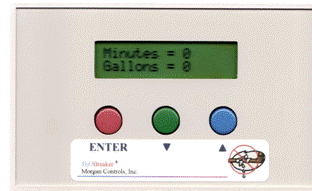


How to Install and Operate the **H₂OBreaker**® Automatic Water Shut-Off Valve

H₂OBreaker® Series 2000



Printed in the U.S.A.

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Part No. D002

H₂OBreaker®

Unpacking

H₂OBreaker® units are shipped in a single box. The box should contain a controller with mounting hardware, a valve and flow sensor assembly, an electrical transformer, and a cable. The box also includes a Warranty Registration Card and this instruction manual.

RJ-45 cable



valve & flow sensor

electrical transformer



controller

Thoroughly check the H₂OBreaker® unit for possible shipping damage and parts loss. Also inspect and note any damage to the shipping carton. Notify the transportation company if damage is present. Morgan Controls, Inc. is not responsible for in-transit damages.

LIMITED WARRANTY

Morgan Controls, Inc.
Series 2000 H₂OBreaker® System

To register your warranty, complete the enclosed Warranty Registration Card and mail it within 30 days of purchase.

Morgan Controls, Inc. warrants the electrical components of the H₂OBreaker® System to be free from defects in material and workmanship. Morgan Controls, Inc. will replace any defective parts if the parts are returned to Morgan Controls, Inc. within one year of purchase. This shall constitute the sole remedy of the purchaser and the sole liability of Morgan Controls, Inc. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Morgan Controls, Inc. be liable for special or consequential damages.

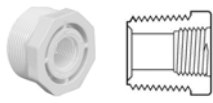
SAFETY GUIDELINES

- **The H₂OBreaker® must be installed by a licensed plumber.**
- **Check local plumbing, electrical, & building codes. The installation must conform to them.**
- Follow the installation instructions carefully. Failure to install the H₂OBreaker® unit properly, and according to these **SAFETY GUIDELINES voids the warranty.**
- Before installation, read this entire manual. Then obtain all the materials and tools needed to make the installation.
- If the building contains any equipment which requires an uninterrupted water supply of any kind, the H₂OBreaker® **MUST be installed after, i.e., downstream, of the water line which supplies the equipment,** to ensure a steady supply of water to the vital equipment and water outlets.
- If the building is equipped with an automatic sprinkler system, or an emergency water supply intended for fire-fighting purposes, the H₂OBreaker® unit **MUST be installed after, i.e., downstream, of the water line which supplies the sprinkler system or emergency water supply.** Failure to comply with this requirement may result in loss of life and extreme property damage due to loss by fire.
- **Make no substitutions** for parts that compose the H₂OBreaker® unit.
- Use care when handling the H₂OBreaker® unit. Do not drop.
- Do not locate the H₂OBreaker® unit where freezing temperatures occur. Do not attempt to control water over 120°F. **Freezing, or hot water, will damage the H₂OBreaker® and voids the warranty.**
- Avoid installing in direct sunlight. Excessive sun heat may cause distortion or other damage to parts.
- The H₂OBreaker® requires a **maximum allowable inlet water pressure of 125 psi.** If daytime pressure is over 80 psi, nighttime pressure may exceed the maximum. Use a pressure reducing valve if necessary. Adding a pressure reducing valve may reduce the flow.
- **The H₂OBreaker® unit works on 12 volt DC electrical power only.** Be sure to use the transformer included in this purchase.
- Use a 100 micron, or smaller pore size, filter upstream of the H₂OBreaker® unit.

