

### FEATURES

- High flow due to angled seat design
- Anti-waterhammer design (fluid entry under the disc)
- Vacuum operation up to 10<sup>-2</sup> mbar
- Wide range of piston-type operators (32 - 50- 63 - 90 - 125 mm dia.) rotatable through 360°, for maximum performance at different minimum pilot pressures
- High performance, maintenance-free stuffing box
- The valves satisfy Pressure Equipment Directive 97/23/EC, category 1 (DN > 25) or article 3.3 (DN ≤ 25)

### GENERAL

Differential pressure	See «SPECIFICATIONS» [1 bar = 100 kPa]
Maximum allowable pressure	16 bar
Ambient temperature range	-10°C to +60°C
Maximum viscosity	600 cSt (mm <sup>2</sup> /s)
Pilot fluid	Filtered air or water <sup>(1)</sup>
Max. pilot pressure	10 bar
Min. pilot pressure	See below and following page
Pilot fluid temperature	-10°C to +60°C
Response time	See page V402-7



fluids (*)	temperature range	disc seal (*)
DN ≤ 50: air and gas groups 1 & 2 DN 65: air and gas group 2 all DN: water, oil, liquids groups 1 & 2 and steam	- 10°C to + 184°C	PTFE

### MATERIALS IN CONTACT WITH FLUID

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

	Bronze body	Stainless steel body	All AISI 316L
Valve body	Bronze	AISI 316L	AISI 316L <sup>(2)</sup>
Stuffing box housing	Brass	AISI 316L	AISI 316L
Stem	Stainless steel	Stainless steel	AISI 316L
Disc	Brass	Stainless steel	AISI 316L
Stuffing box packing	PTFE chevrons	PTFE chevrons	PTFE chevrons
Wiper seal	FPM	FPM	FPM
Disc seal	PTFE	PTFE	PTFE
Valve body seal	PTFE	PTFE	PTFE

### OTHER MATERIALS

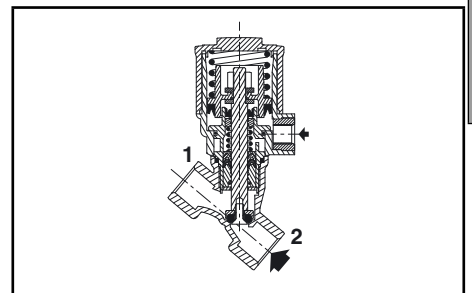
Operator	Glass fibre filled PA
Optical position indicator	PA 12, supplied standard on valves with 63, 90 and 125 mm operators

<sup>(1)</sup> For dia. 32, 50, 63, 90 and 125 mm operators: At service fluid temperatures inside the valve body above 100°C, it is prohibited to pilot the valve with water.

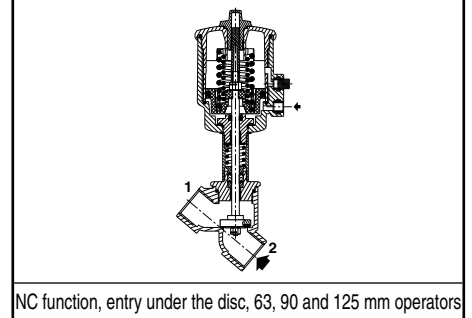
<sup>(2)</sup> NET-INOX passivation treatment included.

