Table 2. Air Duct Velocities for Forced Draft

Static Pressures	Velocity in Main Air Duct 5 Per Cent Static Pressure	Velocity in Main Air Duct 10 Per Cent Static Pressure
2	1300	1800
2½	1400	2000
3	1550	2200
3½	1700	2400
4	1800	2550
4½	1900	2700
5	2000	2850
5½	2100	3000
6	2200	3100
6½	2300	3250
7	2400	3350

From Recommendations for the Installation of Stoker Fans by the Stoker and Fan Manufacturers' Association:

The area of the main air ducts shall be determined by using a velocity in the ducts based on a velocity pressure of from 5 per cent to a maximum of 10 per cent of the static pressure.

The area of the branch air ducts leading to boilers should be such that the velocity will not be more than two-thirds of that in the main ducts.

The above table is based on a weight of air of 0.075 lb. per cu. ft. which corresponds to a temperature of 68 deg. fahr., a barometric pressure 29.92 in. (sea level) and 50 per cent relative humidity. (For higher elevations or temperatures, the above velocities may be increased 1 per cent for each 500 ft. increase in elevation, add 1 per cent for each 10 deg. fahr. increase in temperature.)

It is desirable to have the duct work as short and straight as possible and for the class of installations contemplated under this heading 2500 ft. per minute is a satisfactory velocity for the air through the duct work as a maximum.

Table 3. For Forced Draft Blowers

Based on 40 cu. ft. of air per minute per square foot of grate

No. 1 Buckwheat Coal						No. 2 and 3 Buckwheat Coal				
Grate Area Sq. Ft.	Size of Blower Outlet In.	C.f.m.	Static Press. In.	Motor Hp.	Speed R.p.m.	Size of Blower Outlet In.	C.f.m.	Press. In.	Motor Hp.	Speed R.p.m.
4	4	160	0.25	1/15	1750	....	.....	.....	.....	.....
6	6	240	0.51	1/6	1150	....	.....	.....	.....	.....
10	6	400	0.75	¼	1750	8	400	1.14	½	1750
12	6	480	0.68	¼	1750	9	550	1.23	½	1750
16	8	700	0.76	⅓	1750	9	700	1.04	½	1750
20	9	800	0.91	½	1750	8	800	1.25	¾	1750
24	9	960	0.65	½	1750	9	960	1.22	¾	1750
30	9	1200	0.93	¾	1750	12	1300	1.25	¾	1150
36	11	1440	0.72	½	1150	....	.....	.....	.....	.....
40	9	1600	1.2	1½	1750	9	1600	1.22	1½	1750

Table 4. Capacities and Dimensions of Propeller Type Forced Draft Blowers

Outside Diameter of Fan Housing Inches	Motor H.P.	Cubic Feet per Minute at Various Static Pressures						
		0.10″	0.15″	0.20″	0.25″	0.50″	0.75″	1.00″
12	⅛	1100	1050	950	850	300	.....	.....
14	¼	1600	1550	1500	1450	750	450	.....
16	½	2550	2450	2350	2250	1450	1100	800
18	¾	3300	3250	3200	3150	2800	2300	1500
21	1	4350	4250	4150	4050	3500	2750	2000
24	1½	6300	6200	6100	6000	5500	4900	4100
27	2	8400	8300	8200	8100	7500	6800	6100

Table 5. Capacities and Dimensions of Steam Turbine Driven Propeller Type Forced Draft Fans

Outside Diameter of Fan Housing Inches	R.P.M.	Cubic Feet per Minute at Various Static Pressures								
		0.25″	0.50″	0.75″	1.00″	1.25″	1.50″	1.75″	2.00″	2.50″	3.00″
16	4000	3200	3050	2900	2800	2650	2450	2200	1950	.....	.....
	5000	4100	4000	3850	3700	3600	3450	3300	3100	2700	2100
18	3600	5350	5150	4950	4700	4400	4000	3650	3300	2650	.....
	4500	7000	6800	6600	6450	6250	6050	5800	5600	5100	4550
18	3800	5700	5550	5350	5100	4850	4600	4300	4000	3300	.....
	4700	7300	7150	7000	6800	6600	6450	6250	6000	5600	5000
21	3400	6350	6150	5950	5700	5450	5150	4800	4400	3550	.....
	4000	7550	7400	7250	7100	6850	6600	6400	6100	5500	4700
21	3600	6700	6570	6400	6250	5950	5700	5400	5050	4250	3450
	4500	8400	8350	8250	8100	8000	7800	7600	7350	6850	6200
22	3300	7800	7550	7300	7000	6700	6400	6050	5700	5000	4000
	4100	9900	9700	9450	9200	9000	8700	8400	8150	7500	6900
22	3500	8800	8050	7800	7500	7250	6950	6650	6350	5700	4850
	4300	10300	10050	9850	9650	9450	9250	9000	8750	8200	7600
25	3100	9700	9450	9150	8800	8500	8100	7800	7400	6650	5900
	3600	11350	11200	10850	10650	10400	10000	9750	9500	8850	8150
25	3400	10700	10450	10150	9850	9500	9150	8850	8500	7900	7250
	4200	13000	12800	12600	12300	12200	11950	11700	11450	10900	10350
29	3200	15100	14800	14300	14000	13500	13000	12500	11700	10700	9600
	3800	18200	17800	17500	17100	16800	16500	16100	15600	14500	13600
32	3200	18400	18250	18100	17900	17650	17350	17050	16750	16000	15000
	3600	20500	20400	20300	20200	20000	19800	19550	19400	18900	18200