

Liebherr Slurry Wall Cutter

# LSC 8-18

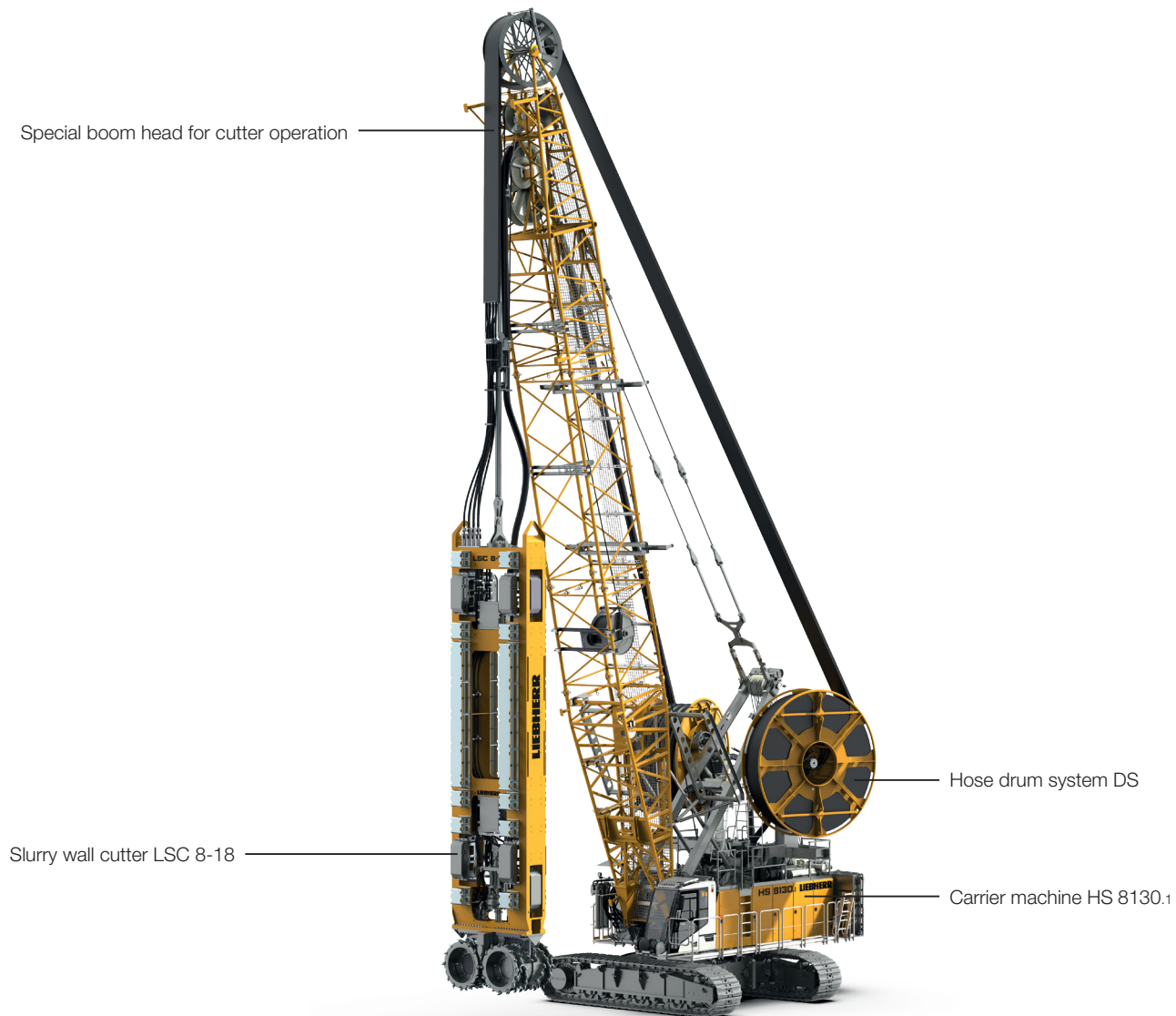
EN-US



# LIEBHERR

# Concept and characteristics

## Liebherr slurry wall cutter package



### Designed for the demands of urban areas:

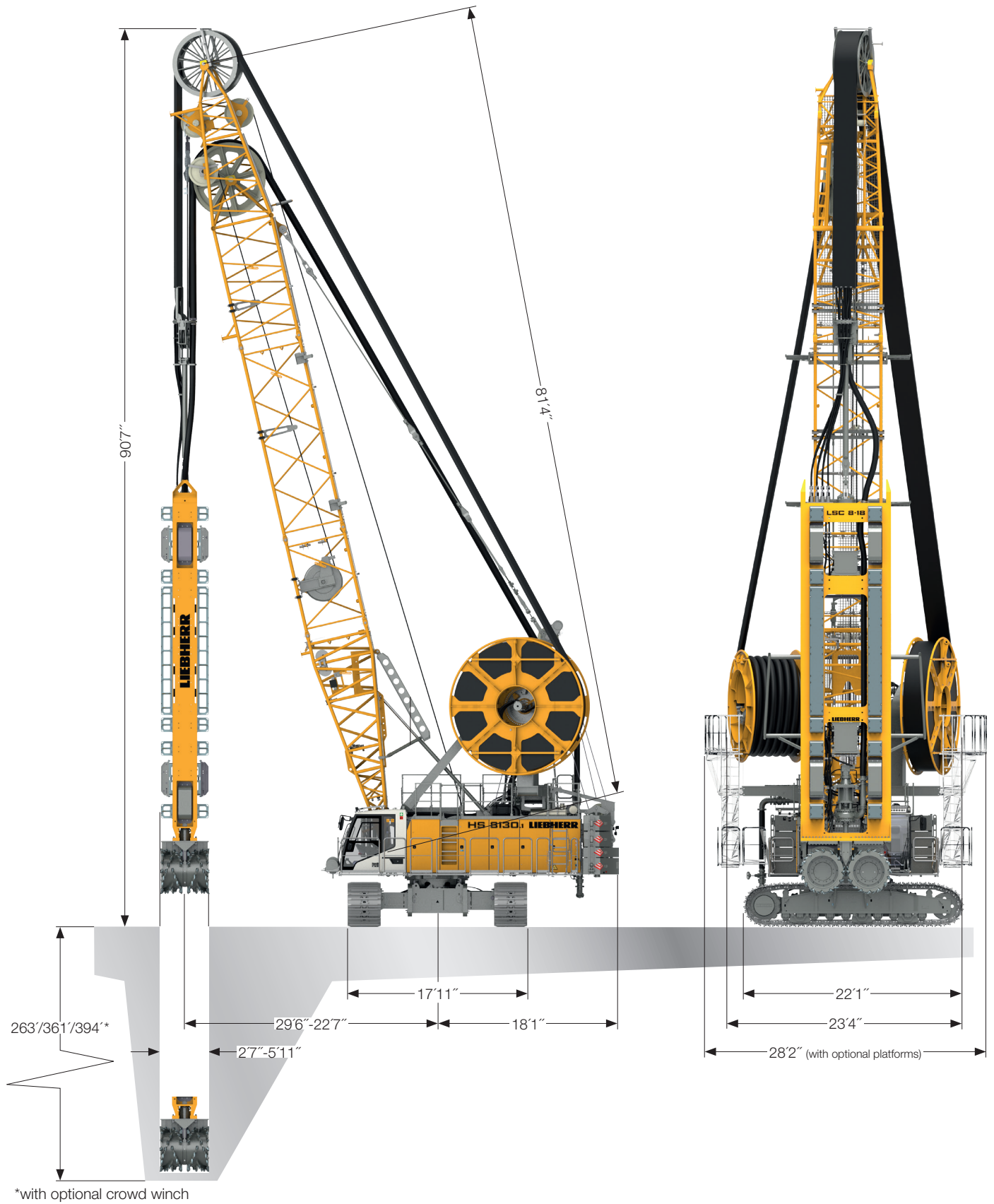
- Vibration-free slurry wall installation – excavation through cutting
- Slurry walls with depths down to 393.7 ft
- Complicated geometric wall forms – cutter turning device
- Adaptation to various wall dimensions – modular cutter design
- Low space requirements – no additional power pack required
- Low exhaust emission due to an efficient drive system and engine complying with Stage V
- Optional Local Zero Emission with electric engine
- Low noise emission – optional Eco-Silent Mode

### Universal carrier machine HS 8130.1 – for diverse deep foundation applications

- Hydraulic/mechanical slurry wall grab
- Spherical grab with casing oscillator (up to Ø 11.5 ft)
- Lifting operation and material handling grab

