

Vent-Axia Sabre® Plate Mounted Sickle Fans (VSP)

Features and Benefits

- One shot die cast impeller, dynamically balanced for smoother operation
- External Rotor Motors on all models for compact efficient design
- All models speed controllable and can be wired for reverse running
- Guards fitted as standard on all models
- Thermal Overload Protection for motor protection
- Maintenance free sealed for life bearings
- 2 Year Guarantee

Sabre Plated Mounted Sickle Fans

SABRE Sickle bladed fans are the latest addition to the Vent-Axia range offering improved pressure characteristics over axial units and lower sound levels. The advanced blade design and purpose built motor ensure excellent reliability and speed control.

Construction

SABRE Plate mounted sickle fans are based on an integrated impeller and external rotor motor design, which produces a very compact unit. Together with a specially designed bell mouth inlet and mounting plate, the complete fan is lightweight and ensures an excellent performance to sound level ratio.

The mounting plate is formed from a single sheet, protected with a tough epoxy paint finish. Inlet finger guards and motor supports are manufactured from steel rod, electro welded for extra strength. Sizes 250 to 710 finger guards give protection to BS 848 Part 5. Manufacture is controlled to BS EN ISO 9001 Standards.

Impellers

The motors and impellers are factory matched, statically and dynamically balanced to ISO 1940, part 1 Quality Class G.6.3

Motors

The external rotor motors are specifically designed and styled for this range of fan. Ball bearings are greased for life. Sizes 315 - 710 motors are protected to IP54, against dust and moisture complying with BS EN 60529. They have ribbed aluminium body castings for efficient cooling with Motor insulation to Class 'F' (from -40.C to + 70.C). Speed controlled sizes 450 to 710, 6 & 8 pole motors are only suitable for operating temperatures of up to 40.C.

Electrical

The Sabre range is available for either single phase 220-240V 50 Hz capacitor start and run or three phase 380-415V 50Hz. Motors are fitted with Thermal Overload Protection which should be wired into all controller circuits and into starter contactors to prevent motor damage due to overloading / overheating. Units are suitable for speed control by either electronic, voltage reduction or frequency inverters where permissible.

Form of Running

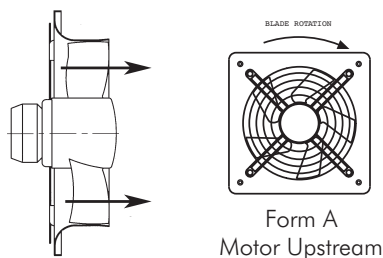


Plate mounted fans (ex-stock) are supplied for extract use (Form 'A' running).

Terminal Box

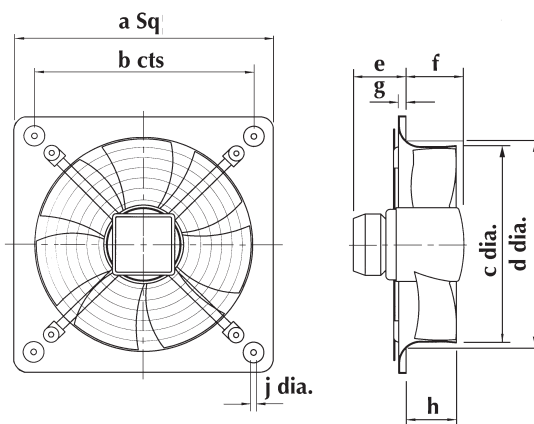
An IP54 terminal box is supplied with all models with M20 x 1.5mm gland entry offering protection against dust and water.

Performance

The fan performance, is in accordance with tests to ISO 5801.



