



®

MIRAB CO.

Manufacturer of Industrial Valves
and Relevant Equipment



Double Chambers-Double Orifices Triple Function Air Valves

ADT



Double Chambers-Double Orifices Triple Function Air Valves

Size: DN 80 - 250 mm

Pressure rating: PN 10 - 40 bar

Flange drilling according to DIN EN 1092-2 (DIN 2501) & ASME/ANSI Class150

Product features:

This type of Air valve consists of two chambers and an Isolating mechanism in the middle. One chamber is designed to exhaust and inject a low volume of air from or to the pipeline, and the other chamber is considered for a high amount of air. During operation and under fluid pressure, it's possible to inspect and clean the internal parts by rotating the hand wheel of the valve in a clockwise direction and without depressurizing the pipeline. This valve exhausts air. This air valve is available with or without an integrated Isolating mechanism according to customer order. In the case of using an air valve without an Isolating mechanism, it is strongly recommended to install an isolating valve under the air valve. If the integrated shut-off valve is included it shall be open while the valve is in operation.

The automatic operation of this valve is due to water buoyancy and the differential pressure between the internal and external areas of the pipeline.

Advantages:

- Reliable design.
- Easy repair of internal parts.
- The minimum required sealing pressure is 1 bar.
- Not required for a separate isolation valve.
- Using of corrosion-resistant materials for production of float and guides.

Coating:

Color coating and working temperature are according to the table below.

Temperature of coating	
Coating	Temperature(°c)
RAL 5005 (Epoxy Powder)	Up to 70
RAL 7001 (Epoxy Powder)	Up to 110
RAL 9001 (ZINGA)	Up to 150
RAL 9001 (SILICONE ACRYLIC)	Up to 250

Hydrostatic test Pressure:

The test is according to the table below.

