

CUSTOM PRODUCTS AND SERVICES GUIDE



NEW YORK BLOWER COMPANY
(800) 208.7918 • nyb.com

Why New York Blower Company

The New York Blower Company is a full service fan manufacturer offering a complete array of centrifugal and axial products. These range from standard, predesigned fans to highly customized products. The New York Blower Company excels at designing and constructing fans for corrosive, abrasive and high temperature applications (beyond 1800°F). In addition, we can modify fans to meet specific application needs such as zero leakage construction, abrupt temperature change, cyclical speed changes and more.

Leading the Industry for Drawings and Fabrication Lead Times

With over 125 years of design, engineering and manufacturing experience in both the fan and steel fabricating industries, New York Blower Company manufactures completely custom fans designed around specific application requirements. New York Blower Company has industry leading lead times for both drawings and fabrication when compared to the competition.

Expansive Manufacturing Facilities

The New York Blower Company has over 460,000 ft² of manufacturing floor space that is fully equipped to fulfill fabricating and machining requirements. New York Blower Company's AMCA accredited laboratory with six test chambers assists in providing an unmatched combination of technology and manufacturing expertise in its products. New York Blower Company fan designs offer the highest aerodynamic efficiencies compatible with specific systems and gas-stream requirements.

State of the art lasers allow New York Blower Company to cut steel accurately and cleanly. Plasma burning tables with oxy/acetylene have adjustable water levels and can cut carbon steel up to 4" thick. Air scribes and arc writers allow for accurate layout details on burned parts and coded materials. Inventory also includes a press brake, shears, heavy duty power rolls, dynamic balancers, laser alignment portable balancer, and sand blasting equipment along with all the related welding and forming equipment.

The New York Blower Company follows a custom in-house Quality Control program proven efficient through years of experience. AWS D14.6 certified welders and documented weld procedures are used on all New York Blower Company fans, not just when specified by customers. NDT checks such as dye penetrant, mag particle, x-ray, ultrasonic and Helium spectrometer leak tests are routinely performed by both in-house personnel and independent testing services. Fan construction includes mild steel, high strength alloy steels, aluminum, 300 series stainless steels, Inconel, incoloy, hastalloy, titanium and other exotic alloys. Special coatings consist of baked phenolics, epoxys and rubber linings.

Skilled in the repair and retrofitting of our competitor's equipment.

New York Blower Company offers an extensive Field Service Department for fan startup and trouble-shooting. Our technicians have the flexibility to repair or rebuild any fan manufacturer's equipment. Our trained personnel can field measure a fan, or we can arrange to have a unit sent to our shop for duplication.



Lab

The New York Blower Company has an AMCA accredited laboratory and research center to ensure the company performs to the highest standards in product development and research including sound, air performance, vibration, finite element analysis, and speed-testing.

Custom Engineered Fans

Our fans are available in standard catalog sizes or as custom designed units. Each application is analyzed on its own performance and unique design requirements. Designs are based on computer analysis of wheel metallurgical stresses, shaft critical speed and bearing limitations. All units are custom built in accordance with customers' specifications. Available in Arrangements #1, 2, 3, 4, 7, 8, 9 and 10 - all the standard design features of the industry plus custom sizes, DWDI, inlet boxes, cut-width construction, split housings, independent pedestals, liners, elevated temperatures, alloy construction, gas tight construction and more. Units can be designed to match any competitor's catalog dimensions or design construction.

Design Features:

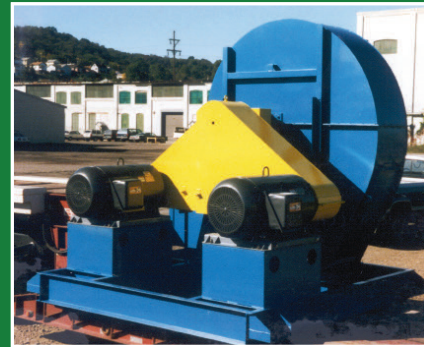
- Flows over 1,000,000 CFM/ 472 m³/sec
- Static pressures beyond 150" wg/ 37.4 kPa
- Centrifugal wheels beyond 150 in/ 3810 mm diameter
 - Radial Bladed fan models
 - Radial Tipped fan models
 - Backward Curved fan models
 - Flat Bladed Backward Inclined fan models
 - Airfoil fan model

High Temperature Fans

New York Blower Company's high temperature fans are available in both direct drive and belt driven centrifugal and axial designs.