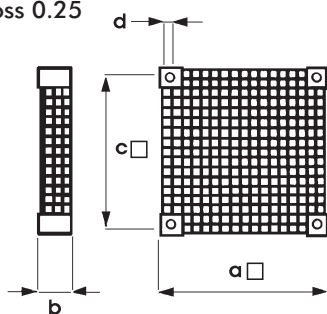
Fan Dimensions (mm)



Dia	a	b	Øc	Ød	e	f	g	h	Øj	Kg
250	370	320	256.5	264.5	84	80	6	80	9	3.4
315	430	380	320	328	84	84	19	70	9	6.3
355	485	435	367	372	86	97	21	75	9	7.3
400	540	490	412	420	93	100	12	88	9	10.2
450	575	535	463	480	86	139	14	96	11	15.8
500	655	615	517	528	84	141	16	104	11	17.3
560	725	675	568	589	81	142.5	16	119	11	24
630	805	750	643	664	82	142.5	20	130	11	45
710	850	810	720	763	37	176.5	20	150	14.5	31

Accessories Dimensions

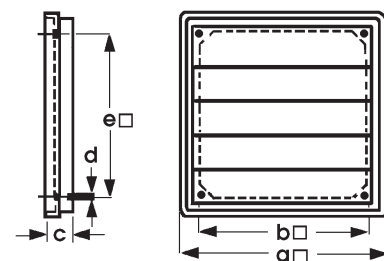
Discharge Guard
'K' factor loss 0.25



Stock Ref	a	b	c	Ød
10502325	397	64	351	8
10502375	449	64	403	8
10502450	501	64	455	8
10502525	553	64	507	8
10502630	808	150	735	8
10502800	1010	140	-	8

If a discharge guard is required with a louvre shutter the next size up discharge guard should be selected.

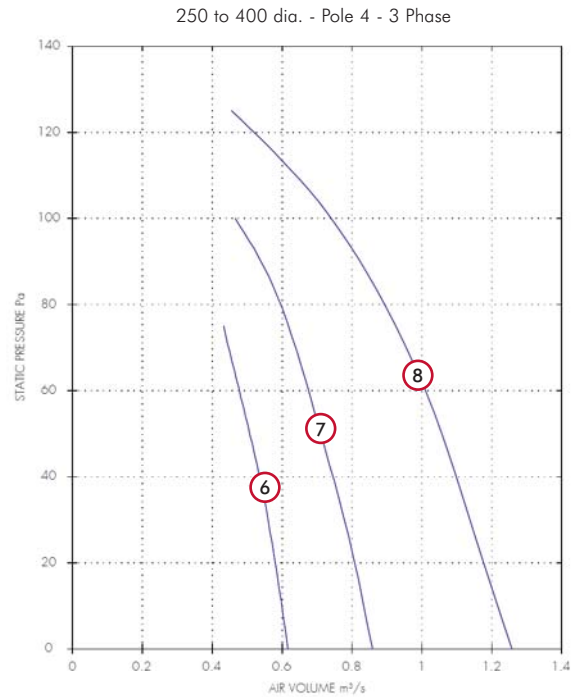
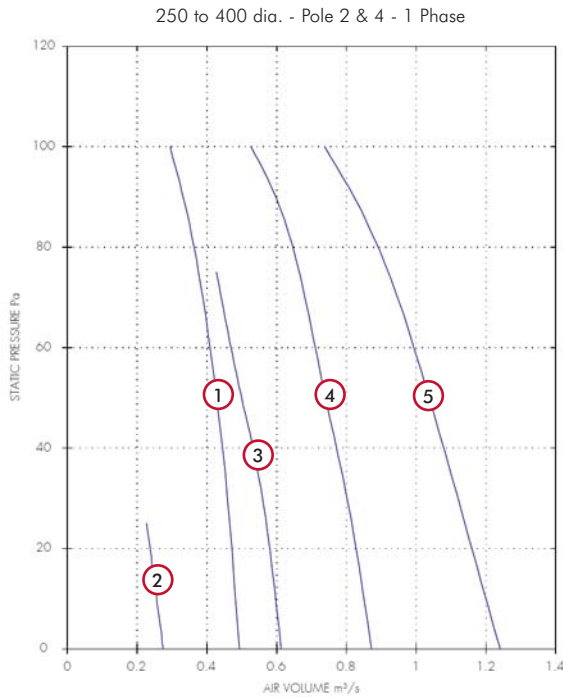
Louvre Shutter



