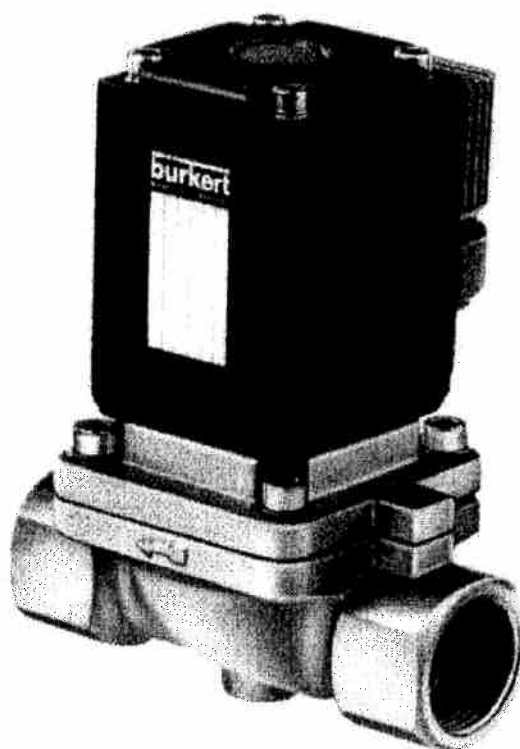


# Solenoid Valve 2/2

Typ: 282



## 2/2-Way Solenoid Valve with Servo Diaphragm and Pivoted Armature Pilot Control Type 282



### Features

- G 1/2 - 2 1/2, NPT 1/2, flanged
- Normally open or closed
- Body material: brass, stainless steel and grey cast iron
- Separating diaphragm isolates solenoid against operating fluid
- Silent operation and waterhammer-free
- Restrictor screws allow alteration of opening and closing times
- Lockable manual override standard

### Applications

- Neutral gases and liquids
- Aggressive, slightly contaminated fluids
- De-mineralised water
- Water treatment
- Process technology
- Ship building industry (central lubrication systems)
- Ceramic industry
- Drinking water filtration systems
- Offshore technology
- Environmental protection (filter system)

### Design

Type 282 is a normally-closed or normally-open servo-assisted solenoid valve (circuit function A or B). With circuit function A, the valve when de-energized is closed by the fluid pressure, assisted by the spring. When de-energized, pressure is built up above the servo diaphragm to close the valve. When energized, the chamber above the diaphragm is exhausted via the pilot valve, the diaphragm is lifted by the fluid pressure - the main valve opens. Circuit function B provides the opposite functioning principle. The normally closed valve relieves the pressure above the diaphragm.

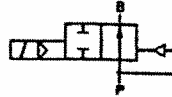
Opening and closing times can be adjusted by integrated restrictor screws, which delay the pressure rise and drop above the diaphragm. The pilot valve is switched via a pivoted armature system which isolates the actuator from the fluid.

The type 282 is much less sensitive to contaminated fluids than a plunger-type piloted valve. The solenoid epoxy encapsulation efficiently dissipates the heat generated by the coil.

## Technical Data

### Circuit Function

- A** 2/2-way valve,  
normally closed,  
with 3-way pilot control
- B** 2/2-way valve,  
normally open,  
with 3-way pilot control



### Body Material

Body and seat of brass  
Body and seat: 1.4581  
Body: grey cast iron, seat 1.4305,  
bonnet: brass  
Valve internals 1.4301

## Specification

Orifice DN [mm]	Kv-Value Water [m³/h]	Qn- Value Air [l/min]	Pressure Range for Seal Material		Weight Threaded Port brass [kg]	Flange		
			NBR, EPDM [bar]	FPM [bar]		stainless [kg]	grey cast iron [kg]	stainless [kg]
13	4,0	4300	0,2-16	0,2-12	0,95	-	-	-
20	5,0	5400	0,2-16	0,2-12	1,40	1,40	-	-
25	10,0	11000	0,2-16	0,2-12	1,85	1,80	4,60	3,65
32	20,0	22000	0,2-16	0,2-12	2,60	2,25	6,40	6,45
40	20,0	22000	0,2-16	0,2-12	3,05	2,70	7,25	7,05
50	40,0	43000	0,2-16	0,2-12	5,15	4,80	10,55	10,50
65	40,0	43000	0,2-16	0,2-12	5,90	-	-	-

All pressure quoted are gauge pressure with respect to the prevailing atmospheric pressure,  
A min. differential pressure of 0,5 bar is required to open the valve fully.

