

2/2-way valves ND 15 to 100



For neutral gaseous and liquid fluids
 Solenoid actuated, with forced lifting
 Piston seat valves
 Flange connection ANSI B 16.5 – 150 lbs RF
 Operating pressure 0 to 16 bar



06.09.95
 Catalogue index
A 5

85 400/84 400 series

Description (standard valve)

Solenoid valve for air, water and oil

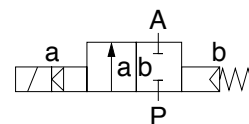
Flow direction: determined
Fluid temperature: max. +90 °C
Ambient temperature: max. +50 °C
Sum of fluid and ambient temperature: max. +130 °C
Mounting position: optional, solenoid preferably mounted vertical on top, ND 65 and larger, solenoid on top in vertical position imperative
Material Body: Grey cast iron
Seat seal: NBR
Internal parts: 1.4104, 1.4301, Brass, Gun metal



For contaminated fluids insertion of a strainer is recommended (see accessories).

Features

- Flat piston valve
- Valve operates without pressure differential (Δp)
- High flow rate
- Damped operation



Switching function:
 Normally closed

Characteristic data

ND	Operating pressure with gaseous and liquid fluids up to 40 mm ² /s (cSt) [bar]		K _v -value ¹⁾ (Base m ³ /h)	Weight [kg]	Section no	Dimension table no	Cat no			
	min.	max.					Valve XX XXX	Solenoid DC XX.XXXX	Valve XX XXX	Solenoid AC XX.XXXX
15	0	16	5.5	5.0	01	01	85 402	00.8401	85 402	00.8404
20	0	16	10.0	5.3	01	02	85 403	00.8401	85 403	00.8404
25	0	16	12.5	5.7	01	03	85 404	00.8401	85 404	00.8404
32	0	16	27.0	10.5	01	04	85 405	00.8401	85 405	00.8404
40	0	16	31.0	11.3	01	05	85 406	00.8401	85 406	00.8404
50	0	16	43.0	13.6	01	06	85 407	00.8401	85 407	00.8404
65	0	16	67.0	34.0	02	07	84 408	00.9501	84 408	00.9504
80	0	16	94.0	42.0	02	08	84 409	00.9501	84 409	00.9504
100	0	16	144.0	61.0	02	09	84 410	00.9501	84 410	00.9504

On request ND 150

State voltage [V] and frequency [Hz]

¹⁾ C_v-value (US) ≈ K_v-value x 1.2

Remark: Blade Dimensions of the flanges do not correspond to ANSI standard. Produced from flanges acc. to DIN 2533.

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Solenoids

Standard-voltages	DC	AC 40 Hz to 60 Hz
	24 V – 205 V	24 V 110 V 230 V

Design acc. to VDE 0580
Voltage range $\pm 10\%$
100 % duty cycle
Protection class acc. to EN 60529 IP 65 (previous DIN 40 050)

Attention! Restricted temperature range for explosion proof solenoids

For technical details see catalog-register "Solenoids"

Further models

available at extra cost

- XX XXX **01.XXXX** Normally open, mounting position: solenoid vertical on top
- XX XXX **02.XXXX** Manual override
- XX XXX **03.XXXX** Seat seal FPM, fluid temperature max. $+110\text{ }^{\circ}\text{C}^{2)}$
- XX XXX **06.XXXX** Seat seal PTFE, fluid temperature max. $+110\text{ }^{\circ}\text{C}^{2)}$
- XX XXX **14.XXXX** Seat seal EPDM, fluid temperature max. $+110\text{ }^{\circ}\text{C}$
- XX XXX **17.XXXX** Normally open, seat seal FPM, fluid temperature max. $+110\text{ }^{\circ}\text{C}^{2)}$, mounting position: solenoid vertical on top
- XX XXX **23.XXXX** Position indicator with two solenoid switches
- XX XXX **25.XXXX** Seat seal FPM, only up to ND 50, with larger bleed orifices in the piston, viscosity max. $80\text{ mm}^2/\text{s}$ (cSt), fluid temperature max. $+110\text{ }^{\circ}\text{C}^{2)}$
- XX XXX **34.XXXX** Enlarged closing force, advisable at low flow rate and low switching cycles; k_V -value reduced appr. -20%
- **On request** Further versions

Power consumption ¹⁾

Solenoid	DC	AC Inrush and Holding
	8401 8404 9501 9504	40 W – 80 W –

Socket acc. to DIN 43 650 at solenoid 8401/8404, AC solenoid with rectifier.

