



Installing the ACT D'MAND KONTROLS[®] Systems

Models C3-100-PF, S3-100-PF, and BR3-200-PF
for
Standard Piping (Non-recirculating)
Pre-Fab Systems

Installations shall be in accordance with the manufacturer's instructions per the requirements of the Uniform Plumbing Code (UPC)
Conforms to UL STD 508
Certified To CSA STD C22.2 #14

BE CAREFUL

Do not plug the power cord into an electrical receptacle until the System is installed and in place. Operation of the System without being plumbed into water lines may burn out the pump prematurely and void the warranty.

Pre-Installation Checklist

1. Check the package contents. Your D'MAND KONTROLS[®] System "PF" installation kit includes:

- A pre-assembled Controller/Circulator Pump Assembly
- Custom Brass Compression T fittings
- Homes with Galvanized piping will need Galvanized T's. (Please call 1-800-200-1956)
- Custom 3/4" FIP X FIP flexlines two (2)
- Control Box Black One (1) with power cord and activation wires
- PVC ball valves two (2)
- Adapter with IFC valve One (1)
- Plastic Bag containing One (1) push-button
- If wireless remote option was purchased: One (1) transmitter/battery, one (1) receiver, three (3) gray wire nuts and three (3) screws.
- Check the components for visible damage and contact your supplier immediately if any damage is found.

2. Make sure you have the tools to do the job:

- Pipe wrench or adjustable crescent wrench
- Pliers
- Small Philips head and medium flat head screwdriver
- Wire strippers
- Drill and 5/8" drill bit

3. Determine where you will install the ACT D'MAND KONTROLS[®] System:

Typically, this should be at the fixture farthest away from the water heater. If your hot water supply line runs in two separate directions from the water heater, you may need more than one ACT D'MAND KONTROLS[®] System to satisfy all of your hot water requirements. **Caution:** The D'MAND KONTROLS[®] System may NOT be installed outdoors, or in an environment where water may make contact with the outside of the system.



Installing the D'MAND KONTROLS® System with the Pre-Fab KIT

This is for installation of the Pre-Fab Accessory T's only. These do not replace the existing instructions included with your System. Be sure you have read the instructions carefully before proceeding with your installation.

Accessories

If you have purchased an ACT Hot Water D'MAND KONTROLS® System that is equipped with the pre-fab accessory package, (PF-Kit), the 3/4" male threads and adapters have been provided to install your System.

Enclosed with your system are two T's custom designed to simplify your installation to 1/2" copper hot and cold supply lines. Additional pipe thread fittings may be required if your supply lines are threaded galvanized or CPVC plastic pipe. Call 1-800-200-1956 for assistance.

To Install Your Custom T Fittings (PF-Kits only)

1. Turn off the house water supply.
2. Open the hot and cold faucets at the fixture chosen for installation. This will relieve the water pressure from the hot and cold water pipes.
3. Remove the shut-off valves that supply the hot and cold water lines to the sink from the 1/2" copper pipe for ease of installation; you may leave the compression ring and nut from the angle stop on the hot and cold water supply lines. (**Note:** If the existing ring or nut is damaged you may use the parts from the new custom T's.)
4. Remove the compression ring and nut from the enclosed compression fitting on the supplied Pre Fab custom T's.
5. Insert the male compression fitting into the nut on the hot and cold water supply pipes. Tighten until there are NO leaks.
6. Insert male end of angle stops (valves) into the female nut of the new Pre Fab Custom T's. Both of these connections are compression "fine" threads, so NO Teflon tape is needed.
7. Now you are ready to attach the flex lines from the 3/4" male thread of the Pre Fab T's to your D'MAND KONTROLS® System. (Teflon tape is recommended for the 3/4" course pipe thread fittings.)
8. Refer to Page 3 – "Installing the D'MAND KONTROLS® Button(s)" and Wireless Remote Option".



(Custom 1/2"compression x 3/4" MIP x 1/2"compression Pre-Fab T's)

The System adapts to your existing plumbing! Follow these simple steps:

"NO SWEAT"



1. Turn off water supply and remove angle stops.

2. Install & tighten T's (included), attach angle stops.

3. Install flex lines or any line with $\frac{3}{4}$ " inside diameter.

4. Connect System, install push button and plug in.

Installation Procedures:

- Turn off the house water supply.
- Open the hot and cold faucets at the fixture chosen for installation. This will relieve the water pressure from the hot and cold water pipes.
- Remove the shut-off valves that supply the hot and cold water to the sink.
- Install T fittings to the pipe stubs from the hot and cold water supply.
NOTE: Using piping with less than $\frac{1}{2}$ " inside diameter will restrict the flow of the water, causing it to take longer for hot water to arrive.
- Install the System between the hot and cold lines, but be sure that the arrows on the pump and are pointing from the hot side to cold.
- Re-install the shut-off valves to the water supply and sink.

