



JCB TRACKED EXCAVATOR | JS 235 HD

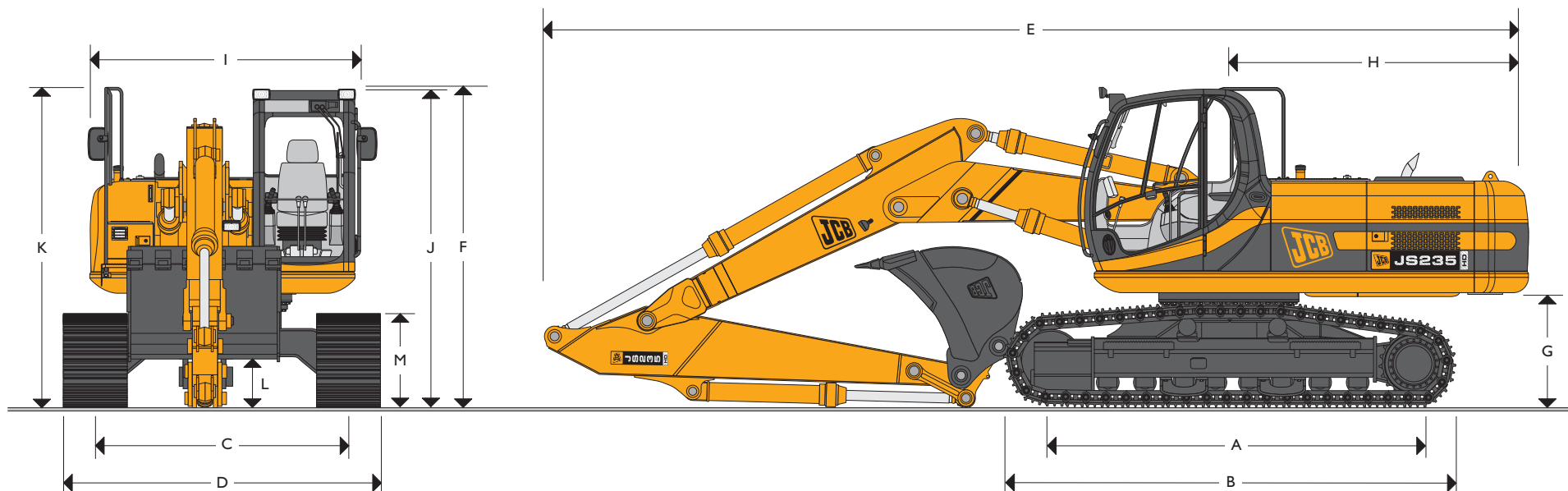


MAX. OPERATING WEIGHT

24222 kg (53400 lb)

NETT ENGINE POWER

128 kW (172 hp)



STATIC DIMENSIONS

Dimensions in millimetres (ft-in)	JS235 HD
A Track length on ground	3420 (11-3)
B Undercarriage overall length	4220 (13-10)
C Track gauge	2000 (6-7)
D Width over tracks (550mm trackshoes)	2550 (8-4)

Dipper lengths	1.91m (6ft 3in)	2.40m (7ft 10in)	3.0m (9ft 10in)
E Transport length with TAB	9583 (31-5)	9576 (31-5)	9467 (31-1)
E Transport length with Monoboam	9570 (31-5)	9560 (31-4)	9440 (31-0)
F Transport height with TAB	3154 (10-4)	3162 (10-4)	2290 (7-6)
F Transport height with Monoboam	3154 (10-4)	3162 (10-4)	2290 (7-6)

Dimensions in millimetres (ft-in)	JS235 HD
G Counterweight clearance	1170 (3-10)
H Tailswing radius	2825 (9-3)
I Width of superstructure	2550 (7-5)
J Height over cab	3050 (10-0)
K Height over grab rail	3129 (10-3)
L Ground clearance	565 (1-10)
M Track height	995 (3-3)



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ENGINE

Model	Isuzu 4HK1X European Tier III emissions compliant.
Nett power (ISO 3046-INF)	128kW (172hp) at 2000rpm.
Piston Displacement	5.193 litres (317 cu.in.).
Injection	Electronic governor.
Air Filtration	Dry element with secondary safety element and in cab warning indicator.
Cooling	Water cooler via large capacity radiator with anti block "wavy" fins and protected by a separate fine mesh grille.
Starting system	24 volt – 4.5kW.
Batteries	2 x 12 volt Heavy Duty.
Alternator	24 volt 40 amp.
Refuelling pump	Electric type.

