Safgard™

Steam Pro Kit

Auto Reset Low Water Cut-Off Kit for Gauge Glass Attachment

Kit #45-4520 (120V Low Water Cut-Off)
Kit #45-4020 (24V Low Water Cut-Off)

- No moving parts in water. No floats to hang-up or foul.
- Easy installation. Quick hook-up fittings adapt control to all 8" to 14" sight glasses.
- Simple fast wiring.
- Can be used with Hydrolevel's VXT Automatic Water Feeder*

*McDonnell & Miller Model 101A water feeder may cause flooding and should not be used with this low water cut-off.

Kit Includes....

- Cast Iron Hub Assembly
- Applicable Fittings
- Wiring Whip
- Automatic Reset Low Water Cut-Off

READ BEFORE PROCEEDING

Read and understand these instructions completely before installing or servicing this control. Save these instructions for future reference.

Only Hydrolevel brand low water cut-off controls are approved for use with the included cast iron manifold casting. We recommend that secondary (redundant) Low Water Cut-Off controls be installed on all steam boilers with heat input greater than 300,000 BTU/hour or operating above 15 psi of steam pressure. At least two controls should be connected in series with the burner control circuit to provide safety redundancy protection should the boiler experience a low water condition. Moreover, at each annual outage, the low water cut-offs should be dismantled, inspected, cleaned, and checked for proper performance.

⚠ WARNING Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.

This low water cut-off must be installed in series with all other limit and operating controls installed on the boiler. After installation, check for proper operation of all of the limit and operating controls, before leaving the site.

To prevent serious personal injury from steam and hot water make sure there is a discharge line from the blow down valve to a proper place of disposal. To prevent a fire, do not use this low water cut-off to switch currents over 7.4A, 1/3 Hp at 120 VAC or 3.7A, 1/3 HP at 240 VAC, unless a starter or relay is used in conjunction with it.

Previous controls should never be installed on a new system. Always install new controls on a new boiler or system. Failure to follow this warning could cause property damage, personal injury or death.

NOTICE **Frozen pipes/water damage.** Central heating systems are prone to shut down as a result of power or fuel outages, safety related fault conditions or equipment failure. Installation of freeze protection monitoring or similar precautions are recommended for unattended dwellings in climates subject to sustained below-freezing temperatures. Failure to do so can cause frozen pipes which will result in severe property damage including burst pipes and substantial water leaks.

