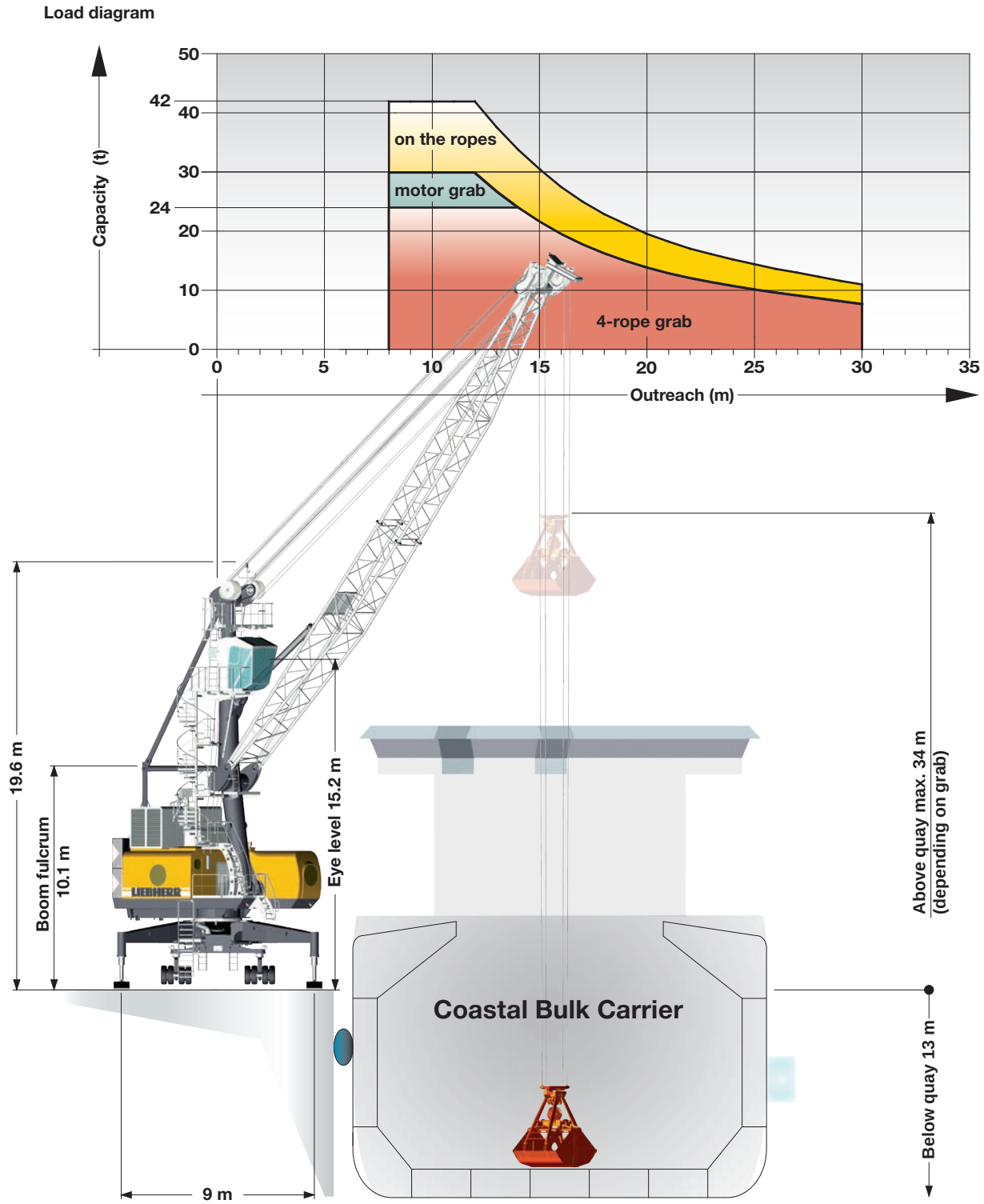
Mobile Harbour Crane

LHM 120

LIEBHERR

Main dimensions

Bulk operation



Bulk operation

Maximum crane capacity 42 t			
	Hook operation	Grab operation	
Outreach	on the ropes	4-rope grab	motor grab
(m)	(t)	(t)	(t)
8-11	42.0	24.0	30.0
12	42.0	24.0	29.9
13	37.7	24.0	26.8
14	33.8	24.0	24.1
15	30.5	21.7	21.7
16	27.5	19.6	19.6
17	25.1	17.8	17.8
