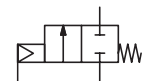




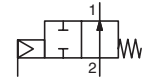
# VALVES

pressure operated  
bronze or stainless steel body  
threaded ports, 3/8 to 2 1/2

NC



NO



2/2  
Series  
**E290**

## 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)
- The valves in conformity with IEC 61508 Standard (2010 route 2<sub>H</sub> version) certified with integrity levels: SIL 2 for HFT = 0

## 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
Valve body	Bronze	AISI 316L
Stuffing box housing	Brass	AISI 316L
Stem	Stainless steel	Stainless steel
Disc	Brass	Stainless steel
Stuffing box packing	PTFE chevrons	PTFE chevrons
Wiper seal	FPM	FPM
Disc seal	PTFE	PTFE
Valve body seal	PTFE	PTFE

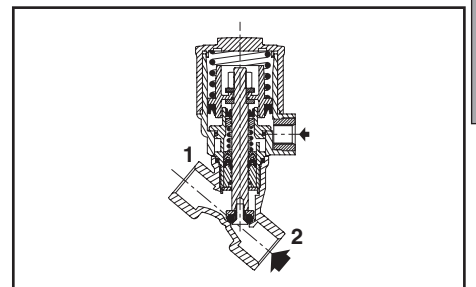
## OTHER MATERIALS

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

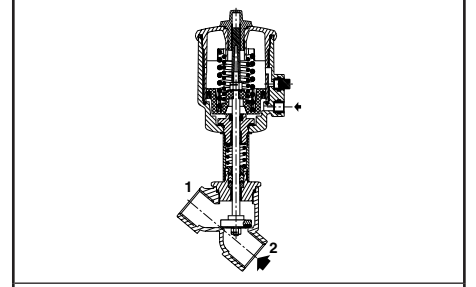
<sup>(1)</sup> For dia. 32, 50, 63, 90 and 125 mm operators: At service fluid temperatures inside the valve body above 100°C, it is prohibited to pilot the valve with water.

## SPECIFICATIONS

piping (ISO 6708)		flow coefficient Kv		pilot pressure (bar)		operating pressure differential (bar)			operator diameter (mm)	catalogue number		
pipe size (G <sup>*</sup> )	DN	(m <sup>3</sup> /h)	(l/min)	min.	max.	min.	max.	steam (*) (≤184°C)		bronze	stainless steel	
<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
		4,1	68	4	10	0	12	12	10	32	-	E290A792
1/2	15	4,9	82	4	10	0	16	16	10	50	E290A384	E290A393
				2,5	10	0	16	16	10	63	E290B002	E290B045
3/4	20	6,5	108	4	10	0	6	6	6	32	-	E290A793
				10	10	10	50	E290A385	E290A394			
				16	16	10	63	E290B005	E290B048			
				12	12	10	63	E290B004	E290B047			
1	25	12,8	213	4	10	0	6	6	6	50	E290A386	E290A395
				10	10	10	63	E290B010	E290B053			
				16	16	10	90	E290B011	E290B054			
				6	6	6	63	E290B008	E290B051			
				12	12	10	90	E290B009	E290B052			
				6	6	6	63	E290A016	E290A059			
1 1/4	32	27	450	4	10	0	12	12	10	90	E290A017	E290A060
				3	3	3	63	E290A014	E290A057			
				7	7	7	90	E290A015	E290A058			
				4	10	0	16	16	10	125	E290A642	E290A646
				2,5	10	0	16	16	10	125	E290A641	E290A645
				2,5	10	0	16	16	10	125	E290A641	E290A645



