

DF 40.1



223,5 kW



2 m³



1,6; 2,0; 2,5 m³



47 - 50 t



hydraulic excavator



DH 40.1 hydraulic excavator

The DH 40.1 hydraulic excavator made by the traditional Czech manufacturer is a further representative of a new generation of the UNEX machines with the following typical characteristic:

- Top design
- Comfortable operator workplace
- Easy control and maintenance
- High output
- High reliability
- High crossing ability
- Optimum utilization of energy in the ESU hydraulic system
- Low consumption of fuel



engines

The 1306-E87TA PERKINS is serial, compression ignition, supercharged, water cooled sixcylinder with fuel direct injection, and cooling of intake air.

Cylinder Bore	116.6 mm
Stroke	135.9 mm
Cylinder Displacement Volume	8,71 l
Power (DIN 70020)	224 kW
Rated Speed	2 000 rpm
Fuel Tank Volume	690 l
Consumption	218 g/kWh
Electric Equipment	Voltage 24 V
	Storage battery capacity 2 x 165 Ah
	Alternator 24 V/55 A

The BF6M 1015 DEUTH is compression ignition, supercharged, water cooled six-cylinder arranged to „V“.

Cylinder Bore	132 mm
Stroke	145 mm
Cylinder-Displacement Volume	11.906 l
Power (ISO 3046/1; DIN 6271)	214 kW
Rated Speed	2 000 rpm
Fuel Tank Volume	690 l
Consumption	225 g/kWh
Electric Equipment	Voltage 24 V
	Storage battery capacity 2 x 165 Ah
	Alternator 24 V/55 A



hydraulic system and control

Hydraulic System:

Max. Volume of Hydraulic Fluid:	
Main Pumps	2 x 300 l/min.
Servo-Control Circuit Pump	22 l/min.
Working Pressure	320 bar
Servo-Control Pressure	35 bar

Hydraulic Cylinders:

	mm
Boom	2 x \varnothing 160 O.D. / 110 I.D. - 1475 length
Arm of Backhoe Equipment	\varnothing 200 O.D. / 140 I.D. - 1650 length
Backhoe Bucket	\varnothing 160 O.D. / 110 I.D. - 1290 length
Arm of Loading Equipment	\varnothing 180 O.D. / 110 I.D. - 1280 length
Loading Shovel	2 x \varnothing 160 O.D. / 110 I.D. - 1240 length
Jaw of Loading Equipment	2 x \varnothing 125 O.D. / 80 I.D. - 260 length
Slewing Hydraulic Motor	axial, piston, without regulation
Travel Hydraulic Motor	axial, piston, with two-position regulation



undercarriage and travel drive

The undercarriage frame is a rigid welded, box-type structure. Crawler carriers are in two types:

ST – standard construction – with travel sections / parts marked B7 (INTER-TRAKTOR marking) available for backhoe working equipment.

HD – hard construction – with travel sections / parts marked B8 specified for hard operation conditions with loading equipment at a quarry. Screw joint of crawler carrier with centric frame allows optional construction of carrier and track gauge for excavator transport and operation area. Travel drive is ensured by axial two-speed hydraulic motor via planetary transmission with the dimensions not exceeded the contour of crawler track. The transmission involves a parking multi-disk brake closed automatically without any requirement of maintenance. Track tensioning: with a grease cylinder and nitrogen charging (spring).

Undercarriage Performance	ST	HD
Number of Supporting Rollers	3	3
Number of Travelling Rollers	9	8
Number of Crawler Shoes	52	48
Machine Tractive Power	356 kN,	340 kN
Climbing Ability	84 % (40°)	84 % (40°)
Travelling Speed	0–4 km/h	0–4 km/h



slewing superstructure drive

The slewing superstructure is driven with an axial piston hydraulic motor via planetary transmission with built-in static multi-disc brake. The outlet pinion mates with cross-roll bearing inner teeth.

