

EN- Technical data sheet

Modular two-way valve, 45°, pneumatically operated, rotary, actuator, ATEX

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Article code

20	4	1	963	/ATEX
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①

Diameter

15 DN 150

20 DN 200

25 DN 250

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40 DN 400

②

Thickness

4 4.0 mm (case)

③

Surface

1 1.0330, powder-coated

3 1.4301, shot-blasted

④

Article group

963 Modular two-way valve, 45°, pneumatically operated, rotary actuator

1 Technical data

Area of application and use	Dust-tight deflection of dry, non-abrasive bulk materials in conveyor systems. With the flap seal intact, there is no risk of mixing. Flap seal replaceable. Only suitable for pressureless conveying. Adjustment only in the event of interrupted product flow. The actuation time depends on the drive. <i>(see table 1.1 Actuation, pp. 3-4)</i>
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Connection	Both sides with flanged edge (<i>lips</i>) for clamping ring connection
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Materials	
Case	According to article number 1.0330 (DC01) or 1.4301 (X5CrNi18-10) in specified material thickness
Transition pieces	Made of 1.0330 (DC01) in material thickness $t = 3 \text{ mm}$ Made of 1.4301 (X5CrNi18-10) in material thickness $t = 2 \text{ mm}$
Flaps	Two pieces of 1.0038 (S235JR) or 1.4301 (X5CrNi18-10) in Material thickness $t = 3 \text{ mm}$
Flap seal	Flat seal made of silicone, transparent, $60 \pm 5 \text{ Shore A}$
Shaft seal	Silicone profile seal, transparent, $60 \pm 5 \text{ Shore A}$
Shaft sealing ring	Flat sealing ring made of silicone, transparent, $60 \pm 5 \text{ Shore A}$

Surfaces and temperature		
Surface treatment	Powder Coating (1.0330)	Stainless Steel Shot Blasting (1.4301)
	Standard colour: RAL 7032 ("pebble grey"); smooth, satin-gloss, electrostatically dissipative; Food physiologically harmless; Average layer thickness: $30 - 60 \mu\text{m}$	Surface roughness $R_a: 1.3 \mu\text{m}$
Ambient temperature	-10°C to $+50^\circ\text{C}$	
Product temperature*	-20°C to $+120^\circ\text{C}$ (from $+80^\circ\text{C}$ impairment of the appearance is to be expected)	-10°C to $+180^\circ\text{C}$

**Note: If product temperatures exceed 50°C , the manual control or drive must be insulated against heat conduction on site.*

ATEX approval	
Application	Group II, Category 3D Zone 22
Marking	Ⓔ II 3 D c T 130°C
Equipotential bonding	with welded earthing bolts for on-site grounding

1.1 Actuation

Pneumatic rotary actuator, ATEX			
Diameter	DN 150 – DN 200	DN 250 – DN 300	DN 350 – DN 400
Make	Air Torque		
Type	DR00060U	DR00100U	DR00150U
Compressed air supply	5 bar		
Torque (at 5 bar)	58.2 Nm	91.5 Nm	133 Nm
A/F double square	14 mm	17 mm	
Air volume per double stroke	0.8 L	1.29 L	1.82 L
Actuation time (90°)	< 3 seconds		
Mode of action	double-acting		
Ambient temperature	-40°C to +80°C		
ATEX approval	II 2 G Ex h IIC T6... T5 Gb X II 2 D Ex h IIIC T85°C... T95°C Db		

5/2-way solenoid valve, bistable	
Make	Hafner / Joyner
Type	MNH 510 701 Ex
Mode of action	bistable (2 spools)
Flow	1250 L/min
Ambient temperature	-10° to +50°C
ATEX approval	II 3 G Ex h IIC T6 Gb II 3 D Ex h IIIC T80°C
Pneumatic connection	Push-in connection for 8 mm hose diameter

Solenoid	
Voltage	24V DC
Make	Amisco
Type	0709SD02403AX
Current	max. 120mA
Degree of protection	IP65
Ambient temperature	-10° to +50°C
ATEX approval	II 3 G Ex ec IIC T5 Gc II 3 D Ex tc IIIC T95°C Dc

