

High Performance Axial Fans

Model RA-3 Series

Direct Drive



BUILDING VALUE IN AIR.



August
2023

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High Performance Axial Fans



Greenheck's [high efficiency direct drive RA 3 fans](#) equipped with [performance vanes](#) are ideal for inline air ventilation in commercial, institutional or industrial buildings. The casing design and construction are well suited for [indoor or outdoor](#) applications and can be easily installed in ducted or non-ducted systems. The vane axial inline fan is designed to significantly reduce [operating costs](#) with peak total efficiency ranging up to 86%.

Features and Benefits

- Higher efficiency and lower sound levels than other axial inline fan models
- Lower maintenance compared to other vane axial inline fans
- Easy to select
- Fast lead times
- Multiple configurations
- Variety of applications
- Complete smoke control offerings

Typical Applications

- Fire and smoke exhaust
- Stairwell, lift and atrium pressurization
- General ventilation
- Parking garage and storage facility exhaust
- Emergency smoke and heat exhaust
- Industrial process ventilation
- Supply and return ventilation



Building Segments

We are known worldwide as a leading manufacturer that provides high-quality air movement and control equipment. Today, our HVAC (heating, ventilation, air conditioning) products are efficiently moving air in a variety of commercial and industrial spaces.



Mixed Use/Residential



Hospitals



Offices



Metro



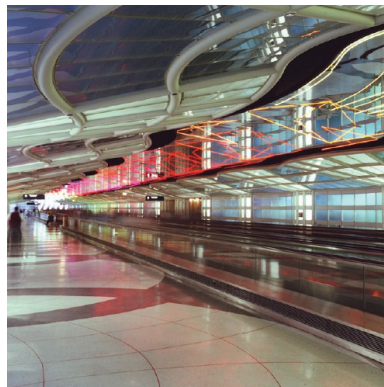
Shopping



Schools/Universities



Hotels



Airports



Manufacturing

- Model RA 3 Series is available in 15 sizes that cover a broad range of volumetric flow and pressure conditions.
- Capacities range for volumes up to 215,000 CMH (126,544 cfm) and external static pressures to 1,367 Pa (5.5 in. wg).
- Licensed to bear the AMCA Sound & Air Performance seal.



Greenheck India Pvt. Ltd. certifies that the Model RA 3 shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



High-Temperature Certification

Greenheck understands that designing products for life safety applications is an important and serious matter. Products that limit the spread of smoke and fire need to be reliable, utilizing quality components to ensure and promote safety. That's why Greenheck's model RA-3 Series fans are certified in accordance with EN12101-3:2015 at Applus Laboratory headquarters in Barcelona, Spain. Additionally, our fans are certified to carry the CE marking.

Greenheck offers the following temperature classifications for our RA-3 Series fans:

- 250°C / 2 Hrs - TUV
- 250°C / 2 Hrs - UL
- 400°C / 2 Hrs (752°F / 2 Hrs)

Units are suitable for both smoke reservoir and nonsmoke reservoir applications, certified to be used either inside or outside the reservoir. RA 3 fans are also suitable for vertical and horizontal installation. Additionally, our high temperature fans are certified for dual purpose ventilation, meaning they can be used for smoke extraction as well as normal, day-to-day ventilation.



CE Mark

The CE mark is a mandatory conformity marking for certain products sold within the European Economic Area (EEA). Greenheck declares conformity to the legal requirements necessary to achieve the CE marking.



UL Mark

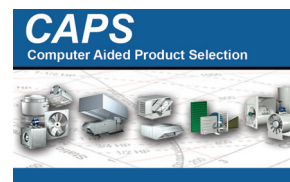
The Model RA 3 is available with UL Listing for Power Ventilators for Smoke Control Systems, File no. E529585



Leading Edge Support

All Greenheck products are supported by the industry's best product literature and Computer Aided Product Selection (CAPS®). You will also find extensive product information and installation, operation and maintenance (IOM) manuals on our website.

And, of course, you can always count on the personal service and expertise of our international representative organization. To locate your nearest Greenheck representative, visit our website at greenheck.co.in.



