

Untempered Make-Up Air for Kitchen Systems

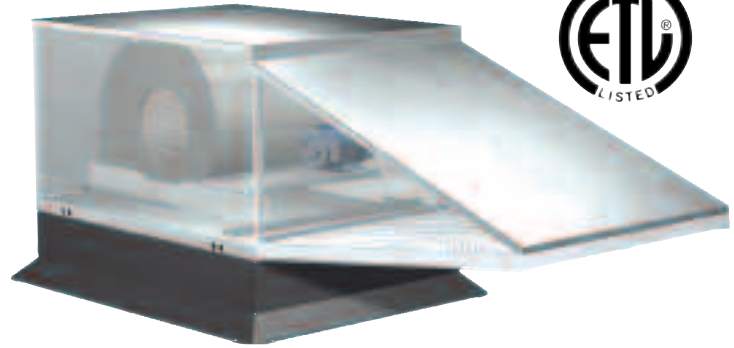
Models KSFB and KSFD



Models KSFB and KSFD Untempered Make-Up Air Unit

Greenheck's series KSF is available in a belt drive (KSFB) and direct drive (KSFD). Both have a compact design providing untempered make-up air for commercial and institutional kitchen applications. Eight available blower sizes provide airflow capacities up to 10,500 cfm and static pressure capabilities up to 2.0 in. wg.

Installation may be stand alone or on a combination curb with exhaust fan. See page 3 for details.



Features

Weatherhood and Filters

A weatherhood is standard and meets NFPA 96 requirements when used with a combination package. See page 3 for details. All weatherhoods come standard with UL Class 2 rated, 1 in. washable aluminum mesh filters.

Vibration Isolators

The motor and wheel assembly is mounted on vibration isolators to minimize noise transmission into the building.



Reliable Fan Performance

Air performance ratings from Greenheck's third party accredited test chamber ensure accurate data. Double width, double inlet, forward curved wheels for high efficiency and low sound levels are constructed of heavy gauge steel. Wheels are statically and dynamically balanced to ensure vibration free operation.



Accessories

Kitchen Fan Control Center (KFCC)



Prewired in compliance to the National Electrical Code, the KFCC simplifies field wiring, thereby reducing installation time and mistakes. The control center is a UL Listed NEMA 1 panel for mounting indoors. It is designed to interlock with the fire suppression system.

Remote Starter Control Panel (RSCP)

The Remote Starter Control Panel (RSCP) offers safety and reliability for remote operation of up to four fans. Standard NEMA 3R housing allows panel to be mounted outdoors.

- Multiple supply voltages
- Wide range of horsepowers
- Disconnect switch(es)
- Control transformer for low voltage remote switching
- Terminal strips
- Fuse blocks
- Electronic motor overload protection



Speed Controller

Available on the KSFD, the speed controller provides an economical means of system balancing.



Roof Curbs

Prefabricated roof curbs are available to reduce installation time and costs by ensuring compatibility between the fan and the roof opening. All curbs are lined with fiberglass insulation to prevent condensation and reduce sound levels. See Greenheck's roof curb catalog for complete details.

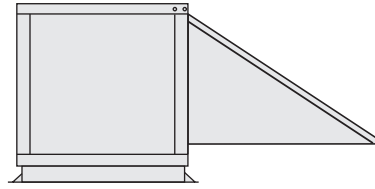
Special Coatings

Special coatings are available for decorative or protective purposes. Consult your Greenheck representative or the factory for more information.

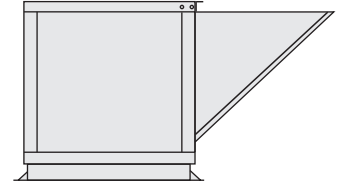
Standard Arrangements

Series KSF has a compact design that is available in both downblast discharge (arrangement DB) and horizontal discharge (arrangement HZ).

Installations may be as stand alone supply fans as pictured at right or as combination packages with exhaust and supply fans on a common curb as shown below.



