

High Performance Fans and Air Distribution for Marine/Naval Applications



**American
Fan Company**

A Flakt Woods Company

2933 Symmes Road
Fairfield, Ohio 45014

Phone (513) 874-2400
www.flaktwoods.com

American Fan: A Profile of Performance



Air movement technology is a world of specialized knowledge. Design and manufacturing knowledge, combined with expertise in thermodynamics, aerodynamics, physics and electronics, are all required today to create the fans and fan systems needed by commercial and naval fleets.

American Fan is America's leader in air movement technology. **We have a long, strong history of providing innovative, practical answers to the marine industry's toughest challenges.**

Throughout our history, we have invested aggressively in technology development, with programs that produced breakthroughs in aerodynamics, acoustics, vibration control and motor performance. Advanced modeling and testing ensure that American Fan products perform efficiently and reliably, over a long service life.

Our products include the widest range of fans and blowers for cruise ships, container vessels, aircraft carriers and submarines. Our resources include 160,000 sq. ft of manufacturing and management space, and 175 employees who understand the needs of the modern marine/naval industry, and the requirements of the consulting engineers and contractors who serve it.

In 2002, American Fan became part of the world's largest manufacturer of industrial fan systems.

We look forward to partnering with you . . . on your next project!

Benefits/Advantages



Real-time radiographic testing

Quality Testing

All American Fan aluminum cast components are fully x-rayed to insure casting integrity. Precision equipment, manufactured to our specifications, replicates all fan casings. Casings are expanded hydraulically to assure impeller track roundness. All fan/wheel/inlet combinations are air and sound tested. Air and sound testing

is performed per current AMCA standards. JM Fans up to Model 160 JM are AMCA certified.

Manufacturing

The use of advanced CNC manufacturing methods insures that American Fan products are identical to specification. Machines are controlled directly from computer programs, rather than tapes, which can become fragile and degrade over time.

Product Protection and Corrosion Performance

American Fan uses three advanced paint technologies to deliver the best combination of corrosion and chemical resistance, thermal protection, weathering performance and mechanical film resilience.

Depending on the application, the substrate and the customer's specifications, American Fan combines a high-performing pretreatment regimen with advanced enamel, or hot dipped galvanizing.

Applications

American Fan Products Are Proudly in Service in These Marine Installations:

Avondale/Bath Shipyards:

LPD-17 Class of Ships

Bethlehem Shipbuilding:

USNS El Paso

USNS Mobile

Detyens Shipyard:

USNS Invincible

Nassco Shipyards:

BP Tankers

Newport News:

Sealift Conversion

Sealift Phase II

Norfolk Shipbuilding and Drydock:

USS Concord

USS Flint

USS Niagara Falls

USS Mt. Baker

USS Waters

South West Marine:

USNS San Jose

Washington State Ferry:

M/V Cathlamet

M/V Elwha

M/V Evergreen State

M/V Issaquah

M/V Kitsap

M/V Klahowya

M/V Klickitat

M/V Nisqually

M/V Quinault

M/V Rhododendron

M/V Tillikum



JM Aerofoil Fans

Advantages of the JM Aerofoil Fan include compact size, low cost, high efficiency and rugged design. JM is available in 18 fan diameters from 12.4" to 88.2". Multiple combinations of hub diameter, speed and number of blades assure the optimum selection for your application. Bulletin JMA60-99.



JM Aerofoil Fans



Mixed Flow Fans

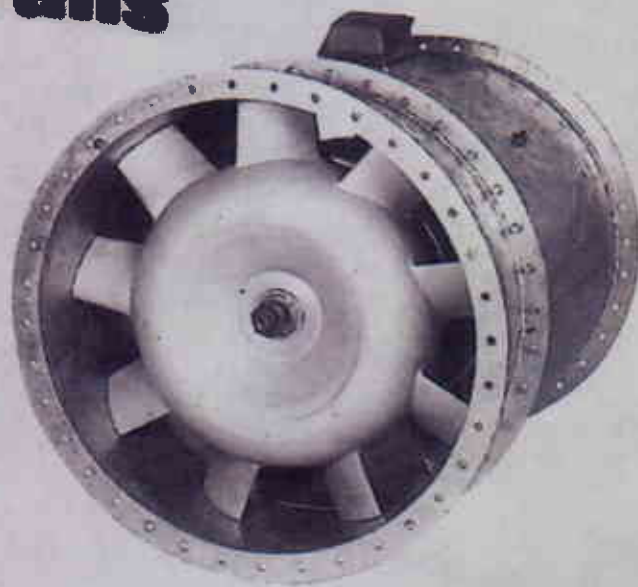
American Fan's Mixed Flow Series was engineered specifically for the offshore engineer. Nine standard sizes of compact, in-line fans, with capacities to 120,000 cfm and pressure to 12". All have steep pressure/volume characteristics and are suitable for high wind environments without excessive change in air delivery performance.

