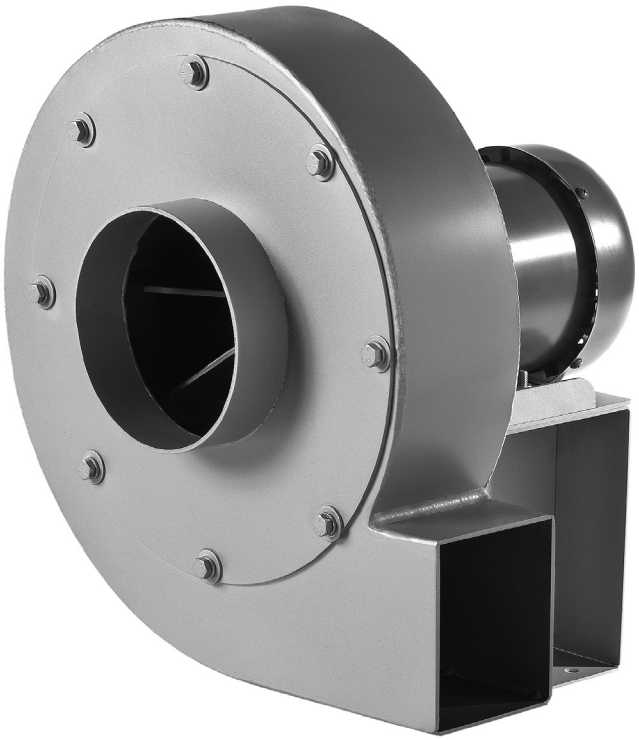
PBS series

CENTRIFUGAL BLOWER

engineering data
and specifications



CINCINNATI FAN

Since the founding of Cincinnati Fan in 1956, the company's mission has been to provide quality products at competitive prices, backed by depend-able service.

This mission is carried out by specializing in the market for industrial air handling products up to 125 hp. But specialization does not mean the product line is small. Cincinnati Fan offers a wide variety of standard and customized products, production flexibility, and customer responsiveness.

CINCINNATI FAN PROVIDES

- Technical evaluation for correct performance conditions
- Review of air stream and ambient conditions that require special attention
- Selection of proper components to meet required design specifications
- Selection of proper accessories
- System analysis for proper fan design

Cincinnati Fan operates in a modern facility specifically designed for world class manufacturing enabling us to build standard products to order, including accessories, and ship within 5 to 10 working days.

With support like this, you can be sure your Cincinnati Fan product will be well-built and will provide maximum dependability and longevity.

Cincinnati Fan has over 170 experienced sales engineers across the US and Canada ready to serve your air handling needs.

PBS SERIES SPECIFICATIONS

Fabricated mild steel pressure blowers shall be Cincinnati Fan PBS Series Model _____, Arrangement _____.

Capacity: _____CFM,_____ Static Pressure inches WG at standard conditions.

Operating conditions: _____°F, _____ feet altitude

All fan performance shall have been tested per AMCA Standard 210. Fan motor and bearing vibration levels shall not exceed 1.5 mils displacement at 3450 RPM. Wheels up to 13" diameter shall be statically balanced. Wheels over 13" diameter shall be dynamically balanced.

All blower housings shall be continuously welded. Housing, wheel and base gauges shall be as shown on page 14. Fan bearings shall be heavy duty, grease lubricated, self aligning ball bearings mounted in cast iron pillow blocks. V-belt drives shall be selected for a minimum of 1.3 times nominal horsepower.

Before painting, steel parts shall be cleaned by detergent wash, phophatized and painted with oven cured gray enamel. All Arrangement 1, 8 and 9 fan shafts shall receive a rust preventative coating prior to shipment. Shafts shall be turned, ground and polished steel (or stainless steel).

All parts in contact with the airstream shall be standard mild steel or stainless steel as specified. For AMCA Type A or B spark resistant construction, see the PB Series, Cast Aluminum Pressure Blower catalog.

SIX STANDARD ARRANGEMENTS

Arrangement 4

- Foot mounted motor with optional damper

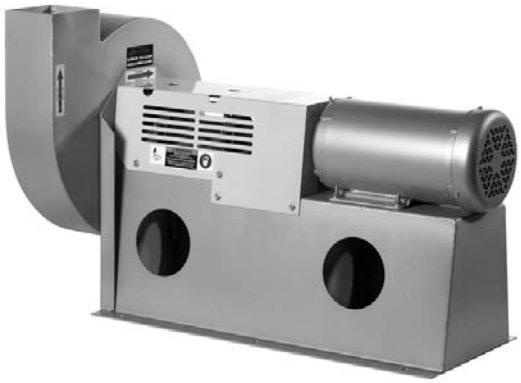
Arrangement 4HM

- Horizontal mount

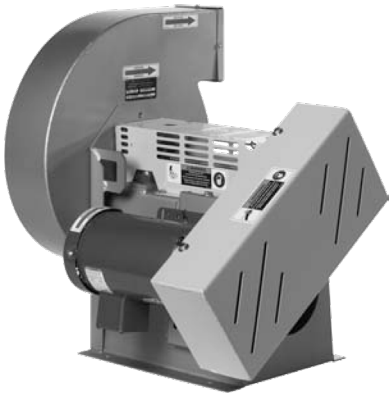
Arrangement 1

Arrangement 2

- With optional discharge flange



Arrangement 8



Arrangement 9

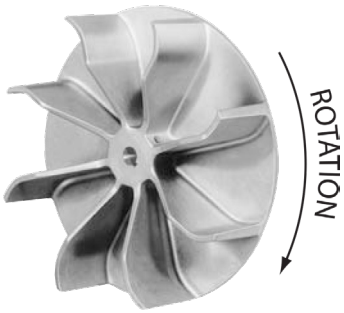
- With optional discharge guard

BLOWER WHEELS

Standard Fabricated Wheel

- Not available in B.C

Cast Aluminum Radial Wheel Option



Cast Aluminum B.C Wheel

- Backward Curve (B.C)

Steel wheels are standard. Stainless steel or cast aluminum are optional. All mild steel wheels have a taper-lock hub and bushing. All stainless steel and cast aluminum wheels have a straight bore with two set screws, 90°-120° apart, with one over the keyway. Wheel diameters 13" or less are statically balanced. Wheels over 13" diameter are dynamically balanced. Stainless steel or coated wheels should be used in corrosive environments.

OPTIONS

Inlet Flange

Flanges are 10 gauge steel drilled to ANSI-125 pound bolt circle if requested.

Discharge Flange

Discharge flange can be round or rectangular. On round flanges, drilling can be per CFV standard or ANSI-125 pound drilled bolt circle. Flange not available on some discharge positions.
All flanges are 10 gauge steel. If ordered with inlet flange, OD of round discharge flange will extend past face of inlet flange.

Drain

1/2" pipe coupling with plug welded to lowest point of housing. Not required for BH discharge position.

Inlet Filter

Many layered fine wire mesh for 50% efficiency @ 100 micron. Pleated paper media available for efficiencies down to 1 micron. Filter weather hoods are also available.

Inlet Guard Discharge Guard

Inlet guard is spiral with nickel/chrome/lacquer finish. Discharge guard is expanded metal. Both meet OSHA regulations. Guards are required by OSHA on any unducted inlet or discharge.

Teflon Shaft Seal

1/8" thick Teflon shaft seal good to 400˚F. Ceramic fiber gasket with steel cover plate for above 400°F.

Belt Guard

Bearing side is enclosed. Not available unless Cincinnati Fan mounts the motor. Painted safety yellow. Standard on Arrangement 9.

Inlet Slide Gate Discharge Slide Gate

Inlet damper is cast aluminum with galvanized gate. Discharge damper is fabricated steel with galvanized gate. If not ducted, guard is required by OSHA.

Shaft and/or Heat Slinger Guard

Available on Arrangements 1 and 9. Covers bearings and shaft between housing and belt guard. Has extended lube lines. Standard on Arrangement 8. Meets OSHA standards. Painted safety yellow.

SPARK-RESISTANT CONSTRUCTION

Type A: All parts in contact with airstream are of nonferrous material. (See PM series cast aluminum blower catalog).

Type B: Add cast aluminum wheel and aluminum rubbing ring for motor or fan shaft. **Maximum temperature up to 400°F except if with EXP motor, maximum temperature is 150°F.**

⚠ WARNING

The use of aluminum or aluminum alloys in the presence of steel which has been allowed to rust requires special consideration. Research by the U.S. Bureau of Mines and others has shown that aluminum impellers rubbing on rusty steel may cause high intensity sparking.
The use of the above Standard in no way implies a guarantee of safety for any level of spark resistance. Spark-resistant construction also does not protect against ignition of explosive gases caused by catastrophic failure or from any airstream material that may be present in a system.

HIGH TEMPERATURE CONSTRUCTION

Arrangement 2, 4 and 4HM

Up to 200°F: **Standard fan construction.** Steel or cast aluminum wheels are available. **No BC type steel wheels.**

201°F - 400°F: Standard fan with heat slinger and slinger guard. External hub on wheel or a shaft extension may be required (except on arrangement 2). Includes steel or high temperature cast aluminum wheel. **No BC type steel wheels.**

Arrangement 1, 8 and 9:

Up to 300°F: **Standard fan construction. No BC type steel wheels.**

301° - 400°F: Standard fan with heat slinger and shaft/slinger guard. Includes steel or high temperature cast aluminum wheel. **No BC type steel wheels.**

401° - 600°F: Standard fan with steel wheel, heat slinger, slinger guard, high temperature shaft seal, high temperature aluminum paint and silicone gasketing. **No cast aluminum wheels and no BC type steel wheels.**

601° - 750°F: Standard fan with steel wheel, heat slinger, slinger guard, high temperature shaft seal, high temperature aluminum paint, silicone gasketing and 316SS fan shaft. **No cast aluminum wheels and no BC type steel wheels.**

TEMPERATURE - ALTITUDE ADJUSTMENT

Air Temperature °F	Altitude - Feet Above Sea Level										
	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
0°	0.87	0.91	0.94	0.98	1.01	1.05	1.09	1.13	1.17	1.22	1.26
40°	0.94	0.98	1.02	1.06	1.10	1.14	1.19	1 23	1.28	1.32	1.36
70°	1.00	1.04	1.08	1.12	1.16	1.20	1.25	1.30	1.35	1.40	1.45
80°	1.02	1.06	1.10	1.14	1.19	1.23	1.28	1.33	1.38	1.43	1.48
100°	1.06	1.10	1.14	1.19	1.23	1.28	1.33	1.38	1.43	1.48	1.54
120°	1.09	1.14	1.18	1.23	1.28	1.32	1.38	1.43	1.48	1.53	1.58
140°	1.13	1.18	1.22	1.27	1.32	1.37	1.42	1.48	1.54	1.58	1.65
160°	1.17	1.22	1.26	1.31	1.36	1.42	1.47	1.53	1.59	1.64	1.70
180°	1.21	1.26	1.30	1.36	1.41	1.46	1.52	1.58	1.64	1.70	1.75
200°	1.25	1.29	1.34	1.40	1.45	1.51	1.57	1.63	1.69	1.75	1.81
250°	1.34	1.39	1.45	1.50	1.56	1.62	1.68	1.74	1.82	1.88	1.94
300°	1.43	1.49	1.55	1.61	1.67	1.74	1.80	1.87	1.94	2.00	2.08
350°	1.53	1.59	1.65	1.72	1.78	1.85	1.92	2.00	2.07	2.14	2.22
400°	1.62	1.69	1.75	1.82	1.89	1.96	2.04	2.12	2.20	2.27	2.35
450°	1.72	1.79	1.86	1.93	2.00	2.08	2.16	2.24	2.33	2.41	2.50
500°	1.81	1.88	1.96	2.03	2.11	2.19	2.28	2.36	2.46	2.54	2.62
550°	1.91	1.98	2.06	2.14	2.22	2.30	2.40	2.49	2.58	2.68	2.77
600°	2.00	2.08	2.16	2.24	2.33	2.42	2.50	2.61	2.71	2.80	2.90
650°	2.10	2.18	2.26	2.35	2.44	2.54	2.63	2.74	2.84	2.94	3.04
700°	2.19	2.27	2.36	2.46	2.55	2.65	2.75	2.86	2.97	3.06	3.18
750°	2.28	2.37	2.47	2.56	2.66	2.76	2.87	2.98	3.10	3.19	3.31

Fan performance tables are developed using standard air which is 70°F, 29.92" barometric pressure and .075 lb/ft^2 per cubic foot. Density changes resulting from temperature or barometric pressure variations (such as higher altitudes) must be corrected to standard conditions before selecting a fan based on standard performance data.

Temperature and/or altitude conversion factors are used in making corrections to standard conditions.

EXAMPLE: Select a **PBS** blower to deliver 800 CFM at 3" SP at 500°F, and 7000' altitude.

Step 1 - From the table, conversion factor is 2.36.

Step 2 - Correct static pressure is:

2.36 x 3" SP = 7.08" SP at standard conditions.
Use 7" SP

Step 3 - Check the belt drive tables on pages 8 and 9 for 800 CFM at 7" SP. We select a model **PBS-12A** at 3378 RPM and 1.74 bhp.

Step 4 - Correct the bhp for the lighter air:

1.74 bhp ÷ 2.36 = .74 bhp.

A 1 hp motor will suffice at 500° and 7000', but a 2 hp motor would be required at standard conditions. Special motor insulation may be required above 3500 feet altitude. Consult your local Cincinnati Fan sales representative.

