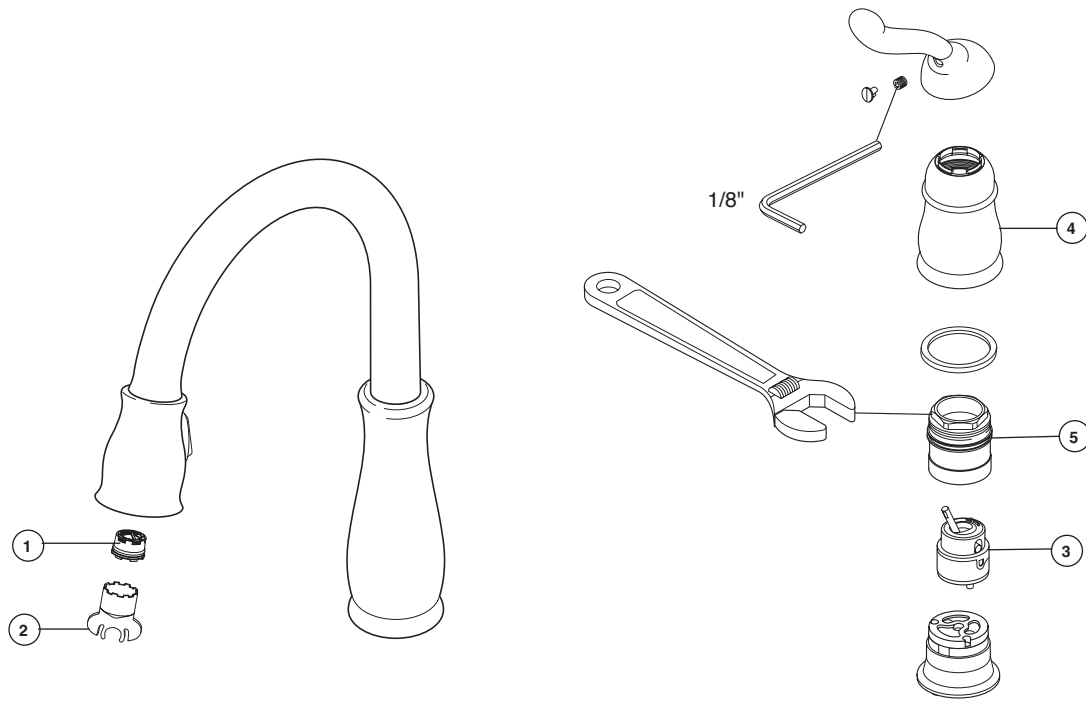
#### Plaçant l'arrêt de limite de poignée (facultatif)

Ce robinet est muni d'une butée de température maximale à deux positions. La position 1, à gauche, permet le déplacement de la manette entre les deux extrémités de la plage de température (eau très froide et eau très chaude). C'est la position sélectionnée en usine. La position 2, à droite, permet le déplacement de la manette sur la moitié de la plage de température (eau très froide et eau mitigée).

Il est possible de régler la butée de température maximale de la manette au moment de l'installation du robinet. Un réglage à la position 2 peut empêcher l'ébullition parce que cette position limite la quantité d'eau chaude dans le mélange. Toutefois, ce réglage de la butée de température maximale de la manette ne constitue pas une garantie absolue contre l'ébullition parce qu'il n'offre aucune protection contre les fluctuations de la pression d'alimentation ou les changements de température soudains.

**Pour modifier la position de la butée de température maximale de la manette :** enlevez la manette; amenez l'obturateur à l'extrémité de la plage du côté eau froide pour faire s'écouler l'eau; modifiez la position de la butée de température maximale; fermez le robinet; réinstallez la manette.





## Maintenance

### If faucet exhibits very low flow:

- A. Remove and clean Aerator (1) with supplied wrench (2), or  
 B. SHUT OFF WATER SUPPLIES. Replace valve cartridge (3).

### If faucet leaks from under handle:

Remove handle and unthread trim cap (4). Using a wrench, ensure bonnet nut (5) is tight.

### If leak persists—SHUT OFF WATER SUPPLIES.

Replace valve cartridge (3). When reinstalling parts, make sure bonnet nut (5) is tightened securely with a wrench.\*

**If faucet leaks from spout outlet—SHUT OFF WATER SUPPLIES.** Replace valve cartridge (3). When reinstalling parts, make sure bonnet nut (5) is tightened securely with a wrench.\*

**\* WARNING: Failure to securely tighten bonnet nut with a wrench could result in water damage.**

**Note:** A small amount of water may run out the spout or drip for a very short period after the faucet is shut off. This is a natural occurrence caused by the long flexible hose.

**Note:** Do not attempt to disassemble cartridge (3). There are no repairable parts inside.

## Cleaning and Care

Care should be given to the cleaning of this product. Although its finish is extremely durable, it can be damaged by harsh abrasives or polish. To clean, simply wipe gently with a damp cloth and blot dry with a soft towel.

## Backflow Protection System

Your Delta Faucet pull-down spout incorporates a backflow protection system that has been tested to be in compliance with ASME A112.18.3 and ASME A112.18.1 / CSA B125.1. It incorporates two certified check valves in series, which operate independently and are integral, non-serviceable parts of the spray assembly.

### Si la llave de agua exhibe muy poco flujo:

- A. Quite y limpie el aerador (1) con la llave de tuerca incluida (2), o  
 B. CIERRE LOS SUMINISTROS DE AGUA. Cambie el cartucho de la válvula (3).

### Si la llave de agua tiene una filtración por debajo de la manija:

Quite la manija y casquillo (4). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

### Si la filtración persiste – CIERRE LOS

SUMINISTROS DE AGUA. Cambie el cartucho de la válvula (3). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

### Si la llave de agua tiene una filtración

desde la salida del surtidor – CIERRE LOS SUMINISTROS DE AGUA. Cambie el cartucho de la válvula (3). Sando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

**\* AVISO: Si no aprieta fijamente la tuerca tapa con una llave de tuercas pudiera resultar en daño por agua.**

**Nota:** Una cantidad pequeña de agua puede escurrirse del surtidor o gotear por un período corto de tiempo después de cerrar el agua. Esto es una ocurrencia natural causada por la manguera larga flexible.

**Nota:** No procure desmontar el cartucho (3). No hay piezas reparables adentro.

## Limpeza y Cuidado de su Llave

Tenga cuidado al ir a limpiar este producto. Aunque su acabado es sumamente durable, puede ser afectado por agentes de limpieza o para pulir abrasivos. Para limpiar su llave, simplemente frótelas con un trapo húmedo y luego séquela con una toalla suave.

## Sistema de protección contra el contraflujo

Su llave de agua tipo deslizable Delta tiene un sistema de protección contra el contraflujo, incorporado, que ha sido probado para cumplir con los requisitos de ASME A112.18.3 y ASME A112.18.1 / CSA B125.1. Este incorpora en la pieza de mano dos válvulas de retención o checadoras certificadas en una serie, las cuales operan independientemente y son piezas integrantes que no requieren servicio.

## Entretien

### Si le débit du robinet est très faible :

- A. Enlevez l'aérateur (1) à l'aide de l'outil fourni (2) et nettoyez-le ou  
 B. FERMEZ LES ROBINETS D'ALIMENTATION. Remplacez la cartouche de la soupape (3).

### Si le robinet fuit par le dessous de la manette :

Enlevez la manette et embase (4). À l'aide d'une clé, assurez-vous que l'écrou-chapeau (5) est serré.\*

### Si la fuite persiste, COUPEZ L'ARRIVÉE D'EAU.

Remplacez la cartouche de la soupape (3). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

**Si le robinet fuit par la sortie du bec, COUPEZ L'ARRIVÉE D'EAU.** Remplacez la cartouche (3). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

**\* MISE EN GARDE : L'omission de bien serrer l'écrou-chapeau peut entraîner une fuite d'eau et des dommages.**

**Note :** Un peu d'eau peut s'écouler du bec ou dégoutter pendant une très courte période après la fermeture du robinet. Cela est normal en raison de la longueur du flexible.

**Note :** N'essayez pas de démonter la cartouche (3). Il n'y a aucune pièce réparable à l'intérieur.

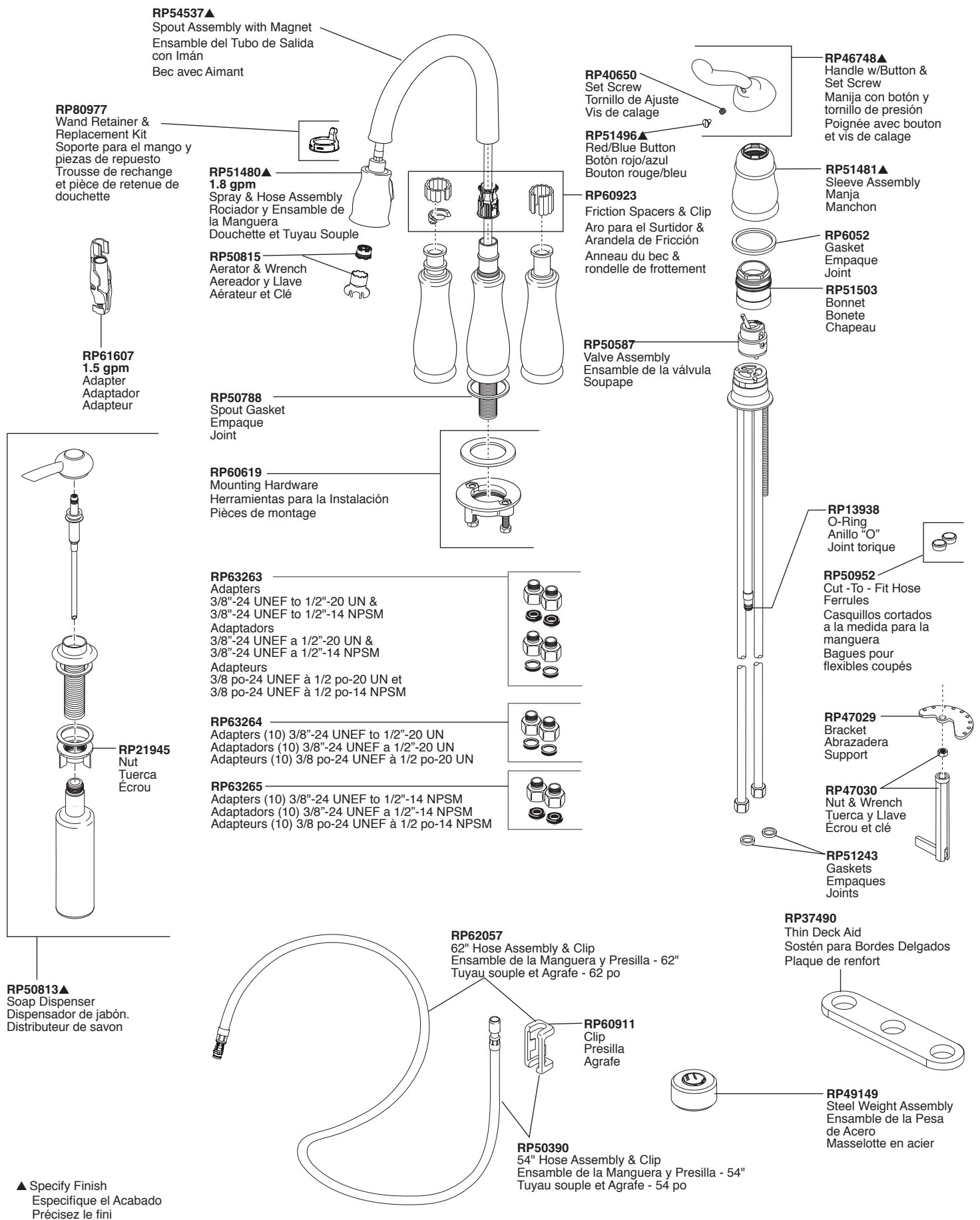
## Instructions de nettoyage

Il faut le nettoyer avec soin. Même si son fini est extrêmement durable, il peut être abîmé par des produits fortement abrasifs ou des produits de polissage. Il faut simplement le frotter doucement avec un chiffon humide et le sécher à l'aide d'un chiffon doux.

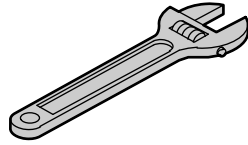
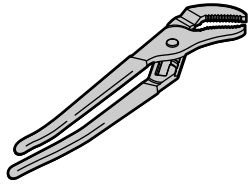
## Dispositif anti-siphonnage

Le bec rétractable de votre robinet Delta comporte un dispositif anti-siphonnage qui a été éprouvé et qui est conforme aux normes ASME A112.18.3 et ASME A112.18.1 / CSA B125.1. Ce dispositif se compose de deux clapets indépendants homologués, montés en série dans le tube rigide, qui sont non réparables.


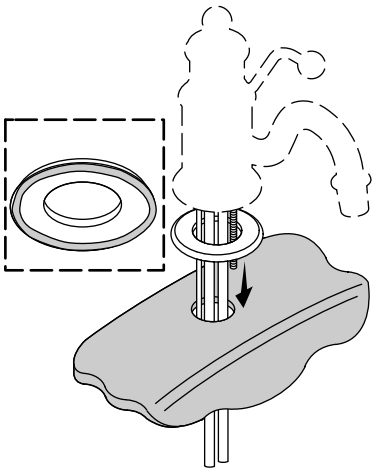
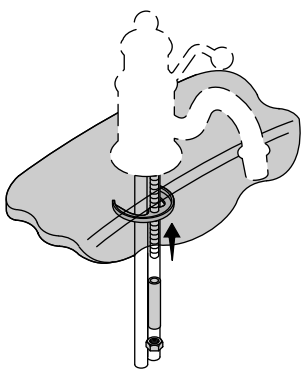
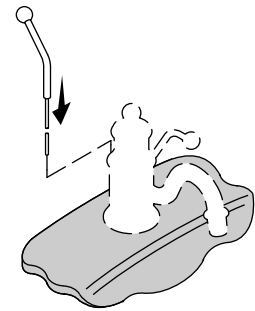

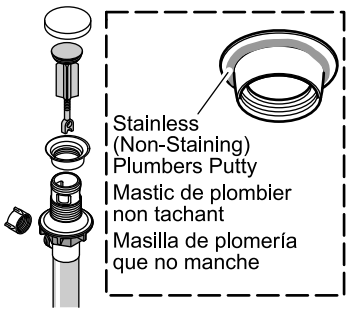
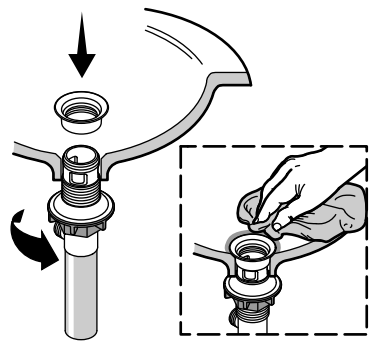
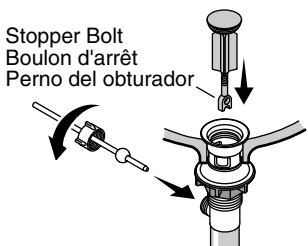
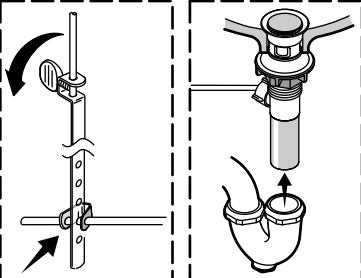
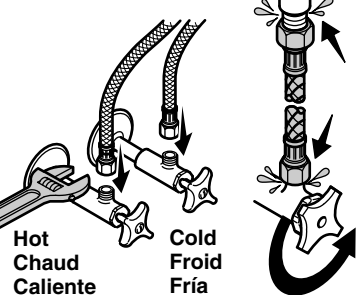
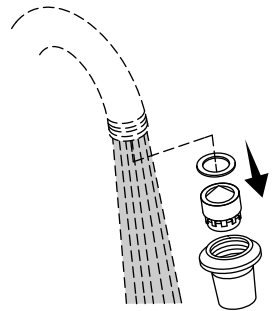
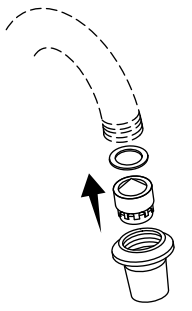
# MODELS / MODELOS / MODÈLES 978-DST, 978-SD-DST & 9978-DST



▲ Specify Finish  
Especifique el Acabado  
Précisez le fini



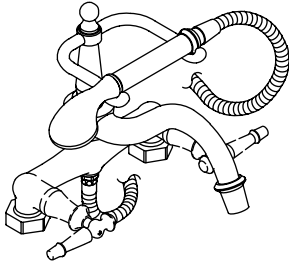
Stainless (Non-Staining) Plumbers Putty  
 Mastic de plombier non tachant  
 Masilla de plomería que no manche

<p><b>Important Information</b>  <b>For service parts information</b>, visit <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.  <b>For care and cleaning</b> and other information, visit <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p> <p><b>Informations importantes</b>  <b>Pour obtenir de l'information sur les pièces de rechange</b>, consulter le site <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.  <b>Pour obtenir de l'information sur l'entretien et le nettoyage</b> et de l'information supplémentaire, consulter le site <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p> <p><b>Información importante</b>  <b>Para información sobre piezas de repuesto</b>, visite <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.  <b>Para el cuidado y la limpieza</b> y otra información, visite <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p>	<p><b>Important Information</b>              If possible, assemble the faucet and drain to the bathroom sink before installing the sink.</p> <p><b>Informations importantes</b>              Si possible, assembler le robinet et le drain au lavabo avant d'installer ce dernier.</p> <p><b>Información importante</b>              De ser posible, ensamble la grifería y el desagüe en el lavabo de baño antes de instalar el lavabo.</p>	<p>Do not use petroleum-based plumbers putty on marble or stone surfaces.</p> <p>Ne pas utiliser du mastic de plombier à base de pétrole sur les surfaces en marbre ou en pierre.</p> <p>No utilice masilla de plomería con base de petróleo en superficies de mármol o piedra.</p>	<p><b>1</b> Clean the sink surface.              Nettoyer la surface du lavabo.              Limpie la superficie del lavabo.</p> 	<p><b>2</b> Apply plumbers putty.              Appliquer du mastic de plombier.              Aplique masilla de plomería.</p> 
<p><b>3</b> Secure the faucet.              Sécuriser le robinet.              Fije la grifería.</p> 	<p><b>4</b> Install the lift rod.              Installer la tige de levage.              Instale el tirador.</p> 	<p><b>5</b> Remove excess sealant.              Retirer tout excédent de mastic.              Limpie el exceso de sellador.</p> 	<p><b>6</b> Disassemble the drain. Apply plumbers putty to the underside of the flange.              Désassembler le drain. Appliquer du mastic de plombier sur le dessous de la bride.              Desensamble el desagüe. Aplique masilla de plomería al dorso de la brida.</p> 	<p><b>7</b> Install the flange. Tighten the nut. Remove excess sealant.              Installer la bride. Serrer l'écrou. Retirer tout excédent de mastic.              Instale la brida. Apriete la tuerca. Limpie el exceso de sellador.</p> 
<p><b>8</b> Insert the rod and tighten the nut. Then insert the stopper. If needed, turn the stopper bolt to adjust the height.              Insérer la tige et serrer l'écrou. Insérer ensuite le bouchon. Si nécessaire, tourner le boulon du bouchon pour régler la hauteur.              Inserte la varilla y apriete la tuerca. Luego inserte el obturador. Si es necesario, gire el perno del obturador para ajustar la altura.</p>  <p>Stopper Bolt Boulon d'arrêt Perno del obturador</p>	<p><b>9</b> Tighten the thumbscrew. Connect the lift rod using the clip. Connect the trap to the tailpiece.              Serrer la vis de serrage. Connecter la tige de levage en utilisant le clip. Connecter le siphon à la pièce de raccordement.              Apriete el tornillo de mariposa. Conecte el tirador utilizando el clip. Conecte la trampa al tubo final.</p> 	<p><b>10</b> Connect and tighten the supply hoses. Check for leaks.              Connecter et serrer les tuyaux d'alimentation. Rechercher des fuites.              Conecte y apriete las mangueras de suministro. Verifique que no haya fugas.</p>  <p>Hot Chaud Caliente</p> <p>Cold Froid Fría</p>	<p><b>11</b> Remove the aerator. Flush the lines.              Retirer l'aérateur. Purger les conduits.              Retire el aireador. Haga circular agua por las líneas.</p> 	<p><b>12</b> Reinstall the aerator.              Réinstaller l'aérateur.              Vuelva a instalar el aireador.</p> 

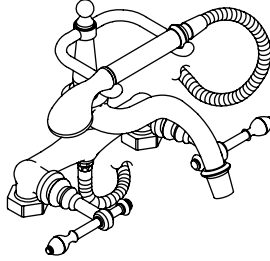
# Installation Guide

## Deck/Wall-Mount Bath Faucet

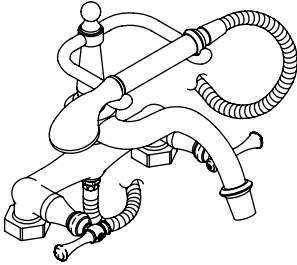
K-110



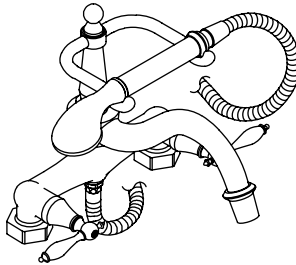
K-331



K-6905



K-16210



**M** product numbers are for Mexico (i.e. K-12345**M**)  
Los números de productos seguidos de  
**M** corresponden a México (Ej.  
K-12345**M**)  
Français, page "Français-1"  
Español, página "Español-1"

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1008209-2-G

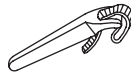
## Tools and Materials



Adjustable  
Wrench



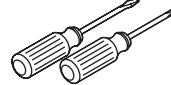
Thread  
Sealant



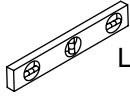
Strap  
Wrench



Solder



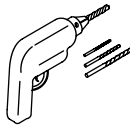
Assorted  
Screwdrivers



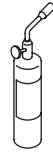
Level



Assorted Hex  
Wrenches



Drill and  
Bits



Propane  
Torch

### Plus:

- Adjustable Arc Pliers
- 1/2" Piping
- Threaded 1/2" Adapters
- 1/2" Union Elbows
- Bath Shower Ells
- K-6525 Wall-Mount Bracket

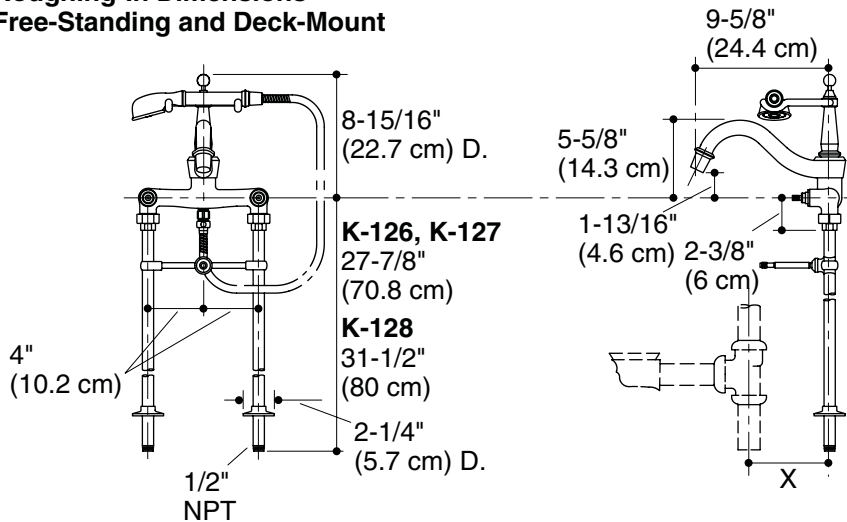
## Before You Begin



**WARNING: Risk of personal injury.** This product is not designed or intended for use as a grab or support bar. Do not install in a location where this product may be inadvertently used as a grab or support bar.

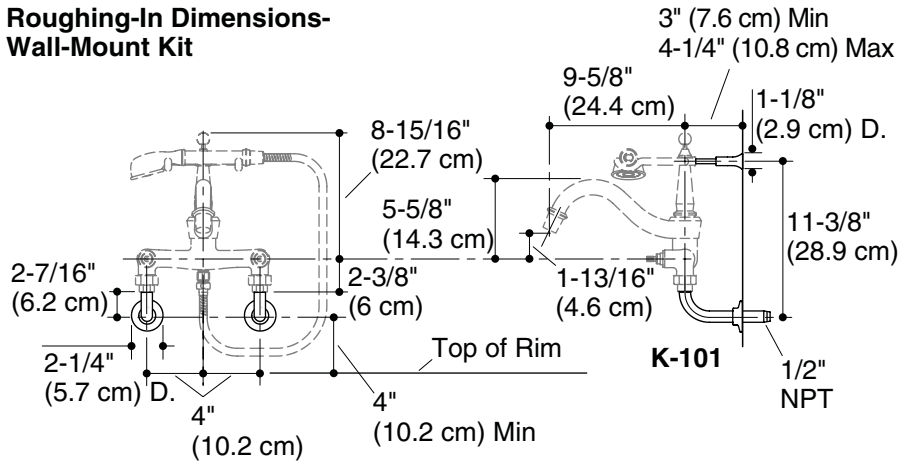
- Please read all instructions before you begin.
- Observe all local plumbing and building codes.
- Shut off the main water supply.
- Inspect the waste and supply tubing and replace as needed.
- Install or relocate the supplies as necessary to conform to the roughing-in dimensions.
- This faucet can be installed in freestanding, deck-mount or wall mount configurations. **Follow only the instructions that apply to your installation.**
- An optional wall-mount bracket is available to adapt the handshower to a stationary location.
- Kohler Co. reserves the right to make revisions in the design of faucets without notice, as specified in the Price Book.

**Roughing-In Dimensions-  
Free-Standing and Deck-Mount**

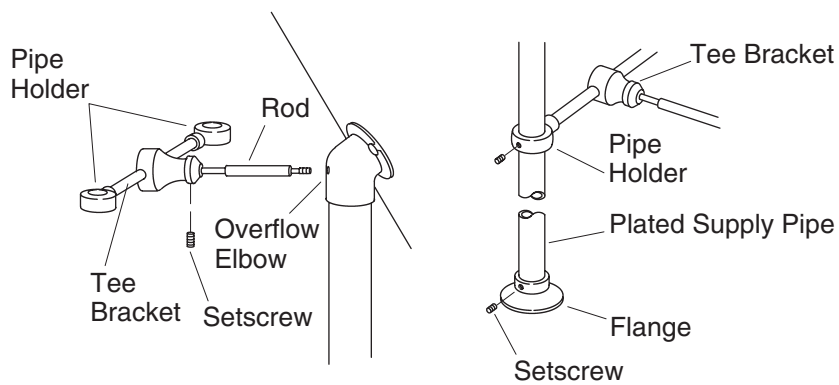


Bath drain to faucet	X
Bath Models	
K-100	5-7/8" (14.9 cm)
K-700, K-702	6-3/8" (16.2 cm)
K-710, K-711, K-712, K-726, K-727	4-3/8" (11.1 cm)

**Roughing-In Dimensions-  
Wall-Mount Kit**



**Roughing-In**



## 1. Prepare the Site

- If not already installed, install or relocate the water supplies as needed to conform to the roughing-in dimensions for your particular installation.
- Use thread sealant on all the threaded connections.

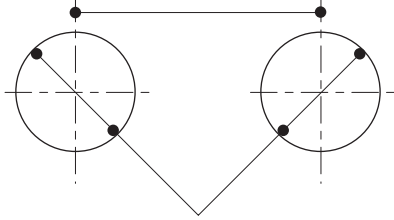
## 2. Freestanding Supply Installation

- Remove the temporary plugs from the water supply couplings.
- **Replace the long rod with the short rod for Kohler models K-710, K-711, K-712, K-726 and K-727.** To determine the bath to drain faucet measurement for your model bath refer to the "Roughing-In" section of this manual.
- Thread the tee bracket into the hole in the back of the overflow elbow.
- Insert the rod into the tee bracket and secure with the setscrew.

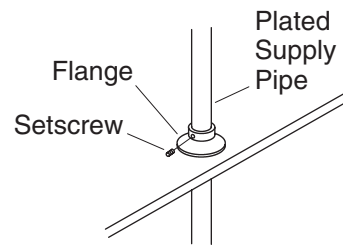
### Install the Supply Tubes

- Loosen the setscrews in the pipe holder and flange.
- Carefully slide the plated supply pipe through the pipe holder and flange.
- Thread the supply pipe into the supply rough-in and tighten it with a strap wrench.
- Tighten the setscrews in the pipe holder and flange.

8" (20.3 cm) Center-to-Center



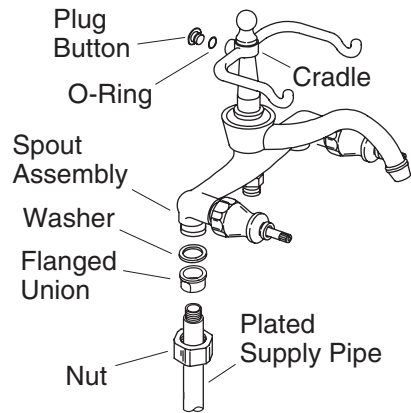
1" (2.5 cm) Diameter Holes



### 3. Deck-Mount Supply Installation

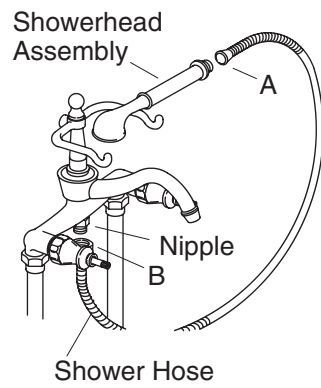
- Remove the temporary plugs from the water supply couplings.
- Construct a frame for the deck with two 1" (2.5 cm) holes measuring 8" (20.3 cm) apart from the center of each hole.
- Carefully slide the plated supply pipe through the holes.
- Thread the supply pipe into the supply rough-in and tighten with a strap wrench.
- Securely strap the supply pipes to the framing below the bath deck.
- Loosen the setscrew in the flange.
- Carefully slide the flange down the supply pipe so it rests on the bath deck.
- Tighten the flange setscrew.





#### 4. Freestanding and Deck-Mount Faucet Installation

- Carefully slip the O-ring into the groove in the plug button.
- Press the plug button into the hole in the back of the cradle.
- Apply thread sealant to the threads of the plated supply pipes.
- Slide a nut onto one of the plated supply pipes. Be careful to avoid scratching the plated finish.
- Thread the flanged union onto the supply pipe. Verify that the flanged union is level.
- Set the washer on top of the flanged union.
- Repeat for the other supply pipe.
- Set the spout assembly on both washers.
- Thread the nuts up onto the spout assembly to secure it to the supply tubes.

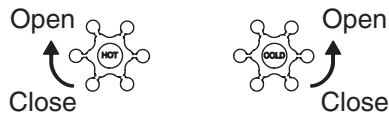
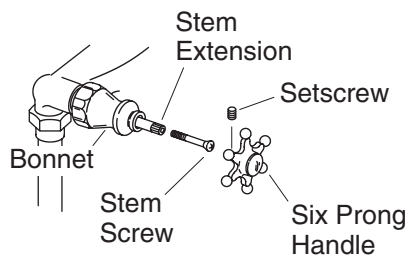


**Deck-Mount  
Installation is Shown**

## 9. Install the Handshower – All Installations

**NOTE:** Only deck-mount installation is shown in the illustration. The handshower installs the same for all faucet installation types.

- Thread the end of the shower hose with the nut onto the nipple.
- Thread the handshower onto the other end of the shower hose.



**Shown in Closed Position**

## 12. Six Prong Handle Installation

- Verify that the valves are in the closed position.

**NOTICE: Risk of product damage.** Do not overtighten. Overtightening will damage the handle.

- Insert the stem screw into the stem extension and tighten with a screwdriver.
- Loosen the setscrew.
- Position the handle assembly on the stem extension.
- Verify that the handle label is in an even horizontal position. If needed, remove the handle and adjust its position on the splines of the stem extension until horizontal. For fine adjustment, pull out the stem extension until it disengages from the valve, rotate, and return it to its original position. **Do not pull the stem extension completely out.**
- Tighten the setscrew.
- Repeat for the other handle.

## 14. Complete the Installation

- Open the supplies.
- Turn on the hot and cold water.
- Run the water through both the handshower and the faucet.
- Check for leaks.
- Turn off the water.

### Features

- Single-hole mounting.
- One-piece, self-contained ceramic disc valve allows both volume and temperature control.
- Temperature memory allows faucet to be turned on and off at any temperature setting.
- High-temperature limit setting for added safety.
- Pop-up drain with lift rod and tailpiece.
- Lever handle.
- 5-3/8" (137 mm) spout reach.
- Stationary spout.
- 1.2 gal/min (4.5 l/min) maximum flow rate [max at 60 psi (4.14 bar)].

### Material

- Brass construction.

### Optional Accessories

K-14531



ADA CSA B651 OBC

### Codes/Standards

ASME A112.18.1/CSA B125.1

NSF 61

NSF 372

All applicable US Federal and State material regulations

DOE - Energy Policy Act 1992

EPA WaterSense®

California Energy Commission (CEC)

ADA

ICC/ANSI A117.1

CSA B651

OBC

### KOHLER® Faucet Lifetime Limited Warranty

See website for detailed warranty information.

### Available Color/Finishes

*Color tiles intended for reference only.*

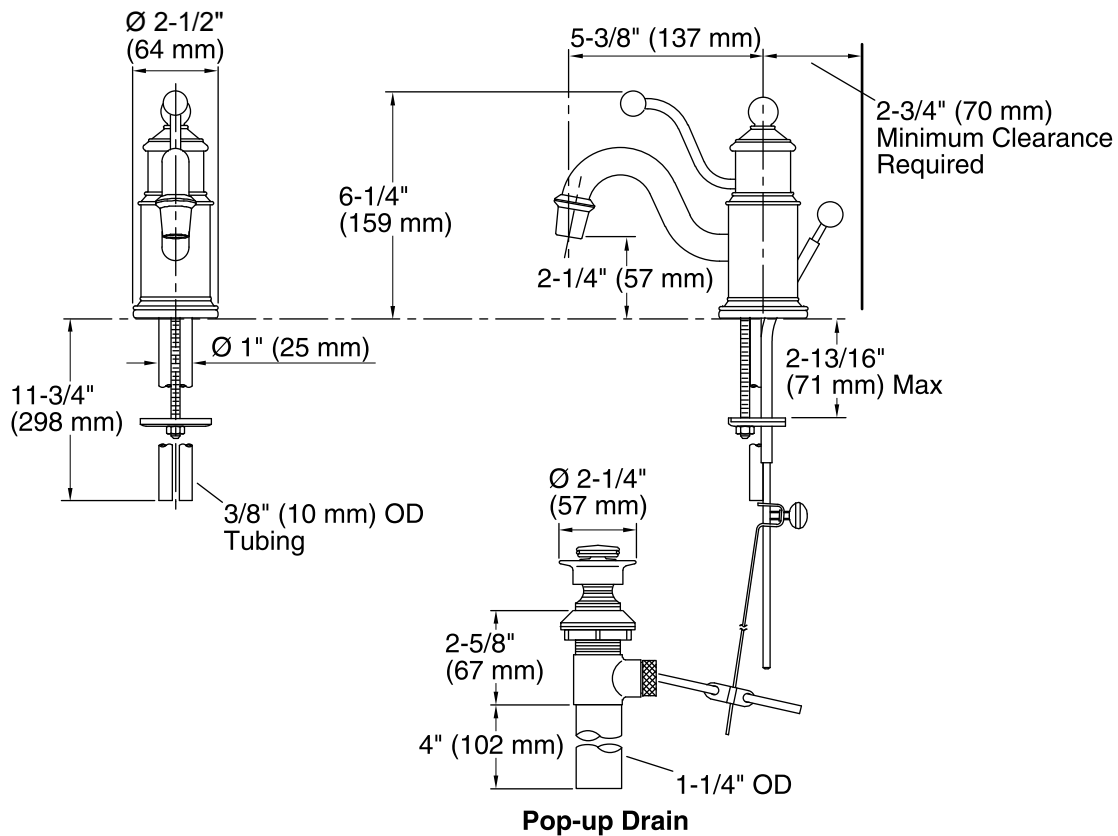
Color	Code	Description
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CP Polished Chrome



PB Vibrant® Polished Brass



### Technical Information

All product dimensions are nominal.

Drain included: YES

Drain tailpiece included: YES

### Spout:

Spout reach:  $5\text{-}3/8''$  (137 mm)

### Faucet:

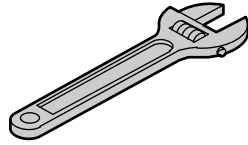
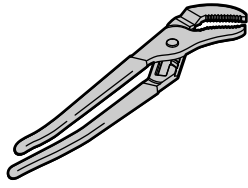
Flow rate: 1.2 gal/min (4.5 l/min)

Pressure: 60 psi (4.1 bar)


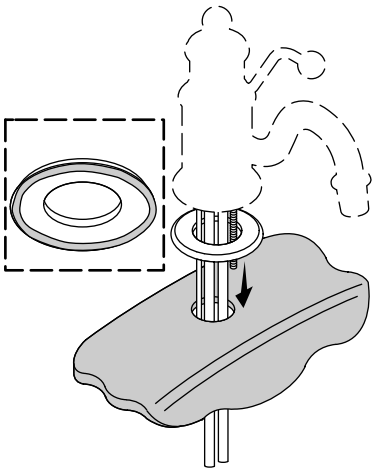
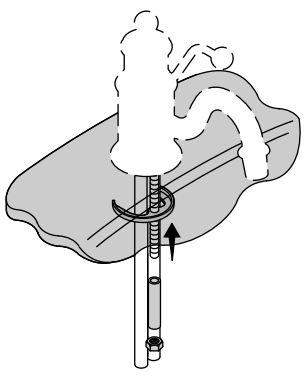
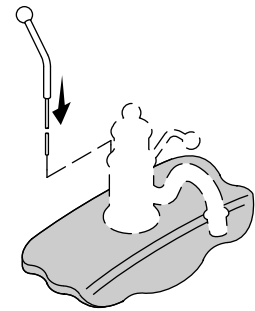

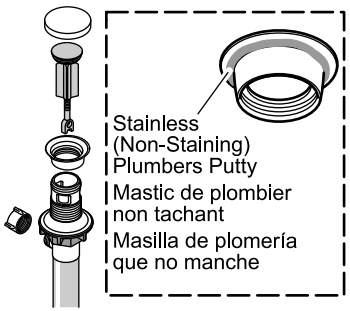
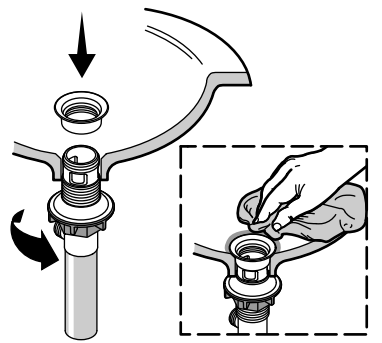
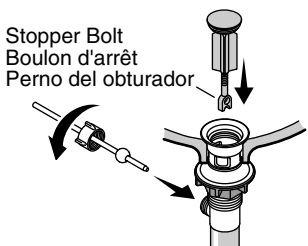
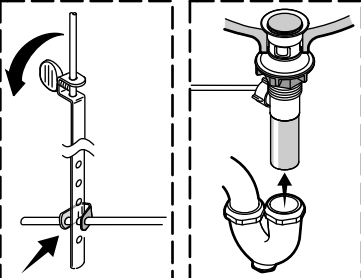
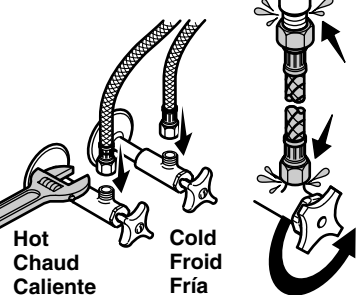
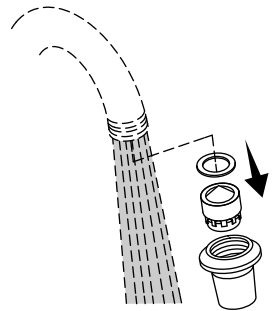
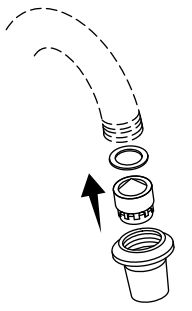
### Notes

Install this product according to the installation guide.

ADA, OBC, CSA B651 compliant when installed to the specific requirements of these regulations.



Stainless (Non-Staining) Plumbers Putty  
 Mastic de plombier non tachant  
 Masilla de plomería que no manche

<p><b>Important Information</b>  <b>For service parts information</b>, visit <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.  <b>For care and cleaning</b> and other information, visit <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p> <p><b>Informations importantes</b>  <b>Pour obtenir de l'information sur les pièces de rechange</b>, consultez le site <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.  <b>Pour obtenir de l'information sur l'entretien et le nettoyage</b> et de l'information supplémentaire, consultez le site <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p> <p><b>Información importante</b>  <b>Para información sobre piezas de repuesto</b>, visite <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.  <b>Para el cuidado y la limpieza</b> y otra información, visite <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p>	<p><b>Important Information</b>              If possible, assemble the faucet and drain to the bathroom sink before installing the sink.</p> <p><b>Informations importantes</b>              Si possible, assemblez le robinet et le drain au lavabo avant d'installer ce dernier.</p> <p><b>Información importante</b>              De ser posible, ensamble la grifería y el desagüe en el lavabo de baño antes de instalar el lavabo.</p>	<p>Do not use petroleum-based plumbers putty on marble or stone surfaces.</p> <p>Ne pas utiliser du mastic de plombier à base de pétrole sur les surfaces en marbre ou en pierre.</p> <p>No utilice masilla de plomería con base de petróleo en superficies de mármol o piedra.</p>	<p><b>1</b> Clean the sink surface.              Nettoyer la surface du lavabo.              Limpie la superficie del lavabo.</p> 	<p><b>2</b> Apply plumbers putty.              Appliquer du mastic de plombier.              Aplique masilla de plomería.</p> 
<p><b>3</b> Secure the faucet.              Sécuriser le robinet.              Fije la grifería.</p> 	<p><b>4</b> Install the lift rod.              Installer la tige de levage.              Instale el tirador.</p> 	<p><b>5</b> Remove excess sealant.              Retirer tout excédent de mastic.              Limpie el exceso de sellador.</p> 	<p><b>6</b> Disassemble the drain. Apply plumbers putty to the underside of the flange.              Désassembler le drain. Appliquer du mastic de plombier sur le dessous de la bride.              Desensamble el desagüe. Aplique masilla de plomería al dorso de la brida.</p> 	<p><b>7</b> Install the flange. Tighten the nut. Remove excess sealant.              Installer la bride. Serrer l'écrou. Retirer tout excédent de mastic.              Instale la brida. Apriete la tuerca. Limpie el exceso de sellador.</p> 
<p><b>8</b> Insert the rod and tighten the nut. Then insert the stopper. If needed, turn the stopper bolt to adjust the height.              Insérer la tige et serrer l'écrou. Insérer ensuite le bouchon. Si nécessaire, tourner le boulon du bouchon pour régler la hauteur.              Inserte la varilla y apriete la tuerca. Luego inserte el obturador. Si es necesario, gire el perno del obturador para ajustar la altura.</p>  <p>Stopper Bolt Boulon d'arrêt Perno del obturador</p>	<p><b>9</b> Tighten the thumbscrew. Connect the lift rod using the clip. Connect the trap to the tailpiece.              Serrer la vis de serrage. Connecter la tige de levage en utilisant le clip. Connecter le siphon à la pièce de raccordement.              Apriete el tornillo de mariposa. Conecte el tirador utilizando el clip. Conecte la trampa al tubo final.</p> 	<p><b>10</b> Connect and tighten the supply hoses. Check for leaks.              Connecter et serrer les tuyaux d'alimentation. Rechercher des fuites.              Conecte y apriete las mangueras de suministro. Verifique que no haya fugas.</p>  <p>Hot Chaud Caliente</p> <p>Cold Froid Fría</p>	<p><b>11</b> Remove the aerator. Flush the lines.              Retirer l'aérateur. Purger les conduits.              Retire el aireador. Haga circular agua por las líneas.</p> 	<p><b>12</b> Reinstall the aerator.              Réinstaller l'aérateur.              Vuelva a instalar el aireador.</p> 

<p><b>SERVICE PARTS</b> For service parts information, visit your product page at <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.</p> <p>For care and cleaning and other information go to: <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p> <p><b>KOHLER® Faucet Lifetime Limited Warranty</b> Kohler Co. warrants its Faucets* manufactured after January 1, 1997, to be leak and drip free during normal residential use for as long as the original consumer purchaser owns his or her home. If the Faucet should leak or drip during normal use, Kohler Co. will, free of charge, mail to the purchaser the cartridge necessary to put the Faucet in good working condition. This warranty applies only to Kohler Faucets installed in the United States of America, Canada or Mexico ("North America"). Kohler Co. also warrants all other aspects of the faucet or accessories ("Faucet")*, (except gold, non-Vibrant®, non-chrome finishes) to be free of defects in material and workmanship during normal residential use for as long as the original consumer purchaser owns his or her home. This warranty applies only to Kohler Faucets installed in North America. If a defect is found in normal residential use, Kohler Co. will, at its election, repair, provide a replacement part or product, or make appropriate adjustment. Damage to a product caused by accident, misuse, or abuse is not covered by this warranty. Improper care and cleaning will void the warranty**. Proof of purchase (original sales receipt) must be provided to Kohler Co. with all warranty claims. Kohler Co. is not responsible for labor charges, installation, or other incidental or consequential costs. In no event shall the liability of Kohler Co. exceed the purchase price of the Faucet.</p> <p>If the Faucet is used commercially or is installed outside of North America, or if the finish is gold, non-Vibrant or a painted or powder coated color finish, Kohler Co. warrants the Faucet to be free from defects in material and workmanship for one (1) year from the date the product is installed, under Kohler Co.'s standard one-year limited warranty.</p> <p>If you believe that you have a warranty claim, contact Kohler Co., either through your Dealer, Plumbing Contractor, Home Center or E-tailer, or by writing Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, the date the product was purchased and from whom the product was purchased. Also include your original invoice. For other information, or to obtain the name and address of the service and repair facility nearest you, call 1-800-4-KOHLER (1-800-456-4537) from within the USA and Canada, and 001-800-456-4537 from within Mexico, or visit <a href="http://www.kohler.com">www.kohler.com</a> within the USA, <a href="http://www.ca.kohler.com">www.ca.kohler.com</a> from within Canada, or <a href="http://www.mx.kohler.com">www.mx.kohler.com</a> in Mexico.</p> <p><b>KOHLER CO. AND/OR SELLER ARE PROVIDING THESE WARRANTIES IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KOHLER CO. AND/OR SELLER DISCLAIM ALL LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states/provinces do not allow limitations of how long an implied warranty lasts or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the consumer specific legal rights. You may also have other rights that vary from state/province to state/province.</b></p> <p><b>This is Kohler Co.'s exclusive written warranty.</b></p> <p>*Trend® faucets, Master Shower® tower, BodySpa systems and components; WaterHaven® tower, systems and components; Tripoint® faucets, Polished Gold, non-Vibrant and painted or powder coated finishes, fittings; all items within the "Fixture Related" section of the Kohler Faucets Price Book, drains, Duostrainer® sink strainers, soap/lotion dispensers; and faucets used in commercial settings, and outside North America, are covered by Kohler Co.'s one-year limited warranty.</p> <p>**Never use cleaners containing abrasive cleansers, ammonia, bleach, acids, waxes, alcohol, solvents or other products not recommended for chrome. This will void the warranty.</p> <p>USA/Canada: 1-800-4KOHLER Mexico: 001-800-456-4537 <a href="http://www.kohler.com">www.kohler.com</a></p>	<p><b>PIÈCES DE RECHANGE</b> Pour obtenir de l'information sur les pièces de rechange, visitez votre page de produits sur le site <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.</p> <p>Pour obtenir de l'information sur l'entretien et le nettoyage et de l'information supplémentaire, visitez le site: <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p> <p><b>Garantie limitée à vie du robinet KOHLER®</b> Kohler Co. garantit que les robinets* fabriqués après le 1er janvier 1997 ne fuient pas et ne gouttent pas lors d'une utilisation domestique normale, aussi longtemps que l'acquéreur d'origine demeure propriétaire de son domicile. Si le robinet goutte ou présente des fuites lors d'une utilisation normale, Kohler Co. enverra par courrier à l'acheteur, sans frais, la cartouche nécessaire pour réparer le robinet. La présente garantie s'applique uniquement aux robinets Kohler installés aux États-Unis, au Canada ou au Mexique ("Amérique du Nord"). Kohler Co. garantit également toutes les autres caractéristiques du robinet ou des accessoires ("Robinet")*, (à l'exception des finitions dorées, non-Vibrant®, non chromées) contre tout vice de matériau et de fabrication lors d'une utilisation domestique normale, aussi longtemps que l'acquéreur d'origine demeure propriétaire de son domicile. La présente garantie s'applique uniquement aux robinets Kohler installés en Amérique du Nord. Si un vice est décelé lors d'une utilisation domestique normale, Kohler Co. choisira, à sa discrétion, la réparation, le remplacement ou la rectification appropriée. Cette garantie n'offre pas de protection contre les dommages dus à un accident, une mauvaise utilisation ou un mauvais traitement. Un entretien et un nettoyage inadéquats annulent la garantie**. Une preuve d'achat (ticket de caisse d'origine) doit être présentée à Kohler Co. avec toutes les réclamations au titre de la garantie. Kohler Co. n'est pas responsable des frais de main-d'œuvre, d'installation ou de tout autre frais particulier, accessoire ou indirect. La responsabilité de Kohler Co. ne dépassera en aucun cas le prix d'achat du robinet.</p> <p>Si le robinet est utilisé dans un commerce ou s'il est installé en dehors d'Amérique du Nord, ou si la finition est dorée, non-Vibrant, peinte ou revêtue d'une poudre, Kohler Co. garantit le robinet contre tout vice de matériau et de fabrication pendant un (1) an à partir de la date d'installation du produit, selon les modalités de la garantie limitée standard d'un an de Kohler Co. Pour toute réclamation au titre de la présente garantie, contacter Kohler Co. par l'intermédiaire du vendeur, plombier, centre de rénovation ou revendeur par internet, ou bien par écrit à l'adresse suivante Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Fournir tous les renseignements pertinents à la réclamation, dont notamment une description complète du problème et du produit, le numéro de modèle, la couleur, la finition, la date et le lieu d'achat du produit. Joindre également l'original de la facture. Pour de plus amples renseignements ou pour obtenir les coordonnées du service de réparation le plus proche, appeler le 1-800-4-KOHLER (1-800-456-4537) à partir des E.-U. et du Canada, et le 001-800-456-4537 à partir du Mexique, ou consulter le site <a href="http://www.kohler.com">www.kohler.com</a> aux É.-U., <a href="http://www.ca.kohler.com">www.ca.kohler.com</a> à partir du Canada, ou <a href="http://www.mx.kohler.com">www.mx.kohler.com</a> au Mexique.</p> <p><b>KOHLER CO. ET/OU LE REVENDEUR FOURNISSENT CES GARANTIES AU LIEU ET PLACE DE TOUTES AUTRES GARANTIES, EXPRESSES OU TACITES, Y COMPRIS LES GARANTIES TACITES DE COMMERCIALITÉ ET D'ADAPTATION À UN USAGE PARTICULIER. KOHLER CO. ET/OU LE REVENDEUR DÉCLINENT TOUTE RESPONSABILITÉ CONTRE LES DOMMAGES PARTICULIERS, ACCESSOIRES OU INDIRECTS. Certains états et provinces ne permettent pas de limite sur la durée de la garantie tacite, ni l'exclusion ou la limite des dommages, et, par conséquent, lesdites limites et exclusions peuvent ne pas s'appliquer à votre cas. La présente garantie accorde au consommateur des droits juridiques particuliers. Vous pouvez également avoir d'autres droits qui varient d'un état ou d'une province à l'autre.</b></p> <p><b>Ceci constitue la garantie écrite exclusive de Kohler Co.</b></p> <p>*Les robinets Trend®, la colonne MasterShower®, les systèmes et éléments BodySpa, la colonne, les systèmes et les éléments WaterHaven®, les robinets Tripoint®, les finitions or poli, non-Vibrant et peintes ou à revêtement de poudre, les raccords; tous les articles de la section "Fixture Related" du le catalogue des prix des robinets Kohler, les drains, les crépines d'évier Duostrainer®, les distributeurs de savon/lotion; et les robinets utilisés dans des milieux commerciaux et en dehors d'Amérique du Nord, sont couverts par la garantie limitée d'un an de Kohler Co.</p> <p>**Ne jamais utiliser de nettoyants contenant des agents abrasifs, de l'ammoniaque, de l'eau de Javel, des acides, des cires, de l'alcool, des dissolvants ou autres produits non recommandés pour le chrome. Ceci annulera la garantie.</p>	<p><b>PIEZAS DE REPUESTO</b> Para información sobre piezas de repuesto, visite la página de su producto en <a href="http://www.kohler.com/serviceparts">www.kohler.com/serviceparts</a>.</p> <p>Para el cuidado y la limpieza y otra información visite: <a href="http://www.us.kohler.com">www.us.kohler.com</a>.</p> <p><b>Garantía limitada de por vida para la grifería KOHLER®</b> Kohler Co. garantiza que la Grifería* fabricada después del 1 de enero de 1997 está libre de problemas de fugas y goteo durante el uso residencial normal, mientras el comprador consumidor original sea el propietario de su casa. En caso de que la Grifería presente fugas o goteo durante el uso normal, Kohler Co. enviará por correo y sin ningún cargo al comprador original, el cartucho necesario para que la Grifería funcione correctamente. Esta garantía se aplica sólo a la Grifería Kohler instalada en los Estados Unidos de América, Canadá o México ("Norteamérica"). Kohler Co. también garantiza que todas las demás características de la grifería o accesorios ("Grifería")*, (excepto los acabados de oro, que no sean Vibrant®, o que no sean de cromo) están libres de defectos de material y mano de obra, durante el uso residencial normal, mientras el comprador consumidor original sea el propietario de su casa. Esta garantía se aplica sólo a la Grifería Kohler instalada en Norteamérica. Si se encuentra un defecto durante el uso residencial normal, Kohler Co., a su criterio, reparará, proveerá un repuesto o producto, o realizará los ajustes pertinentes. Esta garantía no cubre daños causados por accidente, abuso o uso indebido del producto. El cuidado y la limpieza indebidos anularán la garantía**. Al presentar las reclamaciones de garantía a Kohler Co., es necesario incluir la prueba de compra (recibo de venta original). Kohler Co. no se hace responsable de costos de mano de obra, instalación u otros costos incidentales o indirectos. En ningún caso la responsabilidad de Kohler Co. excederá el precio de compra de la Grifería.</p> <p>Si la Grifería se utiliza comercialmente o se instala fuera del territorio de Norteamérica, o si el acabado es de oro, no es Vibrant o un acabado de color con revestimiento de pintura o polvo, Kohler Co. garantiza que la Grifería está libre de defectos de material y mano de obra por un (1) año, a partir de la fecha de instalación, bajo la garantía limitada de un año estándar de Kohler Co.</p> <p>Si usted considera que tiene una reclamación en virtud de la garantía, comuníquese con Kohler Co. a través de su distribuidor, contratista de plomería, centro de remodelación o distribuidor por Internet, o escriba a Kohler Co., Attn.: Customer Care Center, 444 Highland Drive, Kohler, WI 53044, USA. Por favor, asegúrese de proporcionar toda la información pertinente a su reclamación, incluyendo una descripción completa del problema, el producto, el número de modelo, el color, el acabado, la fecha de compra y el lugar de compra del producto. También incluya el recibo original. Para información adicional, o para obtener el nombre y dirección del lugar de reparación y servicio más cercano a usted, llame al 1-800-4-KOHLER (1-800-456-4537) desde los EE.UU. y Canadá, y al 001-800-456-4537 desde México, o visite <a href="http://www.kohler.com">www.kohler.com</a> desde los EE.UU., <a href="http://www.ca.kohler.com">www.ca.kohler.com</a> desde Canadá, o <a href="http://www.mx.kohler.com">www.mx.kohler.com</a> en México.</p> <p><b>KOHLER CO. Y/O EL VENDEDOR OFRECEN ESTAS GARANTÍAS QUE SUSTITUYEN TODAS LAS DEMÁS GARANTÍAS, EXPRESAS O IMPLÍCITAS, INCLUYENDO, ENTRE OTRAS, LAS GARANTÍAS IMPLÍCITAS DE COMERCIALIZACIÓN E IDONEIDAD PARA UN USO DETERMINADO. KOHLER CO. Y/O EL VENDEDOR DESCARGAN TODA RESPONSABILIDAD POR CONCEPTO DE DAÑOS PARTICULARES, INCIDENTALES O INDIRECTOS. Algunos estados/provincias no permiten limitaciones en cuanto a la duración de una garantía implícita o a la exclusión o limitación de dichos daños, por lo que estas limitaciones y exclusiones pueden no aplicar a su caso. Esta garantía otorga al consumidor ciertos derechos legales específicos. Además, usted puede tener otros derechos que varían de estado a estado y provincia a provincia.</b></p> <p><b>Ésta es la garantía exclusiva por escrito de Kohler Co.</b></p> <p>*La grifería Trend®, la torre MasterShower®, los sistemas y componentes BodySpa, la torre, sistemas y componentes WaterHaven®, las griferías Tripoint®, el acabado en oro pulido, que no sea Vibrant y los acabados con revestimiento de pintura o en polvo, las conexiones, todos los artículos contenidos en la sección "Fixture Related" de la lista de precios de la grifería Kohler, los desagües, las coladeras de fregadero Duostrainer®, los dispensadores de jabón y loción, y la grifería de uso comercial e instalada fuera del territorio de Norteamérica, están cubiertos por la garantía limitada de un año de Kohler Co.</p> <p>**Nunca utilice limpiadores que contengan limpiadores abrasivos, amoniaco, blanqueador, ácidos, ceras, alcohol, disolventes u otros productos no recomendados para el cromo. Esto anulará la garantía.</p>
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# MultiChoice® Valve Trim Installation Instructions

## Owners Manual

### 17T Series

68883

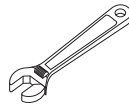
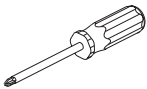
17T Series

17T Series

17T Series

Write purchased model number here.

