

BULLETIN AX200

August 2004

Twin City Fan & Blower

AXIFAN® TUBEAXIAL FANS

TYPE TCTA



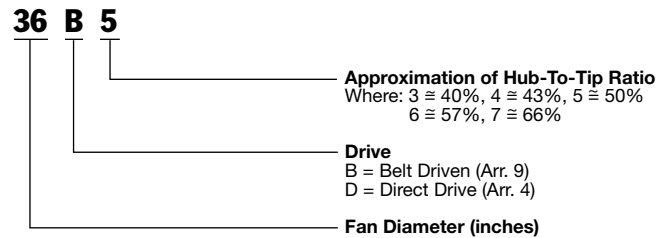
TCTA Tubeaxial Fans

The type TCTA AXIFAN® Tubeaxial Fan from Twin City Fan & Blower is designed to handle a wide range of requirements ranging from general ventilation to process air supply. Its mounting flexibility, which allows it to be mounted as part of the ductwork, makes it ideal for many industrial and commercial applications.

The type TCTA includes all of the design advantages of the TCVA AXIFAN® Vaneaxial Fan, except that guide vanes are not provided. This makes the TCTA more suitable for lower pressures and provides cost savings.

Capabilities

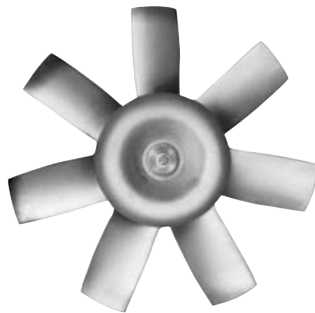
- Wheel diameters 12" to 60"
- Capacities from 800 to 96,000 CFM
- Static pressures to 5" w.g.
- 37 unique diameters and hub-to-tip ratios



Model Nomenclature

AXIFAN® Wheel

The heart of the TCTA AXIFAN® fan lies in its wheel. Cast of high strength aluminum alloy, the one-piece TCTA AXIFAN® wheel has been developed to maximize the highest efficiency possible. Attention to detail in blade and hub design have created what is felt to be the most efficient and reliable axial fan on the market today. With the wide range of hub-to-tip ratios available, there is a TCTA AXIFAN® to meet any air movement requirement.



Model TCTA is available with UL/cUL 705 listing for electrical, File No. E158680.

Hub-To-Tip Ratio

The multitude of TCTA AXIFAN® wheels evolves from nine basic castings. Each casting is machined and cut to the proper diameter. By cutting the same model casting to one of several different diameters, different hub-to-tip ratios are created. Since each hub ratio has slightly different pressure/efficiency characteristics, the freedom of having several wheels (different hub ratios) for a set diameter provides the opportunity to maximize efficiency at the required point of rating.



Housing

TCTA AXIFAN® housings are one-piece, heavy-gauge, hot-rolled steel construction. Flanges on both the inlet and outlet are integrally rolled and punched for attachment to ductwork or accessories as necessary. The seam is continuously welded and ground smooth to assure efficient airflow through the housing.

Drive Isolated from Airstream

The shaft and bearing assembly is mounted within the inner cylinder to isolate these components from the high velocity airstream.

The V-belt drive assembly is extended through a two-piece belt fairing. The belt fairing is an aerodynamically designed tube, designed to maximize fan efficiency, minimize air blockage and reduce noise generation.



Additional Information

For additional information on the TCTA and TCVA AXIFAN® tubeaxial and vaneaxial fans, refer to Twin City Fan & Blower Bulletin AX100.

This bulletin contains performance tables for Arrangement 9 belt driven fans. For Arrangement 4 direct drive selections and additional selections not shown, refer to the Twin City Fan & Blower Fan Selector Program.

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Performance Data

TCTA 18B4 – 18B7

Wheel Dia.: 18"

Outlet Area: 1.799 ft²

Tip Speed: 4.71 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
18B4	2000	1112	1334	0.26																			
	3000	1668	1603	0.44	1926	0.80																	
	4000	2223	1925	0.70	2194	1.14	2437	1.61	2669	2.11													
	5000	2779	2276	1.09	2507	1.61	2717	2.16	2913	2.74	3105	3.34	3291	3.96									
	6000	3335	2648	1.62	2839	2.22	3031	2.87	3207	3.53	3373	4.20	3534	4.90	3695	5.62	3851	6.36					
7000	3891	3031	2.34	3193	3.01	3359	3.73	3523	4.49	3676	5.26	3821	6.03	3962	6.83								
8000	4447	3421	3.28	3562	4.02	3705	4.80	3851	5.64	3995	6.51												
9000	5003	3815	4.45	3941	5.27																		
18B5	2000	1112			1772	0.83																	
	3000	1668	1490	0.48	2037	1.23	2250	1.69															
	4000	2223	1789	0.76	2333	1.75	2524	2.32	2697	2.89	2864	3.50											
	5000	2779	2111	1.15																			
	6000	3335	2456	1.72	2636	2.36	2821	3.12	2981	3.81	3128	4.47	3271	5.16	3410	5.89	3544	6.65					
7000	3891	2811	2.50	2962	3.18	3121	4.00	3279	4.88	3419	5.70	3549	6.47	3673	7.25	3796	8.06	3916	8.90				
8000	4447	3173	3.51	3304	4.25	3437	5.08	3579	6.05	3717	7.06	3845	8.03	3962	8.92								
9000	5003	3539	4.78	3655	5.59	3772	6.47																
18B6	2000	1112	1460	0.53	1713	0.90																	
	3000	1668	1769	0.87	1992	1.37	2184	1.86															
	4000	2223	2106	1.37	2295	1.98	2470	2.60	2626	3.20	2776	3.82	2915	4.46									
	5000	2779	2458	2.09	2614	2.75	2773	3.51	2920	4.27	3054	4.98	3181	5.70	3307	6.45	3425	7.21					
	6000	3335	2820	3.07	2953	3.79	3088	4.60	3224	5.50	3353	6.40	3471	7.24	3584	8.07	3693	8.91	3801	9.77			
7000	3891	3188	4.35	3304	5.14	3420	6.00	3539	6.95	3658	7.97	3773	9.01										
8000	4447	3559	5.96	3662	6.84	3765	7.76																
9000	5003																						
18B7	2000	1112	1197	0.35	1743	1.07																	
	3000	1668	1520	0.66	2065	1.68	2233	2.21	2395	2.78	2541	3.35											
	4000	2223	1886	1.18	2422	2.57	2564	3.20	2700	3.85	2833	4.55	2962	5.26	3085	5.97							
	5000	2779	2271	1.96																			
	6000	3335	2667	3.06	2797	3.79	2921	4.53	3039	5.28	3154	6.05	3267	6.85	3378	7.69	3486	8.54	3592	9.40	3694	10.25	
7000	3891	3070	4.56	3184	5.41	3293	6.26	3399	7.12	3501	7.99	3601	8.88	3699	9.79								
8000	4447	3478	6.52	3578	7.47	3676	8.44																
9000	5003																						

