Perform Gas Leak Test

WARNING

Fire or Explosion Hazard.
Can cause severe injury, death or property damage.
Check for gas leaks with soap and water solution any time work is done on a gas system.

CAUTION

Water Damage Hazard.
Can damage electrical components in the WT8840.
Do not spray soap and water solution on the WT8840 housing. Do not use an excessive amount of soap and water to perform the gas leak test.

Gas Leak Test

1. Paint pipe connections upstream of the water heater control with a rich soap and water solution. Bubbles indicate a gas leak.
2. If a leak is detected, tighten the pipe connection.
3. Stand clear of the burner while lighting to prevent injury caused from hidden leaks that could cause flashback in the appliance burner compartment.
4. With the burner in operation, paint the pipe joints (including adapters) and the control inlet and outlet with a rich soap and water solution.
5. If another leak is detected, tighten the adapter screw, joints, and pipe connections.
6. Replace the part(s) if a leak cannot be stopped.

Check the gas input and burner flow rate

WARNING

Fire or Explosion Hazard.
Can cause severe injury, death or property damage.
Follow these warnings exactly:

1. Do not exceed input rating stamped on appliance nameplate or manufacturer recommended burner orifice pressure for size of orifice(s) used. Follow instructions of appliance manufacturer.
2. IF CHECKING GAS INPUT BY CLOCKING GAS METER: Make certain there is no gas flow through the meter other than to the appliance being checked. Other appliances must remain off with the pilots extinguished (or that consumption must be deducted from the meter reading). Convert flow rate to Btuh as described in form number 70-2602, Gas Controls Handbook, and compare to Btuh input rating on appliance nameplate.
3. IF CHECKING GAS INPUT WITH MANOMETER: Make sure the manual gas shutoff switch is in the OFF position before removing outlet pressure tap plug to connect the manometer (pressure gauge). Also, move the manual gas shutoff switch to the OFF position when removing the gauge and replacing the plug. Also shut off gas supply before disconnecting manometer and replacing plug. Repeat Gas Leak Test at plug with main burner operating.

Procedure to check the gas input and burner flow rate

1. Check the full rate manifold pressure listed on the appliance nameplate. Water heater control full rate outlet pressure should match this rating.
2. With burner operating, check the water heater control flow rate using the meter clocking method or check pressure using a manometer connected to the outlet pressure tap on the water heater control. See Fig. 5.

MAINTENANCE

WARNING

Fire or Explosion Hazard. Can cause severe injury, death or property damage.
Do not attempt to take apart or clean the gas valve inside the WT8840 control. Improper cleaning or reassembly can cause gas leakage.

The maintenance program should include regular checkout of the control as outlined in the Startup and Checkout section, and the control system as described in the appliance manufacturer literature.

Maintenance frequency must be determined individually for each application. Some considerations are:

1. Cycling frequency. Appliances that may cycle 10,000 times annually should be checked monthly.
2. Intermittent use. Appliances that are used seasonally should be checked before shutdown and again before the next use.
3. Consequence of unexpected shutdown. Where the cost of an unexpected shutdown would be high, the system should be checked more often.
4. Dusty, wet or corrosive environment. Since these environments can cause the control to deteriorate more rapidly, the system should be checked more often.

The system should be replaced if:

- It does not perform properly on checkout or troubleshooting.
- The control is likely to have operated for more than 150,000 cycles.
- The control is wet or looks as if it has been wet.

TROUBLESHOOTING

Troubleshooting With Status Indicator Assistance

1. Pilot burner must be lit. If not, push and hold Pilot knob and light pilot with piezo. Error code will be displayed when thermopile heats up. Error code can be recognized by counting the number of flashes of the status indicator after a three second pause. One single flash (with set point knob in PILOT position) indicates that the control is in normal operation.
2. Observe status indicator on control; check and repair the system as noted in Table 3 on page 6. Flash codes are displayed with a three-second delay between cycles. A continuous solid light indicates system shutdown when knob is turned from a temperature setting to OFF position. When the solid light is present, the pilot and

main valve will not hold. When the status indicator goes out, the user can restart the system. (Approximate shutdown time is one minute.)

3. After status indicator analysis and appliance repair is complete, turn device knob to OFF, wait until the indicator goes out, then perform lighting procedure.
4. Status indicator light should be in normal mode (1 flash) with the knob in the PILOT position. Turn the device knob past the water temperature in the tank should turn on the main burner. The Status indicator light will strobe every three seconds when there is a call for heat.
5. In the event of multiple failure codes, the next failure code follows the previous failure code by approximately three seconds with higher flash count first.

Table 3. Troubleshooting with status light visual indication.

