



# JCB TRACKED EXCAVATOR | JS220 LONG REACH

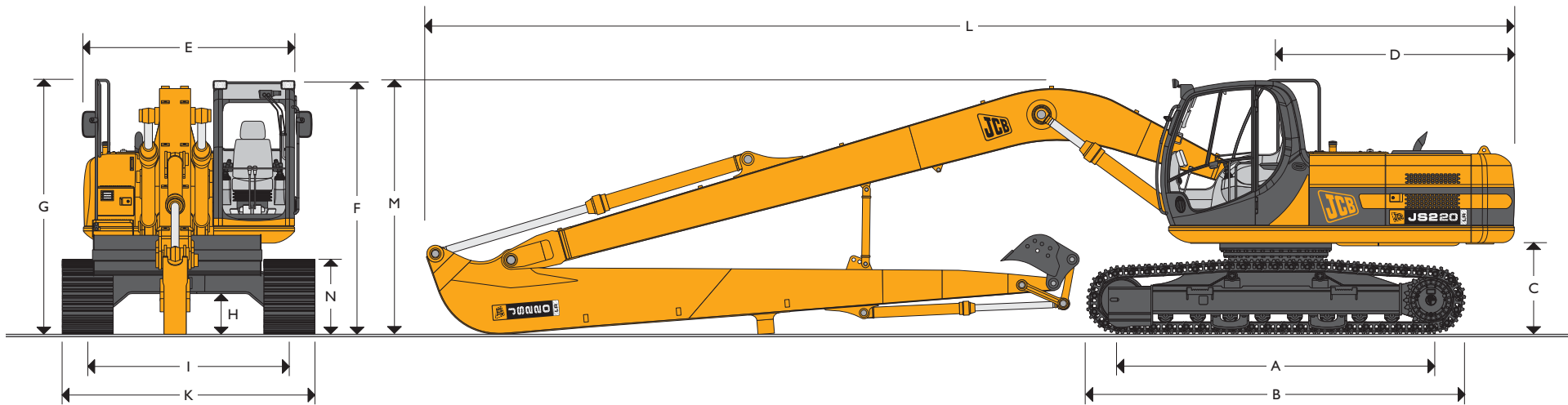


MAX. OPERATING WEIGHT

23742 kg (52342 lb)

NETT ENGINE POWER

128 kW (172 hp)



## STATIC DIMENSIONS

Dimensions in millimetres (ft-in)	LC	SC
A Track length on ground	3660 (12-0)	3370 (11-1)
B Undercarriage overall length	4460 (14-8)	4170 (13-8)
C Counterweight clearance	1065 (3-6)	1065 (3-6)
D Tail swing radius	2825 (9-3)	2825 (9-3)
E Overall width of superstructure	2549 (8-4)	2549 (8-4)
F Height over cab	2946 (9-8)	2946 (9-8)
G Height over grab rail	3025 (9-11)	3025 (9-11)
H Ground clearance	486 (1-7)	486 (1-7)

Dimensions in millimetres (ft-in)	LC	SC
I Track gauge	2390 (7-10)	2200 (7-2)
K Width o/tracks (700mm shoes)	3090 (10-2)	2900 (9-6)
K Width o/tracks (800mm shoes)	3190 (10-6)	3000 (9-10)
K Width o/tracks (900mm shoes)	3290 (10-10)	3100 (10-2)
L Transport length	12545 (41-2)	12545 (41-2)
M Transport height	3025 (9-11)	3025 (9-11)
N Track height	885 (2-11)	885 (2-11)



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## ENGINE

<b>Type</b>	Isuzu 4HK1X. European Tier III emissions compliant.
<b>Nett power (ISO 3046-1NF)</b>	128kW (172hp) at 2000rpm.
<b>Piston Displacement</b>	5.193 litres (317 cu.in.).
<b>Injection</b>	Electronic governor.
<b>Air Filtration</b>	Dry element with secondary safety element and in cab warning indicator.
<b>Cooling</b>	Water cooler via large capacity radiator.
<b>Starting system</b>	24 volt – 4.5kW.
<b>Batteries</b>	2 x 12 volt Heavy Duty.
<b>Alternator</b>	24 volt 40 amp.
<b>Refuelling pump</b>	Electric type.