### You May Need



### Table of Contents:

Warranties .....	Page 2
Installation Instructions .....	Pages 3 - 7
Clean and care .....	Page 8
Maintenance .....	Page 8
Cartridge Summary Reference Sheet .....	Page 8

To order replacement parts, visit [www.deltafaucet.com](http://www.deltafaucet.com)

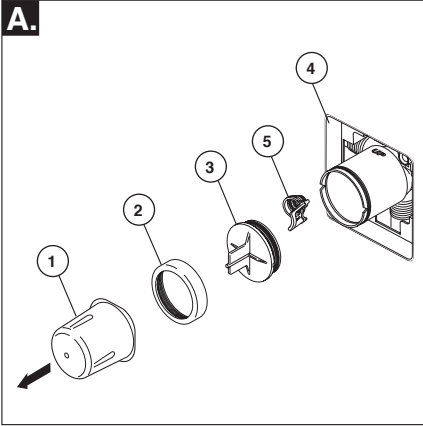
**CAUTION:** This system/device must be set by the installer to ensure safe, maximum temperature. Any change in the setting may raise the discharge temperature above the limit considered safe and may lead to hot water burns.

**NOTICE TO INSTALLER: CAUTION!**—As the installer of this valve, it is your responsibility to properly **INSTALL** and **ADJUST** this valve per the instructions given. This valve does not automatically adjust for inlet temperature changes, therefore, someone must make the necessary temperature knob adjustments at the time of installation and further adjustments may be necessary due to seasonal water temperature change. **YOU MUST** inform the owner/user of this requirement by following the instructions. If you or the owner/user are unsure how to properly make these adjustments please refer to page 6 and if still uncertain, call us at 1-800-345-DELTA.

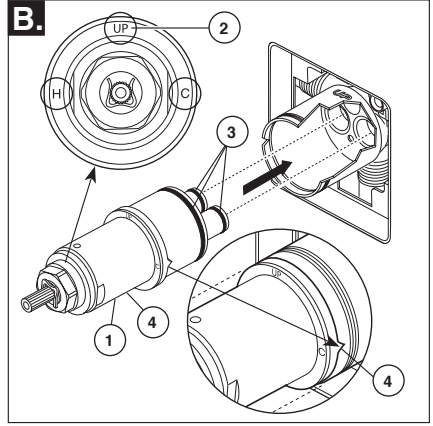
After installation and adjustment, you must affix your name, company name and the date you adjusted the temperature knob to the caution

label provided and apply or attach the label to the back side of the closest cabinet door and the warning label to the water heater. **Leave this Instruction Sheet for the owner's/user's reference. WARNING:** This pressure balanced or thermostatic bath valve is designed to minimize the effects of outlet water temperature changes due to inlet pressure changes, commonly caused by dishwashers, washing machines, toilets and the like. It may not provide protection from hot water burns when there is a failure of other temperature controlling devices elsewhere in the plumbing system, if the temperature knob is not properly set or if the hot water temperature is changed after the settings are made or if the water inlet changes due to seasonal changes. **WARNING:** Do not install a shut-off device on either outlet of this valve. When this type of device shuts off the water flow, it can defeat the ability of the valve to balance the hot and cold water pressures.

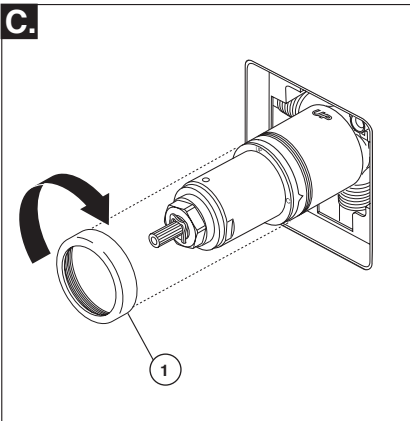
## 1 Cartridge Installation



**Turn off water supplies.** Remove cover (1), bonnet nut (2) and test cap (3) from the body. Place a bucket or small container over the front of the valve body and slowly open the water supplies to flush any debris from the supply lines before installing the cartridge. Turn the water supplies back off. If this is not a thin wall mounting, the entire plasterguard (4) may be removed. If screen (5) is in place, remove before installing cartridge.

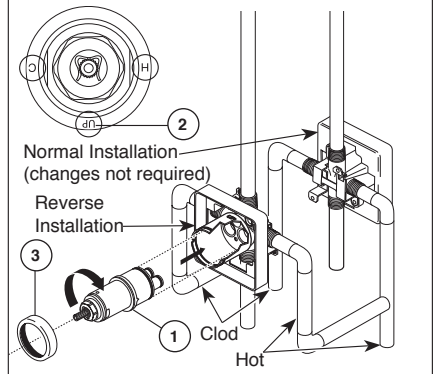


Rotate the cartridge (1) so the word "UP" (2) appears on the top. The "H" must be on the hot side and the "C" must be on the cold side. Add silicone lube to the three o-rings (3) shown above to make the cartridge easier to install and remove from the valve body. Insert cartridge into valve body as shown. Ensure the keys on the body are fully engaged with the slots in the body (4).



Slide bonnet nut (1) over the cartridge and thread onto the body. Hand tighten securely.

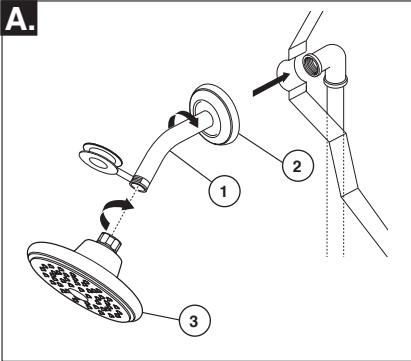
## Back to back Installation



For the exceptions of back to back or reverse installations (hot on right and cold on left) only: Rotate cartridge (1) so "H" is on the hot side and "C" is on the cold side and the word "UP" (2) appears on the bottom. Add silicone lube to the three o-rings shown above to make the cartridge easier to install and remove from the valve body. Install the cartridge making sure that the keys are fully engaged with the slot in the brass body (see step B). Slide bonnet nut (3) over the cartridge and thread onto the body. Hand tighten securely.

# Installation

## 2 Showerhead and Tub Spout Installation



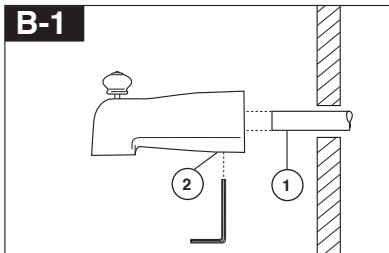
### FOR SHOWERHEAD INSTALLATION:

Apply plumber tape to pipe threads on both ends of the shower arm (1). To prevent damage to finish on shower arm, insert wall end of shower arm into shower flange (2) before screwing arm into riser connection.

Thread showerhead (3) onto shower arm. Do not overtighten showerhead.

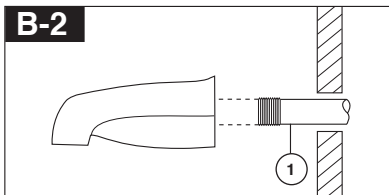
### FOR TUB SPOUT INSTALLATION:

Refer to the installation instructions supplied with your spout. Do not connect deck mount spouts to in-wall valves. Do not use hand showers connected in lieu of a tub spout to a tub/shower valve. Do not use PEX tubing for tub spout drop.



### Slip-On Installation

The copper tube (1) must be 1/2" nominal copper. Important: If it is necessary to cut the copper tube, the end must be chamfered free of burrs to prevent cutting or nicking O-ring inside the spout. Slide spout over copper tube flush with the finished tub or wall surface. Tighten set screw (2), but do not overtighten.

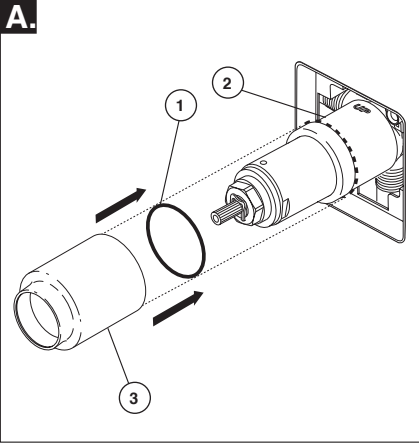


### Iron Pipe Installation

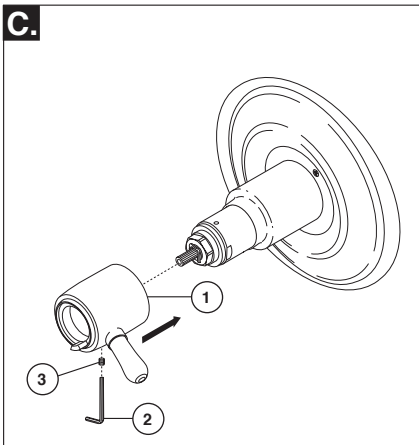
Install threaded pipe nipple (1) to extend past finished wall. Apply plumber tape to threads on pipe nipple and screw on tub spout.

# Installation

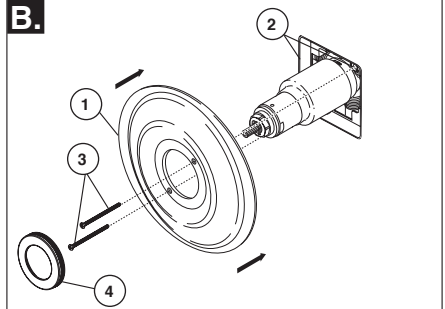
## 3 Valve Trim Installation



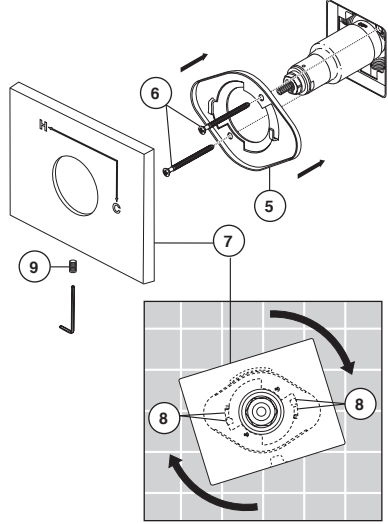
Slide O-ring (1) over cartridge and the bonnet nut (2). The O-ring, which acts as a spacer to steady the sleeve, should rest behind the bonnet nut. Slide the sleeve (3) over the cartridge, body and O-ring. Ensure sleeve is properly positioned over the front of cartridge.



Install volume control handle (1) with lever to the right, using an Allen wrench (2) to secure with the set screw (3).



### Escutcheon Installation for Models T17T053, T17T253, T17T453, T17T067, T17T267 & T17T467.



Secure the escutcheon (1) to the bracket (2) with the 2 screws provided (3). Do not overtighten escutcheon screws.

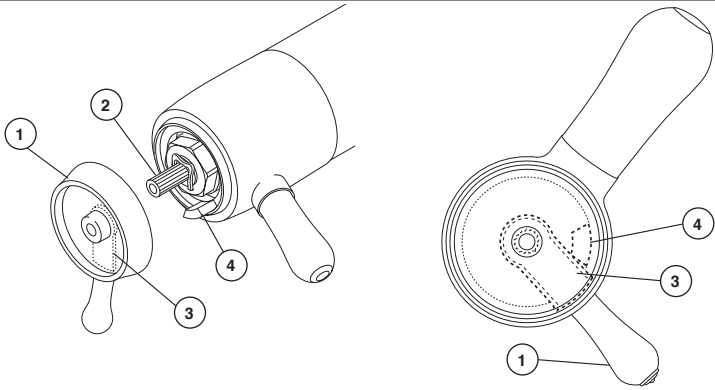
**If you are installing the Cassidy models T17T097, T17T297 & T17T497:** Thread the cover (4) onto the escutcheon (1).

### For models T17T053, T17T253, T17T453, T17T067, T17T267 & T17T467:

Install bracket (5) over the cartridge body using the 2 screws provided (6). Install escutcheon (7) by placing it over the bracket as shown and rotating it to lock the tabs (8). Secure the escutcheon to the bracket using set screw (9).

## 4 Installation and Adjustment of the Temperature Knob Failure to do so may cause injury.

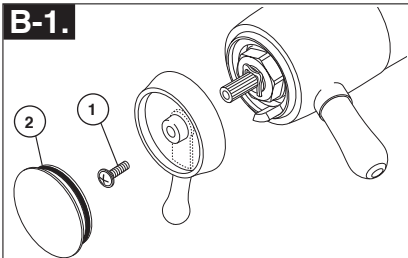
**A.**



**A. Adjust temperature limit stop!** Turn on water supplies; LET THE WATER RUN AT BOTH FULL HOT AND FULL COLD TO ENSURE THE WATER IS RUNNING AS HOT/COLD AS POSSIBLE. Place a thermometer in a plastic tumbler, and hold the tumbler in the water stream. Place the temperature knob (1) onto the

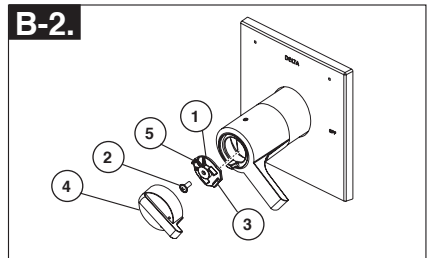
splines (2), then rotate the temperature knob until you achieve your maximum desired temperature from the outlet (not more than 120° or the lower temperature mandated by your local plumbing code). Remove the temperature knob and replace onto the splines (2), making sure that the temperature knob limit stop (3) hits against the volume handle limit stop (4) as shown.

**B-1.**



Secure the temperature knob using screw (1) and place cap (2) on knob.

**B-2.**



Secure temperature control knob (1) with screw (2). Hook (3) front of temperature control cover (4) onto knob (1) before engaging rear snap (5).

**5** Potential scald or thermal shock injury could result due to cross flow if outlet at the shower is blocked or restricted (e.g., pause control on showerhead). Be sure to point showerhead away from you when re-starting flow or install inlet check valves on both supply lines to prevent possible injury.

## Cleaning and Care

Care should be given to the cleaning of this product. Although its finish is extremely durable, it can be damaged by harsh abrasives or polish. To clean, simply wipe gently with a damp cloth and blot dry with a soft towel.

**Warning:** *Scrubbing Bubbles® Bathroom Cleaner and Lysol® Basin Tub and Tile Cleaner* must not be used on the clear knob handles and levers. Use of these cleaners can result in cracked or severely damaged handles. If overspray gets onto the handles, immediately wipe them dry with a soft cotton cloth.

## Maintenance

**Cannot receive more than a trickle of water:**

Both hot and cold supply lines must be pressurized. If only one side is pressurized, the system will not allow adequate flow of water.

**Faucet leaks from showerhead:** Remove the showerhead then turn the water on and off to verify if the cartridge is leaking or the showerhead is draining slowly (the showerhead may need to be cleaned if water drains slowly).

**If leak persists -SHUT OFF WATER SUPPLIES**  
Replace cartridge assembly - RP47201.

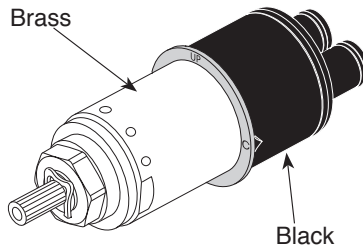
**Unable to set or maintain mixed water temperature:**  
SHUT OFF WATER SUPPLIES. Remove handle assembly, trim sleeve, and bonnet nut. Check to make sure the "H" marking on the cartridge aligns with the hot inlet and the "C" marking on the cartridge aligns with the cold inlet to the valve body. The thermostatic cartridge cannot function if hot and cold inlets are reversed.

**Low flow:** Low flow may be caused by clogged screens within the thermostatic cartridge. To clean the hot and cold screens in the cartridge, follow the steps below:

1. SHUT OFF WATER SUPPLIES.
2. Remove the handle assembly.
3. Unscrew the hex shaped portion of the cartridge.
4. Carefully clean any debris from the screens under running water. If the debris is difficult to remove then soak the screens overnight in a 50% water and 50% vinegar solution.
5. Reassemble the cartridge.
6. Replace the handle.
7. Turn the water back on.
8. Reset the limit stop before using the valve.

## Cartridge Summary Reference Sheet

17T



**Order RP47201 to  
Replace Cartridge.**

## Lifetime Faucet and Finish Limited Warranty

### Parts and Finish

All parts (other than electronic parts and batteries) and finishes of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for as long as the original consumer purchaser owns the home in which the faucet was first installed or, for commercial users, for 5 years from the date of purchase.

### Electronic Parts and Batteries (if applicable)

Electronic parts (other than batteries), if any, of this Delta® faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for 5 years from the date of purchase or, for commercial users, for one year from the date of purchase. No warranty is provided on batteries.

Delta Faucet Company will replace, FREE OF CHARGE, during the applicable warranty period, any part or finish that proves defective in material and/or workmanship under normal installation, use and service. If repair or replacement is not practical, Delta Faucet Company may elect to refund the purchase price in exchange for the return of the product. **These are your exclusive remedies.**

Delta Faucet Company recommends using a professional plumber for all installation and repair. We also recommend that you use only genuine Delta® replacement parts.

Delta Faucet Company shall not be liable for any damage to the faucet resulting from misuse, abuse, neglect or improper or incorrectly performed installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions.

Replacement parts may be obtained by calling the applicable number below or by writing to:

### In the United States and Mexico:

Delta Faucet Company  
Product Service  
55 E. 111th Street  
Indianapolis, IN 46280  
1-800-345-DELTA (3358)  
customerservice@deltafaucet.com

### In Canada:

Masco Canada Limited, Plumbing Group  
Technical Service Centre  
350 South Edgeware Road  
St. Thomas, Ontario, Canada N5P 4L1  
1-800-345-DELTA (3358)  
customerservice@mascocanada.com

Proof of purchase (original sales receipt) from the original purchaser must be made available to Delta Faucet Company for all warranty claims unless the purchaser has registered the product with Delta Faucet Company. This warranty applies only to Delta® faucets manufactured after January 1, 1995 and installed in the United States of America, Canada and Mexico.

DELTA FAUCET COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LABOR CHARGES) FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THE FAUCET. Some states/provinces do not allow the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you special legal rights. You may also have other rights which vary from state/province to state/province.

This is Delta Faucet Company's exclusive written warranty and the warranty is not transferable.

If you have any questions or concerns regarding our warranty, please view our Warranty FAQs at [www.deltafaucet.com](http://www.deltafaucet.com), email us at [customerservice@deltafaucet.com](mailto:customerservice@deltafaucet.com) or call us at the applicable number above.

## Delta HDF Limited Warranty

All parts of the Delta HDF faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for a period of five (5) years. This warranty is made to the original consumer purchaser and shall be effective from date of purchase as shown on purchaser's receipt.

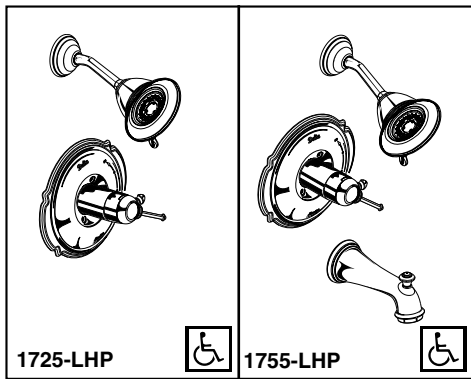
Delta will replace, FREE OF CHARGE, during the warranty period, any part which proves defective in material and/or workmanship under normal installation, use and service. Replacement parts can be obtained from your local dealer or distributor listed in the telephone directory or by returning the part along with the purchaser's receipt to our factory, TRANSPORTATION CHARGES PREPAID, at the address listed. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY MADE BY DELTA. ANY CLAIMS MADE UNDER THIS WARRANTY MUST BE MADE DURING THE FIVE YEAR PERIOD REFERRED TO ABOVE. ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A

PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. LABOR CHARGES AND/OR DAMAGE INCURRED IN INSTALLATION, REPAIR OR REPLACEMENT AS WELL AS INCIDENTAL AND CONSEQUENTIAL DAMAGES CONNECTED THEREWITH ARE EXCLUDED AND WILL NOT BE PAID BY DELTA.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

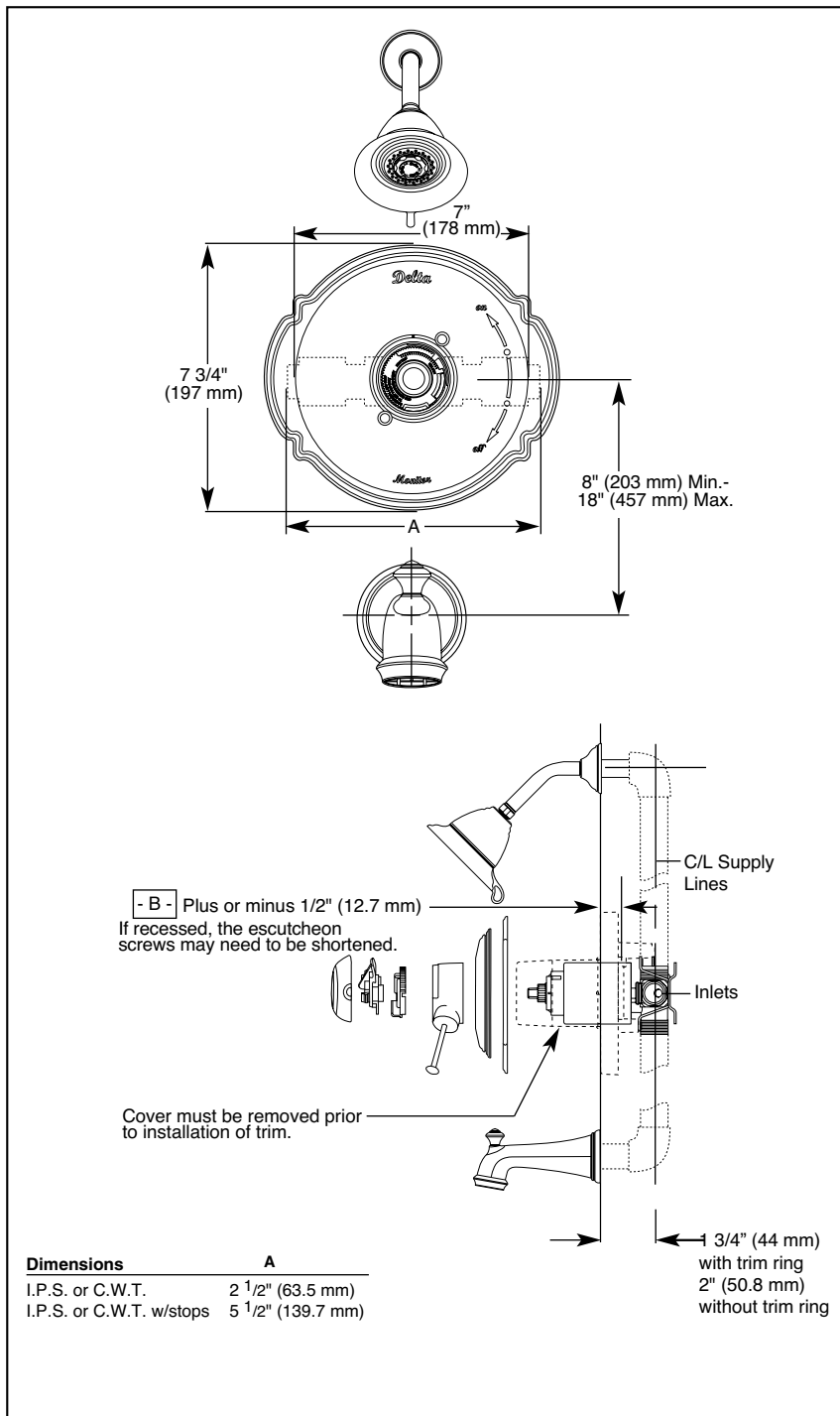
This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty is void for any damage to this faucet due to misuse, abuse, neglect, accident, improper installation, any use violative of instructions furnished by us or any use of replacement parts other than genuine Delta parts.



Submitted Model No.: \_\_\_\_\_

Specific Features: \_\_\_\_\_



# DELTA<sup>®</sup>

## BATH MIXING VALVES

- Victorian™ Collection
- Shower Only (1725)
- Tub/Shower (1755)
- Single Handle
- Monitor® with Scald-Guard® Valve
- Pressure Balance
- Volume Controlled with Less Handle Accent
- Temperature Controlled with Dial
- Decor Trim Plate
- Universal Fittings

Water-Efficient  
Watersense Certified

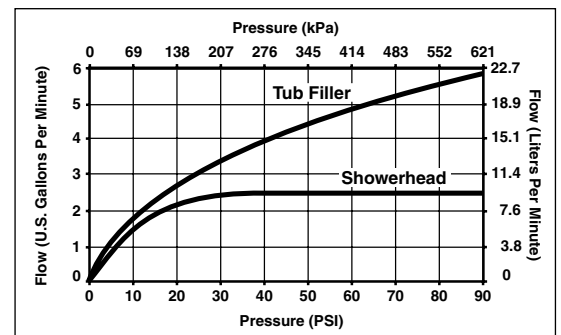
### COMPLIES WITH:

- ASME A112.18.1 / CSA B125.1

Indicates compliance to ICC/ANSI A117.1 - valve control only

### STANDARD SPECIFICATIONS:

- Requires 1 1/2" (38 mm) wall cavity.
- Back-to-back installation capability.
- Solid brass fabricated body.
- Monitor® with Scald-Guard® valve. Maintains a balanced pressure of hot and cold water even when a valve is turned on or off elsewhere in the system.
- Lever volume control handle; temperature adjustment dial.
- Field adjustable to limit dial rotation into hot water zone.
- Maximum dial rotation adjustable between 90° and 180°.
- Red and Blue graphics indicate hot/cold temperature adjustment.





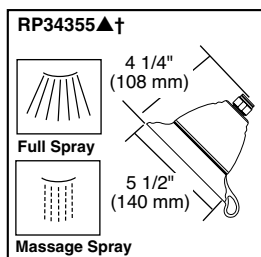
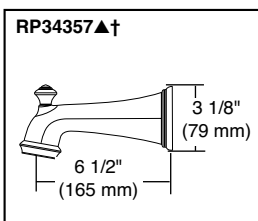
Standard Features	1725-LHP	1725-WSLHP	1725-C8LHP	1725-PBLHP	1725-NNLHP	1725-NPLHP	1725-RBLHP	1755-LHP	1755-WSLHP	1755-C8LHP	1755-PBLHP	1755-NNLHP	1755-NPLHP	1755-RBLHP
	Washerless	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Scald-Guard® Valve	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Back-to-Back Installation	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Copper with Stops		◆							◆					
1/2" I.P.S. Inlets and Outlets	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
1/2" C.W.T. Sweat Inlets and Outlets	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Replaceable Cartridge	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Adjustment Rotational Limit Stop	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Matching Finish Temperature Adjustment Dial	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Less Handle Program-Volume Control Handle-See Lever Handle Accents	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿
Metal Shower Arm and Flange	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Non-Metallic Dual Spray Touch-Clean® Showerhead/2 Spray Patterns	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Tub Filler w/Pull-Up Diverter								◆	◆	◆	◆	◆	◆	◆
Screwdriver Stops		◆							◆					
Chrome Finish	◆	◆						◆	◆					
Chrome and Brilliance® Polished Brass Finish			◆							◆				
Brilliance® Polished Brass Finish				◆							◆			
Brilliance® Pearl Nickel Finish					◆							◆		
Brilliance® Pearl Nickel and Brilliance® Polished Brass Finish						◆							◆	
Venetian Bronze™ Finish							◆							◆
Deco Trim Ring	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

**Available Options for Field Conversion:**

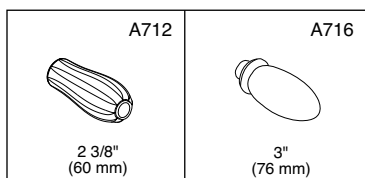
- Screwdriver Stops. Order two RP5876s for IPS or two RP6005s for C.W.T.
- Shower Arm. Order RP6023▲.
- Shower Flange. Order RP34356▲.
- Non-metallic Push-Clean™ showerhead/1 spray pattern. Order RP28599▲.
- Non-metallic Touch-Clean® showerhead/1 spray pattern. Order RP28600▲.
- Non-metallic Dual Spray Touch-Clean® showerhead/2 spray patterns. Order RP28601▲.
- Non-metallic Ultimate Touch-Clean® showerhead/3 spray patterns. Order RP28602▲.
- Brass shower arm diverter for hand shower. Order RP4239 (chrome only).
- Personal hand shower with 24" vertical bar, 60" hose. Order RP7245 (chrome only).
- Personal hand shower with 24" vertical bar, 60" hose, vacuum breaker and wall supply elbow. Order RPW111HDF (chrome only).
- Personal handshower with 60" hose, vacuum breaker and wall supply elbow. Order RPW222HDF (chrome only).
- Metallic tub filler with pull-down diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP17454▲.
- Non-metallic tub filler with pull-down diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP17453 (chrome only).
- Non-metallic slip-on tub filler with pull-down diverter for 1/2" C.W.T. Order RP5836 (chrome only).
- Metallic slip-on tub filler with pull-down diverter for 1/2" C.W.T. Order RP19581PB (Brilliance™ polished brass only).
- Metallic tub filler with pull-up diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP7533▲.
- Non-metallic tub filler with pull-up diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP5834(chrome only).
- Non-metallic slip-on tub filler with pull-up diverter for 1/2" C.W.T. Order RP19820 (chrome only).
- Metallic over-the-rim tub filler for 1/2" I.P.S. Order RP5833▲.
- Metallic over-the-rim slip-on tub filler for 1/2" C.W.T. Order RP5835 (chrome only).
- Bath waste assemblies and bath accessories also available separately.

▲ = Specify Finish

† = Designates the accent color on split finish models.



**\* Handle Accents**

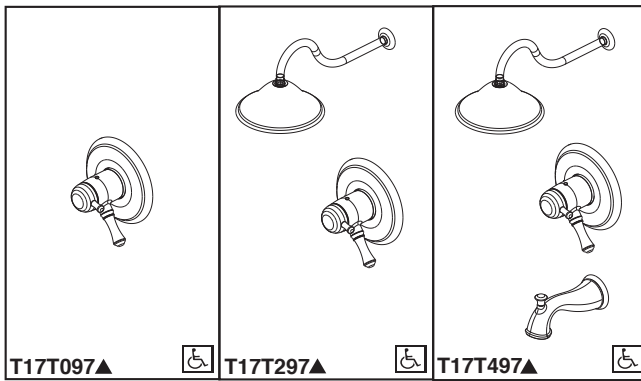


**DELTA FAUCET COMPANY**

Indianapolis, Indiana 46280  
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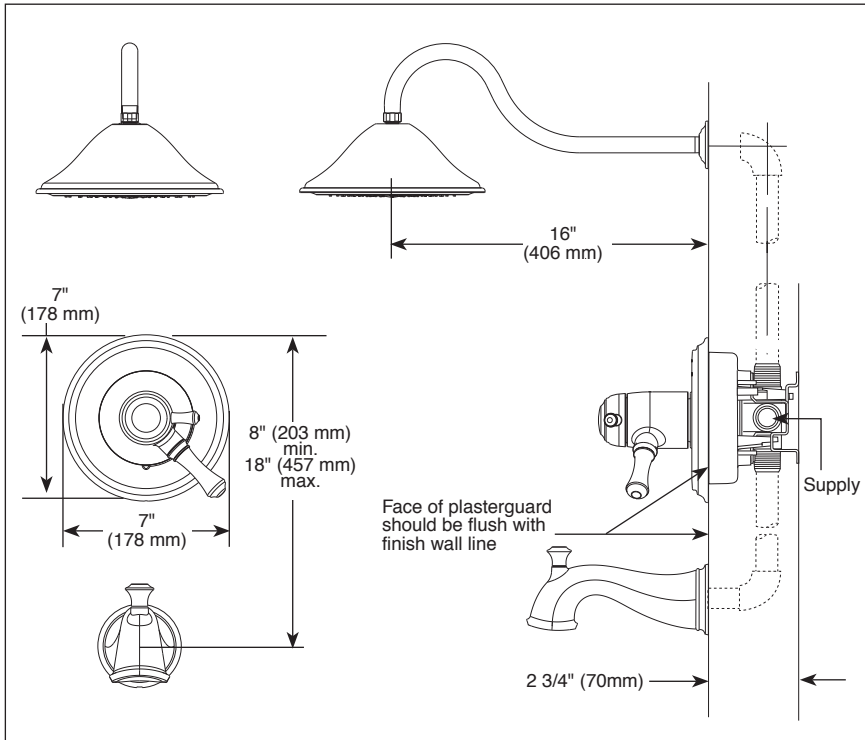
# TUB AND SHOWER FAUCET TRIM



- Cassidy™ Series
- TempAssure® Thermostatic
- Valve Only (T17T097)
- Shower Only (T17T297)
- Tub/Shower (T17T497)

Submitted Model No.: \_\_\_\_\_

Specific Features: \_\_\_\_\_



## FEATURES:

- TempAssure® 17T thermostatic valve cartridge

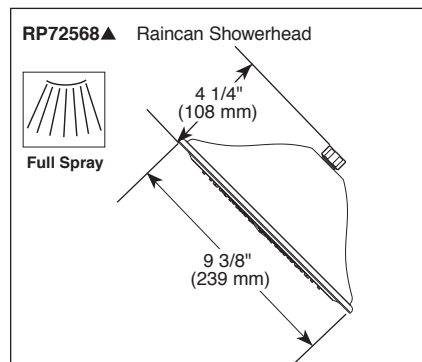
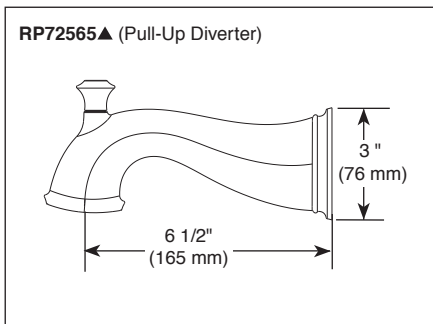
## STANDARD SPECIFICATIONS:

- Thermostatic wax element maintains the outlet temperature to  $\pm 3.6^\circ \text{F}$
- Must also order Multi-Choice® Universal rough separately (R10000)
- Back-to-back installation capability
- Solid brass forged body
- Lever volume control handle; temperature adjustment dial
- Graphics indicate hot/cold temperature adjustment
- Field adjustable to limit rotation into hot water zone
- All parts are replaceable from the front of the valve
- Adjusts for up to 1" wall thickness
- Raincan showerhead 2.50 gpm max @ 80 PSI
- Available extension kit (RP75136 adds up to 1 3/8" installation depth)

## WARRANTY

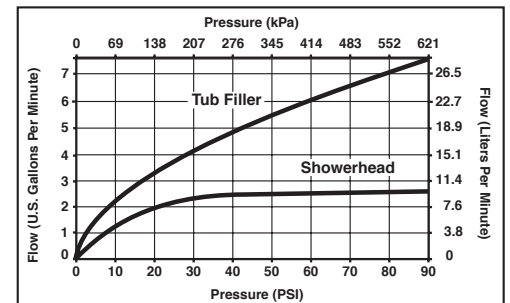
- Lifetime limited warranty on parts (other than electronic parts and batteries) and finishes; or for commercial users, for 5 years from the date of purchase.
- 5 year limited warranty on electronic parts (other than batteries); or for commercial users, for 1 year from the date of purchase. No warranty is provided on batteries.

## ▲ Designate Proper Finish Suffix



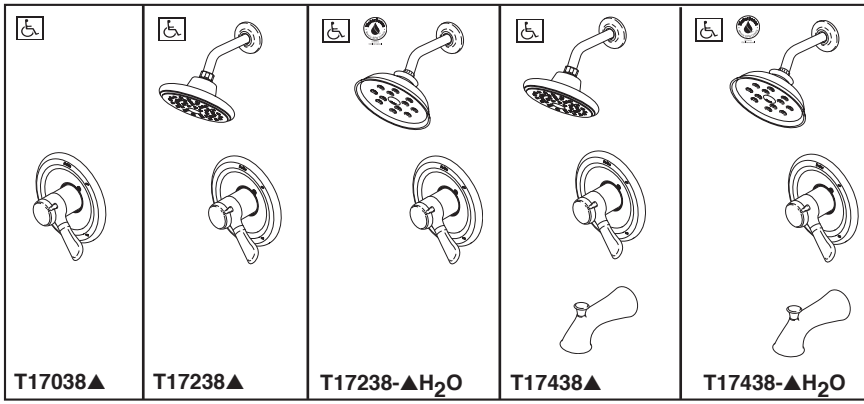
## COMPLIES WITH:

- ASME A112.18.1 / CSA B125.1
- ASSE 1016
- Indicates compliance to ICC/ANSI A117.1



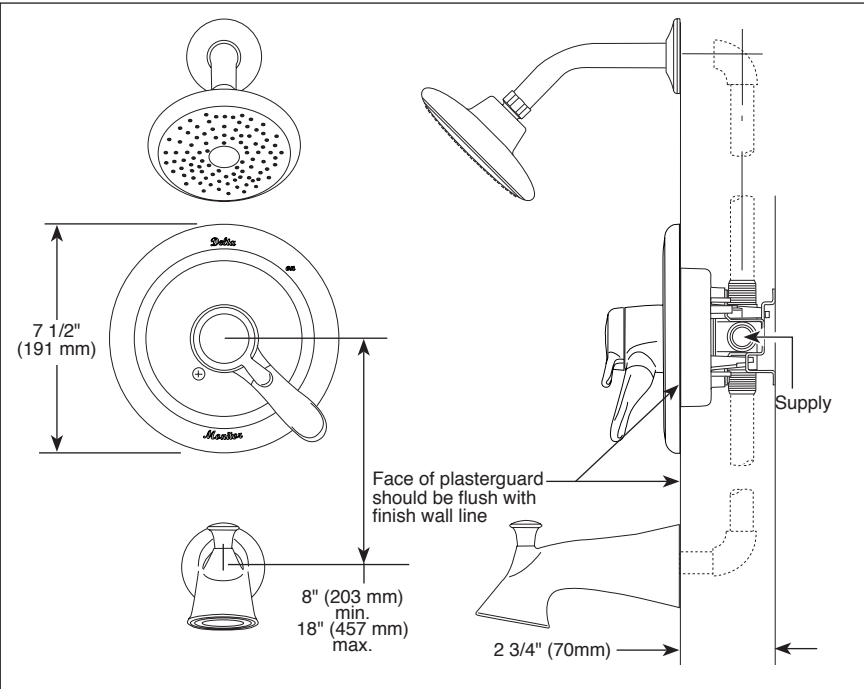
55 E. 111th Street, Indianapolis, Indiana 46280  
 350 South Edgeware Road, St. Thomas, Ontario Canada N5P 4L1  
 © 2016 Masco Corporation of Indiana

Delta reserves the right (1) to make changes in specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference only. See current full-line price book or [www.deltafaucet.com](http://www.deltafaucet.com) for finish options and product availability.  
 DSP-B-T17T097 Rev. E

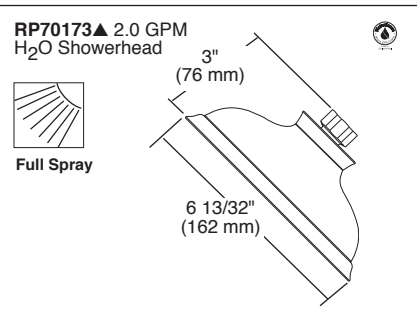
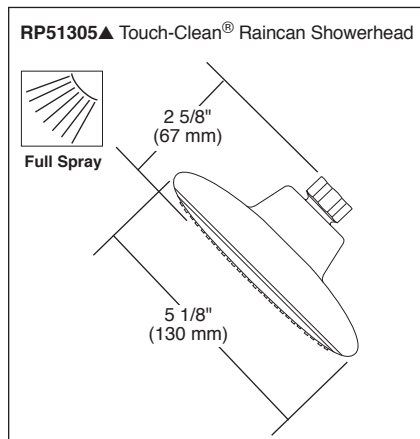
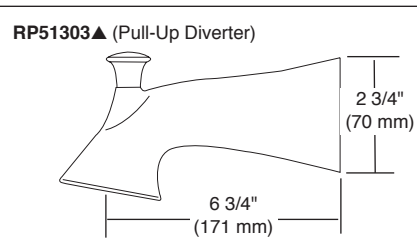


Submitted Model No.: \_\_\_\_\_

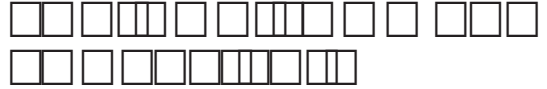
Specific Features: \_\_\_\_\_



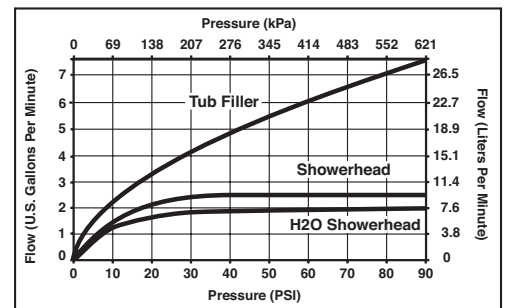
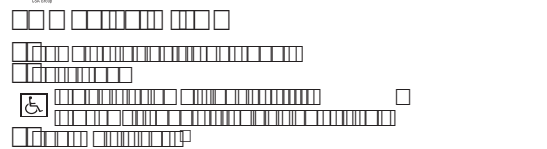
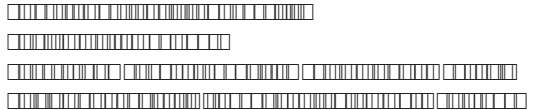
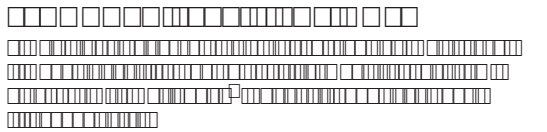
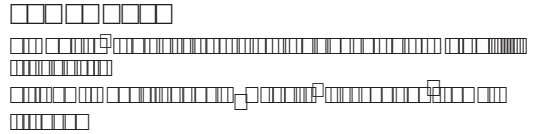
▲ Designate Proper Finish Suffix



Delta reserves the right (1) to make changes in specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference only. See current full-line price book or [www.deltafaucet.com](http://www.deltafaucet.com) for finish options and product availability.



