EN Installation and Maintenance Instructions

Series
8003G/H
8007G/H
8202G/H

DOWNLOAD

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	https://www.emerson.com/8003GH-8007GH-8202GH_01	To access the updated available translations of this document (I&M V_6584-300-BAL), simply scan the QR code.

Multilingual version of the Original Instructions (Original: Document No. V_6584 Rev. VG)

I&M No. V_6584-300-BAL Rev. AB

ASCO RED-HAT II Open-frame, General Purpose, Watertight/explosion Proof Solenoids Optional Feature for Open Frame (General Purpose) Construction Only

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⚠ WARNING To reduce the risk of death, serious injury, or property damage:

- **Personnel installing, maintaining, or operating this equipment must be qualified and follow these instructions. See also separate solenoid valve installation & maintenance instructions. Keep this document.**
- **Before installing or maintaining the valve, 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.**

Service Notice

ASCO solenoid valves with design change letter "G" or "H" in the catalog number (ex. 8210G1) have an epoxy encapsulated ASCO Red Hat II™ solenoid. This solenoid replaces some of the solenoids with metal enclosures and open-frame constructions. Follow these installation and maintenance instructions if your valve or operator uses this solenoid.

See separate instructions for basic valve.

Product Verification

Check nameplate for correct catalog number, service, and wattage. Check the front of the solenoid for voltage and frequency. Never apply incompatible fluids or exceed pressure rating of the valve. Contact ASCO or your supplier for more information about this valve or other valve options if this valve is not suitable for your application.

Description

Catalog numbers 8003G/H, 8007G/H and 8202G/H and are epoxy encapsulated pull-type solenoids. The green solenoid with lead wires and 1/2 conduit connection is designed to meet Enclosure Type 1-General Purpose, Type 2-Dripproof, Types 3 and 3S-Raintight, and Types 4 and 4X-Watertight. The black solenoid on catalog numbers prefixed "EF" or "EV" is designed to meet Enclosure Types 3 and 3S-Raintight, Types 4 and 4X-Watertight, Types 6 and 6P-Submersible, Type 7, Explosionproof Class I, Division1 Groups A, B, C, & D and Type 9, -Dust-Ignitionproof Class II, Division1 Groups E, F & G. The Class II, Groups F & G Dust Locations designation is not applicable for solenoids or solenoid valves used for steam service or when a class "H" solenoid is used. See Temperature Limitations section for solenoid identification and nameplate/retainer for service. When installed just as a solenoid and not attached to an ASCO valve, the core has a 0.250-28 UNF-2B tapped hole, 0.38 or 0.63 minimum full thread.

NOTE: Catalog number prefix "EV" denotes stainless steel construction.

Solenoid catalog numbers 8202G/H1, 8202G/H3, 8202G/H5 and 8202G/H7 are epoxy encapsulated push-type, reverse-acting solenoids having the same enclosure types as previously stated for Catalog numbers 8003G/H1 and 8003G/H2. 8007G/H are 3-way solenoid operators with a pipe port or adapter, exhaust protector or vent at the top of the solenoid base sub-assembly.

Series 8003G/H, 8007G/H and 8202G/H solenoids are also available in:

- **Open-Frame Construction:** The green solenoid may be supplied with 1/4″ spade, screw or DIN terminals (Refer to **Figure 4**).
  - ☐ **DIN Plug Connector Kit No. K236034:** Use this kit only for solenoids with DIN terminals. The DIN plug connector kit provides a two pole with grounding contact DIN Type 43650 construction (See **Figure 6**).
- **Panel Mounted Construction:** These solenoids are specifically designed to be panel mounted by the customer. Refer to Figures specified in this I&M and the section on *Installation of Panel Mounted Solenoid* for details.
- **Junction Box (Aluminum):** This junction box construction meets Enclosure Types 2, 3, 3S, 4, and 4X. Only solenoids with 1/4″ spade or screw terminals may have a junction box. The junction box provides a 1/2″ conduit connection, grounding and spade or screw terminal connections within the junction box (See **Figure 5**).
- **Junction Box (Sheet Metal):** This junction box construction meets enclosure Type 1. The junction box is available with press-on lead wires, spade connection, and screw terminal (See **Figure 9**).
- **Multi-pin Connectors:** All Multi-pin connectors (VT, VB, ZT, ZB) do not have any enclosure ratings.

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Solenoid Characteristics

Series 8003G/H and 8007G/H - When the solenoid is energized, the core is drawn into the solenoid base sub-assembly.

IMPORTANT: When the solenoid is de-energized, the initial return force for the core, whether developed by spring,pressure, or weight, must exert a minimum force to overcome residual magnetism created by the solenoid. Minimum return force for AC construction is 11 ounces, and 5 ounces for DC construction.

Series 8202G/H - When the solenoid is energized, the disc holder assembly seats against the orifice. When the solenoid is de-energized, the disc holder assembly returns.

IMPORTANT: Initial return force for the disc or disc holder assembly, whether developed by spring, pressure, or weight, must exert a minimum force to overcome residual magnetism created by the solenoid. Minimum return force is 1 pound, 5 ounces.

Installation

Temperature Limitations

For maximum solenoid ambient and fluid temperatures, refer to chart. The temperature limitations listed, only indicate maximum application temperatures for field wiring rated at 90 °C (194 °F). Check catalog number prefix and watt rating on nameplate to determine maximum ambient temperature. See valve installation and maintenance instructions for valve temperature limitations.

NOTE: For steam service, refer to *Wiring* section, *Junction Box* for temperature rating of supply wires.

Temperature Limitations For Series 8003G, 8007G or 8202G

Watt Rating	Catalog Number Coil Prefix	Class of Insulation	Maximum Ambient/Fluid Temperature
10.1 & 17.1	NONE, EF, EV, KF, KP, SC, SD, SF, SP, VT, VB, ZT & ZB	F	125 °F (52 °C)
10.1, 17.1 & 24.6	(EV/EF)HB, (EV/EF)HT, KB, KH, KC, SS, ST, SW, SU, (EV/EF)HC	H	140 °F (60 °C)
11.6 & 22.6	NONE, EF, EV, KF, KP, SC, SD, SF, SP, VT, VB, ZT & ZB	F	104 °F (40 °C)
11.6 & 22.6	(EV/EF)HB, (EV/EF)HT, KB, KH, SS, ST, SU, SV	H	104 °F (40 °C)
15.6	NONE, KB, SS, SV	H	104 °F (40 °C)
12.0	NONE, EF, EV, KF, SC, SF, VT, ZT	F	131 °F (55 °C)

Approved minimum fluid and ambient temperature is -76 °F (-60 °C) for the operator. Actual temperature can be limited depending on valve limits.

Temperature Limitations for Series 8003H, 8007H and 8202H Solenoids						
Prefix [1]	Coil Class	Watt Ratings			Maximum Ambient/ Fluid Temperature	
		AC		DC		
		60 Hz	50 Hz		°C	°F
EF, EV	FT	10.1	10.1	-	52	125
EF, EV	FB	17.1	17.1	-		
	FT	10.1	10.1	-	55	131
	FB	17.1	17.1	-		
	HT	-	-	11.6	40 [2]	104 [2]
	HF	-	-	15.6		
	HB	-	-	22.6		
EF, EV	HT	-	-	11.6		
EF, EV	HF	-	-	15.6		
EF, EV	HB	-	-	22.6		
	HT	10.1	10.1	-	60 [3]	140 [3]
	HB	17.1	17.1	-		
EF, EV	HT	10.1	10.1	-		
EF, EV	HB	17.1	17.1	-		
EF, EV	HC	-	-	24.6		

1 = EF, EV data applies to Explosionproof coils only.

2 = Some DC solenoid valves can be operated at maximum ambient temperature of 55 °C / 131 °F with reduced pressure ratings. See valve I&M for maximum operating pressure differential ratings.

3 = Steam Service Valves have a maximum ambient temperature of 55 ° C / 131 °F.

Strainer or Filter Requirement

NOTICE 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 and 8601 for strainers.

⚠ WARNING Electrical hazard from the accessibility of live parts. To prevent the possibility of death, serious injury or property damage, install the open - frame solenoid in an enclosure.

FOR BLACK ENCLOSURE TYPES 7 AND 9 ONLY

NOTICE To prevent fire or explosion, do not install solenoid and/or valve where ignition temperature of hazardous atmosphere is less than 165 °C (329 °F). On valves used for steam service or when a class "H" solenoid is used, do not install in hazardous atmosphere where ignition temperature is less than 180 °C (356 °F). See nameplate/retainer for service.

