

AIR MOVEMENT

Fiberglass Centrifugal Exhausters SERIES 82, 83, 87, 88

AIR MOVEMEN

Hartzell Air Movement 910 S. Downing Street Piqua, OH 45356-0919 Contact 1-800-336-3267 | info@hartzell.com

Website www.hartzellairmovement.com

THE HARTZELL DIFFERENCE

Building the highest quality fans in America for generations



QUALITY AT EVERY TURN.

Hartzell Air Movement exceeds the standard in the air movement industry, committed to delivering top-quality, reliable products. And our relationship with our customers, and our knowledgeable, inventive, flexible and hardworking employees are the reasons we've continued and thrived, right here in the USA, for six generations.

Customers choose Hartzell for our:

- Durability and high performance
- · Low cost of ownership
- Leadership in performance testing and certification
- Advanced engineering and manufacturing processes
- Innovative design and manufacturing
- Trusted brand name

Experienced Hartzell team to assist you from design to shipping

ISO 9001:2015 Certification AMCA Accredited Laboratory Complete Fans and Blowers Centrifugal Wheels Airfoil Propellers





HARTZELL ADVANTAGES

A LIFETIME OF VALUE

- Industrial fans are field proven, 100% tested, with virtually no incident of return
- Energy efficient designs that provide a lower total cost of ownership

LEADERSHIP IN PERFORMANCE

- Products certified by AMCA that meet DOE recommended efficiencies
- Highly efficient industrial fan designs that are the quietest in the market
- Airfoil shape blades with industry leading measured efficiencies

ADVANCED ENGINEERING & MANUFACTURING

- Proven manufacturing techniques on state of the art equipment in ISO 9001:2015 registered facilities
- Engineering team utilizes the latest design tools in 3D CAD and other modeling software

CREATIVE DESIGN & MANUFACTURING TEAM

- Offering the greatest number of industrial fan design choices
- Building products to meet your rigorous application; no limiting catalog

TRUSTED BRAND NAME

Extensive talent pool bringing over 145 years of knowledge and experience to you

5-YEAR WARRANTY

☐ The industry's first and only manufacturer that stands behind their products for a full 5-years



Register your 5 year warranty

Download your installation manual

Order replacement parts



HARTZELL WARRANTY

LIMITED WARRANTIES, LIMITATION OF LIABILITY, AND LIMITATION OF LIABILITY FOR BREACH OF WARRANTY

NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS

Hartzell does not warrant that said goods are of merchantable quality or that they are fit for any particular purpose. There is no implied warranty of merchantability and there is no implied warranty of fitness.

The details of the Hartzell warranty can be found at http://www.hartzellairmovement.com/warranty-service

PERFORMANCE GUARANTEED

Your products are only as good as the components that go into them. We know you have high expectations, and so does Hartzell Air Movement. We know you expect the most reliable and durable industrial air movement products available, so we're holding ourselves to a higher standard. We're so sure that our products will out-perform

industry standards, we're backing that promise with the industry's first – and only – five-year warranty.

At Hartzell, these are words we live by. They guide us every day. Good enough isn't how you design your products. It's not how we engineer, build and support our products — or provide ongoing service to our customers. When we looked at the industry standard two-year warranty, we knew we had to do better. And we did — by offering the Hartzell FIVE-YEAR WARRANTY.

Register for your 5year warranty at https://www.hartzellairmovement.com/warranty-and-parts/five-year-warranty



ADVANTAGES OF FIBERGLASS CONSTRUCTION

A variety of corrosion problems plague the water and wastewater industry. Although fans and blowers made of coated steel or metals such as stainless, Hastelloy and monel can handle some of these challenges, Hartzell's fiberglass products provide unsurpassed resistance to a great majority of corrosive elements at a cost substantially below that of corrosion resistant metals.



SUPERIOR CORROSION RESISTANCE



Solid, one-piece design from an RIM mold – up to 60" dia.
Consistent wheels and propellers with 98%+ exact wheels and propellers. Only variation is in the requested finishes.



