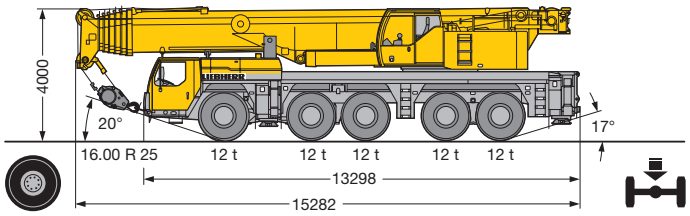
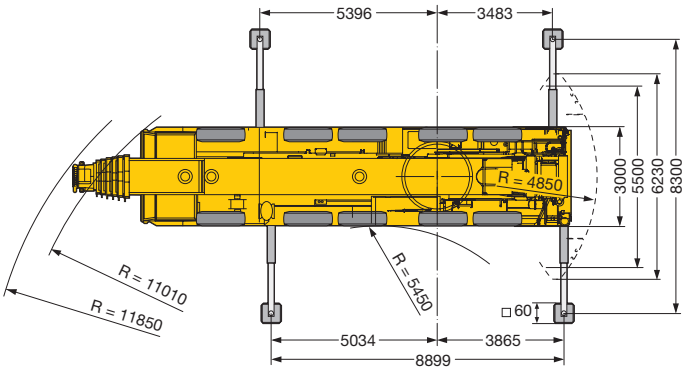
Mobile crane
Product advantages

LTM 1200-5.1

Max. load capacity: 200 t
Max. height under hook: 98 m
Max. radius: 82 m

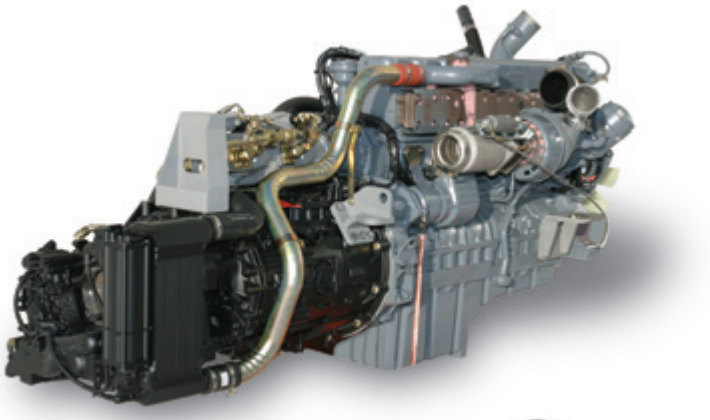
LIEBHERR

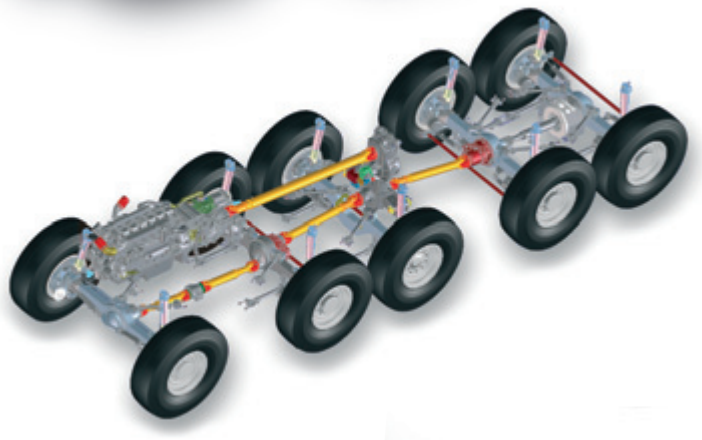




Compact, maneuverable and weight-optimized

- Overall length 15.28 m, carrier length 13.3 m
- Large overhang angles of up to 20°
- Smallest turning radius of 11.01 m with all-wheel steering
- Rear counterweight radius only 4.85 m
- 60 t total weight incl. drive 10 x 8, tyre size 16, hook block 31.2 t (axle load 5 x 12 t)
- 3 optional tyre sizes
  - 14.00 R 25 carrier width 3 m
  - 16.00 R 25 carrier width 3 m
  - 20.5 R 25 carrier width 3.1 m





Modern drive concept

- Powerful, 6-cylinder Liebherr turbo-charged Diesel engine type D846 A7, 370 kW/503 h.p, exhaust gas emissions correspond to the directives 97/68/EG stage 3 and EPA/CARB Tier 3, robust and reliable, modern, electronically controlled engine management
- ZF power shift gear with automated control system AS-TRONIC. ZF intarder fitted directly to the gear unit, 12 forward and 2 reverse gears, automated control, reduced fuel consumption due to a great number of gears
- 2-step, robust transfer case with lockable transfer differential, creeping speed 0.78 km/h
- Drive 10 x 6, axles 2, 4 and 5 driven
- Drive 10 x 8 (optional), axles 2, 4 and 5 driven, axle 1 activatable for off-road displacement
- Weight-optimized, robust axles of minor maintenance, perfect track keeping and lateral stability due to special arrangement of the steering knuckles, steel- and rubber mounted
- Maintenance-free cardan shafts; easy and quick fitting due to 70° diagonal toothing
- Hydropneumatic suspension "Niveaumatik", program-controlled for "setting crane on outriggers", "crane displacement with equipment" and for "road displacement of the crane", suspension travel +150/-150 mm
- Lateral force released and maintenance-free suspension rams, protected against damage by synthetic pipes
- Sustained-action brakes:
  Engine brake as exhaust retarder with Liebherr additional brake system (ZBS), Intarder on gear, Telma-type eddy current brake (optional)
- Service brake:
  All axles fitted with air disc brakes, high braking performance, long maintenance intervals, rapid-change brake linings

