

# Mixed Flow Roof Fans (RMH)

## Features and Benefits

- Motors protected to IP44
- Motor insulation Class 'B'
- Maximum operating temperature 40°C
- Standard Thermal Overload Protection IP65
- P65 service isolator
- Guard included as standard
- All models speed controllable
- Performance tested to BS 848 parts 1 & 2
- Manufacture controlled to BS EN ISO 9001
- 2 Year Guarantee

Specially designed for use when medium pressure characteristics are required, the Vent-Axia Mixed Flow roof range is delivered on-site fully assembled and ready for installation. To meet COSHH requirements, a service isolator is fitted and pre-wired as standard. Equally suitable for flat or inclined roofs, the range is suitable for kerb or purlin box mounting and boasts a wide range of accessories to suit many different industrial applications. There are five sizes available with duties ranging from 0.606m<sup>3</sup>/s to 3.63m<sup>3</sup>/s (2182m<sup>3</sup>/h to 13068m<sup>3</sup>/h) with pressure development available up to 600 Pa.

The mounting plate is moulded with a fixed integral bellmouth to ensure optimum efficiency and precise alignment. The weather-cowl is also moulded to produce a smooth, internal surface and a tough, stable UV resistant finish. Colour: **BS 10A07**. Alternative colours available on request.

Vent-Axia mixed flow roof fans are designed for either kerb or inclined fixing (maximum angle 30°).

## Electrical

Single phase 220-240V 50 Hz. Capacitor start and run. Three phase 380-415V 50Hz. A **service isolator** switch is provided for local isolation and the enclosure is protected to IP65 according to **BS EN 60529**. All motors are fitted with **Standard Thermal Overload Protection (S.T.O.P.)**, which for three phase fans should be wired into all controller circuits and into starter contactors. Most models are available with 4 and 6 pole motors.

## Motors



The Mixed Flow roof range features a proven external rotor motor and backward curved mixed flow aluminium impeller assembly (35.5 dia. in polyamide) selected for performance and non-overloading characteristics. The assembly is dynamically balanced to **VDI 2060**. The motors in this range are rated **IP44** according to **BS EN 60529**. Ball bearings are greased for life and are designed to run at any angle. Insulation is **Class 'B'** (from -30°C to +40°C). Manufacture is controlled to **BS EN ISO 9001** standards.

## Sound Levels

Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at a reference level of  $2 \times 10^{-5}$  Pa (20 micro-Pascal). The sound power level spectra figures are dB with a reference level of  $10^{-12}$  Watts (1 picowatt).

## Performance

Tested to **BS 848** Parts 1 & 2.

## Accessories

### Soaker Flanges

The Vent-Axia range of soaker flanges are a simple and neat solution to weathering when a roof extract unit is required on a pitched corrugated roof.

Colour: **BS 00A 05**.

### Purlin boxes

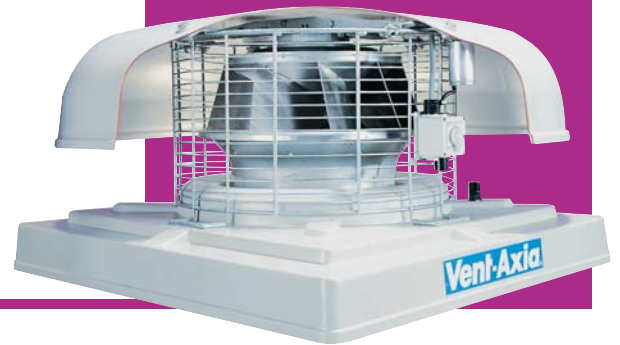
Available in sizes to suit all models and should be used to support the fan in conjunction with a soaker flange sheet.

### Roof attenuators

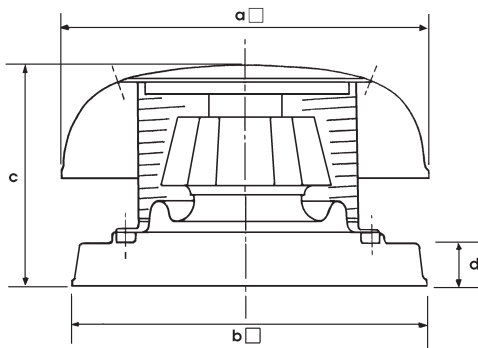
Available in all sizes to cover the range of Mixed Flow roof fans in three lengths: 600, 900 or 1200mm according to the attenuation required.

