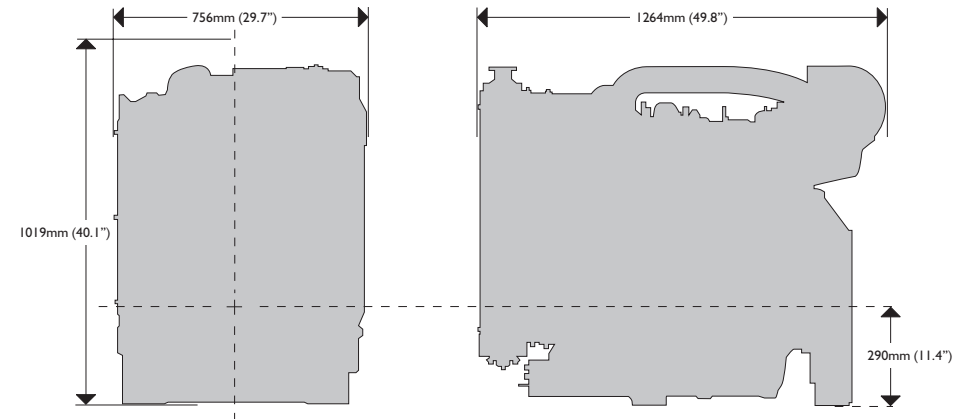




INDUSTRIAL POWER UNIT

REAR MOUNT OPTION



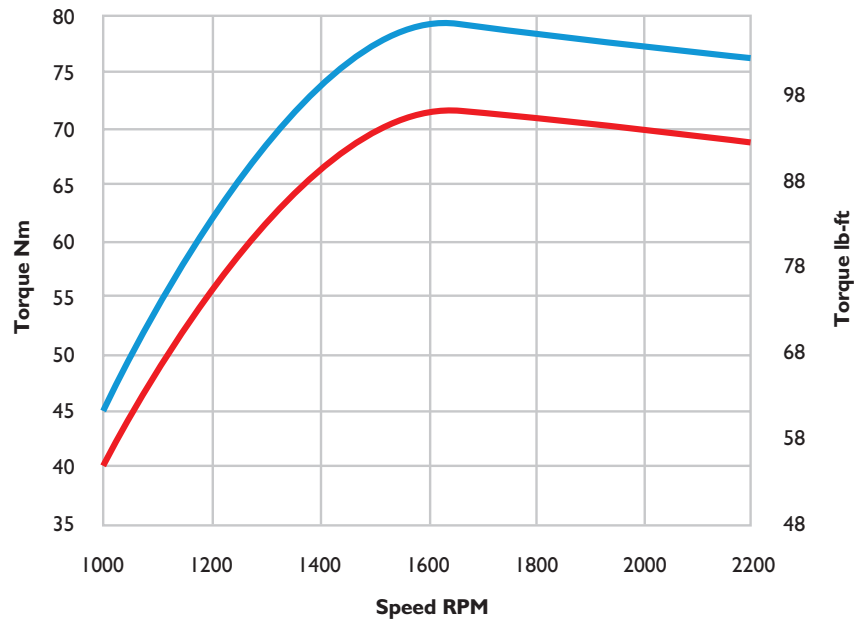
GENERAL TECHNICAL DATA

Technical Code		TCAE-81
Thermodynamic cycle		Diesel 4 stroke
Air intake		TCAE
Arrangement		In-line 4 cyl. IPU
Bore	mm (in)	103 (4.06)
Stroke	mm (in)	132 (5.20)
Swept volume	cm <sup>3</sup> (in <sup>3</sup> )	4399 (269)
Mean piston speed at rated speed	m/s (ft/s)	9.68 (31.8)
Valves per cylinder		4
Cooling		Liquid
Direction of rotation (viewed from crank nose)		Clockwise
Compression ratio		17.2
Dry weight	kg (lb)	TBC (TBC)
Top mount option dimensions (L x W x H)	mm (in)	1075 x 756 x 1141 (42.3 x 29.7 x 44.9)

Technical Code		TCAE-81
Maximum rating <sup>(1)</sup> (net intermittent)	kW (hp)	76.4 (120.4)
Rated speed	rpm	2200
Torque at rated speed (net intermittent)	Nm (lb-ft)	352 (260)
Maximum torque (net intermittent)	Nm (lb-ft)	516 (381)
Maximum torque speed	rpm	1500
Maximum no load governed speed	rpm	2371
Nominal idling speed	rpm	850
BMEP at maximum torque	bar (PSI)	14.7 (213.2)
Emission certification		EU St. IIIB / EPA Tier 4i
Minimum starting temperature without auxiliaries	°C (°F)	-20 (-4)