SWING SYSTEM

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

UNDERCARRIAGE

Construction	Fully welded, "X" frame type with central bellyguarding and track motor guards. Sloping sidemembers with dirt relief holes under top rollers.
Recovery point	Front and rear.
Track type	Sealed and greased.
Track shoe options	550mm (22 inch).
Upper & lower rollers	Heat treated, sealed and lubricated.
Track adjustment	Grease cylinder type.
Track idler	Sealed and lubricated, with spring cushioned recoil.
No. of track guides	2 per side
No. of lower rollers	8 per side
No. of upper rollers	2 per side
No. of track shoes	46 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

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

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

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

Cooling

Cooling is provided via a full return line air blast cooler with anti-block wavy cooling fins and separate easy clean fine mesh grill.

TRACK DRIVE

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



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EXCAVATOR END

Triple Articulated Boom and Monoboom available along with a choice of dipper lengths to suit the requirements of reach, dig-depth, loadover height, tearouts and site versatility. Reserve strength is built into the fully welded structures for hydraulic hammer and other arduous operations.

Fabricated bucket tipping links are provided with a choice of lift points.

Strong, durable construction, large cross sections and multi plate fabrications to withstand high stress applications.

The 5.7m (18ft 8in) boom is designed to ensure the optimum digging envelope when matched with the three dipper lengths.

Low maintenance bronze alloy bushes with graphite plugs are fitted to boom base and boom to dipper pivots resulting in 1000 hour greasing intervals at these points.

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.

Optional 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

Tracks

All servo lever operated to ISO control pattern, independently adjustable to the seat.

Individually servo operated by foot pedal or hand lever.

Speed selection via joystick button.

Via servo operated foot pedal.

Auxiliary

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.



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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

Figures include 1.14cu.m. bucket, 760kg (1675lbs), operator, full fuel tank, 550mm track shoes and 2.4m dipper.

	JS235 HD	
	Machine weight	Ground bearing pressure
	kg (lb)	kg/cm ² (lb/in ²)
TAB	23970 (52845)	0.53 (7.54)
Monoboam	22920 (50530)	0.51 (7.25)

GENERAL PURPOSE EXCAVATOR BUCKETS

All buckets are JCB – Esco type fully welded steel, with sealed, hardened steel pivot pins and replaceable wear parts.

Max Width	Capacity (SAE heaped)	Weight
600mm (24in.)	0.40cu.m (0.52cu.yd)	484kg (1067lb)
900mm (36in.)	0.71cu.m (0.93cu.yd)	595kg (1312lb)
1000mm (39in.)	0.81cu.m (1.06cu.yd)	627kg (1382lb)
1200mm (47in.)	1.03cu.m (1.35cu.yd)	705kg (1555lb)
1350mm (53in.)	1.05cu.m (1.37cu.yd)	679kg (1497lb)
1450mm (57in.)	1.14cu.m (1.49cu.yd)	720kg (1588lb)
1500mm (59in)	1.19cu.m (1.56cu.yd)	734kg (1618lb)

STANDARD / OPTIONAL EQUIPMENT

Standard Equipment: Engine fan guard; Cold start pre-heat; Auto engine warm up; Double element air cleaner; Radiator fine mesh grille; Electric refuelling pump; Heavy duty alternator; Electrics isolator; Heavy duty batteries; Cab & engine soundproofing; Cab heater & screen demister; Tinted glass; Interior light; Coat hook; Cigarette lighter; Ashtray; Operator's storage shelf; Removable floor mat; Windscreen wash/wipe; Plug-in power socket; Automatic power boost; Auto-idle; One-touch engine speed control; Hydraulic cushion control; Boom/swing priority switch; Plexus hydraulic oil filtration; HSP pressure test points; Auxiliary pipework mounting brackets; Work lights – boom & mainframe mounted; Undercarriage belly guarding; Upper structure under covers; Swing system cover; Twin track guides; External mirrors; Handrail & non slip walk ways; Quick connect engine oil drain pipe; Front screen blind; Quick connect fuel tank drain pipe; Hinged engine under cover; Remote filter system.

Optional Equipment: Hose burst check valves & overload warning system; Tipping link mounted lift points; General purpose buckets; Ditch/grading buckets; Quickhitch buckets; Hydraulic hammers; Auxiliary pipework (full and low flow); Climate control; Cab mounted & rear work lights; Rotating beacon; Rain guard; Biodegradeable oil; Air suspension seat with heated pad and lumbar support adjustment; Radio; High and low temperature hydraulic oil option.