DIRECT DRIVE RATINGS TABLES at 3450 RPM

CFM and bhp at Static Pressure Shown – Ratings at 70°F – .075" Density – Sea Level

Model	Nominal Wheel Diameter and Width*	Nominal Inlet Diameter	1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP	
			CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp
PBS-9	8" x 2.75"	5"	388	0.39	341	0.36	285	0.32	156	0.25								
	8.5" x 2.75"	5"	435	0.46	385	0.41	324	0.37	243	0.33								
	9" x 2.875"	5"	493	0.52	445	0.48	384	0.42	310	0.37	196	0.31						
	9.75" x 2.875"	5"	549	0.81	501	0.76	449	0.71	395	0.66	335	0.60	258	0.51				
PBS-10A	9" x 2.875"	6"	576	0.70	510	0.65	425	0.58	325	0.50	163	0.37						
	10.25" x 3" BC	6"	605	0.79	547	0.72	479	0.66	399	0.60	299	0.53	149	0.43				
	9.75" x 2.875"	6"	710	1.02	658	0.96	594	0.89	517	0.82	428	0.72	314	0.59	109	0.42		
	11" x 3" BC	6"	729	1.06	687	1.01	638	0.95	580	0.88	511	0.81	425	0.71	306	0.59		
	10.625" x 2.625"	6"	826	1.39	763	1.30	699	1.23	632	1.15	559	1.06	476	0.96	361	0.83		
	11" x 2.75"	6"	830	1.42	780	1.33	727	1.23	670	1.15	607	1.06	537	0.97	450	0.87	307	0.70
	11.5" x 2.875"	6"	884	1.52	836	1.45	780	1.38	718	1.30	652	1.22	582	1.14	506	1.04	414	0.92
PBS-12A	11" x 3" BC	7"	877	1.10	807	1.04	729	0.96	642	0.88	543	0.79	419	0.69	181	0.51		
	10.625" x 2.625"	7"	1062	1.62	989	1.53	899	1.42	795	1.29	681	1.15	553	0.99	378	0.78		
	11" x 2.75"	7"	1155	2.00	1068	1.85	974	1.71	873	1.56	762	1.40	636	1.23	487	1.04	281	0.78
	11.5" x 2.875"	7"	1266	2.39	1183	2.28	1092	2.14	997	2.00	900	1.85	798	1.69	686	1.51	547	1.30
	12" x 2.875"	7"	1307	2.61	1225	2.46	1139	2.30	1052	2.15	965	2.00	876	1.86	784	1.72	681	1.56
	13" x 3.25" BC	7"	1297	2.61	1233	2.51	1164	2.40	1093	2.29	1021	2.17	947	2.06	871	1.96	791	1.84
	12.25" x 2.875"	7"	1363	2.92	1287	2.76	1202	2.58	1114	2.40	1025	2.22	936	2.06	845	1.90	748	1.74
	13" x 3.25"	7"	1464	3.24	1388	3.08	1306	2.92	1222	2.77	1139	2.61	1058	2.47	978	2.32	897	2.17
PBS-14A	13" x 3.25" BC	6"	1317	2.50	1253	2.40	1185	2.31	1114	2.21	1036	2.09	952	1.97	858	1.82	748	1.65
	13" x 3.25" BC	7"	1360	2.51	1284	2.39	1210	2.28	1134	2.17	1054	2.07	968	1.96	872	1.83	759	1.68
	13" x 3.25" BC	8"	1413	2.51	1328	2.41	1243	2.31	1157	2.21	1068	2.11	974	1.98	872	1.83	757	1.65
	12.25" x 2.875"	6"	1495	2.98	1406	2.83	1310	2.67	1210	2.50	1107	2.32	1001	2.15	887	1.97	757	1.76
	13" x 3.25"	6"	1508	3.60	1445	3.47	1380	3.32	1312	3.15	1240	2.98	1163	2.79	1079	2.61	984	2.41
	12.25" x 2.875"	7"	1573	3.33	1477	3.18	1381	3.03	1283	2.87	1178	2.69	1063	2.47	931	2.20	774	1.87
	13" x 3.25"	7"	1576	3.66	1513	3.52	1447	3.37	1377	3.21	1303	3.04	1222	2.86	1132	2.67	1029	2.45
	14" x 3.25" BC	6"	1595	3.87	1521	3.74	1447	3.59	1372	3.44	1296	3.28	1218	3.12	1136	2.95	1049	2.77
	12.25" x 2.875"	8"	1624	3.50	1529	3.34	1433	3.16	1332	2.96	1222	2.75	1097	2.53	954	2.31	784	2.07
	13" x 3.25"	8"	1637	3.77	1572	3.60	1504	3.43	1431	3.25	1352	3.08	1263	2.89	1162	2.69	1042	2.46
	14" x 3.25" BC	7"	1676	4.06	1592	3.87	1507	3.71	1423	3.56	1338	3.42	1254	3.26	1167	3.10	1078	2.91
	14" x 3.25"	6"	1656	4.61	1606	4.44	1550	4.29	1487	4.15	1418	4.03	1345	3.89	1267	3.73	1185	3.54
	14" x 3.25" BC	8"	1741	4.10	1659	3.95	1576	3.79	1492	3.64	1406	3.48	1317	3.32	1225	3.15	1128	2.97
	14" x 3.25"	7"	1841	5.23	1785	5.04	1722	4.83	1650	4.61	1570	4.37	1482	4.12	1388	3.86	1289	3.63
	14" x 3.25"	8"	2021	5.54	1942	5.35	1853	5.13	1754	4.89	1649	4.63	1540	4.35	1429	4.08	1317	3.79
PBS-15A use 182T frame min	14" x 3.25" BC	6"	1768	3.47	1690	3.37	1601	3.24	1500	3.08	1388	2.90	1264	2.70	1132	2.50	992	2.29
	14" x 3.25" BC	8"	2112	4.36	2011	4.17	1892	3.92	1756	3.62	1604	3.32	1443	3.02	1275	2.75	1099	2.50
	14" x 3.25" BC	10"	2174	4.43	2058	4.24	1929	4.00	1787	3.72	1633	3.41	1466	3.09	1286	2.79	1090	2.49
	15.5" x 5" BC	6"	2057	5.37	1971	5.18	1886	5.01	1801	4.84	1715	4.67	1628	4.50	1538	4.34	1445	4.16
	14" x 3.25"	6"	2206	5.75	2122	5.64	2031	5.48	1934	5.28	1831	5.04	1722	4.77	1606	4.49	1481	4.19
	16.5" x 4.375" BC	6"	2248	6.47	2182	6.35	2108	6.21	2028	6.06	1942	5.90	1850	5.71	1755	5.51	1656	5.29
	15.5" x 5"	6"	2379	8.19	2311	8.05	2242	7.89	2171	7.70	2099	7.50	2024	7.28	1947	7.05	1866	6.80
	15.5" x 5" BC	8"	2688	7.43	2570	7.18	2448	6.88	2323	6.54	2197	6.18	2069	5.83	1938	5.48	1805	5.14
	16.5" x 4.375"	6"	2618	9.81	2549	9.59	2480	9.38	2408	9.18	2335	9.00	2259	8.81	2182	8.63	2103	8.43
	14" x 3.25"	8"	2924	8.02	2774	7.64	2624	7.24	2472	6.83	2315	6.40	2150	5.96	1975	5.49	1785	4.99
	16.5" x 4.375" BC	8"	2711	7.79	2637	7.64	2559	7.46	2475	7.26	2385	7.04	2287	6.79	2182	6.53	2069	6.26
	15.5" x 5" BC	10"	2821	7.88	2715	7.62	2599	7.31	2473	6.97	2338	6.59	2197	6.19	2050	5.78	1898	5.36
	16.5" x 4.375" BC	10"	2818	7.86	2748	7.70	2671	7.52	2584	7.32	2487	7.09	2379	6.85	2260	6.58	2129	6.30
	14" x 3.25"	10"	2995	8.38	2880	8.04	2751	7.68	2607	7.27	2446	6.81	2268	6.30	2073	5.74	1862	5.13
	15.5" x 5"	8"	3272	11.92	3171	11.60	3062	11.23	2948	10.79	2828	10.31	2702	9.80	2572	9.27	2438	8.74
	15.5" x 5"	10"	3476	12.90	3394	12.55	3301	12.15	3193	11.69	3068	11.16	2926	10.57	2769	9.93	2605	9.29
	16.5" x 4.375"	8"	3623	13.81	3545	13.62	3458	13.36	3360	13.04	3251	12.64	3130	12.17	2998	11.64	2855	11.08
	16.5" x 4.375"	10"	3705	14.27	3643	14.09	3575	13.88	3499	13.62	3414	13.31	3318	12.94	3209	12.51	3086	12.01
PBS-18 use 182T frame min	14" x 3.25" BC	6"	1520	3.35	1438	3.23	1355	3.12	1271	3.00	1185	2.89	1097	2.77	1006	2.64	909	2.50
	14" x 3.25" BC	8"	1589	3.41	1517	3.32	1441	3.22	1361	3.12	1277	3.00	1186	2.88	1089	2.75	981	2.59
	14" x 3.25" BC	10"	1574	3.34	1508	3.27	1437	3.18	1362	3.09	1279	2.98	1189	2.86	1088	2.72	972	2.56
	14" x 3.25"	6"	1795	5.29	1729	5.15	1659	4.98	1586	4.79	1510	4.59	1430	4.39	1347	4.18	1260	3.97
	16.5" x 4.375" BC	6"	1792	5.84	1743	5.72	1693	5.59	1641	5.46	1587	5.32	1531	5.17	1473	5.02	1412	4.87
	14" x 3.25"	8"	2036	5.81	1952	5.61	1865	5.40	1775	5.17	1682	4.95	1586	4.71	1485	4.46	1378	4.21
	14" x 3.25"	10"	2067	5.85	1976	5.61	1880	5.36	1780	5.12	1678	4.88	1574	4.65	1468	4.41	1357	4.17
	18" x 4.375" BC	6"	2021	7.51	1981	7.41	1939	7.31	1893	7.19	1845	7.07	1794	6.94	1740	6.80	1683	6.65
	16.5" x 4.375" BC	8"	2212	7.19	2131	6.98	2053	6.76	1976	6.55	1899	6.34	1822	6.12	1744	5.91	1663	5.69
	16.5" x 4.375" BC	10"	2210	6.79	2152	6.68	2089	6.55	2023	6.41	1953	6.25	1879	6.08	1800	5.90	1717	5.71
	16.5" x 4.375"	6"	2168	9.44	2118	9.29	2067	9.12	2015	8.94	1963	8.74	1910	8.54	1855	8.33	1799	8.10
	18" x 4.375"	6"	2321	11.44	2280	11.28	2239	11.11	2197	10.94	2154	10.76	2110	10.57	2065	10.38	2018	10.18
	18" x 4.375" BC	8"	2454	9.37	2385	9.16	2317	8.95	2251	8.74	2184	8.54	2118	8.33	2052	8.13	1984	7.92
	18" x 4.375"	8"	2518	10.61	2468	10.41	2416	10.21	2362	10.01	2306	9.81	2248	9.60	2187	9.39	2123	9.17
	18" x 4.375" BC	10"	2615	9.37	2538	9.16	2463	8.97	2391	8.79	2319	8.61	2248	8.42	2175	8.24	2102	8.05
	16.5" x 4.375"	10"	2624	10.69	2567	10.48	2508	10.27	2447	10.06	2384	9.85	2318	9.63	2250	9.41	2179	9.18
	18" x 4.375"	8"	2780	12.99	2722	12.80	2665	12.59	2608	12.38	2550	12.17	2493	11.95	2434	11.73	2375	11.50
	18" x 4.375"	10"	2860	13.47	2814	13.28	2765	13.08	2714	12.89	2661	12.68	2605	12.48	2547	12.26	2486	12.04
PBS-18WA use 182T frame min	16.5" x 5" BC	8"	2597	7.78	2479	7.59	2369	7.38	2263	7.17	2159	6.96	2056	6.74	1952	6.51	1847	6.28
	16.5" x 5" BC	10"	2740	7.30	2613	7.03	2490	6.80	2367	6.58	2242	6.37	2111	6.15	1972	5.91	1822	5.64
	15.5" x 5"	8"	2795	9.25	2682	8.97	2568	8.69	2453	8.39	2339	8.09	2224	7.80	2108	7.50	1990	7.20
	16.5" x 5" BC	10"	2935	8.39	2828	8.22	2719	8.04	2606	7.84	2489	7.63	2369	7.40	2244	7.16	2113	6.90
	16.5" x 5"	8"	2998	11.25	2915	10.91	2830	10.59	2741	10.28	2650	9.99	2555	9.70	2457	9.42	2356	9.14
	17" x 6"	8"	3098	12.49	2997	12.18	2895	11.85	2794	11.53	2693	11.20	2592	10.88	2490	10.56	2389	10.25
	15.5" x 5"	10"	3396	12.29	3291	11.82	3181	11.33	3065	10.82	2941	10.31	2809	9.79	2668	9.27	2516	8.75
	17" x 6"	10"	3641	15.80	3552	15.29	3459	14.79	3362	14.30	3261	13.82	3156	13.35	3048	12.90	2935	12.46
	16.5" x 5"	10"	3722	16.00	3623	15.41	3519	14.83	3408	14.25	3291	13.68	3168	13.11	3039	12.56	2903	12.01
	18.5" x 6"	10"	4462	24.24	4315	23.31	4174	22.41	4038	21.53	3908	20.70	3782	19.91	3659	19.17	3540	18.47

* BC wheels are cast aluminum only. Not available in steel.