Mixed Flow Fans have spark minimization features standard. Construction is stainless steel or galvanized mild steel, with saddle, base or duct-mounted motors.



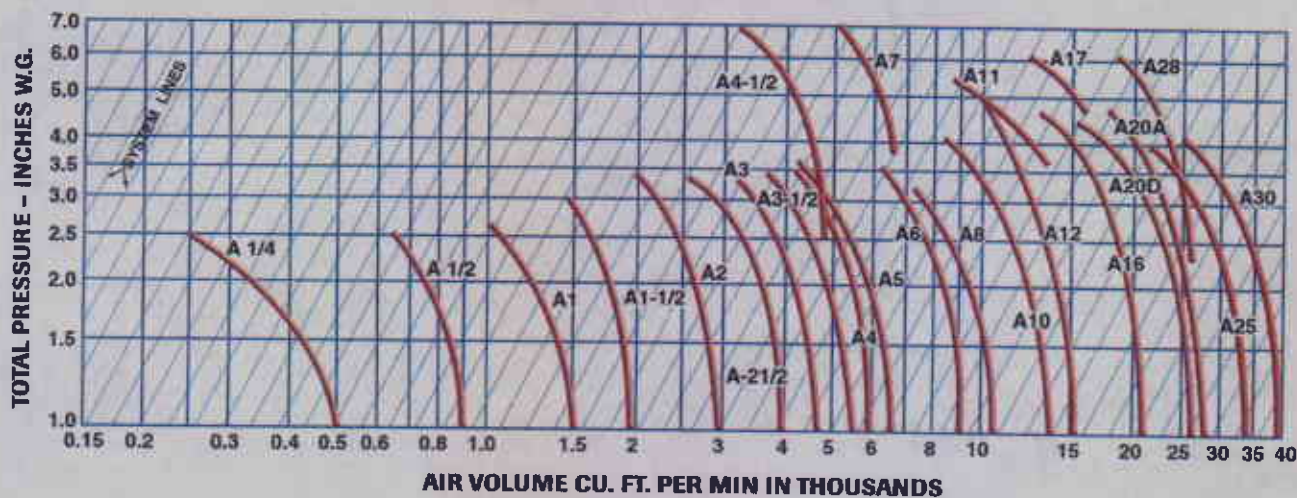
Navy Type A Fans

Vaneaxial Fans Type A Navy Standard per MIL-F-18953 (ships). Standard construction includes cast aluminum wheel, all-welded, galvanized steel casing and direct connected A.C. motor of totally enclosed spraytight construction. Also available are Navy standard Vaneaxial Fans with explosion-proof and non-magnetic features. 28 sizes with capacity up to 40,000 cfm.



Navy Vaneaxial Fan

Performance of Vaneaxial Fans



Navy Type CPS Fans

High Pressure Vaneaxial Fans per Navy Standard MIL-F 24755 (ships). Standard construction includes cast aluminum wheel, all-welded, galvanized steel casing and direct connected A.C. motor of totally enclosed spraytight construction.

Fan Data Performance Table

SIZE	MOTOR		SET ⁽²⁾ WEIGHT (LB)	AIRFLOW ⁽²⁾ (CFM)	
	HP	RPM		FAN TOTAL PRESS (IN W.G.)	
				14	12
A101	10	3600	A101	1200	1320
A102	10	3600	A102	1800	1980
A103	15	3600	A103	2400	2640
A104	15	3600	A104	3600	3960
A105	20	3600	A105	5400	5940

Centrifugal Fans

NAVY CENTRIFUGAL FANS



Type CC Navy standard per MIL-F-19004. 11 sizes with capacity up to 14,000 cfm. Total pressures up to 6" w.g.

ARRANGEMENT 4 BCS



16 sizes from 12" to 54" wheel diameters. Up to 100,000 cfm and 20" SP w.g. Backwardly inclined and backwardly curved units; full line of accessories. Bulletin AS0951.