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			
							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 1/2	40	45	750	4	10	0	4	4	4	63	E290A020	E290A063		
				2,5	10	0	8	8	8	90	E290A021	E290A064		
		48	800	4	10	0	4	4	4	90	E290A019	E290A062		
				2,5	10	0	16	16	10	125	E290A482	E290A495		
2	50	59	983	4	10	0	2,5	2,5	2,5	63	E290A024	E290A067		
				2,5	10	0	6	6	6	90	E290A025	E290A068		
		66	1100	4	10	0	2,5	2,5	2,5	90	E290A023	E290A066		
				2,5	10	0	10	10	10	125	E290A485	E290A498		
		2 1/2	65	94	1567	4	10	0	5	5	5	125	E290A484	-
				111	1850	4	10	0	2	2	2	90	E290A487	E290A500
				4	10	0	6	6	6	125	E290A488	E290A501		
<b>NO - Normally open, entry under the disc</b>														
3/8	10	2,8	47	IX (*)	10	0	16	16	10	32	-	E290A794		
1/2	15	4,1	68	IX (*)	10	0	16	16	10	32	-	E290A795		
		4,9	82	I (*)	10	0	16	16	10	50	E290A387	E290A396		
3/4	20	6,5	108	II (*)	10	0	16	16	10	63	E290B026	E290B069		
				IX (*)	10	0	16	16	10	32	-	E290A796		
		9,4	157	I (*)	10	0	16	16	10	50	E290A388	E290A397		
				II (*)	10	0	16	16	10	63	E290B027	E290B070		
1	25	12,8	213	I (*)	10	0	16	16	10	50	E290A389	-		
		16,5	275	II (*)	10	0	16	16	10	63	E290B028	E290B071		
1 1/4	32	27	450	III (*)	10	0	16	16	10	90	E290B029	E290B072		
				II (*)	10	0	16	16	10	63	E290A030	E290A073		
		29	483	IV (*)	10	0	16	16	10	90	E290A031	E290A074		
1 1/2	40	45	750	II (*)	10	0	11	11	10	63	E290A032	E290A075		
				III (*)	10	0	16	16	10	90	E290A033	E290A076		
		48	800	IV (*)	10	0	16	16	10	125	E290A489	E290A502		
2	50	59	983	II (*)	10	0	7	7	7	63	E290A034	E290A077		
				III (*)	10	0	13	13	10	90	E290A035	E290A078		
		66	1100	IV (*)	10	0	16	16	10	125	E290A490	E290A503		
2 1/2	65	94	1567	III (*)	10	0	7	7	7	90	E290A491	E290A504		
		111	1850	IV (*)	10	0	16	16	10	125	E290A492	E290A505		
<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		
1/2	15	4,1	68	X (*)	10	0	10	-	10	32	-	E290A798		
		4,9	82	V (*)	10	0	10	-	10	50	E290A390	E290A399		
3/4	20	6,5	108	VI (*)	10	0	10	-	10	63	E290B036	E290B079		
				X (*)	10	0	10	-	10	32	-	E290A799		
		9,4	157	V (*)	10	0	10	-	10	50	E290A391	E290A400		
				VI (*)	10	0	10	-	10	63	E290B037	E290B080		
1	25	12,8	213	V (*)	10	0	10	-	10	50	E290A392	E290A401		
		16,5	275	VI (*)	10	0	10	-	10	63	E290B038	E290B081		
1 1/4	32	27	450	VI (*)	10	0	10	-	10	63	E290A039	E290A082		
1 1/2	40	45	750	VII (*)	10	0	10	-	10	90	E290A136	E290A137		
				VI (*)	10	0	10	-	10	63	E290A040	E290A083		
2	50	59	983	VII (*)	10	0	9	-	9	90	E290A041	E290A084		
				VI (*)	10	0	9	-	9	63	E290A042	E290A085		
2 1/2	65	94	1567	VII (*)	10	0	10	-	10	90	E290A043	E290A086		
				VIII (*)	10	0	10	-	10	90	E290A623	E290A625		
				VIII (*)	10	0	10	-	10	125	E290A624	-		

(\*) 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
- Check temperature range of valve body and solenoid pilot valves for suitability. For probability of failure, contact us
- Pipe connections (G<sup>+</sup>) have standard combination thread according to ISO 228/1 and ISO 7/1
- Installation/maintenance instructions are included with each valve

