

Fresh Air Intake Ventilators – Models TIV

Fresh Air Intake Ventilators have a 2 to 1 ratio of hood perimeter opening to throat area. Maximum design velocity through the hood opening is only 600 fpm to reduce entrainment of rain or snow in incoming air. The maximum throat design velocity is 1200 fpm.

THROAT SIZE A X B	HOOD SIZE			CFM @ IN. W.G.			THROAT SIZE A X B	HOOD SIZE			CFM @ IN. W.G.			THROAT SIZE A X B	HOOD SIZE			CFM @ IN. W.G.		
	C	D	E	.05	.10	.20		C	D	E	.05	.10	.20		C	D	E	.05	.10	.20
12							16 x 24	31	39	9	1,790	2,531	3,580	20 x 80	46	106	11	7,669	10,845	15,337
12 x 12	21	21	7	685	969	1,307	16 x 28	32	44	9	2,070	2,927	4,140	20 x 84	46	110	11	7,838	11,085	15,677
12 x 14	22	24	7	801	1,133	1,602	16 x 30	32	46	9	2,287	3,235	4,575	20 x 96	47	123	11	9,171	12,969	18,341
12 x 16	22	26	7	912	1,289	1,824	16 x 36	33	53	9	2,814	3,980	5,629	20 x 108	48	136	11	10,034	14,190	20,068
12 x 18	23	29	7	1,058	1,496	2,115	16 x 40	33	57	9	3,046	4,308	6,093	20 x 120	49	149	11	11,463	16,211	22,927
12 x 20	24	32	7	1,177	1,664	2,354	16 x 42	33	60	9	3,236	4,576	6,472	22						
12 x 22	24	34	7	1,254	1,774	2,509	16 x 48	35	67	9	3,684	5,210	7,368	22 x 22	39	39	11	2,303	3,257	4,606
12 x 24	25	37	7	1,402	1,983	2,804	16 x 54	36	74	9	3,945	5,579	7,890	22 x 24	40	42	11	2,440	3,451	4,880
12 x 28	26	42	7	1,634	2,311	3,268	16 x 60	36	80	9	4,390	6,208	8,780	22 x 28	40	46	11	2,978	4,211	5,956
12 x 30	26	44	7	1,790	2,531	3,579	16 x 66	37	87	9	5,065	7,163	10,130	22 x 30	42	50	11	3,141	4,442	6,282
12 x 36	27	51	7	2,124	3,004	4,248	16 x 72	38	94	9	5,545	7,841	11,089	22 x 36	43	57	11	3,640	5,148	7,280
12 x 40	28	56	7	2,282	3,227	4,564	16 x 80	38	102	9	5,976	8,452	11,953	22 x 40	44	62	11	4,078	5,768	8,157
12 x 42	29	59	7	2,435	3,444	4,870	16 x 84	39	107	9	6,393	9,041	12,786	22 x 42	45	65	11	4,220	5,968	8,440
12 x 48	28	64	7	2,783	3,935	5,566	16 x 96	39	119	9	7,336	10,375	14,673	22 x 48	46	72	11	4,805	6,795	9,610
12 x 54	28	70	7	3,120	4,413	6,240	16 x 108	40	132	10	8,054	11,390	16,108	22 x 54	46	78	11	5,275	7,460	10,549
12 x 60	29	77	7	3,468	4,904	6,936	16 x 120	40	144	10	9,171	12,969	18,341	22 x 60	47	85	11	6,025	8,521	12,050
12 x 66	29	83	7	3,811	5,389	7,621	18							22 x 66	48	92	11	6,446	9,116	12,892
12 x 72	30	90	7	4,158	5,881	8,317	18 x 18	32	32	10	1,539	2,176	3,078	22 x 72	49	99	11	7,200	10,182	14,400
12 x 80	30	98	7	4,601	6,507	9,202	18 x 20	33	35	10	1,763	2,493	3,525	22 x 80	50	108	11	8,000	11,314	16,000
12 x 84	31	103	7	4,844	6,850	9,687	18 x 22	33	37	10	1,882	2,661	3,763	22 x 84	50	112	11	8,623	12,195	17,247
12 x 96	31	115	7	5,523	7,811	11,047	18 x 24	34	40	10	2,000	2,828	4,000	22 x 96	51	125	11	10,067	14,236	20,133
12 x 108	31	127	8	6,399	9,050	12,799	18 x 28	35	45	10	2,330	3,295	4,660	22 x 108	52	138	11	11,004	15,561	22,007
