Dampers & Measure units

Lindab	1
General information and theory	2
Safe	3
Silencers	4
Dampers & Measure units	**5**
Fire dampers & Smoke evacuation	6
Air valves	7
Roof hoods	8
Other circular products	9
Transfer	10
Rectangular	11
Flexible ducting	12
Isol	13
Access doors	14
Smart tools	15
Duct suspensions & Support systems	16
Fastening material	17
Index	18

Content – Dampers & Measure units

				To regulate	To shut-off
Standard dampers	manual			DRU ..... 243 DIRU 251	DSU ..... 259 DTU ..... 267 DTMU/DTWU 275
	for motor	electric or pneumatic			DTHU ..... 280 DTH1U 282 DTH2U 283
	with motor	electric		DSVUSN ..... 289 DIRBU ..... 284 DIRVU 286	DSUSN ..... 288 DTBU ..... 290 DTBCU ..... 294 DTFU ..... 299 DTBLU 301
		pneumatic			DTPU 303
Cleaning dampers	manual			PSDRU ..... 306 TDRU 307	TDSU 308
Alternating dampers	manual				TASU ..... 309 TATU 310
	with motor	electric			TATBU 311
Constant- and variable flow units (automatic dampers)	manual			DAU 320	
	with motor	electric		DA2EU ..... 321 DAVU 322	

Regulating damper

LKSR 323

Regulating damper

DRUI 324

Sliding dampers

SKMTR 325
SKPTR 326

Air stream operated dampers

CARU 327
CAR 328

Flow meters

FMDRU 329

FMDU 334

FMU 339

Measuring bends

MBU 342

MBFU 343

Insulation cup

IK 345

Handle

DRHTG 345

HANDLE 345

Assembly kits

MSATS 31 345
MSATS 41 345

Extension spindles

VREDF 15 60 345
VREDF 15 100 345

Extension spindles

AXFL 345

Mounting shelves

KOMHY 345

KOMHY LONG 345

LÖMOK 345

Content – Dampers

Tightness and pressure classes

		Tightness class				
		0	1	2	3	4
		To regulate		To shut-off		
Pressure class	A	DRU DIRU DIRBU DIRVU DSU Ø63–315 PSDRU TDRU TASU DAU DA2EU DAVU	DSU Ø355–1000 DSVUSN TDSU	DSUSN TATU TATBU		DTU Ø710–1000 DTHU Ø710–1000 DTBU Ø710–1000
	B				DTPU Ø355–630	DTU Ø355–630 DTMU Ø355–630 DTWU Ø355–630 DTHU Ø355–630 DTH1U Ø355–630 DTBU Ø355–630 DTBCU Ø355–630
	C				DTPU Ø80–315	DTU Ø80–315 DTMU Ø80–315 DTWU Ø80–315 DTHU Ø80–315 DTH1U Ø80–315 DTH2U Ø80–315 DTBU Ø80–315 DTBCU Ø80–315 DTFU Ø80–250 DTBLU Ø80–315

Dampers

Summary, motorized dampers

This is the standard range. Other combinations of dampers and motors can be ordered.

Original damper		Motorized damper					
DTU		**DTBU**				**DTBLU (low built)**	
		Ø 80–315	Ø 400–500	Ø 630	Ø 710–1000	Ø 80–160	Ø 80–315
TATU			TATBU Ø 100–400				
DAU		DA2EU Ø 80–315					
DIRU		DIRBU Ø 100–315					
Motor	Regulating	2 set-points					
	Forward Return	electricity electricity					
	Denomination	LM 24 A-F LM 230 A-F	NM 24 A-F NM 230 A-F	SM 24 A SM 230 A	GM 24 A GM 230 A	CM 24 F CM 230 F	LM 24 A-F LM 230 A-F

Original damper		Motorized damper						
DTU		**DTBCU**			**DTFU (fast motor)**			
		Ø 80–315	Ø 250–315	Ø 400–630	Ø 80–250	Ø 80–250		
TATU								
DAU							DAVU Ø 80–315	
DIRU								DIRVU Ø 100–315
Motor	Regulating	2 set-points				continous		
	Forward Return	electricity spring			electricity electricity			
	Denomination	TF 24 TF 230	LF 24 LF 230	SF 24 A SF 230 A	LMQ 24 A	LMQ 24 A-SR	LM 24 A-SX	LM 24 A-SR

Original damper		Motorized damper		
DTU		**DTPU (very fast actuator)**		
		Ø 80–200	Ø 250–315	Ø 400–630
TATU				
DAU				
DIRU				
Motor	Regulating	2 set-points		
	Forward Return	pressureized air spring		
	Denomination	AK 31 P	AK 41 P	AK 42 P

Dampers

Preference	First choise	2nd choise	3rd choise	Last choise
Final Damper	**DTBU**			
Motor	**LM**			
Dimension	80–315			
Extension spindle			VREDF 15 60 	
Motor Shelf			LÖMOK 	KOMHY LONG 
Starting damper	DTH1U 	DTHU 	DTU 	

Which parts to use
when building motorized dampers at building sitestarting from;
manual dampers or
dampers prepared for motorizing.

Lindab recommends to follow the preference rating, if possible.

Preference	First choise	2nd choise		3rd choise	4th choise	Last choise
Final Damper	**DTBU**					
Motor	**NM**					
Dimension	80–500	80–450	500	80–400		500
Extension spindle				VREDF 15 100 	VREDF 15 60 	
Motor Shelf				LÖMOK 	KOMHY LONG 	KOMHY 
Starting damper	DTH1U 	DTHU 		DTU 		

Dampers

Preference	First choise	2nd choise		3rd choise	Last choise	First choise	
Final Damper	DTBU						
Motor	SM					GM	
Dimension	80–500	80–450	500–630	80–630		710–800	900–1000
Extension spindle	AXFL 			VREDF 15 60 			
Motor Shelf	KOMHY LONG 			KOMHY LONG 	KOMHY 		
Starting damper	DTH1U 	DTHU  		DTU 		DTHU  	

Preference	First choise		2nd choise	First choise		2nd choise	Last choise
Final Damper	DTBCU						
Motor	TF	LF		SF			
Dimension	80–200	250–315		400	500–630	400–630	
Extension spindle			VREDF 15 100 			VREDF 15 100 	
Motor Shelf			KOMHY LONG 			KOMHY LONG  KOMHY 	
Starting damper	DTHU 	DTHU 	DTU 	DTHU  		DTU 	

Dampers

Preference	First choise	2nd choise	3rd choise	Last choise

Final Damper	**DTFU**			
Motor	**LMQ**			
Dimension	80–250			
Extension spindle			VREDF 15 60 	
Motor Shelf			LÖMOK 	KOMHY LONG 
Starting damper	DTH1U 	DTHU 	DTU 	

Preference	First choise	2nd choise	3rd choise	Last choise
Final Damper	**DTFU**			
Motor	**LMQ-SR**			
Dimension	80–250			
Extension spindle			VREDF 15 60 	
Motor Shelf			LÖMOK 	KOMHY LONG 
Starting damper	DTH1U 	DTHU 	DTU 	

Dampers

Preference	First choise	Last choise

Final Damper	DTBLU	
Motor	**CM**	**LM**
Dimension	80–160	80–315
Starting damper	DTH2U 	DTH2U 

Preference	First choise	Last choise	First choise	Last choise
Final Damper	**DTPU**			
Motor	**AK 31 P**		**AK 41 P**	
Dimension	80–200		250–315	
Extension spindle	MSATS AK 31 		MSATS AK 41 	
Motor Shelf		KOMHY LONG 		KOMHY LONG 
Starting damper	DTHU 	DTH1U 	DTHU 	DTH1U 

General

Dampers for different purposes are used in a ventilation system

Regulating dampers are used to balance the plant so that the wanted air flow is achieved.

The damper blade is normally designed so that a certain flow of air can always leak through, even if the damper is closed. This makes the sensitivity to angle changes less than for a shut-off damper.

Dampers are available in both manual and automatic versions. The manual dampers are adjusted when the installation is commissioned, and are cheaper than the automatic ones. On the other hand, manual dampers need many more hours of adjustment, and means of flow measurement. For this reason, some dampers have measuring nozzles. In large systems, or where pressure variations occur, it is better to use automatic dampers. These are also referred to as constant flow dampers.

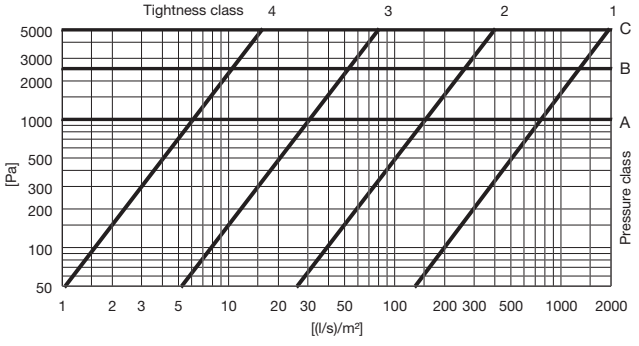
Shut-off dampers are used to save energy, to prevent the spread of poisonous gas etc. These dampers often have rubber seals on the damper blade. The damper can either be designed as a straight piece of ducting, or as a T-piece to switch the air flow from one duct to another. The blade is normally either fully open or fully closed.

Tightness

Two types of tightness are applicable to dampers:

1. **Tightness to the environment**
   This specifies the magnitude of the air leakage throu joints and leaks in the duct sides in relation to the duct surface. This leakage is classified into tightness classes A, B, C and D. Most dampers can be used in installations/systems which require them to maintain tightness class D. Please refer to the Safe section.
   Fulfils the demands of the standard EN 1751.
2. **Tightness past a closed damper shutter**
   This refers to the amount of air leaking past the closed blade, in relation to shutter area. This relationship is classified into five sealing classes 0–4. There is no tightness requirement for class 0. The classes 0 and 1 are regulating dampers. The highest class, tightness class 4, refers to very tight shut-off dampers.
   Fulfils the demands of the standard EN 1751.

Tightness past the closed damper blade and pressure classes



Motorized dampers

Dampers can be supplied ex works with actuators installed. Various types of actuators are available, both electric and pneumatic.

Material

Standard
Bushings are made from polyamide. The bushings can withstand constant temperatures of up to 150 °C.

Special
If a higher corrosivity class is required, the dampers can be supplied with a polyester coating, or made from aluminium or stainless steel. The blades can be provided with silicone rubber seals for higher temperature operation. The dampers can then withstand constant temperatures of 150 °C and 200 °C intermittent. In these cases, please contact Lindab.

CE-labeling

Our dampers with electrical shifting motor are regarded as components of the duct system and need not to be separately CE-labeled. Their electrical shifting motor on the contrary is a part of the electrical system and is CE-labeled. Assurance of conformity can be found at www.belimo.com.

Blade setting

DRU and DSU dampers of dimensions Ø63–160 are supplied with their blades completely open, to facilitate adjustment preparations. Dampers of other dimensions are supplied with closed blades to prevent transport damage.

Cleaning of duct system

Most dampers have components which obstruct the duct system to a greater or lesser extent, and thus obstruct or prevent cleaning.

Please refer to page 647.

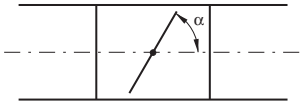
Regulating damper DRU

Description

Has a turning, cut-off blade. The blade is stepless adjustable 0–90°. The damper admits an insulation thickness of approx. 50 mm.

The blade is designed to generate a minimum of noise. The noise is approx. the same as for a perforated blade. But the blade is less sensitive to clogging since it lacks perforations.

Setting angle α
α = 0° = open blade, α = 90° = closed blad



There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–1000 fullfills pressure class A in closed position.

The cup at Ø 80–630 can be complemented with the special insulation cup IK at insulation thicker than 50 mm.

Reinforced blade

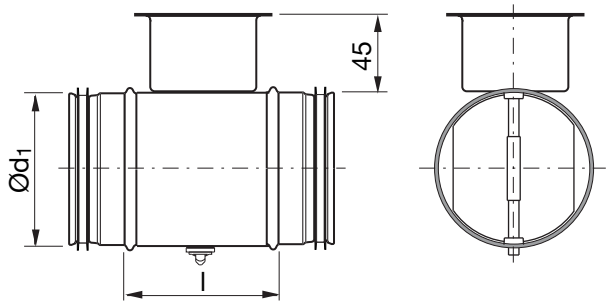
Ordering example

DRU 125

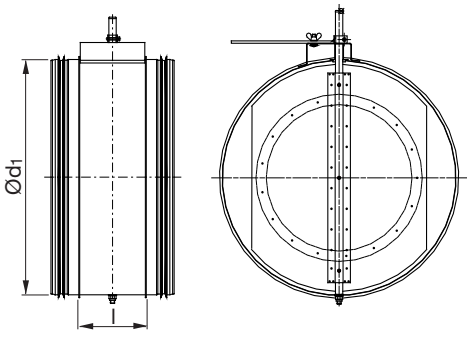
Product
Dimension Ød$_1$

Dimensions

Ø 80–630



Ø 800–1000



Ød$_1$ nom	l mm	m kg	Sealing class past closed blade
80	100	0,34	0
100	100	0,40	0
112	100	0,43	0
125	100	0,46	0
140	100	0,54	0
150	100	0,60	0
160	100	0,65	0
180	100	0,69	0
200	100	0,80	0
224	100	0,90	0
250	100	1,28	0
280	100	1,40	0
300	100	1,62	0
315	100	1,70	0
355	100	2,01	0
400	100	2,82	0
450	100	3,70	0
500	115	4,70	0
560	115	5,51	0
600	115	5,90	0
630	115	6,21	0
800	230	18,2	0
1000	230	24,4	0

Regulating damper DRU

Property	Ø 80–315	Ø 400	Ø 500	Ø 630	Ø 800×1000
The blade is set via a knob in a protective cup.	×	×	×	×	
The setting of the blade is read against an embossed scale at the rim of the cup.	×	×	×	×	
The blade is locked with two screws, type Pozidriv (PZD2).	×	×	×	×	
The blade has reinforced locking with a sturdy wing nut.					×
The blade is reinforced.			×	×	
The blade is additionally reinforced.					×
With sturdy handle.		×	×	×	
With additionally reinforced handle.					×
With reinforced stop beads.			×	×	
The axle is reinforced.					×
The damper can be delivered prepared for motor.	×	×	×	×	
The damper can be delivered with motor.	×	×	×	×	×

Technical data

Pressure drop graphs with noise data for dimensioning

The solid curves show the pressure drop, Δp_t, over the damper as a function of flow q, and setting angle α.
The dashed curves give the A-weighted sound power data, L_{WA}, in dB to the duct.

Example

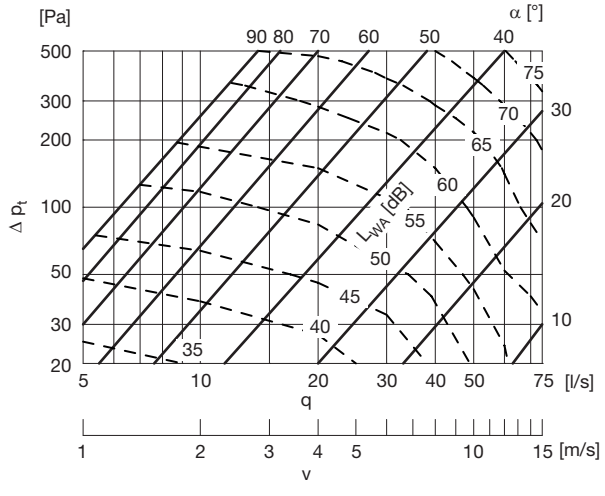
Given

Dimension Ø100
Flow 60 l/s
Pressure drop 200 Pa

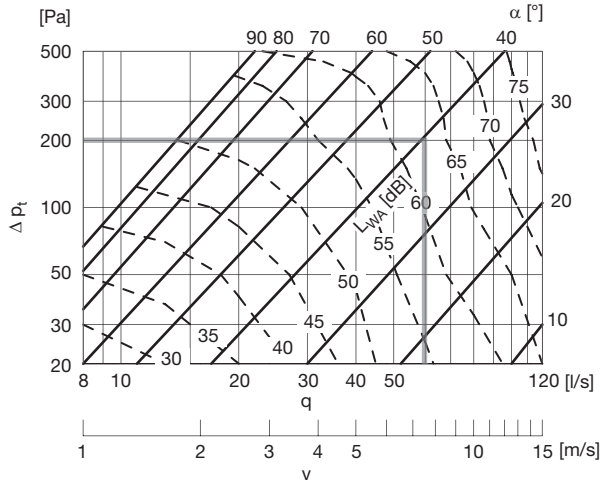
Obtained from graph

Setting angle 40°
Sound power level 63 dB (A)

Ø80

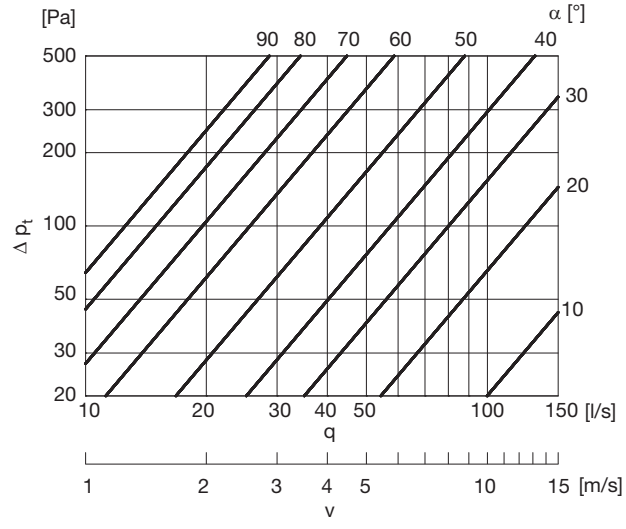


Ø100

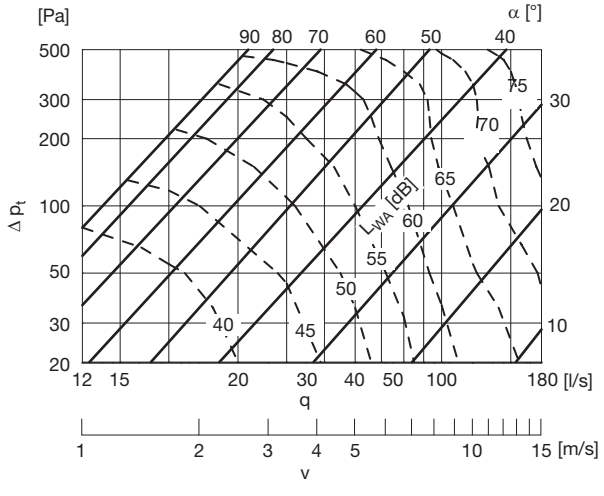


Regulating damper DRU

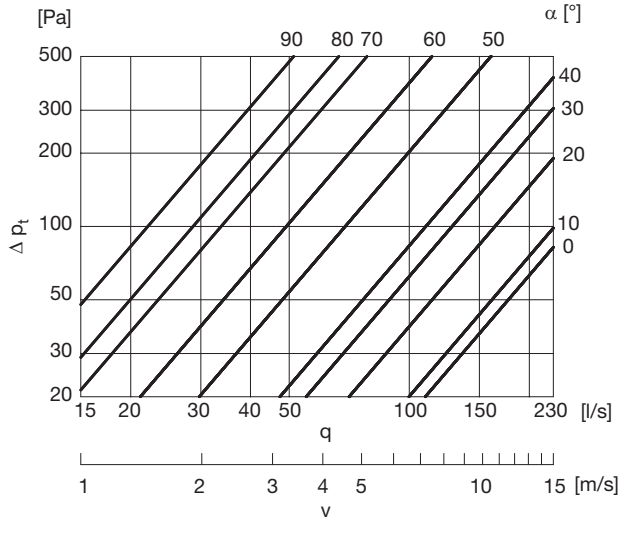
Ø112



Ø125



Ø140



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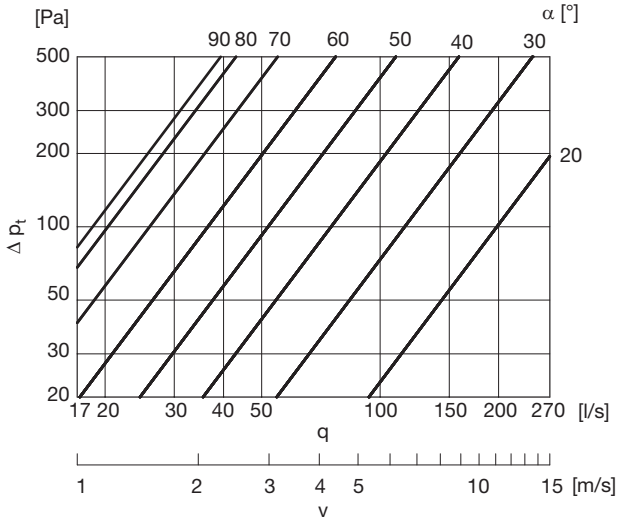

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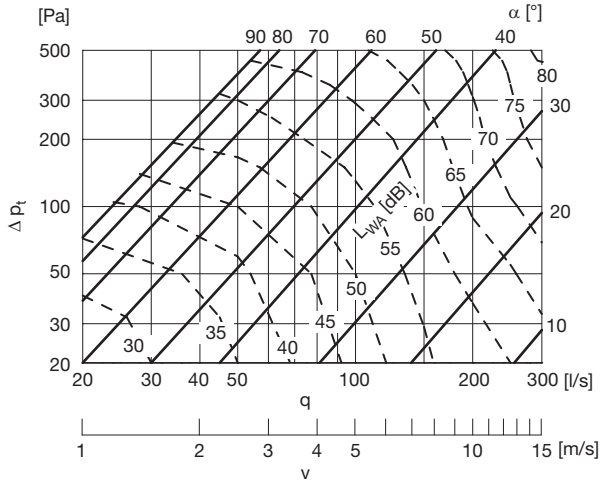
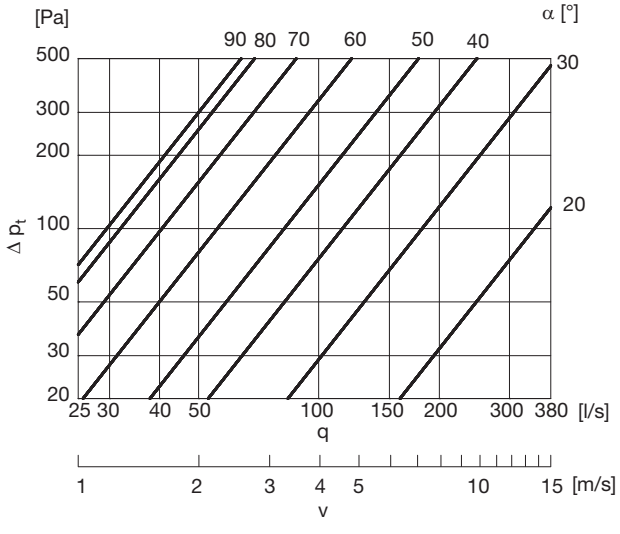
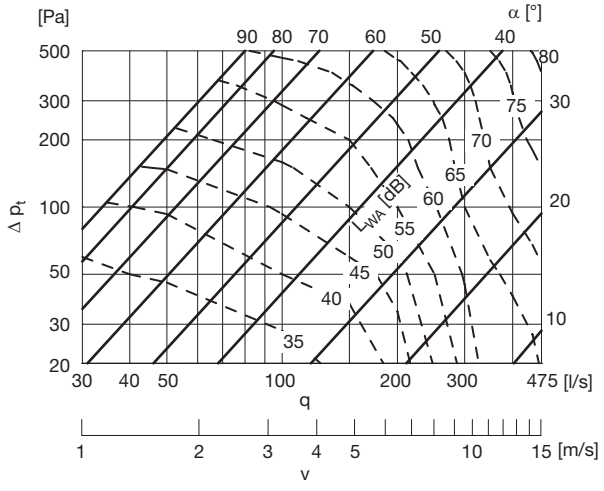


Ø180



Regulating damper DRU

Ø200



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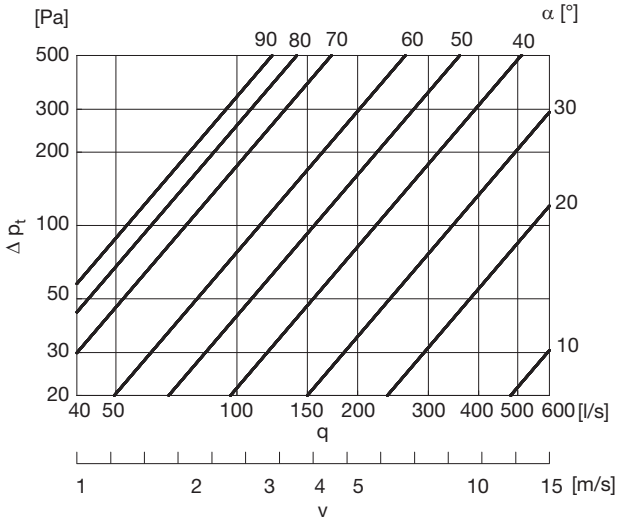

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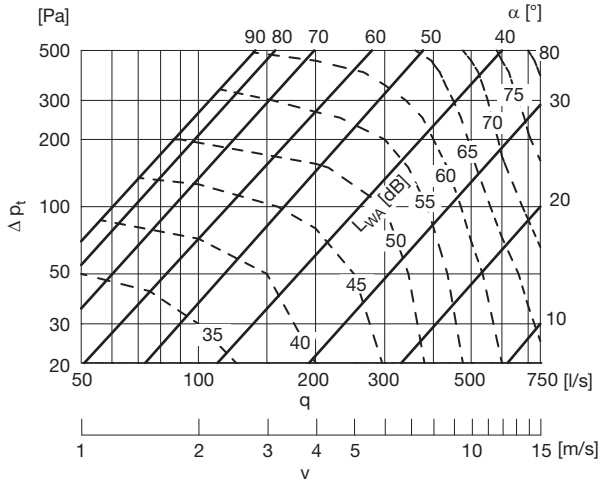

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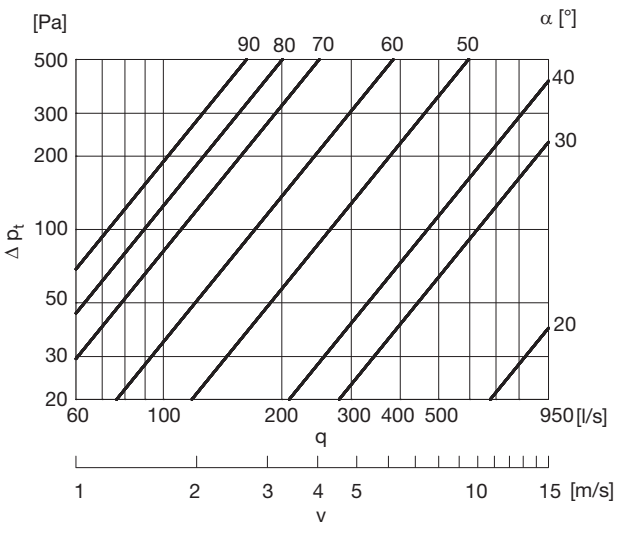

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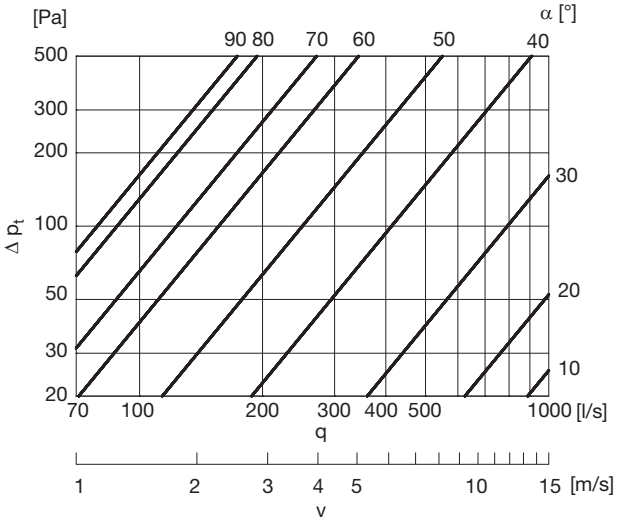

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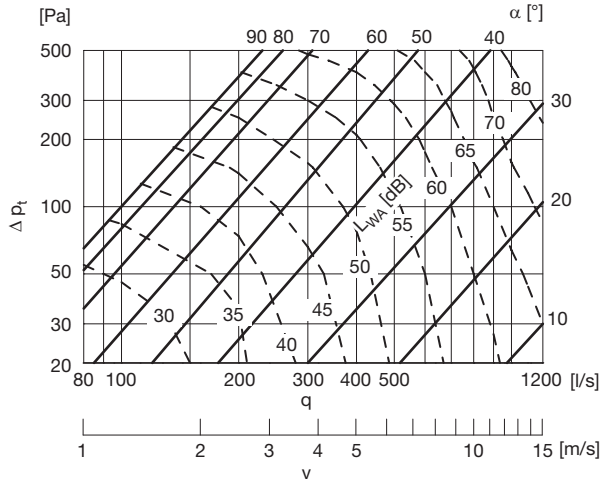
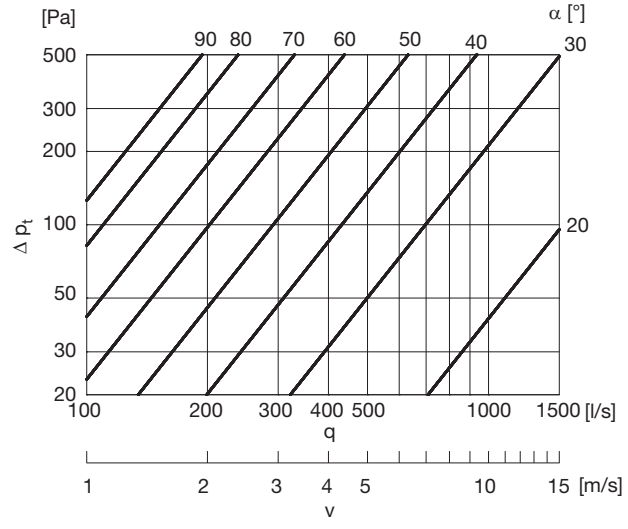


Regulating damper DRU

Ø355



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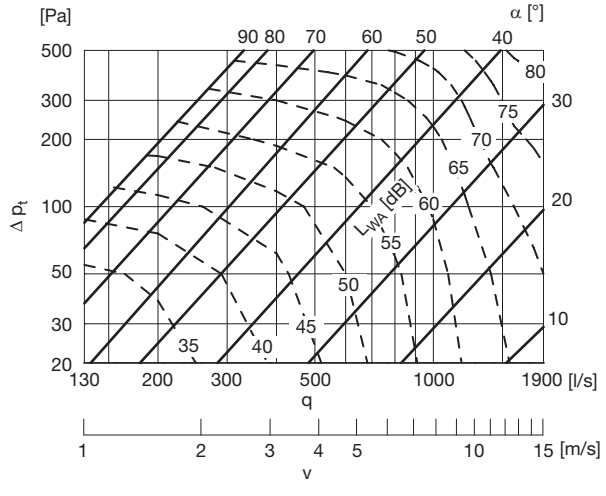

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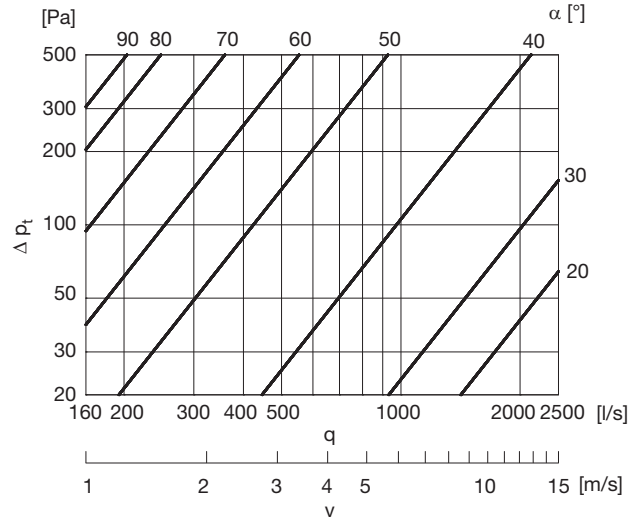

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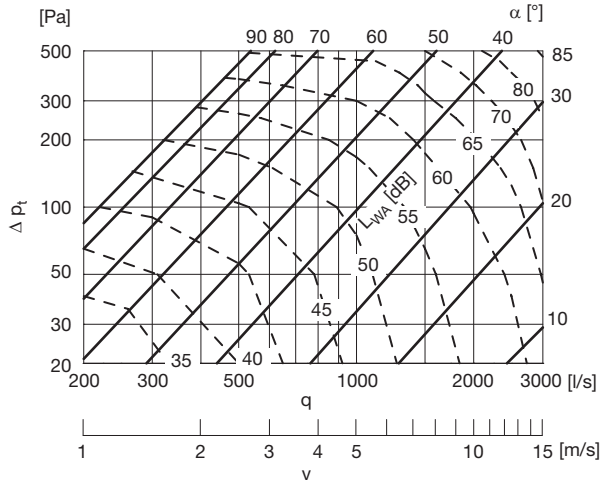

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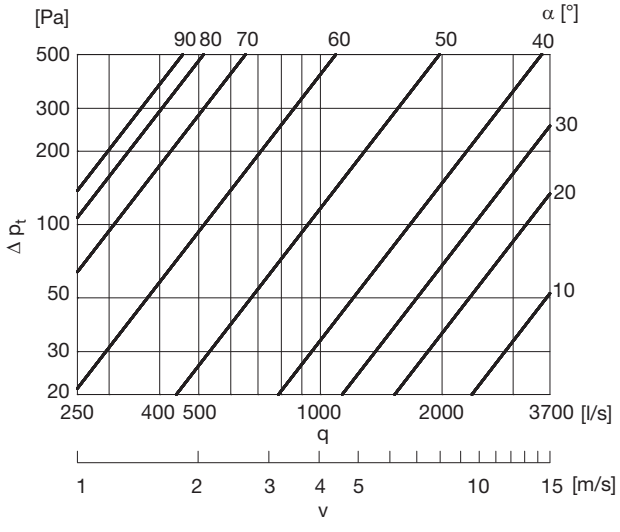

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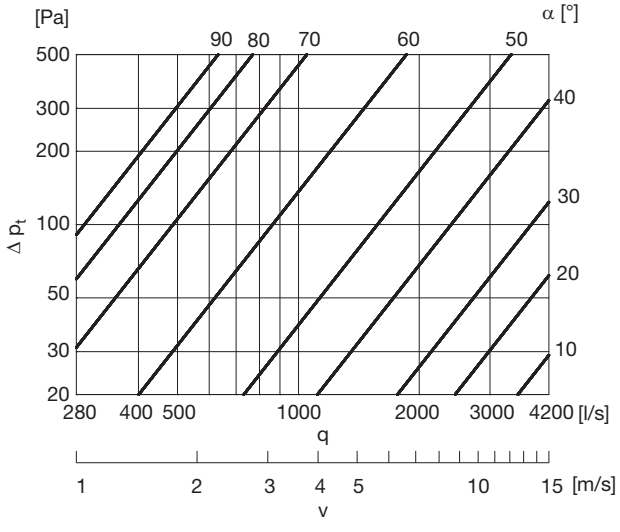
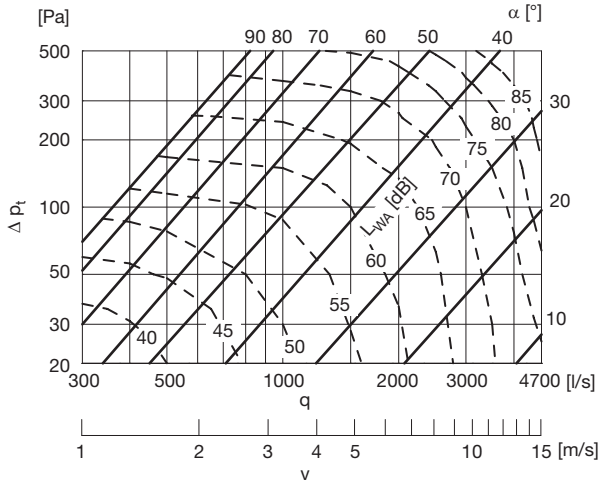
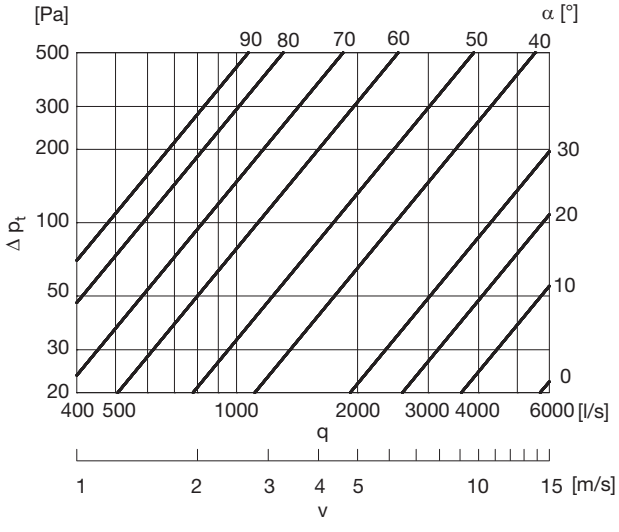


Regulating damper DRU

Ø630



Ø710



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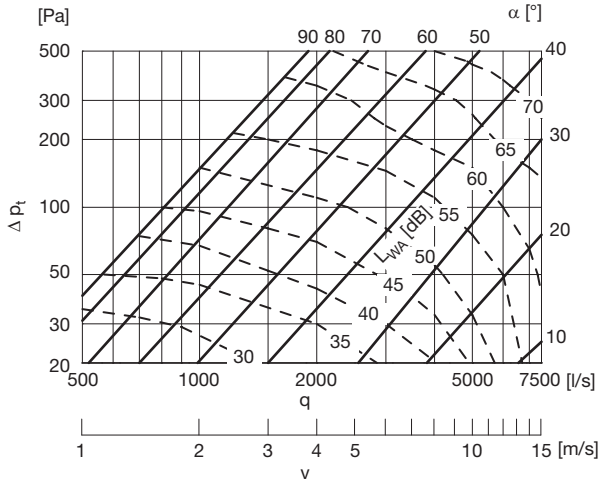

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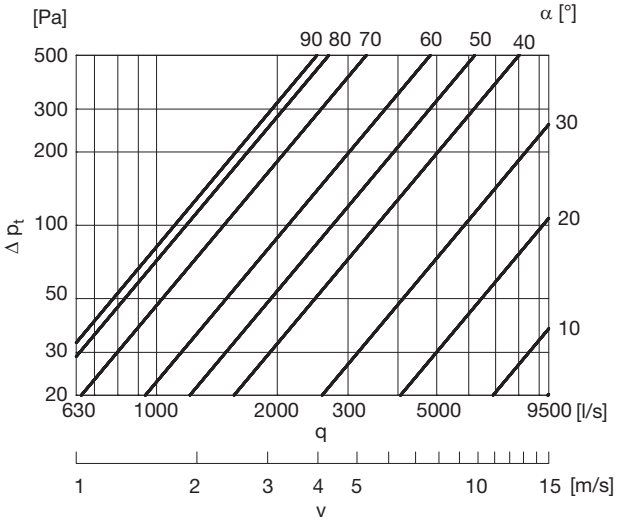
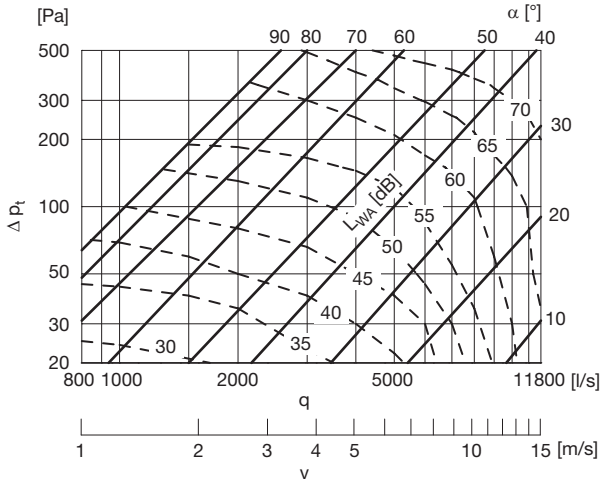


Ø1000



Regulating damper DRU

Sound data

Sound power level L_W, [dB] to duct in the octave bands 1–8, 63–8000 Hz, as a function of dimension, flow and pressure drop.

dim Ød$_1$	Pressure drop [Pa]	Velocity app. 1 [m/s] Centre frequency [Hz]								Velocity app. 3 [m/s] Centre frequency [Hz]								Velocity app. 6 [m/s] Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 5 [l/s]								Flow 15 [l/s]								Flow 30 [l/s]							
	500	–	–	–	–	–	–	–	–	65	65	65	65	59	55	49	46	67	67	67	67	60	57	50	47
	200	–	–	–	–	–	–	–	–	63	63	60	54	51	43	34	29	65	65	62	56	53	44	35	30
	100	–	–	–	–	–	–	–	–	60	60	53	48	43	30	23	15	61	64	57	51	46	32	24	16
	50	53	49	43	40	33	23	15	8	56	54	47	43	36	25	16	9	59	59	52	47	40	27	17	10
	20	47	42	36	32	25	16	7	1	51	47	39	35	28	18	8	2	54	52	44	39	32	20	9	4
100		Flow 8 [l/s]								Flow 25 [l/s]								Flow 50 [l/s]							
	500	–	–	–	–	–	–	–	–	67	64	64	57	54	48	48	48	72	69	69	62	59	52	52	52
	200	–	–	–	–	–	–	–	–	59	58	58	50	48	40	37	37	66	65	64	57	54	45	42	42
	100	–	–	–	–	–	–	–	–	58	55	53	46	41	34	26	24	65	64	62	54	48	40	31	29
	50	48	42	38	33	26	19	16	14	55	53	48	42	35	26	22	18	64	63	60	53	44	33	28	22
	20	43	35	30	23	17	9	7	6	50	49	42	37	28	17	15	14	62	61	57	51	41	27	25	15
125		Flow 12 [l/s]								Flow 40 [l/s]								75 [l/s]							
	500	–	–	–	–	–	–	–	–	71	68	65	59	56	50	50	47	76	73	70	63	60	53	53	50
	200	–	–	–	–	–	–	–	–	65	62	57	51	46	41	38	38	72	71	65	59	53	47	43	43
	100	–	–	–	–	–	–	–	–	64	59	53	47	39	34	29	27	71	70	63	55	47	40	35	32
	50	57	42	41	31	29	20	17	15	63	54	50	41	36	27	25	20	70	68	60	51	43	34	32	24
	20	56	32	39	29	27	11	15	11	62	48	48	34	34	20	22	15	68	65	56	47	39	29	28	17
160		Flow 20 [l/s]								Flow 60 [l/s]								Flow 120 [l/s]							
	500	–	–	–	–	–	–	–	–	68	67	64	59	55	53	52	51	73	71	68	62	59	55	54	53
	200	–	–	–	–	–	–	–	–	61	58	56	50	48	42	40	40	71	65	62	56	53	47	44	44
	100	–	–	–	–	–	–	–	–	59	54	50	45	40	35	33	31	70	64	60	53	48	42	39	38
	50	42	36	33	28	25	20	17	16	54	50	46	37	33	29	25	25	69	63	58	48	42	37	32	32
	20	37	30	30	26	19	16	11	10	49	46	43	35	27	24	19	18	68	61	55	44	36	32	27	23
200		Flow 30 [l/s]								Flow 100 [l/s]								Flow 200 [l/s]							
	500	–	–	–	–	–	–	–	–	70	64	61	55	52	52	55	55	75	69	65	59	55	55	59	59
	200	–	–	–	–	–	–	–	–	62	57	55	47	44	42	42	42	71	65	61	53	50	48	47	47
	100	–	–	–	–	–	–	–	–	57	52	48	41	39	36	34	34	69	64	58	50	47	44	42	42
	50	40	38	33	30	28	27	23	22	51	45	41	36	32	32	28	28	63	56	51	44	39	39	34	34
	20	34	31	26	25	25	23	18	16	44	37	33	29	27	25	21	19	56	47	43	36	29	27	24	22
250		Flow 50 [l/s]								Flow 150 [l/s]								Flow 300 [l/s]							
	500	–	–	–	–	–	–	–	–	69	66	59	53	50	54	53	52	71	67	61	56	53	56	55	54
	200	–	–	–	–	–	–	–	–	59	57	52	46	44	41	44	44	63	60	55	49	46	44	46	46
	100	–	–	–	–	–	–	–	–	56	52	45	41	38	36	34	31	62	57	51	46	43	40	38	35
	50	44	41	35	32	29	24	22	20	52	48	40	38	34	30	28	24	61	56	47	45	40	38	33	28
	20	33	35	29	29	25	15	12	10	47	44	37	35	31	25	22	17	59	54	46	42	38	36	30	24
315		Flow 80 [l/s]								Flow 250 [l/s]								Flow 500 [l/s]							
	500	–	–	–	–	–	–	–	–	68	65	59	53	50	50	53	50	74	71	65	58	55	55	58	55
	200	–	–	–	–	–	–	–	–	60	55	50	45	43	40	43	40	70	65	58	52	49	48	49	46
	100	–	–	–	–	–	–	–	–	54	52	45	41	38	36	36	31	66	64	56	50	47	46	44	39
	50	34	34	30	26	22	21	19	15	49	49	43	38	34	32	30	24	64	63	55	49	45	42	40	32
	20	26	30	27	21	16	15	13	11	44	46	41	35	30	27	25	18	62	61	54	48	43	37	34	24
400		Flow 130 [l/s]								Flow 400 [l/s]								Flow 800 [l/s]							
	500	–	–	–	–	–	–	–	–	79	73	67	62	57	60	59	58	82	75	68	65	59	62	61	60
	200	–	–	–	–	–	–	–	–	67	62	56	50	48	48	48	45	74	68	62	56	53	52	52	49
	100	–	–	–	–	–	–	–	–	61	56	49	44	42	39	39	34	72	67	58	53	49	47	46	40
	50	42	37	31	29	28	27	25	20	57	52	44	39	37	35	34	26	71	66	56	50	47	44	44	33
	20	40	34	27	25	24	23	21	11	55	50	40	35	34	32	30	20	70	65	54	47	44	40	38	28
500		Flow 200 [l/s]								Flow 600 [l/s]								Flow 1200 [l/s]							
	500	–	–	–	–	–	–	–	–	84	77	70	64	63	62	61	60	85	78	71	65	64	63	62	61
	200	–	–	–	–	–	–	–	–	71	65	59	53	50	50	50	47	77	70	64	58	56	55	54	51
	100	–	–	–	–	–	–	–	–	63	58	53	47	46	44	42	37	72	66	60	55	53	51	49	43
	50	46	40	36	33	32	29	29	25	59	52	47	44	42	38	38	31	71	63	57	54	51	46	46	37
	20	41	33	29	27	26	19	18	20	56	47	42	40	38	32	30	26	70	60	54	52	49	44	40	32
630		Flow 300 [l/s]								Flow 900 [l/s]								Flow 1800 [l/s]							
	500	–	–	–	–	–	–	–	–	88	80	73	69	66	64	63	62	90	83	75	71	68	67	65	64
	200	–	–	–	–	–	–	–	–	78	72	65	62	59	55	55	49	80	74	67	64	60	57	57	50
	100	–	–	–	–	–	–	–	–	71	66	59	54	50	46	45	40	78	71	66	59	56	49	48	44
	50	54	49	45	39	34	36	30	26	66	58	53	48	43	40	39	30	77	68	62	57	51	45	47	36
	20	45	35	38	30	29	29	26	20	61	50	47	43	38	36	33	25	76	65	57	55	46	42	39	30
800		Flow 500 [l/s]								Flow 1500 [l/s]								Flow 3000 [l/s]							
	500	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	72	65	62	63	62	62	61	56
	200	–	–	–	–	–	–	–	–	58	52	49	49	50	49	45	37	67	60	56	55	53	52	49	43
	100	–	–	–	–	–	–	–	–	55	48	45	44	44	40	35	29	63	55	51	49	47	44	40	34
	50	–	–	–	–	–	–	–	–	52	44	40	38	35	31	26	20	60	50	46	44	41	37	33	25
	20	31	33	27	22	21	11	12	1	44	36	32	28	25	17	13	2	56	40	37	34	29	23	14	9
1000		Flow 800 [l/s]								Flow 2400 [l/s]								Flow 4750 [l/s]							
	500	–	–	–	–	–	–	–	–	68	62	58	58	57	57	56	53	77	70	66	67	64	64	63	57
	200	–	–	–	–	–	–	–	–	64	56	53	52	52	51	48	38	72	64	58	56	54	52	50	42
	100	–	–	–	–	–	–	–	–	60	52	46	45	44	41	37	28	67	58	53	49	47	44	40	32
	50	50	40	32	34	31	26	21	10	56	47	40	39	36	31	27	15	62	54	48	44	41	37	33	25
	20	47	22	27	29	19	6	2	1	50	34	33	32	25	17	7	2	53	45	39	35	32	28	22	14

Regulating damper DRU

dim $Ød_1$	Pressure drop [Pa]	Velocity app. 9 [m/s]								Velocity app. 12 [m/s]								Velocity app. 15 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 45 [l/s]								Flow 60 [l/s]								Flow 75 [l/s]							
	500	72	70	70	70	63	60	53	49	77	76	75	75	68	64	56	53	80	80	80	80	72	68	60	56
	200	70	68	67	60	57	48	38	32	75	74	71	65	61	51	41	34	78	77	72	70	64	53	42	35
	100	66	65	63	57	51	36	27	18	74	73	70	60	57	45	32	25	77	75	71	65	58	46	33	26
	50	63	62	58	52	45	28	18	11	73	71	66	55	52	40	25	19	75	72	67	58	53	41	26	20
	20	59	58	51	46	38	21	10	5	70	67	60	47	44	32	17	13	72	68	62	50	47	36	20	15
100		Flow 75 [l/s]								Flow 100 [l/s]								Flow 120 [l/s]							
	500	78	75	75	67	64	57	57	57	84	81	80	72	68	62	61	61	88	86	85	76	72	65	64	64
	200	74	73	72	64	59	50	47	46	80	79	78	69	66	55	51	51	84	83	81	72	68	59	55	54
	100	73	72	71	62	56	46	36	33	79	78	75	65	60	49	44	42	82	81	78	69	63	54	48	45
	50	72	70	68	58	51	40	29	23	77	76	70	60	53	43	36	31	80	79	74	65	57	48	40	35
	20	70	67	63	53	44	33	26	17	74	73	65	54	46	37	27	20	78	77	69	60	50	41	31	24
125		Flow 110 [l/s]								Flow 145 [l/s]								Flow 180 [l/s]							
	500	83	80	76	68	65	58	58	54	89	87	81	73	69	62	62	58	91	88	83	75	71	63	63	59
	200	79	78	71	65	58	51	48	47	87	85	78	70	63	56	52	48	88	86	80	71	66	59	54	49
	100	78	77	70	61	51	45	39	35	86	83	75	66	58	50	44	39	87	84	78	69	61	53	47	42
	50	77	76	68	57	45	39	33	25	84	80	71	61	52	44	36	28	86	82	75	65	55	47	39	33
	20	76	75	64	53	40	33	30	18	81	76	66	55	45	38	32	19	85	81	71	60	48	41	34	22
160		Flow 180 [l/s]								Flow 240 [l/s]								Flow 300 [l/s]							
	500	78	77	74	67	63	60	59	58	84	84	80	72	68	65	65	65	89	89	85	77	73	69	69	69
	200	76	73	70	63	59	53	50	50	80	80	77	69	66	58	55	55	85	84	80	73	70	64	59	58
	100	75	72	69	61	54	48	45	44	78	76	73	66	61	53	50	48	83	80	77	70	65	58	54	52
	50	74	71	66	58	49	40	38	33	76	72	68	62	55	47	43	38	80	76	72	66	59	51	47	42
	20	73	66	61	54	43	35	30	25	74	68	63	57	48	40	35	27	76	71	65	61	52	43	39	30
200		Flow 300 [l/s]								Flow 400 [l/s]								Flow 475 [l/s]							
	500	85	79	72	65	62	61	65	65	92	85	79	72	68	66	71	70	95	89	82	73	71	70	74	73
	200	83	77	70	62	58	55	54	54	90	83	77	69	65	62	61	60	92	85	79	71	66	64	64	63
	100	82	76	69	59	56	53	50	50	88	80	73	65	61	58	55	53	90	83	76	68	63	61	58	56
	50	81	74	65	56	52	49	45	42	85	76	68	60	56	52	48	45	88	80	72	64	59	56	52	48
	20	80	70	60	52	46	43	38	32	81	72	62	54	50	45	40	36	86	76	67	59	54	50	47	39
250		Flow 450 [l/s]								Flow 600 [l/s]								Flow 750 [l/s]							
	500	78	75	68	61	58	61	60	59	87	83	76	68	68	68	68	68	94	90	82	74	71	74	74	74
	200	74	69	63	57	55	54	54	53	82	79	72	64	63	63	62	61	88	84	77	69	68	67	68	65
	100	72	68	60	56	52	49	45	42	79	76	69	62	60	60	58	57	85	81	74	67	65	63	62	59
	50	69	67	58	54	48	44	37	32	76	72	65	59	56	54	51	48	82	78	70	64	61	58	55	52
	20	66	65	56	52	44	39	32	27	73	68	61	56	51	46	42	38	79	75	65	60	56	53	47	46
315		Flow 750 [l/s]								Flow 1000 [l/s]								Flow 1200 [l/s]							
	500	82	78	71	64	60	60	60	60	89	85	77	69	68	67	69	65	92	88	80	72	71	70	72	68
	200	77	72	66	59	58	57	56	52	86	79	72	65	63	62	63	58	88	83	75	68	66	65	64	59
	100	76	71	64	57	54	52	50	44	84	77	69	62	60	58	57	53	87	80	72	65	63	61	59	55
	50	75	70	61	54	50	46	43	35	82	74	66	59	55	52	49	46	85	77	69	62	59	55	52	48
	20	74	68	58	51	46	39	36	26	80	71	63	56	48	44	39	38	82	74	66	60	54	47	46	40
400		Flow 1200 [l/s]								Flow 1500 [l/s]								Flow 1900 [l/s]							
	500	88	81	74	70	63	66	65	64	95	87	79	75	69	71	70	69	98	90	82	78	73	74	73	72
	200	83	76	68	61	60	59	58	54	89	82	75	69	67	64	63	60	92	84	77	70	69	67	65	63
	100	82	75	67	60	58	55	53	47	86	80	72	66	63	61	58	55	89	82	74	68	66	64	61	58
	50	80	73	65	58	56	51	47	39	83	77	68	63	58	56	52	48	86	80	71	66	62	59	55	51
	20	77	70	63	55	53	47	42	30	80	74	64	60	54	50	45	40	83	78	68	64	58	51	47	42
500		Flow 1800 [l/s]								Flow 2400 [l/s]								Flow 3000 [l/s]							
	500	91	84	76	68	67	68	68	67	96	88	80	72	70	73	72	71	102	94	85	78	75	77	77	76
	200	85	78	72	65	63	61	60	57	91	84	76	70	66	66	65	61	96	89	80	72	68	68	68	67
	100	82	74	69	62	59	57	55	50	88	75	70	63	60	58	56	52	93	85	76	69	65	63	61	58
	50	79	71	66	59	55	52	48	43	85	72	67	60	56	53	49	44	90	80	72	65	62	57	53	49
	20	76	67	63	56	50	47	41	36	82	69	64	57	52	48	43	37	87	75	67	61	58	54	46	40
630		Flow 2800 [l/s]								Flow 3700 [l/s]								Flow 4900 [l/s]							
	500	96	88	80	76	72	72	70	68	103	95	86	82	77	77	76	73	107	98	90	85	81	81	80	76
	200	90	83	76	71	67	63	63	56	98	90	82	78	74	70	70	62	103	95	87	82	78	76	73	66
	100	89	82	75	68	63	58	55	50	95	88	79	74	70	65	63	57	100	92	84	79	75	71	67	62
	50	87	80	72	65	58	52	48	42	92	84	75	69	65	60	56	51	97	89	80	74	70	65	60	56
	20	84	77	68	61	52	45	42	33	89	82	70	63	59	55	49	43	94	86	75	68	64	58	52	48
800		Flow 4500 [l/s]								Flow 6000 [l/s]								Flow 7500 [l/s]							
	500	78	70	66	66	65	64	63	58	83	73	69	69	68	66	65	60	84	75	71	70	69	67	66	61
	200	72	64	60	59	57	55	52	46	77	67	63	62	60	58	55	49	80	70	66	65	63	61	58	52
	100	68	59	55	53	51	48	44	37	73	63	59	57	55	52	48	42	77	67	62	60	57	55	51	45
	50	66	55	51	48	45	42	37	30	71	60	55	52	49	47	41	35	76	65	61	58	54	52	47	40
	20	61	46	43	39	35	32	25	18	69	58	53	50	47	41	37	29	74	63	59	56	52	48	43	36
1000		Flow 7100 [l/s]								Flow 9450 [l/s]								Flow 11800 [l/s]							
	500	81	74	69	69	67	65	64	58	85	77	71	70	68	67	65	60	86	79	72	71	69	68	66	61
	200	76	69	63	60	57	55	53	45	80	71	65	64	61	58	57	50	83	74	68	67	64	61	60	55
	100	72	64	58	55	52	49	47	39	76	67	61	59	56	54	52	46	80	72	65	63	60	59	57	53
	50	68	60	54	52	48	45	43	36	73	65	59	58	54	52	50	45	78	70	63	62	59	58	56	52
	20	61	53	48	46	42	39	37	31	70	62	56	55	51	49	47	42	74	67	60	59	56	55	53	48

Damper with flow meter DIRU

Description

The damper DIRU with flow meter offers measurement of the air flow. DIRU has following characteristics: low noise level, centric flow, fixed measurement nozzles for accurate flow measurement and is equipped with regulating facilities which can be fully opened, which means that you do not need cleaning covers. It fulfils tightness class C.