DIRECT DRIVE RATINGS TABLES at 3450 RPM

CFM and bhp at Static Pressure Shown – Ratings at 70°F – .075" Density – Sea Level

Model	Nominal Wheel Diameter and Width*	Nominal Inlet Diameter	9" SP		10" SP		11" SP		12" SP		13" SP		16" SP		18" SP		20" SP †	
			CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp
PBS-10A	11.5" x 2.875"	6"	205	0.69														
PBS-12A	12" x 2.875"	7"	552	1.35	225	0.81												
	12.25" x 2.875"	7"	633	1.56	456	1.28												
	13" x 3.25" BC	7"	702	1.72	592	1.58	380	1.31										
	13" x 3.25"	7"	811	2.01	714	1.83	587	1.60										
PBS-14A	12" x 2.875"	6"	585	1.47	178	0.76												
	12" x 2.875"	7"	571	1.44	266	0.86												
	12" x 2.875"	8"	580	1.77	298	1.27												
	13" x 3.25" BC	6"	612	1.42	429	1.11	161	0.68										
	13" x 3.25" BC	7"	617	1.46	414	1.10												
	13" x 3.25" BC	8"	617	1.43	414	1.12												
	13" x 3.25"	6"	872	2.20	727	1.92	487	1.39										
	13" x 3.25"	8"	897	2.18	717	1.82	488	1.34										
	13" x 3.25"	7"	905	2.21	742	1.90	470	1.41										
	14" x 3.25" BC	6"	954	2.57	846	2.34	713	2.05	524	1.62								
	14" x 3.25" BC	7"	983	2.69	877	2.43	753	2.12	580	1.69								
	14" x 3.25" BC	8"	1023	2.76	905	2.52	764	2.21	566	1.76								
	14" x 3.25"	6"	1101	3.31	1011	3.04	911	2.72	790	2.34								
	14" x 3.25"	7"	1186	3.39	1076	3.14	955	2.85	810	2.50								
	14" x 3.25"	8"	1203	3.51	1084	3.20	953	2.87	800	2.48								
PBS-15A use 182T frame min	14" x 3.25" BC	10"	870	2.20	602	1.88												
	14" x 3.25" BC	6"	843	2.09	678	1.87	483	1.61										
	14" x 3.25" BC	8"	909	2.25	684	1.93	357	1.41										
	14" x 3.25"	6"	1344	3.89	1192	3.55	1010	3.15	765	2.56								
	15.5" x 5" BC	6"	1347	3.97	1242	3.76	1126	3.53	995	3.26	634	2.47						
	14" x 3.25"	8"	1578	4.46	1349	3.89	1090	3.27	782	2.57								
	14" x 3.25"	10"	1635	4.52	1389	3.92	1110	3.35	749	2.79								
	16.5" x 4.375" BC	6"	1554	5.06	1449	4.82	1338	4.55	1219	4.26	927	3.58	375	2.47				
	15.5" x 5" BC	8"	1666	4.80	1520	4.47	1364	4.12	1189	3.73	709	2.58						
	15.5" x 5" BC	10"	1739	4.95	1572	4.53	1392	4.09	1186	3.63	512	2.26						
	15.5" x 5"	6"	1780	6.53	1689	6.24	1590	5.92	1480	5.58	1206	4.71	722	3.17				
	16.5" x 4.375" BC	8"	1946	5.97	1813	5.66	1669	5.34	1514	4.99	1164	4.18	731	3.07				
	16.5" x 4.375" BC	10"	1988	6.01	1838	5.71	1682	5.40	1518	5.07	1156	4.29	647	3.03				
	16.5" x 4.375"	6"	2020	8.22	1935	7.99	1845	7.73	1751	7.44	1542	6.74	1282	5.76	863	4.17		
	15.5" x 5"	8"	2300	8.21	2156	7.69	2007	7.17	1850	6.65	1491	5.55	955	3.96				
	15.5" x 5"	10"	2438	8.66	2271	8.05	2106	7.48	1937	6.91	1568	5.74	926	3.86				
	16.5" x 4.375"	8"	2707	10.50	2554	9.94	2399	9.40	2243	8.88	1919	7.86	1552	6.72	988	4.76		
	16.5" x 4.375"	10"	2949	11.45	2799	10.85	2640	10.23	2474	9.61	2130	8.42	1746	7.19	1146	5.34		
PBS-18 use 182T frame min	14" x 3.25" BC	10"	836	2.38	664	2.16	419	1.87										
	14" x 3.25" BC	6"	801	2.32	673	2.09	499	1.75	210	1.20								
	14" x 3.25" BC	8"	858	2.40	710	2.15	511	1.78										
	14" x 3.25"	6"	1166	3.75	1063	3.52	943	3.25	787	2.87								
	14" x 3.25"	10"	1242	3.91	1117	3.64	975	3.33	795	2.95								
	14" x 3.25"	8"	1263	3.93	1135	3.62	987	3.27	799	2.81								
	6.5" x 4.375" BC	6"	1347	4.71	1279	4.55	1206	4.39	1127	4.22	943	3.83	692	3.24				
	6.5" x 4.375" BC	8"	1579	5.47	1491	5.24	1399	5.01	1299	4.77	1069	4.20	759	3.40				
	6.5" x 4.375" BC	10"	1629	5.50	1536	5.28	1437	5.05	1332	4.80	1091	4.22	762	3.42				
	6.5" x 4.375" BC	6"	1624	6.49	1561	6.33	1496	6.16	1428	5.99	1282	5.62	1118	5.19	918	4.64	588	3.65
	16.5" x 4.375"	6"	1741	7.87	1680	7.63	1616	7.38	1548	7.13	1395	6.56	1206	5.89	920	4.89		
	18" x 4.375"	8"	1916	7.72	1846	7.50	1774	7.29	1698	7.06	1536	6.57	1344	5.99	1086	5.20	404	3.19
	18" x 4.375"	6"	1970	9.98	1920	9.77	1868	9.55	1814	9.33	1697	8.85	1565	8.32	1409	7.71	1209	6.93
	18" x 4.375" BC	10"	2027	7.86	1950	7.65	1870	7.44	1787	7.21	1607	6.70	1405	6.11	1168	5.39	870	4.48
	16.5" x 4.375"	8"	2057	8.95	1986	8.72	1911	8.47	1831	8.20	1652	7.59	1432	6.81	1120	5.62		
	16.5" x 4.375"	10"	2105	8.94	2028	8.69	1947	8.43	1862	8.15	1674	7.52	1452	6.76	1158	5.74		
	18" x 4.375"	8"	2314	11.27	2253	11.04	2189	10.80	2124	10.55	1985	10.04	1832	9.47	1656	8.82	1440	7.99
	18" x 4.375"	10"	2422	11.81	2355	11.57	2285	11.32	2212	11.06	2056	10.48	1883	9.81	1689	9.04	1462	8.10
PBS-18WA use 182T frame min	15.5" x 5" BC	10"	1657	5.33	1475	4.97	1272	4.55	1048	4.10	536	3.23						
	16.5" x 5" BC	8"	1738	6.04	1626	5.79	1507	5.53	1382	5.26	1098	4.67	737	3.97				
	15.5" x 5"	8"	1869	6.90	1744	6.58	1613	6.26	1473	5.91	1143	5.08	617	3.77				
	16.5" x 5" BC	10"	1976	6.63	1832	6.34	1678	6.02	1511	5.67	1115	4.83	548	3.68				
	15.5" x 5"	10"	2352	8.24	2175	7.73	1984	7.24	1780	6.76	1329	5.75	782	4.50				
	16.5" x 5"	8"	2251	8.86	2141	8.57	2027	8.28	1907	7.96	1643	7.25	1327	6.38	881	5.13		
	17" x 6"	8"	2287	9.95	2184	9.66	2080	9.36	1972	9.07	1747	8.45	1494	7.76	1181	6.85	633	5.11
	16.5" x 5"	10"	2761	11.47	2612	10.93	2456	10.40	2293	9.86	1943	8.76	1544	7.59	1037	6.23		
	17" x 6"	10"	2819	12.03	2699	11.62	2573	11.21	2443	10.81	2162	9.99	1842	9.07	1443	7.84		
	18.5" x 6"	10"	3423	17.82	3308	17.21	3194	16.64	3080	16.10	2852	15.09	2618	14.16	2372	13.26	2103	12.33

* BC wheels are cast aluminum only. Not available in steel.

† For static pressures above 20" see the HP series catalogs. For higher CFM values see the RBE series catalogs.

PBS-9

Outlet Area .093 sq ft — **Wheel Size: 9" x 2.875" Inlet: 5"**

Volume CFM	1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		6" SP	
	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp
50	1515	0.02																		
100	1566	0.03	1879	0.05	2152	0.07	2399	0.09	2624	0.12	2834	0.15	3030	0.17	3214	0.21	3390	0.24		
150	***1708***	***0.04***	1986	0.07	2234	0.09	2460	0.11	2669	0.14	2866	0.17	3052	0.21	3228	0.23	3397	0.27	3714	0.34
200	1898	0.07	2150	0.09	2375	0.12	2582	0.15	2776	0.17	2958	0.21	3132	0.24	3297	0.27	***3456***	***0.31***	3757	0.39
250	2119	0.10	2346	0.13	2554	0.16	2746	0.19	2925	0.22	3096	0.25	3258	0.29	***3413***	***0.33***	3563	0.37	3846	0.45
300	2364	0.15	2566	0.18	2757	0.21	2935	0.25	3104	0.28	3264	0.32	***3416***	***0.36***	3563	0.40	3704	0.44	3972	0.52
350	2628	0.22	2807	0.25	2980	0.28	3145	0.32	3303	0.36	***3453***	***0.40***	3598	0.54	3736	0.48	3870	0.53		
400	2907	0.30	3065	0.34	3221	0.37	3373	0.41	***3519***	***0.46***	3660	0.50	3797	0.54	3928	0.59				
450	3197	0.41	3336	0.45	***3476***	***0.49***	3615	0.53	3750	0.57	3882	0.62								
500	***3494***	***0.54***	3618	0.58	3744	0.63	3870	0.67	3995	0.72										
550	3796	0.71	3908	0.75																

PBS-10A

Outlet Area .113 sq ft — **Wheel Size: 10.625" x 2.625" Inlet: 6"**

Volume CFM	1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP		10" SP	
	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp
100	1266	0.04	1773	0.09	2170	0.15	2507	0.23	2804	0.31	3072	0.40	3319	0.50						
200	1421	0.07	1854	0.13	2215	0.20	2532	0.29	2817	0.38	3078	0.48	3320	0.59	3547	0.71	3760	0.83	3963	0.95
300	1679	0.13	2049	0.21	2365	0.30	2648	0.39	2909	0.49	3151	0.60	3378	0.72	3593	0.84	3798	0.97	3993	1.11
400	1981	0.23	2307	0.33	2588	0.44	2842	0.54	3078	0.66	3299	0.78	***3508***	***0.91***	3708	1.04	3899	1.18		
500	2306	0.38	2599	0.51	2853	0.63	3085	0.76	3300	0.89	***3503***	***1.03***	3696	1.17	3881	1.32				
600	2646	0.60	2911	0.75	3145	0.89	***3359***	***1.04***	3558	1.19	3746	1.35	3926	1.51						
700	2997	0.89	3238	1.06	***3454***	***1.23***	3653	1.40	3839	1.58										
800	3355	1.27	3576	1.46	3777	1.66	3963	1.85												
900	3718	1.75	3921	1.97																

PBS-12A

Outlet Area .166 sq ft — **Wheel Size: 12.25" x 2.875" Inlet: 7"**

Volume CFM	2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP		10" SP		12" SP	
	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp
100	1518	0.08	1858	0.14	2144	0.21	2395	0.28	2622	0.36	2830	0.45	3023	0.54	3204	0.64	3376	0.74	3694	0.96
200	1541	0.11	1869	0.18	2151	0.26	2402	0.35	2630	0.44	2840	0.54	3036	0.64	3220	0.75	3393	0.86	3716	1.11
300	1628	0.16	1925	0.24	2189	0.33	2428	0.43	2648	0.53	2853	0.64	3045	0.76	3227	0.88	3399	1.01	3721	1.27
400	1763	0.24	2034	0.33	2275	0.43	2497	0.54	2703	0.66	2898	0.78	3081	0.90	3256	1.04	***3423***	***1.17***	3737	1.46
500	1923	0.34	2175	0.45	2399	0.57	2605	0.69	2798	0.82	2980	0.95	3153	1.09	3319	1.23	***3478***	***1.38***	3779	1.69
600	2095	0.48	2334	0.61	2546	0.74	2740	0.88	2921	1.02	3093	1.16	3256	1.31	***3413***	***1.47***	3564	1.63	3851	1.96
700	2276	0.66	2505	0.81	2708	0.96	2892	1.11	3065	1.27	3228	1.42	3383	1.59	3532	1.76	3675	1.93	3949	2.28
800	2463	0.88	2683	1.05	2878	1.22	3056	1.39	3222	1.56	3378	1.74	3526	1.92	3669	2.10	3806	2.29		
900	2656	1.14	2866	1.34	3055	1.53	3228	1.72	3388	1.92	3539	2.11	3682	2.31	3819	2.50	3951	2.71		
1000	2854	1.47	3055	1.69	3237	1.90	***3405***	***2.11***	3560	2.33	3707	2.54	3846	2.76	3979	2.97				
1100	3058	1.85	3248	2.09	***3424***	***2.33***	3586	2.57	3738	2.80	3881	3.04								
1200	3266	2.30	***3446***	***2.57***	3614	2.83	3772	3.09	3919	3.35										
1300	***3478***	***2.83***	3648	3.12	3809	3.40	3961	3.68												
1400	3695	3.44	3854	3.75																
1500	3914	4.14																		

PBS-14A

Outlet Area .202 sq ft — **Wheel Size: 14" x 3.25" Inlet: 7"**

Volume CFM	2" SP		4" SP		6" SP		8" SP		10" SP		12" SP		14" SP		16" SP	
	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp
200	1347	0.10														
400	1465	0.22	1949	0.40	2347	0.60	2694	0.81	3003	1.03	3286	1.26				
600	1673	0.40	2103	0.66	2460	0.93	2776	1.22	3065	1.51	3332	1.81	***3582***	***2.11***	3817	2.43
800	1919	0.69	2311	1.03	2638	1.37	2929	1.73	3195	2.09	***3443***	***2.46***	3677	2.84	3898	3.22
1000	2192	1.12	2547	1.53	2853	1.95	3125	2.38	3374	2.82	3606	3.26	3824	3.71		
1200	2490	1.75	2804	2.21	3089	2.70	3346	3.20	***3582***	***3.72***	3801	4.24				
1400	2807	2.60	3080	3.10	3342	3.66	***3584***	***4.24***	3809	4.82						
1600	3137	3.72	3374	4.27	3611	4.87	3837	5.51								
1800	***3475***	***5.15***	3683	5.74	3895	6.39										

Note: Drive loss ***bold italic***, direct drive

Consult Cincinnati Fan for speeds higher than shown in tables.

