

PNEUMATIC VALVES

Angle seat valves

Threaded end

features

features and benefits

methods of use

materials, dimensions and diagram

codes

accessories



Features

GENERAL FEATURES

Threaded valve ends, as per ISO 228/1 and ISO 7/1 – other types available on request.

Assembling is possible in all positions: upright, flat or angled.

Range available from 3/8" to 2" in the Double Acting versions, Spring Return N.C. from above and below the plug, Spring Return N.O. from below the plug.

According to 97/23 EC "PED"

ATEX version in conformity with directive 94/9/EC (to request at time of order)

The variations in the actioning of the valve, the several combinations and the possibility to intercept the fluid from above or below the plug, originate multiple versions of the automatic valve.

In the table below are indicated the standard versions with the main parameters.

On the basis of the kind of valve and the variations of pressure ΔP that must be intercepted, the necessary control pressure can be individuated, and consequently, the code for the corresponding valve.

Operating media

Air, water, alcohol, oil, petroleum products, saline solutions, steam, etc. (as long as compatible with AISI 316 or Bronze RG5).

Pressure from 0 to 16 / 25 bar (steam from 180 °C, from 0 to 10 bar) depending on the size and model chosen (see following pages).

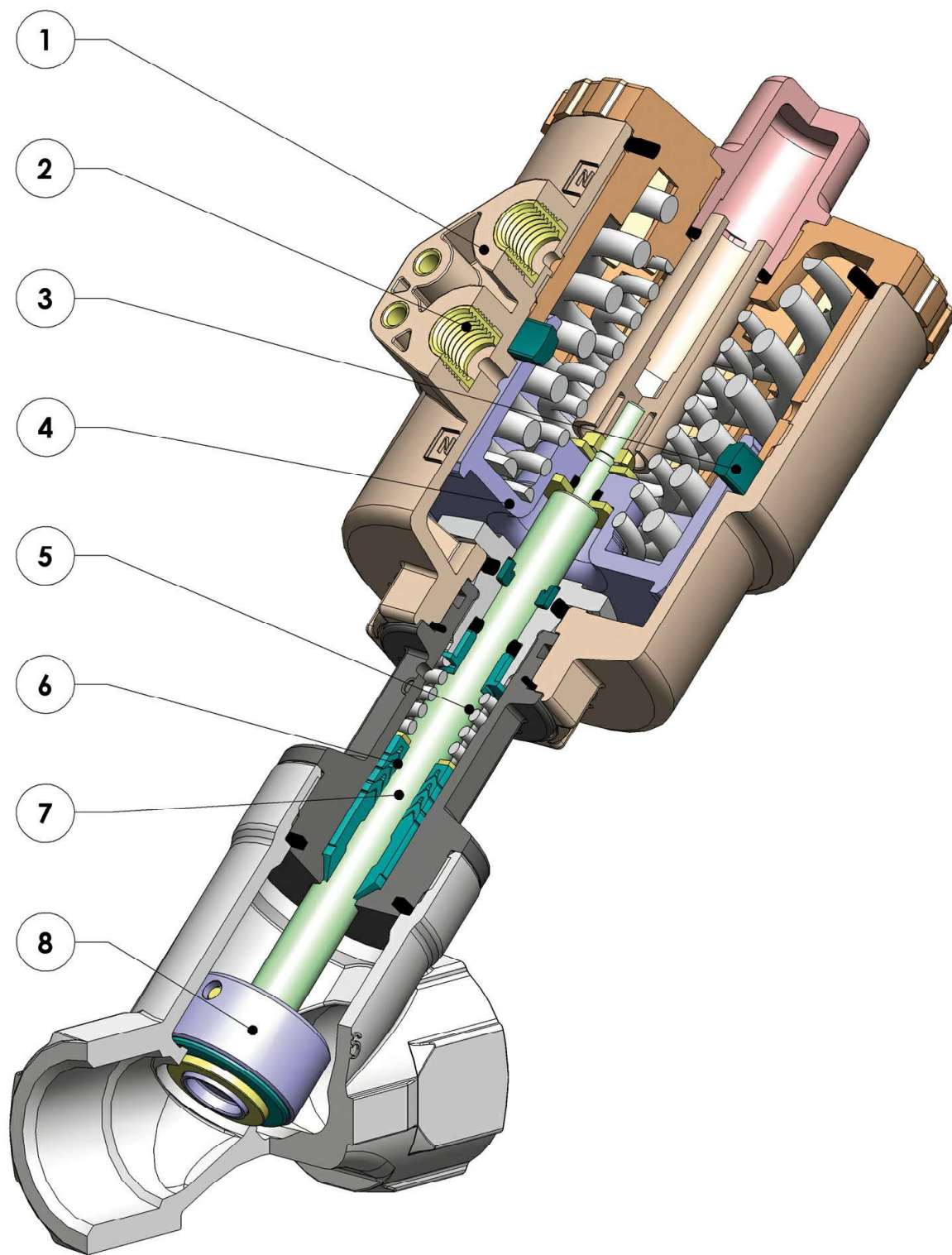
Temperature from -10 °C to 180 °C.

Max. viscosity 600 cst (mm²/s).

Control media

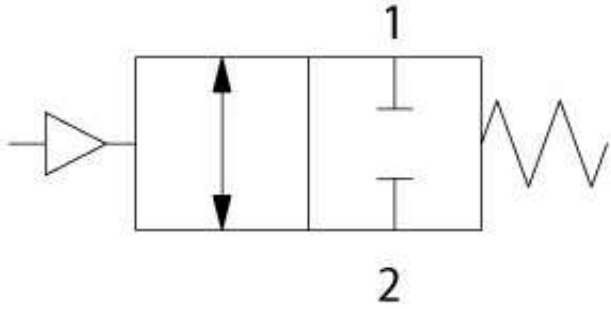
Driving media: compressed air, lubricated or dry, gas or neutral media.

Ambient temperature: -10 °C to +60 °C



FEATURES & BENEFITS		
1	NAMUR direct connections on piloting head (except Diam.40 Piloting head)	Direct coupling with solenoid valve
2	Piloting head inserts in AISI 316	Increases considerably the corrosion resistance caused by external agents
		Longer stroke of the actuator and shutter will be achieved, granting higher flow rate (less flow loss)

3	Lip seal placed in the cylinder rather than on the piston	Minor usura della guarnizione Less wear of the seal
4	Starting from DN63 metal piston with CHEMICAL NICKEL coating (10-15 micron)	Reduces the wear of the piston due to the achievement of a greater surface hardness (700-750 HV)
5	Seals pre-loaded by spring	Guarantee of the recovery of the gap due to the wear caused by the sliding of the shaft avoiding leakage towards the outside part. Allow to maintain energized the "chevron" seals (V) compensating the dimensional changes even in case of huge temperature excursions
6	CHEVRON seals (V shape) with 4 seals in the lower part	It ensures a perfect tightness even after a high number of cycles
7	Rolled shaft	Less wear of the seals due to the low roughness (0,1 micron Ra) which facilitate the sliding of the shaft
8	Oscillating / self-aligning shutter	It fits perfectly to the valve body ensuring the maximum tightness
	ATEX Certificate	Installation is allowed in a potential explosive environment
	PED Certificate	Full compliance with European Safety Standards for Pressure Equipment



