

FILTERED SUPPLY CENTRIFUGAL - BELT DRIVE

Carnes Models VSBB and VHBB centrifugal filtered roof supply fans are available in six sizes - 8" through 20" with capacities from 500 CFM through 13,000 CFM, and static pressures up to 2 inches W. G.

The standard 1" aluminum filters are sized for low air velocity and high efficiency. Regular filter maintenance is facilitated by removable cover with quick release latches. 2" aluminum filters optional.

Field power wiring to the factory mounted NEMA 1 disconnect switch is easily installed through a pre-punched conduit hole in the unit bottom pan.

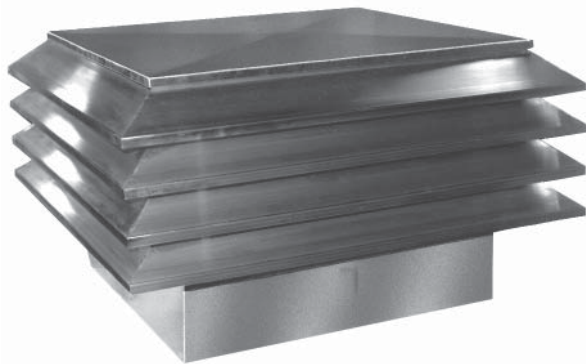
The unit base is pre-punched for securing unit to roof curb.

To prevent moisture condensation and for sound attenuation, the unit cover is insulated with 1-1/2" inch, 3 lb/ft³ density insulation.

Model VSBB



Model VHBB



The Model VSBB standard construction is heavy-gauge galvanized steel. The Model VHBB incorporates an attractive aluminum louvered hood with mitered and welded corners.

Maintenance is reduced through the use of heavy-duty, permanently lubricated and sealed ball bearings.

The blower motor assembly is mounted on internal vibration rails with rubber-in-shear vibration isolators to ensure smooth, vibration free operation.

Fans are completely assembled, with motor and drives mounted. Each fan is factory run tested to ensure proper operation at the specified fan RPM.

Cast iron sheaves, non-static, oil resistant V-belts, and adjustable motor sheave with pivoting motor base facilitate field adjustment and maintenance of proper belt tension.

UL OPTION

Models VSBB and VHBB are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



POWER VENTILATOR

COMPUTERIZED FAN SELECTION: Make the right choice with Carnes FAN-C-LECT™. The Models VSBB and VHBB, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.

▼ TYPICAL SPECIFICATIONS

Roof mounted, filtered supply ventilators shall be belt driven with DWDI forward curved centrifugal blower.

Model VSBB: Housing stack, hood and lid shall be heavy-gauge galvanized steel.

Model VHBB: Louvered hood, stack and lid shall be heavy-gauge aluminum. Louvers shall be extruded aluminum with mitered and welded corners. Filter racks shall be aluminum.

Unit base shall have pre-punched mounting holes. Bottom pan shall have conduit opening to facilitate field power wiring. The entire blower and motor assembly shall be mounted on rubber shear vibration isolators.

Lid shall be insulated, to prevent condensation, and shall be removable with quick release latches for easy access to filters and internal parts.

Permanent, washable 1" aluminum filters shall be mounted in full width/full height racks.

Disconnect (NEMA 1) shall be factory mounted within the unit housing.

Blower shall be DWDI-FC constructed of heavy-gauge steel, statically and dynamically balanced for vibration free operation.

Fan shaft shall be ground and polished and mounted in heavy-duty, permanently lubricated and sealed ball bearings with average life $L_{50} = 200,000$ hours at operating speed.

Drives shall be selected for minimum of 150% of motor horsepower. Sheaves shall be cast iron and keyed to motor shaft and fan shaft. Motor shall be adjustable for final system balancing.

Motors shall be permanently lubricated sealed ball bearing type and carefully matched to the specified fan performance, enclosure type and electrical specification.

Motor mounting base shall be adjustable for proper belt maintenance. Belts shall be non-static conducting, oil resistant V-belts.

Motors and drives shall be factory mounted. Unit shall be completely assembled and factory run-tested and adjusted to proper RPM.

CONSTRUCTION FEATURES

INSULATED LID
For Sound Absorption and Condensation Control

ADJUSTABLE MOTOR PLATE
Pivots For Maintaining Proper Belt Tension

DISCONNECT SWITCH
Standard On All Units
NEMA 1 Mounted

FORWARD CURVED BLOWER
DWDI For Efficient Air Flow

MOTORS
Heavy-duty Ball Bearing
Motors Matched To The Specified Fan Load

ADJUSTABLE MOTOR SHEAVE
For Final System Balancing

BEARINGS
Permanently Sealed and Lubricated Average Life $L_{50} = 200,000$ Hours

FILTERS
Permanent/Washable
1 Inch Aluminum

REMOVABLE HOOD LID
Secured By Quick-Release Latches For Regular Filter Maintenance

GALVANEALED STEEL HOUSING
Encloses Blower, Motor, Drives and Filters

FACTORY RUN-TESTED
Factory Mounted Motor and Drives - Factory Set RPM

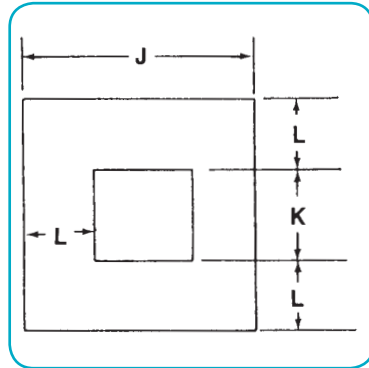


Model VSBB Shown

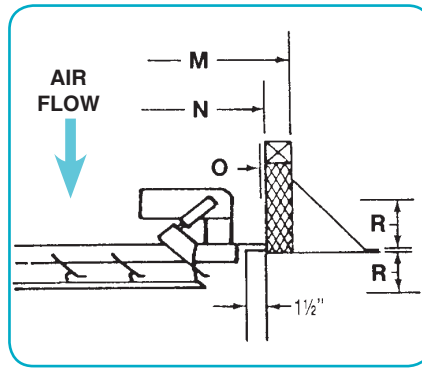
INTERNAL CONDUIT OPENING
Facilities Field Wiring