### Shutters

Robust construction, designed to fit beneath the fan using the fittings provided. Airflow operated, manual or motorised shutter. A minimum distance of half the attenuator width is required between an airflow shutter and a roof attenuator for satisfactory operation.



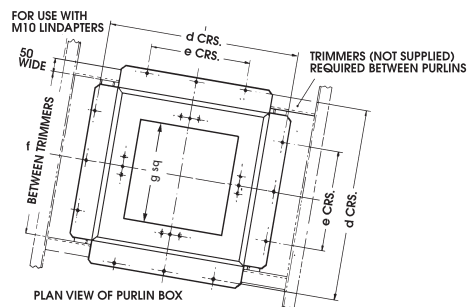
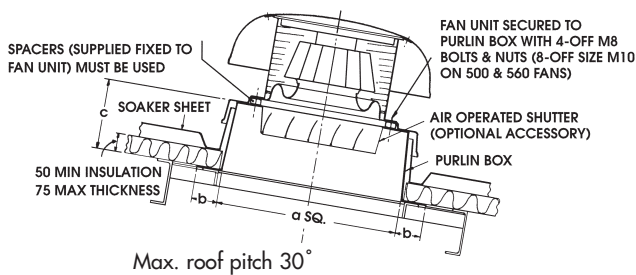
### Fan Dimensions (mm)



Fan size	a □	b □	c	d	Weight Kg
355 / 400	800	780	480	83	24/27
450	950	930	575	103	45
500 / 560	1230	1055	630	103	48 / 64

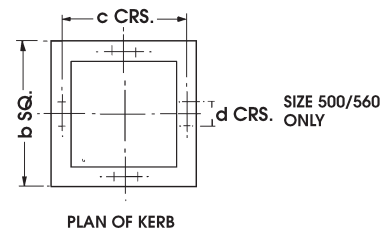
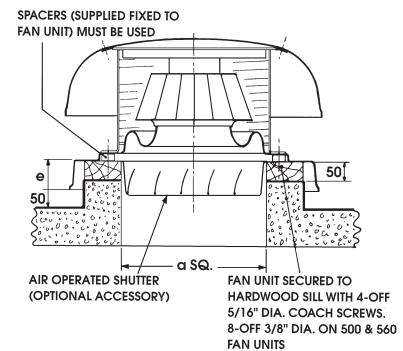
### Details for Purlin Mounting

(Manufactured from 1.5mm pre-galv. mild steel).



Fan size	a □	b	c	d	e	f	g □
355 / 400	725	90	240	865	500	753	500
450	890	70	250	990	650	878	650
500 / 560	1030	75	250	1140	760	1028	790