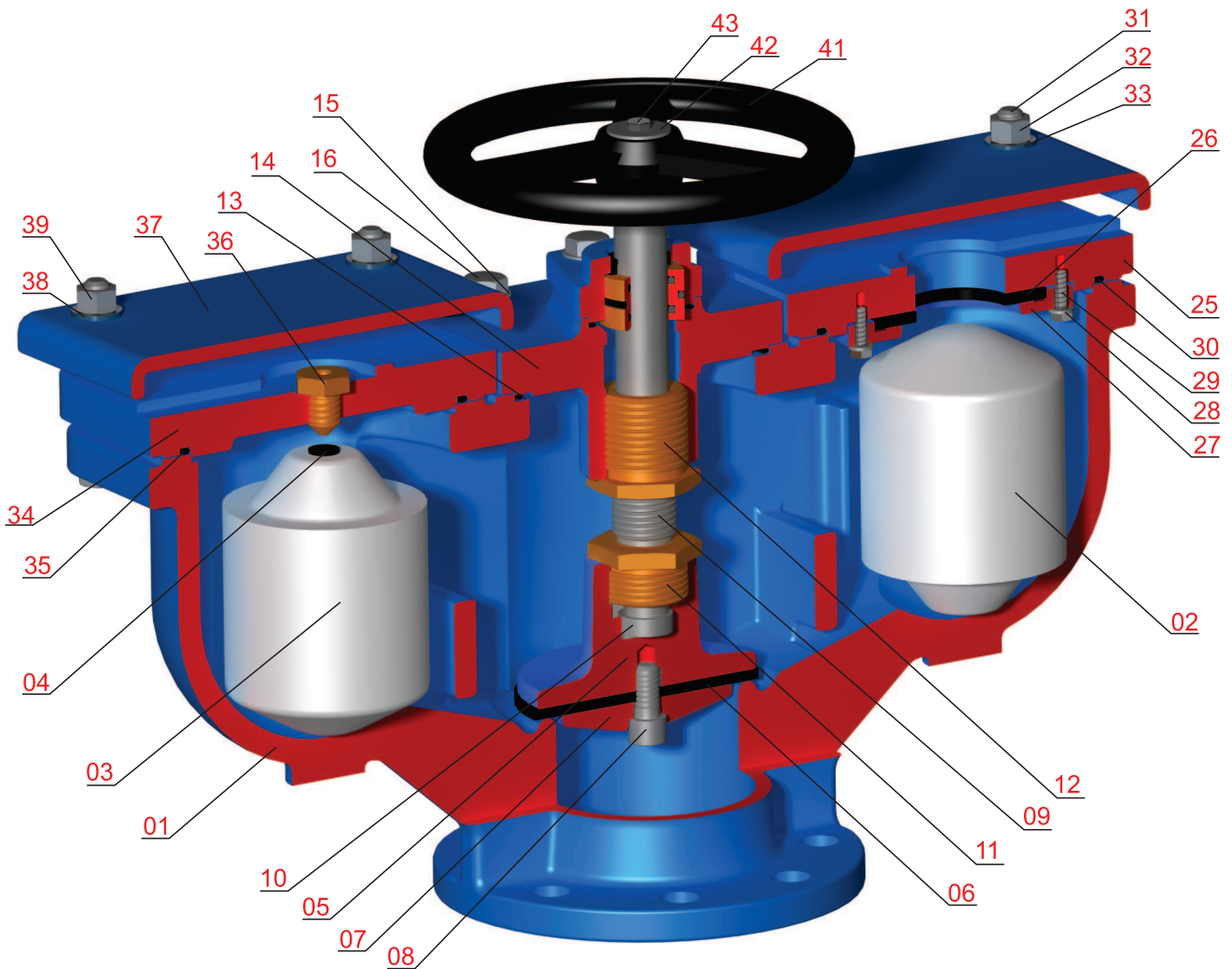
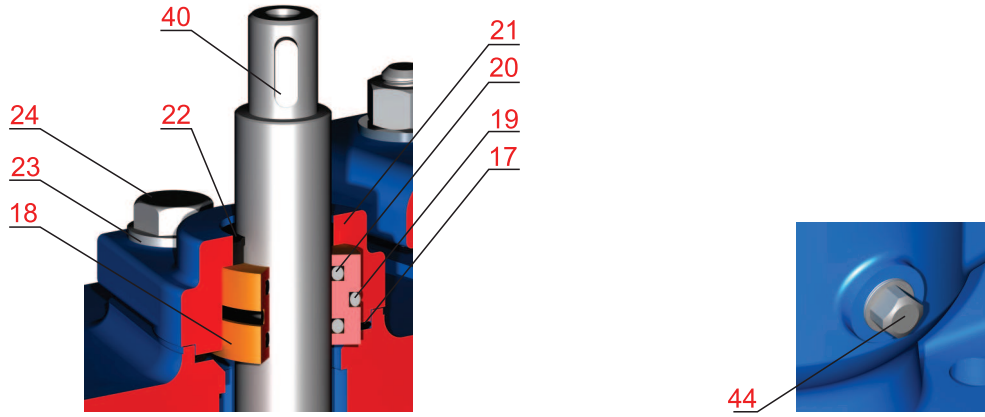
Hydrostatic test Pressure (bar) according to DIN EN 12266-1		
Nominal Pressure PN (bar)	Test Pressure, with water, (bar)	
	Closure Test	Shell Test
10	11	17
16	18	25
25	28	38
40	44	60

Materials:

The types of materials used in double-chamber Air valve, which can be changed based on the type of passing fluid, are specified in the table below.

