Hydraulic Crawler Excavator Specifications

RH 4.5

Service weight	**14.1 – 15.8 t**
Engine output	**63 kW**
Bucket capacities up to	**0.66 m³ (SAE)**

- **PMS three-pump hydraulics**
- **Electronic control and management system**
- **Deluxe cab with noise suppression**
- **Low noise and exhaust emissions**
- **Highly fuel efficient**
- **Fast work cycles**

O&K

In its element on small and mid-size construction sites: O&K's RH 4.5

Outstanding precision controllability

Zero-loss superstructure start-up and braking with energy recovery

Electronic immobilizer standard

Fast work cycles

Generous working ranges for stick and bucket

Four stick lengths, various buckets and attachments

CE symbol according to EC Machinery Directive.

TÜV certificate for compliance with DIN ISO EN 9001.

Lifting gear operation permitted with anti-burst and overload warning devices installed.

Electronic engine and pump management system PMS III

New coolant system

New cooling air routing

Heat exchange through external combined radiator

Powerful Cummins diesel

Rugged design engineered for construction machinery applications

Final drives protected within the crawler profile

N or LC undercarriages for excellent lift capacity and punishing applications

Automatic up/down shifting

O&K track cleaning and guide system (optional)

Perfect engine and pump management system PMS III

The electronic PMS III manages engine and pump performance to unbeatable levels of comfort and efficiency. PMS III offers decisive application advantages:

- Highest productivity through the three performance levels “Lift“ (65 %), “Eco“ (90 %) and “Heavy“ (100 % of available power).
- Lift capacity amplification at the lift stage (optional).
- The component-friendly warm-up phase clearly increases the unit’s longevity.
- Function monitoring of all important components with optical and acoustic signals for reduced downtime. An instant error code analysis on the display assists in monitoring functions essential for increasing the unit’s service life.
- The integrated service display reminds the operator of service intervals. Moreover, O&K after-sales service is able to trace the causes of any malfunction and take corrective action with the aid of the error memory of the EDS diagnostic system.

Smart technology lowers operating costs

Ample engine output is efficiently used for fuel savings: by precise variable flow control, the priority-controlled eco performance level and automatic rev reduction in no-load phases.

Innovative stroke dampening easier on components for improved longevity

The new end-of-stroke damping system with self-regulating throttle eliminates punishing piston impact. This protects the basic unit, reduces wear and increases durability.

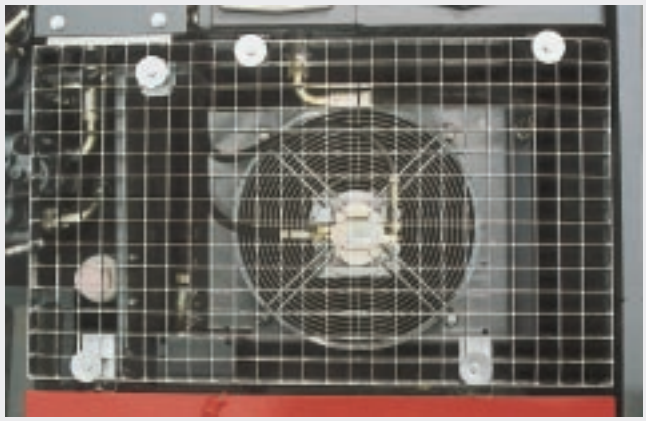
Slewing and braking torque individually adjustable

On O&K machines, the superstructure braking force is adjustable to what the customer wants. Operators may opt for either a soft or more aggressive swing-off/brake setting.

Separate cooling circuit

A separate cooling circuit ensures lower oil temperatures for less heat and extended service life of the pumps and hydraulic components.

The cooling system is designed for ambient temperatures of more than 40° C.

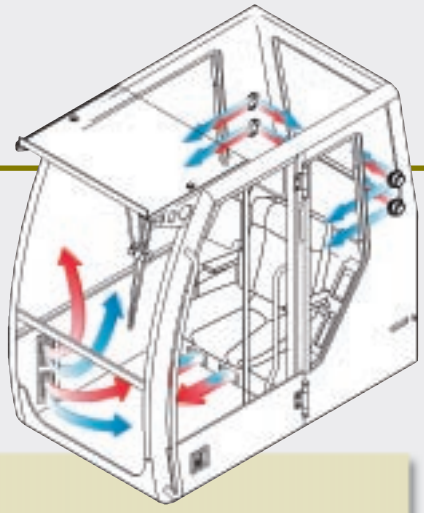


More power through the rugged Cummins construction machinery engine

Clean, water-cooled Cummins engine with turbocharger and charge-air cooler for a long service life. Outstanding torque curves and low rated speed help to deliver power and cost efficiency. The PMS III electronic Pump Managing System fully exploits available engine power. Despite this, the engine is never overworked. Ongoing comparison of stored target data (e.g., temperature) with actual values provides automatic adjustment of engine and pump performance in the event of any deviations.