### Operating Data (Valve)

#### Seal Materials/Fluids Handled/Temp.-Range

NBR	Neutral fluids, e. g. compressed air, town gas, water, hydraulic oil, oils and fat without additives.	0 to +90 °C
EPDM	Oil- and fat-free fluids, e. g. hot water, alkaline washing and bleaching lyes	-30 to +90 °C
FPM	Hot air, oxygen, per-solutions, hot oils with additives	-10 to +90 °C

Max. ambient temperature	+55 °C
Max. viscosity	approx. 21 mm²/s
Port connection	G ½ - 2 ½, NPT ½, flanged
Response times	opening 0,1 - 0,8 s closing 1,0 - 4,0 s

Times measured at an operating pressure of 6 bar with water. They depend upon orifice and circuit function of the valve as well as upon pressure and viscosity of the fluid handled.

Opening and closing times can be extended by adjusting the outlet or inlet restrictor screws in the bonnet.

### Operating Data (Actuator)

Operating voltages 220, 110, 42, 24 V/50, 110 V/50-60 Hz, 24 V/=

Voltage tolerance ±10 %

Power consumption AC 30 VA (inrush)  
15 VA/8 W (hold)  
DC 8 W

Duty cycle 100 % continuously rated

Cycling rate 10-50 c. p. m.

Rating with cable plug: IP 65

The valve is fitted with lockable manual override as standard.

### Installation / Accessories

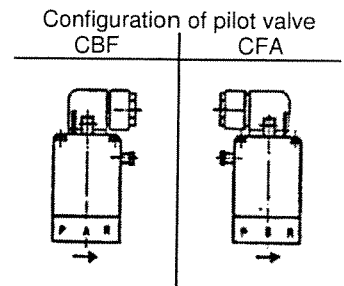
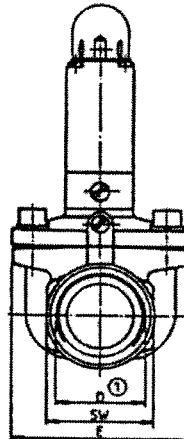
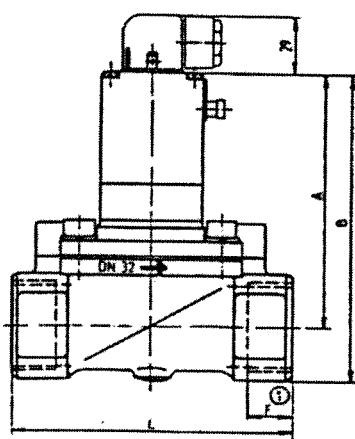
Installation as required

Electrical connection cable plug for 7 mm Ø cable (supplied as standard)

Our strainer Type 0007 provides protection against ingress of solids

## Dimensions

### Ported Version

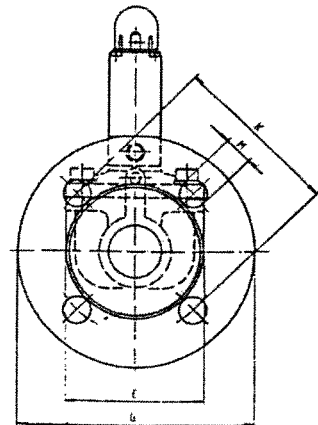
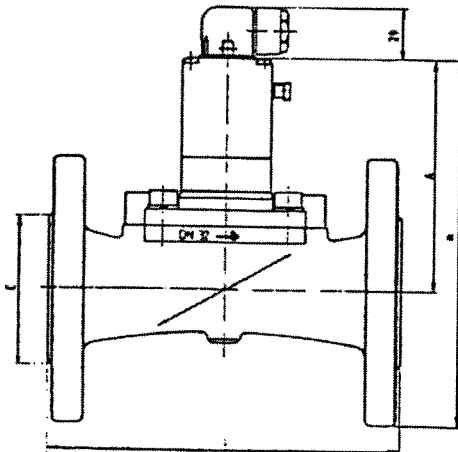