Stock Ref	a	b	c	Ød
LS250	294	265	25	6
LS315	344	276	26	6
LS355	398	312	26	6
LS400	458	365	26	6
LS450	499	395	31	6
LS500	544	444	31	6
LS560	605	533	31	6
LS630	694	627	31	6
LS710	790	722	43	6

Vent-Axia Sabre® Plate Mounted Sickle Fans (VSP)

Performance Curves



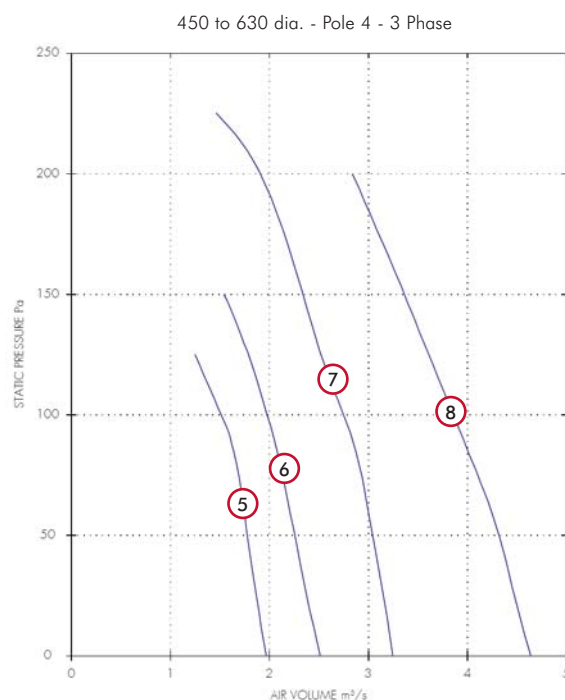
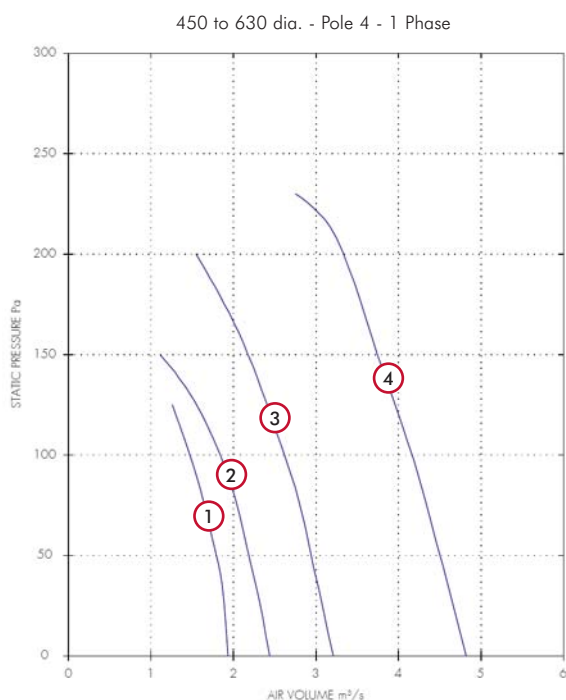
Performance Guide

			Performance		IP	m³/s at Pa						Motor	S.C.	F.L.C.	dBA @	
Dia.	Phase	Stock Ref	Poles	Curves	r.p.m.	Rating	0	25	50	75	100	125	kW	Amps	Amps	3m
250	1	VSP25012	2	①	2240	IP44	0.49	0.47	0.43	0.38	0.3		0.14	0.84	0.59	57
250	1	VSP25014	4	②	1370	IP44	0.28	0.23					0.14	0.4	0.24	57
315	1	VSP31514	4	③	1400	IP54	0.61	0.57	0.5	0.43			0.13	1.5	0.59	49
315	3	VSP31534	4	⑥	1410	IP54	0.62	0.57	0.51	0.43			0.12	1	0.29	48
355	1	VSP35514	4	④	1400	IP54	0.87	0.82	0.74	0.67	0.53		0.20	2.5	0.9	50
355	3	VSP35534	4	⑦	1360	IP54	0.86	0.79	0.71	0.62	0.47		0.18	1	0.35	48
400	1	VSP40014	4	⑤	1280	IP54	1.24	1.14	1.04	0.92	0.74		0.29	2.9	1.35	49
400	3	VSP40034	4	⑧	1250	IP54	1.26	1.16	1.06	0.93	0.74	0.46	0.17	1.35	0.47	52

