

# Installation & Maintenance Instructions

2-WAY INTERNAL PILOT-OPERATED SOLENOID VALVES  
NORMALLY CLOSED OPERATION – 3/4", 1", 1-1/4", 1-1/2" OR 2" NPT

SERIES

8215

I&M No.V5996R6

**IMPORTANT:** See separate solenoid installation and maintenance instructions for information on: Wiring, Solenoid Temperature, Causes of Improper Operation, and Coil Replacement.

## DESCRIPTION

Series 8215 valves are 2-way normally closed internal pilot-operated solenoid valves. Valve bodies are made of rugged aluminum with trim and internal parts made of steel and stainless steel. Series 8215 valves may be provided with a general purpose or explosionproof solenoid enclosure.

## OPERATION

**Normally Closed:** Valve is closed when solenoid is de-energized; open when energized.

**Note:** No minimum operating pressure differential required.

## INSTALLATION

**⚠ CAUTION:** Not all valves are approved for fuel gas service. Check nameplate for correct catalog number, pressure, voltage, frequency, and service. Never apply incompatible fluids or exceed pressure rating of the valve. Installation and valve maintenance to be performed by qualified personnel.

### Future Service Considerations

Provision should be made for performing seat leakage, external leakage, and operational tests on the valve with a nonhazardous, noncombustible fluid after disassembly and reassembly.

### Temperature Limitations

For maximum valve ambient and fluid temperatures, refer to chart below. Check catalog number prefix on nameplate to determine maximum temperatures.

Construction	Coil Class	Catalog Number Prefix	Max. Ambient Temp °F	Max. Fluid Temp °F
AC Construction	F	FT	125	125
	H	HT	140	140
DC Construction	B or H	None or HT	77	77

## Positioning

Valve must be mounted with solenoid vertical and upright.

## Piping

Connect piping to valve according to markings on valve body. 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 or solenoid as a lever. Locate wrenches applied to valve body or piping as close as possible to connection point.

**⚠ CAUTION:** To avoid damage to the valve body, DO NOT OVERTIGHTEN PIPE CONNECTIONS. If Teflon\* tape, paste, spray or similar lubricant is used, use extra care when tightening due to reduced friction.

**IMPORTANT:** To protect the solenoid valve, install a strainer or filter, suitable for the service involved, in the inlet side as close to the valve as possible. Clean periodically depending on service conditions. See ASCO Series 8600, 8601 and 8602 for strainers.

## MAINTENANCE

**⚠ WARNING:** To prevent the possibility of death, serious injury or property damage, turn off electrical power, depressurize valve, extinguish all open flames and avoid any type of sparking or ignition. Vent hazardous or combustible fluid to a safe area before servicing the valve.

**NOTE:** It is not necessary to remove the valve from the pipeline for repairs.

## Cleaning

All solenoid valves should be cleaned periodically. The time between cleanings will vary depending on the medium and service conditions. In general, if the voltage to the coil is correct, sluggish valve operation, excessive noise or leakage will indicate that cleaning is required. In the extreme case, faulty valve operation will occur and the valve may fail to open or close. Clean valve strainer or filter when cleaning the valve.

\*Dupont Co. Registered Trademark

## Preventive Maintenance

- Keep the medium flowing through the valve as free from dirt and foreign material as possible.
- Periodic exercise of the valve should be considered if ambient or fluid conditions are such that corrosion, elastomer degradation, fluid contamination build up, or other conditions that could impede solenoid valve shifting are possible. The actual frequency of exercise necessary will depend on specific operating conditions. A successful operating history is the best indication of a proper interval between exercise cycles.
- Depending on the medium and service conditions, periodic inspection of internal valve parts for damage or excessive wear is recommended. Thoroughly clean all parts. If parts are worn or damaged, install a complete rebuild kit.

