SUZUKI RG60 RACE ENGINE SPEC SHEET

The stroked RG60 build for the 1990 race season.

Coker Race Products take no responsibility for any problems you may encounter when executing these specifications.
The *success* of these specs has been proven in Short Circuit racing since 1985. Your success will revolve around how well you can *interpret* and *execute* the information I have supplied. I hope it is of use to you and remember it is ***free!***

We have run the Suzuki RG 50 in two configurations using the large (44) bore with the stock stroke and the smaller (43) bore with a re-stroked crank. Our capacity limit is 60cc + 10%. We use the 43mm Kawasaki kx60 piston and the 44mm pro-x 1mm oversize Kawasaki kx60 piston. The stock kx60 piston allows the engine to rev a bit more freely but lacks the torque of the pro-x piston. The stock kx60 piston is made on the same internal die as the pro-x piston, but is 1mm smaller in diameter, therefore giving you a thinner lighter piston. The shorter crown to small-end height also has many mechanical advantages over the stock RG piston.

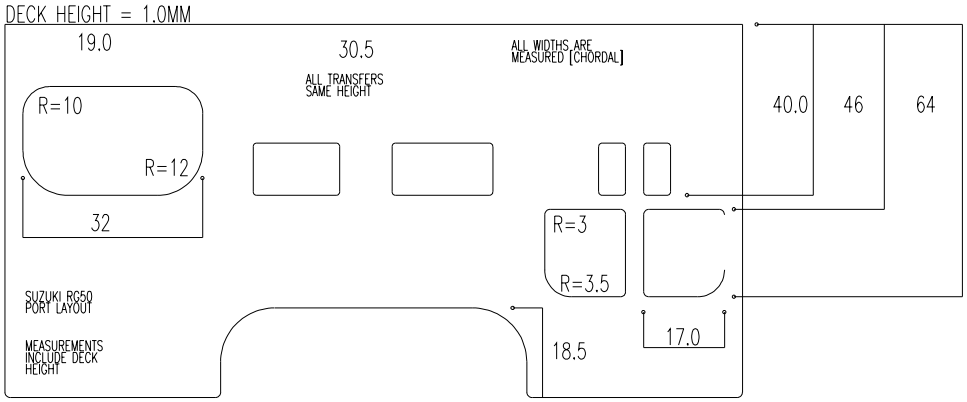
Running the stock kx piston or pro-x piston with the standard stroke will require that you machine down the cylinder base because of the crown height difference. I suggest setting your transfer heights and then skimming the cylinder Base, after which you can set your exhaust height. I have included a measurement in the drawing but you will have to run 2 * base gaskets with it.(giving you the correct deck height).
Running the stroked crank requires you to bore a new, big-end hole. This new hole must be offset 1-1.9mm depending on the capacity you are aiming for 1.9mm will give you a stroke of 41.7mm as apposed to the stock stroke of 37.9mm. The longer stroke will give you a maximum capacity of 60.5cc. There are many mechanical advantages to the

stroking. The engine is more square (allowing higher compression ratios if you want to run them) and the longer 84mm rod also helps in creating a bit more crank case vol. The stock rod is 80mm in length.

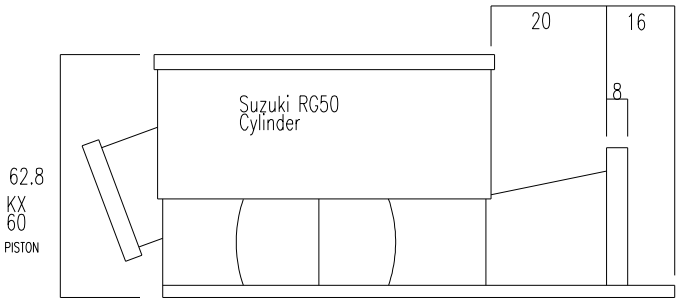
If you are using your cylinder with an already skimmed base, you will need to have a spacer plate laser cut to the same shape as the base gasket. You will be using the stock TZR50 big-end pin, thrust washers, bearing, and conrod. If you want to, you can also use the Kawasaki kx 60 big-end pin, thrust washers, bearing and rod. You will have to grind the big-end pin shorter. I have found the setup with the TZR50 parts to work the best. Much beter life than the stock rg 50 parts.