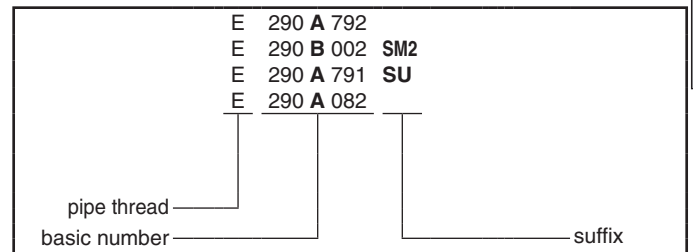
**SPARE PARTS KITS**

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>

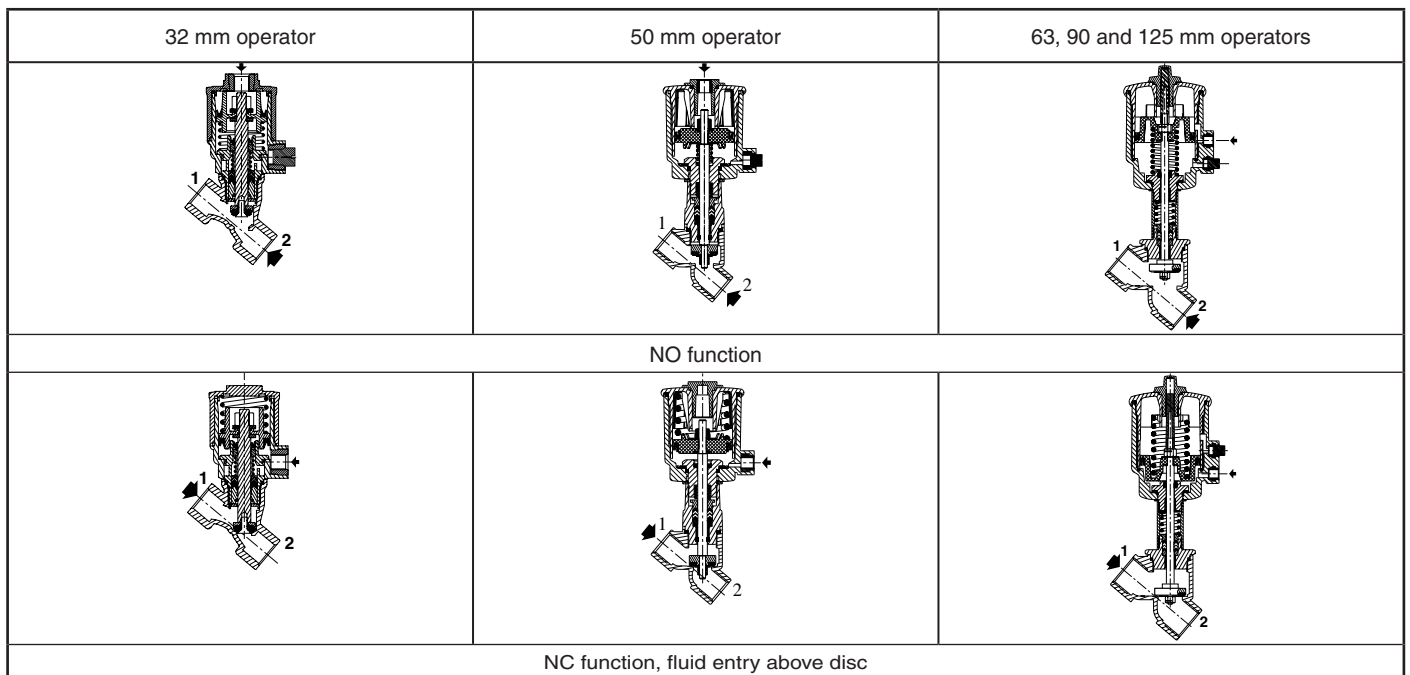
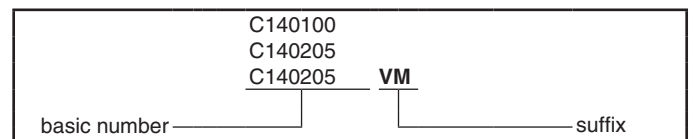
<sup>(1)</sup> Standard suffix VM also applies to kits (see V435).

- Not available

**ORDERING EXAMPLES:**

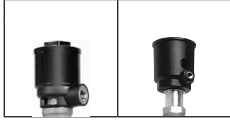


**ORDERING EXAMPLES KITS:**

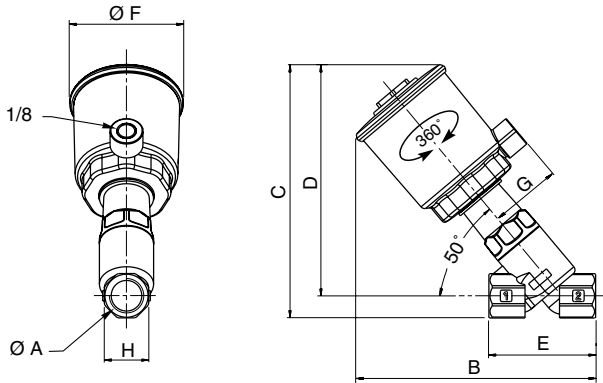


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### DIMENSIONS (mm), WEIGHT (kg)



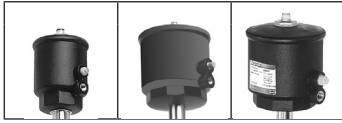
**TYPE 01-02**  
 32 and 50 mm operators  
 Fluid entry:  
 under the disc at 2  
 above the disc at 1



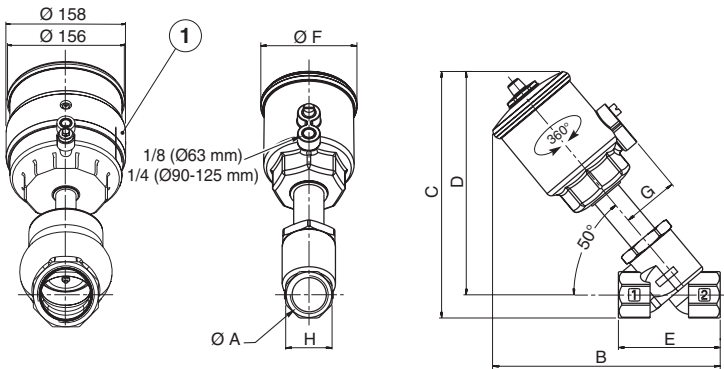
type	operator diameter	ØA	B	C	D	E	ØF	G	ØH	weight <sup>(1)</sup>
01	32 mm	3/8	92	93	81,5	55	43,5	27	23,5	0,35
		1/2	99	97	83,5	65	43,5	27	28	0,4
		3/4	107	104,5	88	75	43,5	27	30	0,45
02	50 mm	1/2	142	154,5	141	65	69	43	27	0,9
		3/4	150,5	159	143	75	69	43	32	1
		1	155	165	145	90	69	43	41	1,4

<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
05	125 mm	2 1/2	299	300	257	190	118	67	86	6,3
		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).