Design Features:

- Standard high temperature 1800°F/983°C fans
- Centrifugal and Axial designs
 - Shop insulated fans with riveted or welded cladding
 - Shop installed insulation pins for field cladding
 - Plug fans with backward inclined, axial, forward curve, paddle wheel or radial blade designs
 - Special alloy construction with shop welding certification
 - Water cooled packing gland seal
 - Gas purge seals
 - Gas tight construction
 - AMCA class C spark proof construction
 - High temperature louvered dampers
 - Backpressure (anti-thrust) blades



Dual 250 HP drive "RT" radial tip fan for separating out debris from an industrial grinder.



Carbon steel fan designed for a New York Blower Company customer as a repair and rebuild job.



New York Blower Company 700°F Axial Fan used for an industrial furnace exhaust application.

Repair and Rebuild

The New York Blower Company uses their experienced engineers, technicians and Field Service Department to assess and analyze any field issues associated with fan equipment. Fan assemblies can be quickly tested in the field or at New York Blower's AMCA accredited lab for a quick diagnosis of air, sound and vibration problems. Regardless of the original manufacturer, New York Blower Company can accommodate all repair, rebuild and retrofit needs.

Service Features:

- Over four decades experience serving the fan repair and rebuild market.
- Ability to repair, modify and replace all fan manufacturer's designs and components.
- Ability to field measure difficult to replace components including wheels, cones, shafts and more.
- NDT (non-destructive) testing for safety and quality assurance.
- PMI (positive material identification) test capability for critical components.
- Relationships with skilled and New York Blower Company certified machine shops to salvage items including shafts, hubs and wheel components to reduce downtime and costs.
- Engineered solutions including modified liners, stiffeners, blade tips, metallurgical changes and fabricated inlets to accommodate changes in application requirements or to improve longevity of originally manufactured equipment.

Design Enhancements:

- Backspin devices
- Special guards
- Motor and drives including steam turbines, hydraulic motors and special couplings
- Modified inspection doors available with a variety of customer securing hardware
- Special motor pedestal platforms
- Custom wheel removal housing splits
- New York Blower designed and built dampers
- Radial inlet dampers
- Louvered outlet dampers
- Guillotine/isolation dampers (AVD)

Rebuild

We used competitor's fan assembly drawings and took field measurements to build the two fans with integral inlet boxes below. We upgraded both units to improve durability by including A514 scroll and cheek liners. The assemblies were installed without the need for any field modifications.



Repair

Induced draft fan located on dirty side of baghouse exhausting blast furnace. 82" diameter wheel with chromium carbide blade liners.



Products

High Temperature Fans

Axial Plug Fans (Series 900, Type “AX” & “AXR”)

- Alloy constructions (300 series, Inco’s, Hastelloy, RA, etc.) up to 1800°F.
- Available with gas tight construction and external air or water cooled shaft and shaft seals.
- For higher static pressure applications, see “FC”, Radial “PW”, “BC” and “RT” blade designs.

Centrifugal Plug Fans (Type “AcF”, “BC”, “FC”, “PLR”, “PW” & “RT”)

- Alloy constructions (300 series, Inco’s, Hastelloy, RA, etc.) for temperatures up to 1800°F.
- Available with gas tight construction and external air or water cooled shaft and shaft seals.
- Available in Forward Curved, Radial, Backward Curved and Radial Tip wheel configurations.

Tubeaxial and Vaneaxial (Series 950, Type AXT & AXV)

- Standard catalog style tubeaxial and vaneaxial fans for ambient air temperatures to 800°F.

