



Воздухонагреватель SILENTHERME

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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Тула (4872)74-02-29

Тюмень (3452)66-21-18

Ульяновск (8422)24-23-59

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Ярославль (4852)69-52-93

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*The economical solution
with centralised production
Individual adjustment in each room
The most silent electric air heater to protect
against frost
or to heat large spaces
A wide range of accessories*



Range: 5 to 120 kW
Air flow: 900 to 1 4000 m³/h

USE

■ Extra Silent (ES) and Silent (S) Operation

Forced air heating for rooms requiring a low sound level and rapid warm-up.

Particularly well-suited to very large rooms, the **SILENTHERME** is the most logical solution for heating multi-purpose rooms, halls, auditoriums, cinemas, conference rooms, etc.

■ Large Volumes (TG) and Very Large Volumes (TGV) Operation

These air heaters are used to heat large industrial premises using forced air. Their high flow rate/pressure means that they can be used for heating via a large duct network.

RANGE

■ Hot water SILENTHERME:

- Operation in ES and S zones
Extra Silent and Silent

5 unit sizes: series 1 - 2 - 3 - 4 - 5.

Air flow rate from 900 to 7 100 m³/h.

- Operation in TG and TGV

Large Volumes and Very Large Spaces

5 unit sizes: series 1 - 2 - 3 - 4 - 5.

Air flow rate from 1 000 to 14 000 m³/h.

■ Electric SILENTHERME:

- Operation in ES/S and in TG and TGV

Extra Silent/Silent and Large Volumes/Very Large Volumes

5 unit sizes: series 1 - 2 - 3 - 4 - 5

Capacity from 6 to 60 kW depending on the models.

Air flow rate from 400 to 14 000 m³/h

CHOOSING A SILENTHERME

When choosing a SILENTHERME, the functional and structural parameters of the room to be heated must be taken into account:

- Volume, height, surface, shape, type of construction, insulation.
- The purpose of the room, whether or not there is an intake of fresh air, any specific internal pollution, the desired sound level, the possible installation location (obstacles, fresh air inlets).
- The heating objective: global, in zones, for protection (air curtain).
- Compliance with room regulations:
 - Designed for work (temperature, pollution)
 - Open to the public (temperature, air change, fire protection rating).

On the electric version, the regulations are different:

Reminder of the regulations

Fire safety regulations

Article CH 37

Electrical heater coils

Electrical heater coils placed in the air stream (whatever the capacity of the coil), must be installed in accordance with the following specifications:

1. It must not be possible to power the central and terminal coils if the fan is not operating.
2. Manual reset safety thermostats (thermal short-circuit devices) must be placed on each coil, no more than 15 centimetres upstream; these are designed to cut the power supply to the coil in question if the air stream temperature exceeds 120°C.
3. Electric heaters must be installed in boxes or ducts made from category M0 materials. Any components made from materials which do not belong to category M0 must be protected from direct radiation from these electric heaters.

Note: The insulation on our centrifugal electric air heaters is protected against radiation by the double casing on the electric heater.

Section VIII. – Self-contained heat production
/emission units

Article CH 44

Definitions and general information

§1. A production/emission unit is a self-contained unit which produces and emits heat in the room in which it is installed. It may be a direct combustion unit (powered by solid, liquid or gaseous fuel) or a non-combustion unit (electric convector and

radiator, electric baseboard heater, electric underfloor heating system, electric heated ceiling, electric radiant panel or other process which has received technical approval by the Central Safety Committee).

Electric heated ceilings, however, are subject to the above procedure.

§2. This equipment must not include flames or unprotected glowing elements, nor be susceptible to projecting any glowing particles from it.

No accessible component part of this equipment must be at a temperature over 100°C, if the height is less than 2.25 metres.

They must also comply with the specifications of title III of the order referred to in article CH 2.

Article CH 45

Electrical equipment

Unless otherwise stated elsewhere in this regulation, electrical production and emission equipment may be installed in accessible public spaces without any power limits, provided that it is fixed, in addition to complying with any particular specifications concerned.

Our electric SILENTHERME air heater complies with the requirements of the above-mentioned regulations.

TECHNICAL DESCRIPTION

Casing

Electro-galvanised steel sheet metal coated in a dark grey paint (RAL 7024). All panels lined with glass wool to protect against erosion. Hinged access panel to the fan motor assembly and heater.

Filtration

- Operation in ES and S zones
Type G 4 or type F 5.
- Operation in LS and VLS
Type G 1 or type G 4.

Heat exchange coil for hot water SILENTHERME

Silenterme units are equipped with high efficiency coils compatible with low temperature fluids (heat pumps, condensation boilers).

Easily removable without having to remove the SILENTHERME.

Built with copper tubes and aluminium blades for hot water with an inlet temperature $\leq 120^\circ\text{C}$ and for a operating pressure ≤ 8 bar.

- Supply piping

Construction: hexagonal sleeves

Position:

- Vertical units: to the left when looking at the unit from the front.
- Horizontal units: the positions can change sides on site very quickly.

Fan

Centrifugal, dual-inlet, dynamically balanced impeller with forward curved blades.

