



## Instructions for Installation and Operation e-FLAME Remote Electronic Ignition System



**CAUTION!** Please read and follow these instructions for installation and operation entirely before use.  
The product must be installed and operated according to all applicable regulations!

### DESCRIPTION

**e-FLAME is a battery-powered electronic remote ignition and control system. It is designed for gas appliances with pilot burners including ODS.**

The e-FLAME system consists of the following components (standard model, Figure 2):

**Gas Combination Control (GV 60 Series)** with

- ON/OFF switch, soldered cable or connecting cable #2 interrupter-receiver
- ignition cable
- connecting cable #1 interrupter-receiver

**Remote Control**

- remote handset
- receiver
- 8 wire connecting cable combination control-receiver

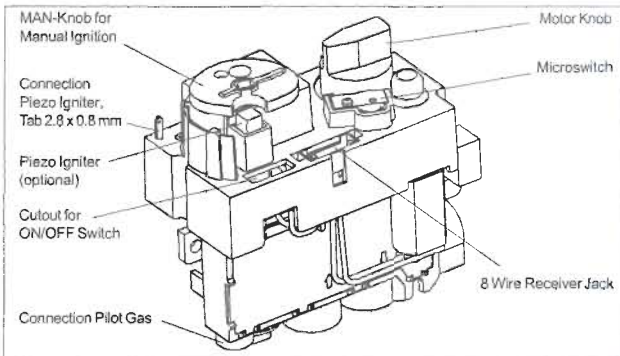


Figure 1: Combination Control GV60

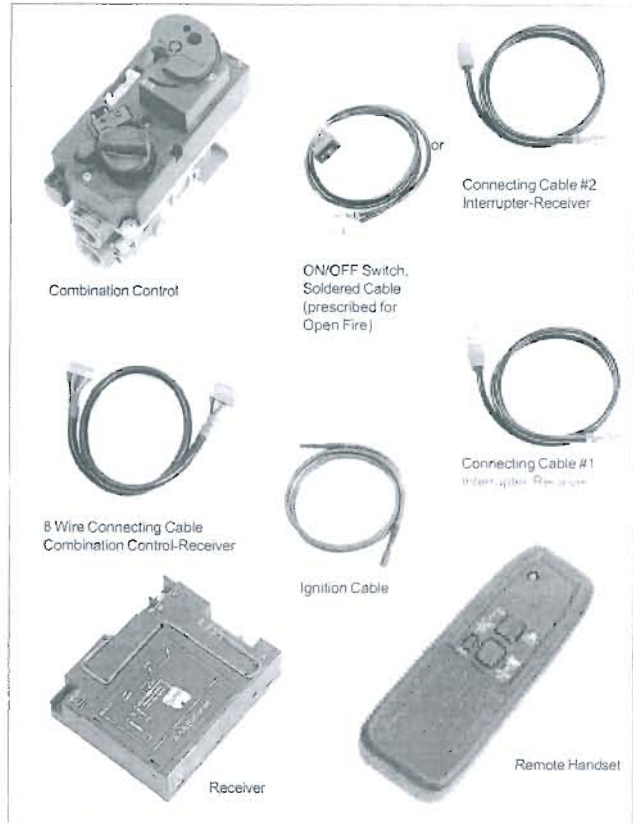


Figure 2: e-FLAME Components

### Technical Data

**Combination Control** group 2 according to DIN EN 126 or CSA approved (see label)

	CSA	EN126
Capacity: .....	65,000 BTU/hr at 1"W.C. pressure drop* *(for LP capacity multiply by 1.61)	1.2 m <sup>3</sup> /h air at 2.5 mbar pressure drop
Pressure regulator: .....	10,000 to 85,000 BTU/hr control range	class C according EN126
Outlet pressure: .....	3"W.C. to 5"W.C. (7.5 to 12 mbar) 8"W.C. to 12"W.C. (20 to 30 mbar) 3"W.C. to 12"W.C. (7.5 to 30 mbar)	2.5 mbar to 25 mbar
Max. operating inlet pressure: .....	1/2psi (34.5 mbar)	50 mbar (20"W.C.)
Mounting: .....	Knobs upwards or control mounted at any angle up to 90° from the vertical position.	
Ambient temperature: .....	0°C to 80°C (32°F to 176°F)	
Max. operating inlet pressure: .....	50 mbar (20"W.C.)	

