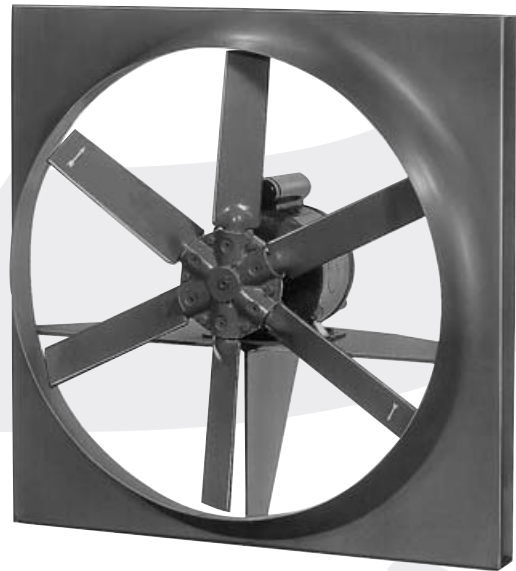




**Bulletin PN05**



## **WALL PROPELLER FANS**

Models: MBP, PND, PNB  
Direct Drive and Belt Drive

*MOVING YOUR WAY*

### CERTIFIED RATINGS



PennBarry certifies that the Model MBP Panel Fans shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

### FANSIZER® Product Selection Software

FanSizer software allows you to select the best centrifugal or axial unit for your application. Input CFM and static pressure, and FanSizer will make the optimum selection. It allows you to complete job schedules which you can store, modify and print in seconds. Features include: on-line help, on-screen product drawings and dimensions, and complete text specifications. In addition, you can convert job schedules to ASCII code for use with other programs like word processing.

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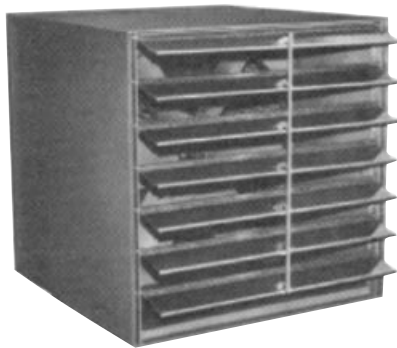
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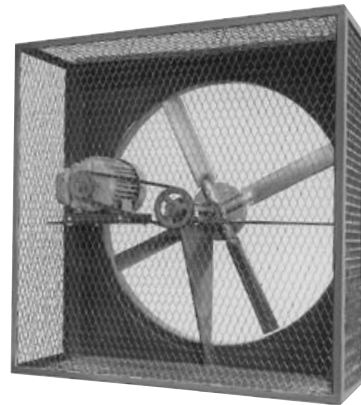
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# Features and Benefits

## MBP/PND/PNB - Panel Fan



Packaged Panel Fan



Belt Drive Fan with Guard

PennBarry **Wall Mounted Propeller Panel Fans**, incorporating deep-spun inlet scrolls to minimize losses due to fan inlet conditions, perform at a high efficiency. Rugged construction insures long life even in the severest industrial application. Panel Fans, which are capable of moving large volumes of air quickly, are in service at industrial plants, power generating stations and commercial applications throughout the country. Extensive special applications, such as in parking garages, mine ventilation, heat exchangers, and drying installations have been easily accomplished and successfully in operation for many years.

### Model MBP - Slow Speed Panel Fan

Propellers for MBP models are fabricated of sheet metal in a wide-bladed configuration. This propeller is capable of moving large volumes of air, against moderate pressure at low blade RPM, allowing the air moving job to be done quietly and efficiently. Blade sections are attached to the heavy-weight steel spider with high tensile strength steel fasteners. The propellers are secured to the fan shaft by means of malleable split taperlock bushings and hubs.

Fan bearings are self-aligning grease lubricated heavy duty ball bearing pillow block units specifically sized for long years of trouble free service.

Heavy duty fan bearings and motor mounting frames incorporate easily adjustable motor positioning, with slide bases for all large size motors.

### Models PND and PNB

Propellers for PND direct drive models feature the latest improvements in adjustable pitch design. The blades and hubs are separate castings, accurately machined, matched and balance. All propellers are cast of a special aluminum alloy of high tensile strength. Propellers with fixed pitch are furnished on standard units where capacity requirements are known. Adjustable pitch props are optional on orders specifying this feature.

Propellers are direct mounted on continuous duty, ball bearing, NEMA design, foot mounted motors specifically selected for fan duty.

The same propellers are also utilized on the PNB belt driven panel fans. Propellers are mounted

on turned, ground and polished shafts, specially machined with standard size keyways at both ends. Fan bearings are self-aligning, grease lubricated, heavy-duty ball bearing pillow block units with locking collars separate from the inner race, and specifically sized for long years of trouble-free service.



PND Direct Drive Panel Fan



PNB Belt Drive Panel Fan

Heavy-duty fan and motor mounting frame incorporates easily adjustable motor positioning, with slide bases for all larger size motors.

Angle iron frames on larger size PNB units provide extra heavy construction for large air moving jobs where they are usually "built-in" as an integral part of the building design. Heavy-duty "stud" type motor mount adjustment provides easy, positive belt tensioning now required on higher horsepower drives.

# Options and Accessories

MBP/PND/PNB - Panel Fan

## Front Guard (Type #2)

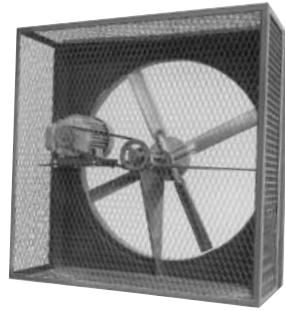
1/2" spiral wire guard mounted on fan discharge

## Front Guard (Type #1)

1/2" spiral wire guard mounted between motor and propeller

## Rear Guard (Type #4)

1/2" expanded metal cage with angle iron frame for mounting over motor end of fan. The Type #4 Guard has a removable rear cover for access to motor and drive.



Special Guards

## Panel Size Automatic Shutter

Same size as square panel O.D. of fan. Standard duty suitable for up to 2200 fpm outlet velocity. Heavy duty suitable for up to 3000 fpm outlet velocity. **EXHAUST APPLICATIONS ONLY.** Damper has a flange on the intake (rear) side. Sizes 60 and larger are shipped in multiple sections.



Shutters

## Panel Size Motor Operated Damper

Same size as square panel O.O. of fan. Includes 115 Volt operator (**Not Wired**). **This damper can be used for either Supply or Exhaust applications.**

## Shutter Boot

A sheet metal half sleeve to allow mounting of shutter to fan discharge.

## Rainhood with Bird Screen

A 45° galvanized steel rain hood is used on the inlet or as a discharge hood. This option is normally used on an outside wall to keep rain from entering the fan. It can also be used for directing the fan discharge downward. The Rainhood is supplied with a 3/4" expanded metal screen over the end. **A 60° hood is available at an extra charge.**

## Reverse Flow Units

Air enters on the prop side and passes over the motor. A venturi extension is added to maintain the same air performance as the standard exhaust configuration. This is typically used for supply air applications.

## Reversible Flow Units

Allows for the same airflow in both supply and exhaust modes. A double bell venturi is also added to maintain performance in both directions. For this feature, add .39 velocity pressure (VP) loss in airflow calculations. This option is only available on the PND and PNB models.

## Wall Box Housing

A sheet metal full sleeve for mounting fan, damper and rear guard to create a package panel fan.

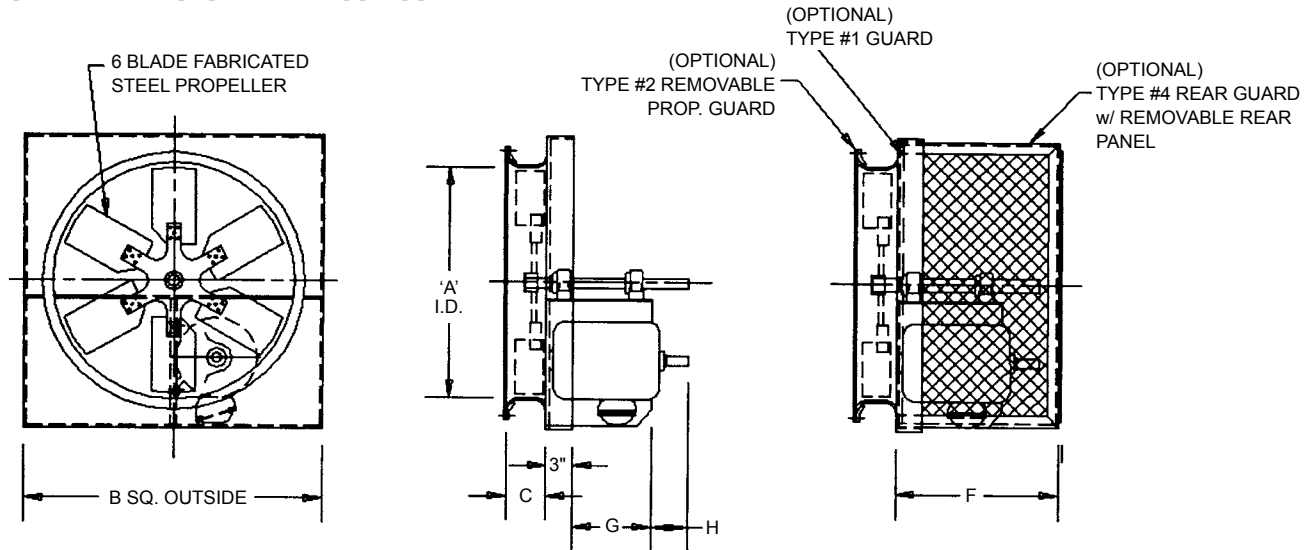
## Fan Size Selection Chart (for preliminary sizing of fans on basis of outlet velocity and CFM)

THROAT VELOCITY FPM	VELOCITY PRESSURE in. w.g.	CFM															
		18"	21"	24"	27"	32"	36"	42"	48"	54"	60"	72"	84"	96"	108"	120"	144"
600	.02	1080	1470	1926	2436	3420	4632	5892	7698	9744	12030	17322	23574	30972	36969	48108	59282
800	.04	1440	1960	2568	3248	4560	6176	7856	10264	12992	16040	23096	31432	41056	51960	64144	92376
1000	.06	1800	2450	3210	4060	5700	7720	9820	12830	16240	20050	28870	39290	51320	64950	80180	115470
1200	.09	2160	2940	3852	4872	6840	9264	11784	15396	19488	24060	34644	47178	61584	77938	96216	138562
1400	.12	2520	3430	4494	5684	7980	10808	13748	17962	22736	28070	40418	55006	71848	90929	112252	151658
1600	.16	2880	2920	5136	6496	9120	12352	15712	20528	25984	32080	46192	62864	82112	103920	128288	184752
1800	.20	3240	4410	5778	7308	10260	13896	17676	23094	28232	36090	51966	70722	92376	116907	144324	207846
2000	.25	3600	4900	6420	8120	11400	15440	19640	25660	32480	40100	57740	78580	102640	129900	160360	230940
2200	.30	3960	5390	7062	8932	12540	16984	21604	28226	35728	44110	63514	86438	112904	142890	176306	254034
2400	.36	4320	5880	7704	9744	13680	18528	23568	30792	38976	48120	69288	94296	123168	155876	192432	277124
2600	.42	4680	6370	8346	10556	14820	20072	25532	33358	42224	52130	75062	102154	133432	168870	208468	300222
2800	.49	5040	6860	8988	11368	15960	21616	26496	35293	45472	56140	80836	110012	143696	181858	224504	303316

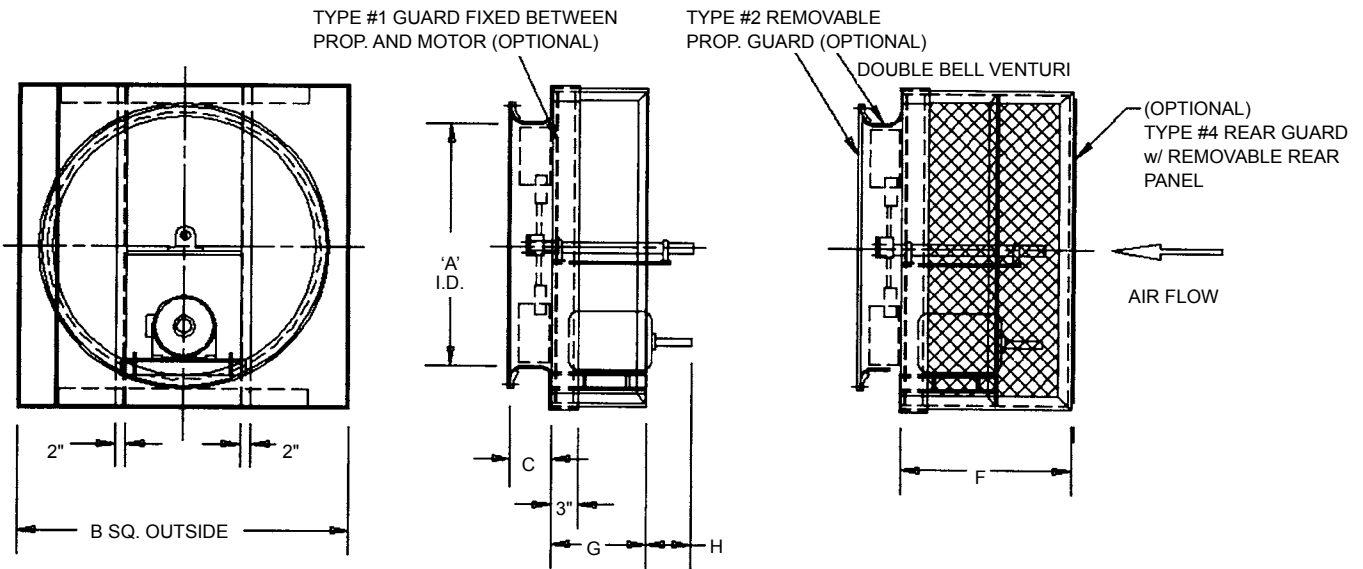
# MPB - Belt Drive Dimensional Data

Panel Fan

## STANDARD MOTOR FRAME 56-256



## LARGE MOTOR FRAME 284-365



SIZE	A	B	C	DESIGN 1				DESIGN 2				LARGE MOTOR FRAME				
				F	G	H	MAX. MOTOR	F	G	H	MAX. MOTOR	F	G	H	MAX. MOTOR	
024	24.25	28.00	6.25	18.88	13.00	3.00	184T	—	—	—	—	—	—	—	—	—
027	27.28	34.00	6.25	18.88	13.00	3.00	184T	—	—	—	—	—	—	—	—	—
032	32.34	38.00	7.50	21.88	16.00	3.00	215T	—	—	—	—	—	—	—	—	—
036	36.38	42.00	9.00	21.88	16.00	3.00	215T	—	—	—	—	—	—	—	—	—
042	42.44	48.00	9.75	21.88	16.00	3.00	215T	—	—	—	—	—	—	—	—	—
048	48.50	54.00	9.75	20.88	14.00	4.75	184T	27.88	20.00	4.75	256T	30.13	26.38	4.75	286T	
054	54.56	60.00	11.75	20.88	14.00	4.75	184T	27.88	20.00	4.75	256T	33.13	28.38	4.75	286T	
060	60.63	66.00	11.75	20.88	14.00	4.75	184T	27.88	20.00	4.75	256T	35.88	31.00	4.75	365T	
072	72.75	78.00	11.75	29.50	20.63	4.75	184T	36.00	28.38	4.75	256T	40.00	35.50	4.75	365T	

Note: Dimensions should not be used for construction. Certified drawings are available upon request.

