EN

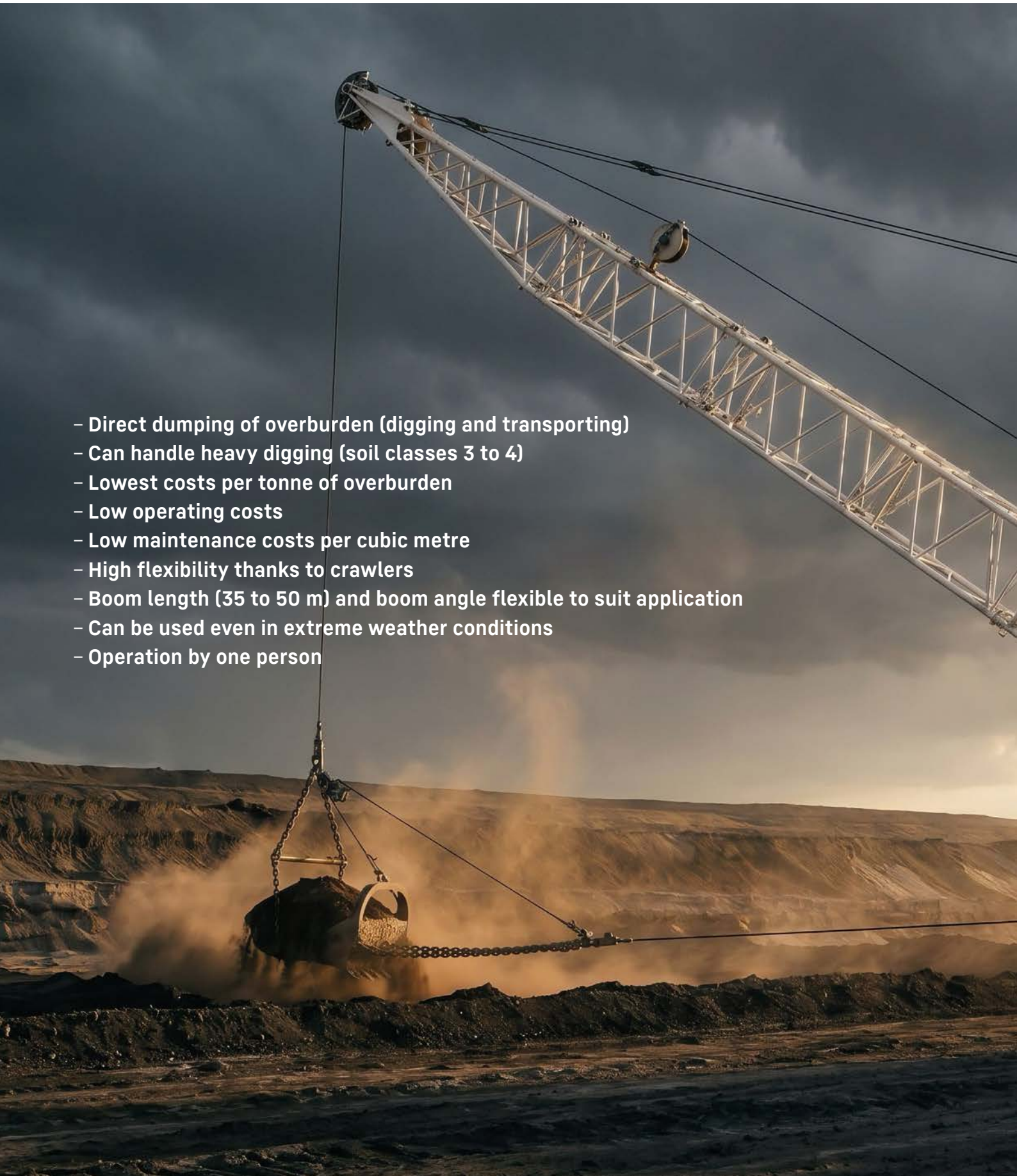
LMD 1200

8608.02.03
Evolution of duty cycle machines
optimised for quarrying and mining

LIEBHERR

Mining dragline

Advantages



- Direct dumping of overburden (digging and transporting)
- Can handle heavy digging (soil classes 3 to 4)
- Lowest costs per tonne of overburden
- Low operating costs
- Low maintenance costs per cubic metre
- High flexibility thanks to crawlers
- Boom length (35 to 50 m) and boom angle flexible to suit application
- Can be used even in extreme weather conditions
- Operation by one person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Basic applications

Wet mining

The term wet mining refers to the extraction of raw materials below the groundwater table. Mining draglines are often used for this type of mining. Thanks to the free-fall system, they achieve high casting distances and large digging depths of down to 25 metres.

Dry mining

Mining draglines are also used for dry mining in open-cast mines. The excavated material can be loaded on to trucks or dumpers for transportation or directly dumped, making mining draglines the most economic method of moving material from A to B.

Characteristics

Productivity

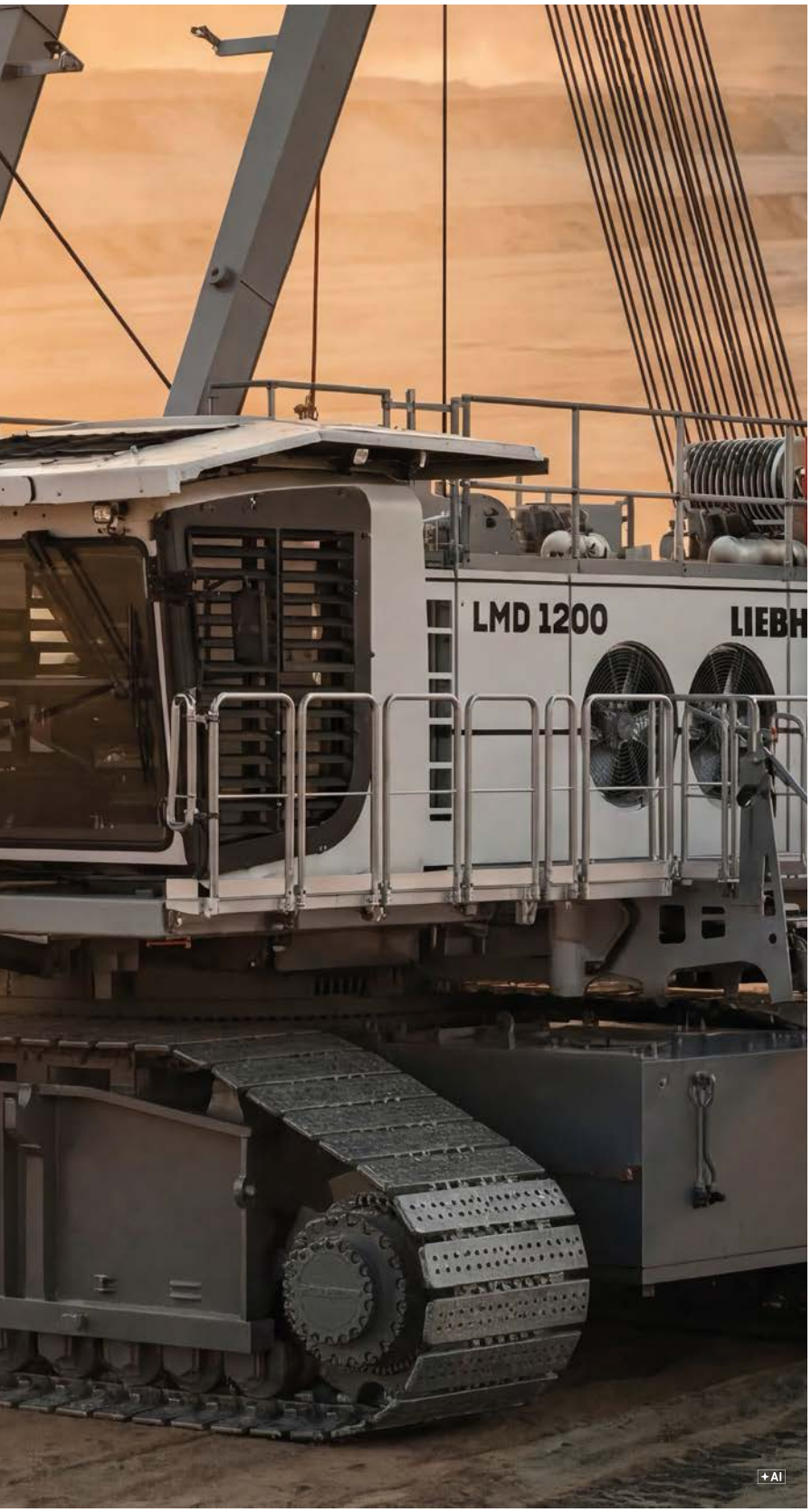
The hydraulically driven winches allow the rope speed to be adjusted as required to suit different soil and material conditions. This ensures even and optimum filling of the dragline. Combined with powerful swing gears, this results in higher handling speeds and shorter working cycles.

Efficiency

Thanks to the specially developed hydraulic components, the drive train is optimally designed and functionally harmonised. The harmonised combination of engine power and reduced hydraulic pressure enables efficient operation with both low fuel consumption and high handling capacity. The diesel engine is predominantly operated in the optimum speed range.

Availability

A high number of components and innovative solutions from Liebherr reduce wear and downtime to a minimum. The robust steel construction contributes significantly to a long service life of the machine.



Customer service

The global service network ensures fast response times, while the logistics centres offer a high level of parts availability. With the Reman programme, attractive alternatives can also be offered, for example, in terms of price or delivery time.
The service and operating experience gained is continuously incorporated into the further development of the components.

