



## Introduction

### Purpose

This document provides information on how to replace diaphragm and valve coil assemblies on Atlas units.

### Kit Ordering Information

*Note: Refer to the tag on the current valve if you are uncertain whether to order a high voltage or a low voltage valve coil assembly kit.*

Use the following kit descriptions to order the correct kit for your unit.

Kit Number	Kit Name
M04607K010	Diaphragm Kit
M04607K012	Valve Coil Assembly - Low Voltage (120/60, 110/50V)
M04607K013	Valve Coil Assembly - High Voltage (240/60, 220/50V)

### Kit Component Parts

#### Diaphragm Kit

- O-Ring (Diaphragm)
- O-Ring (Body)
- Spring
- Diaphragm Assembly

#### Valve Coil Assembly - Low Voltage

- Coil Assembly

#### Valve Coil Assembly - High Voltage

- Coil Assembly

### Recommended Tools

- Absorbent pad
- Approved fuel container
- Phillips® head screwdriver
- Silicone grease
- Standard screwdriver
- Wrench set, US

## Related Document

Document Number	Document Title	GOLD® Library
MDE-4434	Atlas Service Manual	Gasboy Consumer & Commercial

## Follow Codes

Before installing equipment, read, understand and follow the following codes:

- The National Electric Code (NFPA 70)
- The Automotive and Marine Service Code (NFPA 30)
- Any national, state and local codes that may apply

Failure to service the equipment in accordance with these codes may adversely affect the safe usage and operation of the system.

## Before You Begin

- 1 Read all instructions before beginning work.
- 2 Follow all safety precautions.
- 3 Isolate unit at distribution box.
- 4 Turn off all power to unit. Turn off all associated submerged turbine pump (STP) power. Use system circuit breakers. Multiple disconnects may be required.
- 5 Follow Occupational Safety and Hazard Association (OSHA) Lock-Out and Tag-Out requirements. See MDE-4334 Atlas Service Manual for procedures.
- 6 Place nozzle(s) into an approved container to drain and bleed pressure. Some residual pressure may remain.
- 7 Position an approved container for catching fuel under valve coil and/or diaphragm assembly being serviced.

# Important Safety Information

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock or pressure release could occur and cause death or serious injury if these safe service procedures are not followed.



## Preliminary Precautions

You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain or service this equipment.



### Emergency Total Electrical Shut-Off

The first and most important information you must know is how to stop all fuel flow to the pump and island. Locate the switch or circuit breakers that shut-off all power to all fueling equipment, dispensing devices, and submerged turbine pumps (STPs).

<b>⚠ WARNING</b>	
	The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser.
	This means that even if you activate these stops, fuel may continue to flow uncontrolled.
You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not only these cashier station "stops."	

### Total Electrical Shut-Off Before Access

Any procedure requiring access to electrical components or the electronics of the dispenser requires total electrical shut-off of that unit. Know the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gasboy equipment.

### Evacuation, Barricading and Shut-Off

Any procedures requiring accessing the pump/dispenser or STPs requires the following three actions:



- An evacuation of all unauthorized persons and vehicles using safety tape, cones or barricades to the effected units
- A total electrical shut-off of that unit

## Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gasboy Authorized Service Contractor or call the Gasboy Service Center at 1-800-444-5529. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## Follow the Regulations

There is applicable information in NFPA 30A; *Automotive and Marine Service Code*, NFPA 70; *National Electrical Code (NEC)*, OSHA regulations and federal, state, and local codes which must be followed. Failure to install, inspect, maintain or service this equipment in accordance with these codes, regulations and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

## Replacement Parts

Use only genuine Gasboy replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gasboy replacement parts could create a safety hazard and violate local regulations.

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

### Signal Words

These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions that follow must be followed to prevent death, injury or damage to the equipment

**DANGER** - This signal word is used to alert you to a hazard to unsafe practice which will result in death or serious injury

**WARNING** - This alerts you to a hazard or unsafe practice that could result in death or serious injury.

**CAUTION** with Alert symbol - This signal word designates a hazard or unsafe practice which may result in minor injury.

