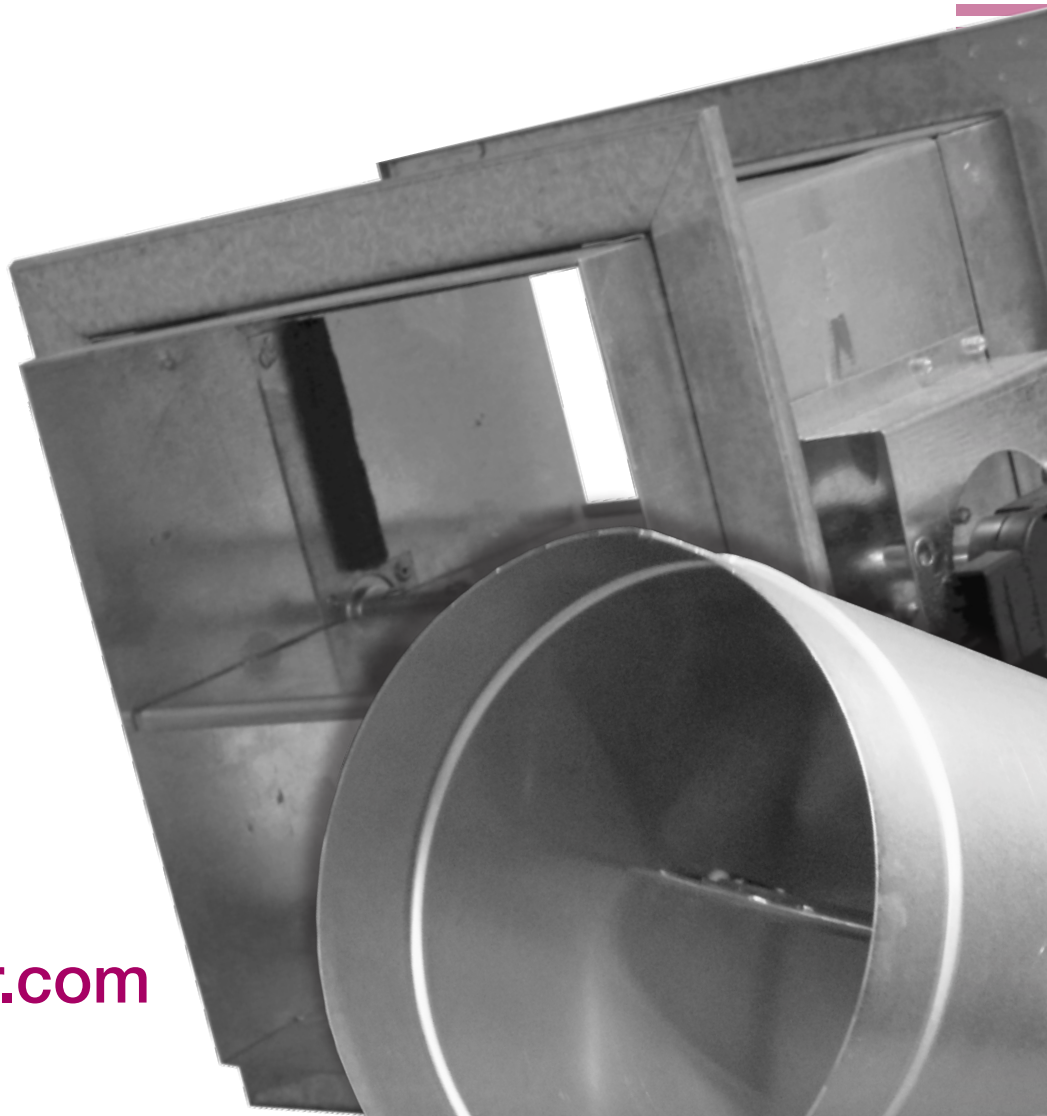
KOOLAIR

series

REGULATING DAMPERS



ISO 9001
BUREAU VERITAS
Certification
Sistema de Gestión

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CONTENTS

Circular regulating dampers types CRC-M, CRC-E and CCC

Damper CRC-M

Damper CRC-E

Damper CRC-MT

Description

Circular Regulating Dampers are used to balance air installations, also these dampers can be used as shutoff dampers. Circular regulating dampers are manufactured in Galvanised sheet metal.

Models

There are 3 different types of circular regulating dampers;

CRC-M: Circular Regulating Dampers made from a steel cylinder made in galvanised sheet metal, it is operated by means of a locking quadrant mechanism, which gives us a visual indication of the damper position, this model provides a positive seal. Incorporates a seal around the edge of the damper blade to ensure a high air tightness. It can be motorised (**CRC-MT**).

CRC-E: Circular Regulating Dampers made from a steel cylinder made in galvanised sheet metal, it is operated by means of a simple handled, this type provides a positive seal. Incorporates a seal around the edge of the damper blade to ensure a high air tightness.

CCC: Circular Regulating Dampers made from a steel cylinder made in galvanised sheet metal, it is operated by means of a simple handled, this type does not provide a positive seal.

Option available for control damper models CRC-M and CRC-MT to comply with the specifications set out in EN 1751, where they achieve class “C” in the damper/frame air tightness test and “3” in the blade closure test.

Product codes

Circular regulating dampers are coded according to their diameter:

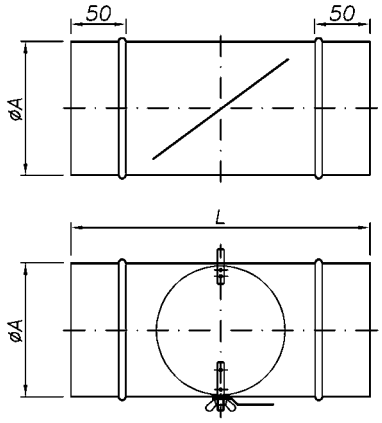
CRC-M	Ø diameter of the duct
CRC-E	Ø diameter of the duct
CCC	Ø diameter of the duct
CRC-MT	Ø diameter of the duct

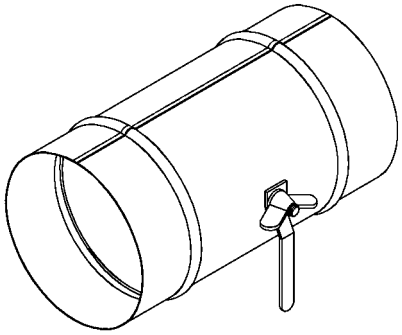
Example:

CCC 200: Circular regulating damper of Ø of duct 200 mm.

Executions. Dimensions

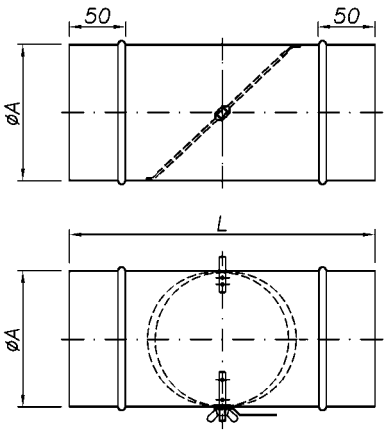
Type CCC

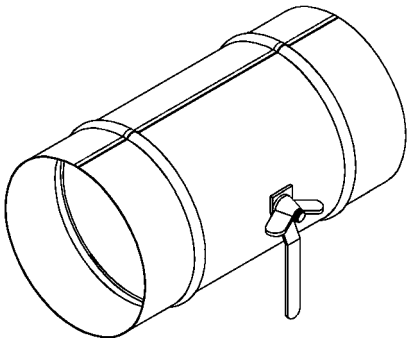




NOMINAL	L	Ø A
80	199	79
100	199	99
125	199	124
140	199	139
150	199	149
160	199	159
180	199	179
200	199	199
225	199	224
250	199	249

Type CRC-E



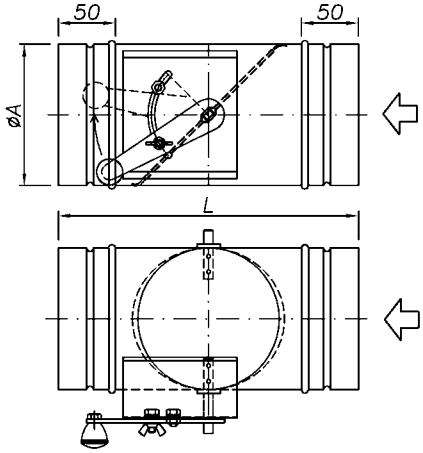


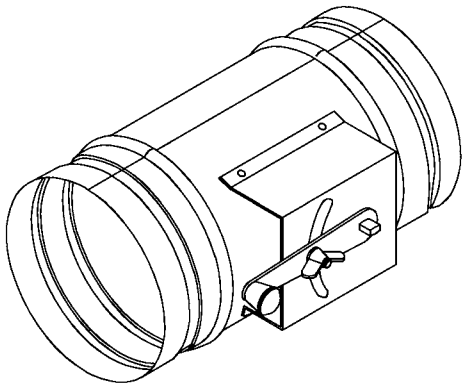
NOMINAL	L	Ø A
100	199	99
125	199	124
140	199	139
150	199	149
160	199	159
180	199	179
200	199	199
225	199	224
250	199	249
275	199	274
280	199	279
300	199	299
315	199	314