## Causes of Improper Operation

- **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
- **Excessive Leakage:** Disassemble valve and clean all parts. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

## Valve Disassembly

**▲ WARNING: To prevent the possibility of death, serious injury or property damage, turn off electrical power, depressurize valve, extinguish all open flames and avoid any type of sparking or ignition. Vent hazardous or combustible fluid to a safe area before servicing the valve.**

NOTE: Determine valve construction AC (Figure 1 on page 3) or DC (Figure 2 on page 4) then proceed as follows:

1. Remove solenoid enclosure, see separate installation and maintenance instructions.
2. For AC Construction, unscrew solenoid base sub-assembly. For DC Construction, unscrew solenoid base sub-assembly with special wrench adapter provided in ASCO Rebuild Kit. For wrench adapter only, order kit No.K218-949. NOTE: For alternate type open end wrench, order kit No.K168-146-1 which is available for solenoid base sub-assembly removal or replacement.
3. Remove bonnet screws, valve bonnet, bonnet gasket, core/diaphragm sub-assembly and body gasket.
4. All parts are now accessible to clean or replace. If parts are worn or damaged, install a complete ASCO Rebuild kit.

## Valve Reassembly

1. Lubricate bonnet gasket and body gasket with a light coat of DOW CORNING® 200 Fluid lubricant or an equivalent high-grade silicone fluid.
2. Apply a light coat of TFL 50® Dry Lube to:
  - Valve seat
  - Valve body flange where diaphragm assembly contacts the valve body and body gasket.
  - Internal surface of valve bonnet where diaphragm assembly contacts bonnet when valve is in the energized (open position).

**IMPORTANT: If valve has been disassembled for inspection and cleaning only and a Rebuild Kit is not being installed, lubricate the following with TFL 50® Dry Lube:**

- Diaphragm assembly on both sides.
- Main disc base of core/diaphragm sub-assembly.
- Pilot disc at base of core assembly.

**▲ CAUTION: Do not distort hanger spring between core assembly and diaphragm assembly when lubricating pilot disc.**

3. Replace body gasket and core/diaphragm sub-assembly with closing spring attached. Locate bleed hole in core/diaphragm sub-assembly approximately 30° from the valve inlet.
4. Replace valve bonnet and bonnet screws (6). Torque screws in a crisscross manner to 100 ± 10 in-lbs [11,3 ± 1,1 Nm].
5. For AC construction, replace bonnet gasket and solenoid base sub-assembly. Torque solenoid base sub-assembly to 45 ± 5 ft-lbs [61,1 ± 6,8 Nm] For DC construction refer to separate “Solenoid Installation and Maintenance Instructions” for lubrication instructions; then install bonnet gasket, housing and solenoid base sub-assembly. Torque solenoid base sub-assembly to 30 ± 5 ft-lbs [40,7 ± 6,8 Nm].
6. Replace solenoid (see separate instructions) and make electrical hookup.

**▲ WARNING: To prevent the possibility of death, serious injury or property damage, check valve for proper operation before returning to service. Also perform internal seat and external leakage tests with a nonhazardous, noncombustible fluid.**

7. Restore line pressure and electrical power supply to valve.
8. After maintenance is completed, operate the valve a few times to be sure of proper operation. A metallic *click* signifies the solenoid is operating.

## ORDERING INFORMATION FOR ASCO REBUILD KITS

Parts marked with an asterisk (\*) in the exploded views are supplied in Rebuild Kits.

- When Ordering Rebuild Kits for ASCO Valves, order the Rebuild Kit number stamped on the valve nameplate.
  - + If the number of the kit is not visible, order by indicating the number of kits required, and the Catalog Number and Serial Number of the valve(s) for which they are intended.