NOTE: These solenoids have an internal non-resettable thermal fuse to limit solenoid temperature in the event that extraordinary conditions occur which could cause excessive temperatures. These conditions include high input voltage, a jammed core, excessive ambient temperature or a shorted solenoid, etc. This unique feature is a standard feature only in solenoids with black explosionproof/dust-ignitionproof enclosures (Types 7 & 9).

Positioning

This solenoid is designed to perform properly when mounted in any position. However, for optimum life and performance, the solenoid should be mounted vertically and upright to reduce the possibility of foreign matter accumulating in the solenoid base sub-assembly area.

Wiring

⚠ WARNING To reduce the risk of electrocution, fire, or property damage, wiring must comply with local codes and the National Electrical Code.

All solenoids supplied with lead wires are provided with a grounding wire which is green or green with yellow stripes and a 1/2″ conduit connection. To facilitate wiring, the solenoid may be rotated 360°. For explosionproof solenoid version, the conduit lead wires are factory sealed for use in hazardous locations. On some solenoids, a grounding wire (green or green with yellow stripes) is provided.

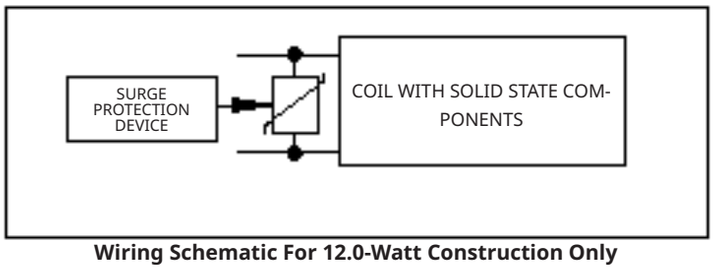
⚠ WARNING The solenoid must be grounded with grounding wire (if included) or rigid metallic conduit - do not rely on pipe as ground.

NOTICE Cryogenic Applications - Solenoid lead wire insulation should not be subjected to cryogenic temperatures. Adequate lead wire protection and routing must be provided.

NOTICE (For 12.0-Watt construction only): These solenoids are provided with a special coil containing solid state components that can be damaged by transient voltages, over voltage, high temperatures or improper valve assembly.

1. When establishing the valve's electrical connections, the circuit that it is being connected to needs to have the proper SPD (Surge Protective Device) installed. This is to limit the effects of over voltages and impulse currents caused by lightning and switching surges occurring on the power lines. Failure to provide this conditioning on the affected circuits can lead to either open circuiting or short circuiting of the solenoid valve coil. Information on the proper sizing of SPDs and installation requirements can be found in numerous industry standards such as IEC 61643---12, IEEE STD. C62.23, IEEE STD. C62.41.1 and IEEE STD. C62.41.2. SPDs used should be capable, based on the class of the installation, of limiting the Up (Voltage Protection Level) to 600 volts for coils marked 120 VAC or less, and limiting the Up to a 1000 volts for coils marked with voltages greater than 120 VAC.
2. The coil is designed for continuous duty in the maximum ambient temperature.
   NOTE: The maximum ambient temperature should not be exceeded for prolonged periods of time.
3. Do not apply voltage in excess of 110% of the nominal voltage.
4. Do not energize (or apply voltage to) the coil unless the solenoid is completely assembled.

NOTICE Failure to comply with the above can result in premature coil failure.



Wiring Schematic For 12.0-Watt Construction Only

Additional Wiring Instructions For Optional Features:

- **Open-Frame solenoid with 1/4″ spade terminals**
  For solenoids supplied with screw terminal connections use #12-18 AWG stranded copper wire rated at 90 °C (194 °F) or greater. Torque terminal block screws to 10±2 in-lbs [1,1±0,2 Nm]. A tapped hole is provided in the solenoid for grounding, use a #10-32 machine screw. Torque grounding screw to 15-20 in-lbs [1,7-2,3 Nm]. On solenoids with screw terminals, the socket head screw holding the terminal block to the solenoid is the grounding screw. Torque the screw to 15-20 in-lbs [1,7-2,3 Nm] with a 5/32″ hex key wrench.
- **Junction Box (Aluminum)**
  The junction box is used with spade or screw terminal solenoids only and is provided with a grounding screw and a 1/2″ conduit connection. Connect #12-18 AWG standard copper wire only to the screw terminals. Within the junction box use field wire that is rated 90 °C (194 °F) or greater for connections. For steam service use 105 °C (221 °F) rated wire up to 50 psi or use 125 °C (257 °F) rated wire above 50 psi. After electrical hookup, replace cover gasket, cover, and screws. Tighten screws evenly in a criss-cross manner.
- **Junction Box (Sheet Metal)**
  The junction box is used with spade connection, screw terminal and press-on lead wires. Connect #12-18 AWG standard copper wire only to the screw terminals. Within the junction box, use field wire that is rated at 90 °C (194 °F) or greater for connections. After electrical hookup, slide the junction box cover on junction box housing.

Multi-pin Connector		
Connector Type	Mating Connector	Application
VT / VB	4-Pin, M12, Female, Single Keyway	DC
	4-Pin, M12, Female, Dual Reverse Keyway	AC
ZT / ZB	3-Pin, Mini, Female, Single Keyway	AC / DC

- **DIN Plug Connector Kit No. K236034**
  1. The open-frame solenoid is provided with DIN terminals to accommodate the plug connector kit.
  2. Remove center screw from plug connector. Using a small screwdriver, pry terminal block from connector cover.
  3. Use #12-18 AWG stranded copper wire rated at 90 °C (194 °F) or greater for connections. Strip wire leads back approximately 1/4″ for installation in socket terminals. The use of wire-end sleeves is also recommended for these socket terminals. Maximum length of wire-end sleeves to be approximately 1/4″. Tinning of the ends of the lead wires is not recommended.
  4. Thread wire through gland nut, gland gasket, washer and connector cover.
     NOTE: Connector housing may be rotated in 90° increments from position shown for alternate positioning of cable entry.
  5. Check DIN connector terminal block for electrical markings. Then make electrical hookup to terminal block according to markings on it. Snap terminal block into connector cover and install center screw.
  6. Position connector gasket on solenoid and install plug connector. Torque center screw to 5±1 in-lbs [0,6±0,1 Nm].
     NOTE: Alternating current (AC) and direct current (DC) solenoids are built differently and cannot be converted from one to the other by changing the coil.

Installation of Solenoid

Solenoids may be assembled as a complete unit. Tightening is accomplished by means of a hex flange at the base of the solenoid.

Installation of Panel Mounted Solenoid (See Figures 1 and 2)

1. Disassemble solenoid following instruction under Solenoid/Coil Replacement then proceed.
2. Install solenoid base sub-assembly through customer panel. 8202H panel mounted solenoids include a retainer to adapt the solenoid base sub-assembly to the customer panel (See **Figure 2**).
3. Position finger washer on opposite side of panel over solenoid base sub-assembly.
4. Replace solenoid, nameplate/retainer and red cap.
5. Make electrical hookup, see Wiring section.

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 death, serious injury or property damage, turn off electrical power, depressurize solenoid operator and/or valve, and vent fluid to a safe area before servicing.

Cleaning

All solenoid operators and 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. Clean strainer or filter when cleaning the valve.

Preventive Maintenance

- Keep the medium flowing through the solenoid operator or 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. 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. Replace if necessary. Check supply voltage; it must be the same as specified on nameplate/retainer and marked on the solenoid. Check ambient temperature and check that the core is not jammed.
- **Low Voltage:** Check voltage across the solenoid leads. Voltage must be at least 85% of rated voltage.

Solenoid/Coil Replacement

1. Disconnect conduit, coil leads, and grounding wire.
   NOTE: Any optional parts attached to the old solenoid must be reinstalled on the new solenoid.
2. Disassemble solenoids with optional features as follows:
   - **Spade or Screw Terminals**
     Remove terminal connections, grounding screw, grounding wire, and terminal block (screw terminal type only).
     NOTE: For screw terminals, the socket head screw holding the terminal block serves as a grounding screw.
   - **Junction Box (Aluminum)**
     Remove conduit and socket head screw (use 5/32″ hex key wrench) from center of junction box. Disconnect junction box from solenoid.
   - **DIN Plug Connector**
     Remove center screw from DIN plug connector. Disconnect DIN plug connector from adapter. Remove socket head screw (use 5/32″ hex key wrench), DIN terminal adapter, and gasket from solenoid.
   - **Junction Box (Sheet Metal)**
     Refer to Figure 9. Remove Cover. Remove Spade Connector or other terminal connections. Remove grounding screw, grounding wire and terminal block (screw type only).
3. For 8003 G/H, 8007G without pipe adapter, and 8202G, snap off red cap from the top of the solenoid base sub-assembly. For 8007G with pipe adapter, remove piping or tubing from pipe adapter and remove pipe adapter. For 8202H solenoids, use a suitable hex wrench to loosen retaining clip screw and remove retaining clip.
4. Push down on solenoid. Then using a suitable screwdriver, insert blade between solenoid and nameplate/retainer. Pry up slightly and push to remove nameplate.
   NOTE: Series 8202G/H solenoids have a spacer between the nameplate/retainer and solenoid.
5. Remove solenoid from solenoid base sub-assembly.
6. Reassemble in reverse order of disassembly. Use exploded views for identification and placement of parts.

