AIRTECHNOLOGY / AMETEK®

MIXED FLOW FANS

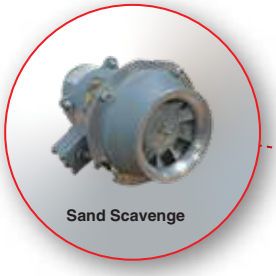


WHEN
EXCEPTIONAL PERFORMANCE
MATTERS

General Overview

Mixed flow fans occupy a position part way between axial and centrifugal designs. The pressure/volume characteristic is very stable and particularly suited to systems of variable resistance, such as those containing filters or adjustable outlets. The aerodynamic geometry also produces a low and broad based noise signature without the need for additional attenuation. They are much less sensitive to impeller/casing clearance and blade wear than other types and are widely used for filter scavenge applications; service life can be further improved with stainless steel impellers and casings.

Our Products & Applications


Sand Scavenge



Avionics Cooling


Avionics Cooling

Sand Scavenge

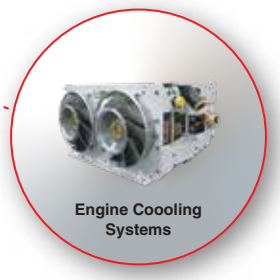



Gearbox Oil Cooling

Helicopter Main Gearbox Oil Cooling


Engine Coooling Fans




Engine Coooling Systems

Military Vehicle Engine Cooling Fans & Systems

Electrically Driven Mixed Flow Fans



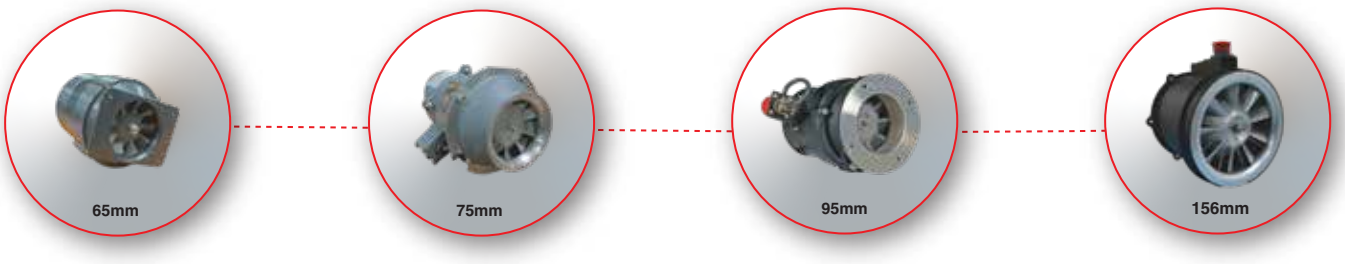
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Electrically Driven Mixed Flow Fans