Easy and quick maintenance through good accessibility

Quick and easy access to all the service points and extended maintenance intervals are typical features of O&K crawler excavators. The panels open wide allowing comfortable access to all the components. A central display inside the cab reminds the operator of any checks or maintenance chores due.



Optional air conditioner with ingenious air routing system for agreeable temperatures throughout the year.

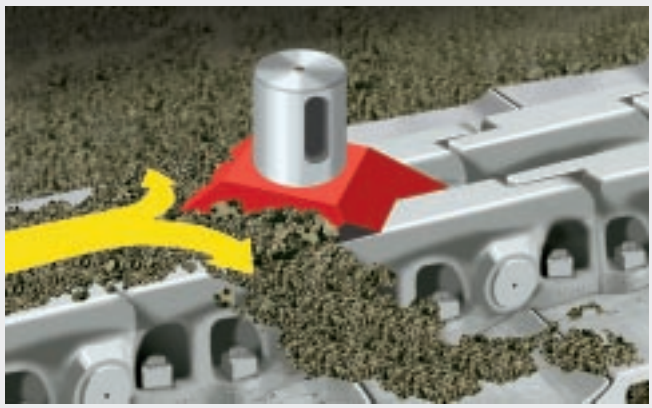
This comfortable cab enhances productivity

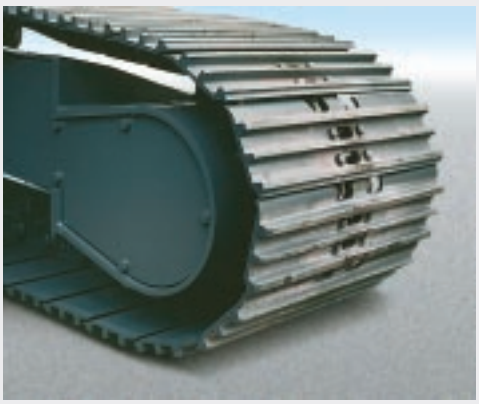
The new crawler excavator cab has even more space for the operator plus stowage area behind the seat. The rounded tinted windows of the futuristic softline design prevent glare. The completely restructured frame parts and large roof window improve upward visibility substantially. The front pane slides easily under the roof (a standard feature) where it locks safely into place. The doors have sliding windows as standard. The front roof projection in transparent plexiglass keeps out the rain with the front window open while a standard sunshade prevents rays entering from the front and top. Air conditioning is optional.

The bright and stimulating colors and stylish design combine to create an agreeable working ambience. All the controls are designed and positioned according to the latest ergonomic findings. Additional assets: the comfortable adjustable swing seat, the low noise level, and an extra-throughout ventilator providing slight overpressure within the cab.

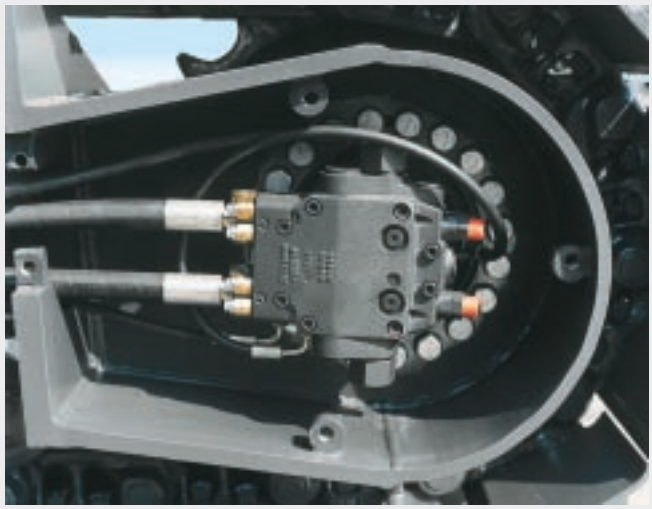
Automatic track cleaning

The patented track cleaning and guide system (optional) is an effective safeguard against dirt accumulating. While the unit is travelling, the tracks are automatically cleaned. The wedge shape of the cleaning shoe dislodges the dirt sideways out of the tracks, preventing build-up at the idlers and sprockets. Track wear is significantly reduced, the track tensioning system has less work to do and the tracks are prevented from slipping off.