⚠ WARNING Verify that the solenoid is grounded with grounding wire or rigid metallic conduit – do not rely on pipe as ground.

7. For 8007G solenoids with pipe adapter, torque pipe adapter to 90 inch-pounds maximum [10.2 Nm maximum]. Then make up piping or tubing to pipe adapter on solenoid. For 8202H solenoids, torque retaining clip screw to 6±2 in-lbs [0.7±0.2 Nm].

⚠ WARNING Perform internal (seat) leakage test (including checking valve for proper operation and checking for external leaks) before returning to service. Use a nonhazardous, noncombustible fluid if practical.

Disassembly and Reassembly of Solenoids

1. Remove solenoid, see Solenoid/Coil Replacement.
2. Remove spring washer from solenoid base sub-assembly. For 3-way construction, remove pipe adapter and plugnut gasket.
3. Unscrew solenoid base sub-assembly from valve body.
4. Remove internal solenoid parts for cleaning or replacement. Use exploded views for identification and placement of parts.
5. If the solenoid is part of a valve, refer to basic valve installation and maintenance instructions for further disassembly.
6. Torque solenoid base sub-assembly and adapter to 175±25 in-lbs [19,8±2,8 Nm].

Ordering Information for ASCO Solenoids

When Ordering Solenoids for ASCO Solenoid Operators or Valves, order the number stamped on the solenoid. Also specify voltage and frequency.

ZH 安装和维护指南

系列
8003G/H
8007G/H
8202G/H

《原始使用说明》的多语言版本（原始文档：编号 V_6584 修订号 VG）

《安装和维护说明书》编号：V_6584-300-BAL Rev. AB

ASCO RED-HAT II开放型，通用，防水/防爆电磁头仅开放型（通用）结构选配功能

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- **必须由具备资质的人员按照相关说明进行安装、维护和操作，并遵守以下说明。请参见各型号阀门的安装和维护指南。请妥善保管本文件。**
- **安装或维护电磁阀前，请务必切断电源、对电磁阀进行泄压、熄灭所有明火，并避免任何形式的火花或点火。同时将危险或可燃流体排放至安全区域。**

维修注意事项

型号中带字母“G”或“H”（如8210G1)的ASCO 电磁阀配有环氧树脂封装的ASCO Red Hat II™电磁头。本电磁头采用开放型结构，并配备金属外壳，可用于替换部分其他点磁头。若您的电磁阀或执行机构使用了该电磁头，请遵守安装和维护指南。
参见各型号基本电磁阀的说明书。

产品验证

请核对铭牌数据，确保正确的型号、功率和使用方式。查看电磁头正面数据，确保正确的电压和频率。切勿使用不兼容的流体介质，或超出电磁阀的额定压力范围。若电磁阀不适合您的应用，请咨询 ASCO或供应商获取该款电磁阀或其他电磁阀选项的更多信息。

描述

8003G/H，8007G/H和8202G/H型号是环氧树脂封装牵引式电磁头。绿色电磁头带导线和1/2导管接口，可选配满足Type1-通用、Type 2-防滴漏、Type 3和3S-防雨，以及Type 4和4X-防水应用要求的外壳类型。型号前缀为“EF”或“EV”的黑色电磁头则可选配Type 3和3S-防雨；Type 4和4X-防水；Type 6和6P-潜水；Type 7 - 防爆I类，1区，A、B、C & D组；以及Type 9 – 粉尘防爆II类，1区，E、F和G组应用要求的外壳类型。适合蒸汽应用的电磁头或电磁阀，以及“H”类电磁头未经过爆炸性粉尘环境的II类，F & G组应用认证。当仅作为电磁头安装且未连接到ASCO电磁阀时，阀芯配有0.250-28 UNF-2B螺纹孔，最小深度为0.38或0.63。

注:型号前缀为“EV”表示不锈钢结构。

8202G/H1、8202G/H3、8202G/H5和8202G/H7型号电磁头是环氧树脂封装推入式反作用电磁头，与上述8003G/H1和8003G/H2型号电磁头采用相同的外壳类型。8007G/H是三通电磁头操作器，在电磁头底座组件的顶部带有管道端口或接头，排放口保护装置或排气孔。

8003G/H、8007G/H和8202G/H系列电磁头具有以下款式可选：

- **开放型结构:** 绿色电磁头可能配有1/4"连接、螺钉或DIN端子(参见图4)。

- ☐ **DIN插头连接器套装（订货号K236034）:**该套装仅用于带DIN端子的电磁头。DIN插头连接器套装提供带接地触点的两极DIN 43650型结构（参见图6）。

- **面板安装结构:** 这些电磁头专为客户面板安装而设计。详细信息请参见本文件中示意图和“面板安装电磁头的安装”章节。
- **接线盒（铝制）:** 接线盒结构适用于Type 2、3、3S、4和4X外壳类型。只有带1/4连接片或螺钉端子的电磁头才可能配有接线盒。接线盒配有1/2 导管接口、接地和连接片或螺钉端子连接（参见图5）。
- **接线盒（金属板）:** 此接线盒的结构符合外壳类型 1。接线盒有压入式导线、铲形连接和螺丝端子可供选择（见图 9）。
- **多针连接器:** 所有多针连接器（VT、VB、ZT和ZB）都没有外壳防护等级。

注: 如需中国RoHS有害物质表，请点击下方链接或扫描QR码：
www.asco.com/ChinaRoHSDisclosure

电磁头特性

8003G/H和8007G/H系列 - 当电磁头通电时，阀芯被吸入电磁头底座组件中。

重要说明：当电磁头断电时，阀芯的初始恢复力，无论是由弹簧、压力还是重量产生的，都必须施加最小作用力来克服电磁头产生的残留磁力。AC结构的最小恢复力为11盎司，DC结构为5盎司。

8202G/H系列 - 当电磁头通电时，阀瓣固定组件落在通径孔上；当电磁头断电时，阀瓣固定组件返回。

重要说明：阀瓣或阀瓣固定组件的初始恢复力，无论是由弹簧、压力还是重量产生的，都必须施加最小作用力来克服电磁头产生的残留磁力。最小恢复力为1磅5盎司。

安装

温度限制

电磁头的最高环境和流体温度请参见下表。温度限制仅表示额定90°C (194°F) 的现场接线的最高应用温度。应核对铭牌上的型号前缀和额定功率，以确定最高环境温度。电磁阀温度限制参见电磁阀安装和维护指南。

注: 对于蒸汽应用，电源线的额定温度请参见“布线”章节的“接线盒”

8003G、8007G或8202G系列电磁头的温度限制			
功率 (W)	型号前缀	绝缘等级	最高环境/流体温度
10.1 & 17.1	无, EF, EV, KF, KP, SC, SD, SF, SP, VT, VB, ZT & ZB	F	125 °F (52 °C)
10.1, 17.1 & 24.6	(EV/EF)HB, (EV/EF)HT, KB, KH, KC, SS, ST, SW, SU, (EV/EF)HC	H	140 °F (60 °C)
11.6 & 22.6	无, EF, EV, KF, KP, SC, SD, SF, SP, VT, VB, ZT & ZB	F	104 °F (40 °C)
11.6 & 22.6	(EV/EF)HB, (EV/EF)HT, KB, KH, SS, ST, SU, SV	H	104 °F (40 °C)
15.6	无, KB, SS, SV	H	104 °F (40 °C)
12.0	无, EF, EV, KF, SC, SF, VT, ZT	F	131 °F (55 °C)

