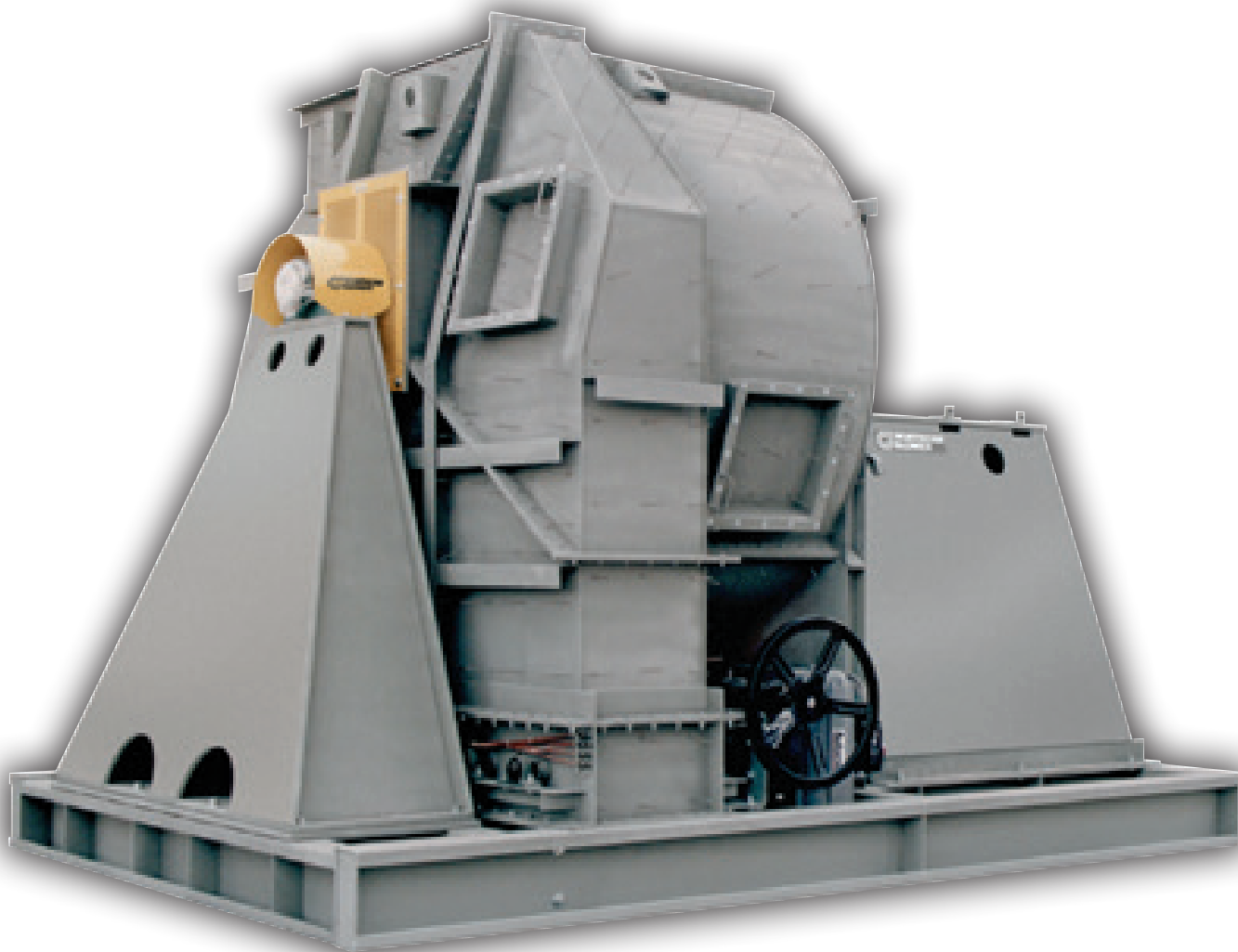


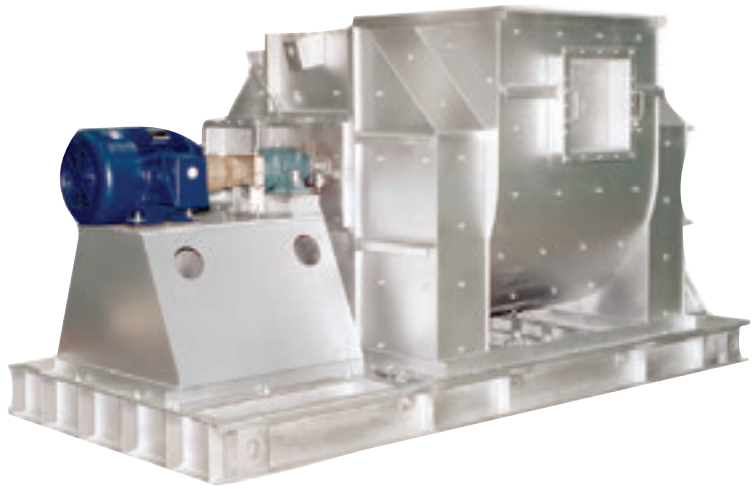
Northern Blower Inc.

