



Please read the operating and mounting instructions before using the equipment. Install the equipment in compliance with the prevailing regulations.

Bedrijfs- en montagehandleiding voor gebruik goed lezen! Apparaat moet volgens de geldende voorschriften worden geïnstalleerd.

Lire les instructions de montage et de service avant utilisation! L'appareil doit impérativement être installé selon les réglementations en vigueur.

Betriebs- und Montageanleitung vor Gebrauch lesen! Gerät muß nach den geltenden Vorschriften installiert werden.



The Installation, Operating and Maintenance Instructions contain important information that must be read and followed by anyone operating or servicing this product. Do not operate or service this equipment unless the instructions have been read. **IMPROPER INSTALLATION OR USE OF THIS PRODUCT COULD RESULT IN BODILY INJURY OR DEATH.**

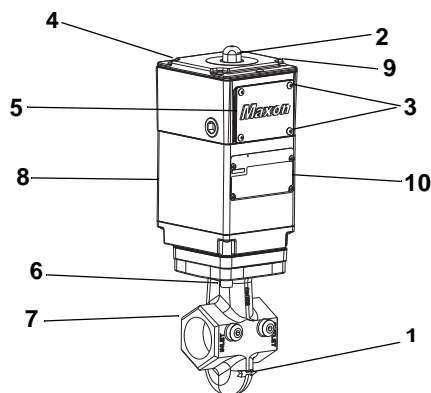
## Description

The Series 8000 Valve is a pneumatically operated fuel shut-off valve. These valves require compressed air for actuation. The 8000 Series valve will open or close by the addition of a control voltage signal. Removal of the signal will cause a fast acting return to the at rest position. Options are available in both normally closed and normally open versions. Series 8\*1\* Normally Closed will shut off flow when de-energized and pass flow when energized. Series 8\*2\* Normally Open will shut off flow when energized and pass flow when de-energized. The Series 8000 Valve has optional configurations that meet hazardous locations.

## Nameplate and Abbreviations

Consult the nameplate on your valve. This lists the maximum operating pressure, temperature limitations, voltage requirements and service conditions of your specific valve. Do not exceed nameplate ratings.

Abbreviation or Symbol	Description
M.O.P.	Maximum Operating Pressure
$P_{ACT}$	Required actuator pressure
$T_{AMB}$	Ambient temperature range
$T_F$	Fluid temperature range
	Visual indication not seen; valve is in energized position
	Visual indication seen; valve is in normal de-energized position
	Valve is shut
	Valve is partially open
	Valve is full open
VOS-1/2	Valve open switch(es)
VCS-1/2	Valve closed switch(es); proof of closure



Item No.	Description
1	Flow Arrow
2	Visual Indication
3	Terminal Block Cover Screws, M5 x 0.8
4	Switch Access Cover
5	Terminal Block Cover
6	Actuator Bolts, M8 x 1.25 or M10 x 1.50
7	Valve Body
8	Actuator
9	Switch Access Cover Screws, M6 x 1.0
10	Nameplate

## Installation

1. A gas filter or strainer of 40 mesh (0.6 mm maximum) or greater is recommended in the fuel gas piping to protect the downstream safety shut-off valves.
2. Properly support and pipe the valve in the direction of the flow arrow on the valve body. Valve seats are directional. Sealing will be maintained at full rated pressures in one direction only. Sealing will be provided in reverse flow only at reduced pressures.
3. Mount valve so that open/shut indicator will not face downward.
4. Series 8000 Valves require clean, dry compressed air or gas piped to the inlet of the actuator. Guidelines for various actuating gases:
  - A. Compressed Air
    1. The vent, located on the underside of the base plate, should be protected from blockage.
    2. Although MAXON Series 8000 Valves do not require lubrication, they do contain Buna-N seals in the actuator sub-assembly. Compressed air supply must not contain any lubricant that is not compatible with Buna-N elastomers.
  - B. Natural gas and other fuel gases can be used to actuate the Series 8000 Valve when the appropriate considerations are taken into account.
    1. Apply only the Intrinsically Safe Series 8000 Valve for the application. The general purpose and non-incendive options are not suitable for fuel gas activation.
    2. The activating fuel gas must be clean and free of moisture. The Series 8000 actuator contains Buna-N elastomers and brass components that will come in contact with the activating gas. The quality of the gas must not contain any constituents that are not compatible with Buna-N or brass.
    3. The exhaust gas must be vented to the atmosphere in a safe manner by piping from the filtered vent, located on the underside of the actuator's base. A 1/8" NPT female connection in the base plate allows for proper piping.
5. In some instances, it may be desired to utilize a slow opening feature for either application or code-related reasons. If a slow opening feature is required for normally closed shut-off valves, use MAXON's optional speed control set kit.
6. Wire the valve in accordance with all applicable local and national codes and standards. In U.S. and Canada, wiring must conform to the NEC ANSI/NFPA 70 and/or CSA C22.1, Part 1.
  - A. Supply voltages must agree with valve's nameplate voltage within -15%/+10% for proper operation. For electrical wiring schematic, see instructions or sample affixed inside valve terminal block cover.
  - B. Grounding is achieved with a grounding screw, which is located in the top assembly.
  - C. Customer connections are provided via terminal block located in the top assembly.
  - D. Main power wiring (120 VAC or 240 VAC) must be segregated from lower voltage 24 VDC signal wiring, when both are required.
  - E. **WARNING:** For Division 2 installations using the intrinsically safe solenoid, the power source is not to exceed 28VDC with a minimum series resistance of 300 ohms.
7. Maintain integrity of the Series 8000 actuator enclosure by using the appropriate electrical connectors for the (2) 3/4" NPT conduit threaded connections. The Series 8000 electrical enclosure is NEMA 4 and IP65 rated with an option for NEMA 4X.
8. All access cover plate screws should be tightened using an alternate cross-corner tightening pattern to the values shown in Table 1.