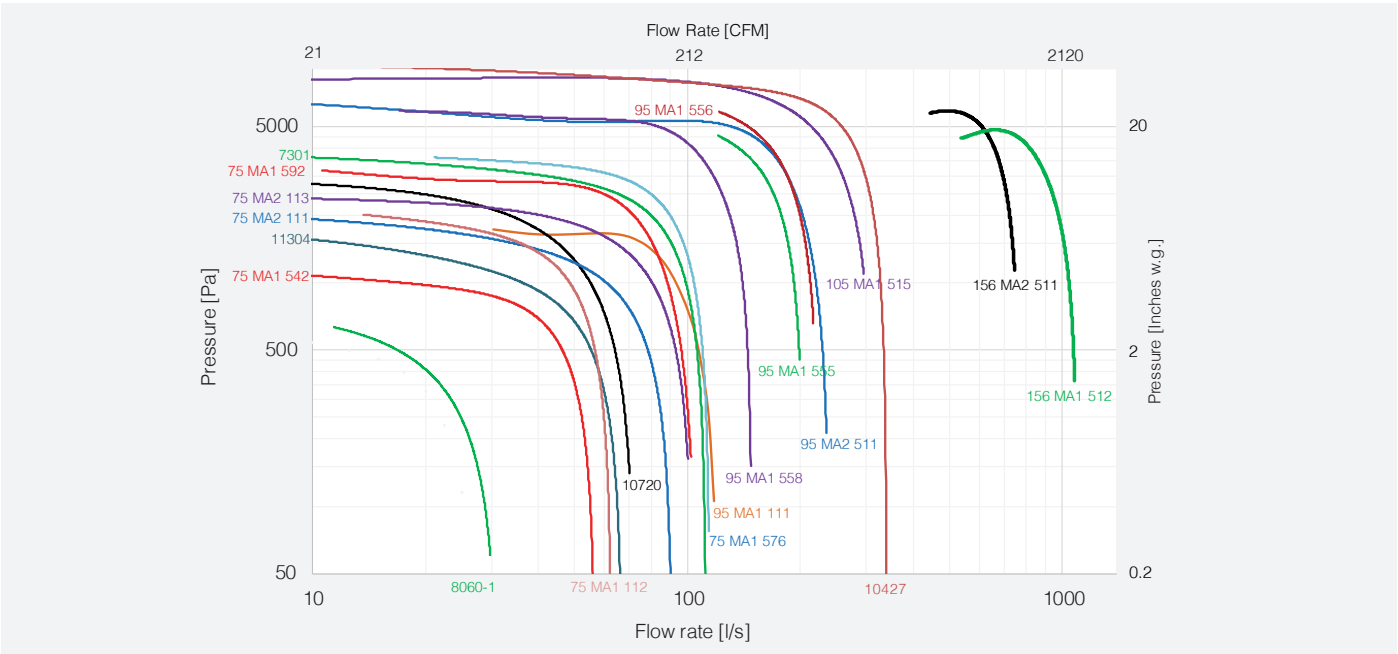
AMETEK Airtechnology designs and manufactures a wide range of mixed flow fans, available in sizes from 65mm to 156mm, for a variety of applications, including avionics cooling, ventilation, and sand scavenge. Our mixed-flow fans, with their inherent resistance to stall, are particularly well-suited for demanding scavenge applications, offering exceptional resistance to blade wear—an important advantage. These fan designs deliver high static pressure performance while maintaining improved noise characteristics and are capable of adapting to varying system resistances without the risk of stalling. Both AC (200V, 400 Hz) and 28V DC versions are available with options including: Twin speed motors, speed sensors, Thermal trips and Non-Return valve on exhaust.

Motor Options ■ 115/200V AC ■ 28, 270, 600-800V DC

FAN DIAMETER	PART NUMBER	AIRFLOW at free delivery l/s (CFM)	MAX PRESSURE kPa (in.w.g)	SPEED rev/min	INPUT (WATTS)	WEIGHT kg (lbs)
65mm	8060-1	27.5 (58.3)	0.5 (2.01)	11500	59	0.9 (1.9)
	10720	70 (148.3)	2.5 (10.1)	23000	303	1 (2.2)
	11304	67.1 (142)	7.5 (30.1)	17000	90	1.3 (2.9)
75mm	7301	112 (237.3)	2.5 (10.1)	23000	380	1.7 (3.7)
	75 MA2 111	104 (220.4)	1.7 (6.8)	17000	230	1.6 (3.5)
	75 MA2 112	62 (131.4)	1.7 (6.8)	17000	252	2.5 (5.5)
	75 MA2 113	102 (216.1)	2.5 (10.1)	18000	280	1.7 (3.7)
	75 MA1 542	56 (118.7)	0.9 (3.6)	11500	70	1.4 (3.1)
	75 MA1 576	115 (243.7)	3.2 (12.9)	23000	450	1.6 (3.5)
	75 MA2 592	102 (216.1)	2.8 (11.3)	23000	560	2.2 (4.9)
95mm	95 MA1 111	118 (250)	1.6 (6.4)	12000	250	2.6 (5.7)
	95 MA2 511	170 (360.2)	2.7 (10.9)	23000	1365	2.8 (6.2)
	95 MA2 521	260 (551)	5.2 (20.9)	11500/22000	300/1400	2.9 (6.4)
	95 MA3 521	187.5 (397.3)	7 (28.1)	11500/22000	300/1400	3.1 (6.8)
	95 MA1 555	204 (432.3)	4.8 (19.3)	23000	1330	3.0 (6.6)
	95 MA1 556	210 (444.1)	6.3 (25.3)	23000	1330	3.0 (6.6)
	95 MA1 558	145 (307.3)	5.7 (22.9)	23000	840	3.0 (6.6)
105mm +	105 MA1 515	300 (635.7)	7.5 (30.1)	23000	2780	4.4 (9.7)
	10427	320 (678.1)	7.8 (31.3)	23000	2500	4.7 (10.4)
	156 MA2 511	650 (1377.4)	5.9 (23.7)	11500	6550	7.9 (17.4)
	156 MA1 512	1100 (2331)	4.8 (19.3)	11500	6600	7.9 (17.4)



