

CARBURETOR ANALYSIS



The software **CARBURETOR ANALYSIS** allows to analyze and to find the optimal needle and atomizer for the needs of the engine, the driver, and the track.

The coupling needle - atomizer is one of the element more important of the carburetor calibration because it manages the delivery of fuel from the main circuit at the different throttle openings, for this reason for each carburetor are available a long series of needle to combine with atomizers that are available in their turn in different diameters.

With so many needles and atomizer availables to quickly find the right ones, or understand how to improve the torque in some points simply changing the needle, it's a difficult task, and also the needles dimensions tables often instead of helping increase the confusion, with **CARBURETOR ANALYSIS** you'll have everything clear in a moment and you can **easily find the needle and the atomizer to improve performance where you are interested**



Use of the software is extremely simple, in fact you'll just have to enter the engine displacement and the maximum engine speed, so the software can evaluate the fluid-dynamics conditions in which works the circuit of the maximum of the carburetor.



At this point you can start using the software with the first functionality available, the comparison between two coupling of needle - atomizer

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The first functionality of the software CARBURETOR ANALYSIS is the comparison from two needle - atomizer coupling. You will just have to choose the needles and the atomizers, in addition to the notch of the needle, that you want compare.

COMPARISON NEEDLE - ATOMIZER		
REF.	COMPARE	NEW
260	atomizer	259
K11	needle	K15
2.5	notch	2

Clicking COMPARE the software visualizes a graph easy to interpret that shows the fuel flow at the different throttle opening for the two coupling that you're comparing (red curve and blue curve).



For example in this case it is clearly seen that the first coupling (red) provides more flow until to 30% and instead after the second coupling (blue) allows a higher flow.

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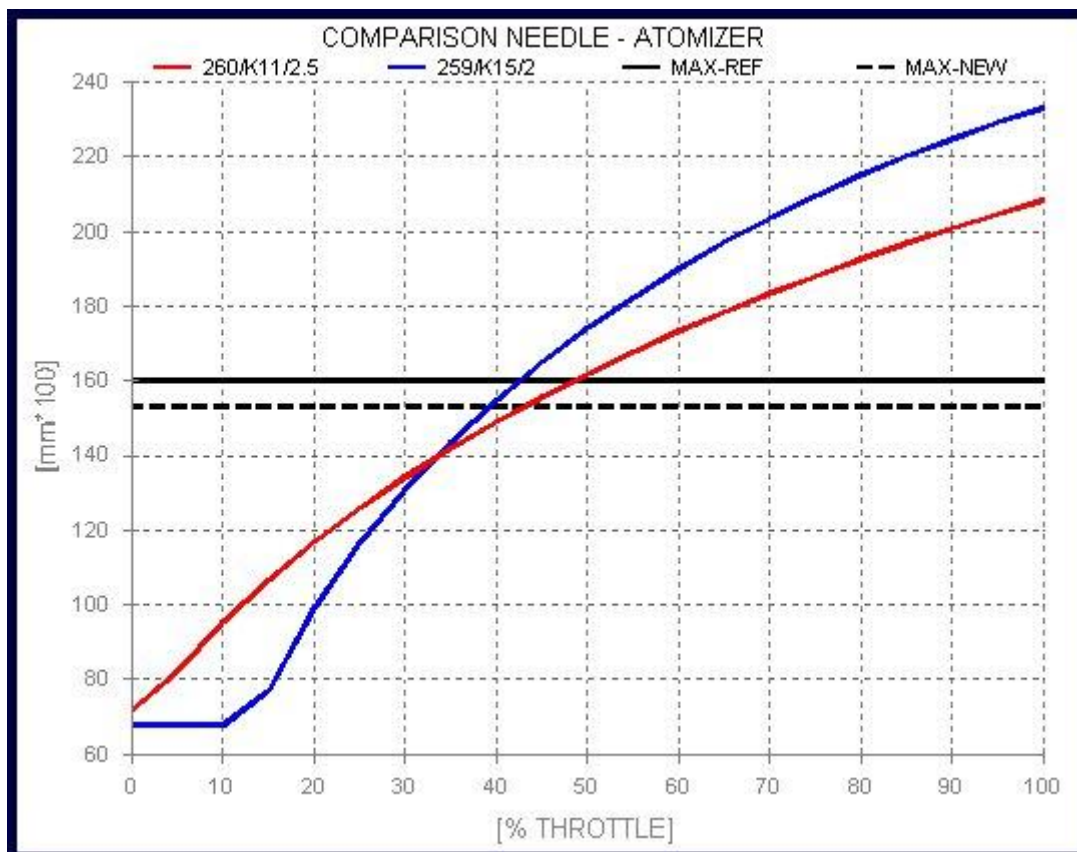
Other at the chart the software CARBURETOR ANALYSIS shows how at each opening of the throttle varies in percentage the passage of fuel between the two needle - atomizer coupling compared. This is very important to make the **right choice based to the needs of fuel** that you have in comparison at the initial situation.