### SPECIFICATIONS

pipe size (G*)	DN	flow coefficient Kv (m <sup>3</sup> /h)   (l/min)		pilot pressure (bar) min.   max.		operating pressure differential (bar)			operator diameter (mm)	catalogue number			
						min.	max.			bronze	stainless steel	all AISI 316L	
							air, inert gas, aggressive fluids (*)	water, oil, liquids, aggressive liquids (*)					steam (*) (≤184°C)
<b>NC - Normally closed, entry under the disc <sup>(1)</sup></b>													
3/8	10	2,8	47	4	10	0	16	16	10	32	-	E290A791	E290A845
		4,1	68	4	10	0	12	12	10	32	-	E290A792	E290A846
1/2	15	4,9	82	4	10	0	16	16	10	50	E290A384	E290A393	E290A402
				2,5	10	0	16	16	10	63	E290B002	E290B045	E290B088
		1,5	10	0	5	5	5	63	E290B001	E290B044	E290B087		
		6,5	108	4	10	0	6	6	6	32	-	E290A793	E290A847
3/4	20	9,4	157	4	10	0	10	10	10	50	E290A385	E290A394	E290A403
				16	16	10	63	E290B005	E290B048	E290B091			
		2,5	10	0	12	12	10	63	E290B004	E290B047	E290B090		
		1,5	10	0	4	4	4	63	E290B003	E290B046	E290B089		
		12,8	213	4	10	0	6	6	6	50	E290A386	E290A395	E290A404
1	25	16,5	275	4	10	0	10	10	10	63	E290B010	E290B053	E290B096
				16	16	10	90	E290B011	E290B054	E290B097			
		6	6	6	63	E290B008	E290B051	E290B094					
		12	12	10	90	E290B009	E290B052	E290B095					
		3	3	3	63	E290B006	E290B049	E290B092					
		5	5	5	90	E290B007	E290B050	E290B093					
		12	12	10	90	E290B009	E290B052	E290B095					