The dimensioning graph are to be used to determine the pressure drop over the damper with flow meter and to give information regarding the sound effect level at different settings. When balancing the system the balancing graphs should be used.

There is a separate assembly, measuring, balancing and maintenance instruction for dampers with flow meter.

The damper blades forms a measuring flange which allows flow measuring. By measuring the pressure difference between the measure nozzles, you can through the equation on the damper derive the flow q [l/s]. The setting value of the damper and the correction factor (k-factor) is the same number which means that you do not have to read a graphs in order to get the k-factor from a setting value.

The air flow is regulated with a handle.

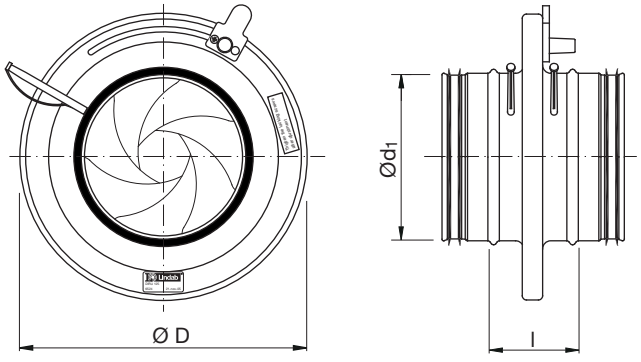
Ø 80–630 fullfills pressure class A in closed position.

Material
The damper is made of hot-dip galvanized sheet steel.

Installation
Consider required straight distance after or before disturbance, as mentioned on the card attached to the measurement nozzles, to obtain accurate flow measurement.

Cleaning
By fully open the damper, one get access to the duct. Do not forget to readjust the damper after cleaning.

Dimensions



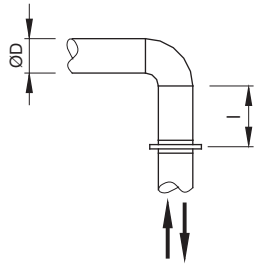
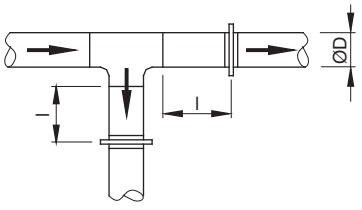
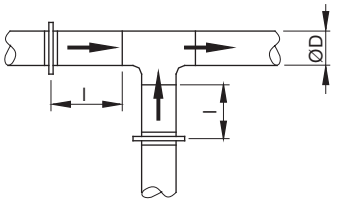
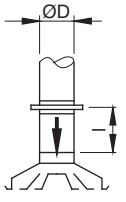
Ød1 nom	ØD mm	l mm	m kg
80	135	52	0,60
100	163	54	0,80
125	210	63	1,20
150	230	53	1,40
160	230	60	1,40
200	285	62	2,00
250	333	62	2,60
300	406	65	3,00
315	406	63	3,40
400	560	70	6,90
500	644	60	7,90
630	811	60	11,9

Ordering example

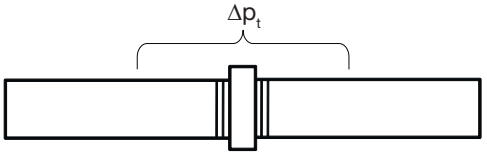
	DIRU	160
Product		
Dimension Ød1		

Damper with flow meter DIRU

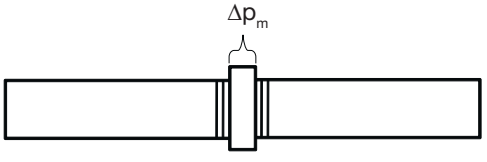
Technical data for DIRU, DIRBU and DIRVU

l = straight distance before and after disturbances	Method error ± 7%
	l ≥ 1 D
	l ≥ 1 D
	l ≥ 3 D
	l ≥ 3 D

Dimensioning
The dimensioning graphs show the pressure drop over the damper with flow meter, Δp_t. They should be used to determine the pressure drop and to provide information about sound effect levels at different settings.



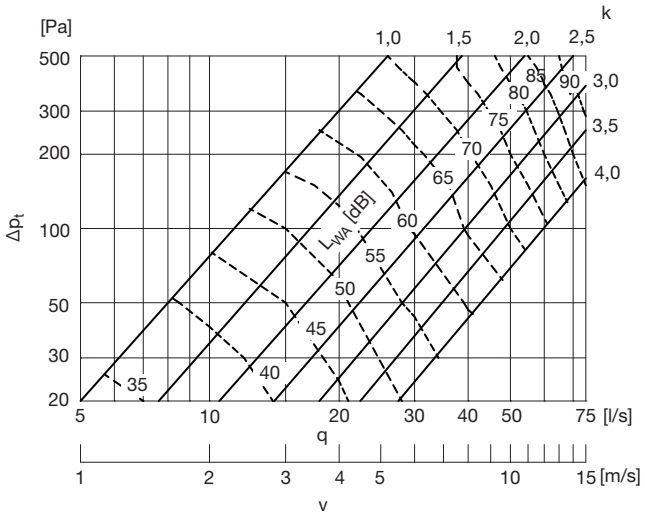
Balancing
The balancing graphs show the flow as a function of the measured pressure, Δp_m. These graphs should be used to balance the system.



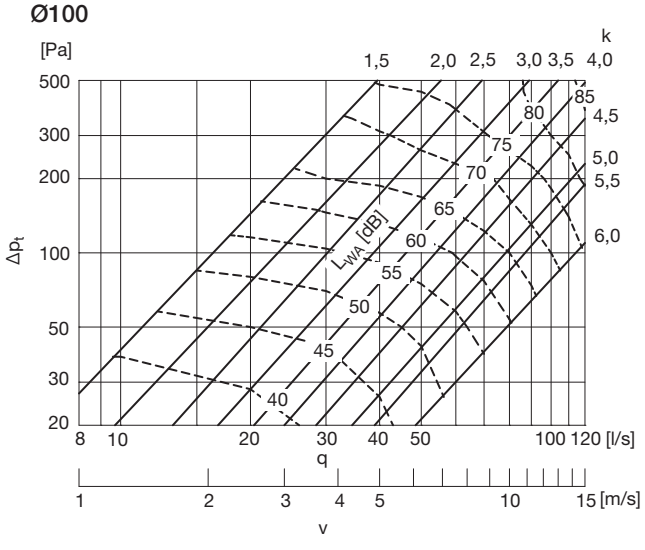
Damper with flow meter DIRU, DIRBU, DIRVU

Pressure drop graphs with noise data for dimensioning

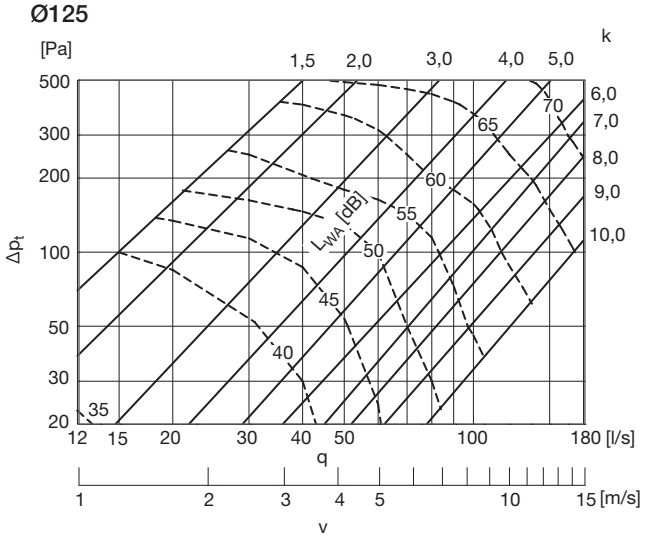
Ø80



Ø100

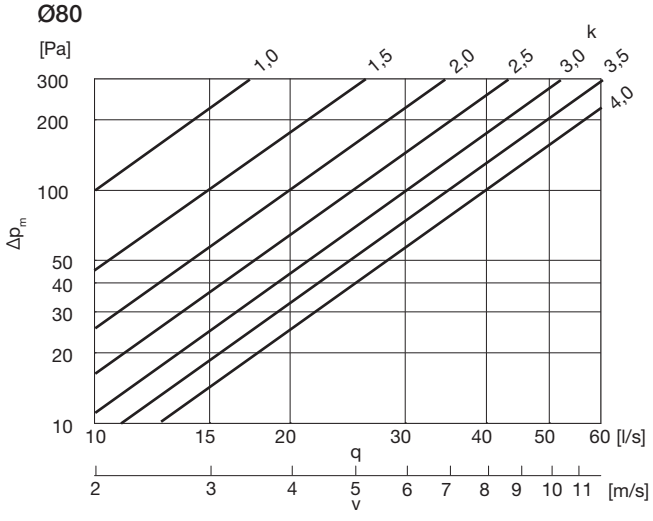


Ø125

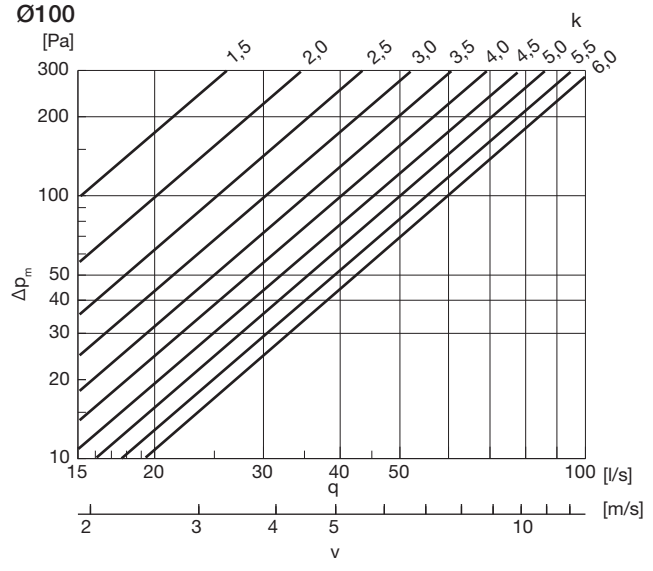


Flow graphs for balancing

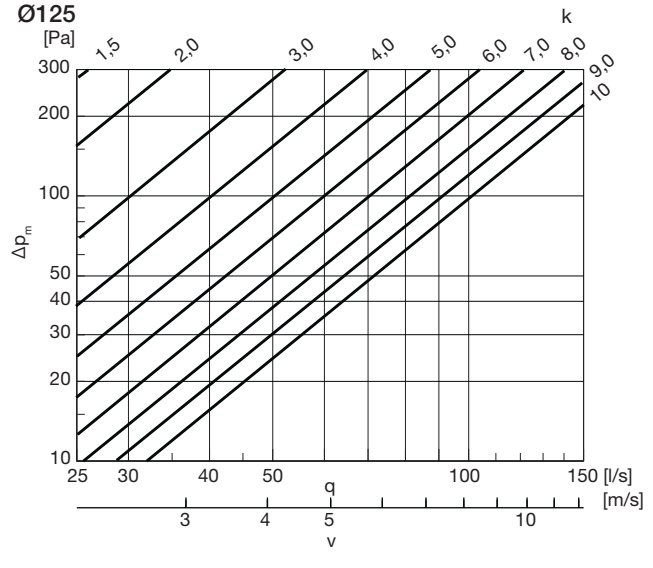
Ø80



Ø100



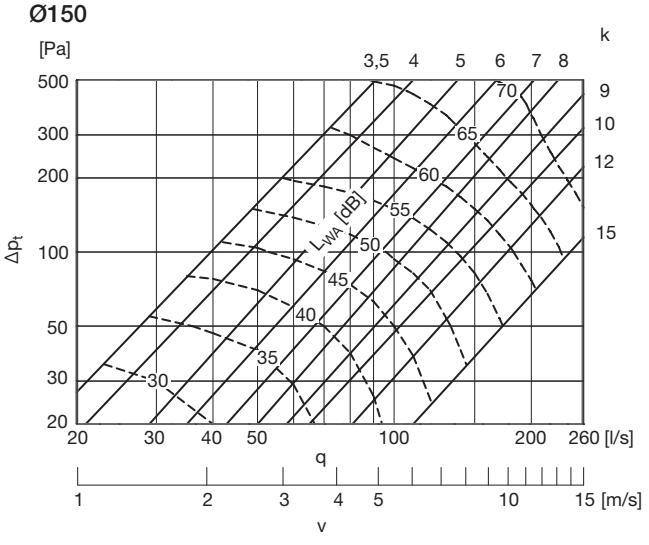
Ø125



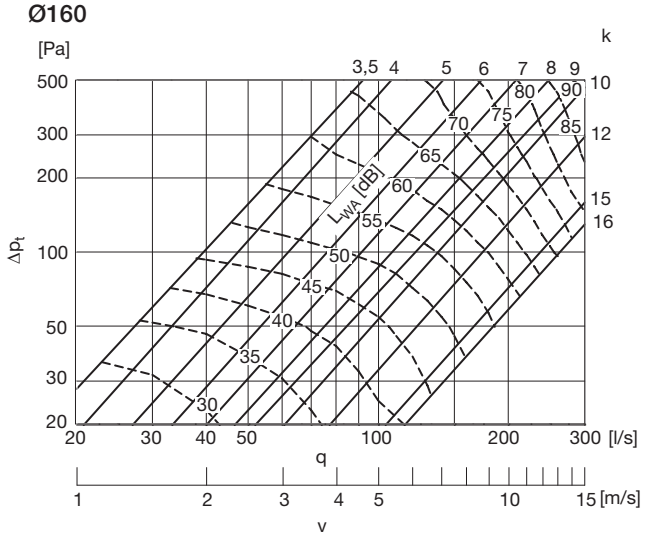
Damper with flow meter DIRU, DIRBU, DIRVU

Pressure drop graphs with noise data for dimensioning

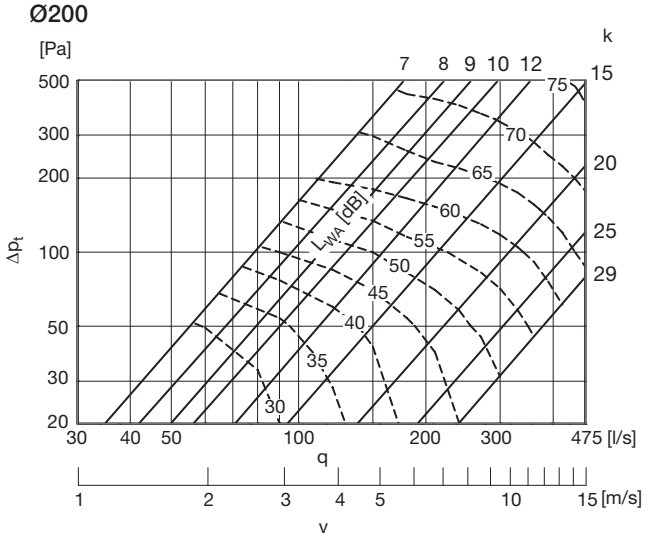
Ø150



Ø160

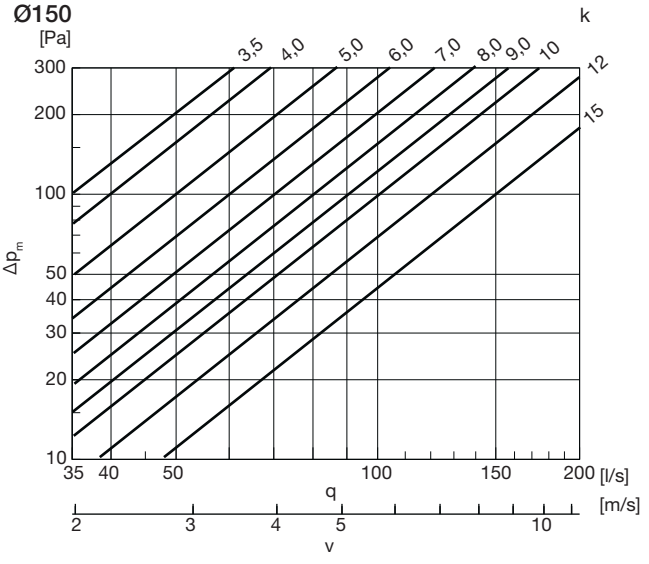


Ø200

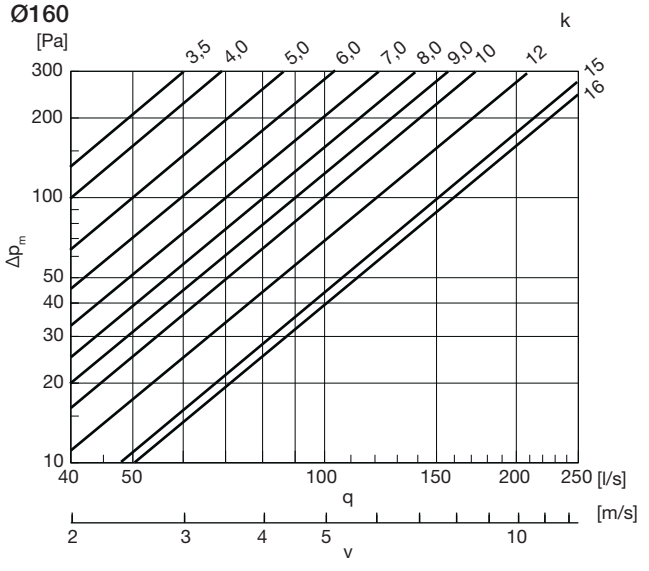


Flow graphs for balancing

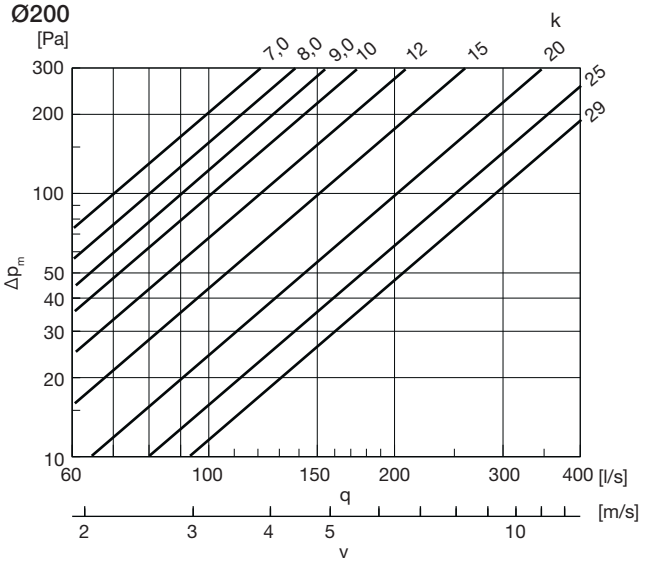
Ø150



Ø160



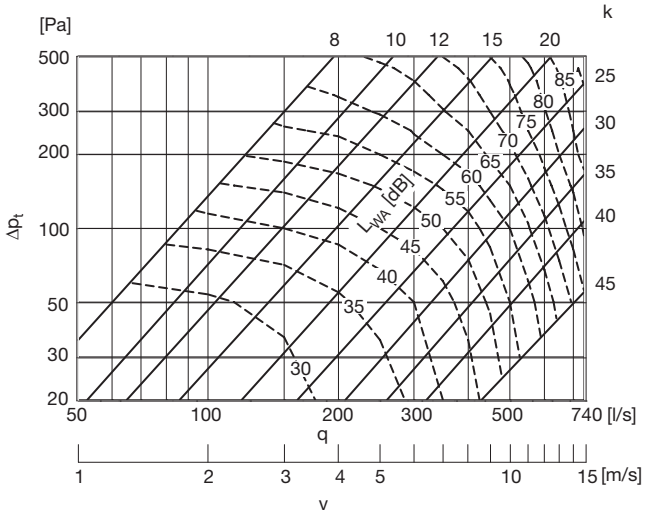
Ø200



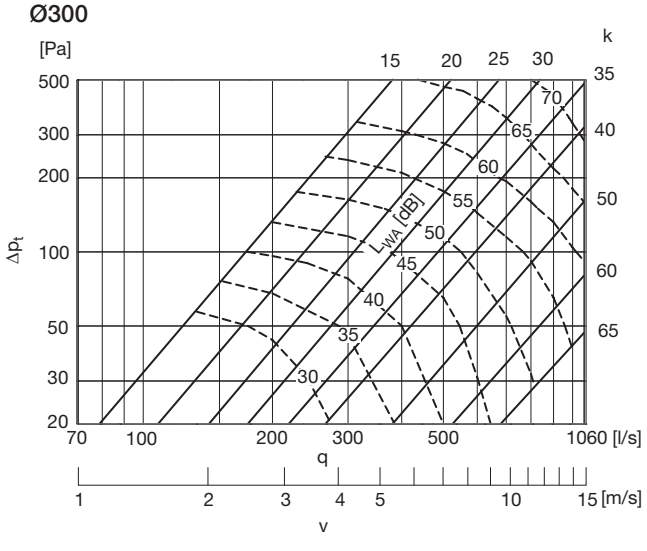
Damper with flow meter DIRU, DIRBU, DIRVU

Pressure drop graphs with noise data for dimensioning

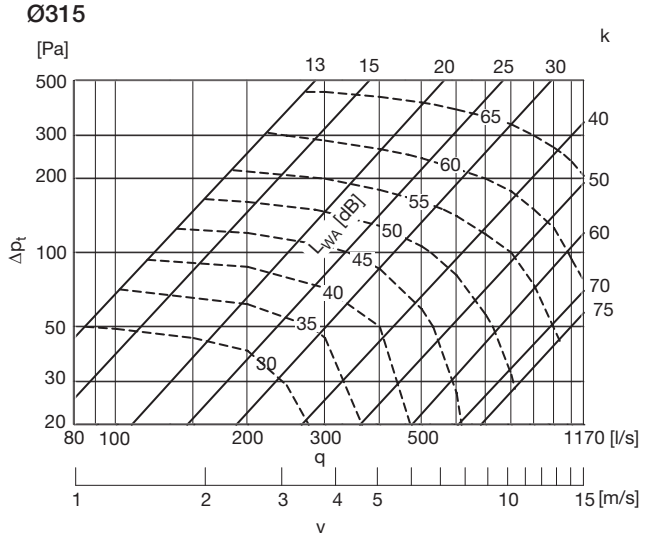
Ø250



Ø300

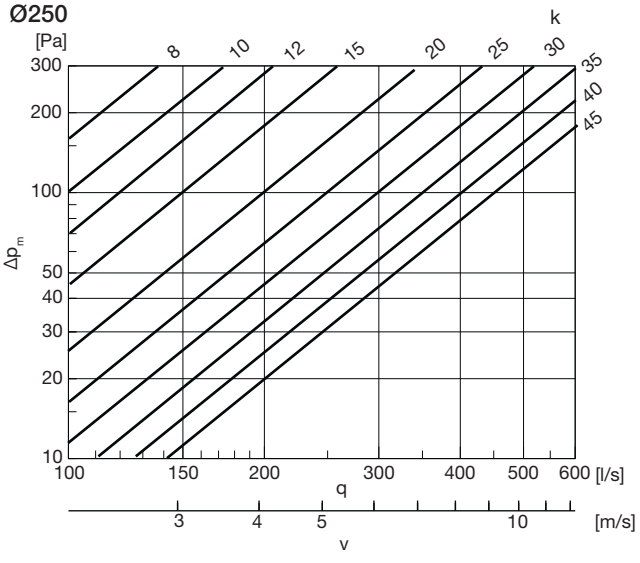


Ø315

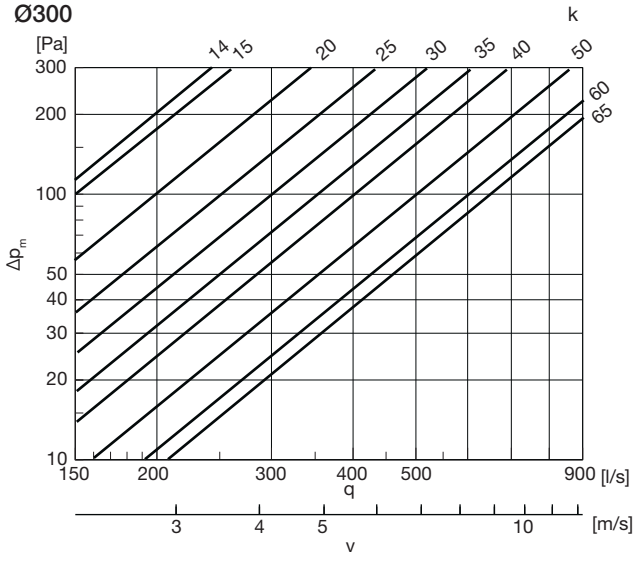


Flow graphs for balancing

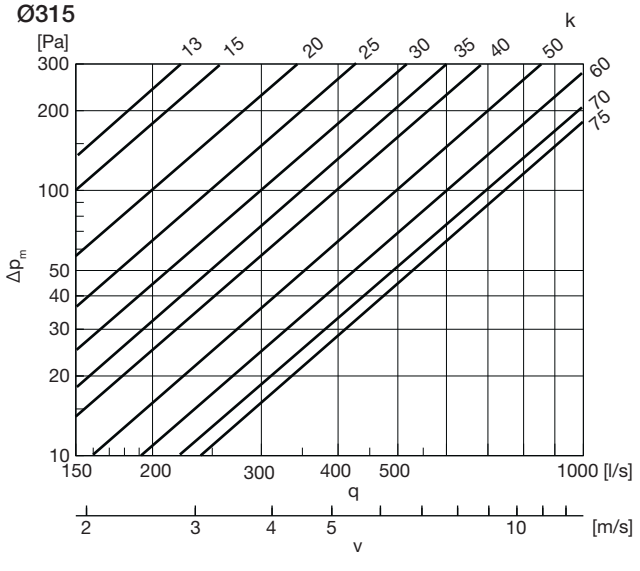
Ø250



Ø300



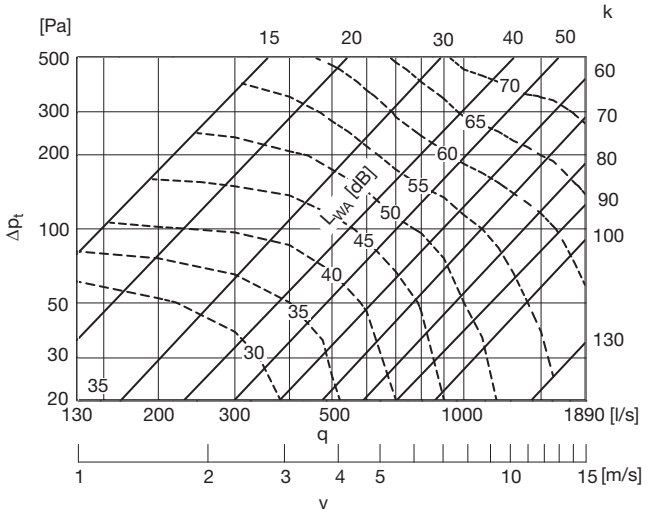
Ø315



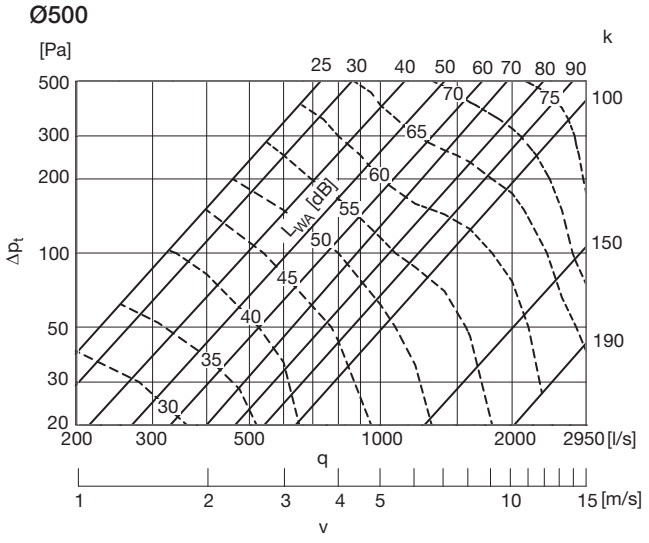
Damper with flow meter DIRU, DIRBU, DIRVU

Pressure drop graphs with noise data for dimensioning

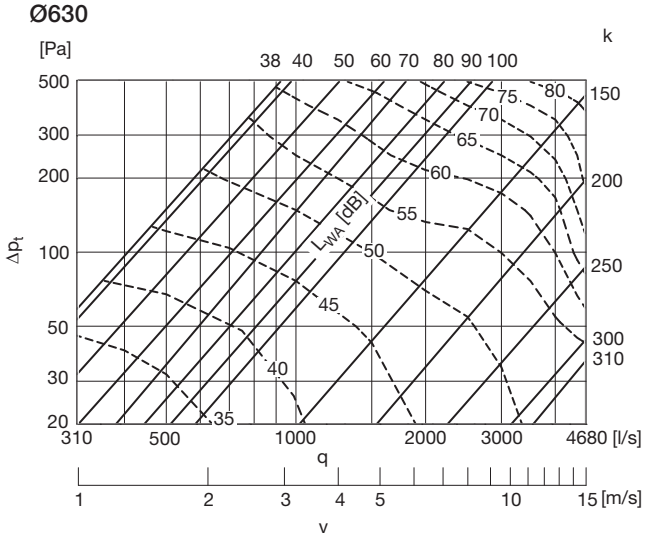
Ø400



Ø500

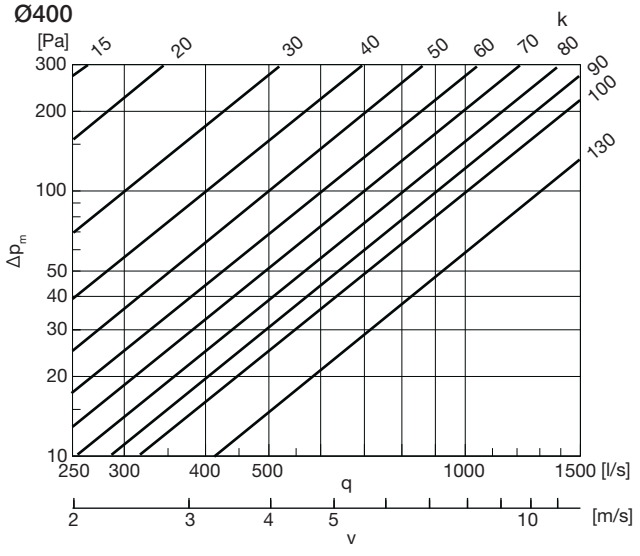


Ø630

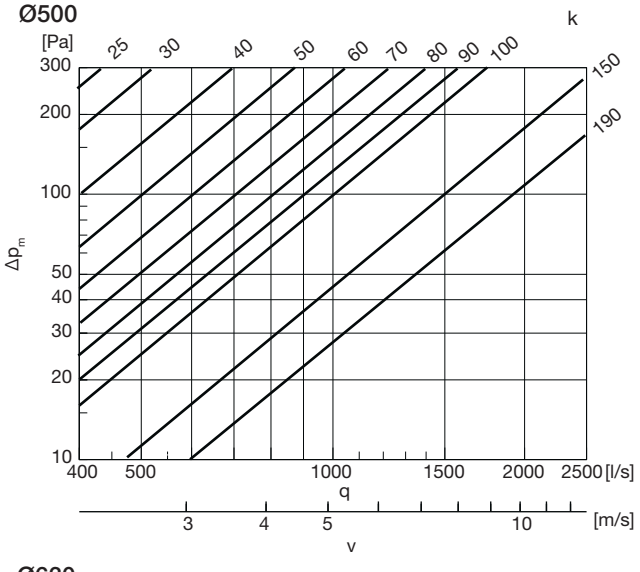


Flow graphs for balancing

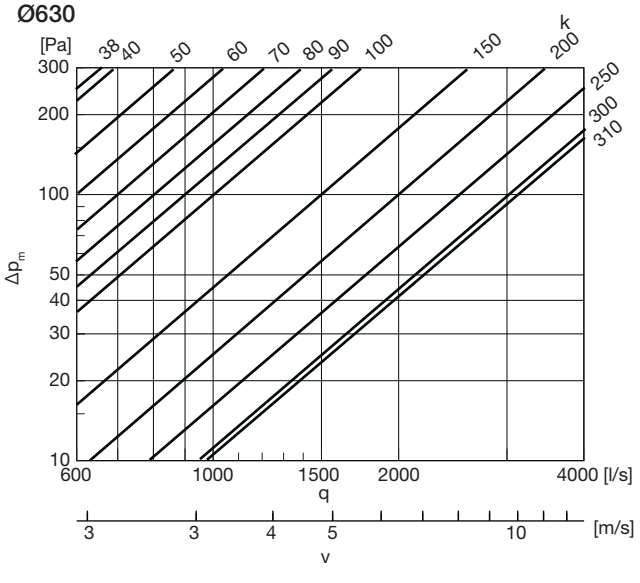
Ø400



Ø500



Ø630



Sound data

Sound power level L_W, [dB] to duct in the octave bands 1–8, 63–8000 Hz, as a function of dimension, flow and pressure drop.

dim Ød1	Pressure drop [Pa]	Velocity app. 1 [m/s] Centre frequency [Hz]								Velocity app. 3 [m/s] Centre frequency [Hz]								Velocity app. 6 [m/s] Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 5 [l/s]								Flow 15 [l/s]								Flow 30 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	74	73	70	68	61	61	61	49
	200	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	71	70	68	63	54	50	49	37
	100	–	–	–	–	–	–	–	–	65	58	52	45	42	40	37	23	68	67	66	58	52	47	43	31
	50	–	–	–	–	–	–	–	–	62	55	50	39	35	32	23	17	65	64	62	53	48	42	35	24
	20	56	45	31	24	18	13	3	9	60	53	43	34	28	21	11	15	62	61	56	48	42	34	23	18
100		Flow 8 [l/s]								Flow 25 [l/s]								Flow 45 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	95	90	76	67	58	49	40	36
	200	–	–	–	–	–	–	–	–	85	78	65	55	46	37	28	24	86	79	68	56	47	38	29	25
	100	–	–	–	–	–	–	–	–	74	67	54	44	35	26	17	13	77	70	57	47	38	29	20	16
	50	–	–	–	–	–	–	–	–	66	59	46	36	27	18	9	7	70	63	50	40	31	22	13	11
	20	53	48	35	25	17	9	2	1	60	53	40	30	22	14	5	4	66	59	46	36	27	18	9	8
125		Flow 10 [l/s]								Flow 45 [l/s]								Flow 75 [l/s]							
	300	–	–	–	–	–	–	–	–	83	78	67	56	46	37	29	26	85	80	69	58	48	39	31	28
	200	–	–	–	–	–	–	–	–	74	69	58	47	37	28	20	17	78	73	62	51	41	32	24	21
	100	–	–	–	–	–	–	–	–	63	58	47	36	26	17	9	6	72	67	56	45	35	26	18	15
	50	54	49	39	28	18	9	2	2	60	55	44	33	23	14	6	5	70	65	54	43	33	24	16	13
	20	52	48	37	26	16	7	1	1	58	52	41	30	20	11	3	4	67	62	51	40	30	21	13	10
150		Flow 20 [l/s]								Flow 50 [l/s]								Flow 110 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	85	79	67	57	49	41	32	29
	200	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	78	72	60	50	42	34	25	22
	100	–	–	–	–	–	–	–	–	64	58	46	36	28	20	12	9	71	65	53	43	35	27	18	15
	50	–	–	–	–	–	–	–	–	56	50	38	28	20	12	5	4	66	60	48	38	30	22	13	10
	20	45	39	27	17	9	1	1	1	51	45	33	23	15	7	3	3	62	56	44	34	26	18	9	6
160		Flow 20 [l/s]								Flow 60 [l/s]								Flow 120 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	90	81	71	61	53	45	36	33
	200	–	–	–	–	–	–	–	–	77	68	58	48	40	32	23	20	82	73	63	53	45	37	28	25
	100	–	–	–	–	–	–	–	–	69	60	50	40	32	24	15	12	74	65	55	45	37	29	20	17
	50	–	–	–	–	–	–	–	–	60	51	41	31	23	15	7	6	68	59	49	39	31	23	14	11
	20	47	37	28	18	10	1	2	1	53	45	34	24	16	9	4	3	63	54	44	34	26	18	9	6
200		Flow 30 [l/s]								Flow 95 [l/s]								Flow 190 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	93	83	74	65	57	51	44	40
	200	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	84	74	65	56	48	42	35	31
	100	–	–	–	–	–	–	–	–	67	57	48	39	31	25	18	14	75	65	56	47	39	33	26	22
	50	–	–	–	–	–	–	–	–	56	46	37	28	20	14	9	6	66	56	47	38	30	24	17	13
	20	–	–	–	–	–	–	–	–	52	42	33	24	16	10	5	4	63	53	44	35	27	21	14	10
250		Flow 50 [l/s]								Flow 150 [l/s]								Flow 290 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	87	77	67	65	55	50	43	40
	200	–	–	–	–	–	–	–	–	71	61	51	49	39	34	27	24	77	67	57	55	45	40	33	30
	100	–	–	–	–	–	–	–	–	60	50	40	38	28	23	16	13	67	57	47	45	35	30	23	20
	50	–	–	–	–	–	–	–	–	51	41	31	29	19	14	7	4	59	49	39	37	27	22	15	12
	20	44	34	24	22	12	7	2	1	48	38	28	26	16	11	4	3	55	45	35	33	23	18	11	8
300		Flow 70[l/s]								Flow 210[l/s]								Flow 420[l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	82	74	65	63	56	51	42	41
	200	–	–	–	–	–	–	–	–	70	62	53	51	44	39	30	29	73	65	56	54	47	42	33	32
	100	–	–	–	–	–	–	–	–	59	51	42	40	33	28	19	18	64	56	47	45	38	33	24	23
	50	–	–	–	–	–	–	–	–	49	41	32	30	23	18	9	8	58	50	41	39	32	27	18	17
	20	33	25	16	14	7	4	2	1	42	34	25	23	16	11	3	2	53	45	36	34	27	22	13	12
315		Flow 80 [l/s]								Flow 230 [l/s]								Flow 465 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	83	76	67	65	59	54	45	45
	200	–	–	–	–	–	–	–	–	71	64	55	53	47	42	33	33	74	67	58	56	50	45	36	36
	100	–	–	–	–	–	–	–	–	59	52	43	41	35	30	21	21	65	58	49	47	41	36	27	27
	50	46	39	30	28	22	17	8	8	48	41	32	30	24	19	10	10	59	52	43	41	35	30	21	21
	20	34	27	18	16	10	5	2	1	43	36	27	25	19	14	6	7	56	49	40	38	32	27	18	18
400		Flow 130 [l/s]								Flow 370 [l/s]								Flow 750 [l/s]							
	300	–	–	–	–	–	–	–	–	72	65	57	56	50	46	40	38	81	74	66	65	59	55	49	47
	200	–	–	–	–	–	–	–	–	64	57	49	48	42	38	32	30	73	66	58	57	51	47	41	39
	100	–	–	–	–	–	–	–	–	56	49	41	40	34	30	24	22	65	58	50	49	43	39	33	31
	50	42	35	27	26	20	16	10	8	50	43	35	34	28	24	18	16	59	52	44	43	37	33	27	25
	20	32	25	17	16	10	6	2	1	44	37	29	28	22	18	12	10	55	48	40	39	33	29	23	21
500		Flow 200 [l/s]								Flow 590 [l/s]								Flow 1180 [l/s]							
	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	89	79	70	64	56	50	41	36
	200	–	–	–	–	–	–	–	–	75	65	56	50	42	36	27	22	84	74	65	59	51	45	36	31
	100	–	–	–	–	–	–	–	–	69	59	50	44	36	30	21	16	79	69	60	54	46	40	31	26
	50	–	–	–	–	–	–	–	–	63	53	44	38	30	24	15	10	72	62	53	47	39	33	24	19
	20	45	35	26	20	12	6	2	1	57	47	38	32	24	18	9	4	67	57	48	42	34	28	19	14
630		Flow 310 [l/s]								Flow 940 [l/s]								Flow 1870 [l/s]							
	300	–	–	–	–	–	–	–	–	79	69	62	57	52	49	46	40	86	76	69	64	59	56	53	46
	200	–	–	–	–	–	–	–	–	73	63	56	51	46	43	40	34	80	70	63	58	53	50	47	41
	100	–	–	–	–	–	–	–	–	67	57	50	45	40	37	34	28	74	64	57	52	47	44	41	36
	50	54	44	37	32	27	24	21	15	62	52	45	40	35	32	29	23	69	59	52	47	42	39	36	30
	20	49	39	32	27	22	19	16	9	55	45	38	33	28	25	22	17	60	50	43	38	33	30	27	21

Damper with flow meter DIRU, DIRBU, DIRVU

dim Ød1	Pressure drop [Pa]	Velocity app. 9 [m/s]								Velocity app. 12 [m/s]								Velocity app. 15 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 45 [l/s]								Flow 60[l/s]								Flow 75[l/s]							
	300	79	76	74	73	72	73	75	60	84	80	78	79	80	79	83	76	89	84	82	85	88	85	91	92
	200	75	74	73	69	66	65	64	50	79	78	77	75	74	73	72	62	83	82	81	81	82	81	80	74
	100	71	72	72	65	60	57	53	40	74	76	76	71	68	67	61	48	–	–	–	–	–	–	–	–
	50	66	68	67	60	54	48	41	30	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
100		Flow 70 [l/s]								Flow 95[l/s]								Flow 120[l/s]							
	300	97	91	77	68	59	50	41	38	101	95	82	73	64	55	47	43	106	98	90	76	68	59	53	45
	200	89	82	69	59	50	41	32	30	95	87	77	65	56	47	39	35	101	92	85	71	62	53	46	40
	100	83	76	63	53	44	35	26	23	89	82	70	59	50	41	32	29	95	88	77	65	56	47	38	35
	50	77	70	57	47	38	29	20	18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
125		Flow 110 [l/s]								Flow 145 [l/s]								Flow 180 [l/s]							
	300	86	82	71	60	50	41	33	30	88	84	73	62	52	43	35	32	90	86	75	64	54	45	37	34
	200	81	76	65	54	44	35	27	24	84	79	68	57	47	38	30	27	87	82	71	60	50	41	33	30
	100	78	73	62	51	41	32	24	21	81	76	65	54	44	35	27	24	84	79	68	57	47	38	30	27
	50	75	70	59	48	38	29	21	18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
150		Flow 160 [l/s]								Flow 210[l/s]								Flow 260[l/s]							
	300	89	83	71	61	53	45	36	33	92	86	74	64	56	48	39	36	94	88	76	66	58	50	41	38
	200	83	77	65	55	47	39	30	27	87	81	69	59	51	43	34	31	91	85	73	63	55	47	38	35
	100	77	71	59	49	41	33	24	21	82	76	64	54	46	38	29	26	87	81	69	59	51	43	34	31
	50	73	67	55	45	37	29	20	17	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
160		Flow 180 [l/s]								Flow 240 [l/s]								Flow 300 [l/s]							
	300	97	88	78	68	60	52	43	40	105	96	86	76	68	60	51	48	113	104	94	84	76	68	59	56
	200	89	80	70	60	52	44	35	32	97	88	78	68	60	52	43	40	105	96	86	76	68	60	51	48
	100	81	72	62	52	44	36	27	24	89	80	70	60	52	44	35	32	97	88	78	68	60	52	43	40
	50	75	66	56	46	38	30	21	18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
200		Flow 285 [l/s]								Flow 380 [l/s]								Flow 475 [l/s]							
	300	94	84	75	66	58	52	45	41	95	85	76	67	59	53	46	42	97	87	78	69	61	55	48	44
	200	86	76	67	58	50	44	37	33	89	79	70	61	53	47	40	36	92	82	73	64	56	50	43	39
	100	79	69	60	51	43	37	30	26	83	73	64	55	47	41	34	30	87	77	68	59	51	45	38	34
	50	73	63	54	45	37	31	24	20	78	68	59	50	42	36	29	25	–	–	–	–	–	–	–	–
	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
250		Flow 440 [l/s]								Flow 590 [l/s]								Flow 740 [l/s]							
	300	94	84	74	72	62	57	50	47	102	95	82	80	70	65	58	55	110	106	90	88	78	73	66	63
	200	85	75	65	63	53	48	41	38	95	87	75	73	63	58	51	48	105	99	85	83	73	68	61	58
	100	76	66	56	54	44	39	32	29	88	79	68	66	56	51	44	41	100	92	80	78	68	63	56	53
	50	70	60	50	48	38	33	26	23	82	72	62	60	50	45	38	35	94	84	74	72	62	57	50	47
	20	65	55	45	43	33	28	21	18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
300		Flow 640 [l/s]								Flow 850[l/s]								Flow 1060[l/s]							
	300	84	76	67	65	58	53	44	43	88	80	71	69	62	57	48	47	92	84	75	73	66	61	52	51
	200	77	69	60	58	51	46	37	36	81	73	64	62	55	50	41	40	85	77	68	66	59	54	45	44
	100	70	62	53	51	44	39	30	29	74	66	57	55	48	43	34	33	78	70	61	59	52	47	38	37
	50	66	58	49	47	40	35	26	25	70	62	53	51	44	39	30	29	74	66	57	55	48	43	34	33
	20	62	54	45	43	36	31	22	21	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
315		Flow 700 [l/s]								Flow 935 [l/s]								Flow 1170 [l/s]							
	300	84	77	68	66	60	55	46	46	85	78	69	67	61	56	47	47	86	79	70	68	62	57	48	48
	200	77	70	61	59	53	48	39	39	79	72	63	61	55	50	41	41	81	74	65	63	57	52	43	43
	100	70	63	54	52	46	41	32	32	74	67	58	56	50	45	36	36	78	71	62	60	54	49	40	40
	50	66	59	50	48	42	37	28	28	70	63	54	52	46	41	32	32	74	67	58	56	50	45	36	36
	20	63	56	47	45	39	34	25	25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
400		Flow 1130 [l/s]								Flow 1510 [l/s]								Flow 1890 [l/s]							
	300	87	80	72	71	65	61	55	53	88	81	73	72	66	62	56	54	89	82	74	73	67	63	57	55
	200	79	72	64	63	57	53	47	45	81	74	66	65	59	55	49	47	83	76	68	67	61	57	51	49
	100	71	64	56	55	49	45	39	37	74	67	59	56	52	48	42	40	77	70	62	61	55	54	45	43
	50	66	59	51	50	44	40	34	32	70	63	55	54	48	44	38	36	74	67	59	58	52	48	42	40
	20	63	56	48	47	41	37	31	29	68	61	53	52	46	42	36	34	–	–	–	–	–	–	–	–
500		Flow 1770 [l/s]								Flow 2360 [l/s]								Flow 2950 [l/s]							
	300	92	82	73	67	59	53	44	39	95	85	76	70	62	56	47	42	98	88	79	73	65	59	50	45
	200	88	78	69	63	55	49	40	35	92	82	73	67	59	53	44	39	96	86	77	71	63	57	48	43
	100	84	74	65	59	51	45	36	31	89	79	70	64	56	50	41	36	94	84	75	69	61	55	46	41
	50	77	67	58	52	44	38	29	24	82	72	63	57	49	43	34	29	87	77	68	62	54	48	39	34
	20	73	63	54	48	40	34	25	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
630		Flow 2810 [l/s]								Flow 3740 [l/s]								Flow 4680 [l/s]							
	300	93	83	76	71	66	63	60	53	97	87	80	75	70	67	64	58	101	91	84	79	74	71	68	63
	200	86	76	69	64	59	56	53	47	90	80	73	68	63	60	57	51	94	84	77	72	67	64	61	55
	100	79	69	62	57	52	49	46	41	83	73	66	61	56	53	50	44	87	77	70	65	60	57	54	47
	50	72	62	55	50	45	42	39	33	74	64	57	52	47	44	41	35	76	66	59	54	49	46	43	37
	20	63	53	46	41	36	33	30	24	64	54	47	42	37	34	31	25	–	–	–	–	–	–	–	–

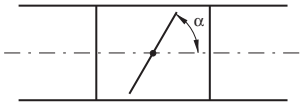
Shut-off damper DSU

Description

Has a turning, circular blade. The blade is stepless adjustable 0–90°. The damper is used when you have lower demands for shut-off capacity. The damper admits an insulation thickness of approx. 50 mm.