Housed Centrifugal Fans (Type “AcF”, “BC”, “FC”, “PLR”, “PW” & “RT”)

- Standard catalog and customer style pedestal mount housed centrifugal fans for airstream conditions to 1800°F.
- Available with gas tight construction and external air or water cooled shaft and shaft seals.
- Available in Forward Curved, Radial, Backward Curved and Radial Tip wheel configurations.

Backward Inclined Fans

Airfoil Designs (Series 100, Type “AcF” & “AF”)

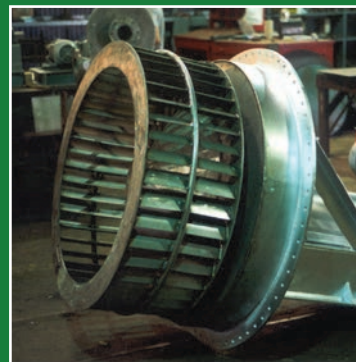
- A complete line of high efficiency airfoil blade designs with a specific speed range - 12,000 to 80,000.
- Custom sizes from 12” to beyond 150” diameter.
- Optional solid nosepiece and/or liners for light dirt applications.
- Peak static efficiencies to 84%.
- Static pressure to 60” H²O.
- Volumes over 1,000,000 CFM.
- Non-overloading BHP curve.

Backward Curve Fan (Series 200, Type “BC”)

- A complete line of flat backward curve blade designs with a specific speed range - 10,000 to 70,000.
- Custom sizes from 12” to beyond 150” diameter.
- Single thickness “airfoil” blade profile with good wear resistance for use in dust laden applications.
- Peak static efficiencies to 83%.
- Static pressure to 70” H²O.
- Volumes over 1,000,000 CFM.
- Non-overloading BHP curve.

Backward Inclined Fan (Series 300, Type “BI” & “PLR”)

- A complete line of flat backward inclined blade designs with a specific speed range - 30,000 to 80,000.
- Custom sizes from 12” to beyond 120” diameter.
- Single thickness flat blade profile for dust laden applications can be made wear resistant.
- Peak static efficiencies to 78%.
- Static pressure to 35” H²O.
- Volumes over 1,000,000 CFM.
- Non-overloading BHP curve.



Products

Radial Fans

Radial Bladed Industrial Exhauster Fan (Series 500, Type “AH”, “DH”, “LS”, “LSIE”, “MH”, “PW” & “RIM”)

- A standard line of Industrial Exhausters with air and material handling blade designs – pre-engineered sizes from 12” to beyond 150” diameter.
- Peak static efficiencies over 70%.
- Three static pressure classes to 45” H₂O.
- Custom designs for elevated temperatures to 1800°F.
- Units can be custom designed to match any competitor’s catalog dimensions or design construction.

Radial Bladed Fan (Series 600, Type “RB”)

- A complete line of custom radial blade designs up to a specific speed of 35,000.
- Sizes from 8” to beyond 150” diameter.
- Peak static efficiencies of 75%.
- Static pressure to 150” H₂O.
- Volumes from shut off (surge limiting designs) to over 700,000 CFM.
- Dirty applications – special hard surface lining material available.

Radial Tip Designs (Series 700, Type “RT” & “RTS”)

- A complete line of custom radial blade designs up to a specific speed of 35,000 - sizes to beyond 150” diameter.
- Peak static efficiencies of 78%.
- Pressure to 80” H₂O.
- Volumes to 900,000 CFM.
- Moderate to dirty applications – special hard surface lining material available.

