

# Mechanical Draft Fans



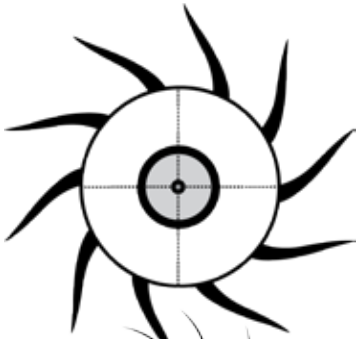
## **“What more can we do for our customers?”**

In 1981, Process Equipment, Inc. was formed to offer fan impeller fabrication, general heavy steel fabrication and engineering design services. The founders asked themselves the question, “What more can we do for our customers?” The answer was to expand their offerings to include fan repair, air system auxiliary equipment, material handling systems and field installation, opening the door to a strong demand for on-site field work and technical services. With a unique ability to repair, refurbish and rebuild equipment on an emergency basis, ProcessBarron is able to minimize downtime in forced outages. In May of 2002, Process Equipment acquired Barron Industries, a well-known and respected name in the new fan industry since 1973, expanding its market share and integrated solution strategy.

Today, ProcessBarron is a leader in the design, manufacture, installation, maintenance and repair of mechanical draft system equipment. ProcessBarron is one of the most experienced fan and draft system companies in North America with service and production capabilities that include all components related to the movement of air, gas or materials. We primarily service the Pulp & Paper, Utility Power Generation, Cement, Iron & Steel, Aluminum, Lime, Foundry, and Chemical Industries. All of our products are manufactured in our production facilities near Birmingham, Alabama.

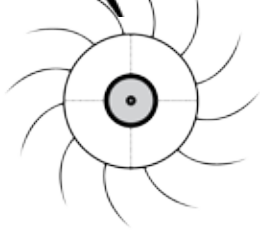
And we still want to know what more we can do for you.





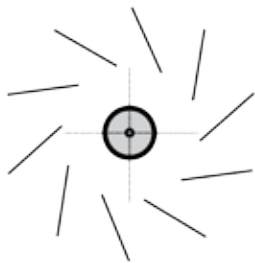
## **NEW FANS**

We offer fans ranging from 25 HP to 10,000 HP for most process industries using any metallurgy for the most severe applications.



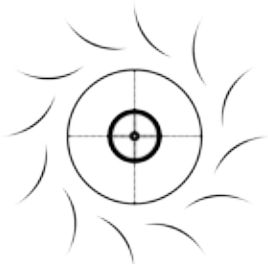
## **REPAIR, REBUILD, RETROFIT**

We can repair, rebuild or redesign any type or size of centrifugal fan impeller, regardless of the extent of damage.



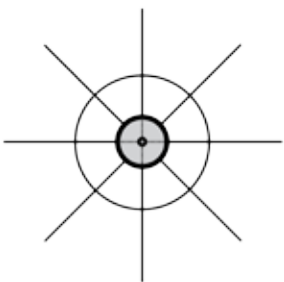
## **UPGRADES**

We provide upgrades for structural and wear issues and are unequalled in our ability to provide performance, mechanical and efficiency upgrades on existing equipment, extending equipment life and reducing power consumption.



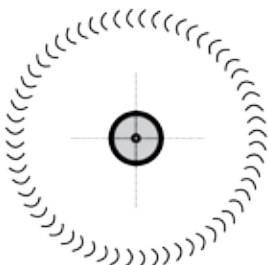
## **AUXILIARY EQUIPMENT**

We are able to provide for all of your draft system needs by also supplying control and isolation dampers, expansion joints, ducting, mechanical dust collectors, air heaters, fan housings and stacks.



## **CUSTOM PROPOSALS**

Our experienced sales engineers and engineering department will provide a customized proposal to meet the specific needs or address problems of your draft system.



## **PREVENTIVE MAINTENANCE**

Our technical field service and quality control teams focus on on-site testing and maintenance to help prevent future system failures and unplanned outages.

## **EMERGENCY REPAIR SERVICE**

24 hours a day, 7 days a week our emergency team is ready to serve you. Call 800-226-3267 for emergency repair, including re-design, fabrication and installation.

