Sabre Sickle Short Case Fans (VSC)

- Swept impeller with Aerofoil blades, winglets and serrated trailing edge for optimum performance
- One shot die cast impeller, dynamically balanced for smoother operation
- Operating temperature up to 70°C
- External Rotor Motors on all models for compact efficient design
- All models speed controllable
- Guards fitted as standard on all models
- Thermal Overload Protection for motor protection
- Maintenance free sealed for life bearings
- 2 Year Guarantee



The latest generation of the Vent-Axia Sabre® Sickle Short Case fans incorporate the very latest FE2 Owlett impeller offering improved performance over the previous ranges with up to 7dB(A) reduction in sound and up to 15% improvement in efficiency ensuring the best available fan performance in its class. The advanced blade design is matched to a purpose designed external rotor motor to ensure unrivalled reliability and controllability.

Design and Development

Using a combination of NASA research into wing performance and winglets, coupled with a study of bird flight has enabled the development of the best available Sickle blade profile. Matching this to a purpose designed close fitting casing ensures best use of this blade technology thereby reducing noise and improving the performance in cased axial fans.

Construction

The Sabre® Sickle Short Case fan range share the same case lengths as the Euroseries Cased axial range making them fully interchangeable and compatible with the full range of Vent-Axia Accessories. The strong and compact short case is constructed from rolled steel plate and protected with a tough, epoxy paint finish. Casing dimensions are to DIN 24151 and flange dimensions are to ISO 6580.

Manufacture is controlled to BS EN ISO 9001:2015. The compact motor/impeller unit is robustly supported within the casing by electro welded and epoxy coated steel rod mounting supports for ease of installation and service access. Suitable for all outdoor weather environments.

Impellers

The impellers incorporate the latest in Sickle blade aerofoil technology to ensure minimum sound and maximum performance. Impellers up to 400mm diameter are moulded from a composite polymer, impellers above this size are Aluminium. 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 – 630 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 630, 6 pole motors are only suitable for operating temperatures of up to 40°C.

Electrical

The Sabre® Sickle Short Case fan 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.

Speed Control

Units are suitable for speed control by either electronic, voltage reduction or frequency inverters where permissible. For optimum efficiency and controllability Vent-Axia recommend the use of the eDemand Inverter Controller to give close control via sensors or manual control.

Form of Running

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

Performance

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

Vent-Axia

Sound Levels

Fan sound levels are measured in a reverberant chamber in accordance with ISO 3744 Part 1. Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at a reference level of 2 x 10^{-5}Pa (20 micro-Pascal). The sound power level spectra figures are dB with a reference level of 10^{-12} Watts (1 pico-watt).

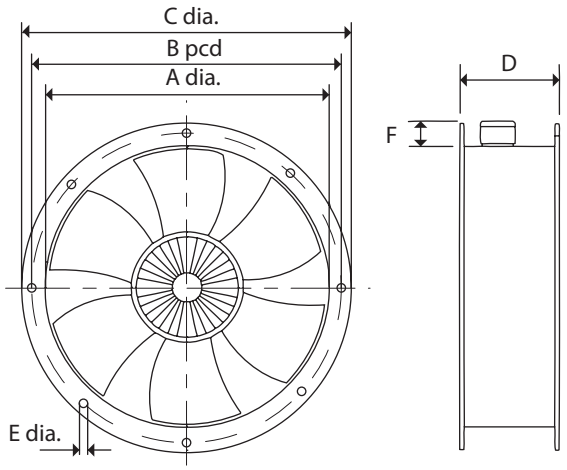
To ensure minimum noise levels during speed control, either an auto transformer or eDemand inverter speed control is recommended.

