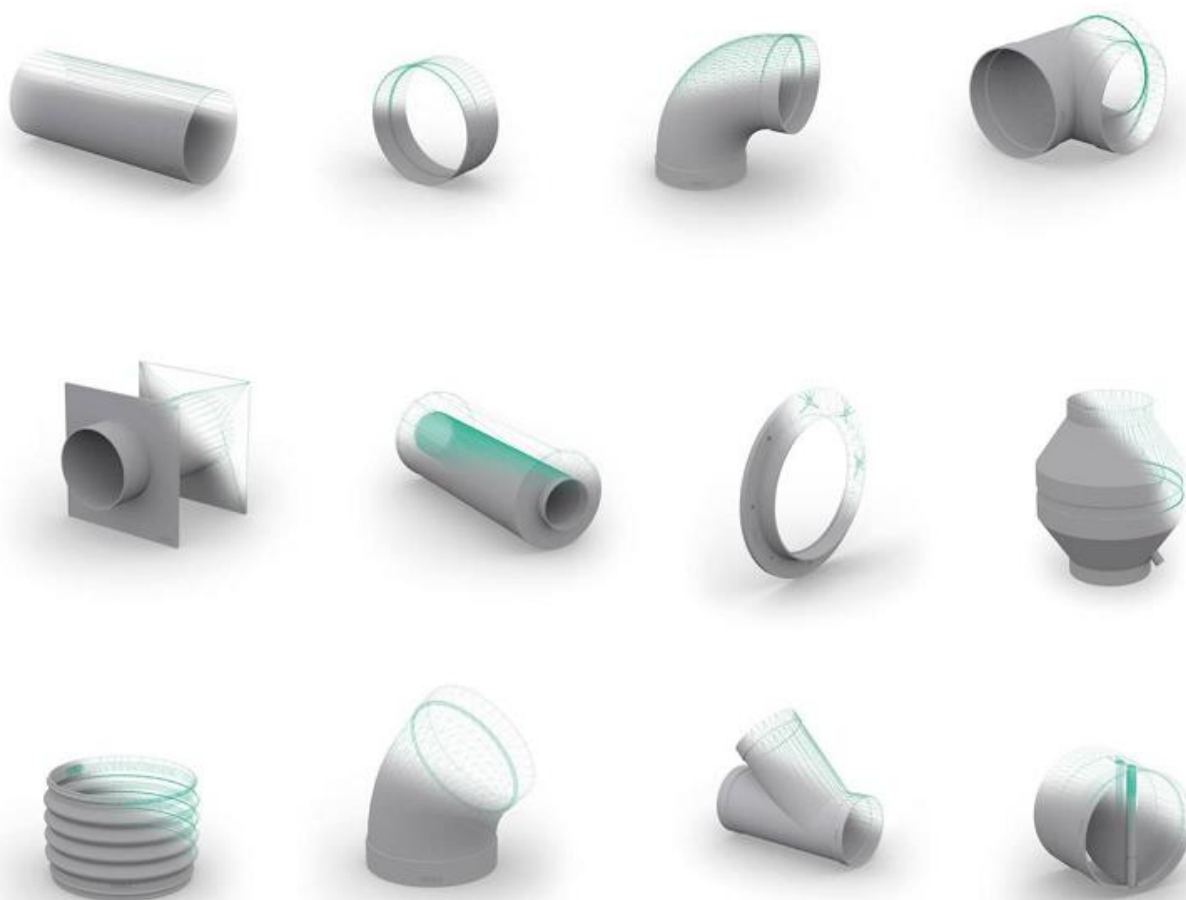


Polymeric airways and shaped objects

«UralActiv»

Version 9. 15.12.2015





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Introduction



The company “UralActiv” manufactures shaped objects for ventilation systems from different types of polymeric materials.

Due to great properties of these polymers our shaped objects are used in many industry areas where the chemical resistance, corrosion resistance, leak resistance, economical efficiency, light weight, long service life and environmental compatibility are needed.

Scope of application:

- laboratories;
- chemical industry;
- clear rooms;
- surface working (etching, galvanic process);
- hospitals;
- production of chlorine.



One of the main advantages of thermoplastic material as compared to metallic systems with the same properties is the relative **low cost**; it gives more economical efficiency together with the long service life.

The main materials used in products – grey polypropylene RAL7032 and black polyethylene. On special order other types of materials are available.



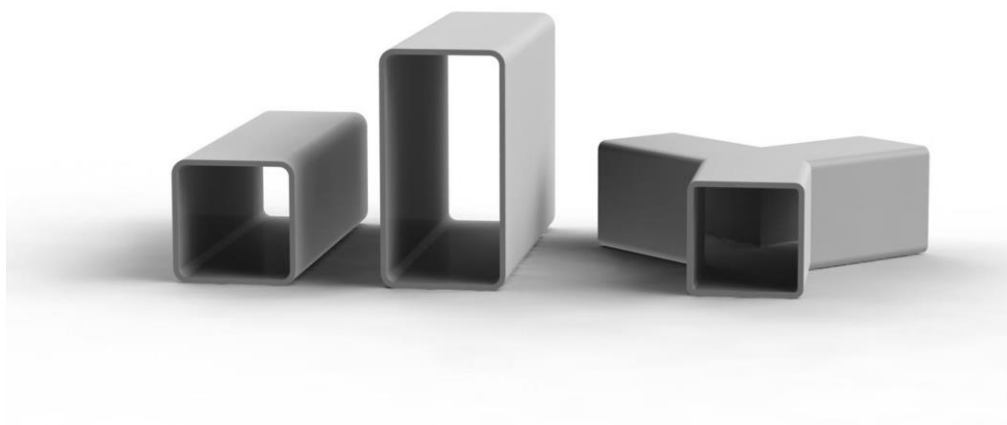
Available types of plastic:

- PP** – polypropylene
- PPs** – flame-resistant polypropylene
- PP-EL-s** – electrically conductive, flame-resistant polypropylene
- PE** – polyethylene
- PVC** – polyvinyl chloride
- PVDF** – polyvinylidene fluoride



Also our company can design and manufacture other products from polymers:

- **Airways** of any cross-section on individual request.
- **Dampers**, manually operated **valves** and for electric drive.
- Plastic **sound attenuators**.
- **Heat exchanger air-to-air, air-to-water**.
- **Staking frames for airways** of round and rectangular cross-section.
- **Flanges**.
- Plastic **crosses**.
- **Access holes**.





The main properties of polypropylene:

- **Low density.** The density of homogeneous (monolithic) polypropylene sheet – 0.92 g/cc. The density of our composite sheets and plates from light polypropylene can be 0.7 g/cc.
- **High strength of material.** The constructions of polypropylene can be more solid than constructions of steel with the same weight. The strength of polypropylene sheets is 3-4 times higher by the static load than the strength of polyethylene.
- **Frost-resistance.** The sheets of block copolymer polypropylene can be used by the temperature to -40° C.
- **Chemical resistance in aggressive mediums.** It is used in organic and inorganic concentrated and diluted acids.
- **The material is safe for human health.** The sheets and plates of polypropylene can be used in production of reservoir for drinking water, swimming pools, in food industry. The polypropylene sheets are widely used in production of treatment facilities. All our products from polypropylene have Sanitary-Epidemiological Conclusion Certificate.
- **It is easy to undergo the mechanical processing.** It can be compared with the easy processing of wood.
- **Simple and safety welding of polypropylene sheets.**
- **Good dielectric properties.**

Table 1 – Characteristics of sheets made from block copolymer polypropylene

Main properties	Value	Measuring unit	Testing method
Unit weight, density	0.9-0.92	g/cc	ISO 1183
Composition of material	PP-C: block copolymer polypropylene		
Toxicity	Non toxic		
Tensile stress by fluidity (tensile yield stress)	29	N/mm ²	ISO 527-1 GOST 14236-81
Elongation at yield stress	10	%	ISO 527-1 GOST 14236-81
Elongation at break	>50	%	ISO 527-1 GOST 14236-81
Modulus of elasticity for tension	1400	N/mm ²	ISO 527-1 GOST 14236-81
Notched impact strength	66	mJ/mm ²	ISO 179
Notched Izod impact resistance (-30°C, method A*)	6.0 (V=6.6%)	kJ/m ²	ISO 180/A
Notched Izod impact resistance (-50°C, method A*)	4.1 (V=3.8%)	kJ/m ²	ISO 180/A
Unnotched Charpy impact resistance value (-50°C)	N n/ breakage	kJ/m ²	ISO-179/3.2fU
Shore hardness	68		ISO 868
Flame reaction	HB		UL 94
melting point	162-167°C		DSC
heat conduction	0.1...0.15 (*)	w/mK	DIN 52612
Linear expansion coefficient by 20g	1-2*10 ⁻⁴ (*)	l/K	DIN 53752
Temperature limit (short-term)	-60...150 (*)	°C	
Temperature limit	-50...100 (*)	°C	DRUCK- UND MEDIE
Flame reaction	B2		DIN 4102
Dielectric resistance	>10 ¹⁴	Ohm x cm	DIN VDE 0303
Surface resistance	>10 ¹³	Ohm	DIN VDE 0303
Electrical breakdown resistance	CTI 600	Stage	IEC 60112
Electric strength	>30	kV/mm	IEC 60243
Electric coefficient	2.3 (*)		DIN VDE 0303-4
Dielectric loss factor	1.9*10 ⁻⁴ (*)		DIN VDE 0303-4
Arc resistance	L4 (*)	Degree	DIN VDE 0303

Values above are the average values of statistical report and analysis. Data are intended only for information and should not be considered as obligatory (if it is not indicated in sale and purchase contract).

*) data from literature.

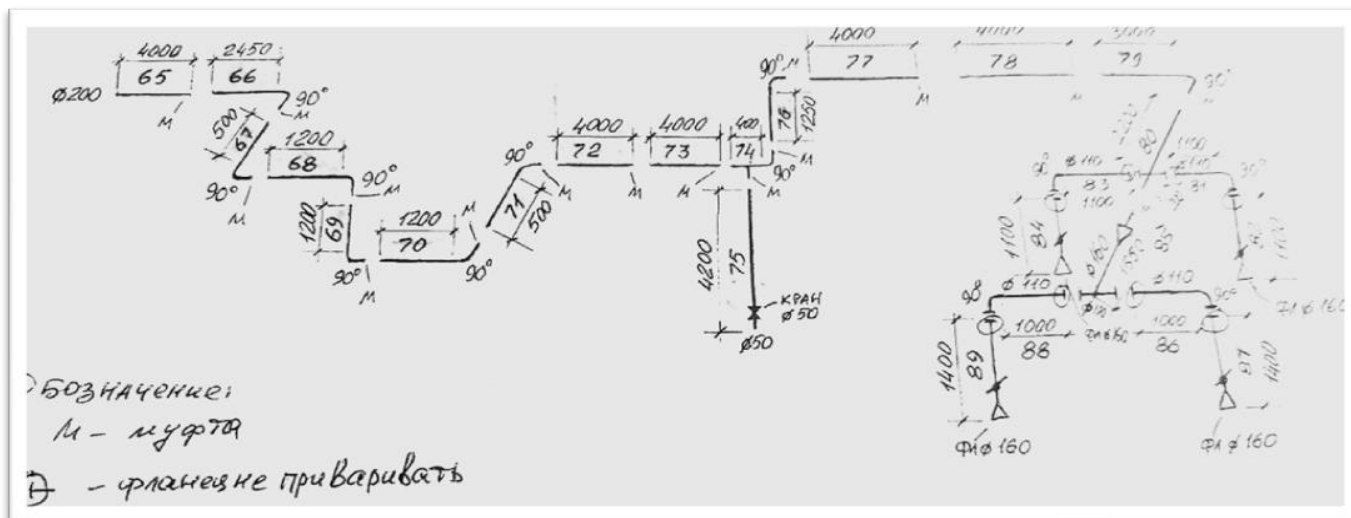
***) depend on pressure and environment.