Port specs that I have been using are 198 to 200 Degrees exh. Duration and a blowdown value of 34.5(short circuit) to 35.5(long circuit) degrees. The transfers are really not very efficient on this engine because the crankcases are trying to feed six ports from two ducts. Because there is no rear wall to the auxiliary ports, the flow is very rearwards (and upwards) and the two boost ports don't have a nice upward angle. The auxiliaries have too little inside flow radius. This accounts for nice linear flow of power. No strong mid to top-end as we would all prefer for roadracing.

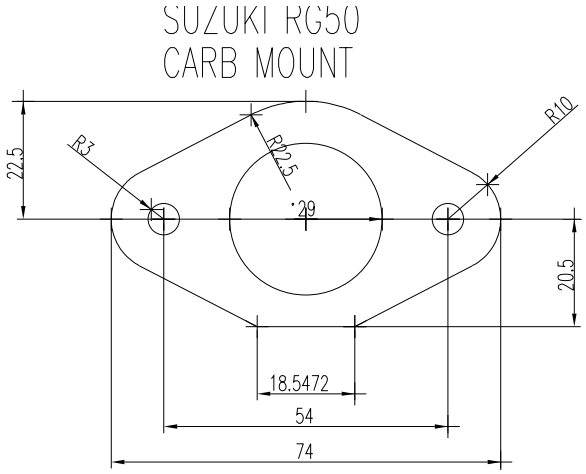
The engine runs best with a 28 mm mikuni flatslide carb on longer circuits. The squish area ratio must be 0.42 % at 9 degrees and have a squish clearance of 1mm. Set the trapped vol. to 4.5cc. We have found the Suzuki rm80 1983 to 1985 ignitions to work well and also the HPI Type 068 ignition (really let this motor rev). Set the ignition timing at 0.6 to 0.9 mm BTDC for the rm80 ignitions and 3.5 mm BTDC for the HPI ignition. A NGK B9EGV works great most of the time. Use race gas with an octane rating of at least 102. These specs are all based on sea level. If you only have 97 pump gas, set the trapped vol. to 4.6cc. You will need a smaller trapped vol. with the standard bore (3.7 to 4cc). These volumes allow for good EGT values keeping the power delivery as wide as possible.



Running the Case reed setup, you will need to advance the inlet timing for more duration (see drawing). The piston skirt length must be cut to a length of 44 to 45 mm. You also need to modify the reed block for flatter straighter flow. This engine looses a lot of flow velocity through this type of inlet. The inlet is also a little long for piston port induction. You will need to cut off the stock inlet carb mount as in the drawing.

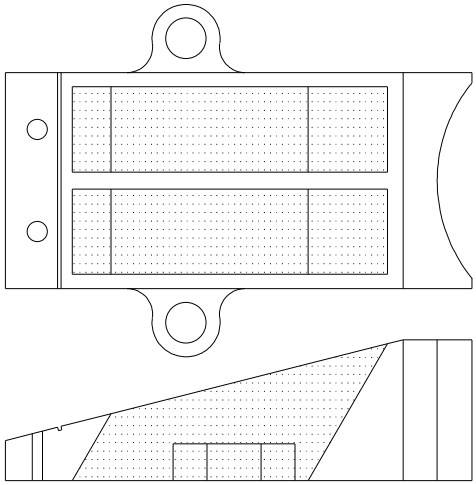


You can now weld on a flat flange plate for a new carb mount (this allows you to use one of those nice bolt on carb mounts). The flange plate must be 8mm thick.



