

# Externally operated valves, type AV210

## Features



- For robust industrial applications
- Bi-directional NC version - two flow directions
- Bronze version for water, oil and compressed air
- stainless steel version for neutral and aggressive liquid and gaseous media
- Unpressurized closed (NC) bidirectional versions and unpressurized opened (NO) version closing against the flow direction
- Control connection G 1/8 and NAMUR
- Operating pressure up to 16 bar, depending on valve type
- The valves can be used for rough vacuum
- Valves comply with P.E.D. 97/23/ EC group 1 & 2
- Options: See page 11

## Contents

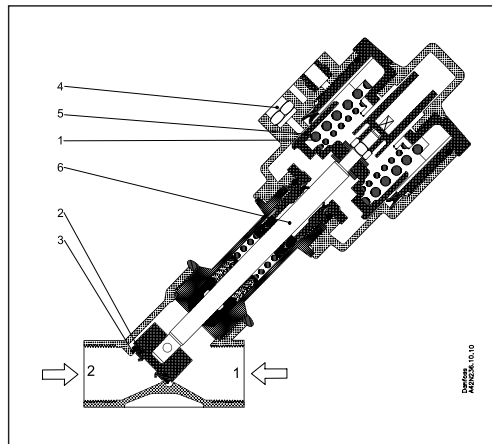
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Technical data

Design	Piston-operated; angle-seated;
Installation	Optional
Pressure range	See ordering
Tightness	Internally/ Externally: Better than 0.4 mbar l/sec (25 ccm air per min.)
Ambient temperature	-30 to +60°C
Medium temperature	-30 to +180°C
Viscosity	Max. 600 cSt
Control medium	Air
Materials	Valve body: Bronze RG 5 Stainless steel AISI 316 Intermediate piece: Bronze body: ..... Brass W.no.2.0402 Stainless steel body: Stainless steel AISI 316 Seat control and nut:.....Stainless steel AISI 316 Spindle: .....Stainless steel AISI 316 Spindle gasket: .....PTFE Gasket: .....Graphite Valve plate unit: .....PTFE Control head: .....PA66

Function

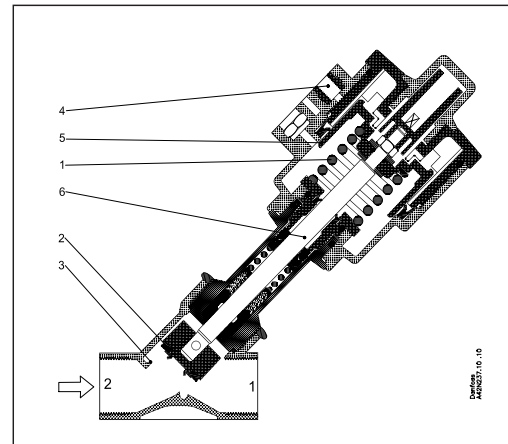
- 1. Spring
- 2. Seat gasket
- 3. Valve seat
- 4. Control connection
- 5. Control piston
- 6. Spindle



**AV210 unpressurized closed version (NC) bidirectional.**

The valve is kept closed by the spring (1), which presses the seat gasket (2) against the valve seat (3).

When the pressure is applied to the control connection (4), the control piston (5), the spindle (6) and thus the seat gasket (2) are raised, and the valve opens with or against the pressure of the medium.

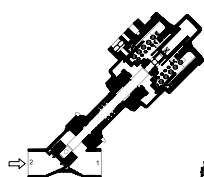


**AV210 unpressurized open version (NO)**

The valve is kept open by the spring (1), which keeps the seat gasket (2) away from the valve seat (3).

When pressure is applied to the control connection (4), the control piston (5), the spindle (6) and thus the seat gasket (2) are lowered, and the valve closes against the pressure of the medium.

