

# KOOLAIR

## series

# RW

Variable flow rate  
controllers



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## Variable flow rate controllers, type RVV



### Description

Flow rate controllers type RVV are elements designed to regulate the air volume which passes through it.

The RVV casing is of circular shape with diameters from 80 to 630 mm, corresponding to the normalised diameters for circular ducts.

The volume control damper, with its elliptical shape and sealing gasket in its entire periphery, and installed in the circular inlet, is the most adequate to obtain maximum linearity in damper actuation and a reduced sound level.

In the inlet duct a cross-shaped probe is installed which measures the differential pressure which varies with the air volume entering the unit. The minimum pressures for equipment setup depend on the actuator sensor accuracy.

### Control

Air volume control is and consists of:

- 1- Differential pressure sensor
- 2- Temperature sensor (not included in the RVV)
- 3- Controller which receives the signals from the temperature probe and differential pressure sensor
- 4- Actuator, which closes or opens the damper 5 according to the signal received from the controller

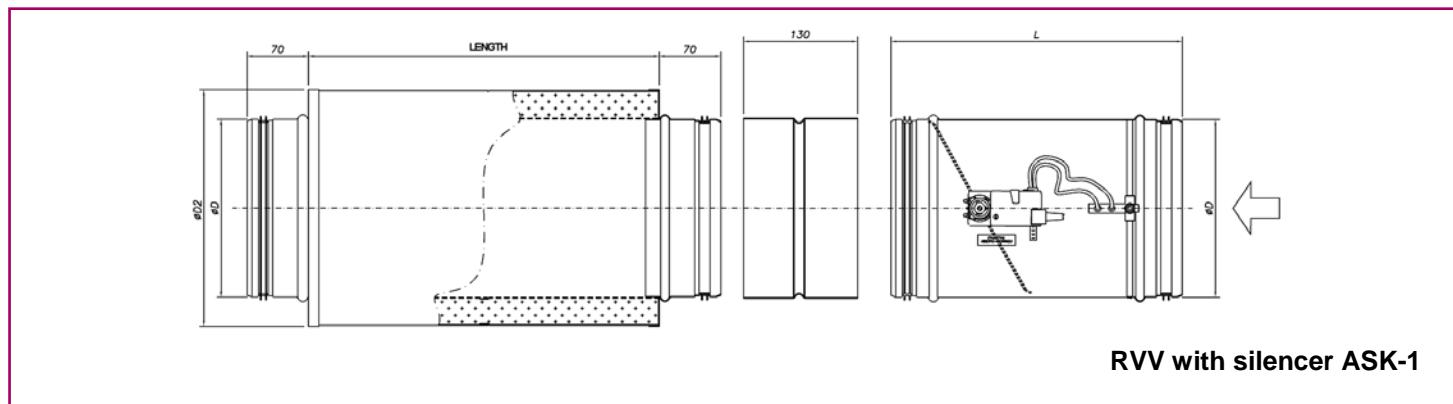
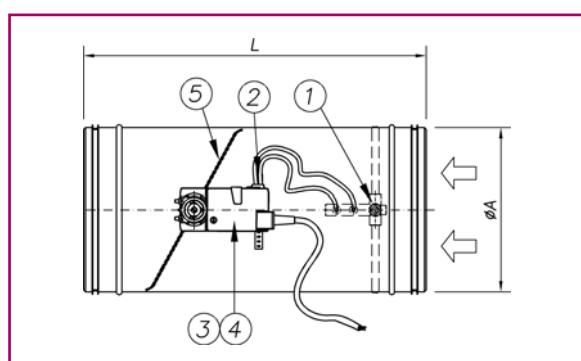
The controller and actuator are usually constructed as a single compact unit, which fulfils both functions.

In the controller maximum and minimum required air flow rates are set, which will be controlled by the controller as a function of the signal received from the differential pressure sensor.

Between these limits the controller will vary the air flow rate according to the signal received from the temperature sensor.

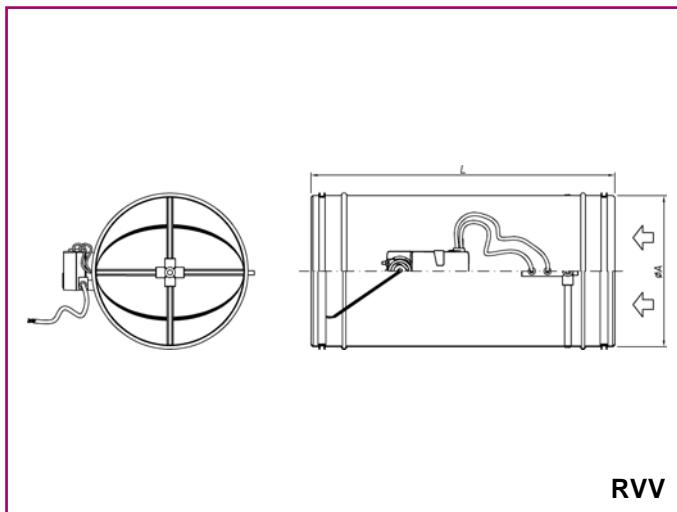
### Normative

The variable flor rate controllers type RVV, RVV-D and RVV-DL meet the specifications according to standard EN 1751, obtaining class "C" and "3" air tightness for the casing of the regulator.



## Dimensions

### Dimensions



SIZE	Ø A	L
80	78	340
100	98	340
125	123	365
160	158	400
200	198	440
250	248	490
315	313	555
355	353	595
400	398	640
450	448	690
500	498	740
630	628	870

Dimensions in mm

**RVV**

Variable flow rate controller

**SIZE**

Indicate size from 80 to 630

For calibration of the RVV maximum and minimum air flow rates should also be indicated.

### Damper leakage

The sealing gasket, mounted on the periphery of the damper, guarantees an air leakage level through the damper less than 1% of the nominal air flow rate (defined as the flow rate corresponding to a velocity in the inlet duct of 7.5 m/s) and at a pressure of up to 1000 Pa.

### Coefficient to convert the differential pressure reading to air flow rate

In order to determine the air flow rate through the RVV variable volume flow controller, a number of constants are used based on the differential pressure measured at the unit inlet sensor.

To calculate the flow rate, use the following formula:

$$Q = C \cdot \sqrt{P_d}$$

Where:

Q = air flow rate in  $\text{m}^3/\text{h}$

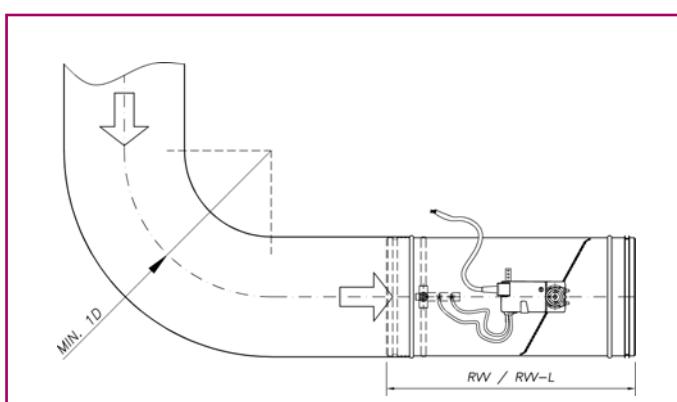
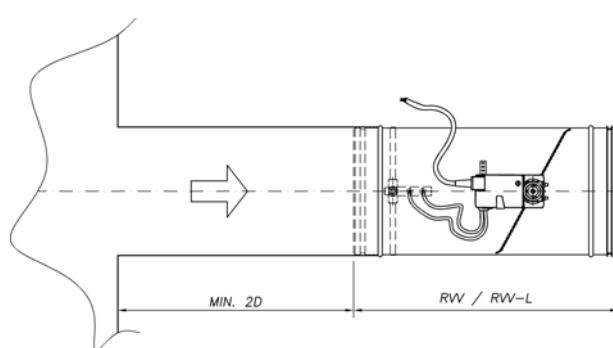
C = constant

Pd = differential pressure at probe in Pa.

### Installation conditions

In order to obtain a correct reading with the differential pressure probe a minimum uniform air distribution at the inlet of the RVV unit is required.

For this reason the minimum distances indicated in the figures are recommended, both for a RVV controller close to a T-piece as well as close to a 90° elbow.

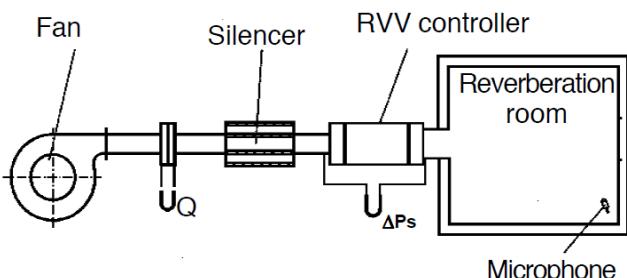


## Selection tables

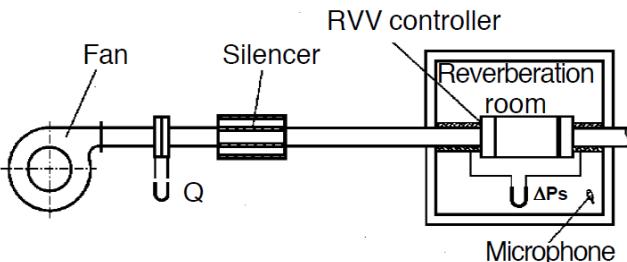
In the following tables (1 to 10) all data are presented which are necessary for a correct selection of the variable flow rate controllers RVV.

