



APPLICATION

Kiln / furnace exhaust

A kiln-exhaust fan sits downstream of the process, pulling hot gas through the duct and the air-pollution-control train to the stack. It is close kin to an ID fan, but the kiln defines it: the gas is very hot, it carries the mineral dust of the process — clinker, ceramic body, scale, grit — and on some kiln gas it turns alkali-laden or drops below the acid dew point.

Capability envelope

kiln / furnace exhaust service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,25,000 CMH	higher on enquiry
Static pressure	up to 2,000 mmWC	higher on enquiry
Continuous gas temperature	up to 500 °C	wheel and casing metallurgy chosen for the duty
Inlet mineral-dust loading	high dust load	higher with enhanced wear protection
Drive power	up to 425 HP	our largest drive delivered to date
Speed	600–1,800 RPM typical, derated above ~482 °C	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

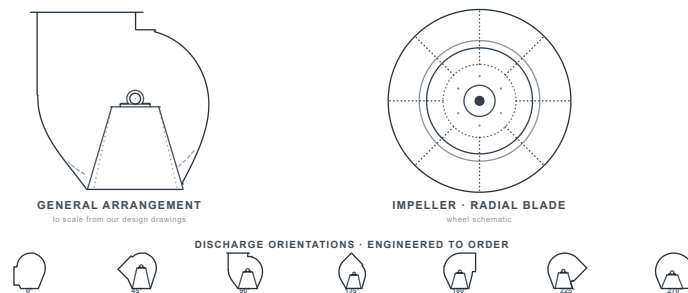


FIG. 1 Representative arrangement — a Jitamitra Radial fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Wheel for hot, dusty gas** — A radial or radial-tip wheel is the default for kiln and furnace exhaust — the open, rugged blade sheds mineral dust and holds shape at temperature where a thin backward-curved blade would erode and creep. Max speed derated above ~482 °C to keep centrifugal stress inside the hot allowable.
- **High-temperature construction** — Heat shield behind the wheel; shaft cooling disc standard above ~150–350 °C with bearings outside the airstream; casing in IS 2062 or SA 516 Gr 70 stepped up by temperature band; refractory lining built to 500 °C and expansion joints for the thermal growth.
- **Wear protection** — Chrome-carbide hard-facing on the blade leading edges and high-wear zones; bolted-in, replaceable wear plates and liners on the scroll and inlet, with inspection and cleanout doors so worn parts change out in place — the wear scope is replaceable, not welded in.
- **Dew-point & alkali metallurgy, plus draft control** — Corten or 316L on the wetted surfaces where the gas turns acidic; casing insulation and heat tracing to hold the wall above the acid dew point on cooler kiln gas. Draft controlled by VFD (our default) or isolation / shut-off damper.

How a Jitamitra Kiln / furnace exhaust fan is specified

AMCA conventions

SPECIFICATION FIELD	OPTIONS
Arrangement (AMCA 99)	Arr. 1 / 8 (overhung, fan bearings outside the airstream) and Arr. 9 default for kiln-exhaust duty; Arr. 4 (wheel on motor shaft) only on cooler furnace exhaust — selected by drive, access and temperature.
Width / inlet	SWSI (single width, single inlet) default for kiln-exhaust duty; DWDI (double width, double inlet) with an inlet box for high flow at moderate pressure.
Wheel type	Radial (default — sheds mineral dust, holds shape hot) / radial-tip (higher efficiency where dust and temperature allow) / backward-curved only on clean, cooler furnace exhaust.

SPECIFICATION FIELD	OPTIONS
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 / IS 2062 casing to ~250 °C; Cr-Mo stepped up by temperature; chrome-carbide hard-faced wheel and bolted-in wear plates for the mineral dust; Corten or 316L on wetted surfaces for alkali / acid dew-point gas; refractory lining built to 500 °C.
Drive	Direct-coupled / V-belt / VFD (default for variable-draft control). Drive up to 425 HP across the envelope; speed typically 600–1,800 RPM, derated above ~482 °C.
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 & high-temp scope	Flexible connection / expansion joint at inlet and outlet for the thermal growth; heat slinger / cooling disc (standard above 350 °C); water-cooled bearings above 200 °C; impeller wear protection (chrome-carbide hard-facing); wear plates / liners (scroll & inlet); special material of construction for alkali / dew-point gas; isolation / shut-off damper; inlet guide vanes (IGV) or VFD package for draft control; inspection / cleanout door; casing insulation and heat tracing for acid dew-point service.

Where the Kiln / furnace exhaust runs

CEMENT & LIME Kiln and preheater exhaust, calciner ID, kiln-hood ventilation for cement and lime kilns.	GLASS & CERAMICS Kiln and furnace exhaust for tile, sanitaryware, refractory and float-glass kilns.
IRON & STEEL / METALS Reheating-furnace flue gas, annealing and normalising-furnace exhaust.	FURNACES, OVENS & HEAT TREATMENT Heat-treatment-furnace exhaust, tempering and quench-furnace flue extraction.
FOUNDRY & CASTING Cupola and melting-furnace exhaust, core-oven and shell-furnace flue gas.	CHEMICALS Calciner and rotary-dryer exhaust on mineral and chemical processing lines.
MINING & MINERALS Rotary-kiln exhaust for non-ferrous, alumina and mineral calcination duty.	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.