



APPLICATION

Bag-filter / pulse-jet draught

A bag-filter draught fan pulls dust-laden gas through a pulse-jet baghouse — and its whole job is to hold flow steady while the resistance underneath it never stops moving. Every pulse-clean cycle drops the cake off the bags and the filter dP steps down; between pulses the cake rebuilds and dP climbs again.

Capability envelope

bag-filter draught service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,25,000 CMH	higher on enquiry
Static pressure	up to 2,000 mmWC	sized to include the full clean-to-loaded filter dP swing
Gas temperature	ambient to 200 °C (clean-side)	up to 500 °C on hot-gas trains with special metallurgy
Inlet dust loading	clean side (light residual dust); dirty side (high dust load)	higher with enhanced wear protection
Static efficiency	high static efficiency standard	higher on backward-curved clean-side builds
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

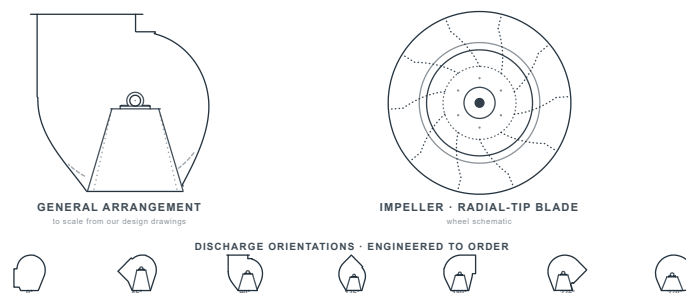


FIG. 1 Representative arrangement — a Jitmitra Radial-Tip fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Sized across the dP band, not a point** — We size onto the falling, stable portion of the wheel curve so flow holds across the clean-to-loaded filter dP swing — a live band of order **50–200 mmWC** across the pulse cycle — with a minimum **15–20%** flow margin at the clean-filter condition and the curve carried through the loaded condition.
- **Wheel & wear protection** — Backward-curved / backward-inclined for the highest efficiency on clean-side duty; radial-tip self-cleaning where carryover or dirty-side loading is real, with chrome-carbide leading edges and bolted-in **AR400** wear plates on the high-wear zones and hinged access doors for in-place replacement.
- **Control — VFD as default** — VFD is our default: it holds duct and hood velocity as the cake rebuilds between pulses instead of letting the fan coast, and turns the fan down with process load. Speed control is more efficient than an inlet damper across the range because it avoids the throttling loss at part-load; inlet vane dampers remain available for legacy retrofit.
- **Dew-point & thermal scope** — Casing insulation and heat tracing to hold the wall above the water or acid dew point (~120–150 °C on sulphur-bearing gas), corrosion-resistant metallurgy on the wetted surfaces to the gas analysis, a scroll-low-point drain, and — on hot-gas trains to 500 °C — expansion joints, shaft cooling disc and heat-rated bearings.

How a Jitmitra Bag-filter / pulse-jet draught 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 temperature.
Width / inlet	SWSI (single width, single inlet) default for bag-filter draught duty; DWDI (double width, double inlet) for high flow at moderate pressure on large multi-compartment baghouses.

SPECIFICATION FIELD	OPTIONS
Position relative to filter	Clean-side, downstream of the collector (the common case — light residual loading) / dirty-side, ahead of the collector (carryover and raw-dust loading, full wear package). Stated up front because it sets the whole build.
Wheel type	Backward-curved or backward-inclined (default, best efficiency on clean-side gas) / radial-tip self-cleaning (carryover-prone and dirty-side duty) / straight-radial where deposit build-up dominates.
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	Mild steel + epoxy coating (standard clean-side) / IS 2062 casing with AR400 bolted wear plates and chrome-carbide-faced wheel (carryover / dirty-side abrasion) / 316L or Corten for acid dew-point service / SA 516 Gr 70 casing for hot-gas trains.
Drive	Direct-coupled / V-belt / VFD (default, to hold velocity across the pulse cycle and turn down with load). 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 & thermal / acoustic scope	VFD or inlet vane damper control; isolation / shut-off damper for compartment maintenance; bolted-in AR400 wear plates and access doors on carryover-prone duty; casing insulation, heat tracing and scroll drain for dew-point service; expansion joints and shaft cooling disc on hot-gas trains; inlet and outlet silencers with acoustic-lagged casing (down to <75 dB(A)); drain and inspection doors.

Where the Bag-filter / pulse-jet draught runs

CEMENT & LIME Bag-filter draught on raw-mill, cement-mill, cooler and nuisance-dust baghouses across the plant.	IRON & STEEL / METALS De-dusting-baghouse draught on furnace, casting-bay and material-handling collection.
POLLUTION-CONTROL / APC OEMS Draught fans supplied as a sub-package to pulse-jet baghouse and cartridge-collector builders — interface documented up front.	FOUNDRY & CASTING Shake-out, sand-plant and melting-fume baghouse draught, where carryover and grit are real.
POWER GENERATION Fabric-filter draught on boiler and material-handling collection downstream of the baghouse.	CHEMICALS & PETROCHEM Process-dust and dryer baghouse draught, sometimes on corrosive or dew-point-critical gas.
WOOD, GRAIN & MINERALS Product-recovery and nuisance-dust baghouse draught on grinding, milling and handling lines.	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.