

EN

# HSG 5-18

Hydraulic slurry wall grab  
[www.liebherr.com](http://www.liebherr.com)

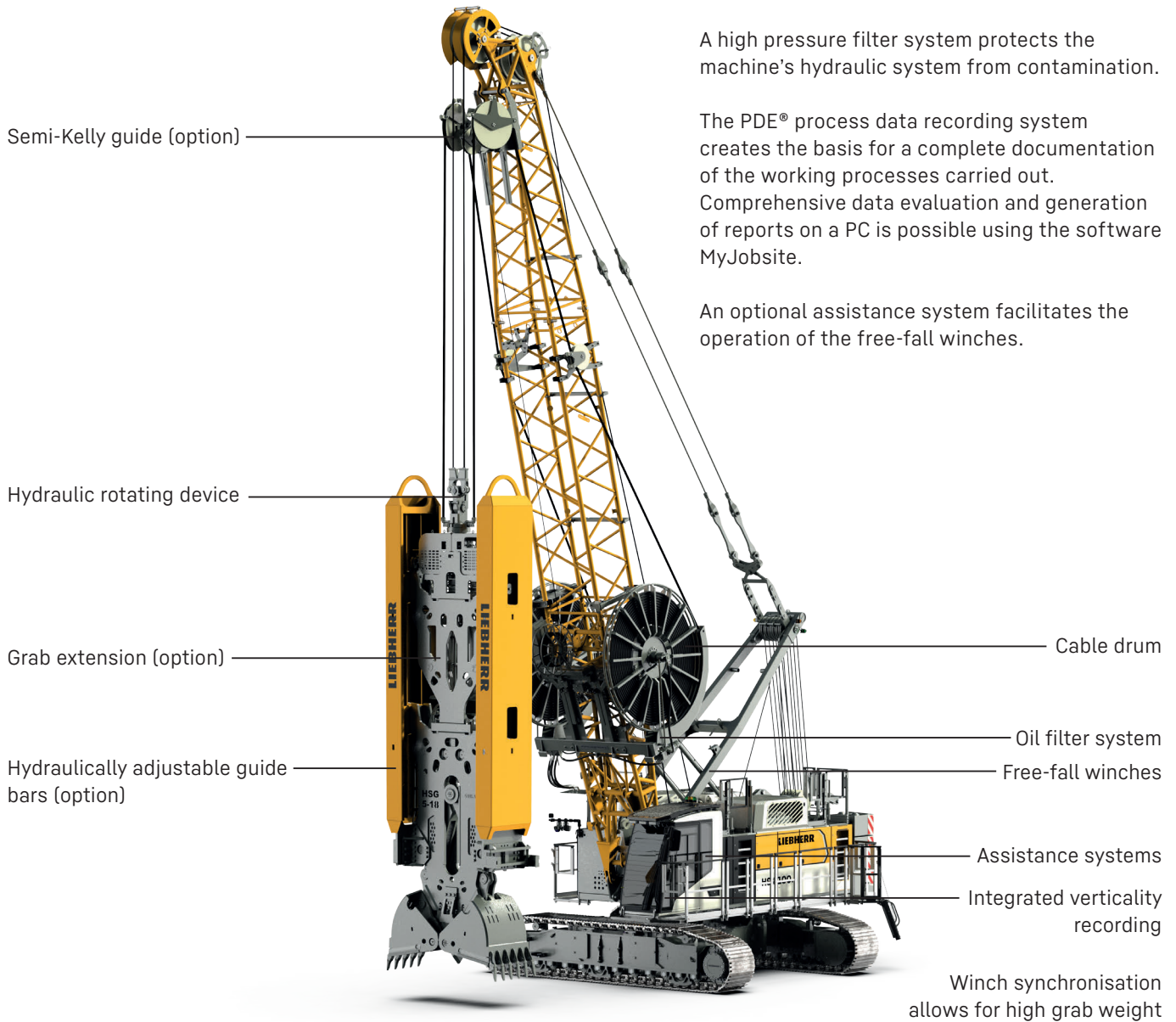
## LIEBHERR

Deep foundation machines



# Characteristics

## Basic machine HS 8100.2 with hydraulic slurry wall grab HSG 5-18



### Features of the HSG 5-18 slurry wall grab

The modular design of the grab promises a high level of flexibility and enables the optimum adaptation to jobsite requirements.