Belt Drive Ratings Table — at 70°F | .075 density | sea level

PBS-15A

Outlet Area .312 sq ft — **Wheel Size: 15.5" x 5" Inlet: 8"**

Volume CFM	2" SP		4" SP		6" SP		8" SP		10" SP		12" SP		14" SP		16" SP		18" SP		20" SP	
	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp
200	1197	0.12	1688	0.28	2067	0.47														
400	1238	0.21	1708	0.43	2079	0.68	2394	0.95	2674	1.24	2927	1.56	3160	1.89	3377	2.24	3581	2.60	3774	2.98
600	1322	0.33	1762	0.61	2117	0.93	2423	1.27	2696	1.62	2945	2.00	3175	2.38	3389	2.79	3592	3.21	3783	3.64
800	1436	0.50	1846	0.85	2182	1.23	2475	1.64	2739	2.06	2981	2.50	3206	2.95	3417	3.42	3616	3.90	3805	4.39
1000	1567	0.74	1952	1.16	2270	1.61	2550	2.08	2804	2.56	3038	3.07	3256	3.59	***3462***	***4.12***	3656	4.67		
1200	***1711***	***1.06***	2074	1.55	2376	2.06	2644	2.60	2888	3.15	3113	3.73	3324	4.31	3523	4.91	3713	5.53		
1400	1864	1.47	2207	2.04	2496	2.62	2752	3.23	2986	3.85	3204	4.48	3408	5.14	3601	5.80	3784	6.48		
1600	2024	2.00	2348	2.65	2625	3.30	2872	3.97	3097	4.66	3307	5.36	***3504***	***6.08***	3691	6.81				
1800	2192	2.65	2497	3.39	2762	4.12	3000	4.85	3217	5.61	***3420***	***6.38***	3611	7.16	3793	7.96				
2000	2365	3.44	2652	4.27	2905	5.08	3135	5.89	3345	6.71	3542	7.55	3728	8.40						
2200	2543	4.38	2812	5.30	3055	6.19	3276	7.08	***3480***	***7.98***	3671	8.89								
2600	2909	6.78	3146	7.89	3367	8.97	3573	10.02	3764	11.08										
2800	3097	8.27	3320	9.48	3530	10.65	3728	11.79												

Minimum motor frame size is 182T even though the bhp might be available in a smaller frame size

PBS-18

Outlet Area .207 sq ft — **Wheel Size: 18" x 4.375" Inlet: 8"**

Volume CFM	4" SP		6" SP		8" SP		10" SP		12" SP		14" SP		16" SP		18" SP		20" SP		22" SP	
	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp
200	1428	0.26																		
400	1448	0.43	1757	0.67	2023	0.93	2259	1.20	2473	1.48	2671	1.78	2856	2.09	3029	2.42				
600	1520	0.66	1805	0.97	2056	1.30	2282	1.64	2490	1.99	2682	2.36	2863	2.74	3034	3.13	3196	3.52	3350	3.93
800	1640	0.96	1896	1.34	2127	1.74	2339	2.15	2536	2.58	2721	3.02	2895	3.48	3061	3.94	3218	4.41	3369	4.89
1000	***1793***	***1.38***	2022	1.81	2233	2.28	2430	2.76	2614	3.26	2789	3.78	2955	4.30	3113	4.84	3265	5.39	***3410***	***5.94***
1200	1968	1.94	2175	2.44	2368	2.96	2549	3.51	2720	4.07	2884	4.65	3040	5.25	3190	5.86	3335	6.48	***3475***	***7.10***
1400	2158	2.69	2347	3.24	2523	3.83	2690	4.43	2850	5.05	3003	5.70	3150	6.36	3291	7.03	***3429***	***7.72***	3561	8.41
1600	2358	3.63	2532	4.25	2695	4.90	2850	5.56	2998	6.24	3141	6.94	3279	7.66	***3413***	***8.40***	3542	9.15		
1800	2566	4.80	2727	5.50	2879	6.20	3023	6.93	3162	7.67	3296	8.43	***3425***	***9.20***	3551	10.00				
2000	2779	6.23	2929	7.00	3071	7.77	3207	8.56	3337	9.36	***3463***	***10.18***	3585	11.01						
2200	2997	7.93	3138	8.78	3271	9.63	3398	10.48	3521	11.35										
2400	3218	9.94	3350	10.87	3476	11.79	3597	12.72												

Minimum motor frame size is 182T even though the bhp might be available in a smaller frame size

PBS-18WA

Outlet Area .313 sq ft — **Wheel Size: 18.5" x 6" Inlet: 10"**

Volume CFM	4" SP		6" SP		8" SP		10" SP		12" SP		14" SP		16" SP		18" SP		20" SP		22" SP	
	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp	RPM	bhp
400	1382	0.54	1686	0.89	1944	1.28	2173	1.72	2380	2.19										
600	1420	0.70	1709	1.11	1959	1.57	2182	2.05	2386	2.58	2574	3.13	2750	3.71	2916	4.32	3073	4.96	3223	5.62
800	1485	0.92	1758	1.39	1996	1.90	2212	2.45	2409	3.03	2593	3.64	2765	4.28	2927	4.95	3082	5.64	3230	6.35
1000	1570	1.19	1827	1.72	2054	2.30	2260	2.91	2450	3.55	2628	4.22	2795	4.92	2954	5.64	3105	6.39	3250	7.16
1200	1668	1.54	1911	2.13	2127	2.77	2324	3.44	2507	4.14	2679	4.87	2841	5.63	2995	6.41	3142	7.22	3283	8.05
1400	1774	1.98	2007	2.64	2213	3.33	2402	4.06	2578	4.82	2743	5.61	2900	6.43	3049	7.28	3192	8.15	3329	9.04
1600	1887	2.52	2111	3.24	2309	4.00	2491	4.79	2660	5.61	2819	6.46	2970	7.34	3115	8.25	3253	9.18	3387	10.13
1800	2005	3.17	2221	3.96	2412	4.78	2587	5.64	2751	6.52	2905	7.43	3051	8.37	3191	9.34	3325	10.33	***3455***	***11.34***
2000	2126	3.95	2335	4.82	2521	5.70	2690	6.62	2848	7.57	2998	8.54	3140	9.54	3275	10.57	***3406***	***11.62***	3532	12.69
2200	2249	4.87	2453	5.81	2633	6.77	2798	7.75	2952	8.76	3097	9.80	3235	10.86	3367	11.95	***3494***	***13.06***		
2400	2374	5.92	2573	6.95	2749	7.99	2910	9.04	3060	10.12	3201	11.22	3335	12.34	***3464***	***13.49***	3587	14.66		
2600	2501	7.14	2696	8.26	2868	9.37	3025	10.50	3171	11.65	3309	12.81	***3440***	***14.00***	3566	15.21				
2800	2630	8.53	2820	9.74	2989	10.94	3143	12.14	3286	13.36	***3421***	***14.60***	3549	15.85						
3000	2760	10.09	2946	11.41	3111	12.70	3262	13.98	***3403***	***15.27***	3535	16.58								
3200	2891	11.85	3073	13.27	3236	14.65	3384	16.02	3522	17.40										
3400	3023	13.80	3202	15.34	3361	16.82	***3507***	***18.28***												
3600	3156	15.97	3331	17.63	***3488***	***19.22***														
3800	3290	18.37	***3462***	***20.15***																
4000	***3424***	***21.00***	3593	22.91																

Minimum motor frame size is 182T even though the bhp might be available in a smaller frame size

Note—Drive losses are not included in bhp.
Consult Cincinnati Fan for speeds higher than shown in tables.

RPM and bhp in ***bold italic***, direct drive °blowers should be considered

DIRECT DRIVE RATINGS TABLES at 2850 RPM — 50 cycle motors only

CFM and bhp at Static Pressure Shown – Ratings at 70°F – .075" Density – Sea Level

