# **Crawler Excavator Specifications**

# **RH 6.5**



Service weight 20.6 – 23.1 t Engine output 113 kW Trenching buckets up to 1.45 m³ (SAE)

- PMS three-pump hydraulics
- Electronic control and monitoring system
- Noise insulated, deluxe cab
- Low noise and emission values
- Very low fuel consumption



#### Power and speed: the new RH 6.5

New regenerative circuit for boom and stick cylinders Zero-energy lowering of attachment Optimum lowering speed for attachment Fuel savings through improved efficiency

New geometry

Fast work cycles

Extended leverage for added forces

Anti-burst device safely protected between the cylinders

Sealed bucket mount

Generous working range for stick and bucket

Three stick lengths, various buckets and attachments



Outstanding precision controllability

Automatic valve cap venting

Preheating of control valves

CE symbol according to EC Machinery Directive
TÜV certificate for compliance with DIN ISO EN 9001

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



Final drives protected within the crawler profile

LC or HD undercarriage for excellent lift capacity and punishing applications

Automatic up/down shifting

O&K track cleaning and guide shoe (optional)



## Regenerative circuit for faster lowering

The stick and boom cylinders come with a regenerative circuit. Pump output is not required for lowering the boom. The unused power is then available for other functions. In this way, lowering speed is enhanced and fuel consumption cut.



## Fast and powerful, the geometry

The RH 6.5 is remarkable for its newly designed geometry. Slim cylinders as well as extended lift and leverage arms and higher operating pressure boost hydraulic performance for added speed and power. Outstanding dump angle and working range complete the picture. The anti-burst device is protected between the cylinders.



#### Precise end-of-stroke damping

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.



### Outstanding precision controllability

The valve caps are continuously and automatically vented to ensure perfect activation of the spools and hence outstanding precision controllability.

The valves and the servo-control levers are preheated with oil from a separate hydraulic circuit to give smooth control-lability immediately after start-up. No delays caused by cold oil.

#### Ultramodern, productivityenhancing cab

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

The bright, stimulating colours and stylish design help to create an agreeable working ambience. All the controls are designed and positioned according to the latest ergonomic research. Additional advantages: the comfortable, adjustable seat, the low noise level, and an extra-throughput ventilator providing slight overpressure inside the cab.



#### Maintenance-free undercarriage

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



#### New, intelligent cooling system



The cooling system on O&K crawler excavators has been completely reengineered. Cool air is taken in behind the control valves for significantly less dust contamination, compared with outside air intake. In order to cool the engine, the intake air is routed through the engine compartment for additionally reduced ambient temperatures. An external combined radiator ensures heat exchange. The air is exited upward.

In all, this cooling system is an assurance of low oil temperatures and extended pump and hydraulic component durability.

#### **Rugged Cummins construction machinery engine**

The clean, water-cooled Cummins engine with turbocharger and charge-air cooling operates at low revs for a long service life. Outstanding torque curves and low idling 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 in the event of any deviations.



#### **Automatic final drive**



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

### Adjustable slewing and braking moment

The superstructure braking moment on O&K machines can be adjusted to customer needs. Both braking and swingoff can be selected for either smooth or more aggressive operation.



#### **Automatic track cleaning**



The patented track cleaning and guide system is an effective safeguard against dirt. 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.



#### **Engine**

Cummins diesel

6 BTA 5.9 C

Water-cooled • Turbocharged • Integrated charge-air cooler • Electric rev regulation • Electric engine shut-off at key switch

Engine output ISO 9249	113 kW / 1 900 RPM
Cylinders/displacement	6 / 5 900 cm <sup>3</sup>
Bore/stroke	102 mm / 120 mm
Voltage system	24 V
Two batteries	each 12 V / 92 Ah
Alternator	70 A
Starter	4 kW

Exhaust emissions comply with current legislation



#### **Hydraulics**

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

Max. delivery, main pumps	2 x 195 l/min
Max. delivery, swing pump	106 l/min
Max. pressure, w/o booster	350 bar
Max. pressure with booster	370 bar
Max. 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 engine rev return

3 selectable output levels:

	Heavy	Eco	Lift
RPM	1900	1800	1600
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 multidisc brake • Encapsulated ball-bearing swing ring with long-term lubrication

Effective slewing moment	58 kNm
Max. rpm	9.8 min <sup>-1</sup>

#### Cab

Tinted safety glass • Front top pane retracts, lower section removable • Sliding window in the door • Roof window • Rain-protecting 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



#### **Final 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

	LC undercarriage:	200 kN
	HD undercarriage:	220 kN
Max. travel speed		5 km/h
Track pads per craw	vler	
	LC undercarriage:	50
	HD undercarriage:	46



#### **Capacities**

Fuel tank	315 I
Cooling system	29 I
Engine oil, including filter	26 I
Slewing gear	4.01
Hydraulic tank	185 I
Hydraulic system	285 I

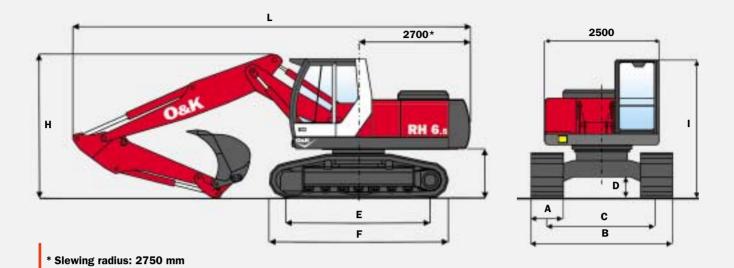
#### **Equipment**

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**

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

#### **Dimensions and weights**



	A	В	C	D	E	F	G	
RH 6.5 LC 600	600	2980	2380	460	3740	4550	1065	2950
RH 6.5 LC 700	700	3080	2380	460	3740	4550	1065	2950
RH 6.5 LC 800	800	3180	2380	460	3740	4550	1065	2950
RH 6.5 LC 900	900	3280	2380	460	3740	4550	1065	2950
RH 6.5 HD 600	600	2800	2200	457	3520	4350	1068	2953
RH 6.5 HD 700	700	2900	2200	457	3520	4350	1068	2953
RH 6.5 HD-N 500	500	2500	2000	457	3520	4350	1068	2953
RH 6.5 HD-N 600	600	2600	2000	457	3520	4350	1068	2953

Transport dimensions Monoboom				
Stiele	Н			
2.0 m	9550	3100		
2.4 m	9550	3150		
2.9 m	9550	3150		
3.5 m	9550	3350		

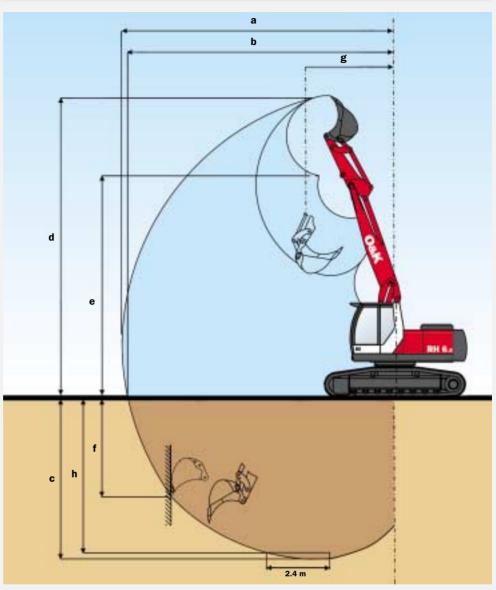
Transport dimensions Adjustable boom					
Stiele	н				
2.0 m	9850	3050			
2.4 m	9850	3050			
2.9 m	9850	3050			
3.5 m	9800	3350			