Executions. Dimensions

Type CRC-M and CRC-MT

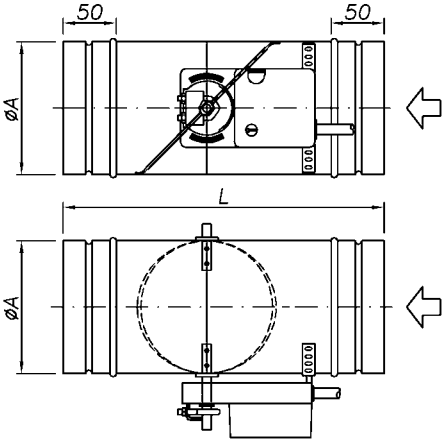
CRC-M

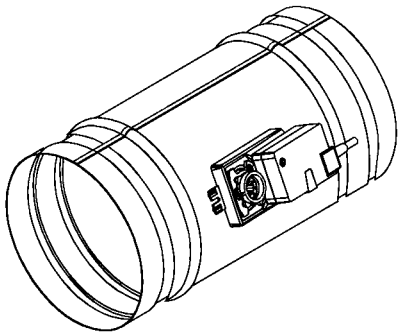




NOMINAL	L	Ø A
100	199	99
125	199	124
140	199	139
150	199	149
160	199	159
180	199	179
200	199	199
225	199	224
250	199	249
275	199	274
280	199	279
300	199	299
315	199	314
350	300	349
355	300	354
375	400	374
400	400	399
450	400	449
500	400	499
600	400	599
625	400	624
700	400	699

CRC-MT





NOMINAL	L	Ø A
100	300	99
125	300	124
140	300	139
150	300	149
160	300	159
180	300	179
200	300	199
225	300	224
250	300	249
275	300	274
280	300	279
300	300	299
315	300	314
350	300	349
355	300	354
375	400	374
400	400	399
450	400	449
500	400	499
600	400	599
625	400	624
700	400	699

Technical data

Sound Pressure Levels in dB(A)

Damper		Regenerated noise			dB(A) a p [Pa] =									
Size	Ø [mm]	Q [m^3/h]	Q (l/s)	P_{min} [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	33	36	39	40	42	43	44	44	45	46
		170	47,2	31	40	44	46	48	49	50	51	52	53	53
		255	70,8	69	44	48	51	52	54	55	56	56	57	58
		340	94,4	122		51	54	55	57	58	59	59	60	61
		425	118,1	191		54	56	58	59	60	61	62	63	63
125	124	130	36,1	6	34	38	41	42	44	45	46	47	47	48
		260	72,2	26	41	45	48	49	51	52	53	54	54	55
		390	108,3	58	45	49	52	54	55	56	57	58	59	59
		520	144,4	103	48	52	55	57	58	59	60	61	62	62
		650	180,6	161		55	57	59	60	62	62	63	64	65
140	139	165	45,8	6	34	39	41	43	45	46	47	48	48	49
		330	91,7	25	42	46	49	50	52	53	54	55	56	56
		495	137,5	55	46	50	53	55	56	57	58	59	60	60
		660	183,3	98	49	53	56	57	59	60	61	62	63	63
		825	229,2	154		55	58	60	61	62	63	64	65	66
160	159	215	59,7	6	35	40	42	44	46	47	48	49	50	50
		430	119,4	22	42	47	49	51	53	54	55	56	56	57
		645	179,2	50	46	51	53	55	57	58	59	60	61	61
		860	238,9	89	49	53	56	58	59	61	62	63	63	64
		1075	298,6	140		56	58	60	62	63	64	65	66	66
200	199	340	94,4	5	36	41	44	46	47	48	50	51	51	52
		680	188,9	19	42	47	50	52	54	55	56	57	58	59
		1020	283,3	43	46	51	54	56	58	59	60	61	62	63
		1360	377,8	77	49	54	57	59	60	62	63	64	65	65
		1700	472,2	121		56	59	61	63	64	65	66	67	67
225	224	430	119,4	4	36	41	44	46	48	49	50	51	52	53
		860	238,9	17	42	48	50	53	54	56	57	58	58	59
		1290	358,3	39	46	51	54	56	58	59	60	61	62	63
		1720	477,8	69	49	54	57	59	61	62	63	64	65	66
		2150	597,2	109	51	56	59	61	63	64	65	66	67	68
250	249	525	145,8	4	36	41	44	46	48	49	51	52	52	53
		1050	291,7	15	42	48	51	53	54	56	57	58	59	60
		1575	437,5	34	46	51	54	56	58	59	61	62	62	63
		2100	583,3	61	49	54	57	59	61	62	63	64	65	66
		2625	729,2	96	51	56	59	61	63	64	65	66	67	68
315	314	840	233,3	3	36	42	45	47	49	50	51	53	53	54
		1680	466,7	12	42	48	51	53	55	56	57	59	59	60
		2520	700,0	27	46	51	54	57	58	60	61	62	63	64
		3360	933,3	47	48	53	57	59	61	62	63	65	65	66
		4200	1166,7	74	50	55	59	61	63	64	65	66	67	68
400	399	1350	375,0	2	35	41	45	47	49	51	52	53	54	55
		2700	750,0	8	41	47	50	53	55	56	57	59	60	60
		4050	1125,0	18	44	50	54	56	58	60	61	62	63	64
		5400	1500,0	32	47	53	56	58	60	62	63	64	65	66
		6750	1875,0	50	49	54	58	60	62	64	65	66	67	68

In this table it is given, for each air flow and inlet pressures from 100 to 1000 Pa, the Sound Pressure Level in dB(A) due to the noise regenerated in the circular damper. To obtain these values we have assumed attenuation in the outlet duct, the diffuser and the room of 10 dB/Octave.

Technical data

Damper		Radiated noise			dB(A) a p [Pa] =									
Size	Ø[mm]	Q [m^3/h]	Q (l/s)	P_{min} [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	24	28	31	33	34	36	37	38	39
		170	47,2	31	22	28	32	34	36	38	39	41	42	43
		255	70,8	69	24	30	34	36	38	40	41	43	44	45
		340	94,4	122		32	35	38	40	41	43	44	45	46
		425	118,1	191		33	36	39	41	43	44	45	46	47
125	124	130	36,1	6	<	23	27	29	31	33	34	35	37	37
		260	72,2	26	21	27	31	33	35	37	38	39	41	41
		390	108,3	58	23	29	33	36	38	39	41	42	43	44
		520	144,4	103	25	31	35	37	39	41	42	43	45	45
		650	180,6	161		32	36	38	40	42	44	45	46	47
140	139	165	45,8	6	<	23	26	29	31	32	34	35	36	37
		330	91,7	25	20	27	30	33	35	37	38	39	40	41
		495	137,5	55	23	29	33	35	37	39	41	42	43	44
		660	183,3	98	25	31	35	37	39	41	42	43	45	45
		825	229,2	154		32	36	39	41	42	44	45	46	47
160	159	215	59,7	6	<	22	26	28	30	32	33	35	36	37
		430	119,4	22	20	27	30	33	35	37	38	39	40	41
		645	179,2	50	23	29	33	35	37	39	41	42	43	44
		860	238,9	89	25	31	35	37	39	41	42	44	45	46
		1075	298,6	140		33	36	39	41	42	44	45	46	47
200	199	340	94,4	5	<	22	26	28	30	32	33	35	36	37
		680	188,9	19	21	27	31	33	35	37	38	39	40	41
		1020	283,3	43	24	30	33	36	38	40	41	42	43	44
		1360	377,8	77	26	32	35	38	40	42	43	44	45	46
		1700	472,2	121		33	37	40	42	43	45	46	47	48
225	224	430	119,4	4	<	22	26	28	30	32	33	35	36	37
		860	238,9	17	21	27	31	34	36	37	39	40	41	42
		1290	358,3	39	24	30	34	37	39	40	42	43	44	45
		1720	477,8	69	26	32	36	39	41	42	44	45	46	47
		2150	597,2	109	28	34	38	40	42	44	45	47	48	49
250	249	525	145,8	4	<	22	26	29	31	32	34	35	36	37
		1050	291,7	15	21	28	31	34	36	38	39	40	41	42
		1575	437,5	34	24	31	34	37	39	41	42	43	44	45
		2100	583,3	61	27	33	37	39	41	43	44	45	47	47
		2625	729,2	96	28	35	38	41	43	45	46	47	48	49
315	314	840	233,3	3	<	23	27	30	32	33	35	36	37	38
		1680	466,7	12	23	29	33	35	37	39	40	42	43	44
		2520	700,0	27	26	32	36	39	41	42	44	45	46	47
		3360	933,3	47	29	35	39	41	43	45	46	47	48	49
		4200	1166,7	74	30	37	40	43	45	47	48	49	50	51
400	399	1350	375,0	2	<	25	29	31	33	35	36	37	38	39
		2700	750,0	8	25	31	35	37	39	41	42	44	45	46
		4050	1125,0	18	29	35	38	41	43	45	46	47	48	49
		5400	1500,0	32	31	37	41	44	46	47	49	50	51	52
		6750	1875,0	50	33	39	43	46	48	49	51	52	53	54

In this table it is given, for each air flow and inlet pressures from 100 to 1000 Pa, the Sound Pressure Level in dB(A) due to the noise radiated in the circular damper. To obtain these values we have assumed attenuation in the outlet duct, the diffuser and the room of 10 dB/Octave.