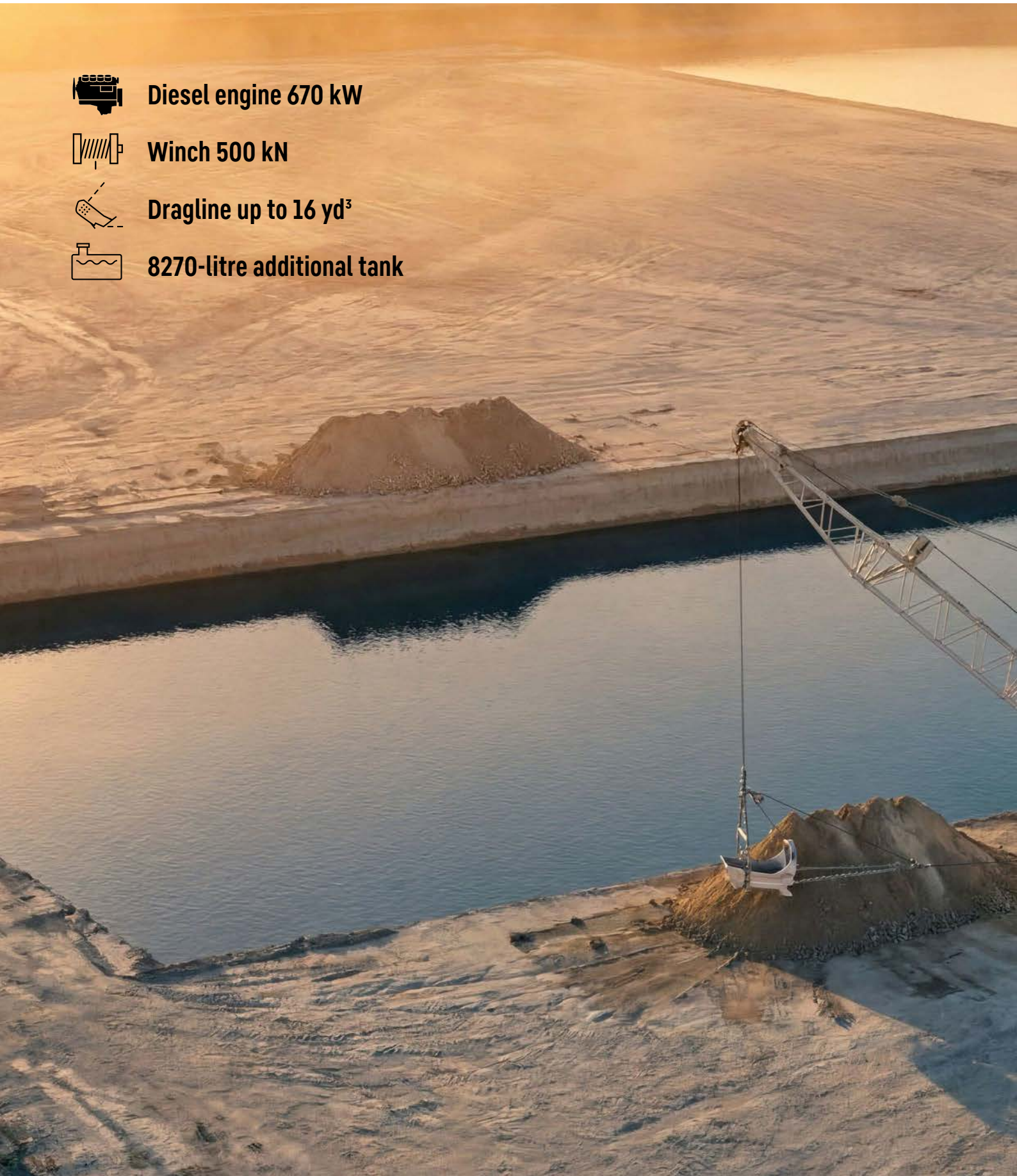
Safety

Sophisticated safety systems significantly contribute to the avoidance of injuries and/or damage by protecting operator and machine during tough assignments, and technicians during assembly and service work.

Environment

The diesel engines are also designed and built by Liebherr. They impress with low fuel consumption combined with high performance. Liebherr diesel engines are equipped with the latest exhaust gas treatment technology.

Productivity



- Diesel engine 670 kW
- Winch 500 kN
- Dragline up to 16 yd^3
- 8270-litre additional tank

Efficiency

Interlock

The dragline interlock, a standard piece of equipment for this type of application, connects the two working winches with each other via the hydraulic motors and the motor-pump unit when the filled dragline is emptied. The braking energy of the drag winch, which is lost in conventional operation, is fed to the hoisting winch.

- Recovery of energy from the lifting process of the dragline
- Harmonisation of the working cycles
- Saving on fuel costs
- Protection of the free-fall brakes
- Increased operating comfort

Closed winch circuit

The hydraulic motors of the various drives work in a closed circuit. This means less energy is required per cycle, so significantly reducing fuel consumption.

Pressure reduction in the hydraulics

Reducing the pressure in the hydraulic drive train also reduces the load on the components and thus extends their service life.

Rope service life

The fairlead consists of a pivoting roller head with rope pulleys and guide rollers as well as the bearing and an automatic positioning unit.
– Wear-reducing spooling of the drag rope onto the rope drum
– Increased service life of the drag rope

The large rope diameter and standard grooving instead of special grooving also extend the service life of the ropes.

Lubrication

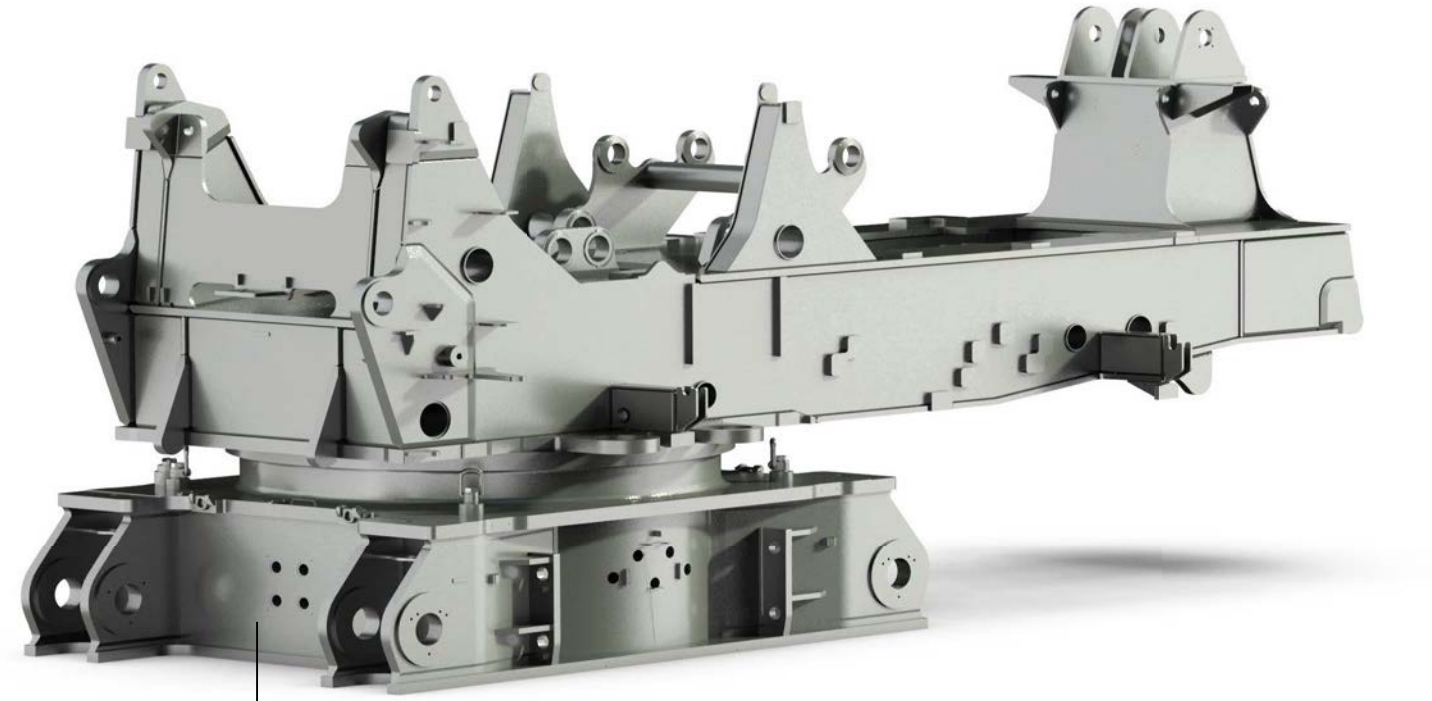
– Central lubrication of all service points on the uppercarriage relevant for daily maintenance
– Central lubrication swing ring
– Central lubrication variable fairlead

Main winches

Perfectly matched winch system thanks to automatic and continuous adaptation of rope speed. Thus, maximum performance is achieved.