	Weight*		Crawler			
	Monoboom	Adjustable boom	Track size	Track rollers	Upper rollers	Ground pressure
RH 6.5 LC 600	20 750	21900	B 60L / 190 mm	8	2	$0.43 \text{ kg/cm}^2$
RH 6.5 LC 700	21 025	22200	B 60L / 190 mm	8	2	0.37 kg/cm <sup>2</sup>
RH 6.5 LC 800	21 300	22450	B 60L / 190 mm	8	2	0.33 kg/cm <sup>2</sup>
RH 6.5 LC 900	21 575	22750	B 60L / 190 mm	8	2	0.29 kg/cm <sup>2</sup>
RH 6.5 HD 600	21 500	22650	B 60 / 190 mm	8	2	0.46 kg/cm <sup>2</sup>
RH 6.5 HD 700	21 800	22950	B 60 / 190 mm	8	2	$0.40 \text{ kg/cm}^2$
RH 6.5 HD-N 500	21 100	22250	B 60 / 190 mm	8	2	0.55 kg/cm <sup>2</sup>
RH 6.5 HD-N 600	21 400	22550	B 60 / 190 mm	8	2	0.46 kg/cm <sup>2</sup>

<sup>\*</sup> with 2.9 m stick and trenching bucket (700 kg)



### Working range with backhoe and adjustable boom

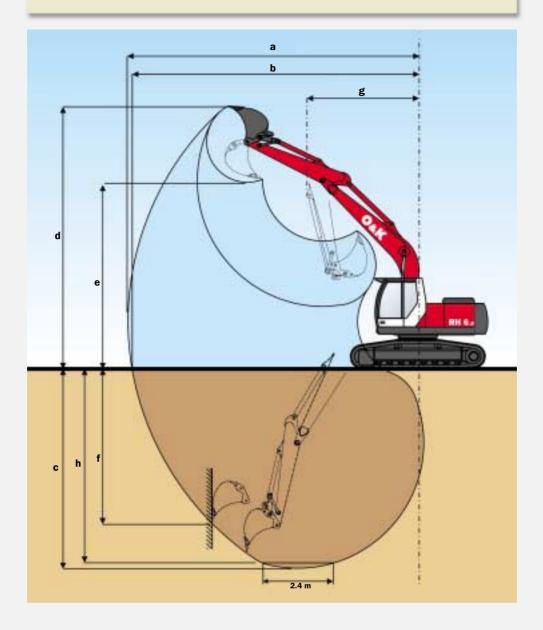


	Range	Stick length	2.0 m	2.4 m	2.9 m	3.5 m
а	Maximum reach	m	9.5	9.8	10.2	10.9
b	Maximum reach at ground level	m	9.3	9.7	10.1	10.7
С	Maximum digging depth	m	5.7	6.1	6.6	7.2
d	Maximum penetration height	m	10.5	10.9	11.0	11.6
е	Maximum dump height	m	7.8	8.1	8.3	8.8
f	Maximum vertical digging depth	m	4.4	4.7	5.0	5.6
g	Minimum slew radius	m	3.0	3.0	2.8	3.1
h	Maximum digging depth with 2.4 m (8') wide base	m	5.6	6.0	6.5	7.1

Digging forces					
Stick		2.0 m	2.4 m	2.9 m	3.5 m
Breakout force*	kN	127	127	127	127
Ripping force*	kN	128	114	100	88

<sup>\*</sup> with booster

#### Working range with backhoe and monoboom 5.7 m



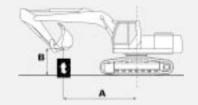
		Stick length	2.0 m	2.4 m	2.9 m	3.5 m
	Range					
а	Maximum reach	m	9.1	9.5	9.9	10.5
b	Maximum reach at ground level	m	8.9	9.3	9.7	10.3
С	Maximum digging depth	m	5.7	6.1	6.6	7.2
d	Maximum penetration height	m	9.0	9.2	9.2	9.5
е	Maximum dump height	m	6.4	6.5	6.5	6.9
f	Maximum vertical digging depth	m	4.7	5.0	5.0	5.7
g	Minimum slew radius	m	3.9	3.9	3.9	3.9
h	Maximum digging depth with 2.4 m (8') wide base	m	5.5	5.9	6.4	7.0

Digging forces					
Stick		2.0 m	2.4 m	2.9 m	3.5 m
Breakout force*	kN	127	127	127	127
Ripping force*	kN	128	114	100	88