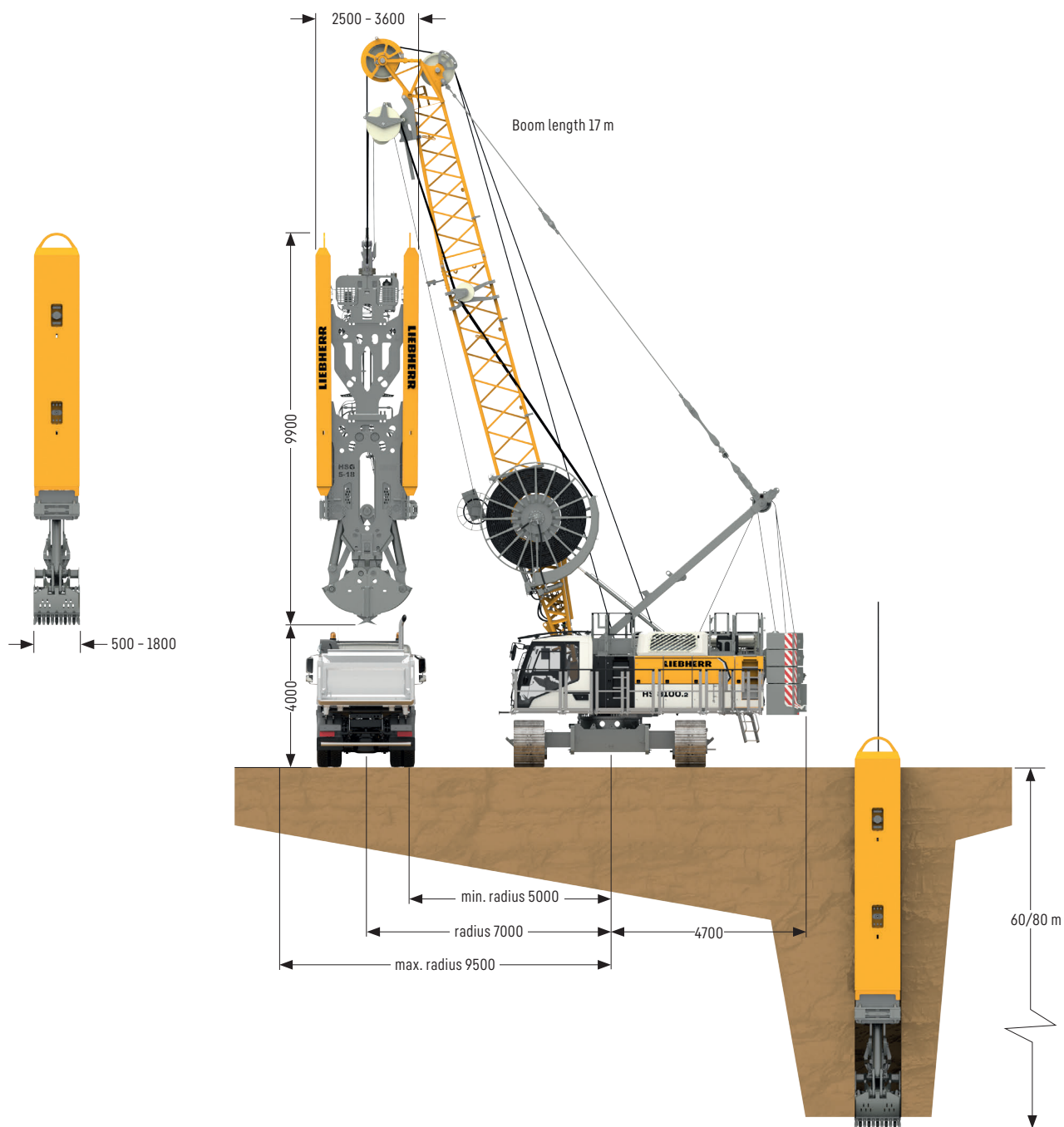
The hydraulic slurry wall grab package is based on the proven HS series. It unites precision, power and economy. At the same time the multifunctionality of the carrier machine is maintained 100%.

The grab convinces with its robust design and high closing force. These properties provide a decisive advantage especially for hard soil conditions.

Thanks to the synchronisation of the hoisting winches high grab weights are viable and the lifting capacity of the basic machine is optimally utilized. As a standard the free-fall winches are also synchronised and can be controlled using a pedal.

