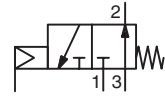




# VALVES

pressure operated  
bronze body  
threaded ports, 1/2 to 2

NO



**3/2**  
Series  
**166**  
(AD/TBT PN16)

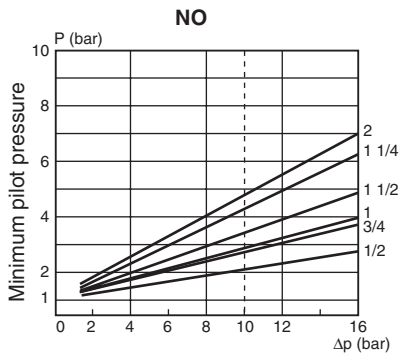
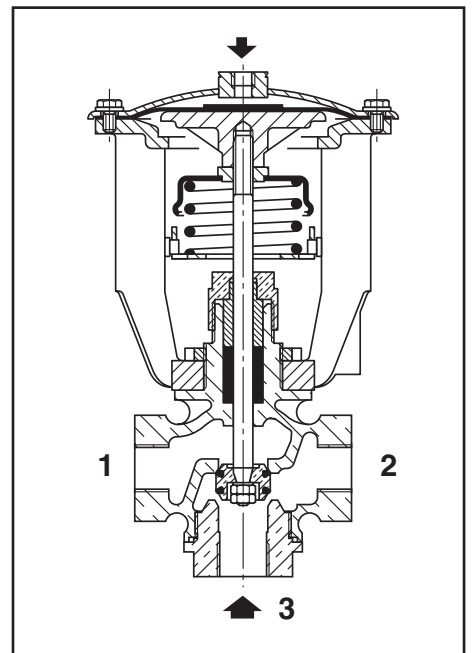
## FEATURES

- Differential-action valve for high-pressure fluid control at reduced piloting pressure
- Heavy-duty valve recommended for demanding applications
- Available with several accessories and options to handle the majority of industrial applications
- The valves satisfy Pressure Equipment Directive 2014/68/EU, category 1 (DN > 25) or article 4.3 (DN ≤ 25)

## GENERAL

fluids (*)	temperature range	disc seal (*)
air and gas groups 1 & 2 water, oil, liquids groups 1 & 2 and steam	- 10°C to + 184°C	PTFE

Differential pressure	0 to 16 bar [1 bar =100 kPa]
Steam	0 to 10 bar
Maximum allowable pressure	16 bar
Ambient temperature range	-5°C to +60°C
Maximum viscosity	5000 cSt (mm <sup>2</sup> /s)
Response time	See overleaf
Pilot fluid	Water, air, filtered
Max. pilot pressure	10 bar
Min. pilot pressure	See graphs (lower pressure: see Options)



## MATERIALS IN CONTACT WITH FLUID

(\*) Ensure that the compatibility of the fluids in contact with the materials is verified

Valve body	Bronze
Stem	Stainless steel
Disc	Brass
Stuffing-box seal	Braided PTFE
Disc seal	PTFE
Valve body seal	FPM
Third flange connection	Brass or bronze

## OTHER MATERIALS

Diaphragm (operator)	NBR
Bonnet (operator)	Steel

## SPECIFICATIONS

piping (ISO 6708)		flow coefficient Kv				maximum allowable pressure (bar)	pilot pressure (bar)		catalogue number	reference
pipe size (G*)	DN	2 → 1 (m <sup>3</sup> /h) (l/min)		3 → 2 (m <sup>3</sup> /h) (l/min)			min.	max.		
<b>NO - Normally open</b>										
1/2	15	4,5	75	6	100	16	※	10	16600025	2703-TBT-D2
3/4	20	7,2	120	9,6	160	16	※	10	16600026	2704-TBT-D2
1	25	12	200	16,2	270	16	※	10	16600027	2705-TBT-D2
1 1/4	32	18	300	24	400	16	※	10	16600028	2706-TBT-D2
1 1/2	40	31,8	530	42,9	715	16	※	10	16600029	2707-TBT-D2
2	50	39	650	52,8	880	16	※	10	16600030	2708-TBT-D2

※ The minimum pilot pressure varies according to the differential pressure across the valve. See pilot graphs above.

00085GB-2017/R01 Availability, design and specifications are subject to change without notice. All rights reserved.

### OPTIONS AND ACCESSORIES

- Guard mounted on valves, 1/2 - 3/4: catalogue number **210555** / 1 - 1 1/4: catalogue number **210556** / 1 1/2 - 2: catalogue number **210557**
- Valves DN 15 to 50 to ATEX 2014/34/EU for categories 2 (II 2 GD c T6 T85°C) and 3 (II 3 GD c T6 T85°C X)
- Dry IP66 contacts
- 2 explosionproof switches with contacts for potentially explosive atmospheres to ATEX:
 

switch ambient temperature range	number of contacts	DN 15..32 catalogue number	DN 40..50 catalogue number
-20°C to +80°C	1	<b>260657</b>	<b>260658</b>
-20°C to +80°C	2	<b>260660</b>	<b>260661</b>
-55°C to +82°C	1	<b>260663</b>	<b>260664</b>
- Inductive M18 switch, IP66
- Inductive M18 switch, intrinsically safe to ATEX, II 1 GD EEx ia IIC T6 IP66 T85°C
- Manual override on the bonnet of the operator
- Accessories for adjustable response time (flow control, quick exhaust etc.)
- Anti-waterhammer device available with air-oil exchanger
- Backpressure applications possible by off-setting the yoke and using a reinforced spring
- Low pressure control (min. 1 bar) by off-setting the yoke
- Other types of stuffing-boxes are available depending on the nature of the fluid used
- Modifications for special environments (cold, hot, aggressive, marine etc.)
- Oxygen service, catalogue number **970509**, pressure/temperature limited to 15 bar / + 60°C
- Valve body degreased during assembly, catalogue number **970523**

