

## Valve model number description

Every MAXON gas electro-mechanical valve can be accurately identified by the model number shown on the valve nameplate. The example below shows a typical gas electro-mechanical valve model number, along with the available choices for each item represented in the model number.

Configured item number					Valve body						Actuator					
Valve size	Flow capacity	Valve type	Normal position	Area classification	Body connection	Body seals & bumper material	Body material	Internal trim package	Solenoid OR circuit board voltage	Motor voltage OR handle side plate	Motor timing (automatic valves only)	Switch options	Enclosure rating	Instruction language		
300	C	MA	1	1	-	A	A	1	1	-	B	B	2	0	A	0

### Valve size

075 - 3/4" (DN20)  
100 - 1" (DN25)  
125 - 1-1/4" (DN32)  
150 - 1-1/2" (DN40)  
200 - 2" (DN50)  
250 - 2-1/2" (DN65)  
300 - 3" (DN80)  
400 - 4" (DN100)  
600 - 6" (DN150)

### Flow capacity

S - Standard  
C - CP body construction  
H - High capacity

### Valve reset type

MA - MAXON automatic (motorized) valve  
MM - MAXON manual valve

### Normal position

1 - Normally closed shut-off valve  
2 - Normally open vent valve

### Area classification

1 - General purpose  
2 - Non-incendive, Class I, II and III Division 2  
4 - Valve body only (400 & 600 high capacity valves only)

### Body connection

A - ANSI (NPT) threaded  
B - ANSI flanged (PN20)  
C - ISO 7/1 threaded  
D - DIN PN16 flanged  
E - Socket welded nipple  
F - Socket welded nipple w/Class 150 flange (ISO 7005 PN20)  
H - EN1092-1 PN16 flanged (ISO 7005-1 PN16)

### Body seals & bumper material

A - Buna o-rings/Buna bumper  
B - Viton o-rings/Buna bumper  
C - Viton o-rings/Viton bumper [1]  
D - Ethylene Propylene o-rings/Ethylene Propylene bumper [1]  
E - Omniflex o-rings/Buna bumper  
F - Omniflex o-rings/Viton bumper [1]

### Body material

1 - Cast iron  
2 - Carbon steel  
5 - Stainless steel  
6 - Low temp carbon steel

### Internal trim package

1 - Trim package 1  
2 - Trim package 2  
4 - Trim package 2, oxy clean [1]

### Solenoid OR circuit board voltage

A - 115VAC 50 Hz  
B - 115VAC 60 Hz  
C - 230VAC 50 Hz  
D - 230VAC 60 Hz  
E - 208VAC 50 Hz  
F - 24VDC  
G - 120VDC

### Motor voltage

A - 115VAC 50 Hz  
B - 115VAC 60 Hz  
C - 230VAC 50 Hz  
D - 230VAC 60 Hz  
E - 24VDC

### Motor timing

1 - 2.5 second  
2 - 6 second  
3 - 12 second  
\* - N/A with manual valves

### OR Handle side plate

A - Standard handle  
B - Tandem main  
C - Tandem blocking  
D - Tandem overhead  
E - Wheel and chain

### Switch options

#### Automatic valves

0 - VOS1/none  
1 - VOS1/VCS1  
2 - VOS2/VCS2  
3 - VOS2/VCS1  
4 - VOS1HC/VCS1HC

#### Manual valves

0 - None  
1 - VOS1/VCS1  
2 - VOS2/VCS2  
3 - VOS2/VCS1

### Enclosure rating

A - NEMA 4  
B - NEMA 4X

### Instruction language

0 - English

[1] 0°F minimum ambient temperature limit

## Valve model cross reference

MAXON valve model numbers have changed to intelligent coded model numbers for easy identification and specification. Valves manufactured prior to October 1, 2008 will contain an older model number system which can be easily cross referenced with the chart below.

<b>Normally-closed (shut-off) valves General purpose, NEMA 4 or 4X</b>	
<b>Model number (prior to October 1, 2008)</b>	<b>New model designation</b>
808	SMM11
808 CP	CMM11
5000	SMA11
5000 CP	CMA11
7000	HMA11
<b>Normally-open (vent) valves General purpose, NEMA 4 or 4X</b>	
<b>Model number (prior to October 1, 2008)</b>	<b>New model designation</b>
STO-M	SMM21
STO-A	SMA21
STO-A-CP	CMA21
<b>Normally-closed (shut-off) valves Hazardous area classification</b>	
<b>Model number (prior to October 1, 2008)</b>	<b>New model designation</b>
808 NI	SMM12
808 NI CP	CMM12
5000 NI	SMA12
5000 NI CP	CMA12
<b>Normally-open (vent) valves Hazardous area classification</b>	
<b>Model number (prior to October 1, 2008)</b>	<b>New model designation</b>
STO-M-NI	SMM22
STO-M-NI-CP	CMM22
STO-A-NI	SMA22
STO-A-NI-CP	CMA22

## Valve body assembly options &amp; specifications

Normally-closed shut-off valves							
Nominal pipe size	Flow capacity	Body connections available	Body material	Trim package options	Cv rating	MOPD rating (psig)	Special service MOPD rating (psig) [1]
3/4" (DN20)	S	A, C	1, cast iron	1, 2, 4	19	125	30
1" (DN25)	S	A, C	1, cast iron	1, 2, 4	20	125	30
		A, C, E, F	2, 6, carbon steel 5, stainless steel				
1-1/4" (DN32)	S	A, C	1, cast iron	1, 2, 4	45	100	30
1-1/2" (DN40)	S	A, C	1, cast iron	1, 2, 4	53	70	20
		A, C, E, F	2, 6, carbon steel 5, stainless steel				
2" (DN50)	S	A, B, C, D, H	1, cast iron	1, 2, 4	86	70	15
		A, C, E, F	2, 6, carbon steel 5, stainless steel				
2-1/2" (DN65)	S	A, B, C, D	1, cast iron	1	127	40	10
	CP		1, cast iron	1, 2, 4	304	50	15
		B, D, H	2, 6, carbon steel 5, stainless steel				
3" (DN80)	S	A, C	1, cast iron	1	173	30	5
	CP	A, B, C, D, H	1, cast iron	1, 2, 4	423	40	10
		B, D, H	2, 6, carbon steel 5, stainless steel				
4" (DN100)	CP	B, D, H	1, cast iron	1, 2, 4	490	40	10
			2, 6, carbon steel				
	5, stainless steel						
	1, cast iron						
HC			2, carbon steel		719	60	10
			5, stainless steel				
6" (DN150)	S	B, D, H	1, cast iron	1, 2, 4	869	30	5
			2, carbon steel				
	5, stainless steel						
	1, cast iron						
HC			2, carbon steel		1172	50	10
			5, stainless steel				

[1] Special service fuels (see page 10-30.1-12): Valve maximum operating pressure differential (MOPD) to be reduced

**Body connections:**

A - NPT  
 B - ANSI flanged (ISO 7005 PN20)  
 C - ISO 7-1 threaded  
 D - DIN PN16 flanged  
 E - Socket welded nipple  
 F - Socket welded nipple w/Class 150 flange (ISO 7005 PN20)  
 H - EN1092-1 PN16 (ISO 7005-1 PN16)

**Body material:**

1 - Cast iron  
 2 - Carbon steel  
 5 - Stainless steel  
 6 - Low temp carbon steel

**Trim package options and typical material:**

1 - 400 series stainless steel seat, hardened ductile iron disc, PEEK follower ring  
 2 - 316SS seat, 316SS disc, PEEK follower ring  
 4 - Oxy clean, trim 2

**Body seals and bumper:**

- Buna o-rings/Buna bumper  
 - Viton o-rings/Buna bumper  
 - Viton o-rings/Viton bumper  
 - Ethylene Propylene o-rings/Ethylene Propylene bumper  
 - Omniflex o-rings/Buna bumper  
 - Omniflex o-rings/Viton bumper

Refer to valve body assembly gas compatibility for proper elastomer selection.

