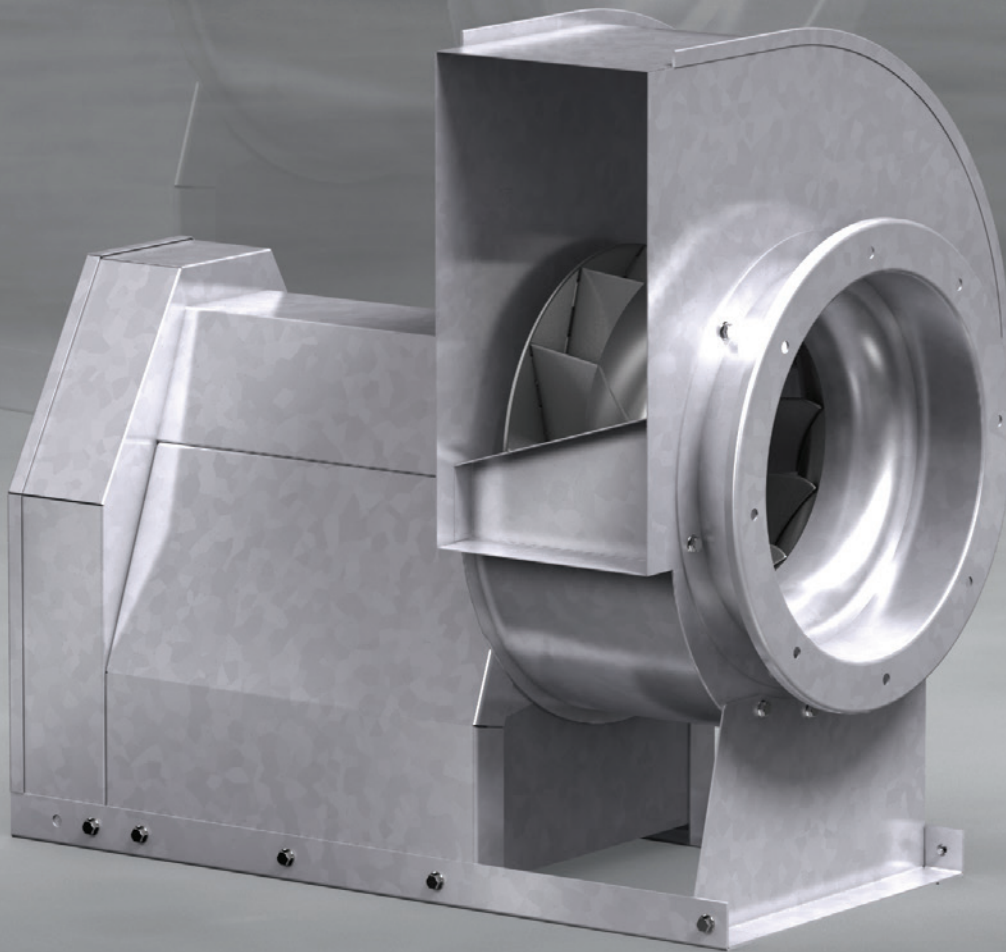


Centrifugal Fans Model CSB

- Single Width Blowers
- Commercial & Industrial Applications



BUILDING VALUE IN AIR.

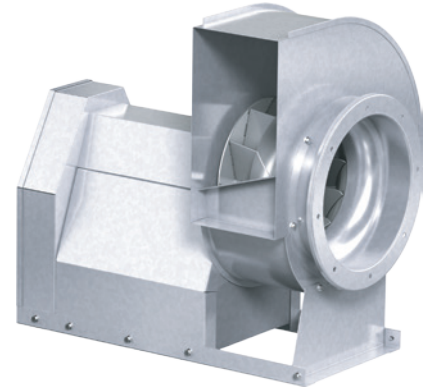
April
2024

Model CSB

Centrifugal Single Width Blowers

Greenheck's single-width centrifugal fans are designed to provide efficient and reliable operation for commercial and industrial applications. We manufacture our products with state-of-the-art equipment and undergo quality control testing to ensure a trouble-free start-up.

