



APPLICATION

Pneumatic conveying (dense)

A dense-phase pneumatic-conveying blower pushes a small air volume at high pressure to move product as slugs through the pipeline — low velocity, low air-to-material ratio, gentle on friable product but hard on the fan. The static is high, the back-pressure swings as each slug forms and clears, and the product itself is often abrasive.

Capability envelope

dense-phase conveying service

PARAMETER	STANDARD RANGE	ON APPLICATION
Static pressure	up to 2,000 mmWC	higher via multi-stage / blower package on enquiry
Volume flow	up to 2,25,000 CMH (typically 10,000–80,000 CMH at high static)	higher on enquiry
Conveying velocity	3–8 m/s (dense-phase, slug flow)	per product and line design
Wheel type	straight-radial / radial-tip (high pressure)	geometry set to pressure rise + carry-over
Wear protection	hard-faced edges + AR400 bolted wear plates on carry-over duty	enhanced hard-facing for severe abrasion
Drive power	up to 425 HP	our largest drive delivered to date
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

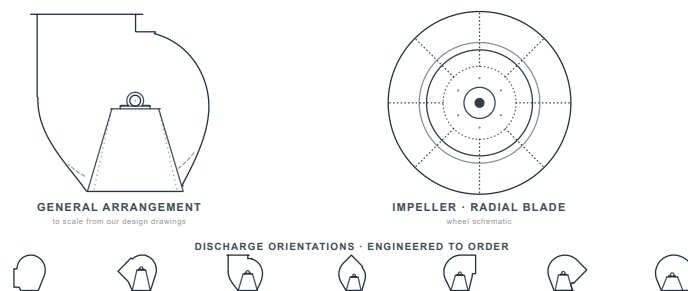


FIG. 1 Representative arrangement — a Jitmitra Radial fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Impeller geometry** — Straight-radial for the highest pressure rise and self-cleaning on carry-over; radial-tip where the duty allows a little more efficiency at high static. Backward-curved is reserved for the low-static dilute-phase sibling, not this duty. Tip speed set to the pressure rise the line demands.
- **Materials & wear protection** — Mild steel + epoxy coating standard; hard-faced (chrome-carbide) leading edges and AR400 bolted-in wear plates where abrasive product carries over; 304 / 316L stainless for food-grade or corrosive product; special coating on hygroscopic or sticky powders.
- **High-pressure mechanical build** — Heavier casing plate and a stiffened, over-margined rotor for the pressure load and tip speed; shaft sized for the high-static thrust; bearings selected for the continuous duty at a design target of L10h ≥ 40,000 h. Every rotor dynamically balanced to ISO 21940 G6.3 (G2.5 on application).
- **Control** — **VFD as default** — Conveying rate is set by the air delivery, and VFD speed control holds the conveying velocity as line loading changes across the batch — more efficient than throttling and it avoids surge at part-load. VFD is our default; an inlet damper remains available for legacy retrofit.

How a Jitmitra Pneumatic conveying 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 pressure load.
Width / inlet	SWSI (single width, single inlet) default for the high-static dense-phase duty; DWDI (double width, double inlet) only where flow is high at moderate pressure.

SPECIFICATION FIELD	OPTIONS
Wheel type	Straight-radial (default, highest pressure rise and self-cleaning on carry-over) / radial-tip (a little more efficiency at high static) — backward-curved is reserved for the low-static dilute-phase duty, not this one.
Class (by pressure / outlet velocity)	Class II / III selected from the duty point on the pressure-vs-outlet-velocity limits — dense-phase static usually sits in the higher classes; higher class = heavier construction for higher pressure and tip speed.
Materials of construction	Mild steel + epoxy coating (standard) / hard-faced (chrome-carbide) wheel and AR400 bolted wear plates for abrasive carry-over / 304 or 316L stainless for food-grade or corrosive product / special coating on hygroscopic powder.
Drive	Direct-coupled / V-belt / VFD (default for conveying-velocity control). Drive up to 425 HP across the envelope; speed set to the pressure rise the line needs.
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 pipeline take-off and installed footprint.
Accessories & wear scope	VFD or inlet damper control; bolted-in AR400 wear plates and hinged access doors for in-place replacement; impeller wear protection and hard-facing; flexible connection / expansion joint at the outlet; shaft seal against product ingress; inlet and outlet silencers with acoustic-lagged casing where sound matters; drain and inspection doors.

Where the Pneumatic conveying runs

CEMENT & LIME Cement, fly ash, raw meal and kiln-dust conveying; pneumatic transport of pulverised material between silos.	CHEMICALS & PETROCHEMICALS Powder and granule transport, catalyst conveying, soda ash and mineral-additive lines.
PLASTICS & POLYMERS PVC, resin and masterbatch pellet and powder conveying — dense phase for gentle, low-attrition transport.	FOOD PROCESSING Flour, sugar, starch and milk-powder conveying — dense phase to protect friable product, stainless build for hygiene.
POWER GENERATION Fly-ash and bottom-ash conveying from the ESP and hoppers to the ash silo.	MINERALS & MINING Alumina, silica, bentonite and mineral-powder transport between process stages.
PHARMACEUTICALS Powder and granule transfer under contained, low-attrition dense-phase conditions.	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.

Jitamitra Electro Engineering Private Limited

Works Units N-7 & B-20/2, MIDC Ahilyanagar (Ahmednagar) 414111 · Sales: Karvenagar, Pune 411052
Part of the Zen Group of Industries (est. 1993) · CIN U31908PN2009PTC134884

+91 83291 72325

sales@jitamitrablowsers.com
jitamitrablowsers.com

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