Datos comunes para todas las tablas:

- $\varnothing$  (mm): Diameter of the circular inlet duct connection.
- $P_{\min}$  (Pa): Minimum pressure at the inlet of the RVV, equivalent to the pressure loss of the box with the damper fully open.
- $Q(m^3/h)$  (l/s): Air flow rate for which the unit is to be selected.



**Determination of sound power regenerated by the RVV.**



**Determination of sound power radiated by the RVV.**

### Table n°1

In this table the sound pressure level in the room, due to the noise regenerated by the RVV unit, is given in dB(A) for various air flow rates and for pressures from 100 to 1000 Pa. To obtain these values a 10 dB/octave attenuation has been assumed for discharge duct, diffuser and room.

### Table n°2

Values for the sound pressure level in the room in NR (value of the NR curve corresponding to the sound spectrum) is presented for the same conditions as table 1.

### Tables n°3 and 4

The value of the sound power level (dB), regenerated by the RVV unit is presented for the octave bands between 63 and 8000 Hz.

### Table n°5

In this table the sound pressure level in the room, due to the noise radiated by the RVV unit, is given in dB(A) for various air flow rates and for pressures from 100 to 1000 Pa. To obtain these values a 10 dB/octave attenuation has been assumed for the false ceiling.

### Tables n°6 and 7

These tables are similar to the former, except that the sound pressure levels are referred to the NC and NR curves respectively.

### Tables n°8 and 9

Sound power levels (dB) are given for the radiated noise for the octave bands from 63 to 8000 Hz.

### ISO Standards

All acoustic data published in this catalogue were obtained by tests, realised in a single reverberation room, constructed according to ISO standard 3741.

All tests have been realised according to ISO standards 5135 and 5220.

## Selection tables

## Table 1

- Variable flow rate controllers type RVV (Sound pressure levels in dB(A))

RVV				Regenerated noise									
Size	Diam [mm]	Q [m³/h]	Pmin [Pa]	150	200	300	400	500	600	700	800	900	1000
100	100	85	8	35	36	39	40	42	43	44	44	45	46
		170	31	42	44	46	48	49	50	51	52	53	53
		255	69	47	48	51	52	54	55	56	56	57	58
		340	122	50	51	54	55	57	58	59	59	60	61
		425	191	52	54	56	58	59	60	61	62	63	63
125	125	130	6	36	38	41	42	44	45	46	47	47	48
		260	26	43	45	48	49	51	52	53	54	54	55
		390	58	48	49	52	54	55	56	57	58	59	59
		520	103	51	52	55	57	58	59	60	61	62	62
		650	161	53	55	57	59	60	62	62	63	64	65
160	160	215	6	38	40	42	44	46	47	48	49	50	50
		430	22	45	47	49	51	53	54	55	56	56	57
		645	50	49	51	53	55	57	58	59	60	61	61
		860	89	52	53	56	58	59	61	62	63	63	64
		1075	140	54	56	58	60	62	63	64	65	66	66
200	200	340	5	39	41	44	46	47	48	50	51	51	52
		680	19	45	47	50	52	54	55	56	57	58	59
		1020	43	49	51	54	56	58	59	60	61	62	63
		1360	77	52	54	57	59	60	62	63	64	65	65
		1700	121	54	56	59	61	63	64	65	66	67	67
250	250	525	4	39	41	44	46	48	49	51	52	52	53
		1050	15	45	48	51	53	54	56	57	58	59	60
		1575	34	49	51	54	56	58	59	61	62	62	63
		2100	61	52	54	57	59	61	62	63	64	65	66
		2625	96	54	56	59	61	63	64	65	66	67	68
315	315	840	3	39	42	45	47	49	50	51	53	53	54
		1680	12	45	48	51	53	55	56	57	59	59	60
		2520	27	49	51	54	57	58	60	61	62	63	64
		3360	47	51	53	57	59	61	62	63	65	65	66
		4200	74	53	55	59	61	63	64	65	66	67	68
400	400	1350	2	40	42	46	48	50	52	53	54	55	56
		2700	8	46	48	51	54	56	57	58	60	61	61
		4050	18	49	51	55	57	59	61	62	63	64	65
		5400	32	51	54	57	59	61	63	64	65	66	67
		6750	50	53	55	59	61	63	65	66	67	68	69
450	450	1700	2	40	43	46	49	51	52	54	55	56	57
		3400	6	46	49	52	54	56	58	59	60	61	62
		5100	14	49	52	55	58	60	61	63	64	65	66
		6800	24	52	54	58	60	62	64	65	66	67	68
		8500	38	53	56	59	62	64	65	67	68	69	70
500	500	2100	2	41	44	47	50	52	53	55	56	57	58
		4200	4	47	49	53	55	57	59	60	61	62	63
		6300	10	50	52	56	58	60	62	63	64	65	66
		8400	18	52	54	58	61	63	64	66	67	68	69
		10500	27	54	56	60	62	64	66	67	68	69	70
630	630	3000	2	42	45	49	51	53	55	57	58	59	60
		6000	2	47	50	54	56	58	60	62	63	64	65
		9000	2	50	53	57	59	61	63	65	66	67	68
		12000	2	52	55	59	62	64	65	67	68	69	70
		15000	5	54	57	60	63	65	67	68	70	71	72

## Selection tables

## Table 2

- Variable flow rate controllers type RVV (Sound pressure levels in NR)

RVV Regenerated noise				NR a p =									
Size	Diam [mm]	Q [m <sup>3</sup> /h]	Pmin [Pa]	100	200	300	400	500	600	700	800	900	1000
100	100	85	8	29	33	35	37	38	39	40	41	42	42
		170	31	37	40	43	44	46	47	48	48	49	50
		255	69	41	45	47	49	50	51	52	53	53	54
		340	122	44	48	50	52	53	54	55	56	57	57
		425	191	46	50	53	54	56	57	58	58	59	60
125	125	130	6	30	35	37	39	40	41	42	43	44	44
		260	26	37	42	44	46	47	48	49	50	51	52
		390	58	42	46	48	50	52	53	54	54	55	56
		520	103	45	49	51	53	55	56	57	57	58	59
		650	161	47	51	54	56	57	58	59	60	61	61
160	160	215	6	32	36	39	41	42	43	44	45	46	47
		430	22	38	43	46	48	49	50	51	52	53	54
		645	50	42	47	50	52	53	54	55	56	57	58
		860	89	45	50	53	55	56	57	58	59	60	61
		1075	140	48	52	55	57	58	59	60	61	62	63
200	200	340	5	32	37	40	42	44	45	46	47	48	49
		680	19	39	44	47	49	50	52	53	54	54	55
		1020	43	43	48	51	53	54	55	57	57	58	59
		1360	77	46	50	53	55	57	58	59	60	61	62
		1700	121	48	53	55	57	59	60	61	62	63	64
250	250	525	4	33	38	41	43	45	46	47	48	49	50
		1050	15	39	44	47	49	51	52	53	54	55	56
		1575	34	43	48	51	53	55	56	57	58	59	60
		2100	61	45	50	53	56	57	59	60	61	62	62
		2625	96	47	52	55	58	59	61	62	63	64	64
315	315	840	3	32	38	41	44	45	47	48	49	50	51
		1680	12	38	44	47	50	51	53	54	55	56	57
		2520	27	42	48	51	53	55	56	57	59	59	60
		3360	47	44	50	53	56	57	59	60	61	62	63
		4200	74	46	52	55	57	59	61	62	63	64	65
400	400	1350	2	33	39	42	45	46	48	49	50	51	52
		2700	8	39	44	48	50	52	54	55	56	57	58
		4050	18	42	48	51	54	55	57	58	59	60	61
		5400	32	44	50	54	56	58	59	61	62	63	64
		6750	50	46	52	55	58	60	61	62	64	65	65
450	450	1700	2	33	39	43	45	47	49	50	51	52	53
		3400	6	39	45	49	51	53	54	56	57	58	59
		5100	14	42	48	52	54	56	58	59	60	61	62
		6800	24	45	51	54	57	58	60	61	63	64	64
		8500	38	46	52	56	58	60	62	63	64	65	66
500	500	2100	1	34	40	44	46	48	50	51	52	53	54
		4200	4	39	46	49	52	54	55	57	58	59	60
		6300	10	43	49	52	55	57	58	60	61	62	63
		8400	18	45	51	55	57	59	61	62	63	64	65
		10500	27	47	53	56	59	61	62	64	65	66	67
630	630	3000	0	35	41	45	48	50	52	53	54	55	56
		6000	1	40	46	50	53	55	57	58	59	60	61
		9000	1	43	49	53	56	58	60	61	62	63	64
		12000	2	45	52	55	58	60	62	63	64	66	67
		15000	4	47	53	57	60	62	63	65	66	67	68





## Selection tables

## Table 5

### - Variable flow rate controllers type RVV (Sound pressure levels in dB(A))

RVV		Radiated noise			dB(A) a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [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

< : sound pressure level < 20 dB(A)

