



APPLICATION

Engine-room / cargo-hold vent

Marine and offshore ventilation is a survival duty. An engine-room supply fan feeds combustion and cooling air to running machinery; an exhaust fan clears heat, oil mist and fumes from the space; a cargo-hold fan purges vapour and gas from a closed compartment before entry.

Capability envelope

marine ventilation service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,25,000 CMH	higher on enquiry
Static pressure	up to 1,000 mmWC typical	up to 2,000 mmWC for long trunk and high-resistance duty
Air temperature	ambient to 80 °C (engine-room exhaust)	higher on hot-space application with special metallurgy
Corrosion protection	hot-dip galvanised / heavy epoxy	304 / 316L SS or an FRP coating for salt-spray and cargo-vapour exposure
Construction (ignition)	AMCA 99 spark-resistant Type B	Type A / C + ATEX Zone 2/22 (Cat 3) self-declared
Sound level	<85 dB(A) @ 1 m	<75 dB(A) with silencers + acoustic enclosure
Drive power	up to 425 HP	our largest drive delivered to date
Balance quality	ISO 21940 G2.5 (marine)	G1.0 on application

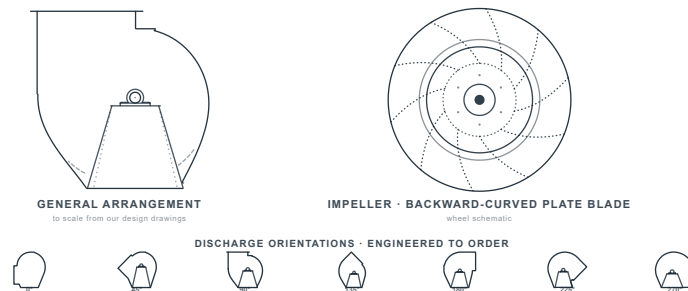


FIG. 1 Representative arrangement — a Jitamitra Backward-Curved Plate fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Materials & corrosion protection** — Matched to the exposure: hot-dip galvanised or heavy-duty epoxy on protected supply air; 304 / 316L stainless where salt spray and condensate are constant; an FRP coating or lining for corrosive cargo-vapour exhaust; sealed fasteners and drained casings throughout so water is never trapped.
- **Spark-resistant & gas-safe build** — AMCA 99 Type A / B / C selected to the space — **Type B** (non-ferrous rub ring) as the working default, **Type A** (fully non-ferrous flow path) for tanker holds and pump rooms — with bonded earthing and **ATEX Zone 2** self-declaration where the compartment is classified.
- **Impeller geometry** — Backward-curved or backward-inclined wheels for efficient, quiet clean-air supply and exhaust; backward-flat-plate on higher-pressure purge and duct-run duty. Efficiency matters — ventilation fans run continuously on generator-limited power at sea.
- **Marine vibration & mounting** — Rotor balanced to ISO 21940 G2.5, shaft and bearings sized for the shipboard vibration case, anti-vibration isolators and flexible connections to break structure-borne noise, and marine-rated locked fasteners so nothing works loose under continuous motion.

How a Jitamitra Engine-room / cargo-hold vent fan is specified

AMCA conventions

SPECIFICATION FIELD	OPTIONS
Arrangement (AMCA 99)	Arr. 1 (overhung, fan bearings) / Arr. 4 (direct, motor on base) / Arr. 8 (overhung on common base) / Arr. 9 (overhung, motor side) / Arr. 10 (overhung, motor inside base) — selected by drive, space access and mounting envelope aboard.
Width / inlet	SWSI (single width, single inlet) default for marine supply and exhaust; DWDI (double width, double inlet) for high air-change flow at moderate pressure in large engine rooms.
Wheel type	Backward-curved or backward-inclined (default, efficient and quiet clean-air duty) / backward-flat-plate (higher-pressure purge and long trunk runs).

SPECIFICATION FIELD	OPTIONS
Spark-resistant construction (AMCA 99)	Type A (all non-ferrous parts in the airstream) / Type B (non-ferrous rub ring and non-ferrous parts across the shaft opening) / Type C (aligned construction that prevents ferrous rotating-to-stationary contact) — selected to the space classification; Type B is the working default, Type A for tanker holds and pump rooms.
Materials of construction	Hot-dip galvanised or heavy epoxy MS (protected supply air) / 304 or 316L stainless (salt-spray and condensate exposure) / FRP-coated or FRP-lined (corrosive cargo-vapour exhaust) / aluminium or bronze non-sparking parts for classified hazardous spaces.
ATEX scope	Zone 2/22 self-declared (Cat 3) per 2014/34/EU for classified cargo holds, pump rooms and cofferdams — non-sparking impeller, bronze rub rings, bonded earthing, T-class bearing control.
Drive	Direct-coupled / V-belt / VFD (for two-speed or variable air-change control). Drive up to 425 HP across the envelope; speed typically 600–1,800 RPM.
Accessories & marine scope	Anti-vibration isolators and flexible connections against structure-borne noise; marine-rated locked fasteners and drained casings; weatherproof or gas-tight cowls and closable louvres on deck penetrations; inlet and outlet silencers with acoustic-lagged casing (down to <75 dB(A)); bonded earthing and non-sparking scope; class-society witness and documentation arranged with the vessel's society.

Where the Engine-room / cargo-hold vent runs

MARINE & SHIPBUILDING Engine-room supply and exhaust, cargo-hold and 'tween-deck ventilation, machinery-space and steering-gear extract.	OFFSHORE OIL & GAS Platform machinery-room and module ventilation, pump-room and turret purge, classified-area gas-safe extract.
TANKERS & GAS CARRIERS Cargo-hold and cofferdam purge, pump-room exhaust — spark-resistant and ATEX self-declared for the classified space.	DEFENCE & NAVAL Machinery-space and compartment ventilation, magazine and store extract on naval and coast-guard vessels.
DREDGERS & WORKBOATS Engine-room and pump-room ventilation on dredgers, tugs and utility workboats operating in continuous salt exposure.	PORTS & TERMINALS Enclosed-jetty, loading-arm and shore-side machinery-room ventilation for marine terminals and bunkering facilities.
MARINE EQUIPMENT OEMS Vent fans supplied as a sub-package to engine-room package, HVAC and switchboard-room builders — interface documented up front.	YOUR DUTY POINT Send us flow, static pressure and the air / gas condition — we size the wheel to it and quote in 3 to 5 working days — 5 to 7 working days for ATEX and special projects.

Standards & conformity

PERFORMANCE Tested to the IS 4894 / ISO 5801 / AMCA 210 method, in-house on our 200 HP VFD rig. Tested-to-method — not AMCA-certified.	QUALITY SYSTEM ISO 9001:2015 — third-party certified (our only third-party certification).
CE CONFORMITY Self-declared per 2006/42/EC + 2014/35/EU. Not a notified-body certificate.	ATEX CONFORMITY Self-declared, spark-resistant (SR), Zone 2/22 Cat 3 per 2014/34/EU, where area classification requires.
BALANCE & VIBRATION Balance ISO 21940 (G6.3 std, G2.5 on request); fan vibration acceptance ISO 14694, measurement ISO 14695.	WELDING & HEAVY DUTY ASME Sec IX welders + WPS; API 673 available as project-specific scope for oil & gas.

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Figures indicate family capability; every fan is engineered to the customer's duty point and confirmed on the approved GA drawing.