Variable steering concept with "active rear-axle steering"

Axles 3, 4 and 5 set up as "active rear-axle steering, 5 steering methods are preselectable by fixed programs (P):

P1 On-road steering
Axles 1 and 2 are steered mechanically with hydraulic assistance by the steering wheel. Axles 3, 4 and 5 are steered “actively” speed-dependent according to the cramp of the front axles, and over 30 km/h, axles 3 and 4 are set to straight displacement and fixed, from 60 km/h, axle 5 is fixed equally to straight displacement. The change of the steering angle in accordance with the speed, results in a precise and stable driving quality during higher speeds, tyre abrasion is reduced and the maneuverability clearly improved.

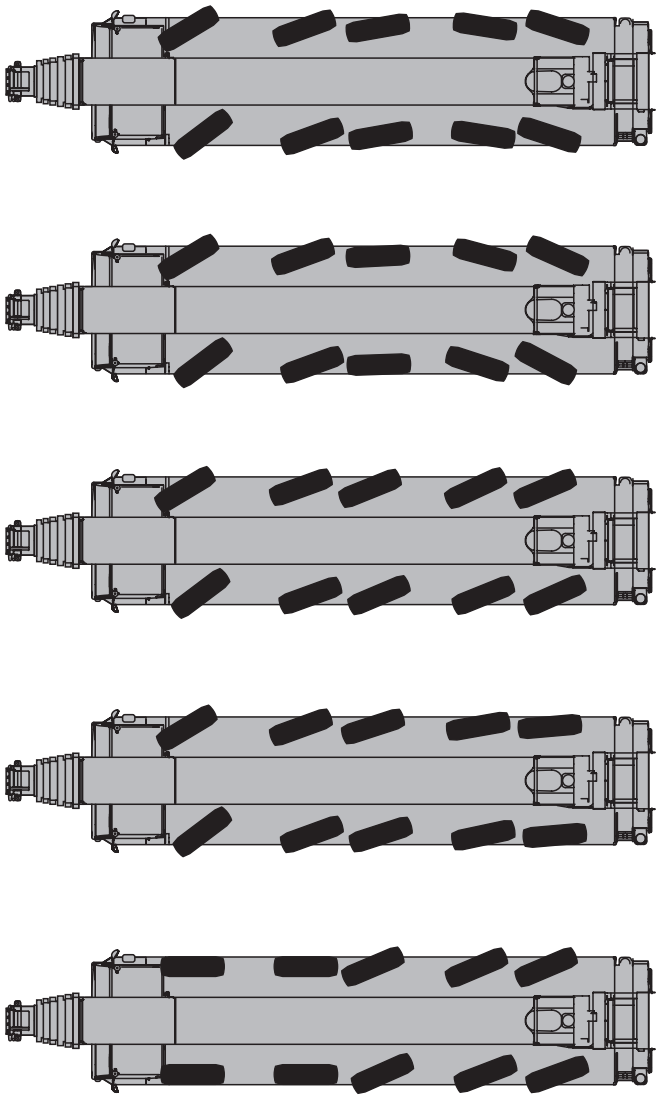
P2 All-wheel steering
Axles 3, 4 and 5, dependent on the steering angle of axle 1 are cramped by means of the steering wheel so that the smallest turning radii can be performed.

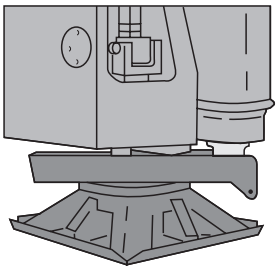
P3 Crab steering
Axles 3, 4 and 5 are cramped into the same direction as axles 1 and 2 by means of the steering wheel.

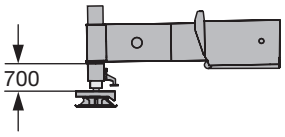
P4 Steering without swerving
Axles 3, 4 and 5 are cramped in accordance with axle 1 so that no swerve out of the rear of the carrier takes place.

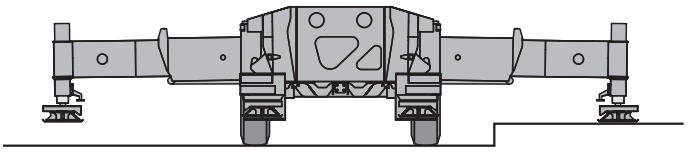
P5 Independent rear-axle steering
Axles 1 and 2 are cramped by the steering wheel, axles 3, 4 and 5 steered independent of the cramp of axles 1 and 2 by momentary-contact buttons, whereby the cramp of axle 3 is adapted to the required situation.

