

Presentation SET-UP CARBURETOR *Power*

SCREENSHOT

SET-UP CARBURETOR VSH30-KZ - POWER

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MODIFICATION EFFECT

	0	25	50	75	100
throttle cutaway	-5				
air screw turns	-1/8				
idle atomizer					
idle jet	+1				
main jet	+1				
nozzle	+1				
atomizer	+1				
needle					
notch	+0.5				
float [gr]					
float height	-0.5				

AIR-FUEL RATIO

	0-25	25-50	50-75	75-100	COMB.EFF.	EMUL.EFF.
Opening Slow Corner						
Full Load						
Opening Fast Corner						

SET-UP CARBURETOR VSH30-KZ - POWER

The POWER version of the software SET-UP Carburetor is available for the categories 125 KZ and 60 MINI (the images and examples in the presentation refer to the KZ software, but for MINI, input, output and operation are the same).

This version of the software differs from the others because it carries out a complete dynamic simulation of the operation of the carburetor which integrates the calculations, of the air-fuel ratio, of the response speed, and of the mixture atomization, this allows to analyze the carburation more in detail and therefore to have precise optimization to improve even more the performance in every sector of the track.

TOTAL MANAGEMENT OF INFLUENT FACTORS ON CARBURATION



As is known, every engine, in function of its features and of the level of tuning, makes work the carburettor differently and therefore, to have the optimal carburation, each engine must work with specific carburetor settings. For this reason, have been included in the software some parameters that allow you to precisely and easily define the efficiency of the engine in the fundamental operating conditions, and based on your engine we will tell you how to set these parameters to get the most from the software and therefore from the engine!

partial efficiency	<input type="text"/>
minimum efficiency	<input type="text"/>
maximum efficiency	<input type="text"/>
oil mixture [%]	4



Another aspect that significantly affects the carburation is the type of filter used, for this reason all the homologated filters have been included in the software, so the carburetor setting will also be optimized according to the filter that you use. It will also be possible to take into account, in case of rain, of any filter cover, or of change of position, or of a decrease in efficiency linked to wear.

filter type	R&R NOX
rain filter cover	<input type="checkbox"/>
filter efficiency	<input type="text"/>



In addition to the engine and filter characteristics, to obtain the maximum it is necessary to optimize the carburation within the effective operating range of the engine, in fact the carburettor even if evolved is not able to guarantee an optimal carburation in any operating condition, for this reason the calibration is calculated to offer the maximum in the rotation speeds where the engine actually works on the different tracks.

min speed [rpm]	9000
max speed [rpm]	14500



Once the engine parameters have been set, the type of filter has been chosen and the operating range has been entered, you are ready to analyze your carburetor setting and find the optimal one for your engine.

Before this, however, it is necessary to enter the atmospheric conditions, in fact every minimum variation in pressure, temperature and humidity alters the carburation, compromising the performance of the engine. One of the reasons for the success of our software is precisely to allow the mechanics and tuners to accurately correct the carburetor setting according to atmospheric conditions and therefore always get the best from the engine!



pressure [hPa]	1013
temperature [°C]	20
humidity [%]	40
thermal sensitivity	<input type="text"/>



MANAGEMENT OF ALL THE CALIBRATION ELEMENTS OF THE CARBURETOR

As you have seen, the software SET-UP Carburetor Power takes into account of all the factors influencing carburetion, engine characteristics, type and efficiency of the filter, operating engine speeds based on the track and driving style, and weather conditions.



throttle cutaway	50
air screw turns	1.5
idle atomizer	B50
idle jet	60
main jet	165
nozzle	7
atomizer	
needle	
notch	1.5
float [gr]	2 x 4.5
float height	

In the software you will then have to enter the setting that you have mounted on the carburetor, or that you want to test, and in a moment you will see the carburation that is obtained in each driving condition and see how far you are from the optimal, with all the indications to change the carburetor setting to get the maximum performance from the engine in all the conditions.

The software takes into account all the calibration elements available based on the type of carburetor (VHSH30 for the KZ, and PHBG18 for the MINI), in this way the carburation will be calculated precisely and it will be possible to act on each calibration element to optimize it in each detail.

Following will see the results!

