



FAN FAMILY • RADIAL-TIP

Jitamitra Radial-Tip Fans

The Jitamitra Radial-Tip wheel curves at the root and finishes straight (radial) at the tip: dust-tolerant and self-cleaning where a backward blade would erode, yet far more efficient than a full paddle radial. It is the family for gas carrying moderate dust — too much for a backward fan, below the heavy abrasive load of a radial — at medium-to-high pressure.

Capability envelope

radial-tip service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,00,000 CMH	higher on enquiry
Static pressure	up to 2,000 mmWC	to the envelope; per wheel + class
Inlet dust loading	moderate — more than a backward family should see	heavier abrasive load → step to the radial family
Continuous gas temperature	up to 600 °C with HT construction	hot-duty build confirmed on enquiry
Peak static efficiency (family character)	well above a paddle radial; below the backward families	duty-point efficiency engineered onto best-efficiency region
Drive power	up to 400 HP	higher with custom motor sourcing
Balance quality	ISO 21940 G6.3 standard	G2.5 fine balance for the 150 m/s tip
Bearing life (design target)	L10h ≥ 40,000 h continuous	longer L10 on application

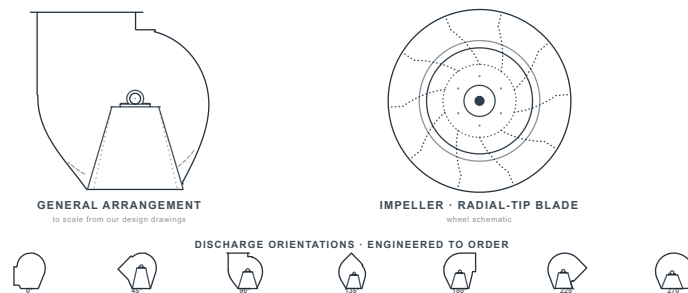


FIG. 1 General arrangement, impeller face and the discharge orientations we build — drawn to scale from our in-house design drawings. Every fan is engineered to your duty.

Construction & materials

documented on your GA

- **Blade form & wheel geometry** — Radial-tipped wheel — curved at the root for clean inflow, straight (radial) at the tip for self-cleaning and dust tolerance; sized near best efficiency on the selected wheel, with FEA on the higher-stress builds at the 150 m/s tip.
- **Materials & wear protection** — MS standard; wear-plated (WP) recommended on abrasive duty — leading-edge hardfacing (qualified WPS) and bolt-in replaceable scroll liners; SS304 / 316, Corten or duplex on the airstream for corrosive gas; FRP (F) where the chemistry calls for it.
- **Construction suffixes** — HT high-temperature (refractory-grade construction + shaft cooling disc) for hot mill-vent gas; SR spark-resistant (AMCA 99 Type A/B/C, ATEX self-declared) for combustible-dust zones; F FRP; WP wear-plated. SWSI is standard for this family.
- **Drive & control** — Belt or direct drive; inlet / outlet damper or in-cone IGV for capacity control; VFD with shaft-earthing ring for variable duty; split SNL plummer-block bearings for maintainability; shaft cooling disc above ~150 °C.

How a Jitamitra Radial-Tip 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) — standard for radial-tip duty; the family is built single-inlet for the pressure and the wear-protected wheel.
Wheel type	Radial-tipped (curved root, straight radial tip) — self-cleaning, moderate-dust, medium-high-pressure; the deliberate middle between backward (efficiency) and full radial (ruggedness).

SPECIFICATION FIELD	OPTIONS
Class (by pressure / outlet velocity)	Class 4–5 build for the 150 m/s tip — thicker plate, FEA on the higher-stress wheels, fine balancing; class selected from the duty point on the pressure-vs-outlet-velocity limits.
Materials of construction	MS (standard) / wear-plated WP with leading-edge hardfacing + bolt-in replaceable scroll liners for abrasive duty / SS304, SS316, Corten or duplex on the airstream for corrosion / FRP (F) for chemical service.
Construction & high-temp suffixes	HT (high-temperature / refractory-grade construction + shaft cooling disc above ~150 °C) / SR (spark-resistant, AMCA 99 Type A/B/C + ATEX self-declared) / F (FRP) / WP (wear-plated) — combined as the duty requires.
Drive	Direct-coupled / V-belt / VFD with shaft-earthing ring for variable duty. Drive up to 400 HP across the envelope; capacity trim by inlet / outlet damper or in-cone IGV.
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.

Where the Radial-Tip runs

CEMENT & LIME Cement-mill and raw-mill vent, moderate-dust process draught.	FOUNDRY & CASTING Dust-laden process and sand-handling vent at medium-high pressure.
PHARMACEUTICALS Dust-collection draught and AHU duty where moderate particulate rules out an aerofoil.	FOOD & BEVERAGE Spray / fluid-bed / flash drying on dust-laden product gas.
MINING & MINERALS Ore and mineral dust collection at moderate loadings.	POLLUTION CONTROL / APC OEM Mill-vent and dust-handling fans built to an APC builder's package spec.
WATER & WASTEWATER Sludge drying and handling exhaust on dust-laden gas.	YOUR DUTY POINT Send us flow, static pressure and the air / gas condition — we size the wheel to it and quote in 3 working days.

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 (Module A). 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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