18	23.0	16.3	16.3
19	21.2	15.0	15.0
20	19.6	13.9	13.9
21	18.2	13.0	13.0
22	17.1	12.2	12.2
23	16.1	11.5	11.5
24	15.2	10.8	10.8
25	14.4	10.2	10.2
26	13.7	9.7	9.7
27	13.0	9.2	9.2
28	12.3	8.7	8.7
29	11.6	8.3	8.3
30	11.0	7.8	7.8

Weight ramshorn hook 1.5 t
Weight rotator 1.5 t

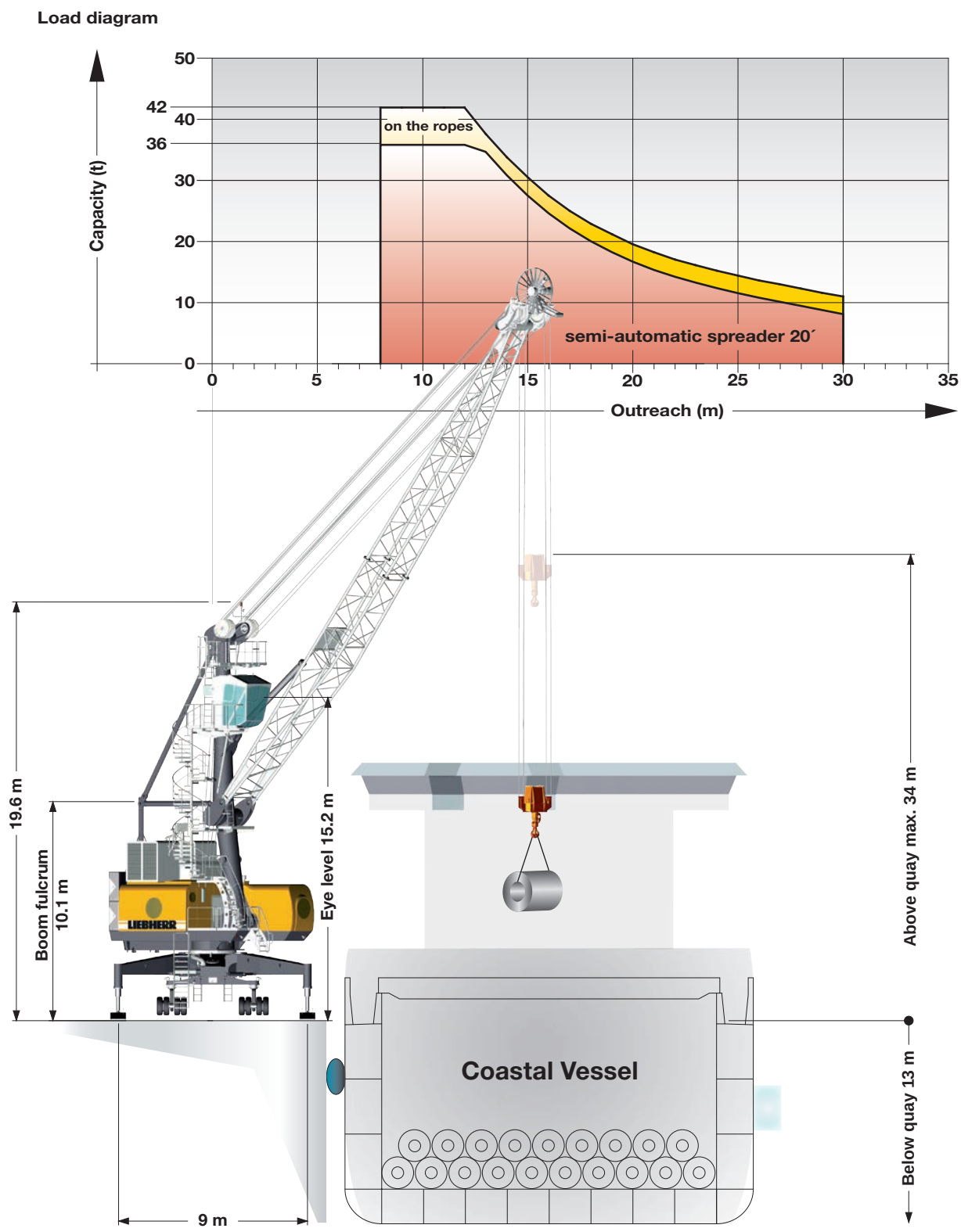
Professional bulk handling – Turnover up to 550 t per hour