# Belt Drive Fan Data - MBP

Panel Fan

## 024

Prop Diameter = 24 in.	Tip Speed, FPM = 6.28 x RPM
Throat Diameter = 24.25 in.	Throat Area = 3.21 sq. ft.
Maximum BHP = .74 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1926	286	0.01																
2568	381	0.03	546	0.12														
3210	477	0.06	605	0.16	747	0.30												
3852	572	0.11	676	0.21	790	0.35	911	0.54										
4494	667	0.18	753	0.29	850	0.43	949	0.61	1054	0.84								
5136	762	0.26	835	0.38	920	0.54	1006	0.72	1093	0.93	1281	1.49						
5778	858	0.37	920	0.50	995	0.67	1071	0.86	1146	1.07	1304	1.58	1478	2.29				
6420	953	0.51	1008	0.65	1073	0.83	1141	1.03	1210	1.25	1348	1.75	1494	2.38	1652	3.19		
7062	1048	0.68	1097	0.83	1155	1.02	1216	1.23	1279	1.46	1402	1.96	1531	2.56	1666	3.29	1812	4.21
7704	1144	0.88	1187	1.04	1239	1.24	1294	1.46	1352	1.70	1466	2.23	1581	2.82	1697	3.49	1822	4.31
8346	1239	1.12	1279	1.29	1325	1.49	1375	1.73	1427	1.98	1533	2.53	1639	3.13	1743	3.78	1855	4.56
8988	1334	1.40	1371	1.59	1412	1.79	1457	2.03	1505	2.29	1605	2.87	1701	3.48	1799	4.15	1898	4.88

## 027

Prop Diameter = 27 in.	Tip Speed, FPM = 7.07 x RPM
Throat Diameter = 27.26 in.	Throat Area = 4.06 sq. ft.
Maximum BHP = 1.34 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2436	254	0.02																
3248	339	0.04	485	0.15														
4060	423	0.08	537	0.20	663	0.37												
4872	508	0.14	600	0.27	702	0.44	810	0.68										
5684	593	0.22	669	0.36	756	0.55	843	0.77	937	1.05								
6496	677	0.33	742	0.48	818	0.69	894	0.91	970	1.17	1139	1.89						
7308	762	0.47	817	0.63	884	0.85	951	1.09	1019	1.36	1159	2.00	1315	2.90				
8120	847	0.65	895	0.82	953	1.05	1014	1.31	1075	1.58	1197	2.21	1327	3.00	1470	4.05		
8932	932	0.86	974	1.05	1026	1.28	1081	1.56	1136	1.85	1247	2.49	1360	3.23	1480	4.16	1544	4.71
9744	1016	1.12	1055	1.32	1101	1.56	1150	1.85	1201	2.15	1302	2.82	1403	3.55	1509	4.42	1563	4.91
10556	1101	1.42	1136	1.63	1176	1.89	1222	2.18	1268	2.50	1362	3.20	1455	3.95	1550	4.79		
11368	1186	1.78	1218	2.00	1255	2.27	1295	2.57	1338	2.90	1425	3.63	1512	4.41				

- Notes:**
- 1) Performance shown is for Model MBP Panel Venturi without ducts or guards.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

# MBP - Belt Drive Fan Data

Panel Fan

## 032

Prop Diameter = 32 in.	Tip Speed, FPM = 8.38 x RPM
Throat Diameter = 32.33 in.	Throat Area = 5.7 sq. ft.
Maximum BHP = 3.13 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
<b>3420</b>	214	0.02																	
<b>4560</b>	286	0.06	409	0.21															
<b>5700</b>	357	0.11	454	0.28	560	0.53													
<b>6840</b>	429	0.20	507	0.38	592	0.62	684	0.96											
<b>7980</b>	500	0.31	565	0.51	638	0.77	712	1.08	791	1.48									
<b>9120</b>	572	0.47	626	0.68	690	0.96	754	1.28	819	1.65	962	2.66							
<b>10260</b>	643	0.66	690	0.89	746	1.19	803	1.53	860	1.90	978	2.81	1109	4.07					
<b>11400</b>	715	0.91	755	1.15	805	1.47	856	1.83	908	2.22	1010	3.10	1120	4.21	1240	5.69			
<b>12540</b>	786	1.21	822	1.47	865	1.80	912	2.19	959	2.59	1052	3.49	1147	4.54	1249	5.84	1359	7.49	
<b>13680</b>	857	1.57	890	1.85	929	2.19	970	2.59	1013	3.02	1099	3.95	1184	4.99	1273	6.19			
<b>14820</b>	929	2.00	959	2.29	993	2.65	1031	3.06	1071	3.52	1150	4.49	1228	5.54	1308	6.72			
<b>15960</b>	1000	2.49	1028	2.81	1059	3.18	1093	3.60	1129	4.08	1203	5.09	1276	6.19	1349	7.37			

## 036

Prop Diameter = 36 in.	Tip Speed, FPM = 9.42 x RPM
Throat Diameter = 36.28 in.	Throat Area = 7.22 sq. ft.
Maximum BHP = 5.59 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
<b>4332</b>	180	0.03	316	0.17	426	0.40													
<b>5776</b>	240	0.06	342	0.22	441	0.47	524	0.77											
<b>7220</b>	300	0.12	379	0.30	465	0.56	542	0.88	612	1.24									
<b>8664</b>	360	0.21	426	0.41	495	0.68	566	1.01	631	1.39	745	2.25	851	3.22					
<b>10108</b>	420	0.34	477	0.56	533	0.83	594	1.17	656	1.58	765	2.47	864	3.48	954	4.58			
<b>1152</b>	480	0.51	530	0.76	579	1.0	631	1.39	683	1.78	789	2.74	882	3.78	969	4.92	1048	6.14	
<b>12996</b>	540	0.72	585	1.00	628	1.30	672	1.65	79	2.07	814	3.01	905	4.13	987	5.31	1065	6.58	
<b>14440</b>	600	0.99	641	1.30	679	1.62	719	1.99	759	2.39	844	3.35	930	4.50	1010	5.74	1083	7.05	
<b>15884</b>	660	1.32	698	1.65	733	2.00	768	2.39	804	2.80	880	3.79	956	4.87	1035	6.20	1108	7.57	
<b>17328</b>	720	1.72	755	2.08	787	2.45	819	2.85	852	3.29	918	4.26	991	5.42	1061	6.67			
<b>18772</b>	780	2.18	813	2.57	842	2.97	872	3.40	902	3.85	963	4.85	1027	6.01	1093	7.28			
<b>20216</b>	840	2.73	871	3.15	899	3.57	926	4.02	953	4.49	1009	5.51	1066	6.66					

- Notes:**
- 1) Performance shown is for Model MBP Panel Venturi without ducts or guards.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

# Belt Drive Fan Data - MBP

Panel Fan

## 042

Prop Diameter = 42 in.	Tip Speed, FPM = 11.00 x RPM
Throat Diameter = 42.44 in.	Throat Area = 9.82 sq. ft.
Maximum BHP = 12.08 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>5892</b>	154	0.04	270	0.24	365	0.55												
<b>7856</b>	206	0.09	293	0.30	378	0.64	449	1.04										
<b>9820</b>	257	0.17	325	0.41	399	0.76	464	1.20	524	1.68								
<b>11784</b>	308	0.29	365	0.56	424	0.92	48	1.38	541	1.90	640	3.05	730	4.38				
<b>13748</b>	360	0.46	408	0.76	457	1.13	509	1.59	562	2.14	655	3.37	740	4.73	818	6.23		
<b>15712</b>	411	0.69	454	1.03	496	1.42	540	1.89	585	2.42	676	3.72	756	5.15	830	6.70	898	8.36
<b>17676</b>	463	0.98	501	1.35	538	1.77	576	2.25	616	2.81	698	4.10	776	5.61	846	7.22	913	8.95
<b>19640</b>	514	1.35	549	1.76	582	2.20	616	2.70	650	3.25	723	4.56	797	6.12	866	7.80	929	9.59
<b>21604</b>	566	1.80	598	2.25	628	2.72	658	3.24	689	3.81	754	5.15	819	6.63	887	8.43	949	10.30
<b>23568</b>	617	2.33	647	2.82	674	3.33	702	3.87	730	4.47	787	5.79	849	7.39	909	9.07		
<b>25532</b>	668	2.97	696	3.50	722	4.04	747	4.62	773	5.23	825	6.59	880	8.17	936	9.89		
<b>27496</b>	720	3.70	746	4.28	770	4.85	793	5.46	817	6.10	865	7.49	914	9.05				

## 048

Prop Diameter = 48 in.	Tip Speed, FPM = 12.57 x RPM
Throat Diameter = 48.50 in.	Throat Area = 12.83 sq. ft.
Maximum BHP = 23.54 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>7698</b>	135	0.05	237	0.31	319	0.71												
<b>10264</b>	180	0.11	256	0.40	331	0.84	393	1.36										
<b>12830</b>	225	0.22	284	0.53	349	1.00	406	1.57	459	2.20								
<b>15396</b>	270	0.38	319	0.73	371	1.20	425	1.80	473	2.48	560	3.99	638	5.72				
<b>17962</b>	315	0.61	357	1.00	400	1.48	446	2.08	492	2.80	574	4.40	648	6.18	716	8.14		
<b>20528</b>	360	0.90	398	1.34	434	1.85	473	2.47	512	3.16	592	4.86	661	6.72	726	8.75	786	10.90
<b>23094</b>	405	1.29	439	1.77	471	2.32	504	2.94	539	3.67	610	5.36	679	7.33	740	9.4	799	11.70
<b>25660</b>	450	1.76	481	2.30	509	2.88	539	3.53	569	4.24	633	5.96	697	7.99	758	10.20	812	12.50
<b>28226</b>	495	2.35	523	2.94	550	3.56	576	4.24	603	4.98	660	6.73	717	8.66	776	11.00	831	13.40
<b>30792</b>	540	3.05	566	3.69	590	4.35	614	5.06	639	5.84	688	7.56	743	9.62	795	11.80		
<b>33358</b>	585	3.88	609	4.57	632	5.27	654	6.03	676	6.84	722	8.61	770	10.70	819	12.90		
<b>35924</b>	630	4.84	653	5.59	674	6.34	694	7.14	715	7.97	757	9.79	800	11.80				

- Notes:**
- 1) Performance shown is for Model MBP Panel Venturi without ducts or guards.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.



# MBP - Belt Drive Fan Data

Panel Fan

## 054

Prop Diameter = 54 in.	Tip Speed, FPM = 14.14 x RPM
Throat Diameter = 54.56 in.	Throat Area = 14.14 sq. ft.
Maximum BHP = 42.43 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9744	120	0.06	210	0.39	284	0.90												
12992	160	0.14	228	0.50	294	1.06	349	1.73										
16240	200	0.28	253	0.67	310	1.26	361	1.98	408	2.78								
19488	240	0.48	284	0.92	330	1.52	378	2.28	421	3.14	498	5.05	568	7.23	636	10.30		
22736	280	0.77	318	1.26	355	1.87	396	2.63	437	3.55	510	5.57	576	7.82	646	11.10		
25984	320	1.14	353	1.70	386	2.34	420	3.12	455	4.00	526	6.15	588	8.51	658	11.90	699	13.80
29232	30	1.63	390	2.24	419	2.93	448	3.72	479	4.65	543	6.78	603	9.28	674	12.90	710	14.80
32480	400	2.23	427	2.91	453	3.65	479	4.46	506	5.38	563	7.54	620	10.10	690	13.90	722	15.90
35728	440	2.97	465	3.72	489	4.51	512	5.37	536	6.31	587	8.51	637	11.00	707	15.00	739	17.00
38976	480	3.86	503	4.67	525	5.51	546	6.41	568	7.39	612	9.57	660	12.20	728	16.40		
42224	520	4.91	542	5.79	561	6.68	581	7.64	601	8.65	642	10.90	685	13.50				
45472	560	6.13	580	7.08	599	8.03	617	9.04	635	10.10	673	12.40	711	15.00				