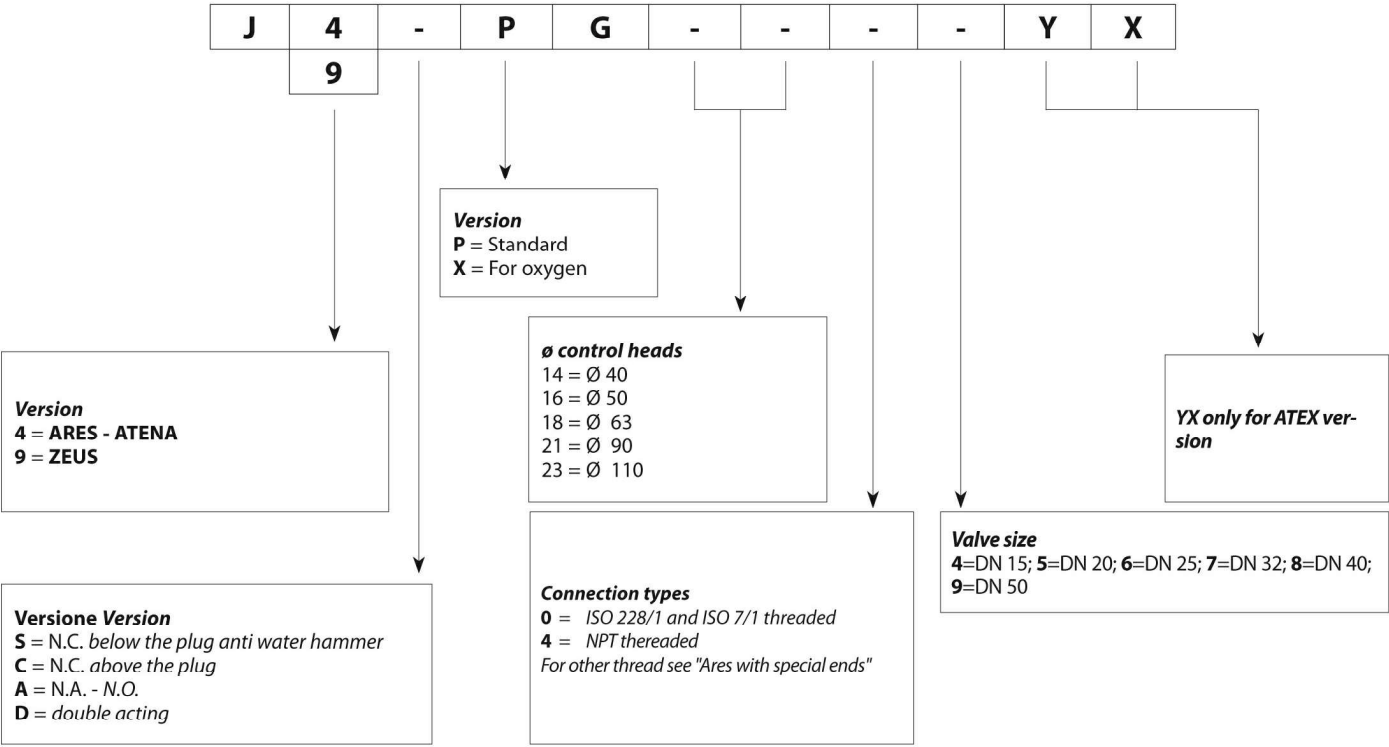
N.C. Normally Closed bidirectional. With the flow coming from below the plug you avoid water hammering.
Flow from above the plug for condensable media.

N.C. Normally Closed with the flow from above the plug.
Flow from above the plug for condensable media.

N.O. Normally Open with flow from below the plug.

