



APPLICATION

General / dilution ventilation

General / dilution ventilation is moderate-temperature, continuous, often ATEX-rated extraction and supply: chemical plant halls, pharmaceutical production zones, food-processing facilities, electronics fabs, laboratories and workshops. Efficiency, reliability and hazardous-area scope are what matter — the fan runs 24×7 and rarely stops.

Capability envelope

general / dilution-ventilation service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	5,000–1,50,000 CMH typical	up to 2,25,000 CMH on application
Static pressure	100–1,000 mmWC	up to 1,500 mmWC for high-resistance filtration
Operating temperature	ambient to 80 °C	up to 150 °C for warm-process duty
ATEX classification	Zone 2 (Cat 3G) self-declared for solvent / flammable-vapour areas	—
Drive power	up to 250 HP (most general/dilution-ventilation duty)	up to 425 HP on application
Speed	600–1,800 RPM typical	per duty + sound limits
Balance quality	ISO 21940 G6.3	G2.5 / G1.0 on application
Bearing life (design target)	L10h ≥ 40,000 h continuous	L10h ≥ 100,000 h on application

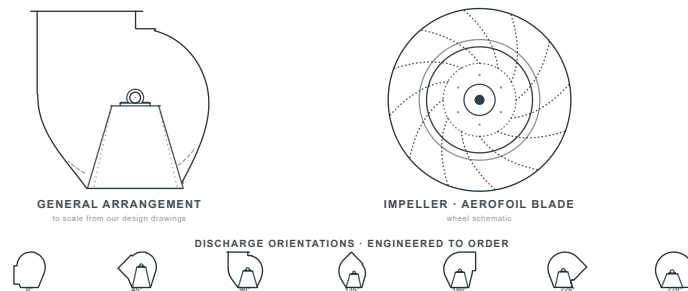


FIG. 1 Representative arrangement — a Jitamitra Aerofoil fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Materials per gas composition** — MS + epoxy for clean air; 316L SS or anti-corrosion coating for solvent vapour; 304 SS food-grade for fryer / dairy exhaust; electropolished 316L for cleanroom; PP-lined or duplex 2205 or FRP-lined carbon steel for aggressive chemical fume.
- **Wheel geometry** — backward-curved or airfoil-bladed for highest efficiency on clean-air duty; radial-tipped only where light dust carry-over from an upstream process may occur.
- **Pressure-cascade & draft control** — VFD default for new installations. Pharma facilities run a pressure cascade — positive in the cleanroom, negative in the airlock and process room — and VFD enables precise pressure-balance control across it.
- **ATEX & outdoor scope** — aluminium impeller, bronze rub rings, bonded earthing and anti-static coatings for Zone 2; IP55 motor minimum (IP66 for severe weather), outdoor coupling guard, corrosion-protected exterior and drain ports at the lowest casing point for rooftop units.

How a Jitamitra General / dilution ventilation 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, access and installation.
Width / inlet	SWSI (single width, single inlet) default; DWDI (double width, double inlet) for high hall-ventilation flow at moderate pressure.
Wheel type	Airfoil or backward-curved (default, best efficiency on clean air) / radial-tipped (only where light dust carry-over from an upstream process occurs).
Class (by pressure / outlet velocity)	Class I / II / III selected from the duty point on the pressure-vs-outlet-velocity limits; higher class = heavier construction for higher pressure and tip speed.

SPECIFICATION FIELD	OPTIONS
Materials of construction	MS + epoxy (clean air) / 316L SS or anti-corrosion coating (solvent vapour) / 304 SS food-grade (fryer, dairy) / electropolished 316L (cleanroom, low-particle) / PP-lined, duplex 2205 or FRP-lined carbon steel (aggressive chemical fume); aluminium impeller for ATEX.
Drive	Direct-coupled / V-belt / VFD (default for new installations and pressure-cascade control). Drive up to 425 HP across the envelope; speed typically 600–1,800 RPM.
Discharge & rotation (AMCA orientation)	Rotation CW or CCW (viewed from drive side) with discharge angle per AMCA — e.g. TH/BH/UB/DB — set to match your duct take-off and installed footprint.
Accessories & ATEX scope	VFD control; inlet/outlet flexible connectors; aluminium impeller, bronze rub rings, bonded earthing and anti-static coatings with T-class temperature classification for Zone 2; IP55/IP66 motor, outdoor coupling guard, corrosion-protected exterior and casing drain ports for rooftop units; auto-lubrication on hard-to-reach bearings; acoustic package on application.

Where the General / dilution ventilation runs

PHARMACEUTICALS Cleanroom HVAC, granulation-hall ventilation, solvent-area extraction, dust-tight dispensing halls.	CHEMICALS & PETROCHEM Process-hall ventilation, vent-gas extraction, laboratory fume-hood exhaust.
FOOD PROCESSING Production-hall ventilation, fryer exhaust, dairy spray-dryer area ventilation, oven ventilation.	ELECTRONICS & SEMICONDUCTORS Cleanroom HEPA-bank fans, fab makeup air, wet-bench exhaust.
LABORATORY & R&D Fume-hood exhaust, glovebox ventilation, BSL containment air.	PROCESS INDUSTRY — GENERAL Captive workshop ventilation, welding-shop exhaust, paint-preparation halls.
CLEANROOM & CONTROLLED ENVIRONMENTS Pressure-cascade ventilation across cleanroom, airlock and process room.	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.