Material	Description
Body	
Cast Iron	EN 1563/ EN GJS-400-15
Cast Iron	EN 1563/ EN GJS-500-7
Carbon Steel	ASTM A216 Gr. WCB
Stainless Steel	AISI 304 (1.4301)
Stainless Steel	AISI 304L (1.4307)
Stainless Steel	AISI 316 (1.4401)
Stainless Steel	AISI 316L (1.4404)
Stainless Steel	Duplex
Stainless Steel	Super Duplex
Aluminum Bronze	ASTM B148 UNS No. C95200
Nickle Aluminum Bronze	ASTM B148 UNS No. C95800
Seat	
NR	Temp. Up to 50 °C
NBR	Temp. Up to 70 °C
EPDM	Temp. Up to 120 °C
EPDM (Hi Temp.)	Temp. Up to 150 °C
Viton	Temp. Up to 200 °C
Float	
Polymer	Polypropylene
Stainless Steel	AISI 304 (1.4301)
Stainless Steel	AISI 316 (1.4401)

Part list of Air valves (with integrated isolating mechanism):



Double Chambers-Double Orifices Triple Function Air Valves

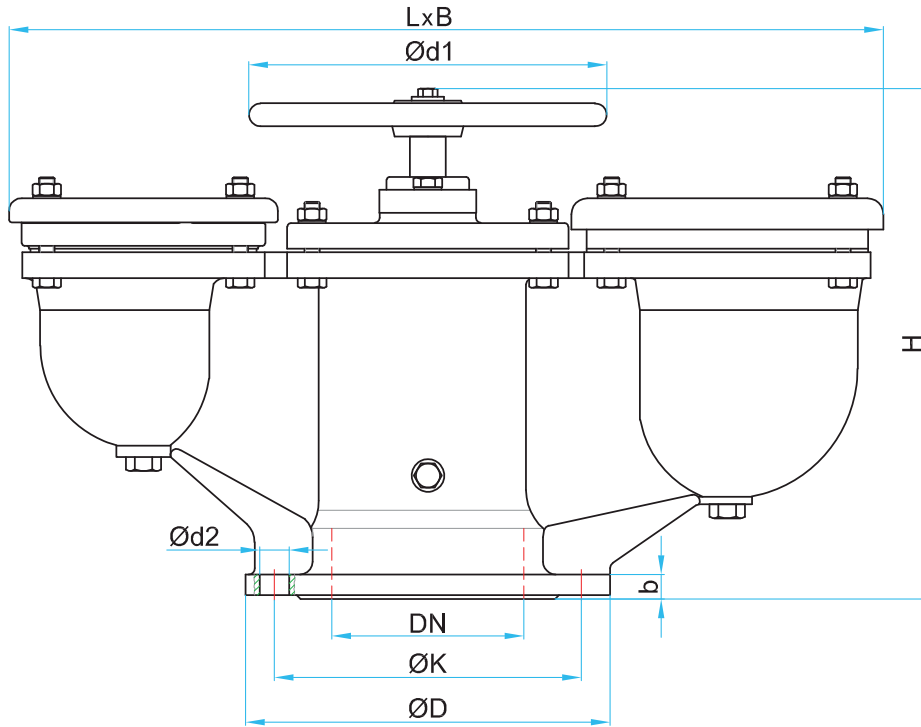
Part No.	Part Name	Part Material	1	2
01	Body	EN 1563/EN-GJS-400-15		
02	Float	** Polypropylene	•	
03	Float	** Polypropylene	•	
04	Degassing Gasket	EPDM	•	•
05	Valve support	EN 1563/EN-GJS-400-15		
06	Valve Seal	EPDM	•	•
07	Valve compression plate	EN 1563/EN-GJS-400-15		
08	Allen screw	ISO 3506-1 Gr.A2 Property Class 70		
09	Stem	DIN EN 10088-3/1.4021	•	
10	Washer	ASTM B148 UNS 95200	•	
11	Nut	ASTM B148 UNS 95200	•	
12	Stem nut	ASTM B148 UNS 95200	•	
13	O-ring	NBR	•	•
14	Mediate Bonnet	EN 1563/EN-GJS-400-15		
15	Washer	ISO 898-2 Property Class 8, Zinc Plated		
16	Hexagon screw	ISO 898-1 Property Class 8.8, Zinc Plated		
17	O-ring	NBR	•	•
18	Bush	ASTM B148 UNS 95200		
19	O-ring	NBR	•	•
20	O-ring	NBR	•	•
21	Bush housing	EN 1563/EN-GJS-400-15		
22	Driving shaft seal	PTFE	•	•
23	Washer	ISO 898-2 Property Class 8, Zinc Plated		
24	Hexagon screw	ISO 898-1 Property Class 8.8, Zinc Plated		
25	Fill. Empty Bonnet	EN 1563/EN-GJS-400-15		
26	Fill. Empty Gasket	EPDM(NBR on Request)	•	•
27	Support gasket	EN 1563/EN-GJS-400-15		
28	Washer	ISO 3506-2 Gr.A2 Property Class 70		
29	Hexagon screw	ISO 3506-1 Gr.A2 Property Class 70		
30	O-ring	NBR	•	•
31	Hexagon screw	ISO 898-1 Property Class 8.8, Zinc Plated		
32	Washer	ISO 898-2 Property Class 8, Zinc Plated		
33	Nut	ISO 898-2 Property Class 8, Zinc Plated		
34	Degassing bonnet	EN 1563/EN-GJS-400-15		
35	O-ring	NBR	•	•
36	Nuzzle	ASTM B148 UNS 95200	•	
37	Cover(big orifice)	EN 1563/EN-GJS-400-15		
38	Washer	ISO 898-2 Property Class 8, Zinc Plated		
39	Nut	ISO 898-2 Property Class 8, Zinc Plated		
40	Key	High Strength Carbon Steel-St 60		
41	Hand wheel	EN 1563/EN-GJS-400-15		
42	Washer	ISO 898-2 Property Class 8, Zinc Plated		
43	Hexagon screw	ISO 898-1 Property Class 8.8, Zinc Plated		
44	Plug screw	DIN EN 10088-3/1.4301		