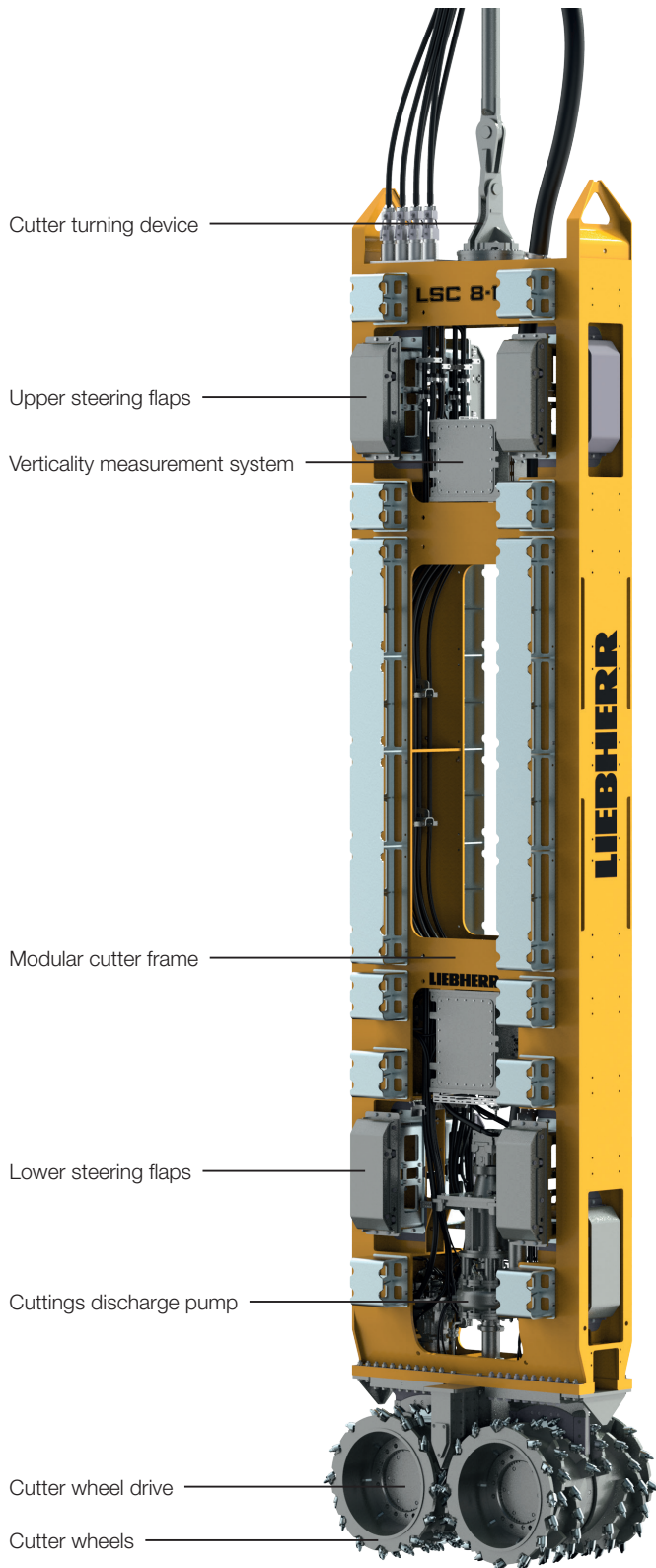
# Dimensions

HS 8130.1 with cutter LSC 8-18





# Slurry wall cutter LSC 8-18



## Cutter turning device:

- Enables continuous hydraulic turning of the cutter. Thus, all possible working positions are covered entirely.

## Lower and upper steering flaps:

- 12 independently controllable steering flaps enable correction of the cutting direction.
- The actual positions of the flaps are displayed on the operator's monitor in real time.
- Central lubrication system allows for quick and easy lubrication (optional).

## Verticality measurement system:

- Integrated assistance system supports and records the cutting process.
- Slurry wall deviations along the X and Y axes as well as the rotation round the Z axis are measured.

## Modular cutter frame:

- The modular cutter frame can be adapted to suit special requirements on the jobsite, thus offering highest flexibility.

## Cuttings discharge pump:

- Generously designed pump leads to increased efficiency and service life.
- Focus lies on ease of assembly and service.

## Cutter wheel drive:

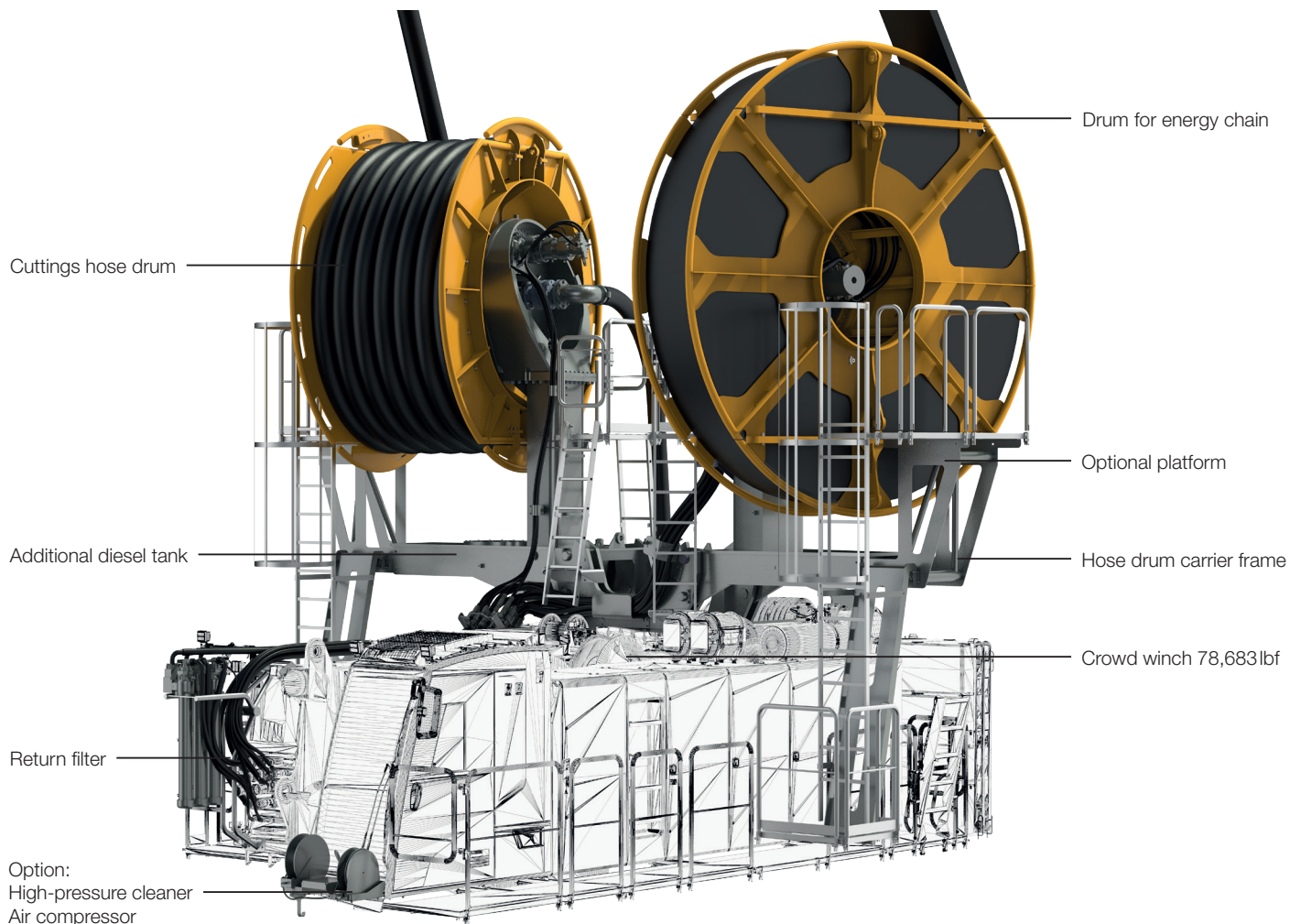
- High torque for toughest construction tasks.
- Focus lies on maximum service life of the gearbox and utmost ease of assembly.