执行机构的认证最高流体和环境温度为-76 °F (-60 °C)。实际温度限值还取决于电磁阀限值。

8003H、8007H和8202H系列电磁头的温度限制						
前缀 [1]	线圈等级	功率 (W)			最高环境/流体温度	
		AC		DC		
		60 Hz	50 Hz		°C	°F
EF, EV	FT	10.1	10.1	-	52	125
EF, EV	FB	17.1	17.1	-		
	FT	10.1	10.1	-	55	131
	FB	17.1	17.1	-		
	HT	-	-	11.6	40 [2]	104 [2]
	HF	-	-	15.6		
	HB	-	-	22.6		
EF, EV	HT	-	-	11.6		
EF, EV	HF	-	-	15.6		
EF, EV	HB	-	-	22.6		
	HT	10.1	10.1	-	60 [3]	140 [3]
	HB	17.1	17.1	-		
EF, EV	HT	10.1	10.1	-		
EF, EV	HB	17.1	17.1	-		
EF, EV	HC	-	-	24.6		

1 = EF和EV数据仅适用于防爆电磁头。

2 = 某些DC（直流）电磁阀可在最高环境温度55°C/131°F条件下降额（降低额定压力）运行。最大额定工作压力请参见电磁阀《安装和维护指南》。

3 = 蒸汽应用电磁阀的最高环境温度为55 °C/131 °F。

滤网或过滤器要求

注意 **为保护电磁阀或操作器，应在入口侧靠近电磁阀或操作器的位置安装适当的滤网或过滤器。应根据实际使用情况定期进行清洗。滤网相关信息请参见ASCO 8600和8601系列产品。**

⚠ 警告 **接触带电部件存在触电危险。为避免造成人员死亡、严重受伤或财产损坏，请将开放型电磁头安装在壳体中。**

仅适用于Type 7和9黑色外壳。

注意 **为避免火灾或爆炸，请勿将电磁头和/或电磁阀安装在着火温度低于165°C (329°F)的危险环境中。当电磁阀用于蒸汽应用或使用“H”类电磁头时，请勿将其安装在着火温度低于180°C (356°F) 的危险环境中。维护信息请参见铭牌/固定夹。**

注: 这些电磁头配有内置不可复位的热熔断器，以在发生可能导致温度过高的异常条件下限制电磁头的温度。这些异常条件包括高输入电压、阀芯堵塞、环境温度过高或电磁头短路等。仅采用黑色防爆/粉尘防爆外壳（Type 7和9）的电磁头标配此独特功能。

安装方位

电磁头安装在任意位置均可正常工作。但为确保最佳的寿命和性能，应尽可能将电磁头垂直朝上安装，以避免外物聚集在电磁头底座组件区域。

布线

⚠ 警告 **为降低触电、火灾和财产损坏风险，布线必须符合当地和国家电气规范。**

所有带导线的电磁头都配有绿色或黄绿相间的接地线，以及1/2 导管接口。电磁头可360°旋转以方便布线。防爆型电磁头的导管导线出厂时已密封，适用于危险区域。其中一些电磁头上配有接地线（绿色或黄绿相间）。

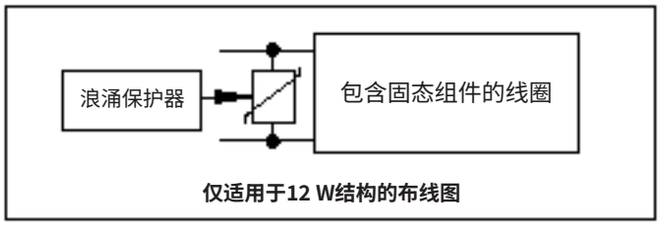
⚠ 警告 **电磁头必须使用接地线（如有）或刚性金属导管接地 -请勿依赖管道作为接地。**

注意 **低温应用 - 电磁头导线绝缘不得承受低温。必须提供充分保护和合适的布线。**

注意 **（针对12W结构）：电磁头配有包含固态组件的特殊线圈，因此线圈可能因瞬态电压、过电压、高温或电磁阀组装不当而损坏。**

1. 建立电磁阀的电气连接时，要连接的电路需要安装适当的SPD（浪涌保护器），以限制因雷电和供电线路中操作过电压所导致的过电压和冲击电流的影响。若未能在受影响的电路上提供SPD（浪涌保护器），则可能会导致电磁阀线圈开路或短路。关于SPD正确选型和安装要求的详细信息可在许多行业标准中找到，如IEC 61643-12、IEEE STD.C62.23、IEEE STD.C62.41.1和IEEE STD.C62.41.2。根据安装类别，所使用的SPD应能将标记为120 VAC或更低的线圈的 Up（电压保护水平）限制为600 V，将标记为大于120 VAC的线圈的Up（电压保护水平）限制为1000 V。
2. 线圈专为在最高环境温度下连续工作而设计。
   注: 严禁长时间超过最高环境温度。
3. 请勿施加超过标称电压110%的电压。
4. 电磁头完全组装好之前，不得给线圈通电（或施加电压）。

注意 **不遵守上述说明可能会导致线圈寿命缩短。**



仅适用于12 W结构的布线图

选配功能的额外布线说明:

- **带1/4 连接片端子的开放型电磁头**
  对于带螺钉端子连接的电磁头，请使用额定温度为90°C(194°F)或更高的#12-18 AWG标准铜线。以10±2 in-lbs [1,1±0,2 Nm] 的扭矩将接线板螺钉拧紧。电磁头配备一个用于接地的螺纹孔，使用#10-32机械螺钉。以15-20 in-lbs [1,7-2,3 Nm] 的扭矩将接地螺钉拧紧。对于带螺钉端子的电磁头，将接线板固定到电磁头的内六角螺钉是接地螺钉。使用5/32 内六角扳手以15-20 in-lbs [1,7-2,3 Nm] 的扭矩拧紧螺钉。
- **接线盒（铝制）**
  接线盒只能使用连接片或螺钉端子电磁头，并配有接地螺钉和1/2 导管接口。只能使用#12-18 AWG标准铜线连接到螺钉端子。在接线盒内使用额定温度为90°C (194°F) 或更高的现场电线进行连接。对于蒸汽应用，压力小于50 psi时使用额定温度为105°C (221°F) 的电线，压力大于50 psi时使用额定温度为125°C (257°F) 的电线。完成电气连接后，重新装好盖板垫片、盖板和螺钉。按照十字交叉的方式将螺钉均匀拧紧。

- **接线盒(金属板)**

  接线盒可用于铲形连接、螺丝端子和压入式导线。#12-18 AWG 标准铜线只能连接螺钉端子上。在接线盒内,使用额定温度为 90°C (194°F) 或更高的导线进行连接。完成电气连接后,将接线盒盖板滑入接线盒外壳上。

多针连接器		
连接器类型	**匹配连接器**	**应用**
VT / VB	4针M12内螺纹,单键槽	DC
	4针M12内螺纹,双反向键槽	AC
ZT / ZB	3针Mini内螺纹,单键槽	AC / DC

- **DIN插头连接器套装(订货号K236034)**
  1. 开放型电磁头配有DIN端子,以适应插头连接器套装。
  2. 将中心螺钉从插头连接器上拆下。使用小螺丝刀将接线板从连接器盖中撬出。
  3. 使用额定温度为90°C (194°F) 或更高的#12-18AWG标准铜线进行连接。将电线导线剥去约1/4 ,以安装在插座端子中。对于这些插座端子,也建议使用线端套管。线端套管的最大长度约为1/4 。
  4. 将电线穿过压盖螺母、压盖垫片、垫圈和连接器盖。

  注: 连接器外壳可从图示位置旋转(每次90°),以定位电缆入口。
  5. 检查DIN连接器接线端子的电气标记。然后按照相应标记进行接线板的电气连接。将接线板装入连接器盖并安装中心螺钉。
  6. 将连接器垫片放到电磁头上并安装插头连接器。以5±1 in-lbs [0,6±0,1 Nm] 的扭矩将中心螺钉拧紧。

  注: 交流(AC)和直流(DC)电磁头的结构不同,不能通过更换线圈在两种类型间切换。

安装电磁头
电磁头可组装成一个完整单元。可通过电磁头底座的六角法兰拧紧。

面板安装电磁头的安装 (参见图1和图2)
1. 按照电磁头/线圈更换中的说明拆解电磁头,然后继续。
2. 通过客户面板安装电磁头底座组件。8202H面板安装电磁头包括一个固定夹,用于将电磁头底座组件安装到客户面板。(参见图2) 。
3. 将波形垫圈放到面板另一侧的电磁头底座组件上。
4. 重新装好电磁头、铭牌/固定夹和红色盖帽。
5. 参见布线章节进行电气连接。