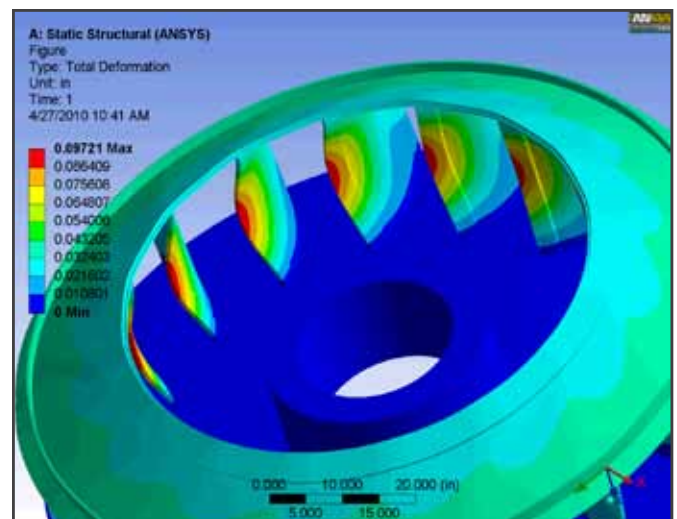
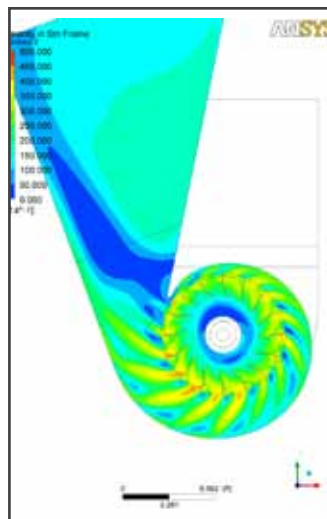
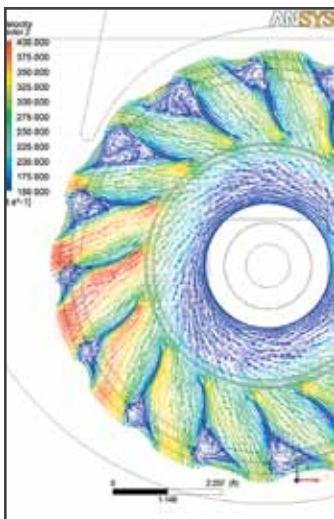
## ENGINEERING ANALYSIS

Our engineering department provides a thorough engineering analysis using the most sophisticated technology available. We assess every component of your draft system to determine efficiency opportunities including:

- Blade design
- Arrangement
- Rotation
- Angle of discharge
- Inlet box angle & lining
- Cut-off clearance

Through Computational Fluid Dynamics (CFD) and prototype modeling techniques, we can engineer a fan solution that significantly reduces power requirements and provides a quick return on investment. Our testing capabilities include:

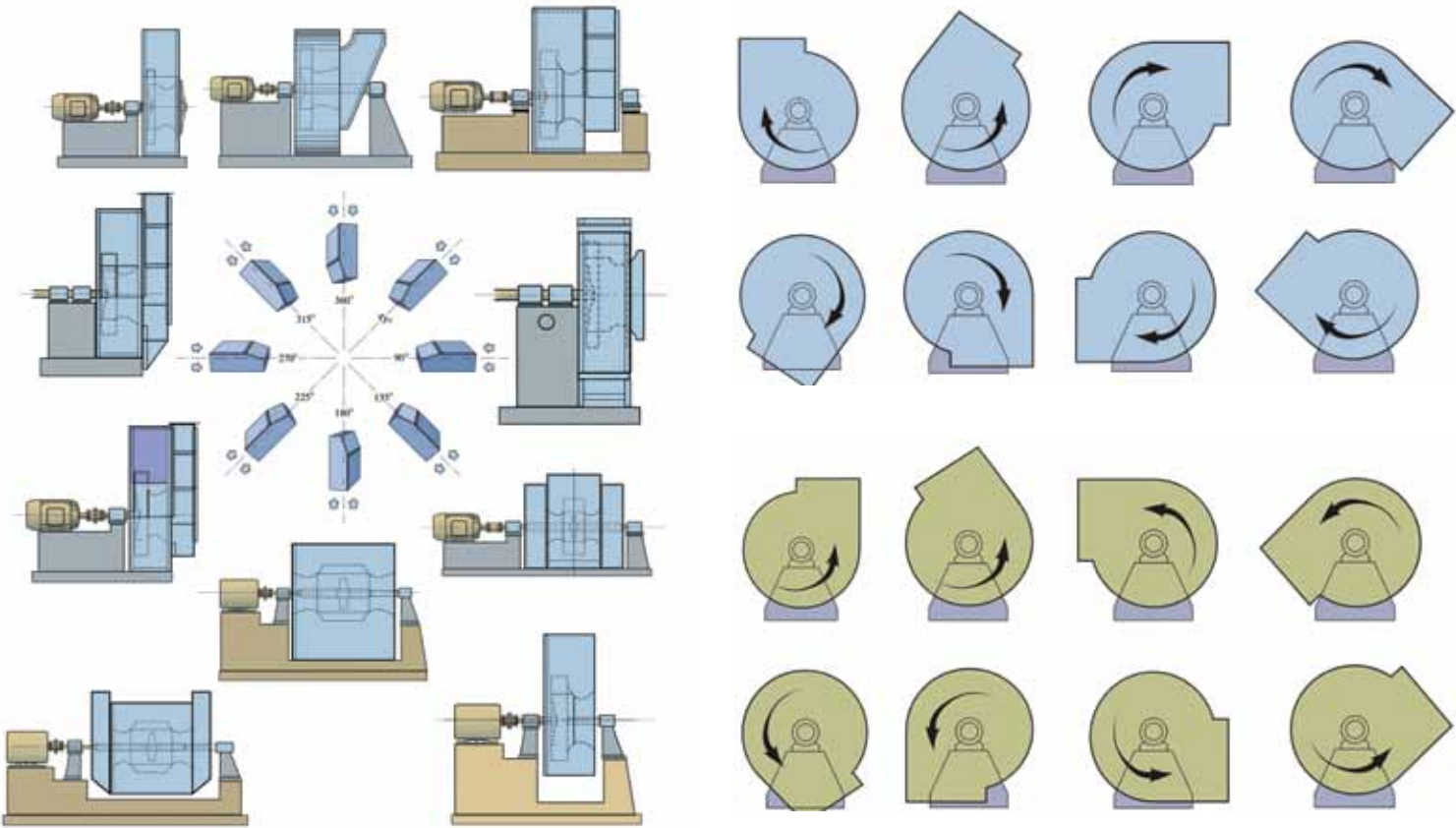
- Finite element analysis of rotors using ANSYS software
- ANSYS CFX - Fluent computational fluid dynamics to accurately predict fan performance
- Modal analysis to prevent resonance problems and premature failures
- Model and prototype testing
- Metallurgical analysis
- Fatigue analysis
- Solid modeling