Accessories

A full range of accessories is available with the Sabre® Sickle Short Case fans:

- Electronic Speed Controllers
- Auto Transformer Speed Controllers
- eDemand Inverter Speed Control
- D.O.L. Starters
- Ancillary Packs
- Attenuators

Fan Dimensions (mm)

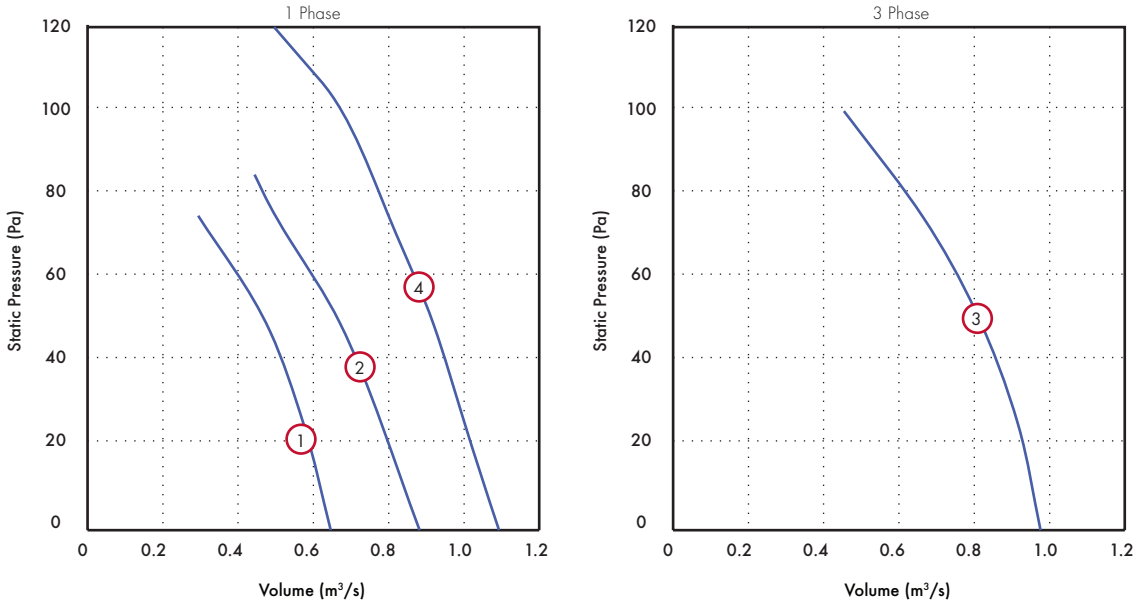


Stock Ref	Kg	A	B	C	D	E	n*	F
VSC31514B	7	316	356	382	136.5	9.5	8	65
VSC35514B	7	356	395	421	136.5	9.5	8	65
VSC35534A	7.1	359	395	421	135	9.5	8	65
VSC40014A	8.3	400	438	466	155	9.5	12	65
VSC45014B	15.7	451	487	515	160	9.5	12	65
VSC45034A	14.2	451	487	515	160	9.5	12	65
VSC45036	14.2	451	487	515	160	9.5	12	65
VSC50014B	16.8	503	541	567	166	9.5	12	65
VSC50036	16.8	503	541	567	166	9.5	12	65
VSC56014B	29.7	559	605	635	210	11.5	16	75
VSC56034A	21.3	559	605	635	210	11.5	16	75
VSC56036	21.3	559	605	635	210	11.5	16	75
VSC63014B	44	634	674	707	220	11.5	16	75

