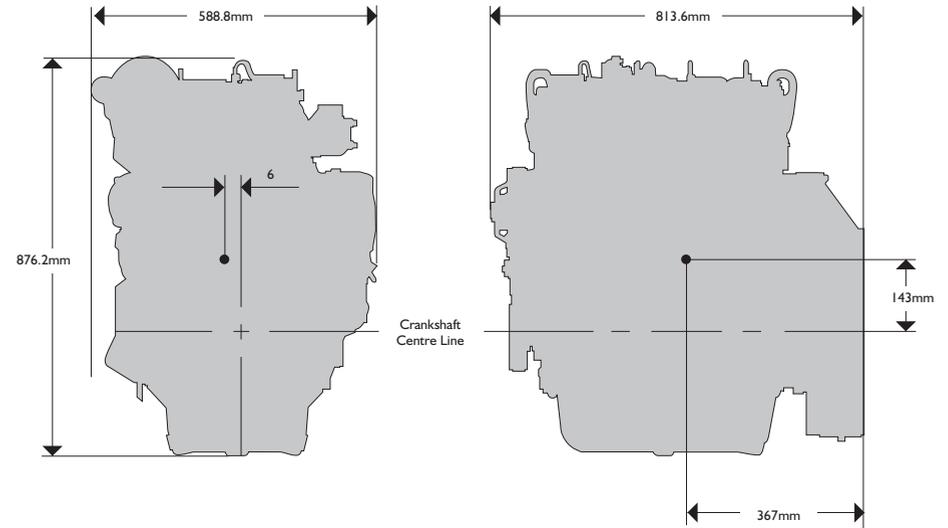


MOBILE MACHINERY



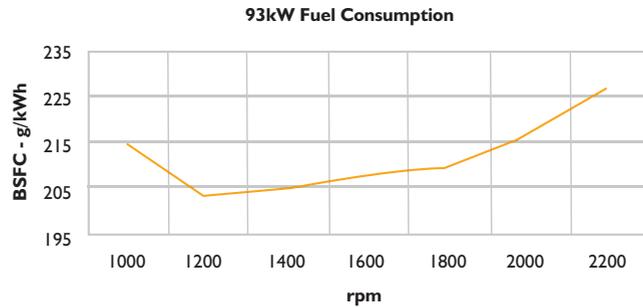
GENERAL TECHNICAL DATA

Technical Code		TCA – 93kW
Thermodynamic Cycle		Diesel 4 stroke
Air intake		TCA
Arrangement		4.4L
Nominal Bore	mm	103
Stroke	mm	132
Total displacement	cm <sup>3</sup>	4399
Valves per cylinder		4
Cooling		Liquid
Direction of rotation (viewed from crank nose)		Clockwise
Compression ratio		17.5:1
Rotational mass moment of inertia excluding flywheel.	kgm <sup>2</sup>	0.2255
Standard flywheel inertia	kgm <sup>2</sup>	0.4061

Technical Code		TCA – 93kW
Maximum rating* (gross intermittent)	kW	93
At speed	rpm	2200
Maximum torque	Nm	525
At speed	rpm	1300
Maximum no load governed speed	rpm	2390
Nominal idling speed	rpm	800
Mean Piston speed at rated speed	m/s	9.68
BMEP at maximum torque	bar	15.0
Emission Certification		EPA TII, EU St2
Best point specific fuel consumption	g/kWh	205
Minimum full load specific fuel consumption	g/kWh	205
Noise at maximum rating	dBA 1m	89
Minimum starting temperature without auxiliaries	°C	-12
Dry weight	kg	477



### FUEL CONSUMPTION

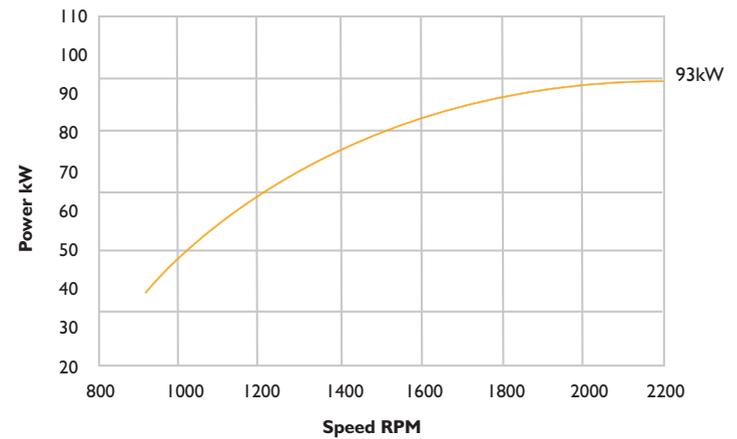
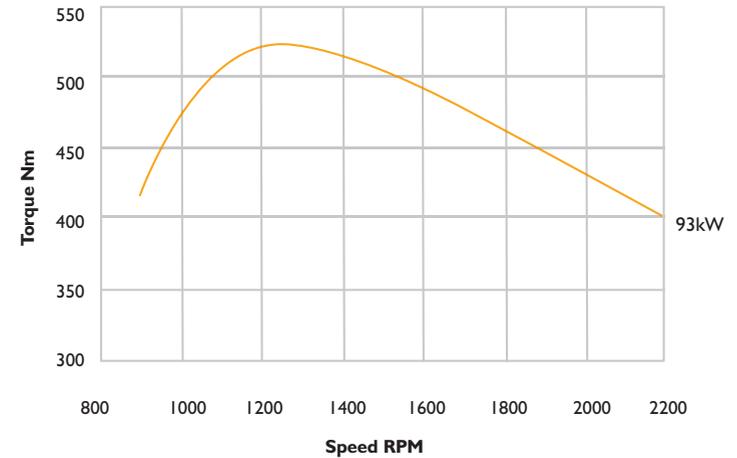


