

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 – 300 lbs RF
 Operating pressure 0 to 25 bar



06.09.95
 Catalogue index
A 5

85 420/84 420 series

Description (standard valve)

Solenoid valve for air, water and oil

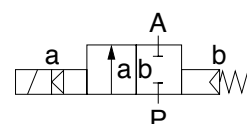
Flow direction: determined
Fluid temperature: max. +90 °C
Ambient temperature: max. +50 °C
Sum of fluid and ambient temperature: max. +130 °C
Mounting position: optional, solenoid preferably mounted vertical on top, ND 65 and larger, solenoid on top in vertical position imperative
Material Body: Cast steel
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	25	5.5	5.5	01	01	85 422	00.8401	85 422	00.8404
20	0	25	10.0	5.8	01	02	85 423	00.8401	85 423	00.8404
25	0	25	12.5	6.2	01	03	85 424	00.8401	85 424	00.8404
32	0	25	27.0	11.0	01	04	85 425	00.8401	85 425	00.8404
40	0	25	31.0	11.8	01	05	85 426	00.8401	85 426	00.8404
50	0	25	43.0	14.0	01	06	85 427	00.8401	85 427	00.8404
65	0	25	67.0	36.5	02	07	84 428	00.9501	84 428	00.9504
80	0	25	94.0	46.5	02	08	84 429	00.9501	84 429	00.9504
100	0	25	144.0	70.0	02	09	84 430	00.9501	84 430	00.9504

¹⁾ C_v-value (US) ≈ k_v-value x 1.2

State voltage [V] and frequency [Hz]

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⁾, operating pressure: max. 16 bar up to ND 50
- 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 **22.XXXX** Operating pressure: max. 40 bar, solenoid with higher power consumption
- 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), temperature $+110\text{ }^{\circ}\text{C}$ ²⁾
- XX XXX **28.XXXX** Fluid temperature min. $-20\text{ }^{\circ}\text{C}$
- 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
AC solenoid with rectifier.

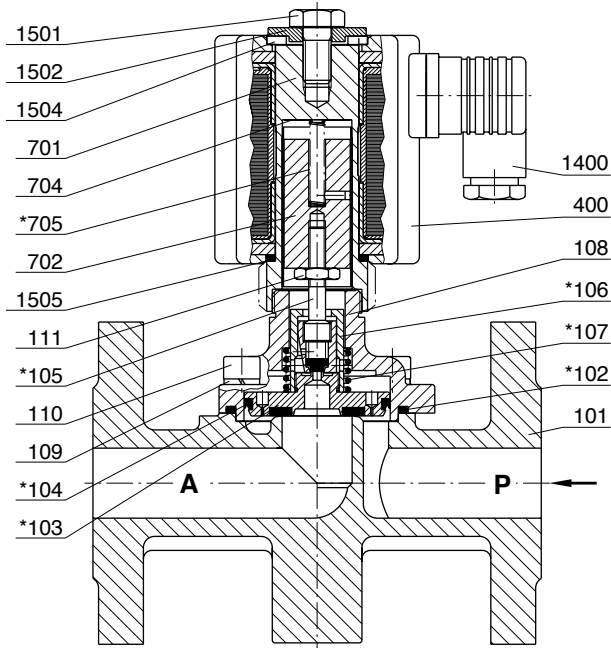
¹⁾ **According to VDE 0580 at coil temperature $+20\text{ }^{\circ}\text{C}$. In operating the solenoid coil decrease the power consumption appr. 30 %.**

- XX XXX XX.**8402** Solenoid for higher fluid temperature, fluid temperature max. $+200\text{ }^{\circ}\text{C}$, operating pressure: max. 20 bar for ND 50, mounting position: vertical with solenoid underneath, for DC only
- XX XXX XX.**8406** Same as 8402, for AC 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, only, 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 \geq ND 65, operating pressure: max. 16 bar, for DC
- XX XXX XX.**9540** Solenoid in protection class EEx me T3/T4, Size \geq 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)

