

## What Volume Dust Collector Do I Need?

Two important considerations when selecting a new dust collector is making sure the airflow or volume of the system is efficient at capturing dust and the system volume is right for your application. If the volume of your system is too low, your system will not filter dust as efficiently which can impact production, air quality and shorten the life of your collector. If the volume of your system is too high, your energy consumption costs will be higher and you may disrupt the process of your application.

Dust collector volume is measured in cubic feet per minute or CFM. CFM is a measurement of airflow especially related to air conditioning, heating and ventilation environments like those requiring dust collection. In dust collector applications CFM measures the amount of air per minute that can be moved from a space. Key variables for calculating dust collector CFM include the space of the area that needs ventilation, the method of ventilation, and how frequently the air needs to be turned in a given amount of time.

Work environments vary dramatically from one another based on several variables and even very similar environments can require vastly different volume. To determine the right volume capabilities for your new dust collector, consider the following variables carefully:

### How are you collecting dust?

Take a look at your work environment and how the dust is being captured. There are several scenarios for dust capture and ventilation, each option will impact the amount of CFM required.

Ventilation Hoods –Common applications for ventilation hoods include grinding, welding, and woodworking, where hoods are installed over a worksite to capture dust. Take a look at the size of the hood over the workstation and how many ventilation hoods there are. You will want to measure the number of hoods within the workspace and the size of the hoods. Larger hoods allow more air to pass through the system and would typically require a system with more CFM. Here are a few examples of applications with ventilation hoods:



Ventilation Taps – Ventilation taps are attached with duct work directly to the machinery that is generating dust. You'll want to measure the size of the ventilation taps and how many ventilation taps are connected to the dust collector.

Here is an example of a grinder that has a ventilation tap. If you know the size of the tap you can calculate how much air is needed to move to properly ventilate this machine and maximize airflow and efficiency.



## What is the size of the duct being used to collect dust?

The diameter of the ductwork that is pulling the air out of the work environment should be measured. This is important because the larger the ducts are, the more air can be removed from the area in less time. Larger ducts typically require dust collectors with higher volumes.

## Cubic Feet of the work environment

Consider the size of the room or workspace where the air needs to be pulled from. Is the air being pulled from enclosed booths or a large warehouse? The size of the space will impact the amount of volume that the system requires. Dust collectors that need to ventilate large spaces and turn or remove a large amount of air from the environment require a higher volume than an enclosed booth.

## For New Dust Collector Installations:

Consider each of these variables when you are designing your dust collector and ventilation method. You may be able to improve airflows at lower energy consumption by choosing the right size and number of hoods, taps and ductwork. Our engineers have over 50 years' experience designing new dust collection systems from the ground up and can recommend appropriate size and number of ventilation hoods or taps and ductwork to maximize your performance and efficiency at optimal energy consumption and lower maintenance costs. Call us today at 888-221-0312 to learn more.

**Volume Calculator** – If you know your CFM and your air to cloth ratio, you can calculate the volume needed for your dust collector. Take a look at the following sample chart to help you determine the appropriate volume for your work environment.

