

# Installation & Maintenance Instructions

## GENERAL PURPOSE/RAINTIGHT/WATERTIGHT AND RAINTIGHT/WATERTIGHT/EXPLOSIONPROOF SOLENOIDS

SERIES

8004

Form No.V6796R2

**NOTICE:** See separate valve installation and maintenance instructions for information on: Operation, Positioning, Mounting, Cleaning, Preventive Maintenance, Causes of Improper Operation, Disassembly and Reassembly of basic valve.

### DESCRIPTION

Catalog Numbers 80041, 8004A1, EF80041 and EF8004A1 are thermoplastic encapsulated pull-type solenoids for use with ASCO valves. These solenoids have three lead wires with one wire for grounding and a 1/2" male conduit connection. Catalog No. 80041 and 8004A1 are designed to meet Enclosure Type 1—General Purpose, Types 3 and 3S—Raintight, and Types 4 and 4X—Watertight. Catalog No. EF80041 and EF8004A1 meet Enclosure Types 3 and 3S—Raintight, Types 4 and 4X—Watertight, Types 6 and 6P—Submersible, Type 7 (A, B, C, & D) Explosionproof Class I, Division 1, Groups A, B, C, & D and Type 9 (E, F, & G)—Dust — Ignitionproof Class II, Division 1, Groups E, F, & G.

### OPERATION

When the solenoid is energized, the core assembly is drawn into the plugnut/core tube sub-assembly. When the solenoid is de-energized, spring force returns the core assembly to the original position.

#### Enclosure Types 7 and 9 Only

**⚠ CAUTION:** To prevent fire or explosion, do not install solenoid and/or valve where ignition temperature of hazardous atmosphere is less than 160° C. Open circuit before disassembling.

#### Temperature Limitations

Catalog Numbers	Construction Ambient Temperature
80041 EF80041	AC & DC Construction 77° F (25° C) maximum
8004A1 EF8004A1	AC Construction 104° F (40° C) maximum DC Construction 77° F (25° C) maximum

#### Positioning

Solenoid may be mounted in any position.

#### Valve Mounting

This solenoid is assembled to a valve that must be rigidly supported using the valve body mounting provisions.

#### Wiring

Wiring must comply with local codes and the National Electrical Code. The solenoid is provided with lead wires and one grounding wire which is green or green with a yellow stripe. To facilitate wiring, the solenoid may be rotated 360° in 90° increments. To rotate solenoid, remove retaining cap (if present) and four mounting screws, reposition solenoid and replace screws and retaining cap (if present). Torque screws evenly in a crisscross manner to 12 in-lbs [1,3 Nm]. Torque retaining cap to 10–12 in-lbs [1,1–1,3 Nm] using a 21/32" socket.

Solenoids have a 1/2–14 NPT male thread. For connection to rigid metal conduit, metal type NPT electrical fittings should be used. For the watertight and explosionproof solenoid, electrical fittings must be approved for use in hazardous locations or use ASCO Part Number 264568–001.

#### Solenoid Temperature

Standard solenoids are 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.

#### MAINTENANCE

**⚠ WARNING:** To prevent the possibility of personal injury or property damage, turn off electrical power, depressurize valve, and vent fluid to a safe area before servicing.

#### Cleaning

All solenoid valves should be cleaned periodically. The time between cleaning will vary depending on medium and service conditions. In general, if the voltage to the solenoid 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 shift. Clean strainer or filter when cleaning the valve.

#### Preventive Maintenance

- Keep the medium flowing through the solenoid valve as free from dirt and foreign material as possible.
- While in service, the solenoid valve should be operated at least once a month to ensure proper opening and closing.
- Depending on the medium and service conditions, periodic inspection of internal valve parts for damage or excessive wear recommended. Thoroughly clean all parts. Replace any worn or damaged parts.

#### Causes of Improper Operation

- **Faulty Control Circuit:** Check the electrical system by energizing the solenoid. A metallic *click* signifies that the solenoid is operating. Absence of the *click* indicates loss of power supply. Check for loose or blown fuses, open-circuited or grounded solenoid, broken lead wires or splice connections.

- **Burned-Out Solenoid:** Check for open-circuited solenoid. Check supply voltage; it must be the same as specified on nameplate and marked on the solenoid. Check ambient temperature and check that the core is not jammed. If necessary, replace pilot valve.
- **Low Voltage:** Check voltage across the solenoid leads. Voltage must be at least 85% of rated voltage.

**ORDERING INFORMATION FOR REPLACEMENT PILOT VALVE WITH SOLENOID**

Specify valve Catalog Number, Solenoid Catalog Number, Serial Number, Voltage, and Frequency.

