





EXCELLENT SOLUTIONS IN FLUIDTECHNOLOGY

For over 45 years, Aignep has been a leading manufacturer of fluid and compressed air FITTINGS. Driven by a constant desire for innovation, our company has gained successful experience in various fields of industrial AUTOMATION with high quality and design products such as: cylinders, pneumatic valves, the "FLUIDITY" line with solenoid control valves for fluids, the "INFINITY" line for compressed air distribution, special fittings and QUICK COUPLING for any types of fluid.

All products are designed by a team of qualified engineers and they are manufactured in the production site of Bione, Italy, covering 25.000 m². We have over 14.000 standard items ex stock and countless special versions available on request.

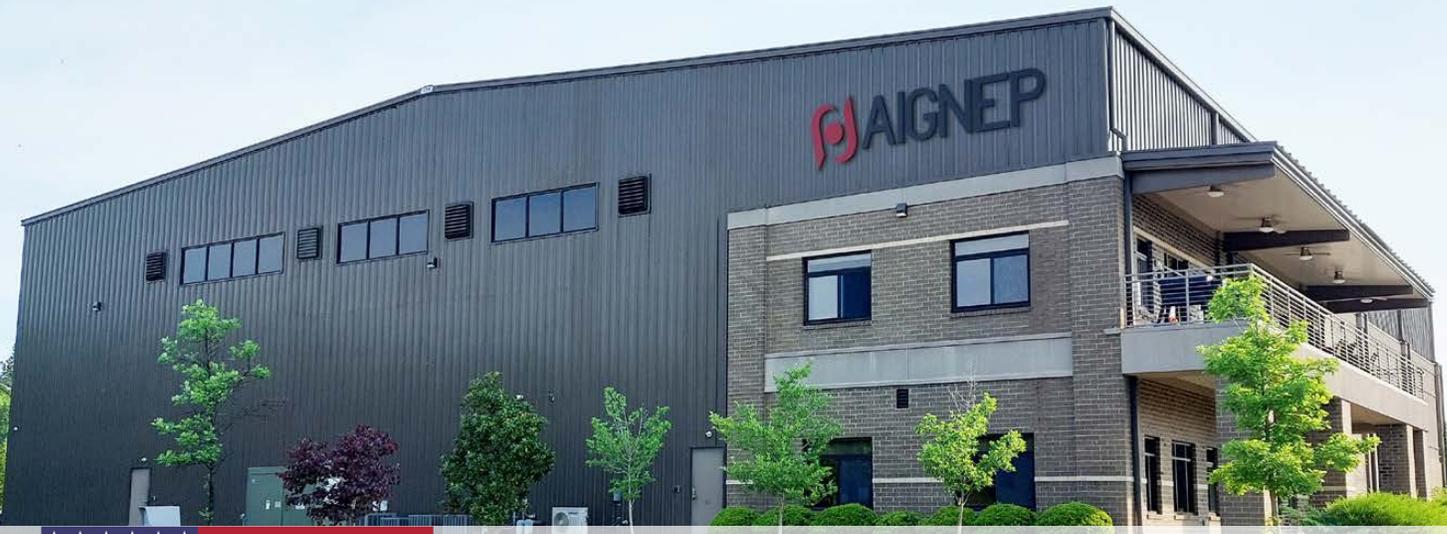
Aignep invests every year in industrial automation, innovation and services to meet the worldwide customers' demands. In order to stay closer to our customers, our company has 11 branches spread around the globe: USA, Spain, France, Switzerland, Brasil, Colombia, China, Russian, Germany, Mexico and Vietnam becoming a multinational Group.

"Excellent solutions in fluidtechnology"

"Listening to our customers, understanding their needs is the power that drives us to develop everyday new solutions for fluid and compressed air".

GRAZIANO BUGATTI
CEO of Aignep





Aignep USA

In the mid-1990's, Aignep partnered with Aignep USA to expand into North America. The North American headquarters relocated in 2015 to a new, state-of-the-art facility in Fairview, TN. which also serves as a cylinder production site.

Over the past 20 years both Aignep and Aignep USA have experienced extensive growth and has resulted in the establishment of 9 locations throughout the world.

As Aignep's global footprint continues to expand it was strategically important to change the name from Alpha to Aignep USA.



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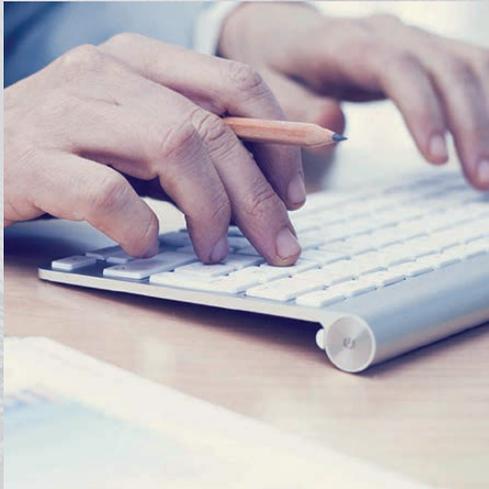
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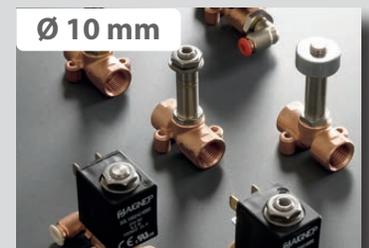
Our catalogues at your disposal

0. Introduction

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1. Series 01F 2/2 NC-NO - 3/2 NC-NO - 2/2 LATCHING

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY



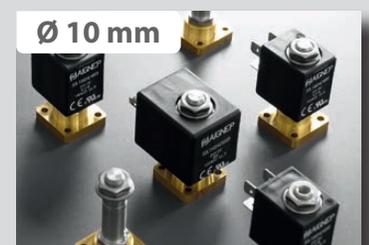
2. Series X1F 2/2 NC-NO - 3/2 NC-NO - 2/2 LATCHING

DIRECT ACTING SOLENOID VALVES WITH STAINLESS STEEL 316L BODY



3. Series F1F 2/2 NC-NO - 3/2 NC-NO - 2/2 LATCHING

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY



4. Series A1M 2/2 NC

DIRECT-ACTING SOLENOID VALVES WITH ALUMINUM BODY



5. Series 02F 2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY



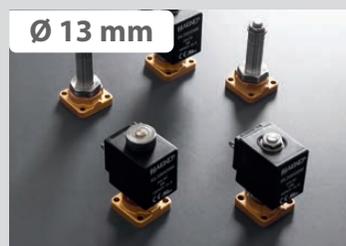
6. Series X2F 2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH STAINLESS STEEL 316L BODY



7. Series F2F 2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY



8. Series 03F 2/2 NC

GUIDED DIAPHRAGM SOLENOID VALVES WITH BRASS BODY



9. Series 04F 2/2 NC-NO - 2/2 LATCHING

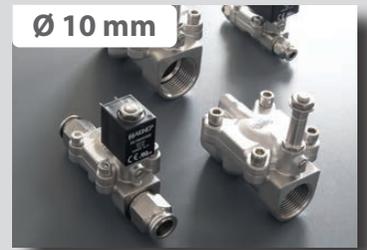
SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY



10. Series X4F 2/2 NC-NO - 2/2 LATCHING

SERVO-ASSISTED SOLENOID VALVES WITH STAINLESS STEEL 316L BODY

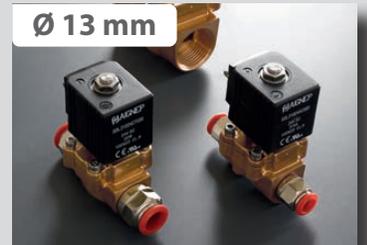
Ø 10 mm



11. Series 06F 2/2 NC ΔP = 0 psi

ASSISTED-LIFT DIAPHRAGM SOLENOID VALVES

Ø 13 mm



12. Series X6F 2/2 NC ΔP = 0 psi

ASSISTED-LIFT DIAPHRAGM SOLENOID VALVES IN STAINLESS STEEL 316L

Ø 13 mm



13. Series 01C 2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

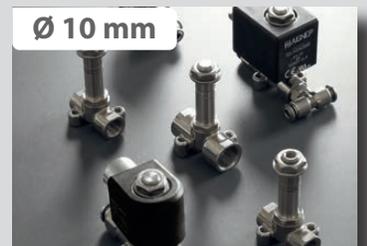
Ø 10 mm



13. Series X1C 2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH STAINLESS STEEL 316L BODY

Ø 10 mm



13. Series 04C 2/2 NC-NO

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

Ø 10 mm



13. Series X4C 2/2 NC-NO

SERVO-ASSISTED SOLENOID VALVES WITH STAINLESS STEEL 316L BODY

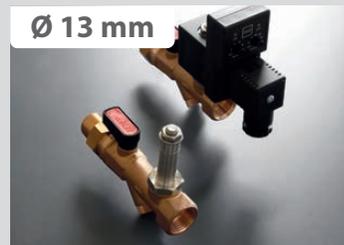
Ø 10 mm



14. Series 90976 2/2 NC

DRAIN VALVE

Ø 13 mm



15. Coils & Connectors

COILS AND CONNECTORS



16. Accessories & Solenoid Pilots

FLUIDITY SPARE PARTS AND ACCESSORIES



Fluidity Series

Aignep, Italian company leader in the production of components for fluid controls, designs and manufactures the range of FLUIDITY solenoid valves for the use with liquid and gaseous fluids.

With a simple and compact design, the FLUIDITY solenoid valves are available in 2/2 and 3/2 versions, direct acting and servo-assisted, NC and NO, sizes from 1/8" up to 2" and the whole range is ATEX II 2G/D Ex h certified.

The bodies are available in different types of brass and Stainless Steel, with a wide selection of gaskets depending on the compatibility with the fluid.

The materials used allow the FLUIDITY solenoid valves to be installed also in food applications or in contact with aggressive fluids and reach working temperatures from -40°C to +180°C.

The proposed coils allow to obtain high performances and, on request, low power consumption.

Multiple are the combinations with our fittings depending on the application and the fluid to be managed.

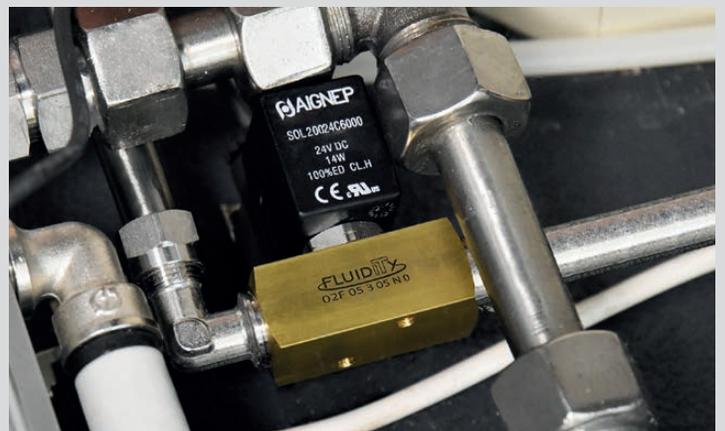
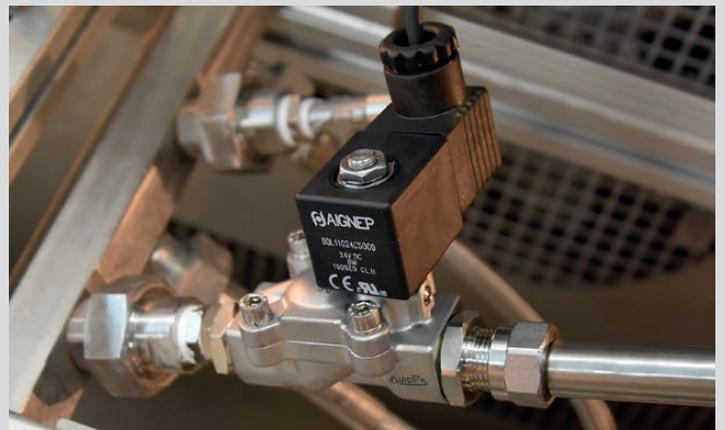
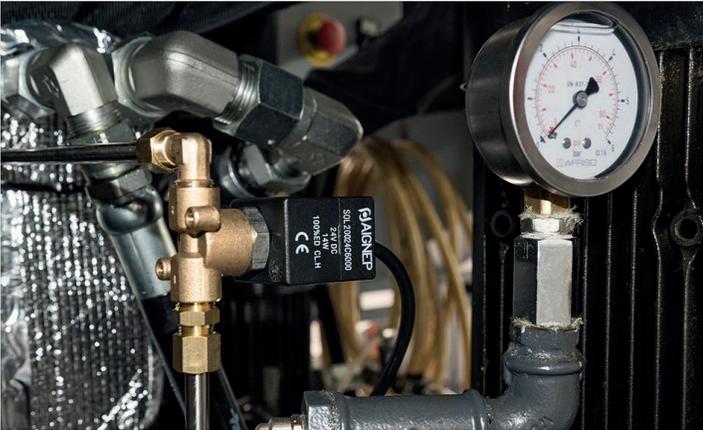
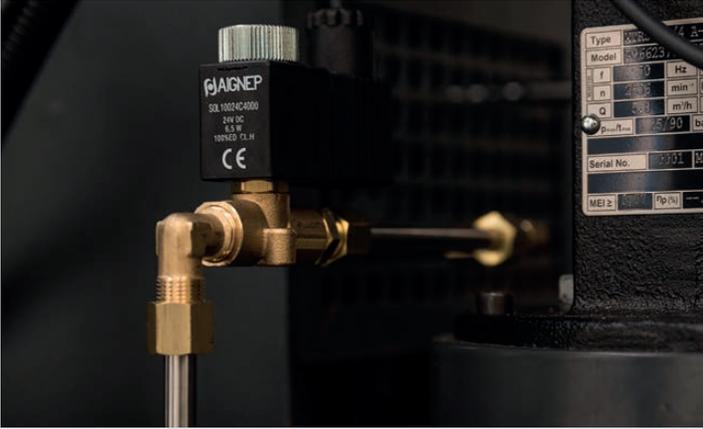
In addition to the standard products in the catalog, we are able to realize customized solutions to satisfy the most demanding requests of our Customers.

Main advantages

- Simple, compact and strong design
- ATEX II 2G / D Ex h certified valves
- High pressures and high flow rates
- High quality gaskets: perfect sealing with high number of working cycles
- Class H coils
- Coils certified  -  - CSA C22.2 - 
- Products traceability
- Stock availability for quick delivery
- 100% Made in Italy

Applications

- Food industry
- Coffee & vending
- Irrigation
- Industrial Processes and Automation
- Machine tools, Laser cutting
- Automotive
- Compressors
- Industrial washing, pressure washers
- Car wash
- Misting
- Heating and Refrigeration
- Medical
- Sterilizers
- Vacuum
- Chemical and Petrochemical industry
- Fire-fighting systems



SOLENOID VALVES FOR FLUIDS



Series Fluidity

HOW TO READ THE FLUIDITY CATALOG

Introduction to the catalog

The Fluidity catalog includes all the families of solenoid valves for fluid controls available in the Aignep's product range.

In the catalog the User can find technical content, information, tables and formulas in the introduction pages, whereas for each individual Series, a product presentation it's proposed including technical features, certifications, available options and improved performances.

In order to offer an increasingly excellent service and support to its Customers, Aignep reserves the right to make changes to the catalog to improve products and contents, and recommends to contact the technical support for any necessary clarification.

°F	°C	K	°F	°C	K	°F	°C	K
-40	-40	233.15	104	40	313.15	284	140	413.15
-31	-35	238.15	113	45	318.15	302	150	423.15
-22	-30	243.15	122	50	323.15	320	160	433.15
-13	-25	248.15	131	55	328.15	338	170	443.15
-4.0	-20	253.15	140	60	333.15	356	180	453.15
5.0	-15	258.15	149	65	338.15	374	190	463.15
14	-10	263.15	158	70	343.15	392	200	473.15
23	-5	268.15	167	75	348.15	428	220	493.15
32	0	273.15	176	80	353.15	464	240	513.15
41	5	278.15	185	85	358.15	500	260	533.15
50	10	283.15	194	90	363.15	536	280	553.15
59	15	288.15	203	95	368.15	572	300	573.15
68	20	293.15	212	100	373.15	662	350	623.15
77	25	298.15	230	110	383.15	752	400	673.15
86	30	303.15	248	120	393.15	842	450	723.15
95	35	308.15	266	130	403.15	932	500	773.15

FLUIDS	Sealing materials				
	Brass	Stainless Steel AISI 316L	NBR	EPDM	FKM
Acetone	●	●	●	●	●
Acetylene	●	●	●	●	●
Argon	●	●	●	●	●
Benzene	●	●	●	●	●
Butane	●	●	●	●	●
Carbon dioxide dry (gas)	●	●	●	●	●
Carbon dioxide dry (liquid)	●	●	●	●	●
Carbon disulfide	●	●	●	●	●
Chloroform (100%)	●	●	●	●	●
Diesel fuel	●	●	●	●	●
Helium	●	●	●	●	●
Ethane	●	●	●	●	●
Ethanol	●	●	●	●	●
Ethyl acetate	●	●	●	●	●
Ethyl chloride	●	●	●	●	●

Sealing materials	Temperature		Fluids
	min	max	
NBR	+14°F	+194°F	Air, Inert gases, water, mineral oils, diesel, fuel oils
NBR ❄️	-40°F	+194°F	Air, Inert gases, water, mineral oils, diesel, fuel oils
FKM	+14°F	+284°F	Mineral oils, gasoline, diesel, fuel oils
EPDM	+14°F	+284°F	Hot water, steam (max pressure 36 psi)
PTFE	-40°F	+356°F	Steam (max pressure 145 psi), solvents, aggressive fluids
RUBY	-40°F	+356°F	Water, hot water, demineralized water, steam (max pressure 145 psi), aggressive fluids

Product presentation

In the introduction pages for each valve Series, a brief presentation of the product is proposed which introduces the type of valve and shows the main data to simplify the choice; the pages offer the following information:

- 1 Product family, valve function and available port sizes.
- 2 Materials and components, general features and helpful information.
- 3 How to compose the valve model and explanation of each individual code.
- 4 Usable coils and connectors, with reference to the technical data sheets pages.

Valve section

Following the product presentation, there are the pages related to the types of valves expected for the Series in question; on these pages is possible to find the following information:

- 5 Valve codes table showing technical features and performances, divided according to the type of coil.
- 6 Complete the valve code indicated in the first column with the letter relating to the available sealing material indicated in the second column.
- 7 Valve sectional and dimensional drawing.

Series 01F - 2/2 NC

Series 01F
DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/8" - 1/4"

Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel

General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2GD Ex certification
- Coils: Class H - - CSA C22.2

Maximum allowable pressure

580 psi (40 bar)

Compatibility and materials table

Page 0.13 - 0.14

Room temperature with coil class H

+14°F +176°F
-10°C +80°C

Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry

Series 01F - 2/2 NC

Code	Sealing materials	Port size	Ø Orifice (mm)	Viscosity (cSt)	Cv (gpm/in ² /ft)	Differential pressure (OPD)			Power		Coils		
						psi (bar)			DC	AC	Size	Series	
						Min	Max DC	Max AC	W	VA	mm	A - SOL10 B - SOL11	
01F 02 1 15 0 N	N = NBR +14°F +176°F -10°C +80°C	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL10	
580 (40)							580 (40)	8	11	30	B - SOL11		
01F 02 1 02 0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL10	
435 (30)							580 (40)	8	11	30	B - SOL11		
01F 02 1 25 0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL10	
189 (13)							435 (30)	8	11	30	B - SOL11		
01F 02 1 03 0 N		1/8 (3)	53	0.23 (0.20)	0	44 (3)	145 (10)	6.5	7.5	22	A - SOL10		
102 (7)						232 (16)	8	11	30	B - SOL11			
01F 02 1 04 0 N		5/32 (4)	53	0.35 (0.30)	0	15 (1)	58 (4)	6.5	7.5	22	A - SOL10		
36 (2.5)						116 (8)	8	11	30	B - SOL11			
01F 03 1 15 0 N		E = EPDM +14°F +176°F -10°C +80°C	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL10
580 (40)								580 (40)	8	11	30	B - SOL11	
01F 03 1 02 0 N	5/64 (2)			37	0.10 (0.09)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL10	
435 (30)							580 (40)	8	11	30	B - SOL11		
01F 03 1 25 0 N	3/32 (2.5)			53	0.17 (0.15)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL10	
189 (13)							435 (30)	8	11	30	B - SOL11		
01F 03 1 03 0 N	1/8 (3)		53	0.23 (0.20)	0	44 (3)	145 (10)	6.5	7.5	22	A - SOL10		
102 (7)						232 (16)	8	11	30	B - SOL11			
01F 03 1 04 0 N	5/32 (4)		53	0.35 (0.30)	0	15 (1)	58 (4)	6.5	7.5	22	A - SOL10		
36 (2.5)						116 (8)	8	11	30	B - SOL11			

① Select seal material
With steam: EPDM - P max = 36 psi (2.5 bar)
Coil not included

Ordering codes

Series	Port size	Functions	Orifice (inch/mm)	Sealing materials	Version	Thread	Suitable coils
01F 02	1/8" / 03	1 / 2/2 NC	15 / 1/16 (1.5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	A = A series - SOL10 B = B series - SOL11
			02 = 1/8" / 02				A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Values and coils are supplied separately. Upon commercial agreements can be supplied assembled.

COILS: SERIES A, B
PAGE: 11.2 / 11.3
CONNECTORS
PAGE: 11.7

Series 01F - 2/2 NC

Max: 3.685 ft-lbs

10 mm Ø

Size	A	B	C	D	E	F	G
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

1.2
1.3

Coil section

Each valve requires the use of certain types of coils, as indicated for each Series. The pages related to each coil Series contain the following information:

- 11 Product family, coil sectional and dimensional drawing.
- 12 Coil codes table with the main technical features: available voltages supply, standard powers, tolerances and ambient temperature.
- 13 General technical information and options on request.
- 14 Coil size, operator diameter and ED service.
- 15 Standard certifications.
- 16 Reference with 2 digits and related coil code.

Serie A

SERIES A COIL 11

22 mm

10 mm

ED 100%

The dimensions are in millimeters (mm)

CE
C UL US
UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
AA	SOL10012C4000	12V DC	6.5 W	±10 %		
AB	SOL10024C4000	24V DC	6.5 W	±10 %		
A1	SOL10024A8000	24V AC / 50-60 Hz	7.5 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
A2	SOL10110A8000	110V AC / 50-60 Hz	7.5 VA	±10 %		
A3	SOL10220A8000	220V AC / 50-60 Hz	7.5 VA	±10 %		

INSULATION CLASS H EN 60085 **ENCAPSULATION MATERIAL** RYNITE* **ELECTRICAL CONNECTIONS** FORM B EN 175301-803 (EX DIN 43650) **AMBIENT TEMPERATURE** +14°F +176°F (-10°C +80°C) **PROTECTION DEGREE** IP67 IEC 60529 **OPTIONS** Other voltages/powers on request

Series B

SERIES B COIL 14

30 mm

10 mm

ED 100%

The dimensions are in millimeters (mm)

CE
C UL US
UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
BA	SOL11012C5000	12V DC	8 W	±10 %		
BB	SOL11024C5000	24V DC	8 W	±10 %		
B1	SOL11024A9000	24V AC / 50-60 Hz	11 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
B2	SOL11110A9000	110V AC / 50-60 Hz	11 VA	±10 %		
B3	SOL11220A9000	220V AC / 50-60 Hz	11 VA	±10 %		

INSULATION CLASS H EN 60085 **ENCAPSULATION MATERIAL** RYNITE* **ELECTRICAL CONNECTIONS** FORM A EN 175301-803 (EX DIN 43650) **AMBIENT TEMPERATURE** +14°F +176°F (-10°C +80°C) **PROTECTION DEGREE** IP67 IEC 60529 **OPTIONS** Other voltages/powers on request



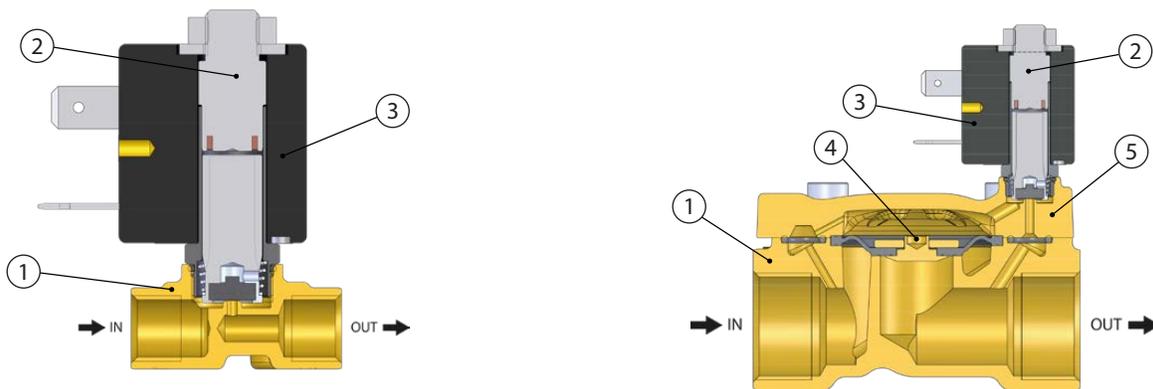
Introduction and function

Solenoid valves are electromechanical devices which allow a fluid, either gaseous or liquid, to flow through an orifice inside the valve body. The opening or closing of the main orifice, whether controlled directly or indirectly, takes place via the mobile plunger which is activated by the magnetic field generated by the coil.

Technical elements and terminology

The solenoid valves are composed by:

- 1 Valve body, in which there is the main orifice and the inlet/outlet connections to the line.
- 2 Operator kit, composed by an armature tube (which houses the fixed core) and mobile core (which houses the shutter). Generating the magnetic field, the mobile plunger slides inside the armature tube allowing the opening or closing of the main orifice or the pilot orifice or the exhaust (in the case of a 3-way valves).
- 3 Coil or solenoid, which generates the magnetic field needed to activate the mobile plunger.
- 4 Diaphragm or piston (for servo-assisted valves only), which allows the opening or closing of the main orifice.
- 5 Cover (for servo-assisted valves only), which has the function of housing the operator kit and being installed on the body to allow the fluid to flow inside the valve.



Solenoid valve types

DIRECT ACTING SOLENOID VALVES

2/2 NC - NO

3/2 NC - NO



1

SERVO-ASSISTED SOLENOID VALVES

2/2 NC - NO



2

GUIDED DIAPHRAGM SOLENOID VALVES $\Delta p = 0$ psi

2/2 NC



3

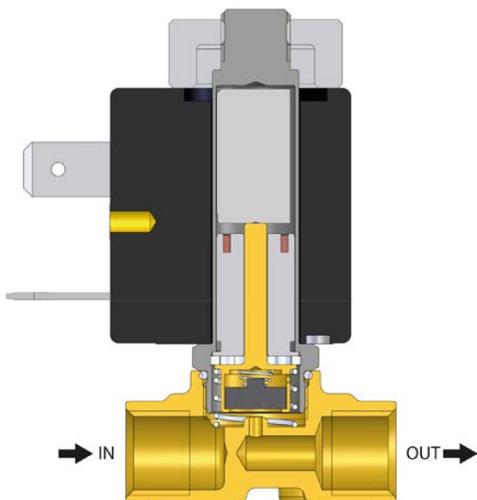
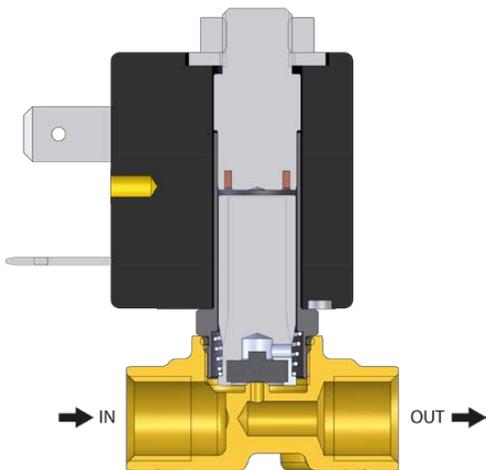
DIRECT ACTING SOLENOID VALVES

2/2



Direct acting 2/2 - NC / NO / Latching

In the 2/2-way direct acting solenoid valves, available in Normally Closed or Normally Open versions, the mobile plunger opens or closes the main orifice of the valve. These type of valves work also with a minimum OPD zero bar up to a maximum OPD which varies according to the model and the power of the coil. In both cases (NC or NO), the functioning is determined by the magnetic field generated by the current in the coil. In 2/2 Latching valves, the switching is done by sending an electrical pulse of at least 20ms duration with polarity inverted compared to the previous pulse.



DIRECT ACTING SOLENOID VALVES

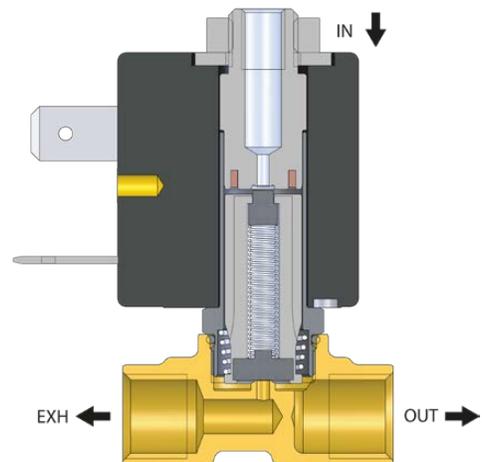
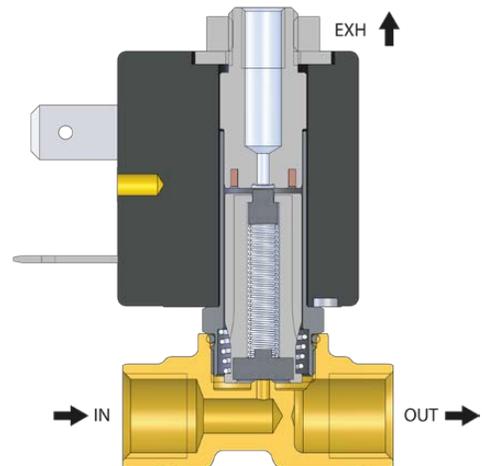
3/2



Direct acting 3/2 - NC and NO

The 3/2-way direct acting solenoid valves have inlet and outlet connections carved/machined from in the valve body and an exhaust connection carved/machined from in the fixed core. The main and the exhaust orifices are intercepted by the shutters present in the mobile plunger.

These valves are available in the Normally Closed or Normally Open versions and can operate with a minimum OPD of zero bar up to a maximum OPD which varies according to the model. In the NC version's, in rest position the outlet and exhaust are in communication with each other, while the incoming fluid is intercepted by the shutter. By energizing the coil, the main orifice is opened and the fluid can flow from the inlet to the outlet; the exhaust is closed. In the NO version's, in rest position the main orifice is open and the fluid can flow from the inlet to the outlet, while the exhaust is closed. By energizing the coil the main orifice is closed and the outlet is in communication with the exhaust which is opened. In both cases the functioning is determined by the magnetic field generated by the passing electric current in the coil.



SERVO-ASSISTED OR INDIRECT ACTING SOLENOID VALVES



Servo-assisted 2/2 - NC / NO / Latching

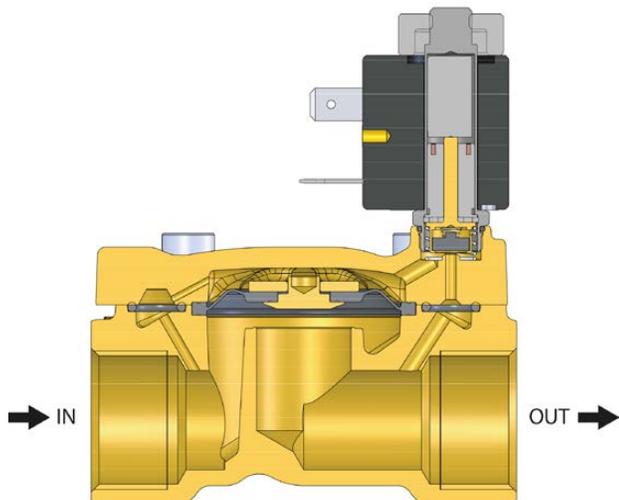
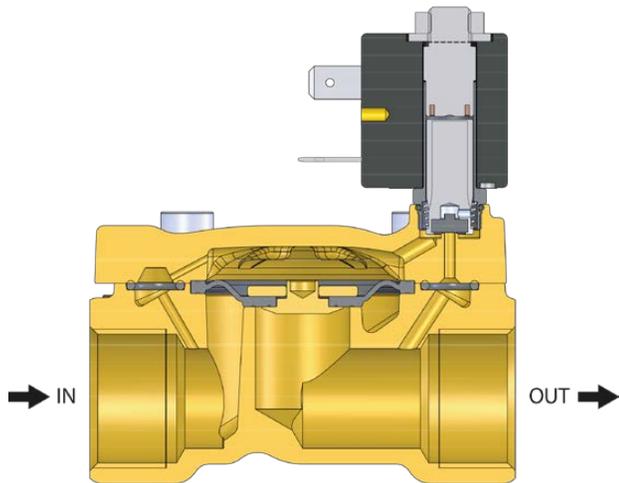
In the servo-assisted solenoid valves, available in the 2/2-way Normally Closed or Normally Open versions, the main feature is the possibility to manage high flow rates compared the direct acting valves, while the fluid is intercepted by the diaphragm or by the piston which acts on the main orifice.

In these types of valves the opening or closing of the main orifice is determined by the min OPD, generated between the inlet and the outlet, which allows the movement of the diaphragm or piston.

By energizing the coil the mobile plunger opens or closes the pilot orifice causing the relieve or the load of the fluid that acts in the top chamber of the diaphragm or piston, generating an imbalance of forces (Δp) able to allow the movement of the diaphragm or piston and therefore the opening or closing of the main orifice.

The functioning of the servo-assisted valves depends both from the magnetic field generated by the coil for controlling the pilot orifice and from the min OPD required for opening/closing the diaphragm or piston.

In 2/2 Latching valves, the switching is done by sending an electrical pulse of at least 20ms duration with polarity inverted compared to the previous pulse.



MIXED ACTING SOLENOID VALVES



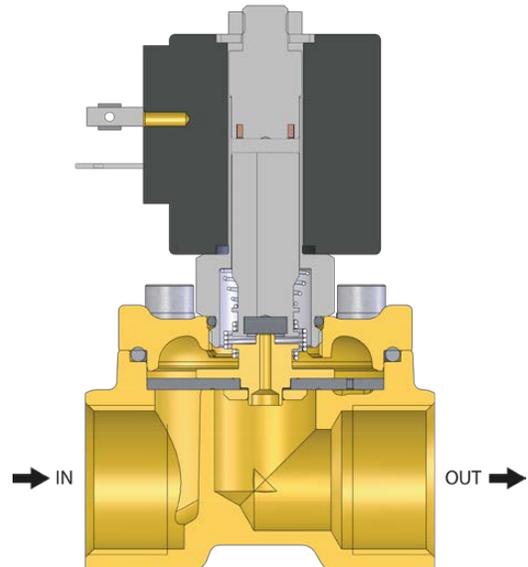
Mixed acting 2/2 - NC

The mixed acting solenoid valves, available in the 2/2-way Normally Closed version, are the combination of direct acting and servo-assisted valves.

In these valves the mobile plunger is mechanically connected to the diaphragm, in which the pilot orifice is in.

By energizing the coil, the mobile plunger opens the pilot orifice (releasing the pressure present in the top chamber of the diaphragm) and at the same time raises the diaphragm which opens the main orifice.

Partial opening of the valve occurs at zero bar pressure, while a minimum Δp is required for total opening.



GENERAL TECHNICAL INFORMATION



Differential pressure Δp

Differential pressure (or pressure drop) means the pressures difference between the valve's inlet and outlet. The symbol is Δp .

Operating Pressure Difference (OPD)

Solenoid valves performances are measured with the maximum and minimum pressure difference between the valve inlet and outlet.

The maximum and minimum OPD are indicated notified for each valve model.

With MOPD (Maximum Operative Pressure Difference) indicates the maximum working Δp that the valve must overcome to allow the fluid to flow. With the same orifice, but with AC or DC voltage supply, the MOPD values can be different.

With mOPD (minimum Operative Pressure Difference) indicates the minimum working Δp to allow the opening or closing of the main orifice. In direct acting valves it can be 0 psi, while in servo-assisted valves it must always be > 0 psi.

Back pressure

Back pressure is the outlet pressure that works opposite to the desired flow. It is often generated due to kinks or bends in the pipes or spray nozzles placed downstream of the valve outlet, thus reducing the flow.

In 2-way solenoid valves the back pressure higher than the inlet pressure will not allow the valve to function correctly.

Whenever this situation occur, the recommendation is to use check valves to prevent the back pressure to run over the upstream circuit of the valve.

Maximum allowable pressure (PS)

The maximum allowable pressure (PS) is the maximum pressure that the valve can withstand before having damages to the internal components and/or having external leakages.

It's not related with the MOPD as long as it must be higher than or in any case equal to the inlet pressure.

FLOW COEFFICIENTS



Kv and Cv flow coefficients

Each solenoid valve has a Kv or Cv flow rate coefficient which varies according to the type and the orifice diameter.

The flow rate coefficient Kv, which use the metric system units of measurement, defines the flow of water that crosses the solenoid valve with a differential pressure of 1 bar at a temperature between 5°C and 40°C and is determined as indicated by VDE 2173 standards.

It is expressed in: m³/h or l/min.

The flow rate coefficient Cv uses the units of measurement of the Anglo-Saxon system and defines the flow of water that cross the solenoid valve at 60°F with a differential pressure of 1 psi.

It is expressed in US gpm (US gallons per minute).

The two values cannot be compared, but there are conversion formulas:

$$Kv = 0.857 * Cv$$

$$Cv = 1.165 * Kv$$

Knowing the type of fluid, the working pressure and the acceptable pressure drop, the Kv or Cv flow rate coefficient allows to calculate the flow rate that crosses the solenoid valve and the relative size for the proper use in the application.

VISCOSITY



The viscosity of a fluid is the physical magnitude that measures the resistance to flow opposed by a fluid. The viscosity heavily influences the valve's flow rate and MOPD.

The maximum recommended viscosity, expressed in cSt (centiStokes), is indicated for each valve diameter in the catalog tables.

The use of fluids with higher viscosity values could lead to reduced performances and occlusion of the valves' orifices.

Kinematics viscosity	Engler	Kinematics viscosity	Engler
centiStokes – cSt = mm ² /s	°E	centiStokes – cSt = mm ² /s	°E
1	1.00	30	4.08
3	1.22	37	4.97
4	1.31	40	5.35
5	1.40	50	6.65
7	1.57	53	7.04
10	1.83	60	7.92
12	2.02	70	9.24
15	2.30	80	10.56
20	2.88	90	11.88
25	3.44	100	13.20

FLOW CALCULATION

Symbols	Units of measure	Description
Kv	m ³ /h	Flow rate coefficient
Q	m ³ /h	Flow rate
Q_n	Nm ³ /h	Normal flow (20°C, 760mm Hg)
P₁	bar	Absolute inlet pressure (Pr + 1 bar)
P₂	bar	Absolute outlet pressure (Pr + 1 bar)
Δp	bar	Pressure drop (P1 - P2)
ρ	Kg/dm ³	Relative density to water (= 1)
ρ_n	Kg/dm ³	Normal density to air
G	Kg/h	Mass
T	°C	Inlet fluid temperature
V₁	m ³ /Kg	Specific inlet volume
V₂	m ³ /Kg	Specific outlet volume

Fluids	Formulas	
Liquids	$Q = Kv * \sqrt{\frac{\Delta p}{\rho}}$	
Gases	$\Delta p < \frac{P_1}{2} \rightarrow Q_n = 514 * Kv * \sqrt{\frac{\Delta p * P_2}{\rho_n * (273+T)}}$	$\Delta p > \frac{P_1}{2} \rightarrow Q_n = 257 * Kv * \sqrt{\frac{P_1}{\rho_n * (273+T)}}$
Air	$\Delta p < \frac{P_1}{2} \rightarrow Q_n = 26 * Kv * \sqrt{\Delta p * P_2}$	$\Delta p > \frac{P_1}{2} \rightarrow Q_n = Kv * P_1 * 13$
Steam	$\Delta p < \frac{P_1}{2} \rightarrow G = 31.6 * Kv * \sqrt{\frac{\Delta p}{V_2}}$	$\Delta p > \frac{P_1}{2} \rightarrow G = 31.6 * Kv * \sqrt{\frac{P_1}{V_1}}$

IP PROTECTION CLASS



The **CEI EN 60529/1997** (formerly CEI 70-1) standard classifies the protection degrees of enclosures for electrical equipments. The IP degree for the solenoid valves is indicated with two digits.

Solid bodies	
IP (1 st Digit)	Description
0	No protection
1	Protection from solid bodies > Ø 50 mm
2	Protection from solid bodies > Ø 12 mm
3	Protection from solid bodies > Ø 2.5 mm
4	Protection from solid bodies > Ø 1 mm
5	Protected against dusts (no harmful deposit)
6	Fully protected against dusts

Liquid bodies	
IP (2 nd Digit)	Description
0	No protection
1	Protection against vertical falls of water drops
2	Protection against falling drops of water or rain up to 15° from the vertical
3	Protection against falling drops of water or rain up to 60° from the vertical
4	Protection against water splashes from all directions
5	Protection against water jets
6	Protection against powerful jets of water
7	Protection against the effects of temporary diving
8	Protection against the effects of continuous diving

COILS TECHNICAL INFORMATION



Coils power

The power, or electrical absorption, indicated for each coil is its registered at the ambient temperature of 68°F and at the nominal voltage, and is expressed in:

- Watt (W), for Direct Current (DC) power supplies;

in the DC-powered coils, the active power remains constant both during the inrush phase and when the mobile plunger stroke cycle is completed.

- VoltAmpere (VA), for Alternating Current (AC) power supplies; in the AC-powered coils only the apparent power it's indicated in the holding state (when the mobile plunger has completed its stroke cycle); it must be considered that the apparent power during the inrush phase (at the electrical insertion) is always higher than the holding state.

$$P (W \text{ or } VA) = V (\text{Volt}) \times I (\text{Ampere}) = \frac{V^2 (\text{Volt})}{R (\text{Ohm } \Omega)}$$

The power can be expressed in Watts even in the case of AC power supplies; in this case there is a displacement between voltage and current indicated as power factor or $\cos \phi$ (Phi). This value can vary between 0 and 1.

$$P (W) = V (\text{Volt}) \times I (\text{Ampere}) \times \cos \phi$$



Continuous Service (ED)

The "Continuous Service (ED)" is intended as the maximum electrical insertion time tolerated by the coil compared to the thermal time constant of the coil.

Coils in Continuous Service are identified with ED100%, while for non-continuous service coils (e.g.: ED50%) it is necessary to intersperse electrical insertion times and rest times.

The ED is calculated with the following formula:

$$ED = \frac{\text{insertion time}}{\text{insertion time} + \text{rest time}} \times 100$$

Example:

$$ED = \frac{10'}{10' + 10'} \times 100 = ED 50\%$$

For non-continuous services it is possible to use coils with higher powers than the standard ones or to use coils with ambient temperatures higher than the indicated ones.



Coils insulation class

The insulation class identifies the maximum winding temperature that each coil can withstand to ensure normal operation.