Model	Cloth Area (Sq. Ft.) Bag		"A"	"B"	"C"		"D"	120-6 Air Volume (CFM)			144-6 Air Volume (CFM)		
	Length - Diameter				120-6	144-6		Air to Cloth Ratio			Air to Cloth Ratio		
	120-6	144-6						Dimensions in Feet		4/1	5/1	6/1	4/1
17 15 WPT	4,006	4,807	15.00	11.67	38.00	40.00	15.00	16,022	20,028	24,033	19,227	24,033	28,840
18 15 WPT	4,241	5,089	16.00	12.33	38.00	40.00	16.00	16,965	21,206	25,447	20,358	25,447	30,536
19 15 WPT	4,477	5,372	17.00	13.00	38.00	40.00	17.00	17,907	22,384	26,861	21,489	26,861	32,233
20 15 WPT	4,712	5,655	18.00	13.67	38.00	40.00	18.00	18,850	23,562	28,274	22,620	28,274	33,929
21 15 WPT	4,948	5,938	18.00	14.33	38.00	40.00	18.00	19,792	24,740	29,688	23,750	29,688	35,626
22 15 WPT	5,184	6,220	19.00	15.00	38.00	40.00	19.00	20,735	25,918	31,102	24,881	31,102	37,322
23 15 WPT	5,419	6,503	20.00	15.67	38.00	40.00	20.00	21,677	27,096	32,516	26,012	32,516	39,019
24 15 WPT	5,655	6,786	20.00	16.33	38.00	40.00	20.00	22,620	28,274	33,929	27,143	33,929	40,715
25 15 WPT	5,891	7,069	21.00	17.00	38.00	40.00	21.00	23,562	29,453	35,343	28,274	35,343	42,412
26 15 WPT	6,126	7,351	22.00	17.67	38.00	40.00	22.00	24,504	30,631	36,757	29,405	36,757	44,108
27 15 WPT	6,362	7,634	22.00	18.33	38.00	40.00	22.00	25,447	31,809	38,170	30,536	38,170	45,805
28 15 WPT	6,597	7,917	23.00	19.00	38.00	40.00	23.00	26,389	32,987	39,584	31,667	39,584	47,501
29 15 WPT	6,833	8,200	24.00	19.67	38.00	40.00	24.00	27,332	34,165	40,998	32,798	40,998	49,197
30 15 WPT	7,069	8,482	24.00	20.33	38.00	40.00	24.00	28,274	35,343	42,412	33,929	42,412	50,894
31 15 WPT	7,304	8,765	25.00	21.00	38.00	40.00	25.00	29,217	36,521	43,825	35,060	43,825	52,590
32 15 WPT	7,540	9,048	26.00	21.67	38.00	40.00	26.00	30,159	37,699	45,239	36,191	45,239	54,287
33 15 WPT	7,775	9,331	26.00	22.33	38.00	40.00	26.00	31,102	38,877	46,653	37,322	46,653	55,983
34 15 WPT	8,011	9,613	27.00	23.00	38.00	40.00	27.00	32,044	40,055	48,066	38,453	48,066	57,680
35 15 WPT	8,247	9,896	28.00	23.67	38.00	40.00	28.00	32,987	41,234	49,480	39,584	49,480	59,376
36 15 WPT	8,482	10,179	28.00	24.33	38.00	40.00	28.00	33,929	42,412	50,894	40,715	50,894	61,073
37 15 WPT	8,718	10,462	29.00	25.00	38.00	40.00	29.00	34,872	43,590	52,308	41,846	52,308	62,769
38 15 WPT	8,954	10,744	30.00	25.67	38.00	40.00	30.00	35,814	44,768	53,721	42,977	53,721	64,466
39 15 WPT	9,189	11,027	30.00	26.33	38.00	40.00	30.00	36,757	45,946	55,135	44,108	55,135	66,162
40 15 WPT	9,425	11,310	31.00	27.00	38.00	40.00	31.00	37,699	47,124	56,549	45,239	56,549	67,859
41 15 WPT	9,660	11,593	32.00	27.67	38.00	40.00	32.00	38,642	48,302	57,963	46,370	57,963	69,555
42 15 WPT	9,896	11,875	32.00	28.33	38.00	40.00	32.00	39,584	49,480	59,376	47,501	59,376	71,251
43 15 WPT	10,132	12,158	33.00	29.00	38.00	40.00	33.00	40,527	50,658	60,790	48,632	60,790	72,948
44 15 WPT	10,367	12,441	34.00	29.67	38.00	40.00	34.00	41,469	51,836	62,204	49,763	62,204	74,644
45 15 WPT	10,603	12,723	34.00	30.33	38.00	40.00	34.00	42,412	53,015	63,617	50,894	63,617	76,341
46 15 WPT	10,839	13,006	35.00	31.00	38.00	40.00	35.00	43,354	54,193	65,031	52,025	65,031	78,037
47 15 WPT	11,074	13,289	36.00	31.67	38.00	40.00	36.00	44,297	55,371	66,445	53,156	66,445	79,734
48 15 WPT	11,310	13,572	36.00	32.33	38.00	40.00	36.00	45,239	56,549	67,859	54,287	67,859	81,430
49 15 WPT	11,545	13,854	37.00	33.00	38.00	40.00	37.00	46,182	57,727	69,272	55,418	69,272	83,127
50 15 WPT	11,781	14,137	38.00	33.67	38.00	40.00	38.00	47,124	58,905	70,686	56,549	70,686	84,823
51 15 WPT	12,017	14,420	38.00	34.33	38.00	40.00	38.00	48,066	60,083	72,100	57,680	72,100	86,520
52 15 WPT	12,252	14,703	39.00	35.00	38.00	40.00	39.00	49,009	61,261	73,513	58,811	73,513	88,216
53 15 WPT	12,488	14,985	40.00	35.67	38.00	40.00	40.00	49,951	62,439	74,927	59,942	74,927	89,913
54 15 WPT	12,723	15,268	40.00	36.33	38.00	40.00	40.00	50,894	63,617	76,341	61,073	76,341	91,609
55 15 WPT	12,959	15,551	41.00	37.00	38.00	40.00	41.00	51,836	64,796	77,755	62,204	77,755	93,306
56 15 WPT	13,195	15,834	42.00	37.67	38.00	40.00	42.00	52,779	65,974	79,168	63,335	79,168	95,002
57 15 WPT	13,430	16,116	42.00	38.33	38.00	40.00	42.00	53,721	67,152	80,582	64,466	80,582	96,698
58 15 WPT	13,666	16,399	43.00	39.00	38.00	40.00	43.00	54,664	68,330	81,996	65,597	81,996	98,395
59 15 WPT	13,902	16,682	44.00	39.67	38.00	40.00	44.00	55,606	69,508	83,409	66,728	83,409	100,091
60 15 WPT	14,137	16,965	44.00	40.33	38.00	40.00	44.00	56,549	70,686	84,823	67,859	84,823	101,788