**Torque Chart**

Part Name	Torque Value Inch-Pounds	Torque Value Newton-Meters
Mounting screws	12	1,3
Retaining cap	10 – 12	1,1 – 1,3

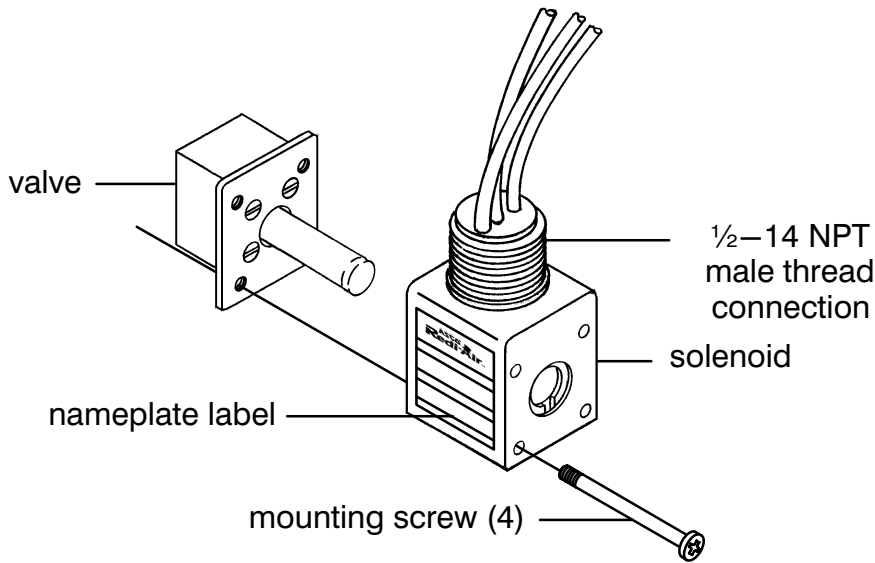


Figure 1. Catalog No. 80041 General Purpose/Raintight/Watertight Solenoid.

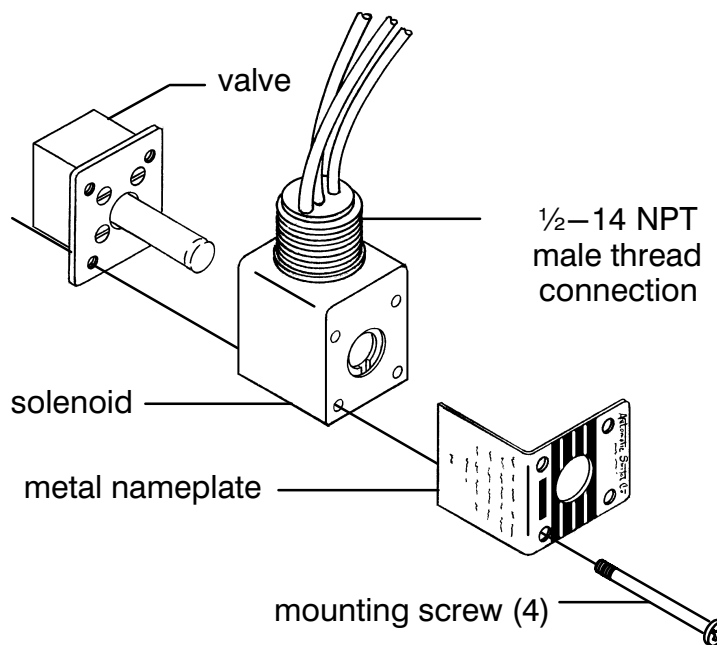


Figure 2. Catalog No. EF80041 Raintight/Watertight/Explosionproof Solenoid.