Fan motor assembly suspended on resilient mounts

Motor

Fitted inside the casing, the single speed, 3-phase 230/400 V - 50 Hz silent series is equipped with overload protection (PTO).

Option: 2-speed motor ratio 1:2.

Drive

Via pulleys/V-belt(s)

Electric heater for electric SILENTHERME

Composed of shielded resistors made from finned steel tubing, fitted with double insulation.

3-PH 400 V + neutral - 50 Hz supply.

Manual reset safety thermostat (temperature cut-out $> 100^\circ\text{C}$). Power supply to the right or left of the unit, can be changed on site.

Accessories

There is a wide range of assembly and connection accessories available (see primary and secondary accessories section).

HOT WATER SILENTHERME

■ Selection

The selection of a SILENTHERME is done according to a heating capacity, an air flow and a static pressure (optional for ducts).

This leads to the determination of the series (1, 2, 3, 4 or 5) and the number of rows (1, 2 or 3) of the heating coil for obtention of the price.

This defines the SILENTHERME designation

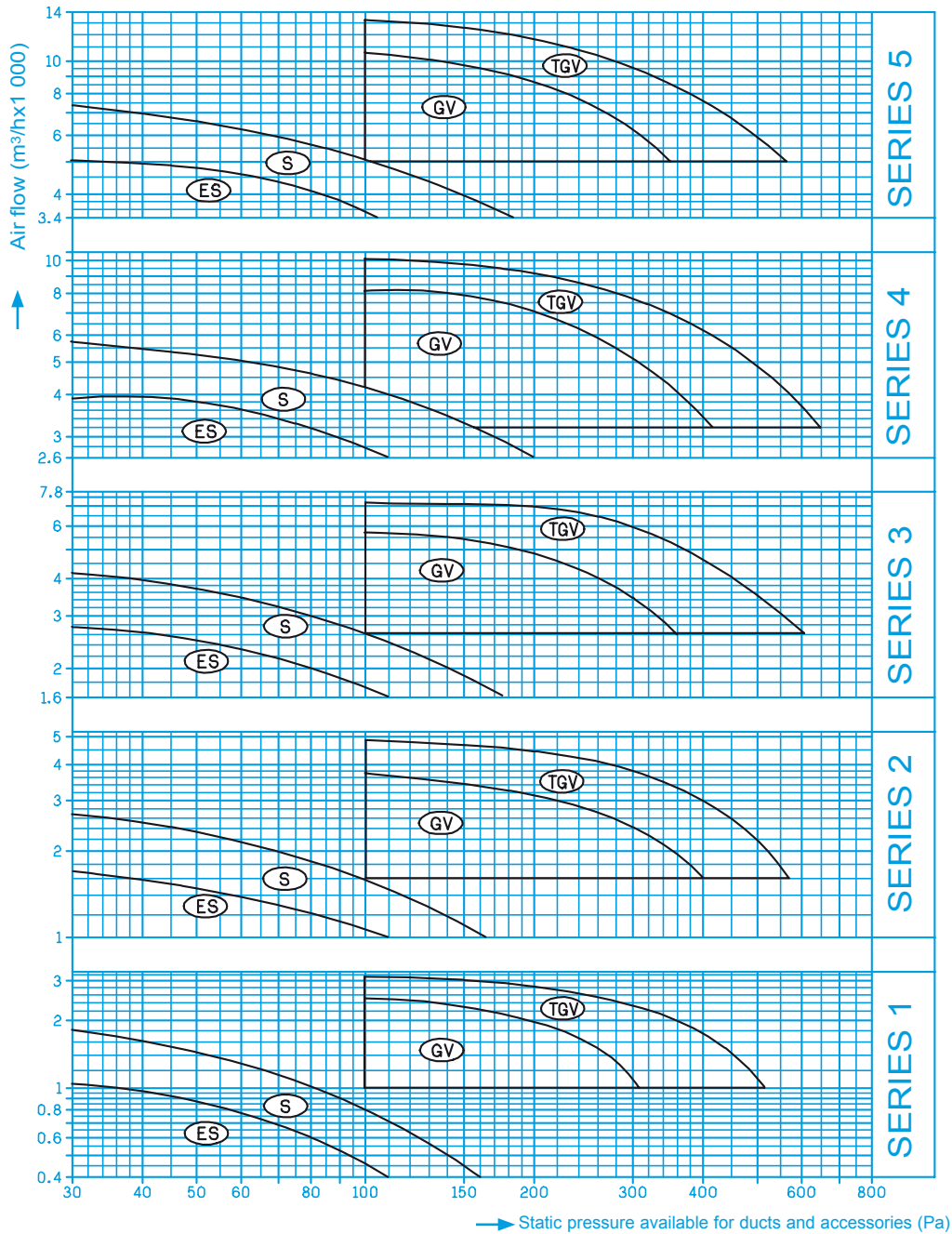
Example:



Each "standard" unit can be fitted with main accessories:

- Air intake box No. 10 - 20 - 30 or 40.
- Air diffuser No. 1 or 2.

