TEST RESULTS

Certified to the ISO 5011 Air Filtration Standard

2005-06 Ford Mustang V6 4.0L

S&B Cold Air Intake Kit
Part # 75-5004

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ISO 5011, Second Edition
Air Filter or Intake Kit Test Report

The test data presented in the following report represents the restriction of airflow, efficiency and dust loading capacity. The filters tested were procured from various distributors or provided by customers. The tests were performed in accordance with ISO 5011. The following were measured in accordance with the test: (1) Pressure Drop for Clean Element, Initial Efficiency and Dust Loading Capacity. The Flow Rate used to conduct the Dust Loading and Capacity test(s) is listed under the *Average Environmental Conditions and Test Specifications*. PTI ISO Course Test Dust was utilized and the particle data sheet for the batch is attached.

The test sequence begins with measuring the pressure drop of a clean filter as a function of the airflow rate which is measured in cubic feet per minute (CFM). Subsequently, the cumulative efficiency and dust loading capacity are measured. The termination point when measuring for capacity is shown at the bottom of the report under the heading *Termination ^P*. The results of the tests are recorded in the top table and charts shown on the next page. The filters are inspected before and after the tests are performed.

The Top Table demonstrates the results of the testing for up to three (3) samples per filter type (part number). The Efficiency represents the amount of dust (contaminants) that was stopped by the filter during each test. The Capacity measures the dust holding capability of the filter.

During the test, the filter is loaded with dust until it reaches a terminal pressure drop increase of 10 inches of water (28”H2O for Heavy Duty Vehicles) across the filter element (please refer to the Average Environmental Conditions and Test Specifications at the bottom of the next page to verify the pressure drop utilized on this particular test).

The Line Graph shows the pressure drop as a function of the airflow rate for the clean filter(s). The computer controlled test equipment initiates the test at close to zero (0) cubic feet per minute (CFM) and then increases the CFM gradually until the CFM termination point is reached. During the test, the restriction of the filter is measured in inches of water (“H2O) as it relates to the air flow rate (CFM). Visual inspections of filters are performed to insure against dust leakage and manufacturing flaws.

The Bar Graph illustrates the cumulative efficiency for the filter(s) tested.

Definition of Terms & Test Protocol

Restriction

Restriction measures how difficult it is for the air to get through the filter and is measured in inches of H2O. Instead of referring to restriction, the industry uses "air flow" to describe the effect of restriction. They say for example, that a High Performance Filter "flows better" than the OEM paper filter. On a line graph, the lower the restriction of a filter the better the air flow.

Efficiency

Efficiency is measured in % and is the amount of dirt/contaminants that the filter stops from going into the engine.

Capacity

Capacity is the total amount of contaminants/dirt the filter will hold before reaching its termination point. The termination point is a predefined restriction point that is used as the cut-off point when measuring how much dirt a filter will hold. For typical vehicles, 10”H2O is used at the termination point. For heavy duty trucks, this number is 28”H2O.

Note: Testing was conducted based on the ISO 5011 testing standard; however, variances from the actual test procedures may exist. The intent of the testing is to show comparative test results between various products that are intended for similar use. Tests are conducted under a climate controlled environment; however, changes in temperature and humidity between tests may occur which could alter the actual test results.