Producing of plastic ventilation

Airways are the important elements of any ventilation system. Airways are integrated in one system of straight segments with shaped objects – beds, reducers, branch outlet and other objects, which are intended for merging, division, change of direction, widening and narrowing of air flow. For that reason our company can join and adjust airways from PP, PE and supply plastic ventilation elements assembled according to your request. It considerably hastens the assembling of air circuits.

We help you to realize charts of blowing, exhaust and combined ventilation made from plastic materials!

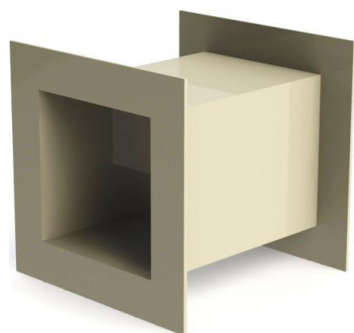




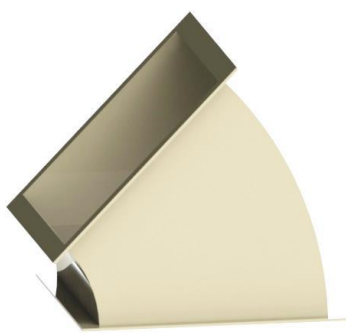
Rectangular airways

The company “UralActiv” produces plastic airways of square or rectangular cross-section with different dimensions from polypropylene and polyethylene sheets. Rectangular PP airways are most commonly used elements for ventilation; they are in demand in the sphere of climate control equipment and ventilation systems. It is connected with the possibility to use airways of rectangular cross-section for the mounting of any ventilation system due to the easiness of production, universality and standardized construction.

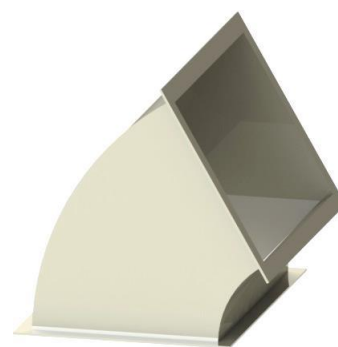
Unlike the airways made from metal and galvanized steel, the PP and PE airways are resistant to corrosion and destruction, have good chemical resistance and are simply to maintain.



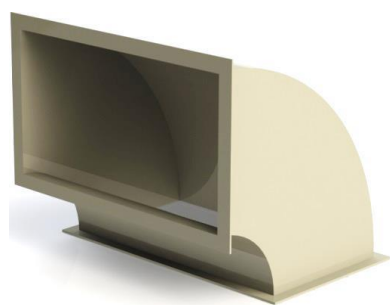
Straight sections



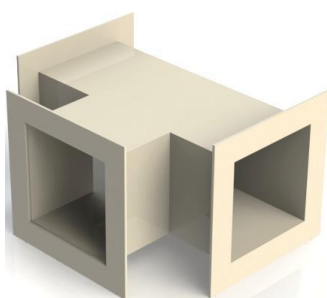
Bends 45°



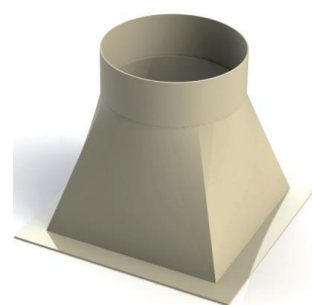
Bends 60°



Bends 90°



Branch outlet



Reducers

Round airways

Airways with round cross-section are made in different versions of connection to each other. Airways are divided in following types depends on version of connection.

Types of airways' connection

Type 1 – M – Muff

Type 2 – F – Flange

Type 3 – FF – Flanges on both ends

Type 4 – MF – Muff + Flange



Type 1



Type 2



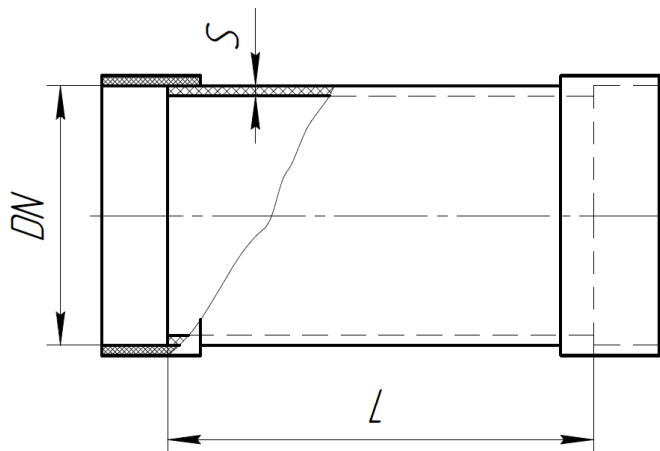
Type 3



Type 4

Table of dimensions for airways

Size of pipe	Wall thickness	Possible length	Color
DN	S, mm	L, m	
50	2	0,5 - 3	Dark grey
110	3	0,5 - 3	
160	3	0,5 - 3	
180	3	0,5 - 1	Polypropylene RAL 7032 grey; Polyethylene - black
200	3	0,5 - 1	
225	3	0,5 - 1	
250	3	0,5 - 1	
280	3	0,5 - 1	
315	3	0,5 - 1,5	
355	3	0,5 - 2	
400	3	0,5 - 2	
450	3	0,5 - 2	
500	5	0,5 - 2	
560	5	0,5 - 2	
600	5	0,5 - 2	
630	5	0,5 - 2	
700	5	0,5 - 2	
710	8	0,5 - 2	
800	8	0,5 - 2	
900	10	0,5 - 2	
1000	10	0,5 - 2	
1200	12	0,5 - 2	
1250	12	0,5 - 2	
1300	12	0,5 - 2	
1400	12	0,5 - 2	
1500	12	0,5 - 2	
1600	12	0,5 - 2	
1700	12	0,5 - 2	
1800	12	0,5 - 2	
1900	12	0,5 - 2	
2000	12	0,5 - 2	
2100	12	0,5 - 2	
2200	12	0,5 - 2	



Designation of airway

Airway UA-PP-DNxS-L-type

- UA** – UralActiv
- PP** – type of polymer – polypropylene
- DN** – outer diameter
- S** – wall thickness
- L** – length of airway
- Type** – type of airway (M, F, MM, MF)

Example of designation:

Airway UA-PP-700x5-500-MF



Bends

Ventilation bends are manufactured in different versions of connection to each other. They are divided in several types depends on it.

Types of bends' connection

Type 1 – FF – Flanges on both ends

Type 2 – MF – Muff + Flange

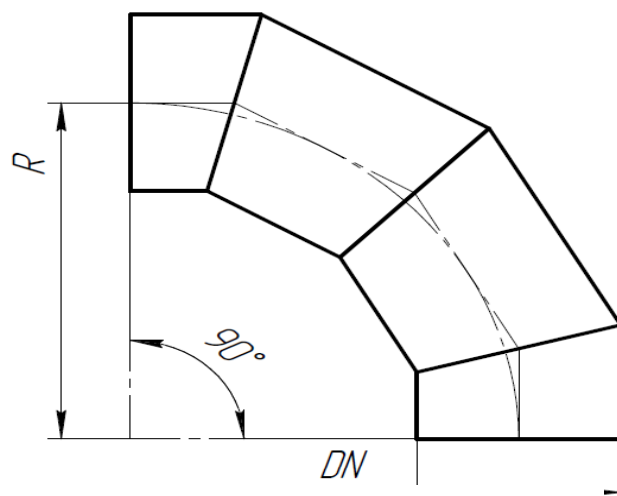
Also bends have different bending angles:

- Bend 90°
- Bend 60°
- Bend 45°



Table of dimensions for bends 90°

Size of bend	Wall thickness	Radius of bend	Color
DN, mm	S, mm	R, mm	
50	2	50	Dark grey
110	3	110	
160	3	160	Red
180	3	180	
200	3	200	Polypropylene - RAL 7032 grey; Polyethylene - black
225	3	225	
250	3	250	
280	3	280	
315	3	315	
355	3	355	
400	3	400	
450	3	450	
500	5	500	
560	5	560	
600	5	600	
630	5	630	
700	5	700	
710	8	710	
800	8	800	
900	10	900	
1000	10	1000	
1200	12	1200	
1250	12	1250	
1300	12	1300	
1400	12	1400	
1500	12	1500	
1600	12	1600	
1700	12	1700	
1800	12	1800	
1900	12	1900	
2000	12	2000	
2100	12	2100	
2200	12	2200	



Designation of bends

Bend UA90-PP-DNxS-type

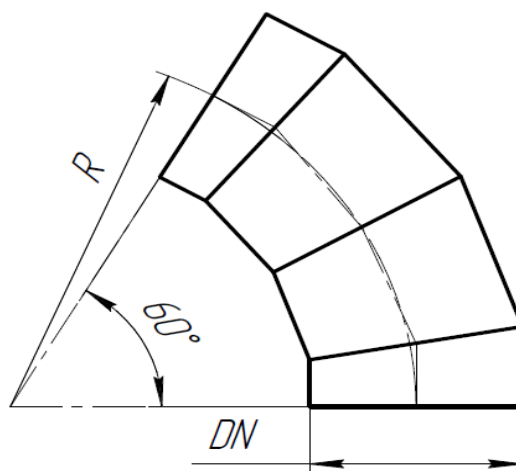
- UA** – UralActiv
- 90** – bending angle
- PP** – type of polymer – polypropylene
- DN** – outer diameter
- S** – wall thickness
- Type** – type of bend (FF, MM)

Example of designation:

Bend UA90-PP-500x5-FF

Table of dimensions for bends 60°

Size of bend	Wall thickness	Radius of bend	Color
DN, mm	S, mm	R, mm	
110	3	110	Dark grey
160	3	160	Red
180	3	180	Polypropylene - RAL 7032 grey; Polyethylene - black
200	3	200	
225	3	225	
250	3	250	
280	3	280	
315	3	315	
355	3	355	
400	3	400	
450	3	450	
500	5	500	
560	5	560	
600	5	600	
630	5	630	
700	5	700	
710	8	710	
800	8	800	
900	10	900	
1000	10	1000	
1200	12	1200	
1250	12	1250	
1300	12	1300	
1400	12	1400	
1500	12	1500	
1600	12	1600	
1700	12	1700	
1800	12	1800	
1900	12	1900	
2000	12	2000	
2100	12	2100	
2200	12	2200	



Designation of bends

Bend UA60-PP-DNxS-type

UA – UralActiv

60 – bending angle

PP – type of polymer – polypropylene

DN – outer diameter

S – wall thickness

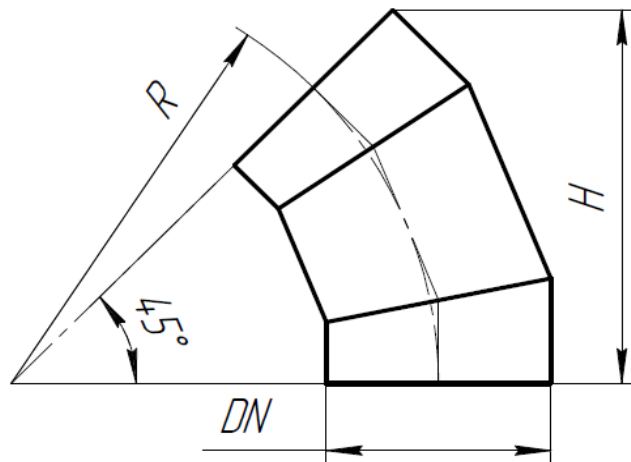
Type – type of bend (FF, MM)

Example of designation:

Bend UA60-PP-800x5-MM

Table of dimensions for bends 45°

Size of bend	Wall thickness	Radius of bend	Color
DN, mm	S, mm	R, mm	
50	2	50	Dark grey
110	3	110	
160	3	160	Red
180	3	180	Polypropylene - RAL 7032 grey; Polyethylene - black
200	3	200	
225	3	225	
250	3	250	
280	3	280	
315	3	315	
355	3	355	
400	3	400	
450	3	450	
500	5	500	
560	5	560	
600	5	600	
630	5	630	
700	5	700	
710	8	710	
800	8	800	
900	10	900	
1000	10	1000	
1200	12	1200	
1250	12	1250	
1300	12	1300	
1400	12	1400	
1500	12	1500	
1600	12	1600	
1700	12	1700	
1800	12	1800	
1900	12	1900	
2000	12	2000	
2100	12	2100	
2200	12	2200	



Designation of bends

Bend UA45-PP-DNxS-type

UA – UralActiv

45 – bending angle

PP – type of polymer – polypropylene

DN – outer diameter

S – wall thickness

Type – type of bend (FF, MM)

Example of designation:

Bend UA45-PP-600x5-MM

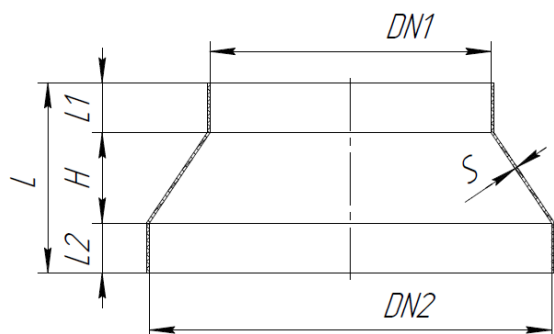
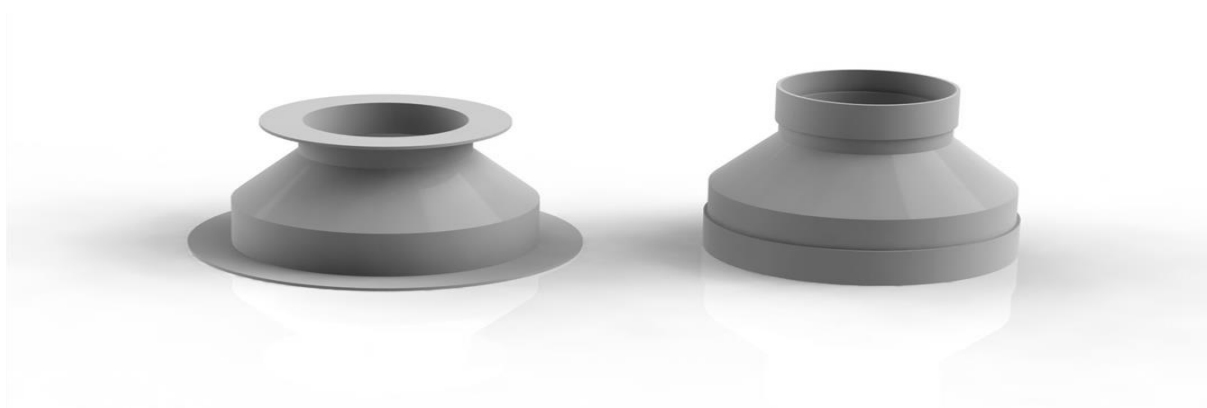
Reducers

Reducers are manufactured in different versions of connection to each other. They are divided in several types depends on it.

Types of reducers' connection

Type 1 – FF – Flanges on both ends

Type 2 – MM – Muff on both ends



Designation of reducers

Reducer UA-PP-DN1xDN2-S-type

UA – UralActiv

PP – type of polymer – polypropylene

DN1 – small diameter

DN2 – large diameter

S – wall thickness

Type – type of reducer (FF, MM)

Example of designation:

Reducer UA-PP-250x400-5-MM



Table of dimensions for reducers

Size of reducer		Dimensions				
DN1	DN2	H, mm	L1, mm	L2, mm	S, mm	L, mm
110	125	40	40	40	2,5	120
	140	80	40	40	2,5	160
	160	140	40	40	2,5	220
	180	50	40	40	2,5	130
	200	65	40	40	2,5	145
160	180	60	40	40	2,5	140
	200	120	40	40	2,5	200
	225	100	40	40	2,5	180
	250	120	40	40	2,5	200
	280	85	40	50	2,5	175
	315	115	40	50	2,5	205
180	200	75	40	40	2,5	155
	225	85	40	40	2,5	165
	250	100	40	40	2,5	180
	280	65	40	50	2,5	150
	315	100	40	50	2,5	190
200	225	80	40	40	2,5	160
	250	140	40	40	2,5	220
	280	105	40	50	2,5	195
	315	160	40	50	2,5	250
	355	115	40	50	2,5	205
225	250	80	40	40	2,5	160
	280	40	40	50	2,5	130
	315	65	40	50	2,5	155
	355	95	40	50	2,5	185
	400	125	40	50	2,5	215
250	280	35	40	50	2,5	125
	315	100	40	50	2,5	190
	355	140	40	50	2,5	230
	400	105	40	50	2,5	195
	450	145	40	50	2,5	235
280	315	100	50	50	2,5	200
	355	65	50	50	2,5	165
	400	90	50	50	2,5	190
	450	120	50	50	2,5	220
	500	160	50	50	2,5	260
315	355	50	50	35	2,5	135
	400	75	50	40	2,5	165
	450	120	50	45	2,5	215
	500	160	50	50	2,5	260
	355	400	100	50	40	3
450		80	50	45	3	175
500		125	50	50	3	225
560		180	50	55	3	285
600		215	50	60	3	325
630		240	50	60	3	350
700		300	50	70	3	420
710		310	50	70	3	430
800		385	50	80	3	515
900		475	50	90	3	615
1000	560	50	100	3	710	

Size of reducer		Dimensions					
DN1	DN2	H, mm	L1, mm	L2, mm	S, mm	L, mm	
400	450	45	50	50	3	145	
	500	85	50	50	3	185	
	560	140	50	55	3	245	
	600	175	50	60	3	285	
	630	205	50	60	3	315	
	700	265	50	70	3	385	
	710	270	50	70	3	390	
	800	350	50	80	3	480	
	900	435	50	90	3	575	
	1000	520	50	100	3	670	
450	500	45	50	50	5	145	
	560	100	50	55	5	205	
	600	130	50	60	5	240	
	630	160	50	60	5	270	
	700	220	50	70	5	340	
	710	230	50	70	5	350	
	800	305	50	80	5	435	
	900	395	50	90	5	535	
	1000	480	50	100	5	630	
	500	560	55	50	55	5	160
600		90	50	60	5	200	
630		115	50	60	5	225	
700		175	50	70	5	295	
710		185	50	70	5	305	
800		265	50	80	5	395	
900		350	50	90	5	490	
1000		435	50	100	5	585	
560		600	40	60	60	6	160
		630	65	60	60	6	185
	700	125	60	70	6	255	
	710	135	60	70	6	265	
	800	215	60	80	6	355	
	900	300	60	90	6	450	
	1000	385	60	100	6	545	
	600	630	30	60	60	6	150
		700	90	60	70	6	220
		710	100	60	70	6	230
800		180	60	80	6	320	
900		265	60	90	6	415	
1000		350	60	100	6	510	
1200		525	60	120	6	705	
1250		570	60	125	6	755	
630		700	65	60	70	6	195
		710	75	60	70	6	205
	800	155	60	80	6	295	
	900	240	60	90	6	390	
	1000	325	60	100	6	485	
	1200	500	60	120	6	680	
	1250	540	60	125	6	725	



Table of dimensions for reducers (continuation)

Size of reducer		Размеры				
DN1	DN2	H, mm	L1, mm	L2, mm	S, mm	L, mm
700	710	30	70	70	6	170
	800	90	70	80	6	240
	900	180	70	90	6	340
	1000	265	70	100	6	435
	1200	440	70	120	6	630
	1250	480	70	125	6	675
710	800	85	70	80	8	235
	900	170	70	90	8	330
	1000	255	70	100	8	425
	1200	430	70	120	8	620
	1250	475	70	125	8	670
800	900	90	80	90	8	260
	1000	180	80	100	8	360
	1200	350	80	120	8	550
	1250	395	80	125	8	600
900	1000	90	90	100	8	280
	1200	265	90	120	8	475
	1250	310	90	125	8	525
1000	1200	180	100	120	10	400
	1250	220	100	125	10	445
	1300	260	100	130	10	490
	1400	345	100	140	10	585
	1500	430	100	150	10	680
1200	1250	100	120	125	12	345
	1300	110	120	130	12	360
	1400	170	120	140	12	430
	1500	260	120	150	12	530
	1600	350	120	160	12	630
1250	1300	100	125	130	12	355
	1400	130	125	140	12	395
	1500	215	125	150	12	490
	1600	300	125	160	12	585
	1700	390	125	170	12	685
1300	1400	100	130	140	12	370
	1500	170	130	150	12	450
	1600	260	130	160	12	550
	1700	350	130	170	12	650
	1800	430	130	180	12	740
1400	1500	110	140	150	12	400
	1600	170	140	160	12	470
	1700	260	140	170	12	570
	1800	350	140	180	12	670
	1900	430	140	190	12	760
1500	1600	110	150	160	12	420
	1700	170	150	170	12	490
	1800	260	150	180	12	590
	1900	350	150	190	12	690
2000	430	150	200	12	780	

Size of reducer		Dimensions				
DN1	DN2	H, mm	L1, mm	L2, mm	S, mm	L, mm
1600	1700	110	160	170	12	440
	1800	170	160	180	12	510
	1900	260	160	190	12	610
	2000	350	160	200	12	710
	2100	430	160	210	12	800
1700	1800	150	170	180	12	500
	1900	170	170	190	12	530
	2000	260	170	200	12	630
	2100	350	170	210	12	730
	2200	430	170	220	12	820
1800	1900	150	180	190	12	520
	2000	170	180	200	12	550
	2100	260	180	210	12	650
	2200	350	180	220	12	750
1900	2000	150	190	200	12	540
	2100	170	190	210	12	570
	2200	260	190	220	12	670
2000	2100	150	200	210	12	560
	2200	170	200	220	12	590
2100	2200	150	210	220	12	580

Branch outlet

Branch outlets are manufactured in different versions of connection to each other. They are divided in several types depends on it.

Types of branch outlets' connection

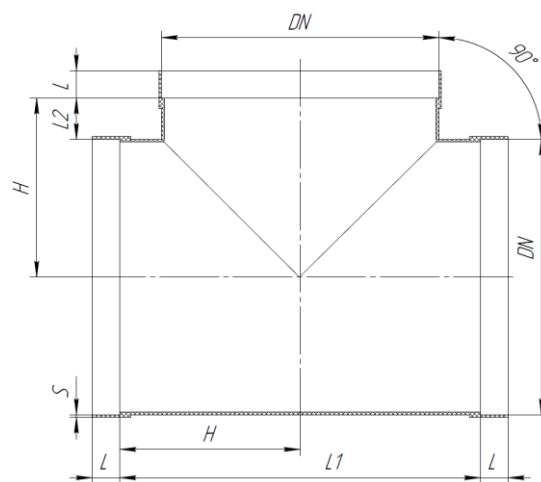
Type 1 – FF – Flanges on both ends

Type 2 – MM – Muff on both ends

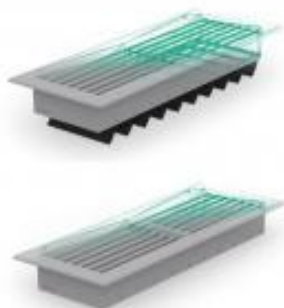
Table of dimensions for branch outlets

Size of branch outlet	Dimensions					Color
DN	L, mm	L1, mm	L2, mm	H, mm	S, mm	
50	70	90	15	65	3	Dark grey
110	70	143	17	72	3	
160	70	208	24	104	3	Red
180	70	360	90	180	3	
200	70	400	100	200	3	
225	70	445	110	222,5	3	
250	70	500	125	250	3	
280	70	560	140	280	3	
315	70	635	160	317,5	5	
355	70	715	180	357,5	5	
400	70	800	200	400	5	
450	70	900	225	450	5	
500	70	1000	250	500	5	
560	70	1120	280	560	5	
600	70	1200	300	600	5	
630	70	1260	315	630	6	
700	70	1400	350	700	6	
710	70	1420	355	710	6	
800	70	1600	400	800	8	
900	70	1800	450	900	8	
1000	70	2000	500	1000	10	
1200	70	2400	600	1200	12	
1250	70	2500	625	1250	12	
1300	70	2600	650	1300	12	
1400	70	2800	700	1400	12	
1500	70	3000	750	1500	12	
1600	70	3200	800	1600	12	
1700	70	3400	850	1700	12	
1800	70	3600	900	1800	12	
1900	70	3800	950	1900	12	
2000	70	4000	1000	2000	12	
2100	70	4200	1050	2100	12	
2200	70	4400	1100	2200	12	

Polypropylene - RAL 7032 grey;
Polyethylene - black



Inlet/outlet grille with rectangular stacking frame



- Chemical resistance to aggressive mediums.
- Light weight, simple assembly.
- Long service life.
- 100% leak resistance.
- Lower service costs (smooth surfaces don't accumulate sediments).
- Environment protection, products are recyclable.