**CAUTION** without Alert symbol - When used by itself, CAUTION designates a hazard or unsafe practice which may result in property or equipment damage.

## Working With Fuels and Electrical Energy

### Prevent Explosions and Fires

Fuels and their vapors will become explosive if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause explosive vapors in the vicinity of dispenser or island.

## Important Safety Information

### No Open Flames



Open flames from matches, lighters, welding torches or other sources can ignite fuels and their vapors.



### No Sparks - No Smoking

Sparks from starting vehicles, starting or using power tools, burning cigarettes, cigars or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuels and their vapors. After getting out of a vehicle, touch the metal of your vehicle to discharge any electrostatic charge before you approach the dispenser island.

### Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Be familiar with Cardiopulmonary Resuscitation (CPR) methods if you are working with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA tag out and lock out procedures. If you are not familiar with this requirement, refer to information in the service manual and OSHA documentation.

### Working With Electricity Safely

Be sure to use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock. Be sure grounding connections are properly made. Make sure that sealing devices and compounds are in place. Be sure not to pinch wires when replacing covers. Follow OSHA Lock-Out and Tag-Out requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

### Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Be sure to clean hands after handling equipment. Do not place any equipment in mouth.

#### WARNING

This area contains a chemical known to the State of California to cause cancer.

#### WARNING

This area contains a chemical known to the State of California to cause birth defects or other reproductive harm.

**IMPORTANT:** Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

## Emergency First Aid

### Informing Emergency Personnel

Compile the following information for emergency personnel:  
Location of accident (for example, address, front/back of building, and so on.)

Nature of accident (for example, possible heart attack, run over by car, burns, and so on.)

Age of victim (for example, baby, teenager, middle-age, elderly.)

Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on.)

Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on.)

#### WARNING



Gasoline ingested may cause unconsciousness and burns to internal organs.

Do not induce vomiting.

Keep airway open.

Oxygen may be needed at scene.

Seek medical advice immediately.

#### WARNING



Gasoline inhaled may cause unconsciousness and burns to lips, mouth and lungs.

Keep airway open.

Seek medical advice immediately.

#### WARNING



Gasoline spilled in eyes may cause burns to eye tissue.

Irrigate eyes with water for approximately 15 minutes.

Seek medical advice immediately.

#### WARNING



Gasoline spilled on skin may cause burns.

Wash area thoroughly with clear/water.

Seek medical advice immediately.

**IMPORTANT:** Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

### Lockout/Tagout

Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical or other energy, but does not cover electrical hazards. Reference Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

# Valve Coil Installation Instructions

Follow the directions below to replace the valve coil assembly.

