



## APPLICATION

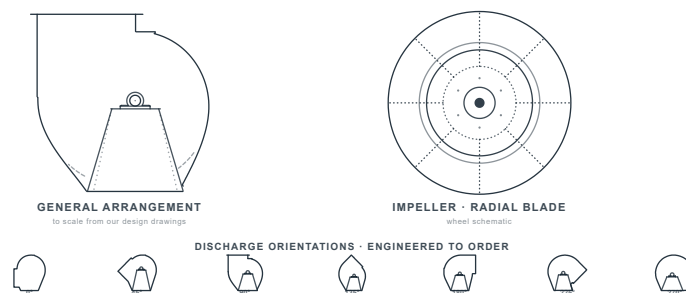
## SCR / DeNOx booster

A DeNOx booster fan exists for one reason: the selective-catalytic-reduction reactor you added to the flue-gas path takes pressure that the original draught train was never sized to give. The fan makes up that pressure rise — while the gas is hot, dust-laden and now carries slipped ammonia and ammonium bisulphate that fouls and corrodes.

### Capability envelope

SCR / DeNOx booster service

| PARAMETER                      | STANDARD RANGE                                             | ON APPLICATION                                        |
|--------------------------------|------------------------------------------------------------|-------------------------------------------------------|
| Volume flow                    | up to 2,25,000 CMH                                         | higher on enquiry                                     |
| Static pressure (make-up rise) | up to 2,000 mmWC                                           | sized to catalyst end-of-campaign $\Delta P$ + margin |
| Continuous gas temperature     | up to 500 °C                                               | wheel and casing metallurgy chosen for the duty       |
| Inlet particulate loading      | clean-side (low dust); high-dust SCR (heavy inlet loading) | higher with enhanced wear protection                  |
| Wetted-path metallurgy         | MS / IS 2062 standard                                      | 316L / Corten / higher alloy for ABS & acid dew-point |
| 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

- **Head margin to end-of-campaign  $\Delta P$**  — Sized to the fouled-catalyst pressure, not the clean one — typically 20–30% head margin over the clean-catalyst point — with the duty point placed 5–15% right of the curve peak so draught stays stable across the campaign.
- **Materials & ABS/corrosion protection** — Mild steel for clean-side low-dust boosters; IS 2062 or SA 516 Gr 70 casing for temperature; 316L / Corten / higher alloys on the wetted path where ammonium-bisulphate condensate or acid dew-point risk is real; hard-faced or 4140 wheel on high-dust ash duty.
- **Thermal management** — Shaft cooling disc standard above 400 °C; fabric or metal expansion joints for growth of order ~25 mm on a long run at 400 °C; casing insulation and heat tracing to hold the wall above the ABS and acid condensation window; bearings selected for sustained 80–100 °C housing temperature.
- **Control** — VFD as default — Catalyst  $\Delta P$  and boiler load both move the duty point, so speed control earns its place: VFD holds draught as the bed fouls and avoids the throttling loss of a damper at part load. Inlet vane dampers remain available for retrofit where the existing motor and starter cannot take a drive.

### How a Jitamitra SCR / DeNOx 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 gas temperature. |
| Width / inlet         | SWSI (single width, single inlet) default for booster duty; DWDI (double width, double inlet) for high flow at moderate pressure rise.                                                                                       |

| SPECIFICATION FIELD                     | OPTIONS                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wheel type                              | Radial-tipped backward-curved (default, best efficiency on hot flue gas) / straight-radial (heavy fly-ash build-up on high-dust SCR) / backward-curved (clean-side tail-end SCR, high-efficiency duty).                                                                                                                                       |
| 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 rise and tip speed.                                                                                                                                                                        |
| Materials of construction               | MS (clean-side low-dust) / IS 2062 or SA 516 Gr 70 casing for temperature / hard-faced (chrome carbide) or 4140 wheel for high-dust abrasion / 316L, Corten or higher alloy on the wetted path for ammonium-bisulphate and acid dew-point service.                                                                                            |
| Drive                                   | Direct-coupled / V-belt / VFD (default for draught control across catalyst fouling and boiler load). 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 & high-temp scope           | Inlet vane damper or VFD control; fabric or metal expansion joints (thermal growth to ~25 mm at 400 °C); bolted-in AR wear plates and access doors on high-dust duty; shaft cooling disc (standard above 400 °C); casing insulation and heat tracing to hold the wall above the ABS and acid condensation window; drain and inspection doors. |

## Where the SCR / DeNOx booster runs

|                                                                                                                                |                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>THERMAL POWER</b><br>High-dust and tail-end SCR booster fans on utility and industrial boilers, ahead of or after the ESP.  | <b>CEMENT &amp; LIME</b><br>High-dust SCR booster on the kiln / pre-heater line, where NOx control meets raw-gas dust and heat.                                                                                   |
| <b>IRON &amp; STEEL</b><br>DeNOx booster on sinter-plant and reheating-furnace flue gas ahead of the stack.                    | <b>WASTE-TO-ENERGY &amp; INCINERATION</b><br>SCR booster on municipal and hazardous-waste lines, where ammonia slip meets chloride- and acid-laden gas.                                                           |
| <b>CHEMICALS &amp; PETROCHEM</b><br>Process-boiler and fired-heater DeNOx booster fans making up added catalyst pressure drop. | <b>POLLUTION-CONTROL OEMS</b><br>Booster fans supplied as a sub-package to SCR / DeNOx reactor and stack builders — interface documented up front.                                                                |
| <b>GLASS &amp; CERAMICS</b><br>DeNOx booster on melting-furnace flue gas where high temperature and NOx control coincide.      | <b>YOUR DUTY POINT</b><br>Send us flow, static pressure and the air / gas condition — we size the wheel to it and quote in <b>3 to 5 working days</b> — <b>5 to 7 working days</b> for ATEX and special projects. |

## Standards & conformity

|                                                                                                                                                  |                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>PERFORMANCE</b><br>Tested to the IS 4894 / ISO 5801 / AMCA 210 method, in-house on our 200 HP VFD rig. Tested-to-method — not AMCA-certified. | <b>QUALITY SYSTEM</b><br>ISO 9001:2015 — third-party certified (our only third-party certification).                               |
| <b>CE CONFORMITY</b><br>Self-declared per 2006/42/EC + 2014/35/EU. Not a notified-body certificate.                                              | <b>ATEX CONFORMITY</b><br>Self-declared, spark-resistant (SR), Zone 2/22 Cat 3 per 2014/34/EU, where area classification requires. |
| <b>BALANCE &amp; VIBRATION</b><br>Balance ISO 21940 (G6.3 std, G2.5 on request); fan vibration acceptance ISO 14694, measurement ISO 14695.      | <b>WELDING &amp; HEAVY DUTY</b><br>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.*