# Dimensions

## Basic machine HS 8100.2 with hydraulic slurry wall grab HSG 5-18



# Overview carrier machines



**HS 8070.1**

## Technical data

Engine power	kW	320
2x free-fall winches (line pull 1 <sup>st</sup> layer)	kN	200
Rope diameter	mm	30
Effective rope length	m	145
Max. admissible line pull in 2-rope operation	kN	300
Max. recommended weight of hydr. slurry wall grab (full)	t	23



**HS 8100.2**

## Technical data

Engine power	kW	450
2x free-fall winches (line pull 1st layer)	kN	295
Rope diameter	mm	34
Effective rope length	m	141
Max. admissible line pull in 2-rope operation	kN	417
Max. recommended weight of hydr. slurry wall grab (full)	t	30

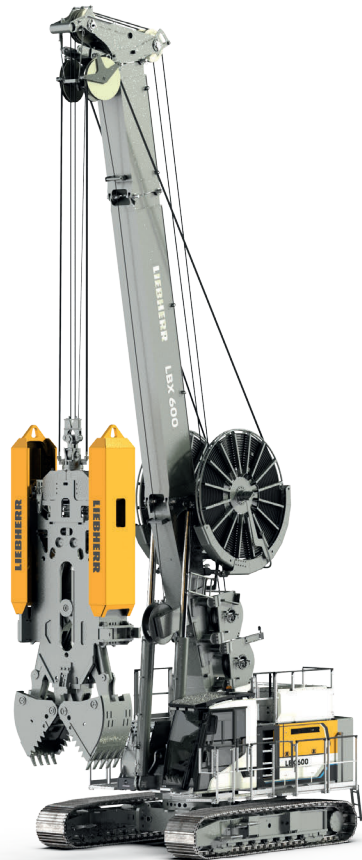




## HS 8130.1

### Technical data

Engine power	kW	565
2x free-fall winches (line pull 1st layer)	kN	350
Rope diameter	mm	36
Effective rope length	m	233
Max. admissible line pull in 2-rope operation	kN	530
Max. recommended weight of hydr. slurry wall grab (full)	t	40



## LBX 600/LBX 600 unplugged

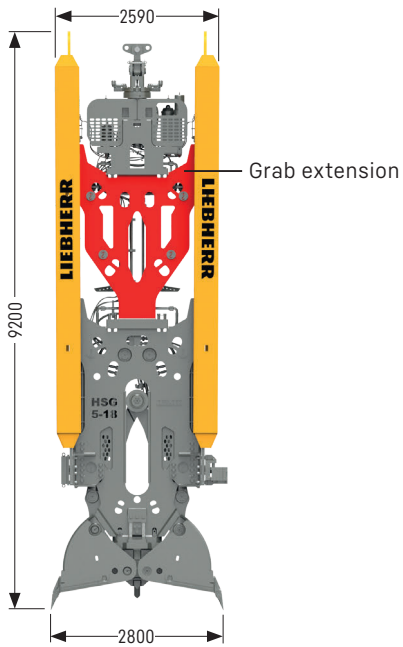
### Technical data

Engine power	kW	320/390*
Max. working depth	m	80
Max. admissible grab weight, full	t	30
Max. pull force in grab operation (dual-winch operation)	kN	450
Max. pull force in recovery mode (dual-winch operation)	kN	600
2x free-fall winches (line pull 1st layer)	kN	300
Can be equipped with a hoist winch (reeving on the grab)	option	

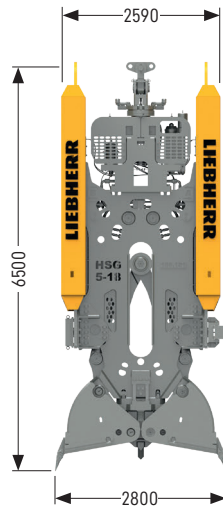
\* LBX 600 unplugged

# Grab sizes

## HSG 5-18 C/L



**HSG 5-18 L**

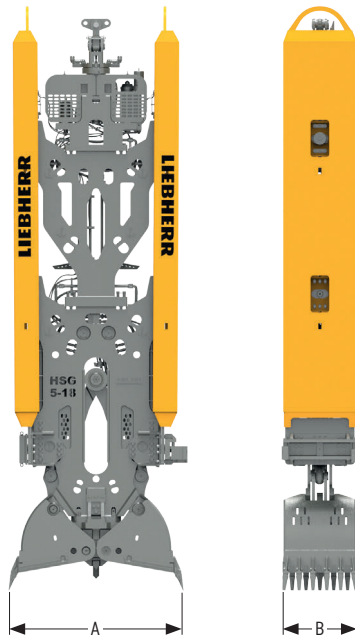


**HSG 5-18 C**

The grab extension increases weight and length of the grab and therefore enhances the verticality of the trench. The extension is recommended for deep trenches.

Example dimensions of HSG 5-18 C/L for jaw opening width of 2800 mm.  
Different opening widths result in different dimensions.

