

Centrifugal Fans Model CSB

- Single Width Blowers
- Commercial & Industrial Applications



BUILDING VALUE IN AIR.

November
2021

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

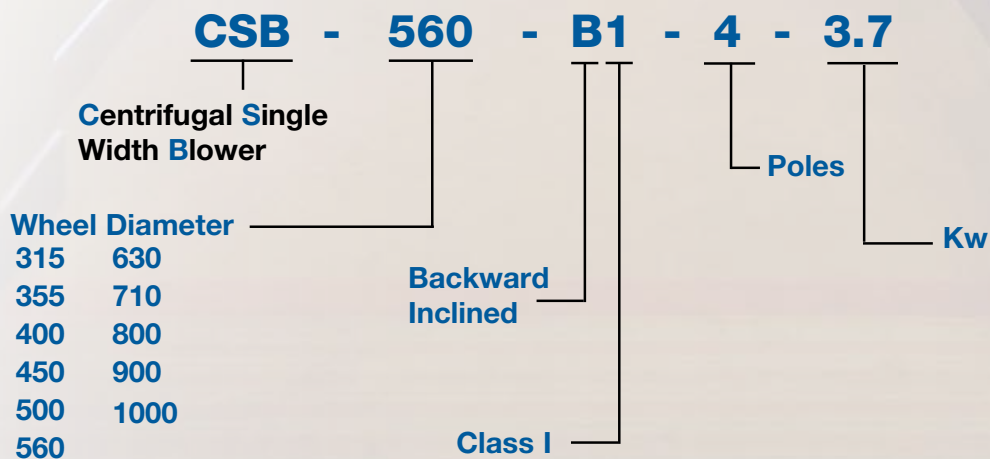
Certifications



Greenheck India Pvt Ltd. certifies that the CSB models shown herein is 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).

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 and conditioning 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

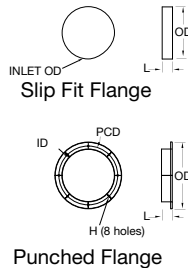
- General or fume exhaust
- Kitchen smoke and grease exhaust
- Stairwell pressurization
- Filtered exhaust
- Industrial process exhaust

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: (315-1000mm)
 - Aluminum: (315-710mm)

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.

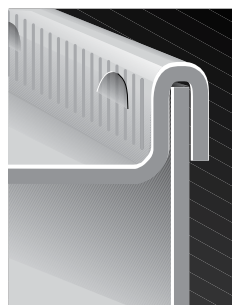
Premium Bearings

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: 315-710mm Steel: Sizes: 315-1000mm	

Grease Exhaust Accessories

Shaft Seal

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

Heat Slinger

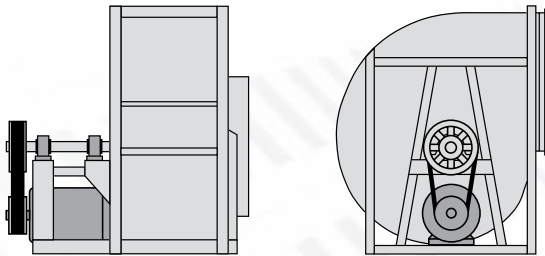
The heat slinger is an aluminum cooling disc mounted on the fan shaft between the inboard bearing and the blower housing to dissipate heat conducted along the fan shaft.

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).

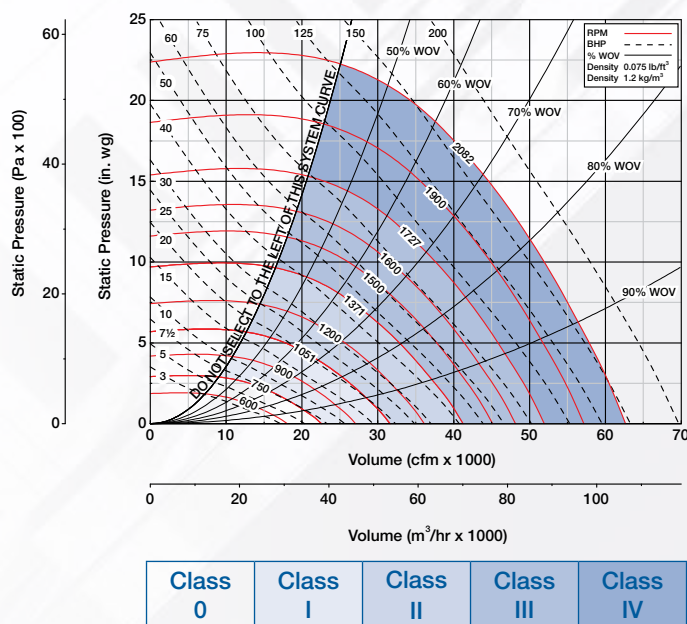
Arrangement 10 – Belt Drive

- 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

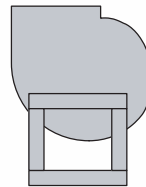
Fan class refers to a construction level designed to handle a given fan outlet velocity and pressure. As the fan performance requirements increase, the fan construction (material gauge, shaft diameter, motor size) must also increase to handle the new workload. CSB models target Class 0 & I performance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



