

Engine type: 1004TG

Engine application data

· Engine type	1004TG
· Number of cylinder	4
· Cylinder arrangement:	Vertical, in line
· Induction system:	Turbocharged
· Combustion system:	Direct injection
· Bore×Stroke(mm):	100×127
· Cubic capacity(L) :	3.99
· Direction of rotation:	Clockwise viewed from the front
· Firing order:	1.3.4.2
· Cycle:	4 stroke
· Average sound pressure level of bare engine at one meter :	91.2(1500r/min),96.4(1800r/min)
· Prime/Speed: (kw/r/min)	65.7/1500, 75.6/1800
· Standby/ Speed: (kw/r/min)	72.3/1500, 83.2/1800
· Governor Regulation	≤5%
· Idle speed: rpm	700±30
· Mean effective pressure:	1.32Mpa
· Mean piston speed:	6.35m/s
· Over load capacity:	10%
· Fuel governor type:	mechanical
· Maximum permissible high altitude: m	3000
· Compression ratio:	17.5:1
· Overall dimension(mm)L×W×H	1250×706×960
· Moment of inertia (kg m ²)	Engine 0.1254kg m ²

Induction system:

·Maximum permissible air intake restriction at engine (clean filter):	kPa	3.0
·Maximum permissible air intake restriction at engine (dirty filter):	kPa	5.0
·Air filter type :		Dry element type
·Minimum dirt capacity: g/ m ³ /min		353
·Cooling air flow:		4.52 m ³ /min

Exhaust system

·Maximum permissible back pressure for total system:	kPa	6
·Exhaust gas flow(prime) :	m ³ /min	13.1 (50HZ) ,15.9 (60HZ)
·Exhaust gas flow(standby) :	m ³ /min	14.0 (50HZ) ,17 (60HZ)
·Exhaust gas temperature(prime) :	°C	561 (50HZ) ,511 (60HZ)
·Exhaust gas temperature(standby) :	°C	596 (50HZ) ,548 (60HZ)
·Heat rejection to exhaust system:		46kW

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Lubrication system:

· Lubrication oil capacity (sump): L	6.9
· Lubrication oil capacity (total): L	8.5
· Normal operation angles: °	Front 25 ° Front down, side to side 25 °
· Lubrication oil pressure: kPa	310-390
· Pressure at which oil relief valve opens: kPa	345-414
· Lubrication oil temperature: °C	At normal operation 105 °C, Maximum 125 °C
· Lubrication oil consumption as a percentage of fuel consumption:	0.2% maximum

Fuel system:

· Pump:	in line
· Fuel lift pump pressure: kg	1.8
· Maximum pressure head: MPa	95

Cooling system:**Radiator**

· Radiator:	pipe and belt
· Radiator pipe area: m ²	26.94
· Length x width x height: mm	628X221X830
· Pressure cap setting: kpa	75
· Maximum top tank temperature: °C	103
· Estimated cooling air flow reserve: kPa	0.12(1500r/min) 0.15(1800r/min)
· Heat rejection to cooling system:	42.2kW
· Total heat radiation:	11.7kW

Fan:

· Diameter: mm	508
· Driver radio:	1.25
· Num:	10
· Material:	plastic

Coolant:

· Total system coolant capacity: L	22.2
· Thermostat operation range: °C	71-88
· Maximum permissible external system resistance: kPa	35
· Minimum temperature to engine: °C	70
· Temperature rise across to engine: °C	7.7
· Maximum static pressure head at pump: m	6.2m/1500rpm, 4.3m/1800rpm

Electrical system

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·Alternator: V	12/24
·Starter motor: V	12/24
·Choice battery according to SAEJ537 and BS3911	
·Battery capacity and voltage:	$\geq 135\text{A/h}, 12\text{V}$
·Automatic battery charger capacity and voltage:	$14\text{V} \times 65\text{A}$
·Starter power:	3.7kW

