



APPLICATION

Forced Draft (FD)

FD fans sit on the clean side of the combustion process — pushing ambient or pre-heated air into boilers, fired heaters, kilns and burners at controlled pressure. Cleaner duty than ID, but the engineering bar is just as high: efficiency wins or loses operating cost, the curve must stay pressure-stable across turndown, and sound matters when the fan sits beside personnel.

Capability envelope

FD 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
Inlet air temperature	up to 350 °C (pre-heated air)	higher on application with special metallurgy
Static efficiency	high (backward-bladed) — figures shared on enquiry	higher on airfoil high-efficiency builds
Sound level	<85 dB(A) @ 1 m	<75 dB(A) with acoustic enclosure
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

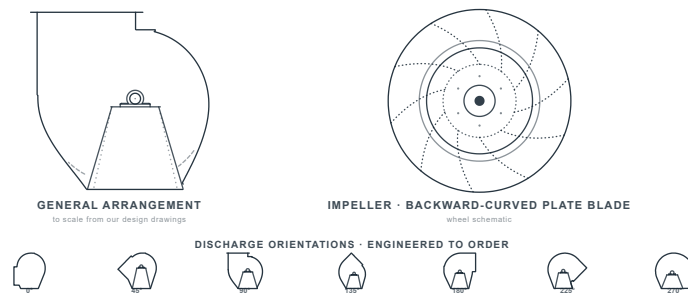


FIG. 1 Representative arrangement — a Jitamitra Backward-Curved Plate fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Impeller geometry** — Backward-curved or backward-inclined for the highest static efficiency on clean-air duty; airfoil-bladed on the highest-efficiency builds where the duty is large and the hours justify the CAPEX.
- **Materials** — Mild steel + epoxy coating standard; stainless where inlet air is humid (coastal) or corrosive (chemical-plant boilers); aluminium impeller for ATEX Zone 2 service.
- **Control** — VFD as default — Boiler at 40% MCR needs far less air than at 100% MCR. VFD speed control avoids the throttling loss of an inlet damper at part-load and is our default; inlet vane dampers remain available for legacy retrofit.
- **Pre-heated air handling** — Downstream of an air pre-heater the inlet air may run 200–350 °C — casing upgraded to IS 2062 or SA 516 Gr 70, shaft sized for thermal growth, bearings selected for sustained 80–100 °C housing temperature.

How a Jitamitra Forced Draft 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 FD duty; DWDI (double width, double inlet) for high flow at moderate pressure.
Wheel type	Backward-curved or backward-inclined (default, best efficiency on clean air) / airfoil-bladed (highest-efficiency, large continuous-duty builds).
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.

SPECIFICATION FIELD	OPTIONS
Materials of construction	Mild steel + epoxy coating (standard) / stainless steel for humid coastal or corrosive chemical-plant air / IS 2062 or SA 516 Gr 70 casing for pre-heated air / aluminium impeller for ATEX Zone 2.
Drive	Direct-coupled / V-belt / VFD (default for turndown control). 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 & acoustic scope	Inlet vane damper or VFD control; inlet silencer (cylindrical or splitter-type) for low-frequency content; outlet silencer and casing-wall acoustic lagging; acoustic enclosure for <75 dB(A); expansion joints and thermal scope for pre-heated-air service; drain and inspection doors.

Where the Forced Draft runs

POWER GENERATION Utility boiler FD, cogen FD, industrial steam-boiler FD.	CEMENT Kiln main-burner FD, calciner FD, raw-mill bag-house FD.
IRON & STEEL Reheating-furnace combustion air, blast-furnace stove blowers.	CHEMICALS & PETROCHEM Process-boiler FD; fired-heater FD (the heater is API 560, the FD fan serving it is API 673).
OIL & GAS Refinery fired-heater FD fans.	FOOD PROCESSING Drying-furnace and roaster FD fans.
PHARMACEUTICALS Boiler FD for utility steam.	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@jitamitrablowers.com
jitamitrablowers.com

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