When the winding is crossed by the current it heats up due to the Joule effect; the heating varies according to the time during which the coil is powered.

Aignep uses standard class H coils, which can work at a winding temperature of +356°F.



Ambient temperature

The minimum and maximum ambient temperature determines the safety limits dictated by the insulation class of the coil. It depends on the materials of the winding and encapsulation of the coil and is defined by the sector's directives.

TEMPERATURE VALUES CONVERSION TABLE

°F	°C	K	°F	°C	K	°F	°C	K
-40	-40	233.15	104	40	313.15	284	140	413.15
-31	-35	238.15	113	45	318.15	302	150	423.15
-22	-30	243.15	122	50	323.15	320	160	433.15
-13	-25	248.15	131	55	328.15	338	170	443.15
-4.0	-20	253.15	140	60	333.15	356	180	453.15
5.0	-15	258.15	149	65	338.15	374	190	463.15
14	-10	263.15	158	70	343.15	392	200	473.15
23	-5	268.15	167	75	348.15	428	220	493.15
32	0	273.15	176	80	353.15	464	240	513.15
41	5	278.15	185	85	358.15	500	260	533.15
50	10	283.15	194	90	363.15	536	280	553.15
59	15	288.15	203	95	368.15	572	300	573.15
68	20	293.15	212	100	373.15	662	350	623.15
77	25	298.15	230	110	383.15	752	400	673.15
86	30	303.15	248	120	393.15	842	450	723.15
95	35	308.15	266	130	403.15	932	500	773.15

PRESSURE VALUE CONVERSION TABLE

Psi	Bar	MPa	mH ₂ O	Psi	Bar	Mpa	mH ₂ O
1.45	0.1	0.01	1.02	203.00	14	1.40	142.80
2.90	0.2	0.02	2.04	217.50	15	1.50	153.00
4.35	0.3	0.03	3.06	232.00	16	1.60	163.20
5.80	0.4	0.04	4.08	246.50	17	1.70	173.40
7.25	0.5	0.05	5.10	261.00	18	1.80	183.60
8.70	0.6	0.06	6.12	275.50	19	1.90	193.80
10.15	0.7	0.07	7.14	290.00	20	2.00	204.00
11.60	0.8	0.08	8.16	304.50	21	2.10	214.20
13.05	0.9	0.09	9.18	319.00	22	2.20	224.40
14.50	1	0.10	10.20	333.50	23	2.30	234.60
21.75	1.5	0.15	15.30	348.00	24	2.40	244.80
29.00	2	0.20	20.40	362.50	25	2.50	255.00
36.25	2.5	0.25	25.50	377.00	26	2.60	265.20
43.50	3	0.30	30.60	391.50	27	2.70	275.40
50.75	3.5	0.35	35.70	406.00	28	2.80	285.60
58.00	4	0.40	40.80	420.50	29	2.90	295.80
65.25	4.5	0.45	45.90	435.00	30	3.00	306.00
72.50	5	0.50	51.00	507.50	35	3.50	357.00
79.75	5.5	0.55	56.00	580.00	40	4.00	408.00
87.00	6	0.60	61.20	652.50	45	4.50	459.00
94.25	6.5	0.65	66.30	725.00	50	5.00	510.00
101.50	7	0.70	71.40	797.50	55	5.50	561.00
108.75	7.5	0.75	76.50	870.00	60	6.00	612.00
116.00	8	0.80	81.60	942.50	65	6.50	663.00
123.25	8.5	0.85	86.70	1015.00	70	7.00	714.00
130.50	9	0.90	91.80	1087.50	75	7.50	765.00
137.75	9.5	0.95	96.90	1160.00	80	8.00	816.00
145.00	10	1.00	102.00	1232.50	85	8.50	867.00
159.50	11	1.10	112.20	1305.00	90	9.00	918.00
174.00	12	1.20	122.40	1377.50	95	9.50	969.00
188.50	13	1.30	132.60	1450.00	100	10.00	1020.00

STEAM: PRESSURE - TEMPERATURE CONVERSION TABLE

Relative pressure	Absolute pressure	Temperature		Specific volume
		°F	°C	
psi (g)	psi (a)			m ³ /Kg
0	14.69	212.0	100.0	1.673
1.45	16.14	216.7	102.6	1.533
2.90	17.59	223.2	106.2	1.414
4.35	19.04	225.3	107.4	1.312
7.25	21.94	232.9	111.6	1.149
10.15	24.84	239.7	115.4	1.024
14.50	29.19	248.7	120.4	0.881
21.75	36.44	261.7	127.6	0.714
29.00	43.69	272.7	133.7	0.603
36.25	50.94	282.2	139.0	0.522
43.50	58.19	290.7	143.7	0.461
50.75	65.44	298.4	148.0	0.413
58.00	72.69	305.6	152.0	0.374
65.25	79.94	311.9	155.5	0.342
72.50	87.19	318.0	158.9	0.315
87.00	101.69	329.0	165.0	0.272
101.50	116.19	338.9	170.5	0.240
116.00	130.69	347.7	175.4	0.215
130.50	145.19	356.0	180.0	0.194
145.00	159.69	363.4	184.1	0.177


Response times

The response time of the opening (or closing) of a solenoid valve is defined as the time interval between the electrical insertion (or disconnection) and the moment in which the outlet (or inlet) pressure reaches 50% of the maximum value.

Valves type	Response times		Note
	Open	Close	
Direct acting NC 2/2 - 3/2	~ 10 ms	~ 20 ms	Response times may vary according to the fluid (gas or liquid), pressure, flow rate, viscosity and voltage supply (AC or DC).
Direct acting NO 2/2 - 3/2	~ 20 ms	~ 10 ms	
Servo-assisted NC 1/4" → 2"	50 ms → 500 ms	70 ms → 600 ms	
Servo-assisted NO 1/4" → 2"	70 ms → 600 ms	50 ms → 500 ms	



FLUIDS	BODY MATERIAL		SEALS		
	Brass	Stainless Steel AISI 316L	NBR	EPDM	FKM
Acetone	●	●	●	●	●
Acetylene	●	●	●	●	●
Argon	●	●	●	●	●
Benzene	●	●	●	●	●
Butane	●	●	●	●	●
Carbon dioxide dry (gas)	●	●	●	●	●
Carbon dioxide dry (liquid)	●	●	●	●	●
Carbon disulfide	●	●	●	●	●
Chloroform (100%)	●	●	●	●	●
Diesel fuel	●	●	●	●	●
Helium	●	●	●	●	●
Ethane	●	●	●	●	●
Ethanol	●	●	●	●	●
Ethyl acetate	●	●	●	●	●
Ethyl chloride	●	●	●	●	●
Ethylene glycol	●	●	●	●	●
Formaldehyde (100%)	●	●	●	●	●
Freon	●	●	●	●	●
Glycerine	●	●	●	●	●
Heptane	●	●	●	●	●
Hexane	●	●	●	●	●
Hydrogen	●	●	●	●	●
Hydrogen peroxide	●	●	●	●	●
Isobutane	●	●	●	●	●
Isopentane	●	●	●	●	●
Methane	●	●	●	●	●
Methanol	●	●	●	●	●
Methyl chloride	●	●	●	●	●
Mineral oil	●	●	●	●	●
Neon	●	●	●	●	●
Nitrobenzene	●	●	●	●	●
Nitrogen	●	●	●	●	●
Oxygen	●	●	●	●	●
Pentane	●	●	●	●	●
Petrol	●	●	●	●	●
Propane (LPG)	●	●	●	●	●
Propyl Alcohol	●	●	●	●	●
Toluene	●	●	●	●	●
Trichlorethylene dry	●	●	●	●	●
Vinegar	●	●	●	●	●
Water demineralized	●	●	●	●	●
Water (Hard)	●	●	●	●	●
Water (Hot <75°C)	●	●	●	●	●
Water (Hot-steam <140°C)	●	●	●	●	●
Water with glycol	●	●	●	●	●
Xylene	●	●	●	●	●

LEGEND:

- COMPATIBLE
- INCOMPATIBLE
- ASK TO TECHNICAL DEPARTMENT

SEALING MATERIALS FEATURES

Sealing materials	Temperature		Fluids
	min	max	
NBR	+14°F	+194°F	Air, inert gases, water, mineral oils, diesel, fuel oils
NBR 	-40°F	+194°F	Air, inert gases, water, mineral oils, diesel, fuel oils
FKM	+14°F	+284°F	Mineral oils, gasoline, diesel, fuel oils
EPDM	+14°F	+284°F	Hot water, steam (max pressure 36 psi)
PTFE	-40°F	+356°F	Steam (max pressure 145 psi), solvents, aggressive fluids
RUBY	-40°F	+356°F	Water, hot water, demineralized water, steam (max pressure 145 psi), aggressive fluids
CR	-31°F	+212°F	Refrigerants, water-glycol mixtures, ozone

INSTALLATION AND MAINTENANCE

INSTALLATION'S WARNINGS

- Before to proceed with the installation, make sure that the valve model is suitable for the use in the application, verifying that fluid, temperatures, pressures and operating flow rates doesn't exceed the values indicated in the technical tables shown in the Aignep catalog and also on the website www.aignep.com.
- Make sure that the valve is correctly sized for the piping used and that the flow is flowing in the direction indicated by the arrow on the valve body.
- Make sure that there aren't foreign bodies or impurities in the fluid that could obstruct the passage and compromise the functionality of the valves; Aignep always recommends a filter installation upstream.
- For corrosive fluids and environments make sure that all the materials are compatible (contact Aignep in case of doubt or further information).
- It is recommended to install the valve in a horizontal position with the operator facing upwards to prevent possible impurities from depositing in the armature tube of the solenoid valve.
- During the installation on the pipes:
 - Make sure that the pipes are pressureless;
 - Assemble the valve with the pipes and/or fittings whose threads are compatible with the connection;
 - Avoid any kind of torsion or forcing on the valve;
 - Do not use the armature tube as a socket for screwing the valve;
 - Make sure that the connections to the piping are free of leaks (use appropriate PTFE sealants or tapes; pay attention to liquid sealants that can clog the valve operating orifices);
 - Make sure that the valve is not subjected to stresses and vibrations.
- It is recommended to install the valve in easy positions, to allow simple maintenance or replacement of the coil.
- Avoid the valve being immersed in liquids or exposed to jets of water or steam.
- The use of servo-assisted valves with free exhaust is not recommended, unless suitably sized.
- In case of condensation, use the anti-humidity kit (see Aignep catalog).
- WARNING:** to guarantee the indicated performances it is recommended to use Aignep's valves and coils.

ELECTRICAL CONNECTIONS

- The coil, when installed on the operator, can be rotated on its axis to place it in the desired position. Once the most suitable position is identified, anchor the coil by fixing the nut to the operator, with a maximum torque of 3.685 ft-lbs.
- Connect the coils correctly with the appropriate connectors, paying attention to the grounding.
- Aignep coils are suitable for continuous service ED 100%.

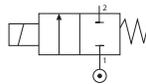
TEMPERATURES

- Although the coils conform to high temperatures, it is always recommended to install the valves away from heat sources to avoid excessive overheating.
- Always check the operating temperatures in the catalog and if in doubt consult Aignep.
- The temperatures of use must take into account the environment and also the temperatures of the fluids.
- WARNING:** when energized the coils tend to overheat. Do not touch them with your hands.
- WARNING:** in case of installation with ambient temperature < +32°F, the freezing of the fluid may cause serious damage to the solenoid valve.

MAINTENANCE

- Before carrying out any type of maintenance or disassembly, in order to avoid possible damage to people or surrounding objects, make sure that the pressure in the circuit has been released.
- Make sure the coil is de-energized.
- Remove the nut using the correct size hex wrench and slide off the coil.
- Remove the operator kit with the appropriate hex wrench; it is advisable not to use tools that could damage the operator kit.
- In the diaphragm version remove also the cover by unscrewing the n. 4 screws.
- Inspect the valve by cleaning the individual components from possible foreign bodies and replace the parts worn or corroded by the use; it is recommended to use original Aignep spare parts only.
- Make sure all the components are correctly installed and then close the valve.
- To fix the operator kit on the valve body and the coil fixing nut, use respectively a maximum tightening torque of 7.37 ft-lbs and 3.685 ft-lbs.

2/2 NC

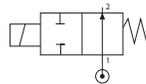



1/8" - 1/4"

Page 1.3



2/2 NO

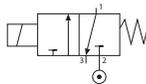



1/8" - 1/4"

Page 1.5



3/2 NC

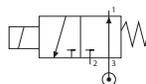



1/8" - 1/4"

Page 1.7



3/2 NO

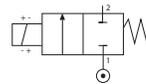



1/8" - 1/4"

Page 1.9



2/2 LATCHING

1/8" - 1/4"

Page 1.11



22 mm



Series A

Page 15.2



30 mm



Series B

Page 15.3




Connectors

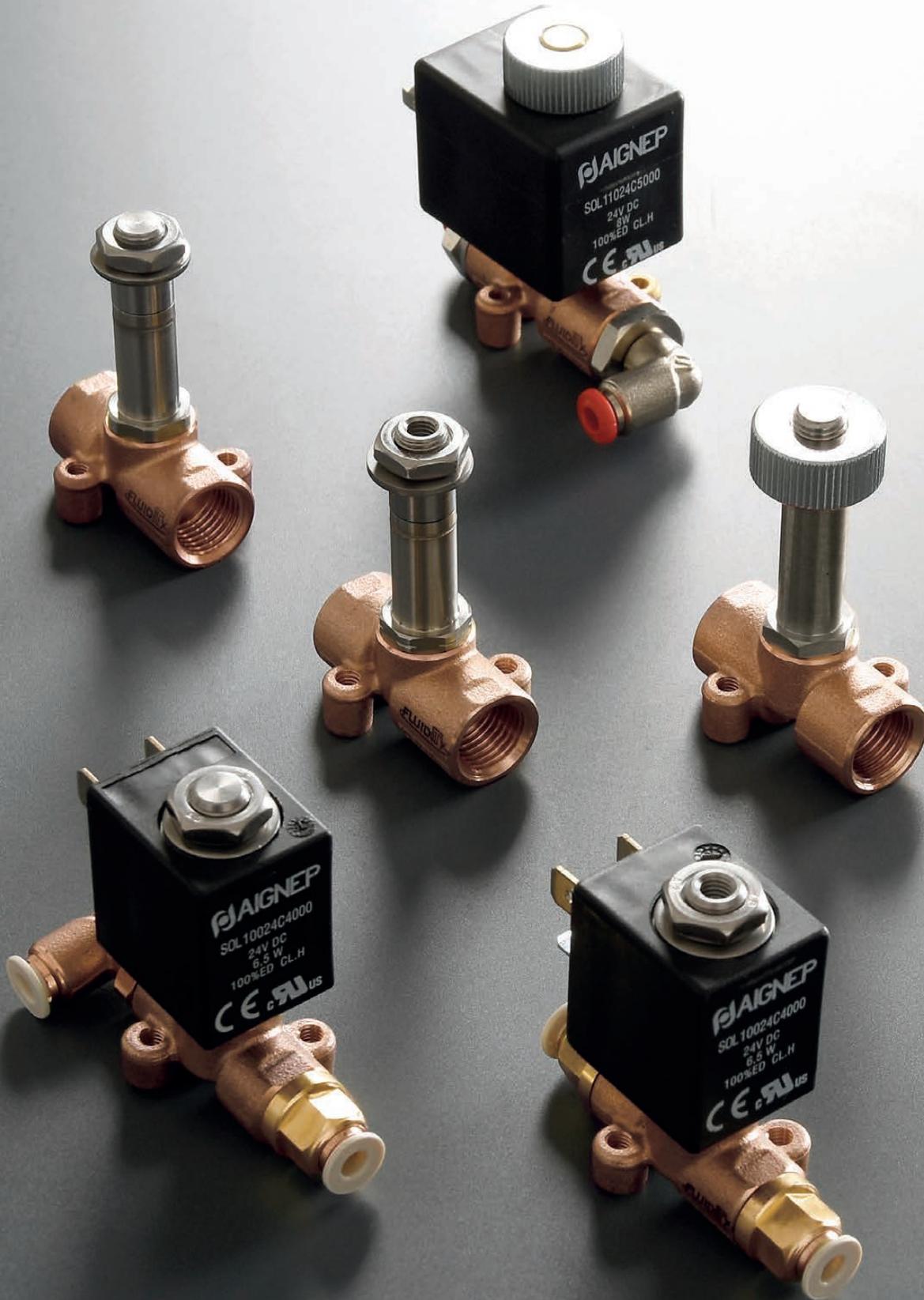
Page 15.8 - 15.10



DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

Ex
II 2 G/D Ex h

UL US
CSA C22.2



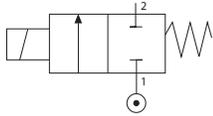
Series 01F

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM - CR - NBR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 1 F	0 2 02 = 1/8" 03 = 1/4"	1 1 = 2/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N N = NBR E = EPDM V = FKM C = CR F = NBR	0 0 = Standard	N N = NPTF	A A = A series - SOL10 B = B series - SOL11 A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

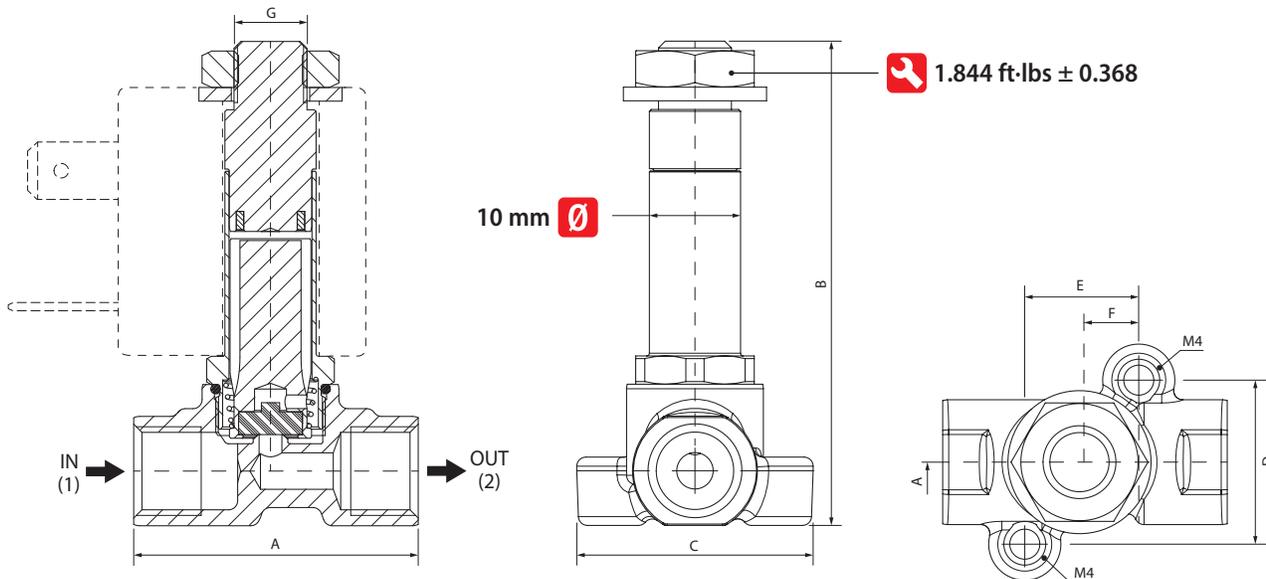
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)					
						inch (mm)	cSt	gpm (m³/h)	psi (bar)		
									Min	Max DC	Max AC
01F 02 1 15_0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)			
01F 02 1 02_0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)			
01F 02 1 25_0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)			
01F 02 1 03_0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3)	145 (10)			
01F 02 1 04_0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1)	58 (4)			
01F 03 1 15_0 N	C = CR -31°F +212°F (-35°C +100°C) F = NBR ❄️ -40°F +194°F (-40°C +90°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)			
01F 03 1 02_0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)			
01F 03 1 25_0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)			
01F 03 1 03_0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3)	145 (10)			
01F 03 1 04_0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1)	58 (4)			

Power		Coils	
DC	AC	Size	Series
W	VA	mm	A - Page 15.2 B - Page 15.3
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



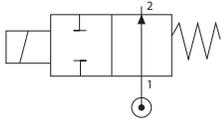
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 1 F	0 2 02 = 1/8" 03 = 1/4"	2 2 = 2/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	A A = A series - SOL10	A A = 12V DC B = B series - SOL11 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

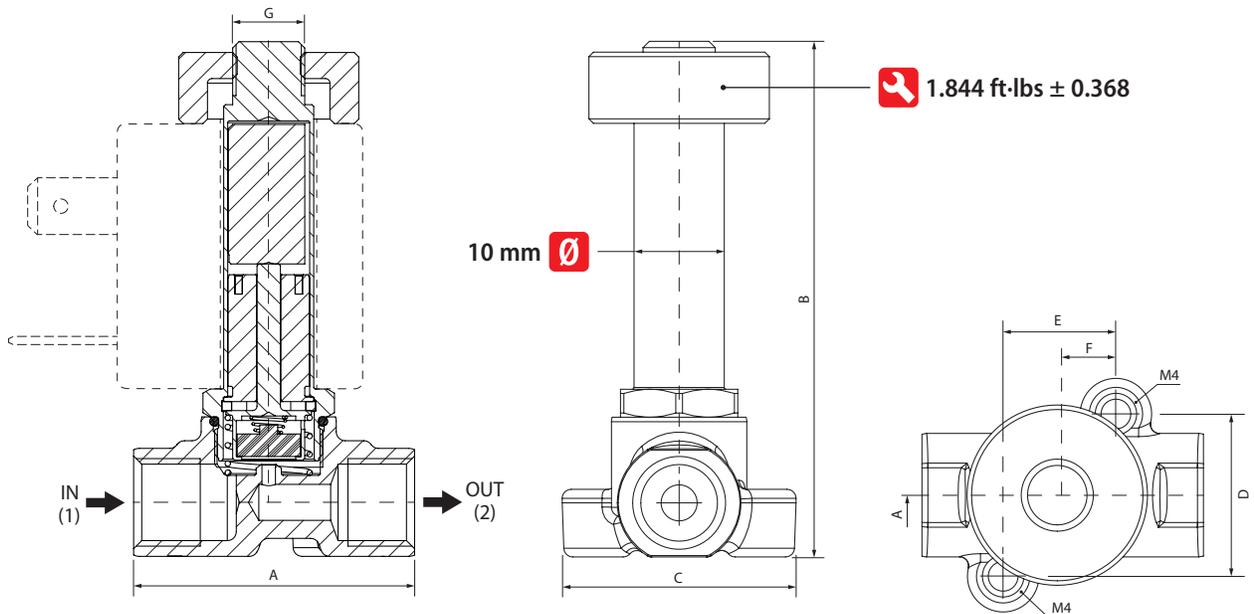
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)					
						inch (mm)	cSt	gpm (m³/h)	psi (bar)		
									Min	Max DC	Max AC
01F 02 2 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)			
01F 02 2 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)			
01F 02 2 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)			
01F 02 2 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)			
01F 03 2 15 _0 N	E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)			
01F 03 2 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)			
01F 03 2 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)			
01F 03 2 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)			

Power		Coils	
DC	AC	Size	Series
W	VA	mm	A - Page 15.2 B - Page 15.3
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



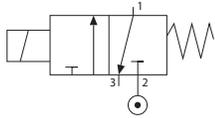
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/8"	1.228 (31.2)	2.251 (57.2)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 1
1/4"	1.456 (37)	2.370 (60.2)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 1

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 1 F	0 2 02 = 1/8" 03 = 1/4"	3 3 = 3/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N N = NBR E = EPDM V = FKM	0 0 = Standard	N N = NPTF	A A = A series - SOL10 A = 12V DC B B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

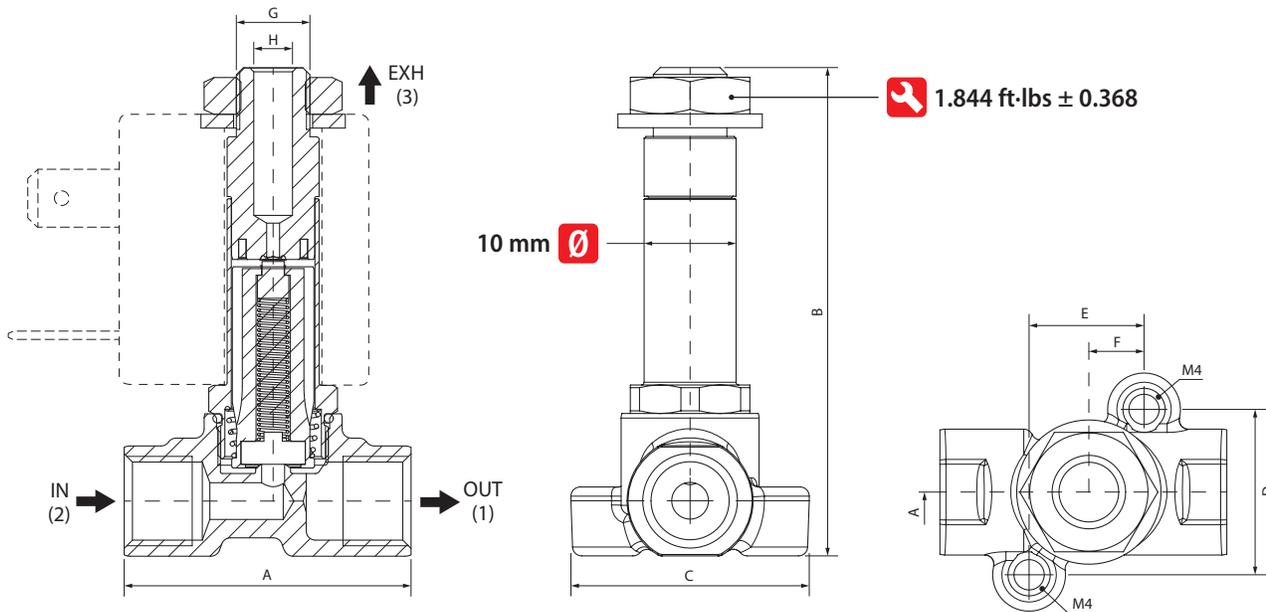
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils		
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	
01F 02 3 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/8"	1/16	1/16	25	0.07	0.06	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10	
01F 02 3 02 _0 N			5/64	1/16		25	0.10		0.06	0	87 (6)	87 (6)	8	11	30
01F 02 3 25 _0 N			3/32	1/16	25	0.17	0.06	0	58 (4)	58 (4)	6.5	7.5	22	A - SOL10	
01F 02 3 03 _0 N			1/8	1/16	25	0.23	0.06	0	-	44 (3)	8	11	30	B - SOL11	
01F 02 3 04 _0 N			5/32	1/16	25	0.35	0.06	0	-	15 (1)	8	11	30	B - SOL11	
01F 03 3 15 _0 N			1/16	1/16	1/4"	25	0.07	0.06	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
01F 03 3 02 _0 N		5/64	1/16	25		0.10	0.06	0		87 (6)	87 (6)	8	11	30	B - SOL11
01F 03 3 25 _0 N		3/32	1/16	25		0.17	0.06	0	58 (4)	58 (4)	6.5	7.5	22	A - SOL10	
01F 03 3 03 _0 N		1/8	1/16	25		0.23	0.06	0	-	44 (3)	8	11	30	B - SOL11	
01F 03 3 04 _0 N		5/32	1/16	25		0.35	0.06	0	-	15 (1)	8	11	30	B - SOL11	

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



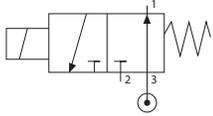
Size	A	B	C	D	E	F	G	H
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 1 F	0 2 02 = 1/8" 03 = 1/4"	4 4 = 3/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	N N = NPTF	A A = A series - SOL10 A = 12V DC B B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

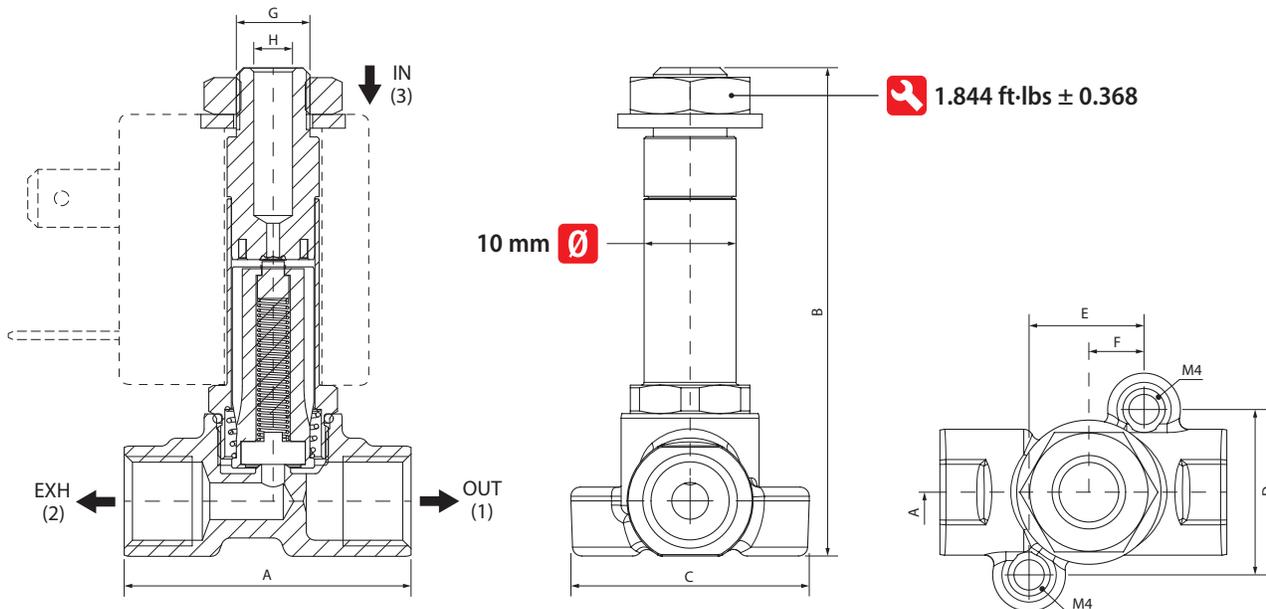
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils				
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series		
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3		
01F 02 4 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
01F 02 4 02 _0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/8"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
01F 03 4 15 _0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
01F 03 4 02 _0 N		1/4"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
01F 03 4 25 _0 N		1/4"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



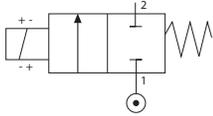
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 LATCHING

1/8" - 1/4"



Pulse switching ≥ 20 ms, polarity reversed



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit \varnothing 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 1 F	0 2 02 = 1/8" 03 = 1/4"	B B = 2/2 Latching	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	A A = A series - SOL10 A = 12V DC B B = B series - SOL11 B = 24V DC F = 3V DC H = 9V DC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

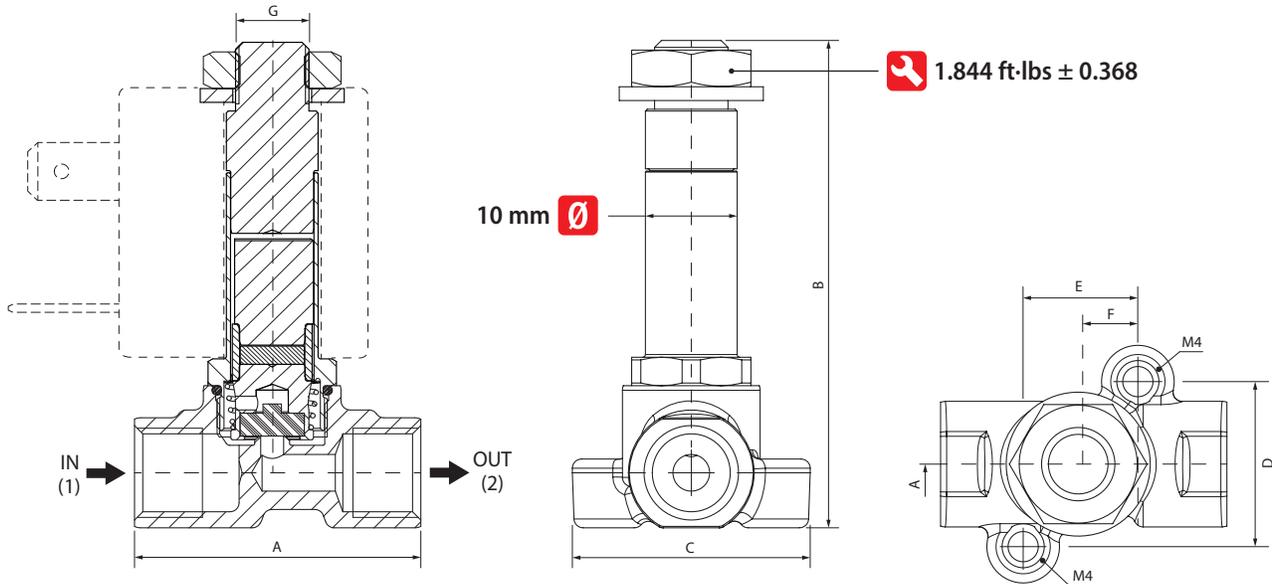
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						gpm (m³/h)	psi (bar)	
							Min	Max DC
01F 02 B 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	145 (10) 290 (20) 507 (35)	
01F 02 B 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	94 (6.5) 188 (13) 333 (23)	
01F 02 B 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	36 (2.5) 72 (5) 145 (10)	
01F 02 B 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	43 (3) 797 (5.5)	
01F 03 B 15 _0 N		1/4"	1/16 (1.5)	25	0.07 (0.06)	0	145 (10) 290 (20) 507 (35)	
01F 03 B 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	94 (6.5) 188 (13) 333 (23)	
01F 03 B 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	36 (2.5) 72 (5) 145 (10)	
01F 03 B 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	43 (3) 797 (5.5)	

DC	Coils	
	Size	Series
W	mm	A - Page 15.2 B - Page 15.3
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11

① Select seal material

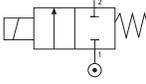
With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

2/2 NC

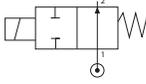



1/8" - 1/4"

Page 2.3



2/2 NO

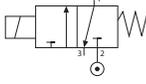



1/8" - 1/4"

Page 2.5



3/2 NC

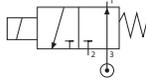



1/8" - 1/4"

Page 2.7



3/2 NO

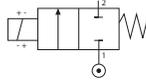



1/8" - 1/4"

Page 2.9



2/2 LATCHING

1/8" - 1/4"

Page 2.11



22 mm



Series A

Page 15.2



30 mm



Series B

Page 15.3




Connectors

Page 15.8 - 15.10



DIRECT ACTING SOLENOID VALVES IN STAINLESS STEEL 316L

Ex
II 2 G/D Ex h

C **UL** **US**
CSA C22.2

AISI 316L



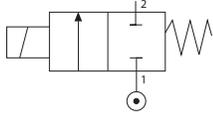
Series X1F

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM - CR - NBR ❄️
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 1 F	0 2	1	1 5	N	0	N	A A
	02 = 1/8" 03 = 1/4"	1 = 2/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR E = EPDM V = FKM C = CR F = NBR ❄️	0 = Standard	N = NPTF	A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

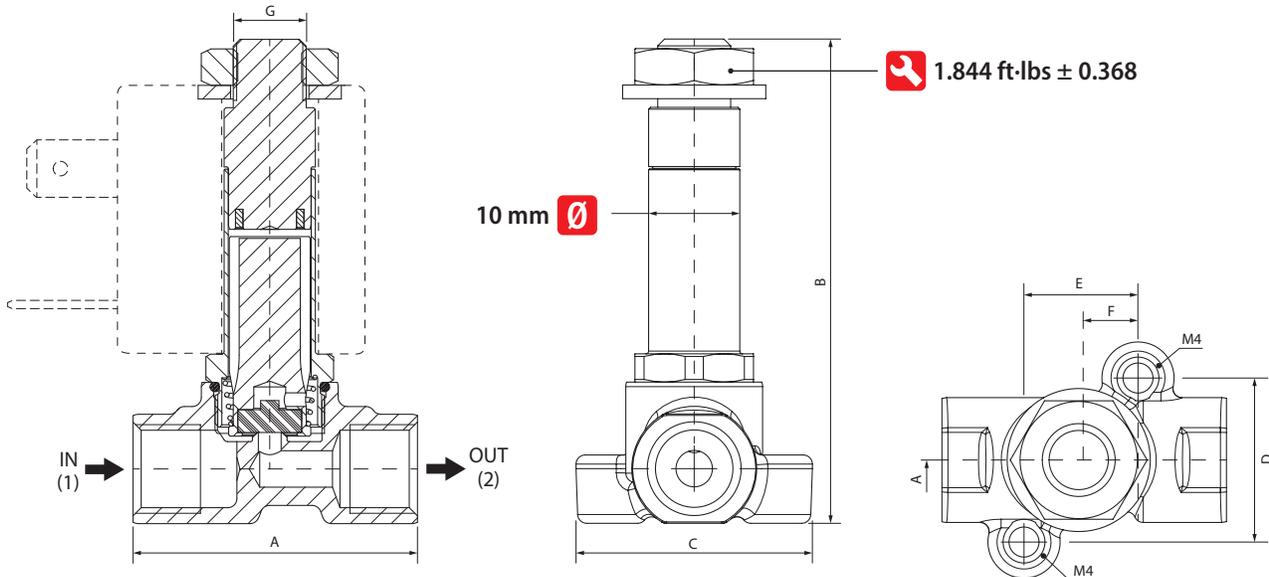
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)					
						inch (mm)	cSt	gpm (m³/h)	psi (bar)		
									Min	Max DC	Max AC
X1F 02 1 15_0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16) 580 (40)	435 (30) 580 (40)			
X1F 02 1 02_0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12) 435 (30)	363 (25) 580 (40)			
X1F 02 1 25_0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5) 189 (13)	261 (18) 435 (30)			
X1F 02 1 03_0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3) 102 (7)	145 (10) 232 (16)			
X1F 02 1 04_0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1) 36 (2.5)	58 (4) 116 (8)			
X1F 03 1 15_0 N	C = CR -31°F +212°F (-35°C +100°C) F = NBR ❄️ -40°F +194°F (-40°C +90°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16) 580 (40)	435 (30) 580 (40)			
X1F 03 1 02_0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12) 435 (30)	363 (25) 580 (40)			
X1F 03 1 25_0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5) 189 (13)	261 (18) 435 (30)			
X1F 03 1 03_0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3) 102 (7)	145 (10) 232 (16)			
X1F 03 1 04_0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1) 36 (2.5)	58 (4) 116 (8)			

Power		Coils	
DC	AC	Size	Series
W	VA	mm	A - Page 15.2 B - Page 15.3
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11
6.5	7.5	22	A - SOL10
8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



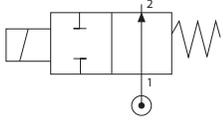
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 1 F	0 2	2	1 5	N	0	N	A A
	02 = 1/8" 03 = 1/4"	2 = 2/2 NO	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3)	N = NBR E = EPDM V = FKM C = CR	0 = Standard	N = NPTF	A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

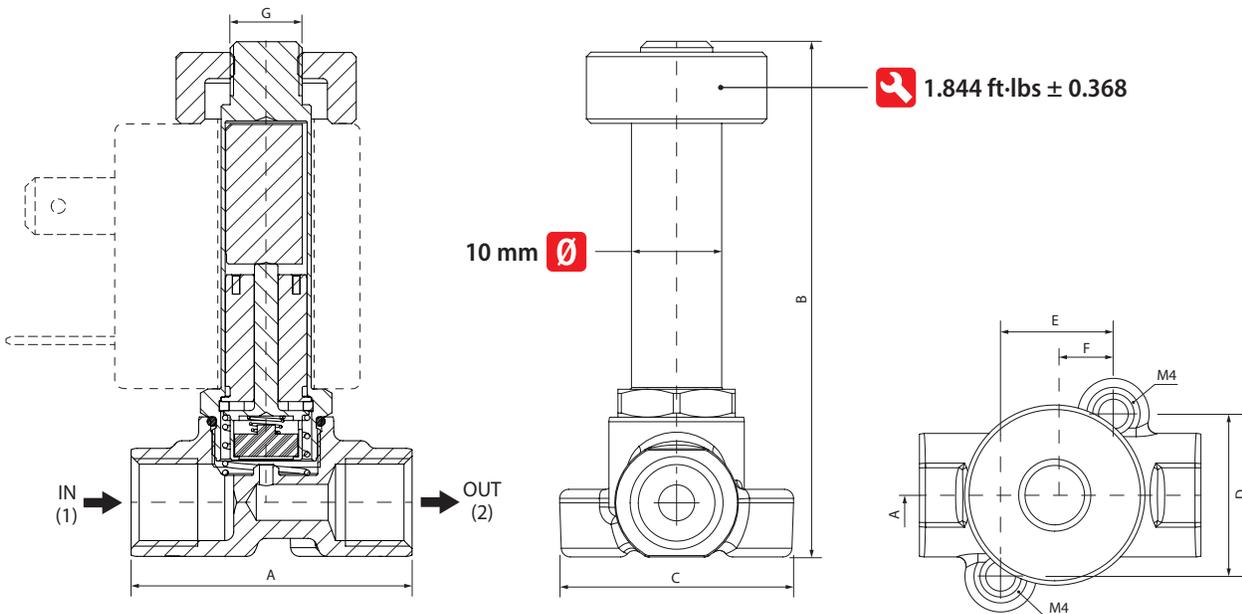
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						inch (mm)	psi (bar)	
							Min	Max DC
①	①	NPTF		cSt	gpm (m ³ /h)			
X1F 02 2 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)
X1F 02 2 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)
X1F 02 2 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)
X1F 02 2 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)
X1F 03 2 15 _0 N	E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)
X1F 03 2 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)
X1F 03 2 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)
X1F 03 2 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)

Power		Coils	
DC	AC	Size	Series
W	VA	mm	A - Page 15.2 B - Page 15.3
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



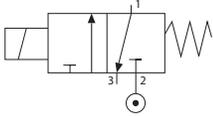
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/8"	1.228 (31.2)	2.251 (57.2)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 1
1/4"	1.456 (37)	2.370 (60.2)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 1

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 1 F	0 2	3	1 5	N	0	N	A A
	02 = 1/8" 03 = 1/4"	3 = 3/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

