Figure 1: Y99AW-1 Flame Simulator

The Y99AW-1 Flame Simulator provides a fast, simple method of functionally testing an ignition control by simulating a pilot flame. Circuitry inside the Y99AW-1 rectifies the current and sends a signal back to the control that is larger than the minimum current required for proper operation.

The Y99AW-1 can be used to test all G60, G65, G66, G67, CSA, G600, G670, G72x, G73x, G75x, G76x, and G77x ignition controls.

Note: The G72x, G75x, and G76x are direct ignition systems. They do not have a separate pilot valve. Both valve seats in the redundant valve open simultaneously.
Test the ignition control as follows:

⚠️ **WARNING: Risk of Explosion or Fire.** Turn off all gas to the appliance by closing the shutoff valve in the supply line to the appliance. The gas supply must be off before the flame is simulated. Failure to shut off the gas may result in property damage, severe personal injury, or death.

**AVERTISSEMENT : Risque de explosion ou incendie.** Coupez l’arrivée de gaz sur l’équipement en fermant la vanne d’arrêt de l’alimentation. L’arrivée de gaz doit être fermée avant de simuler la flamme. Le non-respect de cette précaution peut entraîner des dégâts matériels et des blessures graves voire mortelles.

⚠️ **CAUTION: Risk of Property Damage.** Label all wires prior to disconnecting the equipment. Failure to label the wires may cause improper equipment operation after reconnecting the equipment.

**MISE EN GARDE : Risque de dégâts matériels.** Etiquetez tous les câbles avant de débrancher l’équipement. Le non-respect de cette précaution peut amener un fonctionnement anormal après redémarrage de l’équipement.

1. Open the thermostat contacts.
2. Disconnect the flame sensor cable from Terminal 4 on the ignition control.
3. Connect the Y99AW-1 lead with the 6.35 mm (1/4 in.) spade connector to the sensor connection (Terminal 4) on the ignition control.
4. Connect a 24 VAC voltmeter across pilot valve connections on the ignition control (see Figure 2). Pilot valve connections, depending on the model, are between Terminals 1 and 5 or Terminal 1 and ground. View the ignition control cover for specific wiring information.

**Note:** Most ignition controls have a built-in self-checking circuit that monitors the condition of the entire ignition system prior to the call for heat. This prevents the ignition system from recycling with the flame simulator attached and the thermostat calling for heat.
5. Close the thermostat contacts. If the spark does not come on and the meter does not read 24 VAC, perform the **Checkout Procedure** (see Figure 4).

6. After the spark comes on and 24 VAC appears on the meter, reconnect the meter across the main valve terminals on the ignition control (see Figure 3). Depending on the model, the main valve connections are between Terminals 3 and 5, or Terminal 3 and ground. View the ignition control cover for specific wiring information.

7. Connect the Y99AW-1 lead with the alligator clip to a ground terminal on the ignition control. The spark should shut off within 15 seconds and 24 VAC should appear on the meter. If this does not occur, replace the control.

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![Diagram](image_url)

**Figure 2: Y99AW-1 Flame Simulator and AC Voltmeter Connected Across Pilot Valve Connections**
Figure 3: Y99AW-1 Flame Simulator and AC Voltmeter Connected Across Main Valve Connections
Checkout Procedure

Start

Are thermostat and limit contacts closed?
Yes

Is 24 VAC present between Terminal 2 and ground?
Yes

Is 24 VAC present between Terminal 1 and ground?
Yes

Is pilot valve securely attached to Terminal 1 and ground?
Yes

Turn off supply voltage

Is spark cable securely connected to ignition control?
Yes

Is spark cable brittle, burnt, or cracked?
Yes

Replace cable

No

Correct

Replace control

No

Is pilot valve securely attached to Terminal 1 and ground?
No

Correct

No

Replace control

Is 24 VAC present between Terminal 2 and ground?
No

Check for defective transformer, thermostat, or faulty wiring

Is 24 VAC present between Terminal 1 and ground?
No

Replace control

Is pilot valve securely attached to Terminal 1 and ground?
No

Correct

Is spark cable brittle, burnt, or cracked?
No

Replace pilot burner

Is spark cable brittle, burnt, or cracked?
Yes

Replace cable

Correct or replace pilot burner

Is spark electrode ceramic cracked?
Yes

Replace pilot burner

Correct or replace pilot burner

Is spark gap per manufacturer’s specifications and located in pilot gas stream?
Yes

Replace control

No

Correct or replace pilot burner

Figure 4: Checkout Procedure

Refer to the Y99AW-1 Product Bulletin (LIT-4350870) for necessary information on operating and performance specifications of this product.

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