Ordering



NC version

Mounting: closing *against* or closing *with* the flow direction

Closing *against* recommended to avoid water hammer

Connection ISO 228/1	DN [mm]	K <sub>V</sub> -value [m <sup>3</sup> /h]	Dia-meter control-head [mm]	Pressure range <sup>1)</sup> [bar]	Control pressure [bar]		Bronze		Code no.
							Type designation		
					min.	max.	Main type	Specification	
G 3/8	15	4.5	40 <sup>2)</sup>	0 to 16	4.2	10	AV210A15G	G38T NC000	<b>042N4400</b>
G 3/8	15	4.9	50	0 to 16	4	10	AV210B15G	G38T NC000	<b>042N4401</b>
G 1/2	15	5.3	40 <sup>2)</sup>	0 to 16	4.2	10	AV210A15G	G12T NC000	<b>042N4402</b>
G 1/2	15	5.7	50	0 to 16	4	10	AV210B15G	G12T NC000	<b>042N4403</b>
G 3/4	20	10	50	0 to 10	4	10	AV210B20G	G34T NC000	<b>042N4404</b>
G 3/4	20	10	63	0 to 16	4	10	AV210C20G	G34T NC000	<b>042N4405</b>
G 1	25	20	63	0 to 11	4	10	AV210C25G	G1T NC000	<b>042N4406</b>
G 1	25	20	90	0 to 16	4	8	AV210D25G	G1T NC000	<b>042N4407</b>
G 1 1/4	32	29	90	0 to 14	4	8	AV210D32G	G114T NC000	<b>042N4408</b>
G 1 1/2	40	46	90	0 to 11	4	8	AV210D40G	G112T NC000	<b>042N4409</b>
G 1 1/2	40	47	110	0 to 16	4	8	AV210E40G	G112T NC000	<b>042N4410</b>
G 2	50	74	110	0 to 10	4	8	AV210E50G	G2T NC000	<b>042N4411</b>

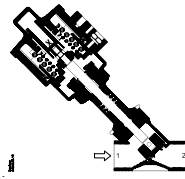
<sup>1)</sup> Pressure range can be extended for use in rough vacuum, typically up to 99% vacuum (10mbar), depending on the application

<sup>2)</sup> Without NAMUR interface

Connection ISO 228/1	DN [mm]	K <sub>V</sub> -value [m <sup>3</sup> /h]	Dia-meter control-head [mm]	Pressure range <sup>1)</sup> [bar]	Control pressure [bar]		Stainless Steel		Code no.
							Type designation		
					min.	max.	Main type	Specification	
G 3/8	15	4.9	50	0 to 16	4	10	AV210B15SS	G38T NC000	<b>042N4450</b>
G 1/2	15	5.7	50	0 to 16	4	10	AV210B15SS	G12T NC000	<b>042N4451</b>
G 3/4	20	10	50	0 to 10	4	10	AV210B20SS	G34T NC000	<b>042N4452</b>
G 3/4	20	10	63	0 to 16	4	10	AV210C20SS	G34T NC000	<b>042N4453</b>
G 1	25	20	63	0 to 11	4	10	AV210C25SS	G1T NC000	<b>042N4454</b>
G 1	25	20	90	0 to 16	4	8	AV210D25SS	G1T NC000	<b>042N4455</b>
G 1 1/4	32	29	90	0 to 14	4	8	AV210D32SS	G114T NC000	<b>042N4456</b>
G 1 1/2	40	46	90	0 to 11	4	8	AV210D40SS	G112T NC000	<b>042N4457</b>
G 1 1/2	40	47	110	0 to 16	4	8	AV210E40SS	G112T NC000	<b>042N4458</b>
G 2	50	74	110	0 to 10	4	8	AV210E50SS	G2T NC000	<b>042N4459</b>

<sup>1)</sup> Pressure range can be extended for use in rough vacuum, typically up to 99% vacuum (10mbar), depending on the application