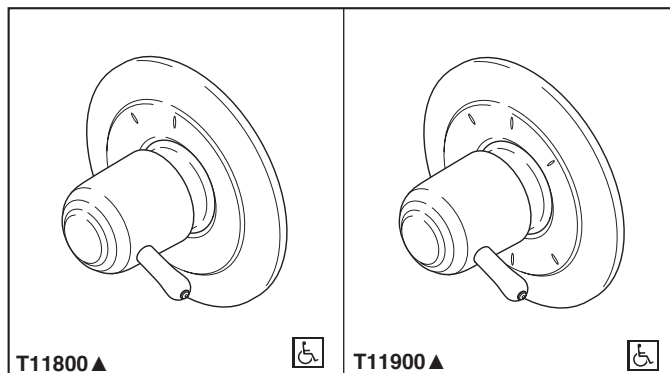
- Lahara® Bath Collection
- Valve Only (T17038 Series)
- Shower Only (T17238 Series)
- Tub/Shower (T17438 Series)





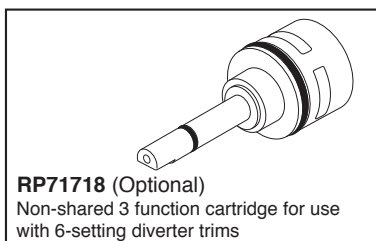
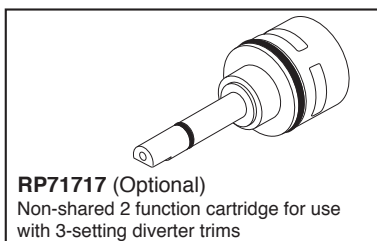
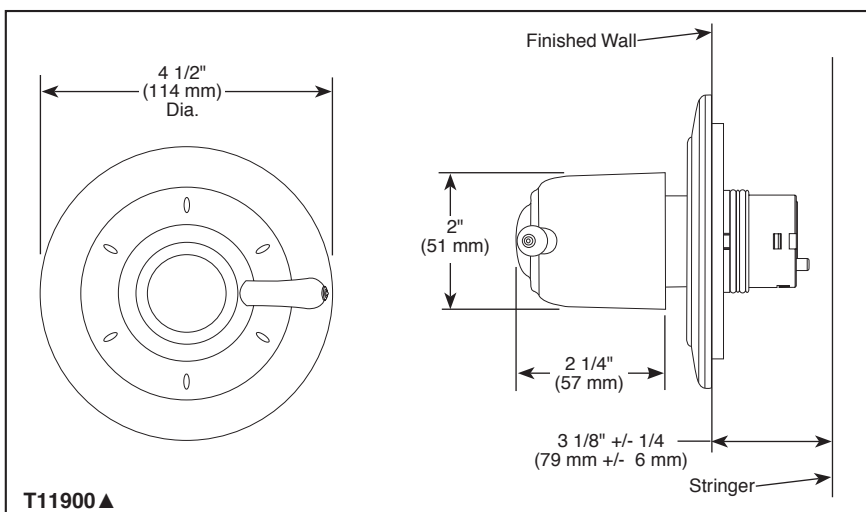
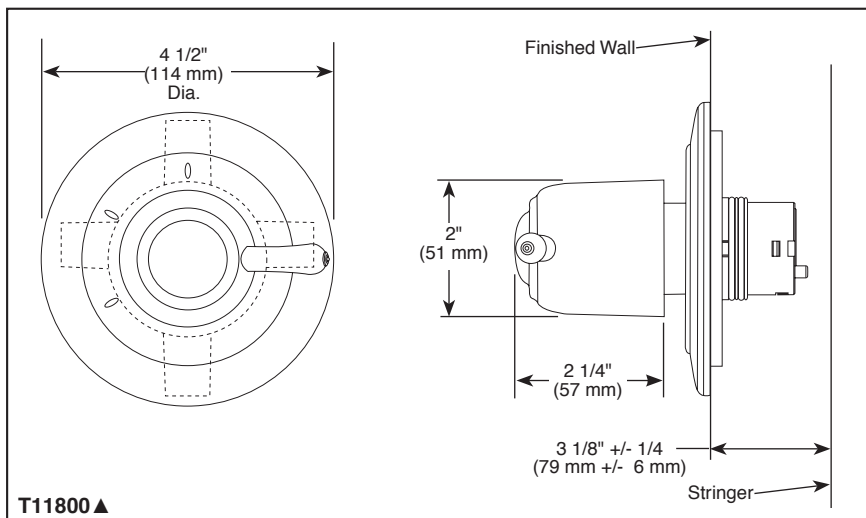
# CUSTOM SHOWER DIVERTER

- Classic Collection
- Three Function Diverter Trim (T11800)
- Six Function Diverter Trim (T11900)
- Coordinates With All Delta Classic Styled Bath Suites



Submitted Model No.: \_\_\_\_\_

Specific Features: \_\_\_\_\_



## STANDARD SPECIFICATIONS

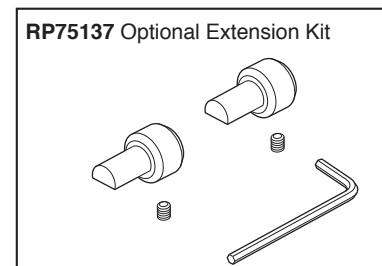
- Three function diverter 2 individual positions, 1 shared position.
- Six function diverter 3 individual positions, 3 shared positions.
- 1/2" rough-in.
- Must also order R1 1000 rough-in.
- Two individual positions, no shared positions order cartridge RP71717.
- Three individual positions, no shared positions order cartridge RP71718.

## WARRANTY

- Lifetime limited warranty on parts (other than electronic parts and batteries) and finishes; or, for commercial users, for 5 years from date of purchase.
- 5 year limited warranty on electronic parts (other than batteries); or, for commercial users, for 1 year from the date of purchase. No warranty is provided on batteries.

## COMPLIES WITH:

- ASME A112.18.1 / CSA B125.1
- Indicates compliance to ICC/ANSI A117.1

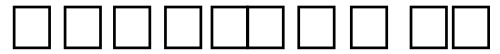


55 E. 111th Street, Indianapolis, Indiana 46280  
350 South Edgeware Road, St. Thomas, ON N5P 4L1  
© 2015 Masco Corporation of Indiana

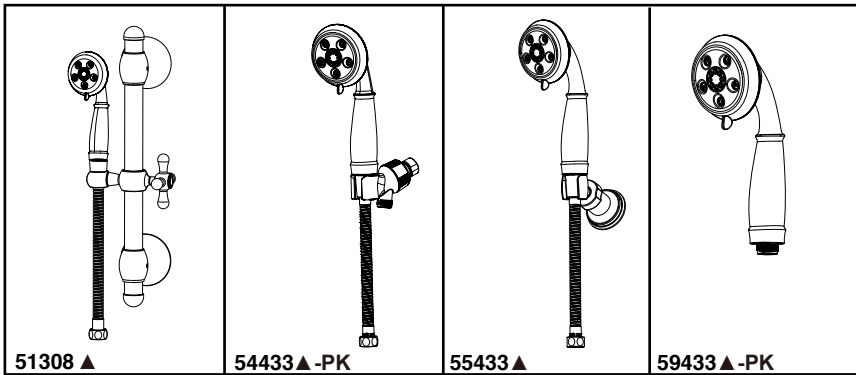
▲ Designate proper finish suffix

Delta reserves the right (1) to make changes in specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference only. See current full-line price book or [www.deltafaucet.com](http://www.deltafaucet.com) for finish options and product availability.

DSP-B-T11800 Rev. D



- H2Okinetic Technology® Handshower
- 29" Wall Bar, Wall mount or Shower Arm Mount
- Certified Dual Check Valves



Submitted Model No.: \_\_\_\_\_

Specific Features: \_\_\_\_\_

<p><b>51308 ▲ 2.0 GPM</b></p> <ul style="list-style-type: none"> <li> H<sub>2</sub>Okinetic™ Spray</li> <li> Massage Spray</li> <li> Trickle</li> </ul>	<p><b>54433▲-PK 2.0 GPM</b></p> <ul style="list-style-type: none"> <li> H<sub>2</sub>Okinetic™ Spray</li> <li> Massage Spray</li> <li> Trickle</li> </ul>
<p><b>55433 ▲ 2.0 GPM</b></p> <ul style="list-style-type: none"> <li> H<sub>2</sub>Okinetic™ Spray</li> <li> Massage Spray</li> <li> Trickle</li> </ul>	<p><b>59433▲-PK 2.0 GPM</b></p> <ul style="list-style-type: none"> <li> H<sub>2</sub>Okinetic™ Spray</li> <li> Massage Spray</li> <li> Trickle</li> </ul>

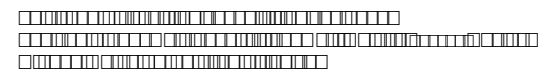
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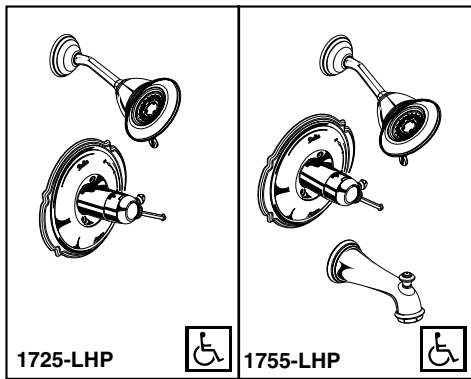
- 

▲ Designate proper finish suffix

Delta reserves the right (1) to make changes in specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference only. See current full-line price book or [www.deltafaucet.com](http://www.deltafaucet.com) for finish options and product availability.

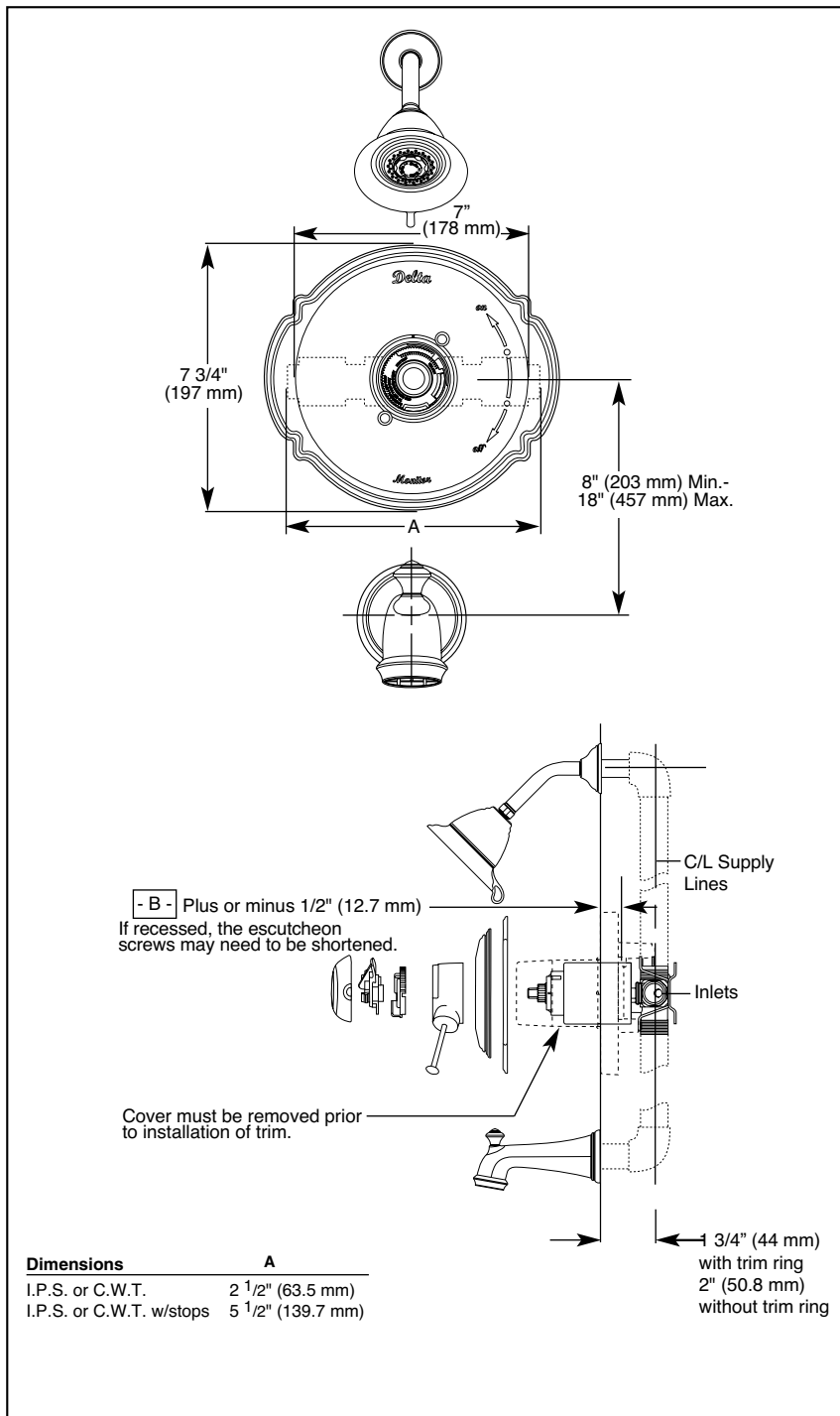
DSP-B-51308 Rev. E





Submitted Model No.: \_\_\_\_\_

Specific Features: \_\_\_\_\_



# DELTA<sup>®</sup>

## BATH MIXING VALVES

- Victorian™ Collection
- Shower Only (1725)
- Tub/Shower (1755)
- Single Handle
- Monitor® with Scald-Guard® Valve
- Pressure Balance
- Volume Controlled with Less Handle Accent
- Temperature Controlled with Dial
- Decor Trim Plate
- Universal Fittings

Water-Efficient  
Watersense Certified

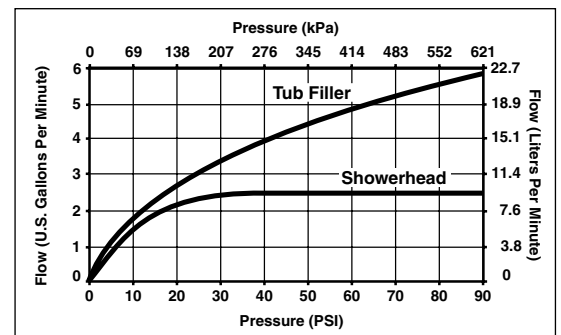
### COMPLIES WITH:

- ASME A112.18.1 / CSA B125.1

Indicates compliance to ICC/ANSI A117.1 - valve control only

### STANDARD SPECIFICATIONS:

- Requires 1 1/2" (38 mm) wall cavity.
- Back-to-back installation capability.
- Solid brass fabricated body.
- Monitor® with Scald-Guard® valve. Maintains a balanced pressure of hot and cold water even when a valve is turned on or off elsewhere in the system.
- Lever volume control handle; temperature adjustment dial.
- Field adjustable to limit dial rotation into hot water zone.
- Maximum dial rotation adjustable between 90° and 180°.
- Red and Blue graphics indicate hot/cold temperature adjustment.



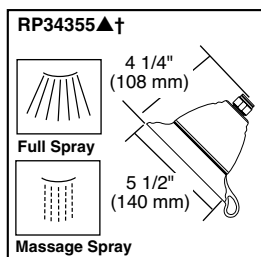
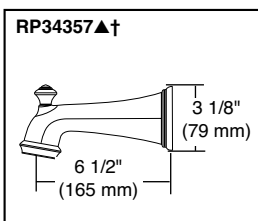
Standard Features	1725-LHP	1725-WSLHP	1725-C8LHP	1725-PBLHP	1725-NNLHP	1725-NPLHP	1725-RBLHP	1755-LHP	1755-WSLHP	1755-C8LHP	1755-PBLHP	1755-NNLHP	1755-NPLHP	1755-RBLHP
Washerless	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Scald-Guard® Valve	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Back-to-Back Installation	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Copper with Stops		◆							◆					
1/2" I.P.S. Inlets and Outlets	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
1/2" C.W.T. Sweat Inlets and Outlets	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Replaceable Cartridge	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Adjustment Rotational Limit Stop	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Matching Finish Temperature Adjustment Dial	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Less Handle Program-Volume Control Handle-See Lever Handle Accents	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿	♿
Metal Shower Arm and Flange	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Non-Metallic Dual Spray Touch-Clean® Showerhead/2 Spray Patterns	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Tub Filler w/Pull-Up Diverter								◆	◆	◆	◆	◆	◆	◆
Screwdriver Stops		◆							◆					
Chrome Finish	◆	◆						◆	◆					
Chrome and Brilliance® Polished Brass Finish			◆							◆				
Brilliance® Polished Brass Finish				◆							◆			
Brilliance® Pearl Nickel Finish					◆							◆		
Brilliance® Pearl Nickel and Brilliance® Polished Brass Finish						◆							◆	
Venetian Bronze™ Finish							◆							◆
Deco Trim Ring	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

**Available Options for Field Conversion:**

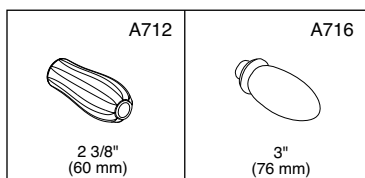
- Screwdriver Stops. Order two RP5876s for IPS or two RP6005s for C.W.T.
- Shower Arm. Order RP6023▲.
- Shower Flange. Order RP34356▲.
- Non-metallic Push-Clean™ showerhead/1 spray pattern. Order RP28599▲.
- Non-metallic Touch-Clean® showerhead/1 spray pattern. Order RP28600▲.
- Non-metallic Dual Spray Touch-Clean® showerhead/2 spray patterns. Order RP28601▲.
- Non-metallic Ultimate Touch-Clean® showerhead/3 spray patterns. Order RP28602▲.
- Brass shower arm diverter for hand shower. Order RP4239 (chrome only).
- Personal hand shower with 24" vertical bar, 60" hose. Order RP7245 (chrome only).
- Personal hand shower with 24" vertical bar, 60" hose, vacuum breaker and wall supply elbow. Order RPW111HDF (chrome only).
- Personal handshower with 60" hose, vacuum breaker and wall supply elbow. Order RPW222HDF (chrome only).
- Metallic tub filler with pull-down diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP17454▲.
- Non-metallic tub filler with pull-down diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP17453 (chrome only).
- Non-metallic slip-on tub filler with pull-down diverter for 1/2" C.W.T. Order RP5836 (chrome only).
- Metallic slip-on tub filler with pull-down diverter for 1/2" C.W.T. Order RP19581PB (Brilliance™ polished brass only).
- Metallic tub filler with pull-up diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP7533▲.
- Non-metallic tub filler with pull-up diverter for 1/2" C.W.T. or 1/2" I.P.S. Order RP5834(chrome only).
- Non-metallic slip-on tub filler with pull-up diverter for 1/2" C.W.T. Order RP19820 (chrome only).
- Metallic over-the-rim tub filler for 1/2" I.P.S. Order RP5833▲.
- Metallic over-the-rim slip-on tub filler for 1/2" C.W.T. Order RP5835 (chrome only).
- Bath waste assemblies and bath accessories also available separately.

▲ = Specify Finish

† = Designates the accent color on split finish models.



**\* Handle Accents**



**DELTA FAUCET COMPANY**

Indianapolis, Indiana 46280  
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# Tri-Max™ 3-Flow Showerhead

## FEATURES AND BENEFITS

N2615



Also Available in White

Large POM Swivel Adjustment

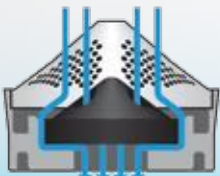
Three Flow Rates



Large Conical Spray Pattern



Constant Output Regardless of Pressure



Low Water Pressure

High Water Pressure

Finishes & Flow Rates

	0.5/1.0/1.5 GPM
<b>Chrome</b>	N2615CH
<b>White</b>	N2615

## Tri-Max™ 3-Flow Showerhead

### Water Savings Without Sacrificing Performance

#### Extra Power and Full Coverage

- Select Your Savings: 3-pressure compensated flow rate options, 0.5 GPM/1.0 GPM/1.5 GPM
- Niagara's patented pressure compensating technology guarantees a consistent flow rate across wide range of pressure
- Easy grip turn-dial for selecting your savings
- Multi-motion flow with wide to concentrated spray
- Corrosion resistant high-impact ABS thermoplastic body
- Installs easily, by hand and without tools
- Large POM swivel adjustment, lead free
- Limited Lifetime Warranty\*\*

### POTENTIAL ANNUAL SAVINGS\*

	Water (Gallons)	Electric (kWh)	Gas (therms)	Dollars
<b>Water Savings</b>	16,425			\$131
<b>Energy Savings with Electric Water Heater</b>		2,408		\$320
<b>Energy Savings with Gas Water Heater</b>			82	\$78

\*Factors in calculating savings potential:

- 3-person households each using a shower 10 minutes per day, 365 days per year
- Comparing water use with this 1.0 GPM showerhead vs. a standard 2.5 GPM unit
- Water and sewer cost of \$8 per 1,000 gallons
- 8.34 BTUs to raise the temperature of 1 gallon of water 1°
- 500.4 BTUs to raise the temperature of 1 gallon 60° (i.e. 50° to 110°)
- 1 million BTUs = 293 kWh
- Average cost of electricity \$0.133 per kWh (Bureau of Labor Statistics Sept 2012)
- Average cost of gas \$0.953 per therm (Bureau of Labor Statistics Sept 2012)
- On multi-flow rate heads, savings calculated using the avg of available flow rates

#### Corporate HQ

4200 Diplomacy Road  
Fort Worth, TX 76155 USA  
Toll Free: 800.831.8383  
Phone: 817.391.0800 Fax: 817.391.0801  
Email: info@nccgreen.com

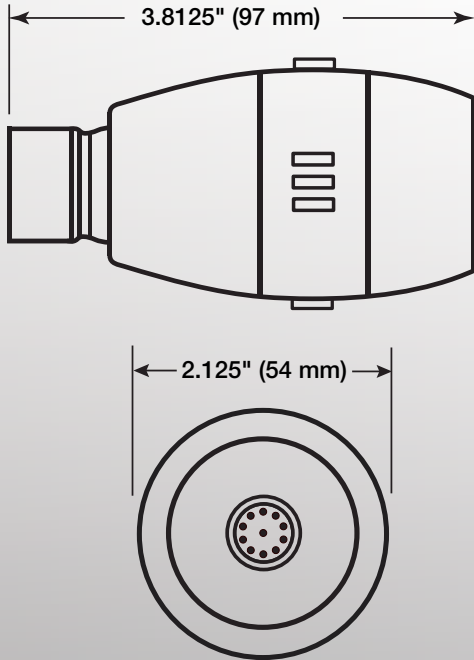




# Tri-Max™ 3-Flow Showerhead

## SPECIFICATIONS

N2615

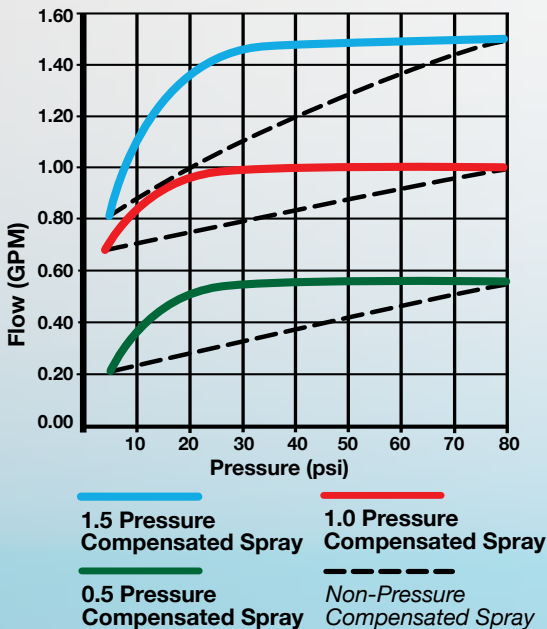


\*Dimensions are subject to change

<b>Overall Dimensions</b>	Width 2.125" Height 2.125" Depth 3.8125"
<b>Materials</b>	Corrosion resistant high-impact ABS thermoplastic body; Internal component: ABS and POM plastic & high heat rubber gaskets.
<b>Threads</b>	Inlet size: 1/2-14 NPSM female straight pipe thread
<b>Certifications</b>	Meets or exceeds: ASME A112.18.1/CSA B125.1: ASTM B368 WaterSense labeled - Max. Flow Rate: 1.5 GPM Min. Flow Rate at 45 PSI: 1.13 GPM (4.3 LPM)



### 0.5 / 1.0 / 1.5 GPM Flow Rate



#### \*\*WARRANTY FOR SHOWERHEADS PURCHASED AT RETAIL:

Limited Lifetime Warranty for showerheads purchased at retail for as long as the original purchaser owns the product. Niagara will replace any part that, in our opinion has proved defective, provided it has not been abused, misused, altered or damaged after its purchase.  
For complete product warranty details, call Niagara Conservation at 1-800-831-0800.

#### WARRANTY FOR SHOWERHEADS OBTAINED THROUGH WHOLESALE, MUNICIPALITIES, UTILITIES OR OTHER COMMERCIAL CHANNELS:

10-year Limited Warranty to the purchaser from the date of purchase.  
Niagara will replace any part that, in our opinion has proved defective, provided it has not been abused, misused, altered or damaged after its purchase.  
For complete product warranty details, call Niagara Conservation at 1-800-831-0800.

#### Corporate HQ

4200 Diplomacy Road  
Fort Worth, TX 76155 USA  
Toll Free: 800.831.8383  
Phone: 817.391.0800 Fax: 817.391.0801  
Email: info@nccgreen.com





# GLACIER BAY®

Item #215-583  
Model #N2316

## USE AND CARE GUIDE

---

### HIGH EFFICIENCY ELONGATED DUAL FLUSH TOILET



Questions, problems, missing parts? Before returning to the store,  
call Glacier Bay Customer Service  
8 a.m. - 6 p.m., EST, Monday-Friday

**1-855-434-5224**

**HOMEDEPOT.COM**

---

#### **THANK YOU**

*We appreciate the trust and confidence you have placed in Glacier Bay through the purchase of this toilet. We strive to continually create quality products designed to enhance your home. Visit us online to see our full line of products available for your home improvement needs. Thank you for choosing Glacier Bay!*

# Table of Contents

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# Safety Information



**WARNING:** Handle with care. Vitreous chinaware is glasslike with sharp edges if broken. Do not drop, handle roughly, or overtighten bolts.



**WARNING:** Risk of hazardous gases. If a new toilet is not installed immediately, temporarily plug the floor flange hole with a towel (or cover) to block sewer gases from escaping.



**CAUTION:** Observe local plumbing and building codes.

# Warranty

## LIMITED LIFETIME WARRANTY

Glacier Bay products are manufactured with superior quality standards and workmanship and are backed by our limited lifetime warranty. Glacier Bay products are warranted to the original consumer purchaser to be free of defects in materials or workmanship. We will replace FREE OF CHARGE any product or parts that proves defective. Simply, return the product / part to any of The Home Depot retail locations or call 1-855-HD Glacier (1-855-434-5224) to receive the replacement item. Proof of purchase (original sales receipt) from the original consumer purchaser must be made available for all Glacier Bay warranty claims.

This warranty excludes incidental/inconsequential damages and failures due to misuse, abuse or normal wear and tear. This warranty excludes all industrial, commercial and business usage, whose purchasers are hereby, extended a five year limited warranty from the date of purchase, with all other terms of this warranty applying except the duration of warranty.

Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from state to state and province to province. Please see a store or contact 1-855-HD Glacier for more details.

Contact the Customer Service Team at 1-855-434-5224 or visit [www.HomeDepot.com](http://www.HomeDepot.com).

# Pre-Installation

## PLANNING INSTALLATION

Before beginning installation of this product, make sure all parts are present. Compare parts with the Hardware Included and Package Contents lists. If any part is missing or damaged, do not attempt to assemble, install, or operate the product. Contact customer service for replacement parts.

Estimated Assembly Time: 60 minutes

## TOOLS REQUIRED



Putty knife



Carpenter's level

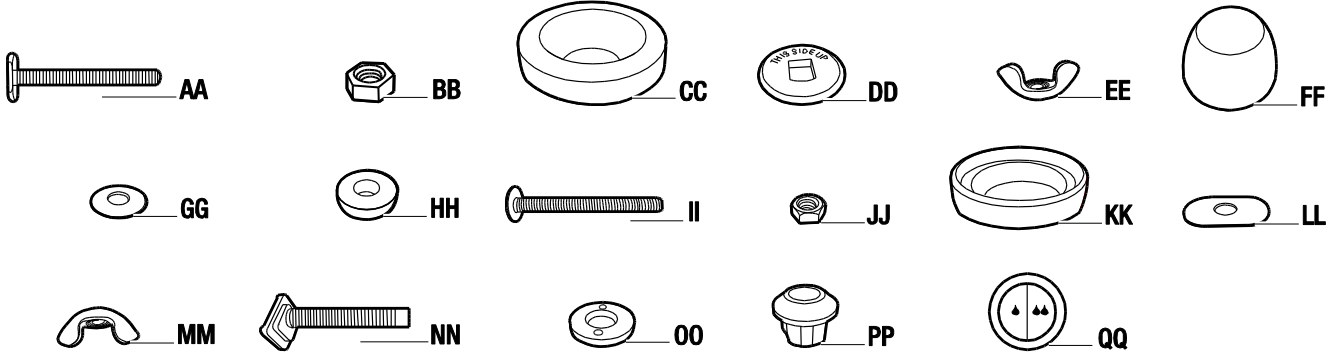


Toilet water supply line

## HARDWARE INCLUDED



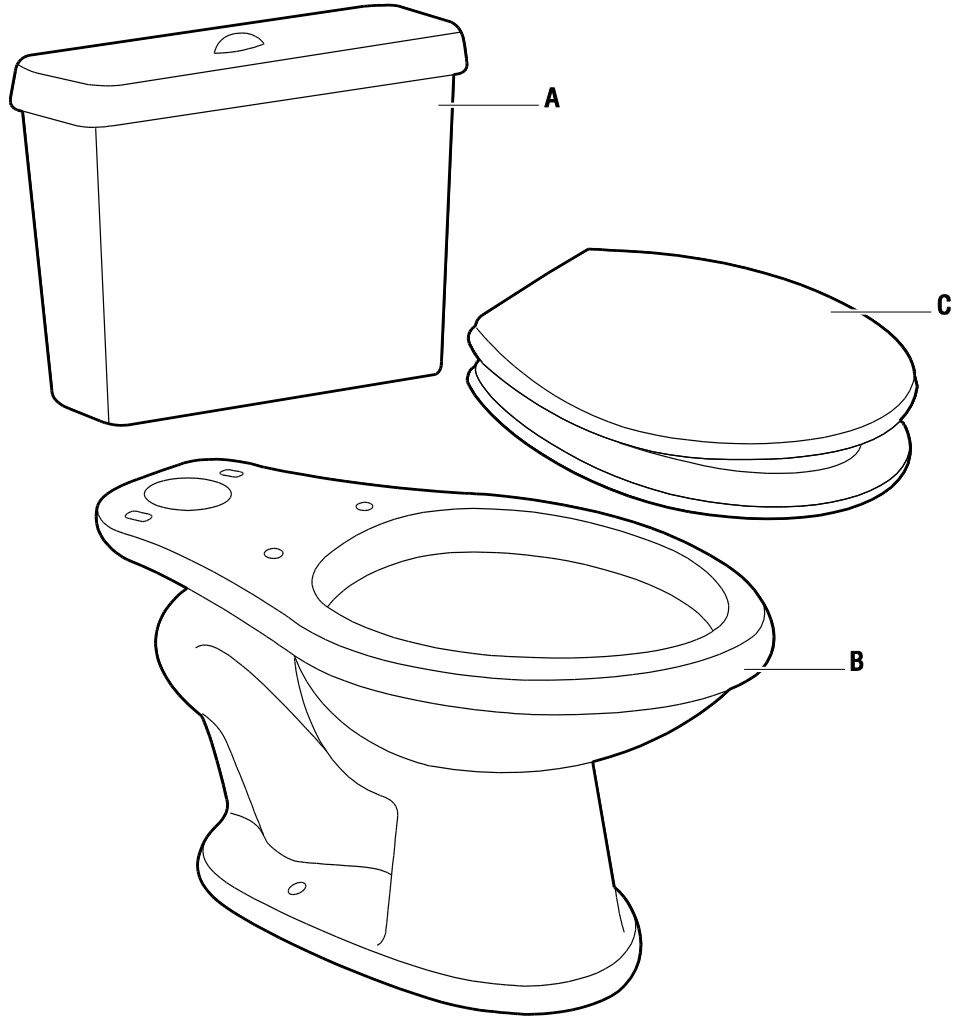
**NOTE:** Hardware not shown to actual size.



Part	Description	Quantity
AA	Floor bolt	2
BB	Floor bolt hex nut	2
CC	Wax ring	1
DD	Plastic disc	2
EE	Floor bolt wing nut	2
FF	Bolt cap	2
GG	Brass washer (Preassembled to Tank (A))	2
HH	Rubber washer (Preassembled to Tank (A))	4
II	Bolt (Preassembled to Tank (A))	2
JJ	Hex nut (Preassembled to Tank (A))	2
KK	Rubber sealing gasket	1
LL	Oval metal washer	2
MM	Wing nut	2
NN	Lock bolt	2
OO	Toilet seat washer	2
PP	Lock nut	2
QQ	Dual flush button	1

# Pre-Installation (continued)

## PACKAGE CONTENTS



Part	Description	Quantity
A	Tank with cover	1
B	Toilet bowl	1
C	Seat with lid	1

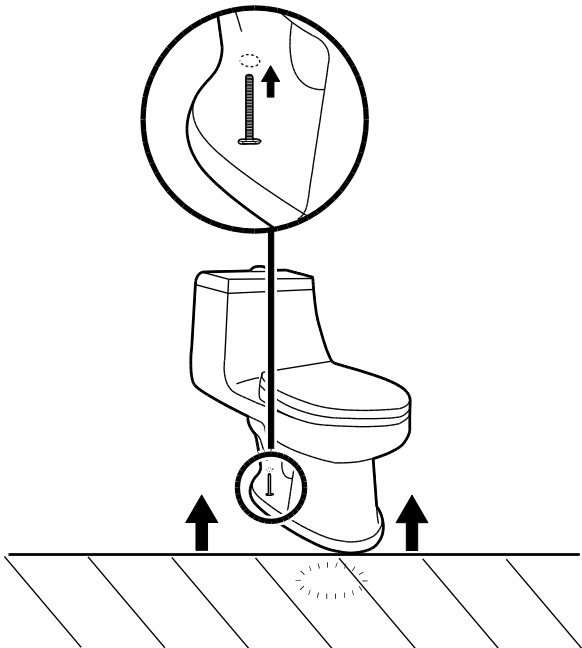
# Installation

## 1 Removing the old toilet

- Turn off the water supply and flush the tank completely. Towel or sponge remaining water from the tank and bowl.
- Disconnect and remove the old water supply line.
- Remove the bowl from the floor by removing the bolt caps and the floor bolt nuts.
- Remove the floor bolts from the toilet flange and clean old wax, putty, and sealant from the base area.
- Temporarily plug the floor flange with a towel or cover to block sewer gases from escaping.

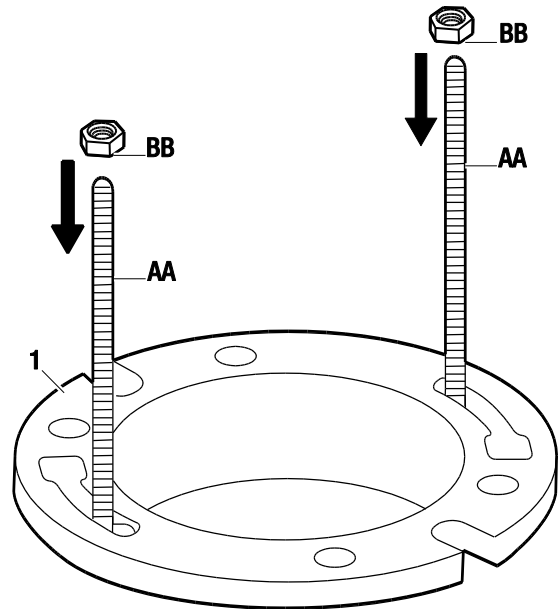


**NOTE:** The mounting surface must be clean and level before the new toilet is installed.



## 2 Installing the floor bolts

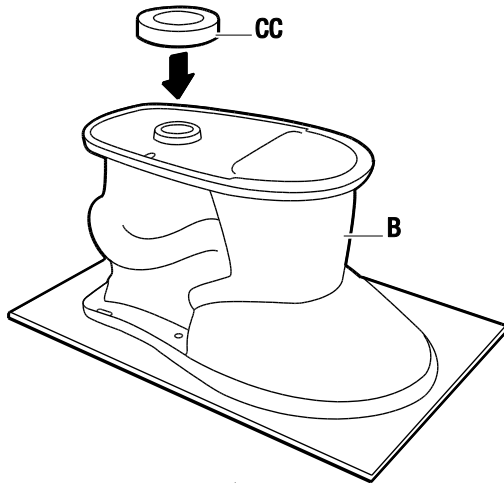
- Insert the floor bolts (AA) into the slots on the toilet flange (1) with the bolt heads down and threaded ends facing up. The heads of the floor bolts (AA) should be perpendicular to the slot opening in the toilet flange.
- Ensure the floor bolts (AA) are parallel to the wall. When set, hand-tighten the hex nuts (BB) onto the floor bolts (AA) to secure.



## Installation (continued)

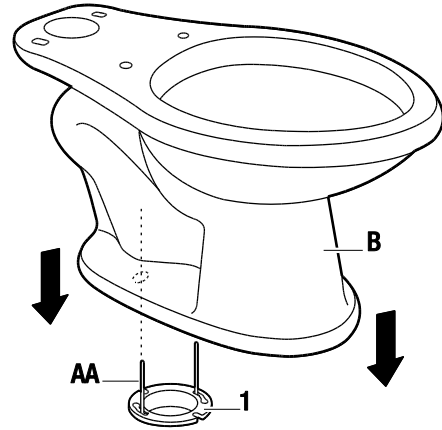
### 3 Installing the wax ring

- Turn the toilet bowl (B) upside down onto a towel or cushioned surface. With the rounded (tapered) end of the wax ring (CC) facing the toilet, place the wax ring (CC) around the raised outlet ring of the bowl (B), and press firmly enough so the wax ring (CC) adheres to the bowl (B).



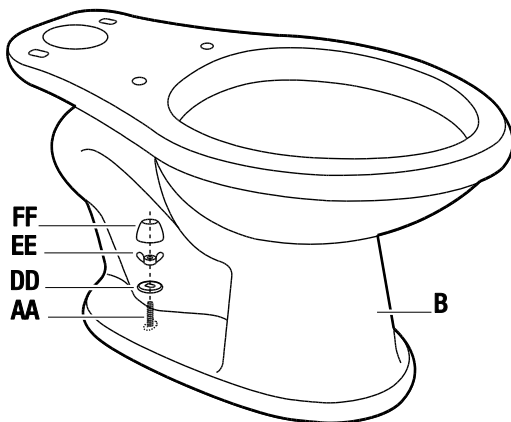
### 4 Installing the toilet

- Place the toilet bowl (B) over the toilet flange (1) in alignment with the floor bolts (AA) so they protrude through the slots on the base of the toilet bowl (B). Press down on the toilet bowl (B).



### 5 Securing the toilet

- From the backside of the toilet (B), place the plastic discs (DD) over the floor bolts (AA), noting 'this side up' on the top of the discs.
- Tighten the floor bolt wing nuts (EE) onto the floor bolts (AA) to secure the position of the plastic discs (DD).
- Place the bolt cap covers (FF) over the floor bolts (AA) and snap into place.

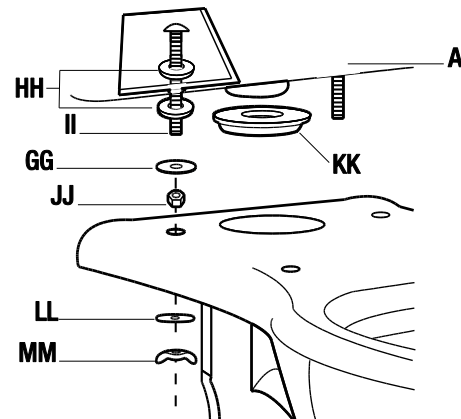


### 6 Installing the tank

- Attach the rubber sealing gasket (KK) to the center drain hole under the tank (A).
- Gently place the tank (A) on the toilet bowl (B) with bolts (II) protruding underneath.
- Place an oval metal washer (LL) followed by a wing nut (MM) onto each protruding bolt (II).
- Tighten the wing nuts (MM) enough so that the tank (A) sits flat on the toilet bowl (B). Make sure the tank (A) is parallel to the wall and straight on the toilet bowl (B).



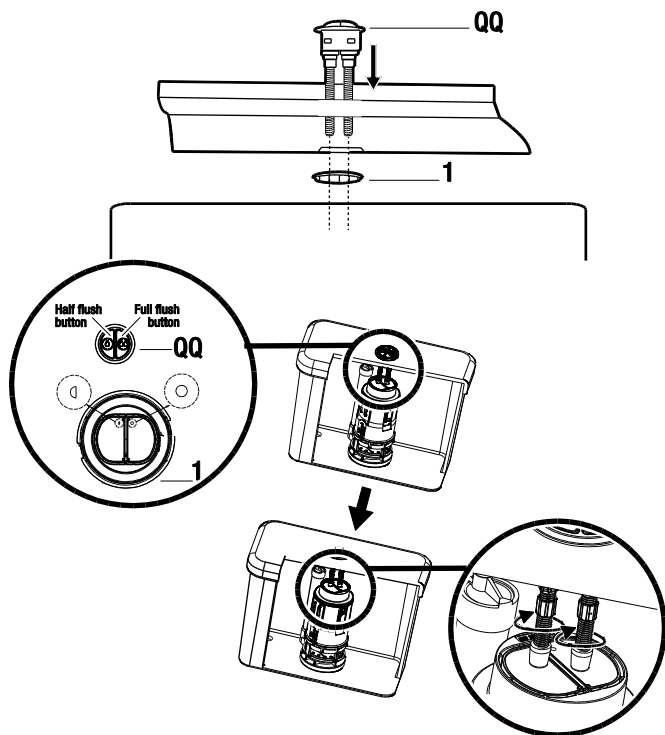
**CAUTION:** Do not overtighten the nuts. Severe damage may occur.



## Installation (continued)

### 7 Installing and adjusting the flush button

- Position the flush button mechanism (QQ) in tank lid so the single drop button will align with blue lever (half flush) on top of the flush valve and double drop button aligns with the white lever (full flush).
- Secure the flush button mechanism (QQ) in the tank lid by hand tightening the lock nut (1).
- The rubber tip on the bottom of the push rods leading from the flush buttons should lightly touch the top of the levers on the flush valve.
- To increase the rod length, turn the rod locknut counter-clockwise to loosen, then rotate the push rod counter-clockwise to increase exposed length. When the desired length is achieved, turn the rod locknut clockwise, while holding the push rod, until it is tightened.

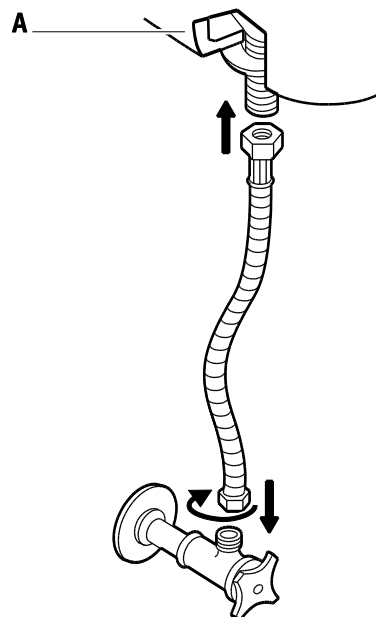


### 8 Connecting the water supply line

- Connect the water supply line (not included) between the tank (A) and shut-off valve.
- Tighten the tank connection coupling nut  $\frac{1}{4}$  turn beyond hand tight.
- Turn on the supply valve and allow the tank (A) to fill.
- Check for leakage at all connections and tighten or correct as needed.



**NOTE:** Do not overtighten the tank connection.

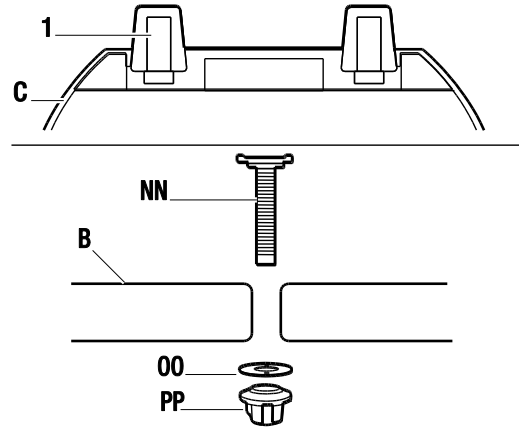




## Installation (continued)

### 9 Installing the seat with lid

- Turn the toilet seat with lid (C) upside-down.
- Insert the lock-bolt (NN) in the bolt trough (1), then adjust the lock-bolt (NN) to make the hole distance match with the toilet.
- Turn the toilet seat with lid (C) over so that the lock-bolts (NN) protrude downward.
- Insert the lock-bolts (NN) into the holes on the toilet (B) and adjust the toilet seat and lid (C) to find the best assembly position.
- Place the washer (OO) and the lock-nut (PP) onto the lock bolt (NN) from underneath the toilet (B) and tighten the lock-nut (PP) firmly to secure the seat and lid (C) in place on the toilet (B).



## Care and Cleaning

Your new toilet is made of stain-, acid- and abrasion-resistant vitreous china. Clean the outside surface with mild soap, warm water and a soft cloth. On stubborn stains use a powdered detergent and damp sponge or nylon scouring pad. Never use abrasive scouring powders, cleansers or pads because they will scratch, damage and dull the surface. The manufacturer shall not be responsible or liable for any tank fitting damage caused by the use of cleaners containing chlorine (calcium hypochlorite). When cleaning your toilet seat, wash it with mild soapy water. Rinse the seat thoroughly with clean water and dry with a soft cloth. Avoid detergents, disinfectants or cleaning products in aerosol cans. NEVER use abrasive scouring powders on your seat. Some bathroom chemicals and cosmetics may cause damage to the seat's finish, so test your cleaning solution on an inconspicuous area before applying to the entire surface.



**WARNING:** DO NOT USE IN-TANK CLEANERS. Products containing chlorine (calcium hypochlorite) can seriously damage tank fittings potentially causing leaks, excessive water use and property damage.

## Troubleshooting

Problem	Solution
No water flows into the tank.	<ul style="list-style-type: none"> <li>□ Make sure the water supply valve is fully open.</li> <li>□ Check the debris filter screen for any obstruction that would restrict the water supply. To check the debris screen, shut off the water supply. Disconnect the supply line. Remove any debris from inside the threaded shank which might be preventing proper water flow. Reconnect and turn the water supply on, checking for leaks.</li> </ul>
The flush quality of the toilet is poor.	<ul style="list-style-type: none"> <li>□ Make sure the water level in the tank is up to the water line printed on the overflow tube of the flush valve. To increase the water level, turn the adjustment screw on the fill valve clockwise to raise the float cup.</li> <li>□ Make sure the push rods are the correct length. The push rods should be set to a gap of approximately 1/16 in. above the push buttons of the flush valve. To adjust, loosen the collar on the push rod and turn the rod counterclockwise to extend the length. Tighten the collar to secure.</li> </ul>
Water continues to run.	<ul style="list-style-type: none"> <li>□ Check to make sure the rubber seal gasket on the flush valve is completely closed. Clear any debris from the gasket surface and sealing area of the flush valve which may be obstructing full closure.</li> </ul>

## Replacement Parts List

Part Name	Model Number
Fill Valve	□ A1260
Flush Valve	□ A2422



# GLACIER BAY®

## PRODUCT OVERVIEW

Model # N2316

Internet # 100676582

Store SKU # 215583

The Glacier Bay 2-Piece High-Efficiency Dual-Flush Complete Elongated Toilet in White delivers powerful 1.1 or 1.6 GPF flush performance and features a WaterSense certified design to help conserve water. This toilet's vitreous china construction offers resistance to acid, abrasion and staining. The all-in-one product contains the toilet bowl, tank and seat along with a wax ring and floor bolts with caps. Limited Lifetime Warranty.

2-piece design features a separate tank and bowl

16.5 in. chair height elongated bowl meets ADA standards

WaterSense certified product meets high-efficiency toilet (HET) standards

Vitreous china resists stains, acid and abrasion

Dual-flush design provides superior flushing performance of solids and liquids to help prevent clogs

1.1 or 1.6 GPF

White toilet with a chrome-plated, top-mounted flush button complements many bathroom decors

Rated #1 dual flush toilet by a leading consumer magazine

Questions, problems, missing parts? Before returning to the store,

call Glacier Bay Customer Service

8 a.m. - 6 p.m., EST, Monday-Friday

**1-855-434-5224**

**HOMEDEPOT.COM**

Retain this manual for future use.



## Stealth® UHET® Dual Flush Toilet-Elongated

MODEL # N7717EB-DF, N7714T-DF



### Product Overview

Innovative and stylish, Niagara's Stealth UHET Dual Flush delivers two efficient flush options – 0.95 GPF full flush for solid waste and 0.5 GPF reduced flush for liquid waste. With its quiet flush, low-profile body and breakthrough patented hydraulic technology, the Stealth has revolutionized the toilet market. It is offered in both round and elongated models and adaptable to fit a standard 12" roughing installation. The Stealth easily replaces your existing toilet, offering superior performance and lowering water usage and utility bills like no other toilet can.

- Ultra-High-Efficiency Flush
- Two efficient flush options – 0.95 GPF full and 0.5 GPF half
- Quiet 0.65 Average Flush
- MaP Score : 400g at 0.5 GPF / 800g at 0.95 GPF
- Extremely quiet flush
- EPA WaterSense labeled
- White vitreous china, Elongated front, 12" rough-in
- One flush thoroughly evacuates the bowl every time—no double flushing

### TROUBLESHOOTING

[VIEW VIDEO](#)

### Details

**Bowl Shape:** Elongated

**Rough-In:** 12"

**Bowl Rim Height:** 17"

**Efficiency Standard:** Ultra-High-Efficiency

**Product Dimensions:** 28.875" x 31.5" (732 mm x 800 mm)

**Trapway:** Fully glazed 2" (51 mm) trapway

**Water Surface Area:** 8" x 6" (203 mm x 152 mm)

**Valve/Flush Lever:** Polished chrome top-mount flush actuator

**Flush Technology:** Patented Stealth® flush chamber and air transfer system

**MaP Performance (Miso Rating):** 400g at 0.5 GPF / 800g at 0.95 GPF

**Color:** White

**Finish/Glaze:** Vitreous China – White Finish

1200 Lakeside Parkway, Suite 450 | Flower Mound, Texas 75028

Email: [info@niagaracorp.com](mailto:info@niagaracorp.com) | Toll-Free: (800) 831-8383

# **STEALTH**<sup>®</sup>

**UHET 0.8 GPF  
Ultra High-Efficiency Toilet**

**0.8 GPF / 3 LPF Toilet  
Inodoro de Muy Alta Eficiencia**

## **WARRANTY & INSTALLATION INSTRUCTIONS**

**GARANTÍA E INSTRUCCIONES  
DE INSTALACIÓN**

For models:  
Para los modelos:  
77000WHA1  
77001RWHA1  
N7717 Bowl (Taza)  
N7716 Bowl (Taza)  
N7714 Tank (Tanque)



**NIAGARA**  
CONSERVATION

[www.NiagaraCorp.com/stealth](http://www.NiagaraCorp.com/stealth)



## NIAGARA CONSERVATION WARRANTY INFORMATION

### Manufacturer's Limited Lifetime Warranty For Vitreous China Products

**PLEASE READ CAREFULLY AND RETAIN FOR YOUR RECORDS.** Niagara Conservation warrants its vitreous china products, excluding plumbing fittings and toilet tank trim products – (see specific warranty exclusions outlined below for these fill valve and flush valve assembly components) to be free from defects in materials or workmanship for the lifetime of this product to the purchaser starting from the date of purchase. Niagara Conservation promises to provide a replacement vitreous china part for any vitreous china part of this product that proves upon our inspection and from the date of purchase, to be defective in material or workmanship. All labor for uninstalling and reinstalling and transportation costs or charges incidental to warranty service is to be borne by the owner. Niagara Conservation provides no warranties, written or oral, beyond those contained in this document.

**EXCLUSIONS:** In no event shall Niagara Conservation be liable for incidental or consequential damages, for damages resulting from improper installation or for damages caused by handling, neglect, abuse or alteration. All implied warranties, including any warranty of fitness for any particular purpose of merchantability, or those that might arise from a course of dealing with the purchaser or usages of trade, are hereby disclaimed or excluded. Niagara Conservation warrants its toilet tank trim: fill valve and flush valve assembly and plumbing fittings products to be free from defects in material or workmanship for a period of ten years from the date of purchase. Niagara Conservation promises to provide replacement toilet tank trim product that proves, upon our inspection and within ten (10) years from the date of purchase to be defective in material or workmanship. All labor for de-installation and re-installation and transportation costs or charges incidental to warranty service is to be borne by the owner. Niagara Conservation shall not be responsible or liable for any failure or damage to its toilet tank trim, plumbing fittings or vitreous china products caused by the use of either chloramines or high concentration of chlorine, lime/iron sediments and/or other minerals not removed from public water during the treatment of public water supplies or caused by toilet tank type cleaners containing chlorine, calcium hypochlorite and/or other chemicals. Only those parts that were included in this toilet purchase are covered by warranty. If this purchase included a toilet seat, Niagara warrants the seat for one (1) year from date of purchase to be free from defect in material or workmanship.