*Types of polymeric materials:

PVC – polyvinyl chloride

PP – polypropylene

PPs – flame-resistant polypropylene

PP-EL-s – electrically conductive, flame-resistant polypropylene

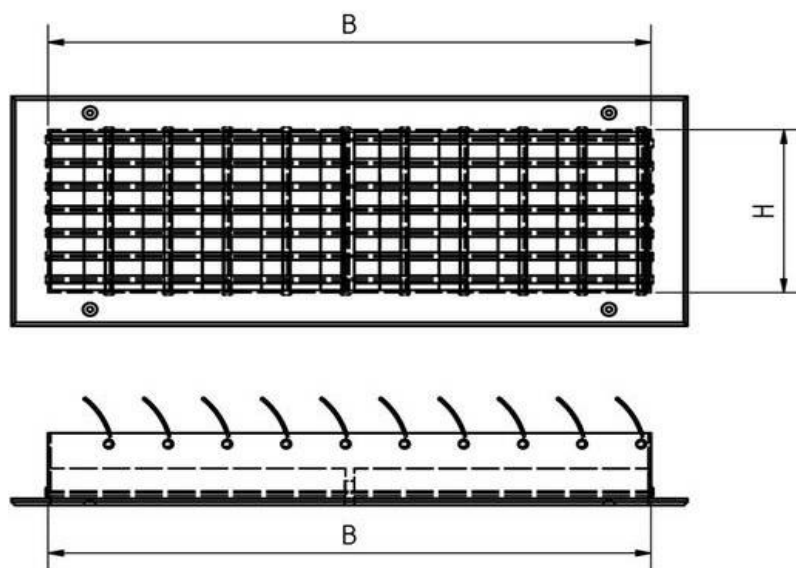
PE – polyethylene

PVDF – polyvinylidene fluoride

Range of sizes

H	B
300	100
400	100
500	100
600	100
300	150
400	150
500	150
600	150
300	200
400	200
500	200
600	200
300	250
400	250
500	250
600	250

Technical drawing



We produce all available sizes of inlet/outlet grille on your request!

Roof heads

- Chemical resistance to aggressive mediums.
- Light weight, simple assembly.
- Long service life.
- 100% leak resistance.
- Lower service costs (smooth surfaces don't accumulate sediments).
- Environment protection, products are recyclable.

*Types of polymeric materials:

PVC – polyvinyl chloride

PP – polypropylene

PPs – flame-resistant polypropylene

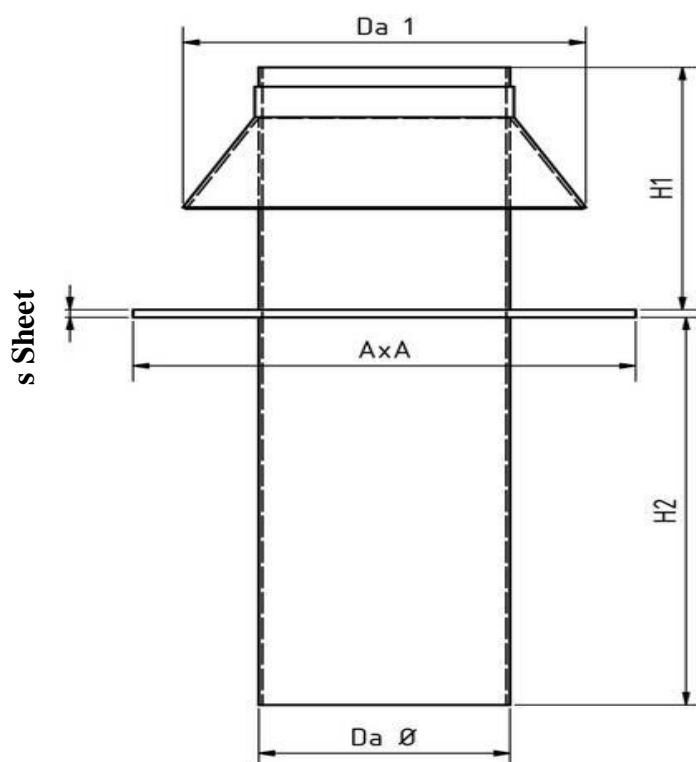
PP-EL-s – electrically conductive, flame-resistant polypropylene

PE – polyethylene

PVDF – polyvinylidene fluoride

Roof head 0°

Technical drawing





Ø	PVC						PE/PP/PPs/PP-EL-s/PVDF						Thickness of the pipe wall			
	H1	H2	A x A	Ø 1	s Sheet	s Pipe	H1	H2	A x A	Ø 1	s Sheet	PPS	PP	PE	PP-el-s	
110*	250	400	350x350	200	8,0	1,8	250	400	350x350	200	8,0	3,0	2,7	3,4	3,0	
160**	250	400	400x400	315	8,0	1,8	250	400	400x400	315	8,0	3,0	4,0	4,0	3,0	
180	250	400	400x400	315	8,0	1,8	250	400	400x400	315	8,0	3,0	4,4	5,5	3,0	
200	250	400	400x400	315	8,0	1,8	250	400	400x400	315	8,0	3,0	3,0	6,2	3,0	
225	250	400	450x450	400	10,0	1,8	250	400	450x450	400	10,0	3,5	5,5	6,9	3,5	
250	250	400	450x450	450	10,0	2,0	250	400	450x450	450	10,0	3,5	3,5	6,2	3,5	
280	250	400	500x500	500	10,0	2,3	250	400	500x500	500	10,0	3,5	6,9	8,6	3,5	
315	250	400	500x500	500	10,0	2,5	250	400	500x500	500	10,0	5,0	5,0	7,7	5,0	
355	250	400	550x550	500	10,0	2,9	250	400	550x550	500	10,0	5,0	5,0	10,9	5,0	
400	250	400	600x600	500	10,0	3,2	250	400	600x600	500	10,0	6,0	6,0	12,3	6,0	
450	250	400	750x750	600	10,0	5,0	250	400	750x750	600	10,0	6,0	6,0	6,0	6,0	
500	250	400	800x800	700	10,0	5,0	250	400	800x800	700	10,0	6,0	6,0	6,0	6,0	
560	-	-	-	-	-	-	250	400	860x860	800	10,0	6,0	6,0	6,0	6,0	
600	250	400	900x900	800	10,0	6,0	250	400	900x900	800	10,0	6,0	6,0	6,0	6,0	
630	-	-	-	-	-	-	250	400	930x930	800	10,0	6,0	6,0	6,0	6,0	
700	250	400	1100x1100	900	12,0	6,0	250	400	1100x1100	900	12,0	6,0	6,0	6,0	6,0	
710	-	-	-	-	-	-	250	400	1100x1100	900	12,0	6,0	6,0	6,0	6,0	
800	250	400	1200x1200	1000	12,0	8,0	250	400	1200x1200	1000	12,0	8,0	8,0	8,0	8,0	
900	250	400	1300x1300	1200	12,0	8,0	250	400	1300x1300	1200	12,0	8,0	8,0	8,0	8,0	
1000	250	400	1400x1400	1200	12,0	10,0	250	400	1400x1400	1200	12,0	10,0	10,0	10,0	10,0	
1200	250	400	1600x1600	1400	12,0	12,0	250	400	1600x1600	1400	12,0	12,0	12,0	12,0	12,0	
1250	250	400	1650x1650	1400	12,0	12,0	250	400	1650x1650	1400	12,0	12,0	12,0	12,0	12,0	

Note:

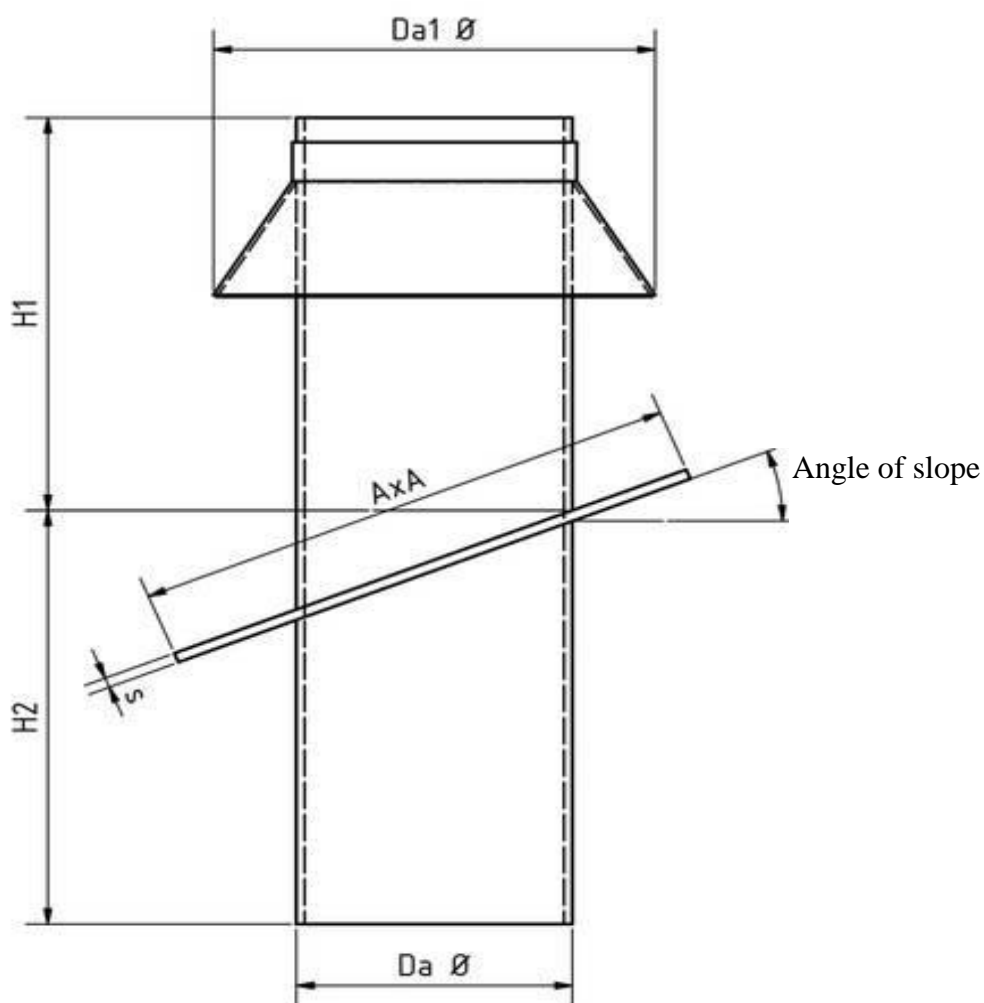
* Color of roof head Ø 110 mm – dark grey

** Color of roof head Ø 160 mm – red

Colors of other roof heads: made from PP - RAL 7032 grey; made from PE - black.

