



## RETRIEVER I—CONDENSATE ONLY

### Installation Manual



**NATIONAL COMBUSTION CO., INC.**  
104-11 180th Street  
Jamaica, NY 11433  
Ph: 718-291-8400 Fx: 718-291-6870

### **The Retriever I: Purpose**

The purpose of the RETREIVER I for Condensate Only is to recover heat and steam remaining in condensate returns in order to generate hot potable water.

### **The Retriever I: Sequence of Operation**

1. When hot domestic water is drawn from the Retriever I, incoming cold water replaces it and the temperature decreases.
2. When the temperature dips *below* the set point on the control, the bypass solenoid valve will close—blocking condensate from returning directly to the condensate return tank—and the condensate solenoid valve will open—forcing condensate into the Retriever’s coil.
3. When the temperature of the water in the tank reaches the set point, the condensate solenoid valve will close and the bypass solenoid valve will open. No steam or condensate will circulate through the coil.
4. The vinyl and polyurethane insulation jacket allows less than 1/2 degree per hour standby loss.

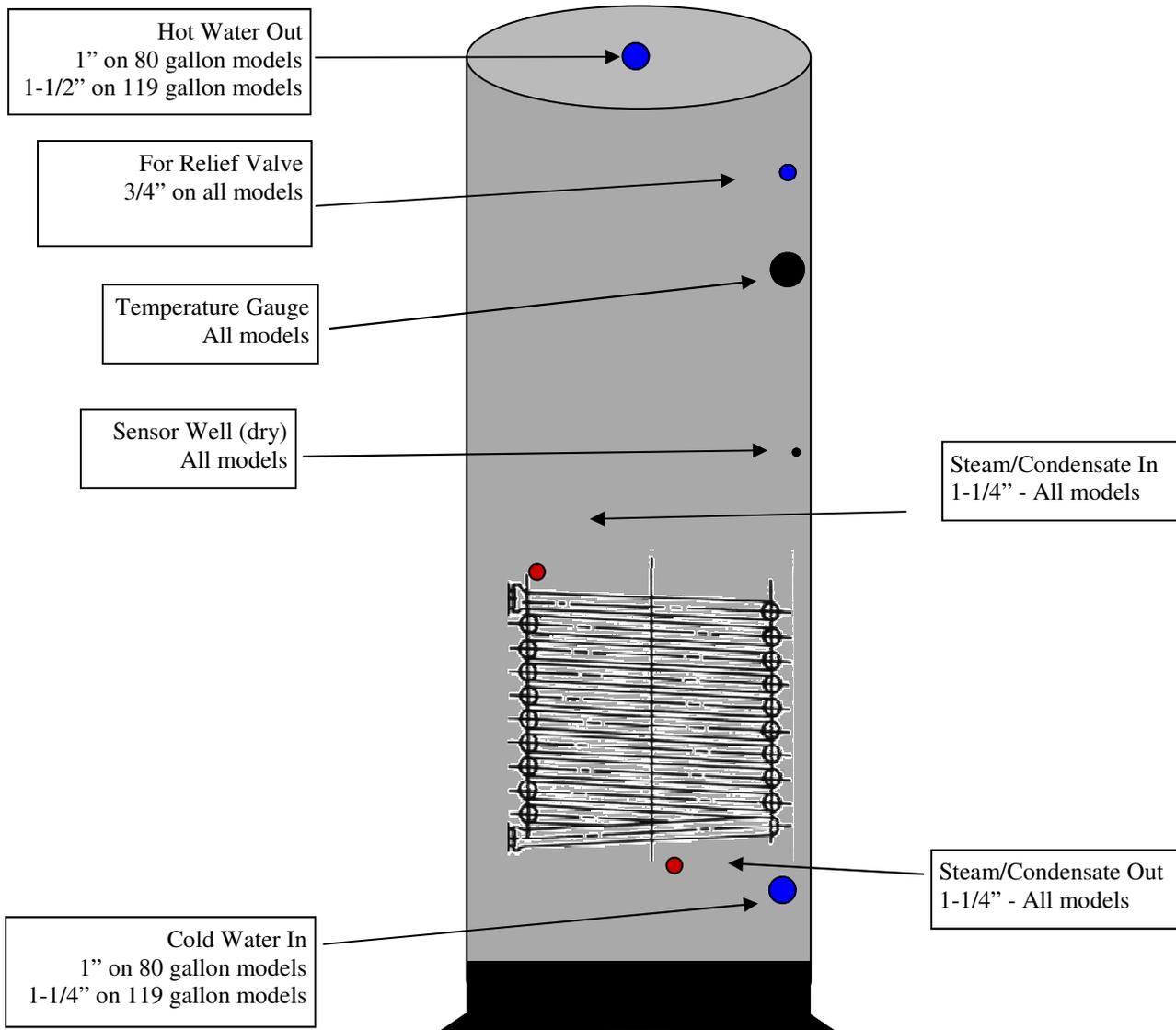
### **Frequently Asked Questions**

Q: Do I need steam traps on the heat exchanger outlets?