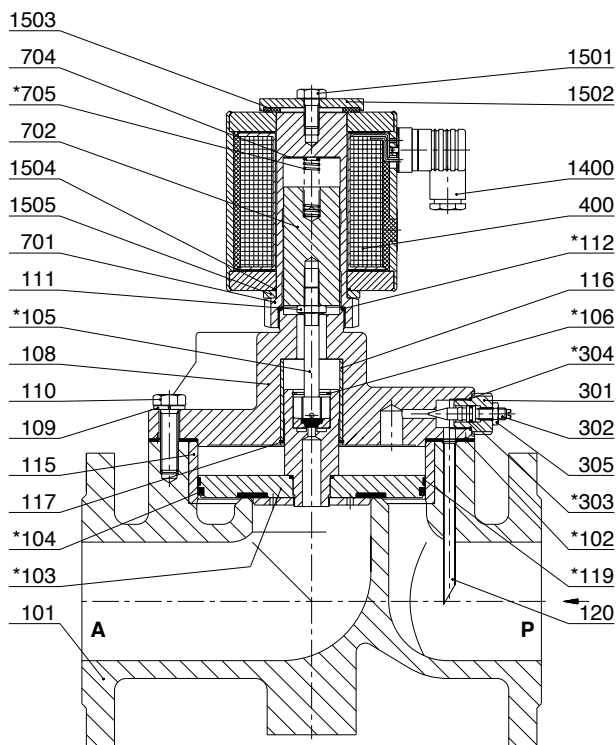
Sections

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



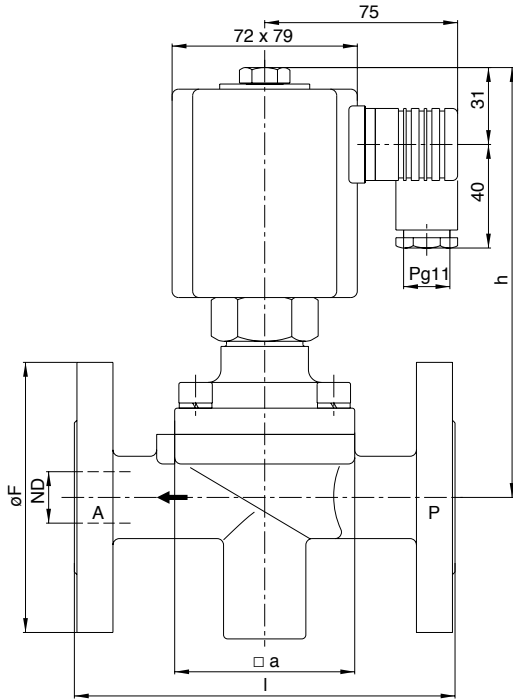
- | | |
|--------------------|--------------------------|
| 101 Valve body | 302 Valve spindle |
| *102 Gasket | *303 O-ring |
| *103 Valve piston | *304 O-ring |
| *104 Grooved ring | 305 Hexagon nut |
| *105 Valve spindle | 400 Solenoid |
| *106 Locking ring | 701 Core tube |
| 108 Body cover | 702 Core |
| 109 Spring washer | 704 Anti magnetic spacer |
| 110 Hexagon screw | *705 Pressure spring |
| 111 Hexagon nut | 1400 Socket |
| *112 Seal ring | 1501 Hexagon screw |
| 115 Bushing | 1502 Round plate |
| 116 Bushing | 1503 Gasket |
| 117 Circilp | 1504 O-ring |
| *119 Guide foil | 1505 Round plate |
| 120 Tube | |
| 301 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

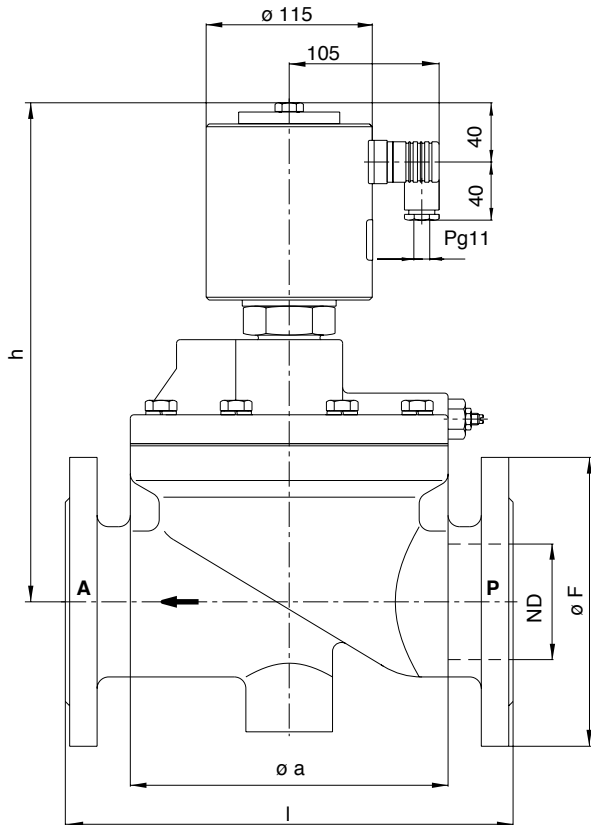


Flange connection ANSI B 16.5 – 300 lbs RF
Contact face „Stock Finish“

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	96.0	
02	20	117.5	
03	25	123.8	
04	32	133.3	
05	40	150.0	
06	50	165.0	

02



Flange connection ANSI B 16.5 – 300 lbs RF
Contact face „Stock Finish“

Dimension table no	Ø a	h	l
07	195	327	290
08	220	347	310
09	265	376	350

Dimension table no	ND	Ø F	
07	65	185	
08	80	204	
09	100	254	

Solenoid may be rotated 360 °

Socket turnable 4 x 90°