### Remote Control

Radio Frequency: ..... 433.92 MHz for Europe  
..... 315 MHz for US (FCC ID:xxx-G6R) and for Canada (IC:xxxxxx-G6R)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and, (2) This device must accept any interference received including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Batteries - Receiver: ..... 4 x 1.5V "AA" (alkaline recommended), optional 4 x 1.5V "C" with separate battery holder or power supply plug

Batteries - Remote Handset: 1 x 9V block (alkaline recommended)

Max. ambient temperatures: . remote handset and receiver with batteries 60°C (140°F)  
receiver without batteries and ON/OFF switch 80°C (176°F)  
8 wire connecting cable and thermocurrent cable 105°C (221°F)  
ignition cable 180°C (356°F)

## INSTALLATION INSTRUCTIONS

### WARNING

It is the appliance manufacturer's responsibility to determine e-Flame's suitability for a specific application. Installation and adjustments are to be made only by qualified service personnel. After installation, check connections carefully for leaks using a suitable method. Combination control must be in "main gas open" position (motor knob ON and MAN-knob ON). Never unscrew fastening screws to open appliance. Do not change adjustments marked with red paint. Motor knob is not removable.

### General Notes

- Wiring must comply with diagram (Figure 9).
- Place ON/OFF switch in such a manner as to be easily accessible for the operator.
- Pay attention to the directions printed on the receiver when connecting thermocurrent cables to interrupter. When cables are interchanged the device will not work.  
**Caution: Total resistance of thermo circuit should be minimum to keep ignition time as short as possible.**
- Minimum release current of GV60 magnet unit is 60mA. If fall time is too long replace the cable between interrupter and receiver with a cable of higher resistance (optional).
- When e-Flame components are installed, make sure they are not exposed to dirt. Make sure no foreign particles get under the cover.

### Connection - Main and Pilot Gas

When threads are tightened, the appliance must be held at the designated points (Figure 3). Do not apply pressure to top casting or plastic cover.

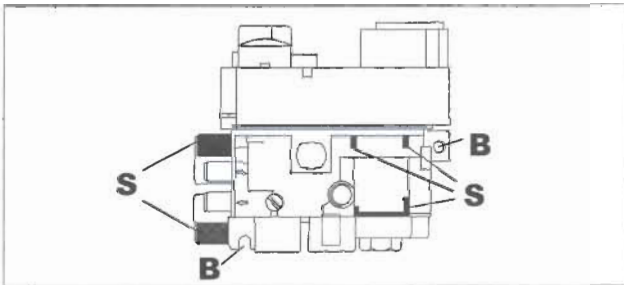


Figure 3: S=Clamp Areas, B=Mounting Points

### Main Gas NPT Connection

Valves with part number G6xxx-B... are threaded to 3/8" NPT. Use joint compound/thread sealant, properly threaded pipes and careful assembly procedure so that there is no cross threading, etc., which can cause damage or leakage.

### Main Gas BSP Connection

Valves with part number G6xxx-C... are threaded to Rp 3/8" ISO 7/1.

You have the following connection options:

#### Compression fittings for:

- 12 mm tube (crimp connection both sides)
- 10 mm and 8 mm tube (crimp connection one side)
- adapter for 8 mm tube (crimp connection both sides)

- Cut tube at a right angle, remove burrs.
- Slip compression fitting over tubing and insert into connection fully.
- Check compression fitting's position, and tighten nut by hand without using joint compound.
- Tighten nut with a wrench approx. one turn to make a gas-tight joint.

Pipes must not be bent after tightening fitting since this can cause leaks in the connection.

#### Installation - Threaded Pipe

Pipes with tapered thread R3/8 ISO7/1 can be connected. Maximum allowable torque is 35 Nm (309.78 lbf-in).

### Pilot Gas Connection (tubing only)

For pilot gas 1 piece compression fittings are available in different sizes:

- For valves with part number G6xxx-C...: 4 and 6 mm pilot gas fitting
- For valves with part number G6xxx-B...: 1/4" and 3/16" pilot gas fitting