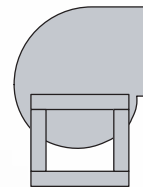
Discharge Positions and Rotatable Housings

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

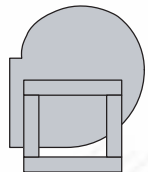
CW UB



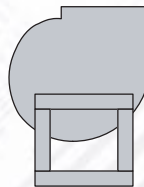
CW TH



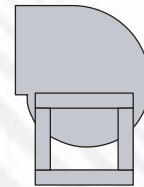
CW BH



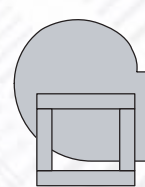
CCW UB



CCW TH



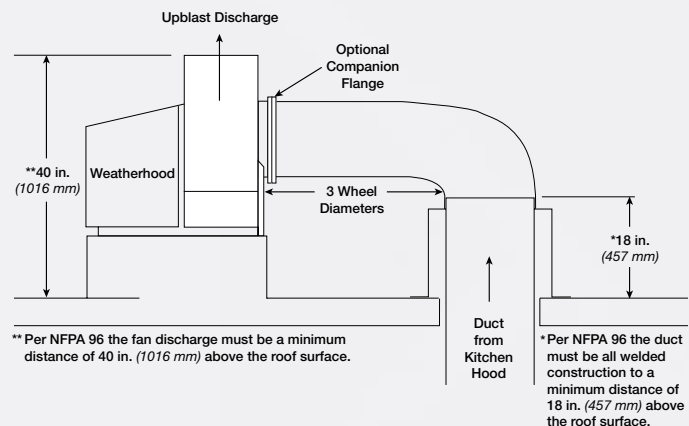
CCW BH



Typical Installation - Commercial Kitchen (Grease)

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

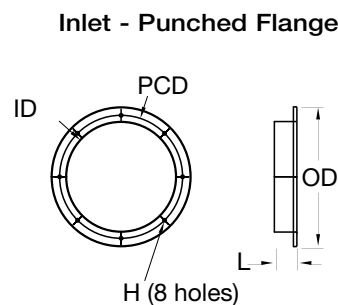
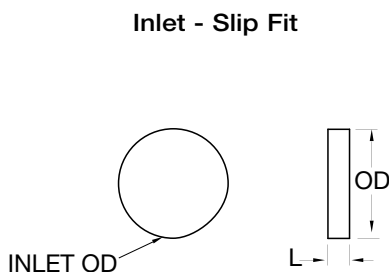
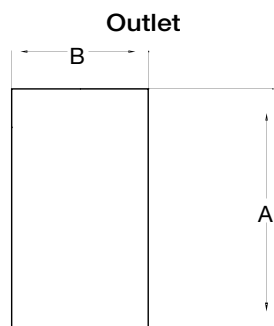
- Fans selected for grease removal must include a 25 mm (1 inch) drain connection.
- An outlet guard is strongly recommended when the fan discharge is accessible.
- An upblast discharge is recommended.
- The fan must discharge a minimum of 1016 mm (46 inches) above the roofline and the exhaust duct must 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.

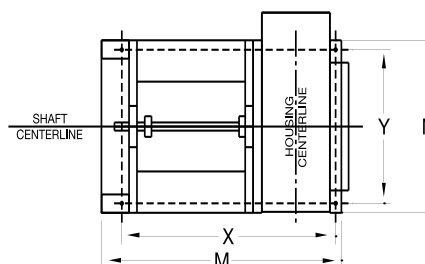


Foot Print & Slot Dimensions

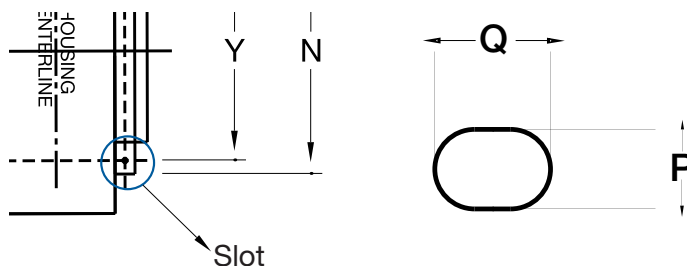
Size	X	Y	M	N	P	Q
315	612	305	737	347	11	16
355	630	362	755	404	11	16
400	658	407	783	449	11	16
450	753	447	878	489	13	18
500	792	492	917	534	13	18
560	867	612	992	654	13	18
630	917	682	1042	724	13	18
710	1077	762	1202	804	13	18
800	1154	862	1279	904	13	18
900	1298	992	1423	1034	13	18
1000	1368	1092	1493	1134	13	18

All dimensions are in millimeters.