12 x 120	32	140	8	6,931	9,801	13,861	18 x 30	36	48	10	2,567	3,630	5,133	22 x 120	53	151	11	12,607	17,829	25,214
14							18 x 36	37	55	10	3,104	4,390	6,209	24						
14 x 14	25	25	8	933	1,319	1,866	18 x 40	38	60	10	3,426	4,845	6,852	24 x 24	42	42	11	2,650	3,748	5,300
14 x 16	25	27	8	1,095	1,549	2,191	18 x 42	38	62	10	3,637	5,143	7,273	24 x 28	43	47	11	3,262	4,614	6,525
14 x 18	26	30	8	1,196	1,692	2,393	18 x 48	39	69	10	3,950	5,586	7,900	24 x 30	44	50	11	3,457	4,890	6,915
14 x 20	27	33	8	1,333	1,886	2,667	18 x 54	40	76	10	4,440	6,279	8,880	24 x 36	46	58	11	3,945	5,579	7,890
14 x 22	28	36	8	1,508	2,132	3,015	18 x 60	40	82	10	4,811	6,804	9,622	24 x 40	47	63	11	4,335	6,131	8,670
14 x 24	28	38	8	1,550	2,192	3,100	18 x 66	41	89	10	5,718	8,087	11,437	24 x 42	48	66	11	4,600	6,505	9,200
14 x 28	29	43	8	1,897	2,683	3,795	18 x 72	41	95	10	6,074	8,590	12,148	24 x 48	49	73	11	5,275	7,460	10,550
14 x 30	29	45	8	1,998	2,825	3,995	18 x 80	42	104	10	6,720	9,504	13,440	24 x 54	50	80	11	5,915	8,365	11,830
14 x 36	30	52	8	2,129	3,011	4,259	18 x 84	43	109	10	7,084	10,019	14,169	24 x 60	52	88	11	6,580	9,306	13,160
14 x 40	30	56	8	2,667	3,772	5,334	18 x 96	43	121	10	8,003	11,317	16,005	24 x 66	52	94	11	7,205	10,189	14,410
14 x 42	30	59	8	2,830	4,003	5,660	18 x 108	44	134	11	9,250	13,081	18,499	24 x 72	52	100	11	7,855	11,109	15,710
14 x 48	31	66	8	3,330	4,709	6,660	18 x 120	45	147	11	10,277	14,534	20,555	24 x 80	53	109	11	8,700	12,304	17,400
14 x 54	32	72	8	3,637	5,143	7,273	20							24 x 84	54	114	11	8,949	12,656	17,898
14 x 60	33	79	8	4,032	5,702	8,064	20 x 20	35	35	11	1,952	2,761	3,905	24 x 96	55	127	11	10,400	14,708	20,800
14 x 66	33	85	8	4,427	6,261	8,854	20 x 22	36	38	11	2,092	2,959	4,185	24 x 108	56	140	11	11,750	16,617	23,500
14 x 72	34	92	8	4,849	6,857	9,698	20 x 24	37	41	11	2,220	3,140	4,440	24 x 120	57	154	11	13,440	19,007	26,881
14 x 80	34	100	8	5,227	7,393	10,455	20 x 28	37	45	11	2,730	3,861	5,460	28						
14 x 84	35	105	8	5,597	7,916	11,194	20 x 30	38	48	11	2,857	4,040	5,713	28 x 28	51	51	13	3,789	5,359	7,579
14 x 96	35	117	8	6,393	9,041	12,786	20 x 36	40	56	11	3,484	4,927	6,968	28 x 30	51	53	13	4,058	5,739	8,117
14 x 108	36	130	9	7,221	10,211	14,441	20 x 40	40	60	11	3,704	5,238	7,408	28 x 36	52	60	13	4,600	6,505	9,200
14 x 120	36	142	9	8,249	11,666	16,498	20 x 42	41	63	11	3,835	5,424	7,670	28 x 40	53	65	13	5,055	7,149	10,110
16							20 x 48	42	70	11	4,260	6,024	8,520	28 x 42	53	67	13	5,370	7,594	10,740
16 x 16	28	28	9	1,217	1,722	2,435	20 x 54	43	77	11	4,930	6,972	9,860	28 x 48	54	74	13	6,065	8,577	12,130
16 x 18	28	30	9	1,370	1,938	2,741	20 x 60	44	84	11	5,348	7,563	10,696	28 x 54	56	82	13	6,900	9,758	13,800
16 x 20	29	33	9	1,567	2,217	3,135	20 x 66	45	91	11	6,025	8,521	12,050	28 x 60	57	89	13	7,650	10,819	15,300
16 x 22	30	36	9	1,725	2,439	3,449	20 x 72	45	97	11	6,720	9,504	13,440	28 x 66	58	96	13	8,198	11,593	16,395