Performance curves



Helicopter Main Gearbox (MGB) Oil Cooling Fans



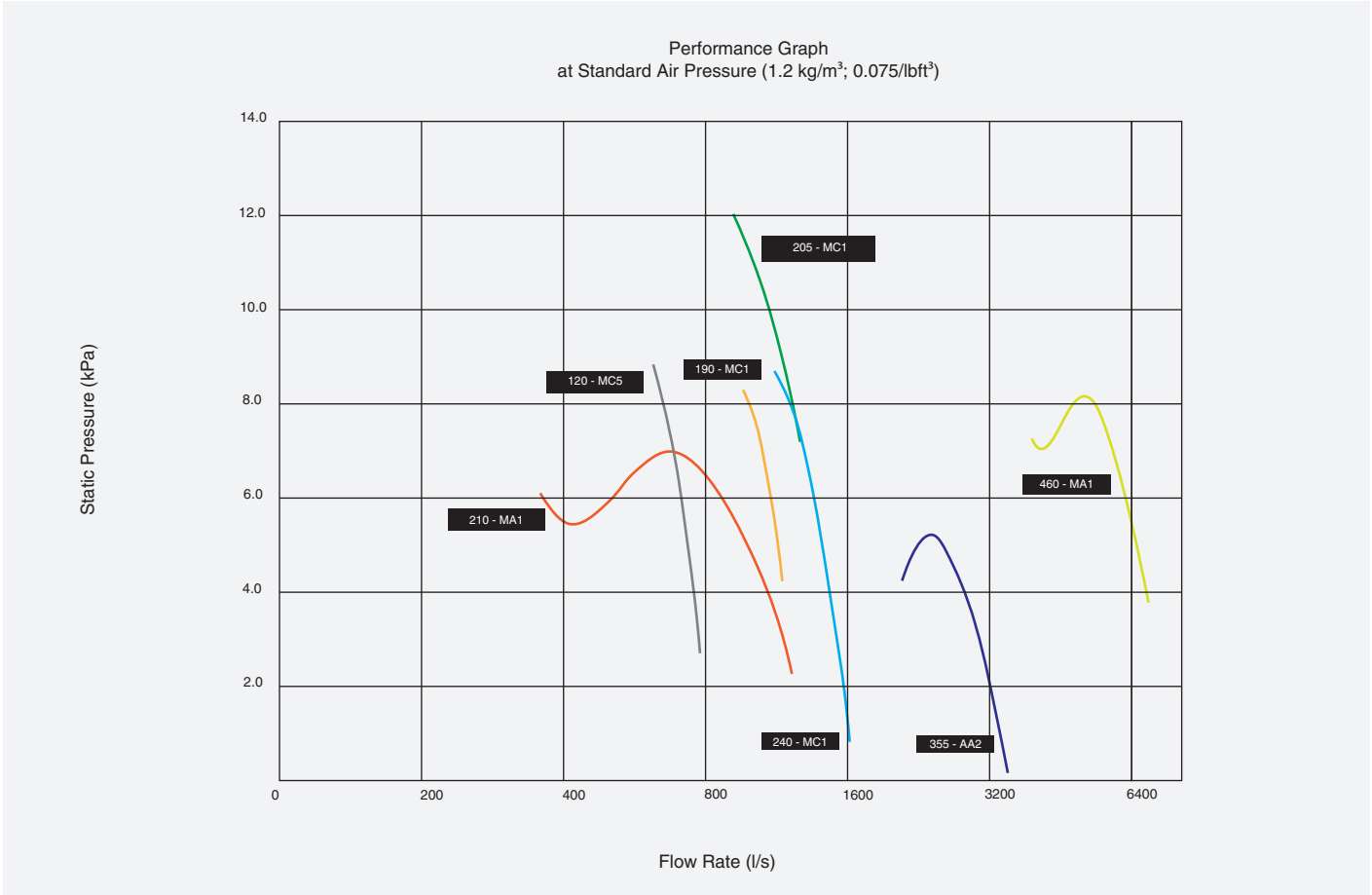
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Helicopter Main Gearbox (MGB) Oil Cooling Fans

