

# DRAFT INDUCER KIT WITH CONTROL KIT

**Model: DI PAK MV & DI PAK MVFG**

**(NOTE: DI PAK MVFG units are designed for the Flame Guard units built by American Water Heater. All other manufacturers use DI PAK MV)**



This draft inducer kit is designed for installation onto vent systems serving 30 millivolt standing pilot gas fired water heaters with gas valves having a manifold pressure tap port (1/8 FPT)

**NOTE:** *DI-1 Model must be used on 4" diameter vent pipe.*

#### ITEMS INCLUDED IN KIT

- 1) DI-1,2 or 3 Draft Inducer with pre-attached power cable
- 1) Fan control gas pressure switch with built in post purge option and pre-wired power cord
- 1) 1/8" NPT x 3 inch pipe nipple
- 1) 1/8" NPT pipe tee
- 1) TCA-1 Thermocouple Adapter (DI PAK MV)
- 1) TCA-2 Left Handed Thermocouple Adapter (DI PAK MVFG)
- 1) 6 ft. length of 12-2 wire
- 1) 12 inch jumper wire
- 1) Flexible conduit connector
- 2) GSK-3 Spillage Switch

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#### DO NOT DESTROY

THESE INSTRUCTIONS MUST REMAIN WITH EQUIPMENT

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**CAUTION:** Draft inducers are designed to increase draft in venting applications where inadequate natural draft exists. This device is NOT designed for sidewall venting applications. The vent to which the inducer is to be mounted is to be installed in accordance with NFPA 54, NFPA 31, or other local codes.

This device MUST be installed by a qualified installer in accordance with the manufacturers installation instructions. Appliances should have a maximum measure flue gas temperature of 750°F at the desired location of the draft inducer. "Qualified Installer" shall mean an individual who has been properly trained or a licensed installer. The installer MUST write or imprint his name, phone number, and date of installation on the tag provided with this device. The tag MUST be attached to the draft inducer. Recording burner and draft inducer operation information (draft level, efficiency, etc) is recommended as a guide for future service.



**FIELDCONTROLS**  
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## I. INSTALL THE DI-SERIES DRAFT INDUCER ON THE FLUE PIPE (Figure 1)

1. Refer to the included DI instruction manual for this procedure. Set the draft adjustment plate on the draft inducer to maximum setting before installing

**NOTE:** The draft inducer proving switch (DIP-1) and DI-CK Control Kit adapter kit are not required with the DI PAK MV and MVFG kits.



Figure 1

## II. INSTALLATION OF GAS PRESSURE SWITCH

**CAUTION:** Check gas control valve pressure. Pressure must not exceed 14" WC pressure.

1. Remove pressure tap plug in gas valve. (See Figure 2)

**NOTE:** If installing on an existing appliance, shut off gas supply to gas valve before plug removal.

2. Replace the pressure tap plug with the 1/8" pipe nipple and pipe tee. Install pressure tap plug at the bottom of the pipe tee. (See Figure 3)

3. Install the gas pressure switch into the side of the pipe tee. The gas pressure switch is supplied with a restrictor orifice in the inlet and outlet ports. With these orifices in place, the switch does not need to be vented. This feature complies with current ANSI standards for gas regulators. (See Figure 4)

**CAUTION:** If for any reason the system has shut down during operation, the cause of the system failure should be investigated and corrected before resetting the safety switches and restarting the system.

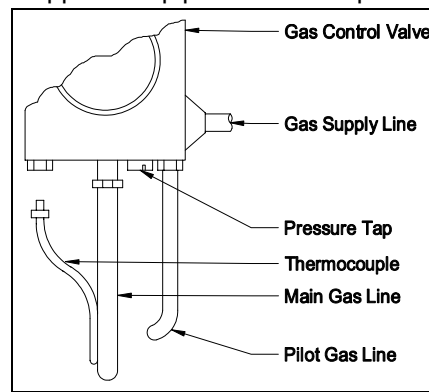


Figure 2

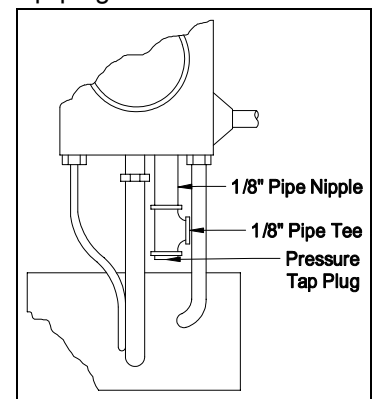


Figure 3

## III. DRAFT HOOD SAFETY SWITCH INSTALLATION

**NOTE:** 12 ga. wire must be used when wiring safety spillage switches, to reduce the voltage drop in the thermocouple circuit.