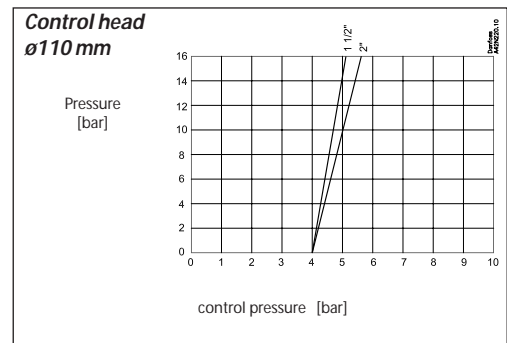
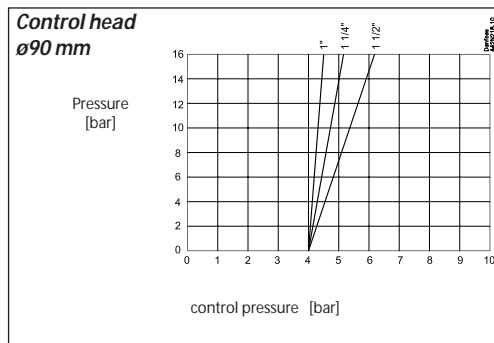
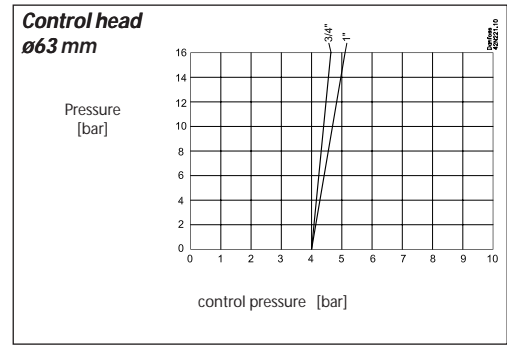
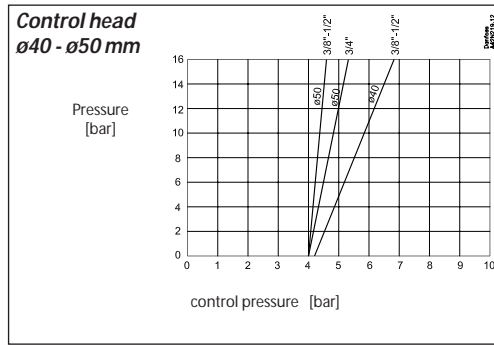
Diagrams NC



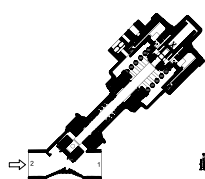
**NC version**

Mounting: closing *with* the flow direction

Recommended only for compressible media for extended pressure range



Ordering



**NO version**

Mounting: Always closing *against* the flow direction

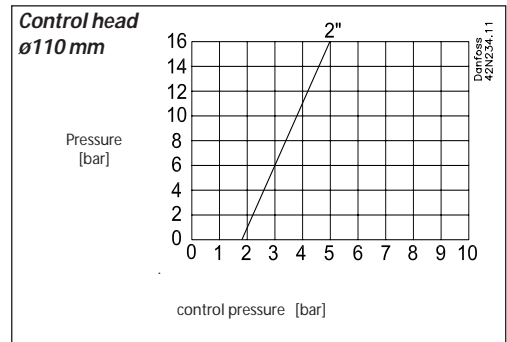
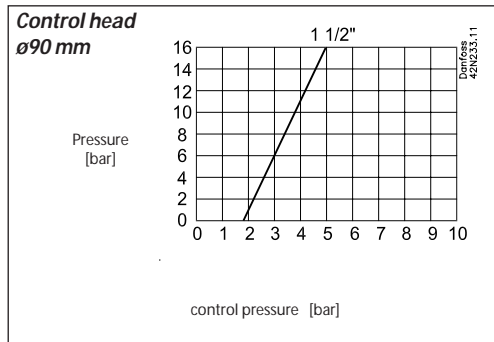
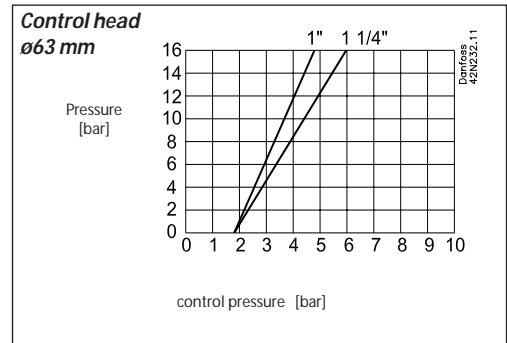
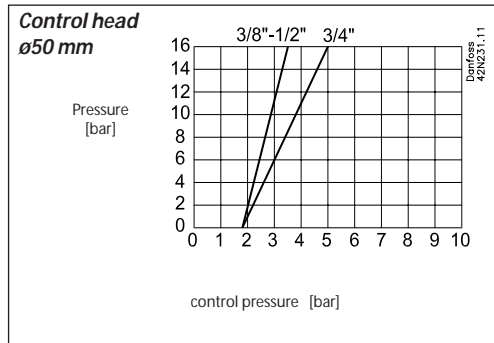
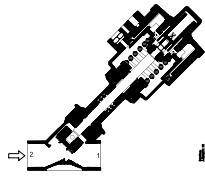
Connection ISO 228/1	DN [mm]	K <sub>v</sub> -value [m <sup>3</sup> /h]	Diameter control-head [mm]	Pressure range <sup>1)</sup> [bar]	Control pressure [bar]		Bronze		Code no
							Type designation		
					min.	max.	Main type	Specification	
G 3/8	15	4.9	50	See diagram, page 6	10	AV210B15G	G38T NO000	<b>042N4430</b>	
G 1/2	15	5.7	50	See diagram, page 6	10	AV210B15G	G12T NO000	<b>042N4431</b>	
G 3/4	20	10	50	See diagram, page 6	10	AV210B20G	G34T NO000	<b>042N4432</b>	
G 1	25	20	63	See diagram, page 6	10	AV210C25G	G1T NO000	<b>042N4433</b>	
G 1 1/4	32	29	63	See diagram, page 6	10	AV210D32G	G114T NO000	<b>042N4434</b>	
G 1 1/2	40	46	90	See diagram, page 6	8	AV210D40G	G112T NO000	<b>042N4435</b>	
G 2	50	74	110	See diagram, page 6	8	AV210E50G	G2T NO000	<b>042N4436</b>	