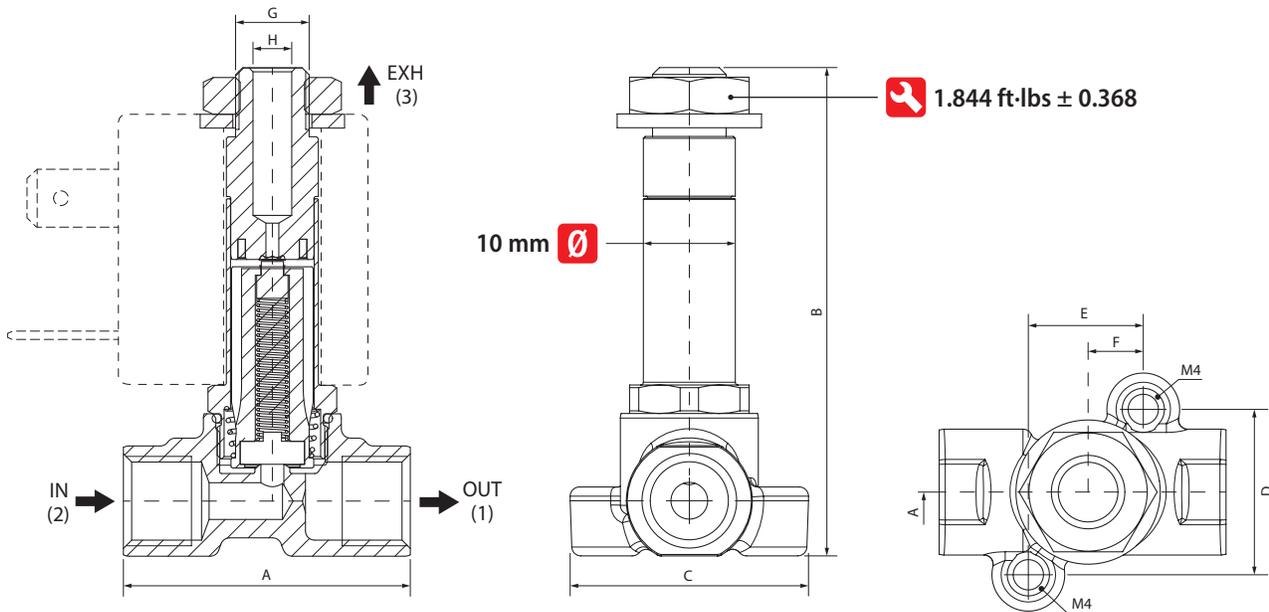
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils		
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
X1F 02 3 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/8"	1/16	1/16	25	0.07	0.06	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10	
X1F 02 3 02 _0 N			5/64	1/16		25	0.10		0.06	0	87 (6)	87 (6)	8	11	30
X1F 02 3 25 _0 N			3/32	1/16	25	0.17	0.06	0	58 (4)	58 (4)	6.5	7.5	22	A - SOL10	
X1F 02 3 03 _0 N			1/8	1/16	25	0.23	0.06	0	-	44 (3)	8	11	30	B - SOL11	
X1F 02 3 04 _0 N			5/32	1/16	25	0.35	0.06	0	-	15 (1)	8	11	30	B - SOL11	
X1F 03 3 15 _0 N			1/16	1/16	1/4"	25	0.07	0.06	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
X1F 03 3 02 _0 N		5/64	1/16	25		0.10	0.06	0		87 (6)	87 (6)	8	11	30	B - SOL11
X1F 03 3 25 _0 N		3/32	1/16	25		0.17	0.06	0	58 (4)	58 (4)	6.5	7.5	22	A - SOL10	
X1F 03 3 03 _0 N		1/8	1/16	25		0.23	0.06	0	-	44 (3)	8	11	30	B - SOL11	
X1F 03 3 04 _0 N		5/32	1/16	25		0.35	0.06	0	-	15 (1)	8	11	30	B - SOL11	

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



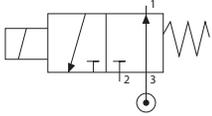
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
 -10°C +80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 1 F	0 2	4	1 5	N	0	N	A A
	02 = 1/8" 03 = 1/4"	4 = 3/2 NO	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

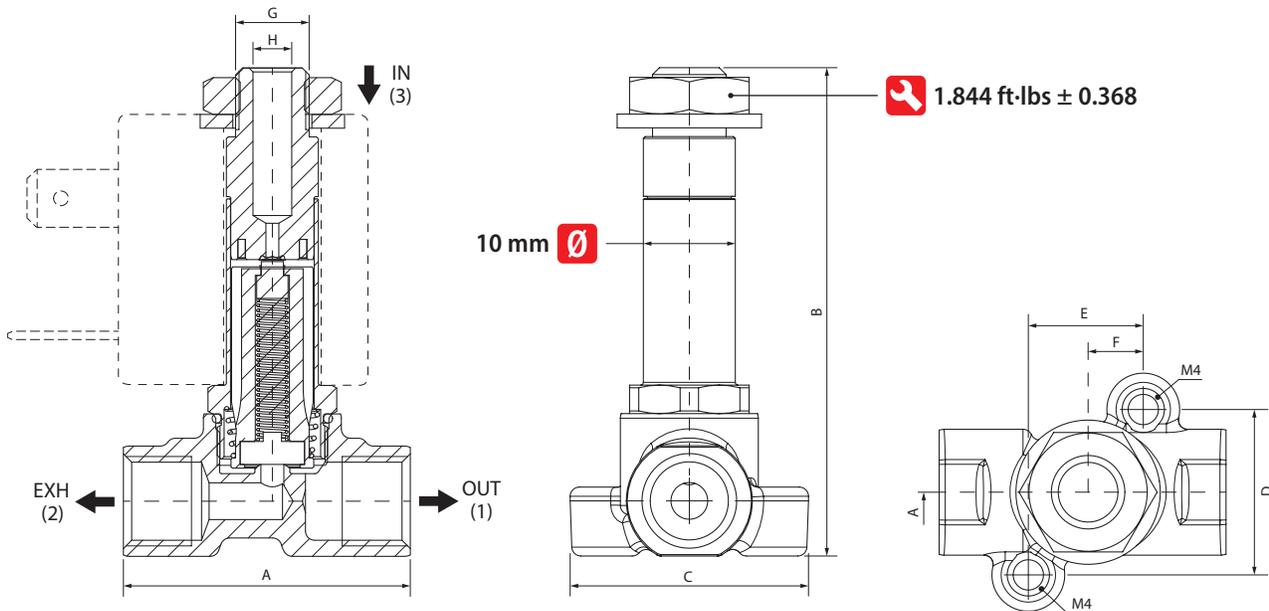
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils				
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series		
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3		
X1F 02 4 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
X1F 02 4 02 _0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/8"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
X1F 03 4 15 _0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
X1F 03 4 02 _0 N		1/4"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								
X1F 03 4 25 _0 N		1/4"	1/16	1/16	25	0.06	0.07	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10			
1/16			5/64	0.06		0.10	145 (10)		145 (10)	8					11	30	B - SOL11
1/16			3/32	0.06		0.17	58 (4)		145 (10)								

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



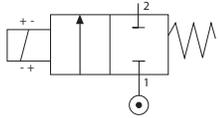
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 LATCHING

1/8" - 1/4"



Pulse switching ≥ 20 ms, polarity reversed



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 1 F	0 2	1	1 5	N	0	N	A A
	02 = 1/8" 03 = 1/4"	B = 2/2 Latching	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR E = EPDM V = FKM C = CR	0 = Standard	N = NPTF	A = A series - SOL10 B = B series - SOL11 A = 12V DC B = 24V DC F = 3V DC H = 9V DC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit \varnothing 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry

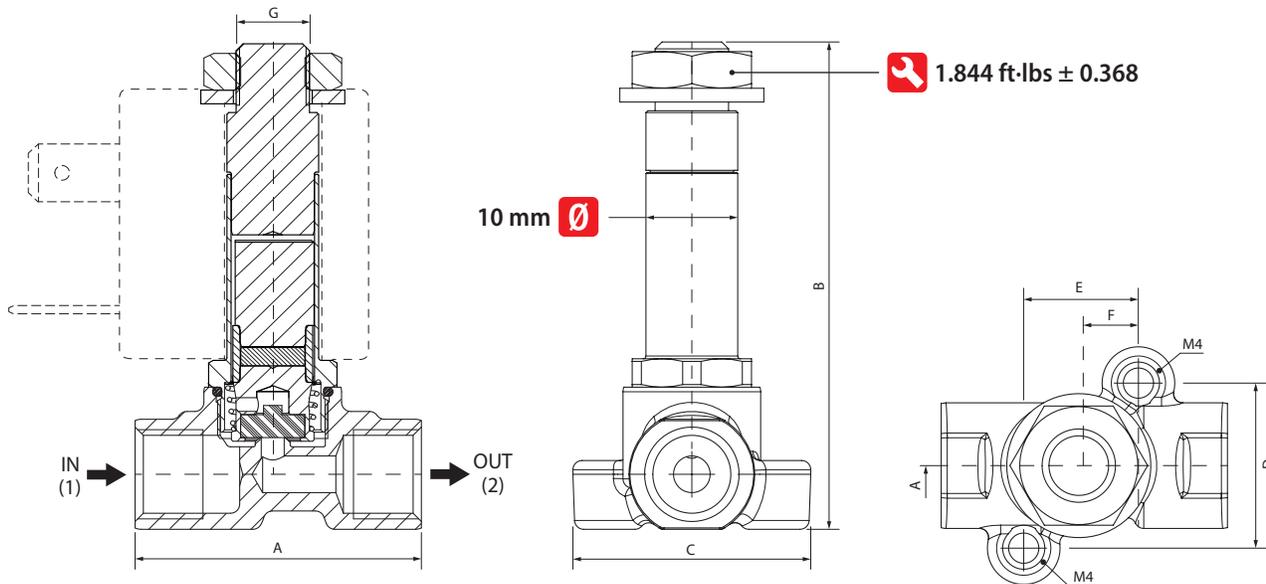
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						gpm (m³/h)	psi (bar)	
							Min	Max DC
X1F 02 B 15_0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	145 (10) 290 (20) 507 (35)	
X1F 02 B 02_0 N			5/64 (2)	37	0.10 (0.09)	0	94 (6.5) 188 (13) 333 (23)	
X1F 02 B 25_0 N			3/32 (2.5)	53	0.17 (0.15)	0	36 (2.5) 72 (5) 145 (10)	
X1F 02 B 03_0 N			1/8 (3)	53	0.23 (0.20)	0	43 (3) 797 (5.5)	
X1F 03 B 15_0 N	E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	145 (10) 290 (20) 507 (35)	
X1F 03 B 02_0 N			5/64 (2)	37	0.10 (0.09)	0	94 (6.5) 188 (13) 333 (23)	
X1F 03 B 25_0 N			3/32 (2.5)	53	0.17 (0.15)	0	36 (2.5) 72 (5) 145 (10)	
X1F 03 B 03_0 N			1/8 (3)	53	0.23 (0.20)	0	43 (3) 797 (5.5)	

DC	Coils	
	Size	Series
W	mm	A - Page 15.2 B - Page 15.3
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11
2	22	A - SOL10
3	22	A - SOL10
4	30	B - SOL11

① Select seal material

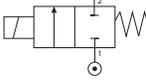
With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

2/2 NC

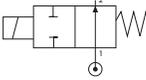



25 x 25 mm

Page 3.3



2/2 NO

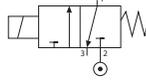



25 x 25 mm

Page 3.5



3/2 NC

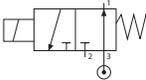



25 x 25 mm

Page 3.7



3/2 NO

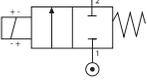



25 x 25 mm

Page 3.9



2/2 LATCHING

25 x 25 mm

Page 3.11



22 mm



Series A

Page 15.2



30 mm



Series B

Page 15.3




Connectors

Page 15.8 - 15.10



**DIRECT ACTING SOLENOID VALVES WITH FLANGE
FIXING AND BRASS CW510L BODY - PB ≤ 0.1%**

CW510L / Pb ≤ 0.1%

Ex
II 2 G/D Ex h

UL US
CSA C22.2



Series F1F

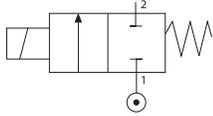
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NC

25 x 25 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM - CR - NBR ❄️
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 1 F	J 4 J4 = □ 25x25 mm	1 1 = 2/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM C = CR F = NBR ❄️	0 0 = Standard	A A A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

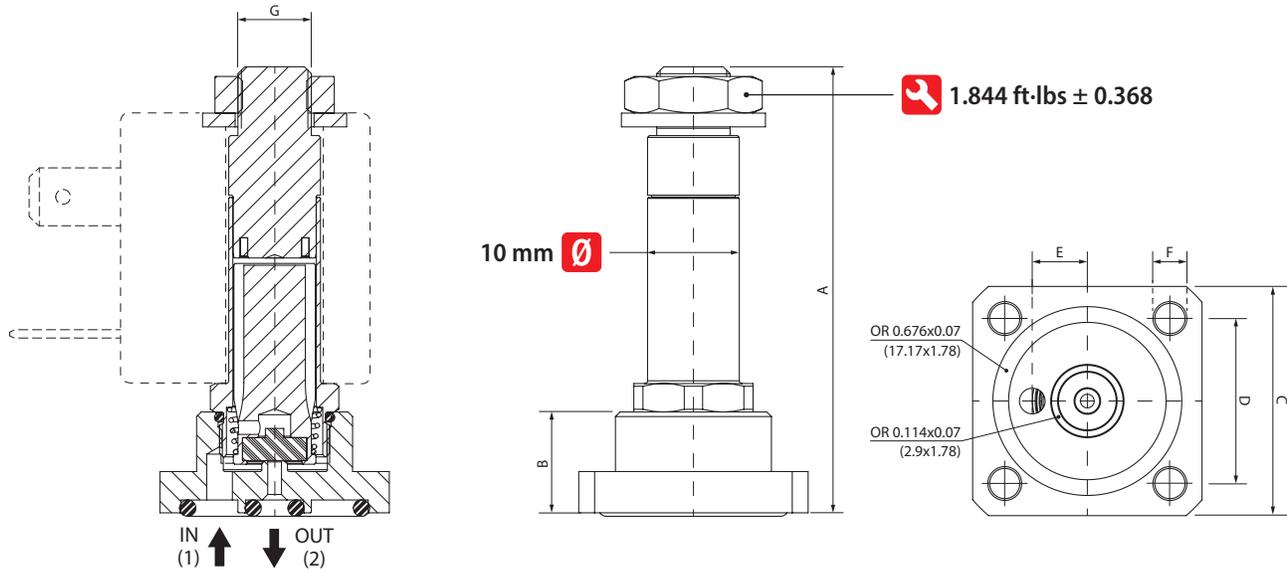
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils				
						inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series
									Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
F1F J4 1 15 _0	N = NBR +14°F +194°F (-10°C +90°C)		1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL10			
							580 (40)	580 (40)	8	11	30	B - SOL11			
F1F J4 1 02 _0	V = FKM +14°F +284°F (-10°C +140°C)	□ 25x25 mm	5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL10			
							435 (30)	580 (40)	8	11	30	B - SOL11			
F1F J4 1 25 _0	C = CR -31°F +212°F (-35°C +100°C)		3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL10			
							189 (13)	435 (30)	8	11	30	B - SOL11			
	F = NBR ❄️ -40°F +194°F (-40°C +90°C)														

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
□ 25x25 mm	1.915 (48.65)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M8 x 0.75

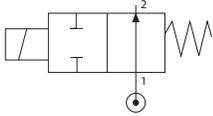
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NO

25 x 25 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 1 F	J 4 J4 = □ 25x25 mm	2 2 = 2/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	A A A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

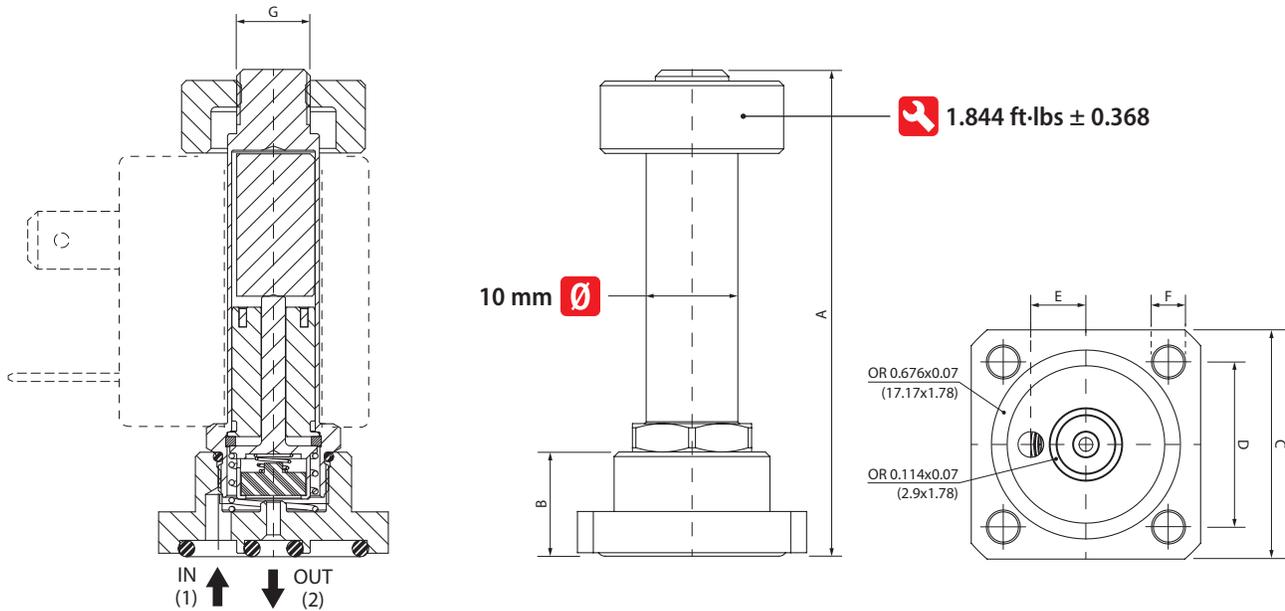
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils				
						inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series
									Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
F1F J4 2 15 _0	N = NBR +14°F +194°F (-10°C +90°C)	□ 25x25 mm	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)	-	7.5	22	A - SOL10			
F1F J4 2 02 _0	V = FKM +14°F +284°F (-10°C +140°C)		5/64 (2)	37	0.10 (0.09)	0	-	145 (10)	8	11	30	B - SOL11			
F1F J4 2 25 _0	E = EPDM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)	-	7.5	22	A - SOL10			
	C = CR -31°F +212°F (-35°C +100°C)						94 (6.5)	94 (6.5)	8	11	30	B - SOL11			

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
□ 25x25 mm	2.271 (57.7)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M8 x 1

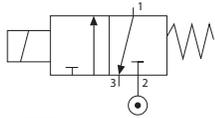
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NC

25 x 25 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 1 F	J 4 J4 = □ 25x25 mm	3 3 = 3/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	A A A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

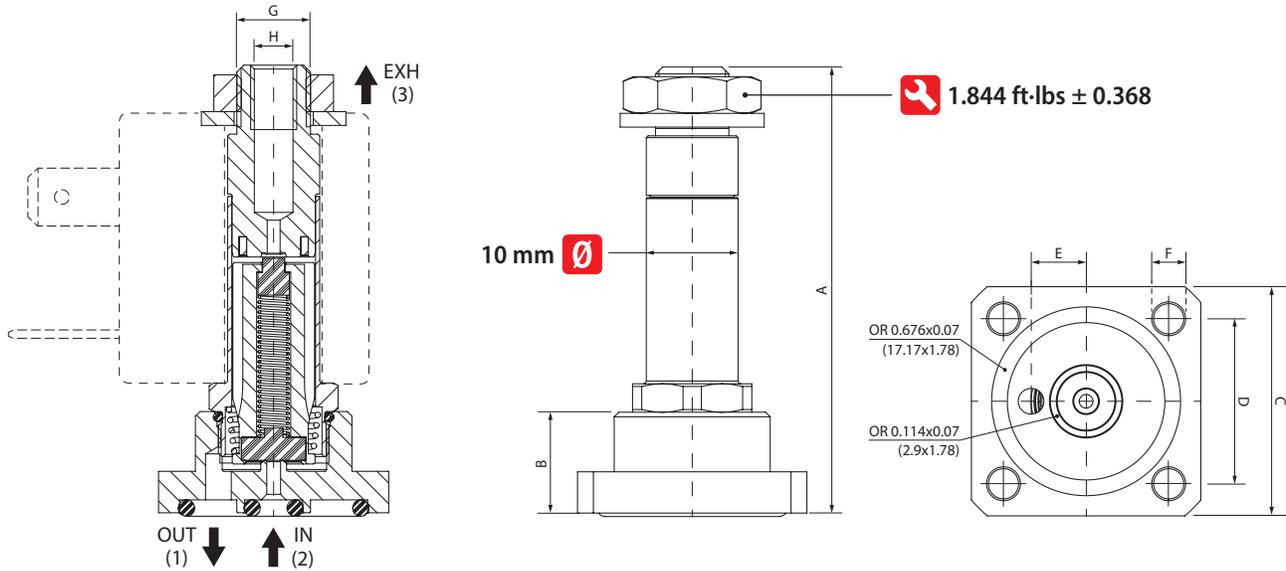
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils		
			inch (mm)			cSt	gpm (m ³ /h)		psi (bar)			DC	AC	Size	Series
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
F1F J4 3 15 _0	N = NBR +14°F +194°F (-10°C +90°C)	□ 25x25 mm	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10	
F1F J4 3 02 _0	V = FKM +14°F +284°F (-10°C +140°C)		5/64 (2)	1/16 (1.4)	25	0.10 (0.09)	0.06 (0.05)	0	87 (6)	87 (6)	8	11	30	B - SOL11	
F1F J4 3 25 _0	E = EPDM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	1/16 (1.4)	25	0.17 (0.15)	0.06 (0.05)	0	58 (4)	58 (4)	6.5	7.5	22	A - SOL10	
									58 (4)	58 (4)	8	11	30	B - SOL11	

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A	B	C	D	E	F	H	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
□ 25x25 mm	1.915 (48.65)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M5	M8 x 0.75

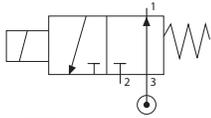
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NO

25 x 25 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 1 F	J 4 J4 = □ 25x25 mm	4 4 = 3/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	A A A = A series - SOL10 A = 12V DC B = B series - SOL11 B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

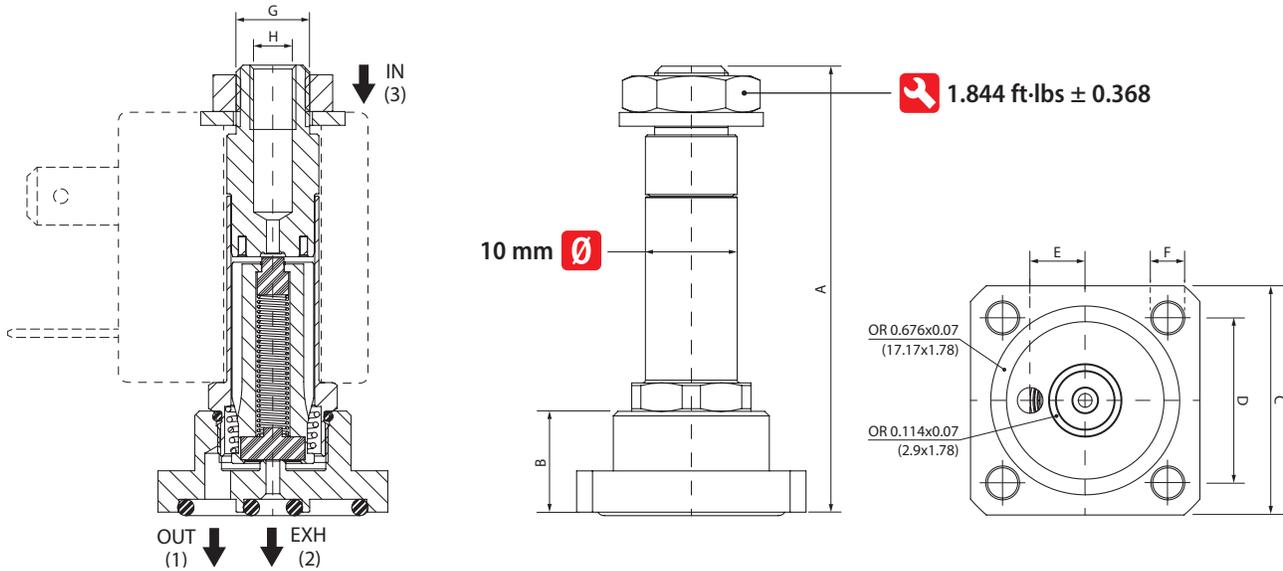
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils		
			inch (mm)			cSt	gpm (m ³ /h)		psi (bar)			DC	AC	Size	Series
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
F1F J4 4 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C)	□ 25x25 mm	1/16 (1.4)	1/16 (1.5)	25	0.06 (0.05)	0.07 (0.06)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10 B - SOL11	
F1F J4 4 02 _ 0	V = FKM +14°F +284°F (-10°C +140°C)		1/16 (1.4)	5/64 (2)		0.06 (0.05)	0.10 (0.09)		145 (10)	145 (10)					8
F1F J4 4 25 _ 0	E = EPDM +14°F +284°F (-10°C +140°C)		1/16 (1.4)	3/32 (2.5)		0.06 (0.05)	0.17 (0.15)	58 (4)	145 (10)	6.5	7.5	22	A - SOL10 B - SOL11		

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A	B	C	D	E	F	H	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
□ 25x25 mm	1.915 (48.65)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M5	M8 x 0.75

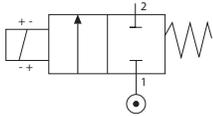
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 LATCHING

25 x 25 mm

CW510L
Pb ≤ 0.1%



Pulse switching ≥20 ms, polarity reversed

Ordering codes



Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 1 F	J 4 J4 = □ 25x25 mm	B B = 2/2 Latching	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	A A A = A series - SOL10 B = B series - SOL11 A = 12V DC B = 24V DC F = 3V DC H = 9V DC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

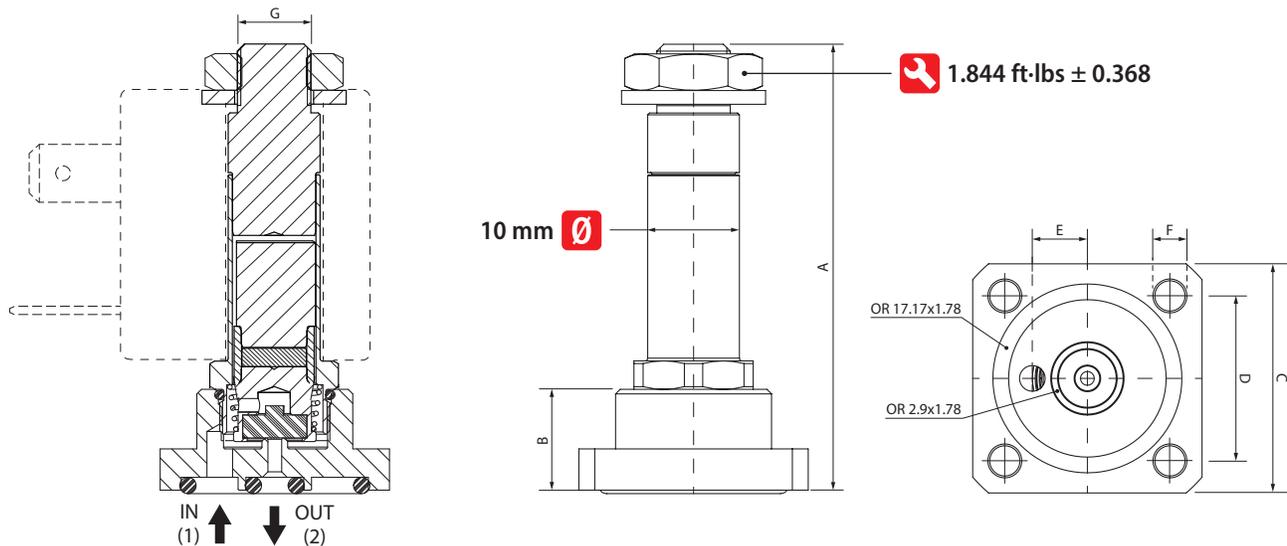
- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		Power	Coils					
						inch (mm)	cSt		gpm (m³/h)	psi (bar)		DC	Size	Series
										Min	Max DC			
F1F J4 B 15 _0	N = NBR +14°F +194°F (-10°C +90°C)	 25x25 mm	1/16 (1.5)	25	0.07 (0.06)	0	145 (10)	2	22	A - SOL10				
							290 (20)							
							507 (35)							
F1F J4 B 02 _0	V = FKM +14°F +284°F (-10°C +140°C)	 25x25 mm	5/64 (2)	25	0.10 (0.09)	0	94 (6.5)	2	22	A - SOL10				
							188 (13)							
							333 (23)							
F1F J4 B 25 _0	C = CR -31°F +212°F (-35°C +100°C)	 25x25 mm	3/32 (2.5)	25	0.17 (0.15)	0	36 (2.5)	2	22	A - SOL10				
							72 (5)							
							145 (10)							

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

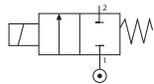
Coil not included



Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
25x25 mm	1.915 (48.65)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M8 x 0.75



2/2 NC



1/8"
Page 4.3




22 mm

Series A
Page 15.2




Connectors
Page 15.8 - 15.10

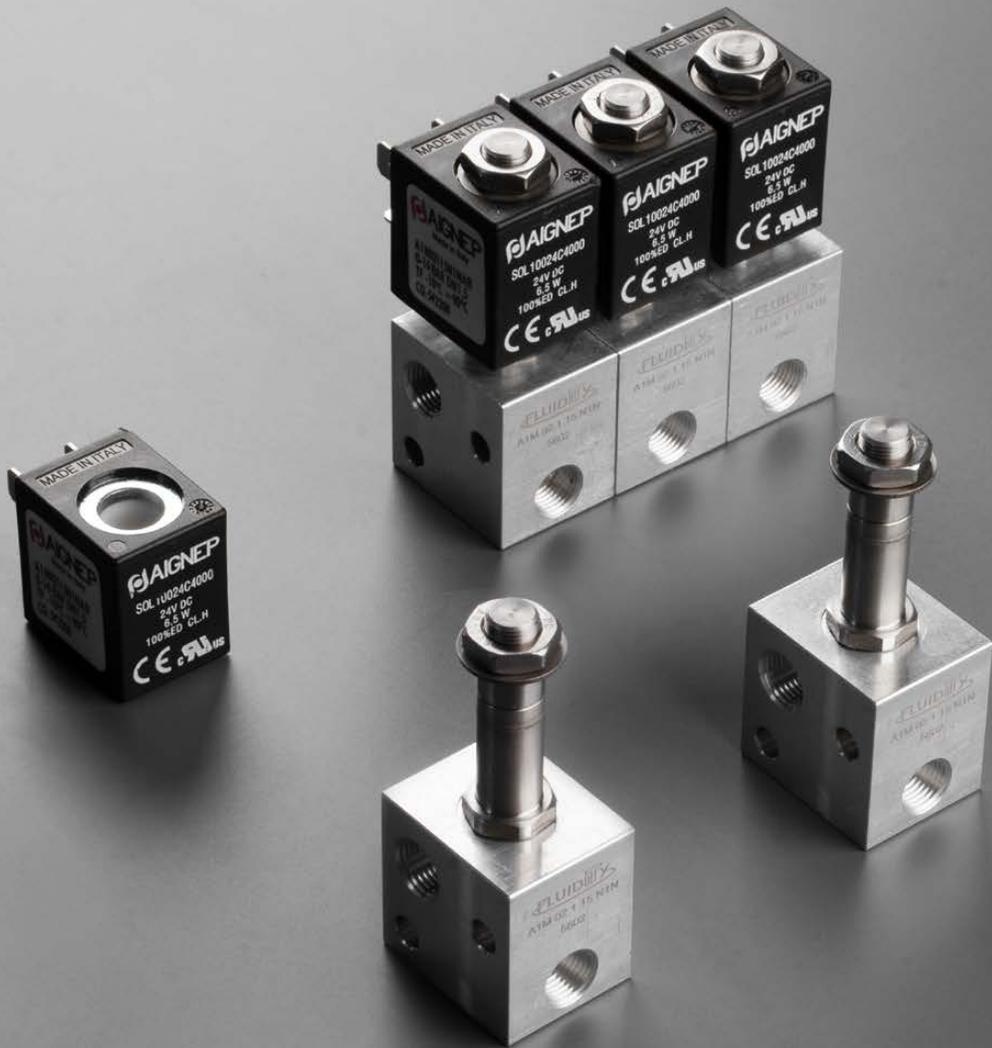


DIRECT-ACTING SOLENOID VALVES WITH ALUMINUM BODY



Series A1M

A1M

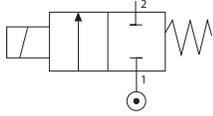


Series A1M

DIRECT-ACTING SOLENOID VALVES WITH ALUMINUM BODY

2/2 NC

1/8"



Component Parts and Materials

- 1 Body: Aluminum
- 2 Seals: NBR – EPDM – FKM
- 3 Guide tube: Stainless steel
- 4 Fixed and moving core: AISI 430FR stainless steel
- 5 Springs: Stainless steel



General features - A1M

- Universal mounting position
- Single valve or manifold assembly
- Compact dimensions
- Operator kit Ø 10 mm
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	N. of Elements	Thread	Suitable coils
A 1 M	0 2 02 = 1/8"	1 1 = 2/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3)	N N = NBR E = EPDM V = FKM	1 1 = 1 Element 2 = 2 Elements 3 = 3 Elements _ = _ Elements 10 = 10 Elements	N N = NPTF	A A A = A series - SOL10 A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils				
						inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series
									Min	Max DC	Max AC	W	VA	mm	A - Page 15.2
A1M 02 1 15 __ N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	NPTF	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL10		
A1M 02 1 02 __ N				5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)						
A1M 02 1 25 __ N				3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)						
A1M 02 1 03 __ N				1/8 (3)	53	0.23 (0.20)	0	44 (3)	145 (10)						

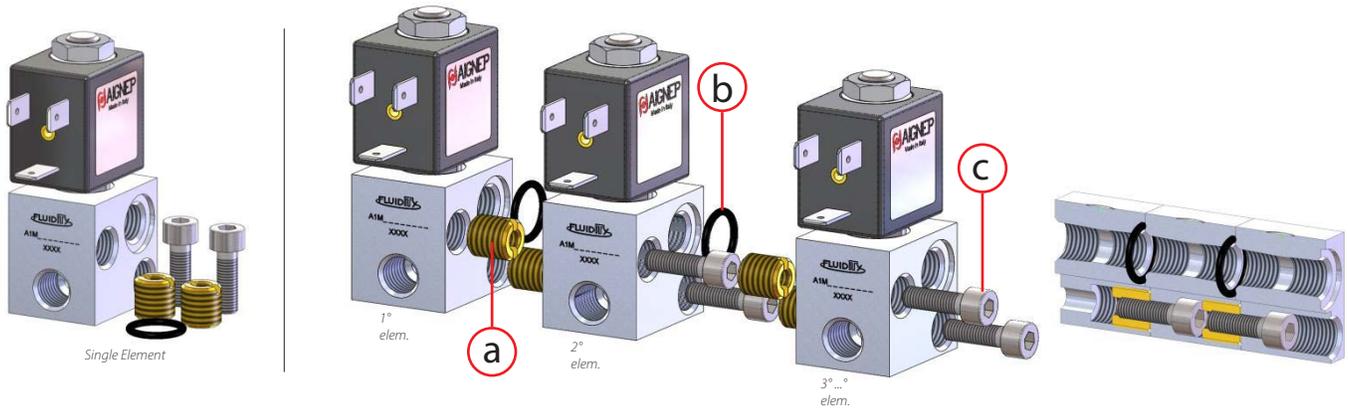
① Select seal material

② Select Q.ty of Valve Elements (1 ÷ 10 *)

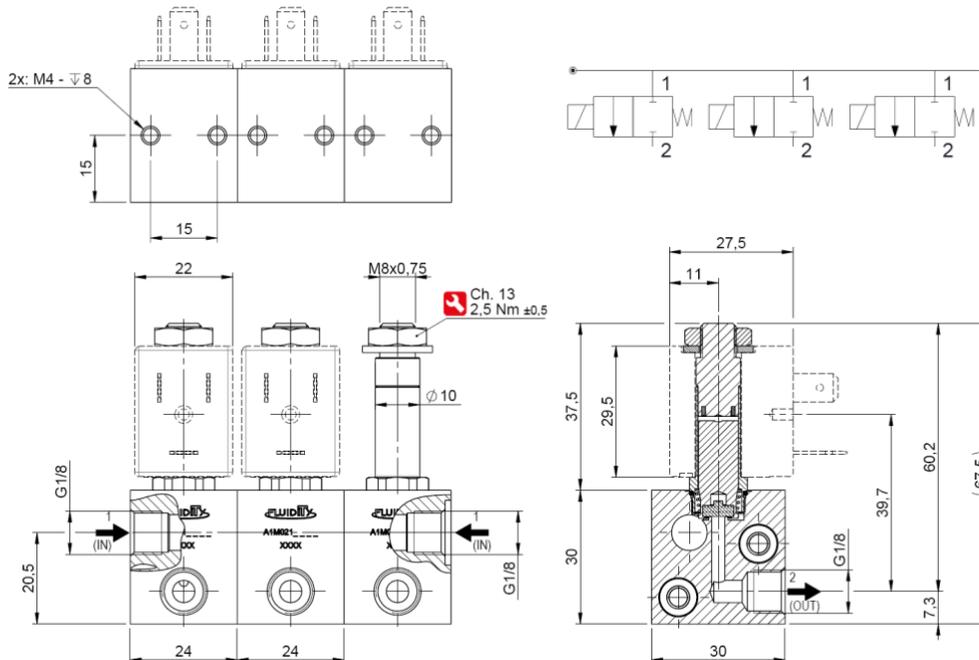
Coil not included

(*) The elements may also be more than 10, depending on the maximum number of valves actuated simultaneously and the orifice diameter (please contact Aignep for further details).

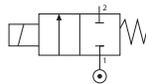
The manifold version is pre-assembled by Aignep, with the valve element quantity indicated in the code. If ordered individually or for subsequent additions, proceed with assembly as described below.



- A. Screw in the set screws (a) fully to the end of the thread without tightening them against the first valve element.
 - B. Place the O-ring (b) in its designated seat.
 - C. Bring the second valve element close to the previous one and tighten the two screws (c) to a torque of 2.5 Nm.
 - D. Repeat steps "A" through "D" for all additional valve elements.
- On the last element, DO NOT insert the set screws (a) or the O-ring (b).