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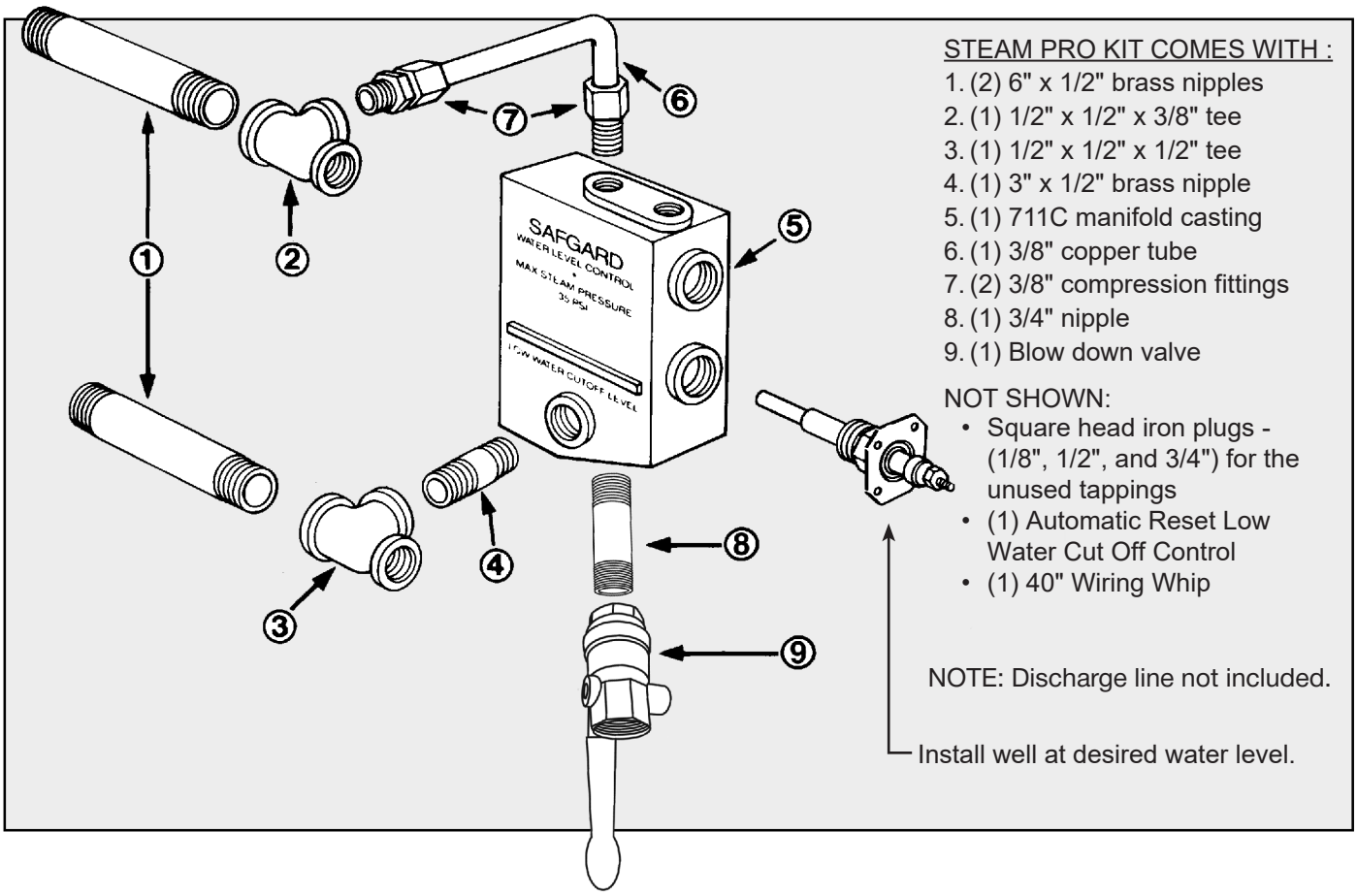
INSTALLATION



STEAM PRO KIT COMES WITH :

1. (2) 6" x 1/2" brass nipples
2. (1) 1/2" x 1/2" x 3/8" tee
3. (1) 1/2" x 1/2" x 1/2" tee
4. (1) 3" x 1/2" brass nipple
5. (1) 711C manifold casting
6. (1) 3/8" copper tube
7. (2) 3/8" compression fittings
8. (1) 3/4" nipple
9. (1) Blow down valve

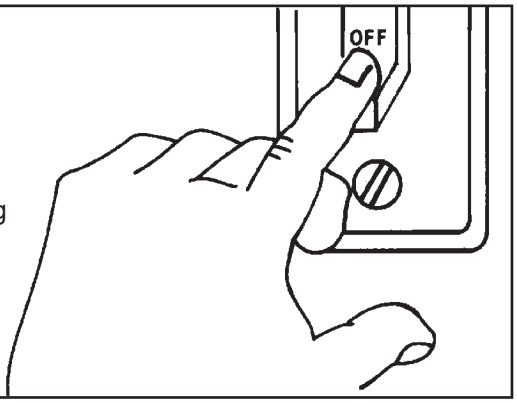
NOT SHOWN:

- Square head iron plugs - (1/8", 1/2", and 3/4") for the unused tappings
- (1) Automatic Reset Low Water Cut Off Control
- (1) 40" Wiring Whip

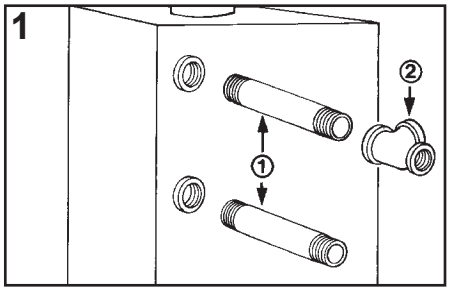
NOTE: Discharge line not included.

