

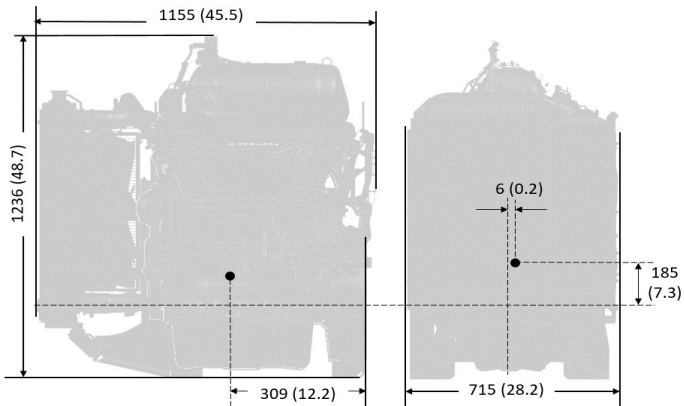


# POWER SYSTEMS

## JCB 430 DIESELMAX STAGE V 55 kW (74 hp) Top Mount IPU Engine

FUEL SYSTEM		
Injection System		Common Rail
Brake Specific Fuel Consumption (BSFC) @ Full Load Rated Speed (FLRS)	g / kW / hr	220.5
BSFC @ Peak Torque	g / kW / hr	217.7
Max. Fuel Inlet Temperature Measured Before Engine Mounted Fuel Filter.	°C (°F)	80 (176)
Max. Fuel System Back Pressure Measured at Engine Spill Line Outlet From Engine	kPa (PSI)	30 (4.35)
Max. Fuel Inlet Depression Measured at Inlet to Fuel Lift Pump	kPa (PSI)	25 (3.6)
Nominal Fuel Inlet Flow to Pump @ FLRS	litre/h (gal/h)	99 (21.8)
Heat Rejection to Returned Fuel	kW (hp)	0.65 (0.87)
Nominal Fuel Return Flow to Tank @FLRS	litre/h (gal/h)	84 (18.5)
Engine Fuel Pre Filter	micron	12
Engine Fuel Main Filter	micron	4

MODEL DATA		
Certification Model		430 STAGE V
Gross Rated Power	kW (hp)	55 (74)
Emissions Level		Stage V
Rated Speed	rpm	2200
Peak Torque	Nm (lbf-ft)	440 (325)
Peak Torque Speed	rpm	1150
Nominal Displacement	litres	3
Idle Speed (With engine at normal operating temperature)	rpm	850
Max. No Load Governed Speed	rpm	2450
Dimensions (L x W x H) (Engine Only)	mm (in)	816(32.2)x678(26.7)x1206(47.5)
Bore	mm (in)	92 (3.62)
Stroke	mm (in)	112 (4.41)



ENGINE LUBRICATION		
Engine Oil Pressure @ FLRS	kPa (PSI)	350-450 (50.7-65.3)
Max. Continuous Oil Temperature	°C (°f)	125 (257)
Max. Intermittent Oil Temperature	°C (°f)	135 (275)
Oil Capacity	litres (gals)	14.5 (3.8)
Oil SAE Classification (as supplied from factory)	SAE	10W30 or 5W40
Min. Required Oil Grade	API	API CJ4/ CK-4/ ACEA E6/ E9

POWER & TORQUE														
Speed (r/min)	850	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
Power (kW)	26.7	36.7	44.3	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	55.5
Power (hp)	36	49	59	73	73	73	73	73	73	73	73	73	73	74
Torque (Nm)	300	350	385	433	400	371	346	325	306	289	273	260	247	241