Universal Mounting Configurations

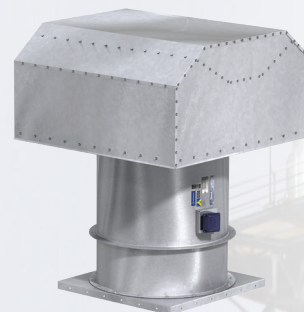
For ease of installation, fans for horizontal and vertical orientation each have Universal Mounting Configurations which allow for ceiling or base mounting. These supports can be removed and reinstalled to the other end of the housing, allowing for multiple mounting configurations on supply or exhaust applications.



Horizontal Base Mount



Vertical Base Mount



Hooded Roof Fan



Horizontal Ceiling Mount*

*Shown with Flexible Duct Connectors



Vertical Wall Mount



Vertical Ceiling Mount



Upblast Exhaust

Horizontal Mounting

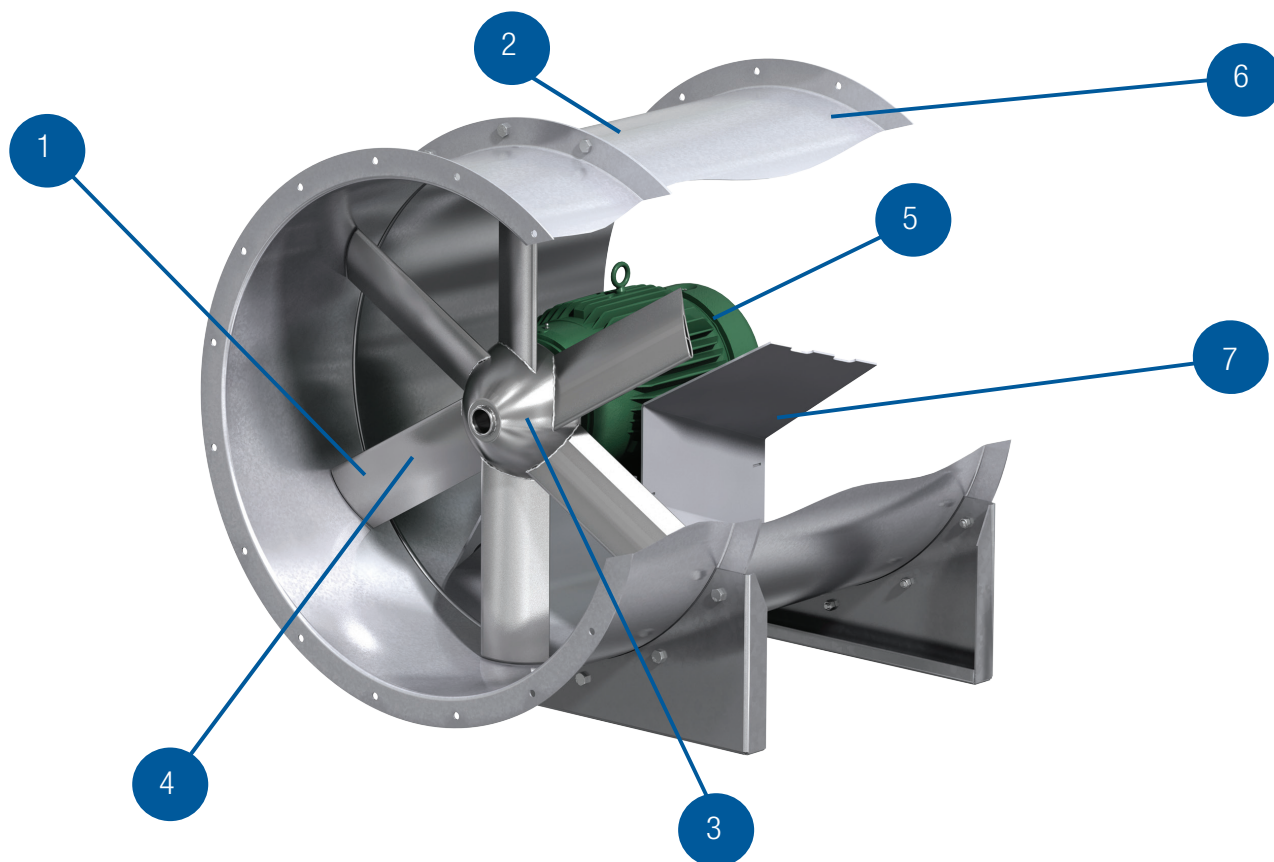
Base mount or ceiling hung fans in horizontal configuration are provided with two identical rigid steel supports, which allows the configuration to easily be changed between base mount and ceiling hung in the field.