<sup>1)</sup> Pressure range can be extended for use in rough vacuum, typically up to 99% vacuum (10mbar), depending on the application

Connection ISO 228/1	DN [mm]	K <sub>v</sub> -value [m <sup>3</sup> /h]	Diameter control-head [mm]	Pressure range <sup>1)</sup> [bar]	Control pressure [bar]		Stainless Steel		Code no.
							Type designation		
					min.	max.	Main type	Specification	
G 3/8	15	4.9	50	See diagram, page 6	10	AV210B15SS	G38T NO000	<b>042N4480</b>	
G 1/2	15	5.7	50	See diagram, page 6	10	AV210B15SS	G12T NO000	<b>042N4481</b>	
G 3/4	20	10	50	See diagram, page 6	10	AV210B20SS	G34T NO000	<b>042N4482</b>	
G 1	25	20	63	See diagram, page 6	10	AV210C25SS	G1T NO000	<b>042N4483</b>	
G 1 1/4	32	29	63	See diagram, page 6	10	AV210D32SS	G114T NO000	<b>042N4484</b>	
G 1 1/2	40	46	90	See diagram, page 6	8	AV210D40SS	G112T NO000	<b>042N4485</b>	
G 2	50	74	110	See diagram, page 6	8	AV210E50SS	G2T NO000	<b>042N4486</b>	

<sup>1)</sup> Pressure range can be extended for use in rough vacuum, typically up to 99% vacuum (10mbar), depending on the application