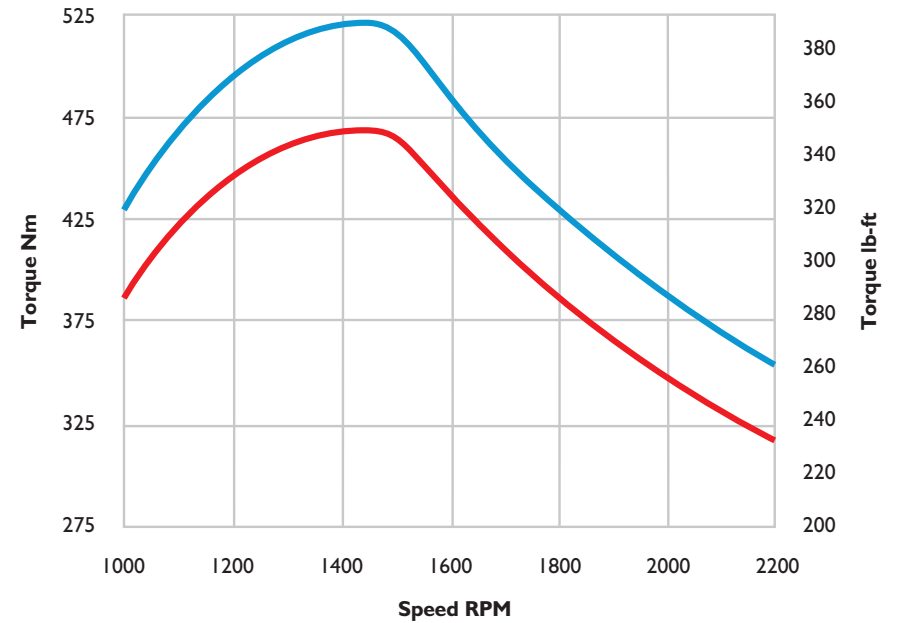
<sup>(1)</sup> as per ISO14396 (adjusted for fan loss)

POWER CURVE



— Net intermittent  
— Net continuous

TORQUE CURVE



— Net intermittent  
— Net continuous



### AIR INDUCTION

		TCAE-81
Maximum allowable air intake restriction with clean air filter	mbar (PSI)	42 (0.61)
Maximum allowable restriction with dirty air filter	mbar (PSI)	80 (1.16)
Air requirement for combustion at full load rated speed	g/s (lb/s)	123 (0.271)
Turbocharging pressure at full load rated speed	mbar (PSI)	1244 (18.04)
Turbocharger compressor outlet air temperature	°C (°F)	188 (370.4)
Charge cooler outlet temperature	°C (°F)	556 (132.8)
Heat rejected to charge cooler at maximum power	kW (hp)	11.5 (15.4)
Charge cooler system max pressure drop	mbar (PSI)	100 (1.45)

### EXHAUST SYSTEM

		TCAE-81
Maximum allowable back pressure	mbar (PSI)	117 (1.60)
Minimum allowable back pressure	mbar (PSI)	78 (1.13)
Exhaust gas temperature at full rated speed	°C (°F)	400 (752)
Exhaust flow at maximum output	g/s (lb/s)	128.4 (0.283)

### COOLING SYSTEM

		TCAE-81
Coolant capacity	ltr (US gal)	18.4 (4.86)
Water pump flow at rated speed	ltr/min (gal/hr)	230 (3646)
Heat to reject from coolant at maximum power	kW (hp)	58.2 (78)
Thermostat temperature	°C (°F)	96 (204.8)
Cooling liquid maximum temperature	°C (°F)	115 (239)
Coolant Specification Approved (JCB HP High Performance)		ASTM D6210
Headertank pressure cap setting	bar (PSI)	1(14.5)
Cooling air flow requirement	m <sup>3</sup> /sec (gallons/sec)	2.5 (660)
Maximum working ambient temperature	°C (°F)	46 (115)
Fan type (standard)		22" pusher
Fan ratio		1:1

### LUBRICATING SYSTEM

		TCAE-81
Lubricating oil pressure	bar (PSI)	5.0 (72.5)
Maximum oil temperature at full rated speed: continuous	°C (°F)	125 (257)
Maximum oil temperature at full rated speed: intermittent	°C (°F)	135 (275)
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	ltr (US gal)	14 (3.7)
Minimum recommended oil grade	API	CI4
Oil filter maintenance service interval (<75% duty cycle)	hrs	500
Oil consumption at maximum rating	% of fuel consumption	0.03

### FUEL SYSTEM

		TCAE-81
Injection system		Common rail
Fuel maximum intake restriction	mbar (PSI)	250 (3.63)
Fuel maximum intake temperature	°C (°F)	85 (185)
Engine pre-filter	Micron	5
Engine main filter	Micron	2

### ELECTRICAL SYSTEM

		TCAE-81
Type (ETR - Energised To Run)		Negative Ground ETR
Standard (starter & alternator)	V	12
Minimum cranking speed	rpm	100
Battery (not included) - minimum capacity recommended		145Ah.
Battery (not included) - minimum cold cranking capacity		1000 CCA

STANDARD CONFIGURATION

Technical Code	TCAE-81
Flywheel housing	SAE 3
Flywheel	11.5"
Cooling system	Aluminium Radiator with associated guards, hoses and fan included
Induction system	Air filter (2 stage paper element) with induction hose and depression switch included
Intake manifold location	Left hand forward
Exhaust manifold / turbocharger location	Right hand rearward
Turbocharger	Variable geometry turbocharger
Fan drive ratio	1:1
Distance between fan - crankshaft centres	262mm
Main fuel filter & pre-filter	Included
Fuel pump	Included
Oil filter	1 off, left side
Oil sump	Press steel, low noise transmission structure
Oil vapours blow-by circuit	Open filtered, breather hose included
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	60kW SAE B, RHS
Power Take Off light-duty	10kW SAE A, LHS
Finish	Lacquered

OPTIONAL EQUIPMENT

Extensive range of configuration options available from JCB engine sales option manual – contact JCB Power Systems distributor or JCB Power Systems Sales Dept. for availability of specific configuration options