

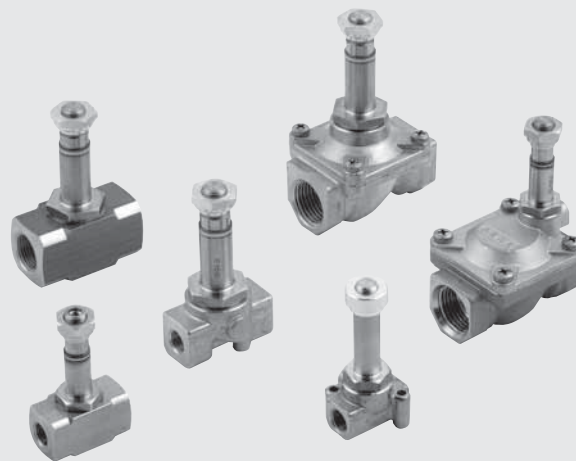
# SOLENOID VALVES, SERIES EV-FLUID

The EV-FLUID series consists of a vast range of solenoid valves, with a brass or stainless steel body, suited to intercept the different types of fluid. Available in 2/2 or 3/2, normally closed or normally open, and with different types of action: direct, servo-assisted or mixed (also called assisted-lift).

The size of the inlet and outlet threads, as well as that of the nominal orifice, can be chosen from among a vast range.

Versions with NBR, FKM/FPM, EPDM or PTFE gaskets are available, depending on the models.

The coils, which are designed and optimized specifically for this type of solenoid valves, are available for operation with different voltage ratings. They are divided by power and dimension into four types (type 2, type 3, type 4 and type 5). The coupling between each solenoid valve and the type of matching coil is illustrated in the dedicated section of the catalogue.



## RESPONSE TIME

The Response time of a solenoid valve series EV-FLUID, is the period passing between the energisation (or de-energisation) of the coil and the moment when the outlet pressure reaches the 50% of its peak.

The response time depends from the type of valve, the nature of the medium, the pressure and the current (AC or DC), if these value are measured at the moment of electrical connection or disconnection.

Tipologia	Response time at 6 bar [ms]		Notes
	Opening (TRA)	Closing (TRR)	
2 and 3 ways direct acting NC	8	25	with liquids +50% to +150% depending on the viscosity
2 and 3 ways direct acting NO	25	8	
Servo-assisted NC			
3/8" - 1/2"	30	50	
3/4" - 1"	50	70	
Servo-assisted NO			
3/8" - 1/2"	50	30	
3/4" - 1"	70	50	

For Servo-assisted 1 1/4" - 1 1/2" - 2" the response times vary about the model and operating conditions (viscosity, fluid, temperature, etc.)

## NOTES

## SOLENOID VALVES, SERIES EV-FLUID, DIRECT ACTING

In direct-acting EV-FLUID series solenoid valves the orifice is closed (or opened) by the movement of a rubber poppet placed on a moving core made of ferromagnetic steel.

The moving core, which is normally kept in the resting position by a spring, is moved thanks to the action of the magnetic field generated by the coil that is mounted on the valve. The sleeve supporting the coil can be retracted or incorporated into the valve body (depending on the model).

Available functions are 2/2 NC, 2/2 NO and 3/2 NC (3/2 NO available on request for some models)

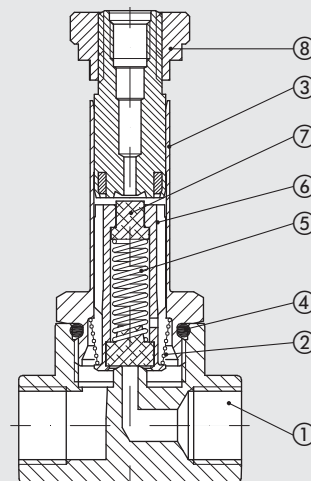
These solenoid valves can operate at a minimum pressure of 0 bar.



