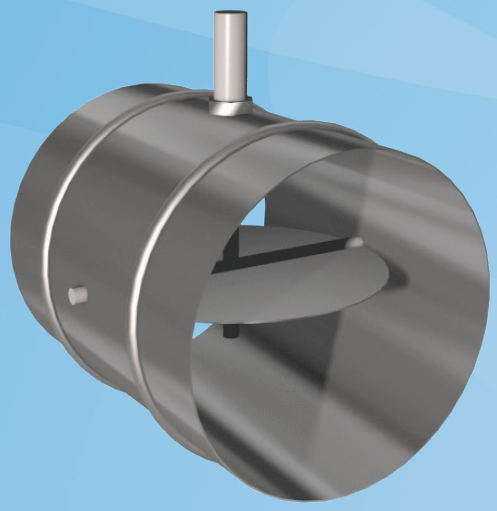
Halton RMC

Constant Airflow Damper

20/RMC/3500/0606/EN



- Constant airflow damper without external power supply, self-balancing operation
- Effective commissioning
- Large operation area, pressure range of 50...600 Pa and optionally up to 1000 Pa
- Galvanised steel design

Product models

- Models with and without insulated casing

MATERIAL

PART	MATERIAL
Housing	Galvanised steel
Damper blade	Aluminium
Damper blade bearings	PTFE
Tube for the adjustment	Plastic
Ring seals	Rubber

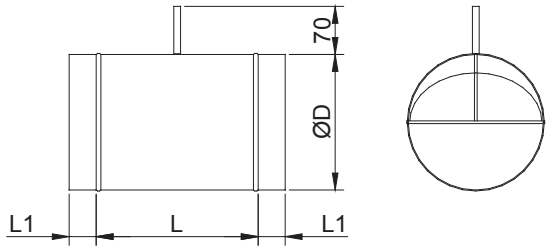
QUICK SELECTION

D	qmin		qmin(recommend)		qmax	
[mm]	[l/s]	[m³/h]	[l/s]	[m³/h]	[l/s]	[m³/h]
100	19	70	31	113	61	220
125	28	100	49	177	78	280
160	50	180	80	290	139	500
200	69	250	126	452	250	900
250	139	500	196	707	417	1500
315	222	800	312	1122	611	2200
350	278	1000	503	1810	1056	3800

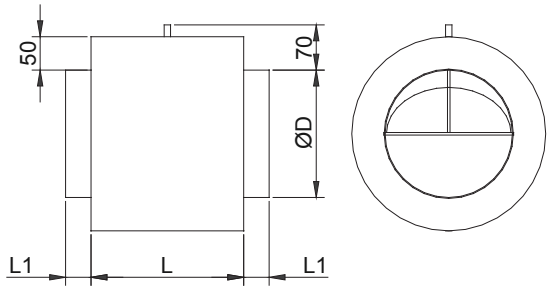
qmin Minimum airflow
qmin(recommend) Recommmende minimum airflow at 50Pa minimum unit pressure loss
qmax Maximum airflow

DIMENSIONS

NS	L	L1	ØD
100	170	40	99
125	170	40	124
160	240	40	159
200	240	40	199
250	240	40	249
315	220	60	314
400	295	60	399



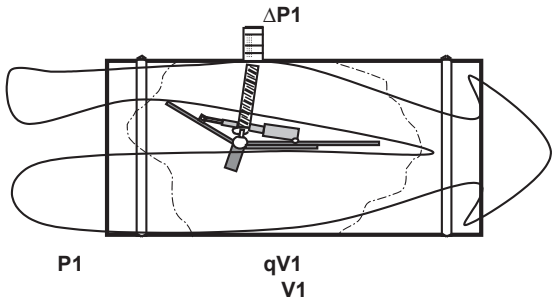
RMC/A

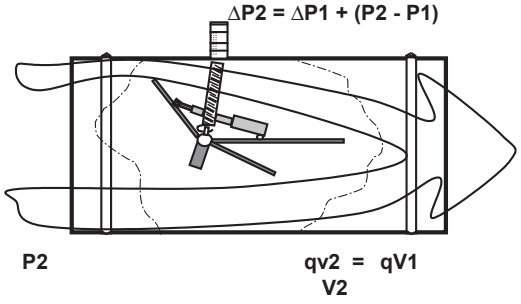


RMC/AI

PRODUCT MODELS

PRODUCT MODEL	CODE	DESCRIPTION
External insulation	I	Mineral wool, thickness 50 mm, for sound insulation and reduction of heat transfer
Standard	N	No insulation