Pre-assemble the pump, adapters, and valves. (Model C3-100):

1. Lay the D'MAND KONTROLS[®] System in front of you with the label facing up and readable. Starting at the left side of the pump, place Teflon tape on the 1 inch male fitting, then thread on one of the 1" x $\frac{3}{4}$ " adapters to the pump.
2. Next, apply Teflon tape to the threads on the right side of the pump. Then take the 1" x 1" adapter with IFC valve and thread on the right side of the pump. Make sure that the washers provided in installed between every CPVC fitting. (Note: Teflon tape or dope should be used when joining the pump's proprietary resin body to the CPVC adapters. Using Teflon makes hand tightening easier prior to the final $\frac{1}{4}$ to $\frac{1}{2}$ turn joining the components). Once you have installed the System, place Teflon tape on the male thread of the adapter and install the second 1"x $\frac{3}{4}$ " adapter on the right side as well.

The assembled pump should look like this:



C3-100 Shown

3. Apply Teflon tape to the $\frac{3}{4}$ " male threads of both the 1" x $\frac{3}{4}$ " adapters and the $\frac{3}{4}$ " Brass T's above.
4. Thread the supplied $\frac{3}{4}$ " flex line to each side of pump, onto each $\frac{3}{4}$ " adapter. Bend the flex lines so they are pointed upward with the pump on its back.

Pre-assemble the pump and flange. (Models S3-100 and BR3-200):

1. Pre-assemble the DMAND KONTROLS® pump by laying the unit on its back with the label facing upwards. Unwrap the flange bolt kit (included) with your System. Each side of the pump should have two (2) 9/16” bolts with two (2) 9/16” nuts, one (1) DMAND KONTROLS® stainless steel flange, and one rubber seal.
2. Place the rubber seal in the round groove on your DMAND KONTROLS® pump.
3. Once the rubber seal is in place, put one 9/16” bolt on top of the flange with the threads facing in.
3. Now, place the stainless steel flange on the bolt and lightly secure with nut. **DO NOT** tighten.
4. Place second bolt with threads pointed out on the bottom of the flange through the stainless steel flange and **LIGHTLY** secure with the 9/16” nut. Once the stainless steel flange is secure, **TIGHTEN EVENLY** from both sides.

Typical flange installation S3-100



Typical flange installation BR3-200

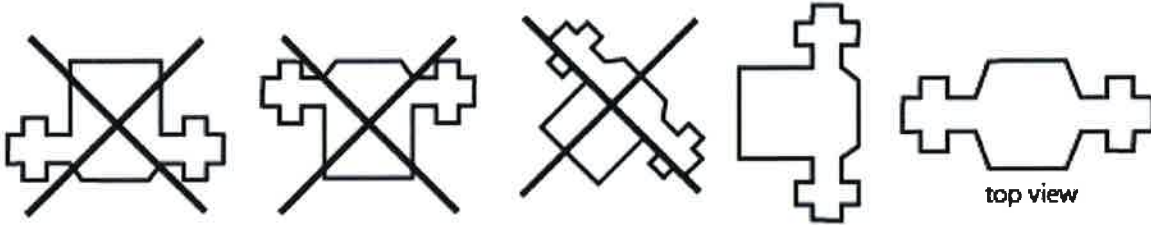


5. Repeat procedure on the other side of pump.
6. Make sure flanges are parallel to pump when tight.
7. You are now ready for pump placement.
8. The pump is going to be “hard plumbed” in the piping, it is now ready for mounting.

Note: If pump is to be placed under sink, it is recommended the flex lines now be secured for ease of installation.

You are now ready to place the pump in the cabinet.

Place assembled pump on its back with the label facing up, underneath the hot and cold T's. Now thread the 3/4" flex line to the 3/4" male thread on the custom T. Tighten all fittings to ensure there are no leaks.



Pump Position:

Install the pump in the **Horizontal** position with the D'MAND KONTROLS® label facing up toward the sink. Be sure the arrow of the pump base points left to right (hot water to cold water side) prior to connecting the flex-lines or adapters. Placement of the pump in a vertical position will decrease the life of the pump and result in an increased noise level. **IMPORTANT NOTE:** Use of any parts other than the supplied D'MAND KONTROLS® parts, including check valves or flex-lines may restrict and delay the flow of water from the water heater, and possibly void the warranty.

Connecting the Control Box for Models (C3-100, S3-100, and BR3-200):



(S3-100 Shown)

Your D'MAND KONTROLS® pump is controlled by the D'MAND KONTROLS® controller. This can be identified as the black box with the 110v power cord with the D'MAND KONTROLS® control wires along with the pump cable receptacle. Ensure the control box is installed using the double sided tape, (included), to an adjacent surface close to the pump. **Note:** Pumps should always be installed on an AC line that includes circuit breakers.