### Engine Technical Data



ENGINE BREATHING		
Max. Rise Over Ambient at Inlet to Turbocharger	°C (°F)	10 (18)
Max. Induction Depression @ FLRS, Clean Filter	kPa (PSI)	3.5 (0.5)
Min. Induction Depression @ FLRS, Clean Filter	kPa (PSI)	2.5 (0.36)
Max. Induction Depression @ FLRS, Dirty Filter	kPa (PSI)	7 (1.02)
Air Requirement For Combustion / CAC Mass Flow @ FLRS, 25°C Ambient	kg/h (Lb/h)	305
Air Requirement For Combustion / CAC Mass Flow @ Peak Torque, 25°C Ambient	kg/h (Lb/h)	245
Engine Compressor Outlet Temperature @ FLRS 25°C Ambient	°C (°F)	180 (356)
Engine Compressor Outlet Temperature @ Peak Torque 25°C Ambient	°C (°F)	150 (302.5)
Max. Engine Compressor Outlet Temperature @ Limiting Ambient Temperature (LAT)	°C (°F)	171.3 (340.3)
Turbocharger Boost Pressure @ FLRS	kPa abs (PSI abs)	225 (32.6)
Max. Turbocharger Boost Pressure	kPa abs (PSI abs)	265 (38.4)
CAC Outlet Temperature @ FLRS, 25°C Ambient	°C (°F)	44-60 (111-140)
CAC Outlet Temperature @ Peak Torque, 25°C Ambient	°C (°F)	53-60 (127-140)
Heat Rejection to CAC @ FLRS 25°C Ambient	kW (hp) thermal	9 (12.1)
Heat Rejection to CAC @ Peak Torque 25°C Ambient	kW (hp) thermal	-
CAC System (comp. outlet to intake manifold inlet) Max. Pressure Drop @ FLRS	kPa (PSI)	5 (0.73)
CAC System (comp. outlet to intake manifold inlet) Min. Pressure Drop @ FLRS	kPa (PSI)	4 (0.58)

EXHAUST & EGR		
Exhaust Mass Flow @ FLRS	kg/h (Lb/h)	325 (716.5)
Exhaust Mass Flow @ peak torque	kg/h (Lb/h)	241 (531.3)
Max. Allowable Exhaust Back Pressure @ FLRS	kPa (PSI)	33 (4.79)
Min. Allowable Exhaust Back Pressure @ FLRS	kPa (PSI)	4 (0.58)
Turbocharger Turbine Outlet Gas Temperature @ FLRS	°C (°F)	700 (1292)
Max. EGR Actuator Skin Temperature	°C (°F)	150 (302)

ENGINE COOLING		
Heat to Coolant @ Rated Condition, 25°C Ambient	kW (hp) thermal	49 (66)
Heat to Coolant @ Peak Torque, 25°C Ambient	kW (hp) thermal	37 (50)
Radiator Flow @ Rated Speed (cab heater off)	l/min (gal/h)	182 (2402)
Radiator Flow @ Peak Torque (cab heater off)	l/min (gal/h)	93 (1227)
Max. Coolant System Pressure Drop Between T.Stat Outlet and Coolant Inlet	kPa (PSI)	55 (7.98)
Min. Coolant Fill Rate	l/min (gal/h)	10 (132)
Max. Coolant Temperature	°C (°F)	110 (230)
Max. Managed Coolant Temperature	°C (°F)	115 (239)
Thermostat Opening Temperature	°C (°F)	96 (205)
Coolant Temperature Warning Threshold	°C (°F)	113 (235)
Coolant Capacity Engine Only	litres (gals)	7.9 (2.1)

MASS / GEOMETRY		
Direction of Rotation (viewed from crank nose)		Clockwise
Approximate Weight (Engine Only, Dry)	kg (lb)	475 (1047)
Max. Bending Moment on Standard Flywheel Housing	Nm (lbf-ft)	1400 (1032)
Mass Moment of Inertia	kgm <sup>2</sup> (lbf <sup>2</sup> )	-
Centre of Gravity: x (distance from rear face of standard FH2 flywheel housing)	mm (in)	214 (8.4)
Centre of Gravity: y (distance to left of crank centreline, viewed from rear)	mm (in)	3 (0.1)
Centre of Gravity: z (height above centreline of crank)	mm (in)	187 (7.4)

OTHER TEMPERATURE LIMITS		
Max. Engine ECU Case Temperature	°C (°F)	115 (239)
Max. Alternator Air Inlet Temperature	°C (°F)	110 (230)

©2020 JCB Power Systems. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any other means, electronic, mechanical, photocopying or otherwise, without prior permission from JCB Power Systems. All references in this publication to operating weights, sizes, capacities and other performance measurements are provided for guidance only and may vary dependant upon the exact specification of engine. They should not therefore be relied upon in relation to suitability for a particular application. Guidance and advice should always be sought from your JCB Distributer. JCB reserves the right to change specifications without notice.

Illustrations and specifications shown may include optional equipment and accessories. The JCB logo is a registered trademark of J C Bamford Excavators Ltd.