The damper can on occations be used for regulation.

Setting angle α
α = 0° = open blade, α = 90° = closed blade



There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 63–1000 fullfills pressure class A in closed position.

The cup at Ø 80–630 can be complemented with the special insulation cup IK at insulation thicker than 50 mm.

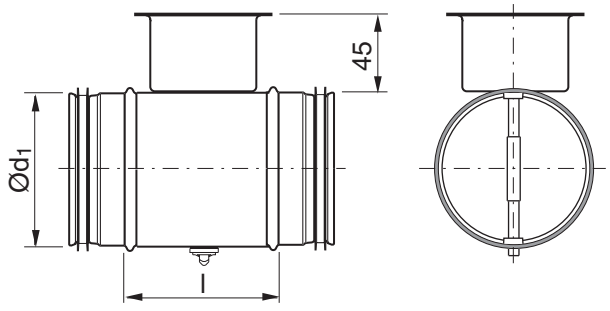
Reinforced blade

Ordering example

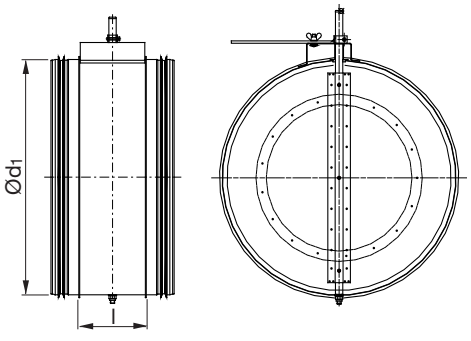
	DSU	160
Product		
Dimension Ød$_1$		

Dimensions

Ø 80–630



Ø 800–1000



Ød$_1$ nom	l mm	m kg	Sealing class past closed blade
63	100	0,30	0
80	100	0,35	0
100	100	0,40	0
112	100	0,44	0
125	100	0,49	0
140	100	0,54	0
150	100	0,57	0
160	100	0,67	0
180	100	0,73	0
200	100	0,86	0
224	100	1,10	0
250	100	1,31	0
280	100	1,51	0
300	100	1,65	0
315	100	1,81	0
355	100	2,00	0
400	100	2,91	1
450	100	3,90	1
500	115	4,92	1
560	115	6,01	1
600	115	6,40	1
630	115	6,92	1
800	230	19,0	1
1000	230	30,0	1

Shut-off damper DSU

Property	Ø 80–315	Ø 400	Ø 500	Ø 630	Ø 800–1000
The blade is set via a knob in a protective cup.	×	×	×	×	
The setting of the blade is read against an embossed scale at the rim of the cup.	×	×	×	×	
The blade is locked with two screws, type Pozidriv (PZD2).	×	×	×	×	
The blade has reinforced locking with a sturdy wing nut.					×
The blade is reinforced.		×	×	×	
The blade is additionally reinforced.					×
With sturdy handle.		×	×	×	
With additionally reinforced handle.					×
With reinforced stop beads.			×	×	
The axle is reinforced.					×
The damper can be delivered prepared for motor.	×	×	×	×	
The damper can be delivered with motor.	×	×	×	×	×

Technical data

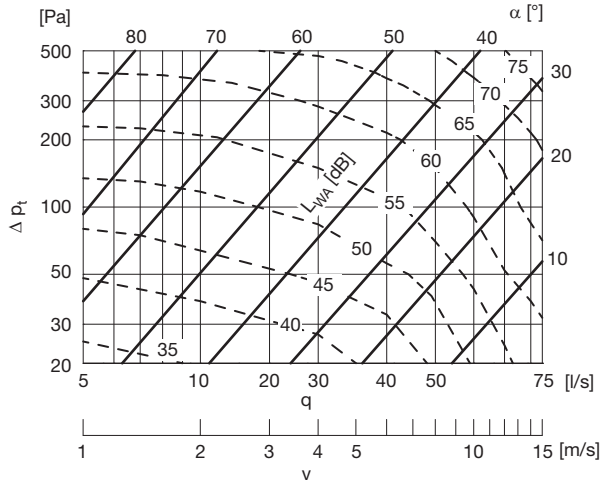
Pressure drop graphs with noise data for dimensioning

The solid curves show the pressure drop, Δp_t, over the damper as a function of flow q, and setting angle α.

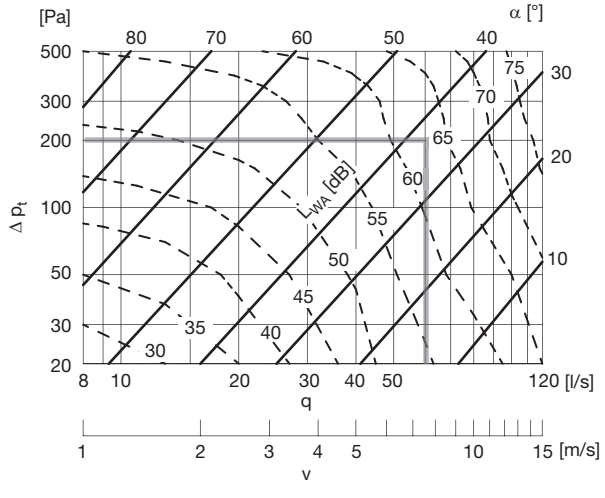
The dashed curves give the A-weighted sound power data, L_{WA}, in dB to the duct.

Example
Given Dimension Ø100
Flow 60 l/s
Pressure drop 200 Pa
Obtained from graph
Setting angle 38°
Sound power level 63 dB (A)

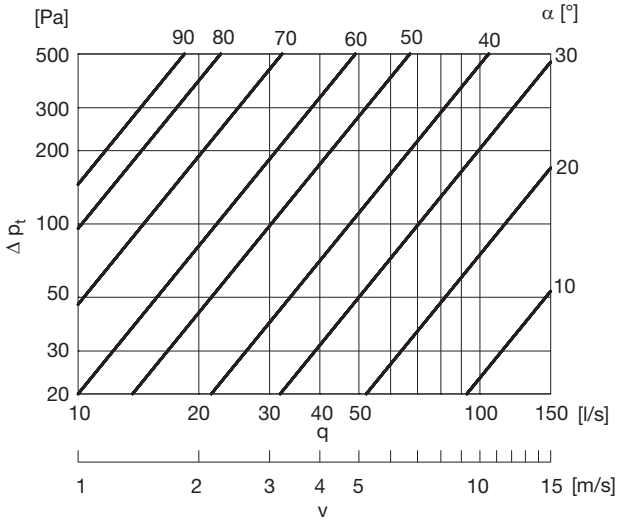
Ø80



Ø100



Ø112



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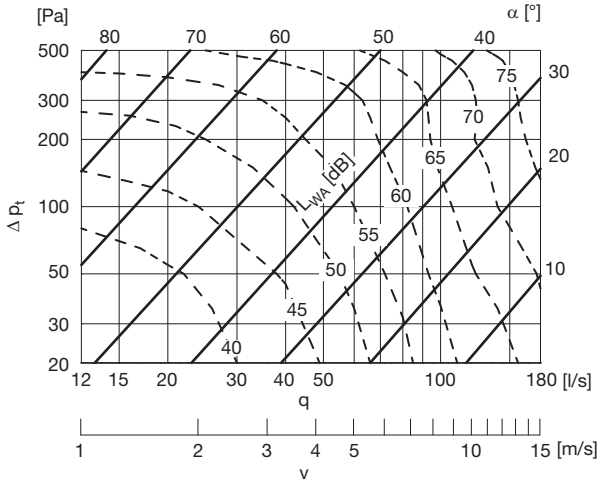

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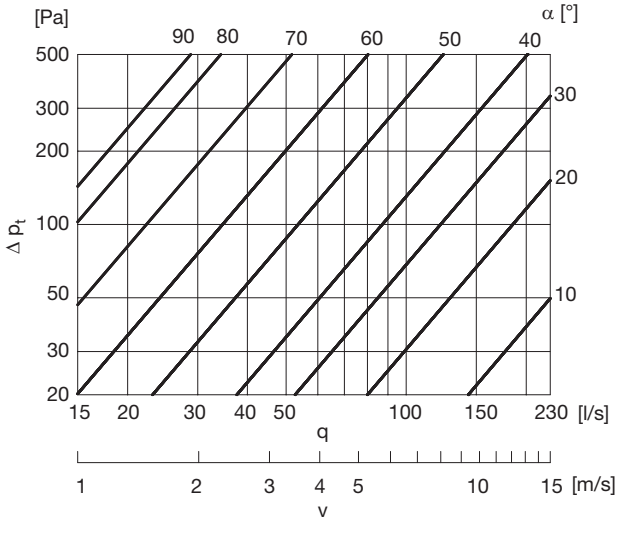

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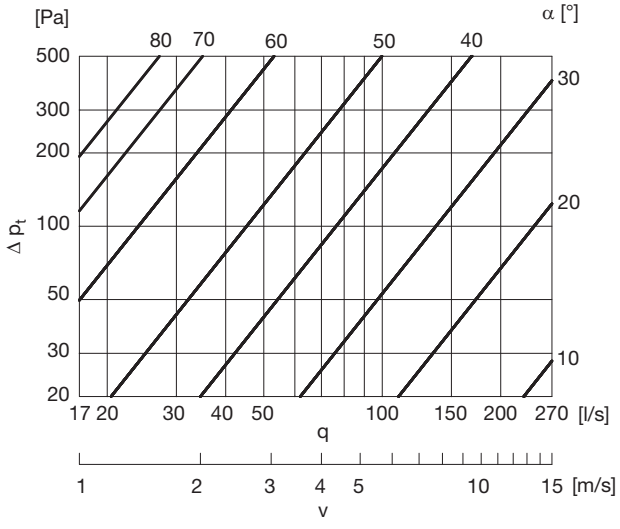

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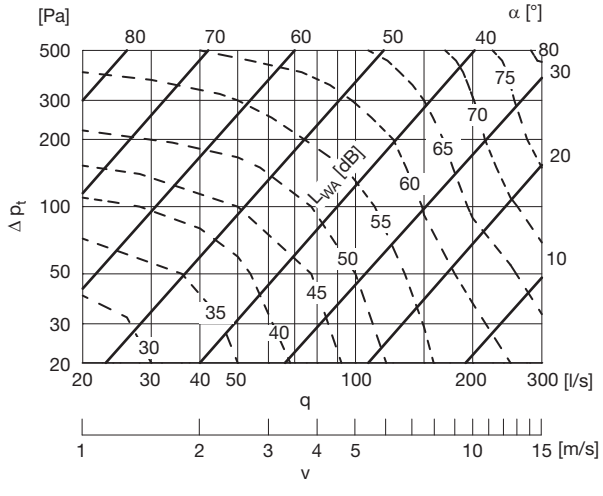

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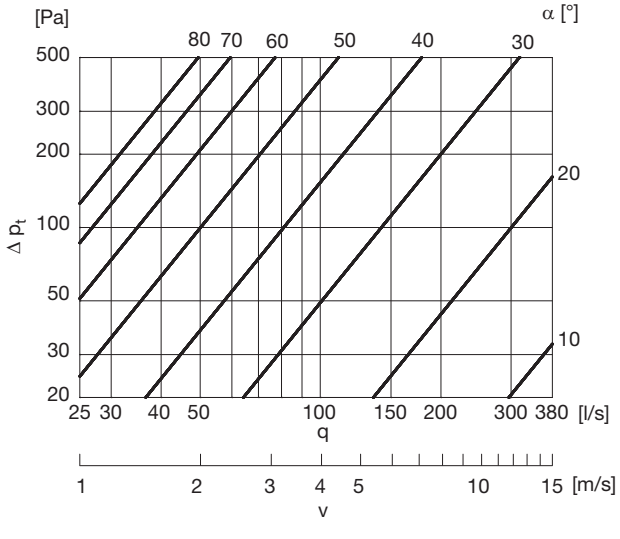
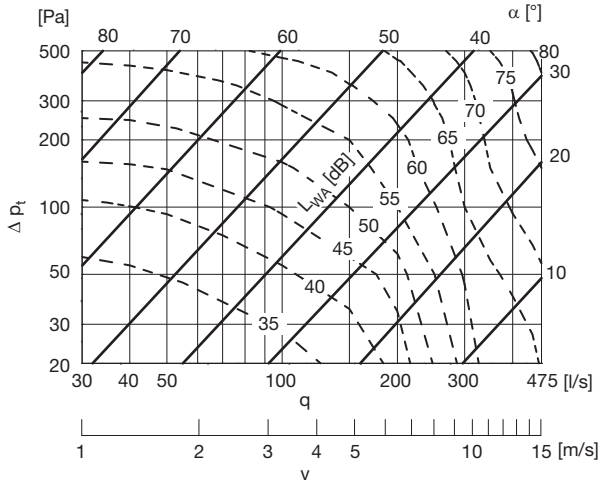


Shut-off damper DSU

Ø200



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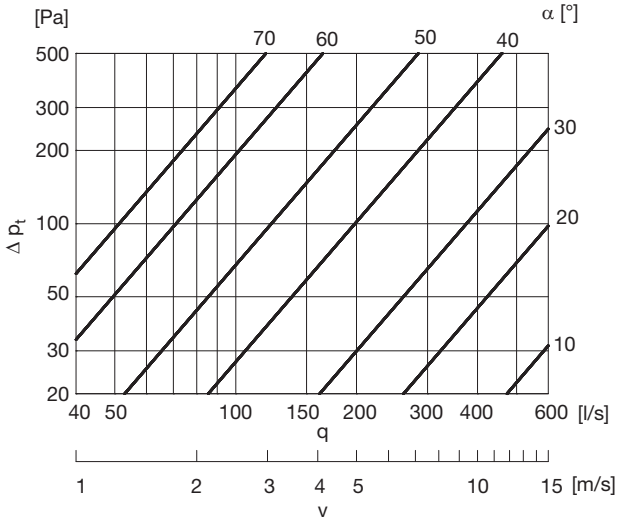

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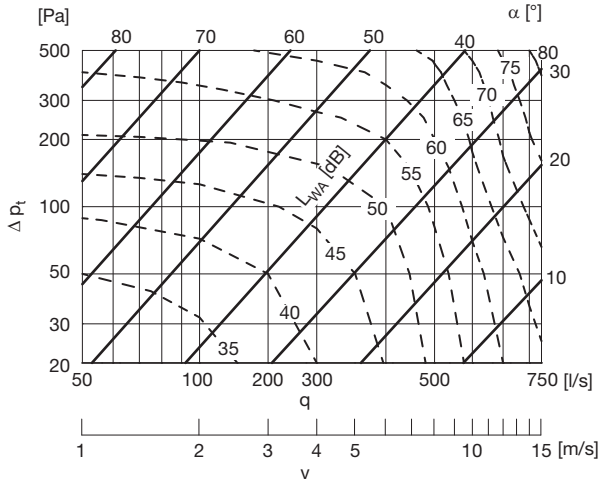

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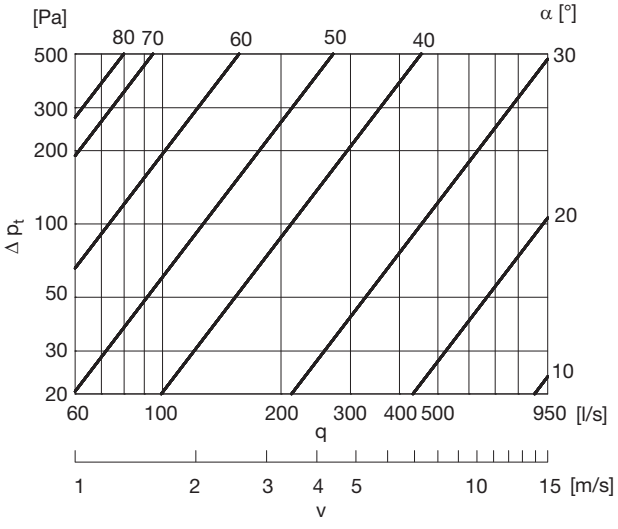

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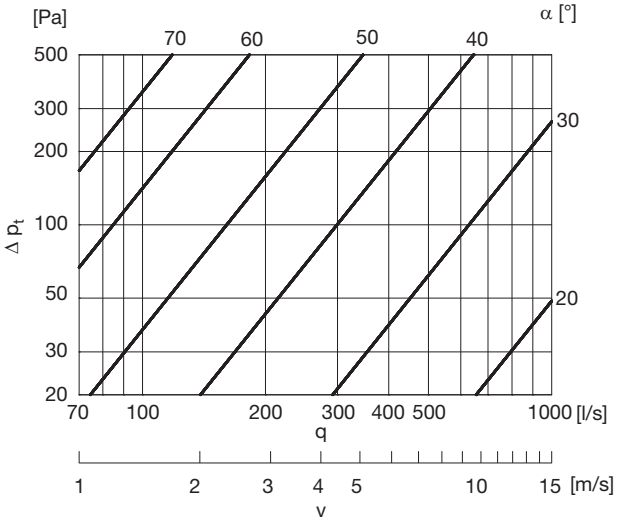

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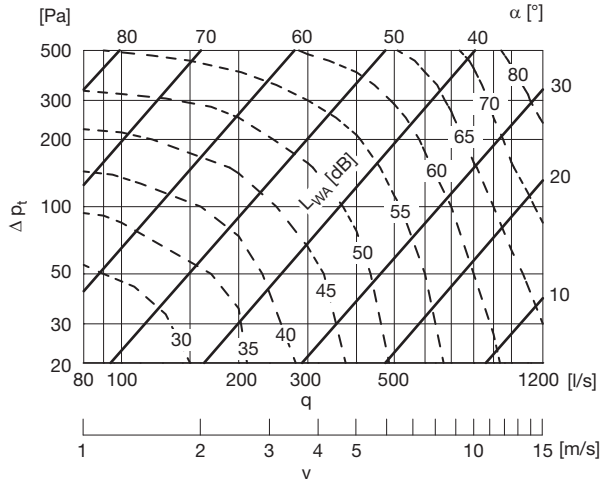

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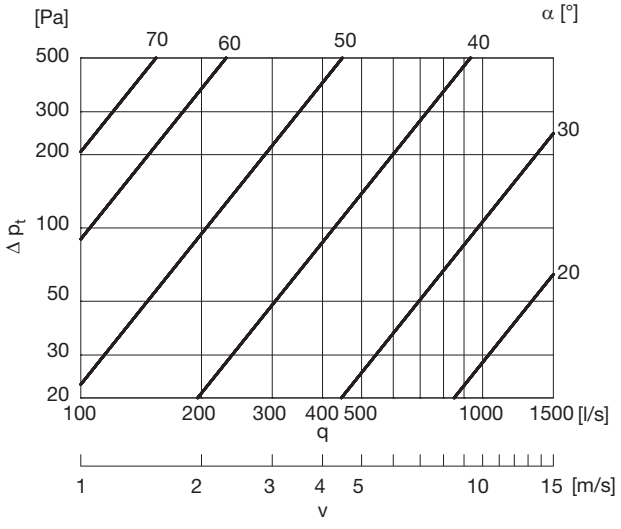

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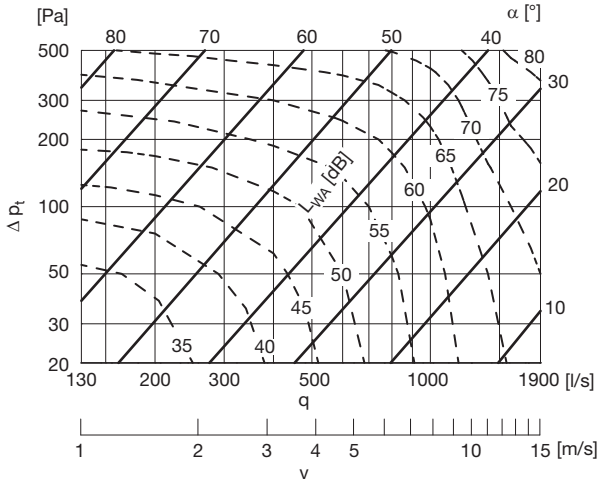

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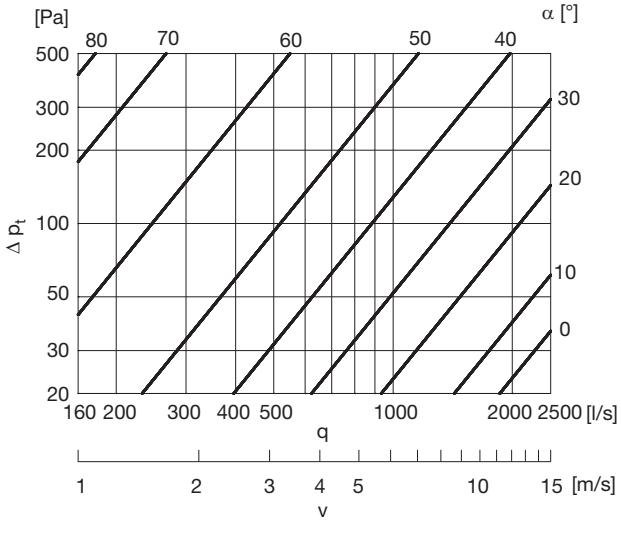

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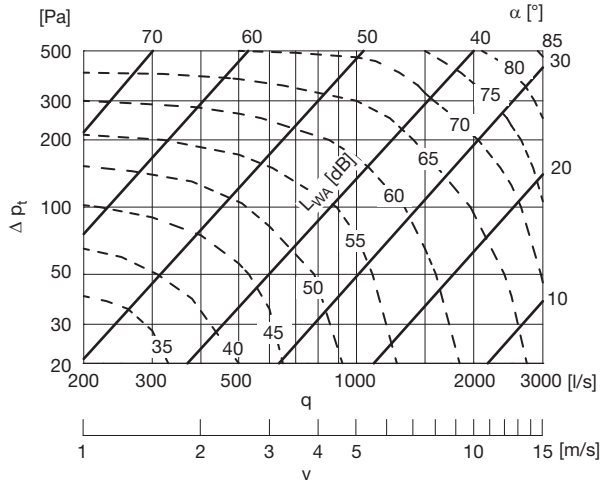

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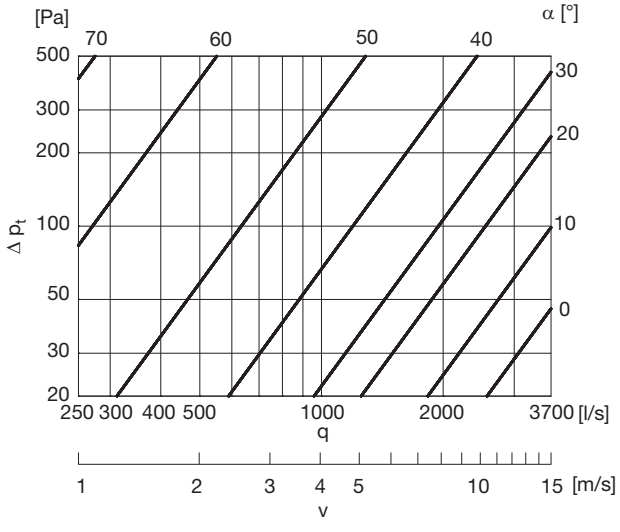

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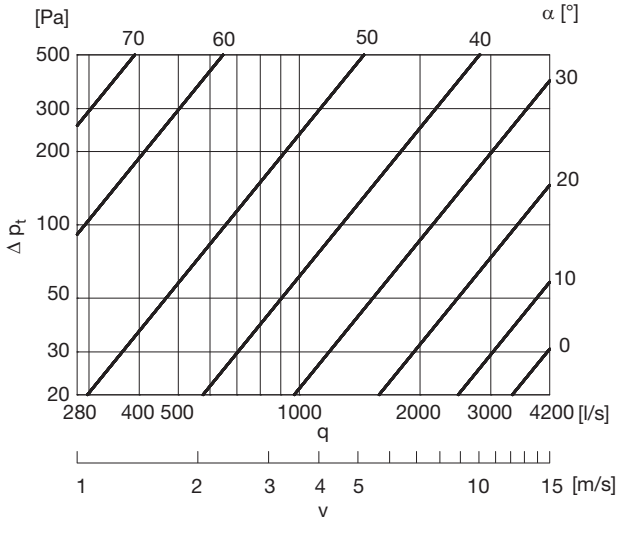
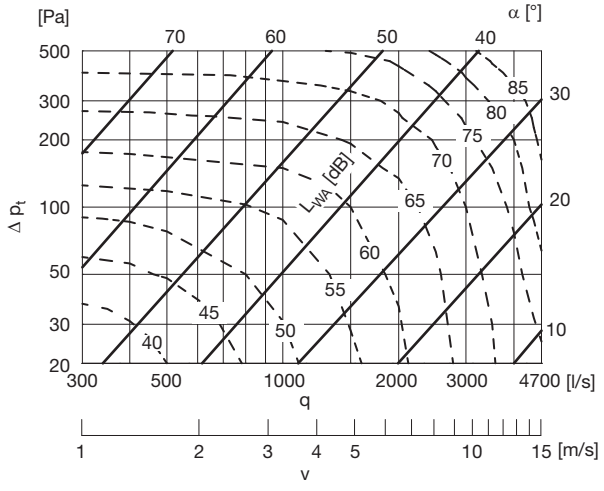


Shut-off damper DSU

Ø630



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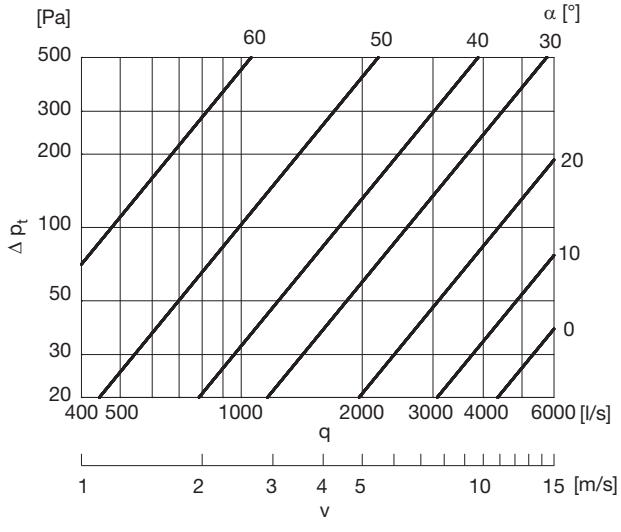

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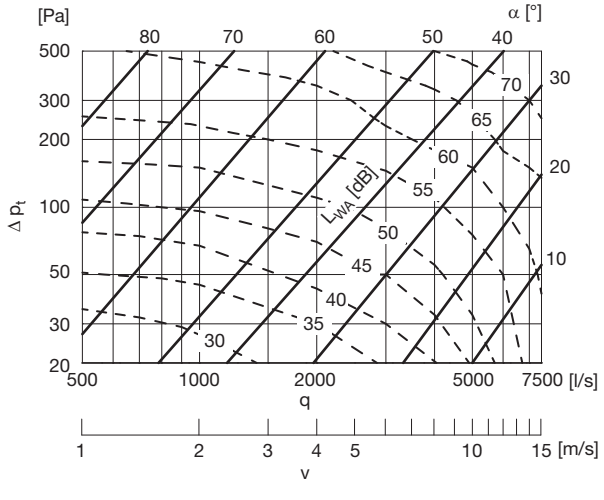

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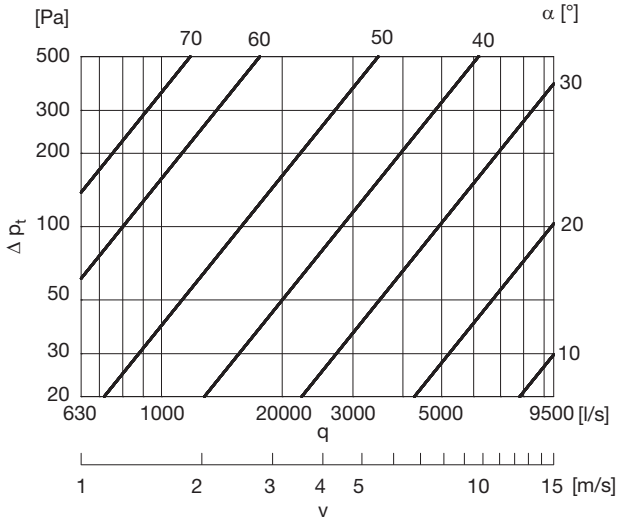

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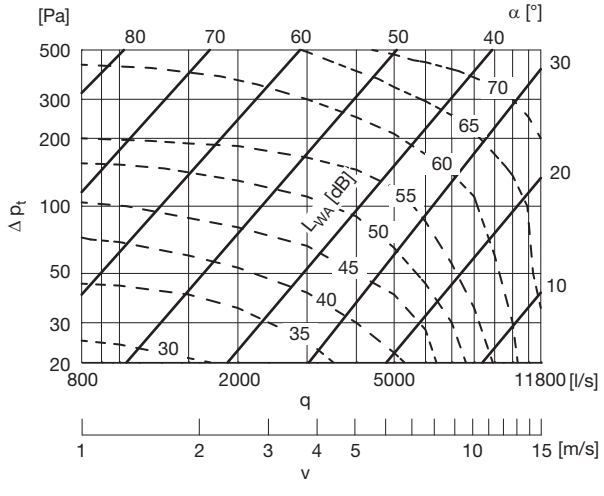


Shut-off damper DSU

Sound data

Sound power level L_W, [dB] to duct in the octave bands 1–8, 63–8000 Hz, as a function of dimension, flow and pressure drop.

dim Ød$_1$	Pressure drop [Pa]	Velocity app. 1 [m/s]								Velocity app. 3 [m/s]								Velocity app. 6 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 5 [l/s]								Flow 15 [l/s]								Flow 30 [l/s]							
	500	63	63	64	63	58	53	48	45	65	65	65	65	59	55	49	46	67	67	67	67	60	57	50	47
	200	61	61	58	52	49	42	33	28	63	63	60	54	51	43	34	29	65	65	62	56	53	44	35	30
	100	59	56	50	45	41	28	22	14	60	60	53	48	43	30	23	15	61	64	57	51	46	32	24	16
	50	53	49	43	40	33	23	15	8	56	54	47	43	36	25	16	9	59	59	52	47	40	27	17	10
	20	47	42	36	32	25	16	7	1	51	47	39	35	28	18	8	2	54	52	44	39	32	20	9	4
100		Flow 8 [l/s]								Flow 25 [l/s]								Flow 50 [l/s]							
	500	60	60	59	52	50	44	44	44	67	64	64	57	54	48	48	48	72	69	69	62	59	52	52	52
	200	53	51	53	43	42	35	32	32	59	58	58	50	48	40	37	37	66	65	64	57	54	45	42	42
	100	51	46	44	38	35	28	21	20	58	55	53	46	41	34	26	24	65	64	62	54	48	40	31	29
	50	48	42	38	33	26	19	16	14	55	53	48	42	35	26	22	18	64	63	60	53	44	33	28	22
	20	43	35	30	23	17	9	7	6	50	49	42	37	28	17	15	14	62	61	57	51	41	27	25	15
125		Flow 12 [l/s]								Flow 40 [l/s]								Flow 75 [l/s]							
	500	66	63	61	55	52	46	47	44	71	68	65	59	56	50	50	47	76	73	70	63	60	53	53	50
	200	59	53	49	44	38	34	33	32	65	62	57	51	46	41	38	38	72	71	65	59	53	47	43	43
	100	58	49	43	40	31	28	22	22	64	59	53	47	39	34	29	27	71	70	63	55	47	40	35	32
	50	57	42	41	31	29	20	17	15	63	54	50	41	36	27	25	20	70	68	60	51	43	34	32	24
	20	56	32	39	29	27	11	15	11	62	48	48	34	34	20	22	15	68	65	56	47	39	29	28	17
160		Flow 20 [l/s]								Flow 60 [l/s]								Flow 120 [l/s]							
	500	62	63	61	56	52	51	50	49	68	67	64	59	55	53	52	51	73	71	68	62	59	55	54	53
	200	52	52	51	44	43	38	37	36	61	58	56	50	48	42	40	40	71	65	62	56	53	47	44	44
	100	47	43	39	37	32	27	27	25	59	54	50	45	40	35	33	31	70	64	60	53	48	42	39	38
	50	42	36	33	28	25	20	17	16	54	50	46	37	33	29	25	25	69	63	58	48	42	37	32	32
	20	37	30	30	26	19	16	11	10	49	46	43	35	27	24	19	18	68	61	55	44	36	32	27	23
200		Flow 30 [l/s]								Flow 100 [l/s]								Flow 200 [l/s]							
	500	65	60	56	52	49	47	44	42	70	64	61	55	52	52	55	55	75	69	65	59	55	55	59	59
	200	55	52	51	43	40	37	38	38	62	57	55	47	44	42	42	42	71	65	61	53	50	48	47	47
	100	46	43	41	34	32	29	29	29	57	52	48	41	39	36	34	34	69	64	58	50	47	44	42	42
	50	40	38	33	30	28	27	23	22	51	45	41	36	32	32	28	28	63	56	51	44	39	39	34	34
	20	34	31	26	25	25	23	18	16	44	37	33	29	27	25	21	19	56	47	43	36	29	27	24	22
250		Flow 50 [l/s]								Flow 150 [l/s]								Flow 300 [l/s]							
	500	67	65	57	50	47	52	51	50	69	66	59	53	50	54	53	52	71	67	61	56	53	56	55	54
	200	55	54	49	43	42	38	42	42	59	57	52	46	44	41	44	44	63	60	55	49	46	44	46	46
	100	52	48	40	37	34	33	31	28	56	52	45	41	38	36	34	31	62	57	51	46	43	40	38	35
	50	44	41	35	32	29	24	22	20	52	48	40	38	34	30	28	24	61	56	47	45	40	38	33	28
	20	33	35	29	29	25	15	12	10	47	44	37	35	31	25	22	17	59	54	46	42	38	36	30	24
315		Flow 80 [l/s]								Flow 250 [l/s]								Flow 500 [l/s]							
	500	63	60	53	49	47	46	45	44	68	65	59	53	50	50	53	50	74	71	65	58	55	55	58	55
	200	50	44	42	38	38	33	37	34	60	55	50	45	43	40	43	40	70	65	58	52	49	48	49	46
	100	42	39	33	31	30	25	30	23	54	52	45	41	38	36	36	31	66	64	56	50	47	46	44	39
	50	34	34	30	26	22	21	19	15	49	49	43	38	34	32	30	24	64	63	55	49	45	42	40	32
	20	26	30	27	21	16	15	13	11	44	46	41	35	30	27	25	18	62	61	54	48	43	37	34	24
400		Flow 130 [l/s]								Flow 400 [l/s]								Flow 800 [l/s]							
	500	76	71	66	59	55	58	57	56	79	73	67	62	57	60	59	58	82	75	68	65	59	62	61	60
	200	61	58	50	44	43	44	45	41	67	62	56	50	48	48	48	45	74	68	62	56	53	52	52	49
	100	50	45	40	34	36	35	35	29	61	56	49	44	42	39	39	34	72	67	58	53	49	47	46	40
	50	42	37	31	29	28	27	25	20	57	52	44	39	37	35	34	26	71	66	56	50	47	44	44	33
	20	40	34	27	25	24	23	21	11	55	50	40	35	34	32	30	20	70	65	54	47	44	40	38	28
500		Flow 200 [l/s]								Flow 600 [l/s]								Flow 1200 [l/s]							
	500	82	76	69	63	62	61	60	59	84	77	70	64	63	62	61	60	85	78	71	65	64	63	62	61
	200	66	60	55	48	45	44	46	43	71	65	59	53	50	50	50	47	77	70	64	58	56	55	54	51
	100	55	50	47	38	38	36	34	31	63	58	53	47	46	44	42	37	72	66	60	55	53	51	49	43
	50	46	40	36	33	32	29	29	25	59	52	47	44	42	38	38	31	71	63	57	54	51	46	46	37
	20	41	33	29	27	26	19	18	20	56	47	42	40	38	32	30	26	70	60	54	52	49	44	40	32
630		Flow 300 [l/s]								Flow 900 [l/s]								Flow 1800 [l/s]							
	500	86	77	71	67	64	61	61	60	88	80	73	69	66	64	63	62	90	83	75	71	68	67	65	64
	200	76	70	63	60	56	53	52	48	78	72	65	62	59	55	55	49	80	74	67	64	60	57	57	50
	100	65	61	52	49	45	43	41	37	71	66	59	54	50	46	45	40	78	71	66	59	56	49	48	44
	50	54	49	45	39	34	36	30	26	66	58	53	48	43	40	39	30	77	68	62	57	51	45	47	36
	20	45	35	38	30	29	29	26	20	61	50	47	43	38	36	33	25	76	65	57	55	46	42	39	30
800		Flow 500 [l/s]								Flow 1500 [l/s]								Flow 3000 [l/s]							
	500	56	53	54	51	52	52	47	44	64	59	58	57	57	56	54	50	72	65	62	63	62	62	61	56
	200	49	43	41	43	47	46	41	31	58	52	49	49	50	49	45	37	67	60	56	55	53	52	49	43
	100	46	40	39	39	41	36	30	23	55	48	45	44	44	40	35	29	63	55	51	49	47	44	40	34
	50	44	37	34	32	29	25	19	15	52	44	40	38	35	31	26	20	60	50	46	44	41	37	33	25
	20	31	33	27	22	21	11	12	1	44	36	32	28	25	17	13	2	56	40	37	34	29	23	14	9
1000		Flow 800 [l/s]								Flow 2400 [l/s]								Flow 4750 [l/s]							
	500	59	53	50	50	50	53	50	49	68	62	58	58	57	57	56	53	77	70	66	67	64	64	63	57
	200	55	47	48	47	47	50	46	34	64	56	53	52	52	51	48	38	72	64	58	56	54	52	50	42
	100	52	46	39	42	41	38	34	24	60	52	46	45	44	41	37	28	67	58	53	49	47	44	40	32
	50	50	40	32	34	31	26	21	10	56	47	40	39	36	31	27	15	62	54	48	44	41	37	33	25
	20	47	22	27	29	19	6	2	1	50	34	33	32	25	17	7	2	53	45	39	35	32	28	22	14

Shut-off damper DSU

dim Ød$_1$	Pressure drop [Pa]	Velocity app. 9 [m/s]								Velocity app. 12 [m/s]								Velocity app. 15 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 45 [l/s]								Flow 60 [l/s]								Flow 75 [l/s]							
	500	72	70	70	70	63	60	53	49	77	76	75	75	68	64	56	53	80	80	80	80	72	68	60	56
	200	70	68	67	60	57	48	38	32	75	74	71	65	61	51	41	34	78	77	72	70	64	53	42	35
	100	66	65	63	57	51	36	27	18	74	73	70	60	57	45	32	25	77	75	71	65	58	46	33	26
	50	63	62	58	52	45	28	18	11	73	71	66	55	52	40	25	19	75	72	67	58	53	41	26	20
	20	59	58	51	46	38	21	10	5	70	67	60	47	44	32	17	13	72	68	62	50	47	36	20	15
100		Flow 75 [l/s]								Flow 100 [l/s]								Flow 120 [l/s]							
	500	78	75	75	67	64	57	57	57	84	81	80	72	68	62	61	61	88	86	85	76	72	65	64	64
	200	74	73	72	64	59	50	47	46	80	79	78	69	66	55	51	51	84	83	81	72	68	59	55	54
	100	73	72	71	62	56	46	36	33	79	78	75	65	60	49	44	42	82	81	78	69	63	54	48	45
	50	72	70	68	58	51	40	29	23	77	76	70	60	53	43	36	31	80	79	74	65	57	48	40	35
	20	70	67	63	53	44	33	26	17	74	73	65	54	46	37	27	20	78	77	69	60	50	41	31	24
125		Flow 110 [l/s]								Flow 145 [l/s]								Flow 180 [l/s]							
	500	83	80	76	68	65	58	58	54	89	87	81	73	69	62	62	58	91	88	83	75	71	63	63	59
	200	79	78	71	65	58	51	48	47	87	85	78	70	63	56	52	48	88	86	80	71	66	59	54	49
	100	78	77	70	61	51	45	39	35	86	83	75	66	58	50	44	39	87	84	78	69	61	53	47	42
	50	77	76	68	57	45	39	33	25	84	80	71	61	52	44	36	28	86	82	75	65	55	47	39	33
	20	76	75	64	53	40	33	30	18	81	76	66	55	45	38	32	19	85	81	71	60	48	41	34	22
160		Flow 180 [l/s]								Flow 240 [l/s]								Flow 300 [l/s]							
	500	78	77	74	67	63	60	59	58	84	84	80	72	68	65	65	65	89	89	85	77	73	69	69	69
	200	76	73	70	63	59	53	50	50	80	80	77	69	66	58	55	55	85	84	80	73	70	64	59	58
	100	75	72	69	61	54	48	45	44	78	76	73	66	61	53	50	48	83	80	77	70	65	58	54	52
	50	74	71	66	58	49	40	38	33	76	72	68	62	55	47	43	38	80	76	72	66	59	51	47	42
	20	73	66	61	54	43	35	30	25	74	68	63	57	48	40	35	27	76	71	65	61	52	43	39	30
200		Flow 300 [l/s]								Flow 400 [l/s]								Flow 475 [l/s]							
	500	85	79	72	65	62	61	65	65	92	85	79	72	68	66	71	70	95	89	82	73	71	70	74	73
	200	83	77	70	62	58	55	54	54	90	83	77	69	65	62	61	60	92	85	79	71	66	64	64	63
	100	82	76	69	59	56	53	50	50	88	80	73	65	61	58	55	53	90	83	76	68	63	61	58	56
	50	81	74	65	56	52	49	45	42	85	76	68	60	56	52	48	45	88	80	72	64	59	56	52	48
	20	80	70	60	52	46	43	38	32	81	72	62	54	50	45	40	36	86	76	67	59	54	50	47	39
250		Flow 450 [l/s]								Flow 600 [l/s]								Flow 750 [l/s]							
	500	78	75	68	61	58	61	60	59	87	83	76	68	68	68	68	68	94	90	82	74	71	74	74	74
	200	74	69	63	57	55	54	54	53	82	79	72	64	63	63	62	61	88	84	77	69	68	67	68	65
	100	72	68	60	56	52	49	45	42	79	76	69	62	60	60	58	57	85	81	74	67	65	63	62	59
	50	69	67	58	54	48	44	37	32	76	72	65	59	56	54	51	48	82	78	70	64	61	58	55	52
	20	66	65	56	52	44	39	32	27	73	68	61	56	51	46	42	38	79	75	65	60	56	53	47	46
315		Flow 750 [l/s]								Flow 1000 [l/s]								Flow 1200 [l/s]							
	500	82	78	71	64	60	60	60	60	89	85	77	69	68	67	69	65	92	88	80	72	71	70	72	68
	200	77	72	66	59	58	57	56	52	86	79	72	65	63	62	63	58	88	83	75	68	66	65	64	59
	100	76	71	64	57	54	52	50	44	84	77	69	62	60	58	57	53	87	80	72	65	63	61	59	55
	50	75	70	61	54	50	46	43	35	82	74	66	59	55	52	49	46	85	77	69	62	59	55	52	48
	20	74	68	58	51	46	39	36	26	80	71	63	56	48	44	39	38	82	74	66	60	54	47	46	40
400		Flow 1200 [l/s]								Flow 1500 [l/s]								Flow 1900 [l/s]							
	500	88	81	74	70	63	66	65	64	95	87	79	75	69	71	70	69	98	90	82	78	73	74	73	72
	200	83	76	68	61	60	59	58	54	89	82	75	69	67	64	63	60	92	84	77	70	69	67	65	63
	100	82	75	67	60	58	55	53	47	86	80	72	66	63	61	58	55	89	82	74	68	66	64	61	58
	50	80	73	65	58	56	51	47	39	83	77	68	63	58	56	52	48	86	80	71	66	62	59	55	51
	20	77	70	63	55	53	47	42	30	80	74	64	60	54	50	45	40	83	78	68	64	58	51	47	42
500		Flow 1800 [l/s]								Flow 2400 [l/s]								Flow 3000 [l/s]							
	500	91	84	76	68	67	68	68	67	96	88	80	72	70	73	72	71	102	94	85	78	75	77	77	76
	200	85	78	72	65	63	61	60	57	91	84	76	70	66	66	65	61	96	89	80	72	68	68	68	67
	100	82	74	69	62	59	57	55	50	88	75	70	63	60	58	56	52	93	85	76	69	65	63	61	58
	50	79	71	66	59	55	52	48	43	85	72	67	60	56	53	49	44	90	80	72	65	62	57	53	49
	20	76	67	63	56	50	47	41	36	82	69	64	57	52	48	43	37	87	75	67	61	58	54	46	40
630		Flow 2800 [l/s]								Flow 3700 [l/s]								Flow 4700 [l/s]							
	500	96	88	80	76	72	72	70	68	103	95	86	82	77	77	76	73	107	98	90	85	81	81	80	76
	200	90	83	76	71	67	63	63	56	98	90	82	78	74	70	70	62	103	95	87	82	78	76	73	66
	100	89	82	75	68	63	58	55	50	95	88	79	74	70	65	63	57	100	92	84	79	75	71	67	62
	50	87	80	72	65	58	52	48	42	92	84	75	69	65	60	56	51	97	89	80	74	70	65	60	56
	20	84	77	68	61	52	45	42	33	89	82	70	63	59	55	49	43	94	86	75	68	64	58	52	48
800		Flow 4500 [l/s]								Flow 6000 [l/s]								Flow 7500 [l/s]							
	500	78	70	66	66	65	64	63	58	83	73	69	69	68	66	65	60	84	75	71	70	69	67	66	61
	200	72	64	60	59	57	55	52	46	77	67	63	62	60	58	55	49	80	70	66	65	63	61	58	52
	100	68	59	55	53	51	48	44	37	73	63	59	57	55	52	48	42	77	67	62	60	57	55	51	45
	50	66	55	51	48	45	42	37	30	71	60	55	52	49	47	41	35	76	65	61	58	54	52	47	40
	20	61	46	43	39	35	32	25	18	69	58	53	50	47	41	37	29	74	63	59	56	52	48	43	36
1000		Flow 7100 [l/s]								Flow 9450 [l/s]								Flow 11800 [l/s]							
	500	81	74	69	69	67	65	64	58	85	77	71	70	68	67	65	60	86	79	72	71	69	68	66	61
	200	76	69	63	60	57	55	53	45	80	71	65	64	61	58	57	50	83	74	68	67	64	61	60	55
	100	72	64	58	55	52	49	47	39	76	67	61	59	56	54	52	46	80	72	65	63	60	59	57	53
	50	68	60	54	52	48	45	43	36	73	65	59	58	54	52	50	45	78	70	63	62	59	58	56	52
	20	61	53	48	46	42	39	37	31	70	62	56	55	51	49	47	42	74	67	60	59	56	55	53	48

Shut-off damper

DTU

Description

Has a turning circular blade with an EPDM-rubber seal which tightens against the inside of the damper when closed. The blade can be adjusted in a 0–90° angle.

The cup at Ø 80–630 can be complemented with the special insulation cup IK at insulation thicker than 50 mm.

The damper can be used for regulating at rare occations.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–315 fullfills pressure class C in closed position.
Ø 355–630 fullfills pressure class B in closed position.
Ø 710–1000 fullfills pressure class A in closed position.

Motorizing

The torque needed for the motorizing is given in the adjacent table.
Ø710–1000 is not possible to motorize on site.

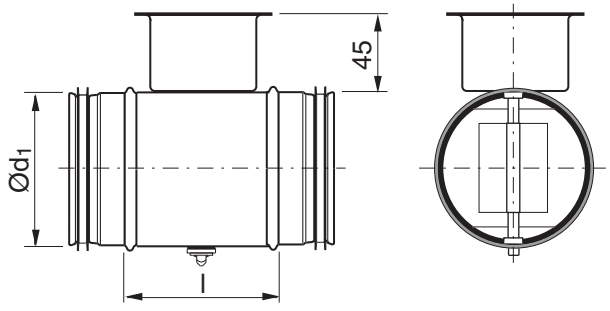
Reinforced blade

Ordering example

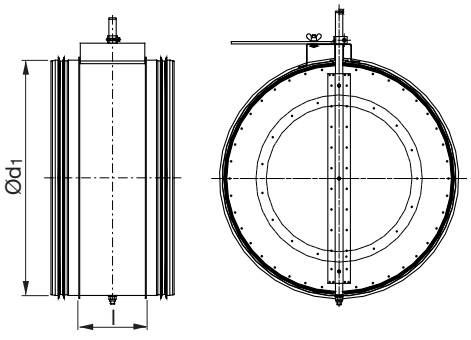
	DTU	200
Product		
Dimension $Ød_1$		

Dimensions

Ø 80–630



Ø 800–1000



$Ød_1$ nom	l mm	M Nm	m kg	Sealing class past closed blade
80	100	2,0	0,30	4
100	100	2,0	0,38	4
112	100	2,0	0,48	4
125	100	2,0	0,53	4
140	100	2,0	0,60	4
150	100	2,0	0,63	4
160	100	2,0	0,74	4
180	100	2,0	0,82	4
200	100	2,0	1,04	4
224	100	3,0	1,27	4
250	100	3,0	1,52	4
280	100	4,0	1,77	4
300	100	4,0	1,98	4
315	100	4,0	2,14	4
355	100	8,0	2,44	4
400	100	8,0	3,65	4
450	100	10	4,84	4
500	115	10	6,07	4
560	115	15	7,47	4
600	115	15	8,11	4
630	115	15	8,80	4
710	230	40	17,0	4
800	230	40	19,5	4
900	230	60	26,0	4
1000	230	60	31,0	4

Shut-off damper DTU

Property	Ø 80–315	Ø 400	Ø 500	Ø 630	Ø 710–1000
The blade is set via a knob in a protective cup.	×	×	×	×	
The setting of the blade is read against an embossed scale at the rim of the cup.	×	×	×	×	
The blade is locked with two screws, type Pozidriv (PZD2).	×	×	×	×	
The blade has reinforced locking with a sturdy wing nut.					×
The blade is reinforced.		×	×	×	
The blade is additionally reinforced.					×
With sturdy handle.		×	×	×	
With additionally reinforced handle.					×
With reinforced stop beads.			×	×	×
The axle is reinforced.					×
The damper can be delivered prepared for motor. Is then called DTHU.	×	×	×	×	×
The damper can be delivered with electric motor of On/Off-type without spring return. Is then called DTBU.	×	×	×	×	×
The damper can be delivered with electric motor of On/Off-type with spring return. Is then called DTBCU.	×	×	×	×	
The damper can be delivered with pneumatic actuator of On/Off-type with spring return. Is then called DTPU.	×	×	×	×	

Technical data

Pressure drop graphs with noise data for dimensioning

The solid curves show the pressure drop, Δp_t, over the damper as a function of flow q, and setting angle α.