Regular type face = Class I **Bold type face** = Class II

Maximum RPM: Class I = 2971 Class II = 4000 (Sizes 18B4 and 18B5)
Class II = 3820 (Sizes 18B6 and 18B7)

TCTA 21B4 – 21B7

Wheel Dia.: 21"

Outlet Area: 2.448 ft²

Tip Speed: 5.50 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
21B4	3000	1225	1166	0.40																			
	4000	1634	1339	0.59	1614	1.06																	
	5000	2042	1536	0.84	1773	1.39	1991	2.00															
	6000	2451	1743	1.15	1961	1.82	2150	2.49	2332	3.21													
	7000	2859	1964	1.57	2158	2.33	2334	3.10	2495	3.89	2652	4.72	2805	5.59	3095	7.51	3227	8.51					
8000	3268	2194	2.10	2362	2.92	2529	3.82	2679	4.70	2820	5.59	2959	6.53	3095	7.51	3227	8.51	3657	12.31	3767	13.51		
10000	4085	2669	3.59	2800	4.53	2935	5.56	3072	6.69	3200	7.81	3320	8.91	3434	10.01	3546	11.14						
12000	4902	3156	5.75	3264	6.82	3373	7.96	3485	9.19	3600	10.52	3713	11.88	3820	13.23	3921	14.55						
21B5	3000	1225	1091	0.42																			
	4000	1634	1262	0.63																			
	5000	2042	1449	0.90	1667	1.47	1860	2.08															
	6000	2451	1643	1.22	1849	1.95	2020	2.62	2182	3.35													
	7000	2859	1851	1.66	2036	2.49	2199	3.31	2345	4.09	2486	4.93											
8000	3268	2068	2.23	2227	3.10	2387	4.11	2524	5.01	2651	5.89	2777	6.84	2896	7.82								
10000	4085	2517	3.84	2639	4.79	2767	5.91	2899	7.18	3020	8.39	3129	9.51	3232	10.61	3333	11.73	3433	12.89	3531	14.11		
12000	4902	2976	6.17	3077	7.25	3179	8.42	3286	9.75	3396	11.23	3504	12.76	3604	14.21	3697	15.58						
21B6	3000	1225	1058	0.45																			
	4000	1634	1235	0.69	1457	1.18																	
	5000	2042	1425	0.99	1626	1.60	1801	2.22															
	6000	2451	1626	1.38	1812	2.14	1969	2.85	2117	3.59													
	7000	2859	1839	1.92	2002	2.76	2153	3.63	2287	4.46	2415	5.31	2535	6.19									
8000	3268	2059	2.61	2199	3.49	2342	4.52	2470	5.50	2588	6.44	2700	7.39	2811	8.40	2914	9.42						
10000	4085	2512	4.54	2623	5.55	2735	6.67	2850	7.93	2961	9.22	3064	10.45	3159	11.62	3252	12.80	3342	<				

Performance Data

TCTA 24B4 – 24B7

Wheel Dia.: 24"

Outlet Area: 3.191 ft²

Tip Speed: 6.28 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
24B4	5000	1567	1132	0.72																			
	6000	1880	1261	0.96	1476	1.64																	
	7000	2194	1394	1.24	1593	2.02	1771	2.84															
	8000	2507	1533	1.57	1720	2.48	1881	3.36	2037	4.33	2186	5.34											
	10000	3134	1831	2.50	1984	3.55	2133	4.70	2265	5.80	2391	6.93	2515	8.13	2636	9.38							
	12000	3761	2143	3.82	2267	4.98	2397	6.31	2522	7.69	2635	9.01	2743	10.34	2848	11.70	2953	13.13	3055	14.59	3155	16.08	
14000	4387	2462	5.61	2568	6.91	2676	8.32	2787	9.88	2896	11.50	2997	13.07	3093	14.62	3185	16.16	3276	17.74				
16000	5014	2785	7.95	2878	9.39	2971	10.91	3066	12.56	3163	14.33	3260	16.19										
24B5	5000	1567	1077	0.76																			
	6000	1880	1202	1.02	1399	1.71																	
	7000	2194	1328	1.31	1514	2.13	1676	2.95															
	8000	2507	1460	1.65	1638	2.63	1786	3.52	1926	4.48													
	10000	3134	1744	2.64	1891	3.77	2032	5.00	2153	6.10	2268	7.23	2381	8.45	2489	9.71							
	12000	3761	2041	4.05	2159	5.25	2284	6.69	2403	8.19	2509	9.55	2607	10.86	2703	12.22	2798	13.65	2890	15.13	2979	16.64	
14000	4387	2346	5.99	2445	7.29	2548	8.76	2655	10.47	2760	12.25	2855	13.90	2944	15.47	3028	17.00	3110	18.55				
16000	5014	2654	8.50	2741	9.94	2829	11.5	2919	13.23	3013	15.17	3107	17.22										
24B6	5000	1567	1053	0.85																			
	6000	1880	1180	1.15	1359	1.88																	
	7000	2194	1312	1.50	1480	2.38	1625	3.22															
	8000	2507	1451	1.94	1607	2.95	1742	3.92	1868	4.90													
	10000	3134	1744	3.19	1869	4.32	1994	5.61	2106	6.83	2209	8.02	2310	9.25	2405	10.52							
	12000	3761	2047	4.98	2150	6.22	2256	7.66	2360	9.20	2458	10.71	2548	12.15	2634	13.57	2718	15.02	2802	16.55	2880	18.06	
14000	4387	2356	7.41	2445	8.81	2533	10.32	2624	12.00	2714	13.80	2801	15.60	2883	17.34	2960	19.01						
16000	5014	2669	10.60	2746	12.15	2824	13.80	2902	15.56														
24B7	5000	1567	1091	1.04	1267	1.74																	
	6000	1880	1240	1.47	1393	2.25	1537	3.11															
	7000	2194	1397	2.03	1532	2.90	1661	3.85	1783	4.85													
	8000	2507	1557	2.72	1680	3.71	1796	4.74	1907	5.84	2014	6.98	2114	8.12									
	10000	3134	1888	4.63	1991	5.85	2088	7.08	2182	8.36	2273	9.68	2362	11.05	2448	12.45	2533	13.89	2614	15.32			
	12000	3761	2227	7.38	2315	8.82	2399	10.28	2481	11.77	2559	13.26	2637	14.81	2713	16.40	2787	18.03	2860	19.69			
14000	4387	2570	11.11	2646	12.77	2721	14.48	2793	16.19	2863	17.91												
16000	5014																						