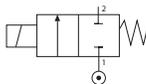
2/2 NC

1/4"
Page 5.3



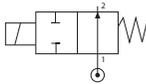
2/2 NC

3/8" - 1/2"
Page 5.5



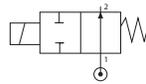
2/2 NO

1/4"
Page 5.7



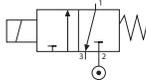
2/2 NO

3/8" - 1/2"
Page 5.9



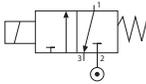
3/2 NC

1/4"
Page 5.11



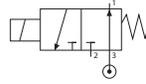
3/2 NC

3/8" - 1/2"
Page 5.13



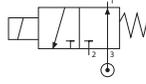
3/2 NO

1/4"
Page 5.15



3/2 NO

3/8" - 1/2"
Page 5.17



30 mm



Series C
Page 15.4



30 mm



Series D
Page 15.5



36 mm



Series E
Page 15.6




Connectors
Page 15.8 - 15.10



DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

Ex
II 2 G/D Ex h

C **UL** **US**
CSA C22.2



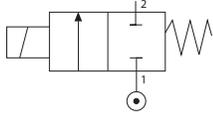
Series 02F

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE - RUBY - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

1450 psi (100 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 3 03 = 1/4"	1 1 = 2/2 NC	0 1 01 = 1/32 (1) 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5) 64 = 1/4 (6.4)	N N = NBR F = NBR E = EPDM V = FKM P = PTFE R = RUBY C = CR	0 0 = Standard 3 = Stainless Steel seat (on request)	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						gpm (m³/h)	psi (bar)	
							Min	Max DC
02F 03 1 01 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	NPTF 1/4"	1/32 (1)	25	0.05 (0.04)	0	1450 (100)	1450 (100)
02F 03 1 15 _0 N	F = NBR -40°F +194°F (-40°C +90°C)		1/16 (1.5)	25	0.07 (0.06)	0	725 (50)	725 (50)
02F 03 1 02 _0 N	V = FKM +14°F +284°F (-10°C +140°C)		5/64 (2)	37	0.12 (0.10)	0	508 (35)	725 (50)
02F 03 1 25 _0 N	E = EPDM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	53	0.17 (0.15)	0	305 (21)	508 (35)
02F 03 1 03 _0 N	P = PTFE * -40°F +356°F (-40°C +180°C)		1/8 (3)	53	0.24 (0.21)	0	362 (25)	435 (30)
02F 03 1 04 _0 N	R = RUBY * -40°F +356°F (-40°C +180°C)		5/32 (4)	53	0.41 (0.35)	0	44 (3)	145 (10)
02F 03 1 05 _0 N	C = CR -31°F +212°F (-35°C +100°C)		13/64 (5)	53	0.59 (0.51)	0	20 (1.4)	73 (5)
02F 03 1 64 _0 N			1/4 (6.4)	53	0.76 (0.65)	0	22 (1.5)	51 (3.5)
								65 (4.5)

Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21

① Select seal material

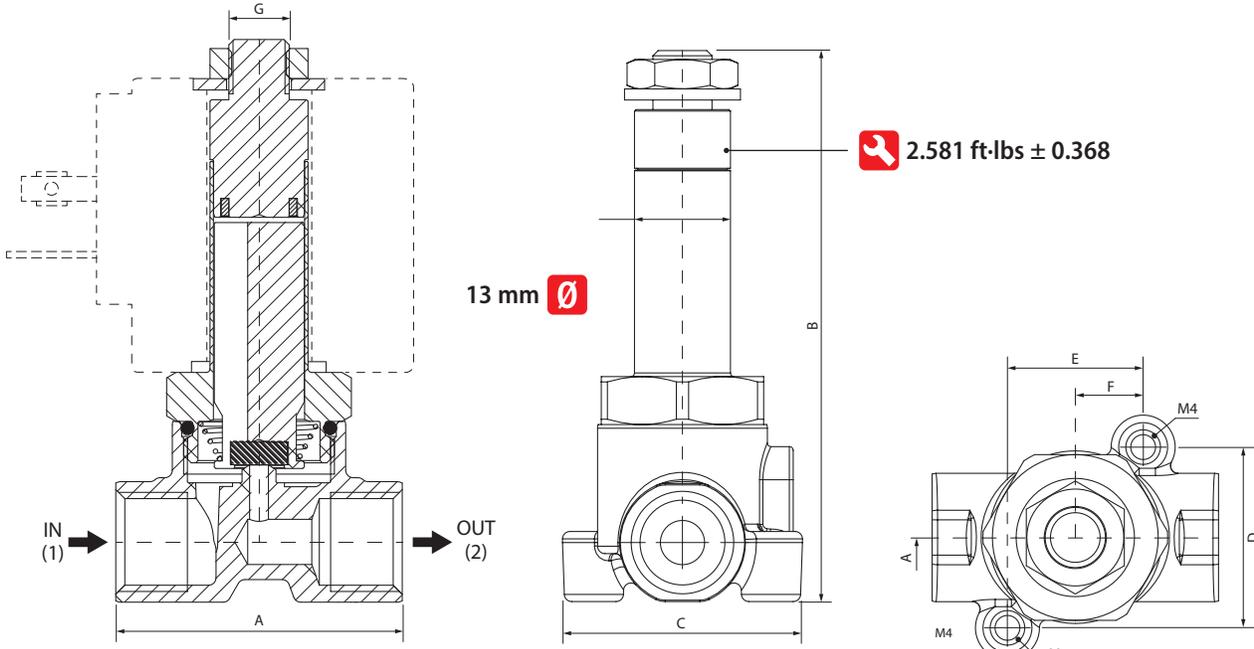
With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE & RUBY - P max = 145 psi (10 bar)

Allowable leakage: PTFE & RUBY = max 0.08 gph (300 cm³/h)

* RUBY - orifice max Ø 3/32" (2.5 mm): Only with stainless steel seat

* PTFE - orifice max Ø 5/32" (4 mm): Only with stainless steel seat

Coil not included



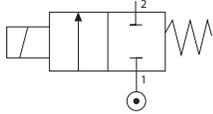
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

3/8" - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 4 04 = 3/8" 05 = 1/2"	1 1 = 2/2 NC	0 3 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5) 64 = 1/4 (6.4)	N N = NBR F = NBR E = EPDM V = FKM P = PTFE C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						psi (bar)	Max DC	Max AC
		NPTF	inch (mm)	cSt	gpm (m ³ /h)	Min		
02F 04 1 03 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	3/8"	1/8 (3)	53	0.24 (0.21)	0	145 (10)	305 (21)
362 (25)							435 (30)	
580 (40)							580 (40)	
02F 04 1 04 _0 N			F = NBR -40°F +194°F (-40°C +90°C)	3/8"	5/32 (4)	53	0.41 (0.35)	0
87 (6)	203 (14)							
218 (15)	290 (20)							
02F 04 1 05 _0 N	V = FKM +14°F +284°F (-10°C +140°C)	3/8"	13/64 (5)	53	0.59 (0.51)	0	20 (1.4)	73 (5)
32 (2.2)							102 (7)	
80 (5.5)							145 (10)	
02F 04 1 64 _0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	1/4 (6.4)	53	0.76 (0.65)	0	-	36 (2.5)
22 (1.5)							51 (3.5)	
65 (4.5)							73 (5)	
02F 05 1 03 _0 N	P = PTFE * -40°F +356°F (-40°C +180°C)	1/2"	1/8 (3)	53	0.24 (0.21)	0	145 (10)	305 (21)
362 (25)							435 (30)	
580 (40)							580 (40)	
02F 05 1 04 _0 N	C = CR -31°F +212°F (-35°C +100°C)	1/2"	5/32 (4)	53	0.41 (0.35)	0	44 (3)	145 (10)
87 (6)							203 (14)	
218 (15)							290 (20)	
02F 05 1 05 _0 N	C = CR -31°F +212°F (-35°C +100°C)	1/2"	13/64 (5)	53	0.59 (0.51)	0	20 (1.4)	73 (5)
32 (2.2)							102 (7)	
80 (5.5)							145 (10)	
02F 05 1 64 _0 N	C = CR -31°F +212°F (-35°C +100°C)	1/2"	1/4 (6.4)	53	0.76 (0.65)	0	-	36 (2.5)
22 (1.5)							51 (3.5)	
65 (4.5)							73 (5)	

Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21

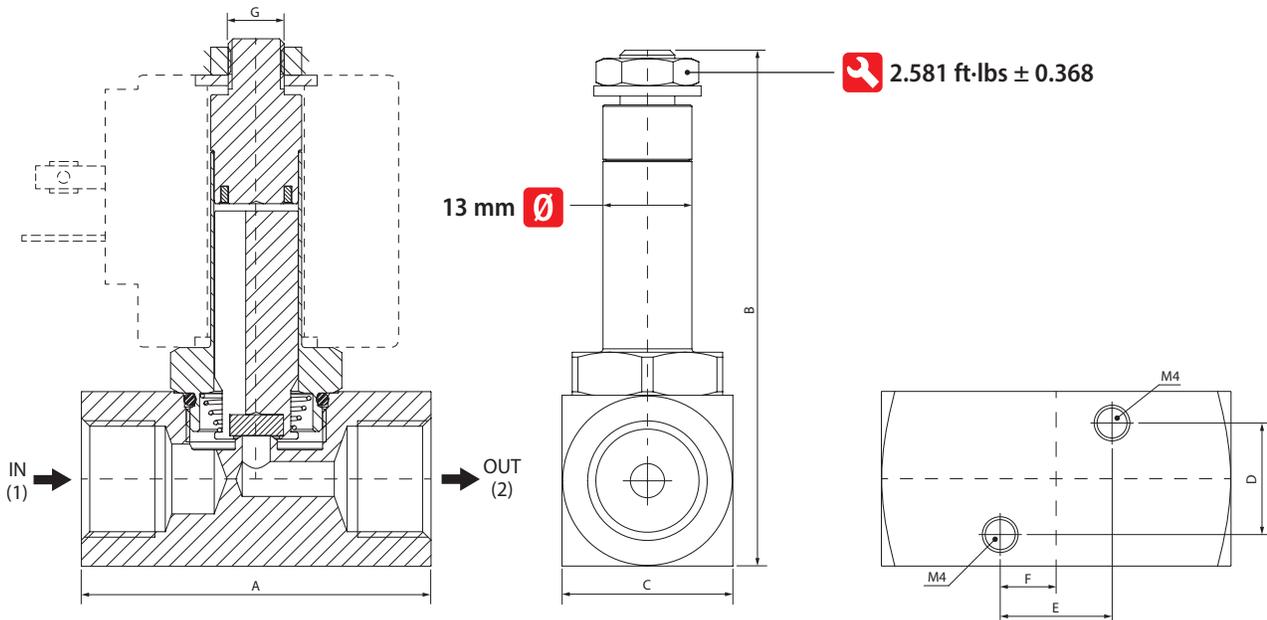
① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE - P max = 145 psi (10 bar)

Allowable leakage: PTFE = max 0.08 gph (300 cm³/h)

* PTFE - orifice max Ø 5/32" (4 mm): Only with stainless steel seat

Coil not included



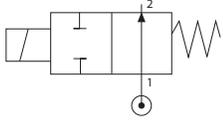
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
3/8"	1.968 (50)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1
1/2"	2.283 (58)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NO

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 3 03 = 1/4"	2 2 = 2/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C C = C series - SOL20 D D = D series - SOL20 E E = E series - SOL21
							A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

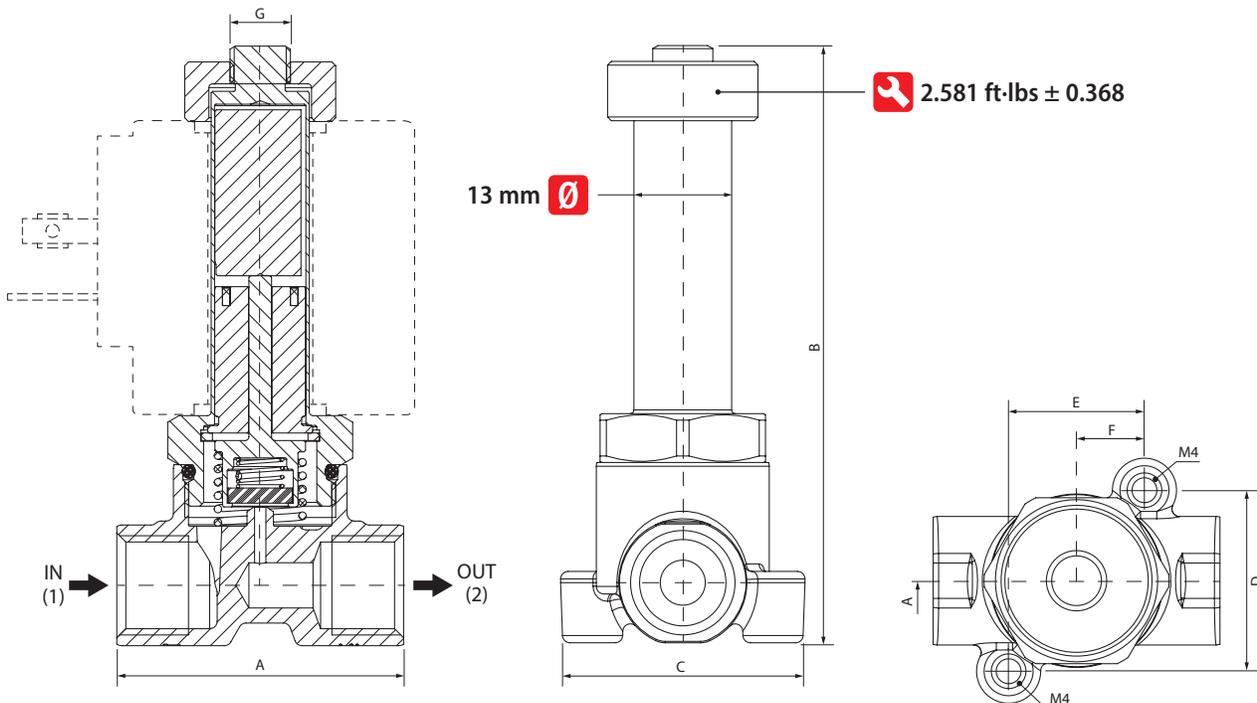
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)				
						inch (mm)	cSt	gpm (m³/h)	psi (bar)	
									Min	Max DC
02F 03 2 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	NPTF	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	-	363 (25)	
02F 03 2 02 _0 N				5/64 (2)	37	0.12 (0.10)	0	-	261 (18)	
02F 03 2 25 _0 N				3/32 (2.5)	53	0.17 (0.15)	0	-	174 (12)	
02F 03 2 03 _0 N				1/8 (3)	53	0.24 (0.21)	0	-	109 (7.5)	
02F 03 2 04 _0 N				5/32 (4)	53	0.41 (0.35)	0	-	65 (4.5)	
02F 03 2 05 _0 N				13/64 (5)	53	0.59 (0.51)	0	-	36 (2.5)	

Power		Coils	
DC	AC	Size	Series
W	VA	mm	
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



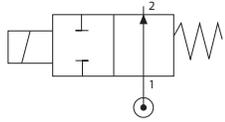
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/4"	1.496 (38)	3.129 (79.5)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NO

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 4 04 = 3/8" 05 = 1/2"	2 2 = 2/2 NO	0 3 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C C = C series - SOL20 D D = D series - SOL20 E E = E series - SOL21
							A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

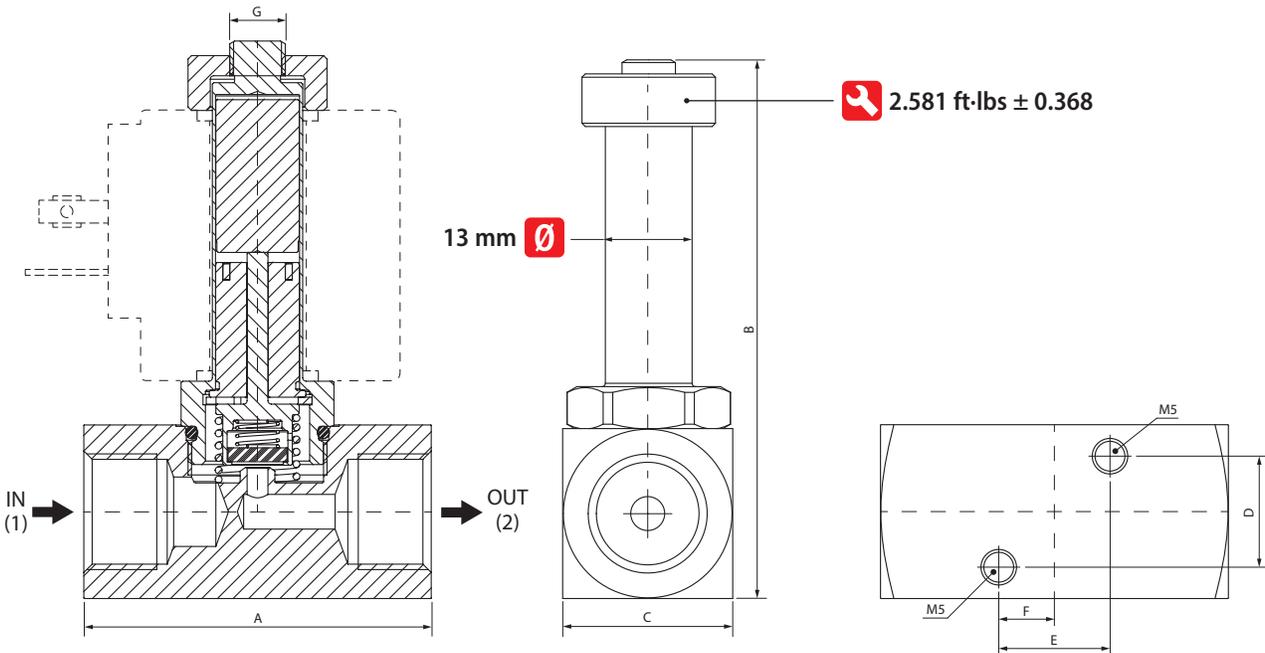
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						gpm (m ³ /h)	psi (bar)		DC	AC	Size	Series
							Min	Max DC				
		NPTF	inch (mm)	cSt								
02F 04 2 03 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	3/8"	1/8 (3)	53	0.24 (0.21)	0	-	109 (7.5)	-	14	30	C - SOL20
02F 04 2 04 _0 N			5/32 (4)	53	0.41 (0.35)	0	109 (7.5)	109 (7.5)	14	21	30	D - SOL20
02F 04 2 05 _0 N			13/64 (5)	53	0.59 (0.51)	0	109 (7.5)	109 (7.5)	22	31	36	E - SOL21
02F 05 2 03 _0 N	V = FKM +14°F +284°F (-10°C +140°C)	3/8"	1/8 (3)	53	0.24 (0.21)	0	-	36 (2.5)	-	14	30	C - SOL20
02F 05 2 04 _0 N			5/32 (4)	53	0.41 (0.35)	0	36 (2.5)	36 (2.5)	14	21	30	D - SOL20
02F 05 2 05 _0 N			13/64 (5)	53	0.59 (0.51)	0	36 (2.5)	36 (2.5)	22	31	36	E - SOL21
02F 05 2 03 _0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	1/8 (3)	53	0.24 (0.21)	0	-	109 (7.5)	-	14	30	C - SOL20
02F 05 2 04 _0 N			5/32 (4)	53	0.41 (0.35)	0	109 (7.5)	109 (7.5)	14	21	30	D - SOL20
02F 05 2 05 _0 N			13/64 (5)	53	0.59 (0.51)	0	65 (4.5)	65 (4.5)	22	31	36	E - SOL21
02F 05 2 04 _0 N	C = CR -31°F +212°F (-35°C +100°C)	1/2"	1/8 (3)	53	0.24 (0.21)	0	-	65 (4.5)	-	14	30	C - SOL20
02F 05 2 04 _0 N			5/32 (4)	53	0.41 (0.35)	0	65 (4.5)	65 (4.5)	14	21	30	D - SOL20
02F 05 2 05 _0 N			13/64 (5)	53	0.59 (0.51)	0	65 (4.5)	65 (4.5)	22	31	36	E - SOL21
02F 05 2 05 _0 N	C = CR -31°F +212°F (-35°C +100°C)	1/2"	1/8 (3)	53	0.24 (0.21)	0	-	36 (2.5)	-	14	30	C - SOL20
02F 05 2 05 _0 N			5/32 (4)	53	0.41 (0.35)	0	36 (2.5)	36 (2.5)	14	21	30	D - SOL20
02F 05 2 05 _0 N			13/64 (5)	53	0.59 (0.51)	0	36 (2.5)	36 (2.5)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



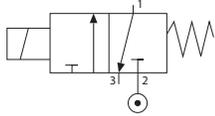
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
3/8"	1.968 (50)	3.161 (80.3)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1
1/2"	2.283 (58)	3.161 (80.3)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NC

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 3 03 = 1/4"	3 3 = 3/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

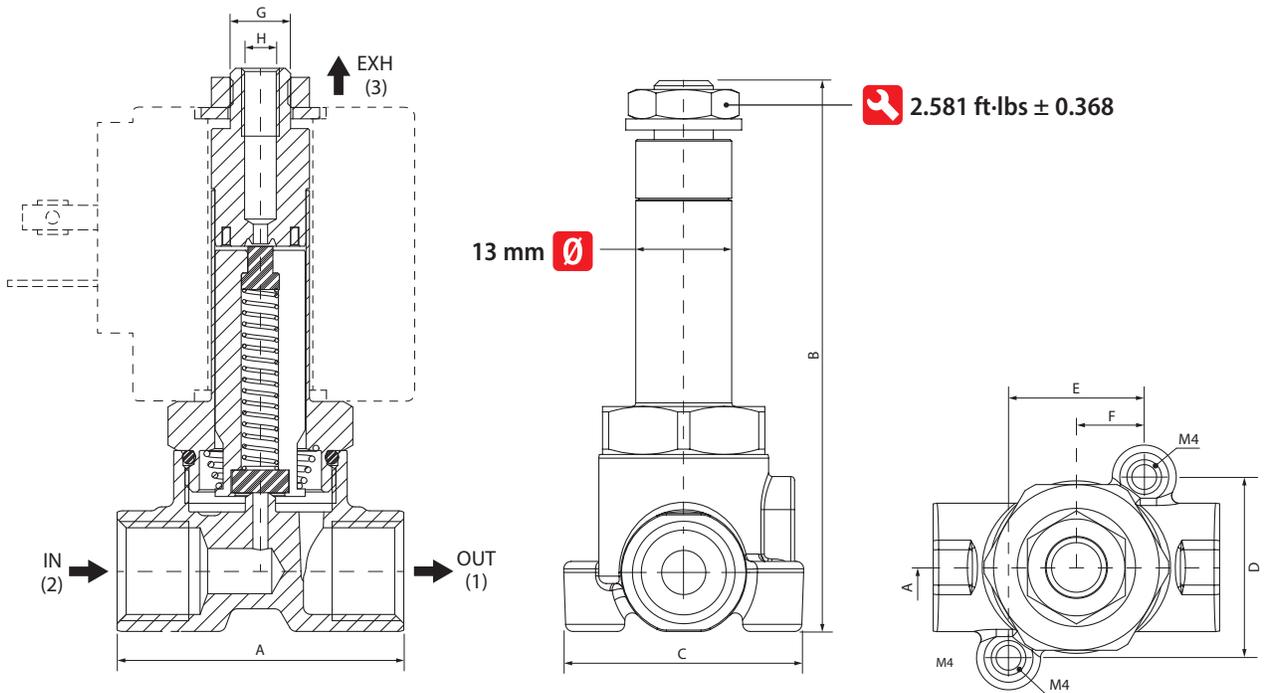
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils			
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series	
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA			mm
02F 03 3 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/4"	1/16	5/64	25	0.07	0.12	0	363 (25)	363 (25)	8	14	30	C - SOL20		
02F 03 3 02 _0 N			5/64	5/64		37	0.12		0.12	0	261 (18)	261 (18)	14	21	30	D - SOL20
02F 03 3 25 _0 N			3/32	5/64			37		0.17		0.12	0	189 (13)	189 (13)	22	31
02F 03 3 03 _0 N			1/8	5/64	37	0.24		0.12	0	145 (10)	145 (10)		8	14	30	C - SOL20
02F 03 3 04 _0 N			5/32	5/64		37	0.41	0.12		0	87 (6)	87 (6)	14	21	30	D - SOL20
02F 03 3 05 _0 N			13/64	5/64	37		0.59	0.12	0		44 (3)	44 (3)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



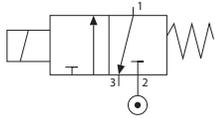
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1	M5

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NC

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 4 04 = 3/8" 05 = 1/2"	3 3 = 3/2 NC	0 3 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

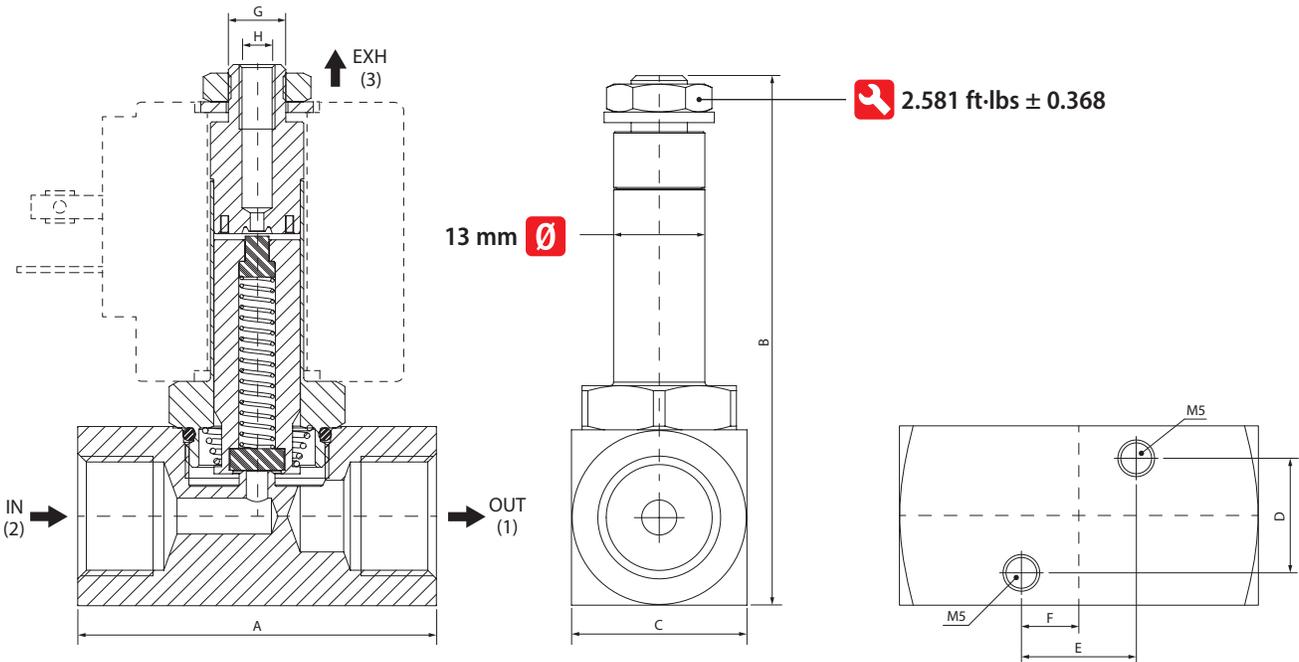
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils					
			inch (mm)			cSt	gpm (m ³ /h)		psi (bar)			DC	AC	Size	Series			
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6			
02F 04 3 15_0 N	N = NBR +14°F +194°F (-10°C +90°C)	3/8"	1/8 (3)	5/64 (1.9)	37	0.24 (0.21)	0.12 (0.10)	0	145 (10)	145 (10)	145 (10)	145 (10)	8	14	30	C - SOL20		
02F 04 3 02_0 N			5/32 (4)	5/64 (1.9)		0.41 (0.35)	0.12 (0.10)		87 (6)	87 (6)	87 (6)	87 (6)	8	14	30	C - SOL20		
02F 04 3 25_0 N			13/64 (5)	5/64 (1.9)		0.59 (0.51)	0.12 (0.10)		44 (3)	44 (3)	44 (3)	44 (3)	44 (3)	44 (3)	44 (3)	8	14	30
02F 05 3 03_0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	1/8 (3)	5/64 (1.9)	37	0.24 (0.21)	0.12 (0.10)	0	145 (10)	145 (10)	145 (10)	145 (10)	8	14	30	C - SOL20		
02F 05 3 04_0 N			5/32 (4)	5/64 (1.9)		0.41 (0.35)	0.12 (0.10)		87 (6)	87 (6)	87 (6)	87 (6)	87 (6)	87 (6)	8	14	30	C - SOL20
02F 05 3 05_0 N			13/64 (5)	5/64 (1.9)		0.59 (0.51)	0.12 (0.10)		44 (3)	44 (3)	44 (3)	44 (3)	44 (3)	44 (3)	44 (3)	8	14	30

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



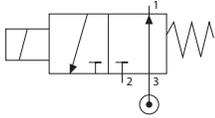
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
3/8"	1.968 (50)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5
1/2"	2.283 (58)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NO

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 3 03 = 1/4"	4 4 = 3/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

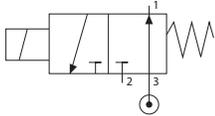
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NO

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 2 F	0 4 04 = 3/8" 05 = 1/2"	4 4 = 3/2 NO	0 3 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

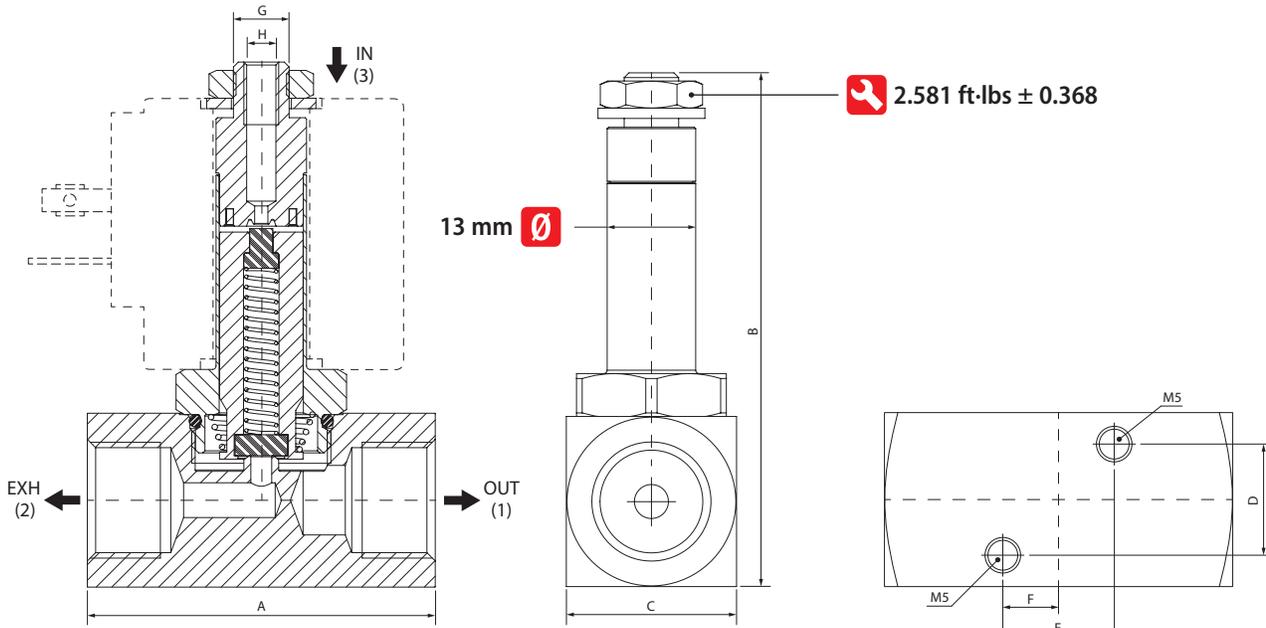
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils					
			inch (mm)			cSt	gpm (m ³ /h)		psi (bar)			DC	AC	Size	Series			
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6			
02F 04 4 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	3/8"	5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	145 (10)	218 (15)	218 (15)	218 (15)	8	14	30	C - SOL20		
02F 04 4 02 _ 0 N			5/64 (1.9)	5/32 (4)		0.12 (0.10)	0.41 (0.35)		58 (4)	145 (10)	102 (7)	218 (15)	189 (13)	218 (15)	8	14	30	C - SOL20
02F 04 4 25 _ 0 N			5/64 (1.9)	13/64 (5)		0.12 (0.10)	0.59 (0.51)		29 (2)	87 (6)	44 (3)	138 (9.5)	116 (8)	174 (12)	8	14	30	C - SOL20
02F 05 4 03 _ 0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	145 (10)	218 (15)	218 (15)	218 (15)	8	14	30	C - SOL20		
02F 05 4 04 _ 0 N			5/64 (1.9)	5/32 (4)		0.12 (0.10)	0.41 (0.35)		58 (4)	145 (10)	102 (7)	218 (15)	189 (13)	218 (15)	8	14	30	C - SOL20
02F 05 4 05 _ 0 N			5/64 (1.9)	13/64 (5)		0.12 (0.10)	0.59 (0.51)		29 (2)	87 (6)	44 (3)	138 (9.5)	116 (8)	174 (12)	8	14	30	C - SOL20

① Select seal material

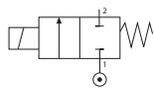
With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G	H
3/8"	1.968 (50)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5
1/2"	2.283 (58)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5

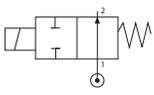
2/2 NC

1/4"
Pag. 6.3



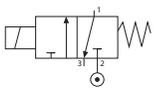
2/2 NO

1/4"
Pag. 6.5



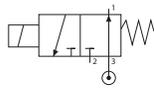
3/2 NC

1/4"
Pag. 6.7



3/2 NO

1/4"
Pag. 6.9



30 mm



Series C
Page 15.4



30 mm



Series D
Page 15.5



36 mm



Series E
Page 15.6




Connectors
Page 15.8 - 15.10



DIRECT ACTING SOLENOID VALVES IN STAINLESS STEEL 316L

Ex
II 2 G/D Ex h

C US
CSA C22.2

AISI 316L



Series X2F

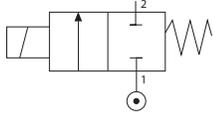
X2F

Series X2F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NC

1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X2F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
 -10°C +80°C



Applications

- Chemical and Petrochemical Industry
- Oil & Gas
- Oxygen and Hydrogen



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 2 F	0 3 03 = 1/4"	1 1 = 2/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR F = NBR E = EPDM V = FKM P = PTFE C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)					
						inch (mm)	cSt	gpm (m³/h)	psi (bar)		
									Min	Max DC	Max AC
X2F 03 1 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	725 (50)	725 (50)			
X2F 03 1 02 _0 N	F = NBR -40°F +194°F (-40°C +90°C)		5/64 (2)	37	0.12 (0.10)	0	508 (35)	725 (50)			
X2F 03 1 25 _0 N	V = FKM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	53	0.17 (0.15)	0	305 (21)	508 (35)			
X2F 03 1 03 _0 N	E = EPDM +14°F +284°F (-10°C +140°C)		1/8 (3)	53	0.24 (0.21)	0	145 (10)	305 (21)			
X2F 03 1 04 _0 N	P = PTFE -40°F +356°F (-40°C +180°C)		5/32 (4)	53	0.41 (0.35)	0	44 (3)	145 (10)			
X2F 03 1 05 _0 N	C = CR -31°F +212°F (-35°C +100°C)		13/64 (5)	53	0.59 (0.51)	0	20 (1.4)	73 (5)			
							32 (2.2)	102 (7)			
							80 (5.5)	145 (10)			

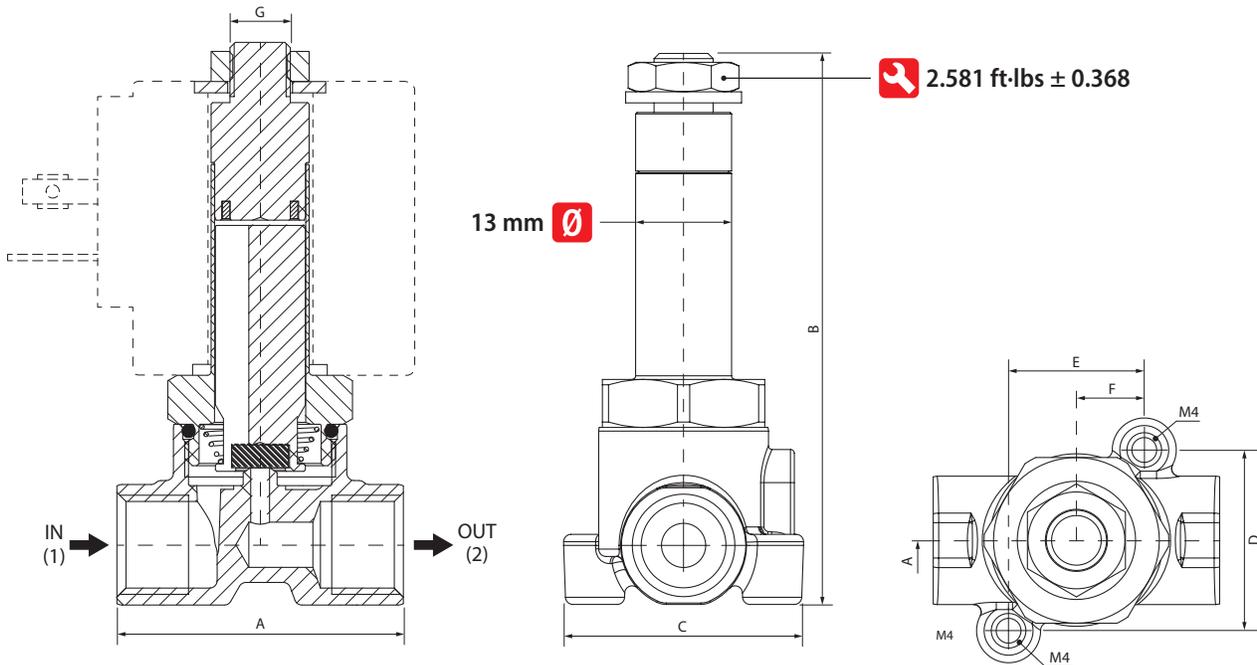
Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
8	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE - P max = 145 psi (10 bar)

Allowable leakage: PTFE = max 0.08 gph (300 cm³/h)

Coil not included



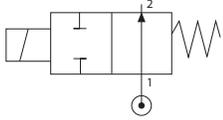
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Series X2F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NO

1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X2F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Chemical and Petrochemical Industry
- Oil & Gas
- Oxygen and Hydrogen



Silver-plated shading ring on request



Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 2 F	0 3 03 = 1/4"	2 2 = 2/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

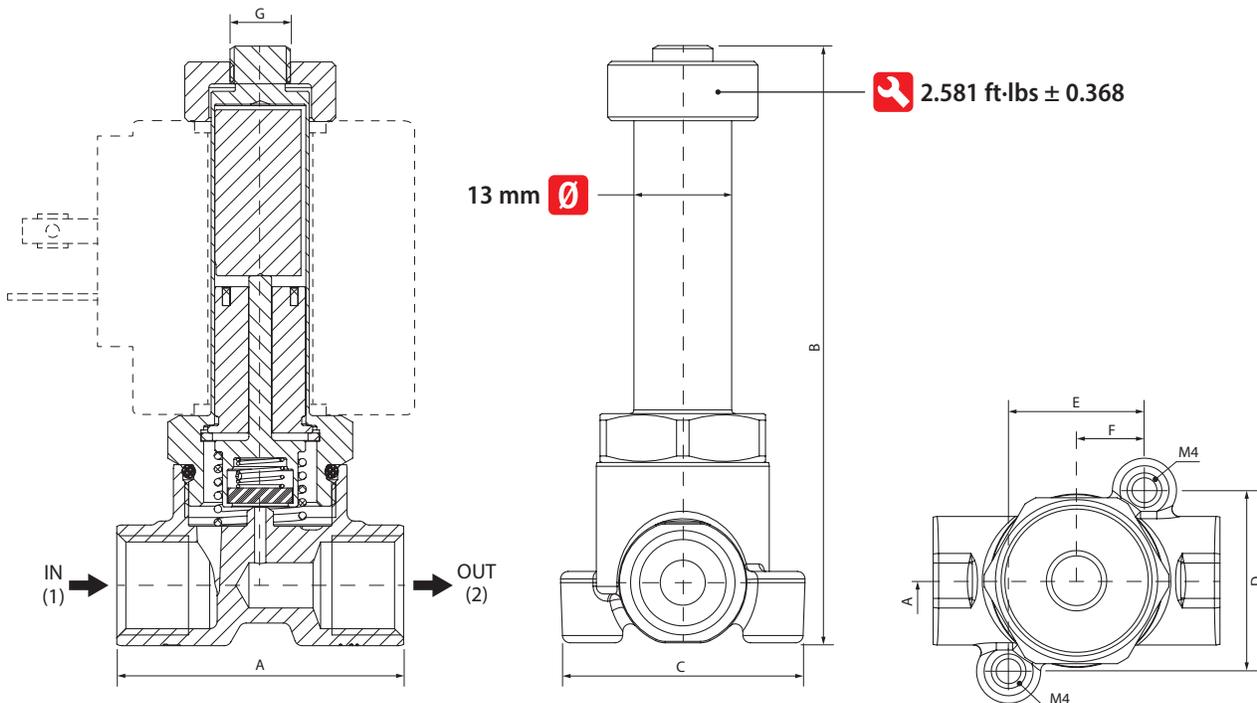
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)							
						gpm (m³/h)	psi (bar)						
							Min	Max DC	Max AC				
X2F 03 2 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	NPTF	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	-	363 (25)				
X2F 03 2 02 _ 0 N								5/64 (2)	37	0.12 (0.10)	0	-	261 (18)
X2F 03 2 25 _ 0 N												3/32 (2.5)	53
X2F 03 2 03 _ 0 N								1/8 (3)	53	0.24 (0.21)	0		
X2F 03 2 04 _ 0 N												5/32 (4)	53
X2F 03 2 05 _ 0 N								13/64 (5)	53	0.59 (0.51)	0		

Power		Coils	
DC	AC	Size	Series
W	VA	mm	
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



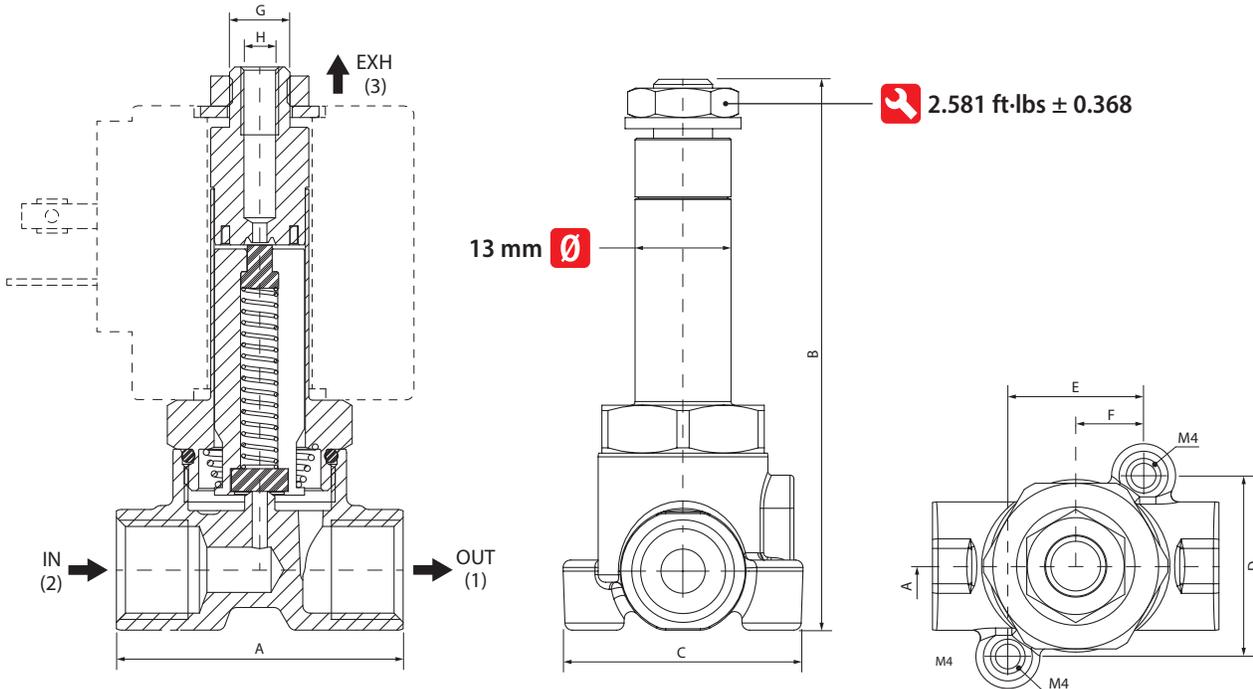
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/4"	1.496 (38)	3.129 (79.5)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils			
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series	
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA			mm
X2F 03 3 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/4"	1/16	5/64	25	0.07	0.12	0	363 (25)	363 (25)	8	14	30	C - SOL20		
X2F 03 3 02 _0 N			5/64	5/64		37	0.12		0.12	0	261 (18)	261 (18)	14	21	30	D - SOL20
X2F 03 3 25 _0 N			3/32	5/64			37		0.17		0.12	0	189 (13)	189 (13)	22	31
X2F 03 3 03 _0 N			1/8	5/64	37	0.24		0.12	0	145 (10)	145 (10)		8	14	30	C - SOL20
X2F 03 3 04 _0 N			5/32	5/64		37	0.41	0.12		0	87 (6)	87 (6)	14	21	30	D - SOL20
X2F 03 3 05 _0 N			13/64	5/64			37	0.59			0.12	0	44 (3)	44 (3)	22	31

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



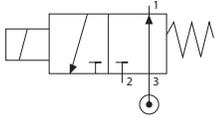
Size	A	B	C	D	E	F	G	H
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1	M5

Series X2F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NO

1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X2F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
 -10°C +80°C



Applications

- Chemical and Petrochemical Industry
- Oil & Gas
- Oxygen and Hydrogen



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 2 F	0 3 03 = 1/4"	4 4 = 3/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	N N = NPTF	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

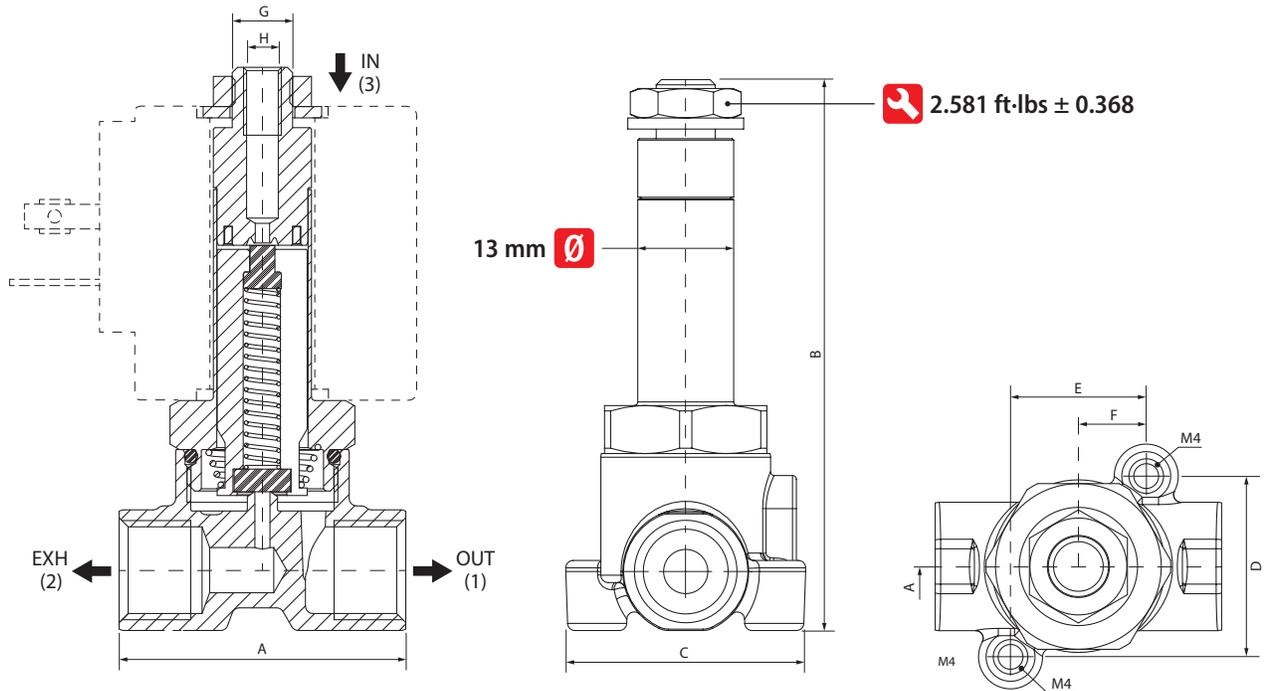
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils			
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series	
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA			mm
X2F 03 4 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/4"	5/64	1/16	25	0.12	0.07	0	218 (15)	218 (15)	8	14	30	C - SOL20		
X2F 03 4 02 _0 N			5/64	5/64		37	0.12		0.12	0	218 (15)	218 (15)	14	21	30	D - SOL20
X2F 03 4 25 _0 N			5/64	3/32			37		0.12		0.17	0	218 (15)	218 (15)	22	31
X2F 03 4 03 _0 N			5/64	1/8	37			0.12	0.24		0		145 (10)	218 (15)	8	14
X2F 03 4 04 _0 N			5/64	5/32		37		0.12	0.41	0			58 (4)	145 (10)	14	21
X2F 03 4 05 _0 N			5/64	13/64			37	0.12	0.59			0	102 (7)	218 (15)	22	31
									189 (13)		218 (15)		8	14	30	C - SOL20
								29 (2)	87 (6)	14	21		30	D - SOL20		
							44 (3)	138 (9.5)	22	31	36	E - SOL21				
							116 (8)	174 (12)	8	14	30	C - SOL20				
									14	21	30	D - SOL20				
									22	31	36	E - SOL21				