<sup>\*</sup> with booster

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

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



		RH 6.5	LC 600									
	A 3.0 m		) m	4.5 m		6.0 m		7.	5 m	max.		
Sticks B		a b		а	b	а	b	а	b	а	b	
	4.5 m					4.6	5.1*	3.1	3.7*			
	3.0 m			6.7	7.9*	4.3	5.9*	3.0	5.0			
	1.5 m			6.3	9.5*	4.1	6.7*	2.9	4.9			
2.0 m Gro	und level			6.1	10.2*	4.0	6.8	2.8	4.8	2.6	3.5*	
	1.5 m	9.6*	9.6*	6.1	10.1*	3.9	6.7					
	3.0 m	12.3*	13.1*	6.2	9.3*	4.0	6.7*					

а	3.0 m b	4. a	5 m	6.	0 m	7	5 m	m	ov	
	b	9				• •	J 111	- "	ıax.	
		а	b	a b		а	b	a b		
5 m				4.3	5.1*	2.9	3.7*			
) m		6.3	7.9*	4.1	5.9*	2.8	4.8			
5 m		5.9	9.5*	3.9	6.6	2.8	4.6			
level		5.7	10.2*	3.7	6.4	2.7	4.6	2.5	3.5*	
<b>5 m</b> 9.7*	9.7*	5.7	10.1*	3.7	6.4					
<b>) m</b> 11.3	13.1*	5.8	9.3*	3.8	6.5					
5	m m evel m 9.7*	m m evel m 9.7* 9.7*	m     6.3       m     5.9       eevel     5.7       m     9.7*     9.7*	m     6.3     7.9*       m     5.9     9.5*       evel     5.7     10.2*       m     9.7*     9.7*     5.7     10.1*	m     6.3     7.9*     4.1       m     5.9     9.5*     3.9       evel     5.7     10.2*     3.7       m     9.7*     9.7*     5.7     10.1*     3.7	m     6.3     7.9*     4.1     5.9*       m     5.9     9.5*     3.9     6.6       evel     5.7     10.2*     3.7     6.4       m     9.7*     9.7*     5.7     10.1*     3.7     6.4	m     6.3     7.9*     4.1     5.9*     2.8       m     5.9     9.5*     3.9     6.6     2.8       evel     5.7     10.2*     3.7     6.4     2.7       m     9.7*     9.7*     5.7     10.1*     3.7     6.4	m     6.3     7.9*     4.1     5.9*     2.8     4.8       m     5.9     9.5*     3.9     6.6     2.8     4.6       evel     5.7     10.2*     3.7     6.4     2.7     4.6       m     9.7*     9.7*     5.7     10.1*     3.7     6.4	m     6.3     7.9*     4.1     5.9*     2.8     4.8       m     5.9     9.5*     3.9     6.6     2.8     4.6       evel     5.7     10.2*     3.7     6.4     2.7     4.6     2.5       m     9.7*     9.7*     5.7     10.1*     3.7     6.4	

	RH 6.	5 HDN 500									
А	3	3.0 m		5 m	6.	0 m	7.	5 m	max.		
Sticks B	а	a b		b	a b		а	b	a t		
4.5 m					3.8	5.1*	2.6	3.7*			
3.0 m			5.6	7.9*	3.6	5.9*	2.5	4.7			
1.5 m			5.1	9.5*	3.4	6.5	2.4	4.6			
2.0 m Ground leve	l		4.9	10.1	3.3	6.3	2.3	4.5	2.2	3.5*	
1.5 m	9.5	9.7*	4.9	10.1	3.2	6.3					
3.0 m	9.7	13.1*	5.0	9.3*	3.3	6.4					

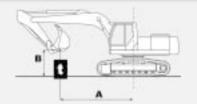
As per EN 474/5, hydraulic excavators in lifting operations must be equipped with anti-burst valves at the lift cylinders and an overload warning device.