NC function, entry under the disc, 32 and 50 mm operators



NC function, entry under the disc, 63, 90 and 125 mm operators

## SPECIFICATIONS

piping (ISO 6708)		flow coefficient Kv		pilot pressure (bar)		operating pressure differential (bar)				operator diameter (mm)	catalogue number			
pipe size (G*)	DN	(m³/h)	(l/min)	min.	max.	min.	max.				bronze	stainless steel	all AISI 316L	
							air, inert gas, aggressive fluids (*)	water, oil, liquids, aggressive liquids (*)	steam (*) (≤184°C)					
<b>NC - Normally closed, entry under the disc <sup>(1)</sup></b>														
1 1/4	32	27	450	4	10	0	6	6	6	63	E290A016	E290A059	E290A102	
				2,5	10	0	12	12	10	90	E290A017	E290A060	E290A103	
				7	10	0	3	3	3	63	E290A014	E290A057	E290A100	
		29	483	7	10	0	7	7	7	90	E290A015	E290A058	E290A101	
				1,5	10	0	1,5	1,5	1,5	63	E290A012	E290A055	E290A098	
				3	10	0	3	3	3	90	E290A013	E290A056	E290A099	
	1 1/2	40	45	750	4	10	0	4	4	4	63	E290A020	E290A063	E290A106
					8	10	0	8	8	8	90	E290A021	E290A064	E290A107
					2,5	10	0	4	4	4	90	E290A019	E290A062	E290A105
		48	800	1,5	10	0	3	3	3	90	E290A018	E290A061	E290A104	
				4	10	0	16	16	10	125	E290A482	E290A495	E290A508	
				2,5	10	0	10	10	10	125	E290A481	E290A494	E290A507	
2	50	59	983	4	10	0	2,5	2,5	2,5	63	E290A024	E290A067	E290A110	
				6	10	0	6	6	6	90	E290A025	E290A068	E290A111	
				2,5	10	0	2,5	2,5	2,5	90	E290A023	E290A066	E290A109	
		66	1100	1,5	10	0	1	1	1	90	E290A022	E290A065	E290A108	
				4	10	0	10	10	10	125	E290A485	E290A498	E290A511	
				2,5	10	0	5	5	5	125	E290A484	E290A497	E290A510	
	2 1/2	65	94	1567	1,5	10	0	2	2	2	125	E290A483	E290A496	E290A509
					4	10	0	2	2	2	90	E290A487	E290A500	E290A513
					4	10	0	6	6	6	125	E290A488	E290A501	E290A514
		111	1850	2,5	10	0	1	1	1	125	E290A486	E290A499	E290A512	
				4	10	0	2	2	2	90	E290A487	E290A500	E290A513	
				4	10	0	6	6	6	125	E290A488	E290A501	E290A514	
<b>NO - Normally open, entry under the disc</b>														
3/8	10	2,8	47	IX (*)	10	0	16	16	10	32	-	E290A794	E290A848	
		4,1	68	IX (*)	10	0	16	16	10	32	-	E290A795	E290A849	
1/2	15	4,9	82	I (*)	10	0	16	16	10	50	E290A387	E290A396	E290A405	
		6,5	108	II (*)	10	0	16	16	10	63	E290B026	E290B069	E290B112	
3/4	20	9,4	157	IX (*)	10	0	16	16	10	32	-	E290A796	E290A850	
		12,8	213	I (*)	10	0	16	16	10	50	E290A388	E290A397	E290A406	
1	25	16,5	275	II (*)	10	0	16	16	10	63	E290B027	E290B070	E290B113	
		12,8	213	I (*)	10	0	16	16	10	50	E290A389	E290A398	E290A407	
1 1/4	32	16,5	275	II (*)	10	0	16	16	10	63	E290B028	E290B071	E290B114	
		12,8	213	I (*)	10	0	16	16	10	50	E290B029	E290B072	E290B115	
1 1/2	40	16,5	275	III (*)	10	0	16	16	10	90	E290A030	E290A073	E290A116	
		12,8	213	I (*)	10	0	16	16	10	63	E290A031	E290A074	E290A117	
2	50	12,8	213	II (*)	10	0	16	16	10	90	E290A032	E290A075	E290A118	
		16,5	275	III (*)	10	0	16	16	10	63	E290A033	E290A076	E290A119	
2 1/2	65	16,5	275	IV (*)	10	0	16	16	10	125	E290A489	E290A502	E290A515	
		12,8	213	I (*)	10	0	16	16	10	90	E290A490	E290A503	E290A516	
3/8	10	12,8	213	II (*)	10	0	7	7	7	63	E290A034	E290A077	E290A120	
		16,5	275	III (*)	10	0	13	13	10	90	E290A035	E290A078	E290A121	
1/2	15	16,5	275	IV (*)	10	0	16	16	10	125	E290A490	E290A503	E290A516	
		12,8	213	I (*)	10	0	7	7	7	90	E290A491	E290A504	E290A517	
3/4	20	111	1850	III (*)	10	0	7	7	7	90	E290A491	E290A504	E290A517	
		111	1850	IV (*)	10	0	16	16	10	125	E290A492	E290A505	E290A518	
<b>NC - Normally closed, entry above the disc (version recommended for rapid-cycling steam applications)</b>														
3/8	10	2,8	47	X (*)	10	0	10	-	10	32	-	E290A797	-	
		4,1	68	X (*)	10	0	10	-	10	32	-	E290A798	-	
1/2	15	4,9	82	V (*)	10	0	10	-	10	50	E290A390	E290A399	-	
		6,5	108	VI (*)	10	0	10	-	10	63	E290B036	E290B079	-	
3/4	20	9,4	157	X (*)	10	0	10	-	10	32	-	E290A799	-	
		12,8	213	V (*)	10	0	10	-	10	50	E290A391	E290A400	-	
1	25	16,5	275	VI (*)	10	0	10	-	10	63	E290B037	E290B080	-	
		12,8	213	V (*)	10	0	10	-	10	50	E290A392	E290A401	-	
1 1/4	32	16,5	275	VI (*)	10	0	10	-	10	63	E290B038	E290B081	-	
		12,8	213	V (*)	10	0	10	-	10	50	E290A039	E290A082	-	
1 1/2	40	16,5	275	VII (*)	10	0	10	-	10	90	E290A136	E290A137	-	
		12,8	213	VI (*)	10	0	10	-	10	63	E290A040	E290A083	-	
2	50	16,5	275	VII (*)	10	0	10	-	10	90	E290A041	E290A084	-	
		12,8	213	VI (*)	10	0	9	-	9	63	E290A042	E290A085	-	
2 1/2	65	16,5	275	VII (*)	10	0	10	-	10	90	E290A043	E290A086	-	
		12,8	213	VIII (*)	10	0	10	-	10	90	E290A623	E290A625	-	
3/8	10	111	1850	VIII (*)	10	0	10	-	10	125	E290A624	E290A626	-	
		111	1850	VIII (*)	10	0	10	-	10	125	E290A624	E290A626	-	

(\*) Minimum pilot pressure varies with differential pressure, see page V402-7.

