

SWG

NOISE-DAMPING RECTANGULAR WALL AIR-INTAKE/EXHAUST VENTILATOR



Description:

SWG rectangular wall air-intake/exhaust ventilator with fixed/angled sound damping inserts.

Intended use

The SWG air-intake/exhaust ventilator is used at the ends of ventilation systems in order to suppress noise.

They are also used as noise barriers for the air transfer, for example, in power plants, engine and plant rooms, car parks and landing sites, etc.

Design

The SWG has profiled, non-movable louvres filled with a mineral wool damping insert with an additional covering of fibreglass. On the back of the damping grille, a steel bird guard net is mounted. The entire structure is made of galvanised steel as standard. Other RAL versions made out of aluminium or stainless steel are available upon special request.

Designing guidelines

Two design variants are available: the SWG150 and SWG300.

Where quantitative airflow control with simultaneous noise attenuation is required, it is recommended to use the SWG300 damping net with a multi-leaf damper mounted.

In a location exposed to direct weathering, it is recommended to use a PS damper with louvres filled with polyurethane foam (which minimises the impact of thermal bridges).

It is recommended to select an SWG with an active area corresponding to an effective velocity in the net cross-section of no more than 2 m/s.

Installation

SWG ventilators can be fixed to the partitions by means of screws through the holes in the ventilator frame (to be made on site) or through casting (the ventilator must not constitute a formwork for the mounting hole).

After installation of the counter-frame, a shut-off damper or a ventilation duct of standard dimensions can be fitted to the air-intake ventilator.

Dimensions

SWG150

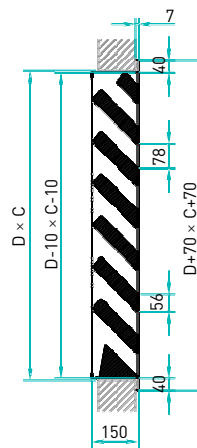


Figure 1. SWG 150 dimensions.

SWG300

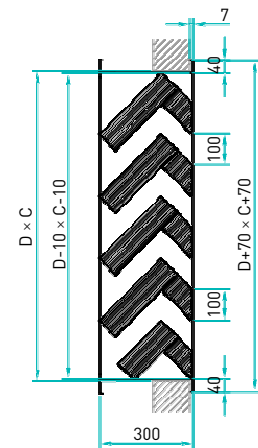


Figure 2. SWG 300 dimensions with a counter-frame to the duct.

Standard dimensions of the SWG air-intake ventilator:

- Width **C = 400÷2000 mm** (every 50 mm)
- Height **D = 300, 350, 400, 500, 550, 600, 630, 700, 750, 800, 900, 950, 1000, 1100, 1150, 1200, 1300, 1350, 1400, 1500, 1550, 1600, 1700, 1750, 1800, 1900, 1950, 2000, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2500, 2550 mm.**

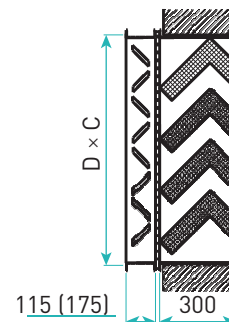


Figure 3. SWG300 damping ventilator with a multileaf damper installed.

AIRFLOW CONTROL AND DISTRIBUTION



Technical Data

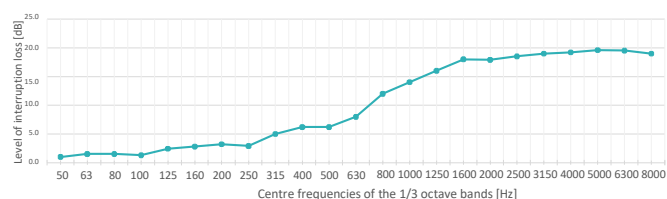


Diagram 1. Theoretical noise attenuation level in the SWG150 sound frequency bands.

Table 1. SWG150 effective area.

Height B [mm]	Effective area A_{eff} [m ²]						
	Width A [mm]						
	400	500	600	700	800	900	1000
350	0.045	0.056	0.067	0.078	0.089	0.100	0.112
550	0.069	0.086	0.103	0.120	0.138	0.155	0.172
750	0.109	0.137	0.164	0.191	0.219	0.246	0.273
950	0.133	0.167	0.200	0.233	0.267	0.300	0.334
1150	0.174	0.217	0.261	0.304	0.348	0.391	0.434
1350	0.198	0.248	0.297	0.347	0.396	0.456	0.495
1550	0.238	0.298	0.358	0.417	0.477	0.536	0.596
1750	0.279	0.348	0.418	0.488	0.558	0.627	0.697
1950	0.303	0.379	0.454	0.530	0.606	0.682	0.757

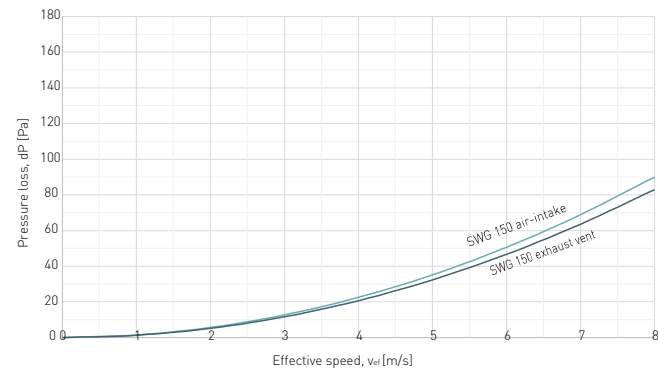


Diagram 2. Pressure loss for the SWG150.