# Selection tables

# Table 6

## - Variable flow rate controllers type RVV (Sound pressure levels in NC)

RVV			Radiated noise		NC a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	<	23	26	28	29	31	32	33	34
		170	47,2	31	<	23	26	29	31	33	34	35	36	37
		255	70,8	69	<	25	29	31	33	35	36	37	38	39
		340	94,4	122		26	30	33	35	36	38	39	40	41
		425	118,1	191		28	31	34	36	37	39	40	41	42
125	124	130	36,1	6	<	<	21	24	26	28	29	30	31	32
		260	72,2	26	<	22	25	28	30	32	33	34	35	36
		390	108,3	58	<	24	28	30	32	34	35	37	38	39
		520	144,4	103	<	26	29	32	34	36	37	38	39	40
		650	180,6	161		27	31	33	35	37	38	40	41	42
140	139	165	45,8	6	<	<	21	24	26	27	29	30	31	32
		330	91,7	25	<	22	25	28	30	31	33	34	35	36
		495	137,5	55	<	24	28	30	32	34	35	37	38	39
		660	183,3	98	20	26	29	32	34	36	37	38	39	40
		825	229,2	154		27	31	33	35	37	38	40	41	42
160	159	215	59,7	6	<	<	21	23	25	27	28	29	31	31
		430	119,4	22	<	21	25	28	30	31	33	34	35	36
		645	179,2	50	<	24	28	30	32	34	35	37	38	39
		860	238,9	89	20	26	30	32	34	36	37	38	39	40
		1075	298,6	140		27	31	34	36	37	39	40	41	42
200	199	340	94,4	5	<	<	20	23	25	27	28	29	30	31
		680	188,9	19	<	22	25	28	30	32	33	34	35	36
		1020	283,3	43	<	25	28	31	33	34	36	37	38	39
		1360	377,8	77	20	27	30	33	35	37	38	39	40	41
		1700	472,2	121		28	32	34	36	38	40	41	42	43
225	224	430	119,4	4	<	<	21	23	25	27	28	29	31	31
		860	238,9	17	<	22	26	28	30	32	33	35	36	37
		1290	358,3	39	<	25	29	31	33	35	36	38	39	40
		1720	477,8	69	21	27	31	33	35	37	39	40	41	42
		2150	597,2	109	23	29	33	35	37	39	40	41	42	43
250	249	525	145,8	4	<	<	21	23	25	27	28	30	31	32
		1050	291,7	15	<	22	26	29	31	32	34	35	36	37
		1575	437,5	34	<	26	29	32	34	35	37	38	39	40
		2100	583,3	61	21	28	31	34	36	38	39	40	41	42
		2625	729,2	96	23	29	33	36	38	39	41	42	43	44
315	314	840	233,3	3	<	<	22	24	26	28	29	31	32	33
		1680	466,7	12	<	24	28	30	32	34	35	36	37	38
		2520	700,0	27	21	27	31	34	36	37	39	40	41	42
		3360	933,3	47	23	30	33	36	38	40	41	42	43	44
		4200	1166,7	74	25	32	35	38	40	41	43	44	45	46
400	399	1350	375,0	2	<	20	23	26	28	30	31	32	33	34
		2700	750,0	8	20	26	30	32	34	36	37	38	40	40
		4050	1125,0	18	23	30	33	36	38	40	41	42	43	44
		5400	1500,0	32	26	32	36	38	40	42	44	45	46	47
		6750	1875,0	50	28	34	38	40	42	44	46	47	48	49

< : sound pressure level < NC 20

## Selection tables

## Table 7

### - Variable flow rate controllers type RVV (Sound pressure levels in NR)

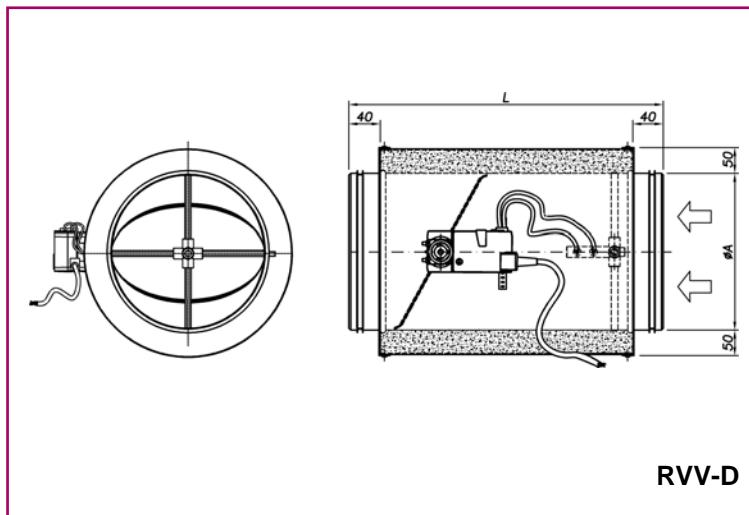
RVV			Radiated noise		NR a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	21	25	27	29	31	32	34	35	36
		170	47,2	31	<	25	28	31	33	35	36	37	38	39
		255	70,8	69	21	27	30	33	35	37	38	39	40	41
		340	94,4	122		28	32	35	37	38	40	41	42	43
		425	118,1	191		29	33	36	38	39	41	42	43	44
125	124	130	36,1	6	<	20	23	26	28	30	31	32	33	34
		260	72,2	26	<	24	27	30	32	34	35	36	37	38
		390	108,3	58	20	26	30	32	34	36	37	38	40	40
		520	144,4	103	21	28	31	34	36	38	39	40	41	42
		650	180,6	161		29	33	35	37	39	40	41	42	43
140	139	165	45,8	6	<	<	23	25	28	29	31	32	33	34
		330	91,7	25	<	23	27	30	32	33	35	36	37	38
		495	137,5	55	20	26	30	32	34	36	37	38	39	40
		660	183,3	98	21	28	31	34	36	38	39	40	41	42
		825	229,2	154		29	33	35	37	39	40	42	43	44
160	159	215	59,7	6	<	<	22	25	27	29	30	31	32	33
		430	119,4	22	<	23	27	30	32	33	35	36	37	38
		645	179,2	50	20	26	30	32	34	36	37	38	39	40
		860	238,9	89	22	28	31	34	36	38	39	40	41	42
		1075	298,6	140		29	33	35	37	39	41	42	43	44
200	199	340	94,4	5	<	<	22	25	27	29	30	31	32	33
		680	188,9	19	<	24	27	30	32	34	35	36	37	38
		1020	283,3	43	20	26	30	33	35	36	38	39	40	41
		1360	377,8	77	22	29	32	35	37	38	40	41	42	43
		1700	472,2	121		30	34	36	38	40	41	43	44	45
225	224	430	119,4	4	<	<	22	25	27	29	30	31	32	33
		860	238,9	17	<	24	28	30	32	34	35	36	38	38
		1290	358,3	39	21	27	31	33	35	37	38	39	41	41
		1720	477,8	69	23	29	33	35	37	39	40	42	43	44
		2150	597,2	109	24	31	34	37	39	41	42	43	44	45
250	249	525	145,8	4	<	<	23	25	27	29	30	31	33	34
		1050	291,7	15	<	24	28	31	33	34	36	37	38	39
		1575	437,5	34	21	27	31	34	36	37	39	40	41	42
		2100	583,3	61	23	30	33	36	38	40	41	42	43	44
		2625	729,2	96	25	31	35	38	40	41	43	44	45	46
315	314	840	233,3	3	<	20	24	26	28	30	31	33	34	35
		1680	466,7	12	20	26	29	32	34	36	37	38	39	40
		2520	700,0	27	23	29	33	35	37	39	40	42	43	44
		3360	933,3	47	25	32	35	38	40	42	43	44	45	46
		4200	1166,7	74	27	33	37	40	42	43	45	46	47	48
400	399	1350	375,0	2	<	22	25	28	30	32	33	34	35	36
		2700	750,0	8	22	28	32	34	36	38	39	40	41	42
		4050	1125,0	18	25	31	35	38	40	41	43	44	45	46
		5400	1500,0	32	28	34	38	40	42	44	45	47	48	49
		6750	1875,0	50	30	36	40	42	44	46	47	49	50	51

< : sound pressure level < NR 20





## Variable flow rate controllers, type RVV-D



RVV-D

### Description

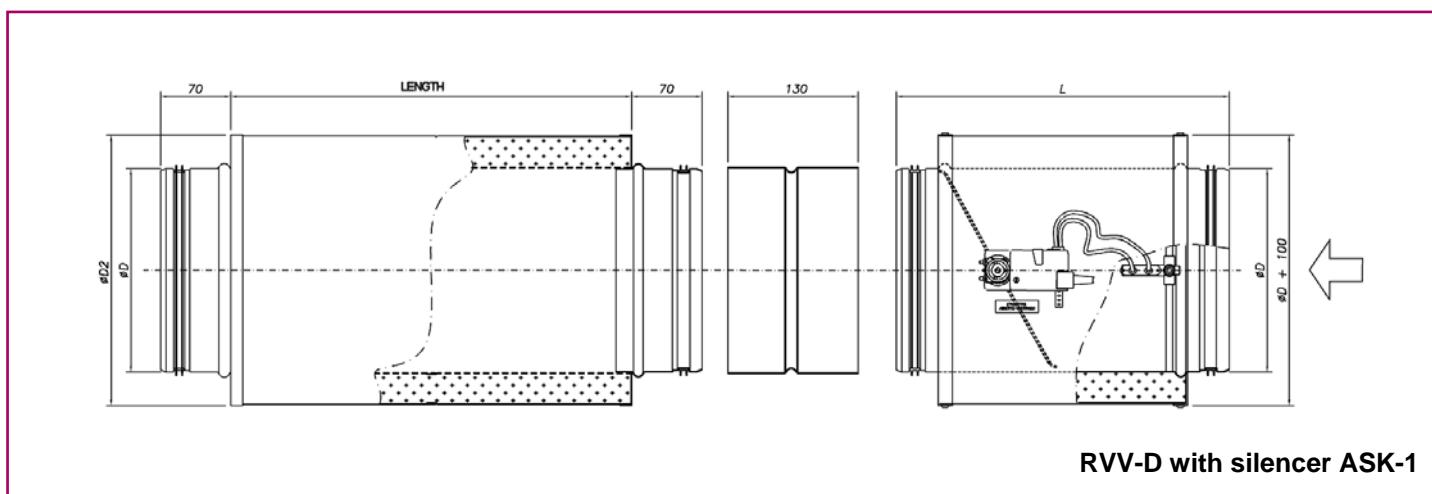
The RVV-D is a variable flow rate controller similar to the RVV, with the only difference of having a double skin casing with acoustic isolation material. Therefore, only the exterior dimensions and radiated noise levels will be modified.