Inlet & Outlet Plumbing Options

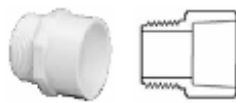
- Ensure that the pipe size of the **H₂OBreaker®** valve and flow sensor assembly match the size of the water main pipe in the home.
- Use sweat copper, threaded pipe, CPVC, or PVC plastic pipe.
- **Be sure to comply with all local plumbing, electrical, and building codes.**
- Optional Inlet & Outlet Fittings

Reducer Bushing



(MIPT x FIPT)

Male Adapter



(MIPT x slip)

Union



(slip x slip)

Union



(FIPT x FIPT)

Other Requirements

- A 120V, 60Hz, grounded electrical outlet, continuously “live”, is needed within five feet (5’) of the **H₂OBreaker®** Unit.

Tools You Will Need

SOLDERED COPPER PIPE PLUMBING SYSTEMS	THREADED PIPE PLUMBING SYSTEMS	CPVC PLASTIC PIPE PLUMBING SYSTEMS
tape measure	tape measure	tape measure
hacksaw or pipe cutter	hacksaw or pipe cutter	hacksaw or pipe cutter
propane torch	threading tool	adjustable wrench
lead-free solder and flux	Teflon® tape or pipe joint compound	Teflon® tape or pipe joint compound
emery cloth, sandpaper, or steel wool	pipe wrench & adjustable wrench	solvent cement primer

Materials You May Need

- pipe and fittings as required

Note:

- The installation of the **H₂OBreaker®** valve and sensor assembly requires cutting the building water main supply. Failure to complete the installation will leave the building without pressurized water service until the installation is complete.
 - The typical **H₂OBreaker®** installation requires about two (2) hours. It is important to schedule the installation for a day and time that will be safe and convenient for everyone and everything in the building during this period of interrupted water service.
 - The **H₂OBreaker®** must be installed by a licensed plumber.
 - The **H₂OBreaker®** must be installed in compliance with local and state plumbing, electric, and building codes.
 - A 100 micron, or smaller pore size, whole-house water filter must be installed upstream of the **H₂OBreaker®** to ensure the water supply is free of sediment and particulate.
 - When installing the **H₂OBreaker®** ensure that NO pipe joint compound or debris enters the interior of the valve or flow sensor. Loosened joint compound may stall the flow sensor.
1. Select the proper location for the installation of the **H₂OBreaker®** within the pressurized plumbing system.
 - The **H₂OBreaker®** must be installed after, i.e., downstream, of any water supply which provides water to medical or life support systems, emergency systems or equipment such as a sprinkler system intended for use in the event of a fire.
 - The **H₂OBreaker®** must be installed after, i.e., downstream, of an accumulation (pressure) tank of the type included in well-water systems.
 - The **H₂OBreaker®** must be installed after, i.e., downstream, of a water conditioning system.
 - The **H₂OBreaker®** solenoid valve and flow sensor assembly may be installed in a horizontal or vertical orientation.
 2. Ensure that all of the pipe fittings, tools, and materials, needed to connect the **H₂OBreaker®** inlet and outlet to the water main pipe, are at the worksite prior to beginning the installation.
 3. Measure the overall length of the **H₂OBreaker®** valve and sensor assembly, from inlet to outlet, accounting for the fittings needed to install it into the water main pipe.
 4. Turn off the water heater and turn off the main water supply valve to the building.
 5. Remove a section of the water main pipe to permit the installation of the **H₂OBreaker®** valve and sensor assembly into the water main pipe.
 6. Install the proper fittings to the ends of the water main.
 7. Install the **H₂OBreaker®** valve and sensor assembly in the water main ensuring that the inlet and outlet sections are in the proper direction.
 8. If using PVC slip connections, allow sufficient time for the PVC solvent cement to cure before applying water pressure to the system.



Pressure Testing for Leaks

To prevent excessive air pressure in the H₂OBreaker® Unit and plumbing system, do the following steps EXACTLY in order.

1. Fully open 2 or more cold water faucets downstream of the H₂OBreaker® Unit.
2. Slowly, fully open the main water supply valve. Observe steady flow from the opened faucets, with no air bubbles.
3. After about 3 minutes, open a hot water faucet for about 1 minute, or until all air is expelled, then close.
4. Close all cold water faucets and check your plumbing work for leaks.