Item Number	Description	Torque
3	Terminal Block Cover Screws, M5 x 0.8	45 in-lbs
9	Switch Access Cover Screws, M6 x 1.0	50 in-lbs
6	Actuator Bolts, M8 x 1.25	25 ft-lbs
6	Actuator Bolts, M10 x 1.50	40 ft-lbs

9. Verify proper installation and operation by electrically actuating the valve for 10-15 cycles prior to the first introduction of gas or liquid.

Specifications

Valve Body Assemblies									
Valve Size	Flow Capacity	Actuator Pressure Class	Body Connections Available [1]	Body Material	Cv Rating	Flow Rate [2] $\left[ \frac{cfh}{m^3/h} \right]$	MOP $\left[ \frac{psig}{bar} \right]$		
.75" (DN 20)	Std.	High Pressure	A, C	Iron	19	1060 / 30	200/13.8		
1" (DN 25)	Std.	High Pressure	A, C	Iron	20	1115 / 31	200/13.8		
			A, C, E, F, G	Steel Stainless			255/17.6		
1.25" (DN 32)	Std.	High Pressure	A, C	Iron	45	2510 / 71	200/13.8		
1.5" (DN 40)	Std.	High Pressure	A, C	Iron	53	2956 / 83	200/13.8		
			A, C, E, F, G	Steel Stainless			255/17.6		
2" (DN 50)	Std.	High Pressure	A, B, C, D, H	Iron	86	4796 / 135	200/13.8		
			A, C, E, F, G	Steel Stainless			255/17.6		
2.5" (DN 65)	Std.	High Pressure	A, B, C, D, H	Iron	127	7083 / 200	150/10.3		
			A, B, C, D, H	Iron					
	CP	Std.	B, D, H	Steel Stainless			304	16955 / 480	50/3.4
		High Pressure	A, B, C, D, H	Iron					175/12.1
3" (DN 80)	Std.	High Pressure	A, C	Iron	173	9648 / 273	150/10.3		
			A, B, C, D, H	Iron					
	CP	Std.	B, D, H	Steel Stainless			423	23591 / 668	40/2.7
		High Pressure	A, B, C, D, H	Iron					135/9.3
4" (DN 100)	CP	High Pressure	B, D, H	Iron	490	27328 / 773	40/2.7		
				Steel					
	Stainless	135/9.3							
	Iron								
6" (DN 150)	Std.	High Pressure	B, D, H	Iron	1172	65364 / 1850	60/4.1		
				Steel					
	Stainless	100/6.9							
	Iron								
CP	High Pressure	High Pressure	B, D, H	Iron	1172	65364 / 1850	100/6.9		
				Steel					
Stainless	100/6.9								
Iron									

Note 1: Body Connections

- A - NPT
- B - ANSI 150 lb Flange (ISO 7005 PN 20)
- C - ISO Threaded
- D - DIN PN16 Flange
- E - Socket Welded Nipple
- F - Socket Welded Nipple w/ANSI 150 lb flange (ISO 7005 PN 20)
- G - Socket Welded Nipple w/ANSI 300 lb flange (ISO 7005 PN 50)
- H - EN 1092-1 PN16 (ISO 7005-1 PN16)

Note 2: Flow for Natural Gas (S.G. 0.60) at differential pressure = 1" wc and standard temperature (68°F) and pressure (14.696 psi)



## Operating Characteristics

- Opening time varies per valve size, 3 seconds or less for largest size. For slower opening, a speed control set can be supplied by MAXON.
- Closing time is less than 1 second.
- Type of Gas

Gas Compatibility and Valve Approvals/Certifications									
Gas	Gas Code	Suggested Material Options			MOPD Rating	Agency approvals and Certifications			
		Body seals & bumper	Body & bonnet	Trim Package		FM	CSA [3]	CE [4]	
								GAD	MD
Air	AIR	A, B, C, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	NA	X
Ammonia	AMM	C	1, 2, 5, 6	1, 2, 3	Std.	X	X	NA	X
Butane Gas	BUT	A, B, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	X	X
Coke Oven Gas	COKE	B, F	5	Analysis Required	Std.	X	X	NA	X
Delco	DEL	A, B, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	NA	X
Digester [1]	DIG	Analysis Required	5	Analysis Required	Std.	X	X	NA	X
Endothermic AGA	ENDO	A, B, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	NA	X
Exothermic Gas	EXO	A, B, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	NA	X
Hydrogen Gas	HYD	A, B, C, F	2, 5, 6	2, 3	[2]	X	X	NA	X
Manufactured [1]	MFGD	Analysis Required	5	Analysis Required	Std.	X	X	NA	X
Natural Gas	NAT	A, B, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	X	X
Nitrogen	NIT	A, B, C, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	NA	X
Oxygen High	OXYH	B, C, F	2, 5, 6	4, 5	200 psig max	X	X	NA	X
Oxygen Low	OXYL	B, C, F	1, 2, 5, 6	4, 5	30 psig max	X	X	NA	X
Oxygen X	OXYX	B, C, F	2, 5, 6	4, 5	Std.	X	X	NA	X
Propane	PROP	A, B, F	1, 2, 5, 6	1, 2, 3	Std.	X	X	X	X
Refinery [1]	REF	Analysis Required	5	Analysis Required	Std.	X	X	NA	X
Sour Natural [1]	SOUR	Analysis Required	5	Analysis Required	Std.	X	X	NA	X
Town Gas [1]	TOWN	Analysis Required	5	Analysis Required	Std.	X	X	X	X
Land Fill Gas	LAND	Analysis Required	5	Analysis Required	Std.	X	X	NA	X

**Notes:**

[1] Other body and trim packages may be acceptable pending fuel analysis. For pricing inquiry, Viton body seals and bumper material will be standard option. Contact MAXON for details.