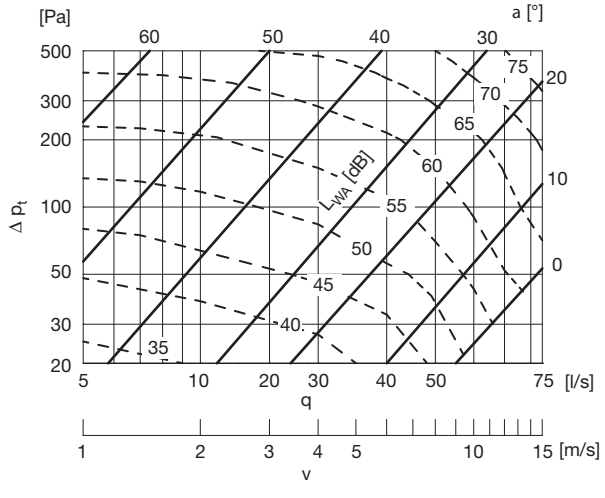
The dashed curves give the A-weighted sound power data, L_{WA}, in dB to the duct.

Example

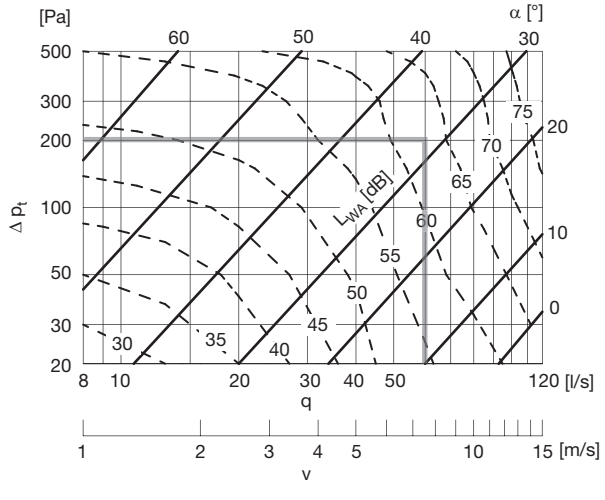
Given
Dimension Ø100
Flow 60 l/s
Pressure drop 200 Pa

Obtained from graph
Setting angle 32°
Sound power level 63 dB (A)

Ø80



Ø100



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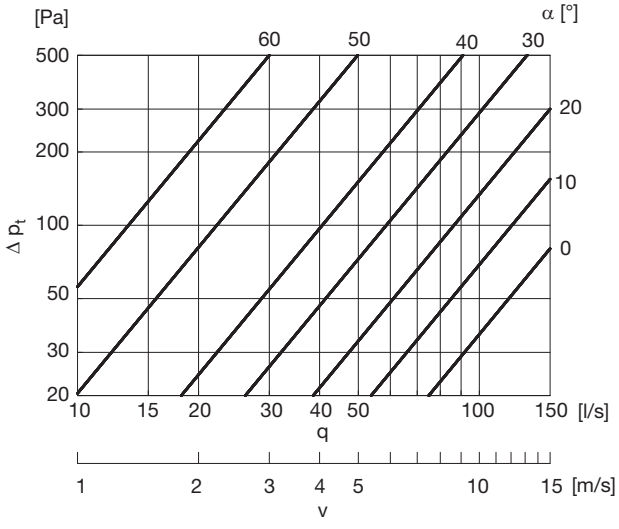

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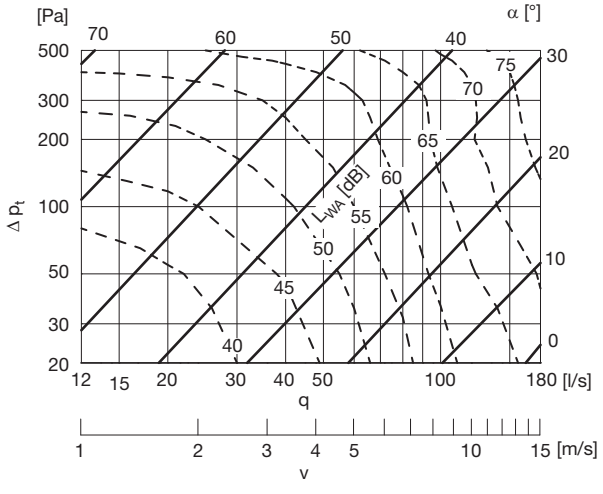

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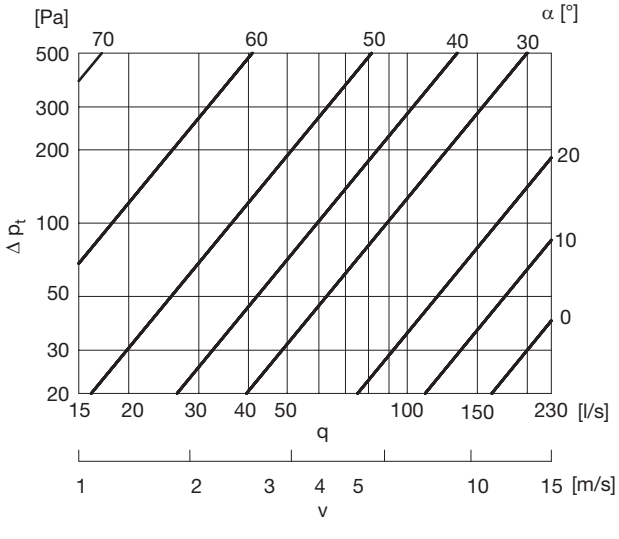

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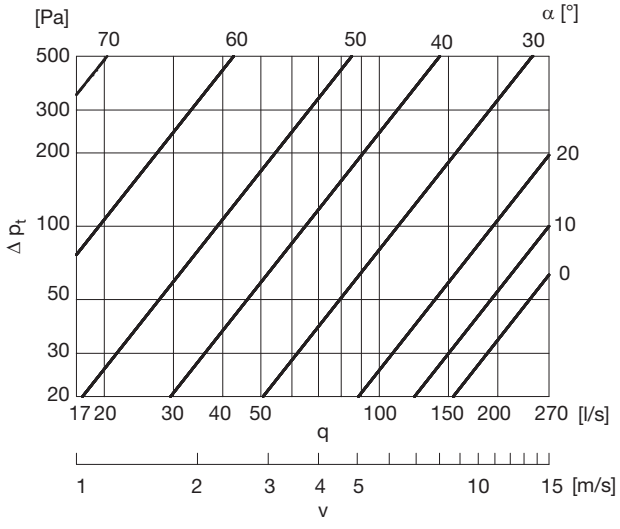

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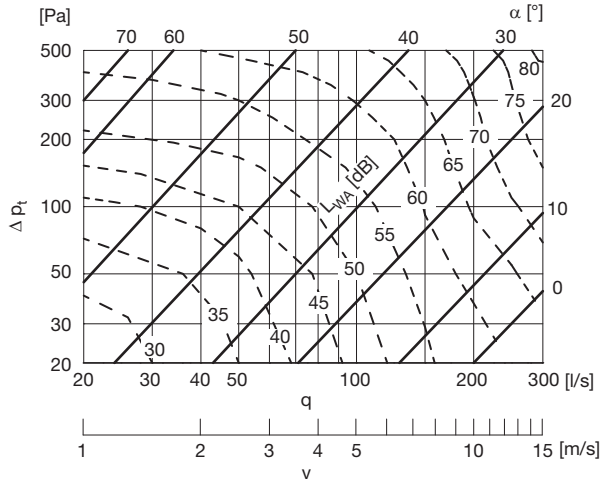

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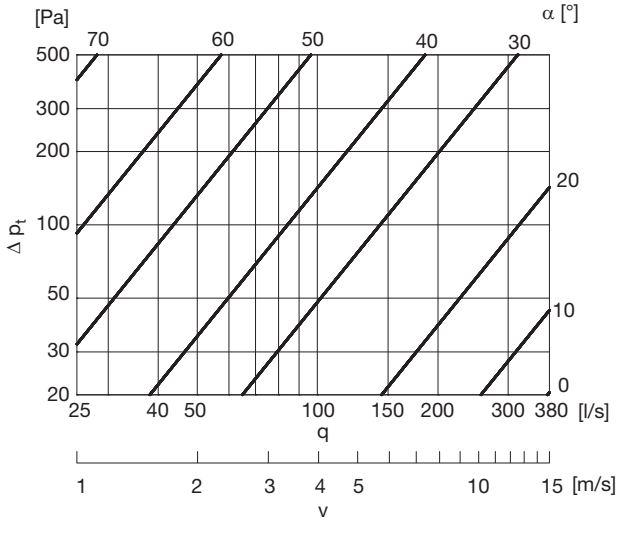
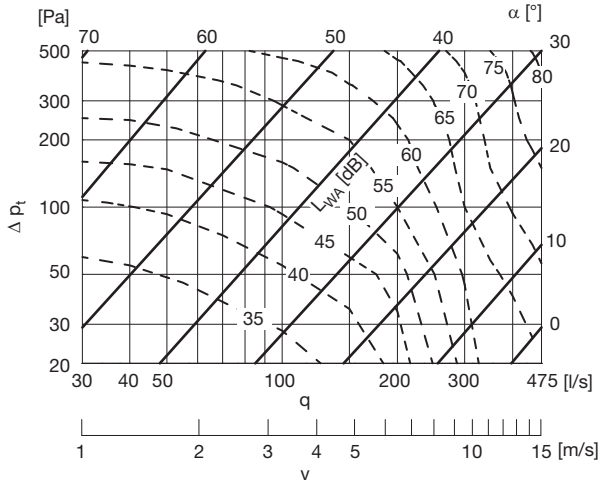


Shut-off damper

DTU

Ø200



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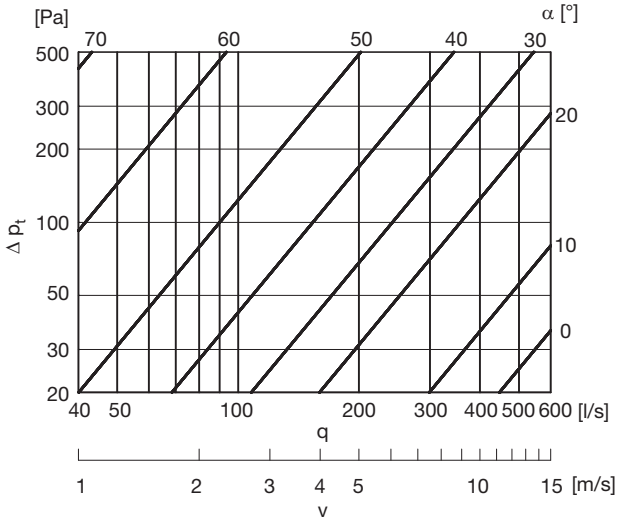

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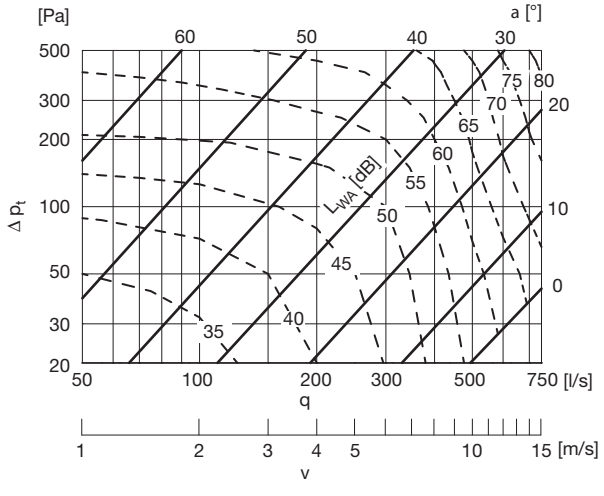

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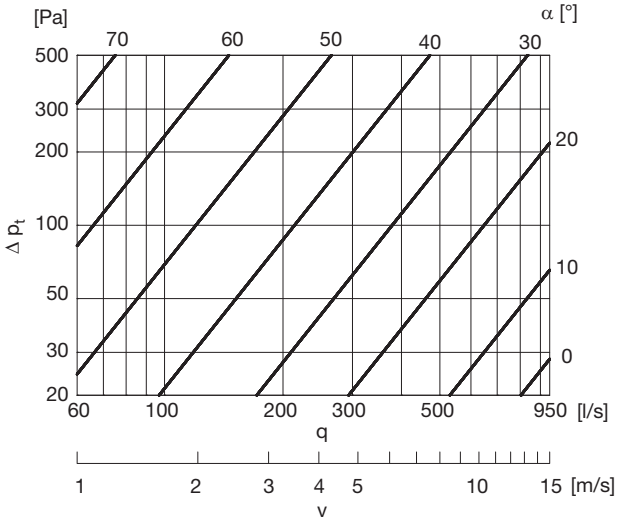

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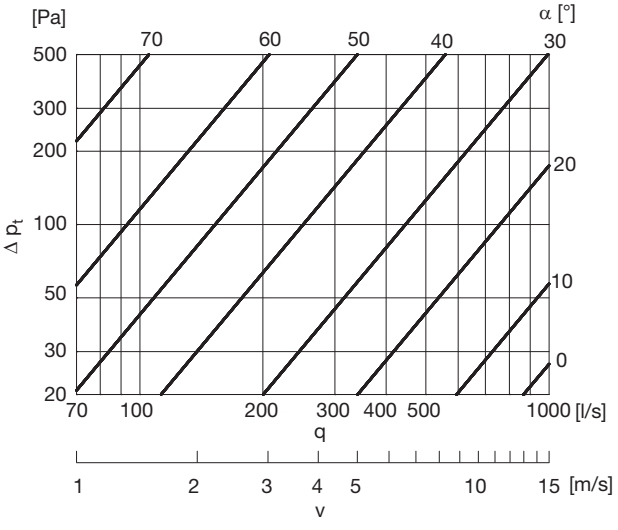

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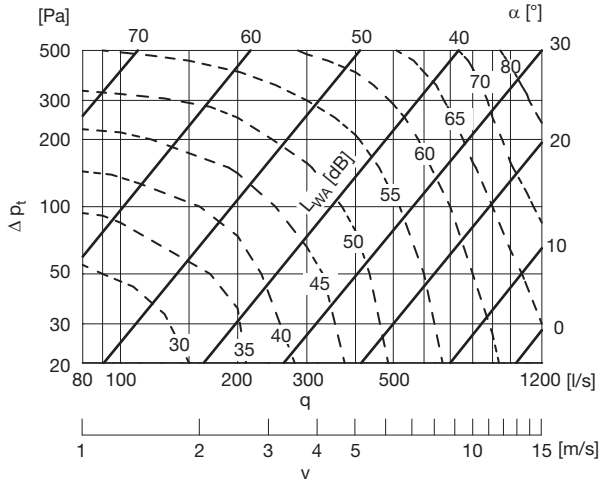
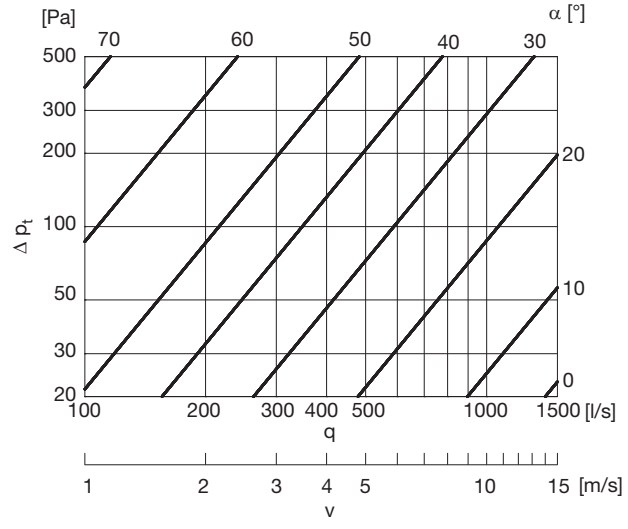


Lindab

Shut-off damper

DTU

Ø355



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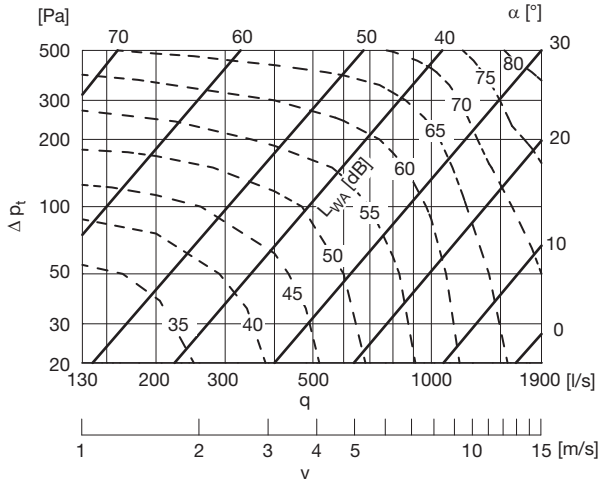

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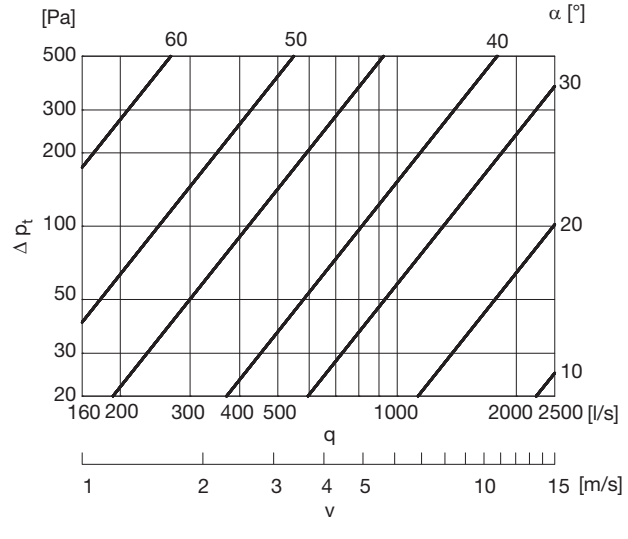

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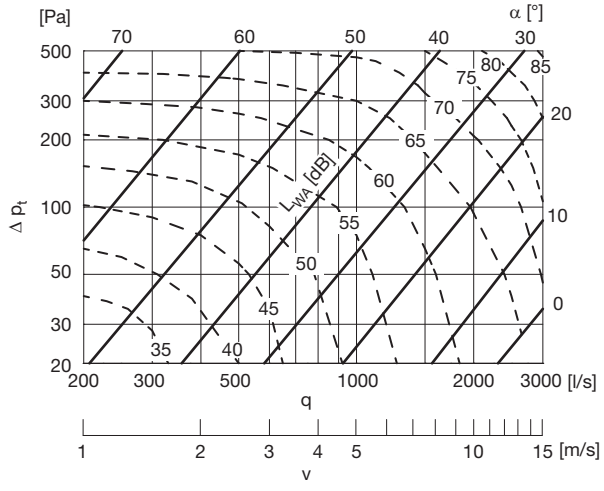

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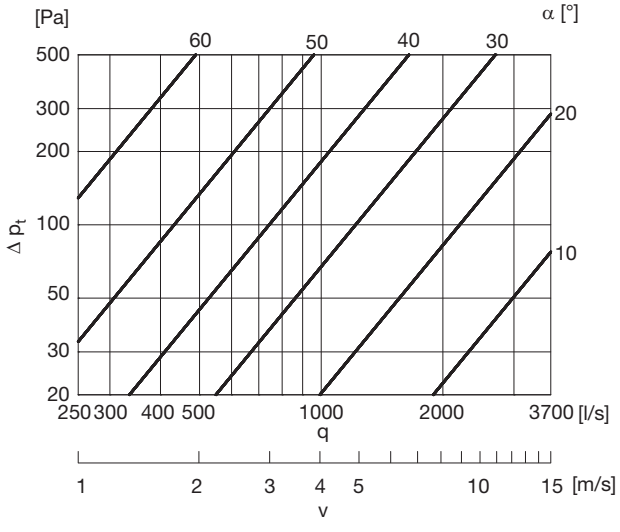

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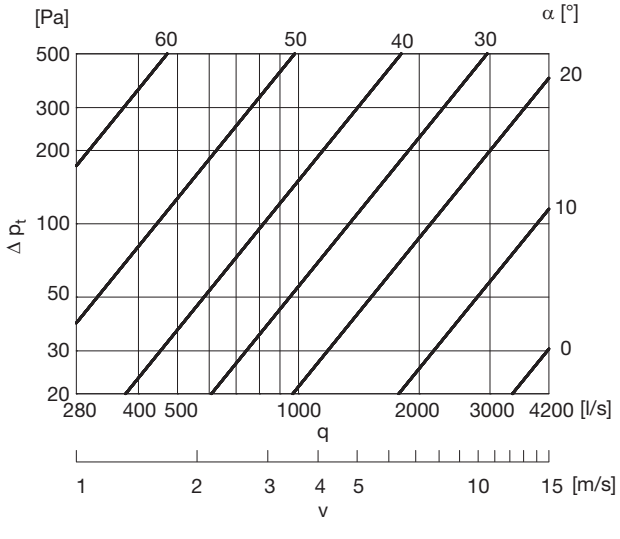
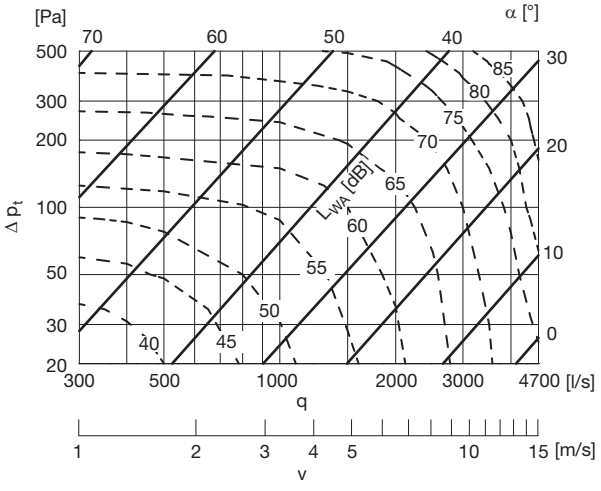


Shut-off damper

Ø630



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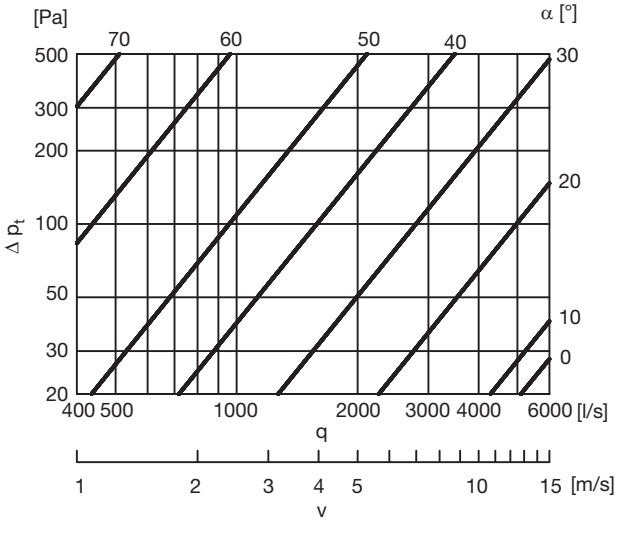

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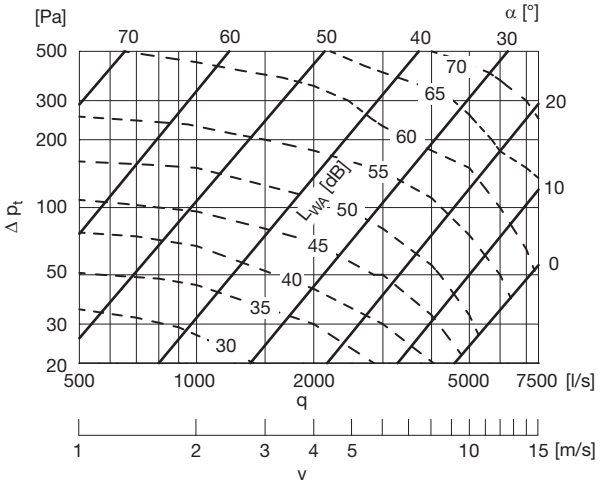

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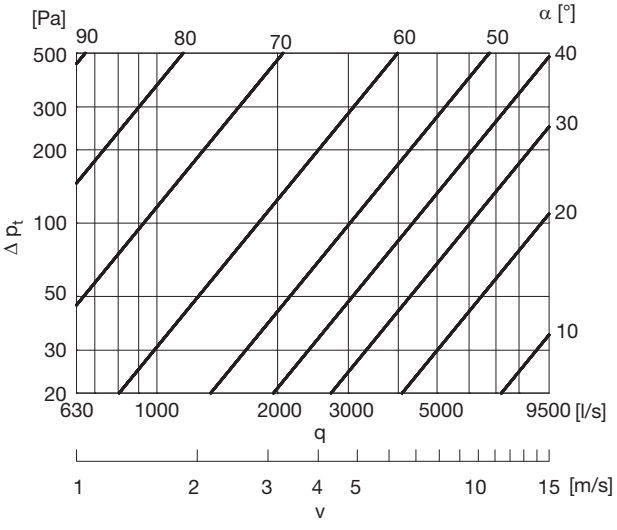

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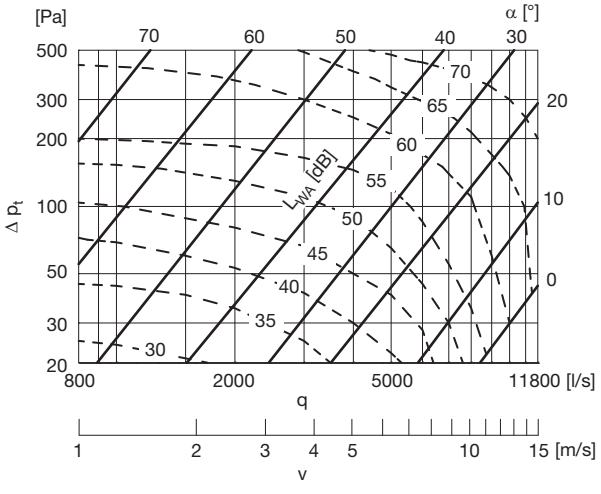


Sound data

Sound power level L_W, [dB] to duct in the octave bands 1–8, 63–8000 Hz, as a function of dimension, flow and pressure drop.

dim Ød$_1$	Pressure drop [Pa]	Velocity app. 1 [m/s] Centre frequency [Hz]								Velocity app. 3 [m/s] Centre frequency [Hz]								Velocity app. 6 [m/s] Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 5 [l/s]								Flow 15 [l/s]								Flow 30 [l/s]							
	500	63	63	64	63	58	53	48	45	65	65	65	65	59	55	49	46	67	67	67	67	60	57	50	47
	200	61	61	58	52	49	42	33	28	63	63	60	54	51	43	34	29	65	65	62	56	53	44	35	30
	100	59	56	50	45	41	28	22	14	60	60	53	48	43	30	23	15	61	64	57	51	46	32	24	16
	50	53	49	43	40	33	23	15	8	56	54	47	43	36	25	16	9	59	59	52	47	40	27	17	10
	20	47	42	36	32	25	16	7	1	51	47	39	35	28	18	8	2	54	52	44	39	32	20	9	4
100		Flow 8 [l/s]								Flow 25 [l/s]								Flow 50 [l/s]							
	500	60	60	59	52	50	44	44	44	67	64	64	57	54	48	48	48	72	69	69	62	59	52	52	52
	200	53	51	53	43	42	35	32	32	59	58	58	50	48	40	37	37	66	65	64	57	54	45	42	42
	100	51	46	44	38	35	28	21	20	58	55	53	46	41	34	26	24	65	64	62	54	48	40	31	29
	50	48	42	38	33	26	19	16	14	55	53	48	42	35	26	22	18	64	63	60	53	44	33	28	22
	20	43	35	30	23	17	9	7	6	50	49	42	37	28	17	15	14	62	61	57	51	41	27	25	15
125		Flow 12 [l/s]								Flow 40 [l/s]								Flow 75 [l/s]							
	500	66	63	61	55	52	46	47	44	71	68	65	59	56	50	50	47	76	73	70	63	60	53	53	50
	200	59	53	49	44	38	34	33	32	65	62	57	51	46	41	38	38	72	71	65	59	53	47	43	43
	100	58	49	43	40	31	28	22	22	64	59	53	47	39	34	29	27	71	70	63	55	47	40	35	32
	50	57	42	41	31	29	20	17	15	63	54	50	41	36	27	25	20	70	68	60	51	43	34	32	24
	20	56	32	39	29	27	11	15	11	62	48	48	34	34	20	22	15	68	65	56	47	39	29	28	17
160		Flow 20 [l/s]								Flow 60 [l/s]								Flow 120 [l/s]							
	500	62	63	61	56	52	51	50	49	68	67	64	59	55	53	52	51	73	71	68	62	59	55	54	53
	200	52	52	51	44	43	38	37	36	61	58	56	50	48	42	40	40	71	65	62	56	53	47	44	44
	100	47	43	39	37	32	27	27	25	59	54	50	45	40	35	33	31	70	64	60	53	48	42	39	38
	50	42	36	33	28	25	20	17	16	54	50	46	37	33	29	25	25	69	63	58	48	42	37	32	32
	20	37	30	30	26	19	16	11	10	49	46	43	35	27	24	19	18	68	61	55	44	36	32	27	23
200		Flow 30 [l/s]								Flow 100 [l/s]								Flow 200 [l/s]							
	500	65	60	56	52	49	47	44	42	70	64	61	55	52	52	55	55	75	69	65	59	55	55	59	59
	200	55	52	51	43	40	37	38	38	62	57	55	47	44	42	42	42	71	65	61	53	50	48	47	47
	100	46	43	41	34	32	29	29	29	57	52	48	41	39	36	34	34	69	64	58	50	47	44	42	42
	50	40	38	33	30	28	27	23	22	51	45	41	36	32	32	28	28	63	56	51	44	39	39	34	34
	20	34	31	26	25	25	23	18	16	44	37	33	29	27	25	21	19	56	47	43	36	29	27	24	22
250		Flow 50 [l/s]								Flow 150 [l/s]								Flow 300 [l/s]							
	500	67	65	57	50	47	52	51	50	69	66	59	53	50	54	53	52	71	67	61	56	53	56	55	54
	200	55	54	49	43	42	38	42	42	59	57	52	46	44	41	44	44	63	60	55	49	46	44	46	46
	100	52	48	40	37	34	33	31	28	56	52	45	41	38	36	34	31	62	57	51	46	43	40	38	35
	50	44	41	35	32	29	24	22	20	52	48	40	38	34	30	28	24	61	56	47	45	40	38	33	28
	20	33	35	29	29	25	15	12	10	47	44	37	35	31	25	22	17	59	54	46	42	38	36	30	24
315		Flow 80 [l/s]								Flow 250 [l/s]								Flow 500 [l/s]							
	500	63	60	53	49	47	46	45	44	68	65	59	53	50	50	53	50	74	71	65	58	55	55	58	55
	200	50	44	42	38	38	33	37	34	60	55	50	45	43	40	43	40	70	65	58	52	49	48	49	46
	100	42	39	33	31	30	25	30	23	54	52	45	41	38	36	36	31	66	64	56	50	47	46	44	39
	50	34	34	30	26	22	21	19	15	49	49	43	38	34	32	30	24	64	63	55	49	45	42	40	32
	20	26	30	27	21	16	15	13	11	44	46	41	35	30	27	25	18	62	61	54	48	43	37	34	24
400		Flow 130 [l/s]								Flow 400 [l/s]								Flow 800 [l/s]							
	500	76	71	66	59	55	58	57	56	79	73	67	62	57	60	59	58	82	75	68	65	59	62	61	60
	200	61	58	50	44	43	44	45	41	67	62	56	50	48	48	48	45	74	68	62	56	53	52	52	49
	100	50	45	40	34	36	35	35	29	61	56	49	44	42	39	39	34	72	67	58	53	49	47	46	40
	50	42	37	31	29	28	27	25	20	57	52	44	39	37	35	34	26	71	66	56	50	47	44	44	33
	20	40	34	27	25	24	23	21	11	55	50	40	35	34	32	30	20	70	65	54	47	44	40	38	28
500		Flow 200 [l/s]								Flow 600 [l/s]								Flow 1200 [l/s]							
	500	82	76	69	63	62	61	60	59	84	77	70	64	63	62	61	60	85	78	71	65	64	63	62	61
	200	66	60	55	48	45	44	46	43	71	65	59	53	50	50	50	47	77	70	64	58	56	55	54	51
	100	55	50	47	38	38	36	34	31	63	58	53	47	46	44	42	37	72	66	60	55	53	51	49	43
	50	46	40	36	33	32	29	29	25	59	52	47	44	42	38	38	31	71	63	57	54	51	46	46	37
	20	41	33	29	27	26	19	18	20	56	47	42	40	38	32	30	26	70	60	54	52	49	44	40	32
630		Flow 300 [l/s]								Flow 900 [l/s]								Flow 1800 [l/s]							
	500	86	77	71	67	64	61	61	60	88	80	73	69	66	64	63	62	90	83	75	71	68	67	65	64
	200	76	70	63	60	56	53	52	48	78	72	65	62	59	55	55	49	80	74	67	64	60	57	57	50
	100	65	61	52	49	45	43	41	37	71	66	59	54	50	46	45	40	78	71	66	59	56	49	48	44
	50	54	49	45	39	34	36	30	26	66	58	53	48	43	40	39	30	77	68	62	57	51	45	47	36
	20	45	35	38	30	29	29	26	20	61	50	47	43	38	36	33	25	76	65	57	55	46	42	39	30
800		Flow 500 [l/s]								Flow 1500 [l/s]								Flow 3000 [l/s]							
	500	56	53	54	51	52	52	47	44	64	59	58	57	57	56	54	50	72	65	62	63	62	62	61	56
	200	49	43	41	43	47	46	41	31	58	52	49	49	50	49	45	37	67	60	56	55	53	52	49	43
	100	46	40	39	39	41	36	30	23	55	48	45	44	44	40	35	29	63	55	51	49	47	44	40	34
	50	44	37	34	32	29	25	19	15	52	44	40	38	35	31	26	20	60	50	46	44	41	37	33	25
	20	31	33	27	22	21	11	12	1	44	36	32	28	25	17	13	2	56	40	37	34	29	23	14	9
1000		Flow 800 [l/s]								Flow 2400 [l/s]								Flow 4750 [l/s]							
	500	59	53	50	50	50	53	50	49	68	62	58	58	57	57	56	53	77	70	66	67	64	64	63	57
	200	55	47	48	47	47	50	46	34	64	56	53	52	52	51	48	38	72	64	58	56	54	52	50	42
	100	52	46	39	42	41	38	34	24	60	52	46	45	44	41	37	28	67	58	53	49	47	44	40	32
	50	50	40	32	34	31	26	21	10	56	47	40	39	36	31	27	15	62	54	48	44	41	37	33	25
	20	47	22	27	29	19	6	2	1	50	34	33	32	25	17	7	2	53	45	39	35	32	28	22	14

Shut-off damper DTU

dim Ød$_1$	Pressure drop [Pa]	Velocity app. 9 [m/s]								Velocity app. 12 [m/s]								Velocity app. 15 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 45 [l/s]								Flow 60 [l/s]								Flow 75 [l/s]							
	500	72	70	70	70	63	60	53	49	77	76	75	75	68	64	56	53	80	80	80	80	72	68	60	56
	200	70	68	67	60	57	48	38	32	75	74	71	65	61	51	41	34	78	77	72	70	64	53	42	35
	100	66	65	63	57	51	36	27	18	74	73	70	60	57	45	32	25	77	75	71	65	58	46	33	26
	50	63	62	58	52	45	28	18	11	73	71	66	55	52	40	25	19	75	72	67	58	53	41	26	20
	20	59	58	51	46	38	21	10	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
100		Flow 75 [l/s]								Flow 100 [l/s]								Flow 120 [l/s]							
	500	78	75	75	67	64	57	57	57	84	81	80	72	68	62	61	61	88	86	85	76	72	65	64	64
	200	74	73	72	64	59	50	47	46	80	79	78	69	66	55	51	51	84	83	81	72	68	59	55	54
	100	73	72	71	62	56	46	36	33	79	78	75	65	60	49	44	42	82	81	78	69	63	54	48	45
	50	72	70	68	58	51	40	29	23	77	76	70	60	53	43	36	31	80	79	74	65	57	48	40	35
	20	70	67	63	53	44	33	26	17	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
125		Flow 110 [l/s]								Flow 145 [l/s]								Flow 180 [l/s]							
	500	83	80	76	68	65	58	58	54	89	87	81	73	69	62	62	58	91	88	83	75	71	63	63	59
	200	79	78	71	65	58	51	48	47	87	85	78	70	63	56	52	48	88	86	80	71	66	59	54	49
	100	78	77	70	61	51	45	39	35	86	83	75	66	58	50	44	39	87	84	78	69	61	53	47	42
	50	77	76	68	57	45	39	33	25	84	80	71	61	52	44	36	28	86	82	75	65	55	47	39	33
	20	76	75	64	53	40	33	30	18	81	76	66	55	45	38	32	19	–	–	–	–	–	–	–	–
160		Flow 180 [l/s]								Flow 240 [l/s]								Flow 300 [l/s]							
	500	78	77	74	67	63	60	59	58	84	84	80	72	68	65	65	65	89	89	85	77	73	69	69	69
	200	76	73	70	63	59	53	50	50	80	80	77	69	66	58	55	55	85	84	80	73	70	64	59	58
	100	75	72	69	61	54	48	45	44	78	76	73	66	61	53	50	48	83	80	77	70	65	58	54	52
	50	74	71	66	58	49	40	38	33	76	72	68	62	55	47	43	38	80	76	72	66	59	51	47	42
	20	73	66	61	54	43	35	30	25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
200		Flow 300 [l/s]								Flow 400 [l/s]								Flow 475 [l/s]							
	500	85	79	72	65	62	61	65	65	92	85	79	72	68	66	71	70	95	89	82	73	71	70	74	73
	200	83	77	70	62	58	55	54	54	90	83	77	69	65	62	61	60	92	85	79	71	66	64	64	63
	100	82	76	69	59	56	53	50	50	88	80	73	65	61	58	55	53	90	83	76	68	63	61	58	56
	50	81	74	65	56	52	49	45	42	85	76	68	60	56	52	48	45	88	80	72	64	59	56	52	48
	20	80	70	60	52	46	43	38	32	81	72	62	54	50	45	40	36	–	–	–	–	–	–	–	–
250		Flow 450 [l/s]								Flow 600 [l/s]								Flow 750 [l/s]							
	500	78	75	68	61	58	61	60	59	87	83	76	68	68	68	68	68	94	90	82	74	71	74	74	74
	200	74	69	63	57	55	54	54	53	82	79	72	64	63	63	62	61	88	84	77	69	68	67	68	65
	100	72	68	60	56	52	49	45	42	79	76	69	62	60	60	58	57	85	81	74	67	65	63	62	59
	50	69	67	58	54	48	44	37	32	76	72	65	59	56	54	51	48	82	78	70	64	61	58	55	52
	20	66	65	56	52	44	39	32	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
315		Flow 750 [l/s]								Flow 1000 [l/s]								Flow 1200 [l/s]							
	500	82	78	71	64	60	60	60	60	89	85	77	69	68	67	69	65	92	88	80	72	71	70	72	68
	200	77	72	66	59	58	57	56	52	86	79	72	65	63	62	63	58	88	83	75	68	66	65	64	59
	100	76	71	64	57	54	52	50	44	84	77	69	62	60	58	57	53	87	80	72	65	63	61	59	55
	50	75	70	61	54	50	46	43	35	82	74	66	59	55	52	49	46	85	77	69	62	59	55	52	48
	20	74	68	58	51	46	39	36	26	80	71	63	56	48	44	39	38	–	–	–	–	–	–	–	–
400		Flow 1200 [l/s]								Flow 1500 [l/s]								Flow 1900 [l/s]							
	500	88	81	74	70	63	66	65	64	95	87	79	75	69	71	70	69	98	90	82	78	73	74	73	72
	200	83	76	68	61	60	59	58	54	89	82	75	69	67	64	63	60	92	84	77	70	69	67	65	63
	100	82	75	67	60	58	55	53	47	86	80	72	66	63	61	58	55	89	82	74	68	66	64	61	58
	50	80	73	65	58	56	51	47	39	83	77	68	63	58	56	52	48	86	80	71	66	62	59	55	51
	20	77	70	63	55	53	47	42	30	80	74	64	60	54	50	45	40	–	–	–	–	–	–	–	–
500		Flow 1800 [l/s]								Flow 2400 [l/s]								Flow 3000 [l/s]							
	500	91	84	76	68	67	68	68	67	96	88	80	72	70	73	72	71	102	94	85	78	75	77	77	76
	200	85	78	72	65	63	61	60	57	91	84	76	70	66	66	65	61	96	89	80	72	68	68	68	67
	100	82	74	69	62	59	57	55	50	88	75	70	63	60	58	56	52	93	85	76	69	65	63	61	58
	50	79	71	66	59	55	52	48	43	85	72	67	60	56	53	49	44	90	80	72	65	62	57	53	49
	20	76	67	63	56	50	47	41	36	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
630		Flow 2800 [l/s]								Flow 3700 [l/s]								Flow 4700 [l/s]							
	500	96	88	80	76	72	72	70	68	103	95	86	82	77	77	76	73	107	98	90	85	81	81	80	76
	200	90	83	76	71	67	63	63	56	98	90	82	78	74	70	70	62	103	95	87	82	78	76	73	66
	100	89	82	75	68	63	58	55	50	95	88	79	74	70	65	63	57	100	92	84	79	75	71	67	62
	50	87	80	72	65	58	52	48	42	92	84	75	69	65	60	56	51	97	89	80	74	70	65	60	56
	20	84	77	68	61	52	45	42	33	89	82	70	63	59	55	49	43	–	–	–	–	–	–	–	–
800		Flow 4500 [l/s]								Flow 6000 [l/s]								Flow 7500 [l/s]							
	500	78	70	66	66	65	64	63	58	83	73	69	69	68	66	65	60	84	75	71	70	69	67	66	61
	200	72	64	60	59	57	55	52	46	77	67	63	62	60	58	55	49	80	70	66	65	63	61	58	52
	100	68	59	55	53	51	48	44	37	73	63	59	57	55	52	48	42	77	67	62	60	57	55	51	45
	50	66	55	51	48	45	42	37	30	71	60	55	52	49	47	41	35	76	65	61	58	54	52	47	40
	20	61	46	43	39	35	32	25	18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1000		Flow 7100 [l/s]								Flow 9450 [l/s]								Flow 11800 [l/s]							
	500	81	74	69	69	67	65	64	58	85	77	71	70	68	67	65	60	86	79	72	71	69	68	66	61
	200	76	69	63	60	57	55	53	45	80	71	65	64	61	58	57	50	83	74	68	67	64	61	60	55
	100	72	64	58	55	52	49	47	39	76	67	61	59	56	54	52	46	80	72	65	63	60	59	57	53
	50	68	60	54	52	48	45	43	36	73	65	59	58	54	52	50	45	78	70	63	62	59	58	56	52
	20	61	53	48	46	42	39	37	31	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Shut-off damper DTMU/DTWU

Description

DTMU/DTWU are tight-closing shut-off dampers. The dampers can be used to completely shut off the air flow.

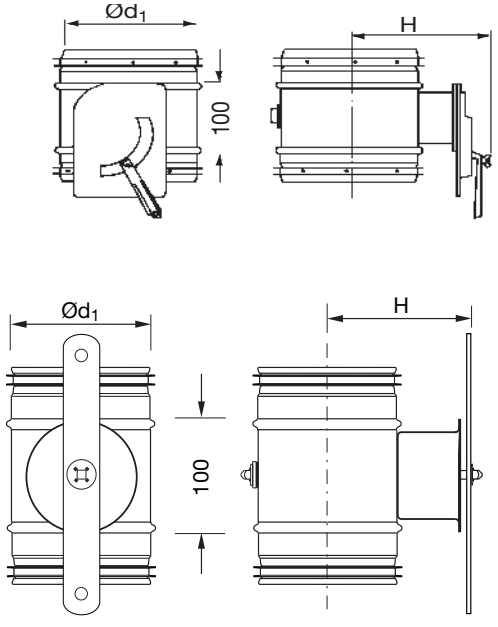
The blade consists of double sheet metal with a intermediate sealing of EPDM-rubber, which is in contact with the inside of the damper housing when in the closed position.

DTMU is equipped with a handle and a locking mechanism for stepless adjustment of 0–90°.

DTWU is equipped with a transverse lever, on which pulling ropes can be mounted for manual remote control.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–315 fullfills pressure class C in closed position.
Ø 355–630 fullfills pressure class B in closed position.



Dimensions

Ød1 nom	H mm	m kg	Sealing class past closed blade
80	95	0,80	4
100	105	0,90	4
112	110	0,90	4
125	118	1,00	4
140	125	1,00	4
150	130	1,10	4
160	135	1,10	4
180	145	1,30	4
200	155	1,40	4
224	165	1,60	4
250	180	1,90	4
280	195	2,20	4
300	205	2,40	4
315	215	2,60	4
355	240	3,10	4
400	260	3,90	4
450	285	4,50	4
500	310	5,20	4
560	340	6,20	4
600	360	7,20	4
630	375	8,10	4

Ordering example

DTMU 250

Product
Dimension Ød1

Shut-off damper DTMU/DTWU

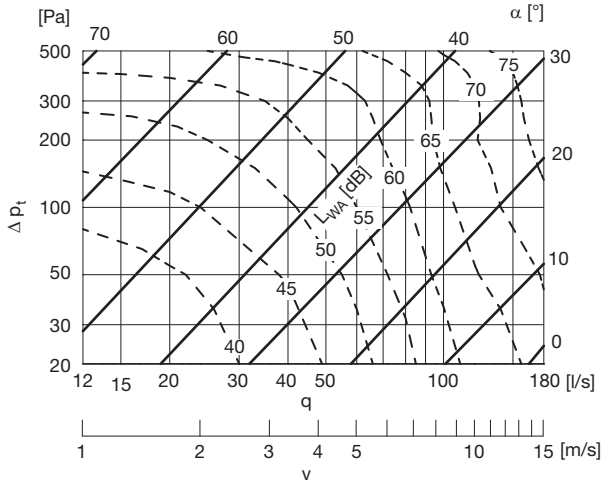
Technical data

Pressure drop graphs with noise data for dimensioning

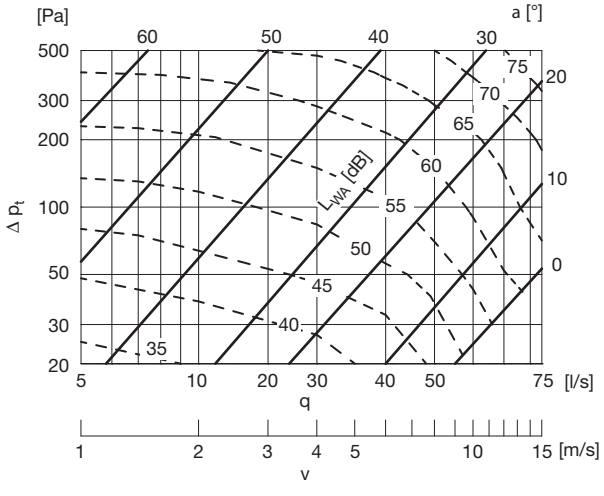
The solid curves show the pressure drop, Δp_t, over the damper as a function of the flow q, and setting angle α. The dashed curves give the A-weighted sound power data, L_{WA}, in dB to the duct.