#### **Lift capacities**

#### Adjustable boom 2.9 m/3.2 m • Backhoe 0.8 m³ SAE

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

- a Total slewing range  $360^{\circ}$  b Longitudinal direction +/-15 $^{\circ}$
- \* Limited by hydraulic system



	RH 6.5 LC 600 RH 6.5 HDN 600																			
A	3.0	) m	4.5	5 m	6.0	0 m	7.5	5 m	ma	ıx.	3.0	) m	4.5	5 m	6.	0 m	7.5	m	ma	ax.
Sticks B	а	b	а	b	а	b	а	b	а	b	а	b	а	b	а	b	а	b	а	b
4.5 m	12.7*	12.7*	6.4*	8.3*	4.8	6.0*	3.2	5.1			11.7	12.7*	6.4	8.3*	4.2	6.4*	2.6	4.8		
3.0 m	12.1*	12.1*	6.9*	9.5*	4.7	6.6*	3.1	5.0			11.2	12.1*	6.3	9.4*	4.0	6.7	2.5	4.8		
1.5 m	13.3*	13.6*	7.4	10.0*	4.5	6.9	2.9	4.9			10.5	13.6*	5.8	9.9*	3.7	6.6	2.4	4.6		
2.0 m Ground level	12.4	15.5*	7.2	10.0*	4.2	6.8	2.8	4.8	2.3	3.5*	9.7	15.4*	5.3	9.9*	3.5	6.7	2.3	4.5	1.9	3.5*
1.5 m	12.1	16.0*	7.1	10.1*	3.9	6.9	2.6	4.6			9.4	15.9*	5.1	10.0*	3.2	6.4	2.2	4.4		
3.0 m	12.2	15.3*	6.5	9.8*	3.8	6.6*					9.4	15.2*	4.9	9.7*	3.1	6.1				
4.5 m	11.5*	11.5*	7.4	7.8*	4.8	6.0*	3.2	5.1			11.5*	11.5*	6.4	7.7*	4.1	6.0*	2.6	4.8		
3.0 m	12.3*	12.3*	7.1	9.0*	4.7	6.6*	3.1	5.0			11.1	12.2*	6.2	9.0*	4.0	6.5*	2.5	4.8		
1.5 m	12.9*	12.9*	7.0	9.7*	4.5	6.9	2.9	4.9			10.7	12.9*	5.9	9.7*	3.7	6.5	2.4	4.6		
2.4 m Ground level	12.4	12.4	6.5	9.7*	4.2	6.8	2.8	4.8	2.1	2.8*	9.7	14.7*	5.3	9.7*	3.4	6.5	2.2	4.5	1.6	2.8*
1.5 m	12.0	12.0	6.2	9.8*	3.9	6.9	2.6	4.6			9.3	15.7*	5.0	9.8*	3.2	6.4	2.1	4.3		
3.0 m	11.9	11.9	6.1	9.9*	3.8	6.6*					9.2	15.4*	4.8	9.9*	3.0	6.2				
4.5 m			6.2*	6.2*	4.8	5.6*	3.2	4.5*					6.2*	6.2*	4.1	5.6*	2.7	4.5*		
3.0 m		12.8*	7.1	8.5*	4.7	6.3*	3.1	5.0			11.2	12.8*	6.2	8.5*	4.0	6.3*	2.6	4.7		
1.5 m	12.9	13.0*	7.0	9.5*	4.6	6.8*	3.0	4.9			10.9	13.0*	6.0	9.5*	3.8	6.5	2.4	4.7		
2.9 m Ground level		14.4*	6.6	9.6*	4.2	6.7	2.8	4.8	1.9	2.2*	9.9	14.3*	5.4	9.6*	3.5	6.4	2.3	4.5	1.5	2.2*
	12.0	15.5*	6.2	9.7*	4.0	6.8	2.6	4.6			9.3	15.4*	5.0	9.6*	3.2	6.4	2.1	4.3		
3.0 m	11.8	15.6*	6.0	9.9*	3.7	6.6	2.6	4.1*			9.1	15.5*	4.8	9.8*	3.0	6.1	2.0	4.1*		
4.5 m			3.9*	3.9*	4.2*	4.2*	3.3	3.8*					3.9*	3.9*	4.1	4.2*	2.8	3.8*		
		12.3*	7.2	7.8*	4.7	5.9*	3.2	4.8*				12.3*	6.2	7.8*	4.0	5.9*	2.7	4.7		
1.5 m		12.4*	6.9	9.0*	4.5	6.5*	3.1	4.8				12.4*	6.0	9.0*	3.9	6.4	2.6	4.6		
3.5 m Ground level		-	6.7	9.5*	4.3	6.7	2.9	4.8	1.6	1.6*	10.3	13.4*	5.5	9.5*	3.5	6.3	2.3	4.5	1.3	1.6*
1.5 m		14.9*	6.2	9.5*	4.0	6.7	2.7	4.7			9.4	14.9*	5.0	9.5*	3.2	6.4	2.1	4.3		
3.0 m	11.7	15.5*	5.9	9.6*	3.7	6.7	2.5	4.5			9.0	15.5*	4.7	9.6*	3.0	6.2	2.0	4.2		