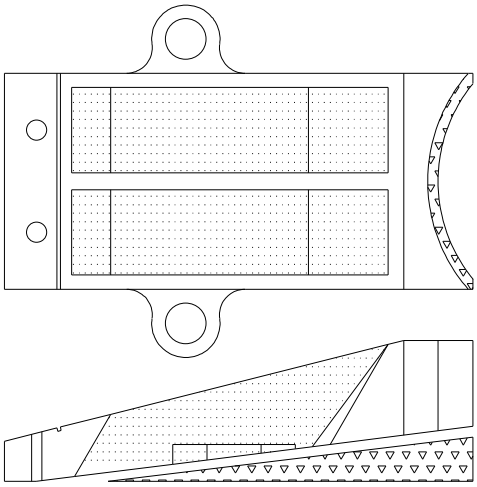
Make sure it is high enough so that the carb clears the cases. Don't weld it on at to much of an angle or you will have float level problems (especially detrimental to this motor).

The flat reed block can be created from the original one.



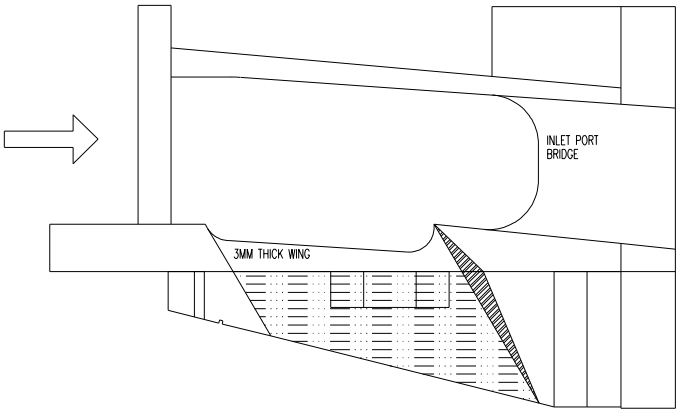
stock reed block

Set the reed block up in a milling vice mill it at an angle as per the drawing.



shaded area removed

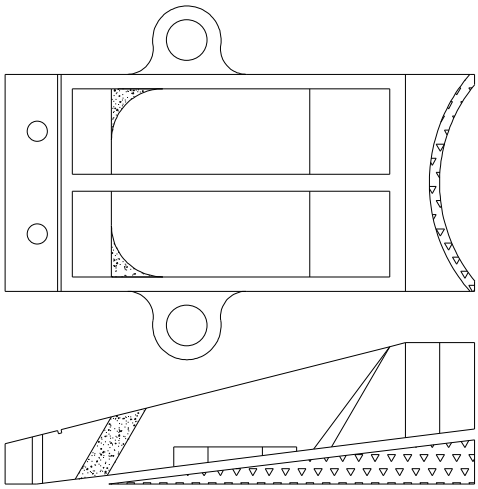
You will then have to epoxy small angled ears onto the existing ones for mounting. You can now use epoxy to re shape the inlet and reed block. Don't cut out the center rib out of the reed block. Epoxy a 3 mm wing into the reed port as in the drawing.



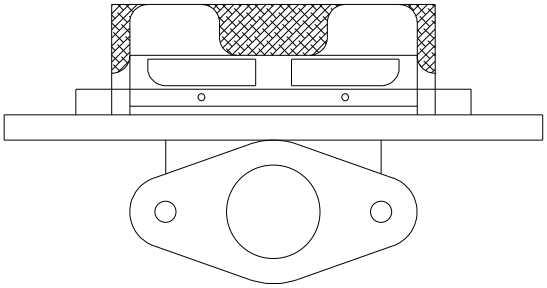
shaded area epoxy after angled milling

Grind the center rib in the reed block to match the wing that you put into the inlet. This greatly improves flow and velocity.

Reed block reshaping with epoxy for better flow velocity(shaded).