## Torque Chart

Part Name	Torque Value	Torque Value in Newton–Meters
Solenoid Base Sub–Assembly	45 ± 5 ft.–lbs	61,1 ± 6,8
Bonnet Screws	100 ± 10 in.–lbs	11,3 ± 1,1

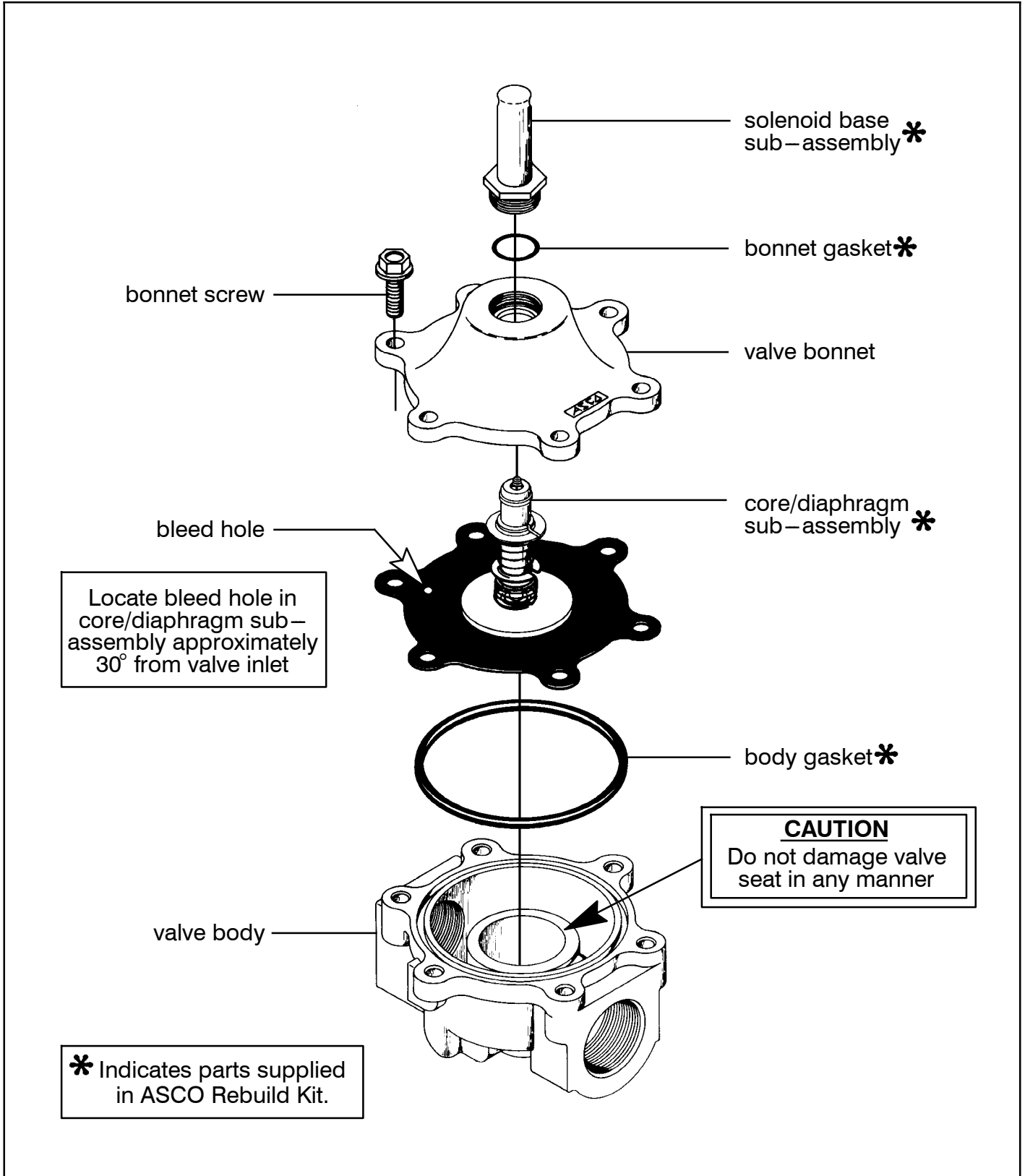


Figure 1. Series 8215 valves without solenoid, AC Construction.

