

# Mobile crane

# LTC 1045-3.1

Max. capacity:	45 t
Max. lifting height:	48 m
Max. radius:	39 m



# LIEBHERR



# **Mobile crane LTC 1045-3.1**

## **Compact and universally employable**





A long telescopic boom, high capacities, compact dimensions, an extraordinary manoeuvrability and mobility as well as a comprehensive comfort and safety equipment distinguish the mobile crane LTC 1045-3.1 from Liebherr. The 45-ton crane offers state of the art technology for more benefit in practical operation.

- 36 m long telescopic boom with outstanding high telescopable capacities
- 36 t total weight incl. 6.5 t ballast and swing-away jib at 12 t axle load
- ZF-power shift gearbox with automatic shifting and torque converter
- Telescopable cab offers best visibility at road driving and at crane operation as well as steering capabilities of a 2-cab crane
- Integrated and easily detachable storage box at the vehicle front







#### Drive train

- 6-cylinder Mercedes-Benz diesel engine, 240 kW/326 HP at 2200 rpm, max. torque 1300 Nm at 1200 rpm
- Power shift gearbox with automatic shifting ZF 6 WG 210, 6 forward and 2 reverse gears
- Torque converter and lock-up clutch
- Axles 1 and 3 driven, optional axle 2





# Most modern chassis and drive technology

## High mobility and economy

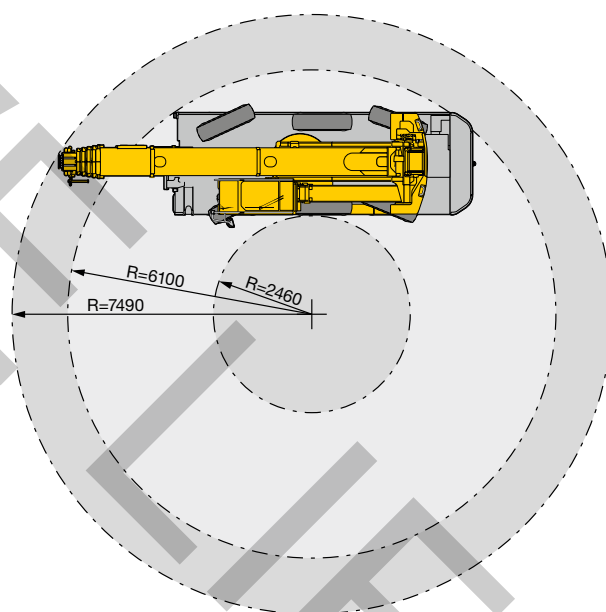
A powerful 6-cylinder turbo-diesel engine with 240 kW/326 HP provides for fast driving performance. The ZF-power shift gearbox with automatic shifting offers best manoeuvrability and high comfort.

- Minimum crawling speed due to torque converter
- ABV-automatic locking preventer
- Telma Eddy current brake optional, wear free and comfortable

## Compact, manoeuvrable and weight optimized

Due to its extremely compact dimensions the LTC 1045-3.1 can also move on the tightest job sites. At especially crowded conditions on-site the boom can be luffed up so that the turning radius of the chassis is the decisive factor. By removing the front storage box the vehicle length can be further reduced.

- Chassis length only 8.91 m, after removing of the front storage box only 7.68 m
- Minimum turning radius only 6.10 m
- Chassis width only 2.54 m, also with tyres 445/95 R 25 (16.00 R 25)
- Lowest vehicle height only 3.01 m
- Tail swing only 3.20 m



## Hydropneumatic axle suspension "Niveaumatik"

- Maintenance free suspension cylinder
- Large dimensioning for high axle loads
- Spring travel +100/-100 mm
- High side stability at driving around curves
- Choosing of the driving modes by fixed programmes



## Pneumatically activated disk brakes

- High braking power, better brake control
- Improved track stability
- No fading of the brake performance at high brake temperatures
- Higher operational life
- Shorter working time for replacement of the brake pads
- Brake pads with wear indicators

# Roomy storage boxes



Numerous storage boxes for extensive accessories,  
lifting tackle and support timber







**Easy and fast removing of the front storage box**





#### 5 steering programmes

- Selection of programme by simple push button
- Clear layout of control elements and displays
- Programmes changeable during driving
- Crab steering comfortably controlled by steering wheel





# Variable steering concept



## Centring cylinder on the rear axles

- Automatic straightening of rear axles in case of failure

## Active rear axle steering

The rear axles are actively electro-hydraulically controlled in accordance with the speed and steering angle of the front axle. 5 different steering programmes (P) can be selected by touch button.