Reliability

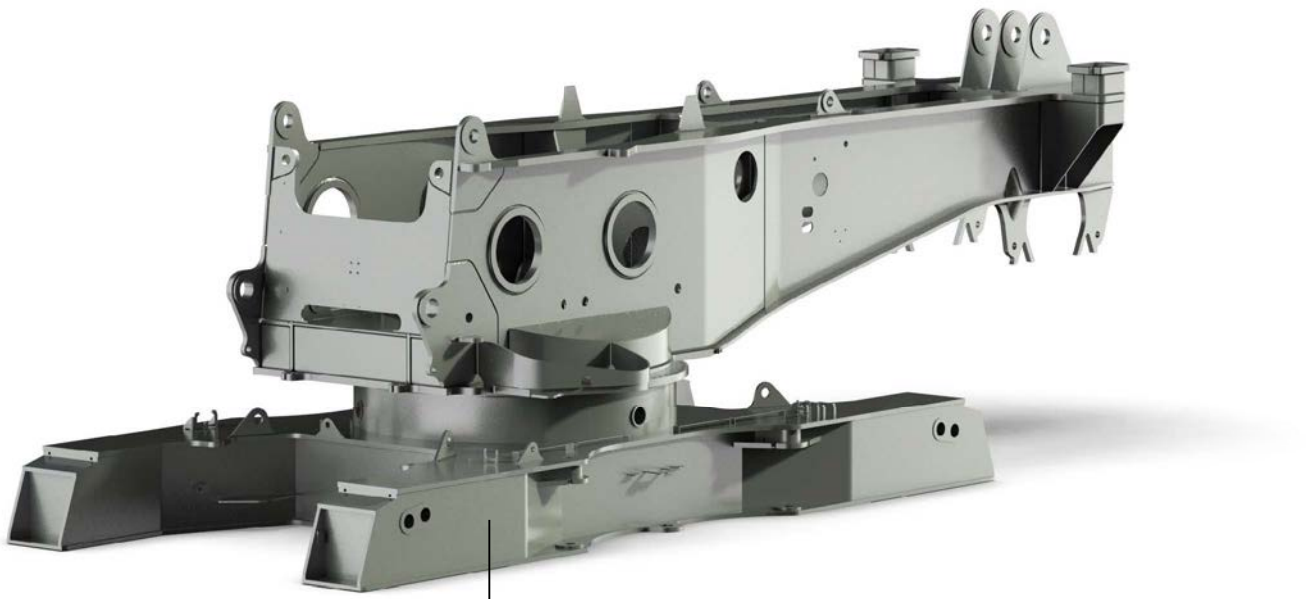
LMD 1200



Focus
- High turnover
- Long service life
- Robustness

Weight of steel structure
77.2 t

Comparable crawler crane



Focus
- High lifting capacity
- Lightweight construction
- Easy to transport

Weight of steel structure
18.4 t

Service

Maximum availability

Global service network
With an extensive global service network, Liebherr ensures fast and reliable support for its customers. Qualified service engineers, efficient logistic processes and high parts availability make a decisive contribution to maximising machine availability.

Technical training
Structured training programmes for maintenance and service staff provide in-depth knowledge in diagnostic, maintenance and repair.

Application training
Practical operator training directly on the machine optimises productivity, operating processes and safety in day-to-day operations. Operating errors and wear are effectively reduced.

Service agreements
CarePacks offer customised service agreements ranging from regular inspections and maintenance up to repairs and much more – all in proven manufacturer quality. They ensure a long service life and minimise machine downtimes.

Remote service
In addition to traditional technical support, XpertAssist offers extended remote service in real-time communication via audio-video connection. Customers benefit from efficient troubleshooting with step-by-step instructions and advice on predictive maintenance. This quick solution for problem-solving ensures maximum machine performance regardless how remote the location.

Service

Parts and efficiency

Liebherr Logistics
A high-performance logistics network with strategically located warehouses worldwide ensures the fast and reliable delivery of parts. Waiting times are minimised through optimised processes and short delivery times.

Parts Assistant
Identify and order maintenance and spare parts quickly and easily, directly via a mobile device. The Parts Assistant helps to find the right components immediately and makes the ordering process as simple as possible.

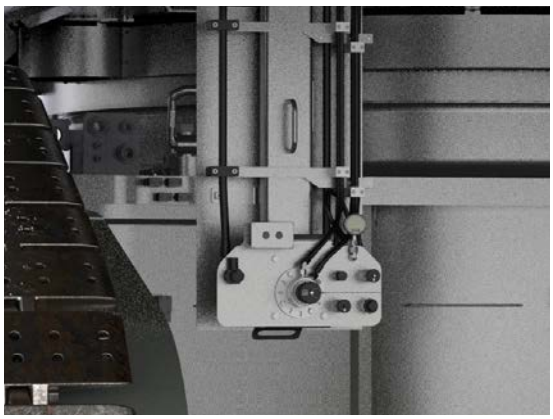
Reman programme
By remanufacturing used components according to defined industry standards, the Reman programme offers economical and sustainable solutions. The three service levels – replacement, general overhaul and repair – represent highest quality.

Parts sets and toolkits
Specially compiled sets support diagnostic, maintenance and repair work directly on site. They ensure rapid availability of the required components and contribute to quick and efficient maintenance.

Tools and parts container
This container ensures that the most frequently used parts are available directly on site at all times. The container has an integrated work-bench for maintenance and repair work.

- Sockets for electrical tools
- Air conditioning for ideal storage conditions
- Sufficient room for comprehensive parts stocks
- Availability of electrical and hydraulic components

Service



Central service station
The service flap is mechanically operated and accessible from the ground. This enables efficient refilling of operating fluids:

- Hydraulic oil
- Engine oil
- Transmission oil
- Lubricants for swing ring bearings and gear teeth

New rope lock
Changing the rope is quick and easy thanks to the new rope lock, so reducing downtimes.

Split sleeves
- Conversion to other rope diameters possible
- Simple conversion to different windings
- Ropes easily exchanged when worn

Example

Gear oil level warning
The new warning allows the operator to check the gear oil levels of both main winches, the swing drive and the luffing winch. This facilitates daily maintenance of the machine.

Gear oil level warning of winch 1 lights up green: Gear oil level of winch 1 is sufficient.

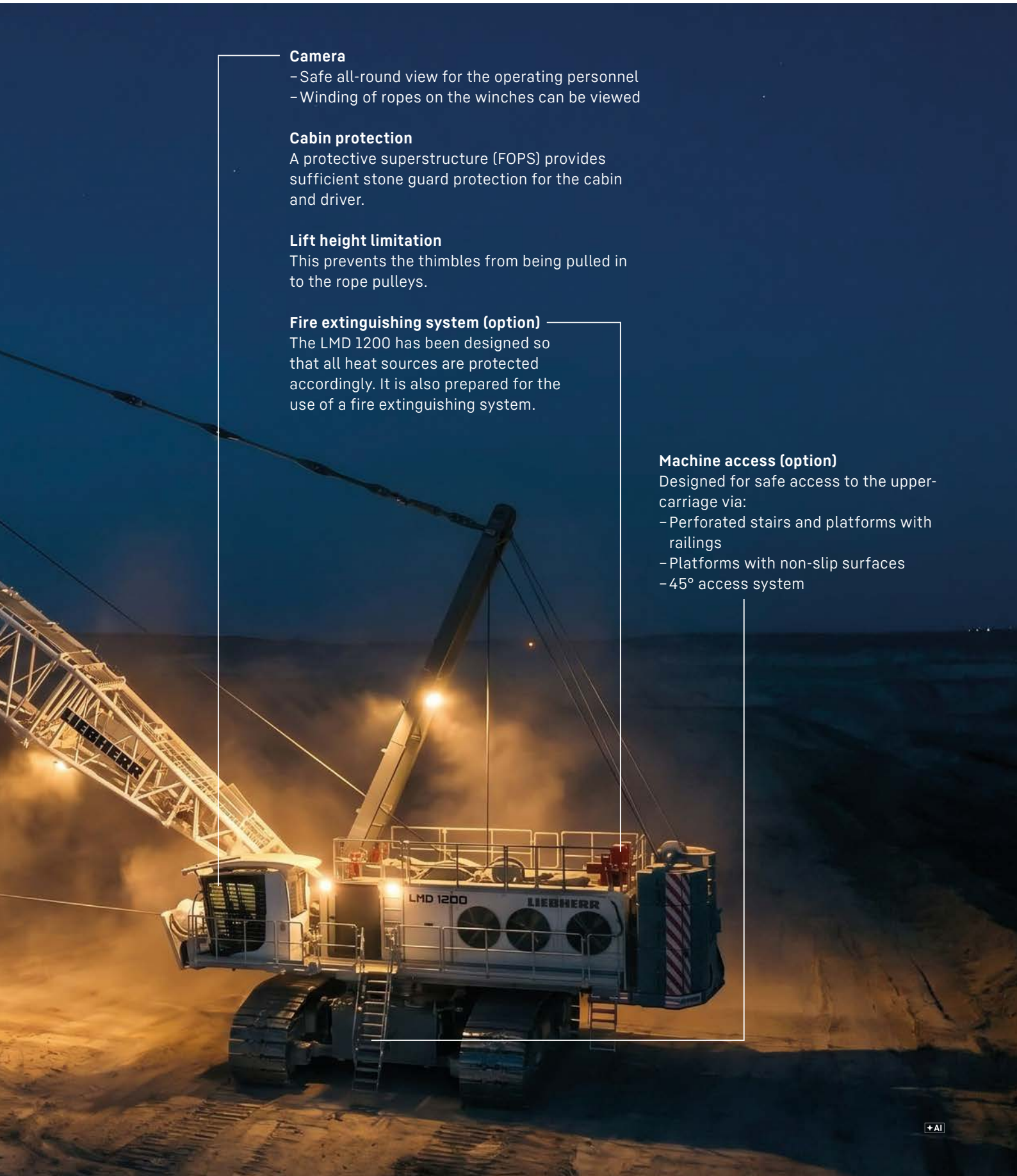
Gear oil level warning of winch 1 lights up yellow after ten seconds: Fill gear oil for winch 1.