## 060

Prop Diameter = 60 in.	Tip Speed, FPM = 15.71 x RPM
Throat Diameter = 60.63 in.	Throat Area = 20.25 sq. ft.
Maximum BHP = 71.85 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
12030	108	0.07	189	0.48	255	1.12												
16040	144	0.18	205	0.62	264	1.31	314	2.13										
20050	180	0.34	228	0.83	279	1.56	325	2.45	367	3.44								
24060	216	0.60	256	1.14	297	1.88	340	2.82	379	3.87	448	6.24	511	8.93				
28070	252	0.95	286	1.56	320	2.31	356	3.25	393	4.38	459	6.87	518	9.66	573	12.70		
32080	288	1.41	318	2.10	347	2.89	378	3.86	410	4.94	473	7.60	529	10.50	581	13.70	629	17.10
36090	324	2.01	351	2.77	377	3.62	403	4.59	432	5.74	488	8.37	543	11.50	592	14.70	639	18.30
40100	360	2.76	385	3.60	408	4.50	431	5.51	455	6.64	506	9.31	558	12.50	606	15.90	650	19.60
44110	396	3.67	419	4.59	440	5.56	461	6.62	482	7.78	528	10.50	573	13.50	621	17.20	665	21.00
48120	432	4.77	453	5.77	472	6.80	491	7.91	511	9.13	551	11.80	594	15.00	636	18.50		
52130	468	6.06	488	7.15	505	8.24	523	9.43	541	10.70	578	13.50	616	16.70	656	20.20		
56140	504	7.57	522	8.74	539	9.92	556	11.20	572	12.50	605	15.30	640	18.50				

- Notes:**
- 1) Performance shown is for Model MBP Panel Venturi without ducts or guards.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

# Belt Drive Fan Data - MBP

Panel Fan

# 072

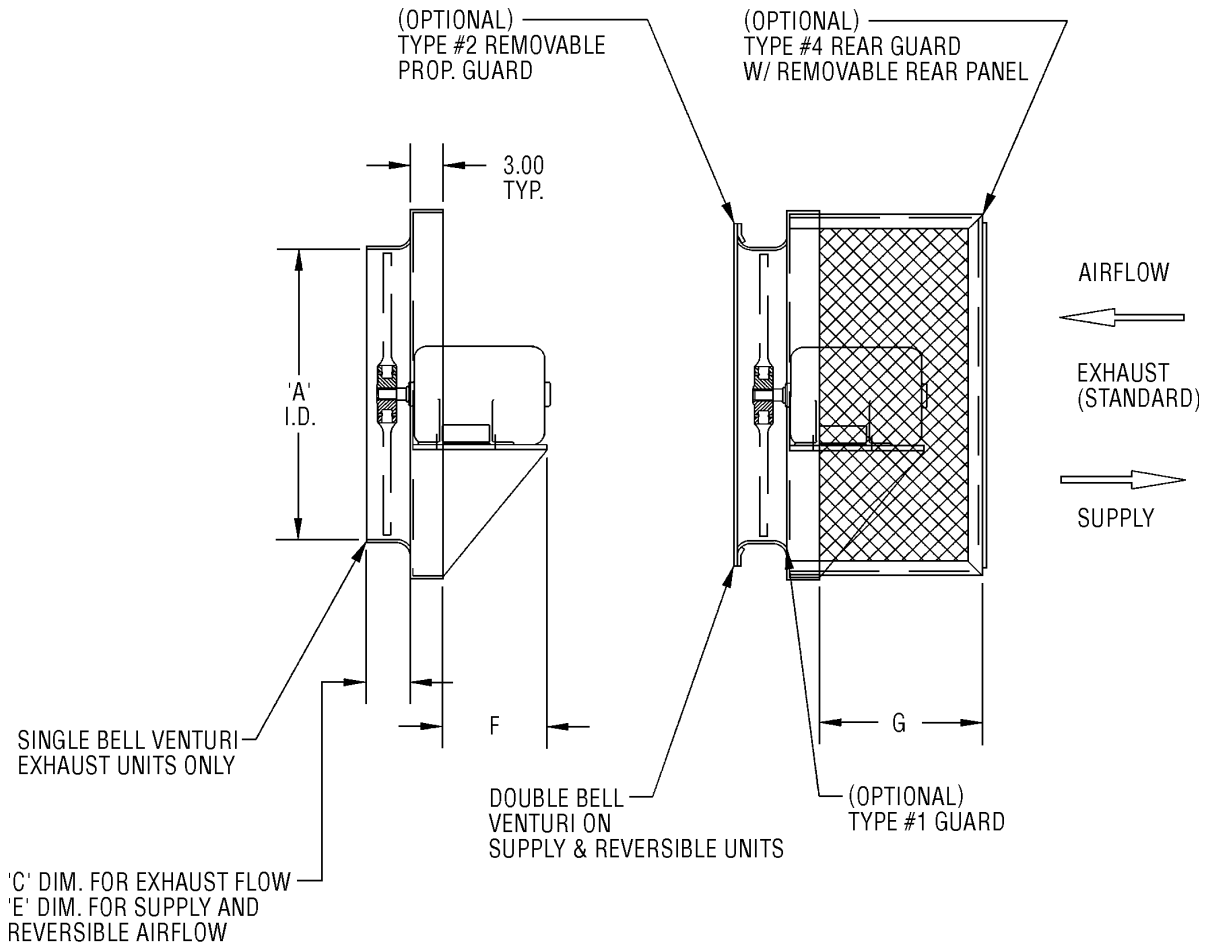
Prop Diameter = 72 in.	Tip Speed, FPM = 18.85 x RPM
Throat Diameter = 72.75 in.	Throat Area = 28.87 sq. ft.
Maximum BHP = 178.80 x (RPM/1000) <sup>3</sup>	

CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
17322	90	0.11	158	0.70	213	1.61												
23096	120	0.25	171	0.89	220	1.89	262	3.07										
2870	150	0.50	190	1.20	232	2.25	271	3.52	306	4.95								
34644	180	0.86	213	1.64	248	2.71	283	4.06	315	5.58	373	8.98						
40418	210	1.36	238	2.24	267	3.33	297	4.68	328	6.30	382	9.90						
46192	240	2.03	365	3.02	289	4.16	315	5.55	342	7.12	384	10.90						
51966	270	2.90	292	3.98	314	5.21	336	6.61	360	8.26	407	12.10						
57740	300	3.97	320	5.18	340	6.48	359	7.94	379	9.56	422	13.40						
63514	330	5.29	349	6.61	366	8.01	384	9.54	402	11.20								
69288	360	6.86	377	8.31	394	9.79	409	11.40	426	13.10								
75062	390	8.73	406	10.30	421	11.90												
80836	420	10.90																

- Notes:**
- 1) Performance shown is for Model MBP Panel Venturi without ducts or guards.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

# PND - Direct Drive Dimensional Data

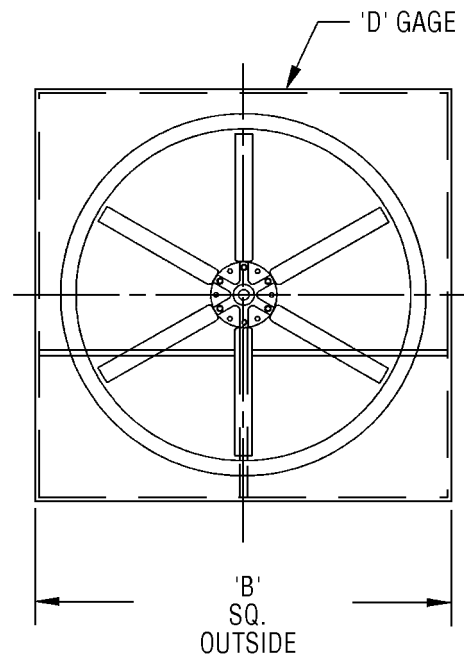
## Design 1



### Notes:

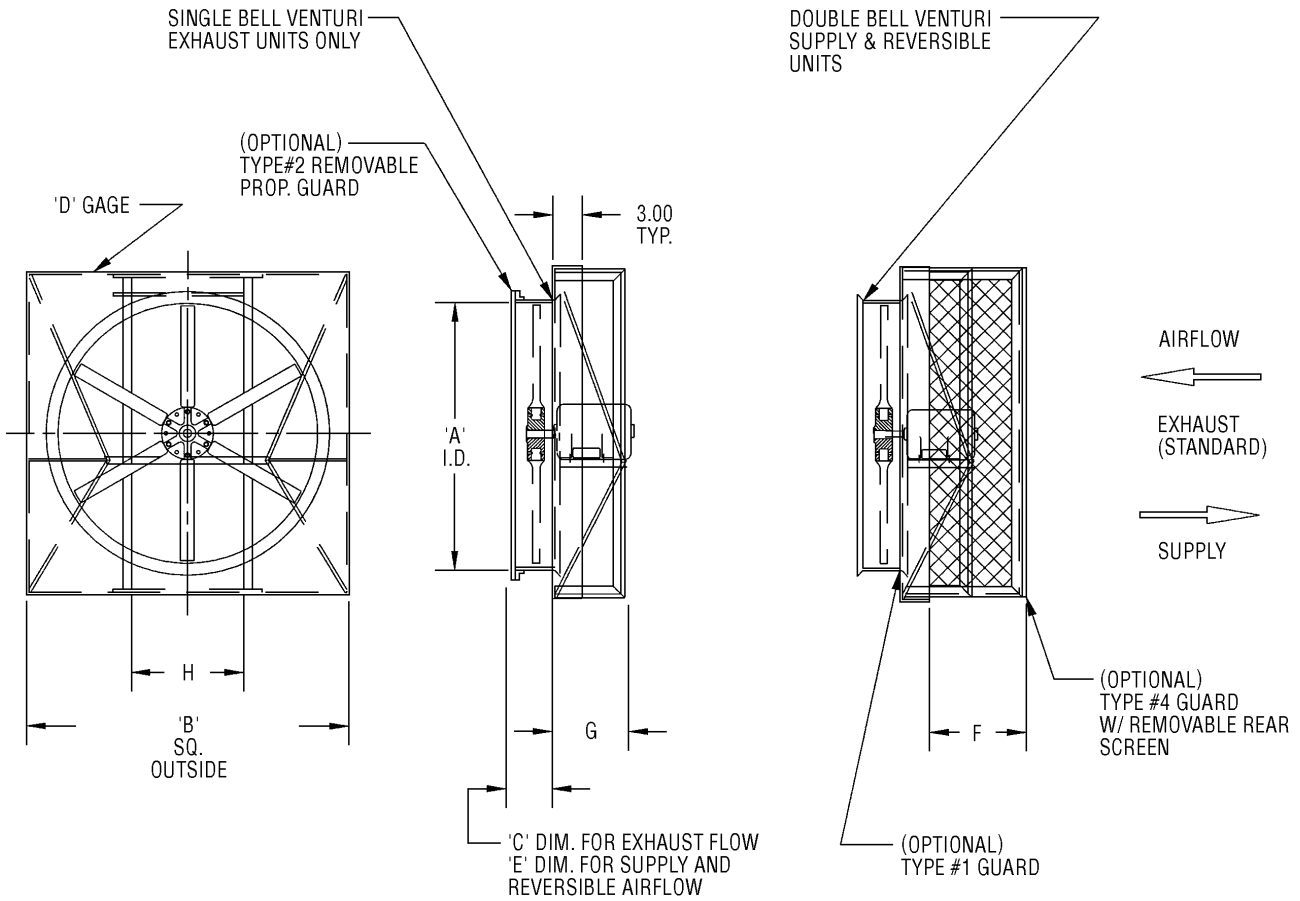
1. Approximate fan weights are less motor and accessories.
2. Propeller is six-bladed cast aluminum.
3. See Direct Drive, Design 2 drawing for larger motor frame sizes.
4. Dimensions should not be used for construction.  
Certified drawings are available upon request.

SIZE	A	B	C	D	E	F MAX.	G	MAX. MTR.	UNIT WEIGHT
012	12.19	16.00	1.50	16	4.63	4.13	7.63	145T	15
015	15.19	19.00	2.00	16	5.13	4.13	7.63	145T	20
018	18.19	22.00	2.50	16	5.63	7.31	11.63	184T	30
021	21.22	25.00	2.50	16	5.63	7.31	11.63	184T	35
024	24.25	28.00	3.00	16	6.13	6.56	15.88	184T	40
027	27.28	34.00	3.00	16	6.13	6.25	15.88	184T	60
030	30.31	36.00	3.50	14	7.50	8.63	18.88	215T	80
032	32.34	38.00	3.50	14	7.50	8.63	18.88	215T	90
036	36.38	42.00	4.00	14	9.00	13.63	18.88	256T	110
042	42.44	48.00	4.75	14	9.75	12.75	18.88	256T	160
048	48.50	54.00	4.75	14	9.75	12.81	17.88	256T	200
054	54.56	60.00	5.00	14	11.75	12.19	17.88	256T	240
060	60.63	66.00	5.00	14	11.75	11.88	17.88	256T	270



# Direct Drive Dimensional Data - PND

Design 2



**Notes:**

1. Approximate fan weights are less motor and accessories.
2. Propeller is six-bladed cast aluminum.
3. Dimensions should not be used for construction. Certified drawings are available upon request.

