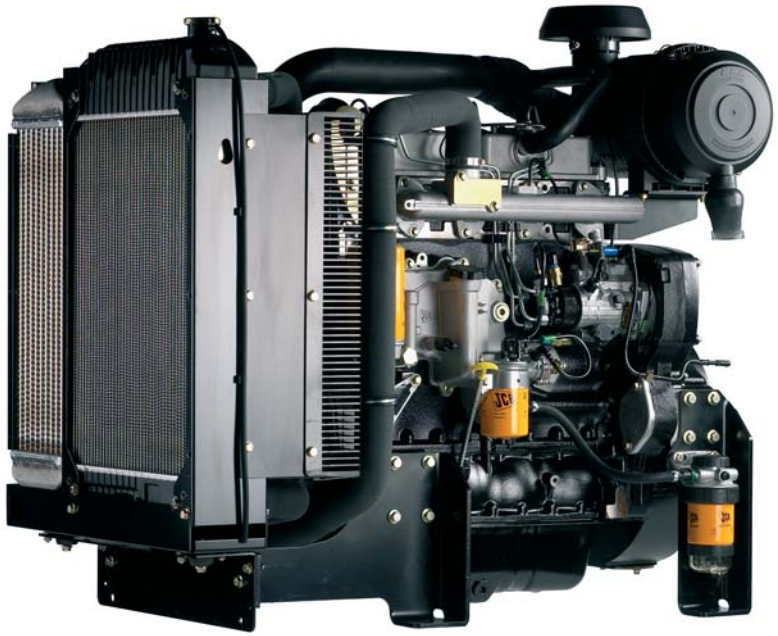
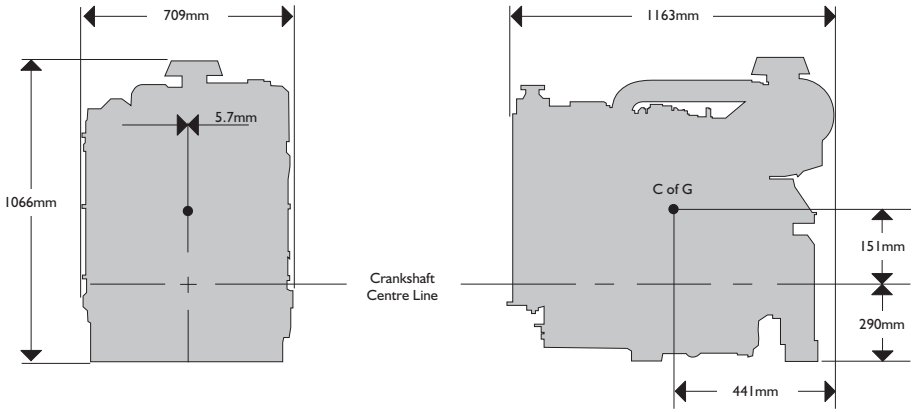
INDUSTRIAL POWER UNIT





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	cm³	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.	kgm²	0.2255
11.5" flywheel inertia	kgm²	0.6986

		Intermittent	Continuous
Technical Code		TCA – 93KW	TCA – 93KW
Net power output	kW	89.0	80.1
At speed	rpm	2200	2200
Maximum net torque	Nm	520	468
At speed	rpm	1300	1300
Maximum no load governed speed	rpm	2390	2390
Nominal idling speed	rpm	800	800
Mean Piston speed at rated speed	m/s	9.68	9.68
BMEP at maximum torque	bar	15.0	13.5
Emission Certification		EPA TII, EU St2	EPA TII, EU St2
Best point specific fuel consumption	g/kWh	205	205
Minimum full load specific fuel consumption	g/kWh	205	205
Minimum starting temperature without auxiliaries	°C	-12	-12
Dry weight	kg	595	595