## Technical data



### The following configurations are included in the given grab weights

Stop-end guide	see table
Hydraulically adjustable guide bars	t 0.5
Accumulator for accelerated opening	t 0.33
Verticality sensor	t 0.04
Stabilisers for guide bars (from 1200 mm slurry wall thickness)	t 0.67
Standard closing cylinder (180/140)	
Standard grab jaws with scrapers	
Signal and data transmission via cable	

### Weights of optional equipment

Signal and data transmission via radio	t -0.25
Mounting semi-Kelly	t 0.10
Generator	t 0.02
Additional weight	t 4.43
Additional weight	t 6.56
Heavy duty grab jaws	on request
Further jaw widths 2500 – 3600 mm	on request

Other jaw opening widths on request.

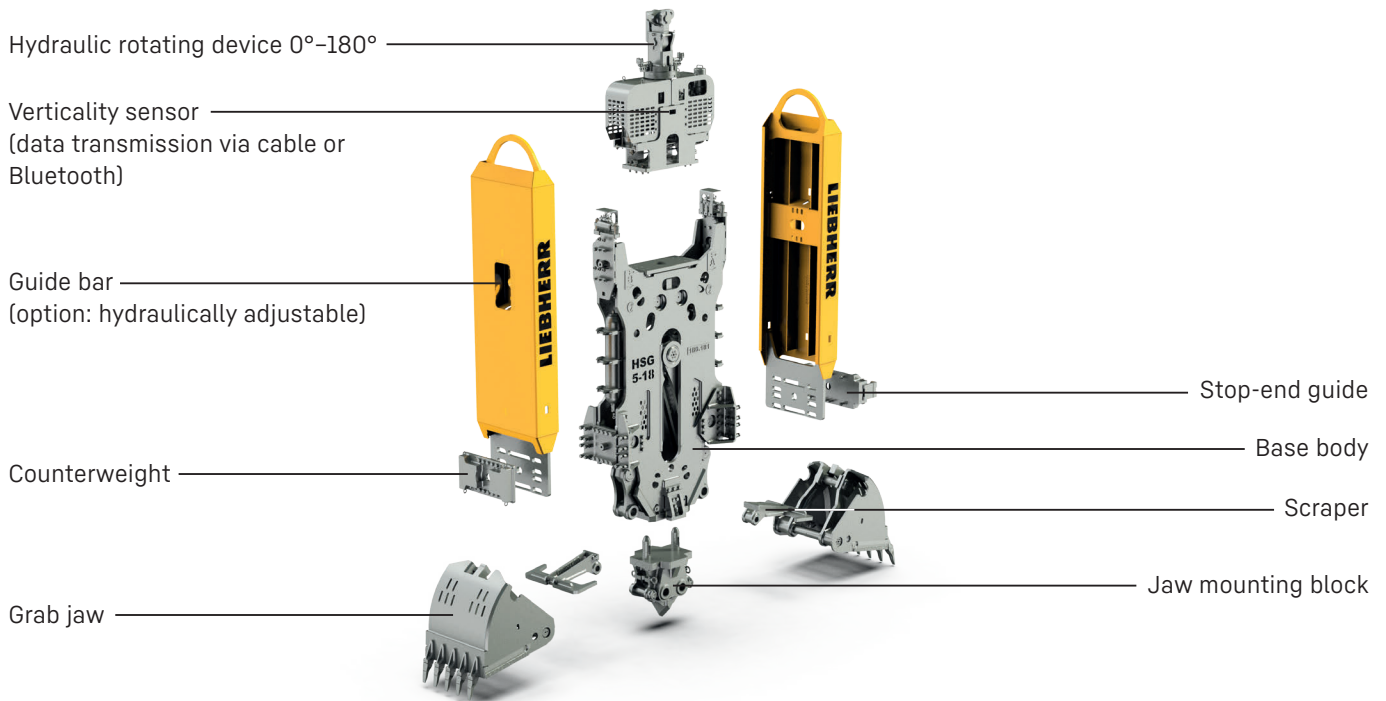
### Technical data HSG 5-18 C/L

Jaw opening width A [mm]	Slurry wall thickness B [mm]	Grab capacity [m³]	Grab weight empty		Grab weight full*		Weight stop-end guide (included) [t]
			HSG C [t]	HSG L [t]	HSG C [t]	HSG L [t]	
2800	500	0.62	14.71	18.31	15.91	19.51	0.39
	600	0.78	15.12	18.72	16.72	20.32	0.40
	800	1.10	16.81	20.71	19.01	22.91	0.49
	1000	1.42	18.10	22.20	20.90	25.00	0.58
	1200	1.72	19.47	24.07	22.87	27.47	0.78
	1500	2.21	21.50	26.00	25.90	30.40	0.91
	1800	2.69	22.09	26.89	27.49	32.29	
3200	500	0.79	15.41	19.01	17.01	20.61	0.39
	600	0.99	15.92	19.52	17.92	21.52	0.40
	800	1.39	17.61	21.51	20.41	24.31	0.49
	1000	1.80	18.90	22.90	22.50	26.50	0.58
	1200	2.20	20.27	24.87	24.67	29.27	0.78
	1500	2.81	22.30	26.80	27.90	32.40	0.91
	1800	3.41	22.79	27.69	29.59	34.49	