<: Sound Power Level < 20 dB

Technical data

Value of the Sound Power of the regenerated noise (dB) for the circular regulating dampers in the different Octave bands from 63 to 8000 Hz.

Damper	Regenerated noise			p = 100 Pa								p = 200 Pa								p = 300 Pa								p = 400 Pa								p = 500 Pa							
Size	Ø [mm]	Q [m3/h]	Q (l/s)	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
100	99	85	23,6	35	40	39	39	38	35	32	26	39	44	43	43	42	39	36	30	41	46	46	45	44	42	38	32	43	48	47	47	46	43	40	34	44	49	49	48	47	45	41	35
		170	47,2	42	47	47	47	45	43	39	33	46	51	51	51	49	47	43	37	49	54	53	53	51	49	46	40	50	55	55	55	53	51	47	41	52	56	56	56	54	52	48	42
		255	70,8	47	52	51	51	50	47	44	38	51	56	55	55	53	51	48	42	53	58	58	57	56	53	50	44	55	60	59	59	57	55	52	46	56	61	61	60	59	56	53	47
		340	94,4									54	59	58	58	57	54	51	45	56	61	61	60	59	57	53	47	58	63	62	62	61	58	55	49	59	64	64	63	62	60	56	50
		425	118,1									56	61	61	61	59	57	53	47	59	63	63	63	61	59	55	49	60	65	65	64	63	61	57	51	62	66	66	66	64	62	58	52
125	124	130	36,1	36	41	41	40	39	37	33	27	40	45	45	45	43	41	37	31	43	48	47	47	46	43	40	34	45	49	49	49	47	45	41	35	46	51	51	50	49	46	43	37
		260	72,2	43	48	48	48	46	44	40	34	48	52	52	52	50	48	44	38	50	55	55	54	53	51	47	41	52	57	56	56	55	52	49	43	53	58	58	57	56	54	50	44
		390	108,3	48	52	52	52	50	48	44	38	52	57	56	56	55	52	49	43	54	59	59	59	57	55	51	45	56	61	61	60	59	57	53	47	57	62	62	62	60	58	54	48
		520	144,4	51	55	55	55	53	51	47	41	55	60	59	59	58	55	52	46	57	62	62	62	60	58	54	48	59	64	64	63	62	60	56	50	60	65	65	65	63	61	57	51
		650	180,6									57	62	62	61	60	58	54	48	60	64	64	64	62	60	56	50	61	66	66	66	64	62	58	52	63	68	67	67	66	63	60	54
140	139	165	45,8	37	42	41	41	40	37	34	28	41	46	46	46	44	42	38	32	44	49	48	48	47	44	41	35	46	51	50	50	48	46	43	37	47	52	52	51	50	48	44	38
		330	91,7	44	49	48	48	47	44	41	35	48	53	53	53	51	49	45	39	51	56	55	55	54	51	48	42	53	58	57	57	55	53	50	44	54	59	59	58	57	55	51	45
		495	137,5	48	53	53	52	51	48	45	39	52	57	57	57	55	53	49	43	55	60	60	59	58	55	52	46	57	62	61	61	60	57	54	48	58	63	63	63	61	59	55	49
		660	183,3	51	56	56	55	54	51	48	42	55	60	60	60	58	56	52	46	58	63	63	62	61	58	55	49	60	65	64	64	63	60	57	51	61	66	66	65	64	62	58	52
		825	229,2									58	63	62	62	60	58	55	49	60	65	65	64	63	61	57	51	62	67	67	66	65	63	59	53	64	68	68	68	66	64	60	54
160	159	215	59,7	37	42	42	42	40	38	34	28	42	47	47	46	45	42	39	33	45	50	49	49	47	45	42	36	47	51	51	51	49	47	43	37	48	53	53	52	51	49	45	39
		430	119,4	44	49	49	49	47	45	41	35	49	54	53	53	52	49	46	40	52	56	56	56	54	52	48	42	54	58	58	58	56	54	50	44	55	60	59	59	58	55	52	46
		645	179,2	48	53	53	53	51	49	45	39	53	58	57	57	56	53	50	44	56	60	60	60	58	56	52	46	58	62	62	62	60	58	54	48	59	64	64	63	62	59	56	50
		860	238,9	51	56	56	55	54	52	48	42	56	61	60	60	59	56	53	47	59	63	63	63	61	59	55	49	60	65	65	65	63	61	57	51	62	67	66	66	65	62	59	53
		1075	298,6									58	63	63	62	61	58	55	49	61	66	65	65	63	61	58	52	63	67	67	67	65	63	59	53	64	69	69	68	67	65	61	55
200	199	340	94,4	38	43	43	42	41	39	35	29	43	48	48	47	46	44	40	34	46	51	50	50	49	46	43	37	48	53	53	52	51	48	45	39	50	54	54	54	52	50	46	40
		680	188,9	45	50	49	49	48	45	42	36	50	55	54	54	52	50	47	41	53	57	57	57	55	53	49	43	55	59	59	59	57	55	51	45	56	61	61	60	59	57	53	47
		1020	283,3	49	53	53	53	51	49	45	39	54	58	58	58	56	54	50	44	56	61	61	61	59	57	53	47	58	63	63	63	61	59	55	49	60	65	65	64	63	60	57	51
		1360	377,8	51	56	56	56	54	52	48	42	56	61	61	61	59	57	53	47	59	64	64	63	62	60	56	50	61	66	66	65	64	62	58	52	63	68	67	67	65	63	60	54
		1700	472,2									58	63	63	63	61	59	55	49	61	66	66	66	64	62	58	52	63	68	68	68	66	64	60	54	65	70	69	69	68	65	62	56
225	225	430	119,4	38	43	43	43	41	39	35	29	43	48	48	48	46	44	40	34	46	51	51	51	49	47	43	37	49	53	53	53	51	49	45	39	50	55	55	54	53	51	47	41
		860	238,9	45	50	49	49	48	45	42	36	50	55	54	54	53	50	47	41	53	58	57	57	56	53	50	44	55	60	59	59	58	55	52	46	57	61	61	61	59	57	53	47
		1290	358,3	49	53	53	53	51	49	45	39	54	58	58	58	56	54	50	44	57	61	61	61	59	57	53	47	59	64	63	63	61	59	56	50	60	65	65	65	63	61	57	51
		1720	477,8	51	56	56	56	54	52	48	42	56	61	61	61	59	57	53	47	59	64	64	64	62	60	56	50	61	66	66	66	64	62	58	52	63	68	68	67	66	63	60	54
		2150	597,2	53	58	58	58	56	54	50	44	58	63	63	63	61	59	55	49	61	66	66	66	64	62	58	52	63	68	68	68	66	64	60	54	65	70	70	69	68	66	62	56
250	250	175	145,8	38	43	43	43	41	39	35	29	44	48	48	48	46	44	40	34	47	51	51	51	49	47	43	37	49	54	53	53	52	49	46	40	50	55	55	55	53	51	47	41
		350	291,7	45	50	49	49	47	45	42	36	50	55	54	54	53	50	47	41	53	58	57	57	56	53	50	44	55	60	60	59	58	56	52	46	57	62	61	61	59	57	54	48
		525	437,5	48	53	53	53	51	49	45	39	54	58	58	58	56	54	50	44	57	61	61	61	59	57	53	47	59	64	63	63	61	59	56	50	60	65	65	65	63	61	57	51
		700	583,3	51	56	56	55	54	51	48	42	56	61	61	60	59	57	53	47	59	64	64	63	62	60	56	50	61	66	66	66	64	62	58	52	63	68	68	67	66	63	60	54
		875	729,2	53	58	58	57	56	53	50	44	58	63	63	62	61	59	55	49	61	66	66	65	64	62	58	52	63	68	68	68	66	64	60	54	65	70	70	69	68	66	62	56
315	315	840	233,3	38	43	43	43	41	39	35	29	44	49	48	48	47	44	41	35	47	52	52	51	50	48	44	38	49	54	54	54	52	50	46	40	51	56	56	55	54	52	48	42
		1680	466,7	44	49	49	49	47	45	41	35	50	55	54	54	53	50	47	41	53	58	58	57	56	54	50	44	55	60	60	60	58	56	52	46	57	62	62	61	60	58	54	48
		2520	700,0	48	53	52	52	51	48	45	39	53	58	58	58	56	54	50	44	57	61	61	61	59	57	53	47	59	64	63	63	62	59	56	50	61	65	65	65	63	61	57	51
		3360	933,3	50	55	55	55	53	51	47	41	56	61	60	60	59	56	53	47	59	64	64	63	62	60	56	50	61	66	66	66	64	62	58	52	63	68	68	67	66	64	60	54
		4200	1166,7	52	57	57	57	55	53	49	43	58	63	62	62	61	58	55	49	61	66	66	65	64	61	58	52	63	68	68	68	66	64	60	54	65	70	70	69	68	66	62	56
400	400	1350	375,0	38	43	42	42	41	38	35	29	44	48	48	48	46	44	40	34	47	52	52	51	50	47	44	38	49	54	54	54	52	50	46	40	51	56	56	56	54	52	48	42
		2700	750,0	44	48	48	48	46	44	40	34	49	54	54	54	52	50	46	40	53	58	57	57	55	53	50	44	55	60	60	59	58	56	52	46	57	62	62	61	60	57	54	48
		4050	1125,0	47	52	51	51	50	47	44	38	53	57	57	57	55	53	49	43	56	61	61	60	59	56	53	47	59	63	63	63	61	59	55	49	60	65	65	65	63	61	57	51
		5400	1500,0	49	54	54	53	52	50	46	40	55	60	60	59	58	55	52	46	58	63	63	63	61	59	55	49	61	66	65	65	64	61	58	52	63	68	67	67	65	63	60	54
		6750	1875,0	51	56	56	55	54	51	48	42	57	62	61	61	60	57	54	48	60	65	65	64	63	61	57	51	63	67	67	67	65	63	59	53	65	69	69	69	67	65	61	55