电磁头温度
标准电磁头专为连续工作设计。当电磁头长时间通电时,外壳就会变热,只能用手短暂触摸。这是安全的工作温度。

维护
⚠ 警告 为避免造成人员死亡、严重受伤或财产损坏,检修电磁阀前,请务必切断电源、对电磁头操作器和/或电磁阀进行泄压、并将流体排放至安全区。

清洁
所有电磁头操作器和电磁阀都需要定期清洁。具体清洁间隔各有不同,视介质和使用条件而定。一般来说,只要电磁头电压正确,那么出现电磁阀动作缓慢、噪音过大或泄漏严重时就意味着需要进行清洁。在清洁电磁阀时,应对滤网或过滤器也进行清洁。

预防性维护
- 确保通过电磁头操作器或电磁阀的介质尽可能不带有污垢与杂质。
- 若环境或流体条件可能导致腐蚀、弹性元件降解、流体污染物累积或其他可能妨碍电磁阀换向的情况,则应定期对电磁阀进行操作。实际操作频率取决于具体的工作条件。成功的操作历史表明设备操作间隔合适。
- 根据具体的介质和使用条件,建议定期检查电磁阀内部零件是否损坏或过度磨损。彻底清洁所有零件。更换磨损或损坏零件。

故障排除及原因
- **制电路故障:** 为电磁头通电,检查电气系统是否正常。若听到金属咔哒声,说明电磁头能正常工作。若听不到咔哒声,说明电源未能正常供电。检查保险丝是否松动或熔断、电磁头是否开路或接地、导线是否断裂或者接头是否搭接在一起。
- **电磁头烧坏:** 检查电磁头是否开路。如有需要,请予以更换。检查电源电压,确认其与铭牌标识一致。核对环境温度并检查阀芯是否卡滞。
- **电压过低:** 检查电磁头导线两端的电压。电压必须至少达到铭牌额定值的85%。

更换电磁头/线圈
1. 断开导管、线圈导线和接地线。

   注: 必须将旧电磁头上连接的所有可选零件重新安装在新电磁头上。
2. 按照以下步骤拆解带选配功能的电磁头:
   - **连接片或螺钉端子**

     拆下端子连接、接地螺钉、接地线和接线板(仅螺栓端子型)。

   注: 对于带螺钉端子,固定接线板的内六角螺钉作为接地螺钉。
   - **接线盒(铝制)**

     将导管和内六角螺钉(使用5/32"内六角扳手)从接线盒中间拆下。断开接线盒与电磁头。
   - **DIN插头连接器**

     将中心螺钉从DIN插头连接器上拆下。 断开DIN插头连接器与接头。将内六角螺钉(使用5/32"内六角扳手)、DIN端子接头和垫片从电磁头上拆下。
   - **接线盒(金属板)**

     参考图9拆下盖板。拆下铲形接头或其他端子接头。拆下接地螺钉,接地线缆和接线端子(仅限螺钉型)。
3. 对于无管接头的8003G/H、8007G,以及8202G电磁头,将红色盖帽从电磁头底座组件顶部拔下。对于带管接头的 8007G电磁头,将管路或管件从管接头上拆下,然后拆下管接头。对于8202H电磁头,使用六角扳手旋松固定夹螺钉,然后拆下固定夹。
4. 向下推动电磁头,然后使用合适的螺丝刀,将刀口插入电磁头和铭牌/固定夹之间。轻轻撬起并推动拆下铭牌。

   注: 8202G/H系列电磁头在铭牌/固定夹与电磁头间配有隔板。
5. 然后将电磁头从电磁头底座组件中拆下。
6. 请按照与拆解相反的顺序将其重新装好,重装时请仔细参照爆炸图确保零件位置正确。

⚠ 警告 电磁头必须使用接地线或刚性金属导管接地-请勿将管道作为接地。

7. 对于带管接头的8007G电磁头,以最大90 in-lbs [10.2 Nm] 的扭矩拧紧管接头。然后将管路或管件安装到电磁头的管接头上。对于8202H电磁头,以6 +/- 2 in-lbs [0.7 +/- 0.2 Nm] 的扭矩拧紧固定夹螺钉。

⚠ 警告 在重新使用前必须进行内部(阀座)泄漏测试(包括确认电磁阀能否正常工作以及是否存在外部泄漏)。如可行,使用无危险且不可燃的流体。拆解和重装电磁头。

拆解和重装电磁头
1. 拆下电磁头,参见电磁头/线圈更换章节。
2. 将弹簧垫圈从电磁头底座组件中拆下。对于3通结构,拆下管接头和静铁芯垫片。
3. 将电磁头底座组件从阀体上拧下。
4. 拆下电磁头内部零件进行清洁或更换。参照爆炸视图找准各个零件及其位置。
5. 如果电磁头是电磁阀的一部分,请参见基本电磁阀的安装和维护说明进行进一步拆解。
6. 以175 ± 25 in-lbs [19,8 ± 2,8 Nm]的扭矩上紧电磁头底座组件和接头。

ASCO电磁头订购须知
订购用于ASCO电磁头操作器或电磁阀的电磁头时,应说明电磁头的编号,并指定电压和频率。

EN	Part Name	Torque Value (Inch-Pounds)	Torque Value (Newton-Meters)
Torque Chart	Solenoid base Sub-assembly	175 ± 25	19,8 ± 2,8
	Pipe Adapter	90 maximum	10.2 maximum

ZH	部件名称	扭矩值, in-lbs	扭矩值, N-m
扭矩表	电磁头底座组件	175 ± 25	19,8 ± 2,8
	管接头	最大 90	最大10.2

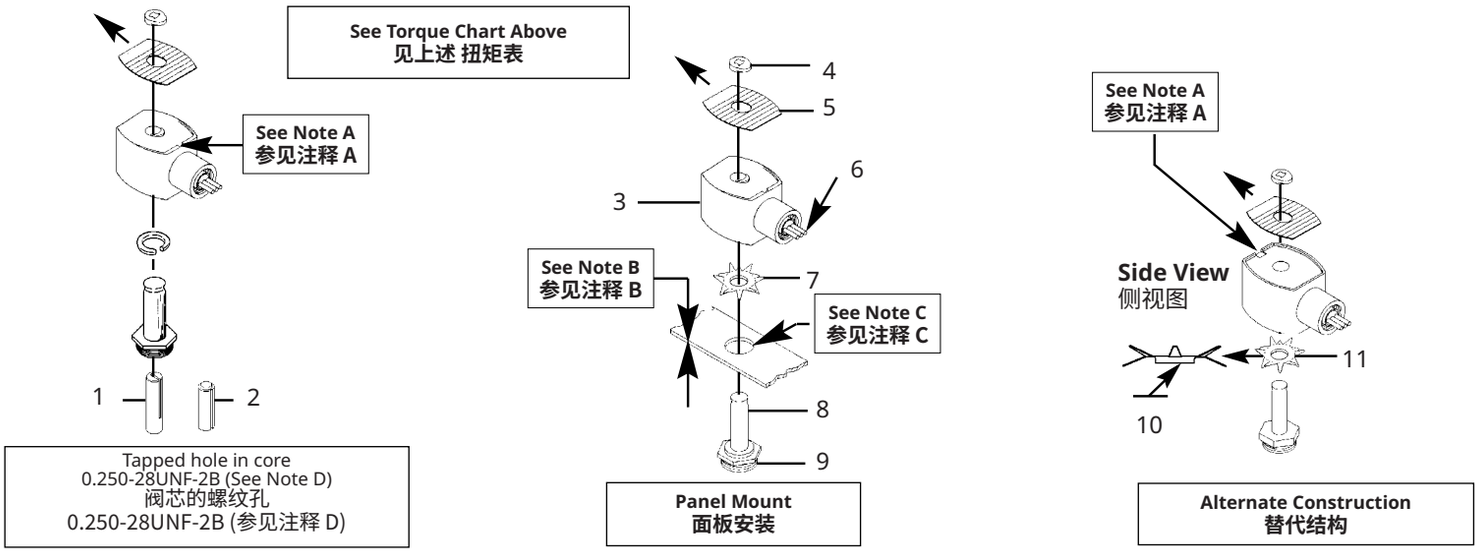


Figure 1. Series 8003G/H Solenoids
图1. 8003G/H系列电磁头

EN	Description (Figure 1)	ZH	描述 (图1)
1. Core (AC) 2. Core (DC) 3. Solenoid with 1/2" NPT 4. Red Cap 5. Nameplate/Retainer 6. Grounding Wire (green or green with yellow stripes) 7. Finger Washer 8. Solenoid Base Sub-assembly 9. 0.9375-26UNS-2A Thread 10. Collar to Face Valve Body 11. Finger Washer		1. 阀芯 (AC) 2. 阀芯 (DC) 3. 带1/2" NPT 接口的电磁头 4. 红盖帽 5. 铭牌/固定夹 6. 接地线-绿色或 黄绿相间 7. 波形垫圈 8. 电磁头底座组件 9. 0.9375-26UNS-2A螺纹 10. 套环朝向阀体 11. 波形垫圈	
Note: A. Remove red cap and push solenoid down. Then pry here to lift nameplate/retainer and push to remove. B. 0.062" to 0.093" (1.57 to 2.36 mm) Max. Thickness of Panel for Mounting C. 0.69" (17.5 mm) Diameter Mounting Hole D. 0.63 minimum full thread (AC) , 0.38 minimum full thread (DC)		**备注:** A. 拆下红色盖帽并向下 推动电磁头,然后在 这里轻轻撬起铭牌/ 固定夹并将其拆下。 B. 0,062" 0,093" (1.57到2.36mm) 安装面板的 最大厚度 C. 0.69"(17.5mm) 直径安装孔 D. 最小深度0.63 (AC) , 最小深度0.38 (DC)	

