

Automotive & Powersports

# THE FACTS ABOUT YOUR **INTAKE & AIR FILTER**

ISO 5011 Tested to Make Sure You Maximize Airflow While Still Protecting Your Engine.

# Part Number: 75-5140

Test Date: 2020.07.22

Description: Restriction, C&E Test Report #: 806

Vehicle Applications: 2020 Ford F-250, F350, 6.7L Diesel

#### TECHNICAL BULLETIN

There is a lot of misinformation in the marketplace. S&B publishes specific test results for each of our intakes & filters as shown below, so you can make an informed decision. Remember, improving your airflow is only good if your engine is still protected. That's the S&B difference!

#### **FACT:** S&B Flows **39.05%** Better than Stock.

In tests performed in our climate controlled laboratory according to the ISO5011 Test Standard, S&B's intake kit (and filter) had significantly lower restriction (better airflow) than the stock intake system. See the graph on the next page.

**WATCH OUT:** Some competitors overstate airflow.

If they state that their filter will flow, let's say 1000 cfm, without stating at what restriction level, they are trying to mislead you.

| Description  | % S&B Flowed Better than  | <b>Test Conditions</b>           |           |  |
|--|---------------------------|----------------------------------|-----------|--|
|  | Stock (tested @ _580_cfm) | Barometric Pressure              | 28.7 inHg |  |
| S&B Intake w/ Cleanable Filter<br>(Secondary Inlet - Open) | 39.05%                    | Airflow Setpoint                 | 580 CFM   |  |
| S&B Intake w/ Cleanable Filter                             |                           | Relative Humidity                | 52%       |  |
| (Secondary Inlet - Closed)                                 | 34.91%                    | Temperature 69 F                 | 69 F      |  |
| S&B Intake w/ Dry Filter                                   |                           | Type of Dust                     | A4 Coarse |  |
| Secondary Inlet - Open                                     | 57.4770                   | Batch #                          | 14057C    |  |
| S&B Intake w/ Dry Filter<br>(Secondary Inlet - Closed)     | 33.21%                    | Dust Feed Rate<br>(grams/minute) | 16.42     |  |

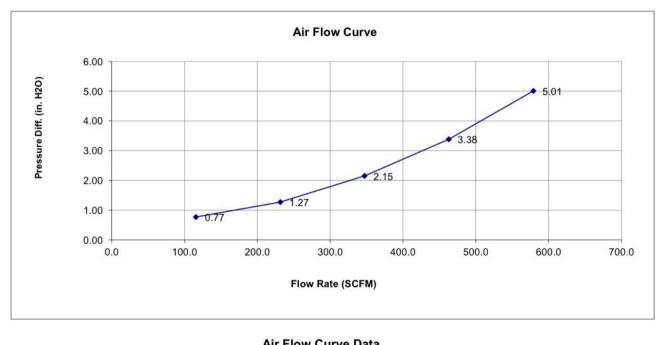
| Description                       | Efficiency Rate<br>(Tested @ _580_cfm)                      | WATCH OUT: Some Competitors   |
|-----------------------------------|---|---|
| Stock                             | 99.21%  | Use the Same Efficiency Rates<br>for Multiple Part Numbers                          |
| S&B Intake w/<br>Cleanable Filter | 99.42%  | Many send one filter off to a lab to be tested                                      |
| S&B Intake w/<br>Dry Filter       | 99.54%  | at a low cfm and then publish this efficiency<br>rate for all of their part numbers |
|                                   | Stock<br>S&B Intake w/<br>Cleanable Filter<br>S&B Intake w/ | Stock 99.21%   S&B Intake w/<br>Cleanable Filter 99.42%   S&B Intake w/ 99.42%      |

Test #: 806 Sample #: -02R Filter #: KF-1050 Housing #: Date Code: 2020.07.21 JM 7/23/2020



Test Description: 75-5140 with KF-1050, without Box Plug, without MAF Sensor

|                                      | Tes             | t Conditions       |           |
|--------------------------------------|-----------------|--------------------|-----------|
| Barometric Pressure:                 | 28.69513 in. Hg | Relative Humidity: | 55 %      |
| Air Flow Type:                       | SCFM            | Temperature:       | 70 deg. F |
| Number of Pleats:<br>Flow Direction: |                 | Pleat Depth:       | in.       |