Electrical Connections

1. Plug the RJ-45 cable into the receptacle of the H₂OBreaker® controller. This is an 8-conductor, polarized connector. Use care to ensure the plug is inserted with the correct orientation.
2. Plug the remaining end of the RJ-45 cable into the junction-box receptacle of the H₂OBreaker® automatic valve and flow sensor assembly. This is an 8-conductor, polarized connector. Use care to ensure the plug is inserted with the correct orientation.
3. Plug the Wall Adapter Power Transformer coaxial cable into the H₂OBreaker® controller.
4. Plug the transformer into a continuously “live”, grounded, 120V, 60Hz house electrical outlet, approved by local codes. *THE UNIT WORKS ON 12VDC, 1250 ma TRANSFORMER ONLY. DO NOT CONNECT WITHOUT THE TRANSFORMER.*

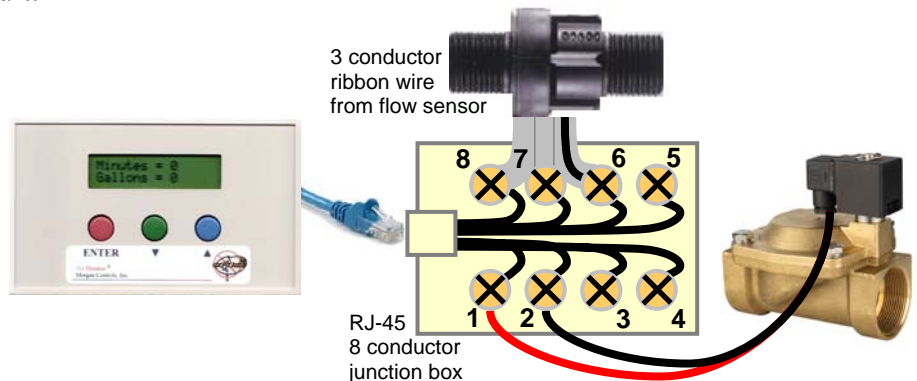


5. The H₂OBreaker® has a SPDT relay to optionally interface with a security system, using terminals 3, 4 & 5 of the valve-mounted, RJ-45 junction box.
 - In normal operation terminals 3&4 are a normally-closed circuit, terminals 4&5 a normally-open circuit.
 - When the H₂OBreaker® stops flow, the SPDT relay changes position and terminals 3&4 become an open circuit and terminals 4&5 a closed circuit.

RJ-45 Junction Box - Terminal Connections

Pin#

1. Valve 12VDC
2. Valve ground
3. Security Interface SPDT-Relay N.C. Terminal
4. Security Interface SPDT-Relay Common Terminal
5. Security Interface SPDT-Relay N.O. Terminal
6. Flow Sensor ground (gray/black)
7. Flow Sensor output signal (gray)
8. Flow Sensor 5VDC (gray)



Restart the Water Heater

- Turn on the electric or fuel supply to the water heater, and light the pilot, if applicable.

Note: Pressing the **ENTER** button enables scrolling through the set-point screens.
Pressing the up ▲ or down ▼ button enables changing the set-points.

Setting the H₂OBreaker® Alarm Values

Setting the alarm values sets the longest number of MINUTES and the highest number of GALLONS of steady flow anticipated during any single water use.

To set the MINUTES Limit:



- From the Main Screen, press the **ENTER** button.
- A screen will appear which shows the MINUTES Limit.
- To adjust the MINUTES Limit press the up ▲ or down ▼ buttons.
- Press **ENTER**.