Filtered Supply Vents

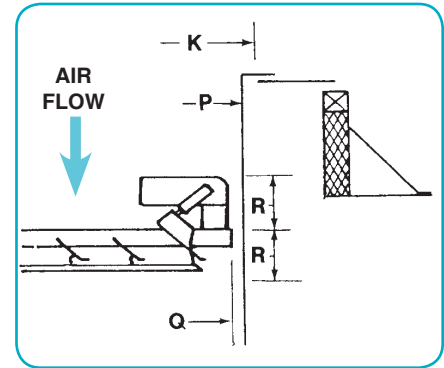
ACCESSORIES



Duct Adapter



VXGA Curb Mtd. Damper
(Requires 1-1/2" damper shelf)
Shown with optional motor pack



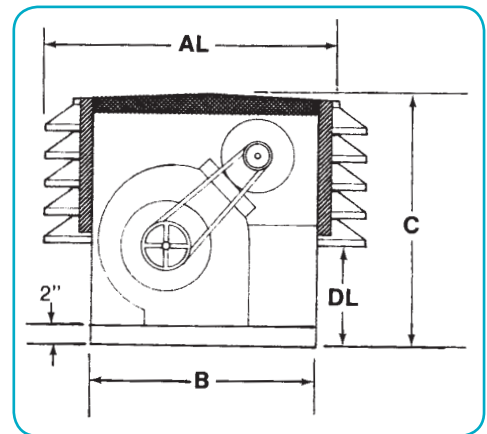
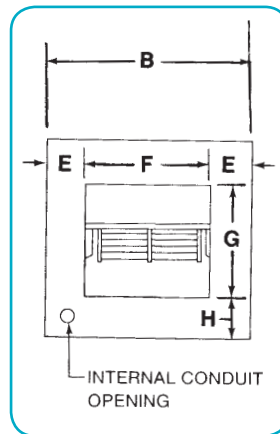
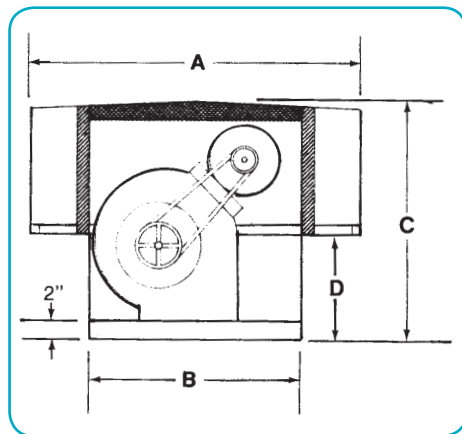
VXHA Duct Mtd. Damper
Shown with optional motor pack

DIMENSIONS LISTED IN INCHES

Unit Size	J Sq.	K Sq.	L	Roof Curb Sq.		VXGA Damper		P Duct Sq. I.D.	VXHA Damper		R Damper Clearance	1" Filters Qty.-Nominal Size
				M O.D.	N I.D.	Size	O Sq.O.D.		Size	Q Sq. O.D.		
08	18	12-1/4	2-7/8	18-1/2	15-1/2	15	14-3/4	12	12	11-3/4	7	4 - 10 x 16
10	26-1/2	14-1/4	6-1/8	27	24	23	22-3/4	14	14	13-3/4	7	4 - 16 x 25
12	26-1/2	18-1/4	4-1/8	27	24	23	22-3/4	18	18	17-3/4	7	4 - 16 x 25
15	30	20-1/4	4-7/8	30-1/2	27-1/2	27	26-3/4	20	20	19-3/4	7	4 - 16 x 25
18	34	26-1/4	3-7/8	34-1/2	31-1/2	31	30-3/4	26	26	25-3/4	7	4 - 20 x 25
20	48-1/2	30-1/4	9-1/8	49	46	45	44-3/4 ¹	30	30	29-3/4	7	8 - 20 x 20

NOTE: 1. 2 panel damper. Motorized damper requires field installed panel bracket (included) for single motor operation.

DIMENSIONS



DIMENSIONS LISTED IN INCHES

Unit Size	A Sq. Hood O. D.	AL Sq. Hood O. D.	B Sq. Cap I. D.	C Height	D Stack	DL Stack	Qty. Tiers VHBB	E	F	G	H	Weight (lbs.)	
												VSBB	VHBB
08	29	34	19-3/4	19	9	8	3	5	8-3/4	9-5/8	6-9/16	125	100
10	37	43	28-1/4	29	13	13	4	7-1/4	11-3/4	13-5/8	8-3/16	225	175
12	37	43	28-1/4	29	13	13	4	6	13-3/4	16-1/8	7-3/16	250	200
15	45	45	32-1/8	30	14	14	4	6-1/2	16-1/4	19	7-3/4	350	260
18	45	50	36-1/8	38	18	18	5	6-7/8	19-1/4	22-1/4	7	425	300
20	69	69	50-1/2	49	29	29	5	12-3/4	25-1/8	25-1/8	13-7/8	700	500

VSBB/VHBB - 08 Max. Fan RPM = 3000 Max. Motor Frame = 145T Tip Speed (Ft./Min.) = RPM x 2.10

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
550	1038	RPM	525	667	812						
		BHP	.03	.05	.07						
625	1179	RPM	596	726	846						
		BHP	.04	.07	.09						
700	1321	RPM	668	787	893	1006					
		BHP	.06	.09	.11	.14					
775	1462	RPM	739	851	942	1041	1148				
		BHP	.08	.12	.14	.16	.20				
850	1604	RPM	810	915	998	1089	1180	1276	1364		
		BHP	.11	.15	.17	.20	.23	.27	.31		
925	1745	RPM	882	980	1061	1138	1222	1300	1396		
		BHP	.14	.18	.21	.24	.27	.31	.35		
1000	1887	RPM	953	1046	1122	1190	1269	1345	1427	1500	1584
		BHP	.18	.22	.26	.29	.32	.35	.40	.43	.49
1075	2028	RPM	1024	1112	1184	1251	1318	1392	1460	1539	1614
		BHP	.23	.27	.31	.35	.38	.42	.45	.49	.54
1150	2170	RPM	1096	1179	1250	1312	1370	1441	1507	1572	1646
		BHP	.28	.33	.37	.41	.45	.48	.52	.55	.61
1225	2311	RPM	1168	1246	1314	1375	1432	1489	1555	1617	1678
		BHP	.34	.39	.43	.48	.52	.56	.60	.63	.67
1300	2453	RPM	1240	1312	1379	1438	1493	1500	1603	1664	
		BHP	.40	.45	.51	.55	.60	.57	.68	.72	
1375	2594	RPM	1310	1380	1446	1501	1555	1605	1653		
		BHP	.47	.52	.59	.63	.68	.73	.77		
1450	2735	RPM	1382	1448	1500	1566	1618				
		BHP	.56	.62	.66	.73	.78				
1525	2877	RPM	1453	1500	1578						
		BHP	.65	.69	.77						
1600	3019	RPM	1500	1587							
		BHP	.71	.81							