	OCTAVE BANDS							
	1	2	3	4	5	6	7	8
HZ	63	125	250	500	1000	2000	4000	8000

Technical data

Damper	Regenerated noise			p = 600 Pa								p = 700 Pa								p = 800 Pa								p = 900 Pa								p = 1000 Pa							
Size	Ø [mm]	Q [m3/h]	Q (l/s)	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
100	99	85	23,6	45	50	50	49	48	46	42	36	46	51	51	50	49	46	43	37	47	52	51	51	50	47	44	38	47	52	52	52	50	48	44	38	48	53	53	52	51	48	45	39
		170	47,2	53	57	57	57	55	53	49	43	54	58	58	58	56	54	50	44	54	59	59	59	57	55	51	45	55	60	59	59	58	55	52	46	56	60	60	60	58	56	52	46
		255	70,8	57	62	62	61	60	57	54	48	58	63	62	62	61	58	55	49	59	64	63	63	61	59	56	50	59	64	64	64	62	60	56	50	60	65	64	64	63	60	57	51
		340	94,4	60	65	65	64	63	61	57	51	61	66	66	65	64	61	58	52	62	67	66	66	65	62	59	53	62	67	67	67	65	63	59	53	63	68	68	67	66	63	60	54
		425	118,1	63	67	67	67	65	63	59	53	63	68	68	68	66	64	60	54	64	69	69	68	67	65	61	55	65	70	69	69	68	65	62	56	66	70	70	70	68	66	62	56
125	124	130	36,1	47	52	52	51	50	48	44	38	48	53	53	52	51	49	45	39	49	54	53	53	52	49	46	40	50	54	54	54	52	50	46	40	50	55	55	55	53	51	47	41
		260	72,2	54	59	59	59	57	55	51	45	55	60	60	60	58	56	52	46	56	61	61	60	59	57	53	47	57	62	61	61	60	57	54	48	58	62	62	62	60	58	54	48
		390	108,3	59	63	63	63	61	59	55	49	60	64	64	64	62	60	56	50	60	65	65	65	63	61	57	51	61	66	66	65	64	62	58	52	62	67	66	66	64	62	59	53
		520	144,4	62	66	66	66	64	62	58	52	63	67	67	67	65	63	59	53	63	68	68	68	66	64	60	54	64	69	69	68	67	64	61	55	65	70	69	69	67	65	62	56
		650	180,6	64	69	68	68	67	64	61	55	65	70	69	69	68	65	62	56	66	70	70	70	68	66	62	56	66	71	71	71	69	67	63	57	67	72	72	71	70	67	64	58
140	139	165	45,8	48	53	53	52	51	49	45	39	49	54	54	53	52	50	46	40	50	55	55	54	53	51	47	41	51	56	55	55	54	51	48	42	52	56	56	56	54	52	48	42
		330	91,7	55	60	60	60	58	56	52	46	56	61	61	61	59	57	53	47	57	62	62	61	60	58	54	48	58	63	62	62	61	58	55	49	59	63	63	63	61	59	55	49
		495	137,5	59	64	64	64	62	60	56	50	60	65	65	65	63	61	57	51	61	66	66	66	64	62	58	52	62	67	67	66	65	62	59	53	63	68	67	67	65	63	60	54
		660	183,3	62	67	67	67	65	63	59	53	63	68	68	68	66	64	60	54	64	69	69	68	67	65	61	55	65	70	70	69	68	65	62	56	66	70	70	70	68	66	62	56
		825	229,2	65	69	69	69	67	65	61	55	66	70	70	70	68	66	62	56	67	71	71	71	69	67	63	57	67	72	72	71	70	68	64	58	68	73	72	72	71	68	65	59
160	159	215	59,7	49	54	54	54	52	50	46	40	50	55	55	55	53	51	47	41	51	56	56	55	54	52	48	42	52	57	57	56	55	52	49	43	53	58	57	57	55	53	50	44
		430	119,4	56	61	61	60	59	57	53	47	57	62	62	61	60	58	54	48	58	63	63	62	61	59	55	49	59	64	63	63	62	59	56	50	60	64	64	64	62	60	56	50
		645	179,2	60	65	65	64	63	61	57	51	61	66	66	65	64	62	58	52	62	67	67	66	65	63	59	53	63	68	67	67	66	63	60	54	64	68	68	68	66	64	60	54
		860	238,9	63	68	68	67	66	63	60	54	64	69	69	68	67	65	61	55	65	70	69	69	68	65	62	56	66	71	70	70	68	66	63	57	66	71	71	71	69	67	63	57
		1075	298,6	65	70	70	70	68	66	62	56	66	71	71	71	69	67	63	57	67	72	72	71	70	68	64	58	68	73	72	72	71	68	65	59	69	73	73	73	71	69	65	59
200	199	340	94,4	51	56	55	55	54	51	48	42	52	57	56	56	55	52	49	43	53	58	57	57	56	53	50	44	54	59	58	58	56	54	51	45	54	59	59	59	57	55	51	45
		680	188,9	57	62	62	62	60	58	54	48	59	63	63	63	61	59	55	49	60	64	64	64	62	60	56	50	60	65	65	65	63	61	57	51	61	66	66	65	64	61	58	52
		1020	283,3	61	66	66	66	64	62	58	52	62	67	67	67	65	63	59	53	63	68	68	68	66	64	60	54	64	69	69	68	67	65	61	55	65	70	69	69	68	65	62	56
		1360	377,8	64	69	69	68	67	64	61	55	65	70	70	69	68	66	62	56	66	71	71	70	69	67	63	57	67	72	71	71	70	67	64	58	68	72	72	72	70	68	64	58
		1700	472,2	66	71	71	70	69	67	63	57	67	72	72	71	70	68	64	58	68	73	73	72	71	69	65	59	69	74	74	73	72	69	66	60	70	75	74	74	72	70	67	61
225	225	430	119,4	51	56	56	56	54	52	48	42	53	57	57	57	55	53	49	43	54	58	58	58	56	54	50	44	54	59	59	59	57	55	51	45	55	60	60	59	58	56	52	46
		860	238,9	58	63	62	62	61	58	55	49	59	64	64	63	62	59	56	50	60	65	65	64	63	60	57	51	61	66	65	65	64	61	58	52	62	66	66	66	64	62	58	52
		1290	358,3	62	66	66	66	64	62	58	52	63	68	67	67	66	63	60	54	64	69	68	68	66	64	61	55	65	69	69	69	67	65	61	55	65	70	70	70	68	66	62	56
		1720	477,8	64	69	69	69	67	65	61	55	65	70	70	70	68	66	62	56	66	71	71	71	69	67	63	57	67	72	72	72	70	68	64	58	68	73	73	72	71	68	65	59
		2150	597,2	66	71	71	71	69	67	63	57	68	72	72	72	70	68	64	58	69	73	73	73	71	69	65	59	69	74	74	74	72	70	66	60	70	75	75	74	73	71	67	61
250	250	175	145,8	52	57	56	56	55	52	49	43	53	58	57	57	56	53	50	44	54	59	58	58	57	54	51	45	55	60	59	59	58	55	52	46	56	60	60	60	58	56	52	46
		350	291,7	58	63	63	62	61	59	55	49	59	64	64	63	62	60	56	50	60	65	65	64	63	61	57	51	61	66	66	65	64	62	58	52	62	67	66	66	65	62	59	53
		525	437,5	62	67	66	66	65	62	59	53	63	68	67	67	66	63	60	54	64	69	68	68	67	64	61	55	65	70	69	69	68	65	62	56	66	70	70	70	68	66	62	56
		700	583,3	64	69	69	69	67	65	61	55	66	70	70	70	68	66	62	56	67	71	71	71	69	67	63	57	67	72	72	72	70	68	64	58	68	73	73	72	71	69	65	59
		875	729,2	66	71	71	71	69	67	63	57	68	72	72	72	70	68	64	58	69	73	73	73	71	69	65	59	70	74	74	74	72	70	66	60	70	75	75	74	73	71	67	61
315	315	840	233,3	53	57	57	57	55	53	49	43	54	59	58	58	57	54	51	45	55	60	59	59	58	55	52	46	56	61	60	60	59	56	53	47	57	61	61	61	59	57	53	47
		1680	466,7	59	63	63	63	61	59	55	49	60	65	64	64	63	60	57	51	61	66	65	65	64	61	58	52	62	67	66	66	65	62	59	53	63	67	67	67	65	63	59	53
		2520	700,0	62	67	67	66	65	63	59	53	63	68	68	68	66	64	60	54	64	69	69	69	67	65	61	55	65	70	70	70	68	66	62	56	66	71	71	70	69	67	63	57
		3360	933,3	65	69	69	69	67	65	61	55	66	71	70	70	69	66	63	57	67	72	71	71	70	67	64	58	68	73	72	72	71	68	65	59	69	73	73	73	71	69	65	59
		4200	1166,7	67	71	71	71	69	67	63	57	68	73	72	72	70	68	65	59	69	74	73	73	72	69	66	60	70	75	74	74	72	70	67	61	71	75	75	75	73	71	67	61
400	400	1350	375,0	53	58	57	57	56	53	50	44	54	59	59	58	57	55	51	45	55	60	60	60	58	56	52	46	56	61	61	61	59	57	53	47	57	62	62	61	60	58	54	48
		2700	750,0	59	63	63	63	61	59	55	49	60	65	64	64	63	60	57	51	61	66	66	65	64	61	58	52	62	67	66	66	65	62	59	53	63	68	67	67	66	63	60	54
		4050	1125,0	62	67	66	66	65	62	59	53	63	68	68	67	66	64	60	54	64	69	69	69	67	65	61	55	65	70	70	70	68	66	62	56	66	71	71	70	69	67	63	57
		5400	1500,0	64	69	69	68	67	65	61	55	66	70	70	70	68	66	62	56	67	71	71	71	69	67	63	57	68	72	72	72	70	68	64	58	69	73	73	73	71	69	65	59
		6750	1875,0	66	71	71	70	69	67	63	57	67	72	72	72	70	68	64	58	69	73	73	73	71	69	65	59	70	74	74	74	72	70	66	60	70	75	75	75	73	71	67	61