A: The surface area of the Retriever’s coil is oversized for most applications in laundries and Drycleaning plants. Steam traps are usually not necessary because all of the steam will be condensed upon exiting the coil.

Q: If I cool down my condensate, won’t that make my boiler work harder?

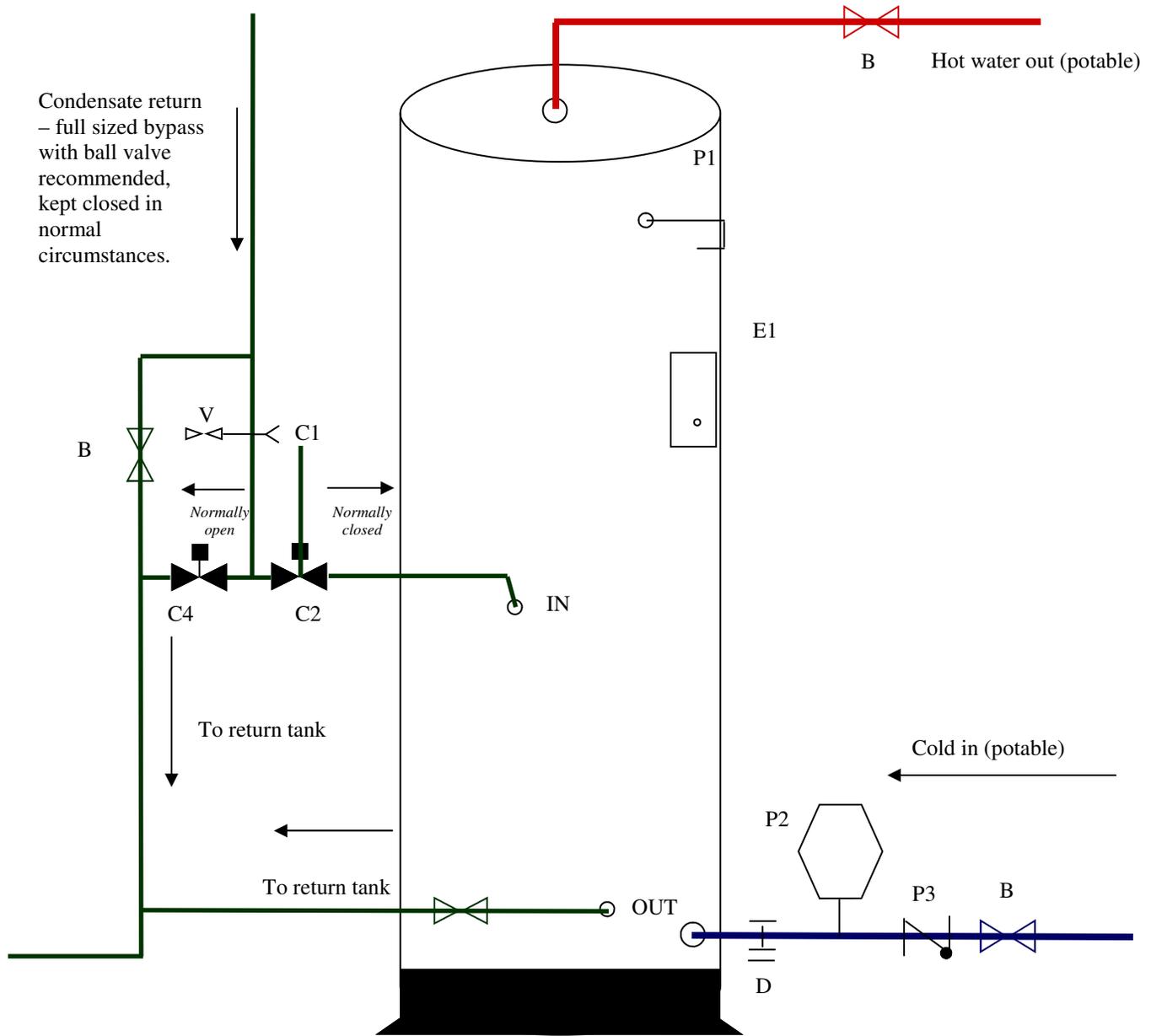
A: Probably. But you recover 970 BTU’s per pound of steam in latent heat. Moreover, steam that vents out of a condensate system is pure waste. Also, by using the condensate to heat hot water you’re doing without a separately fired hot water heater, which will have significant draft and standby losses.