## SWING SYSTEM

<b>Swing motor</b>	Axial piston.
<b>Swing brake</b>	Hydraulic braking plus automatic spring applied disc type parking brake.
<b>Final drive</b>	Planetary reduction.
<b>Swing speed</b>	12.9rpm.
<b>Swing gear</b>	Large diameter, internally toothed fully sealed grease bath lubricated.
<b>Swing lock</b>	Switchable brake in cab.

## UNDERCARRIAGE

<b>Carriage options</b>	L-Long Carriage.
<b>Construction</b>	Fully welded, "X" frame type with central bellyguarding and sloping sidemembers with dirt relief holes under top rollers.
<b>Recovery point</b>	Front and rear.
<b>Track type</b>	Sealed and lubricated.
<b>Track shoe options</b>	700mm (28in), 800mm (31.5in), 900mm (35in).
<b>Upper &amp; lower rollers</b>	Heat treated, sealed and lubricated.
<b>Track adjustment</b>	Grease cylinder type.
<b>Track idler</b>	Sealed and lubricated, with spring cushioned recoil.
<b>No. of track guides</b>	2 per side
<b>No. of lower rollers</b>	8 per side
<b>No. of upper rollers</b>	2 per side
<b>No. of track shoes</b>	49 per side

## HYDRAULICS

A variable flow load sensing system with flow on demand, variable power output and servo operated, multi-function open centre control. Machine auto warm up standard – maximises performance in cold conditions.

### Pumps

<b>Main pumps</b>	2 variable displacement axial piston type.
<b>Maximum flow</b>	2 x 214 L/min (2 x 47 UK GPM).
<b>Servo pump</b>	Gear type.
<b>Maximum flow</b>	20 L/min (4.4 UK GPM).

### Control valve

A combined four and five spool control valve with auxiliary service spool as standard. When required twin pump flow is combined to boom, dipper and bucket services for greater speed and efficiency.

### Relief valve settings

<b>Boom/Arm/Bucket</b>	343 bar (4975 lbf/sq.in)
<b>Automatic power boost</b>	373 bar (5410 lbf/sq.in)
<b>Swing circuit</b>	289 bar (4190 lbf/sq.in)
<b>Travel circuit</b>	343 bar (4975 lbf/sq.in)
<b>Pilot control</b>	40 bar (580 lbf/sq.in)

A separate Cushion Control valve in the servo system provides cushioning of the boom and dipper spools selection and quick warm-up of the servo system.

### Hydraulic cylinders

Double acting type, with bolt-up end caps and hardened steel bearing bushes. End cushioning is fitted as standard on boom, dipper and bucket rams. Optional hose burst check valves available for boom and dipper rams.

### Filtration

The hydraulic components are protected by the highest standard of filtration to ensure long hydraulic fluid and component life.

<b>In tank</b>	150 micron, suction strainer.
<b>Main return line</b>	10 micron, fibreform element.
<b>Plexus Bypass line</b>	1.5 micron, paper element.
<b>Pilot line</b>	10 micron, paper element.
<b>Hydraulic hammer return</b>	10 micron, reinforced microform element.

### Cooling

Cooling is provided via a full return line air blast cooler as part of a single face cooling pack in conjunction with the engine water cooler.

## TRACK DRIVE

<b>Type</b>	Fully hydrostatic, three speed with autoshift.
<b>Travel motors</b>	Variable swash axial piston type, fully guarded within undercarriage frame.
<b>Final drive</b>	Planetary reduction, bolt-on sprockets.
<b>Service brake</b>	Hydraulic counter balance valve to prevent overspeeding on gradients.
<b>Park brake</b>	Disc type, spring applied, automatic hydraulic release.
<b>Gradeability</b>	70% (35 deg) continuous.
<b>Travel speed</b>	High – 5.6 km/h (3.4 mph). Mid – 3.3 km/h (2.1 mph). Low – 2.3 km/h (1.4 mph).
<b>Tractive effort</b>	191.9kN (19570kgf, 43144lbf).