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

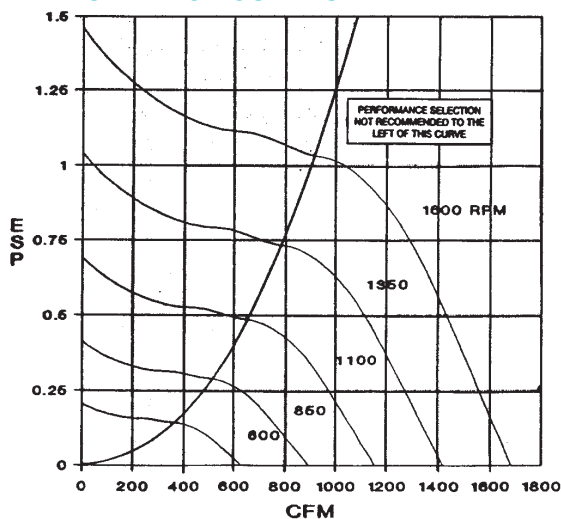
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{wo} and L_{woA} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
600	.000	72	64	59	58	55	55	50	45	61
	.125	69	61	57	54	51	50	45	40	57
	.250	68	59	54	52	49	57	42	37	55
850	.000	88	75	69	68	64	62	60	55	71
	.125	87	74	68	67	62	60	58	53	70
	.250	85	72	66	65	60	58	55	50	68
	.500	84	71	64	62	58	56	52	47	65
1100	.000	100	84	76	72	70	68	68	63	79
	.125	100	83	75	72	69	67	66	61	78
	.250	99	82	75	71	68	66	65	60	77
	.500	96	80	72	68	65	63	61	56	74
	.750	95	79	71	67	64	62	60	55	73
1350	.000	104	93	82	78	76	73	72	69	84
	.125	104	92	82	77	76	72	71	68	84
	.250	103	92	82	77	75	72	71	67	83
	.500	102	91	81	76	74	70	69	65	82
	.750	100	89	78	73	71	78	66	62	80
	1.000	99	88	78	72	70	67	65	61	79
1600	.000	107	101	88	82	81	77	76	73	90
	.125	107	101	88	82	81	77	75	73	89
	.250	106	100	88	82	81	76	75	72	89
	.500	106	99	87	81	80	76	74	71	88
	.750	105	99	87	81	80	75	73	70	88
	1.000	103	97	85	78	77	72	71	67	86

PERFORMANCE CURVES



Filtered Supply Vents

VSBB/VHBB - 10 Max. Fan RPM = 2500 Max. Motor Frame = 145T Tip Speed (Ft./Min.) = RPM x 3.03

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)									
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	1.750	
1475	1418	RPM	500	574	654	724	854					
		BHP	.19	.22	.26	.30	.39					
1650	1587	RPM	532	606	678	748	870	982	1083			
		BHP	.23	.27	.32	.37	.48	.58	.68			
1825	1755	RPM	572	640	706	772	888	996	1096	1188		
		BHP	.28	.34	.39	.46	.55	.66	.80	.89		
2000	1923	RPM	616	678	740	796	912	1014	1110	1200	1285	
		BHP	.36	.41	.49	.54	.65	.78	.89	1.02	1.15	
2175	2091	RPM	662	717	772	828	936	1036	1128	1214	1298	
		BHP	.47	.52	.58	.64	.76	.90	1.03	1.17	1.29	
2350	2260	RPM	708	756	810	862	962	1060	1146	1232	1312	
		BHP	.57	.62	.69	.75	.90	1.05	1.17	1.32	1.46	
2525	2428	RPM	756	796	848	894	989	1084	1170	1250	1330	
		BHP	.69	.74	.81	.88	1.03	1.20	1.35	1.49	1.67	
2700	2596	RPM	802	838	886	932	1022	1108	1194	1272		
		BHP	.82	.88	.96	1.04	1.20	1.35	1.52	1.70		
2875	2764	RPM	850	884	926	970	1054	1134	1218			
		BHP	.98	1.04	1.12	1.21	1.38	1.55	1.74			
3050	2933	RPM	898	930	965	1008	1088	1167				
		BHP	1.17	1.23	1.31	1.40	1.57	1.75				
3225	3100	RPM	945	976	1006	1047	1123					
		BHP	1.36	1.43	1.50	1.60	1.79					
3400	3269	RPM	993	1023	1051							
		BHP	1.58	1.66	1.75							