Normally-open vent valves							
Nominal pipe size	Flow capacity	Body connections available	Body material	Trim package options	Cv rating	MOPD rating (psig)	Special service MOPD rating (psig) [1]
3/4" (DN20)	S	A, C	1, cast iron	1, 2, 4	19	125	30
1" (DN25)	S	A, C	1, cast iron	1, 2, 4	20	125	30
		A, C, E, F	2, 6, carbon steel 5, stainless steel				
1-1/2" (DN40)	S	A, C	1, cast iron	1, 2, 4	53	70	20
		A, C, E, F	2, 6, carbon steel 5, stainless steel				
2" (DN50)	S	A, B, C, D, H	1, cast iron	1, 2, 4	86	70	15
		A, C, E, F	2, 6, carbon steel 5, stainless steel				
2-1/2" (DN65)	CP	A, B, C, D	1, cast iron	1, 2, 4	304	50	15
		B, D, H	2, 6, carbon steel 5, stainless steel				
3" (DN80)	CP	A, B, C, D, H	1, cast iron	1, 2, 4	423	40	10
		B, D, H	2, 6, carbon steel 5, stainless steel				
4" (DN100)	CP	B, D, H	1, cast iron	1, 2, 4	490	40	10
			2, 6, carbon steel 5, stainless steel				

[1] Special service fuels (see page 10-30.1-12): Valve maximum operating pressure differential (MOPD) to be reduced

**Body connections:**

- A - NPT
- B - ANSI flanged (ISO 7005 PN20)
- C - ISO 7-1 threaded
- D - DIN PN16 flanged
- E - Socket welded nipple
- F - Socket welded nipple w/Class 150 flange (ISO 7005 PN20)
- H - EN1092-1 PN16 (ISO 7005-1 PN16)

**Body material:**

- 1 - Cast iron
- 2 - Carbon steel
- 5 - Stainless steel
- 6 - Low temp carbon steel

**Trim package options and typical material:**

- 1 - 400 series stainless steel seat, hardened ductile iron disc, PEEK follower ring
- 2 - 316SS seat, 316SS disc, PEEK follower ring
- 4 - Oxy clean, trim 2

**Body seals and bumper:**

- Buna o-rings/Buna bumper
  - Viton o-rings/Buna bumper
  - Viton o-rings/Viton bumper
  - Ethylene Propylene o-rings/Ethylene Propylene bumper
  - Omniflex o-rings/Buna bumper
  - Omniflex o-rings/Viton bumper
- Refer to valve body assembly gas compatibility for proper elastomer selection.

## Valve actuator options

Automatic reset valves							
Nominal pipe size	Flow capacity	Normal position	Area classification	Solenoid OR circuit board voltage	Motor voltage	Motor timing	Switch options
3/4" (DN20)	S	1, 2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	1, 2 1, 2	0, 1, 2, 3, 4 0, 1, 2, 3
1" (DN25)	S	1, 2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	1, 2 1, 2	0, 1, 2, 3, 4 0, 1, 2, 3
1-1/4" (DN32)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	1, 2 1, 2	0, 1, 2, 3, 4 0, 1, 2, 3
1-1/2" (DN40)	S	1, 2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	1, 2 1, 2	0, 1, 2, 3, 4 0, 1, 2, 3
2" (DN50)	S	1, 2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	1, 2 1, 2	0, 1, 2, 3, 4 0, 1, 2, 3
2-1/2" (DN65)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	1, 2 1, 2	0, 1, 2, 3, 4 0, 1, 2, 3
3" (DN80)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	1, 2 1, 2	0, 1, 2, 3, 4 0, 1, 2, 3
2-1/2" (DN65)	C	1, 2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	2 2	0, 1, 2, 3, 4 0, 1, 2, 3
3" (DN80)	C	1, 2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	2 2	0, 1, 2, 3, 4 0, 1, 2, 3
4" (DN100)	C	1, 2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D	2 2	0, 1, 2, 3, 4 0, 1, 2, 3
4" (DN100)	H	1	1	A, B, C, D, F	A, B, C, D	3	0, 1, 2, 3
6" (DN150)	H	1	1	A, B, C, D, F	A, B, C, D	3	0, 1, 2, 3

**Flow capacity**

S - Standard  
C - CP body construction  
H - High capacity

**Normal position**

1 - Normally-closed shut-off valve  
2 - Normally-open vent valve

**Area classification**

1 - General purpose  
2 - Non-incendive, Class I, II and III, Division 2

**Solenoid OR circuit board voltage**

A - 115VAC 50 Hz  
B - 115VAC 60 Hz  
C - 230VAC 50 Hz  
D - 230VAC 60 Hz  
E - 208VAC 50 Hz  
F - 24VDC  
G - 120VDC

**Motor voltage**

A - 115VAC 50 Hz  
B - 115VAC 60 Hz  
C - 230VAC 50 Hz  
D - 230VAC 60 Hz  
E - 24VDC

**Motor timing**

1 - 2.5 second  
2 - 6 second  
3 - 12 second

**Switch options**

0 - VOS1/None  
1 - VOS1/VCS1  
2 - VOS2/VCS2  
3 - VOS2/VCS1  
4 - VOS1HC/VCS1HC

Manual reset valves						
Nominal pipe size	Flow capacity	Normal position	Area classification	Solenoid voltage	Handle side plate options	Switch options
3/4" (DN20)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
		2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, E A, E	0, 1, 2, 3 0, 1, 2, 3
1" (DN25)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
		2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, E A, E	0, 1, 2, 3 0, 1, 2, 3
1-1/4" (DN32)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
1-1/2" (DN40)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
		2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, E A, E	0, 1, 2, 3 0, 1, 2, 3
2" (DN50)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
		2	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, E A, E	0, 1, 2, 3 0, 1, 2, 3
2-1/2" (DN65)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
3" (DN80)	S	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
2-1/2" (DN65)	C	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
		2	2	A, B, C, D, F, G	A, E	0, 1, 2, 3
3" (DN80)	C	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
		2	2	A, B, C, D, F, G	A, E	0, 1, 2, 3
4" (DN100)	C	1	1 2	A, B, C, D, E, F, G A, B, C, D, F, G	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3
		2	2	A, B, C, D, F, G	A, E	0, 1, 2, 3
6" (DN150)	S	1	1 2	A, B, C, D, E A, B, C, D	A, B, C, D, E A, B, C, D, E	0, 1, 2, 3 0, 1, 2, 3

**Flow capacity**

S - Standard  
C - CP body construction  
H - High capacity

**Normal position**

1 - Normally-closed shut-off valve  
2 - Normally-open vent valve

**Area classification**

1 - General purpose  
2 - Non-incendive, Class I, II and III, Division 2

**Solenoid voltage**

A - 115VAC 50 Hz  
B - 115VAC 60 Hz  
C - 230VAC 50 Hz  
D - 230VAC 60 Hz  
E - 208VAC 50 Hz  
F - 24VDC  
G - 120VDC

**Handle side plate options**

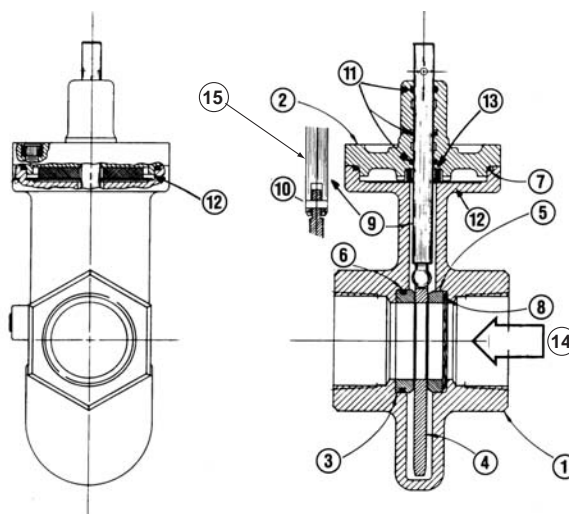
A - Standard handle  
B - Tandem main  
C - Tandem blocking  
D - Tandem overhead  
E - Wheel and chain

