



APPLICATION

Drying (spray / fluid-bed / flash)

A dryer runs on two fans, and they could not be less alike. The supply fan pushes clean, heated air into the chamber at 150–350 °C; the exhaust fan pulls fine, sticky, hygroscopic powder and moisture to the cyclone or baghouse — powder that is often the saleable product itself.

Capability envelope

drying 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
Operating temperature	supply air 150–350 °C; exhaust warm & moist	up to 500 °C for hot-process drying with special metallurgy
Wetted materials	SS304 / SS316 for hygienic duty	crevice-free food-grade + cleanable coating on application
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
Bearing life (design target)	L10h ≥ 40,000 h continuous	longer L10 on application

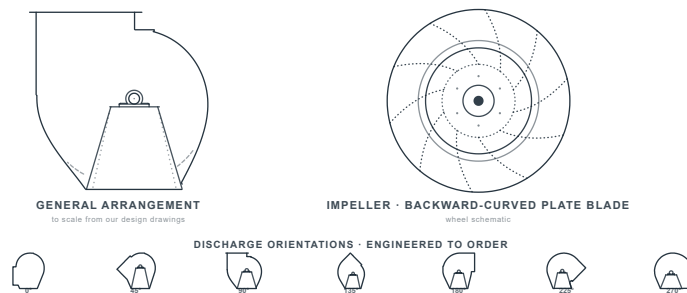


FIG. 1 Representative arrangement — a Jitmitra Backward-Curved Plate fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Supply fan vs exhaust fan — designed apart** — The supply fan is a clean, thermal duty — efficiency, curve stability and heat handling — often a backward-curved wheel selected for high static efficiency. The exhaust fan is a dirty, hygienic duty — radial-tipped self-cleaning wheel, crevice-free, access for cleaning. We quote them as two fans, not one line item.
- **Hygienic, cleanable construction** — For food & pharma duty: SS304 / SS316 wetted parts, crevice-free welds ground smooth, cleanable Special Coating / Paint, hinged inspection access, and Cleaning Provisions (water-wash / rapping) or CIP where the product and regulator demand it — so the fan can be verified clean, not just assumed clean.
- **Temperature package** — Where supply or early-exhaust air runs 150–350 °C: casing stepped to IS 2062 or SA 516 Gr 70, shaft sized for thermal growth, Flexible Connection / Expansion Joint at inlet and outlet, and a Heat Slinger / cooling disc holding the bearing housing below its lubricant rating.
- **VFD for airflow & drying profile** — Drying quality depends on air throughput and residence time, which shift across the batch or product change. VFD is our default on both fans — it tracks the drying profile smoothly, and on the exhaust fan it avoids the flow swings that unsettle cyclone capture and drive powder onto the wheel.

How a Jitmitra Drying fan is specified

AMCA conventions

SPECIFICATION FIELD	OPTIONS
Arrangement (AMCA 99)	Arr. 1 / 8 / 9 (overhung, fan bearings outside the airstream) default for hot supply and product-laden exhaust duty; Arr. 4 (direct, motor on base) on cooler exhaust duty — selected by drive, access, temperature and cleaning.
Width / inlet	SWSI (single width, single inlet) default for drying duty; DWDI (double width, double inlet) for high flow at moderate pressure on large supply fans.
Wheel type	Supply fan: backward-curved / backward-inclined (clean air, best efficiency). Exhaust fan: radial-tipped self-cleaning (default for sticky hygroscopic powder) / straight-radial where build-up dominates.

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	Hygienic duty: SS304 food-grade / SS316 for aggressive or pharma product, crevice-free. Hot supply: IS 2062 or SA 516 Gr 70 casing. Abrasive powder: MS with Impeller Wear Protection or hard-faced wheel.
Hygiene & cleaning scope	Crevice-free construction, inspection access doors, Cleaning Provisions (water-wash / rapping), CIP provision and cleanable Special Coating / Paint where the food or pharma duty requires it — so the fan can be verified clean.
Drive	Direct-coupled / V-belt / VFD (default, for airflow and drying-profile control). Drive up to 425 HP across the envelope; speed typically 600–1,800 RPM.
Accessories & thermal / hygiene scope	Inlet Guide Vanes (IGV) or Discharge / Outlet Damper with VFD control; Flexible Connection / Expansion Joint at inlet and outlet for thermal growth; Heat Slinger / cooling disc on the hot supply side; Impeller Wear Protection for abrasive powder; Cleaning Provisions (water-wash / rapping) and inspection doors; drain for wash-down.

Where the Drying runs

FOOD & BEVERAGE Dairy and spray-dried milk powder, coffee, food ingredients — hygienic SS exhaust fans, ATEX Zone 22 for combustible food dust.	PHARMACEUTICALS API and excipient drying, fluid-bed dryers, granulation — crevice-free SS316, CIP provision, ATEX Zone 22.
CHEMICALS Detergent spray drying, pigments and fine-chemical flash drying — corrosion-resistant SS, self-cleaning wheels.	SUGAR & DISTILLERIES Spray and flash drying of sugar and by-products, spent-wash and DDGS drying exhaust.
PLASTICS & POLYMERS Resin, polymer-powder and additive drying — supply and exhaust fans for fluid-bed and flash dryers.	GLASS & CERAMICS Spray-dried body preparation for ceramic tile and sanitaryware — abrasive slurry-powder exhaust, wear-protected wheels.
FERTILIZER & MINERALS Fluid-bed and flash drying of fertilizer granules and mineral powders — corrosion- and wear-protected supply and exhaust fans.	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.