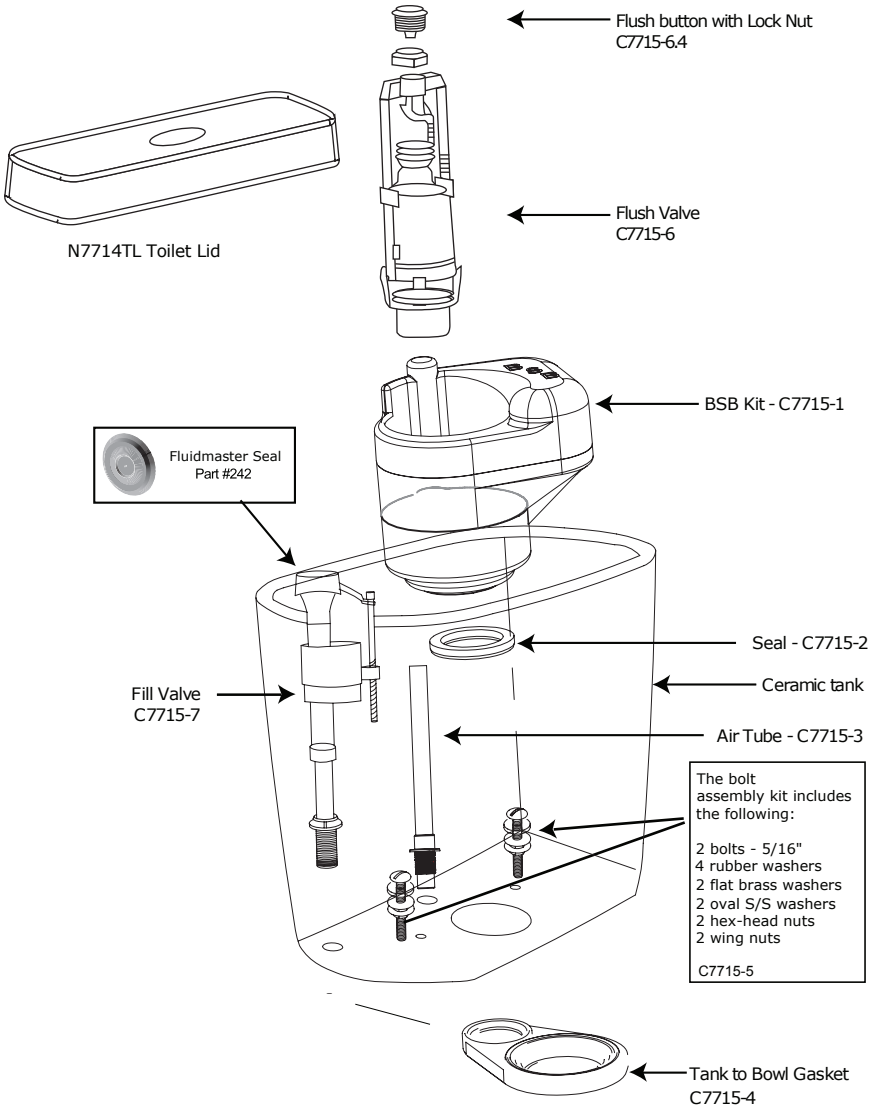
**NOTE:** Some states do not allow limitations on an implied warranty, and some states do not allow exclusions or limitations regarding incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may have other rights which vary from state to state. No person is authorized to change, add to, or create any warranty or obligation other than set forth herein. This is our exclusive written warranty.

To obtain warranty service or a copy of the product warranty, contact your local dealer and/or the contractor from whom you purchased this product.

© 2016 Niagara Conservation  
CORPORATE ADDRESS: 1200 Lakeside Parkway, Suite 450, Flower Mound, TX 75028  
PHONE: 800-831-8383  
EMAIL: [custservice@niagaracorp.com](mailto:custservice@niagaracorp.com)  
[www.NiagaraCorp.com](http://www.NiagaraCorp.com)

# STEALTH®

## ASSEMBLY DRAWING / SPARE PARTS



**To order replacement parts for your UHET 0.8 GPF / 3 LPF toilet,  
please call 1.800.831.8383**

## Installation Instructions

Vitreous china plumbing products are heavy and fragile. To avoid injury or damage, ask for assistance and handle with extreme care.

You have purchased the best gravity-flush, 0.8 gallon (3 Liters) flush toilet. To insure proper installation carefully read these instructions and be sure you have the proper tools to complete the job.

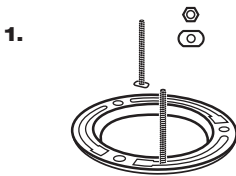
When installing a 0.8 gallon (3 Liters) per flush toilet, make sure the plumbing system is vented adequately and that the soil pipe is clean.

Be very cautious when working with vitreous china plumbing products. Vitreous china can break and chip if you overtighten mounting bolts or nuts. Such breaks and chips are as sharp as glass and should be handled with care. Take care when handling these products.

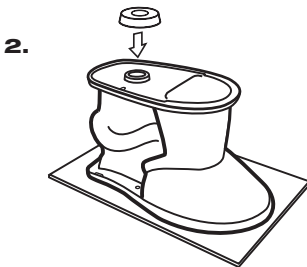
### Recommended Tools:

- 1/2" x 9/16" box or open-end wrench
- Adjustable wrench
- Caulking
- Hacksaw
- Level
- Putty knife
- Screwdriver
- Tape measure

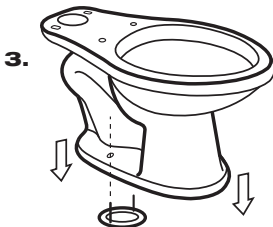
### TO START, TURN OFF THE MAIN WATER SUPPLY.



Install new "T" bolts through the floor flange

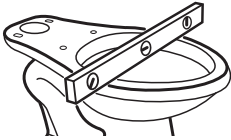


Remove the toilet from the box and set the toilet upside down on a soft surface. (You may use the box for this purpose.) Set the wax ring firmly in place around the outlet of the toilet.



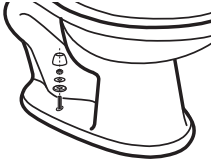
Carefully lower the toilet bowl onto the floor flange while aligning the "T" bolts through the two holes in the toilet bowl foot.

4.



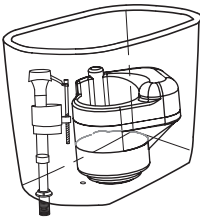
Make sure that the toilet bowl is level. If the toilet tilts or is rocking, insert shims under the base.

5.



Install the plastic washer (be sure that the side marked "top" is facing up), round metal washer, and full hex nut. **DO NOT OVERTIGHTEN.** Cut off any excess bolt length and snap the bolt cap in place. Run a bead of caulk around the base of the toilet for a finished look and to meet plumbing codes.

6.



Install the toilet tank. (The tank has been factory assembled and has the gasket between the bowl and the bottom of the tank and is ready to set in place.) Place the tank on the toilet bowl. Secure the tank in place with the two (2) metal washers and (2) nuts provided.

**DO NOT OVERTIGHTEN.**

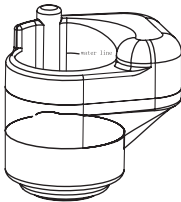
7.



Connect the water supply to the toilet fill valve and hand tighten.

Carefully connect the water supply to the shut-off valve.

8.

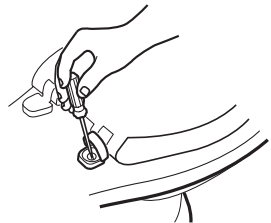


Open the shut-off valve slowly and check for leaks. Fill to the water line. Adjust the level, if necessary by turning the black screw on top of the float. Turn the screw to the right to lower the water level or to the left to raise the level.

## TOILET SEAT INSTALLATION INSTRUCTIONS

(Seat included in Stealth All in One and Stealth System models)

1. Place the seat on the toilet, aligning the holes of the seat with the holes in the back of the toilet bowl.
2. Insert the screw through the holes to secure it with the nut from the bottom of the toilet, with the nut's tapered end on top.
3. Secure nut from the bottom of the toilet, use a regular screwdriver to tight the fit. (See picture)  
CAUTION: DO NOT OVERTIGHTEN THE SCREW AS IT MAY CAUSE DAMAGE ON SEAT.
4. Push the decorative cap down.



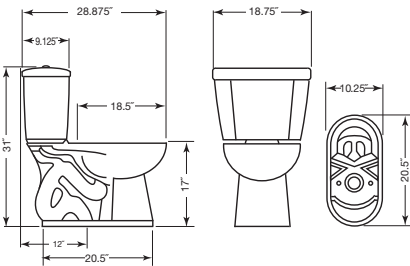


# Troubleshooting Guide

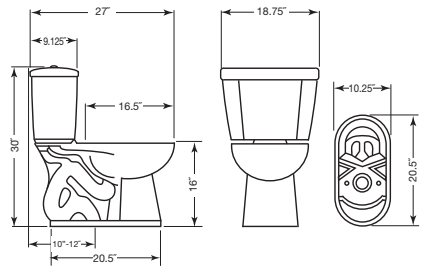
Problem	Possible Cause	Corrective Action
<p>Poor or sluggish flush</p>	<p>A. Water supply is blocked.</p> <p>B. Water level is too low in tank.</p> <p>C. Water supply valve is partially closed</p> <p>D. Partially clogged trapway or drain.</p> <p>E. Outlet is partially blocked by wax gasket</p>	<p>A. Shut off water supply, disconnect supply and check water supply valve opening. (Valve is located on wall or floor).</p> <p>B. Adjust water level in tank to water level mark by turning adjustment screw on Fluidmaster™.</p> <p>C. Open supply valve.</p> <p>D. Clear passage with an auger. If you are unable to clear blockage, please contact a plumber.</p> <p>E. Lift toilet and replace wax ring gasket.</p>
<p>Fill valve does not shut off</p>	<p>A. Water level in tank is set too high adjust</p> <p>B. Debris lodged in the valve.</p> <p>C. Fill valve seal may need to be replaced</p>	<p>A. Refer to installation instructions (Step 8) to adjust the water lever.</p> <p>B. Shut off water supply valve; remove front cap from the Fluidmaster™ valve by turning counterclockwise; turn water supply on very slowly and flush out the line.</p> <p>C. Shut off water supply; remove the front cap from the Fluidmaster™ valve and replace the rubber seal disk (Fluidmaster™ Part No. 242)</p>

**WARNING:** Do not place toilet bowl cleaner tablets in toilet tank. The use of these tablets in this manner may cause leakage and void warranty.

## Elongated Bowl

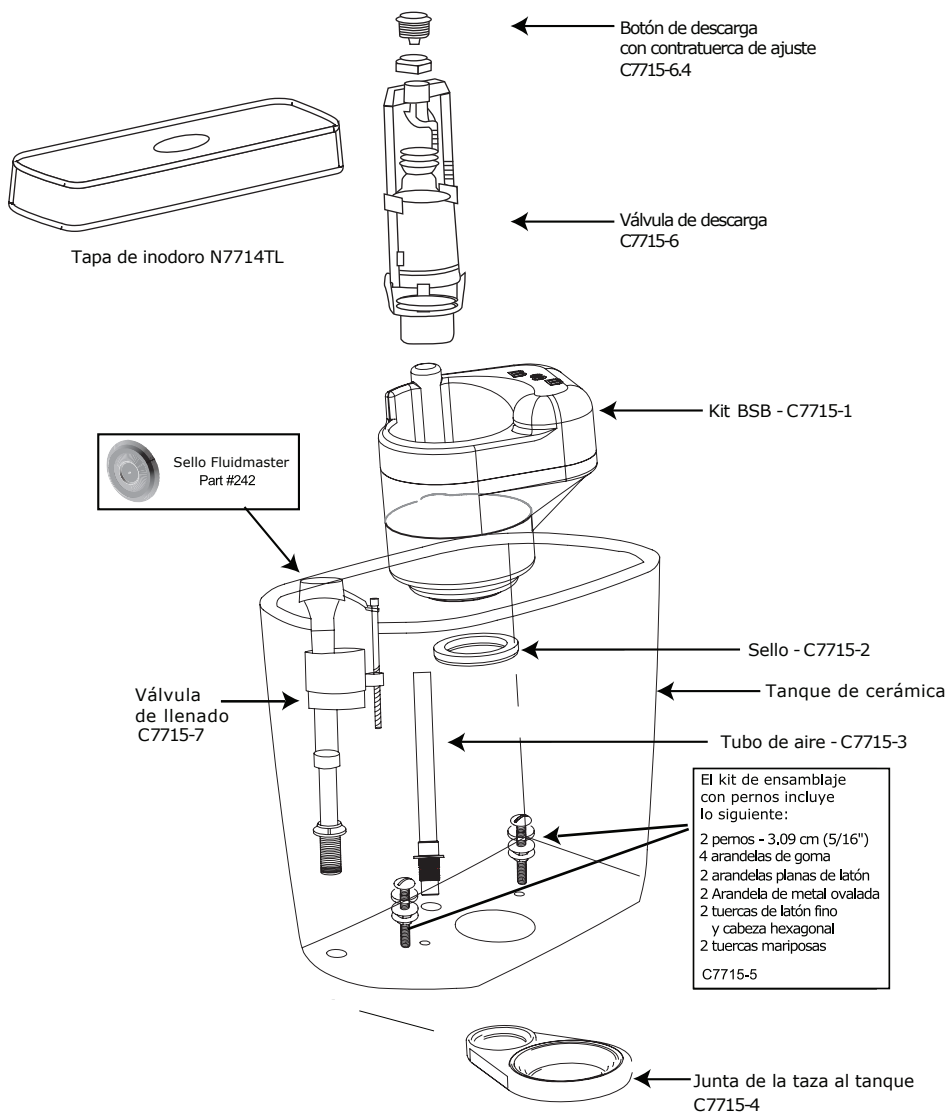


## Round Bowl



# STEALTH®

## DIAGRAMA PARA ENSAMBLAJE / PIEZAS DE REPUESTO



**Ordena piezas de repuesto para tu inodoro UHET de 0.8 GPD / 3 LPD  
llamando al 1.800.831.8383**

## Instrucciones para la instalación

Los productos de vitrocerámica son duros y frágiles. Para evitar daño o lesión, pida ayuda y manipule con extremo cuidado.

Ha comprado el mejor inodoro de descarga por gravedad: 0.8 galones (3 litros). Para garantizar la instalación adecuada, lea con cuidado estas instrucciones y asegúrese de contar con las herramientas apropiadas para completar el trabajo.

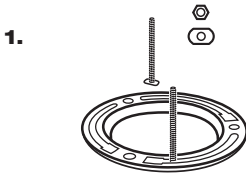
Al instalar el inodoro de 0.8 galones (3 litros) por descarga, compruebe que el sistema de plomería esté ventilado adecuadamente y que la tubería de desagüe sanitario esté limpia.

Sea muy cauteloso al trabajar con productos de vitrocerámica para plomería. La vitrocerámica puede romperse y astillarse si aprieta demasiado los pernos o tuercas. Esas astillas y roturas son más cortantes que el vidrio y deben manipularse con cuidado. Tenga cuidado al manipular estos productos.

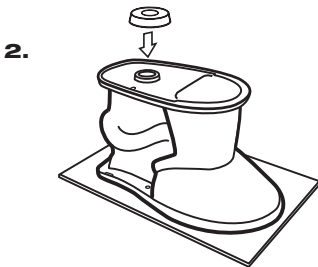
### Herramientas recomendadas:

- Caja de 1/2" x 9/16" o llave de extremo abierto
- Llave ajustable
- Masilla
- Sierra para metales
- Nivel
- Espátula para masilla
- Destornillador
- Cinta métrica

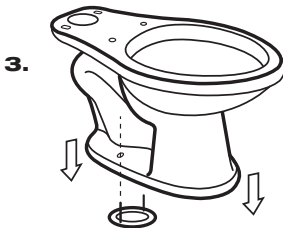
## PARA EMPEZAR, CERRAR EL SUMINISTRO PRINCIPAL DE AGUA.



Instale los nuevos pernos "T" a través de la brida del piso.

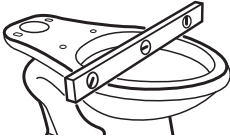


Sacar el inodoro de la caja y ponerlo boca abajo sobre superficie blanda. (A tal efecto se puede usar la propia caja) Colocar firme el anillo de cera alrededor de la salida del inodoro.



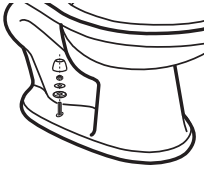
Bajar con cuidado la taza del inodoro hasta la brida del piso y alinear al mismo tiempo los pernos "T" a través de los dos orificios en la base de la taza

4.



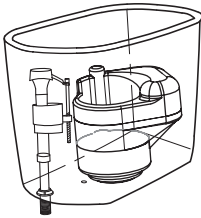
Asegurar que la taza del inodoro esté nivelada. Si el inodoro se inclina o mece, insertar cuñas debajo de la base.

5.



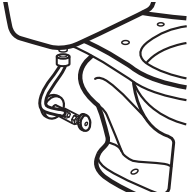
Instalar la arandela de plástico (asegurar que el lado marcado como superior mire hacia arriba), la arandela redonda de metal y la tuerca hexagonal completa. **NO APRETAR DEMASIADO.** Recortar el largo saliente de cualquier perno y colocar a presión el cubreperno en su lugar. Aplicar un borde de masilla alrededor de la base del inodoro para darle una apariencia terminada y cumplir con los códigos de plomería.

6.



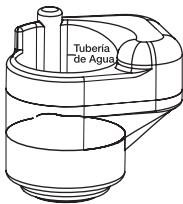
Instalar el tanque del inodoro. (El tanque viene ensamblado de fábrica y tiene la junta entre la taza y el fondo del tanque lista para colocarse en su lugar.) Colocar el tanque sobre la taza del inodoro. Asegurar el tanque en su lugar con las dos (2) arandelas metálicas y las dos (2) tuercas incluidas. **NO APRETAR DEMASIADO.**

7.



Conectar el suministro de agua a la válvula de llenado del inodoro y apretar a mano. Conectar con cuidado el suministro de agua a la válvula de cierre.

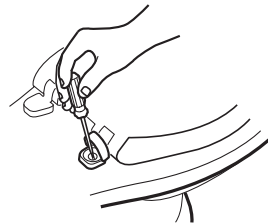
8.



Abrir lentamente la válvula de cierre y verificar si hay filtraciones. Llenar hasta la línea de agua. Ajustar el nivel, si es necesario, girando el tornillo negro en la parte superior del flotante. Girar el tornillo a la derecha para reducir y hacia la izquierda para elevar el nivel de agua.

## INSTRUCCIONES PARA LA INSTALACIÓN DEL ASIENTO DEL INODORO (Asiento incluido en los modelos Sistema Stealth y Stealth Todo en Uno)

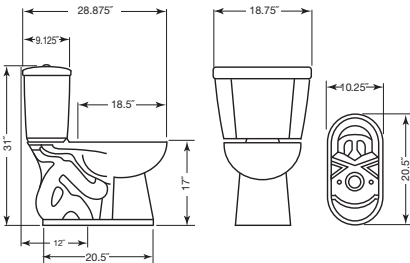
1. Colocar el asiento en el inodoro y alinear los orificios del asiento con aquellos en la parte trasera de la taza del inodoro.
2. Insertar el tornillo a través de los orificios para asegurarlo con la tuerca del fondo del inodoro, con el extremo cónico de la tuerca en la parte superior.
3. Asegurar la tuerca del fondo del inodoro con un destornillador regular para apretar el ajuste. (Ver la imagen)  
**PRECAUCIÓN: NO APRETAR DEMASIADO LOS TORNILLOS, PORQUE PUDIERA DAÑARSE EL ASIENTO.**
4. Presionar hacia abajo la tapa decorativa.



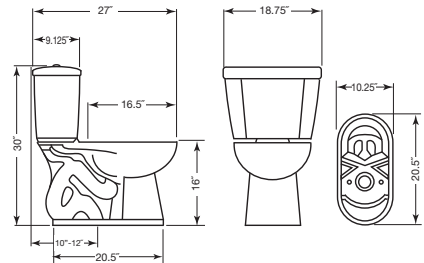
## Guía para la solución de problemas

Problema	Causa Posible	Solución
Descarga pobre o lenta	<p>A. El suministro de agua está bloqueado</p> <p>B. El nivel de agua en el tanque es muy bajo</p> <p>C. La válvula de suministro de agua está parcialmente cerrada</p> <p>D. El sifón o el drenaje están parcialmente obstruidos</p> <p>E. La salida está parcialmente bloqueada por la junta de cera</p>	<p>A. Cerrar el suministro de agua, desconectarlo y revisar la apertura de la válvula de suministro (Esta válvula está en la pared o en el piso).</p> <p>B. Ajustar el nivel de agua en el tanque al marcado girando el tornillo de ajuste en Fluidmaster™.</p> <p>C. Abrir la válvula de suministro</p> <p>D. Destupir el desagüe con una sonda. Si no se puede eliminar la obstrucción, contacte por favor a un plomero.</p> <p>E. Levantar el inodoro y reponer la junta de anillo de cera.</p>
La válvula de llenado no se cierra	<p>A. El nivel de agua en el tanque se ajustó demasiado alto</p> <p>B. Hay desechos alojados en la válvula</p> <p>C. El sello de la válvula de llenado pudiera necesitar reposición</p>	<p>A. Consultar las instrucciones de instalación (Paso 8) para ajustar el nivel de agua.</p> <p>B. Cerrar la válvula de suministro; quitar la tapa frontal de la válvula Fluidmaster™ girando en contra de las manecillas del reloj; abrir muy despacio el suministro de agua y enjuagar la línea o tubería.</p> <p>C. Cerrar el suministro de agua; quitar la tapa frontal de la válvula Fluidmaster™ y reponer el disco de goma de sellado (Fluidmaster™ - Parte 242).</p>
<p><b>ADVERTENCIA:</b> No colocar tabletas limpiadoras de taza de inodoro en el tanque. El uso de dichas tabletas de esta manera pudiera causar filtraciones y anular la garantía.</p>		

**Taza Alargada**



**Taza Circular**





# Washers

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Control Settings ..... 6, 7  
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Loading and Using the Washer ..... 10, 11  
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**Installation Instructions** ..... 15-20

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**Owner's Manual & Installation Instructions**

- GFWN1000
- GFWN1100
- WBVH5200
- WBVH5300
- WCVH6400
- WCVH6800
- WHDVH680



As an ENERGY STAR® partner, GE has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

**Write the model and serial numbers here:**

**Model #** \_\_\_\_\_

**Serial #** \_\_\_\_\_

You can find them on a label on the side of the washer.

# IMPORTANT SAFETY INFORMATION. READ ALL INSTRUCTIONS BEFORE USING.

**⚠ WARNING!** For your safety, the information in this manual must be followed to minimize the risk of fire or explosion, electric shock, or to prevent property damage, personal injury or loss of life.

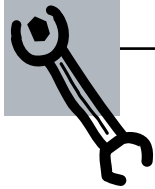
The instructions in this manual and all other literature included with this washer are not meant to cover every possible condition and situation that may occur. Good, safe practices and caution **MUST** be applied when installing, operating and maintaining any appliance.



## WATER HEATER SAFETY

Under certain conditions, hydrogen gas may be produced in a water heater that has not been used for two weeks or more. Hydrogen gas can be explosive under these circumstances.

If the hot water has not been used for two weeks or more, prevent the possibility of damage or injury by turning on all hot water faucets and allowing them to run for several minutes. Do this before using any electrical appliance which is connected to the hot water system. This simple procedure will allow any built-up hydrogen gas to escape. Since the gas is flammable, do not smoke or use an open flame or appliance during this process.



## PROPER INSTALLATION

This washer must be properly installed and located in accordance with the Installation Instructions before it is used.

- Install or store where it will not be exposed to temperatures below freezing or exposed to the weather, which could cause permanent damage and invalidate the warranty.
- Properly ground washer to conform with all governing codes and ordinances. Follow details in Installation Instructions.



## YOUR LAUNDRY AREA

- Keep the area underneath and around your appliances free of combustible materials such as lint, paper, rags and chemicals.
- Do not leave the washer door open. An open door could entice children to hang on the door or crawl inside the washer.
- Close supervision is necessary if this appliance is used by or near children. Do not allow children to play on, with or inside this or any other appliance.



## WHEN USING THE WASHER

Use this appliance only for its intended purpose as described in this Owner's Manual.

- Never reach into washer while it is moving. Wait until the machine has completely stopped before opening the door.
- Do not mix chlorine bleach with ammonia or acids such as vinegar and/or rust remover. Mixing different chemicals can produce a toxic gas which may cause death.
- Do not wash or dry articles that have been cleaned in, washed in, soaked in or spotted with combustible or explosive substances (such as wax, oil, paint, gasoline, degreasers, dry-cleaning solvents, kerosene, etc.) which may ignite or explode. Do not add these substances to the wash water. Do not use or place these substances around your washer or dryer during operation.
- The laundry process can reduce the flame retardancy of fabrics. To avoid such a result, carefully follow the garment manufacturer's wash and care instructions.
- To minimize the possibility of electric shock, unplug this appliance from the power supply or disconnect the washer at the building's distribution panel by removing the fuse or switching off the circuit breaker before attempting any maintenance or cleaning. **NOTE:** Pressing the power button does **NOT** disconnect the appliance from the power supply.
- Never attempt to operate this appliance if it is damaged, malfunctioning, partially disassembled, or has missing or broken parts, including a damaged cord or plug.
- Do not slam the washer door closed. Do not try to force the door open when locked (LOCKED indicator ON). This could result in damage to the washer.
- The washer is equipped with an electrical overload protector. The motor will stop if it becomes overheated. The washer will automatically restart after a cool-down period of up to 2 hours, if the washer has not been manually turned off during this time.



## WHEN NOT IN USE

- Turn off water faucets to relieve pressure on hoses and valves and to minimize leakage if a break or rupture should occur. Check the condition of the fill hoses; GE recommends changing the hoses every 5 years.
- Before discarding a washer, or removing it from service, remove the washer door to prevent children from hiding inside.
- Do not attempt to repair or replace any part of this appliance unless specifically recommended in this Owner's Manual, or in published user-repair instructions that you understand and have the skills to carry out.
- Do not tamper with controls.

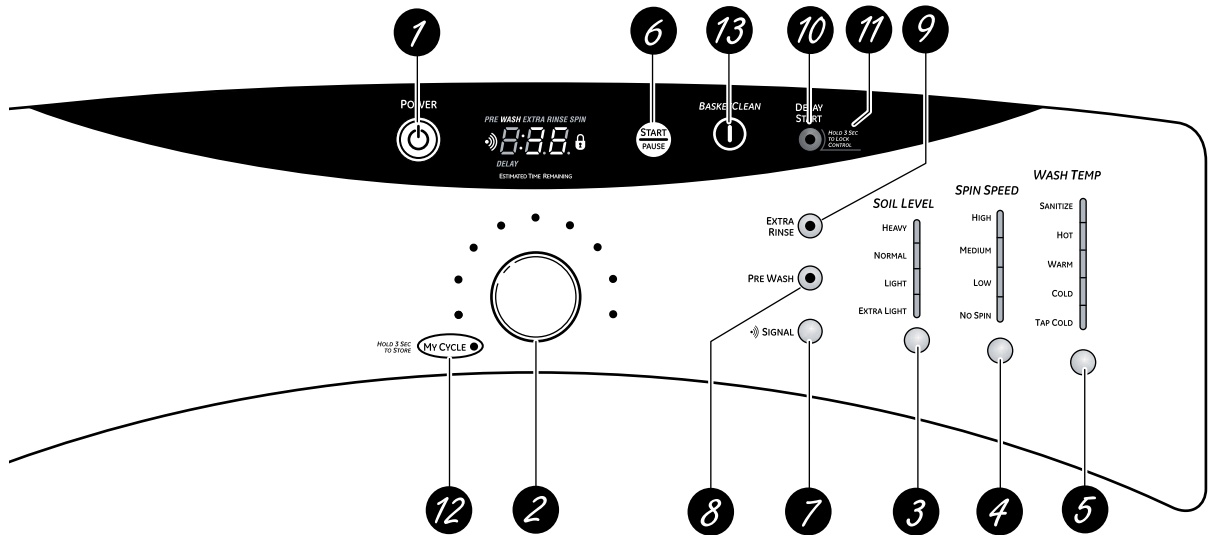


**READ AND FOLLOW THIS SAFETY INFORMATION CAREFULLY.  
SAVE THESE INSTRUCTIONS**

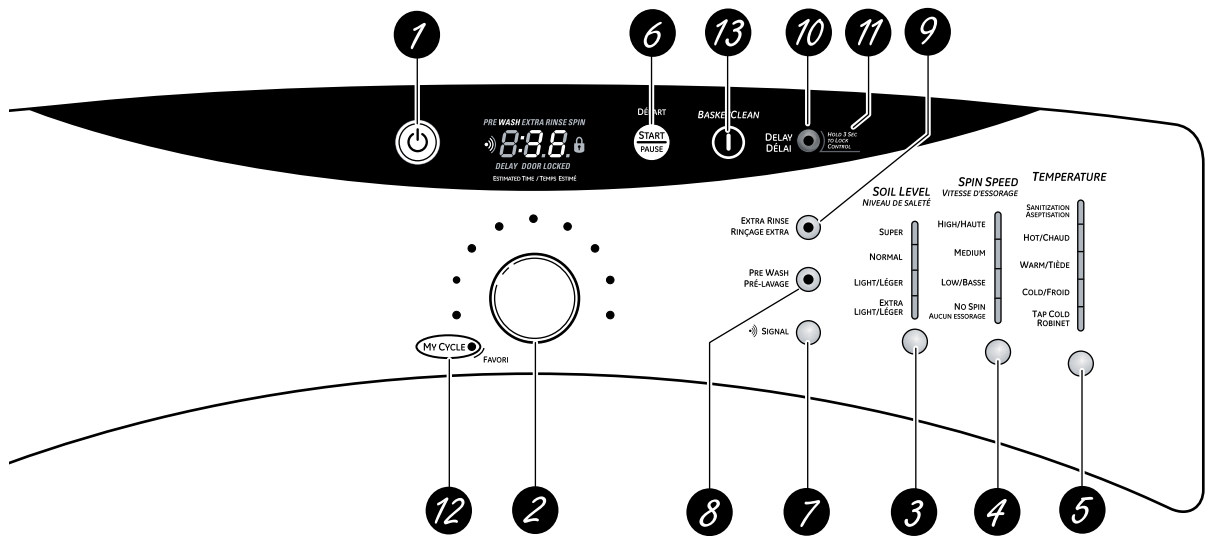
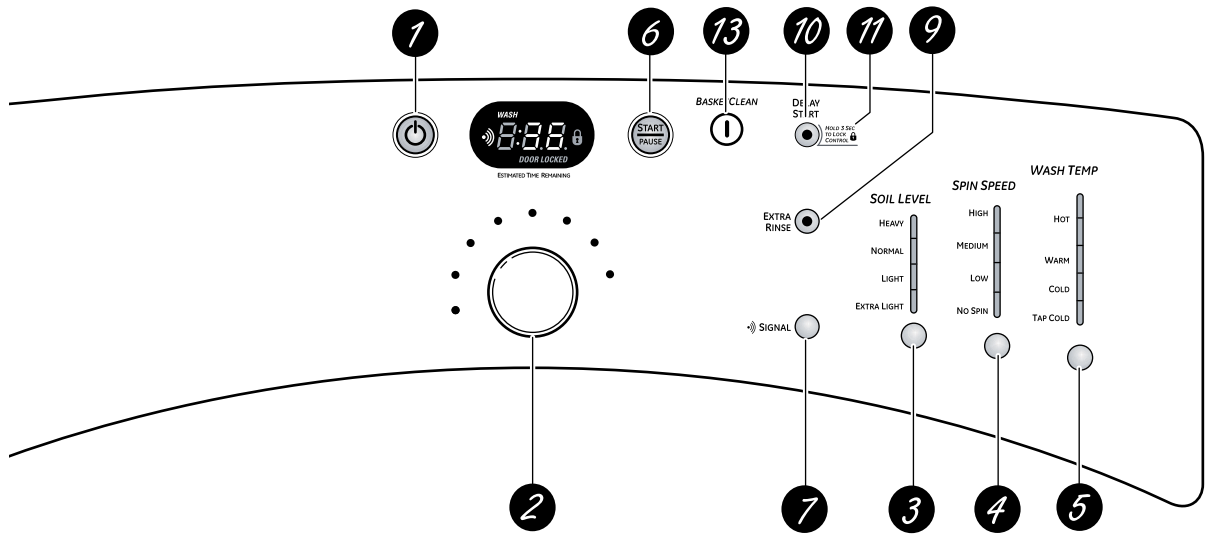


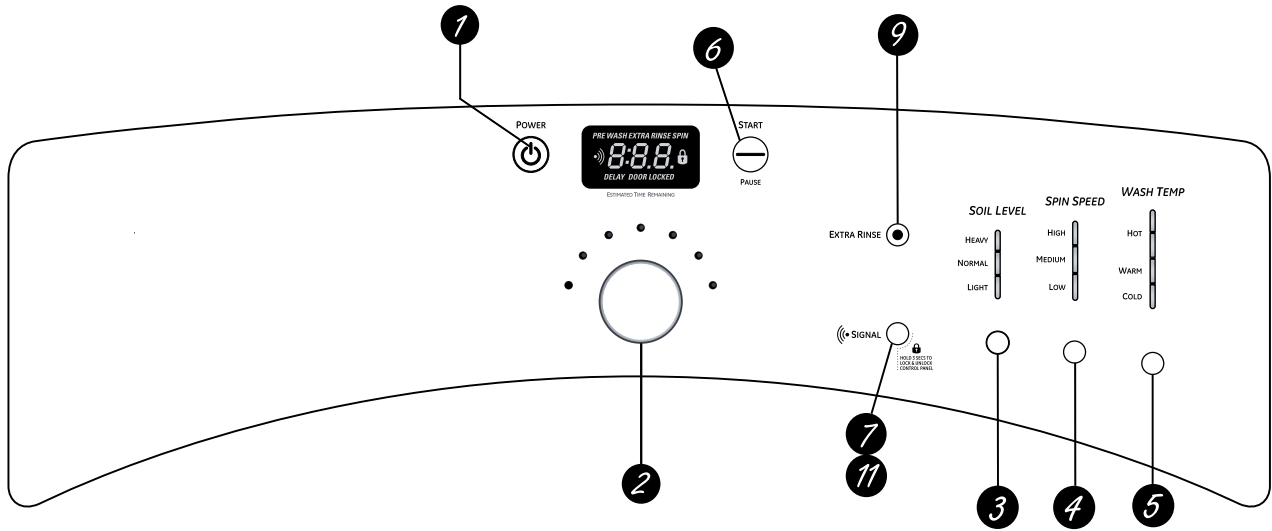
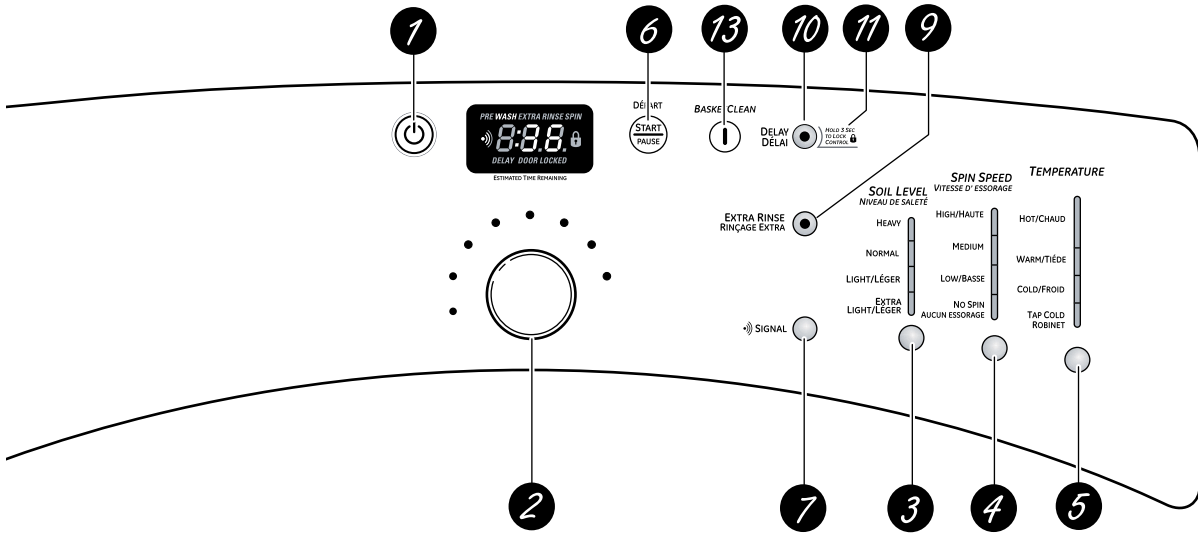
# About the washer control panel.

Find the illustration that closely matches your model and see the cycle descriptions starting on page 6 for details.



(On some models)





## About the washer control panel.

- 1 Power**  
Press to “wake up” the display. If the display is active, press to put the washer into standby mode.

**NOTE:** Pressing **POWER** does not disconnect the appliance from the power supply.

- 2 Wash Cycles**  
The wash cycles are optimized for specific types of wash loads. The chart below will help you match the wash setting with the loads. The GentleClean™ lifters lightly tumble the clothes into the water and detergent solution to clean the load.

<b>WHITES</b>	For heavily to lightly soiled white cottons, household linens, work and play clothes.
<b>COLORS/NORMAL</b>	For heavy to lightly soiled colorfast cottons, household linens, work and play clothes.
<b>STAIN WASH</b>	For heavy soiled colorfast cottons, household linens, work and play clothes.
<b>EASY CARE (PERMA PRESS) (some models)</b>	For wrinkle-free and permanent press items.
<b>ACTIVE WEAR (some models)</b>	For active sports, exercise and some casual wear clothes. Fabrics include modern technology finishes and fibers such as spandex, stretch and micro-fibers.
<b>DELICATES (some models)</b>	For lingerie and special-care fabrics with light to normal soil. Provides gentle tumbling and soak during wash and rinse.
<b>HANDWASH</b>	For items labeled hand-washable with light soils. Provides gentle rocking to mimic the handwashing action.
<b>WASHABLE</b>	For the washing of machine washable wool products, provided that they are
<b>WOOLS (some models)</b>	washed according to the instructions on the garment label. When selecting this cycle, you must use a detergent suitable for washing wool.
<b>MY CYCLE (some models)</b>	Press to use, create or modify custom wash cycles.
<b>SPEED WASH</b>	For lightly soiled items that are needed in a hurry. Cycle time is approximately 30 minutes, depending on selected options.
<b>DRAIN &amp; SPIN</b>	Drain and spin at any time.
<b>RINSE &amp; SPIN (some models)</b>	To quickly rinse out any items at any time.

**3 Soil Level**

Changing the SOIL LEVEL increases or decreases the wash time to remove different amounts of soil. To change the SOIL LEVEL, press the **SOIL LEVEL** button until you have reached the desired setting.

**4 Spin Speed**

Changing the SPIN SPEED changes the final spin speed of the cycles. Always follow the fabric manufacturer's care label when changing the SPIN SPEED.

To change the SPIN SPEED, press the **SPIN SPEED** button until you have reached the desired setting. Higher spin speeds are not available on certain cycles, such as Delicates.

Higher spin speeds remove more water from the clothes and will help reduce dry time, but may also increase the possibility of setting wrinkles on some fabrics.

**5 Wash Temp**

Adjust to select the proper water temperature for the wash cycle. The prewash and rinse water is always cold to help reduce energy usage and reduce setting of stains and wrinkles.

Follow the fabric manufacturer's care label when selecting the wash temperature.

To change the wash temperature, press the **WASH TEMP** button until you have reached the desired setting. The Sanitized wash temperature is not available on certain cycles, such as Delicates.

When selecting the Sanitize wash temperature (on some models), the washer increases the water temperature to sanitize and kill more than 99% of many common bacteria found in home laundry. The sanitize wash temperature is only available on Stain Wash and Whites wash cycles. For best results, select

the heavy soil setting when using the Sanitize wash temperature setting.

NOTE: The first 10 seconds of the wash fill is always cold. This feature assists in conditioning the fabric and preventing stains from setting on garments.

**6 START/PAUSE**

Press to start a wash cycle. If the washer is running, pressing it once will pause the washer and unlock the door. Press again to restart the wash cycle.

NOTE: If the washer is paused and the cycle is not restarted within 2 hours, the current wash cycle will be cancelled.

NOTE: The washer performs automatic system checks after pressing the **START** button. Water will flow in 45 seconds or less. You may hear the door lock and unlock before water flows; this is normal.

# About the washer features.

NOTE: Features may not be available on all washer models.

Safety Instructions

Operating Instructions

Installation Instructions

Troubleshooting Tips

Consumer Support

7



## Cycle Signal

Use the **SIGNAL** button to change the volume of the end of cycle signal.

Press the button until you reach the desired volume.

8



## Prewash (on some models)

Prewash is an extra wash before the main wash. Use it for heavily soiled clothes or for clothes with a care label that recommends prewashing before washing. Be sure to add high-efficiency

detergent, or the proper wash additive to the prewash dispenser.

**NOTE:** When selecting prewash, it is recommended to use powder detergent in the main wash (detergent) compartment.

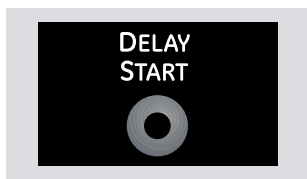
9



## Extra Rinse

Use an extra rinse when additional rinsing is desired to remove excess dirt and detergent from soiled loads.

10



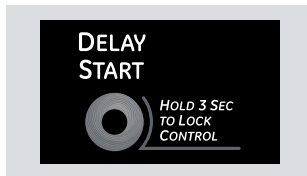
## Delay Start (on some models)

You can delay the start of a wash cycle for 10–18 hours, depending on the model. Press the **DELAY START** button to choose the number of hours you want to delay the start of the cycle, then press the **START** button. The machine will count down and start automatically at the correct time.

**NOTE:** If you forget to fully close the door, a reminder signal will beep reminding you to do so.

**NOTE:** If you open the door when the delay is counting down, the machine will enter the pause state. You must close the door and press **START** again in order to restart the countdown.

11



## Lock

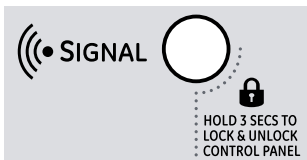
You can lock the controls to prevent any selections from being made. Or you can lock the controls after you have started a cycle.

To lock the washer, press and hold the **DELAY START** button for 3 seconds (on some models use **SIGNAL** button). To unlock the washer controls, press and hold the **DELAY START** button for 3 seconds.

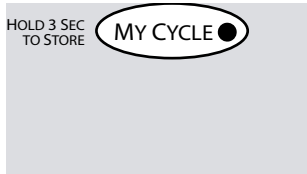
Children cannot accidentally start the washer by touching pads with this option selected.

The control lock icon on the display will light up when it is on.

**NOTE:** The **POWER** button can still be used when the machine is locked.



12



## MY CYCLE (on some models)

To save a favorite cycle, set the desired settings for wash cycle, soil level, spin speed and wash temp settings and hold down the **MY CYCLE** button for 3 seconds. A beep will sound to indicate the cycle has been saved.

**NOTE:** When using **MY CYCLE**, wash options cannot be modified after the cycle has been started.

To use your custom cycle, press the **MY CYCLE** button before washing a load.

**NOTE:** If you change wash options with **MY CYCLE** before starting the cycle, the **MY CYCLE** light will turn off and you will be returned to the base cycle.

To change the saved cycle, set the desired settings and hold down the **MY CYCLE** button for 3 seconds.

13

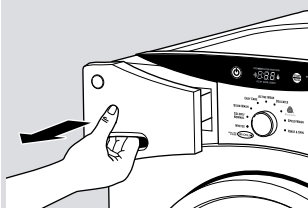


## BASKET CLEAN

**BasketClean** is a cycle that freshens up the inside of your washer. The cycle uses bleach or other available washing machine cleaners and more water to refresh your washer. Use **BasketClean**

once every month to reduce odor and residue buildup inside the washer.

For more information on **BasketClean**, refer to the Care and Cleaning section on page 12.

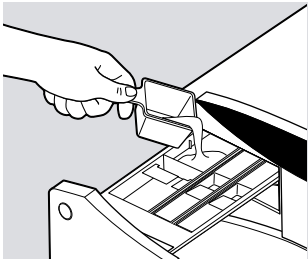


### The Dispenser Drawer

Slowly open the dispenser drawer by pulling it out until it stops.

After adding laundry products, slowly close the dispenser drawer. Closing the drawer too quickly could result in early dispensing of the bleach, fabric softener or detergent.

You may see water in the bleach and fabric softener compartments at the end of the cycle. This is a result of the flushing/siphoning action and is part of the normal operation of the washer.

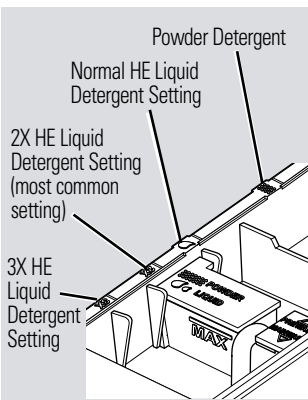


### The Prewash Compartment (on some models)

- Only use the Prewash Compartment if you are selecting the Prewash cycle for heavily soiled clothes. Add measured detergent or prewash additive to the back left prewash compartment of the dispenser drawer.
- Detergent or prewash additive is flushed from the dispenser in the prewash cycle (if selected).

**NOTE:** Liquid detergent will drain into the washer drum as it is added.

- Detergent usage may need to be adjusted for water temperature, water hardness, size and soil level of the load. Avoid using too much detergent in your washer as it can lead to over sudsing and detergent residue being left on the clothes.



Appearance may vary

### The Detergent Compartment

- **High-efficiency detergent is required for this washer. Use the detergent manufacturer's recommended amount.**

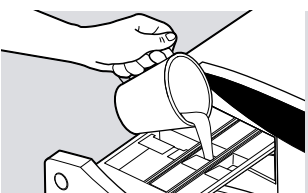
The detergent selection insert must be placed in the detergent compartment in a specific position according to what type of detergent you are using.

- **Powder Detergent** – Place the insert in the rear position. The Powder Icons must line up on center when the insert is in the powder position.
- **Liquid Detergent** – You will need to adjust the insert according to the type of Liquid Detergent you are using. The Icons on the side of the detergent compartment must line up on the center when the insert is in position.

Move the insert by pulling it up and replace it by sliding it down between either the rear or front detergent compartment molded rails, as desired, for powder or liquid detergent.

- Add measured detergent to the front left detergent compartment of the dispenser drawer.
- Detergent is flushed from the dispenser at the beginning of the wash cycle. Either powdered or liquid detergent can be used.
- Detergent usage may need to be adjusted for water temperature, water hardness, size and soil level of the load. Avoid using too much detergent in your washer as it can lead to oversudsing and detergent residue being left on the clothes.
- Using more detergent than the recommended quantity can cause residue buildup on your washer.


**NOTE:** Not all models have the 2x and 3x detergent settings. Some have only regular HE detergent settings. You must reduce the amount of detergent for 2x or 3x detergent per bottle instructions.



On some models, the Liquid Bleach Compartment is in the center.

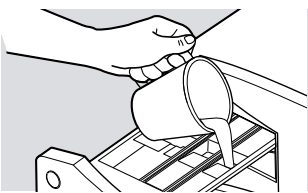
### The Liquid Bleach Compartment

**IMPORTANT:** The bleach compartment position varies by model. Be sure to identify the correct compartment for bleach before using.

If desired, measure out the recommended amount of liquid bleach, not to exceed 1/3 cup (80 ml), and pour into the center compartment labeled "LIQUID BLEACH" marked with this symbol .

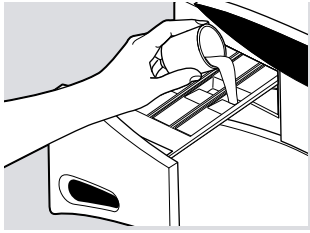
Do not exceed the maximum fill line. Overfilling can cause early dispensing of the bleach which could result in damaged clothes.

**NOTE:** Do not use powdered bleach in the dispenser.

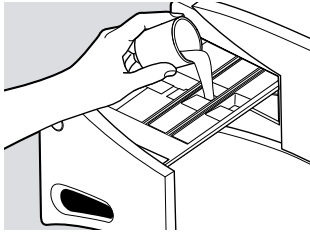


On some models, the Liquid Bleach Compartment is on the right.

## About the washer features.



On some models, the Fabric Softener Compartment is on the right.



On some models, the Fabric Softener Compartment is in the center.

### The Fabric Softener Compartment

**IMPORTANT:** The fabric softener compartment position varies by model. Be sure to identify the correct compartment for fabric softener before using.

If desired, pour the recommended amount of liquid fabric softener into the compartment labeled "FABRIC SOFTENER."

Use only liquid fabric softener in the dispenser.

Dilute with water to the maximum fill line.

Do not exceed the maximum fill line. Overfilling can cause early dispensing of the fabric softener which could stain clothes.

**NOTE:** Do not pour fabric softener directly on the wash load.

## Loading and using the washer.

Always follow fabric manufacturer's care label when laundering.



### Sorting Wash Loads

Sort laundry into loads that can be washed together.

Colors	Soil	Fabric	Lint
Whites	Heavy	Delicates	Lint Producers
Lights	Normal	Easy Care	Lint Collectors
Darks	Light	Sturdy Cottons	

- Combine large and small items in a load. Load large items first. Large items should not be more than half the total wash load.
- Washing single items is not recommended. This may cause an out-of-balance load. Add one or two similar items.
- Pillows and comforters should not be mixed with other items. This may cause an out-of-balance load.

### Preparing Clothes

- To avoid snags during washing:

Follow these steps to maximize garment care.

- Close garment zippers, snaps, buttons and hooks.
- Mend seams, hems, tears.
- Empty all items from pockets.
- Remove nonwashable garment accessories such as ornaments and nonwashable trim materials.
- To avoid tangling, tie strings, draw ties and belt-like materials.
- Brush away surface dirt and lint; treat spots and stains.
- Promptly wash wet or stained garments to maximize results.
- Mix garments using recommended maximum load sizes on page 11.
- Use nylon mesh garment bags to wash small items.
- Wash multiple garments at one time for best results.



## Loading the Washer

Wash drum may be fully loaded with loosely added items. **Do not wash fabrics containing flammable materials (waxes, cleaning fluids, etc.).**

To add items after washer has started, press **START/PAUSE** and wait until the door is unlatched. The washer may take up to 30 seconds to unlock the door after pressing **START/PAUSE** depending on the machine conditions. Do not try to force open the door when it is locked. After the door unlocks, open gently. Add items, close the door and press **START/PAUSE** to restart.

### Maximum Loading Sizes\*

WORKWEAR	LINENS	MIXED LOAD	DELICATES**	SPEED WASH (2-4 GARMENTS)
4 Jeans 5 Workwear Shirts 5 Workwear Pants	2 Bath Sheets 10 Bath Towels/ 12 Washcloths 7 Hand Towels/ 2 Terrycloth Bath Mats <b>OR</b> 2 Flat Queen-Sized Sheets 2 Fitted Queen-Sized Sheets 4 Pillowcases	4 Pillowcases 2 Hand Towels 2 Flat Sheets/ 2 Fitted Sheets 2 Bath Towels/ 4 Washcloths <b>OR</b> 6 Shirts (Men's or Women's) 4 Pair Pants (Khakis or Twills) 5 T-Shirts 7 Pairs of Boxers 4 Pairs of Shorts <b>OR</b> 6 T-Shirts 4 Pairs of Sweatpants 4 Sweatshirts 2 Hoodies 7 Pairs of Socks	7 Bras 7 Panties 3 Slips 2 Camisoles 4 Nightgowns	2 Casual Wear Work Shirts 1 Pair Casual Wear Work Pants <b>OR</b> 3 Soccer Uniforms

\*Exceeding maximum recommended load sizes may affect cleaning performance and garment care.