**Switch options**

0 - None  
1 - VOS1/VCS1  
2 - VOS2/VCS2  
3 - VOS2/VCS1

### Valve body assembly specifications

- 1) Body
- 2) Bonnet
- 3) Seat
- 4) Disc
- 5) Follower ring
- 6) Seat o-ring
- 7) Body o-ring
- 8) Wavy spring
- 9) Stem
- 10) Spring pin
- 11) Stem o-ring
- 12) Striker plate
- 13) Bumper
- 14) Flow direction
- 15) Typical stem/disc connection used with smaller sized valves



Threaded CP body design shown

Body and bonnet materials					
Item number	Description	Material code			
		1	2	5	6
1	Body	Cast iron	Carbon steel	Stainless steel	Low temp carbon steel
2	Bonnet	ASTM A126, Class B	ASTM A216, Gr. WCB	ASTM A351 Gr. CF8M	ASTM A352 Gr. LCB

Body seals and bumper material		
Item number	Description	Material
6	Seat o-ring	Buna o-rings/Buna bumper Viton o-rings/Buna bumper Viton o-rings/Viton bumper Ethylene Propylene o-rings/Ethylene Propylene bumper Omniflex o-rings/Buna bumper Omniflex o-rings/Viton bumper
7	Body o-ring	
11	Stem o-ring	
13	Bumper	

Trim package materials			
Item number	Description	Internal trim package	
		1	2
3	Seat	400 series stainless steel	316 stainless steel
4	Disc	Hardened ductile iron	316 stainless steel
5	Follower ring	PEEK	PEEK
8	Wavy spring	300 series stainless steel	
9	Stem	17-4 PH stainless steel	
10	Spring pin (when required)	Carbon steel	400 series stainless steel
12	Striker plate	17-7 PH stainless steel	

## Valve body assembly - gas compatibility

Gas	Gas code	Suggested material options			MOPD rating	Agency approvals and certifications				
		Body seals & bumper	Body & bonnet	Trim package		FM	CSA [3]	CE [4]		UL [3]
								GAD	MD	
Air	AIR	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X		X	X
Ammonia	AMM	A, D, E	1, 2, 5, 6	1, 2	Std.	X	X		X	
Butane gas	BUT	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X	X	X	X
Coke oven gas	COKE	C, F	1, 2, 5, 6	2	[5]	X	X		X	
Delco	DEL	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X		X	X
Digester [1]	DIG	Analysis required	5	2	[5]	X	X		X	
Endothermic AGA	ENDO	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X		X	X
Exothermic gas	EXO	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X		X	X
Hydrogen gas	HYD	A, B, C, E, F	1, 2, 5, 6	1, 2	[2]	X	X		X	
Manufactured [1]	MFGD	Analysis required	5	2	Std.	X	X		X	
Natural gas	NAT	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X	X	X	X
Nitrogen	NIT	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X		X	X
Oxygen high	OXYH	C, D, F	2, 5, 6	4	125 psig max	X	X		X	
Oxygen low	OXYL	C, D, F	1, 2, 5, 6	4	30 psig max	X	X		X	
Propane	PROP	A, B, C, E, F	1, 2, 5, 6	1, 2	Std.	X	X	X	X	X
Refinery [1]	REF	Analysis required	5	2	[5]	X	X		X	
Sour natural [1]	SOUR	Analysis required	5	2	[5]	X	X		X	
Town gas [1]	TOWN	Analysis required	5	2	Std.	X	X	X	X	
Land fill gas [1]	LAND	Analysis required	5	2	[5]	X	X		X	

[1] Other body and trim packages may be acceptable pending fuel analysis. For pricing inquiries, Viton or Omniflex o-rings should be used. Contact MAXON for details.

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

[3] ISO connections are not recognized by CSA or UL standards

[4] All electro-mechanical 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).

[5] Special service fuels: Valve maximum operating pressure differential (MOPD) to be reduced from standard ratings

### **Body seals & bumper:**

A - Buna o-rings/Buna bumper

B - Viton o-rings/Buna bumper

C - Viton o-rings/Viton bumper

D - Ethylene propylene o-rings/Ethylene propylene bumper

E - Omniflex o-rings/Buna bumper

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

4 - Trim package 2, oxy clean



## Electrical data

### General

MAXON shut-off valves are electrically actuated from a power source. Standard assemblies include an internal holding solenoid or clutch and printed circuit board.

Position switch wiring diagrams (reproduced below) are part of each valve assembly, summarizing electrical data and wiring for a valve equipped with terminal block and a full complement of optional switches.

Good practice normally dictates that auxiliary switches in valves should be used for signal duty only, not to operate additional safety devices.

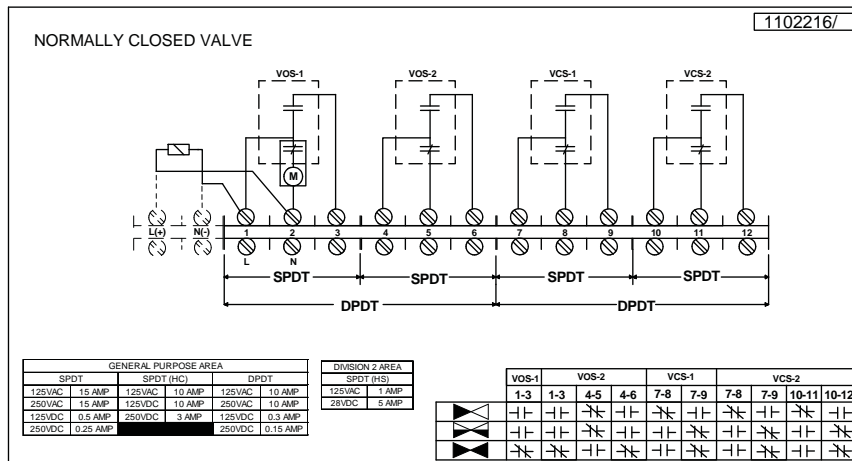
Valve position switches are offered in SPDT (single pole/double throw). Recommended packages include one open switch and one closed switch (VOS1/VCS1). Additional auxiliary switches are designated by VOS2/VCS2.

VCS (valve closed switch) is actuated at the end of the closing stroke. VOS (valve open switch) is actuated at the end of the opening stroke.

Switch amperage ratings are shown on the schematic wiring diagrams below. DO NOT EXCEED rated amperage or total load shown. Diagrams show valve with a full complement of switches. For normally-closed valves, the wiring diagram illustrates the switch contact positions with the valve closed. For normally-open valves, the wiring diagram illustrates the switch contact position with the valve open.