	OCTAVE BANDS							
	1	2	3	4	5	6	7	8
HZ	63	125	250	500	1000	2000	4000	8000

Quick selection tables

Value of the Sound Power of the regenerated noise (dB) for the circular regulating dampers in the different Octave bands from 63 to 8000 Hz.

Damper	Radiated noise			p = 100 Pa								p = 200 Pa								p = 300 Pa								p = 400 Pa								p = 500 Pa							
Size	Ø [mm]	Q [m3/h]	Q (l/s)	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
100	99	85	23,6	24	27	26	24	23	21	<	<	30	33	32	30	30	27	25	<	33	37	36	34	33	30	29	22	36	40	38	37	36	33	31	24	38	42	40	39	38	35	33	26
		170	47,2	27	31	29	28	27	24	22	<	33	37	36	34	33	30	29	22	37	41	39	37	37	34	32	25	40	43	42	40	39	37	35	28	42	45	44	42	41	39	37	30
		255	70,8	29	33	31	30	29	26	24	<	35	39	38	36	35	32	31	24	39	43	41	40	39	36	34	27	42	45	44	42	42	39	37	30	44	47	46	44	44	41	39	32
		340	94,4									37	40	39	37	37	34	32	25	41	44	43	41	40	38	36	29	43	47	45	44	43	40	38	31	45	49	47	46	45	42	40	33
		425	118,1									38	42	40	39	38	35	33	26	42	45	44	42	42	39	37	30	44	48	47	45	44	41	40	33	46	50	49	47	46	43	42	35
125	124	130	36,1	22	26	24	23	22	19	<	<	28	32	31	29	28	25	24	<	32	36	34	32	32	29	27	20	35	38	37	35	34	32	30	23	37	40	39	37	36	34	32	25
		260	72,2	26	30	28	26	26	23	21	<	32	36	35	33	32	29	28	21	36	40	38	36	36	33	31	24	38	42	41	39	38	35	34	27	41	44	43	41	40	38	36	29
		390	108,3	28	32	31	29	28	25	24	<	35	38	37	35	34	32	30	23	38	42	41	39	38	35	34	27	41	44	43	41	41	38	36	29	43	46	45	43	43	40	38	31
		520	144,4	30	34	32	30	30	27	25	<	36	40	39	37	36	33	32	25	40	43	42	40	40	37	35	28	42	46	45	43	42	39	38	31	45	48	47	45	44	42	40	33
		650	180,6									38	41	40	38	37	35	33	26	41	45	43	42	41	38	36	29	44	47	46	44	44	41	39	32	46	49	48	46	46	43	41	34
140	139	165	45,8	22	25	24	22	21	<	<	<	28	31	30	28	28	25	23	<	31	35	34	32	31	28	27	20	34	38	36	35	34	31	29	22	36	40	38	37	36	33	31	24
		330	91,7	26	29	28	26	26	23	21	<	32	36	34	33	32	29	27	20	36	39	38	36	36	33	31	24	38	42	41	39	38	35	34	27	40	44	43	41	40	37	36	29
		495	137,5	28	32	31	29	28	25	24	<	35	38	37	35	34	32	30	23	38	42	40	39	38	35	33	26	41	44	43	41	41	38	36	29	43	46	45	43	43	40	38	31
		660	183,3	30	34	32	31	30	27	25	<	36	40	39	37	36	33	32	25	40	44	42	40	40	37	35	28	43	46	45	43	42	40	38	31	45	48	47	45	44	42	40	33
		825	229,2									38	41	40	38	38	35	33	26	41	45	44	42	41	38	37	30	44	47	46	44	44	41	39	32	46	49	48	46	46	43	41	34
160	159	215	59,7	21	25	23	22	21	<	<	<	27	31	30	28	27	24	23	<	31	35	33	32	31	28	26	<	34	37	36	34	34	31	29	22	36	39	38	36	36	33	31	24
		430	119,4	26	29	28	26	26	23	21	<	32	35	34	32	32	29	27	20	36	39	38	36	35	33	31	24	38	42	40	39	38	35	33	26	40	44	42	41	40	37	35	28
		645	179,2	28	32	31	29	28	25	24	<	35	38	37	35	34	32	30	23	38	42	40	39	38	35	33	26	41	44	43	41	41	38	36	29	43	46	45	43	43	40	38	31
		860	238,9	30	34	32	31	30	27	25	<	36	40	39	37	36	33	32	25	40	44	42	41	40	37	35	28	43	46	45	43	43	40	38	31	45	48	47	45	45	42	40	33
		1075	298,6									38	41	40	38	38	35	33	26	41	45	44	42	41	38	37	30	44	48	46	45	44	41	39	32	46	50	48	47	46	43	41	34
200	199	340	94,4	21	25	23	22	21	<	<	<	27	31	30	28	27	24	23	<	31	35	33	31	31	28	26	<	34	37	36	34	33	31	29	22	36	39	38	36	35	33	31	24
		680	188,9	26	30	28	26	26	23	21	<	32	36	35	33	32	29	28	21	36	39	38	36	36	33	31	24	38	42	41	39	38	35	34	27	40	44	43	41	40	37	36	29
		1020	283,3	29	32	31	29	29	26	24	<	35	39	37	36	35	32	30	23	39	42	41	39	39	36	34	27	41	45	44	42	41	38	37	30	43	47	46	44	43	40	39	32
		1360	377,8	31	34	33	31	31	28	26	<	37	41	39	38	37	34	32	25	41	44	43	41	41	38	36	29	43	47	46	44	43	40	39	32	45	49	48	46	45	42	41	34
		1700	472,2									39	42	41	39	39	36	34	27	42	46	45	43	42	39	38	31	45	49	47	45	45	42	40	33	47	51	49	47	47	44	42	35
225	225	430	119,4	21	25	23	22	21	<	<	<	27	31	30	28	27	24	23	<	31	35	33	32	31	28	26	<	34	37	36	34	34	31	29	22	36	39	38	36	36	33	31	24
		860	238,9	26	30	29	27	26	23	22	<	33	36	35	33	32	30	28	21	36	40	39	37	36	33	32	25	39	42	41	39	39	36	34	27	41	44	43	41	41	38	36	29
		1290	358,3	29	33	32	30	29	26	25	<	36	39	38	36	35	33	31	24	39	43	42	40	39	36	35	28	42	45	44	42	42	39	37	30	44	47	46	44	44	41	39	32
		1720	477,8	31	35	34	32	31	28	27	20	38	41	40	38	38	35	33	26	41	45	44	42	41	38	37	30	44	48	46	44	44	41	39	32	46	50	48	46	46	43	41	34
		2150	597,2	33	37	35	34	33	30	28	21	39	43	42	40	39	36	35	28	43	47	45	44	43	40	38	31	46	49	48	46	46	43	41	34	48	51	50	48	48	45	43	36
250	250	175	48,6	21	25	24	22	21	<	<	<	28	31	30	28	27	25	23	<	31	35	34	32	31	28	27	20	34	37	36	34	34	31	29	22	36	39	38	36	36	33	31	24
		350	97,2	27	30	29	27	27	24	22	<	33	37	35	33	33	30	28	21	37	40	39	37	36	34	32	25	39	43	41	40	39	36	34	27	41	45	43	42	41	38	36	29
		525	145,8	30	33	32	30	30	27	25	<	36	40	38	37	36	33	31	24	40	43	42	40	40	37	35	28	42	46	45	43	42	39	38	31	44	48	47	45	44	41	40	33
		700	194,4	32	36	34	32	32	29	27	20	38	42	41	39	38	35	34	27	42	46	44	42	42	39	37	30	45	48	47	45	44	42	40	33	47	50	49	47	46	44	42	35
		875	243,1	34	37	36	34	34	31	29	22	40	44	42	40	40	37	35	28	44	47	46	44	44	41	39	32	46	50	49	47	46	43	42	35	48	52	51	49	48	45	44	37
315	315	840	233,3	22	26	25	23	22	<	<	<	29	32	31	29	28	26	24	<	32	36	35	33	32	29	28	21	35	38	37	35	35	32	30	23	37	40	39	37	37	34	32	25
		1680	466,7	28	32	30	29	28	25	23	<	34	38	37	35	34	31	30	23	38	42	40	39	38	35	33	26	41	44	43	41	41	38	36	29	43	46	45	43	43	40	38	31
		2520	700,0	31	35	34	32	31	28	27	20	38	41	40	38	38	35	33	26	41	45	44	42	41	38	37	30	44	48	46	45	44	41	39	32	46	50	48	47	46	43	41	34
		3360	933,3	34	38	36	34	34	31	29	22	40	44	42	41	40	37	35	28	44	47	46	44	44	41	39	32	46	50	49	47	46	43	42	35	48	52	51	49	48	45	44	37
		4200	1166,7	36	39	38	36	36	33	31	24	42	46	44	43	42	39	37	30	46	49	48	46	46	43	41	34	48	52	51	49	48	45	44	37	50	54	53	51	50	47	46	39
400	400	1350	375,0	24	28	26	24	24	21	<	<	30	34	32	31	30	27	25	<	34	37	36	34	34	31	29	22	36	40	39	37	36	33	32	25	38	42	41	39	38	35	34	27
		2700	750,0	30	34	32	31	30	27	25	<	36	40	39	37	36	33	32	25	40	44	42	41	40	37	35	28	43	46	45	43	43	40	38	31	45	48	47	45	45	42	40	33
		4050	1125,0	34	37	36	34	34	31	29	22	40	44	42	41	40	37	35	28	44	47	46	44	44	41	39	32	46	50	49	47	46	43	42	35	48	52	51	49	48	45	44	37
		5400	1500,0	36	40	39	37	36	33	32	25	43	46	45	43	43	40	38	31	46	50	49	47	46	43	42	35	49	53	51	49	49	46	44	37	51	55	53	51	51	48	46	39
		6750	1875,0	38	42	41	39	38	35	34	27	45	48	47	45	45	42	40	33	48	52	51	49	48	45	44	37	51	55	53	51	51	48	46	39	53	57	55	53	53	50	48	41