## Cutter wheels:

- Different types are available for different ground conditions.
- The innovative form lock ensures quick and easy exchange of the wheel sets.



# Hose drum system DS 80/110 T



## Crowd winch:

- One of the two standard free-fall winches (78,683 lbf) is used as a crowd winch.
- The special winch control enables especially high precision when lowering the cutter.
- Continuous adjustment for crowd force and winch speeds.

## Additional diesel tank:

- An additional 132 gal diesel tank increases the total capacity to 335 gal.
- This enables longest possible self-sufficient operation.

## Return filter:

- The hydraulic oil flowing back from the cutter is fed through filters to protect the hydraulic system of the carrier machine from contamination.

## Hose drum carrier frame:

- Enables quick and easy mounting and dismounting of the cutter carrier.
- Excellent access to all important components.

## Drums for cuttings hose and energy chain:

- Optimized for maximum service life of the hoses.
- Efficiency is increased through the large diameter of the hoses.

## Optional platforms:

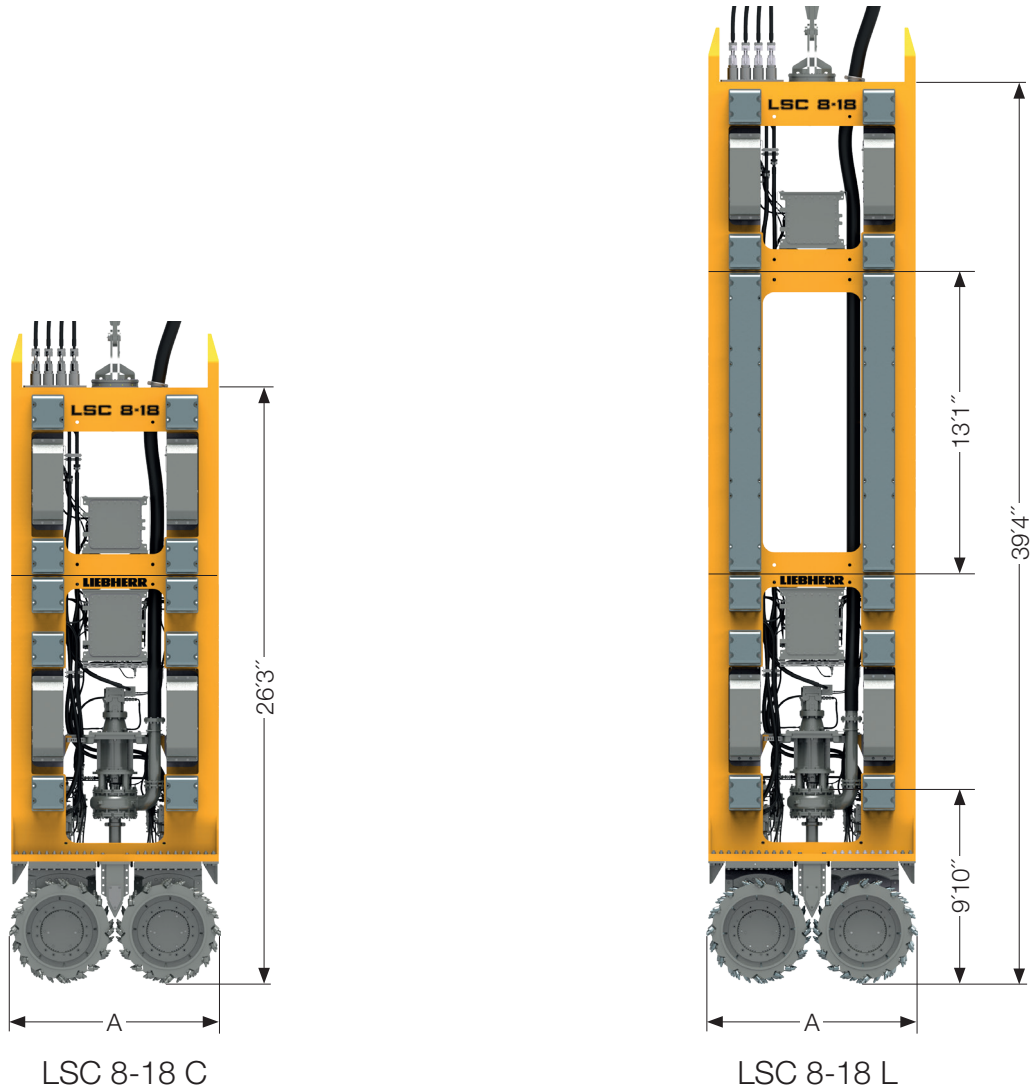
- These enable quick and safe access to the drums from both sides.
- Easily retrofitted.

