

## WARRANTY

Hass Manufacturing Company (HMC) warrants the Intellifaucet main unit, power supply and cabling against defects in materials and workmanship for a period of Five (5) years from the date of original retail purchase. If you discover a defect, HMC will, at its option, repair, replace, or refund the purchase price of the product at no charge to you, provided you return it during the warranty period, transportation prepaid, to HMC. Prior to returning the product for warranty consideration, contact Hass Manufacturing Company for a return authorization number and shipping instructions.

This warranty does not apply if the product has been damaged by accident, misuse, abuse or misapplication, has been modified, or if any serial number has been removed or defaced.

## SATISFACTION GUARANTEE

If, at any time, you are not 100% satisfied with the Intellifaucet, you may return it for replacement or a refund, whichever you prefer. Call Hass Manufacturing Company at (518) 674-8151 prior to returning the product for a return authorization number and shipping instructions.

## COPYRIGHTS AND PATENTS

This manual, computer programming, printed circuit board designs, and product design are copyrighted by Hass Manufacturing Company, with all rights reserved.

The Intellifaucet is patented.

## SAFETY

The Intellifaucet uses 12 volts DC in the main unit. Follow these safety precautions when using the Intellifaucet:

- Use grounded outlet with a GFI
- Do not bypass any fuses
- Do not open the case when power is applied
- Do not submerge the Intellifaucet or the power supply in water.

**\*\*\* IMPORTANT \*\*\***

Observe all safety precautions when using any electrical appliance, **FCC NOTICE**

The Intellifaucet generates and uses radio frequency energy. If not installed in accordance with the operating instructions, technical and service information, it may interfere with radio and television reception.

The Intellifaucet has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. These rules are designed to provide reasonable protection against such interference when operated in a residential area. If the unit interferes with radio or television reception, which can be determined by switching the unit off and on, the user is encouraged to try one of these actions:

- Move the receiving antenna

- Relocate the receiver with respect to the Intellifaucet
- Plug the Intellifaucet into a different electrical outlet from the radio or television so the Intellifaucet and the receiver are on different branch circuits.

If necessary, contact Hass Manufacturing Company for additional suggestions. The manufacturer is not responsible for any radio or television interference caused by unauthorized modifications to this equipment.

The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

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## INSTRUCTIONS

### Intellifaucet D and E Series

#### COMPUTER-CONTROLLED MIXING VALVE

## INSTALLATION

Adequate supplies of hot and cold water must be provided. **WATER MUST BE FILTERED WITH 50 MICRON OR FINER FILTER MEDIA.** Do not connect the output of the Intellifaucet to a closed system (such as a film processing machine) without using an anti-siphon vacuum breaker, such as a Watts 288A. For instant hot water, install a recirculating loop on the hot water supply. A chiller may be needed to get very cold water.

## Mechanical Connections

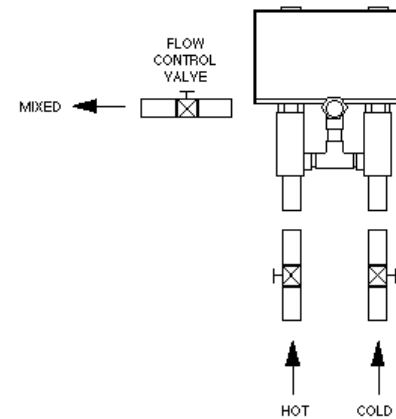


FIGURE 1 MECHANICAL CONNECTIONS

The Intellifaucet is shipped mounted to a wall bracket which can be attached to any vertical surface. Use unions on all pipe connections. Use a flat bladed screwdriver to open and close the valves manually. Remove access caps on the top of the enclosure and insert screwdriver in slot of motor shaft.

1. Prepare mounting surfaces, attach wall bracket and then attach Intellifaucet to the bracket.
2. Connect pipe fittings to the Intellifaucet valves. **HOT IS ON THE LEFT AND COLD IS ON THE RIGHT AS YOU ARE FACING THE INTELLIFAUCET.**
3. Connect the pipe fitting to the outlet.
4. Slowly pressurize the system checking all connections for leaks.

## Electrical Connections

1. Connect the Intellifaucet to the power supply.
2. Plug the power supply into an **OUTLET EQUIPPED WITH A GROUND FAULT INTERRUPTER.**

## OPERATION

To start the Intellifaucet, rotate the control knob to the desired temperature setting. The water will turn on. The ready light glows when the temperature is within on-half degree F of the setting. Rotate the control knob to off to turn off the water. Use an external valve, such as a full port ball valve, available locally, for flow control.

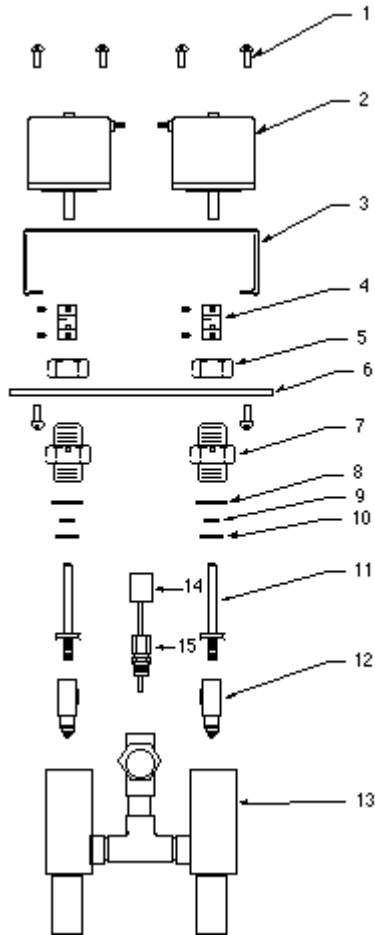
## MAINTENANCE AND REPAIR

### Seat Seal Replacement

The seat seals and plunger are replaced as a unit called the plunger assembly. When replacing the plunger assemblies, replace the stem seal O-rings. New plunger assemblies and O-rings are available from HMC. (NS) means not shown in the figure.