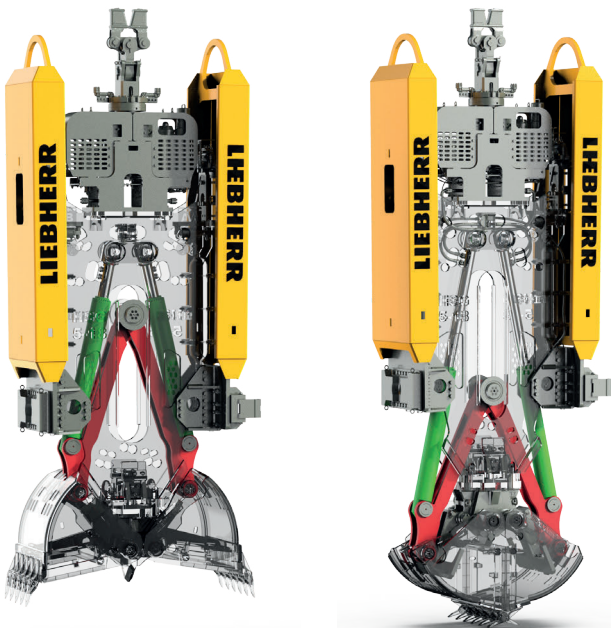
\* density of excavated material 2 kg/dm³

Please note: the suitable carrier machine must be selected taking into account the maximum permissible grab weight (see pages 4 and 5).

# Modular design



# Grab closing mechanism



Opening and closing of the grab is actuated by two direct-acting cylinders. These are installed with the piston rods at the top, which means they are protected inside the grab body. The robust cylinder barrels are positioned downwards.

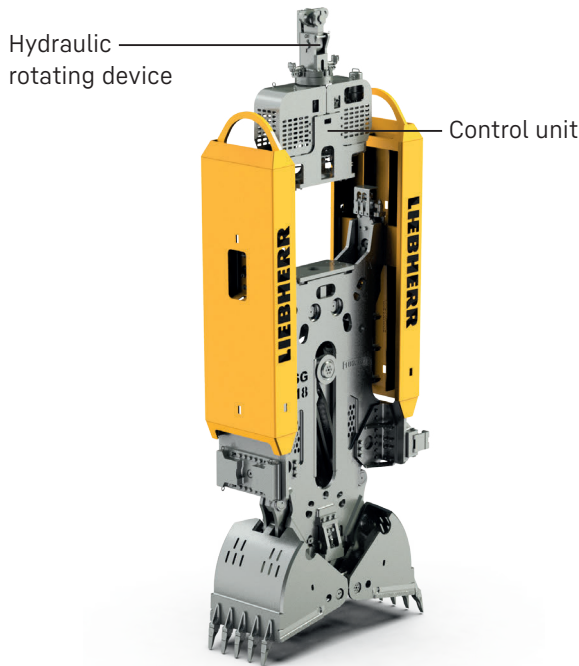
Synchronised opening or closing of the grab jaws is mechanically ensured via push rods. This mechanism is reliable and easy to maintain.

Cylinder 180/140 (standard)	bar	300
Cylinder force (2 cylinders)	kN	1527
Max. closing force at teeth (2800 mm)	kN	948
Opening/closing speed approx.	s	10/9
Opening speed with accumulator for accelerated opening approx.	s	8

Cylinder 200/140 (option)	bar	300
Cylinder force (2 cylinders)	kN	1885
Max. closing force at teeth (2800 mm)	kN	1170
Opening/closing speed approx.	s	11
Opening speed with accumulator for accelerated opening approx.	s	8



# Hydraulic rotating device



The rotating device allows for easy rotation and alignment of the grab after each grab cycle.

