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**GUIDE SPEC**  
**GS-491**  
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## **SPECIFYING BACKWARD CURVED PRESSURE BLOWER (BC PB) FANS**

### **GENERAL**

The fans shall be model \_\_\_\_\_ single-width single-inlet BC Fans as designed and manufactured by The New York Blower Company. To ensure consistent quality, all production procedures are to be documented under an ISO 9001 certified process. 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 in an accredited laboratory. Fans shall have a sharply rising pressure characteristic extending throughout the operating range to assure quiet and stable operation. Fan brake horsepower shall be equal to or less than \_\_\_\_\_ BHP at \_\_\_\_\_ inches static pressure and \_\_\_\_\_ CFM at \_\_\_\_\_ density.

### **SOUND**

Fan manufacturer shall provide sound power level ratings for fans tested and rated in accordance with AMCA Standards 300 and 301. Tests shall be performed in an accredited AMCA laboratory. Sound power ratings shall be in decibels (reference 10<sup>-12</sup> 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 housings are to be constructed of heavy gauge plate, continuously welded. Housings with lock seams or partially welded construction are not acceptable. Housings are to be reinforced with rigid bracing to increase structural integrity and prevent vibration. Housings shall include flanged inlets, flanged outlets and shaft seals as standard. Housing inlet cones shall be aerodynamically designed and spun providing a minimum separation of air flow. Wheel diameters and outlet areas shall be in accordance with the standard dimensions adopted by AMCA for centrifugal fans. Designs not in accordance with AMCA Standard 99-2402 are not acceptable.

### **BEARINGS**

Bearings are to be heavy duty, precision anti-friction ball or spherical roller, self-aligning, pillow block design. Bearings shall be selected for an average minimum L-50 life of 200,000 hours 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 125% 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. After cleaning, all surfaces are to be coated with an industrial grade 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 AND RUN TEST**

All wheels are precision balanced prior to assembly. Fans with motors and drives mounted by nyb are final-balanced at the specified running speed.

### **ACCESSORIES**

Accessories shall be provided as in the plans and specifications.

Standard accessories include:

- Flanged Outlet
- Shaft Seal - Ceramic Felt
- Flanged Inlet

Required accessories include:

- Bolted Cleanout Door - Flushed - Raised
- Inlet Companion Flange
- Outlet Companion Flange
- Drain, Drain Plug
- Narrow-Width Construction
- Split Housing
- Insulation Studs
- Shaft Seal - Buna-N - Viton® - Teflon®
- External Inlet-Vane Damper
- Inlet Box Assembly
- Inlet Box Damper
- Heat-Fan Construction (Arr. 1 & 8 only)
- Safety Equipment - Belt Guard with Tachometer Opening and Plug - Shaft and Bearing Guard - Coupling Guard - Inlet Guard - Outlet Guard
- Unitary Base
- Vibration Isolation Bases - Spring - Rubber-In-Shear
- Constant V-Belt Drive
- Flexible Coupling
- Outlet Damper (Wafer Type)

### **FINAL INSPECTION**

All fans shall receive a final inspection as documented in the manufacturer's ISO 9001 process 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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