	LED Error Code**	Number of LED Flashes*	Detected Failure	Recommended Action
Normal operation. No action required.	1 flash every 3 seconds	□ □ □ □	Not an error; indicates the electronics is holding the Pilot Valve open and the Main Valve closed.	You can now turn the knob to a desired setpoint temperature. LED will continue to flash 1 time every 3 seconds while in Idle mode (no call for heat).
	Strobe every 3 seconds	▯▯ ▯▯ ▯▯ ▯▯	Not an error; indicates call for heat during normal operation, Main valve open.	None.
Action required.	2 flashes	□□ □□ □□	Low thermopile voltage; main valve not turned ON.	Check thermopile and its connections. Check pilot flame.
	4 flashes	□□□□ □□□□	Temperature cut-out limit reached.	Check the valves and the water temperature sensor. Reduce the water temperature setpoint. Thoroughly check out main valve operation and water temperature control before walking away.
	5 flashes	□□□□□	Water temperature sensor failure.	Check water temperature sensor and its connection for open circuits, shorts, or differences in resistance between the two sensor elements.
	6 flashes	□□□□□□	Tank leakage detected by accessory module.	Control recovers after receiving message from accessory module.
	7 flashes	□□□□□□□	Electronics Failure	Replace control module.
	8 flashes	□□□□□□□□	This is just a warning; The control does not see power decaying with the knob in the OFF position.	Check valves.
	Solid ON	▭	Not an error—indicates that the control is in OFF mode.	None; wait until LED turns off if you want to restart the system.

* LED Error Codes are flashed once per second, with a three-second pause between repeating the error code.

**Maximum two different errors can be displayed simultaneously if more than one error has been detected.

Troubleshooting Without Status Indicator Assistance

Follow diagram in Fig. 6.

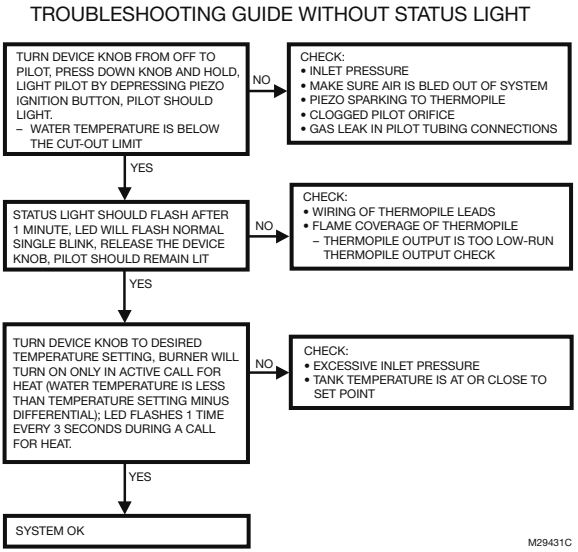

Fig. 6. Troubleshooting without status light.

Thermopile Output Check

1. Turn device knob to OFF.
2. Disconnect thermopile leads.
3. Turn device knob to PILOT, hold down knob to light pilot burner. Hold the knob down for five or more minutes.
4. After five minutes, check thermopile output by connecting the voltmeter to the positive red lead and negative white lead.
5. Output should be at least 350 mV. (See Fig. 7.) Connect the 3.6 ohm resistor between the two thermopile leads, the voltage should be at or higher than one half of the open circuit voltage.
6. The terminal housing prevents miswiring of positive and negative leadwires.
7. Flame must envelop thermopile at Hot Junction (3/8 in. below tip).
8. Keep heat away from cold junction (brass sleeve of the thermopile) for maximum output.

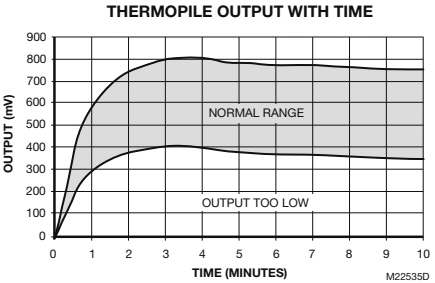

Fig. 7. Thermopile output.

INSTRUCTIONS TO THE HOMEOWNER

⚠ WARNING

Fire or Explosion Hazard.
Can cause severe injury, death or property damage.

1. IF YOU SMELL GAS:
   - Turn off the gas supply at the appliance service valve.
   - Do not light any appliances in the house.
   - Do not touch electrical switches or use the phone. Leave the building and use a neighbor's phone to call your gas supplier.
   - If you cannot reach your gas supplier, call the fire department.
2. The water heater control must be replaced in event of any physical damage, tampering, bent terminals, missing or broken parts, stripped threads or evidence of exposure to heat.

⚠ WARNING

Scalding Hazard.
Can cause burns, severe injury or death.
Never move temperature setpoint knob past the HOT setting without checking water temperature at the faucet, and readjusting until comfortably warm to the touch. Consider the ages and health of all who will come into contact with heated water.

IMPORTANT

Follow the operating instructions provided by the manufacturer of your water tank appliance. The information in this form describes a typical water heater control application, but the specific controls used and the procedures outlined by the manufacturer of your appliance can differ, requiring special instructions.