[2] Valve maximum operating pressure (MOPD) to be reduced by 25% from standard ratings.

[3] ISO connections are not recognized by CSA standards.

[4] All 8000 Valves do meet the essential requirements of the Low Voltage (73/23/EC) and the EMC (89/336/EC) Directives. GAD refers to the Gas Appliances Directive (90/396/EC); this Directive only covers the use of commercially available fuels (natural gas, butane, town gas and LPG). MD stands for Machinery Directive (98/37/EC).

**Body Seals & Bumper:**

**A** - Buna N

**B** - Viton

**C** - Ethylene Propylene

**F** - Omniflex o-rings/Viton bumper

**Body & Bonnet:**

**1** - Cast Iron

**2** - Carbon Steel

**5** - Stainless Steel

**6** - Low Temp Carbon Steel

**Trim Package:**

**1** - Trim Package 1

**2** - Trim Package 2

**3** - Trim Package 3 (NACE)

**4** - Trim Package 2, Oxy Clean

**5** - Trim Package 3, Oxy Clean

## Auxiliary Features

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- a. Non-adjustable Proof of Closure Switch(es) with valve seal over travel interlock.
- b. Auxiliary switch for indication of full travel (open for normally closed valves, closed for normally open).

## Operating Environment

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- a. Fluid temperature range of -40°F to 212°F .
- b. Actuators are rated for NEMA 4, IP65 or optional NEMA 4X, IP65.
- c. Ambient temperature range of -40°F to 140°F for the 8011, 8111, 8021 and 8121 General Purpose and 8012, 8112, 8022 and 8122 Non-Incendive series valves.
- d. Ambient temperature range of -40°F to 122°F for 8013, 8113, 8023 and 8123 Intrinsically Safe series valves.
- e. All valves for oxygen service or using Ethylene Propylene body seals are limited to a minimum ambient and fluid temperature of 0°F.

## Product Approvals

Agency Approvals and Certifications						
	General Purpose Valves 8111, 8121, 8011, 8021 Series		Non-Incendive/Non-Sparking Valves 8112, 8122, 8012, 8022 Series		Intrinsically Safe Valves 8113, 8123, 8013, 8023 Series	
	Standards	Markings	Standards	Markings	Standards	Markings
FM Approvals	FM 7400		FM 7400 FM 3611 FM 3600 FM 3810	Class I, Div. 2, Groups ABCD, T4 Class II, Div. 2, Groups FG, T4 Class III, Div. 2, T4 	FM 7400 FM 3610 FM 3600 FM 3810	Class I, Div. 1, Groups ABCD, T5 Class II, Div. 1, Groups EFG, T5 Class III, Div. 1, T5 
CSA International	CSA 6.5		CSA 6.5 CSA 22.2 No. 213 CSA 22.2 1010.1 CSA E60079-0 CSA E60079-15	Class I, Div. 2, Groups ABCD, T4 Class II, Div. 2, Groups FG, T4 Class III, Div. 2, T4 Ex nA IIC T4 Ta = 60C (with standard solenoid) (Zone 2 approval) Ex nA IIC T5 Ta = 50C (with IS solenoid) (Zone 2 approval)  C/I 03.1433937	CSA 6.5 CSA 22.2 No. 157 CSA 22.2 1010.1 CSA E60079-0 CSA E60079-11	Class I, Div. 1, Groups ABCD, T5 Class II, Div. 1, Groups EFG, T5 Class III, Div. 1, T5 Ex ia IIC T5 Ta = 50C (with IS solenoid) (Zone 0 approval) Ex ia IIC T5 Ta = 60C (with ATEX IS solenoid) (Zone 0 approval)  C/I 03.1433937X
European Approvals [1]	EN 161 EN 13774	CL/KL:A GR 2 EC PIN: C87BQ83	EN 161 EN 13774	CL/KL:A GR 2 EC PIN: C87BQ83	EN 161 EN 13774	CL/KL:A GR 2 EC PIN: C87BQ83
European Approvals [2] (Hazardous Locations)	Not Applicable		Not Applicable		EN 60079-0: 2006 EN 60079-11: 2007 EN 61214-0: 2007 EN 61241-11: 2007	II 2 G c Ex ia IIC T5 Ta = -20C to +50C IP65 II 2 D c Ex iaD 21 IP65 T100°C Ta = -20C to +50C FM07ATEX0036   (Approval valid with use of ATEX IS solenoid only)
IEC Approvals	IEC 61010-1 IEC 61508		IEC 61010-1 IEC 61508		IEC 61010-1 IEC 61508	

[1] Product certified to meet the following: Gas Appliance Directive (90/396/EEC); Low Voltage Directive (73/23/EEC); EMC Directive (89/336/EEC)

[2] Product certified to meet the following: ATEX Directive (94/9/EC)

## Electrical Data

### Normally-Closed Shut-Off Valves

#### General Purpose Normally-Closed Valves

Series 8011 & Series 8111

Switches: V7

Solenoid Valve: Standard

24 VDC, 4.8W

120VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

240VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

See catalog page 10-30.3-11 or inside valve cover for wiring schematic.