Roof head 1-22°

Technical drawing



Ø	PVC					S Pipe	PE/PP/PPs/PP-EL-s/PVDF					Thickness of the pipe wall			
	H1	H2	A x A	Ø 1	s Sheet		H1	H2	A x A	Ø 1	s Sheet	PPS	PP	PE	PP-el-s
110*	300	430	400x400	200	8,0	1,8	300	430	400x400	200	8,0	3,0	2,7	3,4	3,0
160**	300	440	450x450	315	8,0	1,8	300	440	450x450	315	8,0	3,0	4,0	4	3,0
180	300	445	450x450	315	8,0	1,8	300	445	450x450	315	8,0	3,0	4,4	5,5	3,0



Ø	PVC						PE/PP/PPs/PP-EL-s/PVDF						Thickness of the pipe wall			
	H1	H2	A x A	Ø 1	s Sheet	s Pipe	H1	H2	A x A	Ø 1	s Sheet	PPS	PP	PE	PP-PP-el-s	
200	300	450	450x450	315	8,0	1,8	300	450	450x450	315	8,0	3,0	3,0	6,2	3,0	
225	300	455	500x500	400	10,0	1,8	300	455	500x500	400	10,0	3,5	5,5	6,9	3,5	
250	300	460	500x500	450	10,0	2,0	300	460	500x500	450	10,0	3,5	3,5	6,2	3,5	
280	300	470	550x550	500	10,0	2,3	300	470	550x550	500	10,0	3,5	6,9	8,6	3,5	
315	300	480	550x550	500	10,0	2,5	300	480	550x550	500	10,0	5,0	5,0	7,7	5,0	
355	300	490	600x600	500	10,0	2,9	300	490	600x600	500	10,0	5,0	5,0	10,9	5,0	
400	300	500	650x650	500	10,0	3,2	300	500	650x650	500	10,0	6,0	6,0	12,3	6,0	
450	300	550	800x800	600	10,0	3,6	300	550	800x800	600	10,0	6,0	6,0	6,0	6,0	
500	300	550	850x850	700	10,0	4,0	300	550	850x850	700	10,0	6,0	6,0	6,0	6,0	
560	-	-	-	-	-	-	300	600	910x910	800	10,0	6,0	6,0	6,0	6,0	
600	300	600	950x950	800	10,0	5,0	300	600	950x950	800	10,0	6,0	6,0	6,0	6,0	
630	-	-	-	-	-	-	300	600	1000x1000	800	10,0	6,0	6,0	6,0	6,0	
700	300	650	1200x1200	900	12,0	6,0	300	650	1200x1200	900	12,0	6,0	6,0	6,0	6,0	
710	-	-	-	-	-	-	300	650	1200x1200	900	12,0	6,0	6,0	6,0	6,0	
800	300	700	1300x1300	1000	12,0	8,0	300	700	1300x1300	1000	12,0	8,0	8,0	8,0	8,0	
900	300	750	1400x1400	1200	12,0	8,0	300	750	1400x1400	1200	12,0	8,0	8,0	8,0	8,0	
1000	300	800	1500x1500	1200	12,0	10,0	300	800	1500x1500	1200	12,0	10,0	10,0	10,0	10,0	
1200	300	850	1700x1700	1400	12,0	12,0	300	850	1700x1700	1400	12,0	12,0	12,0	12,0	12,0	
1250	300	850	1700x1700	1400	12,0	12,0	300	850	1700x1700	1400	12,0	12,0	12,0	12,0	12,0	

Note:

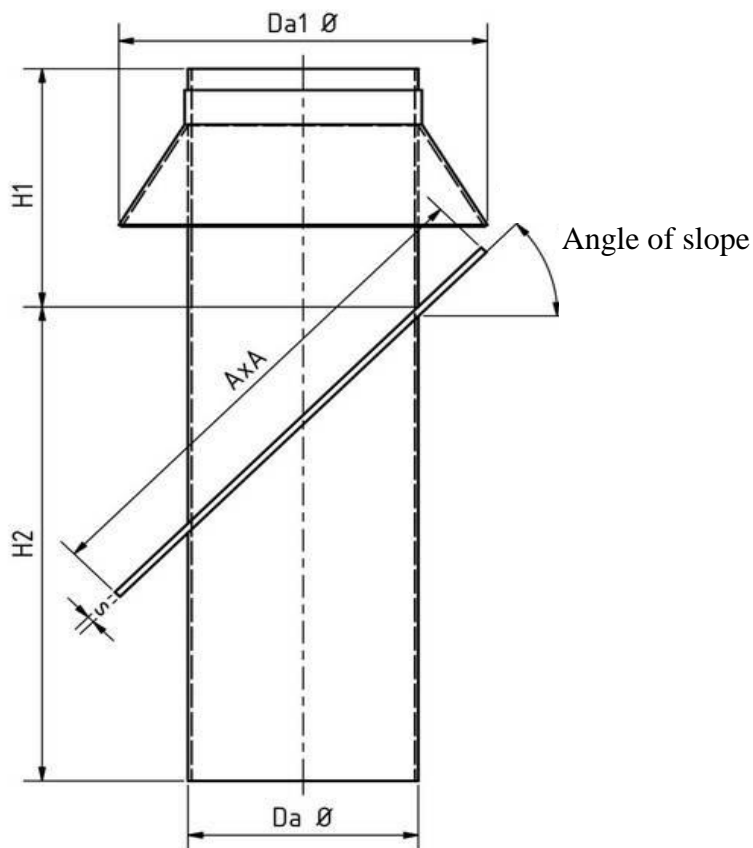
* Color of roof head Ø 110 mm – dark grey

** Color of roof head Ø 160 mm – red

Colors of other roof heads: made from PP - RAL 7032 grey; made from PE - black.

Roof head 23-45°

Technical drawing



Ø	PVC						PE/PP/PPs/PP-EL-s/PVDF					Thickness of the pipe wall			
	H1	H2	A x A	Ø 1	s Sheet	s Pipe	H1	H2	A x A	Ø 1	s Sheet	PPS	PP	PE	PP-el-s
110*	350	450	450x450	200	8,0	1,8	350	450	450x450	200	8,0	3,0	2,7	3,4	3,0
160**	350	480	500x500	315	8,0	1,8	350	480	500x500	315	8,0	3,0	4,0	4,0	3,0
180	350	490	500x500	315	8,0	1,8	350	490	500x500	315	8,0	3,0	4,4	5,5	3,0
200	350	500	500x500	315	8,0	1,8	350	500	500x500	315	8,0	3,0	3,0	6,2	3,0
225	350	510	550x550	400	10,0	1,8	350	510	550x550	400	10,0	3,5	5,5	6,9	3,5
250	350	525	550x550	450	10,0	2,0	350	525	550x550	450	10,0	3,5	3,5	6,2	3,5
280	350	540	600x600	500	10,0	2,3	350	540	600x600	500	10,0	3,5	6,9	8,6	3,5



Ø	PVC						PE/PP/PPs/PP-EL-s/PVDF					Pipe wall thickness			
	H1	H2	A x A	Ø 1	s Sheet	s Pipe	H1	H2	A x A	Ø 1	s Sheet	PPS	PP	PE	PP-el-s
315	350	550	600x600	500	10,0	2,5	350	550	600x600	500	10,0	5,0	5,0	7,7	5,0
355	350	570	650x650	500	10,0	2,9	350	570	650x650	500	10,0	5,0	5,0	10,9	5,0
400	350	600	700x700	500	10,0	3,2	350	600	700x700	500	10,0	6,0	6,0	12,3	6,0
450	350	700	1050x1050	600	10,0	3,6	350	700	1050x1050	600	10,0	6,0	6,0	6,0	6,0
500	350	800	1100x1100	700	10,0	4,0	350	800	1100x1100	700	10,0	6,0	6,0	6,0	6,0
560	-	-	-	-	-	-	350	900	1160x1160	800	10,0	6,0	6,0	6,0	6,0
600	350	900	1200x1200	800	10,0	5,0	350	900	1200x1200	800	10,0	6,0	6,0	6,0	6,0
630	-	-	-	-	-	-	350	950	1230x1230	800	10,0	6,0	6,0	6,0	6,0
700	350	1050	1400x1400	900	12,0	6,0	350	1050	1400x1400	900	12,0	6,0	6,0	6,0	6,0
710	-	-	-	-	-	-	350	1050	1400x1400	900	12,0	6,0	6,0	6,0	6,0
800	350	1150	1600x1600	1000	12,0	8,0	350	1150	1600x1600	1000	12,0	8,0	8,0	8,0	8,0
900	350	1250	1750x1750	1200	12,0	8,0	350	1250	1750x1750	1200	12,0	8,0	8,0	8,0	8,0
1000	350	1350	1900x1900	1200	12,0	10,0	350	1350	1900x1900	1200	12,0	10,0	10,0	10,0	10,0
1200	350	1650	2150x2150	1400	12,0	12,0	350	1650	2150x2150	1400	12,0	12,0	12,0	12,0	12,0
1250	350	1650	2200x2200	1400	12,0	12,0	350	1650	2200x2200	1400	12,0	12,0	12,0	12,0	12,0

Note:

* Color of roof head Ø 110 mm – dark grey

** Color of roof head Ø 160 mm – red

Colors of other roof heads: made from PP - RAL 7032 grey; made from PE - black.

Outlet cowls

*Types of polymers:

PVC – polyvinyl chloride

PP – polypropylene

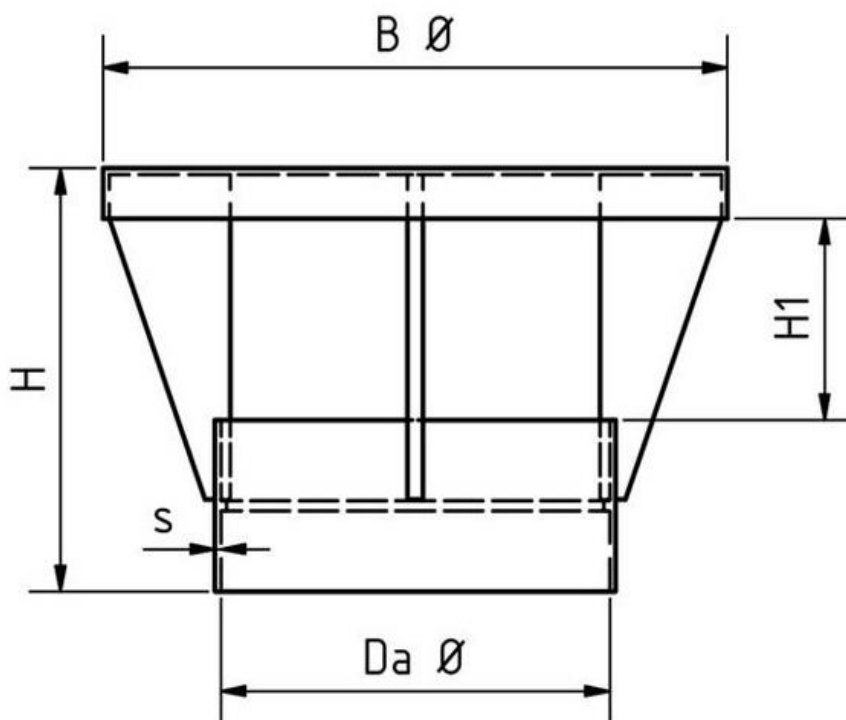
PPs – flame-resistant polypropylene

PP-EL-s – electrically conductive, flame-resistant polypropylene

PE – polyethylene

PVDF – polyvinylidene fluoride

Technical drawing



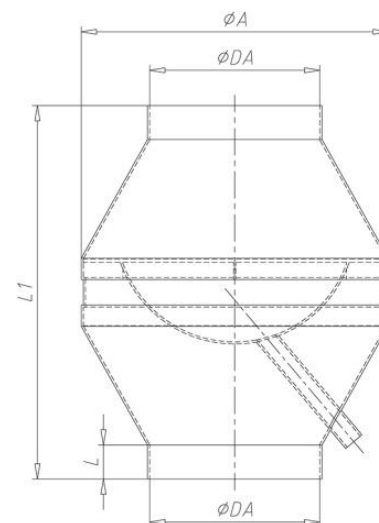
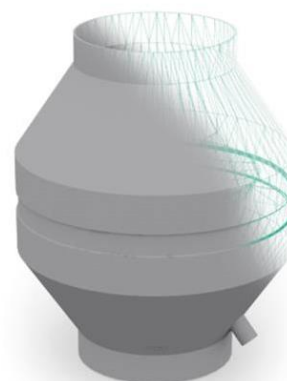