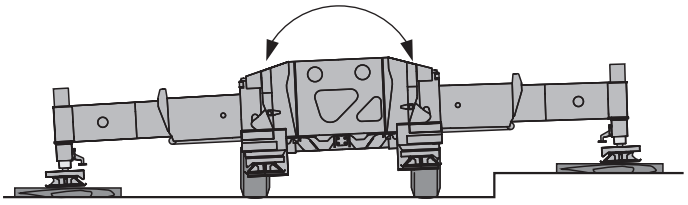
- A failure in the rear-axle steering does make it ineffective and the rear axles are set to straight displacement by the centering rams
- Two independent hydraulic circuits with wheel- and engine driven hydraulic pump, thus maximum safety standard
- Two independent control processors (by existing E/A modules) and diversified sensoriel system
- Entire know-how of the "active rear-axle steering" by Liebherr











Setting crane on outriggers – quick, convenient and safe

- Variable supporting basis
  - Outriggers retracted
  - Supporting basis 5.5 m x 8.9 m
  - Supporting basis 8.3 m x 8.9 m
- Fix-mounted supporting pads with splash guard
- Travel of supporting ram of up to 700 mm
- Level control of the outriggers, all-automatic levelling of the crane during the supporting procedure by "push-button"
- 2 x 9° lateral inclination of crane and crane superstructure
- Control panels at either side of the carrier with membrane keyboard and electronic inclination indicator, push-buttons for ENGINE/START/STOP and speed control are illuminated and lockable
- Operation of the outrigger system in accordance with the rules for the prevention of accidents
- Illumination of the supporting area by 4 incorporated projectors

Comfortable driver's cab of high functionality

- Modern, comfortable driver's cab of high functionality and convincing design, corrosion resistant, sheet steel version, cataphoretic dip-primed, front mounted on rubber shock absorbers, rear cushioned hydraulically, internal sound and heat absorbing panelling
- Safety glass all-round, greenish tinted front and side windows for heat absorption, electric window lifters
- Arrangement of the control elements and displays according to ergonomical aspects for safe and convenient handling during continuous operation
- Digital display and keyboard units interconnected with the functional blocks by data bus technology
- Driver's seat cushioned pneumatically, with pneumatic lumber support, headrest
- Steering wheel adjustable in height and inclination
- Heatable and electrically adjustable rear mirrors
- Safety belts for driver and co-driver
- 3 windscreen wipers with automatic wipe/wash system and intermittent control
- Delayed switch-off of the interior lights
- Various racks and stackers
- Radio preparation

Comfortable crane cab of high functionality

- Crane cab in corrosion-resistant galvanized sheet steel version, powder-coated, with sound and heat absorbing internal panelling, interior of modern design, tinted windows all-round, front knock-out window with large windscreen wiper and wipe/wash device, skylight of bullet-proof glass with large screen wiper and wipe/wash device, roller blind on front window and skylight, space-saving sliding door
- Greenish tinted front and side windows for heat absorption
- Pneumatically lateral extendable footboard for safe access to and from the carrier
- Crane cab tiltable to the rear by 20° to improve the sight
- 1 working projector of 70 Watt, at the front of the cab
- Spring-mounted and hydraulically cushioned crane operator's seat with pneumatic lumber support and head rest
- Operator-friendly armrest-integrated controls, vertically and horizontally adjustable joystick selector consoles and armrests, ergonomically adjustable operating consoles
- Ergonomic control levers with integrated winch rotation and slewing gear signalling device
- Modern instrument supporting base with incorporated LICCON monitor, display of all essential operating data on the LICCON screen
- Radio preparation