(1) Recommended Spare Parts

(2) Depreciable Parts

**For pressure up to 40 bar Polypropylene and for higher pressure SS304
(SS304 is available for all pressures on request)

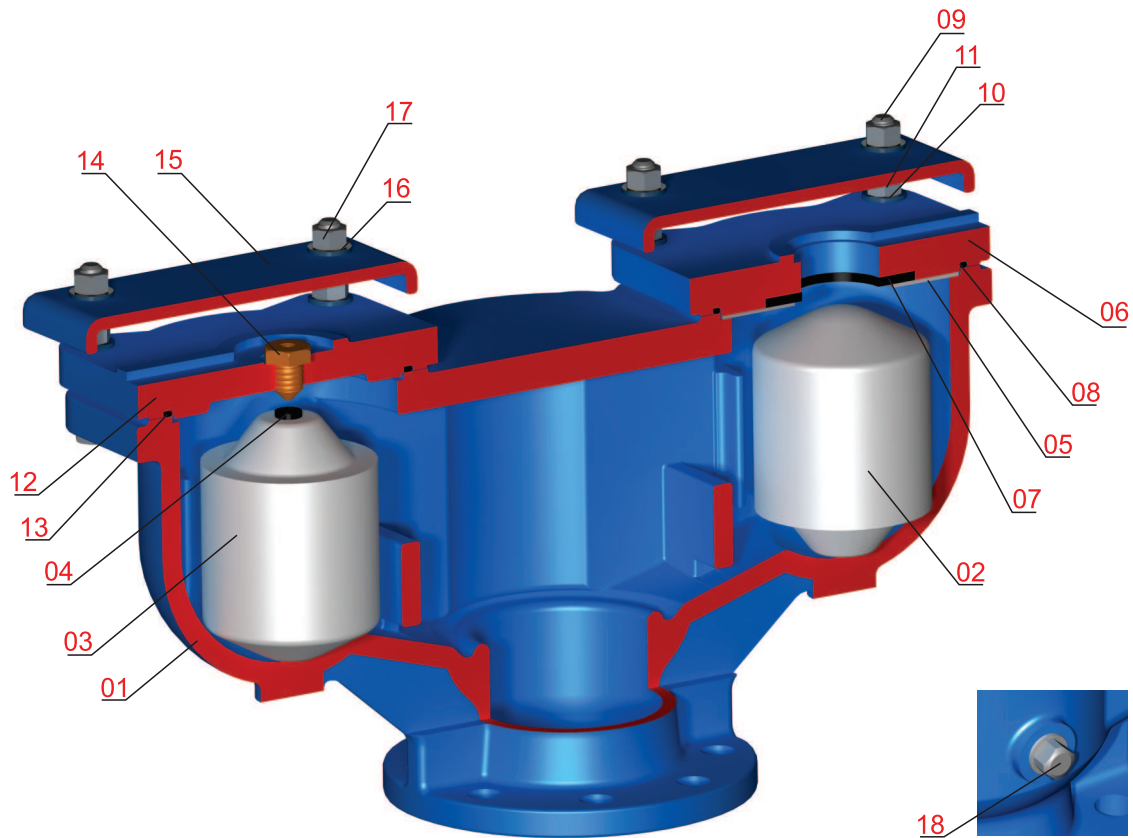
Dimensions and weight of Air valves (with integrated isolating mechanism):



