



APPLICATION

FGD / scrubber booster

A booster fan makes up the pressure drop a wet or dry flue-gas desulphurisation (FGD) or scrubber train adds to the flue-gas path. Unlike a dry ID fan, this duty runs below the water dew point: the gas leaves the absorber saturated, acidic and carrying droplets, so the fan wall is permanently wet and every wetted surface is under corrosion attack.

Capability envelope

FGD / scrubber booster service

PARAMETER	STANDARD RANGE	ON APPLICATION
Volume flow	up to 2,25,000 CMH	higher on enquiry
Static pressure	up to 2,000 mmWC	sized to the measured added-train resistance
Gas condition	saturated, below dew point 45–70 °C	higher on a reheated / upstream-of-absorber position
Wetted metallurgy	316L / duplex on the wetted surfaces	duplex 2205, FRP coating or rubber / ebonite lining per gas analysis
Drainage	self-draining scroll + low-point drain	wash-water / de-scale connection 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

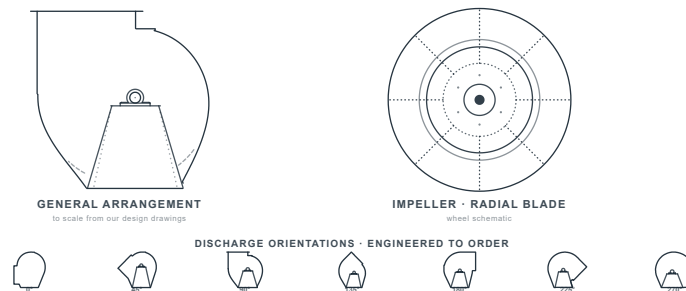


FIG. 1 Representative arrangement — a Jitamitra Radial fan, the family most often applied to this duty. The exact family and wheel are engineered to your operating point.

Construction & materials

documented on your GA

- **Materials & corrosion protection** — Wetted-surface selection driven by the condensate chemistry — 316L for mild acid; duplex 2205 for aggressive chloride-bearing gas; an FRP coating, or rubber / ebonite lining on a carbon-steel shell, where chlorides rule out stainless. The corrosion allowance and lining spec are set against your gas analysis.
- **Wheel geometry** — Backward-curved or radial-tip by default for good efficiency and solids-shedding on the wet, lightly-loaded gas; the geometry is chosen to keep the blade root clear of gypsum build-up rather than to resist heavy abrasion, which is not the dominant mode here.
- **Drainage & sealing** — Self-draining scroll with a low-point drain so condensate cannot stand; a shaft seal (mechanical or purged labyrinth) rated for the wet acidic gas; and a wash-water connection for periodic de-scaling without dismantling the fan.
- **Control** — **VFD as default** — FGD draught varies with boiler load and absorber operation, so speed control earns its place. VFD is our default — it avoids the throttling loss of a damper at part load and keeps the fan off its surge line as the train pressure drop moves; inlet vane or outlet dampers remain available for legacy retrofit.

How a Jitamitra FGD / scrubber booster 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 the wet-gas shaft-seal arrangement.
Width / inlet	SWSI (single width, single inlet) default for booster duty; DWDI (double width, double inlet) for high flow at moderate pressure where the added-train resistance is modest.

SPECIFICATION FIELD	OPTIONS
Wheel type	Backward-curved (default, best efficiency on the wet lightly-loaded gas) / radial-tip (heavier gypsum or lime carry-over, better solids-shedding) — geometry chosen to keep the blade root clear of build-up.
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	316L on the wetted surfaces (mild acid) / duplex 2205 (aggressive chloride-bearing gas) / FRP coating or rubber / ebonite lining on a carbon-steel shell where chlorides rule out austenitic steel — selected against the absorber outlet gas analysis.
Drive	Direct-coupled / V-belt / VFD (default for variable-draught 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, with the drain kept at the low point.
Accessories & wet-duty scope	Self-draining scroll with low-point drain; shaft seal (mechanical or purged labyrinth) rated for wet acidic gas; wash-water / de-scale connection and access doors; expansion joints at the flanges; inlet vane or outlet damper or VFD control; special coating / paint on non-wetted external surfaces; drain and inspection doors.

Where the FGD / scrubber booster runs

POWER GENERATION Wet-limestone and semi-dry FGD booster fans downstream of utility and cogen boilers.	CEMENT & LIME Kiln-line SO ₂ scrubber and semi-dry absorber booster fans.
IRON & STEEL Sinter-plant and coke-oven flue-gas desulphurisation and wet-scrubber boosters.	CHEMICALS & PETROCHEM Acid-gas and tail-gas scrubber booster fans on process off-gas.
POLLUTION-CONTROL OEMS Booster fans supplied as a sub-package to wet-scrubber and FGD builders — wetted metallurgy and interface documented up front.	WASTE-TO-ENERGY Wet and semi-dry scrubber booster fans on chloride-laden incinerator flue gas.
NON-FERROUS & SMELTING SO ₂ -rich smelter off-gas scrubber booster duty on corrosion-resistant construction.	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.