Ground pressure visualisation

Safety

Lighting
Optimum illumination of the work area means that 24/7 operation is possible without any problems.

Additional tank
An 8270-litre additional diesel tank enables continuous operation for up to one week.



Camera
– Safe all-round view for the operating personnel
– Winding of ropes on the winches can be viewed

Cabin protection
A protective superstructure (FOPS) provides sufficient stone guard protection for the cabin and driver.

Lift height limitation
This prevents the thimbles from being pulled in to the rope pulleys.

Fire extinguishing system (option)
The LMD 1200 has been designed so that all heat sources are protected accordingly. It is also prepared for the use of a fire extinguishing system.

Machine access (option)
Designed for safe access to the upper-carriage via:
– Perforated stairs and platforms with railings
– Platforms with non-slip surfaces
– 45° access system

+AI

Environmental protection

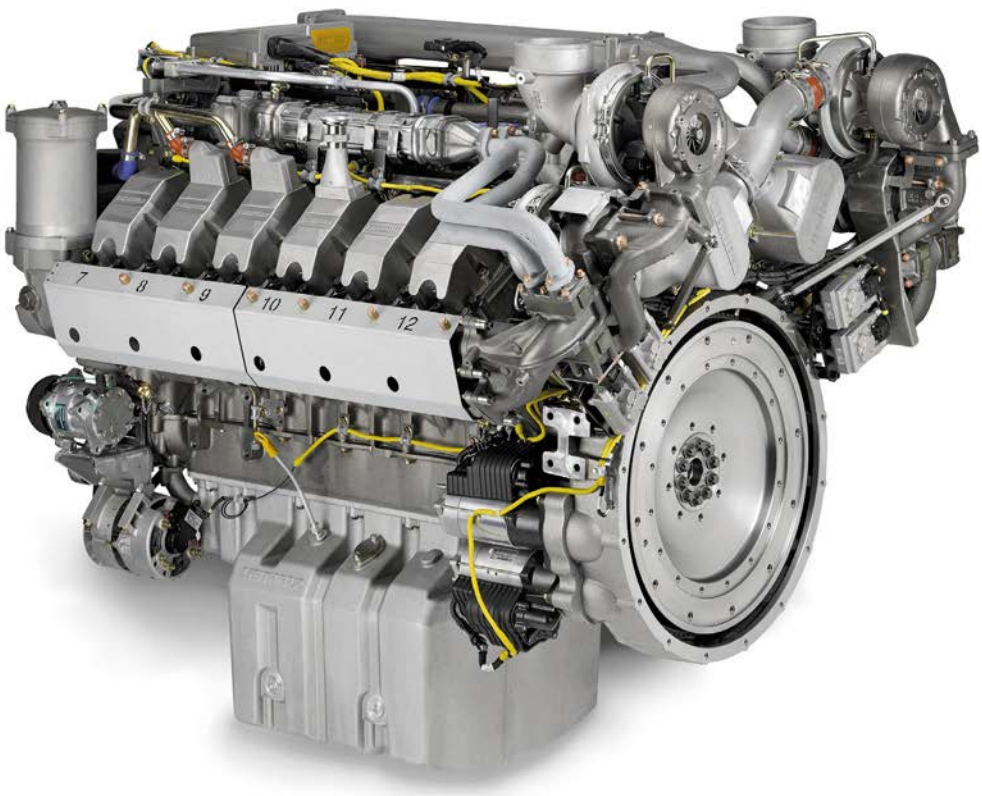
Reduction of noise emission and fuel consumption

The newest drive and control systems help to reduce fuel consumption and emissions, and at the same time increase the reliability and performance of mining draglines.

These are fitted with Liebherr's own diesel engines. The latest generation complies with Stage V/TIER 4f and can be operated with HVO fuel.

HVO ready

Up to 90 % CO_2 emissions reduction



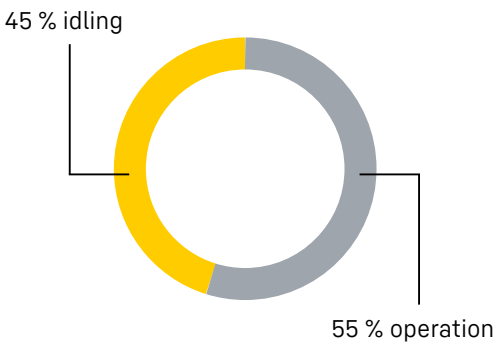
Engine functions for enhanced efficiency

Downsizing of the engine
Thanks to the machine's optimised hydraulic system the size of the primary source can be reduced without negative effects on the turnover. The efficiency is thus significantly increased while the fuel consumption is decreased.

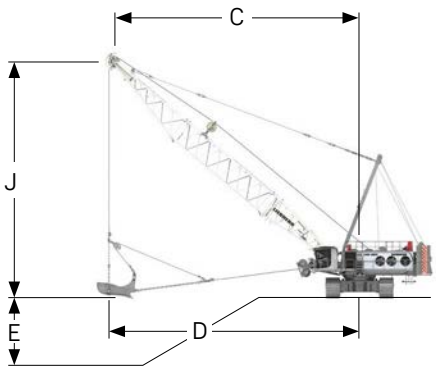
Automatic engine stop control
This control system switches the engine off automatically during longer idling periods, after having checked certain system functions.

Eco-silent mode
With the aid of this feature the engine speed is reduced to a required predefined level.

Lower engine speed while idling
Mining draglines are in idling mode for 45 % of their operating time. With the lowering of the engine speed from 950 to 750 rpm while the machine is in idling mode, up to two litres of fuel can be saved.



Dragline operation



Digging diagram
C = Radius / dumping radius
D = Max. digging radius = approx. C + 1/3 to 1/2 J
E* = Digging depth = approx. 40–50 % of C
J = Height to centre rope pulley boom head

*The digging depths, casting distances and digging radii may vary considerably depending on digging conditions, design of dragline bucket and operator's skill.
Maximum digging depths are attainable under ideal conditions and cannot be guaranteed.

Capacities in [t]

		Jib length [m]																			
		35										38									
					Material density										Material density						
		C	J		1.4 t/m³		1.5 t/m³		1.6 t/m³			C	J		1.4 t/m³		1.5 t/m³		1.6 t/m³		
		[m]	[m]	[t]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]		[m]	[m]	[t]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	
alpha [°]	45	27.0	29.1	**47.4**	16*	16**	16*	16**	16*	16**		29.1	31.3	**42.5**	16*	16**	16*	16**	16*	16**	
	40	29.1	27.0	**42.6**	16*	16**	16*	16**	16*	16**		31.4	28.9	**38.2**	16*	16**	16*	16**	14*	16**	
	35	31.0	24.6	**39.0**	16*	16**	16*	16**	14*	16**		33.5	26.3	**34.8**	14*	16**	14*	16**	14*	16**	
	30	32.7	22.1	**36.0**	14*	16**	14*	16**	14*	16**		35.3	23.6	**32.1**	12*	16**	12*	16**	12*	16**	

Capacities in [t]

		Jib length [m]																			
		41										44									
					Material density										Material density						
		C	J		1.4 t/m³		1.5 t/m³		1.6 t/m³			C	J		1.4 t/m³		1.5 t/m³		1.6 t/m³		
		[m]	[m]	[t]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]		[m]	[m]	[t]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	
alpha [°]	45	31.2	33.4	**38.2**	16*	16**	16*	16**	14*	16**		33.3	35.5	**34.6**	14*	16**	14*	16**	12*	16**	
	40	33.7	30.9	**34.1**	14*	16**	14*	16**	12*	16**		36.0	32.7	**30.9**	12*	16**	12*	16**	12*	14**	
	35	35.9	28.1	**31.0**	12*	16**	12*	16**	12*	14**		38.4	29.8	**28.0**	12*	14**	10*	14**	10*	14**	
	30	37.9	25.1	**28.5**	12*	14**	10*	14**	10*	14**		40.5	26.6	**25.7**	10*	12**	10*	12**	10*	12**	

Capacities in [t]

		Jib length [m]																			
		47										50									
					Material density										Material density						
		C	J		1.4 t/m³		1.5 t/m³		1.6 t/m³			C	J		1.4 t/m³		1.5 t/m³		1.6 t/m³		
		[m]	[m]	[t]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]		[m]	[m]	[t]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	[yd³]	
alpha [°]	45	35.4	37.7	**31.2**	12*	16**	12*	16**	12*	14**		37.6	39.7	**28.3**	12*	14**	10*	14**	10*	14**	
	40	38.3	34.7	**27.8**	12*	14**	10*	14**	10*	14**		40.6	36.6	**25.0**	10*	12**	10*	12**	10*	12**	
	35	40.8	31.5	**25.1**	10*	12**	10*	12**	10*	12**		43.3	33.2	**22.5**	8*	12**	8*	10**	8*	10**	
	30	43.1	28.1	**22.9**	8*	12**	8*	10**	8*	10**		45.7	29.6	**20.5**	8*	10**	8*	10**	8*	10**	

TLT 14173185 Vorab 49. Stability calculated according to EN 474-12. Max. capacities do not exceed 75 % of tipping load.
Above capacities are for reference only and are not programmed in the load moment limitation system.
The size of the bucket has to be determined according to local conditions.