#### Non-incendive Normally-Closed Valves

Series 8012 & Series 8112

Switches: IP67

Solenoid Valve: Standard

24 VDC, 4.8W

120VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

240VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

24VDC IS, .09A, 2.1W

#### Intrinsically Safe Normally-Closed Valves

Series 8013 & Series 8113

Switches: V7 with optional IP67

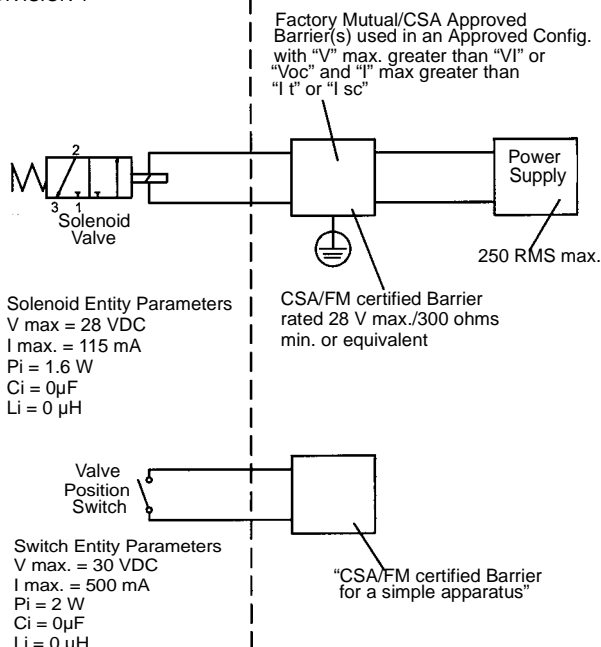
Solenoid Valve: Intrinsically Safe

#### NOTES:

- 1) The Intrinsic Safety Entity concept allows the interconnection of two FM approved (CSA Certified when installed in Canada) Intrinsically safe devices with entity parameters not specifically examined in combination as a system when:  
 $V_{oc}$  or  $U_o$  or  $V_t \leq V_{max}$ ,  $I_{sc}$  or  $I_o$  or  $I_t \leq I_{max}$ ,  $C_a$  or  $C_o \geq C_i + C_{cable}$ ,  
 $L_a$  or  $L_o \geq L_i + L_{cable}$ , and for FM only:  $P_o \leq P_i$ .
- 2) Dust-tight conduit seal must be used when installed in Class II and Class III environments.
- 3) Control equipment connected to the Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
- 4) Installation in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electric Code® (ANSI/NFPA 70) Sections 504 and 505.
- 5) Installation in Canada should be in accordance with the Canadian Electrical Code, CSA C22.1, Part 1, Appendix F.
- 6) Installation in the European Union should be in accordance to Directive 94/9/EC (ATEX 95).
- 7) The configuration of associated Apparatus must be FM Approved (CSA Certified when in Canada) under Entity Concept.
- 8) Associated Apparatus manufacturer's installation drawing must be followed when installing this equipment.
- 9) No revision to drawing without prior authorization from FM Approval and CSA International.

HAZARDOUS (CLASSIFIED) LOCATION  
CLASS I, DIVISION 1, GROUPS A,B,C,D  
CLASS II, DIVISION 1, GROUPS E,F,G  
CLASS III, DIVISION 1

NON-HAZARDOUS LOCATION





## Electrical Data

### Normally-Open Vent Valves

#### General Purpose Normally-Open Vent Valves

Series 8021 & Series 8121

Switches: V7

Solenoid Valve: Standard

24 VDC, 4.8W

120VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

240VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

See catalog page 10-30.3-11 or inside valve cover for wiring schematic.