ISO 5011 Air Filtration Standard

Intake Kit Comparison

S&B Filters75-5004

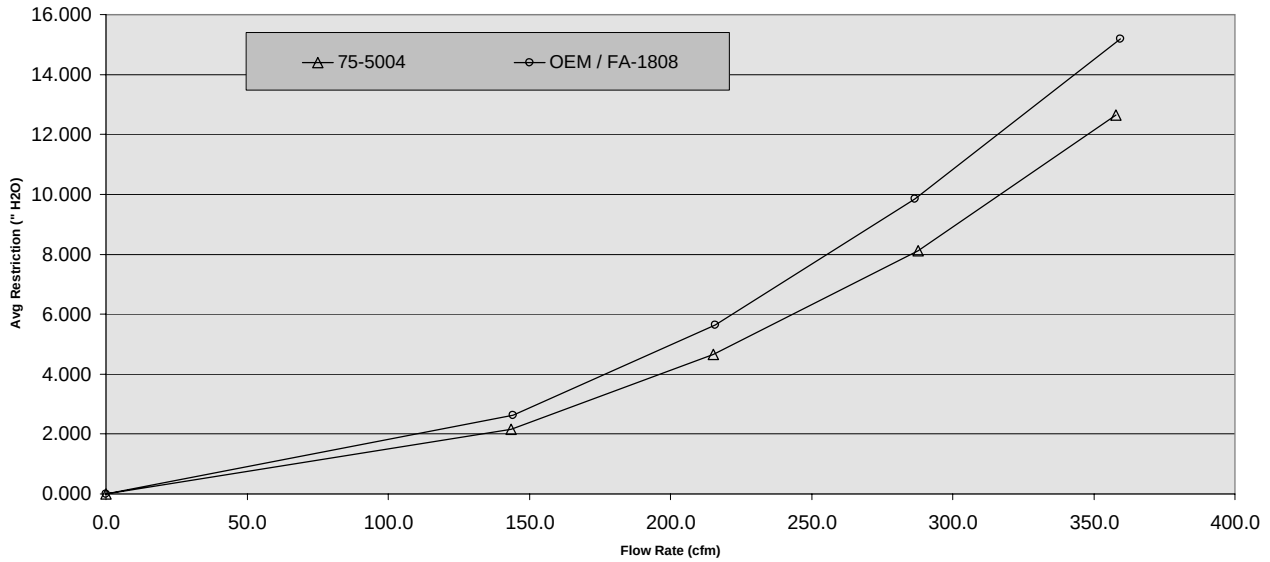
Parts Produced after Julian Date: 06232

Test Number 244

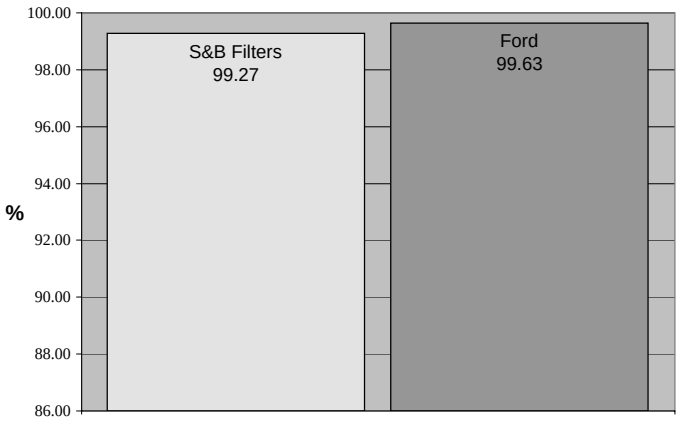
Filter Mfg. & Part No.	PLEAT COUNT	INITIAL RESTRIC. ("H2O)	CAPACITY (grams)	EFFICIENCY (%)	Air Flow cfm	Net Restriction (Inches of H2O)	% Less Restrictive than OEM / FA-1808Ford
Filter #1	54	7.6	65.5	99.27	0.0	0.000	0.0%
S&B Filters					143.5	2.165	17.3%
75-5004					215.2	4.657	17.3%
					287.8	8.116	17.6%
					357.8	12.654	16.7%
					430.2	18.015	17.5%
Filter #2	65	3.8	257.7	99.63	0.0	0.000	
Ford					144.2	2.617	
OEM / FA-1808					215.9	5.629	
					286.7	9.850	
					359.5	15.182	
					429.6	21.825	

SUMMARY

RESTRICTION vs FLOWRATE



ISO 5011 Air Filtration Test
Filter Efficiency %



ISO 5011 Air Filtration Test
Air Flow Summary

05-06' Ford Mustang 4.0L V6

S&B Filters Part Number 75-5004 Flows:

17.6% Better Than Filter # 2 at rated CFM

17.3% Better Than Filter # 2 Across CFM Spectrum

Efficiency Rating

99.27% Efficient - ISO Course Dust

AVERAGE ENVIRONMENTAL CONDITIONS & TEST SPECIFICATIONS

Temperature:	70.94	deg F
Relative Humidity:	51.67	%
Baro Pressure:	28.51	mmHg
Test Stand:	#1	
Inlet Size:	3.75	inches

Housing:	OEM & universal	
Contaminant:	Coarse	
Contam. Lot #:	5336C	
Dust Feed Rate:	8.04	grams/minute
Rated Flow:	287	cfm

Testing was conducted based on the ISO 5011 Air Filtration standard.