	OCTAVE BANDS							
	1	2	3	4	5	6	7	8
HZ	63	125	250	500	1000	2000	4000	8000

<: Sound Power Level < 20 dB

Quick selection tables

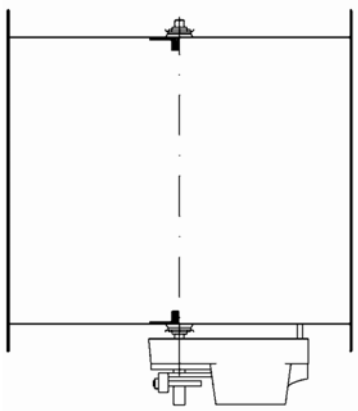
Damper	Radiated noise			p = 600 Pa								p = 700 Pa								p = 800 Pa								p = 900 Pa								p = 1000 Pa							
Size	Ø[mm]	Q [m3/h]	Q (l/s)	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
100	99	85	23,6	40	43	42	40	40	37	35	28	41	45	43	42	41	38	36	29	42	46	45	43	42	39	38	31	43	47	46	44	43	40	39	32	44	48	47	45	44	41	40	33
		170	47,2	43	47	46	44	43	40	39	32	45	48	47	45	45	42	40	33	46	49	48	46	46	43	41	34	47	50	49	47	47	44	42	35	48	51	50	48	48	45	43	36
		255	70,8	45	49	48	46	45	42	41	34	47	50	49	47	47	44	42	35	48	51	50	48	48	45	43	36	49	53	51	49	49	46	44	37	50	54	52	50	50	47	45	38
		340	94,4	47	50	49	47	47	44	42	35	48	52	50	49	48	45	43	36	49	53	52	50	49	46	45	38	50	54	53	51	50	47	46	39	51	55	54	52	51	48	47	40
		425	118,1	48	52	50	48	48	45	43	36	49	53	52	50	49	46	45	38	51	54	53	51	50	48	46	39	52	55	54	52	51	49	47	40	53	56	55	53	52	50	48	41
125	124	130	36,1	38	42	40	39	38	35	33	26	40	43	42	40	39	37	35	28	41	44	43	41	41	38	36	29	42	45	44	42	42	39	37	30	43	46	45	43	43	40	38	31
		260	72,2	42	46	44	43	42	39	37	30	44	47	46	44	43	41	39	32	45	48	47	45	45	42	40	33	46	49	48	46	46	43	41	34	47	50	49	47	47	44	42	35
		390	108,3	44	48	47	45	44	41	40	33	46	49	48	46	46	43	41	34	47	51	49	48	47	44	42	35	48	52	50	49	48	45	43	36	49	53	51	50	49	46	44	37
		520	144,4	46	50	48	47	46	43	41	34	48	51	50	48	47	45	43	36	49	52	51	49	49	46	44	37	50	53	52	50	50	47	45	38	51	54	53	51	51	48	46	39
		650	180,6	47	51	50	48	47	44	43	36	49	52	51	49	49	46	44	37	50	54	52	51	50	47	45	38	51	55	53	52	51	48	46	39	52	56	54	53	52	49	47	40
140	139	165	45,8	38	41	40	38	38	35	33	26	39	43	41	40	39	36	34	27	40	44	43	41	40	37	36	29	41	45	44	42	41	38	37	30	42	46	45	43	42	39	38	31
		330	91,7	42	46	44	42	42	39	37	30	43	47	46	44	43	40	39	32	45	48	47	45	44	42	40	33	46	49	48	46	46	43	41	34	47	50	49	47	46	44	42	35
		495	137,5	44	48	47	45	44	41	40	33	46	49	48	46	46	43	41	34	47	51	49	48	47	44	42	35	48	52	50	49	48	45	43	36	49	53	51	50	49	46	44	37
		660	183,3	46	50	48	47	46	43	41	34	48	51	50	48	47	45	43	36	49	52	51	49	49	46	44	37	50	53	52	50	50	47	45	38	51	54	53	51	51	48	46	39
		825	229,2	48	51	50	48	47	45	43	36	49	53	51	49	49	46	44	37	50	54	52	51	50	47	45	38	51	55	53	52	51	48	46	39	52	56	54	53	52	49	47	40
160	159	215	59,7	37	41	40	38	37	34	33	26	39	42	41	39	39	36	34	27	40	44	42	40	40	37	35	28	41	45	43	42	41	38	36	29	42	46	44	42	42	39	37	30
		430	119,4	42	45	44	42	42	39	37	30	43	47	46	44	43	40	39	32	44	48	47	45	44	41	40	33	45	49	48	46	45	42	41	34	46	50	49	47	46	43	42	35
		645	179,2	44	48	47	45	44	41	40	33	46	49	48	46	46	43	41	34	47	51	49	48	47	44	42	35	48	52	50	49	48	45	43	36	49	53	51	50	49	46	44	37
		860	238,9	46	50	49	47	46	43	42	35	48	51	50	48	48	45	43	36	49	52	51	49	49	46	44	37	50	54	52	50	50	47	45	38	51	54	53	51	51	48	46	39
		1075	298,6	48	51	50	48	48	45	43	36	49	53	51	50	49	46	44	37	50	54	53	51	50	47	46	39	51	55	54	52	51	48	47	40	52	56	55	53	52	49	48	41
200	199	340	94,4	37	41	40	38	37	34	33	26	39	42	41	39	39	36	34	27	40	43	42	40	40	37	35	28	41	44	43	41	41	38	36	29	42	45	44	42	42	39	37	30
		680	188,9	42	46	44	43	42	39	37	30	44	47	46	44	43	41	39	32	45	48	47	45	45	42	40	33	46	49	48	46	46	43	41	34	47	50	49	47	47	44	42	35
		1020	283,3	45	49	47	45	45	42	40	33	46	50	49	47	46	43	42	35	48	51	50	48	47	45	43	36	49	52	51	49	49	46	44	37	50	53	52	50	50	47	45	38
		1360	377,8	47	51	49	48	47	44	42	35	48	52	51	49	48	45	44	37	50	53	52	50	50	47	45	38	51	54	53	51	51	48	46	39	52	55	54	52	52	49	47	40
		1700	472,2	49	52	51	49	49	46	44	37	50	54	52	51	50	47	45	38	51	55	54	52	51	48	47	40	52	56	55	53	52	49	48	41	53	57	56	54	53	50	49	42
225	225	430	119,4	37	41	40	38	37	34	33	26	39	42	41	39	39	36	34	27	40	44	42	40	40	37	35	28	41	45	43	42	41	38	36	29	42	46	44	42	42	39	37	30
		860	238,9	42	46	45	43	42	39	38	31	44	47	46	44	44	41	39	32	45	49	47	46	45	42	40	33	46	50	48	47	46	43	41	34	47	51	49	48	47	44	42	35
		1290	358,3	45	49	48	46	45	42	41	34	47	50	49	47	47	44	42	35	48	52	50	49	48	45	43	36	49	53	51	50	49	46	44	37	50	54	52	51	50	47	45	38
		1720	477,8	48	51	50	48	48	45	43	36	49	53	51	50	49	46	44	37	50	54	53	51	50	47	46	39	51	55	54	52	51	48	47	40	52	56	55	53	52	49	48	41
		2150	597,2	49	53	52	50	49	46	45	38	51	54	53	51	51	48	46	39	52	55	54	52	52	49	47	40	53	57	55	53	53	50	48	41	54	57	56	54	54	51	49	42
250	250	175	48,6	37	41	40	38	37	34	33	26	39	42	41	39	39	36	34	27	40	44	42	41	40	37	35	28	41	45	43	42	41	38	36	29	42	46	44	43	42	39	37	30
		350	97,2	43	46	45	43	43	40	38	31	44	48	47	45	44	41	40	33	45	49	48	46	45	42	41	34	47	50	49	47	46	44	42	35	47	51	50	48	47	44	43	36
		525	145,8	46	50	48	46	46	43	41	34	47	51	50	48	47	44	43	36	49	52	51	49	48	46	44	37	50	53	52	50	50	47	45	38	51	54	53	51	50	48	46	39
		700	194,4	48	52	50	49	48	45	43	36	50	53	52	50	49	47	45	38	51	54	53	51	51	48	46	39	52	55	54	52	52	49	47	40	53	56	55	53	53	50	48	41
		875	243,1	50	53	52	50	50	47	45	38	51	55	54	52	51	48	47	40	52	56	55	53	52	49	48	41	54	57	56	54	53	51	49	42	55	58	57	55	54	52	50	43
315	315	840	233,3	39	42	41	39	38	36	34	27	40	44	42	40	40	37	35	28	41	45	43	42	41	38	36	29	42	46	44	43	42	39	37	30	43	47	45	44	43	40	38	31
		1680	466,7	44	48	47	45	44	41	40	33	46	49	48	46	46	43	41	34	47	51	49	47	47	44	42	35	48	52	50	48	48	45	43	36	49	53	51	49	49	46	44	37
		2520	700,0	48	51	50	48	48	45	43	36	49	53	51	50	49	46	44	37	50	54	53	51	50	47	46	39	51	55	54	52	51	48	47	40	52	56	55	53	52	49	48	41
		3360	933,3	50	54	52	51	50	47	45	38	51	55	54	52	51	48	47	40	53	56	55	53	53	50	48	41	54	57	56	54	54	51	49	42	55	58	57	55	55	52	50	43
		4200	1166,7	52	56	54	52	52	49	47	40	53	57	56	54	53	50	49	42	55	58	57	55	54	52	50	43	56	59	58	56	56	53	51	44	57	60	59	57	56	54	52	45
400	400	1350	375,0	40	44	42	41	40	37	35	28	42	45	44	42	41	39	37	30	43	46	45	43	43	40	38	31	44	47	46	44	44	41	39	32	45	48	47	45	45	42	40	33
		2700	750,0	46	50	49	47	46	43	42	35	48	51	50	48	48	45	43	36	49	53	51	49	49	46	44	37	50	54	52	51	50	47	45	38	51	55	53	51	51	48	46	39
		4050	1125,0	50	54	52	51	50	47	45	38	51	55	54	52	51	48	47	40	53	56	55	53	53	50	48	41	54	57	56	54	54	51	49	42	55	58	57	55	55	52	50	43
		5400	1500,0	53	56	55	53	53	50	48	41	54	58	56	55	54	51	49	42	55	59	58	56	55	52	51	44	56	60	59	57	56	53	52	45	57	61	60	58	57	54	53	46
		6750	1875,0	55	58	57	55	55	52	50	43	56	60	58	57	56	53	51	44	57	61	60	58	57	54	53	46	58	62	61	59	58	55	54	47	59	63	62	60	59	56	55	48