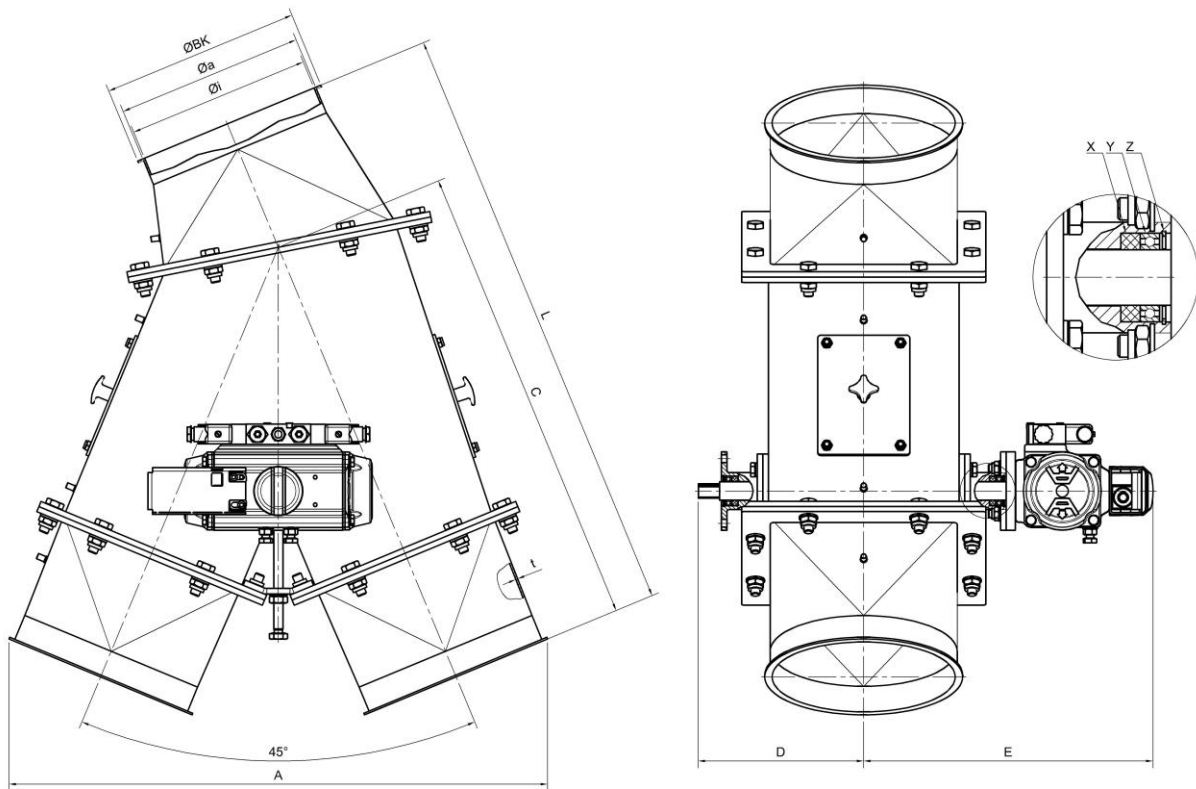
Power cord	
Voltage	max. 300V DC (230V AC)
Make	H.T.P.
Type	M1NS2000-ATEX
Construction	B-Industry
Current	max. 10A
Degree of protection	IP65 / IP67
ATEX approval	II 2 G Ex eb IIC T5 Gb II 2 D Ex tb IIIC T100°C Db
Electrical connection	Cable gland PG9 Cable diameter: 6-8mm

Sensor	
Voltage	10 - 30V DC
Make	Ifm
Type	IN507A
Output	PNP
Current	max. 15 mA
Degree of protection	IP67
ATEX approval	II 3G Ex ec IIC T6 Gc X II 3D Ex tc IIIC T80°C Dc IP67 X
Ambient temperature	-20°C to +60°C
Electrical Connection	M12 connector, coding: A