### Dimensions

SIZE	$\varnothing A$	L
80	78	340
100	98	340
125	123	365
160	158	400
200	198	440
250	248	490
315	313	555
355	353	595
400	398	640
450	448	690
500	498	740
630	628	870

Dimensions in mm

<b>RVV-D</b>	Variable flow rate controller with acoustic isolation
<b>SIZE</b>	Indicate size from 80 to 630
	For calibration of the RVV-D maximum and minimum air flow rates should also be indicated.



RVV-D with silencer ASK-1

## Selection tables

The following tables (11 to 20) correspond to the regenerated and radiated noise for the RVV-D unit according to the same conditions indicated for the RVV.

### Table n°10

In this table the sound pressure level in the room, due to the noise regenerated by the RVV-D unit, is given in dB(A) for various air flow rates and for pressures from 100 to 1000 Pa. To obtain these values a 10 dB/octave attenuation has been assumed for discharge duct, diffuser and room.

### Table n°11

In this table the sound pressure level in the room is given expressed in NC (value of the NC curve corresponding to the sound spectrum) for the same conditions as table 1.

### Table n°12

Values for the sound pressure level in the room in NR (value of the NR curve corresponding to the sound spectrum) is presented for the same conditions as table 1.

### Tables n°13 and 14

The value of the sound power level (dB), regenerated by the RVV-D unit is presented for the octave bands between 63 and 8000 Hz.

### Table n°15

In this table the sound pressure level in the room, due to the noise radiated by the RVV-D unit, is given in dB(A) for various air flow rates and for pressures from 100 to 1000 Pa. To obtain these values a 10 dB/octave attenuation has been assumed for the false ceiling.

### Tables n°16 and 17

These tables are similar to the former, except that the sound pressure levels are referred to the NC and NR curves respectively.

### Tables n°18 and 19

Sound power levels (dB) are given for the radiated noise for the octave bands from 63 to 8000 Hz.

### ISO Standards

All acoustic data published in this catalogue were obtained by tests, realised in a single reverberation room, constructed according to ISO standard 3741. All tests have been realised according to ISO standards 5135 and 5220.

## Selection tables

## Table 10

- Variable flow rate controllers type RVV-D (Sound pressure levels in dB(A))

RVV-D			Regenerated noise		dB(A) a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [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
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
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
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

## Selection tables

## Table 11

### -Variable flow rate controllers type RVV-D (Sound pressure levels in NC)

RVV-D			Regenerated noise		NC a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	28	32	34	36	37	38	39	40	40	41
		170	47,2	31	35	39	42	43	45	46	46	47	48	48
		255	70,8	69	40	44	46	48	49	50	51	52	52	53
		340	94,4	122		47	49	51	52	53	54	55	55	56
		425	118,1	191		49	52	53	54	55	56	57	58	58
125	124	130	36,1	6	29	33	36	38	39	40	41	42	43	43
		260	72,2	26	36	41	43	45	46	47	48	49	50	50
		390	108,3	58	40	45	47	49	50	52	52	53	54	55
		520	144,4	103	43	48	50	52	53	55	55	56	57	58
		650	180,6	161		50	53	54	56	57	58	59	59	60
140	139	165	45,8	6	30	34	37	39	40	41	42	43	44	44
		330	91,7	25	37	41	44	46	47	48	49	50	51	52
		495	137,5	55	41	45	48	50	51	52	53	54	55	56
		660	183,3	98	44	48	51	53	54	55	56	57	58	59
		825	229,2	154		51	53	55	56	58	59	59	60	61
160	159	215	59,7	6	30	35	38	40	41	42	43	44	45	46
		430	119,4	22	37	42	45	46	48	49	50	51	52	52
		645	179,2	50	41	46	49	50	52	53	54	55	56	57
		860	238,9	89	44	49	51	53	55	56	57	58	59	59
		1075	298,6	140		51	54	56	57	58	59	60	61	62
200	199	340	94,4	5	31	36	39	41	42	44	45	46	47	47
		680	188,9	19	38	43	45	48	49	50	51	52	53	54
		1020	283,3	43	42	46	49	51	53	54	55	56	57	58
		1360	377,8	77	44	49	52	54	56	57	58	59	60	61
		1700	472,2	121		51	54	56	58	59	60	61	62	63
225	224	430	119,4	4	31	36	39	41	43	44	46	46	47	48
		860	238,9	17	38	43	46	48	49	51	52	53	54	55
		1290	358,3	39	42	47	50	52	53	55	56	57	58	58
		1720	477,8	69	44	49	52	54	56	57	58	59	60	61
		2150	597,2	109	46	51	54	56	58	59	60	61	62	63
250	249	525	145,8	4	31	37	40	42	43	45	46	47	48	49
		1050	291,7	15	38	43	46	48	50	51	52	53	54	55
		1575	437,5	34	41	47	50	52	53	55	56	57	58	59
		2100	583,3	61	44	49	52	54	56	57	58	59	60	61
		2625	729,2	96	46	51	54	56	58	59	61	62	62	63
315	314	840	233,3	3	31	37	40	42	44	46	47	48	49	50
		1680	466,7	12	37	43	46	48	50	52	53	54	55	56
		2520	700,0	27	41	46	50	52	54	55	56	57	58	59
		3360	933,3	47	43	49	52	54	56	58	59	60	61	62
		4200	1166,7	74	45	51	54	56	58	59	61	62	63	64
400	399	1350	375,0	2	31	37	40	42	44	46	47	48	49	50
		2700	750,0	8	36	42	46	48	50	51	53	54	55	56
		4050	1125,0	18	40	46	49	51	53	55	56	57	58	59
		5400	1500,0	32	42	48	51	54	56	57	58	60	61	61
		6750	1875,0	50	44	50	53	56	57	59	60	61	62	63

## Selection tables

## Table 12

- Variable flow rate controllers type RVV-D (Sound pressure levels in NR)

RVV-D			Regenerated noise		NR a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	29	33	35	37	38	39	40	41	42	42
		170	47,2	31	37	40	43	44	46	47	48	48	49	50
		255	70,8	69	41	45	47	49	50	51	52	53	53	54
		340	94,4	122		48	50	52	53	54	55	56	57	57
		425	118,1	191		50	53	54	56	57	58	58	59	60
125	124	130	36,1	6	30	35	37	39	40	41	42	43	44	44
		260	72,2	26	37	42	44	46	47	48	49	50	51	52
		390	108,3	58	42	46	48	50	52	53	54	54	55	56
		520	144,4	103	45	49	51	53	55	56	57	57	58	59
		650	180,6	161		51	54	56	57	58	59	60	61	61
140	139	165	45,8	6	31	35	38	40	41	42	43	44	45	46
		330	91,7	25	38	42	45	47	48	49	50	51	52	53
		495	137,5	55	42	47	49	51	52	54	55	55	56	57
		660	183,3	98	45	50	52	54	55	57	58	58	59	60
		825	229,2	154		52	54	56	58	59	60	61	61	62
160	159	215	59,7	6	32	36	39	41	42	43	44	45	46	47
		430	119,4	22	38	43	46	48	49	50	51	52	53	54
		645	179,2	50	42	47	50	52	53	54	55	56	57	58
		860	238,9	89	45	50	53	55	56	57	58	59	60	61
		1075	298,6	140		52	55	57	58	59	60	61	62	63
200	199	340	94,4	5	32	37	40	42	44	45	46	47	48	49
		680	188,9	19	39	44	47	49	50	52	53	54	54	55
		1020	283,3	43	43	48	51	53	54	55	57	57	58	59
		1360	377,8	77	46	50	53	55	57	58	59	60	61	62
		1700	472,2	121		53	55	57	59	60	61	62	63	64
225	224	430	119,4	4	33	38	41	43	44	46	47	48	49	49
		860	238,9	17	39	44	47	49	51	52	53	54	55	56
		1290	358,3	39	43	48	51	53	54	56	57	58	59	60
		1720	477,8	69	45	50	53	56	57	58	60	61	61	62
		2150	597,2	109	47	53	55	58	59	61	62	63	63	64
250	249	525	145,8	4	33	38	41	43	45	46	47	48	49	50
		1050	291,7	15	39	44	47	49	51	52	53	54	55	56
		1575	437,5	34	43	48	51	53	55	56	57	58	59	60
		2100	583,3	61	45	50	53	56	57	59	60	61	62	62
		2625	729,2	96	47	52	55	58	59	61	62	63	64	64
315	314	840	233,3	3	32	38	41	44	45	47	48	49	50	51
		1680	466,7	12	38	44	47	50	51	53	54	55	56	57
		2520	700,0	27	42	48	51	53	55	56	57	59	59	60
		3360	933,3	47	44	50	53	56	57	59	60	61	62	63
		4200	1166,7	74	46	52	55	57	59	61	62	63	64	65
400	399	1350	375,0	2	32	38	41	44	45	47	48	49	50	51
		2700	750,0	8	38	43	47	49	51	53	54	55	56	57
		4050	1125,0	18	41	47	50	53	54	56	57	58	59	60
		5400	1500,0	32	43	49	53	55	57	58	60	61	62	63
		6750	1875,0	50	45	51	54	57	59	60	61	63	64	64