#### Non-incendive Normally-Open Vent Valves

Series 8022 & Series 8122

Switches: IP67

Solenoid Valve: Standard

24 VDC, 4.8W

120VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

240VAC, 50/60 Hz, 11/9.4 VA Peak, 8.5/6.9 VA Holding

24VDC IS, .09A, 2.1W

#### Intrinsically Safe Normally-Open Vent Valves

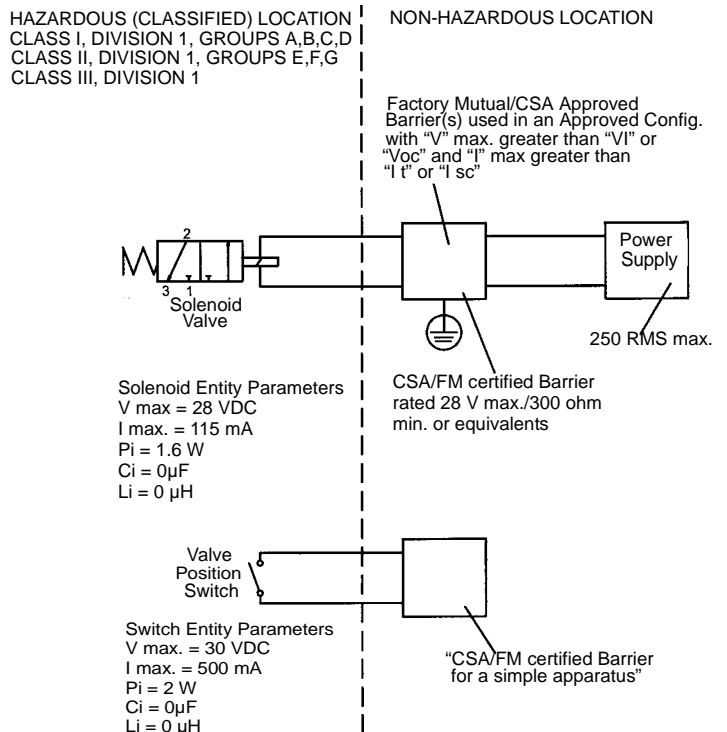
Series 8023 & Series 8123

Switches: V7 with optional IP67

Solenoid Valve: Intrinsically Safe

#### NOTES:

- The Intrinsic Safety Entity concept allows the interconnection of two FM approved (CSA Certified when installed in Canada) Intrinsically safe devices with entity parameters not specifically examined in combination as a system when:  $V_{oc}$  or  $U_o$  or  $V_t \leq V_{max}$ ,  $I_{sc}$  or  $I_o$  or  $I_t \leq I_{max}$ ,  $C_a$  or  $C_o \geq C_i + C_{cable}$ ,  $L_a$  or  $L_o \geq L_i + L_{cable}$ , and for FM only:  $P_o \leq P_i$ .
- Dust-tight conduit seal must be used when installed in Class II and Class III environments.
- Control equipment connected to the Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
- Installation in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electric Code® (ANSI/NFPA 70) Sections 504 and 505.
- Installation in Canada should be in accordance with the Canadian Electrical Code, CSA C22.1, Part 1, Appendix F.
- Installation in the European Union should be in accordance to Directive 94/9/EC (ATEX 95).
- The configuration of associated Apparatus must be FM Approved (CSA Certified when in Canada) under Entity Concept.
- Associated Apparatus manufacturer's installation drawing must be followed when installing this equipment.
- No revision to drawing without prior authorization from FM Approval and CSA International.



## Actuator Assembly Rotation/Replacement



MAXON Series 8000 Valves should be ordered in a configuration compatible with planned piping. If valve orientation is not correct, the actuator assembly can be rotated in 90° increments around the valve body center-line axis using the procedure below. This procedure should also be followed for field replacement of the actuator.

**Shut off all electrical power** and close off upstream manual cock.

**Remove terminal block access cover plate [5]** and disconnect power lead wires. **Caution:** Label all wires prior to disconnection when servicing valve. Wiring errors can cause improper and dangerous operation.

**Remove conduit and electrical leads.**

**Remove all pneumatic lines.**

**Unscrew the actuator/body bolts [6]** screwed up from the bottom. These bolts secure the valve actuator [8] to the valve body [7].

**Gently lift the actuator [8] off valve body assembly** enough to break the seal between body assembly and the rubber gasket adhering to the bottom of the actuator base plate.

**Carefully rotate/replace actuator assembly** to the desired position. Reposition the actuator back down onto the valve body casting.

**Realign holes** in valve body casting with the corresponding tapped holes in the bottom of the actuator base plate. Be sure the gasket is still in place between the body and actuator base plate.

**Reinsert the body bolts** up from the bottom through the body and carefully engage threads of the actuator assembly. Tighten securely referring to Table 1 on page 10-30.3-26 for appropriate torque specifications.

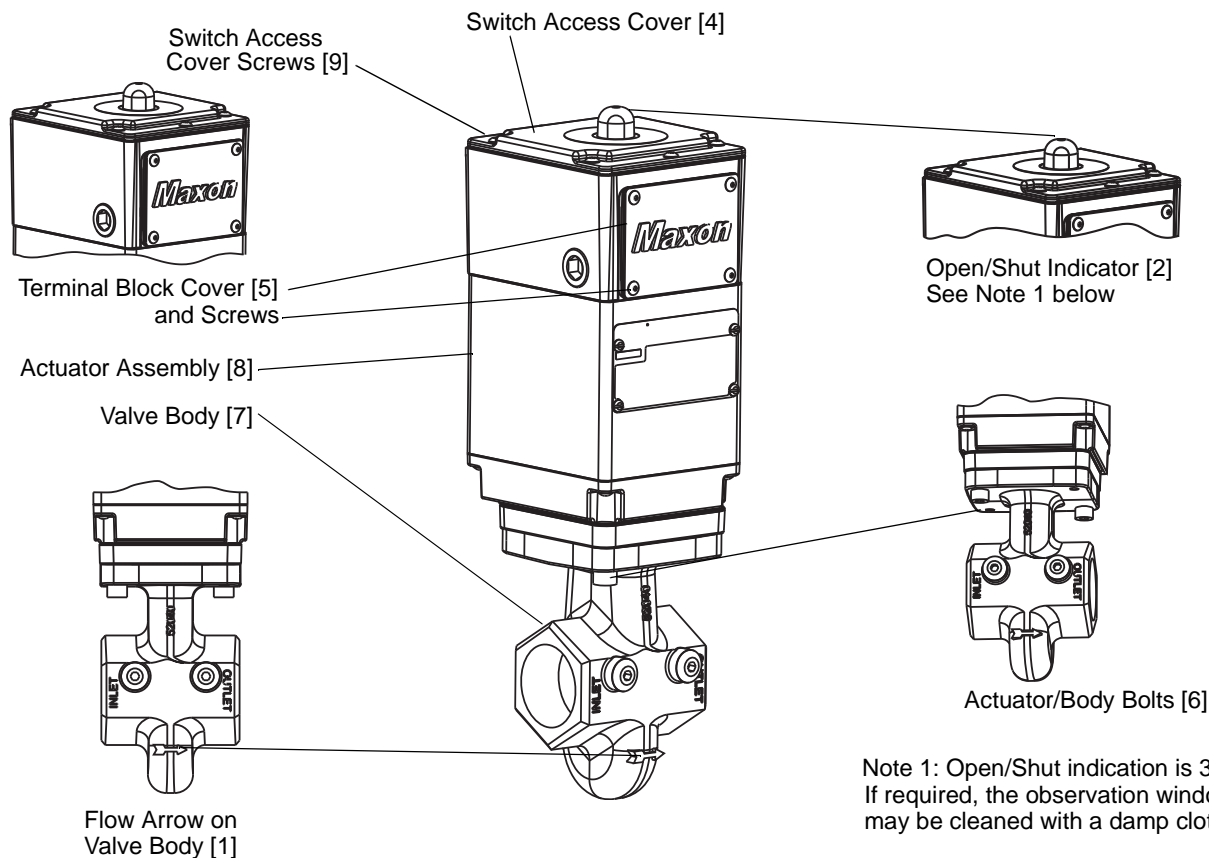
**Reconnect conduit, electrical leads, and all pneumatic lines**, then check that signal switch wands are properly positioned.