① Select seal material

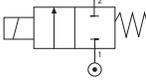
With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A	B	C	D	E	F	G	H
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1	M5

2/2 NC

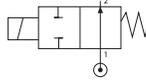



32 x 32 mm

Page 7.3



2/2 NO

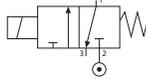



32 x 32 mm

Page 7.5



3/2 NC

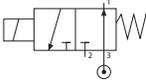



32 x 32 mm

Page 7.7



3/2 NO

32 x 32 mm

Page 7.9



30 mm



Series C

Page 15.4



30 mm



Series D

Page 15.5



36 mm



Series E

Page 15.6




Connectors

Page 15.8 - 15.10



**DIRECT ACTING SOLENOID VALVES WITH FLANGE
FIXING AND BRASS CW510L BODY - PB ≤ 0.1%**

CW510L / Pb ≤ 0.1%

Ex
II 2 G/D Ex h

C **UL** **US**
CSA C22.2



Series F2F

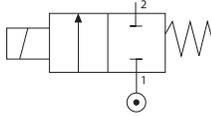
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NC

32 x 32 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE - RUBY - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 2 F	J 9	1	1 5	N	0	C A
	J9 = □ 32x32 mm	1 = 2/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR F = NBR E = EPDM V = FKM P = PTFE R = RUBY C = CR	0 = Standard 3 = Stainless Steel seat (on request)	C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

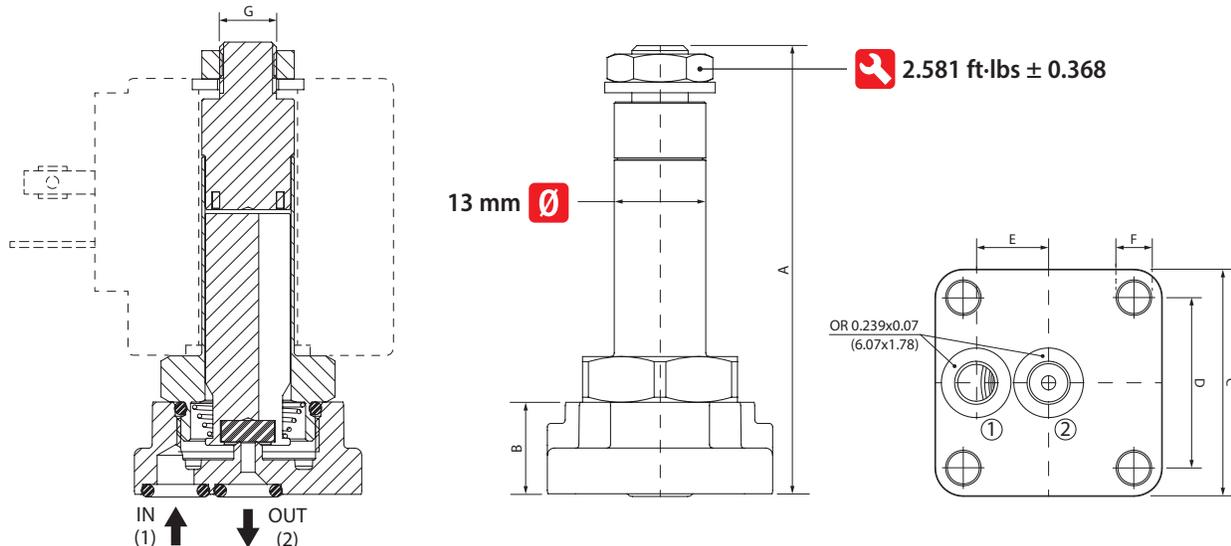
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils					
						inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series	
									Min	Max DC	Max AC	W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6	
F2F J9 1 15 _0	N = NBR +14°F +194°F (-10°C +90°C)	□ 32x32 mm	1/16 (1.5)	25	0.07 (0.06)	0	725 (50)	725 (50)	8	14	30	C - SOL20				
F2F J9 1 02 _0	F = NBR -40°F +194°F (-40°C +90°C)						5/64 (2)	37	0.12 (0.10)	0	725 (50)	725 (50)	14	21	30	D - SOL20
											725 (50)	725 (50)	22	31	36	E - SOL21
			508 (35)	725 (50)	8	14					30	C - SOL20				
F2F J9 1 25 _0	V = FKM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	53	0.17 (0.15)	0	305 (21)	508 (35)	14	21	30	D - SOL20				
							435 (30)	580 (40)	22	31	36	E - SOL21				
							653 (45)	725 (50)	8	14	30	C - SOL20				
F2F J9 1 03 _0	E = EPDM +14°F +284°F (-10°C +140°C)		1/8 (3)	53	0.24 (0.21)	0	145 (10)	305 (21)	14	21	30	D - SOL20				
							362 (25)	435 (30)	22	31	36	E - SOL21				
							580 (40)	580 (40)	8	14	30	C - SOL20				
F2F J9 1 04 _0	C = CR -31°F +212°F (-35°C +100°C)		5/32 (4)	53	0.41 (0.35)	0	44 (3)	145 (10)	14	21	30	D - SOL20				
							87 (6)	203 (14)	22	31	36	E - SOL21				
							218 (15)	290 (20)	8	14	30	C - SOL20				
F2F J9 1 15 _3	P = PTFE -40°F +356°F (-40°C +180°C) R = RUBY -40°F +356°F (-40°C +180°C)		□ 32x32 mm	1/16 (1.5)	25	0.07 (0.06)	0	290 (20)	580 (40)	8	14	30	C - SOL20			
362 (25)								725 (50)	14	21	30	D - SOL20				
F2F J9 1 02 _3		5/64 (2)		37	0.12 (0.10)	0	0	218 (15)	508 (35)	8	14	30	C - SOL20			
								362 (25)	725 (50)	14	21	30	D - SOL20			
F2F J9 1 25 _3		3/32 (2.5)		53	0.17 (0.15)	0	0	116 (8)	290 (20)	8	14	30	C - SOL20			
								145 (10)	362 (25)	14	21	30	D - SOL20			
F2F J9 1 03 P 3		1/8 (3)		53	0.24 (0.21)	0	0	145 (10)	305 (21)	8	14	30	C - SOL20			
								232 (16)	435 (30)	14	21	30	D - SOL20			
F2F J9 1 04 P 3		5/32 (4)		53	0.41 (0.35)	0	0	44 (3)	145 (10)	8	14	30	C - SOL20			
								87 (6)	203 (14)	14	21	30	D - SOL20			

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE & RUBY - P max = 145 psi (10 bar)

Allowable leakage: PTFE & RUBY = max 0.08 gph (300 cm³/h)

Coil not included



Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
□ 32x32 mm	2.507 (63.7)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	M8 x 1

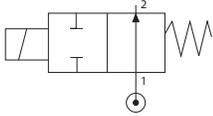
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NO

32 x 32 mm

**CW510L
Pb ≤ 0.1%**



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 2 F	J 9 J9 = □ 32x32 mm	2 2 = 2/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

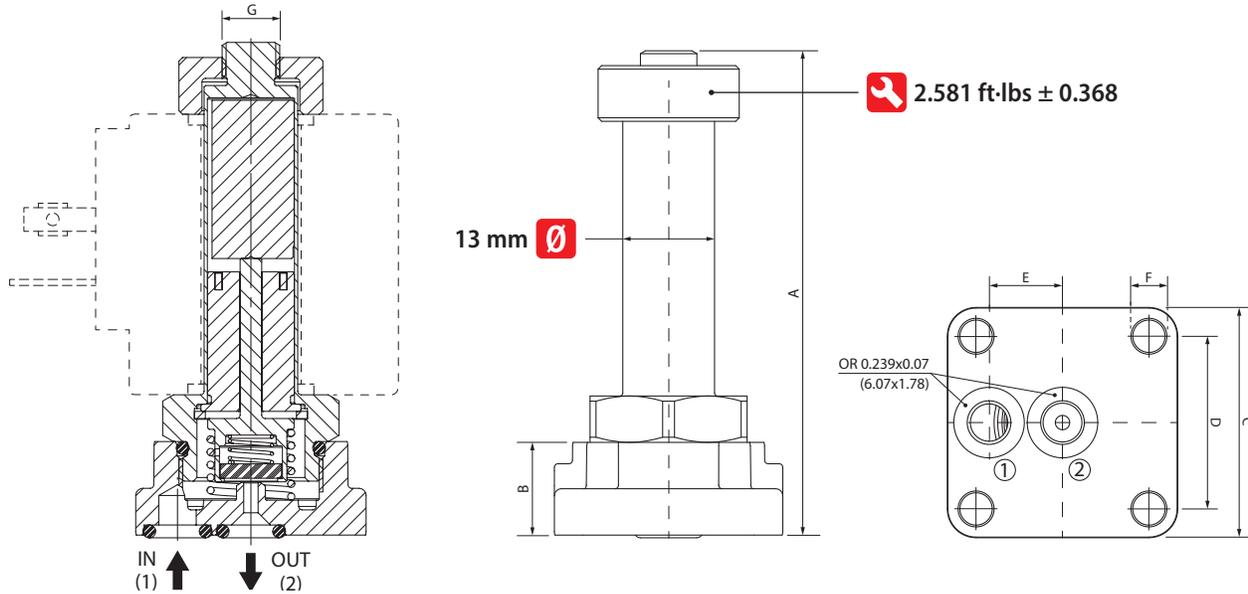
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils				
						inch (mm)	cSt	gpm (m ³ /h)	psi (bar)			DC	AC	Size	Series C - Page 15.4 D - Page 15.5 E - Page 15.6
									Min	Max DC	Max AC	W	VA	mm	
F2F J9 2 15 _0	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	 32x32 mm	1/16 (1.5)	25	0.07 (0.06)	0	-	363 (25)	-	14	30	C - SOL20			
F2F J9 2 02 _0			5/64 (2)	37	0.12 (0.10)	0	-	261 (18)	14	21	30	D - SOL20			
F2F J9 2 25 _0			3/32 (2.5)	53	0.17 (0.15)	0	-	174 (12)	14	21	30	D - SOL20			
F2F J9 2 03 _0			1/8 (3)	53	0.24 (0.21)	0	-	109 (7.5)	14	21	30	D - SOL20			
F2F J9 2 04 _0			5/32 (4)	53	0.41 (0.35)	0	-	65 (4.5)	14	21	30	D - SOL20			

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
32x32 mm	2.696 (68.5)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	M8 x 1

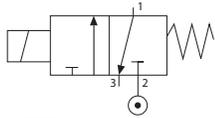
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NC

32 x 32 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM - RUBY - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 2 F	J 9 J9 = □ 32x32 mm	3 3 = 3/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N N = NBR E = EPDM V = FKM R = RUBY C = CR	0 0 = Standard 3 = Stainless Steel seat (on request)	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

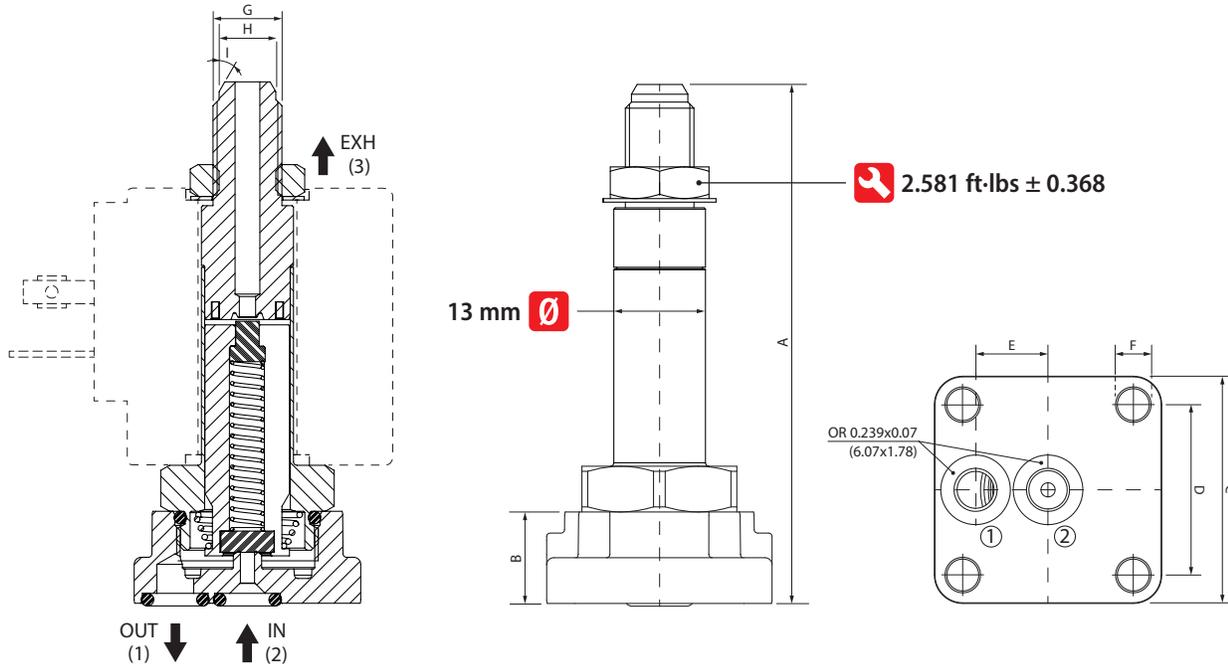
Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils				
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series		
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA			mm	
F2F J9 3 15 _0	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	□ 32x32 mm	1/16 (1.5)	3/32 (2.3)	25	0.07 (0.06)	0.15 (0.13)	0	363 (25)	363 (25)	363 (25)	363 (25)	8	14	30	C - SOL20	
F2F J9 3 02 _0			5/64 (2)	3/32 (2.3)	37	0.12 (0.10)	0.15 (0.13)	0	261 (18)	261 (18)	261 (18)	261 (18)	261 (18)	8	14	30	C - SOL20
F2F J9 3 25 _0			3/32 (2.5)	3/32 (2.3)	37	0.17 (0.15)	0.15 (0.13)	0	189 (13)	189 (13)	189 (13)	189 (13)	189 (13)	14	21	30	D - SOL20
F2F J9 3 03 _0			1/8 (3)	3/32 (2.3)	37	0.24 (0.21)	0.15 (0.13)	0	145 (10)	145 (10)	145 (10)	145 (10)	145 (10)	14	21	30	D - SOL20
F2F J9 3 04 _0			5/32 (4)	3/32 (2.3)	37	0.41 (0.35)	0.15 (0.13)	0	87 (6)	87 (6)	87 (6)	87 (6)	87 (6)	87 (6)	8	14	30
F2F J9 3 15 R 3	R = RUBY -40°F +356°F (-40°C +180°C)	□ 32x32 mm	1/16 (1.5)	3/32 (2.3)	25	0.07 (0.06)	0.15 (0.13)	0	217 (15)	217 (15)	217 (15)	217 (15)	8	14	30	C - SOL20	
F2F J9 3 02 R 3			5/64 (2)	3/32 (2.3)	37	0.12 (0.10)	0.15 (0.13)	0	145 (10)	145 (10)	145 (10)	145 (10)	145 (10)	14	21	30	D - SOL20
F2F J9 3 25 R 3			3/32 (2.5)	3/32 (2.3)	37	0.17 (0.15)	0.15 (0.13)	0	87 (6)	87 (6)	87 (6)	87 (6)	87 (6)	87 (6)	8	14	30

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar) / RUBY - P max = 145 psi (10 bar)**

Allowable leakage: **RUBY = max 0.08 gph (300 cm³/h)**

Coil not included



Size	A	B	C	D	E	F	G	H	I
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)			
□ 32x32 mm	2.901 (73.7)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	1/8"	Ø 8	30°

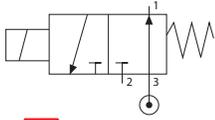
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NO

32 x 32 mm

**CW510L
Pb ≤ 0.1%**



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM - CR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils
F 2 F	J 9 J9 = □ 32x32 mm	4 4 = 3/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N N = NBR E = EPDM V = FKM C = CR	0 0 = Standard	C A C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

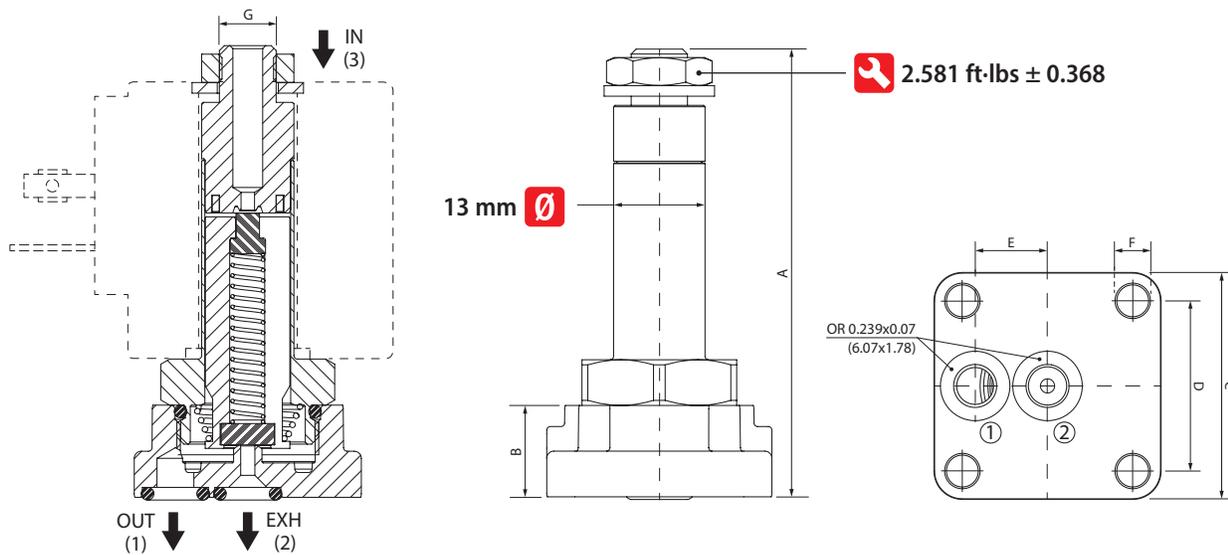
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils				
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series		
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA			mm	C - Page 15.4 D - Page 15.5 E - Page 15.6
F2F J9 4 15 _ 0	N = NBR -10°C +90°C V = FKM -10°C +140°C E = EPDM -10°C +140°C C = CR -31°F +212°F (-35°C +100°C)	□ 32x32 mm	5/64 (1.9)	1/16 (1.5)	25	0.12 (0.10)	0.07 (0.06)	0	218 (15)	218 (15)	218 (15)	218 (15)	8	14	30	C - SOL20	
F2F J9 4 02 _ 0			5/64 (1.9)	5/64 (2)	37	0.12 (0.10)	0.12 (0.10)	0	218 (15)	218 (15)	218 (15)	218 (15)	218 (15)	8	14	30	C - SOL20
F2F J9 4 25 _ 0			5/64 (1.9)	3/32 (2.5)	37	0.12 (0.10)	0.17 (0.15)	0	218 (15)	218 (15)	218 (15)	218 (15)	218 (15)	8	14	30	C - SOL20
F2F J9 4 03 _ 0			5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	145 (10)	218 (15)	218 (15)	218 (15)	218 (15)	8	14	30	C - SOL20
F2F J9 4 04 _ 0			5/64 (1.9)	5/32 (4)	37	0.12 (0.10)	0.41 (0.35)	0	58 (4)	145 (10)	102 (7)	218 (15)	218 (15)	8	14	30	C - SOL20
													14	21	30	D - SOL20	
													22	31	36	E - SOL21	
													8	14	30	C - SOL20	
													14	21	30	D - SOL20	
													22	31	36	E - SOL21	
													8	14	30	C - SOL20	
													14	21	30	D - SOL20	
													22	31	36	E - SOL21	

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
□ 32x32 mm	2.507 (63.7)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	M8 x 1	M5



2/2 NC

1/4" → 1"

Page 8.3




30 mm

Series C

Page 15.4




30 mm

Series D

Page 15.5




36 mm

Series E

Page 15.6




Connectors

Page 15.8 - 15.10



GUIDED DIAPHRAGM SOLENOID VALVES WITH BRASS BODY

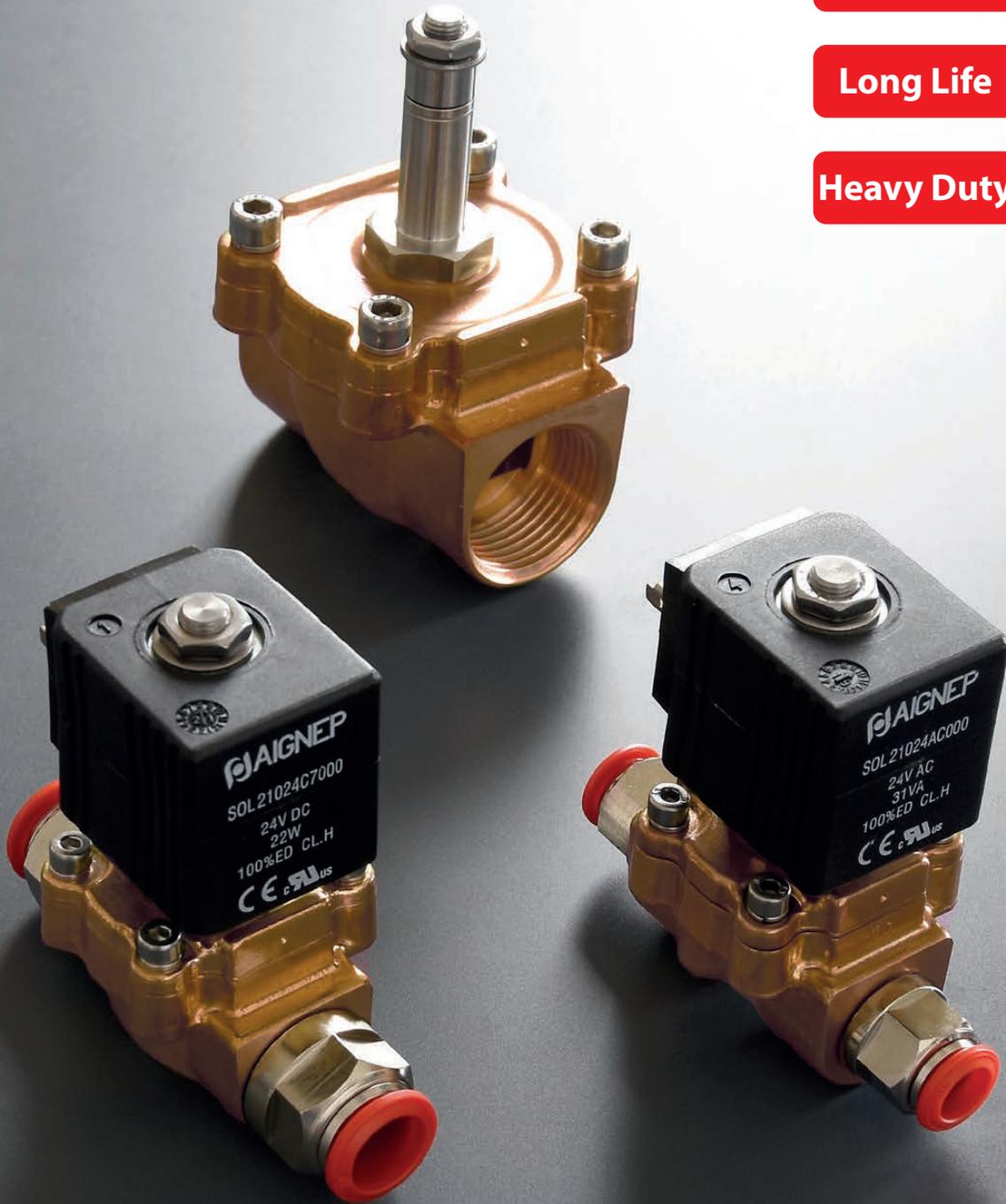
Ex
II 2 G/D Ex h

UL US
CSA C22.2

$\Delta P = 2$ psi

Long Life

Heavy Duty



Series 03F

Series 03F

GUIDED DIAPHRAGM SOLENOID VALVES - $\Delta P = 2$ psi

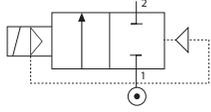
2/2 NC

1/4" → 1"

$\Delta P = 2$ psi

Long Life

Heavy Duty



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 03F

- Recommended horizontal mounting position
- Operator kit \varnothing 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Car washes, Washing systems
- Industrial processes, Tank draining
- Air and Inert gases
- Vacuum, Packaging
- Oxygen, Steam, Medical, Sterilizers



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 3 F	0 3	1	1 0	N	0	N	C A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	0 = Standard	N = NPTF	C = C series - SOL20 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM			D = D series - SOL20 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM			E = E series - SOL21 1 = 24V AC
	07 = 3/4"		25 = 1 (25)				2 = 110V AC
	09 = 1"						3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

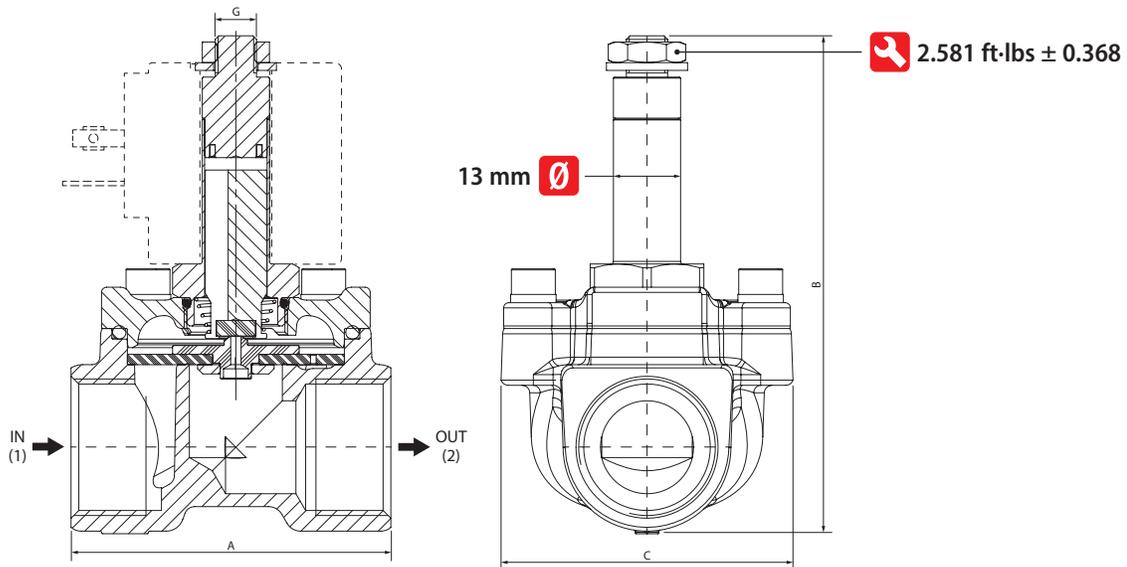
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						gpm (m ³ /h)	psi (bar)	
							Min	Max DC
03F 03 1 10_0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	1.84 (1.58)	2 (0.15)	-	261 (18)
87 (6)							290 (20)	
03F 04 1 12_0 N		3/8"	35/64 (14)	25	2.73 (2.34)	2 (0.15)	-	261 (18)
87 (6)							290 (20)	
03F 05 1 12_0 N		1/2"	35/64 (14)	25	2.75 (2.36)	2 (0.15)	-	261 (18)
87 (6)	290 (20)							
03F 07 1 18_0 N	3/4"	45/64 (18)	25	4.75 (4.08)	2 (0.15)	-	261 (18)	
87 (6)						290 (20)		
03F 09 1 25_0 N	1"	1 (25)	25	7.72 (6.63)	2 (0.15)	-	232 (16)	
58 (4)						290 (20)		
							174 (12)	363 (25)

Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21

① Select seal material

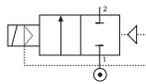
With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	1.732 (44)	3.307 (84)	1.574 (40)	M8 x 1
3/8"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
1/2"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
3/4"	2.440 (62)	3.799 (96.5)	2.224 (56.5)	M8 x 1
1"	2.854 (72.5)	4.133 (105)	2.598 (66)	M8 x 1

2/2 NC

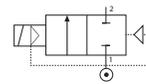



1/4" → 1"

Page 9.3



2/2 NC

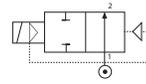



1"1/4 → 2"

Page 9.7



2/2 NO

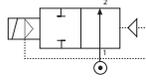



1/4" → 1"

Page 9.9



2/2 NO

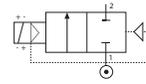



1"1/4 → 2"

Page 9.13



2/2 LATCHING

1/4" → 1"

Page 9.15



22 mm



Series A

Page 15.2



30 mm



Series B

Page 15.3



30 mm



Series C

Page 15.4



30 mm



Series D

Page 15.5



36 mm



Series E

Page 15.6



Connectors



Page 15.8 - 15.10

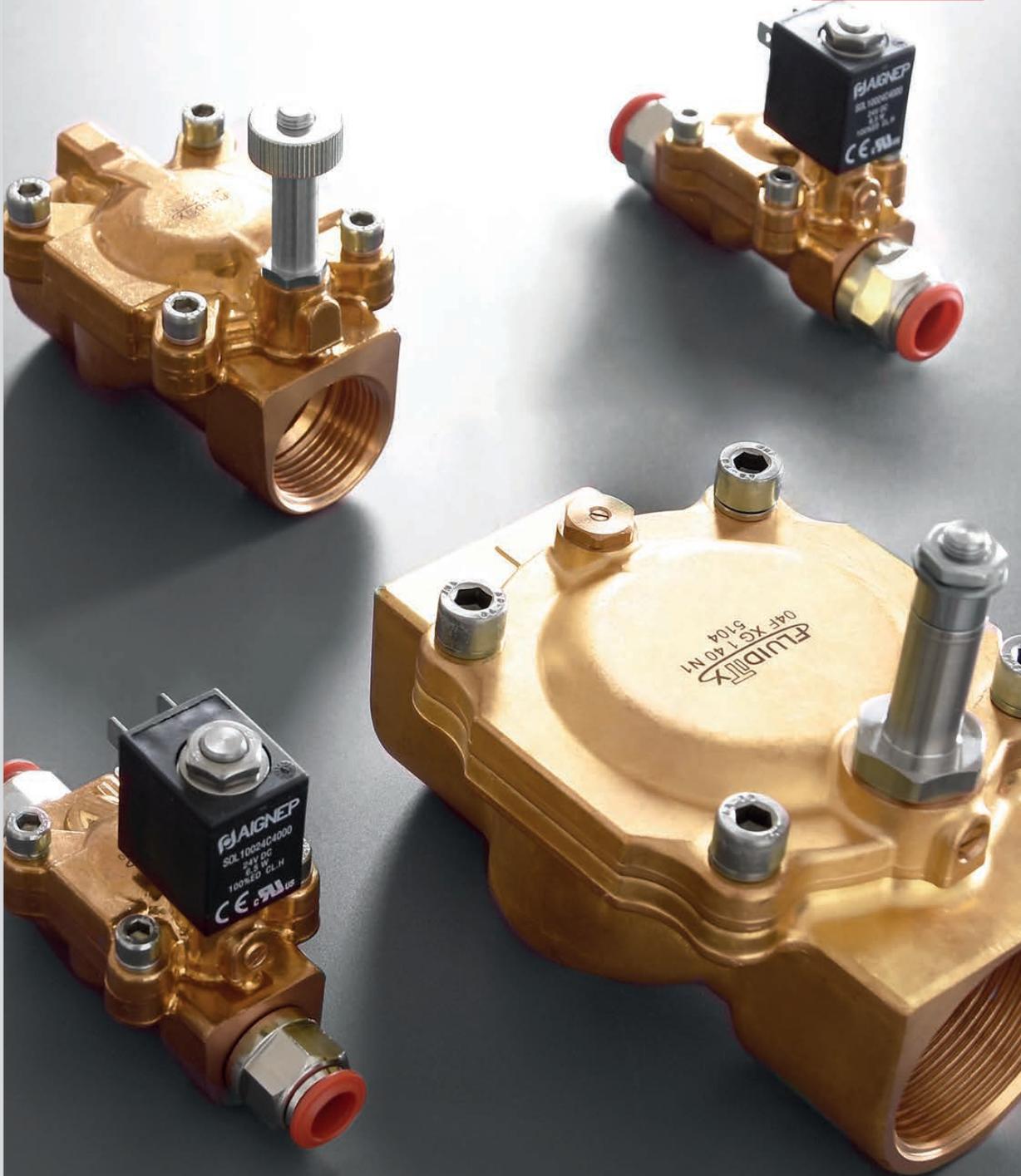


SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

Ex
II 2 G/D Ex h

C US
CSA C22.2

$\Delta P = 2$ psi



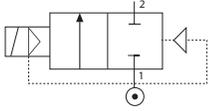
Series 04F

Series 04F

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/4" → 1"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 4 F	0 3	1	1 0	N	*	N	A A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	* = Select the version	N = NPTF	A = A series - SOL10 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM	↓		B = B series - SOL11 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM	2/2 NC → Page 8.3 / 8.4		1 = 24V AC
	07 = 3/4"		25 = 1 (25)		↓		2 = 110V AC
	09 = 1"						3 = 220V AC
Ex: Version H → 04F 03 1 10 N H N Version 4 → 04F 07 1 18 N 4 N Version 0 → 04F 03 1 10 N 0 N Version 2 → 04F 07 1 18 N 2 N Version T → 04F 07 1 18 N T N Version 5 → 04F 07 1 18 N 5 N Version 1 → 04F 07 1 18 N 1 N Version 3 → 04F 07 1 18 N 3 N							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						gpm (m ³ /h)	psi (bar)		DC	AC	Size	Series
							Min	Max DC	Max AC	W	VA	mm
①	①	NPTF	inch (mm)	cSt								

H Without manual override												
04F 03 1 10_H N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
04F 04 1 12_H N		3/8"	35/64 (14)	25	3.87 (2.32)	2 (0.15)	261 (18)	261 (18)	8	11	30	B - SOL11
04F 05 1 12_H N	V = FKM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
04F 07 1 18_H N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_H N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

4 Without manual override and with reinforced and guided diaphragm												
04F 07 1 18_4 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_4 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

0 With manual override												
04F 03 1 10_0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
04F 04 1 12_0 N		3/8"	35/64 (14)	25	3.87 (2.32)	2 (0.15)	261 (18)	261 (18)	8	11	30	B - SOL11
04F 05 1 12_0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
04F 07 1 18_0 N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

2 With manual override and with reinforced and guided diaphragm												
04F 07 1 18_2 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_2 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



With Speed regulator
 Allow to adjust the opening and closing diaphragm Speed.

2/2 NC **1/4" → 1"**

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						gpm (m ³ /h)	psi (bar)		DC	AC	Size	Series
							Min	Max DC				
①	①	NPTF	inch (mm)	cSt								A - Page 15.2 B - Page 15.3

T With Speed regulator and without manual override												
04F 07 1 18_T N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_T N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

5 With Speed regulator, without manual override and with reinforced and guided diaphragm												
04F 07 1 18_5 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_5 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

1 With Speed regulator and with manual override												
04F 07 1 18_1 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_1 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

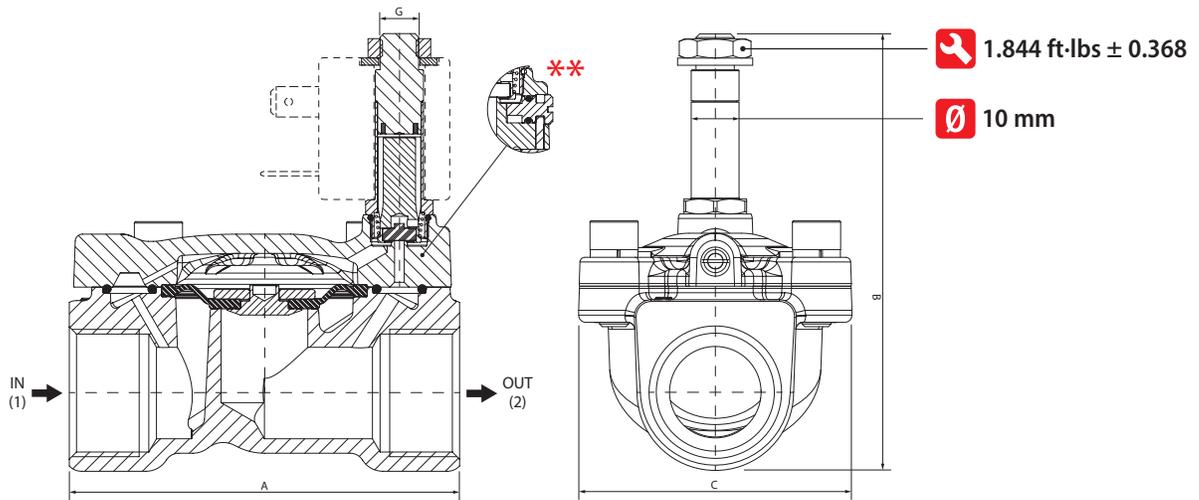
3 With Speed regulator, with manual override and with reinforced and guided diaphragm												
04F 07 1 18_3 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
04F 09 1 25_3 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11
	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							261 (18)	261 (18)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included

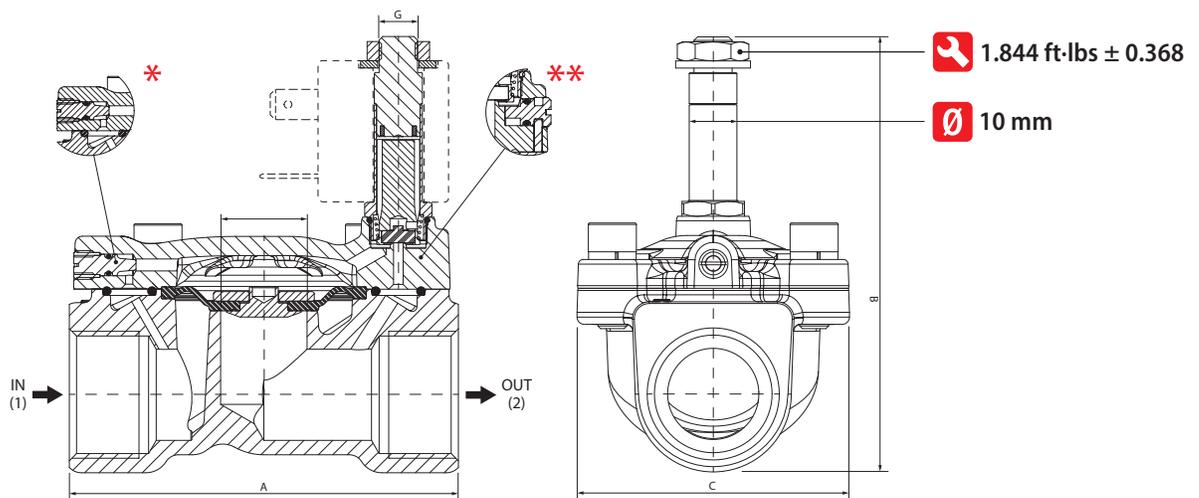
** Manual override



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

* Spread regulator

** Manual override



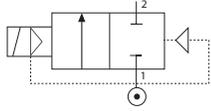
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

Series 04F

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NC

1"1/4 → 2"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 4 F	0 3	1	1 0	N	T	N	C A
	XF = 1"1/4 XG = 1"1/2 XH = 2"	1 = 2/2 NC	40 = ____ (40) 50 = ____ (50)	N = NBR E = EPDM V = FKM	T: Without manual override 1: With manual override	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21 A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						gpm (m ³ /h)	psi (bar)		DC	AC	Size	Series C - Page 15.4 D - Page 15.5 E - Page 15.6
							Min	Max DC	Max AC	W	VA	

T With Speed regulator and without manual override

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	gpm (m ³ /h)	Min	Max DC	Max AC	Power DC (W)	Power AC (VA)	Coils Size (mm)	Series
04F XF 1 40 _ TN	N = NBR +14°F +194°F (-10°C +90°C)	1"1/4	1" 9/16 (40)	25	27,74 (24)	2,9 (0,2)	145 (10)	145 (10)	8	14	30	C - SOL20	
							145 (10)	145 (10)	14	21	30	D - SOL20	
							145 (10)	145 (10)	22	31	36	E - SOL21	
04F XG 1 40 _ TN	V = FKM +14°F +284°F (-10°C +140°C)	1"1/2	1" 9/16 (40)	25	29,2 (25,3)	2,9 (0,2)	145 (10)	145 (10)	8	14	30	C - SOL20	
							145 (10)	145 (10)	14	21	30	D - SOL20	
							145 (10)	145 (10)	22	31	36	E - SOL21	
04F XH 1 50 _ TN	E = EPDM +14°F +284°F (-10°C +140°C)	2"	1" 61/64 (50)	25	47,39 (41)	2,9 (0,2)	145 (10)	145 (10)	8	14	30	C - SOL20	
							145 (10)	145 (10)	14	21	30	D - SOL20	
							145 (10)	145 (10)	22	31	36	E - SOL21	

1 With Speed regulator and with manual override

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	gpm (m ³ /h)	Min	Max DC	Max AC	Power DC (W)	Power AC (VA)	Coils Size (mm)	Series
04F XF 1 40 _ 1N	N = NBR +14°F +194°F (-10°C +90°C)	1"1/4	1" 9/16 (40)	25	27,74 (24)	0	145 (10)	145 (10)	8	14	30	C - SOL20	
							145 (10)	145 (10)	14	21	30	D - SOL20	
							145 (10)	145 (10)	22	31	36	E - SOL21	
04F XG 1 40 _ 1N	V = FKM +14°F +284°F (-10°C +140°C)	1"1/2	1" 9/16 (40)	25	29,2 (25,3)	0	145 (10)	145 (10)	8	14	30	C - SOL20	
							145 (10)	145 (10)	14	21	30	D - SOL20	
							145 (10)	145 (10)	22	31	36	E - SOL21	
04F XH 1 50 _ 1N	E = EPDM +14°F +284°F (-10°C +140°C)	2"	1" 61/64 (50)	25	47,39 (41)	0	145 (10)	145 (10)	8	14	30	C - SOL20	
							145 (10)	145 (10)	14	21	30	D - SOL20	
							145 (10)	145 (10)	22	31	36	E - SOL21	

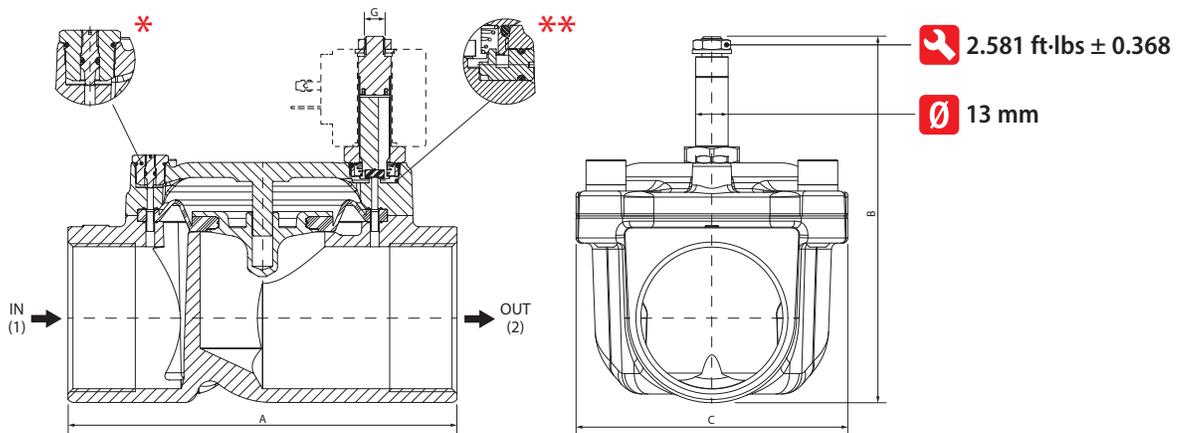
① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included

* Speed regulator

** Manual override



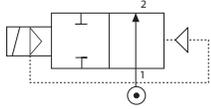
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1"1/4	5.51 (140)	5 (127)	3.85 (98)	M8 x 1
1"1/2	5.51 (140)	5 (127)	3.85 (98)	M8 x 1
2"	6.14 (156)	5.78 (147)	4.29 (109)	M8 x 1

Series 04F

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NO

1/4" → 1"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 4 F	0 3	2	1 0	N	*	N	A A
	03 = 1/4"	2 = 2/2 NO	10 = 25/64 (10)	N = NBR	* = Select the version	N = NPTF	A = A series - SOL10 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM	↓		B = B series - SOL11 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM	2/2 NO → Page 8.7 / 8.8		1 = 24V AC
	07 = 3/4"		25 = 1 (25)		↓		2 = 110V AC
	09 = 1"						3 = 220V AC
Ex: Version 0 → 04F 03 2 10 N 0 N Version 2 → 04F 07 2 18 N 2 N Version 1 → 04F 07 2 18 N 1 N Version 3 → 04F 07 2 18 N 3 N							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						gpm (m ³ /h)	psi (bar)		DC	AC	Size	Series
							Min	Max DC	Max AC	W	VA	mm
①	①	NPTF	inch (mm)	cSt								

0 Without manual override												
04F 03 2 10 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 04 2 12 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 05 2 12 _ 0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 07 2 18 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 09 2 25 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
2 Without manual override and with reinforced and guided diaphragm												
04F 07 2 18 _ 2 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 09 2 25 _ 2 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



With Speed regulator
 Allow to adjust the opening and closing diaphragm Speed.