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## EXCAVATOR END

Long reach boom and dipper is standard on the JS220 LR. This is designed for waterways maintenance applications rather than material extraction applications. Machine can be ordered with a loose standard monoboom and 2.4m or 3.0m dipper to increase flexibility of use.

## CAB

Excellent digging, loading and positioning visibility results from the careful design of front, side and roof lights. All screens are tinted to improve in cab conditions.

Fully opening front screen is very smooth to operate and as the lower screen is stored within the top screen frame it makes complete front screen opening easy, fast and convenient.

Fresh air ventilation available from opening door window, opening slot in front screen and fully opening front screen.

Parallelogram wash wiper for upper screen ensuring good wiped area for maximum visibility. Wiper motor is fitted in the left hand side of the roof screen so as not to affect bucket visibility when loading. Optional lower screen wiper available.

Fresh air ventilation and heater with windscreen demister. Infinitely variable blower speed, temperature and recirculation control.

Climate control. Fully adjustable deluxe suspension seat with arm rest adjustment and backrest recline. Optional radio with digital tuner fitted into the roof lining for maximum protection. Conveniently placed radio mute button incorporated into lower console.

12v power point and mobile phone holder built into the right hand console. Courtesy light can be operated from ground level and is illuminated for five minutes or until switched off improving operator access at night. Cab mounted roller blind protects operator from sun's glare through front or top screens.

## AMS – ADVANCED MANAGEMENT SYSTEM

Four selectable working modes link the operators control movements with the engine and hydraulic systems to maximise productivity and efficiency.

- A (Auto)** Up to 100% engine power and 100% flow. Gives variable power and speed depending on the operator's input, matching the demand for output and efficiency to the job. Power boost is automatically activated in this mode should hard conditions be encountered. Auto idle cuts in after a period of inactivity (between 5 and 30 seconds as set by the operator)
- E (Economy)** 80% engine power. 95% of hydraulic flow maximises economy while maintaining excellent output.
- P (Precision)** 55% engine power. 90% of hydraulic flow for fine control of grading operations.
- L (Lifting)** 55% engine power. 63% of hydraulic flow with permanent power boost for maximum lifting power and control.

The Auto mode allows the AMS processor to select the optimum operational performance to match the demands of the job while the three alternative modes give precise matching of application when specific tasks are undertaken.

The adjustable position monitor mounted on the front right hand pillar of the cab gives the operator a constant read out of mode, tracking range, operating temperature and a host of other information, while retaining excellent visibility of the monitor and the job being carried out.

The required flow for hammer applications can be set and stored in the AMS memory and is automatically activated whenever the hammer pedal is depressed.

A maintenance indicator warns of imminent service needs, and all servicing and basic checks can be carried out using only the in cab display.

## CONTROLS

- Excavator** All servo lever operated to ISO control pattern, independently adjustable to the seat.
- Tracks** Individually servo operated by foot pedal or hand lever. Speed selection via joystick button.
- Auxiliary** Via servo operated foot pedal.
- Control isolation** Via gate lock lever at cab entrance or panel switch.
- Engine speed** Dial type throttle control plus servo lever mounted one-touch idle control or separate selectable auto-idle with adjustable time delay using AMS.
- Engine stop** Ignition key operated and separate shut-down button.
- Horn** Operated via servo lever mounted button.