Industries Served:

Pulp & Paper, Utilities, Cement, Iron and Steel, Aluminum, Cement and Lime, Foundries, Chemical Plants, Air Pollution Control, Metals and Minerals, Petrochemical, Paper, Coal, Ethanol, Utilities, Power Generation, Mining, Water Treatment



Products

Pressure Blower Fan (Series 400, Type “PB364”, “PB368”, “BCPB” & “HPPB”)

- Custom designs available for elevated temperature, alloy construction and higher pressure/volume requirements than standard designs.
- Radial, Radial Tip and Backward Incline blade designs with improved Static Efficiencies from 68% to 78%.
- Static pressure range from 1 oz. to 60 oz.
- Volumes from 100 CFM to over 120,000 CFM – at any required RPM.
- Standard designs available in Arr. #1, 4, 8, 9 and 10.

Surge Limiting Pressure Blower Fan (Series 410, Type “PBS364” & “PBS368”)

- Same design features available as the PB blower. Ability to operate at volumes approaching shutoff because of specific wheel/casing designs that minimize surge without the need for special design accessories or auxiliary equipment.

Multistage Blower (Series 420, Type “PB2S364” & “PB2S368”)

- Special two stage design blowers for high-pressure applications up to 150” PS on common shaft using single driver.

Forward Curved Fans

Forward Curve Fan (Series 800, Type “FC”)

- Typical “FC” multi-blade Squirrel Cage design for low and high volume and high temperature applications.
- Standard sizes from 10” to 84”.
- Temperatures range from ambient to 1800°F.
- Available in both centrifugal and plug fan designs.



Accessories

Sound Attenuating Devices

The New York Blower Company can supply silencers, blankets or enclosures for sound attenuating purposes. We manufacture our own enclosures and are able to custom fit the size of the enclosure to the installation. A variety of filter designs are available that provide attenuation and ensure clean air supply to the fan.

Enclosures

Enclosures are manufactured to fit the customer's size for applications where a silencer alone will not meet the customer's sound requirements. Sound transmission through fan housing and from motor can be controlled with an acoustical enclosure. Low temperature and relatively clean air applications.

Acoustical Blankets, Silencers, Filters can be supplied by New York Blower Company.

Special Applications

In addition to manufacturing fans, New York Blower Company is known for providing customized fan components and solutions. For example, we can supply fans mounted on common bases with interconnecting ductwork to facilitate field installation. We have also supplied fans mounted inside tanks to ensure zero leakage from the system. If you require a product to move air, New York Blower Company can design and build it to your exact specifications.

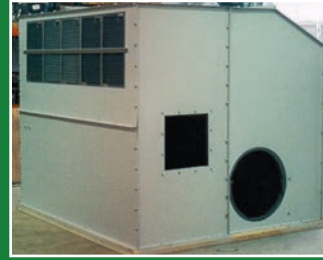
Ductwork

New York Blower Company can supply interconnecting ductwork in a variety of shapes and sizes to help any system run efficiently.

Drives & Motors

New York Blower Company can provide a variety of drives and flow control devices including:

- Motor Controllers
- Motor disconnects
- Motor starters
- Variable speed drives
- Magnetic couplings
- Motors
- Steam turbines
- Diesel motors
- Electric motors (NAME and IEC)
- Hydraulic motors
- Dampers (manual, electrical and pneumatically controlled)
- Louvered dampers
- Vortex dampers
- Isolation dampers



Services

The New York Blower Company offers a comprehensive Field Service Department for fan trouble shooting. We can provide state of the art equipment for in-field alignment, balancing and analysis. Our field service personnel have years of field training combined with specialized schooling in the latest techniques and can assist diagnosing field related fan issues.

Repair and Rebuild

The New York Blower Company is highly skilled in the repairing, rebuilding, modifying and retrofitting of existing fan equipment. We take the performance criteria from the existing system to produce a fan that meets or exceeds the dimensional and performance requirements of the customer.

Engineering Analysis

Engineering experience plus ability combine for a theoretical and practical analysis of problems and solutions. We assist our customers with bearing analysis, stress analysis, shaft critical speed, resonant speed, thermal effect and other factors that can cause problems.

Testing

Fan assemblies are tested at New York Blower's AMCA accredited test lab.

- Flows to 130,000 CFM.
- Pressures to 100" SP.