Arrangement DB



Arrangement HZ

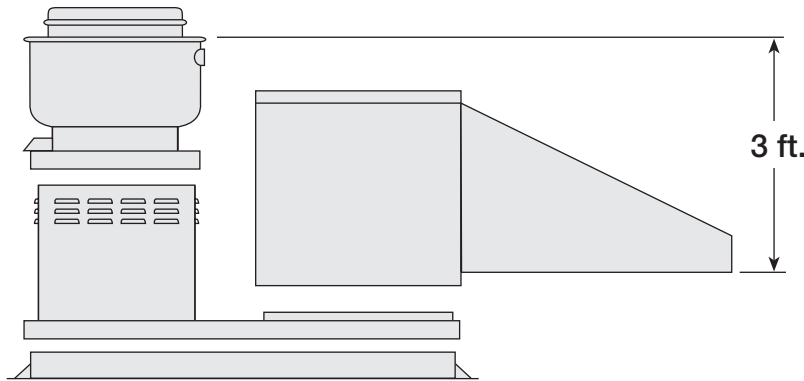
Combination Packages

With either ten feet of horizontal separation or three feet of vertical separation, Greenheck has a combination package for your requirements. The Greenheck combination package simplifies installation and reduces field labor costs. This pre-engineered design offers the benefit of only one roof penetration for both supply and exhaust ducts, while ensuring complete compatibility and interface between the supply fan, exhaust fan, curb and combination extension.

Greenheck combination packages are specifically designed to comply with NFPA 96, which states:

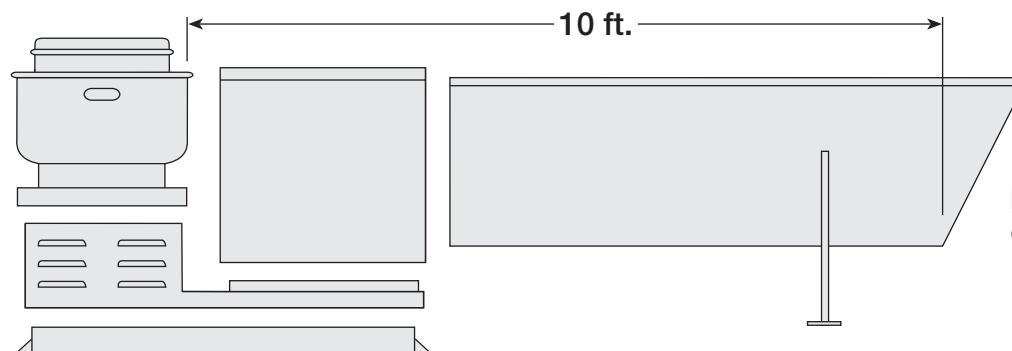
- Exhaust duct must terminate at least 24 in. above the roof deck.
- Fan discharge must terminate at least 40 in. above the roof deck.
- There must be at least 10 ft. of horizontal or 3 ft. of vertical separation between the intake and exhaust discharge.

3 Ft. Vertical Separation - Short Weatherhood



Provides 3 ft. of vertical separation for compliance to NFPA 96.

10 Ft. Horizontal Separation - Extended Weatherhood



Provides 10 ft. of horizontal separation for compliance to NFPA 96.

Note: Consult local codes and the authority having jurisdiction if there are questions concerning the use of this product.

KSFD-70-H05

RPM	AMPS	Watts	CFM/Static Pressure in inches of WG								
			0.000	0.100	0.125	0.250	0.375	0.500	0.625	0.750	1.000
1,600	3.77	405	813	783	776	741	707	671	637	603	527

KSFD-80-H08

RPM	AMPS	Watts	CFM/Static Pressure in inches of WG								
			0.000	0.100	0.125	0.250	0.375	0.500	0.625	0.750	1.000
1,610	8.32	830	1672	1617	1604	1542	1484	1427	1367	1306	1171