2/2 NO

1/4" → 1"

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
①	①	NPTF	inch (mm)	cSt	gpm (m ³ /h)							

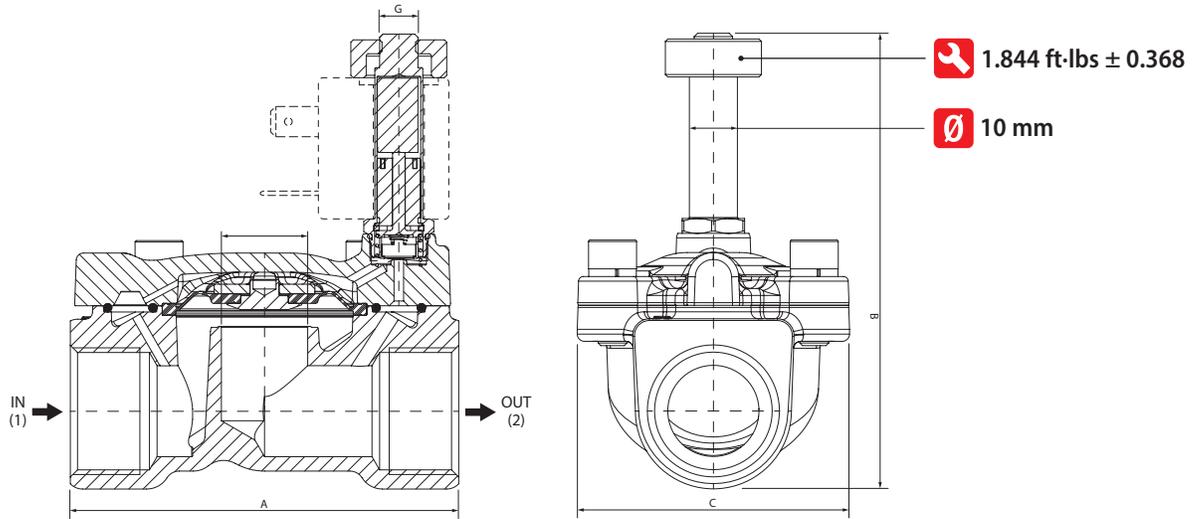
1 With Speed regulator and without manual override												
04F 07 2 18 _ 1 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 09 2 25 _ 1 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 09 2 25 _ 1 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11

3 With Speed regulator, without manual override and with reinforced and guided diaphragm												
04F 07 2 18 _ 3 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 09 2 25 _ 3 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
04F 09 2 25 _ 3 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11

① Select seal material

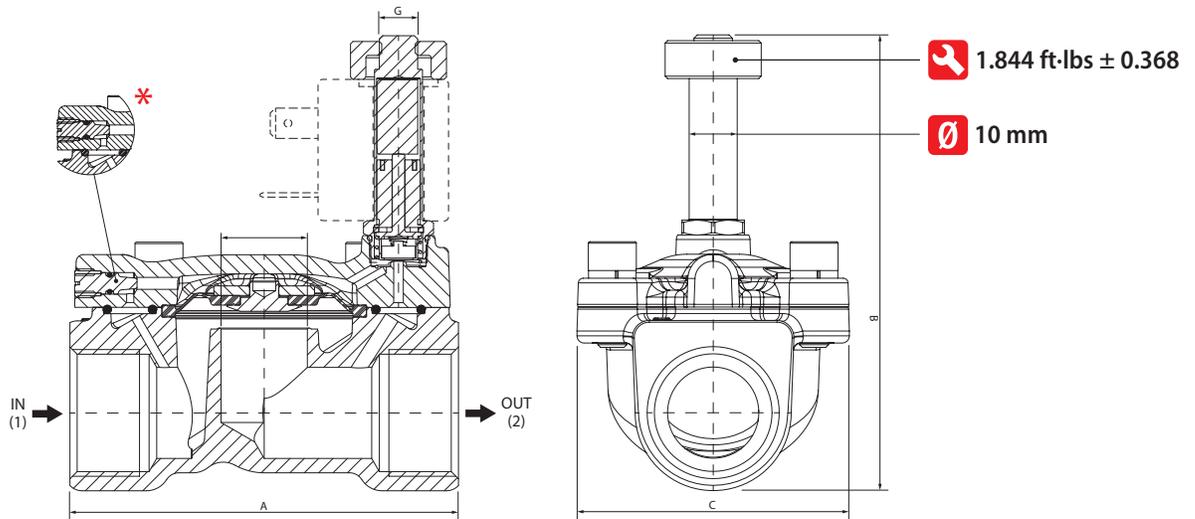
With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	3.015 (76.6)	1.385 (35.2)	M8 x 1
3/8"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
1/2"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
3/4"	3.188 (81)	3.740 (95)	2.232 (56.7)	M8 x 1
1"	3.740 (95)	3.980 (101.1)	2.559 (65)	M8 x 1

* Spread regulator



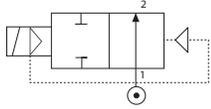
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
3/4"	3.188 (81)	3.740 (95)	2.232 (56.7)	M8 x 1
1"	3.740 (95)	3.980 (101.1)	2.559 (65)	M8 x 1

Series 04F

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NO

1"1/4 → 2"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 4 F	0 3	1	1 0	N	1	N	C A
	XF = 1"1/4 XG = 1"1/2 XH = 2"	2 = 2/2 NO	40 = ____ (40) 50 = ____ (50)	N = NBR E = EPDM V = FKM	1= Without manual override	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21 A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils				
						inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series C - Page 15.4 D - Page 15.5 E - Page 15.6
									Min	Max DC	Max AC	W	VA	mm	
①	①	NPTF													

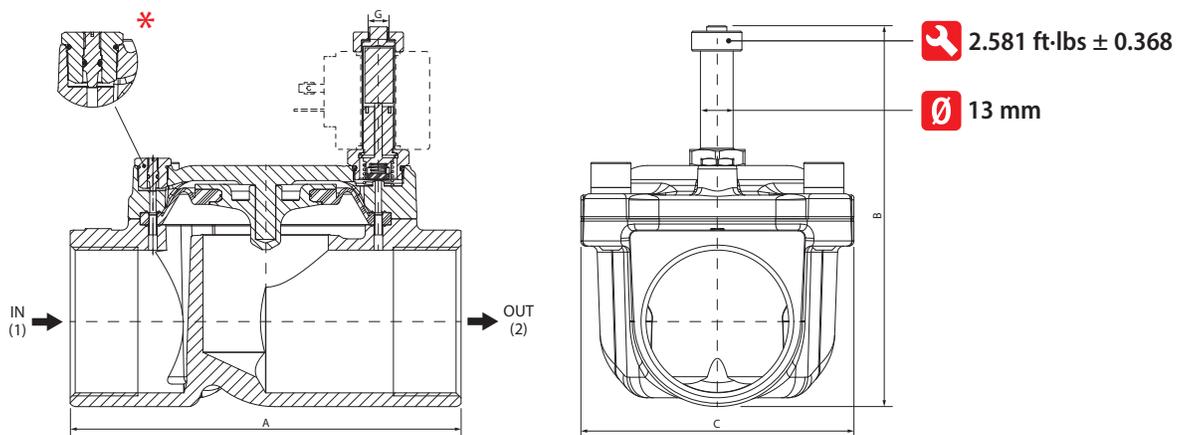
1 With Speed regulator and without manual override												
04F XF 2 40 _ 1N	N = NBR -10°C +90°C	1"1/4	1" 9/16 (40)	25	27.74 (24)	2.9 (0.2)	-	145 (10)	-	14	30	C - SOL20
							145 (10)	145 (10)	14	21	30	D - SOL20
							145 (10)	145 (10)	22	31	36	E - SOL21
04F XG 2 40 _ 1N	V = FKM -10°C +140°C	1"1/2	1" 9/16 (40)	25	29.2 (25.3)	2.9 (0.2)	-	145 (10)	-	14	30	C - SOL20
							145 (10)	145 (10)	14	21	30	D - SOL20
							145 (10)	145 (10)	22	31	36	E - SOL21
04F XH 2 50 _ 1N	E = EPDM -10°C +140°C	2"	1" 61/64 (50)	25	47.39 (41)	2.9 (0.2)	-	145 (10)	-	14	30	C - SOL20
							145 (10)	145 (10)	14	21	30	D - SOL20
							145 (10)	145 (10)	22	31	36	E - SOL21

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included

* Speed regulator



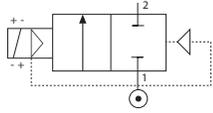
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1"1/4	5.51 (140)	5.18 (131.7)	3.85 (98)	M8 x 1
1"1/2	5.51 (140)	5.18 (131.7)	3.85 (98)	M8 x 1
2"	6.14 (156)	5.97 (151.7)	4.29 (109)	M8 x 1

Series 04F

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 LATCHING

1/4" → 1"



Pulse switching ≥20 ms, polarity reversed



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 4 F	0 3	B	1 0	N	*	N	A A
	03 = 1/4"	B = 2/2 Latching	10 = 25/64 (10)	N = NBR	* = Select the version	N = NPTF	A = A series - SOL10 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM			B = B series - SOL11 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM	2/2 NC → Page 8.3 / 8.4		F = 3V DC
	07 = 3/4"		25 = 1 (25)				H = 9V DC
	09 = 1"						
					Ex: Version H → 04F 03 1 10 N H N		
					Version 4 → 04F 07 1 18 N 4 N		
					Version 0 → 04F 03 1 10 N 0 N		
					Version 2 → 04F 07 1 18 N 2 N		
					Version T → 04F 07 1 18 N T N		
					Version 5 → 04F 07 1 18 N 5 N		
					Version 1 → 04F 07 1 18 N 1 N		
					Version 3 → 04F 07 1 18 N 3 N		

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		Power	Coils	
						Min	Max DC		DC	Size
①	①	NPTF	inch (mm)	cSt	gpm (m ³ /h)			psi (bar)		
								W	mm	A - Page 15.2 B - Page 15.3

H Without manual override													
04F 03 B 10 _ H N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	94 (6.5)	2	22	A - SOL10			
							188 (13)	3	22	A - SOL10			
							261 (18)	4	30	B - SOL11			
04F 04 B 12 _ H N		V = FKM +14°F +284°F (-10°C +140°C)	3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	87 (6)	2	22	A - SOL10		
								174 (12)	3	22	A - SOL10		
								261 (18)	4	30	B - SOL11		
04F 05 B 12 _ H N			E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	87 (6)	2	22	A - SOL10	
									174 (12)	3	22	A - SOL10	
									261 (18)	4	30	B - SOL11	
04F 07 B 18 _ H N				E = EPDM +14°F +284°F (-10°C +140°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	87 (6)	2	22	A - SOL10
										174 (12)	3	22	A - SOL10
										261 (18)	4	30	B - SOL11
04F 09 B 25 _ H N	E = EPDM +14°F +284°F (-10°C +140°C)				1"	1 (25)	25	12.78 (10.97)	2 (0.15)	79 (5.5)	2	22	A - SOL10
										123 (8.5)	3	22	A - SOL10
										261 (18)	4	30	B - SOL11

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



With Speed regulator
 Allow to adjust the opening
 and closing diaphragm Speed.

2/2 LATCHING

1/4" → 1"

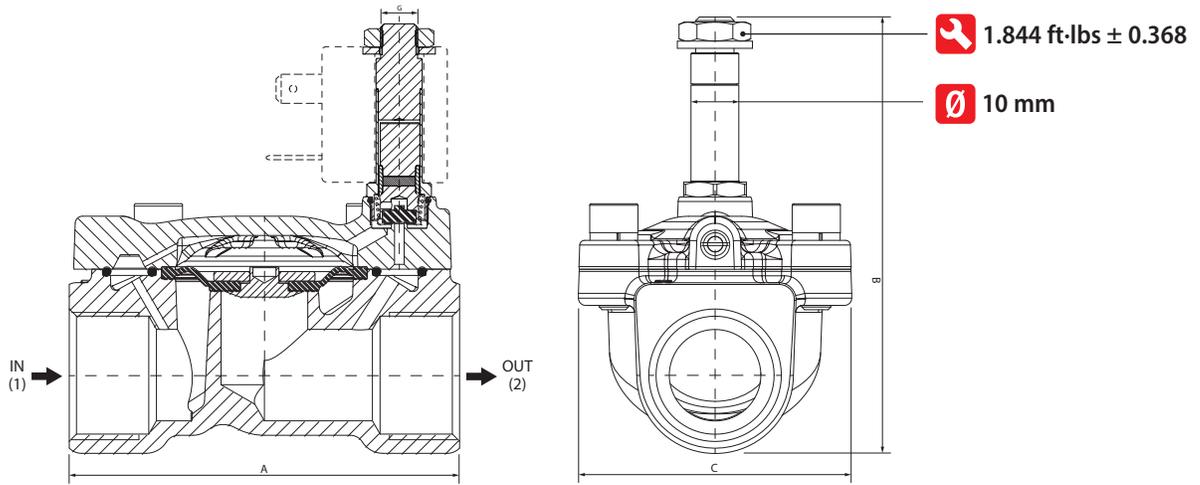
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		Power	Coils					
						inch (mm)	cSt		gpm (m ³ /h)	psi (bar)		DC	Size	Series
										Min	Max DC			

T With Speed regulator and without manual override										
04F 07 B 18 _ T N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	87 (6)	2	22	A - SOL10
							174 (12)	3	22	A - SOL10
							261 (18)	4	30	B - SOL11
04F 09 B 25 _ T N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	79 (5.5)	2	22	A - SOL10
							123 (8.5)	3	22	A - SOL10
							261 (18)	4	30	B - SOL11

① Select seal material

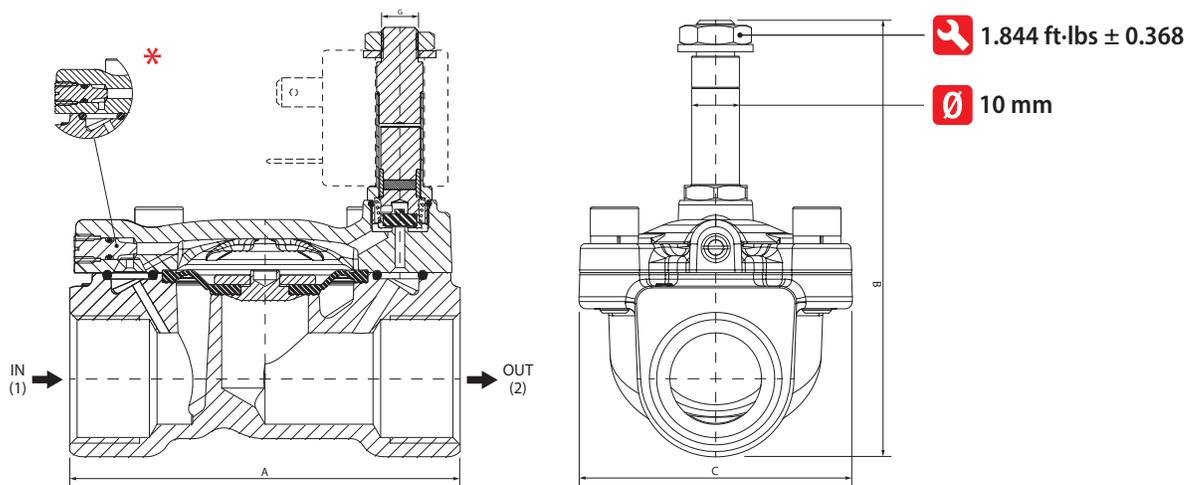
With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A <i>inch (mm)</i>	B <i>inch (mm)</i>	C <i>inch (mm)</i>	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

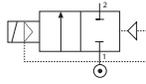
* Speed regulator



Size	A <i>inch (mm)</i>	B <i>inch (mm)</i>	C <i>inch (mm)</i>	G
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75



2/2 NC



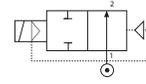
1/4" → 1"



Page 10.3



2/2 NO



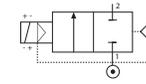
1/4" → 1"



Page 10.5



2/2 LATCHING



1/4" → 1"



Page 10.7



22 mm

Series A



Page 15.2



30 mm

Series B



Page 15.3



Connectors



Page 15.8 - 15.10

**SERVO-ASSISTED SOLENOID VALVES WITH BODY
IN STAINLESS STEEL AISI 316L**

Ex
II 2 G/D Ex h

UL
C US
CSA C22.2

AISI 316L



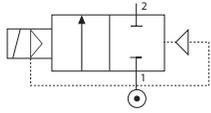
Series X4F

Series X4F

SERVO-ASSISTED SOLENOID VALVES IN STAINLESS STEEL AISI 316L

2/2 NC

1/4" → 1"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X4F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Neutral and corrosive liquids
- Water management, Water treatment
- Food industry, Washing systems
- Industrial processes, Refrigeration
- Air, Inert and aggressive gases
- Oxygen, Steam
- Chemical and Petrochemical industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 4 F	0 3	1	1 0	N	H	N	A A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	H = Without manual override	N = NPTF	A = A series - SOL10 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM	0 = With manual override		B = B series - SOL11 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM			1 = 24V AC
	07 = 3/4"		25 = 1 (25)				2 = 110V AC
	09 = 1"						3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						psi (bar)	Min	Max DC
①	①	NPTF	inch (mm)	cSt	gpm (m ³ /h)			

Power		Coils	
DC	AC	Size	Series
W	VA	mm	A - Page 15.2 B - Page 15.3

H Without manual override													
X4F 03 1 10 _ H N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 04 1 14 _ H N		3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 05 1 14 _ H N	V = FKM -22°F +284°F (-30°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 07 1 18 _ H N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 09 1 25 _ H N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	

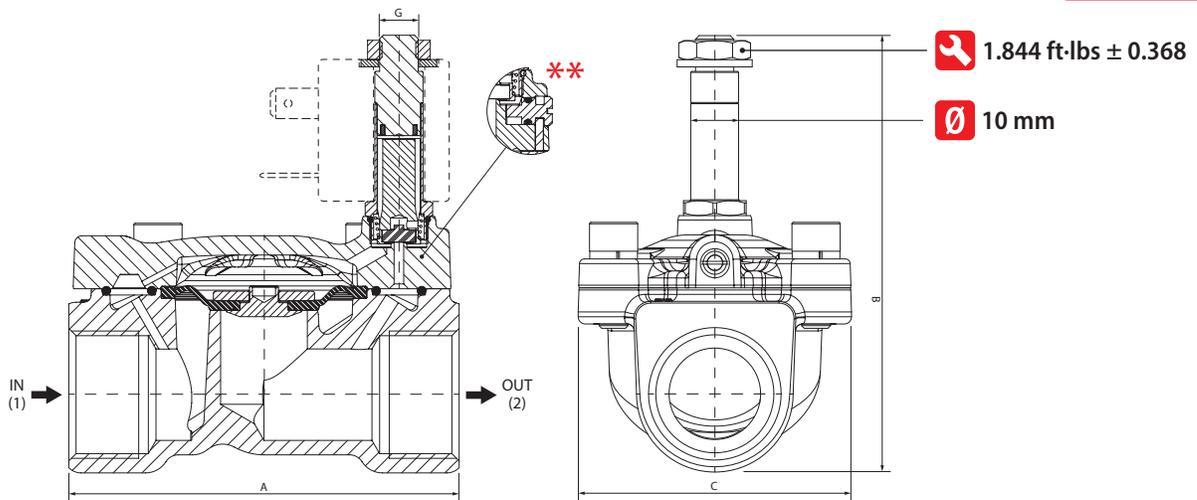
O With manual override													
X4F 03 1 10 _ O N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 04 1 14 _ O N		3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 05 1 14 _ O N	V = FKM -22°F +284°F (-30°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 07 1 18 _ O N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	
X4F 09 1 25 _ O N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16) 261 (18)	232 (16) 261 (18)	6.5 8	7.5 11	22 30	A - SOL10 B - SOL11	

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included

** Manual override



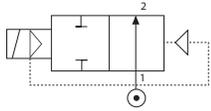
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

Series X4F

SERVO-ASSISTED SOLENOID VALVES IN STAINLESS STEEL AISI 316L

2/2 NO

1/4" → 1"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X4F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Neutral and corrosive liquids
- Water management, Water treatment
- Food industry, Washing systems
- Industrial processes, Refrigeration
- Air, Inert and aggressive gases
- Oxygen, Steam
- Chemical and Petrochemical industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 4 F	0 3	2	1 0	N	0	N	A A
	03 = 1/4"	2 = 2/2 NO	10 = 25/64 (10)	N = NBR	0 = Without manual override	N = NPTF	A = A series - SOL10 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM			B = B series - SOL11 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM			1 = 24V AC
	07 = 3/4"		25 = 1 (25)				2 = 110V AC
	09 = 1"						3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

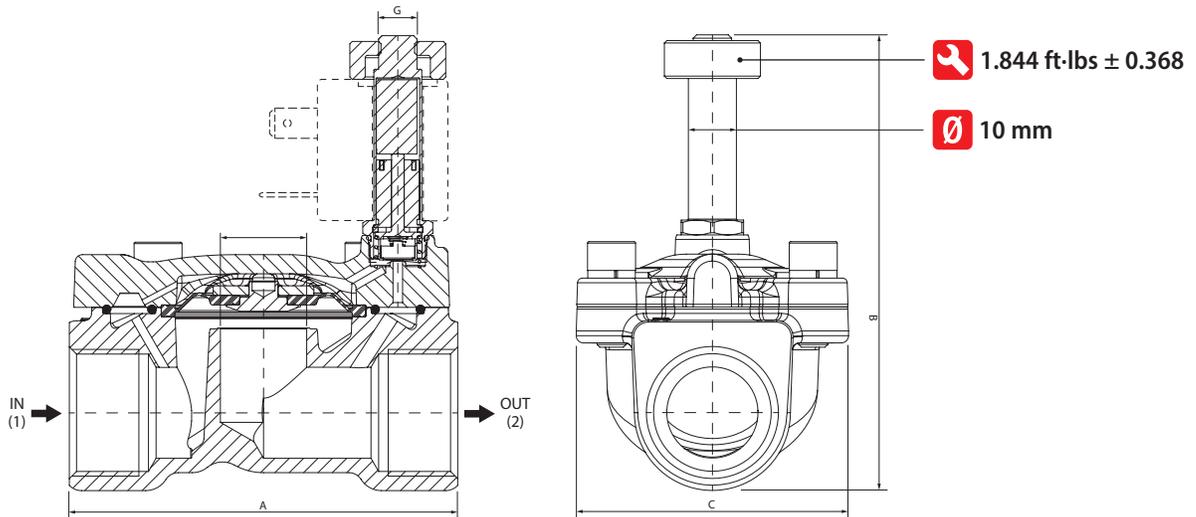
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						gpm (m ³ /h)	psi (bar)		DC	AC	Size	Series
							Min	Max DC	Max AC	W	VA	mm
①	①	NPTF	inch (mm)	cSt								

0 Without manual override												
X4F 03 2 10 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
X4F 04 2 14 _ 0 N	V = FKM -22°F +284°F (-30°C +140°C)	3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
X4F 05 2 14 _ 0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
X4F 07 2 18 _ 0 N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
X4F 09 2 25 _ 0 N		1"	1 (25)	25	12.78 (10.97)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



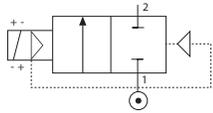
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	3.015 (76.6)	1.385 (35.2)	M8 x 1
3/8"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
1/2"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
3/4"	3.188 (81)	3.740 (95)	2.232 (56.7)	M8 x 1
1"	3.740 (95)	3.980 (101.1)	2.559 (65)	M8 x 1

Series X4F

SERVO-ASSISTED SOLENOID VALVES IN STAINLESS STEEL AISI 316L

2/2 LATCHING

1/4" → 1"



Pulse switching ≥20 ms, polarity reversed



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 4 F	0 3	B	1 0	N	H	N	A A
	03 = 1/4"	B = 2/2 Latching	10 = 25/64 (10)	N = NBR	H = Without manual override	N = NPTF	A = A series - SOL10 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM	O = With manual override		B = B series - SOL11 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM			F = 3V DC
	07 = 3/4"		25 = 1 (25)				H = 9V DC
	09 = 1"						

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X4F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Neutral and corrosive liquids
- Water management, Water treatment
- Food industry, Washing systems
- Industrial processes, Refrigeration
- Air, Inert and aggressive gases
- Oxygen, Steam
- Chemical and Petrochemical industry

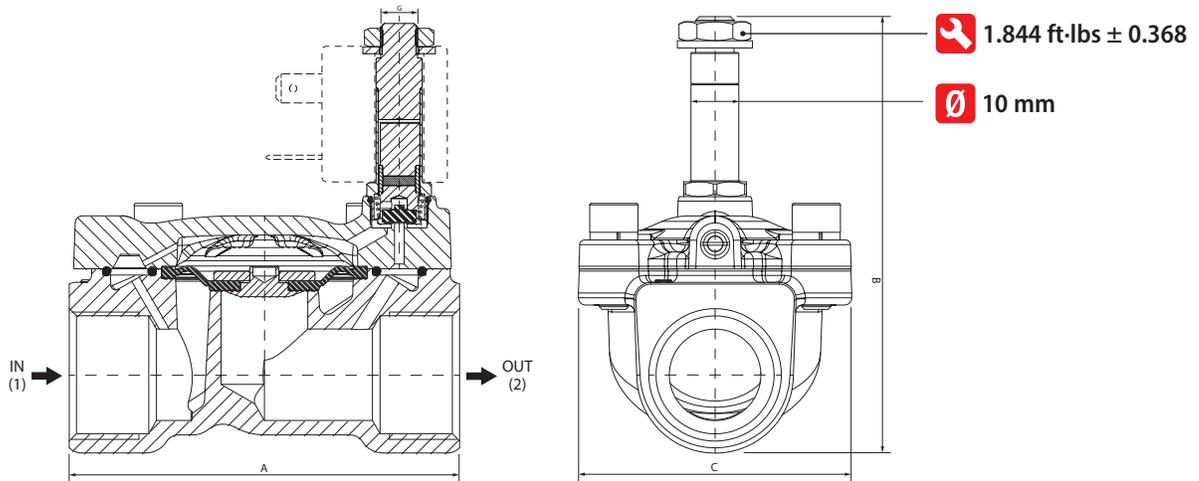
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		Power	Coils					
						inch (mm)	cSt		gpm (m ³ /h)	psi (bar)		DC	Size	Series
										Min	Max DC			
①	①	NPTF								A - Page 15.2 B - Page 15.3				

H Without manual override												
X4F 03 B 10 _ H N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	94 (6.5)	2	22	A - SOL10		
							188 (13)	3	22	A - SOL10		
							261 (18)	4	30	B - SOL11		
X4F 04 B 14 _ H N		V = FKM -22°F +284°F (-30°C +140°C)	3/8"	35/64 (14)	25	3.87 (2.32)	2 (0.15)	87 (6)	2	22	A - SOL10	
								174 (12)	3	22	A - SOL10	
								261 (18)	4	30	B - SOL11	
X4F 05 B 14 _ H N			E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	87 (6)	2	22	A - SOL10
									174 (12)	3	22	A - SOL10
									261 (18)	4	30	B - SOL11
X4F 07 B 18 _ H N		1"		45/64 (18)	25	6.48 (5.56)	2 (0.15)	87 (6)	2	22	A - SOL10	
								174 (12)	3	22	A - SOL10	
								261 (18)	4	30	B - SOL11	
X4F 09 B 25 _ H N	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	79 (5.5)	2	22	A - SOL10			
						123 (8.5)	3	22	A - SOL10			
						261 (18)	4	30	B - SOL11			

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

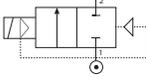
Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75



2/2 NC



3/8" → 1"



Pag. 11.3



30 mm

Series C



Page 15.4



30 mm

Series D



Page 15.5



36 mm

Series E



Page 15.6



Connectors



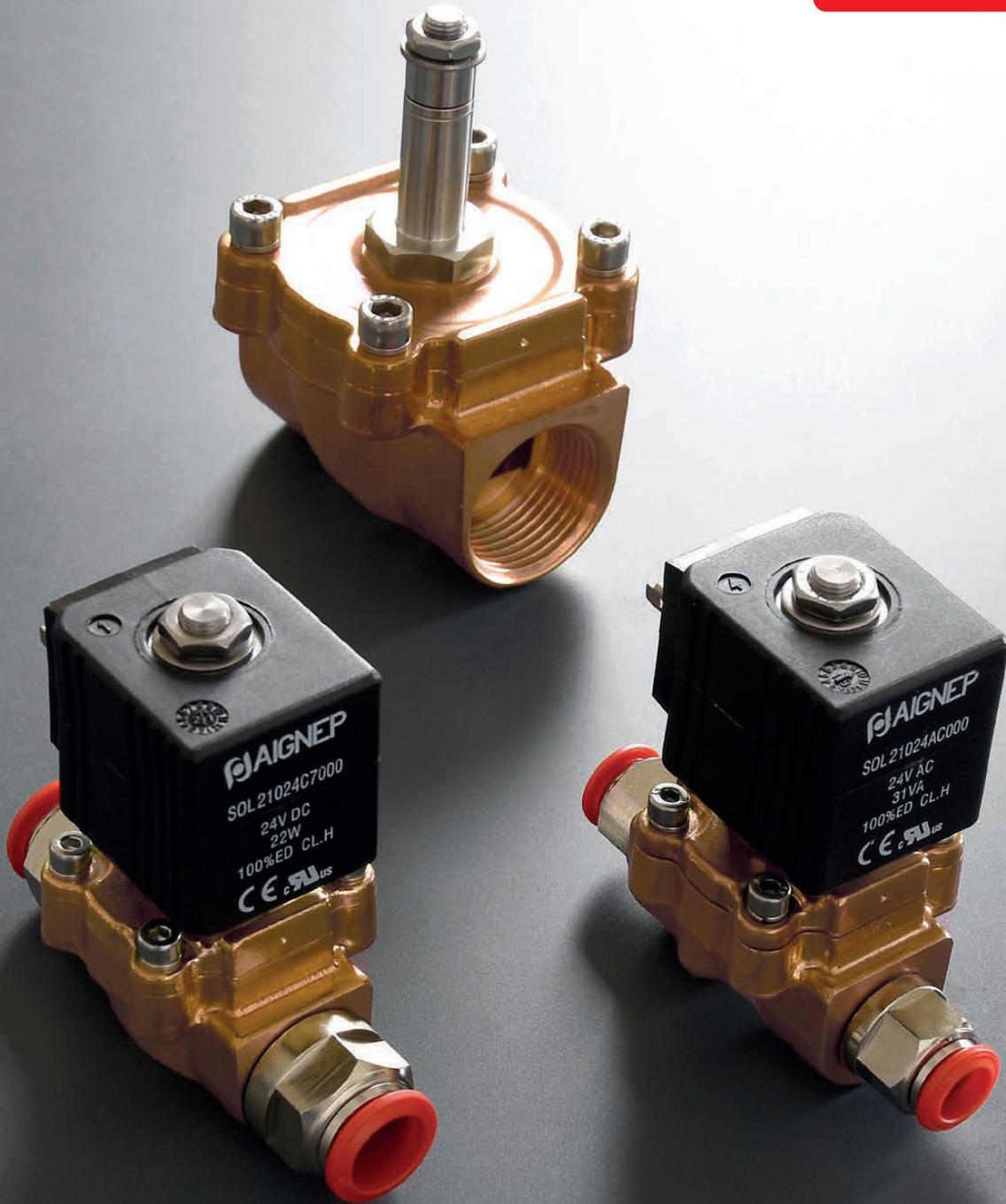
Page 15.8 - 15.10

ASSISTED-LIFT DIAPHRAGM SOLENOID VALVES

Ex
II 2 G/D Ex h

UL US
CSA C22.2

$\Delta P = 0$ psi



Series 06F

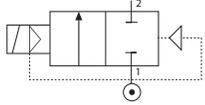
Series 06F

ASSISTED-LIFT DIAPHRAGM SOLENOID VALVES - $\Delta P = 0$ bar

2/2 NC

$\Delta P = 0$ psi

1/4" → 1"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 06F

- Recommended horizontal mounting position
- Operator kit \varnothing 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Car washes, Washing systems
- Industrial processes, Tank draining
- Air and Inert gases
- Vacuum, Packaging
- Oxygen, Steam, Medical, Sterilizers



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 6 F	0 4	1	1 4	N	0	N	C A
	04 = 3/8"	1 = 2/2 NC	14 = 35/64 (14)	N = NBR	0 = Standard	N = NPTF	C = C series - SOL20 A = 12V DC
	05 = 1/2"		18 = 45/64 (18)	E = EPDM			D = D series - SOL20 B = 24V DC
	07 = 3/4"		25 = 1 (25)	V = FKM			E = E series - SOL21 1 = 24V AC
	09 = 1"						2 = 110V AC
							3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

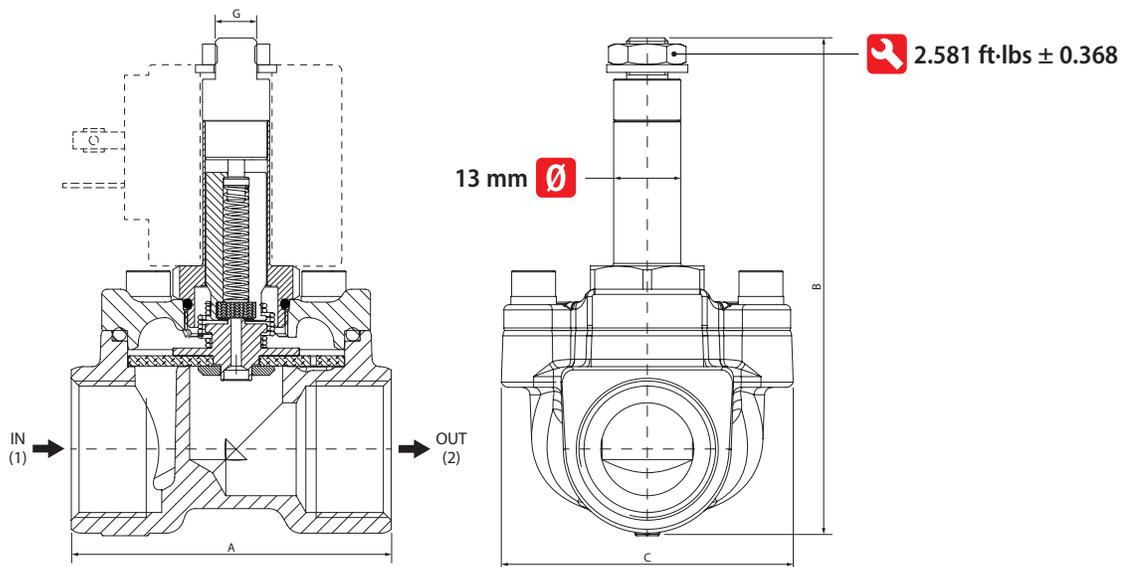
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						gpm (m ³ /h)	psi (bar)	
							Min	Max DC
06F 04 1 14_0 N	N = NBR +14°F +194°F (-10°C +90°C)	3/8"	35/64 (14)	25	3.15 (2.73)	0	-	174 (12)
14 (1)							203 (14)	
06F 05 1 14_0 N		1/2"	35/64 (14)	25	3.37 (2.92)	0	-	174 (12)
14 (1)							203 (14)	
06F 07 1 18_0 N	V = FKM +14°F +284°F (-10°C +140°C)	3/4"	45/64 (18)	25	4.71 (4.08)	0	-	174 (12)
14 (1)							203 (14)	
06F 09 1 25_0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	7.66 (6.63)	0	-	145 (10)
-							174 (12)	

Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
-	21	30	D - SOL20
22	31	36	E - SOL21

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
3/8"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
1/2"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
3/4"	2.440 (62)	3.799 (96.5)	2.224 (56.5)	M8 x 1
1"	2.854 (72.5)	4.133 (105)	2.598 (66)	M8 x 1



2/2 NC

3/8" → 1"

Pag. 12.3



Series X6F

Coils & Connectors



30 mm

Series C

Page 15.4




30 mm

Series D

Page 15.5




36 mm

Series E

Page 15.6




Connectors

Page 15.8 - 15.10



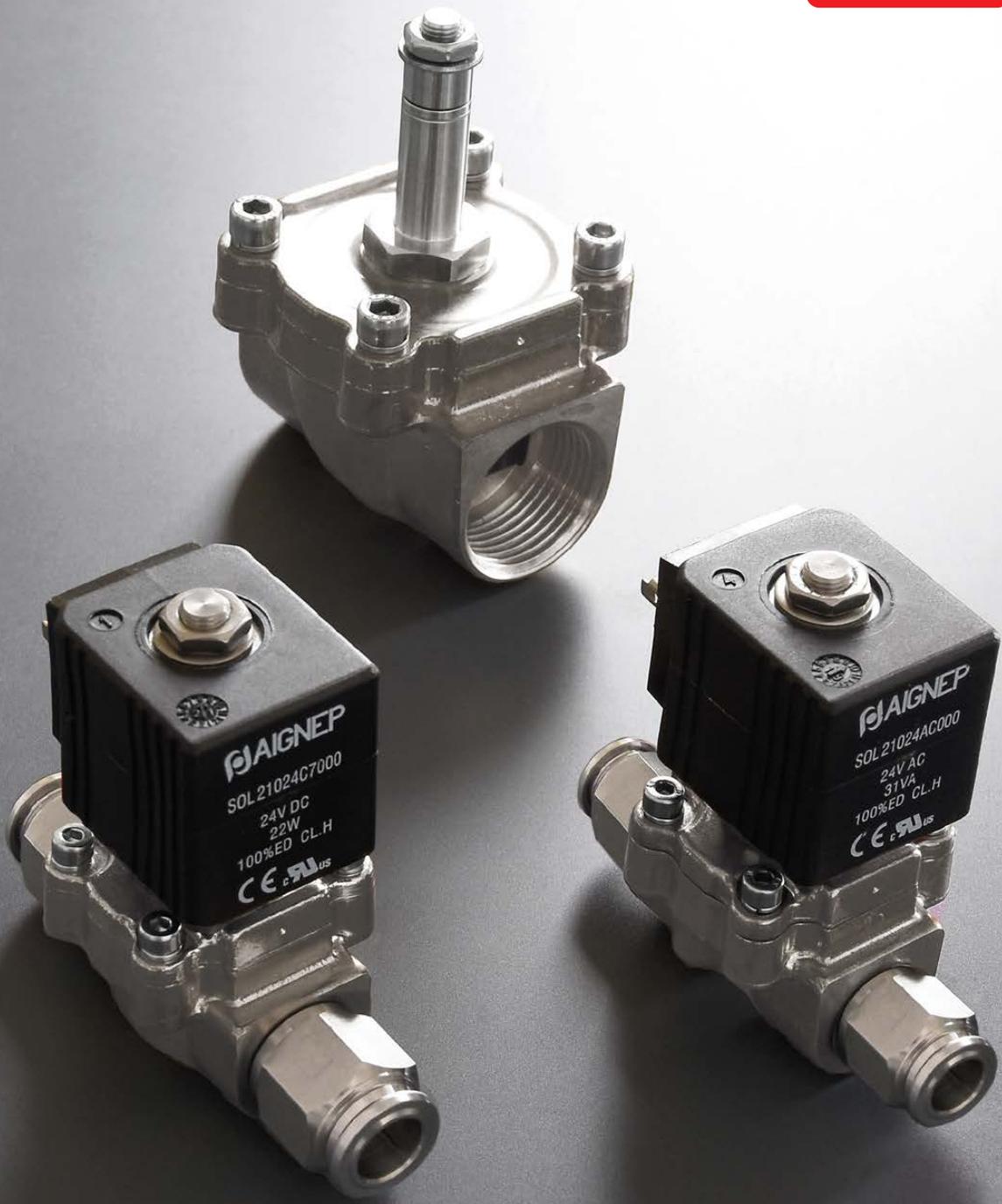
**ASSISTED-LIFT DIAPHRAGM SOLENOID VALVES
IN STAINLESS STEEL AISI 316L**