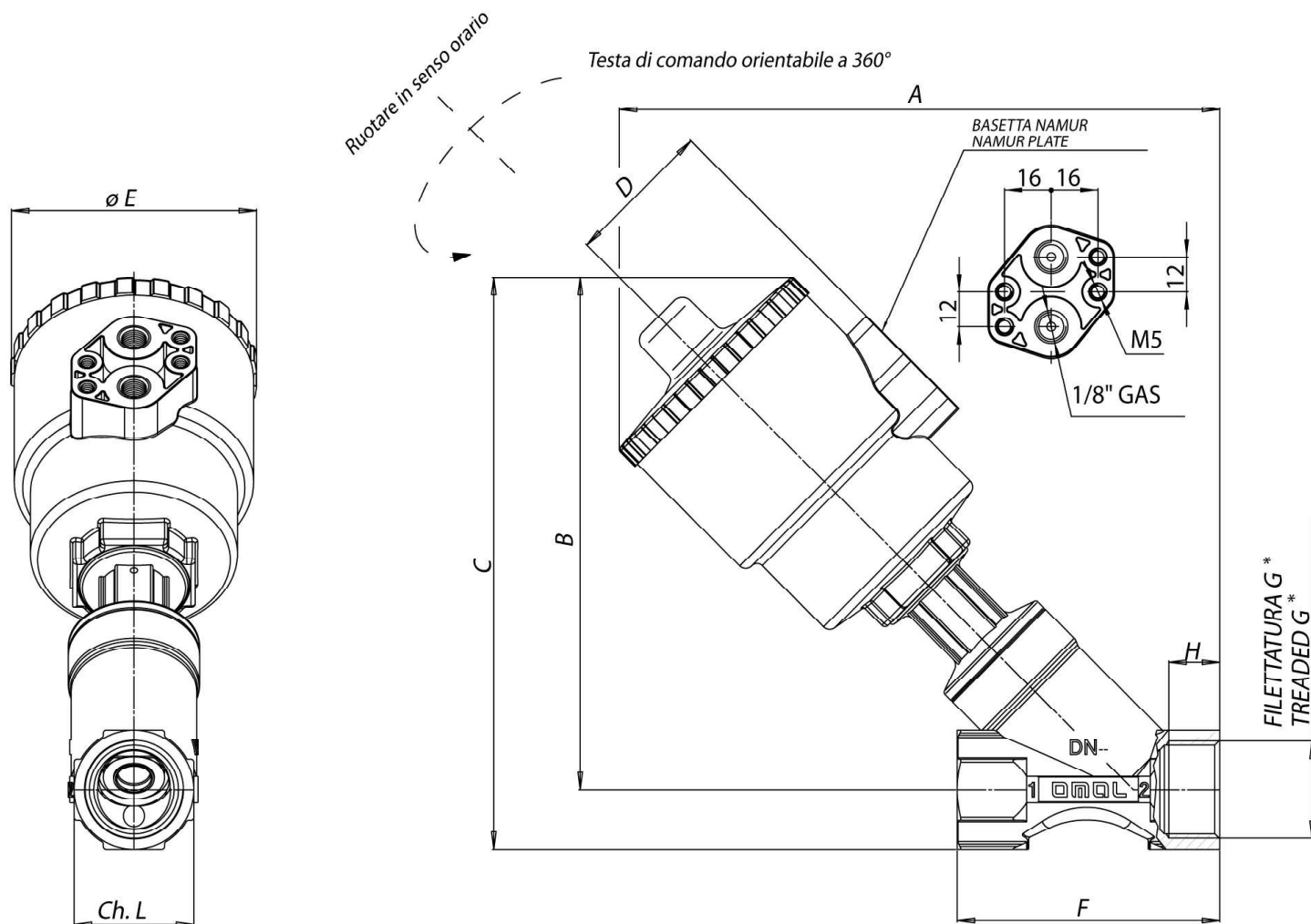
Double Acting bidirectional

ANGLE SEATS VALVES CODE PLAN



On request version for vacuum

Materials, dimensions and diagram - Zeus

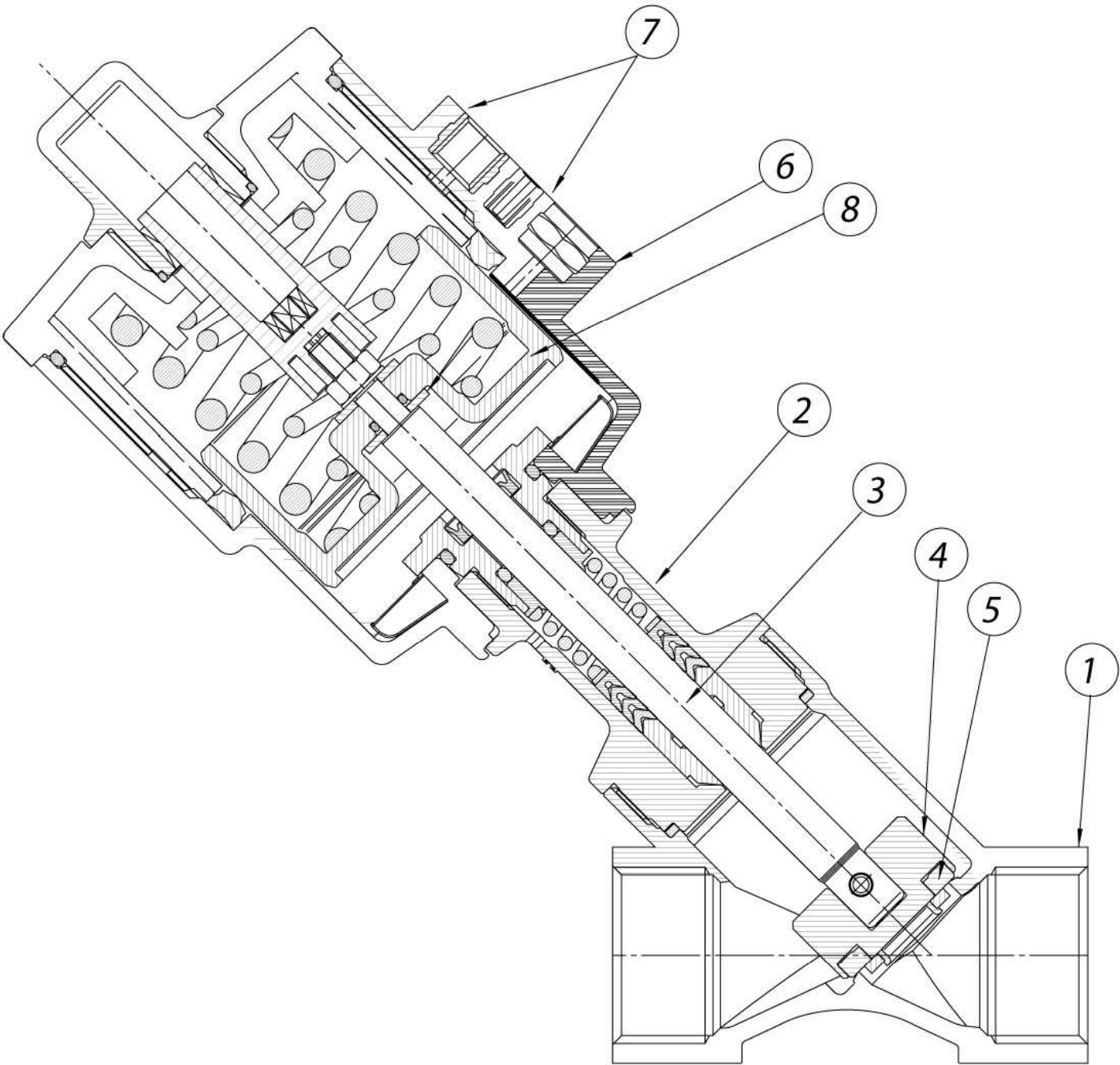


DIMENSIONALS TABLE

DN	G *	Actuator	A	B	C	D	$\varnothing E$	F	ch. L	H
15	3/8"	$\varnothing 50$	166	143	156,5	44	70	65	27	12
15	1/2"	$\varnothing 50$	166	143	156,5	44	70	65	27	13
20	3/4"	$\varnothing 50$	174	148,5	165	44	70	75	33	14,3
20	3/4"	$\varnothing 63$	192,5	167	183,5	50,5	84,4	75	33	14,3
25	1"	$\varnothing 50$	---	175,5	---	---	---	---	---	17,5
25	1"	$\varnothing 63$	206	225	196	50,5	84,4	90	41	17,5
25	1"	$\varnothing 90$	254,5	180	245,5	66,2	116,4	90	41	19
32	1 1/4"	$\varnothing 50$	---	231	---	---	---	---	---	19
32	1 1/4"	$\varnothing 63$	215	235	205	50,5	84,4	110	50	18
32	1 1/4"	$\varnothing 90$	267	271	256	66,2	116,4	110	50	18
32	1 1/4"	$\varnothing 110$	---	240	---	---	---	---	---	20
40	1 1/2"	$\varnothing 63$	---	276	---	---	---	---	---	20
40	1 1/2"	$\varnothing 90$	270		264	66,2	116,4	120	58	
40	1 1/2"	$\varnothing 110$	306		300	77,4	140,6	120	58	
50	2"	$\varnothing 63$	---		---	---	---	---	---	
50	2"	$\varnothing 90$	280		275	66,2	116,4	150	70	