For customers seeking expert support in Helicopter Main Rotor Gearbox (MGB) Oil Cooling System design, AMETEK Airtechnology brings over 30 years of specialised experience. We excel in designing, testing, and manufacturing MGB oil cooling systems that use mixed-flow fans, perfectly suited for these applications.
We provide a complete turn-key solution, optimising the entire system—fan, heat exchanger, and composite ducting—for performance, weight, and reliability. Engaging early in the design process allows us to collaborate closely with our customers to meet the unique oil cooling requirements of their helicopters. Our innovative designs are fully certified and in service across multiple military and civil helicopter platforms from the world's leading manufacturers.

FAN DIAMETER	PART NUMBER	AIRFLOW at free delivery l/s (CFM)	MAX PRESSURE kPa (in.w.g)	SPEED rev/min	INPUT (WATTS)	WEIGHT kg (lbs)
120mm	120 MC5 846	500 (1059)	2.5 (10.1)	25000	28000	2.8 (6.2)
190mm	190 MA1 862	670 (1419)	7.8 (31.3)	14350	42000	4.2 (9.3)
205mm	205 MC1 813	1180 (2500)	9.3 (37.4)	14560	50000	12.2(26.9)
210mm	210 MA1 811	899 (1905)	5.2 (20.8)	11466	25000	4.4 (9.6)
240mm	240 MC1 911	1312 (2780)	4.3 (17.3)	12623	13870	15.5(34.2)
355mm	355 AA2 911	2590 (5488)	3.3 (13.3)	7178	22000	6.6 (14.6)
460mm	460 MA1 911	7000 (14833)	8 (32.1)	7178	50600	21.9 (48.3)

Performance curves



Military Engine Cooling Fans



AIRTECHNOLOGY / AMETEK

Military Engine Cooling Fans

We offer three fan sizes for military vehicle engine cooling to cater to different vehicle cooling requirements. Our MP4 range includes 305mm, 380mm, and 475mm diameter fans, all of which use our mixed flow design that optimises high performance with low power consumption. The fan design has non-stall performance, non-overloading power characteristics, and low noise emission levels.
We also provide a performance-enhancing solution with our Inlet Guide Vane (IGV) technology (see next page). This optional fit component optimises airflow and boosts overall cooling efficiency. Furthermore, we offer several drive options for different system configurations, including belt-driven, shaft-driven, hydraulic, and electric drives up to 800V.

Mixed Flow Advantage

True mixed flow fan designs, such as the Airtechnology MP4 type, provide integrators with both axial and centrifugal air discharge options from the same fan within a more compact package. This is in contrast to alternate fan types, such as pseudo mixed flow, axial or centrifugal fans, which may have more restrictive installation limitations — for example, how close any obstruction can be to the fan outlet, which is not apparent with a true Mixed flow fan.

