

Comfortable energy efficient kitchen ventilation starts here.

Larkin specializes in ventilation comfort—for restaurants and other food service establishments. Our many top performing kitchen ventilation products reflect the industry's latest technological advances and will provide you with a fully integrated ventilation system that results in a positive, balanced building where customers and employees prefer to dine and work.

Our state-of-the-art, computer-aided product selection program (CAPS®) helps you select and configure products for your system, view real-time drawings and create AutoCAD® files quickly. You'll also like the friendly, responsive customer service we provide. Your Larkin representative is just a phone call or e-mail away, and is always well prepared to help you design a ventilation system that reduces future energy and operating costs.

We listen to you, our customer, when designing our diverse product line.

Larkin believes in continuous improvement. Our engineers are constantly developing and redesigning products, responding to the needs of our customers. Extensive prototype modeling and testing results in products that have higher efficiencies with lower installation and operating costs. Larkin engineers are focused on delivering reliable and convenient products that result in a positive ventilation experience.

Reliability and top performance are assured through extensive testing.

Larkin products are comprehensively tested for structural integrity, aerodynamic performance, sound levels, mechanical operation, vibration, temperatures, environmental impact and more. Fans are tested in our on-site third-party air chamber and registered sound testing facility. Larkin products carry several certifications including AMCA, UL, and ETL.

A single source for all your kitchen ventilation needs.

Whether it's a large project or a small one, Larkin will build and deliver your entire kitchen system quickly and efficiently. Our products range from kitchen hoods, exhaust fans, dedicated make-up air, packaged rooftops, controls, variable volume systems, fire suppression, utility distribution and more.

Selection Chart

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 XRUB	Roof Mounted Upblast Exhaust Fan	Belt	30,000	5 in. wg	4
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 XSEB	Sidewall Mounted Exhaust Fan	Belt	12,450	2.75 in. wg	4
 XSED	Sidewall Mounted Exhaust Fan	Direct	6,400	3 in. wg	4
 XRUBS	Roof Mounted Severe Duty Upblast Exhaust Fan	Belt	6,800	3.25 in. wg	4
 XIB	Indoor Mounted Non-Grease Transfer Fan	Belt	27,000	4 in. wg	11
 XID	Indoor Mounted Non-Grease Transfer Fan	Direct	5,000	2 in. wg	11
 XQEI	Indoor or Outdoor Mounted Inline Exhaust Fan	Belt	116,000	8 in. wg	11
 XTIF	Indoor or Outdoor Mounted Inline Exhaust Fan	Belt	26,000	4 in. wg	11
 XUEFD	Indoor or Outdoor Mounted Utility Set Exhaust Fan	Direct	6,500	3 in. wg	21
 XUEF	Indoor or Outdoor Mounted Utility Set Exhaust Fan	Belt	66,000	9 in. wg	21
 XRED	Roof Mounted Non-Grease Downblast Exhaust Fan	Direct	6,300	1.5 in. wg	30
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Roof Upblast and Sidewall Exhaust Fans

Overview

When you buy a Larkin roof upblast or sidewall exhaust model, you receive a fan with the industry's best performance and durability for general clean air, high grease and other contaminant applications (as found in food service and fume hood exhaust). Both, roof upblast and sidewall configurations, are specifically designed to discharge air directly away from the mounting surface. All fan sizes are tested in our AMCA Accredited laboratory, and all models are licensed to bear the AMCA Sound and Air Performance seal. Larkin subjects these products to extensive life testing, assuring you that the fans will provide many years of reliable performance.

You will also receive the following benefits with a Larkin roof upblast and sidewall exhaust fan:

- Leakproof construction for the entire life of the fan utilizing a one-piece windband that is continuously welded to the curb cap, which traps grease and protects the roof (roof upblast models only)
- Broadest performance in the industry, up to 5 in. wg (1,245 Pa) and 30,000 cfm (50,970 m³/hr)
- Most advanced motor cooling of any fan in its class
- Seismic Certification IBC 2009, 2012. OSHPD/OSP Certification



XRUB, XRUD, XSEB, XSED, and XRUBS models are listed for electrical (UL/cUL 705) File no. E40001.

XRUB, XRUD, XSEB, XSED and XRUBS models are available with the UL/cUL 762 Listing, Power Ventilators for Restaurant Exhaust Appliances. File no. MH11745.

Model XRUB, XRUD, XSEB, XSED, and XRUBS are AMCA Licensed for Sound and Air Performance.

For comprehensive product information including performance, contact your local Larkin representative.



* UL is optional and must be specified.

Roof Upblast and Sidewall Exhaust Fans



XRUB - Belt Drive

Model XRUB belt drive upblast centrifugal exhaust fans are specifically designed for roof mounted applications. Exhaust air is discharged directly upward, away from the roof surface. Performance capabilities range from 200 to 30,000 cfm (339 to 50,970 m³/hr) and up to 5 in. wg (1,242 Pa) of static pressure. Maximum continuous operating temperature is 400°F (204°C). Seismic certification to size 480.



XRUD - Direct Drive

Model XRUD direct drive upblast centrifugal exhaust fans are specifically designed for roof mounted applications. Exhaust air is discharged upward, away from the roof surface. Performance capabilities range from 70 to 6,400 cfm (119 to 10,874 m³/hr) and up to 3 in. wg (745 Pa) of static pressure. Maximum continuous operating temperature is 400°F (204°C). Seismic certification to size 200.

Standard Construction Features for Models XRUB and XRUD

Wheel – An aluminum, backward-inclined, non-overloading centrifugal wheel is utilized to generate high-efficiency and minimal sound. Wheel cones are carefully matched to the venturi for maximum efficiency. Each wheel is statically and dynamically balanced for long life and quiet operation.

Disconnect Switch – NEMA-1 switch is factory mounted and wiring is provided from the motor as standard (other switches are available). All wiring and electrical components comply with the National Electrical Codes (NEC) and are either UL/cUL Listed or Recognized.

Fan Shaft – Precisely sized, ground, and polished so the first critical speed is at least 25% over the maximum operating speed. Close tolerances, where the shaft makes contact with bearings, results in longer bearing life.

Bearings – 100% factory tested and designed specifically for air handling applications with a minimum L₁₀ life in excess of 100,000 hours (L₅₀ average life of 500,000 hours).

Motor – Carefully matched to the fan load and mounted out of the airstream.

Motor Cover – Aluminum construction. Stainless steel fasteners are attached for easy removal and access to the motor compartment and drive assembly.

Stainless Steel Fasteners – Allows for easy removal and access to the motor compartment and drive assembly.

Motor Cooling – Cooling fins located on top of the fan wheel draw outside air through a large breather tube, directly into the motor compartment. Positive motor cooling with fresh air results in maximum motor life.

Lifting Points – Select models have various lifting points located on the drive frame and bearing plates.

Vibration Isolation – True vibration isolators contain two independent studs with rubber neoprene to support the drive assembly and wheel for long life and quiet operation. (No steel-on-steel contact).

Drive Assembly – Belts, pulleys and keys are oversized 150% of driven horsepower. Machined cast pulleys are adjustable for final system balancing. Belts are static-free and oil-resistant.

Windband – One-piece, heavy-gauge aluminum, with a rolled bead for extra strength, directs exhaust air away from the mounting surface.

Leakproof Construction – One-piece windband is continuously welded to the curb cap and drain trough for leakproof protection on XRUD and XRUB, sizes 098 through 300 and all sizes with UL/cUL 762.

Mounting Holes – Aluminum curb cap has prepunched mounting holes to ensure correct attachment to the roof.

Drain Trough – Allows for one-point drainage of water, grease and other residue.

Internal Conduit Chase – For easy internal electrical wiring in applications not subject to NFPA.

Name Plate – Permanent stamped aluminum plate for exact model and serial identification number.

Seismic Certification – Certified to IBC 2009 and 2012, ASCE 7-05 and California OSHPD certification standards for all seismic design categories. OSHPD OSP# 0148-10, SDS Value 2.28, Maximum Certification Size 480.

Roof Upblast and Sidewall Exhaust Fans



XSEB - Belt Drive

Model XSEB belt drive centrifugal sidewall exhaust fans are ideal for exhausting contaminated air away from a building, where a roof mounted unit cannot be used. Performance capabilities range from 200 to 12,450 cfm (339 to 21,153 m³/hr) and up to 2.75 in. wg (683 Pa) of static pressure. Maximum continuous operating temperature is 400°F (204°C). Seismic certification to size 300.



XSED - Direct Drive

Model XSED direct drive centrifugal sidewall exhaust fans are designed to direct air out and away from buildings. Performance capabilities range from 70 to 6,400 cfm (119 to 10,874 m³/hr) and up to 3 in. wg (745 Pa) of static pressure. Maximum continuous operating temperature is 400°F (204°C). Seismic certification to size 200.

Standard Construction Features for Models XSEB and XSED

Wheel – An aluminum, backward-inclined, non-overloading centrifugal wheel is utilized to generate high-efficiency and minimal sound. Wheel cones are carefully matched to the venturi for maximum efficiency. Each wheel is statically and dynamically balanced for long life and quiet operation.

Disconnect Switch – NEMA-1 switch is factory mounted and wiring is provided from the motor as standard (other switches are available). All wiring and electrical components comply with the National Electrical Codes (NEC) and are either UL/cUL Listed or Recognized.

Fan Shaft – Precisely sized, ground, and polished so the first critical speed is at least 25% over the maximum operating speed. Close tolerances, where the shaft makes contact with bearings, results in longer bearing life.

Bearings – 100% factory tested and designed specifically for air handling applications with a minimum L₁₀ life in excess of 100,000 hours (L₅₀ average life of 500,000 hours).

Motor – Carefully matched to the fan load and mounted out of the airstream.

Motor Cover – Constructed of aluminum. Attached with stainless steel fasteners for easy removal and access to the motor compartment and drive assembly.

Motor Cooling – Cooling fins located on top of the fan wheel draw outside air through a large breather tube, directly into the motor compartment. Positive motor cooling with fresh air results in maximum motor life.

Vibration Isolation – True vibration isolators contain two independent studs with rubber neoprene to support the drive assembly and wheel for long life and quiet operation. (No steel-on-steel contact).

Drive Assembly – Belts, pulleys and keys are oversized 150% of driven horsepower. Machined cast pulleys are adjustable for final system balancing. Belts are static-free and oil-resistant.

Windband – One-piece, heavy-gauge aluminum, with a rolled bead for extra strength, directs exhaust air away from the mounting surface.

Mounting Holes – Galvanized mounting plate has prepunched mounting holes to ensure correct attachment to the wall.

Galvanized Birdscreen – Rigid wire protects the fan's discharge from birds and small objects. Standard on all sidewall fans.

Galvanized Mounting Plate – Allows mounting and sealing to the wall prior to mounting the entire unit. The remainder of the unit is attached to the mounting plate without locating and fastening problems associated with mounting a heavy sidewall unit to a wall.

Internal Conduit Chase – For easy internal electrical wiring in applications not subject to NFPA.

Name Plate – Permanent stamped aluminum plate for exact model and serial identification number.

Stainless Steel Fasteners – Allows easy removal and access to the motor compartment and drive assembly.

Seismic Certification – Certified to IBC 2009 and 2012, ASCE 7-05 and California OSHPD certification standards for all seismic design categories. OSHPD OSP# 0148-10, SDS Value 2.28, Maximum Certification Size 300.

Roof Upblast and Sidewall Exhaust Fans

XRUBS - Belt Drive



Model XRUBS is used for heavy grease exhaust applications as found in charbroilers, solid fuel cooking and oriental cooking. All sizes are UL Listed for commercial cooking applications and capable of 400°F (204°C) continuous operation. The entire unit is constructed of heavy-gauge steel and has a centrifugal backward-inclined steel wheel. Unit includes: clean out port, non-stick coated wheel, heat baffle, and a NEMA-3R disconnect switch. Performance up to 3.25 in. wg (807 Pa) and 6,800 cfm (11,553 m³/hr).

Standard Construction Features for Model XRUBS

Fan Shaft – Precisely sized, ground, and polished so the first critical speed is at least 25% over the maximum operating speed. Close tolerances, where the shaft makes contact with bearings, results in longer bearing life.

Bearings – 100% factory tested and designed specifically for air handling applications with a minimum L₁₀ life in excess of 100,000 hours (L₅₀ average life of 500,000 hours).

True Vibration Isolation – True vibration isolators contain two independent studs with rubber neoprene to support the drive assembly and wheel for long life and quiet operation. (No steel-on-steel contact).

Clean Out Port – Allows the outside of the wheel to be cleaned through a 4 inch diameter removable plug in the windband.

Non-Stick Coated Steel Wheel – Heavyweight steel wheel with a non-stick coating eliminates imbalance in heavy grease applications. The steel wheel is a backward-inclined, non-overloading centrifugal type.

Drain Trough – Allows for one-point drainage of water, grease and other residue.

Curb Cap with Mounting Holes – Steel curb cap has prepunched mounting holes to ensure correct attachment to the roof.

Hinged Base – Factory installed hinged base allows maintenance personnel to gain access to wheel and ductwork for regular inspection and cleaning.

Leakproof Construction – One-piece windband is continuously welded to the curb cap and drain trough for leakproof protection.

Drive Assembly – Dual belts, pulleys and keys are oversized 150% of driven horsepower. Machined cast steel pulleys are adjustable for final system balancing. Belts are static-free and oil-resistant.

Motor Cover – Steel construction. Stainless steel fasteners are attached for easy removal and access to the motor compartment and drive assembly.

Permator™ Coating – Unit is constructed of a minimum of 16-gauge steel. Entire unit is powder coated with chemical-resistant Permator™ finish.

Motor – Carefully matched to the fan load and mounted out of the airstream.

Windband – Uniquely spun one piece steel windband with a rolled bead for extra strength. Windband directs exhaust air away from the mounting surface.

NEMA-3R Disconnect Switch Mounted & Wired – All wiring and electrical components comply with the National Electrical Code (NEC) and are either UL/cUL Listed or Recognized.

Motor Cooling – Cooling fins located on top of the fan wheel draw outside air through a large breather tube, directly into the motor compartment. Positive motor cooling with fresh air results in maximum motor life.

Name Plate – Permanent stamped aluminum plate for exact model and serial identification number.

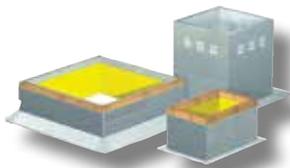
Heat Baffle – Extends motor life by reducing the amount of heat through the bottom of the motor support pan.

Lifting Points – Select models have various lifting points located on the drive frame and bearing plates.

Roof Upblast and Sidewall Exhaust Fans

Options and Accessories

Roof Curbs – Wide variety of roof curbs are available for mounting the fan to the roof, including: vented, flanged, pitched, and sound-absorbing.



Vented Curb Extensions – Mounts between roof curb and roof mounted fans to meet NFPA requirements of 40 in. (101.6 cm) minimum discharge above the roof when mounted on a minimum 8 in. (20.32 cm) high roof curb.



Disconnect Switches – Assorted NEMA rated switches are available for positive electrical shutoff and safety, including: dust-tight, rainproof and corrosion-resistant.



Hinge Kit – Allows maintenance personnel to hinge the entire fan up to gain access to wheel and ductwork for regular inspection and cleaning. (Roof Upblast only)



Hinged Base – Allows for easy maintenance. Hinge and restraining cables are factory mounted to a subbase attached directly to the curb without additional height added.

Grease Trap – Polypropylene trap designed to collect grease residue to avoid drainage onto roof surface.

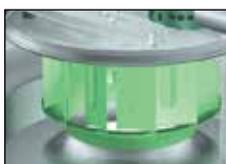


Grease Trap with Absorbent Material – Same as above, with an absorbent material to collect grease residue for easy disposal. (Roof Upblast only)



Windband Extension – Aluminum tube raises fan's discharge an additional 36 in. (91.44 cm) for special code requirements.

Non-Stick Wheel – Patented coating helps prevent wheel imbalance in heavy grease applications and allows build-up on wheel to be easily removed. Patent No. 5,809,993



EC Motor – 1/6 thru 2 hp high efficiency electronically commutated motors with built-in speed control capability available for direct drive fans with 115, 208-230, or 277V, 50 or 60 Hz, single phase power.



Coatings – Wide variety of coatings and colors are available for decorative to acidic applications.

PERMATECTOR™

Permatector™ is our standard coating, typically used for applications that require corrosion resistance in indoor and outdoor environments.

HI-PRO
POLYESTER

Hi-Pro Polyester is resistant to salt water, chemical fumes and moisture within more corrosive atmospheres.

BAKED
ENAMEL

Baked Enamel Decorative Coatings come in 16 standard, decorative colors or color match any color.

Clean Out Port – Patented removable plug allows for easy spray or steam cleaning of wheel through the windband. (Roof Upblast only) Patent No. 5,809,993



Birdscreen – Galvanized or aluminum rigid wire to protect the fan's discharge from birds or small objects. (Galvanized is standard on Sidewall)

Curb Seal – Rubber seal between fan and curb to assure proper sealing when attached to a curb.