Connect pump power cord to female receptacle in D'MAND KONTROLS® controller. Drill a 5/8" hole in the face of the cabinet where the D'MAND KONTROLS® pump is installed. Next, feed the two wire cable through the 5/8" hole; connect the hard-wired button to the two lead cables. (Red and Black) The hard-wired button has two (2) terminals to affix a wire on each side.



Once the wires are firmly connected, you can firmly press the round button into the hole until secure.



Locate the sensor wire from the top of the pump, (see picture below), and the white plastic end connector. This will need to be connected to the connector from the D'MAND KONTROLS® controller box. This will allow your pump to sense water temperature differential in the water line.



Accessory: If a wireless receiver is being used, then connect the three (3) wire cable with the color coded wires from the D'MAND KONTROLS® pump to the three wires on the receiver. Example: red to red, green to green, and black to black. Make sure to use the three (3) wire nuts provided to cap the connections.



Once all of the wires from the DMAND KONTROLS® box are connected, then you may plug the box to the three prong 110v outlet. (Please note the pump will start and run one (1) cycle if there is not hot water at the pump.)

Using your D'MAND KONTROLS® System:

Your D'MAND KONTROLS® System will typically run only until hot water is present. Once hot water is at the pump, the system will shut down and remain dormant until:

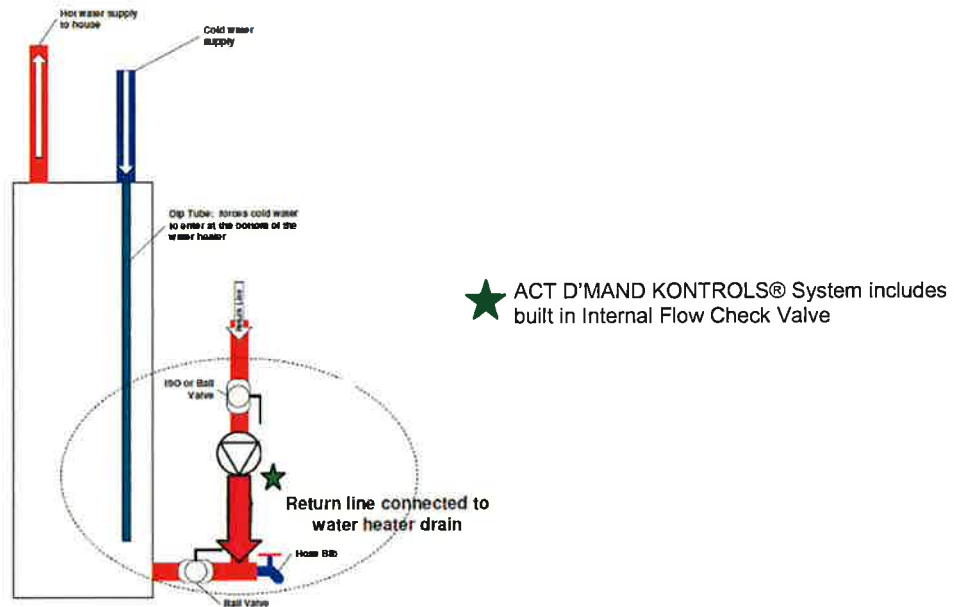
1. The water cools down and needs to be circulated.
2. The user interfaces with the pump again.
3. The D'MAND KONTROLS® System will NOT run if there is hot water at the pump.
4. The user does not activate the pump.
5. When the user is running hot water there is no need to prime the hot water line.

DEDICATED RETURN LINE INSTALLATION

Installing your ACT D'MAND KONTROLS® System

If your System needs to be installed on a dedicated return line then your D'MAND KONTROLS® System can be installed at any location on the dedicated return line.

When installing the pump be sure to orientate the unit with the flow direction arrow pointed towards the water heater. The motor/cylinder needs to be placed in a horizontal position to ensure the unit is quiet and has the maximum life. When using a return line we need to ensure that the pump is not installed directly above the water heater or within 18". This may cause the unit to detect the heated water in the tank and not function as desired. To purge any air which may become trapped in the pump it is recommended that isolation valves may be installed in front and behind the pump. A drain valve will also make any maintenance quick and simple. (See diagram below).



Your ACT D'MAND KONTROLS® System has 3/4" male pipe thread fittings (MPT) on either side of the pump which will need to be adapted to the existing plumbing line. Pipe sealant or Teflon tape is recommended to ensure there are no leaks. Once the unit is plumbed in to the return line you can then proceed to connecting the controllers.