SIZE	A	B	C	D	E	F	280 FRAME		320 FRAME		360 FRAME		UNIT WEIGHT
							G	H	G	H	G	H	
048	48.50	54.00	4.75	14	9.75	26.88	14.50	24.50	16.25	28.50	17.50	32.50	270
054	54.65	60.00	5.00	14	11.75	26.88	14.50	24.50	16.25	28.50	17.50	32.50	300
060	60.63	66.00	5.00	14	11.75	26.88	14.50	24.50	16.25	28.50	17.50	32.50	350

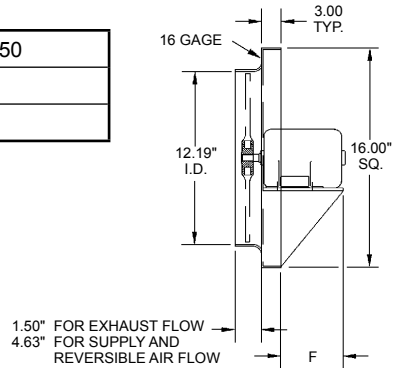
# PND - Direct Drive Fan Data

Panel Fan

## 012

Prop Diameter = 12 in.	Maximum RPM = 3450
Tip Speed, FPM = 3.14 x RPM	
Inlet & Outlet Diameter (Area) = 12.19 in. (0.81 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
145	4.13

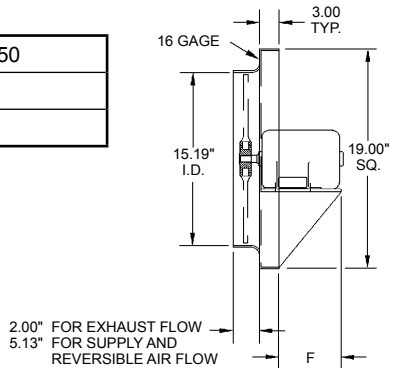


RPM	PITCH	0" SP		1/8" SP		1/4" SP		1/2" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1750	14	454	0.01	289	0.02										
	18	948	0.02	654	0.03										
	22	1092	0.03	798	0.04										
	26	1162	0.04	866	0.04										
	30	1270	0.05	973	0.05										
3450	14	895	0.10	836	0.14	730	0.15	561	0.16						
	18	1869	0.17	1722	0.19	1568	0.20	1270	0.22						
	22	2154	0.25	1987	0.27	1841	0.28	1557	0.30						
	26	2291	0.29	2129	0.31	1982	0.32	1891	0.34						
	30	2503	0.38	2332	0.39	2180	0.41	1896	0.42						

## 015

Prop Diameter = 15 in.	Maximum RPM = 3450
Tip Speed, FPM = 3.93 x RPM	
Inlet & Outlet Diameter (Area) = 15.19 in. (1.26 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
145	4.13



RPM	PITCH	0" SP		1/8" SP		1/4" SP		1/2" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1750	14	887	0.04	685	0.05										
	18	1852	0.07	1487	0.08	1049	0.09								
	22	2134	0.10	1756	0.11	1366	0.12								
	26	2270	0.12	1894	0.13	1479	0.14								
	30	2480	0.15	2095	0.16	1698	0.17								
3450	14	1748	0.31	1674	0.39	1580	0.44	1338	0.46						
	18	3651	0.53	3479	0.56	3266	0.60	2910	0.64	1989	0.68				
	22	4206	0.75	3999	0.80	3792	0.84	3442	0.88	2629	0.92				
	26	4475	0.90	4272	0.92	4075	0.95	3713	1.01	2846	1.05				
	30	4889	1.17	4675	1.19	4471	1.21	4110	1.25	3299	1.28				

Notes: 1) Performance shown is for Installation Type A: free inlet, free outlet.  
2) Performance ratings do not include the effects of appurtenances in the airstream.

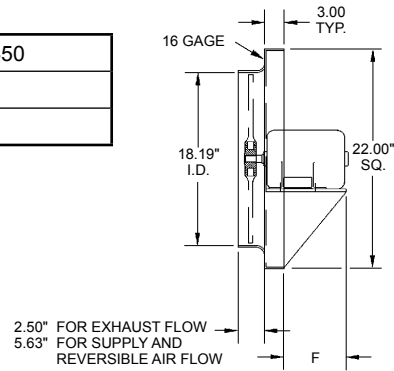
# Direct Drive Fan Data - PND

Panel Fan

## 018

Prop Diameter = 18 in.	Maximum RPM = 3450
Tip Speed, FPM = 4.71 x RPM	
Inlet & Outlet Diameter (Area) = 18.19 in. (1.80 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
184	7.31

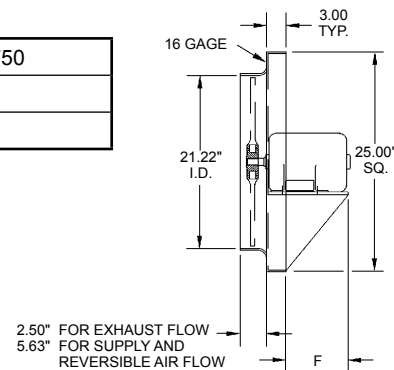


RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1150	14	1781	0.03												
	18	2044	0.04												
	22	2372	0.06												
	26	2579	0.07												
	30	2905	0.10												
1750	14	2710	0.11	1987	0.16										
	18	3110	0.14	2361	0.19										
	22	3610	0.23	2848	0.27										
	26	3925	0.25	3125	0.30										
	30	4420	0.34	3646	0.39										
3450	14	5343	0.83	5040	0.93	4701	1.03	4316	1.12	3858	1.20				
	18	6131	1.08	5828	1.20	5468	1.30	5049	1.39	4603	1.46				
	22	7117	1.73	6815	1.81	6459	1.89	6036	1.97	5558	2.04	4996	2.10		
	26	7738	1.93	7385	2.03	7003	2.13	6578	2.23	6105	2.31	5578	2.37		
	30	8714	2.64	8341	2.76	7964	2.86	7568	2.95	7137	3.02	6675	3.06	6171	3.08

## 021

Prop Diameter = 21 in.	Maximum RPM = 1750
Tip Speed, FPM = 5.50 x RPM	
Inlet & Outlet Diameter (Area) = 21.22 in. (2.45 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
184	7.31



RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
870	14	2139	0.03												
	18	2455	0.04												
	22	2850	0.06												
	26	3099	0.07												
	30	3489	0.09												
1150	14	2828	0.07												
	18	3245	0.09												
	22	3767	0.14												
	26	4096	0.15												
	30	4612	0.17	3090	0.25										
1750	14	4303	0.23	3529	0.31										
	18	4939	0.30	4116	0.39										
	22	5733	0.49	4912	0.55										
	26	6233	0.54	5350	0.62	4134	0.67								
	30	7019	0.75	6142	0.83	5097	0.87								

Notes: 1) Performance shown is for Installation Type A: free inlet, free outlet.  
2) Performance ratings do not include the effects of appurtenances in the airstream.

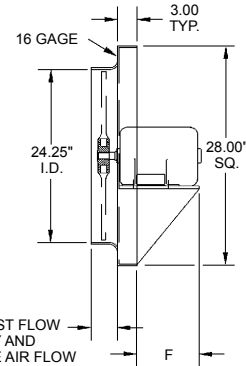
# PND - Direct Drive Fan Data

Panel Fan

## 024

Prop Diameter = 24 in.	Maximum RPM = 1750
Tip Speed, FPM = 6.28 x RPM	
Inlet & Outlet Diameter (Area) = 24.25 in. (3.21 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
184	6.56



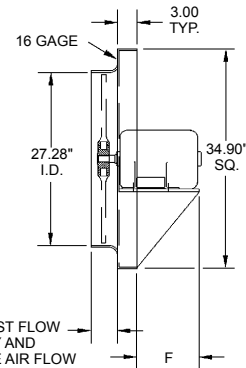
3.00" FOR EXHAUST FLOW  
6.13" FOR SUPPLY AND REVERSIBLE AIR FLOW

RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
870	14	3193	0.06												
	18	3665	0.07												
	22	4254	0.13												
	26	4625	0.13												
	30	5209	0.18												
1150	14	4221	0.13												
	18	4844	0.17												
	22	5623	0.27	3918	0.33										
	26	6114	0.30	4380	0.37										
	30	6885	0.41	5250	0.48										
1750	14	6424	0.46	5572	0.58	4402	0.67								
	18	7372	0.59	6489	0.73	5331	0.82								
	22	8557	0.95	7682	1.05	6450	1.14								
	26	9304	1.06	8335	1.18	7118	1.28								
	30	10477	1.45	9491	1.58	8379	1.67	7055	1.71						

## 027

Prop Diameter = 27 in.	Maximum RPM = 1750
Tip Speed, FPM = 7.07 x RPM	
Inlet & Outlet Diameter (Area) = 27.28 in. (4.06 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
184	6.25



3.00" FOR EXHAUST FLOW  
6.13" FOR SUPPLY AND REVERSIBLE AIR FLOW

RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
870	14	4547	0.10												
	18	5218	0.13												
	22	6057	0.21												
	26	6586	0.24												
	30	7416	0.32												
1150	14	6010	0.23	4341	0.34										
	18	6898	0.30	5178	0.41										
	22	8006	0.49	6252	0.57										
	26	8705	0.54	6868	0.65										
	30	9803	0.74	8029	0.85										
1750	14	9146	0.82	8216	1.00	7042	1.15								
	18	10496	1.07	9529	1.26	8302	1.42								
	22	12184	1.72	11224	1.85	9977	1.99	8300	2.09						
	26	13247	1.91	12167	2.09	10913	2.25	9378	2.36						
	30	14917	2.62	13810	2.81	12642	2.96	11279	3.04						

Notes: 1) Performance shown is for Installation Type A: free inlet, free outlet.  
2) Performance ratings do not include the effects of appurtenances in the airstream.

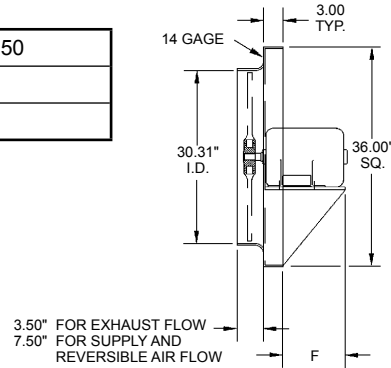
# Direct Drive Fan Data - PND

Panel Fan

## 030

Prop Diameter = 30 in.	Maximum RPM = 1750
Tip Speed, FPM = 7.85 x RPM	
Inlet & Outlet Diameter (Area) = 30.31 in. (5.01 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
215	8.63

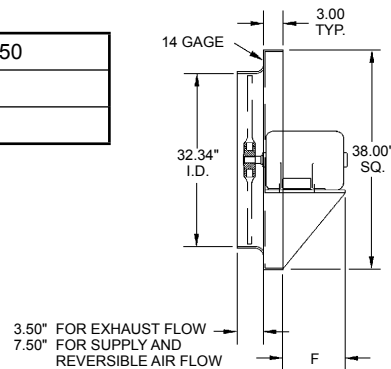


RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
870	14	6361	0.18												
	18	7299	0.24												
	22	8473	0.38	5965	0.46										
	26	9213	0.43	6657	0.52										
	30	10374	0.58	7961	0.67										
1150	14	8408	0.42	664	0.57										
	18	9649	0.55	7818	0.71										
	22	11200	0.88	9358	1.00										
	26	12177	0.98	10215	1.13	8095	1.21								
	30	13713	1.34	11784	1.50	9973	1.56								
1750	14	12795	1.48	11786	1.73	10572	1.95	9602	2.10						
	18	14683	1.93	13637	2.20	12350	2.44	11360	2.58						
	22	17043	3.09	16004	3.28	14714	3.47	13087	3.64	11499	3.78				
	26	18531	3.45	17345	3.69	16021	3.93	14453	4.12	12818	4.26				
	30	20867	4.73	19640	4.99	18368	5.22	16957	5.38	15306	5.52	1386	5.57		

## 032

Prop Diameter = 32 in.	Maximum RPM = 1750
Tip Speed, FPM = 8.38 x RPM	
Inlet & Outlet Diameter (Area) = 32.33 in. (5.70 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
215	8.63



RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
870	14	7570	0.24												
	18	8687	0.31												
	22	10084	0.49	7099	0.60										
	26	10964	0.55	7922	0.67										
	30	12346	0.75	9474	0.87										
1150	14	10006	0.54	8213	0.73										
	18	11483	0.71	9578	0.91										
	22	13329	1.14	11429	1.29										
	26	14492	1.27	12446	1.45	9633	1.57								
	30	16320	1.74	14288	1.93	11868	2.02								
1750	14	15227	1.92	14166	2.22	12926	2.48	11427	2.73						
	18	17474	2.50	16375	2.83	15049	3.12	13519	3.35						
	22	20283	4.01	19190	4.23	17872	4.45	16279	4.68	14374	4.86				
	26	22053	4.47	20797	4.76	19427	5.05	17837	5.29	16023	5.48				
	30	24834	6.13	23526	6.45	22186	6.72	20743	6.94	19133	7.09	17357	7.16		

Notes: 1) Performance shown is for Installation Type A: free inlet, free outlet.  
2) Performance ratings do not include the effects of appurtenances in the airstream.



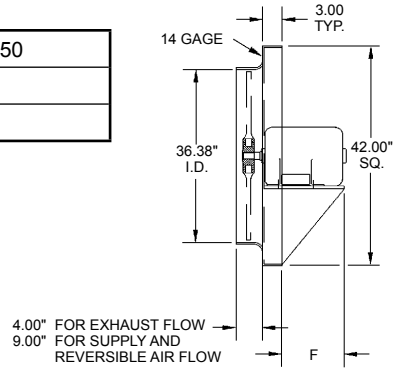
# PND - Direct Drive Fan Data

Panel Fan

## 036

Prop Diameter = 36 in.	Maximum RPM = 1750
Tip Speed, FPM = 9.42 x RPM	
Inlet & Outlet Diameter (Area) = 36.38 in. (7.21 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
256	13.63

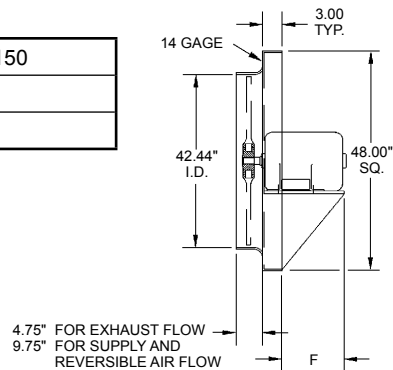


RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
870	14	11159	0.47	7896	0.62										
	18	13315	0.72	10044	0.89										
	22	14487	0.89	11315	1.04										
	26	16379	1.21	13140	1.38										
	30	18459	1.66	15132	1.78										
1150	14	14750	1.07	12411	1.31	9634	1.45								
	18	17600	1.66	15295	1.92	12452	2.07								
	22	19150	2.05	16877	2.29	14239	2.44	7627	2.39						
	26	21650	2.80	19292	3.07	16646	3.20								
	30	24400	3.84	22028	4.09	19160	4.15								
1750	14	22446	3.79	20907	4.21	19371	4.53	17782	4.82	15972	5.03	13807	5.11	10157	4.98
	18	26783	5.86	25289	6.26	23769	6.65	22139	6.96	20293	7.20	18123	7.35	15619	7.35
	22	29141	7.22	27657	7.59	26175	7.96	24529	8.24	22844	8.49	20918	8.62	18229	8.65
	26	32946	9.87	31396	10.30	29847	10.70	28230	11.00	26510	11.20	24564	11.30	21946	11.30
	30	37130	13.50	35572	13.90	34014	14.30	32306	14.50	30520	14.50	28272	14.70	25395	14.70

## 042

Prop Diameter = 42 in.	Maximum RPM = 1150
Tip Speed, FPM = 11.00 x RPM	
Inlet & Outlet Diameter (Area) = 42.44 in. (9.82 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
256	12.75



RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
695	14	14155	0.51	9206	0.69										
	18	16890	0.79	11912	0.99										
	22	18378	0.98	13633	1.16										
	26	20777	1.34	15939	1.53										
	30	23416	1.83	18350	1.98										
870	14	17720	1.01	14075	1.28	8255	1.33								
	18	21143	1.56	17515	1.85	12461	1.95								
	22	23005	1.92	19401	2.19	14515	2.30								
	26	26009	2.62	22323	2.92	17473	2.99								
	30	29312	3.59	25542	3.84	20222	3.91								
1150	14	23422	2.32	20693	2.72	17829	3.01	14111	3.14						
	18	27948	3.59	25291	4.01	22376	4.33	18674	4.91						
	22	30409	4.43	27775	4.81	24889	5.11	21587	5.29	13986	5.18				
	26	34379	6.05	31629	6.48	28735	6.79	25407	6.92						
	30	38746	8.30	35979	8.70	32961	8.88	29232	9.01						

- Notes: 1) Performance shown is for Installation Type A: free inlet, free outlet.  
 2) Performance ratings do not include the effects of appurtenances in the airstream.