- **Base Mount:** Fan is supported horizontally from the floor.
- **Ceiling Hung:** Fan is suspended horizontally from the ceiling.

Vertical Mounting

Vertical mounting configurations, upblast and downblast, are provided with a heavy duty bracket.

- **Base Mount:** Fan is supported vertically from the floor via the ring mounting bracket.
- **Ceiling Hung:** Fan is suspended vertically from the ceiling, connected to the ring mounting bracket under the fan.
- **Wall Mount:** Fan is supported vertically on the ring mounting bracket bolted to the wall mount accessory.
- **Hooded Roof Fan:** Fan is mounted to the roof curb. Suitable for supply or exhaust.
- **Upblast Exhaust:** Designed to exhaust high temperature or clean air.



1 High Performance Propeller (315-1600 mm)
Propellers are high efficiency, airfoil aluminum. The unique design of the RA 3 welded propeller with varying tip and root pitches for sizes up to 1120 is intended to move high volumes of air with less power, saving on energy costs and total cost of ownership. Sizes 1250 and above are constructed of cast aluminum which allow for easy adjustment in the field.

2 Robust Casing
Casings are constructed of continuously welded galvanized steel to prevent air leakage. Rolled inlet and outlet flanges are provided with mounting holes for easy, airtight ductwork connections. Flanges have punched holes in accordance with Eurovent 1/2.

3 Hubs
A wide selection of hub diameters further optimizes the fan performance in a cost-effective manner by choosing the right hub for the required volume and performance.

4 Blades
Tight tip clearance improves overall efficiency and in turn overall sound levels. For quieter operation, blades are engineered for wide blade shapes and unique blade count.

5 Motors
Motors are IEC design, located in the airstream. Utilizes extruded motor leads with an external junction box.

Single or two-speed motors are available in 50 or 60 Hz. Additional motor options include asynchronous three-phase or single-phase.

6 Long Casing Standard
Greenheck's design utilizes a standard long casing to aid in ease of installation and maintenance.

7 Performance Vane Section
Greenheck's developed vane section design ensures improved efficiency of the axial fan.

Other Features

Research & Development (R&D)

Greenheck's engineers use Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) to optimize all performance factors of the fan.

Performance Testing

Aerodynamic design and structural endurance testing take place in Greenheck's state-of-the-art (R&D) facilities and performance testing labs.

Certified Performance

The entire line of model RA-3 Series fans are licensed to bear the AMCA Sound & Air Performance Seal ensuring your fan will perform as expected.

World Class Manufacturing Process

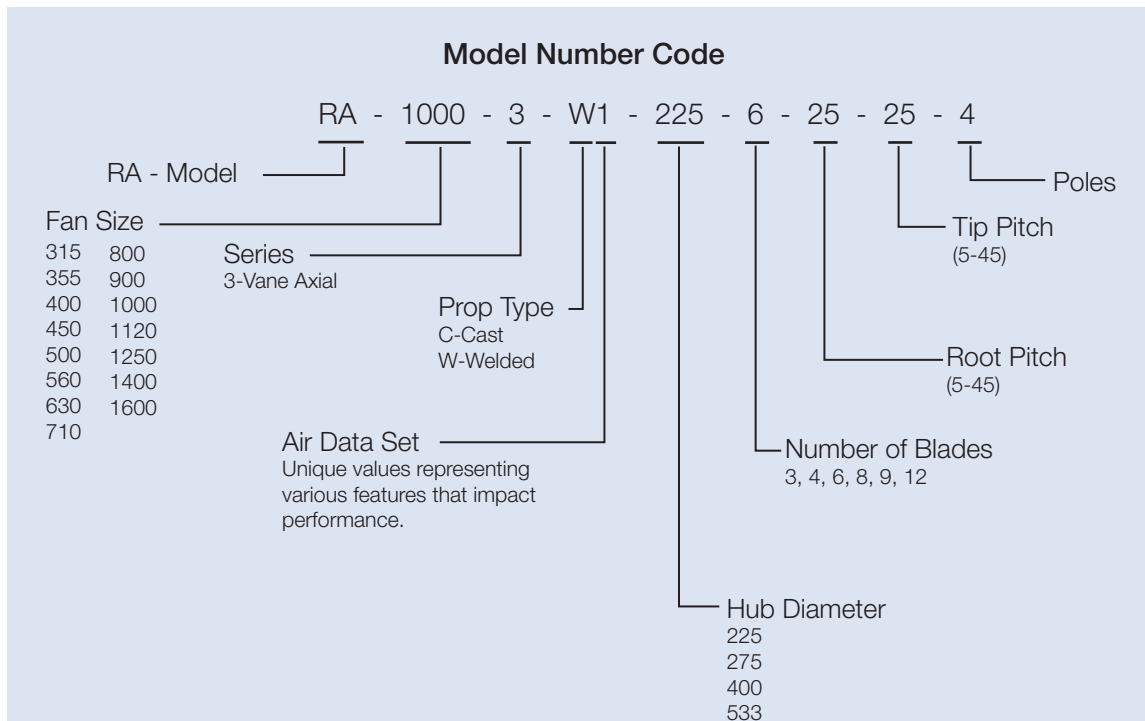
The success of the design relies on the ability of the manufacturing processes to produce accurate parts that are consistent and fit together properly. To manufacture the model RA-3 Series fan, a combination of world-sourced modern technology and custom-built equipment is used to achieve repeatable performance and product quality.

