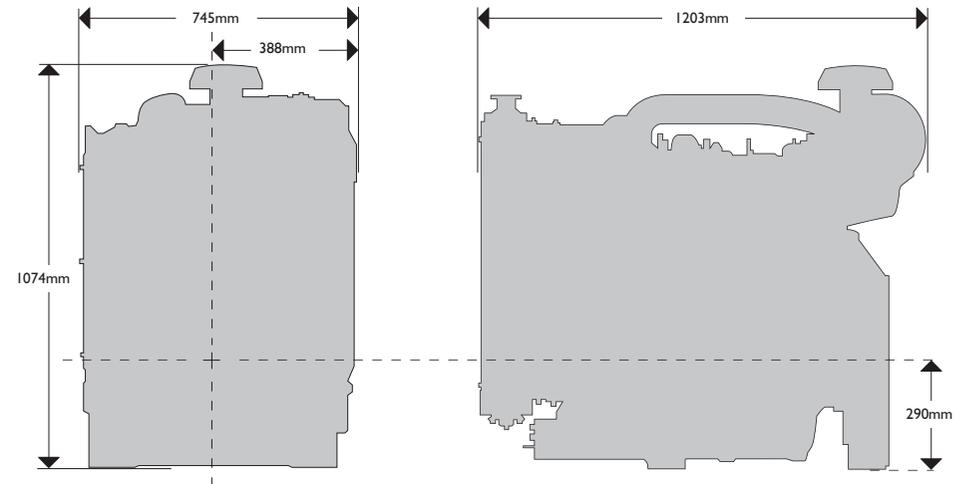




INDUSTRIAL POWER UNIT



GENERAL TECHNICAL DATA

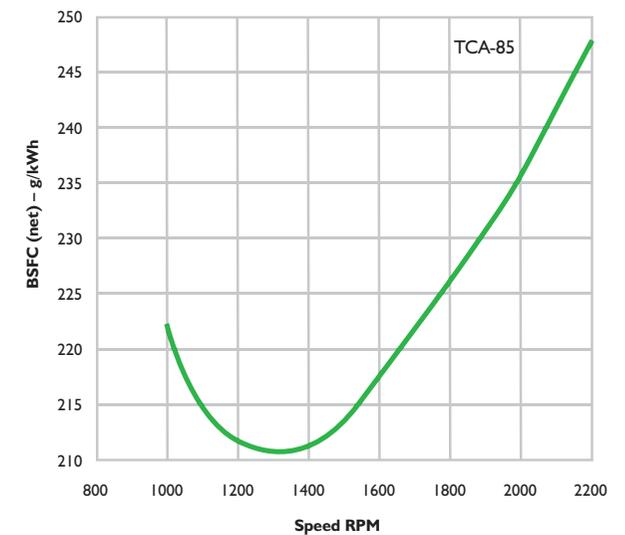
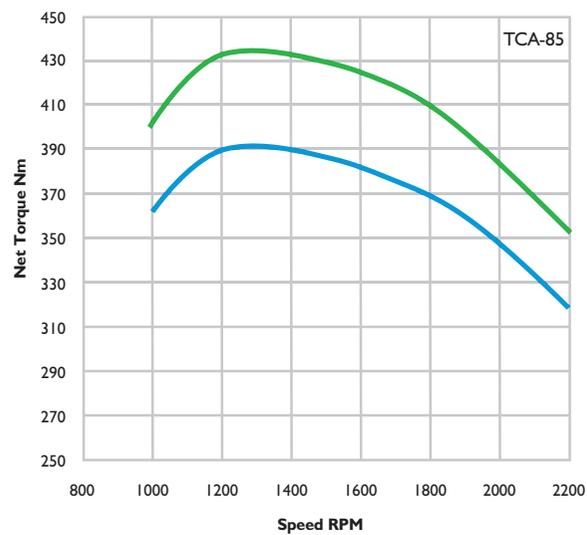
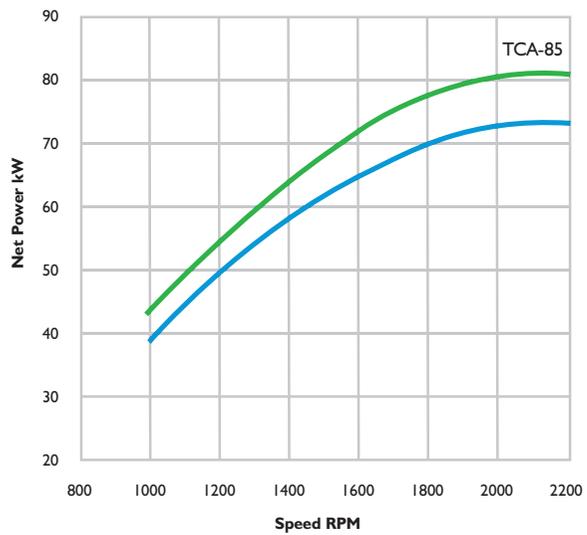
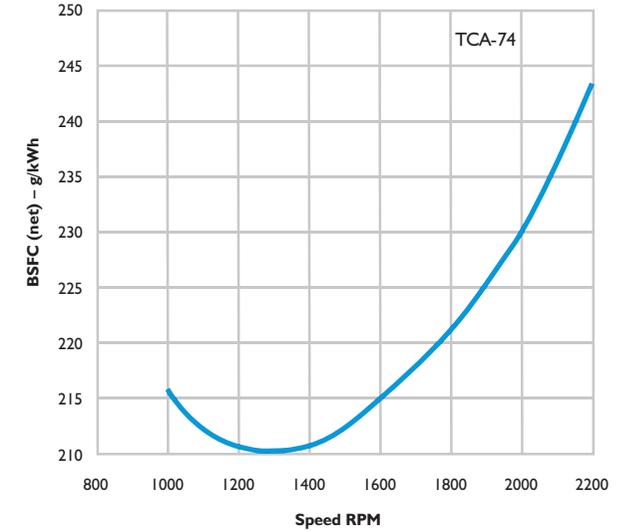
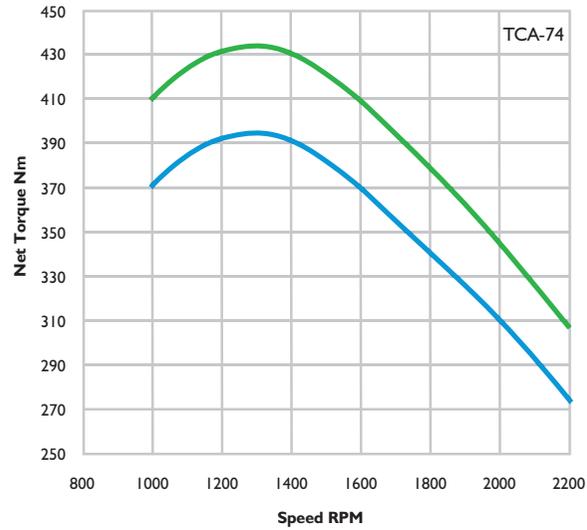
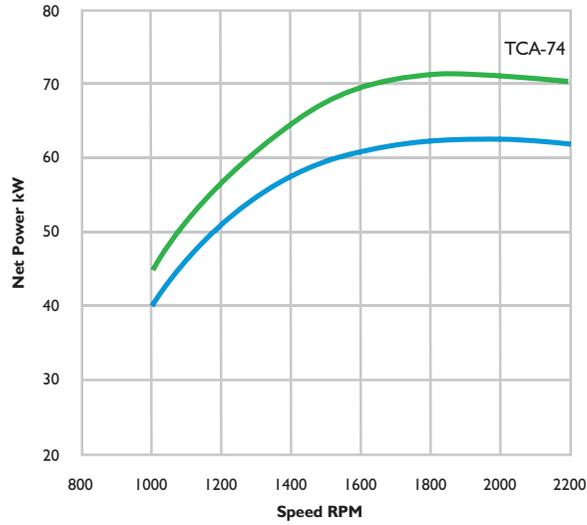
Technical Code	444 IPU T3 TCA	
Thermodynamic cycle	Diesel 4 stroke	
Air intake	TCA	
Arrangement	in-line 4 cyl. IPU	
Bore	mm	103
Stroke	mm	132
Swept volume	cm ³	4399
Mean piston speed at rated speed	m/s	9.68
Valves per cylinder	4	
Cooling	Liquid	
Direction of rotation (viewed from crank nose)	Clockwise	
Compression ratio	17.2	
Rotational mass moment of inertia excluding flywheel	kgm ²	0.2255
Standard flywheel inertia	kgm ²	0.4061
Dry weight	kg	600