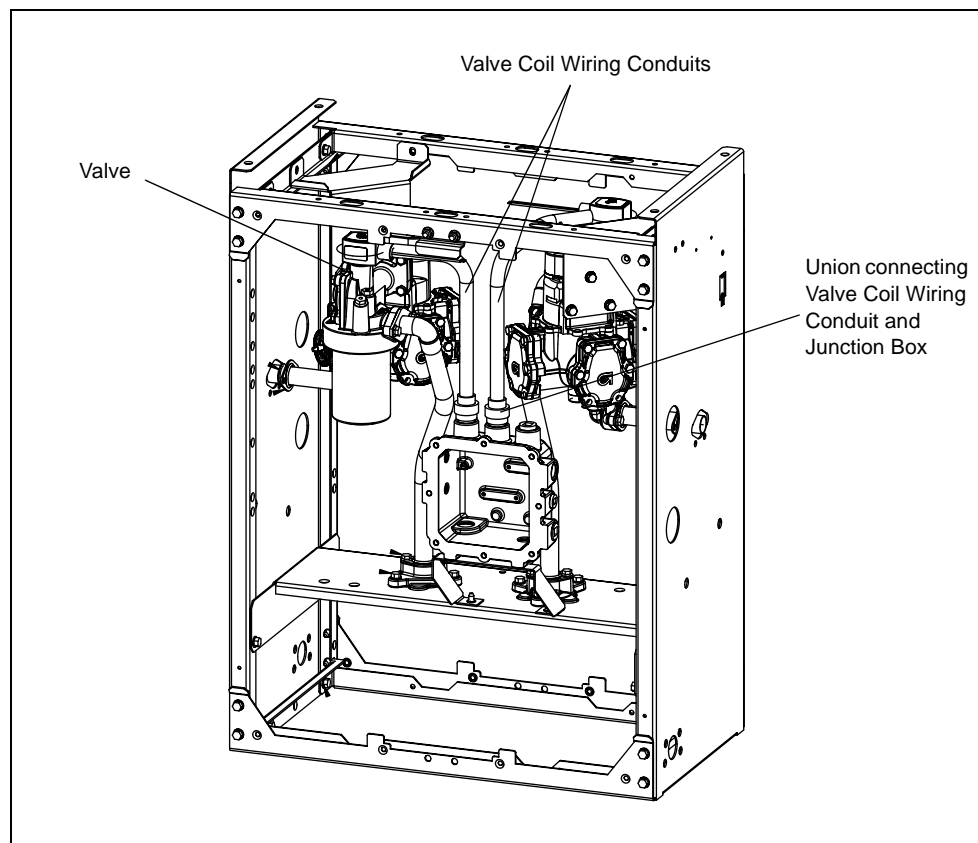
*Note: Valve coil assemblies have the volts and hertz stamped onto the valve coil body. This information is located on the opposite side of the wiring assembly. Check to make sure you have the correct replacement valve coil before replacing the existing coil.*

## Remove Old Valve Coil Assembly

- 1 Open the lower door.
- 2 Remove the junction box cover.
- 3 Locate the valve coil wiring conduit. See Figure 1: Valve Coil Assembly, Conduits and Junction Box on page 5.