Fan Testing and Vibration Analysis

Assembled fans are test run at the factory with motor amp, speed and voltage measurements taken to ensure proper operation.

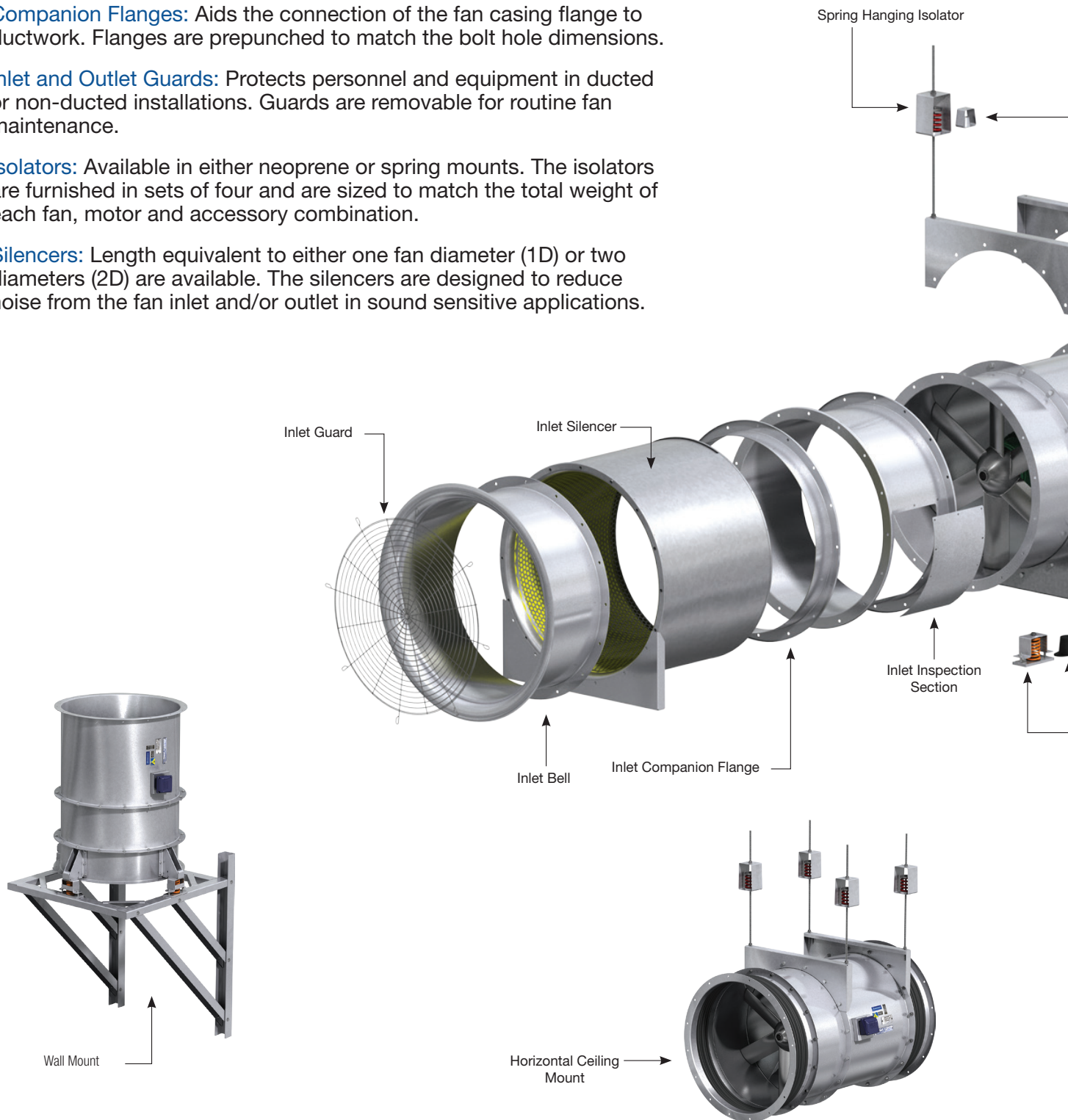
All Greenheck RA-3 Series fans endure a complete mechanical vibration test after assembly. Our proprietary balancing system measures the vibration on six planes at the design operating speed. A permanent record for each fan's performance is kept on file and is available upon request.