*Dry mining
**Wet mining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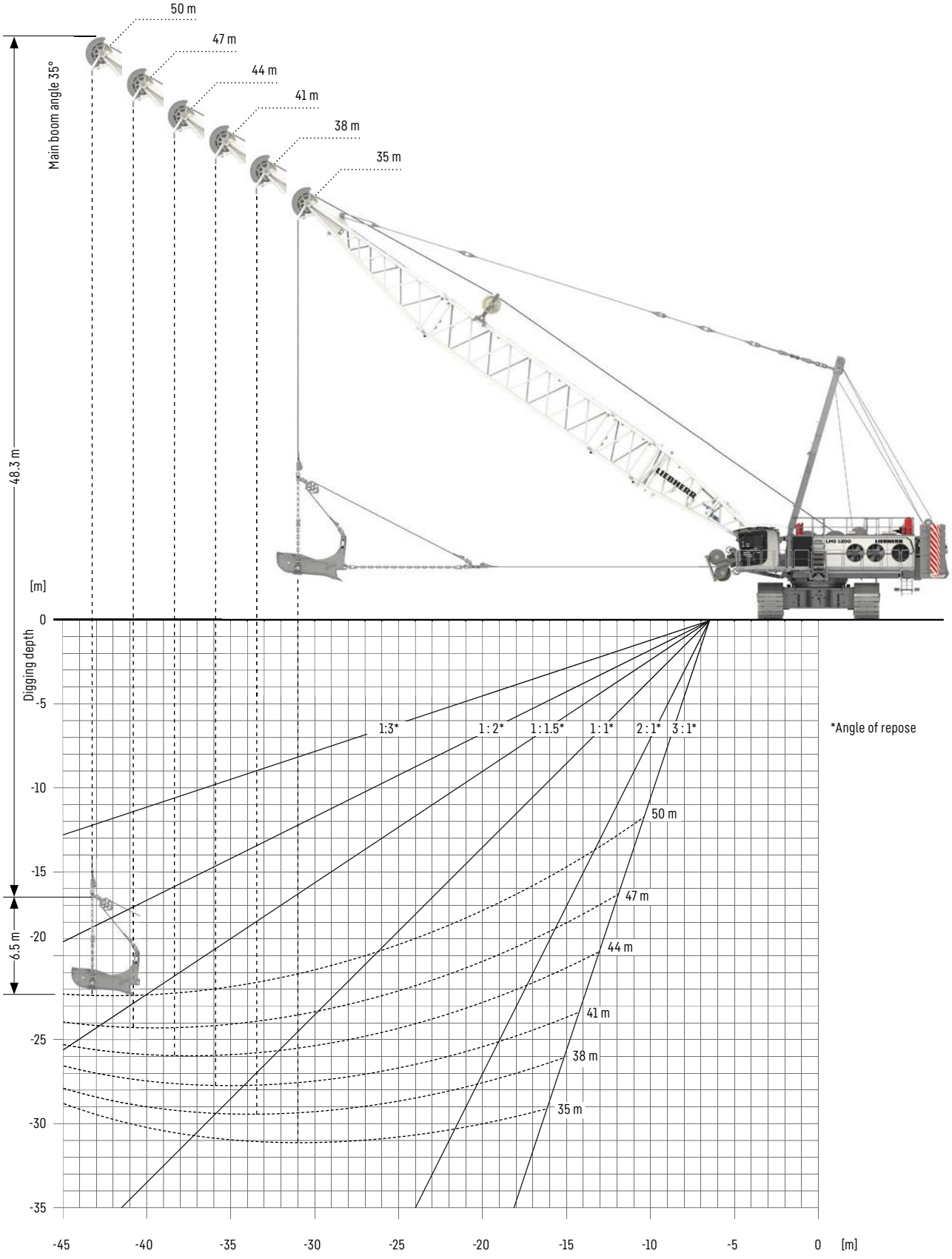
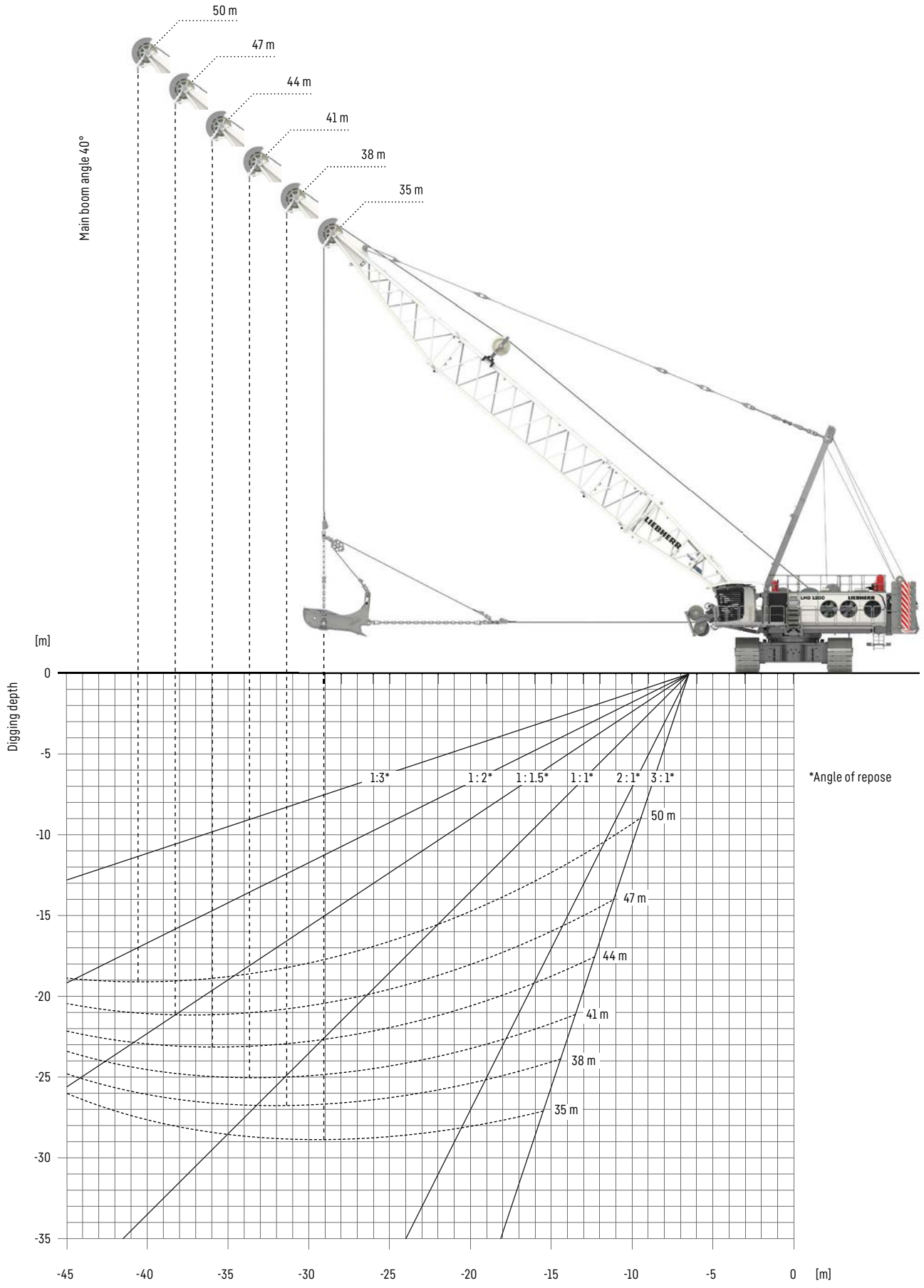
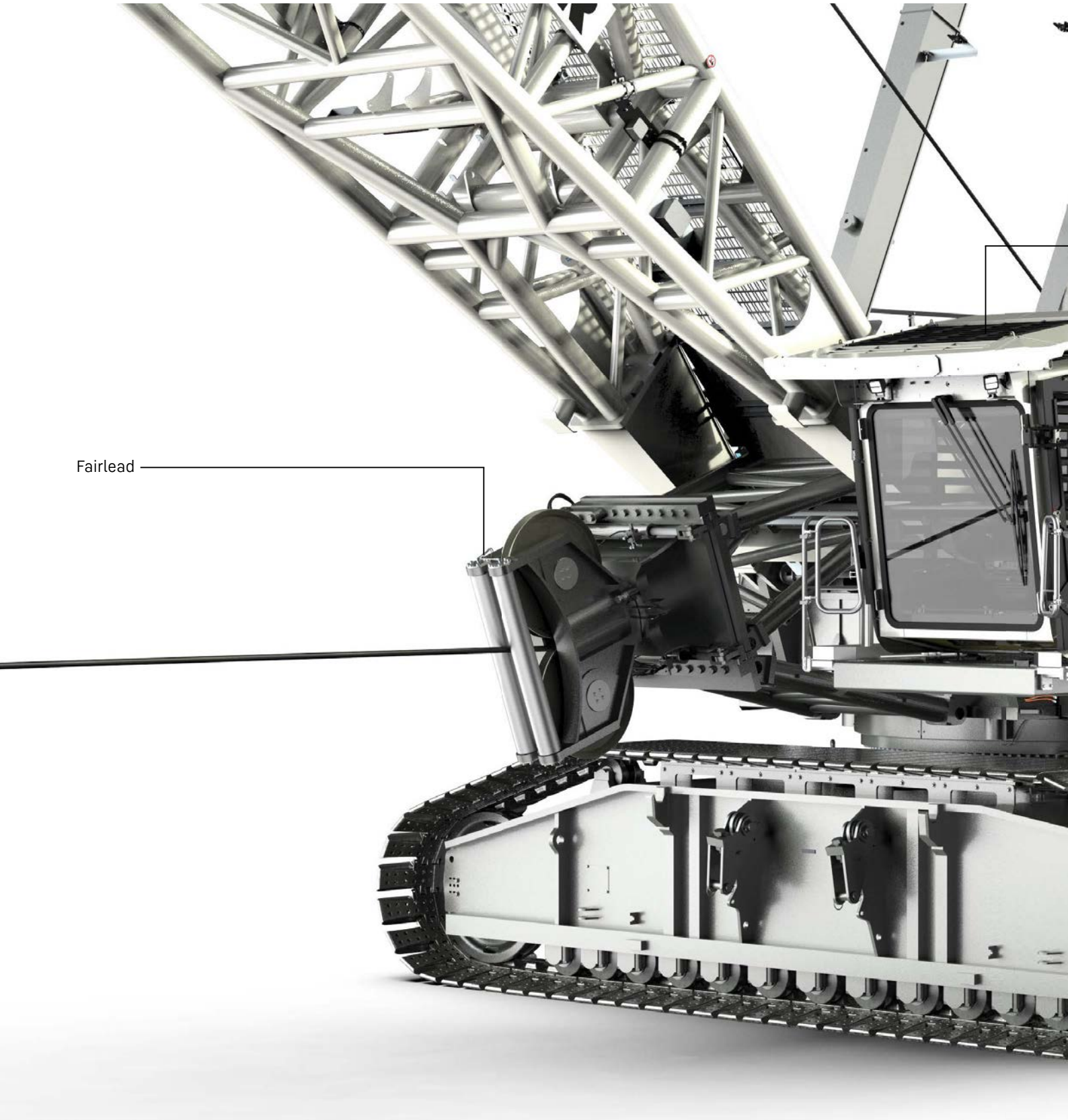
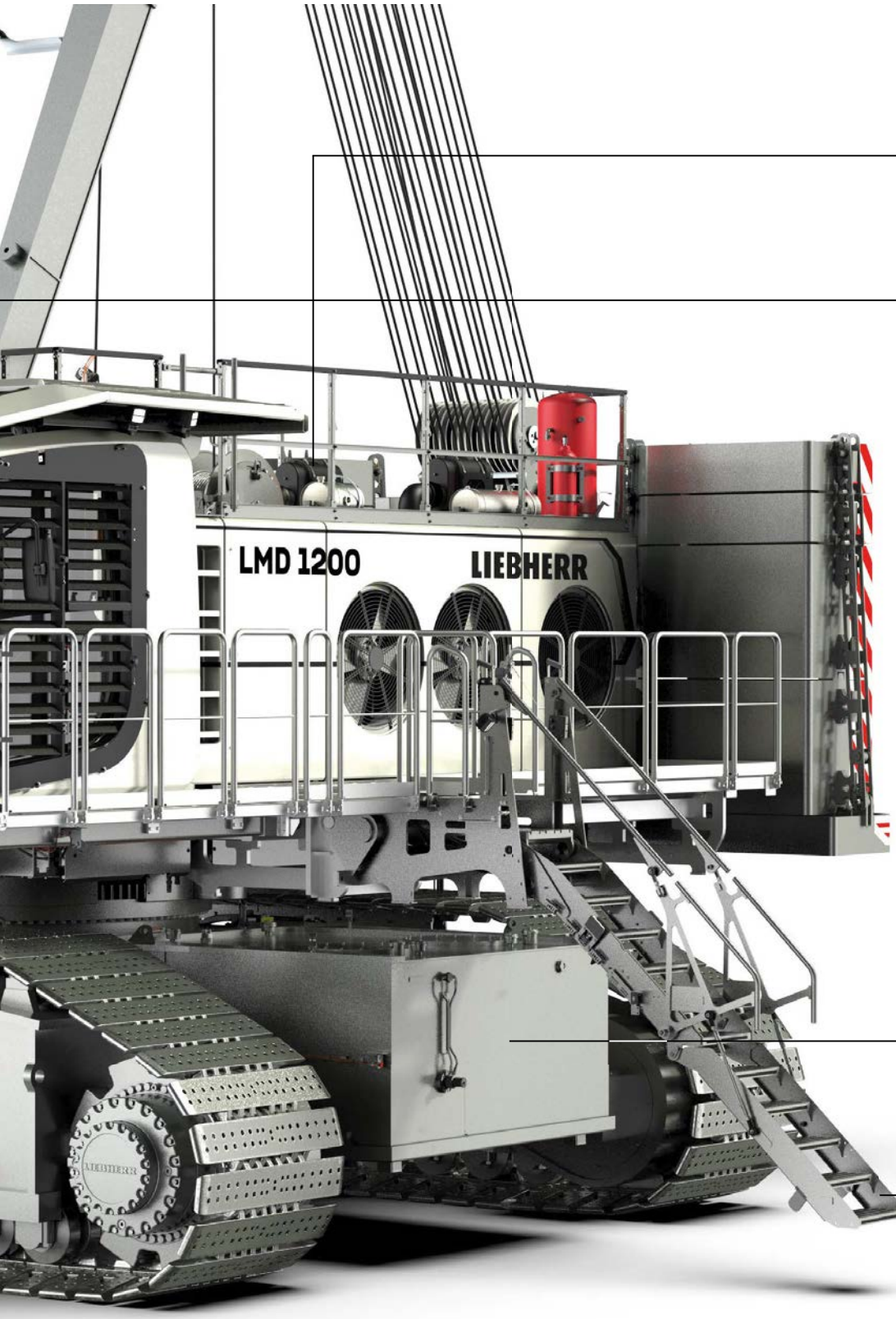
Planning aid (boom head for dragline operation)