Function

Constant airflow damper RMC is an independent control element operating without an external power supply, maintaining the required airflow rate regardless of upstream pressure changes. Consequently, system balancing is not needed.

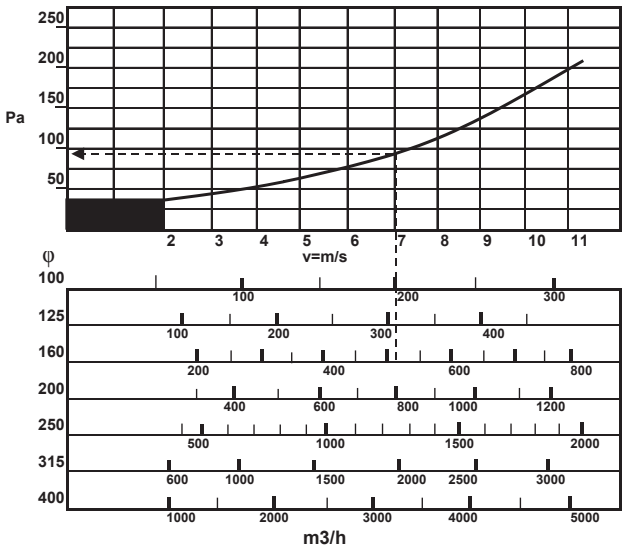
As the dynamic pressure in the duct branch increases, the damper turns, thus increasing the pressure loss and preventing an excessive increase in the airflow rate. Similarly, as the dynamic pressure increases, the spring returns the blade to the open position, reducing the pressure loss and thus maintaining a constant airflow rate.

The constant airflow damper includes a damper blade, supported by bearings and connected to an adjustment spring. As a result of the balance between aerodynamic forces and the spring effect, the necessary throttling effect is achieved and the set airflow rate is achieved.

Operation range

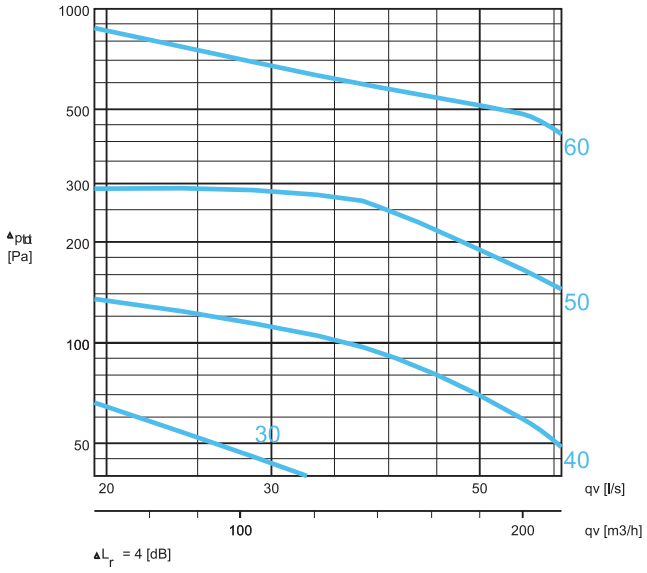
The constant airflow damper operates from a minimum pressure difference over the unit, which depends on the air velocity (see diagram below) to a maximum pressure difference of 1000 Pa.

For example, if air velocity in duct is 7 m/s, the unit pressure loss is approximately 100 Pa or above.