TECHNICAL DATA		NBR	FPM/FKM	EPDM	PTFE
Max operating frequency (with air)	Hz	2			
Power consumption		DC: 5 - 6.5 - 10 - 27 W / AC: 8 - 11 - 15 - 30 VA			
Voltage available		12 - 24VDC / 24 - 110 - 220 VAC 50/60 Hz			
Voltage tolerance	%	DC: $\pm 10$ / AC: -10 to +15			
Type of protection		IP 65 with connector			
Fluid temperature	$^{\circ}\text{C}$	-10 to +90	-10 to +140	-10 to +140	-10 to +180
Ambient temperature	$^{\circ}\text{C}$	with coil C.I.F: -10 to +55; con with coil C.I.H: -10 to +80			
Maximum fluid viscosity		25 cSt (mm <sup>2</sup> /s)			
Pressure range, flow rate, weight		See dimensions and ordering codes			
Maximum coil nut torque	Nm	1.5			
Usable fluids / Materials compatibility		Valves that can be used with neutral or slightly aggressive liquid and gas fluids. (Refer to the tables of chemical compatibility of materials in contact with the fluid on <a href="http://www.metalwork.it">www.metalwork.it</a> or contact Metal Work technical service)			

### COMPONENTS

- ① BODY: brass or stainless steel
- ② SPRING: stainless steel
- ③ SLEEVE
- ④ GASKET
- ⑤ MOLLA: stainless steel
- ⑥ MOBILE CORE
- ⑦ GASKET
- ⑧ RING NUT FOR COIL FIXING

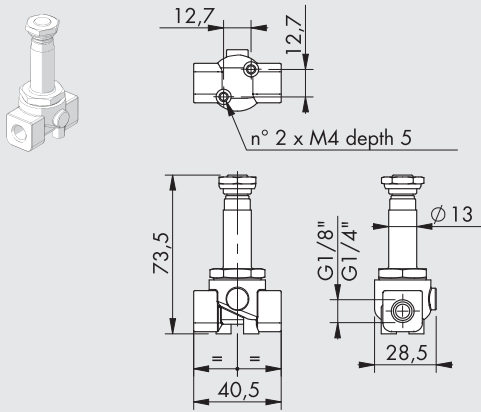




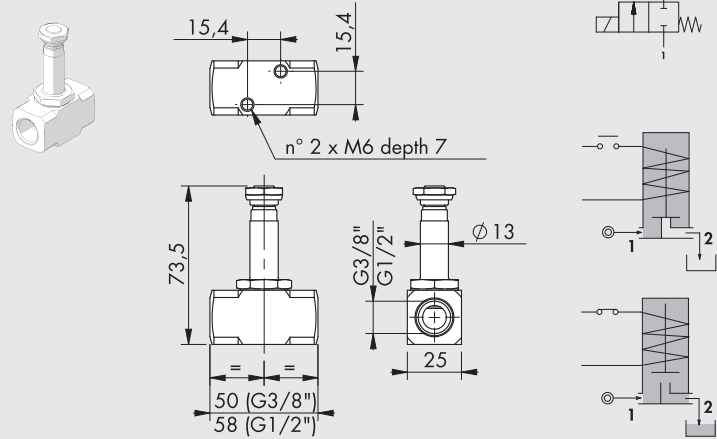
## DIMENSIONS AND ORDERING CODES

### VERSION 2/2 NC, BRASS VALVE BODY

G1/8" - G1/4"



G3/8" - G1/2"



Code	Threaded port	Air hole Ø [mm]	kv factor [m³/h]	Type of coil	Differential pressure [bar]		Max pressure* [bar]	Weight [g]
					AC	DC		
W_910100001	1/8"	1.5	0.07	2	0 to 30	0 to 26	80	180
W_910100002	1/8"	2	0.1	2	0 to 22	0 to 20	80	180
W_910100010	1/4"	2.5	0.15	2	0 to 16	0 to 14	80	180
W_910100011	1/4"	3.5	0.32	2	0 to 10	0 to 8	80	180
W_910100012	1/4"	4.5	0.41	2	0 to 6.5	0 to 3.5	80	180
W_910100013	1/4"	5.2	0.47	5	0 to 10	0 to 9	80	180
W_910100017	1/4"	6.4	0.64	5	0 to 5	0 to 4.5	80	180
W_910100020	3/8"	4	0.36	2	0 to 8	0 to 5	80	240
W_910100021	3/8"	3.5	0.32	2	0 to 10	0 to 8	80	240
W_910100022	3/8"	4.5	0.41	2	0 to 6.5	0 to 3.5	80	240
W_910100030	1/2"	5.2	0.47	5	0 to 10	0 to 9	80	240
W_910100031	1/2"	6.4	0.64	5	0 to 5	0 to 4.5	80	240
W_910100032	1/2"	3.5	0.32	2	0 to 10	0 to 8	80	240

