TT cranes. Versatility means success.





Multi-talented and supremely economical.

With their innovative technology, the new TT cranes redefine the performance standard in their size categories. Their pioneering telescopic action represents a major step

forward. Such a varied range of tasks always needed several different types of crane in the past. For the operating company, these additional benefits make the TT cranes - the 24 TT, 27 TT and 32 TT – supremely cost-effective.



Double

telescoping action. Both the tower and the jib of the TT crane can be extended and retracted telescopically and varied in

length to suit every on-site operating situation.



Compact design, quick and easy movement.

TT cranes are of extremely compact design, with a solid-

walled tower and closed three-chord telescopic jib. The front jib section retracts into the jib heel and reduces the crane's overall dimensions for road transport.



Every detail carefully planned.

There are many other masterly design details in the true Liebherr top-technology tra-

dition: the multifunctional trolley, the 'Quick Connection' system, the ballasting tongs and self-centring device, the automatic rope re-reeving system and the power supply cable with its protective multi-link chain.

Adaptability means cost effectiveness.

Due to their combination of vertical and horizontal adaptability with several load curves,

TT cranes guarantee an exceptional versatility. TT cranes can be adapted precisely to individual operating situations as well as to the progress of work on the construction site.

Unbelievably easy to erect.

TT cranes are not only compact to move from site to site on the road, they can also be

erected extremely quickly. Their ingenious erecting linkage transfers them from the road axles to the support spindles automatically. One person can prepare the TT crane for operation within about 30 minutes.







Double telescoping action.

TT crane jibs are variable in length and can be locked at two-metre extension intervals to provide a fixed working radius. This is possible both with the jib horizontal or when it is raised to an angle. Working from the control panel, the jib is simply run out to the desired length, using the trolley travel motor, and locked automatically. The 24 TT has six jib lengths, the two larger TT models have seven.

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Each of the jib length settings has its own load moment curve. As the jib is retracted step by step, the usable load moment goes up each time by about 20 %. In other words, the telescopic jib matches load capacity to practical operating needs.

Load moment ranges: 24 TT: 24 mt - 35 mt 27 TT: 27 mt - 45 mt 32 TT: 30 mt - 57 mt

Variable hook height.

The TT crane's solid-wall tower also has a telescopic action. As the building progresses, the tower can be extended upwards - whether the jib is horizontal or raised at an angle. The 24 TT has two tower height positions, the 27 TT and 32 TT have three.



Varying the length of the jib.

Load moment to suit the task in hand.



Adaptability means cost effectiveness.



The innovative TT design principle makes these cranes exceptionally versatile. With the tower retracted, they are ready for operation immediately after erecting. They can also be run into extremely narrow gaps between buildings, with the tower either fully erected or half-erected. This simplifies work on the building site immensely and

can save a lot of time in many operating situations.

With its telescopic tower and variable-length jib, the TT crane adapts itself to the progress of work on the construction site. When the jib is horizontal and retracted, the tower can be extended to the new working height in a very short time.

A single, versatile TT crane can handle a range of work that would otherwise need several different types of crane – a definite economy bonus.





The 24 TT tackling a very difficult task. Tower and jib both retracted.

A very narrow gap between buildings. No problem for the 32 TT.

The 27 TT. The jib is simply retracted and slewed past the obstruction.

The 27 TT at work in South Tyrol.

Compact design, quick and easy movement.



With the new high-speed axle, the TT crane can be moved from site to site as a normal trailer. With this axle, 60 km/h are possible on ordinary roads and 80 km/h on motorways or similar roads.

TT cranes form compact roadgoing units. The transport axle wheelbases are between 5.5 m (24 TT) and 7.4 m (32 TT), with part of the ballast carried on the crane. The remaining ballast needs only a 2- or 3-axle truck (a 4-axle truck for the 32 TT). There are slow-speed or high-speed axles for road transport. The latest high-speed axle enables the TT crane to be towed as a normal trailer at up to 60 km/h on ordinary roads and 80 km/h on motorways or similar roads.

Standardised mountings for adapters and axles on the undercarriage mean that all Liebherr road transport axles can be used without problems. The axles can be attached at either end, so that transport is possible in both directions.

The axles can remain attached to the crane's undercarriage while it is in operation. This enables TT cranes to be run into narrow construction sites with ballast in place and the tower fully erected or half-erected. Like all Liebherr tower cranes, the TT cranes have a special operating permit (German ABE) for road use.



LIEBHERR



Unbelievably easy to erect.

Placing on support spindles.

TT cranes can be erected quickly and easily from the transport position. The erecting linkage is operated conveniently from the control panel, and the TT lifts itself automatically from the transport axles to its support spindles. The

tower is then raised slightly and the crane lifted by a short cable link to the front axle. The TT cranes can overcome a considerable height discrepancy in this way.

Erecting is so simple.

The TT crane uses its erecting winch and two double guide arms to reach the vertical position – a completely new sequence of erecting movements. When the tower is erected– but not yet extended telescopically – the jib has already moved out to the working position.

An innovative ballasting technique.

The erecting winch gives the tower the generous ballasting radius of up to 5 metres. The hoisting winch is then operated to place the ballasting slabs in position. The new semi-automatic ballasting tongs and the equally new ballast slab centring system set new standards in this area too.

The new ballasting tongs help to make ballasting far easier: they are simply placed in position accurately and released by hand - the remainder of the process is automatic.

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Complete and ready to operate.