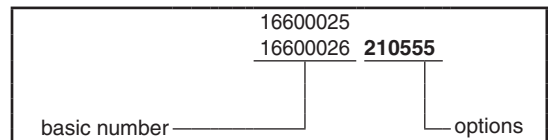
### INSTALLATION

- The valves can be mounted in any position, except with the operator downwards
- Pipe connections (G\*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) has standard thread according to ISO 228/1

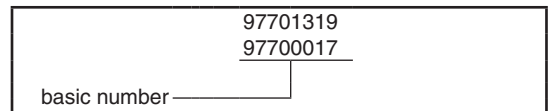
### SPARE PARTS KIT & ACCESSORIES

DN	spare parts kit no.			guard catalogue number
	stem and disc unit	stuffing-box unit	NBR diaphragm	
15	<b>97701319</b>	<b>97701320</b>	<b>97700017</b>	<b>88200035</b>
20	<b>97701321</b>	<b>97701320</b>	<b>97700017</b>	<b>88200035</b>
25	<b>97701322</b>	<b>97701320</b>	<b>97700018</b>	<b>88200036</b>
32	<b>97701323</b>	<b>97701324</b>	<b>97700018</b>	<b>88200036</b>
40	<b>97701325</b>	<b>97701324</b>	<b>97700019</b>	<b>88200037</b>
50	<b>97701326</b>	<b>97701327</b>	<b>97700019</b>	<b>88200037</b>

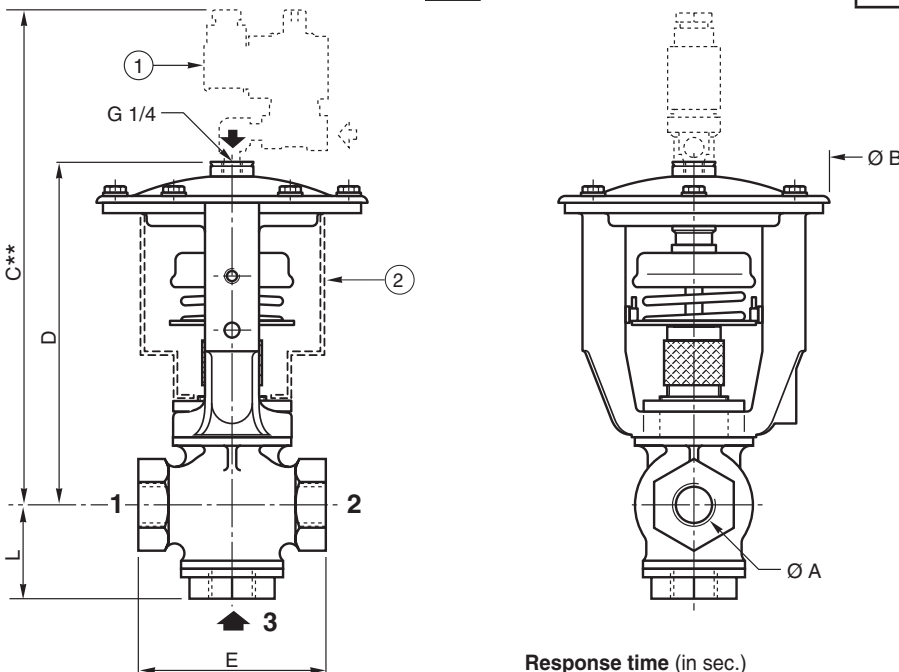
### ORDERING EXAMPLES:



### ORDERING EXAMPLES KITS:



### DIMENSIONS (mm), WEIGHT (kg)



ØA (G*)	ØB	C**	D	E	L	weight <sup>(1)</sup>
1/2	127	284	165	68	39	3,5
3/4	127	289	170	84	44	4
1	156	306	187	92	52	6
1 1/4	156	311	192	110	57	6,5
1 1/2	200	343	224	125	63	12
2	200	353	234	145	71	15

### Response time (in sec.)

ØA (G*)	pilot fluid (6 bar)			
	air		water	
	C	O	C	O
1/2	0,3	1	0,7	2
3/4	0,3	1	0,7	2
1	0,4	1,5	1,5	4
1 1/4	0,4	1,5	1,5	4
1 1/2	0,6	2,5	3	9
2	0,6	2,5	3	9

- ③ Solenoid pilot valves: see page : **83** ["Pressure Operated Valves (2/2)"] ([www.asco.com](http://www.asco.com))
- ④ Guard available as accessory, supplied separately or mounted on valve

<sup>(1)</sup> Weight of valve without pilot.  
\*\* Maximum value given for reference and related to choice of electric pilot.

- Response time is directly related to the Kv of the solenoid pilot valve. The time indicated at opening (O) and closing (C) of the valve is determined by a pilot (dia. 3 mm) with a Kv of 3,5.
- Consult us for shorter cycle times.