■ Preliminary selection of the series based on the air flow to be handled



(ES) "Extra-silent" operation
(S) "Silent" operation

(GV) "Large volume" operation
(TGV) "Very large volume" operation

■ Selection tables - Air flow rate / Heating capacity
for Extra-silent and Silent SILENTHERME

Temperature + 12 °C at inlet - Pressure 1 013 hPa

SILENTHERME	Air flow rate m ³ /h	Range** m	Motor power kW	Sound level* dB(A)	Low pressure fluid					
					Hot water 45 - 37 °C		Hot water 90 - 70 °C		Hot water 105 - 75 °C	
					Heating capacity kW	Air outlet temp. °C	Heating capacity kW	Air outlet temp. °C	Heating capacity kW	Air outlet temp. °C
Extra-silent operation (ES)										
11	1130				3.2	20	7.5	32	8.3	34
12	1020	12	0.37	35	4.7	26	11.7	46	12.8	49
13	930				5.8	31	14.4	58	16.1	63
21	1680				4.1	19	9.6	29	10.5	31
22	1350	14	0.37	40	6.1	25	14.6	45	16.3	48
23	1250				7.5	30	18.6	56	20.7	61
31	2830				6.5	19	15.2	28	16.8	30
32	2480	18	0.55	44	10.2	24	24.5	42	27.2	45
33	2190				12.2	29	30.4	53	33.9	58
41	3950				9.0	19	21.4	28	23.3	30
42	3550	20	0.75	45	14.8	24	35.2	42	39.2	45
43	3250				17.9	28	44.2	52	49.7	57
51	5100				12.7	19	30.0	30	33.1	31
52	4630	22	0.75	43	20.4	25	49.1	44	55.0	47
53	4250				24.7	29	61.3	55	67.8	59
Silent operation (S)										
11	1750				3.9	19	9.2	28	10.1	29
12	1600	16	0.37	44	6.3	24	15.2	40	16.7	43
13	1500				8.3	29	20.0	52	22.4	56
21	2600				4.9	18	11.7	25	12.8	27
22	2250	18	0.55	48	8.3	23	19.6	38	21.9	41
23	2000				10.5	28	25.7	50	28.4	54
31	3800				7.4	18	17.4	26	19.2	27
32	3400	22	0.75	49	12.4	23	29.6	38	32.2	40
33	3000				15.2	27	37.0	49	41.2	53
41	5600				10.5	18	24.9	25	27.3	27
42	5050	30	1.1	51	18.2	23	43.0	38	47.8	40
43	4550				22.7	27	55.6	48	61.0	52
51	7100				14.9	18	35.0	27	38.2	28
52	6550	32	1.1	49	25.2	23	60.0	39	66.7	42
53	6000				31.8	28	77.6	50	86.1	55

Shaded power values correspond to commonly used units, well-suited to room heating.

* Sound level: pressure level at 5 m in a room with average reverberation, 200 m² Sabin.
311 assembly unit - directivity 2.

** for assembly unit 311, residual speed 0.25 ms⁻¹ (equal temperature air blast)

Correction table for other return air temperature

Temperature of air at inlet °C	-15	-10	-7	-5	0	+5	+10	+12	+15	+18	+20
Coefficient corrector	1.44	1.35	1.31	1.27	1.19	1.11	1.03	1.00	0.95	0.90	0.87

■ Selection tables - Air flow rate / Heating capacity for Large Volumes and Very Large Volumes.

Temperature + 12 °C at inlet - Pressure 1 013 hPa

SILENTHERME	Air flow rate m ³ /h	Range** m	Motor power kW	Sound level* dB(A)	Low pressure fluid					
					Hot water 45 - 37 °C		Hot water 90 - 70 °C		Hot water 105 - 75 °C	
					Heating capacity kW	Air outlet temp. °C	Heating capacity kW	Air outlet temp. °C	Heating capacity kW	Air outlet temp. °C
Large Volumes (GV)										
11	2500	24	0.75	54	4.6	17	10.7	24	11.8	25
12	2300				7.8	22	18.2	35	20.2	37
13	2100				10.4	27	24.4	45	27.0	49
21	3800 3500 3100	28	1.5	59	5.8	17	13.7	22	15.2	23
22					10.5	21	24.6	32	27.3	34
23					13.9	25	33.0	43	36.5	46
31	6000 5400 4600	36	2.2	62	9.0	17	21.5	22	23.8	23
32					15.7	21	37.0	32	41.0	34
33					20.0	25	47.4	42	52.5	45
41	8500 7600 6600	44	2.2	64	12.6	16	29.4	22	32.6	23
42					22.5	21	52.8	32	58.5	34
43					28.6	25	68.0	42	75.0	45
51	11000 9600 8000	50	3	64	17.9	17	42.0	23	46.5	24
52					31.1	22	73.0	34	81.0	36
53					38.8	26	91.5	45	101.0	48
Very Large Volumes (TGV)										
11	3300 3100 2800	30	1.5	61	5.2	17	12.1	22	13.4	23
12					9.0	21	21.5	32	23.8	34
13					12.3	25	29.3	42	32.4	45
21	5000 4400 3800	35	2.2	64	6.5	16	15.2	21	16.8	22
22					11.8	20	27.6	30	30.6	32
23					15.7	24	37.4	40	41.4	43
31	7800 6600 5000	44	3	68	10.0	16	23.3	21	25.8	22
32					17.4	20	41.0	30	45.4	32
33					21.1	25	49.5	40	54.8	43
41	10500 9000 7500	49	4	70	13.6	16	32.1	21	35.6	22
42					24.5	20	57.5	30	63.7	32
43					31.0	24	73.5	40	81.4	43
51	14000 12400 10600	60	5.5	70	19.8	16	46.4	22	51.4	23
52					35.1	20	83.5	31	92.4	33
53					45.6	25	108.0	41	119.6	44

Shaded power values correspond to commonly used units, well-suited to room heating.