II 2 G/D Ex h


cRU US
CSA C22.2

AISI 316L

$\Delta P = 0$ psi



Series X6F



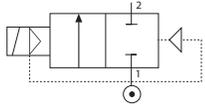
Series X6F

ASSISTED-LIFT DIAPHRAGM SOLENOID VALVES - $\Delta P = 0$ bar

2/2 NC

$\Delta P = 0$ psi

1/4" → 1"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X6F

- Recommended horizontal mounting position
- Operator kit \varnothing 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Neutral and corrosive liquids
- Car washes, Washing systems
- Industrial processes, Tank draining
- Air, Inert and aggressive gases
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 6 F	0 4	1	1 4	N	0	N	C A
	04 = 3/8"	1 = 2/2 NC	14 = 35/64 (14) 18 = 45/64 (18) 25 = 1 (25)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	C = C series - SOL20 A = 12V DC D = D series - SOL20 B = 24V DC E = E series - SOL21 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

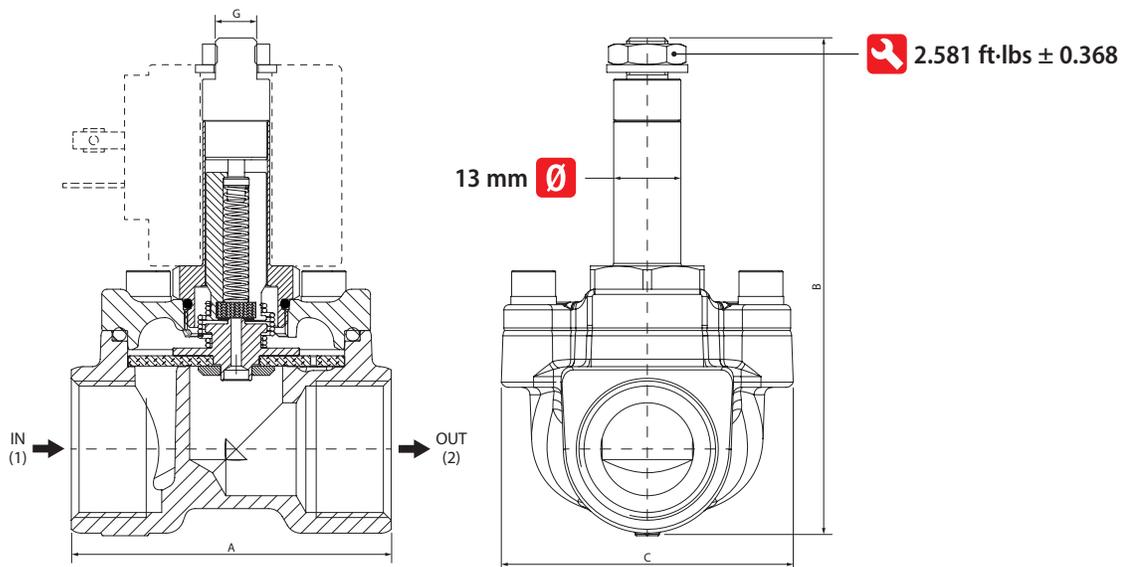
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						gpm (m ³ /h)	psi (bar)	
							Min	Max DC
X6F 04 1 14_0 N	N = NBR +14°F +194°F (-10°C +90°C)	3/8"	35/64 (14)	25	3.15 (2.73)	0	-	174 (12)
14 (1)							203 (14)	
X6F 05 1 14_0 N		1/2"	35/64 (14)	25	3.37 (2.92)	0	-	174 (12)
14 (1)							203 (14)	
X6F 07 1 18_0 N	V = FKM +14°F +284°F (-10°C +140°C)	3/4"	45/64 (18)	25	4.71 (4.08)	0	-	174 (12)
14 (1)							203 (14)	
X6F 09 1 25_0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	7.66 (6.63)	0	-	145 (10)
72 (5)							217 (15)	

Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
-	21	30	D - SOL20
22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

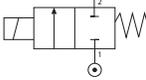
Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
3/8"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
1/2"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
3/4"	2.440 (62)	3.799 (96.5)	2.224 (56.5)	M8 x 1
1"	2.854 (72.5)	4.133 (105)	2.598 (66)	M8 x 1



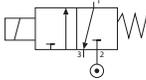
2/2 NC



1/8" - 1/4"
Page13.3



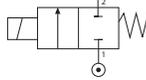
3/2 NC



1/8" - 1/4"
Page13.5



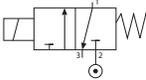
2/2 NC



1/8" - 1/4"
Page 13.7



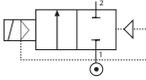
3/2 NC



1/8" - 1/4"
Page 13.9



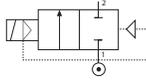
2/2 NC



1/4" → 1"
Page 13.11



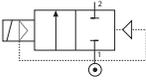
2/2 NC



1"1/4 → 2"
Page 13.13



2/2 NC



1/4" → 1"
Page 13.15




36 mm




Series N
Page 15.7

CONDUIT COIL SOLENOID VALVE SERIES

Ex
II 2 G/D Ex h

SP

FM Approvals

AISI 316L



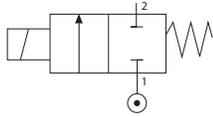
Series Conduit Coil

Series 01C

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01C

- Universal mounting position
- Operator kit Ø 9 mm
- Coils: Series SOL03



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +140°F
-10°C +60°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 1 C	0 2 02 = 1/8" 03 = 1/4"	1 1 = 2/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	N N = NPTF	N A N = N series - SOL03 A = 12V DC B = 24V DC 6 = 120V AC 4 = 240V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC W	AC VA	Size mm	Series N - Page 15.7
						Min	Max DC	Max AC				
①	①	NPTF	inch (mm)	cSt	gpm (m ³ /h)							
01C 02 1 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	580 (40)	580 (40)	4.6	6.8	36	N - SOLO3 *
01C 02 1 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	435 (30)	580 (40)				
01C 02 1 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	145 (10)	290 (20)				
01C 03 1 15 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	580 (40)	580 (40)				
01C 03 1 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	435 (30)	580 (40)				
01C 03 1 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	145 (10)	290 (20)				

① Select seal material

* COIL SERIES N - SOLO3

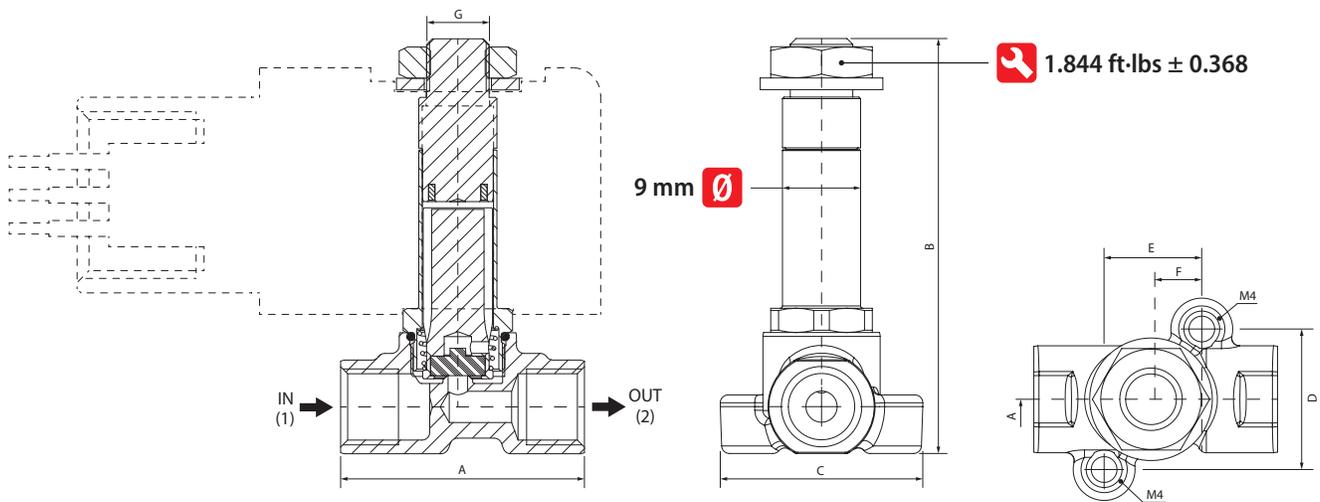
Ex m II T4 and Division 1

Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C



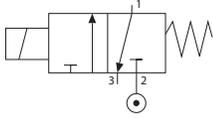
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

Series 01C

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01C

- Universal mounting position
- Operator kit Ø 9 mm
- Coils: Series SOL03



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +140°F
-10°C +60°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 1 C	0 2 02 = 1/8" 03 = 1/4"	3 3 = 3/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	N N = NPTF	N A N = N series - SOL03 A = 12V DC B = 24V DC 6 = 120V AC 4 = 240V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils		
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series N - Page 15.7
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	
01C 02 3 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	137 (9.5)	137 (9.5)	4.6	6.8	36	N - SOL03 *	
01C 02 3 02 _ 0 N			5/64 (2)	1/16 (1.4)	37	0.10 (0.09)	0.06 (0.05)	0	72 (5)	72 (5)					
01C 02 3 25 _ 0 N			3/32 (2.5)	1/16 (1.4)	53	0.17 (0.15)	0.06 (0.05)	0	43 (3)	43 (3)					
01C 03 3 15 _ 0 N		1/4"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	137 (9.5)	137 (9.5)					
01C 03 3 02 _ 0 N			5/64 (2)	1/16 (1.4)	37	0.10 (0.09)	0.06 (0.05)	0	72 (5)	72 (5)					
01C 03 3 25 _ 0 N			3/32 (2.5)	1/16 (1.4)	53	0.17 (0.15)	0.06 (0.05)	0	43 (3)	43 (3)					

① Select seal material

*** COIL SERIES N - SOL03**

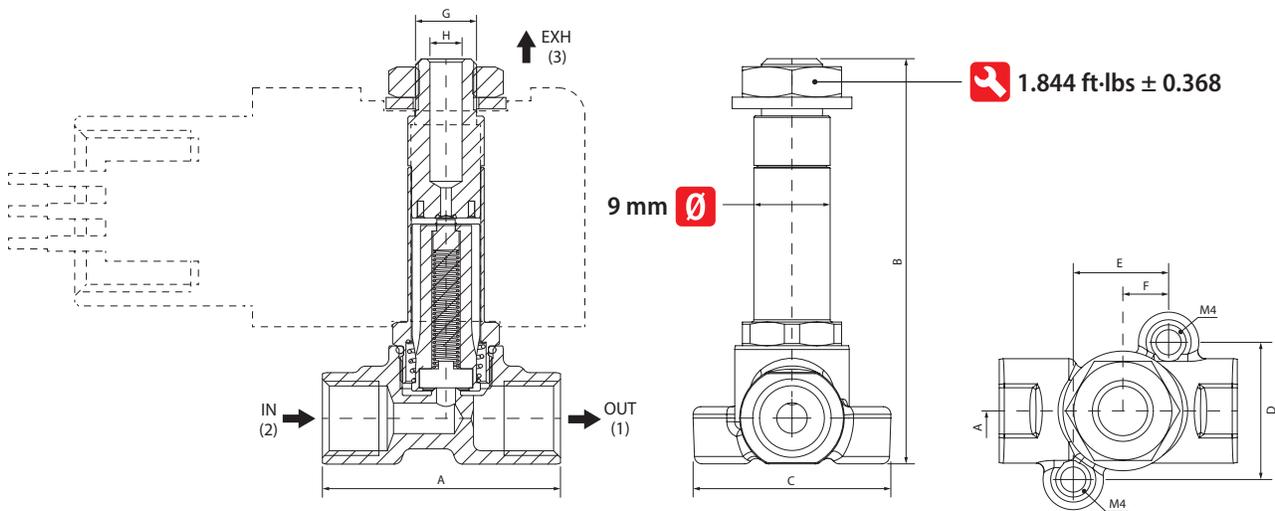
Ex m II T4 and Division 1

Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C



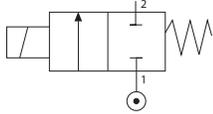
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series X1C

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1C

- Universal mounting position
- Operator kit Ø 9 mm
- Coils: Series SOL03



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+140°F
-10°C	+60°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 1 C	0 2	1	1 5	N	0	N	N A
	02 = 1/8" 03 = 1/4"	1 = 2/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	N = N series - SOL03 A = 12V DC B = 24V DC 6 = 120V AC 4 = 240V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC W	AC VA	Size mm	Series N - Page 15.7
						Min	Max DC	Max AC				
X1C 02 1 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	580 (40)	580 (40)	4.6	6.8	36	N - SOLO3 *
X1C 02 1 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	435 (30)	580 (40)				
X1C 02 1 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	145 (10)	290 (20)				
X1C 03 1 15 _0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	580 (40)	580 (40)				
X1C 03 1 20 _0 N			5/64 (2)	37	0.10 (0.09)	0	435 (30)	580 (40)				
X1C 03 1 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	145 (10)	290 (20)				

① Select seal material

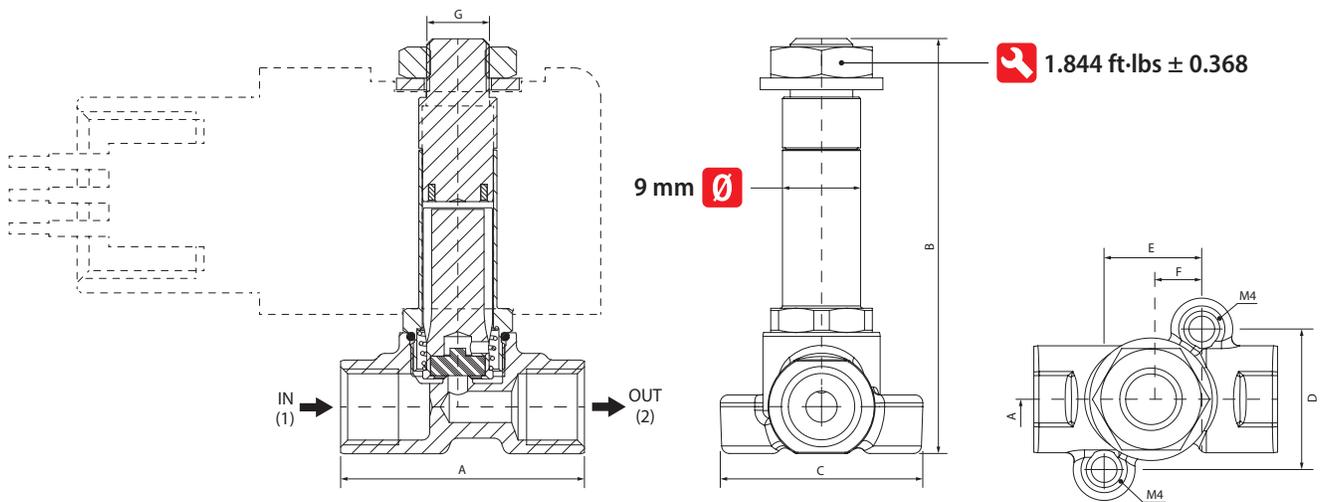
* **COIL SERIES N - SOLO3**
 Ex m II T4 and Division 1

Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C



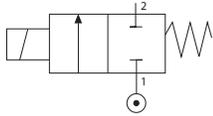
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

Series X1C

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1C

- Universal mounting position
- Operator kit Ø 9 mm
- Coils: Series SOL03



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+140°F
-10°C	+60°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 1 C	0 2	3	1 5	N	0	N	N A
	02 = 1/8" 03 = 1/4"	3 = 3/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	N = N series - SOL03 A = 12V DC B = 24V DC 6 = 120V AC 4 = 240V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils		
			inch (mm)			cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series N - Page 15.7
			IN	EXH			IN	EXH	Min	Max DC	Max AC	W	VA	mm	
X1C 02 3 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	137 (9.5)	137 (9.5)	4.6	6.8	36	N - SOL03 *	
X1C 02 3 02 _0 N			5/64 (2)	1/16 (1.4)	37	0.10 (0.09)	0.06 (0.05)	0	72 (5)	72 (5)					
X1C 02 3 25 _0 N			3/32 (2.5)	1/16 (1.4)	53	0.17 (0.15)	0.06 (0.05)	0	43 (3)	43 (3)					
X1C 03 3 15 _0 N		1/4"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	137 (9.5)	137 (9.5)					
X1C 03 3 20 _0 N			5/64 (2)	1/16 (1.4)	37	0.10 (0.09)	0.06 (0.05)	0	72 (5)	72 (5)					
X1C 03 3 25 _0 N			3/32 (2.5)	1/16 (1.4)	53	0.17 (0.15)	0.06 (0.05)	0	43 (3)	43 (3)					

① Select seal material

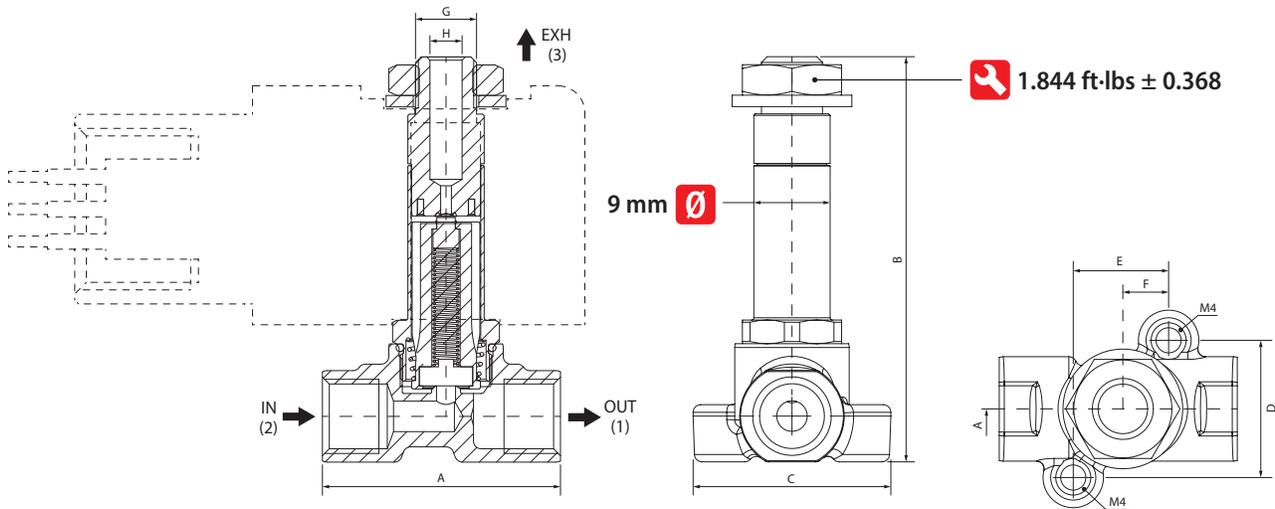
* **COIL SERIES N - SOL03**
 Ex m II T4 and Division 1

Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C



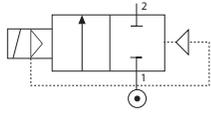
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series 04C

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/4" → 1"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04C

- Recommended horizontal mounting position
- Operator kit Ø 9 mm
- Coils: Series SOL03



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +140°F
-10°C +60°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 4 C	0 3	1	1 0	N	H	N	N A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	H = Standard	N = NPTF	N = N series - SOL03 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM	4 = Reinforced diaphragm (on request)		B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM	T = Speed regulator (on request)		6 = 120V AC
	07 = 3/4"		25 = 1 (25)		5 = Version 4 + T (on request)		4 = 240V AC
	09 = 1"						

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC W	AC VA	Size mm	Series N - Page 15.7
						Min	Max DC	Max AC				
04C 03 1 10 _ HN	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16)	232 (16)	4.6	6.8	36	N - SOLO3 *
04C 04 1 14 _ HN		3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	232 (16)	232 (16)				
04C 05 1 14 _ HN		1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	232 (16)	232 (16)				
04C 07 1 18 _ HN		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)				
04C 09 1 25 _ HN		1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)				

① Select seal material

* **COIL SERIES N - SOLO3**

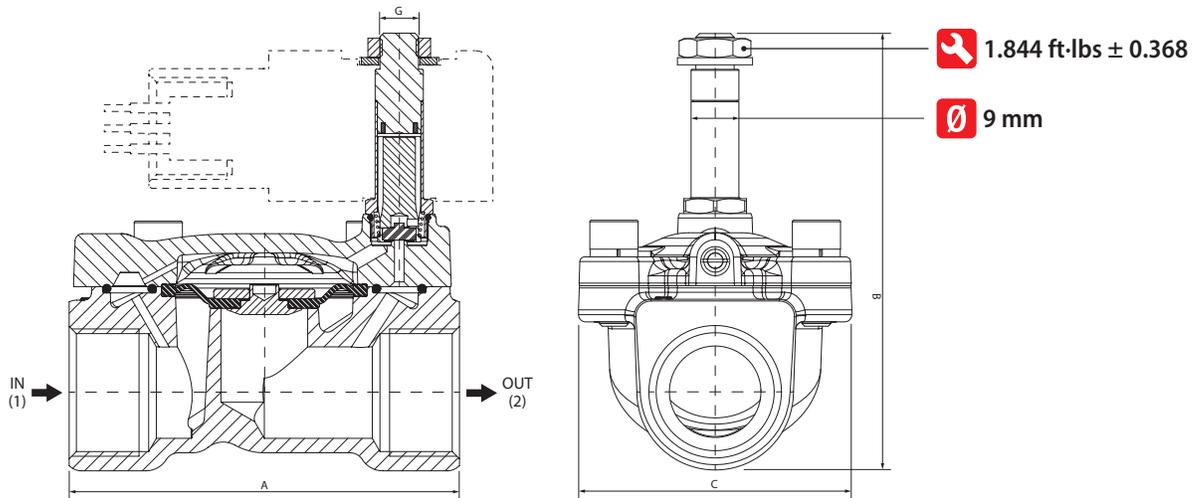
Ex m II T4 and Division 1

Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C



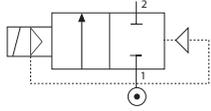
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

Series 04C

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NC

1"1/4 → 2"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04C

- Recommended horizontal mounting position
- Operator kit Ø 9 mm
- Coils: Series SOL03



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +140°F
-10°C +60°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
04C	XF	1	40	N	T	N	N A
	XF = 1"1/4 XG = 1"1/2 XH = 2"	1 = 2/2 NC	40 = 1" 9/16 (40) 50 = 1" 61/64 (50)	N = NBR E = EPDM V = FKM	T: Without manual override 1: With manual override (on request)	N = NPTF	N = N series - SOL03 A = 12V DC B = 24V DC 6 = 120V AC 4 = 240V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						gpm (m ³ /h)	psi (bar)		DC	AC	Size	Series N - Page 15.7
							Min	Max DC	Max AC	W	VA	
①	①	NPTF	inch (mm)	cSt								

With speed regulator												
04C XF 1 40 _T N	N = NBR +14°F +194°F (-10°C +90°C)	1"1/4	1" 9/16 (40)	25	27.74 (24)	2.9 (0.20)	145 (10)	145 (10)	4.6	6.8	36	N - SOL03 *
04C XG 1 40 _T N	V = FKM +14°F +284°F (-10°C +140°C)	1"1/2	1" 9/16 (40)	25	29.2 (25.3)	2.9 (0.20)	145 (10)	145 (10)				
04C XH 1 50 _T N	E = EPDM +14°F +284°F (-10°C +140°C)	2"	1" 61/64 (50)	25	47.39 (41)	2.9 (0.20)	145 (10)	145 (10)				

① Select seal material

* **COIL SERIES N - SOL03**
Ex m II T4 and Division 1

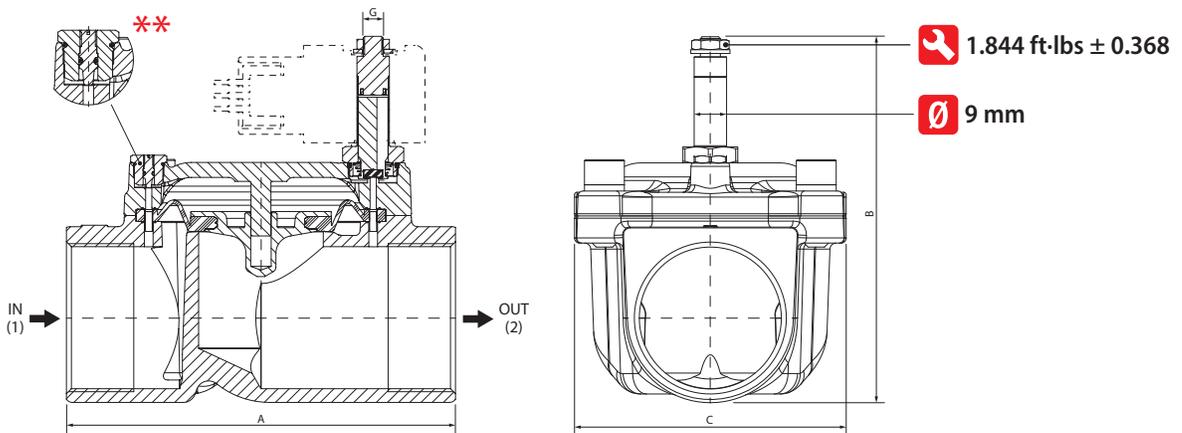
Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C

** Speed regulator



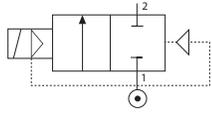
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1"1/4	5.51 (140)	5 (127)	3.85 (98)	M8 x 1
1"1/2	5.51 (140)	5 (127)	3.85 (98)	M8 x 1
2"	6.14 (156)	5.78 (147)	4.29 (109)	M8 x 1

Series X4C

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/4" → 1"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X4C

- Recommended horizontal mounting position
- Operator kit Ø 9 mm
- Coils: Series SOL03



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +140°F
-10°C +60°C



Applications

- Water, Oils, Neutral and corrosive liquids
- Water management, Water treatment
- Food industry, Washing systems
- Industrial processes, Refrigeration
- Air, Inert and aggressive gases
- Oxygen, Steam
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
X 4 C	0 3	1	1 0	N	H	N	N A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	H = Standard	N = NPTF	N = N series - SOL03 A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM			B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM			6 = 120V AC
	07 = 3/4"		25 = 1 (25)				4 = 240V AC
	09 = 1"						

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC				
X4C 03 1 10 _H N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM -22°F +284°F (-30°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	NPTF	inch (mm)	cSt	gpm (m³/h)	2	232	232	4.6	6.8	36	N - SOLO3 *
X4C 04 1 14 _H N		1/4"	25/64 (10)	25	2.19 (1.88)	(0.15)	(16)	(16)				
X4C 05 1 14 _H N		3/8"	35/64 (14)	25	3.87 (3.32)	(0.15)	(16)	(16)				
X4C 07 1 18 _H N		1/2"	35/64 (14)	25	4.11 (3.53)	(0.15)	(16)	(16)				
X4C 09 1 25 _H N		3/4"	45/64 (18)	25	6.48 (5.56)	(0.15)	(16)	(16)				
		1"	1 (25)	25	12.78 (10.97)	(0.15)	(16)	(16)				

① Select seal material

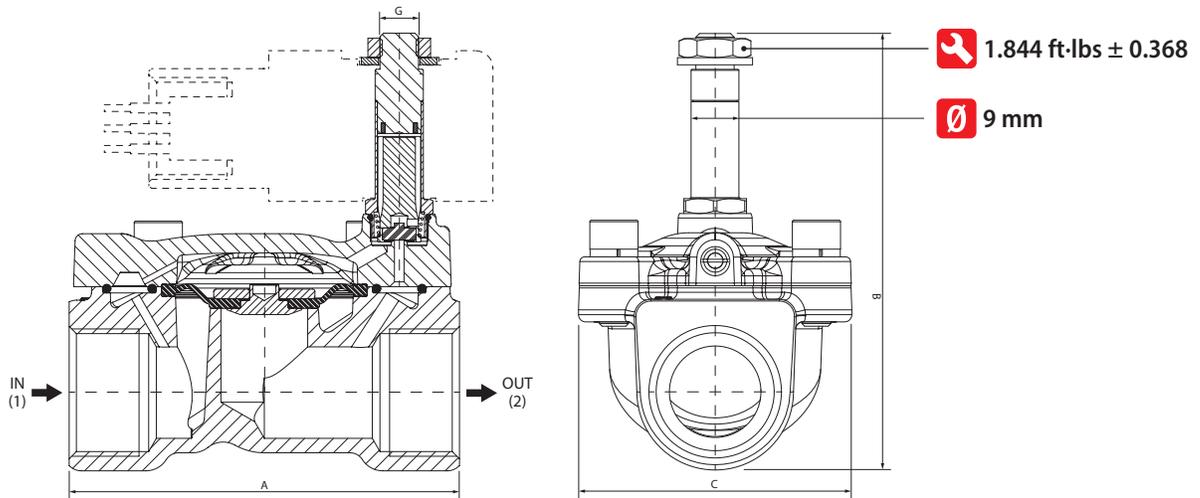
* **COIL SERIES N - SOLO3**
Ex m II T4 and Division 1

Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

2/2 NC



3/8" - 1/2"

Page 14.3

30 mm



Series C

Page 15.4

UL US
CSA C22.2

30 mm



Series D

Page 15.5

UL US
CSA C22.2

36 mm



Series E

Page 15.6

UL US
CSA C22.2



Connectors

Page 15.8 - 15.10

UL US
CSA C22.2



90985

Page 14.4



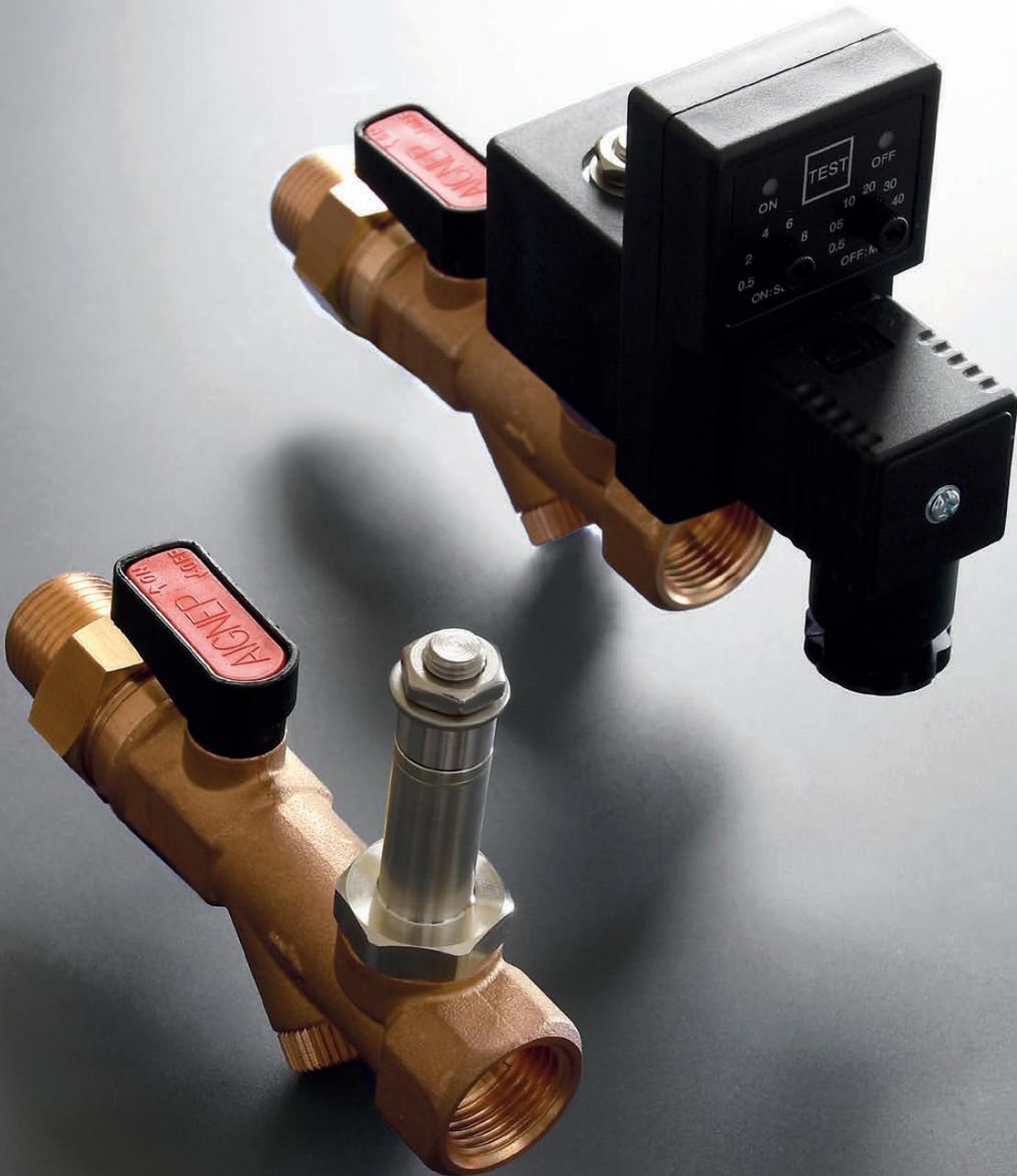
90987

Page 14.4

DRAIN VALVE

UL
C US
CSA C22.2

$\Delta P = 0$ psi



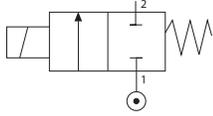
Series 90976

Series 90976

DRAIN VALVE

2/2 NC

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



Advantages

- Taper nipple (3 pieces)
- Analog and digital timer
- Manual ball valve



Degree of filtration

500 µm



Maximum allowable pressure

580 psi (40 bar)



Fluids

Air / Inert gases / Water



Room temperature with coil class H

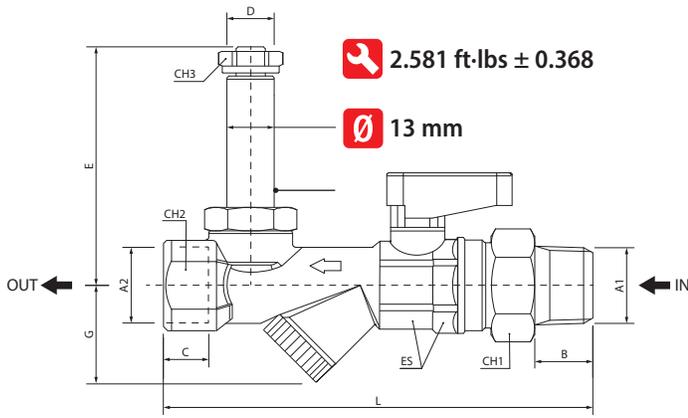
+14°F +176°F
-10°C +80°C

Code	Item	Port size		Sealing materials	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		Power	Coils		
		A1 (NPTF)	A2 (NPTF)					psi (bar)			VA	Size mm	Model
								Min	Max				
909764 D2 4 2	90976-06-08	3/8"	1/2"	NBR +14°F +194°F (-10°C +90°C)	1/8 (3)	53	0.24 (0.21)	0	435 (30)	21	30	D2 (SOL20110AB000) 110V.AC / 50-60 Hz	
909765 D2 4 2	90976-08-08	1/2"	1/2"									53	0.24 (0.21)

Timer (series 90987) included

Coil (model: SOL20110AB000) included

Connector complete with cable included



Code	A1 (NPTF)	A2 (NPTF)	B inch (mm)	C inch (mm)	D inch (mm)	CH1 inch (mm)	CH2 inch (mm)	CH3 inch (mm)	L inch (mm)	E inch (mm)	G inch (mm)	ES inch (mm)	Cable Ft. (Mt.)
909764 D2 4 2	3/8"	1/2"	0.452 (11.5)	0.472 (12)	0.511 (13)	1.062 (27)	0.984 (25)	0.629 (16)	4.468 (113.5)	2.578 (65.5)	1.043 (26.5)	22 - 23	6.5 (2)
909765 D2 4 2	1/2"	1/2"	0.629 (16)	0.472 (12)	0.511 (13)	1.062 (27)	0.984 (25)	0.629 (16)	4.625 (117.5)	2.578 (65.5)	1.043 (26.5)	22 - 23	6.5 (2)

90985

ANALOG TIMER DIN43650A



Code	Pack.	
90985 00 001	1	
	min	max
Temperature	+14°F -10 °C	+122°F +50 °C



Features

- 24 - 240V AC/DC
- IP65 - EN6052
- 1 A Max
- 0.5 - 10 Sec. ON
- 0.5 - 45 Min. OFF
- Reset/Test

90987

DIGITAL TIMER DIN43650A



Code	Voltage	Power consumption	Pack.
90987 00 001	7 - 36V AC/DC	20mA MAX	1
90987 00 002	110 - 240V AC/DC	10mA MAX	1
	min	max	
Temperature	+14°F -10 °C	+158°F +70 °C	



Features

- Insulation Voltage: 100V AC - 1 minute
- Insulation Resistance: 50MΩ (500VDC)
- IP65 - EN6052
- Output Corrent: 1.5 A Max
- 1 Sec. - 100 Hours -> ON
- 1 Sec. - 100 Hours -> OFF
- 4 DIGIT: Mode/Add/Enter/Reset

Coils

Coils & Connectors

22 mm



Series A
Page 15.2

UL US
CSA C22.2

30 mm



Series B
Page 15.3

UL US
CSA C22.2

30 mm



Series C
Page 15.4

UL US
CSA C22.2

30 mm



Series D
Page 15.5

UL US
CSA C22.2

36 mm



Series E
Page 15.6

UL US
CSA C22.2

36 mm



Series N
Page 15.7

Ex
UL US
CSA C22.2

Connectors

Coils & Connectors



Connectors
Page 15.8 - 15.10

UL US
CSA C22.2

COILS AND CONNECTORS

UL
C US
CSA C22.2



Coils & Connectors

SERIES A

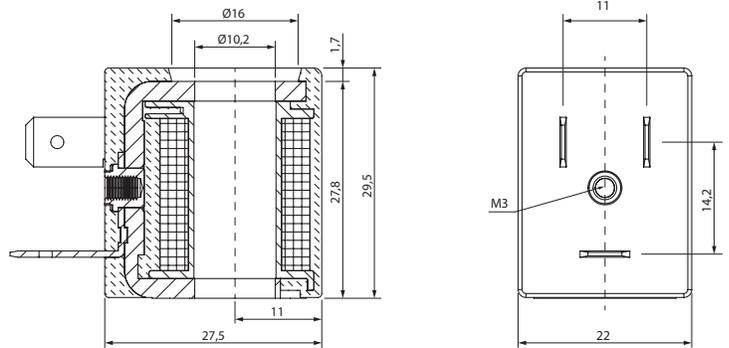
COIL



22 mm

10 mm

ED 100%



The dimensions are in millimeters (mm)



UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
AA	SOL10012C4000	12V DC	6.5 W	±10 %		
AB	SOL10024C4000	24V DC	6.5 W	±10 %		
AF	SOL1003C30000	3V DC	2 W	±10 %		
AH	SOL1009C10000	9V DC	3 W	±10 %	+14°F (-10°C)	+176°F (+80°C)
A1	SOL10024A8000	24V AC / 50-60 Hz	7.5 VA	±10 %		
A2	SOL10110A8000	110V AC / 50-60 Hz	7.5 VA	±10 %		
A3	SOL10220A8000	220V AC / 50-60 Hz	7.5 VA	±10 %		

INSULATION CLASS

H
EN 60085

ENCAPSULATION MATERIAL

RYNITE®

ELECTRICAL CONNECTIONS

FORM B - INDUSTRIAL
EN 175301-803
(EX DIN 43650)

AMBIENT TEMPERATURE

+14°F +176°F
(-10°C +80°C)

PROTECTION DEGREE

IP67
IEC 60529
with connector IP67

OPTIONS

Other voltages/powers on request

SERIES B

COIL



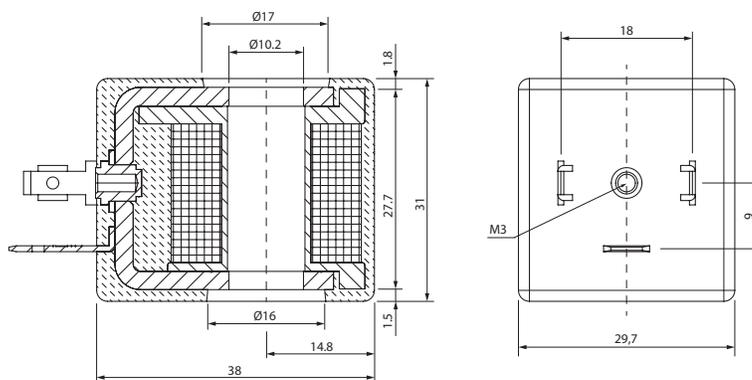
30 mm



10 mm



ED 100%



The dimensions are in millimeters (mm)



UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
BA	SOL11012C5000	12V DC	8 W	±10 %		
BB	SOL11024C5000	24V DC	8 W	±10 %		
BH	SOL11012CL000	12V DC	4 W	±10 %	+14°F	+176°F
B1	SOL11024A9000	24V AC / 50-60 Hz	11 VA	±10 %	(-10°C)	(+80°C)
B2	SOL11110A9000	110V AC / 50-60 Hz	11 VA	±10 %		
B3	SOL11220A9000	220V AC / 50-60 Hz	11 VA	±10 %		

INSULATION CLASS	H EN 60085	ENCAPSULATION MATERIAL	RYNITE®	ELECTRICAL CONNECTIONS	FORM A EN 175301-803 (EX DIN 43650)
AMBIENT TEMPERATURE	+14°F +176°F (-10°C +80°C)	PROTECTION DEGREE	IP67 IEC 60529 with connector IP67	OPTIONS	Other voltages/powers on request

SERIES C

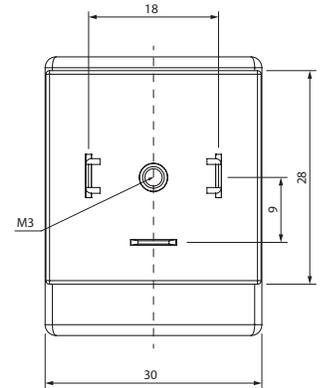
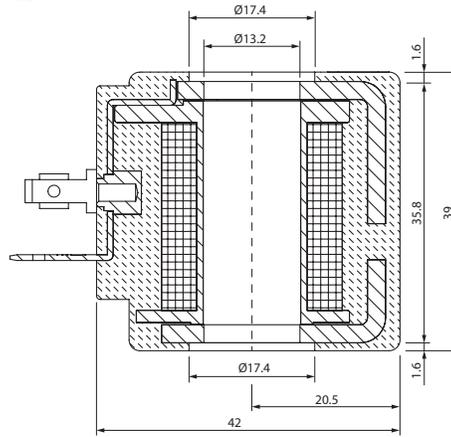
COIL



30 mm

13 mm

ED 100%



The dimensions are in millimeters (mm)



UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
CA	SOL20012C5000	12V DC	8 W	±10 %		
CB	SOL20024C5000	24V DC	8 W	±10 %		
C1	SOL20024AA000	24V AC / 50-60 Hz	14 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
C2	SOL20110AA000	110V AC / 50-60 Hz	14 VA	±10 %		
C3	SOL20220AA000	220V AC / 50-60 Hz	14 VA	±10 %		

INSULATION CLASS: **H EN 60085**

ENCAPSULATION MATERIAL: **RYNITE®**

ELECTRICAL CONNECTIONS: **FORM A EN 175301-803 (EX DIN 43650)**

AMBIENT TEMPERATURE: **+14°F +176°F (-10°C +80°C)**

PROTECTION DEGREE: **IP67 IEC 60529 with connector IP67**

OPTIONS: **Other voltages/powers on request**

SERIES D

COIL

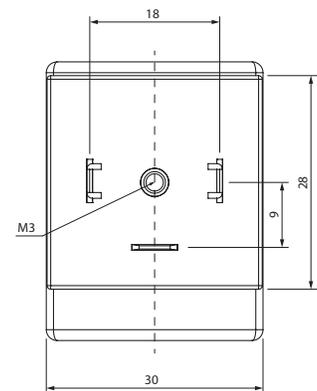
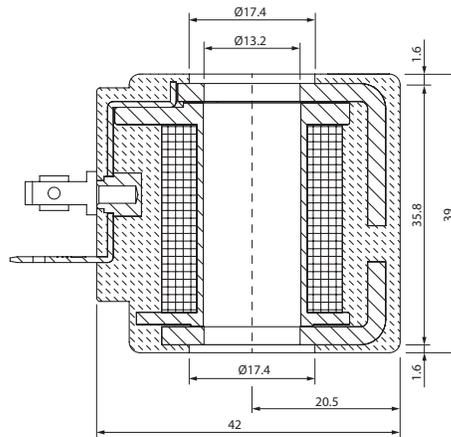
30 mm



13 mm



ED 100%



The dimensions are in millimeters (mm)



UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
DA	SOL20012C6000	12V DC	14 W	±10 %		
DB	SOL20024C6000	24V DC	14 W	±10 %		
D1	SOL20024AB000	24V AC / 50-60 Hz	21 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
D2	SOL20110AB000	110V AC / 50-60 Hz	21 VA	±10 %		
D3	SOL20220AB000	220V AC / 50-60 Hz	21 VA	±10 %		

INSULATION CLASS **H**
EN 60085

ENCAPSULATION MATERIAL **RYNITE®**

ELECTRICAL CONNECTIONS **FORM A**
EN 175301-803
(EX D1N 43650)

AMBIENT TEMPERATURE **+14°F +176°F**
(-10°C +80°C)

PROTECTION DEGREE **IP67**
IEC 60529
with connector IP67

OPTIONS Other voltages/powers on request

SERIES E

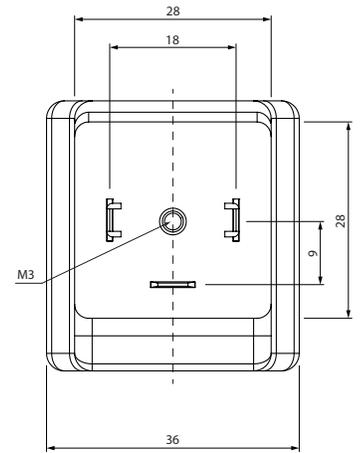
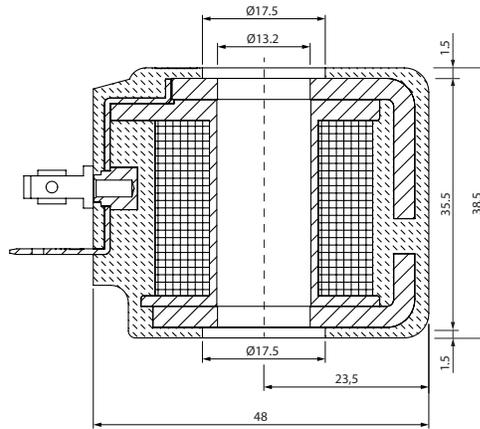
COIL



36 mm

13 mm

ED 100%



The dimensions are in millimeters (mm)



UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
EA	SOL21012C7000	12V DC	22 W	±10 %		
EB	SOL21024C7000	24V DC	22 W	±10 %		
E1	SOL21024AC000	24V AC / 50-60 Hz	31 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
E2	SOL21110AC000	110V AC / 50-60 Hz	31 VA	±10 %		
E3	SOL21220AC000	220V AC / 50-60 Hz	31 VA	±10 %		

INSULATION CLASS

H
EN 60085

ENCAPSULATION MATERIAL

RYNITE®

ELECTRICAL CONNECTIONS

FORM A
EN 175301-803
(EX DIN 43650)

AMBIENT TEMPERATURE

+14°F +176°F
(-10°C +80°C)

PROTECTION DEGREE

IP67
IEC 60529
with connector IP67

OPTIONS

Other voltages/powers on request

SERIES N

COIL



36 mm

9 mm

ED 100%



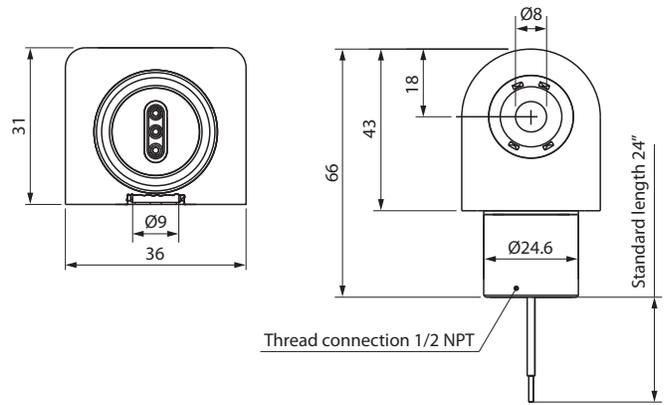
Ex m II T4 and Division 1

Specifications in accordance to CSA certificate:

- Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III;
- Class I, Division 2, Groups A, B, C, D.