Superstructure Slewing	9 /min
Superstructure Torgue	150 kNm



slewing superstructure

A rigid welded structure with straight-way beams from the boom bedding up to the fixed ballast. The boom is embedded in bronze bushings. The cowl is filled with a sound absorbing material lowering outside noise and its design offers a good access to all parts of superstructure. The components which may be opened, may be also locked up.



operator's cabin

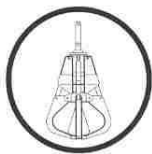
The cabin located at the L.H. side of the slewing superstructure is provided with effective noise insulation. The front sectional windscreen is equipped with a large windscreen wiper. The windscreen upper part may be fully raised under cabin roof. The roof window can be opened. The comfortable, wobbliness spring mounted seat with shock absorber may be adjusted vertically and according to the operator's weight. Seat position is adjustable independently on the integrated hand-operated controllers and pedals. In this way the optimum ergonomics has been achieved to reduce a fatigue. The dashboard of the modern designed control panel with synoptical arranged indicators and instruments, which are differentiated in colour and by the marks, is situated within the operator's field of view. Stepless regulation of engine speed is carried out by a hand lever with position arrestment. The hot-water heating is equipped with a two-stage fan ensuring effective ventilation in the same time. Drawn-in air is filtered.



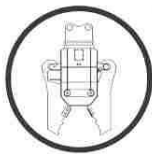
attachable working equipment

Excavator can be supplied with:

- loading working equipment - applied for digging over travel plain
 - backhoe working equipment - applied for digging under travel plain.
- Backhoe working equipment can be provided not only with backhoe bucket but even with large sort of attachable equipment for different character of operation and thereby to utilize great digging forces or digging depth parameters of excavator.



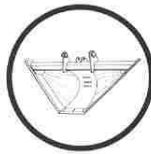
more jaws grab



demolishing pliers



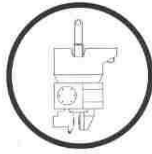
backhoe bucket



trench forming bucket



double jaw grab



vibratory pile-driver



scrapshears

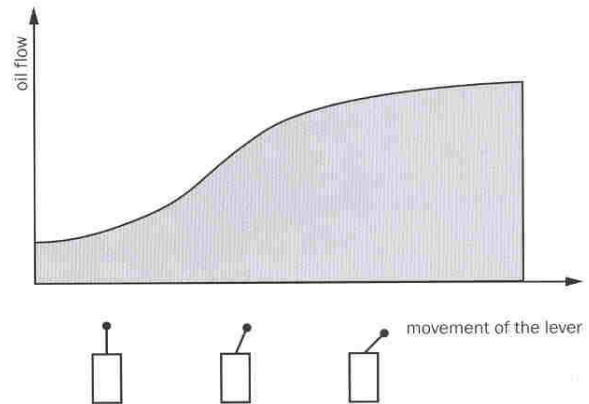


hydraulic hammer



Control:

Slide valves of hydraulic distributor supplying the oil continuously to the working elements are sensitively controlled only by a little force of lever controllers (and pedals for travel). Proportionally to the movement of controller levers, regulation adjusts the pumps to supply only such a quantity of oil necessary at the moment.

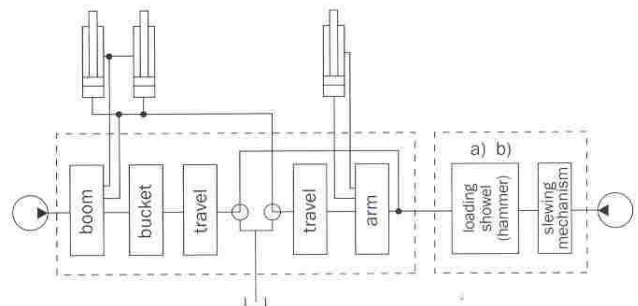


working movements combination

ESU system allows optional combination of working movements.

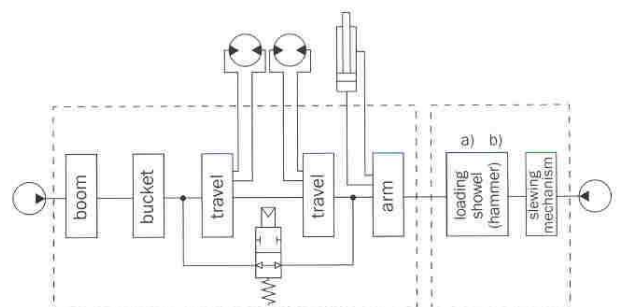
Rapid movement:

If working element from one circuit is not utilized, corresponding pump is automatically applied for acceleration of engaged movement. Rapid movement is possible on both sides of arm cylinder (extension - insert) and at boom cylinders for extension.