Figure 1: Normally-closed shut-off valves

Standard and CP valves



High capacity valves (4" & 6" sizes only)

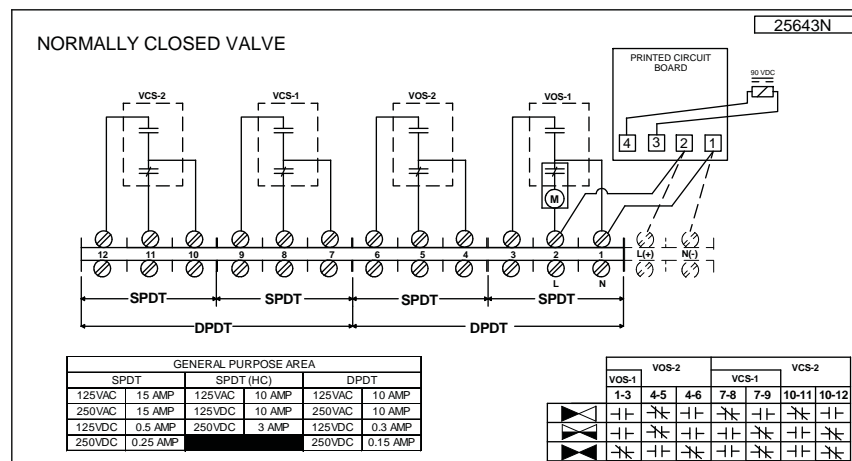
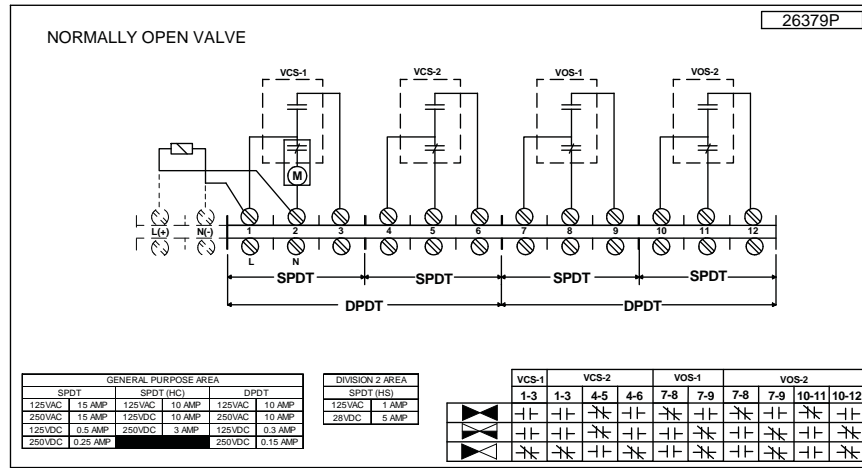


Figure 2: Normally-open valves

Standard and CP valves



## Available voltages and electrical data - General Purpose areas

All MAXON valves are electrically actuated from a power source through the flame safeguard and/or safety control circuits. Standard valve assemblies include an internal holding solenoid on standard flow and CP body constructions, or a printed circuit board on high capacity valves. The solenoid (or printed circuit board) is energized whenever the valve is powered. The motor operator on automatic reset valves is powered only during the opening stroke for normally-closed valves, or the closing stroke for normally-open versions.

### Standard flow and CP body constructions

Solenoids					
3/4" - 1-1/2" standard flow		2" - 3" standard flow		2-1/2"CP - 4"CP & 6" standard flow	
Voltage	Power	Voltage	Power	Voltage	Power
115VAC, 50 Hz	23VA	115VAC, 50 Hz	23VA	115VAC, 50 Hz	40VA
115VAC, 60 Hz	23VA	115VAC, 60 Hz	23VA	115VAC, 60 Hz	40VA
230VAC, 50 Hz	23VA	230VAC, 50 Hz	23VA	230VAC, 50 Hz	40VA
230VAC, 60 Hz	23VA	230VAC, 60 Hz	23VA	230VAC, 60 Hz	40VA
208VAC, 50 Hz	23VA	208VAC, 50 Hz	23VA	208VAC, 50 Hz	40VA
24VDC	14W	24VDC	24W	24VDC	24W
120VDC	14W	120VDC	34W	120VDC	34W

Motor operators	
Voltage	Power
115VAC, 50 Hz	322VA
115VAC, 60 Hz	196VA
230VAC, 50 Hz	322VA
230VAC, 60 Hz	198VA
24VDC	60W

#### To determine valve OPENING power: (or CLOSING power for normally-open versions)

##### Automatic reset valves

- Total power is the sum of the motor and solenoid power ratings for the appropriate voltage/frequency in the tables above.
- If supply voltages are different, then the circuits must be segregated.

##### Manual reset valves

- Total power consists of only the solenoid power rating.

#### To determine valve HOLDING power:

- Holding power consists of the solenoid power rating for the appropriate voltage/frequency.

### 4" and 6" high capacity valves

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Printed circuit boards	
Voltage	Power
115VAC, 50 Hz	13VA
115VAC, 60 Hz	13VA
230VAC, 50 Hz	25VA
230VAC, 60 Hz	25VA
120VDC	14W

Motor operators	
Voltage	Power
115VAC, 50 Hz	667VA
115VAC, 60 Hz	391VA
230VAC, 50 Hz	667VA
230VAC, 60 Hz	391VA

**To determine valve OPENING power:**

- Total power is the sum of the motor and printed circuit board power ratings for the appropriate voltage/frequency in the tables shown.
- If supply voltages are different, then the circuits must be segregated.

**To determine valve HOLDING power:**

- Holding power consists of the printed circuit board power rating for the appropriate voltage/frequency.

## Available voltages and electrical data - Non-incendive areas

All MAXON valves are electrically actuated from a power source through the flame safeguard and/or safety control circuits. Standard valve assemblies include an internal holding solenoid on standard flow and CP body constructions, or a printed circuit board on high capacity valves. The solenoid (or printed circuit board) is energized whenever the valve is powered. The motor operator on automatic reset valves is powered only during the opening stroke for normally-closed valves, or the closing stroke for normally-open versions.

### Standard flow and CP body constructions

Solenoids					
3/4" - 1-1/2" standard flow		2" - 3" standard flow		2-1/2"CP - 4"CP & 6" standard flow	
Voltage	Power	Voltage	Power	Voltage	Power
115VAC, 50 Hz	23VA	115VAC, 50 Hz	23VA	115VAC, 50 Hz	34VA
115VAC, 60 Hz	16VA	115VAC, 60 Hz	16VA	115VAC, 60 Hz	26VA
230VAC, 50 Hz	23VA	230VAC, 50 Hz	23VA	230VAC, 50 Hz	34VA
230VAC, 60 Hz	16VA	230VAC, 60 Hz	16VA	230VAC, 60 Hz	26VA
24VDC	18W	24VDC	24W	24VDC	24W
120VDC	26W	120VDC	34W	120VDC	34W

Motor operators	
Voltage	Power
115VAC, 50 Hz	322VA
115VAC, 60 Hz	196VA
230VAC, 50 Hz	322VA
230VAC, 60 Hz	198VA

#### To determine valve OPENING power: (or CLOSING power for normally-open versions)

##### Automatic reset valves

- Total power is the sum of the motor and solenoid power ratings for the appropriate voltage/frequency in the tables above.
- If supply voltages are different, then the circuits must be segregated.

