



APPLICATION

Local exhaust ventilation (LEV)

An LEV fan is the engine of a hood-and-duct system: it is sized to hold the capture velocity your LEV design calls for at every hood face so contaminant is drawn away at the source, supporting steady capture rather than letting it drift toward the operator's breathing zone. The duty is usually moderate flow and moderate-to-high static — the pressure is spent on branch dampers, hoods and the collector, not on gas density.

Capability envelope

LEV service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,25,000 CMH	higher on enquiry
Static pressure	up to 1,500 mmWC	up to 2,000 mmWC for long-duct + high-resistance collector trains
Capture velocity (design)	0.5–1.0 m/s still-air; 2.5–10 m/s active generation	per hood type + contaminant momentum
Gas / air temperature	ambient to 80 °C	up to 200 °C on hot-process capture with special metallurgy
Construction (ignition)	AMCA 99 spark-resistant Type B on combustible duty	Type A / C + ATEX Zone 22 / Zone 2 (Cat 3) self-declared
Static efficiency	high static efficiency standard	higher on high-efficiency backward-curved builds
Drive power	up to 425 HP	our largest drive delivered to date
Balance quality	ISO 21940 G6.3	G2.5 / G1.0 on application

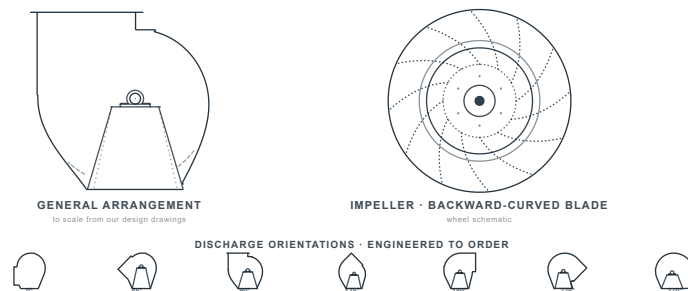


FIG. 1 Representative arrangement — a Jitmitra Backward-Curved fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Capture-velocity control** — VFD default so the fan holds hood-face velocity across filter loading and gate cycling; sized to carry the loaded-filter point with 15–20% flow margin. Static-pressure or CO/VOC-sensor control on application where the hood duty is intermittent, so the fan turns down when hoods close and holds capture when they open.
- **Impeller geometry** — Backward-curved or backward-inclined for high static efficiency on clean or lightly-loaded LEV air — the common case, since most LEV fans sit downstream of the collector. Radial-tipped only where the fan sits on dirty-side or dust-laden capture ahead of the filter.
- **Spark-resistant & ATEX construction** — AMCA 99 Type A / B / C to the ignition risk — **Type B** (non-ferrous rub ring) the default for grinding and buffing capture; **Type A** where the combustible-dust or solvent case is severe. ATEX Zone 22 (Cat 3D) for dust or Zone 2 (Cat 3G) for vapour, self-declared per 2014/34/EU, with bonded earthing throughout.
- **Materials & sound** — Mild steel + epoxy standard; stainless for corrosive or wash-down capture (plating, chemical fume); an FRP coating on aggressive corrosive vapour. Designed to <85 dB(A) @ 1 m as standard, <75 dB(A) with silencers and an acoustic enclosure where the fan sits near the occupied floor.

How a Jitmitra Local exhaust ventilation 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 mounting position.
Width / inlet	SWSI (single width, single inlet) default for LEV duty; DWDI (double width, double inlet) for high flow at moderate pressure on large multi-hood capture.

SPECIFICATION FIELD	OPTIONS
Wheel type	Backward-curved or backward-inclined (default, best efficiency on clean or lightly-loaded LEV air) / radial-tipped self-cleaning (dirty-side or dust-laden capture ahead of the filter).
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 static and tip speed on high-resistance collector trains.
Spark-resistant construction (AMCA 99)	Type A (all non-ferrous parts in the airstream) / Type B (non-ferrous rub ring and non-ferrous parts across the shaft opening) / Type C (aligned construction that prevents ferrous rotating-to-stationary contact) — selected to the ignition risk; Type B is the LEV default on combustible capture.
ATEX scope	Zone 22 self-declared (Cat 3D) per 2014/34/EU for combustible dust (grinding, buffing, wood) / Zone 2 (Cat 3G) for solvent vapour — non-sparking impeller, bronze rub rings, bonded earthing, anti-static coatings, T-class bearing control.
Materials of construction	Mild steel + epoxy coating (standard) / 304 or 316L stainless for corrosive or wash-down capture (plating, chemical fume) / an FRP coating for aggressive corrosive vapour / aluminium or bronze non-sparking parts for combustible dust and vapour.
Drive	Direct-coupled / V-belt / VFD (default for capture-velocity and branch-balance control). Drive up to 425 HP across the envelope; speed typically 600-1,800 RPM.
Accessories & acoustic scope	VFD or static-pressure-controlled damper for capture-velocity hold; blast-gate / auto-damper interface documented up front; bonded earthing and non-sparking parts on combustible duty; shaft seal and drain on wash-down or condensing capture; inlet and outlet silencers with acoustic-lagged casing and enclosure for <75 dB(A) near occupied floor; inspection doors.

Where the Local exhaust ventilation runs

AUTOMOTIVE & PAINT Welding-bench and body-shop capture, sanding and prep-booth LEV, adhesive and sealant fume extraction.	FOUNDRY, CASTING & FORGING Grinding-booth and fettling capture, knock-out and sand-handling hoods, tapping and pouring-bay LEV.
PHARMACEUTICALS Dispensing-booth and granulation capture, tablet-press and coating-pan LEV, solvent-vapour extraction with ATEX scope.	SURFACE COATING & PLATING Plating-tank and pickling-line lateral capture, acid-fume LEV in corrosion-resistant construction, powder-coat booth extraction.
GENERAL MANUFACTURING Grinding, buffing and polishing capture, wood and composite dust hoods, spark-resistant on combustible-dust duty.	CHEMICALS & PETROCHEMICALS Charging-port and reactor-vent capture, solvent-vapour LEV with Zone 2 self-declaration, drum-filling hood extraction.
POLLUTION-CONTROL OEMS LEV fans supplied as a sub-package to hood, ducting and collector integrators — capture-velocity and interface documented up front.	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.