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
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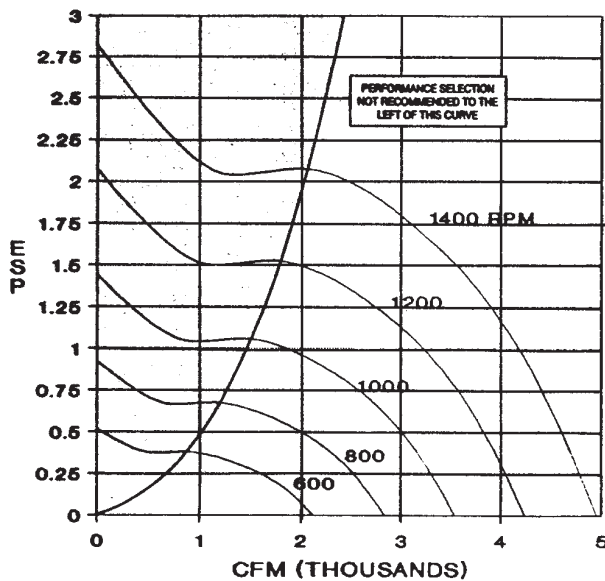
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
600	.125	75	73	68	69	67	66	65	61	73
	.250	71	70	65	67	63	62	61	56	70
	.375	71	68	62	60	55	53	50	43	62
800	.125	84	85	76	75	75	73	73	70	81
	.250	79	82	74	74	74	72	73	69	80
	.500	75	79	71	71	69	67	68	63	75
	.625	78	77	70	67	64	62	61	55	71
1000	.125	89	91	84	81	81	79	78	76	87
	.250	86	88	83	80	80	78	78	76	86
	.500	82	85	81	78	79	76	76	74	84
	.750	79	83	79	76	76	73	73	70	81
	1.000	82	82	77	72	71	67	65	61	76
1200	.250	91	94	90	85	85	83	82	81	91
	.500	87	90	88	83	84	82	81	80	90
	.750	85	88	86	82	83	80	80	78	88
	1.000	83	86	85	81	82	78	77	76	86
	1.250	83	86	84	79	79	75	74	71	84
1400	1.500	85	86	83	77	75	70	69	65	81
	.500	92	95	94	87	87	86	85	85	94
	.750	89	92	93	86	87	86	84	84	93
	1.000	87	91	92	85	86	84	83	83	92
	1.250	86	89	91	84	85	83	81	81	90
	1.500	85	88	90	83	84	81	80	79	89
	1.750	86	89	89	82	81	78	76	75	87
2.000	88	90	88	82	78	75	73	70	85	

PERFORMANCE CURVES



VSBB/VHBB - 12 Max. Fan RPM = 2140 Max. Motor Frame = 145T Tip Speed (Ft./Min.) = RPM x 3.37

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	1.750
1500	1027	RPM	400	489	572	650	784				
		BHP	.10	.14	.19	.23	.35				
1750	1199	RPM	437	516	590	662	793				
		BHP	.15	.19	.24	.29	.41				
2000	1370	RPM	476	549	615	680	804				
		BHP	.20	.26	.30	.36	.49				
2250	1541	RPM	520	584	646	704	816	926	1024		
		BHP	.28	.33	.39	.45	.58	.76	.88		
2500	1712	RPM	569	622	679	732	838	938	1034	1122	
		BHP	.37	.43	.49	.55	.69	.85	1.00	1.16	
2750	1883	RPM	618	661	714	766	862	954	1046	1134	
		BHP	.48	.54	.61	.68	.82	.98	1.15	1.33	
3000	2055	RPM	668	700	752	800	890	978	1060	1146	
		BHP	.62	.66	.75	.83	.97	1.14	1.31	1.51	
3250	2226	RPM	718	748	791	836	922	1002	1084	1158	
		BHP	.78	.83	.91	.99	1.15	1.31	1.51	1.69	
3500	2397	RPM	768	798	830	874	956	1032			
		BHP	.96	1.02	1.08	1.18	1.36	1.52			
3750	2568	RPM	820	846	872	913	990				
		BHP	1.18	1.23	1.29	1.39	1.59				
4000	2740	RPM	870	896	921	952					
		BHP	1.42	1.48	1.55	1.63					

Performance certified is for installation Type B - free inlet, ducted outlet.

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Performance ratings do not include the effects of accessories.

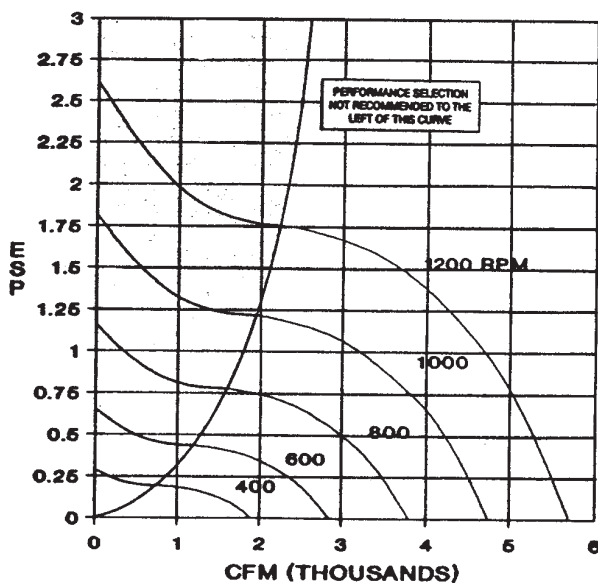
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Values shown are for outlet L_{WO} and L_{WOA} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
400	.125	65	60	58	57	56	54	49	43	61
	.250	62	57	55	53	52	49	42	36	56
600	.125	82	74	70	69	68	67	64	60	74
	.250	80	72	68	67	66	65	61	56	71
800	.500	75	68	65	63	61	60	55	48	67
	.125	95	84	78	76	75	74	73	69	82
1000	.250	93	83	77	75	74	73	72	67	80
	.500	90	80	75	73	72	71	69	64	78
1200	.750	85	77	72	70	68	67	64	57	74
	.125	105	92	84	82	81	80	79	76	88
1000	.250	104	91	84	81	80	79	79	75	87
	.500	101	90	82	80	79	78	77	73	86
1200	.750	98	88	81	79	77	76	75	70	84
	1.000	96	86	79	77	76	74	73	68	82
1200	1.250	92	84	77	75	74	72	71	64	80
	.125	109	100	91	87	85	84	84	81	93
1200	.250	108	99	90	86	85	84	83	80	92
	.500	107	98	89	85	84	83	82	79	91
1200	.750	105	96	88	84	83	82	81	78	90
	1.000	103	95	87	83	82	81	80	76	89
1200	1.250	101	93	86	82	81	80	79	75	88
	1.500	99	92	84	81	80	78	77	72	86
1200	1.750	96	90	83	80	78	76	75	70	85

PERFORMANCE CURVES



Filtered Supply Vents

VSBB/VHBB - 15 Max. Fan RPM = 1800 Max. Motor Frame = 184T Tip Speed (Ft./Min.) = RPM x 4.06