Crane drive with field-proven components

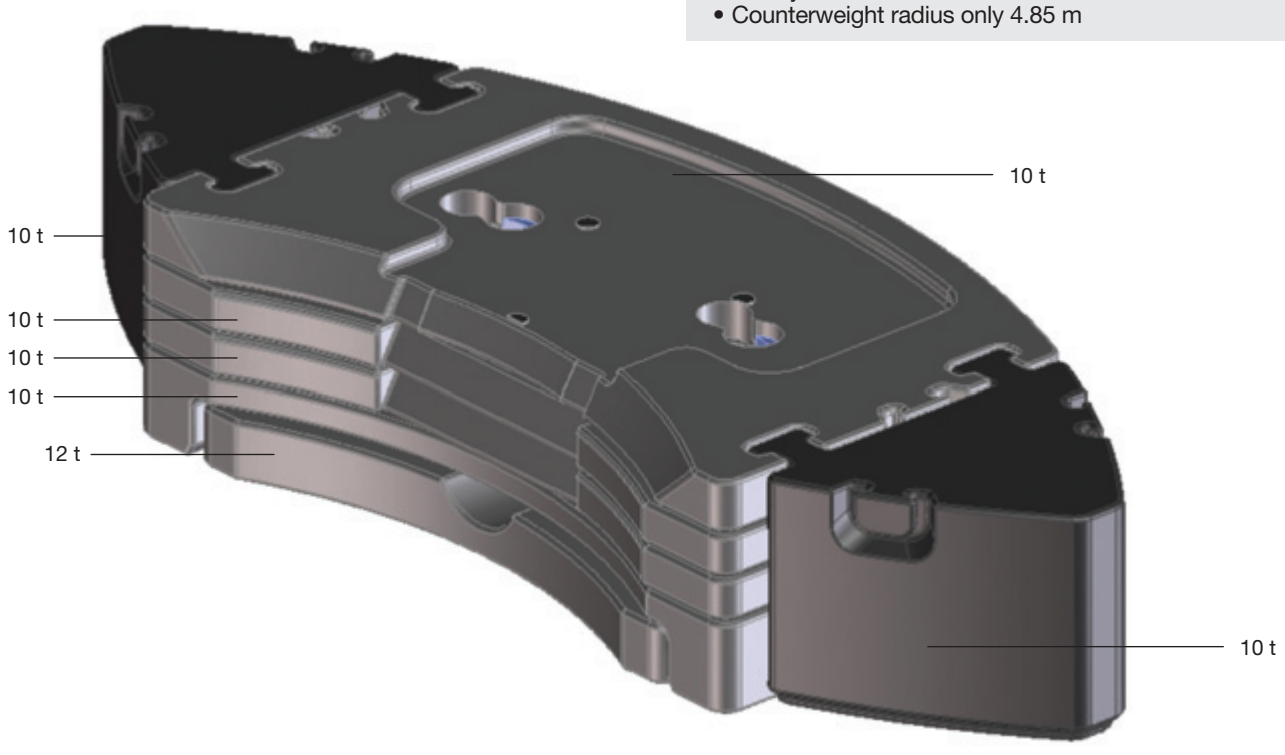
- Crane engine: 4-cylinder Liebherr turbo-charged Diesel engine type D934S A6 of 145 kW/197 h.p, exhaust gas emissions in accordance with the directives 97/68/EG stage 3 and EPA/CARB Tier 3, robust and reliable, located opposite to the crane cab, thus less noise molestation, electronic engine management, optimized fuel consumption, exhaust gas system of special steel
- Hydraulic system with 5 axial-piston variable displacement pumps with pilot control and capacity regulation, electric controlled oil cooler as standard feature
- Standard high-efficient noise abatment of the diesel-hydraulic crane drive

Winch technology by Liebherr

- Self-manufactured Liebherr winches (hoist gear 1 and 2) with special grooving, with incorporated planetary gears and spring-mounted multi-disk brakes as static brakes
- Axial-piston fixed displacement pump of own production, specially designed for crane operation, exposed successfully to tough fatigue tests
- Display of the winch rotation on the LICCON screen
- Non-rotating hoist rope

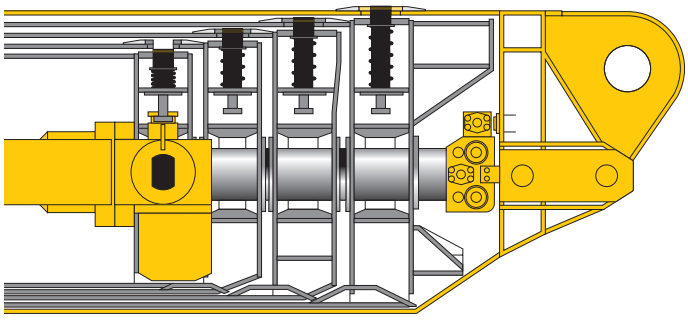
Ballasting – just a matter of minutes

- Counterweight variants 72 t, 52 t, 42 t, 32 t, 22 t and 12 t
- Control of ballasting from the crane cab
- Quick ballasting by “key-hole” method
- Compact counterweight dimensions, e.g. 52 t counterweight of only 3.75 m width
- Counterweight radius only 4.85 m