*n = number of holes

Performance Curves

315 to 400 dia. - Pole 4



Performance Guide

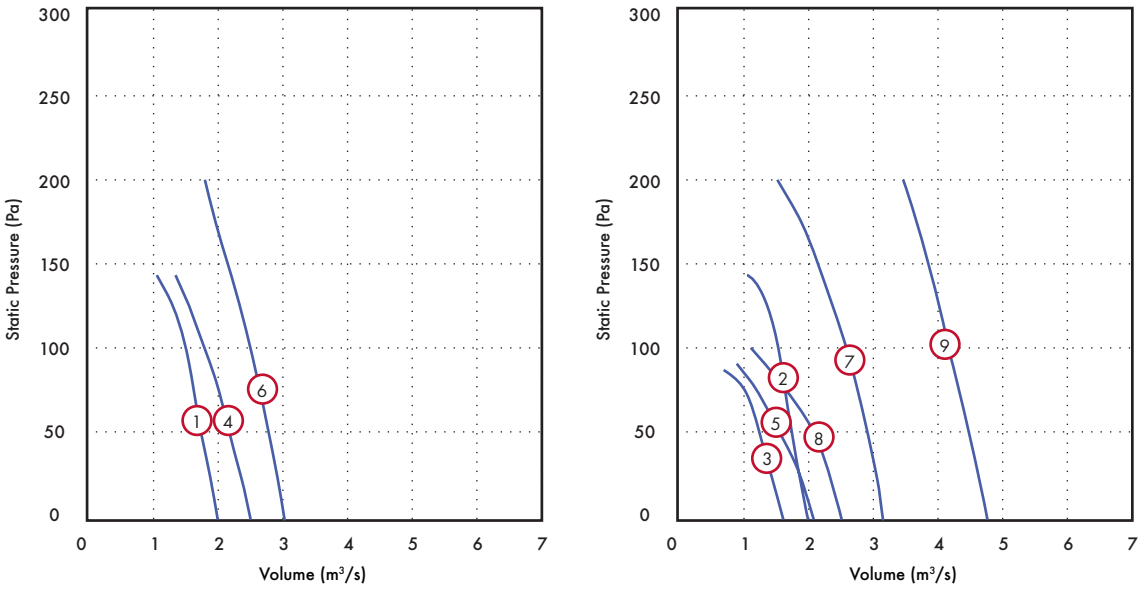
Stock Ref	Supply	IP Rating	Motor kW	F.L.C Amps	S.C. Amps	Poles	rpm	Curve		Volume m³/s @ Pa 0	25	50	75	100	dB(A) @ 3.0m
VSC31514B	230/1/50	IP54	0.12	0.54	11.2	4	1360	1	Volume m³/s	0.65	0.58	0.47	0.29		44
									Power Watts	85	93	100	110		
VSC35514B	230/1/50	IP54	0.13	0.56	2.24	4	1260	2	Volume m³/s	0.88	0.78	0.67	0.50		48
									Power Watts	145	155	167	181		
VSC35534A	400/3/50	IP54	0.19	0.4	1.6	4	1390	3	Volume m³/s	0.98	0.92	0.82	0.67	0.44	48
									Power Watts	155	166	174	179	186	
VSC40014A	230/1/50	IP54	0.24	1.05	4.2	4	1340	4	Volume m³/s	1.09	1.00	0.92	0.79	0.67	46
									Power Watts	183	197	210	224	236	

Sound Power Level Spectra dB (ref 10^{-12} Watts)

Stock Ref	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	dB(A) @ 3.0m
VSC31514B	71	70	65	60	58	59	55	47	44
VSC35514B	67	70	67	64	58	60	53	45	48
VSC35534A	74	66	61	63	64	63	59	53	48
VSC40014A	72	73	66	62	60	59	54	48	46