Example
Given
Dimension Ø100
Flow 60 l/s
Pressure drop 200 Pa
Obtained from the graph
Setting angle 32°
Sound power level 63 dB (A)

Ø125



Ø80



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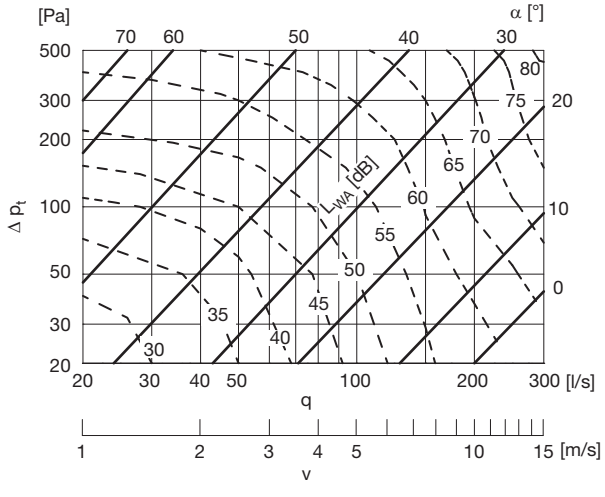

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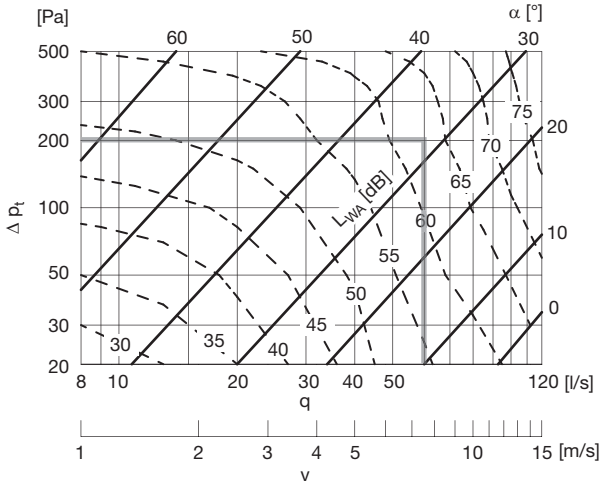

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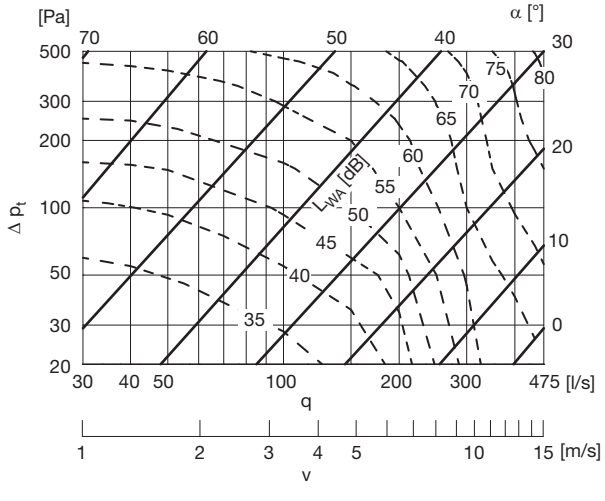
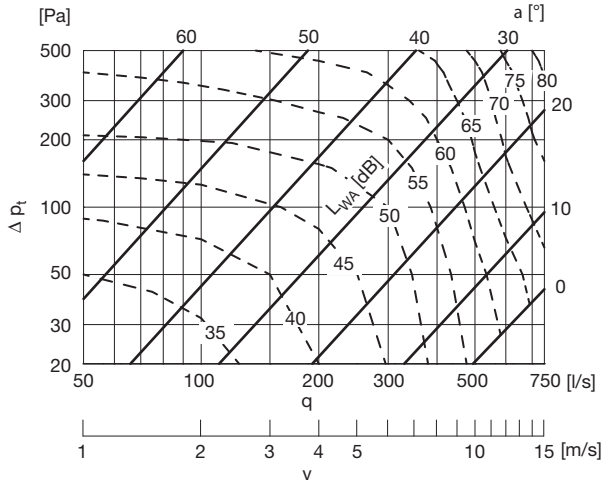


Shut-off damper DTMU/DTWU

Ø250



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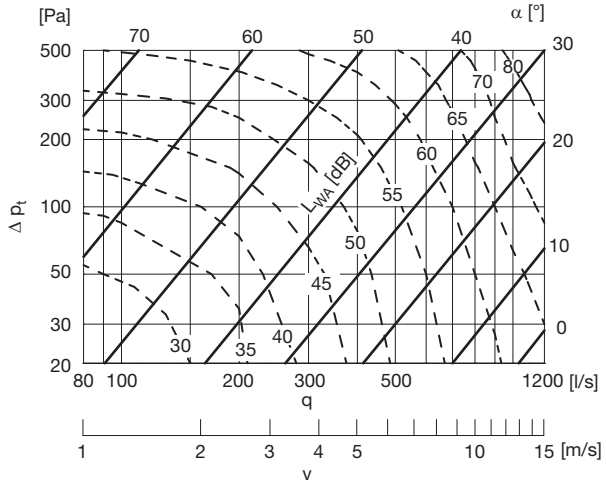

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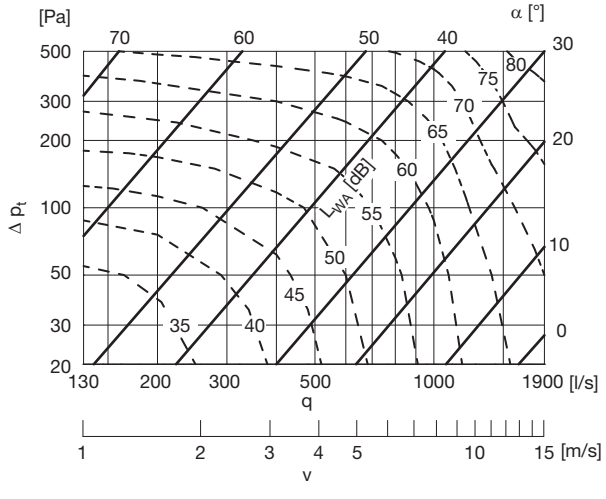
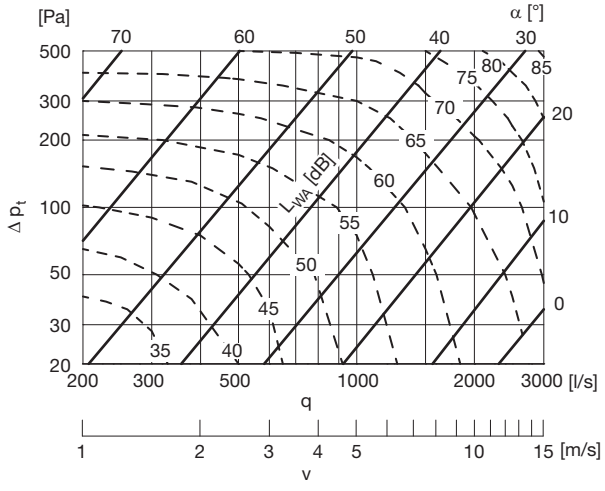


Ø500



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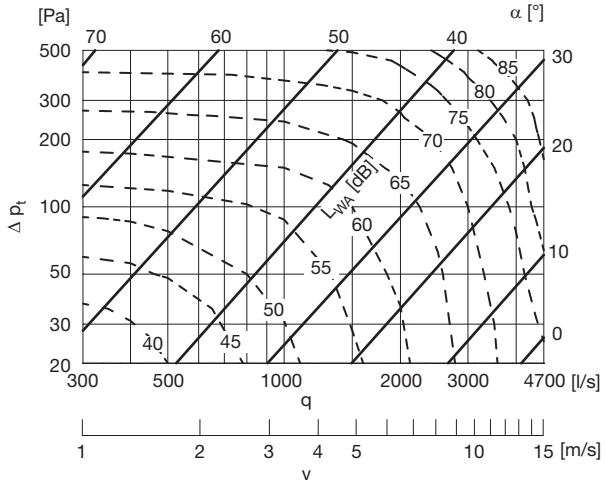


Shut-off damper DTMU/DTWU

Sound data for DTMU/DTWU

Sound power level, L_W, [dB] in duct in the octave bands 1–8, 63–8000 Hz, as a function of dimension, flow and pressure drop. **The methods ISO 5135 and ISO 3741** have been used to measure these sound values.

dim Ød1	Pressure drop [Pa]	Velocity app. 3 [m/s] Centre frequency [Hz]								Velocity app. 6 [m/s] Centre frequency [Hz]								Velocity app. 9 [m/s] Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 15 [l/s]								Flow 30 [l/s]								Flow 45 [l/s]							
	500	65	65	65	65	59	55	49	46	67	67	67	67	60	57	50	47	70	70	70	70	63	60	53	49
	300	63	63	60	60	54	48	42	36	66	66	63	63	56	50	44	38	70	70	67	67	60	54	47	40
	200	63	63	60	54	51	43	34	29	65	65	62	56	53	44	35	30	70	70	67	60	57	48	38	32
	100	55	60	53	48	43	30	23	15	59	65	57	51	46	32	24	16	66	72	63	57	51	36	27	18
	50	56	54	47	43	36	25	16	9	59	59	52	47	40	27	17	10	-	-	-	-	-	-	-	-
100		Flow 25 [l/s]								Flow 50 [l/s]								Flow 75 [l/s]							
	500	67	64	64	57	54	48	48	48	72	68	68	62	59	52	52	52	78	75	75	67	64	57	57	57
	300	62	61	60	54	51	45	42	42	68	68	68	59	56	50	47	47	75	74	73	65	61	54	51	51
	200	58	58	58	50	48	40	37	37	65	65	64	57	54	45	42	42	74	73	73	64	59	50	47	46
	100	58	55	53	46	41	34	26	24	68	66	62	54	48	40	31	29	79	75	71	62	56	46	36	33
	50	55	53	48	42	35	26	22	18	69	67	60	53	44	33	28	22	-	-	-	-	-	-	-	-
125		Flow 40 [l/s]								Flow 80 [l/s]								Flow 120 [l/s]							
	500	71	68	65	59	56	50	50	47	76	73	70	63	60	53	53	50	83	79	76	68	65	58	58	54
	300	66	66	60	55	52	46	43	40	73	73	67	60	57	51	48	44	79	79	72	66	62	55	52	48
	200	65	62	57	51	46	41	38	38	74	71	65	59	53	47	43	43	82	78	71	65	58	51	48	48
	100	64	59	53	47	39	34	29	27	77	70	63	55	47	40	35	32	84	78	70	61	51	45	39	35
	50	63	54	50	41	36	27	25	20	80	68	60	51	43	34	32	26	-	-	-	-	-	-	-	-
160		Flow 60 [l/s]								Flow 120 [l/s]								Flow 180 [l/s]							
	500	68	67	64	59	55	53	52	51	72	71	68	62	59	55	54	53	78	77	74	67	63	60	59	58
	300	63	62	59	55	52	49	46	45	67	66	64	58	55	52	49	48	75	75	71	65	61	58	54	54
	200	61	58	56	50	48	42	40	40	68	65	62	56	53	47	44	44	76	73	69	63	59	53	50	50
	100	59	54	50	45	40	35	33	31	70	64	60	53	48	42	39	38	77	73	69	61	54	48	45	44
	50	54	50	46	37	33	29	25	25	69	64	58	48	42	37	32	32	-	-	-	-	-	-	-	-
200		Flow 100 [l/s]								Flow 200 [l/s]								Flow 300 [l/s]							
	500	70	64	61	55	52	52	55	55	75	68	65	59	55	55	59	59	83	76	72	65	61	61	65	65
	300	67	62	56	50	48	45	48	48	74	68	62	55	52	51	53	52	84	78	71	64	61	57	60	60
	200	62	57	55	47	44	42	42	42	71	65	62	53	50	48	47	47	83	76	71	62	58	55	54	54
	100	57	52	48	41	39	36	34	34	69	64	58	50	47	44	42	42	83	76	69	59	56	53	50	50
	50	51	45	41	36	32	32	28	28	63	56	51	44	39	39	34	34	-	-	-	-	-	-	-	-
250		Flow 150 [l/s]								Flow 300 [l/s]								Flow 450 [l/s]							
	500	69	66	59	53	50	54	53	52	71	67	61	56	53	56	55	54	78	75	68	61	58	61	60	59
	300	63	61	55	50	47	46	48	47	66	63	57	51	48	47	51	48	75	72	65	59	55	55	59	55
	200	59	57	52	46	44	41	44	44	63	60	55	49	46	44	46	46	72	69	63	57	55	54	54	53
	100	56	52	45	41	38	36	34	31	63	57	51	45	43	40	38	35	75	69	60	56	52	49	45	42
	50	52	48	40	38	34	30	28	24	61	56	47	45	40	38	33	28	-	-	-	-	-	-	-	-
315		Flow 250 [l/s]								Flow 500 [l/s]								Flow 750 [l/s]							
	500	68	65	59	53	50	50	53	50	74	71	65	58	55	55	58	55	82	78	71	64	60	60	54	60
	300	62	59	54	49	46	45	49	43	69	66	60	54	51	51	54	48	78	74	68	61	57	57	61	54
	200	60	55	50	45	43	40	43	40	70	64	58	52	49	48	49	46	79	72	66	59	58	57	56	52
	100	54	52	45	41	38	36	36	31	66	63	55	50	47	46	44	39	76	72	64	57	54	52	50	44
	50	49	49	43	38	34	32	30	24	64	64	56	49	45	42	40	32	-	-	-	-	-	-	-	-
400		Flow 400 [l/s]								Flow 800 [l/s]								Flow 1200 [l/s]							
	500	79	73	67	62	57	60	59	58	82	75	68	65	59	62	61	60	88	81	74	70	62	66	65	64
	300	72	66	60	54	51	51	51	51	77	70	64	58	56	55	54	54	84	77	70	63	62	61	60	60
	200	67	62	56	50	48	48	48	45	74	68	62	56	53	52	52	49	82	75	68	61	60	59	58	54
	100	61	56	49	44	42	39	39	34	72	66	58	53	49	47	46	40	83	76	67	60	58	55	53	47
	50	57	52	44	39	37	35	34	26	72	67	56	50	47	44	44	33	-	-	-	-	-	-	-	-
500		Flow 600 [l/s]								Flow 1200 [l/s]								Flow 1800 [l/s]							
	500	84	77	70	64	63	62	61	60	85	78	71	65	64	63	62	61	91	84	76	68	67	68	68	67
	300	77	70	64	58	54	54	58	58	80	74	67	60	57	57	60	60	88	80	73	66	62	62	66	66
	200	71	65	59	53	50	50	50	47	77	70	64	58	56	55	54	51	85	78	72	65	63	61	60	57
	100	63	58	53	47	46	44	42	37	72	66	60	55	53	51	49	43	82	75	70	63	60	57	55	50
	50	59	52	47	44	42	38	38	31	71	63	57	54	51	46	46	37	-	-	-	-	-	-	-	-
630		Flow 1000 [l/s]								Flow 2000 [l/s]								Flow 3000 [l/s]							
	500	88	80	73	69	66	64	63	62	90	83	75	71	68	67	65	64	96	88	80	76	72	72	70	68
	300	82	75	69	65	62	61	58	55	84	77	70	67	63	62	61	56	92	84	77	73	69	68	68	61
	200	78	72	65	62	59	55	55	49	80	74	67	64	60	57	57	50	89	82	75	71	67	63	63	56
	100	71	66	59	54	50	46	45	40	78	71	66	59	56	49	47	44	90	82	76	68	63	58	55	50
	50	66	58	53	48	43	40	39	30	77	68	62	57	51	45	48	36	-	-	-	-	-	-	-	-

Shut-off damper DTMU/DTWU

dim Ød1	Pressure drop [Pa]	Velocity app. 12 [m/s] Centre frequency [Hz] 63	125	250	500	1k	2k	4k	8k	Velocity app. 15 [m/s] Centre frequency [Hz] 63	125	250	500	1k	2k	4k	8k
80		Flow 60 [l/s]								Flow 75 [l/s]							
	500	75	75	75	75	68	64	56	53	80	80	80	80	72	68	60	56
	300	75	75	71	71	64	57	50	43	79	79	75	75	68	60	53	45
	200	75	75	71	65	61	51	41	34	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100		Flow 100 [l/s]								Flow 120 [l/s]							
	500	84	81	80	72	68	62	61	61	88	85	84	76	72	65	64	64
	300	81	80	79	70	67	59	56	55	86	85	84	74	70	62	59	58
	200	80	80	79	69	66	55	51	51	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
125		Flow 160 [l/s]								Flow 180 [l/s]							
	500	89	85	81	73	69	62	62	58	91	87	83	75	71	63	63	59
	300	86	86	79	71	68	60	56	53	89	88	81	73	69	62	58	54
	200	89	85	78	70	63	56	52	52	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160		Flow 240 [l/s]								Flow 300 [l/s]							
	500	84	84	80	72	68	65	65	65	89	89	85	77	73	69	69	69
	300	81	81	78	70	67	63	59	59	87	87	83	76	72	68	64	64
	200	84	80	77	69	66	58	55	55	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
200		Flow 400 [l/s]								Flow 450 [l/s]							
	500	90	82	78	72	67	66	71	70	93	85	81	73	71	70	74	73
	300	92	84	78	71	67	63	67	66	95	87	81	72	68	66	69	68
	200	90	83	79	69	65	62	61	60	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
250		Flow 600 [l/s]								Flow 750 [l/s]							
	500	87	83	76	68	64	68	68	68	94	90	82	74	70	74	74	74
	300	84	80	73	67	65	64	62	61	91	87	80	72	70	69	72	68
	200	82	79	72	64	63	63	62	61	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
315		Flow 1000 [l/s]								Flow 1200 [l/s]							
	500	89	85	77	69	68	67	69	65	92	88	80	72	71	70	72	68
	300	85	81	74	66	64	64	66	59	89	85	78	70	68	68	70	62
	200	86	79	72	65	63	62	64	58	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400		Flow 1600 [l/s]								Flow 1800 [l/s]							
	500	95	87	79	75	67	71	70	69	98	90	82	78	70	74	73	72
	300	91	83	76	69	67	66	65	64	94	86	79	71	70	69	68	67
	200	89	82	75	69	67	64	63	60	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
500		Flow 2400 [l/s]								Flow 3000 [l/s]							
	500	96	88	80	72	70	73	72	71	102	94	85	78	75	77	77	76
	300	93	85	78	70	66	66	70	70	99	91	83	74	70	70	74	74
	200	91	84	76	70	68	66	65	61	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
630		Flow 4000 [l/s]								Flow 4500 [l/s]							
	500	103	95	86	82	77	77	76	73	107	98	90	85	81	81	80	76
	300	100	91	83	79	75	75	74	66	105	96	88	83	79	79	79	70
	200	98	90	82	78	74	70	70	62	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Shut-off damper with motor shelf

DTHU

Description

Shut-off damper with motor shelf KOMHY
Ø 80–630 consists of a DTU damper with a KOMHY combined motor shelf added. The damper has no knob, and has a longer spindle to avoid the need for extension spindle VREDF. The damper is designed to have a motor added on site.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–315 fullfills pressure class C in closed position.
Ø 355–630 fullfills pressure class B in closed position.
Ø 710–1000 fullfills pressure class A in closed position.

Motorizing
The motor shelf KOMHY is provided with suitable fixing holes for Belimo´s LM, NM SM and AF motors, and for Sauter´s pneumatic actuators AK 31 P and AK 41 P.

Ø 900 and 1000 has two motor shelves.

NOTE! AK 42 P does not fit this damper. The torque needed for motorizing is given in the adjacent table.

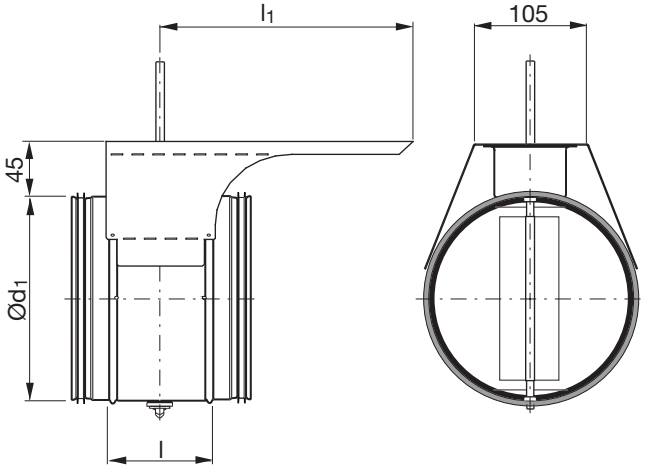
Also the dampers DRU and DSU can be ordered in this version.

Ordering example

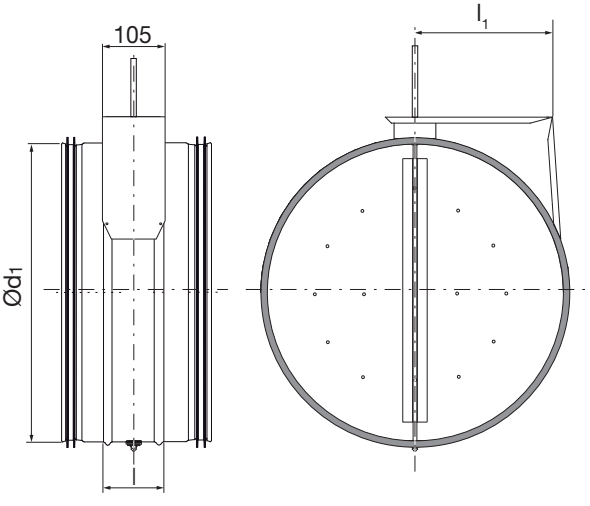
	DTHU	200
Product		
Dimension Ød$_1$		

Dimensions

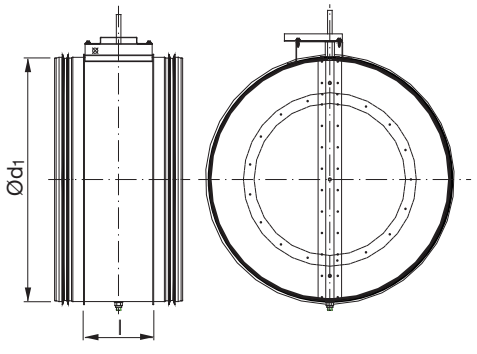
Ø 80–450



Ø 500–630



Ø 710–1000



Shut-off damper with motor shelf

DTHU

Dimensions

Ød$_1$ nom	l mm	l$_1$ mm	M Nm	m kg	Sealing class past closed blade
80	100	230	2,0	0,67	4
100	100	230	2,0	0,75	4
112	100	230	2,0	0,85	4
125	100	230	2,0	0,90	4
140	100	230	2,0	0,97	4
150	100	230	2,0	1,00	4
160	100	230	2,0	1,11	4
180	100	230	2,0	1,19	4
200	100	230	2,0	1,41	4
224	100	230	3,0	1,64	4
250	100	230	3,0	1,89	4
280	100	230	4,0	2,14	4
300	100	230	4,0	2,33	4
315	100	230	4,0	2,51	4
355	100	230	8,0	2,81	4
400	100	230	8,0	4,02	4
450	100	230	10	5,21	4
500	115	230	10	6,44	4
560	115	230	15	7,84	4
600	115	230	15	8,48	4
630	115	315	15	9,17	4
710	230	355	40	18,2	4
800	230	400	40	20,7	4
900	230	450	60	27,6	4
1000	230	500	60	32,6	4

Shut-off damper with motor shelf

DTH1U

Description

Shut-off damper with motor shelf HYLLA LMNM.
Consists of a DTU damper with motor shelf HYLLA LMNM added.
The damper is designed to have a motor added on site.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–315 fullfills pressure class C in closed position.
Ø 400–500 fullfills pressure class B in closed position.

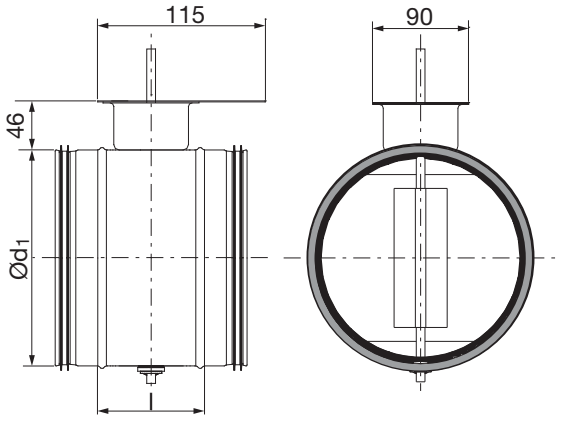
Motorizing
See separate motorizing table.

The torque needed for motorizing is given in the adjacent table.

Ordering example

	DTH1U	125
Product		
Dimension Ød$_1$		

Dimensions



Ød$_1$ nom	l mm	M Nm	m kg	Sealing class past closed blade
80	100	2,0	0,70	4
100	100	2,0	0,75	4
125	100	2,0	0,90	4
160	100	2,0	1,10	4
180	100	2,0	1,20	4
200	100	2,0	1,40	4
250	100	3,0	1,90	4
315	100	4,0	2,50	4
400	100	8,0	4,00	4
500	100	10	6,50	4

Shut-off damper with motor shelf

DTH2U

Description

Shut-off damper with motor shelf HYLLA DTH2U.
Consists of a DTU damper with motor shelf HYLLA DTHU2U added.
The damper has neither any cup nor any knob, and has a longer spindle to avoid the need for extension spindle VREDF. The damper is designed to have a motor added on site.
Has a low height to fit at narrow spaces.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Fulfills pressure class C in closed position.

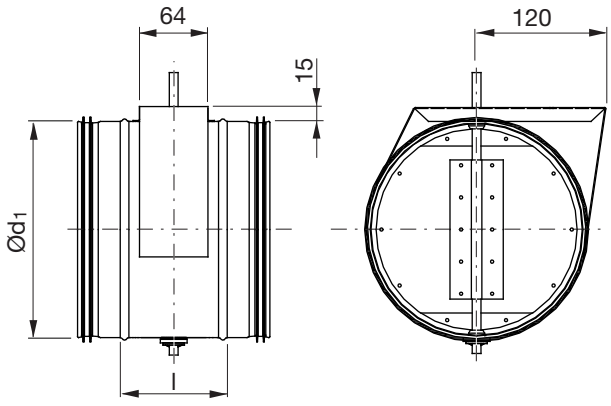
Motorizing
The motor shelf is suitable for Belimo's CM...F and LM...F motors.

The torque needed for motorizing is given in the adjacent table.

Ordering example

	DTH2U	125
Product		
Dimension $Ød_1$		

Dimensions



$Ød_1$ nom	l mm	M Nm	m kg	Sealing class past closed blade
80	100	2,0	0,31	4
100	100	2,0	0,39	4
125	100	2,0	0,54	4
150	100	2,0	0,64	4
160	100	2,0	0,75	4
200	100	2,0	1,05	4
250	100	3,0	1,53	4
315	100	4,0	2,15	4

Damper with flow meter DIRBU

Description

The motor-driven damper DIRBU with flow meter is suitable for systems where it should be possible to increase the air flow or lower it to the basic level. Examples of such systems are conference rooms and public areas.

It fulfils tightness class C. DIRBU is intended for use where you want to be able to set two air flows.

Maximum and minimum flow is set with the measurement nozzles and are fixed with the two end stop screws on the motor.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 100–315 fulfills pressure class A in closed position.

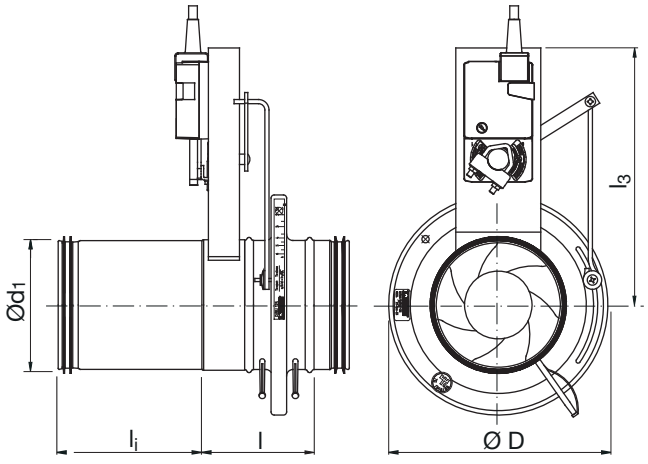
Cleaning
By fully open the damper, one get access to the duct. Do not forget to readjust the damper after cleaning.

Installation
Consider required straight distance after or before disturbance, as mentioned on page 252 and on the card attached to the measurement nozzles, to obtain accurate flow measurement.

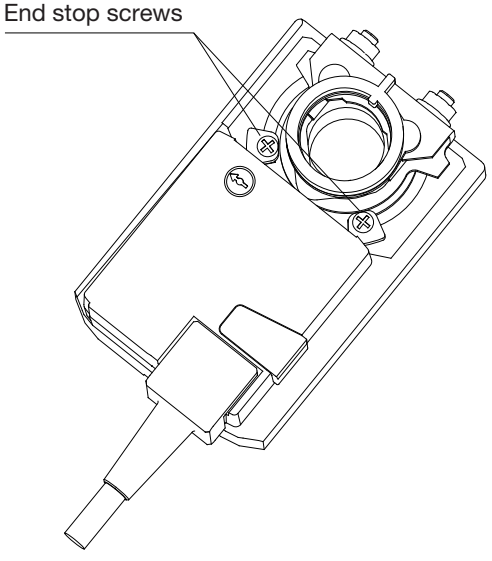
Ordering example

DIRBU	160	24	LM
Product			
Dimension Ød$_1$			
Voltage			
Motor type			

Dimensions



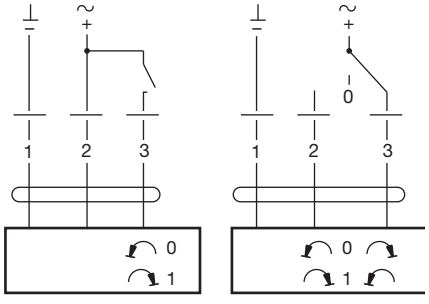
Ød$_1$ nom	ØD nom	l mm	l$_i$ mm	l$_3$ mm	m kg
100	163	94	130	235	1,65
125	210	103	130	249	2,05
150	230	100	130	262	2,25
160	230	100	130	268	2,25
200	285	102	130	289	3,15
250	333	123	185	315	4,05
300	406	123	185	341	4,65
315	406	123	185	350	5,05



Damper with flow meter DIRBU

Technical data for the motors

	LM 24 A	LM 230 A
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 85–265 V, 50/60 Hz
Power consumption	1 W	1,5 W
For wire sizing	2 VA	4 VA
Connection	Cable 1 m, 3×0,75 mm^2	Cable 1 m, 3×0,75 mm^2
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 5 Nm	Min. 5 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RF	95 % RF



Damper with flow meter DIRVU

Description

The motor-driven damper DIRVU with flow meter is suitable for systems where it should possible to vary the air flow. Examples of such systems are conference rooms and public areas. It fulfils tightness class C.

Maximum and minimum flow is set with the measurement nozzles and are fixed with the two end stop screws on the motor. A special mounting, measuring, balancing and maintenance instruction exists for this product.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 100–315 fullfills pressure class A in closed position.

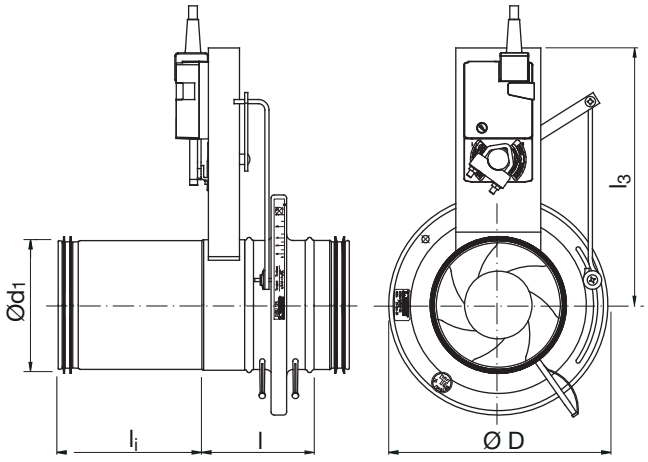
Cleaning
By fully open the damper, one get access to the duct. Do not forget to readjust the damper after cleaning.

Installation
Consider required straight distance after or before disturbance, as mentioned on page 252 and on the card attached to the measurement nozzles, to obtain accurate flow measurement.

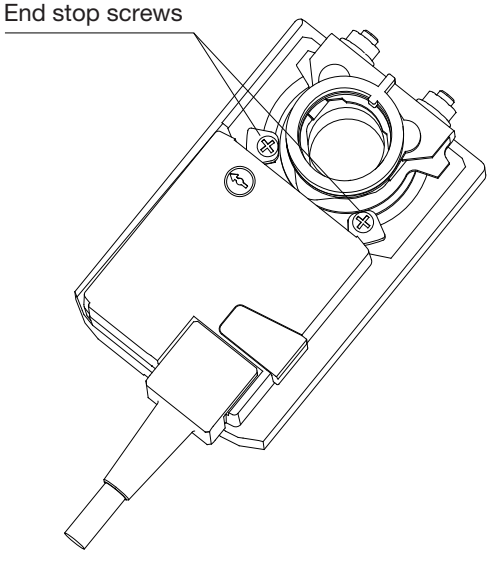
Ordering example

DIRVU	160	24	LM
Product			
Dimension Ød$_1$			
Voltage			
Motor type			

Dimensions



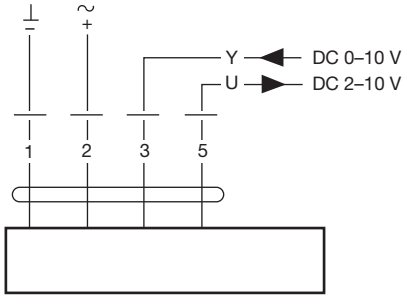
Ød$_1$ nom	ØD nom	l mm	l$_i$ mm	l$_3$ mm	m kg
100	163	94	130	235	1,60
125	210	103	130	249	2,00
150	230	100	130	262	2,20
160	230	100	130	268	2,20
200	285	102	130	289	3,10
250	333	123	185	315	3,95
300	406	123	185	341	4,55
315	406	123	185	350	4,95



Damper with flow meter DIRVU

Technical data for the motor

	LM 24 A-SR
Power supply	AC 24 V, 50/60 Hz DC 24 V
Power consumption	1 W
For wire sizing	2 VA
Connection	Cable 1 m, 4×0,75 mm^2
Operating angle	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 5 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical
Running time for 95°	150 s
Sound power level	Max. 35 dB (A)
Protection class	III Safety extra-low voltage
Protection type	IP 54
Ambient temperature range	-30 to +50°C
Ambient moisture	95 % RF



Shut-off damper with motor DSUSN

Description

Shut-off or regulating damper.
With internal Belimo-motor and blade combination type CM … D, with plastic blade, specially suitable where space is limited.

The housing fulfills tightness class D.

For systems with low requirements at shut-off capacity.

With telescopic function, hence also suitable for simple additional retrofitting.

Available with motors for 24 V DC and AC or 230 V AC (CM .. –L-…D).
On-/Off- or 3-point regulation.

Please look at www.belimo.com for motor data.

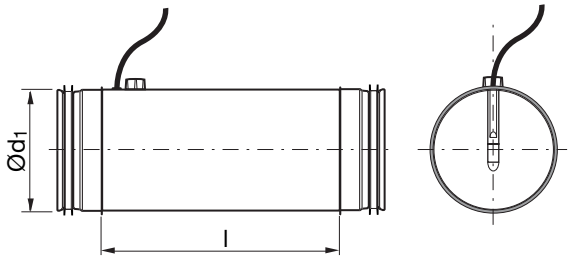
Advantages

- easy to complement
- possible to install in the smallest spaces without the need of extra space
- ensured installation quality and hence tightness through lip seals
- in approx. 50 % of damper positions quieter than other damper constructions
- silent change of setting
- possible to demount (telescopic function)
- can also replace an inspection hatch

Ordering example

	DSUSN	100
Product		
Dimension Ød$_1$		

Dimensions



Ød$_1$ nom	l mm	l$_1$ mm	l$_2$ mm	m kg	Sealing class past closed blade
100	250	40	90	0,75	2
125	250	40	90	0,94	2
150	250	40	90	1,12	2
160	250	40	90	1,20	2

Advantages

- galvanized body, tightness class D
- body also available in stainless steel
- working temperature range -30 to +50 °C
- max. humidity 95 %, not condensating
- for use in systems of max. 1000 Pa
- the air direction must be considered
- maintenance free

Instructions for retrofitting

- Duct cutting length 260 mm.
- Must be able to slide 1 Ø lengthwise.
- To allow later disassembly the duct must not be provided with Click.

Regulating damper with motor

DSVUSN

Description

Shut-off or regulating damper.
With internal Belimo-motor and blade combination type CM … D, with plastic blade, specially suitable where space is limited.

The housing fulfills tightness class D.

For systems with low requirements at shut-off capacity.

With telescopic function, hence also suitable for simple additional retrofitting.

For 24 V available with stepless regulation motor (CM 24 – SR-L…D).

Please look at www.belimo.com for motor data.

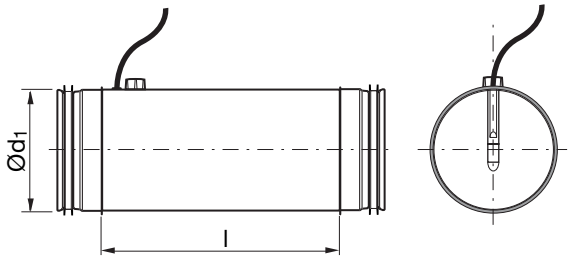
Advantages

- easy to complement
- possible to install in the smallest spaces without the need of extra space
- ensured installation quality and hence tightness through lip seals
- in approx. 50 % of damper positions quieter than other damper constructions
- silent change of setting
- possible to demount (telescopic function)
- can also replace an inspection hatch

Ordering example

	DSVUSN	100
Product		
Dimension Ød$_1$		

Dimensions



Ød$_1$ nom	l mm	l$_1$ mm	l$_2$ mm	m kg
100	250	40	90	0,75
125	250	40	90	0,94
150	250	40	90	1,12
160	250	40	90	1,20

Advantages

- galvanized body, tightness class D
- body also available in stainless steel
- working temperature range -30 to +50 °C
- max. humidity 95 %, not condensating
- for use in systems of max. 1000 Pa
- the air direction must be considered
- maintenance free

Instructions for retrofitting

- Duct cutting length 260 mm.
- Must be able to slide 1 Ø lengthwise.
- To allow later disassembly the duct must not be provided with Click.

Motorized shut-off damper DTBU

Description

Shut-off damper with electric motor – LM 24 A-F or LM 230 A-F

Consists of a DTU damper with a 24 or 230 V electric motor added.

The motor is controlled by a single-pole breaking contact. The motor has overload protection and stops automatically when the blade has reached its end stop. The stops can be continually adjusted. Although the current is connected, the motor is not damaged if blocked.

The spindle and motor can be disconnected from each other via a release button on the motor housing.

In outdoor installation, the motor should be protected from direct UV radiation.

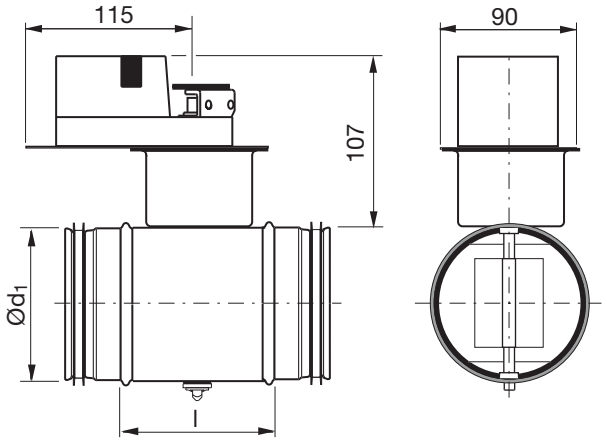
The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

Also the dampers DRU and DSU can be ordered with motor.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–315 fullfills pressure class C in closed position.

Dimensions



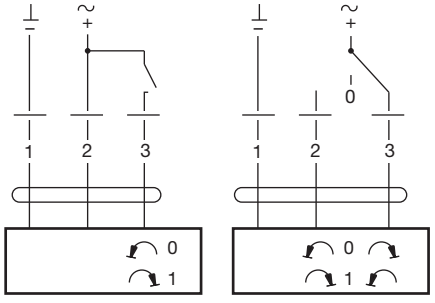
Ød1 nom	l mm	m kg	Sealing class past closed blade
80	100	1,00	4
100	100	1,08	4
125	100	1,23	4
160	100	1,44	4
200	100	1,74	4
250	100	2,22	4
315	100	2,84	4

Ordering example

Product	DTBU	125	24	LMF
Type				
Dimension Ød1				
Voltage				
Motor type				

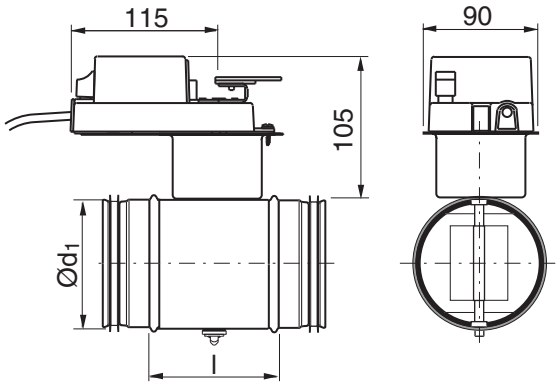
Technical data for the motors

	LM 24 A-F	LM 230 A-F
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 65–265 V, 50/60 Hz
Power consumption	1 W	1,5 W
For wire sizing	2 VA	4 VA
Connection	Cable 1 m, 3×0,75 mm²	Cable 1 m, 3×0,75 mm²
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 5 Nm	Min. 5 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RH	95 % RH



Motorized shut-off damper DTBU

Dimensions



Ød1 nom	l mm	m kg	Sealing class past closed blade
400	100	4,59	4
500	115	7,29	4

Description

Shut-off damper with electric motor – NM 24 A-F or NM 230 A-F
Consists of a DTU damper with a 24 or 230 V electric motor added.

The motor is controlled by a single-pole breaking contact. The motor has overload protection and stops automatically when the blade has reached its end stop. The stop can be continually adjusted. Although the current is connected, the motor is not damaged if blocked.

The spindle and motor can be disconnected from each other via a release button on the motor housing.

In outdoor installation, the motor should be protected from direct UV radiation.

The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

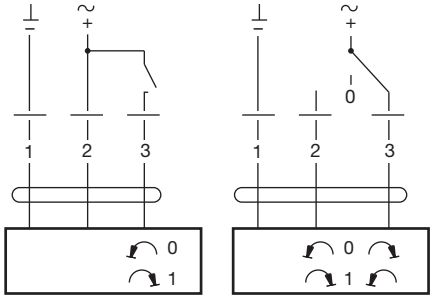
Ø 400–500 fullfills pressure class B in closed position.

Ordering example

Product	DTBU	400	24	NMF
Type				
Dimension Ød1				
Voltage				
Motor type				

Technical data for the motors

	NM 24 A-F	NM 230 A-F
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 85–265 V, 50/60 Hz
Power consumption	1,5 W	2,5 W
For wire sizing	3,5 VA	6 VA
Connection	Cable 1 m, 3×0,75 mm²	Cable 1 m, 3×0,75 mm²
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 10 Nm	Min. 10 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RH	95 % RH



Motorized shut-off damper DTBU

Description

Shut-off damper with electric motor – SM 24 A or SM 230 A
Consists of a DTU damper with a 24 or 230 V electric motor added.

The motor is controlled by a single-pole breaking contact. The motor has overload protection and stops automatically when the blade has reached its end stop. The stop can be continually adjusted. Although the current is connected, the motor is not damaged if blocked.

The spindle and motor can be disconnected from each other via a release button on the motor housing.

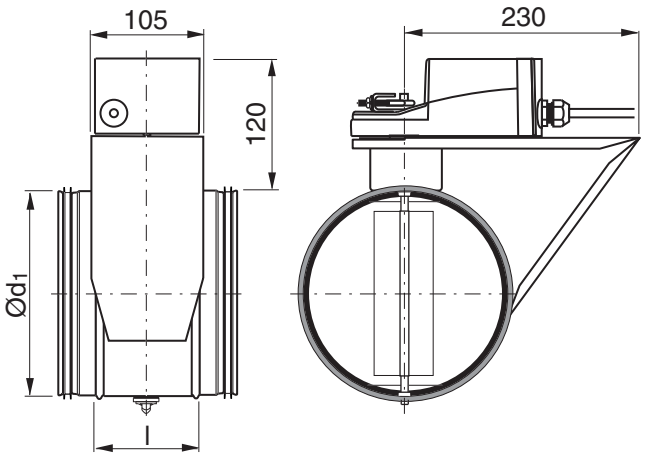
In outdoor installation, the motor should be protected from direct UV radiation.

The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 630 fullfills pressure class B in closed position.

Dimensions



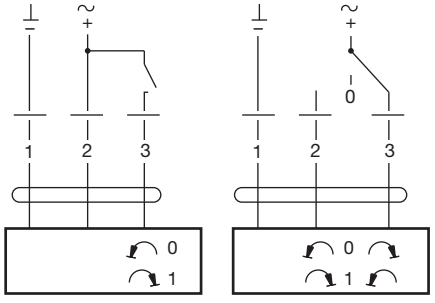
Ød$_1$ nom	l mm	m kg	Sealing class past closed blade
630	115	10,5	4

Ordering example

Product	DTBU	630	24	SM
Type				
Dimension Ød$_1$				
Voltage				
Motor type				

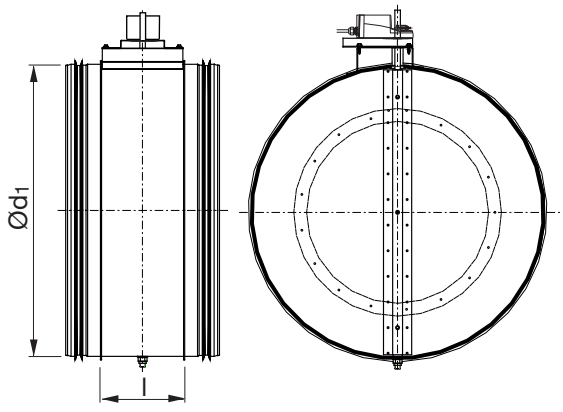
Technical data for the motors

	SM 24 A	SM 230 A
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 85–265 V, 50/60 Hz
Power consumption	2 W	2,5 W
For wire sizing	4 VA	6 VA
Connection	Cable 1 m, 3×0,75 mm^2	Cable 1 m, 3×0,75 mm^2
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 20 Nm	Min. 20 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RH	95 % RH



Motorized shut-off damper DTBU

Dimensions



Ød1 nom	l mm	m kg	Sealing class past closed blade
710	230	19,9	4
800	230	22,4	4
900	230	31,0	4
1000	230	36,0	4

Description

Shut-off damper with electric motor – GM 24 A or GM 230 A

Consists of a DTU damper with a 24 or 230 V electric motor added. Ø900 and 1000 has two motors.

The motor is controlled by a single-pole breaking contact. The motor has overload protection and stops automatically when the blade has reached its end stop. The stop can be continually adjusted. Although the current is connected, the motor is not damaged if blocked.

The spindle and motor can be disconnected from each other via a release button on the motor housing.

In outdoor installation, the motor should be protected from direct UV radiation.

The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

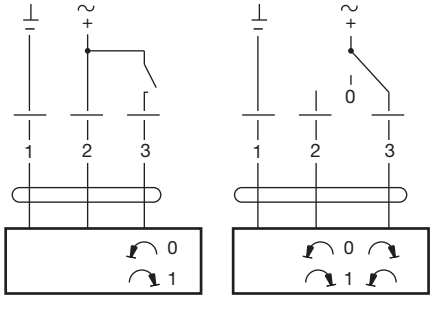
Ø 710–1000 fullfills pressure class A in closed position.

Ordering example

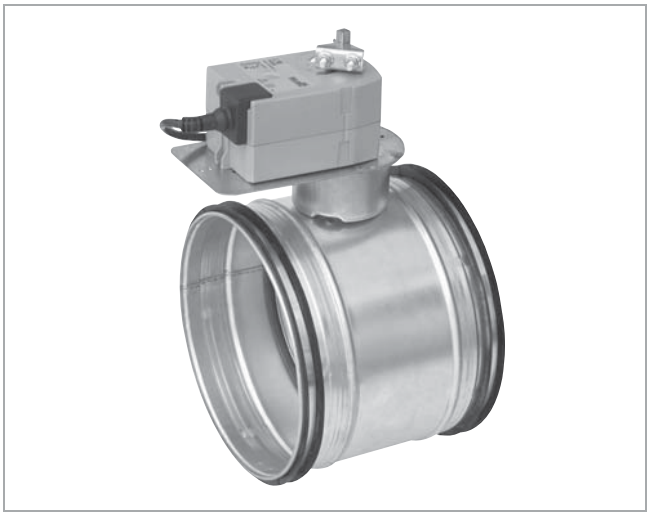
Product	DTBU	800	24	GM
Type				
Dimension Ød1				
Voltage				
Motor type				

Technical data for the motors

	GM 24 A	GM 230 A
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 85–265 V, 50/60 Hz
Power consumption	4,5 W	4,5 W
For wire sizing	7 VA	7 VA
Connection	Cable 1 m, 3×0,75 mm²	Cable 1 m, 3×0,75 mm²
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 40 Nm	Min. 40 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 45 dB (A)	Max. 45 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50 °C	-30 to +50 °C
Ambient moisture	95 % RH	95 % RH



Motorized shut-off damper DTBCU



Description

Shut-off damper with spring return motor – TF 24 or TF 230

Consists of a DTU damper with a 24 or 230 V electric motor added.

The motor is controlled by a single-pole breaking contact. The motor has overload protection and stops automatically when the blade has reached its end stop. Although the current is connected, the motor is not damaged if blocked.

When system voltage is connected, the motor starts and tensions the return spring at the same time. The motor stops at its end position and is not damaged by blockage, although system voltage remains.

When the power is cut, the damper closes when the drive motor freewheels and the return spring pulls the blade back to its original position.

If you want the damper to open instead of close, you can undo the two nuts on the spindle clamp, turn the spindle 90° and tighten the nuts again.

In outdoor installation, the motor should be protected from direct UV radiation.

The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

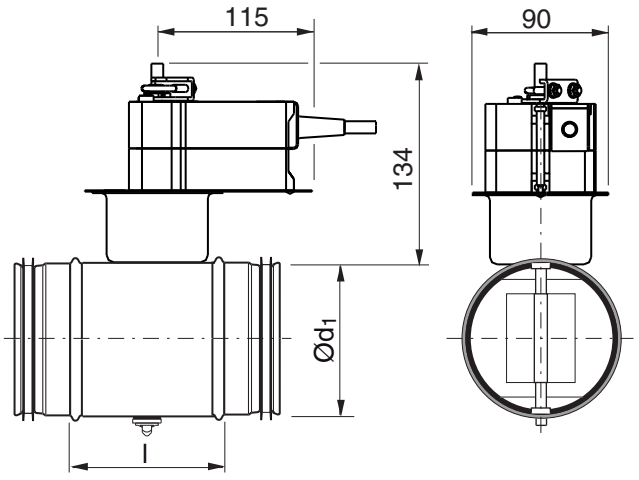
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–200 fullfills pressure class C in closed position.

Ordering example

DTBCU	200	24	TF
Product			
Dimension Ød$_1$			
Voltage			
Motor type			

Dimensions



Ød$_1$ nom	l mm	24 V m kg	230 V m kg	Sealing class past closed blade
80	100	1,06	1,06	4
100	100	1,14	1,14	4
125	100	1,29	1,29	4
160	100	1,50	1,50	4
200	100	1,90	1,90	4

Motorized shut-off damper DTBCU

Description

Shut-off damper with spring return motor – LF 24 or LF 230

Consists of a DTU damper with a 24 or 230 V electric motor added.

The motor is controlled by a single-pole breaking contact. The motor has overload protection and stops automatically when the blade has reached its end stop. Although the current is connected, the motor is not damaged if blocked.

When system voltage is connected, the motor starts and tensions the return spring at the same time. The motor stops at its end position and is not damaged by blockage, although system voltage remains.

When the power is cut, the damper closes when the drive motor freewheels and the return spring pulls the blade back to its original position.

If you want the damper to open instead of close, you can undo the two nuts on the spindle clamp, turn the spindle 90° and tighten the nuts again.

In outdoor installation, the motor should be protected from direct UV radiation.

The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

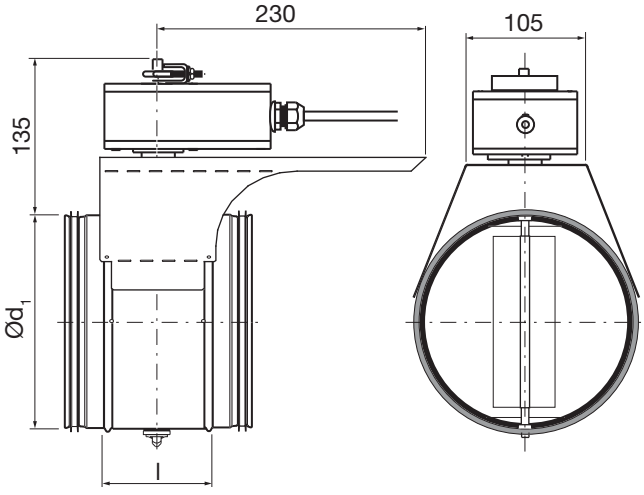
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 250–315 fullfills pressure class C in closed position.

Ordering example

DTBCU	250	24	LF
Product			
Dimension Ød$_1$			
Voltage			
Motor type			

Dimensions



Ød$_1$ nom	l mm	24 V m kg	230 V m kg	Sealing class past closed blade
250	100	3,29	3,44	4
315	100	3,91	4,06	4

Motorized shut-off damper DTBCU

Description

Shut-off damper with spring return motor – SF 24A or SF 230A

Consists of a DTU damper with a 24 or 230 V electric motor added.

The motor is controlled by a single-pole breaking contact. The motor has overload protection and stops automatically when the blade has reached its end stop. Although the current is connected, the motor is not damaged if blocked.

When system voltage is connected, the motor starts and tensions the return spring at the same time. The motor stops at its end position and is not damaged by blockage, although system voltage remains.

When the power is cut, the damper closes when the drive motor freewheels and the return spring pulls the blade back to its original position.

If you want the damper to open instead of close, you can undo the two nuts on the spindle clamp, turn the spindle 90° and tighten the nuts again.

In outdoor installation, the motor should be protected from direct UV radiation.