## Selection tables

## Table 15

- Variable flow rate controllers type RVV-D (Sound pressure levels in dB(A))

RVV-D			Radiated noise		dB(A) a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	<	21	23	25	27	28	29	31	31
		170	47,2	31	<	21	24	27	29	30	32	33	34	35
		255	70,8	69	<	23	26	29	31	33	34	35	36	37
		340	94,4	122		24	28	30	32	34	35	37	38	39
		425	118,1	191		25	29	31	34	35	37	38	39	40
125	124	130	36,1	6	<	<	20	23	25	26	28	29	30	31
		260	72,2	26	<	20	24	27	29	30	32	33	34	35
		390	108,3	58	<	23	26	29	31	33	34	35	36	37
		520	144,4	103	<	24	28	31	33	34	36	37	38	39
		650	180,6	161		26	29	32	34	36	37	38	39	40
140	139	165	45,8	6	<	<	20	23	25	26	28	29	30	31
		330	91,7	25	<	21	24	27	29	30	32	33	34	35
		495	137,5	55	<	23	27	29	31	33	34	36	37	38
		660	183,3	98	<	25	28	31	33	35	36	37	38	39
		825	229,2	154		26	30	32	34	36	37	39	40	41
160	159	215	59,7	6	<	<	20	23	25	26	28	29	30	31
		430	119,4	22	<	21	25	27	29	31	32	33	35	35
		645	179,2	50	<	24	27	30	32	33	35	36	37	38
		860	238,9	89	<	25	29	32	34	35	37	38	39	40
		1075	298,6	140		27	31	33	35	37	38	39	40	41
200	199	340	94,4	5	<	<	21	23	25	27	29	30	31	32
		680	188,9	19	<	22	26	28	30	32	33	35	36	37
		1020	283,3	43	<	25	29	31	33	35	36	38	39	40
		1360	377,8	77	21	27	31	33	35	37	38	40	41	42
		1700	472,2	121		29	32	35	37	39	40	41	42	43
225	224	430	119,4	4	<	<	21	24	26	28	29	30	31	32
		860	238,9	17	<	23	27	29	31	33	34	35	37	37
		1290	358,3	39	20	26	30	32	34	36	37	38	40	40
		1720	477,8	69	22	28	32	34	36	38	39	41	42	43
		2150	597,2	109	23	30	33	36	38	40	41	42	43	44
250	249	525	145,8	4	<	<	22	25	27	28	30	31	32	33
		1050	291,7	15	<	24	27	30	32	34	35	36	37	38
		1575	437,5	34	21	27	30	33	35	37	38	39	40	41
		2100	583,3	61	23	29	33	35	37	39	40	42	43	44
		2625	729,2	96	24	31	34	37	39	41	42	43	44	45
315	314	840	233,3	3	<	20	24	27	29	30	32	33	34	35
		1680	466,7	12	20	26	30	32	34	36	37	39	40	41
		2520	700,0	27	23	29	33	36	38	39	41	42	43	44
		3360	933,3	47	26	32	36	38	40	42	43	44	45	46
		4200	1166,7	74	27	34	37	40	42	44	45	46	47	48
400	399	1350	375,0	2	<	23	26	29	31	33	34	35	36	37
		2700	750,0	8	23	29	33	35	37	39	40	42	43	44
		4050	1125,0	18	26	33	36	39	41	43	44	45	46	47
		5400	1500,0	32	29	35	39	42	44	45	47	48	49	50
		6750	1875,0	50	31	37	41	44	46	47	49	50	51	52

< : Nivel de presión sonora < 20 dB(A)

## Selection tables

## Table 16

- Variable flow rate controllers type RVV-D (Sound pressure levels in NC)

RVV-D			Radiated noise		NC a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	<	<	<	20	21	23	24	25	26
		170	47,2	31	<	<	<	21	23	25	26	27	29	29
		255	70,8	69	<	<	21	23	25	27	28	30	31	32
		340	94,4	122		<	22	25	27	28	30	31	32	33
		425	118,1	191		20	23	26	28	30	31	32	33	34
125	124	130	36,1	6	<	<	<	<	<	21	22	23	24	25
		260	72,2	26	<	<	<	21	23	25	26	27	28	29
		390	108,3	58	<	<	21	23	25	27	28	30	31	32
		520	144,4	103	<	<	22	25	27	29	30	31	32	33
		650	180,6	161		20	24	26	28	30	31	33	34	35
140	139	165	45,8	6	<	<	<	<	<	21	22	23	24	25
		330	91,7	25	<	<	<	21	23	25	26	27	29	29
		495	137,5	55	<	<	21	24	26	27	29	30	31	32
		660	183,3	98	<	<	23	25	27	29	30	32	33	34
		825	229,2	154		21	24	27	29	30	32	33	34	35
160	159	215	59,7	6	<	<	<	<	<	21	22	23	24	25
		430	119,4	22	<	<	<	22	24	25	27	28	29	30
		645	179,2	50	<	<	22	24	26	28	29	30	32	32
		860	238,9	89	<	20	23	26	28	30	31	32	33	34
		1075	298,6	140		21	25	28	30	31	33	34	35	36
200	199	340	94,4	5	<	<	<	<	20	22	23	24	25	26
		680	188,9	19	<	<	20	23	25	26	28	29	30	31
		1020	283,3	43	<	<	23	26	28	29	31	32	33	34
		1360	377,8	77	<	21	25	28	30	31	33	34	35	36
		1700	472,2	121		23	27	29	31	33	34	36	37	38
225	224	430	119,4	4	<	<	<	<	20	22	23	25	26	27
		860	238,9	17	<	<	21	24	26	27	29	30	31	32
		1290	358,3	39	<	20	24	27	29	30	32	33	34	35
		1720	477,8	69	<	22	26	29	31	32	34	35	36	37
		2150	597,2	109	<	24	28	30	32	34	35	37	38	39
250	249	525	145,8	4	<	<	<	<	21	23	24	25	26	27
		1050	291,7	15	<	<	22	24	26	28	29	31	32	33
		1575	437,5	34	<	21	25	27	29	31	33	34	35	36
		2100	583,3	61	<	23	27	30	32	33	35	36	37	38
		2625	729,2	96	<	25	29	31	33	35	36	38	39	40
315	314	840	233,3	3	<	<	<	21	23	25	26	27	28	29
		1680	466,7	12	<	20	24	27	29	30	32	33	34	35
		2520	700,0	27	<	24	27	30	32	34	35	36	37	38
		3360	933,3	47	20	26	30	33	35	36	38	39	40	41
		4200	1166,7	74	22	28	32	34	36	38	39	41	42	43
400	399	1350	375,0	2	<	<	21	23	25	27	29	30	31	32
		2700	750,0	8	<	23	27	30	32	33	35	36	37	38
		4050	1125,0	18	21	27	31	33	35	37	38	40	41	42
		5400	1500,0	32	23	30	33	36	38	40	41	42	43	44
		6750	1875,0	50	25	32	35	38	40	42	43	44	45	46

< : sound pressure level < NC 20

## Selection tables

## Table 17

- Variable flow rate controllers type RVV-D (Sound pressure levels in NR)

