

Square Mixed Flow Fans (MFQ)

- Motors protected to IP44
- Motor insulation Class 'B'
- Standard Thermal Overload Protection
- Ductmate flanging
- All models speed controllable
- Manufacture controlled to BS EN ISO 9001
- Performance tested to ISO 5801
- In duct temperature up to 60°C (dependant on model)



The Square Mixed Flow (MFQ) range has been specially designed for systems with high performance and low sound levels in mind. Ideal for commercial and industrial premises, the MFQ range places the emphasis on fast installation, reliable performance and easy access for maintenance.

The range offers almost two and a half times the pressure development of conventional axial fans and is an ideal cost effective alternative to two stage axial arrangements. The range is dimensionally compact, saving weight and installation costs.

Available in five sizes with a duty range from 0.632m³/s to 3.673m³/s (2275m³/h to 13,222m³/h), develops pressures up to 450 Pa.

Mixed Flow Impeller and Casing

The high efficiency backward curved mixed flow impeller is manufactured in a moulded Polyamide material with 30% Glass Fibre. All other sizes of impeller are constructed in aluminium. All impellers offer non-overloading characteristics and are dynamically balanced for maximum efficiency. The casing is manufactured in sheet steel with Ductmate flanges at both ends.

The full range of MFQ fans is manufactured with an Aluzinc casing suitable for both internal and external mounting as standard.

Motors

A proven external rotor motor design and advanced new design of radial mixed flow impeller assembly has been specially selected for its performance and non-overloading characteristics. The assembly is dynamically balanced to VDI 2060. The motors in this range are rated at 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).



Electrical

Single phase 220-240V 50 Hz. Capacitor: start and run. Capacitors are located in the terminal box. Three phase 380-415V 50Hz. All motors are fitted with Standard Thermal Overload Protection (S.T.O.P.).

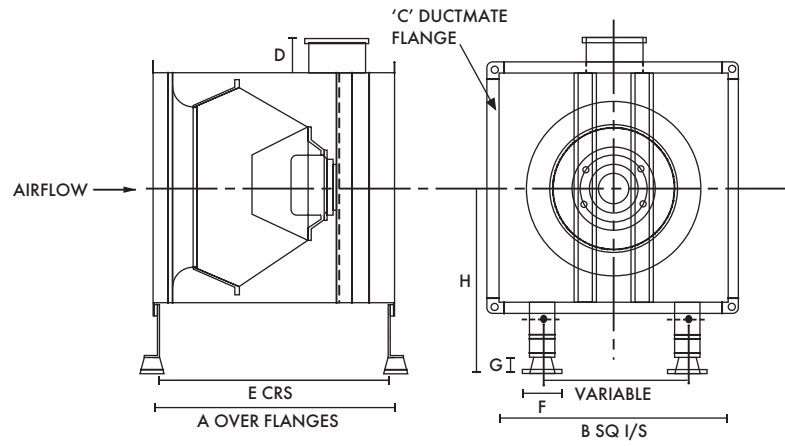
Performance and Sound

Tested to ISO 5801. Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at a reference level of 2×10^{-5} Pa (20 micro-Pascal). The inlet, outlet and breakout sound power level spectra figures are dB with a reference of 10^{-12} Watts (1 pico-watt).

Quality Assurance

Design and manufacture is in accordance with BS EN ISO 9001.