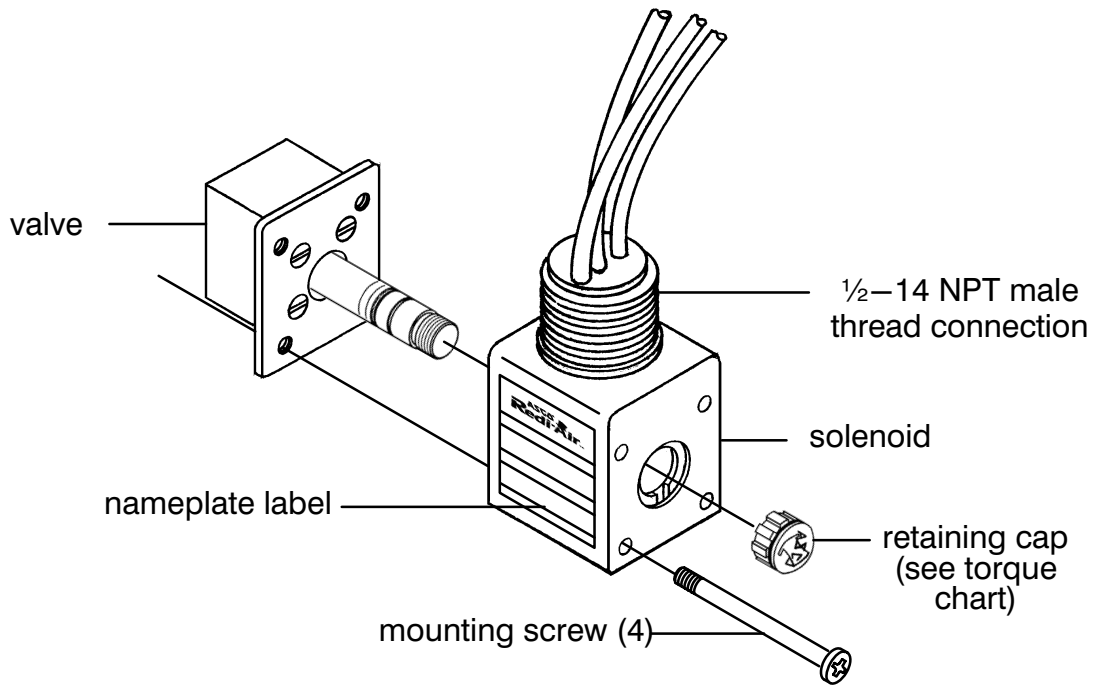


Figure 3. Catalog No. 8004A1 general purpose/raintight/watertight solenoid.

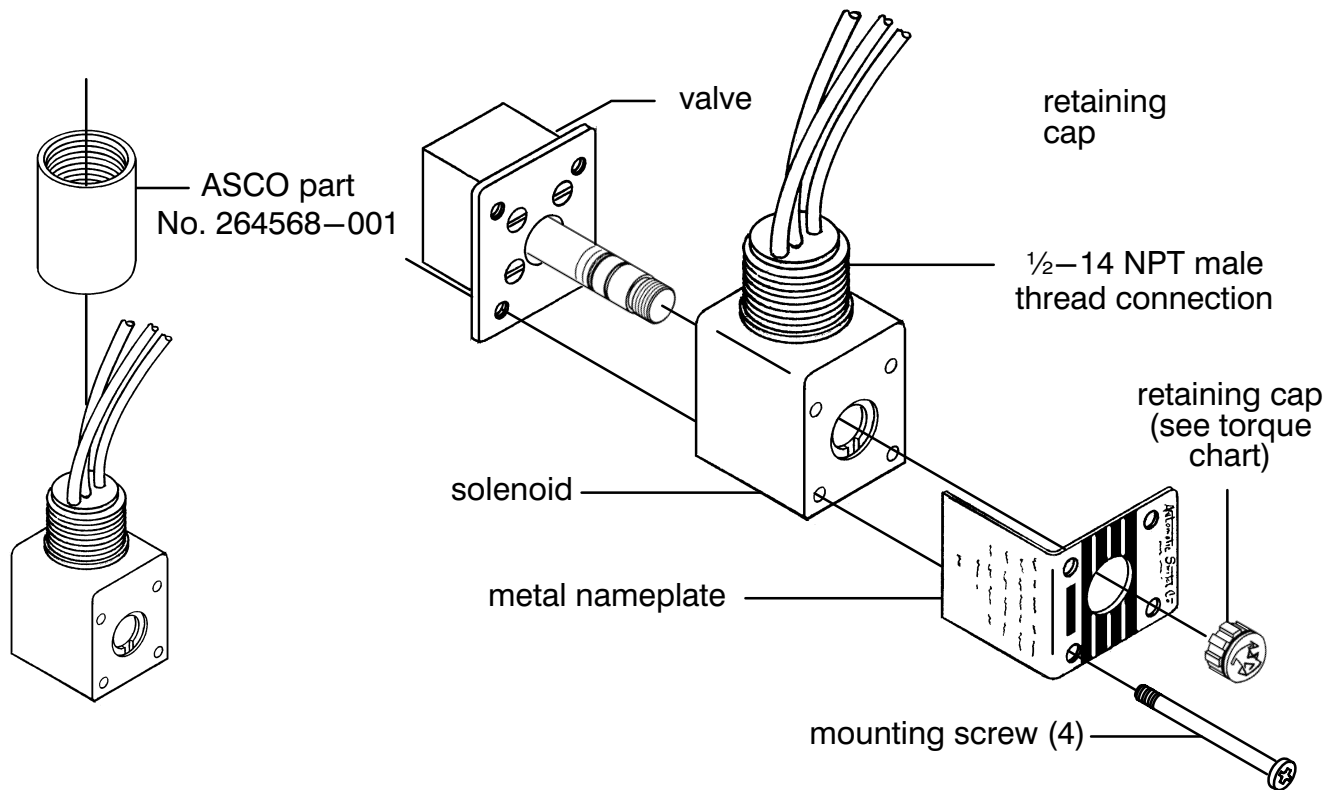


Figure 4. Catalog No. EF8004A1 raintight/watertight/explosionproof solenoid.