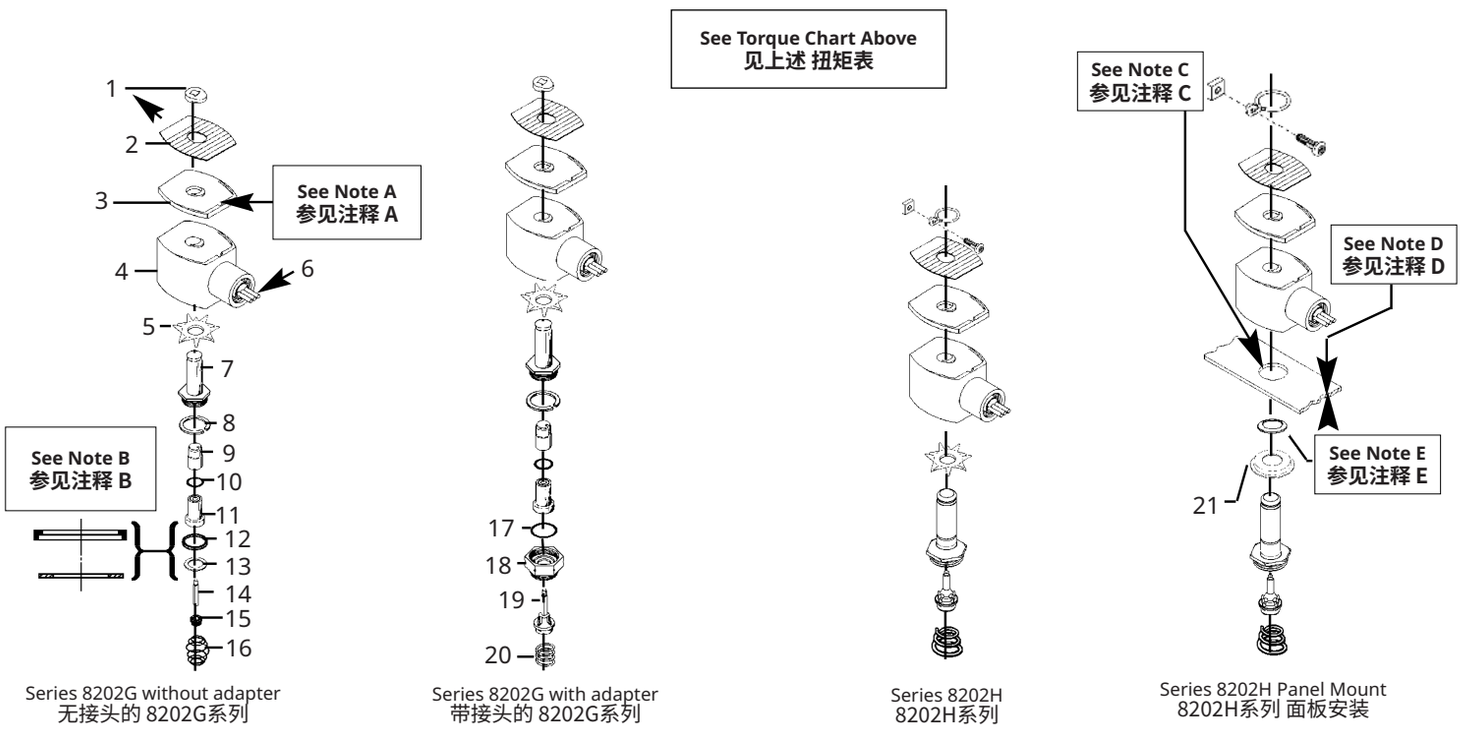
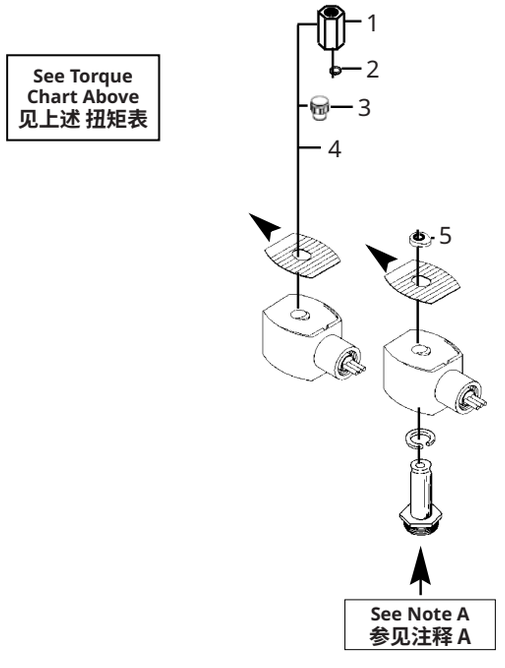


Figure 2. Series 8202G/H Solenoids
图2. 8202G/H系列电磁头

EN	Description (Figure 2)	ZH	描述 (图2)
1. Red Cap 2. Nameplate/Retainer 3. Spacer 4. Solenoid with 1/2" NPT 5. Finger Washer 6. Grounding Wire (green or green with yellow stripes) 7. Solenoid Base Sub-assembly 8. Bonnet Washer 9. Core (small end up) 10. Solenoid Base Gasket 11. Plugnut Assembly 12. Retainer Gasket 13. Retainer 14. Stem 15. Disc 16. Disc spring 17. Adapter Gasket 18. Adapter 19. Disc Holder Assembly 20. Disc Holder Spring 21. Retainer		1. 红盖帽 2. 铭牌/固定夹 3. 挡圈 4. 带1/2" NPT 接口的电磁头 5. 波形垫圈 6. 接地线-绿色或 黄绿相间 7. 电磁头底座组件 8. 阀帽垫圈 9. 阀芯(较细端朝上) 10. 电磁阀底座垫片 11. 静铁芯组件 12. 固定夹垫片 13. 固定夹 14. 阀杆 15. 阀瓣 16. 阀瓣弹簧 17. 接头垫片 18. 接头 19. 阀瓣固定组件 20. 阀瓣固定弹簧 21. 固定夹	
Note: A. Remove red cap and push solenoid down. Then pry here to lift nameplate/retainer and push to remove. B. Cutaway view to show positioning of retainer in gasket recess C. 1.312" (33.3 mm) Diameter Mounting Hole D. .075"[14GA] (1.9 mm) Max. Thickness for Panel Mounting E. Spring washer may be placed above or below retainer to best suit panel thickness		**备注:** A. 拆下红色盖帽并向下 推动电磁头,然后在 这里轻轻撬起铭牌/ 固定夹并将其拆下。 B. 显示固定夹在 垫片凹槽中位 置的剖面图 C. 1.312" (33.3 mm) 直径安装孔 D. 0.075" [14-GA] (1.9 mm) 面板安装的 最大厚度 E. 弹簧垫圈可放 在固定夹的上 方或下方,以 更好地适应面 板厚度	

EN	Part Name	Torque Value (Inch-Pounds)	Torque Value (Newton-Meters)
Torque Chart	Solenoid Base Sub-assembly	175 ± 25	19,8 ± 2,8
	Pipe Adapter	90 maximum	10.2 maximum

ZH	部件名称	扭矩值, in-lbs	扭矩值, N-m
扭矩表	电磁头底座组件	175 ± 25	19,8 ± 2,8
	管接头	最大 90	最大10.2



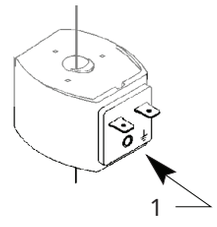
EN	Possible configurations (Figure 3)
1. Pipe Adapter 2. Plugnut Gasket 3. Exhaust Protector 4. None 5. Red Cap **Note:** A. Air Only Construction	
ZH	**可能配置 (图3)**
1. 管接失 2. 靜鐵芯塾片 3. 排放口保抓装置 4. 无 5. 红盖帽 **备注:** A. 仅用于空气的结构	