### Details Kerb Mounting

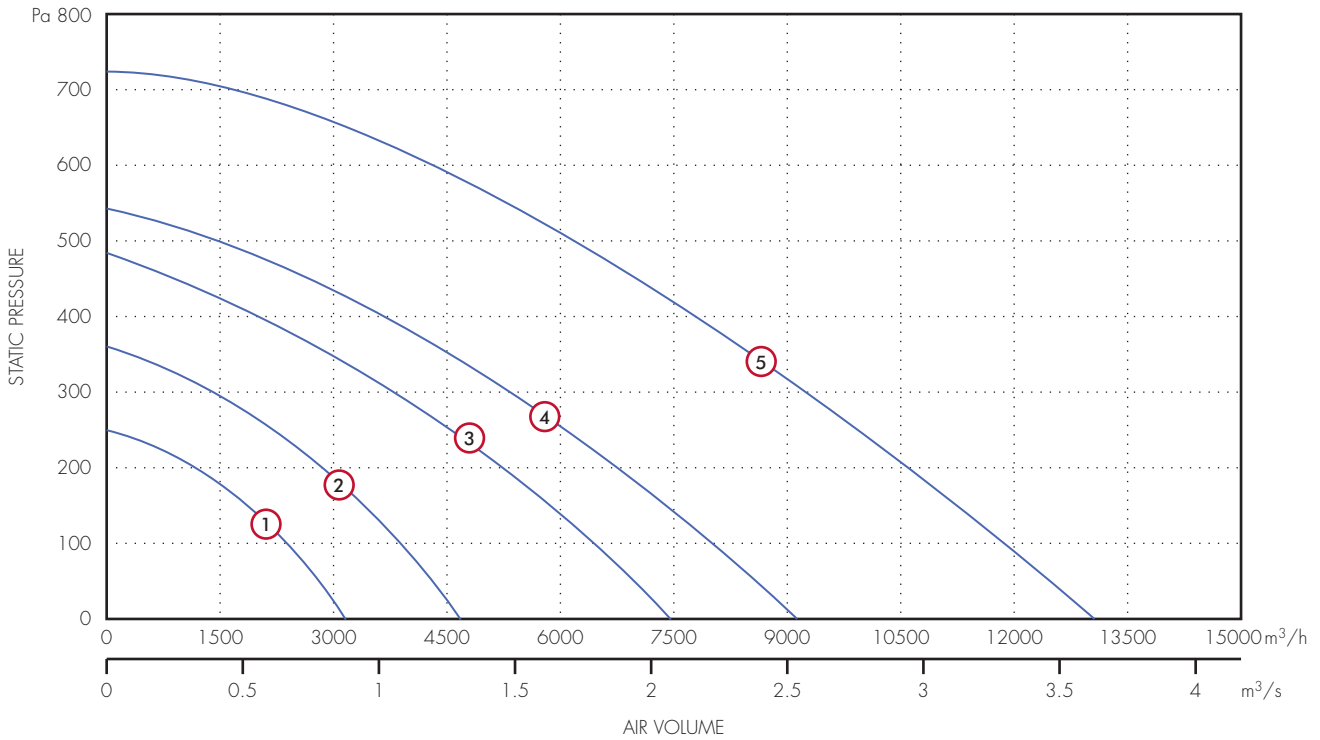


Fan size	a	b	c	d	e
355 / 400	500	700	570	-	83
450	650	850	690	-	103
500 / 560	790	990	842	100	103