##### Manual reset valves

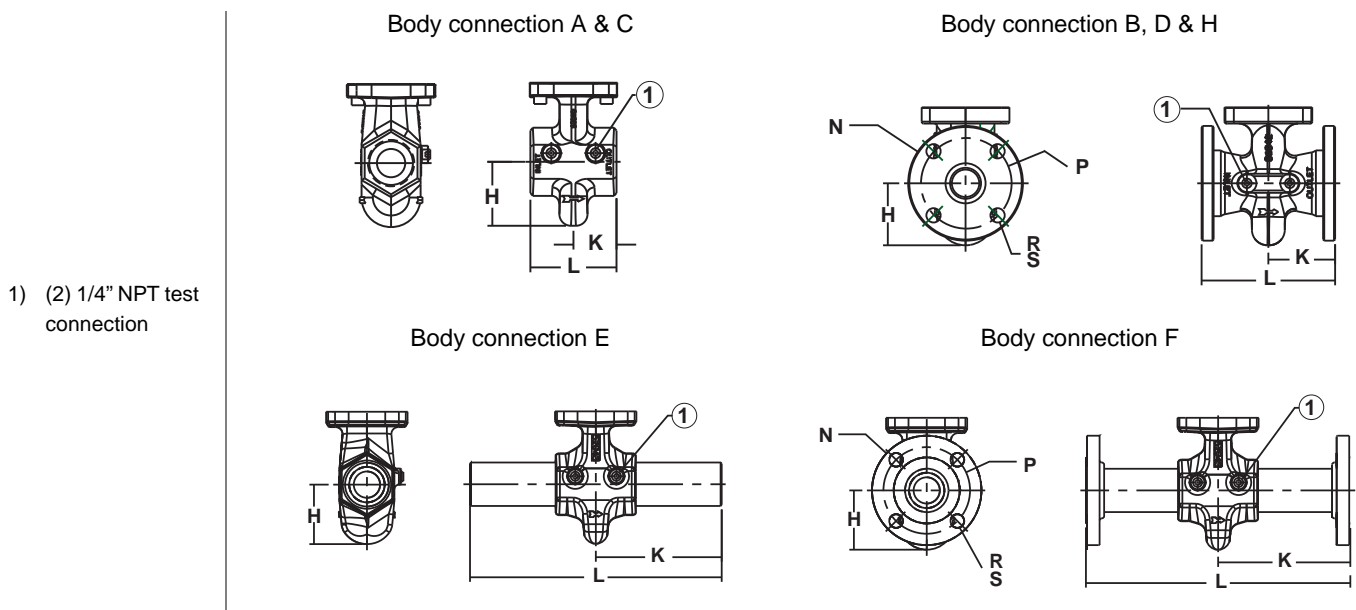
- Total power consists of only the solenoid power rating.

#### To determine valve HOLDING power:

- Holding power consists of the solenoid power rating for the appropriate voltage/frequency.

## Dimensions and weights

Valve bodies: 3/4" (DN20) to 3" (DN80)



Valve size	Flow capacity	Body Connection	Body/ bonnet material	Approximate dimensions (in inches )							Approximate weight (in lbs )		
				H	K	L	N Ø	P Ø	R Ø	S # of holes	Body assembly	Actuator assembly	Total weight
3/4" (DN20)	S	A, C	Cast iron	2.0	1.9	3.8	N/A				8	11	19
1" (DN25)	S	A, C	Cast iron				N/A				8		19
		A, C	Carbon steel & stainless steel		N/A				9	20			
		E			6.9	13.8	N/A		11	22			
		F		7.3	14.5	4.3	3.1	0.62	4	15	26		
1-1/4" (DN32)	S	A, C	Cast iron	2.4	2.0	4.0	N/A				9		20
1-1/2" (DN40)	S	A, C	Cast iron	2.7			N/A				11	22	
		A, C	Carbon steel & stainless steel		N/A				11	22			
		E			6.8	13.6	N/A		14	25			
		F	7.2		14.4	5.0	3.9	0.62	4	21	32		
2" (DN50)	S	A, C	Cast iron	3.3	2.2	4.4	N/A				16	13	29
		B			3.5	7.0	6.0	4.8	0.75	4	26		39
		D, H	6.5				4.9	0.71	26		39		
		A, C	Carbon steel & stainless steel		N/A				18	31			
		E			6.9	13.8	N/A		23	36			
		F			7.3	14.5	6.0	4.8	0.75	4	33		46
2-1/2" (DN65)	S	A, C	Cast iron	2.9	2.5	5.0	N/A				19	32	
		B		3.1	3.8	7.5	7.0	5.5	0.75	4	30	43	
		D, H					7.3	5.7	0.71		30	43	
3" (DN80)	S	A, C	Cast iron	3.0	2.6	5.2	N/A				20	33	

**Flow capacity:**

S - Standard  
C - CP body construction  
H - High capacity

**Body connection:**

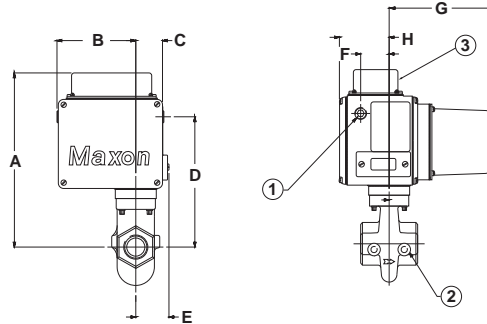
A - NPT  
B - ANSI flanged (ISO 7005 PN20)  
C - ISO 7-1 threaded

D - DIN PN16 flanged

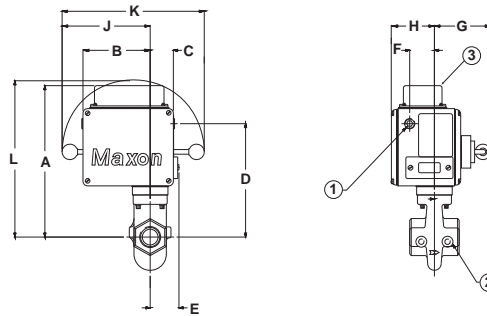
E - Socket welded nipple  
F - Socket welded nipple w/Class 150 flange (ISO 7005 PN20)  
H - EN 1092-1 PN16 (ISO 7005-1 PN16)

Valve actuators: 3/4" through 1-1/2" valves

Automatic reset type (SMA11, SMA21, SMA12, SMA22)  
(formerly 5000, STO-A, 5000 NI, STO-A-NI)



Manual reset type (SMM11, SMM21, SMM12, SMM22)  
(formerly 808, STO-M, 808 NI, STO-M-NI)



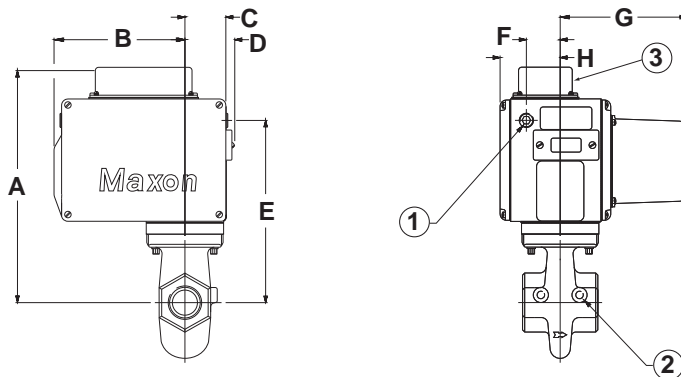
- 1) (2) 3/4" NPT conduit connection
- 2) (2) 1/4" NPT test connection
- 3) Terminal block cover

NOTE: 2.75" needed for terminal block cover removal

Valve size	Flow capacity	Valve type	Approximate dimensions (in inches)											
			A	B	C	D	E	F	G	H	J	K	L	
3/4" (DN20)	S	MM11, MM21	12.25	5.5	1.87	8.11	2.3	2	4.5	3.49	7.13	11.5	11.58	
		MM12, MM22								5.48				
		MA11, MA21								7.34				3.49
		MA12, MA22												5.48
1" (DN25)	S	MM11, MM21	12.25	5.5	1.87	8.11	2.3	2	4.5	3.49	7.13	11.5	11.58	
		MM12, MM22								5.48				
		MA11, MA21								7.34				3.49
		MA12, MA22												5.48
1-1/4" (DN32)	S	MM11	12.81	5.5	1.87	8.67	2.3	2	4.5	3.49	7.13	11.5	12.14	
		MM12								5.48				
		MA11								7.34				3.49
		MA12												5.48
1-1/2" (DN40)	S	MM11, MM21	13.31	5.5	1.87	9.14	2.3	2	4.5	3.49	7.13	11.5	12.61	
		MM12, MM22								5.48				
		MA11, MA21								7.34				3.49
		MA12, MA22												5.48