Hartzell offers the *ONLY* fiberglass wheels & propellers available in a solid, one-piece design from the mold.

Repeatable Process

Available in 12" - 60" diameters

Much stronger wheels and propellers

Hartzell's fiberglass wheels and propellers are unique in the fan and blower industry.

They are manufactured as a single fiberglass piece using a multi-section RTM mold, ensuring that each wheel and prop is aerodynamically identical and provides reliable, repeatable performance without the variability of hand-made and taped components.

The superior design is a result of a substantial investment in research, development, tooling, and manufacturing methods by Hartzell Air Movement.

Fiberglass Product Overview



Fiberglass Centrifugal Exhausters

Low profile roof and wall exhaust solutions. Utilizes Type FE airfoil-bladed, one-piece, solid fiberglass wheel. Temperatures up to 125° F. Sizes 12" - 40" and 500 - 22,000 CFM.

Series 82 - Direct Drive, Downblast Series 83 - Belt Drive, Downblast Series 87 - Direct Drive, Upblast Series 88 - Belt Drive, Upblast Our Fiberglass Wall and Roof Ventilators are a major advantage for general ventilation applications where concentrations of corrosive elements exceed the limits of standard fans.

World-class OEM manufacturers, large and small, have partnered with Hartzell Air Movement for decades. They understand that their businesses rely on partners who share their commitment to design, engineer and manufacture only the best products. Hartzell provides the quality, durability and air movement performance you demand — and should expect — from your partner.

Flexible Design/Seamless Switchover

- Able to match your mounting panel, plug size and mounting holes
- We'll do what others won't/can't; willingness and capability to fully design-engineer a custom solution to fit your specific application
- Easily replaces competitive models; no lost changeover time or costs

CAD Drawings

- No waiting for drawings
- Build online via Hartzell's proprietary FLOW® software
- Drops directly into your existing design drawings

Next Generation Design Consultation

- Air movement engineering and application expertise at your service
- Proactive recommendations to improve your products
- An extension of your design and engineering teams

Delivery Commitment

- On time. Every time.
- Shared sense of urgency
- Experienced production and delivery planning fit to your schedule

Unsurpassed Service

- No-questions-asked service philosophy
- Immediate response
- Nationwide network of authorized sales reps

Fiberglass Centrifugal Exhuasters



Hartzell Fiberglass Centrifugal Exhausters provide a low profile roof or wall exhast solution in both downblast and upblast configurations. They provide a major advantage for general ventilation applications where concentrations of corrosive elements exceed the limits of standard fans. The fiberglass construction is not only resistant to corrosive elements, but also provides additional advantages such as weight, high strength to weight ratio and dimensional stability.

Series 88 Fiberglass Exhauster

Standard Construction Features

- Construction All structural parts in the airstream are either fiberglass resin or epoxy coated stainless steel. All fiberglass surfaces are protected with a minimum 10-mil thickness of chemical, flame, and ultraviolet resistant resin.
 - Housing Constructed of fiberglass and a corrosion resistant polyester resin with a class I flame spread rate of 25 or less
- Wheels Constructed of fiberglass and a corrosion resistant vinylester resin with a class I flame spread rate of 25 or less
- Hardware All internal hardware (airstream) is Type 304 stainless steel. All internal hardware (out of airstream) is zinc plated.
- Shaft Seal A fiberglass and neoprene shaft seal is placed where the shaft leaves the housing.
- Wiring Access Conduit tube between the motor enclosure and the curb panel provides wiring access without additional roof penetration.

For Direct Drive Units:

• Shafts – Direct drive units have extended shaft motors with mild steel shafts. 304 or 316 stainless steel or monel shafting is available as an option at an extra cost.

For Belt Drive Units:

- Shafts Turned, ground, polished, keyed at both ends and fiberglass enclosed in the airstream. Shafts are sized to operate well below critical speed. 304 or 316 stainless steel or monel shafting is available as an option at an extra cost.
- Bearings Bearings are heavy-duty, deep row radial ball type, self-aligning and shielded in cast iron housings. Long inner races insure even load distribution, providing a high radial and thrust load capacity. Bearings are relubricable.
- V-Belt Drives Oversized for long life and continuous duty. Fixed pitch or variable pitch drives are available upon request. Belts are oil, heat and static resistant type.

