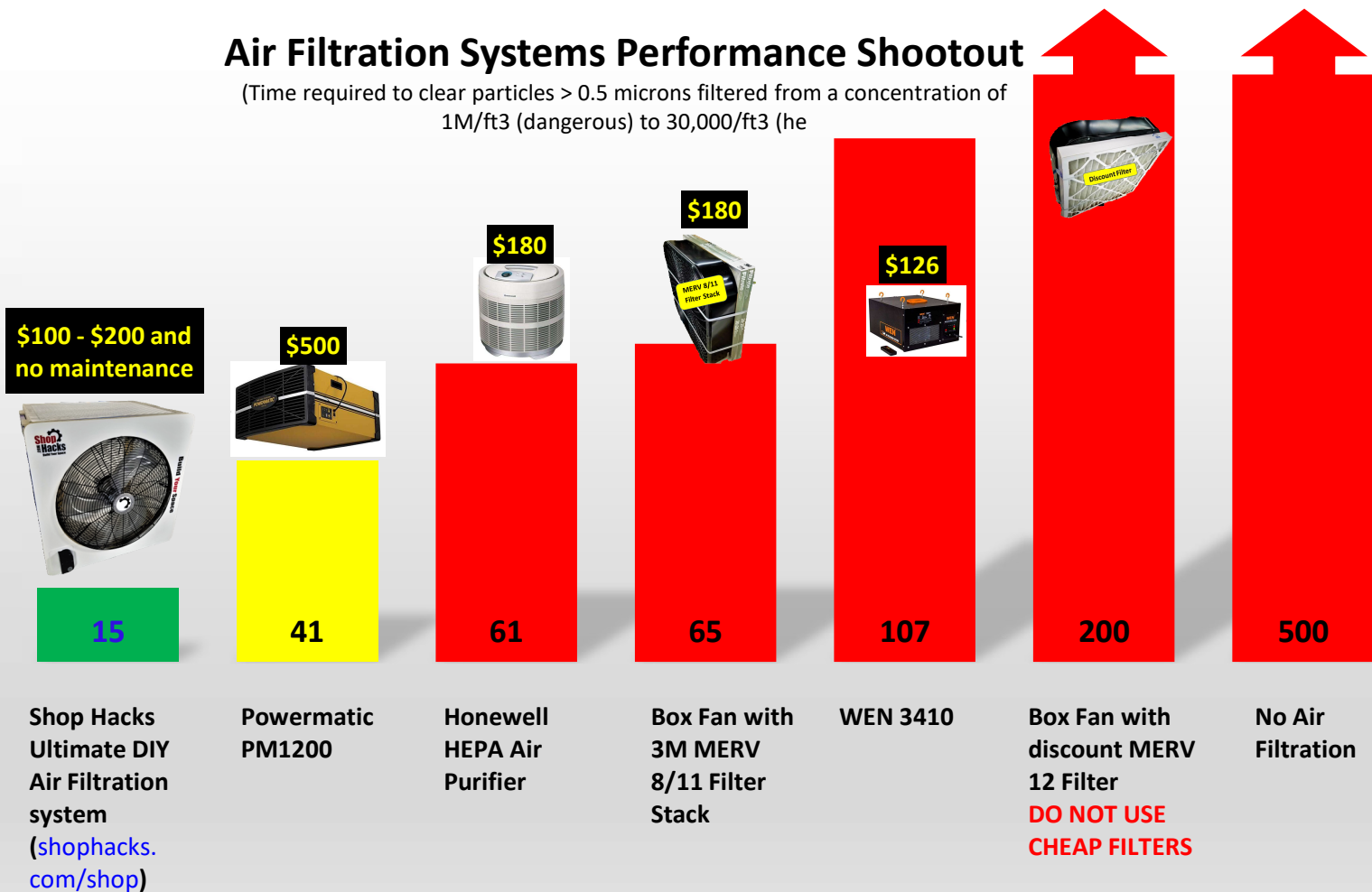




Air Filtration Systems Performance Shootout

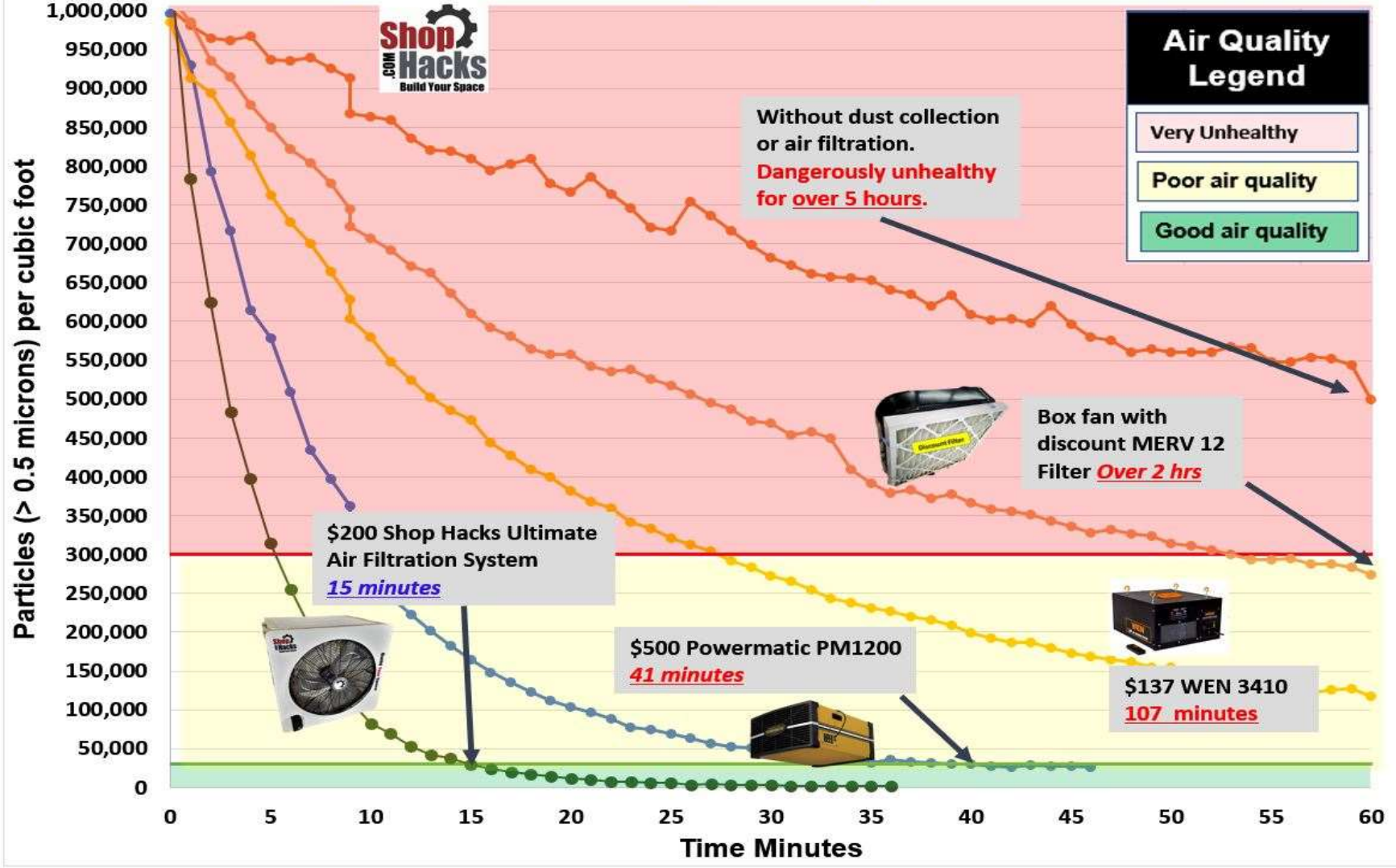
(Time required to clear particles > 0.5 microns filtered from a concentration of 1M/ft3 (dangerous) to 30,000/ft3 (he