After ballasting, the TT crane is complete and ready to operate. The automatic 'Quick Connection' system locks the tower to the slewing platform and the inner and outer towers together. It uses conical pins that are then secured with wedges for safety reasons. The jib is already extended and in its working position, and the TT crane is complete and ready for use - so easily and so quickly.

Simple wind protection.

If the construction site calls for crane slewing movement to be restricted when out of use, the TT crane's tower and jib are retracted, the slewing brake applied and the undercarriage locked to the slewing platform - a very easy, reliable method of preventing unwanted movement, with no complex tying down of the jib needed.



Every detail carefully planned.

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The TT's multifunctional trolley changes gauge automatically as it passes from the heel section to the outer section of the jib. Working from the control panel, the trollev is automatically halted if the jib is to be telescopically extended. When the jib is at its new length, the crane operator locks it in position from the control panel, after

which the trolley is free to move again. It's as simple as that: when the trolley is halted, the jib can be moved in or out; when the jib is halted, the trolley can be moved.

The 'Quick Connection'.

The tower is locked to and released from the slewing platform, and also the inner tower to the outer tower, by an automatic 'quick connection' system. As an additional safety precaution, wedges are then driven in with a hammer to secure the spring-loaded taper pins.

Multi-link chain for power supply.

All the electric cables on the TT crane's tower are run through a multi-link chain which protects them reliably against damage during telescoping movements.

Semi-automatic ballasting tongs.

Thanks to the new semi-automatic ballasting system, which includes a new method of ballast slab centring, one person can perform the TT crane ballasting procedure without difficulty. The ballast slab is attached by hand; the remainder of the work - placing in position, automatic centring and disconnecting - is controlled automatically from the operating point.

Re-reeving.

The 27 TT and 32 TT cranes are equipped with Liebherr's patented automatic re-reeving system. From the control panel, the crane operator only needs to press a button in order to switch from double to quadruple hoist-rope reeving or back again: an effortless means of obtaining the ideal hoist speed at any time.







The 'Quick Connection'.

Operating support and power supply protected by multi-link chain.

Patented automatic rope re-reeving.

Powerful drive systems.

The switchgear cabinet.

TT cranes have a standard contactor control system. The EDC slewing gear controller and the frequency-controlled hoist gear controller are integrated into the switchgear cabinet. As an optional extra, an air-conditioned cabinet with thermostat temperature monitoring is available.

Hoisting and erecting winches.

The hoisting and erecting winches have separate drives. As an optional extra, a hoist gear with frequency converter is available for continuous speed control between 0 and 50 m/min.

The EDC slewing gear.

The patented EDC slewing gear is another standard feature of the TT cranes. Its electronic control system permits extremely sensitive, jolt-free slewing movements. Continuously variable working speeds, electronic wind-load regulation, automatic damping to prevent load oscillation and peak moment limiting to prevent excessive strain on the crane structure are further advantages of this well-proven technology. Electronic monitoring also enables the crane operator to reverse the current flow and thus the direction of slewing.

Trolley travel gear.

The standard trolley travel gear is equipped with a pole-changing motor that not only moves the trolley at speeds of either 20 or 40 metres/min but also extends and retracts the jib. If the TT crane's specification includes working in the optional 20-degree raised jib position, an even more powerful motor is fitted.



The switchgear cabinet.





Trolley travel gear.

Performance overview.

Working radii

14.0 m 16.0 m 18.0 m 20.0 m 22.0 m 24.0 m 24 TT: 6 jib lengths 15.0 m 17.0 m 19.0 m 21.0 m 23.0 m 25.0 m 27.0 m 27 TT: 7 jib lengths 18.0 m 20.0 m 22.0 m 24.0 m 26.0 m 28.0 m 30.0 m 32 TT: 7 jib lengths

Automatic re-reeving

24 TT: double-reeved 27 TT / 32 TT: double-reeved or double-quadruple-reeved

20° raised jib position Optional extra for all TT cranes

Multifunctional trolley With automatic rail-gauge changeover on all TT cranes

Simple erecting linkage On all TT cranes

Trolley travel gear drive On all TT cranes: 1.8/3.5 kW

Hook heights

24 TT: 2 hook heights: 11.5 m,19.0 m 27 TT: 3 hook heights: 13.0 m, 18.0 m, 22.0 m 32 TT: 3 hook heights: 14.5 m, 19.0 m, 24.0 m

Operating support All TT cranes: automatic locking

Control stand Optional extra on all TT cranes

Patented ballasting system Optional extra on all TT cranes

Ballast

Optional self-centring Semi-automatic ballasting tongs

Slewing radii

24 TT: 2.0 m 27 TT: 2.25 m, 2.5 m 32 TT: 2.5 m, 2.75 m

Switchgear cabinet With contactor control system

Hoist gear On all TT cranes: 3x pole-changing 11.0 kW or with frequency converter 11.0 kW (optional extra)

EDC slewing gear Standard on all TT cranes 1.5 kW

Length for road transport 24 TT: 13.7 m 15.3 m 27 TT: 32 TT: 16.7 m

Crane movement after erecting All TT cranes

Wind protection

All TT cranes: retract jib and tower, apply slewing gear brake and lock the undercarriage to the slewing platform - that's all!

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Please contact Liebherr-Werk Biberach GmbH, Postfach 16 63, D-88396 Biberach an der Riss 🕿 +49 7351 41-0, Telefax: +49 7351 41-22 25, www.liebherr.com, E-Mail: info@lbc.liebherr.com Subject to technical modifications.