Ø	PVC						PE/PP/PPs/PP-EL-s/PVDF						Color
	L	H	H1	B Ø	Tolerance	s	L	H	H1	B Ø	Tolerance	s	
110	40	165	55	225	0,3	2,5	40	165	55	225	1,0	3,0	Dark grey
160	40	190	80	250	0,4	2,5	40	190	80	250	1,5	3,0	Red
180	40	200	90	280	0,4	2,5	40	200	90	280	1,7	3,0	Polypropylene - RAL 7032 grey; Polyethylene - black
200	40	210	100	315	0,4	2,5	40	210	100	315	1,8	3,0	
225	40	225	115	355	0,5	2,5	40	225	115	355	1,9	3,5	
250	40	235	125	400	0,5	2,5	40	235	125	400	2,0	3,5	
280	50	275	165	450	0,6	2,5	50	275	165	450	2,2	3,5	
315	50	295	185	500	0,6	2,5	50	295	185	500	2,4	4,0	
355	50	305	195	550	0,7	3,0	50	305	195	550	2,7	4,0	
400	50	335	225	600	0,7	3,0	50	335	225	600	3,0	4,5	
450	50	375	255	650	0,8	3,6	50	375	255	650	3,5	5,0	
500	50	395	275	700	0,9	4,0	50	395	275	700	4,0	5,0	
560	-	-	-	-	-	-	60	425	305	750	4,5	6,0	
600	60	480	340	800	1,0	5,0	60	480	340	800	4,5	6,0	
630	-	-	-	-	-	-	70	540	425	850	4,5	6,0	
700	70	585	425	900	2,5	6,0	70	585	425	900	4,5	6,0	
710	-	-	-	-	-	-	70	605	425	900	4,5	6,0	
800	80	605	425	1000	3,0	8,0	80	605	425	1000	4,5	8,0	
900	90	675	475	1100	3,0	8,0	90	675	475	1100	4,5	8,0	
1000	100	945	725	1200	4,0	10,0	100	945	725	1200	5,0	10,0	
1200	120	1215	975	1400	4,0	12,0	120	1215	975	1400	5,0	12,0	
1250	130	1265	1000	1450	4,0	12,0	130	1265	1000	1450	5,0	12,0	

Condenser deflector housing

Condenser deflector housing is installed on the roof for the vertical updraft. Its design allows the air to disperse effectively with less resistance losses. This makes the condenser deflector energy-efficient. In the case of precipitation the separate drain pipe helps to divert it.

Ø	L	L1	A Ø (xС)	Color
110	40	290	206	Dark grey
160	40	410	321	Red
180	40	380	321	Polypropylene - RAL 7032 grey; Polyethylene - black
200	40	410	361	
225	40	430	408	
250	40	470	458	
280	50	520	508	
315	50	440	508	
355	50	1097	600x399	
400	50	1202	674x448	
450	50	1322	758x503	
500	50	1440	840x558	
560	60	1570	923x613	
600	60	1688	1005x668	
630	70	1818	1089x723	
700	70	1936	1170x778	
710	80	2066	1254x833	
800	80	2184	1336x888	
900	90	2432	1501x998	
1000	100	2680	1666x1108	
1200	120	3176	1997x1328	
1250	130	3306	2081x1383	





Polypropylene air valves

- Chemical resistance to aggressive mediums.
- Light weight, simple assembly.
- Long service life.
- Good leak resistance.
- Lower service costs (smooth surfaces don't accumulate sediments).
- Environment protection, products are recyclable.

Available type of plastics is **PP** – polypropylene

Types of valves' connection

Type 1 - M – Muff

Type 2 - F – Flange

Designation of air valves

Valve **UA-PP-DR-DN-type-PR**

UA – UralActiv

PP – type of polymer – polypropylene

DR – type of valve – air valve

DN – outer diameter

Type – type of connection (1 – Muff, 2 – Flange)

PR – drive (R – manual, E – electrical)

Example of designation:

Valve UA-PP-500-1-R

Type 1

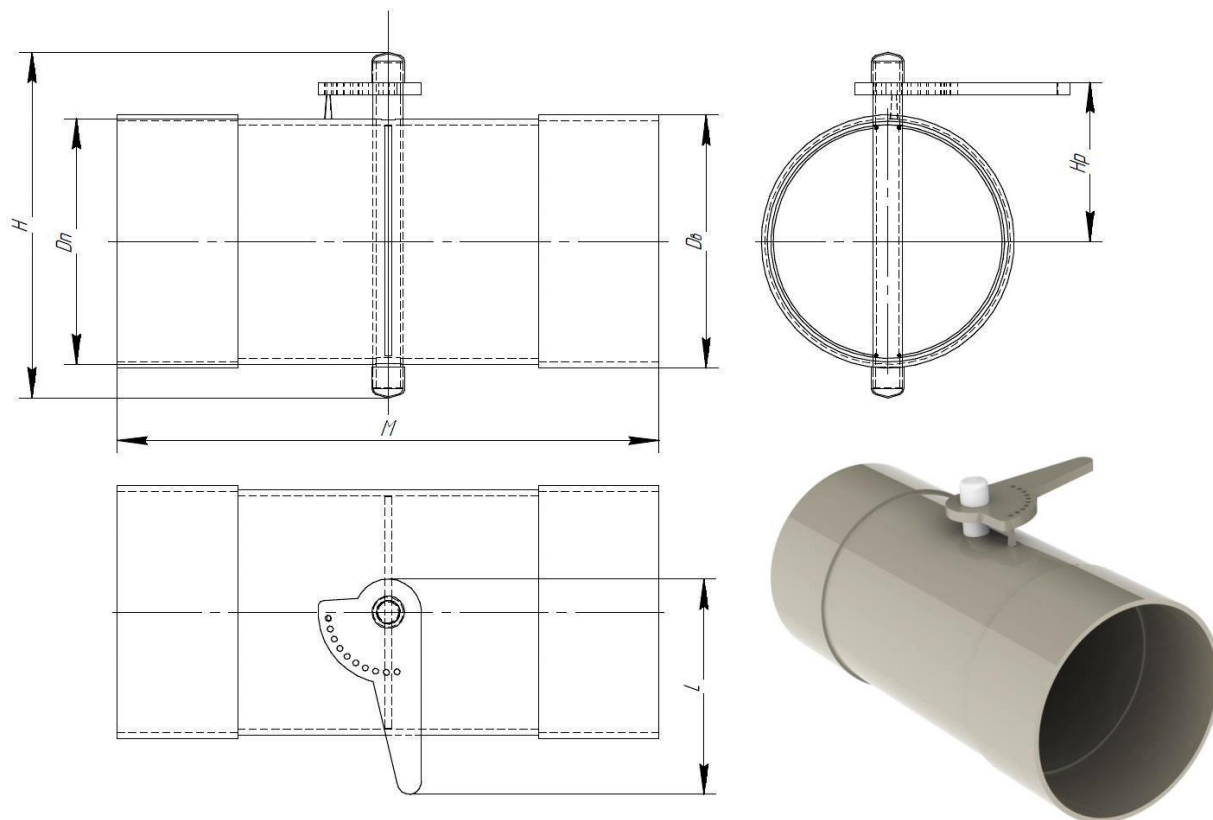


Table of valve sizes - Type 1

Size of valve	Construction length	Height of valve	Distance to the handle	Length of the handle	Outer diameter	Color
DN, mm	M, mm	H, mm	hp, mm	L, mm	DB, mm	
50	150	130	55	165	56	Dark grey
110	360	190	85	165	116	
160	410	240	110	165	166	Red
180	430	260	120	165	186	Polypropylene – RAL 7032 grey; Polyethylene – black
200	450	280	130	165	206	
225	475	305	143	165	231	
250	500	330	155	165	256	
280	530	360	170	165	286	

Type 2

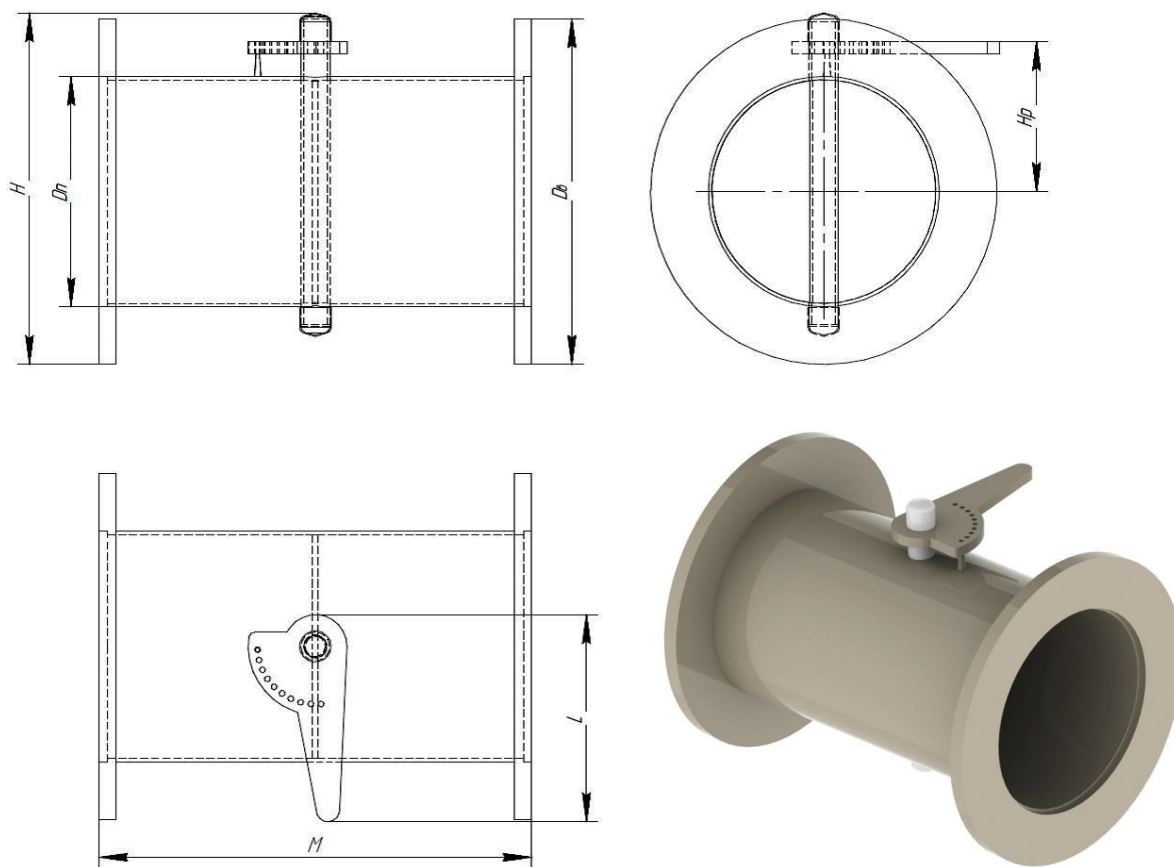


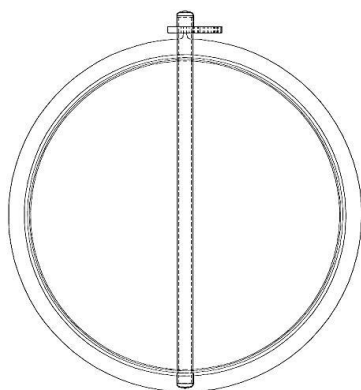
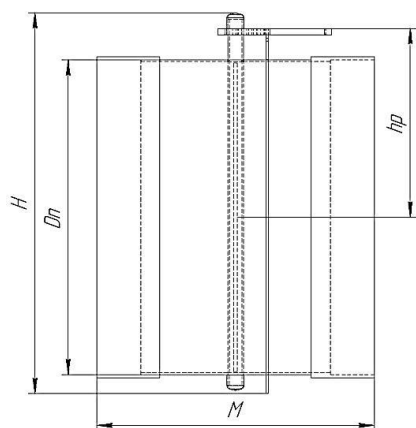
Table of valve sizes - Type 2

