YFICA - TUBULAR CENTRIFUGAL FAN

INFINAIR™
INFINAIR ARABIA CO. LTD.

Ratings and Applications

Airflow Range	1,000 ～26,000 m³/h (588 ～15303 CFM)
Static Pressure Range	100 ～1,000 Pa (0.4 ～4.0 inwg)
Drive Types	Direct / Belt
Installation Methods	Base Mounted / Ceiling Hung
Applications	1. General Ventilation 2. Fume Extraction

Impeller Technology

1. New Impeller Design

- Excellent aerodynamic characteristics and noise characteristics.
- High-efficient area width without overloading.
- Balance quality grade up to G2.5.

2. Advance design

- Optimized design of CFD flow field simulation, repeatedly validated.
- Front disc and inlet venture tube according with flow field characteristic.
- Flow passage control: matched each other to restrain the air flow better.
- Optimize the blade angles.

3. Structure performance design

- Stress analysis of FEA to improve performance.
- Selected the strengthen structure according to different specifications to improve reliability.
- Using riveting technology to avoid stress.

4. Improved Impeller

- Continues improvement: The impeller has the 4th generation.
- Compared with the 2nd generation: Performance increased by 5-10% in the same parameters.
- Compared with the 2nd generation: Noise reduced 2-3 dB(A)in the same parameters.

5. Advanced process

- Inlet venturi tube & Front disc: spun process to ensure streamlines aerodynamic characteristics.
- Inlet venturi tube: replace bell mouth to ensure smooth air flow.
- Blades: once punch forming to ensure process quality.
- Tooling: dedicated fixture to ensure precise install of the blades.

General Features

1. Wide Performance Range

- 4th Generation Wind-surfer Centrifugal Wheel: low noise while pressurizing compare with 2nd generation.
- Maximum wheel diameter is 1 meter, reduce fan quantity and primary investment.
- The scroll is saved and the cabinet size is reduced.

2. Centrifugal In-line: Obvious advantage in RPM and noise

- Compare with axial/mixed flow fans rotation speed is reduced 20-30%.
- The sound pressure level range reduced by 10-15 dB(A).
- Fundamental way to reduce noise.

3. Plug Fan Structure

- Plug fan directly suck air into wheel and pressurize: air flow pattern improved.
- Direct drive no dust generated: suitable for clean rooms of wafer fab, pharmaceutical and food industry.

Technical Information

1. Quality Standards

The fan has designed according to AMCA design procedure, the products are produced within very control procedure following ISO 9001, ISO14001 and ISO 45001.

2. Fan Type

The fan shall be belt drive or direct drive in-line centrifugal type, with aluminum backward inclined centrifugal wheel. The inlet Venturi shall have round curved section to smoothly transit the air to the wheel cone. The wheel shall be statically and dynamically balanced to Level G2.5 as per AMCA204 standard.

3. Nameplate

Permanently fixed aluminium nameplate shall be fixed on fan body clearly display fan mark, product model and serial number (i.e.: unique ID for each fan), so that the customer can use this number to find out the parts used.

4. Main Fan parts

Fan Part	Description
Impeller	Aluminum backward inclined centrifugal wheel, the wheel shall be statically and dynamically balanced to Level G2.5 as per AMCA204 standard.
Fan Housing	Fan housing shall be constructed of heavy gauge galvanized steel (option: epoxy powder coated) with a rigid internal support structure. The thickness of the panel shall be adequate to support the weight of drive and motor. The housing shall have optional discharge direction.
Motor	The motor shall be carefully matched to the fan load. It shall be (IP55,IP56, …etc) rated with Class F,H Insulation according to project specification . The motor bearing shall be of ball type and lubrication- free. Out of the air stream shall the motor and drive mechanism be located to avoid grease or dirt accumulation (Only for belt dive type)
Shaft	Fan shaft shall be heat treated through soaking furnace to the hardness level of HB370, and the surface shall be hard film corrosion treated. The fan shaft shall be balanced together with the wheel, and the shaft design speed shall at least exceed 25% of the maximum fan operation speed.
Pulleys	Fan pulleys shall be sized for a minimum of 150% of driven power. Pulleys shall be cast iron, keyed and securely attached to the wheel and motor shaft. Motor pulleys shall be adjustable for final system balancing. Conical (QD) type bushings shall be equipped for easy removal of the pulleys.
Bearing	The bearings shall be selected with service life of (80, 000 to 200,000) hours at the maximum operating speed specified in the catalog as per the design speed. Bearing type shall be permanently sealed, lubricated pillow block metal ball bearings.
Drive support	Drives shall be supported by powder coated (corrosion resistant) heavy gauge steel. The belt tension shall be adjusted through motor support plate, the design shall make sure the fan shaft and motor shaft always parallel.
Inlet	The inlet Venturi shall have round curved section to smoothly transit the air to the wheel cone