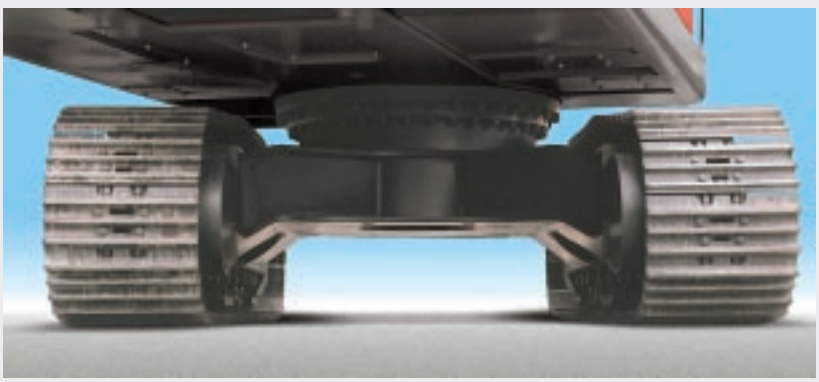


Powerful drive with automatic function



Final drive tractive force ensures brisk travel, even on treacherous terrain. Automatic up/downshift is load-related. The operator can opt between up/downshift and continuous first gear.

Low-maintenance undercarriage



The compact gear units and drive motors are fully encapsulated and safely protected from damage. For any maintenance work, the guards remove easily. The oversized crawlers with track tensioning and sealed chain link bearings as well as the entire undercarriage need very little maintenance, the track and support rollers none at all.

Engine

Cummins diesel 4 BTA 3.9 C
Water-cooled • Exhaust-gas turbocharger • Intergrated charge-air cooler • Electric rev adjustment • Electric engine stop at key switch

Engine output ISO 9249	63 kW / 2200 RPM
Cylinders/displacement	4 / 3900 cm^3
Bore/stroke	102 mm /120 mm
Voltage	24 V
Batteries, 2	12 V / 92 Ah each
Alternator	70 A
Starter	4.0 kW

Exhaust emissions comply with current legislation.

Hydraulics

PMS 3-pump system with two main pumps and separate swing pump • Main pumps each with individual control • Flow on demand • Double flow • Parallel bucket circuits for 4 functions simultaneously • Hydraulic oil cooler with hydrostatic fan drive • High-pressure lines with flanged fittings • Microfiltration of return oil, servo and swing circuits

Maximum delivery, main pumps	2 x 121 l/min
Maximum delivery, swing pump	149 l/min
Maximum pressure, w/o booster	320 bar
Maximum pressure with booster	360 bar
Maximum pressure, swing gear	390 bar

Control and monitoring system

Engine and pump monitoring system with electronic load limit (PMS III) • Controlled heat-up phase • Engine and hydraulic system temperature monitoring, with rev limit to protect engine and pumps • Automatic rev return

3 selectable output levels:

	Heavy	Eco	Lift
Lift	2200	2000	1800
Pump output	100 %	90 %	65 %

Swing gear

Swing pump/motor within sealed circuit for zero-loss superstructure start-up and braking • Swing gear with built-in wear-proof multi-disc brake • Encapsulated ball-bearing swing ring with lifetime lubrication

Effective slewing moment	35 kNm
Max. rpm	12.7 min^{-1}

Cab

Tinted safety glass • Front top pane retracts, lower section removable • Sliding windows in the doors • Roof window • Rain-protection roof • Three-speed blower • Defroster nozzles for leg area and front windows • Central display for all control and monitoring functions • Deluxe seat • Control functions to ISO recommendations • Individually adjustable side consoles • Ergonomic servo-control levers

Drive

Hydraulic drive for each crawler • Stone guard for adjustable motor, final drives and brake valves inside the crawler profile • Crawler brake •Track guard • Low-maintenance crawlers with track tensioning • Sealed chain link bearings • Lifetime-lubricated track and support rollers

Max. effective tractive force	175 kN
Max. travel speed	5 km/h
Track pads per crawler	50

Capacities

Fuel tank	250 l
Cooling system	18.5 l
Engine oil, including filter	11.5 l
Slewing gear	3.5 l
Hydraulic tank	150 l
Hydraulic system	250 l