S&B PERFORMANCE
FILTERS & INTAKE KITS

Determination of Gasoline and Diesel Engine Air Consumption

CFM Calculator: Enter Data in Blue Shaded Areas

Engine Displacement (cubic inches)	**242.8**
RPM at maximum horse power	**5,100**
Cycle Factor:	**2**
Enter "2" for 4 Cycle Diesel and Gasoline	
Enter "1" for 2 Cycle Diesel and Gasoline	
Volumetric Efficiency:	**0.8**
Naturally Aspirated Gasoline & Diesel Engines Enter "0.8"	
Super Charged Diesel Engines Enter "1.30"	
Turbocharged Diesel Engines Enter "1.75"	

Liters to CID Converter

Liters:	4
Cubic Inches:	242.8

Vehicle Information

Model Year	05'-06'
Make	Ford
Model	Mustang
Engine Specs	4.0L V6

Based on the information entered above, the estimated CFM of the vehicle at maximum Horse Power is:	**287**

CYCLE FACTOR	Cycle Factor
4 Cycle Diesel and Gasoline Engine	2
2 Cycle Diesel and Gasoline Engine	1

VOLUMETRIC EFFICIENCY	Volumetric Efficiency (Approximate)
Naturally Aspirated Gasoline & Diesel Engines	0.8
Supercharged Diesel Engines	1.30
Turbocharged Diesel Engines	1.75

Note: The 1.75 volumetric efficiency is applicable only at top governed engine speed under full load conditions.

EQUATION

The following is a method of determining approximated gasoline and diesel engine air flow requirement:

$$\text{Air Flow (CFM)} = \frac{\text{Displacement (cubic inches)}}{1728} \times \frac{\text{RPM}}{\text{Cycle Factor}} \times \text{Volumetric Efficiency}$$

EXAMPLE

Information necessary to calculate air consumption:

Ford F250 7.3L V8 Diesel Truck

4 cycle, 2800 RPM, 443.1 (cubic inches) displacement, turbocharged

$$\text{Air Flow (CFM)} : \frac{443.1}{1728} \times \frac{2800}{2} \times 1.75 = 628 \text{ CFM}$$

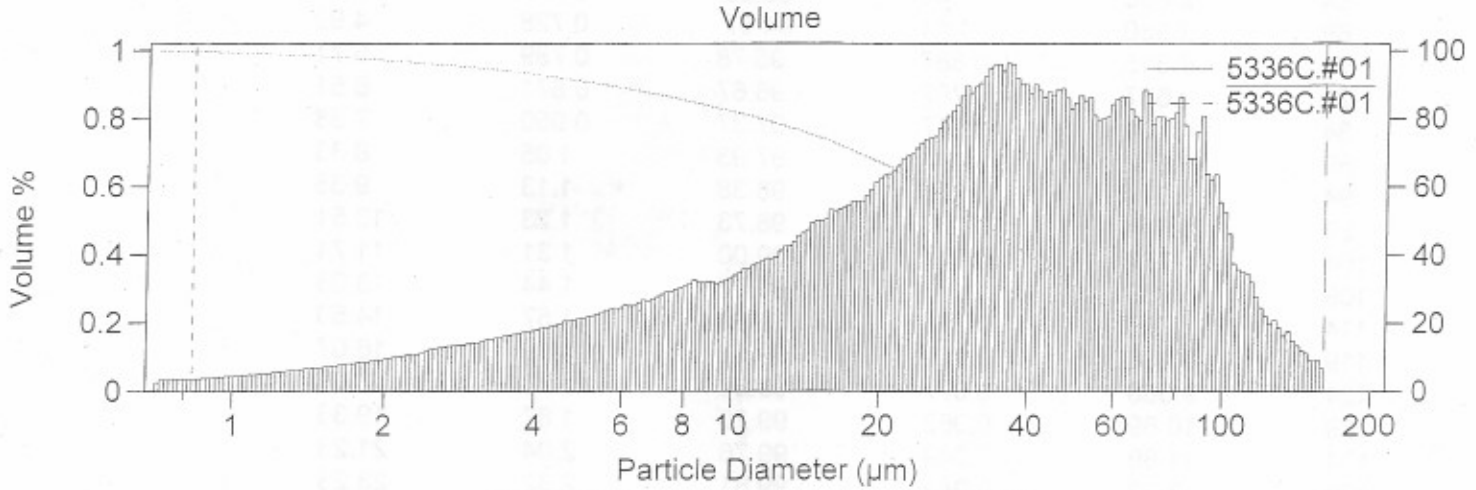
COULTER® MULTISIZER AccuComp® 1.19

21 Feb 2006

POWDER TECHNOLOGY, INC.