Model	Nominal Wheel Diameter and Width*	Nominal Inlet Diameter	1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP	
			CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp
PBS-9	8" x 2.75"	5"	303	0.21	239	0.18												
	8.5" x 2.75"	5"	341	0.25	271	0.21	164	0.18										
	9" x 2.875"	5"	390	0.28	321	0.24	226	0.20										
	9.75" x 2.875"	5"	435	0.44	374	0.40	307	0.36	224	0.30								
PBS-10A	9" x 2.875"	6"	453	0.38	357	0.33	229	0.26										
	10.25" x 3" BC	6"	478	0.43	400	0.37	300	0.32	146	0.25								
	9.75" x 2.875"	6"	568	0.56	495	0.51	400	0.44	275	0.35								
	11" x 3" BC	6"	587	0.58	530	0.54	458	0.48	362	0.41	208	0.31						
	10.625" x 2.625"	6"	658	0.76	581	0.69	499	0.63	404	0.55	248	0.43						
	11" x 2.75"	6"	667	0.78	604	0.70	533	0.63	452	0.56	343	0.47						
	11.5" x 2.875"	6"	713	0.84	648	0.78	572	0.72	489	0.65	395	0.57						
PBS-12A	11" x 3" BC	7"	699	0.60	607	0.55	499	0.48	362	0.40								
	10.625" x 2.625"	7"	851	0.89	748	0.80	620	0.70	473	0.57								
	11" x 2.75"	7"	921	1.09	810	0.97	686	0.85	540	0.71	355	0.54						
	11.5" x 2.875"	7"	1015	1.32	907	1.21	792	1.09	671	0.97	533	0.82	285	0.58				
	12" x 2.875"	7"	1049	1.44	946	1.31	840	1.18	734	1.06	621	0.94	482	0.79				
	13" x 3.25" BC	7"	1047	1.44	966	1.36	879	1.26	791	1.17	698	1.08	596	0.99	459	0.87		
	12.25" x 2.875"	7"	1098	1.61	998	1.46	891	1.31	784	1.17	673	1.04	545	0.90	288	0.63		
	13" x 3.25"	7"	1181	1.79	1084	1.65	982	1.53	883	1.40	787	1.28	686	1.15	567	1.00		
PBS-14A	13" x 3.25" BC	6"	1064	1.38	983	1.31	895	1.22	797	1.12	680	1.00	531	0.83	305	0.57		
	13" x 3.25" BC	7"	1094	1.38	1004	1.29	911	1.20	810	1.11	691	1.01	537	0.86	282	0.54		
	13" x 3.25" BC	8"	1134	1.39	1031	1.31	927	1.22	816	1.13	691	1.00	536	0.83	273	0.57		
	12.25" x 2.875"	6"	1202	1.64	1088	1.51	966	1.37	839	1.23	699	1.07	518	0.87				
	12.25" x 2.875"	7"	1262	1.84	1147	1.72	1026	1.58	892	1.41	730	1.18	511	0.87				
	12.25" x 2.875"	8"	1305	1.93	1190	1.79	1065	1.62	922	1.44	745	1.26	517	1.04				
	13" x 3.25"	6"	1222	2.00	1144	1.88	1061	1.74	970	1.59	866	1.44	741	1.27	562	1.03		
	14" x 3.25" BC	6"	1289	2.15	1200	2.03	1109	1.91	1015	1.77	916	1.63	805	1.48	673	1.28	484	0.99
	13" x 3.25"	7"	1278	2.03	1199	1.90	1114	1.77	1019	1.63	909	1.47	771	1.28	568	1.02		
	13" x 3.25"	8"	1328	2.08	1247	1.94	1157	1.79	1054	1.64	929	1.48	768	1.27	549	0.97		
	14" x 3.25" BC	7"	1352	2.24	1250	2.10	1148	1.98	1045	1.85	940	1.71	829	1.54	700	1.33	526	1.03
	14 x 31/4 BC	8"	1407	2.27	1307	2.14	1204	2.01	1098	1.88	986	1.74	864	1.58	720	1.38	522	1.08
	14" x 3.25"	6"	1350	2.55	1284	2.42	1207	2.31	1119	2.20	1025	2.07	924	1.90	814	1.67	683	1.38
	14" x 3.25"	7"	1500	2.90	1426	2.73	1338	2.54	1235	2.34	1120	2.14	998	1.94	864	1.73	705	1.47
	14" x 3.25"	8"	1640	3.07	1536	2.90	1415	2.70	1285	2.48	1150	2.25	1014	2.01	868	1.76	699	1.46
PBS-15-A use 182T frame min	14" x 3.25" BC	6"	1432	1.93	1328	1.83	1204	1.70	1059	1.54	898	1.37	722	1.20	522	1.02	247	0.75
	14" x 3.25" BC	8"	1707	2.41	1571	2.22	1402	1.97	1211	1.72	1007	1.51	785	1.30	508	1.03		
	14" x 3.25" BC	10"	1753	2.45	1601	2.27	1427	2.03	1231	1.77	1011	1.52	758	1.28	427	1.00		
	15.5" x 5" BC	6"	1666	2.98	1563	2.83	1460	2.69	1355	2.55	1246	2.41	1130	2.26	1002	2.09	854	1.88
	14" x 3.25"	6"	1790	3.22	1683	3.10	1565	2.92	1435	2.71	1293	2.48	1135	2.23	949	1.95	697	1.56
	16.5" x 4.375" BC	6"	1832	3.62	1746	3.51	1648	3.38	1539	3.23	1423	3.07	1301	2.88	1174	2.68	1035	2.45
	15.5" x 5"	6"	1939	4.58	1856	4.45	1770	4.30	1681	4.12	1587	3.93	1486	3.71	1375	3.47	1249	3.20
	15.5" x 5" BC	8"	2176	4.13	2029	3.89	1878	3.61	1724	3.31	1565	3.02	1400	2.75	1224	2.47	1024	2.16
	16.5 x 4.375	6"	2136	5.47	2052	5.29	1965	5.14	1875	4.98	1781	4.83	1683	4.66	1580	4.47	1469	4.24
	14" x 3.25"	8"	2357	4.42	2176	4.10	1991	3.76	1796	3.39	1582	3.00	1341	2.58	1062	2.11	723	1.57
	16.5" x 4.375" BC	8"	2212	4.35	2119	4.21	2016	4.04	1901	3.85	1773	3.63	1629	3.40	1468	3.15	1287	2.87
	15.5" x 5" BC	10"	2291	4.38	2154	4.14	2000	3.84	1831	3.52	1653	3.18	1465	2.84	1262	2.49	1030	2.12
	14" x 3.25"	10"	2431	4.64	2280	4.34	2103	4.00	1895	3.59	1657	3.12	1391	2.62	1091	2.12	714	1.67
	16.5" x 4.375" BC	10"	2302	4.39	2211	4.25	2104	4.08	1978	3.88	1832	3.66	1667	3.42	1486	3.18	1292	2.91
	15.5" x 5"	8"	2665	6.64	2536	6.34	2396	5.98	2247	5.57	2089	5.13	1924	4.69	1750	4.26	1565	3.83
	15.5" x 5"	10"	2841	7.18	2732	6.87	2598	6.47	2434	6.00	2244	5.48	2042	4.95	1841	4.46	1639	3.98
	16.5" x 4.375"	8"	2964	7.74	2861	7.54	2741	7.27	2600	6.90	2439	6.46	2262	5.99	2077	5.52	1888	5.08
	16.5" x 4.375"	10"	3037	8.00	2957	7.83	2864	7.61	2753	7.33	2619	6.96	2460	6.52	2279	6.03	2082	5.52
PBS-18 use 182T frame min	14" x 3.25" BC	6"	1224	1.86	1124	1.76	1022	1.67	917	1.57	806	1.46	681	1.33	524	1.14	247	0.77
	14" x 3.25" BC	10"	1275	1.87	1191	1.80	1099	1.72	993	1.62	869	1.51	716	1.36	505	1.18		
	14" x 3.25" BC	8"	1285	1.90	1195	1.82	1097	1.73	991	1.63	871	1.52	731	1.38	550	1.17	231	0.75
	14" x 3.25"	6"	1458	2.95	1375	2.82	1286	2.66	1191	2.49	1090	2.32	980	2.14	854	1.95	691	1.69
	16.5" x 4.375" BC	6"	1462	3.26	1401	3.16	1338	3.05	1271	2.93	1200	2.80	1124	2.68	1041	2.54	950	2.41
	14" x 3.25"	8"	1650	3.22	1546	3.05	1436	2.87	1321	2.67	1198	2.47	1064	2.25	908	1.99	709	1.66
	14" x 3.25"	10"	1673	3.23	1559	3.03	1438	2.83	1312	2.64	1183	2.44	1046	2.24	894	2.01	703	1.73
	18" x 4.375"8 BC	6"	1654	4.21	1604	4.12	1549	4.03	1488	3.92	1422	3.81	1352	3.68	1276	3.55	1196	3.40
	16.5" x 4.375" BC	8"	1796	4.00	1700	3.82	1607	3.65	1514	3.47	1419	3.29	1319	3.11	1213	2.92	1096	2.73
	16.5" x 4.375" BC	10"	1803	3.80	1730	3.70	1649	3.58	1561	3.44	1465	3.29	1361	3.12	1248	2.94	1125	2.74
	16.5" x 4.375"	6"	1772	5.28	1710	5.15	1648	5.00	1584	4.83	1518	4.65	1448	4.47	1374	4.27	1294	4.06
	18" x 4.375"	6"	1902	6.41	1852	6.27	1801	6.12	1748	5.97	1693	5.81	1636	5.65	1575	5.47	1511	5.29
	18" x 4.375"	8"	2000	5.23	1918	5.05	1837	4.88	1757	4.71	1677	4.55	1594	4.37	1510	4.20	1420	4.02
	16.5" x 4.375"	8"	2061	5.93	1999	5.76	1933	5.60	1864	5.43	1790	5.25	1711	5.07	1625	4.88	1532	4.67
	18" x 4.375" BC	10"	2130	5.23	2039	5.07	1952	4.91	1865	4.76	1777	4.61	1687	4.45	1594	4.28	1495	4.10
	16.5" x 4.375"	10"	2146	5.97	2075	5.80	2001	5.62	1923	5.45	1840	5.26	1752	5.07	1658	4.86	1558	4.64
	18" x 4.375"	8"	2274	7.27	2205	7.11	2135	6.93	2066	6.75	1995	6.57	1922	6.38	1847	6.19	1770	5.99
	18" x 4.375"	10"	2345	7.54	2287	7.38	2225	7.22	2159	7.05	2088	6.87	2012	6.69	1931	6.49	1845	6.28
PBS-18WA use 182T frame min	16.5" x 5" BC	8"	2099	4.34	1963	4.17	1835	4.00	1710	3.82	1584	3.63	1455	3.43	1318	3.23	1171	3.01
	15.5" x 5" BC	10"	2214	4.04	2064	3.84	1915	3.66	1759	3.48	1589	3.28	1398	3.04	1177	2.74	919	2.39
	15.5" x 5"	8"	2266	5.14	2128	4.91	1989	4.66	1850	4.42	1709	4.17	1565	3.92	1414	3.67	1250	3.39
	16.5" x 5" BC	10"	2384	4.69	2252	4.54	2115	4.37	1971	4.19	1819	3.99	1657	3.77	1482	3.53	1288	3.25
	16.5" x 5"	8"	2445	6.25	2343	5.98	2235	5.73	2122	5.49	2003	5.26	1877	5.03	1745	4.79	1603	4.54
	17" x 6"	8"	2521	6.96	2398	6.70	2275	6.42	2152	6.16	2030	5.90	1907	5.65	1782	5.40	1654	5.16
	15.5" x 5"	10"	2766	6.81	2634	6.41	2492	5.99	2336	5.56	2164	5.13	1972	4.70	1757	4.29	1518	3.89
	17" x 6"	10"	2974	8.77	2863	8.36	2744	7.96	2619	7.56	2488	7.19	2349	6.83	2203	6.49	2048	6.16
	16.5" x 5"	10"	3037	8.87	2913	8.38	2778	7.90	2632	7.44	2474	6.98	2305	6.53	2125	6.09	1932	5.64
	18.5" x 6"	10"	3629	13.42	3456	12.67	3293	11.95	3138	11.28	2991	10.68	2848	10.12	2708	9.62	2570	9.16

* BC wheels are cast aluminum only. Not available in steel.

DIRECT DRIVE RATINGS TABLES at 2850 RPM — 50 cycle motors only

CFM and bhp at Static Pressure Shown – Ratings at 70°F – .075" Density – Sea Level

Model	Nominal Wheel Diameter and Width*	Nominal Inlet Diameter	9" SP		10" SP		11" SP		12" SP		13" SP		14" SP		15" SP		16" SP †	
			CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp	CFM	bhp
PBS-14A	14" x 3.25"	7"	385	0.89														
	14" x 3.25"	8"	414	0.97														
PBS-15A use 182T frame min	14" x 3.25"	6"	111	0.61														
	15.5" x 5" BC	6"	664	1.60	381	1.18												
	15.5" x 5" BC	10"	720	1.67														
	15.5" x 5" BC	8"	775	1.77	356	1.08												
	16.5" x 4.375"8 BC	6"	874	2.19	656	1.86	280	1.35										
	16.5" x 4.375" BC	10"	1083	2.61	841	2.23	498	1.64										
	16.5" x 4.375" BC	8"	1085	2.56	855	2.18	579	1.68										
	15.5" x 5"	6"	1098	2.88	898	2.45	558	1.70										
	15.5" x 5"	8"	1360	3.39	1115	2.89	747	2.15										
	16.5" x 4.375"	8"	1347	3.97	1210	3.64	1044	3.21	810	2.59								
	15.5" x 5"	10"	1427	3.51	1176	2.98												
	16.5" x 4.375"	8"	1696	4.66	1492	4.24	1261	3.74	951	3.02								
	16.5" x 4.375"	10"	1877	5.02	1661	4.53	1421	4.01	1097	3.33								
PBS-18† use 182T frame min	14" x 3.25"	6"	159	0.68														
	14" x 3.25"	8"	262	0.93														
	16.5" x 4.375" BC	6"	845	2.25	720	2.07	556	1.80	256	1.22								
	16.5" x 4.375" BC	8"	965	2.51	810	2.24	608	1.88										
	16.5" x 4.375" BC	10"	987	2.52	825	2.25	607	1.89										
	18" x 4.375" BC	6"	1110	3.25	1017	3.09	915	2.91	797	2.69	643	2.39	327	1.72				
	16.5" x 4.375"	6"	1206	3.83	1106	3.59	985	3.30	822	2.91	465	2.01						
	18" x 4.375" BC	8"	1325	3.82	1220	3.60	1100	3.35	950	3.04	721	2.56	122	1.46				
	18" x 4.375" BC	10"	1390	3.90	1275	3.68	1150	3.42	1008	3.13	845	2.79	639	2.36				
	16.5" x 4.375"	8"	1428	4.43	1310	4.15	1170	3.81	990	3.34	672	2.49						
	16.5" x 4.375"	10"	1448	4.39	1327	4.11	1188	3.78	1016	3.38	755	2.77						
	18" x 4.375"	6"	1443	5.10	1368	4.90	1286	4.67	1193	4.42	1083	4.13	946	3.76	742	3.19		
	18" x 4.375"	8"	1688	5.78	1600	5.56	1505	5.32	1400	5.05	1280	4.74	1135	4.35	938	3.78	432	2.18
	18" x 4.375"	10"	1752	6.04	1653	5.79	1546	5.51	1430	5.19	1301	4.83	1152	4.41	965	3.87	631	2.96
PBS-18WA† use 182T frame min	15.5" x 5" BC	10"	624	2.01	276	1.69												
	16.5" x 5" BC	8"	1008	2.77	819	2.51	587	2.21	259	1.86								
	16.5" x 5" BC	10"	1064	2.93	791	2.53	416	2.03										
	15.5" x 5"	8"	1064	3.07	833	2.67	468	2.06										
	15.5" x 5"5	10"	1255	3.48	963	3.04	612	2.48										
	16.5" x 5"	8"	1449	4.26	1278	3.94	1078	3.56	821	3.07	385	2.29						
	17" x 6"	8"	1521	4.91	1378	4.65	1220	4.35	1036	3.99	791	3.47						
	16.5" x 5"	10"	1726	5.19	1503	4.73	1254	4.24	958	3.69	489	2.95						
	17" x 6"	10"	1883	5.82	1704	5.47	1504	5.08	1269	4.59	956	3.88						
	18.5" x 6"	10"	2433	8.73	2294	8.33	2151	7.95	2003	7.58	1846	7.21	1674	6.81	1479	6.35	1235	5.76

* BC wheels are cast aluminum only. Not available in steel.

† For static pressures above 16" see the **HP** series catalogs. For higher CFM values see the **RBE** series catalog.

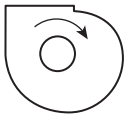
Eight Standard Discharge Positions Available. 45° Discharge Positions Not Shown*

Discharges shown are determined by viewing fan from motor or drive side

CW-TH
Clockwise Top Horizontal Discharge

CW-DB
Clockwise Down Blast Discharge

CW-BH
Clockwise Bottom Horizontal Discharge

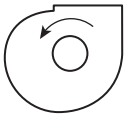


CW-UB
Clockwise Up Blast Discharge

CCW-TH
Counter Clockwise Top Horizontal Discharge

CW-DB
Counter Clockwise Down Blast Discharge

CW-BH
Counter Clockwise Bottom Horizontal Discharge



CW-UB
Counter Clockwise Up Blast Discharge

* Discharge flange not available on some discharge positions—see page 19.