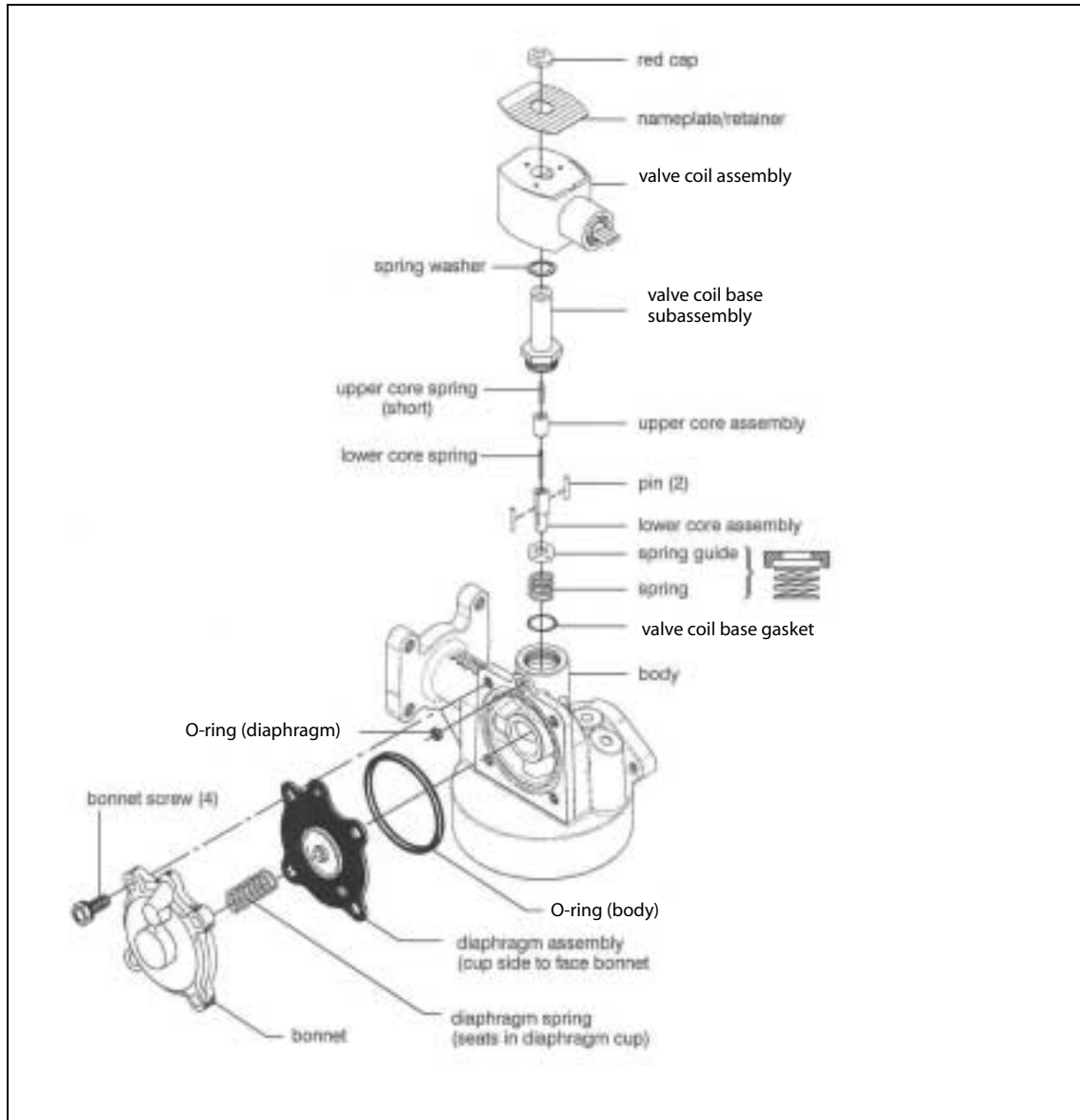
*Caution: Replace one valve coil assembly at a time. Attempting to make two replacements concurrently may cause problems with reconnecting valve coil wiring.*

**Figure 1: Valve Coil Assembly, Conduits and Junction Box**



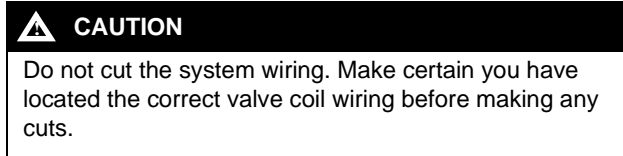
- 4 Loosen the union connecting the valve wiring conduit and the junction box. See Figure 1: Valve Coil Assembly, Conduits and Junction Box on page 5.
- 5 Remove the red cap from the top of the valve coil assembly. See Figure 2: Valve Coil Assembly and Diaphragm - Exploded View on page 6.

**Figure 2: Valve Coil Assembly and Diaphragm - Exploded View**



- 6 Push down on the valve assembly.
- 7 Insert the blade of a screwdriver between the nameplate and the valve assembly.
- 8 Use the screwdriver to pry off the nameplate. Put the red cap and the nameplate aside.
- 9 Loosen the union connecting the valve coil assembly and the conduit.
- 10 Rotate the valve coil and conduit. This will allow you to locate the red, black and yellow valve

coil assembly wires in the junction box.



- 11 Cut the red, black and yellow valve coil assembly wires 2 inches from the wire nut. Leave the old wires connected to the wire nuts to map the new valve coil installation wiring.
- 12 Remove the existing valve coil assembly and wiring from the unit.
- 13 Unscrew the conduit from the coil and remove the wires.