Series 82 & 83 (Downblast) | Fiberglass Exhausters Series 87 & 88 (Upblast) | Fiberglass Exhausters

Features:

- **Applications** Examples include paint and chemical storage facilities, gas transmission pump houses, battery charging facilities and wastewater/odor control pumping stations.
- Sizes 12" to 40"
- Performance 500 to 22,000 CFM
- Temperature Suitable for temperatures up to 125°F
- **Motor** Direct drive motors are standard with an extended shaft. Belt drive motors are standard t-frame. Motor and drive components are protected from the airstream and include internal isolation to minimize vibration. They are available in single or three phase, with two-speed and explosion proof motors available on some models.
- **FRP Materials** The dome ventilators consist of a fiberglass housing, fiberglass curb cap, and fiberglass motor cover all constructed of vinylester resin. The solid fiberglass wheel is molded with Derakane 510-A corrosion resistant vinylester resin. The unit has a formed fiberglass venturi inlet and outlet. All airstream hardware is 304 stainless steel.
- **Type FE Wheel** High efficiency, solid fiberglass wheel built in one piece using a multi-section mold. This process insures repeatability and provides sealed, stronger joints. The tapered inlet side and airfoil design efficiently moves large volumes of air at high pressures. The wheel has a non-overloading horsepower characteristic curve.





Series 88 Fiberglass Exhauster with Electrostatic Grounding and Hoods

For performance data, please visit www.hartzellflow.com or contact your local sales representative.



Hartzell Air Movement certifies that the Series 82 Fiberglass Direct Drive Downblast Exhausters, Series 83 Fiberglass Belt Drive Downblast Exhausters, Series 87 Fiberglass Direct Drive Upblast Exhausters, and Series 88 Fiberglass Belt Drive Upblast Exhausters, shown herein are licensed to bear the AMCA seal for sound and air performance. Ratings are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. For performance and sound data, please visit www.hartzellflow.com or contact your local sales representative.



Principal Dimensions (inches) – Series 82 & 83 Downblast

Fan Size	A (Ref)	В	С	D
12	327/16	20	30	2
15	333/16	24	341/8	2
18	42 ¹ / ₂	30	39¼	3
24	46	30	495/8	3
30	551%	36	54 ³ / ₈	3
36	601/2	42	645/8	3
40	63¾	48	645/8	3



Principal Dimensions (inches) – Series 87 & 88 Upblast

Fan Size	A (Ref)	В	С	D
12	32 ¹⁵ / ₁₆	20	30	2
15	337/16	24	341/8	2
18	42¾	30	39¾	3
24	461/4	30	495/8	3
30	56 ¹ / ₈	36	54 ³ / ₈	3
36	60¾	42	641%	3
40	64	48	641%	3

Series 88 Cross-Section View



A. Vibration Isolator

Reduces vibration and noise transfer between drive system and fan housing.

B. Drive Tensioning Bolts

Provides easy method to adjust belt tension.

C. Curb Panel

Integral adapter to aid in securing the fan to a roof curb.

D. Prefabricated Roof Curb (Optional)

Fiberglass prefabricated roof curbs are designed for metal, concrete or wood roof decks that are not surface insulated. They are available for flat, slope or peak roof installation in 8" or 12" heights. Custom curb construction is also available.

E. Type FE Wheel

Highly efficient, solid fiberglass wheel, built in one-piece using a multi-section mold, with a tapered inlet side, airfoil blades and a non-overloading horsepower characteristic curve. Available in clockwise rotation.

F. Birdscreen (Optional)

Stainless steel guard protects fan from birds and large debris.

Options and Accessories

ASTM D4167-97 Construction

(ASTM D4167-97, Standard Specification for Fiber-Reinforced Plastic Fans and Blowers.) For corrosive systems where ASTM construction is specified this construction option adds: synthetic veil and electrostatically conductive surface coating applied to airstream housing and impeller surfaces, special nameplates, and special final dynamic balancing to fan.