Regular type face = Class I **Bold type face** = Class II Maximum RPM: Class I = 2228 Class II = 3310 (Size 24B4) Class II = 3152 (Size 24B5) Class II = 2971 (Size 24B6) Class II = 2865 (Size 24B7)

TCTA 28B4 – 28B7

Wheel Dia.: 28"

Outlet Area: 4.353 ft²

Tip Speed: 7.33 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
28B4	6000	1378	919	0.82																			
	8000	1838	1078	1.26	1267	2.17																	
	10000	2297	1248	1.82	1416	2.93	1565	4.08	1708	5.32													
	12000	2757	1431	2.58	1581	3.90	1715	5.23	1839	6.59	1960	8.04	2077	9.55									
	14000	3216	1624	3.61	1752	5.05	1878	6.62	1991	8.16	2098	9.73	2204	11.39	2307	13.11	2407	14.88					
	16000	3676	1822	4.93	1932	6.47	2046	8.22	2155	10.03	2254	11.79	2349	13.57	2442	15.41							
18000	4135	2025	6.60	2121	8.26	2221	10.11	2323	12.14	2419	14.16												
20000	4595	2229	8.62	2316	10.44	2404	12.39																
28B5	6000	1378	863	0.86																			
	8000	1838	1017	1.35	1188	2.26																	
	10000	2297	1176	1.93	1334	3.12	1469	4.27															
	12000	2757	1348	2.73	1492	4.19	1615	5.55	1727	6.91	1835	8.38											
	14000	3216	1531	3.83	1652	5.37	1772	7.12	1876	8.69	1972	10.24	2067	11.91	2158	13.65							
	16000	3676	1718	5.25	1821	6.85	1931	8.81	2033	10.77	2124	12.57	2210	14.34	2293	16.16	2376	18.11	2455	20.09			
18000	4135	1909	7.04	1999	8.74	2094	10.74	2192	13.01	2282	15.21	2364	17.25	2441	19.23								
20000	4595	2102	9.24	2183	11.07	2266	13.11	2353	15.46	2440	17.99												
28B6	6000	1378	841	0.94																			
	8000	1838	997	1.48	1154	2.44																	
	10000	2297	1162	2.17	1306	3.43	1428	4.61	1541	5.87													
	12000	2757	1339	3.15	1465	4.61	1580	6.09	1682	7.50	1780	8.99											
	14000	3216	1524	4.47	1631	6.03	1739	7.84	1835	9.53	1924	11.17	2010	12.86	2092	14.61	2170	16.40					
	16000	3676	1713	6.18	1805	7.84	1901	9.79	1994	11.85	2079	13.80	2158	15.67	2234	17.56	2309	19.52	2381	21.53	2450	23.57	
18000	4135	1906	8.35	1987	10.13	2070	12.13	2156	14.41	2239	16.74	2315	18.95	2387	21.08	2456	23.19						
20000	4595	2100	11.00	2174	12.95	2247	15.04	2323	17.37	2400	19.92												
28B7	6000	1378	851	1.08																			
	8000	1838	1024	1.76	1165	2.79	1292	3.88															
	10000	2297	1210	2.73	1332	3.99	1443	5.29	1548	6.63													
	12000	2757	1406	4.10	1510	5.55	1610	7.0															

Performance Data

TCTA 32B4 – 32B7

Wheel Dia.: 32"

Outlet Area: 5.672 ft²

Tip Speed: 8.38 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
32B4	8000	1410	804	1.11																			
	10000	1763	909	1.54	1078	2.70																	
	12000	2116	1020	2.07	1172	3.41	1309	4.84															
	14000	2468	1136	2.71	1278	4.30	1400	5.85	1518	7.55													
	16000	2821	1260	3.53	1388	5.31	1503	7.09	1609	8.90	1712	10.82	1812	12.83									
32B5	8000	1410	763	1.16																			
	10000	1763	866	1.64	1019	2.80																	
	12000	2116	972	2.20	1113	3.57	1237	5.01															
	14000	2468	1082	2.85	1217	4.56	1329	6.12	1435	7.82													
	16000	2821	1199	3.72	1323	5.65	1430	7.49	1526	9.27	1620	11.23											
32B6	8000	1410	745	1.25																			
	10000	1763	849	1.78	991	2.97																	
	12000	2116	957	2.40	1088	3.86	1202	5.31															
	14000	2468	1070	3.18	1193	4.95	1297	6.57	1395	8.29													
	16000	2821	1189	4.20	1300	6.15	1400	8.11	1489	9.96	1575	11.91	1656	13.96									
32B7	8000	1410	760	1.51																			
	10000	1763	878	2.21	1002	3.53																	
	12000	2116	1005	3.17	1114	4.70	1215	6.32	1308	7.99													
	14000	2468	1137	4.42	1234	6.16	1324	7.96	1410	9.86	1493	11.84											
	16000	2821	1273	6.03	1359	7.96	1441	9.97	1520	12.07	1595	14.23	1668	16.46	1737	18.69							