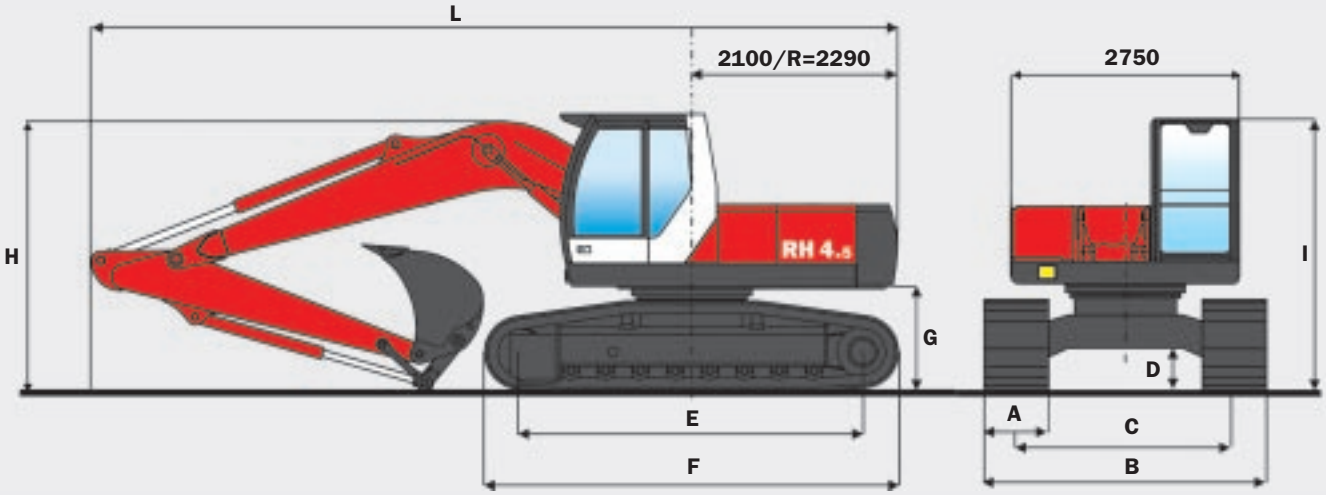
Attachments

Low maintenance through hardened and corrosion-proofed bearing pins, low-wear bushings, sealed bearings and easily accessible grease distributor for boom • Hydraulic cylinders with plain bearings • Spotlight mounted on boom

Options

A/C • Eco-friendly hydraulic oil • Auxiliary heating • Refuelling unit • Anti-burst and overload warning devices • Pressure booster with power boost operation • Additional headlamp • Mid-mounted track guide • TCG track guide and cleaning shoe • Stone guard • Deluxe cab • Fittings for radio/cassette recorder

Dimensions and weights



	A	B	C	D	E	F	G	I
RH 4.5 N 500	500	2496	1996	415	2950	3675	1090	2980
RH 4.5 N 600	600	2596	1996	415	2950	3675	1090	2980
RH 4.5 N 700	700	2696	1996	415	2950	3675	1090	2980
RH 4.5 LC 500	500	2740	2240	454	3375	4130	1100	2990
RH 4.5 LC 600	600	2840	2240	454	3375	4130	1100	2990
RH 4.5 LC 700	700	2940	2240	454	3375	4130	1100	2990

