

**INSTALLATION
AND SERVICE**

DESCRIPTION

The TV17 Midgitrol with Remote Bulb Thermostat is a combination gas valve providing all manual and automatic control functions required to operate gas fired heating equipment. Included in each TV17 is 1) thermomagnet safety shutoff valve, 2) main line automatic valve, 3) a temperature dial and remote temperature sensing bulb, 4) a permanently lubricated shear seal, disc type gas cock, 5) pressure regulator for low and high fire (optional), 6) pilot valve, and, 7) pilot line filter. The valve is suitable for use with all gases.

SPECIFICATIONS

Use valve within following operating ranges:

Maximum operating pressure: ½ psi (14" WC)

Minimum operating pressure: 1 oz. (2" WC)

Maximum ambient temperature: 125°F.

OPERATION

Electric power (millivoltage for operating the manual reset pilot safety section is produced by a #2500 thermocouple properly heated by the pilot flame. Main Line Automatic valve section is operated by temperature changes surrounding remote temperature sensing bulb. Temperature control point can be varied by means of temperature selection dial. Settings may be made on or between any of the numbers 1 (coldest setting) through 5 (warmest setting).

On models with regulator, valve cycles burner automatically to low flame, high flame, or off. Non-regulated models cycle automatically between on and off.

INSTALLATION

1. Valve is multi-poised and may be mounted in any position.
2. Make sure all piping and tubing is free of foreign matter. Apply thread seal to male threads only.
3. Connect ¼" pilot tubing between valve and pilot burner assembly. Pilot burner assembly must be mounted rigidly in a position where pilot will ignite main burner when it has been reduced to smallest flame which will hold thermomagnet safety valve open.
4. TV17 is internally vented. No external venting is required.

LOCATING TEMPERATURE SENSING BULB

If appliance manufacturer suggests a location for temperature sensing bulb, mount as suggested. If no such location is provided, note following suggestions.

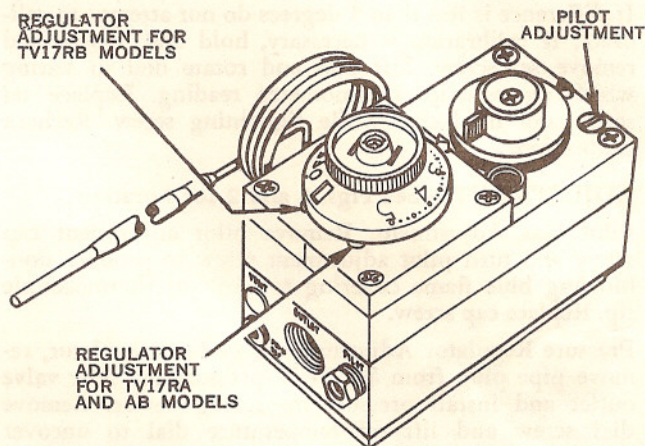


Fig. 1. Typical TV 17
Showing Regulator Adjustment Locations

Temperature sensing bulb should be located so that it will induce burner to cycle at a rate which will produce a uniform heat condition. Sensing bulb is normally located at a point in the heater cold air return where it will not be affected by radiant heat of burner flame. However, due to the wide range of installation conditions, final location may have to be arrived at through trial and error. It may even be practical to utilize a small amount of burner flame radiant heat to induce rate of cycling necessary for proper temperature control.

LIGHTING PROCEDURE

1. Turn to PILOT. Press dial in and light pilot. Hold for 60 seconds and release.
2. Turn dial counterclockwise to ON. Use this position for thermostat control. Set thermostat for desired room temperature.
3. Press dial in and turn clockwise to OFF. Use this position when complete shutdown is necessary. (Use PILOT position for temporary or seasonal shutdown.)

NOTE: When valve is turned OFF, dial on models equipped with Safety-Lock cannot be turned to PILOT for relighting until after three minutes. Do not attempt to force dial.

CALIBRATION

Place a good mercury thermometer *in immediate area of sensing bulb*. Allow sufficient time for true temperature reading. Set temperature dial at point where valve just turns burner off. Check temperature of mercury thermometer and compare with reading of temperature dial at pointer. (Temperature dial settings are approximate. #1=50°, #2=60°, #3=70°, #4=80°, #5=95°F). If difference is less than 5 degrees do not attempt to calibrate. If calibration is necessary, hold dial, loosen and remove set screw. Lift dial and rotate dial to setting which agrees with thermometer reading. Replace set screw and hold dial while tightening screw. Recheck calibration.