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WORKING RANGES

Boom length 5.70m (18ft 8in)

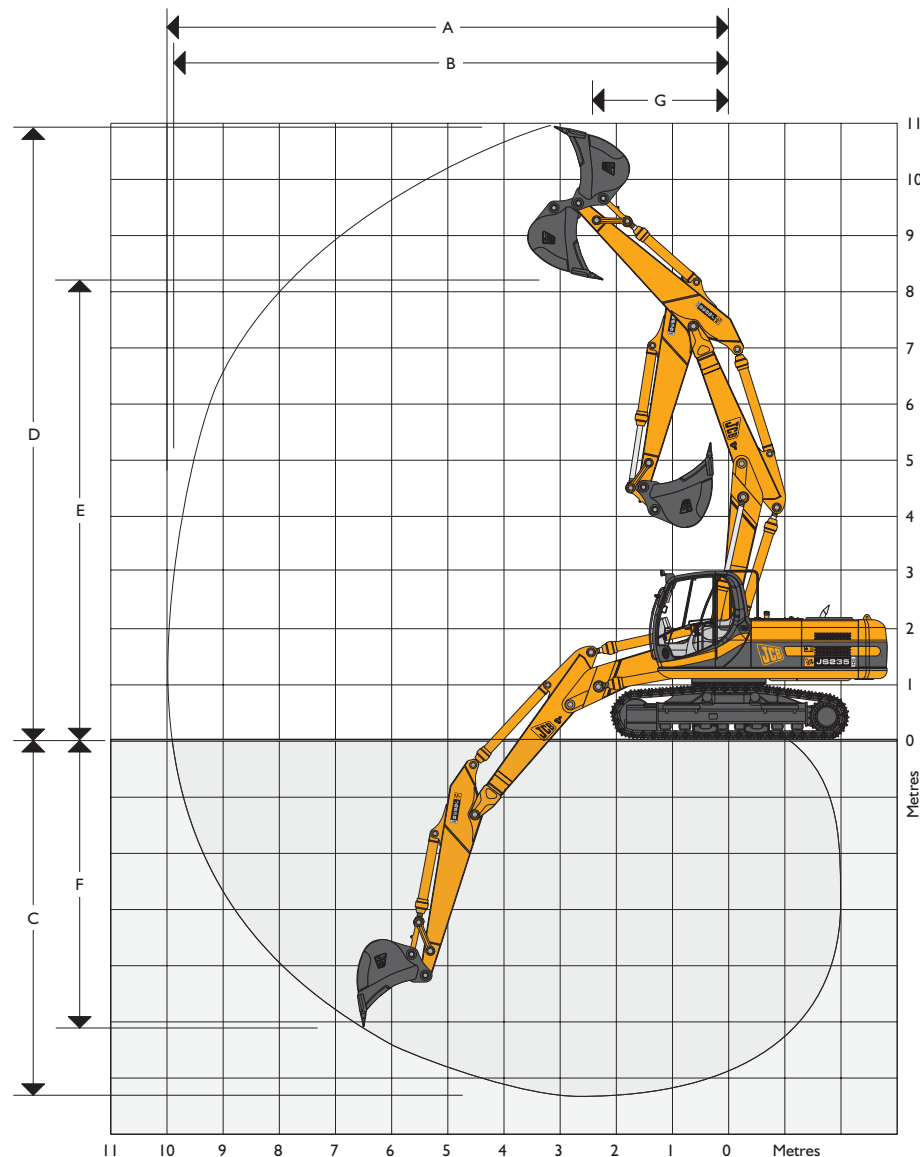


Dipper length	m (ft-in)	1.91 (6-3)	2.40 (7-10)	3.00 (9-10)
A Max digging reach	m	8890 (29-2)	9340 (30-8)	9890 (32-5)
B Max digging reach (on ground)	m (ft-in)	8700 (28-7)	9160 (30-1)	9700 (31-10)
C Max digging depth	m (ft-in)	5430 (17-10)	5920 (19-5)	6500 (21-4)
D Max digging height	m (ft-in)	9050 (29-8)	9300 (30-6)	9500 (31-2)
E Max dumping height	m (ft-in)	6410 (21-0)	6630 (21-9)	6850 (22-6)
F Max vertical wall cut depth	m (ft-in)	4800 (15-9)	5370 (17-7)	5970 (19-7)
G Minimum swing radius	m (ft-in)	3760 (12-4)	3710 (12-2)	3600 (11-10)
Bucket rotation		183°	183°	183°
Dipper tearout (ISO 6015)	kgf (lbf)	13450 (29652)	11560 (25485)	9590 (29652)
Dipper tearout with boost (ISO 6015)	kgf (lbf)	14610 (32209)	12550 (27668)	10410 (22950)
Bucket tearout (ISO 6015)	kgf (lbf)	14550 (32077)	14550 (32077)	14550 (32077)
Bucket tearout with boost (ISO 6015)	kgf (lbf)	15800 (34833)	15800 (34833)	15800 (34833)