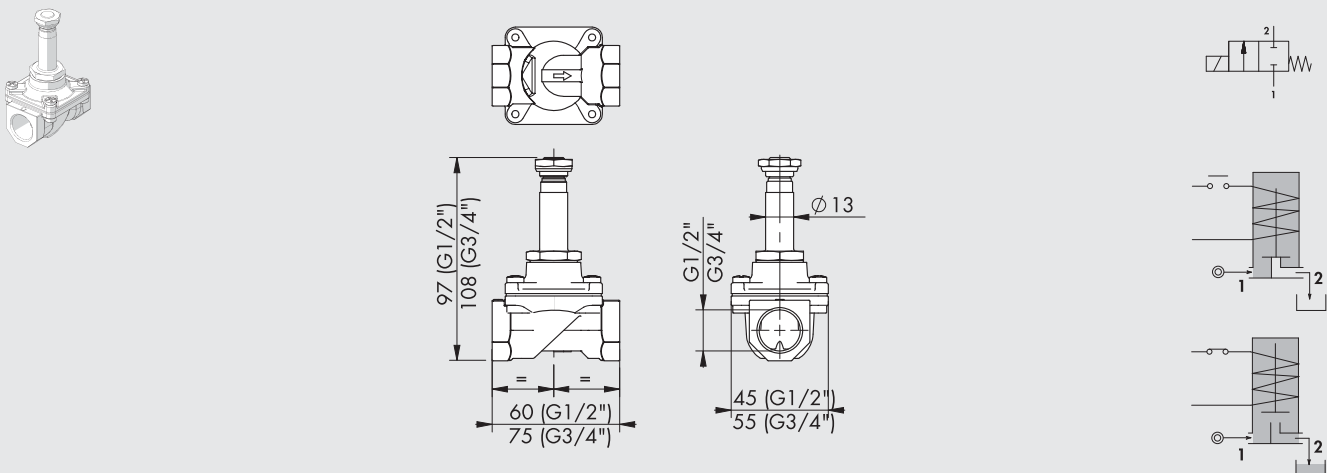
To complete the code enter:

**O** for NBR gaskets  
**E** for EPDM gaskets

**V** for FKM/FPM gaskets  
**T** for PTFE gaskets

\* The maximum allowable pressure for steam is 6 bar with PTFE gaskets and 2.5 bar with EPDM gaskets

### VERSION 2/2 NC, BRASS VALVE BODY AND DIAPHRAGM POPPET



Code	Threaded port	Air hole Ø [mm]	Kv factor [m³/h]	Type of coil	Differential pressure [bar]		Max pressure [bar]	Weight [g]
					AC	DC		
W_910700001	1/2"	12	2.2	5	0 to 0.8	0 to 0.4	5	330
W_910700002	3/4"	18	4.5	5	0 to 0.2	0 to 0.12	5	630

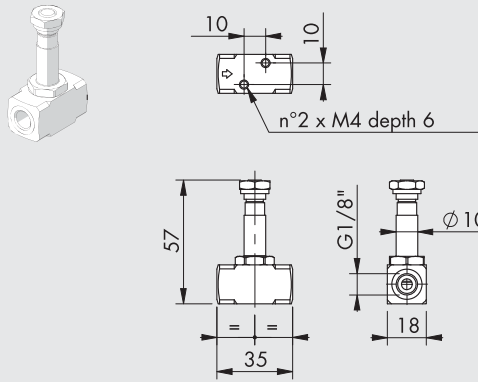
To complete the code enter:

**O** for NBR gaskets  
**E** for EPDM gaskets

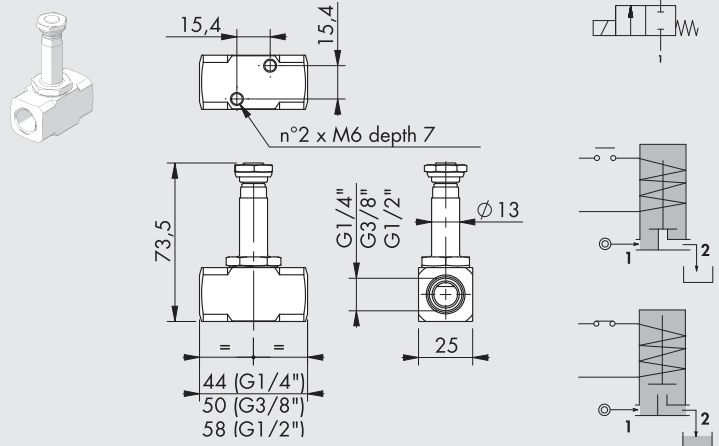
**V** for FKM/FPM gaskets

VERSION 2/2 NC, STAINLESS STEEL VALVE BODY

G1/8"



G1/4" - G3/8" - G1/2"



Code	Threaded port	Air hole Ø [mm]	Kv factor [m³/h]	Type of coil	Differential pressure [bar]		Max pressure * [bar]	Weight [g]
					AC	DC		
W_910300001	1/8"	1.5	0.06	3	0 to 16	0 to 16	50	100
W_910300002	1/8"	2.5	0.14	3	0 to 8	0 to 5.5	50	100
W_910300003	1/8"	3.1	0.19	4	0 to 8	0 to 4	50	100
W_910300010	1/4"	2	0.1	2	0 to 22	0 to 20	100	240
W_910300011	1/4"	3.5	0.32	2	0 to 10	0 to 8	100	240
W_910300020	3/8"	3.5	0.32	2	0 to 10	0 to 8	100	240
W_910300021	3/8"	5.2	0.47	5	0 to 10	0 to 9	100	240
W_910300022	3/8"	6.4	0.64	5	0 to 5	0 to 4.5	100	240
W_910300030	1/2"	5.2	0.47	5	0 to 10	0 to 9	100	240
W_910300031	1/2"	6.4	0.64	5	0 to 5	0 to 4.5	100	240
W_910300032	1/2"	3.5	0.32	2	0 to 10	0 to 8	100	240

To complete the code enter:

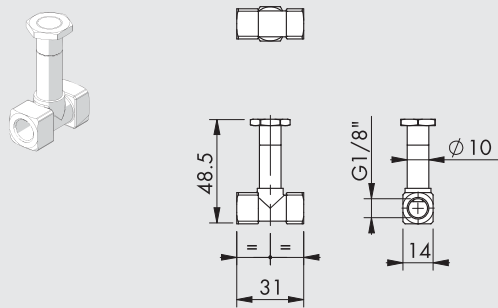
O for NBR gaskets  
E for EPDM gaskets

V for FKM/FPM gaskets  
T for PTFE gaskets

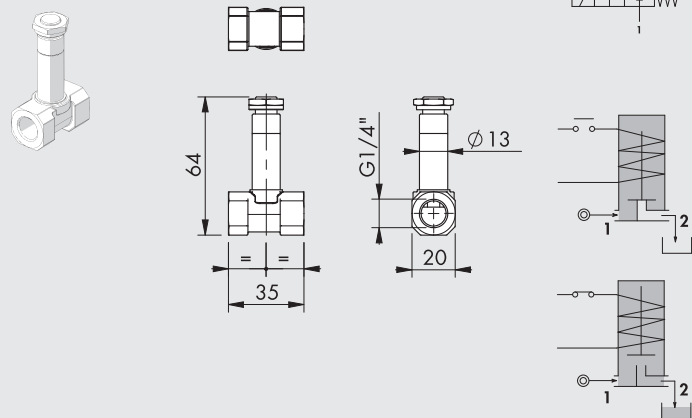
\* The maximum allowable pressure for steam is 6 bar with PTFE gaskets and 2.5 bar with EPDM gaskets

VERSION 2/2 NC, BRASS BODY WITH BUILT-IN SLEEVE, FKM/FPM GASKETS

G1/8"