RVV-D					Radiated noise										NR a p [Pa] =			
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000				
100	99	85	23,6	8	<	<	<	<	21	23	24	26	27	28				
		170	47,2	31	<	<	20	23	25	27	28	29	30	31	31			
		255	70,8	69	<	<	22	25	27	29	30	31	32	33	33			
		340	94,4	122		20	24	27	29	30	32	33	34	35	35			
		425	118,1	191		21	25	28	30	31	33	34	35	36	36			
125	124	130	36,1	6	<	<	<	<	21	22	24	25	26	27				
		260	72,2	26	<	<	20	23	25	26	28	29	30	31	31			
		390	108,3	58	<	<	23	25	27	29	30	31	32	33	33			
		520	144,4	103	<	21	24	27	29	30	32	33	34	35	35			
		650	180,6	161		22	25	28	30	32	33	34	35	36	36			
140	139	165	45,8	6	<	<	<	<	21	22	24	25	26	27				
		330	91,7	25	<	<	20	23	25	27	28	29	30	31	31			
		495	137,5	55	<	<	23	25	28	29	31	32	33	34	34			
		660	183,3	98	<	21	25	27	29	31	32	33	35	36	36			
		825	229,2	154		22	26	29	31	32	34	35	36	36	37			
160	159	215	59,7	6	<	<	<	<	21	23	24	25	26	27				
		430	119,4	22	<	<	21	23	25	27	28	30	31	32	32			
		645	179,2	50	<	20	23	26	28	30	31	32	33	34	34			
		860	238,9	89	<	22	25	28	30	32	33	34	35	36	36			
		1075	298,6	140		23	27	29	31	33	34	36	37	38	38			
200	199	340	94,4	5	<	<	<	20	22	23	25	26	27	28				
		680	188,9	19	<	<	22	25	27	28	30	31	32	33	33			
		1020	283,3	43	<	21	25	27	29	31	33	34	35	36	36			
		1360	377,8	77	<	23	27	29	31	33	35	36	37	38	38			
		1700	472,2	121		25	28	31	33	35	36	37	38	39	39			
225	224	430	119,4	4	<	<	<	20	22	24	25	27	28	29				
		860	238,9	17	<	<	23	25	27	29	30	32	33	34	34			
		1290	358,3	39	<	22	26	28	30	32	33	35	36	37	37			
		1720	477,8	69	<	24	28	31	33	34	36	37	38	39	39			
		2150	597,2	109	20	26	30	32	34	36	37	38	39	40	40			
250	249	525	145,8	4	<	<	<	21	23	24	26	27	28	29				
		1050	291,7	15	<	20	24	26	28	30	31	32	33	34	34			
		1575	437,5	34	<	23	27	29	31	33	34	36	37	38	38			
		2100	583,3	61	<	25	29	31	34	35	37	38	39	40	40			
		2625	729,2	96	21	27	31	33	35	37	38	39	41	41	41			
315	314	840	233,3	3	<	<	20	23	25	26	28	29	30	31				
		1680	466,7	12	<	22	26	29	31	32	34	35	36	37	37			
		2520	700,0	27	<	26	29	32	34	36	37	38	39	40	40			
		3360	933,3	47	22	28	32	34	36	38	39	41	42	43	43			
		4200	1166,7	74	24	30	34	36	38	40	41	42	43	44	44			
400	399	1350	375,0	2	<	<	23	25	27	29	30	32	33	34				
		2700	750,0	8	<	25	29	31	34	35	37	38	39	40	40			
		4050	1125,0	18	23	29	33	35	37	39	40	41	42	43	43			
		5400	1500,0	32	25	31	35	38	40	41	43	44	45	46	46			
		6750	1875,0	50	27	33	37	40	42	43	45	46	47	48	48			

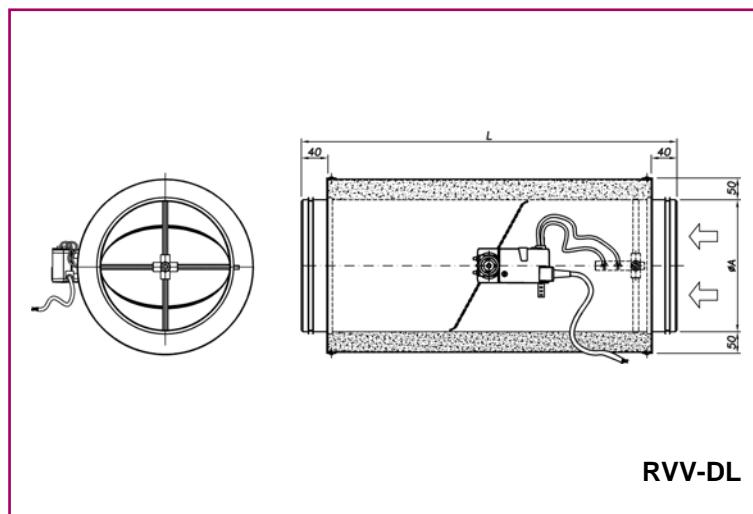
< : sound pressure level < NR 20





## Variable flow rate controller, type RVV-DL

### Dimensions


**RVV-DL**

*Variable flow rate controller with acoustic isolation, extended casing*

**SIZE**

*Sizes Indicate size from 80 to 630*

*For calibration of the RVV-DL maximum and minimum air flow rates should also be indicated.*

### Description

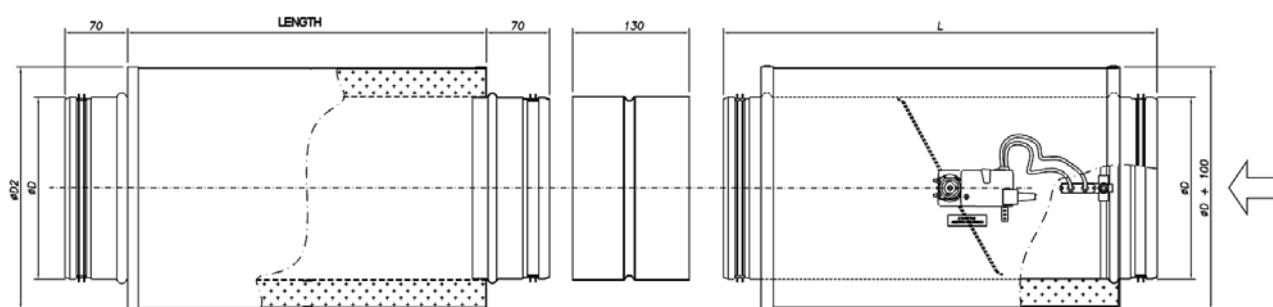
The RVV-DL is a variable flow rate controller similar to the RVV-D, i.e with double skin and acoustic isolation, but with an increased casing length, thus improving the acoustical characteristics of the unit.

Therefore, only the exterior dimensions and noise levels will be modified.

### Dimensions

SIZE	$\varnothing$ A	L
80	78	690
100	98	690
125	123	730
160	158	800
200	198	880
250	248	980
315	313	1000
355	353	1000
400	398	1000
450	448	1000
500	498	1000
630	628	1000

Dimensions in mm



RVV-DL with silencer ASK-1

## Selection tables

The following tables (21 to 30) correspond to the regenerated and radiated noise for the RVV-DL unit according to the same conditions indicated for the RVV.

### Table n°20

In this table the sound pressure level in the room, due to the noise regenerated by the RVV-DL unit, is given in dB(A) for various air flow rates and for pressures from 100 to 1000 Pa. To obtain these values a 10 dB/octave attenuation has been assumed for discharge duct, diffuser and room.

### Table n°21

In this table the sound pressure level in the room is given expressed in NC (value of the NC curve corresponding to the sound spectrum) for the same conditions as table 1.

### Table n°22

Values for the sound pressure level in the room in NR (value of the NR curve corresponding to the sound spectrum) is presented for the same conditions as table 1.

### Tables n°23 and 24

The value of the sound power level (dB), regenerated by the RVV-DL unit is presented for the octave bands between 63 and 8000 Hz.

### Table n°25

In this table the sound pressure level in the room, due to the noise radiated by the RVV-DL unit, is given in dB(A) for various air flow rates and for pressures from 100 to 1000 Pa. To obtain these values a 10 dB/octave attenuation has been assumed for the false ceiling.

### Tables n°26 and 27

These tables are similar to the former, except that the sound pressure levels are referred to the NC and NR curves respectively.

### Tables n°28 and 29

Sound power levels (dB) are given for the radiated noise for the octave bands from 63 to 8000 Hz.

### ISO Standards

All acoustic data published in this catalogue were obtained by tests, realised in a single reverberation room, constructed according to ISO standard 3741. All tests have been realised according to ISO standards 5135 and 5220.

## Selection tables

## Table 20

### - Variable flow rate controllers type RVV-DL (Sound pressure levels in dB(A))

RVV-DL			Regenerated noise		dB(A) a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	23	30	33	36	38	40	41	43	44	45
		170	47,2	31	29	36	40	42	45	46	48	49	50	51
		255	70,8	69	33	40	44	46	48	50	52	53	54	55
		340	94,4	122		42	46	49	51	53	54	55	57	58
		425	118,1	191		44	48	51	53	55	56	58	59	60
125	124	130	36,1	6	26	33	36	39	41	43	44	46	47	48
		260	72,2	26	32	39	43	45	47	49	51	52	53	54
		390	108,3	58	36	42	46	49	51	53	54	55	57	58
		520	144,4	103	38	45	49	51	53	55	57	58	59	60
		650	180,6	161		47	51	53	55	57	59	60	61	62
140	139	165	45,8	6	28	34	38	41	43	45	46	47	48	49
		330	91,7	25	34	40	44	47	49	51	52	53	54	55
		495	137,5	55	37	44	47	50	52	54	56	57	58	59
		660	183,3	98	39	46	50	53	55	57	58	59	60	61
		825	229,2	154		48	52	55	57	58	60	61	62	63
160	159	215	59,7	6	29	36	40	42	45	46	48	49	50	51
		430	119,4	22	35	42	45	48	50	52	53	55	56	57
		645	179,2	50	38	45	49	52	54	55	57	58	59	60
		860	238,9	89	41	47	51	54	56	58	59	61	62	63
		1075	298,6	140		49	53	56	58	60	61	62	63	64
200	199	340	94,4	5	32	38	42	45	47	49	50	52	53	54
		680	188,9	19	37	44	48	50	53	54	56	57	58	59
		1020	283,3	43	40	47	51	54	56	57	59	60	61	62
		1360	377,8	77	43	49	53	56	58	60	61	62	64	65
		1700	472,2	121		51	55	58	60	61	63	64	65	66
225	224	430	119,4	4	33	39	43	46	48	50	51	53	54	55
		860	238,9	17	38	45	49	51	53	55	57	58	59	60
		1290	358,3	39	41	48	52	54	57	58	60	61	62	63
		1720	477,8	69	43	50	54	57	59	60	62	63	64	65
		2150	597,2	109		45	52	56	58	60	62	64	65	67
250	249	525	145,8	4	34	40	44	47	49	51	52	54	55	56
		1050	291,7	15	39	45	49	52	54	56	57	59	60	61
		1575	437,5	34	42	48	52	55	57	59	60	62	63	64
		2100	583,3	61	44	50	54	57	59	61	62	64	65	66
		2625	729,2	96		45	52	56	59	61	63	64	65	68
315	314	840	233,3	3	35	42	46	49	51	53	54	55	56	57
		1680	466,7	12	40	47	51	53	56	57	59	60	61	62
		2520	700,0	27	43	50	53	56	58	60	62	63	64	65
		3360	933,3	47	45	52	55	58	60	62	64	65	66	67
		4200	1166,7	74		46	53	57	60	62	64	65	66	68
400	399	1350	375,0	2	37	43	47	50	52	54	55	57	58	59
		2700	750,0	8	41	48	52	54	56	58	60	61	62	63
		4050	1125,0	18	44	50	54	57	59	61	62	64	65	66
		5400	1500,0	32	45	52	56	59	61	63	64	65	67	68
		6750	1875,0	50		47	53	57	60	62	64	66	67	69