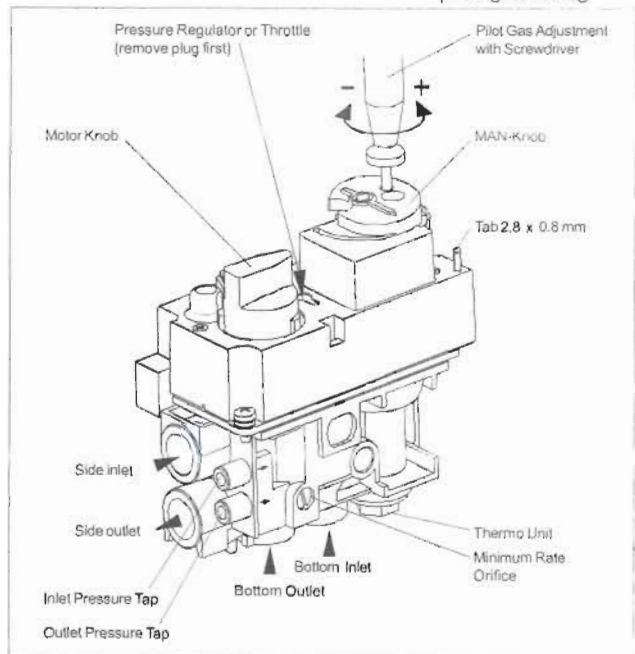


Figure 4: Combination Control GV60, Adjustment Options

- Cut tube at a right angle, remove burrs.
- Slip compression fitting over tubing and insert into connection fully.
- Check compression fitting's position, and tighten nut by hand without using joint compound.
- Tighten nut with a wrench approx. one turn to make a gas-tight joint.

Pipes must not be bent after tightening fitting since this can cause leaks in the connection.

### Connection - Thermo Circuit (Figure 9)

Connection of thermocurrent interrupter and thermocouple must be kept dry and clean. Thermocurrent interrupter can be screwed into fitting as a component or can be integrated in thermocouple. After thermocurrent interrupter is screwed into fitting, tighten it by a tool (approx. 1/4 extra turn) to ensure a good electrical connection. Avoid severe bending of the thermocouple tubing during installation (min. 2.5 cm radius) as this may cause it to kink.

Cables on switch are soldered. The ring terminals need to be screwed tightly on the receiver (use spring washers).

**Caution!** When connecting to the thermocurrent interrupter, note that the switch cable on the flat connection must point to the valve, and the receiver cable (contact TC) on the flat connection must point to the thermocouple.

### Connection - Ignition cable (Figure 9)

Attach ignition cable to receiver tab 2.8 x 0.8 mm (SPARK) and connect other side to spark plug. Pay attention to not damage the ignition cable while attaching it and avoid contact with sharp edges when the cable is in place.

### Connection - Receiver

- Snap in the plug of the 8 wire cable in the jack on the fitting cover.
- If used, connect 5 wire switch panel cable to receiver (Figure 9).
- Insert batteries - note the polarity!

- Move ON/OFF switch to **ON** position and check the reception. If necessary, correct position of antenna by removing the antenna cable and bend it to the position with the best reception.

### ADJUSTMENT

Adjustment devices for pilot gas and pressure regulator or throttle are located under the cover and can be reached without removing it.

#### Adjustment - Pilot Flame

The pilot flame is pre-set to maximum at the factory. The adjustment screw can be reached through a hole in the MAN-knob (Figure 4 and 8). Turn the MAN-knob into the **ON** position. It is now possible to pierce through a film on the cover with a screw driver to reach the adjustment screw beneath.

#### Adjustment - Outlet Pressure

Controls without a customer-specified setting are equipped with an adjustment opening in the cover. Connect a pressure gauge to outlet pressure tap. Turn pressure regulator adjustment screw to set required burner pressure. Pressure is increased by turning clockwise (pressure regulator models), or by turning counter-clockwise (throttle models). After adjustment, close opening with a plug.

#### Changing the Gas Type

GV60 is suitable for all gas types and can be converted to meet the manufacturer's requirements for a specific gas type. Adjustments of pressure regulator, minimum rate and pilot gas are according to above-mentioned instructions. To convert for LPG it is necessary to reset the pressure regulator by setting the adjustment screw to maximum pressure i.e. turn the regulator adjustment screw fully to the bottom limit (or the throttle adjustment screw fully to the upper limit).

#### Final Check

Observe several complete cycles to make sure that the appliance functions correctly. During the first cycles, the time until thermo unit is held can be too long or too short. The electronic system automatically determines optimum time.

#### Service Instructions

The combination control is maintenance-free. Remove cover to change motor, and microswitch.

## OPERATING INSTRUCTIONS



Figure 5: DIP Switch in Remote Handset Battery Compartment

#### General Notes - Remote Handset

The control is radio frequency operated. A code (chosen from among 4,000 available codes) is preset for all Mertik Maxitrol appliances, but can be changed if required (15 additional codes available). **Change DIP switch** position (Figure 5).

Then press the receiver's reset button until you hear a signal. When pressing the ▼ button on the remote handset in the following 20 sec., the receiver learns the new code. When the receiver is placed in heater, note that surrounding metal diminishes reception considerably. The position of the antenna on the receiver also influences reception (see Installation Instructions).