RESULTS										
FUEL [%] vs THROTTLE [%]										
10	20	30	40	50	60	70	80	90	F	
-49	-28	-5	8	16	20	23	25	25	25	

In the graph in addition to the red and blue lines also appear two black lines, these are relative to the diameter of the main jet, in fact, the software in addition to making a geometrical calculation of the needle atomizer coupling, also makes an **fluid-dynamic calculation of the main circuit to see the fluid-dynamic losses that each coupling determines**. Thus if you enter the main jet that you have with the first coupling the software CARBURETOR ANALYSIS **calculates the main jet that you will use with the new needle atomizer coupling to have the same carburetion at full load**. This is a feature unique because the biggest problem that you have when you change the type of needle is that the carburetion becomes incorrect at full load (think what happens in Dellorto VSH30 when you go from needle K to needle U, but this is true in general for all the needles because their shape and size change the fluid-dynamic losses of the circuit).

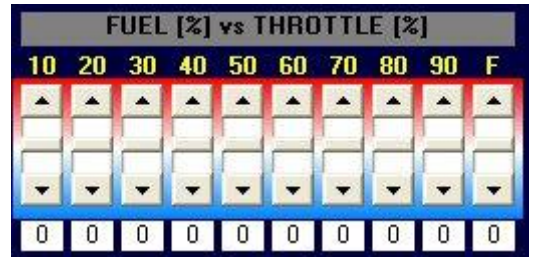
main jet calculation for the new needle atomizer coupling

160	main jet	153
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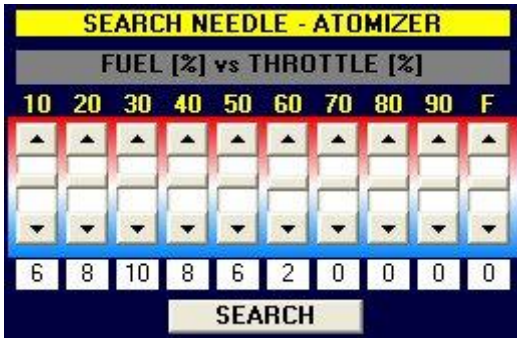


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Other than the comparison of needle atomizer coupling the software CARBURETOR ANALYSIS has the **great functionality to calculate a new needle - atomizer coupling according to the needs of fuel that you want obtain at every throttle opening.** In fact, after entering the needle and the atomizer that you have installed, you instruct the software to find which needle and which atomizer allow you to have more or less fuel at the different throttle openings.