## Disassembling the Intellifaucet

### Removing the cover



1. Unplug the AC adaptor (NS).
2. Turn off the water supplied to the Intellifaucet.
3. Remove the caps (NS). Insert a flat blade screwdriver into the slot on the motor shaft. Open the valves one rotation by rotating counterclockwise as seen from above.
4. Remove the 6 cover screws (NS).
5. Gently lift the cover (NS) straight up. Avoid damaging the front panel gasket (NS).
6. Remove the two screws (NS) holding the front panel (NS) to the base. These screws are located on the underside of the base.
7. Gently disconnect the thermocouple plug (NS) (bright yellow).
8. Pull the front panel forward and away from the unit and set aside.
9. Remove the 2 faucet-base retaining nuts (#5).
10. Gently lift the base (#6) off the faucet and set aside.
11. Loosen the bonnet (#7).
12. Remove the bonnet (#7). While unscrewing the bonnet, hold the stem (#11) stationary to prevent it from jamming up against the underside of the bonnet. The stem assembly is removed with the bonnet.
13. Unscrew the plunger assembly (#12) from the stem (#11). This is a left hand thread.
14. Loosen the coupling (#4) set screws and remove the coupling from the stem (#11).
15. Remove the stem (#11) from the bonnet (#7) exposing the O-ring (#9) inside.
16. Replace the O-ring (#9) with a fresh one. Lubricate the O-ring with Parker Super O Lube or equivalent (silicon-based grease) when assembling. Lubricate the stem threads with Never-Seez or food grade anti-seize lubricant.

Reassemble in reverse order of disassembly.

**IMPORTANT! MAKE SURE SEAT SEAL IS NOT SEATED WHEN TIGHTENING BONNET.**

FIGURE 2 EXPLODED DIAGRAM

### PARTS LIST

Screw (12)  
 Step Motor (2)  
 Motor Platform (1)  
 Coupling (2)  
 Nut (2)  
 Plate (1)  
 Bonnet (2)  
 O-ring, Bonnet (2)  
 O-ring, Stem (2)  
 Thrust Washer (2)  
 Stem (2)  
 Plunger Assembly (2)  
 Faucet Assembly (1)  
 Thermocouple Probe (1)  
 Compression Fitting (1)

## Calibration

Note: All Intellifaucets are factory calibrated before shipping.

Adjust the SPAN screw and the ZERO screw to calibrate the Intellifaucet as follows.

### Calibration Procedures

1. Set a 16 ounce container so that the outlet of the Intellifaucet fills the container and spills over into a drain.
2. Place a reference thermometer in the 16 ounce container.
3. Set the Intellifaucet to 68 degrees F.
4. Wait 2-5 minutes. Read and record the reference temperature.
5. Set the Intellifaucet to 102 degrees F.
6. Wait 2-5 minutes. Read and record the reference temperature.
7. Set up a table as follows: (example values)

T Setpoint	T Actual	Difference (T Actual - T Setpoint)
70.0	69.2	-0.8
105.0	104.2	-0.9

There are four possible cases:

Case 1: Both differences equal 0. The unit is calibrated.

Case 2: Both differences are equal, but not equal to 0.

Rotate the ZERO pot clockwise to lower the actual temperature, counterclockwise to raise it. Start over at 4 until results lead to Case 1.

Case 3: The difference at the higher temperature is more positive than the difference at the lower temperature. Rotate the SPAN pot screw counter-clockwise. Start over at 4 until results lead to Case 2.

Case 4: The difference at the lower temperature is more positive than the difference at the higher temperature. Rotate the SPAN pot screw clockwise. Start over at 4 until results lead to Case 2.

Repeat calibration as needed.

## TROUBLESHOOTING

If a problem exists which is not listed in the chart, contact HMC. We will help you to solve the problem as quickly as possible.

Symptom	Cause	What to do
Valves do not open	Overtightened	Loosen valves with screwdriver
Temp. is wrong	Sticky internal valves	Water must shut off completely when at OFF. If not, unplug, wait 3 seconds, plug in. Repeat up to 5 times if needed.
Nothing happens	Power not connected	Check cables, check GFI reset
	Device is not plugged in	Plug into a working outlet
	Fuse blown	Replace wall adaptor - non-replaceable fuse. Have Intellifaucet checked for proper operation.
Valves cycle (temp. fluctuates)	Supply to valves not correct	Check plumbing - hot on the left, cold on the right
	Flow is restricted	Check manual valves in system, check for blockages

### Cleaning

Clean the Intellifaucet with a mild soap on a damp cloth. Do not use cleanser or other abrasive cleaners as they may scratch the surfaces.