*last three numbers denotes motor type

FAN DIAMETER	PART NUMBER	AIRFLOW at free delivery m³/s (CFM)	MAX PRESSURE kPa (in.w.g)	SPEED rev/min	INPUT (WATTS)	WEIGHT kg (lbs)
305mm	305-MP4*	5.75 (12,184.3)	9.29 (37.3)	9300	See table below	18 (39.7)
380mm	380-MP4*	9.15 (19,388.8)	9.88 (39.7)	7700	See table below	25 (55.1)
475mm	475-MP4*	13.88 (29,411.7)	9.37 (37.7)	6000	See table below	40 (88.2)



305mm



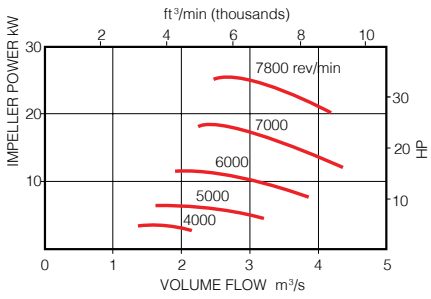
380mm

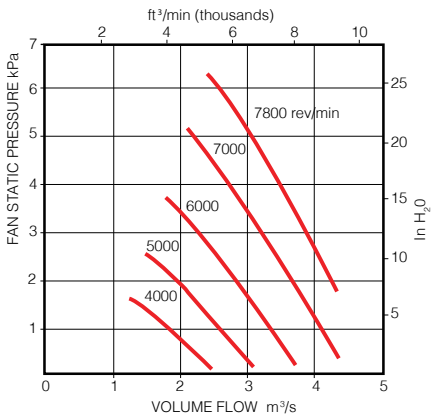


475mm

Fan Type 305 MP4

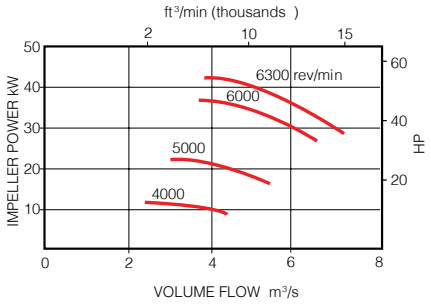
Air Density 1.2 kg/m³
Max Speed 7,800 rev/min rev/min

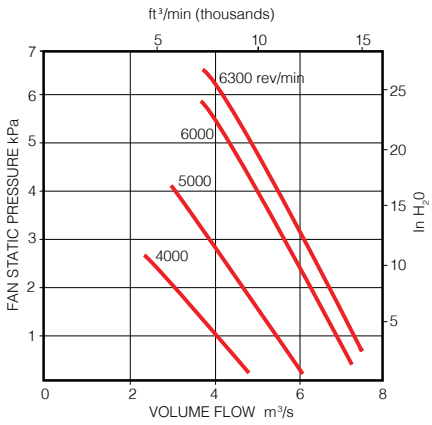




Fan Type 380 MP4

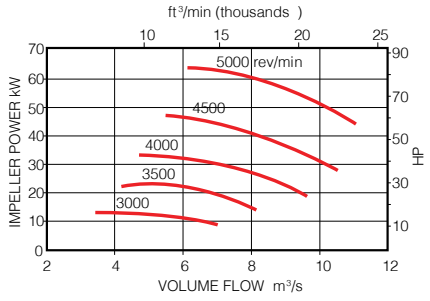
Air Density 1.2 kg/m³
Max Speed 6,300 rev/min rev/min