## Install New Valve Coil Assembly

- 1 Feed the new wiring through the conduit.
- 2 Screw the conduit into the valve coil wiring outlet and tighten so that the conduit will reconnect to the junction box when installed.
- 3 Feed the wiring through the junction box union.
- 4 Place the new valve coil assembly into position on top of the base sub-assembly. See Figure 2: Valve Coil Assembly and Diaphragm - Exploded View on page 6.
- 5 Replace the nameplate and the red cap.
- 6 Pull the wiring tight inside the junction box and tighten the union connecting the junction box and the conduit.

## Make Wiring Connections for New Valve Coil Assembly

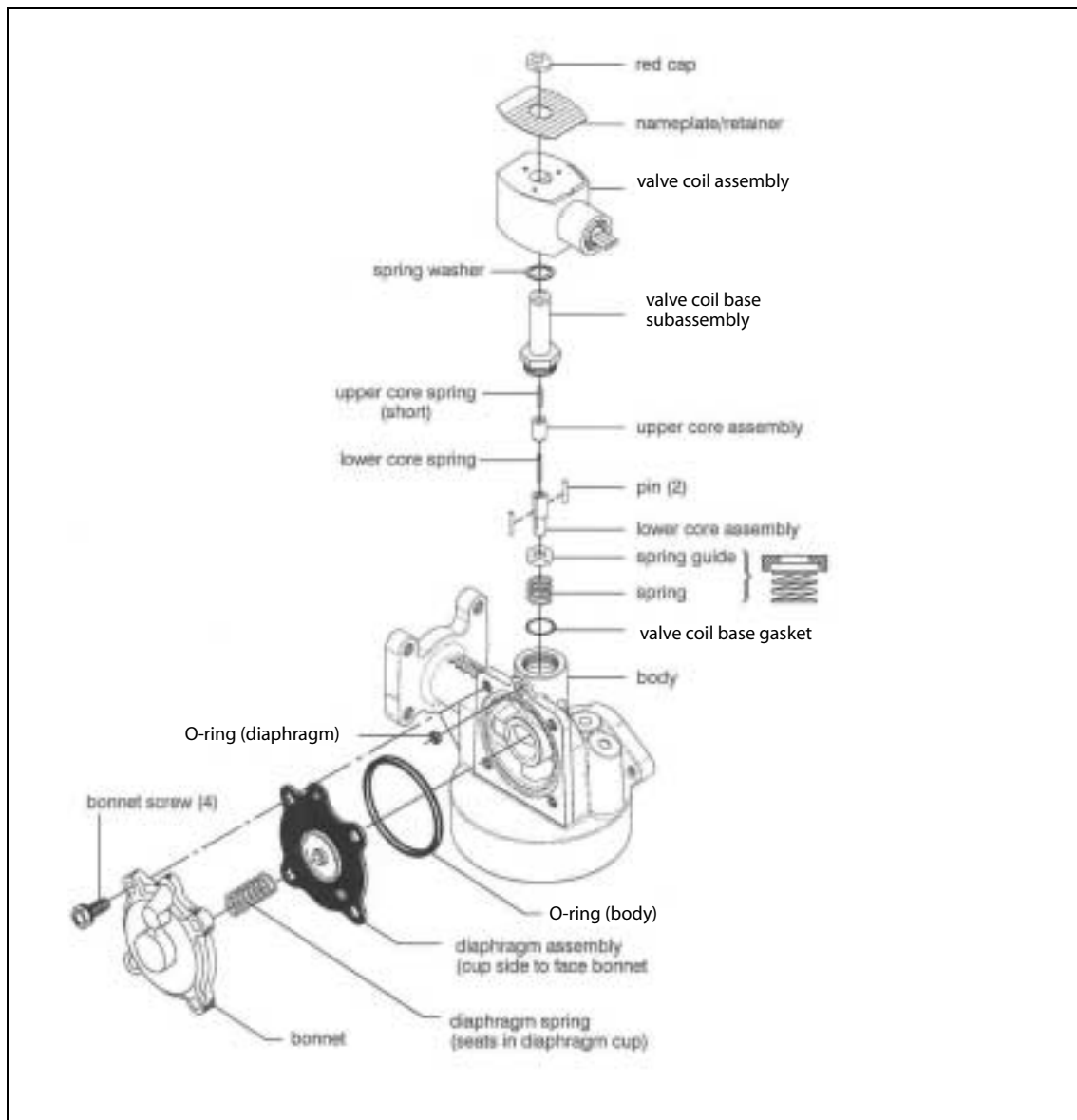
- 1 Connect the red wire to the corresponding wire nut in the junction box. Discard the previous wire section. Repeat for the yellow and black wires.
- 2 Replace the junction box cover, tightening all bolts, and close the lower door.

