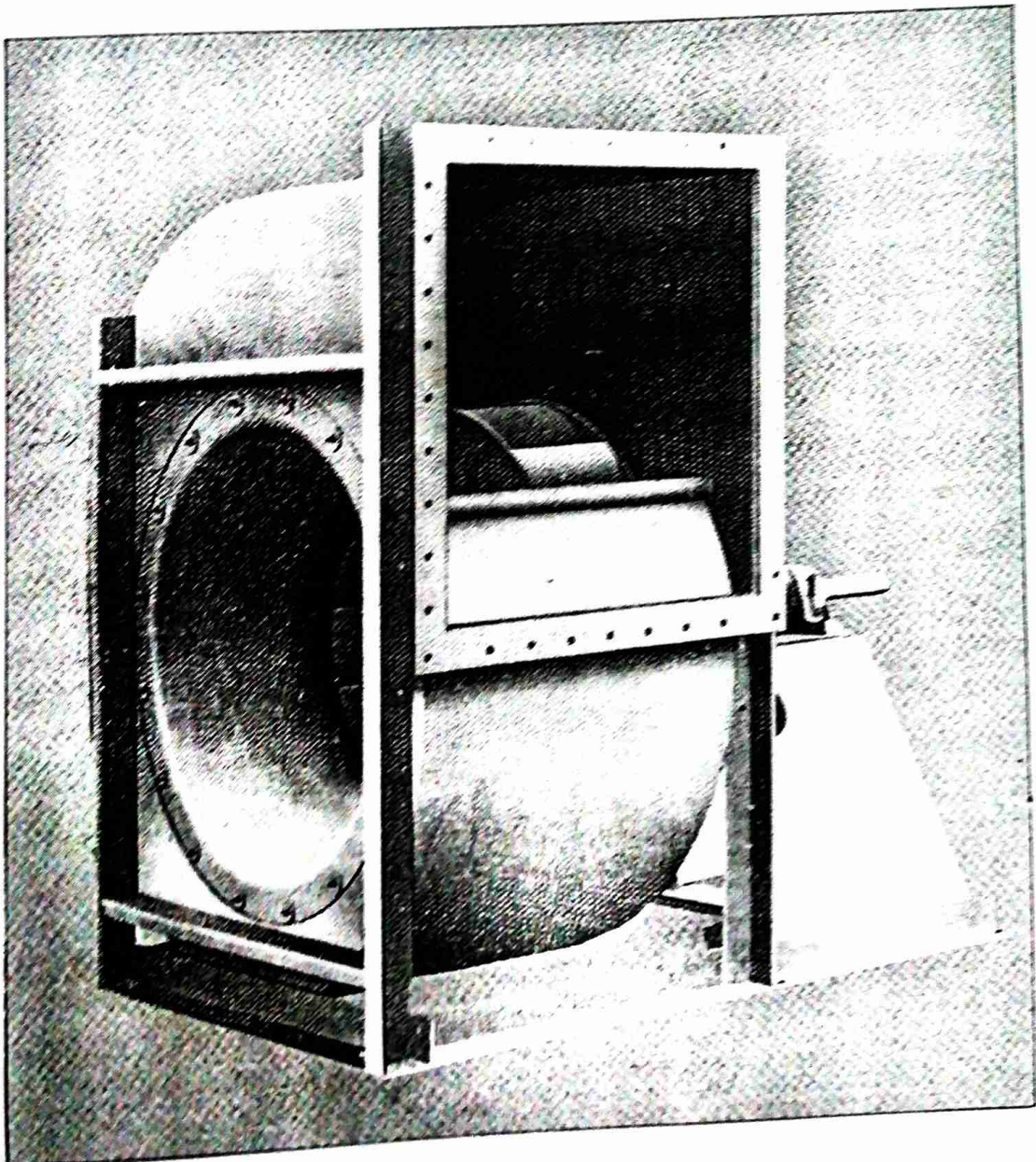


Air Blowers Industries Sdn Bhd

Centrifugal Fans



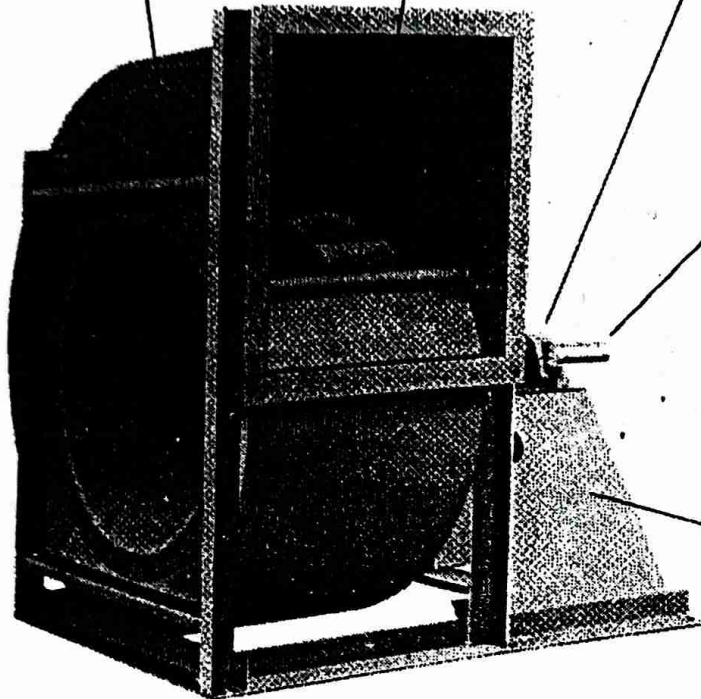
Housing & Framing
Rugged heavy gauge all welded steel housing with substantial framing sections for maximum rigidity.

Laminar Wheel
Superior combination of high efficiency, stable operation and low noise level.

Bearings
Heavy duty precision ball or roller bearings sized for generous B-10 life.

Shafts
Turned ground and polished or fully machined to close dimensional tolerance.

Heavy Duty Structural Bearing Pedestal



Classes of Construction

Arr'gt	Fan Size Range	
	Class I & II	Class III
A-1 - SISW	135 - 807	222 - 650
A-3 - SISW	182 - 807	222 - 650
A-9 - SISW	135 - 600	222 - 600
A-10 - SISW	135 - 365	N.A.
A-3 - DIDW	182 - 807	222 - 650

Shafts and Bearings

Shafts

Selected to have suitable strength and operate well below the first critical speed for each maximum class condition.

Bearings

