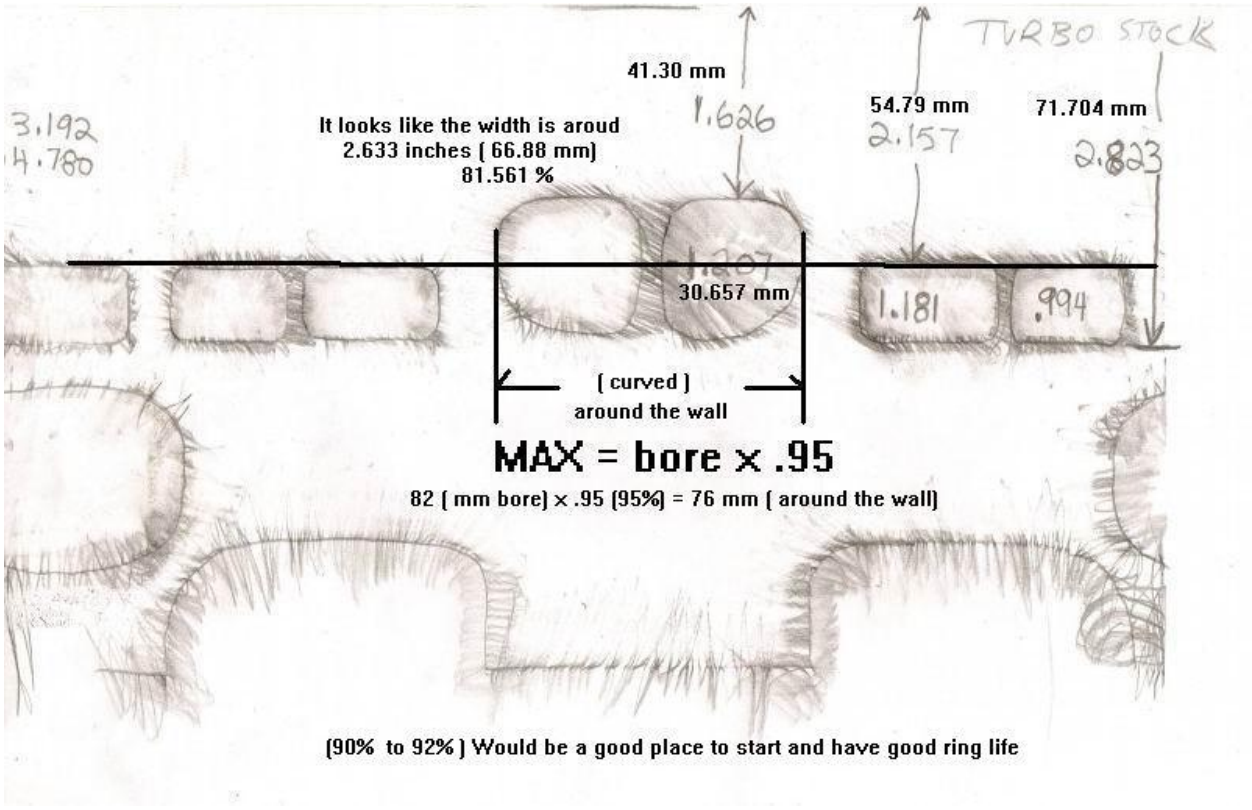
Turbo, PPE and Redskinman's Port lay out