## Advantages of the rotating device

- Alignment of the grab in slurry wall direction, rotation range  $2 \times 180^\circ$
- Storing of the grab position
- Rotation from  $0^\circ$  to  $180^\circ$  after each grab cycle

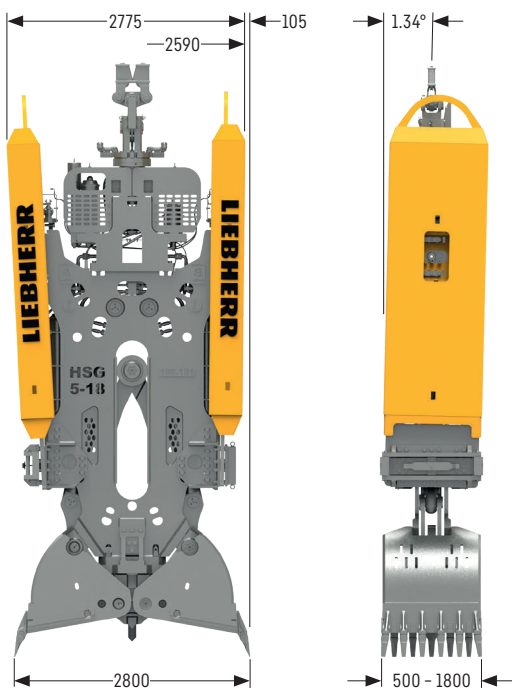
## Signal and data transmission via radio

Control and sensor signals are transmitted via radio outside the trench.

## Signal and data transmission via cable (option)

Control and sensor signals are transmitted via cable. If the cable is damaged, limited operation via radio is possible.

# Adjustable guide bars (option)

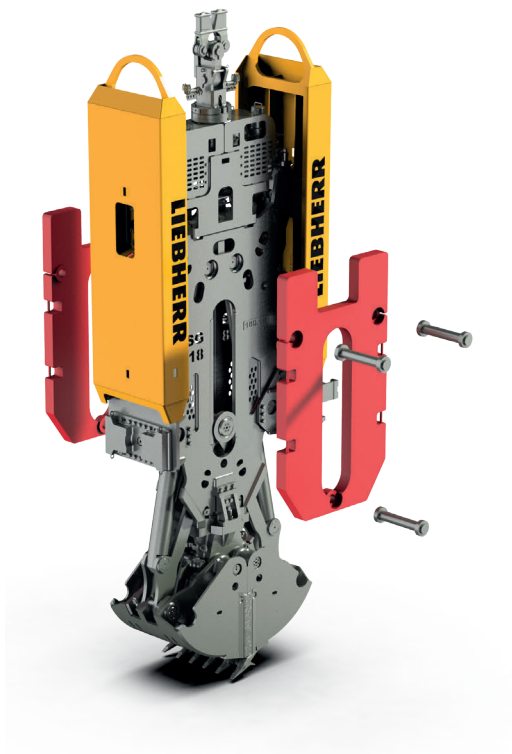


During excavation work the grab direction can be corrected using the guide bars and so higher verticality of the slurry wall is achieved. The system is driven hydraulically and can be controlled from the cabin.

In combination with the cable drum the guide bars can also be adjusted in the trench. The position of the guide bars is shown on the display.

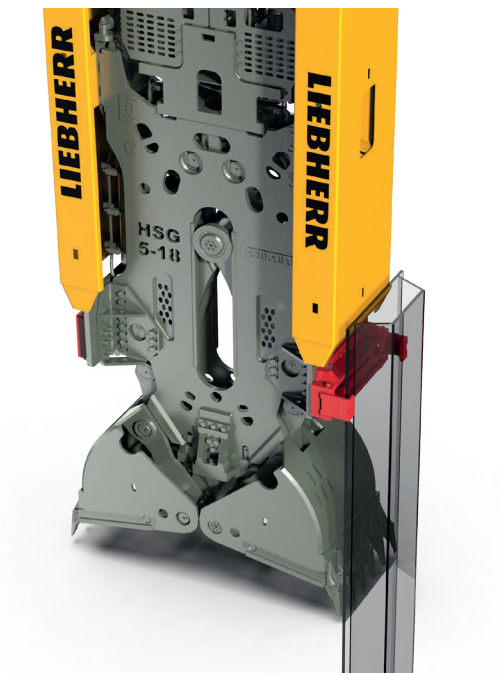
Example dimensions of HSG 5-18 C for jaw opening width of 2800 mm. Different opening widths result in different dimensions.

## Additional weight (option)



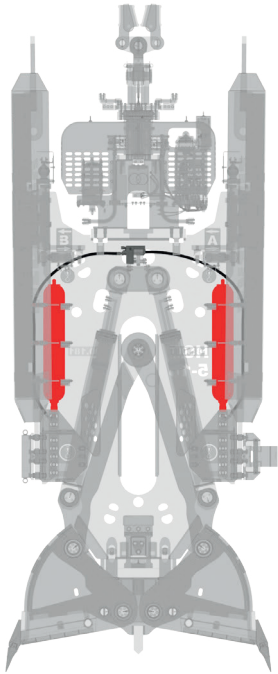
Additional weight of 4.4 t or 6.5 t is available.