Footprint



(Slot Reference)



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

Size	Z	H	A	W
315	447	672	343	600
355	462	710	400	672
400	460	735	445	754
450	515	819	485	847
500	566	894	530	932
560	632	1004	650	1049
630	710	1116	720	1175
710	800	1252	800	1321
800	890	1408	900	1485
900	1005	1621	1030	1668
1000	1130	1802	1130	1851

All dimensions are in millimeters.

Fig. 1 (CCW)

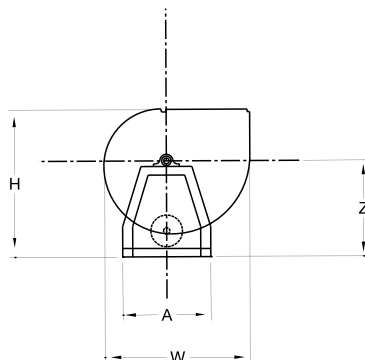
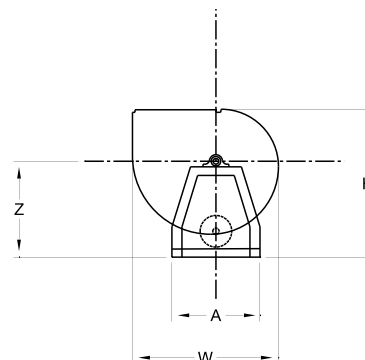


Fig. 2 (CW)



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

Size	Z	H	A	W
315	447	802	343	526
355	462	860	400	582
400	460	905	445	651
450	515	1015	485	727
500	566	1117	530	793
560	632	1249	650	896
630	710	1404	720	992
710	800	1581	800	1111
800	890	1768	900	1261
900	1005	1992	1030	1450
1000	1130	2225	1130	1597

All dimensions are in millimeters.

Fig. 3 (CCW)

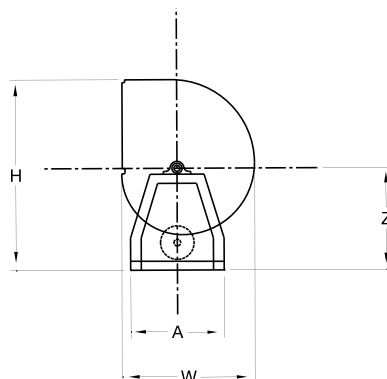
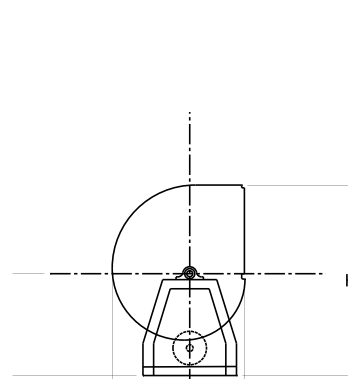


Fig. 4 (CW)



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

Size	Z	H	A	W
315	447	692	343	526
355	462	736	400	582
400	460	769	445	651
450	515	862	485	727
500	566	947	530	793
560	632	1065	650	896
630	710	1191	720	992
710	800	1340	800	1111
800	890	1497	900	1261
900	1005	1687	1030	1450
1000	1130	1886	1130	1597

All dimensions are in millimeters.

Fig. 5 (CW)

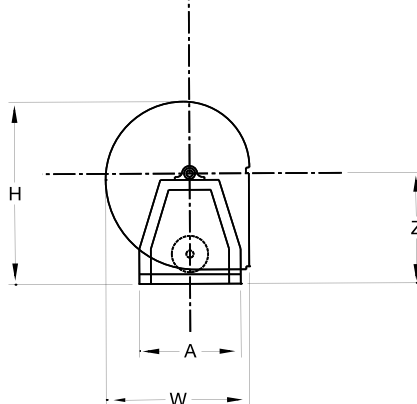
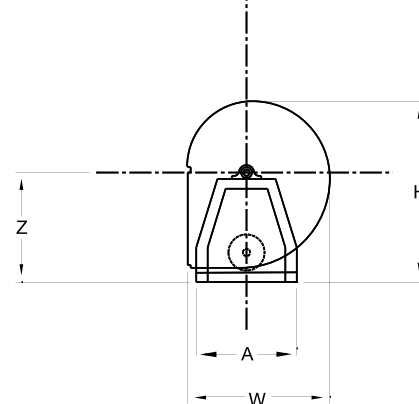


Fig. 6 (CCW)



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.



International
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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.