Install well at desired water level.

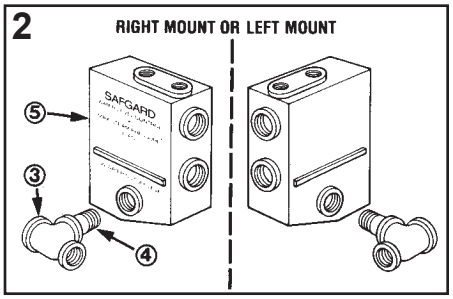
⚠WARNING To prevent electrical shock or equipment damage, power must be off during installation or servicing of the control. To prevent serious burns, the boiler should be thoroughly cooled before installing or servicing control. Only qualified personnel may install or service the control in accordance with local codes and ordinances. Read instructions completely before proceeding.



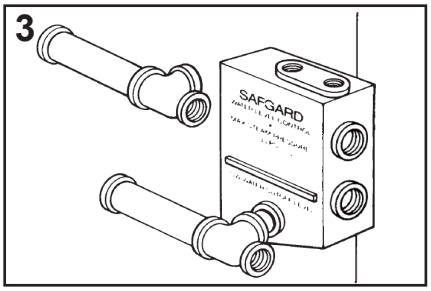
INSTALLATION cont...



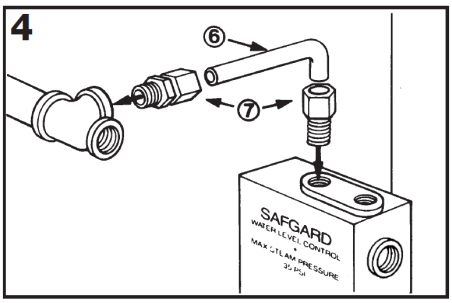
Remove gauge glass assembly and nipples replacing nipples with two 6" brass nipples provided **(1)**. Install 1/2" x 1/2" x 3/8" tee **(2)** on top nipple.



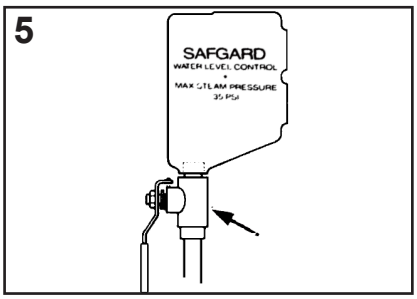
Install 1/2" x 2" brass nipple **(4)** and 1/2" x 1/2" x 1/2" tee **(3)** to 1/2" threaded hole in casting **(5)**. NOTE: Casting is designed for either left or right mounting on gauge glass. Be sure to plug hole on opposite side.



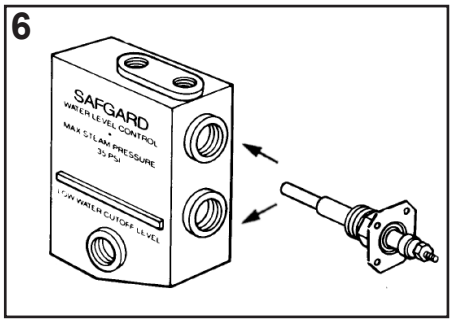
Thread tee attached to casting into bottom 6" nipple. Tighten until casting is vertical.



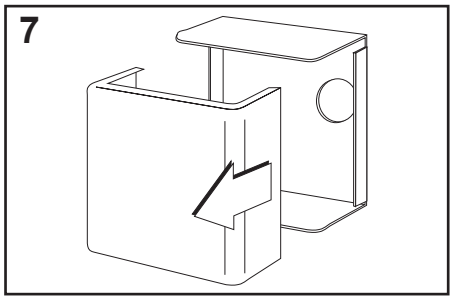
Install compression fittings **(7)** into casting and top tee. Size copper tubing **(6)** and tighten between the two compression fittings.



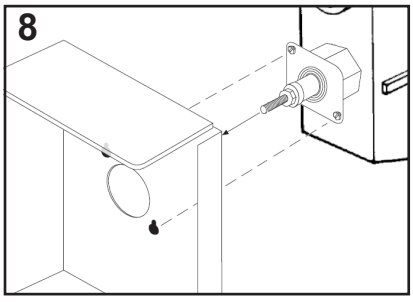
Install nipple and blow down valve (with discharge line) in bottom 3/4" tapped hole.