Performance Curves

450 to 630 dia. - Pole 4 & 6



Performance Guide

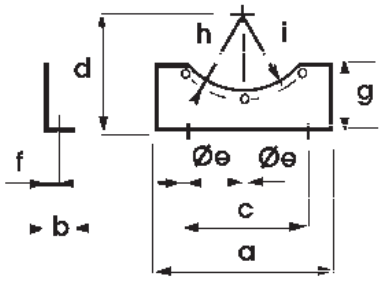
Stock Ref	Supply	IP Rating	Motor kW	F.L.C Amps	S.C. Amps	Poles	rpm	Curve		Volume m³/s @ Pa 0	50	100	125	150	200	250	275	dB(A) @ 3.0m
VSC45014B	230/1/50	IP54	0.6	2.9	11.6	4	1320	1	Volume m³/s	1.98	1.72	1.50	1.31					49
									Power Watts	481	510	537	546					
VSC45034A	400/3/50	IP54	0.54	1.1	4.4	4	1350	2	Volume m³/s	2.00	1.75	1.53	1.41					49
									Power Watts	446	485	523	532					
VSC45036	400/3/50	IP54	0.36	0.66	2.64	6	1020	3	Volume m³/s	1.623	1.254							44
									Power Watts	333	364							
VSC50014B	230/1/50	IP54	0.72	3.2	12.8	4	1230	4	Volume m³/s	2.48	2.14	1.78	1.54					51
									Power Watts	626	670	710	740					
VSC50036	400/3/50	IP54	0.54	0.96	3.84	6	940	5	Volume m³/s	2.08	1.57							47
									Power Watts	472	517							
VSC56014B	230/1/50	IP54	1.15	5	20	4	1330	6	Volume m³/s	3.03	2.78	2.50	2.36	2.15	1.79			62
									Power Watts	824	910	996	1020	1055	1114			
VSC56034A	400/3/50	IP54	1.05	2.2	8.8	4	1280	7	Volume m³/s	3.15	2.89	2.59	2.39	2.14	1.52			57
									Power Watts	742	830	910	945	975	1044			
VSC56036	400/3/50	IP54	0.58	1.1	4.4	6	880	8	Volume m³/s	2.47	2.06	1.11						51
									Power Watts	560	605	650						
VSC63014B	400/3/50	IP54	1.75	7.7	21	4	1370	9	Volume m³/s	4.83	4.51	4.17	3.96	3.75	3.34			69
									Power Watts	-	-	-	-	-	-			

Sound Power Level Spectra dB (ref 10^{-12} Watts)

Stock Ref	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	dB(A) @ 3.0m
VSC45014B	67	69	71	63	63	63	59	53	49
VSC45034A	72	70	65	65	64	64	59	53	49
VSC45036	71	66	60	60	60	58	51	43	44
VSC50014B	71	75	67	63	67	68	60	52	51
VSC50036	77	77	72	66	64	61	54	47	47
VSC56014B	79	78	74	74	77	77	73	66	62
VSC56034A	84	78	76	74	75	74	70	63	57
VSC56036	77	70	67	65	68	64	57	49	53
VSC63014B	63	70	64	66	69	64	56	49	58

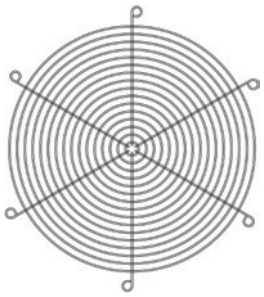
Accessories Dimensions (mm)

Mounting Feet (Pack of 2)



Stock Ref	a	b	c	d	Øe	f	g	h	i
MFZ315	315	40	265	200	10	20	71	178	166
MFZ355	350	40	300	225	10	20	81.5	197.5	186
MFZ400	250	40	220	250	10	20	78	219	205
MFZ450	275	40	240	275	10	20	82	243.5	230
MFZ500	315	50	280	315	1	25	100	270.5	255
MFZ560	355	50	320	355	12	25	97	302.5	285
MFZ630	400	50	360	400	12	25	108.5	337	320

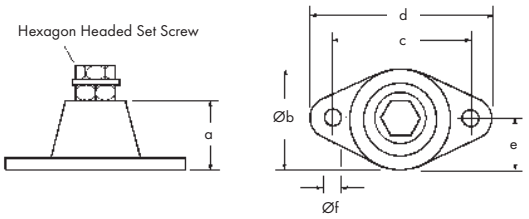
Inlet Wire Guard 'K' factor loss 0.25



Stock Ref	Dia
WGZ315	375
WGZ355	414
WGZ400	461
WGZ450	506
WGZ500	560
WGZ560	626.5
WGZ630	695.5

For more information on the 'K' factor, refer to General Information Section

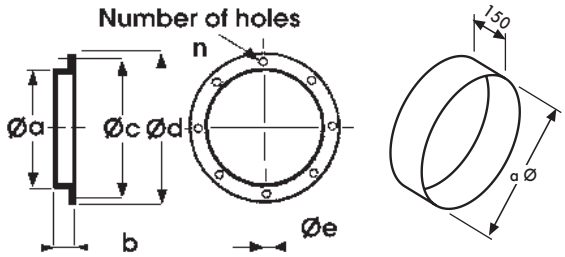
Anti-Vibration Mounts (Pack of 4) - All Models



Stock Ref	a	Øb	c	d	e	Øf	n	load kg
68MP033G	27	37	54	67	18.5	7	M8	23

Supplied as a set of 4. Available for floor mounting only, as compression is required.
Not compatible with ceiling mounting.