Dampers – Designed to prevent outside air from entering back into the building when fan is off. Includes: backdraft and motorized dampers. (Not available with UL/cUL 762)



Drain Connection – Allows for single-point drainage of grease, water or other residue. (Roof Upblast only)

Speed Controllers – Available for use with shaded pole and permanent split capacitor open motors on direct drive fans. They provide an economical means of system balancing.



Fan Controls – Remote mounted dial, two-speed control, touch remote, temperature/humidity, volatile organic compounds, transformer and constant pressure for applications such as bathrooms, dryers, filters, etc.

Roof Upblast and Sidewall Exhaust Fans

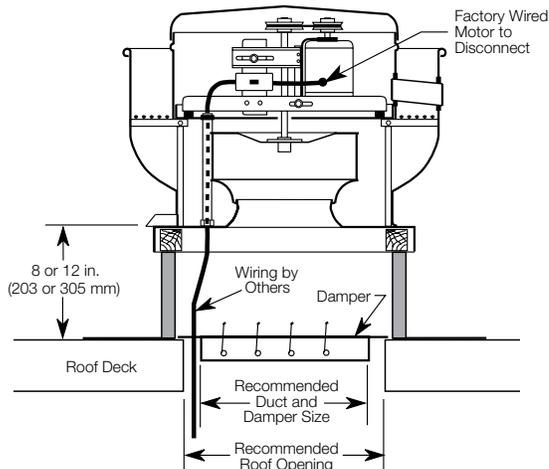
The following chart shows which options and accessories are available on Larkin's roof upblast and sidewall exhaust fans.

	XRUB	XRUD	XSEB	XSED	XRUBS
Options and Accessories					
Roof Curbs	Optional	Optional	—	—	Optional
Vented Curb Extensions	Optional	Optional	—	—	Optional
Disconnect Switches	Standard	Standard	Standard	Standard	Standard
Bracket Hinge Kit	Optional	Optional	—	—	Optional
Hinge Kit	Optional	Optional	—	—	Optional
Hinged Base	Optional	Optional	—	—	Standard
Grease Trap	Optional	Optional	—	—	Optional
Grease Trap with Absorbent Material	Optional	Optional	—	—	Optional
Non-Stick Wheel	Optional	Optional	Optional	Optional	Standard
Windband Extension	Optional	Optional	—	—	Optional
Coatings	Optional	Optional	Optional	Optional	Standard
Clean Out Port	Optional	Optional	—	—	Standard
Birdscreen	Optional	Optional	Standard	Standard	—
Self-Draining Grease System	Optional	Optional	—	—	Optional
Curb Seal	Optional	Optional	—	—	Optional
Dampers	Optional	Optional	Optional	Optional	—
Drain Connection	Optional	Optional	—	—	Optional
Speed Controllers	—	Optional	—	Optional	—
Electronically Commutated Motor	—	Optional	—	Optional	—
Fan Controls	—	Optional	—	Optional	—

Roof Upblast and Sidewall Exhaust Fans

General Clean Air or Fume Hood (Non-Grease)

Exhaust fans are designed for applications ranging from clean air to contaminated air. A typical installation is shown. Sizes 095 and smaller can handle temperatures up to 160°F (71°C).

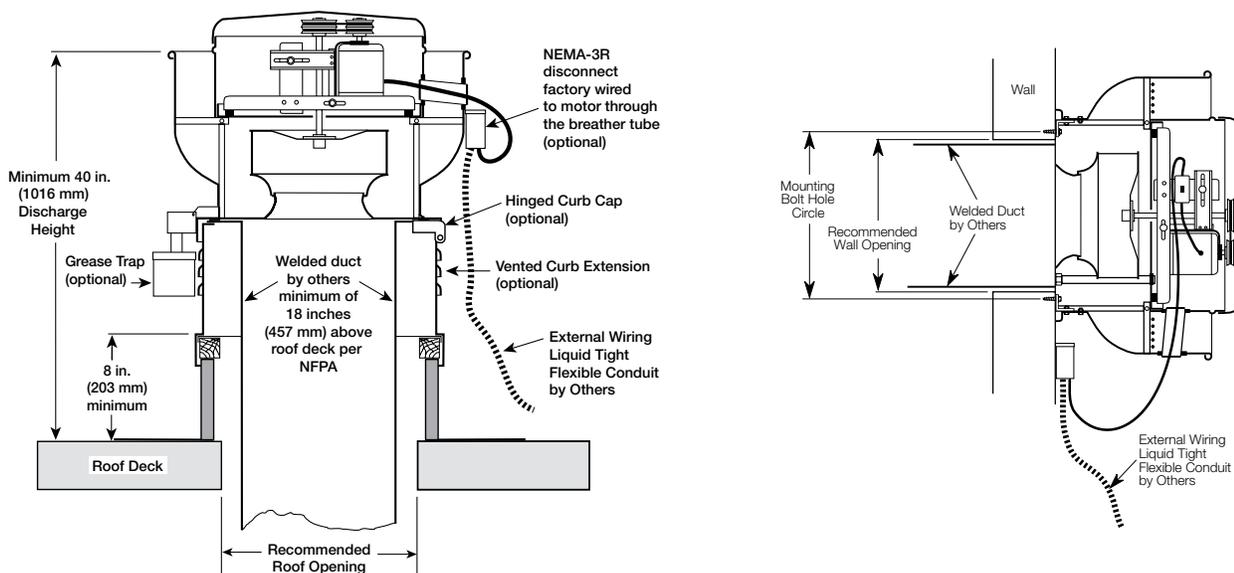


Commercial Kitchen (Grease)

Sizes 099 and larger are designed to meet restaurant and food service applications. These fans are UL/cUL 762 Listed for grease removal and have been tested under high temperature [400°F (204°C)] and abnormal flare-up [600°F (316°C)] conditions.

Due to high temperatures and grease-laden airstreams in commercial kitchen ventilation, system designers must be aware of governing codes and guidelines. The National Fire Protection Association (NFPA) is the primary source upon which many codes for commercial kitchen's ventilation are based. Selected information from NFPA is shown below. Local code authorities should be consulted before proceeding with any kitchen ventilation project.

- Exhaust fans used in kitchen ventilation applications must have external wiring (wiring must not be installed in the airstream).
- Installation must include a means for inspecting, cleaning and servicing the exhaust fan (e.g. hinged curb cap).
- No dampers are to be installed in the system.



Note: Above installations are recommendations based on national codes. Local authority may supersede these recommendations.



Inline Fans

Overview

Model XIB and XID centrifugal backward-inclined belt or direct drive fans, are designed for clean air applications (intake, exhaust, return, or make-up air systems), where space is a prime consideration.

- Performance range: 30 to 27,000 cfm (51-45,873 m³/hr)
- Static pressure: Up to 4.0 in. wg (993 Pa)
- Maximum operating temperature: 180°F (82°C)



Model XQEI uses a mixed flow wheel for quiet operation with high efficiencies in low to medium pressure ducted systems. Units are available for mounting in horizontal or vertical for installations. Motor positions can be rotated in the field. Fans are available in 17 sizes, 9 through 60 inches.

- Performance range: 500 to 116,000 cfm (850 to 197,000 m³/hr)
- Static pressure: Up to 5 in. wg (1245 Pa) Class I
Up to 8 in. wg (1990 Pa) Class II
- Maximum operating temperature: 200°F (93°C)



Model XTIF inline centrifugal fans are designed for ducted inline installations. Larkin's tubular centrifugal fans provide quiet, efficient and reliable air performance. All XTIF products are belt driven with motors out of the airstream to prevent grease buildup. Housings are constructed of welded steel or aluminum (optional), and are suitable for indoor or outdoor applications. The backward-inclined wheels are manufactured from aluminum and are suitable for clean air and restaurant exhaust applications.

- Performance range: 300 to 26,000 cfm (500 to 44,200 m³/hr)
- Static pressure: Up to 4.0 in. wg (993 Pa)
- Maximum operating temperature: 200°F (93°C)



XIB, XID, XQEI and XTIF models are listed for electrical (UL/cUL 705) File no. E40001.

Model XQEI is available with the UL/cUL 762 Listing, Power Ventilators for Restaurant Exhaust Appliances. File no. MH11745

Model XIB, XID, XQEI, and XTIF are AMCA Licensed for Sound and Air Performance.

For comprehensive product information including performance, contact your local Larkin representative.



* UL is optional and must be specified.

Model XTIF is available with the UL 762 Listing, Power Ventilators for Restaurant Exhaust Appliances. File no. MH11745



* UL is optional and must be specified.

XIB/XID - Inline Fan



Larkin's model XIB and XID centrifugal inline fans feature a unique combination of installation flexibility, rugged construction, ease of service, high-efficiency and low sound levels. These compact inline fans are the ideal selection for indoor clean air applications (including intake, exhaust, return, or make-up air systems), where space is a prime consideration. Installation costs are reduced because the need for costly square-to-round transition pieces are eliminated. The square housing design, compact size and straight through airflow give the system designer the flexibility to mount XIB/XID fans horizontal, vertical or at any angle.

Typical applications include:

- General exhaust
- General supply
- Transfer air

Note: Not rated for contaminated air applications.

Standard Construction Features

Cabinet Construction – The fan housing is constructed of rigid structural members and formed galvanized steel panels. (Aluminum construction is optional on all XIB sizes 70-300 and XID sizes 60-160)

Wheel – An aluminum, backward-inclined, non-overloading, centrifugal wheel is utilized to deliver maximum efficiency. Each wheel is statically and dynamically balanced.

Duct Collars – Inlet and discharge duct collars are provided for easy duct connection. The square design also provides a larger discharge area than tubular centrifugal and vane axial fans, so outlet velocities are reduced for quieter operation.

Drive Frame – Constructed from heavy-gauge steel. Belt adjustment is accomplished by loosening fasteners, sliding the motor plate and re-tightening fasteners.

Motor – Permanently lubricated, sealed ball bearing motors are selected to provide years of trouble-free operation with minimal maintenance.

Bearings – 100% factory tested and designed specifically for air handling applications with a minimum L₁₀ life in excess of 100,000 hours [L₅₀ average life of 500,000 hours].

Drive Assembly – Drives are sized for a minimum of 150% of driven horsepower. Machined cast iron pulleys are factory set to the required RPM and adjustable for final system balancing. Belts are static-free and oil-resistant.

Fan Shaft – Precisely sized, ground, and polished so the first critical speed is at least 25% over the maximum operating speed. Close tolerances, where the shaft makes contact with bearings, results in longer bearing life.

Disconnect Switch – NEMA-1 disconnect switch is factory mounted and wiring is provided from the motor as standard. All wiring and electrical components comply with the National Electric Code and materials are UL Listed. (Other NEMA enclosure disconnect switches are optional).

Access Panels – The cabinet construction features two side access panels. Access panels permit easy access to all internal components.

XQEI - Inline Fan



A belt drive model with premium levels of construction and performance. XQEI utilizes a mixed flow wheel and air straightening vanes for higher efficiencies, lower horsepower and lower sound levels. Often used in commercial and industrial applications such as libraries, theaters, garages – involving everything from clean air to grease exhaust to high temperatures.

Typical applications include:

- Restaurant grease exhaust
- Fume hood exhaust (special coatings available)
- General exhaust or supply
- Combustion air
- Industrial space ventilation
- Roof exhaust or supply (with weatherhood)

XQEI Class I and II fans have different wheel designs with different performance characteristics. When selecting a mixed flow fan, it cannot be assumed that moving into a Class II fan will produce the same results as a Class I mixed flow fan.

Class I mixed flow wheels are optimized for performances involving low pressures and high volumes. **Class II** wheels are designed for a steeper fan curve with high pressure capabilities.

Standard and Optional Construction Features

Housing – Tubular housings are constructed of welded steel to eliminate air leakage. Integral straightening vanes are constructed from steel and welded into place.

Wheel – Mixed Flow – Fabricated wheels are constructed from steel. The blade profiles are angled and contoured for the most efficient and quiet performance.

Bearings – Standard bearings are premium air handling quality, grease lubricated, self-aligning, ball or roller type. Bearings are selected with a basic rating fatigue life L_{10} per ABMA standards, in excess of 80,000 hours (L_{50} at 400,000 hours) at the maximum operating speed for the XQEI-I/II in the horizontal position.

Bolted Access Door – A bolted access door provides an opening through the fan housing for cleaning or visual inspection of the wheel. A hinged access door is available as an accessory.

Belt Guard – A totally enclosed belt guard provides protection from rotating pulleys and belts. Belt guards meet OSHA guidelines.

Slip-Fit Duct Connection – Inlets and outlets are designed with extended collars for slip-fit duct connections as standard.

Adjustable Motor Bases – Rigid, heavy-gauge steel motor bases are welded to the fan housing and include heavy-duty adjustment screws for belt tensioning.

Extended Lube Lines – Units have nylon lubrication lines with grease fittings that allow bearing lubrication without disassembling the fan. Grease fittings are mounted on the outside of the fan housing. Smaller frame sized motors are typically sealed and not lubricatable.



Permatector™ Coating – A thermosetting polyester urethane, electrostatically applied to provide uniform thickness and a clean appearance. Permatector™ coatings also provide excellent corrosion characteristics for general applications, both indoor and outdoor.

Optional Construction Features

Type B or C Spark Resistance – XQEI is available with spark resistant designs suitable for applications that involve flammable particles, fumes or vapors. Spark resistant construction options adhere to guidelines defined with AMCA Standard 99-0401-10.

Spark B Sizes 9 - 33	The fan wheel is constructed of a nonferrous material (aluminum). A non-ferrous (aluminum) bearing cover surrounds the driven bearing, shielding it from the airstream.
Spark C All Sizes	The inlet cone is constructed of non-ferrous material (aluminum). A non-ferrous (aluminum) bearing cover surrounds the driven bearing, shielding it from the airstream.



XTIF - Inline Fan



Model XTIF inline fan is the ideal choice for ducted systems. Larkin's standard fan can be mounted in any position from horizontal to vertical, allowing installation in the smallest possible space, at the lowest installation cost. The centrifugal wheel used in this design provides higher efficiencies and lower sound levels than propeller type inline fans when used in medium-pressure ducted systems. XTIF fans are available in either painted steel or aluminum construction.

Typical applications include:

- Restaurant grease exhaust
- Fume hood exhaust (special coatings available)
- General exhaust or supply
- Combustion air
- Industrial space ventilation
- Roof exhaust or supply (with weatherhood)

All XTIF inline fans are available in two levels of construction to provide the most efficient and economical selections. Construction differences between Level 1 and 2 selections include: the impeller, the inlet cone, the shaft size, and the bearings. The housings for both levels are identical in material gauge and overall design.

Level 1 Construction

- Maximum pressure capabilities of 2 in. wg (500 Pa)
- Highest efficiencies at static pressures below 1.5 in. wg (375 Pa)
- Riveted, partially welded aluminum wheel construction
- Most economical selection

Level 2 Construction

- Maximum pressure capabilities of 4 in. wg (993 Pa)
- Highest efficiencies at static pressures above 1.5 in. wg (375 Pa)
- Completely welded aluminum wheel
- Increased shaft and bearing diameter
- Increased horsepower and motor frame size capability



Standard Construction Features

Inlet & Outlet Flanges – Flanged inlets and outlets with mounting holes are provided for duct connections.

Housing – Housings are continuously welded steel and powder coated with Permator™.

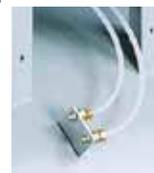
Protective Coating – All steel constructed units are powder coated with Permator™, a thermosetting polyester urethane. Aluminum units are uncoated.

Type B Spark Resistance – All fans have aluminum wheels and a non-ferrous (aluminum) rub ring which surrounds the fan shaft where it passes through the drive cover. This construction meets Type B spark-resistant requirements.

Bearings – Standard bearings are grease lubricated, self-aligning, ball type in pillow block mounts. Bearings are selected for a minimum L₁₀ life in excess of 80,000 hours (L₅₀ average life of 400,000 hours) at maximum cataloged operating speeds.

Belt & Bearing Tube – Belts, bearings, and drives are protected from the airstream by heavy-gauge belt tubes and bolted bearing covers with shaft seals.

Extended Lube Lines – Lubrication lines with grease fittings allow bearing lubrication without disassembling the fan.



Optional Construction Features

Aluminum Construction – Aluminum construction is available on the XTIF fans and is an excellent choice for applications involving moisture or coastal installations.

Easy Access Construction – The easy access option is highly recommended to allow for inspection, cleaning and service of internal fan components. By removing one access panel, service to the wheel, shaft, and bearing assembly is possible without removing duct connections. In addition, all internal fan components can be removed from the fan through the easy access panel.

Easy access construction is available on all levels and sizes of XTIF and is also available with aluminum construction fans.