50	2"	ø 110	316		311	77,4	140,6	150	70	
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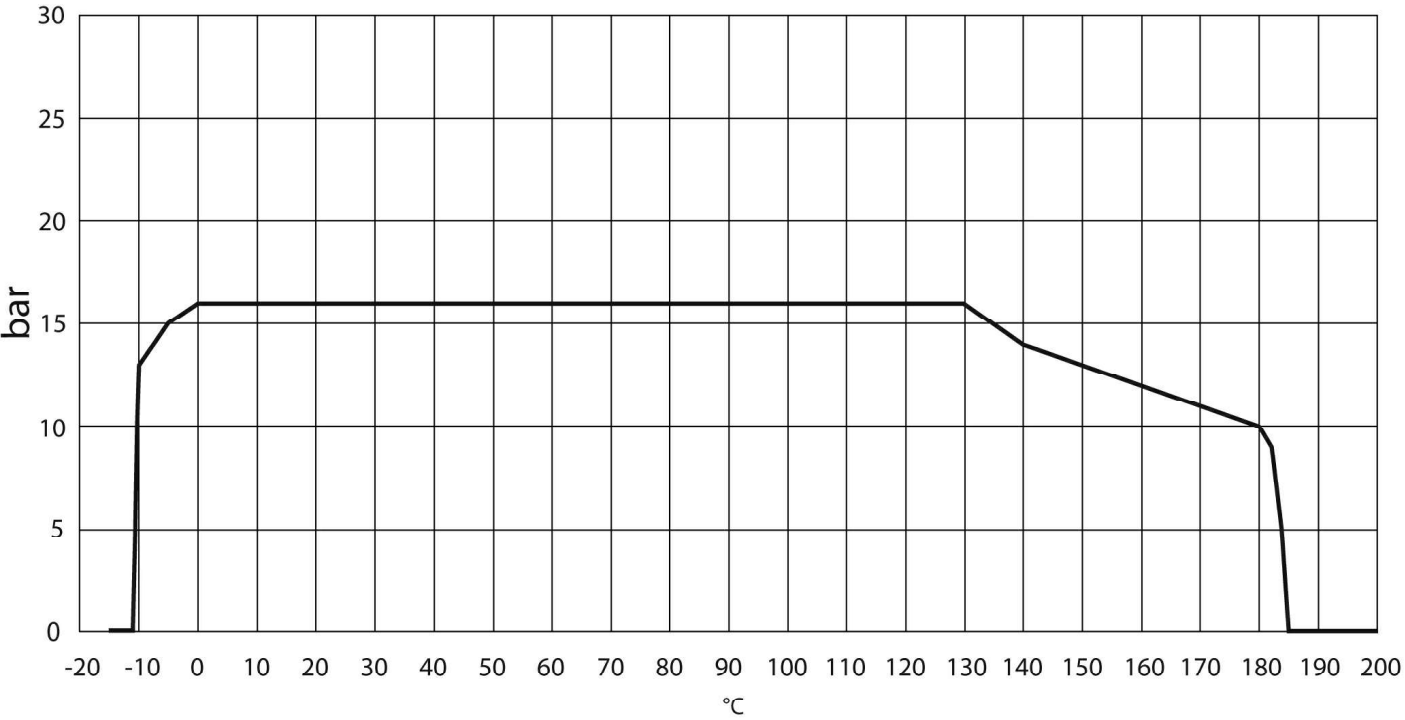
* * On request NPT-threading



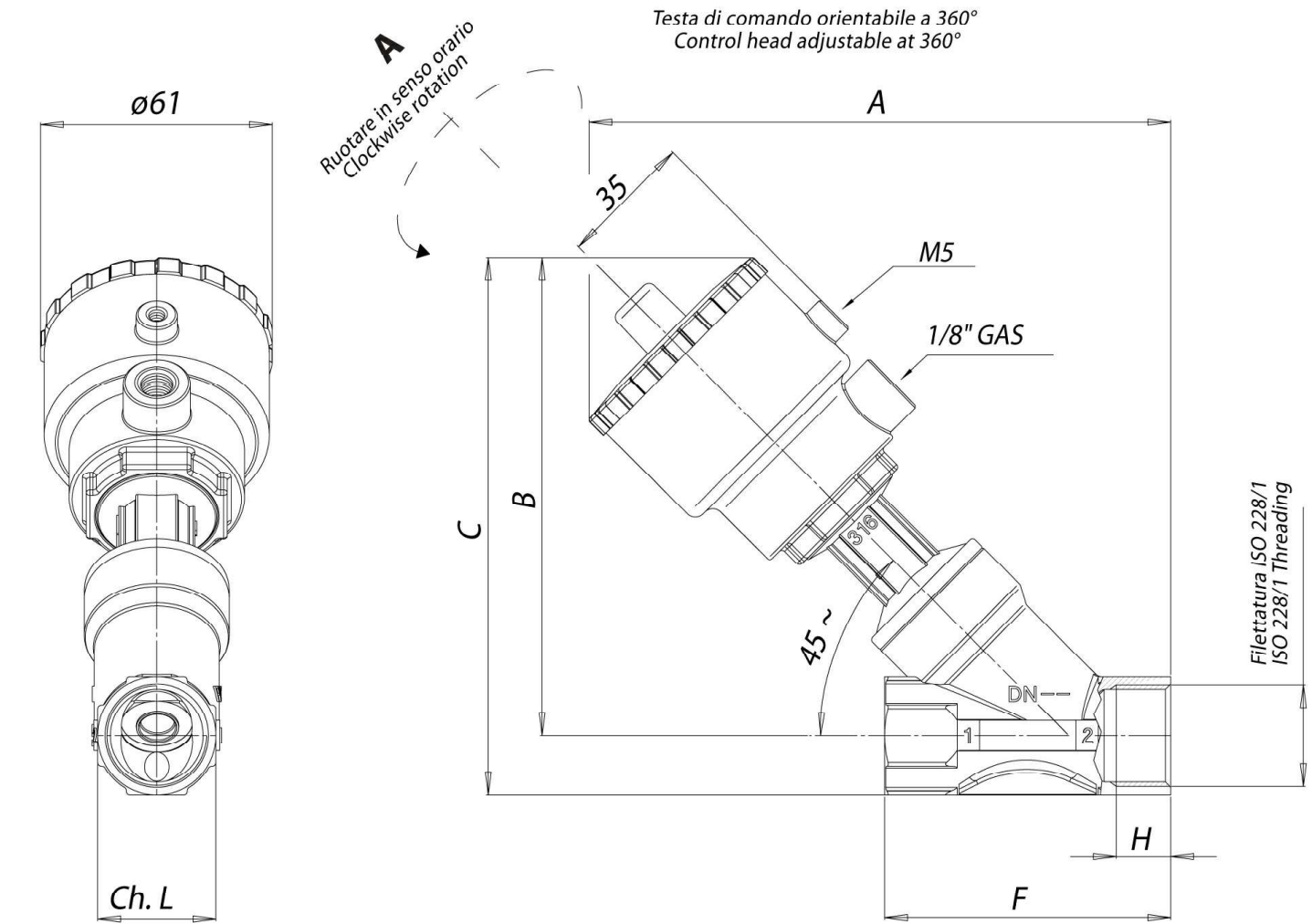
MATERIALS SPECIFICATION

N°	Main materials	
1	Valve body	BronzeCUSN5ZN5PB5-B
2	Sleeve	Brass CW617N
3	Stem	AISI 316L
4	Plug	AISI 316L
5	Plug seals	PTFE
6	Actuator cylinder	Poliamide PA 66 + GF 30%
7	Threading inserts	AISI 303
8	Piston	Brass chem-nickel (PBT + GF 30%headDN 40 - DN 50)