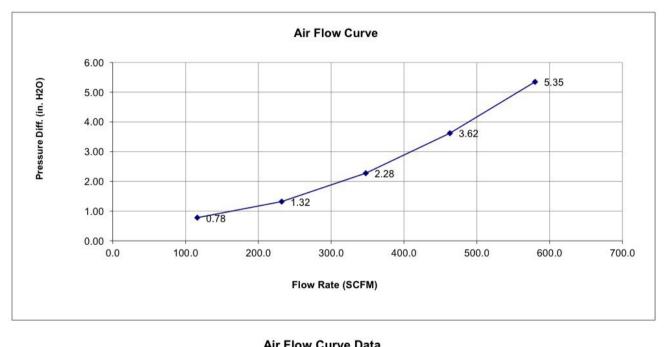
| AIT FIOV  | v Curve Data                 |
|-----------|------------------------------|
| Flow Rate | <b>Differential Pressure</b> |
| 116       | 0.77                         |
| 232       | 1.27                         |
| 347       | 2.15                         |
| 463       | 3.38                         |
| 579       | 5.01                         |
|           |                              |

Test #: 806 Sample #: -01R Filter #: KF-1050 Housing #: Date Code: 2020.07.21 JM 7/23/2020



Test Description: 75-5140 with KF-1050, with Box Plug, without MAF Sensor.

|                                      | Tes             | t Conditions       |           |
|--------------------------------------|-----------------|--------------------|-----------|
| Barometric Pressure:                 | 28.70413 in. Hg | Relative Humidity: | 55 %      |
| Air Flow Type:                       | SCFM            | Temperature:       | 70 deg. F |
| Number of Pleats:<br>Flow Direction: |                 | Pleat Depth:       | in.       |



|           | v Guive Data                 |
|-----------|------------------------------|
| Flow Rate | <b>Differential Pressure</b> |
| 116       | 0.78                         |
| 232       | 1.32                         |
| 348       | 2.28                         |
| 463       | 3.62                         |
| 580       | 5.35                         |
|           |                              |

# Air Filter Full Life Efficiency Test Report

Test #: 806 Sample #: -07CE Filter #: KF-1050 Housing #: Date Code: 2020.07.22

Operator: JM Report Date: 7/22/2020 Filter Mfg.: Housing Mfg.:



Pressure ("H2O) 5.433 5.402 5.391 5.429 5.477 5.544 5.587 5.623 5.692 5.802 5.932 6.052 6.17 6.349 6.603 7.07 7.487 8.082 9.076 10.505 12.603 15.294 15.804

Test Description: 75-5140 with KF-1050, no MAF Sensor, with Box Plug

|                      |                  | Tes     | t Condition | S            |                           |                     |        |
|----------------------|------------------|---------|-------------|--------------|---------------------------|---------------------|--------|
| Barometric Pressure: | 28.727 in. Hg    |         |             | Relative     | Humidity:                 | 52 %                | 6      |
| Air Flow Setpoint:   | 580 SCFM         |         |             | Ту           | pe of Dust:               | A4 Coarse           |        |
| Test Procedure:      | Capacity and Eff |         |             |              | Batch #:                  |                     |        |
| Air Flow Type:       | SCFM             |         |             | Ter          | mperature:                | 69 c                | leg. F |
| Test Endpoint:       | 10 in. H2O       |         |             | Initial      | Add Rate:                 | NaN g               | /min   |
| Number of Pleats:    |                  |         | А           | ccumulative  | Add Rate:                 | 16.42 g             | /min   |
| Flow Direction:      |                  |         |             | PI           | leat Depth:               | i                   | n.     |
| Initial Delta P      | 5.41 in. H2O     |         | 1           | Accumulative | e Capacity:               | 328.50 g            | 1      |
| Initial Delta P      | 5.41 in. H2O     |         |             |              | e Capacity:<br>Test Time: | 328.50 g<br>21.16 r | 100    |
|                      |                  |         |             |              |                           |                     |        |
|                      |                  | Initial |             | Accumulative | e                         |                     |        |
|                      |                  |         | Blanket     | 3            | Blanket                   |                     |        |
|                      | Start            |         |             | 5489.10      |                           |                     |        |
|                      | End              |         |             | 5817.60      |                           |                     |        |
|                      | Gain             |         |             | 328.50       | 1.90                      |                     |        |
|                      | Efficiency       |         |             | 99.42%       |                           |                     |        |