\*\*Using a nylon mesh bag for small items is recommended.



## Cleaning the washer.



### Care and Cleaning

**Exterior:** Immediately wipe off any spills. Wipe with damp cloth. Do not hit surface with sharp objects.

**Moving and Storage:** Ask the service technician to remove water from drain pump and hoses. Do not store the washer where it will be exposed to the weather. When moving the washer, the tub should be kept stationary by using the shipping bolts removed during installation. See Installation Instructions in this book. If these parts are not available, they can be ordered by visiting our Website at [GEAppliances.com](http://GEAppliances.com) or by calling 800.GE.CARES.

**Long Vacations:** Be sure the water supply is shut off at the faucets. Drain all water from the hoses if the weather will be below freezing.

### Cleaning the Interior of the Washer

To clean the interior of the washer, select the **BasketClean** feature on the control panel. The cycle will use more water, in addition to bleach, to refresh your washer.

**NOTE:** Read the instructions below completely before starting the **BasketClean** cycle.

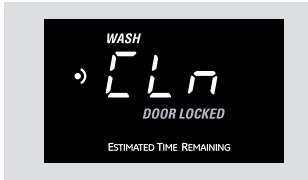
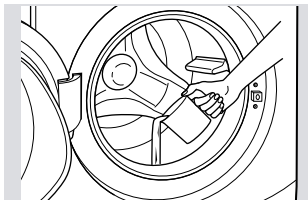
1. Remove any garments or objects from the washer and ensure the washer basket is empty.
2. Open the washer door and pour one cup or 250 ml of liquid bleach or other washing machine cleaner into the basket.
3. Close the door and select the **BasketClean** cycle. Push the **START** button.
4. When the **BasketClean** cycle is working, you will see **CLn** on the display. The cycle will complete in about 90 minutes. Do not interrupt the cycle.
5. After the cycle is complete, leave the door open slightly for better ventilation.

If for any reason the cycle needs to be interrupted, the door will not open immediately. Forcing open the door at this stage may cause water to flood. The door will open after the water is drained to a level where it would not flood the floor.

**BasketClean** may be interrupted by pressing the **START/PAUSE** button in between cycles. A power outage in the house might also interrupt the cycle. When the power supply is back, the **BasketClean** cycle resumes where it had stopped. When interrupted, be sure to run a complete **BasketClean** cycle before using the washer. If the **POWER** button is pressed during **BasketClean**, the cycle will be lost.

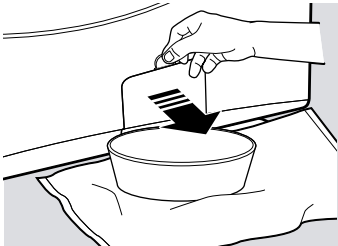
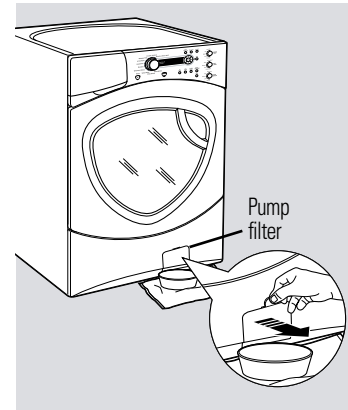
#### IMPORTANT:

- Run **BasketClean** with 1 Cup (250 ml) of bleach once a month.
- After the completion of a **BasketClean** cycle, the interior of your washer may have a bleach smell.
- It is recommended to run a light color load after the **BasketClean** cycle.

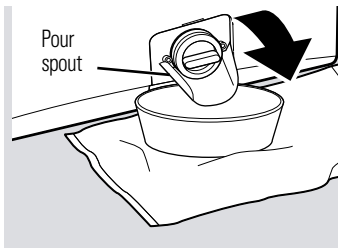


### Cleaning the Pump Filter

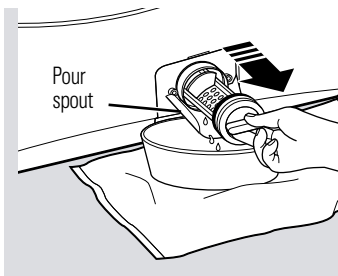
Due to the nature of the front-load washer, it is sometimes possible for small articles to pass to the pump. The washer has a filter to capture lost items so they are not dumped to the drain. To retrieve lost items, clean out the pump filter.



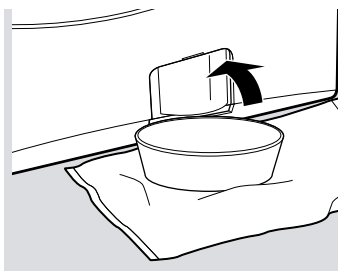
1. Using a coin or flat screwdriver in the notch on the door, open the access door.
2. Place a shallow pan or dish under the pump access door and towels on the floor in front of the washer to protect the floor. It is normal to catch about a cup of water when the filter is removed.



3. Pull down the pour spout.



4. Turn the pump filter counterclockwise and remove the filter. Open slowly to allow the water to drain.
5. Clean the debris from the filter.
6. Replace the filter and turn clockwise. Tighten securely.



7. Flip up the pour spout.
8. Close the access door.

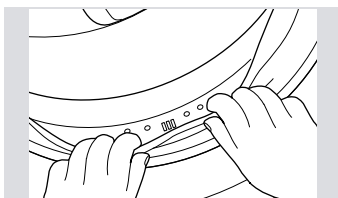
### Cleaning the Door Gasket

Open the washer door. Using both hands, press down the door gasket. Remove any foreign objects if found trapped inside the gasket. Make sure there is nothing blocking the holes behind the gasket.

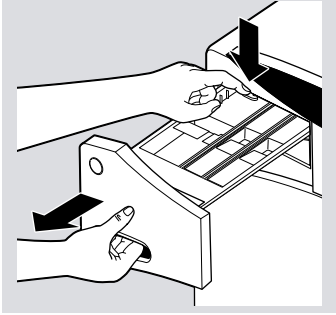
When you are finished cleaning the door gasket, remove your hands and the gasket will return to the operating position.



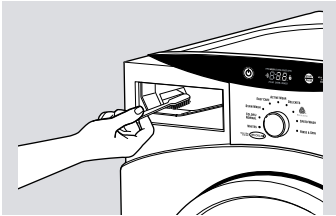
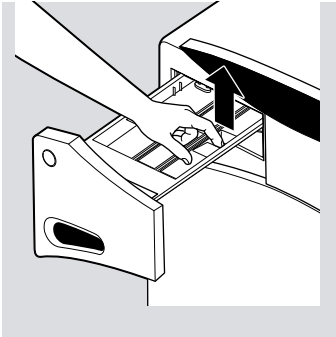
While holding down the door gasket, inspect the interior gasket by pulling it down with your fingers. Remove any foreign objects if found trapped inside this gasket. Make sure there is nothing blocking the holes behind the gasket.



## Cleaning the washer.



Lock tab is visible only after drawer has been pulled out



**Dispenser Drawer Area:** Detergent and fabric softener may build up in the dispenser drawer. Residue should be removed once or twice a month.

- Remove the drawer by first pulling it out until it stops. Then reach back into the left rear corner of the drawer cavity and press down firmly on the lock tab, pulling out the drawer.
- Remove the inserts from the bleach and fabric softener compartments and the detergent insert. Rinse the inserts and the drawer with hot water to remove traces of accumulated laundry products.
- To clean the drawer opening, use a small brush to clean the recess. Remove all residue from the upper and lower parts of the recess.
- Return inserts to the proper compartments. Replace the dispenser drawer.

# Installation Instructions

# Washer

If you have any questions, call 800.GE.CARES (800.432.2737) or visit our Website at: [GEAppliances.com](http://GEAppliances.com)

## BEFORE YOU BEGIN

Read these instructions completely and carefully.

- **IMPORTANT** – Save these instructions for local inspector's use.
- **IMPORTANT** – Observe all governing codes and ordinances.
- **Note to Installer** – Be sure to leave these instructions with the Consumer.
- **Note to Consumer** – Keep these instructions for future reference.
- **Skill level** – Installation of this appliance requires basic mechanical and electrical skills.
- **Completion time** – 1-3 hours
- Proper installation is the responsibility of the installer.
- Product failure due to improper installation is not covered under the Warranty.

## FOR YOUR SAFETY:

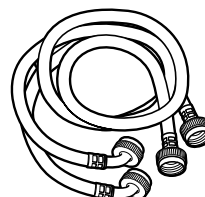
### WARNING

- This appliance must be properly grounded and installed as described in these Installation Instructions.
- Do not install or store the appliance in an area where it will be exposed to water/weather. See the Location of Your Washer section.
- **NOTE:** This appliance must be properly grounded, and electrical service to the washer must conform with local codes and ordinances and the latest edition of the National Electrical Code, ANSI/NFPA 70.

## TOOLS REQUIRED FOR WASHER INSTALLATION

- 1/4" nut driver
- 3/8" socket with ratchet
- 3/8" open-end wrench
- Adjustable wrench or 7/16" socket with ratchet
- Adjustable wrench or 9/16" open-end wrench
- Channel-lock adjustable pliers
- Carpenter's level

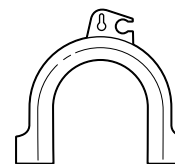
## PARTS SUPPLIED



Water Hoses (2)



Cable Tie



Hose Guide

## STACK BRACKET KIT

A stack bracket kit is available at additional cost. It can be ordered in the United States by visiting our website at [GEAppliances.com](http://GEAppliances.com) or calling 800.GE.CARES. Order kit #WE25X10018 or GEFLSTACK.

# Installation Instructions

## LOCATION OF YOUR WASHER

### Do Not Install the Washer:

1. In an area exposed to dripping water or outside weather conditions. The ambient temperature should never be below 60°F (15.6°C) for proper washer operation.
2. In an area where it will come in contact with curtains or drapes.
3. On carpet. The floor **MUST** be a hard surface with a maximum slope of 1/2" per foot (1.27 cm per 30 cm). To make sure the washer does not vibrate or move, you may have to reinforce the floor.

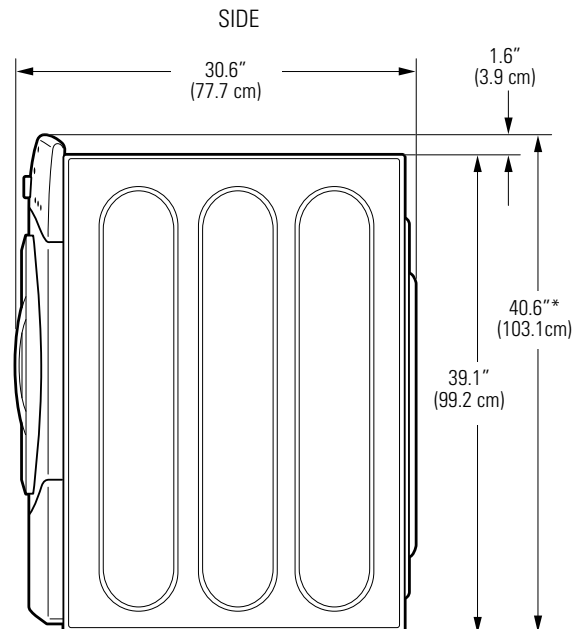
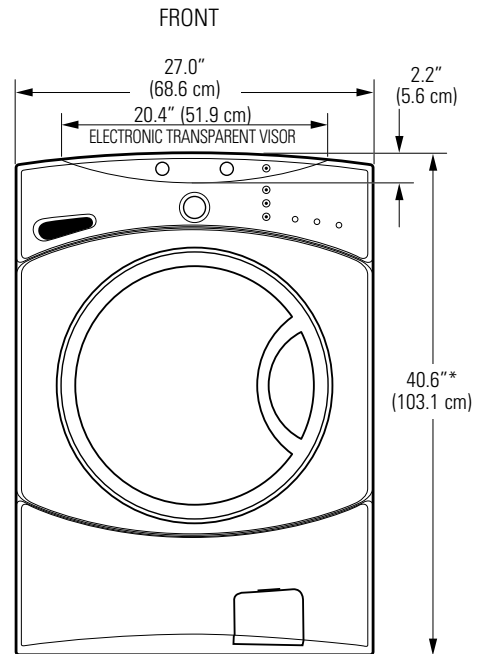
**NOTE:** If floor is in poor condition, use 3/4" impregnated plywood sheet solidly attached to the existing floor covering.

### IMPORTANT:

### Minimum Installation Clearances

- When installed in alcove: Sides, Rear, Top = 0" (0 cm)
- When installed in closet: Sides, Rear, Top = 0" (0 cm), Front = 1" (2.54 cm)
- Closet door ventilation openings required: 2 louvers each 60 square in. (387 cm), located 3" (7.6 cm) from top and bottom of door

## ROUGH-IN DIMENSIONS



\*NOTE: With pedestal, 52.6"  
Stacked, 84"

# Installation Instructions

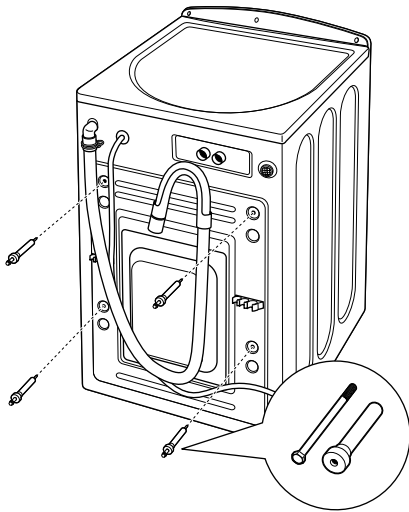
## UNPACKING THE WASHER

**⚠ WARNING:** Recycle or destroy the carton and plastic bags after the washer is unpacked. Make materials inaccessible to children. Children might use them for play. Cartons covered with rugs, bedspreads or plastic sheets can become airtight chambers causing suffocation.

1. Cut and remove the top and bottom packaging straps.
2. While it is in the carton, carefully lay the washer on its side. **DO NOT** lay the washer on its front or back.
3. Turn down the bottom flaps—remove all base packaging, including the cardboard, styrofoam base and styrofoam tub support (inserted in center of base).

**NOTE:** If you are installing a pedestal, proceed to the installation instructions that come with the pedestal.

4. Carefully return the washer to an upright position and remove the carton.
5. Carefully move the washer to within 4 feet (122 cm) of the final location.
6. Remove the following from the back side of the washer:
  - 4 bolts
  - 4 plastic spacers (including rubber grommets)
  - 4 power cord retainers



**NOTE:** Failure to remove the shipping braces can cause the washer to become severely unbalanced.

**Save all bolts for future use.**

**NOTE:** If you must transport the washer at a later date, you must reinstall the shipping support hardware to prevent shipping damage. Keep the hardware in the plastic bag provided.

**In case you misplace your shipping bolts, replacements are available at additional cost. They can be ordered in the United States by visiting our website at [GEAppliances.com](http://GEAppliances.com) or calling 800.GE.CARES. Order kit #WH49X10039.**

# Installation Instructions

## ELECTRICAL REQUIREMENTS

Read these instructions completely and carefully.

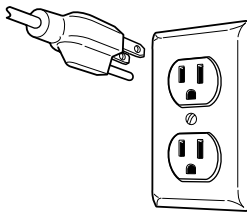
**⚠ WARNING:** TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK AND PERSONAL INJURY:  
• DO NOT USE AN EXTENSION CORD OR AN ADAPTER PLUG WITH THIS APPLIANCE.

Washer must be electrically grounded in accordance with local codes and ordinances, or in the absence of local codes, in accordance with the NATIONAL ELECTRICAL CODE, ANSI/NFPA NO. 70.

**CIRCUIT** – Individual, properly polarized and grounded 15-amp branch circuit fused with 15-amp time-delay fuse or circuit breaker.

**POWER SUPPLY** – 2-wire, with ground, 120-volt, single-phase, 60-Hz, alternating current.

**OUTLET RECEPTACLE** – Properly grounded 3-prong receptacle to be located so the power supply cord is accessible when the washer is in an installed position.



## GROUNDING REQUIREMENTS

**⚠ WARNING:** Improper connection of the equipment grounding conductor can result in a risk of electrical shock. Check with a licensed electrician if you are in doubt as to whether the appliance is properly grounded.

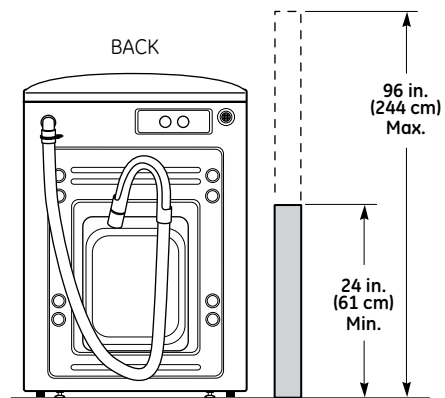
1. The washer **MUST** be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electrical shock by providing a path of least resistance for electrical current.
2. Since your washer is equipped with a power supply cord having an equipment-grounding conductor and a grounding plug, the plug **MUST** be plugged into an appropriate, copper-wired receptacle that is properly installed and grounded in accordance with all local codes and ordinances or in the absence of local codes, with the National Electrical Codes, ANSI/NFPA 70 (latest edition). If in doubt, call a licensed electrician. **DO NOT** cut off or alter the grounding prong on the power supply cord. In situations where a two-slot receptacle is present, it is the owner's responsibility to have a licensed electrician replace it with a **properly grounded** three-prong grounding-type receptacle.

## WATER SUPPLY REQUIREMENTS

Hot and cold water faucets **MUST** be installed within 42 inches (107 cm) of your washer's water inlet. The faucets **MUST** be 3/4" (1.9 cm) garden hose-type so inlet hoses can be connected. Water pressure **MUST** be between 10 and 120 pounds per square inch. Your water department can advise you of your water pressure. The hot water temperature should be set to deliver water at 120° to 140°F (48°–60°C).

## DRAIN REQUIREMENTS

1. Drain capable of eliminating 17 gals (64.3 L) per minute.
2. A standpipe diameter of 1-1/4" (3.18 cm) minimum.
3. The standpipe height above the floor should be:  
Minimum height: 24" (61 cm)  
Maximum height: 96" (244 cm)



**NOTE:** The drain hose attached to the washer can reach a 58" (147 cm) high standpipe. For a higher standpipe, contact an authorized parts distributor.

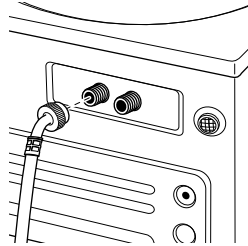
# Installation Instructions

## INSTALLING THE WASHER

1. Run some water from the hot and cold faucets to flush the water lines and remove particles that might clog up the inlet hose and water valve screens.

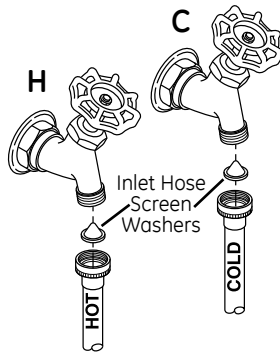
2. Remove the inlet hoses from the plastic bag.

3. (90° elbow end) Ensure there is a rubber washer in the 90° elbow end of the HOT and COLD hoses. Reinstall the rubber washer into the hose fitting if it has fallen out during shipment. Carefully connect the inlet hose marked HOT to the outside "H" outlet of the water valve.

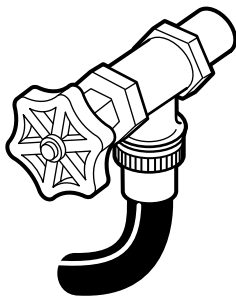


Tighten by hand, then tighten another 2/3 turn with pliers. Carefully connect the other inlet hose to the inside "C" outlet of the water valve. Tighten by hand; then tighten another 2/3 turn with pliers. **Do not crossthread or over-tighten these connections.**

4. If the inlet hose screen washers (if supplied with your model) have fallen out during shipment, reinstall the screen washers by inserting them into the free ends of the HOT and COLD inlet hoses with protruded side facing the faucet.



5. Connect the inlet hose ends to the HOT and COLD water faucets tightly by hand, then tighten another 2/3 turn with pliers. Turn the water on and check for leaks.



6. Carefully move the washer to its final location. Gently rock the washer into position. It is important not to damage the rubber leveling legs when moving your washer to its final location. Damaged legs can increase washer vibration. It may be helpful to spray window cleaner on the floor to help move your washer into its final position.

**NOTE:** To reduce vibration, ensure that all four rubber leveling legs are firmly touching the floor. Push and pull on the back right and then back left of your washer.

**NOTE:** Do not use the dispenser drawer or door to lift the washer.

**NOTE:** If you are installing into a drain pan, you can use a 24-inch long 2x4 to lever the washer into place.

7. With the washer in its final position, place a level on top of the washer (if the washer is installed under a counter,



the washer should not be able to rock). Adjust the front leveling legs up or down to ensure the washer is resting solid. Turn the lock nuts on each leg up towards the base of the washer and snug with a wrench.

**NOTE:** Keep the leg extension at a minimum to prevent excessive vibration. The farther out the legs are extended, the more the washer will vibrate.

If the floor is not level or is damaged, you may have to extend the rear leveling legs.

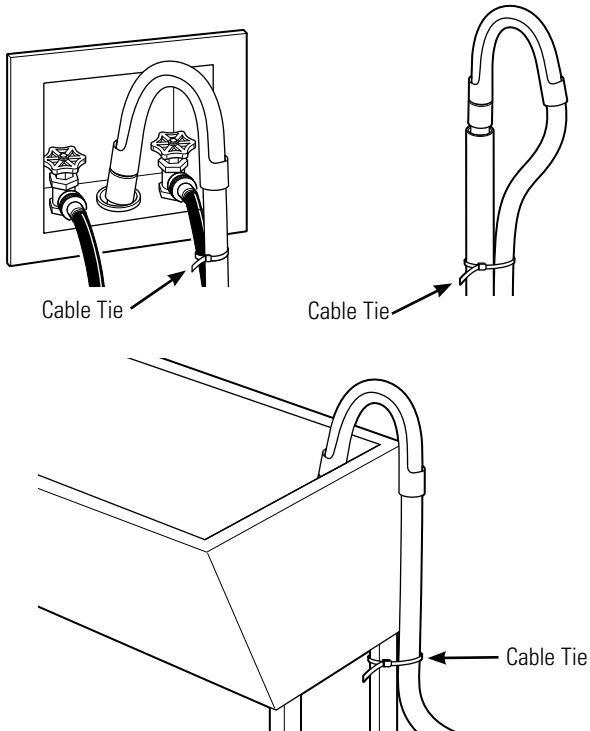


# Installation Instructions

## INSTALLING THE WASHER (cont.)

8. Attach the U-shaped hose guide to the end of the drain hose. Place the hose in a laundry tub or standpipe and secure it with the cable tie provided in the enclosure package.

**NOTE:** Placing the drain hose too far down the drain pipe can cause a siphoning action. No more than 7 inches of hose should be in the drain pipe. There must be an air gap around the drain hose. A snug fit can also cause a siphoning action.



9. Plug the power cord into a grounded outlet.

**NOTE:** Check to be sure the power is off at the circuit breaker/fuse box before plugging the power cord into an outlet.

10. Turn on the power at the circuit breaker/fuse box.

11. Read the rest of this Owner's Manual. It contains valuable and helpful information that will save you time and money.

12. Before starting the washer, check to make sure:

- Main power is turned on.
- The washer is plugged in.
- The water faucets are turned on.
- The unit is level and all four leveling legs are firmly on the floor.
- The shipping support hardware is removed and saved.
- The drain hose is properly tied up.
- There are no leaks at the faucet, drain line or washer.

13. Run the washer through a complete cycle. Check for water leaks and proper operation.

14. If your washer does not operate, please review the *Before You Call For Service* section before calling for service.

15. Place these instructions in a location near the washer for future reference.

## REPLACEMENT PARTS

If replacement parts are needed for your washer, they can be ordered in the United States by visiting our Website at [GEAppliances.com](http://GEAppliances.com) or by calling 800.GE.CARES.

# Before you call for service...



**Troubleshooting Tips**  
 Save time and money! Review the charts on the following pages first and you may not need to call for service.

Problem	Possible Cause	What To Do
<b>Not draining</b> <b>Not spinning</b> <b>Not agitating</b>	<b>Load is out of balance</b>	<ul style="list-style-type: none"> <li>• Redistribute clothes and run drain &amp; spin or rinse &amp; spin.</li> <li>• Increase load size if washing small load containing heavy and light items.</li> </ul>
	<b>Pump clogged</b>	<ul style="list-style-type: none"> <li>• See page 13 on how to clean the Pump Filter.</li> </ul>
	<b>Drain hose is kinked or improperly connected</b>	<ul style="list-style-type: none"> <li>• Straighten drain hose and make sure washer is not sitting on it.</li> </ul>
	<b>Household drain may be clogged</b>	<ul style="list-style-type: none"> <li>• Check household plumbing. You may need to call a plumber.</li> </ul>
	<b>Drain hose siphoning; drain hose pushed too far down the drain</b>	<ul style="list-style-type: none"> <li>• Ensure there is an air gap between hose and drain.</li> </ul>
<b>Leaking water</b>	<b>Door gasket is damaged</b>	<ul style="list-style-type: none"> <li>• Check to see if gasket is seated and not torn. Objects left in pockets may cause damage to the washer (nails, screws, pens, pencils).</li> </ul>
	<b>Door gasket not damaged</b>	<ul style="list-style-type: none"> <li>• Water may drip from the door when the door is opened. This is a normal operation.</li> <li>• Carefully wipe off rubber door seal. Sometimes dirt or clothing is left in this seal and can cause a small leak.</li> </ul>
	<b>Check back left of washer for water</b>	<ul style="list-style-type: none"> <li>• If this area is wet, you have oversudsing condition. Use less detergent.</li> </ul>
	<b>Fill hoses or drain hose is improperly connected</b>	<ul style="list-style-type: none"> <li>• Make sure hose connections are tight at washer and faucets and make sure end of drain hose is correctly inserted in and secured to drain facility.</li> </ul>
	<b>Household drain may be clogged</b>	<ul style="list-style-type: none"> <li>• Check household plumbing. You may need to call a plumber.</li> </ul>
	<b>Dispenser clogged</b>	<ul style="list-style-type: none"> <li>• Powder soap may cause clogs inside the dispenser and cause water to leak out the front of the dispenser. Remove drawer and clean both drawer and inside of dispenser box. Please refer to Cleaning the Washer section.</li> </ul>
	<b>Incorrect use of detergent</b> <b>Dispenser box crack</b>	<ul style="list-style-type: none"> <li>• Use HE and correct amount of detergent.</li> <li>• If new installation, check for crack on inside of dispenser box.</li> </ul>
<b>Clothes too wet</b>	<b>Load is out of balance</b>	<ul style="list-style-type: none"> <li>• Redistribute clothes and run drain &amp; spin or rinse &amp; spin.</li> <li>• Increase load size if washing small load containing heavy and light items.</li> <li>• The machine will slow the spin speed down to 410 rpm if it has a hard time balancing the load. This speed is normal.</li> </ul>
	<b>Pump clogged</b>	<ul style="list-style-type: none"> <li>• See page 13 on how to clean the Pump Filter.</li> </ul>
	<b>Overloading</b>	<ul style="list-style-type: none"> <li>• The dry weight of the load should be less than 16 lb.</li> </ul>
	<b>Drain hose is kinked or improperly connected</b>	<ul style="list-style-type: none"> <li>• Straighten drain hose and make sure washer is not sitting on it.</li> </ul>
	<b>Household drain may be clogged</b>	<ul style="list-style-type: none"> <li>• Check household plumbing. You may need to call a plumber.</li> </ul>
	<b>Drain hose siphoning; drain hose pushed too far down the drain</b>	<ul style="list-style-type: none"> <li>• Ensure there is an air gap between hose and drain.</li> </ul>

## Before you call for service...

<i>Problem</i>	<i>Possible Cause</i>	<i>What To Do</i>
<i>Incomplete cycle or timer not advancing</i>	<i>Automatic load redistribution</i>	<ul style="list-style-type: none"> <li>• Timer adds 3 minutes to cycle for each rebalance. 11 or 15 rebalances may be done. This is normal operation. Do nothing; the machine will finish the wash cycle.</li> </ul>
	<i>Pump clogged</i>	<ul style="list-style-type: none"> <li>• See page 13 on how to clean the Pump Filter.</li> </ul>
	<i>Drain hose is kinked or improperly connected</i>	<ul style="list-style-type: none"> <li>• Straighten drain hose and make sure washer is not sitting on it.</li> </ul>
	<i>Household drain may be clogged</i>	<ul style="list-style-type: none"> <li>• Check household plumbing. You may need to call a plumber.</li> </ul>
<i>Loud or unusual noise; vibration or shaking</i>	<i>Drain hose siphoning; drain hose pushed too far down the drain</i>	<ul style="list-style-type: none"> <li>• Ensure there is an air gap between hose and drain.</li> </ul>
	<i>Cabinet moving</i>	<ul style="list-style-type: none"> <li>• Washer is designed to move 1/4" to reduce forces transmitted to the floor. This movement is normal.</li> </ul>
	<i>All rubber leveling legs are not firmly touching the floor</i>	<ul style="list-style-type: none"> <li>• Push and pull on the back right and then back left of your washer to check if it is level. If the washer is uneven, adjust the rubber leveling legs so they are all firmly touching the floor and locked in place. Your installer should correct this problem.</li> </ul>
	<i>Unbalanced load</i>	<ul style="list-style-type: none"> <li>• Open door and manually redistribute load. To check machine, run rinse and spin with no load. If normal, unbalance was caused by load.</li> </ul>
<i>No power/washer not working or dead</i>	<i>Pump clogged</i>	<ul style="list-style-type: none"> <li>• See page 13 on how to clean the Pump Filter.</li> </ul>
	<i>Washer is unplugged</i>	<ul style="list-style-type: none"> <li>• Make sure cord is plugged securely into a working outlet.</li> </ul>
	<i>Water supply is turned off</i>	<ul style="list-style-type: none"> <li>• Turn both hot and cold faucets fully on.</li> </ul>
	<i>Circuit breaker/fuse is tripped/blown</i>	<ul style="list-style-type: none"> <li>• Check house circuit breakers/fuses. Replace fuses or reset breaker. Washer should have separate outlet.</li> </ul>
<i>Snags, holes, tears, rips or excessive wear</i>	<i>Automatic self system checks</i>	<ul style="list-style-type: none"> <li>• First time the washer is plugged in, automatic checks occur. It may take up to 20 seconds before you can use your washer. This is normal operation.</li> </ul>
	<i>Overloaded</i>	<ul style="list-style-type: none"> <li>• Do not exceed maximum recommended load sizes. See recommended maximum load sizes on page 11.</li> </ul>
	<i>Pens, pencils, nails, screws or other objects left in pockets</i>	<ul style="list-style-type: none"> <li>• Remove loose items from pockets.</li> </ul>
<i>Pins, snaps, hooks, sharp buttons, belt buckles, zippers and sharp objects left in pockets</i>		<ul style="list-style-type: none"> <li>• Fasten snaps, hooks, buttons and zippers.</li> </ul>
	<i>Control time wrong or changes</i>	<ul style="list-style-type: none"> <li>• During spin the washer may need to rebalance the load sometimes to reduce vibrations. When this happens, the estimated time is increased causing time left to increase or jump.</li> </ul>
<i>Not enough water</i>	<i>This is normal</i>	<ul style="list-style-type: none"> <li>• Horizontal washers do not require the tub to fill with water like top-load washers.</li> </ul>
<i>Washer pauses or has to be restarted, or washer door is locked and will not open</i>	<i>Pump clogged</i>	<ul style="list-style-type: none"> <li>• See page 13 on how to clean the Pump Filter.</li> </ul>
<i>Door unlocks or press START and machine doesn't operate</i>	<i>This is normal</i>	<ul style="list-style-type: none"> <li>• Front-load washers start up differently than top-load washers, and it takes 30 seconds to check the system. The door will lock and unlock.</li> </ul>
	<i>Incorrect operation</i>	<ul style="list-style-type: none"> <li>• Simply open and close the door firmly; then press <b>START</b>.</li> </ul>

<i>Problem</i>	<i>Possible Cause</i>	<i>What To Do</i>
<i>Water does not enter washer or enters slowly</i>	<i>Automatic self system checks</i>	<ul style="list-style-type: none"> <li>After <b>START</b> is pressed, the washer does several system checks. Water will flow 60 seconds after <b>START</b> is pressed.</li> </ul>
	<i>Water supply is turned off</i>	<ul style="list-style-type: none"> <li>Turn on both hot and cold faucets fully.</li> </ul>
	<i>Water valve screens are stopped up</i>	<ul style="list-style-type: none"> <li>Turn off the water source and remove the water connection hoses from the upper back of the washer. Use a brush or toothpick to clean the screens in the machine. Reconnect the hoses and turn the water back on.</li> </ul>
<i>Wrinkling</i>	<i>Improper sorting</i>	<ul style="list-style-type: none"> <li>Avoid mixing heavy items (like work clothes) with light items (like blouses).</li> </ul>
	<i>Overloading</i>	<ul style="list-style-type: none"> <li>Load your washer so clothes have enough room to move freely.</li> </ul>
	<i>Incorrect wash cycle</i>	<ul style="list-style-type: none"> <li>Match cycle selection to the type of fabric you are washing (especially for easy care loads).</li> </ul>
	<i>Repeated washing in water that is too hot</i>	<ul style="list-style-type: none"> <li>Wash in warm or cold water.</li> </ul>
<i>Grayed or yellowed clothes</i>	<i>Not enough detergent</i>	<ul style="list-style-type: none"> <li>Use correct amount of detergent.</li> </ul>
	<i>Not using HE (high-efficiency) detergent</i>	<ul style="list-style-type: none"> <li>Use HE detergent.</li> </ul>
	<i>Hard water</i>	<ul style="list-style-type: none"> <li>Use hottest water safe for fabric.</li> <li>Use a water conditioner like Calgon brand or install a water softener.</li> </ul>
	<i>Water is not hot enough</i>	<ul style="list-style-type: none"> <li>Make sure water heater is delivering water at 120°-140°F (48°-60°C).</li> </ul>
	<i>Detergent is not dissolving</i>	<ul style="list-style-type: none"> <li>Try a liquid detergent.</li> </ul>
	<i>Dye transfer</i>	<ul style="list-style-type: none"> <li>Sort clothes by color. If fabric label states wash separately, unstable dyes may be indicated.</li> </ul>
<i>Colored spots</i>	<i>Incorrect use of fabric softener</i>	<ul style="list-style-type: none"> <li>Check fabric softener package for instructions and follow directions for using dispenser.</li> </ul>
	<i>Dye transfer</i>	<ul style="list-style-type: none"> <li>Sort whites or lightly colored items from dark colors.</li> <li>Promptly remove wash load from washer.</li> </ul>
<i>Water temperature is incorrect</i>	<i>Water supply is improperly connected</i>	<ul style="list-style-type: none"> <li>Make sure hoses are connected to correct faucets.</li> </ul>
	<i>House water heater is not set properly</i>	<ul style="list-style-type: none"> <li>Make sure house water heater is delivering water at 120°-140°F (48°-60°C).</li> </ul>
<i>Slight variation in metallic color</i>	<i>This is normal</i>	<ul style="list-style-type: none"> <li>Due to the metallic properties of paint used for this unique product, slight variations of color may occur due to viewing angles and lighting conditions.</li> </ul>
<i>Bad odor inside your washer</i>	<i>Washer unused for a long time, not using recommended quality of HE detergent or used too much detergent</i>	<ul style="list-style-type: none"> <li>Run a <b>BasketClean</b> cycle.</li> <li>In the case of strong odor, you may need to run the <b>BasketClean</b> cycle more than once.</li> <li>Use only the amount of detergent recommended on the detergent container.</li> <li>Use only HE (high-efficiency) detergent.</li> <li>Always remove wet items from the washer promptly after machine stops running.</li> <li>Leave the door slightly open for the water to air dry. Close supervision is necessary if this appliance is used by or near children. Do not allow children to play on, with or inside this or any other appliance.</li> </ul>

Safety Instructions

Operating Instructions

Installation Instructions

Troubleshooting Tips

Consumer Support

## Before you call for service...

<i>Problem</i>	<i>Possible Cause</i>	<i>What To Do</i>
<i>Detergent leak</i>	<i>Incorrect placement of detergent insert</i>	<ul style="list-style-type: none"> <li>• Make sure detergent insert is properly located and fully seated. Never put detergent above max line.</li> </ul>
	<i>This is normal</i>	<ul style="list-style-type: none"> <li>• It is normal operation to see detergent leak on door gasket about 20 seconds after filling the dispenser.</li> </ul>
<i>Improper dispensing of softener or bleach</i>	<i>Dispenser clogged</i>	<ul style="list-style-type: none"> <li>• Monthly clean the dispenser drawer to remove buildup of chemicals.</li> </ul>
	<i>Softener or bleach is filled above the max line</i>	<ul style="list-style-type: none"> <li>• Make sure to have the correct amount of softener or bleach.</li> </ul>
	<i>Softener or bleach cap issue</i>	<ul style="list-style-type: none"> <li>• Make sure softener and bleach cap for dispenser are seated or they will not work.</li> </ul>

# GE Washer Warranty.



All warranty service provided by our Factory Service Centers, or an authorized Customer Care® technician. To schedule service, visit us on-line at [GEAppliances.com](http://GEAppliances.com), or call 800.GE.CARES (800.432.2737). Please have serial number and model number available when calling for service.

Staple your receipt here.  
Proof of the original purchase date is needed to obtain service under the warranty.

## For The Period Of: We Will Replace:

### One Year

From the date of the original purchase

**Any part** of the washer which fails due to a defect in materials or workmanship. During this **limited one-year warranty**, GE will also provide, **free of charge**, all labor and related service costs to replace the defective part.

## What Is Not Covered (in the United States):

- Service trips to your home to teach you how to use the product.
- Improper installation, delivery or maintenance.
- Failure of the product if it is abused, misused, or used for other than the intended purpose or used commercially.
- Damage after delivery.
- Replacement of house fuses or resetting of circuit breakers.
- Damage to the product caused by accident, fire, floods or acts of God.
- Incidental or consequential damage caused by possible defects with this appliance.
- Product not accessible to provide required service.

**EXCLUSION OF IMPLIED WARRANTIES**—Your sole and exclusive remedy is product repair as provided in this Limited Warranty. Any implied warranties, including the implied warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law.

This warranty is extended to the original purchaser and any succeeding owner for products purchased for home use within the USA. If the product is located in an area where service by a GE Authorized Servicer is not available, you may be responsible for a trip charge or you may be required to bring the product to an Authorized GE Service location for service. In Alaska, the warranty excludes the cost of shipping or service calls to your home.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.

**Warrantor: General Electric Company. Louisville, KY 40225**

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## Consumer Support.

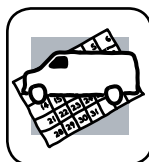
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### GE Appliances Website

**GEAppliances.com**

Have a question or need assistance with your appliance? Try the GE Appliances Website, 24 hours a day, any day of the year! For greater convenience and faster service, you can now download Owner's Manuals, order parts or even schedule service on-line.



### Schedule Service

**GEAppliances.com**

Expert GE repair service is only one step away from your door. Get on-line and schedule your service at your convenience any day of the year! Or call 800.GE.CARES (800.432.2737) during normal business hours.



### Real Life Design Studio

**GEAppliances.com**

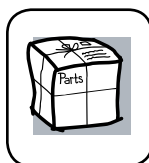
GE supports the Universal Design concept—products, services and environments that can be used by people of all ages, sizes and capabilities. We recognize the need to design for a wide range of physical and mental abilities and impairments. For details of GE's Universal Design applications, including kitchen design ideas for people with disabilities, check out our Website today. For the hearing impaired, please call 800.TDD.GEAC (800.833.4322).



### Extended Warranties

**GEAppliances.com**

Purchase a GE extended warranty and learn about special discounts that are available while your warranty is still in effect. You can purchase it on-line anytime, or call 800.626.2224 during normal business hours. GE Consumer Home Services will still be there after your warranty expires.

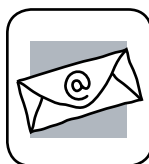


### Parts and Accessories

**GEAppliances.com**

Individuals qualified to service their own appliances can have parts or accessories sent directly to their homes (VISA, MasterCard and Discover cards are accepted). Order on-line today, 24 hours every day or by phone at 800.626.2002 during normal business hours.

**Instructions contained in this manual cover procedures to be performed by any user. Other servicing generally should be referred to qualified service personnel. Caution must be exercised, since improper servicing may cause unsafe operation.**



### Contact Us

**GEAppliances.com**

If you are not satisfied with the service you receive from GE, contact us on our Website with all the details including your phone number, or write to:

General Manager, Customer Relations  
GE Appliances, Appliance Park  
Louisville, KY 40225



### Register Your Appliance

**GEAppliances.com**

**Register your new appliance on-line—at your convenience!** Timely product registration will allow for enhanced communication and prompt service under the terms of your warranty, should the need arise. You may also mail in the pre-printed registration card included in the packing material.



# Dryers

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**Owner's Manual**

DBVH520  
DCVH640  
DCVH680  
DHDVH68  
GFDN100  
GFDN110

**Write the model and serial numbers here:**

**Model #** \_\_\_\_\_

**Serial #** \_\_\_\_\_

They are on the label on the front of the dryer behind the door.



## IMPORTANT SAFETY INFORMATION. READ ALL INSTRUCTIONS BEFORE USING.

### **⚠ WARNING!**

*For your safety, the information in this manual must be followed to minimize the risk of fire or explosion, electric shock, or to prevent property damage, personal injury, or death.*

- *Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.*
- *Installation and service must be performed by a qualified installer, service agency or the gas supplier.*

### **WHAT TO DO IF YOU SMELL GAS:**

- 1 *Do not try to light a match, or cigarette, or turn on any gas or electrical appliance.*
- 2 *Do not touch any electrical switch; do not use any phone in your building.*
- 3 *Clear the room, building or area of all occupants.*
- 4 *Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions carefully.*
- 5 *If you cannot reach your gas supplier, call the fire department.*

#### *California Safe Drinking Water and Toxic Enforcement Act*

This act requires the governor of California to publish a list of substances known to the state to cause cancer, birth defects or other reproductive harm and requires businesses to warn customers of potential exposure to such substances.

Gas appliances can cause minor exposure to four of these substances, namely benzene, carbon monoxide, formaldehyde and soot, caused primarily by the incomplete combustion of natural gas or LP fuels.

Properly adjusted dryers will minimize incomplete combustion. Exposure to these substances can be minimized further by properly venting the dryer to the outdoors.



## PROPER INSTALLATION

This dryer must be properly installed and located in accordance with the Installation Instructions before it is used. If you did not receive an Installation Instructions sheet, you can receive one by visiting [GEAppliances.com](http://GEAppliances.com), or by calling **800.GE.CARES** (800.432.2737).

- Properly ground dryer to conform with all governing codes and ordinances. Follow details in Installation Instructions.
- Install or store where it will not be exposed to temperatures below freezing or exposed to the weather.
- Connect to a properly rated, protected and sized power supply circuit to avoid electrical overload.
- Remove the colored protective film from both the control panel and the door.
- Remove all sharp packing items and dispose of all shipping materials properly.
- Do not remove the vent protector from the back of the dryer (on some models).
- Pull the protector out and down to its lowest position and connect the exhaust duct to the dryer. The lowered protector will prevent the duct from getting crushed (on some models).

### Exhaust/Ducting:

- 1 Dryers **MUST** be exhausted to the outside to prevent large amounts of moisture and lint from being blown into the room.
- 2 Use only rigid metal or flexible metal 4" diameter ductwork inside the dryer cabinet or for exhausting to the outside. **USE OF PLASTIC OR OTHER COMBUSTIBLE DUCTWORK CAN CAUSE A FIRE. PUNCTURED DUCTWORK CAN CAUSE A FIRE IF IT COLLAPSES OR BECOMES OTHERWISE RESTRICTED IN USE OR DURING INSTALLATION.**

For complete details, follow the Installation Instructions.

## IMPORTANT SAFETY INFORMATION. READ ALL INSTRUCTIONS BEFORE USING.

### ⚠ WARNING!



#### YOUR LAUNDRY AREA

- Keep the area underneath and around your appliances free of combustible materials (lint, paper, rags, etc.), gasoline, chemicals and other flammable vapors and liquids.
- Keep the floor around your appliances clean and dry to reduce the possibility of slipping.
- Close supervision is necessary if this appliance is used by or near children. Do not allow children to play on, with or inside this or any other appliance.
- Keep all laundry aids (such as detergents, bleaches, etc.) out of the reach of children, preferably in a locked cabinet. Observe all warnings on container labels to avoid injury.
- Never climb on or stand on the dryer top.



#### WHEN USING YOUR DRYER

- Never reach into the dryer while the drum is moving. Before loading, unloading or adding clothes, wait until the drum has completely stopped.
- Clean the lint filter before each load to prevent lint accumulation inside the dryer or in the room.  
**DO NOT OPERATE THE DRYER WITHOUT THE LINT FILTER IN PLACE.**
- Do not wash or dry articles that have been cleaned in, washed in, soaked in or spotted with combustible or explosive substances (such as wax, oil, paint, gasoline, degreasers, dry-cleaning solvents, kerosene, etc.) which may ignite or explode. Do not add these substances to the wash water. Do not use or place these substances around your washer or dryer during operation.
- Do not place items exposed to cooking oils in your dryer. Items contaminated with cooking oils may contribute to a chemical reaction that could cause a clothes load to catch fire.
- Any article on which you have used a cleaning solvent or that contains flammable materials (such as cleaning cloths, mops, towels used in beauty salons, restaurants or barber shops, etc.) must not be placed in or near the dryer until solvents or flammable materials have been removed. There are many highly flammable items used in homes such as acetone, denatured alcohol, gasoline, kerosene, some household cleaners, some spot removers, turpentine, waxes, wax removers and products containing petroleum distillates.
- The laundry process can reduce the flame retardancy of fabrics. To avoid such a result, carefully follow the garment manufacturer's care instructions.
- Do not dry articles containing rubber, plastic, foam or similar materials such as padded bras, tennis shoes, galoshes, bath mats, rugs, bibs, baby pants, plastic bags, pillows, etc., that may melt or burn. Some rubber materials, when heated, can under certain circumstances produce fire by spontaneous combustion.
- Do not store plastic, paper or clothing that may burn or melt on top of the dryer during operation.
- Garments labeled *Dry Away from Heat* or *Do Not Tumble Dry* (such as life jackets containing kapok) must not be put in your dryer.
- Do not dry fiberglass articles in your dryer. Skin irritation could result from the remaining particles that may be picked up by clothing during subsequent dryer uses.
- To minimize the possibility of electric shock, unplug this appliance from the power supply or disconnect the dryer at the building's distribution panel by removing the fuse or switching off the circuit breaker before attempting any maintenance or cleaning (except the removal and cleaning of the lint filter). **NOTE:** Pressing **START**, **STOP** or **POWER** does **NOT** disconnect the appliance from the power supply.



## WHEN USING YOUR DRYER (cont.)

- Never attempt to operate this appliance if it is damaged, malfunctioning, partially disassembled, or has missing or broken parts, including a damaged cord or plug.
- The interior of the machine and the exhaust duct connection inside the dryer should be cleaned at least once a year by a qualified technician. See the *Loading and Using the Dryer* section.
- If yours is a gas dryer, it is equipped with an automatic electric ignition and does not have a pilot light. **DO NOT ATTEMPT TO LIGHT WITH A MATCH.** Burns may result from having your hand in the vicinity of the burner when the automatic ignition turns on.
- You may wish to soften your laundered fabrics or reduce the static electricity in them by using a dryer-applied fabric softener or an anti-static conditioner. We recommend you use either a fabric softener in the wash cycle, according to the manufacturer's instructions for those products, or try a dryer-added product for which the manufacturer gives written assurance on the package that their product can be safely used in your dryer. Service or performance problems caused by use of these products are the responsibility of the manufacturers of those products and are not covered under the warranty to this appliance.



## WHEN NOT USING YOUR DRYER

- Grasp the plug firmly when disconnecting this appliance to avoid damage to the cord while pulling. Place the cord away from traffic areas so it will not be stepped on, tripped over or subjected to damage.
- Do not attempt to repair or replace any part of this appliance or attempt any servicing unless specifically recommended in this Owner's Manual or in published user-repair instructions that you understand and have the skills to carry out.
- Before discarding a dryer, or removing it from service, remove the dryer door to prevent children from hiding inside.
- Do not tamper with controls.

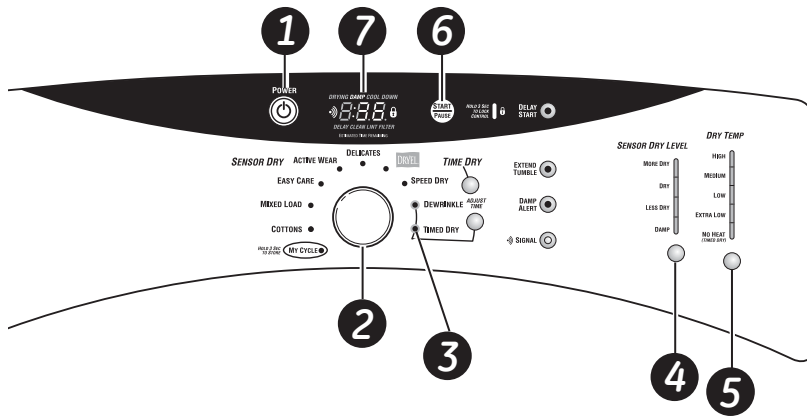


**READ AND FOLLOW THIS SAFETY INFORMATION CAREFULLY.  
SAVE THESE INSTRUCTIONS**

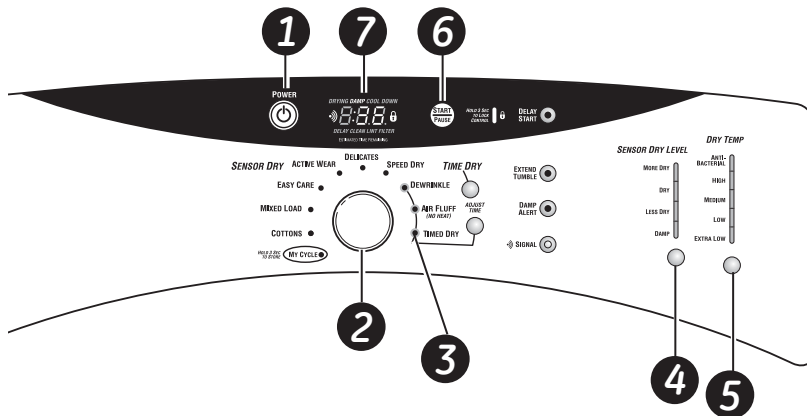
# About the dryer control panel.

You can locate your model number at the top inside of the door opening.