The standard vibration levels attained meet the requirements of Fan Application BV-3 as defined in AMCA Standard 204-05 "Balance Quality and Vibration Levels for Fans."

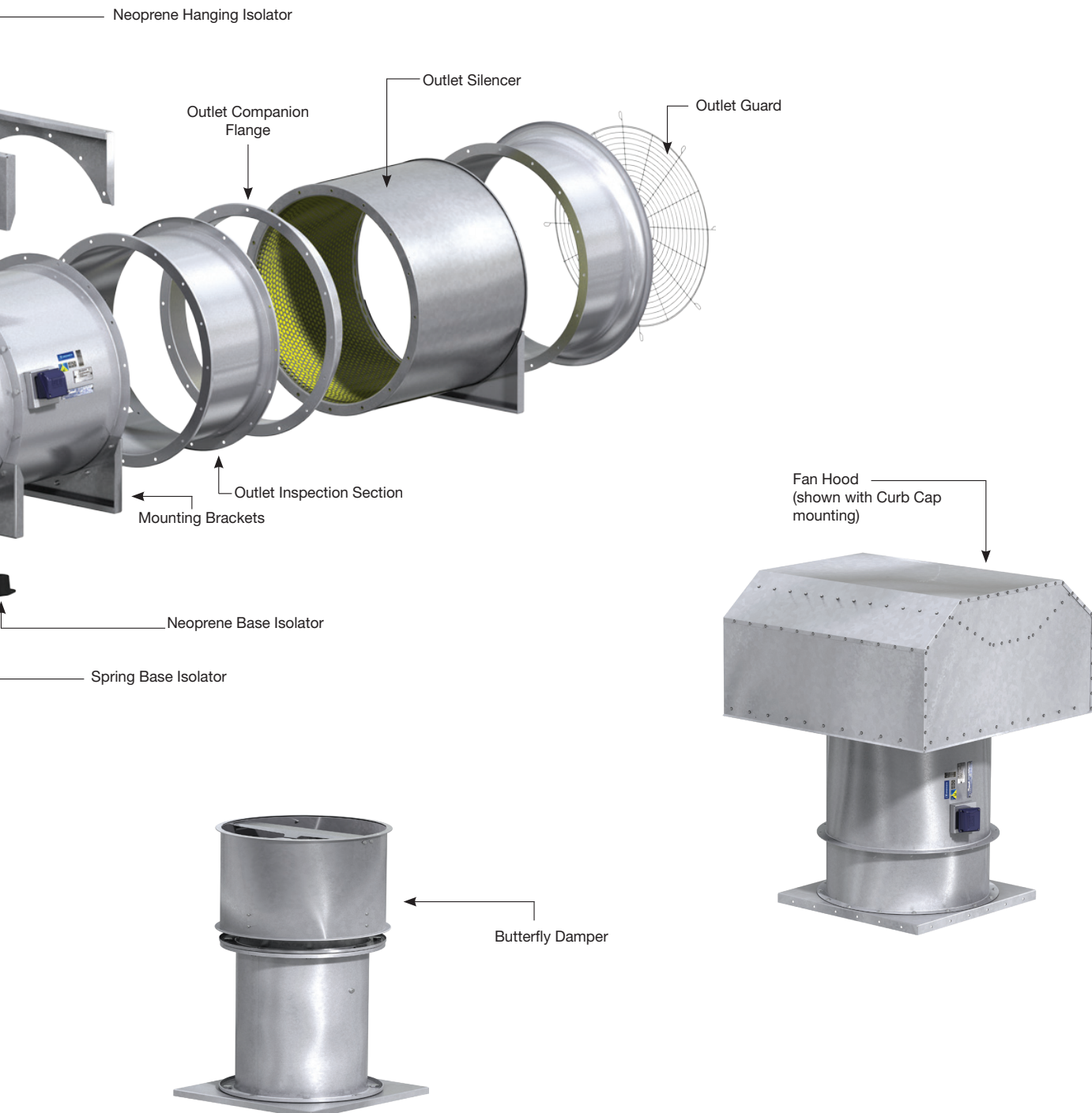


Options & Accessories

- **Mounting Brackets:** Allows for horizontal ceiling or base mount applications. The brackets also provide an attachment point for any vibration isolation devices.
- **Inlet Bell:** Minimizes entry losses into the fan from free (non-ducted) inlet conditions to provide improved performance.
- **Companion Flanges:** Aids the connection of the fan casing flange to ductwork. Flanges are prepunched to match the bolt hole dimensions.
- **Inlet and Outlet Guards:** Protects personnel and equipment in ducted or non-ducted installations. Guards are removable for routine fan maintenance.
- **Isolators:** Available in either neoprene or spring mounts. The isolators are furnished in sets of four and are sized to match the total weight of each fan, motor and accessory combination.
- **Silencers:** Length equivalent to either one fan diameter (1D) or two diameters (2D) are available. The silencers are designed to reduce noise from the fan inlet and/or outlet in sound sensitive applications.



- **Fan Hood:** Constructed of galvanized steel and are available for upblast and downblast, roof mount configurations.
- **Inspection Sections:** Allows access to the fan for cleaning or visual inspection of the propeller or motor. Inspection sections are available for the inlet, outlet, or both.
- **Flexible Duct Connectors:** Flexible, airtight joint used to isolate vibration and minimize noise between the fan and duct system.