Optional Heavy-Duty Dampers

The Hartzell Series FEP are end-pivoted, gravity backdraft shutters constructed entirely of fiberglass.

- Maximum Temperature: 200°F
- Maximum Face Velocity: 2,500 FPM
- Maximum Differential Pressure: 1" W.G.
- Shipped loose for field mounting in roof curb.



Series FEP Fiberglass End-Pivoted Automatic Shutter

Performance Data





Series 88 Fiberglass Exhauster with Custom FRP Base

Disconnect Switch

Shipped loose for field mounting.

Bird Screen

304 stainless steel birdscreen available on all exhausters.

Prefabricated Curbs

The CT-1 fiberglass prefabricated curb shown is for flat roof installation of Hartzell centrifugal exhauster. The curb is designed for metal, concrete or wood roof decks that are not surface insulated. The curb is available either 8" or 12" high.

Model IRC-1 prefabricated curb constructed of galvanized steel is also available with identical features as Model CT-1. Galvanized models can be furnished with epoxy coating. Aluminum construction also available.

All prefabricated curbs can be

furnished for slope or peak bases. Prefabricated curbs are designed to support the weight of the fans cataloged herein and attachments not exceeding over 100 additional pounds in a 40 mph wind. Nonstandard curb construction is available.



Principal Dimensions (in.) - Series 82, 83, 87, 88

Fan Size	12	15	18	24	30	36	40
A	19¼	231/4	29 ¹ / ₄	29¼	35¼	41¼	47¼
В	271/4	31¼	37¼	37¼	43¼	49¼	55¼

WHAT IS CORROSION?

"Corrosion" refers to the destruction or deterioration of a material due to a reaction with its environment. Corrosive atmospheres can deteriorate fan equipment and lead to premature failure. This can result in costly repairs and downtime.

TO PROPERLY SELECT AND SPECIFY A FAN IN A CORROSIVE ENVIRONMENT YOU NEED TO CONSIDER THE FOLLOWING:



1: Identify Chemical Name – You must identify the chemical name (not tradename), temperature, and concentration of mixture as it passes through the fan. If two or more corrosives are mixed when they pass through the fan, that must be determined as well. When corrosive materials are manufactured, the method of manufacture sometimes allows traces of various chemical components used in the process to remain. These are referred to as impurities, and they can do more damage to the fans than the corrosives themselves. Corrosives that are in the air outside the fan can lead to structural, hardware, bearing, and drive component failures.



2: Liquid droplets – Drops of liquid passing through the fan are as effective as sandpaper at removing coatings and protective surfaces. These drops can erode the fan surface. Hartzell offers HartKoate coating on fiberglass fans. This ceramic finish is abrasion and corrosion resistant. It helps protect the fiberglass fan surface from eroding prematurely.



3: Purged Systems – Allowing a fan to run for a few minutes after the corrosive fumes have been shut off will often prevent many problems. If corrosive fumes collect in "nooks and crannies" in the system, they can become more concentrated. When these fumes cool, droplets condense out of suspension. The result is puddles of concentrated corrosives forming in the worst possible places. These lead to mechanical or structural defects. Purging the system by running the fan a few minutes longer can help prevent these build ups.

WHEN YOU NEED TO SELECT AND SPECIFY A FAN TO BE USED IN A CORROSIVE ENVIRONMENT, PLEASE CONTACT YOUR LOCAL HARTZELL SALES REPRESENTATIVE FOR THE PROPER INFORMATION AND ASSISTANCE TO DO THE JOB RIGHT.



various customer specifications and industry standards.

the link between the resin and the reinforcement materials. If that part is under stress, it can lead to premature failure. Surfacing veils also get used to create a thicker corrosion barrier, as detailed in



AIR MOVEMENT

OTHER PRODUCTS INCLUDE:



More than 50 Hartzell representative offices can provide specific performance and installation data to meet your requirements. Call your Hartzell Air Movement representative for assistance. Visit www.hartzellairmovement.com or call 800.336.3267 for the name of your representative.



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