PRESSURE/TEMPERATURE DIAGRAM



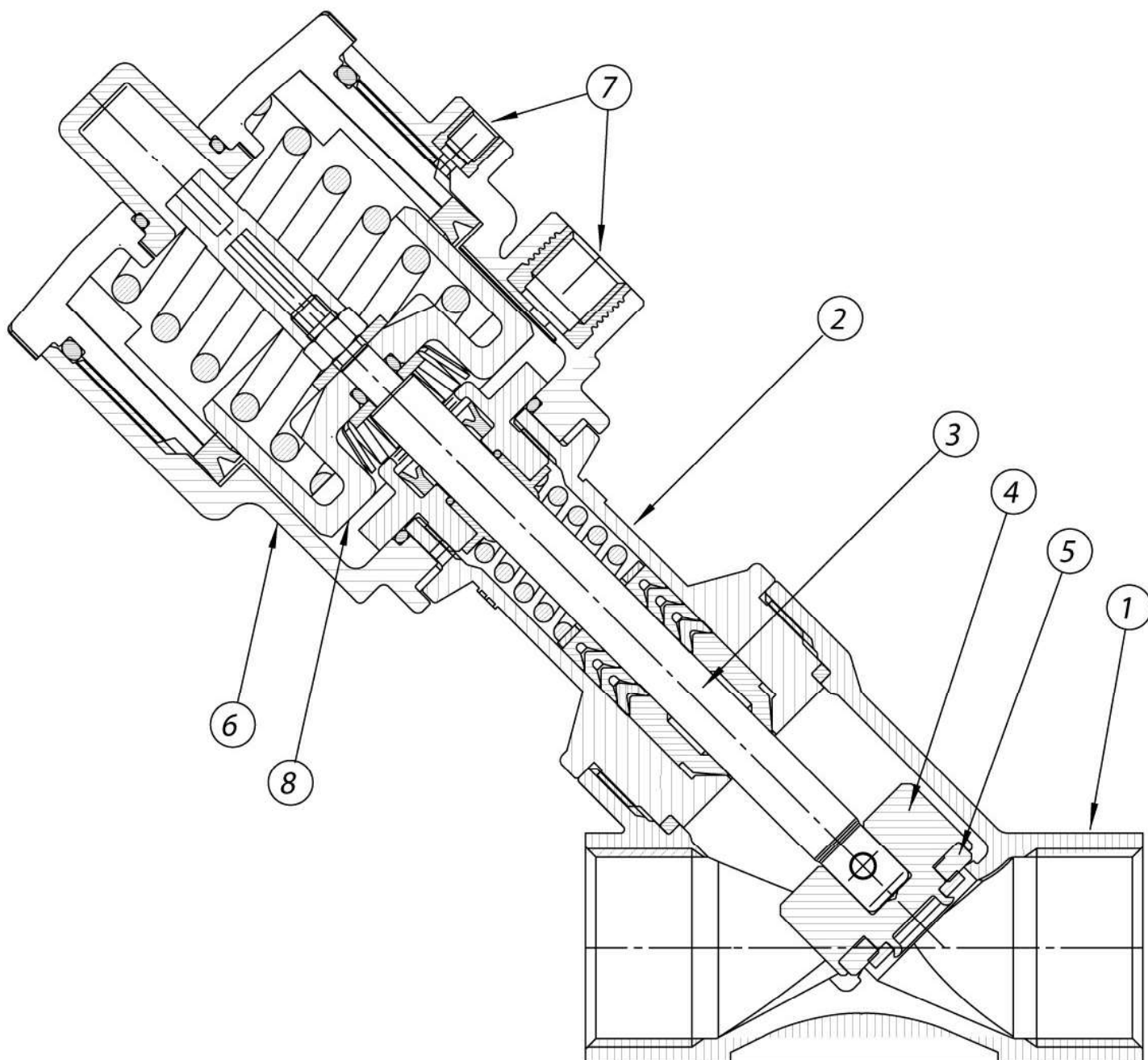
Materials, dimensions and diagram - Zeus40



DIMENSIONAL TABLE

Bronze version										
DN	G *	Actuator	A	B	C	H	35	$\varnothing 61$	F	ch. L
15	3/8"	$\varnothing 40^{**}$	144	120,5	134	12	35	61	65	27
15	1/2"	$\varnothing 40^{**}$	144	120,5	134	13	35	61	65	27
20	3/4"	$\varnothing 40^{**}$	151	127,5	142,5	14,3	35	61	75	33

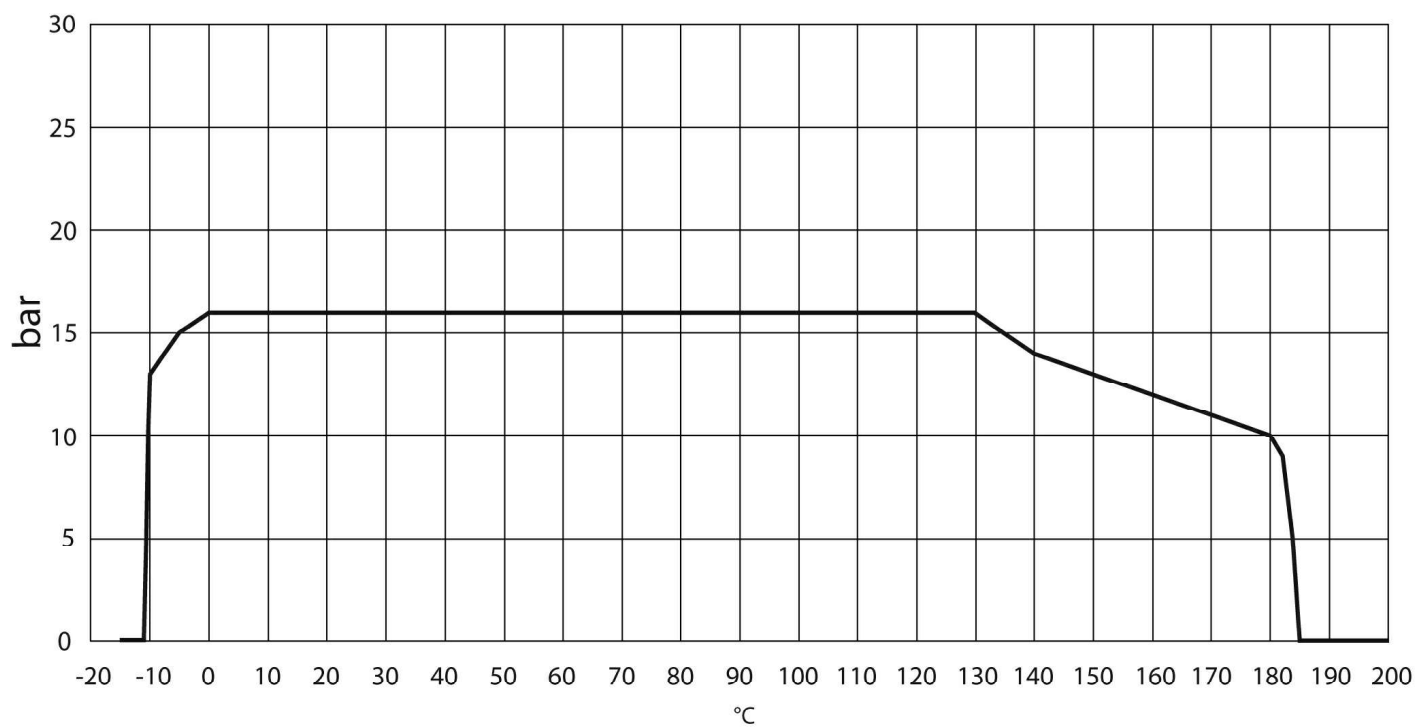
****Control cylinder without NAMUR interface**



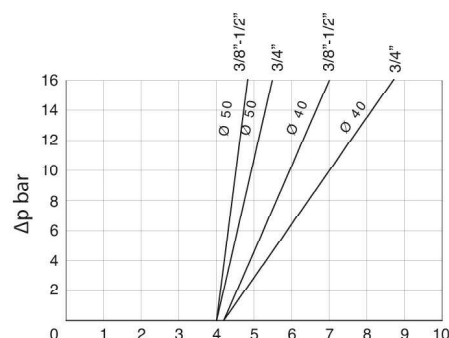
MATERIALS SPECIFICATION

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2	Sleeve	Brass CW617N
3	Stem	AISI 316L
4	Plug	AISI 316L
5	Plug seals	PTFE
6	Actuator cylinder	Poliamide PA 66 + GF 30%
7	Threading inserts	AISI 303
8	Piston	PBT + GF 30%