(1) Calculation of the minimum pilot pressure at a ΔP of max. 10 bar with allowable backpressure (backpressure not recommended with liquids as waterhammer may occur).

- 32 and 50 mm operators, 4 bar minimum pilot pressure version: add 2 bar to the minimum pilot pressure of chart V or X, page V402-7.

- 63, 90 and 125 mm operators, 4 bar minimum pilot pressure version: add 1,5 bar to the minimum pilot pressure of chart VI, VII or VIII, page V402-7.

### OPTIONS AND ACCESSORIES (see page V435/V436)

- Signaling box or compact signaling unit
- Stroke limiter for opening
- Manual safety device
- Optical position indicator on 32-50 mm operators, NC function
- Adapter plate for NAMUR pad mounting pilot (63-90-125 mm operators only)
- Oxygen service (except DN 65), pressure limited to 15 bar, temperature limited to + 60°C
- Vacuum applications up to  $1,33 \cdot 10^{-3}$  mbar
- NET-INOX passivation treatment on stainless steel body valve
- ATEX 94/9/EC versions for potentially explosive atmospheres
- Pilot operated drain valve assembly with electronic timer (see Solenoids, Coils & Accessories section)
- Other pipe connections are available on request

### INSTALLATION

- The valves can be mounted in any position without affecting operation
- Compatible with ASTM 1, 2 and 3 oils
- Pipe connections (G\*) have standard combination thread according to ISO 228/1 and ISO 7/1
- Installation/maintenance instructions are included with each valve

### SPARE PARTS KITS

DN	spare parts kit no.	
	Ø 32 mm	Ø 50-63-90-125 mm
10	<b>C140100</b>	-
15	<b>C140101</b>	<b>C131204</b> <sup>(1)</sup>
20	<b>C140102</b>	<b>C131205</b> <sup>(1)</sup>
25	-	<b>C131206</b> <sup>(1)</sup>
32	-	<b>C131207</b> <sup>(1)</sup>
40	-	<b>C131208</b> <sup>(1)</sup>
50	-	<b>C131209</b> <sup>(1)</sup>
65	-	<b>C131622</b> <sup>(1)</sup>

<sup>(1)</sup> Standard suffix VM also applies to kits (see V435).

- Not available

### ORDERING EXAMPLES:

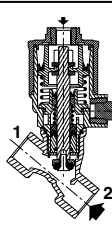
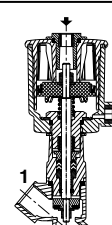
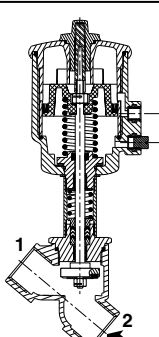
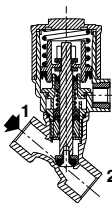
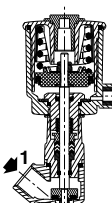
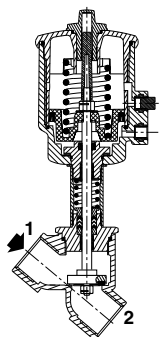
E	290	A	792	
E	290	B	002	SM2
E	290	A	791	SU
E	290	A	082	