Centrifugal Fans for Petro-Chemical Applications

Designed to Meet API Specifications



Induced draft furnace fan designed in accordance with API Standard 673 for a refinery cracking process. Size 3650 Design 5010 Double Width Fan in Arrangement 7D2, Class 4HD. Installed in Texas.



High Efficiency Fan Design

Fan Designs

Northern Blower offers a variety of fan designs to meet API Standards in conjunction with customer special requirements:

- Series 4000 Backward Curved
- Series 5000 Airfoil
- Series 5000 Backward Inclined
- Series 5700 Industrial Airfoil
- Series 6300 Radial
- Series 6400 Radial
- Series 8800 Radial Tip

Each Northern fan series has been designed to provide highly efficient operating characteristics over a broad range of system conditions. A specific fan can be precisely matched to a system's volume and pressure requirements to provide optimum efficiency and reduced operating costs.

The Industrial Airfoil fan shown on the front cover was designed specifically for a petro-chemical application in the Pacific Rim. Special API compliant features include split housing, inorganic zinc primer on all steel surfaces, stainless steel nameplate, inlet damper stuffing boxes, independent bearing pedestals, spring return pneumatic actuator, and spacer coupling. In addition, this fan was equipped with corrosion resistant aluminum guards (galvanized also available), constant-level bearing oilers, steam coil, inlet silencer, rain-hood and 50Hz motor.



73" diameter 4370 Backward Curved Wheel constructed of 304L stainless steel with A2205 blades.

Size 7300 Design 4370 BCI Fan in Arrangement 7S1 (450 hp, 1200rpm, 73" diameter, 304 SS airstream). Installed on a scrubber system at an ammonium nitrate production facility.



*Size 4900 Design 5730
Industrial Airfoil Fan
in Arrangement 7S1.
Forced draft fan for
a fertilizer plant.*



Reliable Operation



Reliable Operation... the Most Important Feature

Every Northern fan destined for a petro-chemical application is subject to rigorous engineering, manufacturing and inspection processes to ensure years of reliable operation.

Engineered to Last

Northern develops its petro-chemical fan designs with the aid of sophisticated engineering tools, including finite element analysis, strain gauge testing, and destructive testing. Air performance envelopes are verified using the standards of the Air Movement and Control Association. The result is a fan thoroughly engineered for reliable operation.

Reduced Operating Costs, Quiet Operation

Northern's exhaustive engineering efforts have resulted in petro-chemical fan designs that are among the most efficient available. More efficient fans reduce operating costs and generally reduce the noise associated with fan operation.

Built Rugged

Northern petro-chemical application fans are built to last. Material alloys and gauges are chosen to suit job-defined design criteria and are ordered with material certificates as required by specification. Welding is performed by CWB certified welders working to CSA W47.1 standards, and all fan wheels are dynamically balanced to ISO 1940 Grade 2.5 to ensure smooth fan operation. The entire manufacturing process is performed within the parameters of a rigorous QA program to ensure the finished product will meet the strict demands imposed by petro-chemical duty.

Available Petro-Chemical Features:

Northern's experience providing fan equipment to the petro-chemical industry has resulted in a vast array of custom options.

- Backstop Clutches
- Bronze Cooling Wheels
- Bearing Temperature Probes
- Code Standard Welding
- Corrosion Resistant Guards
- Flanged Connections
- Fanged Drains
- Forged Shafts
- Inlet Dampers, Outlet Dampers
- Inorganic Zinc Coatings,
or Special Coatings
- Inspection Doors
- Insulation Pins
- Lube Oil Systems
- Mechanical Run Tests
- Post Weld Heat Treatment
- Shaft Sleeves
- Sleeve Bearings
- Spacer Couplings
- Speed Switches
- Split Inlet Cone
- Stainless Steel Construction
- Stainless Steel Nameplates
- Turning Gear
- Variable Inlet Vanes
- Vibration Detectors



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Further information regarding Northern Blower products may be obtained through your local Northern Blower agent or representative or the Northern Blower factory:

Northern Blower Inc.

901 Regent Avenue West
Winnipeg, Manitoba
Canada R2C 2Z8

☎ 204.222.4216

☎ 204.222.7601

✉ info@northernblower.com

🌐 www.northernblower.com