Figure 3. Series 8007G/H Solenoids
图3. 8007G/H系列

EN	Part Name	Torque Value (Inch-Pounds)	Torque Value (Newton-Meters)
Torque Chart	Terminal Block Screws	10 ± 2	1,1 ± 0,2
	Socket Head Screw	15 - 20	1,7 - 2,3
	Center Screw	5 ± 1	0,6 ± 0,1

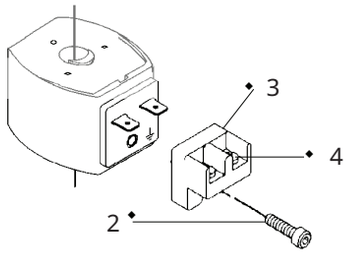
ZH	部件名称	扭矩值, in-lbs	扭矩值, N-m
扭矩表	接线块螺钉	10 ± 2	1,1 ± 0,2
	内六角凹槽螺钉	15 - 20	1,7 - 2,3
	中心螺钉	5 ± 1	0,6 ± 0,1

Open-Frame Solenoid with 1/4" Spade Terminals
开放式线圈 (带 1/4'' 接线)



◆ Indicates parts supplied in Termination Module Kit No. K256104
◆ 表明此零件在接线端模块维修 K256104 中提供

Open - Frame Solenoid with Screw Terminals. Socket head screw is used for grounding.
开放式线圈
(带接线螺钉,内六角凹槽螺钉用于接地)



Open - Frame Solenoid with DIN Terminals
开放式线圈
(带 DIN 接线端)

See Torque Chart Above
见上述 扭矩表

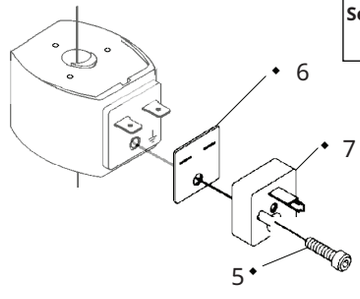
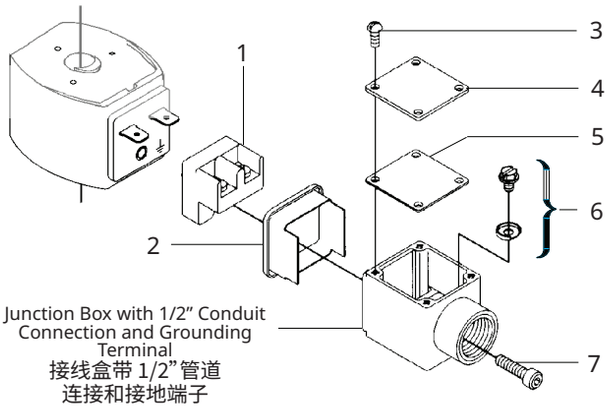


Figure 4. Open-Frame Solenoids
图 4. 开放式线圈

EN	Description (Figure 4)	ZH	描述 (图4)
1. Tapped hole for #10-32 grounding screw (not included) 2. Socket Head Grounding Screw (5/32" Hex Key Wrench) 3. Screw Terminal Adapter 4. Terminal Block Screw 5. Socket Head Screw (5/32" Hex Key Wrench) 6. Gasket 7. DIN Terminal Adapter		1. 螺纹孔,用于 #10-32 接地螺钉 (不提供) 2. 内六角凹槽接地螺钉 (5/32"内六角 扳手) 3. 螺钉接线转接块 4. 接线块 螺钉 5. 内六角螺钉 (5/32"内六角扳手) 6. 密封垫 7. DIN 接线转 接块	

Junction Box Solenoid with 1/4" Spade Terminals or Screw Terminals
接线盒式线圈
(带 1/4"片式接线端或螺钉接线端)

See Torque Chart Above
见上述 扭矩表



Junction Box with 1/2" Conduit Connection and Grounding Terminal
接线盒带 1/2"管道 连接和接地端子

Figure 5. Junction Box (Optional Feature)
图 5. 接线盒式 (可选功能)

EN	Description (Figure 5)	ZH	描述 (图5)
1. Screw Terminal Block (see Note) 2. Junction Box Gasket 3. Cover Screw 4. Cover 5. Cover gasket 6. Grounding Screw and Cup Washer 7. Socket Head Screw (5/32" Hex Key Wrench) **Note:** Junction box with screw terminals shown. With screw terminal block removed, remaining parts comprise the junction box for spade terminal construction.		1. 螺钉接线块 (见备注) 2. 接线盒密封垫 3. 盖子螺钉 4. 盖子 5. 盖子密封垫 6. 接地螺钉和 杯形垫片 7. 内六角螺钉 (5/32"内六角扳手) **备注:** 表明此部件为螺钉 接线端结构。去除螺钉接 线块,剩余部件组成片式 接线端的接线盒式结构。	

EN	Part Name	Torque Value (Inch-Pounds)	Torque Value (Newton-Meters)
Torque Chart	Terminal Block Screws	10 ± 2	1,1 ± 0,2
	Socket Head Screw	15 - 20	1,7 - 2,3
	Center Screw	5 ± 1	0,6 ± 0,1

ZH	部件名称	扭矩值, in-lbs	扭矩值, N-m
扭矩表	接线块螺钉	10 ± 2	1,1 ± 0,2
	内六角凹槽螺钉	15 - 20	1,7 - 2,3
	中心螺钉	5 ± 1	0,6 ± 0,1

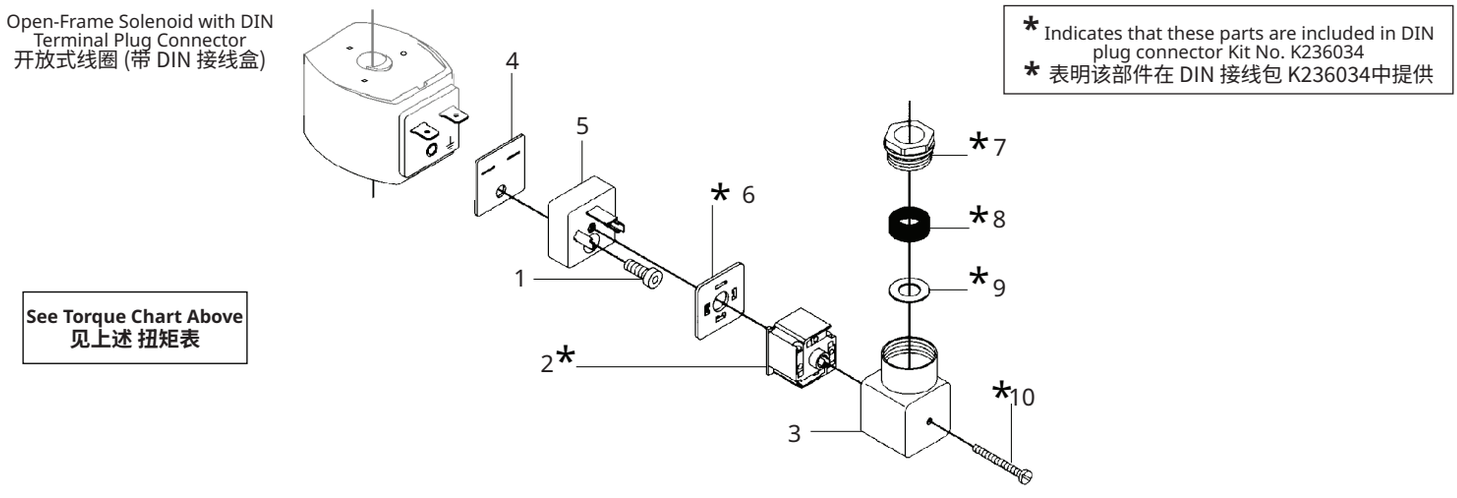


Figure 6. DIN Plug Connector Kit No. K236034 (Optional Feature)
图 6. DIN 插头接线盒式, 接线包号码: K236034 (可选功能)