# Mixed Flow Roof Fans (RMH)

## Performance Curve

355 - 560 dia - 4 Pole - 1 & 3 Phase



## Performance Guide

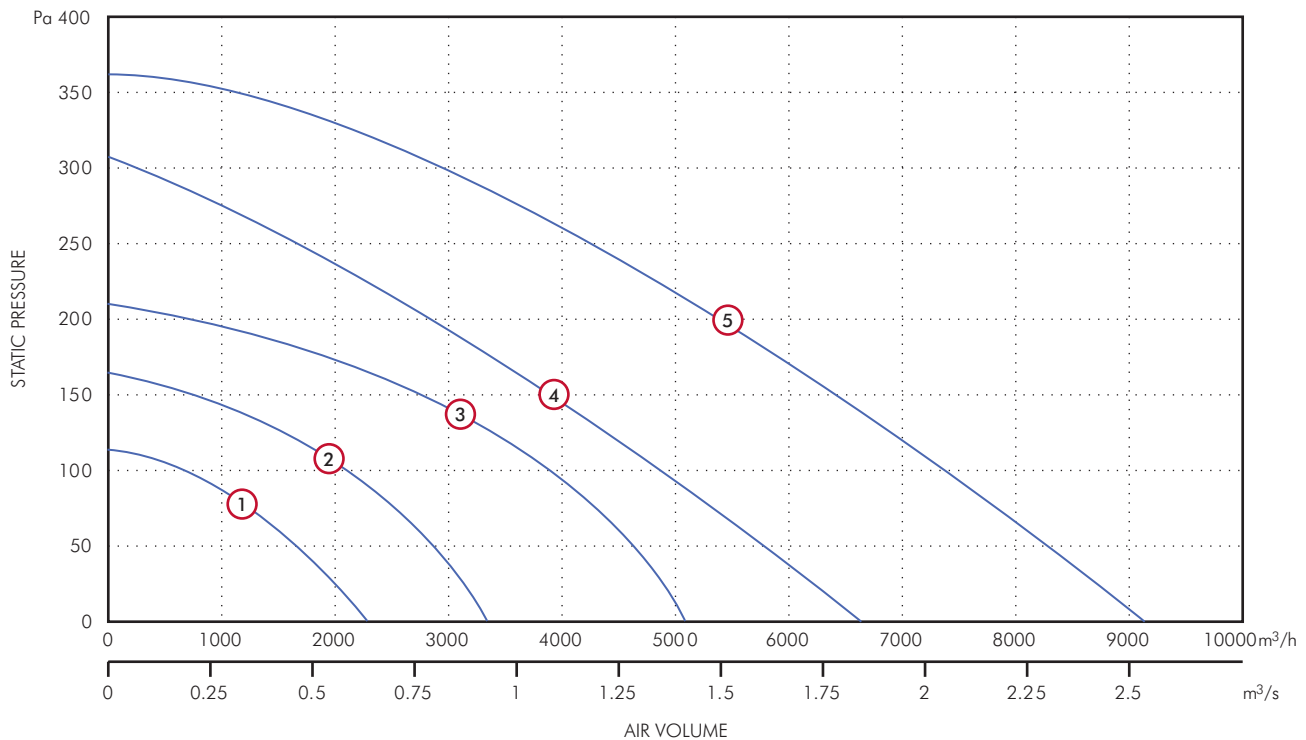
Dia.	Phase	Stock Model	Ref.	Pole	r.p.m.	Curve Ref.	m³/s at Pa							Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m			
							0	25	50	100	150	200	250					300	350	400
355	1	RMH355-14		4	1410	①	0.868	0.819	0.77	0.652	0.51	0.333				0.31	4	1.45	56	
355	3	RMH355-34		4	1410	①	0.868	0.819	0.77	0.652	0.51	0.333				0.25	1.55	0.5	56	
400	1	RMH400-14		4	1340	②	1.297	1.24	1.187	1.069	0.947	0.795	0.595	0.365		0.52	6	2.4	58	
400	3	RMH400-34A		4	1340	②	1.297	1.24	1.187	1.069	0.947	0.795	0.595	0.365		0.54	4.2	1.05	58	
450	1	RMH450-14		4	1380	③	2.053	1.986	1.916	1.77	1.618	1.451	1.256	1.045	0.82	0.57	0.96	10.5	4.7	64
450	3	RMH450-34A		4	1380	③	2.053	1.986	1.916	1.77	1.618	1.451	1.256	1.045	0.82	0.57	0.89	5.9	1.65	64
500	1	RMH500-14		4	1370	④	2.508	2.445	2.35	2.18	2.023	1.83	1.64	1.435	1.22	0.99	1.45	16	6.6	69
500	3	RMH500-34A		4	1370	④	2.508	2.35	2.18	2.023	1.83	1.64	1.435	1.22	0.99	1.35	10	2.4	69	
560	3	RMH560-34		4	1380	⑤	3.631	3.541	3.458	3.305	3.13	3	2.817	2.589	2.45	2.24	2.4	22	4.7	70

## Sound Power Level Spectra dB (re 10<sup>-12</sup>Watts)

Diameter	Pole	63	125	250	500	1k	2k	4k	8k
355	4	65	68	75	73	73	70	59	53
400	4	66	73	79	77	73	72	68	61
450	4	71	76	84	83	83	80	77	65
500	4	73	82	87	84	84	82	76	68
560	4	75	83	90	87	85	85	82	73