DN	A	B	D 1	F 1	D 2	F 2	E	L	SW
3 <sup>2)</sup>	109,0	123,0	G ½	14,0	NPT ½	13,7	40	65	27,0
20 <sup>1)</sup>	115,0	131,0	G ½	14,0	-	-	60	100	32,0
20	115,0	131,0	G ¾	16,0	-	-	60	100	32,0
<b>25</b>	<b>120,5</b>	<b>141,0</b>	<b>G 1</b>	<b>18,0</b>	-	-	<b>70</b>	<b>115</b>	<b>41,0</b>
32	122,0	147,0	G 1 ¼	20,0	-	-	85	126	50,0
40	126,0	156,0	G 1 ½	22,0	-	-	85	126	60,0
50	142,5	177,5	G 2	24,0	-	-	115	164	70,0
65 <sup>2)</sup>	142,5	185,0	G 2 ½	27,0	-	-	115	180	85,0

Ported Version in brass and stainless steel.

<sup>1)</sup> Ported version available in stainless steel only, <sup>2)</sup> Ported version available in brass only.

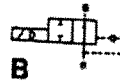
### Flanged Version



DN	A	B	C	E	G	L	M	K
<b>25</b>	<b>124,5</b>	<b>184,5</b>	<b>68</b>	<b>73</b>	<b>120</b>	<b>160</b>	<b>14</b>	<b>85</b>
32	122,0	192,0	78	85	140	180	18	100
50	142,5	225,0	102	115	165	230	18	125

Flanged version available in grey cast iron and stainless steel

## Operating Instructions Type 282



These installation and operating instructions must be followed. Similarly, the exact conditions of use must be taken into account and the performance data of the device must be observed in accordance with the data sheet. The operator must ensure that these instructions are followed so as to guarantee the trouble-free operation and long service life of the device.

### Construction:

2/2-way solenoid valve with 3-way pilot control. Circuit function A = normally closed, circuit function B = normally open. Manual override lockable by rotating button clockwise once depressed.

### Media and pressure range:

Neutral gases and liquids which do not attack the housing material or seal or diaphragm material. The seal material is marked on the rating plate after the nominal size (B=NBR, A=EPDM, F=FPM). Min. pressure differential of 0,5 bar is necessary for full flow. Observe the permissible pressure range. Continual pressure shocks may impair the service life of the diaphragm.

### Installation:

Before installing valve ensure all pipework etc. is free of foreign matter (metal filings, seal material, welding scale etc.). PTFE tape is recommended for sealing ports. Arrow on valve body gives flow direction. Installation as required, but preferably with coil-uppermost installation in this position tends to prevent foreign matter remaining in pilot valve (increased life). A strainer upstream of valve, Type 0007, protects against effects of foreign matter.

Do not lever valve by coil unit. Pipework should be supported such that valve body is not under strain. Ensure pilot passages in valve body (see section overleaf) are not blocked by ends of pipe, seal material etc. Inlet and outlet of valve must be full-bore and pipework unrestricted. Clockwise rotation of restrictor screws in valve body increases opening and closing times. Do not interfere with screws sealed red.