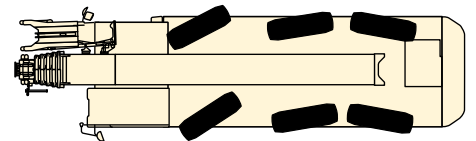
- Remarkably reduced tyre wear
- Improved manoeuvrability
- Stable driving condition even at high speeds
- All three axles can be steered

## High safety standards – entire know-how from Liebherr

- Centring cylinder for automatic straightening of rear axles in case of failure
- Two independent hydraulic circuits with wheel- and engine driven hydraulic pump
- Two independent control computers

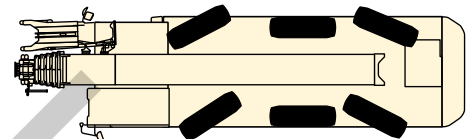
### P1 Road steering

Axle 1 is steered mechanically by using the steering wheel. The axles 2 and 3 are actively steered, depending on the speed and the front axle lock angle. At speeds of 30 km/h and higher they are set to straight-ahead position and locked.



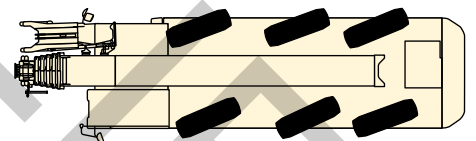
### P2 All-wheel steering

Using the steering wheel the axle 3 is turned in accordance with the steering angle of axle 1 to achieve the smallest possible turning radii.



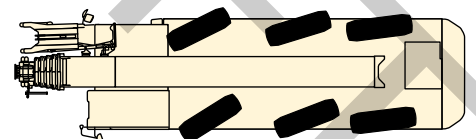
### P3 Crab steering

Axles 2 and 3 are turned in the same direction as the wheel lock on axle 1 by using the steering wheel.



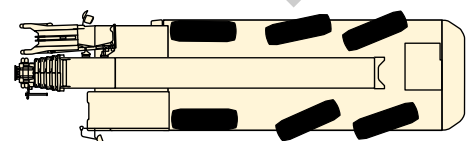
### P4 Reduced swing-out

The axels 2 and 3 are turned in accordance to the steering angle of the 1st axle that the swing-out of the chassis back is minimized.



### P5 Independent rear-axle steering

Axle 1 is turned by using the steering wheel; axles 2 and 3 are turned independently of the wheel lock on axles 1 by control levers.







#### **The driving and crane cab**

- Large field of view
- Safety glass on all sides
- Tinted glass, front screen can be opened
- Heated and electrically adjustable outside mirrors
- Air-sprung driver's seat with lumbar support
- Engine independent additional heating and air condition



# Comfort and functionality

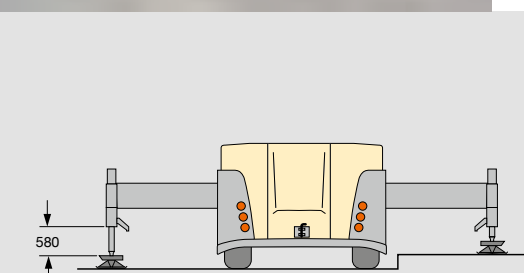
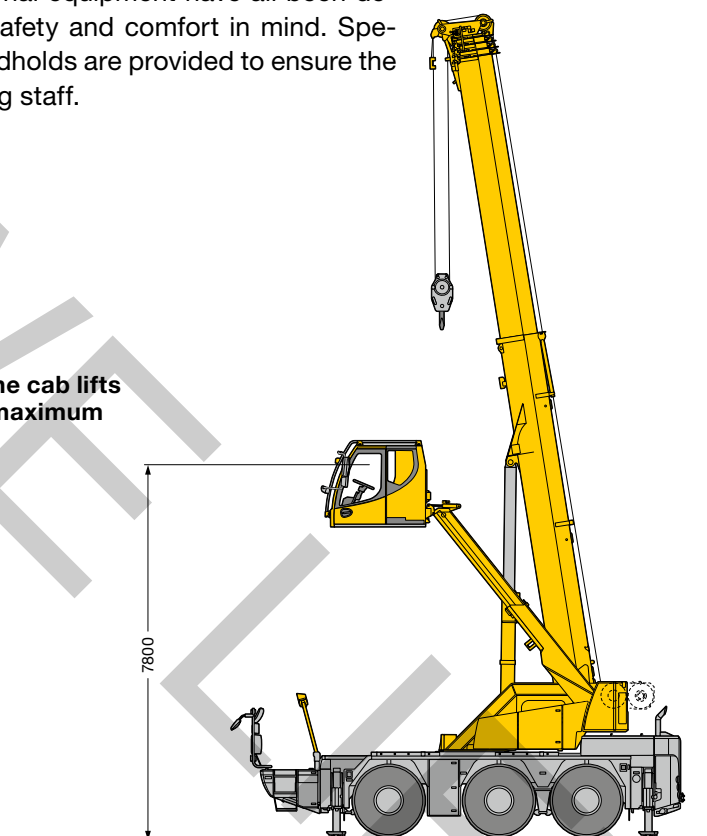
## Variable single cab concept