PRESSURE/TEMPERATURE DIAGRAM



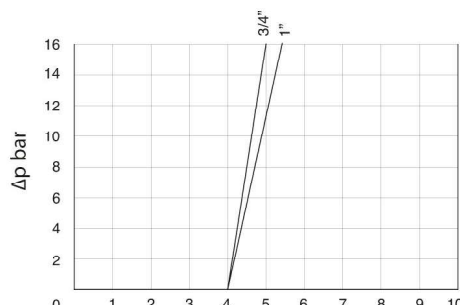
Nei diagrammi le linee tratteggiate indicano le versioni disponibili a richiesta
In the diagrams, the dash lines indicate versions available on request



Pressione di comando Control pressure bar

Ø40: aria 0,031 dm³/cilclo
Ø50: aria 0,051 dm³/cilclo
Ø40: air 0,031 dm³/cycle
Ø50: air 0,051 dm³/cycle

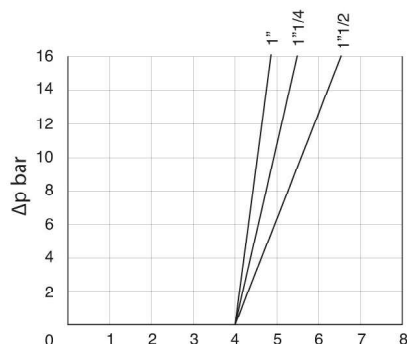
diagramma 1
diagram 1
testa head
Ø40-Ø50



Pressione di comando Control pressure bar

aria 0,108 dm³/cilclo
air 0,108 dm³/cycle

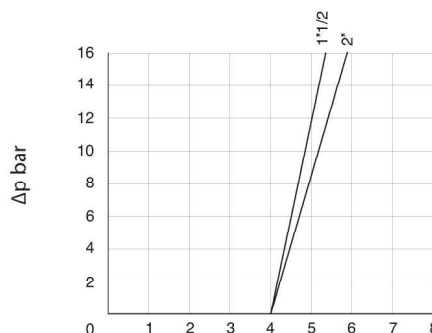
diagramma 2
diagram 2
testa head
Ø63



Pressione di comando Control pressure bar

aria 0,238 dm³/cilclo
air 0,238 dm³/cycle

diagramma 3
diagram 3
testa head
Ø90



Pressione di comando Control pressure bar

aria 0,505 dm³/cilclo
air 0,505 dm³/cycle

diagramma 4
diagram 4
testa head
Ø110

CODES ZEUS NORMALLY CLOSED

Normally closed bidirectional. With the flow coming from below the plug you avoid water hammering

code BRONZE	Threading	DN	Kv m3/h	ø control head	p control bar Min Max		p operating ?P max. bar	Weight Kg. BRONZO	PLUG SPARE KIT	HEAD SPARE KIT
J9SPG1403	3/8"	15	4,5	40 **	4,2	10	16	1,1	KGJP2303	J9SPG14R3
J9SPG1603	3/8"	15	4,9	50	4	10	16	1,1	KGJP2003	J9SPG16R3
J9SPG1404	1/2"	15	5,3	40 **	4,2	10	16	1	KGJP2303	J9SPG14R4
J9SPG1604	1/2"	15	5,7	50	4	10	16	1	KGJP2003	J9SPG16R4
J9SPG1405	3/4"	20	9,2	40 **	4,2	10	8	1,2	KGJP2305	J9SPG14R5
J9SPG1605	3/4"	20	10,5	50	4	10	10	1,2	KGJP2005	J9SPG16R5
J9SPG1805	3/4"	20	10,8	63	4	10	16	1,2	KGJP2005	J9SPG18R5
J9SPG1806	1"	25	20	63	4	10	11	1,6	KGJP2005	J9SPG18R6
J9SPG2106	1"	25	20	90	4	8	16	1,7	KGJP2106	J9SPG21R6
J9SPG2107	1 1/4"	32	29	90	4	8	14	3	KGJP2107	J9SPG21R7
J9SPG2108	1 1/2"	40	46	90	4	8	11	3,4	KGJP2108	J9SPG21R8
J9SPG2308	1 1/2"	40	46,5	110	4	8	16	4	KGJP2108	J9SPG23R8
J9SPG2309	2"	50	67	110	4	8	10	5,8	KGJP2109	J9SPG23R9

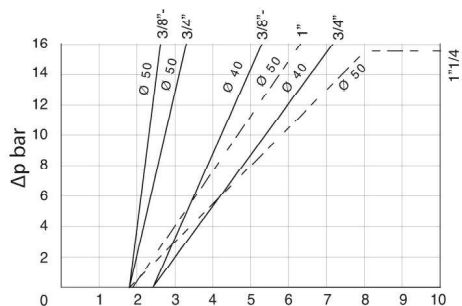
**Control cylinder without NAMUR interface

The “piloting head replacement Kit” includes the complete item without the valve body only

The shutter “replacement Kit” includes the shutter and the necessary seals

Nei diagrammi le linee tratteggiate indicano le versioni disponibili a richiesta
In the diagrams, the dash lines indicate versions available on request

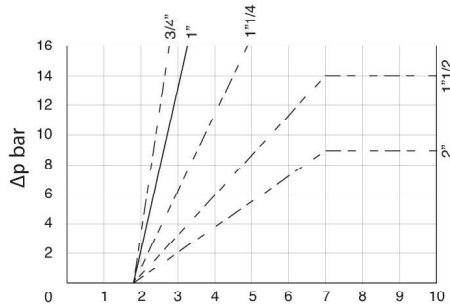
diagramma 5
diagram 5
testa head
Ø40-Ø50



Ø40: aria 0,031 dm³/cilclo
Ø50: aria 0,051 dm³/cilclo
Ø40: air 0,031 dm³/cycle
Ø50: air 0,051 dm³/cycle