Specifications in accordance to FM certificate:

- Explosionproof Class I, Division 1, Groups A, B, C, D, T4, Ta=60°C
- Encapsulation/explosionproof Class I, Zone 1, AEx m II T4, Ta=60°C
- Dust-ignitionproof for Class II/III, Division 1, Group E, F and G, T4, Ta=60°C
- Nonincendive Class I, Division 2, Groups A, B, C, D, T4, Ta=60°C
- Suitable for Class II, III, Division 2, Groups E, F, G, T4, Ta=60°C



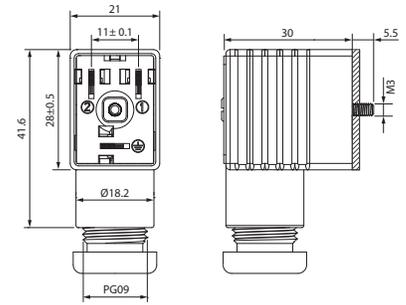
The dimensions are in millimeters (mm)

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
NA	SOL 03 01 2C P000	12V DC	4,6 W	±10 %		
NB	SOL 03 02 4C P000	24V DC	4,6 W	±10 %	-4°F	+140°F
N6	SOL 03 12 0A N000	120V AC / 60Hz	6,8 VA	±10 %	(-20°C)	(+60°C)
N4	SOL 03 24 0A N000	240V AC / 60Hz	6,8 VA	±10 %		

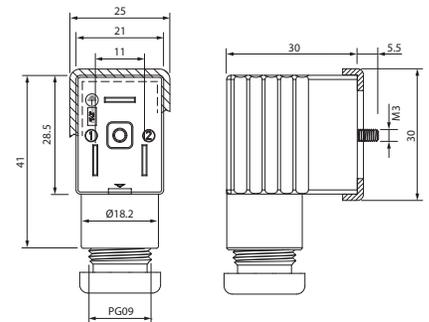
INSULATION CLASS	H EN 60085	ENCAPSULATION MATERIAL	THERMOPLAST	ELECTRICAL CONNECTIONS	24 Inch (0.61m) Three-pole cable
PROTECTION DEGREE	IP65 IEC 60529 According to wiring	FEATURES	Explosion protection	EXAMINATION CERTIFICATES	CSA 202633 FM 3006713

CONNECTORS

22 mm



The dimensions are in millimeters (mm)



The dimensions are in millimeters (mm)

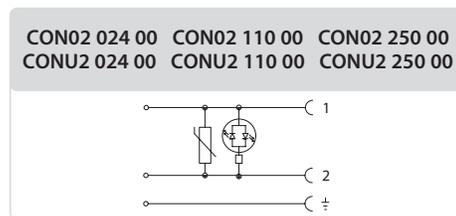
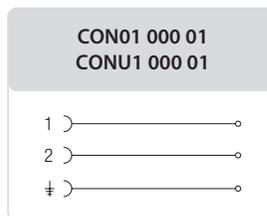
Code	Size	Colour	Characteristics
	mm		
CON01 000 01	22	BLACK	2 PINS
CON02 024 00	22	TRANSPARENT	● LED + VDR 0 - 24V
CON02 110 00	22	TRANSPARENT	● LED + VDR 110V
CON02 250 00	22	TRANSPARENT	● LED + VDR 220V
* CONU1 000 01	22	BLACK	2 PINS
* CONU2 024 00	22	TRANSPARENT	● LED + VDR 0 - 24V
* CONU2 110 00	22	TRANSPARENT	● LED + VDR 110V
* CONU2 250 00	22	TRANSPARENT	● LED + VDR 220V

*: UL 1977 AND CAN/CSA C22.2 NO. 182.3

VDR: Fitted with varistors as surge protection device.



Wiring



ELECTRICAL CONNECTIONS

FORM B - INDUSTRIAL
EN 175301-803
(EX DIN 43650)

PROTECTION DEGREE

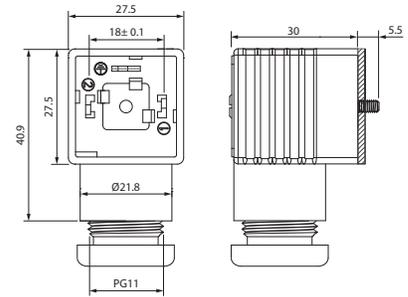
IP67
IEC 60529

CABLE DIAMETER

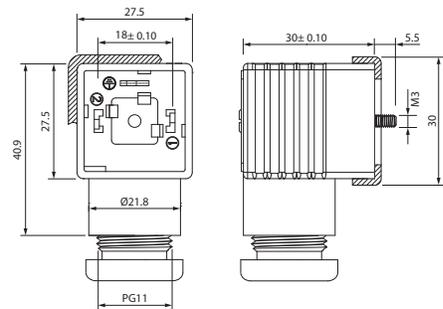
6 ÷ 8 mm
&
8 ÷ 11 mm

CONNECTORS

30-36 mm



The dimensions are in millimeters (mm)



The dimensions are in millimeters (mm)

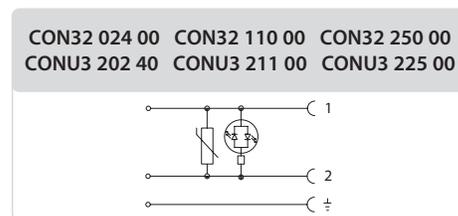
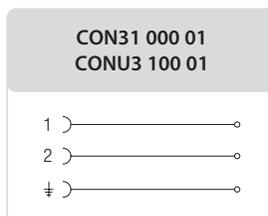
Code	Size mm	Colour	Characteristics
CON31 000 01	30 - 36	BLACK	2 PINS
CON32 024 00	30 - 36	TRANSPARENT	LED + VDR 0 - 24V
CON32 110 00	30 - 36	TRANSPARENT	LED + VDR 110V
CON32 250 00	30 - 36	TRANSPARENT	LED + VDR 220V
* CONU3 100 01	30 - 36	BLACK	2 PINS
* CONU3 202 40	30 - 36	TRANSPARENT	LED + VDR 0 - 24V
* CONU3 211 00	30 - 36	TRANSPARENT	LED + VDR 110V
* CONU3 225 00	30 - 36	TRANSPARENT	LED + VDR 220V

*: UL 1977 AND CAN/CSA C22.2 NO. 182.3

VDR: Fitted with varistors as surge protection device.



Wiring



ELECTRICAL
CONNECTIONS

FORM A
EN 175301-803
(EX DIN 43650)

PROTECTION
DEGREE

IP67
IEC 60529

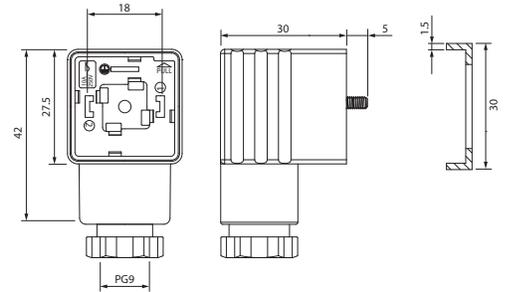
CABLE
DIAMETER

6 ÷ 8 mm
&
8 ÷ 11 mm

CONNECTORS

"ENERGY SAVING"

30-36 mm 



The dimensions are in millimeters (mm)

Code	Size mm	Colour	Characteristics
CON33 012 00	30 - 36	<input type="checkbox"/> TRANSPARENT	ENERGY SAVING 12 V DC (8 ÷ 20)
CON33 024 00	30 - 36	<input type="checkbox"/> TRANSPARENT	ENERGY SAVING 24 V DC (18 ÷ 30)

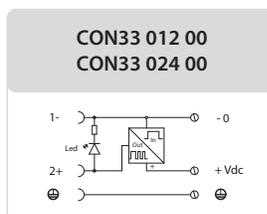
ENERGY SAVING CONNECTOR



The Energy Saving connector reduces the power absorbed by the solenoid valve during supply by up to 40 per cent, thanks to 'speed up & holding' technology. Initially, it provides full power for 600 ms, and then reduces it via a PWM command that regulates the current in the coil. This ensures high performance and fast, safe switching, with considerable energy savings in the holding phase, while also reducing temperature. The connector is protected against short circuits, overloads and polarity reversals, and automatically adapts output power to changes in input voltage



Wiring

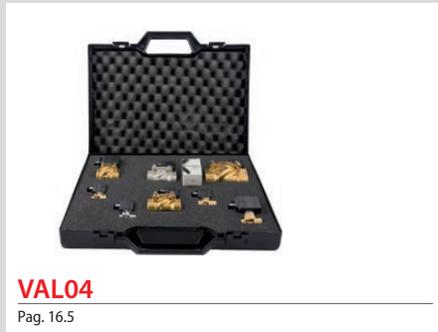


ELECTRICAL CONNECTIONS **FORM A**
EN 175301-803
(EX DIN 43650)

PROTECTION DEGREE **IP65**
IEC 60529

CABLE DIAMETER **6 ÷ 8 mm**
&
8 ÷ 11 mm

Accessories



Solenoid Pilots



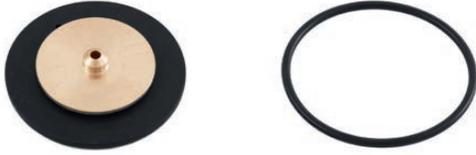
FLUIDITY SPARE PARTS & ACCESSORIES - SOLENOID PILOTS



Accessories - Solenoid Pilots

KIT - 03F

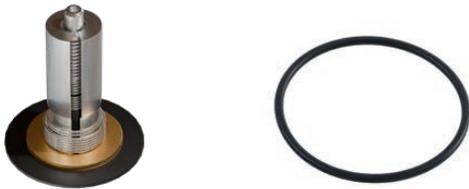
DIAPHRAGM KIT AND O-RING - SERIE 03F



Code	Sealing materials	Size	Pack.
03FK4 0 03 N 0	NBR	1/4"	1
03FK4 0 03 V 0	FKM	1/4"	1
03FK4 0 03 E 0	EPDM	1/4"	1
03FK4 0 04 N 0	NBR	3/8" - 1/2"	1
03FK4 0 04 V 0	FKM	3/8" - 1/2"	1
03FK4 0 04 E 0	EPDM	3/8" - 1/2"	1
03FK4 0 07 N 0	NBR	3/4"	1
03FK4 0 07 V 0	FKM	3/4"	1
03FK4 0 07 E 0	EPDM	3/4"	1
03FK4 0 09 N 0	NBR	1"	1
03FK4 0 09 V 0	FKM	1"	1
03FK4 0 09 E 0	EPDM	1"	1

KIT - 06F

DIAPHRAGM KIT AND O-RING - SERIE 06F



Code	Sealing materials	Size	Pack.
06FK4 0 04 N 0	NBR	3/8" - 1/2"	1
06FK4 0 04 V 0	FKM	3/8" - 1/2"	1
06FK4 0 04 E 0	EPDM	3/8" - 1/2"	1
06FK4 0 07 N 0	NBR	3/4"	1
06FK4 0 07 V 0	FKM	3/4"	1
06FK4 0 07 E 0	EPDM	3/4"	1
06FK4 0 09 N 0	NBR	1"	1
06FK4 0 09 V 0	FKM	1"	1
06FK4 0 09 E 0	EPDM	1"	1

KIT - X6F

DIAPHRAGM KIT AND O-RING - SERIE X6F



Code	Sealing materials	Size	Pack.
X6FK4 0 04 N 0	NBR	3/8" - 1/2"	1
X6FK4 0 04 V 0	FKM	3/8" - 1/2"	1
X6FK4 0 04 E 0	EPDM	3/8" - 1/2"	1
X6FK4 0 07 N 0	NBR	3/4"	1
X6FK4 0 07 V 0	FKM	3/4"	1
X6FK4 0 07 E 0	EPDM	3/4"	1
X6FK4 0 09 N 0	NBR	1"	1
X6FK4 0 09 V 0	FKM	1"	1
X6FK4 0 09 E 0	EPDM	1"	1

KIT - 04F

DIAPHRAGM KIT AND O-RING - SERIE 04F



1/4" - 3/8" - 1/2"

3/4" - 1"

1"1/4 - 1"1/2 - 2"

Code	Sealing materials	Size	Pack.
1/4" - 3/8" - 1/2"			
04FK4 0 03 N 0	NBR	1/4"	1
04FK4 0 03 V 0	FKM	1/4"	1
04FK4 0 03 E 0	EPDM	1/4"	1
04FK4 0 04 N 0	NBR	3/8" - 1/2" - Ø 12	1
04FK4 0 04 V 0	FKM	3/8" - 1/2" - Ø 12	1
04FK4 0 04 E 0	EPDM	3/8" - 1/2" - Ø 12	1
04FK4 0 Y3 N 0	NBR	3/8" - 1/2" - Ø 14	1
04FK4 0 Y3 V 0	FKM	3/8" - 1/2" - Ø 14	1
04FK4 0 Y3 E 0	EPDM	3/8" - 1/2" - Ø 14	1
3/4" - 1"			
04FK4 0 07 N 0	NBR	3/4"	1
04FK4 0 07 V 0	FKM	3/4"	1
04FK4 0 07 E 0	EPDM	3/4"	1
04FK4 0 09 N 0	NBR	1"	1
04FK4 0 09 V 0	FKM	1"	1
04FK4 0 09 E 0	EPDM	1"	1
1"1/4 - 1"1/2 - 2"			
04FK4 0 XF N 0	NBR	1"1/4 - 1"1/2	1
04FK4 0 XF V 0	FKM	1"1/4 - 1"1/2	1
04FK4 0 XF E 0	EPDM	1"1/4 - 1"1/2	1
04FK4 0 XH N 0	NBR	2"	1
04FK4 0 XH V 0	FKM	2"	1
04FK4 0 XH E 0	EPDM	2"	1

KIT - 04F

REINFORCED DIAPHRAGM KIT AND O-RING - SERIE 04F



3/4" - 1"

Code	Sealing materials	Size	Pack.
3/4" - 1"			
04FK4 0 07 N 2	NBR	3/4"	1
04FK4 0 07 V 2	FKM	3/4"	1
04FK4 0 07 E 2	EPDM	3/4"	1
04FK4 0 09 N 2	NBR	1"	1
04FK4 0 09 V 2	FKM	1"	1
04FK4 0 09 E 2	EPDM	1"	1

KIT - X4F

DIAPHRAGM KIT IN STAINLESS STEEL AND O-RING - SERIE X4F



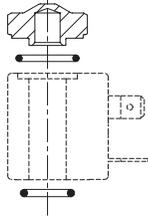
1/4" - 3/8" - 1/2"

3/4" - 1"

Code	Sealing materials	Size	Pack.
1/4" - 3/8" - 1/2"			
X4FK4 0 03 N 0	NBR	1/4"	1
X4FK4 0 03 V 0	FKM	1/4"	1
X4FK4 0 03 E 0	EPDM	1/4"	1
X4FK4 0 04 N 0	NBR	3/8" - 1/2" - Ø 12	1
X4FK4 0 04 V 0	FKM	3/8" - 1/2" - Ø 12	1
X4FK4 0 04 E 0	EPDM	3/8" - 1/2" - Ø 12	1
X4FK4 0 Y3 N 0	NBR	3/8" - 1/2" - Ø 14	1
X4FK4 0 Y3 V 0	FKM	3/8" - 1/2" - Ø 14	1
X4FK4 0 Y3 E 0	EPDM	3/8" - 1/2" - Ø 14	1
3/4" - 1"			
X4FK4 0 07 N 0	NBR	3/4"	1
X4FK4 0 07 V 0	FKM	3/4"	1
X4FK4 0 07 E 0	EPDM	3/4"	1
X4FK4 0 09 N 0	NBR	1"	1
X4FK4 0 09 V 0	FKM	1"	1
X4FK4 0 09 E 0	EPDM	1"	1

KIT - OPK06 / OPK07

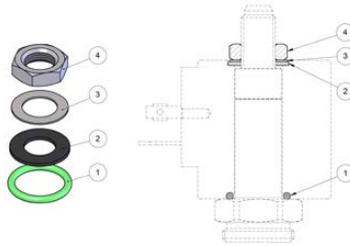
WET-PROOF KIT IN FKM - 2/2 NC



Code	Sealing materials	Coil and Ø armature tube	Pack.
OPK06 VT B2 NC 22	FKM	22 mm - Ø 10 mm	1
OPK06 VT B2 NC 30	FKM	30 mm - Ø 10 mm	1
OPK07 VT B2 NC 30	FKM	30/36 mm - Ø 13 mm	1

KIT - OPK12

WET-PROOF KIT IN FKM - 3/2 NC - 1/8" CONICAL



Code	Sealing materials	Coil and Ø armature tube	Pack.
OPK12 VT B3 NC 00	FKM	30/36 mm - Ø 13 mm	1

90985

ANALOG TIMER DIN43650A



Code	Pack.
90985 00 001	1

	min	max
Temperature	- 10 °C	+ 50 °C



Features

- 24 - 240V AC/DC
- IP65 - EN6052
- 1 A Max
- 0.5 - 10 Sec. ON
- 0.5 - 45 Min. OFF
- Reset/Test

90987

DIGITAL TIMER DIN43650A



Code	Voltage	Power consumption	Pack.
90987 00 001	7 - 36V AC/DC	20mA MAX	1
90987 00 002	110 - 240V AC/DC	10mA MAX	1

	min	max
Temperature	- 10 °C	+ 70 °C



Features

- Insulation Voltage: 100V AC - 1 minute
- Insulation Resistance: 50MΩ (500VDC)
- IP65 - EN6052
- Output Corrent: 1.5 A Max
- 1 Sec. - 100 Hours -> ON
- 1 Sec. - 100 Hours -> OFF
- 4 DIGIT: Mode/Add/Enter/Reset

VAL04

DEMO CASE



Code	Pack.
VAL04	1

SOLENOID PILOTS

SOLENOID PILOTS 2/2 NC - Ø10 mm

2/2 NC

Ø 10 mm

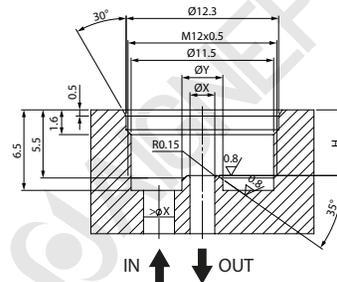
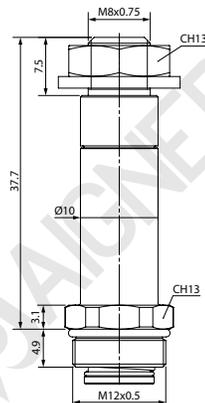


Operator kit for valves series: **01F**
X1F
F1F
04F (1/4" → 1")
X4F

Code	Sealing materials	Ø X inch (mm)	Ø Y inch (mm)	H inch (mm)	Differential pressure (OPD)			Power		Coils	
					psi (bar)			DC	AC	Size	Series
					Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
OPK04_TB2NC00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C)	1/16 (1.5)	0.110 (2.8)	0.208 (5.3)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL10
						580 (40)	580 (40)	8	11	30	B - SOL11
		5/64 (2)	0.130 (3.3)	0.208 (5.3)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL10
						435 (30)	580 (40)	8	11	30	B - SOL11
		3/32 (2.5)	0.149 (3.8)	0.216 (5.5)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL10
						189 (13)	435 (30)	8	11	30	B - SOL11
	1/8 (3)	0.169 (4.3)	0.220 (5.6)	0	44 (3)	145 (10)	6.5	7.5	22	A - SOL10	
					102 (7)	232 (16)	8	11	30	B - SOL11	
	5/32 (4)	0.208 (5.3)	0.228 (5.8)	0	15 (1)	58 (4)	6.5	7.5	22	A - SOL10	
					36 (2.5)	116 (8)	8	11	30	B - SOL11	

① Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 3/2 NO - Ø10 mm

3/2 NO

Ø 10 mm



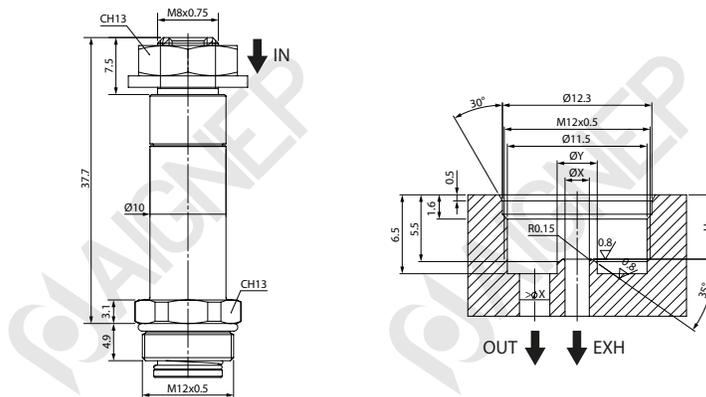
Operator kit for valves series:

O1F
X1F
F1F

Code	Sealing materials	Ø IN (mm)	Ø X (EXH) (mm)	Ø Y (mm)	H (mm)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 15.2 B - Page 15.3
OPK04_TB3NO00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C)	1/16 (1.4)	1/16 (1.5)	0.110 (2.8)	0.208 (5.3)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
	V = FKM +14°F +284°F (-10°C +140°C)	1/16 (1.4)	5/64 (2)	0.130 (3.3)	0.208 (5.3)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
	E = EPDM +14°F +284°F (-10°C +140°C)	1/16 (1.4)	3/32 (2.5)	0.149 (3.8)	0.216 (5.5)	0	58 (4)	145 (10)	6.5	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11

① Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 2/2 NC - Ø13 mm

2/2 NC

Ø 13 mm



Operator kit for valves series:

* O2F
X2F
F2F
O3F
90976

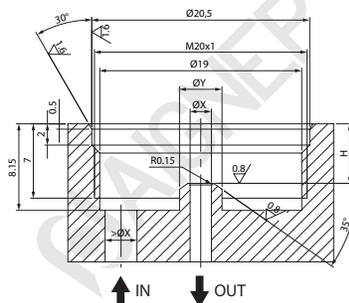
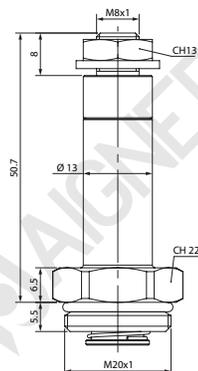
* OPK11 - Ø 6,4 mm

Code	Sealing materials	Ø X inch (mm)	Ø Y inch (mm)	H inch (mm)	Differential pressure (OPD)			Power		Coils		
					psi (bar)			DC	AC	Size mm	Series	
					Min	Max DC	Max AC	W	VA			
①	①											
OPK05_TB2NC00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C)	1/16 (1.5)	0.138 (3.5)	0.220 (5.6)	0	725 (50)	725 (50)	8	14	30	C - SOL20	
						725 (50)	725 (50)	14	21	30	D - SOL20	
						725 (50)	725 (50)	22	31	36	E - SOL21	
		5/64 (2)	0.157 (4)	0.220 (5.6)	0	508 (35)	725 (50)	8	14	30	C - SOL20	
						725 (50)	725 (50)	14	21	30	D - SOL20	
						725 (50)	725 (50)	22	31	36	E - SOL21	
	3/32 (2.5)	0.177 (4.5)	0.228 (5.8)	0	305 (21)	508 (35)	8	14	30	C - SOL20		
					435 (30)	580 (40)	14	21	30	D - SOL20		
					653 (45)	725 (50)	22	31	36	E - SOL21		
	* OPK11_TB2NC00 Stainless steel	E = EPDM +14°F +284°F (-10°C +140°C)	1/8 (3)	0.197 (5)	0.232 (5.9)	0	145 (10)	305 (21)	8	14	30	C - SOL20
							232 (16)	435 (30)	14	21	30	D - SOL20
							580 (40)	580 (40)	22	31	36	E - SOL21
C = CR -31°F +212°F (-35°C +100°C)		5/32 (4)	0.236 (6)	0.240 (6.1)	0	44 (3)	145 (10)	8	14	30	C - SOL20	
						87 (6)	203 (14)	14	21	30	D - SOL20	
						218 (15)	290 (20)	22	31	36	E - SOL21	
* 1/4 (6.4)	0.267 (6.8)	0.252 (6.4)	0	20 (1.4)	73 (5)	8	14	30	C - SOL20			
				32 (2.2)	102 (7)	14	21	30	D - SOL20			
				80 (5.5)	145 (10)	22	31	36	E - SOL21			
* 1/4 (6.4)	0.315 (8)	0.260 (6.6)	0	-	36 (2.5)	-	14	30	C - SOL20			
				22 (1.5)	51 (3.5)	14	21	30	D - SOL20			
				65 (4.5)	73 (5)	22	31	36	E - SOL21			

① Select seal material

Coil not included

* Only for Ø 6.4 mm



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 2/2 NO - Ø13 mm

2/2 NO

Ø 13 mm



Operator kit for valves series:

Brass

02F
F2F
04F (1/4" → 1")

Operator kit for valves series:

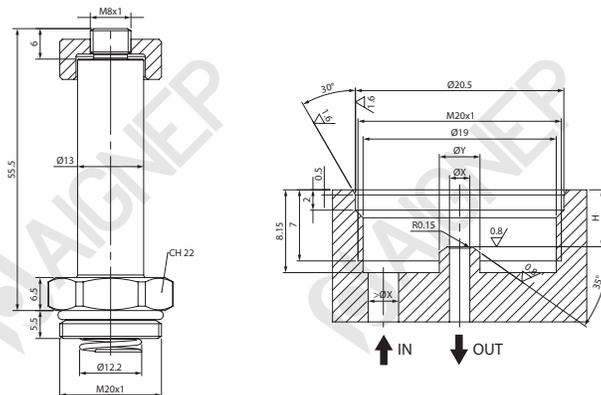
Stainless steel

02F
X2F
F2F
04F (1/4" → 1")

Code	Sealing materials	Ø X inch (mm)	Ø Y inch (mm)	H inch (mm)	Differential pressure (OPD)			Power		Coils	
					psi (bar)	DC	AC	Size	Series		
					Min	Max DC	Max AC	W	VA	mm	
① OPK13_TB2NO00 Brass	N = NBR +14°F +194°F (-10°C +90°C)	1/16 (1.5)	0.138 (3.5)	0.220 (5.6)	0	-	363 (25)	-	14	30	C - SOL20
						363 (25)	363 (25)	14	21	30	D - SOL20
						363 (25)	363 (25)	22	31	36	E - SOL21
OPK13_TB2NO0X Stainless steel	V = FKM +14°F +284°F (-10°C +140°C)	5/64 (2)	0.157 (4)	0.220 (5.6)	0	-	261 (18)	-	14	30	C - SOL20
						261 (18)	261 (18)	14	21	30	D - SOL20
						261 (18)	261 (18)	22	31	36	E - SOL21
*OPK05_TB2NO00 Brass	E = EPDM +14°F +284°F (-10°C +140°C)	3/32 (2.5)	0.177 (4.5)	0.228 (5.8)	0	-	174 (12)	-	14	30	C - SOL20
						174 (12)	174 (12)	14	21	30	D - SOL20
						174 (12)	174 (12)	22	31	36	E - SOL21
OPK05_TB2NO0X Stainless steel	C = CR -31°F +212°F (-35°C +100°C)	1/8 (3)	0.197 (5)	0.232 (5.9)	0	-	109 (7.5)	-	14	30	C - SOL20
						109 (7.5)	109 (7.5)	14	21	30	D - SOL20
						109 (7.5)	109 (7.5)	22	31	36	E - SOL21
		5/32 (4)	0.236 (6)	0.240 (6.1)	0	-	65 (4.5)	-	14	30	C - SOL20
						65 (4.5)	65 (4.5)	14	21	30	D - SOL20
						65 (4.5)	65 (4.5)	22	31	36	E - SOL21
		13/64 (5)	0.267 (6.8)	0.252 (6.4)	0	-	36 (2.5)	-	14	30	C - SOL20
						36 (2.5)	36 (2.5)	14	21	30	D - SOL20
						36 (2.5)	36 (2.5)	22	31	36	E - SOL21

① Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 3/2 NC - Ø13 mm

3/2 NC

Ø 13 mm

OPK10



OPK05

OPK10

Operator kit for valves series:

OPK05

O2F
X2F
F2F (optional)

Operator kit for valves series:

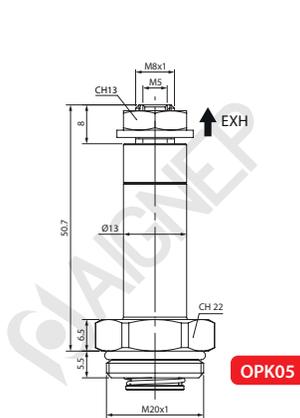
OPK10

F2F
O2F (optional)
X2F (optional)

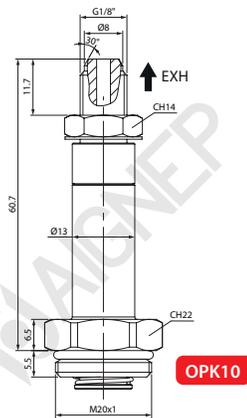
Code	Sealing materials	Ø X inch (mm)	Ø EXH		Ø Y inch (mm)	H inch (mm)	Differential pressure (OPD)			Power		Coils			
			OPK05	OPK10			psi (bar)			DC	AC	Size	Series		
			inch (mm)	inch (mm)			Min	Max DC	Max AC	W	VA	mm	C - Page 15.4 D - Page 15.5 E - Page 15.6		
OPK05_TB3NC00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C)	1/16 (1.5)	5/64 (1.9)	3/32 (2.3)	0.138 (3.5)	0.220 (5.6)	0	363 (25)	363 (25)	8	14	30	C - SOL20		
									363 (25)	363 (25)	14	21	30	D - SOL20	
									363 (25)	363 (25)	22	31	36	E - SOL21	
		5/64 (2)	5/64 (1.9)	3/32 (2.3)	0.157 (4)	0.220 (5.6)	0	261 (18)	261 (18)	8	14	30	C - SOL20		
										261 (18)	261 (18)	14	21	30	D - SOL20
										261 (18)	261 (18)	22	31	36	E - SOL21
		3/32 (2.5)	5/64 (1.9)	3/32 (2.3)	0.177 (4.5)	0.228 (5.8)	0	189 (13)	189 (13)	8	14	30	C - SOL20		
										189 (13)	189 (13)	14	21	30	D - SOL20
										189 (13)	189 (13)	22	31	36	E - SOL21
OPK10_TB3NC00 Stainless steel	E = EPDM +14°F +284°F (-10°C +140°C) C = CR -31°F +212°F (-35°C +100°C)	1/8 (3)	5/64 (1.9)	3/32 (2.3)	0.197 (5)	0.232 (5.9)	0	145 (10)	145 (10)	8	14	30	C - SOL20		
										145 (10)	145 (10)	14	21	30	D - SOL20
										145 (10)	145 (10)	22	31	36	E - SOL21
		5/32 (4)	5/64 (1.9)	3/32 (2.3)	0.236 (6)	0.240 (6.1)	0	87 (6)	87 (6)	8	14	30	C - SOL20		
										87 (6)	87 (6)	14	21	30	D - SOL20
										87 (6)	87 (6)	22	31	36	E - SOL21
		13/64 (5)	5/64 (1.9)	3/32 (2.3)	0.267 (6.8)	0.252 (6.4)	0	44 (3)	44 (3)	8	14	30	C - SOL20		
										44 (3)	44 (3)	14	21	30	D - SOL20
										44 (3)	44 (3)	22	31	36	E - SOL21

① Select seal material

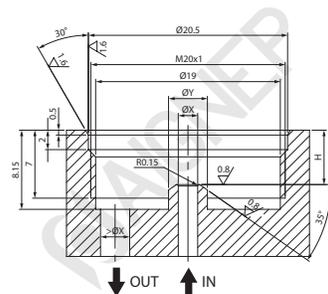
Coil not included



OPK05



OPK10

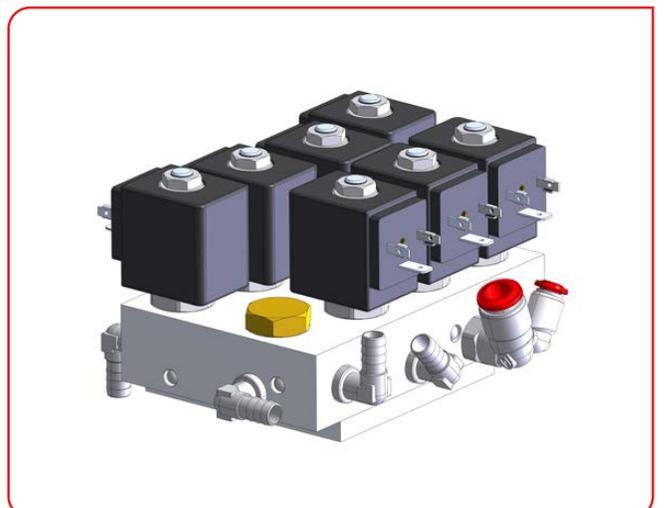
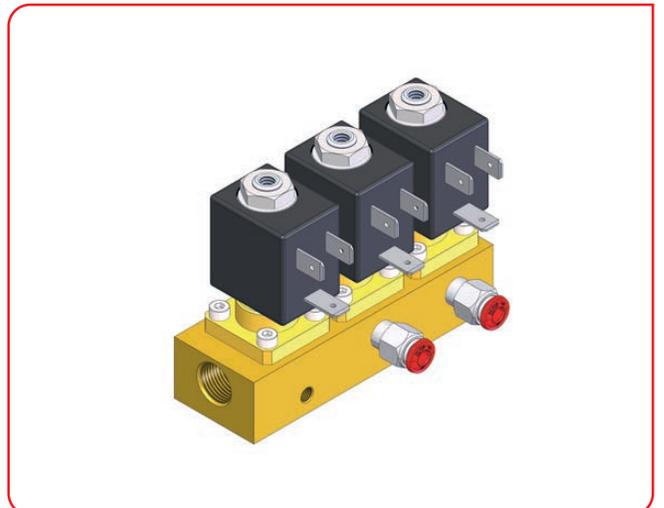
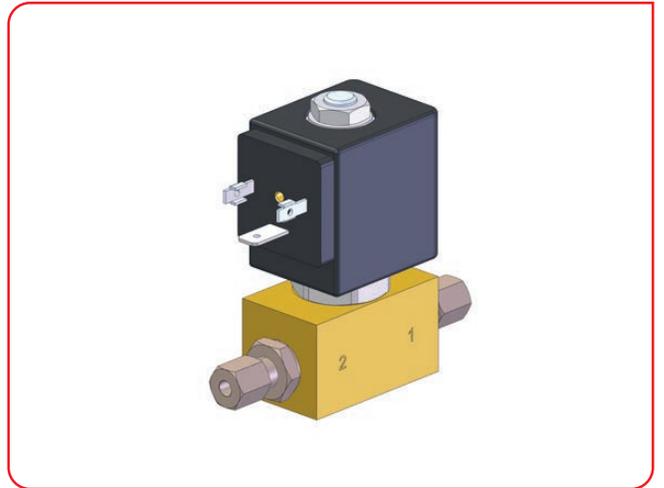
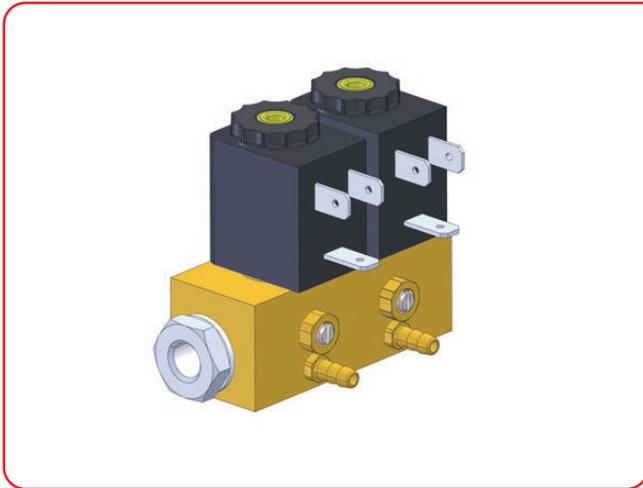


The dimensions are in millimeters (mm)

SPECIAL EXECUTIONS ON REQUEST

Special executions

By "special executions" it means all that products having complex constructions suitable for optimizing the operation of the application. The added value that Aignep offers is to propose and develop customized solutions to satisfy the most demanding requests of our Customers who operates in many industrial sectors. Finding the solution is our strength and below are proposed some "special executions" we have realized.



Serie Infinity



Distribution system for compressed air, inert gases and vacuum



[Request Catalogue](#)



1

87000 / 88000 Series

Push-to-Connect Fittings



2

85000 Series

Technopolymer Push-to-Connect Fittings



3

89000 Series

Metallic Push-to-Connect Fittings



4

Stainless Steel Series

Stainless Steel Push-to-Connect Fittings



5

Mist Fit Series

Push-to-Connect Fittings for Mistings Systems



6

5000N Series

Push-to-Connect Fittings for Metric Tube



7

55000 / 56000 Series

Technopolymer Push-to-Connect Fittings for Metric Tube



8

57000 Series

Metallic Push-to-Connect Fittings for Metric Tube



9

Stainless Steel Series

Stainless Steel Push-to-Connect Fittings for Metric Tube



10

58000 Series

High pressure Push-to-Connect Fittings



11

Functional Series

Functional Fittings



12

Adapters Series

Nickel Plated Brass Adapters



13

62000 Series

Stainless Steel Push-to-Connect Fittings and Adapters



14

Ball Valves Series

Chrome Plated Brass & Stainless Steel Ball Valves



15

Quick-Disconnect Couplers Series

Quick Disconnect Couplers



16

Valves Series

Manual, Mechanical, Air Pilot And Solenoid Pilot Valves



17

Actuators Series

Pneumatic Actuators



18

FRL Series

Air Treatment Unit