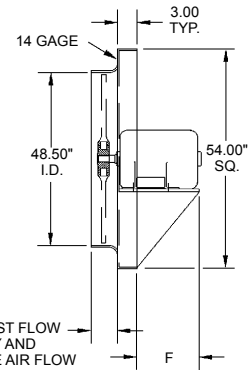
# Direct Drive Fan Data - PND

Panel Fan

## 048

Prop Diameter = 48 in.	Maximum RPM = 1150
Tip Speed, FPM = 12.57 x RPM	
Inlet & Outlet Diameter (Area) = 48.50 in. (12.83 sq.ft.)	

Max. Mtr. Fr.	F - Design 1	F - Design 2
256	12.81	—
284 / 286	—	14.50
324 / 326	—	16.25
364 / 365	—	17.50



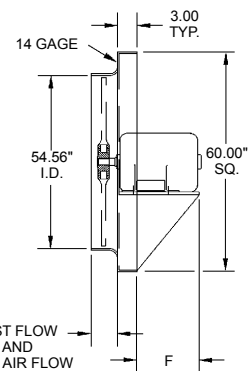
4.75" FOR EXHAUST FLOW  
9.75" FOR SUPPLY AND REVERSIBLE AIR FLOW

RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
695	14	21130	1.00	15818	1.31										
	18	25212	1.55	19901	1.87										
	22	27433	1.91	22193	2.21										
	26	31014	2.60	25658	2.93										
	30	34954	3.57	29460	3.83										
870	14	26450	1.96	22328	2.39	17492	2.64								
	18	31561	3.03	27501	3.49	22540	3.78								
	22	34340	3.74	30343	4.17	25708	4.44	15483	4.37						
	26	38824	5.11	34668	5.59	30044	5.83								
	30	43755	7.01	39575	7.46	34564	7.56								
1150	14	34963	4.53	31842	5.15	28727	5.64	25157	5.99	20551	6.11				
	18	41718	7.01	38688	7.64	35549	8.20	31891	8.59	27512	8.80	21104	8.69		
	22	45393	8.64	42381	9.21	39245	9.73	35826	10.10	31856	10.30	24157	10.20		
	26	51318	11.80	48175	12.40	45031	13.10	41540	13.40	37531	13.50	30100	13.30		
	30	57837	16.20	54675	16.80	51420	17.30	47797	17.40	43223	17.60				

## 054

Prop Diameter = 54 in.	Maximum RPM = 1150
Tip Speed, FPM = 14.14 x RPM	
Inlet & Outlet Diameter (Area) = 54.56 in. (16.24 sq.ft.)	

Max. Mtr. Fr.	F - Design 1	F - Design 2
256	12.19	—
284 / 286	—	14.50
324 / 326	—	16.25
364 / 365	—	17.50



5.00" FOR EXHAUST FLOW  
11.75" FOR SUPPLY AND REVERSIBLE AIR FLOW

RPM	PITCH	0" SP		1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
695	14	30085	1.80	24527	2.27	15785	2.41								
	18	35895	2.79	30097	3.29	22420	3.51								
	22	39060	3.44	33289	3.90	25989	4.11								
	26	44159	4.69	38258	5.22	30937	5.36								
	30	49768	6.44	43737	6.88	35628	7.01								
870	14	37661	3.53	33022	4.16	28105	4.63	21177	4.76						
	18	44937	5.47	40411	6.14	35372	6.63	28957	6.87						
	22	48895	6.74	44417	7.36	39370	7.83	33624	8.05						
	26	55278	9.21	50603	9.89	45644	10.40	39689	10.50						
	30	62300	12.60	57597	13.30	52417	13.50	45751	13.70						
1150	14	49781	8.16	46269	9.08	42764	9.79	39103	10.40	34923	10.90	29703	11.00	20400	10.60
	18	59400	12.60	55991	13.50	52514	14.40	48766	15.00	44500	15.60	39485	15.80	33346	15.80
	22	64631	15.60	61244	16.40	57856	17.20	54075	17.80	50186	18.30	45674	17.60	38656	18.60
	26	73069	21.30	69532	22.20	65996	23.10	62275	23.70	58349	24.20	53777	24.30	47344	24.20
	30	82350	29.20	78793	30.00	75235	30.90	71303	31.20	67165	31.30	61898	31.70	54768	31.70

Notes: 1) Performance shown is for Installation Type A: free inlet, free outlet.  
2) Performance ratings do not include the effects of appurtenances in the airstream.

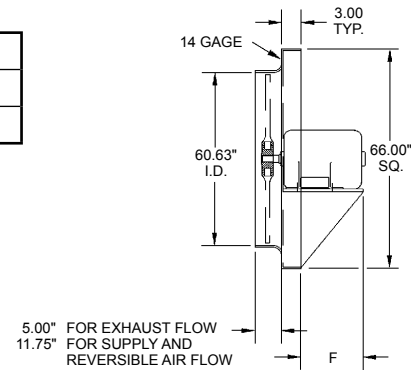
# PND - Direct Drive Fan Data

Panel Fan

# 060

Prop Diameter = 60 in.	Maximum RPM = 870
Tip Speed, FPM = 15.71 x RPM	
Inlet & Outlet Diameter (Area) = 60.63 in. (20.05 sq.ft.)	

Max. Mtr. Fr.	F - Design 1	F - Design 2
256	11.88	—
284 / 286	—	14.50
324 / 326	—	16.25
364 / 365	—	17.50

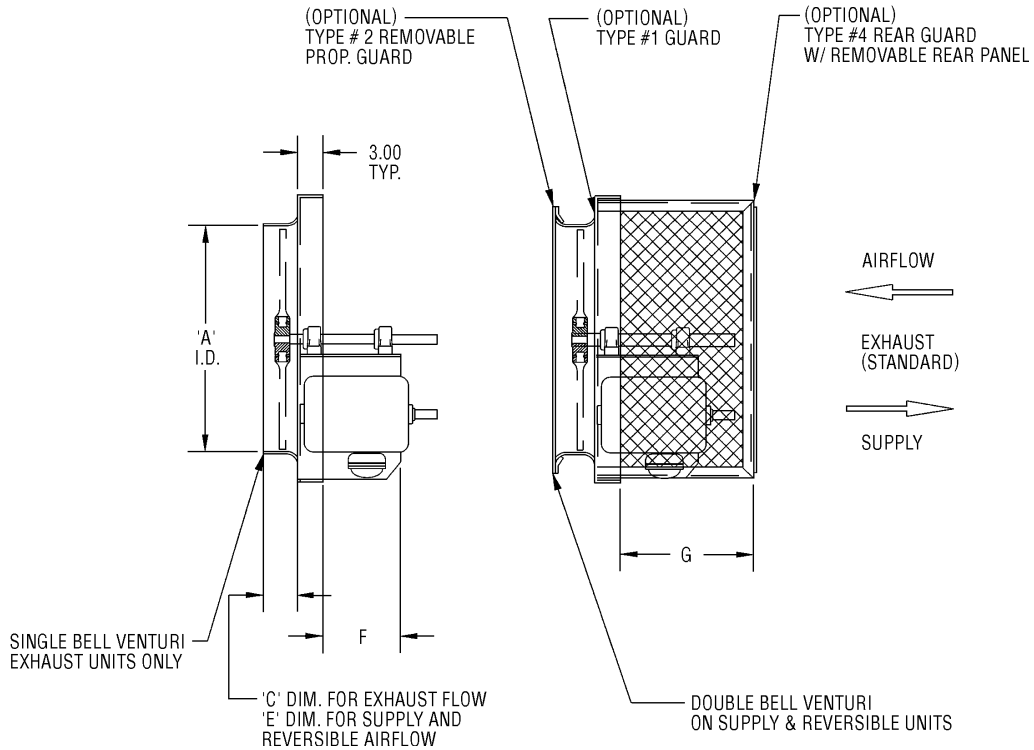


RPM	PITCH	0" SP		1/8" SP		1/4" SP		1/2" SP		1" SP		1 1/4" SP		1 1/2" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
695	14	41269	3.05	34819	3.72	27237	4.11								
	18	48243	4.72	42890	5.43	35114	5.88								
	22	53580	5.82	47323	6.49	40066	6.91	23732	6.78						
	26	60574	7.95	54073	8.59	46827	9.07								
	30	68269	10.90	61729	11.60	53875	11.80								
870	14	51661	5.99	46505	6.88	41273	7.59	35116	8.04	25304	7.94				
	18	61642	9.29	56635	10.20	51301	11.00	44926	11.50	37164	11.60				
	22	67071	11.40	62096	12.30	56793	13.00	50993	13.50	43240	13.70				
	26	75827	15.60	70633	16.50	70633	16.50	65317	17.40	51878	17.80				
	30	85459	21.40	80234	22.30	74711	22.80	68425	23.00	59909	23.30				

**Notes:** 1) Performance shown is for Installation Type D: ducted inlet, ducted outlet.  
2) Performance ratings do not include the effects of appurtenances in the airstream.

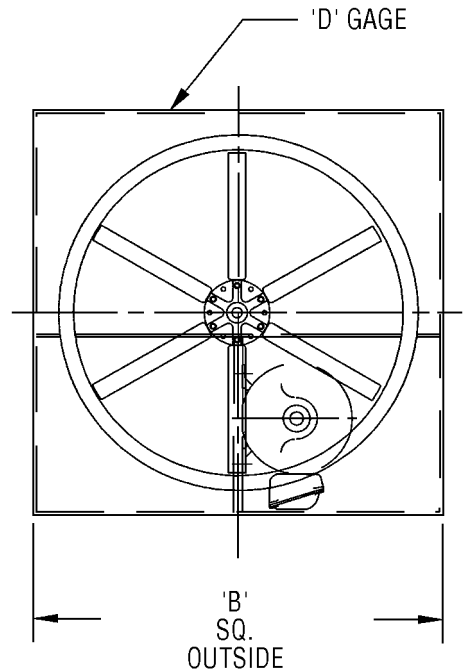
# Belt Drive Dimensional Data - PNB

Designs 1 & 2



**Notes:**

1. Approximate fan weights are less motor and accessories.
2. Propeller is six-bladed cast aluminum.
3. Dimensions should not be used for construction.  
Certified drawings are available upon request.



SIZE	A	B	C	D	E	DESIGN 1			DESIGN 2			UNIT WEIGHT
						F	G	MAX. MTR.	F	G	MAX. MTR.	
024	24.25	28.00	3.00	16	6.13	10.00	15.88	184T	—	—	—	55
027	27.28	34.00	3.00	16	6.13	10.00	15.88	184T	—	—	—	75
030	30.31	36.00	3.50	14	7.50	13.00	18.88	215T	—	—	—	100
032	32.34	38.00	3.50	14	7.50	13.00	18.88	215T	—	—	—	110
036	36.38	42.00	4.00	14	9.00	13.00	18.88	215T	—	—	—	140
042	42.44	48.00	4.75	14	9.75	13.00	18.88	215T	—	—	—	200
048	48.50	54.00	4.75	14	9.75	11.00	17.88	184T	17.00	26.88	256T	280
054	54.56	60.00	5.00	14	11.75	11.00	17.88	184T	17.00	26.88	256T	350
060	60.63	66.00	5.00	14	11.75	11.00	17.88	184T	17.00	26.88	256T	390

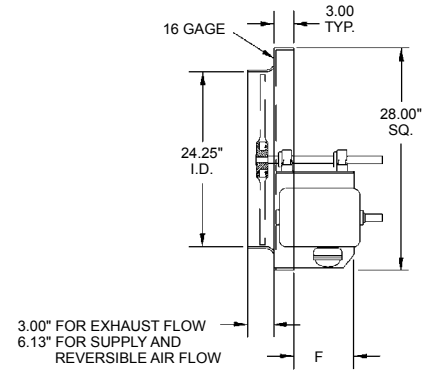
# PNB - Belt Drive Fan Data

Panel Fan

## 024

Prop Diameter = 24 in.	Maximum RPM = 2375
Tip Speed, FPM = 6.28 x RPM	
Inlet & Outlet Diameter (Area) = 24.25 in. (3.21 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
184	10.00