50 m
47 m
44 m
41 m
38 m
35 m
Main boom angle 40°
[m]
0
-5
-10
-15
-20
-25
-30
-35
Digging depth
-45
-40
-35
-30
-25
-20
-15
-10
-5
0
[m]
1:3*
1:2*
1:1.5*
1:1*
2:1*
3:1*
50 m
47 m
44 m
41 m
38 m
35 m
*Angle of repose

Concept and characteristics





Air filter easily accessible

Sun protection

8270-litre additional diesel tank ideal for 24/7 operation

Hydraulically foldable steps for easy and safe access

Cabin

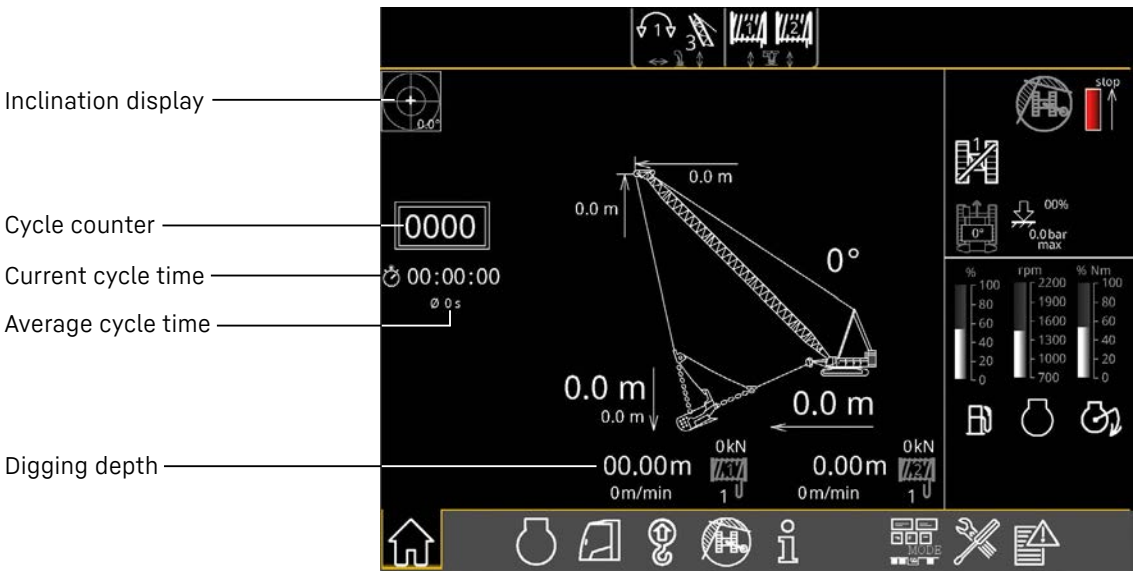
Operator comfort

Sun protection and the powerful air conditioning system ensure a comfortable working climate.