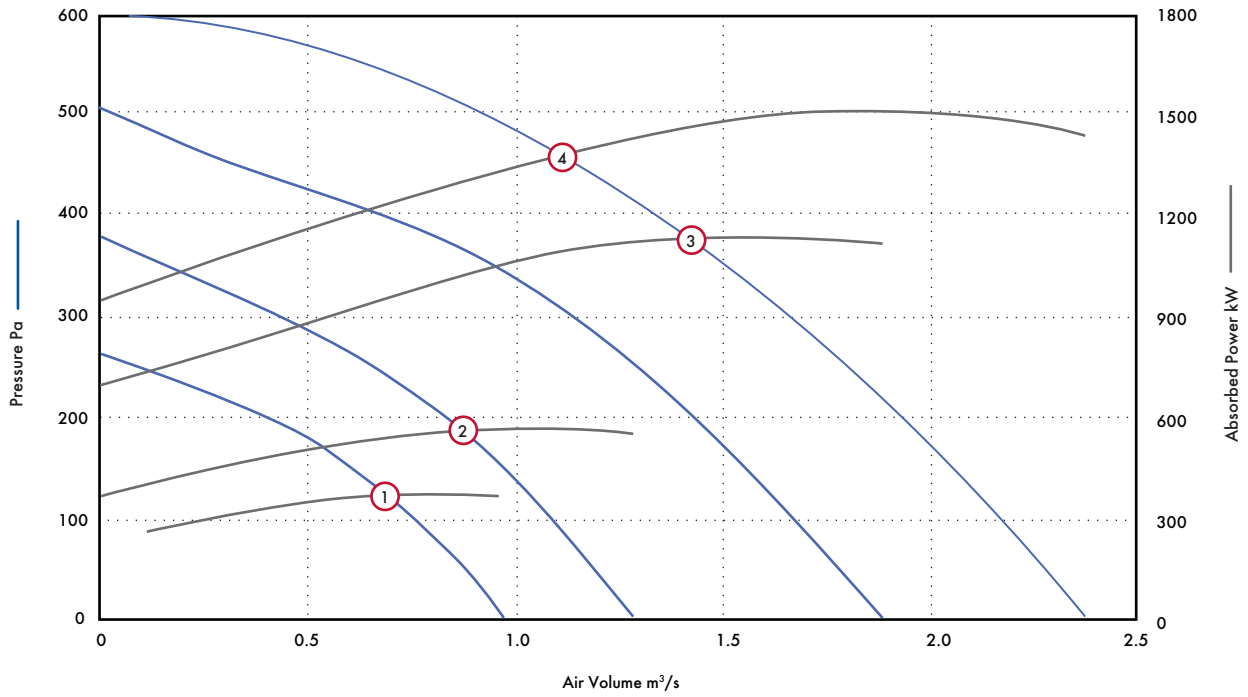
Fan Dimensions (mm)



Unit	Duct Size	A	B	C	D	E	F	G	H	Weight kg
350	450 x 450	400	450	25	52	406	62	29	345	22
400	500 x 500	450	500	25	52	456	62	29	370	28
450	550 x 550	485	550	35	52	491	62	29	405	42
500	650 x 650	510	650	35	86	516	102	37	455	73
560	700 x 700	530	700	35	52	536	102	37	480	78

Performance Guide

350 to 500 dia. - 1 Phase - 4 Pole



Motor Phase	Stock Ref	Poles	r.p.m	Curve Ref.	Duty m³/s @ Pa							Motor kW	S.C. Amps	F.L.C Amps	dBA @ 3m	
					0	100	200	300	400	500						
1	MFQ35014	4	1390	1	m³/s	0.97	0.80	0.56					0.37	5.5	1.85	55
					kW	368.63	377.76	356.75								
1	MFQ40014	4	1270	2	m³/s	1.29	1.08	0.83	0.44				0.58	6	2.6	57
					kW	556.85	572.65	558.43	490.72							
1	MFQ45014	4	1380	3	m³/s	1.89	1.67	1.44	1.15	0.70	0.05	1.1	17	5.2	59	
					kW	1117.53	1135.29	1138.63	1105.84	968.60	720.78					
1	MFQ50014	4	1350	4	m³/s	2.38	2.17	1.94	1.66	1.34	0.92	1.65	22	7.4	61	
					kW	1443.11	1494.90	1518.53	1506.19	1448.25	1327.76					

