



APPLICATION

Dust extraction (dirty side)

Combustible dust, abrasive particulate, sticky organic dust, submicron pharma fines — every dust-extraction duty is different, and a fan that runs 5 years in one application fails in 5 months in another. We build dust-handling fans across three duty families that share one engineering response: dust collection downstream of bag filters and cyclones, air-filtration extraction across particulate-laden ducts, and pollution-control OEM supply for bag-filter, scrubber and ESP integrators.

Capability envelope

dust-extraction service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,25,000 CMH	higher on enquiry
Static pressure	up to 1,000 mmWC	up to 2,000 mmWC for high-resistance filter trains
Operating temperature	ambient to 150 °C	up to 350 °C for hot-process dust
Inlet dust loading	clean-side (post-filter) or dirty-side high-dust duty; loading limits shared on enquiry	higher with enhanced wear protection
Drive power	up to 425 HP	our largest drive delivered to date
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	longer L10 on application

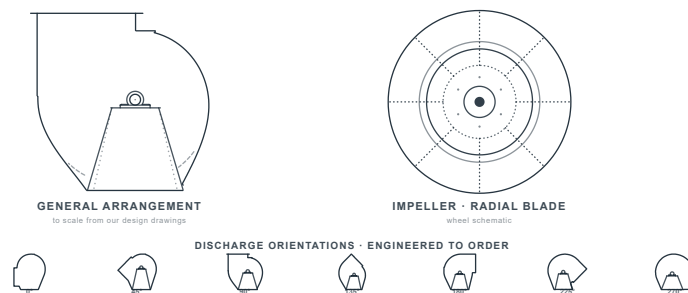


FIG. 1 Representative arrangement — a Jitmitra Radial fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Impeller & wear protection** — Radial-tipped self-cleaning wheel by default; backward-curved only on the cleanest post-bag-filter discharge. Hard-facing per dust abrasiveness — 4140 + chrome carbide for foundry sand, AR400 wear plates with hinged access doors for in-place replacement.
- **ATEX where dust is combustible** — Default for pharma, food, wood, biomass and aluminium-dust duty: aluminium impellers, bronze rub rings, bonded earthing, anti-static coatings and T-class control — ATEX Zone 22 self-declared per 2014/34/EU (Category 3).
- **Pressure-drop & control** — Sized to span the clean-filter and fully-loaded points — minimum 20% flow margin at clean condition, curve extending through the loaded condition. VFD default: filter loading shifts air demand across pulse-clean cycles, and speed control avoids flow oscillation that unsettles hooded capture.
- **Bearings & sound** — Bearing housings sealed against dust ingress with labyrinth plus lip seals where the shaft penetrates. Inlet and outlet silencers with acoustic-lagged casing for noise-sensitive lines — <85 dB(A) standard, designed down to <75 dB(A) with the full acoustic package.

How a Jitmitra Dust extraction 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 dust ingress.
Width / inlet	SWSI (single width, single inlet) default for dust duty; DWDI (double width, double inlet) for high flow at moderate pressure.

SPECIFICATION FIELD	OPTIONS
Wheel type	Radial-tipped self-cleaning (default for dust) / straight-radial (when sticky build-up dominates) / backward-curved (clean post-filter discharge, high-efficiency duty).
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.
Materials of construction	MS with AR400 bolted wear plates (cement, fly ash) / 4140 + chrome-carbide wheel (foundry sand) / 316L SS (chemical, pharma) / 304 SS food-grade (flour, sugar, spices) / aluminium impeller (wood, biomass) / Duplex 2205 for corrosive dust.
ATEX scope	Zone 22 self-declared (Cat 3D) per 2014/34/EU as standard for combustible dust — aluminium impeller, bronze rub rings, bonded earthing, anti-static coatings, T-class bearing control.
Drive	Direct-coupled / V-belt / VFD (default for filter-loading control). Drive up to 425 HP across the envelope; speed typically 600-1,800 RPM.
Accessories & acoustic scope	VFD or damper control; bolted-in AR400 wear plates with hinged access doors; labyrinth + lip bearing seals against dust ingress; inlet and outlet silencers with acoustic-lagged casing (down to <75 dB(A)); drain and inspection doors.

Where the Dust extraction runs

CEMENT Raw-mill bag filter, kiln dedusting, packing-plant extraction.	FOUNDRY, CASTING & FORGING Moulding-station extraction, shake-out dedusting, melting-fume capture.
PHARMACEUTICALS Granulation, tablet coating, dust-tight dispensing — ATEX Zone 22.	FOOD PROCESSING Flour mills, spice grinding, sugar handling, dairy spray dryers — ATEX Zone 22 for combustible food dust.
IRON & STEEL Sinter-plant dedusting and fume extraction over molten metal.	WOOD, PAPER & BIOMASS Sawmill extraction, MDF press dedusting, biomass boiler ash.
MINING & MINERALS Crusher dedusting and conveyor-transfer dust extraction.	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.