G1/4"



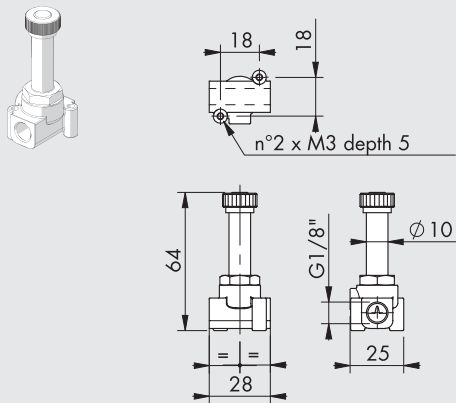
Code	Threaded port	Air hole Ø [mm]	Kv factor [m³/h]	Type of coil	Differential pressure [bar]		Max pressure [bar]	Weight [g]
					AC	DC		
WV910500001	1/8"	1.5	0.06	3	0 to 14	0 to 3	50 *	40
WV910500002	1/4"	3	0.18	2	0 to 14	0 to 6	50 **	100
WV910500003	1/4"	4	0.26	2	0 to 7	0 to 3	50 **	100

\* The maximum allowable pressure for steam is 2.5 bar

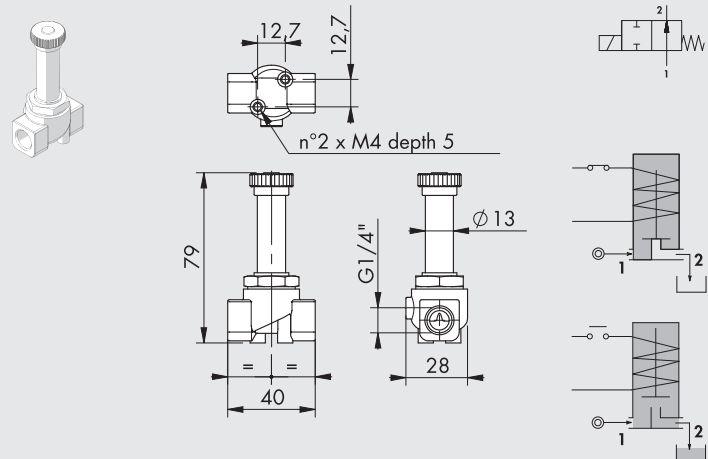
\*\* The maximum allowable pressure for steam is 6 bar

**VERSION 2/2 NO, BRASS VALVE BODY**

G1/8"



G1/4"



Code	Threaded port	Air hole Ø [mm]	Kv factor [m³/h]	Type of coil	Differential pressure [bar]		Max pressure * [bar]	Weight [g]
					AC	DC		
W_910800003	1/8"	2	0.09	3	0 to 8	0 to 8	50	80
W_910800004	1/8"	2.5	0.14	3	0 to 4.5	0 to 4.5	50	80
W_910800008	1/4"	2.5	0.15	2	0 to 12	-	50	180
W_910800009	1/4"	3.5	0.32	2	0 to 7	-	50	180
W_910800010	1/4"	4.5	0.41	2	0 to 4.5	-	50	180
W_910800011	1/4"	5.2	0.47	2	0 to 3	-	50	180
W_910810009	1/4"	3.5	0.32	2	-	0 to 4	50	180
W_910810010	1/4"	4.5	0.41	2	-	0 to 3	50	180
W_910810011	1/4"	5.2	0.47	2	-	0 to 2.2	50	180

To complete the code enter:

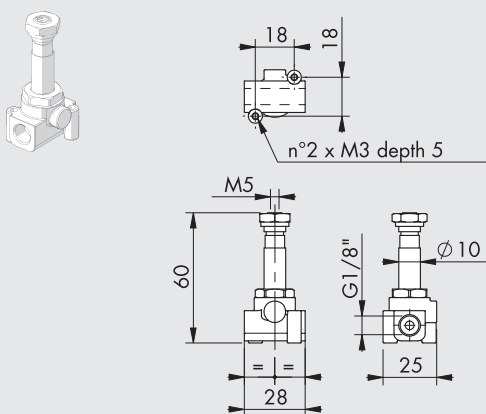
**O** for NBR gaskets  
**E** for EPDM gaskets