## Special boom head:

- Designed for cutting operation with cutter turning device.

# Modular cutter frame

- Using a removable cutter frame extension the cutting length can be adapted to suit the circumstances, e.g. restricted height.
- The cutter can be adapted for all common slurry wall thicknesses with little effort.
- The same cutter wheel drive can be used for bite lengths of 9.2ft and 10.5ft.



## LSC 8-18 C

	9.2					10.5				
	31.5	39.4	47.2	59.1	70.9	31.5	39.4	47.2	59.1	70.9
Bite length (A) [ft]										
Wall thickness [inch]	63,934	68,343	68,343	72,753	74,957	70,548	74,957	79,366	85,980	88,185
Weight [lbs]										

## LSC 8-18 L

	9.2					10.5				
	31.5	39.4	47.2	59.1	70.9	31.5	39.4	47.2	59.1	70.9
Bite length (A) [ft]										
Wall thickness [inch]	72,753	77,162	81,571	88,185	90,390	83,776	88,185	90,390	99,208	101,413
Weight [lbs]										

The given values are guidelines and can vary with the final configuration of the machine.

# Technical description

<b>Carrier machine HS 8130.1</b>		<b>8005.01.03</b>
Machine according to EN 474-12		
Engine power	Liebherr V8 Stage V / Tier 4f	570 kW
Diesel tank capacity		203 gal + 132 gal = 335 gal
Hydraulic oil tank capacity		309 gal
Hoist winch 1 cutter		78,683 lbf (free-fall winch)
Hoist winch 2	option	78,683 lbf (free-fall winch)
Rope diameter		36 mm
Usable rope capacity	per winch	761.2 ft

<b>Hose drum system DS</b>		
Max. working depth		263 ft / 361 ft / 394 ft*
Cutter turning device	continuous, hydraulic	-50° to +95°
Energy chain		65.6 ft sections
Cuttings discharge line		131.2 ft sections

<b>Slurry wall cutter LSC 8-18</b>		
Length of cutter body (C / L)	with / without intermediate section	26.2 ft / 39.4 ft
Bite length		9.2 ft, 10.5 ft
Wall thickness		31.5, 39.4, 47.2, 59.1, 70.9 inch
Flap control (option)	5.9" lift	12 pcs. (with position indicator)
Max. capacity of cuttings discharge pump	152 mm (6")	see head curve (page 9)
Torque of cutter wheel drive		81,132 lbf-ft
Rotational speed of cutter wheel drive	continuous	0-28.5 rpm
Min. depth of initial excavation		9.8 ft

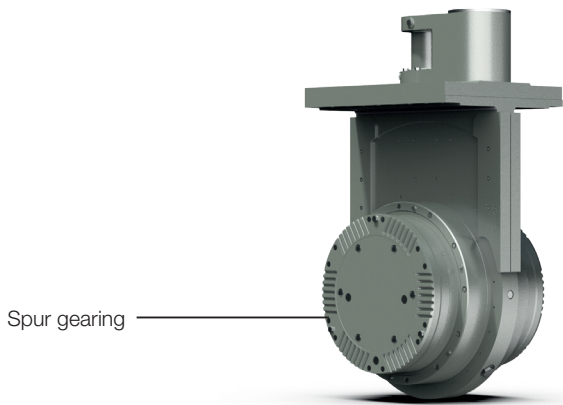
<b>Liebherr slurry wall cutter package (LSC 8-18 1500x2800)</b>	
Operating weight (carrier machine + hose drum system + cutter)	approx. 418,878 lbs
Operating weight (carrier machine + hose drum system without cutter)	approx. 330,693 lbs
Ground pressure of standard undercarriage with cutter	24.18 PSI

\* with optional crowd winch

The given values are guidelines and can vary with the final configuration of the machine.