Standard Restriction

Pressure Differential

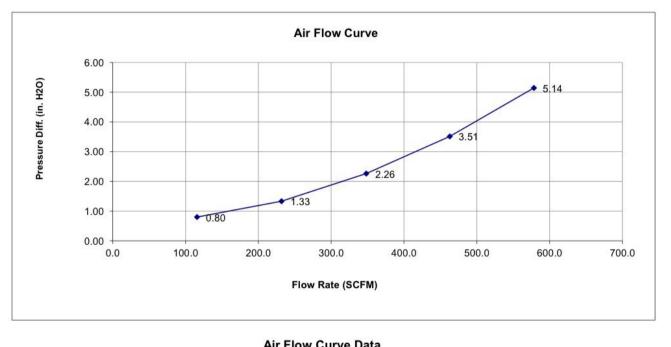
|      |     |                                 |     |         |     | Dust Loadin  | g Curve Data |
|------|-----|---------------------------------|-----|---------|-----|--------------|--------------|
|      | Г   | oust Loading Cu                 | rve |         |     | Dust Fed (g) | Pressure ("H |
|      | 2   | dot Louding of                  |     |         |     | 0            | 5.433        |
| 18 - |     |                                 |     |         |     | 15.822       | 5.402        |
|      |     |                                 |     |         |     | 32.223       | 5.391        |
| 16   |     |                                 |     | 2       |     | 48.662       | 5.429        |
| 14   |     |                                 |     |         |     | 65.187       | 5.477        |
| 14   |     |                                 |     |         |     | 81.602       | 5.544        |
| 12   |     |                                 |     | /       |     | 98.014       | 5.587        |
| 10   |     |                                 |     | *       |     | 114.299      | 5.623        |
| 10   |     |                                 |     |         |     | 130.77       | 5.692        |
| 8    |     |                                 |     | ×       |     | 147.307      | 5.802        |
| 38/2 |     |                                 |     |         |     | 163.816      | 5.932        |
| 6    |     | +++++                           |     |         |     | 180.201      | 6.052        |
| 4    |     |                                 |     |         |     | 196.27       | 6.17         |
|      |     |                                 |     |         |     | 212.941      | 6.349        |
| 2    |     |                                 |     |         |     | 229.246      | 6.603        |
| 0    |     |                                 |     |         |     | 245.863      | 7.07         |
| 0 50 | 100 | 150 200                         | 250 | 300 350 | 400 | 262.248      | 7.487        |
| 0 50 | 100 | 150 200                         | 200 | 300 350 | 400 | 278.65       | 8.082        |
|      |     | Dust Fed (g)                    |     |         |     | 294.883      | 9.076        |
|      |     | 100 100 100 100 <del>1</del> 00 |     |         |     | 311.518      | 10.505       |
|      |     |                                 |     |         |     | 327.84       | 12.603       |
|      |     |                                 |     |         |     | 344.467      | 15.294       |
|      |     |                                 |     |         |     | 346.843      | 15.804       |

Test #: 806 Sample #: -04R Filter #: KF-1050D Housing #: Date Code: 2020.07.21 JM 7/23/2020



Test Description: 75-5140, with KF-1050D, without Box Plug, without MAF Sensor

|                                      | Tes             | t Conditions       |           |
|--------------------------------------|-----------------|--------------------|-----------|
| Barometric Pressure:                 | 28.68174 in. Hg | Relative Humidity: | 54 %      |
| Air Flow Type:                       | SCFM            | Temperature:       | 70 deg. F |
| Number of Pleats:<br>Flow Direction: |                 | Pleat Depth:       | in.       |



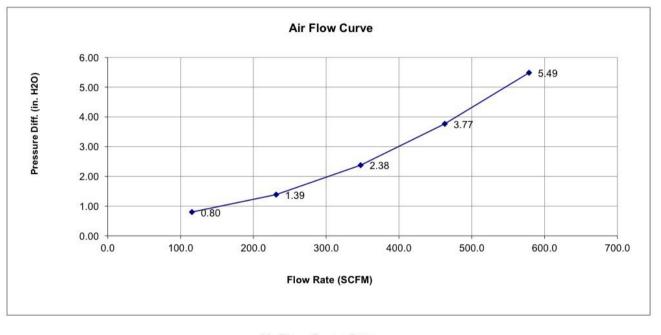
| AITFION   | v Guive Dala                 |
|-----------|------------------------------|
| Flow Rate | <b>Differential Pressure</b> |
| 116       | 0.80                         |
| 232       | 1.33                         |
| 348       | 2.26                         |
| 463       | 3.51                         |
| 579       | 5.14                         |
|           |                              |