2 Dimensions

Dimension table: 45°, asymmetrical

pictured version: DN 200

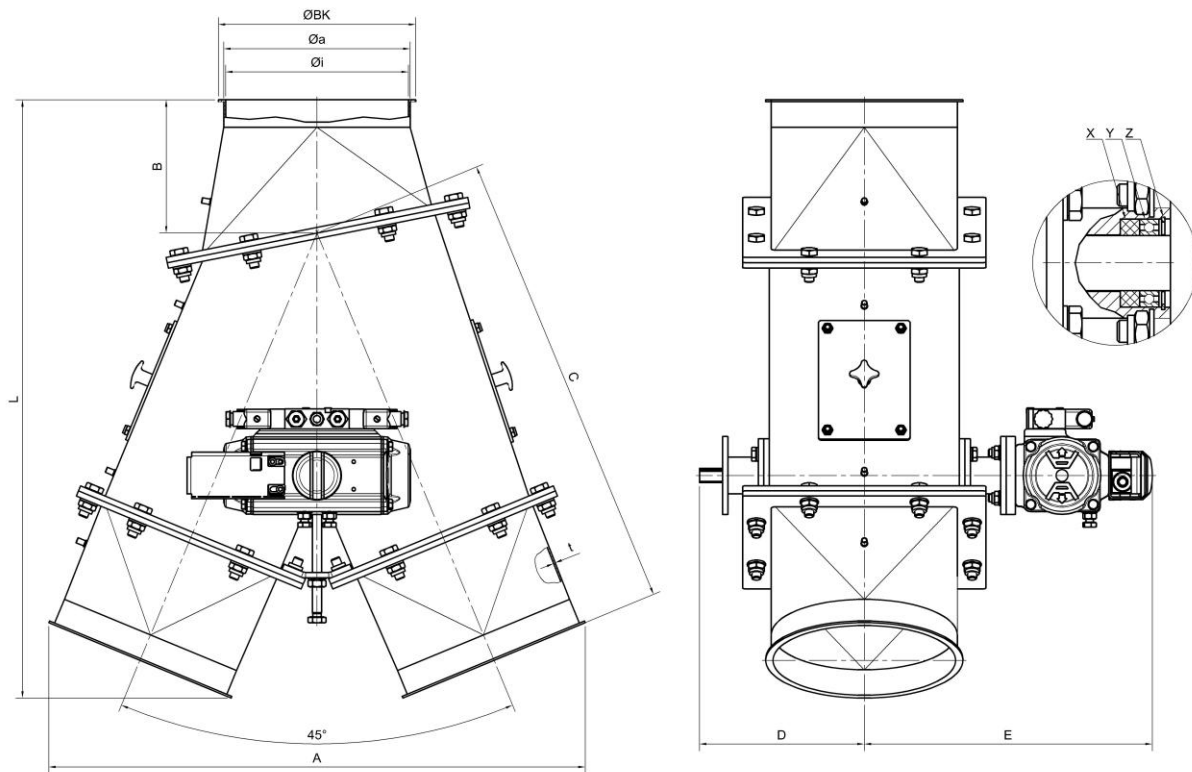


X= Silicone shaft sealing ring
Y= Deep groove ball bearings
Z= Retaining ring

DN	t [mm]	Øi [mm]	Øa [mm]	ØBK [mm]	A [mm]	C [mm]	D [mm]	E [mm]	L [mm]	m [kg]
150	3	148	154	166	474	420	153	287,5	585	31
200		198	204	216	583	504	178	312,5	704	46,1
250		248	254	266	698	590	203	350,5	833	67,3
300		298	304	316	846	725	228	375,5	1000	86,7
350		348	354	366	935	780	253	412,5	1096	105
400		398	404	416	1016	844	278	437,5	1164	113,4