Inline Fans

Optional Construction • UL 762 Restaurant Exhaust for Models XTIF and XQEI

Inline grease exhaust fans are excellent alternatives for kitchen applications when roof or wall mounted ventilators are not practical. The XTIF and XQEI with UL 762 grease option is designed to withstand the demands of high temperature kitchen grease exhaust and high-pressure duct washes.

Leak-Resistant Construction Features

- Continuously welded housing and integral duct flanges, provide air and water tight design.
- Gasketed bearing cover, including a labyrinth shaft seal to prevent moisture leakage during normal operation, while cleaning with high-pressure solvents.
- Continuously welded belt tube keeps the belts and bearings clean.
- Threaded drain connections are located 90° from the motor location to allow for removal of grease and moisture.

Mounting and Serviceability Features

- Duct flanges and access door bolt locations are no more than 4 inches (100 mm) on center per NFPA 96.
- “Easy Access Door” provides access for duct cleaning, and allows removal of the wheel, shaft and bearings for maintenance. Gasket is rated for 400°F (204°C) and prevents leakage during operation. (XTIF only).

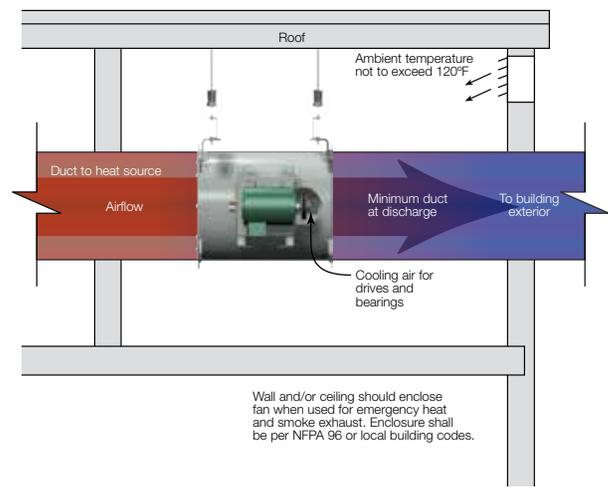
System Design Guidelines

- Inline grease exhaust fans should be installed near the end of the duct run to reduce sound at the hood.
- Inline fan must be securely bolted to the exhaust duct per NFPA 96 guidelines. Larkin’s companion flanges are recommended for ease of installation.
- Grease exhaust fans and ductwork must maintain 18 inches (46 cm) minimum clearance to combustible material. If the ductwork and fan are insulated, the inspection door must be accessible for maintenance.
- A minimum of 10 ft. (3.0 m) of clearance must be kept from the fan outlet to adjacent buildings, property lines, or the closest point of any air intake or operable window at or below the plane of the exhaust termination.
- Larkin recommends that all inline grease applications be reviewed by your local code official to ensure compliance with NFPA, IMC and other local codes.

<p>XTIF</p>  <p>Listed Power Ventilation for Restaurant Exhaust Appliances 13G3 Maximum Operating Temperature 300°F (149°C).</p>	<p>XQEI</p>  <p>Listed Power Ventilation for Restaurant Exhaust Appliances 13G3 Maximum Operating Temperature 400°F (204°C).</p>
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UL 762 is concerned with fans designed for removal of smoke and grease-laden vapors with airstream temperatures up to 400°F (204°C).

- Meets all UL 705 requirements
- Bolted access door
- Drain connection
- Meets requirements of NFPA 96 Ventilation Control and Fire Protection of Commercial Cooking Operations



Inline Fans

Options and Accessories

Belt Guard – Belt guards are totally enclosed to provide protection from rotating pulleys and belts. Belt guards meet OSHA guidelines.

Motor Cover (Weatherhood) – Weatherproof motor covers shield the motor and drive components from dust, dirt and moisture when used in outdoor applications. Motor covers also provide protection from rotating pulleys and belts, and meet OSHA guidelines.

Inlet & Outlet Companion Flanges – Companion inlet flanges and outlet flanges with prepunched holes are available for all fan sizes in painted steel construction.

Inlet & Outlet Guards – Removable inlet and outlet guards provide protection for personnel and equipment in non-ducted installations. These guards meet OSHA guidelines.

Inspection Door – Bolted or hinged doors provide access for cleaning or inspection.

Inspection Section – Inspection sections serve as a length of duct that can be easily removed to provide complete access to the fan for servicing. Each section includes a bolted inspection door.

Isolators – Both, base mount or hanging isolators, are available in either neoprene or spring mounts. The isolators are furnished in sets of four and sized to match the weight of each fan.

Mounting Rails – Mounting rails are required for horizontal mounting of XQEI and XTIF fans when the motor is to be located in the 3 or 9 o'clock position. Mounting rails are also recommended for all vertically mounted inline fans.

Aluminum Construction – Aluminum construction is available for all direct drive sizes 60-160 and belt drive sizes 70-300.

EC Motor (XID only) – 1/6 thru 2 hp high efficiency electronically commutated motors with built-in speed control capability available for direct drive fans with 115, 208-230, or 277V, 50 or 60 Hz, single phase power.

Speed Controllers – Available for use with shaded pole and permanent split capacitor (PSC) open motors on model XID fans. They provide an economical means of system balancing with direct drive fans.

Fan Controls – Remote mounted dial, two-speed control, touch remote, temperature/humidity, volatile organic compounds, transformer and constant pressure for applications such as bathrooms, dryers, filters, etc.

Direct Drive Motor Cover – Formed galvanized steel motor covers are available to isolate direct drive motors from the airstream. When motor covers are furnished, vents to the exterior of the fan are provided to ensure sufficient motor cooling.

Gravity Dampers – Gravity or motorized parallel blade dampers (Model WD-330) are available for duct mounting. These dampers feature sturdy galvanized frames with prepunched mounting holes, aluminum blades with felt edges and a balanced design for minimal resistance to airflow.

Control Dampers – Square opposed blade volume control dampers (Model VCD) are available for duct mounting. These dampers feature sturdy galvanized frames with prepunched mounting holes, steel blades with vinyl seals and flexible metal jamb seals. A balanced design results in minimal resistance to airflow.

Coatings – Wide variety of coatings and colors are available. Decorative coatings are available in sixteen different colors. Protective coatings are available in a choice of five electrostatic applied powders providing an available selection for most environments.

Wiring Pigtail – Allows direct hook-up to the power supply (eliminating field wiring at the fan).

Pressure Probe – A 1/4-inch diameter tube in the fan venturi allows hook-up to the manometer (for static pressure measurement).

Insulated Housing – For noise reduction and condensation control, the interior of the fan housing can be lined with a fiberglass duct liner (1/2 and 1 inch being standard). The optional motor cover can also be insulated.

The table below depicts the dB reduction that can be obtained in each octave band for the insulated housing and motor cover together.

Approximate dB Sound Attenuation								
Octave Band	1	2	3	4	5	6	7	8
Sizes 60 - 130	-2	-7	-4	-4	-6	-13	-13	-9
Sizes 140 - 420	-3	-2	-5	-4	-5	-5	-7	-8

Electrical Accessories

Toggle type and heavy-duty disconnect switches are available for positive electrical shut off and safety in servicing fans.

Enclosure	Application	Toggle	Heavy-Duty
NEMA-1	Indoor, General Purpose	Yes	Yes
NEMA-12	Indoor, Dust/Drip Tight	Yes	Yes
NEMA-3R	Indoor/Outdoor, Rainproof	Yes	Yes
NEMA-4	Indoor/Outdoor, Watertight	Yes	Yes
NEMA-4X	Indoor/Outdoor, Watertight (Corrosion-Resistant)	Yes	Yes
NEMA-7 & 9	Indoor/Outdoor, Hazardous Locations	Yes	No

Inline Fans

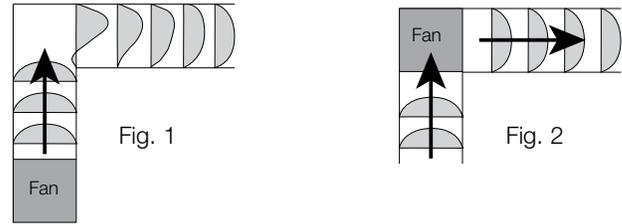
The following chart shows which options and accessories are available on Larkin's inline fans.

	XIB	XID	XQEI	XTIF
Options and Accessories				
Belt Guard	—	—	Optional	Optional
Motor Cover	Optional	Optional	Optional	Optional
Inlet and Outlet Companion Flanges	—	—	Optional	Optional
Inlet and Outlet Guards	Optional	Optional	Optional	Optional
Inspection Door	Standard	Standard	Standard	Optional
Inspection Section	—	—	—	Optional
Isolators	Optional	Optional	Optional	Optional
Mounting Rails	Optional	Optional	Optional	Optional
Inlet Vane Dampers	Optional	Optional	—	—
Aluminum Construction	Optional	Optional	—	Optional
Speed Controllers	—	Optional	—	—
Gravity Dampers	Optional	Optional	—	—
Control Dampers	Optional	Optional	—	—
Coatings	Optional	Optional	Standard	Standard
Wiring Pigtail	Optional	Optional	—	—
Insulated Housing	Optional	Optional	—	—
Drain Connection	—	—	Standard	Standard
Disconnect	1	1	3R, 4, 4X, 12	3R, 4, 4X, 12
Electronically Commutated Motor	—	Optional	—	—
Fan Controls	—	Optional	—	—

Inline Fans

Side Discharge Option

The side discharge option provides several advantages, from removing a system effect problem, increasing performance, or even reducing installation labor. The most notable is reducing system effects. In Fig. 1, notice how the air, when discharged into the corner, will take several duct lengths before becoming smooth again. This is not the case with a side discharge. Notice now in Fig. 2 as air comes into the fan/corner and leaves the fan/corner, you have nice smooth airflow providing a more predictable system. (Duct length prior to or following the installation location should be approximately two to three wheel diameters to achieve cataloged performance).



Discharge Configuration

Make sure discharge is oriented in the same direction as originally ordered, as performance will change with different discharge positions. Right side discharge will give you 108% of cataloged performance and left side will give you 109% of cataloged performance. Refer to Fig. 3 to locate an orientation that fits your application and Fig. 4 and 5 for proper side discharge definition. Consult factory for performance modifications.

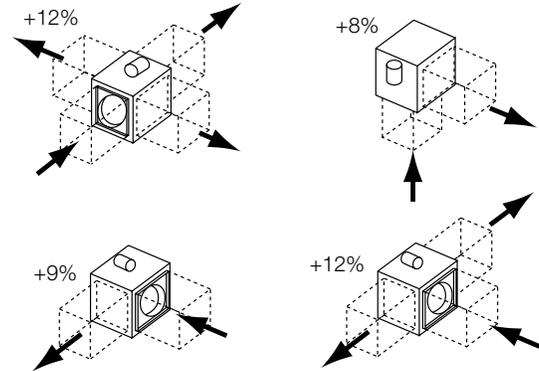


Fig. 3

Percentages based on cataloged performance.

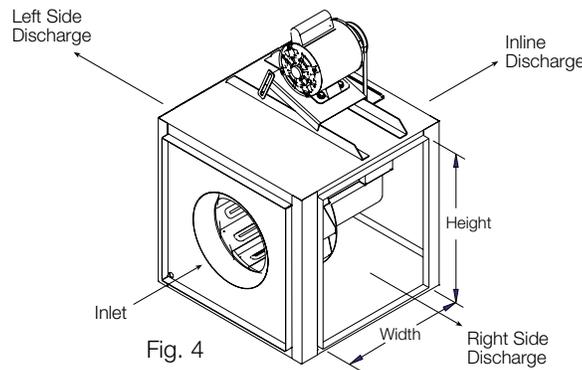


Fig. 4

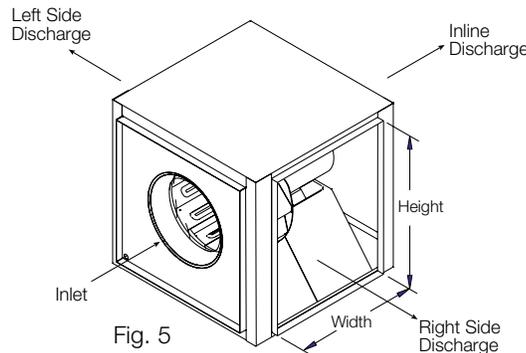


Fig. 5

XIB Side Discharge Duct Openings

Unit Size	Width	Height
70, 80, 90, 100	12½	13⅝
120	12½	15⅝
130, 130HP	12½	17⅝
140, 140HP	13½	19⅝
160, 160HP	17½	22⅝
180, 180HP	19½	23⅝
200, 200HP	23½	27⅝
240, 240HP	25½	34⅝
300, 300HP	31⅝	41⅝
360, 360HP	32⅝	37⅝
420	34⅝	43⅝

XID Side Discharge Duct Openings

Unit Size	Width	Height
60, 65, 70, 75	9⅞	8⅞
80, 85, 90, 95	12⅞	11⅞
97, 98, 99	13⅞	11⅞
100	13⅞	13⅞
120	15⅞	15⅞
130, 130HP	17⅞	17⅞
140, 140HP	19⅞	19⅞
160, 160HP	22⅞	22⅞

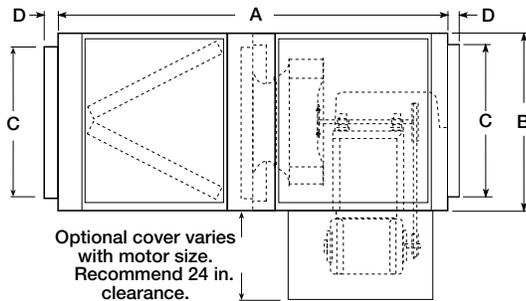
Inline Fans

Filter Boxes

The filter box is designed to provide a compact, convenient, and clean air solution. Factory-assembled as a single unit, this fan eliminates the costly process of designing, fabricating and installing special remote filter box assemblies. Both, the fan and filter section, feature removable access panels on both sides to remove and replace filters, making fan maintenance simple and fast.



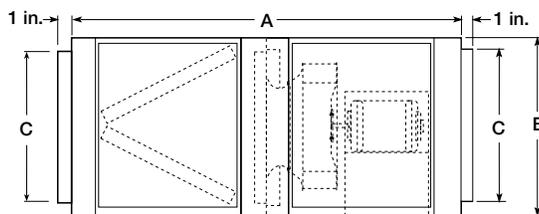
Model XIB



Unit Size	A	B	C	D	WT.	Filter Size	Qty.
70, 80, 90	53 ⁷ / ₈	17 ¹ / ₈	11 ¹ / ₈	1 ¹ / ₂	168	16 x 20	2
100	53 ⁷ / ₈	17 ¹ / ₈	13 ³ / ₈	1 ¹ / ₂	169	16 x 20	2
120	58 ³ / ₄	19 ⁹ / ₈	15 ⁵ / ₈	1 ¹ / ₂	194	16 x 25	2
130, 130HP	53 ¹ / ₄	21 ¹ / ₈	17 ¹ / ₈	1 ¹ / ₂	197	20 x 20	2
140, 140HP	59	23 ³ / ₈	19 ¹ / ₈	1 ¹ / ₂	231	20 x 25	2
160, 160HP	58 ³ / ₄	26 ¹ / ₈	22 ¹ / ₈	1 ¹ / ₂	285	20 x 20	4
180, 180HP	60 ³ / ₄	27 ¹ / ₈	23 ³ / ₈	1 ¹ / ₂	293	20 x 25	4
200, 200HP	69 ⁵ / ₈	31 ¹ / ₈	27 ¹ / ₈	1 ¹ / ₂	361	12 x 25	3
						16 x 25	3
240, 240HP	71 ¹ / ₂	38 ³ / ₈	34 ¹ / ₈	1 ¹ / ₂	496	20 x 25	4
						16 x 25	4
300, 300HP	72 ¹ / ₂	46	41 ¹ / ₈	1 ¹ / ₂	759	20 x 25	8
360, 360HP	79 ³ / ₄	52	47 ¹ / ₈	1 ¹ / ₂	957	16 x 25	10
						20 x 25	5
420	93 ³ / ₈	58	53 ¹ / ₈	1 ¹ / ₂	1185	16 x 25	5
						20 x 25	10

Note: 24 inch side clearance is recommended for accessing and removing filters. All dimensions in inches and weight in pounds.

Model XID



Unit Size	A	B	C	WT.	Filter Size	Qty.
60, 65, 70, 75	22 ¹ / ₈	12	8 ⁷ / ₈	40	10 x 12	1
80, 85, 90, 95	45 ⁵ / ₈	15	11 ¹ / ₈	74	14 x 25	1
97, 98, 99	50 ⁵ / ₈	15	11 ¹ / ₈	80	14 x 25	1
100	47 ¹ / ₄	17	13 ³ / ₈	88	16 x 20	2
120	52 ³ / ₁₆	19	15 ⁵ / ₈	114	16 x 25	2
130, 130HP	46 ⁵ / ₈	21	17 ¹ / ₈	120	20 x 20	2
140, 140HP	52 ⁵ / ₈	23	19 ¹ / ₈	174	20 x 25	2
160, 160HP	51 ¹ / ₈	26	22 ¹ / ₈	246	20 x 20	4

Note: 24 inch side clearance is recommended for accessing and removing filters. All dimensions in inches and weight in pounds.