The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

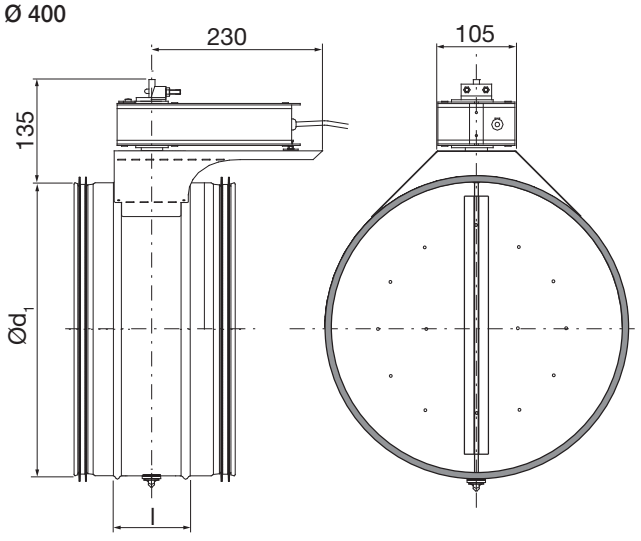
Ø 400–630 fullfills pressure class B in closed position.

Ordering example

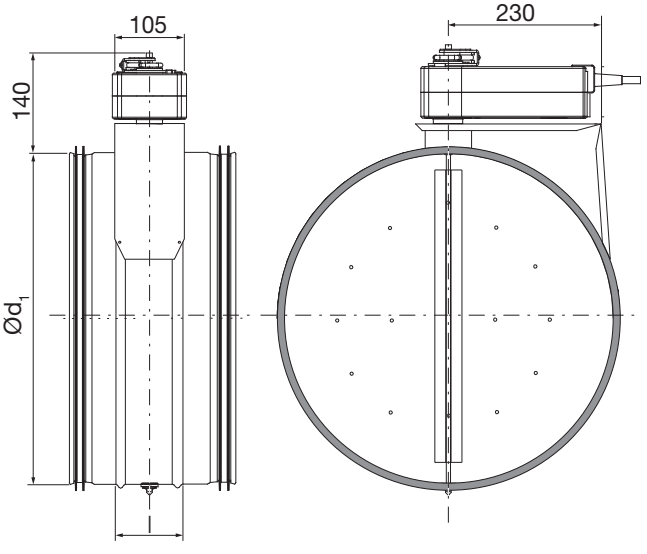
DTBCU	400	24	SF
Product			
Dimension Ød$_1$			
Voltage			
Motor type			

Dimensions

Ø 400



Ø 500–630

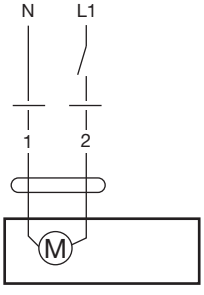


Ød$_1$ nom	l mm	m kg	Sealing class past closed blade
400	100	6,32	4
500	115	8,74	4
630	115	10,5	4

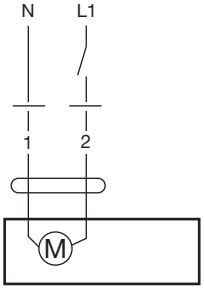
Motorized shut-off damper DTBCU

Technical data for the motors

	TF 24	**TF 230**
Voltage range	2AC 19,2–28,8 V, 50/60 Hz DC 21,6–28,8 V	AC 85–265 V, 50/60 Hz
Power consumption		
– during opening	2,5 W	2,5 W
– stand-by	1,5 W	1,5 W
For wire sizing	5 VA	5 VA
Connection	Cable 1 m, 2×0,75 mm^2	Cable 1 m, 2×0,75 mm^2
Operating angle, adjustable	Mech. limited to 95°	Mech. limited to 95°
Torque at rated voltage		
– motor	Min. 2 Nm	Min. 2 Nm
– return spring	Min. 2 Nm	Min. 2 Nm
Direction of rotation	Optional through right or left-hand installation L/R	Optional through right or left-hand installation L/R
Position indication	Mechanical	Mechanical
Running time		
– motor	< 75 s (0–2 Nm)	< 75 s (0–2 Nm)
– return spring	< 25 s	< 25 s
Degree of protection	IP 42	IP 42
Ambient temperature range	-30 to +50°C	-30 to +50°C

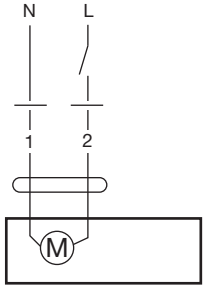


	LF 24	**LF 230**
Voltage range	2AC 19,2–28,8 V, 50/60 Hz DC 21,6–28,8 V	AC 198–264 V, 50/60 Hz
Power consumption		
– during opening	5 W	5 W
– stand-by	2,5 W	3 W
For wire sizing	7 VA	7 VA
Connection	Cable 1 m, 2×0,75 mm^2	Cable 1 m, 2×0,75 mm^2
Operating angle, adjustable	Mech. limited to 95°	Mech. limited to 95°
Torque at rated voltage		
– motor	Min. 4 Nm	Min. 4 Nm
– return spring	Min. 4 Nm	Min. 4 Nm
Direction of rotation	Optional through right or left-hand installation L/R	Optional through right or left-hand installation L/R
Position indication	Mechanical	Mechanical
Running time		
– motor	40–75 s (0–4 Nm)	40–75 s (0–4 Nm)
– return spring	app. 20 s	app. 20 s
Sound power level		
– motor	max 50 dB (A)	max 50 dB (A)
– return spring	app. 62 dB (A)	app. 62 dB (A)
Degree of protection	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C



Motorized shut-off damper DTBCU

	SF 24A	**SF 230A**
Voltage range	AC 19,2–28,8 V, 50/60 Hz DC 21,6–28,8 V	AC 195–264 V, 50/60 Hz
Power consumption		
– during operation	5 W	6,5 W
– stand-by	2,5 W	3,5 W
For wire sizing	7,5 VA	18 VA
Connection	Cable 1 m, 2×0,75 mm^2	Cable 1 m, 2×0,75 mm^2
Operating angle, adjustable	Mech. limited to 95°	Mech. limited to 95°
Torque at rated voltage		
– motor	Min. 20 Nm	Min. 20 Nm
– spring bias	Min. 20 Nm	Min. 20 Nm
Direction of rotation	Optional through right or left-hand installation L/R	Optional through right or left-hand installation L/R
Position indication	Mechanical	Mechanical
Running time		
– motor	≤ 75 s	≤ 75 s
– return spring	≤ 20 s	≤ 20 s
Sound power level		
– motor	≤ 45 dB (A)	≤ 45 dB (A)
– return spring	≤ 62 dB (A)	≤ 62 dB (A)
Degree of protection	IP 54	IP 54
Ambient temperature range	-30 to +50 °C	-30 to +50 °C



Shut-off damper, fastrunning motor

DTFU

Description

Shut-off damper with electric motor LMQ 24A or LMQ 24A-SR.

Consists of a DTU damper with a 24 V electric motor added.
1) Motor LMQ 24A is a fast-running reversing on/off-motor, suitable for extraction at working places where a fast operation is wanted.
2) Motor LMQ 24A-SR is a fast-running modulating motor, suitable for laboratory extraction where a fast change of the air flow is wanted.

The motors stops at its end position and is not damaged by blockage, although system voltage remains.
In outdoor installations, the motor must be protected from rain and direct UV radiation.

The motor is installed at a distance from the damper, which makes it easy to insulate the ventilation duct.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

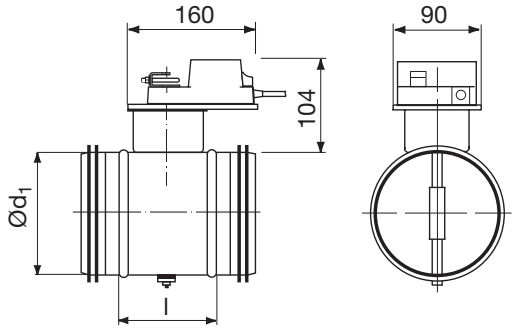
Ø 80–250 fullfills pressure class C in closed position.

The torque needed for motorizing is given in the adjacent table.

Ordering example

	DTFU	125	24	LMQ 24A
Product				
Dimension Ød$_1$				
Voltage				
Motor type				

Dimensions



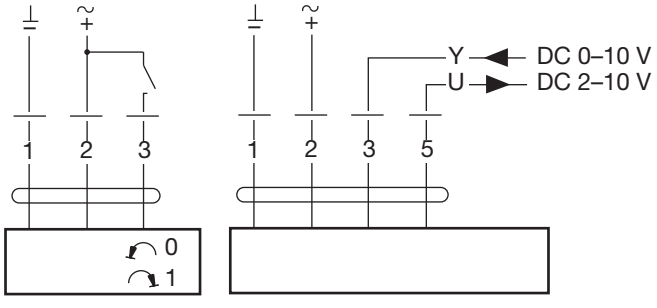
Ød$_1$ nom	l mm	M Nm	m kg	Sealing class past closed blade
80	100	2,0	1,30	4
100	100	2,0	1,40	4
125	100	2,0	1,50	4
160	100	2,0	1,80	4
200	100	2,0	2,10	4
250	100	3,0	2,50	4

Shut-off damper, fastrunning motor

DTFU

Technical data for the motor

	LMQ 24A	LMQ-SR 24A
Power supply	AC 19,2-28,8 V, 50/60 Hz DC 21,6-28,8 V	AC 19,2-28,8 V, 50/60 Hz DC 21,6-28,8 V
Power consumption	13 W	12 W
For wire sizing	23 VA	23 VA
Connection	Cable 1 m, 3×0,75 mm²	Cable 1 m, 4×0,75 mm²
Operating angle	Max. 95°, adjustable 0-100 %	Max. 95°, adjustable 0-100 %
Torque at rated voltage	Min. 4 Nm	Min. 4 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 90°	2,5 s	2,5 s
Sound power level	52 dB (A)	52 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +40°C	-30 to +40°C
Ambient moisture	95 % RH	95 % RH



Shut-off damper with motor DTBLU

Description

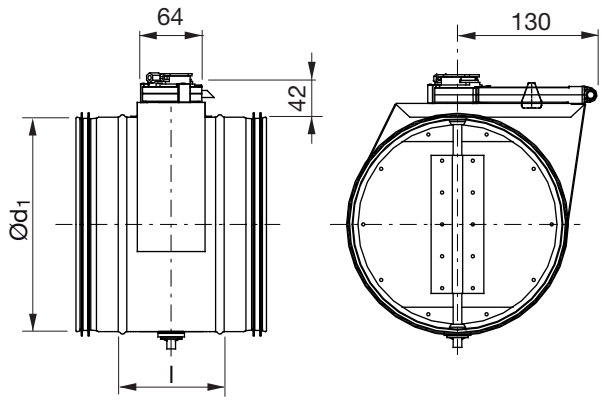
Shut-off damper with electric motor CM 24 F or CM 230 F. Consists of a DTU damper with a 24 or 230 V motor added. Has a low height to fit at narrow spaces.

In outdoor installation, the motor should be protected from direct UV radiation.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Fulfills pressure class C in closed position.

Dimensions



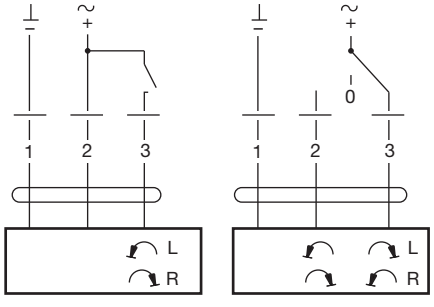
Ød1 nom	l mm	m kg	Sealing class past closed blade
80	100	0,50	4
100	100	0,58	4
125	100	0,73	4
150	100	0,83	4
160	100	0,94	4

Ordering example

DTBLU	125	24	CMF
Product			
Dimension Ød1			
Voltage			
Motor type			

Technical data for the motors

	CM 24 F	CM 230 F
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 65–265 V, 50/60 Hz
Power consumption	0,5 W	1,5 W
For wire sizing	1 VA	3 VA
Connection	Cable 1 m, 3×0,75 mm²	Cable 1 m, 3×0,75 mm²
Operating angle	Continously rotating	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 2 Nm	Min. 2 Nm
Direction of rotation	-L or -R	-L or -R
Position indication	Mechanical, removable	Mechanical, removable
Running time for 90°	75 s	75 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RF	95 % RF



Shut-off damper with motor DTBLU

Description

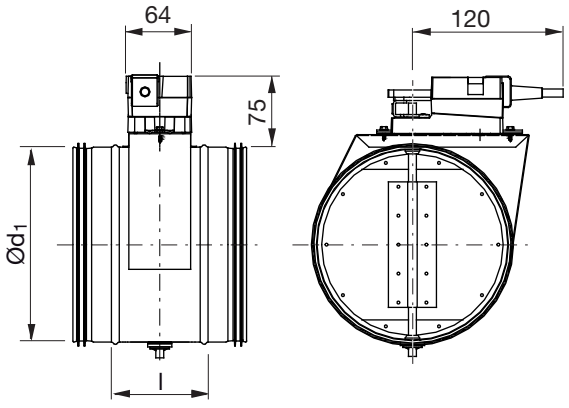
Shut-off damper with electric motor LM 24 A-F or LM 230 A-F.
Consists of a DTU damper with a 24 or 230 V motor added. Has a low height to fit at narrow spaces.

In outdoor installation, the motor should be protected from direct UV radiation.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Fulfills pressure class C in closed position.

Dimensions



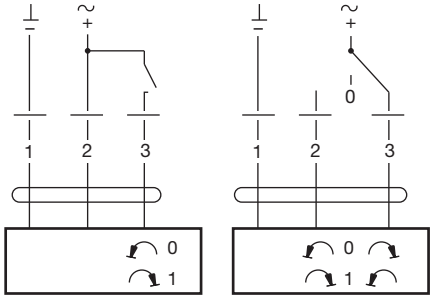
Ød1 nom	l mm	m kg	Sealing class past closed blade
80	100	0,79	4
100	100	0,87	4
125	100	1,02	4
150	100	1,12	4
160	100	1,23	4
200	100	1,53	4
250	100	2,01	4
315	100	2,63	4

Ordering example

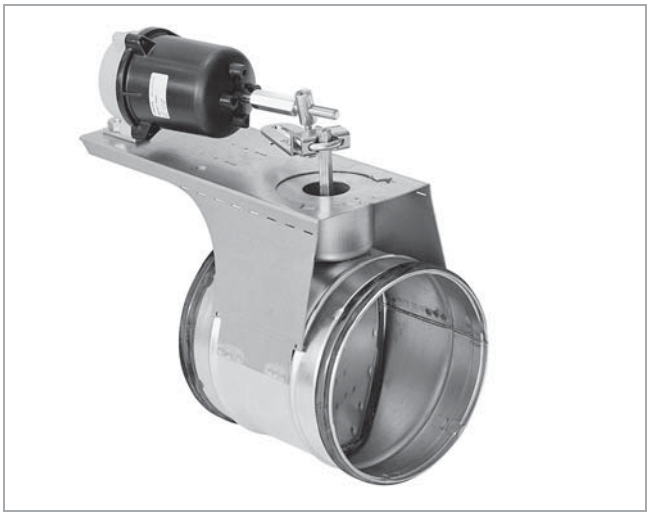
DTBLU	125	24	LMF
Product			
Dimension Ød1			
Voltage			
Motor type			

Technical data for the motors

	LM 24 A-F	LM 230 A-F
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 65–265 V, 50/60 Hz
Power consumption	1 W	1,5 W
For wire sizing	2 VA	4 VA
Connection	Cable 1 m, 3×0,75 mm²	Cable 1 m, 3×0,75 mm²
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 5 Nm	Min. 5 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RF	95 % RF



Motorized shut-off damper DTPU



Description

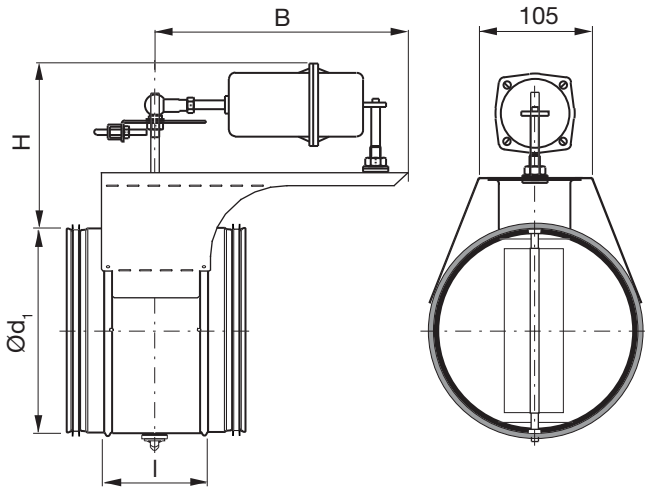
Shut-off damper with pneumatic actuator
Consists of a DTU damper with a pneumatic actuator installed. The actuator consists of a glass-reinforced polyamide housing with an internal rolling diaphragm to which the spindle is fixed.

When air pressure rises, the actuator spindle is forced out and operates the blade via a lever. When air pressure falls, the actuator spindle retracts under the tension of the return spring. The damper blade is closed when delivered, and the actuator fully retracted.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–200 fullfills pressure class C in closed position.

Dimensions



Ød1 nom	l mm	H mm	B mm	m kg	Sealing class past closed blade
80	100	144	230	1,07	3
100	100	144	230	1,15	3
125	100	144	230	1,30	3
160	100	144	230	1,51	3
200	100	144	230	1,81	3

Technical data for the motors

	AK 31 P
Air connection	Nozzle Ø 4 mm
Volume of free air required for full stroke	0,3 l_n
Power pressure max	150 kPa (1,5 bar)
Ambient temperature range	-5 to +60°C
Weight	0,3 kg
Running time 0 – 90 °	
At power pressure 90 kPa	10 s
At power pressure 150 kPa	1 s
At spring return	2 s

Ordering example

DTPU	200	AK31
Product		
Dimension Ød1		
Motor type		

Motorized shut-off damper DTPU

Description

Shut-off damper with pneumatic actuator
Consists of a DTU damper with a pneumatic actuator installed. The actuator consists of a glass-reinforced polyamide housing with an internal rolling diaphragm to which the spindle is fixed.

When air pressure rises, the actuator spindle is forced out and operates the blade via a lever. When air pressure falls, the actuator spindle retracts under the tension of the return spring. The damper blade is closed when delivered, and the actuator fully retracted.

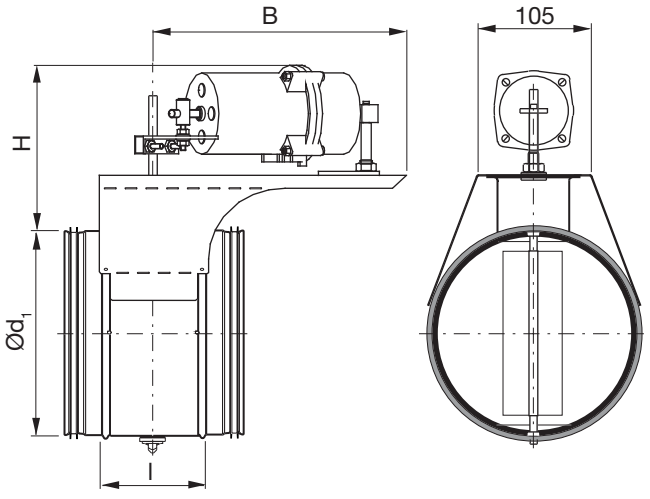
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 250–315 fullfills pressure class C in closed position.

Ordering example

DTPU	250	AK41
Product		
Dimension $Ød_1$		
Motor type		

Dimensions



$Ød_1$ nom	l mm	H mm	B mm	m kg	Sealing class past closed blade
250	100	160	230	2,39	3
315	100	160	230	3,01	3

Technical data for the motors

	AK 41 P
Air connection	1/8”
Volume of free air required for full stroke	0,5 l_n
Power pressure max	150 kPa (1,5 bar)
Ambient temperature range	-10 to +70°C
Weight	0,5 kg
Running time 0 – 90 °	
At power pressure 90 kPa	10 s
At power pressure 150 kPa	1 s
At spring return	2 s

Motorized shut-off damper DTPU

Description

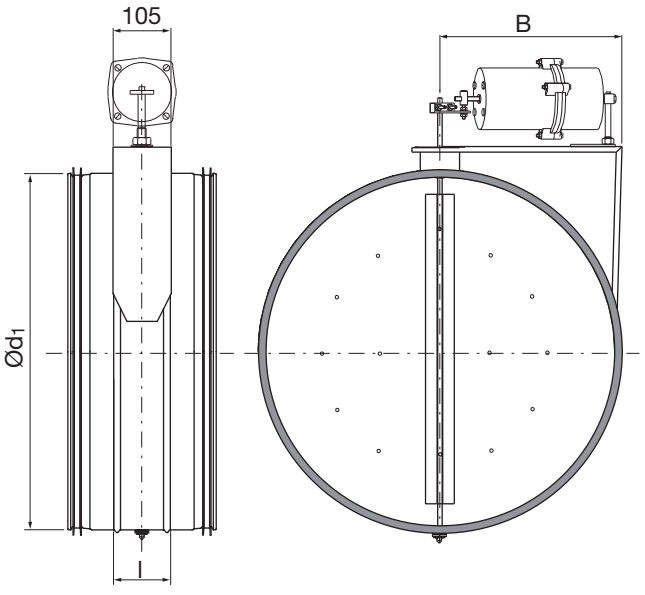
Shut-off damper with pneumatic actuator
Consists of a DTU damper with a pneumatic actuator installed. The actuator consists of a glass-reinforced polyamide housing with an internal rolling diaphragm to which the spindle is fixed.

When air pressure rises, the actuator spindle is forced out and operates the blade via a lever. When air pressure falls, the actuator spindle retracts under the tension of the return spring. The damper blade is closed when delivered, and the actuator fully retracted.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 400–630 fullfills pressure class B in closed position.

Dimensions



Ød$_1$ nom	l mm	H mm	B mm	m kg	Sealing class past closed blade
400	100	195	325	5,42	3
500	115	195	325	7,84	3
630	115	195	325	10,6	3

Technical data for the motors

	AK 42 P
Air connection	1/8”
Volume of free air required for full stroke	1,7 l_n
Power pressure max	150 kPa (1,5 bar)
Ambient temperature range	-10 to +70°C
Weight	1,4 kg
Running time 0 – 90 °	
At power pressure 90 kPa	10 s
At power pressure 150 kPa	1 s
At spring return	2 s

Ordering example

DTPU	400	AK42
Product		
Dimension Ød$_1$		
Motor type		

Cleaning regulating damper

PSDRU

Description

Cleaning regulating damper
Consists of a KCU cleaning cover with a blade without rubber gasket similar to the DRU and a PSU collar saddle in whose branch the cleaning cover is fixed.

The branch is provided with a Safe seal.

Since it is easy to remove the cleaning cover together with the blade, it is easy to inspect and clean the ventilation system. The original pressure balance in the system is not affected since the blade and cleaning cover retain their mutual positions which they were given during balancing. The damper can be used to advantage, to complete an existing ventilation system.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

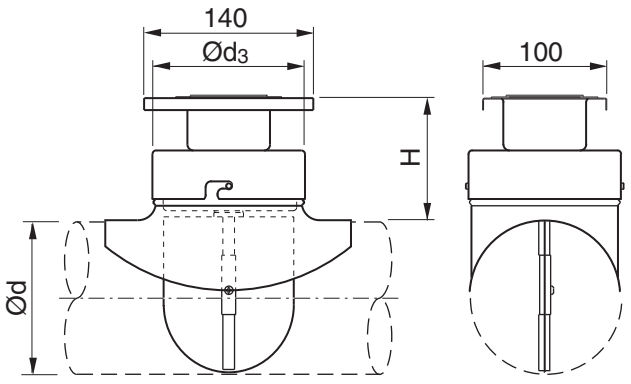
Ø 100–400 fullfills pressure class A in closed position.

Ordering example

PSDRU **160**

Product
Dimension Ød

Dimensions



Ød nom	Ød3 nom	H mm	m kg	Sealing class past closed blade
100	100	100	0,70	0
125	125	105	0,95	0
160	160	110	1,30	0
200	200	110	1,75	0
250	250	120	2,60	0
315	315	120	3,80	0
400	400	175	5,70	0

Cleaning regulating damper

TDRU

Description

Cleaning regulating damper
Consists of a KCU cleaning cover with a blade without rubber gasket similar to the DRU and a TCPU T-piece in whose branch the cleaning cover is fixed.

The branch is provided with a Safe seal.

Since it is easy to remove the cleaning cover together with the blade, it is easy to inspect and clean the ventilation system. The original pressure balance in the system is not affected since the blade and cleaning cover retain their mutual positions which they were given during balancing.

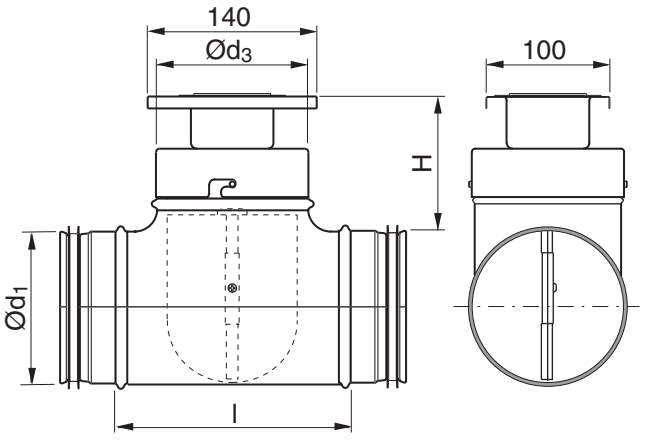
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 100–400 fullfills pressure class A in closed position.

Ordering example

	TDRU	160
Product		
Dimension Ød$_1$		

Dimensions



Ød$_1$ nom	Ød$_3$ nom	l mm	H mm	m kg	Sealing class past closed blade
100	100	130	100	0,71	0
125	125	165	105	1,28	0
160	160	209	110	1,80	0
200	200	249	110	2,80	0
250	250	296	120	3,51	0
315	315	363	120	4,03	0
400	400	510	175	9,30	0

Cleaning shut-off damper TDSU

Description

Cleaning shut-off damper
Consists of a KCU cleaning cover with a blade with rubber gasket and a TCPU T-piece in whose branch the cleaning cover is fixed.
The branch is provided with a Safe seal.

Since it is easy to remove the cleaning cover together with the blade, it is easy to inspect and clean the ventilation system. The original pressure balance in the system is not affected since the blade and cleaning cover retain their mutual positions which they were given during balancing.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

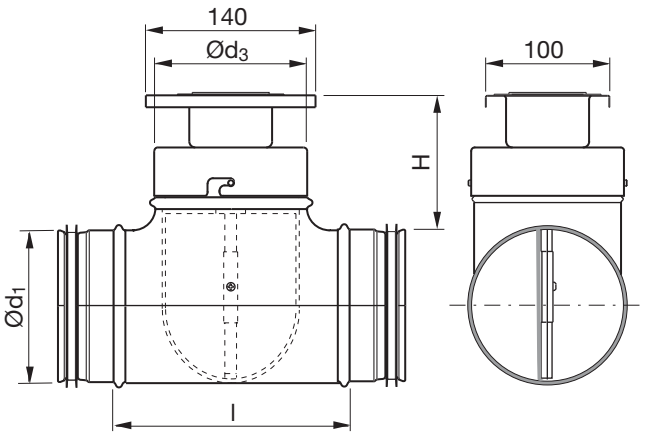
Ø 100–400 fullfills pressure class A in closed position.

Ordering example

TDSU 160

Product
Dimension Ød$_1$

Dimensions



Ød$_1$ nom	Ød$_3$ nom	l mm	H mm	m kg	Sealing class past closed blade
100	100	130	100	0,75	1
125	125	165	105	1,33	1
160	160	209	110	2,00	1
200	200	249	110	2,80	1
250	250	296	120	3,71	1
315	315	363	120	4,33	1
400	400	510	175	9,90	1

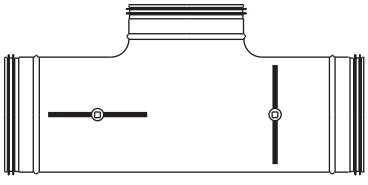
Alternating shut-off damper

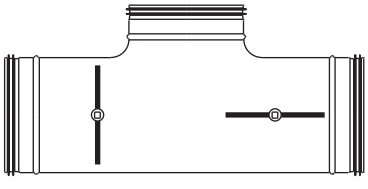
TASU

Description

Alternating shut-off damper
Consists of an extended T-piece and two linked DSU dampers.

Can be used for "by pass" ducts. It thereby replaces two conventional dampers + two couplings + one T-piece and is 20–30% shorter.





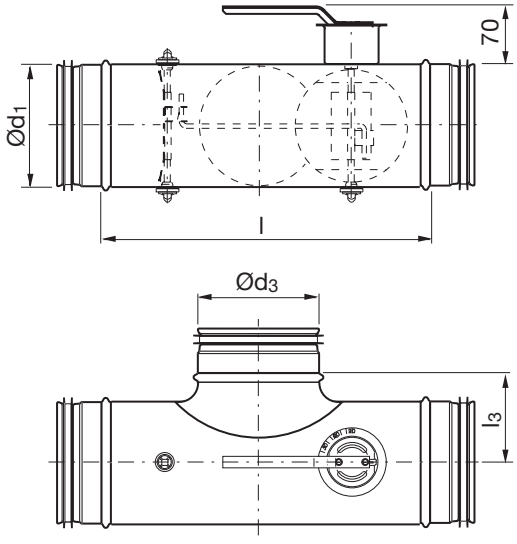
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 100–400 fullfills pressure class A in closed position.

Ordering example

	TASU	160	160
Product			
Dimension $Ød_1$			
Dimension $Ød_3$			

Dimensions



$Ød_1$ nom	$Ød_3$ nom	l mm	l_3 mm	m kg	Sealing class past closed blade
100	100	280	65	1,10	0
125	125	345	83	1,50	0
160	160	385	105	2,00	0
200	200	425	125	2,80	0
250	250	520	150	4,10	0
315	315	585	182	5,90	0
400	400	645	225	8,30	0

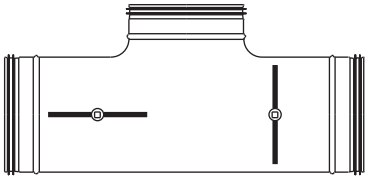
Alternating shut-off damper

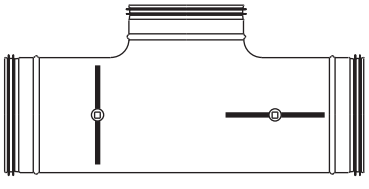
TATU

Description

Alternating shut-off damper
Consists of an extended T-piece and two linked DTU dampers.

Can be used for "by pass" ducts. It thereby replaces two conventional dampers + two couplings + one T-piece and is 20–30% shorter.





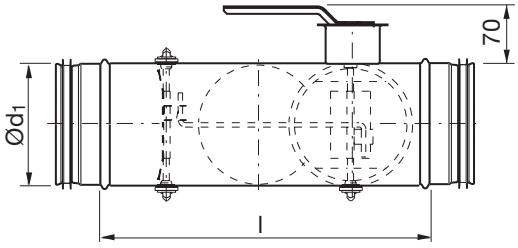
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

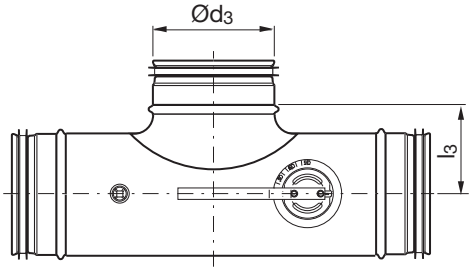
Ø 100–400 fullfills pressure class A in closed position.

Ordering example

	TATU	160	160
Product			
Dimension	$Ød_1$		
Dimension	$Ød_3$		

Dimensions

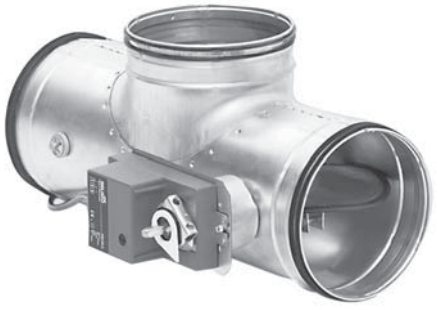




$Ød_1$ nom	$Ød_3$ nom	l mm	l_3 mm	m kg	Sealing class past closed blade
100	100	280	65	1,20	2
125	125	345	83	1,60	2
160	160	385	105	2,20	2
200	200	425	125	3,15	2
250	250	520	150	4,50	2
315	315	585	182	6,60	2
400	400	645	225	9,80	2

Motorized alternating shut-off damper

TATBU



Description

Alternating shut-off damper with electric motor – NM 24 A-F or NM 230 A-F

Consists of an extended T-piece with two linked DTU dampers and a 24 or 230 V electric motor installed.

Can be used for "by pass" ducts. This means that it replaces two conventional dampers + two couplings + one T-piece and is 20–30% shorter.

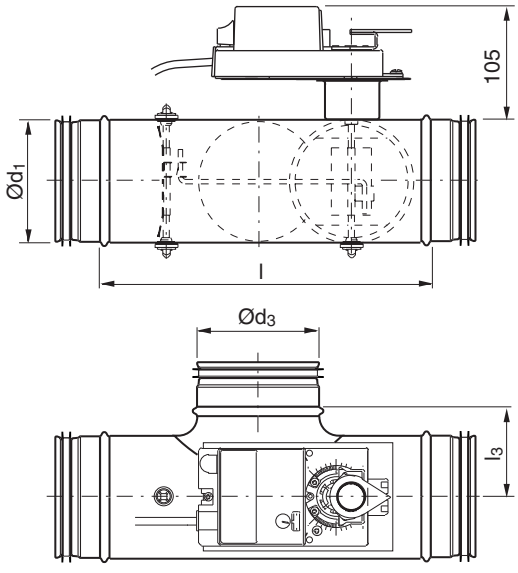
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 100–400 fullfills pressure class A in closed position.

Ordering example

Product	TATBU	400	24	NMF
Type				
Dimension Ød$_1$				
Voltage				
Motor type				

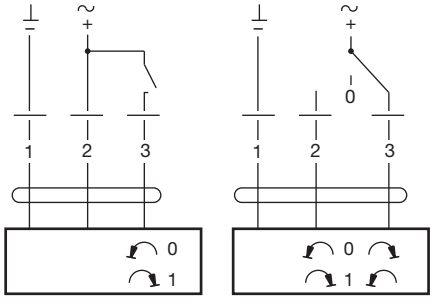
Dimensions



Ød$_1$ nom	Ød$_3$ nom	l mm	l$_3$ mm	m kg	Sealing class past closed blade
100	100	280	65	2,00	2
125	125	345	83	2,40	2
160	160	385	105	3,00	2
200	200	425	125	3,90	2
250	250	520	150	5,20	2
315	315	585	182	7,40	2
400	400	645	225	10,6	2

Technical data for the motors

	NM 24 A-F	NM 230 A-F
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 85–265 V, 50/60 Hz
Power consumption	1,5 W	2,5 W
For wire sizing	3,5 VA	6 VA
Connection	Cable 1 m, 3×0,75 mm^2	Cable 1 m, 3×0,75 mm^2
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 10 Nm	Min. 10 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RH	95 % RH

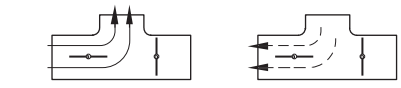


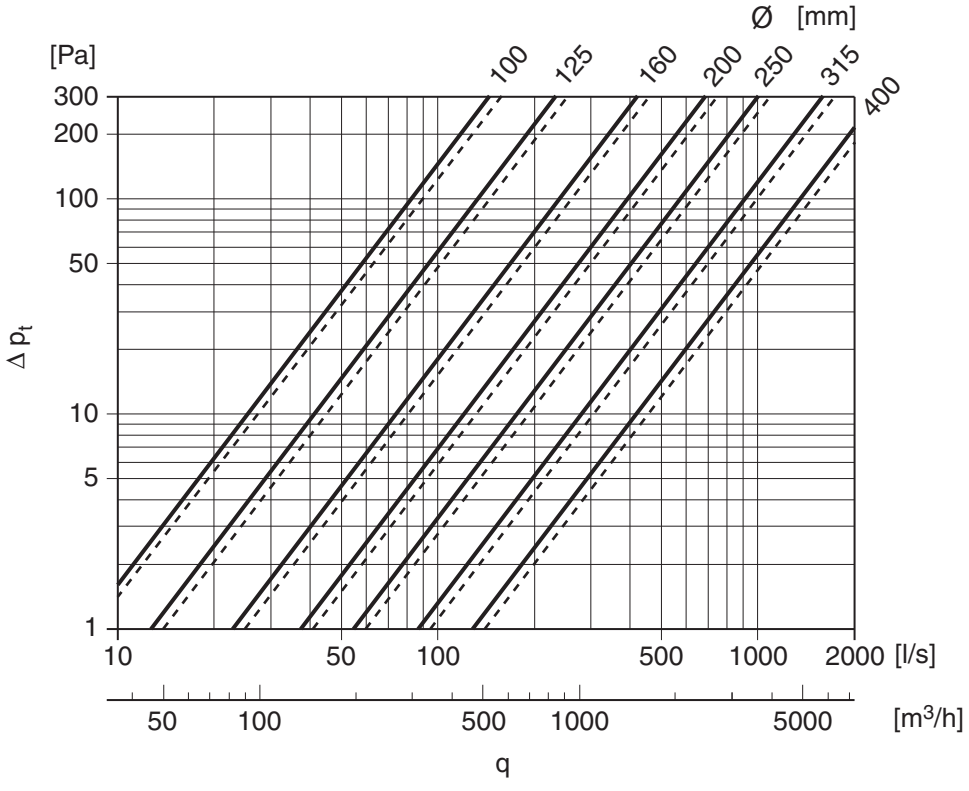
Motorized alternating shut-off dampers

TASU, TATU, TATBU

Technical data

The dashed pressure drop curves refer to the flow direction in the right picture.





Constant-/ variable flow damper

DAU, DA2EU, DAVU

Summary

- DAU - manual single flow unit
- DA2EU - motorized twin flow unit
- DAVU - motorized variable flow unit
- Diameters Ø 80–315
- Flow range 15–830 l/s (54–2988 m³/h)
- Pressure range 50–1000 Pa (over the unit)
- Independent of mounting direction
- Handles 50 mm duct insulation

Function

The constant flow damper is an automatic damper, which at varying pressures wholly mechanical and independent of external energy sources maintains a set flow constant. The force, needed for regulation, is taken from the passing air stream. The air stream across the blade attempts to close it and generates a closing torque. This is balanced by an opposed opening force from a spring. The greater the pressure across the blade the more it closes. A bellow eliminates oscillations, which could occur at unfavourable conditions of operation.

Types

The following types exists:

- DAU – one flow unit – with knob and arrow for manual setting of one flow.
- DA2EU – two flows unit – with electric motor for switching between two flows.
- DAVU – variable flow unit – with electric motor for continuous setting of one flow.

Material

Housing and damper blade are of galvanized sheet metal and shaft is of stainless steel.

Temperature

Working range: +5 to +70 °C.

Insulation

The units can handle 50 mm duct insulation without the scale or the motor being hidden.
DAU is available with an 45 mm external insulation and an outer sheet metal shell for lower sound radiation to the surroundings. Is then called DALU.

Regulating accuracy

The units are calibrated from factory within their whole working range. In this the units keep the flow constant within approximately ±5 to ±10% of the set flow. Greater deviations occur at the lower flows, aspecially for small sizes.

Flow setting

The units can not be delivered from factory with a preset flow. You can set the flow yourself very easy following to the instruction for each product.

Disturbance tolerance

In order to achieve the stated accuracy for the pre-set flow a straight distance of at least 3×d before and at least 1,5×d after the units are required. A mounting close to a source of disturbance (bend, saddle etc.) decreases the regulation accuracy and the flow may deverge from the set value.

Change of direction

The units are independent of their mounting direction and one may deviate from the specified direction and mount them in any direction without affecting the accuracy.

Combinations

The units can be mounted together with e.g. a motorized shut off damper DTBU, see page side 290. Constant flow damper combined with shut off damper can with advantage be used in groups at installations where you want:

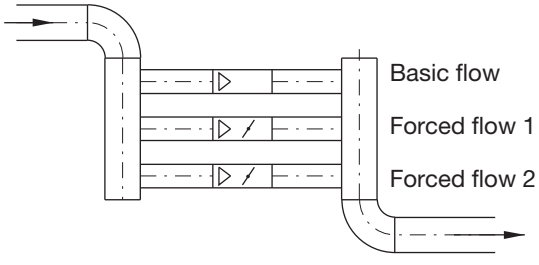
- two flows, that lies too far away from each other for a two flow unit to handle

or

- more than two flows

Presume: Basic flow = 80 l/s
Forced flow 1 = 100 l/s
Forced flow 2 = 150 l/s

Four flows will then be posssible: 80, 180, 230 and 330 l/s.

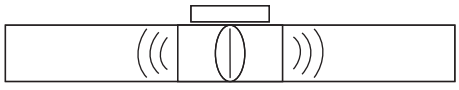


Constant-/ variable flow damper

DAU, DA2EU, DAVU

Technical data

Pressure and flow ranges and sound to duct



The graphs show A-weighted sound **power** level, L_{WA} [dB], to duct. These curvs are intended for brief comparision. For more accurate calculation, please use the tables.

Example

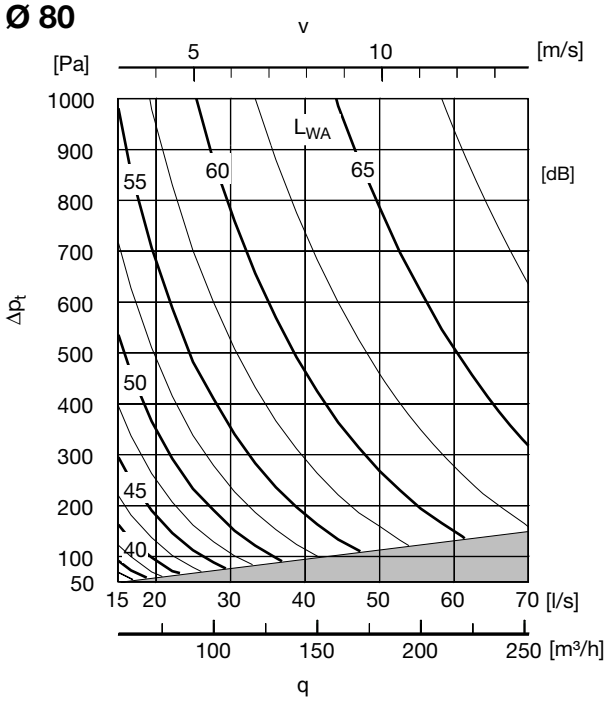
Given: Diameter 125 mm
Flow 70 l/s
Pressure drop 200 Pa

The graph gives:
A-weighted sound power level approx. 57 dB

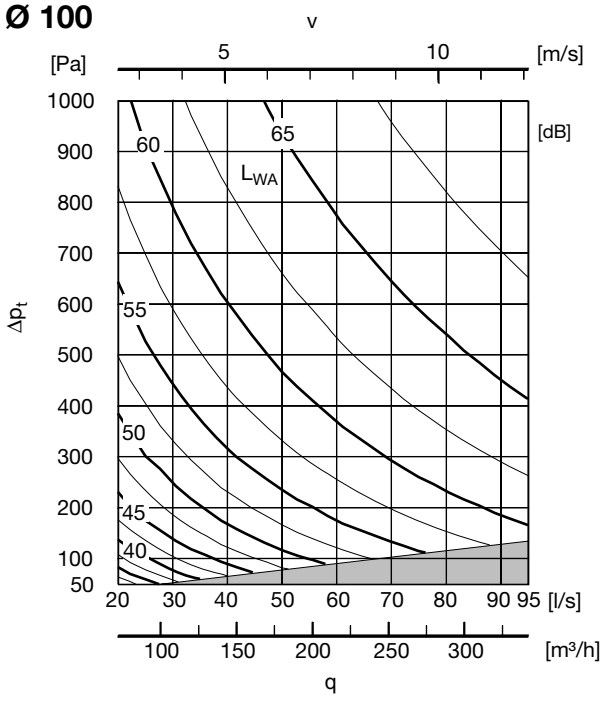
The table gives:
Sound power level as below

Centre frequency [Hz]	**63**	**125**	**250**	**500**	**1 k**	**2 k**	**4 k**	**8 k**
Sound power level [dB]	52	52	49	49	49	51	51	46

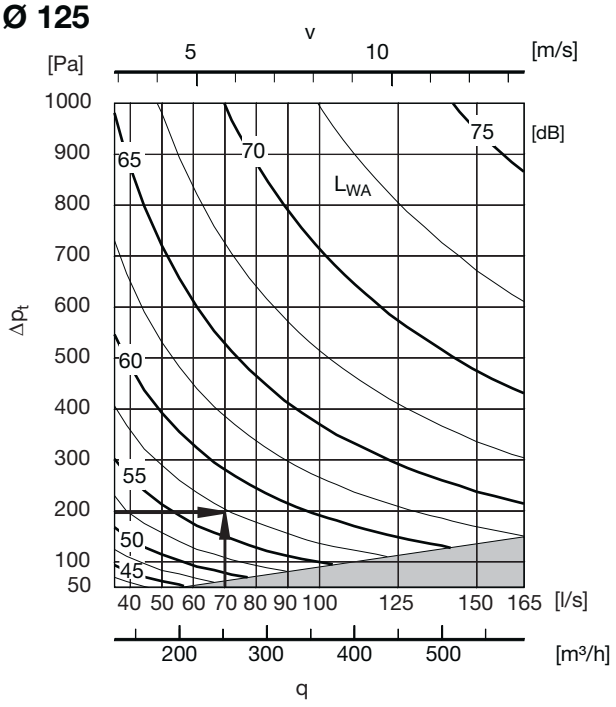
Ø 80



Ø 100



Ø 125



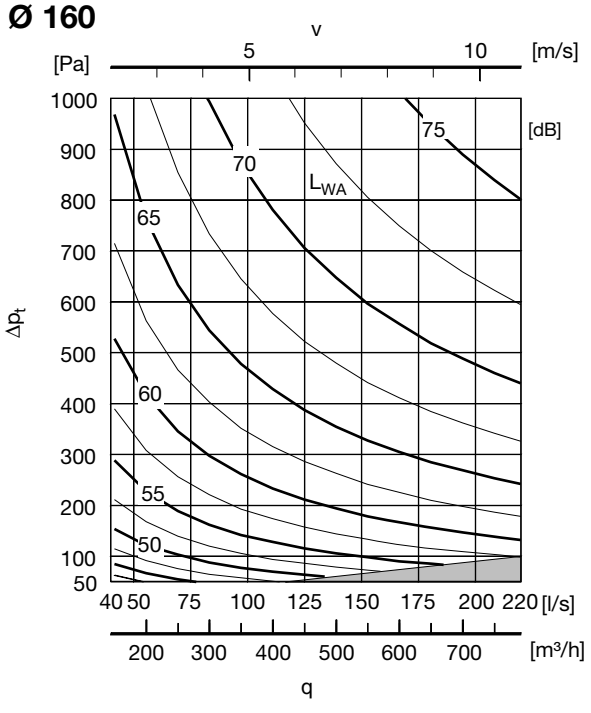
Constant-/ variable flow damper

DAU, DA2EU, DAVU

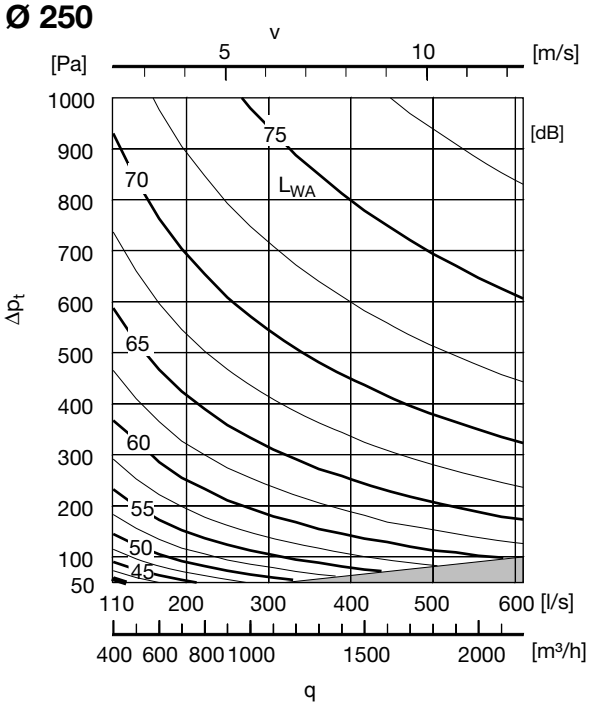
Technical data

Pressure and flow ranges and sound to duct

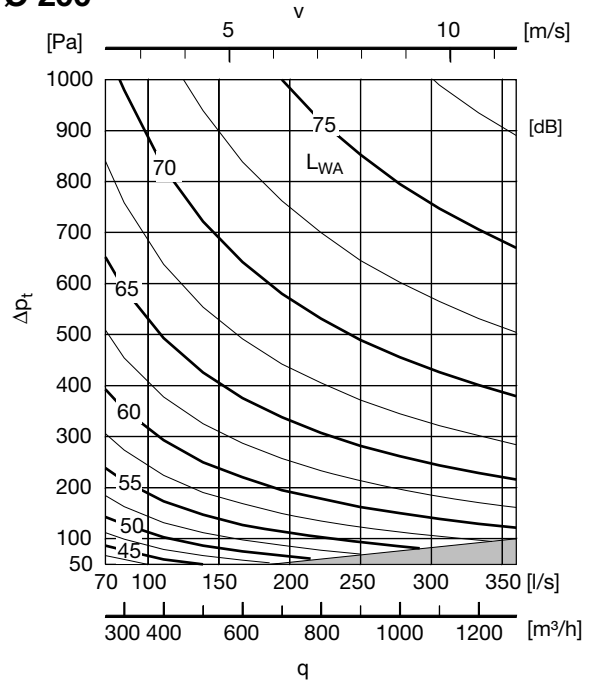
Ø 160



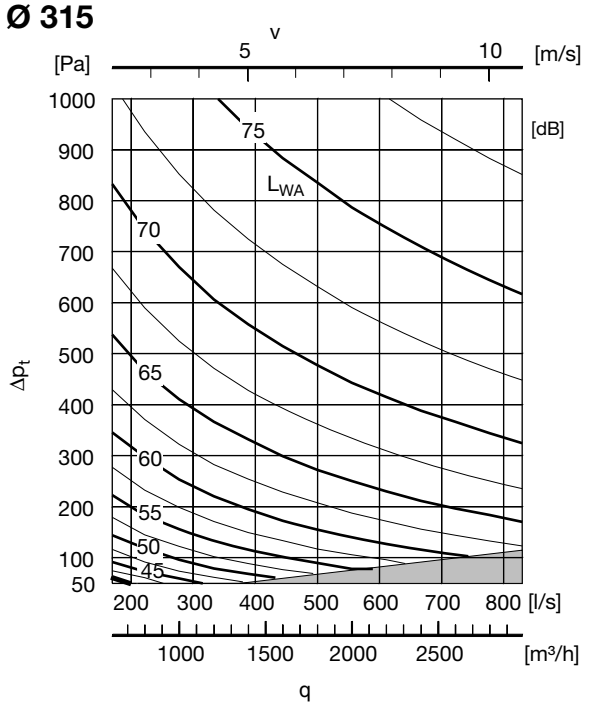
Ø 250



Ø 200



Ø 315



Constant-/ variable flow damper

DAU, DA2EU, DAVU

Technical data

Sound to duct

Sound power level, L_W [dB], to duct in octave bands 1–8, 63–8000 Hz, as function of diameter, pressure drop and flow.