Time to Clear the Air (minutes)




**DO NOT USE
CHEAP FILTERS**

Time Required to clear dust from workshop air after cutting MDF and melamine boards on a table saw



Shop Hacks Air Filtration System Testing Shootout

	Performance Ranking	Time to filter air from 1M ppsf to below "good air qualiti"	Time to filter air from 1M ppsf to below "very unhealthy"	Price	Measured Max Power (W)	Advertised Flow Rate (CFM)	Measured Flow Rate With Filters (CFM)	Max static pressure (in-wc)	Measured Noise Level (db 6' away)	Advertised Primary filter rating	Advertised Prefilter rating	Remote type	Timer durations (hr)	Yearly Power Cost on high (assume 10c/kw-hr running 10 hr/day)	Measured >0.5 Micron Particle Filtration Efficiency	Link to User's Manual
Shop Hacks dust collection with no air filtration	1	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Shop Hacks Ultimate DIY Air Filtration System	2	15	6	\$200	135		1800	0.71	64	MERV13	N/A	RF	0.5, 1, 2, 4	\$49	94%	n/a
Shop Hacks DOWNDRAFT Table	3	29	6	n/a	341	n/a	650	1.25	60	MERV 13 (FPR 10)	n/a	n/a	n/a	\$124	97%	n/a
20" fan drawing air in window. 20" fan blowing	4	(1) n/a	9	\$40	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Powermatic PM1200 without grill and diffuser	5	30	8	\$500	357	1196, 706, 547	865	1.29	65	86% 1 micron	99% 5 micron	RF	1-9	\$130	84%	User's Manual
Powermatic PM1200 with grill and diffuser		41	10	\$500	357	1196, 706, 547	865	1.29	65	86% 1 micron	99% 5 micron	RF	1-9	\$130	84%	User's Manual
Shop Hacks 4 filter prototype system - with 2 year old dirty filters	6	60	13	n/a	143	n/a	1141	n/a	65	MERV 13 (FPR 10)	n/a	n/a	n/a	\$52	79%	n/a
Honeywell 50250-S True HEPA Air Purifier	7	61	20	\$198	167	n/a	n/a	n/a	59	HEPA, 99.7 0.3 micron	n/a	n/a	n/a	\$61	100%	User's Manual
Holmes HBF2001DP-BM 20-Inch Box w 1 @ MERV 6 and 11 TEST#1	8	65	15	\$0	88	Measured 1108 CFM without filters	(2) 237	0.12	64	MERV 11	MERV 6	RF	n/a	\$32	85%	n/a
Holmes HBF2001DP-BM 20-Inch Box w 1 @ MERV 6 and 11 TEST#2		75	18	\$0	88	Measured 1108 CFM without filters	(2) 237	0.12	64	MERV 11	MERV 6	RF	n/a	\$32	85%	n/a
WEN 3410	9	107	28	\$126	81	300, 350, 400	257	0.77	54	1 micron	5 micron	RF	1, 2, 4	\$30	80%	User's Manual
Holmes 20" Box Fan with new MERV 12 Nordic Pure filter	10	200	53	\$0	135	Measured 1878 without filters	1300	0.71	64	MERV 12	MERV 6	n/a	n/a	\$49	forgot to measure	
No dust collection or air filtration (Baseline)	11	600 estimate	75	\$126	81	300, 350, 400	257	0.77	54	1 micron	5 micron	RF	1, 2, 4	\$30	80%	User's Manual

(1) The outside air was at 36,000 particles/ft3 (particles > 0.5 microns) so it was impossible for the fans to bring the shop air below that number.

(2) This number is suspiciously low. There may have been some type of error in my measurement. I would expect this number to be closer to 500 CFM based on filtration performance.