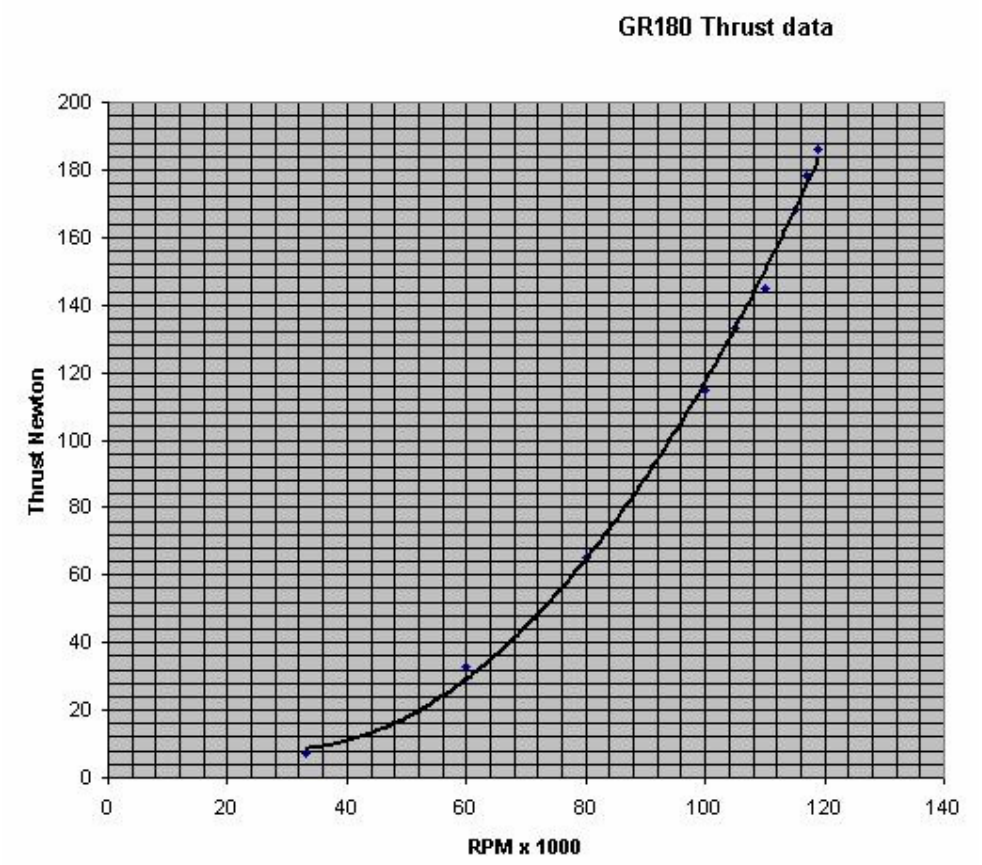
GR180 turbine notes:

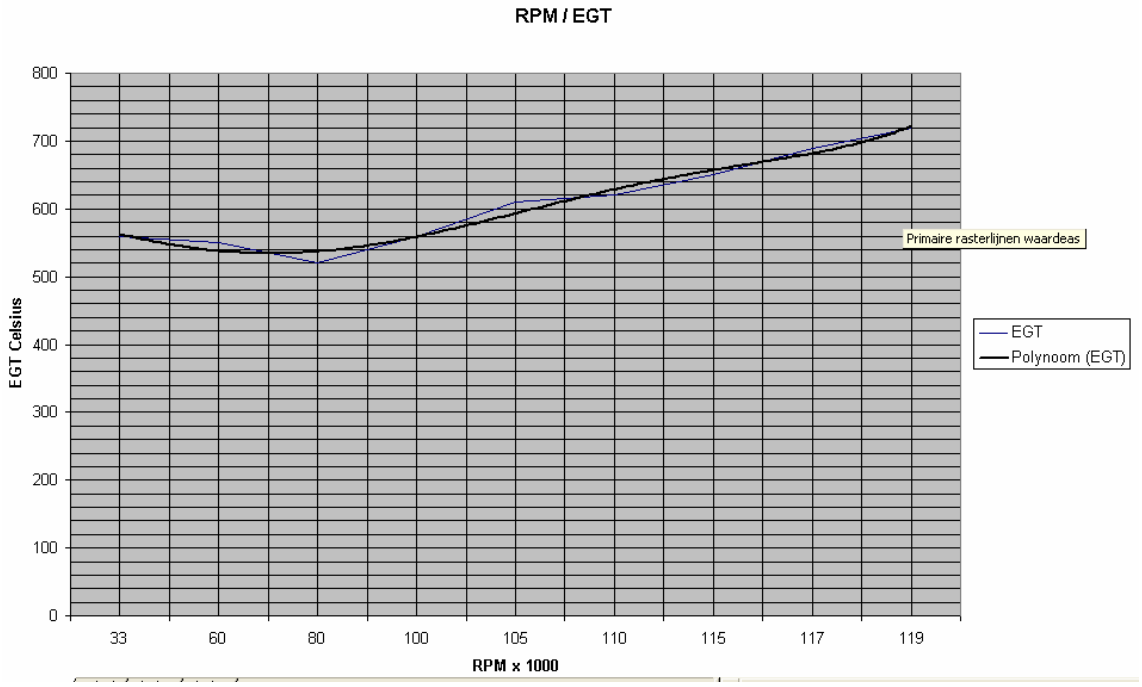
Specifications:

Diameter:	107mm (still CV470 canister)
Length:	240mm
Weight:	1200 gram
Turbine wheel:	DA 70.3mm www.jetmax.ch
NGV:	DA 70mm
Compressor wheel:	Schwitzer 316954
Thrust:	18kg / 40lb @ 120.000rpm

Please note the following:
This engine is still in testing phase and may always be so. The design is a hybrid from several engines around the globe, using the latest impeller technology as adopted from car turbocharger where the most noticeable progress have been made on this engine. Performance depends very much on fits and clearances, shaft precision and balancing techniques. This does not mean that at the max. rated rpm different power settings are possible, the max. power on this engine depends very much on max. egt's obtained and hence corresponding limiting rpm reading. Bear in mind that max. temperature only for take-off power could be as high as 750C° which limits the higher rpm range if engine is not constructed to highest standards. As noted from performance tables normal average operating temperatures will be between 550C° and 650C°, max power 730C° on prototype engine but may be lower in future as tests still proceeds. When you decide to built this engine from these plans be aware you are in a testing zone and therefore I do not take any responsibilities for mishaps ore other disappointments.

Performance graph:





GR180 Drawings:

1. Engine complete
2. Compressor
3. Diffuser
4. Intake
5. Intake outer
6. Shaft
7. Shaft tunnel
8. Turbine + NGV
9. Combustion chamber & parts
10. Casing & exhaust (not finished yet)
11. Misc. parts (not finished yet)

File dates 2-feb-2009

Please note; Most drawings and files refer to my older putfile webpage which no longer exists. Please visit my new page:
http://members.tele2.nl/geraldensuzanne/indexgb.htm

Best regards,

Gerald Rutten

Compressor notes:

This is a Schwitzer item which need resizing. Curve profile stay's the same as this is the best designed shape by manufacturer. A tool must be made to clamp the compressor as not to damage it when fixed by the lath's claws, see pictures for this tool, dimensions are not critical. See drawing for dimensions to alter. There are many way's of doing this, here is how I proceeded: Make a steel dummy shaft front-end in the lath with compressor fit and M6 nut in front, do not remove from lath! Install and fix compressor wheel and turn down outer diameter to 74mm, with unmodified rear side this gives some "meat" to grab wheel in lath. (Note lath turning direction to turn-off bearing in mind not to loosen the nut while machining!) Remove wheel and dummy shaft and place compressor wheel in lath to turn of front core. The only reason for this is to make shaft as short as possible to increase shaft critical resonance speed. Now install wheel again on dummy shaft and turn of first part of back plate outer to accept the wheel in the tool. When installed in the tool clock the wheel dead centre with the bolts fingertighten and gradually fix the bolts making sure that the wheel stay's centred. Now the final integrated spacer can be turned. After this exercise the wheel needs balancing of course!