Regular type face = Class I **Bold type face** = Class II Maximum RPM: Class I = 1671 Class II = 2396 (Size 32B4) Class II = 2234 (Size 32B5) Class II = 2149 (Sizes 32B6 and 32B7)

TCTA 36B4 – 36B7

Wheel Dia.: 36"

Outlet Area: 7.166 ft²

Tip Speed: 9.42 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
36B4	10000	1395	706	1.39																			
	12000	1675	777	1.80	931	3.22																	
	14000	1954	854	2.31	993	3.88																	
	16000	2233	932	2.87	1063	4.67	1180	6.54															
	20000	2791	1100	4.36	1215	6.62	1317	8.85	1411	11.11	1503	13.55	1591	16.08									
36B5	10000	1395	674	1.44																			
	12000	1675	745	1.90	886	3.33																	
	14000	1954	820	2.44	949	4.03																	
	16000	2233	895	3.03	1018	4.90	1125	6.76															
	20000	2791	1056	4.59	1167	7.02	1262	9.30	1349	11.56	1432	13.99											
36B6	10000	1395	656	1.60																			
	12000	1675	730	2.13	856	3.60																	
	14000	1954	806	2.75	923	4.45	1026	6.23															
	16000	2233	885	3.48	996	5.48	1092	7.42															
	20000	2791	1053	5.49	1148	7.92	1235	10.42	1313	12.79	1388	15.28	1458	17.85									
36B7	10000	1395	675	1.93																			
	12000	1675	760	2.64	871	4.26																	
	14000	1954	850	3.56	949	5.37	1042	7.33															
	16000	2233	943	4.71	1032	6.70	1117	8.87	1197	11.13	1271	13.41											
	20000	2791	1135	7.82	1211	10.28	1282	12.79	1350	15.41	1416	18.16	1481	21.04	1542	23.88							

Regular type face = Class I **Bold type face** = Class II Maximum RPM: Class I = 1485 Class II = 2314 (Size 36B4) Class II = 2176 (Size 36B5) Class II = 2052 (Size 36B6) Class II = 1987 (Size 36B7)

Performance Data

TCTA 42B4 – 42B6

Wheel Dia.: 42"

Outlet Area: 9.793 ft²

Tip Speed: 11.00 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
42B4	14000	1430	624	1.95																			
	16000	1634	670	2.35	807	4.26																	
	18000	1838	718	2.82	844	4.86																	
	20000	2042	768	3.34	887	5.58	995	7.99															
	24000	2451	871	4.59	980	7.27	1075	9.96															
	28000	2859	982	6.27	1079	9.30	1167	12.41	1247	15.53													
	32000	3268	1097	8.41	1181	11.67	1265	15.30	1339	18.79	1410	22.38	1479	26.11	1547	30.01	1614	34.08					
	36000	3676	1215	11.10	1288	14.56	1364	18.50	1437	22.58	1503	26.53	1566	30.53	1628	34.67	1689	38.96	1749	43.37			
	40000	4085	1335	14.39	1400	18.10	1468	22.27	1536	26.75	1600	31.23	1660	35.64	1717	40.04	1773	44.56					
	44000	4493	1456	18.33	1515	22.33	1575	26.65	1637	31.39	1699	36.38	1757	41.30									
48000	4901	1578	22.99	1632	27.28	1687	31.87	1743	36.80	1800	42.07												
42B5	14000	1430	586	2.04																			
	16000	1634	631	2.51																			
	18000	1838	678	3.03	792	5.09																	
	20000	2042	725	3.59	833	5.86	930	8.31															
	24000	2451	821	4.87	924	7.78	1010	10.46	1091	13.39													
	28000	2859	925	6.62	1018	9.98	1100	13.25	1172	16.33	1243	19.72											
	32000	3268	1034	8.92	1114	12.43	1193	16.42	1262	20.04	1326	23.60	1388	27.33	1448	31.28							
	36000	3676	1145	11.80	1214	15.41	1287	19.81	1356	24.28	1416	28.28	1473	32.25	1529	36.38	1584	40.74	1637	45.22	5.22		
	40000	4085	1258	15.33	1320	19.18	1384	23.65	1449	28.67	1510	33.57	1564	38.02	1616	42.43	1667	46.95					
	44000	4493	1373	19.62	1428	23.67	1485	28.23	1544	33.46	1604	39.12	1658	44.40									
48000	4901	1488	24.67	1538	28.96	1590	33.72	1643	39.00														
42B6	14000	1430	572	2.23																			
	16000	1634	618	2.76	728	4.70																	
	18000	1838	665	3.34	770	5.50																	
	20000	2042	713	3.97	813	6.40	900	8.86															
	24000	2451	813	5.54	906	8.57	985	11.41	1058	14.34													
	28000	2859	919	7.66	1001	11.04	1076	14.52	1143	17.80	1207	21.20	1267	24.75									
	32000	3268	1030	10.45	1100	13.98	1171	18.08	1235	22.00	1294	25.76	1350	29.55	1405	33.56	1457	37.66					
	36000	3676	1142	13.91	1204	17.67	1267	22.00	1330	26.70	1386	31.05	1439	35.29	1489	39.48	1539	43.89	1587	48.40	1633	53.00	
	40000	4085	1256	18.17	1311	22.17	1367	26.64	1425	31.73	1481	36.93	1532	41.81	1580	46.52	1626	51.18					
	44000	4493	1371	23.31	1421	27.60	1472	32.30	1524	37.53	1576	43.16	1626	48.82									
48000	4901	1487	29.41	1533	34.02	1579	38.94	1626	44.28														

Regular type face = Class I **Bold type face** = Class II

Maximum RPM: Class I = 1273 Class II = 1805 (Size 42B4)
 Class II = 1684 (Size 42B5) Class II = 1637 (Size 42B6)

TCTA 48B4 – 48B5

Wheel Dia.: 48"