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)										
			0.125	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000		
1900	927	RPM	303										
		BHP	.13										
2250	1098	RPM	341	396									
		BHP	.19	.25									
2600	1268	RPM	380	420									
		BHP	.28	.33									
2950	1439	RPM	424	457	546								
		BHP	.40	.45	.59								
3300	1610	RPM	466	496	563								
		BHP	.54	.60	.73								
3650	1781	RPM	510	536	590	670							
		BHP	.71	.78	.91	1.10							
4000	1951	RPM	554	578	628	688							
		BHP	.92	1.00	1.15	1.32							
4350	2122	RPM	599	620	666	710	780						
		BHP	1.17	1.25	1.42	1.56	1.79						
4700	2293	RPM	644	664	704	748	798						
		BHP	1.47	1.55	1.72	1.90	2.09						
5050	2463	RPM	688	708	744	784	823	822	942				
		BHP	1.80	1.90	2.08	2.26	2.44	2.71	2.97				
5400	2634	RPM	734	752	786	824	860	900					
		BHP	2.19	2.29	2.49	2.70	2.88	3.10					
5750	2805	RPM	778	796	828	862							
		BHP	2.62	2.74	2.94	3.16							
6100	2976	RPM	824										
		BHP	3.13										

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance ratings (bhp) does not included transmission losses.
 Performance ratings do not include the effects of accessories.

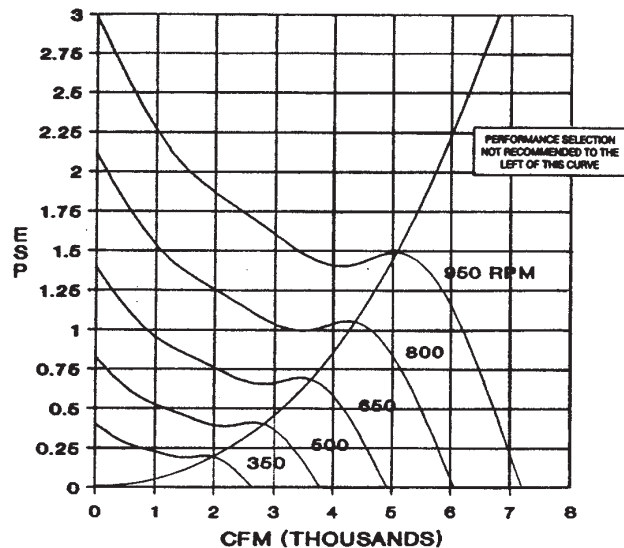
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS									
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA	
350	.125	69	65	62	61	59	59	52	46	65	
	.250	65	61	59	58	56	55	48	40	61	
500	.125	86	77	73	70	70	69	66	60	75	
	.250	84	75	71	68	68	67	64	57	74	
	.500	79	71	68	66	65	63	59	52	70	
650	.125	97	84	80	77	76	75	74	69	82	
	.250	97	84	79	77	76	74	73	69	82	
	.550	93	81	77	74	73	72	70	64	79	
800	.750	90	78	75	73	71	69	68	60	77	
	.125	102	93	86	82	80	80	79	75	88	
	.250	102	92	85	82	80	79	79	75	87	
	.500	101	91	85	82	79	79	78	74	87	
	.750	98	89	83	80	77	77	76	70	84	
950	1.000	95	86	80	78	75	75	73	67	82	
	1.250	94	86	80	78	75	74	73	67	82	
	.125	105	100	91	87	84	84	83	80	92	
	.250	105	100	90	87	84	84	83	80	92	
	.500	104	99	90	86	83	83	82	79	92	
950	.750	103	98	89	86	83	83	82	78	91	
	1.000	101	96	88	84	82	81	80	76	89	
	1.250	99	94	86	83	80	80	78	74	88	
	1.500	97	93	85	82	79	79	77	73	86	

PERFORMANCE CURVES



Filtered Supply Vents

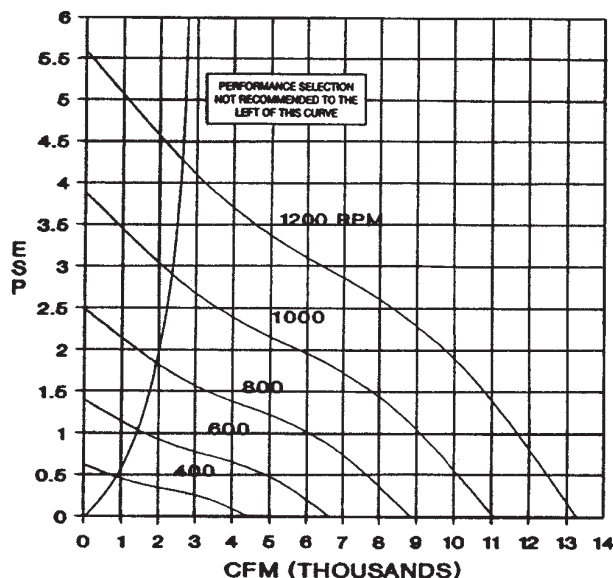
VSBB/VHBB - 18 Max. Fan RPM = 1450 Max. Motor Frame = 184T Tip Speed (Ft./Min.) = RPM x 4.84

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.125	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000
3100	1080	RPM	350	404	508	596	670	734	790	842	892
		BHP	.33	.40	.60	.84	1.08	1.33	1.58	1.85	2.14
3650	1272	RPM	386	436	532	618	692	756	816	868	916
		BHP	.46	.56	.79	1.06	1.33	1.60	1.91	2.20	2.49
4200	1463	RPM	429	472	560	638	712	778	836	890	940
		BHP	.67	.77	1.03	1.29	1.61	1.93	2.24	2.57	2.88
4750	1655	RPM	474	514	592	666	732	798	858	912	962
		BHP	.93	1.06	1.33	1.63	1.92	2.28	2.64	3.01	3.38
5300	1847	RPM	520	556	626	696	760	818	878	932	983
		BHP	1.27	1.40	1.69	2.03	2.36	2.67	3.09	3.46	3.88
5850	2038	RPM	566	600	662	722	788	845	895	952	
		BHP	1.67	1.82	2.12	2.46	2.84	3.20	3.48	3.99	
6400	2230	RPM	613	644	702	760	818	874	926	974	
		BHP	2.15	2.31	2.64	3.00	3.40	3.81	4.22	4.60	
6950	2422	RPM	660	689	744	796	852	895	954	1000	
		BHP	2.71	2.89	3.26	3.63	4.07	4.28	4.92	5.31	
7500	2613	RPM	708	735	787	835	885	936			
		BHP	3.38	3.58	3.97	4.36	4.79	5.26			
8050	2805	RPM	756	782	830	876					
		BHP	4.15	4.37	4.78	5.20					
8600	2297	RPM	804	828							
		BHP	5.02	5.25							