Size of valve	Construction length	Height of valve	Distance to the handle	Length of the handle	Outer diameter	Color
DN, mm	M, mm	H, mm	hp, mm	L, mm	DB, mm	
50	150	195	83	165	100	Dark grey
110	210	255	125	165	210	
160	260	305	150	165	260	Red
180	280	325	160	165	280	Polypropylene - RAL 7032 grey; Polyethylene – black
200	300	345	170	165	300	
225	325	370	183	165	325	
250	350	395	195	165	350	
280	390	425	210	165	390	



Polypropylene air valves of big diameters

Type 1



Type 2

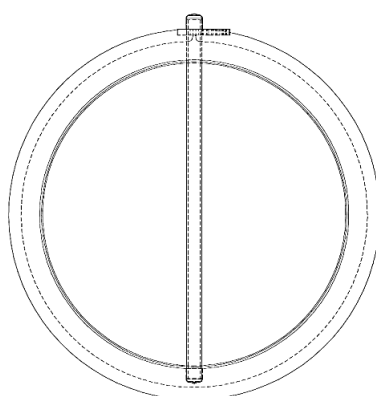
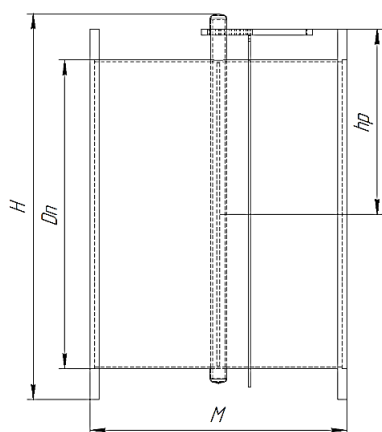




Table of sizes for valve of big diameters

Size of valve	Construction length	Height of valve Type 1	Height of valve Type 2	Distance to the handle	Length of the handle	Color
DN, mm	M, mm	H, mm	H, mm	hp, mm	L, mm	
300	400	400	445	220	200	Polypropylene – RAL 7032 grey; Polyethylene – black
355	455	455	500	178	200	
400	500	500	545	270	200	
450	550	550	595	295	200	
500	600	600	695	320	330	
560	660	660	705	350	330	
600	700	700	745	370	330	
630	730	730	775	385	330	
700	800	800	845	420	330	
710	810	810	855	425	330	
800	900	900	945	470	500	
900	1000	1000	1045	520	500	
1000	1100	1100	1145	570	500	
1200	1300	1300	1345	670	500	
1250	1350	1350	1395	695	500	



Back-flow dampers

- Chemical resistance to aggressive mediums.
- Light weight, simple assembly.
- Long service life.
- Good leak resistance.
- Lower service costs (smooth surfaces don't accumulate sediments).
- Environment protection, products are recyclable.

Available type of plastics is **PP** – polypropylene

Types of dampers' connection

Type 1 - M – Muff

Type 2 - F – Flange

Designation of back-flow damper

Damper **UA-PP-OBR-DN-type-PR**

UA – UralActiv

PP – type of polymer – polypropylene

OBR – type of valve – back-flow damper

DN – outer diameter

Type – type of connection (1 – Muff, 2 – Flange)

PR – drive (R – manual, E – electrical)

Example of designation:

Damper UA-PP-OBR-200-1-R

Type 1

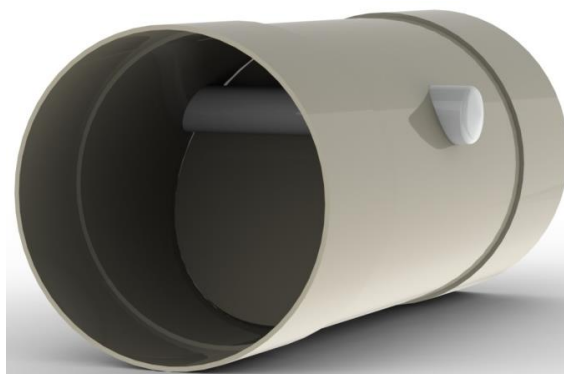
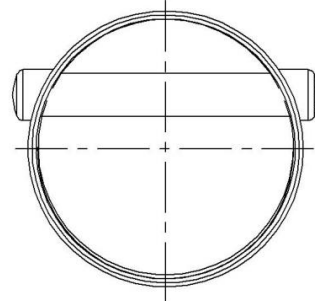
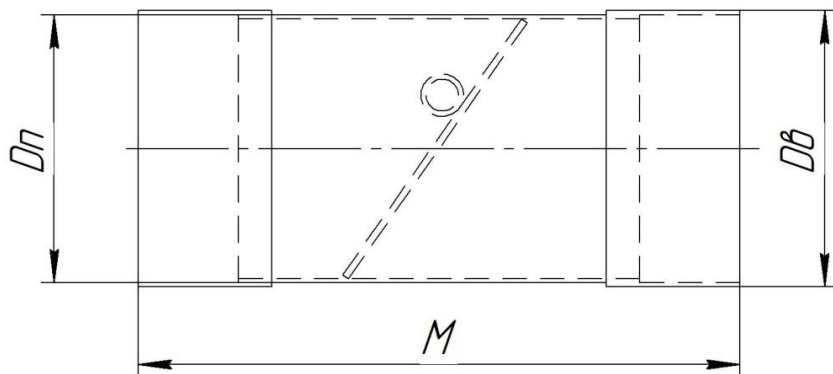


Table of damper sizes – Type 1

Size of Damper	Construction length*	Outer diameter	Color
DN, mm	M, mm	DB, mm	
50	320	56	Dark grey
110	390	116	
160	450	166	
180	470	186	Red
200	500	206	
225	530	231	Polypropylene – RAL 7032 grey; Polyethylene - black
250	560	256	
280	600	286	

Note: the actual length may differ a little from that one in the table.

Type 2

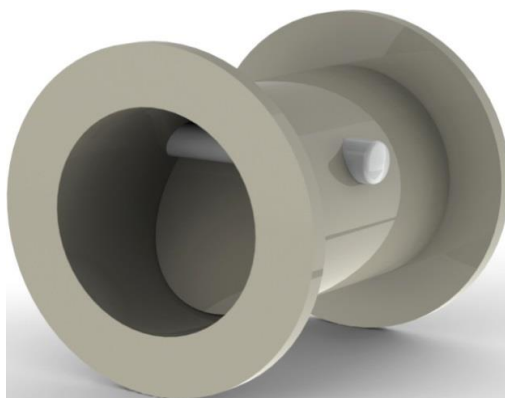
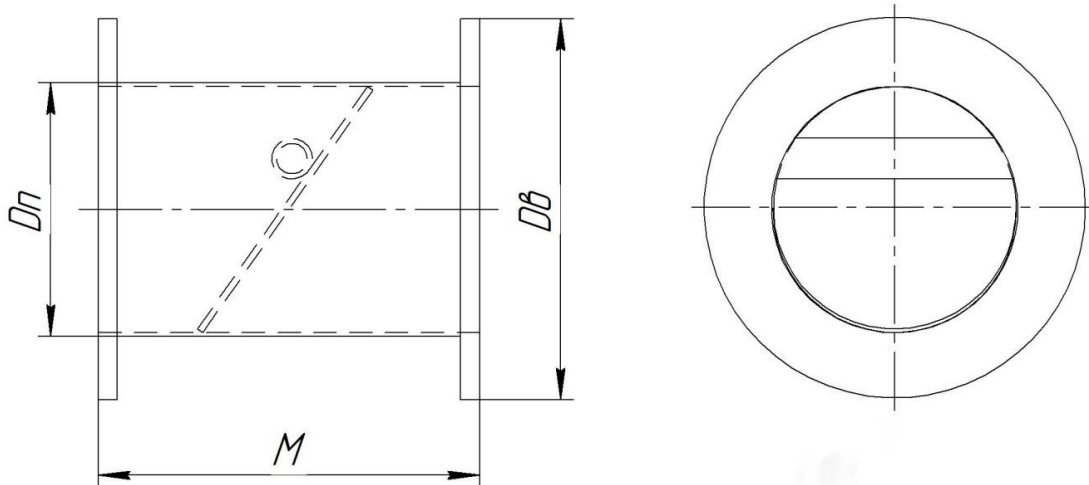


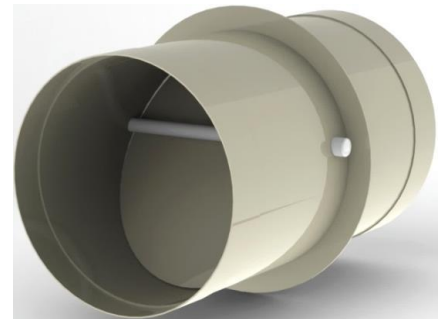
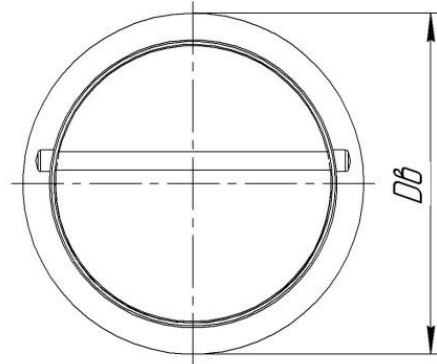
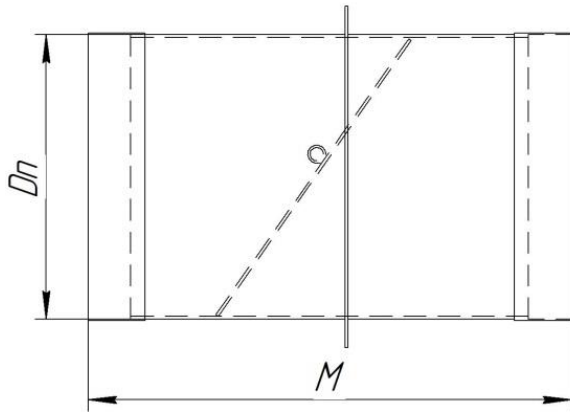
Table of damper sizes – Type 2

Size of damper	Construction length*	Outer diameter	Color
DN, mm	M, mm	DB, mm	
50	170	100	Dark grey
110	240	210	
160	300	260	Red
180	320	280	Polypropylene – RAL 7032 grey;
200	350	300	
225	380	325	
250	410	350	Polyethylene – black
280	450	390	

Note: the actual length may differ a little from that one in the table.