Travel:

Both pumps are utilized at travel. If it is necessary in the same time to move with working equipment and/or with slewing mechanism, travel drive is changed over automatically to one pump and the second pump is provided to the working equipment that can be used, e.g., at disengagement of the excavator. In addition, it is possible to select two speeds of travel by the change-over switch inside the cab.



noise

Acoustic pressure level
Machine acoustic power

$L_{pAeqT} = 77 \text{ dB}$
 $L_{WA} = 110 \text{ dB}$



ESU hydraulic system (UNEX power-saving system)

ESU is two-circuit system drawing only such a power from Diesel-engine that is necessary only for status of operation at the moment.

Driving hydraulic aggregate makes compact unit with Diesel-engine. It is assembled from double axial piston pump and control circuits drive pump. Pumps make compact co-axial unit with Diesel-engine.

Regulation:

Both pumps are connected to the Cross-sensing power regulation allowing utilization of almost full engine power with one pump only if second circuit is not in operation. Engine power is distributed to the two circuits according to their actual loading. When maximum pressure is achieved, pumps are regulated to supply minimum quantity of oil and thereby to prevent the loss of energy. When any power is not taken off from the pumps, they are regulated again to supply minimum oil being returned to the tank only with a negligible loss of energy.

- Multi-disk brakes at hydraulic motors of slewing and travel drives are continuously applied. They release automatically when travel or slewing is engaged.
- Lifting of left hand rest of the seat in the cab puts machine control out of operation.
- Excessive oil drop in the tank also puts machine control out of operation.
- The system of hydraulic joints with SAE flanges and fittings with soft sealing elements makes the oil leakage impossible at fitted points.
- Oil filtration on the drain side ensures desirable oil purity. Filters capacity allows long maintenance intervals.
- Oil charging to the tank is carried out through the built-in service filters.
- There is signalling of impurities in hydraulic filters.
- Hydraulic cylinders dimensioned on the pressure of 400 bars have effective damping at their end position.
- Hydraulic system applies multiply protection against the overload.
- Possibility of crawler undercarriage gauge adjusting provides great stability of excavator and in the same time safety and cheaper transport on rail way and road.
- Gauge adjusting is carried out with excavator working equipment. Disconnected point has guide for adjusting of position and the stops for exact overlap of screw holes. Undercarriage hydraulic system does not require any intervention at adjusting.
- Screw connection of undercarriage frame with crawler carries is more dimensioned in loading ratio than screw connections of slewing mechanism bearings with frames.
- Reliability of hydraulic circuit is ensured by application of hydraulic generators, distributors, hydraulic motors of travel and slewing drives and controllers type of REXROTH.
- All components and groups typical for excavator are supplied by prominent worldwide producers.
- Acoustic warning signalling is used on the excavator before start of machine operation.

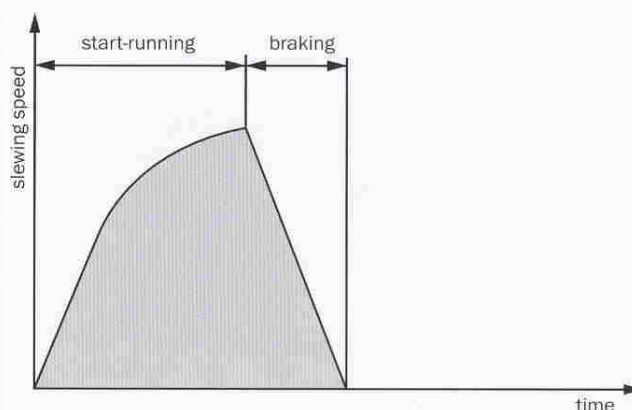
Optional machine equipment:

- Hydraulic fluid capable of biological degradation is suitable in the ecologically sensitive regions with higher ecological demands without further improvement.
- Machine to the tropical conditions without additional arrangements except of service charging fluids exchange.
- Hydraulic locking mechanism for the boom at hoisting operation.
- Machine arrangement to the arctic conditions.
- Heating installation operating independently on the running engine.
- Cab air conditioning.
- Central lubrication system type of VOGEL®.
- Fuel consumption gauge.
- Alternative engine DEUTZ.
- Radio-set with stereo-reproducer.

