

**PARKER BOILER CO.**  
**MOTORIZED FUEL GAS VALVES**

UL Listed Motorized Gas Valves may be furnished on Parker Boilers as Main Line Safety Shutoff Fuel Valves. These valves are of the normally closed type and provide a minimum 5 PSI closing force as required by many insurance companies. They use a separate fluid power actuator assembly to drive the valve body open and may be for either Off-On or High-low operation. For High-low operation a valve body with a characterized guide is required. A Proof of Closure Switch (P.O.C.) may also be furnished to meet valve-closed indication requirements.

**WARNING: DO NOT ALLOW FUEL TO ACCUMULATE IN COMBUSTION CHAMBER. IF FUEL IS ALLOWED TO ENTER THE CHAMBER FOR LONGER THAN A FEW SECONDS WITHOUT IGNITING, AN EXPLOSIVE MIXTURE COULD RESULT.**

**CHECKOUT & SERVICING:**

**CAUTION:**

1. Only qualified service technicians should attempt to service or repair gas valves, flame safeguard controls or burner systems.
2. Use utmost care during troubleshooting. Line voltage is present right at electrical terminations of valve actuators and in all controller circuits. Always open Main Line Disconnect Switch and depressurize valve before replacing or repairing valve.
3. Close all manual fuel shutoff valves if any trouble occurs.
4. Parker Boiler furnishes gas valves with the piping in a horizontal position and the actuator vertical and upright. Do not alter this positioning.
5. Do not attempt to service or replace the valve without reading the valve manufacturers exact service bulletin and safety warnings provided with specific valve.
6. Periodic inspection and leak testing of valve is required. Organize a maintenance schedule based on environment and frequency of use, but no less frequently than monthly. Observe operation through several complete cycles to be sure the valve is functioning properly and shuts off with all safety and limit controls.

**WARNING: ELECTRICAL SHOCK HAZARD. TO AVOID SERIOUS PERSONAL INJURY, DEATH, OR PROPERTY DAMAGE DUE TO ELECTRICAL SHOCK, TURN OFF POWER SUPPLY PRIOR TO SERVICING ACTUATOR.**

**WARNING: SHOCK, FIRE, OR EXPLOSION HAZARD. SERVICING POWERED ACTUATORS COULD CAUSE DEATH, PERSONAL INJURY OR PROPERTY DAMAGE. TURN OFF ELECTRICAL POWER AND PURGE INTERCONNECTED PIPING OF COMBUSTIBLE GASES BEFORE SERVICING ACTUATOR.**

**TROUBLESHOOTING:**

During normal operation when the actuator is energized hydraulic fluid is pumped, causing the actuator stem to extend, opening the valve. While in the open position the actuator pump may engage periodically to maintain pressure. De-energizing actuator retracts stem, allowing valve to close. Valve "Open" or "Closed" position indicators are located on sides of actuator. If actuator fails to energize, check for blown fuses, circuit breakers, loose connections and a complete circuit through the boiler safety, limit and operating controls to the actuator electrical terminations. When a Proof of Closure Switch (Valve Closed Indication Switch) is furnished, this switch must be closed before a circuit can be completed through the Electronic Flame Safeguard. If, with power at correct electrical terminals, actuator stem still fails to extend replace actuator. Except for auxiliary switches, actuators are Not Repairable. To replace actuator, disconnect all electrical power and gas, disconnect wiring from actuator and loosen set screws at base. Always use manufacturers exact replacement actuator by checking complete part number. Always operate through several complete cycles to be certain actuator and valve function properly.

If the valve body fails to open or close properly, first check that gas flow is in direction shown on valve and that inlet pressure to valve is within rating shown on valve [Parker Boiler maximum 1/2 PSI (14" W.C.) on natural gas and 1 PSI (27.7" W.C.) on L.P. gas]. If valve still fails to open or close properly or is noisy or sluggish in operation, replace valve.

**WARNING: INTERNAL REPAIR OF VALVES REQUIRES PERFORMING SEAT LEAKAGE, EXTERNAL LEAKAGE, AND OPERATIONAL TESTS ON THE VALVE WITH A NON-HAZARDOUS, NON-COMBUSTIBLE FLUID AFTER DISASSEMBLY AND REASSEMBLY. IMPROPER ASSEMBLY OR DAMAGE TO INTERNAL COMPONENTS COULD CAUSE VALVE TO STICK IN UNSAFE POSITION. PERSONAL INJURY OR PROPERTY DAMAGE COULD RESULT. ALWAYS REPLACE INOPERATIVE OR DAMAGED VALVES WITH A NEW VALVE OR HAVE VALVE REPAIRED BY ORIGINAL VALVE MANUFACTURER.**

When replacing valve, make certain new valve is correct one for service with correct pressure. Always pipe valve in direction of flow shown on valve. Apply pipe compound sparingly to male pipe threads only. If applied to valve threads the compound may enter the valve and cause operational difficulty. Avoid pipe strain by properly supporting and aligning piping. When tightening the pipe, do not use valve as a lever. Locate wrenches applied to valve body or piping as close as possible to connection point. A drip leg is required to be installed upstream of all boiler gas controls by the installer. In addition, where fuel conditions or Code require it, a strainer or filter suitable for the service should be installed upstream. Always leak test a new valve and operate through several complete cycles to be certain valve functions properly.