Antifriction, grease lubricated, self aligning ball or roller types, solid or split housing, manufactured to internationally adopted standards by companies having worldwide acceptance and support services. Bearings are selected for continuous belt driven operation with a generous bearing life throughout each full class range.

Capacities

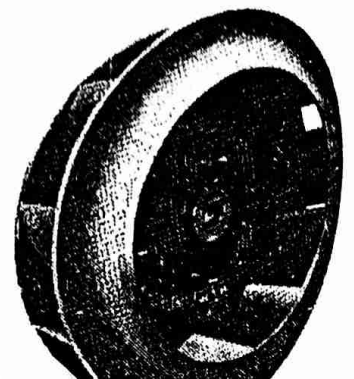
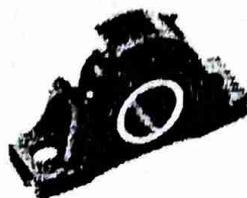
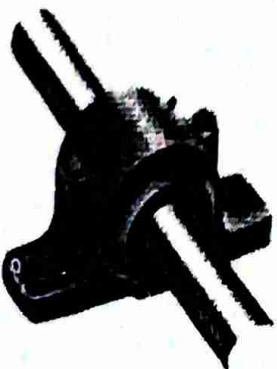
500 CFM to 280,000 CFM

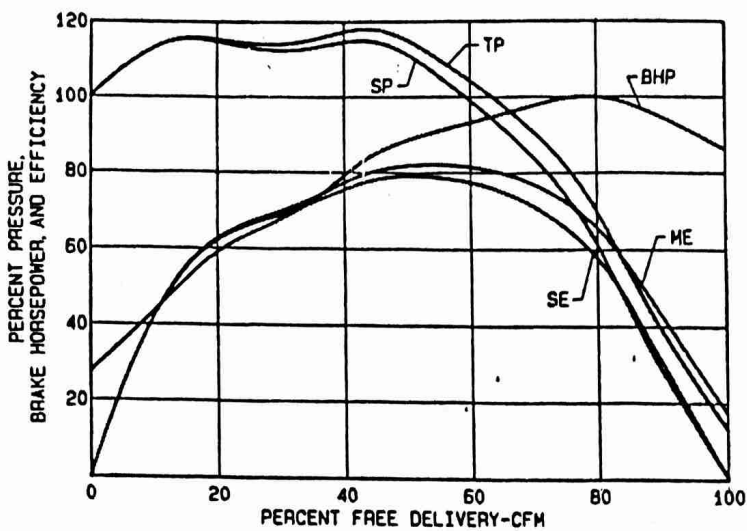
Pressures

Class I to 9" S.P. (Size 1350 - 3650)
 Class I to 8" S.P. (Size 1025 - 8075)
 Class II to 13" S.P. (Size 1350 - 8075)
 Class III to 21" S.P. (Size 2225 - 6600)

Temperatures

Operating Temperatures to 800° F
 See Table 2, Page 6





- High Efficiency
- Stable Operation

CLASSES OF CONSTRUCTION

Arrangement	FAN SIZE RANGE	
	Class I & II	Class III
A/1 - SISW	1350 - 8075	2225 - 8600
A/9 - SISW	1350 - 8000	2225 - 6000
A/10 - SISW	1350 - 3650	N.A.