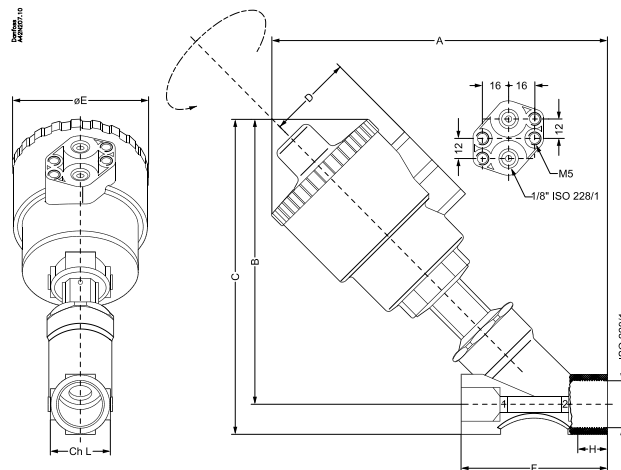
Diagrams NO



Dimensions and weight

**Bronze valve body**

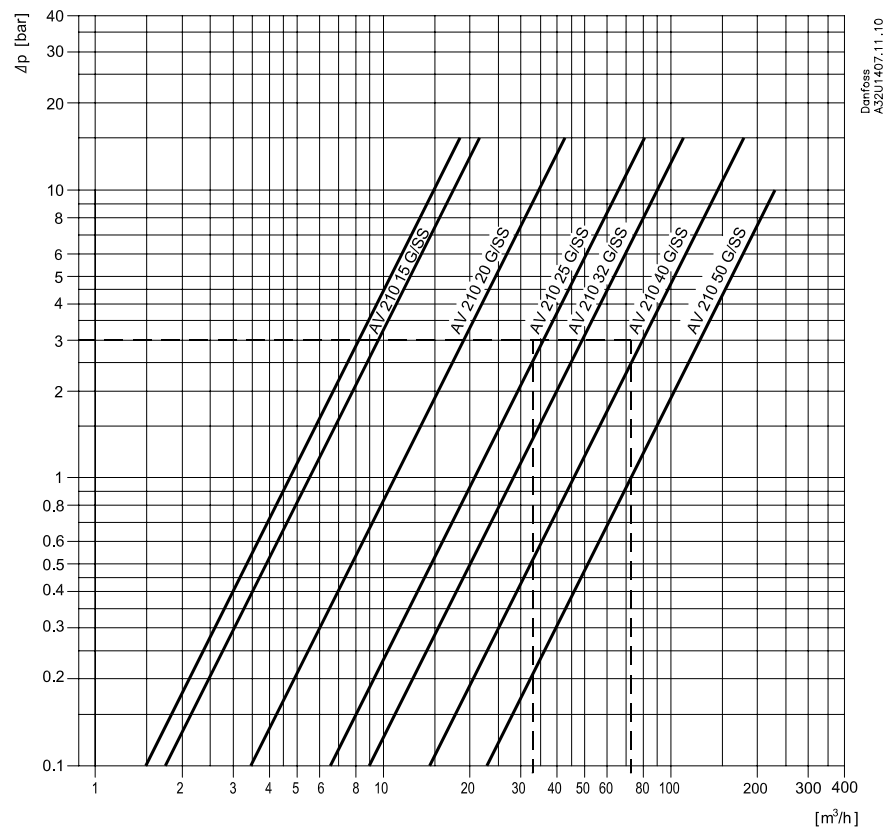
DN [mm]	Connection ISO 228/1	Diameter control-head [mm]	A [mm]	B [mm]	C [mm]	D [mm]	øE [mm]	F [mm]	H [mm]	ch.L [mm]	weight [Kg]
15	G 3/8	40	144	121	134	35	61	65	12	27	1.1
15	G 3/8	50	163	140	153	44	70	65	12	27	1.1
15	G 1/2	40	144	121	134	35	61	65	13	27	1
15	G 1/2	50	163	140	153	44	70	65	13	27	1
20	G 3/4	50	173	147	163	44	70	75	14.3	27.5	1.2
20	G 3/4	63	191	165	181	50.5	84.4	75	14.3	27.5	1.2
25	G 1	63	206	176	196	50.5	84.4	90	17.5	41	1.6
25	G 1	90	246	216	236	66.2	116.4	90	17.5	41	1.7
32	G 1 1/4	90	255	220	245	66.2	116.4	110	19	50	3
40	G 1 1/2	90	270	235	264	66.2	116.4	120	18	58	3.4
40	G 1 1/2	110	306	271	300	77.4	140.6	120	18	58	4
50	G 2	110	316	276	311	77.4	140.6	150	20	70	5.3



**Stainless steel valve body**

DN [mm]	Connection ISO 228/1	Diameter control-head [mm]	A [mm]	B [mm]	C [mm]	D [mm]	øE [mm]	F [mm]	H [mm]	ch.L [mm]	weight [Kg]
15	G 3/8	40	190	156	169	44	70	85	12	25	1.1
15	G 1/2	50	190	156	169	44	70	85	15	25	1
20	G 3/4	50	195	160	176	44	70	95	16.3	31	1.2
20	G 3/4	63	213	178	194.4	50.5	84.4	95	16.3	31	1.2
25	G 1	63	219	182	202	50.5	84.4	105	19.5	38	1.6
25	G 1	90	259	222	242	66.2	116.4	105	19.5	38	1.7
32	G 1 1/4	90	266	226	249	66.2	116.4	120	19	47	3
40	G 1 1/2	90	271	230	258	66.2	116.4	130	18	54	3.4
40	G 1 1/2	110	307	266	294	77.4	140.6	130	18	54	4
50	G 2	110	321	276	310	77.4	140.6	150	20	66	5.3

Capacity diagram, Water

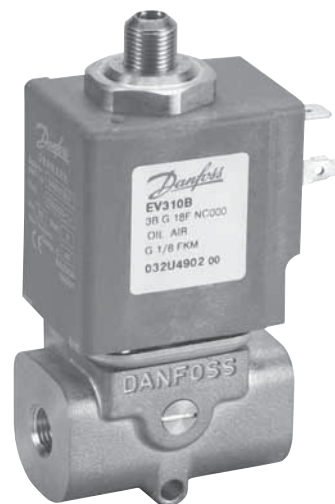


Control valves, types EV310A and EV310B

Control valves, type EV310A

Control valves, type EV310B

See separate data sheets DKACV.PD.100.E and DKACV.PD.200.J regarding code numbers, technical data and coil options for Danfoss EV310A and EV310B valves.



