

Turbocharger Calculations

19/07/2007

Engine Capacity	1293 cc
Ambient Pressure	1000 kPAa
Ambient Temperature	25 deg C
Intercooler Efficiency	80 %
Compressor Efficiency	78 %
Engine Volumetric Efficiency	82 %

Max

Boost Pressure	650 kPAg	1000 kPAg is approx 15 psi
Rpm	6900 rpm	
Pressure Loss thro Air Filter	50 kPAg	
Compressor Inlet Pressure	950 kPAa	
Compressor Inlet Temp Abs	298 Deg K	
Compressor Outlet Pressure Abs	1650 kPAa	
Compressor Outlet Temp	89.6 Deg C	
Compressor Pressure Ratio	1.737	
Density Ratio	1.427	
Theo Engine Air Flow	158 CFM	
Actual Engine Air Flow nat asp	129 CFM	
	8.9 Lbs/Min	
Compressor Air Flow Turboed	184 CFM	
	12.7 Lbs/Min	

Intercooler	
Intercooler Inlet Temp	90 Deg C
Intercooler Outlet Temp	38
Intercooler Pressure Loss	75 kPA
Intercooler Density Ratio	1.113

Comp Air Flow Turboed & Int Cooled	205 CFM
	14.16 Lbs/Min

Approx.Power	154 hp
	113 kW
Approx.Torque	117 FtLbs

Total Density Ratio	1.59
Air flow ratio	1.30