Model CSB is an excellent choice for **exhaust air**, supply air, **filtration**, heating, **air conditioning** and **industrial** process applications.



Benefits of Greenheck Centrifugal Products

- AMCA licensed for FEI, Sound & Air Performance
- Flexible for a variety of applications
- Suitable for indoor or outdoor installation
- Belt drive design allows for easy field performance adjustments
- High-pressure capacity to handle larger ducted systems or filtration requirements
- Efficient backward inclined performance
- Tested and reliable product design

Certifications



Greenheck India Pvt Ltd. certifies that the CSB models 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 comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and FEI ratings only. Performance certified is for installation type B: Free inlet, Ducted outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).



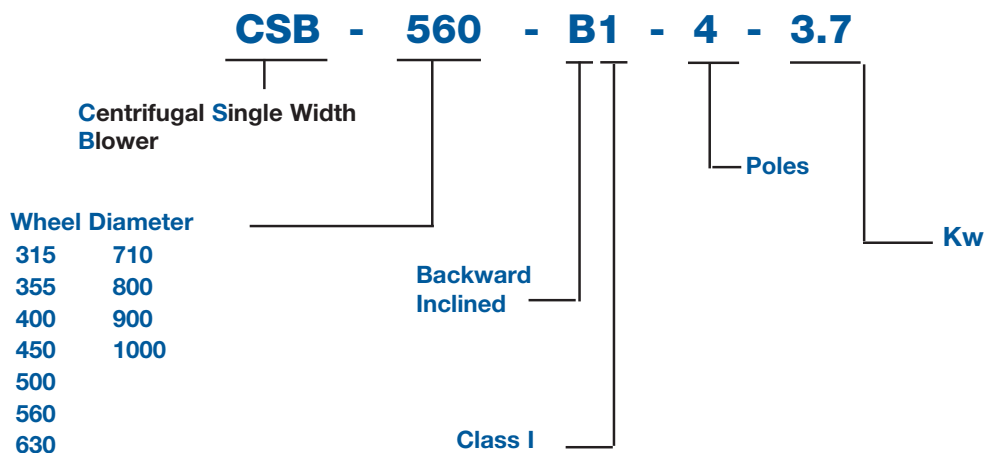
UL Listed Power ventilator
UL File no. E529585

UL 762 Power Ventilator for Restaurant Exhaust Appliances
UL File no. E529585

UL Power Ventilator for Smoke Control Systems (400°C for 2 hours)
UL File no. E529585

Certified data may be found in Greenheck's Computer Aided Product Selection program CAPS®

The model number code is designed to completely identify the unit. The correct code letters must be specified to designate configurations. The remainder of the model number is determined by the size and performance selected from the model CSB Sound and Air performance supplement.



Building Segments and Applications

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



Offices and hotels



Automotive facilities



Shopping centers



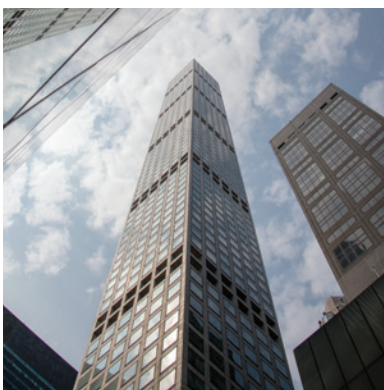
Food processing



Metros



Hospitals



Mid and high-rise

Typical Applications

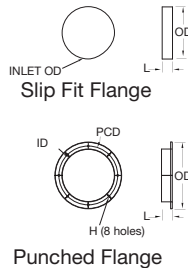
- General or fume exhaust
- Kitchen smoke and grease exhaust
- Stairwell pressurization
- Filtered exhaust
- Industrial process exhaust

Standard Construction and Configuration

- Volume up to 42,000 cmh
- Static pressure up to 1,500 Pa
- Galvanized steel
- Greenheck's Permalock™ lock seam scroll
- Backward-inclined (BI) wheels:
 - Steel: (315-1000 mm)
 - Aluminum: (315-710 mm)

Accessories/Options

- Inlet connection
- Slip-fit flange
- Punched flange
- Extended warranty (1 to 5 years)



Housing

Constructed of galvanized steel with Zinc GSM275, preventing additional corrosion than industry standard, extending product life and increasing long-term savings.



