



APPLICATION

Roof / wall exhaust (PRV)

A powered roof or wall ventilator (PRV) sits on the building envelope: pulling stale, warm, fume- or grease-laden air out of the space below and discharging it clear of the roof, in weather, day and night. The duty is low-static and high-flow, but the engineering is not trivial — the fan must shed rain and wind, stay quiet above occupied rooms, and be spark-resistant where the extract carries process fume.

Capability envelope

roof / wall exhaust service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,25,000 CMH	higher on enquiry
Static pressure	10–250 mmWC typical PRV duty	up to 2,000 mmWC for filtered or long-stub-duct extract
Configuration	upblast / downblast roof, or wall-mounted centrifugal	gooseneck, high-plume or dilution discharge on application
Weatherproofing	weather hood + drain + bird screen; IP55 motor	IP66 motor / stainless / an FRP coating for coastal or corrosive duty
Sound level	<80 dB(A) @ 3 m	lower with silencers + acoustic-lined curb
Construction (process duty)	AMCA 99 spark-resistant Type B on fume / grease service	Type A / C + ATEX Zone 2/22 (Cat 3) self-declared
Drive power	up to 425 HP	our largest drive delivered to date
Balance quality	ISO 21940 G6.3	G2.5 / G1.0 on application

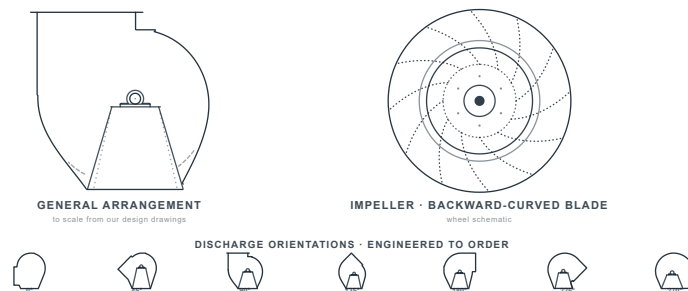


FIG. 1 Representative arrangement — a Jitamitra Backward-Curved fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Configuration — upblast or downblast** — Upblast (discharge thrown up and away from intakes) is the default for fume, grease and process extract; downblast where the plume must hug the roof or the discharge is clean building air. Wall-mounted centrifugal ventilators where roof access or structure rules out a roof unit — the configuration set to your re-entrainment and layout, not a default.
- **Impeller & efficiency** — Backward-curved or backward-inclined wheels for the best efficiency and low sound on clean building extract; airfoil-bladed where the flow is large and continuous; radial-tipped self-cleaning where the process extract carries grease or grit that would pack a curved wheel.
- **Weatherproofing & materials** — Spun aluminium or fabricated mild-steel weather hood with epoxy or polyester powder coat for the roofline; stainless steel on coastal, corrosive or wash-down duty; an FRP lining for aggressive process fume; drain trough, bird screen and IP55 (IP66 on application) weatherproof motor throughout.
- **Control & acoustics** — VFD default where the extract demand varies through the day (occupancy or process load); backdraught damper against reverse flow. Discharge and inlet silencers and an acoustic-lined curb where the fan sits over occupied or boundary-sensitive space — sound engineered to the stated limit before dispatch.

How a Jitamitra Roof / wall exhaust fan is specified

AMCA conventions

SPECIFICATION FIELD	OPTIONS
Arrangement (AMCA 99)	Arr. 4 (direct, motor on base) and Arr. 9 (overhung, motor side) are the common PRV forms; Arr. 1 (overhung, fan bearings) / Arr. 8 (overhung on common base) / Arr. 10 (overhung, motor inside base) selected by drive, access and whether the motor sits in or out of the airstream.

SPECIFICATION FIELD	OPTIONS
Width / inlet	SWSI (single width, single inlet) default for PRV duty; DWDI (double width, double inlet) for high flow at moderate pressure on large roof units.
Configuration & discharge	Upblast roof (discharge up and away from intakes) / downblast roof (discharge along the roof) / wall-mounted centrifugal — set to the re-entrainment, plume and structure requirement.
Wheel type	Backward-curved or backward-inclined (default, best efficiency and low sound on clean building extract) / airfoil-bladed (large continuous-duty flow) / radial-tipped self-cleaning (grease- or grit-laden process extract).
Spark-resistant construction (AMCA 99)	Type A (all non-ferrous parts in the airstream) / Type B (non-ferrous rub ring and shaft-opening parts) / Type C (aligned construction preventing ferrous contact) — selected to the ignition risk on fume, grease and combustible-dust discharge; not required on clean building extract.
Materials & weatherproofing	Spun aluminium or fabricated MS weather hood + epoxy / polyester powder coat (standard) / stainless steel for coastal, corrosive or wash-down duty / FRP lining for aggressive process fume; drain trough, bird / vermin screen, backdraught damper and IP55 (IP66 on application) motor throughout.
Drive	Direct-coupled / V-belt / VFD (default where extract demand varies with occupancy or process load). Drive up to 425 HP across the envelope; speed typically 600–1,800 RPM.
Accessories & acoustic scope	Weather hood, drain trough, bird screen and mounting curb; gravity or motorised backdraught damper; isolation / shut-off damper; grease trough and cleanable construction on kitchen duty; spark arrestor on ember-carrying process discharge; discharge and inlet silencers with acoustic-lined curb (down to the stated sound limit); inspection door.

Where the Roof / wall exhaust runs

HVAC & COMMERCIAL BUILDINGS General building extract, toilet and car-park exhaust, plant-room and boiler-room ventilation on roof and wall.	FOOD & BEVERAGE Process-hall extract, cooking and drying-line exhaust, grease-duty roof fans on cleanable construction.
AUTOMOTIVE & PAINT Roof extract off paint and coating lines — spark-resistant on solvent fume, ATEX where the area is classified.	TEXTILE Process-hall and dye-house extract, humid and lint-laden air moved off the roof at high volume.
WAREHOUSING & LOGISTICS High-volume roof extract and heat relief over large-span sheds and distribution centres.	LIGHT MANUFACTURING & ASSEMBLY General workshop and process extract to atmosphere through roof and wall ventilators.
PHARMACEUTICALS & CHEMICALS Process and utility extract to atmosphere — corrosion-resistant construction or an FRP lining where the discharge is aggressive.	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.

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