**V** for FKM/FPM gaskets

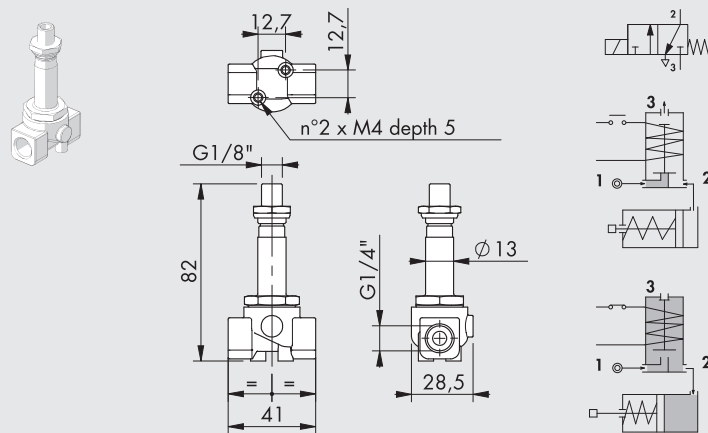
\* The maximum allowable pressure for steam is 2.5 bar

**VERSION 3/2 NC, BRASS VALVE BODY**

G1/8"



G1/4"



Code	Threaded port	Air hole Ø [mm]	Kv factor [m³/h]	Type of coil	Differential pressure [bar]		Max pressure [bar]	Weight [g]
					AC	DC		
W_911000002	1/8"	1.5	0.06	3	0 to 10	0 to 10	11	60
W_911000003	1/8"	2	0.09	3	0 to 6	0 to 6	6.5	60
W_911000004	1/4"	1.5	0.07	2	0 to 20	0 to 20	22	200
W_911000005	1/4"	2	0.11	2	0 to 13	0 to 13	14	200
W_911000006	1/4"	2.5	0.16	2	0 to 10	0 to 10	11	200

To complete the code enter:

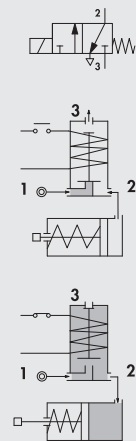
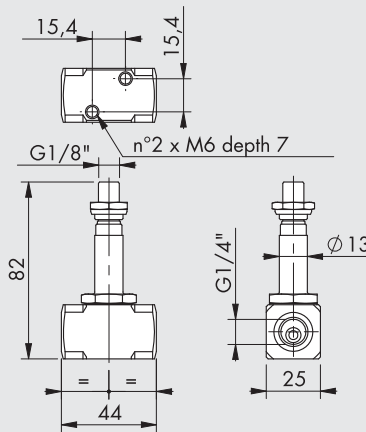
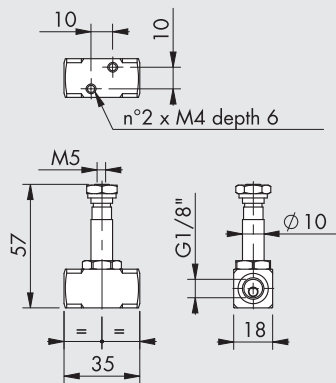
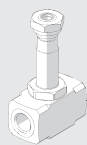
**O** for NBR gaskets  
**E** for EPDM gaskets

**V** for FKM/FPM gaskets

VERSION 3/2 NC, STAINLESS STEEL VALVE BODY

G1/8"

G1/4"



Code	Threaded port	Air hole Ø [mm]	Kv factor [m³/h]	Type of coil	Differential pressure [bar]		Max pressure [bar]	Weight [g]
					AC	DC		
W_911200002	1/8"	1.5	0.06	3	0 to 10	0 to 10	11	100
W_911200003	1/8"	2	0.09	3	0 to 6	0 to 6	6.5	100
W_911200005	1/4"	2	0.11	2	0 to 13	0 to 13	14	240
W_911200006	1/4"	2.5	0.16	2	0 to 10	0 to 10	11	240

To complete the code enter:

**O** for NBR gaskets  
**E** for EPDM gaskets

**V** for FKM/FPM gaskets

NOTES