- PN10 to 40 : DIN 1092-2 (DIN 2501)
- ANSI Class150 & 300 : ASME B16.5

DN mm	PN bar	•ØD mm	•ØK mm	•Ød2 mm	•n	•b mm	Ød1 mm	H mm	LxB mm	~W Kg	~V dm ³	
80	10	200	160	19	8	19	200	366	560x210	60	10	
	16											
	25											
	40											
	Class150											190
Class300	210	168.1	22.3	8	28.4	64.5						
100	10	220	180	19	8	19	200	366	560x210	62	10	
	16											
	25											
	40	235	190	23		23.9						63.5
	Class150	229	190.5	19.1		31.7						67.8
Class300	254	200.2	22.3	20	93							
150	10	285	240	23	8	19	280	400	684x220	94.5	15	
	16											
	25											
	40	300	250	28		25.4						103
	Class150	279	241.3	22.3		36.6						149
Class300	318	269.7	22.3	12	20	151.5						
200	10	340	295	23	8	20	280	475	830x284	157.5	15	
	16											
	25											
	40	375	320	31		30						153.3
	Class150	343	298.4	22.3		8						28.4
Class300	381	330.2	25.4	12	41.1	165						
250	10	400	350	23	12	22	280	475	830x395	160	15	
	16											
	25											
	40	425	370	31		24.5						166
	Class150	406	362	25.4		29.9						160
Class300	444	387.4	28.6	16	47.5	177						

Part list of Air valves (without integrated isolating mechanism):