Ød$_1$	Pressure drop [Pa]	Velocity app. 2,5 [m/s]								Velocity app. 6 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
		Flow 15 [l/s]								Flow 30 [l/s]							
80	1000	51	49	44	44	46	49	49	44	56	56	53	53	53	55	55	50
	500	45	43	38	38	40	43	43	38	51	51	49	49	49	51	50	46
	200	37	35	30	30	32	35	35	30	45	45	43	43	43	45	44	40
	100	32	30	25	25	27	30	30	25	41	41	39	39	39	41	40	35
	50	26	24	19	19	21	24	24	19	–	–	–	–	–	–	–	–
		Flow 20 [l/s]								Flow 45 [l/s]							
100	1000	56	53	48	48	50	53	54	48	59	59	57	57	57	59	58	53
	500	49	46	41	41	43	47	47	42	54	54	51	51	51	53	53	48
	200	39	37	31	31	33	37	37	32	47	47	44	44	45	47	46	41
	100	34	31	26	26	28	32	32	27	42	42	39	39	40	42	41	36
	50	26	24	18	18	20	24	24	19	–	–	–	–	–	–	–	–
		Flow 30 [l/s]								Flow 70 [l/s]							
125	1000	60	58	52	52	54	58	58	53	64	64	62	62	62	64	63	59
	500	54	52	46	46	48	52	52	47	59	59	56	57	57	59	58	53
	200	46	44	38	38	40	44	44	39	52	52	49	49	49	51	51	46
	100	40	38	32	32	34	38	38	33	46	46	44	44	44	46	45	40
	50	34	32	26	26	28	32	32	27	–	–	–	–	–	–	–	–
		Flow 40 [l/s]								Flow 120 [l/s]							
160	1000	62	59	52	52	55	59	60	54	67	67	65	65	65	67	66	61
	500	56	53	47	47	49	53	54	48	61	61	59	59	59	61	60	55
	200	49	46	39	39	42	46	47	41	53	53	51	51	51	53	52	47
	100	43	40	33	33	36	40	41	35	48	48	46	46	46	48	47	42
	50	37	34	27	27	30	34	35	29	–	–	–	–	–	–	–	–
		Flow 70 [l/s]								Flow 180 [l/s]							
200	1000	66	63	57	57	59	63	63	58	69	69	66	66	66	68	68	63
	500	59	56	50	50	53	57	57	52	62	62	60	60	60	62	61	57
	200	50	47	41	41	43	47	47	42	54	54	51	51	52	54	53	48
	100	43	40	34	34	36	40	40	35	47	47	45	45	45	47	46	42
	50	37	34	28	28	30	34	34	29	–	–	–	–	–	–	–	–
		Flow 110 [l/s]								Flow 300 [l/s]							
250	1000	67	64	59	59	61	65	65	60	70	70	67	68	67	69	69	64
	500	60	57	51	51	53	57	57	52	63	63	61	61	61	63	62	57
	200	50	47	41	41	43	47	47	42	55	55	53	53	53	54	54	49
	100	43	40	34	34	36	40	40	35	49	49	47	47	47	48	48	43
	50	35	32	26	26	28	32	33	27	43	43	40	41	40	42	42	37
		Flow 170 [l/s]								Flow 470 [l/s]							
315	1000	69	66	60	60	62	66	67	61	70	70	68	68	68	70	69	65
	500	61	58	52	52	54	58	59	53	64	64	62	62	62	64	63	59
	200	50	47	41	41	44	48	48	43	56	56	54	54	54	56	55	50
	100	42	40	34	34	36	40	40	35	50	50	47	47	47	49	49	44
	50	35	32	26	26	29	33	33	28	–	–	–	–	–	–	–	–

Constant-/ variable flow damper

DAU, DA2EU, DAVU

Technical data

Sound to duct

Sound power level, L_W [dB], to duct in octave bands 1–8, 63–8000 Hz, as function of diameter, pressure drop and flow.

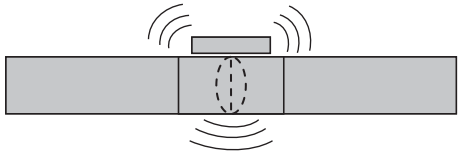
Ød$_1$	Pressure drop [Pa]	Velocity app. 9 [m/s]								Velocity app. 12 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
		Flow 45 [l/s]								Flow 70 [l/s]							
80	1000	58	59	59	59	58	59	58	53	61	64	65	65	63	63	61	57
	500	55	56	55	55	54	55	54	50	59	61	62	62	60	60	59	55
	200	50	51	51	51	50	51	50	45	55	58	59	59	57	57	55	51
	100	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Flow 70 [l/s]								Flow 95 [l/s]							
100	1000	61	62	61	62	61	62	61	56	62	64	65	65	63	63	62	58
	500	56	58	57	57	56	57	56	51	59	60	61	61	59	60	58	54
	200	51	52	51	51	50	51	50	46	53	55	56	56	54	54	53	49
	100	47	48	47	47	46	47	46	42	–	–	–	–	–	–	–	–
	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Flow 110 [l/s]								Flow 165 [l/s]							
125	1000	66	67	67	67	66	67	66	61	68	71	71	72	70	70	68	64
	500	61	62	62	62	61	62	61	56	63	66	66	67	65	65	63	59
	200	54	55	55	55	54	55	54	49	57	59	60	60	58	58	57	52
	100	50	51	50	50	49	50	49	45	–	–	–	–	–	–	–	–
	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Flow 180 [l/s]								Flow 220 [l/s]							
160	1000	69	70	69	69	68	69	68	64	70	71	71	71	70	71	69	65
	500	63	64	63	63	62	63	62	58	64	66	66	66	64	65	64	59
	200	55	56	56	56	55	56	55	50	56	58	58	58	57	57	56	52
	100	50	51	50	50	49	50	49	45	51	52	52	52	51	52	50	46
	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Flow 280 [l/s]								Flow 360 [l/s]							
200	1000	70	71	71	71	70	71	70	65	71	73	73	73	72	72	71	67
	500	64	65	64	64	63	64	63	59	65	67	67	67	65	66	65	60
	200	56	57	56	56	55	56	55	51	57	58	59	59	57	58	56	52
	100	50	51	50	50	49	50	49	45	51	53	53	53	52	52	51	47
	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Flow 450 [l/s]								Flow 600 [l/s]							
250	1000	71	72	71	71	70	71	70	66	72	73	74	74	72	73	71	67
	500	65	66	65	65	64	65	64	60	66	68	69	69	67	67	66	62
	200	57	58	57	57	56	57	56	52	58	60	61	61	59	59	58	54
	100	51	52	52	52	51	52	51	46	54	55	56	56	54	55	53	49
	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Flow 700 [l/s]								Flow 830 [l/s]							
315	1000	71	72	72	72	71	72	71	66	72	73	73	73	72	73	71	67
	500	66	67	66	66	65	66	65	61	66	67	67	68	66	67	66	61
	200	58	59	59	59	58	59	58	53	59	60	60	60	59	60	58	54
	100	52	53	53	53	52	53	52	47	–	–	–	–	–	–	–	–
	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Constant-/ variable flow damper

DAU, DA2EU, DAVU

Technical data

Pressure and flow ranges and sound to the surroundings



The graphs show A-weighted sound **power** level, L_{WA} [dB], to the surroundings.

Example:

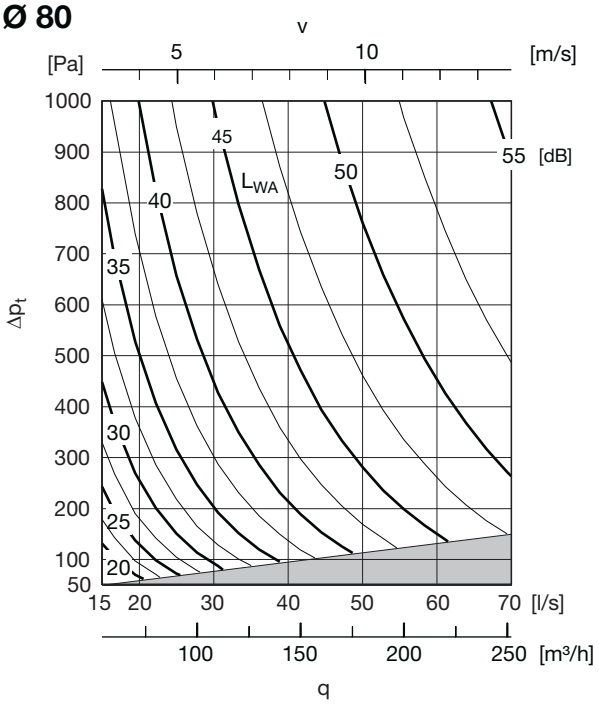
Given:	Diameter	125 mm
	Flow	70 l/s
	Pressure drop	200 Pa
The graph gives:		
	A-weighted sound power level approx.	40 dB

The A-weighted sound **pressure** level in the mittle of the room becomes approx. 8 dB lower than these graph values.

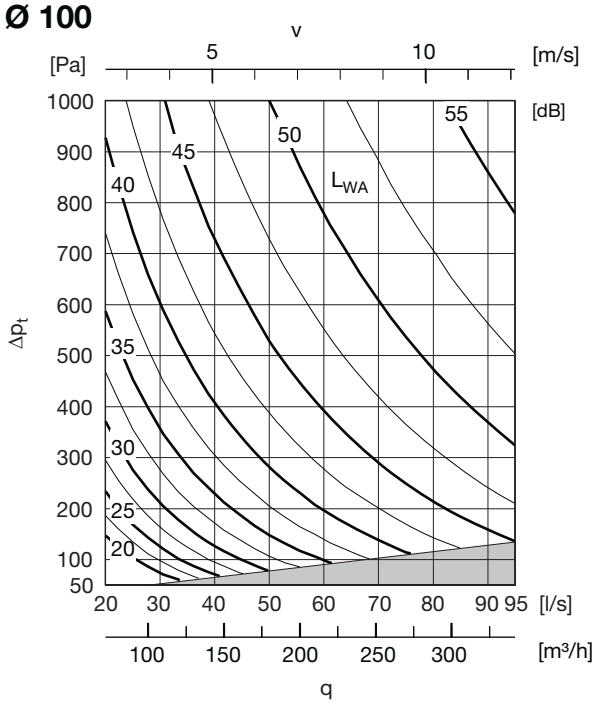
With insulation shell around the unit (the DALU unit) the A-weighted sound **pressure** level in the mittle of the room becomes appox. 26 dB lower than the graph values on condition that also the connected ducts are attenuated (insulated) to the same extent.

Still lower sound **pressure** level can be achieved with additional constructional sound attension measures (false ceiling, high room attenuation).

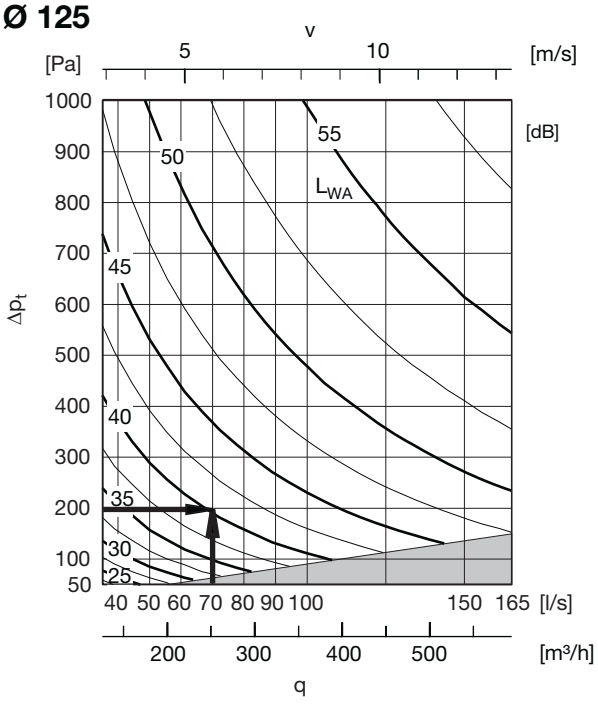
Ø 80



Ø 100



Ø 125



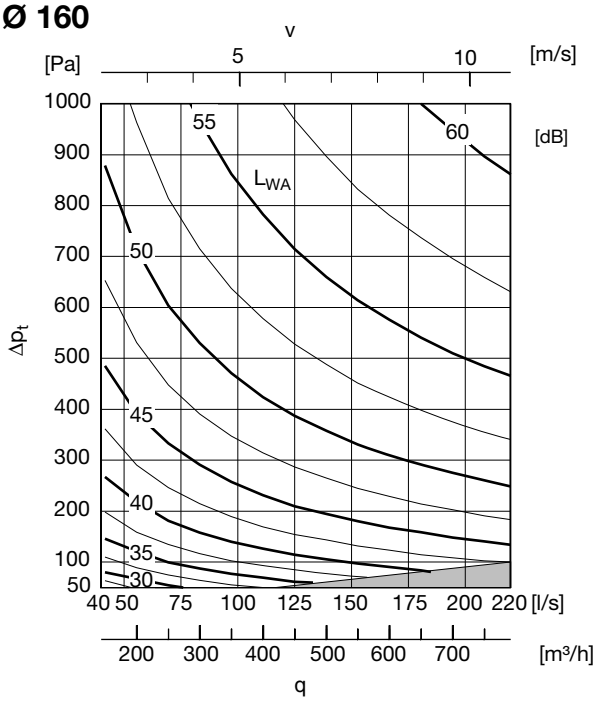
Constant-/ variable flow damper

DAU, DA2EU, DAVU

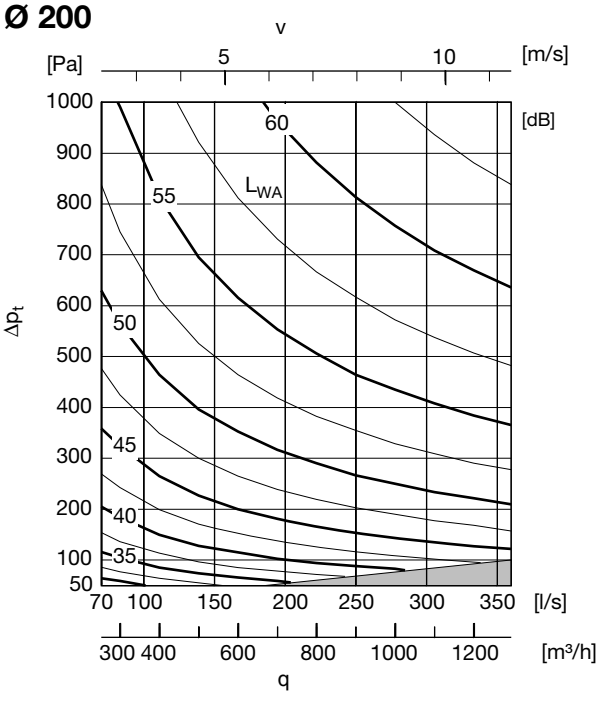
Technical data

Pressure and flow ranges and sound to the surroundings

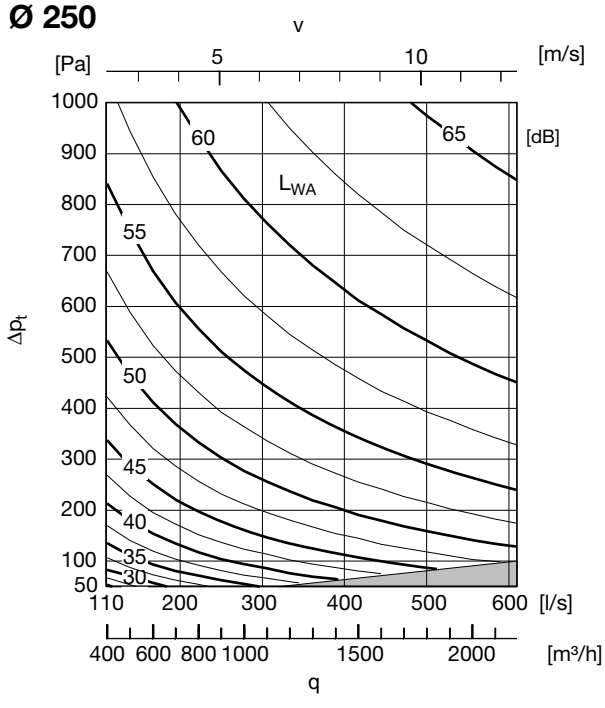
Ø 160



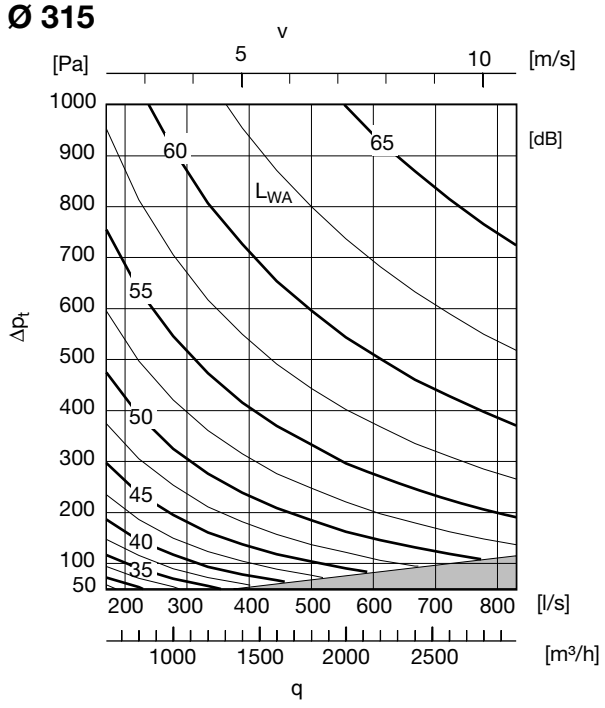
Ø 200



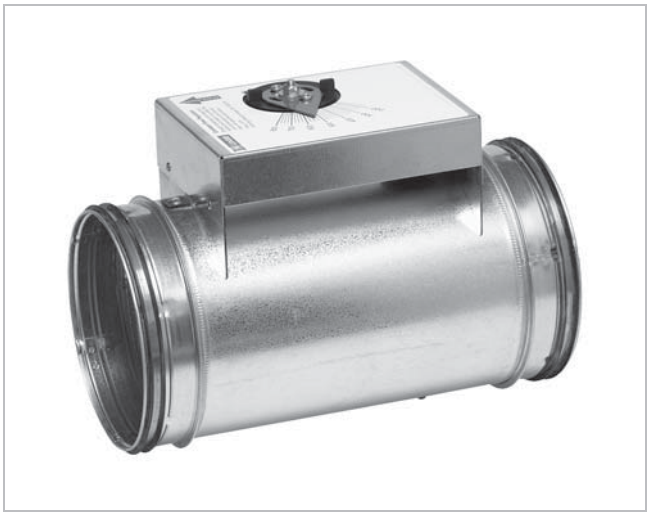
Ø 250



Ø 315



Constant-/variable flow damper DAU



Description

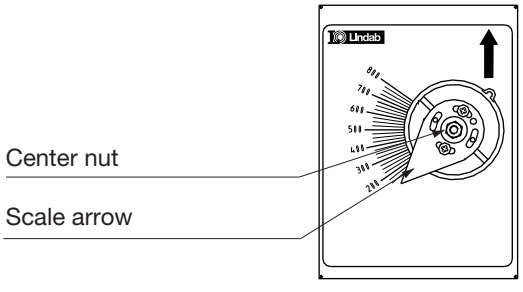
Constant flow damper with manual setting of one flow

DAU is a constant flow damper, which facilitates balancing of ventilation systems and gives correct flow from the start. The unit compensates for e.g. connection and disconnection of system parts, clogging of filters and ducts, thermal lift forces, wind effects, window opening etc.
Ø 80–315 fullfills pressure class A in closed position.
Fulfils tightness class C.
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Technical data

Flow setting

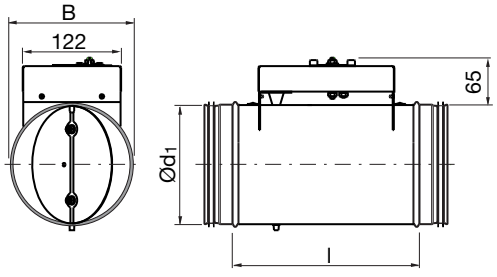
The flow is set by loosing the center nut and via the knob turning the scale arrow so it points at the wanted flow on the scale. Then the center nut is tightened.



Ordering example

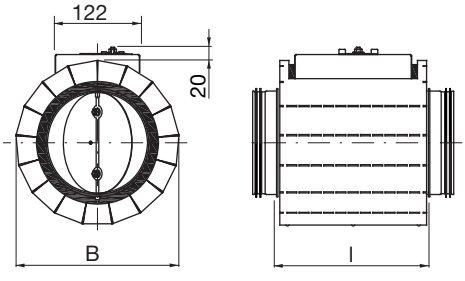
	DAU	125
Product		
Dimension Ød$_1$		

Dimensions



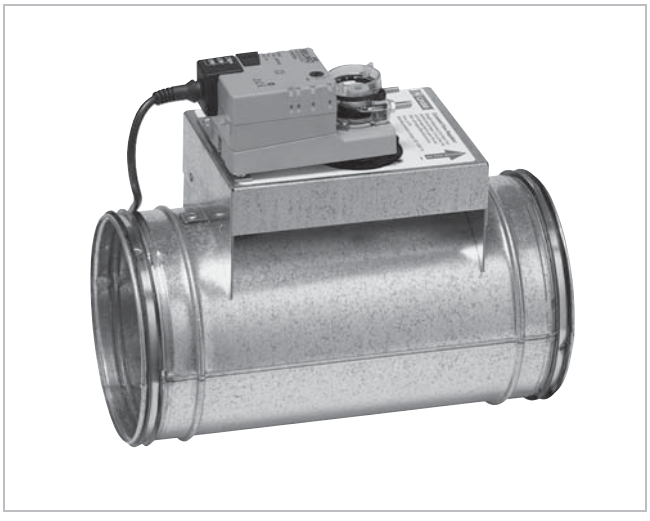
Ød$_1$ nom	l mm	B mm	m kg	Tightness class across closed blade
80	246	122	1,35	0
100	246	122	1,40	0
125	246	135	1,65	0
160	246	170	1,85	0
200	246	210	2,26	0
250	284	260	3,35	0
315	334	325	4,75	0

DAU is available with an 45 mm external insulation and an outer sheet metal shell for lower sound radiation to the surroundings. Is then called DALU.

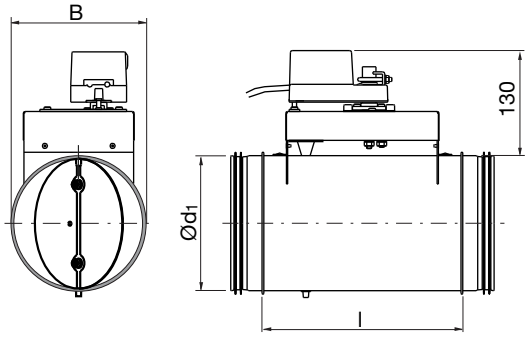


Ød$_1$ nom	l mm	B mm	m kg	Tightness class across closed blade
80	246	170	2,35	0
100	246	190	2,50	0
125	246	215	2,90	0
160	246	250	3,45	0
200	246	290	4,06	0
250	284	340	6,05	0
315	334	405	8,60	0

Constant-/variable flow damper DA2EU



Dimensions



Ød1 nom	l mm	B mm	m kg	Tightness class across closed blade
80	246	122	1,95	0
100	246	122	2,00	0
125	246	135	2,25	0
160	246	170	2,45	0
200	246	210	2,86	0
250	284	260	3,95	0
315	334	325	5,35	0

Description

Constant flow damper with electric motor for switching between two flows

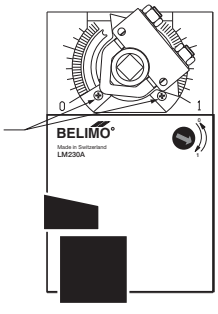
DA2EU is a constant flow damper, which facilitates balancing of ventilation systems and gives correct flow from the start. The unit compensates for e.g. connection and disconnection of system parts, clogging of filters and ducts, thermal lift forces, wind effects, window opening etc. The motors shall be completed with a switch. The switch can in turn be controlled either manually with timer, with on/off-thermostat, with attendance transmitter or similar.
Ø 80–315 fullfills pressure class A in closed position.
Fulfils tightness class C.
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Flow setting

The two flows are set by moving the end stoppers screws.

At delivery the screws are set at largest possible distance.

End stop screws

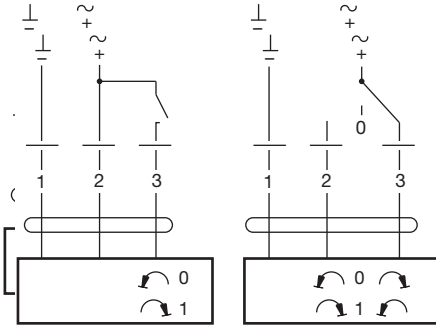


Ordering example

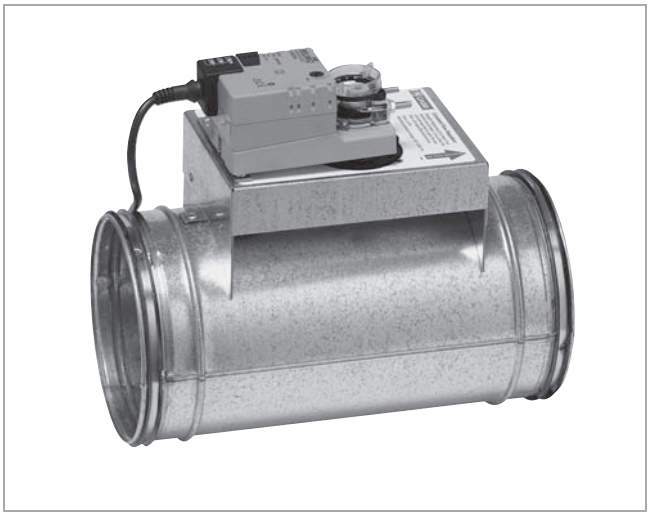
DA2EU	125	24	LM
Product			
Dimension Ød1			
Voltage			
Motor type			

Technical data for the motors

	LM 24 A	LM 230 A
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 19,2–28,8 V	AC 85–265 V, 50/60 Hz
Power consumption	1 W	1,5 W
For wire sizing	2 VA	4 VA
Connection	Cable 1 m, 3×0,75 mm²	Cable 1 m, 3×0,75 mm²
Operating angle	Max. 95°, adjustable 0–100%	Max. 95°, adjustable 0–100%
Torque at rated voltage	Min. 5 Nm	Min. 5 Nm
Direction of rotation	Switch selectable 0 ↶ or 1 ↷	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical	Mechanical
Running time for 95°	150 s	150 s
Sound power level	Max. 35 dB (A)	Max. 35 dB (A)
Protection class	III Safety extra-low voltage	II Safety insulated
Protection type	IP 54	IP 54
Ambient temperature range	-30 to +50°C	-30 to +50°C
Ambient moisture	95 % RH	95 % RH



Constant-/variable flow damper DAVU

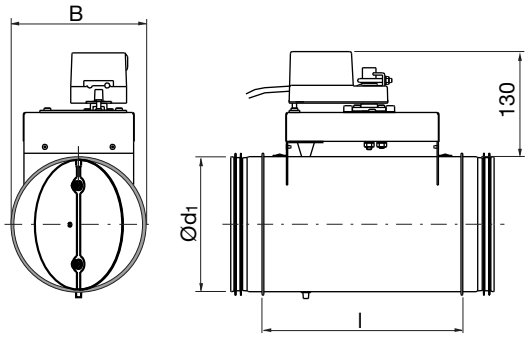


Description

Constant flow damper with electric motor for continuous setting of one flow

DAVU is a constant flow damper, which facilitates balancing of ventilation systems and gives correct flow from the start. The unit compensates for e.g. connection and disconnection of system parts, clogging of filters and ducts, thermal lift forces, wind effects, window opening etc. The motor shall be completed with control signal transmitter e.g. an external potentiometer or a proportionally regulating thermostat. A special mounting, measuring, balancing and maintenance instruction exists for this product.
Ø 80–315 fullfills pressure class A in closed position.
Fulfils tightness class C.
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Dimensions



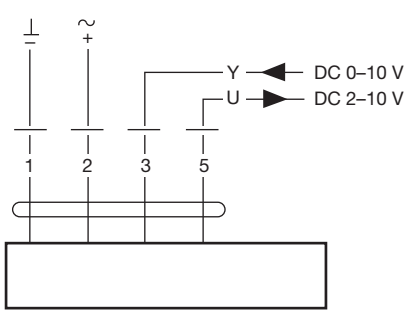
Ød1 nom	l mm	B mm	m kg	Tightness class across closed blade
80	246	122	1,95	0
100	246	122	2,00	0
125	246	135	2,25	0
160	246	170	2,45	0
200	246	210	2,86	0
250	284	260	3,95	0
315	334	325	5,35	0

Ordering example

DAVU	125	24	LMSX
Product			
Dimension Ød1			
Voltage			
Motor type			

Technical data for the motors

	LM 24 A-SX
Power supply	AC 19,2–28,8 V, 50/60 Hz DC 21,6–28,8 V
Power consumption	2 W
For wire sizing	4 VA
Connection	Cable 1 m, 4×0,75 mm²
Operating angle	Max. 95°, adjustable 0–100 %
Torque at nominal voltage	Min. 5 Nm
Direction of rotation	Switch selectable 0/1
Position at Y=0 V	Switch selectable 0 ↶ or 1 ↷
Position indication	Mechanical
Running time for 90°	150 s
Sound power level	35 dB (A)
Protection class	III Safety extra-low voltage
Protection type	IP 54
Ambient temperature range	-30 to +50 °C
Ambient humidity	95 % RH



Regulating damper LKSR

Description

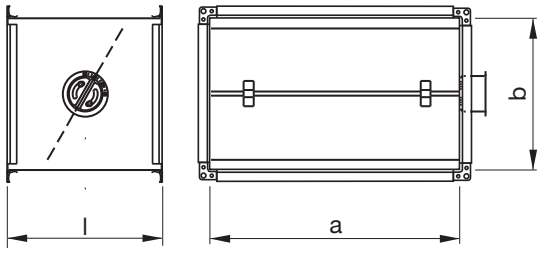
Rectangular regulating damper
Consists of a duct with trapezoid corrugations and a turning blade. Blade angle can be adjusted 0–90° using the knob in the cup, and blade angle is read from an embossed scale on the edge of the cup. Locking is done by two Pozidriv screws (PZD2).

The damper is provided with a joining profile at each end. The length is normally b + 10, but the damper can also be ordered in special lengths.

The cup allows an insulation thickness of 50 mm. If thicker insulation is needed, add the special insulation cup IK to the damper.

Maximum size for the damper is 600 × 600 mm.
LKSR is equipped with joining profile type RJFP.

Dimensions



Ordering example

LKSR	500	300	310
Product			
Side in mm	a		
Knob side in mm	b		
Normal length in mm l = b+10			

Description

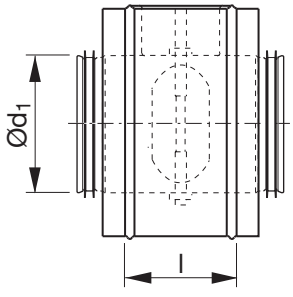
Regulating damper, insulated.

Technical data according to DRU.

Ordering example

	DRUI	250	25
Product			
Dimension Ød$_1$			
Insulation 25/50			

Dimensions



25 mm insulation.

Ød$_1$ nom	l mm	m kg	Sealing class past closed blade
100	100	1,00	0
125	100	1,10	0
150	100	1,30	0
160	100	1,40	0
200	100	1,80	0
250	100	2,50	0
300	100	2,90	0
315	100	3,10	0
355	100	3,60	0
400	100	4,30	0
450	115	5,30	0
500	115	6,20	0

50 mm insulation.

Ød$_1$ nom	l mm	m kg	Sealing class past closed blade
100	100	1,10	0
125	100	1,30	0
150	100	1,60	0
160	100	1,70	0
200	100	2,20	0
250	100	2,80	0
300	100	3,20	0
315	100	3,40	0
355	100	4,00	0
400	100	4,70	0
450	115	5,80	0
500	115	6,50	0

Sliding damper – manual SKMTR

Description

Manual shut-off sliding damper with transfer joint
The damper meets the requirements for tightness class 4 at pressure class C.

The damper meets the requirements for tightness class C only in fully closed or fully opened position.

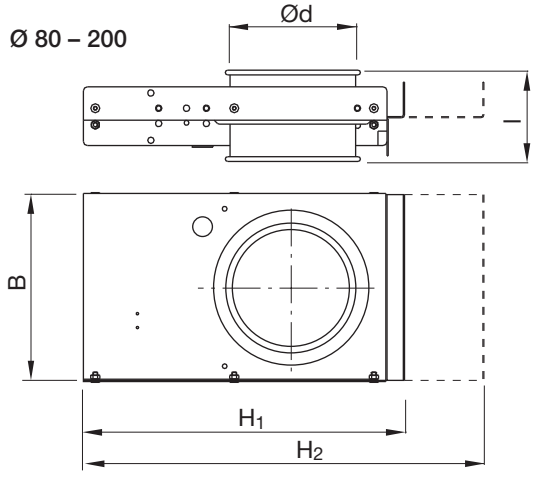
There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ordering example

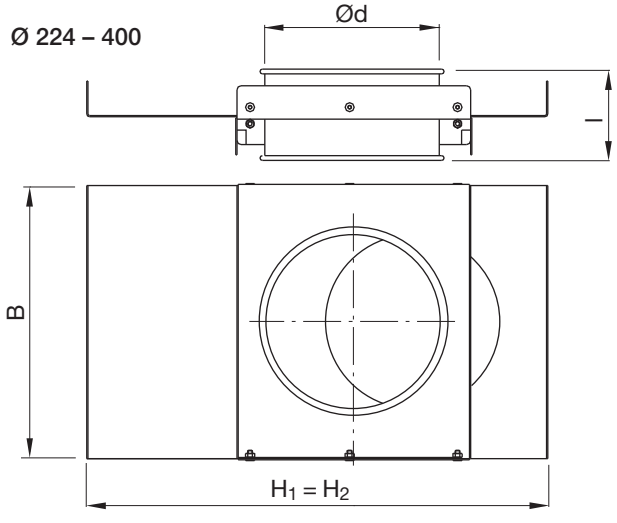
	SKMTR	200
Product		
Dimension Ød		

Dimensions

Ø 80 – 200



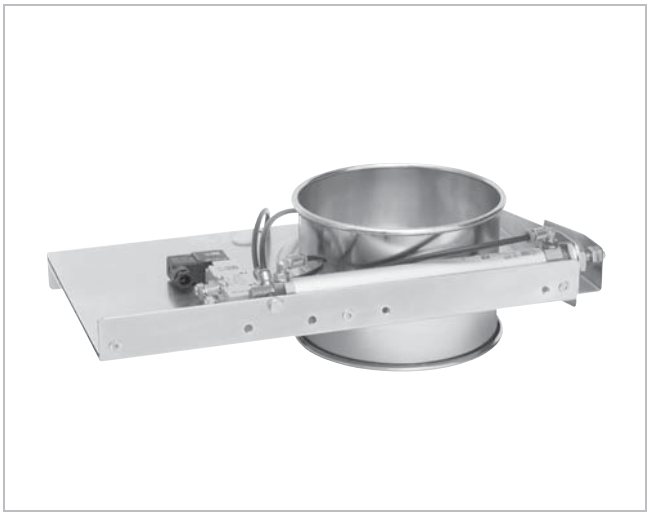
Ø 224 – 400



Ød nom	H_1 mm	H_2 mm	B mm	l mm	m kg
80	250	330	160	125	2,70
100	290	390	180	125	3,00
125	340	465	205	125	3,60
140	390	530	230	125	4,50
150	390	540	230	125	4,50
160	410	570	240	125	4,70
180	490	670	280	125	5,60
200	490	690	280	125	5,60
224 *	585	809	345	165	10,2
250 *	585	835	370	165	12,2
300 *	730	1030	420	165	18,1
315 *	730	1045	435	165	19,0
350 *	800	1150	470	165	22,5
400 *	905	1305	520	165	26,1

* Has through blade

Sliding damper – pneumatic SKPTR



Description

Pneumatic shut-off sliding damper with transfer joint
The damper meets the requirements for tightness class 4 at pressure class C.

The damper meets the requirements for tightness class C only in fully closed or fully opened position.

Pressurized air cylinder with mounted regulation valve is included.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

SPZZ pinch protection available as accessories.

Technical data

Cylinder

Power pressure, normal	0,6 MPa (6 bar)
	, max1,0 MPa (10 bar)
Ambient temperature range	-20 °C (dry air) to +80 °C
Working fluid	Air, clean and dry

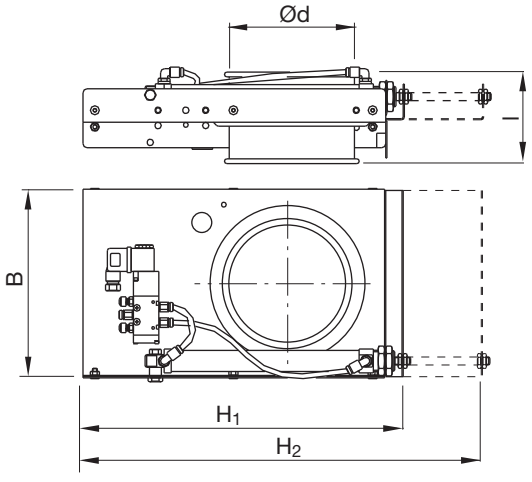
Solenoid valve

Power pressure	max 7 bar
Ambient temperature	max +50 °C
Power supply, standard	220 V~
	, special 24 V~ or 24 V-
Power tolerance	±10 %
Power requirements	appr. 5 W
Protection class	IP 65
Insulation class	B
Air connection	Quick release for Ø 6 mm hose

Ordering example

	SKPTR	200
Product		
Dimension Ød		

Dimensions



Ød nom	H_1 mm	H_2 mm	B mm	l mm	m kg
80	250	330	160	125	3,00
100	290	390	180	125	3,30
125	340	465	205	125	4,00
140	390	530	230	125	5,00
150	390	540	230	125	5,00
160	410	570	240	125	5,20
180 *	490	670	280	125	6,20
200 *	490	690	280	125	6,20
224 *	585	809	345	165	11,3
250 *	585	835	370	165	13,5
300 *	730	1030	420	165	20,1
315 *	730	1045	435	165	21,1
350 *	800	1150	470	165	25,0
400 *	905	1305	520	165	29,0

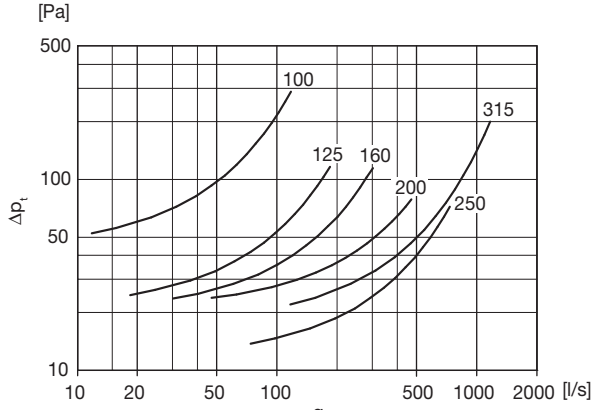
* Provided with 2 compressed air cylinders

Air stream operated damper CARU

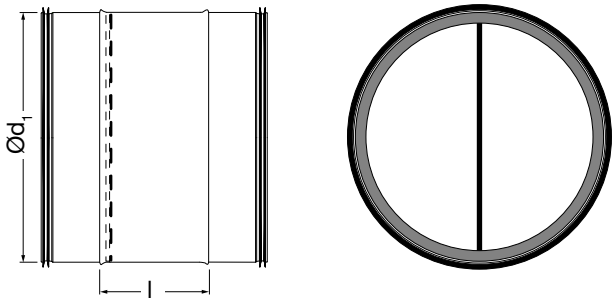
Description

The damper is used where you want an efficient closing at a standstill fan. The air stream operated damper is equipped with springs, which automatically close the damper when the fan stops.

The housing is manufactured of galvanized sheet metal. The butterfly blade is manufactured of aluminium.



Dimensions



Ød1 nom	l mm	m kg
100	60	0,35
125	60	0,40
160	60	0,60
200	60	0,90
250	120	1,45
315	120	1,82

Ordering example

CARU	160
Product	
Dimension Ød1	

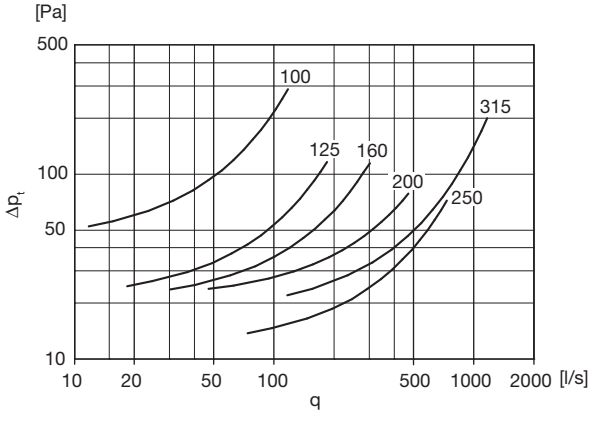
Air stream operated damper CAR

Description

The damper is used where you want an efficient closing at a standstill fan. The air stream operated damper is equipped with springs, which automatically close the damper when the fan stops.

The damper is easy to mount since it is only "pushed" into the duct.

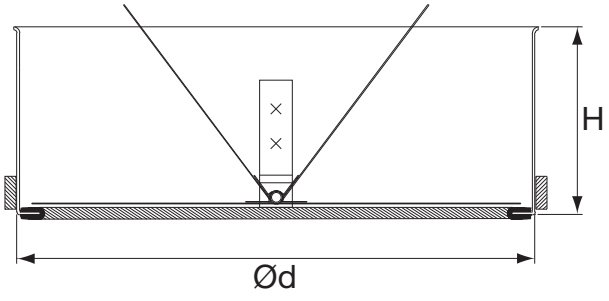
The housing is manufactured of galvanized sheet metal. The butterfly blade is manufactured of aluminium.



Ordering example

	CAR	160
Product		
Dimension Ød$_1$		

Dimensions



Ød$_1$ nom	ØD nom	H mm	m kg
100	96	43	0,10
125	121	49	0,10
160	155	66	0,20
200	195	72	0,30
250	247	120	0,40
315	312	160	0,50

Damper with flow meter FMDRU

Description

Applications
The flow meter is suitable both for setting up and for continous flow measurement. It is intended for permanent installation and must therefore be specified at the design stage.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–630 fullfills tightness class 0 and pressure class A .

Design
The flow meter consists of two reducers joined together, with measurement nozzles. Each nozzle has a removable plastic plug which prevents dirt from entering. It also eliminates air leakage when measurement is not done.

The unit permits insulation of up to 100 mm thickness to be installed without concealing the measurement nozzles or the label plate. The plate can be rotated for best legibility, irrespective of the way the unit is installed and can easily be removed, to be located away from the unit.

The unit also contains a regulating damper DRU to allow balancing. The cup around the damper knob allows insulation up to 50 mm thick to be used. If thicker insulation is needed, add the special insulation cup IK.

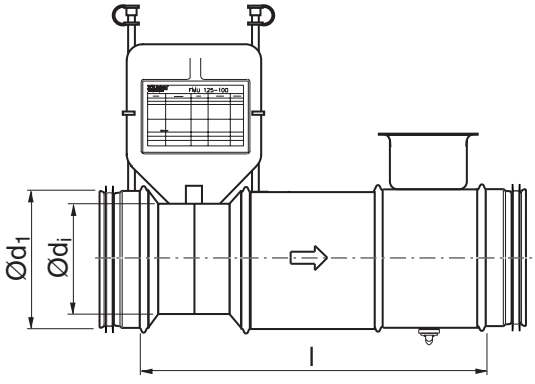
The unit has components which partly block the duct system. You can use one of the tips on page 647 to facilitate cleaning.

Ordering example

FMDRU 160 125

Product
Dimension $Ød_1$
Dimension $Ød_i$

Dimensions



$Ød_1$ nom	$Ød_i$ nom	l mm	m kg
80	63	300	0,78
100	80	300	0,94
125	100	310	1,21
160	125	315	1,52
200	160	380	2,20
250	200	440	3,31
315	250	570	4,92
400	315	660	7,81
500	400	845	12,0
630	500	1030	18,2

Flow meters with reductions of two dimension steps can be obtained, to give higher reading pressure in the measurement nozzles. This entails higher pressure drop and noise generation, however.

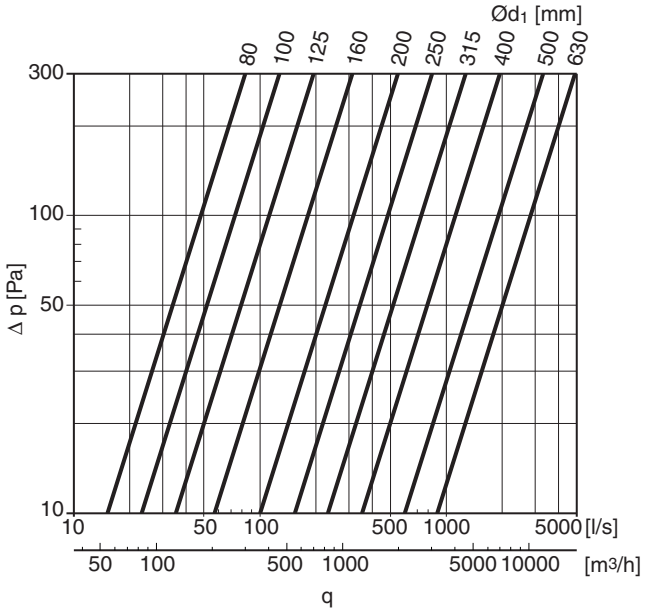
Advantages
- Has low pressure drop due to good aerodynamic design.
- Has low noise generation due to good aerodynamic design.
- Suitable for use with insulation.

Damper with flow meter FMDRU

Technical data

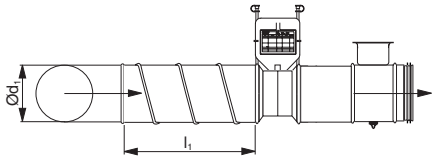
Sound
Sound generation has been measured at the Swedish National Testing and Research Institute in an reverberation room, in accordance with ISO 5135 and ISO 3741.

Flow graph for balancing
The graph show the flow, q, as a function of the pressure difference in the measurement nozzles. Flow data for dimensioning differs from this graph.



Measurement function
Measure pressure difference, Dp, between the measurement nozzles, and use the equation on the units plate to derive the duct flow.

Measurement accuracy
If the velocity profile is asymmetric, the measurement values can differ from the ideal values. For this reason, the flow meter should never be located right up to any flow disturbance. The method error in the table below will differ, depending on the distance to the flow disturbance.

l_1 =straight distance before meter	Method error m_2	
Type of disturbance	5%	10%
A 90° bend 	$2 \cdot d_1$	$1 \cdot d_1$
l_2 = straight distance after meter	$1 \cdot d_1$	$1 \cdot d_1$

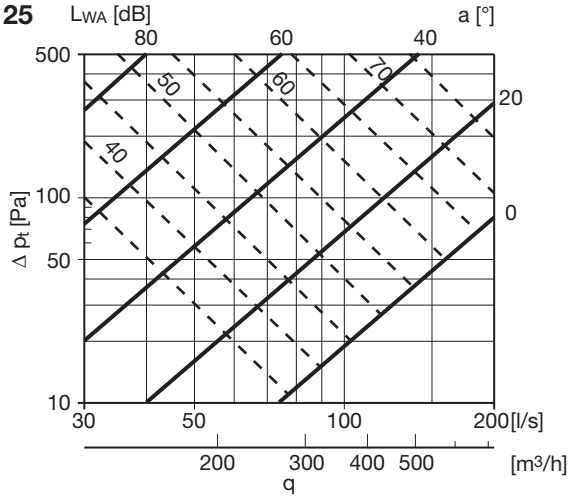
Pressure drop graphs with sound data for dimensioning

The solid lines show the pressure drop, Δp_t, across the unit as a function of flow, q.

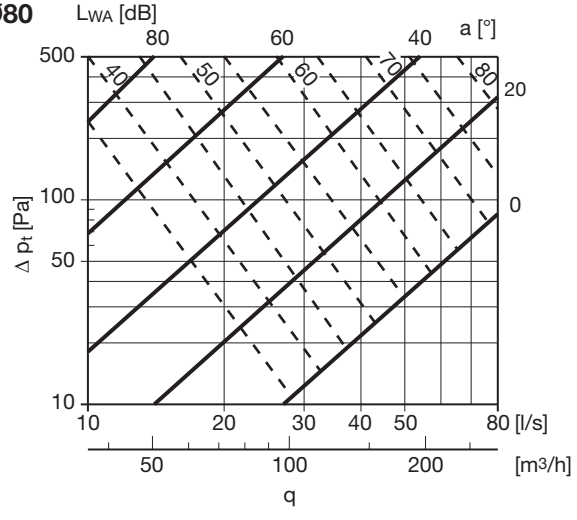
The dashed lines give the A-weighted sound power data, L_{WA}, in dB to the duct.

Flow data for balancing differs from these graphs.