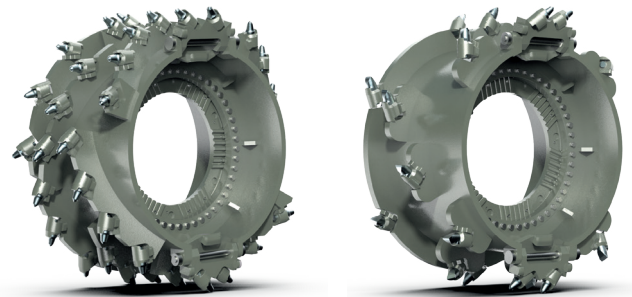


# Cutter wheel drive and cutter wheel



## Cutter wheel drive:

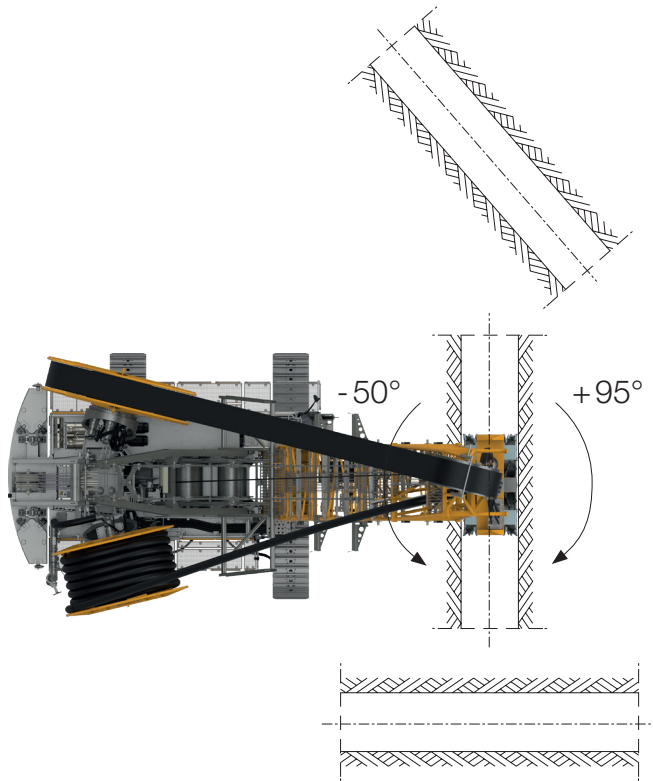
- High torque for toughest applications (81,132 lbf-ft each)
- Focus on max. service life of the gearbox
- Innovative, redundant sealing system
- Gearbox with optimized temperature control for toughest assignments
- Innovative hydraulic system protects the drive from overrevving when loads break away
- Quick assembly and disassembly of the cutter wheel drive
- Degree of utilization and gear oil temperature are monitored in real time
- Thus unforeseen downtime can be reduced and the service life significantly increased



## Cutter wheels:

- Large variety of cutter wheels available for the most diverse ground conditions
- Cutting the space between the cutter wheels ensured by folding teeth
- Innovative form lock (spur gearing) ensures quick and easy exchange of the cutter wheel set
- Soils up to an uniaxial compressive strength of 120 MPa can be cut

# Turning device

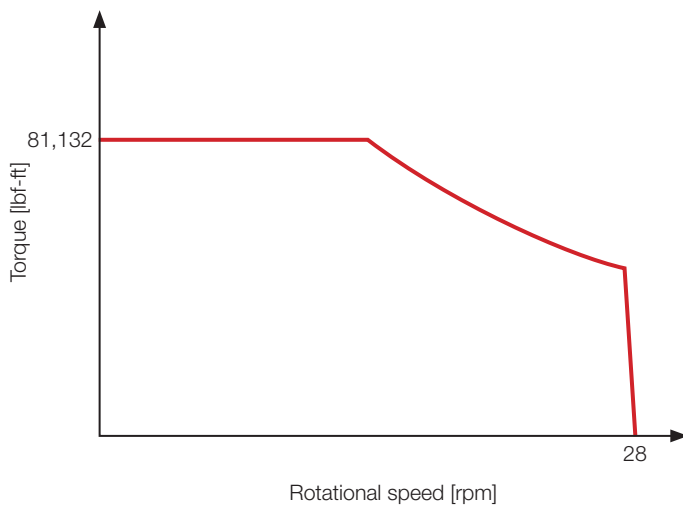


## Turning device:

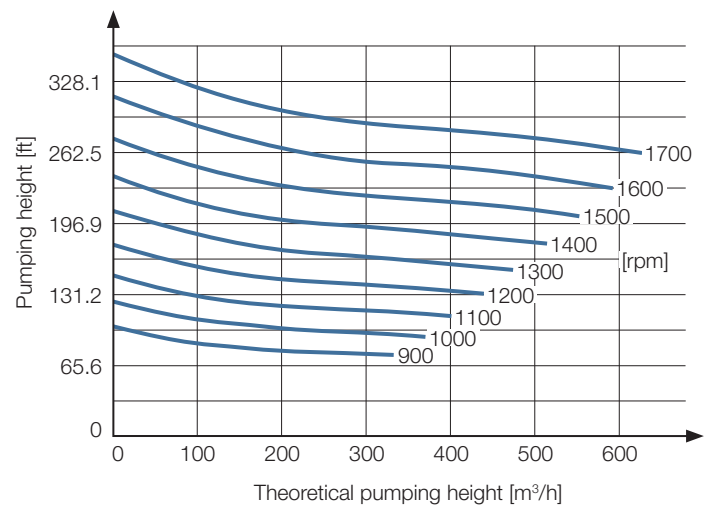
- Continuous hydraulic turning of the cutter from the operator's cab
- All working positions can be served
- Turning through hydraulic cylinders in the cutter frame
- Turning angle  $-50^\circ / +95^\circ$
- Roller bearing lubricated by the central lubrication system – low maintenance