Dimension table: 45°, symmetrical

pictured version: DN 200



X= Silicone shaft sealing ring
Y= Deep groove ball bearings
Z= Retaining ring

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Tolerances

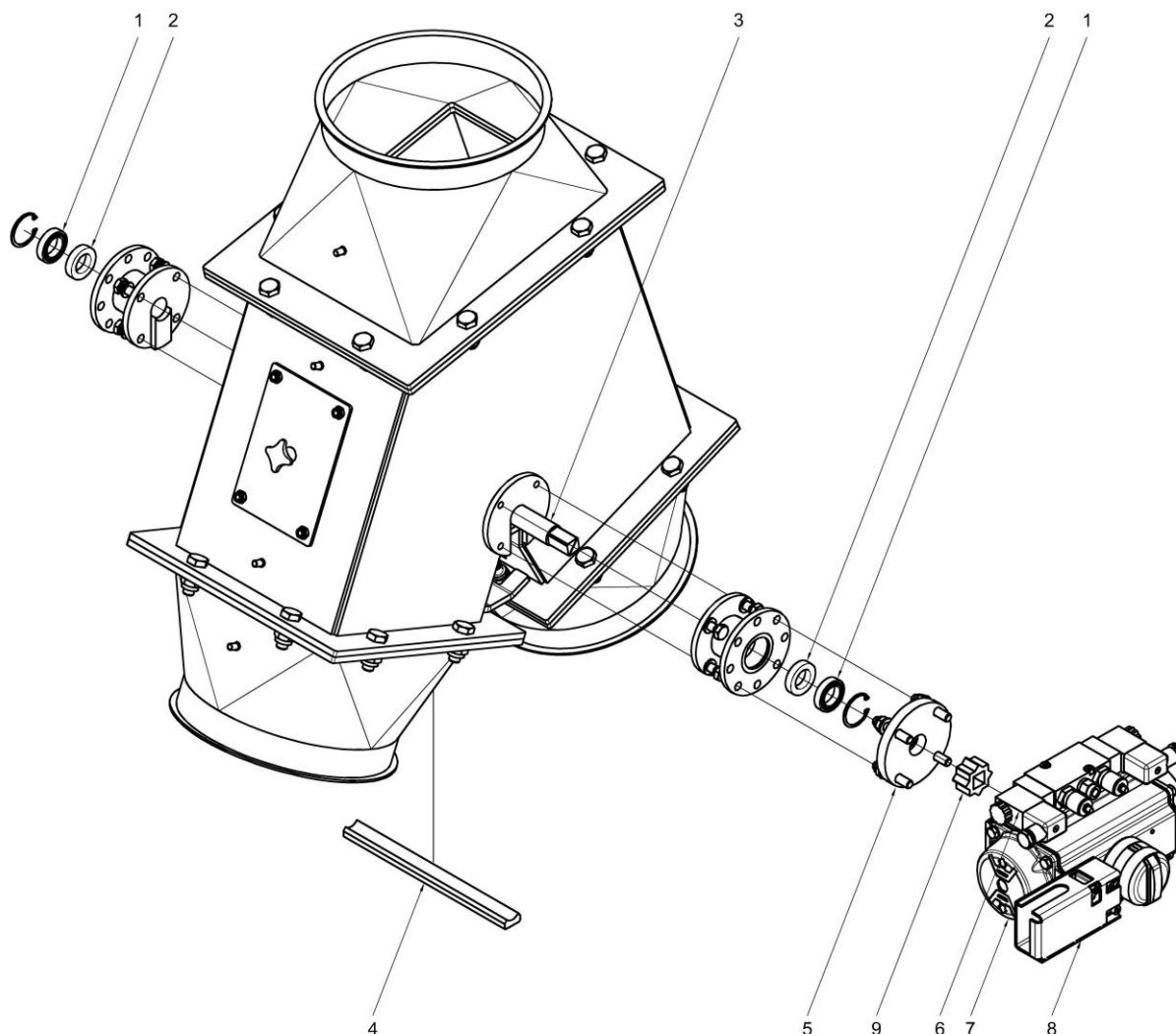
Pipe diameter and roundness according to DIN EN 10296-1:2004
Length and angular dimensions according to DIN ISO 2768-v (very coarse)
Lips: 6 mm ± 1mm

3D-Models

All 3D-models are available for download in our [CAD portal](#) in the common file formats.

3 Spare parts list

Exploded view



No.	Naming	Quantity	DN 150 – DN 200	
			1.0330	1.4301
1	Deep groove ball bearings <i>(for shaft diameter 20 mm)</i>	2	SO0128616	SO0118470
2	Shaft sealing ring <i>(for shaft diameter 20 mm)</i>	2	SO0118471	
3	Flap unit	1	on request	
4	Shaft seal	1	SO0131435	
5	Spacer flange <i>(for shaft diameter 20 mm)</i>	1	SO0105946	SO0123370
6	5/2-way solenoid valve, bistable, ATEX	1	SO0128227	
7	Rotary actuator <i>(DR00060U)</i>	1	SO0131327	
8	Position sensor, ATEX	1	SO0118518	

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No.	Naming	Quantity	DN 250 – DN 300	
			1.0330	1.4301
1	Deep groove ball bearings <i>(for shaft diameter 20 mm)</i>	2	SO0128616	SO0118470
2	Shaft sealing ring <i>(for shaft diameter 20 mm)</i>	2	SO0118471	
3	Flap unit	1	on request	
4	Shaft seal	1	SO0131435	
5	Spacer flange <i>(for shaft diameter 20 mm)</i>	1	SO0105946	SO0123370
6	5/2-way solenoid valve, bistable, ATEX	1	SO0128227	
7	Rotary actuator <i>(DR00100U)</i>	1	SO0131328	
8	Position sensor, ATEX	1	SO0118518	
9	Reducing sleeve <i>(17 / 14)</i>	1	SO0106392	

No.	Naming	Quantity	DN 350 – DN 400	
			1.0330	1.4301
1	Deep groove ball bearings <i>(for shaft diameter 20 mm)</i>	2	SO0128616	SO0118470
2	Shaft sealing ring <i>(for shaft diameter 20 mm)</i>	2	SO0118471	
3	Flap unit	1	on request	
4	Shaft seal	1	SO0131435	
5	Spacer flange <i>(for shaft diameter 20 mm)</i>	1	SO0105946	SO0123370
6	5/2-way solenoid valve, bistable, ATEX	1	SO0128227	
7	Rotary actuator <i>(DR00060U)</i>	1	SO0131329	
8	Position sensor, ATEX	1	SO0118518	
9	Reducing sleeve <i>(17 / 14)</i>	1	SO0106392	