Bore = 81mm Stroke = 68mm Displacment= 350.40 cc's or cm^3

Rod = 125.4mm

Deck height =.060" or 1.5240030480060957

Exhaust open= 92 degrees , Duration: 176 degrees ,

Transfers open= 117degrees, Duration 126 degrees

Cord width = 58.21

Exhaust port #1: 30.657 mm wide X 30.40mm high

Transfer port, Main: 30mm X 17mm, Rear: 25.25 X 17mm, Boost: (30 guess) X 17mm

Exhaust area, Total: Mean: 1116 mm^2 or 11.6 cm^2

Transfers/Boost, Total: Mean: 1500 mm^2 or 15.0 cm^2

SS=. 0.035560 per cm^3

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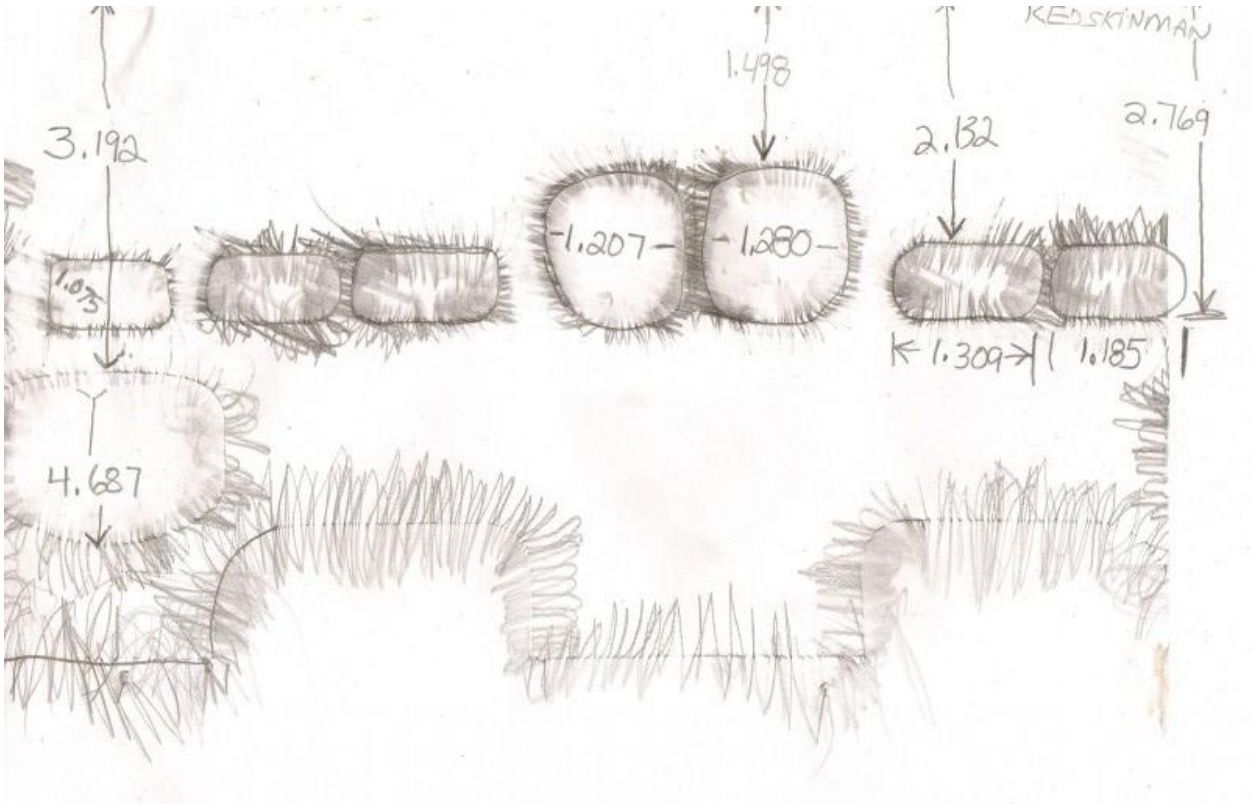
Turbo/"H", I did some number crunching on Turbos port map. I know his cylinder is already done however wanted to do some math on it any way for future builds as well as log his info into my data base. Going off of the picture and the numbers on the pic and then factoring in the data I have for the 350 on deck heights base gaskets head gaskets ect I come up with a base line.
EX port open: 92 degrees ATDC
Duration: 176 degrees (360-92-92= 176)
Mean Area line: 44 degrees BBDC ((180-92)/2= 44)
Single EX port Mean Area: 558 mm^2
Exhaust Port Total mean port area: 1116 mm^2 or 11.6 cm^2(1116/100=11.6)
Displacment of 350.40 cc's or cm^3 (side note: if one looks at a pilot cylinder it stamped cm3 by the intake)
cm^2/cm^3= 11.6/350.40= .0318493
Angle Area of 5.6054768 (duration x cm^2/cm^3) (176 x .0318493=5.6054768)
RPM Range: 5000 to 7500 (based on angle area-deg cm^2/cm^3 .00011 to .00018)
Peak Power PRM: 6200 to 6700 (based on sec,cm^2/cm^3, port time mean area range of .00014 to .00015)
(T) for 6200 rpm = .0001506 (176/(6200x6)= 176/37200=.0047311 x (cm^2/cm^3 or .0318493)=.001506
(T) for 6700 rpm = .0001394(Same math as above)
Out of space, more later.



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Bore = 82mm

Stroke = 68mm

Rod = 125.4mm

Deck height =

Exhaust open=

Transfers open=

Cord width = 58.12

I did some numbers on Redskinmans map. There is a slight issue in the calculations however this should be ok for a comparison of the exhaust numbers. On Redskinmans ex-port it has been raised with radius changes and the width pretty close to the same as Turbo's. The width is bore sensitive, Redskinmans exhaust port has a time and area difference than Turbos mostly Time. This changes the sec in the sec-cm^2'cm^2 calculation the most as the area is increased by it's height crater than its width. As a side not I have seen that the sleeves installed have a greater time area than stock both for the pilot and the 350. Any way here is the comparison numbers for Redskinmans base line

EX port open: 86.5 degrees ATDC, Duration: 187 degrees, Mean Area line: 47 degrees BBDC

Single EX port Mean Area: 711 mm^2, Exhaust Port Total mean port area: 1422 mm^2 or 14.22 cm^2

Displacement of 346.09 cc's or cm^3

cm^2/cm^3= .0410875

Angle Area of 7.6833625

RPM Range: 6800 to 10300 (based on angle area-deg cm^2/cm^3 .00011 to .00018)

Peak Power PRM: 8500 to 9200 (based on sec,cm^2/cm^3, port time mean area range of .00014 to .00015)

(T) for 8500 rpm = .0001507

(T) for 9200 rpm = .0001392

Once these are compared to the transfer /intake angle areas it will make a guy go UM. It will most likely show loss of broad range torque. Once all the numbers are achieved this could be a good example of too much time (port open to high to much duration) and not enough area (port chord width) for the stroke. You can see how the bore sensitive will have an effect as the bore get larger. Area increases and time remains and the mean area increases but at a smaller rate than the transfer and intake.

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This is one reason I have a concern with the deck height number as well as the CR (increase in Cr to get some torque back)and the stock ign timing. If my thoughts are correct the Egts will run higher and require a much fatter air to fuel ratio hurting mid range power or lead to top end lean out as heat builds.