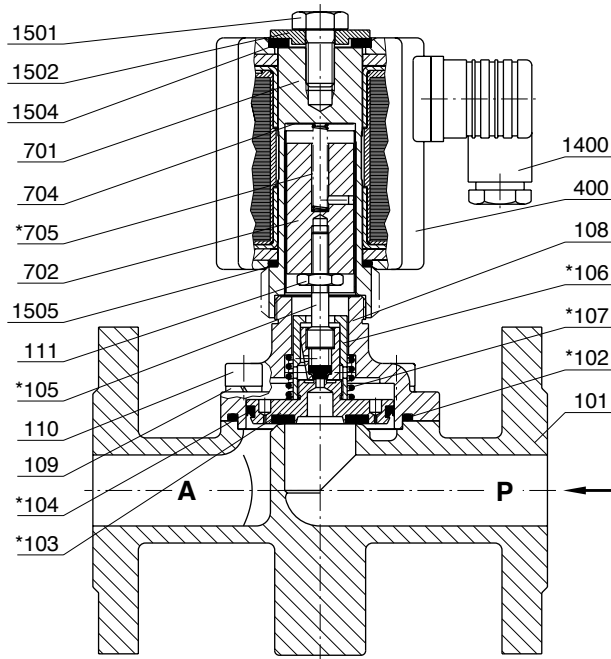
¹⁾ **According to VDE 0580 at coil temperature $+20\text{ }^{\circ}\text{C}$. In operating the solenoid coil decrease the power consumption appr. 30% .**

- XX XXX XX.**8402** Solenoid for higher fluid temperature max. $+200\text{ }^{\circ}\text{C}$, mounting position: vertical with solenoid underneath, for D.C. only
- XX XXX XX.**8406** Same as 8402, for A.C. only
- XX XXX XX.**8436** Solenoid in protection class EEx me II T4
- XX XXX XX.**8441** Solenoid in protection class EEx me II T3
- XX XXX XX.**8900** Solenoid in protection class EEx de IIC T4 and T5, Size \leq ND 50
- XX XXX XX.**8920** Solenoid in protection class EEx d IIC T4 and T5, up to ND 50
- XX XXX XX.**9502** Solenoid for higher fluid temperature max. $+150\text{ }^{\circ}\text{C}$. Size $> =$ ND 65
- XX XXX XX.**9540** Solenoid in protection class EEx me II T3/T4, Size $> =$ ND 65 and larger
- **On request** Further versions

²⁾ max. temp. $+200\text{ }^{\circ}\text{C}$ see solenoid for higher temperature (please observe DIN 2401)

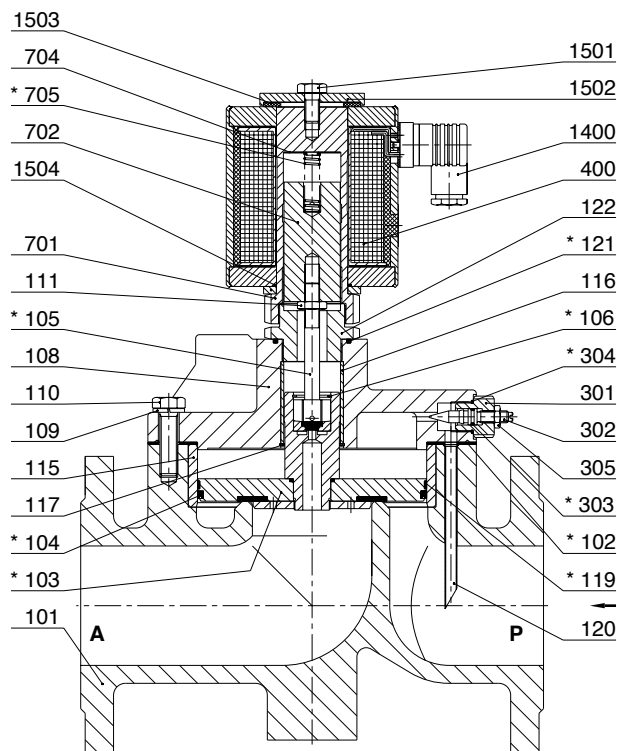
Sections

01



- | | | | |
|------|--------------------------------|------|----------------------|
| 101 | Valve body | 111 | Hexagon nut |
| *102 | O - ring | 400 | Solenoid |
| *103 | Valve plate | 701 | Core tube |
| *104 | Grooved ring | 702 | Core |
| *105 | Valve spindle | 704 | Anti magnetic spacer |
| *106 | Screw piece | *705 | Pressure spring |
| *107 | Pressure spring, not for ND 15 | 1400 | Socket |
| 108 | Body cover | 1501 | Hexagon screw |
| 109 | Spring washer | 1502 | Round plate |
| 110 | Cheese head cap screw | 1504 | Gasket |
| | | 1505 | O-ring |