MATERIAL CONVEYING

Bulky materials such as those shown in **Table 1**, can be conveyed pneumatically using a Cincinnati Fan PBS series pressure blower. Follow the steps below to determine the PBS blower best suited for your application.

Example: Assume a requirement to move 900 pounds per hour of barley through 75 feet of straight, horizontal, round duct. See notes 1 and 2.

I Convert pounds per hour to pounds per minute: 900 lb/hr ÷ 60 = 15 lb/min

II Refer to **Table 1**. Find barley under material (column A) and read horizontally. Barley weighs 38 pounds per cubic foot (column B), requires 38 CFM of air per pound of material (column C) and a minimum of 5000 feet per minute conveying velocity (column D).

III Determine the minimum cubic feet per minute (CFM) requirements:

CFM/lb of material 38 (from column C)

x lb/min = 15 (from step I)

570 Total minimum CFM required @ 5000 ft/min conveying velocity (column D)

IV Determine the system static pressure requirements from **Table 2**. Read across the 5000 ft/min velocity line to the 6" duct size column.

We have selected 6" duct size with 980 CFM (actual) to maintain a velocity of 5000 ft/min.

The friction loss is 8.02" SP per 100' x .75 = 6.01" plus 3.5" SP suction pickup (column E, **Table 1**) = 9.51" total system static pressure for 75 feet of straight 6" duct.

V Check direct drive rating tables for 980 CFM at 9.51" SP at the lowest horsepower. We suggest a Model PBS-14A, 14" x 3.25" wheel, 6" inlet. Interpolate 2.94 bhp. **Do not use BC type wheels for material conveying**.

VI If material being conveyed will be going through the fan, the fan bhp can be significantly increased. The approximate increase is calculated as:

$$\text{Actual bhp} = \frac{\text{lb/minute of air + lb/minute of material}}{\text{lb/minute of air}} \times \text{fan bhp (2.94, step V)}$$

$$\text{In this example : lb/minute of air} = 980 \text{ (actual CFM, step IV)} \times .075 \text{ lb/ft}^3 \left(\frac{\text{Standard}}{\text{Density}}\right) = 73.8$$

note 3

$$\text{Therefore: } \frac{73.5 + 15}{73.5} = \frac{73.5 + 15}{73.5} = 1.20 \times 2.94 + 3.53 \text{ actual bhp}$$

Note

1 For each 10 feet of vertical duct, add 10 feet to your total straight duct length.
2 For equivalent losses through elbows, see chart on page 9 of our Engineering Data catalog.
3. Make sure you use correct density for location of fan.

MATERIAL CONVEYING CALCULATION

(1) Material Being Conveyed (1) _____
(2) Pounds Conveyed/Hour (2) _____
+ 60
(3) Pounds/Minute (3) _____
(4) Feet of Straight Horizontal Duct (4) _____ see note 1
(5) Number of 90° Elbows (5) + _____ see note 2
(6) Total Equivalent Feet of Duct (6) _____
(7) Material Weight, lb/ft³ (col. B) (7) _____
(8) CFM/Pound of Material (col. C) (8) _____
(9) Pounds/Minute (step 3) (9) x _____
(10) Total Min. CFM Required (10) _____
(11) Min. Conveying Velocity in FPM (col. D) (11) _____
(12) Duct Size to Get Total CFM (step 10) @ Minimum Velocity (step 11) per table 2 (12) _____ Duct Size
(13) Actual CFM for Duct (step 12) (13)* _____ Actual CFM*
(14) Friction Loss/100 ft (14) _____
(15) Total Equivalent Feet of Duct (step 6) (in 100s of feet) (15) x _____ (in 100s of feet)
_____
(16) Suction Pickup in inches of WC (col. E) (16) + _____
(17) Total System SP (17) _____ Total System SP

Note: if conveying long, strigy material, specify paper trim type wheel

Fan Model to get #13 (actual CFM) and #17 (total SP) above _____

Fan RPM _____

Actual Fan bhp _____ Step VI

*Must be equal or greater than step 10

Table 1

A	B	C	D	E
Material	Approximate Weight lb/ft^3	Cubic ft of Air per lb of Material	Min Conveying Velocity fpm	Suction Pickup inches of W.C
Ashes, Coal Barley	30	42	4500	3.0
Beans, Soy	38	38	5000	3.5
	47	36	5200	4.0
Bran	16	56	3500	2.0
Cement, Portland	100	35	7000	5.0
Cinders, Coal	45	36	6000	4.0
Coal, Powdered	30	42	4000	3.0
Coffee, Beans	42	36	3500	3.0
Cork, Ground	14	59	3500	1.5
Corn, Cobs	25	44	5000	2.5
Corn, Meal	40	38	5500	3.5
Corn, Shelled	45	36	5500	3.5
Cotton, Dry	5	94	4000	2.0
Dust, Grinding	30	42	5000	3.0
Fruit, Dried	30	42	4000	3.0
Hair or Feathers, Dry	5	94	3000	1.5
Lime, Hydrated	30	42	5000	3.0
Malt, Dry	35	39	4800	3.0
Oats	26	44	4500	3.0
Paper, Shredded	20	49	5000	3.0
Plastic, Granulated	35	42	5400	3.0
Rags, Dry	30	42	4500	2.5
Salt, Coarse	45	36	5500	4.0
Sand, Dry	105	35	7000	5.0
Sawdust, Dry	13	63	3700	2.5
Wheat, Dry	46	37	5800	4.0
Wood Chips, Heavy	24	45	4500	3.0
Wood Shavings, Light	9	73	3400	2.0
Wool, Dry	5	94	5000	2.0

⚠ WARNING

When fans are used in material conveying applications, care must be used in their selection and location within each material conveying system. The material should be crushed, shredded or pulverized **Before** it passes through the fan to eliminate premature fan housing, wheel and/or bearing failure which could cause severe, personal injury and/or complete system failure. Please contact a Cincinnati Fan sales representative in your area for selection assistance.

Table 2 – Friction Loss (FL) in inches of water per 100 feet of straight, horizontal round duct

Velocity fpm	Pipe Diameter and Area sq ft																			
	4" .087		5" .136		6" .196		7" .267		8" .349		10" .545		12" .785		14" 1.069		16" 1.396		18" 1.797		20" 2.182	
	CFM	FL	CFM	FL	CFM	FL	CFM	FL	CFM	FL	CFM	FL	CFM	FL	CFM	FL	CFM	FL	CFM	FL	CFM	FL
2600	227	3.26	355	2.60	511	2.17	695	1.86	909	1.63	1420	1.30										
2800	245	3.76	382	3.01	550	2.52	748	2.15	977	1.89	1530	1.61										
3000	262	4.33	409	3.46	588	2.88	802	2.47	1048	2.08	1638	1.73										
3200	279	4.93	437	3.94	628	3.28	855	2.82	1118	2.47	1748	1.97										
3400	297	5.56	464	4.45	668	3.71	910	3.18	1188	2.78	1855	2.22										
3500	304	5.89	476	4.71	686	3.93	935	3.37	1222	2.95	1908	2.35										
3600	314	6.23	492	4.98	707	4.15	962	3.56	1258	3.12	1965	2.49										
3700	322	6.59	503	5.26	725	4.38	988	3.76	1291	3.30	2017	2.63										
3800	332	6.95	518	5.55	746	4.62	1018	3.97	1327	3.48	2070	2.78										
4000	350	7.69	546	6.15	796	5.13	1070	4.40	1396	3.85	2184	3.08										
4200	367	8.48	573	6.78	825	5.65	1125	4.85	1467	4.25	2290	3.49										
4400	384	9.26	600	7.41	864	6.18	1176	5.30	1536	4.63	2400	3.71										
4500	392	9.70	612	7.77	882	6.48	1202	5.55	1571	4.86	2453	3.89										
4800	418	11.05	654	8.85	944	7.38	1284	6.32	1676	5.55	2620	4.43										
5000	435	12.02	680	9.67	980	8.02	1335	6.88	1745	6.02	2725	4.82										
5200	454	13.00	710	10.50	1022	8.66	1390	7.44	1818	6.50	2840	5.21										
5500	479	14.68	748	11.64	1078	9.68	1469	8.31	1920	7.28	2997	5.81										
5600	490	15.25	764	12.05	1100	10.05	1496	8.61	1954	7.55	3060	6.03										
5800	505	16.27	789	12.95	1137	10.78	1549	9.25	2024	8.10	3161	6.47										
6000	524	17.30	818	13.85	1176	11.52	1604	9.89	2096	8.66	3276	6.92										
7000	611	23.60	955	18.90	1375	15.65	1873	13.50	2445	11.80	3820	9.41										

See RIBE engineering data catalog

Note – Blower housing dimensions common to all Blower Arrangements. Housings on all arrangements are rotatable in 90° increments. Housings on Arrangements 1, 8 and 9 are rotatable in 45° increments. Housings are not reversible on any arrangements. Discharge flanges are not available for some discharge positions. See note 4 below and page 19.

Model	C	D	J	M	N	O	P	R	S	AA notes 1-2-3	DD note 4
PBS-9	2"	3 5/8"	3 13/16"	5 3/4"	1 3/16"	6 1/8"	7 1/8"	7 3/4"	6 1/2"	4 15/16"	4"
PBS-10A	2"	4"	4"	6 13/16"	1 1/8"	6 11/16"	8 5/16"	9"	7 9/16"	5 15/16"	4 3/8"
PBS-12A	2"	4 5/8"	4 5/16"	7 5/8"	1 1/8"	7 3/4"	9 1/4"	10 5/8"	8 1/2"	6 15/16"	5 1/2"
PBS-14A	2"	5 1/8"	4 9/16"	8 3/16"	1 1/4"	8 9/16"	10 5/16"	11 3/16"	9 1/2"	6 15/16"	6"
PBS-15A	2"	5 7/8"	4 15/16"	8"	1 3/8"	9 1/4"	10 13/16"	12"	9 7/8"	7 15/16"	8"
PB-18	2"	5 1/4"	4 5/8"	10 3/4"	15/16"	10 1/2"	12 3/4"	13 3/4"	11 7/16"	7 5/16"	6"
PBS-18WA	2"	6 3/4"	5 5/8"	9 7/8"	1"	10 7/8"	12 5/8"	13 3/8"	11 5/8"	9 15/16"	7"

1 PBS-14A also available with 6" and 8" inlets.

2 PBS-15A and PBS-18 also available with 6" and 10" inlets.

3 PBS-18WA also available with 8" inlet.

4 Discharge flange not available for some discharge positions. See page 19. If fan is selected with a round discharge flange and an inlet flange, the O.D. of the discharge flange will extend past the face of the inlet flange. A square discharge flange will not extend past the face of an inlet flange.

Standard Construction Gauges

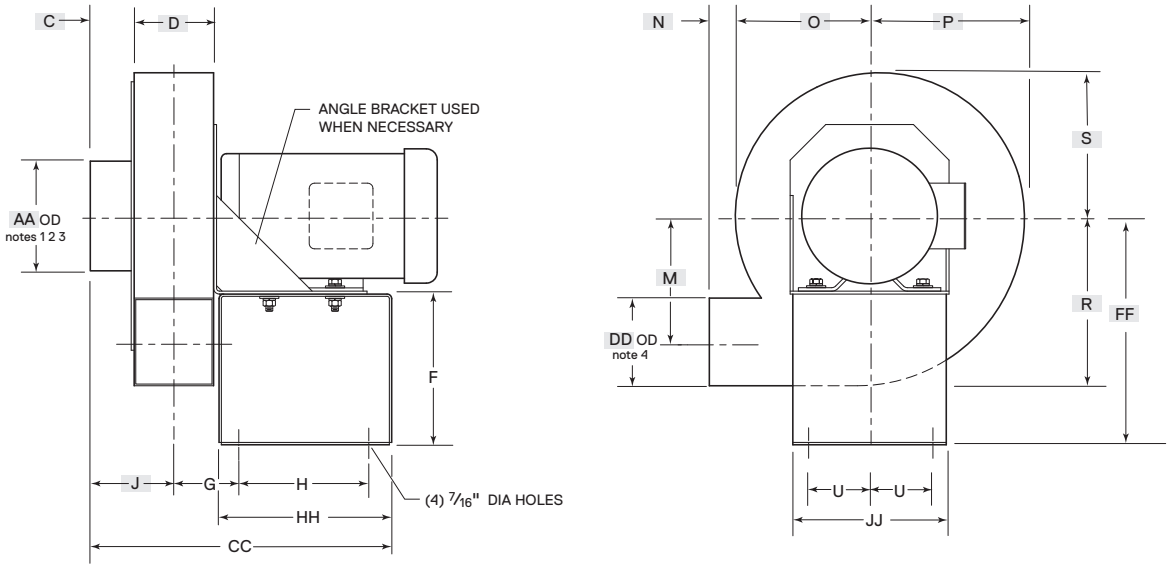
Model	Housing	Inlet Side Plate	Inlet or Discharge Flange	Arrangement 4 Base	Arrangement 2 Base	Arrangement 8 Base	Arrangement 1-9 Base	Wheel	
								Blades	Back Plate
PBS-9	10	10	10	12	7	7 and 10	10	10	10
PBS-10A	10	10	10	12	7	7 and 10	10	10	10
PBS-12A	10	10	10	10 and 12	7	7 and 10	10	7 and 10	7 and 10
PBS-14A	10	10	10	7 and 10	7	7 and 10	10	7	7
PBS-15A	10	10	10	7 and 10	7	7 and 10	10	7	7
PB-18	10	10	10	7 and 10	7	7 and 10	10	7	7
PBS-18WA	10	10	10	7 and 10		7 and 10	10	7	7

Approximate Shipping Weight* lb

Model	Arrangement 1 no motor	Arrangement no motor	Arrangement 4	Arrangement 4HM	Arrangement 8	Arrangement 9	Nominal Motor hp - weight
PBS-9	77	48	69	60	150	123	1/2 - 22
PBS-10A	96	61	83	74	170	146	1 -24
PBS-12A	111	74	136	120	232	202	2 - 41
PBS-14A	172	118	174	163	304	271	3 - 54
PBS-15A	189	133	232	211	352	329	5 - 79
PB-18	200	142	238	229	368	347	7 1/2 - 87
PBS-18WA	241		341	276	478	468	10 - 122

* Arrangement 4, 4HM, 8 and 9 weights include nominal hp and corresponding motor weight indicated in column eight, make corrections as necessary by deducting nominal weight and adding weight of actual motor to be used.