- Valves for industrial applications.
- Available in de-energized closed and de-energized open versions
- Available with or without manual operation

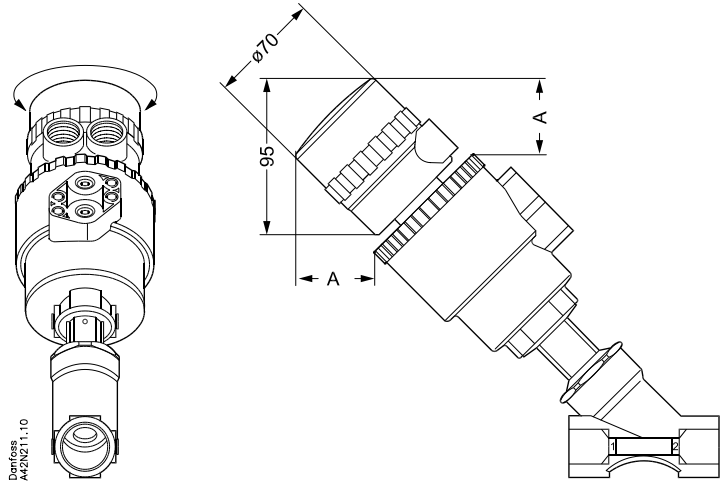
- Valves for industrial application.
- Available in de-energized closed and de-energized open versions
- Available with or without manual operation



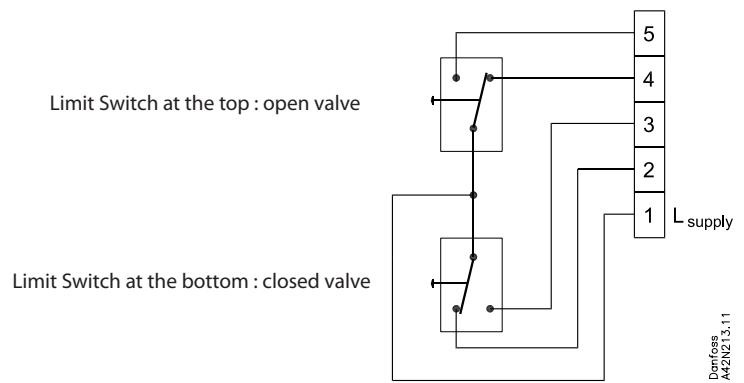
Position indicator

**FEATURES**

The control box to check the open/closed positions with two mechanical limit switches is suitable for assembling on the whole range of valves.  
 Level of protection : IP 65.  
 Ambient temperature: from -20°C to +70°C.  
 Access lead nr.2 PG11.  
 Body material: polyamide  
 (cap in Lexan/polycarbonate)



**Wiring diagram**



Max. capacity 5A 250Vac  
 1A 250Vdc

**Ordering**

Actuator size [mm]	A [mm]	code no.*
Ø 50	52.1	042N4820
Ø 63	47.5	042N4821
Ø 90	37.7	042N4822
Ø 110	29.5	042N4823

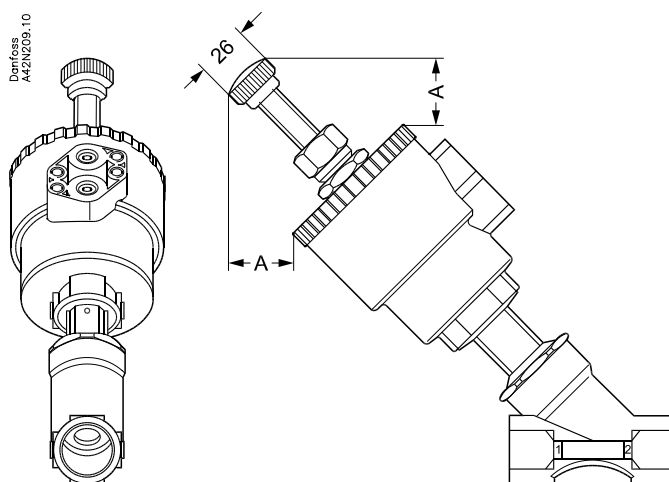
\* Limit Switch Box incl. 2 switches

Accessories

Manual override

**FEATURES**

*It permits opening the valve in emergency cases (lack of pilot fluid, machinery damaged, lack of piloting signal). It is available on all NC versions.*