Sound Power Level Spectra dB (ref 10⁻¹² Watts)

Dia	Phase	Stock Ref	Poles	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
250	1	VSP25012	2	73	79	77	72	68	67	63	57	57
250	1	VSP25014	4	25	42	43	50	51	53	50	40	40
315	1	VSP31514	4	70	68	66	61	60	61	58	51	49
315	3	VSP31534	4	67	68	63	60	60	60	56	49	48
355	1	VSP35514	4	70	70	68	64	65	66	62	54	50
355	3	VSP35534	4	65	68	63	62	63	63	60	54	48
400	1	VSP40014	4	70	72	65	64	65	64	63	56	49
400	3	VSP40034	4	64	72	64	66	66	63	62	53	52

Performance Curves



Performance Guide

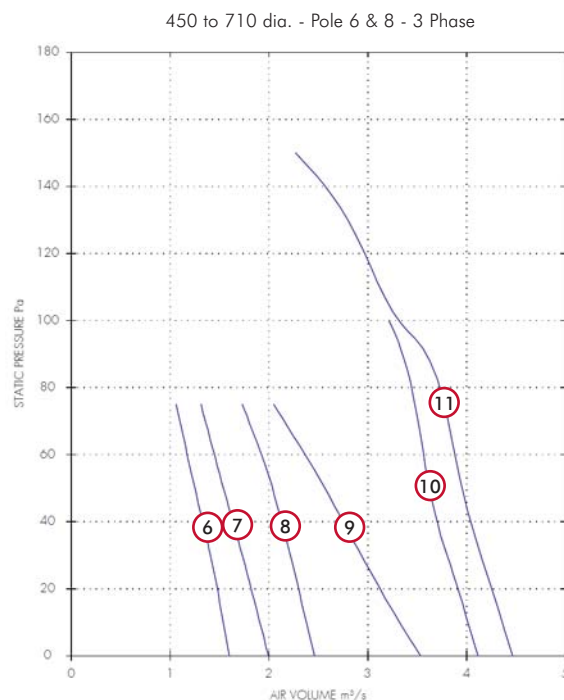
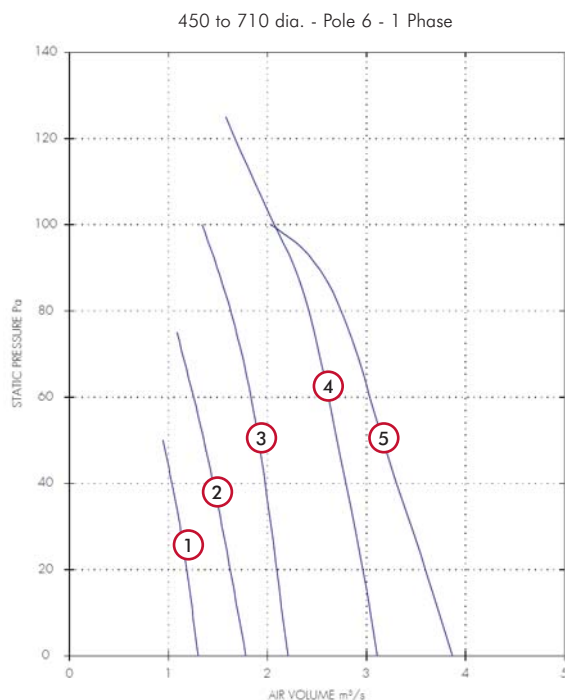
			Performance			IP		m³/s at Pa								Motor		S.C.	F.L.C.	dBA @
Dia.	Phase	Stock Ref	Curves	Poles	r.p.m.	Rating	0	25	50	75	100	125	150	200	225	kW	Amps	Amps	3m	
450	1	VSP45014	①	4	1310	IP54	1.94	1.89	1.74	1.65	1.48	1.26				0.61	7	2.8	59	
450	3*	VSP45034	⑤	4	1360	IP54	1.97	1.87	1.78	1.69	1.52	1.25				0.38	4	1.05	57	
500	1	VSP50014	②	4	1250	IP54	2.45	2.33	2.17	2.05	1.84	1.65	1.11			0.78	7.1	3.4	55	
500	3*	VSP50034	⑥	4	1330	IP54	2.51	2.38	2.26	2.14	1.98	1.79	1.55			0.49	5.2	1.45	58	
560	1	VSP56014	③	4	1350	IP54	3.21	3.08	2.92	2.81	2.62	2.41	2.18	1.55		1.10	15	5.1	66	
560	3*	VSP56034	⑦	4	1280	IP54	3.25	3.15	3.04	2.93	2.75	2.52	2.34	1.91	1.47	0.65	7	2.4	63	
630	1	VSP63014	④	4	1370	IP54	4.83	4.66	4.51	4.35	4.17	3.95	3.73	3.33	2.78	1.75	21	7.7	69	
630	3*	VSP63034	⑧	4	1380	IP54	4.64	4.48	4.32	4.11	3.86	3.61	3.36	2.84		1.15	9	3.1	66	