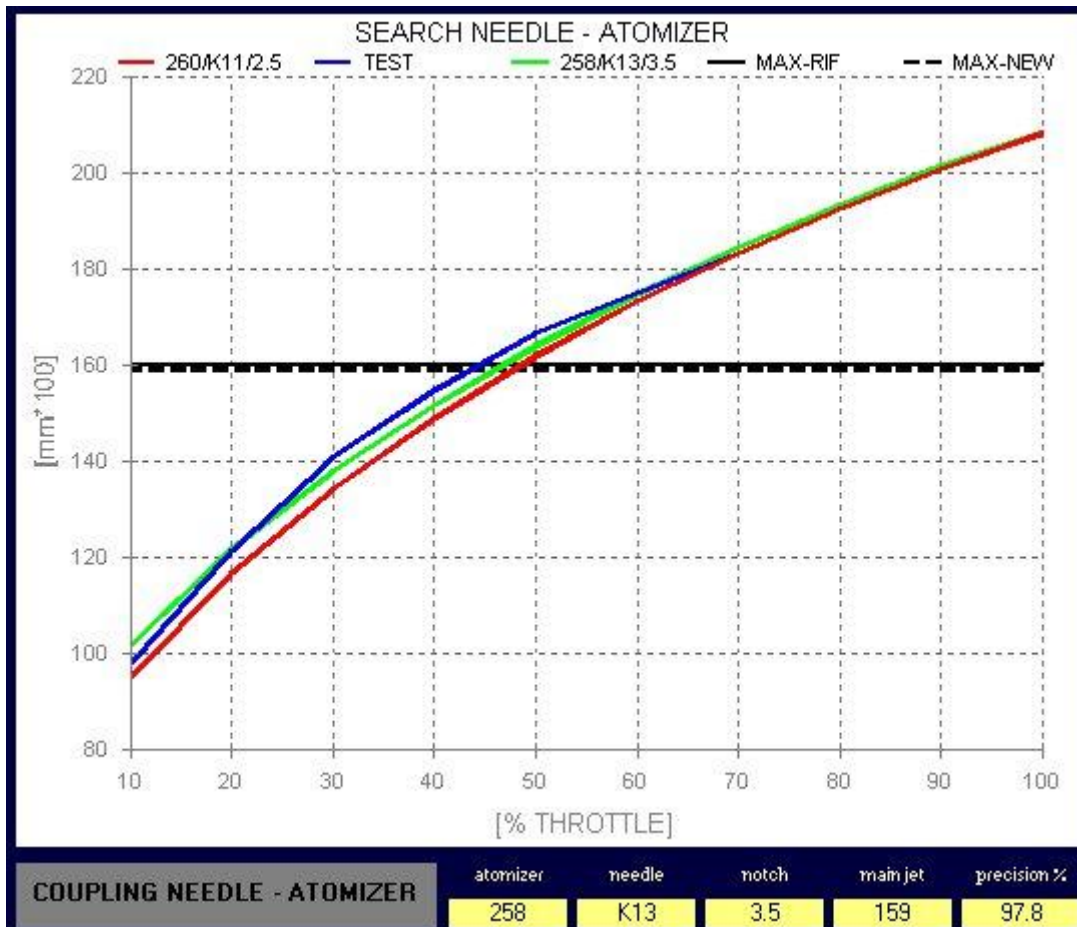


You must simply move the bars to indicate to the software how much you want leaner or richer the jetting at the different throttle openings.



For example, suppose you have the need to enrich the fuel mixture in the first stage of delivery. Move the bars as you want and click SEARCH within seconds the software will calculate the needle atomizer coupling that is closest to the request made.

The chart shows the coupling that you had initially (red curve), that you would want to modify the torque as desired (blue curve) and that calculated by the software that allows you to get closer between all possible combinations of needles and atomizers available.



The software CARBURETOR ANALYSIS not only calculates the new needle to be used, but also the diameter of the atomizer to match it and the optimum notch to obtain the desired torque.

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Other at the chart the software CARBURETOR ANALYSIS shows how at each opening of the throttle varies in percentage the passage of fuel with the new needle - atomizer coupling calculated. This is very important because you can immediately see the new fuel flow respect at your request. The software also indicates of what in percentage terms the needle - atomizer coupling calculated, deviates from the desired one.