## Torque Chart

Part Name	Torque Value	Torque Value in Newton–Meters
Solenoid Base Sub–Assembly	$30 \pm 5$ ft–lbs	$40,7 \pm 6,8$
Bonnet Screws	$100 \pm 10$ in–lbs	$11,3 \pm 1,1$

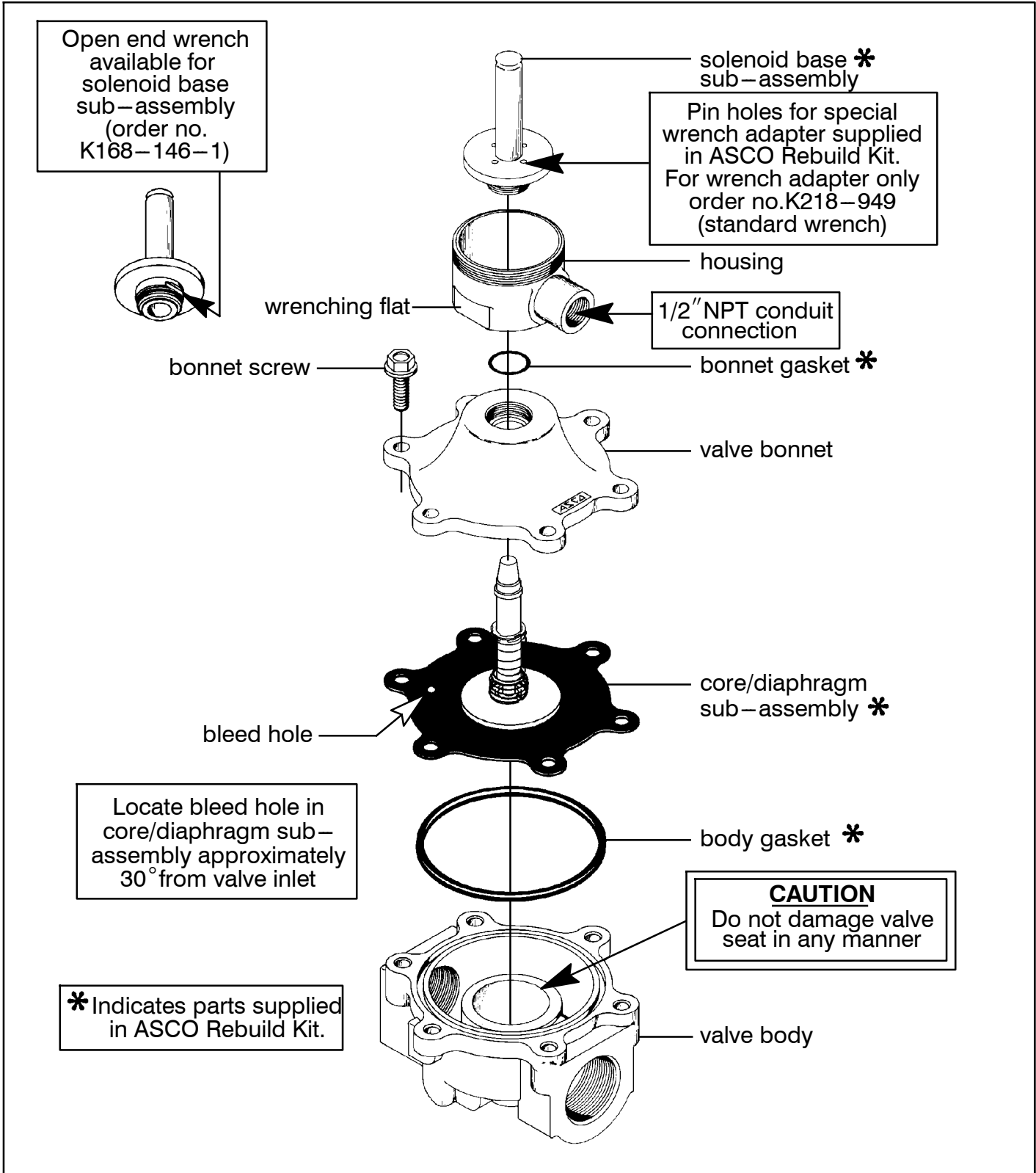


Figure 2. Series 8215 valves without solenoid, DC Construction.