To set the GALLONS Limit:



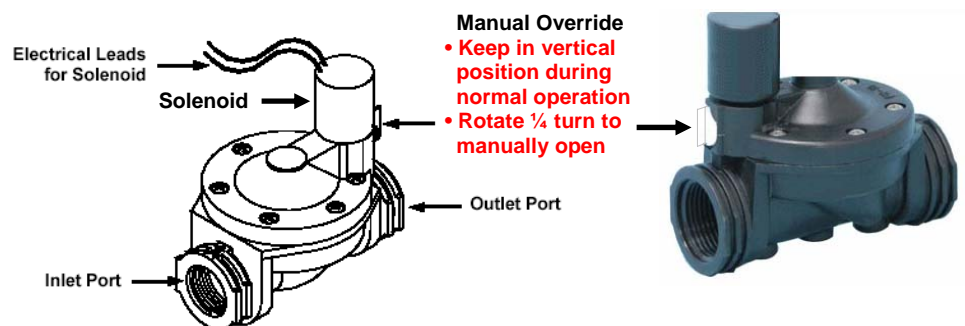
- From the Main Screen, press the **ENTER** button twice.
- A screen will appear which shows the GALLONS Limit.
- To adjust the GALLONS Limit press the up ▲ or down ▼ buttons.
- Press **ENTER**.

The H₂OBreaker® is now in use.

Reaching the Alarm Set-Points

- If steady water flow causes the elapsed time of flow or the total volume of flow to reach a MINUTES or GALLONS Limit, the H₂OBreaker® will first pulse the water flow, off & on, as a warning.
- If the pulsed warning occurs during normal water use - turn off the faucet for about ten seconds, then resume normal water use.
- A response during the pulsed warning automatically increases either the MINUTES or GALLONS Limits by 5 minutes or 5 gallons, reducing the future chance of an alarm.
- If the warning pulses go unanswered, the automatic valve will fully stop water flow until the H₂OBreaker® is reset.
- Pressing the **ENTER** button restores water flow following an alarm period.

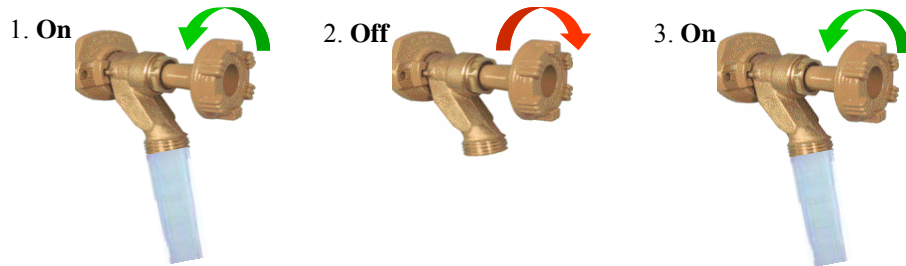
The valve has a Manual Override knob. In normal operation it must remain in the vertical position as seen in the diagram.



H₂OBreaker®

UNLIMITED FLOW Option

- This setting converts each faucet into an H₂OBreaker® Remote Control to enable intentional, unlimited water flow regardless of the time or volume of flow.
- This is useful for periods when uninterrupted water use is intended, for example, when filling a pool, a large whirlpool tub, or watering a lawn.

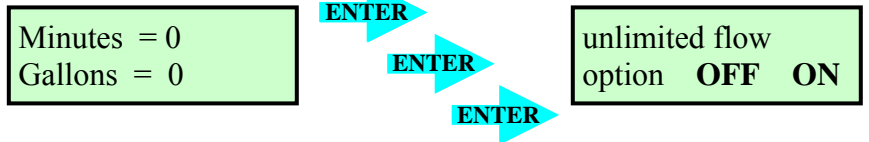


By turning a water faucet fully on, next fully off, then on again, flow control is suspended for the present water-use period.

- Active H₂OBreaker® control is automatically restored when water flow is stopped at the faucet.