Get the feel of your **Retriever I**:

- Blue connections are potable water side connections
- Red connections are non-potable boiler steam or condensate connections.
- Black ports are dry wells for installation of control sensor.

Note: This diagram is not exactly to scale.



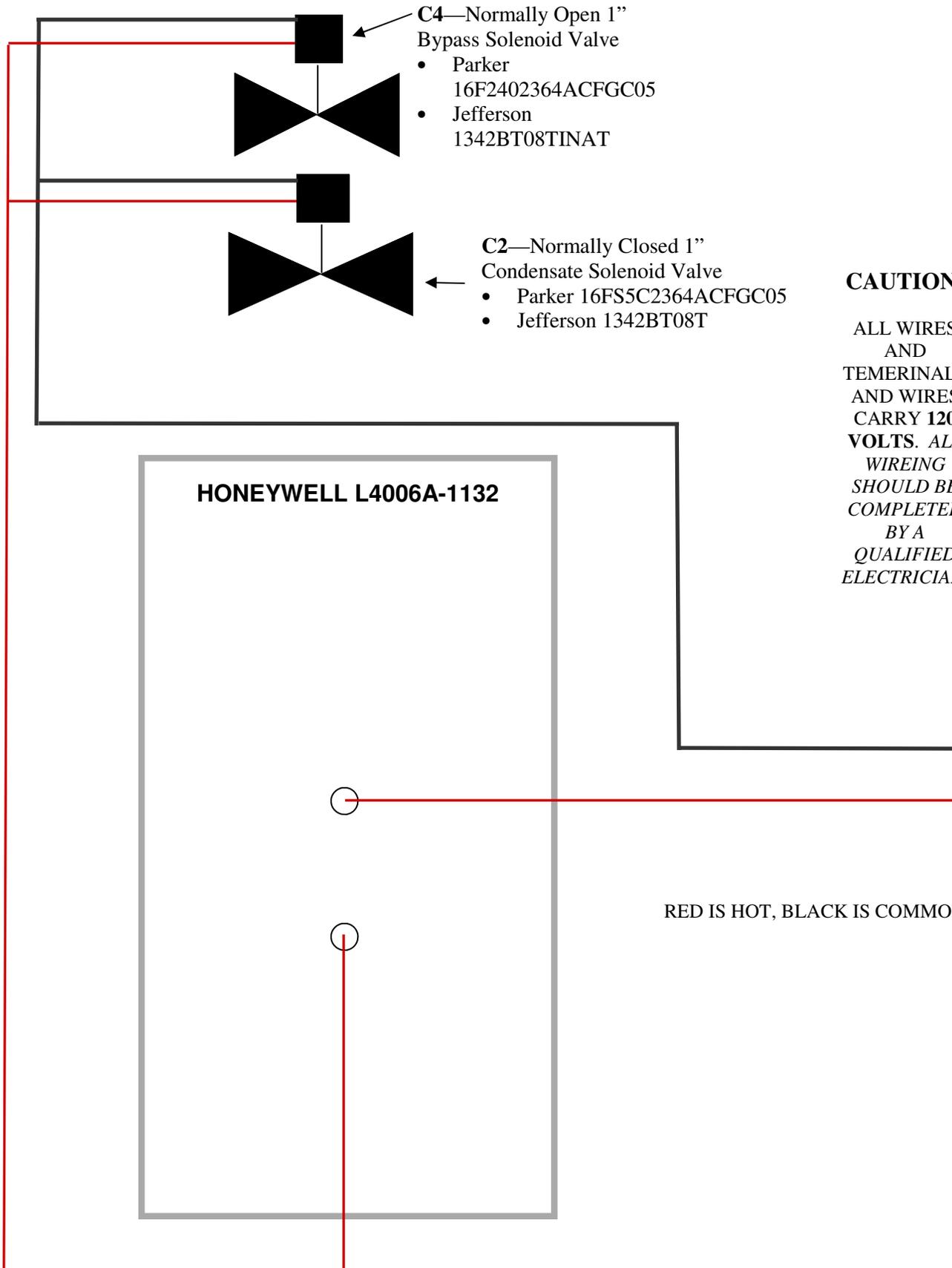
**Potable Side Parts**

**Live Steam Side Parts**

**Condensate Side Parts**

**Other Parts**

P1. 40XL T&P Relief Valve (included)	<b>NOT APPLICABLE</b>	C1. 1" Y-Strainer (included)	B. Ball Valve (Recommended, not included)
P2. Expansion tank (recommended, optional item)		C2. 1" NC Condensate Solenoid (Parker 16FS5C, Jefferson 1342BT08T)	E1. Honeywell L4006A Control.
P3. Ball valve (recommended, not included)		C4. 1" NO* Condensate Solenoid Valve (Parker 16F240, Jefferson 1342BT08INAT)	
P4. Water Check Valve (not included)		*NC = Normally Closed *NO = Normally Open	V. 3/8" Blowdown Valve (included)
P5. Ball Valve (not included)			D. Drain Valve (not included)



