

Impeller Technology

1. Forward Curved Centrifugal Fan: Large Airflow and Low Sound

- The forward curved wheel has larger airflow than the backward inclined wheel at the same speed.
- The forward curved wheel has lower speed and sound than the backward inclined wheel under the same operating condition.
- The inlet bell formed by spinning is carefully matched to the wheel cone for better air movement and lower sound.

2. The Backward Inclined Centrifugal Fan: Great Efficiency and Non-overloading

- The backward inclined wheel has greater efficiency than the axial wheel, mixed flow wheel and forward curved wheel.
- The V-shaped baffle is mounted at the outlet to effectively reduced turbulence, lower sound and improve efficiency.
- The backward inclined wheel has smooth non-overloading performance curves ensuring safer operation.

3. Advanced Technology to Ensure Accuracy

- The scroll is manufactured with Pittsburgh lock seams sealing techniques for zero air leakage.
- The side panels are once formed with high precision to reduce dimension errors.
- The blades are once formed by punching, and dedicated fixtures used for precise mounting positions.

4. More Reliable Structural Design

- The threaded rod is applied as reinforcement for the forward curved wheel for reliable and durable operation.
- The backward inclined wheel is enhanced with stiffeners for durable and safe operation.
- The fan is supported by stable channel steel frame for stable fan operation.

5. High Balance Quality Grade

- Balance quality grade of G2.5.
- Vibration reduced and reliability improved.
- Sound greatly reduced.

General Features

1. Sealed Cabinet Structure for Lower Sound

- The forward curved/backward inclined centrifugal fan of high quality and low sound.
- The AMCA recommended inlet dimensions to ensure more smooth air movement.
- CFD flow field simulation adopted to reduce sound calculation software.
- The fan housing constructed of aluminum alloy for better soundproof performance.
- Double layer housing available to further reduce sound.

2. Carefully Selected Materials for Reliable and Durable Operation

- High-quality aluminum alloy frame strong enough for durable operation.
- Cold rolled steel housing (galvanized steel available).
Electrostatic epoxy coatings available

3. Various Applications

- Motor located inside the cabinet: HVAC air supply and exhaust.
- Motor located outside the cabinet: air supply and exhaust and smoke removal.
- Two-speed air supply and exhaust, filter air supply and exhaust.).

4. Flexible Configurations Suitable for Different Operating Conditions

- Variable discharge directions available.
- Two-speed motor available as option.
- Base mounted or duct mounted types available.
- Rain cover available for outdoor installation.

5. Belt Driven, Precise and Adjustable

- More precise model selection for specific operating conditions.
- Vibration applying on the independent bearing for longer service life.
- Belt tension adjustable on the motor base.
- Flexible jobsite design changes.

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 structure shall be of cabinet type belt drive DWDI centrifugal fan.

4. Main Fan parts

Fan Part	Description
Impeller	The wheel must be constructed of steel and dynamically balanced. The permissible residual unbalance of the wheel shall be determined based on the balance quality grade of AMCA-G 2.5 standard. To meet different operating conditions, the forward curved or backward inclined wheel can be chosen for better performance.
Fan Housing	(Type S, single layer) The housing is constructed of galvanized steel (optional: treated with electrostatic epoxy coatings). It shall be thick enough to offset the vibrations and sound. (Type D, double layer) Fiber glass, fire retardant of Class A fire rating, shall be between the outer layer of galvanized steel and the inner layer of soundproofing perforated steel sheet. Inlet dimensions shall be designed as recommended by AMCA to reduce turbulence, improve efficiency and lower sound.
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 motor outside type).
Shaft	Fan shaft shall be precisely lathe turned, ground and heat treated through soaking furnace to the hardness level of HB370. The drive power selection shall be 120% of the maximum power under the specified rpm.
Bearing	The bearing shall be re-lubricated ball type with cast iron pillow block, and selected for a service life of (80, 000 to 150,000) hours at the maximum operating speed specified in the catalog as per the design