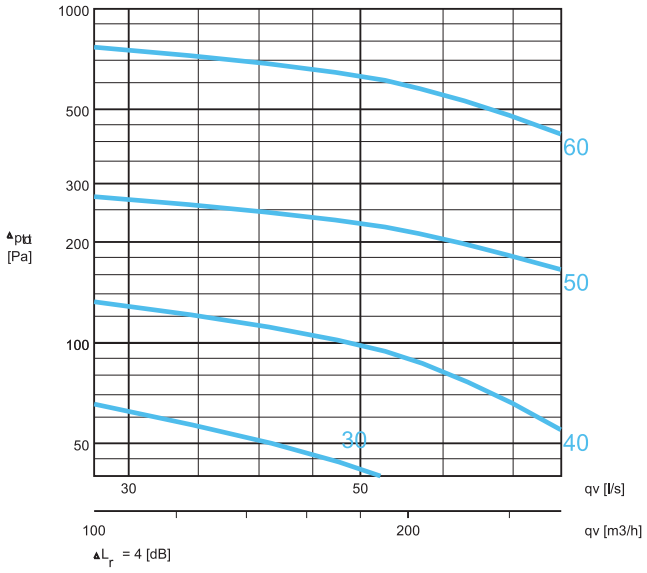


Pressure drop and sound data

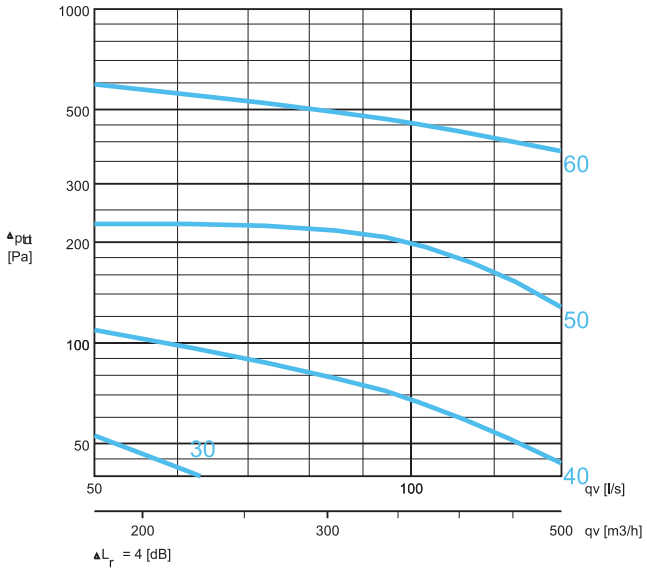
RMC/N-100



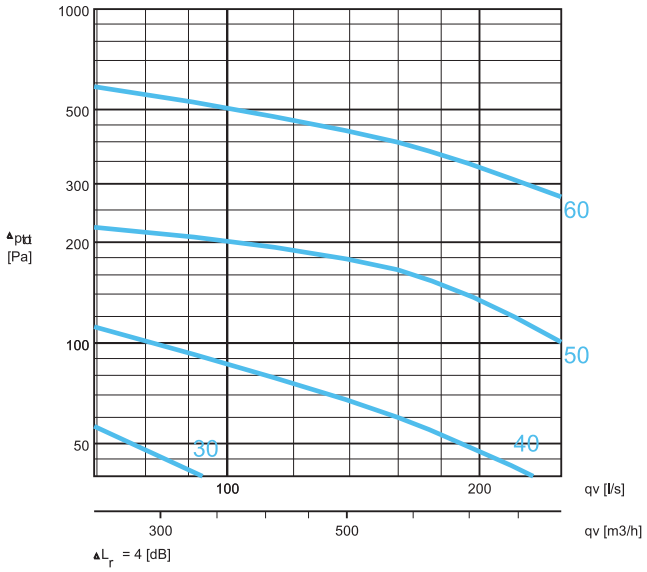
RMC/N-125



RMC/N-160

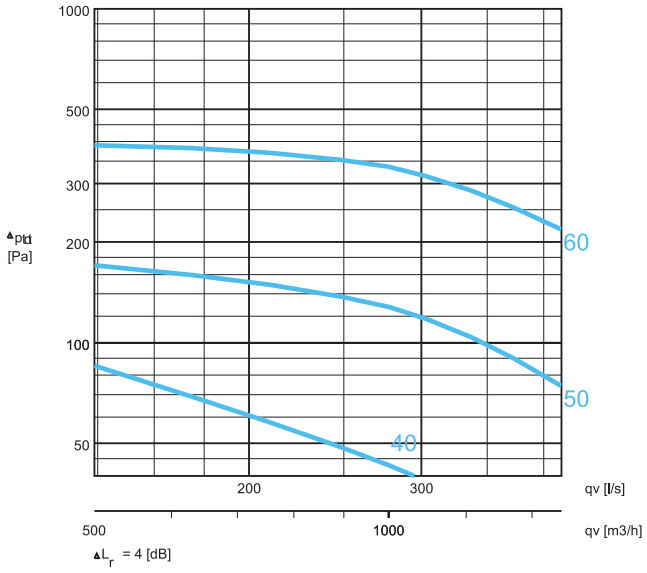


RMC/N-200

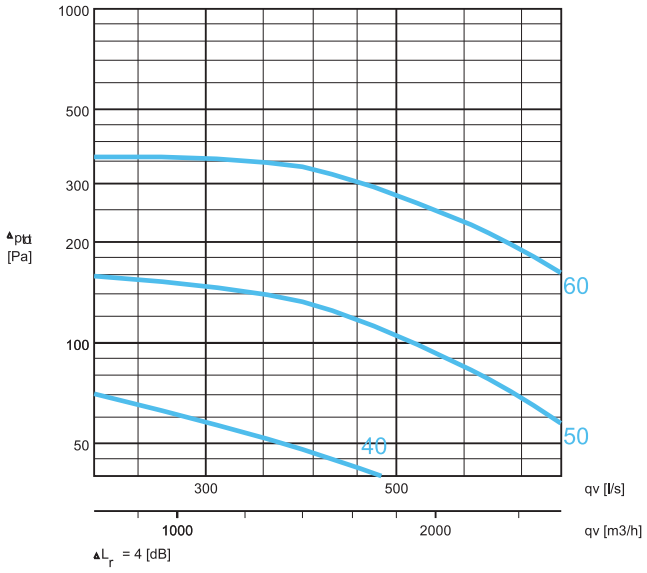


Pressure drop and sound data

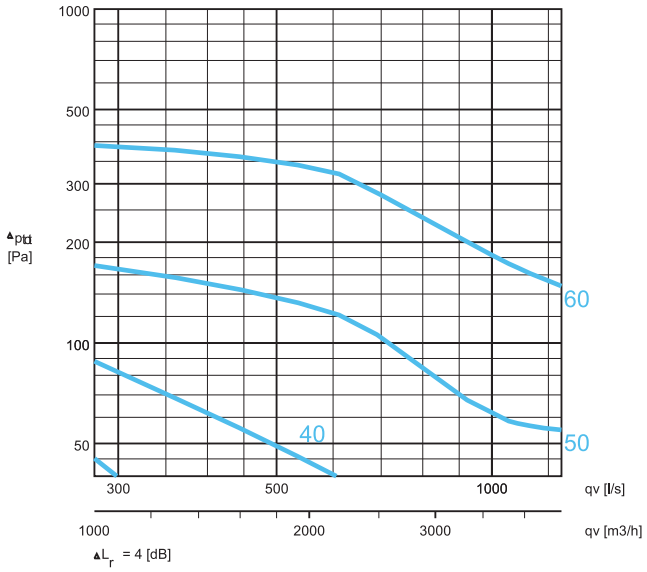
RMC/N-250



RMC/N-315



RMC/N-400



SOUND LEVEL DATA

RMC/N AIRBORNE SOUND

D	V (m/s)	qv	qv	65 Pa									100 Pa									250 Pa									500 Pa								
mm		m³/h	l/s	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)
100	2,4	68	19	39	37	35	32	30	31	25	24	31	40	39	38	36	35	36	30	29	36	43	45	46	46	47	49	44	43	49	49	52	52	53	54	55	50	50	55
	3,6	101	28	43	41	39	36	34	34	28	27	34	46	44	42	39	38	38	32	31	38	52	52	50	49	49	49	43	42	49	55	56	55	55	56	57	52	51	57
	5,2	148	41	47	45	42	39	38	38	31	31	38	51	49	46	43	42	41	35	34	41	60	59	55	53	51	50	45	43	51	62	62	60	59	58	58	54	52	59
	7,8	220	61	51	48	45	43	41	43	36	36	42	55	53	50	48	46	46	40	39	46	65	66	61	61	57	55	52	48	57	74	72	69	67	64	60	58	54	63