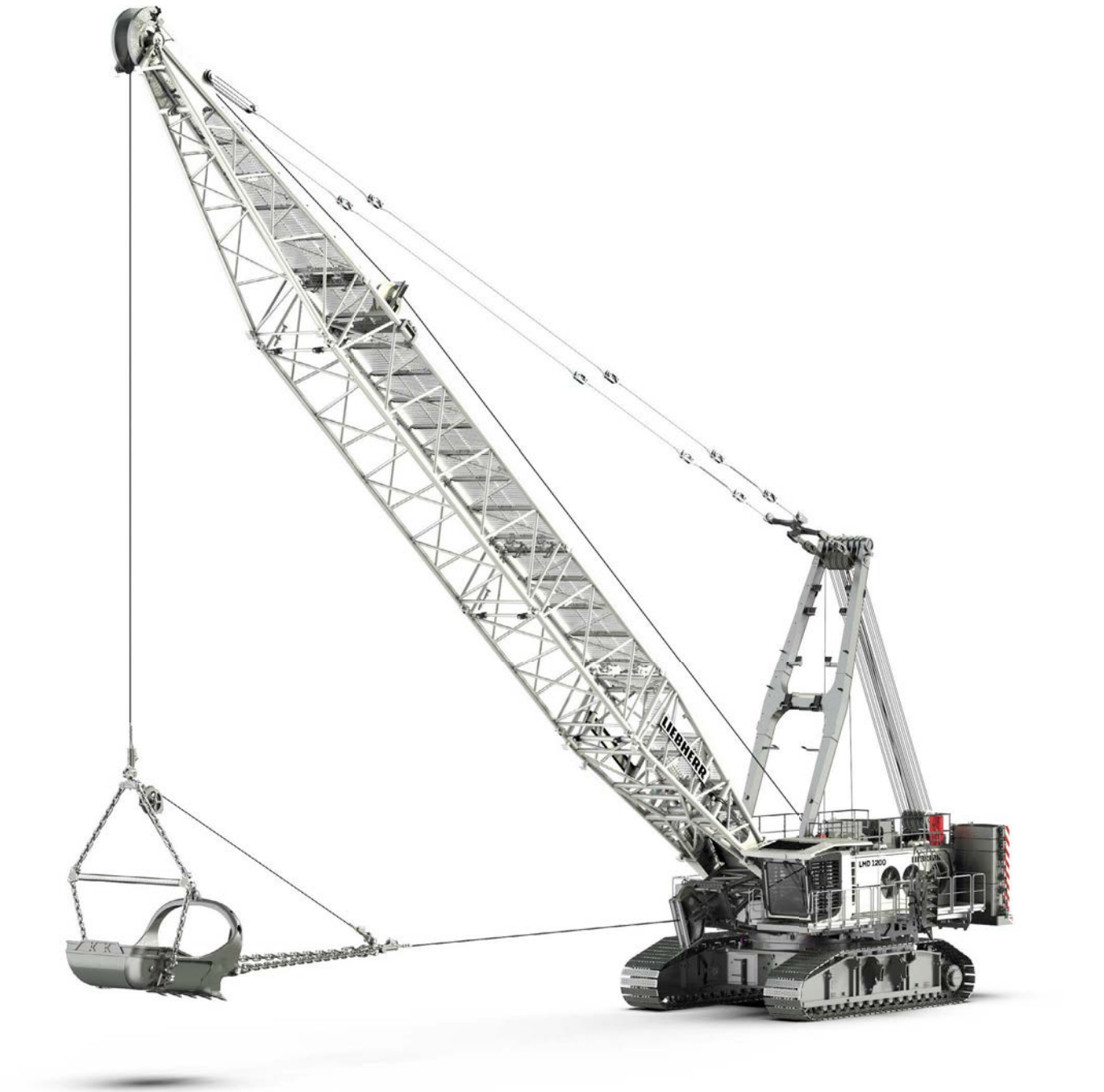
Cameras provide a safe all-round view and at the same time allow the observation of the ropes winding on the winches.

Electric pedals, ergonomically designed control levers, an orthopaedic driver's seat and the excellent overview of the working area from the spacious cabin make working extremely comfortable.

Comfort-focused cabin design
- Toned, laminated safety glass
- Improved soundproofing
- Orthopaedic seat, heatable, coolable and ventilated
- Individually adjustable monitors
- Integrated cool box (option)
- Charger for mobile devices
- Heated outside mirror
- Heavy-duty sun blinds
- Instructor/training seat
- Sun protection (option)



Technical description



Ground pressure

Ground pressure	1.52 kg/cm²

Operating weight

Composition of operating weight	basic machine with HD undercarriage, 2 main winches 500 kN including wire ropes, 20 m main boom, consisting of A-frame, boom foot (10 m) and boom head (10 m), 98.6 t rear counterweight, flat track pads (width 1500 mm)
Total weight	approx. 360 t

Equipment

Main boom (2724.32)	max. 50 m

Diesel engine

Power rating according to ISO 9249	670 kW (911 hp) at 1700 rpm
Engine type	Liebherr D 9512 A7-04
Fuel tank capacity	790 l with continuous level indicator and reserve warning in the uppercarriage Additional tank: 8270 l on the undercarriage (option) – automatic refuelling in the uppercarriage
DEF tank capacity	865 l with continuous level indicator and reserve warning
Exhaust certification	EPA/CARB Tier 4f and EU 2016/1628 Stage V

Noise measurement data and vibration

Noise emission	according to 2000/14/EC directive	
Emission sound pressure level L_{PA}	60 dB(A)	(in the cabin)
Guaranteed sound power level L_{WA}	110 dB(A)	(of the machine)

Hydraulic system

Hydraulic pumps	variable pumps in closed and open circuits supplying oil only when needed (flow control on demand)
Hydraulic oil tank capacity	1100 l
Max. working pressure	350 bar

Control

Control	includes all control and monitoring functions, designed to withstand extreme environmental conditions and heavy duty construction tasks
Display	high resolution monitor in the operator's cabin, clear display of complete machine operating data, warnings and failure indications in the required language
Operation	several movements can be performed simultaneously thanks to electro-hydraulic proportional control, all categories of loads can be positioned with utmost precision

Crawlers

Drive system	with fixed axial piston hydraulic motors	
Crawler side frames	maintenance-free, with hydraulic chain tensioning device	
Brake	hydraulically released, spring-loaded multi-disc holding brake	
Drive speed	1st gear	0.36 km/h
	2nd gear	0.70 km/h
	3rd gear	1.40 km/h
Flat track pads	width 1500 mm	

Swing gear

Drive system	4x swing drives (standard) with fixed axial piston hydraulic motors, planetary gearbox, pinion
Swing ring	roller bearing with external teeth
Brake	hydraulically released, spring-loaded multi-disc holding brake
Swing speed	0-3.0 rpm continuously variable, selector for 3 speed ranges to increase swing precision
Lubrication system	automatic central lubrication system reduces maintenance requirements and increases service life
Option	display of swing angle

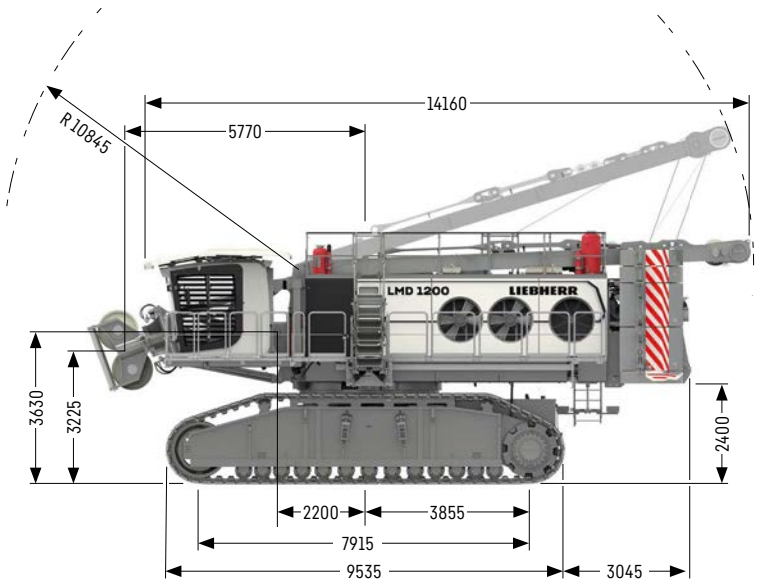
Winches

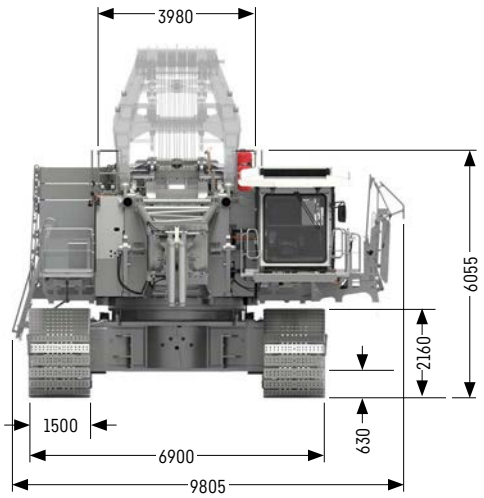
Main winches	pressure controlled, variable flow hydraulic motors for the drag and hoist winches, full utilisation of engine power as the winch speed is automatically adjusted to suit the respective line pull Free fall: clutch and braking functions are provided by the service brake (low wear and maintenance-free multi-disc brake in compact design)		
Winch options	**Standard**	**Free-fall winches 50 t**	
Line pull (nominal load)	500 kN	500 kN	
Rope diameter	50 mm	50 mm	
Drum diameter	1100 mm	1100 mm	
Rope speed	0-110 m/min	0-110 m/min	
Rope capacity in the 1st layer	49.8 m*	49.8 m*	*effective length

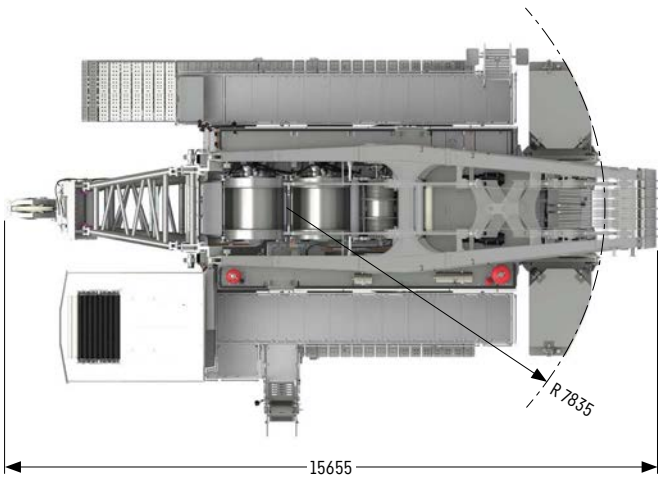
Boom winch

Line pull	150 kN
Rope diameter	24 mm
Boom luffing	15-84° in 130 s

Dimensions





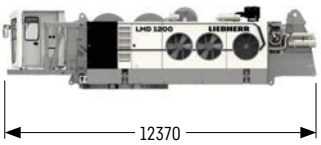


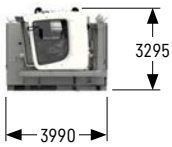
Remarks

- Liebherr cable excavator HS 8608.02.03
- Designed according to EN 474–1 and EN 474–12.
- Machine is standing on firm, horizontal ground.
- For max. wind speed please refer to lift chart in operator's cab or manual.
- Working radii are measured from centre of swing and under load.
- The lifting capacities are valid for 360 degrees of swing.
- The last digits of the given dimensions are rounded to 0 and 5 and may differ from the actual dimensions.
- Weights may vary depending on the delivered configuration of the machine filling level of the tanks as well as generally valid tolerances.
- The figures in this brochure may include options which are not within the standard scope of supply of the machine.