## Performance Curve

355 - 560 dia - 6 Pole - 1 & 3 Phase



## Performance Guide

Dia.	Phase	Stock Model	Pole	r.p.m.	Curve Ref.	m³/s at Pa					Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m	
						0	25	50	100	150					200
355	1	RMH355-16	6	920	①	0.606	0.55	0.466	0.16		0.09	1.1	0.44	47	
355	3	RMH355-36	6	920	①	0.606	0.55	0.466	0.16		0.1	0.57	0.25	47	
400	1	RMH400-16	6	910	②	0.919	0.863	0.794	0.588	0.204	0.19	1.3	0.88	49	
400	3	RMH400-36A	6	910	②	0.919	0.863	0.794	0.588	0.204	0.39	1.4	0.67	49	
450	1	RMH450-16	6	920	③	1.417	1.35	1.288	1.067	0.728	0.149	0.4	5.1	2.3	55
450	3	RMH450-36A	6	920	③	1.417	1.35	1.288	1.067	0.728	0.149	0.59	2	0.96	55
500	1	RMH500-16	6	910	④	1.831	1.716	1.6	1.34	1.047	0.731	0.43	4.1	2.1	60
500	3	RMH500-36A	6	910	④	1.831	1.716	1.6	1.34	1.047	0.731	0.88	4.4	1.45	60
560	1	RMH560-16	6	870	⑤	2.556	2.425	2.324	2.074	1.821	1.541	0.68	7.1	3.3	61
560	3	RMH560-36	6	870	⑤	2.556	2.425	2.324	2.074	1.821	1.541	0.67	4.1	1.55	61

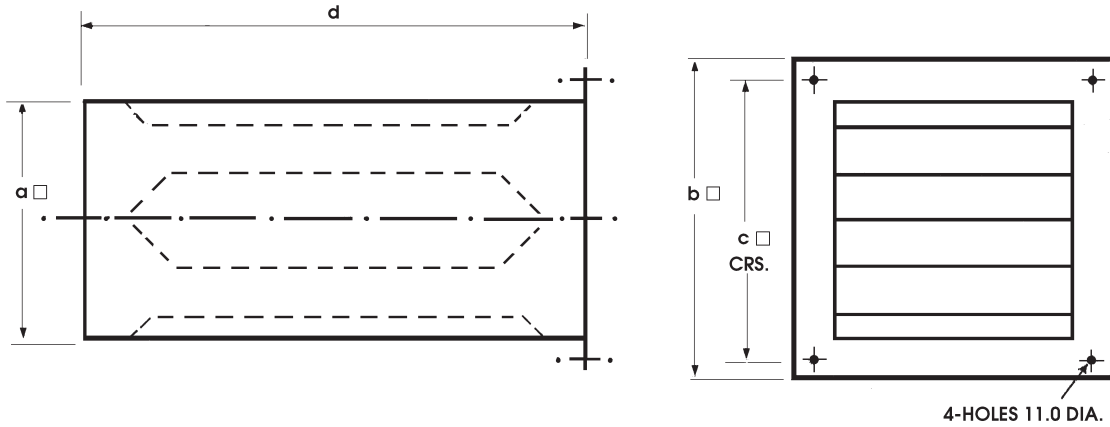
## Sound Power Level Spectra dB (re 10<sup>-12</sup>Watts)

Diameter	Pole	63	125	250	500	1k	2k	4k	8k
355	6	59	60	66	63	63	61	50	46
400	6	60	63	69	77	64	62	59	52
450	6	65	67	75	73	72	70	68	55
500	6	67	73	77	75	75	72	67	59
560	6	68	73	80	78	76	75	73	64

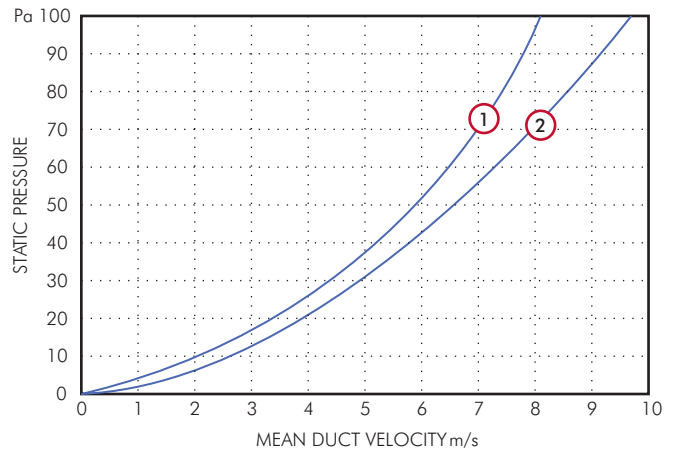
# Mixed Flow Roof Fans (RMH)

