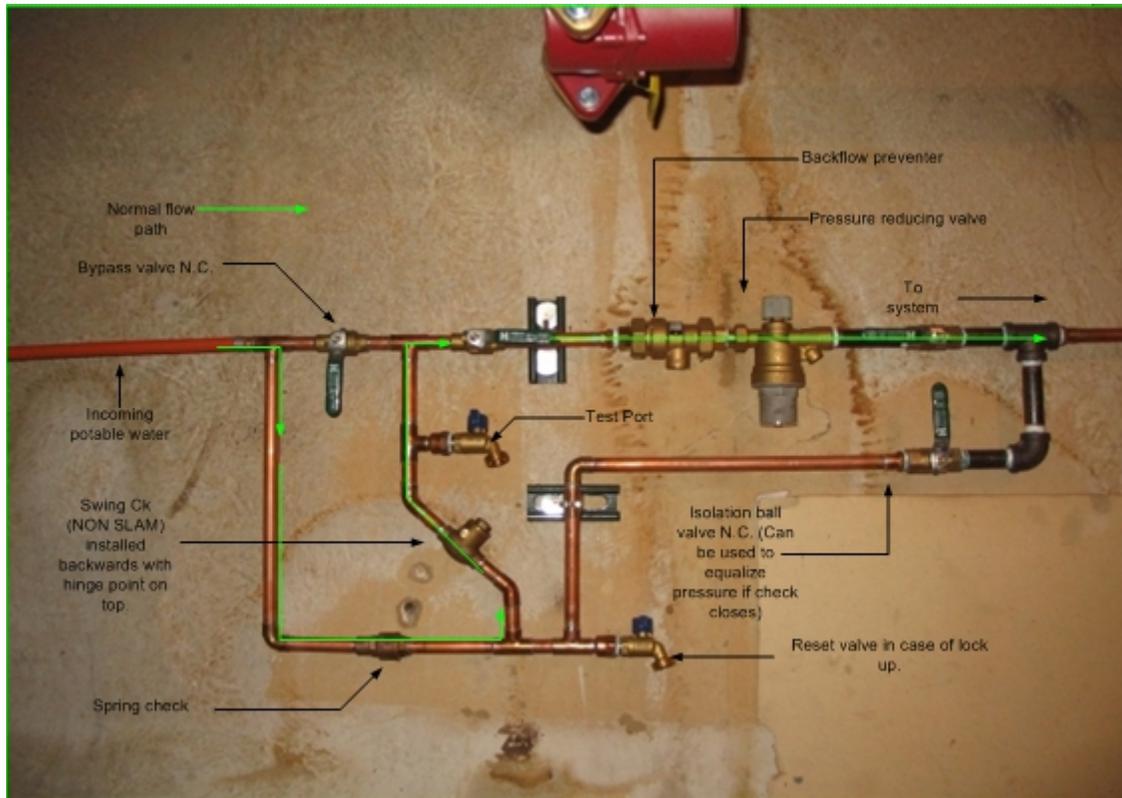


Excess Flow Elimination Unit

In the course of doing business in the hydronic world, we quite often expose our companies to potential water damage “issues” with existing older hydronic systems. One problem is the potential major loss of water from a closed loop heating system. In an effort to negate damages associated with the water losses, we present the Excess Flow Elimination Unit. This unit is comprised of components that must be properly installed in order for it to work. Note that the swing check valve is installed backwards, on a 45 degree angle upward, with the hinge pin for the swing check being located on the top of the valve. It is recommended that a non slam check valve be used to avoid the possibility of setting up a water hammer consideration.



Theory of operation is this. To fill system, open bypass around backwards check valve. Fill and flush as per normal. Upon completion of filling and topping off of fill pressure, close the bypass valve around check valve, remove the ball valve handles and place them in a secure spot.

Under normal operating considerations, the minor loss of water associated with leaking packing glands on valves, auto air vents etc. are automatically made up with no stoppage of water.

In the event where a pipe is broken, or the system breached in whatever manner for whatever reason, (freeze burst, relief valve popping, residents watering marijuana plants from purge cock in baseboard, etc. etc. etc....) excess flow will attempt to run through the backwards check valve whose swing gate is being held open by gravity due to its' installation on a 45 degree angle, resulting in the check valve closing shut and stopping major flow.

If this condition occurs, all make up water will be stopped until the EFEU is manually reset to the "Normal" configuration.

The intended use of this device (EFEU) is for larger apartment complexes where it is virtually impossible to eliminate all known points of leakage and evaporation which would eventually lead to system depressurization due to ongoing water loss. On smaller residential systems, I'd never apply the EFEU, but always applied the PIG limited water availability make up unit. This avoids inadvertent system lock out due to continual small losses and lockout associated with the PIG's operation caused by the low pressure cut out.

BTW, PIG came from the term Pressure Induced Glycol, which is (as per the article) why we developed it and deployed it.

It is strongly recommended that a reliable low pressure cut out be applied to the heating system to turn the heating system off in the event of pressure loss. Most properly designed hydronic systems have a low water cut off device connected to the boilers, but a low water pressure cut off device will work in conjunction with a low water cut off, and will actually act as an early warning system for large leaks that occur in these systems, unseen. Pressure drop occurs prior to boiler being exposed to a dry fire condition.

It should be noted that although all components on this package are code approved, the assembly as a whole is not recognized by AHJ's as being an accepted means of damage mitigation.

Excess Flow Eliminator should be tested and reset on an annual basis in order to ensure proper operation.

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