Transport dimensions, monoboom

Sticks	L	H
1.7 m	7815	2530
2.3 m	7785	2480
2.5 m	7740	2590
2.9 m	7845	2580

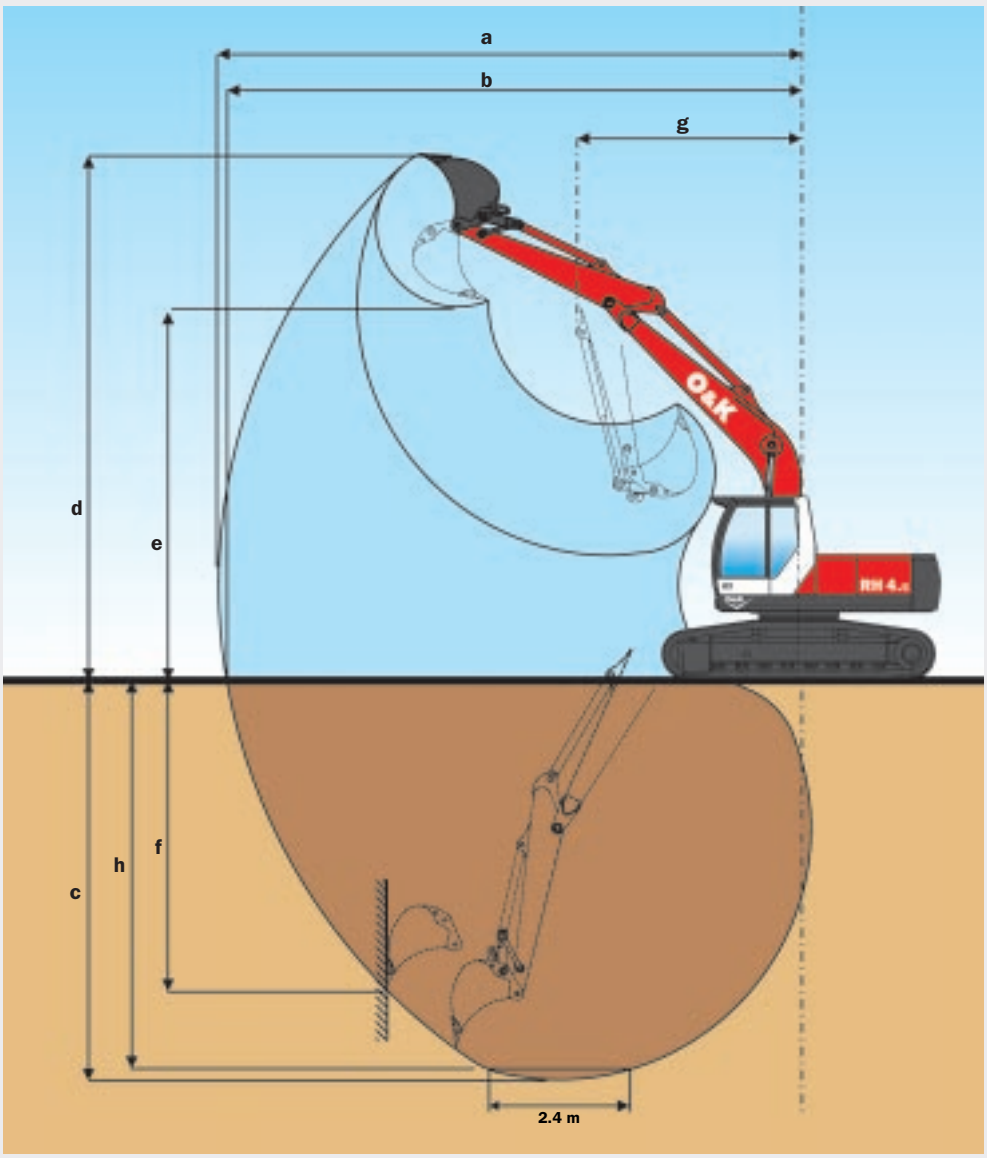
Transport dimensions, adjustable boom

Sticks	L	H
1.7 m	7670	2695
2.3 m	7800	2760
2.5 m	7810	2790
2.9 m	7820	2905

	kg	kg	Crawler			kg/cm²	kg/cm²
	Weight [1]	Weight [2]	Track size	Track rollers	Support rollers	Ground pressure[1]	Ground pressure[2]
RH 4.5 N 500	14,080	14,680	D4D	7	2	0.44	0.46
RH 4.5 N 600	14,300	14,900	D4D	7	2	0.37	0.39
RH 4.5 N 700	14,520	15,120	D4D	7	2	0.32	0.34
RH 4.5 LC 500	14,640	15,240	D4D	8	2	0.40	0.42
RH 4.5 LC 600	14,880	15,480	D4D	8	2	0.34	0.35
RH 4.5 LC 700	15,120	15,720	D4D	8	2	0.30	0.31

*RH 4.5 with 4.6 m monoboom, 2.5 m stick and trenching bucket (260 kg)
*RH 4.5 with 2.0/3.0 m adjustable boom, 2.5 m stick and trenching bucket (260 kg)