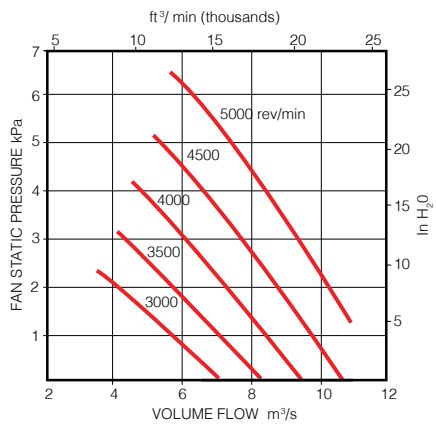




Fan Type 475 MP4

Air Density 1.2 kg/m³
Max Speed 5,000 rev/min rev/min



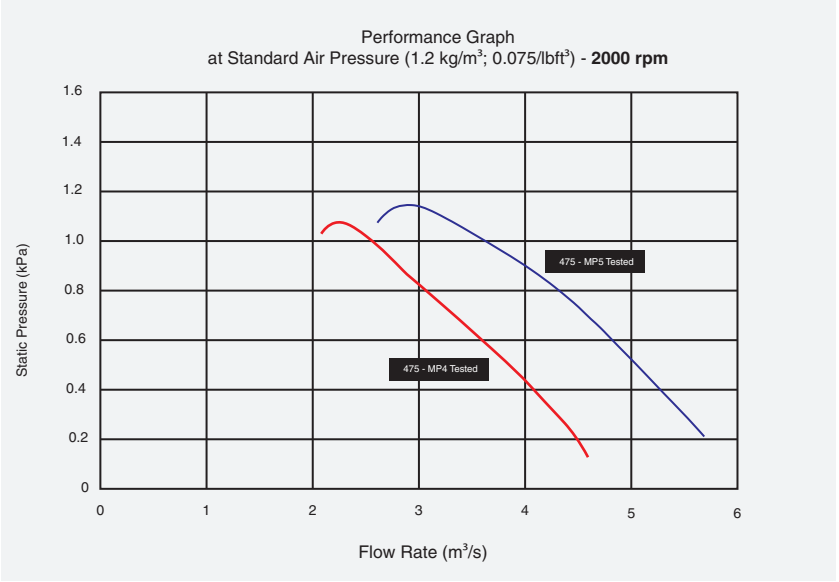


Inlet Guide Vane Performance (IGV) booster

In addition to the gains in performance from increasing the fan speed, we wanted to improve performance even further, and so turned our attention to the fans Inlet guide vane (IGV).

With improved aerodynamics we have developed a standalone (modular) guide vane that can be attached to our existing fans to give an instant **15%** “boost” in performance. The graph below shows the gains made by incorporating our latest guide vane technology (**MP5**).
Performance gains for all three sizes running at increased speeds and with the addition of the new IGV.

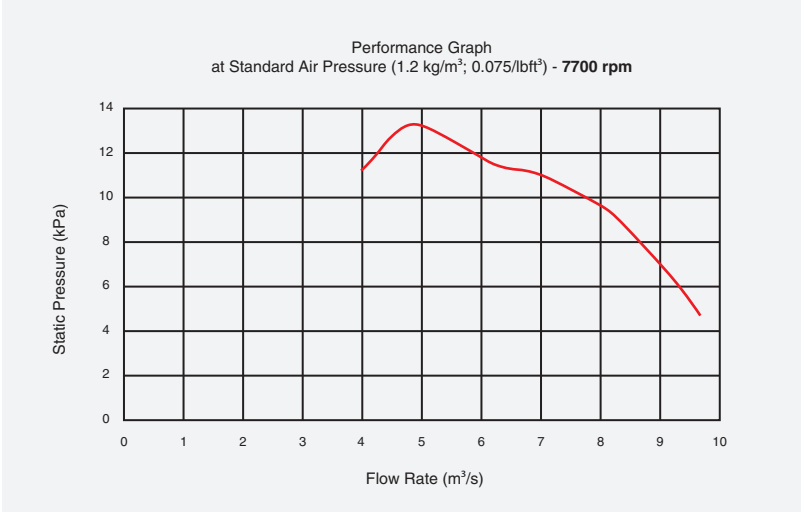




High Voltage DC Engine Cooling Fan

AMETEK Airtechnology's latest electric cooling unit enables powerpack cooling for modern, electric, and hybrid-electric combat vehicles. Instead of a traditional hydraulic motor or a belt drive system, our latest offering uses a High-Voltage DC (HVDC) Motor to drive a fan.

The example shown here uses our standard 380-MP4 Mixed Flow Fan coupled with an Inlet Guide Vane (IGV) to give the performance shown in the performance graph below. The drive motor dimensions and speed are optimised to achieve the target aerodynamic performance. This flexibility allows us to tailor fan and motor combinations to your specific cooling and installation requirements.





Contact Us

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