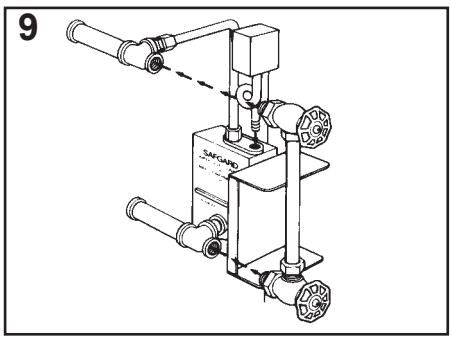
Install probe at desired water level in the 711C manifold casting **(Fig 6).** Apply pipe sealing compound to threads before installing probe. Teflon tape is not recommended.



Loosen the two control box cover binding head screws and remove the cover.



Slide keyhole slots over probe mounting screws and tighten screws (with either a 1/4" hex head driver or flat screwdriver.



Reattach gauge glass cocks and gauge glass into end of 1/2" tees. Pressuretrol can be threaded into 1/8" threaded hole on top of casting. If pressuretrol is not used, plug 1/8" hole on top of casting.

CONTROL WIRING - FLOAT TYPE LWCO REPLACEMENT

⚠WARNING **Wiring Safety Limtis:** For safe appliance operation, all safety limits must be wired in series with and before the LWCO when using the supplied wire harness. Failure to properly wire the safety limits can result in significant property damage damage as well as severe personal injury or death.

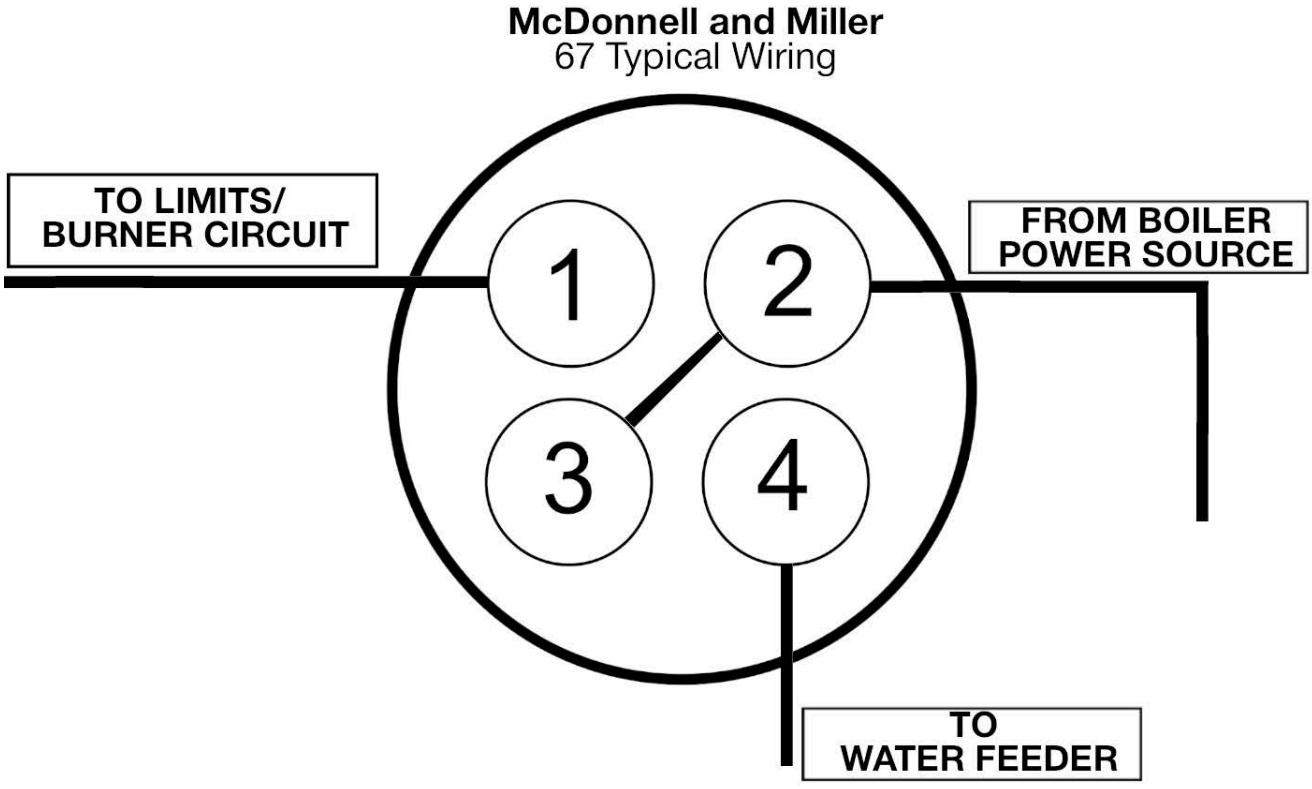
Electrical shock hazard: To prevent electrical shock, death or equipment damage, disconnect power supply before installing or servicing this control. All wiring must comply with all applicable state and local codes or regulations or any other state or local codes or regulations.