# Head curves

Cutter wheel drive

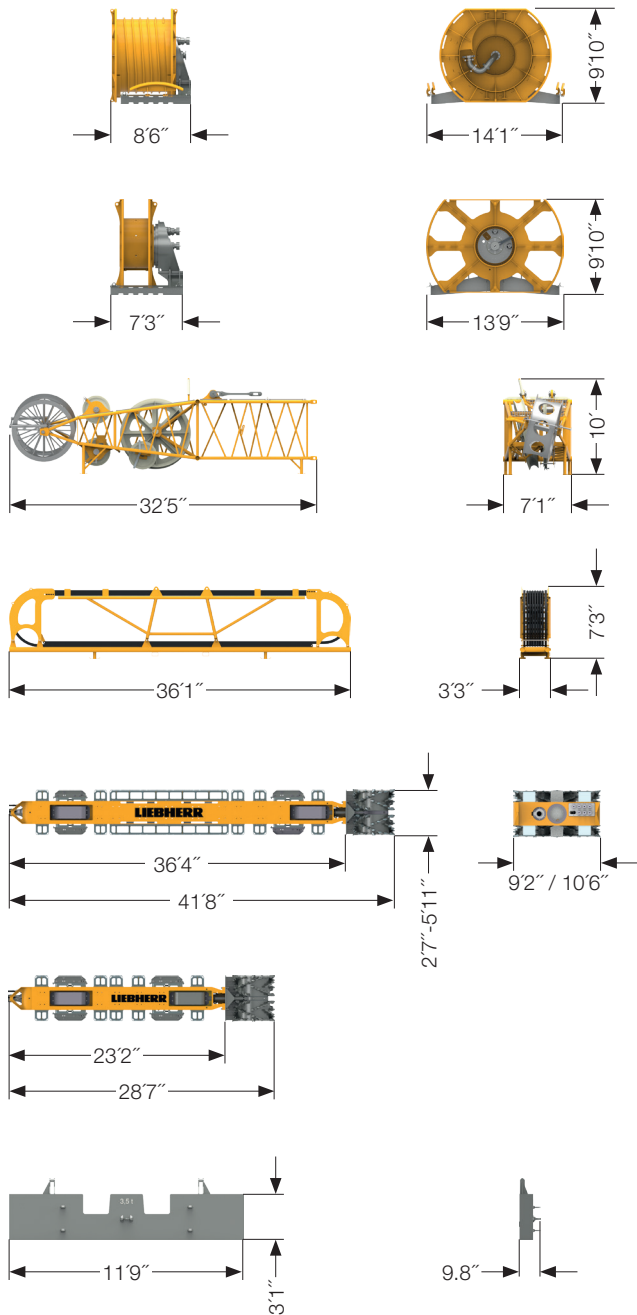


Cuttings discharge pump



# Transport dimensions and weights

Components for slurry wall cutter LSC 8-18



## Cuttings hose drum

Weight 18,739 lbs

## Drum for energy chain

Weight 16,976 lbs

## Boom head

Weight 7,716 lbs

## Transport frame for energy chain

Weight incl. 2 chains 11,023 lbs

## Slurry wall cutter LSC 8-18

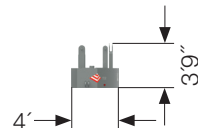
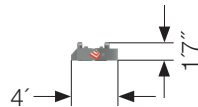
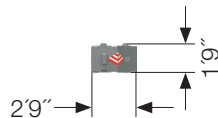
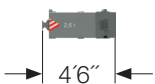
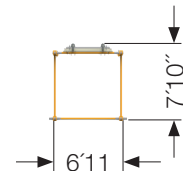
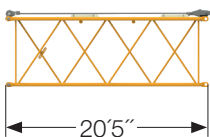
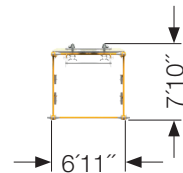
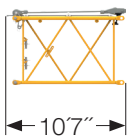
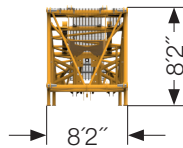
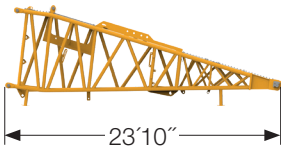
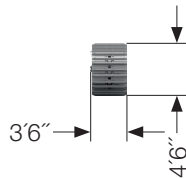
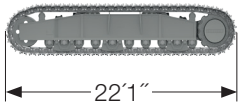
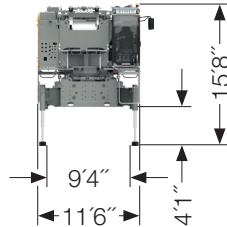
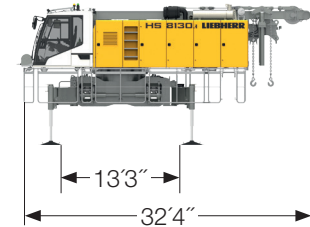
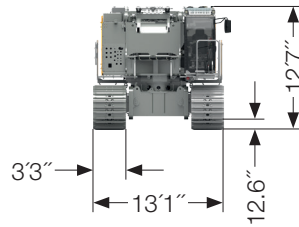
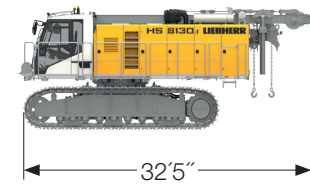
Weights see page 6