EN	Description (Figure 6)	ZH	描述 (图6)
1. Socket Head Screw (5/32" Hex Key Wrench) 2. DIN Connector Terminal Block (see Note 2 3. Connector Cover (see Note 1) 4. Gasket 5. DIN Terminal Adapter 6. Connector Gasket 7. Gland Nut 8. Gland Gasket 9. Washer 10. Center Screw **Note:** 1. Connector cover may be rotated in 90° increments from position shown for alternate position of cable entry. 2. Refer to markings on DIN connector for proper electrical connections.		1. 内六角螺钉 (5/32"内六角扳手) 2. DIN 连接器接线端子 (见注释2) 3. 连接器盖 (见注释1) 4. 密封垫 5. DIN端子适 配器 6. 接线盒垫片 7. 压盖螺母 8. 压盖密封圈 9. 垫片 10. 中心螺钉 **备注:** 1. 接线盒盖可从图示位置按 90 °任意旋转,以适合不同 的电缆入口方向。 2. 参考 DIN 接线盒上的标 记进行正确的电气连接。	

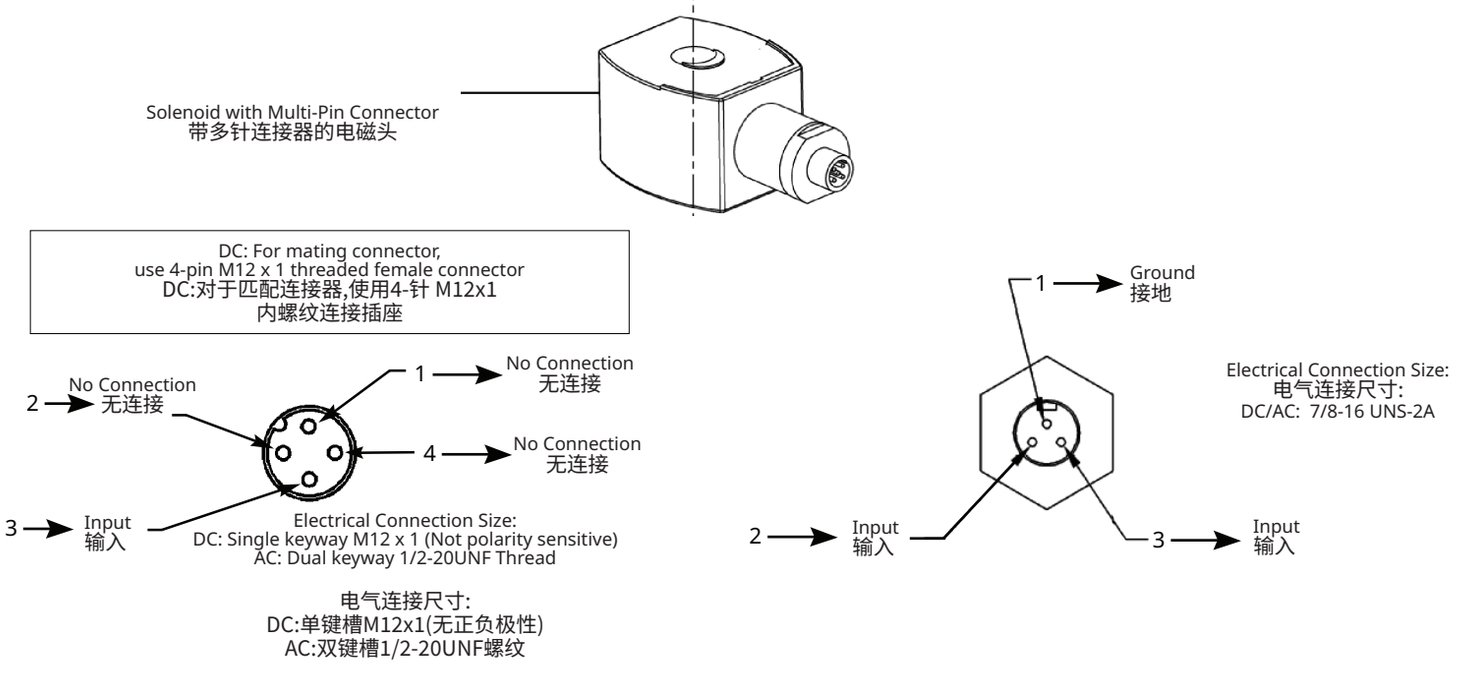
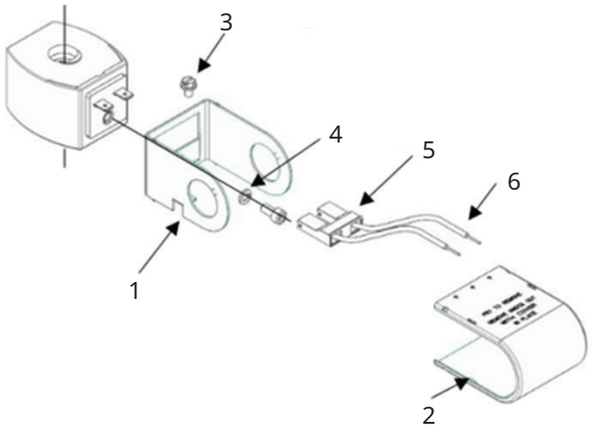


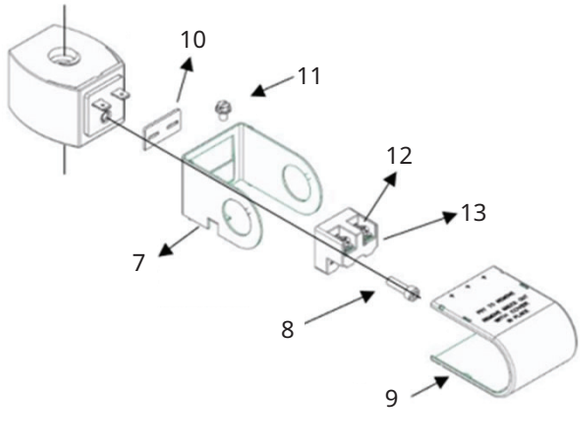
Figure 7. 4-Pin Anodized Aluminum Electrical Termination (VT/VB)
图7. 4针阳极氧化铝合金电气端接(VT/VB)

Figure 8. Mini 3-pin Epoxy Coated Zinc Electrical Termination (ZT/ZB)
图8. Mini 3针环氧镀锌电气端接(ZT/ZB)

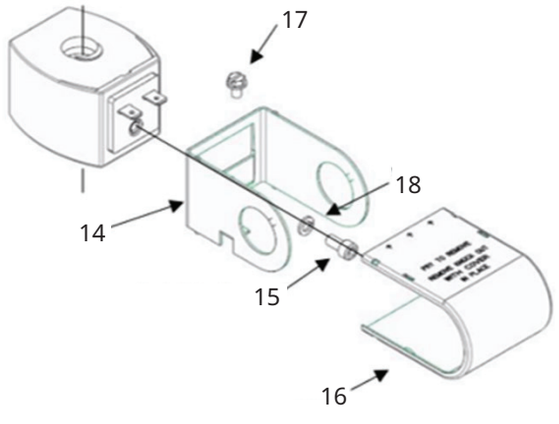
Junction Box Solenoid With
Press on Leads
接线盒电磁头带压入式导线



Junction Box Solenoid With Srew Terminals
接线盒电磁头带螺栓端子



Junction Box Solenoid With 1/4" Spade Terminals
带 1/4 英寸铲形端子的接线盒



EN	Description (Figure 9)
1. Junction Box with 1/2" Conduit Connection and Grounding Terminal 2. Cover 3. Grounding Screw 4. Washer 5. Spade Connector 6. Press on leads 7. Junction Box with 1/2" Conduit Connection and Grounding Terminal 8. Socket Head Grounding Screw (5/32" Hex Wrench) 9. Cover 10. Junction Box Gasket 11. Grounding Screw 12. Terminal Block Screw 13. Screw Terminal Adapter 14. Junction Box with 1/2" Conduit Connection and Grounding Terminal 15. Socket Head Grounding Screw (5/32" Hex Wrench) 16. Cover 17. Grounding Screw 18. Washer	
ZH	**描述 (图9)**
1. 接线盒带1/2英寸导管式连接和接地端子 2. 盖板 3. 接地螺钉 4. 垫圈 5. 铲形接头 6. 按压导线 7. 接线盒带1/2英寸导管式连接和接地端子 8. 内六角接地螺钉(5/32 英寸六角扳手) 9. 盖板 10. 接线盒垫片 11. 接地螺钉 12. 接线端子螺钉 13. 螺钉接线端子适配器 14. 接线盒带1/2英寸导管式连接和接地端子 15. 内六角接地螺钉(5/32 英寸六角扳手) 16. 盖板 17. 接地螺钉 18. 垫圈	

Figure 9. Junction Box (Sheet Metal)
图9. 接线盒(金属板)

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