Pressione di comando Control pressure bar

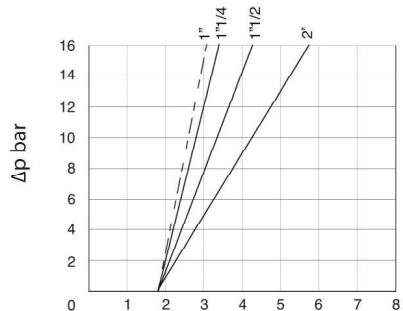
diagramma 6
diagram 6
testa head
Ø63



aria 0,108 dm³/cilclo
air 0,108 dm³/cycle

Pressione di comando Control pressure bar

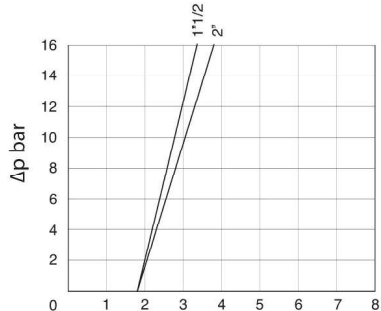
diagramma 7
diagram 7
testa head
Ø90



aria 0,238 dm³/cilclo
air 0,238 dm³/cycle

Pressione di comando Control pressure bar

diagramma 8
diagram 8
testa head
Ø110



aria 0,505 dm³/cilclo
air 0,505 dm³/cycle

Pressione di comando Control pressure bar

CODES ZEUS NORMALLY CLOSED WITH FLOW FROM ABOVE THE PLUG

code BRONZE	Threading	DN	Kv m3/h	Ø control head	p control bar Min Max		p operating ?P max. bar	Weight Kg. BRONZO	PLUG SPARE KIT	HEAD SPARE KIT
J9CPG1403	3/8"	15	4,5	40**	2,5	10	DIAGRAM N° 5	1	KGJP2303	J9CPG14R3
J9CPG1603	3/8"	15	4,9	50	1,8	10	DIAGRAM N° 5	1	KGJP2003	J9CPG16R3
J9CPG1404	1/2"	15	5,3	40 **	2,,5	10	DIAGRAM N° 5	1	KGJP2303	J9CPG14R4
J9CPG1604	1/2"	15	5,7	50	1,8	10	DIAGRAM N° 5	1	KGJP2003	J9CPG16R4
JPCPG1405	3/4"	20	9,2	40 **	2,5	10	DIAGRAM N° 5	1,2	KGJP2305	J9CPG14R5
J9CPG1605	3/4"	20	10,5	50	1,8	10	DIAGRAM N° 5	1,2	KGJP2005	J9CPG16R5
J9CPG1806	1"	25	20	63	1,8	10	DIAGRAM N° 6	1,6	KGJP2006	J9CPG18R6

J9CPG2107	1 1/4"	32	29	90	1,8	8	DIAGRAM N° 7	3	KGJP2107	J9CPG21R7
J9CPG2108	1 1/2"	40	46	90	1,8	8	DIAGRAM N° 7	3,7	KGJP2108	J9CPG21R8
J9CPG2308	1 1/2"	40	46,5	110	1,8	8	DIAGRAM N° 8	4,6	KGJP2108	J9CPG23R8
J9CPG2109	2"	50	59	90	1,8	8	DIAGRAM N° 7	4,4	KGJP2109	J9CPG21R9
J9CPG2309	2"	50	67	110	1,8	8	DIAGRAM N° 8	5,6	KGJP2109	J9CPG23R9

**Control cylinder without NAMUR interface

The "piloting head replacement Kit" includes the complete item without the valve body only

The shutter "replacement Kit" includes the shutter and the necessary seals

Nei diagrammi le linee tratteggiate indicano le versioni disponibili a richiesta
In the diagrams, the dash lines indicate versions available on request

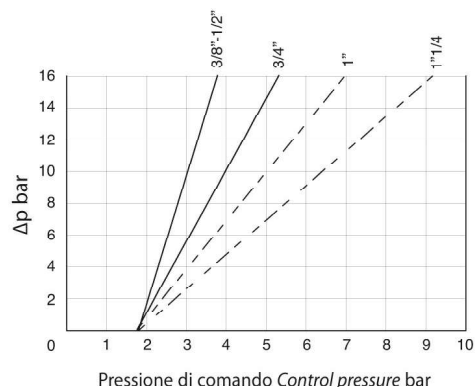


diagramma 9
diagram 9
**testa head
Ø50**

aria 0,089 dm³/ciclo
air 0,089 dm³/cycle

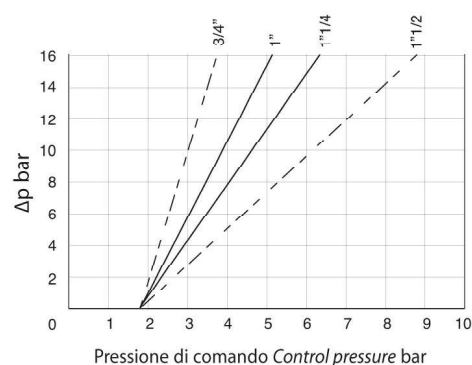


diagramma 10
diagram 10
**testa head
Ø63**

aria 0,194 dm³/ciclo
air 0,194 dm³/cycle

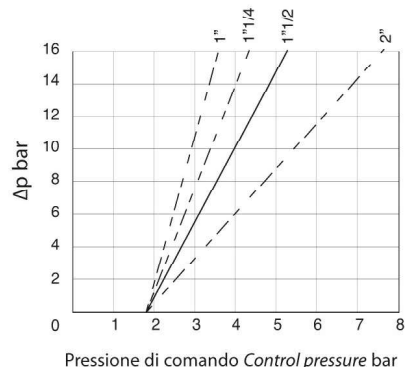


diagramma 11
diagram 11
**testa head
Ø90**

aria 0,499 dm³/ciclo
air 0,499 dm³/cycle

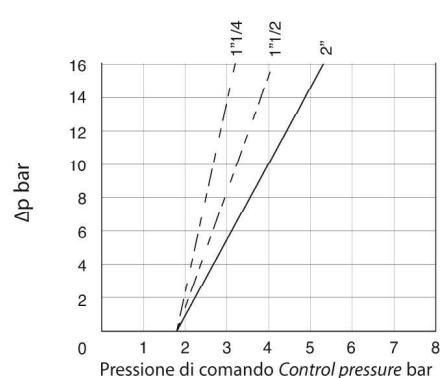


diagramma 12
diagram 12
**testa head
Ø110**

aria 1,08 dm³/ciclo
air 1,08 dm³/cycle

CODES ZEUS NORMALLY OPEN WITH FLOW FROM BELOW THE PLUG

code BRONZE	Threading	DN	Kv m3/h	ø control head	p control bar Min Max	p operating ΔP max. bar	Weight Kg. BRONZO	PLUG SPARE KIT	HEAD SPARE KIT
J9APG1603	3/8"	15	4,9	50	1,8 10	DIAGRAM N° 9	1	KGJP2003	J9APG16R3

J9APG1604	1/2"	15	5,7	50	1,8	10	DIAGRAM N° 9	1	KGJP2003	J9APG16R4
J9APG1605	3/4"	20	10,5	50	1,8	10	DIAGRAM N° 9	1,2	KGJP2005	J9APG16R5
J9APG1806	1"	25	20	63	1,8	10	DIAGRAM N° 10	1,6	KGJP2006	J9APG18R6
J9APG1807	1 1/4"	32	28,5	63	1,8	10	DIAGRAM N° 10	2	KGJP2007	J9APG18R7
J9APG2108	1 1/2"	40	46	90	1,8	8	DIAGRAM N° 11	3,7	KGJP2108	J9APG21R8
J9APG2309	2"	50	67	110	1,8	8	DIAGRAM N° 12	5,6	KGJP2109	J9APG23R9

The "piloting head replacement Kit" includes the complete item without the valve body only

The shutter "replacement Kit" includes the shutter and the necessary seals

Nei diagrammi le linee tratteggiate indicano le versioni disponibili a richiesta
In the diagrams, the dash lines indicate versions available on request