Fan Shaft

Turned and polished steel that is sized so the first critical speed is at least 25% over the maximum operating speed for each pressure class.

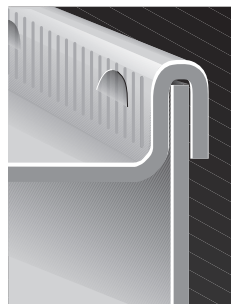
Premium Bearings

Single-width centrifugal products are manufactured with "air handling quality" self-aligning bearings with insert or housed pillow block type. The adapter sleeve collar lock ensures smooth operation and provides superior grip force between the bearing collar and fan shaft. All bearings are selected for a basic rating fatigue life of L_{10} in excess of 40,000 hours at the maximum RPM for the selected pressure class.

L_{10} life implies 90% reliability or 10% failure rate after the stated hours. L_{10} life of 40,000 hours is equal to the average life of 200,000 hours.

Permalock™ Housing

Permalock™ housings use a mechanically fastened seam instead of welding. This airtight and watertight housing construction uses the same structural support as the all-welded housings. Permalock construction is an excellent value engineering option for applications up to 8.5 in. wg (2.1 kPa).



Wheels

Greenheck's single width, single inlet, backward-inclined wheels provide high efficiency with low sound levels. Wheels are balanced statically and dynamically to AMCA G2.5 standard/AMCA Standard 204-05 for smooth vibration-free operation.

	Backward-Inclined (BI)	
Wheel Type		
	Aluminum	Steel
Application	General purpose, clean air, restaurant and grease, or severe environments	
Temperature	Aluminum: Up to 148°C (300°F) Steel: Up to 250°C (482°F)	
Construction	Aluminum: Sizes: 315-710 mm Steel: Sizes: 315-1000 mm	

Grease Exhaust Accessories

Shaft Seal

A felt seal available for operation at high temperatures or for exhausting contaminated air.

Heat Slinger

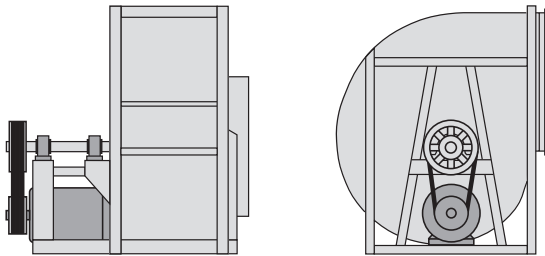
The heat slinger is an aluminum cooling disc mounted on the fan shaft between the inboard bearing and the blower housing to dissipate heat conducted along the fan shaft.

Red Silicone Sealant

Pressure sensitive silicone adhesive recognized for flame retardancy and gasketing properties. Provided at the inlet and outlet of the fan to avoid grease leakage. Working range (-50 to 250° C).