ARRANGEMENT 4 — DIRECT DRIVE

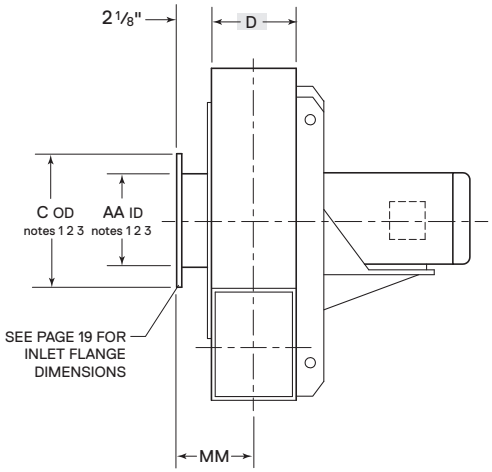


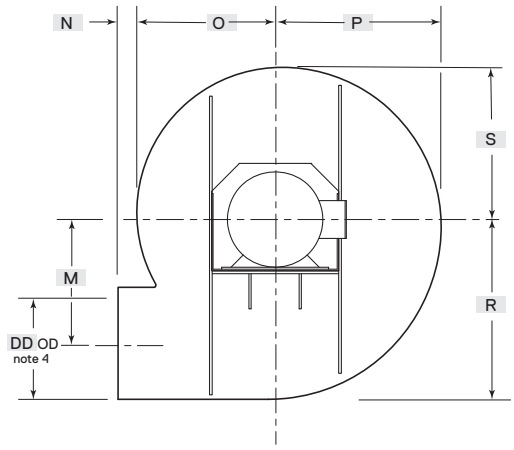
Model	Motor Frame	F	G	H	U	CC	FF	HH	JJ	MM note 5
PBS-9	56	6 7/8"	3 1/8"	5 3/4"	2 3/4"	13 3/4"	10 7/16"	7 7/8"	7"	3 15/16"
	143T-145T	8 1/4"	3 15/16"	5"	3 3/4"	14 1/4"	11 7/8"	8"	9"	3 15/16"
PBS-10A	56	6 7/8"	3 5/16"	5 3/4"	2 3/4"	14 1/8"	10 7/16"	7 7/8"	7"	4 1/8"
	143T-145T	8 1/4"	4 1/8"	5"	3 3/4"	14 5/8"	11 7/8"	8"	9"	4 1/8""
PBS-12A	56	8 1/4"	4 1/16"	5"	3 3/4"	15"	11 7/8"	8"	9"	4 7/16"
	143T-145T	8 1/4"	4 7/16"	5"	3 3/4"	15 1/4"	11 7/8"	8"	9"	4 7/16"
	182T-184T	6 7/16"	4 13/16"	8 3/4"	4 15/16"	19 3/8"	11 7/8"	11 3/4"	12"	4 7/16"
PBS-14A	56-213T	9 15/16"	5 1/16"	8 3/4"	4 15/16"	19 7/8"	15 3/16"	11 3/4"	12"	4 11/16"
PBS-15A	182T-215T	9 15/16"	5 7/16"	8 3/4"	4 15/16"	20 5/8"	15 3/16"	11 3/4"	12"	5 1/16"
	254T-256T	8 15/16"	5 7/16"	13"	4 15/16"	24 7/8"	15 3/16"	16"	16 1/2"	5 1/16"
PBS-18	182T-215T	9 15/16"	5 1/8"	8 3/4"	4 15/16"	20"	15 3/16"	11 3/4"	12"	4 3/4"
	254T-256T	8 15/16"	5 1/8"	13"	4 15/16"	24 1/4"	15 3/16"	16"	16 1/2"	4 3/4"
PBS-18WA	182T-215T	12 3/4"	5 7/8"	10 3/4"	6 1/4"	23 1/2"	18"	13 3/4"	16 1/2"	5 1/2"
	254T-256T	11 3/4"	5 7/8"	15 3/4"	6 1/4"	28 1/2"	18"	18 3/4"	16 1/2"	5 1/2"
	284T-286T	11"	5 7/8"	15 3/4"	6 1/4"	28 1/2"	18"	18 3/4"	16 1/2"	

Note: For common boxed blower housing dimensions see page 16.

1 PBS-14A also available with 6" and 8" inlets.
2 PBS-15A and PB-18 also available with 6" and 10" inlets.
3 PBS-18WA also available with 8" inlet.
4 Discharge flange not available for some discharge positions. See page 19.
5 MM dimensions pertain to Arrangement 4HM on page 16 only.

ARRANGEMENT 4HM — DIRECT DRIVE





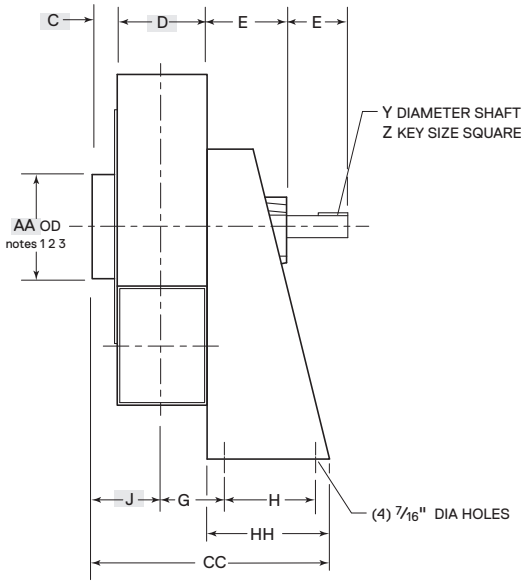
Model	Motor Frame	
	Minimum	Maximum
PBS-9	56	145T
PBS-10A	56	145T
PBS-12A	56	184T*
PBS-14A	56	213T*
PBS-15A	182T*	215T*
PBS-18	182T*	215T*
PBS-18WA	182T*	256T*

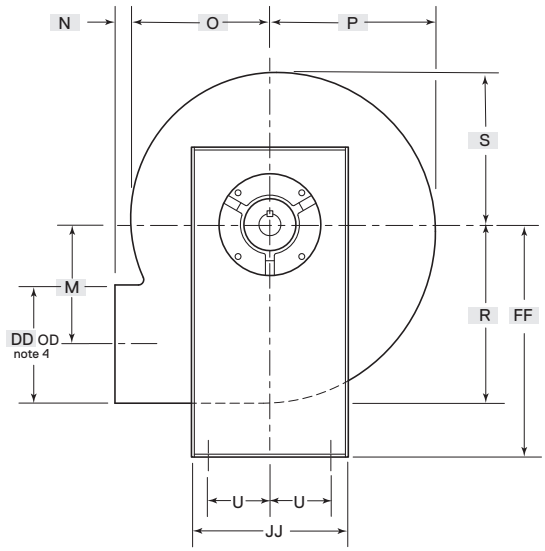
* See note 5

Note: For common boxed blower housing dimensions see page 14.

1 PBS-14A also available with 6" and 8" inlets.
2 PBS-15A and PBS-18 also available with 6" and 10" inlets.
3 PBS-18WA also available with 8" inlet.
4 Discharge flanges not available for some discharge position. See page19.
5 Based on fan mounted on top of surface with the motor shaft vertical, down. If fan will be mounted with a horizontal motor shaft, the customer should add additional support under the motor.

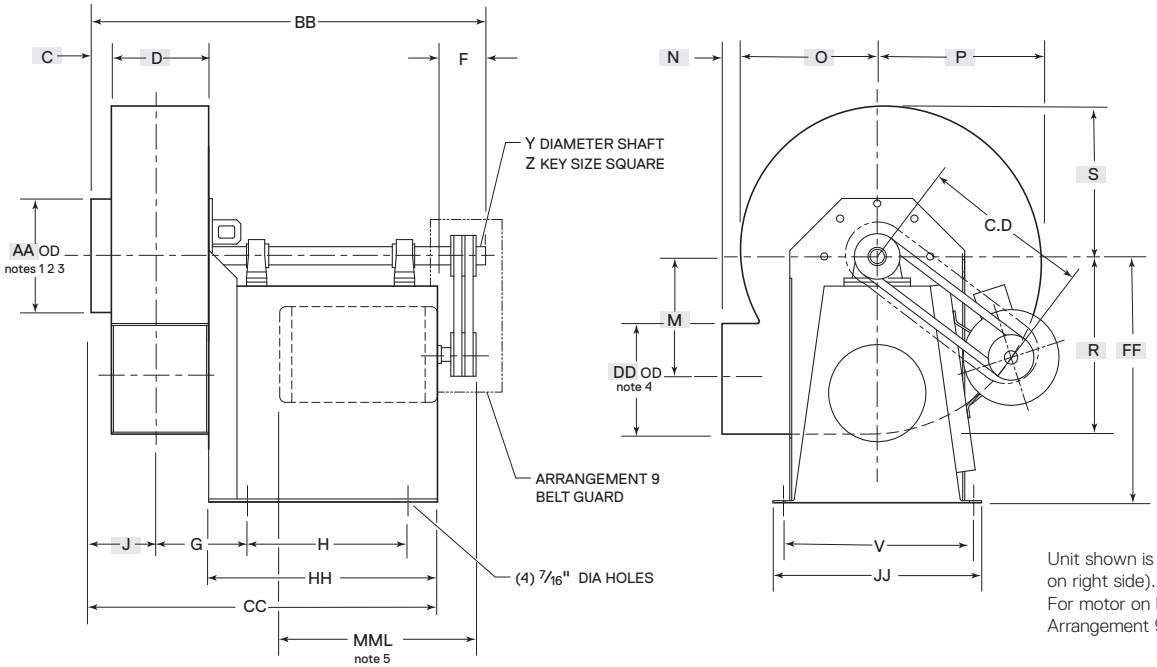
ARRANGEMENT 2 — BELT DRIVE





Model	E	F	G	H	U	Y	Z	BB	CC	FF	HH	JJ
PBS-9	3 11/16"	3"	2 13/16"	4 1/4"	2 7/8"	3/4"	3/16"	12 5/16"	11 5/8"	9 7/8"	6"	7 3/4"
PBS-10A	3 11/16"	3"	3"	4 1/4"	2 7/8"	3/4"	3/16"	12 11/16"	12"	9 7/8"	6"	7 3/4"
PBS-12A	5 1/2"	4"	3 13/16"	4 1/2"	3 1/8"	1"	1/4"	16 1/8"	13 5/8"	11 1/2"	7"	9"
PBS-14A	5 3/16"	4"	4 1/16"	5 1/2"	3 3/4"	1 7/16"	3/8"	15 5/16"	15 1/8"	15"	8"	10 1/4"
PBS-15A	5 3/16"	4"	4 7/16"	5 1/2"	3 3/4"	1 7/16"	3/8"	17 1/16"	15 7/8"	15"	8"	10 1/4"
PBS-18	5 3/16"	4"	4 1/8"	5 1/2"	3 3/4"	1 7/16"	3/8"	16 7/16"	15 1/4"	15"	8"	10 1/4"

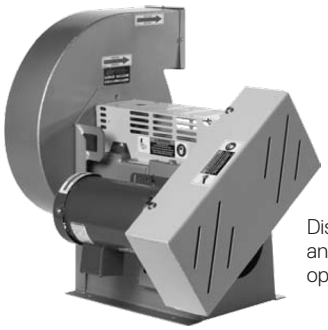
ARRANGEMENT 1 AND 9 — BELT DRIVE note 2



Unit shown is Arrangement 9R (motor on right side).
For motor on left side, specify Arrangement 9L.