During road driving the crane cab is positioned and mechanically locked at the front of the vehicle by means of a telescopic beam. This results in optimal visibility for the crane driver and a steering performance of a 2-cab crane. With the new concept of a movable cab Liebherr solves the problem of the limited visibility of city cranes. Also on the right side of the vehicle the view is not limited, as the lower edge of the telescopic boom remains above the line of sight of the crane driver. By the optimal placement of the steering levers from the steering wheel to the first axle the LTC 1045-4.1 reaches the accustomed good steering quality of the LTM mobile cranes.

## Speedy and safe set-up

Setting of the outriggers, counterweight assembly and attachment of additional equipment have all been designed with speed, safety and comfort in mind. Specific ascents and handholds are provided to ensure the safety of the operating staff.

**Option:**  
The telescopic crane cab lifts the crane driver to a maximum eye level of 7.8 m.



### Supporting the crane – quick, comfortable and safe

- BTT blue tooth terminal, mobile control and display unit
- Electronic inclination display
- Fully automatic levelling by push button
- Engine start/stop and speed control
- Support area lighting with four integrated flood lights

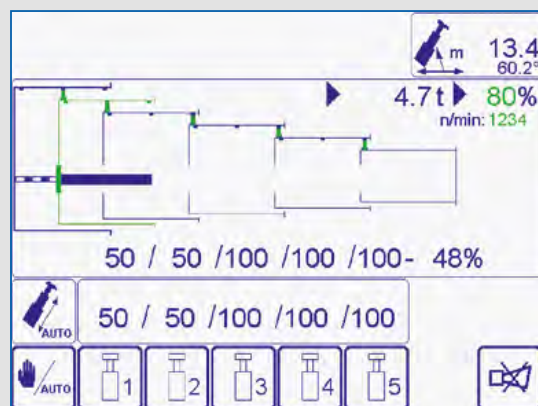






### The fully automatic telescoping system "TELEMATIK"

- Increase of capacities at long booms and wide radii due to the „light“ telescoping system
- 1-stage hydraulic cylinder with hydraulically operated drive pin
- Maintenance free telescoping system
- Fully automatic telescoping
- Easy operation, monitoring of the telescoping action at the LICCON screen



1.5 m long assembly jib





# High lifting capacities and flexible boom system

## High-capacity, long telescopic boom and functional lattice extensions

The telescopic boom comprises the base section and 5 telescopic sections, which are automatically extended and locked to the requested boom lengths by the thousand fold proven single cylinder telescoping system TELEMATIK.

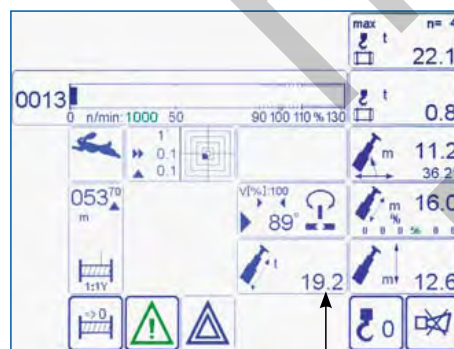
- 36 m telescopic boom
- 7.5 m – 13 m long folding double fly-jib, attachable at 0°, 20°, 40° and 60°
- 1.5 m long assembly jib, consisting of the adapter of the swing-away jib and an additional sheave set and a hook crossbar

## High lifting capacities offer a wide operational range

- High lateral stability due to the oval boom profile
- Optimized capacities due to a multitude of extension versions
- Capacity 7.8 t at the 36 m long telescopic boom

## High capacities at the unpinned telescope lengths

- High telescopic loads due to interpolation
- Separate capacity charts for holding the loads at unpinned telescopic lengths
- Display at the LICCON monitor