## Selection tables

## Table 21

-Variable flow rate controllers type RVV-DL (Sound pressure levels in NC)

RVV-DL			Regenerated noise		NC a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	25	29	31	34	35	37	38	39	40
		170	47,2	31	25	31	35	38	40	42	43	44	46	47
		255	70,8	69	29	35	39	42	44	45	47	48	49	50
		340	94,4	122		38	42	44	46	48	50	51	52	53
		425	118,1	191		40	44	46	48	50	52	53	54	55
125	124	130	36,1	6	21	28	32	35	37	38	40	41	42	43
		260	72,2	26	28	34	38	41	43	45	46	47	48	49
		390	108,3	58	31	38	42	44	46	48	50	51	52	53
		520	144,4	103	34	40	44	47	49	51	52	53	54	55
		650	180,6	161		42	46	49	51	53	54	55	56	57
140	139	165	45,8	6	23	30	33	36	38	40	42	43	44	45
		330	91,7	25	29	36	39	42	44	46	47	49	50	51
		495	137,5	55	32	39	43	46	48	49	51	52	53	54
		660	183,3	98	35	41	45	48	50	52	53	55	56	57
		825	229,2	154		43	47	50	52	54	55	57	58	59
160	159	215	59,7	6	25	31	35	38	40	42	43	44	46	47
		430	119,4	22	30	37	41	44	46	47	49	50	51	52
		645	179,2	50	34	40	44	47	49	51	52	54	55	56
		860	238,9	89	36	43	47	49	51	53	55	56	57	58
		1075	298,6	140		45	48	51	53	55	56	58	59	60
200	199	340	94,4	5	27	34	38	40	42	44	46	47	48	49
		680	188,9	19	33	39	43	46	48	50	51	52	54	55
		1020	283,3	43	36	42	46	49	51	53	54	56	57	58
		1360	377,8	77	38	45	48	51	53	55	57	58	59	60
		1700	472,2	121		46	50	53	55	57	58	60	61	62
225	224	430	119,4	4	28	35	39	41	44	45	47	48	49	50
		860	238,9	17	33	40	44	47	49	51	52	53	54	55
		1290	358,3	39	37	43	47	50	52	54	55	56	58	59
		1720	477,8	69	39	45	49	52	54	56	57	59	60	61
		2150	597,2	109		40	47	51	54	56	58	59	60	62
250	249	525	145,8	4	29	36	40	42	44	46	48	49	50	51
		1050	291,7	15	34	41	45	47	50	51	53	54	55	56
		1575	437,5	34	37	44	48	50	53	54	56	57	58	59
		2100	583,3	61	39	46	50	52	55	56	58	59	60	61
		2625	729,2	96		41	48	51	54	56	58	59	61	63
315	314	840	233,3	3	31	37	41	44	46	48	49	51	52	53
		1680	466,7	12	35	42	46	49	51	53	54	55	57	58
		2520	700,0	27	38	45	49	52	54	55	57	58	59	60
		3360	933,3	47	40	47	51	54	56	57	59	60	61	62
		4200	1166,7	74		42	48	52	55	57	59	60	62	64
400	399	1350	375,0	2	32	39	42	45	47	49	51	52	53	54
		2700	750,0	8	36	43	47	50	52	54	55	56	57	58
		4050	1125,0	18	39	46	49	52	54	56	58	59	60	61
		5400	1500,0	32		41	47	51	54	56	58	59	61	63
		6750	1875,0	50		42	49	53	56	58	59	61	62	64

< : sound pressure level < NC 20

## Selection tables

## Table 22

- Variable flow rate controllers type RVV-DL (Sound pressure levels in NR)

RVV-DL			Regenerated noise		NR a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	26	30	32	34	36	38	39	40	41
		170	47,2	31	26	32	36	39	41	43	44	45	46	47
		255	70,8	69	29	36	40	43	45	46	48	49	50	51
		340	94,4	122		39	42	45	47	49	50	52	53	54
		425	118,1	191		41	45	47	49	51	53	54	55	56
125	124	130	36,1	6	22	29	33	35	38	39	41	42	43	44
		260	72,2	26	28	35	39	42	44	45	47	48	49	50
		390	108,3	58	32	39	42	45	47	49	50	52	53	54
		520	144,4	103	35	41	45	48	50	52	53	54	55	56
		650	180,6	161		43	47	50	52	53	55	56	57	58
140	139	165	45,8	6	24	31	34	37	39	41	42	44	45	46
		330	91,7	25	30	36	40	43	45	47	48	50	51	52
		495	137,5	55	33	40	44	46	49	50	52	53	54	55
		660	183,3	98	36	42	46	49	51	53	54	56	57	58
		825	229,2	154		44	48	51	53	55	56	57	59	60
160	159	215	59,7	6	26	32	36	39	41	43	44	45	46	47
		430	119,4	22	31	38	42	44	47	48	50	51	52	53
		645	179,2	50	35	41	45	48	50	52	53	54	56	57
		860	238,9	89	37	44	47	50	52	54	56	57	58	59
		1075	298,6	140		45	49	52	54	56	57	59	60	61
200	199	340	94,4	5	28	35	39	41	43	45	47	48	49	50
		680	188,9	19	33	40	44	47	49	51	52	53	54	55
		1020	283,3	43	37	43	47	50	52	54	55	56	58	59
		1360	377,8	77	39	45	49	52	54	56	57	59	60	61
		1700	472,2	121		47	51	54	56	58	59	60	62	63
225	224	430	119,4	4	29	36	40	42	45	46	48	49	50	51
		860	238,9	17	34	41	45	48	50	52	53	54	55	56
		1290	358,3	39	37	44	48	51	53	55	56	57	58	59
		1720	477,8	69	40	46	50	53	55	57	58	60	61	62
		2150	597,2	109		41	48	52	55	57	58	60	61	62
250	249	525	145,8	4	30	37	40	43	45	47	49	50	51	52
		1050	291,7	15	35	42	46	48	50	52	54	55	56	57
		1575	437,5	34	38	45	49	51	53	55	57	58	59	60
		2100	583,3	61	40	47	51	53	56	57	59	60	61	62
		2625	729,2	96		42	48	52	55	57	59	60	62	63
315	314	840	233,3	3	32	38	42	45	47	49	50	52	53	54
		1680	466,7	12	36	43	47	50	52	54	55	56	57	58
		2520	700,0	27	39	46	50	52	55	56	58	59	60	61
		3360	933,3	47	41	48	52	54	57	58	60	61	62	63
		4200	1166,7	74		43	49	53	56	58	60	61	63	65
400	399	1350	375,0	2	33	39	43	46	48	50	52	53	54	55
		2700	750,0	8	37	44	48	51	53	54	56	57	58	59
		4050	1125,0	18	40	46	50	53	55	57	59	60	61	62
		5400	1500,0	32		42	48	52	55	57	59	60	62	63
		6750	1875,0	50		43	50	54	56	59	60	62	63	65

