

# BRONZE ZEUS PNEUMATIC ANGLE-SEAT VALVE

## FEATURES

The bronze ZEUS valve is intended for the automatic shut-off of networks of fluids. The full-bore inclined-seat body and the excellent flow-rate coefficients allow for very low pressure drops. The body and the internal parts of stainless steel allow the ARES valve to be used on many fluids for pressures up to 16 bars and temperatures up to 180°C. The pneumatic actuator is of PA, orientable with a single- or double-effect, NAMUR interface. It can receive four options: box with two limit switches, pilot solenoid valve, manual override, stroke limiter. The size 40 economical actuator which can be mounted up to 1/2" does not have a NAMUR interface, and cannot receive any option. The admissible differential pressures depend upon the size and the type of actuator, and on the supply pressure of compressed air. Refer to diagrams for each application.

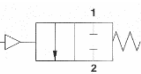


## AVAILABLE MODELS

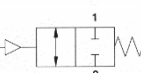
G 3/8" to G 2": G threaded connection.

Connection: G 1/8"

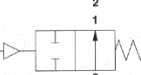
1420: NC single-effect threaded version inlet on top of



1422: NC single-effect threaded version inlet under th



1424: NO single-effect threaded version inlet under th



Option

## LIMITS OF USE

Fluid WP:	16 bar		
Fluid WT°:	-10° / +180°C		
Maximum viscosity of fluid	600 cst		
Ambient WT°:	-10° / +60°C		
Air supply pressure:	1420	1422	1424
	See Table page 5		
	8 bar max		
Operation on saturated steam	9 bar / 180° C		

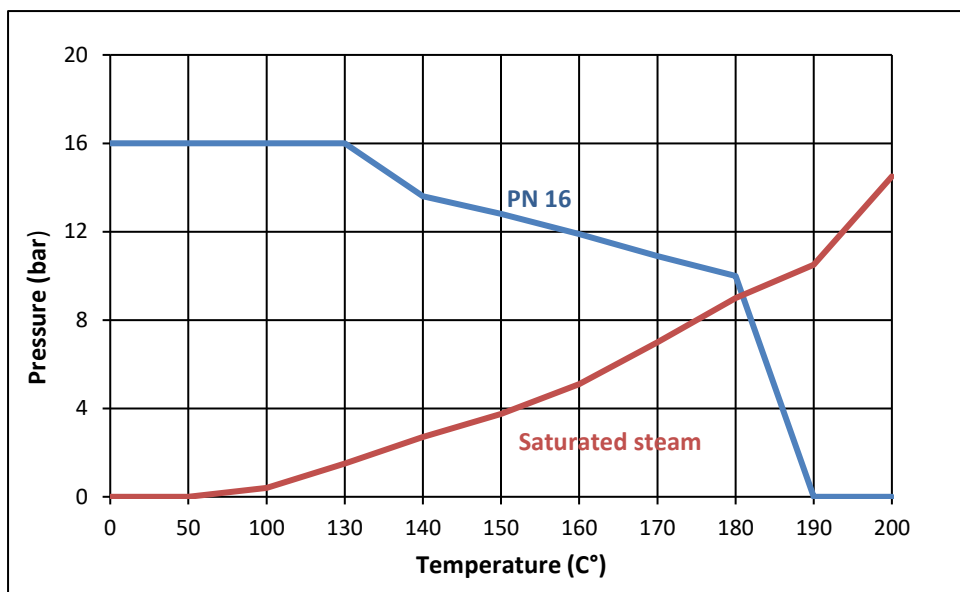
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## DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	<b>3/8" to 1"</b> : A4 § 3 non-submitted <b>1"1/4 to 2"</b> : Category II	1115	Threads	ISO 228
Bronze grade	EN 1503-4		Face-to-face dimension	DIN 3202-4 M8
ATEX Directive	II2GDc TXX			