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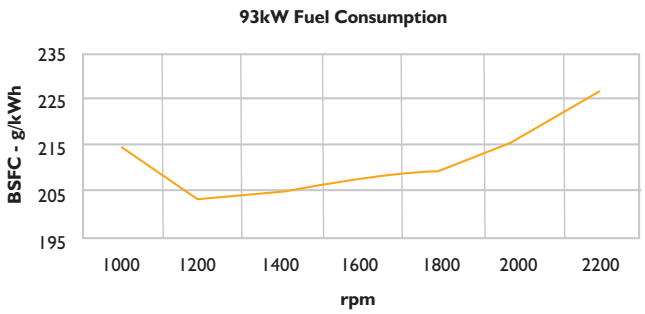
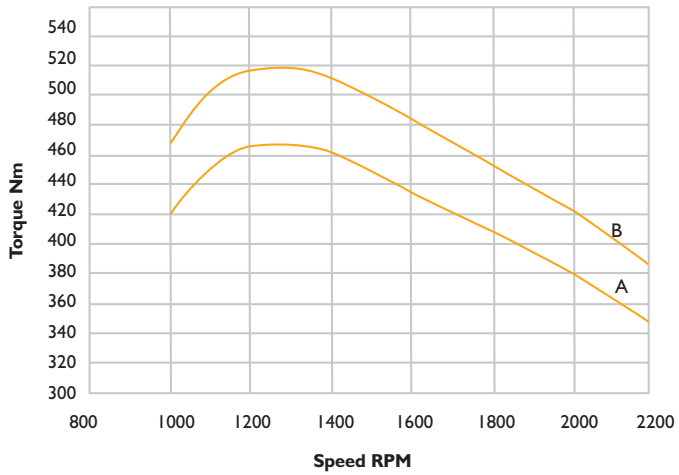
FUEL CONSUMPTION

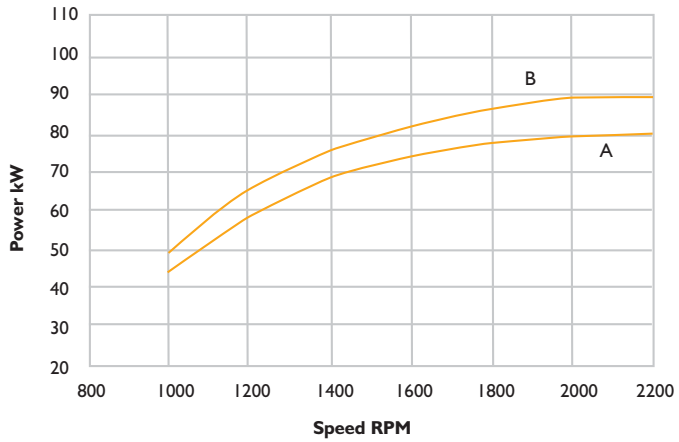


FUEL SYSTEM

		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
Fuel maximum return restriction	mbar	35

POWER AND TORQUE CURVES





A = Net Continuous Power/Torque
B = Net Intermittent Power/Torque
As defined by ISO 14396 and ISO 15550:2002

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

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 continous 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

COOLING SYSTEM

		TCA – 93kW
Coolant capacity – (inc. Cooling Pack)	Ltrs	18.4
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
Coolant Specification Approved (JCB HP High Performance)		ASTM D6210
Header tank pressure cap setting	bar	1.0
Cooling air flow requirement	m^3/sec	2.5
Maximum working ambient temperature	°C	46
Fan type (standard)		20" Pusher
Fan ratio		1:1

NB. The cooling figures stated are for open units tested with a JCB radiator and fan. If the unit is installed in a canopy type enclosure it is recommended that a cooling test is carried out to ensure satisfactory ambient clearance is achieved.

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

AIR INDUCTION

		TCA – 93kW
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
Air filter type		2 stage paper element

JCB DIESELMAX TURBOCHARGED AFTERCOOLED 93kW (125hp)

STANDARD CONFIGURATION

		TCA – 93kW
Flywheel housing	SAE	3
Flywheel		11.5"
Intake manifold location		Left hand.
Exhaust manifold/ Turbocharger location		Right hand.
Turbocharger		Wastegate controlled
Fan transmission ratios.		1:1
Distance between fan – crankshaft centres	mm	262
Main Fuel Filter & Pre Filter		Included
Fuel pump		Mechanical with primer
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.
Finish		Lacquered
Owners Manual		Included

OPTIONAL EQUIPMENT

Puller Fans, AVM's, Hydraulic Pumps, 24 Volt Electrics, Water In Fuel Sensor.
Grid Heater Matrix for improved cold starting.
Long dipstick.

JCB cares for the environment. This paper has been produced without the use of elemental chlorine chemicals in the bleaching process.

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