Model Selection Procedure

1. Calculate system pressure drop and cfm requirements. (Not including filters).
2. Make a preliminary model size selection.
3. Calculate a filter pressure drop for the preliminary model size selected in step 2 using the equation:

$$P = F \times \left(\frac{\text{cfm}}{10,000} \right)^2$$

4. Add the filter pressure drop (P) to the system pressure drop and make a revised model size selection. Use chart to determine filter factor (F).

Model		1 in. Aluminum Filter Factor (F)	1 in. Paper Filters	2 in. Aluminum Filters	2 in. Paper Filters
XIB	XID				
—	60,65,70,75	186	318.06	251.1	303.18
70,80,90	80,85,90,95	21.8	37.278	29.43	35.534
—	97, 98, 99	8.72	14.9112	11.772	14.2136
100	100	8.72	14.9112	11.772	14.2136
120	120	5.58	9.5418	7.533	9.0954
130	130	5.58	9.5418	7.533	9.0954
140	140	3.57	6.1047	4.8195	5.8191
160	160	2.09	3.5739	2.8215	3.4067
180	—	1.34	2.2914	1.809	2.1842
200	—	0.77	1.3167	1.0395	1.2551
240	—	0.41	0.7011	0.5535	0.6683
300	—	0.33	0.5643	0.4455	0.5379
360	—	0.15	0.2565	0.2025	0.2445
420	—	0.13	0.2223	0.1755	0.2119

Note: Table is valid for HP models also.

Inline Fans

Isolators

Complete isolator kits are available with either neoprene or spring isolators and are sized to match the weight of the individual fan sizes.

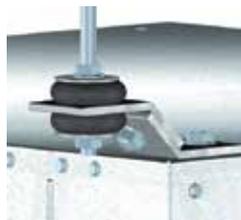
The hanging isolator support brackets are designed to permit mounting the fan with the motor located on top, bottom or side (hanging rods supplied by others). The base isolator support brackets are designed to permit mounting of the fan with the motor located on top or either side.



Hanging Spring Isolator



Standing Neoprene Isolator



Hanging Neoprene Isolator



Standing Spring Isolator

Universal Mounting

All XQEI and XTIF fans can be mounted horizontally or vertically. For ease of installation, eight mounting brackets are welded on each fan. The eight brackets along with four mounting supports, provide a universal mounting system.

Fig. 1 Horizontal Base Mount

Each fan is shipped as standard in this arrangement. Motor at 12 o'clock is standard.

Fig. 2 Horizontal Base Mount with Motor at 3 or 9 o'clock

A set of optional mounting rails are required for this installation. This is the base mounting position required with the easy access option.

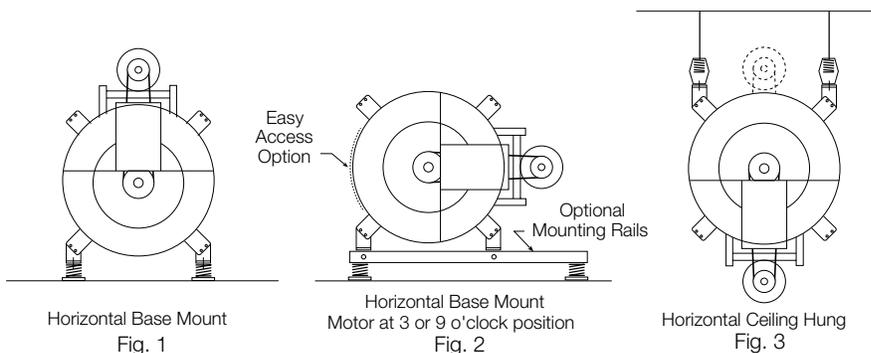


Fig. 3 Horizontal Ceiling Hung

In this installation, the supports can be positioned for mounting the motor at either 6 or 12 o'clock.

Fig. 4 Horizontal Ceiling Hung with Motor at 3 or 9 o'clock

A set of optional mounting rails are required for this installation.

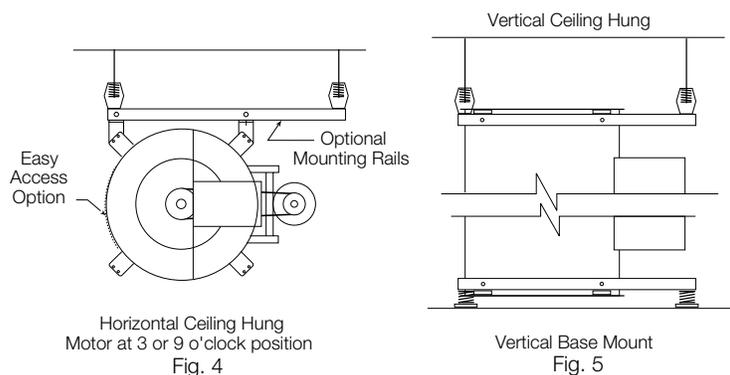


Fig. 5 Vertical Mount

All XQEI and XTIF fans can be mounted vertically (ceiling hung or base mounted) for either upward or downward airflow. Optional mounting rails are recommended.

Note: All fans are shown with optional vibration isolators. Contact your local Larkin representative for complete dimensional data.

Utility Fans

Overview for Model XUEFD



Larkin's Model XUEFD direct drive, backward-inclined utility fans have many advantages - higher operating efficiencies, non-overloading horsepower curves and higher pressure capabilities. Fans are provided with integral speed control for easy system balancing. Simplified wiring and preprogrammed VFD (3 phase) make installation quick and easy. Available in five sizes, 10 through 18, with capacities from 200 to 6,500 cfm (340 to 11,044 m³/hr) and static pressures to 3 in. wg (748 Pa).

- Scroll and frame are bolted and constructed of galvanized steel. Painted steel is optional.
- Permalock™ scroll
- Aluminum wheel

Standard Construction Features

Scroll Construction - Permalock™ housings use a mechanically fastened seam instead of welding. This airtight and watertight housing construction uses the same structural support as all welded housings.



Wheel - Centrifugal backward inclined flat blade

Bolted Access Door - Access door provides access for inspection and cleaning.

Drain Connection - Unthreaded drain hole is provided to drain moisture from the bottom of the fan housing.

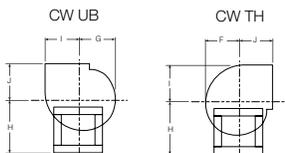
Weatherhood - Protection of drive components from rain, moisture, dust and dirt. Weatherhoods meet OSHA guidelines and are easily removed for service access.



Disconnect Switch - Toggle switch located in a NEMA-3R enclosure. Switch is mounted and wired.

Inlet Cone - Streamlined inlet cone design provides a low turbulence air intake. This reduces intake losses and sound levels.

Optional Discharge Positions



Images are viewed from the drive side of fan.

Model XUEFD is AMCA Licensed for Sound and Air Performance.

For comprehensive product information including performance, contact your local Larkin representative.

Motors and Controls Model XUEFD only

The XUEFD was designed with energy efficiency in mind. It uses an EC motor for single phase units which offer significantly higher efficiencies compared to single phase induction motors, a watt savings of 20-70% depending on RPM. Three phase NEMA Premium efficient motors offer some of the best energy efficiencies for the price for electrical motors today. When coupled to a Variable Frequency Drive (VFD) control, similar advantages are achieved as with the single phase EC motors.

USFD-100	Minimum	Maximum
Volume	200 cfm (340 m ³ /hr)	6,500 cfm (11,040 m ³ /hr)
Static Pressure	0 in. wg	3 in. wg
Motor Type	Electronically-commutated	AC induction
Phase	1	3
Voltage	120/230	230/460
HP	1/4 thru 3/4	1/2 thru 5
Shaft Grounding	Not applicable	Optional
Controls	Integral dial or 0-10 VDC signal	VFD factory mounted, wired and programmed. Adjustable interface or 0-10 VDC signal.

The preprogrammed, factory mounted and wired speed control simplifies the fan install for easy start-up. This value added feature saves time and money by eliminating the need to coordinate mechanical, electrical, and controls personnel to complete the install. Easy connect wire strip is included for fast start-up on three phase models.

For easy system balancing, fan speed can be adjusted by a potentiometer installed at the motor for single phase or it can be adjusted via the VFD interface on three phase models. In addition, a 0-10 VDC signal from a Building Automation System or other controls, can be used as an alternative method to controlling the fan speed.

Overview for Model XUEF



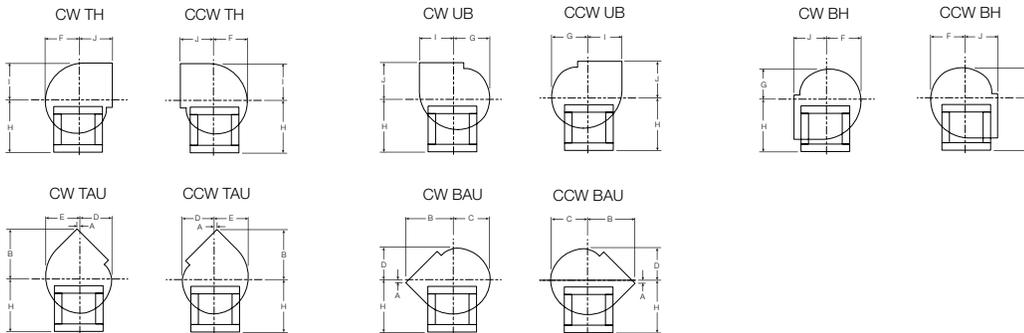
Larkin's XUEF offers:

- Performance range: 50 to 66,000 cfm (85 to 112,130 m³/hr)
- Static pressure: Up to 9 in. wg (2,241 Pa)
- Tiered model approach to give you flexibility in size, performance and construction to match your application
- Larkin utility fans are designed, engineered and tested to provide years of dependable service with minimal maintenance

XUEF Optional Discharge Positions

XUEF-200 = TH, UB

XUEF-300 and XUEF-400 = TH, UB, BH, TAU, BAU



Images are viewed from the drive side of fan.

*XUEF models are listed for electrical (UL/cUL 705) File no. E40001.

*XUEF-300, -400 models are listed for grease removal (UL/cUL 762) File no. MH11745



* UL is optional and must be specified.

Model XUEF-BI and XUEF-AF are AMCA Licensed for Air Performance.

Model XUEF-BI and XUEF-AF are AMCA Licensed for Sound and Air Performance.

For comprehensive product information including performance, contact your local Larkin representative.

Model	Size	AMCA
XUEF-BI-200	6 - 10	Air
XUEF-BI-200	12 - 22	Sound and Air
XUEF-BI-300	6 - 10	Air
XUEF-BI-300	12 - 24	Sound and Air
XUEF-BI-300	27 - 49	Air
XUEF-AF-400	18 - 49	Sound and Air
XUEF-BI-400	All sizes, 7 - 49	Sound and Air



XUEF-200

The XUEF-200 is constructed from galvanized steel with a bolted frame. It provides an economical price point option for Class I airflow and pressure applications for when clean air is being exhausted. The XUEF-200 utilizes a backward inclined centrifugal wheel.

- 200 to 10,000 cfm
- Up to 5.5 in. wg
- Certifications
 - AMCA Licensed for Air (AMCA 210) sizes 6 - 10
 - AMCA Licensed for Sound and Air (AMCA 210 and 300) sizes 12 - 22
 - UL/cUL 705 Listed for Electrical



XUEF-300

The XUEF-300 is a workhorse product used in applications where a coating on the housing and in the airstream is required. It offers the flexibility of bolted or welded construction and an increased performance range for Class I airflow and pressures.

- 200 to 53,000 cfm
- Up to 5.5 in. wg
- Spark B or C resistant construction available
- Certifications
 - AMCA Licensed for Air (AMCA 210) sizes 6 - 10, 27 - 49
 - AMCA Licensed for Sound and Air (AMCA 210 and 300) sizes 12 - 24
 - UL/cUL 705 Listed for Electrical
 - UL/cUL 762 Listed for Grease Exhaust



XUEF-400

The XUEF-400 spans the gap between traditional utility sets and industrial blowers. It is constructed of painted steel construction and is capable of Class II applications and utilizes a backward inclined wheel.

- 200 to 66,000 cfm
- Up to 9 in. wg
- Spark B or C resistant construction available
- Certifications
 - AMCA Licensed for Sound and Air (AMCA 210 and 300)
 - UL/cUL 705 Listed for Electrical
 - UL/cUL 762 Listed for Grease Exhaust

Utility Fans

Standard Construction Features for Model XUEF

XUEF-200

- Bolted construction using all galvanized material
- Used for inexpensive, clean air applications

XUEF-300

- Bolted construction, utilizing all painted steel material
- Used for grease and clean air applications

XUEF-400

- Welded construction, utilizing all painted steel material
- Used for grease and clean air applications
- Heavier construction and capable of higher performances than XUEF-300



Scroll Construction - Permalock™ housings use a mechanically fastened seam instead of welding. This airtight and watertight housing construction uses the same structural support as all welded housings.



Wheel Type, Material and Construction

XUEF-200:

Type: Backward-Inclined
Material: Size 6-10 Aluminum
Size 12-22 Coated Steel
Construction: Riveted

XUEF-300:

Type: Backward-Inclined
Material: Size 6-10 Aluminum
Size 12-49 Coated Steel
Construction: Size 6-24 Riveted
Size 27-49 Welded

XUEF-400:

Type: Backward-Inclined or Airfoil
Material: Coated Steel
Construction: Welded

Fasteners - Corrosion-resistant fasteners are used to secure unit base and blower scroll assembly.

Bearings - Heavy-duty, self-aligning pillow block ball bearings are selected for a minimum L₁₀ life in excess of 100,000 hours [L₅₀ average life of 500,000 hours] at maximum cataloged operating conditions.

Motor - Heavy-duty ball bearing motors are carefully matched to the fan load. Open drip proof, totally enclosed and explosion-proof enclosures are available.

Weatherhood and Motor Cover - Vented steel weatherhoods and a motor cover protect the drive components from rain, moisture, dust and dirt. Weatherhoods meet OSHA guidelines and are easily removed for service access.



Drive Assembly - Machined, cast iron pulleys are factory set to required RPM and are adjustable for final system balancing for applications with 10 hp or less motors. Sized for a minimum of 150% of driven horsepower.

Inlet Cone - Streamlined inlet cone design provides a low-turbulence air intake. This reduces intake losses and sound levels.

Permatector™ - Our standard coating, typically used for applications that require corrosion resistance in indoor and outdoor environments.

Models: XUEF-300, XUEF-400

Restaurant Grease Exhaust (UL/cUL 762 Listed)

The centrifugal scroll fans are designed for high pressure restaurant grease exhaust applications. Either Permalock™ or welded housings are available with UL/cUL Listing of Power Ventilators for Restaurant Exhaust Appliances. The welded housing is suitable for indoor or outdoor mounting locations, whereas the Permalock™ housing is suitable for outdoor kitchen ventilation installations. Listing tests exceed duct temperatures of 400°F (204°C) continuous operation. UL/cUL 762 selections require a drain connection and access door for cleaning.

Models: XUEF-300, XUEF-400



Utility Fans

Options and Accessories for Model XUEF

UL/cUL 762 – The UL/cUL 762 option includes a weatherhood, threaded drain connection and access door. Indoor mounting requires the fan to have welded scroll construction.

UL/cUL 705 – Listed for electrical safety.

Weatherhood – Weatherhoods are available to completely cover the motor and drive compartments to protect the shaft, bearings, motor, and drive components from moisture and other adverse conditions. Weatherhoods are vented to provide sufficient motor cooling and are designed to meet OSHA guidelines.

Drain Connection – Threaded drain connections can be provided to drain moisture from the bottom of the fan housing.

Access Doors – Access doors provide access for inspection and cleaning. Either bolted or hinged quick opening access doors are available.

Welded Scroll Construction – Welded scroll construction is available to provide liquid tight seal.

Equipment Supports – Models GESS and GESR equipment supports are available for roof mounting of utility fans. Equipment supports are available in a number of lengths, widths and heights, and can also be built for a pitched roof.



Extended Lube Lines – Lubrication lines with grease fittings are extended from shaft bearings to the base of the drive frame panel or weatherhood for easy bearing lubrication without disassembling the fan.

Inlet & Outlet Guards – Inlet and outlet guards are constructed of expanded metal and mounted in a steel frame to provide protection for non-ducted installations. The guards can be easily removed for maintenance or inspection.



Aluminum Construction – Aluminum airstream option includes aluminum components in airstream.

Coatings – Fans are available with a wide selection of protective and decorative coatings.