Transport dimensions and weights

Basic machine and main boom (2724.35)

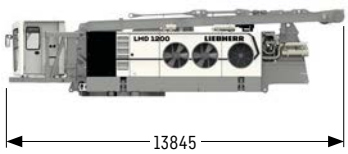


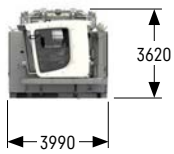


Basic machine

without HD undercarriage, boom, tilting-down supports, A-frame, main winches (2x 687 kN), platforms and counterweights

Weight	kg	72200

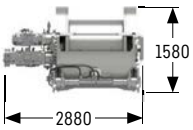


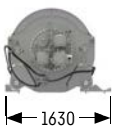


Basic machine

with A-frame, tilting-back supports, main winches (2x 687 kN) without ropes (250 m), without platforms, HD undercarriage and counterweight

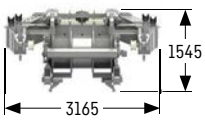
Weight	kg	115500





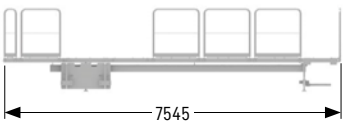
Main winches (2x)

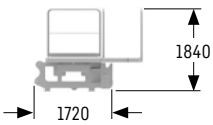
Weight incl. 50 t without rope	kg	12200
Rope 50 mm	kg/m	13.4



A-frame with main winch

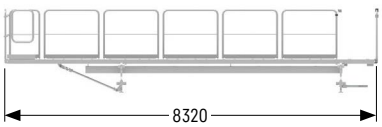
Weight	kg	14700

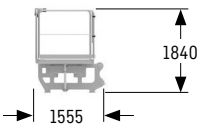




Standard platform (left)

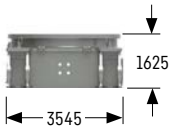
Weight	kg	1600





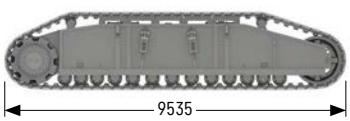
Standard platform (right)

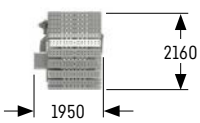
Weight	kg	1400



Undercarriage centre section

Weight	kg	36630

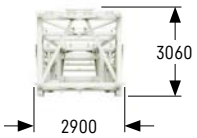




Crawlers

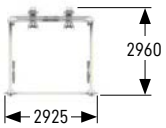
Weight crawlers left (track pads 1500 mm)	kg	48258
Weight crawlers right (track pads 1500 mm)	kg	48258

Dragline equipment



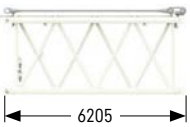
Boom foot (2724.35)

Width	mm	2900
Weight	kg	8580



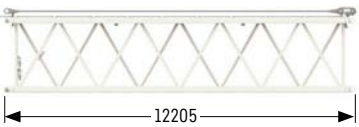
Boom section 3 m (2724.35)

Width	mm	2925
Weight	kg	1830



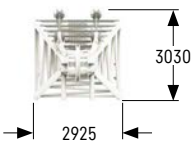
Boom section 6 m (2724.35)

Width	mm	2925
Weight	kg	2810



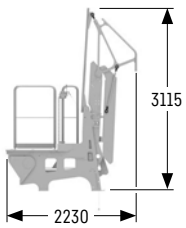
Boom section 12 m (2724.35)

Width	mm	2925
Weight	kg	4820



Boom head – dragline operation

Weight	kg	7230



Access to machine

Weight	kg	780

Counterweight

Counterweight slab (1x)

Width	mm	2090
Weight	kg	24250

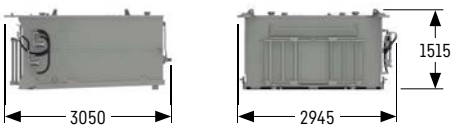
Counterweight slab (4x)

Width	mm	1520
Weight	kg	13550

Counterweight slab (4x)

Width	mm	1520
Weight	kg	5000

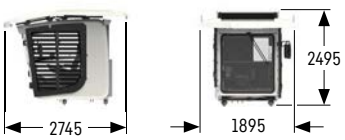
Additional diesel tank



Additional diesel tank

Weight	kg	3700

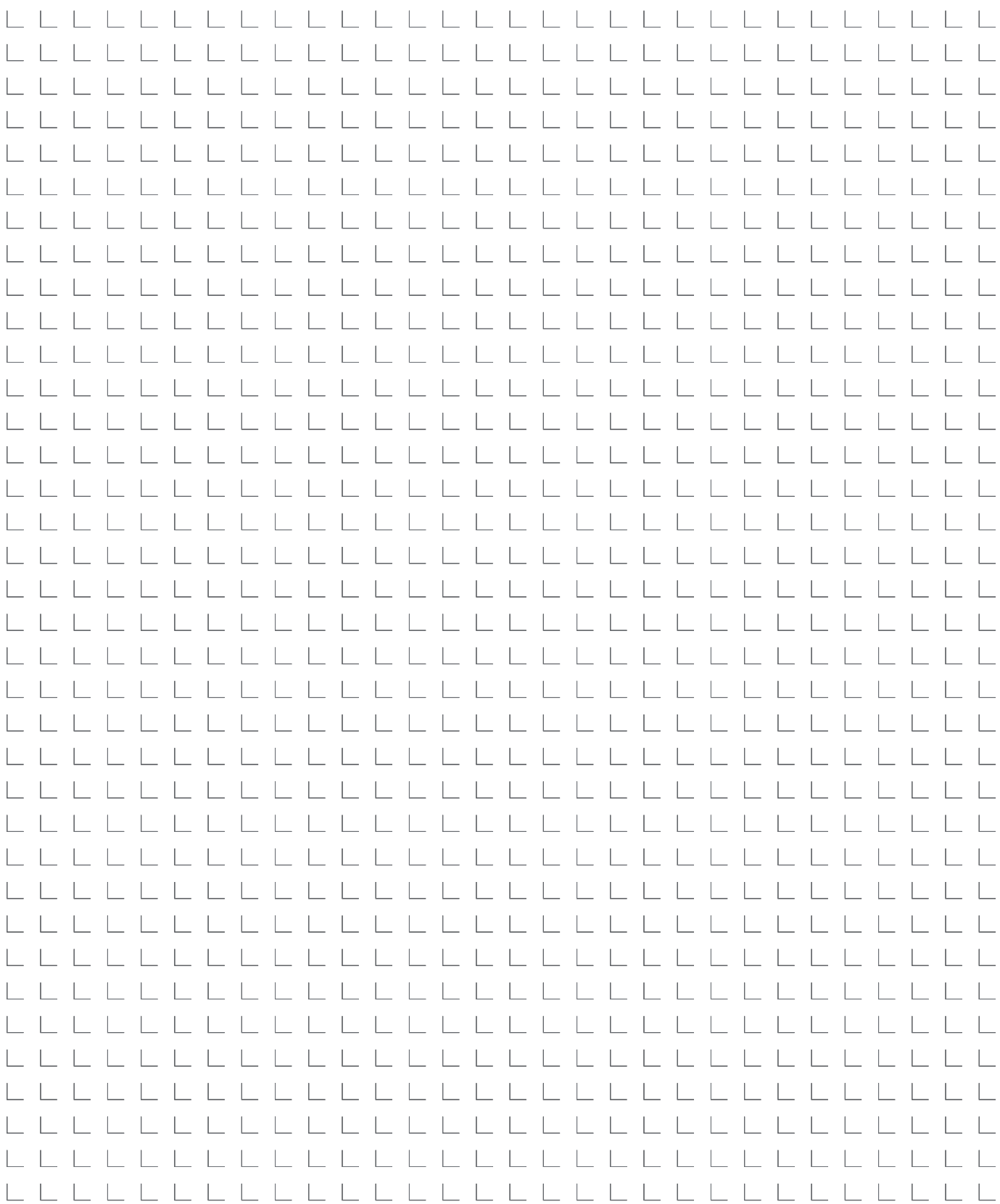
Cabin



Cabin

Weight	kg	2090

Notes



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