Sound Power Level Spectra dB (ref 10⁻¹² Watts)

Dia	Phase	Stock Ref	Poles	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
450	1	VSP45014	4	69	81	72	72	74	70	63	56	59
450	3	VSP45034	4	63	76	67	68	69	70	66	59	57
500	1	VSP50014	4	80	78	72	70	71	69	63	57	55
500	3	VSP50034	4	76	77	74	73	75	72	65	58	58
560	1	VSP56014	4	73	76	80	76	79	78	74	67	66
560	3	VSP56034	4	83	80	74	74	77	75	70	61	63
630	1	VSP63014	4	88	85	82	82	82	80	75	68	69
630	3	VSP63034	4	84	83	78	77	79	79	74	67	66

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Performance Curves



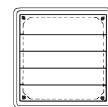
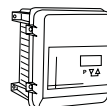
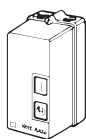
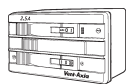
Performance Guide

Dia.	Phase	Stock Ref	Performance		IP	r.p.m.	Rating	m³/s at Pa							Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m
			Curves	Poles				0	25	50	75	100	125	150				
450	1	VSP45016	①	6	910	IP54	1.3	1.15	0.95						0.19	1.95	0.84	50
450	3*	VSP45036	⑥	6	1030	IP54	1.6	1.45	1.25	1.07					0.38	1.35	0.68	51
500	1	VSP50016	②	6	890	IP54	1.78	1.59	1.36	1.09					0.29	2.5	1.25	47
500	3*	VSP50036	⑦	6	980	IP54	2	1.78	1.54	1.31					0.49	1.85	0.89	53
560	1	VSP56016	③	6	920	IP54	2.21	2.07	1.91	1.69	1.34				0.51	5.3	2.3	58
560	3*	VSP56036	⑧	6	880	IP54	2.46	2.26	2.04	1.73					0.65	2.3	1.25	53
630	1	VSP63016	④	6	900	IP54	3.11	2.93	2.7	2.48	2.07	1.58			0.78	7.5	3.5	58
630	3*	VSP63036	⑪	6	1140	IP54	4.47	4.2	3.96	3.78	3.31	2.89	2.27		1.15	6	2	63
710	1	VSP71016	⑤	6	790	IP54	3.87	3.53	3.17	2.83	2.03				0.76	10	3.4	59
710	3*	VSP71036	⑩	6	900	IP54	4.11	3.86	3.63	3.48	3.22				0.88	6.1	1.65	59
710	3*	VSP71038	⑨	8	690	IP54	3.53	3.03	2.57	2.05					0.62	2	1.05	58

Sound Power Level Spectra dB (ref 10⁻¹² Watts)