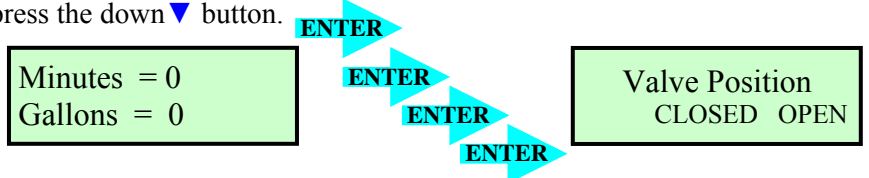
To turn on the UNLIMITED FLOW Option:

- From the Main Screen, Press the **ENTER** button 3 times.
- A screen will appear which shows the UNLIMITED FLOW Option setting.
- To turn ON the UNLIMITED FLOW Option press the up ▲ button.
- To turn OFF the UNLIMITED FLOW Option press the down ▼ button.
- Press **ENTER**.



To set the VALVE POSITION:

- From the Main Screen, Press the **ENTER** button 4 times.
- A screen will appear which shows the VALVE POSITION setting.
- To set the VALVE POSITION to OPEN, press the up ▲ button.
- To set the VALVE POSITION to CLOSED, press the down ▼ button.
- Press **ENTER**.



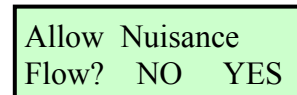
Slow Leaks - Allowing Nuisance Flow

- If the plumbing system has a slow leak, such as a dripping faucet or a toilet with a worn fill or drain valve, the H₂OBreaker® will stop flow after reaching a MINUTES or GALLONS limit. This can become an inconvenience to the homeowner.
- To avoid disarming the H₂OBreaker® before the leak is repaired, slow nuisance leaks can be allowed by following the steps listed below.



To allow Nuisance Flow:

- From the Main Screen, Press the down ▼ button and hold, for about 5 - 10 seconds, until the following screen appears.
- To allow Nuisance Flow, press the up ▲ button, indicating YES.
- To disallow Nuisance Flow, press the down ▼ button, indicating NO.
- The H₂OBreaker® will measure the flow rate and allow flow rates at, or below, the current leak rate.
- It is suggested the leak be identified and repaired when possible.
- When the repair is complete, return to the **Allow Nuisance Flow** screen, and press the down ▼ button, indicating NO to restore the H₂OBreaker® to the highest sensitivity.



Calibrating the H₂OBreaker® Flow Sensor

The accuracy of the H₂OBreaker® will improve with occasional calibration of the flow sensor. Calibration is easily accomplished by filling a container of known volume with water.

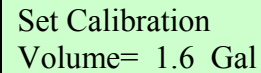
To calibrate the H₂OBreaker® :

- From the Main Screen, press and hold the ▲ button for 5 seconds until the following screen appears.



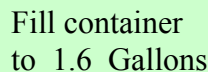
Calibrate Flow ?
NO YES

- Press the ▲ button indicating YES.
- Press **ENTER**.
- A screen will appear allowing you to set the volume of flow used during the calibration.
 - It is convenient to use one of the following vessels:
 - filling an empty one (1) gallon milk bottle, or
 - filling a five (5) gallon pail, or
 - flushing a 1.6 gallon toilet



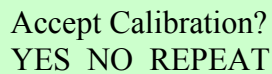
Set Calibration
Volume= 1.6 Gal

- To adjust the calibration volume in gallons, based on the vessel selected, press the up ▲ or down ▼ buttons.
- Press **ENTER**.
- A screen will appear indicating that the calibration flow of water can begin.



Fill container
to 1.6 Gallons

- Go to a faucet and completely fill the selected container, then stop flow.
 - or flush a toilet and allow the tank refilling to complete.
- A blinking screen will appear indicating the calibration flow of water has ended.



Accept Calibration?
YES NO REPEAT

- Press **YES** to accept the recalibration, or
- Press **NO** to abort the recalibration, or
- Press **REPEAT** to repeat the recalibration.

The H₂OBreaker® is now calibrated.