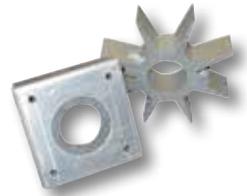
Grease Trap with Drain Connection – Aluminum trap is designed to collect grease residue and avoid drainage onto the roof surface. Disposable grease absorbents are available for easy maintenance.

Vibration Isolators – Base mounted neoprene or spring isolators are available to lessen mechanical vibration and assure quiet operation. Isolators are sized to match the weight of each fan.



Flanged Inlet & Outlet – Flanges are available for damper mounting or flanged duct connections. Inlet flanges have prepunched mounting holes. Outlet flanges are bolted-on as standard, but are welded for UL 762 applications.

Heat Slinger & Shaft Seal – The heat slinger is an aluminum cooling disc mounted on the fan shaft between the inboard bearing and the fan housing. The disc dissipates heat that is conducted along the fan shaft. The shaft seal with an aluminum rub ring is available for applications where contaminated or high temperature air is being handled.



Dampers – Gravity or motorized parallel blade backdraft dampers can be provided. These dampers feature sturdy galvanized frames with prepunched mounting holes, aluminum blades with felt edges and a balanced design for minimal resistance to airflow. Backdraft dampers are not suitable for downblast or bottom angular downblast discharge positions. To install a backdraft damper directly to the fan, the fan must be supplied with a flanged outlet. Heavy-duty dampers are available for high-pressure applications on fans with motors equal to or greater than 7½ horsepower.



Disconnect Switches – Assorted NEMA rated disconnect switches are available for positive electrical shutoff and safety when servicing fans.



Wiring Pigtail – Allows direct hook-up to the power supply eliminating field wiring to the fan.

Fan Controls – Remote mounted dial, two-speed control, touch remote, temperature/humidity, volatile organic compounds, transformer and constant pressure for applications such as bathrooms, dryers, filters, etc.

Utility Fans

The following chart displays which options and accessories are available on Larkin's utility fans.

	XUEFD	XUEF-200	XUEF-300	XUEF-400
Options and Accessories				
UL/cUL 762	—	—	Optional	Optional
UL/cUL 705	—	Optional	Optional	Optional
Weatherhood	Standard	Standard	Standard	Optional
Drain Connection	Standard	Optional	Optional	Optional
Access Door	Standard	Optional	Optional	Optional
Welded Scroll Construction	—	—	—	Optional
Equipment Supports	Optional	Optional	Optional	Optional
Extended Lube Lines	—	Optional	Optional	Optional
Inlet and Outlet Guards	Optional	Optional	Optional	Optional
Coatings	Optional	—	Standard	Standard
Grease Trap with Drain Connection	—	—	Optional	Optional
Vibration Isolators	Optional	Optional	Optional	Optional
Flanged Inlet	—	Optional	Optional	Optional
Flanged Outlet	Optional	Optional	Optional	Optional
Heat Slinger and Shaft Seal	—	—	Optional	Optional
Dampers	Optional	Optional	Optional	Optional
Disconnect Switches	Standard	Optional	Optional	Optional
Wiring Pigtail	—	Optional	Optional	Optional
Electronically Commutated Motor	Optional	—	—	—
Fan Controls	Standard	—	—	—

Mounting Options

Direct Mount

No base required. Isolators are attached directly to equipment. Direct isolation can be used if equipment is unitary and rigid without the use of additional support. If there is any doubt whether or not equipment can be supported directly on isolators, use rails or consult the factory.



Isolators



Neoprene Mounts

Neoprene mountings consist of a steel top plate and base plate completely embedded in colored (oil-resistant) neoprene for easy identification of capacity. Neoprene mountings are furnished with a tapped hole in the center. This enables the equipment to be bolted securely to the rubber mount.



Free-Standing Open Spring Mounts

Free-standing spring isolators are unhusoused laterally stable steel springs. They provide a minimum horizontal stiffness of 0.8 times the rated vertical stiffness and provide an additional 50% overload capacity. These isolators are equipped with a top mounted adjusting bolt and an acoustical non-skid base. Springs are color coded or identified to indicate load capacity.



Restrained Spring Mounts

Restrained spring isolators consist of laterally stable, free-standing springs assembled into a steel housing. These assemblies are designed for vertical and horizontal motion restraint. Restrained spring isolators can be used for blocking during equipment installation and are provided with leveling bolts. Springs provide 50% overload capacity and are color coded or identified to indicate load capacity. Restrained spring mounts are recommended for equipment subject to wind loading or large torquing forces.

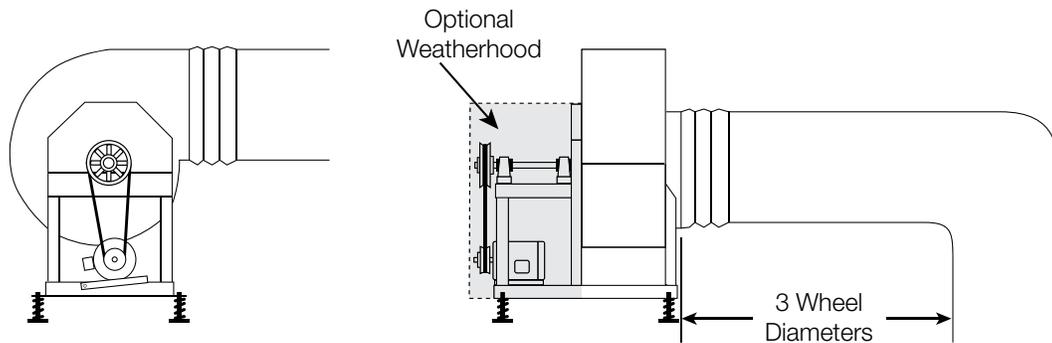
Utility Fans

Model XUEFD and XUEF are designed for your supply, exhaust and return air applications. Tests were conducted to assure safe, rugged and reliable fans capable of withstanding severe conditions.

Due to the varying airstreams encountered in commercial ventilation systems, designers must be aware of national, state, and local codes and guidelines governing these installations.

Typical Installation - General Clean Air or Fume Hood (Non-Grease)

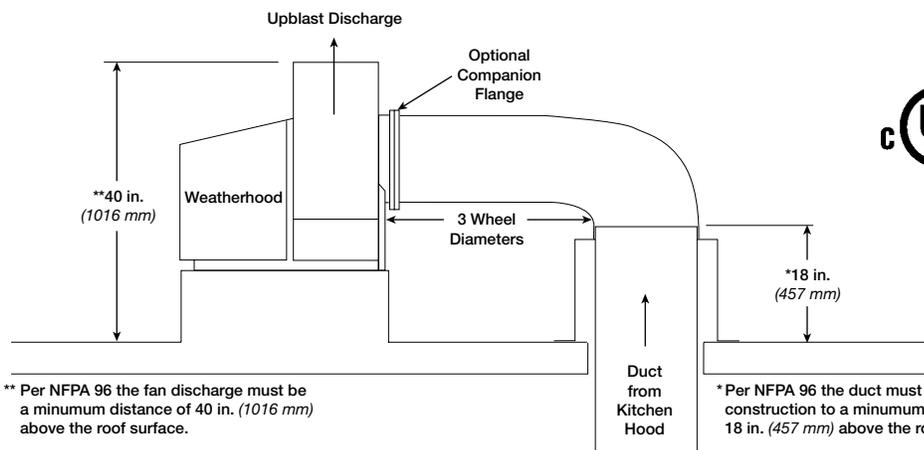
Larkin's utility fans are designed for applications ranging from clean air to contaminated air. Typical installations for XUEFD and XUEF's are shown below.



Typical Installation - Commercial Kitchen (Grease)

Installation must include a means for inspecting, cleaning and servicing the exhaust fan.

- Fans selected for grease removal must include a weatherhood, bolted or hinged access door, and a 1 inch (25 mm) drain connection
- For grease applications where the fan is mounted indoors, the welded scroll option must be selected
- An outlet guard is strongly recommended when the fan discharge is accessible
- An upblast discharge is recommended
- The fan must discharge a minimum of 40 inches (1016 mm) above the roof line and the exhaust duct must be fully welded to a distance of 18 inches (457 mm) above the roof surface
- No dampers are to be used in the system



XUEF-300, -400 models are listed for grease removal (UL/cUL 762) File no. MH11745.



** Per NFPA 96 the fan discharge must be a minimum distance of 40 in. (1016 mm) above the roof surface.

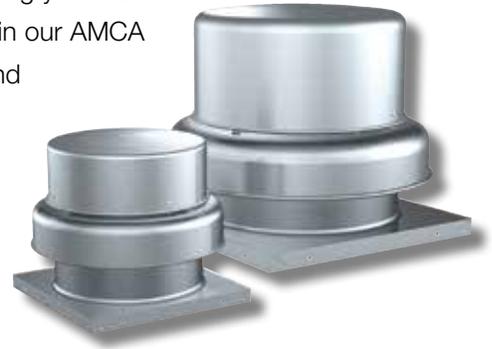
* Per NFPA 96 the duct must be all construction to a minimum distance of 18 in. (457 mm) above the roof surface.

Roof Exhaust Fans

Overview

Larkin's centrifugal roof exhaust fans provide the industry's best performance and durability for general clean air applications. Larkin subjects these products to extensive life testing, assuring you that the fans will provide years of reliable performance. All fan sizes are tested in our AMCA Accredited laboratory, and all models are licensed to bear the AMCA Sound and Air Performance seal. You will also receive the following benefits with an Larkin centrifugal roof exhaust fan:

- Broadest performance in the industry, up to 3.25 in. wg (810 Pa) and 44,700 cfm (75,950 m³/hr)
- Most advanced motor cooling of any fan in its class
- Seismic Certification IBC 2009, 2012. OHSPD/OSP Certification



XREB and XRED models are listed for electrical
(UL/cUL 705) File no. E40001

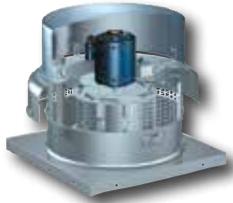


* UL is optional and must be specified.

Model XREB and XRED are
AMCA Licensed for Sound and Air Performance.

For comprehensive product information including performance,
contact your local Larkin representative.

XRED - Direct Drive



Model XRED direct drive centrifugal fans are specifically designed for general clean air, roof mounted applications. Ideal for use with average duct runs and average-resistance duct, the XRED provides long service with little maintenance. Performance ranges up to 6,308 cfm (10,717 m³/hr) and 2.8 in. wg (697 Pa) with a maximum operating temperature of 180°F (82°C). Seismic certification to size 203.

XREB - Belt Drive



Model XREB belt drive centrifugal fans are specifically designed for general clean air, roof mounted applications. Ideal for use with average length duct runs and average-resistance duct the XREB provides performance flexibility ranging up to 44,700 cfm (75,946 m³/hr) and 2.2 in. wg (547 Pa). The maximum operating temperature is 180°F (82°C). Seismic certification to size 540.

XREB-HP - Belt Drive

Model XREB-HP belt drive centrifugal fans are specifically designed for general clean air, roof mounted applications. Ideal for use with long duct runs and high-resistance duct, the XREB-HP provides performance flexibility ranging up to 17,500 cfm (29,733 m³/hr) and 3.25 in. wg (810 Pa). The maximum operating temperature is 180°F (82°C). Seismic certification to size 540.

Standard Construction Features

Wheel – An aluminum, backward-inclined, non-overloading centrifugal wheel is utilized to generate high-efficiency and minimal sound. Wheel cones are carefully matched to the venturi for maximum efficiency. Each wheel is statically and dynamically balanced for long life and quiet operation.

Disconnect Switch – NEMA-1 switch is factory mounted and wiring is provided from the motor as standard (other switches are available). All wiring and electrical components comply with the National Electrical Codes (NEC) and are either UL/cUL Listed or Recognized.

Internal Conduit Chase – A large diameter conduit for installing electrical wiring through the curb cap into the motor compartment.

Fan Shaft – Precisely sized, ground, and polished so the first critical speed is at least 25% over the maximum operating speed. Close tolerances, where the shaft makes contact with bearings, results in longer bearing life.

Bearings – 100% factory tested and designed specifically for air handling applications with a minimum L₁₀ life in excess of 100,000 hours (L₅₀ average life of 500,000 hours).

Motor Cover – Constructed of aluminum. Attached with stainless steel fasteners for easy removal and access to the motor compartment and drive assembly.

Drive Assembly – Belts, pulleys and keys are oversized 150% of driven horsepower. Machined cast pulleys are adjustable for final system balancing. Belts are static-free and oil-resistant.

Motor Cooling – Cooling fins located on top of fan wheel draw outside air through a large space between the fan shroud and the motor cover directly into the motor compartment. Positive motor cooling with fresh air results in maximum motor life.

Vibration Isolation – True vibration isolators contain two independent studs with rubber neoprene to support the drive assembly and wheel for long life and quiet operation. (No steel-on-steel contact).

Fan Shroud – One-piece, heavy-gauge aluminum with a rolled bead for additional strength directs exhaust air towards the mounting surface. The curb cap and integral deep spun venturi are attached to the windband and constructed of aluminum to prevent corrosion.

Name Plate – Permanent stamped aluminum plate for exact model and serial identification number.

Mounting Holes – Aluminum curb cap has prepunched mounting holes to ensure correct attachment to the roof.

Galvanized Birdscreen – Rigid wire protects the fan's discharge from birds and small objects.

Curb Cap – Curb cap (with integral deep spun venturi) is constructed of aluminum in one-piece for a weathertight fit.

Lower Windband – Heavy-gauge aluminum with formed edges for added strength and weather resistance.

Motor – Carefully matched to the fan load and mounted out of the airstream.

Lifting Points – Select models have various lifting points located on the drive frame or bearing plates.

Seismic Certification – Certified to IBC 2009 and 2012, ASCE 7-05 and California OSHPD certification standards for all seismic design categories. OSHPD/OSP# 0148-10, SDS Value 2.28.

Roof Exhaust Fans

Options and Accessories

Electronically Commutated (EC) Motor

Availability for direct drive fans (select models).

Motor Information			
HP	RPM	Voltage	Hz
1/10	1725	115, 208-240	50/60
1/6	1725	115, 208-240	50/60
1/4	1725	115, 208-240	50/60
1/2	1725	115, 208-240	50/60
3/4	1725	115, 208-240	50/60
1	1725	115, 208-240	50/60
2	1725	208-240	50/60
Extended RPM Motors			
1/2	2500	115	50/60
3/4	2200	115	50/60

EC Motor Control

- Motor mounted dial
- Control wire inputs (0-10V)
- Remote mounted dial



Fan Controls

Controls (Box) gauge the actual pressure and signal the EC motor to speed up or slow down.

Sensor/transducer senses the pressure in the duct and signals the information to the controls.

Speed Controllers

Available for use with shaded pole and permanent split capacitor (PSC) open motors on model XRED fans. Controllers provide an economical means of system balancing with direct drive fans.



Disconnect Switches

A wide selection of NEMA rated switches are available for positive electrical shutoff and safety, including: dust-tight, rainproof, and corrosion-resistant. Switches may be internally or externally mounted.



Dampers

Designed to prevent outside air from entering back into the building when fan is off. Includes gravity and motorized dampers.



UL/cUL Listed 705 for Electrical – XREB and XRED File no. E40001. UL/cUL is optional and must be specified.

Birdscreen

Galvanized mesh is standard, optional aluminum or stainless steel rigid wire are also available.

Coatings

A wide variety of coatings and colors are available.



Primer is applied at the factory to allow for final finish in the field.



Permatector™ is our standard coating. Typically used for applications that require corrosion resistance in indoor and outdoor environments.



Hi-Pro Polyester is resistant to salt water, chemical fumes and moisture in more corrosive atmospheres. Typically used for applications that require superior chemical resistance, excellent abrasion and outdoor UV protection. This coating exceeds protective qualities of Air Dried Heresite and Air Dry Phenolic.



Baked Enamel Decorative Coatings

are heat cured enamels applied either as wet paints or electrostatic powders. Customers can choose from 16 standard decorative colors or color match any color.