PTI
POWDER TECHNOLOGY INC.
14331 Ewing Avenue South Burnsville, Minnesota 55306
Phone: 952-894-8737

Filename:	5336C.#01	Sample Number:	200
Group ID:	5336C		
Sample ID:	ISO 12103-1, A4 COARSE TEST DUST		
Comment:	SAE COARSE TEST DUST, NIST TRACEABLE		
Operator:	LHA		
Electrolyte:	ISOTON II		
Dispersant:	TYPE IC		
Aperture Size:	400 µm	5336a.#01	
	200 µm	5336a.#02	
	100 µm	5336a.#03	
	30 µm	5336a.#04	
Acquired:	21:38 21 Feb 2006		
Serial Number:	8308970		
Edited size data			



LC= 0.831 µm UC= 162.9 µm {99.73%}

Volume Statistics (Geometric) 5336C.#01

Calculations from 0.831 µm to 162.9 µm

Volume	5.461e9 µm^3		
Mean:	26.06 µm	S.D.:	49.1 µm
Median:	31.96 µm	Variance:	2410 µm^2
Mean/Median Ratio:	0.815		
Mode:	36.33 µm		
Spec. surf. area:	0.486 m^2/ml		

% >	10	25	50	75	90
Size µm	85.94	58.24	31.96	14.46	5.507

Cumulative Volume Micron size	Numeric Data % Less Than
1	0.6
2	2.8
3	5.1
4	7.1
5	9.2
7	13.1
10	18.3
20	33.4
40	60.0
80	87.5
120	97.9
180	100.0

COULTER® MULTISIZER AccuComp® 1.19

21 Feb 2006

POWDER TECHNOLOGY, INC.

5336C.#01

Channel Number	Particle Diameter µm	Diff Number %	Cum < Number %	Diff Volume %	Cum < Volume %
9	0.831	12.94	28.24	0.184	0.265
14	0.925	10.71	41.19	0.210	0.449
19	1.028	8.86	51.90	0.239	0.659
24	1.144	7.35	60.76	0.273	0.898
29	1.272	6.15	68.12	0.313	1.17
34	1.415	5.02	74.26	0.352	1.48
39	1.574	4.07	79.29	0.393	1.84
44	1.751	3.31	83.36	0.439	2.23
49	1.947	2.64	86.67	0.483	2.67
54	2.166	2.15	89.31	0.541	3.15
59	2.409	1.79	91.46	0.621	3.69
64	2.680	1.41	93.26	0.672	4.31
69	2.980	1.11	94.67	0.728	4.99
74	3.315	0.887	95.78	0.799	5.71
79	3.687	0.702	96.67	0.871	6.51
84	4.101	0.557	97.37	0.950	7.38
89	4.562	0.446	97.93	1.05	8.33
94	5.074	0.350	98.38	1.13	9.38
99	5.644	0.277	98.73	1.23	10.51
104	6.277	0.214	99.00	1.31	11.74
109	6.982	0.171	99.22	1.44	13.05
114	7.766	0.136	99.39	1.57	14.50
119	8.638	0.100	99.52	1.59	16.07
124	9.608	0.077	99.63	1.70	17.66
129	10.69	0.062	99.70	1.87	19.36
134	11.89	0.049	99.76	2.04	21.23
139	13.22	0.041	99.81	2.32	23.28
144	14.71	0.033	99.85	2.56	25.60
149	16.36	0.025	99.89	2.73	28.15
154	18.19	0.020	99.91	2.95	30.89
159	20.24	0.016	99.93	3.25	33.84
164	22.51	0.013	99.95	3.56	37.09
169	25.04	0.010	99.96	3.85	40.65
174	27.85	0.008	99.97	4.30	44.51
179	30.97	0.006	99.98	4.62	48.81
184	34.45	0.005	99.98	4.74	53.43
189	38.32	0.003	99.99	4.46	58.17
194	42.62	0.002	99.99	4.38	62.63
199	47.41	0.002	99.99	4.26	67.01
204	52.73	0.001	100.00	4.07	71.27
209	58.65	0.001	100.00	4.25	75.33
214	65.23	0.001	100.00	4.13	79.59
219	72.56	0.0043	100.00	4.01	83.72
224	80.71	0.0029	100.00	3.76	87.73
229	89.77	0.0018	100.00	3.25	91.50
234	99.85	8.6E-5	100.00	2.07	94.74
239	111.1	4.2E-5	100.00	1.41	96.82
244	123.5	2E-5	100.00	0.928	98.22
249	137.4	9.5E-6	100.00	0.600	99.15