KSFD-90-H08

RPM	AMPS	Watts	CFM/Static Pressure in inches of WG								
			0.000	0.100	0.125	0.250	0.375	0.500	0.625	0.750	1.000
1,100	7.8	735	2249	2175	2156	2044	1900	1701	1424	1114	

KSFB-109-H15

CFM	OV		TOTAL STATIC PRESSURE in inches of WG								
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	2.000
1,300	1,413	RPM	593	678	762	842	987	1118	1236		
		BHP	0.15	0.19	0.23	0.27	0.35	0.43	0.52		
1,600	1,739	RPM	691	764	833	902	1032	1153	1265	1371	1561
		BHP	0.26	0.30	0.35	0.40	0.50	0.60	0.69	0.80	1.02
1,900	2,065	RPM	793	859	918	976	1091	1201	1303	1404	1588
		BHP	0.41	0.47	0.52	0.58	0.70	0.82	0.93	1.04	1.28
2,200	2,391	RPM	899	956	1011	1061	1161	1261	1356	1448	
		BHP	0.61	0.68	0.74	0.80	0.94	1.08	1.22	1.35	
2,575	2,798	RPM	1034	1082	1132	1178	1265	1349	1435		
		BHP	0.95	1.03	1.11	1.18	1.33	1.49	1.65		

KSFB-110-H15

CFM	OV		TOTAL STATIC PRESSURE in inches of WG								
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	2.000
2,400	2,123	RPM	741	781	834	885	977	1066	1153	1234	1392
		BHP	0.54	0.59	0.65	0.72	0.85	0.98	1.12	1.27	1.57
2,750	2,433	RPM	839	871	913	958	1046	1124	1202	1279	1423
		BHP	0.80	0.85	0.91	0.99	1.14	1.29	1.44	1.60	1.93
3,100	2,743	RPM	940	967	996	1036	1118	1192	1262	1330	
		BHP	1.13	1.18	1.24	1.32	1.50	1.67	1.84	2.01	
3,450	3,053	RPM	1041	1064	1089	1119	1191	1264			
		BHP	1.55	1.60	1.66	1.73	1.92	2.12			
3,625	3,207	RPM	1092	1112	1137	1160	1230				
		BHP	1.80	1.84	1.91	1.97	2.16				

KSFB-112-H15

CFM	OV		TOTAL STATIC PRESSURE in inches of WG								
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	2.000
2,700	1,731	RPM	507	561	617	671	768	860	941	1014	
		BHP	0.40	0.47	0.55	0.63	0.78	0.94	1.09	1.24	
3,300	2,115	RPM	596	641	687	733	821	902	979	1052	1183
		BHP	0.68	0.77	0.87	0.96	1.15	1.33	1.52	1.72	2.09
3,900	2,500	RPM	691	729	766	804	881	956	1027	1093	1221
		BHP	1.09	1.19	1.30	1.41	1.63	1.86	2.08	2.28	2.76
4,500	2,885	RPM	787	817	852	884	951	1017	1082	1146	
		BHP	1.64	1.74	1.87	2.00	2.25	2.51	2.77	3.03	
5,100	3,269	RPM	884	911	940	970	1027				
		BHP	2.35	2.47	2.60	2.75	3.03				

Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream.

KSFB-115-H25

CFM	OV		TOTAL STATIC PRESSURE in inches of WG								
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	2.000
4,700	2,146	RPM	524	567	608	1.31	722	790	856	915	1031
		BHP	1.02	1.16	1.31	1.45	1.74	2.03	2.34	2.63	3.29
5,400	2,465	RPM	589	628	665	700	768	832	891	950	1056
		BHP	1.49	1.66	1.83	1.99	2.32	2.65	2.98	3.33	4.01
6,100	2,785	RPM	656	691	724	757	819	877	934	988	1090
		BHP	2.10	2.29	2.47	2.66	3.04	3.40	3.79	4.16	4.94
6,800	3,105	RPM	723	755	786	815	872	928	979	1031	
		BHP	2.86	3.07	3.28	3.48	3.91	4.33	4.72	5.15	
7,500	3,424	RPM	792	821	849	876	929	980			
		BHP	3.78	4.02	4.25	4.47	4.94	5.41			