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance rating (bhp) does not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.
 Values shown are for outlet L_{WO} and L_{WOA} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

PERFORMANCE CURVES



SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
400	.125	74	70	69	67	66	63	58	53	70
	.250	73	68	66	65	64	60	54	48	68
	.500	73	66	64	62	62	58	51	43	68
600	.125	90	81	79	79	75	75	71	66	82
	.250	89	80	79	78	75	74	70	65	81
	.500	89	79	77	76	73	73	68	62	79
	.750	90	78	74	73	71	70	65	57	77
800	1.00	91	77	74	73	70	70	64	57	76
	.125	98	91	86	86	83	82	80	75	89
	.250	97	90	86	85	83	82	79	74	89
	.500	96	90	85	84	82	81	78	73	88
	.750	95	89	85	83	81	80	77	71	87
	1.000	96	89	83	81	80	79	75	70	86
1000	1.250	98	88	82	80	78	78	74	67	85
	1.500	98	88	81	79	77	77	73	66	84
	1.750	98	88	81	79	77	77	73	66	84
	.125	102	99	92	91	90	87	86	82	95
	.250	101	99	92	90	90	87	86	81	95
	.500	101	98	91	90	89	86	85	81	94
	.750	100	98	91	89	88	86	84	80	94
1200	1.000	99	97	90	89	87	85	84	79	93
	1.250	99	97	90	88	87	84	83	78	92
	1.500	100	97	89	87	86	84	82	77	92
	1.750	101	97	89	86	85	83	81	75	91
	2.000	102	98	88	85	84	82	80	74	90
	.125	105	106	96	95	95	91	91	87	100
	.250	105	106	96	95	95	91	91	87	100
1200	.500	104	106	96	94	94	90	90	86	99
	.750	104	105	96	94	94	90	90	86	99
	1.000	103	105	95	94	93	90	89	85	98
	1.250	103	104	95	93	93	89	89	85	98
	1.500	102	104	95	93	92	89	89	84	98
	1.750	102	103	95	92	92	88	88	83	97
	2.000	103	104	94	92	91	88	88	83	97

Filtered Supply Vents

VSBB/VHBB - 20 Max. Fan RPM = 1100 Max. Motor Frame = 215T Tip Speed (Ft./Min.) = RPM x 5.35

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.125	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000
4450	1047	RPM	280	328	412	486	552	610	662	712	
		BHP	.39	.50	.75	1.03	1.34	1.65	1.94	2.31	
5175	1218	RPM	308	354	430	499	562	620	672	720	766
		BHP	.56	.70	.98	1.28	1.61	1.98	2.32	2.66	3.07
5900	1388	RPM	338	380	452	516	574	630	682	730	774
		BHP	.78	.94	1.25	1.59	1.92	2.31	2.71	3.11	3.47
6625	1559	RPM	370	408	476	536	592	642	692	740	784
		BHP	1.06	1.24	1.58	1.96	2.36	2.69	3.11	3.57	3.99
7350	1729	RPM	402	436	500	558	608	660	706	752	796
		BHP	1.40	1.58	1.97	2.38	2.76	3.23	3.64	4.14	4.62
8075	1900	RPM	436	468	526	582	632	676	723	766	806
		BHP	1.82	2.04	2.44	2.89	3.35	3.75	4.25	4.72	5.17
8800	2071	RPM	470	498	553	606	654	698	740	782	822
		BHP	2.32	2.53	2.98	3.46	3.93	4.41	4.90	5.40	5.92
9525	2241	RPM	504	530	582	632	678	722	762	800	840
		BHP	2.90	3.13	3.62	4.13	4.62	5.18	5.69	6.21	6.30
10250	2412	RPM	538	562	612	658	704	746	784	822	856
		BHP	3.56	3.81	4.35	4.88	5.46	6.02	6.53	7.13	7.63
10975	2582	RPM	572	596	642	686	728	770	808		
		BHP	4.32	4.61	5.17	5.75	6.30	6.93	7.51		
11700	2753	RPM	608	630	672	714	754				
		BHP	5.23	5.52	6.08	6.69	7.28				
12425	2924	RPM	642	664	704	744					
		BHP	6.19	6.54	7.15	7.78					
13150	3094	RPM	678	698							
		BHP	7.33	7.67							

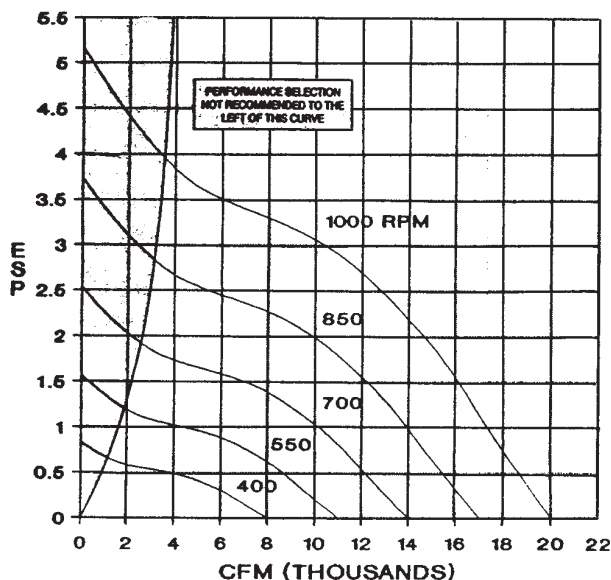
Performance certified is for installation Type B - free inlet, ducted outlet.

Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

PERFORMANCE CURVES

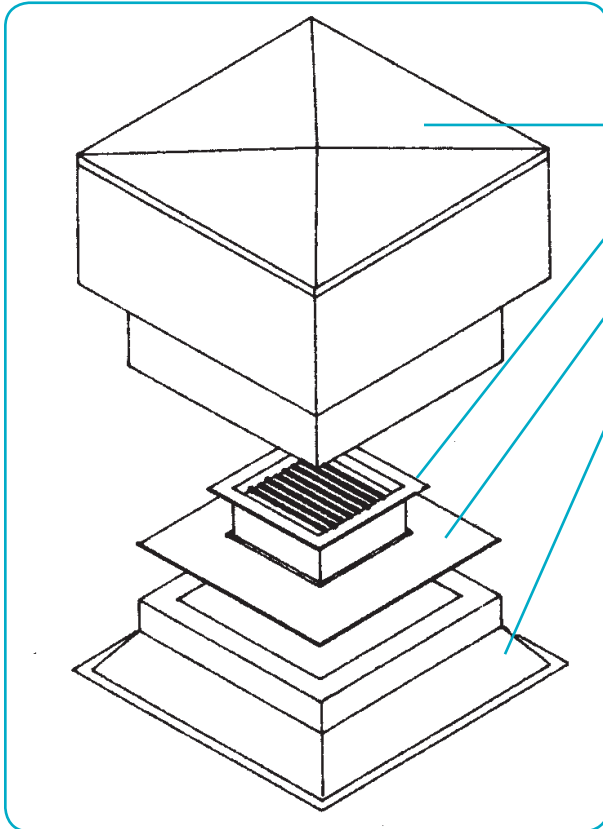


SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
400	.125	83	80	78	77	75	71	66	61	80
	.250	81	78	76	75	73	69	63	58	77
	.500	80	74	72	70	67	63	58	52	72
550	.125	94	89	86	86	84	82	77	71	89
	.250	93	88	85	85	83	80	75	70	88
	.500	91	86	83	82	80	78	72	67	85
	.750	90	84	80	79	76	74	69	63	82
700	1.00	90	84	79	78	75	73	68	62	81
	.125	100	96	93	91	90	89	84	79	95
	.250	99	95	92	91	89	88	83	78	95
	.500	98	94	91	89	88	86	82	77	93
	.750	96	93	89	88	86	84	80	75	92
	1.000	96	92	88	86	84	82	78	72	90
	1.250	96	91	86	84	82	80	76	70	88
850	1.500	96	91	85	84	81	79	75	69	87
	1.750	96	91	85	84	81	79	75	69	87
	.125	103	102	98	96	95	93	90	85	100
	.250	103	101	97	96	95	93	90	84	100
	.500	102	100	96	95	94	92	88	83	99
	.750	101	99	96	94	93	91	87	82	99
	1.000	100	99	95	93	92	90	86	81	97
	1.250	100	98	94	92	90	88	85	80	96
1000	1.500	99	98	93	91	89	87	83	78	94
	1.750	99	97	92	89	88	85	82	77	93
	2.000	99	97	91	88	86	84	80	75	92
	.125	106	107	102	100	99	97	95	90	105
	.250	106	107	102	100	99	97	95	90	104
	.500	105	106	101	99	98	96	94	89	104
	.750	104	105	100	98	98	96	93	88	103
	1.000	104	104	100	98	97	95	92	87	102
1000	1.250	103	104	99	97	96	94	91	86	101
	1.500	103	103	99	96	95	93	91	85	101
	1.750	102	103	98	96	95	92	89	84	100
	2.000	102	103	98	95	94	91	88	83	99

Filtered Supply Vents

TYPICAL INSTALLATION



VSBB filtered supply unit with pre-punched mounting holes for securing unit to roof curb.

Supply duct (*by others*).

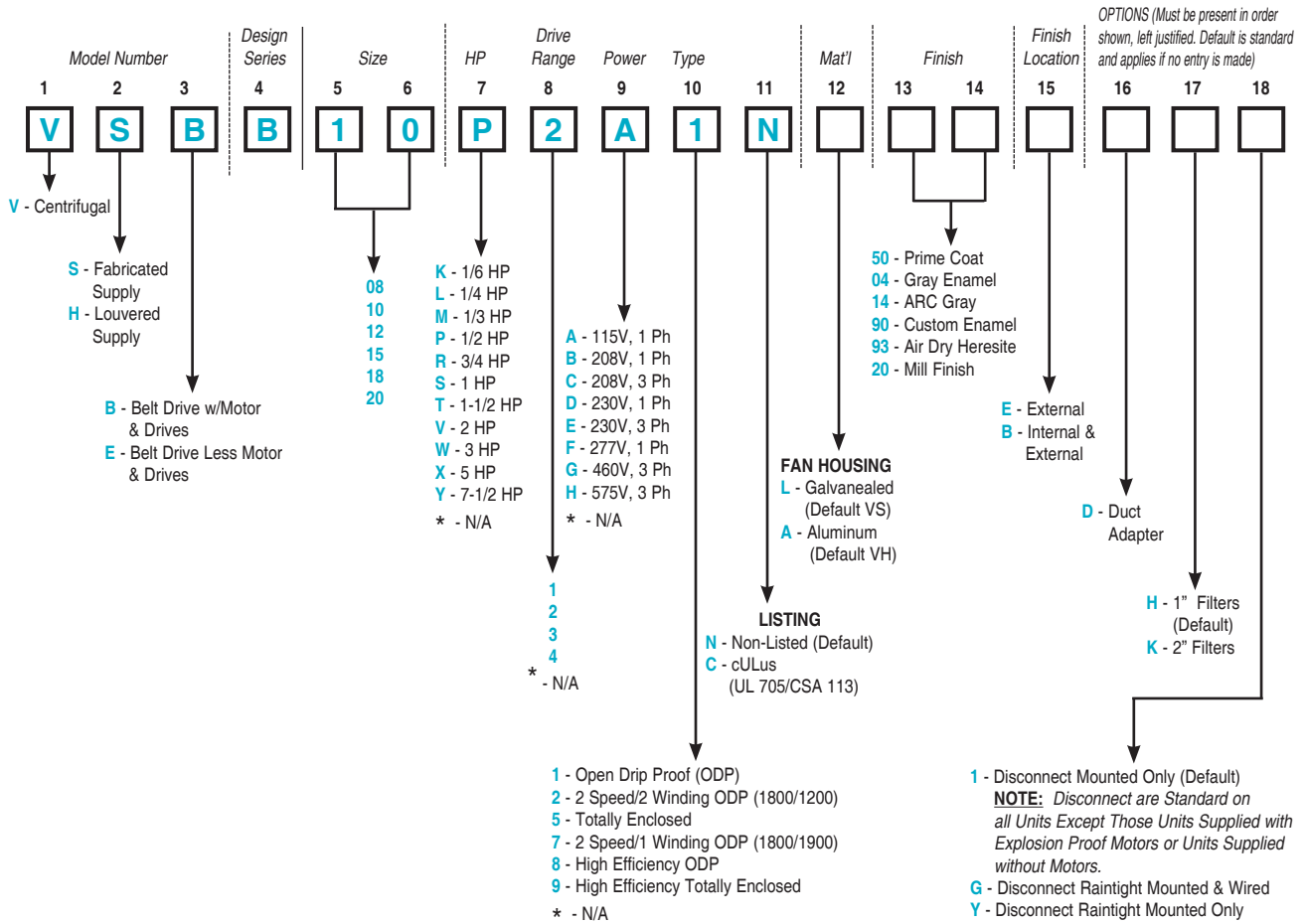
Duct adapter (*optional*) facilitates completion of supply duct prior to setting unit on curb.