Outlet Area: 12.77 ft²

Tip Speed: 12.57 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
48B4	20000	1566	566	2.90																			
	24000	1879	630	3.84	738	6.56																	
	28000	2193	697	4.95	796	8.07	886	11.38															
	32000	2506	766	6.27	860	9.91	941	13.47	1018	17.28	1093	21.36											
	36000	2819	840	7.95	925	11.93	1002	15.96	1072	19.99	1141	24.32	1208	28.87									
	40000	3132	915	9.97	992	14.21	1066	18.78	1132	23.18	1196	27.77	1258	32.57	1318	37.52							
	44000	3446	993	12.42	1062	16.86	1132	21.89	1196	26.83	1255	31.67	1312	36.65	1369	41.93	1424	47.32	1478	52.88			
	48000	3759	1071	15.26	1134	19.93	1198	25.20	1261	30.77	1318	36.09	1372	41.40	1424	46.80	1476	52.48	1527	58.31	1578	64.40	
	52000	4072	1151	18.62	1208	23.50	1267	28.99	1327	35.00	1382	40.84	1434	46.59	1484	52.37	1532	58.18	1581	64.37	1628	70.57	
	56000	4385	1231	22.46	1284	27.62	1338	33.27	1394	39.57	1448	46.01	1499	52.34	1546	58.42	1593	64.70	1638	70.97			
60000	4699	1312	26.86	1361	32.28	1411	38.15	1462	44.55	1514	51.44	1564	58.36	1611	65.10								
64000	5012	1393	31.82	1439	37.54	1485	43.60	1533	50.22	1582	57.39	1630	64.76										
48B5	20000	1566	538	3.05																			
	24000	1879	601	4.10	700	6.84																	
	28000	2193	664	5.24	757	8.50	838	11.79															
	32000	2506	730	6.62	819	10.52	893	14.07	963	17.92													
	36000	2819	800	8.39	882	12.72	953	16.84	1018	20.90	1080	25.26											
	40000	3132	872	10.55	945	15.05	1016	20.00	1077	24.45	1134	28.91	1190	33.74	1244	38.79							
	44000	3446	946	13.16	1011	17.77	1079	23.31	1139	28.47	1193	33.30	1245	38.24	1297	43.60	1346	49.04					
	48000	3759	1021	16.24	1079	20.95	1142	26.77	1202	32.79	1254	38.16	1304	43.51	1352	48.93	1399	54.60	1445	60.53	1490		

Performance Data

TCTA 54B3 – 54B4

Wheel Dia.: 54"

Outlet Area: 16.12 ft²

Tip Speed: 14.14 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
54B3	24000	1489	512	3.31																			
	28000	1737	558	4.12	665	7.37																	
	32000	1985	606	5.09	704	8.68	795	12.54															
	36000	2233	656	6.26	747	10.13	830	14.33	910	18.77													
	40000	2481	709	7.67	793	11.79	870	16.34	945	21.15	1016	26.12											
	44000	2730	764	9.33	842	13.76	914	18.56	982	23.66	1050	29.00											
	48000	2978	819	11.21	891	15.94	960	21.03	1024	26.44	1086	32.06	1148	37.89	1207	43.83							
	52000	3226	876	13.40	943	18.49	1008	23.83	1069	29.53	1127	35.47	1185	41.68	1241	47.88	1296	54.31					
	56000	3474	934	15.92	995	21.27	1057	26.95	1115	32.86	1171	39.17	1225	45.68	1278	52.30	1331	59.08	1382	65.92	1431	72.93	
	60000	3722	992	18.75	1049	24.43	1107	30.40	1163	36.60	1216	43.11	1268	49.99	1318	56.97	1367	63.99	1417	71.31			
	64000	3970	1051	21.96	1104	27.93	1158	34.19	1212	40.73	1263	47.48	1313	54.65	1360	61.85	1407	69.33					
	68000	4218	1110	25.52	1161	31.90	1211	38.44	1262	45.26	1312	52.36	1359	59.63	1405	67.24							
	72000	4467	1170	29.54	1217	36.15	1265	43.09	1313	50.20	1361	57.59	1407	65.17									
	76000	4715	1230	33.97	1275	40.95	1320	48.18	1365	55.57	1411	63.27											
	80000	4963	1290	38.83	1333	46.17	1375	53.63	1418	61.38													
	54B4	24000	1489	486	3.42																		
28000		1737	529	4.29	629	7.54																	
32000		1985	575	5.32	667	8.91	751	12.84															
36000		2233	621	6.44	709	10.52	786	14.69															
40000		2481	670	7.79	753	12.35	825	16.81	894	21.66													
44000		2730	720	9.36	799	14.39	867	19.25	931	24.29	993	29.69											
48000		2978	773	11.28	845	16.56	911	21.96	971	27.27	1030	32.97	1086	38.84									
52000		3226	826	13.46	892	18.93	957	24.98	1014	30.67	1069	36.54	1122	42.65	1174	49.07	1225	55.73					
56000		3474	880	15.97	940	21.58	1002	28.05	1059	34.42	1111	40.59	1161	46.91	1211	53.64	1259	60.50	1306	67.56			
60000		3722	935	18.84	990	24.62	1049	31.45	1104	38.36	1155	45.06	1203	51.71	1249	58.46	1296	65.74	1341	73.09			
64000		3970	990	22.05	1042	28.13	1096	35.06	1150	42.55	1200	49.84	1246	56.85	1290	63.88	1334	71.24					
68000		4218	1045	25.62	1094	31.97	1144	39.01	1196	46.92	1245	54.81	1290	62.34	1333	69.81							
72000		4467	1101	29.65	1147	36.25	1194	43.49	1243	51.62	1291	60.08	1336	68.33									
76000		4715	1158	34.19	1201	41.02	1245	48.44	1291	56.72	1337	65.55											
80000		4963	1214	39.07	1255	46.20	1297	53.90	1340	62.29													

Regular type face = Class I **Bold type face** = Class II

Maximum RPM: Class I = 990 Class II = 1444 (Size 54B3)

Class II = 1348 (Size 54B4)

TCTA 60B3

Wheel Dia.: 60"