The powerful hydrostatic transmission and advanced Liebherr electronics ensure short, productive working cycles during bulk handling.

- During grab operation, hoisting, slewing, and luffing are driven simultaneously at maximized speed to achieve the highest (possible) turnover.
- During grab filling, features such as automatic lowering and hoisting guarantee the optimum filling level of the grab.
- The slack rope monitoring system ensures extended life-time of the ropes and increases operational safety.
- Reverse power is returned to the drive process through closed loop hydraulics which results in reduced fuel consumption.
- The Cycoptronic® anti-sway system automatically compensates for all rotational swing, transverse and longitudinal sway of the load at maximum speeds.
- To provide safe and stress-free working conditions for the operator, Liebherr offers the Cycoptronic® including teach-in® feature, a semi-automatic system, which pilots the crane from the vessel hatch to the quay without any sway. Especially for bulk operation into hoppers, the teach-in® system increases turnover and ensures consistent turnover rates during the entire ship unloading.
- Liebherr technology is absolutely resistant to all types of dust and dirt due to the closed hydraulic system and an electronic system which is military proven and tested.
- The airflow needed for cooling hydraulic and engine systems is routed external from the main machinery house. This helps keep the engine room clean and free of debris.

Main dimensions

General cargo operation



General cargo operation

Maximum crane capacity 42 t			
	Hook operation	Capacity under spreader	
Outreach	on the ropes	semi-automatic 20´	semi-automatic 40´
(m)	(t)	(t)	(t)
8-11	42.0	36.0	36.0
12	42.0	36.0	36.0
13	37.7	34.9	33.6
14	33.8	31.0	29.7
15	30.5	27.7	26.4
16	27.5	24.7	23.4
17	25.1	22.3	21.0
18	23.0	20.2	18.9
19	21.2	18.4	17.1
20	19.6	16.8	15.5
21	18.2	15.4	14.1
22	17.1	14.3	13.0
23	16.1	13.3	12.0
24	15.2	12.4	11.1
25	14.4	11.6	10.3
26	13.7	10.9	9.6
27	13.0	10.2	8.9
28	12.3	9.5	8.2
29	11.6	8.8	7.5
30	11.0	8.2	6.9

Weight rotator 1.5 t
Weight semi-automatic spreader 1.3 t (20 ft), 2.6 t (40 ft)