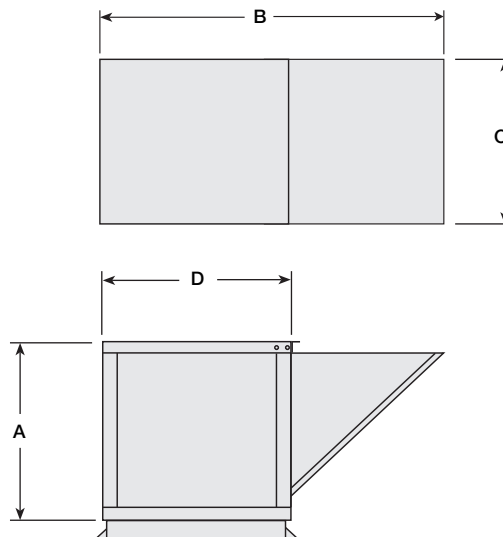
KSFB-118-H25

CFM	OV		TOTAL STATIC PRESSURE in inches of WG								
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	2.000
6,500	2,145	RPM	438	473	510	544	608	667	723	776	
		BHP	1.26	1.42	1.60	1.78	2.13	2.47	2.83	3.20	
7,500	2,475	RPM	495	526	557	588	646	702	754	802	897
		BHP	1.87	2.06	2.26	2.46	2.86	3.27	3.66	4.05	4.92
8,500	2,805	RPM	554	580	607	636	690	740	790	835	922
		BHP	2.66	2.87	3.09	3.32	3.79	4.22	4.69	5.14	6.04
9,500	3,135	RPM	614	637	661	685	735	783	827	872	954
		BHP	3.67	3.86	4.13	4.37	4.90	5.41	5.90	6.43	7.43
10,500	3,465	RPM	675	695	715	738	783	827	870		
		BHP	4.91	5.14	5.39	5.66	6.23	6.80	7.37		

Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream.

DIMENSIONAL DATA STAND ALONE

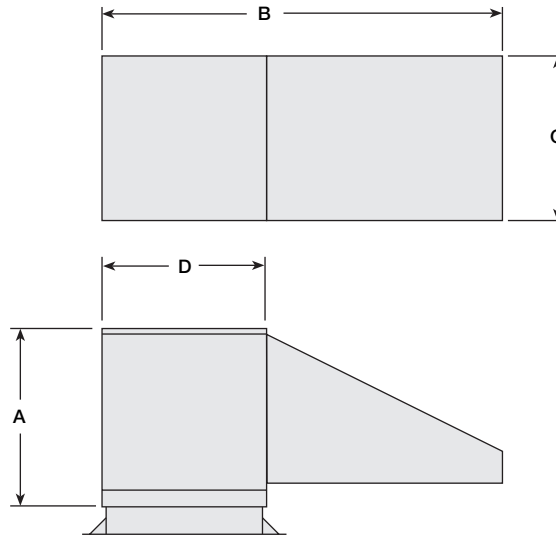
Arrangement HZ - Standard Weatherhood



	A	B	C	D
Housing 05	18 $\frac{3}{4}$	31 $\frac{5}{8}$	20	19 $\frac{3}{8}$
Housing 08	18 $\frac{3}{4}$	31 $\frac{3}{4}$	37	19 $\frac{3}{8}$
Housing 15	25 $\frac{1}{4}$	71 $\frac{1}{8}$	31 $\frac{7}{8}$	39 $\frac{1}{2}$
Housing 25	34	81 $\frac{3}{8}$	40 $\frac{1}{4}$	47 $\frac{3}{8}$