1. Remove the thermocouple from the gas control valve. (See Figure 2)
2. Thread the junction block into the thermocouple port and thermocouple into the bottom of the junction block. Connect lead wire from the junction block to the jacketed lead wires or wire enclosed in an accepted wiring enclosure. (See Figure 5)

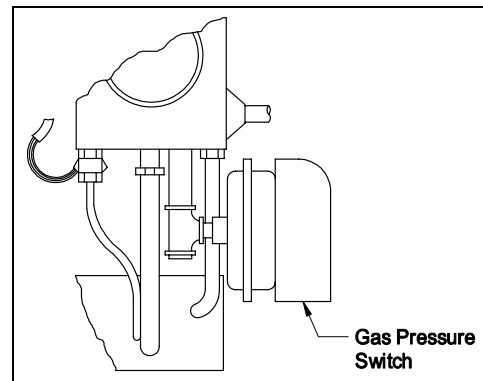


Figure 4

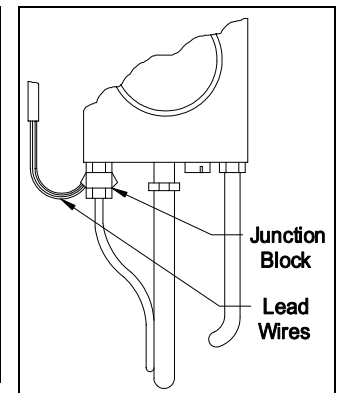


Figure 5

**NOTE:** Draft spillage switches must be mounted 90 degrees apart, and mounted opposite from the vent outlet direction. (See Figure 6)

3. Mount the two spillage switches onto the draft hood and connect inside terminals of switches with jumper wire. Connect outside terminals to lead wires which are connected to the thermocouple junction block. (See Diagram A)
4. Route jacketed lead wires or accepted wiring enclosure on the outside of the water heater enclosure. Secure them to the enclosure with an accepted hold down tab. Keep wiring away from any HOT surface area.

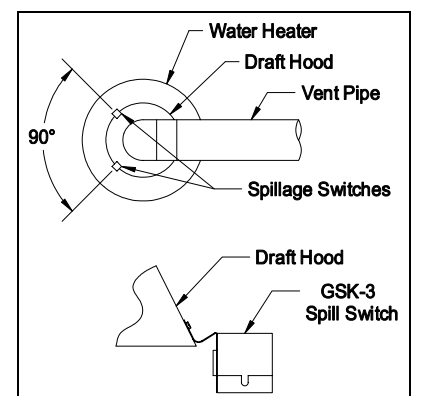


Figure 6

#### IV. WIRING

**CAUTION:** *Disconnect electrical power when wiring power venter*

Wire the draft inducer motor and controls in accordance with the National Electrical Code, manufacturer's recommendations and/or applicable local codes. Units must be grounded. Check ground circuit to make certain that the unit has been properly grounded. The wiring should be protected by an overcurrent circuit device rated at 15 amperes. CAUTION must be taken to ensure that the wiring does not come into contact with any heat source. All line voltage and safety control circuits, between the venter and the appliance, must be wired in accordance with the National Electrical Code for class one wiring or equivalent methods. Route the draft inducer motor and control wiring with an appropriate wiring method. Refer to Wiring Diagram A.

Refer to the draft inducer installation instructions for setting system airflow to the maximum setting.