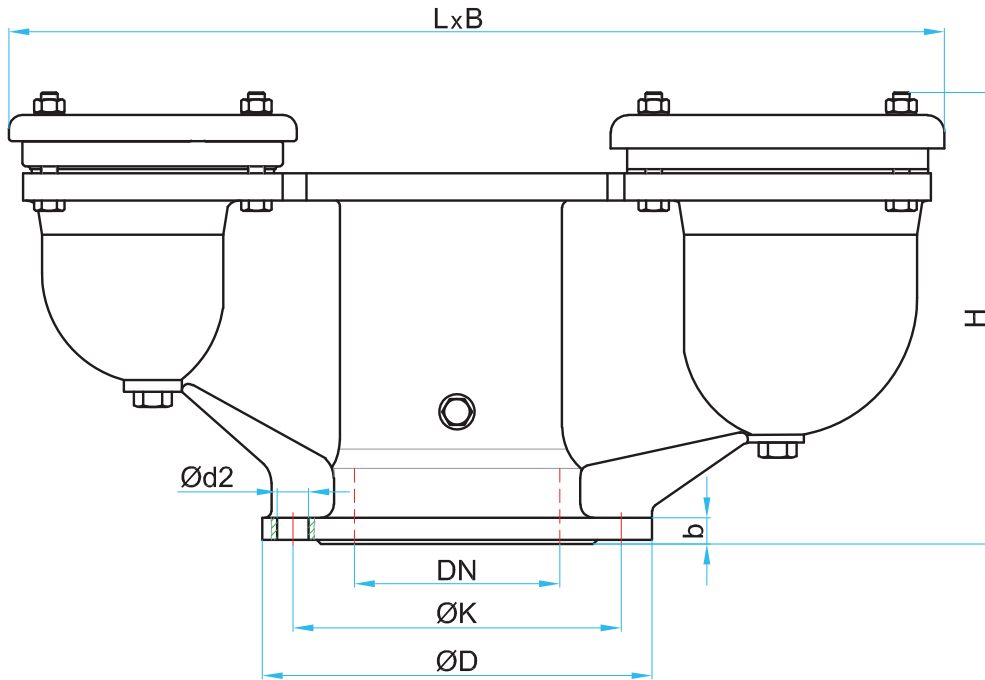
Part No.	Part Name	Part Material	1	2
01	Body	EN 1563/ EN-GJS-400-15		
02	Float	** Polypropylene	•	
03	Float	** Polypropylene	•	
04	Degassing Gasket	EPDM	•	•
05	Disc	DIN EN 10088-3/1.4301	•	
06	Fill.Empt.Bonnet	EN 1563/EN-GJS-400-15		
07	Fill.Empt.Gasket	EPDM	•	•
08	O-ring	NBR	•	•
09	Hexagon screw	ISO 898-1 Property Class 8.8, Zinc Plated		
10	Washer	ISO 898-2 Property Class 8, Zinc Plated		
11	Nut	ISO 898-2 Property Class 8, Zinc Plated		
12	Degassing bonnet	EN 1563/EN-GJS-400-15		
13	O-ring	NBR	•	•
14	Nuzzle	ASTM B148 UNS 95200	•	
15	Cover(big orifice)	EN 1563/EN-GJS-400-15		
16	Washer	ISO 898-2 Property Class 8, Zinc Plated		
17	Nut	ISO 898-2 Property Class 8, Zinc Plated		
18	Plug screw	DIN EN 10088-3/1.4301		

(1) Recommended Spare Parts

(2) Depreciable Parts

**For pressure up to 25 bar Polypropylene and for higher pressure SS304
(SS304 is available for all pressures on request)

Dimensions and weight (Air valves without integrated isolating mechanism) :