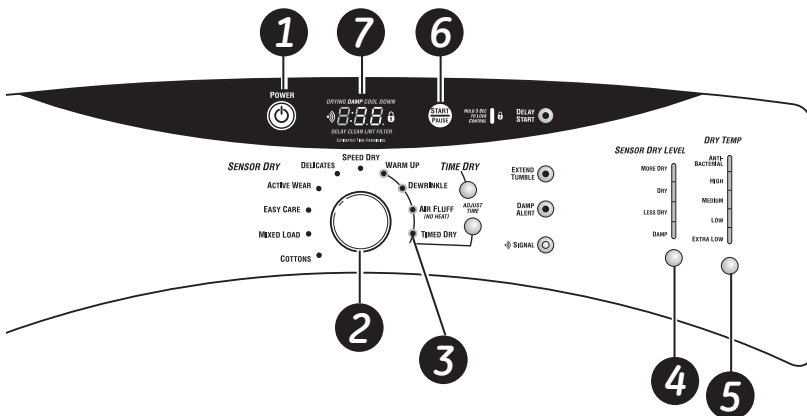
### Model DHDVH68



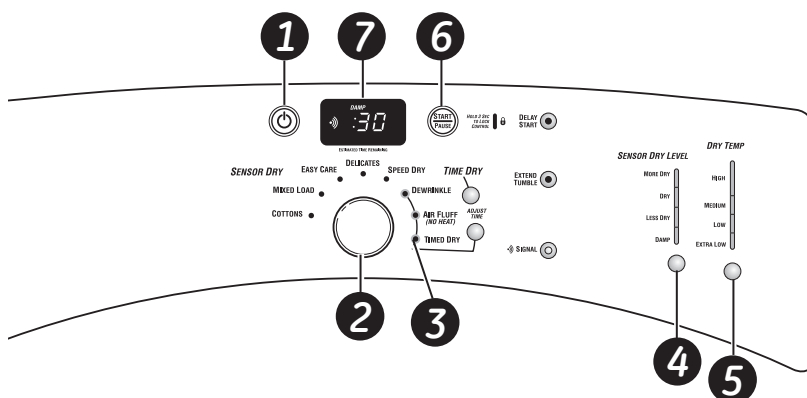
### Model DCVH680



### Model DCVH640



### Model DBVH520

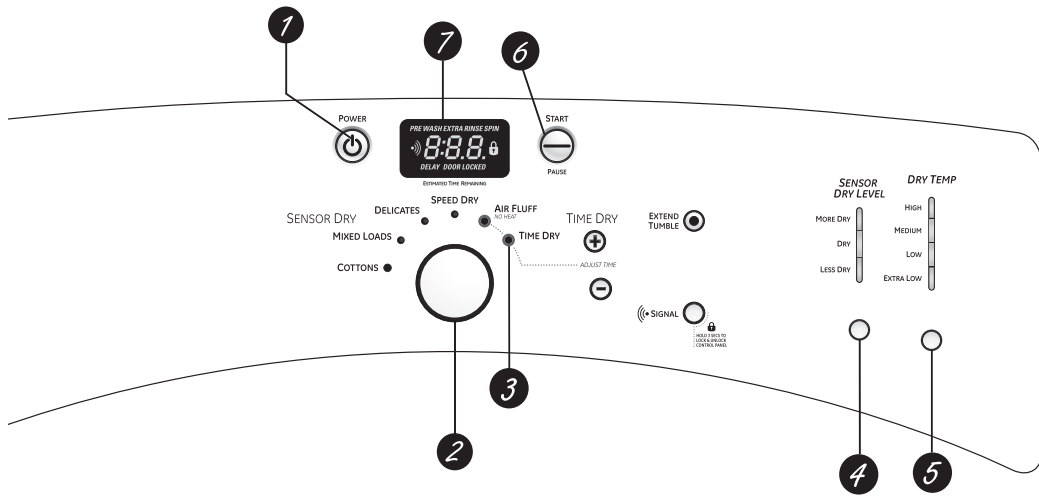


NSF Protocol P154  
Sanitization Performance of  
Residential Clothes Dryers



NSF Protocol P154  
Sanitization Performance of  
Residential Clothes Dryers

Model GFDN100 / GFDN110



- 1 **Power**  
Press to “wake up” the display. If the display is active, press to put the dryer in the standby mode.

**NOTE:** Pressing **POWER** does not disconnect the appliance from the power supply.

- 2 **Dry Cycles**  
The dry cycle controls the length and tumble speed of the drying process. The chart below will help you match the dry setting with the loads.

**Sensor Cycles**

<b>COTTONS</b>	For cottons and most linens.
<b>MIXED LOAD</b>	For loads consisting of cottons and poly-blends.
<b>EASY CARE</b> <i>(on some models)</i>	For wrinkle-free and permanent press items.
<b>ACTIVE WEAR</b> <i>(on some models)</i>	Clothing worn for active sports exercise and some casual wear. Fabrics include new technology finishes and stretch fibers such as Spandex.
<b>DELICATES</b>	For lingerie and special-care fabrics.
<b>DRYEL™</b>	Designed for use with the DRYEL™ “dry clean only” fabric care system. See product package for directions. For questions or issues related to use and performance of DRYEL™, see the Website at: <a href="http://www.dryel.com">www.dryel.com</a> .
<b>SPEED DRY</b>	For small loads that are needed in a hurry, such as sports or school uniforms. Can also be used if the previous cycle left some items damp, such as collars or waistbands.

**Timed Dry Cycles**

<b>DEWRINKLE</b> <i>(on some models)</i>	For removing wrinkles from items that are dry or slightly damp. This cycle is not recommended for delicate fabrics.
<b>WARM UP</b>	Provides 10 minutes of warming time to warm up clothes.
<b>AIR FLUFF</b>	Use this feature to tumble items without heat.

**My Cycle** *(on some models)*

<b>MY CYCLE</b>	Press to use, create or modify custom dry cycles.
-----------------	---

- 3 **Timed Dry**  
Use to set your own dry time. **TIMED DRY** is also recommended for small loads.

**To use TIMED DRY:**

1. Turn dry cycle dial to **TIMED DRY**.
2. Select the drying time by pressing the + and – buttons.
3. Select the **DRY TEMP**.
4. Close the door.
5. Press **START**.

- 4 **Sensor Dry Level**  
The sensor continuously monitors the amount of moisture in the load. When the moisture in your clothes reaches your selected dry level, the dryer will stop.

<b>MORE DRY</b>	Use for heavy or mixed type of fabrics.
<b>DRY</b>	Use for normal dryness level suitable for most loads. This is the preferred cycle for energy saving.
<b>LESS DRY</b>	Use for lighter fabric (ideal for ironing).
<b>DAMP</b> <i>(on some models)</i>	For leaving items partially damp.

## About the dryer control panel.

### 5 Dry Temp

You can change the temperature of your dry cycle.

**ANTI-BACTERIAL** (on some models) This option may only be used with **COTTONS** or **MIXED LOAD** cycles. This option reduces certain types of bacteria by 99.9%, including: *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*\*. The anti-bacterial process occurs when high heat is used during a portion of this drying cycle.

**NOTE:** Do not use this cycle on delicate fabrics.

\* The Anti-Bacterial Cycle is Certified by NSF International (formerly National Sanitation Foundation) to NSF Protocol P154 Sanitization Performance of Residential Clothes Dryers.



NSF Protocol P154  
Sanitization Performance of  
Residential Clothes Dryers

<b>HIGH</b>	For regular to heavy cottons.
<b>MEDIUM</b>	For synthetics, blends and items labeled permanent press.
<b>LOW</b>	For delicates, synthetics and items labeled <i>Tumble Dry Low</i> .
<b>EXTRA LOW</b>	For lingerie and special-care fabrics.
<b>NO HEAT</b> (on some models)	Can only be used with <b>TIMED DRY</b> .


### 6 START

Press to start a dry cycle. If the dryer is running, press it once and it will pause the dryer. Press it again to restart the dry cycle.

#### **My Cycle** (on some models)

Set up your favorite combination of settings and save them here for one touch recall. These custom settings can be set while a cycle is in progress.

#### **To store a MY CYCLE combination of settings:**

1. Select your drying cycle.
2. Change **DRY TEMP** and **SENSOR DRY LEVEL** settings to fit your needs.
3. Select any drying **OPTIONS** you want.
4. Press and hold the  pad for three seconds to store your selection. A beep will sound and the pad will light up.

#### **To recall your stored MY CYCLE combination:**

Press the **MY CYCLE** button before drying a load.

#### **To change your stored MY CYCLE combination:**

Follow steps 1-4 in "**To store a MY CYCLE combination of settings**".

### 7 "CLEAN LINT FILTER" (message)

(This message represents only a reminder.)

After the **POWER** button is pressed, the "**CLEAN LINT FILTER**" message could appear if the previous cycle was not finished.

This message will disappear after the **START** button is pressed. Even though you have already cleaned the filter (before or after the **POWER** button has been pressed), the "**CLEAN LINT FILTER**" message will still be displayed until the **START** button is activated.



# About cycle options.

**NOTE:** Not all features are available on all dryer models.

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EXTEND  
TUMBLE



## Extend Tumble

Minimizes wrinkles by adding approximately 60 minutes of no-heat tumbling after clothes are dry. The beeper will sound every 2 minutes to remind you to remove the clothes. The **ESTIMATED TIME REMAINING** display will show **00**.

DAMP  
ALERT



## Damp Alert (on some models)

This option causes the dryer to beep when clothes have dried to a damp level. Remove items that you wish to hang dry. The **DAMP ALERT** will only beep when this option is selected.

Removing clothes and hanging them when they are damp can reduce the need to iron some items.

SIGNAL



## Signal

Alerts you that the cycle is complete. The beeper will continue to sound every two minutes for the next 6 minutes, until the clothes have been removed. The clothes should be removed when the beeper goes off so wrinkles don't set in.

Press **SIGNAL** to select low, medium or high volume, or to turn the beeper off.

DELAY  
START



## Delay Start (on some models)

Use to delay the start of your dryer.

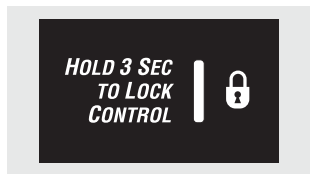
1. Choose your dry cycle and any options.
2. Press **DELAY START**. You can change the delay time in 1 hour increments using the + or - arrow pads.
3. Press the **START** pad to start the countdown.

The countdown time will be shown in the **ESTIMATED TIME REMAINING** display.

### NOTES:

- If the door is opened while the dryer is in **DELAY**, the countdown time will not restart unless the door is closed and **START** has been pressed again.
- You can delay the start of a dry cycle up to 18 hours for models DCVH640, DCVH680, DHDVH68 and up to 10 hours for model DBVH520.

## About cycle options. *NOTE: Not all features are available on all dryer models.*



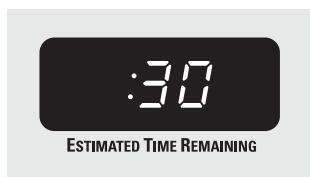
### Lock

You can lock the controls to prevent any selections from being made. Or you can lock the controls after you have started a cycle.

*Children cannot accidentally start the dryer by touching pads with this option selected.*

To lock the dryer, press and hold the lock icon for 3 seconds. To unlock the dryer, press and hold the lock icon for 3 seconds.

The icon of the lock next to the timer will light up when the controls are locked.

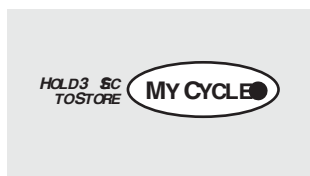


### Estimated Time Remaining

Displays the approximate time remaining until the end of the cycle.

As the cycle begins, you will see an initial approximate total cycle time in the display. Then lights will "race" in the display. This means the dryer is continuously monitoring

the amount of moisture in the load. The lights will continue until the dryer senses a low level of moisture in the load. At that point, the dryer will calculate and display the approximate time remaining.



### My Cycle *(on some models)*

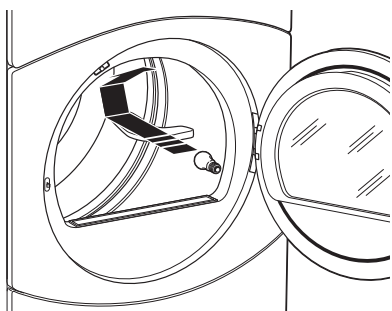
To save a favorite cycle, set the desired settings and hold down the **MY CYCLE** button for 3 seconds. A beep will sound to indicate the cycle has been saved.

To use your custom cycle, press the **MY CYCLE** button before drying a load.

To change the saved cycle, set the desired settings and hold down the **MY CYCLE** button for 3 seconds.

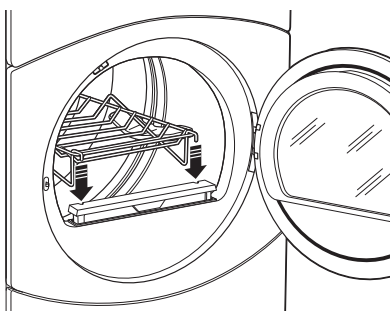
See page 8 for more details.

## About dryer features.



### Drum Lamp

Before replacing the light bulb, be sure to unplug the dryer power cord or disconnect the dryer at the household distribution panel by removing the fuse or switching off the circuit breaker. Reach above dryer opening from inside the drum. Remove the bulb and replace with the same size bulb.



### Drying Rack *(on some models)*

A handy drying rack may be used for drying delicate items such as washable sweaters. Place items flat on the drying rack and block such items as wool sweaters and delicate fabrics. Dry with low heat.

To install the drying rack, pull up the lint filter slightly. Insert the drying rack into the slots, then push the filter back down.

#### NOTE:

- The drying rack must be used with the **TIMED DRY** or **RACK DRY** *(on some models)* cycles.
- Do not use this drying rack when there are other clothes in the dryer.

# Reversing the door swing.

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## IMPORTANT NOTES:

- Read the instructions all the way through before starting.
- Handle parts carefully to avoid scratching paint.
- Set screws down by their related parts to avoid using them in the wrong places.
- Provide a non-scratching work surface for the doors.
- Normal completion time to reverse the door swing is 30–60 minutes.

**IMPORTANT:** Once you begin, do not move the cabinet until door-swing reversal is completed.

These instructions are for changing the hinges from the right side to the left side—if you ever want to switch them back to the right side, follow these same instructions and reverse all references to the left and right.

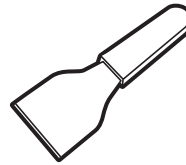
## TOOLS YOU WILL NEED



Adjustable Crescent Wrench

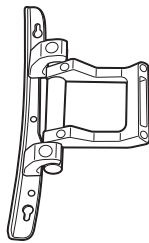


Phillips Head Screwdriver



Putty Knife or  
Thin-Blade  
Screwdriver

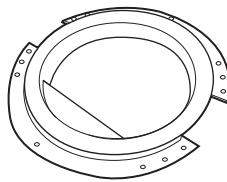
## DOOR PARTS



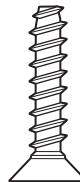
Hinge Assembly



Hinge  
Cover



Plastic Cover



Large Tapping  
Screw (#10) – 6



Tapping Screw (#8) – 2



Machine Screw (#8) – 6

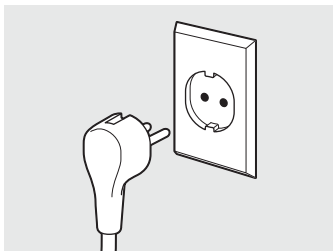


Nut (#8) – 2



Washer – 2

## STEP-BY-STEP INSTRUCTIONS



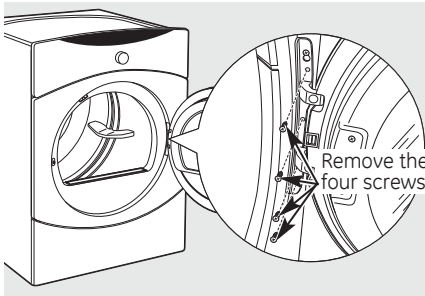
### Before You Start

1. Unplug the dryer from its electrical outlet.

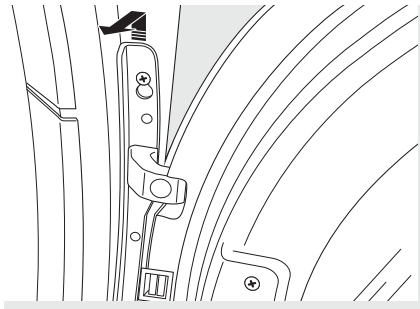
# Reversing the door swing.

## STEP-BY-STEP INSTRUCTIONS (cont.)

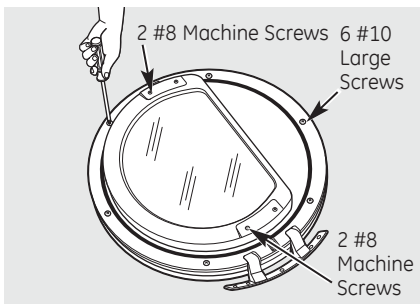
### Remove Door Assembly



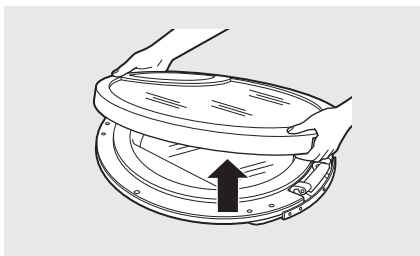
2. Open the door to approximately 90 degrees. Remove the 4 screws starting from the bottom to the top. Make sure the door is supported while removing the screws.



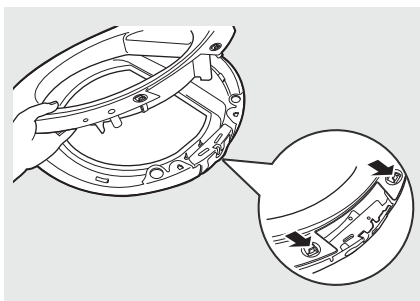
3. Loosen the top screw as shown. Unhook the door by lifting and pulling as shown by the arrows.
4. Lay the door down on a soft protected flat surface so that the inner part faces upward (door resting on the handle side).



5. Remove the 6 large tapping screws (#10) located around the perimeter of the door outlining the gasket, and the 2 machine screws (#8) on the hinge side.



6. With the screws removed, turn the door over and separate the silver cover part of the door from the door frame and set aside.



7. Unlock the 4 tabs on the plastic cover and separate the plastic cover from the frame.

**NOTE:** Disregard the "DO NOT REMOVE" label on the plastic cover.

## STEP-BY-STEP INSTRUCTIONS (cont.)

Safety Instructions

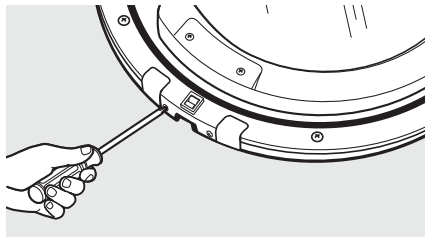
Operating Instructions

Troubleshooting Tips

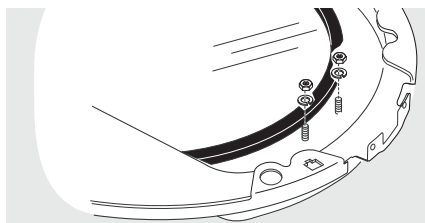
Consumer Support

### Remove Hinge

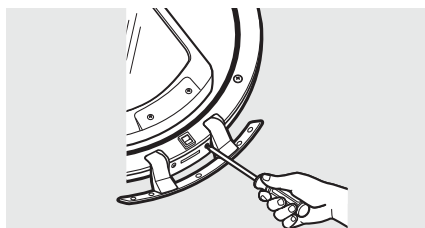
**IMPORTANT:** Note the location of the hinge (left or right) before removing.



8. With the door frame part of the door laid down on a protected soft surface, remove the hinge cover by removing the 2 tapping screws (#8) that fasten it to the frame. The hinge cover is located at the opposite side of the hinge assembly.

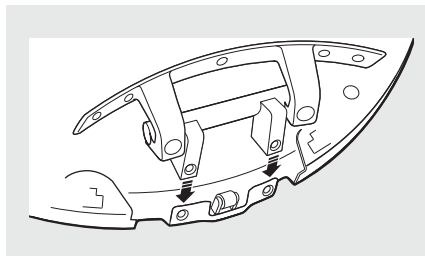


9. Remove the 2 nuts, washers and the 2 machine screws (#8).

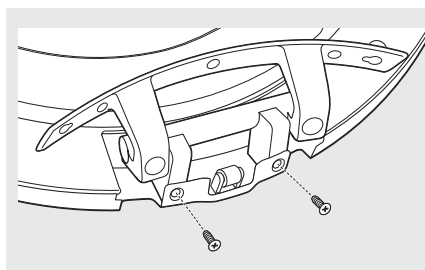


10. Remove the hinge assembly by removing the 2 machine screws (#8) that fasten it to the frame. Pull the hinge assembly out and set it aside.

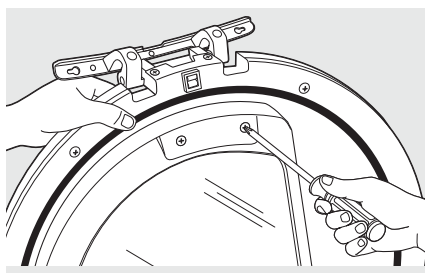
### Reinstall Hinge Assembly



11. Place the hinge assembly in the opposite side of the door. Align the hinge holes with the door holes.



12. Loosely fasten the hinge assembly to the edge using 2 machine screws (#8).

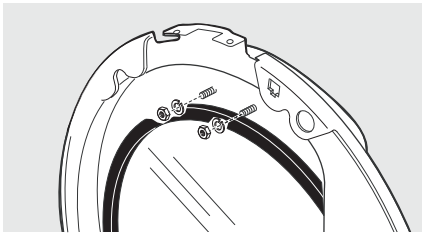


13. Hold the door on its side with one hand and fasten the remaining 2 screws as shown. Then tighten the 2 screws (#8) holding the hinge assembly.

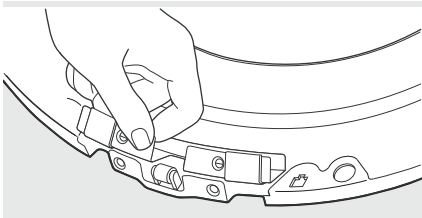
# Reversing the door swing.

## STEP-BY-STEP INSTRUCTIONS (cont.)

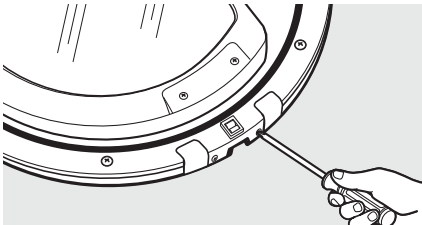
### Reinstall Nuts and Hinge Cover



14. Place the door on its edge. Assemble the 2 machine screws (#8), washers and nuts. Tighten using a wrench and screwdriver.



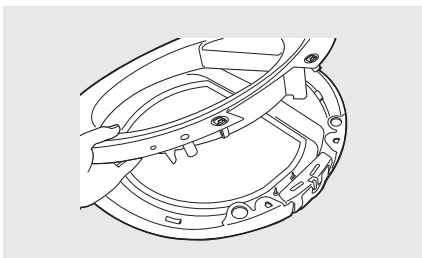
15. Place the hinge cover in position. Align the hinge cover holes with the holes in the door.



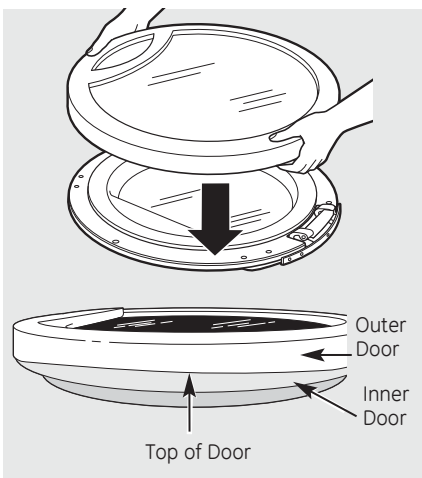
16. Secure the hinge cover with the 2 tapping screws (#8).

### Reassemble Door Assembly

**IMPORTANT:** Make sure there is no dirt or any other foreign material in between the window panes.



17. Place the plastic cover onto the inner door and lock in place with the 4 tabs.



18. Place the outer door onto the inner door.

## STEP-BY-STEP INSTRUCTIONS (cont.)

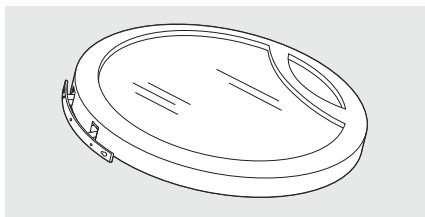
Safety Instructions

Operating Instructions

Troubleshooting Tips

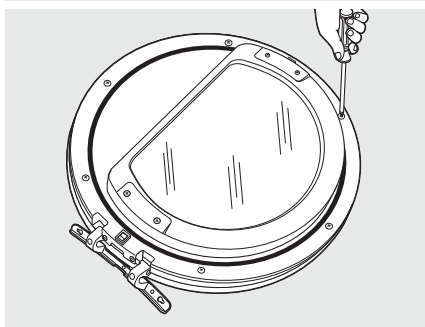
Consumer Support

### Reassemble Door Assembly (cont.)



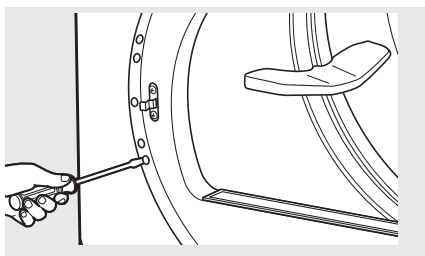
19. After reversing door, there will be a mismatch between the outer door and the inner door.

Make sure that the handle part of the outer door is opposite the hinge, as shown.

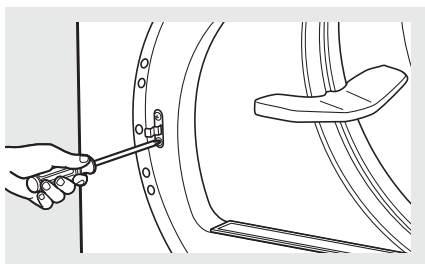


20. Turn the door over and fasten the outer door to the inner door using the 6 large tapping screws (#10).

### Move Strike Bracket

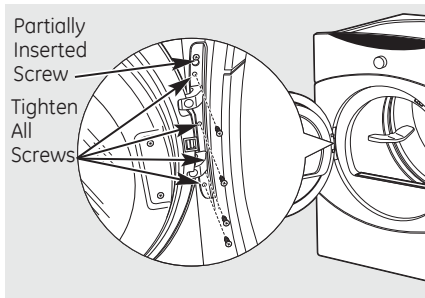


21. Using a putty knife or any other flat tool, remove the 5 plastic screw caps located on the dryer where the door will be installed and install them on the opposite side.



22. Switch the strike bracket and its cover on the opposite side by removing the screws; then reinstall both on the opposite side.

### Reinstall Door Assembly



23. The door is now ready to be installed on the dryer. To ease this step, the hinge has keyholes that allow a partially fastened screw to be used as a hook.

Partially fasten a screw to the uppermost screw hole. Hook the door on the partially fastened screw.

Fasten the hinge by installing the other 4 screws and tightening the partially fastened screw above.

# Loading and using the dryer.

Always follow the fabric manufacturer's care label when laundering.



## Fabric Care Labels

Below are fabric care label "symbols" that affect the clothing you will be laundering.

### WASH LABELS

<b>Machine wash cycle</b>						
	Normal	Permanent Press/wrinkle resistant	Gentle/delicate	Hand wash	Do not wash	Do not wring
<b>Front load target water temperature</b>	<b>Category</b>	<b>Target Water Temperature</b>		<b>Automatic Temperature Control</b>		
	Tap Cold	Inlet Water Temperature		Not used		
	Cold	27°C/80°F		Used		
	Warm	40°C/105°F		Used		
	Hot	50°C/120°F		Used		
	Sanitize	70°C/160°F		Used		

### DRY LABELS

<b>Tumble dry</b>								
	Dry	Normal	Permanent Press/wrinkle resistant	Gentle/delicate	Do not tumble dry	Do not dry (used with do not wash)		
	<b>Heat setting</b>							
		High	Medium	Low	No heat/air			
		<b>Special instructions</b>						
			Line dry/hang to dry	Drip dry	Dry flat	In the shade		

### BLEACH LABELS

<b>Bleach symbols</b>			
	Any bleach (when needed)	Only non-chlorine bleach (when needed)	Do not bleach



## Sorting and Loading Hints

As a general rule, if clothes are sorted properly for the washer, they are sorted properly for the dryer. Try also to sort items according to size. For example, do not dry a sheet with socks or other small items.

Do not add fabric softener sheets once the load has become warm. They may cause fabric softener stains. Bounce® Fabric Conditioner Dryer Sheets have been approved for use in all GE Dryers when used in accordance with the manufacturer's instructions.

**Do not overload.** This wastes energy and causes wrinkling.

**Do not dry the following items:** fiberglass items, woolens, rubber-coated items, plastics, items with plastic trim and foam-filled items.



Always follow the fabric manufacturer's care label when laundering.

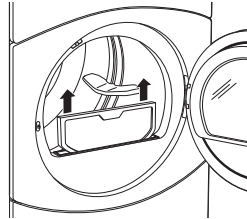


## Care and Cleaning of the Dryer

**The Exterior:** Wipe or dust any spills or washing compounds with a damp cloth. Dryer control panel and finishes may be damaged by some laundry pretreatment soil and stain remover products. Apply these products away from the dryer. The fabric may then be washed and dried normally. Damage to your dryer caused by these products is not covered by your warranty.

**The Lint Filter:** Clean the lint filter before each use.

Pull out the lint filter. Moisten your fingers and remove the captured lint. Once clean, slide the filter back into position. Have a qualified technician vacuum the lint from the dryer once a year.



**NEVER OPERATE THE DRYER WITHOUT ITS FILTER IN PLACE.**

**The Exhaust Duct:** Inspect and clean the exhaust ducting at least once a year to prevent clogging. A partially clogged exhaust can lengthen the drying time.

Follow these steps:

- 1 Turn off electrical supply by disconnecting the plug from the wall socket.
- 2 Disconnect the duct from the dryer.
- 3 Vacuum the duct with the hose attachment and reconnect the duct.

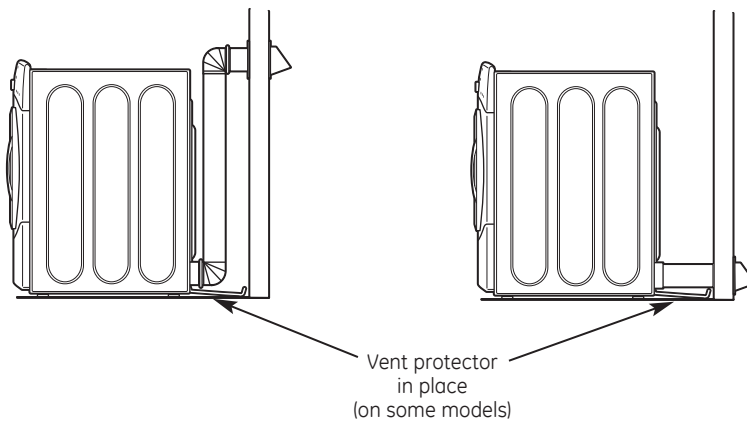
**The Exhaust Hood:** Check with a mirror that the inside flaps of the hood move freely when operating. Make sure that there is no wildlife (birds, insects, etc.) nesting inside the duct or hood.

## Venting the dryer.

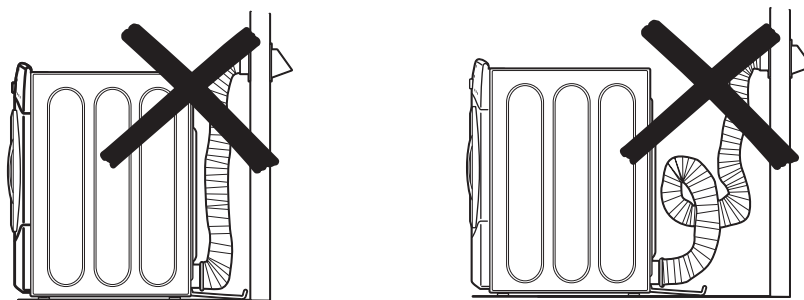
For the best drying performance, the dryer needs to be properly vented. **The dryer will use more energy and run longer if it is not vented to the below specifications. Carefully follow the details on Exhausting in the Installation Instructions.**

- Use only rigid metal 4" diameter ductwork inside the dryer cabinet and for exhausting to the outside.
- Do not use plastic or other combustible ductwork.
- Use the shortest length possible.
- Do not crush, kink or collapse the duct.
- Avoid resting the duct on sharp objects.
- **Venting must conform to local building codes.**
- Do not remove the vent protector from the back of the dryer (on some models).
- Flip the protector down to its lowest position and connect the exhaust duct to the dryer. The lowered protector will prevent the duct from getting crushed (on some models).

**Correct Venting**



**Incorrect Venting**



## BEFORE YOU BEGIN

Read these instructions completely and carefully.

- **IMPORTANT:** Save these instructions for local electrical inspector's use.
- **IMPORTANT:** Observe all governing codes and ordinances.
- **Note to Installer** – Be sure to leave these instructions with the Consumer.
- **Note to Consumer** – Keep these instructions for future reference.
- Installation **must** be performed by a qualified installer.
- Proper installation is the responsibility of the installer.

## FOR YOUR SAFETY

### **⚠ WARNING!**

- Electric Shock Hazard. Disconnect power before installing. Failure to do so could result in serious injury or death.
- **Potential Personal Injury. More than two people are recommended to lift the dryer into position because of its weight and size. Failure to do so could result in personal injury or death.**
- Avoid Tipping and Rupture of Utility Services. Dryer must be securely attached to the washer. DO NOT place the washer on top of the dryer. Failure to do so could result in personal injury/death or property damage.
- Mobile Home or Manufactured Home Installation – Stacking of a gas dryer is not permitted in a mobile home or manufactured home.

## MINIMUM CLEARANCE OTHER THAN ALCOVE OR CLOSET INSTALLATION

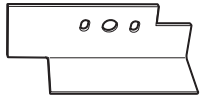
Minimum clearance to combustible surfaces and for air opening are: 0" both sides and 1" rear. Consideration must be given to provide adequate clearance for installation and service.

## ALCOVE OR CLOSET INSTALLATION

- If your dryer is approved for installation in an alcove or closet, it will be stated on a label on the dryer back.
- The dryer **MUST** be vented to the outdoors. Refer to dryer Installation Instructions for details.
- Minimum clearance between dryer cabinet and adjacent walls or other surfaces is:  
0" either side  
3" front and rear
- Minimum vertical space from floor to overhead cabinets, ceiling, etc. is 43" without pedestal, 55" with pedestal and 84" stacked.
- Closet doors must be louvered or otherwise ventilated and must contain a minimum of 60 square inches of open area equally distributed. If the closet contains both a washer and a dryer, doors must contain a minimum of 120 square inches of open area equally distributed.

# Stacking.

## KIT CONTENTS



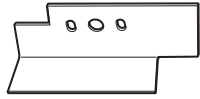
Right Hand Bracket



4 Rubber Pads



4 #12 x 1" Screws



Left Hand Bracket

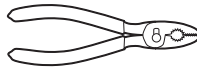


4 #8 x 1/2" Screws

## TOOLS YOU WILL NEED



Phillips Screwdriver



Pliers



Gloves



Open-Ended Wrench



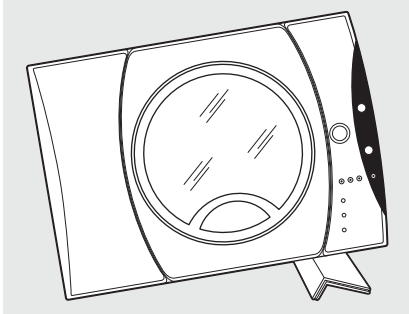
Level

## INSTALLATION PREPARATION

Remove the packaging.

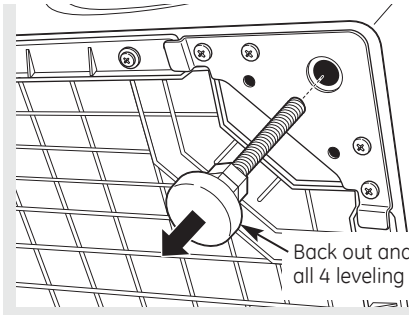
Flatten the product carton to use as a pad to lay the dryer down on its side. Continue using the carton to protect the finished floor in front of the installation location.

## INSTALLING THE STACK BRACKET KIT

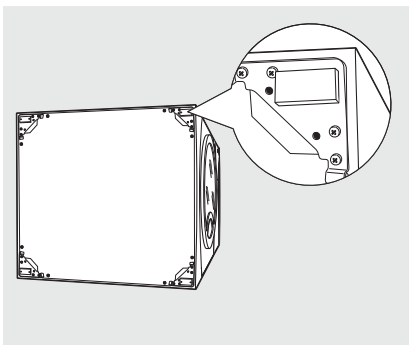


### 1. Remove the Dryer Leveling Legs

- A. Carefully lay the dryer on its side. Use the packing material so you don't scratch the finish on the dryer.
- B. Use an open-end wrench or pliers to remove the dryer leveling legs.

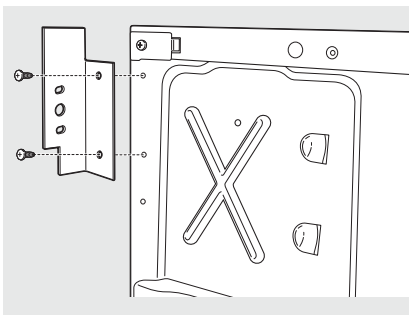


Back out and remove all 4 leveling legs



### 2. Install Rubber Pads to Dryer Base

Locate the 4 rubber pads in the parts package. Remove the adhesive backing and firmly place over on the bracket where you removed the leveling legs.



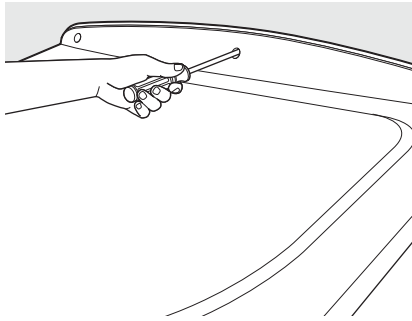
### 3. Install Bracket to Dryer

- A. Align the holes in the left bracket with the holes in the bottom left corner of the dryer. Use a Phillips screwdriver to install the 2 #12 x 1" tapping screws.
- B. Repeat the above step with the right bracket on the bottom right corner of the dryer.
- C. Set the dryer upright.

**NOTE:** Make sure to set the dryer on a piece of packing material so the brackets that are attached to the bottom of the dryer do not damage the floor.

## Stacking.

### INSTALLING THE STACK BRACKET KIT (cont.)

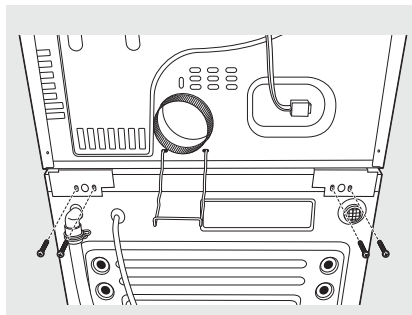


#### 4. Prepare the Washer and Dryer

- A. Place the washer in the approximate location.
- B. Make sure the washer is level. Refer to washer Installation Instructions for details.
- C. Remove the back portion of the control panel by removing the 3 screws.

- D. Reverse dryer door swing if desired. See dryer Installation Instructions for details.

**NOTE:** The washer door swing is not reversible.

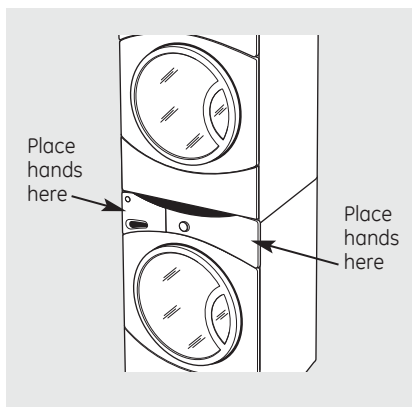


#### 5. Install Dryer and Bracket on Washer

- A. Lift the dryer on top of the washer. Be careful not to scratch the top of the washer with the brackets. Protect the washer control panel with cardboard or other protection. Be sure to lift the dryer high enough to clear the washer control panel.
- B. Align the holes in the bracket with the holes in the back of the washer. Using a Phillips screwdriver, attach the 2 #8 x 1/2" tapping screws. Repeat on both sides of the washer.

### **! WARNING!**

**Potential Personal Injury. More than two people are recommended to lift the dryer into position because of its weight and size. Failure to do so could result in personal injury or death.**



#### 6. Finalize the Installation

- A. Refer to the washer Installation Instructions to complete the washer installation.
- B. Refer to the dryer Installation Instructions to complete the dryer installation.
- C. Carefully slide or walk the stacked washer and dryer into place. Use felt pads or other sliding device to assist moving and to protect flooring.

### **! WARNING!**

**Potential Personal Injury. Do not push on the dryer once installed to top of the washer. Pushing on the dryer may result in pinched fingers.**

## Before you call for service...

GEAppliances.com



### Troubleshooting Tips

Save time and money! Review the charts on the following pages, or visit [GEAppliances.com](http://GEAppliances.com). You may not need to call for service.

PROBLEM	Possible Causes	What To Do
Dryer shakes or makes noise	Some shaking/noise is normal. Dryer may be sitting unevenly	<ul style="list-style-type: none"> <li>Move dryer to an even floor space, or adjust leveling legs as necessary until even.</li> </ul>
Clothes take too long to dry	Improper or obstructed ducting	<ul style="list-style-type: none"> <li>Check the Installation Instructions to make sure the dryer venting is correct.</li> <li>Make sure ducting is clean, free of kinks and unobstructed.</li> <li>Check to see if outside wall damper operates easily.</li> </ul>
	Improper sorting	<ul style="list-style-type: none"> <li>Separate heavy items from lightweight items (generally, a well-sorted washer load is a well-sorted dryer load).</li> </ul>
	Large loads of heavy fabrics (like beach towels)	<ul style="list-style-type: none"> <li>Large, heavy fabrics contain more moisture and take longer to dry. Separate large, heavy fabrics into smaller loads to speed drying time.</li> </ul>
	Controls improperly set	<ul style="list-style-type: none"> <li>Match control settings to the load you are drying.</li> </ul>
	Lint filter is full	<ul style="list-style-type: none"> <li>Clean lint filter before every load.</li> </ul>
	Blown fuses or tripped circuit breaker	<ul style="list-style-type: none"> <li>Replace fuses or reset circuit breakers. Since most dryers use 2 fuses/breakers, make sure both are operating.</li> </ul>
	Overloading/combining loads	<ul style="list-style-type: none"> <li>Do not put more than one washer load in the dryer at a time.</li> </ul>
The DRY dryness level was chosen but load is still damp	Underloading	<ul style="list-style-type: none"> <li>If you are drying only one or two items, add a few items to ensure proper tumbling.</li> </ul>
	Load consists of a mixture of heavy and light fabrics	<ul style="list-style-type: none"> <li>When combining heavy and light fabrics in a load, choose <b>MORE DRY</b>.</li> </ul>
Control pads not responding	Exhaust system is blocked	<ul style="list-style-type: none"> <li>Inspect and clean exhaust system.</li> </ul>
	Controls accidentally put in service mode	<ul style="list-style-type: none"> <li>Press <b>STOP</b>.</li> </ul>
	Controls accidentally put in lock mode	<ul style="list-style-type: none"> <li>Hold the <b>LOCK</b> button for 3 seconds to unlock the dryer.</li> </ul>
Dryer doesn't start	Controls performed an incorrect operation	<ul style="list-style-type: none"> <li>Reset the in-house breaker.</li> </ul>
	Control panel is "asleep"	<ul style="list-style-type: none"> <li>This is normal. Press <b>POWER</b> to activate the control panel.</li> </ul>
	Dryer is unplugged	<ul style="list-style-type: none"> <li>Make sure the dryer plug is pushed completely into the outlet.</li> </ul>
	Fuse is blown/circuit breaker is tripped	<ul style="list-style-type: none"> <li>Check the building's fuse/circuit breaker box and replace fuse or reset breaker. <b>NOTE:</b> Electric dryers use two fuses or breakers.</li> </ul>
No numbers displayed during cycle, only lights	Dryer was accidentally paused when starting Delay Start	<ul style="list-style-type: none"> <li>If the light on the <b>DELAY START</b> pad is flashing, the dryer is paused. Press <b>START</b> to restart the countdown.</li> </ul>
	Dryer is continuously monitoring the amount of moisture in the clothes	<ul style="list-style-type: none"> <li>This is normal. When the dryer senses a low level of moisture in the load, the dryer will display the dry time remaining.</li> </ul>

## Before you call for service...

PROBLEM	Possible Causes	What To Do
Time Remaining jumped to a lower number	The estimated time may change when a smaller load than usual is drying	<ul style="list-style-type: none"> <li>This is normal.</li> </ul>
Cannot make a selection and the dryer beeps twice	The <b>DRYNESS LEVEL</b> , <b>TEMP</b> or <b>OPTION</b> that you are trying to select is incompatible with the chosen dry cycle	<ul style="list-style-type: none"> <li>This is normal.</li> </ul>
Dryer is running but 00 is displayed in Time Remaining	The <b>EXTEND TUMBLE</b> option was chosen	<ul style="list-style-type: none"> <li>This is normal. During extended tumbling, the time remaining is not displayed. The extended tumbling option lasts approximately 20 minutes.</li> </ul>
Clean Lint Filter (message)	<b>POWER</b> button was activated	<ul style="list-style-type: none"> <li>Press <b>START</b> to begin a dry cycle and the message will disappear.</li> </ul>
Dryer doesn't heat	Fuse is blown/circuit breaker is tripped; the dryer may tumble but not heat	<ul style="list-style-type: none"> <li>Check the building's fuse/circuit breaker box and replace both fuses or reset both breakers. Your dryer may tumble if only one fuse is blown or one breaker tripped.</li> </ul>
	Gas service is off	<ul style="list-style-type: none"> <li>Make sure gas shutoff at dryer and main shutoff are fully open.</li> </ul>
	LP gas supply tank is empty or there has been a utility interruption of natural gas (gas models)	<ul style="list-style-type: none"> <li>Refill or replace tank. Dryer should heat when utility service is restored.</li> </ul>
Inconsistent drying times	Type of heat	<ul style="list-style-type: none"> <li>Drying time will vary according to the type of heat used. If you recently changed from an electric to a gas (natural or LP) dryer, or vice versa, the drying time could be different.</li> </ul>
	Type of load and drying conditions	<ul style="list-style-type: none"> <li>The load size, types of fabric, wetness of clothes and the length and condition of the exhaust system will affect drying times.</li> </ul>
Glow at the rear of the drum	Heaters behind the drum	<ul style="list-style-type: none"> <li>This is normal. Under certain drying conditions and room ambient lighting, the glow of the heaters may be visible at the rear of the drum.</li> </ul>
Clothes are still wet and dryer shut off after a short time	The door was opened mid-cycle. The load was then removed from the dryer and a new load put in without selecting a new cycle	<ul style="list-style-type: none"> <li>A dry cycle must be reselected each time a new load is put in.</li> </ul>
	Small load	<ul style="list-style-type: none"> <li>When drying 3 items or less, choose <b>SPEED DRY</b> or <b>TIMED DRY</b>.</li> </ul>
	Load was already dry except for collars and waistbands	<ul style="list-style-type: none"> <li>Choose <b>SPEED DRY</b> or <b>TIMED DRY</b> to dry damp collars and waistbands. In the future, when drying a load with collars and waistbands, choose <b>MORE DRY</b>.</li> </ul>
	Dryer is not level	<ul style="list-style-type: none"> <li>Move dryer to an even floor space or adjust leveling legs as necessary until even.</li> </ul>
Clothes are wrinkled	Overdrying	<ul style="list-style-type: none"> <li>Select a shorter drying time.</li> <li>Remove items while they still hold a slight amount of moisture. Select a <b>LESS DRY</b> or <b>DAMP</b> setting.</li> </ul>
	Letting items sit in dryer after cycle ends	<ul style="list-style-type: none"> <li>Remove items when cycle ends and fold or hang immediately, or use the <b>EXTEND TUMBLE</b> option.</li> </ul>
	Overloading	<ul style="list-style-type: none"> <li>Separate large loads into smaller ones.</li> </ul>



Safety Instructions

Operating Instructions

Troubleshooting Tips

Consumer Support

<b>PROBLEM</b>	<b>Possible Causes</b>	<b>What To Do.</b>
<i>Clothes shrink</i>	Some fabrics will naturally shrink when washed. Others can be safely washed, but will shrink in the dryer	<ul style="list-style-type: none"> <li>To avoid shrinkage, follow garment care labels exactly.</li> <li>Some items may be pressed back into shape after drying.</li> <li>If you are concerned about shrinkage in a particular item, do not machine wash or tumble dry it.</li> </ul>
<i>Greasy spots on clothes</i>	Improper use of fabric softener	<ul style="list-style-type: none"> <li>Follow directions on fabric softener package.</li> </ul>
	Drying dirty items with clean ones	<ul style="list-style-type: none"> <li>Use your dryer to dry only clean items. Dirty items can stain clean items and the dryer.</li> </ul>
	Clothes were not completely clean	<ul style="list-style-type: none"> <li>Sometimes stains which cannot be seen when the clothes are wet <i>appear</i> after drying. Use proper washing procedures before drying.</li> </ul>
<i>Lint on clothes</i>	Lint filter is full	<ul style="list-style-type: none"> <li>Clean lint screen before each load.</li> </ul>
	Improper sorting	<ul style="list-style-type: none"> <li>Sort lint producers (like chenille) from lint collectors (like corduroy).</li> </ul>
	Static electricity can attract lint	<ul style="list-style-type: none"> <li>See suggestions in this section under <b>STATIC</b>.</li> </ul>
	Overloading	<ul style="list-style-type: none"> <li>Separate large loads into smaller ones.</li> </ul>
	Paper, tissue, etc., left in pockets	<ul style="list-style-type: none"> <li>Empty all pockets before laundering clothes.</li> </ul>
<i>Static occurs</i>	No fabric softener was used	<ul style="list-style-type: none"> <li>Try a fabric softener.</li> <li>Bounce® Fabric Conditioner Dryer Sheets have been approved for use in all GE Dryers when used in accordance with the manufacturer's instructions.</li> </ul>
	Overdrying	<ul style="list-style-type: none"> <li>Try a fabric softener.</li> <li>Adjust setting to <b>LESS DRY</b> or <b>DAMP</b>.</li> </ul>
	Synthetics, permanent press and blends can cause static	<ul style="list-style-type: none"> <li>Try a fabric softener.</li> </ul>
<i>Collars and waistbands still wet at end of cycle</i>	The dryness monitor senses that the body of the clothes is dry	<ul style="list-style-type: none"> <li>Choose <b>SPEED DRY</b> or <b>TIMED DRY</b> to dry damp collars and waistbands. In the future, when drying a load with collars and waistbands, choose <b>MORE DRY</b>.</li> </ul>

# GE Dryer Warranty.



All warranty service provided by our Factory Service Centers, or an authorized Customer Care® technician. To schedule service, on-line, visit us at [GEAppliances.com](http://GEAppliances.com), or call 800.GE.CARES (800.432.2737).

Please have serial number and model number available when calling for service.

Staple your receipt here.  
Proof of the original purchase date is needed to obtain service under the warranty.

## For The Period Of: We Will Replace:

### One Year

From the date of the original purchase

**Any part** of the dryer which fails due to a defect in materials or workmanship. During this **limited one-year warranty**, GE will also provide, **free of charge**, all labor and related service costs to replace the defective part.

## What Is Not Covered:

- Service trips to your home to teach you how to use the product.
- Improper installation, delivery or maintenance.
- Failure of the product if it is abused, misused or used for other than the intended purpose or used commercially.
- Replacement of house fuses or resetting of circuit breakers.
- Damage to the product caused by accident, fire, floods or acts of God.
- Incidental or consequential damage caused by possible defects with this appliance.
- Damage caused after delivery.
- Product not accessible to provide required service.