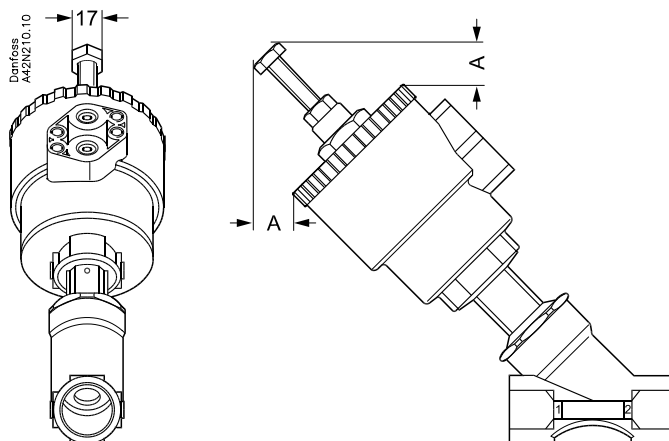
**Ordering**

Actuator size [mm]	A [mm]	code no.
Ø 50	35.8	042N4840
Ø 63	35.8	042N4841
Ø 90	29.5	042N4842
Ø 110	29.5	042N4843

Manual capacity control

**FEATURES**

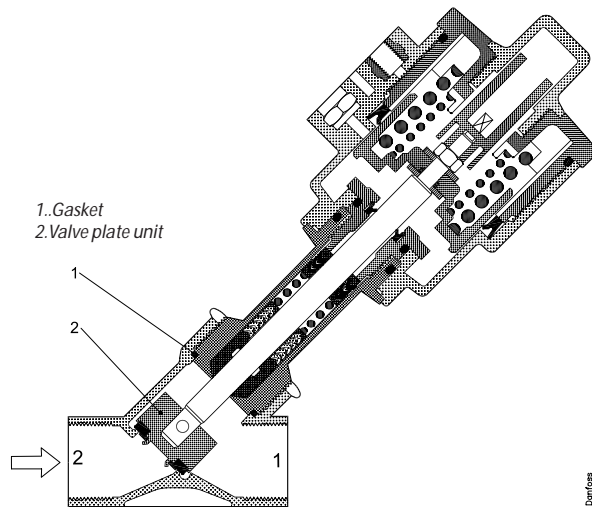
*It limits steplessly the movement of the spindle, thereby controlling the capacity of the valve. Available on all the versions. In NO versions it can be used as manual override.*



**Ordering**

Actuator size [mm]	A [mm]	code no.
Ø 50	25.5	042N4860
Ø 63	21.5	042N4861
Ø 90	5.2	042N4862
Ø 110	5.9	042N4863

Repair sets



Danfoss  
AV210/230, 10.20

Ordering both Bronze and Stainless steel

Con- nection	Dia- meter Control head [mm]	Material		Code no.
		Valve plate unit	Gasket	
G 3/8	40	PTFE	Graphite	<b>042N4800</b>
G 3/8	50	PTFE	Graphite	<b>042N4801</b>
G 1/2	40	PTFE	Graphite	<b>042N4802</b>
G 1/2	50	PTFE	Graphite	<b>042N4803</b>
G 3/4	50 - 63	PTFE	Graphite	<b>042N4804</b>
G 1	63	PTFE	Graphite	<b>042N4805</b>
G 1	90	PTFE	Graphite	<b>042N4806</b>
G1 1/4	90	PTFE	Graphite	<b>042N4807</b>
G1 1/2	90 - 110	PTFE	Graphite	<b>042N4808</b>
G 2	110	PTFE	Graphite	<b>042N4809</b>

The repair set includes 1 valve plate unit including mounting pin and 2 gaskets.

Please note only one gasket shall be used one is for Bronze another is for Stainless Steel

Options

- NPT, Tri-clamp, welding or flange connection
- Double-acting and “closing with” version
- Stainless steel, compact OEM version
- High ambient temperature version (up to 130°C)
- EEx approved position indicator
- Other combinations of control head and valve

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