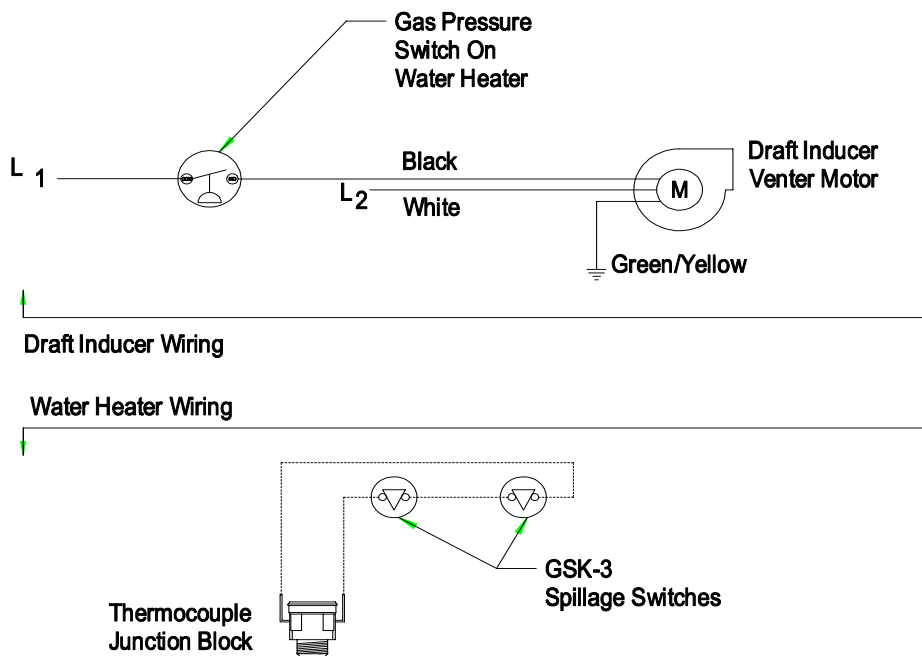


Diagram A

#### V. SYSTEM CONTROL CHECK OUT PROCEDURES

##### GAS PRESSURE SWITCH FOR WATER HEATER

1. Follow water heater manufacturer's instructions to light pilot. Turn the gas control valve to the ON position. Then adjust the thermostat to call for heat, which will energize the venter motor. (May see a 1 to 8 sec. delay of venter motor)
2. Turn gas control valve to the PILOT position, which will start a 1 to 3 min. post purge of the venter motor.
3. Repeat Step 1 and 2 to ensure proper operation.

##### SPILLAGE SWITCHES

1. Allow the water heater to heat up to operating temperature, then disconnect the power to the gas pressure switch.
2. Adjust the thermostat to call for heat with the venter inoperative. Allow approximately 2 minutes of flue gas spillage for the spillage switches to sense the spillage and disrupt the thermocouple circuit, halting the gas flow to the pilot and burner.
3. Wait 2 to 3 minutes. Reset the spillage switches and light the pilot, then perform a second safety spillage test (Steps 1 and 2).

**CAUTION:** *If for any reason the system has shut down during operation, the cause of the system failure should be investigated and corrected before resetting the safety switch and restarting the system.*

**VI. TROUBLE SHOOTING HINTS**

1. Venter does not activate when thermostat calls for heat.
  - a. Check wiring.
  - b. Check gas pressure switch for continuity across terminals when gas valve is pressurized.
  - c. Check gas pressure.
2. Flue gas odor:
  - a. Check system draft.
  - b. Check for negative pressure in building.
3. Pilot will not stay lit on water heater:
  - a. Solder all spillage switch wire terminal connections.
  - b. Check reset buttons on spillage switches.
  - c. Use 12 gage wire for all spillage switch wiring.
  - d. Check for interruption of supply power.

**VII. REPAIR AND REPLACEMENT PARTS LIST**

| <b>REPAIR AND REPLACEMENT PARTS LIST</b> |                           |
|--|---------------------------|
| <b><i>DESCRIPTION</i></b>                | <b><i>PART NUMBER</i></b> |
| Gas Pressure Switch                      | 46284200                  |
| GSK-3 Spillage Switch                    | 46086400                  |
| TCA-1                                    | 46082700                  |
| TCA-2 (Flameguard Only)                  | 46429900                  |
| DI-1                                     | 46073000                  |
| DI-2                                     | 46075300                  |
| DI-3                                     | 46090700                  |

**INSTALLATION INFORMATION**

MODEL NO.: \_\_\_\_\_ **DI- PAK MV(FG)** \_\_\_\_\_

INSTALLER'S NAME: \_\_\_\_\_

INSTALLER'S COMPANY: \_\_\_\_\_

INSTALLER'S PHONE NO.: \_\_\_\_\_

DATE OF INSTALLATION: \_\_\_\_\_

