STAINLESS STEEL AXIAL FLOW FANS

Technical Product Datasheet & Engineering Specifications

1. Product Overview

Stainless Steel (SS) Axial Flow Fans are heavy-duty, direct-driven industrial air-moving systems engineered for extreme performance in demanding environments. Fabricated from premium-grade stainless steel (SS 304, SS 316, or SS 316L), these tube-axial and vane-axial fans deliver superior corrosion protection, high-temperature tolerance, and long-term mechanical reliability. They are widely deployed across chemical processing plants, pharmaceutical manufacturing cleanrooms, marine vessels, wastewater treatment facilities, and emergency smoke spill ventilation setups.

2. Technical Design & Performance Features

- **Corrosion & Chemical Resistance:** Full stainless steel housing, impellers, and mounts protect against acidic fumes, high humidity, and aggressive chemical vapors.
- **Aerodynamic Impeller Profile:** Features multiple high-efficiency aerofoil section blades statically and dynamically balanced to eliminate vibration and optimize power consumption.
- **Adjustable Blade Pitch:** Field-adjustable blade configurations allow tailored pressure-volume operating parameters to adapt to subsequent system changes.
- **Heavy-Duty Tubular Casing:** Rigid, heavy-gauge rolled cylinder housing equipped with integral precision-drilled inlet and outlet mounting flanges for direct inline duct integration.
- **TEFC High-Grade Motor:** Directly coupled Foot-mounted Totally Enclosed Fan Cooled (TEFC) 3-phase AC induction motors with Class F insulation and IP55 protection ratings.
- **Versatile Installation:** Optimized engineering footprint fits seamlessly into indoor ducted pipelines, outdoor exhaust stacks, wall-mounted setups, or roof ventilators.

3. Standard Engineering Specifications

Parameter / Component	Standard Operational Specifications
Fan Diameter Range	315 mm up to 2000 mm
Air Flow Capacity Range	3,000 m³/hr to 180,000 m³/hr (1,700 CFM to 105,000 CFM)
Static Pressure Capability	Up to 1,600 Pa (dependent on blade arrangement and RPM)
Material Construction	SS 304 / SS 316 / SS 316L (Impellers, Hubs, and Housing Outer Shell)
Number of Impeller Blades	6 to 12 aerofoil section high-precision profile blades
Motor Configuration	Direct-driven, TEFC / Flameproof (ATEX Zone 1 / Zone 2 available)
Power Inputs / Electrical	0.5 HP up to 75 HP / 3-Phase, 415V, 50Hz/60Hz AC
Rotational Speed (RPM)	960 RPM (6-Pole) / 1440 RPM (4-Pole) / 2880 RPM (2-Pole)
Operating Temperature Limits	Standard: -20°C to +80°C; High-temp configurations up to +300°C
Ingress & Insulation Ratings	IP55 Minimum protection rating, Class F / Class H Insulation

4. Key Industrial Applications

- **Chemical & Petrochemical Processing:** Safe extraction of volatile, corrosive gases and organic chemical process vapors.
- **Pharmaceutical & Food Grade Cleanrooms:** Sanitary ventilation demands requiring high-pressure washdown compatibility.
- **Wastewater Treatment Plants:** Odor control and continuous exhaust routing within damp, H2S-laden atmospheres.
- **HVAC Emergency Smoke Spill Systems:** High-temperature exhaust function during warehouse, basement, or liftwell fire events.
- **Marine & Offshore Infrastructure:** Salt-spray corrosion management on oil rigs, naval vessels, and seaside installations.