ANALYSIS OF THE CARBURETOR SETTING AND OF THE CARBURETION

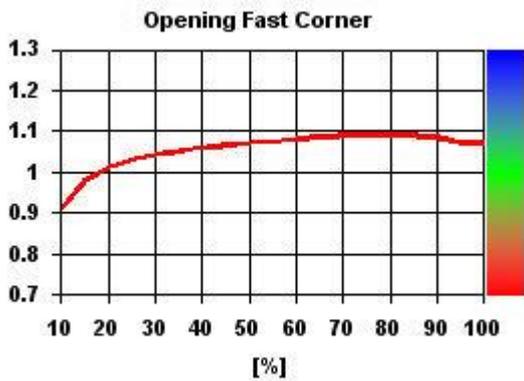
The software SET-UP Carburetor Power shows you in a few seconds the carburation that you get with the setting that you have on the carburetor, or that you want to test, and how this is compared to the optimal one for your engine in the different driving conditions.



For first, it shows you how is the carburation accelerating from slow corners. The reference is the value 1 so you can easily see at the different throttle openings where the carburation is optimal, where it is lean, and where it is rich, thus being able to act in the correct direction to optimize it.



The software then shows you what happens at full load to vary the engine speed, to maintain the optimal carburation throughout all the engine operating range.



Finally the software shows you is the carburetion accelerating from fast corners, or in the case of the KZ, accelerating after the gear shift, in this way you can easily see how the carburetor setting that you use is adapted to the different characteristics of the track finding the best compromise to get the best performance on the lap for each track.

	AIR-FUEL RATIO			
	0-25	25-50	50-75	75-100
Opening Slow Corner	1.5	2.7	5.0	7.1
Full Load	6.7	5.8	5.6	5.6
Opening Fast Corner	-3.0	5.2	8.1	8.2

In addition to the graphs, the software summarizes the situation in the different phases of opening or operating engine speed (0-25% 25-50% 50-75% 75-100%) in this way, as we shall see following, it will be easy to understand on which calibration elements will be necessary to intervene to optimize the carburetion. The software in fact shows you how much you deviate percentage from the optimal in every condition, helping you also with colors to understand where the carburetion tends to lean (colors towards blue), where it tends to rich (colors towards red), and where instead it is optimal (green).

	COMB.EFF.	EMUL.EFF.
	Opening Slow Corner	99.1
Full Load	98.7	96.5
Opening Fast Corner	98.1	95.7

Finally the software shows you two indexes to make you easily understand how globally your carburetor setting approaches the optimal 100% as regards combustion efficiency and the level of mixture atomization that can be obtained in the various driving phases.

CALCULATION OPTIMAL SETTING OF THE CARBURETOR FOR EVERY CONDITION

After analyzing the carburation that is obtained with your calibration, the software SET-UP Carburetor Power provides all the indications to optimize it and therefore obtain the maximum performance from the engine in any driving condition.

For first, it shows you a table that shows you the effects of any setting change to the carburetion. For example, if you switch from a throttle valve of 50 to a 45 (-5) the carburetion will become richer by 8.6% at the start of opening, 5.4% to 25% of opening, and so on for the different openings, and for each calibration element.

		MODIFICATION EFFECT				
		0	25	50	75	100
throttle cutaway	-5	8.6	5.4	3.0	1.5	0.0
air screw turns	-1/8	0.3	0.1	0.1	0.0	0.0
idle atomizer						
idle jet	+1	2.4	1.5	1.0	0.7	0.4
main jet	+1					1.1
nozzle	+1	4.2	2.5	1.5	1.0	0.6
atomizer	+1	1.7	2.1	2.0	1.8	
needle						
notch	+0.5	1.4	1.6	1.4	1.2	
float [gr]						
float height	-0.5	0.1	0.1	0.1	0.1	0.1

Thanks to this table it will therefore be very easy to understand what to do to improve the carburetion. If, for example, from the analysis of the carburetion, coming out of the slow corners, you find yourself in this situation:

	0-25	25-50	50-75	75-100
Opening Slow Corner	1.5	2.7	5.0	7.1

You see that you have to rich the carburetion of 1.5% between 0 and 25 until to 7.1% at full load, so in this case, based on the table generated with the setting entered, you can work on the idle jet (1 more point will rich of 2.4% in the first opening), on the atomizer or on the needle notch to rich between 25 and 75 (1 point more of atomizer will rich of about 2% in this phase), and on the main jet to rich at full load.