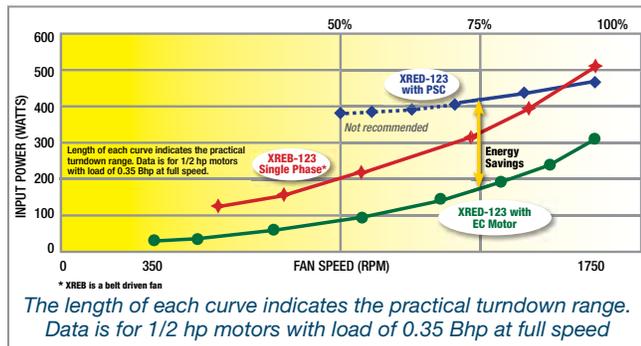


Options and Accessories

EC Motor for model XRED

Larkin's electronically commutated (EC) motor combines motor technology, controllability and energy-efficiency into one single low maintenance unit and is the industry's first fully controllable motor. When combined with Larkin's XRED fans, all the cfm and static pressure ranges of a belt drive can be attained. Features are:

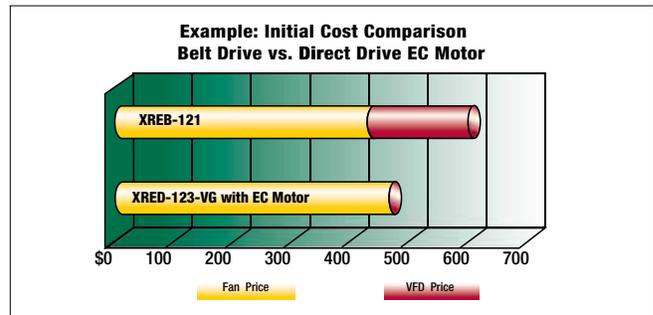
- Operates on AC power that's converted to DC—providing higher efficiency motor operation compared to an AC operation.
- The motor can attain up to 85% efficiencies and reduce energy consumption.
- Watt savings of 30-70% depending on RPM.
Note: As motor speed is turned down, efficiency increases as compared to an AC motor with virtually no efficiency gains.
- Runs cooler than a standard AC motor. A cooler running motor has a longer motor life and reduces energy consumption.
- 80% usable turndown vs. 30%
- The EC motor provides an easier solution for variable volume systems and system balancing.



Direct Drive Benefits

Direct drive fans are often preferred for motors where maintenance access is difficult. XRED fans with EC motors can provide all the cfm and static pressure ranges of a comparable belt drive—and since there are no belts or bearings to replace and no pulleys to adjust, maintenance costs are reduced. Other benefits include:

- Compact housing design requires a smaller footprint
- Low vibration
- Suitable for clean air application
 - no belt or bearing residue in airstream
- Easy Building System Balancing



Constant Volume

Constant volume systems are more limited to applications where heating and cooling loads are constant. A typical application could be a dedicated computer room, where computers run 24 hours a day. Some disadvantages are limited control for comfort zones, high electrical/energy consumption and higher maintenance due to frequent starting and stopping.

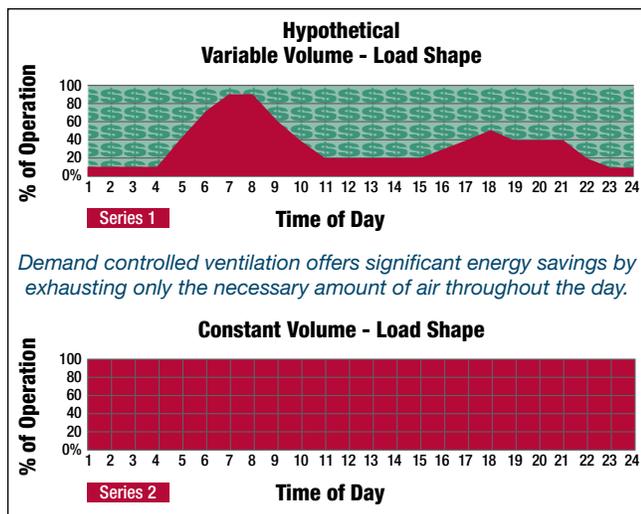
EC Motor Mounted Control

- A potentiometer (speed control dial) is mounted right on the motor for easy speed adjustment for building balance.
- Simply turn a dial instead of adjusting belts and pulleys.

Options and Accessories

Variable Volume

Variable volume or demand ventilation offers significant energy savings by only exhausting conditioned air when necessary throughout a day. This type of application can greatly reduce the operating costs associated with air conditioning and heating. Either a electronically commutated (EC) motor or standard variable frequency drive (VFD) compatible motor can function within a variable volume system and help reduce energy consumption.



Variable Frequency Drive (VFD Rated)

For applications that require a higher horsepower. A VFD rated/compatible motor will also allow the fan performance to be adjusted. Although a comparable VFD rated motor is not as efficient as an electronically commutated (EC) motor, it can still assist in system balancing and provide flexibility in adapting to system changes. It can also help reduce energy consumption. The motors meet NEMA Premium efficiencies.

Note: VFD rated motors will need VFD controllers by others and will require start-up programming.

Roof Exhaust Fans

Options and Accessories

Roof Curbs

Prefabricated roof curbs reduce installation time and costs by ensuring compatibility between the fan, the curb and roof opening. All curbs are insulated with fiberglass. A wide variety of roof curbs are available, including: flanged, pitched and sound-absorbing.

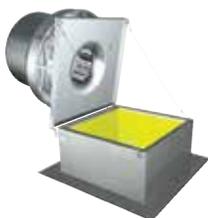


Hinged Curb Cap with Cables (Field Installed)

Mounted to the curb cap, allows entire fan to tilt away from curb for access to wheel and ductwork. Includes restraint cables. (Not available for high wind applications).

Hinged Base (Factory Mounted)

Allows for easy maintenance. Hinge and restraining cables are factory mounted to a subbase attached directly to curb without additional height added. (Not available for high wind applications).



Curb Seal

Rubber seal between fan and curb to assure proper sealing when attached to a curb.

Curb

Extensions raise the fan discharge above the roofline and provide an accessible mounting location for dampers. Insect screen bases, constructed with a removable fine mesh, are recommended for applications where insect entry must be prevented.



	XREB	XRED
Options and Accessories		
Hinge Kit	Optional	Optional
Roof Curbs	Optional	Optional
Curb Extension	Optional	Optional
Coatings	Optional	Optional
Disconnect Switches	Standard	Standard
Dampers	Optional	Optional
Birdscreen	Standard	Standard
Controls	—	Optional
Curb Seal	Optional	Optional
Electronically Commutated Motor	—	Optional
Fan Controls	—	Optional



Heavy Duty Roof Curbs

Provided as optional with models XRED and XREB. The heavy duty roof curb models can ship separately to allow for final finishing of the roof prior to the fan arrival and installation.

Model GPF — This roof curb is specifically designed for high wind applications used on fan models XRED and XREB. Standard height is 12 inches (305 mm), fully-welded straight sides with a 5 inch flashing flange. GPF is available up to 24 inches (460 mm) in height to meet greater height requirements.

Model GPFHL for heavy load applications. Its construction is intended to support compression loads exceeding 1,000 lbs (454 kg). GPFHL is mounted directly to the roof deck structure, and the roofing material is brought to the vertical surface and sealed to the flashing flange. Additional standard construction features include 14 gauge galvanized steel and internal vertical support members.

Model GPFHD for supporting heavy load equipment in severe duty, high wind and seismic applications. The double thick flashing flange provides an extremely durable surface to secure the curb to the building structure. The roofing material is brought to the vertical surface and sealed to the flashing flange. Additional standard construction features include 12 gauge galvanized steel and internal vertical support members.

Mounting details for the roof curb to the roof substrate and the fan to the curb are illustrated on the following pages and are included with each model XRED and XREB installation manual.

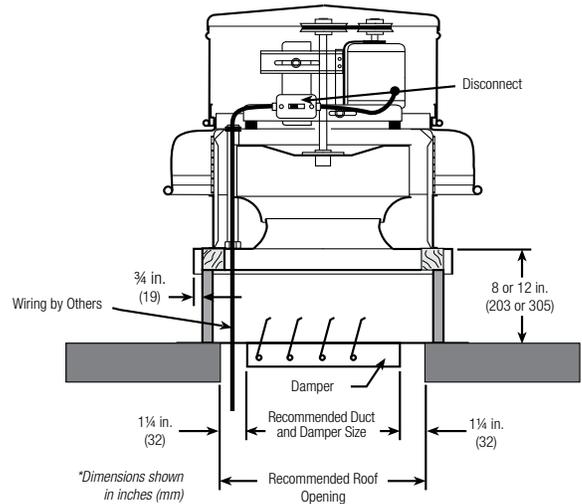
Roof Exhaust Fans

Typical Installation

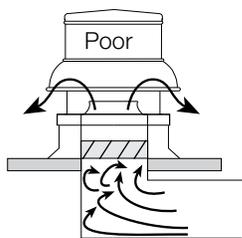
Models XREB and XRED exhaust fans are designed to meet the needs of general clean air applications. Tests were conducted to assure safe, rugged and reliable fans. Due to the varying airstreams encountered in commercial ventilation, system designers must be aware of national, state, and local codes and guidelines governing these installations. Local code authorities should be consulted before proceeding with any ventilation project.

When roofing materials extend to the top of the curb, roof curbs should be 1½ inches (¾ inch on a side) less than the unit curb cap to allow for roofing and flashing.

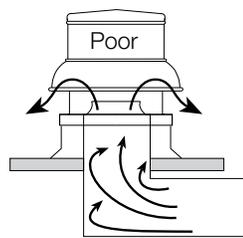
Installation must include a means for inspecting, cleaning and servicing the exhaust fan.



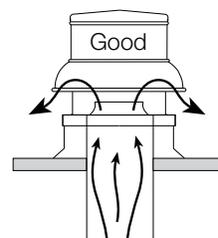
Fan Inlet Connections



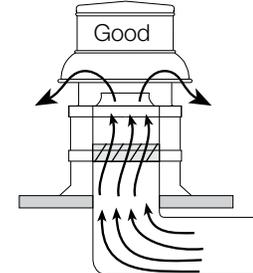
Dampers must open fully. Use motorized dampers in low airflow applications to reduce losses.



Avoid sharp turns or entrance conditions, which cause uneven flow. Use turning vanes in elbows to reduce adverse effects.

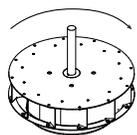


Provide uniform airflow at fan inlet to assure optimum performance.

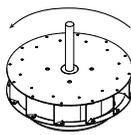


Provide uniform airflow at fan inlet and through the damper to assure optimum performance. The curb cap should be three wheel diameters from the radius. Use turning vanes in duct when possible.

Wheel Rotation



Clockwise Rotation



Counterclockwise Airflow

Direction of rotation is very critical. Rotation in the wrong direction will result in excessive horsepower, possible motor burnout and increased noise levels. Check rotation by energizing the unit only momentarily. The rotation should be clockwise when viewed from the top of the unit and the same as the rotation decals affixed to the unit.

Ceiling and Cabinet Fans

Overview

Great things come in small packages, as do our ceiling fans (model XCR) and cabinet fans (model XIR). Be assured when you buy any Larkin product, you are getting a quality product at a competitive price. We offer one of the most comprehensive ceiling and cabinet exhaust fan lines in the commercial market. In fact, we guarantee our ceiling and cabinet fans with a three (3) year warranty. You will also receive these additional benefits with an Larkin ceiling and cabinet exhaust fan:

- Low sound and compact size
- Competitive price
- Broadest performance selections in the industry

XCR models are designed for ceiling mounted applications.

XIR models are designed for inline remote mounted applications.



Models XCR and XIR are UL/cUL 507 Listed.
Ceiling Exhaust Fans are also UL Listed for above
bathtub/shower with GFCI branch protected circuit.
File no. E33599.



Model XCR is AMCA Licensed for Sound and Air Performance.

Model XIR is AMCA Licensed for Air Performance

For comprehensive product information including performance,
contact your local Larkin representative.

Ceiling and Cabinet Fans

XCR-A

The XCR-A is a premium ceiling fan. It is in the top of its class when it comes to meeting sound requirements.

- Sound levels as low as 0.5 sones
- Profile as low as 9 inches (22.8 cm)
- Air volume as high as 1,600 cfm (2,718 m³/hr)
- UL Listed for above bathtub/shower with GFCI branch protected circuit (sizes A390 and smaller)



Standard Construction Features

Spring Loaded Aluminum Backdraft Damper –

Eliminates rattling or unwanted backdrafts.

Outlet – Square and round outlets are field rotatable from horizontal to vertical discharge.

Power Assembly – Removes quickly for maintenance, or conversion from horizontal to vertical discharge.

External Electrical Access – Eliminates removing motor pack, saving installation time.

Electrical Knockouts (horizontal or vertical) –

Eliminates drilling holes.

Acoustic Insulation – Absorbs sound.

Disconnect – Servicing is quick and safe.

Electrical Junction Box – Large for easy wiring.

Attractive Designer Grille – Concealed attachment screws securely fasten grille to housing for quiet and rattle-free operation.

Mounting Brackets – Fully adjustable for multiple installation conditions.

Housing – Embossed galvanized steel for rigidity.

Motor – All motors are compatible for use with speed controls and have thermal overload protection.

- 60 cycle, 115v, 208v, 220v, 230v, and 277v options

Double-Wide Fans – Available for applications requiring 700 cfm or greater. Double-wide fans have two double-width forward-curved wheels which are housed in separate scrolls and driven by a single motor.

Access Panel – Gain easy access to internal components once installed.

XCR-B

The XCR-B is a deluxe ceiling fan compact enough for almost any application. If quiet is what you are after, this fan will accommodate your needs.

- Sound levels as low as 0.8 sones
- Profile as low as 7 inches (17.8 cm)
- Air volume as high as 200 cfm (340 m³/hr)
- UL Listed for above bathtub/shower with GFCI branch protected circuit



Standard Construction Features

Plastic Backdraft Damper – Prevents unwanted backdrafts.

Round Standard Outlet (6 in.) – Versatile for quick and easy connections.

Power Assembly – Removes quickly for maintenance.

Electrical Access (vertical) – Eliminates drilling holes.

Disconnect – Servicing is quick and safe.

Electrical Junction Box – Large for easy wiring.

Attractive Designer Grille – Concealed attachment screws securely fasten grille to housing for quiet and rattle-free operation.

Mounting Brackets – Fully adjustable for multiple installation types.

Housing – Embossed galvanized steel for rigidity and low profile for height restricted areas.

Motor – All motors are compatible for use with speed controls and have thermal overload protection.

- 60 cycle, 115v, 208v, 220v, 230v, and 277v options

Access Panel – Gain easy access to internal components once installed.

Ceiling and Cabinet Fans

XCR-C

The XCR-C is our economy ceiling fan designed for light commercial applications.

- Sound levels as low as 3 sones
- Profile as low as 3⁵/₈ inches (7.6 cm)
- Air volume as high as 50 cfm (85 m³/hr)
- UL/cUL Listed



Standard Construction Features

Plastic Backdraft Damper – Prevents unwanted backdrafts.

Round Outlet – 3 inch diameter allows quick and easy connections.

Power Assembly – Removes quickly for maintenance.

Disconnect – Servicing is quick and safe.

Decorative Grille – Quickly snaps into place.

Mounting Brackets – Adjustable for several installation types.

Housing – Galvanized steel for rigidity and low profile for height-restricted areas.

Motor – Compatible for use with speed controls. Thermal overload protection.

- 60 cycle, 115v

Access Panel – Gain easy access to internal components once installed.

XIR-A

The XIR-A is a premium inline fan. It outperforms the competition and is preferred by specifying engineers.

- Sound levels as low as 0.8 sones
- Profile as low as 9 inches (22.8 cm)
- Air volume as high as 3,775 cfm (6,414 m³/hr)
- UL/cUL Listed



Standard Construction Features

Spring Loaded Aluminum or Plastic Backdraft Damper – Eliminates rattling or unwanted backdrafts.

Outlet – Square outlets are field rotatable from horizontal to vertical discharge.

Power Assembly – Removes quickly for maintenance or conversion from horizontal to vertical discharge.

External Electrical Access – Eliminates removing motor pack, saving installation time.

Electrical Knockouts (horizontal or vertical) – Eliminates drilling holes.

Acoustic Insulation – Absorbs sound.

Disconnect – Servicing is quick and safe.

Electrical Junction Box – Large for easy wiring.

Access Panel – Gain easy access to internal components once installed.

Mounting Brackets – Fully adjustable for multiple installation conditions.

Housing – Embossed galvanized steel for rigidity.

Motor – All motors are compatible for use with speed controls and have thermal overload protection.

- 60 cycle, 115v, 208v, 220v, 230v, and 277v options

Inlet Duct Collar – Allows for the ductwork to slide over the duct collar to be fastened for faster and easier installation.

Double-Wide Fans – Available for applications requiring 700 cfm or greater. Double-wide fans have two double-width forward-curved wheels, which are housed in separate scrolls and driven by a single motor.

Ceiling and Cabinet Fans

XIR-B

The XIR-B is a compact deluxe inline fan. It is designed to fit in small remote quarters.

- Sound levels as low as 1.5 sones
- Profiles as low as 7 inches (17.8 cm)
- Air volume as high as 185 cfm (314 m³/hr)
- UL/cUL Listed



Standard Construction Features

Aluminum or Plastic Backdraft Damper – Prevents unwanted backdrafts.

Round Standard Outlet (6 in.) – Versatile for quick and easy connections.

Power Assembly – Removes quickly for maintenance.

Electrical Access (vertical) – Eliminates drilling holes.

Disconnect – Servicing is quick and safe.

Electrical Junction Box – Large for easy wiring.