02



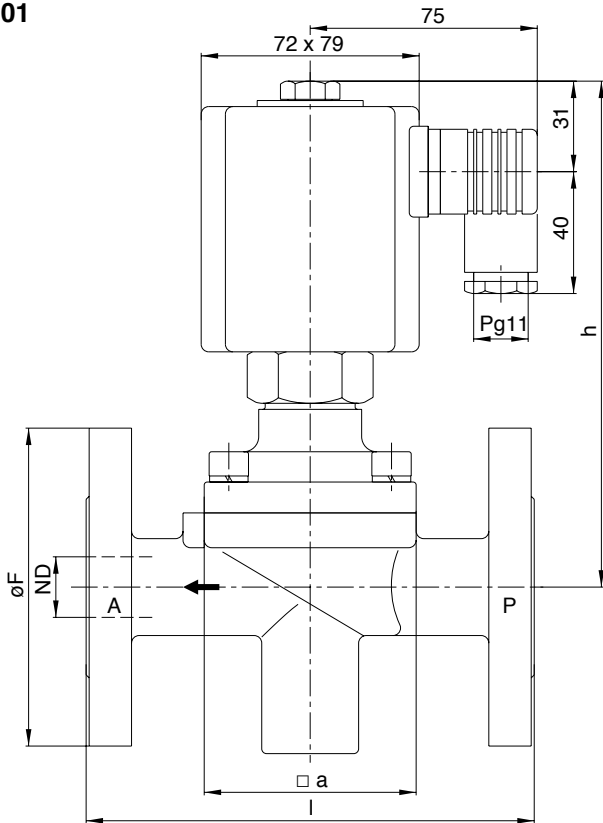
- | | | | |
|------|---------------|------|----------------------|
| 101 | Valve body | 301 | Screw piece |
| *102 | Gasket | 302 | Valve spindle |
| *103 | Valve piston | *303 | O-ring |
| *104 | Grooved ring | *304 | O-ring |
| *105 | Valve spindle | 305 | Hexagon nut |
| *106 | Locking ring | 400 | Solenoid |
| 108 | Body cover | 701 | Core tube |
| 109 | Spring washer | 702 | Core |
| 110 | Hexagon screw | 704 | Anti magnetic spacer |
| 111 | Hexagon nut | *705 | Pressure spring |
| 115 | Bushing | 1400 | Socket |
| 116 | Bushing | 1501 | Hexagon screw |
| 117 | Circilp | 1502 | Round plate |
| *119 | Guide foil | 1503 | Gasket |
| 120 | Tube | 1504 | O-ring |
| *121 | O-ring | 1505 | Round plate |
| 122 | Screw piece | | |

To avoid high shock pressure, you can control the closing time with the adjusting stem pos. 302. Turning clockwise increases restriction and slows down closing speed. A totally closed restriction would result in a malfunction.

* These individual parts form a complete wearing unit.
When ordering spare parts please state Cat no and series no.

Dimensions

01

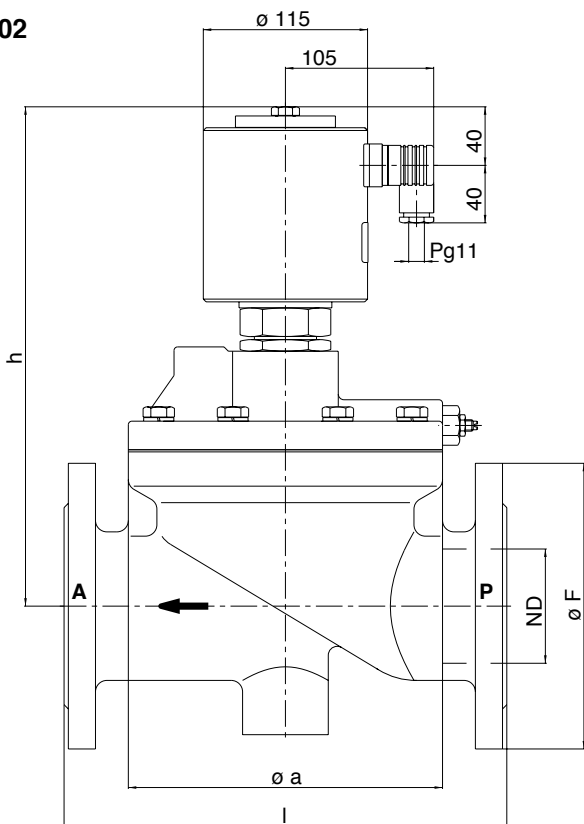


Flange connection ANSI B 165 – 150 lbs RF
Contact face „Stock Finish“

Dimension table no	□ a	h	l
01	70	170	130
02	70	172	150
03	70	172	160
04	96	187	180
05	96	191	200
06	112	200	230

Dimension table no	ND	Ø F	
01	15	88,9	
02	20	98,4	
03	25	107,9	
04	32	117,5	
05	40	127,0	
06	50	152,4	

02



Flange connection ANSI B 16.5 – 150 lbs RF
Contact face „Stock Finish“

Dimension table no	Ø a	h	l
07	195	330	290
08	220	350	310
09	260	378	350

Dimension table no	ND	Ø F	
07	65	177,8	
08	80	190,5	
09	100	220,0	

Solenoid may be rotated 360°

Socket turnable 4 x 90°