General cargo up to 42 tonnes

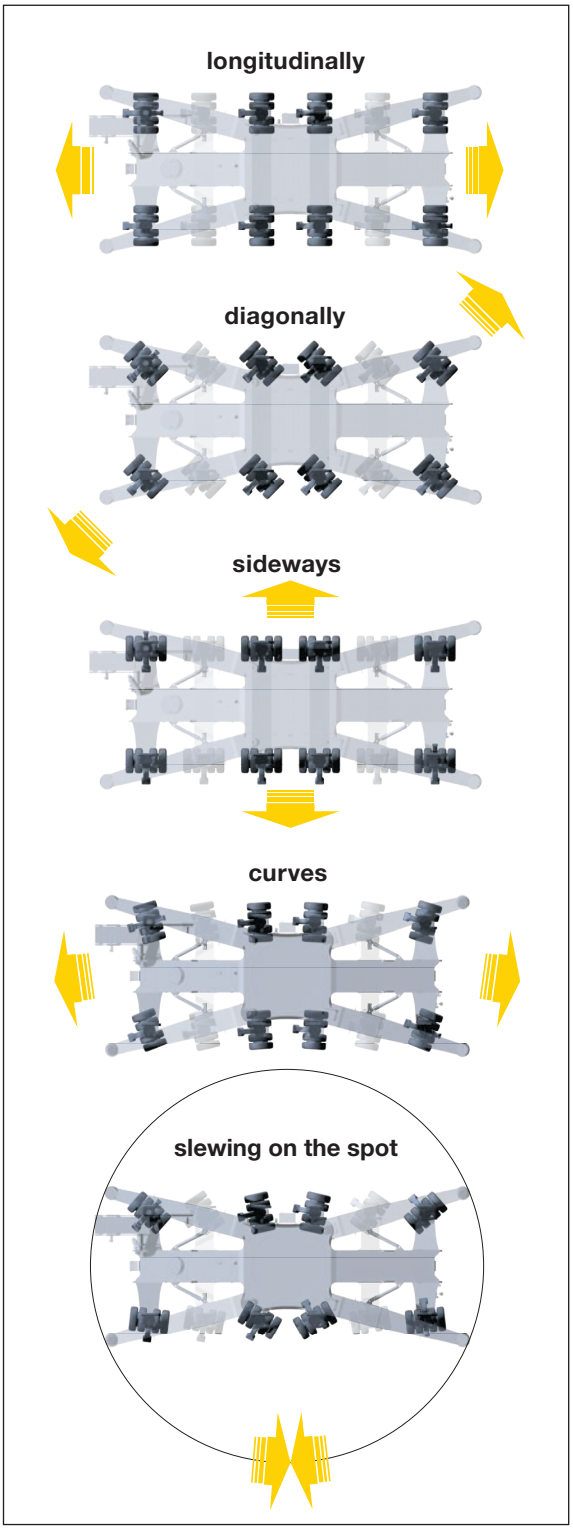
The LHM displays its unique versatility and flexibility especially in general cargo handling with continuously changing operating appliances and handling methods.

- Changing from one lifting device to another requires only minutes.
- Special controls & individually pre-selectable lifting methods – no modification delay.
- Automatic recognition and pre-selection of the lifting device through Liebherr Litronic® control system.
- The hydrostatic drive concept in connection with closed hydraulic circuits guarantees immediate system reaction times for rapid and safe working cycles.
- The luffing cylinder also uses a closed hydraulic circuit, assuring accuracy without vibration.

Undercarriage

Mobility

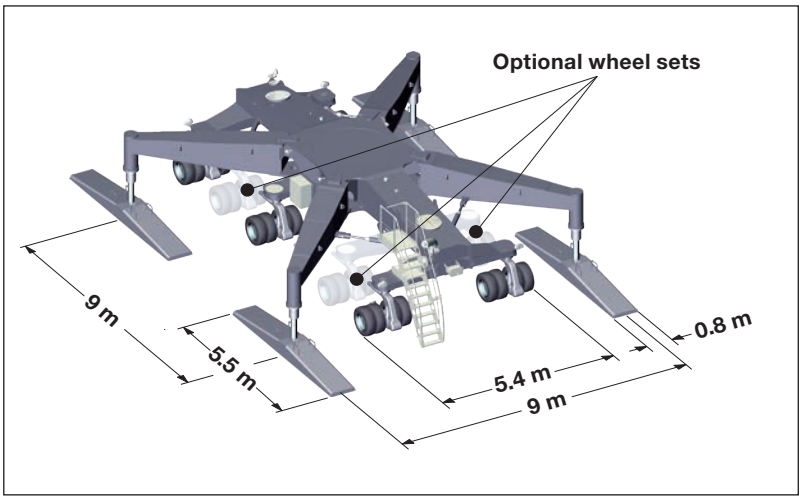
- Outstanding mobility and manoeuvrability
- Curves at any possible radii and even slewing on the spot