## DIMENSIONS (mm) AND CONNECTIONS

DN	ø Head (1420)	ø Head (1422)	ø Head (1424)	A	B	C	D	øE	F	H	Ch. L
G 3/8"	40	40	-	144	120.5	134	39	61	65	12	27
	50	-	50	166	143	156.5	44	70	65	12	27
G 1/2"	40	40	-	144	120.5	134	35	61	65	13	27
	50	50	50	166	143	156.5	44	70	65	13	27
G 3/4"	50	50	50	174	148.5	165	44	70	75	14.3	33
	-	63	-	192.5	167	183.5	50.5	84.4	75	14.3	33
G 1"	63	63	63	206	225	196	50.5	84.4	90	17.5	41
	-	90	-	254.5	180	245.5	66.2	116.4	90	19	41
G 1"1/4	-	-	63	215	235	205	50.5	84.4	110	18	50
	90	90	-	267	271	256	66.2	116.4	110	18	50
G 1"1/2	90	90	90	270	-	264	66.2	116.4	120	-	58
	110	110	-	306	-	300	77.4	140.6	120	-	58
G 2"	90	-	-	280	-	275	66.2	116.4	150	-	70
	110	110	110	316	-	311	77.4	140.6	150	-	70

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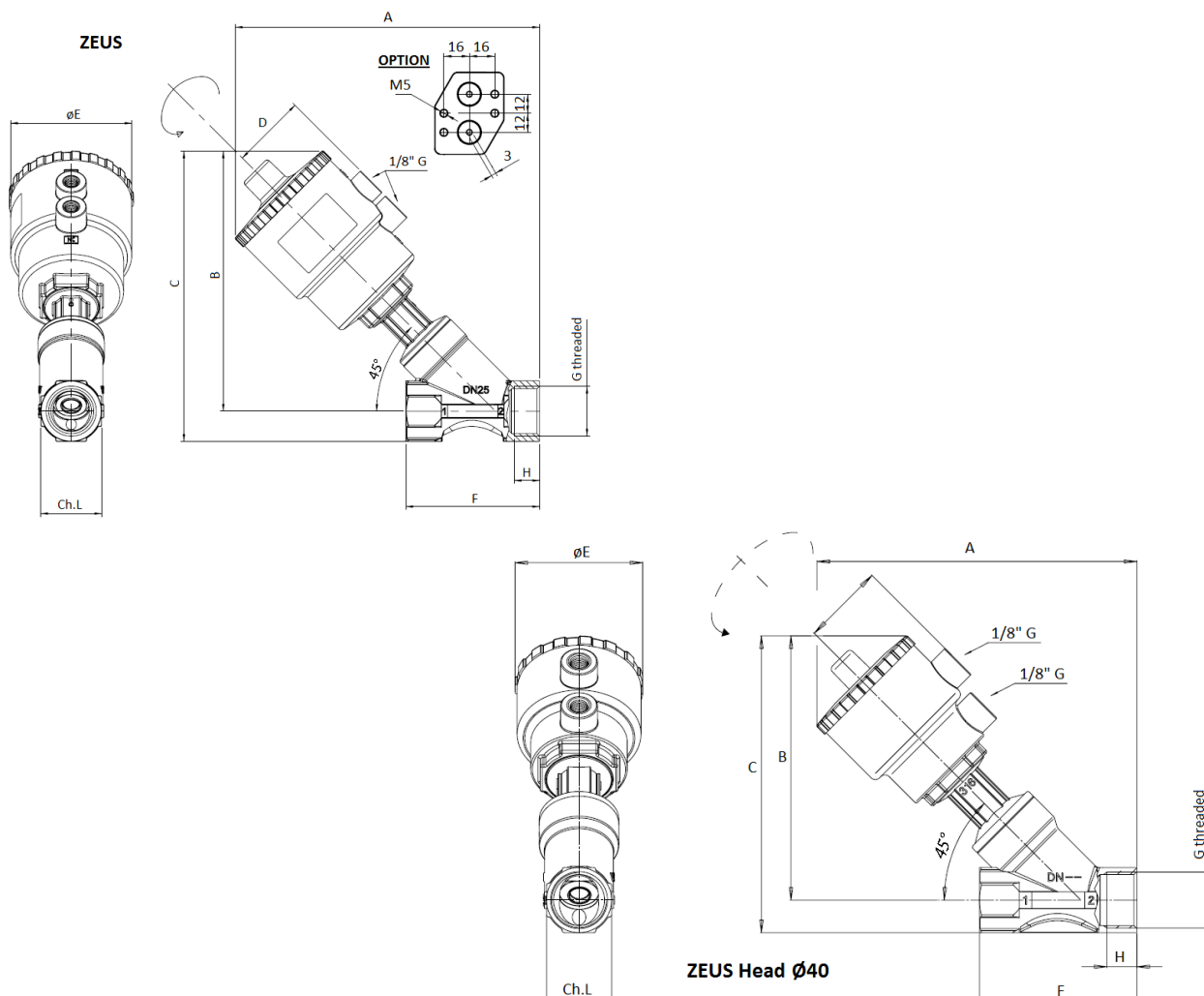
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## WEIGHT (kg)