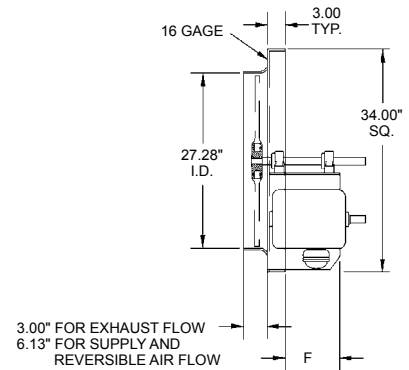


CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1926	389	0.01	694	0.08														
2568	518	0.03	772	0.11	964	0.22	1139	0.36										
3210	648	0.05	862	0.15	1037	0.28	1188	0.42	1326	0.58								
3852	777	0.09	960	0.20	1122	0.34	1260	0.50	1387	0.67	1619	1.06						
4494	907	0.14	1068	0.27	1212	0.42	1344	0.59	1461	0.78	1675	1.18	1872	1.64	2072	2.17		
5136	1036	0.21	1179	0.35	1307	0.51	1432	0.70	1545	0.90	1746	1.33	1928	1.80	2102	2.32	2278	2.91
5778	1166	0.30	1294	0.45	1413	0.63	1525	0.83	1632	1.04	1825	1.50	1999	2.00	2159	2.53	2315	3.10
6420	1295	0.41	1412	0.58	1521	0.76	1622	0.97	1724	1.20	1909	1.70	2075	2.22	2231	2.78	2375	3.36
7062	1425	0.55	1532	0.73	1631	0.93	1728	1.15	1818	1.38	1997	1.91	2158	2.47	2305	3.05		
7704	1554	0.72	1653	0.91	1746	1.12	1836	1.35	1921	1.60	2088	2.15	2243	2.74				
8346	1684	0.91	1775	1.12	1863	1.34	1946	1.58	2027	1.85	2182	2.41	2333	3.04				
8988	1813	1.14	1898	1.35	1981	1.60	2058	1.84	2136	2.12	2280	2.70						

## 027

Prop Diameter = 27 in.	Maximum RPM = 2122
Tip Speed, FPM = 7.07 x RPM	
Inlet & Outlet Diameter (Area) = 27.28 in. (4.06 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
184	10.00



CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2436	345	0.01	617	0.11														
3248	460	0.03	686	0.14	857	0.28	1012	0.46										
4060	575	0.07	766	0.19	922	0.35	1055	0.53	1179	0.74								
4872	690	0.11	853	0.25	997	0.43	1120	0.63	1233	0.85	1439	1.34						
5684	805	0.18	949	0.34	1077	0.53	1194	0.75	1298	0.98	1488	1.49	1664	2.07	1842	2.74		
6496	920	0.27	1047	0.44	1162	0.65	1273	0.89	1373	1.14	1552	1.68	1713	2.27	1868	2.93	2924	3.68
7308	1036	0.38	1150	0.57	1255	0.79	1355	1.04	1450	1.32	1622	1.90	1777	2.53	1919	3.20	2057	3.92
8120	1151	0.52	1255	0.73	1351	0.97	1442	1.23	1532	1.52	1697	2.15	1844	2.81	1982	3.51	2111	4.25
8932	126	0.70	1361	0.92	1449	1.17	1535	1.45	1615	1.75	1774	2.42	1918	3.12	2048	3.86		
9744	1381	0.90	1468	1.15	1551	1.41	1631	1.71	1707	2.02	1856	2.72	1993	3.47	2122	4.24		
10556	1496	1.15	1577	1.41	1655	1.69	1729	2.00	1801	2.33	1939	3.05	2073	3.84				
11368	1611	1.44	1686	1.71	1760	2.02	1828	2.33	1897	2.68	2025	3.42						

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

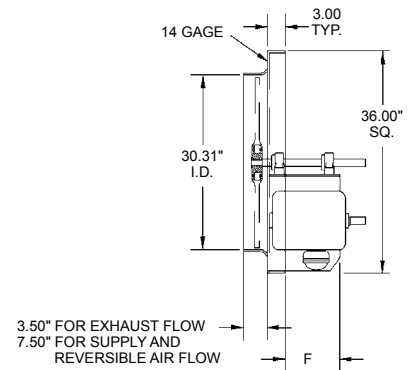
# Belt Drive Fan Data - PNB

Panel Fan

## 030

Prop Diameter = 30 in.	Maximum RPM = 1922
Tip Speed, FPM = 7.85 x RPM	
Inlet & Outlet Diameter (Area) = 30.31 in. (5.01 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
215	13.00

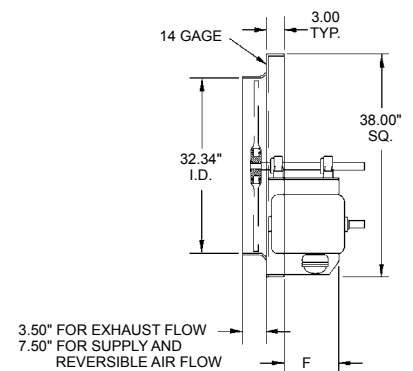


CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3026	313	0.02	559	0.13														
4035	417	0.04	622	0.18	777	0.35	917	0.57										
5044	521	0.08	694	0.24	836	0.43	956	0.66	1069	0.91								
6053	625	0.14	773	0.31	903	0.54	1015	0.79	1117	1.05	1304	1.66						
7062	729	0.22	860	0.42	976	0.66	1082	0.93	1176	1.22	1348	1.85	1508	2.57	1669	3.40		
8070	834	0.34	949	0.55	1053	0.81	1153	1.11	1244	1.42	1406	2.09	1552	2.82	1692	3.64	1834	4.56
9079	938	0.48	1042	0.71	1137	0.98	1228	1.30	1314	1.64	1470	2.36	1610	3.14	1739	3.97	1864	4.87
10088	1042	0.65	1137	0.91	1224	1.20	1306	1.53	1388	1.89	1537	2.67	1670	3.49	1796	4.3	1913	5.28
11097	1147	0.87	1233	1.14	1313	1.45	1391	1.80	1464	2.18	1608	3.01	1738	3.87	1856	4.79		
12106	1251	1.12	1330	1.43	1405	1.75	1478	2.12	1547	2.51	1681	3.37	1806	4.31	1922	5.27		
13114	1355	1.43	1429	1.75	1500	2.10	1566	2.48	1632	2.89	1757	3.79	1878	4.77				
14123	1459	1.78	1528	2.12	1594	2.51	1656	2.89	1719	3.33	1835	4.25						

## 032

Prop Diameter = 32 in.	Maximum RPM = 1790
Tip Speed, FPM = 8.38 x RPM	
Inlet & Outlet Diameter (Area) = 32.33 in. (5.70 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
215	13.00



CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3420	291	0.02	520	0.15														
4560	388	0.05	579	0.20	723	0.40	854	0.65										
5700	485	0.09	646	0.27	778	0.49	890	0.75	995	1.03								
6840	582	0.16	720	0.35	841	0.61	945	0.89	1040	1.19	1214	1.88						
7980	679	0.25	800	0.47	909	0.74	1007	1.05	1095	1.38	1255	2.09	1404	2.91	1554	3.85		
9120	776	0.38	883	0.62	980	0.91	1073	1.25	1158	1.60	1309	2.37	1445	3.19	1576	4.12	1708	5.16
10260	873	0.54	970	0.80	1059	1.11	1143	1.47	1223	1.85	1368	2.67	1499	3.55	1619	4.49	1736	5.51
11400	970	0.73	1058	1.03	1140	1.36	1216	1.73	1292	2.14	1431	3.01	1555	3.95	1672	4.93	1781	5.97
12540	1067	0.98	1148	1.29	1222	1.64	1295	2.04	1363	2.46	1497	3.40	1618	4.38	1728	5.42		
13680	1164	1.27	1238	1.61	1308	1.98	1376	2.40	1440	2.84	1565	3.81	1682	4.87	1790	5.96		
14820	1261	1.61	1330	1.98	1396	2.38	1458	2.80	1519	3.27	1635	4.28	1749	5.39				
15960	1358	2.01	1422	2.40	1484	2.83	1542	3.27	1600	3.76	1708	4.80						

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

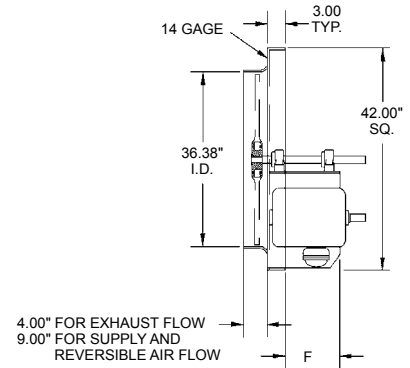
# PNB - Belt Drive Fan Data

Panel Fan

## 036

Prop Diameter = 36 in.	Maximum RPM = 1576
Tip Speed, FPM = 9.42 x RPM	
Inlet & Outlet Diameter (Area) = 36.38 in. (7.21 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
215	13.00

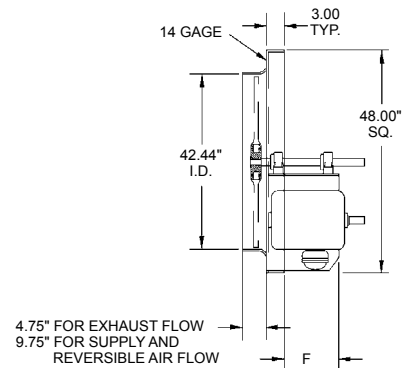


CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4332	263	0.03	501	0.22	677	0.55												
5776	350	0.07	545	0.29	700	0.60	833	1.02										
7220	438	0.13	599	0.38	741	0.72	861	1.12	967	1.59								
8664	525	0.23	660	0.50	788	0.87	902	1.30	1002	1.77	1182	2.90	1354	4.39				
10108	613	0.36	729	0.66	843	1.05	948	1.51	1044	2.01	1215	3.15	1366	4.47	1517	6.16		
11552	700	0.53	806	0.88	903	1.28	1000	1.76	1091	2.30	1254	3.48	1400	4.81	1532	6.31		
12996	788	0.76	884	1.15	966	1.55	1056	2.06	1142	2.62	1298	3.87	1438	5.24	1567	6.75		
14440	876	1.04	964	1.47	1039	1.90	1118	2.42	1197	3.01	1346	4.31	1481	5.75				
15884	963	1.39	1045	1.86	1115	2.33	1182	2.84	1257	3.45	1397	4.81	1528	6.31				
16328	1051	1.80	1126	2.32	1193	2.83	1253	3.35	1320	3.97	1453	5.38	1576	6.92				
18772	1138	2.29	1209	2.85	1272	3.41	1329	3.97	1384	4.55	151	6.01						
20216	1226	2.86	1292	3.46	1352	4.07	1407	4.67	1458	5.27	1572	6.74						

## 042

Prop Diameter = 42 in.	Maximum RPM = 1351
Tip Speed, FPM = 11.00 x RPM	
Inlet & Outlet Diameter (Area) = 42.44 in. (9.82 sq.ft.)	

Max. Mtr. Fr.	F - Design 1
215	13.00



CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5892	225	0.04	429	0.30	580	0.75												
7856	300	0.09	467	0.39	600	0.82	714	1.38										
9820	375	0.18	513	0.51	635	0.98	738	1.52	829	2.16								
11784	450	0.31	565	0.67	675	1.18	773	1.76	859	2.40	1013	3.94	1161	5.97				
13748	525	0.49	625	0.90	722	1.43	813	2.05	895	2.74	1041	4.28	1171	6.08	1300	8.39		
15712	600	0.72	690	1.19	773	1.74	857	2.39	935	3.12	1075	4.73	1200	6.55	1313	8.58		
17676	675	1.03	757	1.56	828	2.11	905	2.80	978	3.57	1112	5.27	1233	7.13	1343	9.19		
19640	750	1.42	826	2.00	890	2.59	958	3.29	1026	4.09	1153	5.86	1269	7.82				
21604	825	1.88	895	2.53	955	3.17	1013	3.86	1077	4.70	1197	6.54	1309	8.58				
23568	900	2.45	965	3.15	1022	3.85	1074	4.55	1131	5.40	1245	7.31	1351	9.41				
25532	975	3.11	1035	3.87	1090	4.64	1139	5.39	1186	6.18	1294							
27496	1050	3.88	1106	4.70	1158	5.53	1205	6.34	1249	7.16	1347							

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

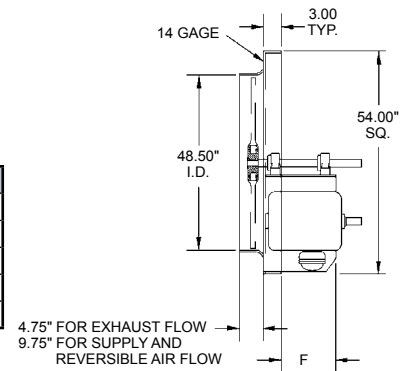
# Belt Drive Fan Data - PNB

Panel Fan

## 048

Prop Diameter = 48 in.	Maximum RPM = 1782
Tip Speed, FPM = 12.57 x RPM	
Inlet & Outlet Diameter (Area) = 48.50 in. (12.83 sq.ft.)	

Max. Mtr. Fr.	F - Design 1	F - Design 2	F - Design 3
184	11.00	—	—
256	—	17.00	—
284 / 286	—	—	26.25
324 / 326	—	—	28.25
364 / 365	—	—	30.75

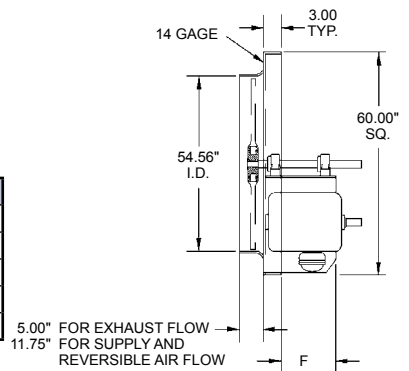


CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7698	197	0.05	376	0.39	508	0.98												
10264	263	0.12	409	0.51	525	1.07	625	1.81										
12830	328	0.23	449	0.67	555	1.28	645	1.99	725	2.82								
15396	394	0.40	495	0.88	591	1.54	676	2.30	751	3.14	886	5.15	1015	7.80				
17962	459	0.63	547	1.17	632	1.86	711	2.68	783	3.58	911	5.59	1024	7.94	1138	11.00		
20528	525	0.95	604	1.56	677	2.27	750	3.13	818	4.08	41	6.18	1050	8.55	1149	11.20		
23094	591	1.35	663	2.04	725	2.75	792	3.66	856	4.66	973	6.88	1079	9.31	1175	12.00		
25660	656	1.85	723	2.62	779	3.38	838	4.30	898	5.35	1009	7.66	1111	10.20				
28226	722	2.46	783	3.30	836	4.14	886	5.04	942	6.14	1047	8.54	1146	11.20				
30792	788	3.20	844	4.11	895	5.03	940	5.95	990	7.05	1089	9.56	1178	12.30				
33358	853	4.06	906	5.05	954	6.06	997	7.05	1038	8.08	1132	10.70						
35924	919	5.08	968	6.14	1014	7.23	1055	8.29	1093	9.36	1179	12.00						

## 054

Prop Diameter = 5 in.	Maximum RPM = 1086
Tip Speed, FPM = 14.14 x RPM	
Inlet & Outlet Diameter (Area) = 54.56 in. (16.24 sq.ft.)	