## Stop-end guide (option)



The slurry wall grab is guided vertically along the stop-end element via the stop-end guide. Furthermore, this guide serves to scrape off and loosen the excess/seeping concrete from the stop-end element.

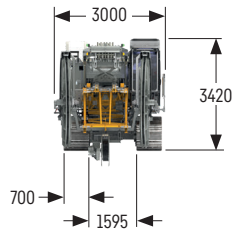
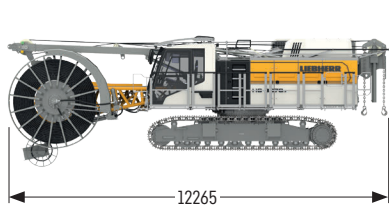
## Accumulator for accelerated opening (option)



These additionally installed accumulators temporarily store the high oil flow that occurs when the jaws are opened. As a result, high opening speeds can be achieved despite generously dimensioned closing cylinders.

The actual speeds achieved depend on the size of the grab jaws and the cylinder installed.

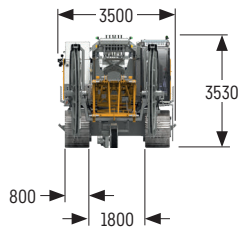
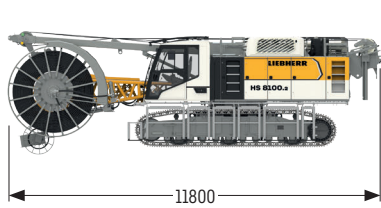
# Transport dimensions and weights



## Carrier machine HS 8070.1, crawlers non-detachable

with HD undercarriage, boom foot (1311.24), A-frame, 2x 200 kN winches, without rear counterweight

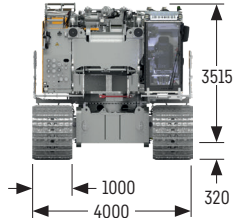
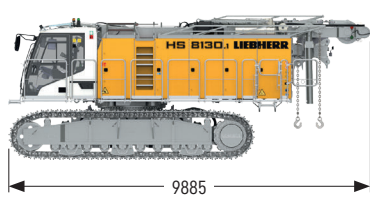
Width with 700 mm 3-web grousers	mm	3000
Weight with 700 mm 3-web grousers	kg	45900
Width with 800 mm 3-web grousers	mm	3400
Weight with 800 mm 3-web grousers	kg	46800
Width with 900 mm 3-web grousers	mm	3500
Weight with 900 mm 3-web grousers	kg	48600
Weight of hoist ropes	kg/m	4.62



## Carrier machine HS 8100.2

with HD undercarriage, boom foot (1311.24), A-frame, 2x 275 kN winches including wire ropes (90 m), without rear counterweight

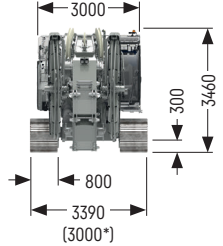
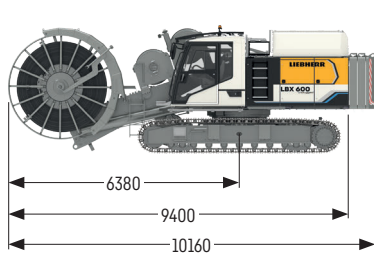
Width	mm	3500
Weight with 800 mm 3-web grousers	kg	59550
Weight with 900 mm 3-web grousers	kg	59930
Weight of hoist ropes (2x 90 m)	kg/m	5.68



## Carrier machine HS 8130.1, crawlers detachable

with HD undercarriage, A-frame, 2x 350 kN winches and self-assembly system for rear counterweight, without boom foot and rear counterweight – fully tanked and ready for operation

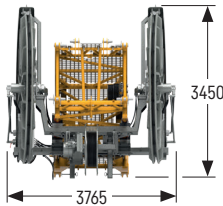
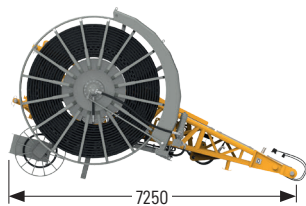
Width	mm	4000
Weight without hoist ropes	kg	78000
Weight of hoist ropes (2x 90 m)	kg/m	6.45
Width without crawlers	mm	3500
Weight without crawlers	kg	51000



## Carrier machine LBX 600/LBX 600 unplugged

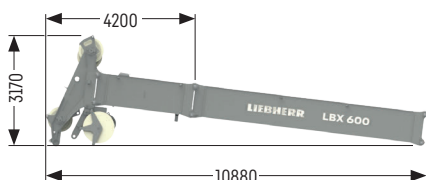
Weight with counterweight, with 800 mm 3-web grousers	t	66.0
Weight without counterweight, with 800 mm 3-web grousers	t	51.0
Weight without counterweight and hose drums, with 800 mm 3-web grousers	t	47.0