DN	ø Head	Weight (kg)	ø Head	Weight (kg)	ø Head	Weight (kg)
	(1420)		(1422)		(1424)	
G 3/8"	40	0.77	40	0.81	-	-
	50	0.95	-	-	50	0.97
G 1/2"	40	0.73	40	0.75	-	-
	50	0.92	50	1.03	50	0.97
G 3/4"	50	1.12	50	1.19	50	1.13
	-	-	63	1.77	-	-
G 1"	63	2	63	2.17	63	1.98
	-	-	90	3.68	-	-
G 1"1/4	-	-	-	-	63	2.33
	90	3.7	90	4.01	-	-
G 1"1/2	90	4.28	90	4.65	90	4.3
	110	5.32	110	6.12	-	-
G 2"	90	5.2	-	-	-	-
	110	6.3	110	7.12	110	6.3



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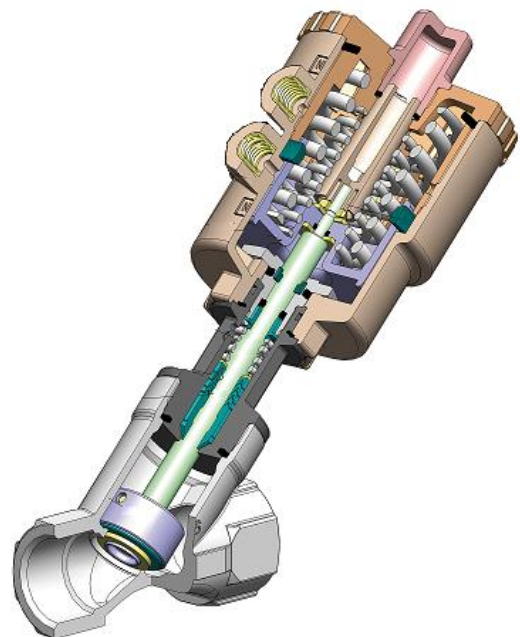
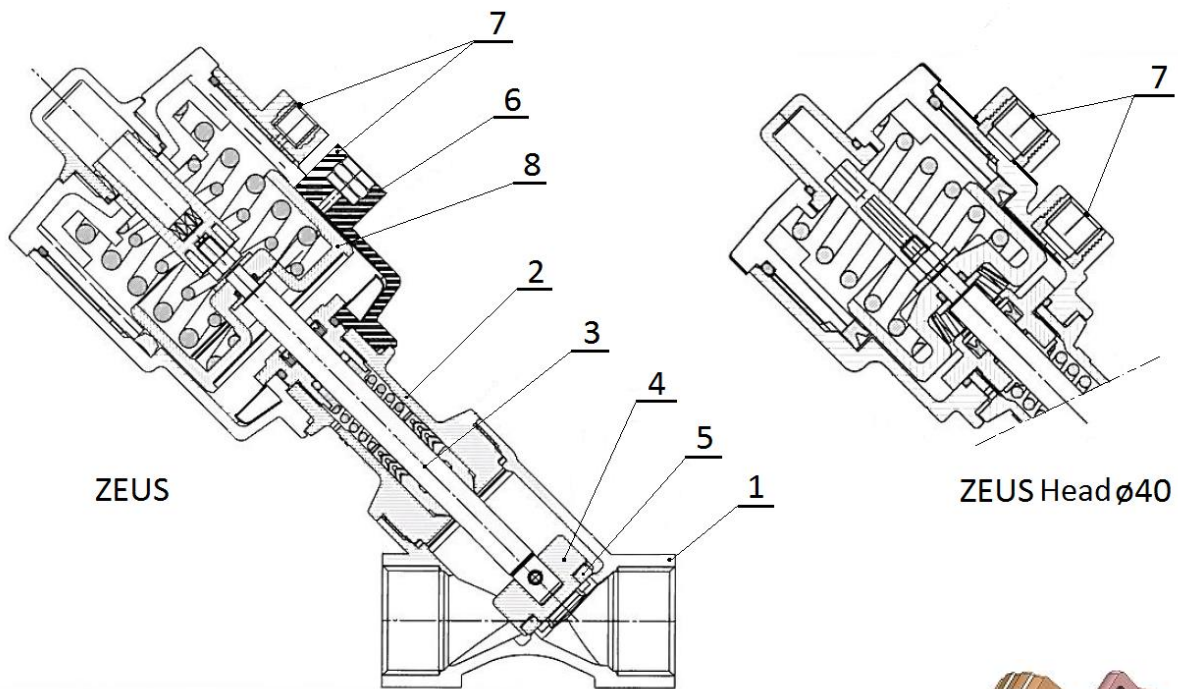