- PN10 to 40 : DIN 1092-2 (DIN 2501)
- ANSI Class150 & 300 : ASME B16.5

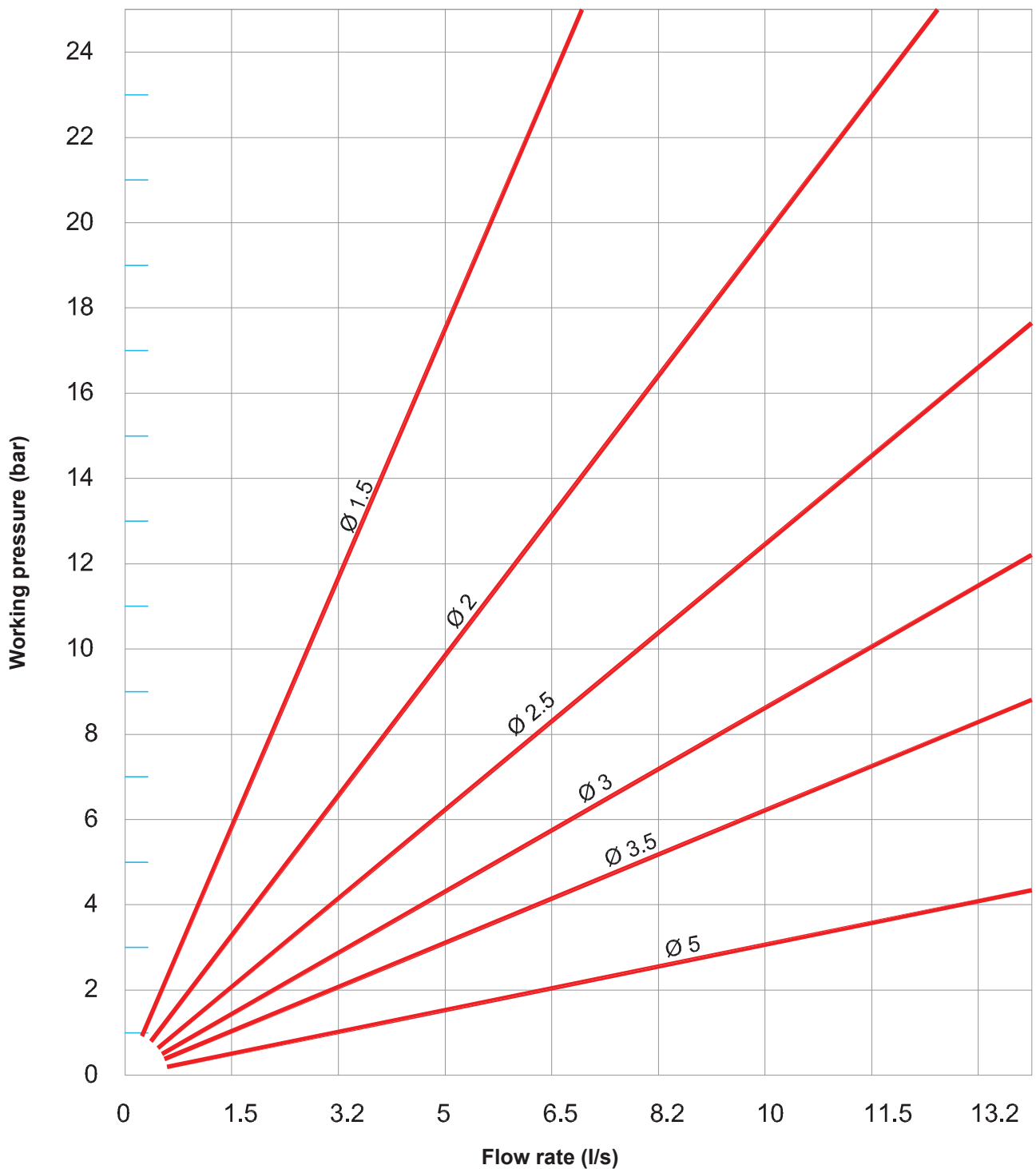
DN mm	PN bar	•ØD mm	•ØK mm	•Ød2 mm	•n	•b mm	H mm	LxB mm	~W Kg	~V dm ³
80	10	200	160	19	8	19	254	560x210	26	10
	16									
	25									
	40									
	Class150	190	152.4	19.1	4	23.9				
Class300	210	168.1	22.3	8	28.4					
100	10	220	180	19	8	19	254	560x210	27	10
	16									
	25									
	40									
	Class150	229	190.5	19.1	4	23.9				
Class300	254	200.2	22.3	8	31.7					
150	10	285	240	23	8	19	274	684x220	47	15
	16									
	25									
	40									
	Class150	279	241.3	22.3	8	25.4				
Class300	318	269.7	22.3	12	36.6					
200	10	340	295	23	8	20	378	830x284	85	15
	16									
	25									
	40									
	Class150	343	298.4	22.3	8	28.4				
Class300	381	330.2	25.4	12	41.1					
250	10	400	350	23	12	22	378	830x395	95	15
	16									
	25									
	40									
	Class150	406	362	25.4	8	29.9				
Class300	444	387.4	28.6	16	47.5					