In addition, in-house prototype tests following the AMCA guidelines are routinely done on new designs or specific jobs for performance verification.

Balancing

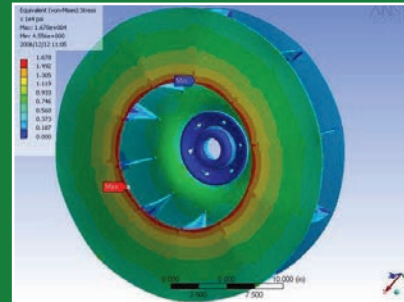
The New York Blower Company can rebalance any manufacturer's wheel/shaft assemblies either in the field or in one of our facilities.

Maintenance

Preventative maintenance can help to extend the life of your equipment and avoid unexpected outages. Service technicians use certified testing methods to replace worn out parts to avoid costly repairs. When conducting maintenance, fans can be upgraded for higher capacity, improved efficiency or longer life with less erosion or corrosion.



A New York Blower Company fan assembly being prepared for shipment.



FEA Analysis of a repaired fan wheel. Testing is done to analyze problems with current designs and rebuild a more functional wheel.



New York Blower Company replacement project which included replacing wheels, inlet pieces and portions of the housing.



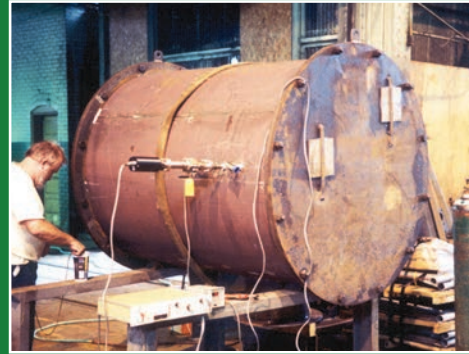
A New York Blower Company repair and rebuild project for a replacement wheel. This duplicate wheel has improved wear performance by adding chromium carbide liners.

Testing Capabilities

The New York Blower Company can test any manufacturer's fan assembly for a variety of needs and requirements. Tests following AMCA guidelines are routinely done on new designs or specific jobs for performance sound and vibration verification. The following shows some of New York Blower Company's additional testing capabilities.



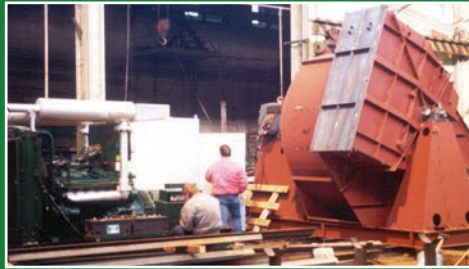
Standard Testing Capacity: New York Blower Company fan being tested for air performance. All testing is in accordance with AMCA guidelines in an AMCA accredited laboratory.



Critical Performance: New York Blower Company Fan packaged in a New York Blower Company manufactured gas tight tank for a vacuum furnace manufacturer. The system shown is being leak tested using a helium spectrometer by an independent third party.



Non-Destructive Testing: Wheel hub being dye penetrant tested per AWS D14.6. Other test methods available include magnetic particle, X-ray and ultrasound. NDT inspection is done by New York Blower Company and independent third party inspectors as required by customer.



Shop Testing: Customer specifications required shop testing of the 600 HP, Arr 7 fan prior to shipping. This unit is a 65" Backward Curve (BC) 1,800 RPM design and was successfully tested using a 450 KW diesel generator and 600 HP variable frequency drive system.

Balancing Capabilities

The New York Blower Company dynamic balances every fan shipped, from the smallest wheel sizes up to 150" diameter and 25,000 lbs, using three in-house balancing machines.



A welder is working on fabricating a New York Blower Company wheel per customer specifications. This flat weld process allows the welder to rotate the wheel so welding is possible at every angle.