All dimensions are in inches

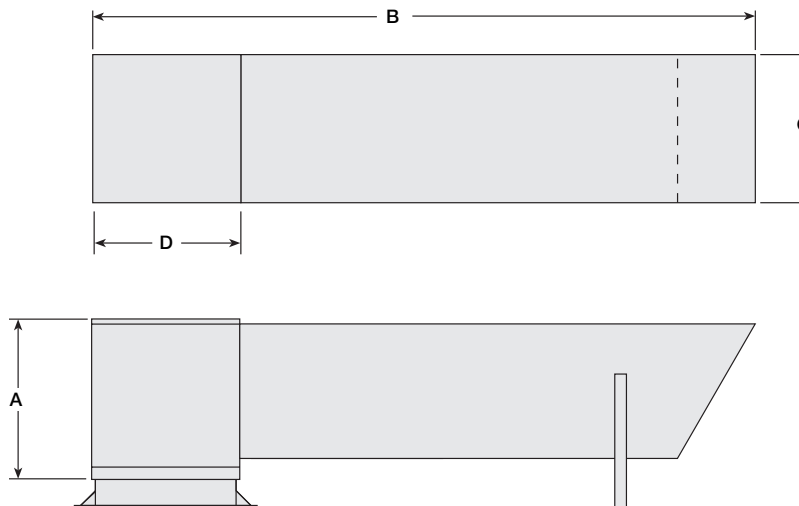
Arrangement DB - Standard Weatherhood



	A	B	C	D
Housing 05	14½	41	20	21¼
Housing 08	14½	41	36⅞	21¼
Housing 15	22¼	80⅞	31⅞	40¼
Housing 25	29½	99½	40¼	52¼

All dimensions are in inches

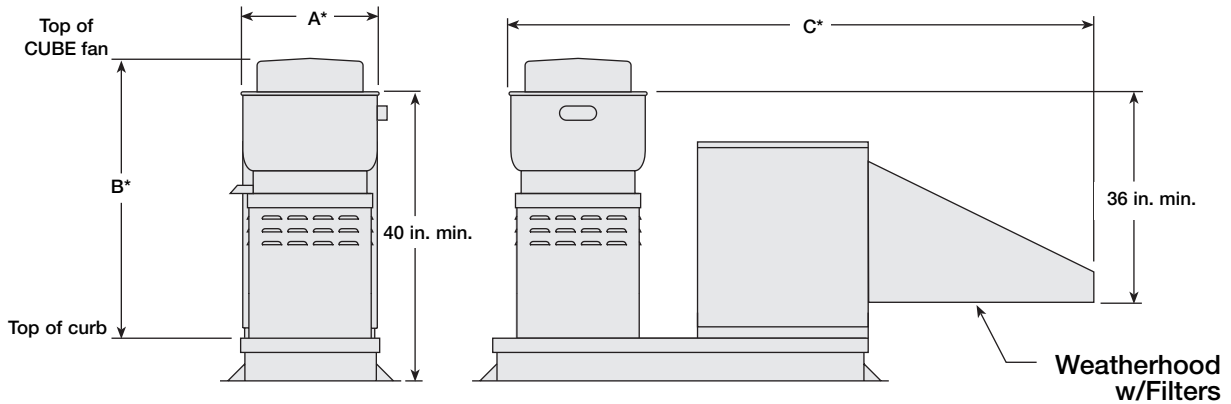
Arrangement DB - Extended Weatherhood



	A	B	C	D
Housing 05	14½	171⅞	20	21¼
Housing 08	14½	165⅞	36⅞	21¼
Housing 15	22¼	145¼	31⅞	40¼
Housing 25	29½	152½	40¼	52¼