**Failure to correct any such misalignment can result in extensive damage to the internal mechanism of your valve.**

**Energize valve and cycle several times** from closed to full open position. Also electrically trip the valve in a partially opened position to prove valve operates properly.

**Replace and secure cover plates.**

**Verify proper operation** after servicing.



## Field Installation of Valve Position Switch



Instructions below are written for normally-closed shut-off valves. For normally-open vent valves, reverse switch nomenclature. (VOS becomes VCS and vice versa.)

**General:** Shut off fuel supply upstream of valve, then de-energize valve electrically. Remove top cover and terminal block cover to provide access, being careful not to damage gasket. See pages 10-30.3-34 and 35 for instructions on adding or replacing switches.

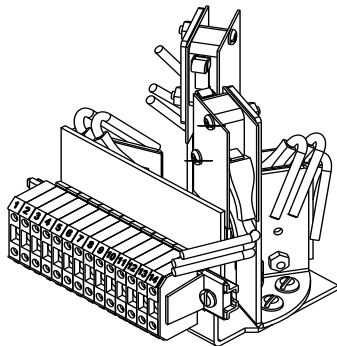
**Substitution of components may affect suitability for Hazardous Locations.**



### Field Replacement Items

- Position Switches
- Actuators
- Solenoids

Contact MAXON with valve serial numbers to locate appropriate switch kit assembly.



**Figure 1:**  
Typical Switch Sub-Assembly

### Replacement Switches:

- Carefully remove field wiring from the terminal block. Insure field wires are clearly marked to correct terminal.
- Unwire the solenoid valve lead wires from terminals labeled #1 and #2.
- Remove screws that secure the switch sub-assembly to the actuator housing. The switch sub-assembly should be easily removable from actuator assembly (see Figure 1: Typical Switch Sub-Assembly).
- Note wand position and mounting hole location. Carefully remove the 2 screws and lift existing switch. --Reference Figures 2 through 7 (page 10-30.3-35) to ensure correct switch location.
- Install replacement switch in same mounting holes on bracket and verify correct wand position.
- Replace existing wiring one connection at a time, following original route and placement.
- Reassemble switch sub-assembly in actuator housing. Dowel pins are provided to insure proper placement of switch sub-assembly.
- Wire the solenoid valve leads to terminals labeled #1 and #2.
- Cycle valve, checking switch actuation points carefully. VCS switch actuates at top of stem stroke and VOS at bottom for normally-closed shut-off valves; vice-versa for normally-open vent valves.
- Replace covers, and then return valve to service.

### Add Switches:

- Carefully remove field wiring from the terminal block. Insure field wires are clearly marked to correct terminal.
- Unwire the solenoid valve lead wires from terminals labeled #1 and #2.
- Remove screws that secure the switch sub-assembly to the actuator housing. The switch sub-assembly should be easily removable from actuator assembly (see Figure 1: Typical Switch Sub-Assembly).
- Reference Figures 2 through 7 to ensure correct switch location. Valve size is depicted in the model number by the first 4 digits. For example, a 3" CP valve should have Model No. 300C.
- Install switch and insulators, when provided, to correct hole. Insure proper alignment. VCS switch should have activation wand pointed upward and VOS activation wand should be pointed downward.

- Wire new switches to terminals provided.
- Reassemble switch sub-assembly in actuator housing. Dowel pins are provided to insure proper placement of switch sub-assembly.
- Wire the solenoid valve leads to terminals labeled #1 and #2.
- Cycle valve, checking switch actuation points carefully. VCS switch actuates at top of stem stroke and VOS at bottom for normally-closed shut-off valves; vice-versa for normally-open vent valves.
- Replace covers, and then return valve to service.