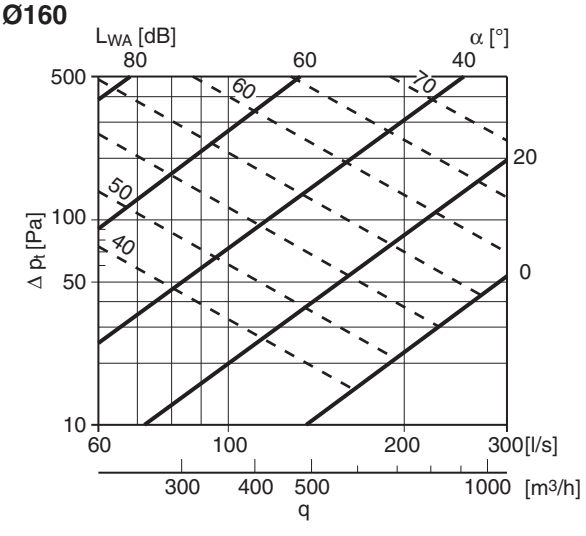
Ø125



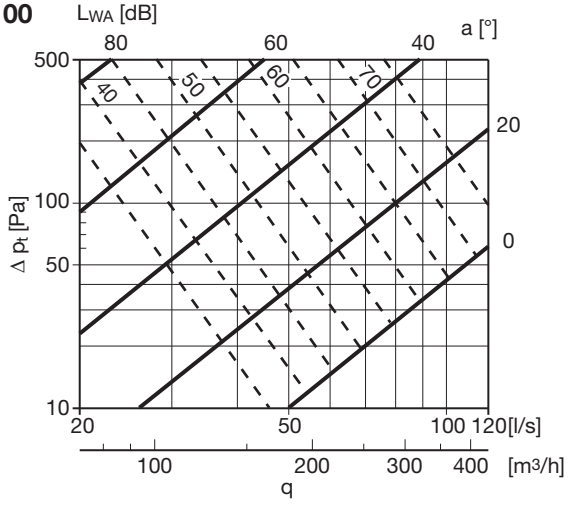
Ø80



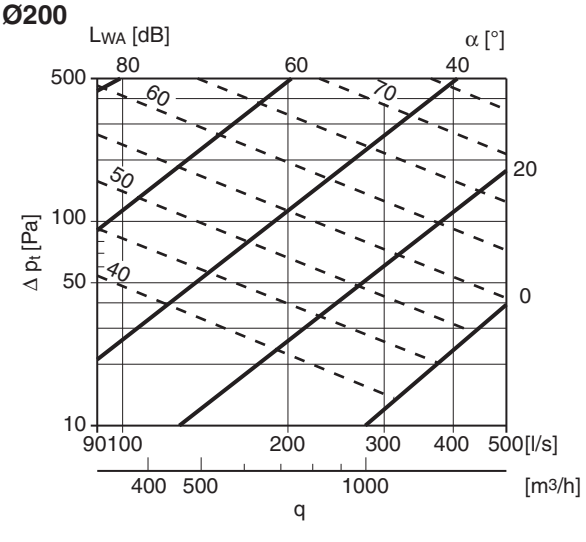
Ø160



Ø100

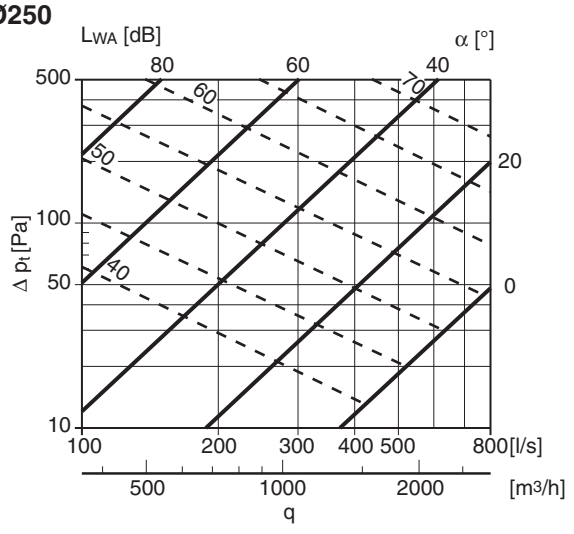


Ø200

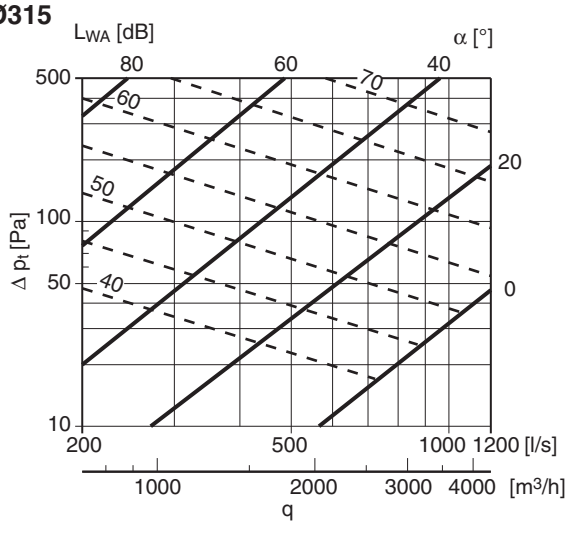


Damper with flow meter FMDRU

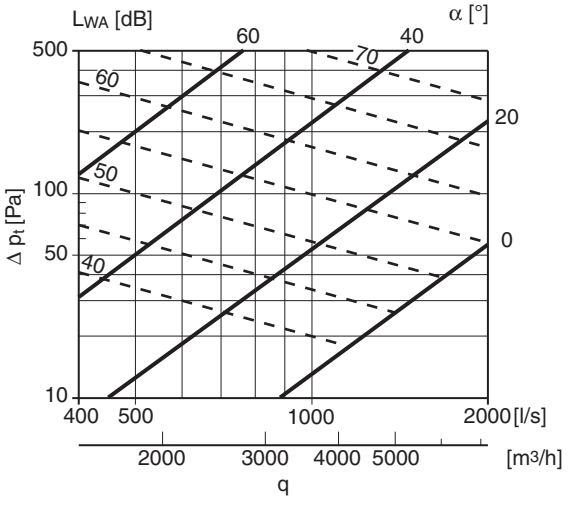
Ø250



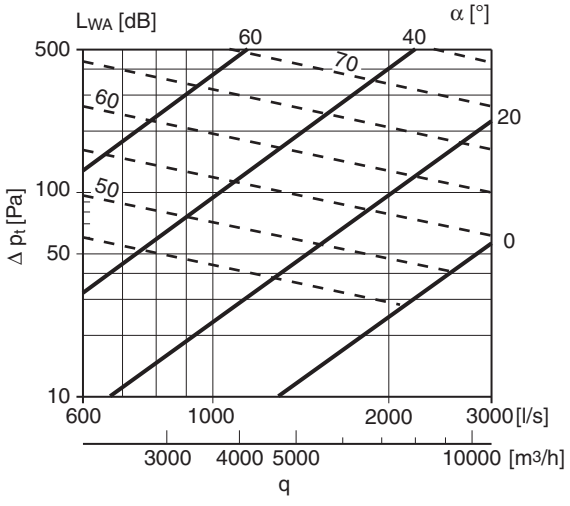
Ø315



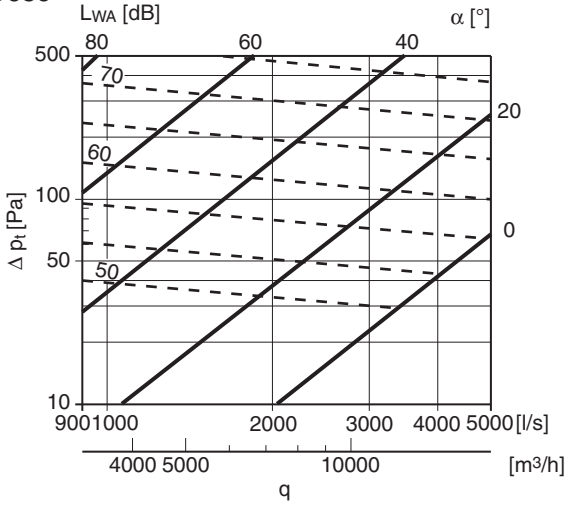
Ø400



Ø500



Ø630



Damper with flow meter FMDRU

Sound generation

dim Ød$_1$	Pressure drop [Pa]	Velocity app. 5 [m/s]								Velocity app. 10 [m/s]								Velocity app. 15 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 25 [l/s]								Flow 50 [l/s]								Flow 75 [l/s]							
	500	64	65	62	59	57	56	52	51	68	76	76	70	64	61	59	56	71	80	80	73	67	63	61	58
	300	61	62	58	55	52	50	45	43	65	75	75	67	61	57	53	49	68	79	77	68	63	58	55	52
	200	59	60	56	51	47	46	40	38	63	75	74	64	58	53	48	44	67	78	75	64	59	54	51	47
	100	56	56	51	45	40	38	30	28	59	74	72	59	52	47	40	35	63	76	71	58	53	48	42	38
	50	52	52	47	40	33	30	21	18	56	73	71	54	47	41	32	26	Pressure drop exceeds 50 [Pa]							
100		Flow 40 [l/s]								Flow 80 [l/s]								Flow 120 [l/s]							
	500	64	63	62	58	56	55	53	54	67	76	76	69	63	60	61	61	70	81	82	70	66	64	64	64
	300	61	60	58	54	51	50	46	46	65	76	76	65	59	55	56	56	68	81	80	65	62	60	60	59
	200	59	58	55	51	47	46	40	40	62	75	75	62	55	51	52	53	65	81	79	61	58	57	56	55
	100	56	54	51	45	40	40	31	30	59	75	75	57	49	44	46	46	62	81	78	54	52	51	50	49
	50	52	50	46	39	34	33	22	20	55	75	74	52	43	37	39	40	Pressure drop exceeds 50 [Pa]							
125		Flow 60 [l/s]								Flow 120 [l/s]								Flow 180 [l/s]							
	500	66	64	62	59	56	56	54	53	72	76	75	68	63	60	61	59	75	81	79	71	66	63	63	61
	300	63	61	58	55	51	51	47	45	69	75	73	65	59	56	55	53	73	79	76	67	62	59	58	56
	200	61	59	56	51	47	47	42	40	67	74	71	62	56	52	50	49	71	78	74	63	58	55	53	51
	100	57	55	51	46	41	40	33	30	64	72	69	57	50	45	43	41	67	76	70	57	52	49	46	43
	50	53	51	46	40	35	32	25	21	60	71	66	51	44	38	36	34	Pressure drop exceeds 50 [Pa]							
160		Flow 100 [l/s]								Flow 200 [l/s]								Flow 300 [l/s]							
	500	66	63	61	57	54	54	53	52	77	78	73	67	63	59	59	58	80	81	76	71	66	62	61	59
	300	63	60	57	53	50	49	47	45	75	77	70	63	59	54	54	53	78	79	72	67	62	57	55	53
	200	61	58	55	50	47	45	42	40	74	75	68	60	56	50	49	48	76	77	69	64	58	53	50	48
	100	58	54	50	45	41	38	34	31	71	73	64	55	51	43	42	41	74	74	63	59	53	46	42	39
	50	55	51	45	39	36	31	26	23	69	71	60	50	46	36	34	33	71	71	58	54	47	39	34	31
200		Flow 150 [l/s]								Flow 300 [l/s]								Flow 450 [l/s]							
	500	71	68	65	61	58	58	57	55	75	77	70	63	60	54	54	53	80	82	78	71	67	65	66	63
	300	67	64	60	57	53	53	50	47	74	75	68	60	56	50	49	48	77	79	74	67	63	60	60	57
	200	65	61	57	53	49	49	45	42	71	73	68	61	56	53	52	50	74	77	71	63	58	56	55	52
	100	60	56	52	48	43	41	36	32	66	69	64	55	50	46	45	42	70	71	66	57	52	50	48	44
	50	55	52	46	42	37	34	28	23	62	66	60	50	44	38	37	34	65	69	51	50	46	41	40	35
250		Flow 250 [l/s]								Flow 500 [l/s]								Flow 750 [l/s]							
	500	69	66	64	61	57	59	58	56	79	76	72	67	62	61	64	63	83	81	76	72	65	64	67	66
	300	66	63	60	58	53	54	53	49	77	73	68	63	57	56	59	58	81	77	72	68	60	59	61	60
	200	64	60	57	55	49	50	49	44	75	70	65	60	53	52	54	53	78	74	69	65	56	55	57	55
	100	60	56	52	50	43	44	41	34	72	65	59	54	47	45	47	46	75	69	63	60	50	48	50	47
	50	56	51	47	45	37	37	34	25	69	61	54	49	40	38	39	38	71	64	58	55	43	41	42	39
315		Flow 400 [l/s]								Flow 800 [l/s]								Flow 1200 [l/s]							
	500	76	71	67	62	60	60	60	57	82	79	74	68	66	64	65	63	86	83	77	71	68	66	69	64
	300	72	67	62	58	55	55	54	49	78	75	69	64	61	58	49	57	82	79	72	66	63	61	62	58
	200	69	64	59	55	51	50	48	44	74	72	66	60	57	54	54	51	78	75	69	62	59	56	57	53
	100	63	58	53	49	45	43	39	34	69	66	60	54	51	46	46	43	73	67	62	56	52	51	49	44
	50	58	52	47	43	39	36	30	24	63	61	54	48	44	38	38	34	67	64	56	49	45	41	41	36
400		Flow 600 [l/s]								Flow 1200 [l/s]								Flow 1800 [l/s]							
	500	78	71	66	61	58	59	59	55	83	78	72	67	65	64	65	62	88	82	76	71	68	67	68	64
	300	73	67	61	57	54	54	53	48	77	73	67	62	60	59	59	56	84	78	71	66	64	62	63	58
	200	69	63	58	54	51	50	48	43	73	69	63	58	56	54	54	51	80	74	67	63	60	58	59	53
	100	63	56	51	48	45	43	39	34	65	62	56	52	50	47	46	42	74	68	60	56	54	50	52	45
	50	56	50	45	43	40	36	31	25	58	55	49	45	43	39	38	34	68	62	54	50	48	43	45	37
500		Flow 1000 [l/s]								Flow 2000 [l/s]								Flow 3000 [l/s]							
	500	81	75	69	64	61	63	63	59	87	81	73	68	67	66	67	64	91	84	76	71	69	68	72	66
	300	76	70	64	60	57	57	57	51	82	75	67	63	62	60	61	58	86	79	70	66	64	62	64	59
	200	73	66	61	57	54	52	51	45	78	71	63	59	57	55	56	53	82	74	66	62	59	57	59	54
	100	66	59	53	51	48	45	42	35	71	64	55	53	51	47	47	44	75	62	58	55	52	52	51	45
	50	60	53	47	45	42	37	33	26	65	56	48	46	44	38	39	35	69	60	51	49	45	40	43	36
630		Flow 1500 [l/s]								Flow 3000 [l/s]								Flow 4500 [l/s]							
	500	88	81	74	68	66	67	67	62	91	84	75	70	70	69	70	66	93	86	77	71	71	70	76	67
	300	82	75	68	63	61	60	60	54	85	78	69	65	65	62	63	59	87	80	71	65	65	63	66	60
	200	78	71	64	59	57	55	54	47	80	73	64	61	60	57	58	53	82	75	66	60	60	57	60	54
	100	70	63	56	53	51	46	43	36	72	65	56	54	53	48	48	43	73	67	58	52	51	48	51	44
	50	63	56	49	46	44	38	33	25	64	57	48	47	46	39	39	33	65	59	50	44	43	38	42	34

Damper with flow meter FMDU

Description

Applications
The meter is suitable both for setting up and for continous flow measurement. It is intended for permanent installation and must therefore be specified at the design stage.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Ø 80–630 fullfills tightness class 0 and pressure class A .

Design
The meter consists of a regulating shutter and a centrally located measurement plate. Each measurement nozzle has a removable plastic plug which prevents dirt from entering. It also eliminates air leakage when measurement is not done.

The unit permits insulation of up to 50 mm thickness to be installed without concealing the measurement nipples or the label plate.

The plate can be rotated for best legibility, irrespective of the way the unit is installed and can easily be removed, to be located away from the unit. The cup around the damper knob allows insulation up to 50 mm thick to be used. If thicker insulation is needed, add the special insulation cup IK.

Advantages
- Short installation length.
- Suitable for use with insulation.

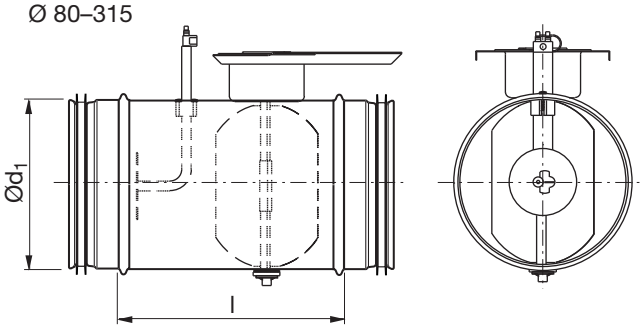
The unit has components which partly block the duct system. You can use one of the tips on page 647 to facilitate cleaning.

Ordering example

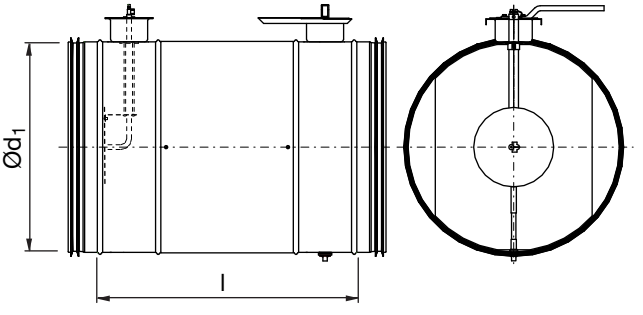
	FMDU	200
Product		
Dimension Ød$_1$		

Dimensions

Ø 80–315



Ø 400–630

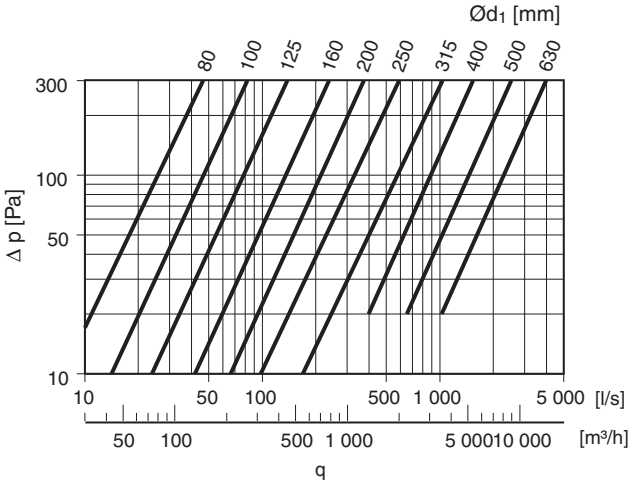


Ød$_1$ nom	l mm	m kg
80	165	0,66
100	165	0,76
125	165	0,88
160	165	1,08
200	230	1,44
250	275	2,10
315	275	2,65
400	450	6,10
500	520	11,4
630	570	16,0

Damper with flow meter FMDU

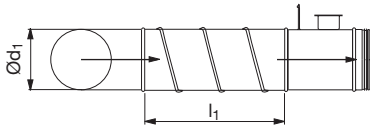
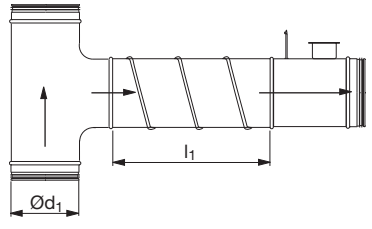
Technical data

Flow graph for balancing
The curves show the flow, q, as a function of the pressure difference in the measurement nozzles. Flow data for dimensioning differs from this graph.



Measurement function
By measuring the pressure difference, Dp, between the measurement nozzles, you can derive the flow in the duct by means of the equation on the units plate.

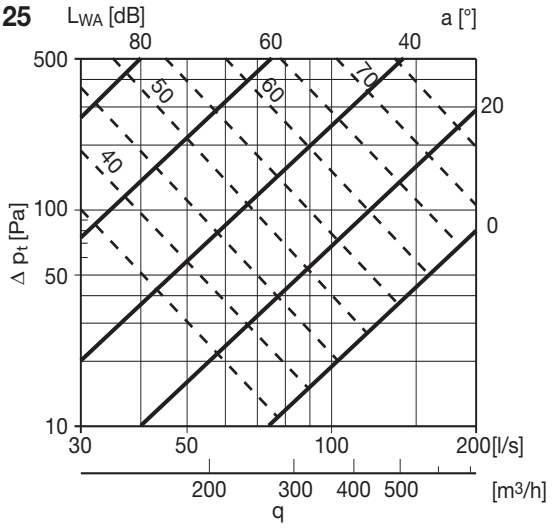
Measurement accuracy
If the velocity profile is asymmetric, the measurement values can differ from the ideal values. For this reason, the flow meter should never be located right up to any flow disturbance. The method error in the table below will differ, depending on the distance to the flow disturbance.

l_1 =straight distance before meter	Method error m_2	
Type of disturbance	5%	10%
A 90° bend 	6·d_1	0·d_1
A branch 	6·d_1	4·d_1
l_2 = straight distance after meter	1·d_1	1·d_1

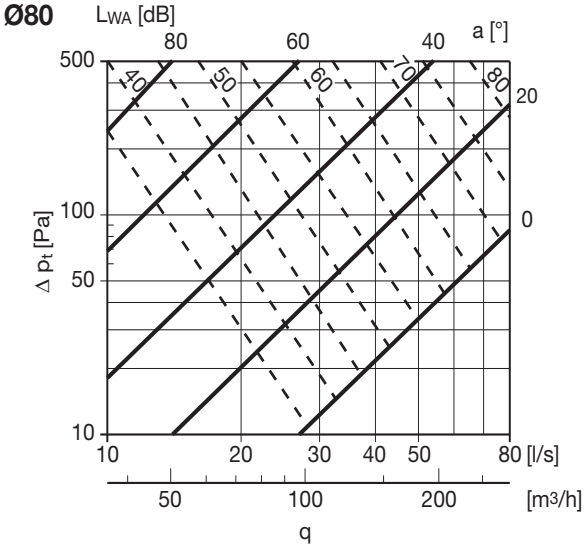
Pressure drop graphs with sound data for dimensioning

The solid lines show the pressure drop, Δp_t, across the unit as a function of flow, q. The dashed lines give the A-weighted sound power data, L_{WA}, in dB to the duct. Flow data for balancing differ from these graphs.

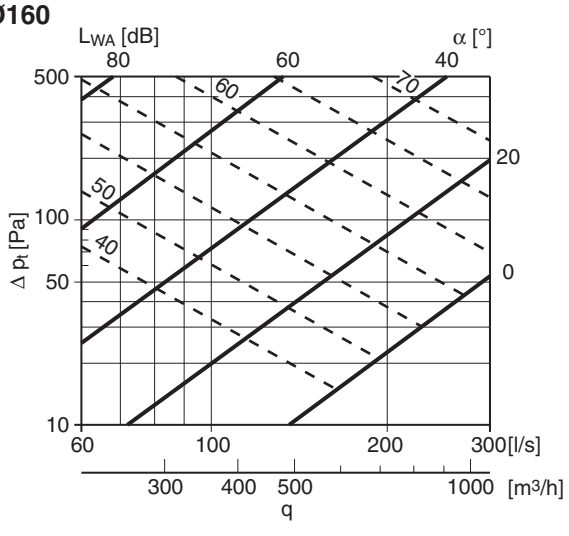
Ø125



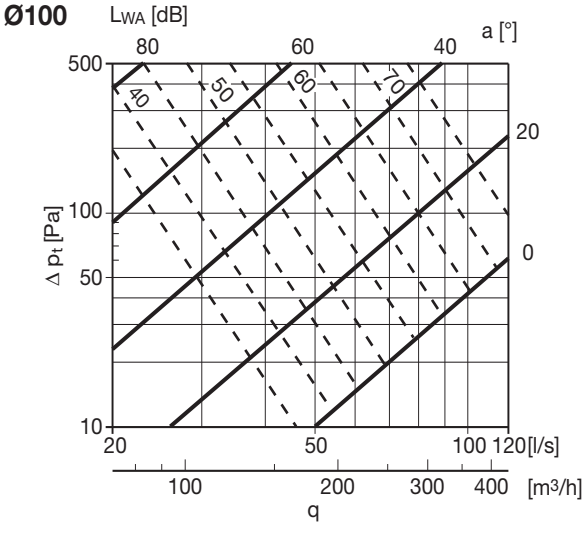
Ø80



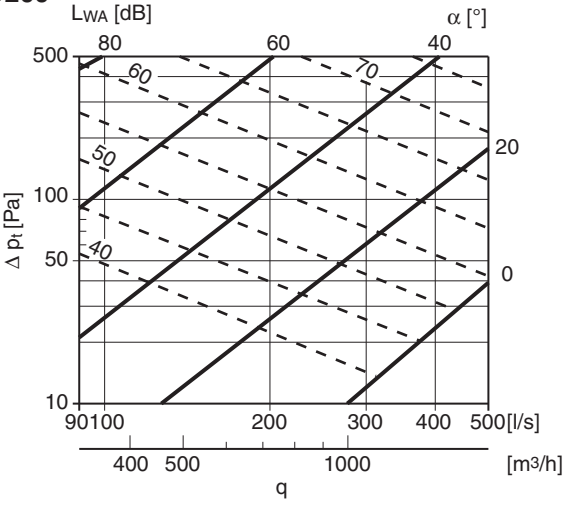
Ø160



Ø100

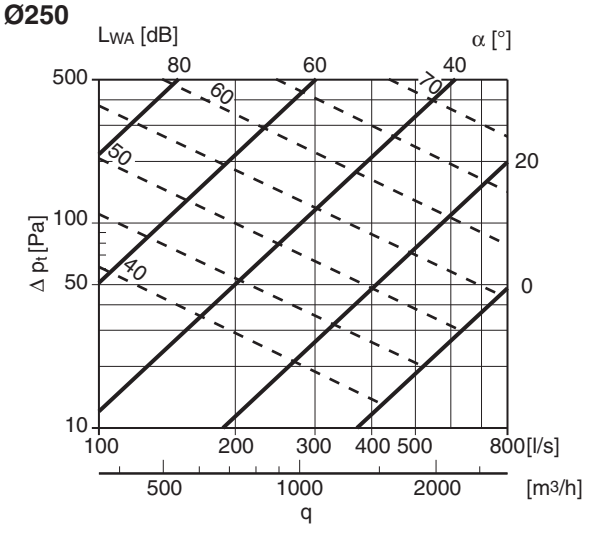


Ø200

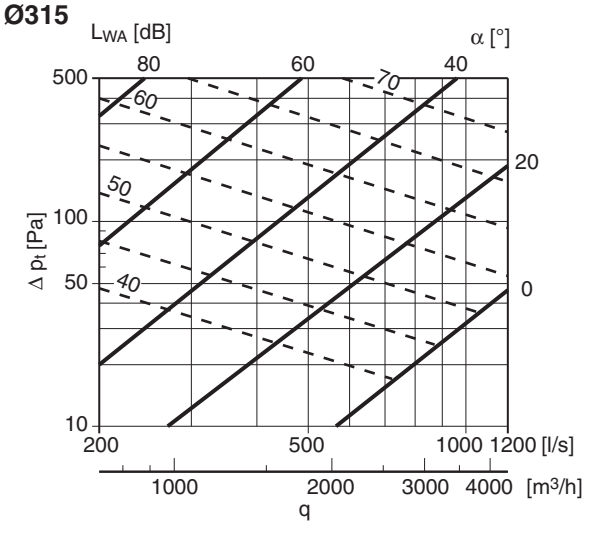


Damper with flow meter FMDU

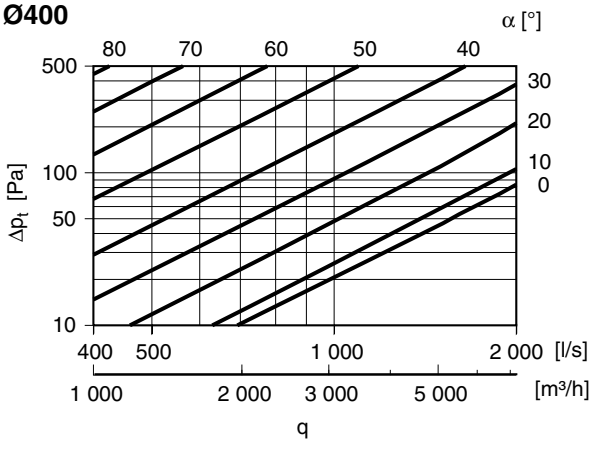
Ø250



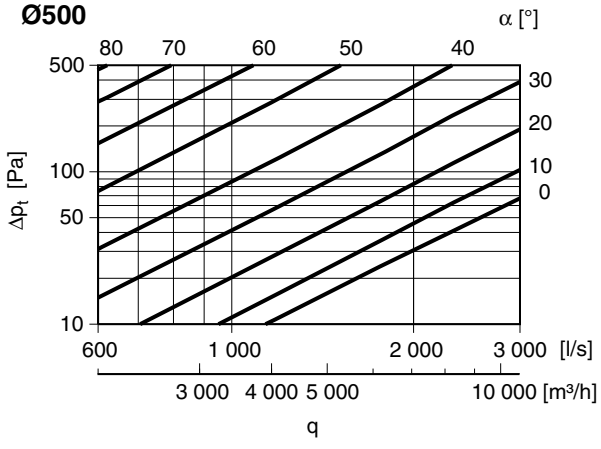
Ø315



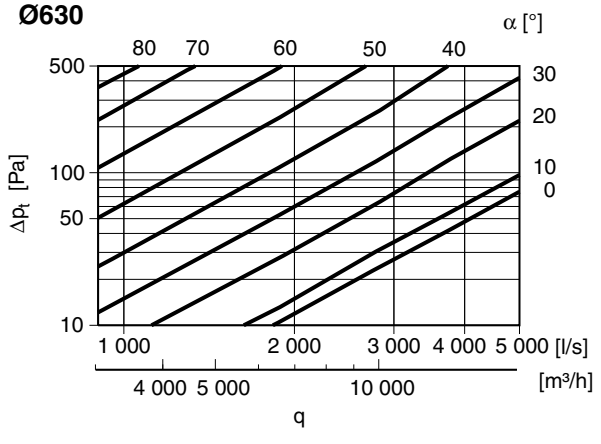
Ø400



Ø500



Ø630



Damper with flow meter FMDU

Sound generation

dim Ød$_1$	Pressure drop [Pa]	Velocity app. 5 [m/s]								Velocity app. 10 [m/s]								Velocity app. 15 [m/s]							
		Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80		Flow 25 [l/s]								Flow 50 [l/s]								Flow 75 [l/s]							
	500	64	65	62	59	57	56	52	51	68	76	76	70	64	61	59	56	71	80	80	73	67	63	61	58
	300	61	62	58	55	52	50	45	43	65	75	75	67	61	57	53	49	68	79	77	68	63	58	55	52
	200	59	60	56	51	47	46	40	38	63	75	74	64	58	53	48	44	67	78	75	64	59	54	51	47
	100	56	56	51	45	40	38	30	28	59	74	72	59	52	47	40	35	63	76	71	58	53	48	42	38
	50	52	52	47	40	33	30	21	18	56	73	71	54	47	41	32	26	Pressure drop exceeds 50 [Pa]							
100		Flow 40 [l/s]								Flow 80 [l/s]								Flow 120 [l/s]							
	500	64	63	62	58	56	55	53	54	67	76	76	69	63	60	61	61	70	81	82	70	66	64	64	64
	300	61	60	58	54	51	50	46	46	65	76	76	65	59	55	56	56	68	81	80	65	62	60	60	59
	200	59	58	55	51	47	46	40	40	62	75	75	62	55	51	52	53	65	81	79	61	58	57	56	55
	100	56	54	51	45	40	40	31	30	59	75	75	57	49	44	46	46	62	81	78	54	52	51	50	49
	50	52	50	46	39	34	33	22	20	55	75	74	52	43	37	39	40	Pressure drop exceeds 50 [Pa]							
125		Flow 60 [l/s]								Flow 120 [l/s]								Flow 180 [l/s]							
	500	66	64	62	59	56	56	54	53	72	76	75	68	63	60	61	59	75	81	79	71	66	63	63	61
	300	63	61	58	55	51	51	47	45	69	75	73	65	59	56	55	53	73	79	76	67	62	59	58	56
	200	61	59	56	51	47	47	42	40	67	74	71	62	56	52	50	49	71	78	74	63	58	55	53	51
	100	57	55	51	46	41	40	33	30	64	72	69	57	50	45	43	41	67	76	70	57	52	49	46	43
	50	53	51	46	40	35	32	25	21	60	71	66	51	44	38	36	34	Pressure drop exceeds 50 [Pa]							
160		Flow 100 [l/s]								Flow 200 [l/s]								Flow 300 [l/s]							
	500	66	63	61	57	54	54	53	52	77	78	73	67	63	59	59	58	80	81	76	71	66	62	61	59
	300	63	60	57	53	50	49	47	45	75	77	70	63	59	54	54	53	78	79	72	67	62	57	55	53
	200	61	58	55	50	47	45	42	40	74	75	68	60	56	50	49	48	76	77	69	64	58	53	50	48
	100	58	54	50	45	41	38	34	31	71	73	64	55	51	43	42	41	74	74	63	59	53	46	42	39
	50	55	51	45	39	36	31	26	23	69	71	60	50	46	36	34	33	71	71	58	54	47	39	34	31
200		Flow 150 [l/s]								Flow 300 [l/s]								Flow 450 [l/s]							
	500	71	68	65	61	58	58	57	55	75	77	70	63	60	54	54	53	80	82	78	71	67	65	66	63
	300	67	64	60	57	53	53	50	47	74	75	68	60	56	50	49	48	77	79	74	67	63	60	60	57
	200	65	61	57	53	49	49	45	42	71	73	68	61	56	53	52	50	74	77	71	63	58	56	55	52
	100	60	56	52	48	43	41	36	32	66	69	64	55	50	46	45	42	70	71	66	57	52	50	48	44
	50	55	52	46	42	37	34	28	23	62	66	60	50	44	38	37	34	65	69	51	50	46	41	40	35
250		Flow 250 [l/s]								Flow 500 [l/s]								Flow 750 [l/s]							
	500	69	66	64	61	57	59	58	56	79	76	72	67	62	61	64	63	83	81	76	72	65	64	67	66
	300	66	63	60	58	53	54	53	49	77	73	68	63	57	56	59	58	81	77	72	68	60	59	61	60
	200	64	60	57	55	49	50	49	44	75	70	65	60	53	52	54	53	78	74	69	65	56	55	57	55
	100	60	56	52	50	43	44	41	34	72	65	59	54	47	45	47	46	75	69	63	60	50	48	50	47
	50	56	51	47	45	37	37	34	25	69	61	54	49	40	38	39	38	71	64	58	55	43	41	42	39
315		Flow 400 [l/s]								Flow 800 [l/s]								Flow 1200 [l/s]							
	500	76	71	67	62	60	60	60	57	82	79	74	68	66	64	65	63	86	83	77	71	68	66	69	64
	300	72	67	62	58	55	55	54	49	78	75	69	64	61	58	49	57	82	79	72	66	63	61	62	58
	200	69	64	59	55	51	50	48	44	74	72	66	60	57	54	54	51	78	75	69	62	59	56	57	53
	100	63	58	53	49	45	43	39	34	69	66	60	54	51	46	46	43	73	67	62	56	52	51	49	44
	50	58	52	47	43	39	36	30	24	63	61	54	48	44	38	38	34	67	64	56	49	45	41	41	36

Flow meter

FMU

Description

Applications
The meter is suitable both for setting up and for continous flow measurement. It is intended for permanent installation and must therefore be specified at the design stage.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Design
The meter consists of two reductions joined together, with measurement nozzles. Each nozzle has a removable plastic plug which prevents dirt from entering. It also eliminates air leakage when measurement is not done.

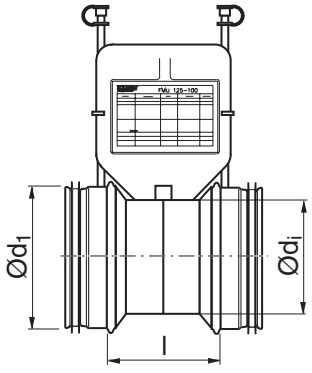
The unit permits insulation of up to 100 mm thickness to be installed without concealing the measurement nozzles or label plate. The plate can be rotated for best legibility, irrespective of the way the fitting is installed and can easily be removed, to be located away from the unit.

Flow meters with reductions of two dimension steps can be obtained, to give higher reading pressure in the measurement nozzles. This entails higher pressure drop and noise generation, however.

Ordering example

	FMU	160	125
Product			
Dimension $Ød_1$			
Dimension $Ød_i$			

Dimensions



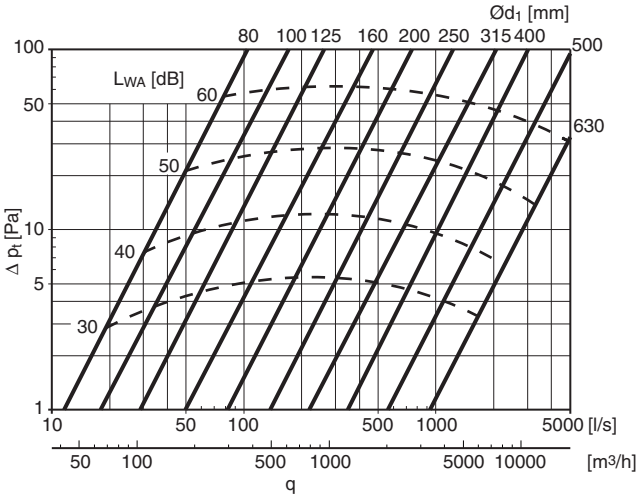
$Ød_1$ nom	$Ød_i$ nom	l mm	m kg
80	63	110	0,33
100	80	120	0,42
125	100	111	0,48
160	125	123	0,62
200	160	129	0,83
250	200	131	1,15
315	250	195	1,81
400	315	206	2,60
500	400	275	3,92
630	500	355	6,38

Advantages
- Has low pressure drop due to good aerodynamic design.
- Has low noise generation due to good aerodynamic design.
- Does not obstruct duct cleaning.
- Suitable for use with insulation.

Flow meter FMU

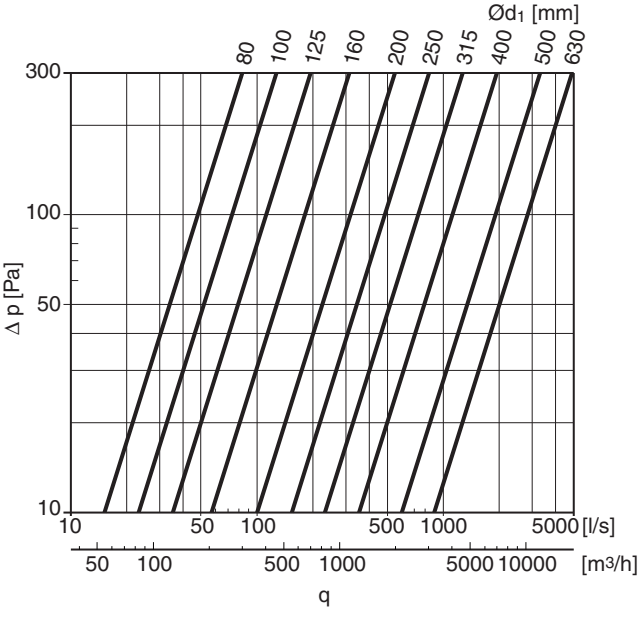
Technical data

Pressure drop graph with sound data for dimensioning
The solid lines give the pressure drop, Δp, as a function of flow, q. The dashed lines give the A-weighted sound power data, L_{WA}, in dB to the duct. Flow data for balancing differ from this graph.



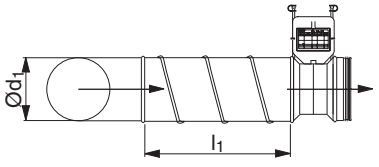
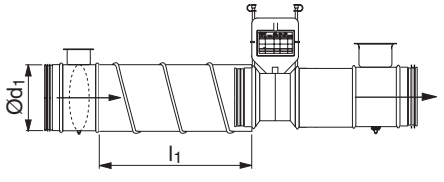
Sound
Sound generation has been measured at the Swedish National Testing and Research Institute in reverberation room, in accordance with ISO 5135 and ISO 3741.

Flow graph for balancing
The curves show the flow, q, as a function of the pressure difference in the measurement nozzles. Flow data for dimensioning differ from this graph.



Measurement function
By measuring the pressure difference, Δp, between the measurement nozzles, you can derive the flow in the duct by means of the equation on the units plate.

Measurement accuracy
If the velocity profile is asymmetric, the measurement values can differ from the ideal values. For this reason, the flow meter should never be located right up to any flow disturbance. The method error in the table below will differ, depending on the distance to the flow disturbance.

l_1 =straight distance before meter	Method error m_2	
Type of disturbance	5%	10%
A 90° bend 	$2 \cdot d_1$	$1 \cdot d_1$
A rotary damper (45°). Shaft in line with measurement nozzles 	$4 \cdot d_1$	$3 \cdot d_1$
l_2 = straight distance after meter	$1 \cdot d_1$	$1 \cdot d_1$

Flow meter FMU

Sound generation

dim Ød$_1$	Velocity app. 5 [m/s]								Velocity app. 10 [m/s]								Velocity app. 15 [m/s]							
	Centre frequency [Hz]								Centre frequency [Hz]								Centre frequency [Hz]							
	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
80	Flow 25 [l/s]								Flow 50 [l/s]								Flow 75 [l/s]							
	49	45	42	33	22	14	11	11	54	56	56	51	42	34	29	21	68	62	61	59	54	44	41	34
100	Flow 40 [l/s]								Flow 80 [l/s]								Flow 120 [l/s]							
	50	45	39	30	18	6	2	7	51	59	54	48	38	30	22	16	60	64	62	59	50	43	38	34
125	Flow 60 [l/s]								Flow 120 [l/s]								Flow 180 [l/s]							
	45	40	33	24	11	1	1	8	53	55	50	42	34	26	21	16	61	62	61	53	45	38	35	33
160	Flow 100 [l/s]								Flow 200 [l/s]								Flow 300 [l/s]							
	41	39	31	24	13	0	0	3	58	54	50	42	34	27	19	15	66	64	61	52	46	41	35	31
200	Flow 150 [l/s]								Flow 300 [l/s]								Flow 450 [l/s]							
	41	36	32	23	7	0	0	4	55	52	47	39	30	27	20	17	64	62	58	48	42	38	34	31
250	Flow 250 [l/s]								Flow 500 [l/s]								Flow 750 [l/s]							
	44	37	31	22	17	15	17	17	64	53	48	39	28	27	26	22	72	64	58	49	44	40	39	29
315	Flow 400 [l/s]								Flow 800 [l/s]								Flow 1200 [l/s]							
	51	35	29	19	14	10	5	6	64	55	46	38	34	31	32	28	72	65	57	48	45	42	42	41
400	Flow 600 [l/s]								Flow 1200 [l/s]								Flow 1800 [l/s]							
	46	37	30	22	19	14	9	7	64	58	47	41	40	40	37	30	75	69	59	53	51	52	51	46
500	Flow 1000 [l/s]								Flow 2000 [l/s]								Flow 3000 [l/s]							
	54	40	29	24	22	15	8	5	64	58	47	41	40	40	37	30	75	69	59	53	51	52	51	46
630	Flow 1500 [l/s]								Flow 3000 [l/s]								Flow 4500 [l/s]							
	53	43	32	28	25	19	14	10	68	61	50	44	43	45	42	35	78	73	62	56	54	58	57	48

Measuring bend MBU

Description

Applications

The measuring bend is suitable both for balancing and for continous flow measurement. It is intended for permanent installation and must therefore be specified at the design stage. The measuring bend is a good choice, since bends are normally used in all installations.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Design

The measuring bend consists of a pressed and seam welded 90° Safe bend with measurement nozzles on the inner and outer radii. The nozzles are asymmetrically located on the centreline, for manufacturing reasons. Each nozzle has a removable plastic plug which prevents dirt from entering. It also eliminates air leakage when measurement is not done.

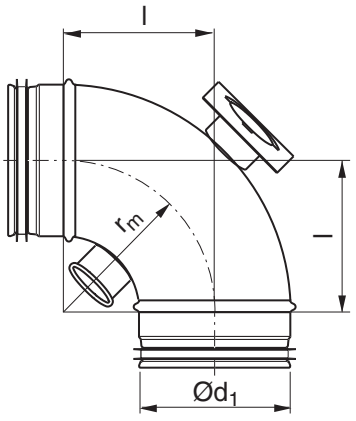
The unit allows insulation of up to 50 mm thickness to be installed without concealing the measurement nozzle or the label plate. The plate can be rotated for best legibility, irrespective of the way the unit is installed and can easily be removed, to be located away from the unit. If thicker insulation is needed, add the insulation cup IK to the standard cup.

Thanks to the robust design of the standard cup, the measurement nozzles are securely protected both before and after installation.

Ordering example

MBU	250	90
Product		
Dimension Ød$_1$		
Angle α		

Dimensions



$r_m \approx 1 \cdot d_1$

Ød$_1$ nom	l mm	m kg
100	100	0,40
125	125	0,60
160	160	1,02
200	200	1,23
250	250	1,74

Advantages

- Has a double function – both as bend and as flow meter.
- Does not increase pressure drop, compared with a standard Safe bend.
- Does not cause any noise, due to projecting components in the duct.
- Does not obstruct duct cleaning.

Measuring bend MBFU

Description

Applications
The measuring bend is suitable both for balancing and for continous flow measurement. It is intended for permanent installation and must therefore be specified at the design stage. The measuring bend is a good choice, since bends are normally used in all installations.

There is a separate assembly, measuring, balancing and maintenance instruction for this product.

Design
The measuring bend consists of a segmented and lock-seamed 90° Safe bend with measuring nozzles on the inner and outer radii. The nozzles are asymmetrically located on the centreline, for manufacturing reasons. Each nozzle has a removable plastic plug which prevents dirt from entering. It also eliminates air leakage when measurement is not done.

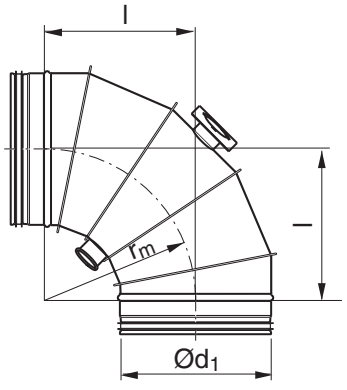
The unit allows insulation of up to 50 mm thickness to be installed without concealing the measurement nozzle or the label plate. The plate can be rotated for best legibility, irrespective of the way the unit is installed and can easily be removed, to be located away from the unit. If thicker insulation is needed, add the insulation cup IK to the standard cup.

Thanks to the robust design of the standard cup, the measurement nozzles are securely protected both before and after installation.

Ordering example

MBFU	500	90
Product		
Dimension Ød$_1$		
Angle α		

Dimensions



$r_m \approx 0{,}9 \cdot d_1$

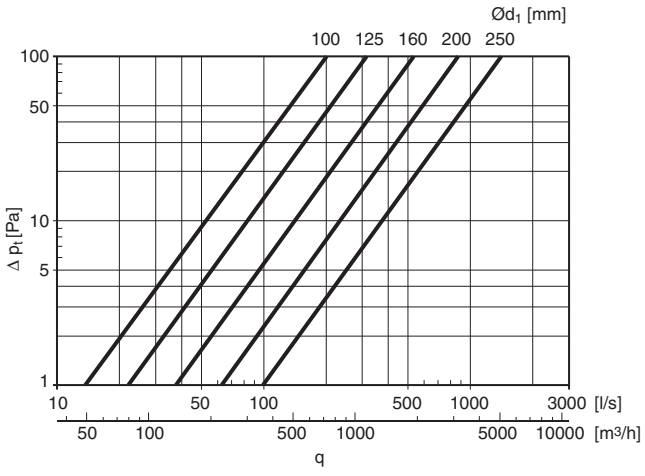
Ød$_1$ nom	l mm	m kg
315	300	3,18
400	360	5,82
500	454	8,38
630	566	13,1

Advantages
- Has a double function – both as a bend and as a meter.
- Does not increase pressure drop, compared with a standard Safe bend.
- Does not cause any noise, due to projecting components in the duct.
- Does not obstruct duct cleaning.

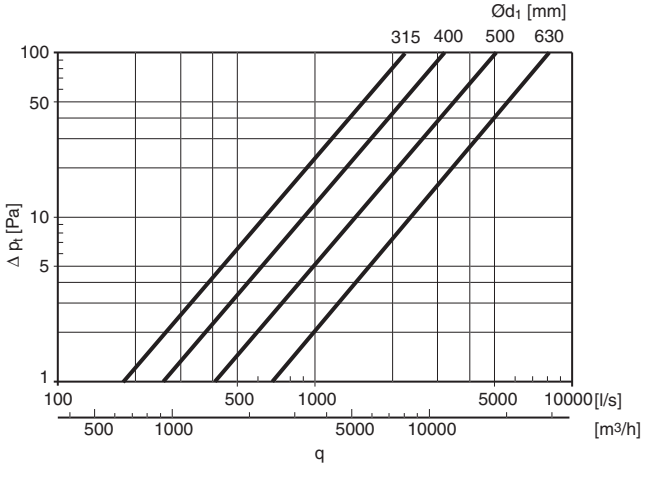
Measuring bends MBU, MBFU

Technical data

Pressure drop graph for dimensioning of MBU

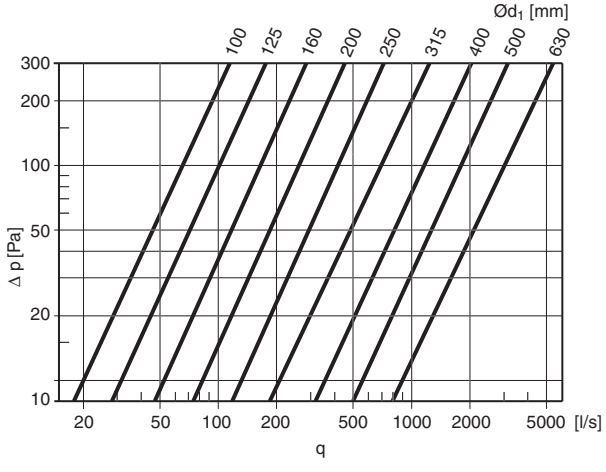


Pressure drop graph for dimensioning of MBFU



Flow graph for balancing

The curves show the flow, q, as a function of the pressure difference in the measurement nipples. Flow data for dimensioning differ from this graph

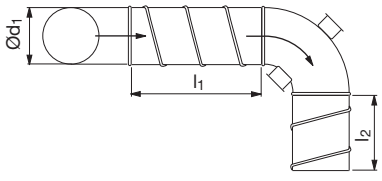
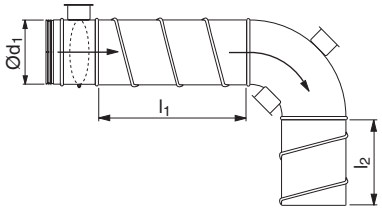


Measurement function

By measuring the pressure difference, Δp, between the inner and outer bend radii, you can derive the flow in the duct by means of the equation on the units plate.

Measurement accuracy

If the velocity profile is asymmetric, the measurement values can differ from the ideal values. For this reason, the measuring bend should never be located right up to any flow disturbance. The method error, as shown in the table below will differ, depending on the distance to the flow disturbance.

l_1 = straight distance before measuring bends. Type of disturbance	Method error m_2	
	5%	10%
A 90° bend 	8,5·d_1	4,5·d_1
A rotary damper (45°). Shaft in line with the measurement nozzles 	9,0·d_1	6,0·d_1
l_2 = straight distance after measuring bend	2·d_1	2·d_1

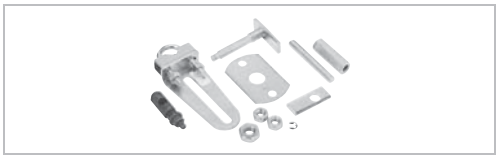
Accessories

IK

DRHTG

HANDLE

MSATS 31, MSATS 41



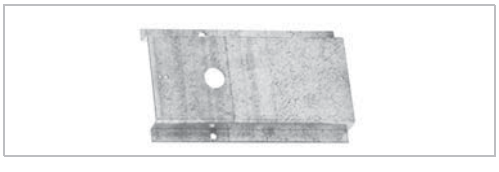
VREDF 15 60, VREDF 15 100

AXFL

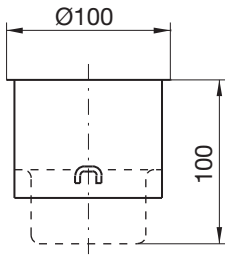
KOMHY

KOMHY LONG

LÖMOK



Insulation cup IK



If the insulation is thicker than 50 mm, there is a risk that the insulation will cover the knob cup and make it difficult to find or use. The insulation cup allows about 100 mm of insulation to be used at the same time as it gives good access to the damper knob. It is quick and easy to fit - just snap it over the edge of the cup. It fits all Lindab dampers with cup, both circular and rectangular.

Handle DRHTG

Strong handle to facilitate setting. Suits all manual dampers.

Handle HANDLE

Handle suitable for damper with motor shelves DTHU, DTH1U and DTH2U – without motor. Can be used for temporay setting/locking of the damper blade before the motor is mounted or as a permanent alternative to the motor.
Can be set stepless 0–90°. Fits axle 8×8 mm.
Is advisably fixed with one or two sheet metal screws/rivets.

Assembly kit MSATS AK 31

Kit for installing a Sauter AK 31 P pneumatic actuator.
The kit contains all components needed.

Assembly kit MSATS AK 41

Kit for installing a Sauter AK 41 P pneumatic actuator.
The kit contains all components needed.

Extension spindle VREDF 15 60

With a 60 mm long Ø 15 mm spindle. Used for motorizing standard dampers. Fixes to the knob with 2 self-tapping screws.

Extension spindle VREDF 15 100

With a 100 mm long Ø 15 mm spindle. Used for motorizing standard dampers. Fixes to the knob with 2 self-tapping screws.

Extension spindle AXFL

A 55 mm long Ø 15 mm spindle. Used for motorizing standard dampers. Fixes to the spindle with a locking screw.

Installation shelf KOMHY

Hooks to the edge of the cup and blind rivets to the damper body.

Installation shelf KOMHY LONG

Hooks to the edge of the cup and blind rivets to the damper body.

Installation shelf LÖMOK

Fixes to the edge of the cup with sheet metal screws.