Operation Test: After installation, check for proper operation of all of the limit and operating controls, before leaving the site.

Probe Installation: Make sure probe is installed above minimum safe water line as determined by the boiler manufacturer and that the probe is positioned to shut off the boiler before the water level falls below the lowest visible part of the gauge glass.

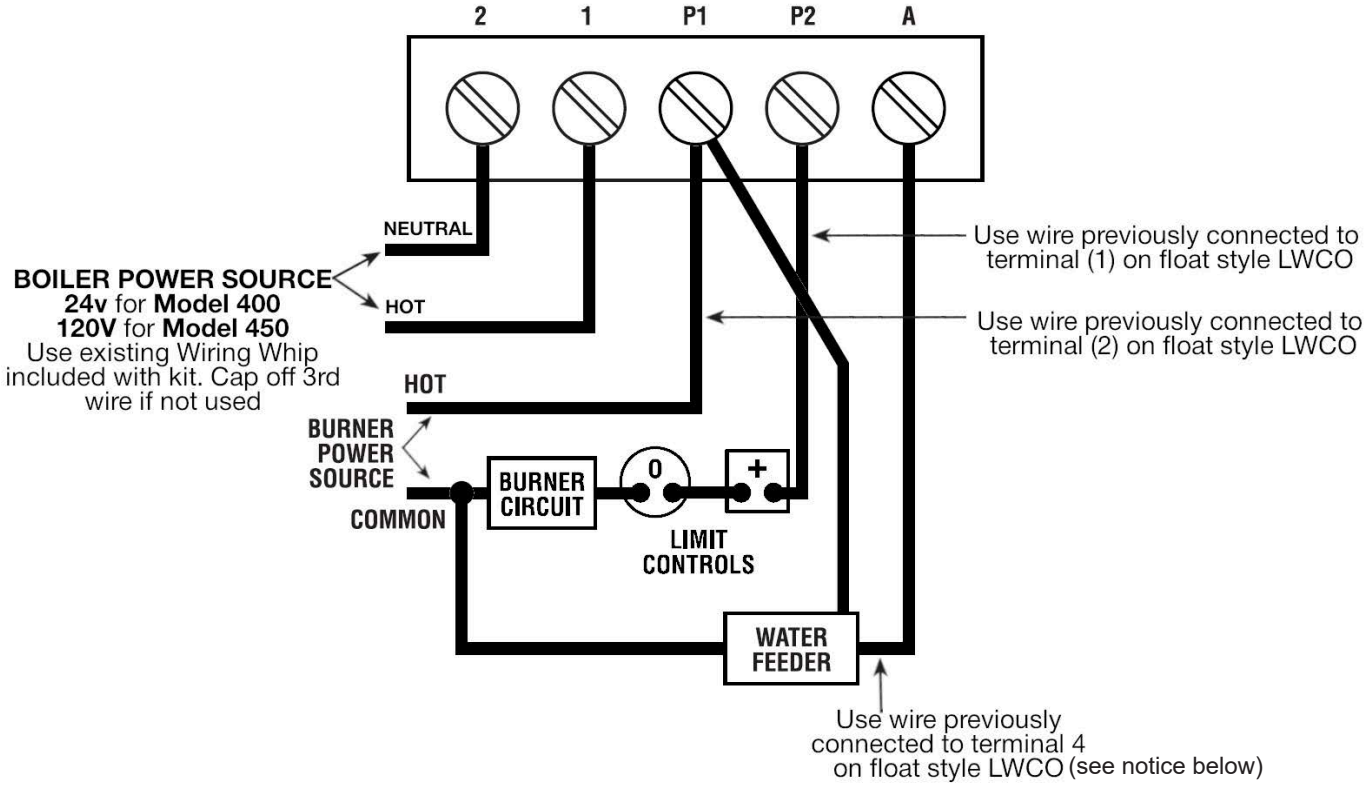
When replacing a float type low water cut-off, first confirm the existing wiring matches the typical float wiring diagram listed below (Fig. 1). Use Fig. 2 (next page) to replace your existing float type low water cut-off with the included Safgard Model 400(24V) or 450(120V). Refer to wiring in the manual supplied with the 400 or 450 control if this kit will not be used as a replacement for a float type low water cut-off.