	OCTAVE BANDS							
	1	2	3	4	5	6	7	8
HZ	63	125	250	500	1000	2000	4000	8000

Volume control dampers, CRR series

Description

The KOOLAIR CRR volume control dampers are rectangular units to be used for flow and pressure control in HVAC installations. The dampers are fitted with a single slat commanded by a central shaft and are manufactured of galvanized steel sheet.

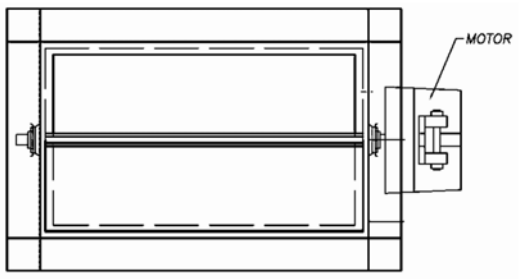


Models

There are four types of rectangular volume control dampers, according to the operating mechanism included and the degree of air tightness provided:

CRR-MT: Rectangular volume control damper manufactured of galvanized steel sheet, with servo drive-based slat operation (opened/closed, three-setting operation, or proportional operation) with 24V or 220 V AC power supply. Includes tightness seal around the entire housing perimeter.

CRR-M: Rectangular volume control damper manufactured of galvanized steel sheet and operated by an easy-to-use manual control section, which shows the extent of slat opening from the exterior. Fitted with a tightness seal around the entire housing perimeter.



CRR-MT model

CRR-E: Rectangular volume control damper manufactured of galvanized steel sheet and operated by a simple control (handle or wing nut). Fitted with a tightness seal around the entire housing perimeter.

CRR-MS: Rectangular volume control damper manufactured of galvanized steel sheet and operated by a simple control (handle or wing nut). Not fitted with a tightness seal around the entire housing perimeter.

Product codes

CRR-MS	Dimensions LxH (mm).
CRR-E	Dimensions LxH (mm).
CRR-M	Dimensions LxH (mm).
CRR-MT	Dimensions LxH (mm).

Note: Specify servo drive type and power

Identification

The damper identification will be coded according to the nomenclature listed in the adjacent table.

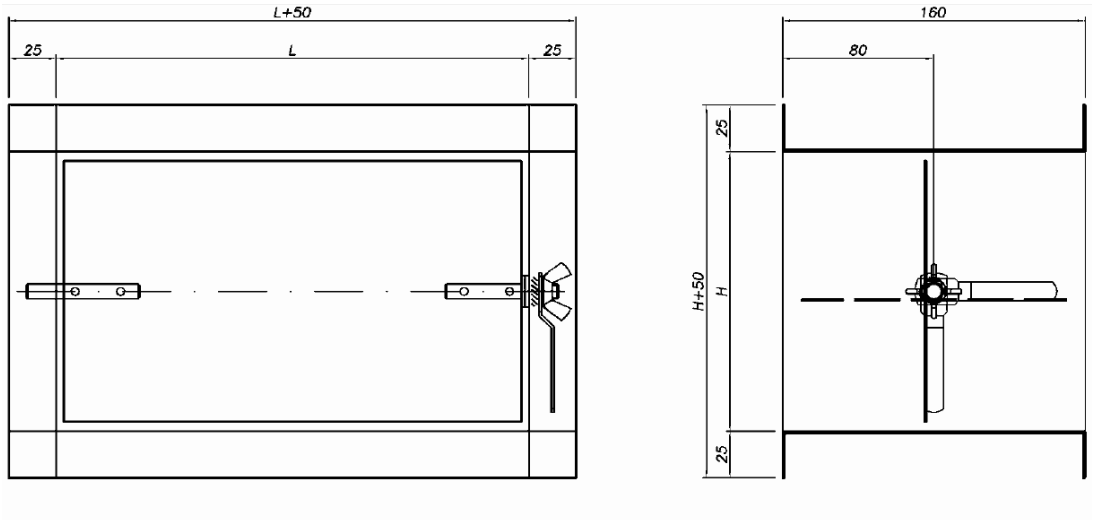
Coding example: CRR-MT, 500x200 with open/closed servo drive, 24V DC power.

Executions. Dimensions

The dimensions listed below are standard for all damper models in the series.