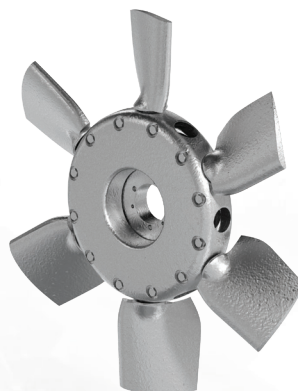
High Efficiency Props

Greenheck's model RA-3 props are available in fabricated (welded) or cast aluminum options. Fabricated aluminum props are offered from 315 mm to 1120 mm while cast aluminum props are available from 560 mm to 1600 mm. The blades on the fabricated prop have the ability to be twisted resulting in an increased efficiency.



Fabricated Aluminum

- More economical at low pressures
- Lighter weight
- Wide variety of efficient performances
- Twisted or straight blades to optimize performance
- AMCA Certified for Sound and Air Performance



Cast Aluminum

- Field adjustable blade pitch
- Ideal for medium to high pressures
- Robust design suitable for industrial applications
- AMCA Certified for Sound and Air Performance

Size	A	B	C	D	E	F	G	H	I	J
RA-315-3	395	355	315	10	8	220	358	10	515	477
RA-355-3	435	395	355	10	8	238	398	10	515	477
RA-400-3	480	450	400	12	8	260	443	12	515	477
RA-450-3	530	500	450	12	8	293	493	12	515	477
RA-500-3	594	560	500	12	12	318	544	12	833	478
RA-560-3	654	620	560	12	12	347	700	12	833	476
RA-630-3	724	690	630	12	12	400	770	12	833	476
RA-710-3	804	770	710	12	16	440	850	12	833	476
RA-800-3	894	860	800	12	16	488	938	12	910	476
RA-900-3	1006	970	900	15	16	561	1052	15	910	546
RA-1000-3	1106	1070	1000	15	16	611	1152	15	910	545
RA-1120-3	1258	1190	1120	15	20	735	1304	15	910	523
*RA-1250-3	1388	1320	1250	15	20	818	1440	15	1100	737
*RA-1400-3	1538	1470	1400	15	20	873	1590	15	1100	737
*RA-1600-3	1760	1680	1600	20	24	967	1790	20	1100	715

NOTE: Dimensions in millimeters (mm)

Tube Length dimensions shown are the maximum, actual dimensions may vary based on motor frame.