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## CONSTRUCTION

No.	Name	Material
1	Body	CuSn5Zn5Pb5-B bronze
2	Bonnet	CW 617N brass
3	Stem	AISI 316L
4	Disc	AISI 316L
5	Gasket	PTFE
6	Actuator	Polymide PA 66 + GF 30%
7	Threaded connection	AISI 303
8	Piston	PBT nickel-plated brass + GF 30% (DN40 - DN50)



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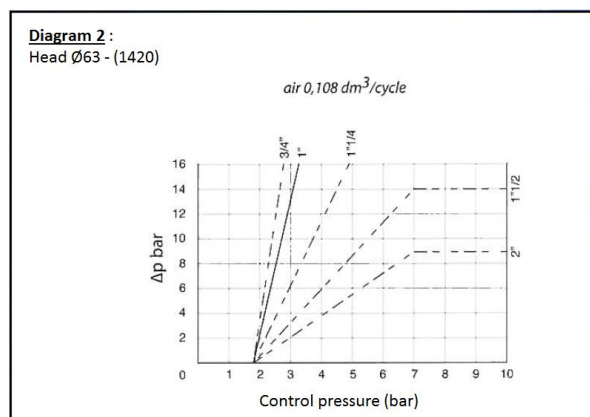
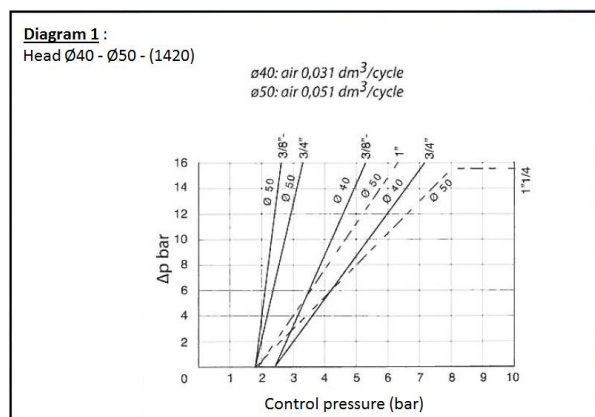
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## HYDRAULIC FEATURES