125	2,3	101	28	39	36	34	30	29	30	24	23	30	41	40	38	36	35	36	30	29	36	45	47	47	48	48	49	44	43	49	52	54	54	54	55	56	50	49	56
	3,2	140	39	44	41	38	34	33	32	26	24	33	46	45	42	39	38	38	32	31	38	50	51	50	50	50	50	45	44	50	57	58	57	56	56	57	51	51	57
	4,5	198	55	49	46	43	38	37	35	29	27	36	51	49	46	43	41	41	35	33	41	56	55	54	51	51	51	46	45	52	61	61	59	58	57	58	53	52	59
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160	2,5	180	50	41	39	36	34	32	32	26	25	33	44	43	41	39	38	38	32	31	39	48	50	50	50	50	51	46	45	51	55	57	57	57	57	58	53	51	58
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	4,9	353	98	49	47	44	40	39	38	32	30	39	53	51	48	44	43	42	36	34	44	62	60	56	53	51	51	44	43	52	65	65	62	60	60	60	55	54	61
	6,9	500	139	52	50	47	44	42	43	35	34	43	57	55	52	49	47	47	40	39	48	66	64	61	58	56	55	49	48	56	72	70	67	64	62	62	56	54	63
200	2,2	248	69	42	38	36	33	32	31	25	24	32	45	43	41	39	38	37	31	30	38	51	52	52	51	51	51	45	44	52	57	59	58	58	57	58	52	50	58
	3,4	382	106	46	44	41	37	36	35	29	28	36	50	48	46	43	41	41	34	33	42	58	57	55	53	52	52	46	45	53	62	63	61	60	60	60	54	53	61