pipe thread \_\_\_\_\_ suffix \_\_\_\_\_  
basic number \_\_\_\_\_

### ORDERING EXAMPLES KITS:

C140100	
C140205	
C140205	VM

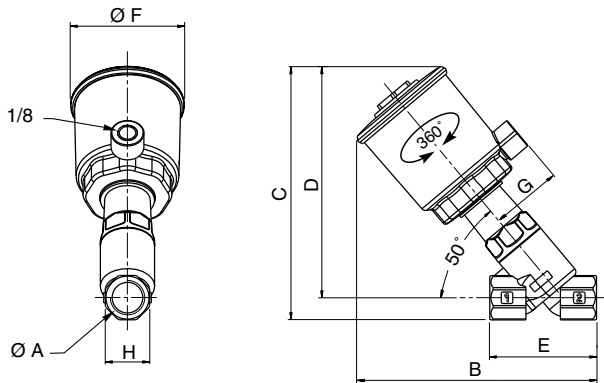
basic number \_\_\_\_\_ suffix \_\_\_\_\_

32 mm operator	50 mm operator	63, 90 and 125 mm operators
		
NO function		
		
NC function, fluid entry above disc		

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



**TYPE 01-02**  
32 and 50 mm operators  
Fluid entry:  
under the disc at 2  
above the disc at 1



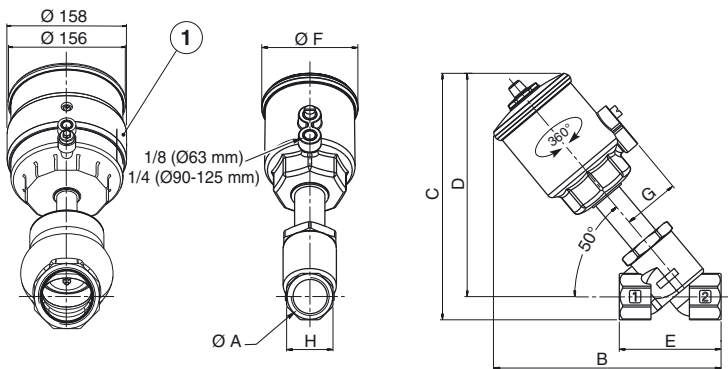
type	operator diameter	ØA	B	C	D	E	ØF	G	ØH	weight <sup>(1)</sup>
01	32 mm	3/8	92	93	81,5	55	43,5	27	23,5	0,35
		1/2	99	97	83,5	65	43,5	27	28	0,4
		3/4	107	104,5	88	75	43,5	27	30	0,45
02	50 mm	1/2	142	154,5	141	65	69	43	27	0,9
		3/4	150,5	159	143	75	69	43	32	1
		1	155	165	145	90	69	43	41	1,4

<sup>(1)</sup> Weight of valve without pilot.

Solenoid pilot valves: see V440 (32 and 50 mm operators).



**TYPE 03-04-05**  
63, 90 and 125 mm operators  
Fluid entry:  
under the disc at 2  
above the disc at 1



① Operator dia. 125 mm, NO function

type	operator diameter	ØA	B	C	D	E	ØF	G	ØH	weight <sup>(1)</sup>
03	63 mm	1/2	170	182	169	65	85	50,5	27	1,2
		3/4	175	185	170	75	85	50,5	32	1,3
		1	179	192	172	90	85	50,5	41	1,7
		1 1/4	217	229	204	110	85	50,5	50	2,1
		1 1/2	224	245	215	120	85	50,5	60	2,9
		2	249	259	224	150	85	50,5	70	3,7
04	90 mm	1	197	209	189	90	118	67	41	2,3
		1 1/4	236	246	221	110	118	67	50	2,7
		1 1/2	243	262	232	120	118	67	60	3,5
		2	267	276	241	150	118	67	70	4,3
		2 1/2	299	300	257	190	118	67	86	6,3
05	125 mm	1 1/4	284	298	273	110	156	86	50	5,2
		1 1/2	291	313,5	283,5	120	156	86	60	6
		2	315	328	293	150	156	86	70	6,8
		2 1/2	347	352	308	190	156	86	86	8,9

<sup>(1)</sup> Weight of valve without pilot. Add 0,2 for dia. 125 mm operator NO.

Solenoid pilot valves: see V439 (63 mm operator) / V444 (90 and 125 mm operators).