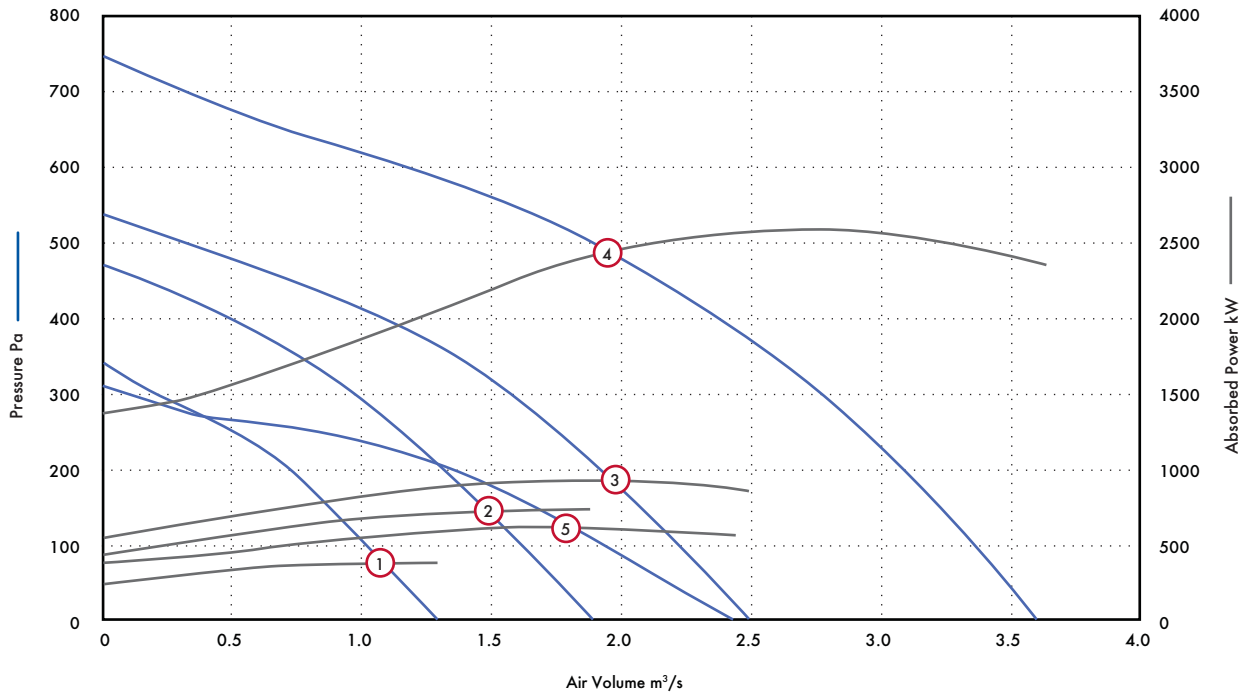
Max temperature 60°C

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

Motor Phase	Stock Ref	Poles	Spectrum	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
1	MFQ35014	4	Inlet	70	74	76	72	72	70	62	54	56
			Outlet	70	74	76	72	72	70	62	54	56
1	MFQ40014	4	Inlet	71	78	79	75	74	69	68	59	58
			Outlet	71	78	79	75	74	69	68	59	58
1	MFQ45014	4	Inlet	80	82	79	76	78	73	68	60	61
			Outlet	80	82	79	76	78	73	68	60	61
1	MFQ50014	4	Inlet	83	85	81	79	80	76	71	66	63
			Outlet	83	85	81	79	80	76	71	66	63

Performance Guide

400 to 560 dia. - 3 Phase - 4 & 6 Pole



Motor Phase	Stock Ref	Poles	r.p.m	Curve Ref.	0	100	200	300	400	500	600	700	Motor kW	S.C. Amps	F.L.C Amps	dBA @ 3m
3	MFQ40034	4	1290	1	m³/s	1.30	1.02	0.72	0.21				0.54	4.2	1.2	57
					kW	364.79	370.14	358.53	278.39							
3	MFQ45034	4	1370	2	m³/s	1.89	1.62	1.32	0.97	0.48			1	9.5	1.95	59
					kW	726.01	726.43	709.22	663.41	558.26						
3	MFQ50034	4	1280	3	m³/s	2.49	2.22	1.93	1.57	1.09	0.31		1.45	9.5	2.8	61
					kW	868.76	904.37	923.04	911.64	836.23	623.80					
3	MFQ56034	4	1330	4	m³/s	3.61	3.36	3.08	2.76	2.39	1.90	1.17	2.5	22	4.6	68
					kW	2366.71	2470.94	2550.37	2590.56	2561.68	2404.60	1989.32	1464.97			
3	MFQ56036	6	920	5	m³/s	2.44	1.94	1.36	0.08				0.86	9	2.2	54
					kW	567.82	603.77	597.59	387.12							

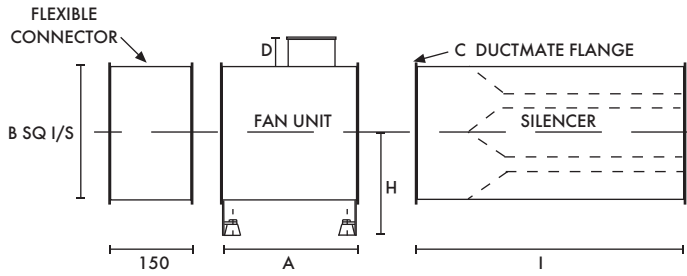
The 3 phase, 4 pole units 400 to 500 are fitted with 2 speed pole change delta/star connection motors as standard (4/6 pole). Max temperature 60°C except MFQ56034.