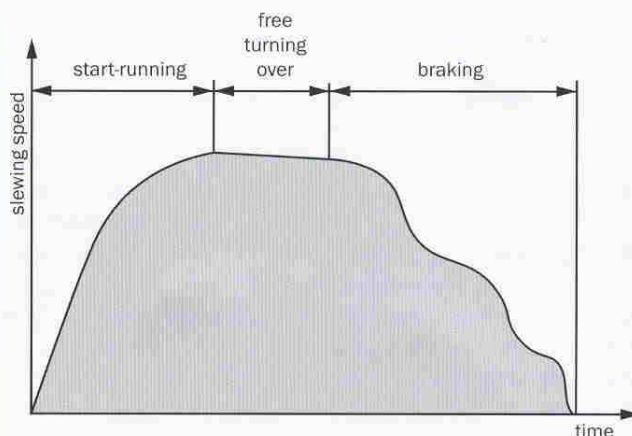


The slewing superstructure is provided with a hydraulic brake. The brake may be optionally adjusted to 3 different braking modes.

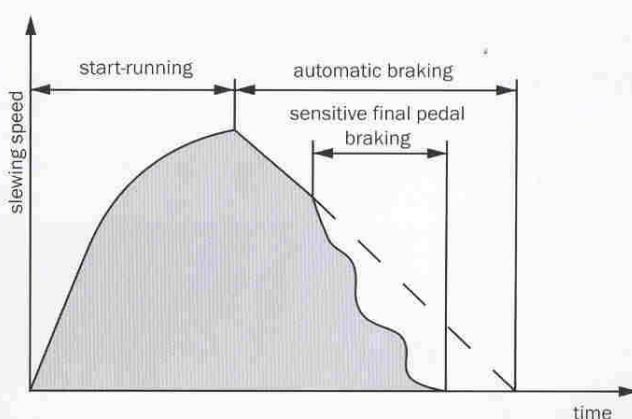
Constant - moment automatic braking after releasing of slewing drive control lever:



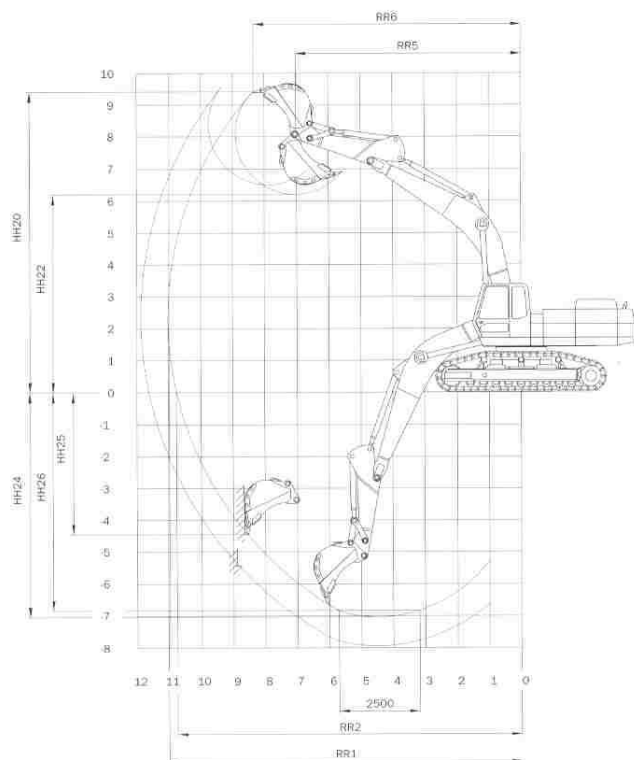
Proportional braking with pedal controlled by arbitrary force



Partially adjusting of constant moment automatic braking with sensitive final braking by the pedal