## SERVICE CAPACITIES

Fuel tank	litres (UK gal)	343 (75.5)
Engine coolant	litres (UK gal)	25.5 (5.61)
Engine oil	litres (UK gal)	21.5 (4.7)
Swing reduction gear	litres (UK gal)	5.0 (1.1)
Track reduction gear (each side)	litres (UK gal)	4.7 (1.0)
Hydraulic system	litres (UK gal)	200 (44)
Hydraulic tank	litres (UK gal)	120 (26.4)

## WEIGHTS AND GROUND BEARING PRESSURES

Machine equipped with 15m Long Reach Boom and Dipper, Counterweight, bucket, operator and full fuel tank.

Shoe Width	Operating Weight	Bearing Pressure
700mm (28in.)	23242kg (51240lb)	0.44kg/sq. cm. (6.26lb/sq. in.)
800mm (31in.)	23492kg (51791lb)	0.39kg/sq. cm. (5.55lb/sq. in.)
900mm (35in.)	23742kg (52342lb)	0.35kg/sq. cm. (4.98lb/sq. in.)



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## ATTACHMENTS

Bucket type	Width mm (in)	Capacity
General purpose	600 (24)	0.28cu.m (0.36cu.yd)
General purpose	750 (30)	0.38cu.m (0.50cu.yd)
General purpose	900 (35)	0.49cu.m (0.64cu.yd)
Ditch/silt cleaning	1800 (71)	0.50cu.m (0.65cu.yd)
Ditch/silt cleaning	2000 (79)	0.55cu.m (0.72cu.yd)
Weed mowing	2500 (98)	–
Weed mowing	3000 (118)	–

## STANDARD EQUIPMENT

Engine fan guard	Std
Cold start pre-heat	Std
Auto engine warm up	Std
Double element air cleaner	Std
Electric refuelling pump	Std
Heavy duty alternator	Std
Electrics isolator	Std
Heavy duty batteries	Std
Cab & engine soundproofing	Std
Cab heater & screen demister	Std
Tinted glass	Std
Interior light	Std
Coat hook	Std
Cigarette lighter	Std
Ashtray	Std
Operator's storage shelf	Std
Removable floor mat	Std
Windscreen wash/wipe	Std
Plug-in power socket	Std
Automatic power boost	Std
Auto-idle	Std
One-touch engine speed control	Std
Hydraulic cushion control	Std
Boom/swing priority switch	Std
Plexus hydraulic oil filtration	Std

## STANDARD EQUIPMENT (Continued)

HSP pressure test points	Std
Auxiliary pipework mounting brackets	Std
Work lights – boom & mainframe mounted	Std
Undercarriage belly guarding	Std
Upper structure under covers	Std
Swing system cover	Std
Twin track guides	Std
External mirrors	Std
Handrail & non slip walk ways	Std
Quick connect engine oil drain pipe	Std
Front screen blind	Std
Quick connect fuel tank drain pipe	Std
Hinged engine under cover	Std
Remote filter system	Std

## OPTIONAL EQUIPMENT

Hose burst check valves & overload warning system	Opt
Tipping link mounted lift points	Opt
General purpose buckets	Opt
Ditch/grading buckets	Opt
Quickhitch buckets	Opt
Low flow pipework	Opt
Climate control	Opt
Cab mounted & rear work lights	Opt
Rotating beacon	Opt
Rain guard	Opt
Biodegradable oil	Opt
Air suspension seat with heated pad and lumbar support adjustment	Opt
Lower screen wiper	Opt
Radio	Opt
High and low temperature hydraulic oil option	Opt