Problem	Cause	Solution
Water in tank exceeds set point temperature	1) Sensor is not positioned properly 2) Sensor is not wired properly 3) A solenoid valve is stuck open 4) Sensor is malfunctioning. 5) Hot water is stacking at top of tank.	1) Check sensor, use thermally conductive putty. 2) Check wiring of sensory, check Honeywell rec. for type of wire. 3) Clean or rebuild solenoid valves. 4) Replace sensor. 5) Install recirculation loop.
Aquastat is calling for heat, but piping leading to the lower heat exchanger is always cold.	1) Condensate valve is not opening. 2) Bypass valve is not closing. 3) Condensate strainer is clogged.	1) Clean or rebuild condensate valve. 2) Clean or rebuild bypass valve. 3) Blow down 1" Y-Strainer.
Water-side relief valve is blowing when no potable water is used.	1) Expansion tank missing or not sufficiently pressurized. 2) Tank is overheating.	1) Install tank or charge tank to street pressure. 2). See above.
Water-side relief valve is blowing when potable water is used.	High water pressure or water hammer coming from main supply.	Install a pressure reducing valve on the cold water side of the tank (expansion tank must also be installed).

**General Maintenance Notes:**

1. Blow down your Y-strainers. This will lengthen the life of your solenoid valves.
2. Recharge your expansion tank. If the expansion tank loses air pressure, it'll become useless. Make sure you charge your expansion tank so that the air pressure equals the water pressure coming from the street.
3. Make sure that the control stays dry. Like any electrical component, when wet it will malfunction and will likely be destroyed.
4. If you have a hard water situation, occasionally de-lime the tank utilizing a de-liming kit (available at most plumbing supplies).
5. DO call NATCO with questions. You can reach us at the following:

**National Combustion Co., Inc.**

104-11 180th Street  
 Jamaica, NY 11433

Ph: 718-291-8400

Fx: 718-291-6870

Email: [technical@nationalcombustion.com](mailto:technical@nationalcombustion.com)



National Combustion Co., Inc. warrants the Retriever tank and integral heat exchangers for defects in materials and workmanship for **5** years after the certified date of installation **or 5 years after** the date of purchase, whichever can be proven. If the date of installation is greater than one (1) year past the date of purchase, the date of purchase + one (1) year will be the date for determining whether the Retriever tank and integral heat exchanger are warranted.

National Combustion Co., Inc. warrants all other components for defects in material and workmanship for 1 year of the date of purchase. The warranties of all other parts are subjects to the terms and conditions of the various manufacturers of those components.

National Combustion Co., Inc. reserves the right to inspect tanks claimed by the purchaser to be defective. Retriever tanks found to have defects in the tank or heat exchangers shall be replaced with the closest available current model. National Combustion Co., Inc. will provide a replacement, but is not liable for costs of (i) shipping replacement tanks, (ii) labor for installation of a replacement and removal and disposal of a defective tank, and (iii) inconveniences due to a defective water heater. National Combustion Co., Inc. is not responsible for damage caused by a leaking tank or heat exchanger. The Retriever tank should be positioned so that the flow of leaked water will not cause damage.

National Combustion Co., Inc. does not warranty Retrievers in the case or malfunctions caused by or in:

- 1) Improper installation or maintenance accorded to these printed installation instructions.
- 2) Retrievers that have been moved from their initial site of installation.
- 3) Water freezing in the tank or heat exchanger(s).
- 4) Retrievers for which the tank or heat exchanger(s) have been repaired without express authorization from National Combustion Co., Inc.
- 5) Excessive pressure due to extraordinary water pressure or failure to properly install and maintain an expansion tank.
- 6) Failure to maintain tank to prevent buildup of lime and scale.
- 7) Operation of the Retriever in a corrosive environment.
- 8) Usage of the Retriever tank and heat exchangers for purposes other than heating water for potable use.
- 9) Flood, fires, wind, or lightning.

**THIS WARRANTY IS NOT-TRANSFERABLE AND IS FOR THE BENEFIT OF THE ORIGINAL PURCHASER ONLY.**

**IMPORTANT:**

To certify an installation date, call, write, or email National Combustion Co., Inc, with the following information:

- Name of Purchaser
- Address of Installation
- Name of Dealer Purchased From
- Name of Contractor Responsible for Installation
- Serial Number

All correspondence to the National Combustion Co., Inc. warranty department can be addressed to the following:

**National Combustion Co., Inc.**  
104-11 180th Street  
Jamaica, NY 11433  
warranties@nationalcombustion.com  
Ph: 718-291-8400 Fx: 718-291-6870