Valve actuators: 2" through 3" valves

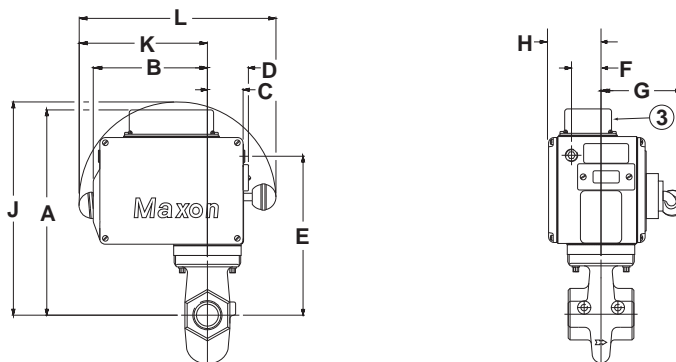
Automatic reset type (SMA11, SMA21, SMA12, SMA22)  
(formerly 5000, STO-A, 5000 NI, STO-A-NI)



- 1) (2) 3/4" NPT conduit connection
- 2) (2) 1/4" NPT test connection
- 3) Terminal block cover

NOTE: 2.75" needed for terminal block removal

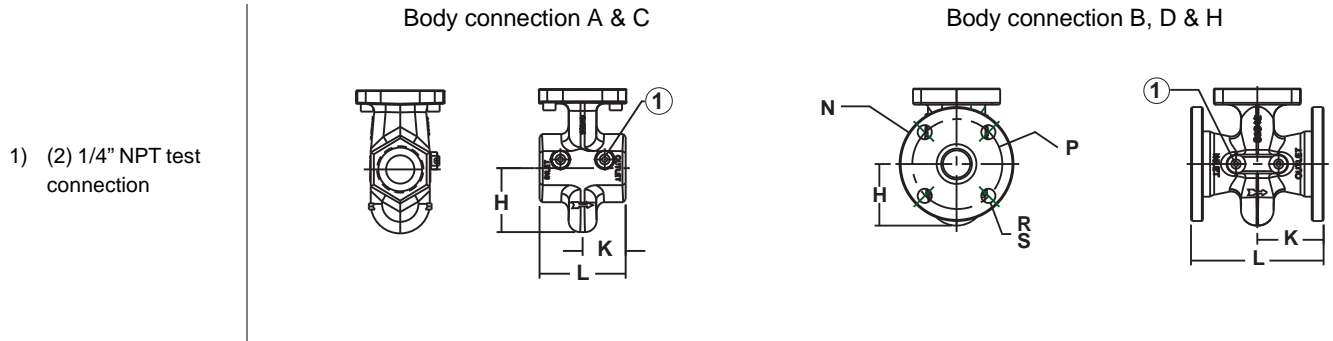
Manual reset type SMM11, SMM21, SMM12, SMM22)  
(formerly 808, STO-M, 808 NI, STO-M-NI)



Valve size	Flow capacity	Valve type	Approximate dimensions (in inches)											
			A	B	C	D	E	F	G	H	J	K	L	
2" (DN50)	S	MM11, MM21	14.75	7.61	2.38	2.9	10.6	1.97	5.63	3.5	14.38	8.55	13.12	
		MM12, MM22								5.38				
		MA11, MA21								7.51				3.5
		MA12, MA22								5.38				
2-1/2" (DN65)	S	MM11	14.62	7.61	2.38	2.9	10.46	1.97	5.63	3.5	14.25	8.55	13.12	
		MM12								5.38				
		MA11								7.51				3.5
		MA12								5.38				
3" (DN80)	S	MM11	14.86	7.61	2.38	2.9	10.71	1.97	5.63	3.5	14.49	8.55	13.12	
		MM12								5.38				
		MA11								7.51				3.5
		MA12								5.38				



Valve bodies: 2-1/2" CP (DN65), 3" CP (DN80), 4" CP (DN100) and 6" (DN150)



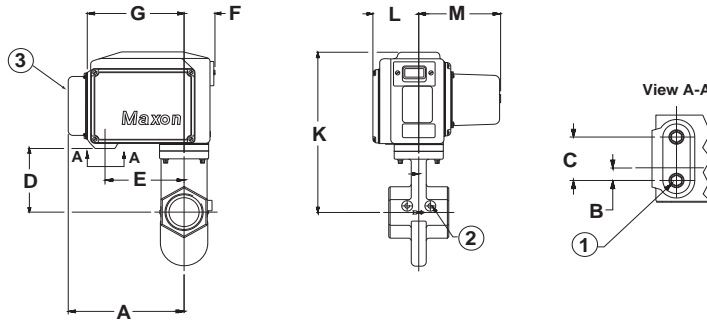
Valve size	Flow capacity	Body connection	Body/bonnet material	Approximate dimensions (in inches)							Approximate weight (in lbs)		
				H	K	L	N Ø	P Ø	R Ø	S #of holes	Body assembly	Actuator assembly	Total weight
2-1/2" (DN65)	C	A, C	Cast iron	4.3	2.5	5.0	N/A				19	15	34
		B		4.5	3.8	7.5	7.0	5.5	0.75	4	31		46
		D					7.3	5.7	0.71		31		46
		H					7.3	5.7	0.71	8	31		46
		B	Carbon steel & stainless steel	7.0	5.5	0.75	4	34	49				
		D		7.3	5.7	0.71		34	49				
		H		7.3	5.7	0.71	8	30	45				
3" (DN80)	C	A, C	Cast iron	5.1	2.8	5.5	N/A				24	39	
		B		5.2	4.0	8.0	7.5	6.0	0.75	4	46	61	
		D, H	7.9				6.3	0.71	8	46	61		
		B	7.5				6.0	0.75	4	47	62		
		D, H	7.9				6.3	0.71	8	47	62		
		4" (DN100)	C	B	Cast iron	5.5	4.5	9.0	9.0	7.5	0.75	8	64
D, H	8.7			7.1					0.71	64	79		
B	9.0			7.5	0.75				64	79			
D, H	8.7			7.1	0.71				64	79			
6" (DN150)	S			B	Cast iron				7.5	5.25	10.5	11.0	9.5
		D, H	11.2	9.4		0.86	115	130 59					
		B	11.0	9.5	0.88	115	130						
		D, H	11.2	9.4	0.86	115	130						

**Flow capacity:**  
S - Standard  
C - CP body construction  
H - High capacity

**Body connection:**  
A - NPT  
B - ANSI flanged (ISO 7005 PN20)  
C - ISO 7-1 threaded  
D - DIN PN16 flanged  
E - Socket welded nipple  
F - Socket welded nipple w/Class 150 flange (ISO 7005 PN20)  
H - EN1092-1 PN16 (ISO 7005-1 PN16)

Valve actuators: 2-1/2" CP through 4" CP and 6" valves

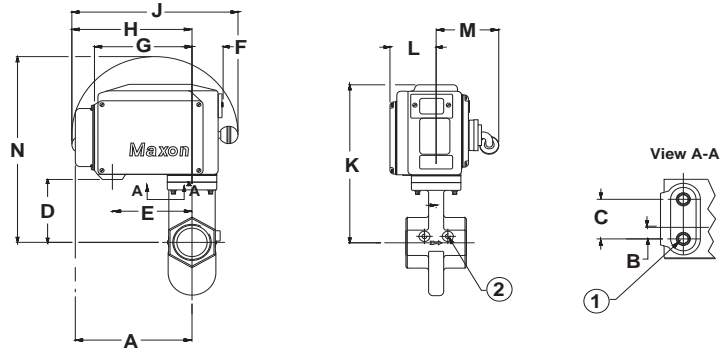
Automatic reset type (CMA11, CMA21, CMA12, CMA22)  
(formerly 5000 CP, STO-A-CP, 5000 NI-CP, STO-A-NI-CP)