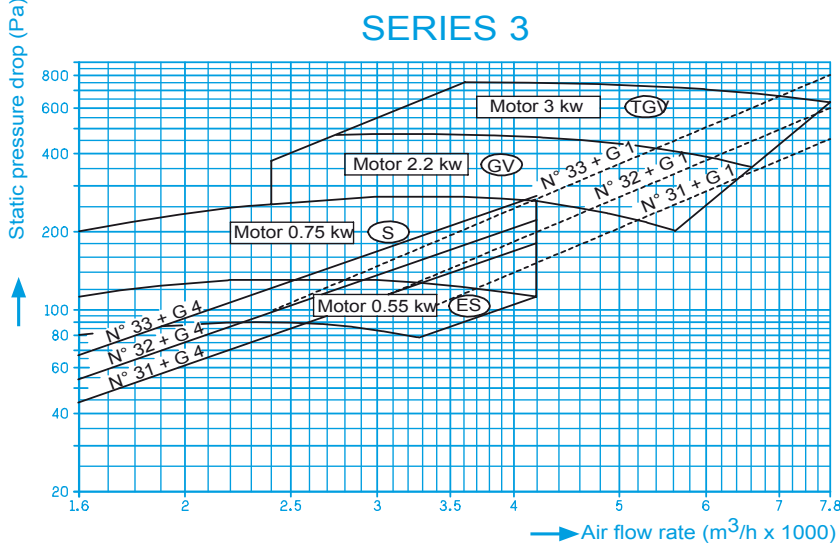
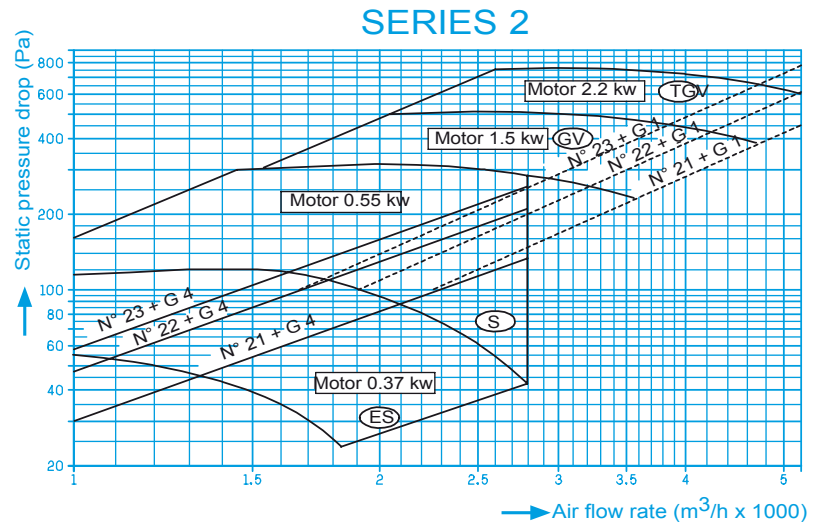
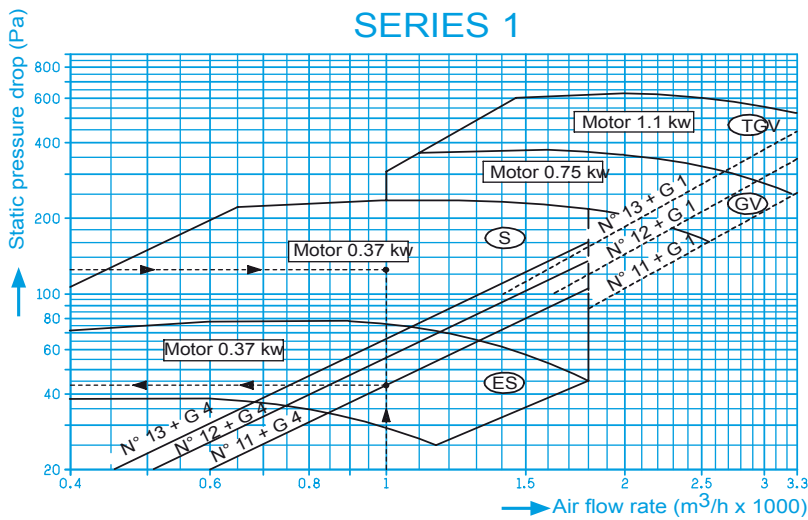
* Sound level: pressure level at 5 m in a room with average reverberation, 200 m² Sabin.
311 assembly unit - directivity 2.