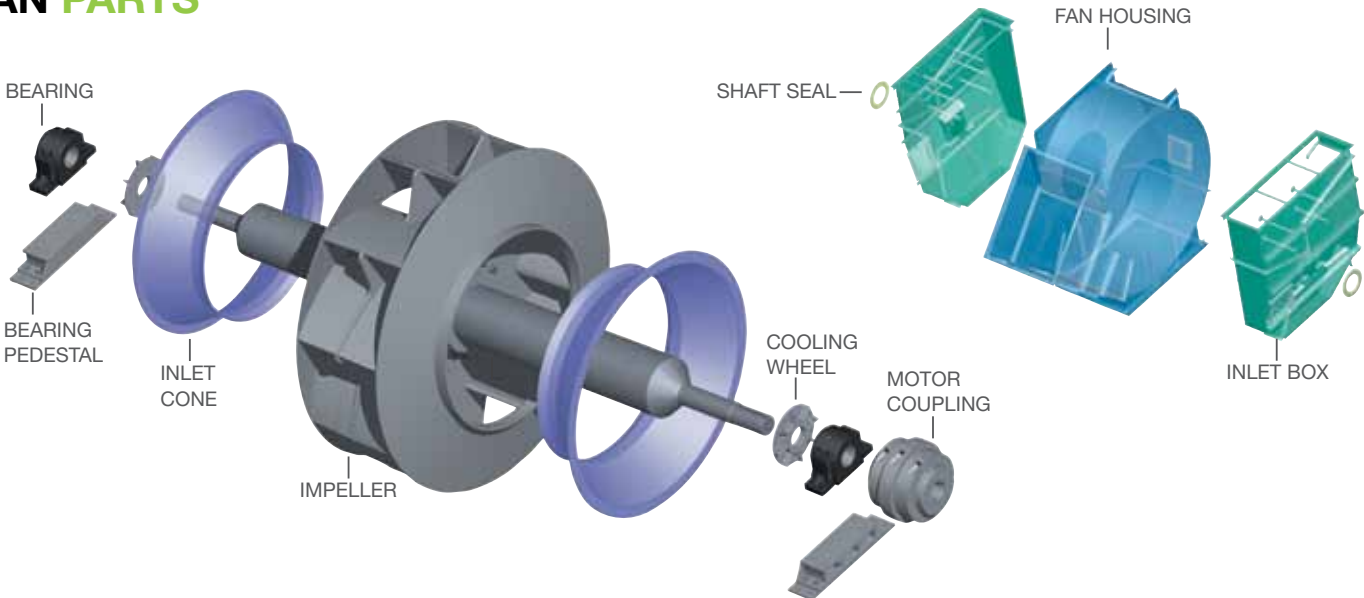


## FAN ARRANGEMENT

ProcessBarron fans are custom engineered and fabricated. You can specify any blade design, arrangement, rotation, angle of discharge and/or inlet box angle that best fits your system.



## FAN PARTS





## MANUFACTURING CAPABILITIES

In this business we don't just comply with the standards; we set them.

At ProcessBarron, we set the standards for our craftsmen very high. Thousands of customers have trusted us to fabricate their fans...from small to large, from simple to complex designs, from common steel to highly exotic alloys. Our fans today move over a billion cubic feet per minute of process gases. For decades we have provided our customers with efficient, cost-effective solutions for their draft system problems.

Performance is rated and calculated in accordance with AMCA (Air Movement and Control Association) Standard 210 "Laboratory Methods of Testing Fans for Aerodynamic Performance Rating / ASHRAE Standard 51.

All rotating assemblies are welded to AWS (American Welding Society) Standard D14.6 "The Specification for Welding of Rotating Elements of Equipment". Static Parts are welded to AWS Standard D1.1. Balance dynamically to ANSI Standard S2.19, levels G6.3 or G2.5 as required or as defined for the application.

800-226-3267



## MACHINE SHOP

Our Machining Services Division supports our manufacturing plants by providing custom shafts, hubs and other machined component parts. We keep component parts and materials in stock to expedite turn-around in standard delivery times and maximize our response time in emergency situations keeping your downtime to a minimum.



## REPAIR AND REBUILD

ProcessBarron's engineers are experienced with erosion, corrosion, performance deficiencies and material fatigue associated with impeller operation that can lead to catastrophic failure. We recommend improvements in design that will provide life extension and/or minimize recurring maintenance problems.

Typically, we can redesign an impeller to change performance characteristics in an existing housing. If the housing cannot be reused, many times the re-designed fan can be adapted to existing foundations and ducting.





## EFFICIENCY UPGRADES

Our mechanical draft fan upgrade services can provide years of additional fan service. We routinely provide field assessments to evaluate equipment and identify opportunities for substantial cost savings through fan efficiency upgrades and/or design modifications.

ProcessBarron experts perform the following:

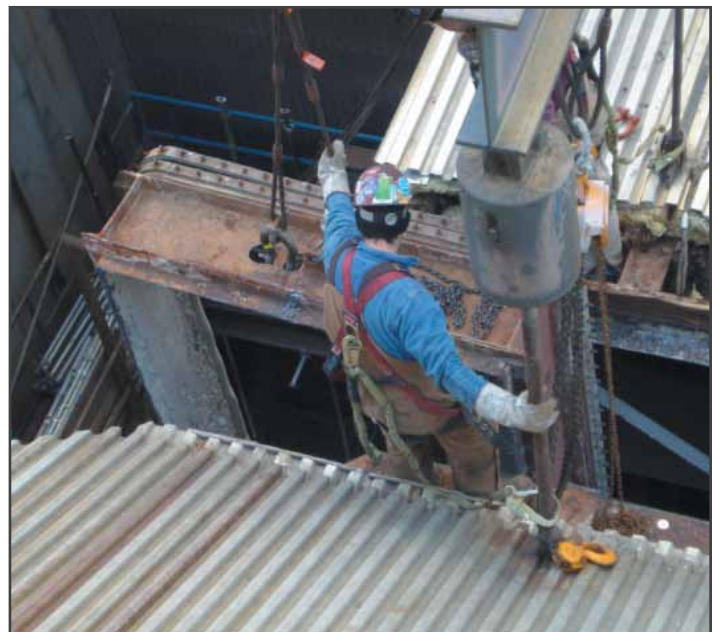
- Field measure existing designs in-place
- Design changes and modifications to correct existing problems
- Evaluate existing rotors to determine whether to repair or replace
- Wear pattern analysis and recommendations for new wear surface materials
- Analysis and recommendations to changes of existing bearings and power transmission equipment