Boom length 5.70m (18ft 8in)



Dipper length	m (ft-in)	1.91 (6-3)	2.40 (7-10)	3.00 (9-10)
A Max digging reach	m (ft-in)	9000 (29-6)	9440 (31-0)	9980 (32-9)
B Max digging reach (on ground)	m (ft-in)	8810 (28-11)	9260 (30-5)	9810 (32-2)
C Max digging depth	m (ft-in)	5190 (19-5)	5670 (18-7)	6250 (20-6)
D Max digging height	m (ft-in)	10300 (33-10)	10640 (34-11)	11010 (36-1)
E Max dumping height	m (ft-in)	7410 (24-4)	7750 (25-5)	8110 (26-7)
F Max vertical wall cut depth	m (ft-in)	3490 (12-11)	4440 (14-7)	5020 (16-6)
G Minimum swing radius	m (ft-in)	2500 (8-2)	2550 (8-4)	2290 (7-6)
Bucket rotation		183°	183°	183°
Dipper tearout (ISO 6015)	kgf (lbf)	13450 (29652)	11560 (25485)	9590 (29652)
Dipper tearout with boost (ISO 6015)	kgf (lbf)	14610 (32209)	12550 (27668)	10410 (22950)
Bucket tearout (ISO 6015)	kgf (lbf)	14550 (32077)	14550 (32077)	14550 (32077)
Bucket tearout with boost (ISO 6015)	kgf (lbf)	15800 (34833)	15800 (34833)	15800 (34833)





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LIFT CAPACITIES – Dipper length: 1.9m, Monoboom, Tracks: 550mm, No bucket.

JS235 HD

Reach	3m (9ft 10in)		4.5m (14ft 9in)		6m (19ft 8in)		7.5m (24ft 7in)		Max. Reach		Max. Reach
Load Point Ht.	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm
6.0m (19.8ft)					6380*	5200			5720*	5060	6105
4.5m (14.9ft)			8020*	7670	6720*	5100			5700*	4140	6907
3.0m (9.10ft)			9870*	7190	7470*	4910			5980*	3740	7318
1.5m (4.11ft)			11210*	6850	8140	4740			6030	3600	7406
0m			11510*	6750	8030	4640			6240	3710	7182
– 1.5m (– 4.11ft)	13010*	12560	11040*	6770	8020	4640			7010	4120	6614
– 3.0m (– 9.10ft)	12760*	12730	9650*	6910					7600*	5200	5596
– 4.5m (– 14.9ft)											

LIFT CAPACITIES – Dipper length: 2.4m, Monoboom, Tracks: 550mm, No bucket.

JS235 HD

Reach	3m (9ft 10in)		4.5m (14ft 9in)		6m (19ft 8in)		7.5m (24ft 7in)		Max. Reach		Max. Reach
Load Point Ht.	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm
7.5m (24.7ft)									5230*	5230*	5547
6.0m (19.8ft)					5810*	5280			4790*	4370	6767
4.5m (14.9ft)			7330*	7330*	6290*	5150			4690*	3700	7497
3.0m (9.10ft)			9230*	7320	7110*	4950	6020	3630	4800*	3380	7878
1.5m (4.11ft)			10820*	6930	7930*	4760	5920	3540	5120*	3270	7959
0m			11480*	6760	8020	4640	5860	3490	5600	3350	7751
– 1.5m (– 4.11ft)	10850*	10850*	11300*	6740	7980	4600			6160	3650	7229
– 3.0m (– 9.10ft)	14090*	12580	10270*	6820	7560*	4670			6980*	4400	6313
– 4.5m (– 14.9ft)			7500*	7080					6850*	6550	4777

LIFT CAPACITIES – Dipper length: 3.0m, Monoboom, Tracks: 550mm, No bucket.