** for assembly unit 311, residual speed 0.25 ms⁻¹ (equal temperature air blast)

Correction table for other return air temperature

Temperature of air at inlet °C	-15	-10	-7	-5	0	+5	+10	+12	+15	+18	+20
Coefficient corrector	1.44	1.35	1.31	1.27	1.19	1.11	1.03	1.00	0.95	0.90	0.87

■ Selection graphs (case of duct networks)



- (ES) Extra-silent operation
- (S) Silent operation
- (GV) "Large volume" operation
- (TGV) "Very large volume" operation

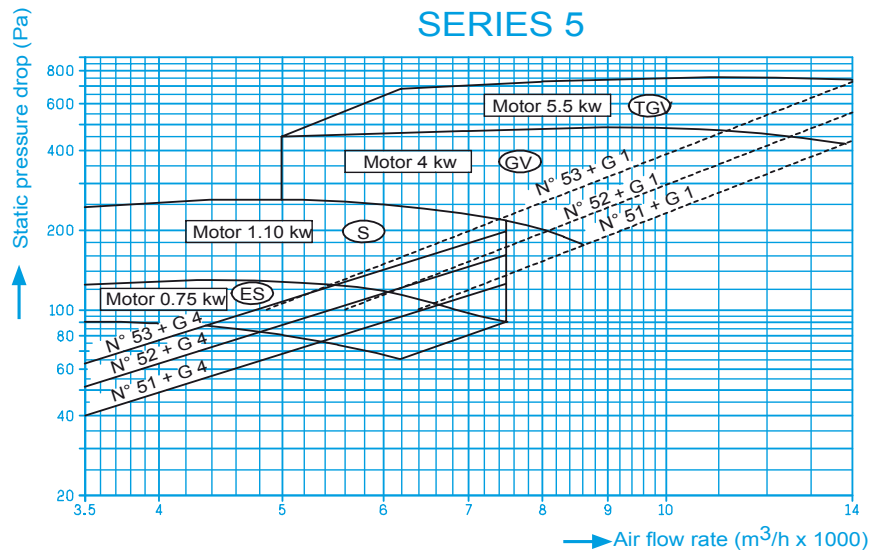
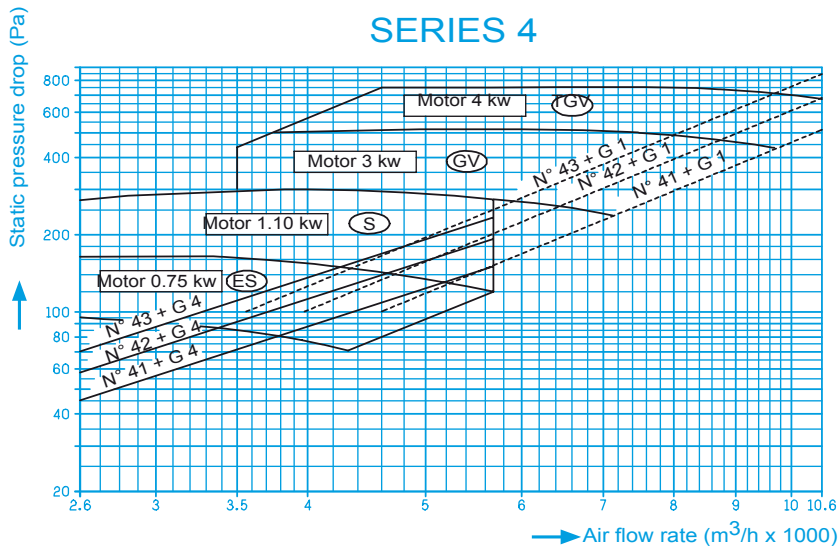
Example of selection

- You wish to use a Silenterme series 1 N° 11 with an air flow of 1 000 m³/h mounted on a duct network whose pressure drop is 80 Pa.

The internal pressure drop of the Silenterme N° 11 is 43 Pa with a G4 standard filter.

The selected model is a zone S unit, motor 0.37 kW.

The selection can be optimised by calculation using software, contact us.



- (ES) Extra-silent operation
- (S) Silent operation
- (GV) "Large volume" operation
- (TGV) "Very large volume" operation

■ Electrical characteristics of three-phase 400 v - 50 hz motors

1-speed motor 4 poles

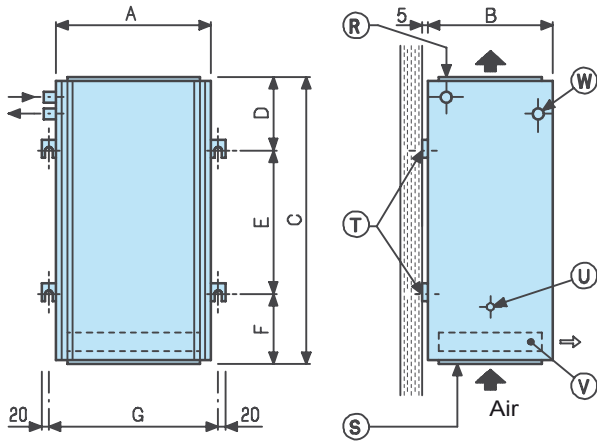
Power (kW)	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5
NI in A	1	1.4	1.8	2.4	3.4	4.7	6.4	8.9	11.3