All dimensions are in inches

Arrangement DB3 - Standard Weatherhood

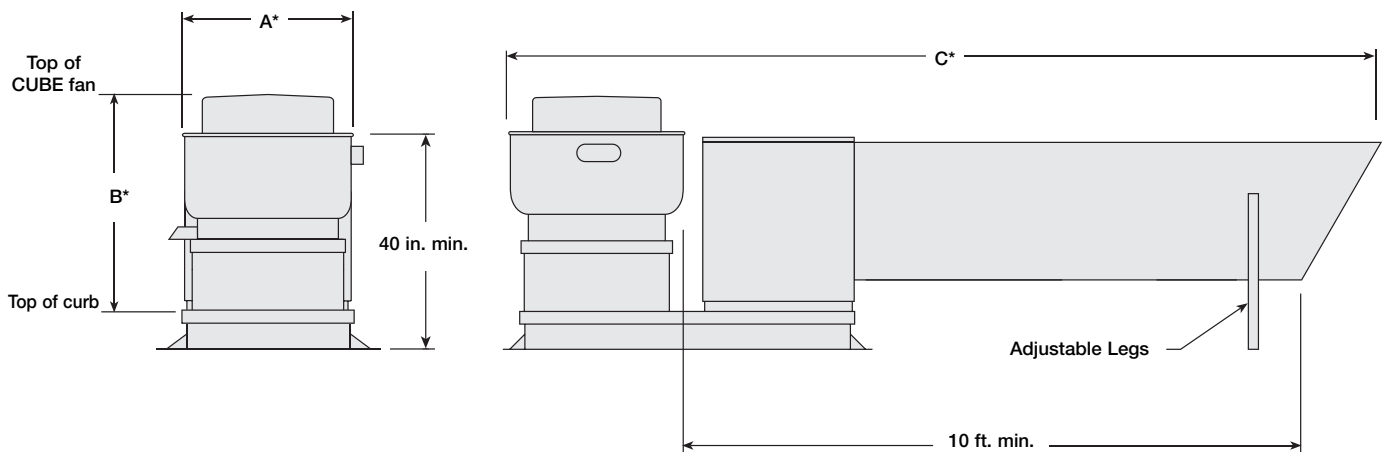


	A*	B*	C*
Housing 05	25	50	70¹/₈
Housing 08	35¹/₈	52¹/₂	82¹/₂
Housing 15	42⁷/₈	55	131³/₄
Housing 25	58³/₄	66¹/₈	164¹/₄

* Maximum dimensions (dependent on CUBE fan)

All dimensions are in inches

Arrangement DBC - Extended Weatherhood



	A*	B*	C*
Housing 05	25	50	200¹/₄
Housing 08	35⁵/₈	52¹/₂	207¹/₄
Housing 15	42⁷/₈	55	196⁵/₈
Housing 25	58³/₄	66¹/₈	217¹/₄

* Maximum dimensions (dependent on CUBE fan)

All dimensions are in inches

General: Make-up air unit shall be as manufactured by Greenheck or approved equal provided all specifications are met. Greenheck Model KSFB and KSFD equipment is used as the basis of design. Performance to be as scheduled on plans. Make-up air units shall be listed to UL 705. Manufacturer to provide lifting lugs of adequate strength to allow rigging without damage.

Unit Casing: Make-up air unit casing shall be constructed of G-90 galvanized steel. Hinged panels shall be provided for access to the blower, motor, and drives. All metal surfaces exposed to the weather shall be sealed, requiring no caulking at jobsite.

Fan Section: Centrifugal fans shall be double width, double inlet. Fan and motor shall be mounted on a common base and shall be internally isolated. All blower wheels shall be statically and dynamically balanced. Ground and polished steel fan shafts shall be mounted in permanently lubricated ball bearings. Bearings shall be selected for a minimum (L10) life in excess of 100,000 hours at maximum cataloged speeds.

Motors and Drives: Motors shall be energy efficient, complying with EPACT standards for single speed ODP and TEFC enclosures. Motors shall be permanently lubricated, heavy duty type, matched to the fan load and furnished at the specified voltage, phase and enclosure. The motors shall be factory wired to a factory supplied disconnect switch. Drives shall be sized for a minimum of 150% of driven horsepower. Pulleys shall be cast and have machined surfaces.

Weather Hood: Weather hood shall be constructed of G90 galvanized steel and include easily removable 1-inch UL Class 2 aluminum mesh filters. Outdoor air openings shall be sized so air velocities do not exceed 900 fpm.



Our Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

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