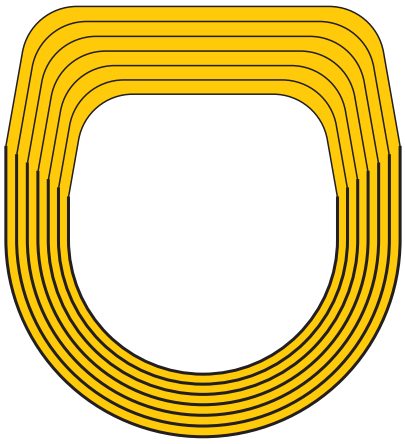


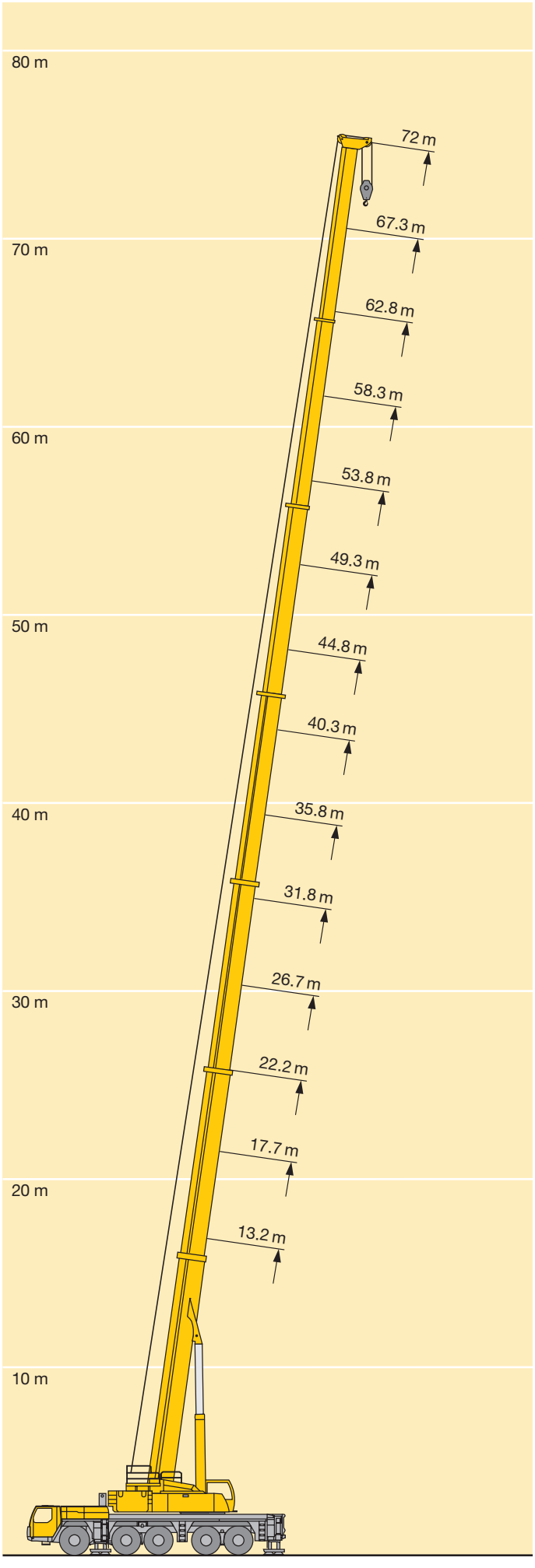
Lifting of loads - precise and safe

- 7-section, 72 m long telescopic boom and 12.2 m – 22 m long biparted swing-away jib extendable to 29 m and 36 m
- One intermediate section of 7 m for the extension of the telescopic boom at operation with swing-away jib
- Telescopic boom with rounded, oviform bottom shell, thus high lateral stability
- Optimal utilization of the telescopic boom due to a multitude of telescoping variants
- Swing-away jib mountable at 0°, 22.5° and 45°, hydraulic fitting aid, hydraulic ram for continuous variation of the swing-away jib from 0° - 45° (optional)
- Luffing under load (interpolation of the loads)
- Erection jib 5.3 m long, integrated in swing-away jib
- Easy and quick re-reeving of the hoist rope by rope dead end connection
- Load hook with rope dead end connection, cylindrical shape of the load hook for easy displacement by rolling on the ground



oviform boom profile





- The electric and electronic components are interconnected by the latest data bus transmission technique
- Instead of the traditional electric wiring, the data transmission to the individual function blocks is performed digitally just by a few data cables, thus improved reliability due to essentially less contacts
- Self-manufactured Liebherr bus systems (LSB), specially adapted to the requirements of a mobile crane
- Diesel engine and automatic transmission are controlled by a CAN data bus. The all electronic drive management reduces fuel consumption and improves the exhaust gas emission
- The electric systems of the carrier and crane as well as of all cockpit functions, the outrigger system and sensor system of the boom are interconnected by 4 Liebherr system busses
- The control of the function blocks is realized by I/A modules the programming of which is performed by means of the Liebherr system busses. The control intelligence is integrated into the LICCON central unit
- Comprehensive diagnostic facilities, quick error localization, operating error display
- Test programs for functional test of keyboard and display unit as well as for the test of the control units for engine and transmission management, additional Liebherr brake system, hydraulic ventilator, hydraulic suspension and outrigger control panels
- The new data bus technique distinctively increases functionality and efficiency of the mobile crane

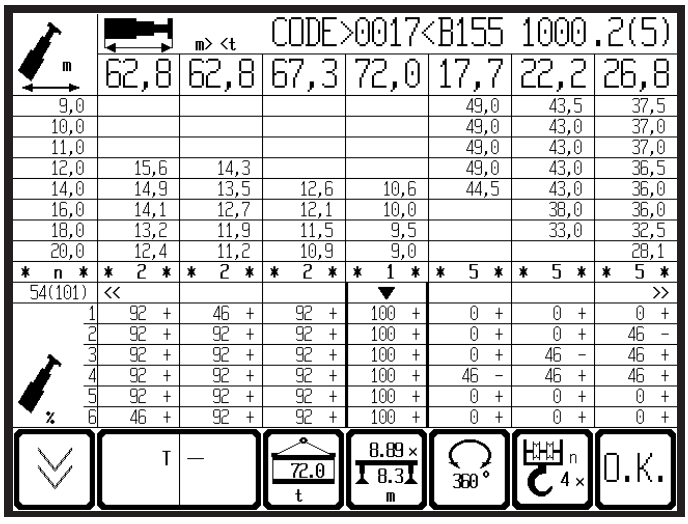
Legend:

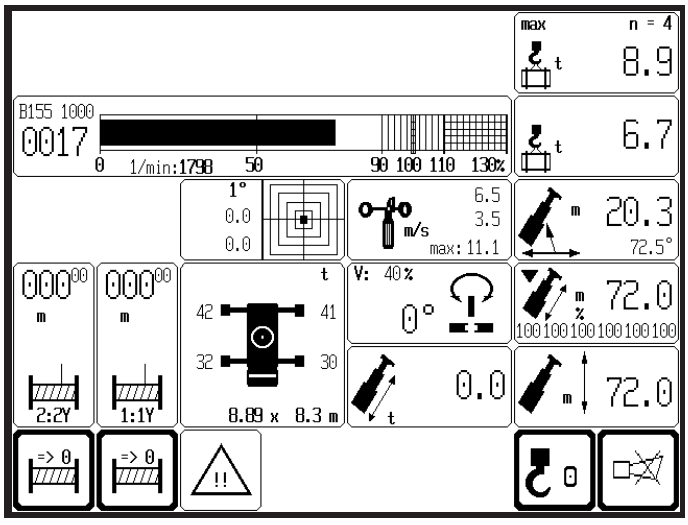
- LSB - Liebherr system bus 1
- LSB - Liebherr system bus 2
- LSB - Liebherr system bus 3
- CAN - Busses
- SCI - Serial Communication Interface

1 Input/output module for control of the suspension, Liebherr Diesel engine, automatic transmission, control functions, pneumatic control of brake functions
1a Instruments keyboard unit in driver's cab
2 Input/output module for differential locks, display functions
2a Instruments keyboard unit in driver's cab
3 Input/output module for outrigger system - right
3a Control unit for outrigger system - right
4 Input/output module for outrigger system - left
4a Control unit for outriggers system - left
5 Input/output module for engine brake, cruise controller, speed setter, electronic control of Diesel engine (steering column switch right) and automatic transmission
6 Control of Liebherr Diesel engine/carrier and automatic transmission
7 Inclination sensor for automatic levelling
8 Slewing sensor in slipring unit
9 Connection of Liebherr system bus (LSB 1, 2, 3, 4)
10 LICCON central unit
11 LICCON monitor in crane cab
12 Length sensor and cable drum/energy cable for interlocking gripper/telescopic boom
13 Inductive sensors (12 x)
14 Angle sensor on base section
15 Cable drum for items 16, 17, 18 and for luffing jib
16 Wind sensor
17 Hoist limit switch
18 Angle sensor
19 Input/output module for electronic control of Diesel engine/superstructure, air flap, ventilator clutch, exhaust flap
20 Control injection pump – Liebherr Diesel engine/superstructure
21 Control lever
22 Pressure sensor (4 x) for output management and LMB (safe load indicator)
23 Steering valve for active rear-axle steering

LICCON configuration and operation program

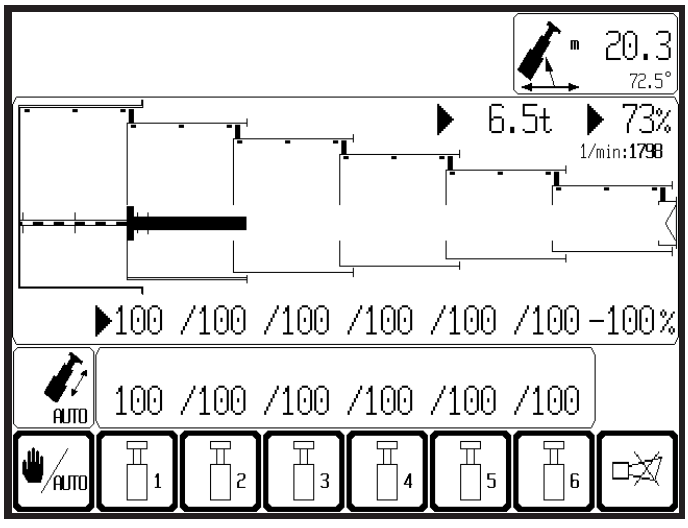
- Standard application programs: Safe load indicator (LMB), configuration program with configuration picture, operation program with operating picture, telescoping program with telescoping picture, test parameter program, test system; supporting force indication and work area limitation as an optional feature
- Setting of the configuration program by convenient interactive functions
- Safe and reliable acknowledgement of the configuration set
- Representation of all essential data by graphic symbols on the operation picture
- With integrated wind force test
- Reliable cutoff device when exceeding the admissible load moments
- Load capacity values for any boom intermediate length
- Winch indications for precise lifting/lowering of the load