Holding capacity

Unpinned telescope length

Telescopic load

Assembly jib with sheave set



Assembly jib with hook crossbar

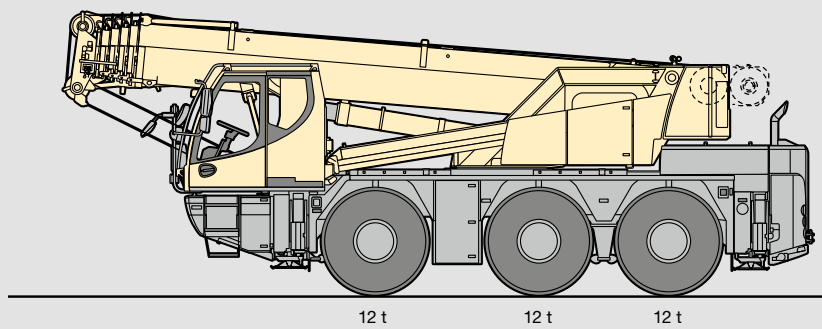




# Integrated counterweight

## As taxi crane immediately operational

- 36 t total weight incl. total ballast of 6.5 t and double swing-away jib at 12 t axle load
- Tail swing only 3.2 m



### The hoist gear

- Hoist winch with integrated planetary gear and spring loaded multiple disk brake
- Rope pull 48 kN on the outer layer
- Max. rope speed 111 m/min
- 2. hoist gear optional



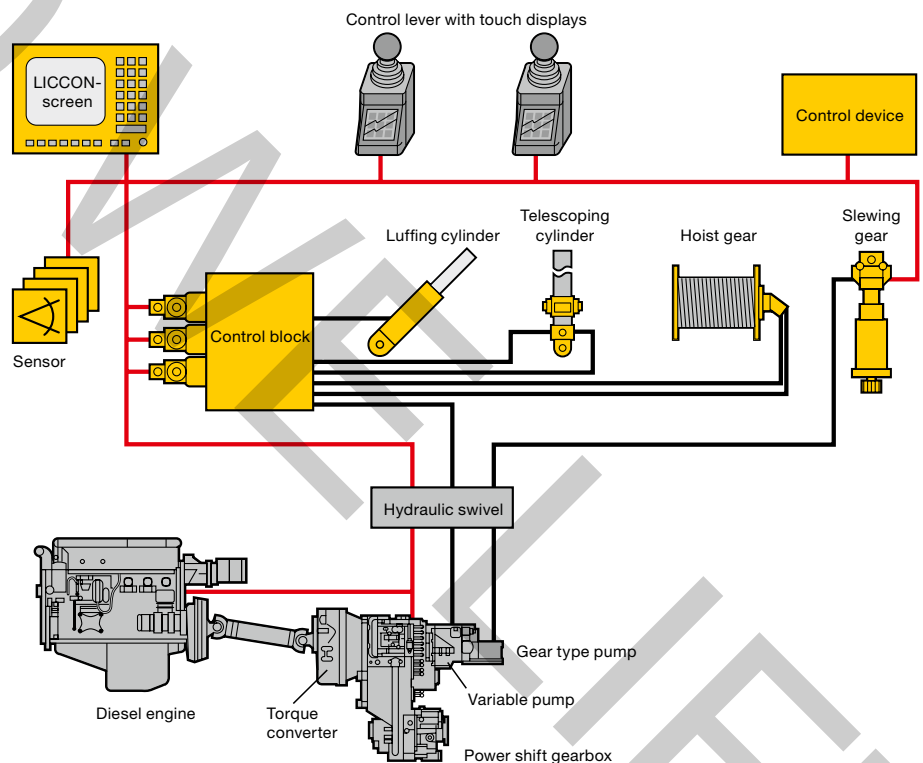


# Powerful crane operation

## With proven components

The drive components for the crane drive are designed for high efficiency and provide for a sensible and precise handling of the loads. They are specially adapted for the crane operation and proven in severe long-time tests.

- Crane drive from diesel engine in chassis
- Optimized fuel consumption by electronic engine management
- Diesel-hydraulic crane drive, open oil circuits with electric "Load Sensing"-control, 4 working motions simultaneously possible
- Electric/electronic SPS-crane control via the LICCON computer system
- Comfort armrest control with 2 self centering, 4-fold multifunctional joysticks, stepless control of all crane motions with winch and slewing gear sensors, electronic pilot control
- Slewing gear switchable as standard for: open or hydraulically fixed, so the motion can optimally be adjusted for the various operation conditions, e. g. sensible erection operation or fast working cycles.