Outlet Area: 19.87 ft²

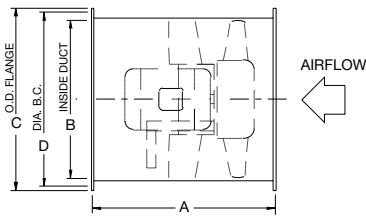
Tip Speed: 15.71 x RPM

MODEL	CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
60B3	24000	1208	421	3.16																			
	28000	1409	448	3.79																			
	32000	1610	480	4.53	583	8.37																	
	36000	1812	514	5.39	608	9.54																	
	40000	2013	550	6.43	637	10.87	719	15.72															
	44000	2214	587	7.62	669	12.35	744	17.49	816	22.91													
	48000	2416	625	8.97	702	13.96	773	19.49	841	25.22													
	52000	2617	664	10.51	737	15.81	804	21.62	868	27.75	930	34.04											
	56000	2818	704	12.26	773	17.89	836	23.87	897	30.41	956	37.10	1013	43.94									
	60000	3020	745	14.23	809	20.14	870	26.42	928	33.24	983	40.23	1038	47.46	1091	54.86							
	64000	3221	787	16.47	846	22.63	905	29.23	960	36.25	1013	43.64	1065	51.25	1116	58.95							
	68000	3422	829	18.94	885	25.47	941	32.34	994	39.60	1045	47.33	1094	55.24	1142	63.23							
	72000	3624	871	21.64	924	28.51	977	35.66	1029	43.26	1077	51.10	1124	59.32									
	76000	3825	914	24.68	964	31.86	1014	39.29	1064	47.15	1111	55.30											
	80000	4026	957	27.99	1004	35.44	1052	43.27	1100	51.41	1146	59.86											
	84000	4227	1000	31.60	1045	39.39	1090	47.46	1136	55.90													
88000	4429	1043	35.51	1086	43.62	1130	52.17																
92000	4630	1087	39.85	1128	48.28																		
96000	4831	1131	44.54																				

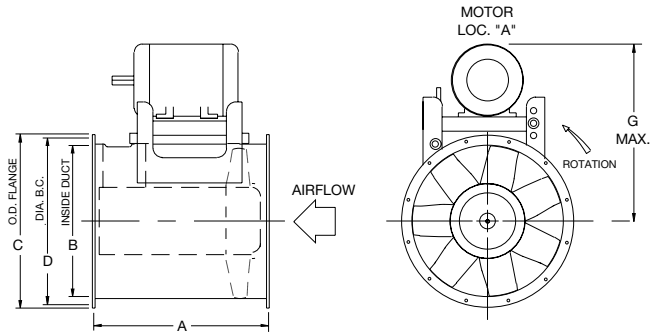
Regular type face = Class I **Bold type face** = Class II

Maximum RPM: Class I = 891 Class II = 1146

Dimensional Data



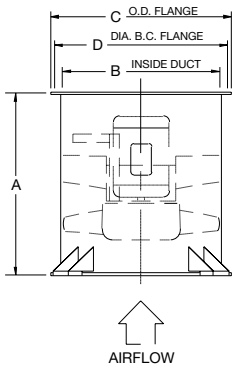
ARR. 4 - HORIZONTAL



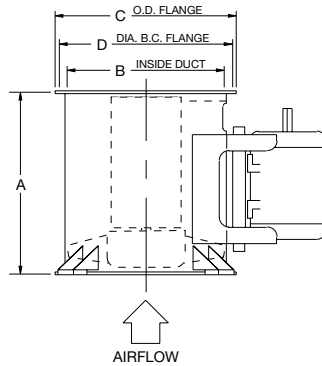
ARR. 9 - HORIZONTAL

HORIZONTAL DISCHARGES

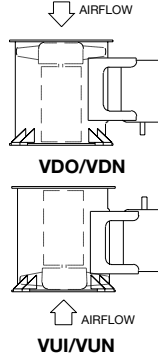
HOR = Horizontal - No Clips or Legs **HCH** = Horizontal Ceiling Hung with Suspension Clips **HBM** = Horizontal Base Mounted with Support Legs



ARR. 4 - VERTICAL

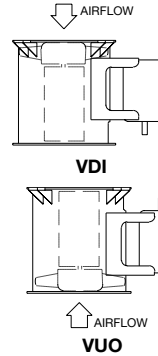


ARR. 9 - VERTICAL



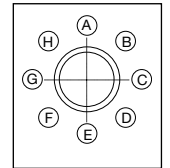
VDO/VDN

VUI/VUN



VDI

VUO



HORIZONTAL MOTOR LOCATIONS (VIEWED FROM FAN OUTLET)

VERTICAL DISCHARGES

VDO = Vertical Down Floor Mounted With Legs
VDN = Vertical Down Discharge Without Legs
VDI = Vertical Down Ceiling Hung With Legs

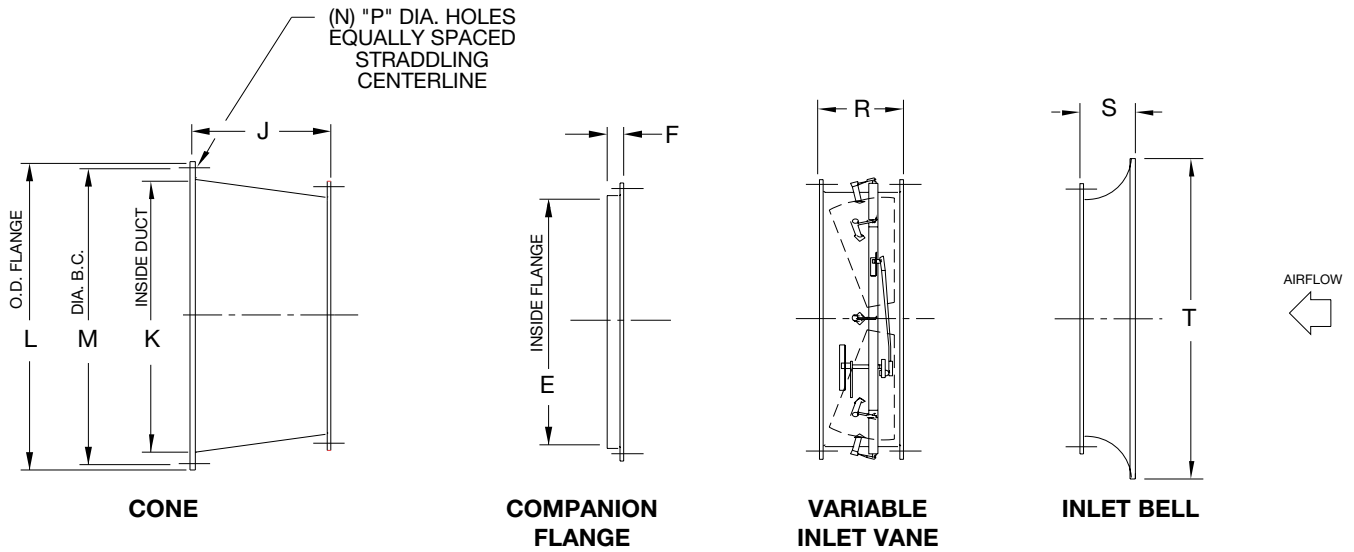
VUI = Vertical Up Floor Mounted With Legs
VUN = Vertical Up Discharge Without Legs
VUO = Vertical Up Ceiling Hung With Legs