**EXCLUSION OF IMPLIED WARRANTIES—Your sole and exclusive remedy is product repair as provided in this Limited Warranty. Any implied warranties, including the implied warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law.**

This warranty is extended to the original purchaser and any succeeding owner for products purchased for home use within the USA. If the product is located in an area where service by a GE Authorized Servicer is not available, you may be responsible for a trip charge or you may be required to bring the product to an Authorized GE Service location for service. In Alaska, the warranty excludes the cost of shipping or service calls to your home.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.

Warrantor: General Electric Company. Louisville, KY 40225

## Consumer Support.

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### GE Appliances Website

**GEAppliances.com**

Have a question or need assistance with your appliance? Try the GE Appliances Website, any day of the year! For greater convenience and faster service, you can now download Owner's Manuals, order parts or even schedule service on-line.



### Schedule Service

**GEAppliances.com**

Expert GE repair service is only one step away from your door. Get on-line and schedule your service at your convenience any day of the year! Or call 800.GE.CARES (800.432.2737) during normal business hours.



### Real Life Design Studio

**GEAppliances.com**

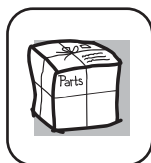
GE supports the Universal Design concept—products, services and environments that can be used by people of all ages, sizes and capabilities. We recognize the need to design for a wide range of physical and mental abilities and impairments. For details of GE's Universal Design applications, including kitchen design ideas for people with disabilities, check out our Website today. For the hearing impaired, please call 800.TDD.GEAC (800.833.4322).



### Extended Warranties

**GEAppliances.com**

Purchase a GE extended warranty and learn about special discounts that are available while your warranty is still in effect. You can purchase it on-line anytime, or call 800.626.2224 during normal business hours. GE Consumer Home Services will still be there after your warranty expires.



### Parts and Accessories

**GEAppliances.com**

Individuals qualified to service their own appliances can have parts or accessories sent directly to their homes (VISA, MasterCard and Discover cards are accepted). Order on-line today, 24 hours every day or by phone at 800.626.2002 during normal business hours.

**Instructions contained in this manual cover procedures to be performed by any user. Other servicing generally should be referred to qualified service personnel. Caution must be exercised, since improper servicing may cause unsafe operation.**



### Contact Us

**GEAppliances.com**

If you are not satisfied with the service you receive from GE, contact us on our Website with all the details including your phone number, or write to:

General Manager, Customer Relations  
GE Appliances, Appliance Park  
Louisville, KY 40225



### Register Your Appliance

**GEAppliances.com**

**Register your new appliance on-line—at your convenience!** Timely product registration will allow for enhanced communication and prompt service under the terms of your warranty, should the need arise. You may also mail in the pre-printed registration card included in the packing material.



# TOP-MOUNT REFRIGERATOR

## Use & Care Guide

For questions about features, operation/performance, parts or service, call: **1-800-253-1301**.

In Canada, call for assistance **1-800-807-6777**,

or visit our website at...

[www.whirlpool.com](http://www.whirlpool.com) or [www.whirlpool.ca](http://www.whirlpool.ca)

# REFRIGERADOR CON MONTAJE SUPERIOR

## Manual de Uso y Cuidado

Para consultas respecto a características, operación/desempeño, partes, accesorios o servicio, llame al: **1-800-253-1301**.

En Canadá, llame al: **1-800-807-6777**

o visite nuestra página de internet..

[www.whirlpool.com](http://www.whirlpool.com) or [www.whirlpool.ca](http://www.whirlpool.ca)

# RÉFRIGÉRATEUR SUPERPOSÉ

## Guide d'utilisation et d'entretien

Au Canada, pour assistance, composez le **1-800-807-6777**.

ou visitez notre site web à

[www.whirlpool.ca](http://www.whirlpool.ca)

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# REFRIGERATOR SAFETY

## Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word “DANGER” or “WARNING.”

These words mean:

**⚠ DANGER**

You can be killed or seriously injured if you don't immediately follow instructions.

**⚠ WARNING**

You can be killed or seriously injured if you don't follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

## IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** To reduce the risk of fire, electric shock, or injury to persons when using the refrigerator, follow basic precautions, including the following:

- Plug into a grounded 3 prong outlet.
- Do not remove ground prong.
- Do not use an adapter.
- Do not use an extension cord.
- Disconnect power before servicing.
- Replace all parts and panels before operating.
- Remove doors from your old refrigerator.
- Use nonflammable cleaner.
- Keep flammable materials and vapors, such as gasoline, away from refrigerator.
- Use two or more people to move and install refrigerator.
- Disconnect power before installing ice maker (on ice maker kit ready models only).

## SAVE THESE INSTRUCTIONS

## Proper Disposal of Your Old Refrigerator

**⚠ WARNING**

### Suffocation Hazard

Remove doors from your old refrigerator.

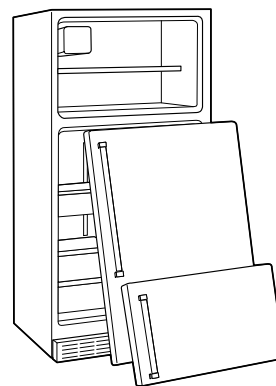
Failure to do so can result in death or brain damage.

**IMPORTANT:** Child entrapment and suffocation are not problems of the past. Junked or abandoned refrigerators are still dangerous – even if they will sit for “just a few days.” If you are getting rid of your old refrigerator, please follow these instructions to help prevent accidents.

### Before You Throw Away Your Old Refrigerator or Freezer:

- Take off the doors.

- Leave the shelves in place so that children may not easily climb inside.



# INSTALLATION INSTRUCTIONS

## Unpack the Refrigerator

### **⚠ WARNING**

#### Excessive Weight Hazard

Use two or more people to move and install refrigerator.

Failure to do so can result in back or other injury.

### Remove the Packaging

- Remove tape and glue residue from surfaces before turning on the refrigerator. Rub a small amount of liquid dish soap over the adhesive with your fingers. Wipe with warm water and dry.
- Do not use sharp instruments, rubbing alcohol, flammable fluids, or abrasive cleaners to remove tape or glue. These products can damage the surface of your refrigerator. For more information, see “Refrigerator Safety.”
- On some models, shelves, bins, door shelf rails, and other feature parts may be packaged in the Interior FeaturePak. Follow the instructions contained in the package for proper assembly.
- There are four bolts that secure the refrigerator to the shipping case. Keep these bolts because they are the refrigerator’s leveling legs.
- Properly dispose of packaging.

**IMPORTANT:** Do not remove the white foam air return insert that is located behind the control panel on the ceiling of the refrigerator (on some models). The insert is part of the refrigerator and not part of the packing material. If the insert is removed, ice may migrate down from the freezer and cause icicles to form.

#### When Moving Your Refrigerator:

Your refrigerator is heavy. When moving the refrigerator for cleaning or service, be sure to protect the floor. Always pull the refrigerator straight out when moving it. Do not wiggle or “walk” the refrigerator when trying to move it, as floor damage could occur.

### Clean Before Using

After you remove all of the package materials, clean the inside of your refrigerator before using it. See the cleaning instructions in “Refrigerator Care.”

#### Important information to know about glass shelves and covers:

Do not clean glass shelves or covers with warm water when they are cold. Shelves and covers may break if exposed to sudden temperature changes or impact, such as bumping. For your protection, tempered glass is designed to shatter into many small, pebble-size pieces. This is normal. Glass shelves and covers are heavy. Use special care when removing them to avoid impact from dropping.

## Location Requirements

### **⚠ WARNING**



#### Explosion Hazard

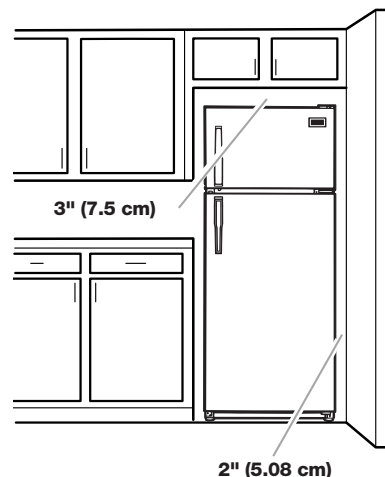
Keep flammable materials and vapors, such as gasoline, away from refrigerator.

Failure to do so can result in death, explosion, or fire.

To ensure proper ventilation for your refrigerator, allow for a ½" (12.70 mm) space on each side. Allow 3" (7.5 cm) of space between overhead cabinets and refrigerator top. Allow at least 1" (25.40 mm) between back of cabinet and the wall. If your refrigerator has an ice maker, make sure you leave some extra space at the back for the water line connections.

- If you are installing your refrigerator next to a fixed wall, leave 2" (5.08 cm) minimum on the hinge side (depending on your model) to allow for the door to swing open.
- Level the refrigerator. See “Adjust the Doors.”

**NOTE:** It is recommended that you do not install the refrigerator near an oven, radiator, or other heat source. Do not install in a location where the temperature will fall below 55°F (13°C).



## Electrical Requirements

### ⚠ WARNING



#### Electrical Shock Hazard

Plug into a grounded 3 prong outlet.

Do not remove ground prong.

Do not use an adapter.

Do not use an extension cord.

Failure to follow these instructions can result in death, fire, or electrical shock.

Before you move your refrigerator into its final location, it is important to make sure you have the proper electrical connection.

#### Recommended Grounding Method

A 115 Volt, 60 Hz., AC only 15- or 20-amp fused, grounded electrical supply is required. It is recommended that a separate circuit serving only your refrigerator be provided. Use an outlet that cannot be turned off by a switch. Do not use an extension cord.

**NOTE:** Before performing any type of installation, cleaning, or removing a light bulb, turn the control (Thermostat, Refrigerator or Freezer Control depending on the model) OFF and then disconnect the refrigerator from the electrical source. When you are finished, reconnect the refrigerator to the electrical source and reset the control (Thermostat, Refrigerator or Freezer Control depending on the model) to the desired setting.

## Water Supply Requirements

Read all directions before you begin.

#### IMPORTANT:

- If you turn the refrigerator on before the water line is connected, turn the ice maker OFF.
- All installations must meet local plumbing code requirements.
- Use copper tubing and check for leaks. Install copper tubing only in areas where the household temperatures will remain above freezing.

**TOOLS NEEDED:** Flat-blade screwdriver,  $\frac{7}{16}$ " and  $\frac{1}{2}$ " open-end wrenches or 2 adjustable wrenches,  $\frac{1}{4}$ " nut driver and drill bit, hand drill or electric drill (properly grounded). Gather the required tools and parts before starting installation. Read and follow the instructions provided with any tools listed.

**NOTE:** Your refrigerator dealer has a kit available with a  $\frac{1}{4}$ " (6.35 mm) saddle-type shutoff valve, a union, and copper tubing. Before purchasing, make sure a saddle-type valve complies with your local plumbing codes. Do not use a piercing-type or  $\frac{3}{16}$ " (4.76 mm) saddle valve which reduces water flow and clogs more easily.

#### Water Pressure

A cold water supply with water pressure of between 30 and 120 psi (207-827 kPa) is required to operate the ice maker. If you have questions about your water pressure, call a licensed, qualified plumber.

## Reverse Osmosis Water Supply

If a reverse osmosis water filtration system is connected to your cold water supply, the water pressure to the reverse osmosis system needs to be a minimum of 40 to 60 psi (276 - 414 kPa).

If the ice maker is still not operating properly:

- Check to see whether the sediment filter in the reverse osmosis system is blocked. Replace the filter if necessary.
- Allow the storage tank on the reverse osmosis system to refill after heavy usage.

If you have questions about your water pressure, call a licensed, qualified plumber.

## Connect the Water Supply

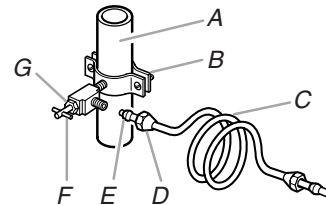
(on some models)

Read all directions before you begin.

**IMPORTANT:** If you turn the refrigerator on before the water line is connected, turn the ice maker OFF.

### Connect to Water Line

1. Unplug refrigerator or disconnect power.
2. Turn OFF main water supply. Turn ON nearest faucet long enough to clear line of water.
3. Locate a  $\frac{1}{2}$ " to  $1\frac{1}{4}$ " (1.27 cm to 3.18 cm) vertical cold water pipe near the refrigerator.  
**IMPORTANT:**
  - Make sure it is a cold water pipe.
  - Horizontal pipe will work, but drill on the top side of the pipe, not the bottom. This will help keep water away from the drill and normal sediment from collecting in the valve.
4. Determine the length of copper tubing you will need. Measure from the connection on lower left rear of refrigerator to the water pipe. Add 7 ft (2.1 m) to allow for cleaning. Use  $\frac{1}{4}$ " (6.35 mm) O.D. (outside diameter) copper tubing. Be sure both ends of copper tubing are cut square.
5. Using a grounded drill, drill a  $\frac{1}{4}$ " hole in the cold water pipe you have selected.



A. Cold water pipe  
B. Pipe clamp  
C. Copper tubing  
D. Compression nut  
E. Compression sleeve  
F. Shutoff valve  
G. Packing nut

6. Fasten the shutoff valve to the cold water pipe with the pipe clamp. Be sure the outlet end is solidly in the  $\frac{1}{4}$ " drilled hole in the water pipe and that the washer is under the pipe clamp. Tighten the packing nut. Tighten the pipe clamp screws slowly and evenly so washer makes a watertight seal. Do not overtighten or you may crush the copper tubing.
7. Slip the compression sleeve and compression nut on the copper tubing as shown. Insert the end of the tubing into the outlet end squarely as far as it will go. Screw compression nut onto outlet end with adjustable wrench. Do not overtighten.
8. Place the free end of the tubing in a container or sink, and turn ON the main water supply. Flush the tubing until water is clear. Turn OFF the shutoff valve on the water pipe. Coil the copper tubing.

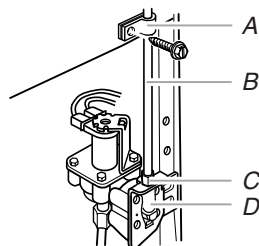


## Connect to Refrigerator

**NOTE:** On kit models, assemble water valve to refrigerator per kit instructions.

### Style 1

1. Unplug refrigerator or disconnect power.
2. Attach the copper tube to the valve inlet using a compression nut and sleeve as shown. Tighten the compression nut. Do not overtighten.
3. Use the tube clamp on the back of the refrigerator to secure the tubing to the refrigerator as shown. This will help avoid damage to the tubing when the refrigerator is pushed back against the wall.
4. Turn shutoff valve ON.
5. Check for leaks. Tighten any connections (including connections at the valve) or nuts that leak.

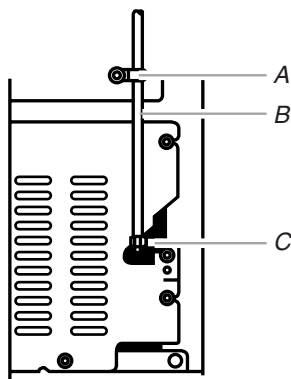


A. Tube clamp  
B. Copper tubing  
C. Compression nut  
D. Valve inlet

6. The ice maker is equipped with a built-in water strainer. If your water conditions require a second water strainer, install it in the  $\frac{1}{4}$ " (6.35 mm) water line at either tube connection. Obtain a water strainer from your nearest appliance dealer.

### Style 2

1. Unplug refrigerator or disconnect power.
2. Disconnect the tube clamp on the back of the product and insert the copper tubing through the clamp as shown.
3. Attach the copper tube to the valve inlet using a compression nut and sleeve as shown.
4. Tighten the compression nut. Do not overtighten. Reattach the tube clamp and tube to the back of the cabinet.



A. Tube clamp  
B. Copper tubing  
C. Compression nut

5. Turn shutoff valve ON. Check for leaks. Tighten any connections (including connections at the valve) or nuts that leak.
6. The ice maker is equipped with a built-in water strainer. If your water conditions require a second water strainer, install it in the  $\frac{1}{4}$ " (6.35 mm) water line at either tube connection. Obtain a water strainer from your nearest appliance dealer.

## Complete the Installation

### ⚠ WARNING



#### Electrical Shock Hazard

**Plug into a grounded 3 prong outlet.**

**Do not remove ground prong.**

**Do not use an adapter.**

**Do not use an extension cord.**

**Failure to follow these instructions can result in death, fire, or electrical shock.**

Plug into a grounded 3 prong outlet.

**NOTE:** Allow 24 hours to produce the first batch of ice. Discard the first three batches of ice produced. Allow 3 days to completely fill ice container.

## Refrigerator Doors

**TOOLS NEEDED:**  $\frac{5}{16}$ " hex-head socket wrench, #2 Phillips screwdriver, flat-blade screwdriver,  $\frac{5}{16}$ " open-end wrench, flat 2" putty knife.

### IMPORTANT:

- Before you begin, turn the refrigerator control OFF. Unplug refrigerator or disconnect power.
- Remove food and adjustable door or utility bins from doors.
- If you are only removing and replacing the doors, see the "Remove Doors and Hinges" and "Replace Doors and Hinges" sections.
- Depending on your model, you may have standard (**Style 1**) or contoured (**Style 2**) doors. If you are also going to reverse the door swing, follow the instructions for the appropriate door style.

## Remove Doors and Hinges



$\frac{5}{16}$ " Hex-Head Hinge Screw

1. Unplug refrigerator or disconnect power.
2. Close the refrigerator door and keep both doors closed until you are ready to lift them free from the cabinet.  
**NOTE:** Provide additional support for the doors while the hinges are being moved. Do not depend on the door magnets to hold the doors in place while you are working.
3. Remove the parts for the top hinge as shown in Top Hinge graphic. Lift the freezer door free from the cabinet.
4. Remove the parts for the center hinge as shown in the Center Hinge graphic. Lift the refrigerator door free from the cabinet.
5. Remove the parts for the bottom hinge as shown in the Bottom Hinge graphic.

## Reverse Doors (optional)

**IMPORTANT:** If you want to reverse your doors so that they open in the opposite direction, follow these steps. If you are not reversing the doors, see “Replace Doors and Hinges.”

### Style 1 - Standard

Graphics follow these instructions.



Door Stop Screw



Door Handle Sealing Screw



Flat-Head Handle Screw



Door Handle Seal Screw Front



Door Hinge Hole Plug



Cabinet Hinge Hole Plug



Door Handle Screw Cover



Round-Head Handle Screw

### Cabinet

1. Remove  $\frac{5}{16}$ " hex-head hinge screws from handle side and move them to opposite side. See Graphic 1-1.
2. Remove cabinet hinge hole plugs from cabinet top and move them to opposite side hinge holes as shown. See Graphic 1-2.

### Freezer door

1. Remove freezer handle assembly as shown. Keep all parts together. See Graphic 2.
2. Remove door hinge hole plug. Move to opposite side as shown. See Graphic 3.
3. Remove door handle sealing screws. Move to opposite side of freezer door as shown. See Graphic 4.
4. Remove door stop. Move to opposite side of freezer door as shown. See Graphic 5.
5. Position freezer handle on opposite side of freezer door. Assemble handle on door as shown. See Graphic 2.
6. Tighten all screws. Set aside door until hinges and refrigerator compartment door are in place.

### Refrigerator door

1. Remove the screw cover. See Graphic 6.
2. Remove refrigerator handle assembly as shown. Keep all parts together. See Graphic 6.
3. Remove door hinge hole plug from refrigerator door. Move to opposite side hinge hole as shown. See Graphic 3.
4. Remove door handle sealing screws. Move to opposite side of refrigerator door as shown. See Graphic 4.
5. Remove door handle seal screw front. Move to opposite side of refrigerator door as shown. See Graphic 7.
6. Remove door stop. Move to opposite side of refrigerator door as shown. See Graphic 5.
7. Position refrigerator handle on opposite side of the refrigerator door as shown. See Graphic 6. Drive top two screws in handle first. Align lower portion of handle and drive bottom screw.
8. Replace screw cover. See Graphic 6.
9. Tighten all screws. Set aside refrigerator door until bottom hinge is installed on refrigerator.

### Style 2 - Contoured

Graphics follow these instructions.



Round-Head  
Handle Screw



Door Handle  
Screw Hole Plug



Door Hinge  
Hole Plug

### Cabinet

1. Remove  $\frac{5}{16}$ " hex-head hinge screws from handle side and move them to opposite side. See Graphic 1-1.
2. Remove cabinet hinge hole plugs from the cabinet top and move them to opposite side hinge holes as shown. See Graphic 1-2.

### Doors

1. Remove door hinge hole plug from top of freezer door. Move to opposite side as shown. See Graphic 2.
2. Remove door stop from both the freezer and refrigerator doors and move to the other side. See Graphic 3.

## Replace Doors and Hinges

**NOTE:** Graphic may be reversed if door swing is reversed.

1. Replace the parts for the bottom hinge as shown. Tighten screws. Replace the refrigerator door.  
**NOTE:** Provide additional support for the doors while the hinges are being moved. Do not depend on the door magnets to hold the doors in place while you are working.
2. Assemble the parts for the center hinge as shown and tighten all screws. See Center Hinge graphic. Replace the freezer door.
3. Assemble the parts for the top hinge as shown. See Top Hinge graphic. Do not tighten screws completely.
4. Line up the doors so that the bottom of the freezer door aligns evenly with the top of the refrigerator door. Tighten all screws.

## Final Steps

1. Check all holes to make sure that hole plugs and screws are in place. Reinstall top hinge cover. See Top Hinge graphic.

## ⚠ WARNING



### Electrical Shock Hazard

**Plug into a grounded 3 prong outlet.**

**Do not remove ground prong.**

**Do not use an adapter.**

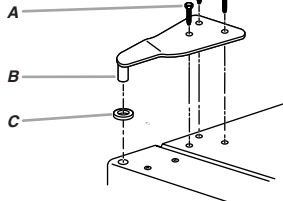
**Do not use an extension cord.**

**Failure to follow these instructions can result in death, fire, or electrical shock.**

2. Plug in refrigerator or reconnect power.
3. Reset the controls. See “Using the Controls.”
4. Return all removable door parts to doors and food to refrigerator.

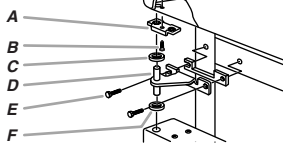
### Door Removal & Replacement

#### Top Hinge



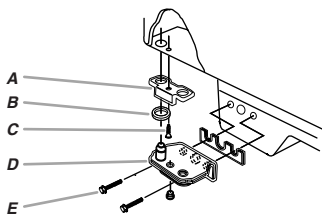
- A.  $\frac{5}{16}$ " Hex-Head Hinge Screws
- B. Top Hinge
- C. Spacer

#### Center Hinge



- A. Door Stop
- B. Door Stop Screw
- C. Spacer
- D. Center Hinge
- E.  $\frac{5}{16}$ " Hex-Head Hinge Screws
- F. Spacer

#### Bottom Hinge

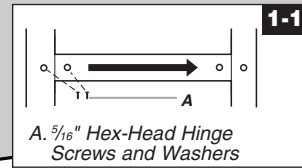


- A. Door Stop
- B. Spacer
- C. Door Stop Screw
- D. Bottom Hinge
- E.  $\frac{5}{16}$ " Hex-Head Hinge Screws

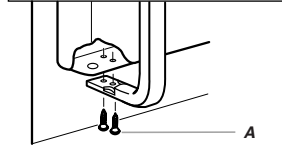
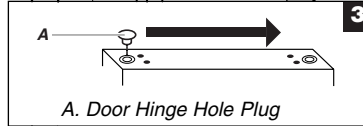
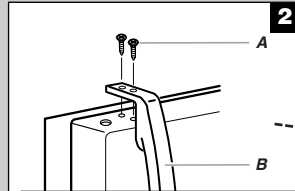
### Door Swing Reversal (optional)



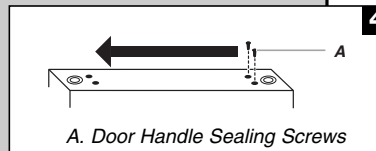
- A. Cabinet Hinge Hole Plugs



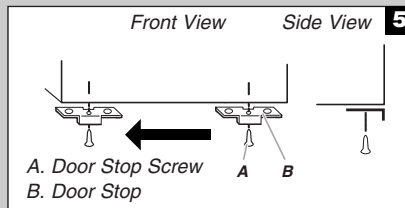
- A.  $\frac{5}{16}$ " Hex-Head Hinge Screws and Washers



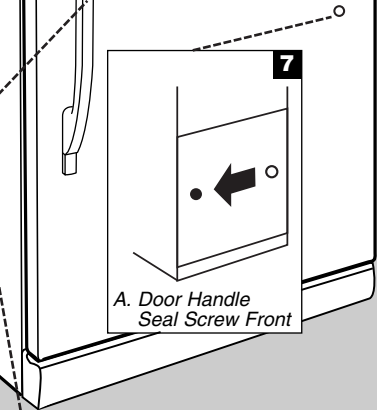
- A. Flat-Head Handle Screws
- B. Freezer Handle



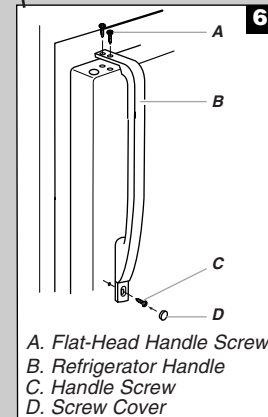
- A. Door Handle Sealing Screws



- A. Door Stop Screw
- B. Door Stop



- A. Door Handle Seal Screw Front

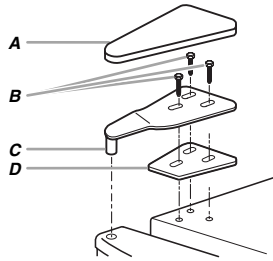


- A. Flat-Head Handle Screw
- B. Refrigerator Handle
- C. Handle Screw
- D. Screw Cover

**Style 2 - Contoured**

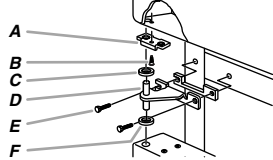
**Door Removal & Replacement**

**Top Hinge**



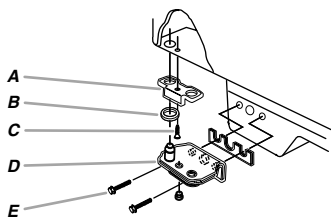
- A. Top Hinge Cover
- B. 5/16" Hex-Head Hinge Screws
- C. Top Hinge
- D. Spacer

**Center Hinge**



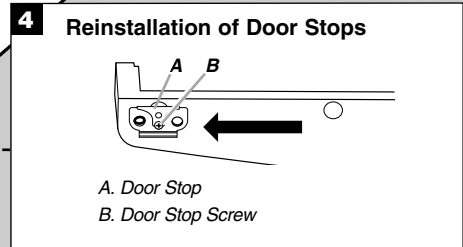
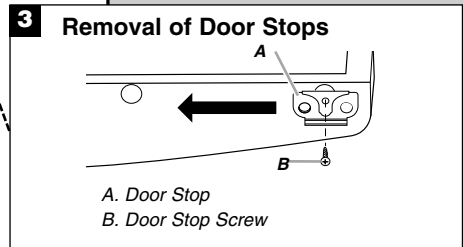
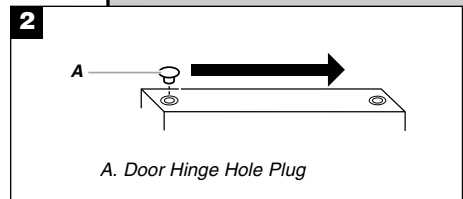
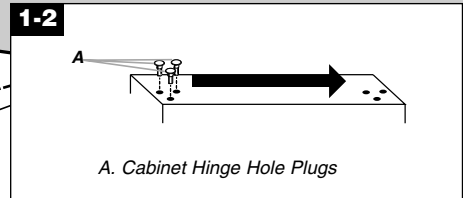
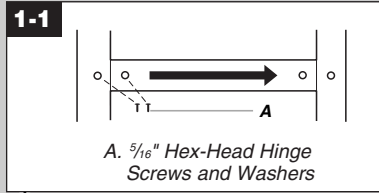
- A. Door Stop
- B. Door Stop Screw
- C. Spacer
- D. Center Hinge
- E. 5/16" Hex-Head Hinge Screws
- F. Spacer

**Bottom Hinge**



- A. Door Stop
- B. Spacer
- C. Door Stop Screw
- D. Bottom Hinge
- E. 5/16" Hex-Head Hinge Screws

**Door Swing Reversal (optional)**



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## Adjust the Doors

Your refrigerator has two front adjustable rollers – one on the right and one on the left. If your refrigerator seems unsteady or you want the doors to close easier, adjust the refrigerator's tilt using the instructions below.

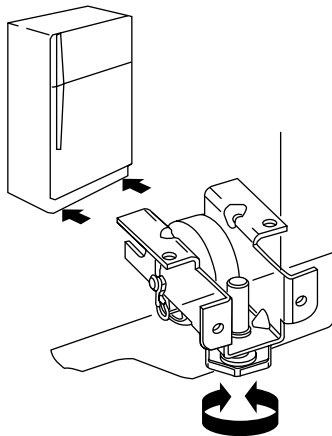
Depending on your model, your refrigerator may have leveling legs (**Style 1**) or leveling screws (**Style 2**). They are part of the front roller assemblies which are found at the base of the refrigerator on either side.

1. Turn the leveling legs or leveling screws to the right to raise that side of the refrigerator or to the left to lower that side. It may take several turns to adjust the tilt of the refrigerator.

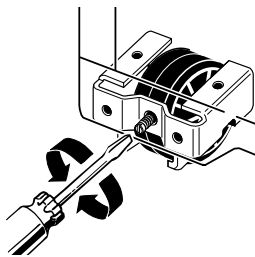
**NOTE:** Having someone push against the top of the refrigerator takes some weight off the leveling screws and rollers. This makes it easier to adjust the screws.

2. Open both doors again and be sure that they close as easily as you like. If not, tilt the refrigerator slightly more to the rear by turning both leveling screws to the right. It may take several more turns, and you should turn both leveling screws the same amount.

### Style 1



### Style 2



3. Using a level, be sure that the refrigerator is still level side to side. Readjust if necessary.

---

## Normal Sounds

Your new refrigerator may make sounds that your old one didn't make. Because the sounds are new to you, you might be concerned about them. Most of the new sounds are normal. Hard surfaces, such as the floor, walls, and cabinets, can make the sounds seem louder. The following describes the kinds of sounds and what may be making them.

- If your refrigerator is equipped with an ice maker, you will hear a buzzing sound when the water valve opens to fill the ice maker for each cycle.

- Your refrigerator is designed to run more efficiently to keep your food items at the desired temperatures and to minimize energy usage. The high efficiency compressor and fans may cause your refrigerator to run longer than your old one. You may also hear a pulsating or high-pitched sound from the compressor or fans adjusting to optimize performance.
- You may hear the evaporator fan motor circulating air through the refrigerator and freezer compartments. The fan speed may increase as you open the doors or add warm food.
- Rattling noises may come from the flow of refrigerant, the water line, or items stored on top of the refrigerator.
- Water dripping on the defrost heater during a defrost cycle may cause a sizzling sound.
- As each cycle ends, you may hear a gurgling sound due to the refrigerant flowing in your refrigerator.
- Contraction and expansion of the inside walls may cause a popping noise.
- You may hear air being forced over the condenser by the condenser fan.
- You may hear water running into the drain pan during the defrost cycle.

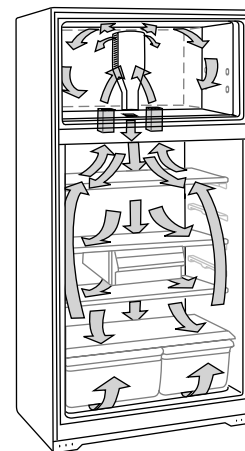
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## REFRIGERATOR USE

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### Ensuring Proper Air Circulation

In order to ensure proper temperatures, you need to permit airflow between the refrigerator and freezer sections. As shown in the illustration, cool air enters through the bottom of the freezer section and moves up. Most of the air then flows through the freezer section vents and recirculates under the freezer floor. The rest of the air enters the refrigerator section through the top vent. In some models, cool air enters through the backwall of refrigerator section and moves to the front of the refrigerator and up into the freezer.



Do not block any of these vents with food packages. If the vents are blocked, airflow will be prevented and temperature and moisture problems may occur.

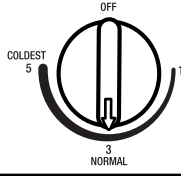
**IMPORTANT:** Because air circulates between both sections, any odors formed in one section will transfer to the other. You must thoroughly clean both sections to eliminate odors. To prevent odor transfer and drying out of food, wrap or cover foods tightly. See the "Refrigerator Features" section for details.

## Using the Controls

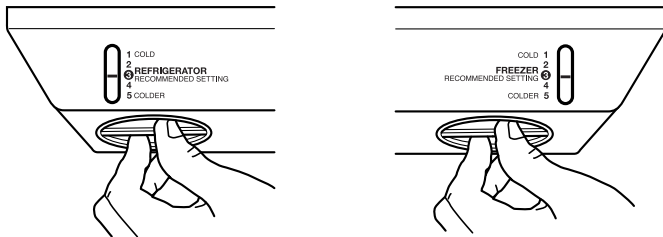
For your convenience, your refrigerator controls are preset at the factory. When you first install your refrigerator, make sure that the controls are still preset to the mid-settings as shown.

**NOTE:** To turn your refrigerator off, turn the refrigerator control to the word OFF or until the word OFF appears. Your product will not cool when the refrigerator control is set to OFF.

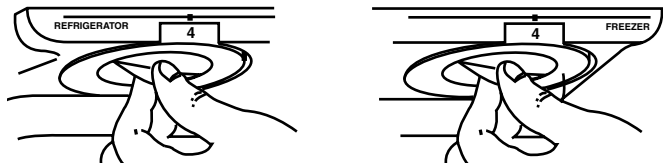
### Mid-setting "3"



### Mid-setting "3"



### Mid-setting "4"



### IMPORTANT:

- Give your refrigerator time to cool down completely before adding food. It is best to wait 24 hours before you put food into the refrigerator.
- If you add food before the refrigerator has cooled completely, your food may spoil. Adjusting the Refrigerator and Freezer Controls to a higher (colder) than recommended setting will not cool the compartments any faster.

## Adjusting Controls

The mid-settings indicated in the previous section should be correct for normal household usage. The controls are set correctly when milk or juice is as cold as you like and when ice cream is firm.

If the temperature is too warm or too cold in the refrigerator or freezer, first check the air vents to be sure they are not blocked.

If you need to adjust temperatures, use the settings listed in the chart below as a guide. On models with two controls, adjust the refrigerator temperature first. Wait at least 24 hours between adjustments and then recheck the temperatures.

CONDITION/REASON:	ADJUSTMENT:
REFRIGERATOR section too warm - Door opened often, large amount of food added or room temperature very warm	Adjust REFRIGERATOR or TEMPERATURE Control one setting higher
FREEZER section too warm/ice not made fast enough - Door opened often, or large amount of food added or very cold room temperature (can't cycle often enough) - Heavy ice usage	Adjust FREEZER or TEMPERATURE Control one setting higher
REFRIGERATOR section too cold - Controls not set correctly for your conditions	Adjust REFRIGERATOR or TEMPERATURE Control one setting lower
FREEZER section too cold - Controls not set correctly for your conditions	Adjust FREEZER or TEMPERATURE Control one setting lower

## Ice Maker

(on some models - Accessory)

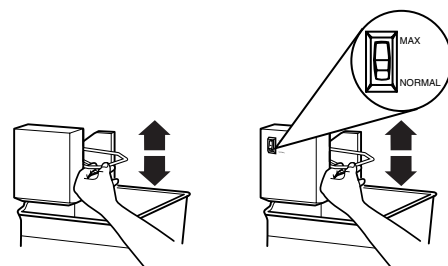
### Turning the Ice Maker On/Off

**NOTE:** Do not force the wire shutoff arm up or down.

- To turn the ice maker on, simply lower the wire shutoff arm.

**NOTE:** Your ice maker has an automatic shutoff. As ice is made, the ice cubes will fill the ice storage bin and the ice cubes will raise the wire shutoff arm to the OFF (arm up) position.

- To manually turn the ice maker off, lift the wire shutoff arm to the OFF (arm up) position and listen for the click to make sure the ice maker will not continue to operate.



### Ice Production Rate

- **NORMAL Ice Production:** The ice maker should produce approximately 8 to 12 batches of ice in a 24-hour period. If ice is not being made fast enough, turn the Freezer Control toward a higher (colder) number in half number steps. (For example, if the control is at 3, move it to between 3 and 4.) Wait 24 hours and, if necessary, gradually turn the Freezer Control to the highest setting, waiting 24 hours between each increase.
- **MAXIMUM Ice Production (on some models):** The ice maker should produce approximately 16 to 20 batches of ice in a 24-hour period. If your refrigerator has the maximum ice production feature, push the switch to MAX.

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## Remember

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- Allow 24 hours to produce the first batch of ice. Discard the first three batches of ice produced.
- The quality of your ice will be only as good as the quality of the water supplied to your ice maker. Avoid connecting the ice maker to a softened water supply. Water softener chemicals (such as salt) can damage parts of the ice maker and lead to poor quality ice. If a softened water supply cannot be avoided, make sure the water softener is operating properly and is well maintained.
- Do not store anything on top of the ice maker or in the ice storage bin.

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# REFRIGERATOR FEATURES

Your model may have some or all of these features. Features that can be purchased separately as product accessories are labeled with the word "Accessory." Not all accessories will fit all models. See the "Assistance or Service" section if you are interested in purchasing one of the accessories.

### Important information to know about glass shelves and covers:

Do not clean glass shelves or covers with warm water when they are cold. Shelves and covers may break if exposed to sudden temperature changes or impact, such as bumping. For your protection, tempered glass is designed to shatter into many small, pebble-size pieces. This is normal. Glass shelves and covers are heavy. Use special care when removing them to avoid impact from dropping.

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## Refrigerator Shelves

(Glass shelves on some models)

The shelves in your refrigerator are adjustable to match your individual storage needs.

Storing similar food items together in your refrigerator and adjusting the shelves to fit different heights of items will make finding the exact item you want easier. It will also reduce the amount of time the refrigerator door is open, and save energy.

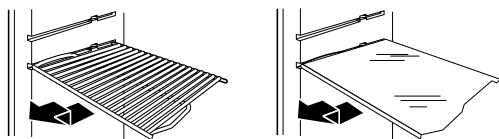
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### Shelves and Glass Shelves (on some models)

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#### To Remove and Replace a Shelf:

1. Remove items from the shelf.
2. Slide the shelf straight out to the stop.
3. Depending on your model, lift back or front of the shelf past the stop. Slide shelf out the rest of the way.
4. Replace the shelf by sliding the back of the shelf into the track in the wall of the cabinet.
5. Guide the front of the shelf into the shelf track. Be sure to slide the shelf in all the way.



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## Meat Drawer

(on some models)

#### To Remove and Replace the Meat Drawer:

1. Slide meat drawer out to the stop.
2. Lift front of meat drawer with one hand while supporting bottom of drawer with other hand. Slide drawer out the rest of the way.
3. Replace the drawer by sliding it back in fully past the drawer stop.

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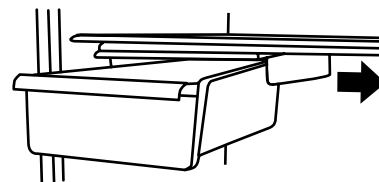
#### Meat Drawer Cover (on some models)

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#### To Remove and Replace the Meat Drawer Cover:

1. Remove the meat drawer.
2. Push the cover back to release the rear clips from the shelf. Tilt the cover up at the front, and pull it forward.
3. Replace the meat drawer cover by fitting the notches and clips on the cover over the rear and center crossbars on the shelf.
4. Lower cover into place and pull the cover forward to secure the rear clips onto the shelf.
5. Replace the meat drawer.

**NOTE:** In some models the meat pan moves sideways on the shelf to allow for flexible positioning.



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### Meat Storage Guide

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Store most meat in original wrapping as long as it is airtight and moisture-proof. Rewrap if necessary. See the following chart for storage times. When storing meat longer than the times given, freeze the meat.

Fresh fish or shellfish..... use same day as purchased  
Chicken, ground beef, variety meats (liver) ..... 1-2 days  
Cold cuts, steaks/roasts ..... 3-5 days  
Cured meats..... 7-10 days  
Leftovers - Cover leftovers with plastic wrap, aluminum foil, or plastic containers with tight lids.

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## Crisper

(on some models)

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### Crisper Drawers

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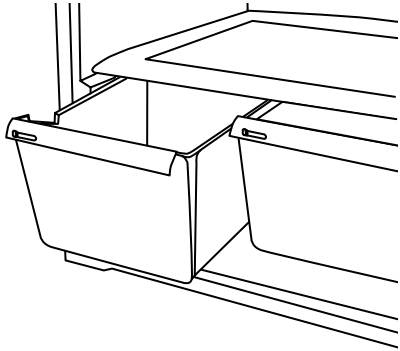
#### To Remove and Replace a Drawer:

1. Slide crisper(s) straight out to the stop. Lift the front and slide the crisper(s) out the rest of the way.
2. Replace the crisper(s) by sliding the crisper(s) in fully past the stop.

## Style 1

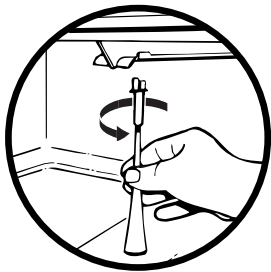
### To Remove and Replace the Plastic Cover:

1. Remove the crisper(s).
2. Lift the front of the cover to remove the cover support. Then lift the cover up and slide it out.



3. Replace the cover by fitting the cover tabs into lowest cabinet slots and pushing them in. Lower the front retainers into place.
4. Insert cover support (with the long tab toward the front) into the groove on the underside of the cover.

**NOTE:** If the support needs adjustment, turn base clockwise to raise or counterclockwise to lower.



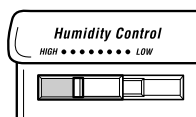
## Style 2

### To Remove and Replace Glass Covers (on some models):

1. Pull the glass straight out.
2. Replace the glass by pushing it straight in.

### Crisper Humidity Control (on some models)

You can control the amount of humidity in the moisture-sealed crisper. Adjust the control to any setting between LOW and HIGH.



LOW (open) lets moist air out of the crisper for best storage of fruits and vegetables with skins.

- Fruit: Wash, let dry and store in refrigerator in plastic bag or crisper. Do not wash or hull berries until they are ready to use. Sort and keep berries in original container in crisper, or store in a loosely closed paper bag on a refrigerator shelf.
- Vegetables with skins: Place in plastic bag or plastic container and store in crisper.

HIGH (closed) keeps moist air in the crisper for best storage of fresh, leafy vegetables.

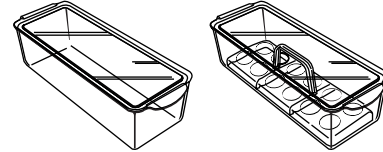
- Leafy vegetables: Wash in cold water, drain and trim or tear off bruised and discolored areas. Place in plastic bag or plastic container and store in crisper.

## Utility or Egg Bin

(on some models -Accessory)

Depending on your model, you may have a one, two or three piece bin. Eggs may be stored in the egg tray or loose in the bin.

**NOTE:** Store eggs in a covered container for long-term storage. If your model does not have an egg storage bin, store eggs in their original container on an interior shelf.



## FREEZER FEATURES

Your model may have some or all of these features. Features that can be purchased separately as product accessories are labeled with the word "Accessory." Not all accessories will fit all models. See the "Assistance or Service" section if you are interested in purchasing one of the accessories.

### Important information to know about glass shelves and covers:

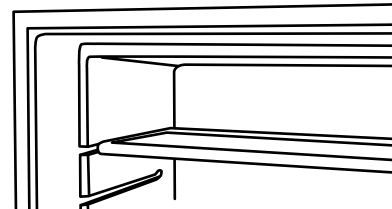
Do not clean glass shelves or covers with warm water when they are cold. Shelves and covers may break if exposed to sudden temperature changes or impact, such as bumping. For your protection, tempered glass is designed to shatter into many small, pebble-size pieces. This is normal. Glass shelves and covers are heavy. Use special care when removing them to avoid impact from dropping.

## Freezer Shelf

(on some models)

### To Remove and Replace the Freezer Shelf:

1. Remove items from the shelf.
2. Lift back of shelf over stop and slide shelf straight out.
3. Replace the shelf by sliding the back of the shelf into the tracks on walls of cabinet.
4. Be sure to slide the shelf in all the way.





## Frozen Food Storage Guide

Storage times will vary according to the quality and type of food, the type of packaging or wrap used (should be airtight and moisture-proof), and the storage temperature. Seal the package or container securely to prevent taste and odor transfer throughout the product. Ice crystals inside a sealed package are normal. This simply means that moisture in the food and air inside the package have condensed, creating ice crystals.

Put no more unfrozen food into the freezer than will freeze within 24 hours (no more than 2-3 lbs of food per cubic foot [907-1,350 g per L] of freezer space). Leave enough space in the freezer for air to circulate around packages. Be careful to leave enough room for the door to close tightly.

**NOTE:** For more information on preparing food for freezing, check a freezer guide or reliable cookbook.

## DOOR FEATURES

Your model may have some or all of these features. Features that can be purchased separately as product accessories are labeled with the word "Accessory." Not all accessories will fit all models. See the "Assistance or Service" section if you are interested in purchasing one of the accessories.

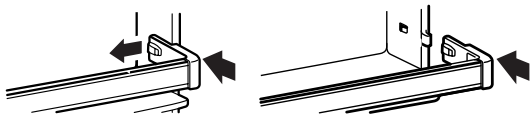
### Door Rails

The door rails may be removed for easier cleaning.

#### Snap on Door Rails

##### To Remove and Replace the Rails:

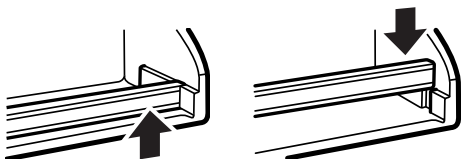
1. Remove the rails by pushing in slightly on the front of the bracket while pulling out on the inside tab. Repeat these steps for the other end of the rail.
2. Replace the rails by aligning the ends of the brackets with the buttons on the sides of the door liner. Firmly snap bracket and rail assembly onto the tabs above the shelf as shown.



#### Drop-in Door Rails

##### To Remove and Replace the Rails:

1. Remove all items from the shelf and pull straight up on each end of the rails.
2. Locate each end of the rail above the rail's pocket opening, and push the rail straight down until it stops.



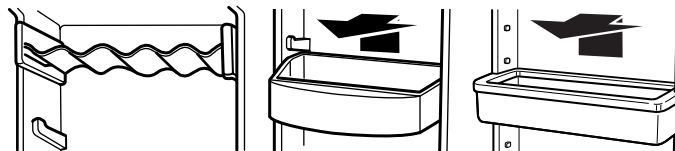
## Can Racks and Door Bins

(on some models)

**NOTE:** Can racks may be purchased as an Accessory for some models.

##### To Remove and Replace the Racks/Bins:

1. Remove the rack/bin by lifting it and pulling it straight out.
2. Replace the rack/bin by sliding it in above the desired support and pushing it down until it stops.



## REFRIGERATOR CARE

### Cleaning

#### ⚠ WARNING



#### Explosion Hazard

Use nonflammable cleaner.

Failure to do so can result in death, explosion, or fire.

Both the refrigerator and freezer sections defrost automatically. However, clean both sections about once a month to prevent odors from building up. Wipe up spills immediately.

**IMPORTANT:** Because air circulates between both sections, any odors formed in one section will transfer to the other. You must thoroughly clean both sections to eliminate odors. To prevent odor transfer and drying out of food, wrap or cover foods tightly.

##### To Clean Your Refrigerator:

**NOTE:** Do not use abrasive or harsh cleaners such as window sprays, scouring cleansers, flammable fluids, cleaning waxes, concentrated detergents, bleaches or cleansers containing petroleum products on plastic parts, interior and door liners or gaskets. Do not use paper towels, scouring pads, or other harsh cleaning tool

1. Unplug refrigerator or disconnect power.
2. Hand wash, rinse, and dry removable parts and interior surfaces thoroughly. Use a clean sponge or soft cloth and a mild detergent in warm water.
3. Wash stainless steel and painted metal exteriors with a clean sponge or soft cloth and a mild detergent in warm water. Dry thoroughly with a soft cloth. For additional protection against damage to painted metal exteriors, apply appliance wax (or auto paste wax) with a clean, soft cloth. Do not wax plastic parts.

**NOTE:** To keep your stainless steel refrigerator looking like new and to remove minor scuffs or marks, it is suggested that you use the manufacturer's approved Stainless Steel Cleaner & Polish. To order the cleaner, see the "Accessories" section.

**IMPORTANT:** This cleaner is for stainless steel parts only!

Do not allow the Stainless Steel Cleaner & Polish to come into contact with any plastic parts such as the trim pieces, dispenser covers or door gaskets. If accidental contact does occur, clean plastic part with a sponge and mild detergent in warm water. Dry thoroughly with a soft cloth.

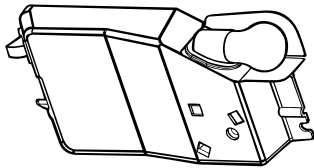
- Clean the condenser coils regularly. Coils may need to be cleaned as often as every other month. This may help save energy.
  - Pull refrigerator out away from the wall. See “Unpack the Refrigerator.”
  - Vacuum coils when they are dusty or dirty.
  - Roll refrigerator back into place. Make sure to leave 1" (2.5 cm) between the cabinet back and the wall.
  - Check to see that the refrigerator is level.
- Plug in refrigerator or reconnect power.

## Changing the Light Bulbs

**NOTE:** Not all appliance bulbs will fit your refrigerator. Be sure to replace the bulb with one of the same size, shape, and wattage.

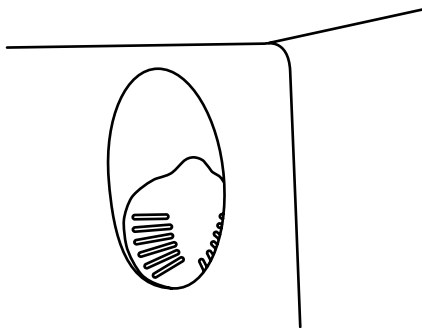
### Refrigerator Light

- Unplug refrigerator or disconnect power.
- Reach behind the control panel and unscrew the bulb.
- Replace the bulb with a 40-watt appliance bulb.
- Plug in refrigerator or reconnect power.



### Freezer Light

- Unplug refrigerator or disconnect power.
- Remove the freezer shelf.
- Remove the freezer light shield by pushing down.



- Remove the light bulb and replace with one of the same size, shape and wattage.
- Replace the light shield.
- Plug in refrigerator or reconnect power.

## Power Interruptions

If the power will be out for 24 hours or less, keep the door or doors closed (depending on your model) to help food stay cold and frozen.

If the power will be out for more than 24 hours, do one of the following:

- Remove all frozen food and store it in a frozen food locker.
- Place 2 lbs (907 g) of dry ice in the freezer for every cubic foot (28 L) of freezer space. This will keep the food frozen for 2 to 4 days.
- If neither a food locker nor dry ice is available, consume or can perishable food at once.

**REMEMBER:** A full freezer stays cold longer than a partially filled one. A freezer full of meat stays cold longer than a freezer full of baked goods. If you see that food contains ice crystals, it may be refrozen, although the quality and flavor may be affected. If the condition of the food is poor, dispose of it.