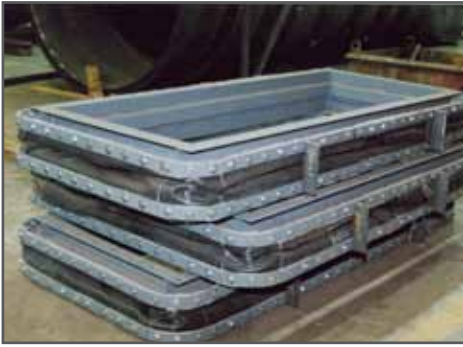
We regularly work with armoring materials such as AR plates, chrome carbide overlays, ceramic tiles, tungsten carbide tiles or overlays, white iron castings, spoiler beads, hub covers, hub bolt covers, etc. to improve rotating assembly life in harsh, erosive environments.

## EMERGENCY REPAIR

Wreck a fan? If you need an experienced team to repair, rebuild or replace an existing fan, then simply call ProcessBarron for quick turn around and minimal down time. Our emergency repair crews are on call 24/7.

For emergency repair, call: 800-226-3267





## AUXILIARY EQUIPMENT

Whatever the need, ProcessBarron has probably designed a fan for it. Our experience, and ability to provide equipment that always improves an “existing system”, makes ProcessBarron the only choice for all your air handling system needs.

ProcessBarron Fan Auxiliary and Air System Equipment:

- Fan Housings
- Expansion Joints
- Inlet and Outlet Dampers
- Ductwork and Stacks
- Dust Collectors
- Air Heaters
- Motors – standard NEMA to custom frames
- Wear Liners – including chrome carbide overlays, ceramic tile, abrasion resistant plate and plasma sprays
- Circulating Oil Systems – air to air cooled and water to oil cooled
- Actuators – electric and pneumatic
- Couplings
- Bearings
- Spring Isolation Bases
- Temperature Sensors
- Vibration Sensors
- Carbon Ring Gas Purged Seals
- Acoustical Inlet Silencers



## ONSITE SERVICES

ProcessBarron's Field Service Department specializes in the turnkey installation of our equipment. We also perform installation of equipment manufactured by others. When our team arrives, you can be guaranteed that you have the best available personnel working for you. We will work around the clock, if necessary, to meet your schedule. Our structural engineering knowledge and experience allows us to design structures to facilitate installation of large components in inaccessible places.

ProcessBarron's Technical Service Department is available to inspect, maintain and provide laser alignment and testing on existing equipment.

- Equipment Installation
- Repair and Preventive Maintenance
- Fan Balancing
- Vibration Analysis
- Laser Alignment
- Wear Pattern Analysis
- Fan and Draft System Testing
- Efficiency Improvements
- Equipment Field Measurement and Testing
- Start-up and Complete Turnkey Services
- 24 Hour Emergency Repair Services





## COMPANY SERVICES

### Fuel & Ash Handling Systems

- Fuel Receiving, Storage, & Delivery Systems
- Metering Bins, Screw, & Drag Reclaimers
- Screening & Hog Towers
- Custom Belt, Screw, & Drag Conveyor Designs
- Fly Ash & Bottom Ash Systems
- Custom Ash Drag & Screw Conveyors
- Fly Ash Conditioning & Truck Loading Systems
- Submerged Bottom Ash Drag Chain Conveyors
- Complete Turnkey Materials Handling Systems
- Double Dump Valves – Electric & Pneumatic
- Rotary Feeders – New & Repair
- Redesign & Retrofit

### Air & Gas Handling Systems

- Mechanical Draft Fans (Induced & Forced Draft)
- Boiler Upgrades & Stokers
- Economizers & Tubular Air Heaters
- Mechanical Dust Collectors
- Custom Dampers
- Fabric & Metal Expansion Joints
- Ductwork & Exhaust Stacks
- Fan & Vibration Analysis
- Draft System Assessment
- Engineering Analysis
- Efficiency Upgrades
- Repair & Rebuild

24 Hour Emergency Repair Services Available

**DESIGN • ENGINEER • FABRICATE • INSTALL • SERVICE • REPAIR • REBUILD**