This is just one example, but thanks to the table, you can act in multiple ways to arrive at the optimal situation by finding the solution that best meets your needs for the different driving conditions that the characteristics of the track require. In fact, due to its characteristics, the carburetor cannot satisfy all the situations in the same way, so it is necessary to play with all the calibration elements to find always the best compromise appropriate to the driving and track needs that you have, and this is only possible with the help of our software because even with so much experience the possibilities are really many and the help of a professional tool, technical and trade leader, such as SET-UP Carburetor, is fundamental.

throttle cutaway	46
air screw turns	1.5
idle atomizer	B51
idle jet	60
main jet	171
nozzle	7
atomizer	
needle	
notch	1.5
float [gr]	2 x 4.5
float height	

In addition to the help table for choosing the modifications that should be made, the software SET-UP carburetor Power directly calculates a new carburetor setting indicating the changes to be made to quickly reach the optimal carburetion. The calculation recommends the changes that are easier to make, this is essential to be able to manage the carburetion easily during the race week end where the time available is always short and the weather conditions change continuously during the day.

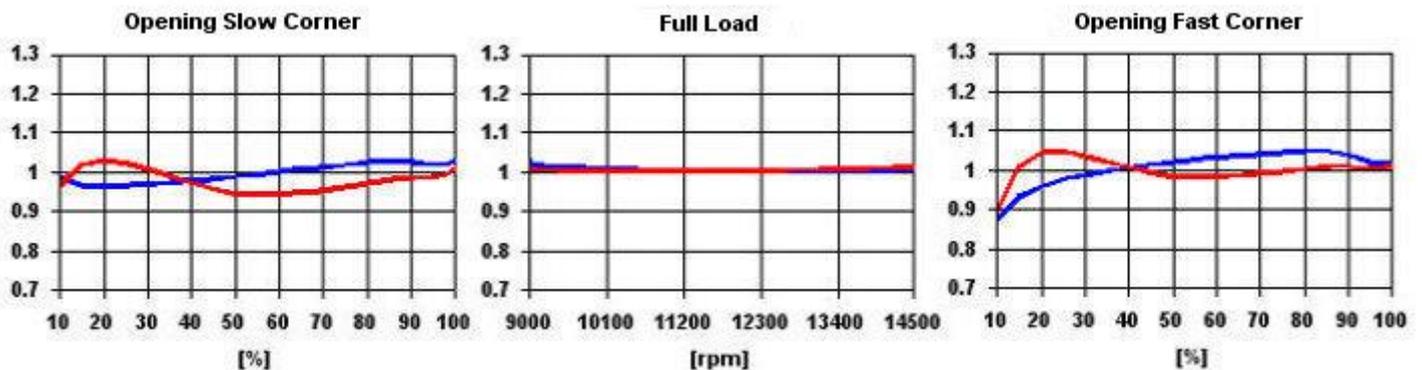
CALCULATION OPTIMAL CARBURETOR SETTING AND SETTINGS COMPARISON

Thanks to the software SET-UP Carburetor Power you can therefore easily find the carburetor setting that allows you to have the best possible carburetion in all the different conditions.



	AIR-FUEL RATIO				COMB.EFF.	EMUL.EFF.
	0-25	25-50	50-75	75-100		
Opening Slow Corner	-2.7	-2.6	0.2	2.3	99.8	95.4
Full Load	1.2	0.4	0.2	0.3	100.0	96.2
Opening Fast Corner	-7.6	-0.2	3.3	3.4	99.3	95.4

As you can see, since it is a carburetor, it is not possible to obtain a homogeneous carburation in all conditions, but only thanks to the SET-UP Carburetor software it is possible to approach perfection in more possible driving conditions!



The software also offers the possibility of comparing the settings, so it will be easy to see how each setting renders in the different driving conditions, and therefore make the best choice depending on the track, and on the driving style of the driver.

At race high level having a good carburetion is not enough, in fact a good mechanic can bring you on a good basis, but when the races are won for a few tenths, or the difference in qualifying between first and last is very little, it is easy to understand, that a good base is not enough, but it is necessary to have the optimum, because even improving by 1% can mean gaining precious tenths. Thanks to the software SET-UP Carburetor Power you can therefore refine your carburetor setting in detail, and keep it at the best in all weather and track conditions.