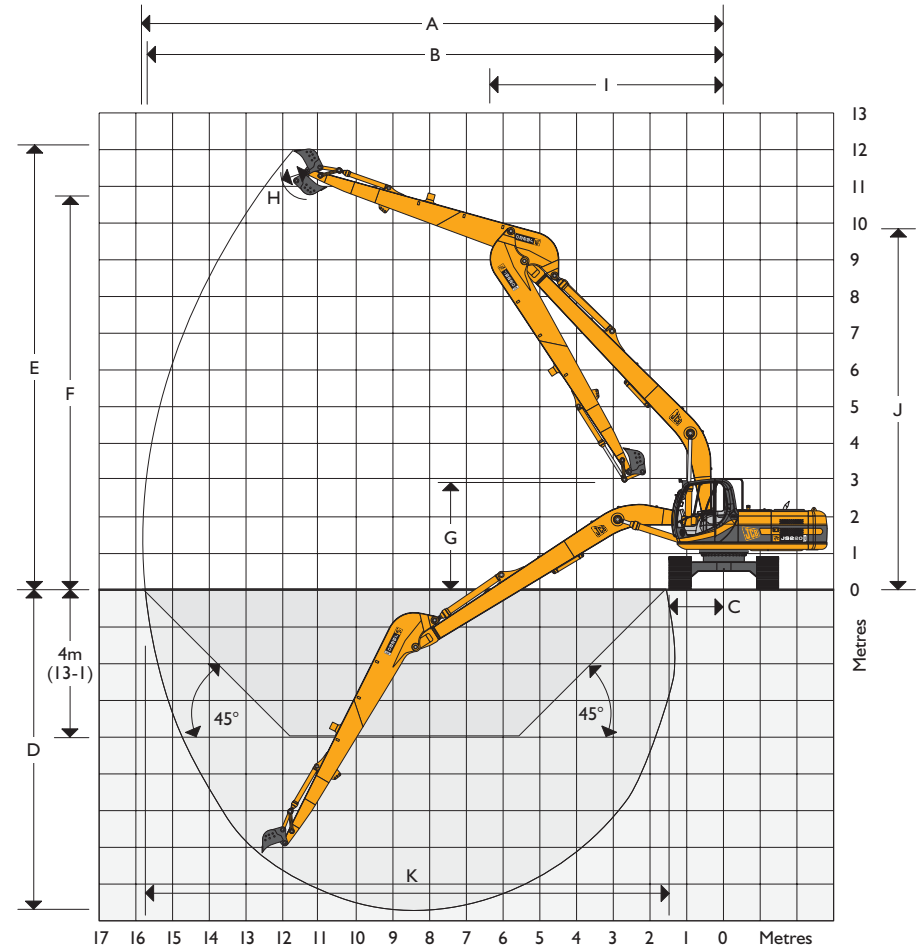


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## WORKING RANGE

Boom length: 8.7m (28ft 7in)		
Dipper length		<b>6.4m (21ft 0in)</b>
A	Maximum reach	mm (ft-in) 15600 (51-2)
B	Maximum reach (on ground)	mm (ft-in) 15490 (50-10)
C	Minimum reach (on ground)	mm (ft-in) 1495 (4-11)
D	Maximum depth	mm (ft-in) 11990 (39-4)
E	Maximum height	mm (ft-in) 12660 (41-6)
F	Maximum dumping height	mm (ft-in) 10450 (34-3)
G	Minimum dumping height	mm (ft-in) 1910 (6-3)
H	Bucket struck radius	mm (ft-in) 1200 (3-11)
I	Minimum swing radius	mm (ft-in) 5450 (17-11)
J	Minimum swing radius height	mm (ft-in) 10270 (33-8)
K	Maximum ground level span	mm (ft-in) 13995 (45-11)
Bucket rotation		182°
Dipper tearout		kgf (lbf) 4500 (9900)
Bucket tearout		kgf (lbf) 5900 (12980)



