



APPLICATION

Combustion / process air blower

A combustion air fan is part of the burner safety chain. It interfaces with the Burner Management System, it must hold its operating point through ignition, flame establishment and steady load, and a fan trip ripples through every safety interlock downstream.

Capability envelope

combustion-air service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	5,000–80,000 CMH typical	up to 1,50,000 CMH on application
Static pressure	200–1,200 mmWC	up to 1,800 mmWC for high-resistance burner trains
Inlet air temperature	ambient to 350 °C (APH-preheated)	wheel and casing metallurgy chosen for the duty
Drive power	up to 200 HP	up to 425 HP, our largest drive delivered to date
Sound	<85 dB(A) @ 1 m	<80 dB(A) on application
Speed	600–1,800 RPM typical	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

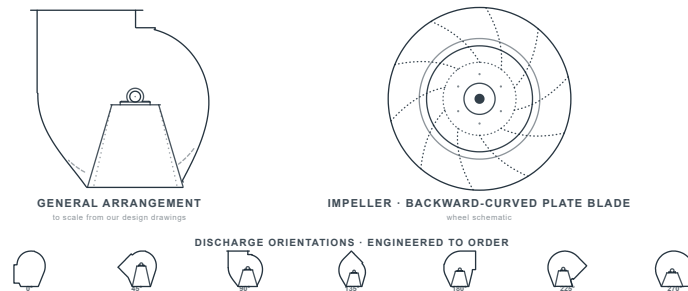


FIG. 1 Representative arrangement — a Jitamitra Backward-Curved Plate fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Impeller & stage** — backward-curved or airfoil-bladed for efficiency; single-stage typical, since combustion-air pressure rise is moderate (200–1,200 mmWC).
- **Materials** — MS + epoxy for ambient air; SS for humid coastal sites or APH-preheated air to 350 °C; ATEX-compliant build (Zone 2 default) for refinery / petrochem service.
- **BMS interface** — airflow proving DP switch on the start permissive; current-sensing relay for fan-running confirmation; second DP switch on the low-air trip; inlet temperature transmitter where APH-preheated, for the air-fuel ratio calculation. Supplied loose for site-wiring, or pre-wired on a junction box **on application**.
- **Surge & bearing margin** — operating point sized to the right of the peak for ignition-transient stability; bearings to L10h ≥ 40,000 h continuous per our QA SOP, longer L10 and auto-lubrication **on application** for unmanned duty.

How a Jitamitra Combustion / process air blower 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, burner-train access and inlet-air temperature.
Width / inlet	SWSI (single width, single inlet) default for dedicated combustion-air duty; DWDI (double width, double inlet) for high flow at moderate pressure.
Wheel type	Backward-curved (default, best efficiency) / airfoil-bladed (highest efficiency, clean air) — single-stage, since combustion-air pressure rise is moderate.
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 + epoxy (ambient air) / SS for humid coastal sites or APH-preheated air to 350 °C / aluminium impeller with bronze rub rings and anti-static coatings for ATEX Zone 2 refinery and petrochem service.

SPECIFICATION FIELD	OPTIONS
Drive	Direct-coupled / V-belt / VFD. Often binary on/off control on a fixed duty point. Drive up to 200 HP standard (425 HP, our largest drive delivered to date); speed typically 600-1,800 RPM.
BMS interface scope	Airflow proving DP switch (start permissive) / current-sensing fan-running relay / second DP switch on the low-air trip / inlet temperature transmitter where APH-preheated. Supplied loose for site-wiring into the burner OEM panel, or pre-wired on a junction box on application.
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 the burner take-off and installed footprint.

Where the Combustion / process air blower runs

OIL & GAS Refinery fired-heater combustion-air fans, gas-turbine inlet air for small turbines, well-pad fired equipment.	CHEMICALS & PETROCHEMICALS Process-heater combustion air, reformer and cracker burner trains, RTO / RCO burner supply.
POWER GENERATION Gas-fired peaking plants and smaller boilers without separate PA / FD fans.	MINING & MINERALS Dryer and kiln burner-train combustion air on captive fired equipment.
CERAMICS Kiln and furnace burner combustion-air supply on fired lines.	GLASS Furnace and forehearth burner combustion air on fired melting lines.
PROCESS INDUSTRY — GENERAL Captive fired heaters and process-oven burner trains across fired 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.