## Vacation and Moving Care

### Vacations

#### If You Choose to Leave the Refrigerator On While You're Away:

- Use up any perishables and freeze other items.
- If your refrigerator has an automatic ice maker:
  - Raise wire shutoff arm to OFF (up) position or move the switch to the OFF (right) setting.
  - Shut off water supply to the ice maker.
- Empty the ice bin.

#### If You Choose to Turn the Refrigerator Off Before You Leave:

- Remove all food from the refrigerator.
- If your refrigerator has an automatic ice maker:
  - Turn off the water supply to the ice maker at least one day ahead of time.
  - When the last load of ice drops, raise the wire shutoff arm to the OFF (up) position or move the switch to the OFF (right) setting.
- Depending on the model, turn the Temperature Control or Refrigerator Control to OFF. See “Using the Control(s).”
- Clean refrigerator, wipe it, and dry well.
- Tape rubber or wood blocks to the tops of both doors to prop them open far enough for air to get in. This stops odor and mold from building up.

### Moving

When you are moving your refrigerator to a new home, follow these steps to prepare it for the move.

- If your refrigerator has an automatic ice maker:
  - Turn off the water supply to the ice maker at least one day ahead of time.
  - Disconnect the water line from the back of the refrigerator.
  - When the last load of ice drops, raise the wire shutoff arm to the OFF (up) position or move the switch to the OFF (right) setting.
- Remove all food from the refrigerator and pack all frozen food in dry ice.

3. Empty the ice bin.
4. Depending on the model, turn the Temperature Control or Refrigerator Control to OFF. See “Using the Control(s).”
5. Unplug refrigerator.
6. Empty water from the defrost pan.
7. Clean, wipe, and dry thoroughly.
8. Take out all removable parts, wrap them well, and tape them together so they don’t shift and rattle during the move.

9. Depending on the model, raise the front of the refrigerator so it rolls more easily OR screw in the leveling legs so they don’t scrape the floor. See “Adjust the Doors.”
10. Tape the doors closed and tape the power cord to the back of the refrigerator.


When you get to your new home, put everything back and refer to the “Installation Instructions” section for preparation instructions. Also, if your refrigerator has an automatic ice maker, remember to reconnect the water supply to the refrigerator.

## TROUBLESHOOTING

**Try the solutions suggested here first in order to avoid the cost of an unnecessary service call.**

### Your refrigerator will not operate

**⚠ WARNING**



**Electrical Shock Hazard**

**Plug into a grounded 3 prong outlet.**

**Do not remove ground prong.**

**Do not use an adapter.**

**Do not use an extension cord.**

**Failure to follow these instructions can result in death, fire, or electrical shock.**

- **Is the power supply cord unplugged?** Plug into a grounded 3 prong outlet.
- **Has a household fuse blown, or has a circuit breaker tripped?** Replace the fuse or reset the circuit breaker. If the problem continues, call an electrician.
- **Is the Temperature Control turned to the OFF position?** See “Using the Control(s).”
- **Is the refrigerator defrosting?** Recheck to see whether the refrigerator is operating in 30 minutes. Your refrigerator will regularly run an automatic defrost cycle.

### The lights do not work

- **Is a light bulb loose in the socket or burned out?** See “Changing the Light Bulbs.”

### There is water in the defrost drain pan

- **Is the refrigerator defrosting?** The water will evaporate. It is normal for water to drip into the defrost pan.
- **Is it more humid than normal?** Expect that the water in the defrost pan will take longer to evaporate. This is normal when it is hot or humid.

### The motor seems to run too much

- **Is the room temperature hotter than normal?** Expect the motor to run longer under warm conditions. At normal room temperatures, expect your motor to run about 40% to 80% of the time. Under warmer conditions, expect it to run even more of the time.
- **Has a large amount of food just been added to the refrigerator?** Adding a large amount of food warms the refrigerator. It is normal for the motor to run longer in order to cool the refrigerator back down. See “Refrigerator Features.”
- **Are the doors opened often?** Expect the motor to run longer when this occurs. In order to conserve energy, try to get everything you need out of the refrigerator at once, keep food organized so it is easy to find, and close the door as soon as the food is removed.
- **Is the control set correctly for the surrounding conditions?** See “Using the Control(s),” depending on the model.
- **Are the doors closed completely?** Push the doors firmly shut. If they will not shut all the way, see “The doors will not close completely” later in this section.

**NOTE:** Your new refrigerator will run longer than your old one due to its high-efficiency motor.

### The refrigerator seems to make too much noise

- **The sounds may be normal for your refrigerator.** See “Normal Sounds.”

### The ice maker is not producing ice or not enough ice

- **Has the ice maker just been installed?** Wait 72 hours for full ice production to begin. Once your refrigerator is cooled, the ice maker should produce 70-120 cubes every 24 hours.
- **Is the freezer temperature cold enough to produce ice?** Wait 24 hours after hookup for ice production. See “Using the Control(s),” depending on the model.
- **Is the wire shutoff arm in the OFF (arm up) position?** Lower the wire shutoff arm to the ON (arm down) position. See “Ice Maker.”



# Dishwashers

SD-9241SS-Stainless Steel

SD-9241W-White

## **Instruction Manual**

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# DISHWASHER FEATURES

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This electric dishwasher has the common characteristics of other house-hold dishwashers, as well as these unique specialties:



## Time delay feature

Allows you to program the operation to begin at a later time, between 1 to 24 hours. Program to run during off-peak hours helps reduce electricity cost.



## Error alarm

Fault codes display would inform the user of abnormal status of the machine.



## Rinse aid Warning Indicator

When the rinse aid is running low, a refill reminder will be displayed on the panel. This ensures the machine continues to operate at optimum performance.



## Stainless steel tub



## 6 wash programs

Choose from 6 wash cycles, based on load and soiled level: All-in-1, Heavy, Normal, Light, Rinse and Speed.



## NOTE:

The manufacturer, following a policy of constant development and up-dating of the product, may make modifications without giving prior notice.

# IMPORTANT SAFETY INFORMATION

## READ ALL INSTRUCTIONS BEFORE USING

### **WARNING!**

When using your dishwasher, follow the below basic precautions including the following:



### GROUNDING INSTRUCTIONS

- This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance of electric current. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.

### **WARNING!**

- Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the appliance is properly grounded. Do not modify the plug provided with the appliance ;If it is not fit for the outlet .have a proper outlet installed by a qualified electrician.



### WARNING! PROPER USE

- Do not abuse, sit on, or stand on the door or dish rack of the dishwasher.
- Do not touch the heating element during or immediately after use.
- Do not wash plastic items unless they are marked dishwasher safe or the equivalent. For plastic items not so marked, check the manufactures recommendations.
- Use only detergent and rinse additives designed for an automatic dishwasher. Never use soap , laundry detergent, or hand washing detergent in your dishwasher. Keep these products out of children's reach.
- Keep child away from detergent and rinse aid, keep child away from the open door of the dishwasher, there could still be some detergent left inside.
- The door should not be left in the open position since this could present a tripping hazards.
- During installation, the power supply must not be excessively or dangerously bent or flattened.
- Do not tamper with controls.
- The appliance is not intended for use by young children or infirm persons without supervision.
- Dishwasher detergents are strongly alkaline, they can be extremely dangerous if swallowed. Avoid contact with skin and eyes and keep children away from the dishwasher when the door is open.
- Do not operate your dishwasher unless all enclosure panels are properly in place. Open the door very carefully if the dishwasher is operating, there is a risk of water squirting out.
- Do not place any heavy objects of stand on the door when it is open. The appliance could tip forward.
- When loading items to be washed:
  - 1) Locate sharp items so that they are not likely to damage the door seal;
  - 2) Load sharp knives with the handles up to reduce the risk of cut-type injuries.
- When using your dishwasher, you should prevent plastic item from contacting with heating element.
- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
- Please dispose of packing materials properly.
- Use the dishwasher only for its intended function.
- Remove the door to the washing compartment when removing an old dishwasher from service or discarding it.
- Young children should be supervised to ensure that they do not play with the appliance.
- Check that the detergent receptable is empty after completion of the wash cycle.

**READ AND FOLLOW THIS SAFETY INFORMATION CAREFULLY**

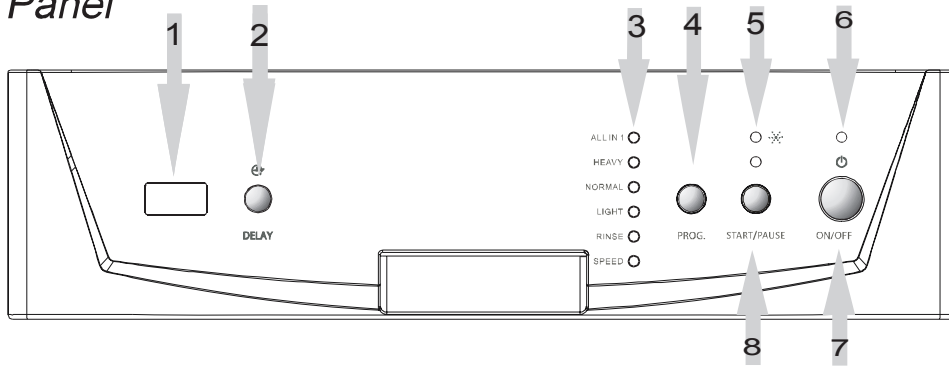
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**SAVE THESE INSTRUCTIONS**

# IMPORTANT!

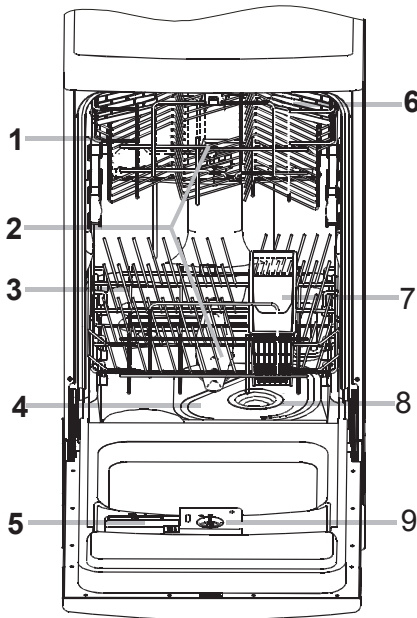
To get the best performance from your dishwasher, read all operating instructions before using it for the first time.

## Control Panel

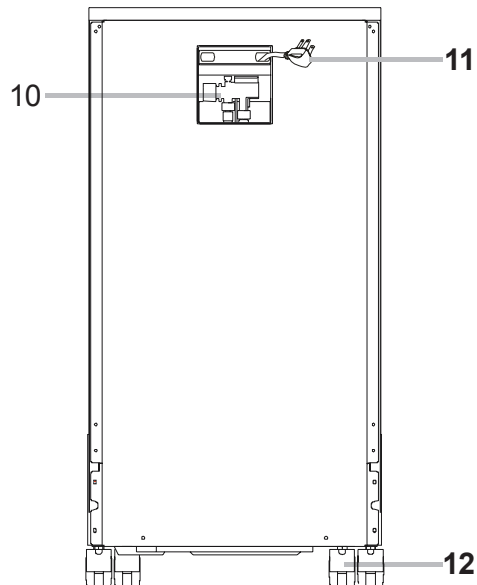


- 1** Display window: Program remaining time, delay time, running indicator, fault codes and etc.
- 2** Delay Button : Press to program delay start.
- 3** Program indicator lights: Indicates the selected wash cycle.
- 4** Wash Program Selector: Press to select one of the six programs.
- 5** Rinse aid low warning light.
- 6** Power indicator light.
- 7** Power switch: To turn on/off the power supply.
- 8** Start /Pause button: To start the selected washing program or pause the washing program when the machine is working.

## Dishwasher Features








**Front View  
(Door Open)**



**Back View**

- |                |                       |                       |                                     |
|----------------|-----------------------|-----------------------|-------------------------------------|
| 1 Upper Basket | 4 Main Filter         | 7 Silverware Basket   | 10 Portable Faucet Adapter Assembly |
| 2 Spray Arms   | 5 Detergent Dispenser | 8 Coarse Filter       | 11 Power Cord                       |
| 3 Lower Basket | 6 Cup Shelf           | 9 Rinse Aid Dispenser | 12 Caster                           |

# WASH CYCLE TABLE

Program	Cycle Selection Information	Description of Cycle	Detergent pre/main	Running time(min)	Energy (Kwh)	Water (gal)	Rinse Aid
All in 1	For all soiled loads, such as pots, pans, casserole dishes and dishes that have been sitting with dried food on them for a while.	Pre-wash Pre-wash wash (136°F) Rinse (154°F) Drying.	All in1	130	0.6	3.7	★
 Heavy	For the heaviest soiled loads, such as pots, pans, casserole dishes and dishes that have been sitting with dried food on them for a while.	Pre-wash Pre-wash (122°F) Wash (136°F) Rinse Rinse (149°F) Drying	18g	135	0.58	4.6	★
 Normal (AHAM)	For normally soiled loads, such as pots, plates, glasses and lightly soiled pans. standard daily cycle.	Pre-wash Wash (136°F) Rinse Rinse (149°F) Drying	18g	115	0.545	3.65	★
 Light	For lightly soiled loads, such as plates, glasses, bowls and lightly soiled pans.	Pre-wash Wash (122°F) Rinse Rinse (140°F) Drying	18g	100	0.43	3.67	★
 Rinse	For dishes that just need a quick rinse.	Pre-Wash Pre-Wash		25	0.05	1.9	
 Speed	A shorter wash for lightly soiled loads .	Pre-Wash Wash (122°F) Rinse (131°F) Drying	18g.	65	0.32	2.75	

## ERROR CODES

When unit experiences malfunction, the appliance will display error codes

Codes	Meanings	Possible Causes
E1	Long inlet time.	Faucets is not opened, or water intake is restricted, or water pressure is too low.
E3	Long heating time, unit not reaching the required temperature	Malfunction of temperature sensor or of heating element.



# DETERGENT DISPENSER

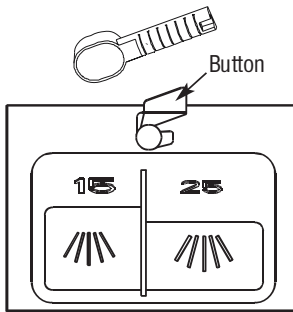
TO PREVENT FORMATION OF DEPOSITS, DO NOT ADD TOO MUCH DETERGENT. THIS DISHWASHER HAS SPECIALLY-DESIGNED WATER SOFTENERS.

The dispenser must be refilled before the start of each wash cycle. Refer to instructions under the Wash Cycle Table on page 4. This unit uses less detergent and rinse aid than most conventional dishwashers. In general, only one tablespoon of detergent is needed for a normal wash load. Add more detergent as needed for heavily soiled loads.

Always add detergent just before starting the dishwasher, otherwise it could get damp and not dissolve properly.

## Amount of Detergent to Use

The amount of detergent needed can vary due to differences in water hardness. To determine the water hardness in your area, contact your local water utility or area water softening company. The harder the water, the more detergent you may need. Remember, you should adjust the amount of detergent you use by small amounts until you find the correct amount.



## Removing Hard Water Spots

To remove hard water spots, try the following:

- Run dishes through a normal wash program.
- Remove all metal dishware, such as cutlery, pans, etc., from the dishwasher.
- Do not add detergent.
- Pour two cups of vinegar into a bowl and set the bowl face up on the lower rack of the dishwasher.
- Run the dishes through a normal wash program.

If this doesn't work, try the same process with 1 / 4 cup of citric acid crystals instead of vinegar.

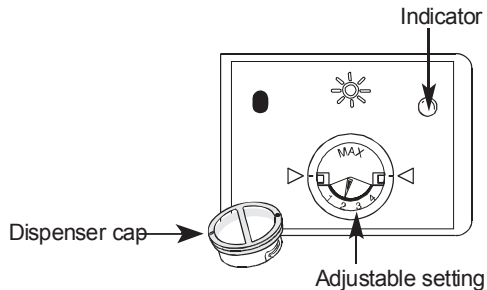
## ⚠ WARNING!

Dishwasher detergent is corrosive!  
Take care to keep it out of reach of children.

## Proper Use of Detergent

Use only detergent specifically made for use in dishwashers. Keep your detergent fresh and dry. Don't put powder detergent into the dispenser until you're ready to wash dishes.

# RINSE AID DISPENSER



- To open the dispenser, turn the cap to the "open" (left) arrow and lift it out.
- Pour the rinse aid into the dispenser, being careful not to overfill.
- To replace, align cap with "open" arrow and turn clockwise to close.

- The rinse aid is released during the final rinse to prevent water from forming droplets on your dishes that can leave spots and streaks. It also improves drying by allowing water to "sheet" off the dishes.
- Your dishwashers are designed to use liquid rinse aids. The rinse aid dispenser is located inside the door next to the detergent dispenser. To fill the dispenser, open the cap and pour the rinse aid into the dispenser until the level indicator turns completely black. The dispenser holds about 100 ml of liquid rinse aid.
- Be careful not to overfill the dispenser, because this could cause over sudsing. Wipe away any spills with a damp cloth. Don't forget to replace the cap before you close the dishwasher door.
- If you have soft water, you may not need rinse aid for it may cause a white film to develop on your dishes.

## Adjusting Rinse Aid Dispenser



Adjustable setting

A measured amount of rinse aid is released during the final rinse. As with detergent, the amount of rinse aid needed for your dishes depends on the hardness of the water in your area. Too much rinse aid can result in lather or foaming and cause cloudiness or streaks on your dishes. If the water in your area is very soft, you may not need rinse aid. If you do, you can dilute the rinse aid with an equal amount of water.

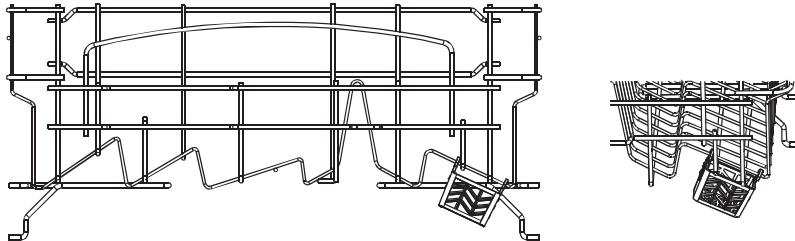
The rinse aid dispenser has four settings. Always start with the dispenser set on "2". If spots and poor drying are problems, increase the amount of rinse aid dispensed by removing the dispenser lid and rotating the dial to "3". If the dishes still are not drying properly or are spotted, adjust the dial to "4". Refill when the Rinse Aid Warning Light illuminates.

# How To Use The All in1 Program

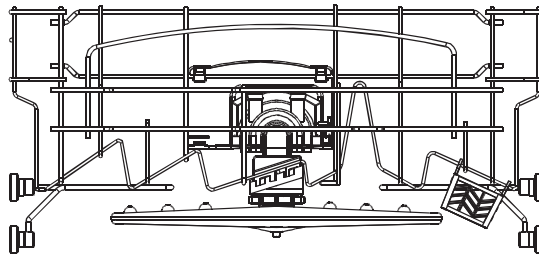
Your dishwasher has a "All-in-1 program" which needs no rinse aid but a "All-in-1" tablet.

**NOTE:** Only the All in1 program can be used with All in1 tablets. If you use All in1 tablets with other programs, The appliance will not achieve a good performance.

1. The figure below shows how to hang the All-in-1 tablet container on the upper basket.



2. Rotate the upper sprayer and change the location of the container to ensure the upper sprayer is not obstructed by the All-in-1 tablet container. Refer to the figure below for reference.



3. Put the All in1 tablet into the container, then start the All in1 program.

## Loading the Dishwasher Racks.

For best performance of the dishwasher, follow these loading guidelines. Features and appearance of racks and silverware baskets may vary from your model.

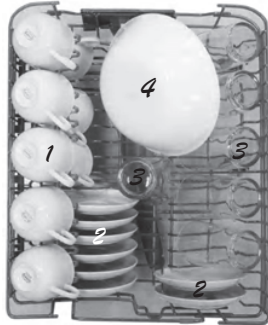
### How to use the Upper Rack

The upper rack is designed to hold more delicate and lighter dishware such as glasses, coffee and tea cup and saucers, as well as plates, small bowls and shallow pans (as long as they are not too dirty).

Position the dishes and cookware so that they do not get moved by the spray of water.

The upper rack can be lifted (or lowered) by removing and placing the rack into different rails.

This makes room for either rack to accommodate different size items.



- 1 Cups
- 2 Saucer
- 3 Glasses

### How to use the Lower Rack

We recommend that you place large items which are most difficult to clean into the lower rack: pots, pans, lids, serving dishes and bowls, as shown in the figure below.

It is preferable to place serving dishes and lids on the side of the racks in order to avoid blocking the rotation of the top spray arm.

- Pots, serving bowls, etc, must always be placed top down.
- Deep pots should be slanted to allow water to flow out.
- The bottom rack feature fold down tine rows to accommodate larger pots and pans.



- 4 Serving bowl
- 5 Fruit bowl
- 6 Bread and butter plates
- 7 Serving plate
- 8 Dinner plates
- 9 Silverware basket

# SILVERWARE BASKET

Silverware should be placed in the silverware basket with handles at the bottom. If the rack has side baskets, the spoon should be loaded individually into the appropriate slots. Especially long utensils should be placed in the horizontal position at the front of the upper rack.



2	4	5	1
	4	5	1
2	4	5	1
2	4	5	1
2	4	5	4
2	4	5	7
	3	5	
2	3	3	1
2	3	3	1
2	3	6	6

1 Salad Forks

2 Teaspoons

3 Soup spoons

4 Dinner forks

5 Knife

6 Serving spoon

7 Serving fork



**▲ WARNING!**

Do not let any item extend through bottom.

## Turning on the Appliance

### Starting a wash cycle. . .

- 1 Make sure that the plug of the appliance is inserted into the wall socket.
- 2 Make sure that the water supply is turned on to full pressure.
- 3 Load the dishwasher (see the section entitled, "Loading the Dishwasher").
- 4 Pour in the detergent (see the section entitled, "Detergent and Rinse Aid").
- 5 Close the door, press the ON/OFF button, and the ON/OFF light will turn on.
- 6 Press the "prog button" to select the "Wash cycle". (see the section entitled, "Wash Cycle Table".)
- 7 Press the start button, the washing will start after ten seconds.

### Canceling or modifying a wash cycle setting. . .

**Premise:** A cycle that is underway can only be modified if it has only been running for a short time. Otherwise, the detergent may have already been released, and the appliance may have already drained the wash water. If this is the case, the detergent dispenser must be refilled (see the paragraph entitled "Loading the Detergent"). Open the door, Press the "Prog key-press" more than three second, then you can change the program to the desired cycle setting (see the section entitled, "Starting a wash cycle. . ."). Then, close the door.

## At the End of the Wash Cycle

When the washing cycle has finished, the buzzer of dishwasher will buzz for eight second, then stop. Turn off the appliance using the ON/OFF button, open the door of the dishwasher. Wait a few minutes before unloading the dishwasher to avoid handling the dishes and utensils while they are still hot and more susceptible to breakage. They will also dry better.

### Forget to Add a Dish?

A forgotten dish can be added any time before the detergent cup opens.

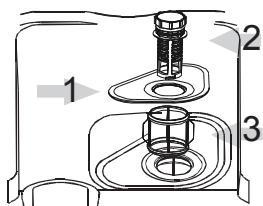
- 1 Open the door a little to pause the cycle.
- 2 After the spray arms stop working, you can open the door completely.
- 3 Add forgotten dishes.
- 4 Close the door, the dishwasher will work after ten second.

**▲ WARNING!**

It is dangerous to open the door when washing, because the hot water may be scalded to you.

## Filtering System

For your convenience, we have placed the drain pump and filtering system within easy reach inside the tub. There are three components of the filtering system: the main filter, the coarse filter, and the fine filter.



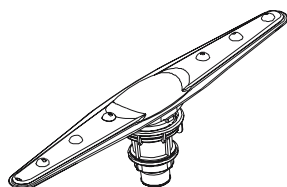
- 1 Main filter**  
Food and soil particles trapped by this filter are pulverized by a special jet on the lower spray arm and washed down the drain.
- 2 Coarse filter**  
Larger items, such as pieces of bone or glass, that could clog the drain are trapped in the coarse filter. To remove an item caught in this filter, gently squeeze the tabs on top of this filter and lift it out.
- 3 Fine filter**  
This filter holds soil and food residue in the sump area and prevents it from being redeposited on the dishes during a cycle.

## Caring for the Dishwasher

To clean the control panel use a lightly dampened cloth then dry thoroughly. To clean the exterior use a good appliance polish wax.

Never use sharp objects, scouring pads or harsh cleaners on any part of the dishwasher.

### Protect Against Freezing



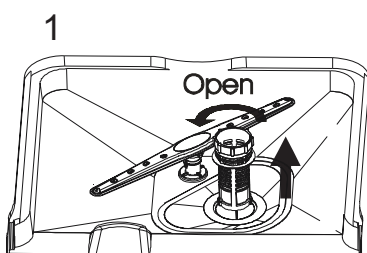
If your dishwasher is left in an unheated place during the winter, ask a service technician to:

- 1** Cut off electrical power to the dishwasher. Remove fuses or trip circuit breaker.
- 2** Turn off the water supply and disconnect the water inlet pipe from the water valve.
- 3** Drain water from the inlet pipe and water valve. (Use a pan to catch the water.)
- 4** Reconnect the water inlet pipe to the water valve.
- 5** Remove the plastic sump cover in the tub the bottom and use a sponge to soak up water in rubber boot.

## Cleaning the Spray Arms

It is necessary to clean the spray arms regularly for hard water chemicals will clog the spray arm jets and bearings. To remove the spray arm, screw off the nut to take out the washer on top of the spray arm and remove the arm. Wash the arms in soapy and warm water and use a soft brush to clean the jets. Replace them after rinsing them thoroughly.

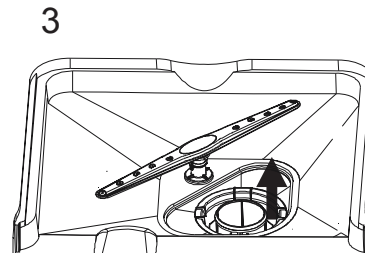
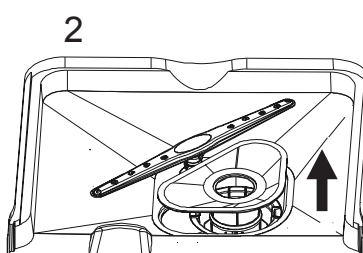
### Cleaning the Filters



Step 1: Turn the filter in anti-clockwise direction, then lift it up.

Step 2: lift the Main filter up

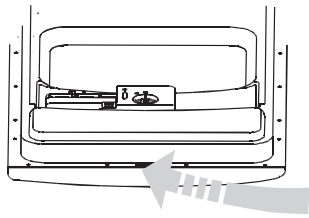
Step 3: lift the Fine filter up



**! NOTE:** When following this procedure from step 1 to step 3, the filter system will be removed; when following it from Step 3 to Step 1, the filter system will be installed.

# User-Maintenance Instructions

## Cleaning the Door



To clean the edge around the door, you should use only a soft warm, damp rag. To prevent penetration of water into the door lock and electrical components, do not use a spray cleaner of any kind.

Also, never use abrasive cleaners or scouring pads on the outer surfaces because they will scratch the finish. Some papers towels can also scratch or leave marks on the surface.

### **▲ WARNING!**

Never use a spray cleaner to clean the door panel for it could damage the door lock and electrical components. It is not allowed to use the abrasive agent or some paper towel because of the risk of scratching or leaving spots on the stainless steel surface.

## How to Keep Your Dishwasher in Shape

### ■ **After Every Wash**

After every wash, turn off the water supply to the appliance and leave the door slightly ajar so that moisture and odors are not trapped inside.

### ■ **Remove the Plug**

Before cleaning or performing maintenance, always remove the plug from the socket. Do not run risks.

### ■ **No Solvents or Abrasive Cleaning**

To clean the exterior and rubber parts of the dishwasher, do not use solvents or abrasive cleaning products. Rather, use only a cloth and warm soapy water. To remove spots or stains from the surface of the interior, use a cloth dampened with water and a little white vinegar, or a cleaning product made specifically for dishwashers.

### ■ **When You Go on Holiday**

When you go on holiday, it is recommended that you run a wash cycle with the dishwasher empty and then remove the plug from the socket, turn off the water supply and leave the door of the appliance slightly ajar. This will help the seals last longer and prevent odors from forming within the appliance.

### ■ **Moving the Appliance**

If the appliance must be moved, try to keep it in the vertical position. If absolutely necessary, it can be positioned on its back.

### ■ **Seals**

One of the factors that cause odors to form in the dishwasher is food that remains trapped in the seals. Periodic cleaning with a damp sponge will prevent this from occurring.

## About Electrical Connection

### **▲ CAUTION, for personal safety:**

DO NOT USE AN EXTENSION CORD OR AN ADAPTER PLUG WITH THIS APPLIANCE.  
DO NOT, UNDER ANY CIRCUMSTANCES, CUT OR REMOVE THE THIRD GROUNDING PRONG FROM THE POWER CORD.

## Electrical Requirements

This dishwasher is designed for operation on an adequately wired individual 110V, 60Hz. Use required fuse 15 amps. Fused electrical supply is required-copper wire only. Time delay fuse or circuit breaker recommended and provide separate circuit serving only this appliance. Outlet should be placed in adjacent cabinet.

## Electrical Connection

### **▲ WARNING!**

Insure proper ground exists before use

After making sure that the voltage and the frequency values for the current in the home correspond to those on the rating plate and that the electrical system is sized for the maximum voltage on the rating plate, insert the plug into an electrical socket which is earthed properly. If the electrical socket to which the appliance must be connected is not appropriate for the plug, replace the socket, rather than using an adaptor or the like as they could cause overheating and burns.

# User-Maintenance Instructions

## Before Calling for service . . .

### Troubleshooting Tips

Review the charts on the following pages may make you be free of calling for service.



<i>Problem</i>	<i>Possible Causes</i>	<i>What To Do</i>
<i>Dishwasher doesn't run</i>	Fuse blown, or the circuit breaker acted	Replace fuse or reset circuit breaker. Remove any other appliances sharing the same circuit with the dishwasher
	Power supply is not turned on	Make sure the dishwasher is turned on and the door is closed securely. Make sure the power cord is properly plugged into the wall socket.
	Water pressure is low	Check that the water supply is connected properly and the water is turned on.
<i>Noise</i>	Some audible sounds are normal	Sound from soft food shredding action and detergent cup opening.
	Utensils are not secure in the baskets or something small has dropped into the basket	To ensure everything is secured in the dishwasher.
	Motor hums	Dishwasher has not been used regularly. If you do not use it often, remember to set it to fill and pump out every week, which will help keep the seal moist.
<i>Suds in the tub</i>	Improper detergent	Use only the special dishwasher detergent to avoid suds. If this occurs, open the dishwasher and let suds evaporate. Add 1 gallon of cold water to the tub. Close and latch the dishwasher, then Start the wash cycle to drain out the water . Repeat if necessary.
	Spilled rinse agent	Always wipe up rinse agent spills immediately.
<i>Stained tub interior</i>	Detergent with colorant was used	Make sure that the detergent is the one without colorant.
<i>Dishes are not dried</i>	Rinse agent dispenser is empty	Make sure that the rinse agent dispense is filled.
<i>Dishes and flatware not clean</i>	Improper program	Select stronger program
	Improper rack loading	Make sure that the action of the detergent dispenser and spray arms are not blocked by large dishware.
<i>Spots and filming on glasses and flatware</i>	<ol style="list-style-type: none"> <li>1 Extremely hard water</li> <li>2 Low inlet temperature</li> <li>3 Overloading the dishwasher</li> <li>4 Improper loading</li> <li>5 Old or damp powder detergent</li> <li>6 Empty rinse agent dispenser</li> <li>7 Incorrect dosage of detergent</li> </ol>	<ul style="list-style-type: none"> <li>• To remove spots from glassware:               <ol style="list-style-type: none"> <li>1 Take out all metal utensils out of the dishwasher.</li> <li>2 Do not add detergent.</li> <li>3 Choose the longest cycle.</li> <li>4 Start the dishwasher and allow it to run for about 18 to 22 minutes, then it will be in the main wash.</li> <li>5 Open the door to pour 2 cups of white vinegar into the bottom of the dishwasher.</li> <li>6 Close the door and let the dishwasher complete the cycle. If the vinegar does not work: Repeat as above, except use 1/4 cup (60 ml)of citric acid crystals instead of vinegar.</li> </ol> </li> </ul>

# User-Maintenance Instructions

## Before calling for service . . .

<i>Problem</i>	<i>Possible Causes</i>	<i>What To Do</i>
<i>Cloudiness on glassware</i>	Combination of soft water and too much detergent	Use less detergent if you have soft water and select a shorter cycle to wash the glassware and to get them clean.
<i>Yellow or brown film on inside surfaces</i>	Tea or coffee stains	using a solution of 1/2 cup of bleach and 3 cups warm water to remove the stains by hand. <b>▲ WARNING</b> You have to wait for 20 minutes after a cycle to let the heating elements cool down before cleaning interior; to preven scalding.
	Iron deposits in water can cause an overall film	You have to call a water softener company for a special filter.
<i>White film on inside surface</i>	Hard water minerals	To clean the interior, use a damp sponge with dishwasher detergent and wear rubber gloves. Never use any other cleaner than dishwasher detergent for the risk of foaming or suds.
<i>Detergent cup lid won't latch</i>	Dial is not in the OFF position	Turn the Dial to OFF position and slide the door latch to the left.
<i>Detergent left in dispenser cups</i>	Dishes block detergent cups	Re-loading the dishes properly.
<i>Steam</i>	Normal phenomenon	There is some steam coming through the vent by the door latch during drying and water draining.
<i>Black or gray marks on dishes</i>	Aluminum utensils have rubbed against dishes	Use a mild abrasive cleaner to eliminate those marks.
<i>Water standing in the bottom of the tub</i>	This is normal	A small amount of clean water around the outlet on the tub bottom at the back of the tub keeps the water seal lubricated.
<i>Dishwasher leaks</i>	Overfill dispenser or rinse aid spills	Be careful not to overfill the rinse aid dispenser. Spilled rinse aid could cause oversudsing and lead to overflowing. Wipe away any spills with a damp cloth.
	Dishwasher isn't level	Make sure the dishwasher is level.





## Your Guarantee

If this product is found to be faulty as a result of faulty materials or workmanship within one year from date of purchase, it will be repaired free of charge.

This guarantee is subject to the following terms:

- Sunpentown must be notified of the fault.
- Proof of purchase must be presented to Sunpentown nominated representative.
- The warranty will be void if the product is modified, misused or repaired by an unauthorized person.
- The warranty after repair will not be extended beyond the original one-year period.
- All replacement parts will be new or reconditioned.
- Parts, which are replaced, become the property of Sunpentown.
- The warranty applies for the use of the product in the USA only.

What is NOT COVERED:

- Warranty does not include freight charges.
- Incidental or consequential damage caused by possible defects with this product.
- Damage to product caused by improper power supply voltage, accident, fire, floods or acts of nature.
- Failure of product resulting from unauthorized modifications to the product.
- Improper installation or failure to perform the necessary maintenance.

This GUARANTEE is in addition to your Statutory Rights

**SUNPENTOWN INTERNATIONAL INC.**  
**14625 Clark Ave. City of Industry, CA 91745**  
**Tel: 800-330-0388**  
**[service@sunpentown.com](mailto:service@sunpentown.com)**  
**[www.sunpentown.com](http://www.sunpentown.com)**

- **Is the water line shutoff valve to the refrigerator turned on?** Turn on the water valve. See “Connect the Water Supply.”
- **Does the ice maker mold have water in it or has no ice been produced?** Be sure your refrigerator has been connected to a water supply and the supply shutoff valve is turned on. See “Connect the Water Supply.”
- **Is an ice cube jammed in the ejector arm?** Remove the ice from the ejector arm with a plastic utensil. See “Ice Maker.”
- **Has a large amount of ice just been removed?** Allow 24 hours for ice maker to produce more ice.
- **Is the control set correctly?** If too little ice is produced, see “Using the Control(s),” depending on the model.
- **Is a reverse osmosis water filtration system connected to your cold water supply?** See “Water Supply Requirements.”

**NOTE:** If not due to any of the above, there may be a problem with the water line. Call for service.

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### Off-taste or gray color in the ice

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- **Are the plumbing connections new, causing discolored or off-flavored ice?** Discard the first few batches of ice.
- **Have the ice cubes been stored for too long?** Throw away old ice and make a new supply.
- **Has food in the refrigerator been wrapped properly?** See “Refrigerator Features.”
- **Do the freezer and ice bin need to be cleaned?** See “Cleaning.”
- **Does the water contain minerals (such as sulfur)?** A filter may need to be installed to remove the minerals.

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### The divider between the two compartments is warm

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The warmth is probably due to normal operation of the automatic exterior moisture control. If still concerned, call for service.

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### Temperature is too warm

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- **Are the air vents blocked in either compartment?** This prevents the movement of cold air from the freezer to the refrigerator. Remove any objects from in front of the air vents. See “Ensuring Proper Air Circulation” for the location of air vents.
- **Are the door(s) opened often?** Be aware that the refrigerator will warm when this occurs. In order to keep the refrigerator cool, try to get everything you need out of the refrigerator at once, keep food organized so it is easy to find, and close the door as soon as the food is removed.
- **Has a large amount of food just been added to the refrigerator or freezer?** Adding a large amount of food warms the refrigerator. It can take several hours for the refrigerator to return to the normal temperature.
- **Are the controls set correctly for the surrounding conditions?** See “Using the Control(s),” depending on the model.

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### There is interior moisture buildup

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- **Are the air vents blocked in the refrigerator?** Remove any objects from in front of the air vents. See “Ensuring Proper Air Circulation” for the location of air vents.
- **Are the door(s) opened often?** To avoid humidity buildup, try to get everything you need out of the refrigerator at once, keep food organized so it is easy to find, and close the door as soon as the food is removed. When the door is opened, humidity from the room air enters the refrigerator. The more often the door is opened, the faster humidity builds up, especially when the room itself is very humid.
- **Is the room humid?** It is normal for moisture to build up inside the refrigerator when the room air is humid.
- **Is the food packaged correctly?** Check that all food is securely wrapped. Wipe off damp food containers before placing in the refrigerator.
- **Are the controls set correctly for the surrounding conditions?** See “Using the Control(s),” depending on the model.
- **Was a self-defrost cycle completed?** It is normal for droplets to form on the back wall after the refrigerator self-defrosts.

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### The doors are difficult to open

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**⚠ WARNING**



**Explosion Hazard**

Use nonflammable cleaner.

Failure to do so can result in death, explosion, or fire.

- **Are the gaskets dirty or sticky?** Clean gaskets and the surface that they touch. Rub a thin coat of paraffin wax on the gaskets following cleaning.

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### The doors will not close completely

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- **Are food packages blocking the door open?** Rearrange containers so that they fit more tightly and take up less space.
- **Is the ice bin out of position?** Push the ice bin in all the way.
- **Are the crisper cover, pans, shelves, bins, or baskets out of position?** Put the crisper cover and all pans, shelves, bins, and baskets back into their correct positions. See “Refrigerator Features.”
- **Are the gaskets sticking?** Clean gaskets and the surface that they touch. Rub a thin coat of paraffin wax on the gaskets following cleaning.
- **Does the refrigerator wobble or seem unstable?** Level the refrigerator. See “Adjust the Doors.”
- **Were the doors removed during product installation and not properly replaced?** Remove and replace the doors according to “Refrigerator Doors,” or call a qualified service technician.

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# ASSISTANCE OR SERVICE

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Before calling for assistance or service, please check "Troubleshooting." It may save you the cost of a service call. If you still need help, follow the instructions below.

When calling, please know the purchase date and the complete model and serial number of your appliance. This information will help us to better respond to your request.

## If You Need Replacement Parts

If you need to order replacement parts, we recommend that you only use FSP® replacement parts. FSP® replacement parts will fit right and work right, because they are made with the same precision used to build every new WHIRLPOOL® appliance.

To locate FSP® replacement parts in your area, call us or your nearest designated service center.

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## In the U.S.A.

Call the Customer eXperience Center toll free: **1-800-253-1301**.

### Our consultants provide assistance with:

- Features and specifications on our full line of appliances.
- Installation information.
- Use and maintenance procedures.
- Accessory and repair parts sales.
- Specialized customer assistance (Spanish speaking, hearing impaired, limited vision, etc.).
- Referrals to repair parts distributors, and service companies. Whirlpool designated service technicians are trained to fulfill the product warranty and provide after-warranty service, anywhere in the United States.

To locate the Whirlpool designated service company in your area, you can also look in your telephone directory Yellow Pages.

### For further assistance

If you need further assistance, you can write to Whirlpool Corporation with any questions or concerns at:

Whirlpool Brand Home Appliances  
Customer eXperience Center  
553 Benson Road  
Benton Harbor, MI 49022-2692

Please include a daytime phone number in your correspondence.

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## In Canada

Call the Whirlpool Canada LP Customer Interaction Centre toll free: **1-800-807-6777**.

Our consultants provide assistance with:

- Features and specifications on our full line of appliances.
- Referrals to local dealers.

### For service in Canada

Call **1-800-807-6777**. Whirlpool Canada LP designated service technicians are trained to fulfill the product warranty and provide after-warranty service, anywhere in Canada.

### For further assistance

If you need further assistance, you can write to Whirlpool Canada LP with any questions or concerns at:

Whirlpool Canada LP  
Customer Interaction Centre  
1901 Minnesota Court  
Mississauga, Ontario L5N 3A7

Please include a daytime phone number in your correspondence.

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## Accessories (for some models)

To order accessories, call **1-800-442-9991** and ask for the part number listed below or contact your authorized Whirlpool dealer. In Canada, call **1-800-807-6777**.

### Stainless Steel Cleaner & Polish

Order Part #4396095

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# WHIRLPOOL CORPORATION MAJOR APPLIANCE WARRANTY

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## ONE YEAR LIMITED WARRANTY

For one year from the date of purchase, when this major appliance is operated and maintained according to instructions attached to or furnished with the product, Whirlpool Corporation or Whirlpool Canada LP (hereafter "Whirlpool") will pay for FSP® replacement parts and repair labor to correct defects in materials or workmanship. Service must be provided by a Whirlpool designated service company.

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### ITEMS WHIRLPOOL WILL NOT PAY FOR

1. Service calls to correct the installation of your major appliance, to instruct you how to use your major appliance, to replace or repair house fuses or to correct house wiring or plumbing.
  2. Service calls to repair or replace appliance light bulbs, air filters or water filters. Those consumable parts are excluded from warranty coverage.
  3. Repairs when your major appliance is used for other than normal, single-family household use.
  4. Damage resulting from accident, alteration, misuse, abuse, fire, flood, acts of God, improper installation, installation not in accordance with electrical or plumbing codes, or use of products not approved by Whirlpool.
  5. Any food loss due to refrigerator or freezer product failures.
  6. Replacement parts or repair labor costs for units operated outside the United States or Canada.
  7. Pickup and delivery. This major appliance is designed to be repaired in the home.
  8. Repairs to parts or systems resulting from unauthorized modifications made to the appliance.
  9. Expenses for travel and transportation for product service in remote locations.
  10. The removal and reinstallation of your appliance if it is installed in an inaccessible location or is not installed in accordance with published installation instructions.
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### DISCLAIMER OF IMPLIED WARRANTIES; LIMITATION OF REMEDIES

CUSTOMER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR AS PROVIDED HEREIN. IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR OR THE SHORTEST PERIOD ALLOWED BY LAW. WHIRLPOOL SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. SOME STATES AND PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS, SO THESE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE.

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Outside the 50 United States and Canada, this warranty does not apply. Contact your authorized Whirlpool dealer to determine if another warranty applies.

If you need service, first see the "Troubleshooting" section of the Use & Care Guide. After checking "Troubleshooting," additional help can be found by checking the "Assistance or Service" section or by calling Whirlpool. In the U.S.A., call **1-800-253-1301**. In Canada, call **1-800-807-6777**.

8/05

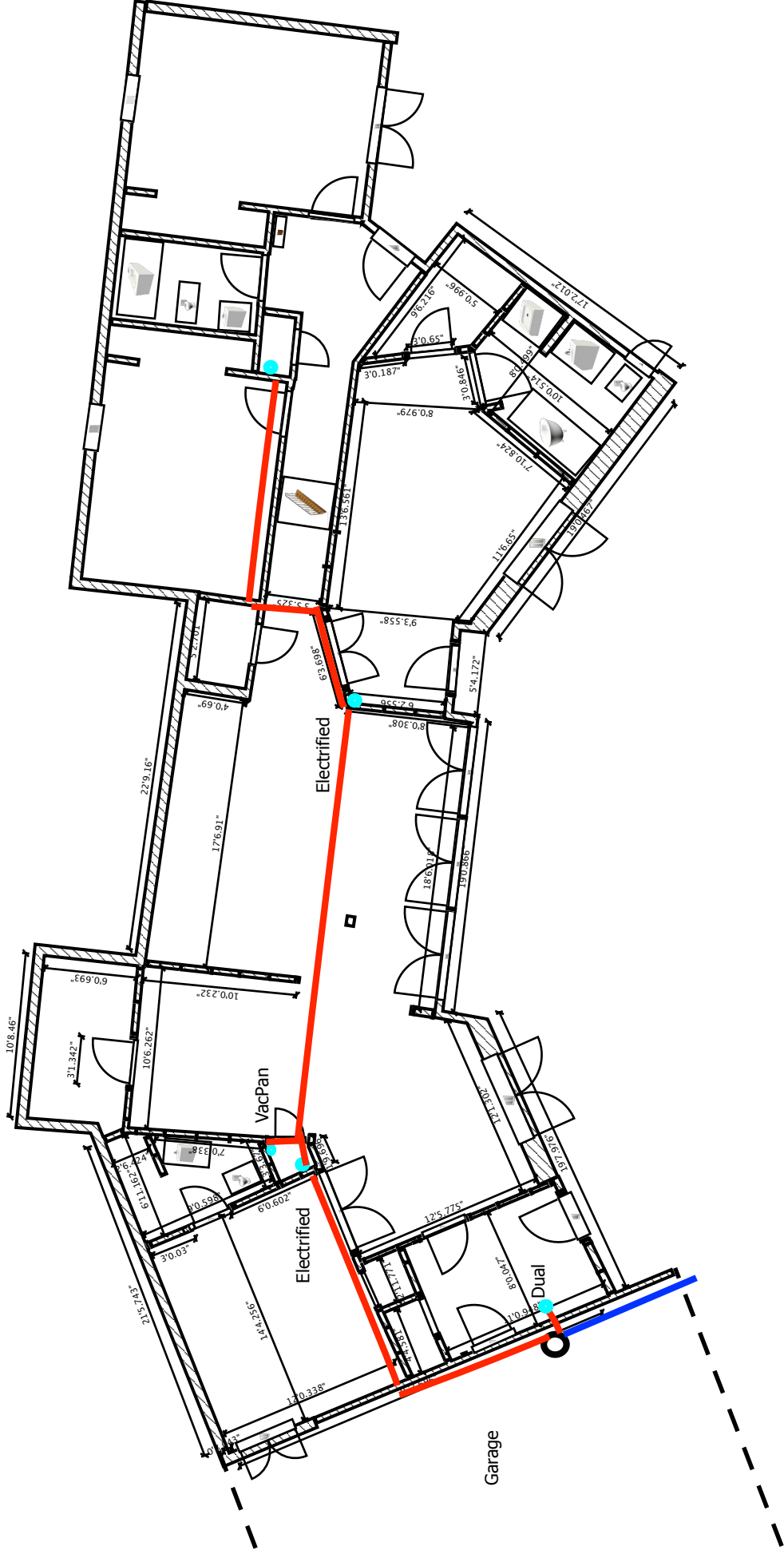
# Central Vacuum Installation Plan

Central Vac in Garage ●

Exhaust —

Supply —

Inlets ●

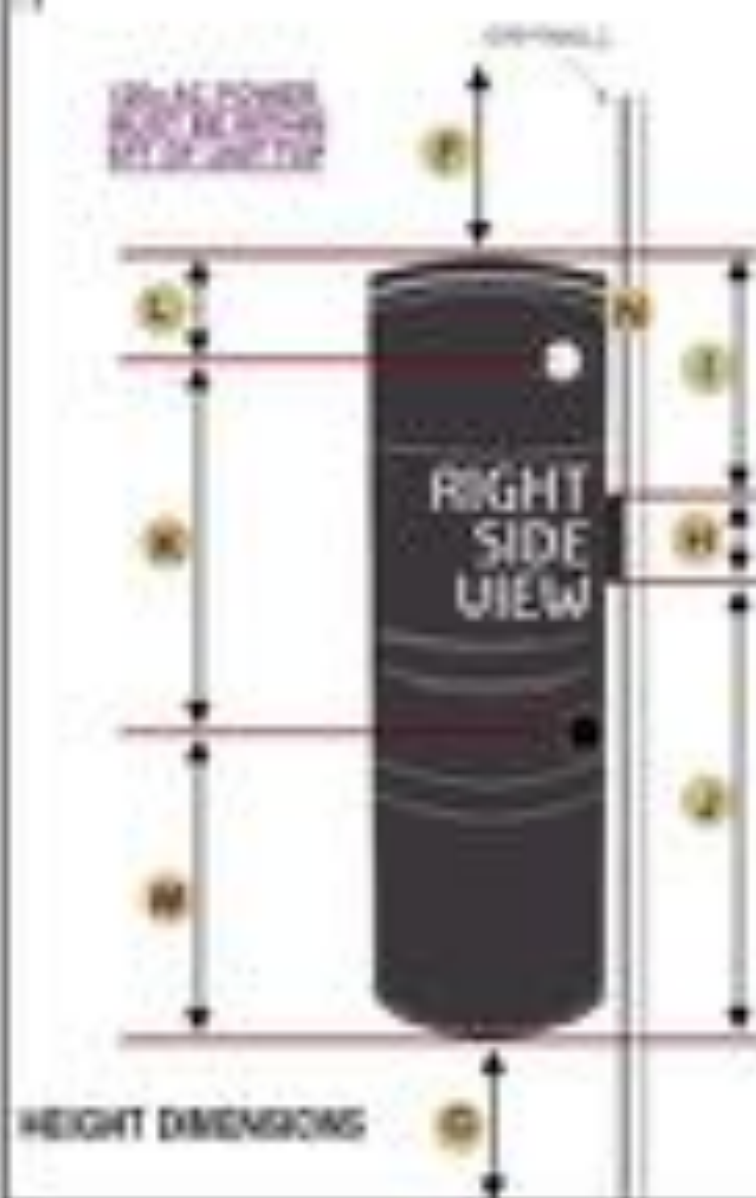


August 14, 2016

**ARCHITECT'S SPECIFICATIONS**  
**ASPRIA CPUB429GO**  
**DURAGETEC HEPA BAGLESS**  
**CVS POWER UNIT**



Unit Dimensions  
 12" DIAMETER  
 41" TALL



- A. 12" MIN SIDE CLEARANCE TO WALL
- B. 13.5" TOTAL DEPTH FRONT TO WALL
- C. 1.25" INTAKE TO WALL
- D. 5" EXHAUST TO WALL
- F. 12" MIN TOP TO CEILING
- G. 18" MIN BOTTOM TO FLOOR
- H. 4.5" SQUARE BRACKET SIZE
- I. 11.75" BRACKET TOP TO TOP OF UNIT
- J. 23.10" BRACKET (WIDTH) TO (WIDTH) OF UNIT
- K. 18" INTAKE TO EXHAUST
- L. 5.25" EXHAUST TO TOP
- M. 15.25" INTAKE TO BOTTOM
- N. 2" POWER CORD TO TOP

All all clearances shown shown in this  
 are approximate and subject to change