

## Installation and Operation Instructions

# LPG Remote Control System Model 580-581

### Model 580 LPG Control Panel

### Model 581 LPG Control Solenoid Valve

#### Please Read Before Installation:

EVIDENCE OF FAULTY CONNECTION RESULTING IN COMPONENT DAMAGE WILL VIOLATE WARRANTY PROVISIONS. REVIEW INSTALLATION INSTRUCTIONS CAREFULLY BEFORE STARTING INSTALLATION.

#### General Description:

Yacht installation of range tops and ovens fueled by Liquified Petroleum Gas requires the following *minimum* provisions and procedures to minimize the prospect of gas leakage into bilge areas:

1. The tank must be installed in a sealed compartment and vented overboard.
2. All regulators, valves and plumbing must be carefully installed and *tested* to insure that no gas leakage can occur.
3. Operationally, the fuel supply valve must be kept turned off except while the gas is being used, i.e. during cooking.

The latter, operational procedure, is the most difficult to insure. Installation requirements, when satisfactorily met, are thereafter a built-in feature and integrity can be expected to maintain for some time. The discipline of valve shut off, however, is solely dependent upon the user and it has been found that typical human forgetfulness results in the valve being left on, with the stove being used as would a gas range in the home.

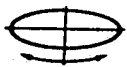
The Marinetics LPG Remote Control System overcomes this hazard by providing a convenient control switch, to be located near the range, by means of which a remote valve, the Remote Control Solenoid Valve located in the tank compartment, can be readily turned on or off. A red light on the control switch panel serves as an attention-getting constant reminder that the valve is open when the switch is turned on.

Power to operate the valve and the indicator light is drawn from the ship's battery. Current is drawn only while the system is turned on and the drain is less than 10 watts. The system is "fail-safe" since loss of power will result in automatic valve shut off.

Additional fail-safe features include automatic valve closure in the event of off-standard conditions including: undervoltage, overvoltage, solenoid coil open, solenoid coil short, pressure regulator failure to regulate (over-pressure) or pressure regulator passage of liquid.

The 581 Solenoid Valve's internal components are of stainless steel with a completely enclosed valve operating mechanism; burst pressure is rated at 10,000 PSIG. The solenoid actuator coil is completely encapsulated with an epoxy resin and no portion of the electrical circuit comes in contact with the walls of the sealed valve enclosure.

**Note:** The Marinetics LPG Control System may also be employed with compressed natural gas (CNG) systems. The Solenoid Valve must be installed downstream from the second pressure regulator (i.e. between the low pressure regulator and the range). When you file your warranty registration, request overlay CNG legend plates for attachment to your MOD 580 Control Panel.



**PLEASE NOTE: IT IS EMPHATICALLY RECOMMENDED THAT NO LPG FUEL INSTALLATION BE MADE WITHOUT PRIOR STUDY OF APPLICABLE RECOMMENDATIONS.** The following will serve as a competent recommendation for installation and operation of a yacht LPG system:

National Fire Protection Association, Document #302, Motor Craft, Section 42, available from NFPA, Batterymarch Park, Quincy, Massachusetts 02269. Telephone (617) 770-3500.

**Installation:**

The Model 581 Solenoid Valve is provided with mounting ears to permit secure attachment within the fuel tank compartment. Orientation should be with the pigtail leads at the top. Plumb the pressure regulator output to the solenoid valve's "IN" side, using 1/4" IPS flare fittings at the solenoid valve.

**NOTE:** The valve is supplied with protective plastic plugs inserted in the inlet and outlet ports to prevent contamination. Remove and discard only at the time of installation and *exert caution* to insure that no foreign particles are permitted to enter the valve body.

Plumb the supply line from the "OUT" side of the solenoid valve to the range. Again use 1/4" IPS flare fittings.


The valve is fitted with 16" pigtail leads which are to be led outside the fuel tank compartment. Connect to a conductor pair (#14 AWG duplex, stranded) led to the Model 580 Control Panel. See Drawing 7686 for connection information.

The Model 580 Control Panel should be located near the range where it is readily visible and easily operated. An area cutout 3" high x 4" wide will permit clearance for the rear enclosure. Secure the unit with the mounting screws provided.