Working range with backhoe and monoboom 4.6 m

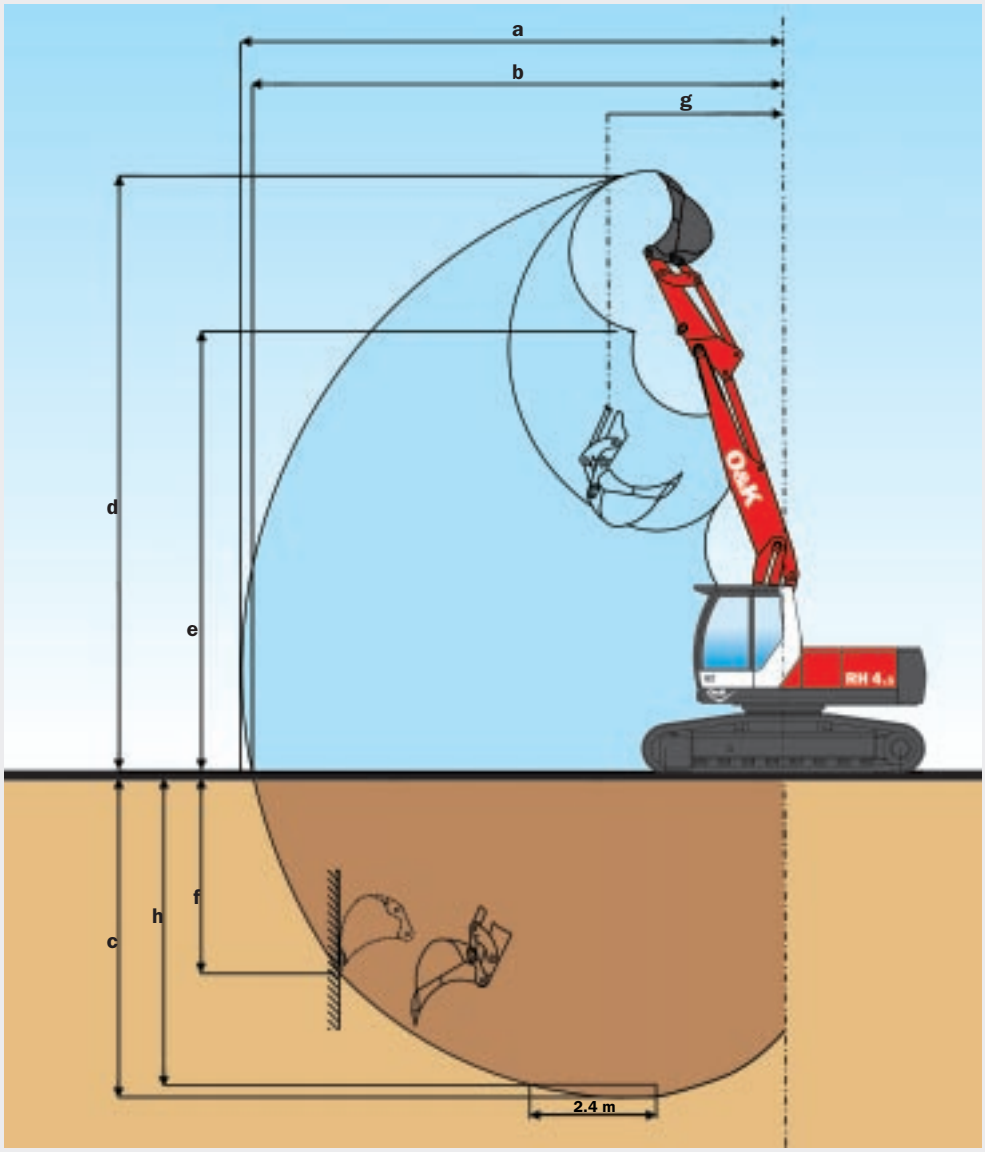


	Range	Stick length	1.7 m	2.3 m	2.5 m	2.9 m
a	Max. reach	m	7.7	8.3	8.5	8.9
b	Max. reach at level ground	m	7.5	8.1	8.3	8.7
c	Max. digging depth	m	4.6	5.2	5.4	5.8
d	Max. penetration height	m	7.7	8.1	8.2	8.4
e	Max. dump height	m	5.4	5.8	5.9	6.1
f	Max. vertical digging depth	m	3.4	3.9	4.1	4.5
g	Min. slewing radius	m	3.1	3.1	3.1	3.1
h	Max. digging depth at 2.4 m (8") wide base	m	4.2	4.9	5.1	5.6

	Digging forces				
Stick		1.7 m	2.3 m	2.5 m	2.9 m
Breakout force*	kN	90	90	90	90
Ripping force*	kN	76	63	59	53

*with booster

Working range with backhoe and adjustable boom 2.0/3.0 m



	Range	Stick length	1.7 m	2.3 m	2.5 m	2.9 m
a	Max. reach	m	7.8	8.4	8.6	8.9
b	Max. reach at level ground	m	7.6	8.2	8.4	8.8
c	Max. digging depth	m	4.6	5.2	5.4	5.8
d	Max. penetration height	m	8.4	8.9	9.0	9.3
e	Max. dump height	m	6.1	6.6	6.7	7.0
f	Max. vertical digging depth	m	3.8	4.3	4.9	4.9
g	Min. slewing radius	m	2.6	2.7	2.7	2.8
h	Max. digging depth at 2.4 m (8") wide base	m	4.4	5.1	5.3	5.7

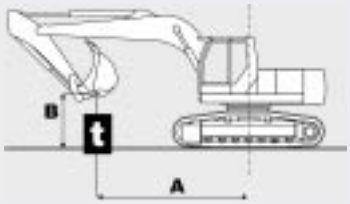
Digging forces Stick		1.7 m	2.3 m	2.5 m	2.9 m
Breakout force*	kN	90	90	90	90
Ripping force*	kN	76	63	59	53

*with booster

Lift capacities — Adjustable boom 2.0 m/3.0 m • backhoe 0.28 m³ SAE

As per ISO 10567, the specified values represent 75 percent of the static tipping load or 87 percent of the hydraulic lift capacity. The values apply with booster activated.

a Total slewing range 360°.
b Longitudinal direction +/-15°.
***** Limited by hydraulic system.