DN	ø Head (1420)	ø Head (1422)	ø Head (1424)	Kv (m <sup>3</sup> /h)	Max pressure diff. (bar)	Min pressure diff. (bar)	ΔP max	Diagram (ø Head)
G 3/8"	40	-	-	4.5	10	2.5	16	No. 1
	-	40	-			4.2		No. 5
	50	-	-	4.9	10	1.8	16	No. 1
	-	-	50			1.8		No. 9
G 1/2"	40	-	-	5.3	10	2.5	16	No. 1
	-	40	-			4.2		No. 5
	50	-	-	5.7	10	1.8	16	No. 1
	-	50	-			4		No. 5
	-	-	50			1.8		No. 9
G 3/4"	50	-	-	10.5	10	1.8	16	No. 1
	-	50	-			4		No. 5
	-	-	50	10.8	10	1.8	16	No. 9
	-	63	-			4		No. 6
G 1"	63	-	-	20	10	1.8	16	No. 2
	-	63	-			4		No. 6
	-	-	63	20	8	1.8	16	No. 10
	-	90	-			4		No. 7
G 1 1/4	-	-	63	28.5	10	1.8	16	No. 10
	90	-	-	29	8	1.8	16	No. 3
	-	90	-			4		No. 7
G 1 1/2	90	-	-	46	8	1.8	16	No. 3
	-	90	-			4		No. 7
	-	-	90	46.5	8	1.8	16	No. 11
	110	-	-			1.8		No. 4
	-	110	-			4		No. 8
G 2"	90	-	-	59	8	1.8	16	No. 3
	110	-	-	67	8	1.8	16	No. 4
	-	110	-			4		No. 8
	-	-	110	-	8	1.8	16	No. 12



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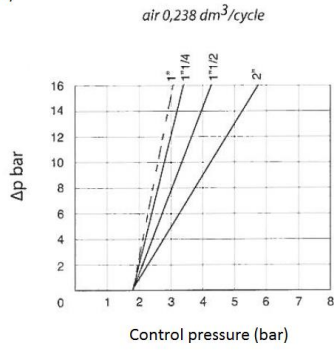


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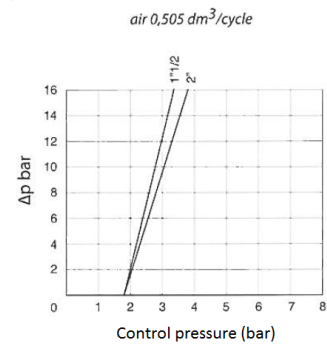
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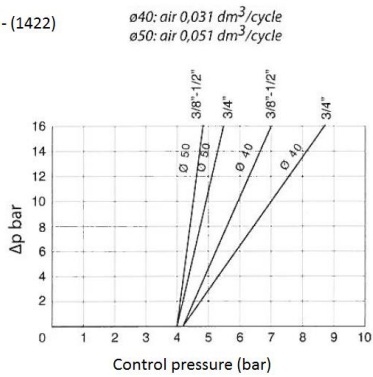
**Diagram 3 :**  
Head Ø90 - (1420)



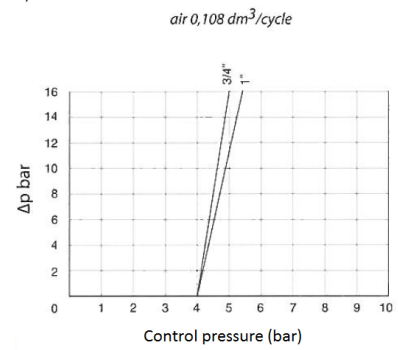
**Diagram 4 :**  
Head Ø110 - (1420)