\* transport width with 700 mm grousers



## Boom foot (7 m) HS 8130.1

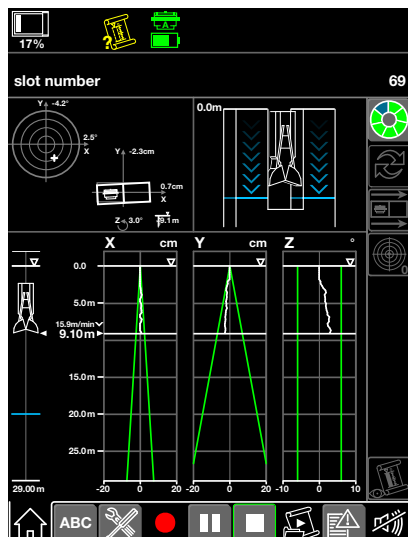
Width	mm	3765
Weight incl. hose drum and 75 m of hydraulic hose without oil	kg	7310



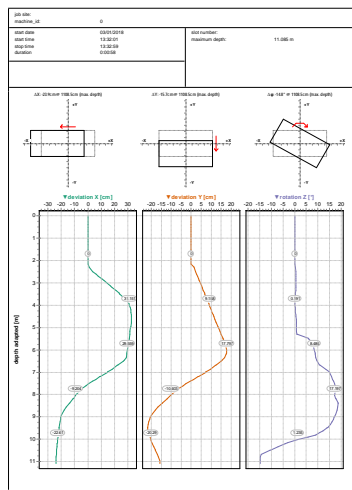
## Boom system LBX 600/LBX 600 unplugged

Boom 10.9 m (see illustration)	t	5.2
Boom section 6.6 m	t	2.2
Boom section 2.8 m	t	1.2
Base arm including hose drums and winches	t	16.4
Boom top	t	1.8

# Verticality assistant



hydr. grab with Verticality Assistant



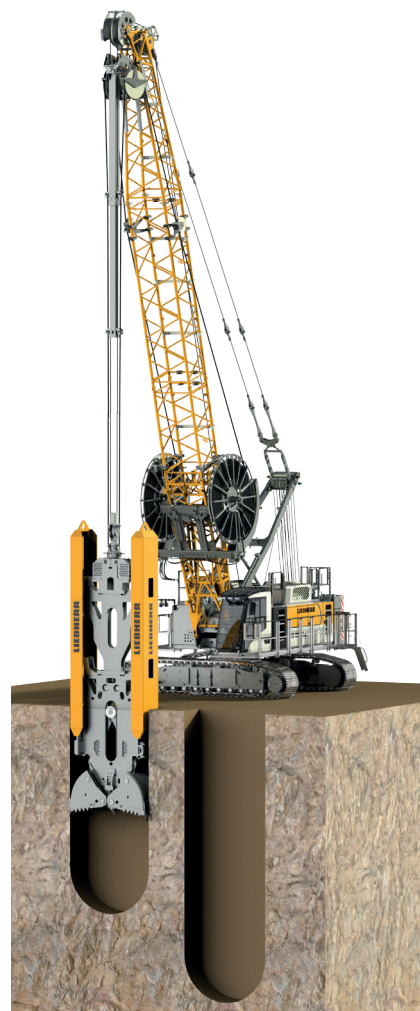
**PDE**



**LiDAT**



**MyJobsite**



## Verticality assistant for hydraulic and mechanical slurry wall grabs

This assistance system is fully integrated in the Liebherr machine's control and process data recording system. It supports and records the slurry wall installation process. With the help of the verticality assistant deviations in the slurry wall along the X and Y axes, as well as the rotation round the Z axis are measured.

- Visualization of the measurements for the machine operator
- Two possible solutions for data transmission: Bluetooth transmission between sensor on the grab and receiver in the uppercarriage (delayed data visualization) or real-time transmission via cable
- Optimum support for the machine operator through an innovative, graphic control system in order to carry out successful measurements
- Ensures optimum measuring conditions by automatically limiting the hoisting speed with two options
  - (exact slow or accelerated measuring run)
- Simple guidelines for calibrating the verticality measuring system
- Mobile data transfer via the telematics system from the machine to the reporting software in the office (MyJobsite)

This system allows control of the precision for the whole depth of the trench. Reports can also be created in MyJobsite for the whole slurry wall installation process. These enable traceability of the application and proof of quality.



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