*Refer to Image 2 for size reference for RA 1250-3, RA-1400-3 & RA-1600-3

Image 1

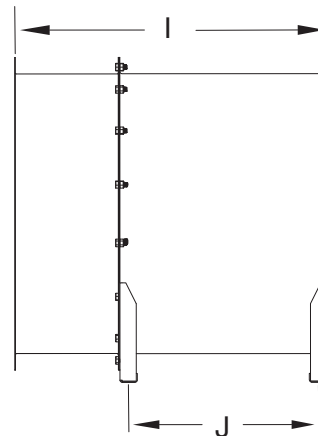
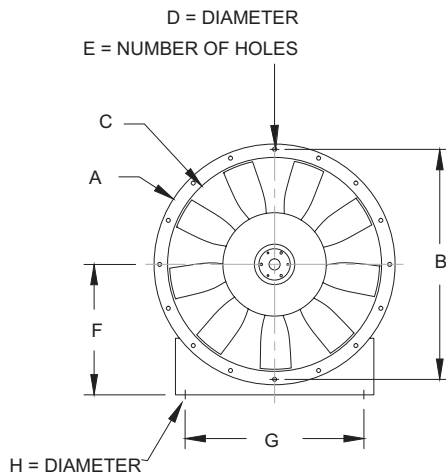
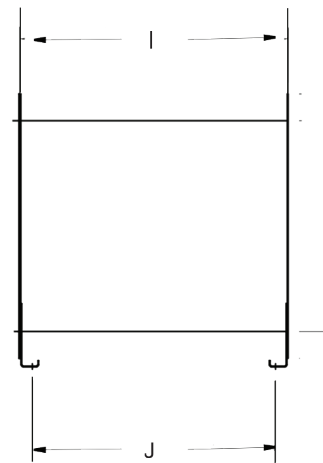
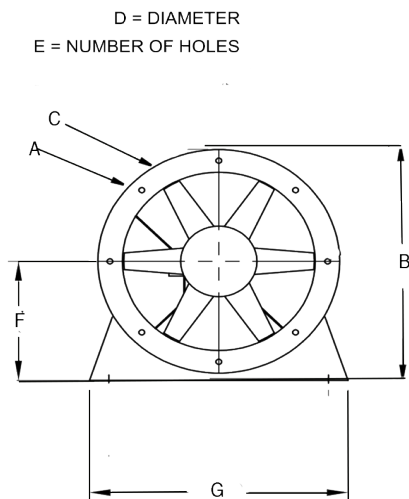


Image 2



Design and Selection Support

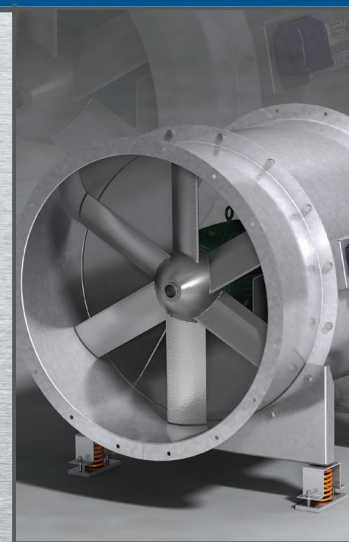
Enjoy Greenheck's extraordinary service, before, during and after the sale.

Greenheck offers added value to our wide selection of top performing, energy-efficient products by providing unique Greenheck service programs.



- Greenheck's free Computer Aided Product Selection CAPS® is rated by many as the best in the industry. CAPS helps you conveniently and efficiently select the right products for the challenge at hand.
- Greenheck continues to take an industry-wide leadership position to affect positive global sustainability. We believe that providing education on products we offer contributes to reducing energy consumption and improving healthier indoor environments.

Find out more about these special Greenheck services at greenheck.com or greenheck.co.in



Building Value in Air

Greenheck delivers value to mechanical engineers by helping them solve virtually any air quality challenges their clients face with a comprehensive selection of

top quality, innovative air-related equipment. We offer extra value to contractors by providing easy-to-install, competitively priced, reliable products that arrive on time.

And building owners and occupants value the energy efficiency, low maintenance and quiet dependable operation they experience long after the construction project ends.

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Product warranties can be found online at Greenheck.com, either on the specific product page or in the literature section of the website at Greenheck.com/Resources/Library/Literature.



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Greenheck India Private Ltd has been independently audited and confirmed as being in conformity with ISO 9001:2015 and ISO 14001:2015.

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