Test #: 806 Sample #: -03R Filter #: KF-1050D Housing #: Date Code: 2020.07.21 JM 7/23/2020



Test Description: 75-5140, with KF-1050D, with Box Plug, without MAF Sensor

|                                      | Tes             | t Conditions       |           |
|--------------------------------------|-----------------|--------------------|-----------|
| Barometric Pressure:                 | 28.68532 in. Hg | Relative Humidity: | 54 %      |
| Air Flow Type:                       | SCFM            | Temperature:       | 70 deg. F |
| Number of Pleats:<br>Flow Direction: |                 | Pleat Depth:       | in.       |



| Air Flow Curve Data |
|---------------------|
|---------------------|

| Flow Rate | <b>Differential Pressure</b> |  |  |  |
|-----------|------------------------------|--|--|--|
| 116       | 0.80                         |  |  |  |
| 231       | 1.39                         |  |  |  |
| 347       | 2.38                         |  |  |  |
| 463       | 3.77                         |  |  |  |
| 579       | 5.49                         |  |  |  |

# Air Filter Full Life Efficiency Test Report

Test #: 806 Sample #: -06CE Filter #: KF-1050D Housing #: Date Code: 2020.07.22

Operator: JM Report Date: 7/23/2020 Filter Mfg.: Housing Mfg.:



Pressure ("H2O) 5.485 5.51 5.654 5.776 5.91 6.038 6.245 6.453 6.707 7.076 7.626 8.352 9.237 10.33 11.861 13.538 15.58 15.882

Test Description: 75-5140 with KF-1050D, no MAF Sensor, with Box Plug

|                      |                  | Tes      | at Condition | s            |                           |                       |
|----------------------|------------------|----------|--------------|--------------|---------------------------|-----------------------|
| Barometric Pressure: | 28.757 in. Hg    |          |              | Relative     | Humidity:                 | 59 %                  |
| Air Flow Setpoint:   | 580 SCFM         |          |              | Тур          | be of Dust:               | A4 Coarse             |
| Test Procedure:      | Capacity and Eff | Batch #: |              |              |                           |                       |
| Air Flow Type:       | SCFM             |          |              | Ter          | nperature:                | 68 deg. F             |
| Test Endpoint:       | 10 in. H2O       |          |              | Initial      | Add Rate:                 | NaN g/min             |
| Number of Pleats:    |                  |          | A            | ccumulative  | Add Rate:                 | 16.42 g/min           |
| Flow Direction:      |                  |          | 304.0        | PI           | eat Depth:                | in.                   |
| Initial Delta P      | 5.44 in. H2O     |          | 1            | Accumulative | e Capacity:<br>Test Time: | 250.70 g<br>16.13 min |
|                      |                  | Initial  |              | Accumulative | •                         |                       |
|                      |                  |          | Blanket      |              | Blanket                   |                       |
|                      | Start            |          |              | 5382.90      | 598.21                    |                       |
|                      | End              |          |              | 5633.60      |                           |                       |
|                      | Gain             |          |              | 250.70       | 1.16                      |                       |
|                      | Efficiency       |          |              | 99.54%       |                           |                       |