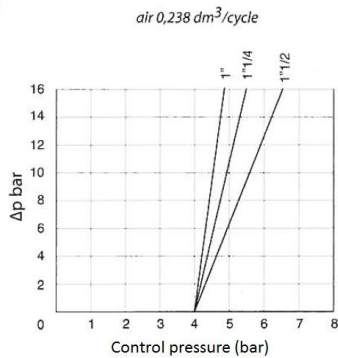
**Diagram 5 :**  
Head Ø40 - Ø50 - (1422)



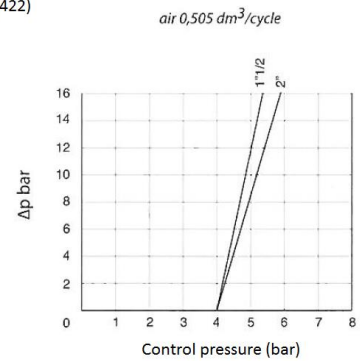
**Diagram 6 :**  
Head Ø63 - (1422)



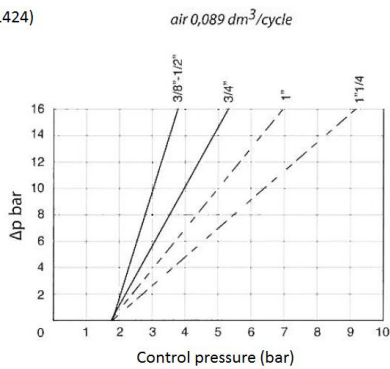
**Diagram 7 :**  
Head Ø90 - (1422)



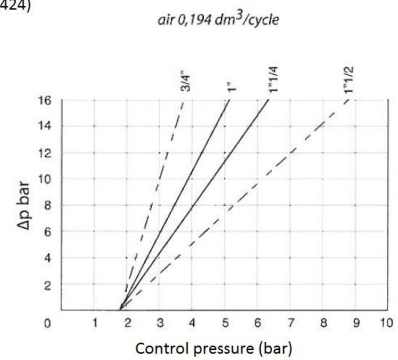
**Diagram 8 :**  
Head Ø110 - (1422)



**Diagram 9 :**  
Head Ø50 - (1424)



**Diagram 10 :**  
Head Ø63 - (1424)



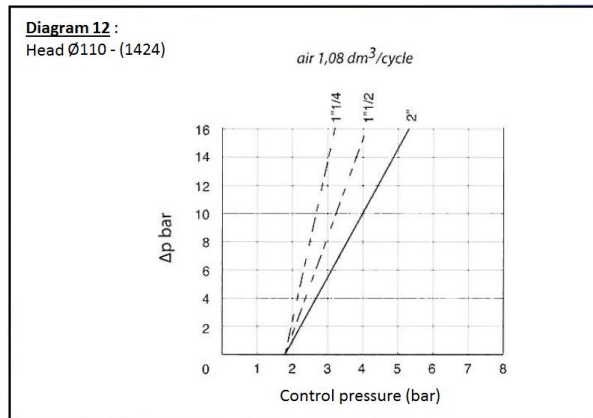
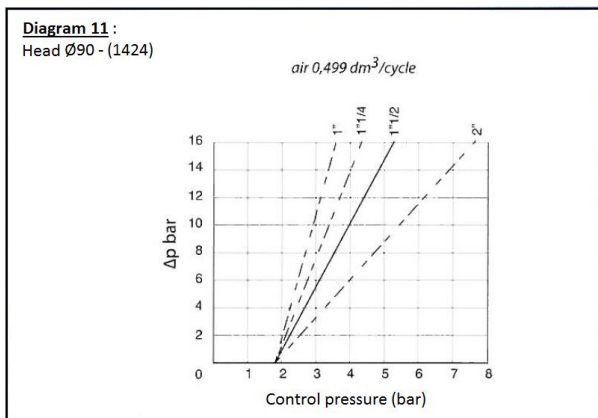
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## INSTALLATION