	5,2	583	162	50	48	46	42	40	40	33	32	41	55	53	50	46	44	44	37	36	45	64	62	58	55	53	53	46	45	54	66	66	64	62	62	62	56	56	63
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250	2,8	500	139	46	43	40	37	35	35	29	28	36	48	47	45	43	41	41	35	34	42	54	56	55	55	54	55	49	48	56	61	62	62	61	61	62	56	54	63
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	8,5	1501	417	56	55	52	51	47	49	40	41	49	61	59	56	54	51	52	44	44	53	70	68	65	62	60	60	53	52	61	77	75	72	68	67	66	60	58	68
315	2,8	799	222	46	44	41	38	40	37	29	27	39	50	49	46	44	43	43	36	34	44	57	58	57	56	50	56	50	48	56	63	65	64	63	63	63	57	55	64
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400	2,2	1001	278	47	43	39	35	34	33	26	24	35	50	48	45	42	41	40	33	31	42	58	59	57	56	55	54	47	45	56	65	65	64	62	61	61	54	51	62
	3,6	1642	456	51	49	45	42	40	39	32	30	41	55	53	49	46	45	44	37	35	46	64	63	60	57	55	54	48	46	56	69	69	67	65	64	64	57	55	65
	6,0	2700	750	61	59	55	53	51	50	43	41	52	64	62	58	55	53	52	45	43	54	69	67	63	60	58	57	51	49	59	76	74	71	69	67	66	61	58	69
	9,9	4500	1250	79	78	74	71	69	68	62	60	70	78	76	72	69	67	66	60	58	68	75	73	69	66	64	63	57	55	65	85	81	80	76	73	70	67	62	74