2-speed motor 4/8 poles

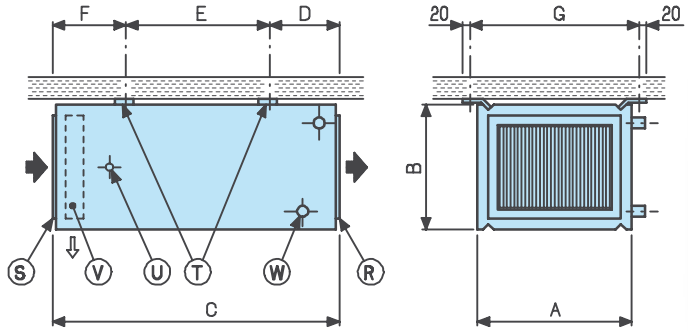
Power (kW)	0.37 / 0.09	0.75 / 0.17	1.7 / 0.35	2.3 / 0.5	3.7 / 1	6.8 / 1.4
NI in A	1.1 / 0.5	2.2 / 0.75	4 / 1.6	5.2 / 1.9	7.9 / 3.2	14.1 / 5.1

DIMENSIONS - SERIES 1 TO 5

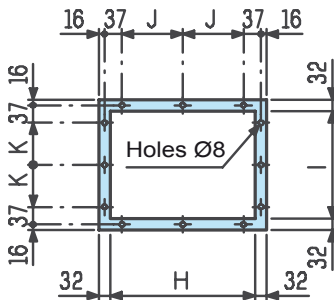
■ **Standard vertical fitting No. 300**



■ **Standard vertical fitting No. 500**



■ **Recommended drilling layout (inlet or outlet duct)**



- (R) Outlet flange
- (S) Inlet flange
- (T) Attachment: 4 M14 rods
- (U) Cable hole (power supply cable)
- (V) Filter EU 4 or EU 5: extracted in direction shown by arrow.
- (W) Supply pipes: position when delivered according to drawing above. Possibility of changing on site. Alternatively, cable hole and grommet for electric units.

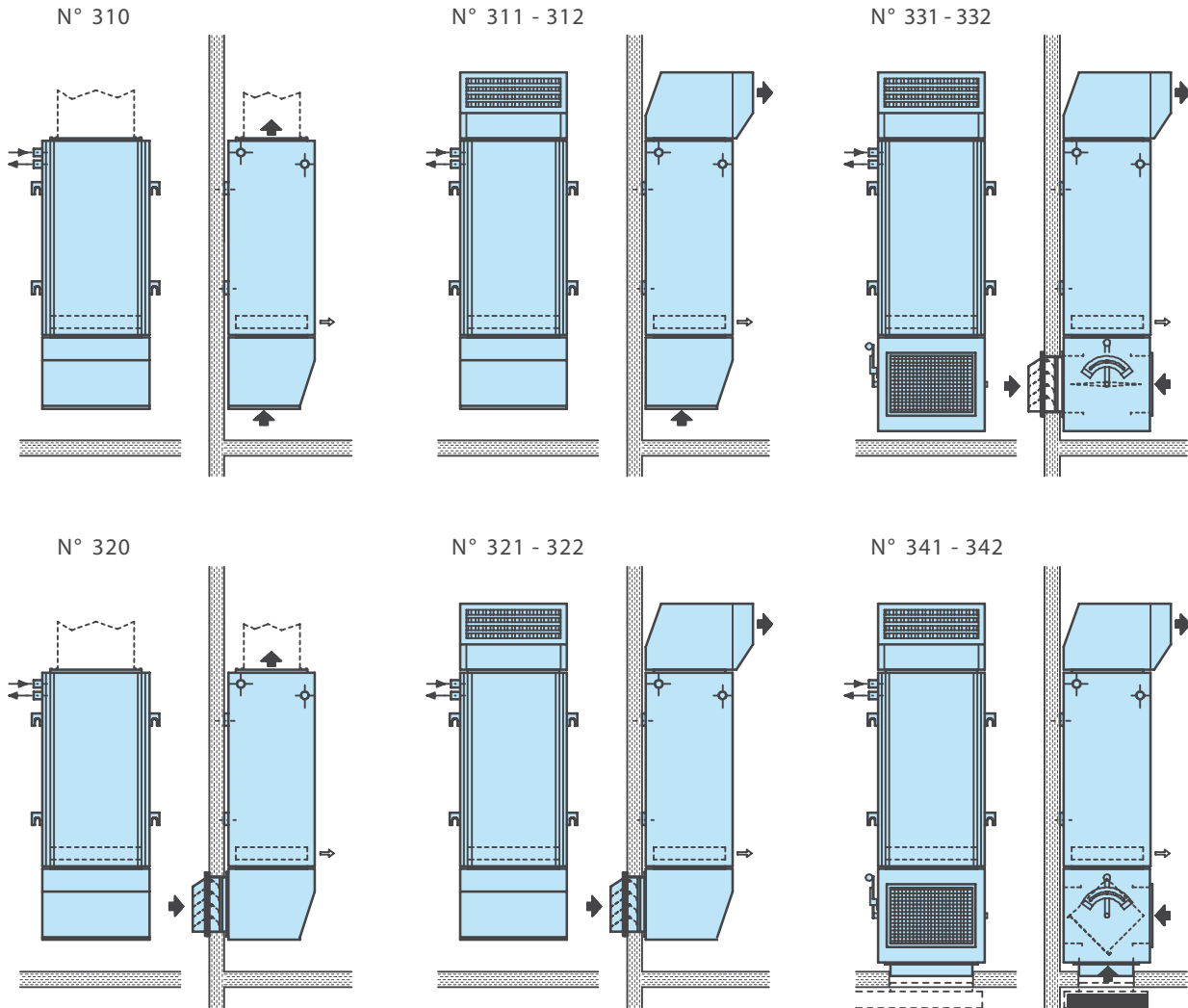
Series	A	B	C	D	E	F	G	H	I	J	K	Ø of supply piping
1	660	470	1180	305	580	295	696	542	352	250	155	GF 1/2"
2	660	525	1180	305	580	295	696	542	407	250	182.5	GF 1/2"
3	750	610	1300	305	700	295	786	632	492	295	225	GF 3/4"
4	845	700	1440	305	840	295	881	727	582	342.5	270	GF 1"
5	970	830	1640	305	1040	295	1006	852	712	405	335	GF 1"