Roof curb - shown without field installed roofing felts and flashing.

NOTES:

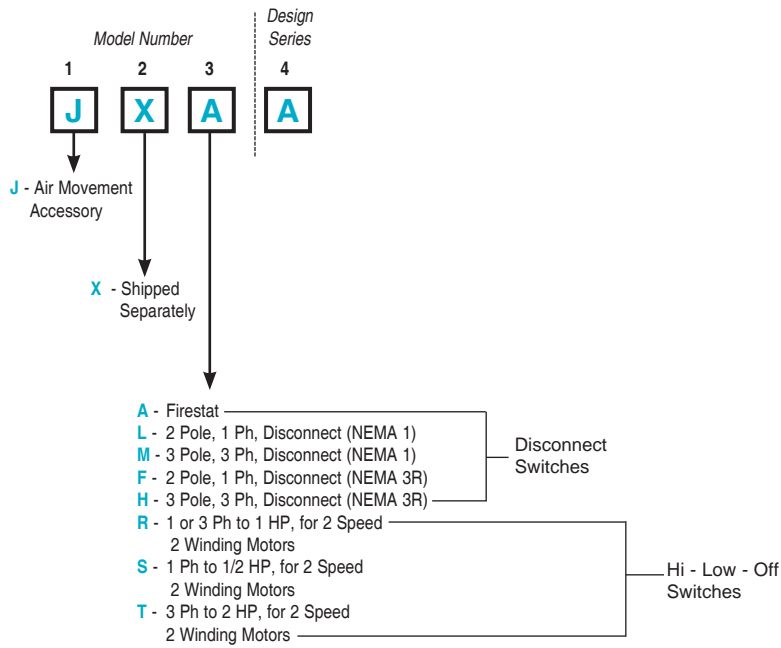
1. For locations where extreme snow depths may occur, an extended height roof curb should be specified. Also, condensate pans or ductwork drains may be required.
2. For restaurant applications (and other installations) a distance of 10 feet to the nearest exhaust fan may be required. Consult your local code authority for all installation requirements.
3. Installations with backdraft dampers require a duct access door, a roof curb extension with access panel, or other means of access to service the damper.

▼ Centrifugal Filtered Supply — Belt Drive

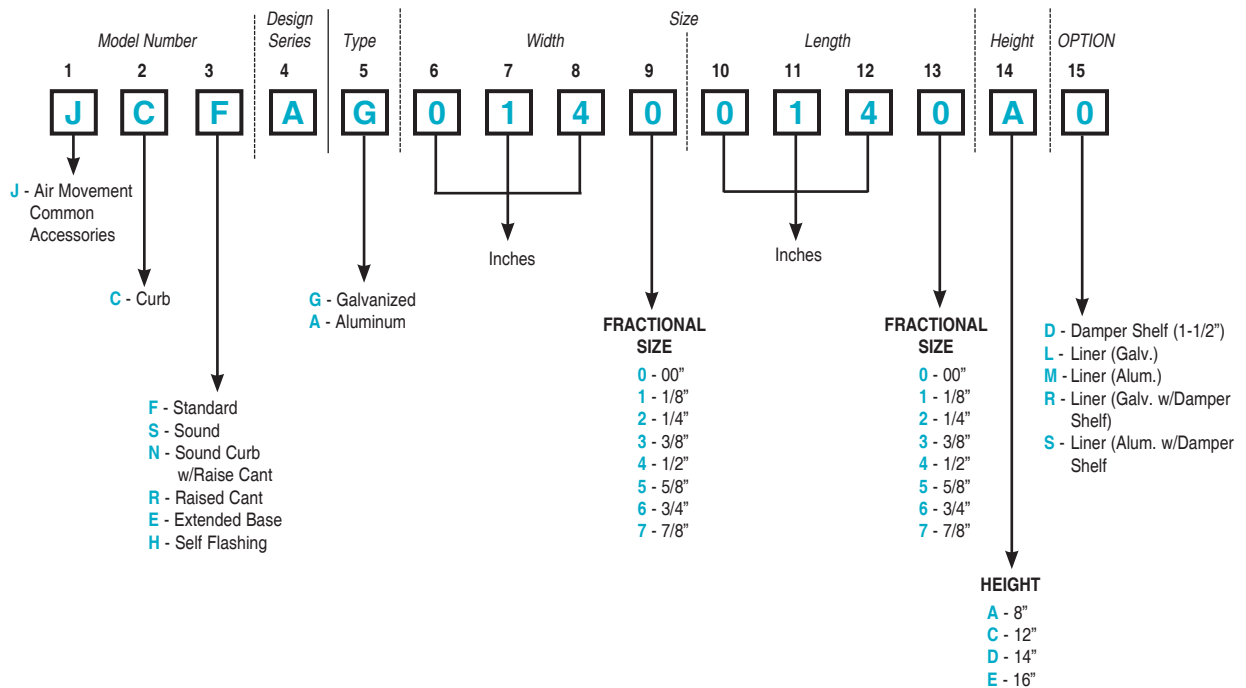


Filtered Supply Vents

▼ **Electric Accessories**



▼ **Curbs**



▼ Dampers