RH 4.5 / 500 N									Adjustable boom	
A	3.0 m		4.5 m		6.0 m		7.5 m		max.	
Sticks B	a	b	a	b	a	b	a	b	a	b
4.5 m			3.5	4.0*	2.1	2.6*				
3.0 m	6.2	8.0*	3.4	5.0	2.1	3.2				
1.5 m	6.1	9.0*	3.4	4.9	2.0	3.1				
1.7 m Ground level	6.0	9.7	3.2	5.0	1.9	3.0			1.5	1.8*
1.5 m	5.7	1.0	3.0	4.7	1.8	2.9				
3.0 m	5.5	9.7	2.8	4.6						
4.5 m			2.8*	2.8*	2.2	2.5*				
3.0 m	5.9*	5.9*	3.4	4.2*	2.2	3.2	1.2*	1.2*		
1.5 m	6.0	8.7*	3.3	4.9	2.1	3.2	1.3	1.7*		
2.5 m Ground level	6.0	9.6	3.3	4.9	2.0	3.1			1.1*	1.1*
1.5 m	5.7	9.8	3.1	4.9	1.9	2.9				
3.0 m	5.6	9.9	2.8	4.6						
4.5 m					2.2	2.2*	0.9*	0.9*		
3.0 m			3.3	3.3*	2.2	2.9*	1.4	1.7*		
1.5 m	6.0	8.5*	3.3	4.9	2.1	3.1	1.3	2.1		
2.9 m Ground level	6.0	9.3*	3.2	4.8	2.0	3.1	1.3	2.0	0.8*	0.8*
1.5 m	5.8	9.6	3.1	4.9	1.9	2.9				
3.0 m	5.6	9.9	2.9	4.6	1.8	2.8				

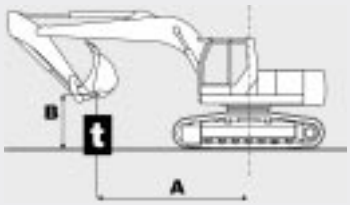
RH 4.5 / 600 LC									Adjustable boom	
A	3.0 m		4.5 m		6.0 m		7.5 m		max.	
Sticks B	a	b	a	b	a	b	a	b	a	b
4.5 m			4.0*	4.0*	2.5	2.6*				
3.0 m	7.4	8.0*	4.0	5.0*	2.5	4.0				
1.5 m	7.3	9.0*	4.0	6.1	2.5	4.0				
1.7 m Ground level	7.4	10.5*	3.9	6.2	2.4	3.8			1.8*	1.8*
1.5 m	7.1	11.1*	3.6	6.2	2.3	3.8				
3.0 m	6.9	10.7*	3.5	5.7*						
4.5 m			2.8*	2.8*	2.5*	2.5*				
3.0 m	5.9*	5.9*	4.0	4.2*	2.6	3.4*	1.2*	1.2*		
1.5 m	7.3	8.7*	3.9	5.5*	2.5	3.9	1.6	1.7*		
2.5 m Ground level	7.2	9.7*	3.9	6.1	2.4	3.9			1.1*	1.1*
1.5 m	7.2	10.9*	3.8	6.2	2.3	3.8				
3.0 m	7.0	11.3*	3.5	6.1						
4.5 m					2.3*	2.3*	0.9*	0.9*		
3.0 m			3.3*	3.3*	2.6	2.9*	1.7	1.7*		
1.5 m	7.2	8.5*	3.9	5.1*	2.6	3.8*	1.7	2.2*		
2.9 m Ground level	7.2	9.3*	3.8	6.0	2.4	3.9	1.6	2.2*	0.8*	0.8*
1.5 m	7.2	10.6*	3.8	6.1	2.3	3.8				
3.0 m	7.0	11.0*	3.6	6.1	2.2	3.7				

As per EN 474/5, hydraulic excavators in lifting operations must be equipped with anti-burst valves at the lifting cylinders and an overload warning device.

Lift capacities — Monoboom 4.6 m • backhoe 0.28 m³ SAE

As per ISO 10567, the specified values represent 75 percent of the static tipping load or 87 percent of the hydraulic lift capacity. The values apply with booster activated.

a Total slewing range 360∞.
b Longitudinal direction +/-15°.
***** Limited by hydraulic system.