Approximate weights of units in kg

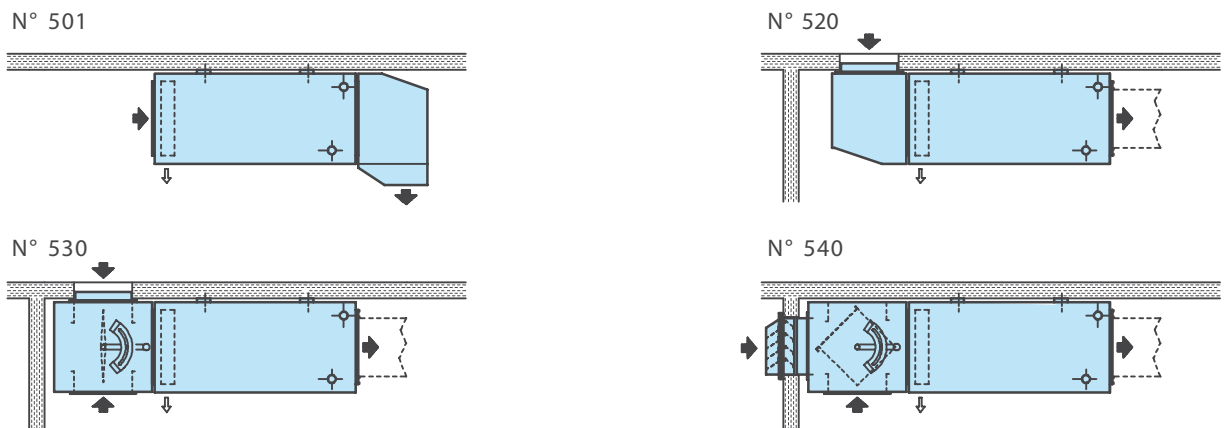
Units	Series	1			2			3			4			5		
	N°	11	12	13	21	22	23	31	32	33	41	42	43	51	52	53
Standard models N° 300 or 400		63	64	65	67	68	70	84	86	88	102	105	108	146	150	154
Accessories :																
Box N° 10			10.5			11.5			15			18.5			24	
20			9.5			10.5			14			16.5			22	
30			24			27			35			45			64	
40			25			28			38			48			68	
Diffuser N° 1			18.5			23			30			36.5			47.5	

EXAMPLES OF ASSEMBLY

■ Vertical assembly with accessories



■ Horizontal assembly with accessories



Reminder: assembly 331: standard unit N° 300 - Air intake box N° 30 - Diffuser N° 1

SECONDARY ACCESSORIES FOR SILENTHERME INSTALLATION

■ For vertical units

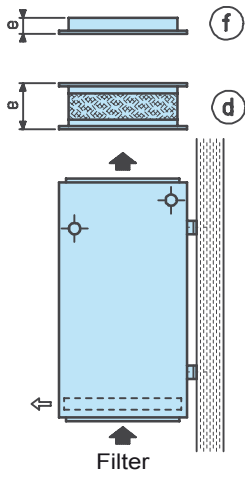
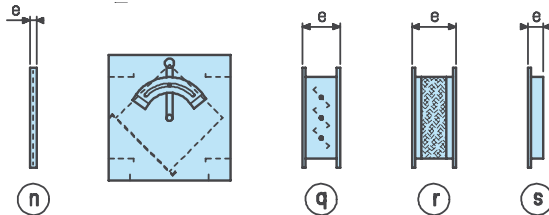