Working reaches with backhoe equipment



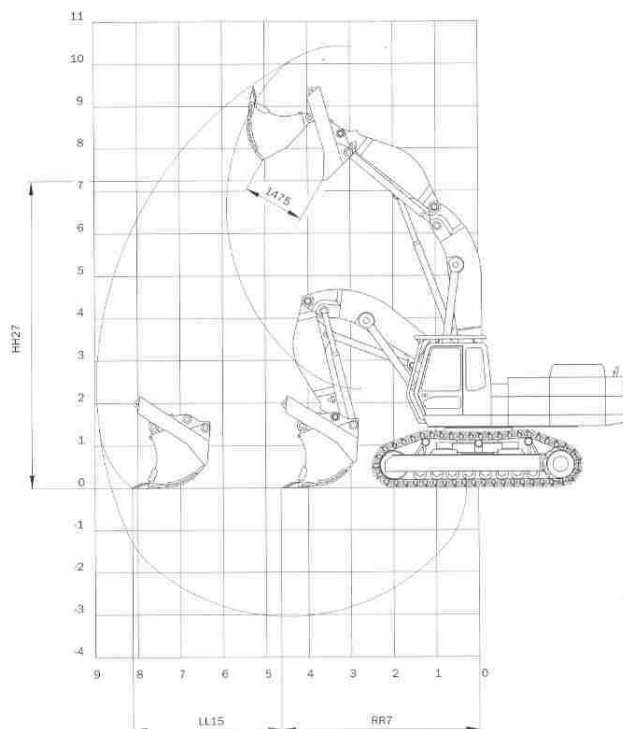
Arm	2,5 m	3,4 m
	mm	mm
RR 1 Maximum horizontal reach	11 030	11 870
RR 2 Maximum horizontal GPR reach	10 760	11 630
RR 5 Shovel pivot horizontal reach at max. height	7 030	7 880
RR 6 Horizontal radius at max. vertical reach	8 340	9 340
HH 20 Max. height reach	9 420	9 565
HH 22 Max. loading bucket ground clearance	6 210	6 525
HH 24 Max. depth reach	7 040	7 940
HH 25 Max. vertical excavating depth	4 450	5 440
HH 26 Max. excavating depth at 2,5 bottom length	6 830	7 770

N excavating forces

Backhoe Equipment

Arm lenght	2,5 m	3,4 m
Excavation digging Force (kN)	240	199
Excavation breaking Force (kN)	228	228

Working reaches with loading equipment



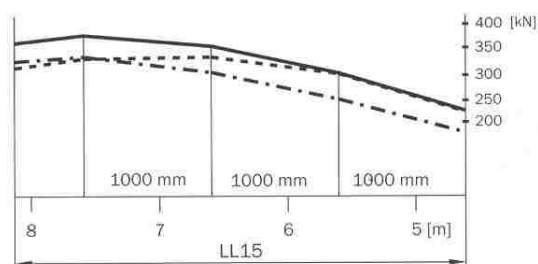
loading equipment with shovel capacity of 2 m³

	mm
LL 15 Cutting length of horizontal bottom	3 520
RR 7 Min.radius of horizontal bottom	4 610
HH 27 Max. discharge height of loading shovel	7 240



excavating force at travel plain

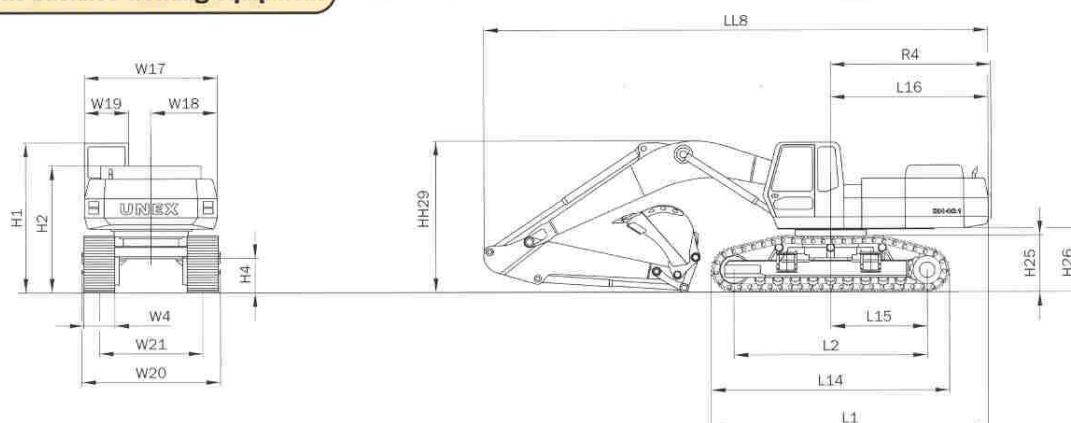
shovel force (VN + VL) —
 breaking force (VL) - - -
 shovel force (VN) - · - ·



shovel cylinder (VL), arm cylinder (VN)