Dia	Phase	Stock Ref	Poles	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
450	1	VSP45016	6	64	72	64	62	64	61	54	48	50
450	3	VSP45036	6	73	68	65	64	65	63	56	48	51
500	1	VSP50016	6	64	67	66	64	63	61	56	48	47
500	3	VSP50036	6	72	71	69	68	71	68	60	53	53
560	1	VSP56016	6	77	75	74	71	71	69	64	56	58
560	3	VSP56036	6	77	70	67	65	68	64	57	49	53
630	1	VSP63016	6	63	70	64	66	69	64	56	49	58
630	3	VSP63036	6	72	80	80	76	77	75	70	62	63
710	1	VSP71016	6	71	76	76	73	73	69	63	55	59
710	6	VSP71036	6	69	81	76	71	75	70	64	57	59
710	3	VSP71038	8	72	69	66	64	66	64	56	48	58

Accessories



OR



Stock Ref.	Electronic controller	5 Step Auto transformer	D.O.L. starters & overload	*eDemand Controller		Louvre shutter	Discharge guard
	Stock Ref.	Stock Ref.	Stock Ref.	Voltage Control Stock Ref.	3 Phase Inverter Stock Ref.	Stock Ref.	Stock Ref.
VSP25012	W10303102M	-	444744 + 444699	444164	-	LS250	10502325
VSP25014	W10303102M	10314103	444744 + 444697	444164	-	LS250	10502325
VSP31514	W10303102M	10314103	444744 + 444699	444164	-	LS315	10502325
VSP31534	-	10314301	444747 + 444697	444166	444172	LS315	10502325
VSP35514	W10303102M	10314103	444744 + 444700	444164	-	LS355	10502375
VSP35534	-	10314301	444747 + 444697	444166	444172	LS355	10502375
VSP40014	W10303102M	10314103	444744 + 444700	444164	-	LS400	10502450
VSP40034	-	10314301	444747 + 444698	444166	444172	LS400	10502450
VSP45014	10303103A	10314103	444744 + 444702	444164	-	LS450	10502525
VSP45034	-	10314301	444744 + 444699	444166	444172	LS450	10502525
VSP50014	10303106A	10314105	444747 + 444700	444164	-	LS500	10502525
VSP50034	-	10314304	444747 + 444699	444166	444172	LS500	10502525
VSP56014	10303106A	10314107	444744 + 444702	444164	-	LS560	10502630
VSP56034	-	10314304	444744 + 444700	444166	444172	LS560	10502630
VSP63014	-	10314113	444747 + 444701	444165	-	LS630	10502630
VSP63034	-	10314304	444747 + 444699	444166	444173	LS630	10502630
VSP45016	W10303102M	10314103	444744 + 444703	444164	-	LS450	10502525
VSP45036	-	10314301	444744 + 444702	444166	444172	LS450	10502525
VSP50016	W10303102M	10314103	444747 + 444702	444164	-	LS500	10502525
VSP50036	-	10314301	444747 + 444700	444166	444172	LS500	10502525
VSP56016	10303103A	10314103	444744 + 444705	444164	-	LS560	10502630
VSP56036	-	10314301	444744 + 444703	444166	444172	LS560	10502630
VSP63016	10303106A	10314105	444747 + 444702	444164	-	LS630	10502630
VSP63036	-	10314304	444747 + 444701	444166	444172	LS630	10502630
VSP71016	10303106A	10314105	444744 + 444702	444164	-	LS710	10502800
VSP71036	-	10314304	444747 + 444701	444166	444172	LS710	10502800
VSP71038	-	10314301	444747 + 444700	444166	444172	LS710	10502800

*For full range of speed controller options & inverters, see Accessories & Controllers Section

NOTE:- When low noise levels are required a 5-step auto transformer is recommended.

NOTE:- All + models are supplied with 2 speed delta/star connection motors, as standard. (Sizes 450 to 630 are 4/6 Pole).

Guards: Some installations may occur where additional safety parts are needed, to ensure safety in operation. For example, the unit may be fitted at the inlet or outlet end of a ducted ventilation system, thereby exposing the impeller/motor to unguarded access. In this event, the installer must fit a safety guard complying to current regulations. These guards are available as an optional extra.