Model	Motor Frame	F	G	H	V	Y	Z	BB	CC	FF	HH	JJ	MML note 5
PBS-9	56-145T	3"	4 5/16"	10"	11 3/8"	3/4"	3/16"	23 5/8"	20 5/8"	14"	15"	12 7/8"	15"
PBS-10A	56-145T	3"	4 1/2"	10"	11 3/8"	3/4"	3/16"	24"	21"	14"	15"	12 7/8"	15"
PBS-12A*	56-145T	4"	4 13/16"	10"	11 3/8"	1"	1/4"	25 5/8"	21 5/8"	14"	15"	12 7/8"	15"
	182T-215T	4"	4 13/16"	13"	16"	1"	1/4"	28 5/8"	24 5/8"	18"	18"	17 1/2"	19"
PBS-14A	56-215T	4"	5 1/16"	13"	11 3/8"	1 7/16"	3/8"	29 1/8"	25 1/8"	14"	18"	12 7/8"	19"
PBS-15A*	182T-215T	4"	5 7/16"	13"	16"	1 7/16"	3/8"	29 7/8"	25 7/8"	18"	18"	17 1/2"	19"
	254T-256T	4"	5 7/16"	19 1/2"	17 1/4"	1 11/16"	3/8"	36 3/8"	32 3/8"	23"	24 1/2"	19"	26"
PBS-18*	182T-215T	4"	5 1/8"	13"	16"	1 7/16"	3/8"	29 1/4"	25 1/4"	18"	18"	17 1/2"	19"
	254T-256T	4"	5 1/8"	19 1/2"	17 1/4"	1 11/16"	3/8"	35 3/4"	31 3/4"	23"	24 1/2"	19"	26"
PBS-18WA*	182T-215T	4"	5 7/8"	13"	16"	1 7/16"	3/8"	30 3/4"	26 3/4"	18"	18"	17 1/2"	19"
	254T-286T	6"	5 7/8"	19 1/2"	17 1/4"	1 11/16"	3/8"	39 1/4"	33 1/4"	23"	24 1/2"	19"	26"

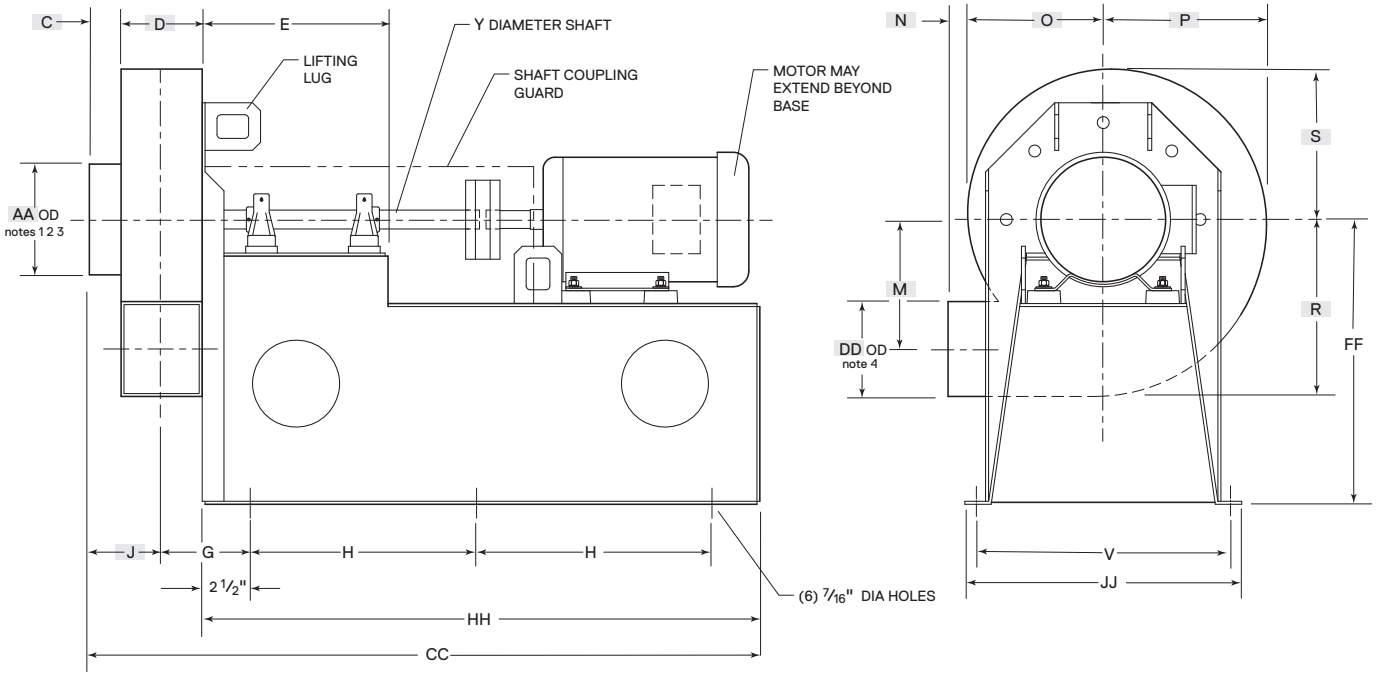
***** All Arrangement 1 units use small base dimensions.
Note: For common boxed blower housing dimensions see page 14.
1 PBS-14A also available with 6" and 8" inlets.
2 PBS-15A and PBS-18 also available with 6" and 10" inlets.
3 PBS-18WA also available with 8" inlet.
4 Discharge flange not available for some discharge positions. See page 19.
5 MML is the maximum motor length on customer-supplied motor. Motor manufacturer's C dimension cannot exceed MML.
6 Arrangement 9 dimensions are the same as Arrangement 1 with the exception of dimensions C.D and MML which are for Arrangement 9 only



Discharge guard and shaft guard optional

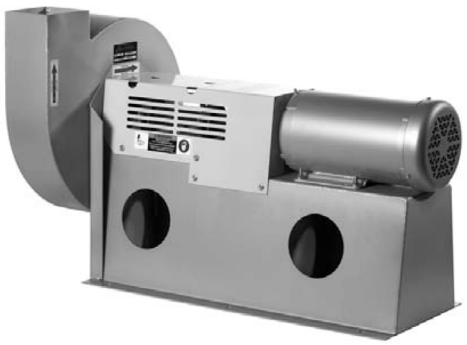
C.D. Belt Center Distance										
Model	56-145T		182T-184T		213T-215T		254T-256T		284T-286T	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
PBS-9	10 1/4"	11 1/4"								
PBS-10A	10 1/4"	11 1/4"								
PBS-12A	10 1/4"	11 1/4"	13 5/8"	14 5/8"	14 3/8"	15 1/2"				
PBS-14A	12"	13"	13 5/8"	14 5/8"	14 3/8"	15 1/2"				
PBS-15A			13 5/8"	14 5/8"	14 3/8"	15 1/2"	17"	18 5/8"		
PBS-18			13 5/8"	14 5/8"	14 3/8"	15 1/2"	17"	18 5/8"		
PBS-18WA			13 5/8"	14 5/8"	14 3/8"	15 1/2"	17"	18 5/8"	17 3/8"	19 1/4"

ARRANGEMENT 8 — DIRECT CONNECTED

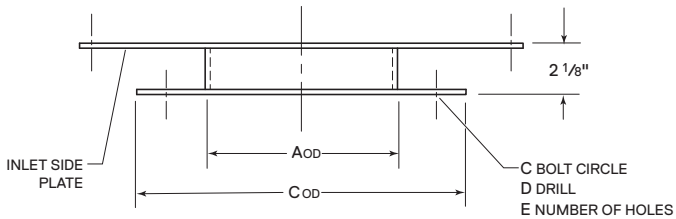


Model	Motor Frame	E	G	H	V	Y	CC	FF	HH	JJ
PBS-9	56-145T	10 3/4"	4 5/16"	12 1/4"	11 3/8"	3/4"	35 1/8"	14"	29 1/2"	12 7/8"
PBS-10A	56-145T	10 3/4"	4 1/2"	12 1/4"	11 3/8"	3/4"	35 1/2"	14"	29 1/2"	12 7/8"
PBS-12A	56-145T	10 3/4"	4 13/16"	12 1/4"	11 3/8"	1"	36 1/8"	14"	29 1/2"	12 7/8"
	182T-215T	11 3/4"	4 13/16"	15 1/8"	16"	1"	41 7/8"	18"	35 1/4"	17 1/2"
PBS-14A	56-145T	10 3/4"	5 1/16"	12 1/4"	11 3/8"	1 3/16"	36 5/8"	14"	29 1/2"	12 7/8"
	182T-215T	11 3/4"	5 1/16"	15 1/8"	16"	1 3/16"	42 3/8"	18"	35 1/4"	17 1/2"
PBS-15A	182T-215T	11 3/4"	5 7/16"	15 1/8"	16"	1 3/16"	43 1/8"	18"	35 1/4"	17 1/2"
	254T-256T	11 3/4"	5 7/16"	18 3/4"	17 1/4"	1 3/16"	50 3/8"	23"	42 1/2"	19"
PBS-18	182T-215T	11 3/4"	5 1/8"	15 1/8"	16"	1 3/16"	42 1/2"	18"	35 1/4"	17 1/2"
	254T-256T	11 3/4"	5 1/8"	18 3/4"	17 1/4"	1 7/16"	49 3/4"	23"	42 1/2"	19"
PBS-18WA	182T-215T	11 3/4"	5 7/8"	15 1/8"	16"	1 7/16"	44"	18"	35 1/4"	17 1/2"
	254T-286T	11 3/4"	5 7/8"	18 3/4"	17 1/4"	1 7/16"	51 1/4"	23"	42 1/2"	19"

Note: For common boxed blower housing dimensions see page 14.
1 PBS-14A also available with 6" and 8" inlets.
2 PBS-15A and PBS-18 also available with 6" and 10" inlets.
3 PBS-18WA also available with 8" inlet.
4 Discharge flange not available for some discharge positions. See page 19.



INLET FLANGE



A Inlet Diameter	B	C	Drilling Pattern note 2			
			CVS Standard		ANSI Standard	
			D	E	D	E
4 15/16"	8 1/2"	10"	7/16"	4	7/8"	8
5 15/16"	9 1/2"	11"	7/16"	4	7/8"	8
6 15/16"	9 1/2"	11"	7/16"	8	7/8"	8
7 15/16"	11 3/4"	13 1/2"	7/16"	8	7/8"	18
9 15/16"	14 1/4"	16"	7/16"	8	1"	12

1 Flanges are NOT drilled unless specified on order. All flanges are 10 gauge steel (about 1/8" thick).

2 If inlet flange is to be drilled, specify the following:

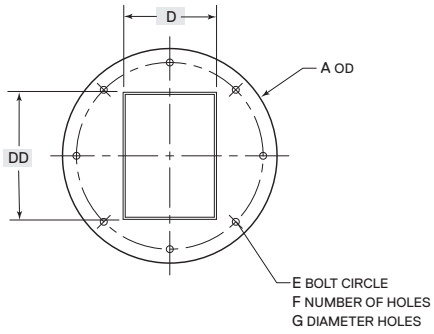
A. Drill per CFV Standard or ANSI Standard.

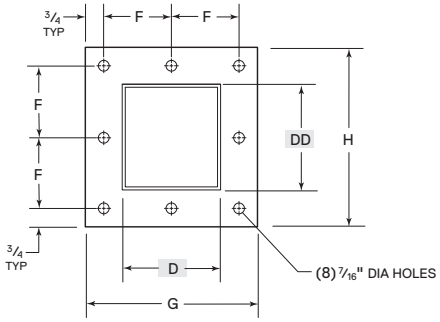
B. If drilling per CFV Standard, specify if holes are to be on centers or straddle centers. If drilling per ANSI Standard, holes always straddle centers.

3 If inlet flange and a round discharge flange are both ordered, the O.D. of the discharge flange will extend past the face of the inlet flange. See Note 4.

4 If inlet flange and a rectangular discharge flange are both ordered, the "G" dimension of the dis-charge flange will NOT extend past the face of the inlet flange.

DISCHARGE FLANGE





Model	A	Round Flange note 8 - 9						Rectangular Flange			
		Drilling Pattern						CVS Standard note 10			
		CVS Standard			ANSI Standard						
		E	F	G	E	F	G	E	F	G	H
PBS-9	9"	7 1/2"	4	7/16"	7 1/2"	8	3/4"	2 9/16"	2 3/4"	6 5/16"	7"
PBS-10A	10"	8 1/2"	4	7/16"	8 1/2"	8	7/8"	2 3/4"	2 15/16"	7"	7 3/8"
PBS-12A	11"	9 1/2"	4	7/16"	9 1/2"	8	7/8"	3 1/16"	3 1/2"	7 3/8"	8 1/2"
PBS-14A	11"	9 1/2"	4	7/16"	9 1/2"	8	7/8"	3 5/16"	3 3/4"	8 1/8"	9"
PBS-15A	13 1/2"	11 3/4"	8	7/16"	11 3/4"	8	7/8"	3 11/16"	4 3/4"	8 7/8"	11"
PBS-18	11"	9 1/2"	4	7/16"	9 1/2"	8	7/8"	3 3/8"	3 3/4"	8 1/4"	9"
PBS-18WA	13 1/2"	11 3/4"	8	7/16"	11 3/4"	8	7/8"	4 1/4"	4 1/4"	9 3/4"	10"

5 The D and DD dimensions in drawing above are the same as on page 14.

6 Flanges are not drilled unless specified on order. All flanges are 10 gauge steel (about 1/8" thick).

7 Discharge flange not available on downblast or bottom angular down discharge positions.

Round Flange

8 If round discharge flange and inlet flange are both ordered, the O.D. of the discharge flange will extend past the face of the inlet flange.

9 If discharge flange is to be drilled, specify the following:

A. Drilling is to be per CFV Standard or ANSI Standard for round flange

B. If drilling per CFV Std., specify if holes are to be on centers or straddle centers. If drilling per ANSI Standard, holes always straddle centers.

Rectangular Flange

10 If discharge flange is to be drilled, specify on order. If rectangular discharge flange is ordered with an inlet flange, it will not extend past the face of the inlet flange.

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