Technical Code		444 IPU T3 TCA-74	444 IPU T3 TCA-85
Maximum rating ⁽¹⁾ (net intermittent)	kW	70.1	81
Rated speed	rpm	2200	2200
Maximum torque (net intermittent)	Nm	434	434
Maximum torque speed	rpm	1300	1300
Maximum no load governed speed	rpm	2420	2420
Nominal idling speed	rpm	900	900
BMEP at maximum torque	bar	12.6	12.6
Emission certification		EPA Tier3, EU St3	EPA Tier3, EU St3
Best point specific fuel consumption (net)	g/kWh	210	211
Specific fuel consumption @ (net) rated power	g/kWh	243	248
Specific fuel consumption @ (net) peak torque	g/kWh	210	210
Minimum starting temperature without auxiliaries	°C	-20	-20

⁽¹⁾ as per ISO14396 (adjusted for fan loss)



NET POWER, TORQUE AND FUEL CONSUMPTION CURVES



— A Rating Power — B Rating Power

— A Rating Torque — B Rating Torque

A = Net continuous Power/Torque
B = Net intermittent Power/Torque



JCB DIESELMAX 444 TURBOCHARGED AFTERCOOLED TIER3 74.2KW (100HP) & 85KW (114HP)

AIR INDUCTION

		444 IPU T3 TCA-74	444 IPU T3 TCA-85
Maximum allowable air intake restriction with clean air filter	mbar	50	50
Maximum allowable restriction with dirty air filter	mbar	80	80
Air requirement for combustion at full load rated speed	g/s	122	135
Turbocharging pressure at full load rated speed	mbar	1100	1250
Turbocharger compressor outlet air temperature	°C	131	140
Charge cooler outlet temperature	°C	60	60
Heat rejected to charge cooler at maximum power	kW	8.2	12
Charge cooler system max pressure drop	mbar	125	125

EXHAUST SYSTEM

		44 IPU T3 TCA-74	444 IPU T3 TCA-85
Maximum allowable back pressure	mbar	150	150
Exhaust gas temperature at full rated speed	°C	480	545
Exhaust flow at maximum output	g/s	127	140

COOLING SYSTEM

		44 IPU T3 TCA-74	444 IPU T3 TCA-85
Coolant capacity	ltrs	18.4	18.4
Water pump flow at rated speed	ltr/min	240	240
Heat to reject from coolant at maximum power	kW	47 est	54 est
Thermostat temperature	°C	88	88
Cooling liquid maximum temperature	°C	110	110
Coolant Specification Approved (JCB HP High Performance)		ASTM D6210	ASTM D6210
Headertank pressure cap setting	(bar)	1	1
Cooling air flow requirement	m ³ /sec	2.5	2.5
Maximum working ambient temperature	°C	46	46
Fan type (standard)		20" pusher	20" pusher
Fan ratio		1:1	1:1

LUBRICATING SYSTEM

		44 IPU T3 TCA-74	444 IPU T3 TCA-85
Lubricating oil pressure	bar	4.9	4.9
Maximum oil temperature at full rated speed: continuous	°C	125	125
Maximum oil temperature at full rated speed: intermittent	°C	135	135
Engine angularity limits in continuous operation:			
- Maximum front up and front down	deg	35	35
- Maximum right hand and left hand	deg	35	35
Total system capacity - including pipes, filters etc	ltrs	14	14
Minimum recommended oil grade	API	CH4	CH4
Oil filter maintenance service interval (<75% duty cycle)	hrs	500	500
Oil consumption at maximum rating	% of fuel consumption	0.03	0.03

FUEL SYSTEM

		44 IPU T3 TCA-74	444 IPU T3 TCA-85
Injection system		Rotary Mechanical	Rotary Mechanical
Fuel maximum intake restriction	mbar	150	150
Fuel maximum intake temperature	°C	50	50
Engine pre-filter	Micron	30	30
Engine main filter	Micron	5	5

ELECTRICAL SYSTEM

		44 IPU T3 TCA-74	444 IPU T3 TCA-85
Type (ETR - Energised To Run)		Negative Ground ETR	Negative Ground ETR
Standard (starter & alternator)	V	12	12
Minimum cranking speed	rpm	105	105
Battery (not included) - minimum capacity recommended		145Ah.	145Ah.
Battery (not included) - minimum cold cranking capacity		850 CCA	850 CCA

STANDARD CONFIGURATION

Technical Code	444 IPU T3 TCA
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 indicator included
Intake manifold location	Left hand forward
Exhaust manifold / turbocharger location	Right hand rearward
Turbocharger	Wastegate controlled
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
Electric Harness	Option available
Finish	Lacquered

OPTIONAL EQUIPMENT

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