## Accessories Dimensions (mm)

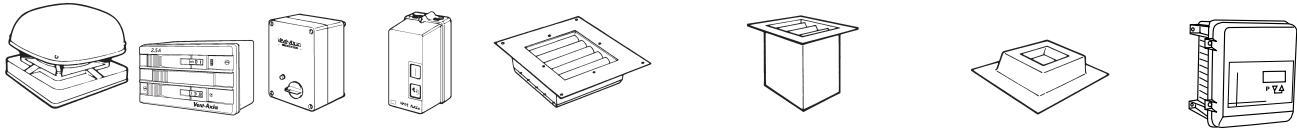
### Roof Attenuators



Stock Ref. No.	a □	b □	c □	d	Kg approx	Face Area m <sup>2</sup>	Resistance curve
10520400	495	595	545	600	22	0.245	①
10520500	645	745	695	600	31	0.416	①
10520630	785	885	835	600	44	0.616	②
10521400	495	595	545	900	28	0.245	①
10521500	645	745	695	900	39	0.416	①
10521630	785	885	835	900	52	0.616	②
10522400	495	595	545	1200	35	0.245	①
10522500	645	745	695	1200	48	0.416	①
10522630	785	885	835	1200	61	0.616	②



### Accessories



Stock Ref.	Electronic controller	Auto transformer	D.O.L. starter & Overload	Air operated Shutters †	Roof attenuators			Purlin boxes	*eDemand Controller		
	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	600mm †	900mm †	1200mm †		Voltage Control	1/3 Phase Inverter	3 Phase Inverter
	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.
RMH35514	W10303102M	10314103	444744 + 444701	10517400	10520400	10521400	10522400	10516400	444164	-	-
RMH35534	-	10314301	444744 + 444698	10517400	10520400	10521400	10522400	10516400	444164	-	-
RMH40014	10303103A	10314103	444747 + 444698	10517400	10520400	10521400	10522400	10516400	444166	444177	444172
RMH40034A	-	10314301	444747 + 444697	10517400	10520400	10521400	10522400	10516400	444166	444177	444172
RMH45014	10303106A	10314105	444744 + 444702	-	10520500	10521500	10522500	10516500	444164	-	-
RMH45034A	-	10314304	444744 + 444700	-	10520500	10521500	10522500	10516500	444164	-	-
RMH50014	10303110A	10314107	444747 + 444700	-	10520630	10521630	10522630	10516630	444166	444177	444172
RMH50034A	-	10314304	444747 + 444698	-	10520630	10521630	10522630	10516630	444166	444177	444172
RMH56034	-	10314307	444744 + 444703	-	10520630	10521630	10522630	10516630	444164	-	-
RMH35516	W10303102M	10314103	444744 + 444702	10517400	10520400	10521400	10522400	10516400	444164	-	-
RMH35536	-	10314301	444747 + 444701	10517400	10520400	10521400	10522400	10516400	444166	444177	444172
RMH40016	W10303102M	10314103	444747 + 444699	10517400	10520400	10521400	10522400	10516400	444166	444177	444172
RMH40036A	-	10314301	444744 + 444704	10517400	10520400	10521400	10522400	10516400	444165	-	-
RMH45016	10303103A	10314103	444744 + 444701	-	10520500	10521500	10522500	10516500	444164	-	-
RMH45036A	-	10314301	444747 + 444702	-	10520500	10521500	10522500	10516500	444166	444177	444173
RMH50016	W10303102M	10314103	444747 + 444700	-	10520630	10521630	10522630	10516630	444166	444177	444172
RMH50036A	-	10314304	444744 + 444702	-	10520630	10521630	10522630	10516630	444164	-	-
RMH56016	10303106A	10314105	444747 + 444703	-	10520630	10521630	10522630	10516630	444167	-	444174
RMH56036	-	10314304	444747 + 444701	-	10520630	10521630	10522630	10516630	444166	444177	444172

† Air operated shutters and manual/motorisable shutters are not suitable for use in combination with roof attenuators. Special manual/motorisable shutters can be fitted to the bottom of the roof attenuator. Supplied by others.

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