Schematic diagram

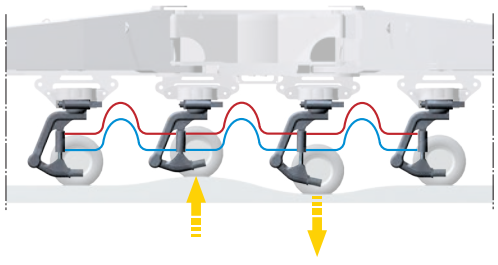
Modular propping system

- Minimised stress and strain of undercarriage due to cruciform support base which directs the load path from boom tip to quay
- Modular system allows further reduction of quay loads by installing additional axle sets
- Easy adaptation to various sizes of support pads and bases



Hydraulic load distribution

- Hydraulic suspension avoids overloading of individual wheel sets
  Standard trailer tyres making requisition of spares economical and time-saving
  Increased lifetime of tyres due to individually steerable wheel sets



Optimum pressure distribution and adaption of wheel sets on uneven surfaces

Technical data

Capacity and Classification

	Capacity	Classification
Grab operation	< 19 t	A8
Grab operation	< 24 t	A7
General cargo	< 30 t	A6
Heavy lift	42 t	A4

Main dimensions

Min. to max. outreach	8—30 m
Height of boom fulcrum	10.1 m
Tower cabin height (eye level)	15.2 m
Overall height (top of tower)	19.6 m
Overall length of undercarriage	12.6 m
Overall width of undercarriage	5.4 m

Working speeds

Hoisting / lowering	0 — 90 m/min
Slewing	0 — 1.6 rpm
Luffing	0 — 67 m/min
Travelling	0 — 5.4 km/h

Propping arrangements

Standard supporting base	9 m x 9 m
Standard pad dimension	4 x 5.5 m x 0.8 m
Standard supporting area of pads	4.4 m^2

Optional size of supporting pads and bases on request

Quay load arrangements

Uniformly distributed load	1.17 t/m^2
Max. load per tyre	5.2 t

Due to a unique undercarriage design its parameters (pad sizes, supporting base and number of axle sets) can easily be adapted to comply with the most stringent quay load restrictions.

Weight

Total weight	approx. 124 t

Hoisting heights

Above quay at minimum radius	34 m
Above quay at maximum radius	15 m
Below quay level	13 m

Optional equipment

1. **Cycoptronic® - anti-sway system**
2. **Teach-In - semi-automatic point to point system**
3. **Sycratronic® - synchronizing crane control system**
4. **Vertical Line Finder - diagonal pull preventing system**
5. **Dynamic anti-collision system**
6. **Lidat® - basic package**
7. **Lidat® - tele service package**
8. **Lidat® - turnover package**
9. **SCULI - crane analyzer with various features**
10. **Economy software - for optimised fuel consumption**
11. **Video monitoring system**
12. **Radio remote control**
13. **Autopropping undercarriage**
14. **Cyclone air-intake system for the engine**
15. **Low temperature package**
16. **Customer-specific painting & logo**
17. **Additional (driven) axle sets**
18. **Axle sets equipped with foamed tyres**
19. **Different supporting bases and pad sizes**
20. **And many more as per customers´ requirements**

Practical solutions

Liebherr develops and produces special designs and solutions to meet customer-specific requirements

- The Liebherr Portal Crane, LPS, is an efficient combination of a space-saving portal (mounted on rails) and the proven mobile harbour crane concept. Particularly on narrow quays, individual portal solutions permit (railway) trains and (road) trucks to travel below the portal.
- Liebherr Fixed Slewing Cranes (LFS) are an efficient combination of a mobile harbour crane upper carriage and a fixed pedestal. LFS cranes provide an economical and space-saving solution for the installation on quaysides and jetties, especially where room for manoeuvring is limited and low ground pressure is essential.

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