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Fresh Air Intake Ventilators have a 2 to 1 ratio of hood perimeter opening to throat area. Maximum design velocity through the hood opening is only 600 fpm to reduce entrainment of rain or snow in incoming air. The maximum throat design velocity is 1200 fpm.

THROAT SIZE A X B	HOOD SIZE			CFM @ IN. W.G.			THROAT SIZE A X B	HOOD SIZE			CFM @ IN. W.G.			THROAT SIZE A X B	HOOD SIZE			CFM @ IN. W.G.		
	C	D	E	.05	.10	.20		C	D	E	.05	.10	.20		C	D	E	.05	.10	.20
28 x 72	59	103	13	9,135	12,919	18,270	40						54							
28 x 80	60	112	13	9,630	13,619	19,260	40 x 40	70	70	17	7,051	9,971	14,102	54 x 54	95	95	23	11,865	16,779	23,729
28 x 84	61	117	13	10,655	15,068	21,310	40 x 42	71	73	17	7,640	10,805	15,280	54 x 60	97	103	23	13,197	18,664	26,395
28 x 96	63	131	13	12,150	17,183	24,300	40 x 48	73	81	17	8,267	11,691	16,533	54 x 66	98	110	23	14,391	20,352	28,783
28 x 108	64	144	13	13,650	19,304	27,300	40 x 54	74	88	17	9,588	13,560	19,176	54 x 72	98	121	23	15,697	22,199	31,394
28 x 120	65	157	13	16,049	22,696	32,097	40 x 60	76	96	17	10,407	14,718	20,814	54 x 80	98	133	23	17,397	24,603	34,793
30						40 x 66	77	103	17	11,451	16,194	22,902	54 x 84	98	140	23	18,833	26,633	37,665	
30 x 30	53	53	13	4,207	5,949	8,413	40 x 72	79	111	17	12,687	17,942	25,373	54 x 96	98	160	23	21,737	30,740	43,473
30 x 36	55	61	13	4,792	6,776	9,583	40 x 80	81	121	17	13,773	19,478	27,546	54 x 108	98	179	23	23,456	33,172	46,913
30 x 40	55	65	13	5,455	7,715	10,910	40 x 84	83	127	17	14,459	20,448	28,919	54 x 120	111	177	23	25,858	36,569	51,716
30 x 42	57	69	13	5,616	7,943	11,233	40 x 96	83	139	17	16,524	23,368	33,047	60						
30 x 48	57	76	13	6,343	8,971	12,687	40 x 108	85	153	17	18,593	26,294	37,185	60 x 60	95	115	25	14,534	20,555	29,069
30 x 54	60	84	13	7,350	10,394	14,700	40 x 120	87	167	17	21,585	30,526	43,170	60 x 66	96	124	25	16,001	22,629	32,003
30 x 60	61	91	13	8,175	11,561	16,350	42						60 x 72	109	121	25	17,397	24,603	34,793	
30 x 66	62	98	13	8,788	12,428	17,576	42 x 42	74	74	18	7,832	11,076	15,663	60 x 80	111	131	25	19,306	27,303	38,612
30 x 72	63	105	13	9,840	13,916	19,680	42 x 48	76	82	18	8,229	11,637	16,457	60 x 84	113	137	25	20,268	28,663	40,535
30 x 80	64	114	13	10,613	15,009	21,226	42 x 54	78	90	18	9,835	13,909	19,670	60 x 96	115	151	25	23,166	32,761	46,331
30 x 84	65	119	13	11,420	16,150	22,840	42 x 60	80	98	18	10,965	15,507	21,930	60 x 108	118	166	25	25,961	36,714	51,921
30 x 96	66	132	13	13,050	18,455	26,100	42 x 66	82	106	18	12,023	17,003	24,046	60 x 120	118	184	25	28,175	39,846	56,351