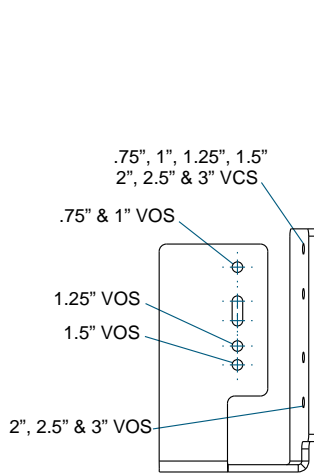


Figure 2:  
IP67 Switch Bracket

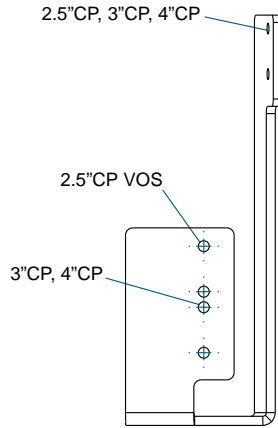


Figure 3:  
IP67 Switch Bracket

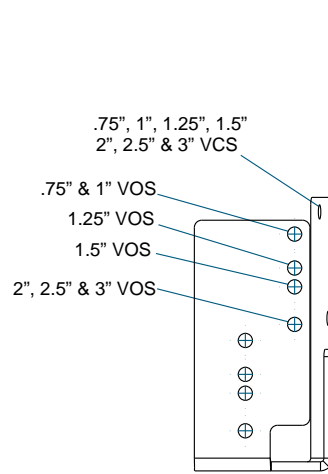


Figure 4:  
General Purpose  
Switch Bracket

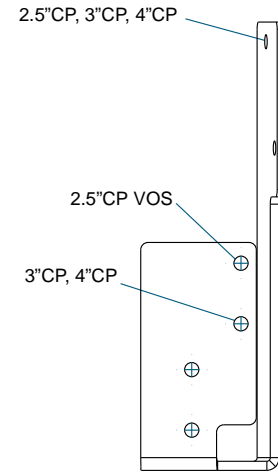


Figure 5:  
General Purpose  
Switch Assembly

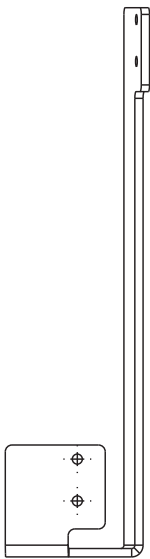


Figure 6:  
6" Valve IP67  
Switch Bracket

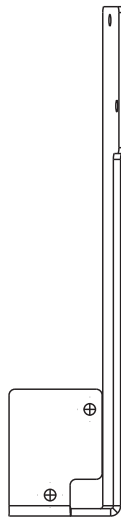


Figure 7:  
6" Valve General  
Purpose Switch Bracket

## Operating Instructions

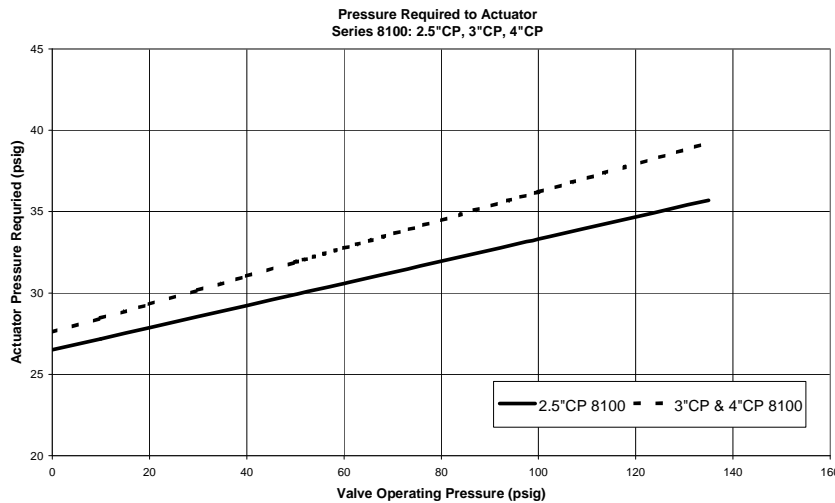
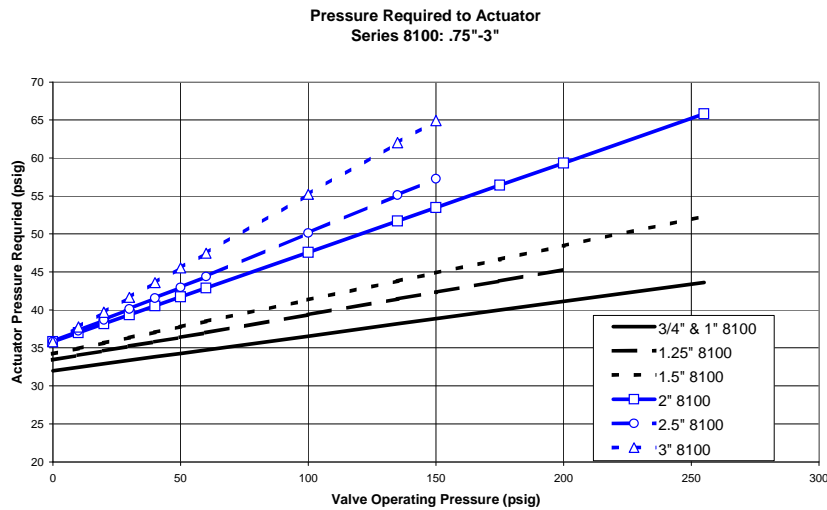
Refer to appropriate catalog bulletin and specification page for operating sequence applying to your specific valve. Never operate valve until all essential allied equipment is operative and any necessary purges completed. Failure of valve to operate normally indicates that it is not powered or supply air pressure is not adequate. Check this first!