## Carbody counterweight

Weight 7,716 lbs **2x**



# Carrier machine HS 8130.1



## Basic machine

with HD undercarriage, A-frame, 2x 78,683lbf winches and self-assembly system for basic counterweight, without boom foot and basic counterweight – fully tanked and ready for operation

Width	13.1 ft
Weight without hoist ropes	171,961 lbs
Weight of hoist ropes (2x 295.3ft)	4.34 lbs/ft

## Basic machine

with A-frame, 2x 78,683lbf winches and self-assembly system, without boom foot, basic counterweight and crawlers – fully tanked and ready for operation

Width	11.5 ft
Weight without hoist ropes	112,436 lbs
Weight of hoist ropes (2x 295.3ft)	4.34 lbs/ft

## Crawler

**2x**

Weight	32,849 lbs
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## Boom foot (No.2018.33)

Weight	7,088 lbs
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## Boom section 3m (No.2018.33)

Weight	1,653 lbs
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## Boom section 6m (No.2018.33)

Weight	2,712 lbs
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## Counterweight slab

**4x**

Weight	5,908 lbs
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## Counterweight slab

**1x**

Weight	13,889 lbs
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## Counterweight slab

**1x**

Weight	26,455 lbs
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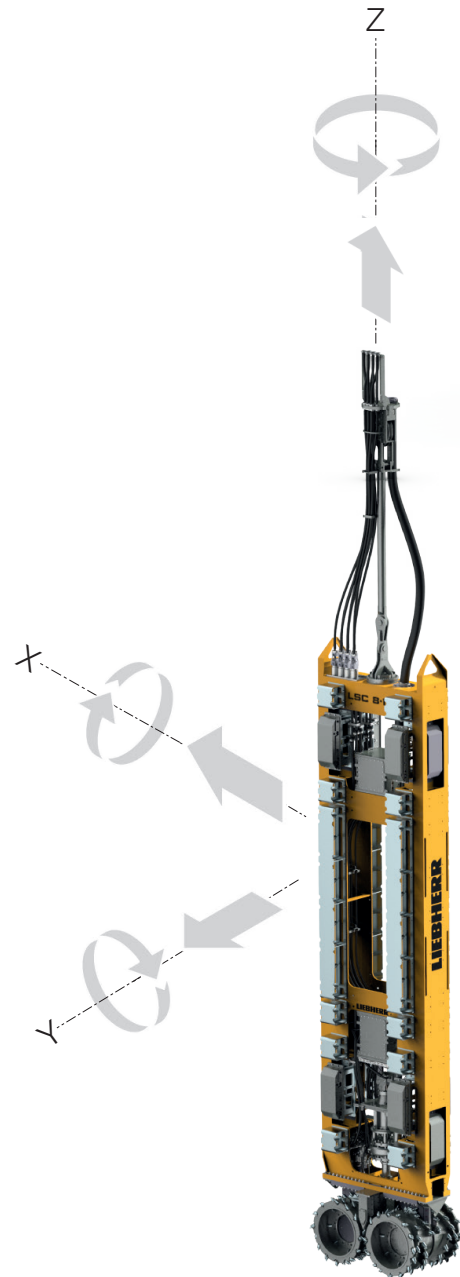
# Verticality Assistant

for slurry wall cutters (PDE, LiDAT, PDR2 )

The Liebherr Verticality Assistant for slurry wall cutters is fully integrated in the Liebherr machine's control system for monitoring and recording the slurry wall cutting 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
- Real time support for the cutting process through cable data transfer from the cutter to the operator's cab
- Recording of the process, productivity and operating data as well as the relevant machine and application parameters
- Mobile data transfer via the telematics system (LiDAT) to the reporting software in the office (PDR2)
- Transparent display of the inclination values during cutting
- Optional gradual measurement of the slurry wall to calculate conclusive deviation values (subject to the process specifications)
- Optimum support for the machine operator through an innovative, graphic control system in order to carry out successful measurements
- Automatic limitation of the cutter's hoisting gear speed for optimum measuring conditions
- Position of the steering flaps is displayed and recorded throughout the whole process
- Simple guidelines for calibrating the verticality measuring system.

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



X – deviation along the X axis

Y – deviation along the Y axis

Z – rotation around Z axis

 – inclination / turning

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