NOMINAL DIMENSIONS (AIR FLOW AREA), in mm

- CRR-MS model

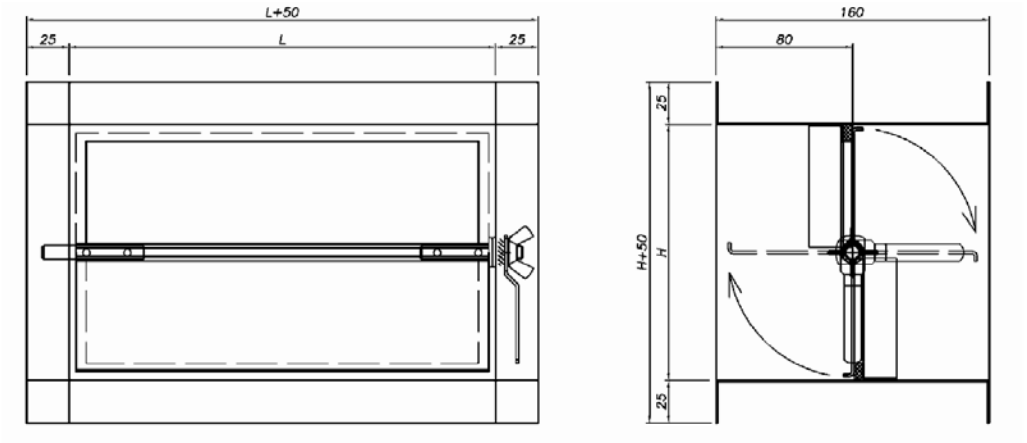


NOMINAL LENGTH

NOMINAL HEIGHT H \ L	100	150	200	250	300
100					
150					
200					
250					
300					

Executions. Dimensions

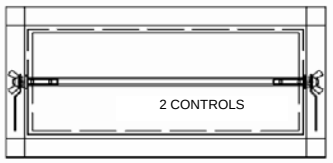
- CRR-E model



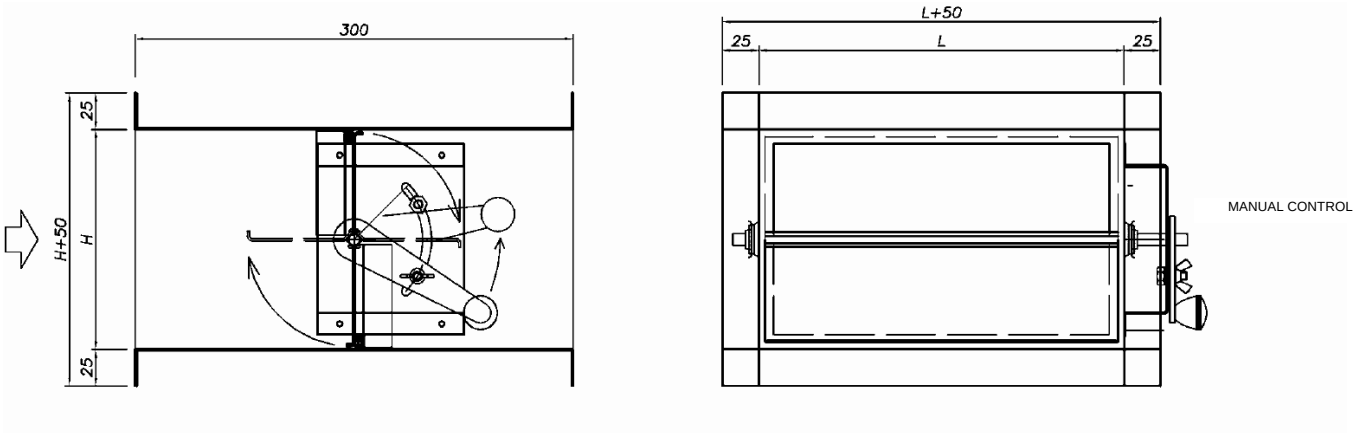
NOMINAL LENGTH

NOMINAL HEIGHT H \ L	100	150	200	250	300	350	400	450	500	550	600	650	700
100													
150													
200													
250													
300													

2 CONTROLS



- CRR-M model

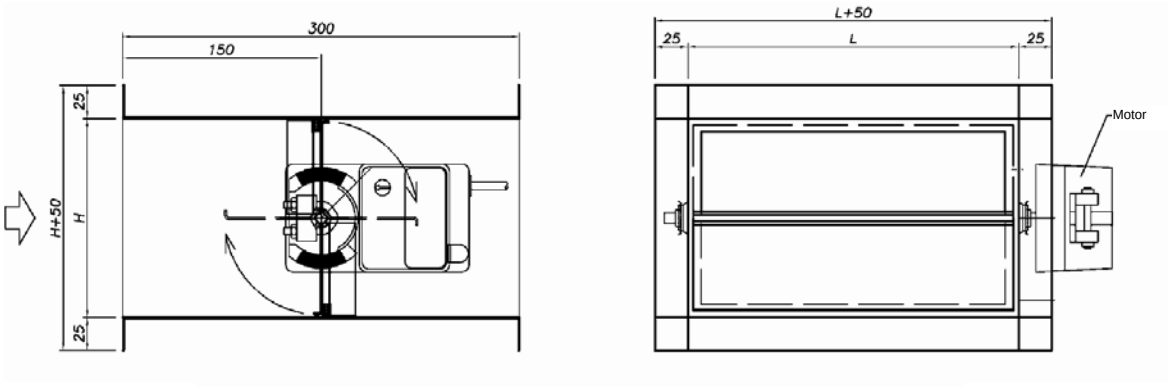


NOMINAL LENGTH

NOMINAL HEIGHT H \ L	100	150	200	250	300	350	400	450	500	550	600	650	700
100													
150													
200													
250													
300													

Executions. Dimensions

- CRR-MT model



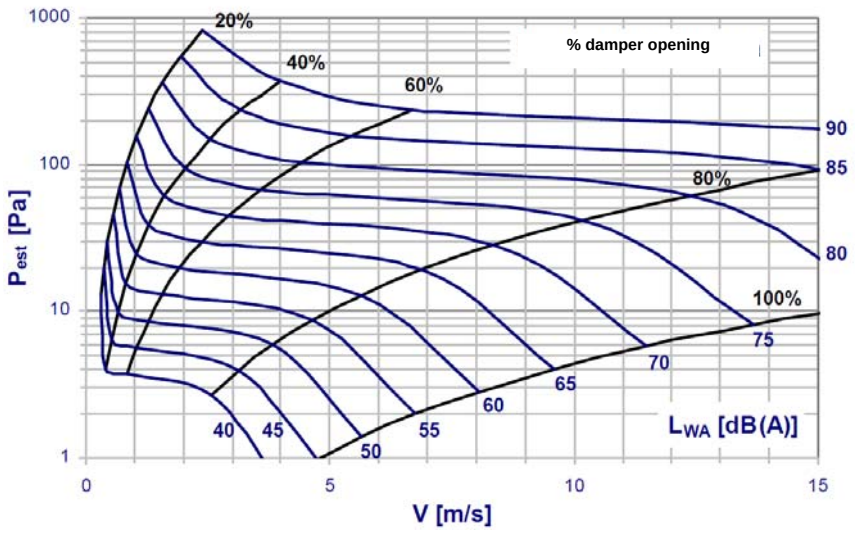
NOMINAL LENGTH

NOMINAL HEIGHT H \ L	100	150	200	250	300	350	400	450	500	550	600	650	700
100													
150	■												
200	■	■											
250	■	■	■										
300	■	■	■	■									

Technical data

Sound power and pressure loss chart, for % damper opening (20% to 100%)

The following chart corresponds to volume control dampers with an area of 0.1 m^2. For other cross-sections, please use the correction factor listed in the table on next page.



Symbols

V (m/s): Front air velocity through the damper, in m/s
P_{est} (Pa): Pressure drop in damper, in Pa
L_{WA} [dB(A)]: Sound power level, in dB(A)

Technical data

Technical data table. Sound power level and pressure loss

The following table can be used to obtain the sound power level (in dB/octave), from a front air flow velocity and a degree of damper opening (pressure loss, in Pa).

The data shown in the following table are for dampers with an **area of 0.1 m^2**. For other cross-sections, please use the **correction factor** listed further below on this page.

CRR SERIES			NOISE REGENERATED								
% open	V (m/s)	P_{est} (Pa)	Octave bands (Hz) - Sound power, in dB								L_W - dB(A)
			63	125	250	500	1000	2000	4000	8000	
100	6	2	55	56	52	50	44	44	36	37	52
	8	3	64	64	60	58	52	52	45	45	60
	10	4	70	71	67	64	59	58	51	51	66
	12	6	75	76	72	69	64	63	56	56	71
	15	10	81	82	78	76	70	70	62	62	78
80	6	15	55	59	59	59	58	52	43	40	62
	8	26	63	66	66	66	65	59	51	47	69
	10	40	68	72	72	72	71	65	56	53	75
	12	58	73	76	77	76	76	69	61	57	79
	15	91	79	82	82	82	81	75	67	63	85
60	3	48	50	56	59	64	67	60	49	40	71
	4	85	57	63	65	71	74	67	56	47	78
	5	133	62	68	71	76	79	73	62	52	83
	6	191	67	73	75	81	84	77	66	57	87
	7	260	70	76	79	84	88	81	70	60	91
40	1	23	40	49	46	50	55	53	42	32	59
	2	93	56	64	61	65	70	69	57	47	75
	3	209	65	73	70	74	79	78	66	56	84
	4	372	71	79	77	81	86	84	72	62	90
	5	581	76	84	81	86	91	89	77	67	95
20	0,5	37	37	42	40	44	44	47	44	40	52
	1,0	146	53	59	57	60	61	64	61	56	69
	1,5	329	63	69	67	70	71	74	71	66	79
	2,0	585	70	76	74	77	78	81	78	73	86
	2,5	914	75	81	79	83	83	86	83	78	91

Sound power level correction values, for various damper cross-sections

Area (m^2)	0,20	0,30	0,40	0,60	0,80	0,90	0,1	0,12	0,15	0,18	0,21
Correction	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+5

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