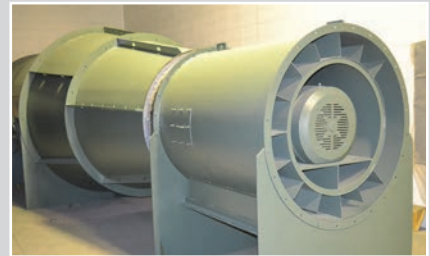
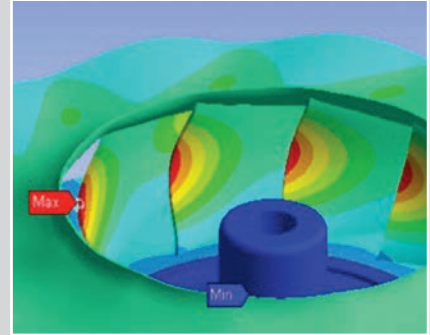
Wheel and Shaft Assembly with Chromium Carbide Liners, SW, 1200 RPM, A514 Steel Construction. Shown being balanced on our large dynamic balancer with a capacity up to 140" diameter and 20,000 lb weight.

Laboratory Testing Capabilities

The New York Blower's state of the art AMCA accredited laboratory that contains six airflow test chambers of various flow and pressure capabilities and two reverberant sound rooms.

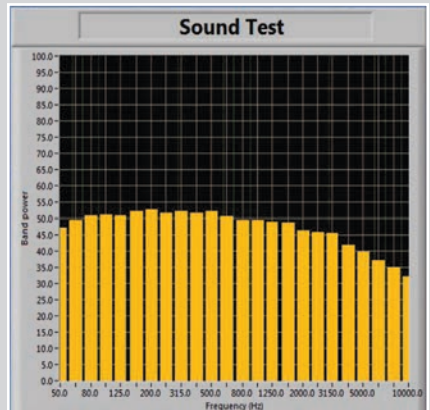
Lab Features include:

- Flows to 130,000 CFM
- Pressures to 100" WC
- Horsepowers to 500 bhp
- 6 Airflow Test Chambers
 - 4 Figure 12
 - 2 Figure 15



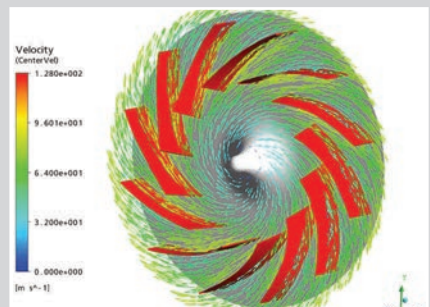
Two Sound Rooms

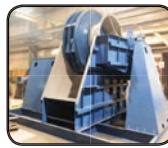
- 15,000 Ft³
- 44,000 Ft³
- Ability to operate 230/460/575v.
- Accommodates Simultaneous Air Tests
- Induced Draft and Forced Draft Test Capability



Additional Testing Capabilities:

- Modal Analysis
- Impact (Bump) Testing
- Balancing and Vibration Tests to a Variety of International Standards
- NDE Weld Analysis
- Wheel Destruction/Deformation Testing
- Positive Material Identification/Verification (non-destructive)
- 2000°F Burnout Oven
- ASTM B117 Salt Fog Chamber Testing for Corrosion
- CAD/Coordinate Verification of Physical Shapes (such as airfoil blades, fan inlet cones)
- Computational Fluid Dynamics (CFD)
- Prototype/Product Evaluation
- Finite Element Analysis (FEA): New York Blower Company has in-house program to do engineering design analysis on wheels or complete fan assemblies. The program will calculate deflections due to external forces, corresponding stresses and predict natural frequencies. Shop "Bump" tests can be done to identify and verify actual resonance.





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Go to www.nyb.com to download more information. A complete list of available services, products, and fan designs can be viewed online. Pictures of field installations are also available. You can also call (800) 208-7918 or email nyb@nyb.com

All information in this catalog has been provided to assist you in locating the fan that best meets your system requirements. Generally, there is more than one product line that will meet a particular flow and pressure requirement so we suggest you contact your local New York Blower Company representative to assist you in making the final selection.