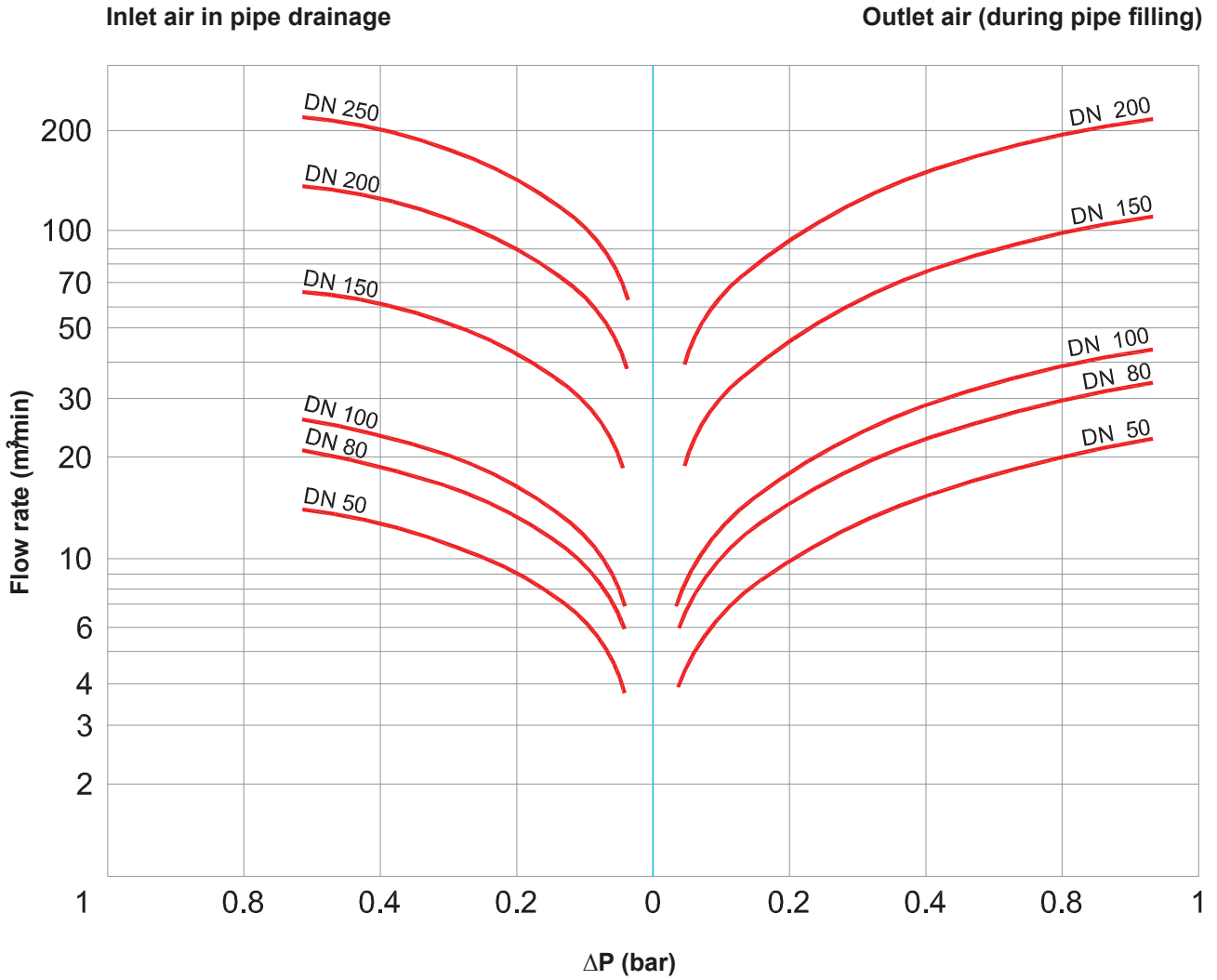
Areas of Large and small orifices:

DN (mm)	100	150	200
Large orifice (mm ²)	1925	6082	12272
Small orifice (mm ²)	1.7	1.7	1.7

Amounts of released air under working pressure



Inlet/ outlet air flow rate for the large chamber:





IRAN

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