



SHELDONS ENGINEERING Inc.

Sheldons Engineering Product Index

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TYPICAL SPECIFICATION TUBEAXIAL FANS –9500 P.V.C or F.R.P

GENERAL

The fans shall be (direct/belt) driven tubeaxial type as designed and manufactured by Sheldons Engineering to ensure smooth operation. Fan wheels shall be P.V.C OR F.R.P. construction with airfoil cross-section blades in all sizes. Unless otherwise directed, fans shall have the arrangement, motor position and orientation as shown on the layout drawings. Wheels have (at rest) manually adjustable pitch blades.

PERFORMANCE

Fan ratings shall be based on tests made in accordance with AMCA Standard 210. Flow shall be actual volumetric flow at the fan inlet. Fan static pressure is defined as static pressure at fan outlet less total pressure at fan inlet. Standard inlet density is to be taken as 0.75 lb/ft^3 with corrections for temperature, elevation, inlet static pressure, gas composition and humidity as defined in the schedule. Fans shall be selected to operate to the right of the peak static pressure at the given speed to ensure stable performance. Fan brake horsepower shall be equal to or less than specified at the given flow and fan static pressure.

SOUND

Fan manufacturers shall provide sound power level ratings for fans tested and rated in accordance with AMCA Standards 300 and 301. Sound power ratings shall be in decibels (reference 10-12 watts) in eight octave bands. Sound power levels will be corrected for installation by the specifying engineer...dBA or sound pressure levels only are not acceptable.

CONSTRUCTION

Fan housings are to be heavy – min 12 gauge, continuously welded steel or aluminum construction with flanged and punched inlet and outlet. Housings with lock seams or spot welded construction are not acceptable.

Fan blades are of plastic construction, p.v.c or frp. Blades shall be airfoil shape for maximum efficiency. Blades shall be of 'at rest' manually adjustable design. Hubs are to be of similar material to blades or of cast aluminum construction and machined to accept bushing. Rotors shall be attached to motor shaft by use of split, taper-lock Q-D bushing.

BEARINGS (belt driven fans)

Bearings are to be heavy duty, grease lubricated, precision anti-friction deep groove ball or spherical roller, self-aligning design. Bearings shall be designed for a minimum L-10 life of 100,000 when rated at the fan's maximum cataloged operating speed.

SHAFT (belt driven fans)

Shafts are to be ASTM A-108 steel, grade 1040/1045, precision turned, ground and polished. Grade 1018 steel is not acceptable. The shaft's first critical speed shall be at least 143% of the fan's maximum operating speed.



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PAINT

When specified, all fan surfaces are to be thoroughly prepared prior to painting using a combination of washing and hand and power tool cleaning as required in SSPC-SP-3. After cleaning, all surfaces (except wheel) are to be coated with industrial grade alkyd enamel. Surfaces of bolted components not accessible after assembly shall be coated and allowed to dry prior to final assembly. Primer only will not be accepted.

BALANCE & INSPECTION

All fans shall be precision balanced to ISO quality grade 2.5, report to be submitted with the maintenance manual. A final inspection by a qualified inspector prior to shipment is required to include: scope of supply confirmation, balance, welding, dimensions, bearings, duct and base connection points, paint finish and overall workmanship.

ACCESSORIES

Accessories shall be provided as called for in the plans and specifications. Standard accessories include:

- Motor to be NEMA Design B 3/60/460-575V-1800 rpm, high efficiency TEFC 1.15 SF
- V-Belt Drives - Variable Speed/Constant Speed with min 1.2 SF
- Belt Guard or weather cover required on belt driven fans
- Extended lubrication lines (nylon, copper or stainless steel) with fittings terminating in an accessible area. (belt driven fans only)

Additional Features that may be required:

- Access Door – bolted/quick opening or plug type with raised door
- Drain – internal thread pipe coupling with plug if required
- Companion Flange (angle companion flange bolted to the fan inlet or outlet flange)
- Inlet or Outlet screen heavy gauge wire on 2” centres
- Inlet Bell streamlined for smooth air flow, flanged and bolted to the fan inlet
- Inlet or Outlet Cone suitable to support the fan weight in vertical or horizontal position and is bolted to the fan
- Above 500°F, high temperature aluminum paint required
- Vibration Isolation - Spring - Rubber-In-Shear
- Horizontal mounting feet/ Suspension lugs for horizontal or vertical mounting
- Spark Resistant Construction –
 - AMCA “A” All parts of the fan in contact with the air stream non-ferrous material
 - AMCA “B” Non-ferrous wheel and aluminum rubbing ring where shaft passes through housing with shaft seal