Mounting Brackets – Fully adjustable for multiple installation types.

Housing – Embossed galvanized steel for rigidity and low profile for height-restricted areas.

Motor – All motors are compatible for use with speed controls and have thermal overload protection.

- 60 cycle, 115v, 208v, 220v, 230v, and 277v options

Inlet Duct Collar – Allows for the ductwork to slide over the duct collar to be fastened for faster and easier installation.

Access Panel – Gain easy access to internal components once installed.

Ceiling and Cabinet Fans

Options and Accessories

Grille Options –

Designer - Standard Grille
Decorative - Lighted and non-lighted
Aluminum - White enamel finish
Stainless Steel - Polished stainless steel finish



Round Duct Connection –

Standard - Sizes A50, A70, and A90



Round Duct Adapter –

Optional - Sizes A110 through A510

Vertical Discharge –

Exhaust outlet duct may be installed in the optional vertical position. The power assembly must be rotated to match the duct adapter position.

Wheel Options –

Models XCR and XIR deliver high performance from forward-curved wheels that offer both high-efficiency and low sound. Fan wheels are constructed of polypropylene or steel as standard, and most models offer an aluminum wheel option.



- Level A models utilize steel or polypropylene wheel construction depending on size.
- Level B models are standard with a polypropylene wheel.

Electronically Commutated Motor –

1/6 or 1/4 hp electronically commutated motor with built-in speed control capability. 115v, 60 Hz, single phase power.

XCR-A510, XCR-A710, XCR-B510, XCR-B710 only



Double-Wide Fans –

Available for applications requiring 700 cfm or greater. Double-wide fans have two double-width forward curved wheels which are housed in separate scrolls and driven by a single motor.



Contractor 4 Packs –

Save installation time and labor by installing the housing first, then installing the internal components after the sheetrocking, plastering and finishing is done.



- Housings are packaged in one box, power assembly and grilles are packaged in another box
- Components are shipped to coincide with the phase of your project



Exclusive Electrical Wiring Feature –

Larkin XCR-A models are the only fans of this type with an electrical access cover located on the housing exterior. This feature permits external wiring without removing the power assembly, saving installation time and cost.

Light Options

Larkin's fan/light combination includes a prismatic or frosted lens, and compact fluorescent lamps or LED. Our unique light box is manufactured with a reflective material to increase the light given off by either type of lamp.

UL Listed for above bathtub/showers with GFCI branch protected circuit. Available on XCR-A Sizes 50-390, XCR-B Sizes 50-200.

LED



- GU24 Base
- 25,000 hour life
- Reflective light box
- 85% more efficient than incandescent

Prismatic Lens



The prismatic lens design provides approximately 25% more light than a traditional frosted lens. The lens may be easily removed to replace light bulbs.

Frosted Lens



The frosted lens option is a traditional design which lets approximately 80% of light through the lens. The lens may be easily removed to replace light bulbs.

Compact Fluorescent Lamps (CFL)



- GU24 Base
- 10,000 hour average rated life
- Complies with UL 1993 End-of-Life requirements
- Replacement bulbs can be found wherever standard light bulbs and fixtures are sold
- California Energy Title 24 compliant

Customized Grille Options



Molded polystyrene available in an array of colors. Includes all the same accessory options as the standard grilles.

Ceiling and Cabinet Fans

Speed Controls

Speed controls may be used on model XCR and XIR fans for manual adjustment of the fan's performance (for final system balancing) or to control the fan's output in confined spaces, such as conference or meeting rooms. The fan can be adjusted to 60% of design airflow with a speed control. This reduction in airflow and fan speed is also accompanied by a reduction in noise level. Solid state speed controls are available for a range of applications up to 15 amps. Speed controls can be used to operate more than one fan if the combined total amperage of the fans does not exceed the control rating.

Model 6WSSC – For use with shaded pole and PSC motors.
Available shipped loose or mounted internal or external.

- Rated for 115 - 127v, 6 amp
- UL Listed
- Require a 2x4 handy box

Model 5W240 – For use with shaded pole and PSC motors.
Available shipped loose or mounted internal or external.

- Rated for 220 - 240v, 5 amp
- UL Listed
- Requires 2x4 handy box

Model 5W277 – For use with shaded pole and PSC motors.
Available shipped loose or mounted internal or external.

- Rated for 277v, 5 amp
- UL Listed
- Requires 2x4 handy box

Model 8WSSC – For use with shaded pole and PSC motors.
Available shipped loose or mounted external.

- Rated for 220 - 240v, 8 amp
- UL Listed
- Requires 2x4 handy box

Model 10WSSC – For use with shaded pole and PSC motors. Available shipped loose or mounted external.

- Rated for 115 - 127v, 10 amp
- UL Listed
- Requires 4x4 handy box

Model 15WSSC – For use with shaded pole and PSC motors.
Available shipped loose or mounted external.

- Rated for 115 - 127v, 15 amp
- UL Listed
- Requires 4x4 handy box



Switches

Switches may be used on models XCR and XIR fans to enable manual control of your fan or fan/light combination. There are several options to fit your application.



1 Function – Single pole rocker switch assembly.

- Rated for 120-277v, 15 amp
- UL Listed



1 Function with Pilot Light – Single pole rocker switch assembly with cover and pilot light.

- Rated for 120v, 15 amp
- UL Listed



2 Function – Two single pole combination switch assembly.

- Rated for 120v, 15 amp, 2 hp
- UL Listed

Ceiling and Cabinet Fans

Time Delay Switch

Time delay switches save energy by automatically turning off equipment. They may be used with models XCR and XIR fans and fan/light combinations, for extended operating time of fan. Time delay switches act in the same manner as a standard switch, however, there is a delay of 10, 20, 30 and 60 minutes after the switch has been turned off.



Single-switch controls both fan and light. Available shipped loose.

- Silent operation
- UL Listed
- Rated for 120v
- Requires 2x4 handy box

Motion Detectors

Motion detectors may be used with models XCR and XIR fans, or fan and light combinations. Motion detectors use a passive infrared motion detector that will automatically turn on the fan when a change in motion is sensed. They have a viewing area of 180 degrees, however, they must be placed in the line-of-sight.

Grille Motion Detectors are available on models up through size XCR-A390 and XCR-B200.

- Rated for 115v
- UL Listed
- Adjustable time delay shut off setting for 30 seconds to 20 minutes



Model 385246

For use on fan or lights. Available shipped loose.

- Rated for 115v
- UL Listed
- Requires 2x4 handy box
- Adjustable time delay shut off setting for 30 seconds to 20 minutes

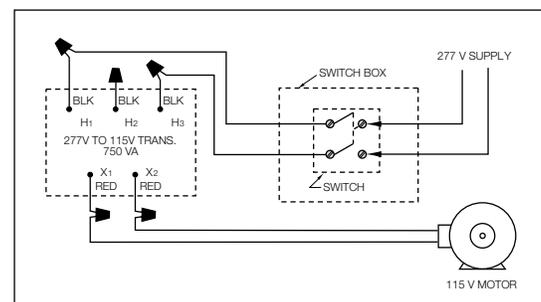


Transformers

Transformers are available for applications requiring voltage reduction. Selection is based on motor amperage. All transformers are shipped loose.



- Model T-2.0** – UL Listed
 - Rated for 230/277v to 115, 2 amps
- Model T-4.3** – UL Listed
 - Rated for 230/277v to 115, 4.3 amps
- Model T-6.5** – UL Listed
 - Rated for 230/277v to 115, 6.5 amps
- Model T-8.6** – UL Listed
 - Rated for 230/277v to 115, 8.6 amps

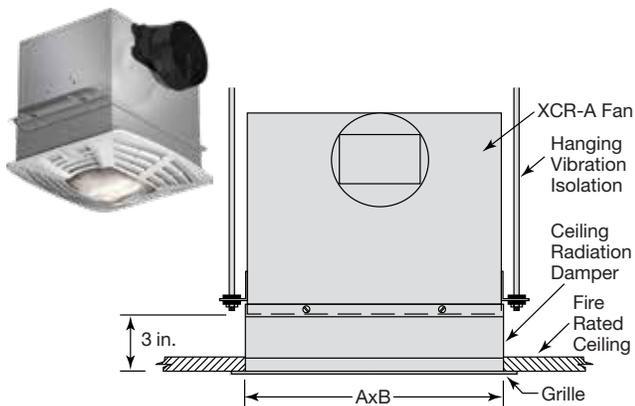


Ceiling and Cabinet Fans

Ceiling Radiation Dampers

The Larkin XCR-A and XCR-B ceiling radiation dampers are UL Classified, rated at three hours fire resistance, and are available on all XCR-A and XCR-B fans and fan/light combinations. This design saves space by allowing the damper to mount directly beneath the fan.

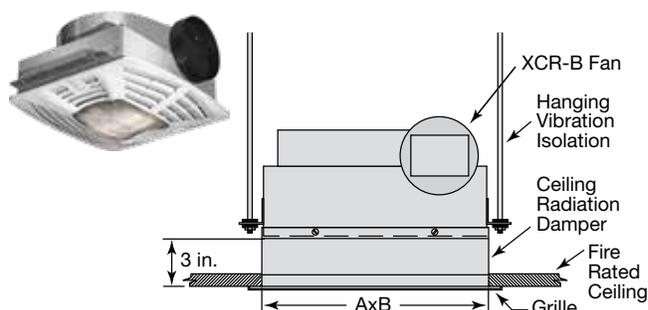
Model XCR-A



XCR Model	CRD	Length	Width	Height
A50 - A190	310	13½	11⅝	3
B50 - B200 A200 - A390	320	14⅜	12¼	3
A410 - A510 A710, A780	350	18⅞	14⅞	3
A700	700	24⅞	12¼	3
A900 - A1550	360	24⅞	14⅞	3

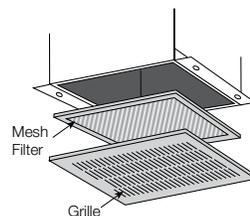
All dimensions shown in inches.
Add an "L" to all CRD models if fan & light combo is used.

Model XCR-B



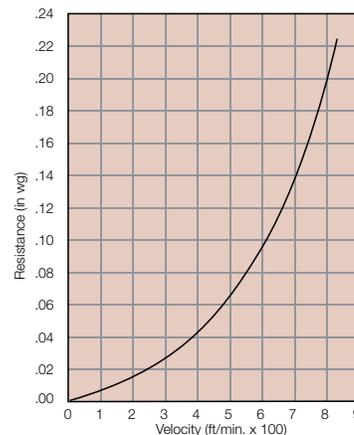
Filters

Fans used in most applications, even where air is not excessively dirty, will collect airborne dirt on wheels and motors over time. Accumulations of dirt on the fan wheel will sharply reduce performance and cause imbalance. Dirt buildup on the motor can cause it to overheat. All of these conditions will shorten the life of the fan. To help reduce this accumulation, washable aluminum mesh filters are available to trap dirt before it enters the fan. These filters should be regularly cleaned to maintain performance. The Filter Loss Chart shows the effect the filter will have on performance. To determine the added resistance, divide the desired cfm by the filter area (ft²). This will give ft/min. Use this with the filter loss chart to get the added resistance. In addition to reducing dirt accumulations on the motor and wheel, filters also reduce sound levels.



XCR Model	Filter Model		Filter Area (ft ²)
	Designer Grill	*Metal Grille	
A50 - A190	F-200	F-210	.739
B50 - B200, A200 - A390	F-200	F-220	.911
A410 - A510, A710, A780	NA	F-250	1.518
A900 - A1550	NA	F-260	2.078

*Aluminum or Stainless Steel Grille.



FILTER LOSS CHART

Ceiling and Cabinet Fans

The following chart shows which options and accessories are available on Larkin's ceiling and cabinet fans.

Options and Accessories	XCR-A	XCR-B	XCR-C	XIR-A	XIR-B
Grille Options	Standard	Standard	—	—	—
Electrical Wiring Feature	Standard	—	—	Standard	—
Vertical Discharge	Optional	—	—	Optional	—
Electronically Commutated Motor	Optional (A510, A710 only)	Optional (A510, A710 only)	—	—	—
Double-Wide Fans	Optional	—	—	Optional	—
Contractor 4 Packs	—	Optional	—	—	—
Light Options					
Prismatic Lens	Optional	Optional	—	—	—
Frosted Lens	Optional	Optional	—	—	—
Compact Fluorescent Lamps	Optional	Optional	—	—	—
LED	Optional	Optional	—	—	—
Speed Controls					
Model 6WSSC	Optional	Optional	Optional	Optional	Optional
Model 5W240	Optional	Optional	—	Optional	Optional
Model 5W277	Optional	Optional	—	Optional	Optional
Model 8WSSC	Optional	Optional	—	Optional	Optional
Model 10WSSC	Optional	Optional	Optional	Optional	Optional
Model 15WSSC	Optional	Optional	Optional	Optional	Optional
Switches					
1 Function	Optional	Optional	Optional	Optional	Optional
1 Function with Pilot Light	Optional	—	—	—	—
2 Function	Optional	—	—	—	—
Time Delay Switch					
874214	Optional	Optional	—	Optional	Optional
Motion Detectors					
385246	Optional	Optional	—	Optional	Optional
Transformers					
Model T-2.0	Optional	Optional	Optional	Optional	Optional
Model T-4.3	Optional	Optional	Optional	Optional	Optional
Model T-6.5	Optional	Optional	Optional	Optional	Optional
Model T-8.6	Optional	Optional	Optional	Optional	Optional
Dampers					
Ceiling Radiation Damper	Optional	Optional	—	—	—
Filters					
Filters	Optional	Optional	—	—	—
Wall Discharge					
6 x 4 Transition Duct Reducer	Optional	Optional	—	Optional	—
Model WC (Round Connection)	Optional	Optional	Optional	Optional	Optional
Model WC (Square/Rect. Connection)	Optional	Optional	Optional	Optional	Optional
Model WL	Optional	Optional	Optional	Optional	Optional
Model BVE	Optional	Optional	Optional	Optional	Optional
Model RDC	Optional	Optional	Optional	Optional	Optional
Roof Discharge Accessories					
Model RJ (Pitched Roof Curb)	Optional	Optional	Optional	Optional	Optional
Model RCC-7	Optional	Optional	Optional	Optional	Optional
Model GRS	Optional	Optional	Optional	Optional	Optional
Model RFC-7	Optional	Optional	Optional	Optional	Optional
Model GRSF	Optional	Optional	Optional	Optional	Optional
Hanging Vibration Isolators	Optional	Optional	Optional	Optional	Optional

Duct Fans

Overview

Larkin's belt drive duct fans, model XIFB, provide the industry's best performance and durability. Model XIFB is carefully engineered for efficiency and reliability in supply, exhaust, and return air applications. The XIFB is designed specifically for low sound levels in ducted applications.

- Performance ranges from 400 to 17,000 cfm (680 to 28,883 m³/hr) with static pressure up to 2.5 in. wg (620 Pa)
- Available in seven sizes ranging from 80 to 200
- All models are licensed to bear the AMCA Sound and Air Performance seal
- Removable access panels provide easy access for service
- Rugged drive frame configuration
- Vibration isolation, assures long life and quiet operation
- Larkin subjects these products to extensive life testing, assuring the fans will provide many years of reliable performance



Model XIFB is AMCA Licensed for Sound and Air Performance.

For comprehensive product information including performance, contact your local Larkin representative.

Duct Fans

Standard Construction Features

Vibration Isolation - Internal isolators support the entire drive assembly, wheel, and scroll to provide long life and quiet operation.

Housing - The fan cabinet is constructed of galvanized steel for corrosion resistance and maintenance free operation.

Bearings - Permanently sealed, pillow block ball bearings are selected for a minimum L_{10} life in excess of 100,000 hours [L_{50} average life of 500,000 hours] at maximum catalogued operating conditions.

Duct Collars - Inlet and outlet duct collars are provided for easy duct connections.

Motor - Ball bearing motors are carefully matched to the fan load and receive the cooling benefits of being in the airstream for increased motor life.

Wheel - Forward-curved, centrifugal, galvanized steel wheel is utilized to generate high efficiency and minimal sound. Each wheel is statically and dynamically balanced for long life and quiet operation.

Drive Frame - Heavy duty frame supports motor, scroll, and wheel to provide long life and durability.

Drive Assembly - Belts, pulleys and keys are sized for a minimum of 150% of driven horsepower. Machined cast iron pulleys are factory set to the required RPM and adjustable for final system balancing. Belts are static free and oil resistant.

Name Plate - Permanent stamped aluminum name plate for model and serial identification.

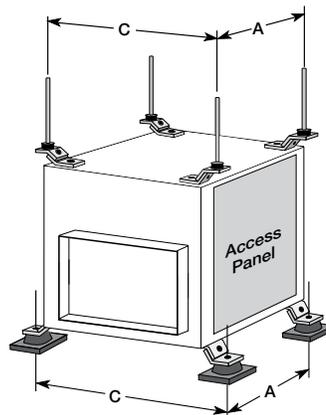
Multi Discharge Positions - Where space between duct and ceiling is a premium, bottom horizontal and top horizontal discharge positions are available for easy installation.