FIG. 1 - Wiring: Typical Float Type Low Water Cut-Off



CONTROL WIRING - FLOAT TYPE LWCO REPLACEMENT - cont...

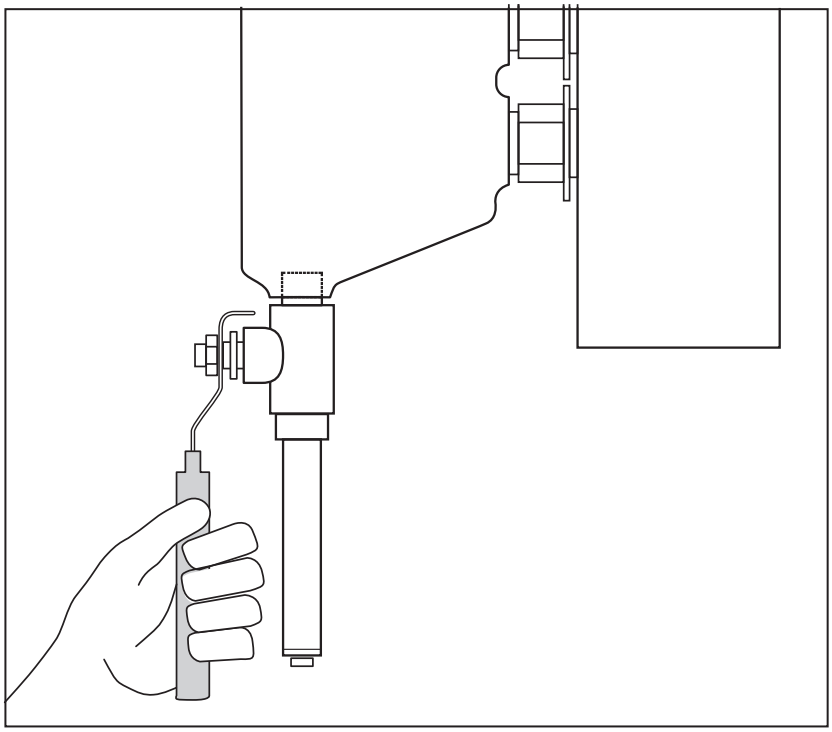
FIG. 2 - Wiring: Replacing Float Type LWCO with Hydrolevel Probe Type LWCO
Same Power Source for Control and Burner Circuit



NOTICE **RISK OF WATER DAMAGE:** Using a solenoid valve or a McDonnell & Miller Model 101A water feeder will cause system overfilling and may result in water leaking from radiators into the living space. Use a Hydrolevel VXT Series water feeder, or other feeder equipped with both a feed delay and a timed, regulated feed cycle. Failure to follow these instructions can result in significant property damage.