Fuel consumption with fuel at 40°C pump inlet, at full load.

### FUEL SYSTEM

		TCA – 93kW
Injection system		Rotary Mechanical
Fuel maximum intake restriction	mbar	100
Fuel maximum intake temperature	C	50
Engine Pre Filter	Micron	30
Engine Main Filter	Micron	5

### POWER AND TORQUE CURVES



Fuel stop power (gross intermittent) shown.  
Performance measured according to ISO 14396 after 50 hours running without fan.



## EXHAUST SYSTEM

		TCA – 93kW
Maximum allowable back pressure	mbar	150
Maximum exhaust temperature at full rated speed	°C	560
Exhaust flow at maximum output	kg/h	580

## ELECTRICAL SYSTEM

		TCA – 93kW
Type (ETR - Energised To Run)		Negative Ground, ETR
Standard (Starter & Alternator)	V	12
Option.	V	24
Minimum Cranking Speed	rpm	120
Battery – minimum capacity recommended, not included		145Ah.
Battery – minimum cold cranking capacity recommended, not included		850 CCA

## LUBRICATION SYSTEM

		TCA – 93kW
Lubricating oil pressure	bar	4.6
Maximum oil temperature at full rated speed: continuous.	°C	125
Maximum oil temperature at full rated speed: intermittent.	°C	135
Engine angularity limits in continuous operation:		
Maximum front up and front down	deg	35
Maximum right hand and left hand	deg	35
Total system capacity – including pipes, filters etc	Ltrs	14
Minimum recommended oil grade	API	CF4
Oil filter maintenance service schedule	Hours	500
Oil consumption at maximum rating	% of fuel consumption	0.1

## AIR INDUCTION

		TCA – 93kW
Maximum allowable air intake restriction with clean air filter	mbar	50
Maximum allowable restriction with dirty air filter	mbar	85
Air requirement for combustion at 100% rated speed	g/s	153
Turbocharging pressure at full rated speed	bar	1.2
Turbocharging air maximum temperature – engine inlet	°C	131
Cooled charge air at inlet manifold	°C	60
Heat rejected to intercooler at maximum power	kW	12
Intercooler system max pressure drop	mbar	125

## COOLING SYSTEM

		TCA – 93kW
Coolant capacity – Engine only	Ltrs	7
Water pump flow at rated speed	ltr/min	200
Heat to reject by heat exchanger at maximum power	kW	56.0
Thermostat Temperature	°C	90
Cooling liquid maximum temperature	°C	110
Minimum and Maximum pressure in the cooling circuit	kPa (bar)	1 bar max – min
Coolant Specification Approved (JCB HP High Performance)		ASTM D6210



## STANDARD CONFIGURATION

		TCA – 93kW
Flywheel housing	SAE	3
Intake manifold location		Left hand forward.
Exhaust manifold/ Turbocharger location		Right hand rearward.
Turbocharger		Wastegate controlled
Fan transmission ratios.		0.85, 1.1, 1.16 or 1.25:1
Distance between fan – crankshaft centres	mm	262 or 356
Main Fuel Filter & Pre Filter		Included
Fuel pump		Included
Oil filter	qty	1 left side
Oil Sump		Pressed dual skin
Oil vapours blow-by circuit		Closed
Oil heat exchanger		Left side
Oil filler position		Top and left hand side
Starter motor		12v, 4.2kW
Alternator		12v, 95A
Engine stop		Electrical
Power Take off Heavy Duty (OEM Spec)		Standard: 60kW. RHS.
Power Take off Light Duty		Standard: 10kW. LHS.
Power Take off Crank nose		Standard: 60kW.
Finish		Lacquered
Owners Manual		Included

## OPTIONAL EQUIPMENT

Pusher & Puller Fans, AVM's, Hydraulic Pumps, 24 Volt Electrics, Water In Fuel Sensor.  
 Grid Heater Matrix for improved cold starting.  
 Flywheel Options: 10", 11", 11.5", W300, Voith and ZF.  
 Long dipstick.