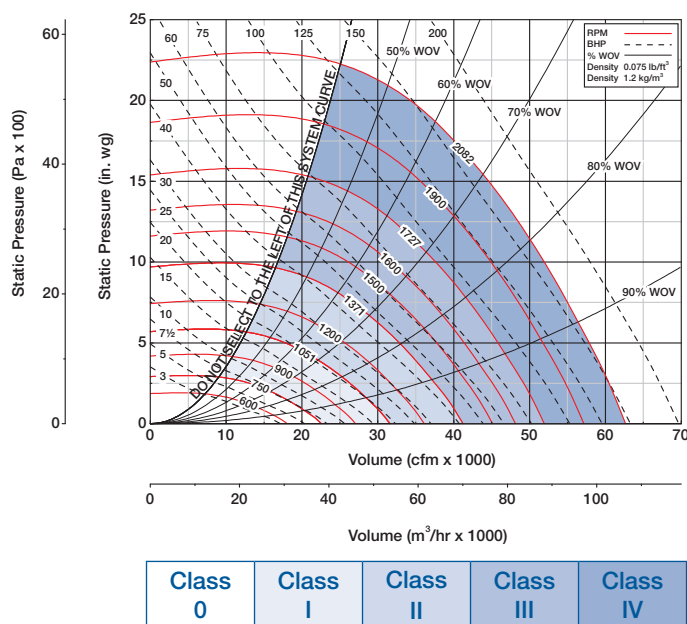
Arrangement 10 — Belt Drive

- Recommended as first choice configuration for belt drive applications
- Most compact belt drive arrangement
- Bearings are mounted out of the airstream
- Motor is mounted beneath the drive frame
- Available with a weatherhood to cover motor, drives and bearings
- Moderate dirt and heat tolerance



Class of Construction

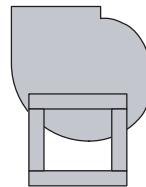
Fan class refers to a construction level designed to handle a given fan outlet velocity and pressure. As the fan performance requirements increase, the fan construction (material gauge, shaft diameter, motor size) must also increase to handle the new workload. CSB models target Class 0 & I performance ranges for backward inclined fans, as defined by AMCA pressure class.



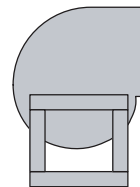
Discharge Positions and Rotatable Housings

Rotation and discharge is always determined from the drive side of the fan.

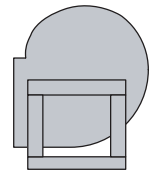
CW UB



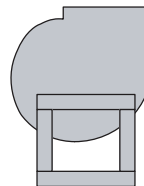
CW TH



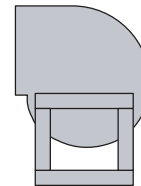
CW BH



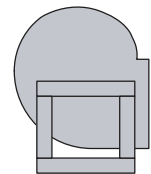
CCW UB



CCW TH



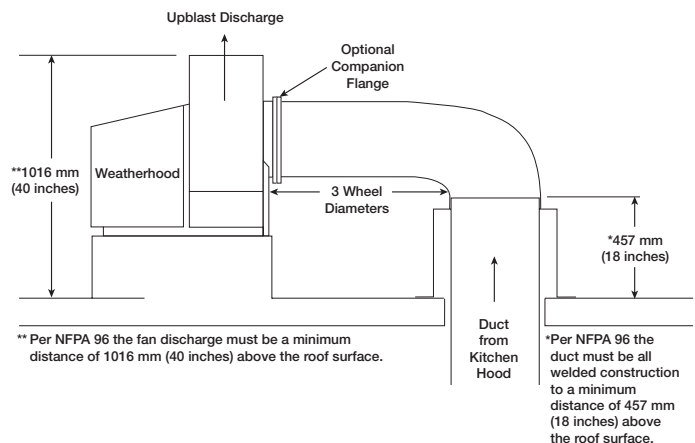
CCW BH



Typical Installation - Commercial Kitchen (Grease)

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

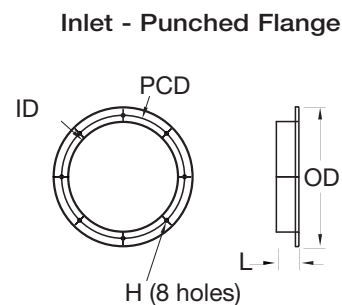
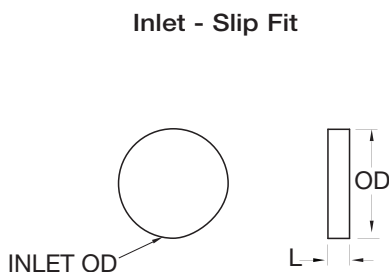
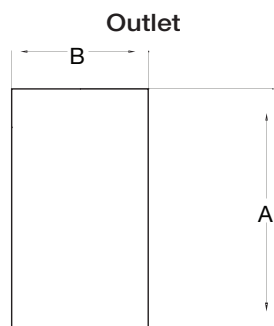
- Fans selected for grease removal must include a 25 mm (1 inch) drain connection.
- An outlet guard is strongly recommended when the fan discharge is accessible.
- An upblast discharge is recommended.
- The fan must discharge a minimum of 1016 mm (46 inches) above the roofline and the exhaust duct must be fully welded to a distance of 457 mm (18 inches) above the roof surface.
- No dampers are to be used in the system.