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

Motor Phase	Stock Ref	Poles	Spectrum	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
3	MFQ40034	4	Inlet	71	78	79	75	74	69	68	59	58
			Outlet	71	78	79	75	74	69	68	59	58
3	MFQ45034	4	Inlet	80	82	79	76	78	73	68	60	61
			Outlet	80	82	79	76	78	73	68	60	61
3	MFQ50034	4	Inlet	83	85	81	79	80	76	71	66	63
			Outlet	83	85	81	79	80	76	71	66	63
3	MFQ56034	4	Inlet	86	90	87	86	87	81	74	69	69
			Outlet	86	90	87	86	87	81	74	69	69
3	MFQ56036	6	Inlet	76	75	73	73	73	65	57	49	55
			Outlet	76	75	73	73	73	65	57	49	55

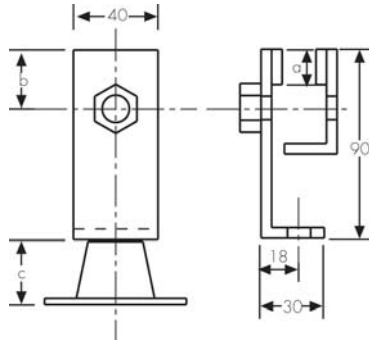
Accessories Dimensions (mm)

Flexible Connectors and Silencer



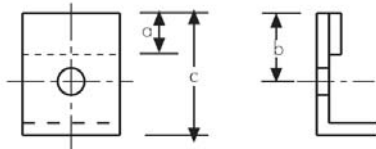
Unit	A	B	C	D	H	I	Weight	Flange
							kg	Ductmate
350	400	450	25	52	345	1200	45	25
400	450	500	25	52	370	1200	48	25
450	485	550	35	52	405	1200	55	35
500	510	650	35	86	455	1500	67	35
560	530	700	35	52	480	1500	70	35

Mount/Feet Details



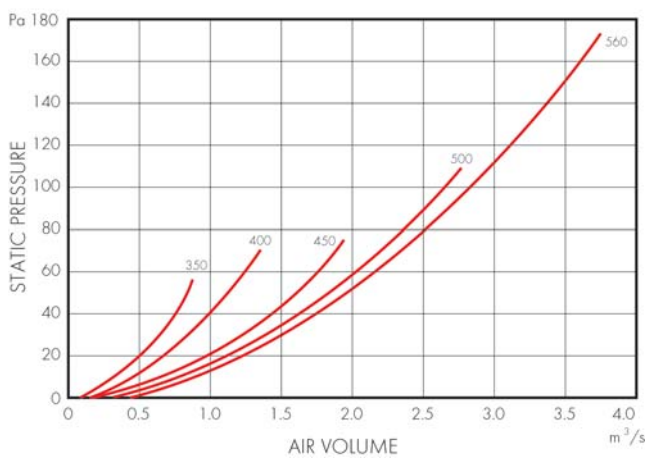
Stock Ref	a	b	c
PAVM 1	25	38	27
PAVM 2	35	38	27
PAVM 3	35	38	35

Clamp Details



Stock Ref	a	b	c
PAVM 1	25	38	60
PAVM 2	35	38	60
PAVM 3	35	38	60

Silencer Resistance Pa



Silencer Insertion Losses

Size	63	125	250	500	1k	2k	4k	8k
350	-3	-5	-14	-27	-36	-36	-29	-24
400	-2	-4	-12	-22	-30	-30	-22	-14
450	-2	-4	-11	-17	-24	-24	-16	-8
500	-3	-6	-15	-23	-31	-31	-21	-11
560	-4	-8	-16	-24	-32	-32	-22	-12

Accessories



Standard Fan Stock Ref	Electronic Controller Stock Ref	Auto Transformer Stock Ref	D.O.L.		eDemand Controller		
			Starter Stock Ref	Overload Stock Ref	Voltage Control Stock Ref	1/3 Phase Inverter Stock Ref	3 Phase Inverter Stock Ref
MFQ35014	W10303102M	10314103	444744	444700	444164	-	-
MFQ40014	W10303102M	10314103	444744	444702	444164	-	-
MFQ40034*	-	10314301	444747	444700	444166	444177	444172
MFQ45014	10303106	10314105	444744	444703	444164	-	-
MFQ45034*	-	10314301	444747	444701	444166	444177	444172
MFQ50014	10303110	10314107	444744	444704	444165	-	-
MFQ50034*	-	10314304	444747	444702	444166	444177	444173
MFQ56034	-	10314307	444747	444703	444166	444177	444173
MFQ56036*	-	10314304	444747	444701	444166	444177	444172

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

Size	Set of Mounting	Flexible	Matching	Acoustic
	Feet & AV's	Connection	Attenuator	Jacket
	Stock Ref	Stock Ref	Stock Ref	Stock Ref
350	PAVM1	MFQFC350	MFQSS350	MFQAJ350
400	PAVM1	MFQFC400	MFQSS400	MFQAJ400
450	PAVM2	MFQFC450	MFQSS450	MFQAJ450
500	PAVM3	MFQFC500	MFQSS500	MFQAJ500
560	PAVM3	MFQFC560	MFQSS560	MFQAJ560

NOTE: The 3 phase, 4 pole Units 400 to 500 are fitted with 2 speed pole change delta/star connection motors as standard (4/6 pole).