STOP: READ THE WARNINGS ABOVE.

If the appliance does not turn on when the setpoint knob is set several degrees above the previous temperature, follow these instructions:

1. Set the temperature setpoint knob to OFF.
2. Turn off the main gas valve to the appliance.
3. Wait five minutes to clear out any unburned gas. If you then smell gas, STOP! Follow step 1 in the warning above. If you DO NOT smell gas, continue with the next step.
4. Turn on the gas supply to the appliance.
5. Restart the appliance by performing lighting procedure.
6. Set the setpoint knob to the desired setting.
7. If the appliance does not turn on, turn off the gas supply to the appliance and contact a qualified service technician for assistance.
8. Allow one minute for thermopile to cool before re-lighting pilot.

TURNING OFF THE APPLIANCE

Complete Shutdown

1. Turn device knob to OFF. Turn off the gas supply to the appliance. Appliance will completely shut off.
2. Follow the procedure in the Instructions to the Homeowner section above to resume normal operation.

Home and Building Technologies
In the U.S.:
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Golden Valley, MN 55422

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Honeywell

Régulateurs de chauffe-eau de remplacement WT8840

NOTICE D'INSTALLATION

APPLICATION

Le régulateur de chauffe-eau WT8840 est conçu pour les applications à veilleuse permanente utilisant un puits d'immersion pour la détection de la température de l'eau. Tous les modèles WT8840 incluent un capteur de température à coefficient intégré.

Le WT8840 est alimenté par une thermopile chauffée par la flamme de la veilleuse permanente. Les veilleuses CS8840 sont conçues pour fonctionner avec ce régulateur.

Le puits d'immersion pour la détection de l'eau du capteur est muni de capteurs à thermistance à coefficient de température négatif adaptés. Ces capteurs fournissent un mécanisme avec sécurité intégrée par lequel le WT8840 peut fournir une régulation précise de la température de l'eau ainsi qu'une fonction de limitation de la température de l'eau (coupure de température ou TCO [Temperature Cut-Out]).

CARACTÉRISTIQUES

IMPORTANT

Les régulateurs WT8840 sont un remplacement direct uniquement.

Régulateur de pression : Le réglage du régulateur de pression de sortie est indiqué sur l'étiquette du produit.

Plage de pression d'admission :
Voir la plaque signalétique de l'appareil pour la plage de pression d'admission recommandée.
Pression d'entrée maximale de 0,5 PSI (14,0 po c.e.) autorisée pour un fonctionnement correct.

Configuration du corps : 90° avec entrée de 1/2 po et sortie conique inversée de 1/2 po.

Montage : À la verticale uniquement.

Entrée de régulateur :
Tension minimum : 350 mV c.c., circuit ouvert.
Tension maximum : 850 mV c.c., circuit ouvert.

Capacité : Voir le Tableau 1.

Plage de régulation :
Gaz naturel :
Minimum : 30 000 Btuh.
Maximum : 85 000 Btuh.

Plage de température ambiante : 0 à 66 °C (32 à 150 °F)

Plage de température de fonctionnement :
-18 à 66 °C (0 à 150 °F)*
*La vanne fonctionne à -18 °C (0 °F) mais ses caractéristiques ne peuvent pas être garanties tant que la température ambiante n'a pas atteint 0 °C (32 °F).

Plage de stockage : -40 à 66 °C (-40 à 150 °F)

Humidité : 95 % sans condensation à 40 °C (104 °F)

Homologations :
Cet appareil est certifié par l'Association canadienne de normalisation (CSA) pour les normes suivantes :
ANSI Z21.20
ANSI Z21.23
ANSI Z21.78
ANSI Z21.87
CAN/CSA-C22.2 N° 199-M89
CAN1-6.6-M78
CSA 4.6
CSA 6.20

Accessoires :
Veilleuse CS8840

Numéro pièce de rechange	Remplace	Numéro FEO	Remplacement FEO	FEO
Réservoir, isolation de 1 po, colonne d'eau de 4 po	WV8840A1000	222-47463-01A	239-47463-01*	Bradford White
	WV8840A1001	222-47463-01E		Bradford White
Réservoir, isolation de 2 po, colonne d'eau de 4 po	WV8840A1050	222-47463-02A	239-47463-02*	Bradford White
	WV8840A1051	222-47463-02E		Bradford White
Réservoir, isolation de 1 po, colonne d'eau de 5 po	WV8840B1042	316910-000	100112336 et 9007884005	AOSmith
	WV8840B1109	316910-000		AOSmith
	WV8840B1110	321166-000		AOSmith
Réservoir, isolation de 2 po, colonne d'eau de 5 po	WV8840B1059	316910-001	100112337 et 9007885005	AOSmith
	WV8840B1117	316910-001		AOSmith
	WV8840B1118	321166-001		AOSmith

***** Comprend la veilleuse et le joint de la chambre de combustion.