Access Panels - Two side panels are removable for inspection or servicing. Removal of either side panel, gives easy access to all the fans internal parts.

Typical Installations

All XIFB fans have been designed to be mounted horizontally. For ease of installation, knockouts are provided at each location where mounting brackets are shown. Universally adjustable brackets are available to mount the fan in hanging or base mounted positions.

In order to assure proper fan performance, caution must be exercised in fan placement and connection. Obstructions, transitions, poorly designed elbows, etc., can cause reduced performance, excessive noise, and increase mechanical stress. For performance to be as published, the system must provide uniform and stable airflow into the fan.



XIFB Size	A	C
80	20 ³ / ₄ (527)	22 ¹¹ / ₁₆ (576)
90	21 ³ / ₄ (552)	25 ⁵ / ₈ (651)
100	23 ³ / ₄ (603)	27 ¹ / ₈ (689)
120	30 ¹ / ₂ (775)	31 ⁵ / ₈ (803)
150	32 (813)	35 (889)
180	37 ³ / ₈ (949)	44 (1118)
200	47 ³ / ₈ (1203)	51 ¹ / ₂ (1308)

All dimensions shown in inches (mm).

Duct Fans

Options and Accessories

Sloped Filter Boxes - The double-vee configuration constructed of galvanized steel. Filters are available in 1 or 2-inch pleated disposable media or permanent washable aluminum mesh. Side access panels are standard for easy maintenance.

Multi Discharge Positions - XIFB fans have been designed for horizontal mounting and are standard with bottom horizontal discharge. Optional top horizontal discharge is also available.

Disconnect Switches - A wide selection of NEMA rated switches are available for positive electrical shutoff and safety. This includes general, dust-tight, rainproof, and corrosion-resistant.



Wiring Pigtail - Allows direct hook-up to the power supply, eliminating field wiring at the fan.

Coatings - A wide variety of protective or decorative coatings are available. Consult your Larkin representative for in-depth information.

Vibration Isolators - Base and hanging isolator kits are available with either neoprene or spring isolators. Kits range in size to support either the weight of the fan alone or the weight of the fan with filter and mixing box combinations. Kits are for horizontal mounting and include mounting brackets and hardware. Knockouts are provided in the fan cabinet for ease of installation. (Hanging rods supplied by others).



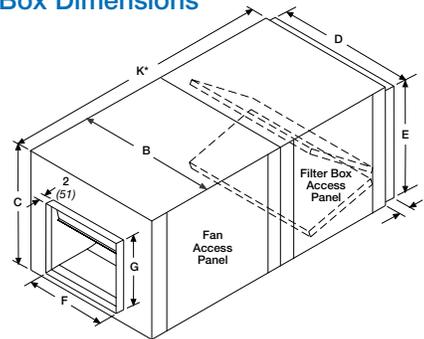
Options and Accessories		XIFB
Sloped Filter Boxes		Optional
Multi Discharge Positions		Optional
Disconnect Switches		Optional
Wiring Pigtail		Optional
Coatings		Optional
Insulated Housing		Standard
Vibration Isolators		Optional

Insulated Housing - For noise reduction and condensation control, the interior of fan housing and filter box can be lined with a fiberglass duct liner. The duct liner can be utilized to reduce radiated noise from fan housings. It is recommended for applications when fans are placed in acoustically sensitive locations. The duct liner also reduces the noise radiation from the inlet and outlet of the fan. The accompanying table depicts the reduction that can be obtained in each octave band.

Approximate (%) Sound Attenuation									
Octave Band	1	2	3	4	5	6	7	8	Sones
*Lined Housing	-3	-2	-3	-3	-5	-5	-5	-4	13%

*Lined Housing shows the reduction that can be obtained in each octave band.

Filter Box Dimensions



XIFB Size	*K	B	C	D	E	F	G	H	Filter Size	Qty.
80	49 ³ / ₄ (1264)	18 ¹ / ₂ (470)	15 ⁷ / ₈ (403)	15 ³ / ₁₆ (386)	12 ¹¹ / ₁₆ (322)	9 ³ / ₄ (248)	8 ⁷ / ₈ (225)	1 (25)	16 x 20 (406 x 508)	2
90	54 ⁷ / ₈ (1394)	21 ¹ / ₄ (540)	18 ³ / ₄ (476)	18 ¹ / ₄ (464)	15 ⁷ / ₈ (403)	12 ¹ / ₄ (311)	10 ¹ / ₂ (267)	1 (25)	20 x 25 (508 x 635)	2
100	51 ⁷ / ₈ (1318)	22 ³ / ₄ (578)	20 ³ / ₄ (527)	19 ³ / ₄ (502)	17 ⁷ / ₈ (454)	13 ³ / ₄ (349)	11 ⁷ / ₈ (302)	1 (25)	20 x 20 (508 x 508)	2
120	63 ⁹ / ₁₆ (1614)	27 ¹ / ₄ (692)	22 ³ / ₄ (578)	24 ¹ / ₈ (613)	19 ⁷ / ₈ (505)	16 (406)	13 ³ / ₈ (340)	1 ¹ / ₂ (38)	12 x 25 (533 x 635)	4
150	62 ¹ / ₁₆ (1576)	32 ⁵ / ₈ (829)	27 ³ / ₄ (705)	28 ⁵ / ₈ (727)	23 ⁷ / ₈ (604)	19 ¹ / ₈ (486)	16 ³ / ₈ (416)	1 (25)	16 x 20 (406 x 508)	8
180	75 ⁵ / ₈ (1915)	41 ³ / ₄ (1060)	31 ³ / ₄ (806)	37 ¹ / ₂ (953)	27 ⁷ / ₈ (708)	22 ¹ / ₂ (572)	18 ⁷ / ₈ (479)	1 ¹ / ₂ (38)	20 x 25 (508 x 635)	6
200	85 ¹ / ₄ (2165)	49 ¹ / ₄ (1251)	39 ³ / ₄ (1010)	48 ¹ / ₈ (1222)	36 (914)	23 ¹ / ₈ (587)	25 ¹ / ₄ (641)	1 ¹ / ₂ (38)	16 x 25 (406 x 635)	12

*K is length of fan and filter box combined. All dimensions in inches (mm).

Overview

Larkin's model XRAE (axial exhaust) and XRAS (axial supply) spun aluminum direct drive fans are designed for economy and reliability solutions in low pressure/low volume applications.

Typical applications include general commercial clean air ventilation.

- Performance capabilities up to 6,000 cfm (10,200 m³/hr) and up to 1.0 in. wg (250 Pa) of static pressure.
- Seven fan sizes are available from 10 to 24 in. (254 to 610 mm) propeller diameter.
- UL Listed for electrical.
- All models are licensed to bear the AMCA Sound and Air Performance seals.
- Larkin subjects these products to extensive life testing, assuring you the fans will provide years of reliable performance.



Models XRAE and XRAS are listed for electrical
(UL/cUL 705) File no. E40001



Model XRAE and XRAS are
AMCA Licensed for Sound and Air Performance.

For comprehensive product information including performance,
contact your local Larkin representative.

Axial Fans

Standard Construction Features

Propeller – Fabricated aluminum propeller with steeply pitched blade designed for low rpm, which generates low sound levels. Each propeller is statically and dynamically balanced for long life and quiet operation.

Switch – NEMA-1 switch is factory mounted and wiring is provided from the motor as standard (other switches are available). All wiring and electrical components comply with the National Electric Codes (NEC) and are either UL Listed or Recognized.

Motor – Carefully matched to the fan load and is mounted in the airstream. All motors are compatible with speed controller except “A” speed motors on the size 20.

Motor Cover – Constructed of aluminum and attached with stainless steel hardware for easy removal and access to motor.

Fan Shroud – One-piece, heavy-gauge aluminum with a rolled bead for extra strength.

Shroud Braces – Adds structural integrity to the shroud.

Vibration Isolation – Vibration isolators support the motor and propeller for long life and quiet operation.

Internal Conduit Chase – A large diameter conduit for installing electrical wiring through the curb cap into the motor compartment.

Curb Cap – Curb cap and integral deep spun venturi inlet are constructed of aluminum to prevent corrosion. Curb cap has 5/16 in. (8 mm) prepunched mounting holes to ensure correct attachment to the roof.

Name Plate – Permanent stamped aluminum plate for exact model and serial number identification.

Galvanized Birdscreen – 1/2 inch square galvanized rigid wire mesh protects the fan’s discharge from birds or small objects.

Lower Windband – Heavy-gauge aluminum with formed edges for added strength and weather resistance.

UL/cUL Listed 705 for Electrical - XRAE and XRAS File No. E40001.

Typical Installation

Model XRAE and XRAS fans are designed to meet the needs of general clean air applications. Tests were conducted to assure safe, rugged and reliable operation.

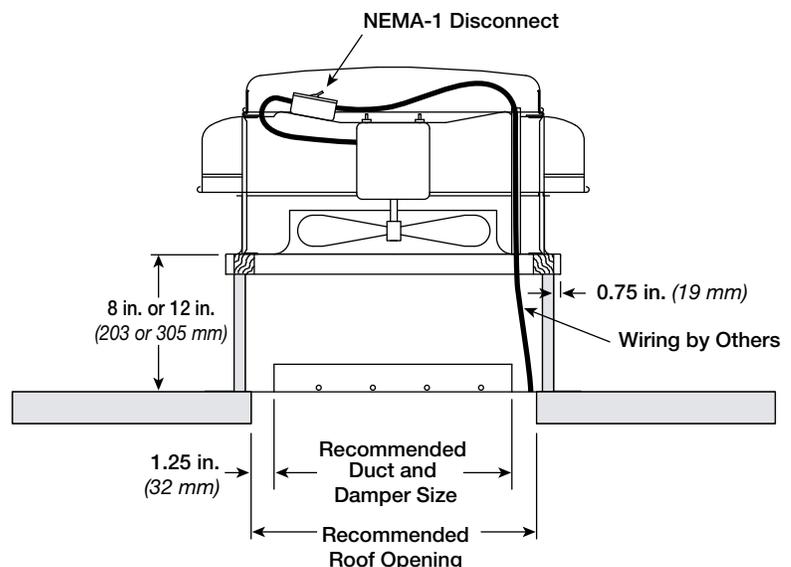
Due to the varying airstreams encountered in commercial ventilation, system designers must be aware of national, state and local codes and guidelines governing these installations. Local code authorities should be consulted before proceeding with any ventilation project.

Internal conduit chase provides means for electrical service connection through fan housing.

When roofing materials extend to the top of the curb, roof curbs should be 1½ inches (¾ inch on a side) less than the unit curb cap to allow for roofing and flashing.

Contact your Larkin Representative for recommended damper size and roof opening. This information is also provided on the CAPS submittal.

Installation must include a means for inspecting, cleaning and servicing the fan.



Axial Fans

Options and Accessories

Roof Curbs – Prefabricated roof curbs reduce installation time and costs by ensuring compatibility between the fan, curb and roof opening. All curbs are insulated with fiberglass. A wide variety of roof curbs are available including: flanged, pitched and sound-absorbing.

Curb Extension – Extensions raise the fan discharge above the roof line and provide an accessible mounting location for dampers. Insect screen bases are constructed with a removable fine mesh. Recommended for applications where insect entry must be prevented.

Coatings – Wide variety of coatings and colors are available.

Disconnect Switches – A wide selection of NEMA rated switches are available for positive electrical shut off and safety, including: dust-tight, rainproof, and corrosion-resistant. Switches may be internally or externally mounted.



Dampers – Designed to prevent outside air from entering back into the building when fan is off. Includes: gravity and motorized dampers.

Birdscreen – Galvanized mesh is standard. Optional aluminum or stainless steel rigid wire is also available.

Speed Controllers – Available for use with shaded pole and permanent split capacitor (PSC) open motors on model XRAE and XRAS fans. They provide an economical means of system balancing with direct drive fans.



The chart below shows which options and accessories are available on Larkin's roof mounted axial fans.

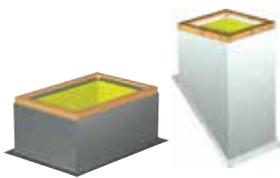
	XRAE	XRAS
Options and Accessories		
Roof Curbs	Optional	Optional
Curb Extension	Optional	Optional
Coatings	Optional	Optional
Disconnect Switches	Standard	Standard
Dampers	Optional	Optional
Birdscreen	Standard	Standard
Speed Controllers	Optional	Optional

Roof Curbs, Equipment Supports and Curb Extensions

Overview

Larkin offers prefabricated roof curbs, which reduce installation time and costs by ensuring compatibility between the fan, curb and roof opening. A wide variety of roof curbs are available, including: flanged, straight-sided, canted, pitched, ridged, vented, and sound-absorbing.

Curb extensions are also available to raise the fan's discharge or provide an accessible mounting location for dampers. Insect screen bases and vented extensions are also available.



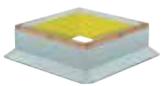
Models GPI, GPIP and GPIR

Models GPI, GPIP and GPIR are standard with fully welded construction, wood nailer, 1 inch insulation and 2 inch flashing flange. Model GPI is for use on flat roofs, GPIP for pitched roofs and GPIR is available for ridged (double pitched) roofs. Models are available in heights of 12 to 42 inches.



Models GPF, GPFP and GPFR

Models GPF, GPFP and GPFR are standard with fully welded construction and 1-inch insulation. Model GPF is for flat roofs, GPFP is for pitched roofs and GPFR is available for ridged (double pitched) roofs. Models are available in heights of 8 to 42 inches.



Model GPS, GPR

This curb is designed for use on flat roof decks. It consists of a fully welded body and 1 inch of insulation. Model GPS is available in heights of 8 inches to 20 inches. Raised cant is available on model GPR.



Model GPFV

The GPFV vented roof curb is typically used for kitchen applications where the vents allow hot air and gases to escape between the ductwork and roof curb. This curb is designed for use with Larkin's model XRUB, XRUBS or XRUD fan to provide the required 40 inch minimum discharge height above the roof line (per NFPA 96).

Options and Accessories

- Damper Trays
- Insulation (All except GPE, VCE and GPFV)
- Step for Insulation (GPR only - up to 6 in.)
- Double Shell Construction (All except GPE, GPFV, VCE)
- Single Pitch (GPI and GPF)
- Ridge Mount (GPI and GPF)

Roof Type/Application	Description	Model and Service
Flat, pitched or ridged, insulated or non-insulated roof decks	Welded, straight-sided construction with rigid fiberglass insulation and 2 in. mounting flange	GPI - All types, sized to meet your requirements
Flat, insulated or non-insulated roof decks	Welded, canted construction with rigid fiberglass insulation	GPS - All types, sized to meet your requirements
Flat, pitched or ridged, non-insulated roof decks	Welded, straight-sided construction with rigid fiberglass insulation and 5 in. mounting flange	GPF - All types, sized to meet your requirements
Flat, insulated roof decks	Welded, raised cant construction with rigid fiberglass insulation	GPR - All types, sized to meet your requirements
Adaptors/Reducers	Used to match new fans to existing roof curbs. Welded galvanized steel or aluminum.	Curb adaptors and reducers

For complete product information contact your local Larkin representative.

Roof Curbs, Equipment Supports and Curb Extensions



Models GESS and GESR

These equipment supports are designed for use on both insulated (GESR) and non-insulated (GESS) flat roof decks. A variety of sizes and widths are available. Models GESS and GESR are available in welded aluminum or galvanized steel. Available in heights of 8, 12 and 14 inches and widths of 4, 6 and 8 inches.



Models GPE and GPEX

Both curb extension models mount between the fan and roof curb. Heights range from 12 up to 24 inches. Models consist of welded aluminum or galvanized steel. The GPE is designed with an access door to provide easy access to the damper and damper actuator as well as fulfilling additional height requirements. The GPEX is also designed to provide additional height requirements without an access door.



Model VCE

The VCE vented curb extension is typically used in kitchen applications, where the vents allow hot air and gases to escape between the ductwork and the roof curb. Designed for use with an 8 inch high roof curb and Larkin's model XRUB, XRUBS or XRUD fan to provide the required 40 inch minimum discharge height above the roof (per NFPA 96). Model VCE is available in galvanized steel or aluminum.



Model ISB

Insect screen bases are available for applications where the building must be free of insects, as in food processing operations. Insect screen bases mount between the supply fan and the roof curb, and provide an additional 6 inches of height. Two bolted access doors are provided for removal and cleaning of the screen. Model ISB is constructed of galvanized steel or aluminum with a fine mesh screen made of aluminum or stainless steel.

Adapters and Reducers

Used to adapt or reduce the standard fan curb cap dimensions to a non-standard specified curb size within 10 inches of standard. Adapters and reducers are most commonly used to match new fans to existing roof curbs. Construction consists of welded galvanized steel or aluminum.