### Spare Parts:

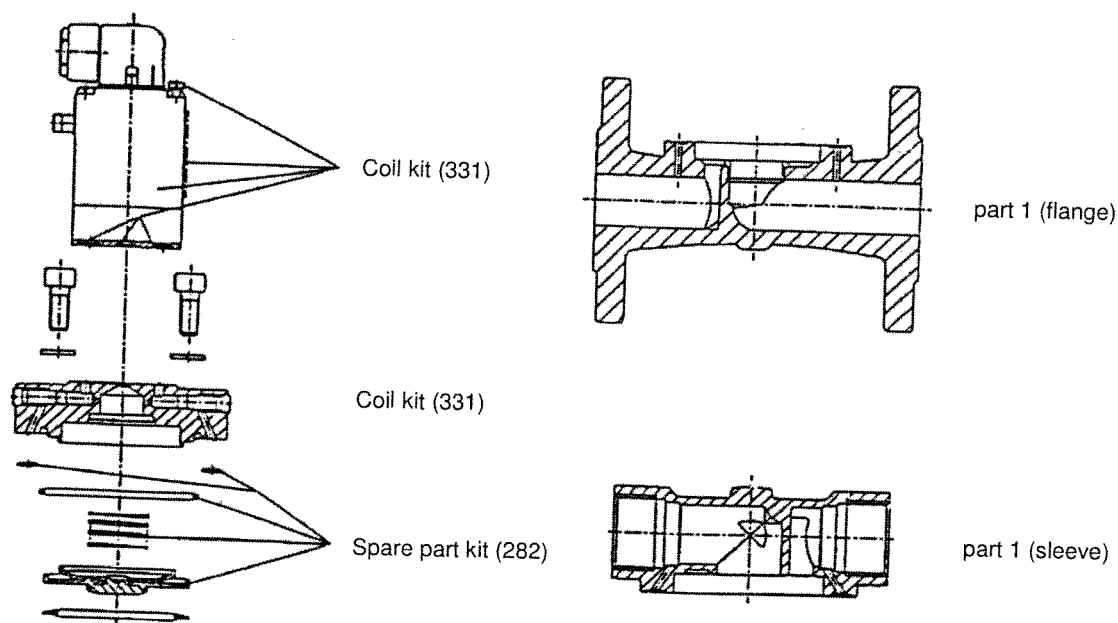
Spare part kit (282): loosen 4 cheesehead screws on valve cap, remove upper valve part, replace faulty parts. Coil kit (331): loosen M4 screw which is not sealed with paint and remove the pilot valve. Replace and attach the new pilot valve. Main valve with circuit function A requires pilot valve with circuit function D, main valve with circuit function B requires pilot valve with circuit function C.

### Electrical connection:

Ensure supply voltage/frequency correspondence with that on label. Voltage tolerance  $\pm 10\%$ . Electrical connection cable plug. Classification IP 65, for cable  $3 \times 0,75 \text{ mm}^2$ . Note earth-connector. Flat terminal = earth, cable plug insert can be positioned at  $90^\circ$  intervals. Tightening torque for cable plug 1 Nm.

### Trouble-shooting:

Check port connections, operating pressure and voltage. Ensure pilot passages in valve inlet and outlet are clear. The armature does not pull in check for short circuit or coil burnout.



#### Spare part kit (282)

The number of parts may vary according to nominal sizes

Body-Material	Seal-Material	DN 13	DN 20	DN 25	DN 32, 40	DN 50, 65
Ms, GG	NBR (B)	624 031 M	624 034 Q	<b>624 040 A</b>	624 046 U	624 052 S
	FPM (F)	624 032 N	624 035 R	<b>624 041 X</b>	624 047 V	624 053 T
	EPDM (A)	624 033 P	624 036 J	<b>624 042 Y</b>	624 048 E	624 054 U
VA	NBR (B)	-	624 037 K	<b>624 043 Z</b>	624 049 F	624 055 V
	FPM (F)	-	624 038 U	<b>624 044 S</b>	624 050 C	624 056 W
	EPDM (A)	-	624 039 V	<b>624 045 T</b>	624 051 Z	624 057 X

#### Part 1 Body

Nom. width pipe connection	Material/Connection type					
	MS G	MS NPT	VA G	VA NPT	GG Flansch	VA Flansch
DN 13 1/2	610 972 F	613 097 M	-	-	-	-
DN 20 1/2	-	-	623 914 N	623 915 P	-	-
DN 20 3/4	621 546 T	621 547 U	623 912 L	623 913 M	-	-
<b>DN 25 1</b>	<b>621 548 D</b>	<b>621 549 E</b>	<b>623 916 Q</b>	<b>623 917 R</b>	<b>615 902 T</b>	<b>615 692 Y</b>
DN 32 1 1/4	613 365 D	614 195 M	613 778 K	613 777 A	614 214 X	614 203 D
DN 40 1 1/2	613 364 C	614 223 Y	613 781 X	613 780 A	614 236 V	614 231 Y
DN 50 2	614 245 E	614 246 F	613 878 G	614 247 G	614 529 L	614 254 F
DN 65 2 1/2	614 268 M	614 269 N	-	-	-	-