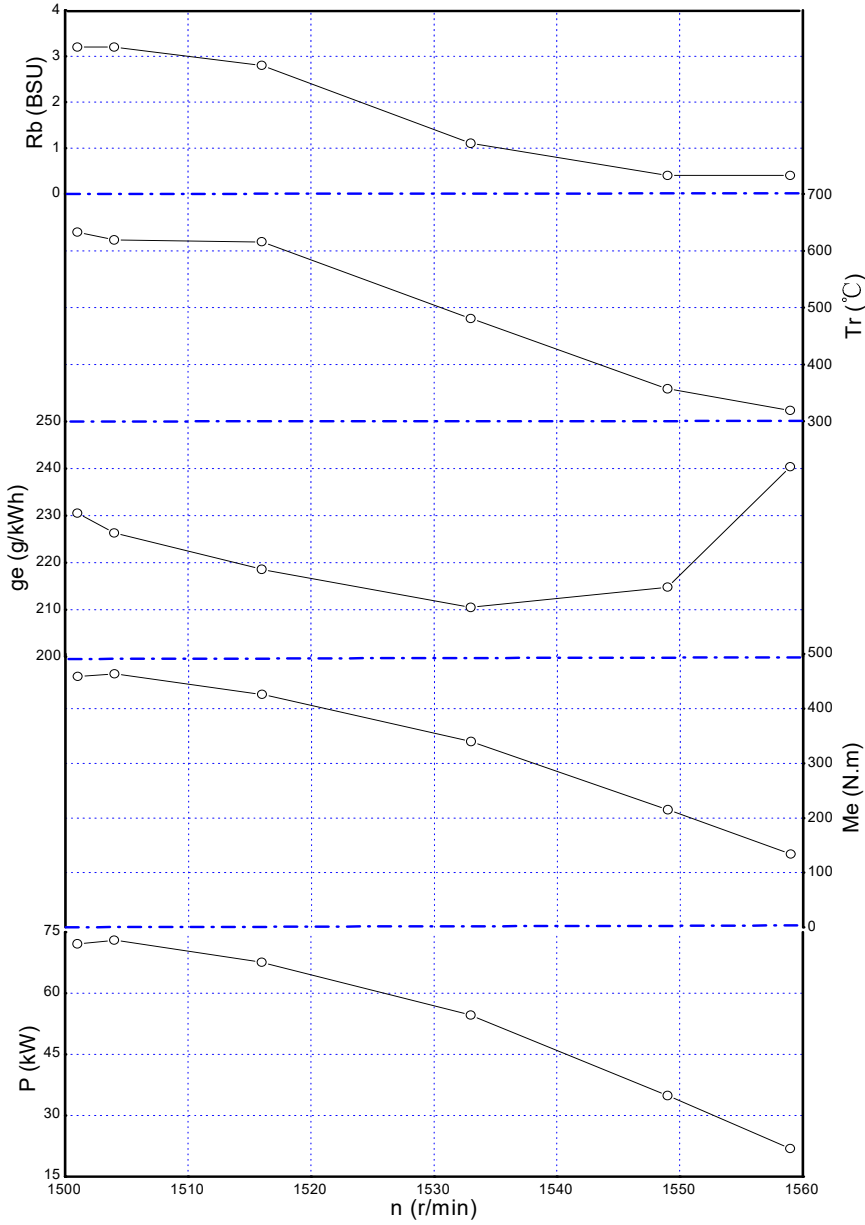
Mountings

·Maximum bending moment at rear face of engine block: Nm	791
·Position of center of gravity (wet engine): Forward from rear face to block 279mm, Above crankshaft center line 279mm, Offset from vertical centreline 15mm right side	

All information given in this letter is correct at the time of printing but may be change subsequently by the company

Model: 1004TG

Aspiration: Turbocharged , Configuration: In-line 4 Cylinder,
 Bore/Stroke: 100mm(3.937in)/127mm(5.00in), Displacement: 3.99L