Max. Mtr. Fr.	F - Design 1	F - Design 2	F - Design 3
184	11.00	—	—
256	—	17.00	—
284 / 286	—	—	26.25
324 / 326	—	—	28.25
364 / 365	—	—	30.75



CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9744	175	0.06	334	0.50	451	1.23												
12992	233	0.15	34	0.65	467	1.35	555	2.29										
16240	292	0.29	399	0.85	494	1.62	574	2.52	645	3.57								
19488	350	0.51	440	1.12	525	1.95	601	2.91	668	3.97	788	6.52	903	9.98				
22736	408	0.80	486	1.48	562	2.36	632	3.39	969	4.53	810	7.08	910	10.10	1011	13.90		
25984	467	1.20	537	1.97	602	2.87	667	3.96	727	5.17	836	7.83	933	10.80	1021	14.20		
29332	525	1.71	589	2.58	644	3.48	704	4.64	761	5.90	865	8.71	959	11.80	1045	15.20		
32480	584	2.34	642	3.31	692	4.28	745	5.45	798	6.77	897	9.70	987	12.90				
35728	642	3.12	696	4.18	743	5.25	788	6.38	838	7.77	931	10.80	1018	14.20				
38976	700	4.05	751	5.21	795	6.37	835	7.54	880	8.93	968	12.10	1051	15.60				
42224	759	5.15	806	6.40	848	7.67	886	8.92	923	10.20	1006	13.50	1086	17.10				
45472	817	6.43	861	7.77	901	9.15	938	10.50	972	11.90	1048	15.20						

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.



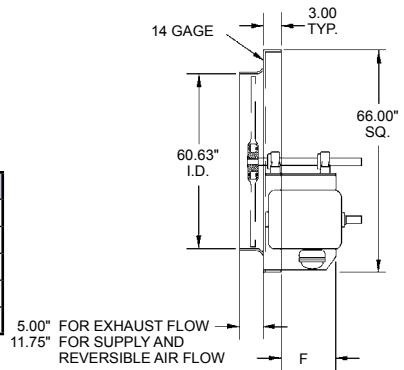
# PNB - Belt Drive Fan Data

Panel Fan

## 060

Prop Diameter = 60 in.	Maximum RPM = 946
Tip Speed, FPM = 15.71 x RPM	
Inlet & Outlet Diameter (Area) = 60.63 in. (20.05 sq.ft.)	

Max. Mtr. Fr.	F - Design 1	F - Design 2	F - Design 3
184	11.00	—	—
256	—	17.00	—
284 / 286	—	—	26.25
324 / 326	—	—	28.25
364 / 365	—	—	30.75

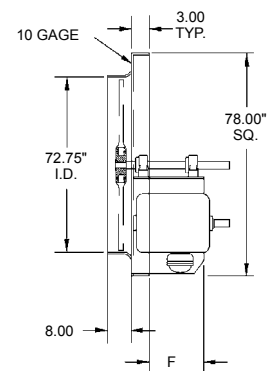


CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
12030	158	0.08	301	0.61	406	1.52												
16040	210	0.19	327	0.80	420	1.67	500	2.83										
20050	263	0.3	359	1.04	444	2.00	516	3.11	580	4.40								
24060	315	0.62	396	1.38	473	2.40	541	3.60	601	4.90	709	8.05	812	12.20				
28070	368	0.99	437	1.83	506	2.91	569	4.19	627	5.59	729	8.74	819	12.40	910	17.10		
32080	420	1.48	483	2.44	541	3.54	600	4.89	654	6.38	753	9.66	840	13.40	919	17.50		
36090	473	2.11	530	3.19	580	4.30	634	5.72	685	7.29	779	10.80	863	14.50	940	18.80		
40100	525	2.89	578	4.09	623	5.28	671	6.72	718	8.36	807	12.00	889	16.00				
44110	578	3.85	627	5.16	669	6.48	709	7.88	754	9.59	838	13.40	917	17.50				
48120	630	5.00	676	6.43	716	7.87	752	9.30	792	11.00	871	14.90	946	19.20				
52130	783	6.35	725	7.90	763	9.47	798	11.00	830	12.60	906	16.70						
56140	735	7.94	775	9.60	811	11.30	844	13.00	875	14.60	943	18.70						

## 072

Prop Diameter = 72 in.	Maximum RPM = 795
Tip Speed, FPM = 18.85 x RPM	
Inlet & Outlet Diameter (Area) = 72.75 in. (28.87 sq.ft.)	

Max. Mtr. Fr.	F - Design 3	Max. Mtr. Fr.	F - Design 3
143 / 145	15.25	324 / 326	30.50
182 / 184	17.00	364 / 365	32.50
213 / 215	20.50	404 / 405	35.00
254 / 256	25.00	444 / 445	40.00
284 / 286	28.00		



CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
17332	135	0.11	259	0.93														
23096	179	0.27	275	1.14	364	2.57												
28870	224	0.53	303	1.51	376	2.88	446	4.76										
34644	269	0.92	336	2.02	398	3.43	458	5.23	517	7.44								
40418	314	1.46	371	2.68	426	4.20	479	5.98	530	8.10	631	13.40						
46192	359	2.18	410	3.55	458	5.16	505	7.01	551	9.11	641	14.30	728	20.60				
51966	404	3.10	449	4.63	493	6.34	535	8.29	576	10.40	656	15.40	737	21.60				
57740	448	4.26	490	5.93	528	7.73	568	9.81	606	12.10	679	17.10	751	23.10				
63514	493	5.67	531	7.49	567	9.45	602	11.60	637	13.90	705	19.10	771	25.00				
69288	538	7.35	573	9.34	606	11.40	638	13.60	671	16.10	734	21.50	795	27.50				
75062	583	9.35	616	11.50	646	13.70	676	16.10	706	18.60	765	24.20						
80836	628	11.70	658	14.00	687	16.40	715	18.90	742	21.40								

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

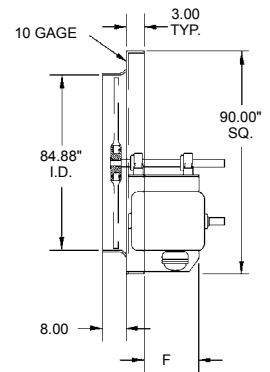
# Belt Drive Fan Data - PNB

Panel Fan

## 084

Prop Diameter = 84 in.	Maximum RPM = 682
Tip Speed, FPM = 21.99 x RPM	
Inlet & Outlet Diameter (Area) = 84.88 in. (39.29 sq.ft.)	

Max. Mtr. Fr.	F - Design 3	Max. Mtr. Fr.	F - Design 3
143 / 145	15.25	324 / 326	30.50
182 / 184	17.00	364 / 365	32.50
213 / 215	20.50	404 / 405	35.00
254 / 256	25.00	444 / 445	40.00
284 / 286	28.00		

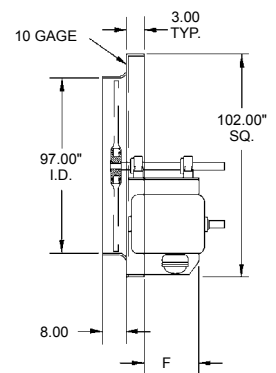


CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
23574	115	0.16	222	1.27														
31432	154	0.37	236	1.55	312	3.50												
39290	192	0.72	260	2.05	322	3.92	383	6.48										
47148	231	1.25	288	2.75	341	4.67	393	7.12	444	10.10								
55004	269	1.99	318	3.64	365	5.72	410	8.14	455	11.00	541	18.20						
62864	307	2.97	351	4.83	392	7.02	433	9.54	472	12.40	550	19.40	624	28.00				
70722	346	4.22	385	6.29	422	8.62	459	11.30	494	14.20	562	20.90	632	29.40				
78580	384	5.79	420	8.07	453	10.50	487	13.40	519	16.40	582	23.30	644	31.40				
86430	423	7.71	455	10.20	486	12.90	516	15.80	546	19.00	604	26.00	661	34.10				
94296	461	10.00	491	12.70	520	15.60	547	18.60	575	22.00	630	29.30	682	37.40				
102154	500	12.70	528	15.60	554	18.70	579	21.90	605	25.30	656	32.90						
110012	538	15.90	564	19.00	589	22.30	613	25.70	636	29.10								

## 096

Prop Diameter = 96 in.	Maximum RPM = 596
Tip Speed, FPM = 25.13 x RPM	
Inlet & Outlet Diameter (Area) = 97.00 in. (51.32 sq.ft.)	

Max. Mtr. Fr.	F - Design 3	Max. Mtr. Fr.	F - Design 3
143 / 145	15.25	324 / 326	30.50
182 / 184	17.00	364 / 365	32.50
213 / 215	20.50	404 / 405	35.00
254 / 256	25.00	444 / 445	40.00
284 / 286	28.00		



CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
30792	101	0.20	194	1.65														
41056	135	0.48	207	2.02	273	4.57												
51320	168	0.95	227	2.68	282	5.12	335	8.46										
61584	202	1.63	252	3.59	298	6.10	344	9.29	388	13.20								
71848	235	2.59	278	4.76	320	7.47	359	10.60	398	14.40	473	23.80						
82112	269	3.87	307	6.3	343	9.17	379	12.50	413	16.20	481	25.40	546	36.60				
92376	303	5.51	337	8.22	369	11.30	401	14.70	432	18.50	492	27.30	553	38.40				
102640	336	7.56	367	10.50	396	13.70	426	17.40	454	21.40	509	30.40	563	41.00				
112904	370	10.10	398	13.30	425	16.80	452	20.60	478	24.80	528	33.90	578	44.50				
123168	404	13.10	430	16.60	455	20.30	478	24.20	503	28.70	551	38.20	596	48.80				
133432	437	16.60	462	20.40	485	24.40	507	28.60	530	33.10	574	43.00						
143696	471	20.80	494	24.90	515	29.10	536	33.50	556	38.10								

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

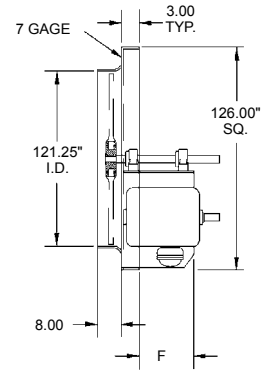
# PNB - Belt Drive Fan Data

Panel Fan

## 120

Prop Diameter = 120 in.	Maximum RPM = 477
Tip Speed, FPM = 31.42 x RPM	
Inlet & Outlet Diameter (Area) = 121.25 in. (80.18 sq.ft.)	

Max. Mtr. Fr.	F - Design 3	Max. Mtr. Fr.	F - Design 3
143 / 145	15.25	324 / 326	30.50
182 / 184	17.00	364 / 365	32.50
213 / 215	20.50	404 / 405	35.00
254 / 256	25.00	444 / 445	40.00
284 / 286	28.00		

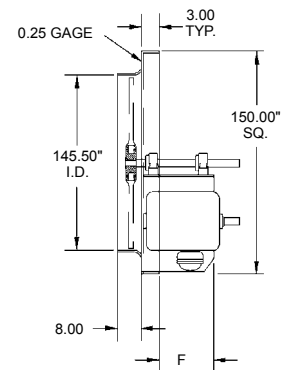


CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
48084	81	0.32	155	2.58														
64112	108	0.76	165	3.16	218	7.14												
80140	134	1.47	182	4.18	225	8.00	268	13.20										
96168	161	2.55	201	5.60	239	9.53	275	14.50	310	20.70								
112196	188	4.05	222	7.43	256	11.70	287	16.60	318	22.50	378	37.20						
128224	215	6.04	246	9.85	275	14.30	303	19.40	330	25.30	385	39.60	437	57.10				
144252	242	8.60	269	12.80	295	17.60	321	23.00	345	28.90	393	42.60	442	60.10				
160280	269	11.80	294	16.40	317	21.40	341	27.20	363	33.50	407	47.50	451	64.00				
176308	296	15.70	318	20.80	340	26.20	361	32.20	382	38.70	423	53.00	463	69.50				
192336	323	20.40	344	25.90	364	31.70	382	37.80	403	44.80	441	59.70	477	76.20				
208364	350	25.90	369	31.90	388	38.10	405	44.60	423	51.70	459	67.20						
224392	376	32.40	395	38.80	412	45.40	429	52.30	445	59.40								

## 144

Prop Diameter = 144 in.	Maximum RPM = 386
Tip Speed, FPM = 37.70 x RPM	
Inlet & Outlet Diameter (Area) = 145.50 in. (115.47 sq.ft.)	