Use Boysen dual stage reeds which Boysen makes specifically for the RG50. Flow the reed block ports so that you have at least 1mm sealing The flatter reed block allows you to cut the inlet sleeve like the 1986 suzuki rm125 (as in the drawing.). The shaded area of the sleeve skirt must be removed.

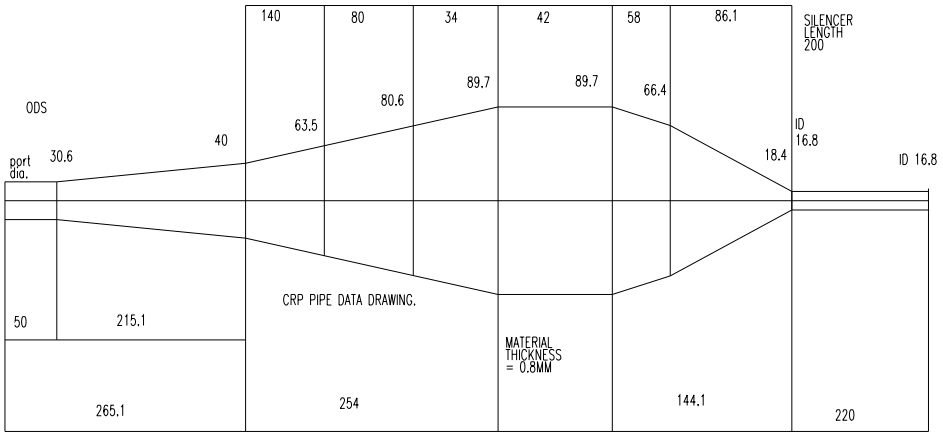


Carbs of choice are the 24, 26 and 28mm mikuni flatslide.
The 24mm carb works great on tight circuits (145 to 155main jet).
Carbs with the correct needles are
24mm : Suzuki ts 125 x 1986
26mm : Suzuki rm 80 1983
28mm : Suzuki rg 250 gamma 1984

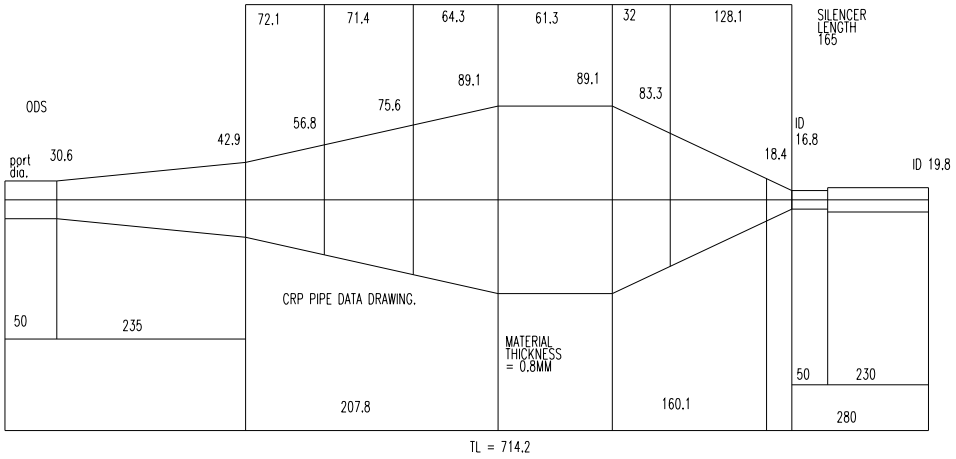
You can use the clutch basket and plates from the old aircooled rm 80's.

We have included two pipe specs for you. The first being for short circuit and was designed in 1984 and the second being a newer version designed in 1996 for the stroked motor. Play with these specs and you should end up with a great pipe. Both these specs have worked well.

Spec 1:



Spec 2:



We hope this information is useful to you and would love to hear how you have found the results.

If you have better specs and setup, tell us about them.

Happy HP Hunting.

Graham Coker
Coker Race Products (South Africa).