MAINTENANCE - SCHEDULE AND PROCEDURE

⚠ WARNING **REGULAR MAINTENANCE REQUIRED:** This Control requires regular maintenance (described below) to ensure continued, safe operation. To prevent serious personal injury from steam and hot water, make sure there is a discharge line from the blow down valve to a proper place of disposal. Failure to properly maintain the control can lead to severe damage to the boiler, other property, personal injury, or death.



PROBE INSPECTION: To ensure optimum performance, inspect probe annually. Clean any scale or build-up from the probe using a scouring pad or steel wool. Reinstall the probe and test control in accordance with the Operating Instructions.

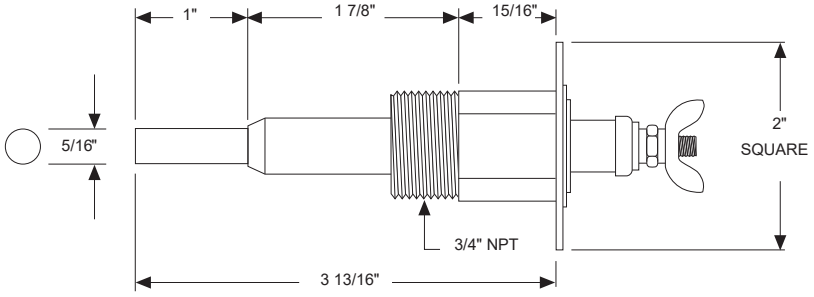
BLOW DOWN INSTRUCTION AND SCHEDULE: This Control requires regular maintenance to ensure continued, safe operation. During normal boiler function, sediment may accumulate in the low water cut-off's probe housing. If left unchecked, this sediment can build up, trap water in the probe housing, and prevent the control from detecting a low water condition in the boiler. A regular blow down of the control is required for proper operation. To flush the sediment from the chamber, the control must be blown down throughout the heating season in accordance with the following schedule:

- Daily for first week following control installation
- Prior to heating season startup in the fall
- Once per week during the heating season

Instructions: Confirm water is visible in the gauge glass. If not visible, shut the burner off, allow the boiler to fully cool, then add water until visible in the gauge glass. Once water is visible, bring your boiler back up to temperature. With the boiler running, place a heat resistant pail directly beneath the con-trol casting blow down valve. Open the valve and allow the sediment and water to drain into the pail. Continue to drain the water until it runs clean (One gallon is sufficient unless otherwise stated by the appliance manufacturer). Close the valve when completed. Replenish the water in the boiler if needed. If water fails to continuously flow after 3-5 seconds the gauge glass nipple may be clogged and service by a qualified technician is required.

PROBE DATA

Test Pressure: 1000 PSI



EL1214 – STANDARD MODEL – 3/4" NPT

SPECIFICATIONS

	MODEL 400 Low Water Cut-Off	MODEL 450 Low Water Cut-Off	MANIFOLD CASTING AND FITTINGS
MAXIMUM PRESSURE:	15 PSI	15 PSI	15PSI
INPUT VOLTAGE:	24 VAC, 60 HZ	120 VAC, 60 HZ	-
SWITCH: CONTACTS SWITCH:	SPDT	SPDT	-
RATINGS & ALARM CIRCUIT:	50 VA @ 24 VAC Pilot Duty	125 VA @ 120 VAC Pilot Duty	-
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UL LISTED

Proudly assembled in the USA from domestic and global components.

LIMITED MANUFACTURER'S WARRANTY

We warrant products manufactured by Hydrolevel Company to be free from defects in material and workmanship for a period of two years from the date of manufacture or one year from the date of installation, whichever occurs first. In the event of any claim under this warranty or otherwise with respect to our products which is made within such period, we will, at our option, repair or replace such products or refund the purchase price paid to us by you for such products. In no event shall Hydrolevel Company be liable for any other loss or damage, whether direct, indirect, incidental or consequential. This warranty is your EXCLUSIVE remedy and shall be IN PLACE OF any other warranty or guarantee, express or implied, including, without limitation, any warranty of MERCHANTABILITY or fitness for a particular purpose. This warranty may not be assigned or transferred and any unauthorized transfer or assignment thereof shall be void and of no force or effect.

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