Using your D'MAND KONTROLS® System:

Your D'MAND KONTROLS® System will typically run only until hot water is present. Once hot water is at the pump, the system will shut down and remain dormant until:

1. The water cools down and needs to be circulated.
2. The user interfaces with the pump again.
3. The D'MAND KONTROLS® System will NOT run if there is hot water at the pump.
4. The user does not activate the pump.
5. When the user is running hot water there is no need to prime the hot water line.

TROUBLESHOOTING

Diagnosing Specific Problems

<u>Problem</u>	<u>Possible Cause</u>	<u>Remedy</u>
1. The pump does not run when push button is pressed	<ul style="list-style-type: none"> A. No power at electrical outlet B. You've plugged the controller into an electrical outlet controlled by a wall switch, (such as the outlet under many kitchen sinks that controls the garbage disposal) C. Power cord is not secured to pump and valve D. Wire to push button is not connected to wall E. The temperature setting is already sensing "hot" water so the pump is not being activated 	<ul style="list-style-type: none"> • Plug the controller into a "hot" outlet • Shut off power, then make sure wires have good contact • Call 1-800-200-1956 to reset sensitivity setting
2. The water is not hot enough	<ul style="list-style-type: none"> A. Pump or valve was installed with water flow going in the wrong direction B. There is something in the piping that has blocked the flow of water 	<ul style="list-style-type: none"> • Check the arrows on the housings of the valve and pump to make sure they point in the correct direction (see page 2) • Check the piping for obstruction
3. There is hot water at the cold water tap	<ul style="list-style-type: none"> A. The temperature sensitivity setting now in place is too high, so the pump is not shutting down soon enough 	<ul style="list-style-type: none"> • Call 1-800-200-1956 for reset information
4. Water is not hot enough when pump shuts down	<ul style="list-style-type: none"> A. The temperature sensitivity setting now in place is too low, so the pump is not shutting down soon enough 	<ul style="list-style-type: none"> • Call 1-800-200-1956
5. There is hot water in the cold water lines only	<ul style="list-style-type: none"> A. The pump is installed backwards 	<ul style="list-style-type: none"> • Reinstall the pump correctly
6. Pump runs approx. 4 minutes & stops with no hot water present	<ul style="list-style-type: none"> A. Air is trapped inside the pump 	<ul style="list-style-type: none"> • Remove both flexlines at the custom tees. Fill both flexlines with water and reconnect
7. Motion sensor not activating pump	<ul style="list-style-type: none"> A. Circuit board not set to 12V inside D'MAND KONTROLS® Pump 	<ul style="list-style-type: none"> • Settings must be changed • Call 1-800-200-1956



WARRANTY

ACT D'MAND KONTROLS® Systems

ACT, Inc. D'MAND KONTROLS® Systems will replace without charge (at the Company's option) any D'MAND KONTROLS® pump, valve, or component part which is proven defective under normal use. Models C3-100, S3-100, and BR3-200: Warranty – (Five Years from date of purchase) Accessories: Hard-Wired Buttons, Wireless Transmitters and Receivers, all Hard-Wired or Wireless Motion Sensors and Receivers: Warranty – (One Year from date of purchase) Labor is not included with Limited Warranty.

In order to obtain services under this warranty, it is the responsibility of the purchaser to promptly notify the Company in writing and promptly deliver the item in question, delivery prepaid to the factory. The address for notification and delivery is ACT, Inc. D'MAND KONTROLS Systems®, 3176 Pullman Street, Suite 119, Costa Mesa CA 92626. If the product or part in question contains no defects as covered in the warranty, the purchaser will be notified and billed for parts and labor charges in effect at the time of factory examination and repair.

Any product or part not installed or operated in conformity with instructions or which has been subject to misuse, misapplication, the addition of petroleum based fluids or certain chemical additives to the system, or other abuse, will not be covered by this warranty.

ACT, Inc. D'MAND KONTROLS® Systems OFFERS THIS WARRANTY IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY WARRANTY IMPLIED BY LAW INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS IS IN EFFECT ONLY FOR THE DURATION OF THE EXPRESS WARRANTY SET FORTH IN THE PARAGRAPH ENTITLED "LIMITED WARRANTY" AS SHOWN ABOVE.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR STATUTORY, OR ANY OTHER WARRANTY OBLIGATION ON THE PART OF ACT, INC. D'MAND KONTROLS® SYSTEMS.

ACT, INC. D'MAND KONTROLS® SYSTEMS WILL NOT BE LIABLE FOR ANY SPECIAL INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF ITS PRODUCTS OR ANY INCIDENTAL COSTS OF REMOVING OR REPLACING DEFECTIVE PRODUCTS.

This warranty gives you specific rights, and you may have other rights, which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts or on the exclusion of incidental or consequential damages, so those limitations or exclusions may not apply to you.