FAN SIZE	A				B	C	D	G (MAX.)	MAXIMUM MOTOR FRAME										
	ARR. 9 HUB RATIO		ARR. 4 HUB RATIO						ARR. 9 - HUB RATIO					ARR. 4 - HUB RATIO					
	3-5	6-7	3-5	6-7					3	4	5	6	7	3	4	5	6	7	
12	NA	24.50	NA	24.50	12.16	15.16	13.88	19.25	NA	NA	NA	184T	184T	NA	NA	NA	NA	145T	184T
15	22.00	27.00	NA	27.00	15.16	18.16	16.88	20.50	NA	NA	215T	215T	215T	215T	NA	NA	NA	145T	184T
18	24.50	28.00	24.50	28.00	18.16	21.16	19.88	27.50	NA	215T	215T	215T	215T	NA	NA	145T	184T	215T	215T
21	27.00	32.00	27.00	32.00	21.19	24.19	22.88	31.75	NA	256T	256T	256T	256T	NA	145T	184T	215T	215T	215T
24	28.00	36.25	28.00	36.25	24.19	27.19	25.88	34.50	NA	256T	256T	256T	256T	NA	184T	215T	215T	215T	256T
28	32.00	40.25	32.00	40.25	28.25	31.25	30.00	38.25	NA	286T	286T	286T	286T	NA	215T	215T	256T	256T	286T
32	36.25	47.00	36.25	47.00	32.25	35.25	34.00	41.00	NA	286T	286T	286T	286T	NA	215T	256T	286T	365T	365T
36	40.25	53.25	40.25	53.25	36.25	39.25	38.00	45.25	NA	326T	326T	326T	326T	NA	256T	286T	365T	405T	405T
42	47.00	53.25	47.00	53.25	42.38	46.38	44.63	49.50	NA	326T	326T	326T	326T	NA	286T	365T	405T	405T	NA
48	53.25	NA	53.25	NA	48.38	52.38	50.63	53.25	NA	326T	326T	NA	NA	NA	365T	405T	NA	NA	NA
54	53.25	NA	53.25	NA	54.38	58.38	56.63	59.00	365T	365T	NA	NA	NA	365T	405T	NA	NA	NA	NA
60	53.25	NA	53.25	NA	60.38	64.38	63.38	60.25	365T	NA	NA	NA	NA	405T	NA	NA	NA	NA	NA

AC13596B AC13792B
 AC13597B AC13793A

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

Dimensional Data



FAN SIZE	COMPANION FLANGE		CONE						VARIABLE INLET VANE	INLET BELL		FAN AREA (FT ²)	CONE AREA (FT ²)
	E	F	J	K	L	M	N	P		R	S		
12	12.16	1.50	8.50	15.16	18.44	16.88	8	0.56	5.50	2.52	15.19	0.81	1.25
15	15.16	1.50	8.50	18.16	21.44	19.88	8	0.56	6.50	3.12	19.77	1.25	1.80
18	18.16	1.50	8.50	21.19	24.50	22.88	8	0.56	7.50	3.71	23.72	1.80	2.45
21	21.19	1.50	8.50	24.19	27.50	25.88	12	0.56	8.75	4.31	27.67	2.45	3.19
24	24.19	1.50	11.50	28.25	31.56	30.00	12	0.56	10.00	4.96	31.63	3.19	4.35
28	28.25	1.50	11.50	32.25	35.56	34.00	12	0.56	11.50	5.75	36.90	4.35	5.67
32	32.25	1.50	11.50	36.25	39.56	38.00	16	0.56	13.00	6.54	42.17	5.67	7.17
36	36.25	1.50	17.00	42.38	46.81	44.63	16	0.69	10.00	7.39	47.44	7.17	9.80
42	42.38	2.00	17.00	48.38	52.81	50.63	16	0.69	11.75	8.59	55.34	9.80	12.77
48	48.38	2.00	17.00	54.38	58.69	56.63	16	0.69	13.25	9.76	63.25	12.77	16.13
54	54.38	2.00	17.00	60.38	64.94	63.38	20	0.69	14.75	10.98	71.16	16.13	19.88
60	60.38	3.00	17.00	66.44	70.94	69.38	24	0.69	16.25	12.20	79.06	19.88	24.08

AC13716M

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

Typical Specifications

Fans shall be Type TCTA AXIFAN® Tubeaxial Fans as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota. Fans shall be Arrangement 9, V-belt driven with the wheel mounted on a separate shaft and bearings supported completely within an enclosed tube isolated from the high velocity airstream or Arrangement 4, with the propeller mounted directly on the motor shaft and with the propeller and motor assembly enclosed entirely within the fan casing.

PERFORMANCE — Fans shall be tested and rated in accordance with industry accepted test codes and shall be guaranteed by the manufacturer to deliver rated published performance levels.

HOUSING — Fan housings shall be welded of 14-gauge ASTM A-569 hot rolled steel in size 12" diameter, 12-gauge hot rolled steel in sizes 15" through 21" diameter, 10-gauge hot rolled steel in sizes 24" through 36" diameter, and 7-gauge hot rolled steel in sizes 42" through 60" diameter. Inlet and outlet flanges are standard.