RMC/N RADIATED SOUND

D	V (m/s)	qv	qv	65 Pa									100 Pa									250 Pa									500 Pa								
mm		m³/h	l/s	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)
100	2,4	68	19	5	5	5	10	14	19	14	14	17	6	7	8	14	19	24	19	19	23	9	13	16	24	31	37	33	33	37	15	20	22	31	38	43	39	40	43
	3,6	101	28	9	9	9	14	18	22	17	17	21	12	12	12	17	22	26	21	21	26	18	20	20	27	33	37	32	32	37	21	24	25	33	40	45	41	41	45
	5,2	148	41	13	13	12	17	22	26	20	21	25	17	17	16	21	26	29	24	24	29	26	27	25	31	35	38	34	33	38	28	30	30	37	42	46	43	42	47
	7,8	220	61	17	16	15	21	25	31	25	26	29	21	21	20	26	30	34	29	29	34	31	34	31	39	41	43	41	38	44	40	40	39	45	48	48	47	44	50
125	2,3	101	28	10	7	3	6	8	11	9	12	13	12	11	7	12	14	17	15	18	19	16	18	16	24	27	30	29	32	32	23	25	23	30	34	37	35	38	39
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160	2,5	180	50	18	16	16	16	21	22	17	17	23	21	20	21	21	27	28	23	23	29	25	27	30	32	39	41	37	37	42	32	34	37	39	46	48	44	43	48
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315	2,8	799	222	28	30	29	25	29	26	21	19	29	32	35	34	31	32	32	28	26	34	39	44	45	43	39	45	42	40	46	45	51	52	50	52	52	49	47	54
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	10,0	2801	778	41	44	44	41	39	38	35	36	41	46	48	48	44	43	42	39	39	45	55	57	56	52	52	51	48	47	54	62	64	62	58	59	58	55	53	60
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	6,0	2700	750	44	48	45	43	41	41	36	35	43	47	51	48	45	43	43	38	37	45	52	56	53	50	48	48	44	43	50	59	63	61	59	57	57	54	52	60
	9,9	4500	1250	62	67	64	61	59	59	55	54	60	61	65	62	59	57	57	53	52	59	58	62	59	56	54	54	50	49	57	68	70	70	66	63	61	60	56	66