Main system shut-off should always be accomplished with an upstream leak-tight manual fuel cock.

- Normally-closed shut-off valves begin opening cycle immediately upon being powered.
- Normally-open vent valves begin to close immediately upon being powered

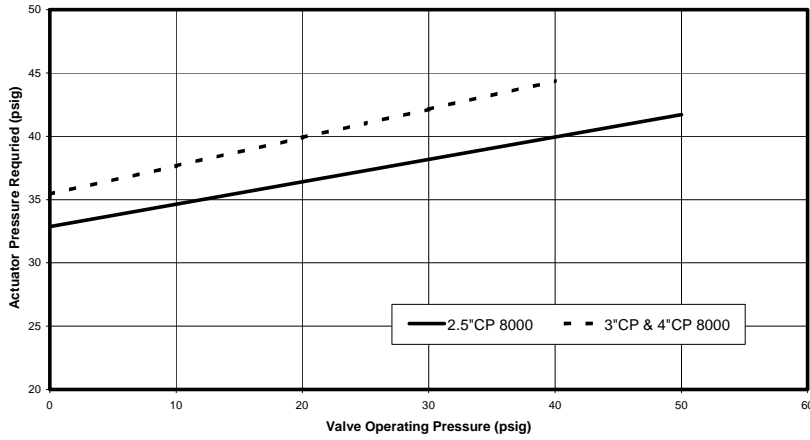
### Alternate operator pressures

Series 8000 Valves may be operated within a range of motive pressures. Consult charts below for application fluid pressure and corresponding required actuator pressure.

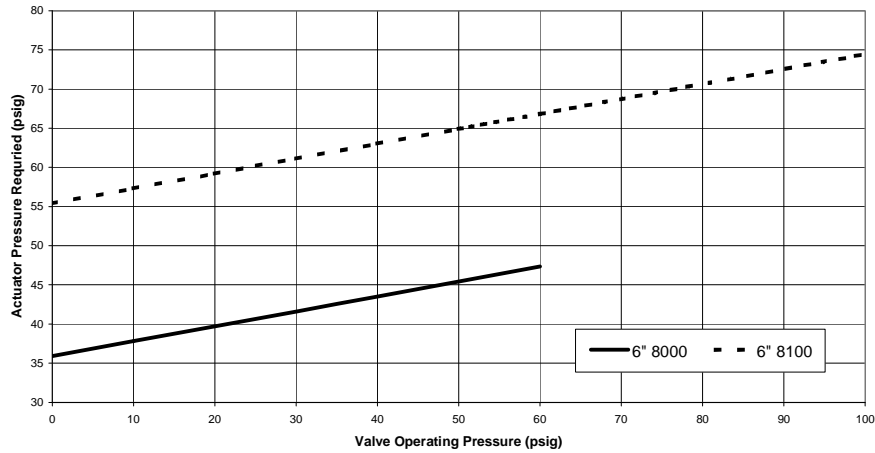


Shut-off and Control Valves - Series 8000 Valve

Pressure Required to Actuator  
Series 8000: 2.5"CP, 3"CP, 4"CP



Pressure Required to Actuator  
6" Series 8000 & 8100



## Maintenance Instructions

MAXON Series 8000 Valves are endurance tested far in excess of the most stringent requirements of the various approval agencies. They are designed for long life even if frequently cycled, and to be as maintenance-free and trouble-free as possible. A valve operational test should be performed on an annual basis. If abnormal opening or closing is observed, the valve should be removed from service and your MAXON representative should be contacted. (See Valve Technical Data page 10-35.1.)

**Valve leak test should be performed on an annual basis** to assure continued safe and reliable operation. Every MAXON valve is operationally tested and meets the requirements of FCI 70-2 Class VI Seat Leakage when in good operable condition. Zero leakage may not be obtained in the field after it has been in service. For specific recommendations on leak test procedures, see MAXON Valve Technical Data page 10-35.2. Any valve that exceeds the allowable leakage, as set forth by your local codes or insurance requirements should be removed from service and your MAXON representative should be contacted.

**Actuator assembly components require no field lubrication** and should **never** be oiled.

Auxiliary switches, solenoids or complete actuator may be replaced in the field.



**Do not attempt field repair of valve body or actuator. Any alterations void all warranties and can create potentially hazardous situations.**

**If foreign material or corrosive substances are present in the fuel line, it will be necessary to inspect the valve to make certain it is operating properly. If abnormal opening or closing is observed, the valve should be removed from service. Contact your MAXON representative for instructions.**

Operator should be aware of and observe characteristic opening/closing action of the valve. Should operation ever become sluggish, remove valve from service and contact MAXON for recommendations.

**Address inquiries to MAXON.** Local worldwide offices may be located at [www.maxoncorp.com](http://www.maxoncorp.com) or by phoning 011-765-284-3304. Include valve serial number and nameplate information.

## FITTING CERTIFICATE

We:

Maxon Corporation

Address:

201 E. 18th Street

Muncie, IN 47302

USA

Declare that all fittings produced at the above address within the following product group:

Maxon Series 8000 Air Actuated Valves

Conform to all applicable provisions of the European Gas Appliance Directive.

Certification: Product Identification Number C87BQ83 applies

EC Surveillance: Advantica Surveillance Services (Notified Body Number 0087)

This certificate issued by: Maxon Corporation

Name: Lora Davis

Title/Position: Senior Product Engineer

Date of issue: 12/15/05