30 x 108	67	145	13	14,550	20,577	29,100	42 x 72	83	113	18	13,209	18,680	26,418	66						
30 x 120	69	159	13	16,570	23,433	33,139	42 x 80	84	122	18	13,844	19,578	27,687	66 x 66	98	134	25	17,468	24,704	34,936
36						42 x 84	84	126	18	14,537	20,559	29,075	66 x 72	117	123	25	18,681	26,419	37,363	
36 x 36	63	63	15	5,425	7,672	10,850	42 x 96	87	141	18	16,972	24,001	33,943	66 x 80	117	135	25	21,234	30,029	42,467
36 x 40	64	68	15	6,392	9,040	12,784	42 x 108	89	155	18	19,451	27,507	38,901	66 x 84	117	142	25	22,298	31,534	44,596
36 x 42	66	72	15	6,900	9,758	13,800	42 x 120	91	169	18	21,605	30,555	43,211	66 x 96	117	162	25	25,482	36,037	50,964
36 x 48	67	79	15	7,437	10,518	14,874	48						66 x 108	127	169	25	27,890	39,443	55,781	
36 x 54	69	87	15	8,750	12,374	17,500	48 x 48	84	84	20	9,192	14,533	20,553	66 x 120	130	184	25	30,872	43,660	61,745
36 x 60	70	94	15	9,875	13,965	19,750	48 x 54	87	93	20	10,062	15,910	22,500	72						
36 x 66	71	101	15	10,805	15,281	21,610	48 x 60	88	100	20	10,733	16,971	24,000	72 x 72	117	137	25	20,370	28,807	40,739
36 x 72	72	108	15	11,750	16,617	23,500	48 x 66	89	107	20	11,511	18,201	25,740	72 x 80	128	136	28	22,716	32,125	45,432
36 x 80	74	117	15	12,443	17,597	24,885	48 x 72	92	116	20	12,558	19,856	28,080	72 x 84	130	142	29	24,324	34,399	48,648
36 x 84	75	123	15	12,775	18,067	25,551	48 x 80	94	126	20	13,475	21,305	30,130	72 x 96	133	157	29	27,259	38,550	54,518
36 x 96	77	137	15	14,874	21,035	29,748	48 x 84	95	131	20	13,962	22,076	31,220	72 x 108	136	172	29	30,311	42,866	60,622
36 x 108	78	150	15	16,690	23,604	33,381	48 x 96	96	144	20	15,456	24,438	34,560	72 x 120	139	187	29	33,679	47,629	67,358
36 x 120	79	165	15	19,400	27,436	38,800	48 x 108	95	165	20	17,418	27,540	38,947							
							48 x 120	97	178	20	19,170	30,311	42,866							

When an engineering application specifies a CFM capacity for a listed size ventilator that is different from that shown for that ventilator in the tables, the new static pressure (P_2) for the specified CFM is readily determined by applying the equation $P_2 = P_1 \left(\frac{CFM_2}{CFM_1} \right)^2$. The CFM_1 and P_1 are shown in the preceding tables. CFM_2 is the specified air flow and P_2 is the corresponding static pressure to be determined.

Example: Determine the static pressure of an intake unit with a 30" X 30" throat, flowing 7,000 CFM. The above data table yields the following:

$$P_1 = .20, CFM_1 = 8413. \text{ Thus, } P_2 = .20 \left(\frac{7000}{8413} \right)^2 = .20 (.8321)^2 = .14" \text{ w.g.}$$