Coupling Flange



Flexible Connection

Stock Ref	Øa	b	Øc	Ød	Øe	Øf	n
CFZ315	313	40	356	382	10	319	8
CFZ355	353	40	395	421	10	359	8
CFZ400	398	45	438	466	10	404	12
CFZ450	448	45	487	515	10	454	12
CFZ500	498	45	541	567	10	504	12
CFZ560	558	45	605	635	12	564	16
CFZ630	628	45	674	707	12	634	16

Accessories







Stock Ref	Supply	Electronic Controller*	5 Step Auto Transformer	eDemand Voltage*	eDemand 3ph Inverter	eDemand 1Ph Inverter	D.O.L Starter	Overload
VSC31514B	230/1/50	SC5001	10314102A	444164	-	444169	444744	444699
VSC35514B	230/1/50	SC5030TK	10314102A	444164	-	444169	444744	444699
VSC35534A	400/3/50	-	10314301A	444166	444172	-	444747	444698
VSC40014A	230/1/50	SC5030TK	10314102A	444164	-	444169	444744	444700
VSC40034A	400/3/50	-	10314301A	444166		-	444747	444698
VSC45014B	230/1/50	SC5060TK	10314103	444164	-	444169	444744	444702
VSC45034A#	400/3/50	-	10314302A	444166	444172	-	444747	444700
VSC45036#	400/3/50	-	10314301A	444166	444172	-	444747	444699
VSC50014B	230/1/50	SC5060TK	10314105	444164	-	444169	444744	444702
VSC50036#	400/3/50	-	10314301A	444166	444172	-	444747	444700
VSC56014B	230/1/50	SC5010TK	10314113A	444164	-	444170	444744	444703
VSC56034A	400/3/50	-	10314304A	444166	444173	-	444747	444701
VSC56036	400/3/50	-	10314301A	444166	444172	-	444744	444703
VSC63014B	400/3/50	-	10314113	444165	-	-	444747	444701

* Electronic Voltage controllers may cause motor noise and vibration at lower speeds, transformer or Inverter recommended for noise sensitive applications

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.

Where inverters are utilised these must be include Sine filters, as included within our eDemand range of inverters.

Fan Dia	Mounting Feet Wire (pack of 2) Stock Ref	Inlet Wire Guard Stock Ref	Coupling Flange Stock Ref	Axial Ancillary Pack Stock Ref	Cased Axial Attenuator Stock Ref	Cased Axial Attenuator Pod 1D Stock Ref	Cased Axial Pod 2D Stock Ref
250	MFZ250	WGZ250	CFZ250	APZ250	ACZ2501D	ACZ2501DP	ACZ2502DP
315	MFZ315	WGZ315	CFZ315	APZ315	ACZ3151D	ACZ3151DP	ACZ3152DP
355	MFZ355	WGZ355	CFZ355	APZ355	ACZ3551D	ACZ3551DP	ACZ3552DP
400	MFZ400	WGZ400	CFZ400	APZ400	ACZ4001D	ACZ4001DP	ACZ4002DP
450	MFZ450	WGZ450	CFZ450	APZ450	ACZ4501D	ACZ4501DP	ACZ4502DP
500	MFZ500	WGZ500	CFZ500	APZ500	ACZ5001D	ACZ5001DP	ACZ5002DP
560	MFZ560	WGZ560	CFZ560	APZ560	ACZ5601D	ACZ5601DP	ACZ5602DP
630	MFZ630	WGZ630	CFZ630	APZ630	ACZ6301D	ACZ6301DP	ACZ6302DP