ADJUSTMENTS—See Figs. 1 and 2 for Location

Pilot Gas Adjustment. Remove pilot adjustment cap screw and turn pilot adjustment screw to produce non-blowing blue flame covering top 1/4" of thermocouple tip. Replace cap screw.

Pressure Regulator Adjustment. To adjust regulator, remove pipe plug from 3/8" NPT pressure tap near valve outlet and install pressure measuring device. Remove dial screw and lift off temperature dial to uncover regulator screw. Adjust pressure to value stamped on valve.

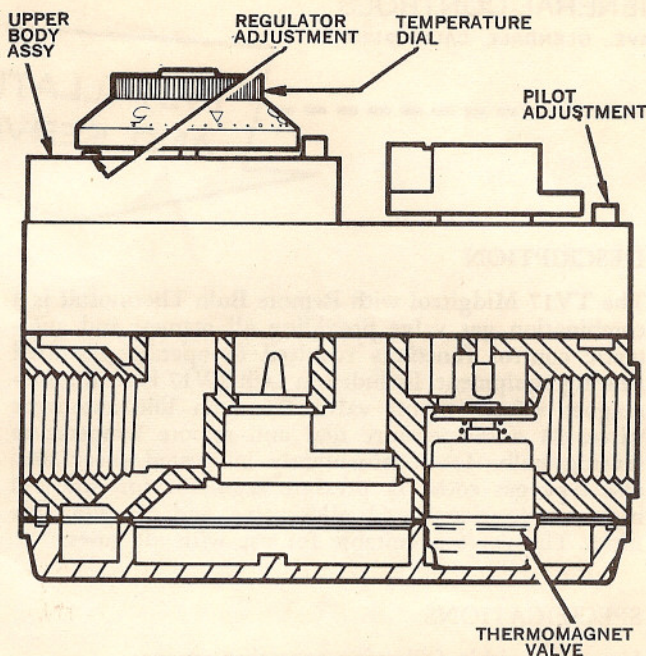


Fig. 2 Typical TV 17 Cutaway View

SERVICE SUGGESTIONS

TROUBLE	POSSIBLE CAUSE	REMEDY
Pilot will not stay open after carefully following lighting instructions	Pilot flame too small or yellow in color due to restricted pilot line, dirt in Primary air opening or burner head, wrong orifice in Pilot, Drafts deflecting Pilot Flame	Clean pilot line, primary air opening and burner head. . . Change pilot orifice. Eliminate source of draft.
	Loose or dirty Pilot Generator connection	Disconnect Pilot Generator from valve, clean contacts with fine sandpaper. Tighten finger tight plus 1/4 turn
	Pilot Generator producing insufficient millivoltage	Check with millivoltmeter, replace if necessary.
Pilot burns, dial set to call for heat, main valve will not open	Poor temperature Sensing bulb location	See LOCATING TEMPERATURE SENSING BULB
	Temperature dial out of calibration	See CALIBRATION
	Main valve assembly damaged	Replace upper body assembly
Main valve leaks or will not close	Dirt or foreign matter on valve seat	Disassemble as shown in exploded view and clean with Lint-free cloth.
	Temperature dial out of calibration	See CALIBRATION
	Main valve assembly damaged	Replace upper body assembly
	Poor temperature Sensing bulb location	See LOCATING TEMPERATURE SENSING BULB

MILLIVOLTMETER TEST

Use 0-50 millivolt scale. Place meter test probes as shown below. If meter needle moves to left of zero or no reading is indicated reverse probes. Take all readings with pilot burning and thermostat contacts closed.



If reading is less than 7 millivolts: 1) Adjust pilot gas. 2) Clean primary air holes. 3) Clean pilot burner orifice. 4) Replace thermocouple. If reading is 7 millivolts or more and thermomagnet will not hold open, replace thermomagnet.

PARTS REPLACEMENT

Thermomagnet Valve Replacement. Turn off gas ahead of control. Remove bottom cover and upper body assembly. Disconnect thermomagnet valve lead. Remove plastic lead guide. Grasp thermomagnet valve bottom with pliers and pull out. Securely press replacement thermomagnet valve straight into valve body. Run lead through channel and plug into upper body assembly. Reassemble valve and check thermomagnet valve for free operation. Turn on gas and check thermomagnet valve for tight seating. With pilot burning and reset dial at ON, check with soap and water solution all gasket surfaces for leakage.

Upper Body Assembly Replacement. Turn off gas ahead of TV17. Replace entire upper body assembly. Readjust regulator and pilot gas (See ADJUSTMENTS). With pilot burning and reset dial at ON, check gasket surface for leakage with soap and water solution.