Max. Mtr. Fr.	F - Design 3	Max. Mtr. Fr.	F - Design 3
143 / 145	15.25	324 / 326	30.50
182 / 184	17.00	364 / 365	32.50
213 / 215	20.50	404 / 405	35.00
254 / 256	25.00	444 / 445	40.00
284 / 286	28.00		



CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
69246	67	0.46	129	3.72														
92328	90	1.09	138	4.55	182	10.30												
115410	112	2.12	151	6.02	188	11.50	223	19.00										
138492	134	3.67	168	8.06	199	13.70	229	20.90	259	29.70								
161574	157	5.83	185	10.70	213	16.80	239	23.90	265	32.40	315	53.60						
184656	179	8.70	205	14.20	229	20.60	252	28.00	275	36.40	321	57.00	364	82.20				
207738	202	12.40	225	18.50	246	25.30	267	33.10	288	41.60	328	61.40	369	86.50				
230820	224	17.00	245	23.70	264	30.90	284	39.20	303	48.20	340	68.40	376	92.20				
253902	246	22.60	265	29.90	283	37.70	301	46.30	318	55.70	352	76.30	386	100.00				
276984	269	29.40	286	37.30	303	45.70	319	54.50	335	64.50	367	86.00						
300066	291	37.30	308	45.90	323	54.90	338	64.20	353	74.40	382	96.70						
323148	314	46.60	329	55.90	343	65.40	357	75.40	371	85.60								

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.

### General Ventilation

General ventilation is the movement of a volume of air through a large space where localized concentrations of contamination due to heat and fumes are not sufficient to represent a problem. Local health department regulations vary concerning general ventilation requirements. If there are no specific code requirements, this table of recommended air changes can serve as a guide to good general ventilation.

TYPE OF SPACE TO BE VENTILATED	RATE OF CHANGE NO. OF MIN./ AIR CHANGE
Auditorium	5
Bakeries	3
Banquet Halls	3
Boiler Rooms	1
Bowling Alley	5
Classrooms	6
Cleaning & Drying	5
Churches	5
Creameries	6
Dining Rooms	5
Dormitories	6
Engine Rooms	2
Factories	6
Foundries	5
Garages	6
Kitchens	2
Laboratories	5

TYPE OF SPACE TO BE VENTILATED	RATE OF CHANGE NO. OF MIN./ AIR CHANGE
Laundries	3
Lodge rooms	5
Machine Shop	6
Mills	5
Offices	5
Packing Houses	3
Plating Rooms	3
Printing Plants	4
Projection Booths	1
Recreation Rooms	5
Residences	4
Restrooms	5
Sales Rooms	6
Ship Holds	10
Stores	5
Transfer Rooms	3
Tunnels	10
Warehouses	7

### Temperature Limitations

COMPONENT	AMBIENT TEMPERATURE °F	
	MIN.	MAX.
Standard Bearings and Grease	-40°F	250°F
Standard Belts and Drives	-40°F	150°F
Standard Paint	-50°F	275°F
Prop or Wheel	-112°F	250°F
Motor w/ Class B Insulation	-10°F	104°F
Motor w/ Class F Insulation	-10°F	149°F
Motor w/ Class H Insulation	-10°F	194°F

# MBP - Sample Specifications

## Panel Fan

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- 1.1 Fans shall be tested and rated in accordance with AMCA air and sound methods and standards.
- 1.2 Fans shall conform to AMCA 99 Standards.
- 1.3 All motors and electrical components shall comply to NEMA, UL or other governing body.

### Belt Drive - Series MBP

#### PRODUCT

- 2.1 The fan shall be of an axial flow propeller, panel fan mount, belt driven configuration.
- 2.2 The fan shall be belt driven with the motor mounted directly in the air stream.
  - 2.2.1 The drive sheaves shall be cast iron with appropriately sized and aligned belt to attain 1.5 service factor.
- 2.3 Fan panel assembly shall be of all welded construction, and shall be constructed completely of carbon steel, aluminum or stainless steel as indicated on the fan schedule.
  - 2.3.1 The fan panel shall have an integrally die formed, deep shroud for smooth air entry into the propeller.
  - 2.3.2 The fan's motor and bearing support consist of a rigid steel formed structure welded directly to the fan panel.
- 2.4 The fan shaft shall be steel, ground for precision fit to bearings and keyed for driving the impeller and drive sheave.
- 2.5 Fan bearings shall be cast iron housing, self-aligning ball, re-lubricatable bearings.
  - 2.5.1 Fan bearings shall have a minimum  $L_{10}$  life as defined by AFBMA of 35,000 hours.
- 2.6 The propeller shall be constructed of sheet metal in a widebladed configuration. Blade sections are attached to the heavy weight steel spider with high tensile strength steel fasteners. The propellers are secured to the fan shaft by means of malleable split taperlock bushings and hubs.
- 2.7 The motor mounting base is configured to allow for various frame sizes and designed to allow for belt tension adjustment.
- 2.8 The fan mounting panel assembly shall be coated with enamel as standard or optional other available coating as made available by coating suppliers and as indicated on the fan schedule. The propeller is uncoated.
- 2.9 The final complete fan assembly is vibration tested and balanced as per AMCA 204, grad BV-3.
- 3.0 The motor shall be of a typical NEMA-T frame type and typical with the motor industry. The electric motor shall be as indicated on the fan schedule and as available from the motor vendors.

#### PRINCIPALS AND FUNCTIONS

- 4.1 Fan performance rating shall be based on methods as developed by AMCA standard 210.
- 4.2 Form, function and application of the fan shall be as defined by ASHRAE, AMCA and SMACNA in regard to air system design in compatibility with the fan.

#### ACCESSORIES

- 5.1 The fan shall have front and/or rear safety guards as indicated on the fan schedule.
- 5.2 The fan shall be of a fixed, reversed air flow configuration with a double entry bell on the fan panel as indicated on the fan schedule.
- 5.3 The fan shall be of a reversible air flow configuration for supply or exhaust with a double entry bell on the fan panel as indicated on the fan schedule.

- 1.1 Fans shall be tested and rated in accordance with AMCA air and sound methods and standards.
- 1.2 Fans shall conform to AMCA 99 Standards.
- 1.3 All motors and electrical components shall comply to NEMA, UL or other governing body.

## Belt Drive - Series PNB

### PRODUCT

- 2.1 The fan shall be of an axial flow propeller, panel fan mount, belt driven configuration.
- 2.2 The fan shall be belt driven with the motor mounted directly in the air stream.
  - 2.2.1 The drive sheaves shall be cast iron with appropriately sized and aligned belt to attain 1.5 service factor.
- 2.3 Fan panel assembly shall be of all welded construction, and shall be constructed completely of carbon steel, aluminum or stainless steel as indicated on the fan schedule.
  - 2.3.1 The fan panel shall have an integrally die formed, deep shroud for smooth air entry into the propeller.
  - 2.3.2 The fan's motor and bearing support consist of a rigid steel formed structure welded directly to the fan panel.
- 2.4 The fan shaft shall be steel, ground for precision fit to bearings and keyed for driving the impeller and drive sheave.
- 2.5 Fan bearings shall be cast iron housing, self-aligning ball, re-lubricatable bearings.
  - 2.5.1 Fan bearings shall have a minimum  $L_{10}$  life as defined by AFBMA of 35,000 hours.
- 2.6 The propeller shall be constructed of cast aluminum blades fastened directly to a cast aluminum hub assembly. The hub is designed to incorporate a taper lock bushing and keyed directly to the fan shaft.
- 2.7 The motor mounting base is configured to allow for various frame sizes and designed to allow for belt tension adjustment.
- 2.8 The fan mounting panel assembly shall be coated with enamel as standard or optional other available coating as made available by coating suppliers and as indicated on the fan schedule. The propeller is uncoated.
- 2.9 The final complete fan assembly is vibration tested and balanced as per AMCA 204, grad BV-3.
- 2.10 The motor shall be of a typical NEMA-T frame type and typical with the motor industry. The electric motor shall be as indicated on the fan schedule and as available from the motor vendors.

### PRINCIPALS AND FUNCTIONS

- 4.1 Fan performance rating shall be based on methods as developed by AMCA standard 210.
- 4.2 Form, function and application of the fan shall be as defined by ASHRAE, AMCA and SMACNA in regard to air system design in compatibility with the fan.

### ACCESSORIES

- 5.1 The fan shall have front and/or rear safety guards as indicated on the fan schedule.
- 5.2 The fan shall be of a fixed, reversed air flow configuration with a double entry bell on the fan panel as indicated on the fan schedule.
- 5.3 The fan shall be of a reversible air flow configuration for supply or exhaust with a double entry bell on the fan panel as indicated on the fan schedule.

## Direct Drive - Series PND

### PRODUCT

- 2.1 The fan shall be of an axial flow propeller, panel fan mount, direct driven configuration.
- 2.2 The fan shall be direct driven with the propeller mounted to the motor shaft.
- 2.3 Fan panel assembly shall be of all welded construction, and shall be constructed completely of carbon steel, aluminum or stainless steel as indicated on the fan schedule.
  - 2.3.1 The fan panel shall have an integrally die formed, deep shroud for smooth air entry into the propeller.
  - 2.3.2 The fan's motor support consist of a rigid steel formed structure welded directly to the fan panel.
- 2.4 The propeller shall be constructed of cast aluminum blades fastened directly to a cast aluminum hub assembly. The hub is designed to incorporate a taper lock bushing and keyed directly to the motor shaft.
- 2.5 Fan mounting panel assembly shall be coated with enamel as standard or optional other available coating as made available by coating suppliers and as indicated on the fan schedule. The propeller is uncoated.
- 2.6 The final complete fan assembly is vibration tested and balanced as per AMCA 204, grad BV-3.
- 2.7 The motor shall be of a typical NEMA-T frame type and typical with the motor industry availability. The electric motor shall be as indicated on the fan schedule and is available from the motor vendors.

### PRINCIPALS AND FUNCTIONS

- 3.1 Fan performance rating shall be based on methods as developed by AMCA standard 210.
- 3.2 Form, function and application of the fan shall be as defined by ASHRAE, AMCA and SMACNA in regard to air system design in compatibility with the fan.

### ACCESSORIES

- 4.1 The fan shall have front and/or rear safety guards as indicated on the fan schedule.
- 4.2 The fan shall be of a fixed, reversed air flow configuration with a double entry bell on the fan panel as indicated on the fan schedule.
- 4.3 The fan shall be of a reversible air flow configuration for supply or exhaust with a double entry bell on the fan panel as indicated on the fan schedule.

# One Year Limited Warranty

Panel Fan - MBP/PND/PNB

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## What Products Are Covered

PennBarry Commercial and Industrial Fans (each, a "PennBarry Product")

## One Year Limited Warranty For PennBarry Products

PennBarry warrants to the original commercial purchaser that the PennBarry Products will be free from defects in material and workmanship for a period of one (1) year from the date of shipment.

## Exclusive Remedy

PennBarry will, at its option, repair or replace (without removal or installation) the affected components of any defective PennBarry Product; repair or replace (without removal or installation) the entire defective PennBarry Product; or refund the invoiced price of the PennBarry Product. In all cases, a reasonable time period must be allowed for warranty repairs to be completed.

## What You Must Do

In order to make a claim under these warranties:

1. You must be the original commercial purchaser of the PennBarry Product.
2. You must promptly notify us within the warranty period of any defect and provide us with any substantiation that we may reasonably request.
3. The PennBarry Product must have been installed and maintained in accordance with good industry practice and any specific PennBarry recommendations.

## Exclusions

These warranties do not cover defects caused by:

1. Improper design or operation of the system into which the PennBarry Product is incorporated.
2. Improper installation.
3. Accident, abuse or misuse.
4. Unreasonable use (including any use for non-commercial purposes, failure to provide reasonable and necessary maintenance as specified by PennBarry, misapplication and operation in excess of stated performance characteristics).
5. Components not manufactured by PennBarry.

## Limitations

1. In all cases, PennBarry reserves the right to fully satisfy its obligations under the Limited Warranties by refunding the invoiced price of the defective PennBarry Product (or, if the PennBarry Product has been discontinued, of the most nearly comparable current product).
2. PennBarry reserves the right to furnish a substitute or replacement component or product in the event a PennBarry Product or any component of the product is discontinued or otherwise unavailable.
3. PennBarry's only obligation with respect to components not manufactured by PennBarry shall be to pass through the warranty made by the manufacturer of the defective component.

## General

**The foregoing warranties are exclusive and in lieu of all other warranties except that of title, whether written, oral or implied, in fact or in law (including any warranty of merchantability or fitness for a particular purpose).**

**PennBarry hereby disclaims any liability for special, punitive, indirect, incidental or consequential damages, including without limitation lost profits or revenues, loss of use of equipment, cost of capital, cost of substitute products, facilities or services, downtime, shutdown or slowdown costs.**

The remedies of the original commercial purchaser set forth herein are exclusive and the liability of PennBarry with respect to the PennBarry Products, whether in contract, tort, warranty, strict liability or other legal theory shall not exceed the invoiced price charged by PennBarry to its customer for the affected PennBarry Product at the time the claim is made.

Inquiries regarding these warranties should be sent to: PennBarry, 1401 North Plano Road, Richardson, TX 75081.

# OTHER PENNBARRY PRODUCTS

## CENTRIFUGAL PRODUCTS



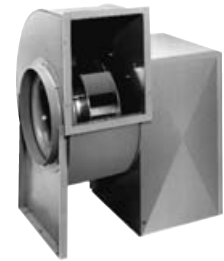
**Domex**  
Centrifugal  
Roof Exhausters



**Fumex Fatrap**  
Kitchen Hood Centrifugal  
Roof Exhausters



**Zephyr**  
Ceiling and Inline Fans



**Dynamo**  
Centrifugal Blowers



**Centrex Inliner**  
Centrifugal Inline Fans



**LC Dynafan**  
Low Contour Centrifugal  
Roof Exhausters

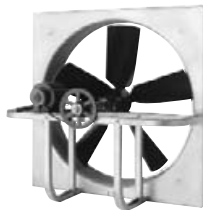


**ESI**  
Efficient Silent  
Inline Fan



**Fume Exhaust**  
Curb Mounted  
Centrifugal Fans

## AXIAL / GRAVITY PRODUCTS



**Breezeway**  
Propeller Wall Fans



**HI-EX**  
Power Roof Ventilator



**Tubeaxial**  
Inline Fans



**Vaneaxial**  
Inline Fans



**Powered Airette**  
Axial Roof Ventilators



**Airette**  
Gravity Intake/Relief Hood



**Domex Axial**  
Axial Roof Ventilators



**Axcentrix**  
Bifurcator Fan

For more information contact your local PennBarry Sales  
Manufacturer Representative or visit us at [www.PennBarry.com](http://www.PennBarry.com)