### The slewing gear

- Planetary gearbox, spring loaded multiple disk brake
- Switchable as standard: open or hydraulically fixed
- Slewing speed from 0 to 1.9 rpm stepless adjustable



### The central greasing

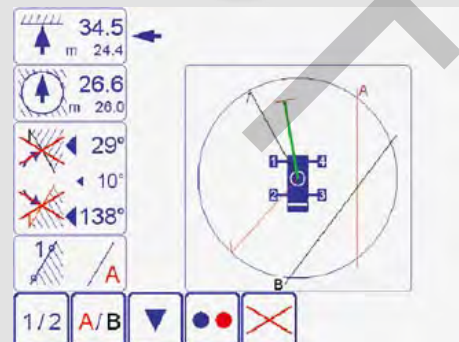
- Standard central greasing device for slewing ring, boom bearing, luffing cylinder and winch bearing
- Consistent supply of grease
- Filling amount in transparent container visible at all times





### The LICCON test system

- Fast detection of faults at the screen without metering instruments
- Display of error codes and error description
- Comfortable dialogue functions for monitoring of all in and out ports
- Display of the functions and allocation of the sensors and the actors





# Intelligent crane control

## For functional and safe crane operation: the LICCON computer system

The soft and hardware of the mobile crane control is developed by Liebherr in-house. The centre is the LICCON computer system (Liebherr Computed Control).

- Integrated LML load moment limiter
- Key components are in-house manufactured by Liebherr
- Guaranteed spare parts availability
- Worldwide proven under the most different climate conditions
- Operator friendly

The second control generation LICCON2 is the result of a continuous development by the Liebherr specialists and enables the adaption to the constantly increasing demands of the markets due to its modern and future oriented control.

## The data bus technology

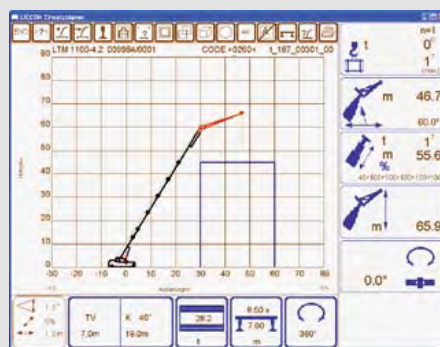
Liebherr mobile cranes are completely interlaced by the data bus system. All important electric and electronic components are equipped with own micro processors and communicate with each other by only limited data cables. For the special demands of the mobile crane Liebherr has developed own data bus systems (LSB – Liebherr-System-Bus). The data bus technology improves the reliability, the comfort and the safety for road driving and crane operation:

- Higher reliability due to remarkable lesser electric cables and contacts
- Continuous self testing of the „intelligent sensors“
- Comprehensive diagnosis possibilities, fast fault finding



### The LICCON working area limitation system (option)

- Relieve for the crane driver by automatically monitoring of working area borders like bridges, roofs, etc.
- Simple programming
- Four different limitation functions:
  - Sheave head height limitation
  - Radius limitation
  - Slewing angle limitation
  - Edge limitation



### The LICCON work planner

- Computer programme for planning, simulation and documentation of crane jobs at the personal computer
- Display of all load charts related to a crane
- Automatic search for the applicable crane by entering the load case parameters load, radius and lifting height
- Simulation of crane jobs with drawing function and support force display



# LICCON2 – safe and comfortable



## Attaching and detaching of the hook block

The BTT – Bluetooth Terminal offers the crane driver the possibility to attach or detach the hook block at the front of the vehicle within sight, as the hoist winch and the luffing cylinder of the telescopic boom are remote controlled.



Wireless remote control

## Wireless remote control (option)

All crane motions can be controlled outside of the cab.

- Higher efficiency
- Free view and closeness to the load
- Prevention of communication errors between the crane driver and the job site personnel

## Crane supporting

With the BTT the crane is supported comfortably and safely. Engine start/stop and speed regulation, electronic inclination display and automatic support levelling are provided as standard. Optionally also the support forces can be displayed on the BTT.



## Colour monitor

The readability of the data on the monitor of the LICCON2 control in the superstructure cab is improved by the colour display. Warnings and the crane utilization are easier detectable.



## Touch displays

Below the joysticks, integrated in the armrests, touch displays are installed by which the various operation functions can be selected. Beside others this are the supporting of the crane and the adjustment of the working flood light as well as the heating and climate regulation.