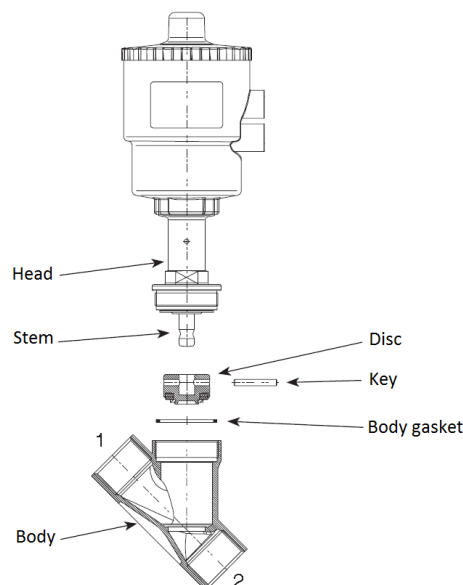
The ZEUS inclined-seat valve can be installed in any position. The actuator is 360° orientable clockwise to facilitate the assembly of the solenoid valve. The connection depends on the type of valve (Normally open or closed, with double effect).

- 1 - Before any installation, cut-off the piping upstream and downstream.
- 2 - Depressurise and purge the pipe.
- 3 - Wait for it to cool down to ambient temperature.
- 4 - Wear the safety equipment required for this type intervention (gloves and goggles).
- 5 - Screw the valve onto the piping following the assembly direction shown by the arrow on the body.
- 6 - Do not use the valve as a lever, and do not excessively tighten the fittings.
- 7 - Connect the actuator to the pneumatic control network.
- 8 - Check the valve operation using the indicator.

## SERVICING

- 1 - The ZEUS valve does not require any special servicing.
- 2 - In case of loss sealing in-line, check the state of the disc reference mark 5, and the air supply pressure.
- 3 - In case of leak at the packing gland, check the state of the packing gland.
- 4 - In case of loss of tightness at the control head, check the state of the O-ring.

Tightening torque (Nm)	
G 3/8" - G 1/2"	40/45
G 3/4"	45/50
G 1"	55/60
G 1 1/4"	65/70
G 1 1/2"	75/80
G 2"	80/90



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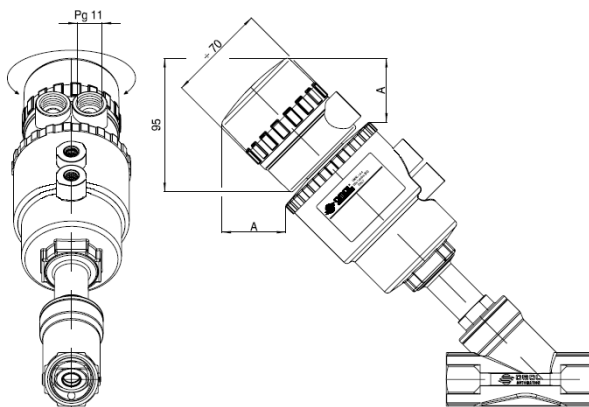
# BRONZE ZEUS PNEUMATIC ANGLE-SEAT VALVE

## ACCESSORIES

### 1 - Switch boxes

This closed position and opened position limit switch box is suitable for all valves of the ZEUS range. It can receive two types of contacts: dry mechanical contacts or inductive detectors (see diagram below).

Features		Actuator	A (mm)	Code Inductive detectors	Code Mechanical contacts
Body material	PA	DN 50	52.1	985016	985008
IP Code	IP 65	DN 63	47.5	985017	985009
Ambient temperature	- 20 °C / + 70 °C	DN 90	37.7	985018	985010
Electrical connection	2 x PG 11	DN 110	29.5	985019	985011



NAMUR EEx ia inductive detectors		Mechanical contacts	
Nominal voltage	8 Vdc	Upper contact: open valve	
Intensity at start	1 mA	Lower contact: closed valve	
Holding current	3 mA	AC maximum current	5A / 250V
Ambient temperature	- 25 °C / + 100 °C	DC maximum current	1A / 250V
Different possible configurations		Configuration	
1 Open valve position contact			
1 Closed valve position contact			
2 x Open and closed valve position contacts			