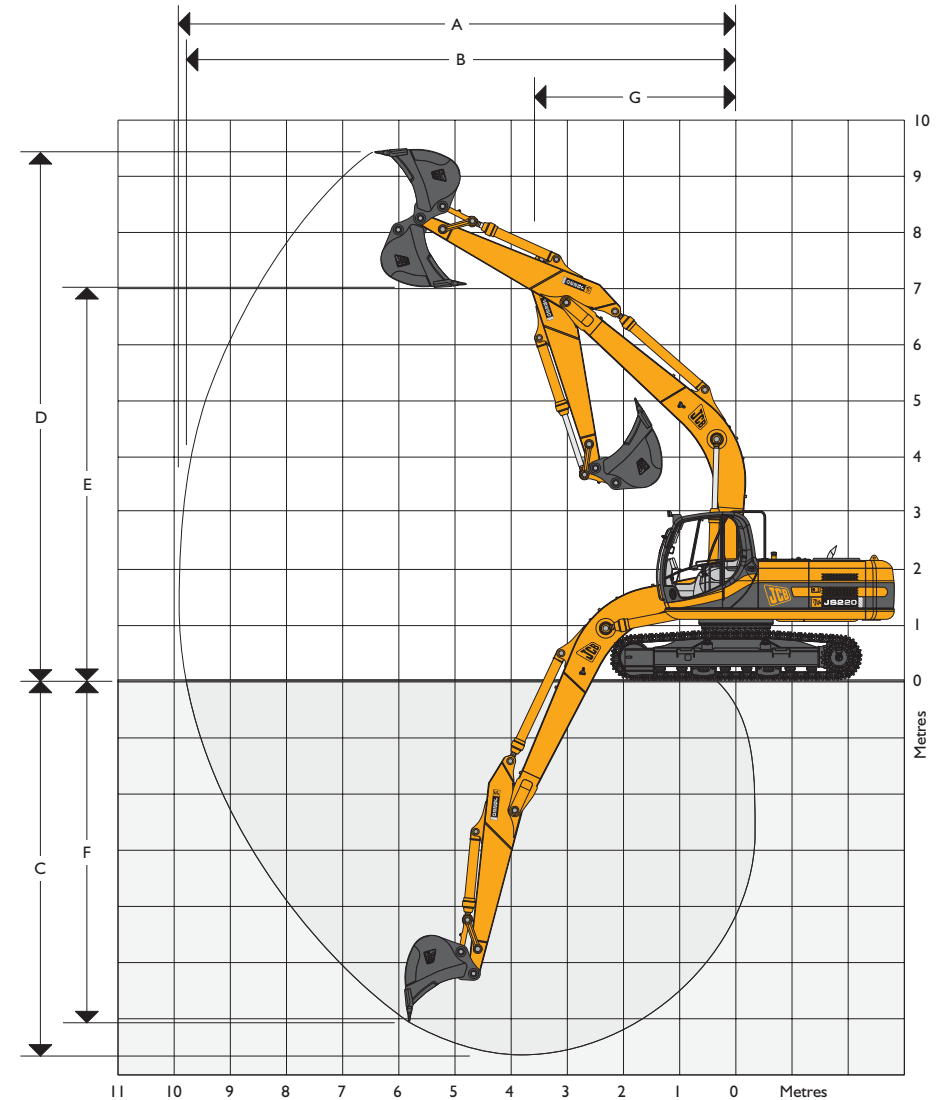


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## STANDARD EXCAVATOR END WORKING RANGE

Boom length: 5.7m (18ft 8in)			2.40m (7ft 10in)	3.0m (9ft 10in)
Dipper length				
A	Maximum digging reach	m (ft-in)	9.34 (30-8)	9.87 (32-5)
B	Maximum digging reach (on ground)	m (ft-in)	9.16 (30-1)	9.70 (31-10)
C	Maximum digging depth	m (ft-in)	6.02 (19-9)	6.60 (21-8)
D	Maximum digging height	m (ft-in)	9.20 (30-2)	9.40 (30-2)
E	Maximum dumping height	m (ft-in)	6.53 (21-5)	6.75 (22-2)
F	Maximum vertical wall cut depth	m (ft-in)	5.47 (17-11)	6.07 (19-11)
G	Minimum swing radius	m (ft-in)	3.71 (12-2)	3.60 (11-10)
	Bucket rotation	degrees	183°	183°
	Dipper tearout with boost (ISO6057)	kgf (lbf)	12550 (27670)	10450 (23040)
	Bucket tearout with boost (ISO6057)	kgf (lbf)	15800 (34835)	15800 (34835)





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LIFT CAPACITIES – Dipper length: 6.40m, Boom: 8.7m, Trackshoes: 700mm, No bucket.