CAPACITIES

600 CFM to 140,000 CFM

PRESSURES

CLASS I to 7" S.P. (SIZE 1350 - 8075)
 CLASS II to 11" S.P. (SIZE 1350 - 8075)
 CLASS III to 19" S.P. (SIZE 2225 - 8600)

TEMPERATURES

OPERATING TEMPERATURES to 800° F.
 SEE TABLE 2, PAGE 7

Fan selection at elevated temperature and altitude.

High Temperature

Fans selected for high temperature service must fall within the limits for a particular arrangement as shown in Table 2. For selection, performance and physical limits must be corrected as in the following example.

TABLE 2

High Temperature Operating Limits		
ARRG'T	WITHOUT COOLING WHEEL	WITH COOLING WHEEL
1 SW	300° F	650° F
10 SW	150° F	N/A
9 SW	300° F	650° F

*With cooling wheel and shaft seal to 800° F.

Example Selection

At fixed RPM the CFM is constant. The SP and BHP vary directly as the air or gas density. When air density varies from standard, due to temperature or altitude changes, the Air Density Correction Factor from Table 3 is applied to selection as shown in the following example. For density changes due to gas composition or humidity the Correction Factor = $.075 \div \text{Gas Density}$.

Select a fan for the operating condition of 7500 CFM at 2½" SP at 500° F and 0' altitude.

- The CFM is constant for constant RPM.
- Selection SP =
 Operating SP x Air Density Correction Factor.
 From Table 3 the Air Density Correction Factor is 1.81. Therefore, Selection SP = 2½" x 1.81 = 4½" SP.
- For 7500 CFM at 4½" SP an efficient selection would be a size 2450 at 1505 RPM and 7.13 BHP. (See Performance Table, Page 15.)
- The selection BHP must be corrected to operating conditions.

Operating BHP =

$$\text{Selection BHP} \div \text{Air Density Correction Factor} = 7.13 \div 1.81 = 3.94 \text{ BHP.}$$

After the size and performance is determined the Wheel and Shaft must be checked independently for suitable Class of Construction and maximum allowable RPM for the operating temperature of the fan.

- The maximum safe operating speed per Class of Construction for a size 2450 fan operating at 500° F is determined by multiplying the Wheel & Shaft Maximum Speed at 70° F Table 1 page 6, by the Safe Speed Deration Factor for 500° F in Table 4.
 Class II max. allowable wheel speed = 2208 x .82 = 1810 RPM
 Class II max. allowable shaft speed = 2208 x .97 = 2142 RPM

Since the fan selection speed of 1505 RPM is below both the maximum allowable wheel and shaft speeds calculated, the Class II fan is a suitable selection.

TABLE 4

Safe Speed Deration Factors		
TEMP° F	STEEL WHEEL	STEEL SHAFT
-50 to 150	1.0	1.0
200	.93	1.0
300	.89	1.0
400	.86	.99
500	.82	.97
600	.79	.96
700	.76	.95
800	.68	.94

Fan Selection Tables

Performance ratings shown in the tables for Series 5000, Design 5020, BI FANS are based on standard air density of .075 pounds per cubic foot at the fan inlet. Standard air is dry air at 70° F and 29.92" Hg barometric pressure.

The data does not include the effects of accessories such as inlet dampers, outlet dampers, screens, or other components in the air stream.

TABLE 3

Air Density Correction Table							
AIR TEMP °F	ELEVATION (Feet) above Sea Level						
	0	500	1000	2000	3000	4000	5000
-40°	.79	.81	.82	.85	.88	.92	.95
0°	.87	.88	.90	.93	.97	1.00	1.04
40°	.94	.96	.98	1.01	1.05	1.09	1.13
70°	1.00	1.02	1.04	1.08	1.12	1.16	1.20
100°	1.06	1.08	1.10	1.14	1.18	1.22	1.27
140°	1.13	1.15	1.17	1.22	1.26	1.31	1.36
180°	1.21	1.23	1.25	1.30	1.35	1.40	1.45
200°	1.25	1.27	1.29	1.34	1.39	1.44	1.50
250°	1.34	1.36	1.39	1.44	1.49	1.55	1.61
300°	1.43	1.46	1.49	1.54	1.60	1.66	1.72
350°	1.53	1.56	1.58	1.64	1.71	1.77	1.84
400°	1.62	1.65	1.68	1.75	1.81	1.88	1.95
450°	1.72	1.75	1.78	1.85	1.92	1.99	2.06
500°	1.81	1.84	1.88	1.95	2.02	2.10	2.18
600°	2.00	2.04	2.07	2.15	2.23	2.32	2.40
700°	2.19	2.23	2.27	2.35	2.44	2.53	2.63
800°	2.38	2.42	2.46	2.56	2.65	2.75	2.86