RH 4.5 / 500 N									Monoboom	
A	3.0 m		4.5 m		6.0 m		7.5 m		max.	
Sticks B	a	b	a	b	a	b	a	b	a	b
4.5 m			3.4	4.1*	2.1	2.2*				
3.0 m	5.9	8.2*	3.2	4.9	2.0	3.1				
1.5 m	3.4*	3.4*	2.9	4.7	1.9	3.0				
1,7 m Ground level	5.1	5.7*	2.8	4.5	1.9	2.9			1.6	1.9*
1.5 m	5.2	9.2	2.8	4.5						
3.0 m	5.3	7.9*	2.8	4.6						
4.5 m					2.1	2.4*				
3.0 m			3.3	4.4*	2.0	3.1				
1.5 m	5.5	7.8*	3.0	4.7	1.9	3.0	1.3	1.4*		
2,5 m Ground level	5.1	6.0*	2.8	4.5	1.8	2.9			1.2*	1.2*
1.5 m	5.0	8.0*	2.7	4.4	1.8	2.8				
3.0 m	5.1	9.2	2.7	4.4						
4.5 m					2.2	2.2*				
3.0 m					2.1	2.9*	1.4	1.5*		
1.5 m	5.6	8.7*	3.0	4.8	1.9	3.0	1.3	2.0*		
2,9 m Ground level	5.1	6.3*	2.8	4.5	1.8	2.9	1.3	1.9*	0.9*	0.9*
1.5 m	5.0	7.5*	2.7	4.4	1.7	2.8				
3.0 m	5.0	9.1	2.7	4.4	1.7	2.8				

RH 4.5/ 600 LC									Monoboom	
A	3.0 m		4.5 m		6.0 m		7.5 m		max.	
Sticks B	a	b	a	b	a	b	a	b	a	b
4.5 m			4.1	4.2*	2.2*	2.2*				
3.0 m	7.3	8.2*	3.8	5.2*	2.5	4.0				
1.5 m	3.4*	3.4*	3.6	6.1	2.4	3.9				
1.7 m Ground level	5.7*	5.7*	3.5	5.9	2.3	3.8			1.9*	1.9*
1.5 m	6.5	9.7*	3.4	5.9						
3.0 m	6.7	7.9*	3.5	5.3*						
4.5 m					2.4*	2.4*				
3.0 m			3.9	4.4*	2.5	3.3*				
1.5 m	6.9	7.7*	3.7	5.6*	2.4	3.9	1.4*	1.4*		
2.5 m Ground level	6.0*	6.0*	3.5	5.9	2.3	3.7			1.2*	1.2*
1.5 m	6.4	8.0*	3.4	5.8	2.2	3.7				
3.0 m	6.5	9.3*	3.4	5.9						
4.5 m					2.2*	2.2*				
3.0 m					2.5	2.9*	1.5*	1.5*		
1.5 m	7.0	8.7*	3.7	5.3*	2.4	3.9	1.6	2.0*		
2.9 m Ground level	6.3*	6.3*	3.5	5.9	2.2	3.7	1.6	1.9*	0.9*	0.9*
1.5 m	6.4	7.5*	3.3	5.8	2.2	3.7				
3.0 m	6.4	9.7*	3.3	5.8	2.2	3.7				

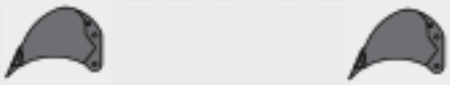
As per EN 474/5, hydraulic excavators in lifting operations must be equipped with anti-burst valves at the lifting cylinders and an overload warning device.

Attachments

Overall dimensions and weights

		Monoboom	Adjustable boom		Stick			
			Lower part	Upper part				
System length	**m**	4.60	2.09	3.00	1.70	2.30	2.50	2.90
Weight	**kg**	800	592	590	260	310	320	370
Linkage	**kg**				110	110	110	110
Cylinders	**kg**	190	240	190	120	120	120	120

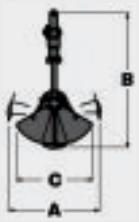
Trenching buckets



		Rock backhoe		Backhoe		
Capacity (CECE)	**m^3**	0.40	0.50	0.32	0.50	0.60
Capacity (SAE)	**m^3**	0.45	0.55	0.35	0.54	0.60
Width	**mm**	750	850	600	850	1000
Weight	**kg**	350	370	285	350	390

Clamshell buckets

Capacity	**m^3**	0.16	0.30	0.40
Width	**mm**	400	600	800
Weight	**kg**	700	550	595
A	**m**	1.45	1.45	1.45
B	**m**	2.48	2.40	2.40
C	**m**	1.43	1.35	1.35



O&K Orenstein & Koppel AG
Staakener Str. 53-63
D-13581 Berlin
E-Mail: info@orenstein-koppel.com
http://www.orenstein-koppel.com

B 448.0e/1-0101
Printed in Germany