Fig.	Description	Dim.	Series				
			1	2	3	4	5
d	M0 anti-vibration sleeve (GM 3)	e	140				
f	Connection frame (GM 1)	e	60				
n	Intake grille (PM 2)	e	7				
q	Motorisable anti freeze damper (PM 5)	e	175				
r	M0 anti-vibration sleeve (PM 3)	e	140				
s	Connection frame (PM 1)	e	60				



■ For horizontal units

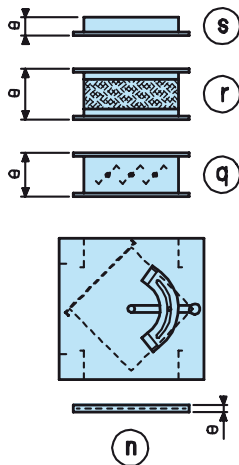
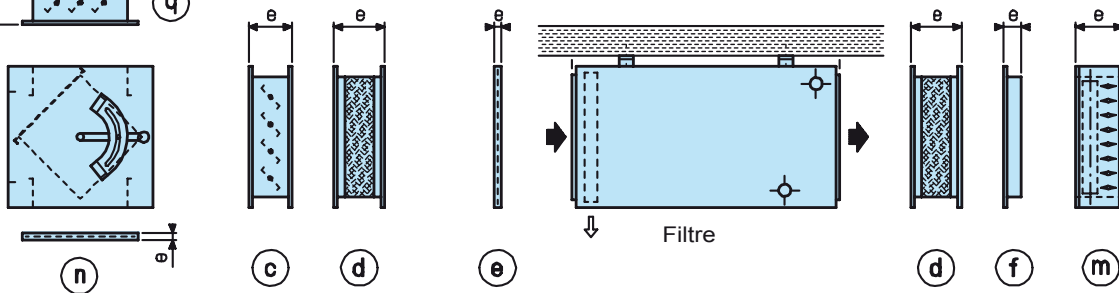







Fig.	Description	Dim.	Series				
			1	2	3	4	5
c	Motorisable antifreeze damper (GM 5)	e	175				
d	M0 anti-vibration sleeve (GM 3)	e	140				
e	Intake grille (GM 2)	e	7				
f	Connection frame (GM 1)	e	60				
m	Frame with vertical and horizontal orientable flaps (GM 9)	e	121				
n	Intake grille (PM 2)	e	7				
q	Motorisable anti freeze damper (PM 5)	e	175				
r	M0 anti-vibration sleeve (PM 3)	e	140				
s	Connection frame (PM 1)	e	60				



SECONDARY ACCESSORIES FOR MOUNTING

Accessories	Series 1	Series 2	Series 3	Series 4	Series 5
Motorisable anti freeze damper (GM5)	7336728	7336729	7336730	7336731	7336732
M0 anti-vibration sleeve (GM3)	2206296	2206297	2206298	2206299	2206300
Intake grille (GM2)	2823218	2823219	2823220	2823221	2823222
Connection frame (GM1)	2710663	2710664	2710665	2710666	2710667
Frame with orientable vertical and horizontal flaps (GM9)	2825475	2825476	2825477	2825478	2825479
Intake grille (PM2)	2823213	2823214	2823215	2823216	2823217
Motorisable anti freeze damper (PM5)	7336733	7336734	7336735	7336736	7336737
M0 anti-vibration sleeve (PM3)	2205666	2205667	2205668	2205669	2205670
Connection frame (PM1)	2710668	2710669	2710670	2710671	2710672

ELECTRICAL ACCESSORIES

Description		Code		
■ Lockable proximity switch with remote position – Complies with EC standards Not fitted		1-speed - 3 poles - 20 A 0596142		
		2-speeds - 6 poles - 20 A 0596147		
■ Start / stop magnetothermal circuit breaker IP 55 sealed box magnetic trigger with alarm output		Three-phase 400 V from 0.12 to 2.2 kW B265527		
■ Variable speed drive (frequency converter) 	VARIABLE FREQ DRIVE NXL	1.1KW 3.3A 7256189		
		1.5KW 4.3A 7256190		
		2.2KW 5.6A 7256191		
		3KW 7.6A 7256192		
		4KW 9A 7256193		
		5.5KW 12A 7256194		
■ 1-speed 3-PH circuit breaker unit 	1-speed 4-pole motor fitted to the SILENTHERMES			
	Power (kW)	Current (A)	Circuit breaker code	
	0.75	1.8	7252528	
	1.1	2.4	7252528	
	1.5	3.4	7252529	
	2.2	4.7	7252530	
	3	6.4	7252531	
	4	8.9	7252531	
5.5	11.3	7252533		
■ 2-speed 3-PH circuit breaker units 	2-speed 4/8-pole motor 3-PH fitted to SILENTHERMES 35 - 45 -56			
	Power (kW)	Current (A)	HS circuit breaker code	LS circuit breaker code
	0.75/0.17	2.2/0.75	7252528	7252526
	1.7/0.35	4/1.6	7252529	7252527
	2.3/0.5	5.2/1.9	7252530	7252528
	3.7/1	7.9/3.2	7252531	7252529
	6.8/1.4	14.1/5.1	7252533	7252530
	8.4/2.05	16/5.7	7252534	7252530
	10.5/2.2	20.6/7.4	7256967	7252531



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