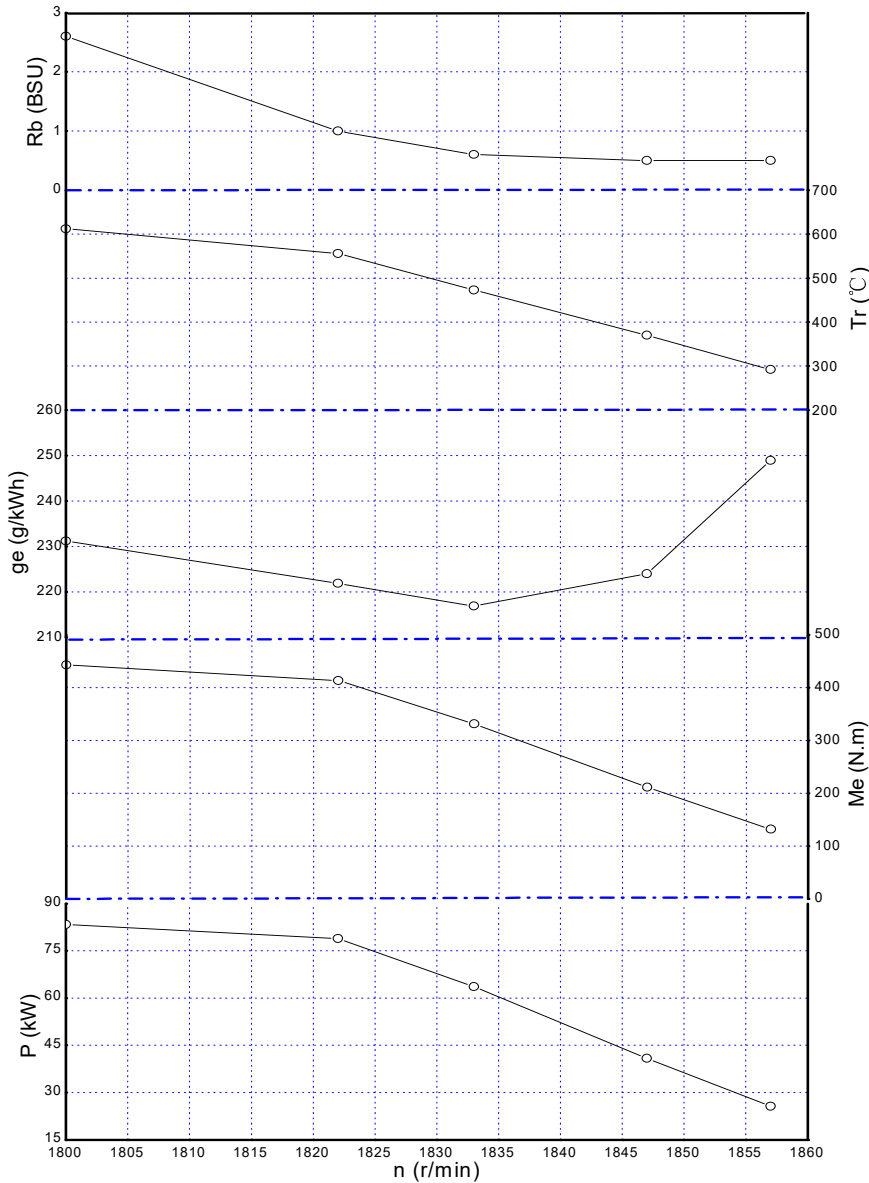
Speed	Power
r/min	kW
1501	72.1
1504	73.0
1516	67.6
1533	54.6
1549	34.9
1559	21.9
Speed	Torque
r/min	Nm
1501	458.8
1504	463.7
1516	425.9
1533	339.9
1549	215.1
1559	134.1
Speed	Specific Fuel Consumption
r/min	g/kWh
1501	229.5
1504	226.3
1516	218.6
1533	210.5
1549	214.8
1559	240.4

Annotation:

Item	Parameter	Accessories
Rating Standard	GB/T6072.1-2000	Without Fan
Atmospheric Pressure	101.3 kPa	
Ambient Temperature	25°C	
Intake Pressure Difference	5.0 kPa	
Exhaust Back Pressure	10.2 kPa	
Power Tolerance	± 3%	
Torque Tolerance	± 3%	

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Speed	Power
r/min	kW
1799	83.4
1822	78.9
1833	63.6
1847	40.9
1857	25.7
Speed	Torque
r/min	Nm
1799	442.5
1822	413.3
1833	331.4
1847	211.2
1857	131.9
Speed	Specific Fuel Consumption
r/min	g/kWh
1799	233.2
1822	225.9
1833	218.9
1847	224.0
1857	248.9

Annotation:

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