AIR FILTER TEST DOCUMENT

Proper air filter design will accomplish high filtration without overly impeding air flow or engine performance through restriction. Air encounters resistance as it passes through the air filter commonly described as restriction. Air filter restriction is the result of air filter design decisions and the materials used as a filtering medium. Less restriction means more air passing through the filter at any given time increasing engine performance.

ABSOLUTE AIRFLOW TEST PROTOCOL

In order to evaluate the restriction of an air filter alone, we perform an absolute air flow test. This test performed on a Superflow SF1020 Flow Bench is to determine how much air will flow through the air filter under a constant pressure per square inch. This constant pressure we use is the amount required to lift a volume of water 1½ inches. This absolute test procedure is useful for understanding the impact of design decisions on air flow while eliminating or holding all other variables constant. Results can vary due to subtle differences between production air filters.

ISO 5011 FILTRATION TEST PROTOCOL

This test protocol is a methodology used by engineers to evaluate the impact of design decisions on 1) filtration efficiency, 2) air flow restriction during dust loading and 3) overall dust holding capacity. This test protocol allows for the selection of many variables such as air flow rate, dust feed rate, test duration and test fixture. Therefore no two ISO 5011 test results are comparable unless all such variables are the same. Keep in mind, this test protocol was not developed or intended to identify how an air filter will perform in a vehicle during operation. We publish these tests solely to help consumers see the result of the air filter design choices we have made using this test protocol with disclosed test conditions.

Efficiency – Measures the percentage of test dust retained by the air filter in a laboratory environment following the ISO 5011 protocol.

Capacity - Measures the total amount of test dust retained by the air filter when the test has reached a user selected level of terminal restriction. Typically the terminal restriction approximates the restriction at which an air filter should be cleaned or replaced.

Restriction – Measures the change in air filter restriction during the test as dust loads on the air filter. Restriction is measured by the pressure differential before and after air has flowed through the filter expressed in inches of water.

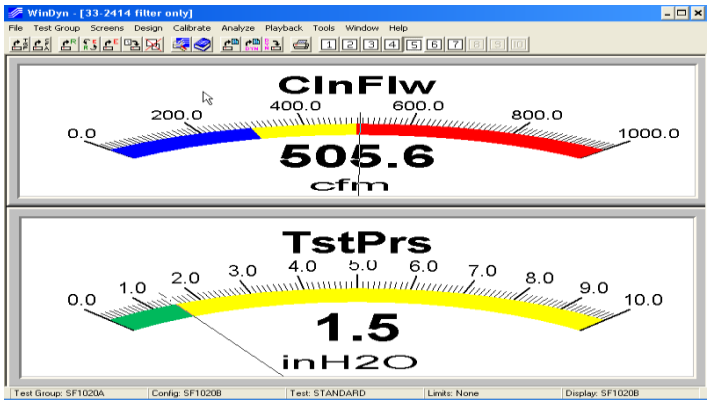
Air Filter Part No. **33-2414**

K&N Absolute Air Flow Test

SuperFlow SF-1020

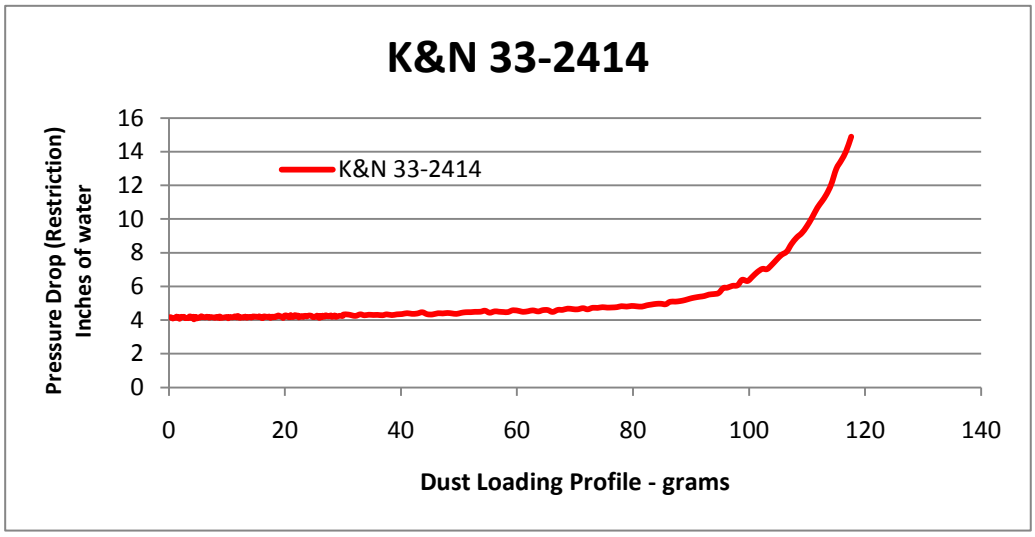
505.6 cfm @1.5 inH20

Demonstrated amount of airflow before the air filter creates restriction of more than 1.5 inches of water pressure



K&N ISO 5011 TEST PROTOCOL

Restriction During Dust Loading Cycle



FILTRATION TEST RESULTS	Initial	Overall
Efficiency	97.93 %	98.67 %
Dirt Capacity (In Grams)		117.6

TEST CONDITIONS

Test Dust Used (ISO) Coarse	22% < 10 Microns; Remainder 10 - 180 microns	
Starting Restriction (Inches of water)	3.92	
Ending Restriction (Inches of Water)	15.05	
Dust Feed Rate	0.25 g/m^3	1 g/m^3
Test Air Flow Rate (Cubic Feet per Minute)	180	180
Test Fixture	OE Air Box	OE Air Box