FIG. 1 - TYPICAL AH2B



FIG. 2 - TYPICAL V4055

**WARNING: FAILURE TO COMPLY WITH THE FOLLOWING COULD RESULT IN DEATH, PERSONAL INJURY AND/OR PROPERTY DAMAGE:**

**HAZARDOUS VOLTAGE. DO NOT TOUCH ELECTRICAL COMPONENTS WHILE ACTUATOR IS SUPPLIED WITH POWER, EXCEPT WITH INSULATED TOOLS, UNDER DRY CONDITIONS, AND ONLY AS INSTRUCTED HEREIN.**

**COMBUSTIBLE/TOXIC GAS. IF THE LOW-FIRE POSITION IS SET TOO LOW, THE FLAME MAY BLOW OUT, CAUSING A POTENTIALLY HAZARDOUS BUILD-UP OF GAS. VERIFY THAT FLAME IS STABLE IN LOW-FIRE POSITION, AND THAT A FLAME SAFEGUARD DEVICE IS INSTALLED.**

**SETTING OF HIGH-LOW MOTORIZED GAS VALVE:**

**WARNING: IMPROPER SETTING OF LOW FIRE ADJUSTMENT MAY CAUSE UNSAFE LIGHT-OFF OR COMBUSTION, PERSONAL INJURY OR PROPERTY DAMAGE COULD RESULT.**

Minimum low fire setting on Parker Atmospheric gas fired boilers is: 1" W.C. on Natural Gas, 11" W.C. on L.P. Gas. Minimum low fire setting on power burners must be individually set by competent burner service technicians. When installing a replacement High-low Actuator, always make sure low fire setting is initially in maximum position.

**LOW FIRE ADJUSTMENT INSTRUCTIONS:**

- A. Shutoff gas and install accurate gas gauge at manifold (gauge) test plug.
- B. Disconnect all electric power and remove electrical compartment cover.
- C. Disconnect high fire wire and carefully secure end, (terminal #3 of Honeywell V4062; terminal #8 of General Controls AH4). If boiler is equipped with "low-automatic" switch this step can be omitted by setting switch in "Low" position.
- D. Turn on boiler to low fire position and check gas pressure. Turn OFF power and adjust as follows:

**1. HONEYWELL V4062:**

- a. Manually rotate cam-dial assembly downward so set-screw is accessible from front of actuator.
- b. Loosen set-screw on the low fire cam using the special wrench taped to the electrical cover plate.
- c. Move cam toward Max. or Min. setting, as required, no more than one mark at a time. Tighten set-screw.
- d. Fire boiler and recheck low fire gas pressure. Turn off power and repeat step "C" and "D" until setting is correct.
- e. With setting correct, cycle boiler 5 or 6 times to check repeatability of setting. Turn off power and reconnect high fire wire to terminal #3. Retape special wrench to electrical cover and replace cover.

**2. GENERAL CONTROLS AH4B WITH POTENTIOMETER:**

- a. With power off, carefully insert an insulated screwdriver through the hole provided in the barrier, and rotate the potentiometer R18 (clockwise to increase and counterclockwise to decrease the low fire setting) a small increment at a time.
- b. Fire boiler and recheck low fire gas pressure. Turn off power and repeat above step until setting is correct.
- c. With setting correct, cycle boiler 5 or 6 times to check repeatability of setting. Turn off power, reconnect high fire wire to terminal #8 and replace electrical cover.
- d. For older model General Controls AH4, without potentiometer, consult factory.

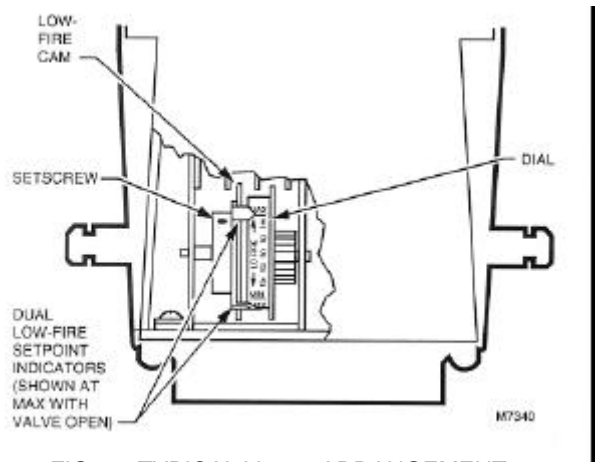


FIG. 3 - TYPICAL V4062 ARRANGEMENT

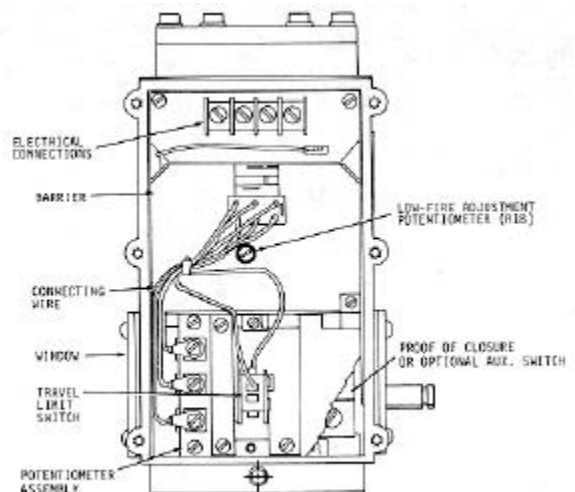


FIG. 4 - TYPICAL AH4B ARRANGEMENT