mm dimensions backhoe working equipment



mm total dimensions

Undercarriage	ST	Undercarriage	ST	Undercarriage	ST
L1 Max. length	6 290 mm	R4 Superstructure slewing gauge radius	3 740 mm	W17 Total slewing superstructure width	2 980 mm
L2 Crawler track base	4 346 mm	H1 Total excavator basic part height	3 395 mm	W18 Distance of slewing structure R.H. side from the axis of undercarriage	1 500 mm
L14 Total undercarriage crawler track length	5 365 mm	H2 Slewing superstructure height	2 880 mm	W19 Cabin outside width	975 mm
L15 Distance of the drive sprocket from the axis of turning	2 173 mm	H4 Undercarriage ground clearance	720 mm	W20 Max. transport width according to W4	3 134 mm
L16 Distance of the rear part from the axis of turning	3 600 mm	H25 Undercarriage crawler track height	1 253 mm	W21 Undercarriage crawler track - transport	2 336 mm
		H26 Slewing superstructure ground clearance	1 435 mm	- operation	2 900 mm
		W4 Crawler shoe width	700 mm		

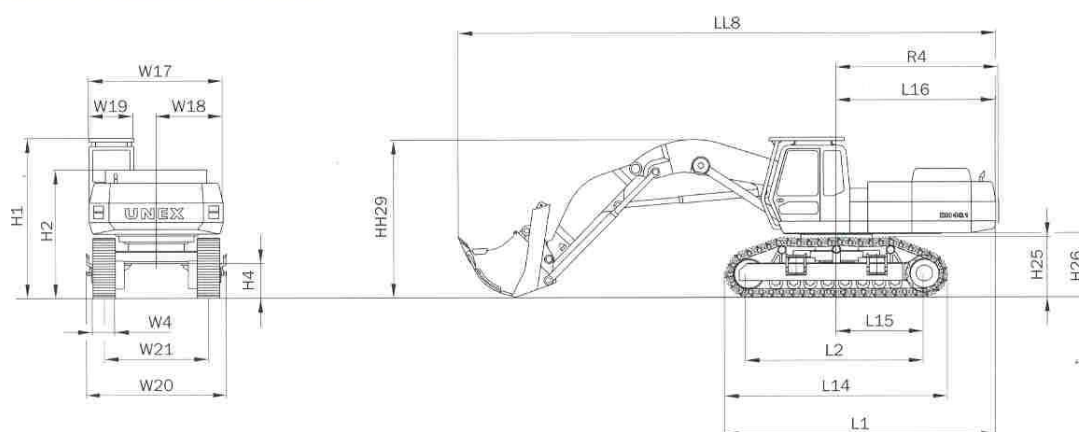
mm transport dimensions



backhoe buckets

Arm length	2.5 m	3.4 m	capacity (m³)	width (mm)	weight (kg)
LL8 Total length at transport	11 410 mm	11 395 mm	SAE		
HH29 Total height of working equipment at transport	3 400 mm	3 425 mm	1.6	1 285	1 542
			2.0	1 690	1 763
			2.5	1 690	1 891

mm dimensions loading working equipment



mm total dimensions

Undercarriage	HD	Undercarriage	HD	Undercarriage	HD
L1 Max. length	6 110 mm	R4 Superstructure slewing gauge radius	3 740 mm	W17 Total slewing superstructure width	2 980 mm
L2 Crawler track base	3 922 mm	H1 Total excavator basic part height	3 655 mm	W18 Distance of slewing structure R.H. side from the axis of undercarriage	1 500 mm
L14 Total undercarriage crawler track length	4 970 mm	H2 Slewing superstructure height	2 950 mm	W19 Cabin outside width	975 mm
L15 Distance of the drive sprocket from the axis of turning	1 961 mm	H4 Undercarriage ground clearance	780 mm	W20 Max. transport width	3 134 mm
L16 Distance of the rear part from the axis of turning	3 600 mm	H25 Undercarriage crawler track height	1 333 mm	W21 Undercarriage crawler track	
		H26 Slewing superstructure ground clearance	1 470 mm	- transport	2 336 mm
		W4 Crawler shoe width	500 mm	- operation	2 900 mm

mm transport dimensions



loading shovel

LL8	Total length at transport	12 090 mm	Capacity (m³)	Capacity (m³)	shovel width (mm)	shovel weight (kg)
HH29	Total height of working equipment at transport	3 580 mm	with stacking 1 : 2	with stacking 1 : 1		
			2.0	2.4	1 680	3 829

Owing to a continuous development of our products, we reserve the right to modify data stated in this prospectus without announcing them in advance and without any obligations with respect to the products supplied formerly. The above excavators may be provided with other special additional equipment, too.