MODEL AF

AF-4 shown with cast aluminum base.



AF-15 shown with steel base. Direct drive fan with wheel-mounted directly on motor shaft. Unit is designed for standard temperature applications only. With no belt losses, the direct drive fan operates at a higher efficiency.



Features

Model AF features a rugged, lightweight and rustproof cast aluminum housing, making it ideal for demanding applications. Model AF is available in direct or belt drive with accessories to meet your requirements.

Capacity selections are available up to 4000 cfm and pressure selections up to 20" SP w.g.

- Split housing for ease of maintenance
- Even O.D. pipe sizes on inlet and outlet
- Non-sparking cast aluminum housing
- Wheel sizes customized to your performance requirement
- High reliability
- Wheel is both statically and dynamically balanced
- Rustproof
- Low capital cost
- Available in arrangements 1,2,4,8 and 9

SC BLOWERS

Model SC features a steel multivane forward-curve wheel with a high volume, low noise characteristic. Model SC is ideal for OEM applications where a quiet, reliable, compact blower is required. Large motor cooling, laundry machinery purging, electronic equipment cooling, and lab hood fume exhausting are among current applications.

Pressure selections are available up to 4" SP w.g. and capacity selections up to 1400 cfm.

Model SC can be mounted and supported by an integrally cast outlet flange or mounted on a base, depending on the application. Special configurations are also available.

Features

- Rugged cast aluminum housing
- AMCA Type "C" sparkproof construction
- Round Slip Fit Inlet standard – available with flanged inlet
- Low cost and low maintenance
- Steel forward curved wheel
- Light weight, compact design ideal for many OEM applications
- Integrally cast outlet flange – (Standard on 381, Optional on 475,600 and 800)

Accessories

- Inlet flange
- Outlet flange
- Housing drain with plug
- Inlet filter
- Shaft seal
- Inlet guard
- Outlet guard
- Cast iron housing



ARRT.4
Flange-Mounted
SC-600



ARRT.4
Base-Mounted
SC-800

Tex-Duct

Today's Military Fleets Demand Products That Are Versatile, Low Noise and Lightweight. American Fan's Tex-Duct Air Distribution System Meets Those Requirements.

The Tex-Duct air distribution system consists of flexible, loose-weave NOMEX® material that replaces or supplements existing steel ductwork. Developed by Dupont, Nomex has passed UL tests for fire retardancy. The fabric's weave provides uniform air distribution along its entire length, in stark contrast to traditional steel ducting systems with point sources of distribution through registers. This feature significantly reduces the noise associated with traditional air distribution. As a result, ship compartments that previously suffered from poor air distribution can be optimally ventilated without noisy downdrafts.

Improved air distribution substantially benefits the electronics and other equipment operating within the compartment, and provides a healthier, more comfortable – and more ergonomic – crew environment.

Tex-Duct from American Fan Company can be as little as one-tenth the weight of old-fashioned steel ducting – a major factor in redistributing the ship's center of gravity. This important product will significantly reduce "first cost" requirements for Navy and Marine ships of all types.



Standard installation of Tex-Duct slotted half round in a surface mount.

The flexibility of Tex-Duct allows any inflated section to be moved aside for access to service equipment; afterwards, Tex-Duct simply drops back into place. Maintenance is also simple: a zipped attachment at the seams allows the duct to breakdown into components for machine washing.

When modifications are needed, Tex-Duct adapts easily, saving time and cost.



Tex-Duct can be configured to zig-zag left and right around any obstruction.



Tex-Duct consumes less space than the original steel ducting, reducing weight and saving precious space. Standard zipper construction allows for future modifications.

NOMEX®

DuPont's NOMEX® fiber products provide outstanding heat and flame resistance and excellent textile characteristics. Applications include industrial coated fabrics and electrical insulation, where its inherent dielectric strength, mechanical toughness and thermal stability provide high reliability in the most aggressive environments.

Inherently flame-resistant, NOMEX® won't melt, drip, burn or support combustion in the air. And, this protection is long-lasting: the flame-resistance provided by NOMEX® cannot be washed out or worn away.

NOMEX® offers not only thermal protection, but exceptional light weight. Honeycombs of NOMEX® substantially improve the performance of commercial aircraft.

NOMEX® Products have provided manufacturers with the dielectric strength, mechanical toughness, thermal stability, chemical compatibility, moisture insensitivity, and reliability they've demanded for more than 30 years.

Detailed engineering and application information is available from American Fan.