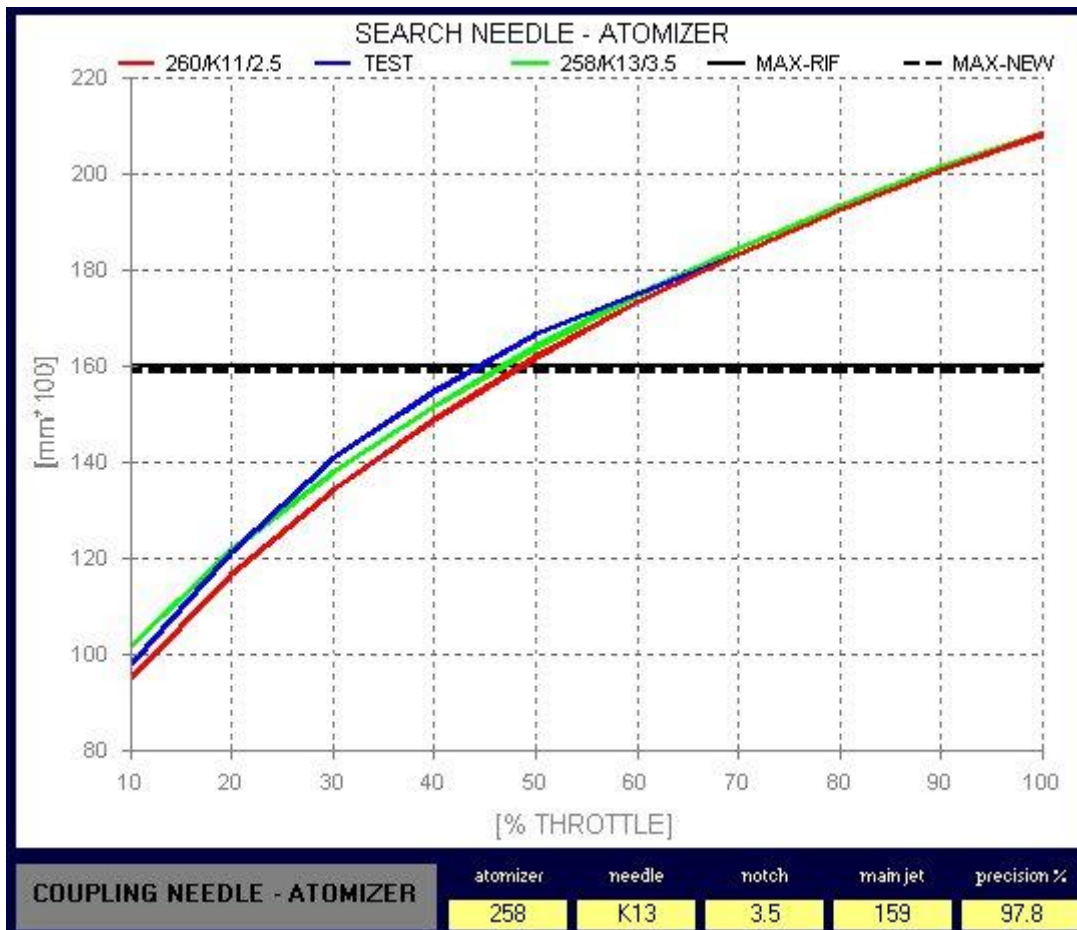
precision %
97.8

6	8	10	8	6	2	0	0	0	0
SEARCH									
RESULTS									
FUEL [%] vs THROTTLE [%]									
10	20	30	40	50	60	70	80	90	F
14	8	6	4	3	2	1	1	0	0

As already seen for the comparison, also in this case the graph in addition to the red, blue and green lines also appear two black lines, these are relative to the diameter of the main jet, in fact, the software in addition to making a geometrical calculation of the needle atomizer coupling, also makes an fluid-dynamic calculation of the main circuit to see the fluid-dynamic losses that each coupling determines. Thus if you enter the main jet that you have with the first coupling the software CARBURETOR ANALYSIS calculates the main jet that you will use with the new needle atomizer coupling to have the same carburetion at full load. This is a feature unique because the biggest problem that you have when you change the type of needle is that the carburetion becomes incorrect at full load (think what happens in Dellorto VHS30 when you go from needle K to needle U, but this is true in general for all the needles because their shape and size change the fluid-dynamic losses of the circuit).

calculation of the main jet for the needle - atomizer coupling calculated by the software for the new requests of fuel flow.

160 main jet 159



CARBURETOR ANALYSIS

Summarizing the software CARBURETOR ANALYSIS allows you to:

COMPARE TWO NEEDLE ATOMIZER COUPLING

clearly seeing the differences of fuel passage at all the throttle openings and the fuel percentage that is delivered more or less in the two cases.

CALCULATE THE MAIN JET FOR A NEW NEEDLE ATOMIZER COUPLING

CALCULATE A NEW NEEDLE ATOMIZER COUPLING

that allows you to get a carburetion leaner or richer at the different throttle openings just like you want for the needs of the engine, the driver and the track.