SOUND LEVEL DATA

RMC/I RADIATED SOUND

D	V (m/s)	qv	qv	65 Pa									100 Pa									250 Pa									500 Pa								
mm		m³/h	l/s	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)	63	125	250	500	1k	2k	4k	8k	Lp(A)
100	2,4	68	19																																				
	3,6	101	28																												14	18							
	5,2	148	41																			19	21								21	24	14	14					
	7,8	220	61										14	15								24	28	15	16					14	33	34	23	22	17				20
125	2,3	101	28																												17	18							
	3,2	140	39																			15	15								22	22	15						
	4,5	198	55	14									16									21	19								26	25	17						
	6,4	281	78	14									19	17								28	25	16							29	28	20						14
160	2,5	180	50										15	15								19	22	15							26	29	22	17					16
	3,5	252	70	16	15								20	19								26	27	18						12	31	33	25	19	15				18
	4,9	353	98	20	19								24	23								33	32	21						15	36	37	27	20	16				21
	6,9	500	139	23	22								28	27	17							37	36	26	18					19	43	42	32	24	18				25
200	2,2	248	69	16	16								19	21								25	30	23	14						31	37	29	21	15				21
	3,4	382	106	20	22								24	26	17							32	35	26	16					18	36	41	32	23	18				24
	5,2	583	162	24	26	17							29	31	21							38	40	29	18					22	40	44	35	25	20				28
	8,0	900	250	28	30	19							33	35	25						18	42	44	34	23	16				27	49	51	41	30	23	14		14	34
250	2,8	500	139	21	23	14							23	27	19							29	36	29	20						36	42	36	26	20				27
	4,1	720	200	23	27	18							28	31	23							35	40	32	21	14				24	40	45	39	28	22	13		14	30
	5,8	1033	287	27	30	21							32	35	26	15					18	41	44	35	23	15				27	45	49	42	30	23	14		16	33
	8,5	1501	417	31	35	26	16					18	36	39	30	19					22	45	48	39	27	19				31	52	55	46	33	26	16		16	38
315	2,8	799	222	20	26	15							24	31	20							31	40	31	18					23	37	47	38	25	21				30
	4,3	1210	336	26	32	21							29	36	25						18	38	45	33	19	12				26	42	50	40	27	22				32
	6,5	1829	508	30	36	23						18	35	41	28						22	43	49	37	22	16				30	48	55	44	29	24	14		13	37
	10,0	2801	778	33	40	30	16					22	38	44	34	19					26	47	53	42	27	21				35	54	60	48	33	28	18		16	42
400	2,2	1001	278	27	27	16							30	32	22						14	38	43	34	23	16				26	45	49	41	29	22				32
	3,6	1642	456	31	33	22						15	35	37	26						19	44	47	37	24	16				29	49	53	44	32	25	16		15	36
	6,0	2700	750	41	43	32	20					26	44	46	35	22					28	49	51	40	27	19				33	56	58	48	36	28	18		18	41
	9,9	4500	1250	59	62	51	38	30	20	12	20	43	58	60	49	36	28	18		18	41	55	57	46	33	25	15		15	39	65	65	57	43	34	22	17	22	48

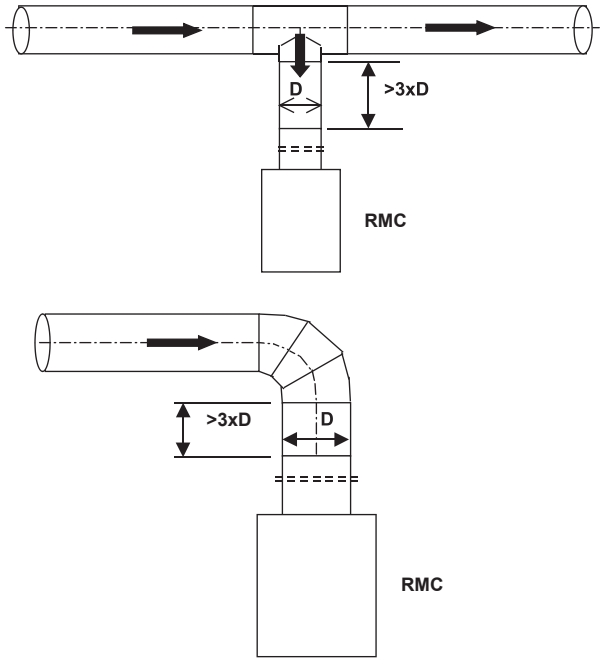
Installation

Safety distances for the damper

The airflow control damper should be installed in undisturbed airflow. The airflow velocity profile in the duct should be sufficiently even, without disturbances caused by bends, T-branches etc.

The necessary safety distance after a bend or a T-branch is 3 x the duct diameter.

The airflow control damper should be installed so that the arrow on the damper corresponds to the direction of the airflow. See the installation examples.



Suggested specifications

The constant airflow damper shall operate without an electric or pneumatic external power supply.
The damper casing shall be made of galvanised steel and the blade of aluminium.
The damper shall operate with an adjustable spring.
Dampers shall be factory-set to the required airflow rate.
The damper with a manual adjustment device shall be able to be easily set or reset on the work site, during commissioning.
The damper casing shall be insulated with mineral wool as sound and heat insulation material (optional).

Product code

RMC/S-D

S = Model

N	Standard, without insulation
I	Casing with 50 mm insulation

D = Diameter of duct connection

100, 125, 160, 200, 250, 315, 400

Code example

RMC/A-100