Standard Restriction

Pressure Differential

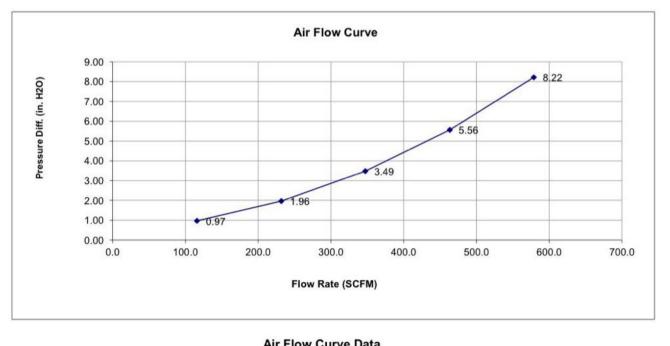
|      |                    |     |            |              |              | Dust Loading Curve Data |         |        |
|------|--------------------|-----|------------|--------------|--------------|-------------------------|---------|--------|
|      | Dust Loading Curve |     |            | Dust Fed (g) | Pressure ("H |                         |         |        |
|      |                    |     |            | 0            | 5.485        |                         |         |        |
| 18 1 |                    |     |            |              |              |                         | 15.812  | 5.51   |
|      |                    |     |            |              | _            |                         | 32.183  | 5.654  |
| 16   |                    |     |            |              | 1            |                         | 49.084  | 5.776  |
| 14   |                    |     |            |              |              |                         | 65.258  | 5.91   |
| 14   |                    |     |            |              | *            |                         | 81.535  | 6.038  |
| 12   |                    |     |            |              | *            |                         | 97.719  | 6.245  |
| 10   |                    |     |            |              |              |                         | 114.019 | 6.453  |
| 10   |                    |     |            |              |              |                         | 130.392 | 6.707  |
|      |                    |     | ~          | ~            |              |                         | 146.813 | 7.076  |
| 200  |                    |     | + + + +    |              |              |                         | 163.37  | 7.626  |
| 6    | +++                |     |            |              |              |                         | 180.018 | 8.352  |
| 4    |                    |     |            |              |              |                         | 196.348 | 9.237  |
|      |                    |     |            |              |              |                         | 212.721 | 10.33  |
| 2    |                    |     |            |              |              |                         | 229.25  | 11.861 |
| 0    |                    |     |            |              |              |                         | 245.728 | 13.538 |
| 0    | 50                 | 100 | 150        | 200          | 250          | 300                     | 261.75  | 15.58  |
| 0    | 00                 | 100 | 100        | 200          | 200          | 000                     | 263.993 | 15.882 |
|      |                    | Dus | st Fed (g) |              |              | _                       |         |        |
|      |                    |     |            |              |              | -                       |         |        |
|      |                    |     |            |              |              | -                       |         |        |
|      |                    |     |            |              |              |                         |         |        |

Test #: 803 Sample #: 1 Filter #: STOCK Housing #: STOCK Date Code: 43938 BL 4/17/2020 FORD FORD



Test Description: 2020 FORD POWERSTROKE STOCK INTAKE

| Test Conditions                      |                 |                    |           |  |
|--------------------------------------|-----------------|--------------------|-----------|--|
| Barometric Pressure:                 | 28.83342 in. Hg | Relative Humidity: | 35 %      |  |
| Air Flow Type:                       | SCFM            | Temperature:       | 72 deg. F |  |
| Number of Pleats:<br>Flow Direction: |                 | Pleat Depth:       | in.       |  |



| Air Flow Curve Data |                              |  |  |  |
|---------------------|------------------------------|--|--|--|
| Flow Rate           | <b>Differential Pressure</b> |  |  |  |
| 116                 | 0.97                         |  |  |  |
| 232                 | 1.96                         |  |  |  |
| 347                 | 3.49                         |  |  |  |
| 463                 | 5.56                         |  |  |  |
| 579                 | 8.22                         |  |  |  |
|                     |                              |  |  |  |

#### Air Filter Full Life Efficiency Test Report

Test #: 803 Sample #: 2 Filter #: STOCK Housing #: STOCK Date Code: 43938 Operator: BL Report Date: 4/17/2020 Filter Mfg.: FORD Housing Mfg.: FORD



Test Description: 2020 FORD POWERSTROKE STOCK INTAKE

|  |              | Test Conditi               | ons          |                          |           |
|--|--------------|----------------------------|--------------|--------------------------|-----------|
| Barometric Pressure:<br>Air Flow Setpoint: |              |                            |              | Humidity:<br>pe of Dust: | 44 %      |
| Test Procedure:                            |              | Batch #:                   |              |                          |           |
| Air Flow Type:                             |              |                            | 66 deg. F    |                          |           |
| Test Endpoint:                             |              |                            | NaN g/min    |                          |           |
| Number of Pleats:                          |              |                            | Accumulative | Add Rate:                | 0 g/min   |
| Flow Direction:                            |              |                            | P            | leat Depth:              | in.       |
|  |              | Test Resu                  | ts           |                          |           |
| Initial Delta P                            | 8.16 in. H2O | H2O Accumulative Capacity: |              |                          | 884.40 g  |
|  |              |                            |              | Test Time:               | 56.69 min |
|  |              | Initial Accumulative       |              |                          |           |
|  |              | Blanket                    |              | Blanket                  |           |
|  | Start        |                            | 4010.50      |                          |           |
|  | End          |                            | 4894.90      | 596.07                   |           |
|  | Gain         |                            | 884.40       | 7.05                     |           |
|  | Efficiency   |                            | 99.21%       |                          |           |

Standard Restriction

C Pressure Differential