- 1) (2) 3/4" NPT conduit connection
- 2) (2) 1/4" NPT test connection
- 3) Terminal block cover

NOTE: 2.75" needed for terminal block cover removal

Manual reset type (CMM11, CMM12, CMM22, SMM11, SMM12)  
(formerly 808 CP, 808-NI-CP, STO-M-NI-CP, 808, 808 NI)

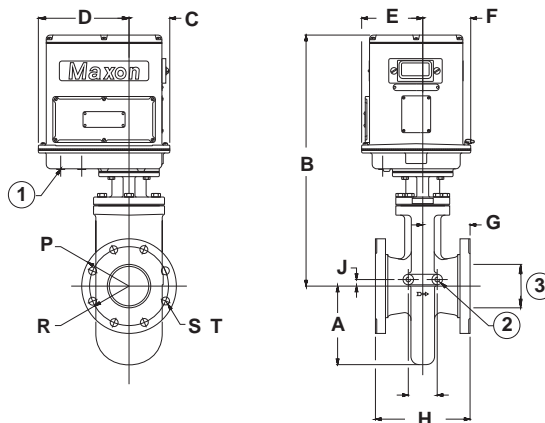


Valve size	Flow capacity	Valve type	Approximate dimensions (in inches)													
			A	B	C	D	E	F	G	H	J	K	L	M	N	
2-1/2" (DN65)	C	MM11	11.68	0.88	3	6.09	7.25	2.83	8.87	10.94	15.12	14.56	4.2	6.29	14.56	
		MM12, MM22											6.14			
		MA11, MA21											4.2			7.51
		MA12, MA22											6.14			
3" (DN80)	C	MM11	11.68	0.88	3	6.09	7.25	2.83	8.87	10.94	15.12	15.29	4.2	6.29	17.97	
		MM12, MM22											6.14			
		MA11, MA21											4.2			7.51
		MA12, MA22											6.14			
4" (DN100)	C	MM11	11.68	0.88	3	6.09	7.25	2.83	8.87	10.94	15.12	15.29	4.2	6.29	17.97	
		MM12, MM22											6.14			
		MA11, MA21											4.2			7.51
		MA12, MA22											6.14			
6" (DN150)	S	MM11	11.68	0.88	3	6.09	7.25	2.83	8.87	10.94	15.12	20.75	4.2	6.29	23.43	
		MM12											6.14			

### Valve bodies and actuators: 4" & 6" high capacity valves

- 1) (2) 3/4" NPT conduit connection
- 2) (2) 1/4" NPT test connection
- 3) Pipe size

HMA11 versions only  
(formerly 7000)



Valve size	Flow capacity	Valve type	Approximate dimensions (in inches)					
			A	B	C	D	E	F
4" (DN100)	H	MA11	7.31	23.88	3.87	8.63	4.19	4.56
6" (DN150)	H	MA11	8.38	25.0			5.81	

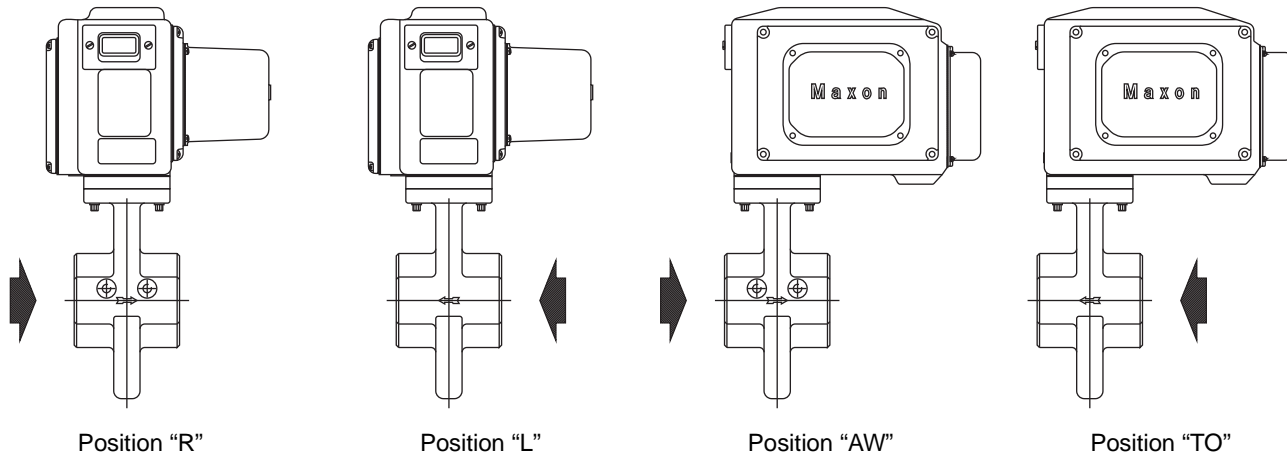
Valve size	Body connection	Body/bonnet material	Approximate dimensions (in inches)							Approximate weight (in lbs)		
			G	H	J	P Ø	R Ø	S Ø	T # of holes	Body assembly	Actuator assembly	Total weight
4" (DN100)	B	Cast iron	4.5	9.0	0.62	9.0	7.5	0.75	8	94	45	139
	D, H					8.7	7.1	0.72		94		139
	B	Carbon steel & stainless steel				9.0	7.5	0.75		94		139
	D, H					8.7	7.1	0.72		94		139
6" (DN150)	B	Cast iron	5.25	10.5	0.62	11.0	9.5	0.88	8	117	45	162
	D, H					11.2	9.4	0.86		117		162
	B	Carbon steel & stainless steel				11.0	9.5	0.88		126		171
	D, H					11.2	9.4	0.86		126		171

**Flow capacity:**  
S - Standard  
C - CP body construction  
H - High capacity

**Body connection:**  
A - NPT  
B - ANSI flanged (ISO 7005 PN20)  
C - ISO 7-1 threaded  
D - DIN PN16 flanged  
E - Socket welded nipple  
F - Socket welded nipple w/Class 150 flange (ISO 7005 PN20)  
H - EN1092-1 PN16 (ISO 7005-1 PN16)

### Available top assembly positions

The valve top assembly can be positioned on the body in four different orientations. See sketches below to determine the designation of the required orientation for your application.



## Tandem arrangements

(for simultaneous opening of main and blocking valves)

### General

Wherever insurance underwriters or other regulatory groups require the use of a double-valve or “block-and-bleed” system, but manual operation is preferred to the use of automatic reset valves, operation can be simplified by adding a tandem arrangement to a pair of MAXON manual reset shut-off valves.

A linkage overtravel spring in the tandem arrangement latches the blocking valve just before the main valve is latched, assuring latching of both valves.

If it is necessary to locate a tandem valve above arms reach, an overhead wheel and chain assembly may be added which includes a loop of chain accessible to operating personnel.

### To order

Valves are to be specified in the usual manner and must be in top assembly position TO or AW.

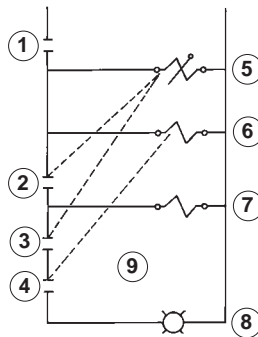
VOS and VCS switches must be included on the main valve and a VOS switch on the blocking valve to permit electrical connection as shown in the wiring schematic illustrated below.

If overhead wheel and chain assembly is also required, specify loop length to reach appropriate operating position. Extra chain (in one foot increments) may be specified.