Back-flow dampers of big diameters

Type 1



Type 2

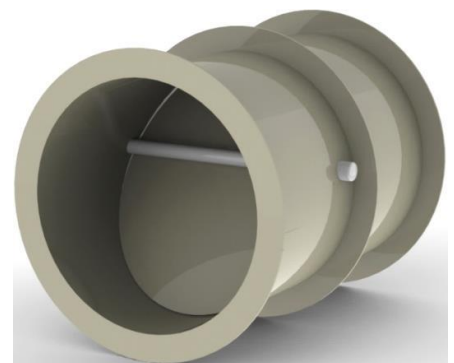
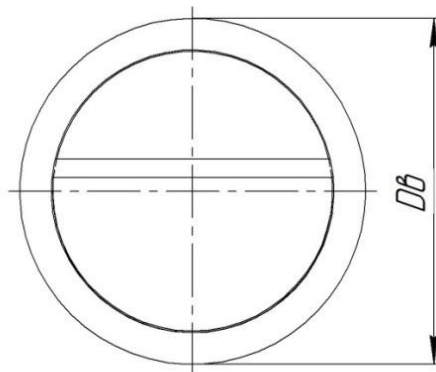
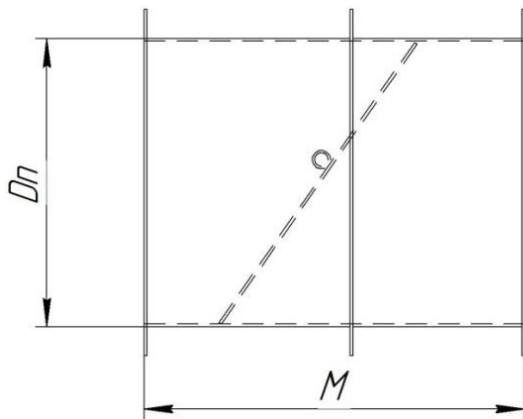




Table of sizes for back-flow dampers of big diameters

Size of damper	Construction length Type 1*	Construction length Type 2*	Outer diameter	Color
DN, mm	M, mm	M, mm	DB, mm	
300	620	470	400	Polypropylene – RAL 7032 grey;
355	690	540	455	
400	740	590	500	
450	800	650	550	
500	860	710	600	
560	940	790	660	
600	990	840	700	
630	1020	870	730	
700	1110	960	800	
710	1120	970	810	
800	1230	1080	900	Polyethylene – black
900	1350	1200	1000	
1000	1470	1320	1100	
1200	1720	1570	1300	
1250	1780	1630	1350	

Note: the actual length may differ a little from that one in the table.

Shutter valves

Shutter valve is an element of ventilation which blocks the air flow.

Shutter valve can have round and rectangular cross-section. The type of shutter valve cross-section depends on the airway's form in the ventilation system. When ordering a shutter valve, please specify the cross-section or diameter of the airway which the shutter valve will be attached to and also the connection type.

Types of connection:

M – Muff

F – Flange

Designation of shutter valve:

Shutter valve UA-PP-DN-type

UA – UralActiv

PP – type of polymer – polypropylene

DN – outer diameter of the airway

Type – type of connection (1 – Muff, 2 – Flange)

Example of designation:

Shutter valve UA-PP-200-1

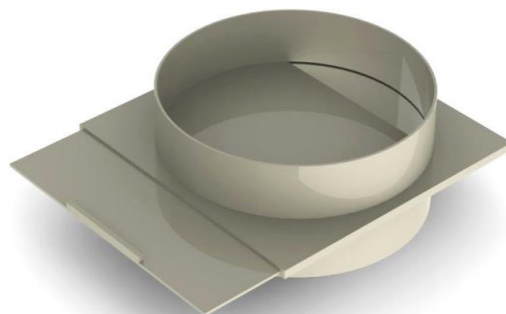
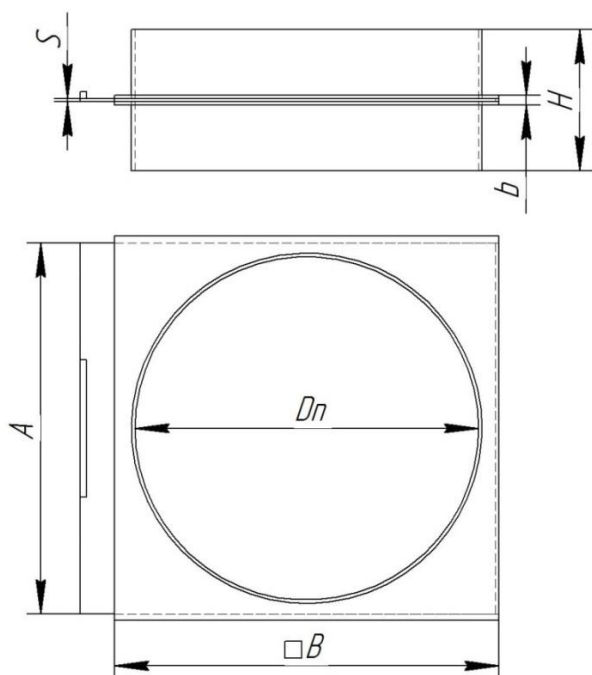




Table of sizes for shutter valves

Diameter of the airway	Shutter width	Shutter thickness	Width and thickness of shutter valve's body	Thickness of shutter body	Height
DN, mm	A, mm	S, mm	□B, mm	b, mm	H, mm
50	90	5	110	15	215
110	150	5	170	15	215
160	200	5	220	15	215
180	220	5	240	15	215
200	240	5	260	15	215
225	265	5	285	15	215
250	290	5	310	15	215
280	320	5	340	15	215
300	340	5	360	15	215
355	395	5	415	15	215
400	440	5	460	15	215
450	490	5	510	15	215
500	540	8	560	24	224
560	600	8	620	24	224
600	640	8	660	24	224
630	670	8	690	24	224
700	740	8	760	24	224
710	750	8	770	24	224
800	840	8	860	24	224
900	940	10	960	30	230
1000	1040	10	1060	30	230
1200	1240	10	1260	30	230
1250	1290	10	1270	30	230

Flexible connectors for fans

Flexible connectors serve to compensate longitudinal and transverse displacements, thermal extensions of pipelines; they also serve to reduce vibration. Flexible connectors are used mainly for fans, pumps, vibration mufflers, radiators, air compressors etc.

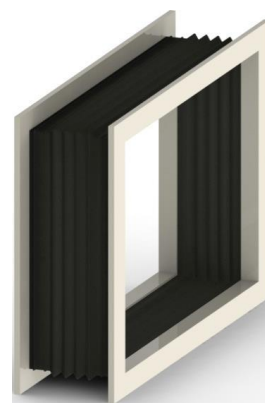
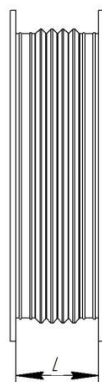
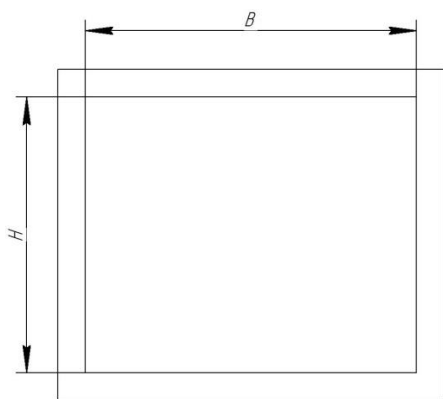
Flexible connector material is corrugated chemically resistant rubber on the basis of polypropylene.

Types of connection:

- M – Muff
- F – Flange

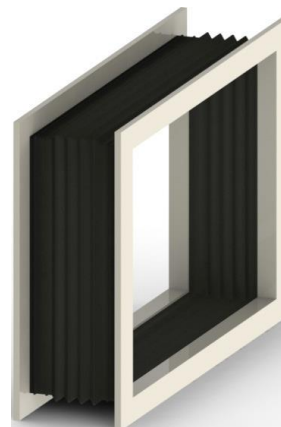
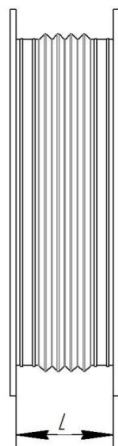
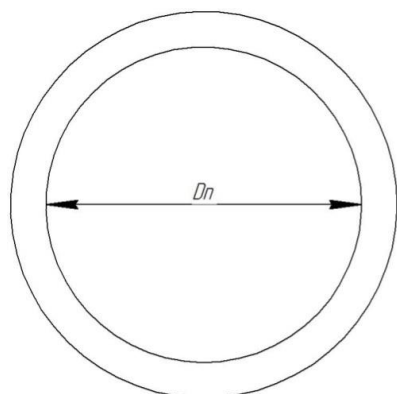


Flexible connector of rectangular section



Height H, mm	Width B, mm	Flexible connector's length L, mm	The material thickness of the flexible connector	Height H, mm	Width B, mm	Flexible connector's length L, mm	The material thickness of the flexible connector
130	170	150	2,5	320	320	150	2,5
140	140			345	455		
140	185			350	350		
160	210			390	510		
175	175			400	400		
175	230			441	441		
200	260			500	500		
220	220			560	560		
225	290			630	630		
250	330			700	700		
280	280			790	790		
280	365			875	875		
310	405						

Flexible connector of circular section



Diameter Dn, mm	Flexible connector's length L, mm	The material thickness of the flexible connector	Diameter Dn, mm	Flexible connector's length L, mm	The material thickness of the flexible connector
200	150	2,5	560	150	2,5
225			600		
250			630		
280			710		
315			800		
355			900		
400			1000		
450			1200		
500			1250		

We can make the flexible connector of any size on your request!

Designation of flexible connector:

Flexible connector UA-PP-HxB-type

Flexible connector UA-PP-D-type

UA – UralActiv

PP – type of polymer – polypropylene

HxB – height and width of airway of rectangular section

DN – outer diameter of airway of circular section

Type – type of connection (1 – Muff, 2 – Flange)

Example of designation:

Flexible connector UA-PP-140x140-1

Flexible connector UA-PP-200-2

Sound attenuators from polypropylene

Sound attenuators serve for noise reduction in airways containing the remaining pairs of acids, alkali.

- Standard length: 500, 750, 1000, 1250, 1500, 1750 and 2000mm.
- The pressure loss is about 15 Pa / 1 meter.
- Noise reduction is from 13 to 40 dB.
- Types of connection can be: muff or flange.

DA1	DA2	Thickness	L	Color
110	315	5,0	40	Dark grey
160	355	5,0	40	Red
180	400	6,0	40	Polypropylene – RAL 7032 grey; Polyethylene – black
200	400	6,0	40	
225	450	5,0	40	
250	450	5,0	40	
280	500	5,0	50	
315	500	5,0	50	
355	500	5,0	50	
400	600	6,0	50	
450	700	6,0	6,0	
500	700	6,0	6,0	
560	800	-	8,0	
600	800	8,0	8,0	
630	800	-	8,0	
700	900	8,0	8,0	
710	900	-	8,0	
800	1000	10,0	10,0	
900	1100	10,0	10,0	
1000	1200	12,0	12,0	
1200	1400	12,0	12,0	
1250	1400	12,0	12,0	





Extendable unit

It is not so unusual when it is difficult to choose right length of airway by installing the ventilation. In that case the extendable units are used as a kind of airway. The extendable unit is an airway made from polypropylene (PP) or polyethylene (PE) and consisting from 3 adjustable sections (adjustment of the length up to 2 times). Plastic extendable unit can be of round and rectangular cross-section.

Ordering the extendable plastic unit please choose the diameter DN according the table of airways dimension on the page 14; the length Lmin – Lmax is set on your request.

Designation of extendable unit:

Extendable unit UA-PP-DNxLmin-Lmax-type

UA – UralActiv

PP – type of polymer – polypropylene

DN – outer diameter of airway

type – connection (1 - Muff, 2 - Flange)

Lmin-Lmax – minimal and maximal essential length of airway

Example of designation:

Extendable unit UA-PP-F500x1020-2000-2