Outlet & Inlet Connections

Outlet			Inlet - Slip Fit		Inlet - Punched Flange					
Size	A	B	Inlet OD (D)	L	ID	PCD	OD	H (Hole Dia)	Number of holes	L
315	404	208	318	67	315	355	399	10	8	67
355	452	234	358	67	355	395	443	10	8	67
400	506	255	403	67	400	450	488	12	8	67
450	568	287	453	67	450	500	538	12	8	67
500	638	321	503	60	500	560	602	12	12	60
560	714	357	563	60	560	620	662	12	12	60
630	800	403	633	60	630	690	732	12	12	60
710	898	451	713	60	710	770	812	12	16	60
800	1007	505	803	60	800	860	902	12	16	60
900	1130	567	903	63	900	970	1010	15	16	63
1000	1266	637	1003	62	1000	1070	1110	15	16	62

All dimensions are in millimeters.

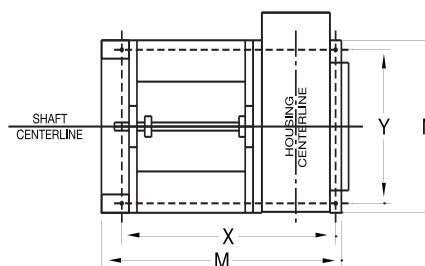


Foot Print & Slot Dimensions

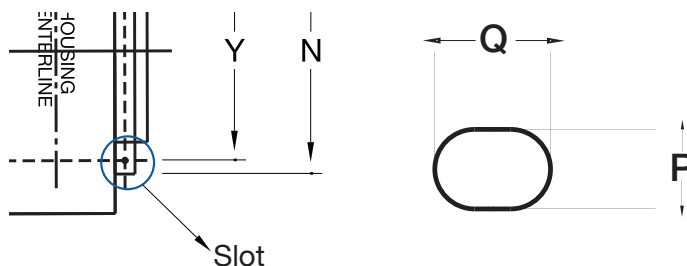
Size	X	Y	M	N	P	Q
315	765	305	835	350	11	16
355	789	362	859	406	11	16
400	893	405	943	453	11	16
450	936	497	986	548	13	18
500	960	545	1020	607	13	18
560	1038	620	1098	682	13	18
630	1136	700	1196	750	13	18
710	1301	760	1361	822	13	18
800	1465	915	1525	982	13	18
900	1622	1005	1682	1072	13	18
1000	1638	1075	1708	1142	13	18

All dimensions are in millimeters.

Footprint



(Slot Reference)



CCW/CW UB Dimensions (Fig. 1 & 2)

Size	Z	H	A	W
315	448	674	350	600
355	463	710	406	672
400	529	803	453	756
450	554	873	548	850
500	606	949	607	935
560	696	1083	682	1051
630	773	1196	750	1177
710	851	1317	822	1321
800	946	1504	982	1489
900	1086	1702	1072	1668
1000	1136	1807	1142	1852

All dimensions are in millimeters.

Fig. 1 (CCW)

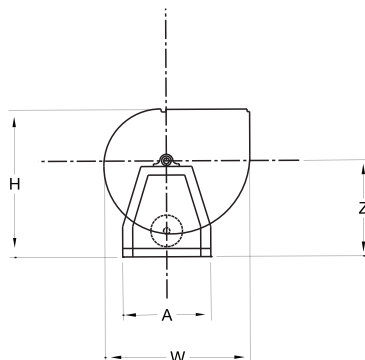
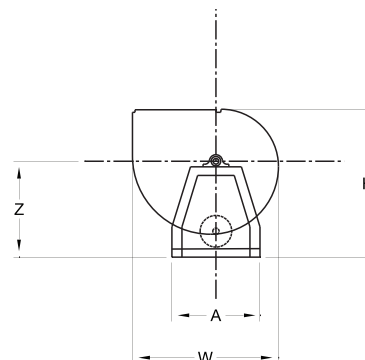


Fig. 2 (CW)



CCW/CW TH Dimensions (Fig. 3 & 4)

Size	Z	H	A	W
315	448	804	350	526
355	463	860	406	583
400	529	976	453	653
450	554	1055	548	742
500	606	1158	607	809
560	696	1314	682	912
630	773	1472	750	1010
710	851	1632	822	1111
800	946	1826	982	1303
900	1086	2073	1072	1450
1000	1136	2233	1142	1597

All dimensions are in millimeters.