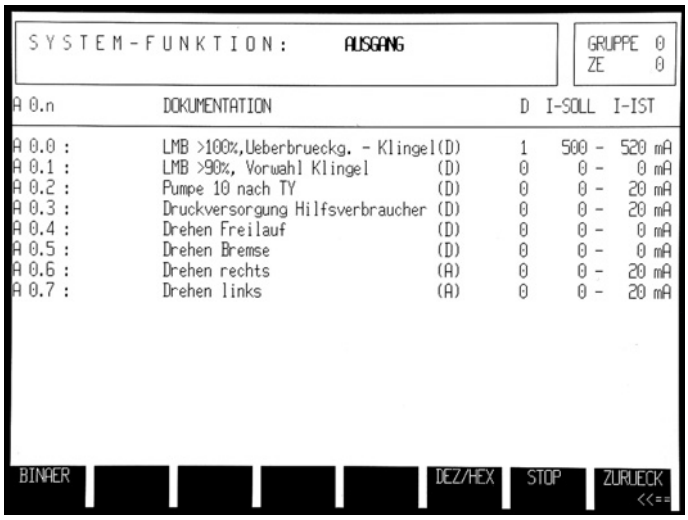
LICCON-assisted telescoping system

- Telescoping by single-stage hydraulic ram with hydraulic driving tenons (patented internal interlocking system)
- Telescoping procedure controllable by convenient operator's guide on the monitor, precise approach of the interlocking positions
- Telescopable loads are displayed on the LICCON operating picture
- Rapid-cycle telescoping system with "automatic mode", i.e. all-automatic telescoping to the required boom length
- Very compact and light-weight telescoping system, thus increased load capacities, especially with long booms and large radii
- Automatic cushioning in end positions during telescoping and retracting for the preservation of the structural members



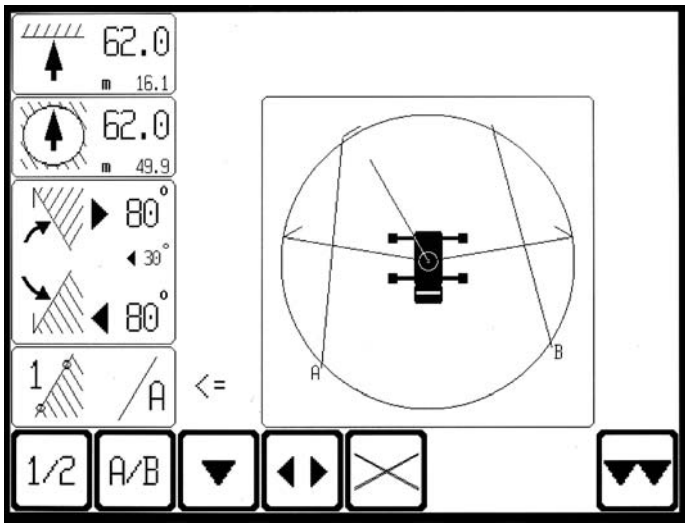
The LICCON test system

- The test system assists the servicing personnel in quickly localizing failures of the crane sensory system without the need of measuring instruments
- The service starts on the display screen, troubleshooting becomes a matter of minutes
- Occurring errors are indicated by error codes and error descriptions on the display screen
- Convenient interactive functios permit the observation of all inputs and outputs of the entire system by different representations on the display screen even during crane operation. It equally visualizes the allocation of the individual sensors and actuators of the system and their functions



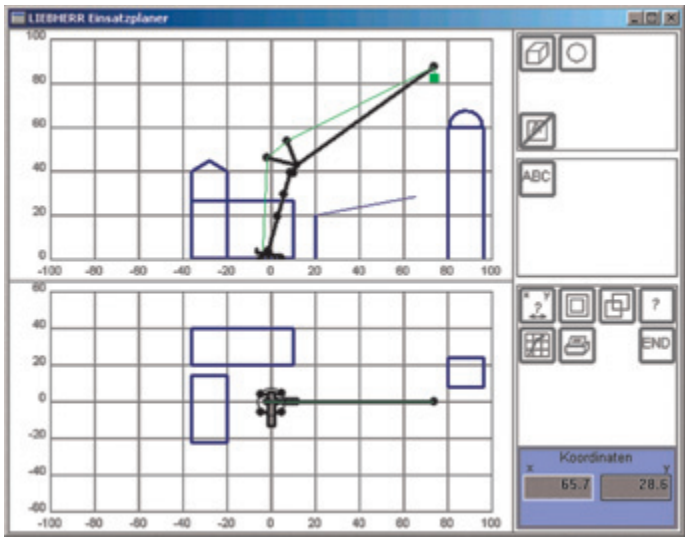
The LICCON work area limitation system

- It relieves the crane operator, especially in situations where the handling of loads requires his full attention, by controlling the work area limits. Work areas can be restricted by buildings, bridges, roofs, high-tension power lines, pipe lines or adjacent cranes. The automatic work area limitation system (optional), can easily be programmed. Four different limitation functions are practicable:
- Height limitation of the pulley head
- Radius limitation
- Slewing angle limitation
- Limitation of edges



