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**GUIDE SPEC**  
**GS-227**  
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## **SPECIFYING PLENUM FANS WITH BACKWARD CURVED WHEELS**

### **GENERAL**

The fans shall be size \_\_\_\_\_ single-width single-inlet capable of unhooded operation as designed and manufactured by The New York Blower Company. Fan wheels shall utilize non-overloading backward curved blades in all sizes. Flat, single thickness blades are not acceptable. Unless otherwise directed, fans shall be in compliance with the layout shown on the drawings.

### **PERFORMANCE**

Fan ratings shall be based on tests made in accordance with AMCA Standard 210 and licensed to bear the AMCA Certified Ratings Seal for Air Performance. Fans not licensed to bear the AMCA Seal for Air Performance shall be tested, at supplier's expense, in an accredited AMCA laboratory. (Option: Only AMCA certified fans will be accepted.) Fans shall have a sharply rising pressure characteristic extending throughout the operating range to assure quiet and stable operation under all conditions from wide open to closed off. Fan brake horsepower shall be equal to or less than \_\_\_\_\_ BHP at \_\_\_\_\_ inches static pressure and \_\_\_\_\_ CFM at \_\_\_\_\_ density.

### **SOUND**

Fan sound power level ratings shall be based on tests made in accordance with AMCA Standards 300 and 301 and licensed to bear the AMCA Certified Ratings Seal for Sound. Tests shall be performed in an accredited AMCA laboratory. 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 levels only are not acceptable.

### **CONSTRUCTION**

Fan structure to be fully assembled, heavy gauge construction with integral mounting panel for inlet cone. Unassembled units are not acceptable. Inlet cones shall be aerodynamically designed and spun providing a minimum separation of air flow. Wheel diameters shall be in accordance with the standard dimensions adopted by AMCA for centrifugal fans.

### **BEARINGS**

Bearings are to be grease lubricated, precision anti-friction, self-aligning, foot-mounted pillow block design. Flange mount bearings are not acceptable. Bearings shall be selected for an average minimum L-10 life of 40,000 hours (200,000 hour L-50 life) when rated at the fan's maximum cataloged operating speed.

### **SHAFT**

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 120% of the fan's maximum operating speed. The drive end of the fan shaft shall be counter-sunk for tachometer readings.

### **PAINT**

All fan surfaces are to be thoroughly prepared prior to painting using a combination of high pressure chemical wash and hand and power tool cleaning as required. After cleaning, all surfaces are to be coated with an industrial grade, finish coating. 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 AND RUN TEST**

All fan wheels shall be dynamically balanced on precision balancers. Prior to shipment, completed fans shall receive a final test balance at the specified operating speed.

### **ACCESSORIES**

Accessories shall be provided as listed in the plans and specifications.

Required accessories include:

- Internal Inlet-Vane Damper
- Safety Equipment - Belt Guard with Tachometer Opening and Plug - Screen Enclosure - Inlet Guard
- Unitary Base
- Isolation Base - Spring - Rubber-In-Shear
- Drive - Variable V-Belt - Constant V-Belt
- Inlet Collar
- Extended Bearing Lubrication Lines
- Narrow-Width Construction
- Integral Motor Mounting Structure (Arrangement 3-V only)

### **FINAL INSPECTION**

All fans shall receive a final inspection by a qualified inspector prior to shipment. Inspection to include: fan description and accessories, balance, welding, dimensions, bearings, duct and base connection points, paint finish and overall workmanship.

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Form 607 GAW