**Operation:**

The manual control valve at the LPG fuel tank may be left open while the boat is occupied. When the range is to be placed in use, turn on the Remote Control Panel switch and observe that the red pilot light comes on. Open the range valve serving the desired burner and light the burner. When cooking has been completed, turn off the switch and, after the burner flame goes out, close the burner valve. For added safety, the manual shut off valve at the tank should be closed when the boat is left unattended.

**Optional Interlock:**

If desired, the control circuit may be wired to a secondary manual control switch (for example, in the cockpit) or a vapor detector output control relay as shown per  on Drawing 7686. To permit the solenoid valve to be opened under control of the Model 580 Panel, the interlock switches must also be closed.

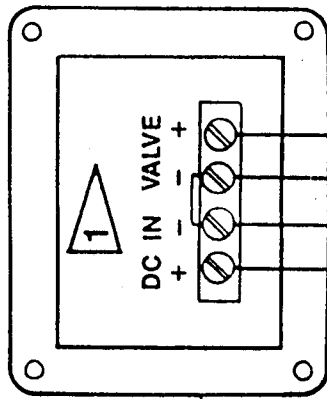
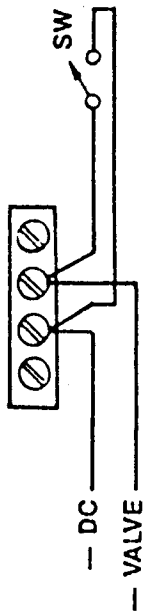
For replacement parts, please write or call (714) 646-8889.

**Replacement Parts:**

	Mod. 580	Mod. 580/1	Mod. 580/2
Voltage	12 VDC	24 VDC	32 VDC
Fuse	3AGC 1 1/2	3AGC 1	
Lamp	GE 382 or equiv.	GE 387 or equiv.	

Optional Interlock: (see text)

To install optional interlock, remove jumper and wire 14-2 Duplex To Secondary Switch:



Model 580  
LPG REMOTE CONTROL PANEL  
(from rear)



14-2

Pressure Regulator

Pressure Gauge

Manual  
Shut-Off Valve

LPG Fuel Line

Range

IN

OUT

LPG Fuel Tank

Model 581  
LPG Safety Control  
Solenoid Valve

APPD



DWN



DATE

4/6/88

DWG

7686



## Technical Bulletin

# LPG Remote Control System

## Installation and Operation Instructions

During the nearly 20 years which have elapsed since we at Marinetics originally conceived and developed the LPG Remote Control System, many thousands of yachtsmen (and their grateful mates) have blessed the ingenuity which has made this utilitarian fuel practical for cooking afloat. Installation problems have been, rewardingly, miniscule.

The following notations have been promulgated to either add emphasis to the information included in Document 609, Installation and Operation Instructions, Model 580-581 LPG Control, or to clarify those aspects of installation or operation which have led to questions from the field:

1. The Solenoid Valve must be mounted vertically and upright. The electrical pigtails exit from the top of the solenoid valve assembly. (Ref. Doc. 609, p. 2)
  2. The Inlet (IN) and outlet (OUT) ports are identified on the solenoid valve body and must be connected accordingly, e.g. the IN port toward the supply (LPG fuel tank, via the pressure regulator) and the OUT port toward the range. (Ref. Doc. 609, p. 2 & 3)  

In the event that the physical installation dictates reversed physical locations for the inlet and outlet ports for most direct plumbing, the following procedure may be employed:

    - a. Loosen the  $\frac{1}{8}$ " nut at the top of the solenoid valve assembly.
    - b. Rotate the stainless steel valve body  $180^\circ$  with respect to the red housing.
    - c. Securely tighten the  $\frac{1}{8}$ " nut.
  3. The solenoid electrical connections are *not* polarity sensitive therefore either pigtail may be connected to the + or - terminals on the Model 580 Control Panel terminal strip.
  4. It is normal for the solenoid valve body to become quite warm after extended operation. This is not detrimental. Body temperature will stabilize at  $150-180^\circ\text{F}$  after  $\frac{1}{2}$  hour operation at room ambient.
  5. Note that it is essential that the valve be located *downstream* from the pressure regulator. (Ref. Doc. 609, p. 2 & 3)
  6. Sources for LPG plumbing materials and hardware include your local RV supply house or bulk LPG supplier. Insist upon materials (i.e. copper tubing, hose, fittings, etc.) which are rated for *marine* system installation.
  7. The recommended fittings for solenoid valve connection must be of brass, flare (of size to suit the selected tubing and/or hose) to  $\frac{1}{4}$ " IPS male. To seal the latter upon solenoid valve installation, apply a non-hardening pipe dope such as Permatex P/N 14A Thread Sealant. Teflon tape is not recommended due to the prospect for particulate contamination if not *very carefully* applied.
  8. To insure adequate flexibility, flex hose (of suitable type) is recommended for solenoid valve inlet connection.
  9. Leak test per NFPA DOC #302 after installation and periodically thereafter.
  10. The solenoid valve housing is of mild steel to provide an efficient magnetic return path. Unless well protected from salt water, the housing *will* rust. If replacement is necessary, order P/N 8609 Housing/Coil assembly (for 12V versions only. For the 24V and 32V versions, contact factory).
  11. The Mod. 580 Control Panel location must be selected with a degree of care; protection, (of the front *and* rear) from salt spray or rain water is *essential*. Insure, also, that the panel will be accessible in the event of a range top flare-up.
- IMPORTANT PRECAUTION:**
12. Should a DC Power interruption occur during the cooking period, the solenoid valve will close automatically and gas flow will cease. Immediately *close* all manual burner valves, restore DC power, then open and re-ignite burner valves as needed.



## MODEL 581 LPG SOLENOID VALVE

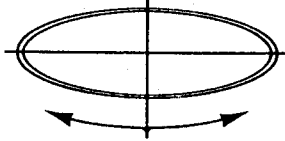
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2. The inlet (IN) and outlet (OUT) ports are identified on the solenoid valve body and must be connected accordingly, e.g. the IN port toward the supply (LPG fuel tank, via the pressure regulator) and the OUT port toward the range. (Ref. Doc. 609, pp2 & 3)

In the event that the physical installation dictates reversed physical locations for the inlet and outlet ports for most direct plumbing, the following procedure may be employed:

- a. Loosen the 11/16" nut at the top of the solenoid valve assembly.
  - b. Rotate the stainless steel valve body 180° with respect to the red housing.
  - c. Securely tighten the 11/16" nut.
3. The solenoid electrical connections are not polarity sensitive therefore either pigtail may be connected to the + and - terminals on the Model 580 Control Panel terminal strip.
  4. It is normal for the solenoid valve body to become quite warm after extended operation. This is not detrimental. Body temperature will stabilize at 150-180° F after 1/2 hour operation at room ambient.
  5. Note that it is essential that the valve be located downstream from the pressure regulator. (Ref. Doc. 609, pp 2 & 3.)

MARINETICS CORPORATION



LIMITED PRODUCT WARRANTY

Marinetics Corporation warrants to the original retail purchaser that each product of its manufacture is free from defects in material and workmanship and will perform as specified when properly installed and operated in accordance with manufacturers instructions.

Marinetics responsibility is restricted to repair or replacement without charge any component which is defective. This warranty shall be in effect for a period of one year from the date of sale to the original user and requires submittal of a properly filled out registration form within a period of 30 days from the date of sale to be placed in effect.

This warranty does not apply to any assembly or component which has been damaged through abuse, neglect, exposure to sea spray, accident, modification, improper installation or normal wear.

Any component felt to be defective shall be mailed to Marinetics, postage charges prepaid, for inspection, repair or replacement at the following address: P.O. Box 2676 Newport Beach, California.

The foregoing one year warranty is in lieu of all warranties, expressed or implied and gives special legal rights. Marinetics will not be liable for consequential damages directly or indirectly resulting from a defect in its product. However, you may have other rights which vary from state to state.

Marinetics Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Purchased From \_\_\_\_\_ Date \_\_\_\_\_

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RETAIN THE ABOVE FOR YOUR RECORDS  
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THE FOLLOWING WARRANTY REGISTRATION FORM MUST BE FILLED OUT  
AND SUBMITTED WITHIN 30 DAYS FROM DATE OF SALE TO THE USER  
TO RENDER THE WARRANTY EFFECTIVE

Purchaser \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Marinetics Model No. 581 Serial No. 22988

Boat Manufacturer \_\_\_\_\_ Model \_\_\_\_\_

Purchased From \_\_\_\_\_

Mail promptly to: Marinetics Corporation  
P.O. Box 2676  
Newport Beach, California 92663