WHEEL — The fan wheel shall be a solid one-piece sand casting of 319 alloy aluminum and shall contain seven blades and an integral center hub. The wheel shall have blades of airfoil shape designed with a variable hub ratio system to allow the selected fan to operate at the highest efficiency possible. Wheels shall be machined to the proper diameter so that blade tip clearance shall be within tolerance necessary to insure certified fan performance. The wheel shall be secured to the fan/motor shaft with a Trantorque® or taperlock bushing.

SHAFT (ARR. 9) — Shafts shall be AISI 1040 or 1045 hot rolled steel, accurately turned, ground, polished, and ring gauged for accuracy. Shafts shall be sized for the first critical speed of at least 1.43 times the maximum speed.

BEARINGS (ARR. 9) — Bearings shall be heavy duty, grease lubricated, anti-friction ball or roller, self-aligning, pillow block type and selected for a minimum average bearing life (AFBMA L-50) in excess of 200,000 hours at the maximum fan RPM. All bearings are provided with pre-filled factory extended lubrication lines terminating at the housing exterior.

DRIVE (ARR. 9) — The fan shall be equipped with a (fixed/adjustable) pitch V-belt drive selected to operate the fan at the correct operational RPM. The V-belt drive shall consist of cast iron sheaves and anti-static conducting belts and shall be selected with a (1.2/1.5) safety factor based upon the required brake horsepower of the fan.

The complete fan shaft and bearing assembly is mounted within a steel fabricated inner cylinder. The V-belt drive assembly is extended through a two-piece belt fairing. The belt fairing shall be an aerodynamically shaped tube designed to maximize fan efficiency. The belt fairing is welded continuously to both the inner cylinder that houses the fan shaft and bearings and the fan housing.

MOTOR — Motors for Arrangement 9 fans shall be manufactured in accordance with current applicable standards of IEEE and NEMA and, where applicable, shall meet current EPACT standards. Motors shall be foot-mounted, NEMA standard (ODP, TEFC, Explosion-Proof), continuous duty, ball bearing type with class (B, F) insulation and of cast iron construction when commercially available.

Motors for Arrangement 4 fans shall be foot-mounted, NEMA standard, totally enclosed fan cooled (TEFC), continuous duty, ball bearing type with class "F" insulation and of cast iron construction when commercially available. For ease in wiring the motor, wiring connections shall be extended to an exterior conduit box located on the exterior of the fan housing. A duplicate motor nameplate shall be mounted on the exterior of the fan adjacent to the fan nameplate. External grease fittings with pre-filled factory extended grease leads shall be supplied for lubrication of the motor bearings on all motors that provide grease fittings.

FINISH — The entire fan assembly, excluding the shaft, shall be thoroughly degreased and deburred before application of a rust-preventative primer. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly. The fan shaft shall be coated with a petroleum-based rust protectant. Aluminum components shall be unpainted.

FACTORY RUN TEST — All fans with motors and drives mounted by Twin City Fan & Blower shall be completely assembled and test run as a unit at the specified operating speed prior to shipment. Each wheel shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

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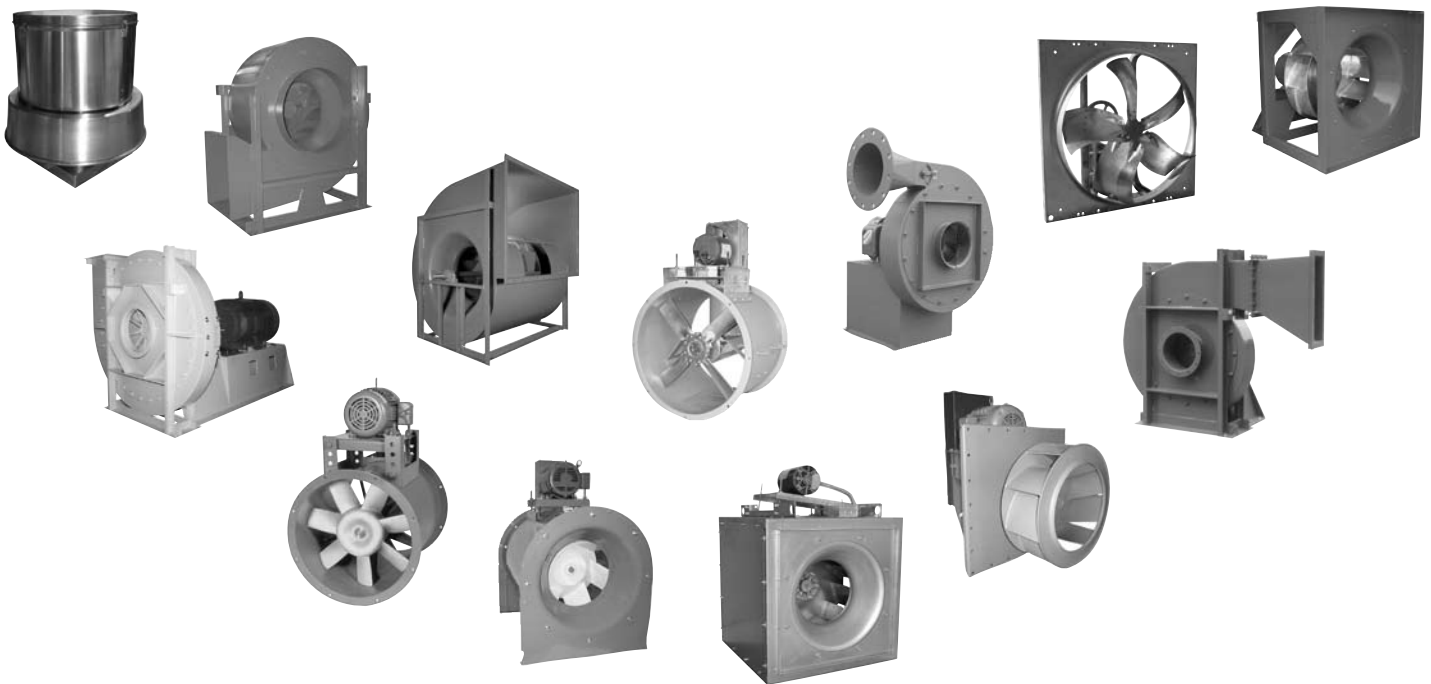
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