Center line distance between valves must be within the ranges indicated in Table 1 and shown in sketch below and must be specified at the time of order.

- 1) Flame safeguard contact
- 2) VCS in main valve
- 3) VOS in main valve
- 4) VOS in blocking valve
- 5) Main valve (normally-closed)
- 6) Blocking valve (normally-closed)
- 7) Vent valve (normally-open)
- 8) Main fuel panel light
- 9) For illustration only (not a wiring diagram)

Wiring schematic

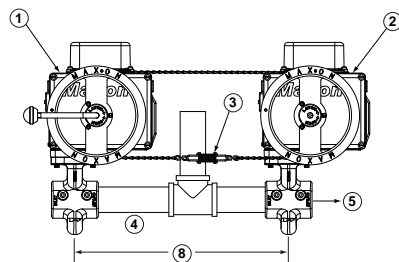


Main valve and blocking valve wired in parallel. VCS switch on main valve powers vent valve. VOS switches on main and blocking valves wired in series to signal light.

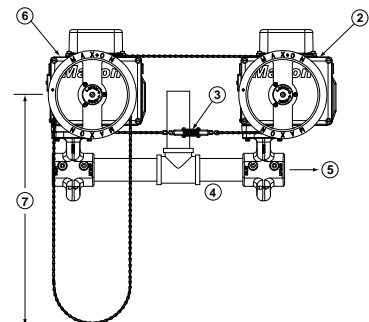
Valve size	Minimum C-C	Maximum C-C
3/4" - 1-1/2"	18	24
2" - 3"	20	27
4" & 6"	27	33

- 1) Tandem main valve
- 2) Tandem blocking valve
- 3) Tension spring
- 4) Piping by others
- 5) Flow
- 6) Tandem overhead valve
- 7) Specify loop length if overhead wheel & chain option
- 8) See Table 1 above

Tandem arrangement



Tandem arrangement with overhead wheel & chain



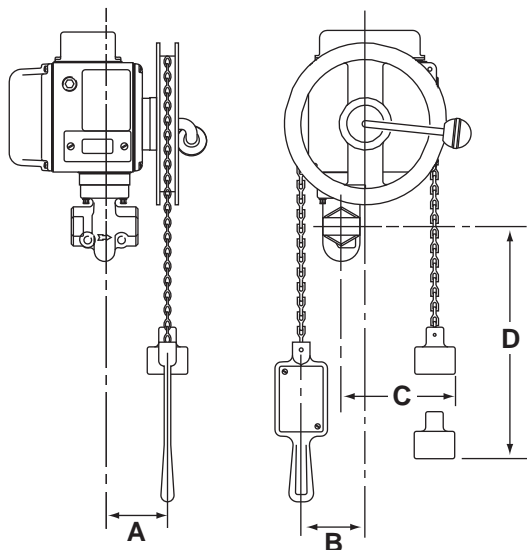
### Overhead wheel & chain assembly

Overhead wheel and chain assembly allows operation of a manual reset valve in an otherwise inaccessible overhead location. A wheel is mounted onto the handle of the valve. The attached chain is weighted on one end and has a paddle handgrip on the other.

Once the valve is electrically energized, pulling down on the paddle will open normally-closed versions or close normally-open versions.

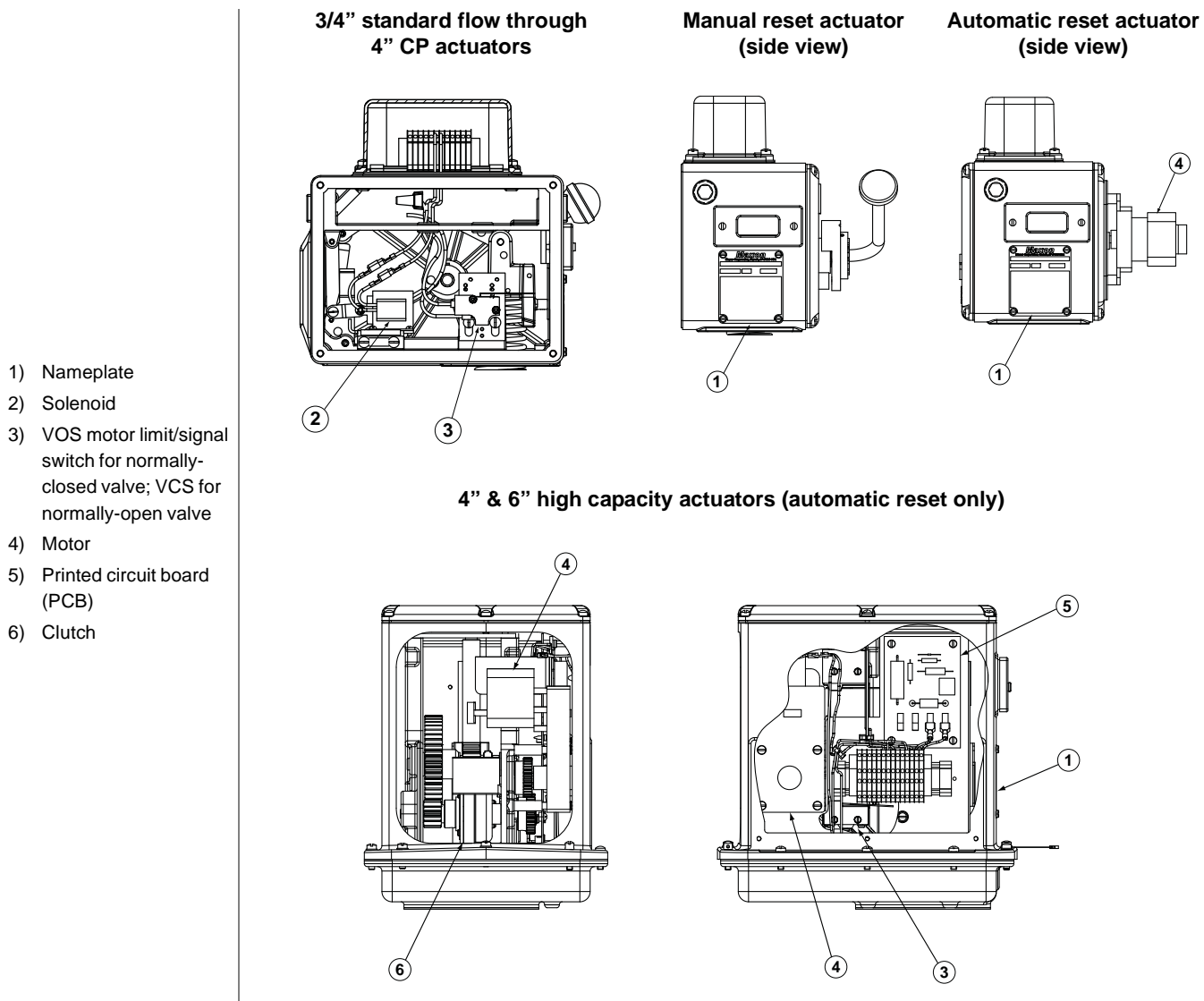
MAXON valve's free-handle design permits valve to trip to its rest position on any power interruption.

Wheel and chain assembly includes a length of chain to position the paddle handgrip slightly below pipe centerline. A standard length of 7 feet of chain is included with CP and larger valve sizes and 5 feet is included with all other valves. Extra chain (in one foot increments) may be specified to fit your specific location.



Dimensions (in inches)			
A	B	C	D
5.25 maximum	4.06	7.25	12.19 maximum

## Valve actuator spare part identification



- MAXON nameplates include a model designation, which can be used to easily identify the exact components for each valve configuration.
- Standard flow and CP flow valve spare parts include the solenoid, motor, and switches as shown above.
- High capacity valve spare parts include the clutch, motor and circuit board as shown above.