< : sound pressure level < NR 20





## Selection tables

## Table 25

### - Variable flow rate controllers type RVV-DL (Sound pressure levels in dB(A))

RVV-DL			Radiated noise		dB(A) a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	<	20	23	25	27	28	29	30	31
		170	47,2	31	<	20	24	27	29	30	32	33	34	35
		255	70,8	69	<	22	26	29	31	32	34	35	36	37
		340	94,4	122		24	28	30	32	34	35	36	37	38
		425	118,1	191		25	29	31	33	35	36	38	39	40
125	124	130	36,1	6	<	<	20	23	25	27	28	29	30	31
		260	72,2	26	<	21	24	27	29	31	32	33	34	35
		390	108,3	58	<	23	27	29	31	33	34	36	37	38
		520	144,4	103	<	25	28	31	33	35	36	37	38	39
		650	180,6	161		26	30	32	34	36	37	38	40	40
140	139	165	45,8	6	<	<	21	23	25	27	28	30	31	32
		330	91,7	25	<	21	25	27	29	31	33	34	35	36
		495	137,5	55	<	24	27	30	32	34	35	36	37	38
		660	183,3	98	<	25	29	32	34	35	37	38	39	40
		825	229,2	154		27	30	33	35	37	38	39	40	41
160	159	215	59,7	6	<	<	21	24	26	27	29	30	31	32
		430	119,4	22	<	22	26	28	30	32	33	34	36	36
		645	179,2	50	<	25	28	31	33	34	36	37	38	39
		860	238,9	89	20	26	30	33	35	36	38	39	40	41
		1075	298,6	140		28	32	34	36	38	39	40	41	42
200	199	340	94,4	5	<	<	22	25	27	29	30	31	32	33
		680	188,9	19	<	24	27	30	32	34	35	36	37	38
		1020	283,3	43	<	27	30	33	35	36	38	39	40	41
		1360	377,8	77	22	29	32	35	37	39	40	41	42	43
		1700	472,2	121		30	34	36	38	40	41	43	44	45
225	224	430	119,4	4	<	20	23	26	28	30	31	32	33	34
		860	238,9	17	<	25	28	31	33	35	36	37	38	39
		1290	358,3	39	22	28	31	34	36	38	39	40	41	42
		1720	477,8	69	24	30	34	36	38	40	41	42	44	44
		2150	597,2	109	25	32	35	38	40	41	43	44	45	46
250	249	525	145,8	4	<	20	24	27	29	30	32	33	34	35
		1050	291,7	15	20	26	29	32	34	36	37	38	39	40
		1575	437,5	34	23	29	33	35	37	39	40	41	43	43
		2100	583,3	61	25	31	35	37	39	41	42	44	45	46
		2625	729,2	96	27	33	37	39	41	43	44	45	46	47
315	314	840	233,3	3	<	23	27	29	31	33	34	36	37	38
		1680	466,7	12	23	29	32	35	37	39	40	41	42	43
		2520	700,0	27	26	32	36	38	40	42	43	45	46	47
		3360	933,3	47	28	35	38	41	43	44	46	47	48	49
		4200	1166,7	74	30	36	40	43	45	46	48	49	50	51
400	399	1350	375,0	2	20	26	30	32	34	36	37	39	40	41
		2700	750,0	8	26	32	36	39	41	42	44	45	46	47
		4050	1125,0	18	30	36	40	42	44	46	47	49	50	51
		5400	1500,0	32	32	39	42	45	47	49	50	51	52	53
		6750	1875,0	50	34	41	44	47	49	51	52	53	54	55

< : sound pressure level < 20 dB(A)

## Selection tables

## Table 26

### - Variable flow rate controllers type RVV-DL (Sound pressure levels in NC)

RVV-DL			Radiated noise		NC a p ]Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	<	<	<	20	21	23	24	25	26
		170	47,2	31	<	<	<	21	23	25	26	28	29	30
		255	70,8	69	<	<	21	23	25	27	28	30	31	32
		340	94,4	122		<	22	25	27	28	30	31	32	33
		425	118,1	191		20	23	26	28	30	31	32	33	34
125	124	130	36,1	6	<	<	<	<	20	21	23	24	25	26
		260	72,2	26	<	<	<	22	24	25	27	28	29	30
		390	108,3	58	<	<	21	24	26	28	29	30	31	32
		520	144,4	103	<	<	23	26	28	29	31	32	33	34
		650	180,6	161		21	24	27	29	31	32	33	34	35
140	139	165	45,8	6	<	<	<	<	20	22	23	24	25	26
		330	91,7	25	<	<	20	22	24	26	27	28	29	30
		495	137,5	55	<	<	22	25	27	28	30	31	32	33
		660	183,3	98	<	20	24	26	28	30	31	33	34	35
		825	229,2	154		21	25	28	30	31	33	34	35	36
160	159	215	59,7	6	<	<	<	<	20	22	23	25	26	27
		430	119,4	22	<	<	20	23	25	27	28	29	30	31
		645	179,2	50	<	<	23	26	28	29	31	32	33	34
		860	238,9	89	<	21	25	27	29	31	32	34	35	36
		1075	298,6	140		23	26	29	31	32	34	35	36	37
200	199	340	94,4	5	<	<	<	20	22	23	25	26	27	28
		680	188,9	19	<	<	22	25	27	28	30	31	32	33
		1020	283,3	43	<	21	25	28	30	31	33	34	35	36
		1360	377,8	77	<	23	27	30	32	33	35	36	37	38
		1700	472,2	121		25	29	31	33	35	36	37	38	39
225	224	430	119,4	4	<	<	<	21	23	24	26	27	28	29
		860	238,9	17	<	<	23	26	28	29	31	32	33	34
		1290	358,3	39	<	22	26	29	31	32	34	35	36	37
		1720	477,8	69	<	25	28	31	33	35	36	37	38	39
		2150	597,2	109	20	26	30	33	35	36	38	39	40	41
250	249	525	145,8	4	<	<	<	21	23	25	26	28	29	30
		1050	291,7	15	<	21	24	27	29	30	32	33	34	35
		1575	437,5	34	<	24	27	30	32	34	35	36	37	38
		2100	583,3	61	20	26	30	32	34	36	37	38	39	40
		2625	729,2	96	21	28	31	34	36	38	39	40	41	42
315	314	840	233,3	3	<	<	21	24	26	28	29	30	31	32
		1680	466,7	12	<	23	27	30	32	33	35	36	37	38
		2520	700,0	27	21	27	31	33	35	37	38	39	40	41
		3360	933,3	47	23	29	33	36	38	39	41	42	43	44
		4200	1166,7	74	25	31	35	37	39	41	42	44	45	46
400	399	1350	375,0	2	<	21	24	27	29	31	32	33	34	35
		2700	750,0	8	21	27	31	33	35	37	38	40	41	42
		4050	1125,0	18	24	31	34	37	39	41	42	43	44	45
		5400	1500,0	32	27	33	37	40	42	43	45	46	47	48
		6750	1875,0	50	29	35	39	42	44	45	47	48	49	50

< : sound pressure level < NC 20

## Selection tables

## Table 27

- Variable flow rate controllers type RVV-DL (Sound pressure levels in NR)

RVV-DL			Radiated noise		NR a p [Pa] =									
Size	[mm]	Q [m³/h]	Q (l/s)	P <sub>min</sub> [Pa]	100	200	300	400	500	600	700	800	900	1000
100	99	85	23,6	8	<	<	<	<	21	23	24	25	26	27
		170	47,2	31	<	<	20	23	25	26	28	29	30	31
		255	70,8	69	<	<	22	25	27	28	30	31	32	33
		340	94,4	122		20	24	26	28	30	31	32	33	34
		425	118,1	191		21	25	27	29	31	32	34	35	36
125	124	130	36,1	6	<	<	<	<	21	23	24	25	26	27
		260	72,2	26	<	<	20	23	25	27	28	29	30	31
		390	108,3	58	<	<	23	25	27	29	30	32	33	34
		520	144,4	103	<	21	24	27	29	31	32	33	34	35
		650	180,6	161		22	26	28	30	32	33	34	36	36
140	139	165	45,8	6	<	<	<	<	21	23	24	26	27	28
		330	91,7	25	<	<	21	23	25	27	29	30	31	32
		495	137,5	55	<	20	23	26	28	30	31	32	33	34
		660	183,3	98	<	21	25	28	30	31	33	34	35	36
		825	229,2	154		23	26	29	31	33	34	35	36	37
160	159	215	59,7	6	<	<	<	20	22	23	25	26	27	28
		430	119,4	22	<	<	22	24	26	28	29	30	32	32
		645	179,2	50	<	21	24	27	29	30	32	33	34	35
		860	238,9	89	<	22	26	29	31	32	34	35	36	37
		1075	298,6	140		24	28	30	32	34	35	36	37	38
200	199	340	94,4	5	<	<	<	21	23	25	26	27	28	29
		680	188,9	19	<	20	23	26	28	30	31	32	33	34
		1020	283,3	43	<	23	26	29	31	32	34	35	36	37
		1360	377,8	77	<	25	28	31	33	35	36	37	38	39
		1700	472,2	121		26	30	32	34	36	37	39	40	41
225	224	430	119,4	4	<	<	<	22	24	26	27	28	29	30
		860	238,9	17	<	21	24	27	29	31	32	33	34	35
		1290	358,3	39	<	24	27	30	32	34	35	36	37	38
		1720	477,8	69	20	26	30	32	34	36	37	38	40	40
		2150	597,2	109	21	28	31	34	36	37	39	40	41	42
250	249	525	145,8	4	<	<	20	23	25	26	28	29	30	31
		1050	291,7	15	<	22	25	28	30	32	33	34	35	36
		1575	437,5	34	<	25	29	31	33	35	36	37	39	39
		2100	583,3	61	21	27	31	33	35	37	38	40	41	42
		2625	729,2	96	23	29	33	35	37	39	40	41	42	43
315	314	840	233,3	3	<	<	23	25	27	29	30	32	33	34
		1680	466,7	12	<	25	28	31	33	35	36	37	38	39
		2520	700,0	27	22	28	32	34	36	38	39	41	42	43
		3360	933,3	47	24	31	34	37	39	40	42	43	44	45
		4200	1166,7	74	26	32	36	39	41	42	44	45	46	47
400	399	1350	375,0	2	<	22	26	28	30	32	33	35	36	37
		2700	750,0	8	22	28	32	35	37	38	40	41	42	43
		4050	1125,0	18	26	32	36	38	40	42	43	45	46	47
		5400	1500,0	32	28	35	38	41	43	45	46	47	48	49
		6750	1875,0	50	30	37	40	43	45	47	48	49	50	51

< : sound pressure level < NR 20





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