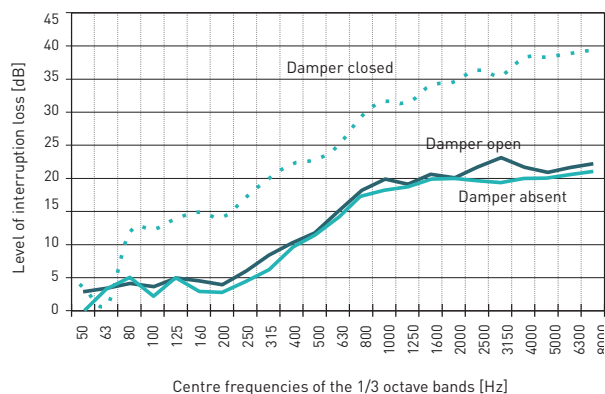


Diagram 3. Theoretical noise attenuation level in the SWG300 sound frequency bands.

Table 2. SWG300 effective area.

Height B [mm]	Effective area A_{eff} [m ²]							A_{eff} [%]
	Width A [mm]							
	400	500	600	700	800	900	1000	
350	0.028	0.035	0.042	0.049	0.056	0.063	0.070	23
550	0.056	0.070	0.084	0.098	0.112	0.126	0.140	28
750	0.084	0.105	0.126	0.147	0.168	0.189	0.210	30
950	0.112	0.140	0.168	0.196	0.224	0.252	0.280	31
1150	0.140	0.175	0.210	0.245	0.280	0.315	0.350	32
1350	0.168	0.210	0.252	0.294	0.336	0.378	0.420	32
1550	0.196	0.245	0.294	0.343	0.392	0.441	0.490	33
1750	0.224	0.280	0.336	0.392	0.448	0.504	0.560	33
1950	0.252	0.315	0.378	0.441	0.504	0.567	0.630	33
2150	0.280	0.350	0.420	0.490	0.560	0.630	0.700	33
2350	0.308	0.385	0.462	0.539	0.616	0.693	0.770	33
2550	0.336	0.420	0.504	0.588	0.672	0.756	0.840	34

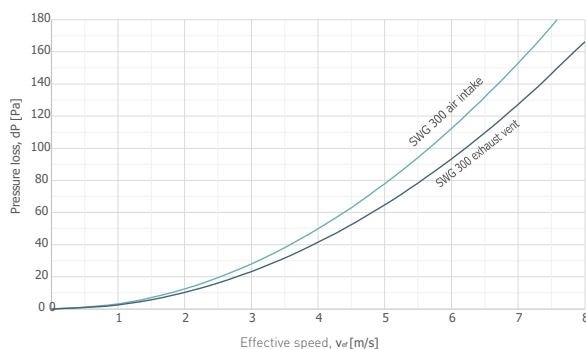


Diagram 4. Pressure loss for the SWG300.

Table 3. SWG300 approximate weight [kg].

Height B [mm]	Approximate weight [kg]						
	Width A [mm]						
	400	500	600	700	800	900	1000
350	9	10.5	12	13.5	15	17	19
550	14.5	17	19	21	23.5	26	29
750	20	23.5	26	29.5	32.5	36	40
950	24.5	29	33	37	41	46	51
1150	31	36	41	46	51	56	61
1350	36	42	48	54	60	66	72
1550	41	48	55	62	69	76	83
1750	46	54	62	70	78	86	94
1950	51	60	69	78	87	96	105
2150	58	68	77	86	96	106	115
2350	62	73	84	95	106	116	127
2550	68	80	91	102	114	126	138

SWG – Noise-damping rectangular wall air-intake/exhaust ventilator

When ordering, please provide information according to the following pattern:

SWG <T> - <C> x <D> - <P> - <RAL>

Where:

T	Type	150 – Depth 150 mm 300 – Depth 300 mm
C	Mounting hole width	400–2000 mm
D	Mounting hole height in mm	350–2550 mm
P	Finish*	AL – Painted aluminium SL – Painted steel SO – Galvanised steel SN – Stainless steel, quality 1.4301 (304 according to AISI, 0H18N9 according to PN)
RAL	Colour as per RAL (for SL or AL finish)	

* Optional values, if not specified, the default values will be used

Sample order: **SWG300-800x1150-SL9010**