Fig. 3 (CCW)

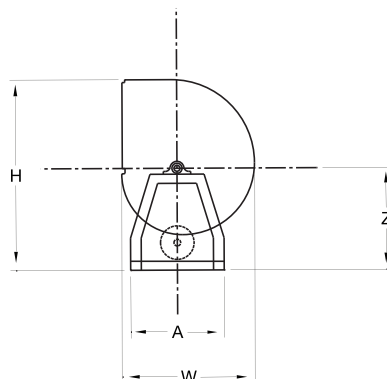
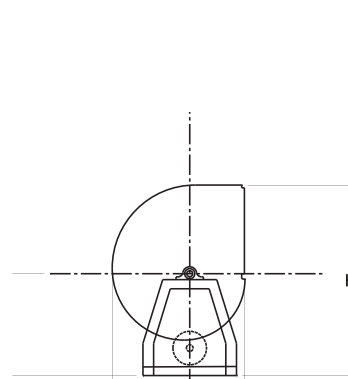


Fig. 4 (CW)



CW/CCW BH Dimensions (Fig. 5 & 6)

Size	Z	H	A	W
315	448	695	350	526
355	463	740	406	583
400	529	838	453	653
450	554	903	548	742
500	606	987	607	809
560	696	1129	682	912
630	773	1254	750	1010
710	851	1392	822	1111
800	946	1555	982	1303
900	1086	1768	1072	1450
1000	1136	1892	1142	1597

All dimensions are in millimeters.

Fig. 5 (CW)

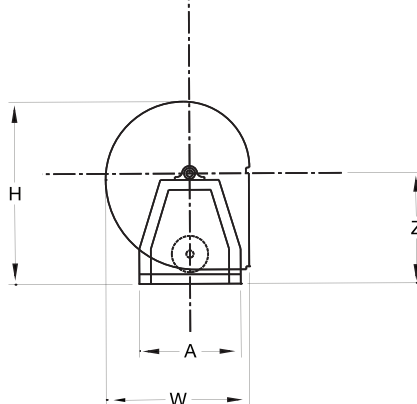
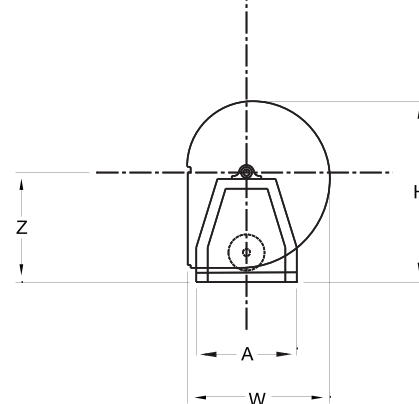


Fig. 6 (CCW)



Design and Selection Support

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

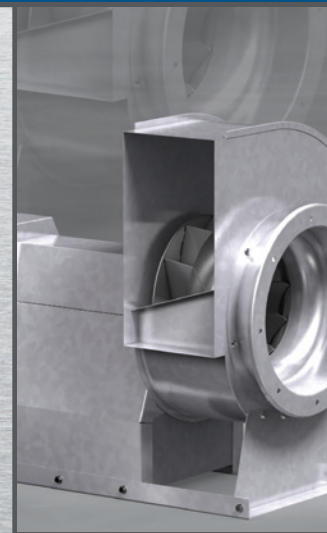
Greenheck offers added value to our wide selection of top performing, energy-efficient products by providing unique Greenheck service programs.



Greenheck's free Computer Aided Product Selection program 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.



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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.