#### Operation - Automatic Ignition

- ON/OFF switch in **ON** position
- MAN-knob (valve) in **ON** position

- Press buttons ✕ and ▲ simultaneously. A short acoustic signal confirms the start sequence has begun. Further short acoustic signals (0.2 sec., 1 Hz) indicate the ignition process until it is completed and main gas flows. If pilot is already lit, motor will turn to **ON** position (max. flame height) while buttons are pressed down.

#### Possible Error Messages

**Long signals** (0.8 sec. tone, 0.2 sec. break) during ignition:

Battery is nearly empty. (When signal appears for first time, about 10 ignitions left.)

**5 sec. continuous tone:**

Error - must be corrected, e.g. cable is not connected, ON/OFF switch is in **OFF** position.

**5 x short signals** (0.2 sec. tone, 0.2 sec. break):

Ignition not successful, procedure can be repeated. Possible reason: air in tube so ignition time is too long.

#### Adjustment - Flame Height

Upon ignition, motor turns automatically to maximum flame height.

Press ▼ to decrease flame height or set appliance at pilot flame

**STAND BY** (a short press adjusts flame height gradually)

Press ▲ to increase flame height (a short press adjusts flame height gradually).

For open fire models: two button operation.

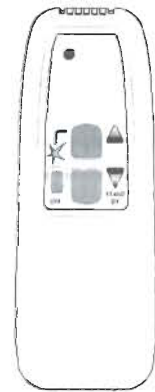


Figure 6: Remote Handset Standard Model

#### Shut-off Procedure

To save battery power, press ▼ to turn main gas to pilot gas. Press **OFF** button to shut off the device including pilot flame (open fire models: separate **OFF** button).

The device can be shut off with the ON/OFF switch, thus disabling the remote handset.

#### Operation - Manual Ignition

- ON/OFF switch in **ON** position
- MAN-knob (valve) in **MAN** position (Figure 8)  
A metallic core is visible (Figure 7)
- Push down metal core fully, e.g. by pen - pilot gas flows
- Light gas with a match
- Continue holding down metal core for about 10 sec. After release, only pilot gas is lit
- Turn MAN-knob to **ON** position - main gas flows
- Turn motor knob to adjust flame. Knob has a slipping clutch and allows manual flame height adjustment as well as adjustment to pilot gas

Gas can be lit by piezo igniter (optional).

To do so, change ignition cable from receiver to piezo igniter. If appliance manufacturer has not provided particular connections, piezo igniter connection is located on the valve cover (Figure 7).

#### Shut-off Procedure

If no batteries are available or if the remote handset cannot be found, **always** use the ON/OFF switch to shut the valve off.

#### Battery replacement

Remote handset batteries need to be changed when LED is dim. Battery life expectancy is 2 to 3 years.

If 4 "AA" batteries are used in receiver, replacement is recommended at the beginning of heating season. Batteries need to be changed when an acoustic error message appears during ignition (see "Possible Error Messages").