# Diaphragm Installation Instructions

Follow the directions below to replace the diaphragm.

- 1 Open the lower door.
- 2 Unscrew the bonnet screws (4). See Figure 3: Valve Coil Assembly and Diaphragm - Exploded View on page 8.

**Figure 3: Valve Coil Assembly and Diaphragm - Exploded View**



- 3 Remove valve bonnet, spring, diaphragm assembly, O-Ring (body) and O-Ring (diaphragm).
- 4 Put the valve bonnet and screws aside for later reassembly.



- 5** Lubricate the new O-Ring (diaphragm) with silicone grease.
- 6** Install the new O-Ring (diaphragm).
- 7** Lubricate the new O-Ring (body) with silicone grease.
- 8** Install the new O-Ring (body).
- 9** Install the new diaphragm assembly and spring with the cup side facing the valve bonnet.
- 10** Replace the valve bonnet.
- 11** Thread valve bonnet screws into the valve body and tighten screws.
- 12** After reapplying power to the unit, run and check for leaks.

## Causes of Improper Valve Operation

One or more of the following causes may contribute to improper valve operation.

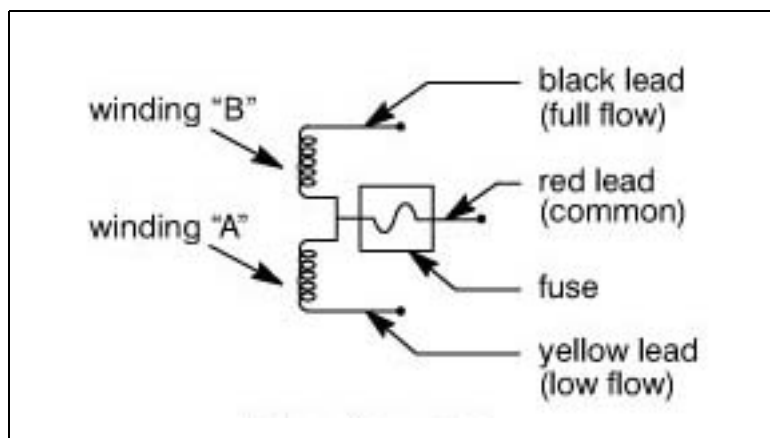
- Faulty Control Circuits
- Burned-out Coil
- Low Voltage
- Incorrect Pressure
- Excessive Leakage - In cases of excessive leakage, replace the complete valve assembly. Use the following table to determine the correct valve assembly.

Valve Assembly Part Number	Valve Assembly Description
M04607B001	Standard, Low Volt (120/60, 110/50V)
M04607B002	Standard, High Volt (240/60, 220/50V)
M04607B003	Standard, Low Volt for Canada ATC (120/60, 110/50V)
M04607B005	Filter Manifold, No Valve
M04607B006	Filter Manifold, No Valve for Canada ATC

## Solenoid Temperature

Valves are supplied with coils designed for continuous duty service. When the solenoid is energized for a long period, the solenoid becomes hot and can be touched by hand only for an instant. This is a safe operating temperature. Any excessive heating will be indicated by the smoke and odor of burning coil insulation. See the following wiring schematic.

Figure 4: Wiring Schematic



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**GASBOY**

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