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## 2 - Pilot solenoid valve

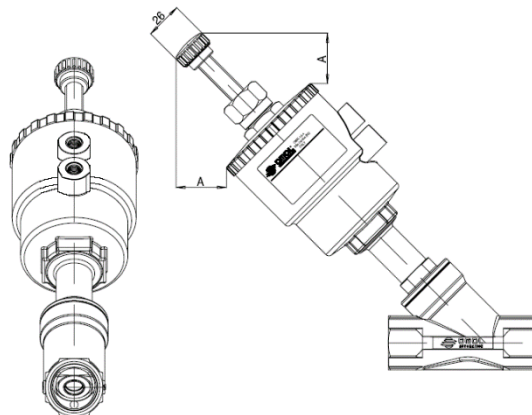
**Two types of solenoid valves can be mounted :**

- 3/2 solenoid valve with G 1/8" BSP connection.
- 3/2 or 5/2 solenoid valve with NAMUR interface. (Mounting pad option)

## 3 - Manual override

This accessory makes it possible to open the valve in case of emergency (Failure of the pilot pressure, loss of control signal). It is available on all NC versions.

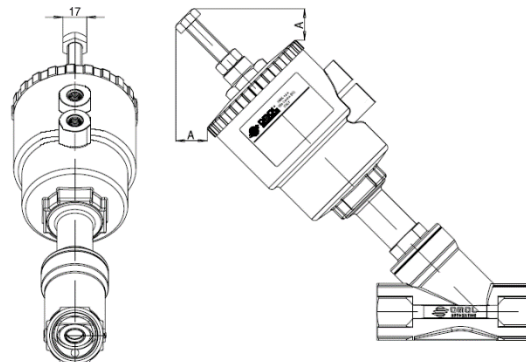
Actuator	A (mm)	Code
DN 50	35.8	985000
DN 63	35.8	985001
DN 90	29.5	985002
DN 110	29.5	985003



## 4 - stroke limiter

This accessory limits the stroke of the actuator piston during the opening stage, and thus controls the flow-rate. Available on all versions. On the NO single-effect versions, it can serve as manual override.

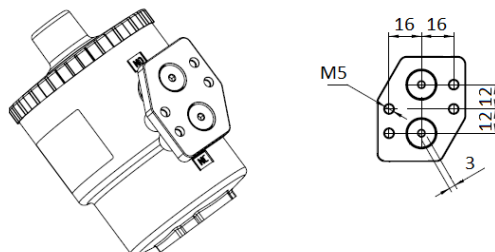
Actuator	A (mm)	Code
DN 50	25.5	985004
DN 63	21.5	985005
DN 90	5.2	985006
DN 110	5.9	985007



## 5 - OPTION (mounting pad)

Mounting pad with NAMUR interface for connection to a solenoid valve.

Mounting pad	Code
P.A	985020



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# BRONZE ZEUS PNEUMATIC ANGLE-SEAT VALVE

## SPARE PARTS

Code	Name
985030	3/8" T40 ZEUS replacement KIT
985031	3/8" T50-63 ZEUS replacement KIT
985032	1/2" T40 ZEUS replacement KIT
985033	1/2" T50-63 ZEUS replacement KIT
985035	3/4" T40-63 ZEUS replacement KIT
985036	1" T50-63 ZEUS replacement KIT
985037	1" T90-110 ZEUS replacement KIT
985038	1"1/4 T50-63 ZEUS replacement KIT
985039	1"1/4 T90-110 ZEUS replacement KIT
985041	1"1/2 T90-110 ZEUS replacement KIT
985043	2" T90-110 ZEUS replacement KIT

The spare parts required for repairing the ZEUS inclined-seat valves are provided in a replacement KIT containing gaskets for the neck, the plug, and the disc. Maintenance can be carried out without removing the valve from the installation.

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