RH 6.5 HDNLC 600													
Α	3.0	) m	4.5	m	6.0	m	7.5	5 m	ma	X.			
Sticks B	а	b	а	b	а	b	а	b	а	b			
4.5 m	12.7*	12.7*	7.1	8.3*	4.7	6.4*	2.9	4.9					
3.0 m	12.1*	12.1*	6.9	9.4*	4.6	6.8	2.9	4.8					
1.5 m	12.2	13.6*	6.6	9.9*	4.2	6.7	2.8	4.7					
2.0 m Ground level	11.3	15.4*	6.1	9.9*	4.0	6.8	2.6	4.6	2.2	3.5*			
1.5 m	11.1	15.9*	5.8	10.0*	3.7	6.5	2.5	4.5					
3.0 m	11.1	15.2*	5.7	9.7*	3.6	6.1							
4.5 m	11.5*	11.5*	7.0	7.7*	4.6	6.0*	3.0	4.9					
3.0 m	12.2*	12.2*	6.8	9.0*	4.5	6.5*	2.9	4.8					
1.5 m	12.2	12.9*	6.7	9.7*	4.2	6.6	2.8	4.7					
2.4 m Ground level	11.3	14.7*	6.1	9.7*	3.9	6.6	2.6	4.5	1.9	2.8*			
<b>1.5</b> m	10.9	15.7*	5.7	9.8*	3.7	6.5	2.4	4.4					
3.0 m	10.9	15.4*	5.6	9.9*	3.5	6.3							
4.5 m			6.2*	6.2*	4.6	5.6*	3.0	4.5*					
3.0 m	12.4	12.8*		8.5*	4.5	6.3*	3.0	4.8					
1.5 m	12.2	13.0*		9.5*	4.3	6.6	2.8	4.7					
	11.6	14.3*		9.6*	4.0	6.5	2.6	4.6	1.8	2.2*			
1.5 m	10.9	15.4*		9.6*	3.7	6.5	2.4	4.4					
3.0 m	10.8	15.5*		9.8*	3.5	6.3	2.4	4.1*					
4.5 m			3.9*	3.9*	4.2*	4.2*	3.1	3.8*					
3.0 m		12.3*		7.8*	4.4	5.9*	3.1	4.8					
1.5 m		12.4*	6.6	9.0*	4.4	6.5*	2.9	4.7					
3.5 m Ground level		13.4*		9.5*	4.0	6.4	2.7	4.6	1.5	1.6*			
1.5 m	11.0	14.9*		9.5*	3.7	6.5	2.5	4.4					
3.0 m	10.7	15.5*	5.5	9.6*	3.5	6.3	2.3	4.3					

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









		Monoboom	Adjustab	le boom		Stick	
			Unterteil	Oberteil			
System length	m	5.70	2.9	3.2	2.40	2.90	3.50
Weight	kg	1610	1250	1350	700	790	915
Linkage	kg	_			206	206	206
Cylinder	kg	240	182	240	130	130	130

#### **Trenching buckets**





			Rock backhoe								
Content (CECE)	m³	0.60	0.70	0.90	1.10	1.30	0.38	0.60	0.70	0.80	0.90
Content (SAE)	m³	0.65	0.80	1.10	1.25	1.45	0.42	0.65	0.80	0.90	1.10
Width	mm	850	1000	1100	1200	1300	600	850	1000	1100	1100
Weight	kg	595	660	735	785	850	470	570	625	675	720

Further buckets on request



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