JS235 HD

Reach	1.5m (4ft 11in)		3m (9ft 10in)		4.5m (14ft 9in)		6m (19ft 8in)		7.5m (24ft 7in)		Max. Reach		Max. Reach
Load Point Ht.	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm
7.5m (24.7ft)							4350*	4350*			3440*	3440*	6285
6.0m (19.8ft)							5170*	5170*			3210*	3210*	7382
4.5m (14.9ft)							5740*	5220	5190*	3750	3160*	3160*	8056
3.0m (9.10ft)			11580*	11580*	8380*	7460	6630	5000	5810*	3650	3230*	3080	8411
1.5m (4.11ft)					10200*	7010	7560*	4790	5930	3550	3430*	2990	8488
0m			6400*	6400*	11240*	6760	8020	4630	5840	3460	3800*	3040	8293
– 1.5m (– 4.11ft)	6500*	6500*	10510*	10510*	11410*	6680	7940	4560	5800	3430	4470*	3270	7807
– 3.0m (– 9.10ft)	10890*	10890*	15320*	12370	10770*	6720	7960	4580			5790*	3810	6969
– 4.5m (– 14.9ft)			12460*	12460*	8920*	6890					6760*	5150	5619

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.

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LIFT CAPACITIES – Dipper length: 1.9m, T.A.B., Trackshoes: 550mm, No bucket.

JS235 HD

Reach	3m (9ft 10in)		4.5m (14ft 9in)		6m (19ft 8in)		7.5m (24ft 7in)		Max. Reach		Max. Reach
Load Point Ht.	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm
7.5m (24.7ft)									6350*	6350*	4193
6.0m (19.8ft)			7250*	7250*					5890*	5640	5715
4.5m (14.9ft)	11970*	11970*	8350*	7810	7030*	5140			5960*	4480	6565
3.0m (9.10ft)			9980*	7280	7650*	4930			6360*	3960	6998
1.5m (4.11ft)			11160*	6850	8180	4730			6420	3790	7089
0m			11340*	6680	8030	4600			6650	3880	6855
– 1.5m (– 4.11ft)	13950*	12280	10660*	6670	7960*	4580			7550	4350	6256
– 3.0m (– 9.10ft)			8840*	6800					7590*	5670	5167

LIFT CAPACITIES – Dipper length: 2.4m, T.A.B., Trackshoes: 550mm, No bucket.

JS235 HD

Reach	3m (9ft 10in)		4.5m (14ft 9in)		6m (19ft 8in)		7.5m (24ft 7in)		Max. Reach		Max. Reach
Load Point Ht.	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm
7.5m (24.7ft)									5300*	5300*	5080
6.0m (19.8ft)			6580*	6580*	6250*	5330			4890*	4810	6391
4.5m (14.9ft)	10330*	10330*	7710*	7710*	6600*	5210			4850*	3970	7160
3.0m (9.10ft)			9400*	7430	7320*	4990	5520*	3610	5040*	3570	7558
1.5m (4.11ft)			10830*	6950	8020*	4760	5930	3510	5490*	3420	7643
0m			11360*	6710	8030	4600			5930	3490	7426
– 1.5m (– 4.11ft)	13480*	12170	11000*	6640	7960	4540			6570	3820	6879
– 3.0m (– 9.10ft)	13060*	12350	9630*	6710					7040	4700	5907

LIFT CAPACITIES – Dipper length: 3.0m, T.A.B., Trackshoes: 550mm, No bucket.

JS235 HD

Reach	1.5m (4ft 11in)		3m (9ft 10in)		4.5m (14ft 9in)		6m (19ft 8in)		7.5m (24ft 7in)		Max. Reach		Max. Reach
Load Point Ht.	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm
7.5m (24.7ft)											3530*	3530*	5811
6.0m (19.8ft)							5440*	5440*			3320*	3320*	6984
4.5m (14.9ft)					6870*	6870*	6070*	5300	4120*	3760	3300*	3300*	7694
3.0m (9.10ft)			13270*	13270*	8620*	7600	6860*	5060	5780*	3660	3430*	3270	8065
1.5m (4.11ft)			6990*	6990*	10290*	7070	7680*	4800	5950	3530	3710*	3140	8145
0m			8570*	8570*	11190*	6730	8050	4610	5840	3430	4220*	3180	7942
– 1.5m (– 4.11ft)	7860*	7860*	12600*	12020	11200*	6600	7930	4500			5160*	3420	7433
– 3.0m (– 9.10ft)			14500*	12150	10290*	6610	7600*	4510			6730*	4050	6545
– 4.5m (– 14.9ft)					7870*	6800					6750	5780	5082

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.
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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.



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The pulp used in the manufacture of this paper is made from renewable timber produced on a fully sustainable basis, and is bleached without the use of chlorine gas (ECF - Elemental Chlorine Free). This paper is suitable for recycling.

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