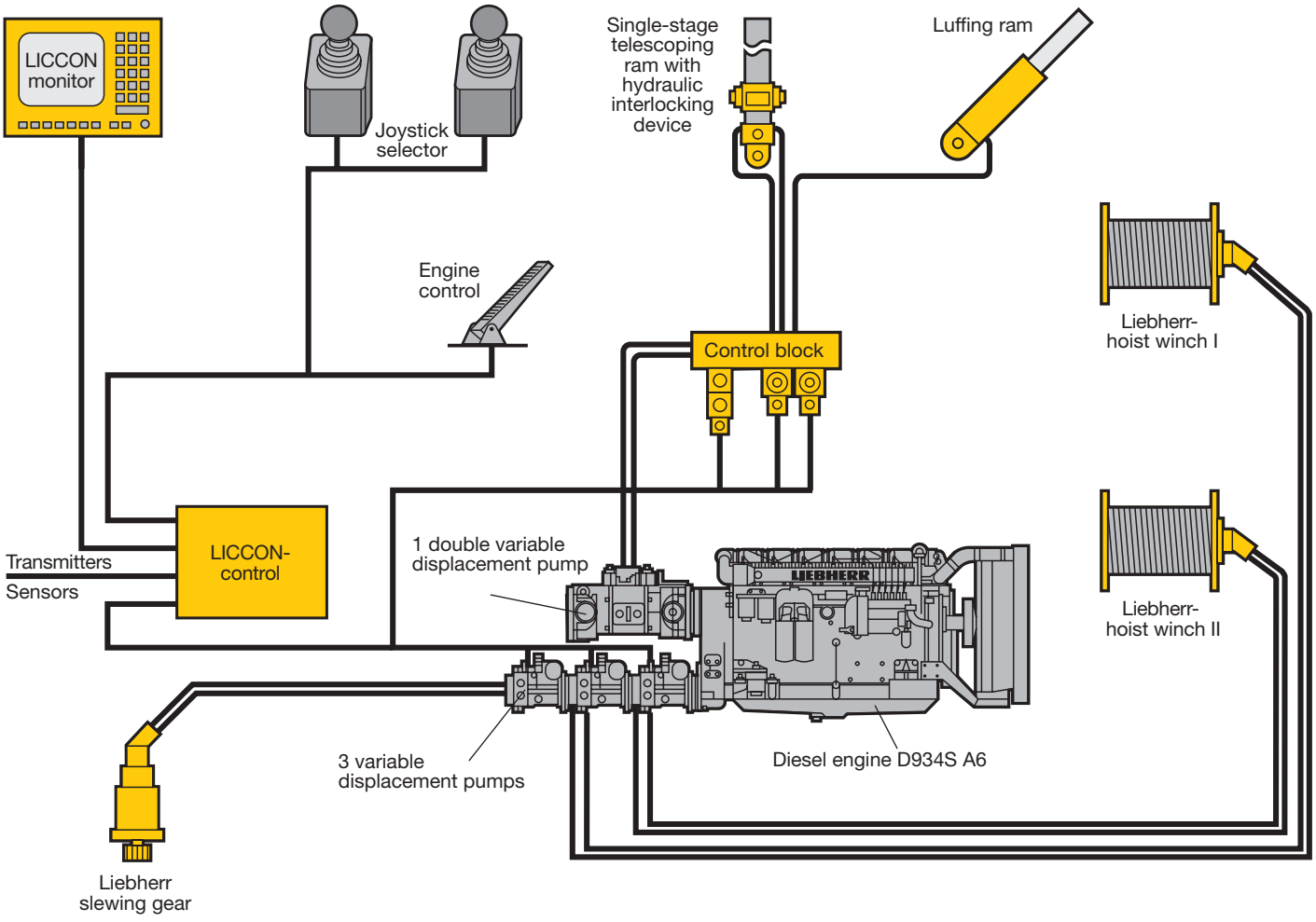
The LICCON work planner

- The LICCON work planner consists of a software program on CD for planning, simulation and documentation of crane applications on the display screen (optional)
- The 2D planner program enables the drawing of buildings, to write texts and to represent a crane model true to scale including the entire motions within a fictional construction site
- The work planner permits the preparation of more transparent offers, facilitates the briefing of crane operators and can be run on a Laptop at the construction site



Electric/electronic PLC crane control with test system

- Control of the winches, slewing gear and the luffing and telescoping motions by the LICCON computer system (PLC control)
- Four working motions can be performed independent from one another
- Speeds for lifting/lowering, luffing and slewing preselectable by 5 steps
- Very short response rates at the activation of crane motions
- Hoist gear and slewing gear are operating within a "closed oil circuit". This enables very sensitive lifting/lowering of loads, or slewing. Moreover, during lowering of the load, the generated potential engergy is not converted into heat but can be re-employed, for a 2nd motion This saves fuel and the oil is less thermically exposed than by operation within the open circuit.
- Functional test of all essential components by means of the LICCON test system



Optional features contribute to an expansion of the application spectrum and increase comfort and safety

On the carrier
- Additional heater with engine preheating
- Eddy-current brake
- Supporting force indicator on the carrier and in the operator's cab
- Stow-away box
- Air-conditioning system
- Trailer coupling D12/D19
- Radio preparation
- Seat heating for driver's and co-driver's seat
- CD radio set

On crane superstructure
- Additional heater with engine preheating
- 2nd hoist gear
- Air-conditioning system
- Seat heating
- Work area limitation
- Aircraft warning light
- Working projectors (xenon) – electric adjustment – on the boom base section
- GSM module for tele-diagnostic
- CD radio set
- Emergency actuation

Further optional features by request.

Subject to modifications.

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