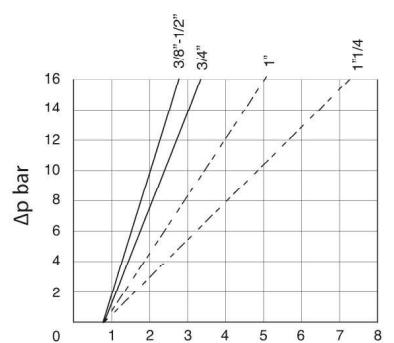


diagramma 13
diagram 13
**testa head
Ø50**

aria 0,14 dm³/ciclo
air 0,14 dm³/cycle

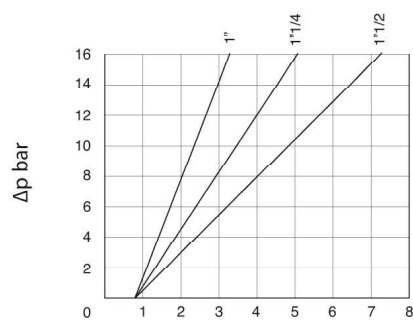


diagramma 14
diagram 14
**testa head
Ø63**

aria 0,302 dm³/ciclo
air 0,302 dm³/cycle

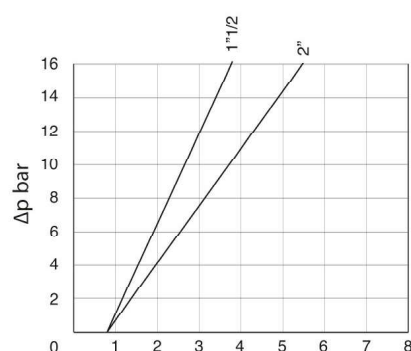


diagramma 15
diagram 15
**testa head
Ø90**

aria 0,737 dm³/ciclo
air 0,737 dm³/cycle

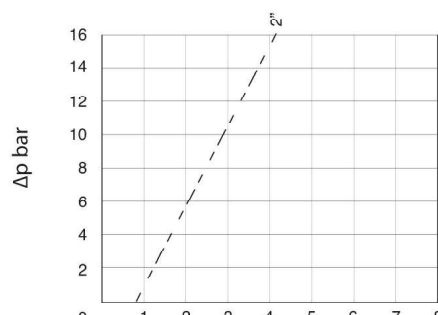


diagramma 16
diagram 16
**testa head
Ø110**

aria 1,585 dm³/ciclo
air 1,585 dm³/cycle

CODES ZEUS DOUBLE ACTING BIDIRECTIONAL

code BRONZE	Threading	DN	Kv m3/h	ø control head	p control bar Min Max		p operating ?P max. bar	Weight Kg. BRONZO	PLUG SPARE KIT	HEAD SPARE KIT
J9DPG1603	3/8"	15	4,9	50	0,8	8	DIAGRAM N° 13	1	KGJP2003	J9DPG16R3

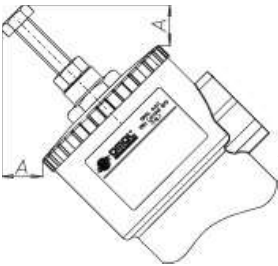
J9DPG1604	1/2"	15	5,7	50	0,8	8	DIAGRAM N° 13	1	KGJP2003	J9DPG16R4
J9DPG1605	3/4"	20	10,5	50	0,8	8	DIAGRAM N° 13	1,2	KGJP2005	J9DPG16R5
J9DPG1806	1"	25	20	63	0,8	8	DIAGRAM N° 14	1,6	KGJP2006	J9DPG18R6
J9DPG1807	1 1/4"	32	28,5	63	0,8	8	DIAGRAM N° 14	1,9	KGJP2007	J9DPG18R7
J9DPG1808	1 1/2"	40	35	63	0,8	8	DIAGRAM N° 14	2,3	KGJP2008	J9DPG18R8
J9DPG2108	1 1/2"	40	46	90	0,8	8	DIAGRAM N° 15	3,6	KGJP2108	J9DPG21R8
J9DPG2109	2"	50	59	90	0,8	8	DIAGRAM N° 15	4,3	KGJP2009	J9DPG21R9

The "piloting head replacement Kit" includes the complete item without the valve body only

The shutter "replacement Kit" includes the shutter and the necessary seals

Accessories

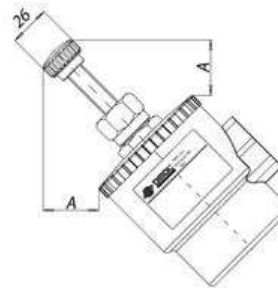
Stroke limiter



It allows to limit the plug run in opening phase, therefore it regulates the flow.
Available on all versions. In spring return normally open version it can be used as an emergency control

Control	A mm
Ø 50	25,5
Ø 63	21,5
Ø 90	5,2
Ø 110	5,9

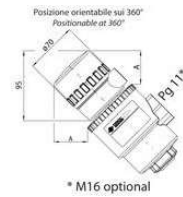
Emergency manual override



It allows to open the valve in emergency cases (lack of pilot fluid, machinery damaged, lack of piloting signal)
It is available on all normally closed valves.

Control	A mm
Ø 50	35,8
Ø 63	35,8
Ø 90	29,5
Ø 110	29,5

Limit switch box

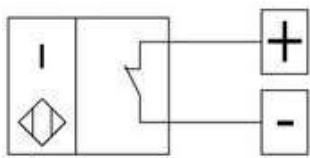


The control box to check the open/close positions with two mechanical limit switches is suitable for assembling on all the range of valves with actuators Ø50 - Ø63 - Ø90 - Ø110.
The terminals to connect the solenoid valve and the visual indicators provided with led are optional.

Level of protection: IP 65.
Room temperature: from -20° C to +70° C.
Access lead nr. 2 PG11.
Body material: polyamide (cap in polymethacrylate).

Control	A mm
Ø 50	52,1
Ø 63	47,5
Ø 90	37,7
Ø 110	29,5

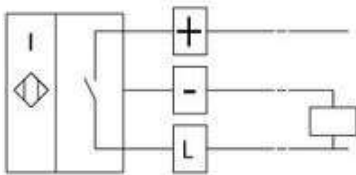
Inductive limit switches NAMUR EEExia



Nominal voltage: 8 Vdc
Consumes: working 1mA; resting 3 mA
Working temperature: from -25° C to +100° C

Configuration	Code
1 Limit switch at the top: open valve	KSIN9A0XX
1 Limit switch at the bottom: close valve	KSIN9C0XX
2 Limit switch open and close valve	KSIN920XX

Proximity limit switches

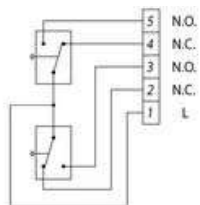


Nominal voltage: 10÷30 Vdc
Consumes: 15mA;
Working temperature: from -25° C to +70° C

Configuration	Code
1 Limit switch at the top: open valve	KSIO9A0XX
1 Limit switch at the bottom: close valve	KSIO9C0XX
2 Limit switch open and close valve	KSIO920XX

Mechanical limit switches

Carico max. 5A 250 Vac;
1A 250 Vdc
Max. capacity 5A 250 Vac;
1A 250 Vdc

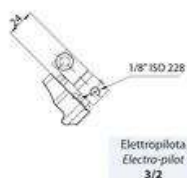


Limit switch at the bottom: close valve

Limit switch at the top: open valve

Configuration	Code
2 limit switch	KSM0C20XX

Control solenoid valve



Electro-pilot 3/2 for direct assembling.

Body and reel positionable at 360°.

Standard manual control.

Solenoid valve (NAMUR) sets for selection between function 5/3 or 3/2, achievable by rotating the interconnecting plate to 180°.

Room temperature: from -10 °C to +50 °C.

Electro-pilot	EP415024	EP415220	EP412010	EP412024
Voltage	24 Vac	230 Vac	12 Vdc	24 Vdc
Solenoid valve	ER8188A2	ER8188A5	ER8188C1	ER8188C2