

## Impeller Technology

### 1. Optimized Design

The fan adopts advanced technology. The design of backward curved centrifugal impeller is optimized by means of CFD hydro-field simulating. The design is more accordant with the aerodynamic characteristics, high efficiency, and stable airflow.

### 2. Advanced Process

All steel laser cut blades are welded and positioned accurately. The overall strength of the blades are designed and welded to withstand long hours high speed operation.

### 3. High Balancing Level

Each impeller is subjected to dynamic balance test. The balancing level is kept at G4.0 (Typical products are balanced to G6.3 only). Durability, stability and quietness are guaranteed.

### 4. High Performance Curve

The impeller has a stable, smooth air performance curve which can efficiently avoid performance drop caused by the deviation of the working point.

### 5. Surge Protection

The fan shaft power will not exceed the motor rated power regardless the operation point of the stable working range. Customers can use it without any worries.

## General Features

### 1. High Reliability

- Our products use advance FEA-aided design to enhance the reliability of structure.
- The hub and the impeller are strengthened and leak-proof thanks to the all-steel continuous welding method. Safety is also significantly improved during operation.
- The new shaft and coupling technology ensuring the accuracy during the assembly process while maintaining high reliability.
- Maximum load surpasses 35% of limit speed to ensure the long-term continuous operation of the security.
- Bearing seal can be lubricated to ensure operation reliability and durability.
- The drive unit has a protective shield using eye-catching warning color to ensure personal safety.
- All our machines underwent vibration tests prior leaving the factory in order to achieve reliable and durable operation.

### 2. High Efficiency

- Venturi inlet shall match the front disc precisely to avoid turbulent flow and air leakages, so that the air flows more smoothly to improve aerodynamic performance.
- Optimized design repeatedly of CFD flow field simulation to ensure aerodynamic performance complied with the flow field characteristics.
- Excellent aerodynamic performance.

### 3. User Friendly

- Flexible motor allocation.
- Wide range of standard accessories available.

## Technical Information

### 1. Standards and Codes

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 single inlet with steel backward curved centrifugal wheel. The drive type shall be direct drive, coupling drive and belt drive. Structure of the fan shall allow convenient withdrawal of the wheel for maintenance and cleaning.

### 3. Coating

Fan surface shall be polished and cleaned up to remove particulates, welding slag, burrs, sharp edge, iron, oil, then epoxy coating or high temperature coating for high temperature environments use, fan surface shall be free of sags, wrinkle, blisters, exposed metal or peeling after coating. It shall be no corrosion and rust at least 5 years in allowable working condition.

**4. Main Fan parts**

Fan Part	Description
Impeller - Type R	The wheel shall be steel backward curved centrifugal and fully welded. The wheel shall be statically and dynamically balanced to level G4.0 in accordance with AMCA204. When the wheel is operating at the highest allowable speed, the volume shall be stable and the noise shall be low. Wheel features shall be able to avoid performance downgrade resulting from sliding of the working points.
Fan Housing	The fan housing shall be steel, the thickness and strength shall be adequate to support fan max running weight. The volute shall be continuously welded and equipped with access door for removing possible foreign objects entered into the scroll.
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.
Belt Drive and Coupling Drive	The fan shaft shall be treated through hardening and tempering and finish turning processes. Its maximum load shall be 35% more than the highest fan speed. The shaft shall be supported by two bearings with rating service life of (80, 000 to 150,000) hours at the maximum operating speed specified in the catalog as per the design. It shall be sealed and can be lubricated under normal operating temperatures. There shall be pulley and belt guard. Flexible coupling equipped with a guard shall be used. The factor of safety of power transmission and torsion shall meet the design requirements.
Inlet	Fan inlet shall be strictly designed according to aerodynamic performance, constructed of glass fiber reinforced plastics. The surface shall be smooth and streamline with good rectification results, reduce turbulence effectively to improve fan efficiency and reduce noise.