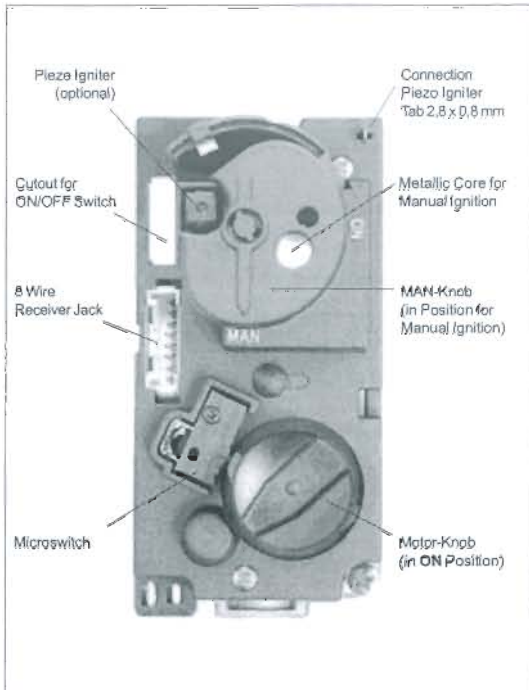


Figure 7: Combination Control, Cover

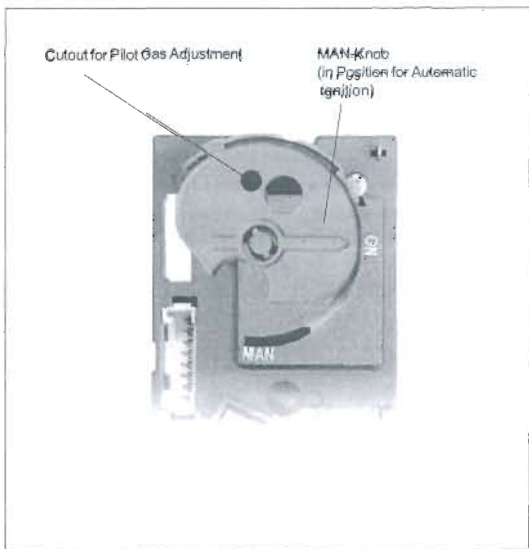


Figure 8: Combination Control, Detail View MAN-Knob

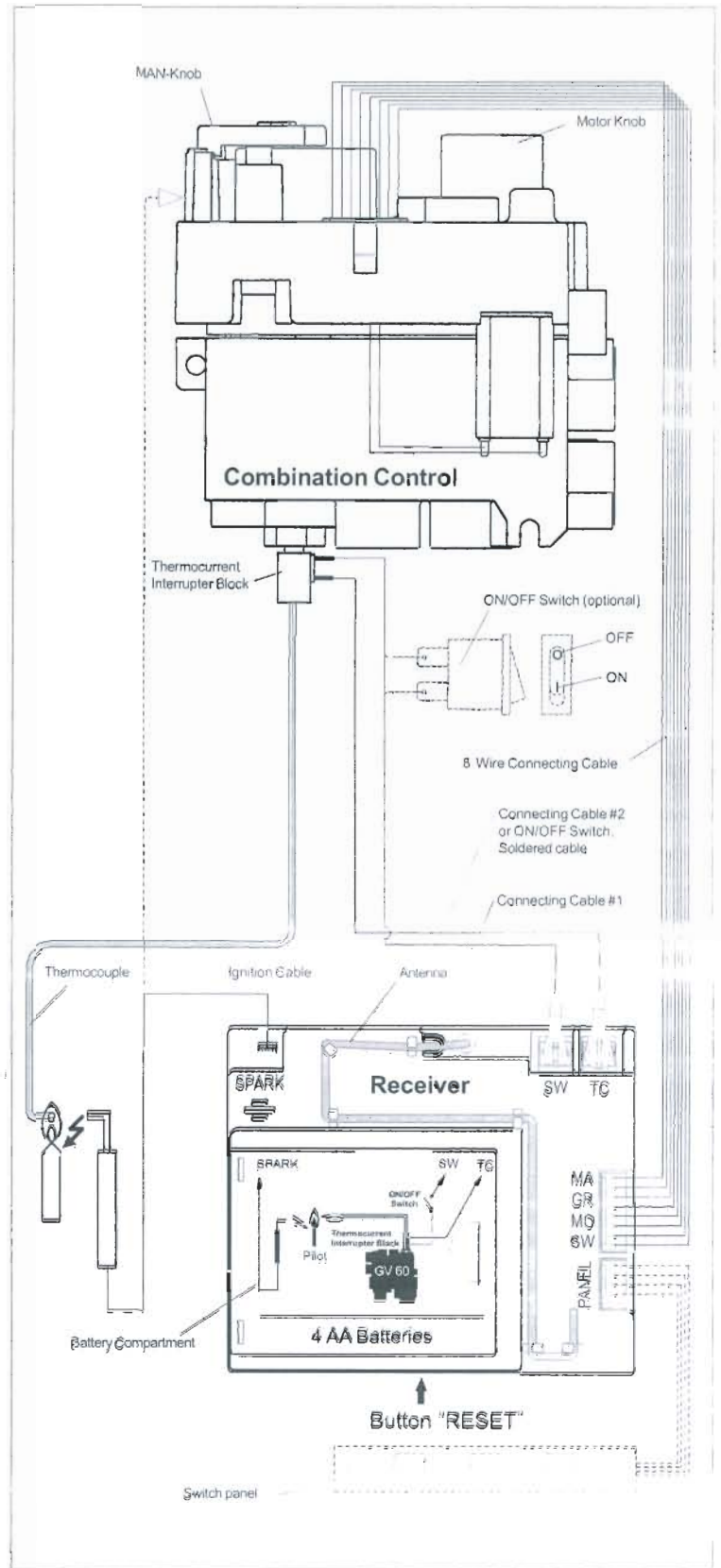


Figure 9: Wiring Diagram

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