JS220 LR

Load Point	Reach from swing centre																				
	3m (9ft 10in)		4.5m (14ft 9in)		6m (19ft 8in)		7.5m (24ft 7in)		9m (29ft 6in)		10.5m (34ft 5in)		12m (39ft 4in)		13.5m (44ft 3in)		Max. Reach		Max. Reach		
Ht.	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm	
10.5m (34.5ft)																			1330*	1330*	11464
9m (29.6ft)														1870*	1870*				1280*	1280*	12466
7.5m (24.7ft)														2200*	2050				1260*	1260*	13222
6m (19.8ft)												2330*	2330*	2290*	2000	1700*	1560		1270*	1270*	13774
4.5m (14.9ft)									2720*	2720*	2540*	2460	2420*	1930	2250*	1520		1290*	1290*	14144	
3m (9.10ft)	9300*	9300*			4270*	4270*	3530*	3530*	3080*	2980	2790*	2320	2590*	1840	2370	1470		1340*	1300	14349	
1.5m (4.11ft)	3600*	3600*	7400*	7170	5210*	4890	4110*	3600	3470*	2770	3050*	2180	2770*	1750	2310	1420		1410*	1250	14393	
0m	3630*	3630*	8050*	6440	5990*	4440	4630*	3310	3820*	2580	3300	2060	2710	1670	2260	1370		1500*	1240	14280	
- 1.5m (- 4.11ft)	4520*	4520*	7650*	6100	6520*	4150	5030*	3100	3960	2430	3190	1960	2640	1600	2220	1330		1630*	1250	14005	
- 3m (- 9.10ft)	5640*	5640*	8340*	5980	6810*	4000	4960	2970	3860	2330	3120	1880	2590	1550	1980*	1310		1820*	1300	13558	
- 4.5m (- 14.9ft)	6920*	6920*	9290*	5990	6780	3950	4900	2920	3800	2280	3080	1850	2570	1540				2090*	1400	12922	
- 6m (- 19.8ft)	8380*	8380*	8940*	6090	6740*	3980	4900	2920	3800	2280	3090	1860	2600	1570				2500*	1560	12066	
- 7.5m (24.7ft)	10070*	10070*	8310*	6270	6370*	4080	4980	2990	3860	2340	3160	1920						3000	1830	10937	
- 9m (29.6ft)	10110*	10110*	7300*	6540	5660*	4260	4530*	3120	3610*	2470								3350*	2330	9440	
- 10.5m (34.5ft)			5660*	5660*	4400*	4400*													3460*	3460*	7346

 Lift capacity front and rear.

 Lift capacity full circle.

- Notes:
1. For lifting capacity including bucket, subtract total weight of bucket or bucket and quickhitch from above values.
  2. Lifting capacities are based on ISO 10567, that is: 75% of minimum tipping load or 87% of hydraulic lift capacity, whichever is the less. Lifting capacities marked\* are based on hydraulic capacity.
  3. Lift capacities assume that the machine is on firm, level ground.
  4. Lift capacities may be limited by local regulations. Please refer to your dealer.



## A GLOBAL COMMITMENT TO QUALITY

JCB's total commitment to its products and customers has helped it grow from a one-man business into Britain's largest privately owned manufacturer of backhoe loaders, crawler excavators, wheeled excavators, telescopic handlers, wheeled loaders, dump trucks, rough terrain fork lifts, industrial fork lifts, mini/midi excavators, skid steer loaders and tractors.

By making constant and massive investments in the latest production technology, the JCB factories have become some of the most advanced in Europe.

By leading the field in innovative research and design, extensive testing and stringent quality control, JCB machines have become renowned all over the world for performance, value and reliability.

And with a global sales and service network of over 400 distributors and agents, the company exports over 70% of its production to all five continents.

Through setting the standards by which others are judged, JCB has become one of Britain's most impressive success stories.

